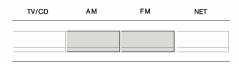
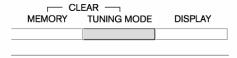
# AM/FM Radio Receiving Function

## Choosing the Radio Station

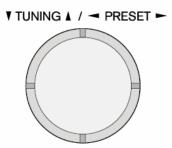
- Tuning into stations automatically
- 1. Press AM or FM on the unit to select either "AM" or "FM".



2. Press TUNING MODE, so that the "AUTO" indicator on the display lights.



- 3. Press ▼TUNING▲. The automatic search for a radio station starts.
  - Searching stops when one is found. When tuned into a radio station, the "►TUNED◄" lights on the display lights. If FM stereo broadcasting is tuned, the "FM STEREO" indicator lights.
  - No sound is output while the "►TUNED◄" indicator is off.



When the signal from an FM radio station is weak: Depending on the structure of the building and the surrounding environment, the radio wave condition is different and it may be impossible to get good reception. In that case, manually tune into the radio station of your choice by referring to the next section.

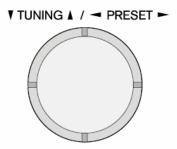
- Tuning into stations manually
- 1. Press AM or FM on the unit to select either "AM" or "FM".

| TV/CD | AM | FM | NET |
|-------|----|----|-----|
|       |    |    |     |
|       |    |    |     |
|       |    |    |     |

2. Press TUNING MODE, so that the "AUTO" indicator on the display goes off.



- 3. Press and hold ▼TUNING▲ to select the desired radio station.
  - The frequency changes by 1 step each time you press the button. The frequency changes continuously if the button is held down and stops when released. Tune by looking at the display.

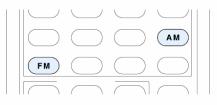


To return to the method for tuning into stations automatically: Press TUNING MODE again on the main unit. FM stereo broadcasting is automatically tuned. Normally, leave the indicator in "AUTO".

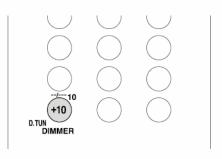
Tuning into stations by frequency



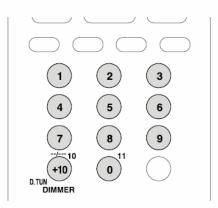
1. Press AM or FM on the remote controller to select either "AM" or "FM".



2. Press D.TUN.



- 3. Using the number buttons, enter the frequency of the radio station within 8 seconds.
  - For example, to tune to 87.5 (FM), press 8, 7, 5 or 8, 7, 5, 0.



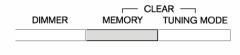
## Registering Radio Station

It allows you to register up to 40 of your favorite AM/FM radio stations. Registering radio stations in advance allows you to tune into your radio station of choice directly.

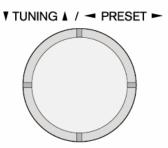
#### Registration



- 1. Tune into the AM/FM radio station you want to register.
- 2. Press MEMORY on the unit, so that the preset number flashes on the display.



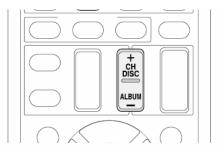
3. Repeatedly press ◀PRESET► to select a number between 1 and 40 while the preset number is flashing (about 8 seconds).



- 4. Press MEMORY again to register.
  - When the station is registered, the preset number stops flashing.
  - Repeat this procedure for all of your favorite AM/FM radio stations.
- Selecting a Preset Radio Station



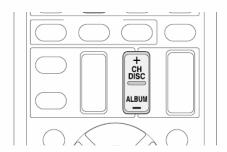
- 1. Press CH +/- on the remote controller to select a preset number.



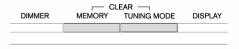
#### ■ Deleting a Preset Radio Station



1. Press CH +/- on the remote controller to select the preset number to delete.



- 2. While holding down MEMORY, press TUNING MODE on the unit to delete the preset number.
  - When deleted, the number on the display goes off.



## Using RDS (Asian model)

RDS stands for Radio Data System and is a method of transmitting data in FM radio signals.

- RDS works only in areas where RDS broadcasts are available.
- In some cases, the text information appeared on the display is not identical to the content transmitted by the RDS station. Furthermore, unexpected characters may be displayed when the unit receives unsupported characters. However, this is not a malfunction.
- If the signal from an RDS station is weak, data may be displayed intermittently or not at all.

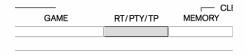
**PS** (**Program Service**): Tuning into a radio station transmitting Program Service information displays the radio station name. Pressing DISPLAY displays the frequency for 3 seconds.

**RT (Radio Text):** Tuning into a radio station transmitting Radio Text information displays text on the display of the unit.

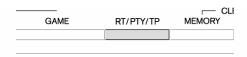
**PTY (Program Type):** Allows you to search for RDS stations by program type.

**TP (Traffic Program):** Allows you to search for radio stations transmitting traffic information.

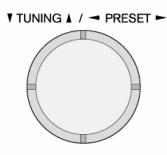
- Displaying Radio Text (RT)
- 1. Press RT/PTY/TP on the unit once.
  - RT (Radio Text) is displayed scrolling across the unit's display. "No Text Data" is displayed when the radio station is not transmitting text information.



- Searching by Type (PTY)
- 1. Press RT/PTY/TP on the unit twice.
  - The current program type appears on the display.



2. Press ◀PRESET► to select the type of program to search for.



• The following RDS station types are displayed:

None

News (News reports)

Affairs (Current affairs)

Info (Information)

Sport

Educate (Education)

Drama

Culture

Science (Science and technology)

Varied

Pop M (Pop music)

Rock M (Rock music)

Easy M (Middle of the road music)

Light M (Light classics)

Classics (Serious classics)

Other M (Other music)

Weather

Finance

Children (Children's programmes)

Social (Social affairs)

Religion

Phone In

Travel

Leisure

Jazz (Jazz music)

Country (Country music)

Nation M (National music)

Oldies (Oldies music)

Folk M (Folk music)

Document (Documentary)

3. Press ENTER to search for the selected type of radio station.



- 4. When the desired radio station is found, the station name on the display flashes. Then, press ENTER again.
  - "Not Found" is displayed if none is found.
- Listening to Traffic Information (TP)
- 1. Press RT/PTY/TP on the unit thrice.
  - The traffic information "[TP]" transmitted by the radio station you are tuned in is displayed. "TP" is displayed without square brackets when the radio station is not transmitting traffic information.



2. Press ENTER to search for a radio station transmitting traffic information.

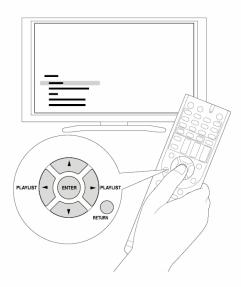


- 3. When such a radio station is found, searching stops and playing traffic information starts.
  - "Not Found" is displayed if none is found.



# Playing Content from a USB Storage Device

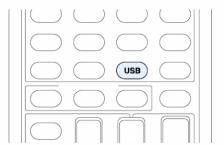
● **Operation**: You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



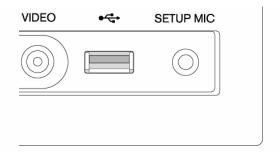
Playback

 $\vee$ 

Press USB on the remote controller to select "USB".



- 2. Plug your USB storage device with the music files into the USB port of the unit, so that the "USB" lights on the display.
  - If the "USB" indicator flashes, check whether the USB storage device is plugged in properly.
  - Do not unplug the USB storage device while "Connecting..." is displayed on the display. This may cause data corruption or malfunction.



#### 3. Press ENTER.

- The list of folders and music files on the USB storage device is displayed. Select the folder with the cursors and press ENTER to confirm your selection.
- 4. Select the folder and file to play using the cursor buttons, then press ENTER or ► to start playing.

## Summary of Internet Radio

Internet radio, also know as online radio, webcasting, streaming radio etc., is a general term for service provider site which offers an audio service transmitted via the Internet. There is a lot of web sites that provide such services all over the world, from terrestrial radio stations to personal web sites.

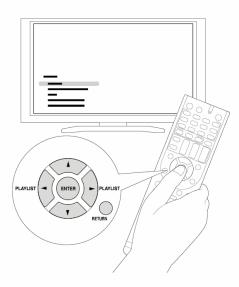
This unit comes preset with Internet radio stations (\*) such as Tuneln for you to enjoy these services, just by connecting the unit to the Internet.

\* Network services or contents may become unavailable if the service provider terminates its service.

### TuneIn

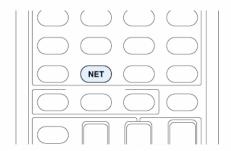
With more than 70,000 radio stations and 2 million on-demand programs registered, Tuneln is a service where you can enjoy music, sports and news from all over the world.

● **Operation**: You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



■ Playback ∨

- 1. Press NET on the remote controller. The NET screen is displayed.
  - The "NET" indicator lights on the display.
  - The same operation can be done by selecting "Network Service" in the Home menu.



2. Select "Tuneln" using the cursor buttons, and then press ENTER. The Tuneln top menu screen is displayed.

3. Select a radio station or program using the cursor buttons, and then press ENTER.

#### Regarding the Tuneln Menu

To display the TuneIn menu, press MENU while playing a radio station, or select "Go to Menu". Selecting the corresponding menu item with the cursor buttons and pressing ENTER allows you to perform the following operations:

**Add to My Presets:** Registers radio stations and programs in your "My Presets" within Tuneln. This allows you to play registered radio stations and programs with a simple operation. ("My Presets" is not displayed if it no radio stations or programs are registered.)

**Remove from My Presets:** Deletes a radio station or program from your "My Presets" within Tuneln.

**Report a problem:** Reports a problem or interactively solves a problem related to TuneIn.

**View Schedule:** Displays the radio station or program schedule.

**Clear recents:** Clears all radio stations and programs from the "Recents" within Tuneln. (This menu is displayed only when a radio station or program inside the "Recents" is being played.)

**Add to My Favorites:** Registers radio stations and programs in "My Favorites" on the NET screen. This allows you to play registered radio stations and programs with a simple operation.

#### Regarding the Tuneln Account

Creating an account on the TuneIn website allows you to automatically add radio stations and programs to your "My Presets" on the AV receiver as you save them on the website .

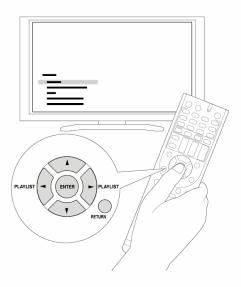
To display a radio station registered in "My Presets", you must log into TuneIn from the unit. To log in, select "Login" - "I have a TuneIn account" in the "TuneIn" top menu, and then enter your user name and password.

Selecting "Login" - "Login with a registration code", and then associating
the device on My Page within the Tuneln website by using the displayed
registration code will allow you to log in from this unit without entering the
user name and password.

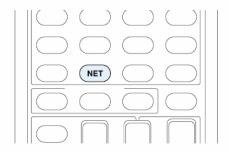
# Pandora®—Getting Started (U.S., Australia and New Zealand only)

Pandora is a free, personalized Internet radio service that plays the music you know and helps you discover music you'll love.

● Operation: You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



- Playback ∨
- 1. Press NET on the remote controller to display NET screen.
  - "NET" indicator on the unit's display lights. To display the NET screen, you can alternatively press HOME, select "Network Service" on the displayed Home menu, and then press ENTER.



2. With the cursor buttons on the remote controller, select "Pandora", and

- then press ENTER.
- 3. Use ▲/▼ to select "I have a Pandora Account" or "I'm new to Pandora" and then press ENTER.

If you are new to Pandora select "I'm new to Pandora". You will see an activation code on your TV screen. Please write down this code. Go to an Internet connected computer and point your browser to www.pandora.com/onkyo. Enter your activation code and then follow the instructions to create your Pandora account and your personalized Pandora stations. You can create your stations by entering your favorite tracks and artists when prompted. After you have created your account and stations you can return to your Onkyo receiver and press enter to begin listening to your personalized Pandora.

If you have an existing Pandora account, you can add your Pandora account to your Onkyo receiver by selecting "I have a Pandora Account" and logging in with your email and password.

- If you want to use multiple user accounts, see "Using Multiple Accounts". Login can be made from the "Users" screen.
- 4. To play a station, use ▲/▼ to select the station from your station list, and then press ENTER. Playback starts and the playback screen appears.

#### Create a New Station

Enter the name of a track, artist, or genre and Pandora will create a unique radio station for you based on the musical qualities of that track, artist, or genre.

I like this track: Give a track "thumbs-up" and Pandora will play more music like it.

I don't like this track: Give a track "thumbs-down" and Pandora will ban that track from the current station.

Why is this track playing?: Discover some of the musical attributes that Pandora uses to create your personal radio stations.

I'm tired of this track: If you are tired of a track, you can put the track to sleep and Pandora will not play it for one month.

**Create station from this artist**: Creates a radio station from this artist.

**Create station from this track**: Creates a radio station from this track.

**Delete this station**: This will permanently delete a station from your Pandora account. All of your thumbs feedback will be lost should you choose to re-create the station with the same track or artist.

**Rename this station**: Lets you rename the current radio station.

**Bookmark this artist**: Pandora will bookmark your favorite artist for your profile on www.pandora.com.

**Bookmark this track**: Pandora will bookmark the current track and allow you to buy them all from Amazon or iTunes in one step!

Add to My Favorites: Adds a station to My Favorites list.

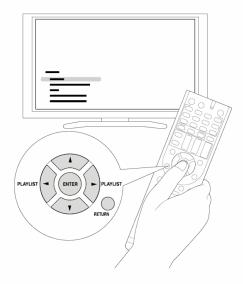
#### **PANDORA**®

PANDORA, the PANDORA logo, and the Pandora trade dress are trademarks or registered trademarks of Pandora Media, Inc. Used with permission.

## SiriusXM Internet Radio (North American only)

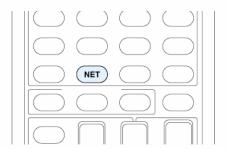
If you want to listen to the service, you must subscribe. To subscribe go to www.siriusxm.com/internetradio with your computer. When you subscribe, you will be provided with a username and password which has to be entered into the AV receiver. To use SiriusXM Internet Radio, you must have your AV receiver connected to the Internet. Using the remote control, follow these steps:

● **Operation**: You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



#### Playback

- 1. Press NET on the remote controller to display NET screen.
  - "NET" indicator on the unit's display lights. To display the NET screen, you can alternatively press HOME, select "Network Service" on the displayed Home menu, and then press ENTER.



- 2. With the cursor buttons on the remote controller, select "SiriusXM Internet Radio", and then press ENTER.
- Select "Sign In", and then press ENTER. If you have an existing SIRIUS
  account, you can sign in by selecting "Sign In". Enter your user name and
  password in the next keyboard screen, or in Web Setup. If you don't know
  your username or password, call Sirius XM at (888) 539-7474 for
  assistance.
  - If you want to use multiple user accounts, see "Using Multiple Accounts". Login can be made from the "Users" screen.

#### Using the keyboard screen

- ① Use **△/**▼/**⊸**/**▶** and ENTER to enter your user name and password.
- ② Select "OK".
- ③ Press ENTER. The "Confirm your entries" screen appears.
- 4 Press ENTER.

"Please wait..." appears and then "SiriusXM Internet Radio" screen appears which displays the category available for selection.

- 4. Use ▲/▼ to select the category and then press ENTER. The channel list screen for the selected category appears.
- 5. Use **△/▼** to select the desired channel and then press ENTER.
- 6. The playback screen for the selected channel appears and you can listen to SiriusXM Internet Radio.
  - You can control the tracks with the buttons on the remote control.

Enabled buttons: ►, ■, ►►

Add to My Favorites: Adds a channel to My Favorites list.

**Add to Presets**: Adds the currently playing station to presets list.

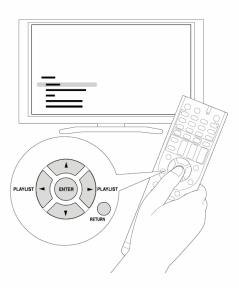
**Delete from Presets**: Deletes the currently playing station from presets list.



SiriusXM Internet Radio subscriptions are sold separately and are governed by the Sirius Terms and Conditions (see www.sirius.com). Be sure to read this agreement before you purchase your subscription. Sirius, XM and all related marks and logos are trademarks of Sirius XM Radio Inc. and its subsidiaries. All rights reserved.

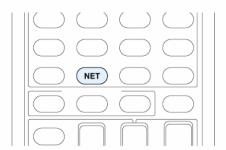
## Slacker Personal Radio (North American only)

● **Operation**: You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



## ■ Playback ∨

- 1. Press NET on the remote controller to display NET screen.
  - "NET" indicator on the unit's display lights. To display the NET screen, you can alternatively press HOME, select "Network Service" on the displayed Home menu, and then press ENTER.



- 2. With the cursor buttons on the remote controller, select "Slacker Personal Radio", and then press ENTER.
- 3. If you do not have an account, create one on the Slacker website (www.slacker.com) with your computer. If you already have a Slacker account, select "Sign in to your account" and then press ENTER. The keyboard screen appears. You can enter

- information from the remote control or the keys on the main unit.
- 4. If there are no mistakes in the information you have entered, use ▲/▼/◄/► to select "OK" then press ENTER. An account information confirmation screen appears.
- 5. If you do not have an account, select "Access without Sign In" and press ENTER to use a restricted version of the service. Note that use will be restricted.
  - If you want to use multiple user accounts, see "Using Multiple Accounts". Login can be made from the "Users" screen.
- 6. Use ▲/▼ to select a menu item and then press ENTER. To sign out, use ▲/
   ▼ to select "Sign out" from this screen and then press ENTER.
- 7. Use ▲/▼ to select a station and then press ENTER or ► to start playback from the station. The playback screen appears.
- 8. You can control the tracks with the buttons on the remote control. Enabled buttons: ►, II, ■, ►►

Rate Song as Favorite: Stores information to server, making it more likely that the song will be played again.

**Ban Song**: Stores information to server, making it less likely that the song will be played again.

**Ban Artist**: Stores information to server, making it less likely that the songs from this artist will be played again.

Mark Favorite: Adds the currently playing station to your favorites.

**Unmark Favorite**: Deletes the currently playing station from your favorites.

**Add song to Library**: Adds the currently playing track to your library.

**Delete song from Library**: Deletes the currently playing track from your library.

Add to My Favorites: Adds a station or song to My Favorites list.

**Using Multiple Accounts**: The AV receiver supports multiple user accounts, which means you can freely switch between several logins. After registering user accounts, login is performed from the "Users" screen.

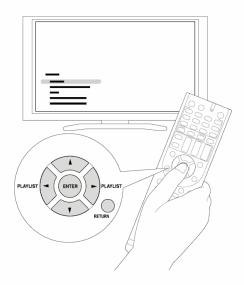
Press MENU while the Users screen is displayed. "Add new user", "Remove this user" menu appear. You can either store a new user account, or delete an existing one.

- Some of the services don't allow the use of multiple user accounts.
- You can store up to 10 user accounts.
- To switch between accounts you must first log out from the current account, and log in again on the "Users" screen.

## Registering Other Internet Radios

To listen to other Internet radio program, register the program in the "My Favorites" menu on the NET screen as described below. The unit supports Internet radio stations stored in the following formats: PLS (URL ending in .pls), M3U (URL ending in .m3u) and RSS (URL ending in rss/rdf/xml).

- You can register up to 40 Internet radio stations.
- Depending on the data type and file format for playback, you may not be able to play an Internet radio station even when its format is PLS, M3U or Podcast (RSS).
- Available services may vary depending on your area of residence.
- **Operation**: You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.

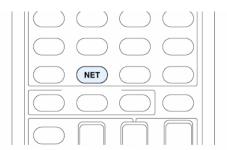


Registration

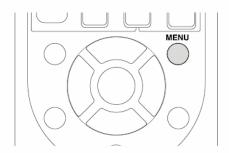
 $\vee$ 

**Before operation**: The name and URL of the additional radio station will be needed for this procedure. Check the specifications before use.

- 1. Press NET on the remote controller to display NET screen.
  - "NET" indicator on the unit's display lights.



- 2. Select "My Favorites" using the cursor buttons, and then press ENTER. The "My Favorites" menu screen is displayed.
- 3. Select blank in "My Favorites" using the cursor buttons, and then press MENU. The menu screen is displayed.

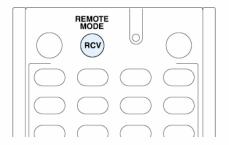


- 4. With the cursor buttons, select "Create new station", and then press ENTER. The keyboard screen is displayed.
- 5. Enter the name and URL of the radio station to add.
  - Select "Shift" and press ENTER to switch uppercase/lowercase.
     Select "Left" or "Right" and press ENTER to move the cursor to the selected direction. Select "BS" and press ENTER to remove a character on left of the cursor.

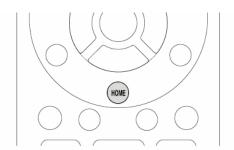
#### Registration using PC

**Before operation**: The name and URL of the additional radio station will be needed for this procedure. Check the specifications before use.

 Press RCV on the remote controller. Always press RCV first to change the remote controller to RECEIVER mode (the mode to operate this unit) since its mode may be changed to operate another components.



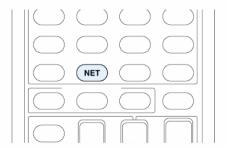
2. Press HOME to display the Home menu screen.



- 3. Select "Setup" with the cursor buttons and press ENTER.
- 4. Select "12. Network Setup" with the cursor buttons ▲/▼ and press ENTER.
- 5. Select "IP Address" using cursor **△/▼** to display the IP address.
  - Make note of displayed IP address as it will be used in later procedure.
- 6. Launch the web browser on PC or Smartphone etc. and enter the IP address of this unit in the browser's address bar.
  - If you are using Internet Explorer, you can also enter the URL by selecting "Open..." on the "File" menu.
  - Status of the unit is displayed on the browser. ("WEB Setup")
- 7. Click "My Favorites" tab, then enter the name and URL of the Internet radio station.
- 8. Click "Save" to register the entered Internet radio station in "My Favorite" on the unit.

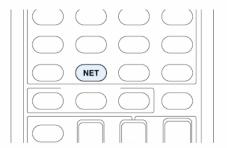
**To Rename a Registered Radio Station**: During playing back a radio station or select a radio station in "My Favorites" using the cursor buttons, and then press MENU to display the Menu screen. Select "Rename this station" using the cursor buttons, press ENTER to display the key board screen and rename the station name as desired.

- The radio station name can also be renamed from "WEB Setup".
- Playing a Registered Radio Station
- 1. Press NET on the remote controller to display NET screen.
  - "NET" indicator on the unit's display lights.

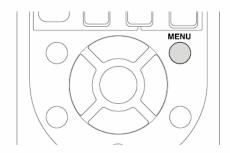


- 2. With the cursor buttons, select "My Favorites", and then press ENTER. The registered Internet radio stations are displayed.
- 3. Select a radio station to play using the cursor buttons, and press ENTER to start playback.
- Deleting a Registered Radio Station

- 1. Press NET on the remote controller. The NET screen is displayed.
  - The "NET" indicator lights on the display.



- 2. With the cursor buttons, select "My Favorites", and then press ENTER. The registered Internet radio stations are displayed.
- 3. Select a radio station to delete using the cursor buttons and press MENU. The menu screen is displayed.
  - The menu screen is also displayed when you press MENU during playing back of a radio station.

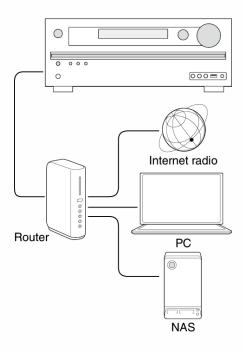


- 4. Select "Delete from My Favorites" using the cursor buttons, and then press ENTER.
  - The radio station can also be deleted from "WEB Setup".

## Summary of DLNA

DLNA (shortened word for Digital Living Network Alliance) is a non-profit collaborative trade organization which defining interoperability guidelines to enable sharing of digital media between multimedia devices sometimes, it also means the function itself.

This unit allows you to play music files stored on a PC or a hard disk connected to your home network (NAS device) Make sure the unit and PC or NAS device are connected to the same router.



- To play a music file with DLNA, you need a NAS device etc. with DLNA server functions and a DLNA player (software) to stream the music. You can also stream music files using a PC installed with Windows Media Player 11 or 12 as they are equipped with both DLNA server and player functions. To enable streaming, you must first configure the Windows Media Player 11 or Windows Media Player 12.
- With Windows Media Player 12 Remote Playback function, you can stream music files stored on your PC to the unit by operating the PC.

## Configuring the Windows Media Player

#### Windows Media Player 11

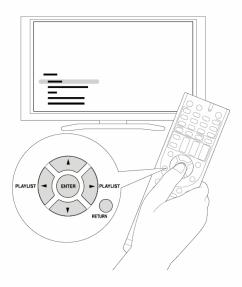
- Turn on your PC and start Windows Media Player 11.
- 2. In the "Library" menu, select "Media Sharing". A dialog box is displayed.
- 3. Select the "Share my media" check box, and then click "OK". A list of supported devices are displayed.
- 4. Select this unit, and then click "Allow".
  - The corresponding icon is checked.
- 5. Click "OK" to close the dialog box.

#### Windows Media Player 12

- 1. Turn on your PC and start Windows Media Player 12.
- 2. In the "Stream" menu, select "Turn on media streaming". A dialog box is displayed.
  - If media streaming is already turned on, select "More streaming options..." in the "Stream" menu to list players in the network. Proceed to step 4.
- 3. Click "Turn on media streaming". A list of players in the network is displayed.
- 4. Select this unit in "Media streaming options" and check that it is set to "Allow".
- 5. Click "OK" to close the dialog box.

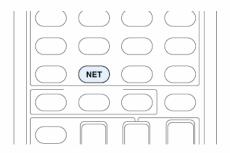
## **DLNA Playback**

● **Operation**: You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



## ■ Playback ∨

- 1. Start the server (Windows Media Player 11, Windows Media Player 12, or NAS device) storing the music files to play.
- 2. Press NET on the remote controller. The NET screen is displayed.
  - The "NET" indicator lights on the display. If the "NET" flashes, the AV receiver is not properly connected to the network. When using a wired LAN connection, check the Ethernet cable connection, and when using a wireless LAN connection, check whether the "Wi-Fi" indicator on the left side of the AV receiver stays lit.

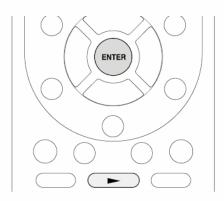


- 3. Select "DLNA" with the cursor buttons and press ENTER.
- 4. With the cursor buttons, select the target server, and then press ENTER.

A list of items on the selected server is displayed.

- Searching does not work in servers that do not support search functions.
- The unit cannot access pictures and videos stored on servers.
- Contents stored on the server may not be displayed depending on the server sharing settings.
- 5. Select a music file to play using the cursor buttons, and press ENTER or 

  ▶ to start playback.
  - If "No Item" is displayed, check whether the network is properly connected.



## Controlling Remote Playback from a PC

You can use this unit to play music files stored on your PC by operating the PC inside your home network. This unit is capable of remote playback via Windows Media Player 12. To use the remote playback function, you must first configure Windows Media Player 12.

Using a DLNA-compatible controller (such as an Android application), you
can select a music file stored on Windows Media Player 12 and stream to
this unit by operating the controller. For information on how to remotely
play using the controller, refer to the controller's instruction manual.

#### Configuration on PC

- 1. Turn on your PC and start Windows Media Player 12.
- 2. In the "Stream" menu, select "Turn on media streaming". A dialog box is displayed.
  - If media streaming is already turned on, select "More streaming options..." in the "Stream" menu to list players in the network. Proceed to step 4.
- 3. Click "Turn on media streaming". A list of players in the network is displayed.
- 4. Select this unit in "Media streaming options" and check that it is set to "Allow".
- 5. Click "OK" to close the dialog box.
- 6. Open the "Stream" menu and check that "Allow remote control of my Player..." is checked.

#### Remote playback

- 1. Turn on the power of the unit.
- 2. Turn on your PC and start Windows Media Player 12.
- 3. Select the music file to play with Windows Media Player 12 and rightclick.
  - To remotely play a music file on another server, open the target server from "Other Libraries" and select the music file to play.
- 4. Select this unit in "Play to". The "Play to" window of Windows Media Player 12 opens and the music file starts playing on the unit.
  - Operations during remote playback are possible from the "Play to" window on the PC. The playback screen is displayed on the TV connected to the unit using HDMI cable. If your PC is running on

Windows 8, click "Play to", and then select this unit.

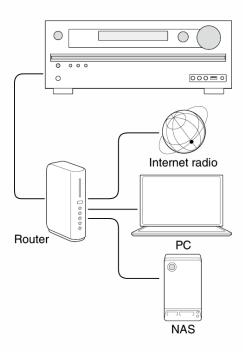
- 5. Adjust the volume using the volume bar on the "Play to" window.
  - Some times, the volume displayed on the remote playback window may differ from that appeared on the display of the unit.
  - When the volume is adjusted from the unit, the value is not reflected in the "Play to" window.
  - This unit cannot play music files remotely in the following conditions.
    - It is using a network service.
    - It is playing a music file on a USB storage device.
    - "Agree" was not selected in the "DISCLAIMER" screen that was displayed when the NET input was selected on the unit for the first time.

# Music Streaming from a Shared Folder

## Summary of Shared Folder

Shared folder is a folder which is placed on PC or NAS device (a hard disk connected to your network) and made accessible to multiple users on a network.

You can play music files in a shared folder on the PC or NAS device connected to the same network as the unit. To play music files in a shared folder, you must first configure Windows 8 or Windows 7, Make sure the unit and PC or NAS device are connected to the same router.



- The sharing options must be configured and a shared folder created on the PC in advance.
- For information on how to configure the NAS device and create a shared folder, refer to the NAS device's instruction manual.



## Music Streaming from a Shared Folder

## Configuration of PC

#### Configuring the Sharing Options

- 1. Select "Choose Home group and Sharing Options" on the "Control Panel".
  - If the menu is not displayed, check whether "View by" is set to "Category".
- 2. Select "Change advanced sharing settings".
- Check whether the following radio buttons are selected in "Home or Work":
  - "Enable network discovery"
  - "Turn on file and printer sharing"
  - "Turn on sharing so anyone with network access can read and write files in the Public folders"
  - "Turn off password protected sharing"
- 4. Select "Save Changes" and click "OK" on the dialog box.

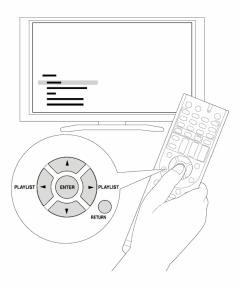
#### Creating a Shared Folder

- 1. Select the folder to share and right-click.
- 2. Select "Properties".
- 3. Select "Advanced Sharing" on the "Sharing" tab.
- 4. Select the "Share this folder" check box and click "OK".
- 5. Select "Share" for "Network File and Folder Sharing".
- 6. Select "Everyone" from the pull-down menu. Click "Add", and then "Share".
  - To set user name and password to a shared folder, set "Permissions" in "Advanced Sharing" on the "Sharing" tab.
  - Check whether a workgroup is set.

# Music Streaming from a Shared Folder

## Playback of Shared Folder Contents

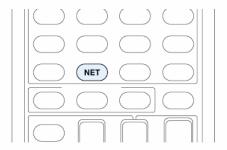
● **Operation**: You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN.



#### Playback



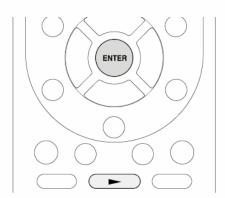
• The "NET" indicator lights on the display. If the "NET" flashes, the AV receiver is not properly connected to the network. When using a wired LAN connection, check the Ethernet cable connection, and when using a wireless LAN connection, check whether the "Wi-Fi" indicator on the left side of the AV receiver is lit.



- 2. With the cursor buttons, select "Home Media", and then press ENTER.
- 3. With the cursor buttons, select the target server, and then press ENTER.
  - You can check the server name of your computer from the computer properties.

- 4. With the cursor buttons, select the target shared folder, and then press ENTER.
- 5. If a username and password is required, enter the necessary login information.
  - The login information is the account information set at the time of creating the shared folder.
  - Once entered, the login information will be remembered from the next time onward.
- 6. Select a music file to play using the cursor buttons, and press ENTER or 

  ▶ to start playback.





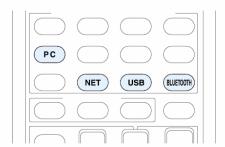
## Summary of Operation on Remote Controller

The remote controller of this unit allows you to operate and/or play music files stored on USB storage devices, Internet radio, PC and NAS devices on your network, as well as on Bluetooth-enabled devices.

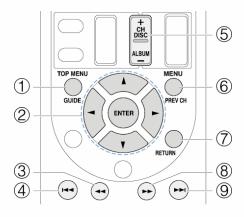
- Available buttons may vary depending on the service and device to play.
- Some buttons cannot be used with Bluetooth-enabled devices.
   Furthermore, the Bluetooth-enabled devices must support the AVRCP profile. Some devices may not be operated, even when they support AVRCP profile.

#### Functions of the Buttons of the Remote Controller

1. Press any of the INPUT SELECTOR button (PC, NET, USB or BLUETOOTH) accordingly to input source.

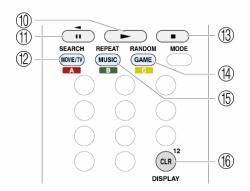


2. Operate the remote controller by referring to the name and function of each of the buttons.



- 1 **TOP MENU**: This button displays the top menu for each media or server.
- ② ▲/▼, ENTER: These buttons navigate through items and activate the selected item.
  - ◄/►: These buttons cycle through pages.
- ③ ◄◄: This button fast-reverses the current track. This button is not operable from 10 seconds before the playback ends.
- ④ ► This button plays the current track from the beginning. Pressing this button twice plays the previous track.
- ⑤ **CH +/- button**: Moves the cursor on the Internet radio stations list in "My Favorites".
- 6 **MENU**: This button displays the menu of each Internet radio service.
- **? RETURN**: This button returns to the previous screen.
- ⊗ ➤➤: This button fast-forwards the current track. This button is not operable from 10 seconds before the playback ends.

⑨ ►►: This button plays the next track.



- ⊕ : This button starts the playback.
- 1 II: This button pauses the playback.
- ② **SEARCH**: This button toggles between the playback screen and list screen during playback.
- ③ ■: This button stops the playback.
- (4) RANDOM: This button performs random playback.
- (5) **REPEAT**: This button replays the track (or tracks). Pressing this button repeatedly cycles through the repeat modes.
- **DISPLAY**: This button changes the displayed track information during playback. Pressing this button when the list screen is displayed toggles the screen to playback.



# Using Remote Controller for Playing Music Files

## Icons Displayed During Playback

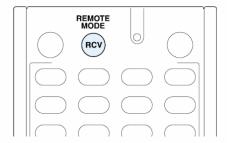
lcons are displayed on the display during music file playback. The meaning of each icon is as follows:

- **!:** Folder
- **!!**: Track
- # : Play
- #: Pause
- : Fast-forward
- : Fast-reverse
- : Artist
- **#**: Album
- 1 2: Repeat One Track
- Example: Repeat within a folder
- Repeat
- : Shuffle

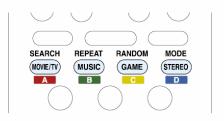
## Selecting the Listening Mode

The listening modes allow you to select the best sound effect for your input source.

- 1. Press RCV on the remote controller.
  - Always press RCV first to change the remote controller to RECEIVER mode (the mode to operate this unit) since its mode may be changed to operate another components.



- 2. Select the desired listening mode.
  - The listening mode changes each time you press one of the buttons below on the remote controller. Set the listening mode of your choice by listening to the actual sound.



■ MOVIE/TV

You can select a listening mode suitable for movies and TV programs.

Selectable listening modes:

All Ch Stereo

Direct

Dolby D

Dolby D+

Dolby TrueHD

**DSD** 

DTS

DTS 96/24

DTS Express

DTS-HD MSTR Full Mono Mono Multichannel Neo:6 Cinema **PLII Movie** T-D TV Logic MUSIC You can select a listening mode suitable for music. • Selectable listening modes: All Ch Stereo Direct Dolby D Dolby D+ Dolby TrueHD DSD DTS DTS 96/24 **DTS Express** DTS-HD HR DTS-HD MSTR Full Mono Multichannel Neo:6 Music Orchestra **PLII Music** Pure Audio Stereo Studio-Mix Unplugged GAME You can select a listening mode suitable for video games. Selectable listening modes: All Ch Stereo Direct Dolby D Dolby D+ Dolby TrueHD DSD

DTS-HD HR

DTS

DTS 96/24
DTS Express
DTS-HD HR
DTS-HD MSTR
Full Mono
Game-Action
Game-Rock
Game-RPG
Game-Sports
Multichannel
PLII Game
T-D

#### STEREO

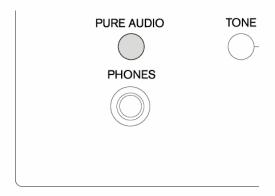
.

You can select a listening mode for stereo and all channel stereo sources.

 Selectable listening modes: All Ch Stereo Stereo

### ■ PURE AUDIO button (on the unit only) (Asian model)

The display and analog video circuit is cut off to switch the unit to PURE AUDIO mode and provide purer sound. Selecting this mode lights the PURE AUDIO indicator on the unit. Pressing the button again reselects the previous listening mode.



 Selecting Pure Audio for listening mode turns off the unit's display and analog video circuitry, and only the video signals input through HDMI input are output from HDMI output.

## Contents of the Listening Modes

Selectable listening modes will differ depending on the number of input source channels and the actual speaker configuration. Listening modes available when headphones are connected are: Pure Audio (Asian model), Mono, Direct, and Stereo.

### Lists in alphabetic order (A-Z)

#### All Ch Stereo

Ideal for background music, this mode fills the entire listening area with stereo sound from the front, surround, and surround back speakers.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch

#### Direct

In this mode, audio from the input source is output as-is. For example, if a 2 ch source from a music CD is input, the output will be stereo, or if Dolby Digital signal is input, the sound field will be controlled corresponding to the number of channels present.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 2.1 ch, 3.1 ch, 5.1 ch

### Dolby D (Dolby Digital)

This mode is for use with Dolby Digital sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

### Dolby D + (Dolby Digital Plus)

This mode is for use with Dolby Digital Plus sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch, 7.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch

- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.
- When playing back 5.1 ch sources from Blu-ray Discs, Dolby Digital is automatically applied.

### Dolby Pro Logic II

This mode expands any 2 ch source for 5.1 ch multichannel surround playback. It provides a very natural and seamless surround-sound experience, keeping the sound clear. As well as music and movies, video games can also benefit from the dramatic spatial effects and vivid imaging.

PLII Movie: Use this mode with any 2 ch movie.

**PLII Music**: Use this mode with any 2 ch music source.

PLII Game: Use this mode with any 2 ch game source.

Input source: Stereo

• Speaker configuration: 3.1 ch, 5.1 ch

### Dolby TrueHD

This mode is for use with Dolby TrueHD sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch, 7.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player's output setting is DSD.

#### DSD

This mode is for use with DSD sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch
- This unit supports DSD signals input through HDMI IN. However, depending on the connected player, better sound is possible when output from the PCM output of the player. In that case, configure the player for PCM output.
- This listening mode can be selected only if your Blu-ray Disc/DVD player's output setting is DSD.

#### DTS

This mode is for use with DTS sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player

#### DTS 96/24

This mode is for use with DTS 96/24 sources. The audio from the input source is output as-is, without surround sound processing. With 96 kHz sampling rate and 24-bit resolution, it provides superior fidelity.

- Input source: 5.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch
- Depending on the settings, this listening mode becomes DTS.
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

### DTS Express

This mode is for use with DTS Express sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

### DTS-HD HR (DTS-HD High Resolution Audio)

This mode is for use with DTS-HD High Resolution Audio sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch, 7.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch
- This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

### DTS-HD MSTR (DTS-HD Master Audio)

This listening mode can be selected only if your Blu-ray Disc/DVD player is digitally connected to the unit or the player's output setting is bitstream.

- Input source: 5.1 ch, 7.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch
- This mode can only be selected if your Blu-ray Disc/DVD player is connected to the unit with a digital audio connection.

#### DTS Neo:6

This mode expands any 2 ch source for 5.1 ch multichannel surround playback. It offers full-bandwidth on all channels, with great independence

between the channels. There are two variants for this mode: one ideal for movies and another ideal for music.

Neo:6 Cinema: Use this mode with any 2 ch movie.

Neo:6 Music: Use this mode with any 2 ch music source.

- Input source: Stereo
- Speaker configuration: 3.1 ch, 5.1 ch

#### Full Mono

 $\vee$ 

In this mode, all speakers output the same sound in mono, so the sound you hear is the same regardless of where you are within the listening room.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch

#### Game-Action



In this mode, sound localization is distinct with emphasis on bass.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 5.1 ch

#### ■ Game-Rock



In this mode, sound pressure is emphasized to heighten live feel.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 5.1 ch

#### Game-RPG



In this mode, the sound has a dramatic feel with a similar atmosphere to Orchestra mode.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 5.1 ch

## Game-Sports



Suitable for audio source with much reverberation.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 5.1 ch

### Mono



Use this mode when watching an old movie with a mono soundtrack, or use it to separately reproduce soundtracks in two different languages recorded in the left and right channels of some movies. It is also suitable for DVDs or other sources containing multiplexed audio.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 2.1 ch, 3.1 ch, 5.1 ch

#### Multichannel

This mode is for use with PCM multichannel sources. The audio from the input source is output as-is, without surround sound processing.

- Input source: 5.1 ch, 7.1 ch
- Speaker configuration: 3.1 ch, 5.1 ch

#### Orchestra

Suitable for classical or operatic music, This mode emphasizes the surround channels in order to widen the stereo image, and simulates the natural

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 5.1 ch

### ■ Pure Audio (Asian model)

reverberation of a large hall.

This mode reproduces the original sound accurately. The audio from the input source is output as-is, without surround sound processing. The display and video circuitry are turned off and possible noise sources are minimized for a realistic audio reproduction.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 2.1 ch, 3.1 ch, 5.1 ch
- This mode cannot be selected when Zone 2 is active. Activating Zone 2 when this mode is selected, automatically switches the listening mode to Direct.

#### Stereo

In this mode, sound is output from the front left and right speakers and subwoofer.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 2.1 ch, 3.1 ch, 5.1 ch

### Studio-Mix

Suitable for rock or pop music, Listening to music in this mode creates a lively sound field with a powerful acoustic image, like being at a club or rock concert.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 5.1 ch

### ■ T-D (Theater-Dimensional)

T-D (Theater-Dimensional): In this mode, you can enjoy a virtual playback of multichannel surround sound even with only two or three speakers. This works by controlling how sounds reach the listener's left and right ears.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 2.1 ch, 3.1 ch, 5.1 ch
- Good results may not be possible if there is too much reverb, so we recommend that you use this mode in an environment with little or no natural reverb.

### TV Logic

Suitable for TV shows produced in a TV studio, This mode enhances the surround effects to the entire sound to give clarity to voices and create a realistic acoustic image.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 5.1 ch

### Unplugged

Suitable for acoustic instruments, vocals and jazz. This mode emphasizes the front stereo image, giving the impression of being right in front of the stage.

- Input source: Monaural, Stereo, 5.1 ch, 7.1 ch
- Speaker configuration: 5.1 ch

## Checking the Input Source

You can check the audio format of the input signals. While audio from the player is being input, press DISPLAY on the remote controller several times to switch the information shown on the main unit display. If "Dolby D 5.1" is displayed in Signal format, the Dolby Digital 5.1 ch signals are being input.

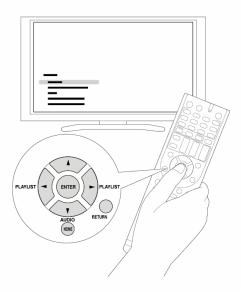
Dolby D 5.1

## Setup Procedure

This unit allows you to configure advanced settings, such as to reassign the input jacks and input selector, or configure various speaker settings.

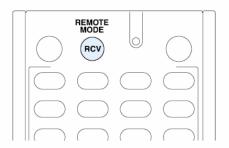
To configure advanced settings, select "Setup" in the Home menu.

● Operation: You can set up by viewing the guidance displayed on the TV screen. To display the guidance, you need to make HDMI connection between the unit and TV. Select the item with the cursor buttons of the remote controller and press ENTER to confirm your selection. To return to the previous screen, press RETURN. To return to the Home menu, press HOMF.

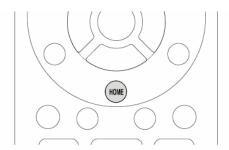


## Operation

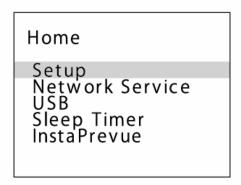
- 1. Press RCV on the remote controller.
  - Always press RCV first to change the remote controller to RECEIVER mode (the mode to operate this unit) since its mode may be changed to operate another components.



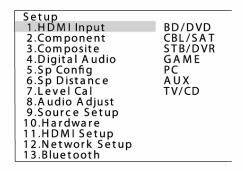
2. Press HOME. The Home menu is displayed on the TV screen.



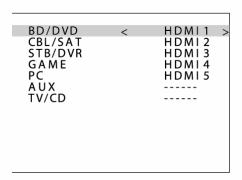
3. Select "Setup" using the cursor buttons ▲/▼ and press ENTER.



4. Select the target menu using the cursors buttons ▲/▼ and then press ENTER.



- 5. Press  $\blacktriangle/\blacktriangledown/\multimap$  to select the desired item to configure the settings.
  - When "ENTER" is displayed on the setting item, press ENTER.



To save changes and finish the setting: Press HOME to exit.



## 1. HDMI Input

It is possible to change assignment of input selector buttons and the HDMI IN jacks.

BD/DVD

 $\vee$ 

Default Value: HDMI 1

"HDMI 1" to "HDMI 6": Desired HDMI IN jack can be assigned to BD/DVD button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.

CBL/SAT

 $\vee$ 

Default Value: HDMI 2

"HDMI 1" to "HDMI 6": Desired HDMI IN jack can be assigned to CBL/SAT button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.

STB/DVR

 $\vee$ 

Default Value: HDMI 3

"HDMI 1" to "HDMI 6": Desired HDMI IN jack can be assigned to STB/DVR button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.

**GAME** 

 $\vee$ 

Default Value: HDMI 4

"HDMI 1" to "HDMI 6": Desired HDMI IN jack can be assigned to GAME button. If you do not assign a jack, select "----". To select an HDMI IN jack already assigned to another input selector, change its setting to "----" first.

Default Value: HDMI 5

"HDMI 1" to "HDMI 6": Desired HDMI IN jack can be assigned to PC button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "------" first.

**AUX** 

 $\vee$ 

Default Value: -----

"HDMI 1" to "HDMI 6": Desired HDMI IN jack can be assigned to AUX button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.

TV/CD

 $\vee$ 

Default Value: ----

"HDMI 1" to "HDMI 6": Desired HDMI IN jack can be assigned to TV/CD button. If you do not assign a jack, select "-----". To select an HDMI IN jack already assigned to another input selector, change its setting to "-----" first.



## 2. Component (Component Video Input)

GAME button is assigned to COMPONENT VIDEO IN jack as factory default setting. This assignment can be changed if necessary. If you do not assign a jack, select "-----".

| BD/DVD  | ~      |
|---|--------|
| Default Value:  |        |
| "COMPONENT": COMPONENT VIDEO IN jack is assigned to BI button.      | D/DVD  |
| CBL/SAT   | ~      |
| Default Value:  |        |
| "COMPONENT": COMPONENT VIDEO IN jack is assigned to Clutton.        | BL/SAT |
| STB/DVR   | ~      |
| Default Value:  |        |
| "COMPONENT": COMPONENT VIDEO IN jack is assigned to STB/DVR button. |        |
| GAME  | ~      |
| Default Value: COMPONENT  |        |
| "COMPONENT": COMPONENT VIDEO IN jack is assigned to G               | AME    |
| PC  | ~      |
| Default Value:  |        |
| "COMPONENT": COMPONENT VIDEO IN jack is assigned to Pobutton.       | C      |
| AUX   | ~      |

Default Value: -----

"COMPONENT": COMPONENT VIDEO IN jack is assigned to AUX button.

TV/CD V

Default Value: -----

"COMPONENT": COMPONENT VIDEO IN jack is assigned to TV/CD button.



## 3. Composite (Composite Video Input)

It is possible to change assignment of input selector buttons and the COMPOSITE VIDEO IN V1 to 3 jacks.

| BD/DVD V   |  |
|--|--|
| BUIDVD   |  |
| Default Value:   |  |
| "VIDEO 1" to "VIDEO 3": Desired COMPOSITE VIDEO IN V jack can be assigned to BD/DVD button. If you do not assign a jack, select "".  |  |
| CBL/SAT V  |  |
| Default Value: VIDEO 1   |  |
| "VIDEO 1" to "VIDEO 3": Desired COMPOSITE VIDEO IN V jack can be assigned to CBL/SAT button. If you do not assign a jack, select "". |  |
| STB/DVR V  |  |
| Default Value: VIDEO 2   |  |
| "VIDEO 1" to "VIDEO 3": Desired COMPOSITE VIDEO IN V jack can be assigned to STB/DVR button. If you do not assign a jack, select "". |  |
| GAME   |  |
| Default Value: VIDEO 3   |  |
| "VIDEO 1" to "VIDEO 3": Desired COMPOSITE VIDEO IN V jack can be assigned to GAME button. If you do not assign a jack, select "".    |  |
| PC V   |  |
| Default Value:   |  |
| "VIDEO 1" to "VIDEO 3": Desired COMPOSITE VIDEO IN V jack can be assigned to PC button. If you do not assign a jack, select "".      |  |
| AUX  |  |

Default Value: FRONT

You cannot change this setting.

TV/CD

Default Value: -----

"VIDEO 1" to "VIDEO 3": Desired COMPOSITE VIDEO IN V jack can be assigned to TV/CD button. If you do not assign a jack, select "-----".



## 4. Digital Audio (Digital Audio Input)

It is possible to change assignment of input selector buttons and the DIGITAL IN COAXIAL 1 to 2/OPTICAL jacks.

| BD/DVD V  |  |
|---|--|
| Default Value: COAXIAL 1  |  |
| "COAXIAL 1", "COAXIAL 2", "OPTICAL": Desired DIGITAL IN jack can be assigned to BD/DVD button. If you do not assign a jack, select "".  |  |
| CBL/SAT V   |  |
| Default Value: COAXIAL 2  |  |
| "COAXIAL 1", "COAXIAL 2", "OPTICAL": Desired DIGITAL IN jack can be assigned to CBL/SAT button. If you do not assign a jack, select "". |  |
| STB/DVR V   |  |
| Default Value:  |  |
| "COAXIAL 1", "COAXIAL 2", "OPTICAL": Desired DIGITAL IN jack can be assigned to STB/DVR button. If you do not assign a jack, select "". |  |
| GAME  |  |
| Default Value:  |  |
| "COAXIAL 1", "COAXIAL 2", "OPTICAL": Desired DIGITAL IN jack can be assigned to GAME button. If you do not assign a jack, select "".    |  |
| PC V  |  |
| Default Value:  |  |
| "COAXIAL 1", "COAXIAL 2", "OPTICAL": Desired DIGITAL IN jack can be assigned to PC button. If you do not assign a jack, select "".      |  |
| ΔΙΙΥ  |  |

Default Value: -----

"COAXIAL 1", "COAXIAL 2", "OPTICAL": Desired DIGITAL IN jack can be assigned to AUX button. If you do not assign a jack, select "-----".

TV/CD V

Default Value: OPTICAL

"COAXIAL 1", "COAXIAL 2", "OPTICAL": Desired DIGITAL IN jack can be assigned to TV/CD button. If you do not assign a jack, select "----".

 Supported sampling rates for PCM signals (stereo, mono) from a digital input (optical and coaxial) are 32/44.1/48/88.2/96 kHz/16, 20, 24 bit.

## 5. Sp Config (Speaker Configuration)

Allows you to change the speaker configuration such as existence of subwoofer, crossover frequency, and so on. Settings are automatically configured if you use the Automatic Speaker Setup.

Subwoofer

 $\vee$ 

Default Value: Yes

Set whether a subwoofer is connected or not.

"Yes": When subwoofer is connected

"No": When subwoofer is not connected

**Front** 

 $\vee$ 

Default Value: Small

Allows you to specify the size of the front speakers. Specify the size according to a cone diameter.

"Small": When the cone diameter is less than 6-1/2 inches (16 cm)

"Large": When the cone diameter is greater than 6-1/2 inches (16 cm)

• The setting is fixed to "Large" if "Subwoofer" is set to "No".

Center

 $\vee$ 

Default Value: Small

Allows you to specify the size of the center speaker and surround speakers. Specify the size in accordance with the smallest cone diameter in the system.

"Small": When the cone diameter is less than 6-1/2 inches (16 cm)

"Large": When the cone diameter is greater than 6-1/2 inches (16 cm)

"None": When the corresponding speaker is not used.

• The setting cannot be selected "Large" if "Front" is set to "Small".

Surround

 $\vee$ 

Default Value: Small

Allows you to specify the size of the center speaker and surround speakers. Specify the size in accordance with the smallest cone

diameter in the system.

- "Small": When the cone diameter is less than 6-1/2 inches (16 cm)
- "Large": When the cone diameter is greater than 6-1/2 inches (16 cm)
- "None": When the corresponding speaker is not used.
- The setting cannot be selected "Large" if "Front" is set to "Small".

Crossover

Default Value: 100 Hz

Allows you to set the lowest frequency range for each speaker output, and make the subwoofer output the lower frequency range than the set value. Specify the size in accordance with the smallest cone diameter in the system.

"40 Hz", "50 Hz", "60 Hz": For cone diameters greater than 8 inches (20 cm)

"70 Hz", "80 Hz" "90 Hz": For cone diameters 6-1/2 to 8 inches (16 to 20 cm)

"100 Hz": For cone diameters 5-1/4 to 6-1/2 inches (13 to 16 cm)

"120 Hz": For cone diameters 3-1/2 to 5-1/4 inches (9 to 13 cm)

"150 Hz", "200 Hz": For cone diameters less than 3-1/2 inches (9 cm)

Double Bass

Default Value: Off

This function boosts bass output by feeding bass sounds from the front left and right, and center speakers to the subwoofer.

"On": To boost the bass output

"Off": Not to boost the bass output

- The setting is fixed to "Off" if "Subwoofer" is set to "No" and "Front" is set to "Small".
- In the following cases, the settings for "Sp Config" cannot be changed:
  - Headphones are connected.
  - "Audio TV Out" is set to "On".
  - "HDMI CEC (RIHD)" is set to "On" and you're listening through your TV speakers.



## 6. Sp Distance (Speaker Distance)

Allows you to set the distance from each speaker to the listening position. Settings are automatically configured if you use the Automatic Speaker Setup.

Unit Default Value: feet/meters Specify the unit of distance for configuring settings. "feet": When setting in feet (0.1 ft to 30.0 ft, in increments of 1.0 ft) "meters": When setting in meters (0.03 m to 9.00 m, in increments of  $0.03 \, \mathrm{m}$ Front Left Default Value: 12.0 ft/3.60 m Specify the distance between each speaker and the listening position. Center Default Value: 12.0 ft/3.60 m Specify the distance between each speaker and the listening position. Front Right Default Value: 12.0 ft/3.60 m Specify the distance between each speaker and the listening position. Surround Right Default Value: 7.0 ft/2.10 m Specify the distance between each speaker and the listening position. Surround Left Default Value: 7.0 ft/2.10 m

Subwoofer

Default Value: 12.0 ft/3.60 m

Specify the distance between each speaker and the listening position.

- In the following cases, the settings for "Sp Distance" cannot be changed:
  - Headphones are connected.
  - "Audio TV Out" is set to "On".
  - Speakers for which "Sp Config" are set to "No" or "None".
  - "HDMI CEC (RIHD)" is set to "On" and you're listening through your TV speakers.
- Default values vary depending on the regions.

## 7. Level Cal (Level Calibration)

Allows you to adjust the level of each speaker with the built-in test tone. Settings are automatically configured if you use the Automatic Speaker Setup.

Front Left

 $\vee$ 

Default Value: 0 dB

Select a value between "-12 dB" and "+12 dB". Select the desired volume level accordingly to the test tone which is output as you change the value.

Center

 $\vee$ 

Default Value: 0 dB

Select a value between "-12 dB" and "+12 dB". Select the desired volume level accordingly to the test tone which is output as you change the value.

Front Right

 $\vee$ 

Default Value: 0 dB

Select a value between "-12 dB" and "+12 dB". Select the desired volume level accordingly to the test tone which is output as you change the value.

Surround Right

 $\vee$ 

Default Value: 0 dB

Select a value between "-12 dB" and "+12 dB". Select the desired volume level accordingly to the test tone which is output as you change the value.

Surround Left

 $\vee$ 

Default Value: 0 dB

Select a value between "-12 dB" and "+12 dB". Select the desired volume level accordingly to the test tone which is output as you change the value.

Subwoofer

Default Value: 0 dB

Select a value between "-15 dB" and "+12 dB". Select the desired volume level accordingly to the test tone which is output as you change the value.

- In the following cases, the settings for "Level Cal" cannot be changed:
  - Headphones are connected.
  - "Audio TV Out" is set to "On".
  - Speakers for which "Sp Config" are set to "No" or "None".
  - Mute (MUTING) is set.
  - "HDMI CEC (RIHD)" is set to "On" and you're listening through your TV speakers.



## 8. Audio Adjust

Allows you to configure various settings related to sound, such as settings for listening to multiplex audio or multilingual TV broadcasts and sound field settings for listening modes.

Input Ch (Mux) (Multiplex Input Channel)

Default Value: Main

Set the audio channel or language to output when listening to multiplex audio or multilingual TV broadcasts etc.

"Main": When playing primary audio channel.

"Sub": When playing secondary audio channel.

"Main/Sub": When playing both primary and secondary audio channel.

Input Ch (Mono) (Mono Input Channel)

Default Value: Left + Right

Allows you to set the input channel to use for playing any 2 ch digital source such as Dolby Digital, or 2-ch analog/PCM source in the Mono listening mode.

"Left": When playing left channel source only.

"Right": When playing right channel source only.

"Left + Right": When playing both left and right channel source only.

Panorama (PLII Panorama)

Default Value: Off

Configure the sound field settings for playing any 2 ch digital source such as Dolby Digital, or 2-ch analog/PCM source in the Dolby Prologic II Music listening mode. Allows you to configure the sound field width of front stereo image.

"On": To broaden the width of the front stereo image

"Off": Default value.

Dimension (PLII Dimension)

Default Value: 0

Configure the sound field settings for playing any 2 ch digital source such as Dolby Digital, or 2-ch analog/PCM source in the Dolby Prologic II Music listening mode. Allows you to configure the sound field position forward or backward.

"-3" to "3": With "0" at the center, smaller the setting value is, more the sound field moves forward, and larger the setting value is, more the sound field moves backward.

### Center Width (PLII Center Width)

 $\vee$ 

#### Default Value: 3

Configure the settings to use for playing any 2 ch digital source such as Dolby Digital, or 2-ch analog/PCM source in the Dolby Prologic II Music listening mode. Allows you to configure the width of the sound from the center speaker.

"0" to "7": Smaller the setting value is, the sound is gathered to the center, and larger the setting value is, the sound is distributed to the front left and right speakers.

#### Center Image (Neo:6 Center Image)

V

#### Default Value: 2

Allows you to configure the width of the front sound field when playing in the DTS Neo:6 Music listening mode.

"0" to "5": Smaller the setting value is, the front sound field is gathered to the center, and larger the setting value is, the front sound field is distributed to the front left and right speakers.

### Listening Angle

V

#### Default Value: Wide

Set the angle of the front left and right speakers relative to the listening position when playing in the Theater-Dimensional listening mode.

"Narrow": Less than 30° "Wide": Greater than 30°

 Values recommended for "Listening Angle" are 20° when "Narrow" is selected, and 40° when "Wide" is selected.



## 9. Source Setup

The setting can be separately set to each input selector button. Select the input selector to configure.

AccuEQ

 $\vee$ 

Default Value: Off

Allows you to disable or enable the sound field correction set on automatic speaker setup.

"On": Enable this function

"Off": Disable this function

- In the following cases, the settings cannot be changed:
  - Automatic Speaker Setup is not being performed.
  - Headphones are connected.

Name

 $\vee$ 

Default Value: -

Allows you to rename the currently selected input selector for easy identification.

 Same name cannot be set for multiple input selectors. Moreover, a name cannot be configured for the input selectors "AM", "FM", "NET", "USB", and "BLUETOOTH".

**Audio Selector** 

 $\vee$ 

Default Value: -

Allows you to select prior input source.

"ARC": When giving priority to input signal from ARC compatible TV.

 This setting can be selected when "Audio Return Channel" is set to "Auto" and when "TV/CD" is selected.

"HDMI": When giving priority to input signal from HDMI jacks.

- This setting can be selected only when the input selector to set is assigned to the HDMI IN jack in the "HDMI Input" setting.
- "COAXIAL" (Coaxial input): When giving priority to input signal from COAXIAL IN jacks.
- This setting can be selected only when the input selector to set is

assigned to the COAXIAL jack in the "Digital Audio (Digital Audio Input)" setting.

"OPTICAL" (Optical input): When giving priority to input signal from OPTICAL IN jack.

 This setting can be selected only when the input selector to set is assigned to the OPTICAL jack in the "Digital Audio (Digital Audio Input)" setting.

"Analog": To always output analog audio independently of the input signal.

#### Fixed Mode

Default Value: Off

Specify an input signal when "HDMI", "COAXIAL", or "OPTICAL" is selected for "Audio Selector". Set this item if noise is produced, or truncation occurs at the beginning of a track that follows a gap when playing PCM or DTS sources.

"Off": To play an analog signal when there is no digital signal.

"PCM": To fix the input source to PCM.

"DTS": To fix the input source to DTS (except for DTS-HD).

- Changing "Audio Selector" setting changes "Fixed Mode" to "Off".
- In the following cases, the settings for "Source Setup" cannot be changed:
  - Automatic Speaker Setup is not being performed.
  - When selecting the input selectors "AM", "FM", "NET", "USB", "BLUETOOTH".



## 10. Hardware (Hardware Setup)

Volume OSD

 $\vee$ 

Default Value: On

This function displays the volume level on the TV screen during volume level adjustment.

"On": The volume level is displayed on TV screen.

"Off": The volume level is not displayed on TV screen.

Remote ID

 $\vee$ 

Default Value: 1

Select an ID for the remote controller to be used with the unit from "1", "2", and "3", and set it to differentiate this unit's remote controller from those used with other Onkyo components when multiple components are used in the same room.

If you change the ID on the unit, set the remote controller ID to the same value accordingly to the procedure below.

- 1. While holding down RCV, press Q SETUP for about 3 seconds until the remote indicator lights.
- 2. Press either 1, 2, or 3 using the number buttons. The remote indicator flashes twice.

AM/FM Freq Step (North American model)

V

Default Value: 10 kHz/200 kHz

Select the frequency step according to your area. Select from "10 kHz/200 kHz" or "9 kHz/50 kHz".

• When the "AM/FM Frequency Step (AM Frequency Step)" setting is changed, all radio presets are deleted.

AM/FM Freq Step (Asian model)

 $\vee$ 

Default Value: 9 kHz

Select the frequency step according to your area. Select from "10 kHz" or "9 kHz".

• When the "AM/FM Frequency Step (AM Frequency Step)" setting is

**Auto Standby** 

Default Value: On/Off

This function places the unit on standby automatically after 20 minutes of inactivity without any video and/or audio input.

"On": To place the unit on standby automatically. ("ASb" flashes on the display.)

"Off": Not to place the unit on standby automatically,

- "Auto Standby" is appeared on the display and menu screen 30 seconds before the Auto Standby comes on.
- "Auto Standby" does not work when Zone 2 is active.
- Default values vary depending on the regions.

### **HDMI Through**

Default Value: Off

Enables/Disables the "Auto Standby" setting when "HDMI Through" setting is on.

"On": Enable this function "Off": Disable this function

This setting is fixed to "Off" when setting "Auto Standby" to "Off".

**Update Notice** 

Default Value: Enable

This function notifies the availability of a firmware update via network.

"Enable": Notify updates

"Disable": Do not notify updates

Version

Default Value: -

The current firmware version is displayed.

Update via NET

Default Value: -

Press ENTER to select when you want to update the firmware via network.

 You will not be able to select "Update via NET" if you do not have Internet access or there is nothing to update. Update via USB

### Default Value: -

Press ENTER to select when you want to update the firmware via USB.

 You will not be able to select "Update via USB" if a USB storage device is not connected or there is nothing to update in the USB storage device.



## 11. HDMI Setup

HDMI CEC (RIHD)

 $\vee$ 

Default Value: Off

Setting to "On" enables the input selection link and other link functions with HDMI connected CEC compliant device.

"On": When using this function.

"Off": When not using this function.

- Depending on the TV set, a link may need to be configured on the TV.
- When this setting is set to "On", closing the on-screen menu displays the name of the CEC-compatible devices and "RIHD On" on the display.
- When this setting is set to "On", power consumption in standby mode may increase. (Depending on the TV status, the unit will enter the normal standby mode.)
- When this setting is set to "On" and you are listening to the audio through the speakers of your TV, operating the MASTER VOLUME control of the unit outputs audio from the speakers connected to the unit. If you want to output audio from either of the unit or TV, change the unit or TV settings, or reduce the volume of the unit.
- If misbehavior occurs when this setting is set to "On", set this setting to "Off".
- When connecting a non-CEC compatible component, or when you are not sure whether it is compatible, set the setting to "Off".
- When making the change to this setting, turn off and then on again the power of all connected components.

**HDMI Through** 

 $\vee$ 

Default Value: Off

Allows video signals from an AV component connected via HDMI to be output to the TV independently of whether the AV receiver is on standby. This setting is only valid for INPUT SELECTOR buttons assigned to HDMI IN jack. You cannot set this setting to INPUT SELECTOR button which is not assigned to any HDMI IN jack. "Off": To disable this function. The input signal from any HDMI IN jacks cannot be output to TV.

"BD/DVD", "CBL/SAT", "STB/DVR", "GAME", "PC", "AUX", "TV/CD": Input signal from components connected to the HDMI IN jack assigned to each input selector is output to TV.

"Last": Input signal from the components connected to input selector which was selected just before the unit enters the standby.

"AUTO": Input signal from all components connected to HDMI IN jacks is displayed on TV.

"Auto (Eco)": Input signal from all components connected to HDMI IN jacks is displayed on TV. Selecting this setting when using CEC-compatible TV, the power consumption on standby is reduced. You cannot select this setting, when "HDMI CEC (RIHD)" is set to "Off".

- When "HDMI Through" is set, the power consumption increases even when the unit is on standby. However, the increase in power consumption is kept to a minimum by automatically entering the HYBRID STANDBY mode, where only the essential circuit is operating.
- When making the change to this setting, turn off and then on again the power of all connected components.

Audio TV Out

Default Value: Off

This function outputs the audio through the speakers of the TV connected to HDMI with this unit turned on.

"On": When using this function

"Off": When not using this function.

- When setting this function to "On", set "HDMI CEC (RIHD)" to "Off".
- This function is fixed to "Auto", when setting "HDMI CEC (RIHD)" to "On".
- Listening mode cannot be changed while "Audio TV Out" is set to "On" and audio is being output through the speakers of the TV.
- Depending on your TV set or input signal of the component, audio may not output through the speakers of the TV even if "Audio TV Out" is set to "On". In such case, audio is output from the speakers of the unit.
- Operating the MASTER VOLUME control of the unit when "Audio TV Out" or "HDMI CEC (RIHD)" is set to "On" and you are listening to the audio through the speakers of your TV, outputs audio from the unit. If you do not want to output audio from the unit, change the unit or TV settings, or reduce the volume of the unit.

Audio Return Ch

Default Value: -

Connection to the ARC compatible TV using HDMI cable allows to listen

to the TV sound from the speakers connected to the unit. To use this function, set "HDMI CEC (RIHD)" to "On" in advance.

"Auto": When using this function.

"Off": When not using this funtion.

#### LipSync

 $\vee$ 

Default Value: On

This function automatically corrects any desynchronization between the video and audio signals based on data from the HDMI LipSync compatible TV.

"On": When using this function.

"Off": When not using this function.

#### InstaPrevue

 $\vee$ 

Default Value: -

This function is related to the preview thumbnails of the video input through HDMI, which will be displayed using "InstaPrevue" in the Home menu.

 Depending on the video source, the preview thumbnails configured in "InstaPrevue" may not be displayed properly.

#### Sub Window

Default Value: Multi

Allows you to set how to display preview thumbnails.

"Multi": Displays all the thumbnails of HDMI IN 1, 2, 3, 4 and 5 at once.

"Single": Displays thumbnails of HDMI IN 1, 2, 3, 4 and 5 individually.

#### Position

Default Value: Bottom/LowerR

Allows you to set the display position of preview thumbnails. When setting "Sub Window" to "Multi": Select from "Top", "Bottom", "Left" and "Right".

When setting "Sub Window" to "Single": Select from "UpperL", "UpperR", "LowerL" and "LowerR".



## 12. Network Setup

Make the network setting.

 When LAN is configured with a DHCP, set "DHCP" to "Enable" to configure the setting automatically. ("Enable" is set by default) To assign fixed IP addresses to each component, you must set "DHCP" to "Disable" and assign an address to this unit in "IP Address" as well as set information related to your LAN, such as Subnet Mask and Gateway.

#### **Network Standby**

Default Value: Off

This function allows you to turn on the power of the AV receiver via network using an application such as Onkyo Remote.

"On": When using this function

"Off": When not using this function.

 When "Network Standby" is used, the power consumption increases even when the AV receiver is on standby. However, the increase in power consumption is kept to a minimum by automatically entering the HYBRID STANDBY mode, where only the essential circuit is operating.

#### Wi-Fi

Default Value: Off

Allows you to connect the unit to Internet via wireless LAN router.

"On": Wireless LAN connection "OFF": Wired LAN connection

## Wi-Fi Setup

Default Value: -

Allows you to configure wireless LAN settings by pressing ENTER when "Start" is displayed.

#### Wi-Fi Status

Default Value: -

Displays the information of the connected access point as follows.

"Security": Security method of the connected access point. "Signal": Signal strength of the connected access point. "Status": Status of the connected access point. MAC Address Default Value: -This is the MAC address of the AV receiver. This value is specific to the component and cannot be changed. **DHCP** Default Value: Enable "Enable": Auto configuration by DHCP "Disable": Manual configuration without DHCP • If selecting "Disable", you must set "IP Address", "Subnet Mask", "Gateway", and "DNS Server" manually. **IP Address** Default Value: -Displays/Sets the IP address. Subnet Mask Default Value: -Displays/Sets the subnet mask. Gateway Default Value: -Displays/Sets the gateway. **DNS Server** Default Value: -Displays/Sets the primary DNS server. Proxy URL Default Value: -Displays/Sets the proxy server URL.

"SSID": SSID of the connected access point.

## **Proxy Port**

Default Value: -

Displays/Sets the proxy server port number when you enter "Proxy URL".

#### **Network Check**

 $\vee$ 

Default Value: -

Confirms the status of the network connection. Press ENTER when "Start" is displayed.

• Wait for a while if "12. Network Setup" is not shown on the screen. It will appear when the network function is started up.

## 13. Bluetooth (Bluetooth Setup)

Bluetooth

 $\vee$ 

Default Value: On

Enables/Disables the unit to pair with Bluetooth-enabled device. "On": Enables the Bluetooth function and allows the unit to pair with Bluetooth-enabled device. Set this function to "On" when configuring the settings related to Bluetooth.

"Off": When not using the Bluetooth function.

**Direct Change** 

V

Default Value: On

Automatically changes the input selector to "BLUETOOTH" when a Bluetooth-enabled device is connected.

"On": To enable this function.

"Off": To disable this function.

• When the input selector is not selected automatically, set this function to "Off" and change the input selector manually.

**Auto Reconnect** 

 $\vee$ 

Default Value: On

Automatically reconnects to the Bluetooth-enabled device connected last when you change the input selector to "BLUETOOTH".

"On": To enable this function.

"Off": To disable this function.

 This function may not work depending on your Bluetooth-enabled device.

Wakeup

V

Default Value: Off

Automatically wakes up the unit when it is on standby by connecting a Bluetooth-enabled device.

"On": To enable this function.

"Off": To disable this function.

- Setting this function to "On" increases the power consumption even when the AV receiver is on standby. However, the increase in power consumption is kept to a minimum by automatically entering the HYBRID STANDBY mode, where only the essential circuit is operating.
- When "Direct Change" is set to "Off", "Wakeup" is fixed to "Off".

#### Pairing Info

 $\vee$ 

#### Default Value: -

This function initializes the information of a previous pairing information stored in the unit.

Pressing ENTER when "Clear" is displayed initializes the pairing information stored in this unit.

 This function does not initialize the pairing information on the Bluetooth-enabled device. When pairing the unit with the device again, be sure to clear the pairing information on the Bluetoothenabled device in advance. For information on how to clear the pairing information, refer to the Bluetooth-enabled device's instruction manual.

#### Device

V

#### Default Value: -

Displays the name of the Bluetooth-enabled device connected to the unit.

• The name is not displayed when "Status" is "Ready" and "Pairing".

#### Status

V

#### Default Value: -

Displays the status of the Bluetooth-enabled device connected to the unit.

"Ready": Not paired "Pairing": Paired

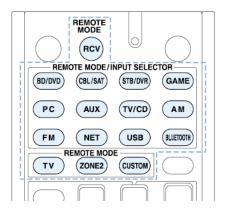
"Connected": Connected successfully

• Wait for a while if "Bluetooth" cannot be selected. It will appear when the Bluetooth function is started up.



## Functions of REMOTE MODE Buttons

REMOTE MODE button on the remote controller has ability to control your other AV components, including those made by other manufacturers, by programming the specified remote control code. Program the desired REMOTE MODE button with remote control code and then press the programmed button. The remote controller's mode is changed to operate the corresponding component.



\* The RCV and ZONE2 buttons cannot be programmed.



## **Programming Remote Control Codes**

For information on the configuration and operation of Onkyo components with RI jack, refer to "Connecting and Operating Onkyo RI Components". Furthermore, the following REMOTE MODE buttons are preprogrammed with remote control codes.

BD/DVD: Onkyo Blu-ray Disc/DVD player

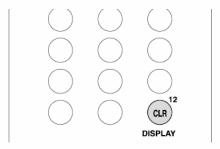
TV/CD: Onkyo CD player

STB/DVR: Apple TV

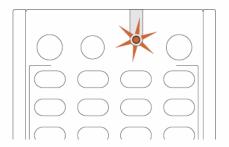
## Registration



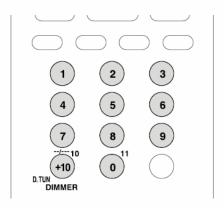
- Look up the Remote Control Code List for the corresponding remote control code.
  - The codes in the Remote Control Code List are those known as of the date of publication and may be changed.
  - Only TV remote control codes can be entered for TV.
  - Program a remote control code in accordance with the input since each button also works as the input selector. (For example, when the CD player is connected to the TV/CD jack, program the remote control code for the CD player to TV/CD)
- 2. Press DISPLAY for 3 or more seconds while holding down the REMOTE MODE button to which you want to register the remote control code.



The remote indicator will light.



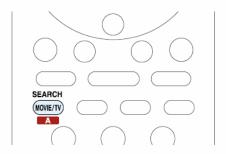
- 3. With the number buttons, enter the 5-digit remote control code within 30 seconds.
  - The registration is complete when the remote indicator flashes twice. The remote indicator flashes once when registration fails. In that case, try the registration again.



#### Remapping the Colored Buttons

The colored button assignment on the AV receiver's remote controller can be remapped to match that on the remote controller of the component whose remote control code you programmed to REMOTE MODE. However, you will not be able to remap the colored buttons if Zone 2 is selected.

- 1. Hold down the REMOTE MODE button to map and A (Red) simultaneously until the remote indicator lights (about 3 seconds).
  - Remapping is possible only for codes included in the categories of the Remote Control Code List such as DVD player and TV.



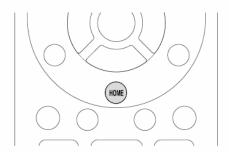
- 2. Within 30 seconds, press the colored buttons from left to right, in the order you want to remap.
  - For example, if the colored buttons on the remote controller of the other component are yellow, green, blue, and red from left to right, press the buttons on the AV receiver's remote controller in that order.
  - Programming is complete when the remote indicator flashes twice. The remote indicator flashes once slowly when remapping fails. Try the remapping again.
  - Pressing any other button than a colored button cancels the remap operation.



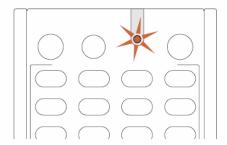
#### Resetting the REMOTE MODE Buttons

You can reset a REMOTE MODE button to its default remote control code. Note that only one REMOTE MODE button can be reset in this procedure.

1. Press HOME for 3 or more seconds while holding down the REMOTE MODE button to which you want to program the remote control code.



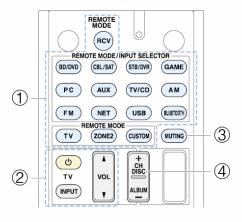
The remote indicator lights.



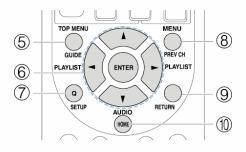
- 2. Within 30 seconds, press the REMOTE MODE button again.
  - Reset is complete when the remote indicator flashes twice.

To reset the remote controller to its factory defaults: While holding down RCV, press and hold down HOME for about 3 seconds until the remote indicator lights. Press RCV again within 30 seconds. Reset is complete if the remote indicator flashes twice.

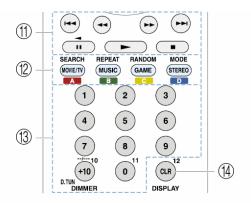
## TV operation



- **1) REMOTE MODE**
- ② O, INPUT, VOL ▲/▼
- **3 MUTING**
- ④ CH +/-

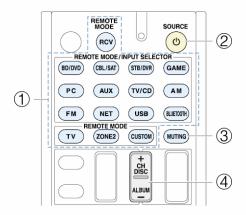


- **5** GUIDE
- ⑥ Δ/▼/◄/►, ENTER
- 7 SETUP
- **® PREV CH**
- 9 RETURN
- ① AUDIO (\*)

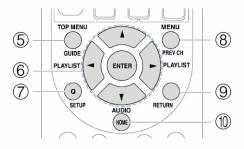


- $\textcircled{1} \blacktriangleright, \blacksquare, \blacksquare, \blacktriangleleft, \blacktriangleright \blacktriangleright, \blacktriangleleft, \blacktriangleright \blacktriangleright (*)$
- 2 A (Red), B (Green), C (Yellow), D (Blue)
- (13) Number 1 to 9, 0, +10
- (4) CLR, DISPLAY
  - \* Not CEC-compatible.

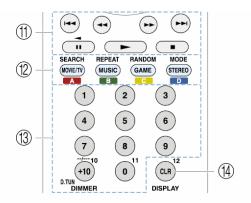
# Blu-ray Disc player/DVD player/DVD recorder operation



- **1) REMOTE MODE**
- 2 USOURCE
- **3 MUTING**
- 4 CH +/-, DISC +/-

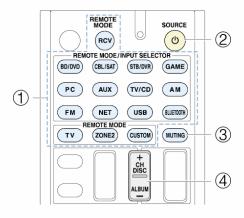


- **5 TOP MENU**
- ⑥ Δ/▼/◄/►, ENTER
- ⑦ SETUP
- **® MENU**
- 9 RETURN
- ① AUDIO (\*)

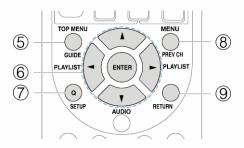


- $\textcircled{1} \blacktriangleright, \blacksquare, \blacksquare, \blacktriangleleft, \blacktriangleright \blacktriangleright, \blacktriangleright \blacktriangleleft, \blacktriangleright \blacktriangleright$
- 2 A (Red), B (Green), C (Yellow), D (Blue)
- (3) Number 1 to 9, 0, +10 (\*)
- (4) CLR, DISPLAY
  - \* Not CEC-compatible.

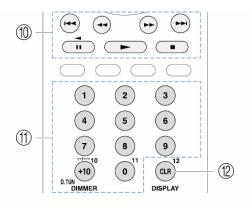
## VCR/PVR operation



- ① REMOTE MODE
- 2 USOURCE
- 3 MUTING
- ④ CH +/-

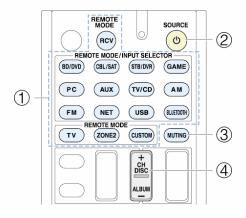


- **5** GUIDE
- ⑥ Δ/▼/◄/►, ENTER
- 7 SETUP
- **® PREV CH**

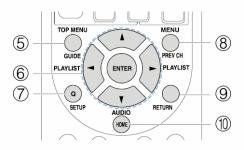


- 1  $\blacktriangleright$ ,  $\blacksquare$ ,  $\blacksquare$ ,  $\blacktriangleleft$ ,  $\blacktriangleright$ ,  $\blacktriangleleft$ ,  $\blacktriangleright$  1 Number 1 to 9, 0, +10
- © CLR, DISPLAY

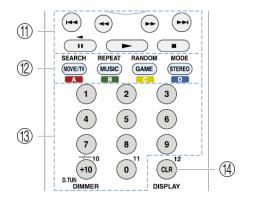
## Satellite receiver/Cable receiver operation



- 1) REMOTE MODE
- 2 USOURCE
- 3 MUTING
- ④ CH +/-

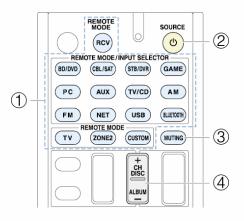


- **5** GUIDE
- ⑥ Δ/▼/◄/►, ENTER
- 7 SETUP
- **® PREV CH**
- 9 RETURN
- 1 AUDIO

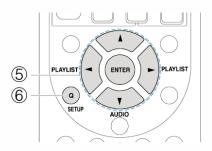


- $\textcircled{1} \blacktriangleright, \blacksquare, \blacksquare, \blacktriangleleft, \blacktriangleright \blacktriangleright, \blacktriangleright \blacktriangleleft, \blacktriangleright \blacktriangleright$
- 2 A (Red), B (Green), C (Yellow), D (Blue)
- (13) Number 1 to 9, 0, +10
- (4) CLR, DISPLAY

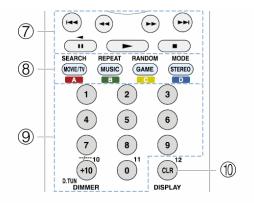
## CD player operation



- **1 REMOTE MODE**
- 2 USOURCE
- ③ MUTING
- 4 DISC +/-



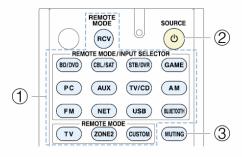
- ⑤ A/▼/◄/►, ENTER
- **6** SETUP



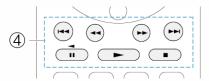
- ® SEARCH, REPEAT, RANDOM, MODE
- 9 Number 1 to 9, 0, +10
- ① CLR, DISPLAY

## Cassette tape deck operation

Press the REMOTE MODE button programmed with the remote control code for the relevant AV component to switch the remote controller mode to that for the AV component. Then, operate by using the corresponding buttons. Available buttons vary depending on the product category of the component. Note that some buttons may not work, or the remote controller may not work at all with some components.



- **1) REMOTE MODE**
- 2 USOURCE
- ③ MUTING



④ ►, (Reverse Playback), ■, , ►, ►, ►



## To operate CEC-compatible components

The TV and BD/DVD buttons on the remote controller are preprogrammed with remote control codes for linked operation of some CEC (Consumer Electronics Control)-compatible TV sets and Blu-ray Disk players. By connecting to the unit via HDMI, you may operate them using the AV receiver's remote controller.

 If you cannot operate your CEC-compatible component, program one of the following remote control codes to the TV or BD/DVD button. TV button: 11807/13100/13500 (CEC-compatible TV) BD/DVD button: 32910/33101/33501/31612 (CEC-compatible BD/DVD player)



# Connecting and Operating Onkyo RI Components

## Summary of RI function

Connecting an Onkyo component with RI jack such as the separately sold RI Dock to the unit by using an RI cable and an analog audio (RCA) cable enables the following RI functions:

**System On/Auto Power On**: Starting playback on a component connected via RI when the unit is on standby mode, automatically turns on the unit to select the relevant component as its input source.

**Direct Change**: When playback is started on a component connected via RI, the unit selects that component as the input source.

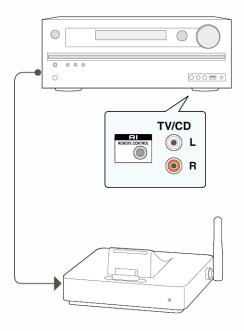
**Remote Controller Operation**: Allows you to operate RI-compatible Onkyo components using the AV receiver's remote controller. Point the remote controller at remote control sensor of the unit. This operation is possible only when the RI remote control code is programmed.

- Some components may not support all RI functions.
- These functions do not work when Zone 2 is turned on.
- For information on the RI functions, also refer to each component's instruction manual.



## Connecting and Operating Onkyo RI Components

## RI connection and settings



Connect an Onkyo component with RI jack to the unit using an RI cable and an analog audio (RCA) cable. For details, refer to the instruction manual of the component with RI jack. The RI cable can be connected in any order. When there are two RI jacks, you can connect to either one as both jacks work in the same way.

To connect the RI Dock or cassette tape deck via RI, you must:

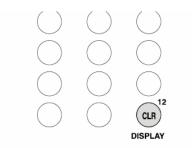
## Renaming the Input Selector

To make the RI functions work, you must rename the input selectors. Press RCV on the remote controller to switch its mode to RECEIVER mode and the press HOME. Select "9. Source Setup" in "Setup" menu and Rename the input selector by setting "DOCK" or "TAPE".

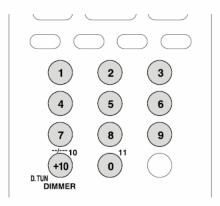
## Program the RI remote control code

Program the remote control code to desired REMOTE MODE button on the remote controller. This will allow you to operate the component by pointing the remote controller at the unit instead of the component.

- 1. Press DISPLAY for 3 or more seconds while holding down the REMOTE MODE button to which you want to program the remote control code.
  - The remote indicator lights.
  - The RCV, ZONE2, and TV buttons cannot be programmed.



2. With the number buttons, enter the following 5-digit remote control code within 30 seconds.



RI Dock: 81993

Cassette tape deck with RI jack: 42157

 Programming is complete when the remote indicator flashes twice. The remote indicator flashes once slowly when programming the remote control code fails. Try programming again.

**Input selector on the RI Dock:** Select "DOCK" or "TAPE". For details, refer to the RI Dock's instruction manual.

To operate Onkyo components directly or Onkyo components that are not connected via RI, use the following remote control codes:

Onkyo DVD player: 30627 Onkyo CD player: 71817

RI Dock: 82990

• With some models, operation may not be possible in part or not possible at all.

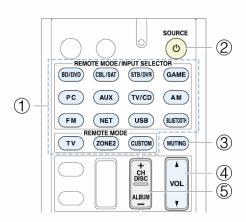
# Connecting and Operating Onkyo RI Components

## iPod/iPhone Operation

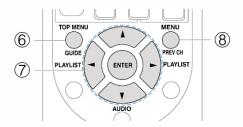
The RI Dock allows you to use the AV receiver's remote controller to operate and play music on your iPod/iPhone. Moreover, it also allows you to view videos on your iPod/iPhone on the screen of your TV, as well as perform RI operations if connected via RI. This operation is possible only when the RI remote control code is programmed.

**Before Operation**: Before performing any operation on your iPod/iPhone, make sure to have it updated to the latest version via iTunes. Certain buttons may not work for some iPod/iPhone models and generations, or RI Dock. For details on the operation, refer to the RI Dock's instruction manual.

Switch the remote controller mode by pressing the REMOTE MODE button programmed with the remote control code. Then, operate by using the corresponding buttons. Point the remote controller at the unit.

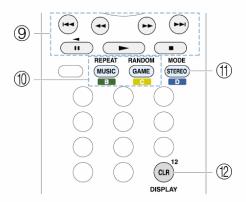


- **1) REMOTE MODE**
- 2 USOURCE
- **3 MUTING**
- ④ VOL ▲/▼
- ⑤ ALBUM +/-



- **© TOP MENU**
- ⑦ ▲/▼/◄/►, ENTER, PLAYLIST◄/►

#### **® MENU**



- **⑨ ► , II , , ◄ , ► ► , ► , ► ► , ► ► |**
- **®** REPEAT, RANDOM
- (f) MODE
- 12 DISPLAY
- Pressing DISPLAY turns on the backlight for a few seconds.
- MODE allows you to use the Resume function. You can resume playing from the song that was playing when you removed your iPod/iPhone from the DS-A2 RI Dock.

## Summary of Firmware Update

There are two methods for updating the firmware: via network and via USB. Use the one that best suits your environment.

- For the latest information on updates, visit the Onkyo website.
- Before updating, make sure that the speaker setup microphone is not connected.
- During an update, do not
  - Disconnect and reconnect any cable, USB storage device, speaker setup microphone or headphones, or perform any operation on the component such as turn off its power
  - Access to this unit from a PC or smartphone using Android application
- The update may take about 10 minutes to complete for either method, via network or via USB.

Furthermore, existing settings are saved regardless of the method used.

**Disclaimer**: The program and accompanying online documentation are furnished to you for use at your own risk.

Onkyo will not be liable and you will have no remedy for damages for any claim of any kind whatsoever concerning your use of the program or the accompanying online documentation, regardless of legal theory, and whether arising in tort or contract.

In no event will Onkyo be liable to you or any third party for any special, indirect, incidental, or consequential damages of any kind, including, but not limited to, compensation, reimbursement or damages on account of the loss of present or prospective profits, loss of data, or for any other reason whatsoever.

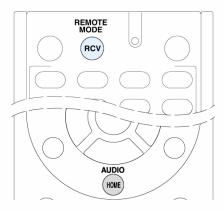
## Updating the Firmware via Network

#### **Before Start:**

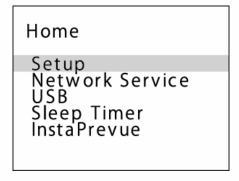
- Check that the unit is turned on, and the connection to the Internet is secured.
- Turn off the controller component (PC etc.) connected to the network.
- Stop any playing Internet radio, USB storage device, or server content.
- If Zone 2 is active, press OFF on the unit to turn it off.
- If "HDMI CEC (RIHD)" is set to "On", set it to "Off" (default value).
  - After pressing RCV, press HOME on the remote controller. Select "Setup" with the cursors and press ENTER. Then, after selecting "11. HDMI Setup" and pressing ENTER, select "HDMI CEC (RIHD)" to select "Off".
  - \* The description may differ from the on-screen display but that will not change the way to operate or the function.

# ■ Update ∨

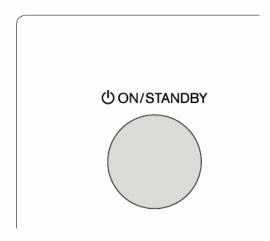
1. After pressing RCV, press HOME on the remote controller.



The Home menu is displayed on the TV screen.



- 2. Select "Setup" "10. Hardware" "Update via NET" in order using the cursor buttons, and then press ENTER.
  - If "10. Hardware" is grayed out and cannot be selected, wait for a while until it starts up.
  - You will not be able to select "Update via NET" if there is nothing to update.
- 3. Select "Update" and press ENTER to start updating.
  - During the update, the TV screen may go black depending on the updated program. In that case, check the progress on the display of the unit. The TV screen will remain black until the update is complete and the power is turned on again.
  - "Completed!" is displayed when the update is complete.
- 4. Press OON/STANDBY on the unit to place the unit to standby. This is the end of the firmware update and you have now the latest firmware installed.
  - Do not use ORECEIVER on the remote controller.



#### If an Error Message is Displayed

When an error occurs, "\*-\* \* Error!" is appeared on the display. ("\*" refers to the numbers displayed when error occurs) Check the following:

#### **Error Code**

• \* -01, \* -10:

Ethernet cable not found. Connect the Ethernet cable properly.

• \*-02, \*-03, \*-04, \*-05, \*-06, \*-11, \*-13, \*-14, \*-16, \*-17, \*-18, \*-20, \*-21:

Internet connection error. Check the following:

- Whether the router is turned on
- Whether this unit and router are connected to the network If they are connected, disconnect the power cord of the unit and router, and reconnect it. This may solve the problem. If you are still unable to connect to the Internet, the DNS server or proxy server may be temporarily down. Check the service status with your ISP provider.
- Others:

Disconnect then reconnect the AC power cord, from the beginning.

## Updating the Firmware via USB

#### **Before Start:**

- Prepare a 64MB or larger USB storage device.
  - Media inserted in a USB card reader may not be used for this function.
  - USB storage devices with security function are not supported.
  - USB hubs and USB devices with hub function are not supported. Do not connect these devices to the unit.
- Delete any data stored on the USB storage device.
- Turn off the controller component (PC etc.) connected to the network.
- Stop any playing Internet radio, USB storage device, or server content.
- If Zone 2 is active, press OFF on the unit to turn it off.
- If "HDMI CEC (RIHD)" is set to "On", set it to "Off" (default value).
  - After pressing RCV, press HOME on the remote controller. Select "Setup" with the cursors and press ENTER. Then, after selecting "11. HDMI Setup" and pressing ENTER, select "HDMI CEC (RIHD)" to select "Off".
  - \* Some USB storage devices may take long to load, may not be loaded correctly, or may not be correctly fed depending on the device or their content.
  - \* Onkyo will not be liable whatsoever for any loss or damage of data, or storage failure arising from the use of the USB storage device with the AV receiver. Thank you for your understanding.
  - \* The description may differ from the on-screen display but that will not change the way to operate or the function.

## Update

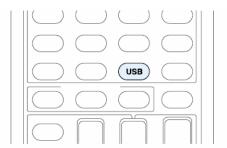


- 1. Connect the USB storage device to your PC.
- 2. Download the firmware file from the Onkyo website to your PC and unzip. Firmware files are named in the following way:

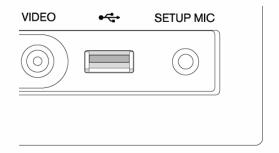
ONKAVR \* \* \* \* \_ \* \* \* \* \* \* \* \* \* \* \* zip

Unzip the file on your PC. The number of unzipped files and folders varies depending on the model.

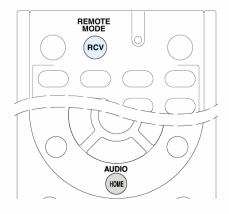
- 3. Copy all unzipped files and folders to the root folder of the USB storage device.
  - Make sure to copy the unzipped files.
- 4. Press USB on the remote controller to select "USB".



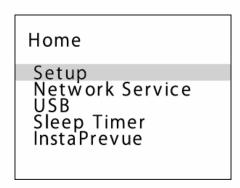
- 5. Connect the USB storage device to the USB port of the unit.
  - If you connect a USB hard disk drive to the USB port of the unit, we recommend that you use its AC adapter to power it.
  - If the USB storage device has been partitioned, each section will be treated as an independent device.



6. After pressing RCV, press HOME on the remote controller.

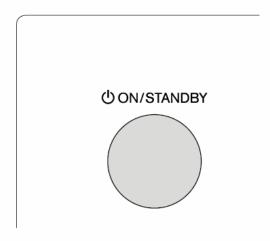


The Home menu is displayed on the TV screen.



- 7. Select "Setup" "10. Hardware" "Update via USB" in order using the cursor buttons, and then press ENTER.
  - If "10. Hardware" is grayed out and cannot be selected, wait for a while until it starts up.

- You will not be able to select "Update via USB" if there is nothing to update.
- 8. Select "Update" and press ENTER to start updating.
  - During the update, the TV screen may go black depending on the updated program. In that case, check the progress on the display of the unit. The TV screen will remain black until the update is complete and the power is turned on again.
  - During the update, do not turn off, or disconnect then reconnect the USB storage device.
  - "Completed!" is displayed when the update is complete.
- 9. Disconnect the USB storage device from the unit.
- 10.Press OON/STANDBY on the unit to place the unit to standby. This is the end of the firmware update and you now have the latest firmware installed.
  - Do not use ORECEIVER on the remote controller.



#### If an Error Message is Displayed

When an error occurs, "\*-\* \* Error!" is appeared on the display. ("\*" refers to the numbers displayed when error occurs) Check the following:

#### **Error Code**

\* -01, \* -10:

USB storage device not found. Check whether the USB storage device or USB cable is correctly inserted to the USB port of the unit. Connect the USB storage device to an external power source if it has its own power supply.

• \*-05, \*-13, \*-20, \*-21:

The firmware file is not present in the root folder of the USB storage device, or the firmware file is for another model. Retry from the download of the firmware file.

Others:

Disconnect then reconnect the AC power cord, from the beginning.

## **Read Before Start**

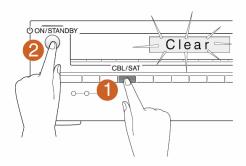
Problem may be solved by turning on and off or reconnecting the power cord, besides rechecking the connection, setting or operation procedure. Try that on both the unit and components connected to the unit. Furthermore, in case of no picture output, no sound or HDMI linked system does not work etc., may be solved if HDMI cable is reconnected. When reconnecting, note that HDMI cable may not be connected properly if it is coiled. After reconnection, turn off and then on again the power of all connected components.

# Resetting the unit

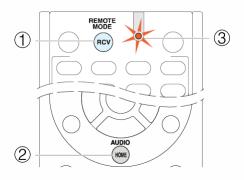
Problem may be solved by resetting the unit to initialize all the setting to factory default. If you cannot resolve the issue from the procedure in trouble shooting, try resetting the unit as explained below. If you reset the unit status, your preferences will be reset to the defaults. Note them down before starting reset.

## Resetting method

- 1. While holding down CBL/SAT on the unit (Do not release this button until step 2 is finished.)
- 2. Press OON/STANDBY on the unit. "Clear" is appeared on the display and the unit will enter standby mode.



- Resetting method of the remote controller
- 1. While holding down ① RCV (Do not release this button until step 2 is finished.).
- 2. Press and hold ② HOME until the ③ remote indicator lights (about 3 seconds). Within 30 seconds, press ① RCV again.



## Power

- Can not turn on the unit
- Make sure that the power cord is properly plugged into the wall outlet.
- Unplug the power cord from the wall outlet, wait 5 seconds or more, then plug it in again.
- The unit turns off unexpectedly
- The unit will automatically enter standby mode when Auto Standby has been set and launches.
- The unit turns off and after restoring the power, it turns off again
- The protection circuit has been activated. Remove the power cord from the wall outlet immediately. Make sure that all speaker cables and input sources are properly connected, and leave the unit with its power cord disconnected for 1 hour. After that, reconnect the power cord and turn the power on. If the unit turns off again, avoid resetting it and unplug the power cord. Then contact your Onkyo dealer.

**Caution**: If "CHECK SP WIRE" is appeared on the display, the speaker cables may be shorting.

**WARNING**: If smoke, smell or abnormal noise is produced by the AV receiver, unplug the power cord from the wall outlet immediately and contact the dealer or Onkyo Support.

## **Audio**

- There is no sound, or it is very quiet
- Make sure that the proper input source is selected.
- Make sure that connecting plugs are pushed in all the way.
- Make sure that the inputs and outputs of all components are connected properly.
- Make sure that the polarity of the speaker cables is correct, and that no bare wires are in contact with the metal part of speaker terminals.
- Make sure that the input source is properly selected.
- Make sure that the speaker cables are not shorting.
- Check the volume. The volume level is adjustable between Min, 1 to 79, Max (80) It is normal that the unit volume level is set up to 40 or around.
- If the MUTING indicator on the display flashes, press MUTING on the remote controller to unmute the unit.
- While headphones are connected to the PHONES jack, no sound is output from the speakers.
- If there is no sound from a BD/DVD player connected to an HDMI IN, check the BD/DVD player's output settings, and be sure to select a supported audio format.
- Check the digital audio output setting on the connected component. On some game consoles, such as those that support DVD, the default setting is off.
- With some DVD-Video discs, you need to select an audio output format from a menu.
- If your turntable uses an MC cartridge, you must connect an MC head amp, or an MC transformer.
- Make sure that none of the connecting cables are bent, twisted, or damaged.
- Not all listening modes use all speakers.
- Specify the speaker distances and adjust the individual speaker levels.
- Make sure that the speaker setup microphone is not still connected.
- If the input signal format is set to "PCM" or "DTS", set it to "Off".
- Only the front speakers produce sound
- When the Stereo or Mono listening mode is selected, only the front speakers and subwoofer produce sound.
- Make sure the speakers are configured correctly.
- Only the center speaker produces sound
- If you use the Dolby Pro Logic II listening mode with a mono source, such

as an AM radio station or mono TV program, the sound is concentrated in the center speaker.

- Make sure the speakers are configured correctly.
- The surround speakers produce no sound
- When the T-D (Theater-Dimensional), Stereo or Mono listening mode is selected, the surround speakers produce no sound.
- Depending on the source and current listening mode, not much sound may be produced by the surround speakers. Try selecting another listening mode.
- Make sure the speakers are configured correctly.
- The center speaker produces no sound
- When the Stereo or Mono listening mode is selected, the center speaker produces no sound.
- Make sure the speakers are configured correctly.
- The subwoofer produces no sound
- When you play source material that contains no information in the LFE channel, the subwoofer produces no sound.
- Make sure the speakers are configured correctly.
- There is no sound with a certain signal format
- When listening to Dolby Digital and/or DTS sound, digital connection is necessary.
- Check the digital input terminal setting. If the connection is different from the default, re-setting is necessary.
- Check the digital audio output setting on the connected component. On some game consoles, such as those that support DVD, the default setting is off.
- Can not select the Pure Audio listening mode (Asian model)
- The Pure Audio listening mode can not be selected while Zone 2 is on.
- Can not select a desired listening mode
- Depending on the connecting status of the speaker, some listening modes may not be selected. Check the details in "Using the Listening Modes" section.
- Can not play 5.1ch
- Make sure the speakers are configured correctly.
- Not all listening modes use all speakers.
- The speaker volume cannot be set as required
- Check to see if a maximum volume has been set.
- Noise can be heard
- Using cable ties to bundle analog audio (RCA) cables with power cords,

- speaker cables, etc. may degrade the audio performance, so refrain from doing it.
- An analog audio (RCA) cable may be picking up interference. Try repositioning your cables.
- The Late Night function does not work
- Make sure the source material is Dolby Digital, Dolby Digital Plus, or Dolby TrueHD.

## About DTS signals

- When DTS program material ends and the DTS bitstream stops, the unit remains in DTS listening mode and the dts indicator remains on. This is to prevent noise when you use the pause, fast forward, or fast reverse function on your player. If you switch your player from DTS to PCM, you may not hear any sound because the unit does not switch formats immediately. In such case, you should stop your player for about 3 seconds and then resume playback.
- With some CD and LD players, you will not be able to playback DTS material properly even though your player is connected to a digital input on the AV receiver. This is usually because the DTS bitstream has been processed (e.g., output level, sampling rate, or frequency response changed) and the AV receiver does not recognize it as a genuine DTS signal. In such cases, you may hear noise.
- Playing DTS program material, using the pause, fast forward, or fast reverse function on your player may produce a short audible noise. This is not a malfunction.
- The beginning of audio received by an HDMI IN can not be heard
- Since it takes longer to identify the format of an HDMI signal than it does for other digital audio signals, audio output may not start immediately.

# Troubleshooting

## Video

- There is no picture
- Make sure that all video connecting plugs are pushed in all the way.
- Make sure that each video component is properly connected.
- If the video source is connected to a component video input, you must assign that input to an input selector, and your TV must be connected to COMPONENT VIDEO OUT terminal.
- If the video source is connected to a composite video input, your TV must be connected to the MONITOR OUT V terminal.
- If the video source is connected to an HDMI input, you must assign that input to an input selector, and your TV must be connected to the HDMI output(s).
- While the Pure Audio (Asian model) listening mode is selected, the analog video circuitry is turned off and only video signals input through HDMI IN can be output.
- Make sure the switching of input screens is proper at the monitor side such as a TV.
- Images of a component connected to the composite video input terminal can not be output by converting on the monitor of a TV or other components connected to COMPONENT VIDEO OUT terminal.
- When the TV image is blurry or unclear, power code or connection cables of the unit may have interfered. In that case, keep distance between TV antenna cable and cables of the unit.
- There is no picture from a source connected to an HDMI IN
- Reliable operation with an HDMI-to-DVI adapter is not guaranteed. In addition, video signals from a PC are not guaranteed.
- The on-screen menus do not appear
- On your TV, make sure that the video input to which this unit is connected is selected.
- When the AV receiver is not connected to a TV via HDMI OUT, on-screen menus are not displayed.

# Troubleshooting

# Tuner

- Reception is noisy, FM stereo reception is noisy, or the "FM STEREO" indicator does not light
- Re-check the antenna connection.
- Relocate your antenna.
- Move the unit away from your TV or PC.
- Passing cars and airplanes can cause interference.
- Concrete walls weaken radio signals.
- Listen to the station in mono.
- When listening to an AM station, operating the remote controller may cause noise.
- If nothing improves the reception, install an outdoor antenna.

## Remote Controller

- The remote controller does not work
- Before operating this unit using remote controller, be sure to press RCV.
- Make sure that the batteries are installed with the correct polarity.
- Install new batteries. Do not mix different types of batteries, or old and new batteries.
- Make sure that the remote controller is not too far away from the unit, and that there is no obstruction between the remote controller and the remote control sensor of the unit.
- Make sure that the unit is not subjected to direct sunshine or inverter-type fluorescent lights. Relocate if necessary.
- If the unit is installed in a rack or cabinet with colored-glass doors, the remote controller may not work reliably when the doors are closed.
- Make sure you have selected the correct remote controller mode.
- When using the remote controller to control other manufacturers' AV components, some buttons may not work as expected.
- Make sure you have entered the correct remote control code.
- Make sure to set the same ID on both the unit and remote controller.
- Operating other Onkyo component by using a RI remote control code is not available
- Make sure that the Onkyo component is properly connected with RI cable.
   When RI cable is used for connection, make sure to connect analog audio (RCA) cable as well. (Connecting only an RI cable is not enough.)
- Make sure you have selected the correct remote controller mode.
- Make sure that the input display is correctly set.
- Input the RI remote control code again.
- When the RI remote control code is input, point the remote controller at remote control sensor of the unit.
- Can not operate Onkyo components (ones without RI connection) and components of other makers
- Make sure that the connection with other components is correct.
- Input a correct remote control code again. If there are several codes, try each code.
- Make sure that the remote controller mode is correctly selected.
- Operate the remote controller by setting toward the light receiving section of each component.
- Some components may not start the operation.

## RI Dock for iPod/iPhone

- There is no sound
- Make sure your iPod/iPhone is actually playing.
- Make sure your iPod/iPhone is properly inserted in the Dock.
- Make sure the unit is turned on, the correct input source is selected, and the volume is turned up.
- Make sure the plugs are pushed in all the way.
- Try resetting your iPod/iPhone.
- There is no video
- Make sure that your iPod/iPhone model's TV OUT setting is set to On.
- Make sure the correct input is selected on your TV or the unit.
- Some versions of the iPod/iPhone do not output video.
- The AV receiver's remote controller does not control my iPod/iPhone
- Make sure your iPod/iPhone is properly inserted in the Dock. If your iPod/iPhone is in a case, it may not connect properly to the Dock. Always remove your iPod/iPhone from the case before inserting it into the Dock.
- The iPod/iPhone can not be operated while it is displaying the Apple logo.
- Make sure you have selected the correct remote controller mode.
- When you use the AV receiver's remote controller, point it toward this unit.
- Before operating with the remote controller, you may need to play on your iPod/iPhone to make the input selector be recognized.
- Try resetting your iPod/iPhone.
- Depending on your iPod/iPhone model and generation, some buttons may not work as expected.
- The unit unexpectedly selects my iPod/iPhone as the input source
- Always pause iPod/iPhone playback before selecting a different input source. If playback is not paused, the Direct Change function may select your iPod/iPhone as the input source by mistake during the transition between tracks.
- iPod/iPhone does not work properly
- Try reconnecting your iPod/iPhone.



# Multi-Zone Function

- There is no sound
- Audio signal from "NET", "USB" and "BLUETOOTH" input selector can be output for multi-zone function. Connect audio components using the analog audio (RCA) cable as audio signal from the components connected using HDMI or digital audio cable cannot be output for one function. Note that connected components may have to be setup to output analog audio signal.

# Wi-Fi (Wireless LAN) Network

- Cannot access to Wi-Fi (Wireless LAN) network or sound playback is interrupted and communication does not work
- Try plugging/unplugging the power supply of wireless LAN router and the unit, check the wireless LAN router power-on status, and try reboot of the wireless LAN router.
- The setting of SSID and encryption (WEP, etc.) is not correct. Make sure the network settings of the unit is properly set.
- Connection to an SSID that includes multi-byte characters is not supported. Name the SSID of the wireless LAN router using single-byte alphanumeric characters only and try again.
- Can not receive radio wave due to a bad connection. Shorten the
  distance from wireless LAN access point or remove obstacles for a good
  visibility, and try again. Place the unit away from microwave ovens or
  other access points. 2.4 GHz band for wireless LAN may not be enough.
  Connect ETHERNET terminal of the unit and the router via an Ethernet
  cable after changing "Wi-Fi" in "12. Network Setup" to "Off".
- Place the unit away from the components emitting electromagnetic waves on the 2.4 GHz band (microwave ovens, game consoles, etc.). If this does not solve the problem, stop using other components which emit electromagnetic waves.
- When other wireless LAN devices are used near the unit, several issues such as interrupted playback and communication may occur. You can avoid these issues by changing the channel of your Wi-Fi router. For instructions on changing channels, see the instruction manual provided with your Wi-Fi router.
- If there is a metallic object near the unit, wireless LAN connection may not be possible as the metal can effect on the radio wave.
- If there is more than one access point in the network, separate each access point.
- It is recommended to place the Wi-Fi router (access point) and the unit in the same room.
- The connection does not complete even when the automatic setting button is pressed on the wireless LAN router
- The wireless LAN router setting may be switched to Manual. Return the setting to Auto.
- Try the manual set-up. The connection may succeed.
- On the list of SSID on the TV menu screen, there is no corresponding

## SSID

 When the wireless LAN router setting is at stealth mode (mode to hide the SSID key) or when ANY connection is off, the SSID is not displayed. Change the setting and try again.

## Bluetooth

- Music playback is unavailable on the unit even after successful Bluetooth connection
- Depending on the characteristics or specifications of your Bluetoothenabled device, playback on the unit is not guaranteed.
- When the audio volume of your Bluetooth-enabled device is set low, the playback of audio may be unavailable. Volume up the Bluetooth-enabled device.
- Depending on the Bluetooth-enabled device, Send/Receive selector switch may be provided. Select Send mode.
- Even when a music file is playing on the Bluetooth-enabled device, the sound can not be played if the connection is not established with the unit. Make sure that the unit is connected (this unit is selected as the sound output destination).
- Sound is interrupted
- Problem may be occurring at the Bluetooth-enabled device. Check the information on a webpage.
- The audio quality is poor after connection with a Bluetooth-enabled device
- The Bluetooth reception is poor. Move the Bluetooth-enabled device closer to the unit or remove any obstacle between the Bluetooth-enabled device and this unit.
- Can not connect with this unit
- Try plugging/unplugging the power of the unit and try turning on/off the Bluetooth-enabled device. Re-startup of the Bluetooth-enabled device may be effective.
- The Bluetooth-enabled device does not support the profiles required for this unit.
- The Bluetooth function of the Bluetooth-enabled device is not enabled.
   Refer to the user manual of the Bluetooth-enabled device for how to enable the function.
- Near devices such as microwave oven or cordless phone, which use the radio wave in the 2.4 GHz range, a radio wave interference may occur, which disables the use of the AV receiver.
- Bluetooth connection can not be built
- When building a Bluetooth connection between this unit and your

Bluetooth-enabled device for the first time, if the connection fails, clear "Pairing Infor" in "13. Bluetooth", turn off and then on again your Bluetooth-enabled device to clear the device name, and build the connection again.

- If there is a metallic object near the unit, Bluetooth connection may not be possible as the metal can effect on the radio wave.
- If the wireless LAN and Bluetooth connections are used at the same time, try to connect the ETHERNET port and router with the Ethernet cable after changing "WiFi" in "12. Network Setup" to "Off" for a better connection.
- The Bluetooth Auto Reconnect function does not work
- This function may not work depending on your Bluetooth-enabled device.
   In this case, play on your Bluetooth-enabled device after pairing with this unit.

## **NET/USB Function**

- Can not access the network server
- When NET is blinking, the unit is not properly connected to the home network.
- Make sure your network server has been started up.
- Make sure your network server is properly connected to the home network.
- Make sure your network server is correctly set.
- Make sure that the router LAN side port is properly connected to the AV receiver.
- Make sure that the correct IP address is allocated in "12. Network Setup" setting.
- Playback stops while listening to music files on the network server
- Make sure the network server is compatible with this unit.
- When the PC is serving as the network server, try quitting any application software other than the server software (Windows Media Player 12 etc.).
- If the PC is downloading or copying large files, the playback may be interrupted.
- Can not access the Internet radio
- Certain network service or contents available through the unit may not be accessible in case the service provider terminates its service.
- If a specific radio station is unavailable for listening, make sure the registered URL is correct, or whether the format distributed from the radio station is supported by the AV receiver.
- When NET is blinking, the AV receiver is not properly connected to the home network.
- Make sure that your modem and router are properly connected, and make sure they are both turned on.
- Make sure that connecting to Internet from other components is possible. If connecting is not possible, turn off all components connected to the network, wait for a while, and then turn on the components again.
- Make sure that the router LAN side port is properly connected to the AV receiver.
- Make sure that the correct IP address is allocated in "12. Network Setup" setting.
- Depending on ISP, setting the proxy server is necessary.
- Make sure that the used router and/or modem is supported by your ISP.

- Can not connect to the AV receiver from a Web browser
- Make sure that the IP address of the AV receiver is correctly input to the Internet browser.
- When DHCP is used for allocating the IP address, the IP address of this AV receiver may have been changed.
- Make sure that both AV receiver and PC are properly connected to the network.
- USB storage device is not displayed
- Make sure that USB storage device and USB cable are securely plugged to the USB port of this AV receiver.
- Remove the USB storage device from the AV receiver once, and then try re-connecting.
- Operability of a USB bus powered hard disk that receives power from the unit via the USB port is not guaranteed.
- Depending on the type of format, the playback may not be performed normally. Check the type of the file formats that is supported.
- USB storage device with security functions may not be played.

## **Others**

- Power consumption in standby mode
- In the following cases, the power consumption in standby mode may reach up to a maximum of 5 W:
  - When "Network Standby" in "12. Network Setup" is set to "On".
  - When "HDMI CEC (RIHD)" is set to "On". (Depending on the TV status, the AV receiver will enter normal standby mode.)
  - When "HDMI Through" is set to other than "Off".
  - When "Wakeup" in "13. Bluetooth" is set to "On".
- The sound changes when I connect my headphones
- When a listening mode other than Direct, Pure Audio (Asian model), or Mono is selected, connecting a headphone automatically selects Stereo.
- The display does not work
- The display is turned off when the Pure Audio (Asian model) listening mode is selected.
- How do I change the language of a multiplex source
- Select "Main" or "Sub" for "Input Ch(Mux)" in "8. Audio Adjust".
- The RI functions do not work
- To use RI, you must make an RI connection and an analog audio (RCA) cable between the component and AV receiver, even if they are connected digitally.
- While Zone 2 is selected, the RI functions do not work.
- The functions System On/Auto Power On and Direct Change do not work for components connected via RI
- These functions do not work when Zone 2 is turned on.
- When performing Automatic Speaker Setup, the measurement fails and the message "Ambient noise is too high." is displayed.
- This can be caused by a malfunction in your speaker unit. Check if the unit produces normal sounds.
- The display is dark
- Make sure that Dimmer function is not working. Press DIMMER button and change the brightness level of the display.
- The following settings can be made for the composite video inputs

 While holding down the input selector button to configure, press HOME once at a time until "Video ATT: On" is appeared on the display. To resume the setup, repeat the above described step until "Video ATT: Off" is appeared on the display.

This setting is possible for input selectors assigned with one of the video inputs "VIDEO 1" to "VIDEO 3" in "3. Composite". If you have a game console connected to the composite video input, and the picture is not very clear, you can attenuate the gain.

Video ATT: Off: (default).

Video ATT: On: (Gain is reduced by 2 dB.)

- If the picture on your TV/monitor connected to the HDMI output(s) is unstable.
- Try turning the DeepColor function off.
   To turn off the DeepColor function, press STB/DVR and ΦΟΝ/STANDBY on the AV receiver simultaneously.
   While holding down STB/DVR, press ΦΟΝ/STANDBY repeatedly until "Deep Color:Off" is appeared on the display. To reactivate the DeepColor function, repeat the above described step until "Deep Color:On" is appeared on the display.

The AV receiver contains a microPC for signal processing and control functions. In very rare situations, severe interference, noise from an external source, or static electricity may cause it to lockup. In the unlikely event that this happens, unplug the power cord from the wall outlet, wait at least 5 seconds, and then plug it back in.

Onkyo is not responsible for damages (such as CD rental fees) due to unsuccessful recordings caused by the unit's malfunction. Before you record important data, make sure that the material will be recorded correctly.

Before disconnecting the power cord from the wall outlet, set the AV receiver to standby.

**DISCLAIMER**: Through this device you are able to link to other services or websites which are not under the control of any company which has designed, manufactured or distributed/have distributed this device, and its affiliates (collectively, "Company"). We have no control over the nature, content and availability of those services. The inclusion of any links does not necessarily imply a recommendation or endorse the views expressed within them.

All information, content and services available through this device belong to third parties and are protected by copyright, patent, trademark and/or other intellectual property laws of applicable countries.

The information, content and services provided through this device are for your personal, noncommercial use only. Any information, content or services

may not be used in any manner other than previously approved by the appropriate content owner or service provider.

You may not modify, copy, republish, translate, exploit, create derivative works, upload, post, transmit, sell or distribute in any manner any information, content or services available through this device, unless expressly permitted by the appropriate copyright, patent, trademark and/or other intellectual property owner, including, without limitation, content owner or service provider.

THE CONTENT AND SERVICES AVAILABLE THROUGH THIS DEVICE ARE PROVIDED "AS IS".

COMPANY DOES NOT WARRANT INFORMATION, CONTENT OR SERVICES SO PROVIDED, EITHER EXPRESSLY OR IMPLIEDLY, FOR ANY PURPOSE.

COMPANY EXPRESSLY DISCLAIMS ANY WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Company makes no representation or warranty of any kind, express or implied, about the completeness, accuracy, validity, legality, reliability, suitability or availability with respect to the information, content or services available through this device. Company shall not be liable, whether in contract or tort, including negligence and strict liability, for any direct, indirect, special, incidental or consequential damages or any other damages arising out of, or in connection with, any information contained in, or as a result of the use of any content or service by you or any third party, even if Company has been advised of the possibility of such damages, nor shall Company be liable for any third party claims against users of this device or any third party. In no event shall Company be responsible nor liable for, without limiting the generality of the foregoing, any interruption or suspension of any information, content or service available through this device. Company is neither responsible nor liable for customer service related to the information, content and services available through this device. Any question or request for service relating to the information, content or services should be made directly to the appropriate content owners and services providers.

# Linked Operation with CEC-compatible Components

The AV receiver is compatible with the following components (as of January 2014).

## TV (Random order):

- Toshiba TV sets
- Sharp TV sets

### Players/Recorders (Random order):

- Onkyo and Integra RIHD-compatible players
- Toshiba players and recorders
- Sharp players and recorders (only when used together with Sharp TV sets)

Models other than those mentioned above may have some interoperability if compatible with CEC, which is part of the HDMI Standard, but operation can not be guaranteed.

**Note:** For RI functions to work properly, do not connect more RIHD-compatible components than the quantities specified below, to the HDMI jack. RI functions are not guaranteed when more RIHD-compatible components than the below mentioned quantities are connected. Furthermore, do not connect the AV receiver to another AV receiver/AV amplifier via HDMI.

- Blu-ray Disc/DVD players: up to 3.
- Blu-ray Disc/DVD recorders: up to 3.
- Cable TV tuner, terrestrial digital tuner, and satellite broadcasting tuner: up to 4 units.

# Checking whether the HDMI Linked Operation Settings Are Enabled

- 1. Turn on the power of all connected components.
- 2. Turn off the power of the TV, and confirm that the power of the connected components is turned off automatically with the link operation.
- 3. Turn on the power of the Blu-ray Disc/DVD player/recorder.
- 4. Start playback on the Blu-ray Disc/DVD player/recorder, and verify the following:
  - The AV receiver automatically turns on, and selects the input to which the Blu-ray Disc/DVD player/recorder is connected.
  - The TV automatically turns on, and selects the input to which the AV receiver is connected.
- 5. Following the operating instructions of the TV, select "Use the TV speakers" from the menu screen of the TV, and confirm that the audio is output from the speakers of the TV, and not from the speakers connected to the AV receiver.
- 6. Select "Use the speakers connected from the AV receiver" from the menu screen of the TV, and confirm that the audio is output from the speakers connected to the AV receiver, and not from the TV speakers.

#### Note:

- Even if you set to output audio on the TV speakers, audio will be output from the speakers connected to the AV receiver when you adjust the volume or switch the input on the AV receiver. To output audio from the TV speakers, redo the corresponding operations on the TV.
- In case of an RIHD connection with RI and RI audio control compatible components, do not connect the RI cable at the same time.
- On the TV, when you select anything other than the HDMI jack to which the AV receiver is connected, the input on the AV receiver will be switched to "TV/CD".
- The AV receiver will automatically power on in conjunction when it determines it to be necessary. Even if the AV receiver is connected to an RIHD compatible TV or player/recorder, it will not power on if it is not necessary. It may not power on in conjunction when the TV is set to output audio from the TV.
- Linked system functions with the AV receiver may not work depending on the component model connected. In such cases, operate the AV receiver directly.
- When the player/recorder cannot be operated with the remote controller

of the AV receiver, the corresponding component may not be programmed to support the remote controller operation of CEC. Program the remote control code of the component maker to the remote controller for using.

## **About HDMI**

HDMI (High Definition Multimedia Interface) is a digital interface standard for connecting TVs, projectors, Blu-ray Disc/DVD players, set-top boxes, and other video components. Until now, several separate video and audio cables have been required to connect AV components. With HDMI, a single cable can carry control signals, digital video, and digital audio (2-channel PCM, multichannel digital audio, and multichannel PCM).

The HDMI video stream (i.e., video signal) is compatible with DVI (Digital Visual Interface) (\*1), so TVs and displays with a DVI input can be connected by using an HDMI-to-DVI adapter cable. (This may not work with some TVs and displays, resulting in no picture.)

This unit supports HDCP (High-bandwidth Digital Content Protection) ( \* 2), so it can display picture only on HDCP-compatible components.

The HDMI on this unit supports the following functions:

Audio Return Channel, 3D, x.v.Color, DeepColor, Lip Sync, 4K (Passthrough), DTS-HD Master Audio, DTS-HD High Resolution Audio, Dolby TrueHD, Dolby Digital Plus, DSD and Multichannel PCM.

## Supported Audio Formats of this Unit:

- 2-channel linear PCM (32-192 kHz, 16/20/24 bit)
- Multichannel linear PCM (up to 7.1 ch, 32–192 kHz, 16/20/24 bit)
- Bitstream (DSD, Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS, DTS-HD High Resolution Audio, DTS-HD Master Audio)

Your Blu-ray Disc/DVD player must also support HDMI output of the above audio formats.

## **About Copyright Protection:**

The AV receiver supports HDCP (High-bandwidth Digital Content Protection) (\*2), a copy-protection system for digital video signals. Other components connected to the AV receiver via HDMI must also support HDCP.

- \* 1 DVI (Digital Visual Interface): The digital display interface standard set by the DDWG (\*3) in 1999.
- \*2 HDCP (High-bandwidth Digital Content Protection): The video encryption technology developed by Intel for HDMI/DVI. It is designed to protect video content and requires a HDCP-compatible HDMI/DVI receiver to display the encrypted video.
- \*3 DDWG (Digital Display Working Group): Lead by Intel, Compaq, Fujitsu, Hewlett Packard, IBM, NEC, and Silicon Image, this open industry group's objective is to address the industry's requirements

for a digital connectivity specification for high-performance PC and digital displays.

#### Note:

- The HDMI video stream (i.e., video signal) is compatible with DVI (Digital Visual Interface), so TVs and displays with a DVI input can be connected by using an HDMI-to-DVI adapter cable. (Note that DVI connections only carry video, so you will need to make a separate connection for audio.) However, reliable operation with such an adapter is not guaranteed. In addition, video signals from a PC are not supported.
- The HDMI audio signal (sampling rate, bit length, etc.) may be restricted by the connected source component. If the picture is poor or there is no sound from a component connected via HDMI, check its setup. Refer to the connected component's instruction manual for details.

# Home network (LAN)

The connection of several components via cables enabling the mutual communication is called a network.

At households, many families create (generally, the term "build" is used) a network to connect computers and gaming machines to the Internet and to exchange data between computers.

The network established in a relatively narrow area such as one household is called a LAN (Local Area Network).

In this manual, a term "home network" (network for a family) is used instead of "LAN," so this LAN becomes more familiar.

By connecting this unit with the network server such as a PC, playing music files in the network server (in the PC) is possible. Moreover, by connecting to the Internet, listening to the Internet radio is also possible.

This unit, PC, and Internet are not directly connected.

When connecting with a PC and/or Internet, several components (network components) are necessary.

#### Components necessary for establishing a home network (LAN):

Components necessary for the home network (LAN) for using the NET function of this unit are as follows.

#### Router

A router is a device that controls information (data) flow between the unit, PC, and the Internet.

As a network term, the flow of information (data) is called "traffic". The router has a role to control the information flow as the traffic control, between connected components.

- A router with a built-in 100Base-TX switch is recommended.
- In addition, if your router has the DHCP function, facilitating the network setting becomes possible.
- Some routers have a built-in modem, and some Internet Service Providers (ISP) require you to use specific routers.

Please consult your ISP or PC dealer if you are unsure.

#### CAT-5 Ethernet cable

The Ethernet cable is a cable that actually connects devices that comprise the network. There are straight type and cross type Ethernet cables.

 Use a shielded CAT-5 Ethernet cable (straight-type) to connect the unit to your home network.

Consult your cable store for details of Ethernet cable.

Network server
(When PC and the like/network server is used)

Conponent that stores music files and provides those files at the time of playback.

- Requirements for use with this unit depend on the conponent that is used as a network server.
- Conditions for pleasant playback of music files on the AV receiver depend on the using network server (computer performance). See instruction manuals of using devices.
- Modem (when Internet radio is used)

Device that connects home network (LAN) and Internet There are many kinds of modems depending on the forms of Internet connection.

In addition, when connecting to the Internet, it is required to conclude an agreement with a company that provides Internet connection service, called ISP (Internet Service Provider).

Use a modem that is recommended by your ISP company for the Internet connection.

There are some devices that have both router and modem functions. Within above network components, prepare a router, Ethernet cable, and network server when the NET function "network server" is used. For enjoying the NET function "Internet radio," it is necessary to use the router, Ethernet cable, and modem (and agreement with ISP).

# Reference Information

# Server Requirements

## Server playback

This unit can play digital music files stored on a PC or media server and supports the following technologies:

- Windows Media Player 11
- Windows Media Player 12
- DLNA-certified media server

The network server must be connected to the same network as this unit. Up to 20,000 folders can be displayed, and folders may be nested up to 16 levels deep.

**Note:** Depending on the media server, the unit may not recognize it, or may not be able to play its music files.

## Remote playback

Remote playback is the function that enables this AV receiver to play music files saved in different devices by operating the DLNA-compliant controller device and PC in the home network.

- Windows Media Player 12
- DLNA-certified (within DLNA Interoperability Guidelines version 1.5) media server or controller component.
  - \* The setting varies depending on the media server or controller components. Refer to your devices' instruction manual for details.

If the operating system of your personal computer is Windows 8/Windows 7, Windows Media Player 12 is already installed. For more information, see the Microsoft web site.

# **USB Storage Device Requirements**

- USB mass storage device class (but not always guaranteed).
- FAT16 or FAT32 file system format.
- If the USB storage device has been partitioned, each section will be treated as an independent device.
- Up to 20,000 folders can be displayed, and folders may be nested up to 16 levels deep.
- USB hubs and USB storage devices with hub functions are not supported. Do not connect these devices to the unit.

#### Note:

- If the media you connect is not supported, the message "No Storage" will be displayed.
- Sound files that are protected by copyright can not be played.
- When the USB audio player and this unit are connected, the audio player screen and the screen of the unit may be different. In addition, control functions of the audio player (classifying and sorting music files and adding information, etc.) are not available on this unit.
- Do not connect a PC to the USB port of the unit. Inputting sound to the USB port of the unit from a PC is not possible.
- Media inserted to the USB card reader may not be available in this function.
- Some USB storage devices and its contents may require some time to be read.
- Depending on the USB storage device, proper reading of the contents and proper supply of the power supply may not be possible.
- Onkyo accepts no responsibility whatsoever for the loss or damage to data stored on a USB storage device when that device is used with this unit. We recommend that you back up your important music files beforehand.
- Performance of the hard disk that receive power from the USB port of the unit is not guaranteed.
- If you connect a USB hard disk drive to the USB port of the unit, we recommend that you use its AC adapter to power it.
- When an audio player that are operated with batteries is used, make sure that the batteries have enough remaining power.
- USB devices with security functions can not be played.

# Supported Audio Formats

- For server playback and playback from a USB storage device, this unit supports the following music file formats.
- Music files of the following formats that can be played depend on the network server. For example, when using Windows Media<sup>®</sup> Player 12, not all music files in the PC can be played. The music files that can be played are the ones registered to the Windows Media<sup>®</sup> Player 12 library.
- Variable bit-rate (VBR) files are supported. However, playback times may not be displayed correctly.
- This unit supports the gapless playback of the USB storage device in the following conditions.
  - When WAV, FLAC and Apple Lossless files are continuously played back with the same format, sampling frequency, channels and quantization bit rate.
- Remote playback does not support the gapless playback.

#### Note:

- With remote playback, this unit does not support the following music file formats:
  - FLAC, Ogg Vorbis, DSD
- MP3 (.mp3 or .MP3)
- Supported formats: MPEG-1/MPEG-2 Audio Layer 3
- Supported sampling rates: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz
- Supported bitrates: Between 8 kbps and 320 kbps and VBR.
- WMA (.wma or .WMA)
- Supported sampling rates: 8 kHz, 11.025 kHz, 22.05 kHz, 32 kHz, 44.1 kHz, 48 kHz
- Supported bitrates: Between 5 kbps and 320 kbps and VBR.
- WMA Pro/Voice formats are not supported.
- Sound files that are protected by copyright cannot be played.
- WMA Lossless (.wma or .WMA)
- Supported sampling rates: 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz
- Quantization bit: 16 bit, 24 bit
- WAV (.wav or .WAV)
- Supported sampling rates: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz,

24 kHz, 32 kHz, 44.1 kHz, 48 kHz, 64 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz

- Quantization bit: 8 bit, 16 bit, 24 bit
  - \* For playback from a USB storage device, sampling rates of 176.4 kHz and 192 kHz are not supported.
- AAC (.aac/.m4a/.mp4/.3gp/.3g2/.AAC/.M4A/.MP4/.3GP or .3G2)
- Supported formats: MPEG-2/MPEG-4 Audio
- Supported sampling rates: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz, 64 kHz, 88.2 kHz, 96 kHz
- Supported bitrates: Between 8 kbps and 320 kbps and VBR.

## FLAC (.flac or .FLAC)

- Supported sampling rates: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz, 64 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz
- Quantization bit: 8 bit, 16 bit, 24 bit
  - \* For playback from a USB storage device, sampling rates of 176.4 kHz and 192 kHz are not supported.

## Ogg Vorbis (.ogg or .OGG)

- Supported sampling rates: 8 kHz, 11.025 kHz, 16 kHz, 22.05 kHz, 32 kHz, 44.1 kHz, 48 kHz
- Supported bitrates: Between 32 kbps and 500 kbps and VBR.
- Incompatible files can not be played.

## ■ LPCM (Linear PCM)

- Supported sampling rates: 44.1 kHz, 48 kHz
- Quantization bit: 16 bit
  - \* Only for playback via DLNA.

## Apple Lossless (.m4a/.mp4/.M4A/.MP4)

- Supported sampling rates: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz, 64 kHz, 88.2 kHz, 96 kHz
- Quantization bit: 16 bit, 24 bit

## ■ DSD (.dsf or .DSF)

- Supported sampling rates: 2.8224 MHz, 5.6448 MHz
  - \* For playback from a USB storage device, sampling rates of 5.6448 MHz is not supported.



# Remote Control Code List

## Television (A to E)

A.R. Systems 10037, 10556

Accent 10037

Acoustic Solutions 11667, 11585, 11037

Action 10650

Addison 10653, 11150

AEG 11037 Aiko 10037 Aim 10037

Akai 10037, 12676, 10208, 10714, 10556, 12414,

13183, 10178

Akiba 10037 Akito 10037

Akura 10037, 10714, 11667, 11585, 10171, 11037

Alba 11037, 12676, 10037, 10714, 11585

Alien 11037 Alistar 10037

Amstrad 10037, 10171, 11037

Anam 10037, 10650 Andersson 11585, 12676

Anitech 10037 Ansonic 10037

AOC 11365, 12769, 10178, 10625, 11150

Apex Digital 12397

Ardem 10714, 10037

Arena 10037 Ario 12397

Aristona 10556, 10037

ART 11037
Art Mito 11585
Asberg 10037
Astra 10037

ATD 10698 Atlantic 10037

Audiosonic 10714, 10037

 Audioworld
 10698

 Autovox
 12676

 Aventura
 10171

 Axxon
 10714

 Baird
 10208

 Barco
 10556

 Base
 10698

Basic Line 10037, 11037, 10556

Baur 10037, 10195

Beaumark 10178 Beijing 10208

Beko 10714, 10037

Bell & Howell 10017 Belson 10698 Belstar 11037 Beon 10037 Berthen 10556 Bestar 10037 Bexa 12493 **BGH** 12414 **Black Diamond** 11037

Blaupunkt 10195

Blue Sky 10714, 10037, 11037, 10556, 10625

BPL 10208, 10037

Brandt 10625, 11585, 10714

Brinkmann 10037 Brionvega 10037 Britania 12414

Bush 11037, 10037, 10714, 12676, 11667, 10208,

10556, 10698, 11585

 Byd:sign
 12209

 Camper
 10037

 Carad
 11037

 Carena
 10037

 Carrefour
 10037

Cascade 10037 Casio 10037 Cathay 10037

CCE 13782, 10037 Celcus 12676, 11585

Celebrity 10000 Centrum 11037 Centurion 10037

Changhong 13434, 12769, 10508

Chimei 12769

Chun Yun 10000, 11150

Chung Hsin 11150 Clarivox 10037

Clatronic 10037, 10714

Clayton 11037 Coby 13478 Commercial 11447

Solutions

 Condor
 10037

 Conrowa
 10698

 Contec
 10037

 Cosmel
 10037

 CPTEC
 10625

Crown 10037, 10714, 10208, 11037

Crypton 11667 Curtis 12397 Cyberpix 11667

D-Vision 10037, 10556

Daewoo 10037, 10556, 10178, 11150

Dansai 10037, 10208

Dantax 11037, 10714, 12676

Datsura 10208 Dawa 10037 Daytron 10037 De Graaf 10208 10037 Decca 10037 Denver Desmet 10037 Diamant 10037 Diamond 10698 Digatron 10037

Digihome 11667, 12676

Digiline 10037 Digisonic 11826

Digitor 10698, 10037

 Dixi
 10037

 Drean
 10037

 DSE
 10698

Dual 11667, 10037, 11037, 11585, 12676, 10714

Dumont 10017

Durabrand 10171, 10178, 10714, 11037

 Dux
 10037

 DX Antenna
 13817

 Dynatron
 10037

 Dynex
 12049

 E.S.C.
 10037

 ECE
 10037

Elbe 10037, 10556

 Electroband
 10000

 Electrograph
 11755

 Elektra
 10017

 Elfunk
 11037

 ELG
 10037

 Elin
 10037

 Elite
 10037

Emerson 11864, 10171, 11394, 10178, 10037, 10714

Envision 11365, 11506

 Epson
 11379

 Erres
 10037

 ESA
 10171

 Euroman
 10037

 Europa
 10037

 Europhon
 10037

 Evesham
 11667

Technology

Excello 11037 Exquisit 10037

## Television (F to J)

F&U 12676 FairTec 11585

Ferguson 10625, 11037, 10037, 10195, 11585, 12676

Fidelity 10037, 10171

Finlandia 10208

Finlux 11667, 10714, 12676, 10037, 10556 Firstline 10714, 10037, 11037, 10208, 10556

Fisher 10208 Flint 10037 Formenti 10037 Fraba 10037 Freesat 11636 Friac 10037 Frigidaire 11826 **Fujitsu** 10809 Fujitsu Siemens 10809

Funai 13817, 10171, 11394, 11037, 10714

 Gaba
 11037

 Galaxi
 10037

 Galaxis
 10037

 Gateway
 11755

GE 11447, 10178, 10625, 11454

GEC 10037 Genesis 10037 Genexxa 10037

GFM 10171, 11864

 Gibralter
 10017

 Gibson
 11826

 Gintai
 11150

 Godrej
 11585

 GoGen
 12676

GoldStar 10178, 10037, 10714, 11150

Goodmans 10037, 11037, 11667, 10714, 11585, 10556,

10625, 12676

Gorenje 11585, 12676

Gradiente 10037 Graetz 10714 Granada 10208, 10037

Grandin 10037, 10714, 11037, 10556

Grundig 10195, 11223, 10556, 10037, 11667, 12676

H-Buster 13620

Haier 13620, 10698, 10037, 10508

Hallmark 10178 Hankook 10178 Hannspree 11826

Hanseatic 10037, 10714, 10625, 10556

Hantarex 10037 Hantor 10037 Harwood 10037 Hauppauge 10037 10714 HB **HCM** 10037 Heran 11826 Herosonic 11826 Highline 10037

Hinari 10037, 10208

HiPlus 11826 Hisawa 10714

Hisense 10556, 10508, 10208

Hitachi 11643, 12676, 11576, 11585, 11691, 11037,

11667, 10037, 10150, 10178, 10508, 11150,

12170

Hitachi Fujian 10150
Hitec 10698
Hoher 10714
Hornyphon 10037
Hua Tun 11150

Hypson 10037, 10714, 10556, 11037

Hyundai 10698, 12676, 11037

 Iberia
 10037

 ICE
 10037

 iLo
 11394

 Imperial
 10037

 Indiana
 10037

Inno Hit 11037, 11585

Innova 10037

Insignia 12049, 10171

Integra 11807, 13100, 13500

10017 Inteq Interbuy 10037 Interfunk 10037 Internal 10556 Intervision 10037 Irradio 10037 **IRT** 10698 Isis 12676 Isukai 10037 ITS 10037

ITT 12676, 10208

ITT Nokia 10208 ITV 10037 JCB 10000 Jinfeng 10208

Jinxing 10037, 10556, 10698

JMB 12676, 10556

Jubilee 10556

JVC 11774, 10653, 11601, 12271, 11428, 10508,

10650, 12676

# Television (K to N)

Kaisui 10037 Karcher 10714 Kathrein 10556

Kendo 11037, 11585, 12676, 10037

 Kennex
 11037

 Kioto
 10556

 Kiton
 10037

 KLL
 10037

Kneissel 10037, 10556

Kolin 10150, 10037, 11150, 11755

Kolster 10037

Konka 10037, 10714

Konnig 10037 Korpel 10037 Kosmos 10037 Kunlun10208Kupperbusch12676L&S Electronic10714Lavis11037Lecson10037

Lenco 10037, 11037

Leyco 10037

LG 11840, 11860, 11423, 12731, 12182, 12358,

12362, 10178, 12424, 10037, 10714, 10017,

10556, 10698

LiesenKotter 10037

Lifetec 10037, 11037, 10714

Linetech 12676

Linsar 12676, 11667, 11585

Local India Brand 10208 Local Malaysia 10698

**Brand** 

Lodos 11037 Loewe 10633

Logik 11037, 10698, 11585

 Luma
 11037

 Lumatron
 10037

 Lumenio
 10037

 Lux May
 10037

Luxor 11037, 12676, 10208

LXI 10178 Madison 10037

Magnavox 12372, 11454, 11506, 10171, 11365, 11755,

11867

Magnum 10714, 10037

Manesth 10037

Manhattan 10037, 11037 Marantz 10037, 10556 Mark 10037, 10714

Mastro 10698 Masuda 10037

Matsui 10037, 10195, 10208, 11037, 10714, 10556,

11667, 12676

Matsushita 10650 Maxent 11755 Maxess 12493 Meck 10698

Mediator 10037, 10556

Medion 10714, 10037, 11037, 12676, 11667, 10556,

10698, 11585

Megatron 10178 MEI 11037

Melectronic 10037, 10195, 10714 Memorex 10178, 10150, 11037

Mercury 10037 Mermaid 10037 Metronic 10625

Metz 11037, 10195 MGA 10150, 10178

Micromaxx 10037, 10714, 11037

Midland 10017

Mikomi 11585, 11667

Minato 10037
Minerva 10195
Ministry Of Sound 11667
Minoka 10037

Mitsubishi 10150, 11250, 12313, 10178, 10037, 10556,

11150, 11037, 11171

 Moree
 10037

 Morgan's
 10037

 Moserbaer
 11585

 MTlogic
 10714

 Mudan
 10208

Multitec 11037, 10037

Multitech 10037 Myryad 10556

NAD 10037, 10178

Naiko 10037 Nakimura 10037

National 10208, 10508

NEC 12461, 10178, 10508, 10653, 11150

Neckermann 10037, 10556

NEI 10037, 11037

Neoka 11826

Netsat 10037 NetTV 11755

Neufunk 10556, 10714, 10037

Nevir 12676 New Sonic 11826

New Tech 10037, 10556 Newave 10178, 11150

 Nikkai
 10037

 Nikkei
 10714

 Nikko
 10178

 Nokia
 10208

 Norcent
 11365

Nordmende 10195, 11585, 10037, 10714, 11667

Normerel 10037 Novatronic 10037 Novita 11585 NPG 13434

### Television (O to S)

Oceanic 10208 OK Line 11037

OK. 13434, 12676

Okano 10037

OKI 11667, 12676, 13434, 11585

Omni 10698 Onei 11667

Onida 10653, 12414

Onimax 10714 Onix 10698

Onkyo 11807, 13100, 13500

Onn 11667

Opera 10037, 10714

 Optimus
 10650

 Orava
 11037

 Orbit
 10037

Orion 10037, 10556, 10714, 11037, 12676

Orline 10037 Ormond 11037

Osaki 10037, 10556

Osio 10037 Osume 10037

Otto Versand 10037, 10556, 10195
Pacific 10714, 11037, 10556
Palladium 10037, 10714, 10556
Palsonic 12461, 10698, 10037

Panama 10037

Panasonic 11636, 11291, 11480, 11650, 10650, 13825,

12170, 10037, 10208, 10508

Panavideo 13825 Panavision 10037

Panda 10208, 10508, 10698

Penney 10178 Perdio 10037 Perfekt 10037

Philco 13426, 12414, 10037, 10178

Philips 10037, 12800, 10556, 11887, 11867, 11506,

12372, 12680, 11454, 10171, 11365, 10017,

10000, 10178, 11394

Phocus 10714 Phoenix 10037

Phonola 10037, 10556

Pioneer 11457, 10037, 10698, 11636, 12171

PJ 11506 Plantron 10037

Playsonic 10714, 10037 Polaroid 12676, 11826 Powerpoint 10037, 10698

Prima 12461 Prinston 11037

Pro Vision 10037, 10556, 10714

Profitronic 10037

Proline 10625, 10037, 11037, 12676

Proscan 11447

Prosonic 10714, 12676, 10037, 11585, 11667

Protech 10037, 11037

Proton 10178 Pulsar 10017

Pye 10037, 10556

Qingdao 10208 Quadro 11667

Quasar 11291, 10650

Quelle 10037, 11037, 10195

R-Line 10037

Radiola 10037, 10556

Radiomarelli 10037

RadioShack 10037, 10178 Radiotone 10037, 11037

RCA 11447, 12746, 10625, 12434, 12932, 12187,

10000, 10178, 10618, 11454, 13426

Realistic 10178
Recor 10037
Rectiligne 10037
Red Star 10037

Reflex 10037, 11037

Relisys 11585 Relon 11826

Remotec 10037, 10171

Reoc 10714 Revox 10037 RFT 10037

Roadstar 11037, 10037, 10714

Rowa 10698, 10037

Runco 10017

Saba 10625, 10714, 12676

Sagem 10618

Saivod 11037, 10037

Salora 10208

Sampo 11755, 10171, 10178, 10650

Samsung 12051, 11632, 10618, 10037, 10556, 10178,

10208, 11150

Sansui 10037, 10714

Sanyo 10208, 11142, 11585, 12676, 12461, 11974,

12769, 10508, 11037, 11150, 11365, 11667

SBR 10037, 10556

Schaub Lorenz 10714, 12676, 11667

Schneider 10037, 10556, 10714, 11037, 11585, 12676

Schontech 11037

Scotch 10178 Scott 10178

Sears 10171, 10178

Seelver 11037

SEG 11037, 10037, 13434

SEI 10037
Sei-Sinudyne 10037
Semp Toshiba 13793
Sencor 10714
Senzu 12493
Serie Dorada 10178

Sharp 11659, 12360, 10818, 11393, 12676, 10650,

11165, 11423

10208

Sheng Chia 11150 Shintoshi 10037

Shanghai

Shivaki 10178, 10037

Siam 10037

Siemens 10195, 10037 Siera 10556, 10037

Silva 10037 Silva Schneider 10037

SilverCrest 12676, 11037

Sinudyne 10037 SKY 10037

Skyworth 12769, 10037, 10698

Solavox 10037 Soniko 10037 Soniq 12493 Sonitron 10208 Sonneclair 10037 Sonoko 10037 Sonolor 10208 Sontec 10037

Sony 12778, 11825, 10810, 10000, 11651, 11505,

11167

Soundesign 10178

Soundwave 10037, 11037 Sowa 10178, 11150 Soyea 10698 Soyo 11826 Squareview 10171

SR Standard 10037, 11037

Starlite 10037 STI 13793 Strato 10037 Sunny 10037 Sunstar 10037 Sunstech 12676 Sunwood 10037 Supersonic 10208

SuperTech 10037, 10556

 Supra
 10178

 Supreme
 10000

 Svasa
 10208

Sylvania 10171, 11864, 11394

Symphonic 10171, 11394

Synco 11755, 10000, 10178, 11826

Sysline 10037

# Television (T to Z)

Tacico 10178, 11150

Tai Yi 11150 Talent 10178

Tashiko 10650, 11150 Tatung 10037, 11150

TCL 12434, 13183, 13426, 12414, 10698

TCM 10714

Teac 10037, 11037, 10698, 10714, 11755, 10171,

10178

Tec 10037

Tech Line 10037, 11585

Technica 11037

Technics 10556, 10650 Technika 11667, 12676

TechniSat 10556
Technisson 10714
Techno 11585

Technosonic 10556, 10625

Techwood 11667, 11037, 12676

Tecnimagen 10556

Teco 10178, 10653

Tedelex 10208
Teknika 10150
TELE System 11585
Telecor 10037

Telefunken 10625, 12676, 12414, 10698, 11585, 10037,

10714, 11667

Telefusion 10037
Telegazi 10037
Telemeister 10037
Telesonic 10037

Telestar 10037, 10556 Teletech 10037, 11037

Teleview 10037 Tennessee 10037

Tensai 10037, 11037

Terris 11667

Tesla 11037, 10037, 10556, 10714

Tevion 10714, 11037, 10037, 10556, 11585, 11667

Thomson 10625, 11447, 10037

Thorn 10037 TMK 10178 TNCi 10017

Tokai 10037, 11037

Tokaido 11037 Topline 11037

Toshiba 11508, 11524, 11656, 12676, 10508, 13570,

10650, 11037, 10195, 10618, 11150, 11169

TRANS-continents 10037, 10556, 11037

Transonic 10037, 10698

Triad 10556

Triumph 10037, 10556

TVTEXT 95 10556 Uher 10037 Ultravox 10037

Unic Line 10037

Uniden 12122, 12676, 11667

United 10714, 11037, 10037, 10556

Universal 10037, 10714

Universum 10037, 11037, 10195, 10618

Univox 10037 V7 Videoseven 11755

Vestel 11037, 10037, 11585, 11667

Vexa 10037

Victor 11428, 10650, 10653

Videocon 10508, 10037

VideoSystem 10037 Vidtech 10178

Viewsonic 11755, 12049, 11365

Vision 11826, 10037

VIZIO 11758, 13758, 12209

Vortec 10037

Voxson 10037, 10178, 11667

VU 11365

Walker 12676, 11667, 11585

Waltham 10037, 11037

Wards 10017, 10000, 10178 Watson 11037, 10037, 10714

Wega 10037 Welltech 10714 Weltstar 11037

Westinghouse 11712, 11826, 11755, 12397

Westwood 11585

Wharfedale 11667, 10037, 10556

White 10037

Westinghouse

 Wilson
 10556

 Windsor
 11037

 Windy Sam
 10556

 Wintel
 10714

 Wyse
 11365

 Xiahua
 10698

 Xiron
 11037

XLogic 10698

Xoceco 10037, 12461

Xrypton 10037

Yamaha 11576, 10650

 Yamishi
 10037

 Yokan
 10037

 Yoko
 10037

 YU-MA-TU
 10037

Zenith 10017, 10178, 11423, 12731, 11365, 12358,

12362

Zepto 11585 Zonda 10698

#### TV DVD Combination

Akai 12676, 32966 Alba 12676, 32966 Black Diamond 11037, 30713 Blue Sky 11037, 30713

Bush 12676, 10698, 11037, 30713, 32966

Centrum 11037, 30713 Crown 11037, 30713 Dual 11037, 30713

Dynex 12049

Elfunk 11037, 30713

Emerson 11864, 11394, 30675

Ferguson 11037, 30713 Funai 11394, 30675

Goodmans 11037, 12676, 30713, 32966

Grandin 30713 Grundig 30539

Hitachi 12676, 11037, 30713, 32966

Insignia 12049

JVC 12271, 11774

LG 11423

Linsar 12676, 32966 Logik 11037, 30713 Luxor 11037, 30713

Magnavox 12372

Matsui 11037, 12676, 30713

Medion 12676, 32966

Mitsubishi 34004

OK. 13434

OKI 12676, 32966 Orava 11037, 30713

Panasonic 12170

Philips 10556, 11454, 11394, 12372, 30539

Polaroid 12676, 32966

Powerpoint 10698

Prosonic 12676, 32966

RCA 12187, 12746, 12932, 11447

Samsung 12051 Sanyo 12676

SEG 11037, 30713

Sharp 10818, 12360, 12676, 32966

Soniq 12493 Sony 12778

Sylvania 11864, 11394, 10171, 30675, 30630

Teac 10698

Technica 11037, 30713

Telefunken 10698

Teletech 11037, 30713 Thomson 10625, 30551

Toshiba 11524, 12676, 32966

United 11037, 30713

Universum 30713 Vestel 11037 Viewsonic 12049

Weltstar 11037, 30713

Westinghouse 11712

Xiron 11037, 30713

#### DVD

3D LAB 30539 Accurian 30675

Acoustic Solutions 30730, 30713

AEG 30675, 30770, 31233

Aiwa 30533

Akai 32966, 31233, 30675, 30770

Akura 31233

Alba 32966, 30713, 30730, 30539

Amitech 30770

Amstrad 30713, 30770, 32139

AMW 30872 Ansonic 30831

Aristona 30539, 30646

ASDA 32213 Audix 30713 Autovox 30713

Awa 30730, 30872

Axion 30730 **Basic Line** 30713 Bel Canto Design 31571 Belson 32139 **Best Buy** 32139 **Black Diamond** 30713 Blu:sens 31233 Blue Parade 30571 Blue Sky 30713 Brainwave 30770

Brandt 30551, 30503

Bush 30713, 30730, 30831, 32966

 Byd:sign
 30872

 CCE
 30730

 Celcus
 32966

Centrum 30713, 30675

Changhong 30627
Cinea 30831
Cineral 30730

Cinetec 30713, 30872

Classic 30730

Clatronic 30675, 31233

 Clayton
 30713

 Coby
 30730

 Codex
 31233

Continental Edison 30831, 30872

Craig 30831

Crown 30713, 30770

Cybercom 30831

Daenyx 30872

Daewoo 30770, 30872

Dansai 30770

Dantax 30713, 30539, 32966

 Datsun
 31233

 Daytek
 30872

 Dayton Audio
 30872

 DCE
 30831

 Decca
 30770

Denon 31634, 32258, 32748, 30490, 33851

Dewo 31634

Digihome 30713, 32966

DigiLogic 30713 DiK 30831

Disney 30675, 30831

 DK Digital
 30831

 Dragon
 30831

 DSE
 30675

Dual 30831, 30713, 30730, 32966

Durabrand 30675, 30713, 30831

Dynex 32596

E:max 30770, 31233

 ECC
 30730

 Elfunk
 30713

 Elin
 30770

 Elite
 32854

Elta 30770, 31233

Eltax 31233

Emerson 30675, 32213 EuroLine 30675, 31233 Ferguson 30713, 32966

Finlux 32966, 30770, 30741

 Firstline
 30713

 Funai
 30675

 G-Hanz
 32213

 G-HanzS
 32213

 GE
 30522

 GFM
 30675

Go Video 31044, 30741

GoldStar 30741

Goodmans 30713, 30730, 32966

GPX 30741 Gran Prix 30831

Grandin 30713, 31233

Grundig 30539, 30551, 30713, 32966

Grunkel 30770, 30831

GVG 30770

H & B 30713, 31233

 Hanseatic
 30741

 Harman/Kardon
 30582

 HE
 30730

 Hello Kitty
 30831

 Henss
 30713

Hitachi 32966, 30573, 30713, 31664

Hoher 30713, 30831 Home Electronics 30730, 30770

 Humax
 30646

 HYD
 31233

 Hyundai
 32966

 Inno Hit
 30713

Insignia 32596, 30675, 30741

Integra 32147, 30627, 31769, 30503, 31612, 30571,

31634

Irradio 31233, 30646

JDB 30730 JMB 32966

JVC 30623, 31602, 30503, 30539, 32966

Kansas 31233

Technologies

Kendo 30713, 30831 Kennex 30713, 30770

 Kenwood
 30490

 Kiiro
 30770

 Kupperbusch
 32966

 Leiker
 30872

Lenco 30713, 30770

Lexicon 32545

LG 30741, 31602, 31233

 Lifetec
 30831

 Linetech
 32966

 Linsar
 32966

 Lodos
 30713

Loewe 30741, 30539

Logik 30713

Lumatron 30713, 30741

Lunatron 30741 Luxman 30573

Luxor 30713, 32966

Magnavox 30675, 30503, 30646, 30539, 31354, 30713

Manhattan 30713

Marantz 30539, 32414, 33444

Mark 30713 Marquant 30770

Matsui 30713, 32966 Maxim 30713, 30872

MBO 30730 MDS 30713 Mecotek 30770

Medion 30831, 32966, 30741, 30630

 Memorex
 30831, 32213

 Metz
 30713, 30571

 Micromedia
 30503, 30539

Micromega 30539

Microsoft 31708, 32083, 30522

Microstar 30831 Minax 30713 Minoka 30770

Mitsubishi 34004, 30713

 Mizuda
 30770

 Mustek
 30730

 Mystral
 30831

 NAD
 30741

 Naiko
 30770

NEC 30741, 31602 Nevir 30831, 30770

Nisato 31233

| Noblex    | 31233 |
|-----------|-------|
| Norcent   | 30872 |
| Nordmende | 30831 |
| OK.       | 32966 |
| OKI       | 32966 |

Onkyo 30627, 32147, 31612, 31769, 30503, 30571,

31634

Oppo 32545, 30575

Orava 30713 Orbit 30872

Orion 30713, 31233

Ormond 30713

Pacific 30831, 30713

Packard Bell 30831 Palladium 30713

Panasonic 30490, 31579, 31641, 32710, 33641, 33862,

32523

Philco 30675

Philips 32056, 30539, 31354, 32789, 32434, 30646,

31340, 30503, 30675, 32084

Pioneer 31571, 30631, 30571, 32442, 32854, 30142

Polaroid 32966 Polk Audio 30539 Portland 30770 Powerpoint 30872 Presidian 30675 Prinz 30831 Prism 30831 **Pro Vision** 30730 **Proline** 32966 Proscan 30522

Prosonic 32966

Pye 30539, 30646

Radionette 30741

Proson

Radiotone 30713

RCA 30522, 32213, 30571, 31769

30713

REC 30490 Red 32213 Red Star 30770 Richmond 31233

Roadstar 30713, 30730

 Ronin
 30872

 Rotel
 30623

 Rowa
 30872

 Saba
 30551

 Saivod
 30831

 Salora
 30741

Samsung 30199, 30573, 33195, 31635, 32369, 32489,

32329, 30490, 31044

Sanyo 32966, 30713, 31233

ScanMagic 30730 Schaub Lorenz 30770

Schneider 30539, 30831, 30646, 30713

Schontech 30713 Scott 31233

SEG 30713, 30872

Semp 30503 Semp Toshiba 30503

Sharp 30630, 32250, 30713, 32966, 30675

Sherwood 30741, 30770

Shinsonic 30533 Sigmatek 32139

Silva Schneider 30831, 30741 Skantic 30713, 30539

Skymaster 30730
SM Electronic 30730
Smart 30713
Sonashi 30831
Soniq 30831

Sony 31633, 31516, 30533, 31033, 31070, 30864,

32861, 31536, 32180

 Sound Color
 31233

 Soundwave
 30713

 Spectra
 30872

 SR Standard
 30831

 Strong
 30713

 Sunkai
 30770

Sunstech 30831, 32139, 32966

Supratech 32139

Sylvania 30675, 30630

 Symphonic
 30675

 Sytech
 30831

 Tandberg
 30713

 Targa
 30741

 Tascam
 31818

 Tatung
 30770

TBoston 32139
Tchibo 30741

TCM 30741

Teac 30571, 30675, 30741, 31818, 32139, 34004

Technica 30713 Technics 30490

Technika 30770, 30831

Technosonic 30730

Techwood 30713, 32966 Telefunken 30551, 32966

Teletech 30713
Tensai 30770
Theta Digital 30571

Thomson 30551, 30522, 30831

Tokai 31233

Toshiba 30503, 32705, 32277, 31769, 33157, 32966,

32551

TRANS-continents 30831, 30872, 31233

 Transonic
 30730

 Trevi
 30831

 TVE
 30713

United 30713, 30675, 30730, 31233

Universum 30713, 30741

Urban Concepts 30503
Venturer 31769
Vestel 30713
VIZIO 32563

Voxson 30831, 30730 Waitec 30730, 31233

Walker 32966

Waltham 30713
Welkin 30831
Wellington 30713
Weltstar 30713
Wharfedale 30713

Wilson 31233, 30831

 Windsor
 30713

 Windy Sam
 30573

 Woxter
 32139

 X-View
 31233

Xbox 31708, 32083, 30522

Xiron 30713 XMS 30770

Yamada 30872, 32139

Yamaha 30539, 30817, 30490, 32298, 31354, 30646

Yamakawa 30872 Yukai 30730

Zenith 30741, 30503

## ■ Blu-ray Disc

Denon 32258, 32748, 33851

Elite 32854 Funai 30675

Insignia 32596, 30675

Integra 32147, 32900, 32910, 33100, 33101, 33500,

33501

Lexicon 32545

LG 31602, 30741

Magnavox 30675

Marantz 32414, 33444

Mitsubishi 34004

Onkyo 32147, 32900, 33101, 33501, 32910, 33100,

33500

Oppo 32545

Panasonic 31641, 33641, 33862, 32523, 32710

Philips 32789, 32434, 32084 Pioneer 32442, 32854, 30142

Samsung 30199, 33195

Sharp 32250

Sony 31516, 32180

Sylvania 30675

Tascam 31818, 34004

Toshiba 32705, 33157, 32551

VIZIO 32563 Yamaha 32298

#### **DVD-R**

Accurian 30675 Aristona 30646 Denon 30490 Emerson 30675 Funai 30675 Go Video 30741 **GPX** 30741 Hitachi 31664 Humax 30646 Irradio 30646 LG 30741 Loewe 30741

Magnavox 30675, 30646

Medion 30741

Panasonic 30490, 31579, 32710, 32523

Philips 30646, 31340

 Pioneer
 30631

 Pye
 30646

 RCA
 30522

Samsung 31635, 30490, 32489

Schneider 30646

Sharp 30630, 30675

Sony 32861, 31070, 31516, 31033, 31536, 32180,

31633

 Sylvania
 30675

 Targa
 30741

 Thomson
 30551

Toshiba 32277, 32551

Yamaha 30646 Zenith 30741

#### **VCR**

| DirecTV    | 20739 |
|------------|-------|
| Humax      | 20739 |
| Panasonic  | 20616 |
| Philips    | 20739 |
| RCN        | 20739 |
| ReplayTV   | 20616 |
| Sonic Blue | 20616 |
| Sony       | 20636 |

TiVo 20739, 20636

### Cable Set Top Box (A to E)

3 Rivers Telephone 01376

Cooperative

Accelplus 01376, 01877, 01982 Access Cable 01376, 01877, 01982

Television

Access 01376, 01877

Communications

Ace 02586

Communications

ACTV Cablevision 01376, 01877, 01982

Adams Cable TV 01376

ADB 02586, 01920, 01481, 01998, 02437, 03028

Advanced 01376, 01877, 01982

Broadband

Advanced 01376, 01877, 01982

Telemedia

Airwave Networks 01376, 01982

Akado 02043 Alabama Broadband 01376 Alcom 02437

Algona Municipal 01376, 01877, 01982

**Utilities** 

All West 01376

Communications

Alleghany 01376, 01877, 01982

Cablevision

Allegiance 01376

Communications

| Alliance                   | 01376  |
|----------------------------|--|
| Communications             | 04070 04077 04000  |
| Allied Telesis             | 01376, 01877, 01982                                      |
| Almega Cable               | 01376, 01877, 01982                                      |
| Alpine Cable               | 01376, 01877, 01982                                      |
| Alta Utilities             | 01877  |
| Altibase                   | 01376, 01877, 01982                                      |
| Altibox                    | 02437  |
| Altitude<br>Communications | 01376  |
| Americable                 | 01877  |
| International              | 01077  |
| American                   | 01376, 01877, 01982                                      |
| Broadband                  | ,  |
| American                   | 01376, 01877, 01982                                      |
| Entertainment              |  |
| Network                    | 04070 04077 04000  |
| American                   | 01376, 01877, 01982                                      |
| Telecasting                | 01376 01877 01082  |
| Amherst Telephone Amino    | 01376, 01877, 01982<br>01615, 01481, 01898, 01998, 03028 |
| Anne Arundel               | 01376  |
| Broadband                  | 01370  |
| Antietam Cable             | 01376, 01877, 01982                                      |
| Arc One                    | 01376, 01877, 01982                                      |
| Arctic Cooperatives        | 01376, 01877, 01982                                      |
| Argent                     | 01376, 01877, 01982                                      |
| Communications             |  |
| Arialink Broadband         | 01376, 01877, 01982                                      |
| Arkwest                    | 01481, 01998, 03028                                      |
| Arledge Electronics        | 01376  |
| Armstrong                  | 01376, 01877   |
| Arris                      | 02187  |
| Arvig                      | 01376, 01982, 01998, 02345                               |
| Communication              |  |
| Systems                    |  |
| Ashland Home Net           | 01376, 01877, 01982                                      |
| Askivision Systems         | 01376, 01877, 01982                                      |
| Astound Broadband          | 01376, 01877   |
| AT&T                       | 00858  |

| ATC<br>Communications      | 01376                      |
|----------------------------|----------------------------|
| Atlantic Broadband         | 01877, 01376               |
| ATMC                       | 01376, 01982, 01998, 03028 |
| Atwood Cable               | 01376, 01877, 01982        |
|                            |                            |
| Aurora Cable TV            | 01376, 01877, 01982        |
| Ayrshire Communications    | 01376, 01877, 01982        |
| B & C Cablevision          | 01376, 01877, 01982        |
| B & L Technologies         | 01376, 01877, 01982        |
| Bailey Cable TV            | 01376, 01877, 01982        |
| Baja Broadband             | 01376, 01077, 01902        |
| Baldwin County             | 01376, 01877, 01982        |
| Internet                   | 01370, 01077, 01902        |
| Baldwin Telecom            | 01877                      |
| Ballard Rural              | 02586                      |
| Telephone                  |                            |
| Cooperative                |                            |
| Barbourville Utility       | 01376, 01877, 01982        |
| Commission                 |                            |
| Bardstown Cable            | 01376, 01877, 01982        |
| Bascom                     | 01376, 01877, 01982        |
| Communications             | 0.40=0.040== 0.4000        |
| Base Cablevision           | 01376, 01877, 01982        |
| Bay Cablevision            | 01376, 01877, 01982        |
| Bay City                   | 01376, 01877, 01982        |
| Cablevision                | 04070 04077 04000          |
| Bay Country Communications | 01376, 01877, 01982        |
| Bay Creek                  | 01376                      |
| Communications             | 01070                      |
| Bayland                    | 02586                      |
| Communications             |                            |
| Bayou Cable                | 01376, 01877, 01982        |
| Beamspeed                  | 01376, 01877, 01982        |
| Beaver Creek               | 01877, 01982               |
| Telephone                  |                            |
| Beaver Valley Cable        | 01376, 01877, 01982        |
| Beck's Cable               | 01376, 01877, 01982        |
| Systems                    |                            |
| Bee Line Cable             | 01376                      |

| Beeline                        | 03028               |
|--------------------------------|---------------------|
| BELD Broadband                 | 01376, 01877, 01982 |
| Belgacom TV                    | 02132               |
| Belhaven Cable TV              | 01376, 01877, 01982 |
| Bell                           | 01998               |
| Bell Aliant                    | 01998               |
| Bell Fibe TV                   | 01998               |
| Bellaire Cable                 | 01376, 01877, 01982 |
| Bellevue Cable                 | 01376, 01877, 01982 |
| Bend Broadband                 | 01376, 02187        |
| Bentleyville Cable             | 01376, 01877, 01982 |
| Benton Cooperative Telephone   | 01376, 01877, 01982 |
| Beresford<br>Cablevision       | 01376, 01877, 01982 |
| Berkshire Cable<br>Corp        | 01376, 01877, 01982 |
| Beulah Cable TV                | 01376, 01877, 01982 |
| Bevcomm                        | 01615, 01898        |
| Beyond                         | 01376, 01877, 01982 |
| Communications                 |                     |
| Big Sandy                      | 01376, 01877, 01982 |
| Broadband                      |                     |
| Biltmore                       | 01877, 01982        |
| Communications  Plakely Cable  | 01276 01077 01002   |
| Blakely Cable<br>Television    | 01376, 01877, 01982 |
| Bledsoe Telephone Cooperative  | 01481, 01998, 03028 |
| Bloomingdale<br>Communications | 01481, 01998, 03028 |
| Blue Mountain TV               | 01376, 01877, 01982 |
| Cable                          | 04077               |
| Blue Ridge<br>Communications   | 01877               |
| Blue Sky Cable                 | 01376, 01877, 01982 |
| Blue Valley                    | 01898               |
| Telecommunications             | 0.1000              |
| Bobcaygeon Cable               | 01376, 01877, 01982 |
| Booher Brothers<br>Cable       | 01376, 01877, 01982 |

| Bouygues Telecom             | 03007               |
|------------------------------|---------------------|
| Bowen Cablevision            | 01376, 01877, 01982 |
| <b>Boycom Cablevision</b>    | 01376               |
| Branch Cable                 | 01376, 01877, 01982 |
| Brandenburg                  | 01481, 01998, 03028 |
| Telecom                      |                     |
| Brandywine Cablevision       | 01376, 01877, 01982 |
| Bresnan                      | 01376, 01877        |
| Briand et Moreau<br>Cable    | 01376, 01877, 01982 |
| Bright Green                 | 01376, 01877, 01982 |
| Communications               |                     |
| Bright House                 | 01877, 01376        |
| Bristol Tennessee            | 01877, 01998        |
| Essential Services           |                     |
| Bristol Virginia             | 01376, 01877, 01982 |
| Utilities                    | 04070 04077 04000   |
| British American             | 01376, 01877, 01982 |
| Broadstar<br>Communications  | 01376, 01877, 01982 |
|                              | 01376               |
| Broadstripe<br>Brockway      | 01376, 01877, 01982 |
| Television                   | 01370, 01077, 01902 |
| Broken Bow Cable             | 01376, 01877, 01982 |
| TV                           |                     |
| Brooks Bay Cable             | 01376, 01877, 01982 |
| Brownwood TV                 | 01376, 01877, 01982 |
| Cable Service                |                     |
| Bryan Municipal<br>Utilities | 01376, 01877, 01982 |
| BT                           | 02294               |
| BTC Broadband                | 02586               |
| Buckeye Cable                | 01877, 01376, 02187 |
| System                       |                     |
| Bulldog Cable                | 01376, 01877, 01982 |
| Bulloch Telephone            | 01376, 01877, 01982 |
| Cooperative                  |                     |
| Burlington Telecom           | 01481, 01615        |
| Butler Bremer                | 01898               |
| Mutual Telephone             |                     |

| D 0 11 TV                     | 0.40=0.040== 0.4000 |
|-------------------------------|---------------------|
| Byron Cable TV                | 01376, 01877, 01982 |
| C & W Cable                   | 01376, 01877, 01982 |
| C.L. Davis Cable<br>Services  | 01376, 01877, 01982 |
| Cable &                       | 01376               |
| Communications                | 01070               |
| Cable America                 | 01376, 01877        |
| Cable Axion Digitel           | 01376               |
| Cable                         | 01376, 01877, 01982 |
| Communications of             |                     |
| Willsboro                     |                     |
| Cable Cooperative             | 01376, 01877, 01982 |
| Cable Development Corporation | 01376, 01877, 01982 |
| Cable Management Assocication | 01376, 01877, 01982 |
| Cable Montana                 | 01376, 01877, 01982 |
| Cable Nebraska                | 01376, 01877, 01982 |
| Cable Of The                  | 01376, 01877, 01982 |
| Carolinas                     |                     |
| Cable One                     | 01376, 01877        |
| Cable Plus                    | 01376, 01877, 01982 |
| Cable Suite                   | 01376               |
| Cable Tech Cable TV           | 01376, 01877, 01982 |
| Cable TV of                   | 01376               |
| Camrose                       |                     |
| Cable TV of East<br>Alabama   | 01376, 01877, 01982 |
| Cable TV of Slave<br>Lake     | 01376, 01877, 01982 |
| Cable TV of St. Paul          | 01376, 01877, 01982 |
| Cable Vision                  | 01877               |
| Services                      |                     |
| Cablecom                      | 01582               |
| Cablecom Mexico               | 01376               |
| Cablemas                      | 01376, 01877        |
| Cablenet                      | 01376, 01877, 01982 |
| CableSouth Media              | 01376, 01877, 01982 |
| Cableview                     | 01376, 01877, 01982 |
| Communications                |                     |

| Cablevision                     | 01877, 01376         |
|---------------------------------|----------------------|
| Cablevision du Nord             | 01376                |
|                                 |                      |
| Cablevision of<br>Marion County | 01376                |
| Cablevision T.R.P.              | 01376, 01877, 01982  |
| Cabovis                         | 02436                |
| Caiway                          | 02015, 0660          |
| CalNeva Broadband               | 01376, 01877, 01982  |
| CalTel Connections              | 02586                |
| Cameron                         | 01376, 01877, 01982  |
| Communications                  | 01370, 01077, 01902  |
| CAMS Cable                      | 01376, 01877, 01982  |
| Canby Telcom                    | 01481                |
| Cannon Valley                   | 01481, 01998, 03028  |
| Cablevision                     | 0.101, 0.1000, 00020 |
| Caprock TV                      | 01376, 01877, 01982  |
| Carnegie Cable                  | 01376, 01877, 01982  |
| Carolina Mountain               | 01376, 01877, 01982  |
| Cable                           |                      |
| Carr                            | 01376, 01877, 01982  |
| Communications                  |                      |
| Carrell                         | 01376, 01877, 01982  |
| Communications                  | 0.4.0.7.0            |
| CAS Cable                       | 01376                |
| Cascade<br>Communications       | 01376, 01877, 01982  |
|                                 | 01376, 01877, 01982  |
| Casey Cable Caspian Community   | 01376, 01877, 01982  |
| TV                              | 01370, 01077, 01902  |
| Cass Cable                      | 01376                |
| Castle Cable                    | 01376, 01877, 01982  |
| Service                         |                      |
| Catalina Cable                  | 01376, 01877, 01982  |
| Catawba Services                | 01376, 01877, 01982  |
| CBN                             | 01376, 01877, 01982  |
| CBPU Cable                      | 01376, 01877, 01982  |
| CCAP                            | 01877                |
| CDE Lightband                   | 00858, 01615, 02586  |
| Cedar Falls Utilities           | 01376                |
| Celect                          | 01376, 01877, 01982  |

| Communications                 |                     |
|--------------------------------|---------------------|
| Cencom                         | 01376, 01877, 01982 |
| CentraCom                      | 01376, 01877, 01982 |
| Interactive                    |                     |
| Central Texas                  | 01376, 01877, 01982 |
| Communications                 |                     |
| Central Valley Cable           | 01376, 01877, 01982 |
| Centre TV Cable                | 01376, 01877, 01982 |
| Centrovision                   | 01376, 01877, 01982 |
| Century                        | 01376, 01877, 01982 |
| Communications                 |                     |
| Century Telephone              | 01376, 01877, 01982 |
| CenturyLink                    | 01998               |
| CenturyTel                     | 01376, 01877, 01982 |
| TeleVideo                      |                     |
| Chambers Cable                 | 01376               |
| Champion                       | 01376, 01877, 01982 |
| Broadband                      |                     |
| Chaparral                      | 01376, 01877, 01982 |
| Cablevision                    |                     |
| Chariton Valley Communications | 01376, 01877, 01982 |
|                                | 04076 04077 00407   |
| Charter                        | 01376, 01877, 02187 |
| Chatmoss<br>Cablevision        | 01376, 01877, 01982 |
|                                | 01909 01615         |
| Chequamegon<br>Telephone       | 01898, 01615        |
| Cooperative                    |                     |
| Chesnee                        | 01376, 01877, 01982 |
| Communications                 |                     |
| Chester Telephone              | 01376               |
| Chinook                        | 01376, 01877, 01982 |
| Progressive Club               | , ,                 |
| TV                             |                     |
| Chippewa Valley                | 01376, 01877, 01982 |
| Cable                          |                     |
| Choice Cable TV                | 01376, 01877, 01982 |
| Choice                         | 01376, 01877, 01982 |
| Communications                 |                     |
| Choice Television              | 01376, 01877, 01982 |
| ChoiceCable                    | 01376               |
|                                |                     |

| Christy Cablevision CimTel       | 01376, 01877, 01982<br>01376   |
|----------------------------------|--|
| Cincinnati Bell                  | 01877, 01376   |
| Circle Bar Cable<br>Television   | 01376, 01877, 01982  |
| Cisco                            | 01877, 01982, 00858, 02589, 03028, 02132, 02345, 01582, 01883, 02378, 02401, 03265 |
| Citizens Cable                   | 01376  |
| Citizens Cable TV                | 01376  |
| Citizens Cablevision             | 01481  |
| Citizens Mutual<br>Telephone     | 01376, 01877, 01982  |
| Citizens Telecom                 | 01376, 01877, 01982  |
| Citizens Telephone               | 02586  |
| City Cablevision                 | 01376, 01877, 01982  |
| City of Barnesville<br>Cable     | 01376, 01877, 01982  |
| City of Baxter<br>Springs Cable  | 01376, 01877, 01982  |
| City of Hawarden<br>Cable        | 01376, 01877, 01982  |
| City of Norway<br>Cable          | 01376, 01877, 01982  |
| City of Quitman<br>Cable         | 01376, 01877, 01982  |
| City Of Salisaw                  | 01376  |
| City of Sumas TV<br>Cable System | 01376, 01877, 01982  |
| City West                        | 01376  |
| Citycable                        | 03477  |
| Clarence Telephone               | 01376, 01877, 01982  |
| Claro                            | 01376  |
| Clear Creek<br>Communications    | 01376  |
| Clearview Cable                  | 01376, 01877, 01982  |
| Clearview Partners               | 01376, 01877, 01982  |
| Clearview TV Cable               | 01376, 01877, 01982  |
| Clearvision Cable<br>TV          | 01376, 01877, 01982  |
| Click Network                    | 01376  |

| ClickOne                    | 01376, 01877, 01982        |
|-----------------------------|----------------------------|
| Clinton Cable               | 01376, 01877, 01982        |
| CLT                         | 01376, 01877, 01982        |
| Communications              |                            |
| Olyala lia ta ma a t        | 00400                      |
| ClubInternet                | 02132                      |
| CMA<br>Communications       | 01376                      |
| CNS Television              | 01376, 01877, 01982        |
| Coast Cable                 | 01376, 01077, 01902        |
| Communications              | 01370                      |
| Coast Cablevision           | 01376, 01877, 01982        |
| Coast                       | 01376                      |
| Communications              | 0.0.0                      |
| Coastal Link                | 01376                      |
| Coaxial Cable TV            | 01376, 01877, 01982        |
| Cobridge                    | 01376                      |
| Cobridge                    | 01376                      |
| Communications              |                            |
| Cogeco                      | 01376, 01877, 01982        |
| Colane Cable TV             | 01376, 01877, 01982        |
| Colfax Highline             | 01376, 01877, 01982        |
| Cable                       |                            |
| Collinsville Cable          | 01376, 01877, 01982        |
| Colonial Cablevision        | 01376, 01877, 01982        |
| ColtonTel                   | 02378                      |
| Columbia Power              | 01376, 01877               |
| and Water                   |                            |
| Columbus                    | 01376                      |
| Telephone                   | 00660 02015                |
| Com Link                    | 00660, 02015               |
| Com-Link                    | 01376, 01877, 01982        |
| Communication               | 01376, 01982, 01877, 02187 |
| Communication Services      | 01376, 01877, 01982        |
| Communicomm                 | 01376, 01877, 01982        |
| Community Antenna           | 01376, 01877, 01982        |
| Service                     |                            |
| Community Antenna<br>System | 01376, 01877, 01982        |
| Community Cable &           | 01376                      |
|                             |                            |

| Broadband                     |  |
|-------------------------------|--|
| Community Cable Service       | 01376, 01877, 01982                        |
| Community                     | 01376, 01877, 01982                        |
| Communications                |  |
| Community Telecom             | 01376, 01877, 01982                        |
| Community<br>Television       | 01376, 01877                               |
| Compas Cable                  | 01376, 01877, 01982                        |
| Complete                      | 01376, 01877, 01982                        |
| Communication                 |  |
| Services Comserv Ltd          | 01276 01077 01002                          |
| ComSouth                      | 01376, 01877, 01982<br>01376, 01877, 01982 |
| ComSpan                       | 01376, 01877, 01982                        |
| Communications                | 01401, 01090                               |
| Comstar Cable TV              | 01376, 01877, 01982                        |
| Consolidated Cable            | 01376, 01877, 01982                        |
| Consolidated                  | 01376                                      |
| Communications                |  |
| Conuma Cable<br>Systems       | 01376, 01877, 01982                        |
| Conway Corporation            | 01376, 01877, 01982                        |
| Cable TV                      |  |
| Conxxus                       | 01376, 01877, 01982                        |
| Coon Creek                    | 01376                                      |
| Telephone                     |  |
| Coon Rapids                   | 01376, 01877, 01982                        |
| Municipal Utilities           | 04070                                      |
| Coop CSCF                     | 01376                                      |
| Cooperative Television Godahl | 01376, 01877, 01982                        |
| CoopTel                       | 00858, 01615, 01898                        |
| Coosa Cable                   | 01376                                      |
| Copper Mountain               | 01376, 01877, 01982                        |
| Metropolitan                  | 01070, 01077, 01002                        |
| Country Cable                 | 01376, 01877, 01982                        |
| Country Cable TV              | 01376, 01877, 01982                        |
| Country Cablevision           | 01376                                      |
| Country Cablevision           | 01376                                      |
| Ltd.                          |  |

| Cowley Telecable Cox Craig Cable TV Craw-Kan Telephone Cooperative | 01376, 01877, 01982<br>01877, 01376<br>01376, 01877, 01982<br>02586                      |
|--|--|
| Crestview Cable Cross Country TV Crosslake Communications          | 01376, 01877, 01982<br>01376, 01877, 01982<br>01376, 01877, 01982                        |
| Crow Cable TV CRRS-TV CRST Telephone Authority                     | 01376, 01877, 01982<br>01376<br>01481, 01998, 03028                                      |
| Crystal Cable TV CSI Cable CT & R Cable CTC Cunningham             | 01376, 01877, 01982<br>01376, 01877, 01982<br>01376, 01877, 01982<br>01376<br>01376      |
| Telephone & Cable Curtis Cable TV CUTV CWA Cable D & D Cable       | 01376, 01877, 01982<br>01376, 01877, 01982<br>01376, 01877, 01982<br>01376, 01877, 01982 |
| D & P Communications   | 01376  |
| Daeryung Dairyland Cable Systems                                   | 01877<br>01376, 01877, 01982   |
| Dakota Central Telecommunications Dalton Cable                     | 02345<br>01877, 01982  |
| Television Darty Box Davis   | 02436<br>01376, 01877, 01982   |
| Communications Dawson City Television                              | 01376, 01877, 01982  |
| DCA Cablevision  | 01376, 01877, 01982  |

| DDD Cablevision Dean Hill Cable Dean's Cablevision Decca Cable Deffner Cable TV Delhi Telephone | 01376, 01877, 01982<br>01376, 01877, 01982<br>01376, 01877, 01982<br>01376, 01877, 01982<br>01376, 01877, 01982<br>01376, 01877, 01982 |
|---|--|
| Delta   | 02015, 00660   |
| Delta Cable   | 01376  |
| Demopolis CATV  | 01376, 01877, 01982  |
| Denali TV   | 01376, 01877, 01982  |
| Dery Telecom  Deutsche Telekom  | 01376<br>02132   |
|   | 01376, 01877, 01982  |
| Dickey Rural<br>Networks  | 01370, 01077, 01902  |
| Digeo   | 02187  |
| Diode   | 01376, 01877, 01982  |
| Communications  |  |
| Diverse   | 01898, 01982   |
| Communications  | 0.40=0.040== 0.4000  |
| Dixie Cable TV  | 01376, 01877, 01982  |
| Dixon Telephone   | 01376, 01877, 01982  |
| DMS Cable   | 01376, 01877, 01982  |
| Downsville Community Antenna  | 01376, 01877, 01982  |
| Doylestown Cable  | 01376, 01877, 01982  |
| Drummond Cable<br>TV  | 01376, 01877, 01982  |
| DTC   | 01376, 01877, 01982  |
| Du  | 02401  |
| Dumont Telephone  | 01376, 01877, 01982  |
| Duncan Cable TV   | 01376, 01877, 01982  |
| Eagle Broadband   | 01481, 01998, 03028  |
| Eagle Cablevision   | 01376, 01877, 01982  |
| Eagle   | 01376, 02187   |
| Communications  |  |
| Eagle Valley  | 01481, 01998, 03028  |
| Telephone<br>EagleVision  | 01376, 01877, 01982  |
| Wireless TV   | 01370, 01077, 01902  |

Services East Arkansas 01376 Video East Cleveland 01376, 01877, 01982 Cable East Texas Cable 01376, 01877, 01982 Eastern Cable 01376, 01877, 01982 EastLink 01376 **Easton Cable** 01877 EasyTEL 01481, 01998, 03028 Eatel 01877 **Echostar** 03452 **Electron Enterprises** 01376, 01877, 01982 Elk River Cable TV 01376, 01877, 01982 Elkhart TV Cable 01376, 01877, 01982 **Emery Telcom** 01376, 01877, 01982 Video **Emily Coop** 01481, 01615 Telephone Enhanced 01376 **Telecommunications** EnTouch 01376 EPB of Chattanooga 00858 **Escape Broadband** 01376, 01877, 01982 **Eston CATV** 01376, 01877, 01982 Cooperative

ETAN Industries 01376, 01877, 01982

Etex 02586 Execulink 01376

Eyecom 01376, 01877, 01982

# ■ Cable Set Top Box (F to J)

F & B Telephone 02586

FairPoint 01376, 01877, 01982

Communications

Falls Earth Station 01376, 01877, 01982 FamilyView 01376, 01877, 01982

Cablevision

Fannettsburg Cable 01376, 01877, 01982

TV

| Farmer & Merchant                     | 01376, 01877, 01982 |
|---------------------------------------|---------------------|
| Mutual Farmer's Telephone Cooperative | 01998, 03028        |
| Farmers Independent                   | 01376, 01877, 01982 |
| Telephone                             |                     |
| Farmers Mutual                        | 01376, 01877, 01982 |
| Telephone                             |                     |
| Fayetteville Electric System          | 01877               |
| Federated                             | 01376               |
| Telephone                             |                     |
| Fenton Cablevision                    | 01376, 01877, 01982 |
| FiberCast Cable Communications        | 01376, 01877, 01982 |
| FiberNet Monticello                   | 01376, 01877, 01982 |
| Fibrant                               | 01376, 01877, 01982 |
| Fidelity                              | 01376               |
| Communications                        |                     |
| First Cable Of                        | 01376, 01877, 01982 |
| Missouri                              |                     |
| FirstMile                             | 01376, 01877, 01982 |
| Flint Cable TV                        | 01376, 01877, 01982 |
| Florida Cable                         | 01376               |
| Foothills Rural                       | 01877               |
| Telephone<br>Cooperative              |                     |
| Forsyth CableNet                      | 01376, 01877, 01982 |
| Fort Jennings                         | 02586               |
| Communications                        | 02300               |
| Fort Towson Cable                     | 01376, 01877, 01982 |
| Foster                                | 01376, 01877, 01982 |
| Communications                        |                     |
| Frank Howard TV                       | 01376, 01877, 01982 |
| Cable                                 |                     |
| Frankfort Plant                       | 01376               |
| Board Cable                           |                     |
| Freebox                               | 01976               |
| FTC                                   | 01877, 01982, 01376 |
| Full Channel TV                       | 01376, 01877, 01982 |

| Full Choice<br>Communications           | 01376, 01877, 01982 |
|---|---------------------|
| Fusion Broadband                        | 01376, 01877, 01982 |
| Futuristic<br>Cablevision               | 01376, 01877, 01982 |
| Galaxy American<br>Communication        | 01376, 01877, 01982 |
| Galaxy Cable                            | 01376, 01877, 01982 |
| Gardonville<br>Cooperative<br>Telephone | 01998               |
| Gatehouse<br>Networks                   | 01376, 01877, 01982 |
| Gauthier Cablevision & Electric         | 01376, 01877, 01982 |
| GCI                                     | 01877               |
| General                                 | 01376               |
| Communications                          |                     |
| Genext                                  | 01376, 01877, 01982 |
| Geraldine Cable TV                      | 01376, 01877, 01982 |
| Get Real Cable                          | 01376, 01877, 01982 |
| GEUS                                    | 01376, 01877, 01982 |
| Giant<br>Communications                 | 01376, 01877, 01982 |
| Giles-Craig<br>Communications           | 01376, 01877, 01982 |
| Gilmer Cable<br>Television              | 01376, 01877, 01982 |
| Glasgow Electric<br>Plant Board         | 01376, 01877, 01982 |
| Glass Antenna<br>Systems                | 01376, 01877, 01982 |
| Glenwood<br>Telecommunications          | 01376               |
| Glide Cablevision                       | 01376, 01877, 01982 |
| Globalcom                               | 01376, 01877, 01982 |
| Golden Belt<br>Telephone                | 02586               |
| Golden<br>Communications                | 01376, 01877, 01982 |

| Golden Rain<br>Foundation         | 01376, 01877, 01982                        |
|-----------------------------------|--|
| Golden Valley Cable               | 01376, 01877, 01982                        |
| Golden West                       | 01376, 01877, 01982                        |
| Telecommunications                | , ,  |
| Goldfield                         | 01376, 01877, 01982                        |
| Communications                    |  |
| Gorham                            | 01481                                      |
| Communications Gowrie Cablevision | 01276 01077 01002                          |
| Grafton Cable                     | 01376, 01877, 01982<br>01376, 01877, 01982 |
| Communications                    | 01370, 01077, 01902                        |
| Grand River Cable                 | 01376, 01877, 01982                        |
| Grande                            | 01877, 01376                               |
| Communications                    |  |
| Great Plains                      | 01376                                      |
| Communications                    | 04070 04077 04000                          |
| Green Hills Communications        | 01376, 01877, 01982                        |
| Greene County                     | 01376, 01877, 01982                        |
| Cable TV                          | 01070, 01077, 01302                        |
| Greenlight                        | 01376, 01877, 01982                        |
| Community                         |  |
| Broadband                         | 0.40=0.040=                                |
| Gridley Cable                     | 01376, 01877, 01982                        |
| Griswold<br>Cooperative           | 01481, 01998, 03028                        |
| Telephone                         |  |
| Grove Cable                       | 01376, 01877, 01982                        |
| Grundy Center                     | 01376, 01877                               |
| Utilities                         |  |
| GTI                               | 01481, 01998, 03028                        |
| Guadalupe Valley                  | 01877                                      |
| Haefele TV                        | 01376, 01877, 01982                        |
| Haines Cable TV                   | 01376, 01877, 01982                        |
| Hall Beach                        | 01376, 01877, 01982                        |
| Cooperative                       | 01077 01000 01076                          |
| Hamilton County Cable TV          | 01877, 01982, 01376                        |
| Hancel                            | 01376, 01877, 01982                        |
| Hargray                           | 01376, 01877, 01982                        |
| <u> </u>                          | ,  |

| Harlan Community              | 01376               |
|-------------------------------|---------------------|
| TV                            | 01070               |
| Harlan Municipal<br>Utilities | 01376               |
| Harmony Cable TV              | 01376, 01877, 01982 |
| Harris Broadband              | 01376               |
| Harrisonville<br>Telephone    | 02586               |
| Harron Metrocast              | 01376, 01877        |
| Hart Cable                    | 01376, 01877, 01982 |
| Hart Electric                 | 01376, 01877, 01982 |
| Hartelco                      | 01376, 01877, 01982 |
| Hastings Cable<br>Vision      | 01376, 01877, 01982 |
| Hathw@y                       | 02043               |
| Hawaiian Telcom               | 03028               |
| HBC                           | 01376, 01877, 01982 |
| HBL                           | 01376, 01877, 01982 |
| Communications                |                     |
| HCS                           | 01376, 01877, 01982 |
| Healthcare Cable Systems      | 01376, 01877, 01982 |
| Heart of Iowa Communications  | 01376, 01877, 01982 |
| Heartland Cable               | 01376, 01877, 01982 |
| Heartland Wireless            | 01376, 01877, 01982 |
| Communications                | 0.0.0, 0.0, 0.002   |
| Heck's TV & Cable             | 01376, 01877, 01982 |
| Henderson<br>Telephone        | 01376, 01877, 01982 |
| Hermosa                       | 01376, 01877, 01982 |
| Cablevision                   | 04070 04077 04000   |
| Herr Cable                    | 01376, 01877, 01982 |
| HFU Television<br>Hiawatha    | 01376, 01877, 01982 |
| Broadband                     | 01376, 01877, 01982 |
| HickoryTech                   | 01898               |
| High Plains<br>Cablevision    | 01376, 01877, 01982 |
| Highland                      | 01376, 01877, 01982 |

| Hill Top<br>Communications     | 01376, 01877, 01982        |
|--------------------------------|----------------------------|
| Hinton CATV                    | 01376, 01877, 01982        |
| HLM Cable Corp                 | 01376, 01877, 01982        |
| HomeTel                        | 01376                      |
| Hometown Cable                 | 01376, 01877, 01982        |
| Hometown Utilicom              | 01376, 01877, 01982        |
| Hood Canal                     | 01376                      |
| Cablevision                    |                            |
| Hoonah Community Television    | 01376, 01877, 01982        |
| Hooper Telephone               | 01376, 01877, 01982        |
| Horizon Cable TV               | 01376, 02586               |
| Horizon Telecom                | 02586                      |
| Horry Telephone<br>Cooperative | 01376, 01877, 01982        |
| Hospers Telephone              | 01376, 01877, 01982        |
| Hotwire                        | 02586                      |
| Houston Cable                  | 01376, 01877, 01982        |
| Hrvatski Telekom               | 02132                      |
| HTC                            | 01481, 01998, 03028        |
| Communications                 |                            |
| HTC Services                   | 01376, 01877, 01982        |
| Humax                          | 00660, 02620, 02043, 02165 |
| HunTel Systems                 | 01376                      |
| Huxley<br>Communications       | 01376, 01877, 01982        |
| Hydaburg Cable TV              | 01376, 01877, 01982        |
| HYDE County Cablevision        | 01376, 01877, 01982        |
| i-CAN                          | 02437                      |
| I-Speed                        | 01376, 01877, 01982        |
| ICE Cable Holdings             | 01376                      |
| ICS                            | 01376, 01877, 01982        |
| Communications                 |                            |
| Illini Cablevision Of Illinois | 01376, 01877, 01982        |
| lmOn                           | 01877                      |
| Communications                 |                            |
| Indco Cable TV                 | 01376, 01877, 01982        |

| Independence<br>Telecom Utility          | 01376, 01982               |
|--|----------------------------|
| Independent Cable<br>Systems of Idaho    | 01376, 01877, 01982        |
| Indevideo                                | 01376, 01877, 01982        |
| Index Cable TV                           | 01376, 01877, 01982        |
| Innovative Cable TV                      | 01376                      |
| Innovative Systems                       | 01898                      |
| Inotel                                   | 02437                      |
| Inside Connect<br>Cable                  | 01376                      |
| Insight                                  | 01376, 01877               |
| Integra Telecom                          | 02345                      |
| Inter Mountain<br>Cable                  | 01877                      |
| Inter-County Cable                       | 01376, 01877, 01982        |
| Interstate                               | 01481, 01998, 03028        |
| Cablevision                              |                            |
| Intertech Private Cable                  | 01376, 01877, 01982        |
| InviTV                                   | 02437                      |
| Iron River                               | 01376, 01877, 01982        |
| Cooperative TV                           |                            |
| Irvine Community<br>TV                   | 01376, 01877, 01982        |
| ITV-3                                    | 01376, 01877, 01982, 03028 |
| J & L Cable                              | 01376, 01877, 01982        |
| J & N Cable                              | 01376, 01877, 01982        |
| Jack McClanahan<br>Cable TV              | 01376, 01877, 01982        |
| Jackson Energy<br>Authority              | 01376, 01877, 01982        |
| Jaguar<br>Communications                 | 01376, 01877, 01982        |
| James Cable<br>Partners                  | 01376, 01877, 01982        |
| James Valley<br>Cooperative<br>Telephone | 02586                      |
| Jayroc Cablevision                       | 01376, 01877, 01982        |
| Jefferson County                         | 01376, 01877, 01982        |
|  |                            |

| Cable                      |                     |
|----------------------------|---------------------|
| Jefferson Telecom          | 01376, 01877, 01982 |
| Jeffersonville Cable<br>TV | 01376, 01877, 01982 |
| Jet Broadband              | 01376               |
| Johnston County<br>Cable   | 01376, 01877, 01982 |
| Journeyvision Cable        | 01376, 01877, 01982 |
| JP PTT                     | 01615               |
| ■ Cable Set Top Box        | (K to N)            |
| K-Communications           | 01376, 01877, 01982 |
| Kabel Deutschland          | 02165               |
| Kalida Telephone           | 01376, 01877, 01982 |
| Kalona Cooperative         | 02586               |
| Telephone                  | 02000               |
| Kaplan Telephone           | 02586               |
| Karban TV Systems          | 01376, 01877, 01982 |
| KAS Cable TV               | 01376, 01877, 01982 |
| Kaslo Cable                | 01376, 01877, 01982 |
| KBS Cable TV               | 01376               |
| Keene Valley Video         | 01376, 01877, 01982 |
| Kelley                     | 01376, 01877, 01982 |
| Communications             |                     |
| Kennebec                   | 01376, 01877, 01982 |
| Telephone                  | 04070 04077 04000   |
| Kennedy<br>Cablevision     | 01376, 01877, 01982 |
| Kentucky Ridge             | 01376, 01877, 01982 |
| Country                    |                     |
| Communications             | 04070 04077 04000   |
| Keta Cable                 | 01376, 01877, 01982 |

01376, 01877, 01982

01376, 01877, 01982

01376, 01877, 01982

01376

02132

**KFW** 

 $\mathsf{TV}$ 

Kiss

KLiP

Kings Bay

Communications

Kincardine Cable

Communications

| KM Telecom                                | 01481                             |
|---|-----------------------------------|
| Knology                                   | 01877, 01376                      |
| KoolConnect                               | 01481                             |
| Koomiut                                   | 01376, 01877, 01982               |
| Cooperative                               |                                   |
| KPN                                       | 02952, 02437                      |
| Kraus Electronic<br>Systems               | 01376, 01877, 01982               |
| Kudzu Cable TV                            | 01376, 01877, 01982               |
| Kugluktuk<br>Cooperative                  | 01376, 01877, 01982               |
| Kuhn<br>Communications                    | 01376, 01877                      |
| L & J Cable                               | 01376, 01877, 01982               |
| La Harpe<br>Communications                | 01376, 01877, 01982               |
| La Harpe Video and<br>Data Services       | 01376, 01877                      |
| Lafayette Utilities<br>System             | 01376                             |
| Laguna Serrano<br>Cable                   | 01376, 01877, 01982               |
| Lake Cable                                | 01376, 01877, 01982               |
| Lakeland<br>Cablevision                   | 01376, 01481, 01877, 01982, 01998 |
| Lakeland Telecom                          | 01481, 01998, 03028               |
| Lakeview Cable                            | 01376, 01877, 01982               |
| Lamont Digital<br>Systems                 | 01376, 01877, 01982               |
| Lang                                      | 01376, 01877, 01982               |
| Laurel Highland                           | 01376, 01877, 01982, 02187        |
| LB Cable                                  | 01376, 01877, 01982               |
| Lehigh Valley<br>Cooperative<br>Telephone | 01376, 01877, 01982               |
| Lemonweir Valley<br>Telephone             | 01481, 01998, 03028               |
| Lexcom Cable<br>Services                  | 01376, 01877, 01982               |
| Liberty Cablevision                       | 01376                             |
| Liberty                                   | 01481, 02586                      |

| Communications               |                     |
|------------------------------|---------------------|
| Limestone<br>Cablevision     | 01376, 01877, 01982 |
| Lincoln Cable<br>Television  | 01376               |
| Lincolnville                 | 01376               |
| Lindsey                      | 01376, 01877, 01982 |
| Communications               |                     |
| LISCO                        | 01376, 01877, 01982 |
| Litestream Holdings          | 01376, 01877, 01982 |
| LNE Telco                    | 01376, 01877, 01982 |
| Localtel                     | 01376, 01877, 01982 |
| Lockesburg<br>Cablevision    | 01376, 01877        |
| Lodgenet<br>Entertainment    | 01376, 01877, 01982 |
| Lone Pine Cable TV           | 01376, 01877, 01982 |
| Longview                     | 01376, 01877, 01982 |
| Communications               | 0.0.0, 0.0, 0.002   |
| Lonsdale Video<br>Ventures   | 01481, 01998, 03028 |
| Loretel Cablevision          | 01376, 01877, 01982 |
| Loretel Systems              | 01376               |
| Lost Island Cable            | 01376, 01877, 01982 |
| Lumos Networks               | 01998, 03028        |
| Lycom                        | 01376, 01877, 01982 |
| Communications               |                     |
| M-Tek Systems                | 01376, 01877, 01982 |
| M.T.C. Cable                 | 01376, 01877, 01982 |
| Maddock Cable TV             | 01376, 01877, 01982 |
| Madison                      | 01376, 01982        |
| Communications               |                     |
| Madison County Cable         | 01376, 01877, 01982 |
| Magio Sat                    | 02132               |
| Magnet                       | 01615               |
| Mahaska                      | 01376, 01877, 01982 |
| Communications               |                     |
| Mainstreet<br>Communications | 01376, 01877, 01982 |

| Maitland Cable TV            | 01376, 01877, 01982 |
|------------------------------|---------------------|
| Mallard Cable                | 01376, 01877, 01982 |
| Manawa Telecom               | 02586               |
| Manning Municipal            | 01376, 01877, 01982 |
| Utilities                    |                     |
| Manti Telecom                | 01481, 01998, 03028 |
| Marco Island Cable           | 01376, 01877, 01982 |
| Markdale Cable TV            | 01376               |
| Marne & Elk Horn             | 01376, 01877, 01982 |
| Telephone                    |                     |
| Marquette-Adams<br>Telephone | 01376, 01877, 01982 |
| Martelle                     | 01376, 01877, 01982 |
| Communications               | 01070, 01077, 01002 |
| Cooperative                  |                     |
| Mascon Cable                 | 01376               |
| Masset-Haida TV              | 01376, 01877, 01982 |
| Society                      |                     |
| Massillon Cable              | 01376               |
| Matanuska                    | 01481, 02586        |
| Telephone                    |                     |
| Association                  | 04076 04077 04000   |
| Matrix Cablevision           | 01376, 01877, 01982 |
| Mattawamkeag Cablevision     | 01376, 01877, 01982 |
| McDonough                    | 01376, 01877, 01982 |
| Telephone                    | 01070, 01077, 01002 |
| Cooperative                  |                     |
| McKee TV                     | 01376, 01877, 01982 |
| Enterprises                  |                     |
| McNabb Cable                 | 01376, 01877, 01982 |
| MCV Broadband                | 01877               |
| Media One                    | 01376, 01877, 01982 |
| Mediacom                     | 01376, 01877, 01982 |
| Mediapolis                   | 01376, 01982        |
| Telephone                    |                     |
| Mediastream                  | 01376               |
| Megacable                    | 01376               |
| Meo                          | 02401               |
| Merrimac                     | 01376, 01877, 01982 |
| Communications               |                     |

| Metlakatla Indian<br>Community TV | 01376, 01877        |
|-----------------------------------|---------------------|
| MetroCast<br>Cablevision          | 01376, 01982, 01877 |
| MetroNet                          | 01877, 0858         |
| Metropolitan Cable                | 01376, 01877, 01982 |
| MGS Cablevision                   | 01376, 01877, 01982 |
| MHTC                              | 01481, 01998, 03028 |
| Mi-Connection                     | 01877               |
| Microwave Satellite               |                     |
| Technologies                      | 01481, 01998, 03028 |
| •                                 | 01401 01615         |
| Mid Century<br>Telecom            | 01481, 01615        |
| Mid Missouri                      | 01376, 01877, 01982 |
| Broadband & Cable                 | 01370, 01077, 01902 |
| Mid Missouri                      | 01376, 01877, 01982 |
| Telephone                         | 01070, 01077, 01302 |
| Mid-Coast                         | 01376, 01877, 01982 |
| Cablevision                       | 01010, 01011, 01002 |
| Mid-Hudson Cable                  | 01376               |
| Mid-Rivers                        | 01376               |
| Communications                    | 01010               |
| Mid-South                         | 01376, 01877, 01982 |
| Cablevision                       | , ,                 |
| Midamerican Cable                 | 01376, 01877, 01982 |
| Systems                           | ,                   |
| Midcontinent                      | 01376, 01877, 01982 |
| Communications                    |                     |
| Midstate                          | 01376, 01877, 01982 |
| Communications                    |                     |
| Midtel Cable TV                   | 01376, 01877, 01982 |
| Milcom Cable                      | 01376, 01877, 01982 |
| Milford Cable TV                  | 01376, 01877, 01982 |
| Milk River Cable                  | 01376, 01877, 01982 |
| Club                              |                     |
| Millennium Telecom                | 01481, 01998, 03028 |
| Millheim TV                       | 01376, 01877, 01982 |
| Transmission                      |                     |
| Millington CATV                   | 01376, 01877, 01982 |
| Minburn                           | 01481, 01998, 03028 |
| Communications                    |                     |
|                                   |                     |

| Minerva Valley<br>Cable        | 01376, 01877, 01982   |
|--------------------------------|---|
| MINET                          | 01877   |
| MLGC Cable TV                  | 01376, 01877, 01982   |
| MM&G Enterprises MMDS Wireless | 01481, 01998, 03028<br>01376, 01877, 01982                    |
| East                           | 01370, 01077, 01902   |
| Mobius<br>Communications       | 01376, 01877, 01982   |
| Monroe Cablevision             | 01376, 01877, 01982   |
| Monroe Utilities               | 01376, 01877, 01982   |
| Montana Opticom                | 01376, 01877, 01982   |
| Moosehead<br>Enterprises       | 01376, 01877, 01982   |
| Morris Broadband               | 01376   |
| Morristown Utility Systems     | 01877   |
| Mosaic Telecom                 | 01376, 02586  |
| Motorola                       | 01376, 02437, 02378, 01998, 00858, 02952, 01562, 01982, 02401 |
| Moultrie                       | 01376, 01877, 01982   |
| Telecommunications             |   |
| Mountain Shadows Cable TV      | 01376, 01877, 01982   |
| Mountain<br>Telecommunications | 01376, 01877, 01982   |
| Mountain Zone TV               | 01376, 01877, 01982   |
| Movistar                       | 03288   |
| Moxi                           | 02187   |
| Mt. Baker Cable                | 01376, 01877, 01982   |
| MTC                            | 01376, 01877, 01982   |
| MTC Technologies               | 01376, 01982  |
| MTS                            | 01998   |
| Multiband Cable                | 01376, 01877, 01982   |
| Municipality Cable Operator    | 01376, 01877, 01982   |
| Murphy Cable                   | 01376, 01877  |
| Murray Electric<br>System      | 01376, 01877, 01982   |
| Muscatine Power &              | 01376   |

| Water                            |                     |
|----------------------------------|---------------------|
| N.W.                             | 01376, 01877, 01982 |
| Communications                   | 04070 04077 04000   |
| National Cable                   | 01376, 01877, 01982 |
| Naujat Cooperative               | 01376, 01877, 01982 |
| NDTC                             | 01481, 01998, 03028 |
| Nebraska Central<br>Telecom      | 01376, 01877, 01982 |
| NEIT                             | 01376, 01877, 01982 |
| Nelson County Cablevision        | 01376, 01877, 01982 |
| Nelsonville TV<br>Cable          | 01376, 01877, 01982 |
| Nemont<br>Communications         | 01376, 01877        |
| NET                              | 01883               |
| New Century                      | 01376, 01877, 01982 |
| Communication                    |                     |
| New Day<br>Broadband             | 01376, 01877, 01982 |
| New England Cable                | 01376, 01877, 01982 |
| New Jersey<br>Broadband          | 01376, 01877, 01982 |
| New Knoxville Cable Systems      | 01376, 01877, 01982 |
| New North<br>Networks            | 01376, 01877, 01982 |
| New Paris Quality<br>Cablevision | 01376, 01877, 01982 |
| New Visions<br>Communications    | 01376, 01877, 01982 |
| New Windsor Cable<br>TV          | 01376, 01877, 01982 |
| Newcastle<br>Cablevision         | 01376, 01877, 01982 |
| Newpath<br>Communications        | 01877, 01982        |
| NewWave<br>Communications        | 01376, 02187        |
| NexHorizon                       | 01376, 01877, 01982 |
| Communications Nexicom           | 01376 01977 01092   |
| INCXICUIII                       | 01376, 01877, 01982 |

| Communications                |                     |
|-------------------------------|---------------------|
| Nextgen<br>Communications     | 01376, 01877        |
| Niagara Community             | 01376, 01877, 01982 |
| TV Cooperative                | 01010, 01011, 01002 |
| Nimpkish Valley               | 01376, 01877, 01982 |
| Communcations                 | 0.40=0              |
| Nittany Media                 | 01376               |
| Nor-Cal Cable<br>Systems      | 01376, 01877, 01982 |
| Nortex                        | 01376, 01877, 01982 |
| Communications                |                     |
| North American Communications | 01376, 01877, 01982 |
| North Central                 | 02345               |
| Telephone                     | 0_0.0               |
| North Crossroads              | 01376, 01877, 01982 |
| Communications                | 00500               |
| North Dakota<br>Telephone     | 02586               |
| North Star                    | 01376, 01877, 01982 |
| Cablevision                   |                     |
| North State                   | 00858               |
| Communications                | 01276 01077 01002   |
| North Texas<br>Broadband      | 01376, 01877, 01982 |
| North Yellowstone             | 01376, 01877, 01982 |
| Cable TV                      |                     |
| Northern Cable<br>Holdings    | 01376, 01877, 01982 |
| Northern Lakes                | 01376, 01877, 01982 |
| Cable TV                      |                     |
| Northland                     | 01376               |
| Communications                | 04070 04077 04000   |
| Northside TV                  | 01376, 01877, 01982 |
| Northstar<br>Broadband        | 01376, 01982        |
| Northwest                     | 01376, 01877, 01982 |
| Communications                | ·                   |
| Northwest                     | 01877               |
| Community Northwest lowa      | 01877               |
| INOLLIMEST IOMS               | 010//               |

| Telephone Northwest Telephone Cooperative | 01376, 01877, 01982 |
|---|---------------------|
| NorthwesTel                               | 01376               |
| Norvado                                   | 02586               |
| Norwood Light                             | 01376               |
| Broadband                                 |                     |
| Nova Cable                                | 01376, 01877, 01982 |
| Management                                |                     |
| Nova Cablevision                          | 01376, 01877, 01982 |
| Novus                                     | 01376, 01877        |
| NPG Cable                                 | 01376               |
| Nsight                                    | 02345, 02586        |
| NTC Cable Services                        | 01376, 01877, 01982 |
| nTelos                                    | 01998               |
| NTL                                       | 01060               |
| NTS<br>Communications                     | 01376, 01877, 01982 |
| NU Telecom                                | 01998, 03028        |
| NuLink                                    | 01877, 01376, 01982 |
| Numericable                               | 02436               |
| Nushagak                                  | 01376, 01877, 01982 |
| Cooperative                               | 01070, 01077, 01002 |
|   |                     |
| Cable Set Top Box                         | (O to S)            |
| Oak Cable Systems<br>Of Iowa              | 01376, 01877, 01982 |
| Oak Hill Cablevision                      | 01376, 01877, 01982 |
| Oasis                                     | 01376, 01877, 01982 |
| Communications                            |                     |
| Oi TV                                     | 03452, 03454        |
| Omni III Cable TV                         | 01376, 01877, 01982 |
| Oneida Cablevision                        | 01376, 01877, 01982 |
| OneLink                                   | 01376, 01877, 01982 |
| OneSource                                 | 01376               |
| Communications                            |                     |
| Ono                                       | 01562               |

01615

01376, 01877, 01982

Open IPTV

Opp Cablevision

| Optimum                 | 01877                                     |
|-------------------------|---|
| Optimus Clix            | 02437                                     |
| Optus                   | 01060                                     |
| Orange                  | 02407                                     |
| Orbitel                 | 01376                                     |
| Communications          |   |
| Oregon Cable            | 01376, 01877, 01982                       |
| Group                   |   |
| Orion Cablesystems      | 01376, 01877, 01982                       |
| OTEC                    | 02586                                     |
| Communications          |   |
| Our Cable               | 01376, 01877, 01982                       |
| Overton County          | 01376, 01877, 01982                       |
| Cable                   |   |
| Oxford Networks         | 01376, 01877, 01982                       |
| Pace                    | 01877, 01060, 02620, 01982, 01582, 01376, |
|                         | 01883, 02401, 03454                       |
| Packerland              | 01376                                     |
| Broadband               |   |
| Paleajook               | 01376, 01877, 01982                       |
| Cooperative             |   |
| Palmer Mutual           | 01376, 01877, 01982                       |
| Telephone               |   |
| Palmetto Rural          | 00858                                     |
| Telephone               |   |
| Cooperative             |   |
| Panasonic               | 01982                                     |
| Pangnirtung             | 01376, 01877, 01982                       |
| Cooperative             |   |
| Panhandle               | 01376                                     |
| Telephone               | 04.404                                    |
| Panora                  | 01481                                     |
| Telecommunications      | 04070 04077 04000                         |
| Paragould Light & Water | 01376, 01877, 01982                       |
| Parish                  | 01276 01977 01092                         |
| Communications          | 01376, 01877, 01982                       |
| Park Region Mutual      | 01481, 01998, 02345, 03028                |
| Telephone               | 01701, 01990, 02070, 00020                |
| Park TV &               | 01376, 01877, 01982                       |
| Electronics             | 0.070, 0.077, 0.002                       |
| Partner                 | 01376, 01877, 01982                       |
| <del>-</del> -          | -, ,                                      |

| Communications           |                            |
|--------------------------|----------------------------|
| Pathway Com-Tel          | 01376, 01877, 01982        |
| Patterson Cable TV       | 01376, 01877, 01982        |
| Paul Bunyan              | 02586                      |
| Communications           |                            |
| PBT Cable Services       | 01376, 01877, 01982        |
| PC One Cable             | 01376, 01877, 01982        |
| PDQ Cable TV             | 01376, 01877, 01982        |
| PEC Cablevision          | 01376, 01877, 01982        |
| Pegasus                  | 01376, 01877, 01982        |
| Communications           |                            |
| Peoples CATV             | 01376, 01877, 01982        |
| Persona                  | 01376, 01877, 01982        |
| Communications           |                            |
| Philippi                 | 01376, 01877, 01982        |
| Communications           |                            |
| Philips                  | 01582, 02294               |
| Phoenix                  | 01376                      |
| Phoenix Cable            | 01376, 01877, 01982        |
| Phonoscope               | 01376, 01877, 01982        |
| Communications           |                            |
| Pickwick                 | 01376, 01877, 01982        |
| Cablevision              |                            |
| Piedmont Cable           | 01376, 01877, 01982        |
| Services                 |                            |
| Pine Bluff Cable         | 01376                      |
| Pine Island<br>Telephone | 01481, 01998, 03028        |
| Pine River Cable         | 01376, 01877, 01982        |
| Pine Tree                | 01376, 01877, 01982        |
| Cablevision              |                            |
| Pineland Telephone       | 01481, 01615, 01898, 02586 |
| Cooperative              |                            |
| Pinpoint                 | 01376, 01877, 01982        |
| Communications           |                            |
| Pioneer                  | 01877                      |
| Pioneer Cable            | 01376, 01877, 01982        |
| Pioneer                  | 01376, 01877, 01982        |
| Communications           |                            |
| Pioneer Long             | 01898, 01615               |
| Distance                 |                            |

| Pitcairn Community Cable TV | 01376, 01877, 01982 |
|-----------------------------|---------------------|
| Plantation Cable<br>System  | 01376, 01877, 01982 |
| Pleasant Vision             | 01376, 01877, 01982 |
| Polar                       | 02586               |
| Communications              |                     |
| Polaris Cable               | 01376, 01877, 01982 |
| Ponderosa                   | 01376, 01877, 01982 |
| Cablevision                 |                     |
| Poplar Bluff                | 01481, 01998, 03028 |
| Municipal Utilities         |                     |
| Portal Cablevision          | 01376, 01877, 01982 |
| Portugal Telecom            | 02401               |
| Post Cablevision            | 01376, 01877, 01982 |
| Premier                     | 01376               |
| Communications              |                     |
| Premiere                    | 02620               |
| Price County Telephone      | 01481, 01998, 03028 |
| Prime Cable                 | 01376, 01877, 01982 |
| Corporation                 | 01370, 01077, 01902 |
| Prime Time Cable            | 01376, 01877, 01982 |
| Princetown Cable            | 01376, 01877, 01982 |
| Private Cable               | 01376, 01877, 01982 |
| Systems                     | 0.0.0, 0.0, 0.00=   |
| Private Network             | 01376, 01877, 01982 |
| Cable Systems               |                     |
| Project Mutual              | 01481, 01998, 03028 |
| Telephone                   |                     |
| Project Services            | 01376, 01877, 01982 |
| PSC                         | 01481, 01998, 03028 |
| PTCI                        | 01376               |
| PVT Networks                | 01376, 01877, 01982 |
| Quality Cable TV            | 01376, 01877, 01982 |
| Quality One                 | 01481, 01998, 03028 |
| Technologies                |                     |
| Quinter Cable               | 01376, 01877, 01982 |
| Qwerty.TV                   | 01898               |
| R & R Cable                 | 01376               |
| Raftview                    | 01376, 01877, 01982 |

## Communications

| Rainbow Cable                  | 01376, 01877, 01982 |
|--------------------------------|---------------------|
| Rainbow<br>Communications      | 01376, 01877, 01982 |
| Rainbow Lake<br>Cable TV       | 01376, 01877, 01982 |
| Rainier Connect                | 01376, 01877, 01982 |
| Ramapo Cable                   | 01376, 01877, 01982 |
| Rancho Murieta Association     | 01376               |
| Randolph<br>Telephone          | 02586               |
| Rapid<br>Communications        | 01376, 01877, 01982 |
| RC Communications              | 01376, 01877, 01982 |
| RCN                            | 01376               |
| Reach Broadband                | 01376, 01877, 01982 |
| Readlyn Telephone              | 02586               |
| Rebeltec                       | 01376, 01877, 01982 |
| Communications                 |                     |
| Red River Cable                | 01376, 01877, 01982 |
| Reds Cable TV                  | 01376, 01877, 01982 |
| Regional Cable TV              | 01376, 01877, 01982 |
| Reinbeck<br>Telecommunications | 01376, 01877, 01982 |
| Reservation<br>Telephone       | 01376, 01998, 02345 |
| Reserve Long Distance          | 01376, 01877, 01982 |
| Resnet<br>Communications       | 01376, 01877, 01982 |
| Resort Cable                   | 01376               |
| Reveille Broadband             | 01376, 01877, 01982 |
| Reynolds Cable                 | 01376, 01877, 01982 |
| RGA Cablle                     | 01376, 01877, 01982 |
| Ridgewood                      | 01376, 01877, 01982 |
| Cablevision                    | . ,                 |
| Ringgold Telephone             | 01376, 01877, 01982 |
| Rio Virgin                     | 01376, 01877, 01982 |
| Telephone                      |                     |

| Riondel Community Cable Society Ripley Video Cable Ritter Cable Ritter Cable River Road Cable River Valley Cable TV River Valley Cable Society River Valley Cable TV River Valley Tv |  |
|--|--|
| Ritter Cable         01376, 01877, 01982           River Road Cable         01376, 01877, 01982           River Valley Cable TV         01376, 01877, 01982           River Valley Telecommunications         01481, 01998, 03028           Riverside Cablevision         01376, 01877, 01982           Riviera Cable TV         01376, 01877, 01982           Robins Cable TV         01376, 01877, 01982           Rock Port Cablevision         01376, 01877, 01982           Rocky Mountain Cable Systems         01376, 01877, 01982           Rogers         01877, 01376           Roome Telecommunications         01376, 01877, 01982           Royal Telephone         01376, 01877, 01982           RTC         01376, 01877, 01982           RTEC Communications         01376, 01877, 01982           Runestone Telcom         01376, 01877, 01982           Rural Route Video         01376, 01877, 01982           Rural Telephone Company         01376, 01877, 01982           Russellville Electric Plant Board         02586  |  |
| River Road Cable         01376, 01877, 01982           River Valley Cable TV         01376, 01877, 01982           River Valley         01481, 01998, 03028           Telecommunications         01376, 01877, 01982           Riverside         01376, 01877, 01982           Cablevision         01376, 01877, 01982           Robins Cable TV         01376, 01877, 01982           Rock Port         01376, 01877, 01982           Cablevision         01376, 01877, 01982           Rogers         01877, 01376           Roome         01376, 01877, 01982           Telecommunications         01376, 01877, 01982           RTC         01376, 01877, 01982           RTEC         01376, 01877, 01982           Communications         01376, 01877, 01982           Rural Route Video         01376, 01877, 01982           Rural Telephone         01376, 01877, 01982           Company         01376, 01877, 01982           Russellville Electric         01376, 01877, 01982           Russellville Electric         01376, 01877, 01982  |  |
| River Valley TV         01376, 01877, 01982           River Valley Telecommunications         01481, 01998, 03028           Riverside Cable Vision         01376, 01877, 01982           Robins Cable TV         01376, 01877, 01982           Rock Port Cable vision         01376, 01877, 01982           Rocky Mountain Cable Systems         01376, 01877, 01982           Rogers Cable Systems         01877, 01376           Roome Cable Systems         01376, 01877, 01982           Rogers Cable Systems         01376, 01877, 01982           Roome Company         01376, 01877, 01982           Roome Company         01376, 01877, 01982           Roome Company         01376, 01877, 01982           Roome Cable Systems         01376, 01877, 01982  |  |
| TV           River Valley         01481, 01998, 03028           Telecommunications         01376, 01877, 01982           Riverside         01376, 01877, 01982           Cablevision         01376, 01877, 01982           Rock Port         01376, 01877, 01982           Cablevision         01376, 01877, 01982           Rocky Mountain         01376, 01877, 01982           Cable Systems         01877, 01376           Roome         01376, 01877, 01982           Telecommunications         01376, 01877, 01982           RTC         01376, 01877, 01982           RTEC         01376, 01877, 01982           Communications         01376, 01877, 01982           Rural Route Video         01376, 01877, 01982           Rural Telephone         01376           Company         01376, 01877, 01982           Russellville Electric         01376, 01877, 01982           Russellville Electric         01376, 01877, 01982  |  |
| River Valley       01481, 01998, 03028         Telecommunications       01376, 01877, 01982         Riviera Cable TV       01376, 01877, 01982         Robins Cable TV       01376, 01877, 01982         Rock Port       01376, 01877, 01982         Cablevision       01376, 01877, 01982         Rocky Mountain       01376, 01877, 01982         Cable Systems       01877, 01376         Roome       01376, 01877, 01982         Telecommunications       01376, 01877, 01982         RTC       01376, 01877, 01982         RTEC       01376, 01877, 01982         Communications       01376, 01877, 01982         Rural Route Video       01376, 01877, 01982         Rural Telephone       01376         Company       01376, 01877, 01982         Russellville Electric       01376, 01877, 01982         Russellville Electric       01376, 01877, 01982  |  |
| Cablevision         Riviera Cable TV       01376, 01877, 01982         Robins Cable TV       01376, 01877, 01982         Rock Port       01376, 01877, 01982         Cablevision       01376, 01877, 01982         Rocky Mountain       01376, 01877, 01982         Cable Systems       01877, 01376         Roome       01376, 01877, 01982         Telecommunications       01376, 01877, 01982         RTC       01376, 01877, 01982         RTEC       01376, 01877, 01982         Communications       01376, 01877, 01982         Rural Route Video       01376, 01877, 01982         Rural Telephone       01376         Company       01376, 01877, 01982         Russellville Electric       02586         Plant Board  |  |
| Robins Cable TV         01376, 01877, 01982           Rock Port         01376, 01877, 01982           Cablevision         01376, 01877, 01982           Rocky Mountain         01376, 01877, 01982           Cable Systems         01877, 01376           Roome         01376, 01877, 01982           Telecommunications         01376, 01877, 01982           RTC         01376, 01877, 01982           RTEC         01376, 01877, 01982           Communications         01376, 01877, 01982           Rural Route Video         01376, 01877, 01982           Rural Telephone         01376           Company         01376, 01877, 01982           RuralWest         01376, 01877, 01982           Russellville Electric         02586           Plant Board   |  |
| Rock Port<br>Cablevision         01376, 01877, 01982           Rocky Mountain<br>Cable Systems         01376, 01877, 01982           Rogers         01877, 01376           Roome<br>Telecommunications         01376, 01877, 01982           RTC         01376, 01877, 01982           RTC         01376, 01877, 01982           RTEC         01376, 01877, 01982           Communications         Runestone Telcom         01376, 01877, 01982           Rural Route Video         01376, 01877, 01982           Rural Telephone<br>Company         01376         01877, 01982           RuralWest         01376, 01877, 01982           Russellville Electric<br>Plant Board         02586   |  |
| Cablevision         Rocky Mountain       01376, 01877, 01982         Cable Systems       01877, 01376         Roome       01376, 01877, 01982         Telecommunications       01376, 01877, 01982         RTC       01376, 01877, 01982         RTEC       01376, 01877, 01982         Communications       01376, 01877, 01982         Rural Route Video       01376, 01877, 01982         Rural Telephone       01376         Company       01376, 01877, 01982         RuralWest       01376, 01877, 01982         Russellville Electric       02586         Plant Board   |  |
| Cable Systems         Rogers       01877, 01376         Roome       01376, 01877, 01982         Telecommunications       01376, 01877, 01982         RTC       01376, 01877, 01982         RTEC       01376, 01877, 01982         Communications       01376, 01877, 01982         Rural Route Video       01376, 01877, 01982         Rural Telephone       01376         Company       01376, 01877, 01982         Russellville Electric       02586         Plant Board   |  |
| Roome       01376, 01877, 01982         Telecommunications       01376, 01877, 01982         RTC       01376, 01877, 01982         RTEC       01376, 01877, 01982         Communications       01376, 01877, 01982         Rural Route Video       01376, 01877, 01982         Rural Telephone       01376         Company       01376, 01877, 01982         RuralWest       01376, 01877, 01982         Russellville Electric       02586         Plant Board       02586   |  |
| Roome       01376, 01877, 01982         Telecommunications       01376, 01877, 01982         RTC       01376, 01877, 01982         RTEC       01376, 01877, 01982         Communications       01376, 01877, 01982         Rural Route Video       01376, 01877, 01982         Rural Telephone       01376         Company       01376, 01877, 01982         RuralWest       01376, 01877, 01982         Russellville Electric       02586         Plant Board       02586   |  |
| Royal Telephone       01376, 01877, 01982         RTC       01376, 01877, 01982         RTEC       01376, 01877, 01982         Communications       01376, 01877, 01982         Rural Route Video       01376, 01877, 01982         Rural Telephone       01376         Company       01376, 01877, 01982         RuralWest       01376, 01877, 01982         Russellville Electric       02586         Plant Board       02586  |  |
| RTC 01376, 01877, 01982  RTEC 01376, 01877, 01982  Communications  Runestone Telcom 01376, 01877, 01982  Rural Route Video 01376, 01877, 01982  Rural Telephone 01376  Company  RuralWest 01376, 01877, 01982  Russellville Electric 02586  Plant Board  |  |
| RTEC       01376, 01877, 01982         Communications       01376, 01877, 01982         Rural Route Video       01376, 01877, 01982         Rural Telephone       01376         Company       01376, 01877, 01982         RuralWest       01376, 01877, 01982         Russellville Electric       02586         Plant Board       02586  |  |
| Communications Runestone Telcom 01376, 01877, 01982 Rural Route Video 01376, 01877, 01982 Rural Telephone 01376 Company RuralWest 01376, 01877, 01982 Russellville Electric 02586 Plant Board  |  |
| Runestone Telcom       01376, 01877, 01982         Rural Route Video       01376, 01877, 01982         Rural Telephone       01376         Company       01376, 01877, 01982         RuralWest       01376, 01877, 01982         Russellville Electric       02586         Plant Board       02586   |  |
| Rural Route Video 01376, 01877, 01982 Rural Telephone 01376 Company RuralWest 01376, 01877, 01982 Russellville Electric 02586 Plant Board  |  |
| Rural Telephone 01376 Company RuralWest 01376, 01877, 01982 Russellville Electric 02586 Plant Board  |  |
| Company Compan |  |
| Russellville Electric 02586 Plant Board  |  |
| Plant Board  |  |
| 0.0 K TV 0. otomo 04070 04077 04000  |  |
| S & K TV Systems 01376, 01877, 01982   |  |
| S & T 01376, 01877, 01982<br>Communications  |  |
| S-GO Video 01877, 01982  |  |
| S.Bryer Cable TV 01376, 01877, 01982   |  |
| Sagem 02407, 02436, 03288  |  |
| Sagemcom 02407, 02436, 03007   |  |
| Sallisaw Municipal 01376, 01877, 01982   |  |
| Authority  |  |
| Samsung 02407, 02015, 01877, 03477, 01060, 01987,  |  |
|  |  |

|                                 | 02589, 03265   |
|---------------------------------|--|
| San Bruno<br>Municipal Cable TV | 01376, 01877, 01982                                    |
| San Carlos<br>Cablevision       | 01376, 01877, 01982                                    |
| San Juan Cable                  | 01376, 01877, 01982                                    |
| San Simeon                      | 01376, 01877, 01982                                    |
| Community Cable                 |  |
| Santel Comm<br>Cooperative      | 01376, 01877, 01982                                    |
| Sasktel                         | 01998  |
| Satellite Cable<br>Services     | 01376, 01877, 01982                                    |
| Satview Broadband               | 01376, 01877, 01982                                    |
| Saugeen Telecable               | 01376, 01877, 01982                                    |
| Savage                          | 01376, 01877, 01982                                    |
| Communications                  |  |
| Sayward Valley Communications   | 01376, 01877, 01982                                    |
| Schindler Cable TV              | 01376, 01877, 01982                                    |
| SCI Cable                       | 01376, 01877, 01982                                    |
| Scientific Atlanta              | 01877, 01982, 00858, 01987, 02401, 02436, 02345, 03028 |
| Scio Cablevision                | 01376, 01877, 01982                                    |
| Scott Telecom And Electronics   | 01376, 01877, 01982                                    |
| Scottsboro Cable<br>TV          | 01376, 01877, 01982                                    |
| Sea Island                      | 01877  |
| Seaside Cable TV                | 01376, 01877, 01982                                    |
| Seaview                         | 01376, 01877, 01982                                    |
| Communications                  |  |
| SecureVision                    | 01376, 01877, 01982                                    |
| Semo                            | 01376, 01877, 01982                                    |
| Communications                  |  |
| Senior TV                       | 01376, 01877, 01982                                    |
| Service Electric                | 01376, 01877, 01982                                    |
| Service One Cable               | 01376, 01877, 01982                                    |
| Shannon Vision                  | 01376, 01877, 01982                                    |
| Shaw                            | 01376, 01877, 02187                                    |
| Shawano Municipal               | 01376, 01877, 01982                                    |

| Utilities                     |                     |
|-------------------------------|---------------------|
| Shellsburg                    | 01376, 01877, 01982 |
| Cablevision                   | 01370, 01077, 01902 |
| Object Heights TV             | 04070 04077 04000   |
| Shen-Heights TV               | 01376, 01877, 01982 |
| Shenandoah Cable              | 01376, 01877, 01982 |
| Shenandoah Telecommunications | 01376, 01877, 01982 |
| Shentel                       | 01276 01077 01002   |
| Sherburne Cable               | 01376, 01877, 01982 |
|                               | 01376, 01877, 01982 |
| Sherman<br>Cablevision        | 01376, 01877, 01982 |
| Shrewsbury Electric           | 01376, 01877        |
| & Cable                       | 01010, 01011        |
| Silver Star                   | 01481, 01998, 03028 |
| Communications                |                     |
| Simpson Country               | 01376, 01877, 01982 |
| Cable TV                      |                     |
| SingTel                       | 01998               |
| Siskiyou                      | 01376, 01877, 01982 |
| Cablevision                   | 0.40=0.040== 0.4000 |
| Sister Lakes Cable            | 01376, 01877, 01982 |
| Sjoberg's Cable TV            | 01376               |
| Skisat                        | 01376, 01877, 01982 |
| SKT                           | 01376, 01877, 01982 |
| SKY                           | 02620               |
| Sky Angel                     | 01376, 01877, 01982 |
| Sky Cablevision               | 01376, 01877, 01982 |
| SKY Deutschland               | 02620               |
| Skyline Cable                 | 02586               |
| SkyPix                        | 01481, 01998, 03028 |
| Sleepy Eye                    | 02345               |
| Telephone<br>Small Town Cable | 01276 01077 01002   |
|                               | 01376, 01877, 01982 |
| Smile Content                 | 02437               |
| Smithville                    | 02586               |
| Sogetel                       | 01998               |
| Somerfield Cable<br>TV        | 01376, 01877, 01982 |
| Source Cable                  | 01376               |
| South Benton                  | 01376, 01877, 01982 |
|                               |                     |

| Cablevision South Central Communications | 01376, 01877, 01982 |
|--|---------------------|
| South Holt<br>Cablevision                | 01376, 01877, 01982 |
| South Slope<br>Communications            | 01376, 01877, 01982 |
| Southeast Cable TV                       | 01376, 01877, 01982 |
| Southern Cayuga<br>County Cable          | 01376, 01877, 01982 |
| Southern Coastal<br>Cable                | 01376, 01877, 01982 |
| Southern Kansas<br>Telephone             | 01376               |
| Southern Plains<br>Cable                 | 01376, 01877, 01982 |
| Southern Vermont Cable                   | 01376, 01982        |
| Southey Cable                            | 01376, 01877, 01982 |
| Southside TV                             | 01376, 01877, 01982 |
| Southwest MN<br>Broadband                | 01376, 01877, 01982 |
| Southwestern Bell Video Services         | 01376, 01877, 01982 |
| Spanish Fork                             | 01376, 01877, 01982 |
| Spencer Municipal Utilities              | 01376, 01877, 01982 |
| Spillway Cablevision                     | 01376, 01877, 01982 |
| Spirit Broadband                         | 01376, 01877, 01982 |
| Spring Creek Cable                       | 01376, 01877, 01982 |
| Springcom                                | 01376, 01877, 01982 |
| Springfield<br>Cablevision               | 01376, 01877, 01982 |
| Springville Cable                        | 01376, 01877, 01982 |
| St. George Island<br>Cable               | 01376, 01877, 01982 |
| St. John Cable                           | 01376, 01877, 01982 |
| Stanley Cablevision                      | 01376, 01877, 01982 |
| Stanton Telecom                          | 01376, 01877, 01982 |
| Star Cablevision                         | 01376, 01877, 01982 |
| Starkville                               | 01376, 01877, 01982 |

| Cablevision                   |                     |
|-------------------------------|---------------------|
| Starlight Communications      | 01376, 01877, 01982 |
| Starview Cable of             | 01376, 01877, 01982 |
| Delaware                      | 01070, 01077, 01002 |
| Starvision                    | 01376, 01877, 01982 |
| Starwest                      | 01376, 01877, 01982 |
| Stellar                       | 01376, 01877, 01982 |
| Communications                |                     |
| Stellar Private Cable Systems | 01376, 01877, 01982 |
| Stofa                         | 02015               |
| Stowe Cablevision             | 01376, 01877, 01982 |
| Strategic<br>Technologies     | 01376, 01877, 01982 |
| Stubbs<br>Communications      | 01376, 01877, 01982 |
| Suddenlink                    | 01877, 01376        |
| Summit Broadband              | 01376, 01877, 01982 |
| Summit                        | 01376, 01877, 01982 |
| Communications                |                     |
| Sumner Cable TV               | 01376, 01877, 01982 |
| Sun Country Cable             | 01376               |
| Sunrise<br>Communications     | 01376, 01877, 01982 |
| Supercanal                    | 01376               |
| Superior Cable & Data         | 01376, 01877, 01982 |
| Supervision Cable TV          | 01376, 01877, 01982 |
| SureWest                      | 01481, 01998, 02586 |
| Surry Telephone               | 02586               |
| SWAT Cooperative              | 01481, 01998, 03028 |
| Sweetwater Cable TV           | 01376, 01877, 01982 |
| Swisher Telephone             | 02345               |
| ■ Cable Set Top Box           | (T to Z)            |
| T-Home                        | 02132               |

TA Communications

Taloga Cable

01376, 01877, 01982

01376, 01877, 01982

|                               | 0.40=0.040== 0.4000 |
|-------------------------------|---------------------|
| TAT Cablevision               | 01376, 01877, 01982 |
| Tbaytel                       | 03028               |
| TCSI Huntsville               | 01376, 01877, 01982 |
| TCT                           | 01376, 01877, 01982 |
| TDS                           | 01376, 01877, 01982 |
| TDS Telecom                   | 03028               |
| Technicolor                   | 01982               |
| Tekstar Cablevision           | 01376, 01877, 01982 |
| Tel-Star Cablevision          | 01376, 01877, 01982 |
| Tele-Media                    | 01376, 01877, 01982 |
| Tele-Services                 | 01376, 01877, 01982 |
| Tele2                         | 00660               |
| Telecentro                    | 01376               |
| Telecom Cable                 | 01376, 01877, 01982 |
| Teledistribution              | 01376               |
| Amos                          |                     |
| Telefonica                    | 03288, 03028        |
| Telenet                       | 01920, 03477        |
| Telepak Networks              | 01376, 01877, 01982 |
| TelePartners                  | 01376, 01877, 01982 |
| Telerent Leasing              | 01376, 01877, 01982 |
| Corporation                   | 04070 04077 04000   |
| Telestar Systems              | 01376, 01877, 01982 |
| Telewest                      | 01987               |
| Telmex                        | 01376               |
| Telsat Systems                | 01376, 01877, 01982 |
| Telus                         | 03028               |
| Templeton                     | 01376, 01877, 01982 |
| Telephone                     | 01000               |
| TeNeT                         | 01898               |
| Tesco Cable TV                | 01376, 01877, 01982 |
| Texas Mid-Gulf<br>Cablevision | 01376               |
| Thames Valley Communications  | 01376, 01877, 01982 |
| The Community                 | 01376               |
| Agency                        | 01070               |
| The Town of                   | 01376, 01877, 01982 |
| Mountain Village              |                     |
| Cable                         |                     |

| Thomson                          | 01582, 01982, 03007, 02407 |
|----------------------------------|----------------------------|
| Three River Digital Cable        | 01376, 01877, 01982        |
| Throckmorton Cablevision         | 01376, 01877, 01982        |
| TiftNet                          | 01376, 01877, 01982        |
| Time Warner                      | 01877, 01376, 02187        |
| Tip-Top<br>Communications        | 01376, 01877, 01982        |
| TiVo                             | 03265                      |
| Tobacco Valley<br>Communications | 01376, 01877, 01982        |
| Tongue River Cable TV            | 01376, 01877, 01982        |
| Total Cable Service              | 01376                      |
| Touchet Valley Television        | 01376, 01877, 01982        |
| TP                               | 02407                      |
| Trans-Video                      | 01376, 01877, 01982        |
| Trappers Loop Communications     | 01376, 01877, 01982        |
| Trenton Cable                    | 01376, 01877, 01982        |
| Tri-County Cable<br>TV           | 01376                      |
| TrioTel<br>Communications        | 01376, 01877, 01982        |
| Troy Cablevision                 | 01376                      |
| Trust Cable TV                   | 01376, 01877, 01982        |
| TruVista                         | 01376, 01877, 01982        |
| <b>Tudjaat Cooperative</b>       | 01376, 01877, 01982        |
| Tulalip Broadband                | 01376, 01877, 01982        |
| Tullahoma Utilities              | 02586                      |
| Tulugak<br>Cooperative           | 01376, 01877, 01982        |
| Turquoise Turtle TV              | 01376, 01877, 01982        |
| TV Cable                         | 01376                      |
| TV Cable Company of Andalusia    | 01376                      |
| TV Cable of<br>Winamac           | 01376, 01877, 01982        |
| TV Northeast                     | 01481, 01998, 03028        |
|                                  |                            |

| TV Service                    | 01376, 01877, 01982        |
|-------------------------------|----------------------------|
| TVB                           | 01615                      |
| TVC                           | 01376, 01877, 01982        |
| TVision                       | 01376, 01877, 01982        |
| TVMAX                         | 01376, 01877, 01982        |
| TVS Cable                     | 01376, 01877, 01982        |
| Twin Valley                   | 02586                      |
| Communications                |                            |
| Two Creeks Cable              | 01376, 01877, 01982        |
| Ucluelet Video                | 01376, 01877, 01982        |
| Uintah Basin                  | 01376, 01877, 01982        |
| Electronic Telecom            |                            |
| UMBC                          | 01376, 01877, 01982        |
| Union Telephone               | 01376, 01877, 01982        |
| Unitah-Strata                 | 01376                      |
| Networks                      |                            |
| United                        | 01376                      |
| Communications Association    |                            |
| United States                 | 01276 01977 01092          |
| Gypsum                        | 01376, 01877, 01982        |
| United Telephone              | 01376, 02586               |
| Unitymedia                    | 03477                      |
| Universal                     | 01376, 01877, 01982        |
| Cablevision                   | 0.010, 0.017, 0.002        |
| Universal Satellite           | 01376, 01877, 01982        |
| Cable                         |                            |
| UPC                           | 01582, 03477, 00660, 01060 |
| UPC Cablecom                  | 01582, 03477               |
| Upper Peninsula               | 01376, 01877, 01982        |
| Communications                |                            |
| US Online                     | 01376, 01877, 01982        |
| US Sonet                      | 01376, 01877, 01982        |
| USA Cablesystems              | 01376, 01877, 01982        |
| USA Companies                 | 01376, 01877, 01982        |
| Utica Cablevision             | 01376, 01877, 01982        |
| Utilities Board City of Foley | 01376                      |
| Utility Systems               | 01376, 01877, 01982        |
| Development                   | . ,                        |
|                               |                            |

| Uwharrie<br>Communications                    | 02586               |
|---|---------------------|
| Valley Cable &<br>Satellite<br>Communications | 01376, 01877, 01982 |
| Valley Cable TV                               | 01376, 01877, 01982 |
| Valparaiso<br>Communications                  | 01376               |
| Venture<br>Communications<br>Cooperative      | 01481, 01998, 03028 |
| Venus Telephone<br>Cooperative                | 01376, 01898        |
| Veracity<br>Communications                    | 01376, 01877, 01982 |
| Verizon                                       | 02378               |
| Vernon Telephone<br>Cooperative               | 02586               |
| Vicksburg Video                               | 01376               |
| Videotron                                     | 01877               |
| Vidia   | 01376, 01877, 01982 |
| Communications                                |                     |
| Vidion Cable                                  | 01376, 01877, 01982 |
| Viken Fibernett                               | 02437               |
| Viola<br>Communications                       | 01376, 01877, 01982 |
| Virgin Media                                  | 01987, 01060, 03265 |
| Vision  | 01376               |
| Communications                                | 0.40=0.040== 0.4000 |
| VisionComm                                    | 01376, 01877, 01982 |
| Vital   | 01376, 01877, 01982 |
| Communications                                | 00000               |
| Vivo  | 03288               |
| Vodafone                                      | 02401               |
| Vogtmann<br>Engineering                       | 01376, 01877, 01982 |
| Volcano Vision                                | 01376               |
| W.D.B. Communications                         | 01376, 01877, 01982 |
| Wabash<br>Independent                         | 01376, 01877, 01982 |

| Networks<br>Wadsworth Cable<br>TV             | 01376               |
|---|---------------------|
| Waitsfield Cable                              | 01376               |
| Walnut  | 01376, 01982        |
| Communications                                | 01070, 01002        |
| Walnut Grove Cable<br>TV                      | 01376, 01877, 01982 |
| Ward<br>Communications                        | 01376, 01877, 01982 |
| Warwick Valley<br>Telephone                   | 01376, 01877, 01982 |
| Washington County Rural Telephone Cooperative | 01376, 01877, 01982 |
| Watch TV                                      | 01481, 01998, 03028 |
| Waterville Cable TV                           | 01376, 01877, 01982 |
| Watson Cable                                  | 01376, 01877, 01982 |
| Wave Broadband                                | 01376               |
| Wavevision                                    | 01376, 01877, 01982 |
| WCTA  | 01376, 01877, 01982 |
| WEHCO Video                                   | 01376               |
| Weiss Lake Cable                              | 01376, 01877        |
| West Alabama TV<br>Cable                      | 01376, 01877, 01982 |
| West Carolina<br>Telephone                    | 03028               |
| West Central<br>Telephone                     | 01376, 01877, 01982 |
| West Lake<br>Cablevision                      | 01376, 01877, 01982 |
| West River Cable Television                   | 01376, 01877, 01982 |
| WesTel Systems                                | 01376, 01877, 01982 |
| Western Broadband                             | 01376, 01877, 01982 |
| Western Cable<br>Service                      | 01376, 01877, 01982 |
| Western lowa<br>Telephone                     | 01877               |
| Western Telephone<br>Company                  | 01376, 01877, 01982 |

| Western Wisconsin<br>Communications | 01376, 02586                            |
|-------------------------------------|---|
|                                     | 04076 00407                             |
| Westman Communications              | 01376, 02187                            |
| Communications                      |   |
| Westphalia                          | 02586                                   |
| Broadband                           |   |
| Wetherell Satellite                 | 01376, 01877, 01982                     |
| Cable TV                            |   |
| WFL Cable                           | 01376, 01877, 01982                     |
| Television                          |   |
| White County Video                  | 01376                                   |
| WideOpenWest                        | 01376, 01877, 02187                     |
| Wikstrom Systems                    | 01376, 01877, 01982                     |
| Wilco Electronic                    | 01376, 01877, 01982                     |
| Systems                             |   |
| Wilkes                              | 01481, 01998, 03028                     |
| Telecommunications                  |   |
| Willamette                          | 01376                                   |
| Broadband                           |   |
| Windbreak Cable                     | 01376, 01877, 01982                     |
| TV                                  | , ,                                     |
| Windjammer Cable                    | 01376, 01877                            |
| Windom                              | 01877                                   |
| Communications                      |   |
| Windstream                          | 01376, 01982                            |
| Winslow                             | 01376, 01877, 01982                     |
| Communications                      | , |
| Wire Tele-View                      | 01376, 01877, 01982                     |
| Wireless One                        | 01376, 01877, 01982                     |
| Wittenberg                          | 01376, 01877, 01982                     |
| Telephone                           | 01010, 01011, 01002                     |
| Wood County                         | 01376, 01877, 01982                     |
| Telephone                           | 01010, 01011, 01002                     |
| Woodsfield                          | 01376, 01877, 01982                     |
| Municipal Cable                     | 01010, 01011, 01002                     |
| Worth Cable TV                      | 01376, 01877, 01982                     |
| WT Services                         | 01376, 01877, 01982                     |
| WTC                                 | 01376, 01877, 01982                     |
| Communications                      | 01070, 01077, 01902                     |
| WTCI Cable                          | 01376, 01877, 01982                     |
|                                     | ·                                       |
| Wyandotte                           | 01376, 01982                            |

Municipal

Yadkin Valley 02345

Telecom

Ycom Networks 01376, 01877, 01982 Yelcot Video Group 01376, 01877, 01982

Yelo 01376

Ygnition 01376, 01877, 01982 Zampelli Electronics 01376, 01877, 01982

Ziggo 02589, 02015, 00660, 02401

Zito Media 01376, 01982

Zoom Media 01376, 01877, 01982

## Satellite Set top Box

@sat 01300 Acoustic Solutions 01284 ADB 00887

AEG 02738, 02813

 Agora
 01284

 Airis
 02813

 Airtel
 02248

 Akira
 02738

Alba 01284, 02034

Altech UEC 02059

Amstrad 00847, 01662, 01175, 01693, 02467

AMTC 02738, 02813

Arledge Electronics 00775
Arnion 01300
ASDA 01284
AssCom 00853

Astro 01100, 02026

 Aurora
 00879

 Austar
 00879

Auvisio 02738, 02813

Avanit 01631 Axil 02738 Ballard Rural 00775

Telephone Cooperative

Bell 00775

Bell Satellite TV 00775 Biostek 02738 Black Diamond 01284

Boca 02026, 02813

Boshmann 01631

Boxer 02443, 01692

BskyB 01175, 00847, 01662

Bulltech 02738

Bush 02376, 01284, 02034, 02813

Cablecom 01195, 01197 Caiway 02443, 00253 Canal Digitaal 00853, 02957

Canal Digital 00853

Canal+ 00853, 02657, 01195, 01197

CanalSat 00853, 02657

Century 00856
CGV 02034
Chess 02026
Cignal 02835
City of Cawker City 00775

Cable

CityCom 01176

Claro 03787, 03790

Clatronic 02738

 Com Hem
 01176, 01915

 Comag
 02026, 02813

 Coship
 03787, 03790

 Country Vision
 00775, 00869

Cable

 Croner
 02813

 Crown
 01284

Cyfra+ 00853, 01409

Cyfrowy Polsat 00253, 0853, 01409

D-box 01114
DASAN 03321
Delta 02443
Denver 02738

Deutsche 01195, 01197

Telekabel

 Dgtec
 01631

 Dicra
 02738

 Digi
 02026

 Digiality
 02813

Digihome 01284, 02034 DigiLogic 01284, 02034

DigiQuest 01300, 02738, 01631

DigitAlb 01195, 01197 DigitalBox 01631, 01100

Digiwave 01631

DirecTV 01377, 00099

 Dish Network
 00775

 Dishpro
 00775

 DishTV
 01300

 DMT
 03321

 DMTech
 02738

 DRE
 01176

Dream Multimedia 01237, 01652, 01923

DSE 02813 DSTV 00879

DTK Deutsche 01195, 01197

Telekabel

Dual 02034

Durabrand 01284, 02034 Dyon 02738, 02813

Echostar 00775, 00853, 01409

Edision 01631 Elta 02738

Energy Sistem 01631, 02813

Etisalat 02443 Evesham 02034

Technology

Finlux 02034

FinnSat 01195, 01197

Fortec Star 01631

Foxtel 01356, 00879, 01176

Freesat 01692, 02376

Freesat+ 02443

Frontier 00775

Communications

Fuji Onkyo 01631

Galaxis 00853, 00879

General Instrument 00869 General Satellite 01176

Globo 02026, 02957

 GoGen
 02738

 GOI
 00775

 Gold Box
 00853

 Gold Vision
 01631

Goodmans 01284, 02376, 02034 Gradiente 00887, 00856, 00099

Grocos 01409

Grundig 00847, 02376, 02034, 01284, 00853, 00879

 Hanseatic
 01100

 HD+
 02443

 HDT
 03321

 Hirschmann
 02026

Hitachi 02034, 01284

 Hornet
 01300

 HTS
 00775

 Huawei
 03787

 Hughes Network
 01377

Systems

Humax 01176, 02443, 01808, 01915, 02408, 01377,

03321, 01989, 02616

 ibox
 01652

 ID Digital
 01176

 Illusion
 01631

Imagin 01195, 01197 Imperial 01195, 01197

Indovision 01989, 00856, 00887

iNETBOX 01652, 01237

Innova 00099 IQ 02813 ISkyB 00887

JVC 00775, 01284 Kabel Deutschland 01195, 01197

KabelBW 01195, 01197, 01915

Kaon 01300 Kenwood 00853 Koenig 01631 KT 03321 01631 Lava LG 03321 01284 Linsar Lodos 01284

Logik 01284, 02034 LogiSat 02026, 02813

Luxor 02034 Macab 00853 02738 Majestic Manhattan 01300 Maplin 02034 Marusys 03543 02738 Mascom 01284 Matsui 02813 Maximum Mediabox 00853 MediaSat 00853 Mediascape 02835 Medion 02026

MegaSat 02034, 02813, 01631, 02738

03321

Metronic 02738, 01631

Micro 02813 Micro electronic 02813 Milestone 00775

Communications

Mega TV

Mitsai 02738 Morgan's 02026

Motorola 00869, 00856, 03469

Movistar 01409

Multichoice 00879, 02059, 02060

Murphy 02034 Mysat 02738 NET 01409

Netsat 00099, 00887

 Next Level
 00869

 Nokia
 00853

 NPG
 01631

NTV Plus 01692, 02443

Olleh TV 03321 Olleh-Skylife 03321

Onn 02034, 01284

Opticum 02957

Optus 00879, 01356

Orbitech 01100, 01195, 01197

Orton 02957

Pace 00847, 01356, 00887, 01175, 01693, 00853,

01662, 02467, 02657, 03469, 01377, 02059,

02060, 02211, 03787, 03790, 02620

Pacific 01284
Palcom 01409
Palsonic 02813
Panasat 00879
Panasonic 00847

Philips 00099, 00853, 01114, 02619, 00856, 00887,

02211, 03469

Pioneer 00853 PLDT 02835

Premiere 01114, 01195, 01197 Primacom 01176, 01195, 01197

 Pro Basic
 00853

 Proline
 01284

 Qook TV
 03321

 Qook-SkyLife
 03321

 Qwest
 01377

 RadioShack
 00869

 Raduga TV
 02957

RiksTV 01692 Roadstar 00853

SAB 01300, 01631 Sagem 01692, 01114

Sagemcom 01692

| Samsung    | 03063. | 00253. | 01377. | 01989. | 02467.  | 00853, |
|------------|--------|--------|--------|--------|---------|--------|
| Carricarig |        | 00200, | oioii, | 01000, | 02 101, | 00000, |

03321, 01662, 01693, 03834

 Sat Control
 01300

 SAT+
 01409

Satellite Operations 00775 Satplus 01100 SatyCon 01631

Schaub Lorenz 02034

Schwaiger 01631, 02813, 02957

Schwaiger CS 01631 Scott 02738

SEG 01284, 02034

 Shark
 01631

 Sharp
 02034

 Shaw Direct
 00869

 Sherwood
 01409

 Shinelco
 02738

Sigmatek 02738, 02813

SilverCrest 02026

SKY 00856, 00847, 01662, 00887, 01175, 02619,

01693, 00099, 01114, 01377, 01915, 02467,

03469

 Sky Brasil
 00856, 00887, 01377, 02619

 SKY Deutschland
 02443, 01114, 01915, 02620

 SKY Italia
 01693, 02467, 00853, 01356

SKY Mexico 00856, 02619, 00887, 01377, 03469

SKY New Zealand 02211
SKY PerfecTV! 02616
SkyCable 01631
SkyLife 03321

Skylink 02443, 02957

Skymaster 01409

Skyplus 02026, 01175

SkySat 01100

Skyworth 01631, 02835

 SL
 02026

 SM Electronic
 01409

 Smart
 01631

Sony 00847, 00853

| Star          | 00887 |
|---------------|-------|
| Star Choice   | 00869 |
| Stream System | 01300 |

Strong 01409, 00879, 02813, 01300, 00853, 01284

Sunny 01300 Sunstech 02738 Supernova 00887 T-Mobile 02443 TATA Sky 03575 TDS Telecom 00775 Teac 02813 **Technicolor** 03469

Technika 01284, 02034

TechniSat 01195, 01197, 01100, 02813

Techwood 01284, 02034

tekComm 02738

TELE System 01409, 02738, 02813

Tele2 01195, 01197 Telefonica 01692, 01409

Telestar 01100, 01197, 01195

Televes 01300 Teleview 00775

Communications

 Televisa
 00887

 Telsey
 02738

 Telstra
 01356

 Telus
 00775

Tevion 01409, 02026, 02813

Thomson 00847, 01175, 00853, 01662, 02619, 03469

TNT SAT 01692, 01195, 01197

Toshiba 01284
TrekStor 02738
Triangle 00775

Communication

System

Triax 00853, 01631

Tricolor TV 01176
True Visions 02408
TV Vlaanderen 00853

TVA Digital 01692, 01409

TVB 01989

UEC 00879, 01356

United Satellite 00775

America

United States 00775

Wireless

Unitymedia 01915 Unixbox 01652 USA Wireless 00775

Satellite TV

Vectra 01195, 01197 Vestel 01284, 02034

Via Embratel 03787

Viasat 01197, 0253, 01195

 VisionNet
 01631

 Viva
 00856

 Vivo
 01409

 Voom
 00869

 VTC
 03834

 Vu+
 03543

Walker 02034, 01284

Wharfedale 02034
Windstream 00775
Wisi 02957
World Satellite 00775

Cable Systems

Woxter 02813, 02738

 Xoro
 02813

 Xtreme
 01300

Yes 00887, 01631 Zehnder 02034, 03469 Zenith 00856, 00253

 Ziggo
 02443

 Zircon
 02957

■ Video - Accessory

A.C.Ryan 02709, 03350

ABS 01272

| Acer                    | 01272        |
|-------------------------|--------------|
| Alienware               | 01272        |
| Apple                   | 02615        |
| Boxee                   | 03693        |
| Claritas                | 01272        |
| CyberPower              | 01272        |
| D-Link                  | 03693        |
| Daily Media             | 01272        |
| Dell                    | 01272        |
| Digitech                | 02260        |
| Elonex                  | 01272        |
| Eminent                 | 02260        |
| Emtec                   | 02709        |
| Fantec                  | 02709        |
| Fujitsu Siemens         | 01272        |
| Gateway                 | 01272        |
| Hewlett-Packard         | 01272        |
| hFX                     | 01272        |
| <b>Howard Computers</b> | 01272        |
| Hush                    | 01272        |
| iBUYPOWER               | 01272        |
| iconBIT                 | 02709, 03350 |
| ISTAR                   | 02260        |
| Linksys                 | 01272        |
| Mede8er                 | 02709        |
| Media Center PC         | 01272        |
| Microsoft               | 01272, 01805 |
| Mind                    | 01272        |
| NiveusMedia             | 01272        |
| Northgate               | 01272        |
| Packard Bell            | 01272        |
| Philips                 | 01272        |
| PopBox                  | 02260        |
| Popcorn Hour            | 02260        |
|                         | 0.40-0       |

Stack 9 01272

01272

03061

02713, 01272

Ricavision

Roku

Sony

| Systemax            | 01272        |
|---------------------|--------------|
| Tagar Systems       | 01272        |
| Toshiba             | 01272        |
| Touch               | 01272        |
| Trust               | 01272        |
| VIA Technologies    | 01272        |
| Viewsonic           | 01272        |
| Voodoo              | 01272        |
| Western Digital     | 02558        |
| Woxter              | 02709        |
| Xbox                | 01805, 01272 |
| ZT Group            | 01272        |
| ■ CD                |              |
| Advantage           | 70032        |
| AH!                 | 70157        |
| Aiwa                | 70157        |
| Arcam               | 70157        |
| Atoll Electronique  | 70157        |
| Audio Research      | 70157        |
| Audiolab            | 70157        |
| Audiomeca           | 70157        |
| Audioton            | 70157        |
| AVI                 | 70157        |
| Balanced Audio      | 70157        |
| Technology          |              |
| Technology<br>Cairn | 70157        |

Labs Cambridge 70157 Cambridge Audio 70157 Carver 70157 CCE 70157 Cyrus 70157 70766 Denon 70000 DKK **DMX Electronics** 70157 Dynaco 70157

Genexxa

70032, 70000

| Goldmund      | 70157 |
|---------------|-------|
| Grundig       | 70157 |
| Harman/Kardon | 70157 |
| Hitachi       | 70032 |
| Integra       | 71817 |
| JVC           | 70072 |
|               |       |

Kenwood 70157, 70036

 Krell
 70157

 Linn
 70157

 Loewe
 70157

 Magnavox
 70157

Marantz 70157, 70029

Matsui 70157 MCS 70029 70032 Memorex Meridian 70157 Micromega 70157 Miro 70000 Mission 70157 70157 Myryad

NAD 70721, 70000

 Naim
 70157

 NSM
 70157

 Onkyo
 71817

Optimus 70032, 70000 Panasonic 70303, 70029

**Philips** 70157 70032 Pioneer 70157 Polk Audio Primare 70157 70157 Proton QED 70157 Quad 70157 70029 Quasar 70157 Radiola **RCA** 70032 70157 Restek

Revox 70157

Rotel 70157 SAE 70157 Sansui 70157 SAST 70157 Siemens 70157 Silsonic 70036 70157 Simaudio Sonic Frontiers 70157

Sony 70000, 70490

Sylvania 70157 TAG McLaren 70157 Tandy 70032

 Tascam
 73095, 73511, 73533

 Teac
 73531, 73532, 73551

Technics 70303, 70029

Thorens 70157
Thule Audio 70157
Universum 70157
Victor 70072

Wards 70032, 70000, 70157 Yamaha 70036, 70032, 70490

Zonda 70157

#### Cassette Deck

 Aiwa
 40029

 Arcam
 40076

Audiolab 40029, 40229

Carver 40029 Denon 40076 40029 Grundig Harman/Kardon 40029 Inkel 40070 **JVC** 40244 Kenwood 40070 Magnavox 40029 Marantz 40029 Myryad 40029 Onkyo 42157 **Optimus** 40027

| Panasonic | 40229 |
|-----------|-------|
|-----------|-------|

Philips 40029, 40229

 Pioneer
 40027

 Polk Audio
 40029

 Radiola
 40029

 RCA
 40027

 Revox
 40029

 Sansui
 40029

Sony 40243, 40170

 Tascam
 73095

 Technics
 40229

 Thorens
 40029

 Victor
 40244

Wards 40027, 40029

Yamaha 40097

## Audio - Accessory

Apple 81115 Jamo 82228

Onkyo 81993, 82351, 82990

Polk Audio 82228

#### Receiver

Integra 52503 Onkyo 52503

### Cable PVR Combination

Access 01376, 01877

Communications

Adams Cable TV 01376 ADB 01920

Armstrong 01376, 01877

Arris 02187
Atlantic Broadband 01877
ATMC 01376
Bend Broadband 02187
Blue Ridge 01877

Communications

Bright House 01877, 01376

Buckeye Cable 01376, 01877, 02187

System

Cable Axion Digitel 01376

Cable One 01376, 01877

Cablecom 01582

Cablevision 01877, 01376

Cablevision du 01376

Nord

CCAP 01877

Charter 01376, 01877, 02187

Cincinnati Bell 01877, 01376

Cisco 01877, 02589, 01982, 01582, 01883, 02401,

03265

Citycable 03477

Cogeco 01376, 01877, 01982

Comcast 01376, 01877, 01982, 02187

Cox 01877, 01376

Darty Box 02436 Digeo 02187 Freebox 01976

Grande 01877, 01376

Communications

Humax 02620, 02165

ImOn 01877

Communications

Insight 01376, 01877

Inter Mountain 01877

Cable

Kabel Deutschland 02165 Knology 01877

Mediacom 01376, 01877

MetroCast 01877

Cablevision

Midcontinent 01376, 01877

Communications

 Motorola
 01376

 Moxi
 02187

 NET
 01883

 NorthwesTel
 01376

Novus 01376, 01877

Numericable 02436

Pace 01877, 02620, 01582, 01883

Panasonic 01982
Philips 01582
Pioneer 01877
RCN 01376

Rogers 01877, 01376

Sagem 02436

Samsung 03477, 01877, 01987, 02589, 03265 Scientific Atlanta 01877, 01982, 01987, 02436, 02401

Service Electric 01376, 01877

Shaw 01376, 01877, 02187

SKY 02620 SKY Deutschland 02620 Source Cable 01376

Suddenlink 01877, 01376 Telenet 01920, 03477

Telewest 01987 Thomson 01582

Time Warner 01877, 01376, 02187

TiVo 03265 Unitymedia 03477

UPC 01582, 03477 UPC Cablecom 01582, 03477

Videotron 01877

Virgin Media 01987, 03265

Wave Broadband 01376 Western Iowa 01877

Telephone

Westman 01376, 02187

Communications

WideOpenWest 01877, 01376, 02187

Ziggo 02589

IPTV

ADB 02586, 01481, 01998, 03028

Alcom 02437 Altibox 02437

Amino 01615, 01481, 01898, 01998, 03028

| Arkwest                           | 01481, 01998               |
|-----------------------------------|----------------------------|
| Arvig                             | 01998, 02345               |
| Communication                     |                            |
| Systems                           | 00050                      |
| AT&T                              | 00858                      |
| ATMC                              | 01998, 03028               |
| Ballard Rural<br>Telephone        | 02586                      |
| Cooperative                       |                            |
| Bayland                           | 02586                      |
| Communications                    |                            |
| Bell                              | 01998                      |
| Bell Aliant                       | 01998                      |
| Bell Fibe TV                      | 01998                      |
| Bledsoe Telephone                 | 01481, 01998               |
| Cooperative                       |                            |
| Bloomingdale                      | 01481, 01998, 03028        |
| Communications                    | 0.4.000                    |
| Blue Valley Telecommunications    | 01898                      |
| Bouygues Telecom                  | 03007                      |
| Brandenburg                       | 01481, 01998               |
| Telecom                           | 01401, 01000               |
| BT                                | 02294                      |
| BTC Broadband                     | 02586                      |
| Burlington Telecom                | 01481, 01615               |
| Cabovis                           | 02436                      |
| CalTel Connections                | 02586                      |
| Canby Telcom                      | 01481                      |
| Cannon Valley                     | 01481, 01998               |
| Cablevision                       |                            |
| CenturyLink                       | 01998                      |
| Cisco                             | 00858, 03028, 02345, 02378 |
| ClubInternet                      | 02132                      |
| CoopTel                           | 00858, 01615, 01898        |
| CRST Telephone                    | 01481, 01998               |
| Authority                         | 00245                      |
| Dakota Central Telecommunications | 02345                      |
| Dalton Cable                      | 01877, 01982               |
| Television                        | 5.517, 5.100 <b>2</b>      |
|                                   |                            |

| Delta Cable               | 01376               |
|---------------------------|---------------------|
| Diverse                   | 01898               |
| Communications            |                     |
| Du                        | 02401               |
| Eagle Broadband           | 01481, 01998        |
| Eagle Valley              | 01481, 01998        |
| Telephone                 |                     |
| EasyTEL                   | 01481, 01998, 03028 |
| Echostar                  | 03452               |
| Etex                      | 02586               |
| Farmer's Telephone        | 01998, 03028        |
| Cooperative               | 00500               |
| Golden Belt<br>Telephone  | 02586               |
| Gorham                    | 01481               |
| Communications            | 01401               |
| Griswold                  | 01481, 01998        |
| Cooperative               |                     |
| Telephone                 |                     |
| GTI                       | 01481, 01998, 03028 |
| Harrisonville             | 02586               |
| Telephone                 |                     |
| Hathw@y                   | 02043               |
| Horizon Cable TV          | 02586               |
| Hotwire                   | 02586               |
| HTC                       | 01481, 01998        |
| Communications            | 04000               |
| Innovative Systems        | 01898               |
| Inotel                    | 02437               |
| Integra Telecom           | 02345               |
| Interstate<br>Cablevision | 01481, 01998        |
| JP PTT                    | 01615               |
| Kiss                      |                     |
| KM Telecom                | 02132<br>01481      |
|                           |                     |
| KoolConnect<br>KPN        | 01481               |
|                           | 02952, 02437        |
| Lakeland<br>Cablevision   | 01481, 01998        |
| Lemonweir Valley          | 01481, 01998        |
| Telephone                 | 31101, 01000        |
| •                         |                     |

| Liberty<br>Communications        | 02586                                   |
|----------------------------------|---|
| Lonsdale Video                   | 01481, 01998                            |
| Ventures                         | 01401, 01330                            |
| Lumos Networks                   | 01998, 03028                            |
| Manawa Telecom                   | 02586                                   |
| Manti Telecom                    | 01481, 01998                            |
| Matanuska                        | 01481, 02586                            |
| Telephone                        |   |
| Association                      |   |
| Meo                              | 02401                                   |
| MHTC                             | 01481, 01998                            |
| Microwave Satellite Technologies | 01481, 01998                            |
| Millennium Telecom               | 01481, 01998                            |
| Minburn                          | 01481, 01998, 03028                     |
| Communications                   |   |
| MM&G Enterprises                 | 01481, 01998                            |
| Motorola                         | 02378, 01998, 02437, 0858, 02952, 01376 |
| Movistar                         | 03288                                   |
| MTS                              | 01998                                   |
| NDTC                             | 01481, 01998, 03028                     |
| North Central                    | 02345                                   |
| Telephone                        |   |
| North Dakota                     | 02586                                   |
| Telephone                        | 00050                                   |
| North State Communications       | 00858                                   |
| Norvado                          | 02586                                   |
| Nsight                           | 02345, 02586                            |
| NU Telecom                       | 01998, 03028                            |
| Oi TV                            | 03452, 03454                            |
| Open IPTV                        | 01615                                   |
| Optimus Clix                     | 02437                                   |
| Orange                           | 02407                                   |
| OTEC                             | 02586                                   |
| Communications                   | 02000                                   |
| Pace                             | 02401, 03454                            |
| Panora                           | 01481                                   |
| Telecommunications               |   |
| David Davis                      | 00506                                   |

Paul Bunyan 02586

| Communications                      |                       |
|-------------------------------------|-----------------------|
| Pine Island                         | 01481, 01998          |
| Telephone                           |                       |
| Polar                               | 02586                 |
| Communications                      | 04404 04000           |
| Poplar Bluff<br>Municipal Utilities | 01481, 01998          |
| Portugal Telecom                    | 02401                 |
| Price County                        | 01481, 01998          |
| Telephone                           |                       |
| Project Mutual                      | 01481, 01998          |
| Telephone                           | 04000                 |
| PSC                                 | 01998                 |
| Quality One<br>Technologies         | 01481, 01998          |
| Qwerty.TV                           | 01898                 |
| Randolph                            | 02586                 |
| Telephone                           |                       |
| Readlyn Telephone                   | 02586                 |
| Reservation                         | 01998, 02345          |
| Telephone                           | 04404 04000           |
| River Valley Telecommunications     | 01481, 01998          |
| S-GO Video                          | 01877                 |
| Sagem                               | 02407, 03288          |
| Sagemcom                            | 02407                 |
| Samsung                             | 02407                 |
| Sasktel                             | 01998                 |
| Scientific Atlanta                  | 00858, 02345, 03028   |
| Silver Star                         | 01481, 01998, 03028   |
| Communications                      | 0.4000                |
| SingTel                             | 01998                 |
| SKY Deutschland                     | 02620                 |
| Skyline Cable                       | 02586                 |
| SkyPix<br>Smile Content             | 01481, 01998<br>02437 |
| Smithville                          | 02586                 |
| CHILITATIC                          | 02000                 |

SureWest 01481, 01998, 02586 Surry Telephone 02586

01998

Sogetel

| SWAT Cooperative        | 01481, 01998, 03028 |
|-------------------------|---------------------|
| T-Home                  | 02132               |
| Telefonica              | 03288, 03028        |
| Telus                   | 03028               |
| TeNeT                   | 01898               |
| Thomson                 | 03007, 02407        |
| TV Northeast            | 01481, 01998        |
| TVB                     | 01615               |
| Twin Valley             | 02586               |
| Communications          |                     |
| United Telephone        | 02586               |
| Venture                 | 01998               |
| Communications          |                     |
| Cooperative<br>Verizon  | 02378               |
| Viken Fibernett         |                     |
|                         | 02437               |
| Vivo                    | 03288               |
| Watch TV                | 01481, 01998        |
| West Carolina Telephone | 03028               |
| Western Wisconsin       | 02586               |
| Communications          | 02000               |
| Westphalia              | 02586               |
| Broadband               |                     |
| Wilkes                  | 01481, 01998        |
| Telecommunications      |                     |

# ■ IPTV PVR Combination

Yadkin Valley 02345 Telecom

| ADB          | 02437        |
|--------------|--------------|
| Altibox      | 02437        |
| Amino        | 01615, 01898 |
| AT&T         | 00858        |
| ATMC         | 03028        |
| Beeline      | 03028        |
| Belgacom TV  | 02132        |
| Bell         | 01998        |
| Bell Aliant  | 01998        |
| Bell Fibe TV | 01998        |

Bouygues Telecom 03007
BT 02294
Cabovis 02436
CenturyLink 01998

Cisco 00858, 03028, 02132, 02345, 02378

ClubInternet 02132 Deutsche Telekom 02132 Du 02401 **Echostar** 03452 Freebox 01976 i-CAN 02437 Innovative Systems 01898 InviTV 02437 02132 **Kiss** 

KPN 02952, 02437

Lumos Networks01998Magio Sat02132Magnet01615Meo02401

Motorola 02437, 02378, 00858, 01998, 02952, 02401

MTS 01998 Numericable 02436

Oi TV 03452, 03454

Orange 02407

Pace 02401, 03454

Philips 02294 Portugal Telecom 02401

Sagem 02407, 03288

Sagemcom 02436, 02407, 03007

Samsung 02407 Sasktel 01998

Scientific Atlanta 00858, 02345, 02401, 03028

SKY Deutschland 02620 SureWest 01998 T-Home 02132

Telefonica 03028, 03288

 Telus
 03028

 Thomson
 03007

 Verizon
 02378

| Vodafone   | 02401        |
|------------|--------------|
| ■ PVR      |              |
| DirecTV    | 20739        |
| Humax      | 20739        |
| Panasonic  | 20616        |
| Philips    | 20739        |
| RCN        | 20739        |
| ReplayTV   | 20616        |
| Sonic Blue | 20616        |
| Sony       | 20636        |
| TiVo       | 20739, 20636 |

SN 29401846HTML\_EN (C) Copyright 2014 Onkyo Corporation Japan. All rights reserved.