Cisco ISB7000 Series
High-Definition
IP Set-Tops

Energy Star V3
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Notice for Installers

The servicing instructions in this notice are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions, unless you are qualified to do so.

Note to System Installer

For this apparatus, the cable shield/screen shall be grounded as close as practicable to the point of entry of the cable into the building. For products sold in the US and Canada, this reminder is provided to call the system installer’s attention to Article 800-83 and Article 800-100 of the NEC (or Canadian Electrical Code Part 1), which provides guidelines for proper grounding of the cable shield.

This symbol is intended to alert you that uninsulated voltage within this product may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this product.

Ce symbole a pour but d’alerter toute personne qu’un contact avec une pièce interne de ce produit, sous tension et non isolée, pourrait être suffisant pour provoquer un choc électrique. Il est donc dangereux d’être en contact avec toute pièce interne de ce produit.

This symbol is intended to alert you of the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product.

Ce symbole a pour but de vous avertir qu’une documentation importante sur le fonctionnement et l’entretien accompagne ce produit.

IMPORTANT SAFETY INSTRUCTIONS

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Power Source Warning

A label on this product indicates the correct power source for this product. Operate this product only from an electrical outlet with the voltage and frequency indicated on the product label. If you are uncertain of the type of power supply to your home or business, consult your service provider or your local power company.

The AC inlet on the unit must remain accessible and operable at all times.

Ground the Product

WARNING: Avoid electric shock and fire hazard! If this product connects to cable wiring, be sure the cable system is grounded (earthed). Grounding provides some protection against voltage surges and built-up static charges.

Protect the Product from Lightning

In addition to disconnecting the AC power from the wall outlet, disconnect the signal inputs.

Verify the Power Source from the On/Off Power Light

When the on/off power light is not illuminated, the apparatus may still be connected to the power source. The light may go out when the apparatus is turned off, regardless of whether it is still plugged into an AC power source.

Eliminate AC Power/Mains Overloads

WARNING: Avoid electric shock and fire hazard! Do not overload AC power/mains, outlets, extension cords, or integral convenience receptacles. For products that require battery power or other power sources to operate them, refer to the operating instructions for those products.
Handling Disposable Batteries
This product may contain disposable batteries. Heed the following warning and follow the Battery Safety and Battery Disposal instructions below.

WARNING: There is danger of explosion if the battery is mishandled or incorrectly replaced. Replace only with the same type of battery. Do not disassemble it or attempt to recharge it outside the system. Do not crush, puncture, dispose of in fire, short the external contacts, or expose to water or other liquids. Dispose of the battery in accordance with local regulations and instructions from your service provider.

Battery Safety
- Insert batteries correctly. There may be a risk of explosion if the batteries are incorrectly inserted.
- Do not attempt to recharge ‘disposable’ or ‘non-reusable’ batteries.
- Please follow instructions provided for charging ‘rechargeable’ batteries.
- Replace batteries with the same or equivalent type that we recommend.
- Do not expose batteries to excessive heat (such as sunlight or fire).
- Do not expose batteries to temperatures above 100°C (212°F).

Battery Disposal
- The batteries may contain substances that could be harmful to the environment.
- Recycle or dispose of batteries in accordance with the battery manufacturer’s instructions and local/national disposal and recycling regulations.

WARNING: There is danger of explosion if the battery is mishandled or incorrectly replaced. Replace only with the same type of battery. Do not disassemble it or attempt to recharge it outside the system. Do not crush, puncture, dispose of in fire, short the external contacts, or expose to water or other liquids. Dispose of the battery in accordance with local regulations and instructions from your service provider.

Provide Ventilation and Select a Location
- Remove all packaging material before applying power to the product.
- Do not place this apparatus on a bed, sofa, rug, or similar surface.
- Do not place this apparatus on an unstable surface.
- Do not install this apparatus in an enclosure, such as a bookcase or rack, unless the installation provides proper ventilation.
- Do not place entertainment devices (such as VCRs or DVDs), lamps, books, vases with liquids, or other objects on top of this product.
- Do not block ventilation openings.

Operating Environment
The set-top is designed for operation indoors with a temperature range from 32° to 104° F (0° to 40°C). Each set-top should have adequate spacing on all sides so that the cooling air vents on the chassis are not blocked.
Change the Way You Watch TV

Welcome to Internet Protocol Television (IPTV). The Cisco® ISB7000 Series High-Definition IP Set-Tops bring a rich, new set of interactive services directly to you through your TV and your in-home IP network. The set-top uses the existing in-home coaxial cable wiring and connects to most entertainment devices.

Available services may include some or all of the following features:

- **Digital Video Recorder (DVR)** – Allows you to record your favorite programs so that you can still go to your friend’s house for dinner and not miss your favorite TV show
- **Pause Live TV** – Allows you to pay for the pizza and come back to the show where you left it. (Applies to DVR models only)
- **High-Definition (HD)** – Provides crystal-clear pictures and sound when compared to standard-definition – you won’t want to watch television any other way once you’ve experienced HD
- **Video-On-Demand (VOD)** – Gives you access to a robust library of movies and programs that you can watch – when you want to watch them

**Note:** Contact your service provider to find out if the DVR, HD, or VOD services are available and to activate the services.

Identify Your Set-Top

Your installation manual covers the following models of set-tops. Use the following information to identify your model.

- **ISB7000 set-top** – TV set-top that supports high-definition (HD) and standard-definition (SD) video decoding. Supports 480i, 720p, and 1080i content. Uses Ethernet over CAT-5 or HPNAv3 in-home networking over coaxial or twisted-pair
- **ISB7005 set-top** – The ISB7005 is the same as the ISB7000 but with a wireless feature and no RF to wall connector
- **ISB7030 set-top** – The ISB7030 is the same as the ISB7000 but with a 320 GB hard disk drive
- **ISB7031 set-top** – The ISB7031 is the same as the ISB7030 but without HPNA and without RF to TV connector
- **ISB7050 set-top** – The ISB7050 is the same as the ISB7000 but with a 500 GB hard disk drive
- **ISB7080 set-top** – The ISB7080 is the same as the ISB7000 but with a 1 TB hard disk drive
- **ISB7100 set-top** – The ISB7100 is the same as the ISB7000 but without optional connectors
- **ISB7150 set-top** – The ISB7150 is the same as the ISB7050 but without optional connectors
Safety First
Before using the set-top, read the Important Safety Instructions section of this manual.

Serial Number
At times your service provider may ask for the serial number. To find the serial number for your set-top, look on the bottom of the set-top for the label. The serial number is a 9-digit numeric code to the right of the letters “S/N” on the label.

Use the space provided here to record the serial number: ______________________________________________________________

In This Manual
This manual covers the information you need to connect your set-top to both your in-home IP network and your entertainment system. The manual also outlines certain safeguards and installation information. The safety information contained in this manual was developed and provided solely by the set-top manufacturer, Cisco Systems, Inc.

Open Source GNU GPL Statement
Cisco ISB7000 set-tops contain(s), in part, certain free/open source software (“Free Software”) under licenses which generally make the source code available for free copy, modification, and redistribution. Examples of such licenses include all the licenses sponsored by the Free Software Foundation (e.g., GNU General Public License (GPL), GNU Lesser General Public License (LGPL), Berkeley Software Distribution (BSD), the MIT licenses and different versions of the Mozilla and Apache licenses). To find additional information regarding the Free Software, including a copy of the applicable license and related information, please go to: (i) for North America http://www.cisco.com/web/consumer/support/open_source.html, or (ii) for outside North America http://www.cisco.com/web/consumer/support/open_source.html#international. Once at the site, search for the product listing and click on the related items identified. If you have any questions or problems accessing any of the links, please contact: spvtg-external-opensource-requests@cisco.com.
Front Panel

1 Power
Turns the set-top on or places it in standby. To restart the set-top, press and hold the POWER button for 10 seconds. The LED is green.

2 Model Number
Identifies the model number of your set-top as ISB7000, ISB7005, ISB7030, ISB7031, ISB7050, ISB7080, ISB7100, or ISB7150.

3 Link
Indicates network link status. The LED is green.

4 HD
Indicates the set-top is set to a resolution of 720p or 1080i. The LED is blue.

5 Record
Indicates that a recording is in progress. The LED is red.

6 IR Sensor
Receives the infrared signal from the remote control. The sensor is behind the front panel.

7 Menu
Accesses the on-screen menu.

8 Arrow Keys
Accesses on-screen services (such as the on-screen guide, video-on-demand, or pay-per-view) and navigates menus.

9 OK
Selects the current item.

10 USB Port
USB connector (optional).

Note: This illustration may vary from the actual product.

⚠️ CAUTION:
Your set-top may be equipped with a hard disk drive to store programs that you record and to allow you to rewind and pause live TV. Any time the set-top is powered on (power LED is illuminated) or a recording is in progress (the record LED is illuminated), the hard disk drive is in use.

If you need to move the set-top, complete the following steps to allow the hard disk drive to shut down properly. First, make sure that no recording is in progress (record LED is off). Then, turn off power by pressing the Power key. Finally, unplug the unit and wait 10 seconds for the hard disk drive to spin down (stop). At this point, the unit can be moved safely.

You should handle this product with the same level of care you would use when handling other electronics containing a hard disk drive, such as a laptop computer or other hard disk drive-equipped devices.
1 To Wall (Video In)  
Connect the set-top to in-house coaxial wiring, if applicable. (optional)

2 To TV (Video Out)  
Connect to TV. You must set the channel on your TV to the channel designated by your service provider (usually channel 3). Contact your service provider for the channel information (optional).

3 Network  
Connect to the Ethernet (CAT-5) network at your home, if applicable.

4 eSATA Port  
Connect external SATA equipment approved by your service provider to this port (optional).

5 YPbPr  
Connect the set-top to the component video input (YPbPr) on your HDTV or SDTV. See pages 15 and 16 for more information.

6 S-Video  
Connect an S-Video cable to send an S-Video signal to your TV, VCR, or DVD recorder. This signal is standard-definition but higher quality than other standard-definition TV connections. See page 17 for more information (optional).

7 Video Out  
Connect to composite input on your HDTV or SDTV.  
**Note:** Two video output connectors are provided. Typically, one output is connected to the TV, and the other output is used to connect to a home theater system, DVD recorder, or VCR.

8 Audio Out (L/R)  
Connect RCA-type cables to Audio Out to send analog audio signals (left and right) to a TV with stereo inputs or to a stereo amplifier.  
**Note:** Two sets of audio out connectors are provided. Typically, one set of outputs is connected to the TV, and the other set is used to connect to a home theater system, DVD recorder, VCR, or wireless headphones.

9 Optical  
Connect an optical cable to send a digital audio signal to a surround-sound system or other digital audio device.

10 HDMI  
Connect an HDTV HDMI™ (High-Definition Multimedia Interface) cable from the HDTV to the HDMI port. HDMI supports both digital audio and video. See page 15 for more information.

11 USB Port  
Connects to external USB equipment approved by your service provider (optional).

12 Power  
Connect the DC output of the AC power adapter (provided) to deliver power to the set-top. Use only the AC power adapter provided with the set-top.

**Note:** This illustration may vary from the actual product.
Connecting the Set-Top
To connect your set-top to your network and home entertainment devices, complete these steps.

Because the connections for a high-definition (HD) or standard-definition (SD) TV are different, you must determine if your TV is HD or SD. Your TV must receive HD signals for you to enjoy the benefits of HDTV. Refer to the manual that came with your TV for more information. See page 30 for more information on picture formats.

Make one of the following connections for your home network:
- If your home network uses coaxial cable, use the TO WALL connector on the set-top. See page 14.
- If your home network uses twisted pair cable (phoneline wiring), use the TO WALL connector on the set-top and an adapter that converts twisted pair to coaxial. See page 14.
- If your home network uses Ethernet (CAT-5) cable, use the NETWORK connector on the set-top. See page 14.

Make the connections for your TV, VCR, and DVD recorder as follows:
- If you are using an HDTV, see page 15 and the connection diagrams in this manual.
- If you are using a standard-definition TV, see page 16 and the connection diagrams in this manual.
- If you want to record some programs on VCR tape or DVD, see page 17 and the connection diagrams in this manual.

Identify the additional consumer electronic devices you will connect to the set-top and TV. See pages 18 through 26 and refer to the owner’s manual for the device.

Plug the set-top and the TV into an AC power source that is not controlled by a switch.
ISB7005 Wireless Network Connection

The ISB7005 set-top allows for easy and secure setup of a wireless home network. The signal strength indicator on the front panel of the set-top indicates the strength of the wireless connection.

The set-top must be paired with the wireless access point for the wireless connection to be established. See page 13 for more information.

<table>
<thead>
<tr>
<th>Wireless LEDs</th>
<th>Set-top Operational Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Green bars" /></td>
<td>Five green bars indicate the wireless signal is excellent. The video quality is good.</td>
</tr>
<tr>
<td><img src="image" alt="Green bars" /></td>
<td>Four green bars indicate the wireless signal is very good. The video quality is good.</td>
</tr>
<tr>
<td><img src="image" alt="Green bars" /></td>
<td>Three green bars indicate the wireless signal is good. The video quality is good. You must obtain three or more green bars at initial installation.</td>
</tr>
<tr>
<td><img src="image" alt="Green bars" /></td>
<td>Two green bars indicate the wireless signal is fair. The video quality is good.</td>
</tr>
<tr>
<td><img src="image" alt="Red bars" /></td>
<td>Two red bars indicate the wireless signal is weak. The video quality may be poor. The STB should be re-oriented to achieve a better wireless signal.</td>
</tr>
<tr>
<td><img src="image" alt="Red bars" /></td>
<td>One red bar indicates the wireless signal is very weak. No video can be displayed. The receiver must be re-oriented to achieve a better wireless signal.</td>
</tr>
<tr>
<td><img src="image" alt="No bars" /></td>
<td>This indicates no wireless connectivity.</td>
</tr>
</tbody>
</table>
Connection for ISB7005 Wireless Set-Top

The ISB7005 set-top allows for easy and secure establishment of a wireless home network. The signal strength indicator on the front panel of the set-top allows you to identify the strength of your wireless connection.

1. Plug the set-top power supply into an AC power supply that is not controlled by a switch.
2. Plug the power adapter into the set-top.
3. Press the power button on the remote control or the set-top.

**Note:** The signal indicator lights may flash for a few minutes when power is first applied. Do not unplug the set-top.
Connecting the Wireless Access Point to the Wireless Gateway

1. Connect the 12 VDC Power Supply plug on the access point to the wall power outlet. Use only the power adapter provided with the product.

2. Connect the power plug to the power receptacle on the wireless access point.

3. Connect one end of the RJ-45 Ethernet cable to the Ethernet port on the wireless access point.

4. Connect the other end of the RJ-45 Ethernet cable to an available Ethernet port on your wireless gateway.

Pairing the Wireless Access Point and Set-Top

1. Press the OK button on the set-top.

2. Press the WPS button on the wireless access point.
Connecting to the In-Home Network

The following diagrams illustrate examples of the connections you can use to connect your set-top to your in-home network. Contact your service provider for the recommended connection method for your home. (This section does not apply to the ISB7005; see Connection for ISB7005 Wireless Set-Top on page 12.)

Notes:
- The in-home coaxial and phoneline wiring networks use HomePNA 3.1 technology.
- The illustrations below may vary from the actual product.

![Coaxial Diagram]

**Coaxial**

TO WALL (VIDEO IN) | TO WALL (VIDEO OUT)
---|---
Wall | Wall
In-Home Coaxial Network | In-Home Coaxial Network

OR

![Phoneline Diagram]

**Phoneline**

TO WALL (VIDEO IN) | TO TV (VIDEO OUT)
---|---
Wall | Wall
In-Home Phoneline Network | In-Home Phoneline Network

OR

![CAT-5 Diagram]

**CAT-5**

TO WALL (VIDEO IN) | TO TV (VIDEO OUT)
---|---
Wall | Wall
In-Home CAT-5 Network | In-Home CAT-5 Network
Connections for a High-Definition TV (HDTV)

To use the set-top with an HDTV, you must make one of the following connections to view the HD content. Refer to the owner’s manual for your TV and the cabling diagrams in this manual for more detailed connection information.

Although all connections provide you with quality service, we list the connections in our recommended order.

Notes:
- The labeling on your set-top or HDTV may vary slightly from the illustrations shown below.
- Some cables shown in the connection diagrams may not be included with this set-top.
- Set the HD mode and select the output video format (480i, 720p, 1080i) on the set-top.

See page 30 for more information on picture formats.

<table>
<thead>
<tr>
<th>Use One of These Required Connections to an HDTV</th>
<th>Set-Top Connections</th>
<th>HDTV Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HDMI</strong></td>
<td><img src="image" alt="HDMI" /></td>
<td><img src="image" alt="HDMI" /></td>
</tr>
</tbody>
</table>
| Some HDTVs have a High-Definition Multimedia Interface (HDMI) connector. The HDMI connector provides both a digital video and audio connection. See the connection diagram on page 18 for an example.  
Note: The HDMI port on the TV must support high-bandwidth digital content protection (HDCP). |                     | Audio/Video       |
| **DVI**                                        | ![HDMI](image)      | ![HDMI](image)  |
| The HDMI connector can provide the connection to an HDTV with a DVI input. If your HDTV has a Digital Visual Interface (DVI) connector, you need an HDMI-to-DVI adapter, and a separate audio connection (either L/R or optical audio).  
Note: The DVI port on the TV must support high-bandwidth digital content protection (HDCP).  
See the connection diagram on page 19 for an example. | ![Adapter Needed](image) | Video            |
| **YPbPr**                                      | ![YPbPr](image)     | ![YPbPr](image) |
| The YPbPr (red, blue, and green) connectors provide high-definition component video signals to an HDTV, and a separate audio connection (either L/R or optical audio).  
See the connection diagram on page 20 for an example. | ![YPbPr](image)     | ![YPbPr](image)  |
| **RGB**                                        | ![RGB](image)       | ![RGB](image)   |
| Some HDTVs have only RGB or RGB-HV connectors. If you have one of these HDTVs, you need a Component-to-RGB adapter, and you need a separate audio connection. | ![RGB](image)       | ![RGB](image)   |
Connections for a Standard-Definition TV (SDTV)

When using the set-top with an SDTV, you must make one of the following connections to view content. Some SDTVs may not have all these connections. Refer to the owner’s manual for your TV and the cabling diagrams in this manual for more detailed information.

Although all connections provide you with quality service, we list the connections in our recommended order.

Notes:
• The labeling on your set-top or SDTV may vary slightly from the illustrations shown below.
• Some cables shown in the connection diagrams may not be included with this set-top.

<table>
<thead>
<tr>
<th>Use One of These Required Connections to an SDTV</th>
<th>Set-Top Connections</th>
<th>SDTV Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>YPbPr (red, blue, and green) connectors can provide standard-definition component video signals to an SDTV. A separate audio connection is also needed.</td>
<td><img src="image1" alt="Set-Top Connections Diagram" /></td>
<td><img src="image2" alt="SDTV Connections Diagram" /></td>
</tr>
<tr>
<td><strong>Note:</strong> To connect YPbPr to an SDTV, you must select the output video format. See page 30 for more information on picture formats. See the connection diagram on page 21 for an example.</td>
<td><img src="image3" alt="Alternate YPbPr Connections Diagram" /></td>
<td><img src="image4" alt="Alternate SDTV Connections Diagram" /></td>
</tr>
<tr>
<td>S-Video connection provides an optimal video connection to SDTVs. A separate audio connection is also needed. See the connection diagram on page 22 for an example.</td>
<td><img src="image5" alt="Set-Top S-Video Connections Diagram" /></td>
<td><img src="image6" alt="SDTV S-Video Connections Diagram" /></td>
</tr>
<tr>
<td>Video Out connector provides a video connection to an SDTV. A separate audio connection is also needed. See the connection diagram on page 23 for an example.</td>
<td><img src="image7" alt="Set-Top Video Out Connections Diagram" /></td>
<td><img src="image8" alt="SDTV Video Out Connections Diagram" /></td>
</tr>
<tr>
<td>The To TV (Video Out) connector provides both a video and audio connection to an SDTV. See the connection diagram on page 24 for an example.</td>
<td><img src="image9" alt="Set-Top To TV Connections Diagram" /></td>
<td><img src="image10" alt="SDTV To TV Connections Diagram" /></td>
</tr>
</tbody>
</table>
Connections for a VCR or DVD Recorder

When using the set-top with a VCR or DVD recorder, you must make one of the following connections to view content.

Although all connections provide you with quality service, we list the connections in our recommended order.

**Notes:**
- The labeling on your set-top, VCR, or DVD recorder may vary slightly from the illustrations shown below.
- Some cables shown in the connection diagrams may not be included with this set-top.

**Use One of These Optional Connections to a VCR or DVD Recorder**

<table>
<thead>
<tr>
<th>VCR/DVD Recorder</th>
<th>Set-Top Connections</th>
<th>VCR/DVD Recorder Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>For VCRs or DVD recorders with S-Video In and Left and Right audio connectors, use the S-Video and the Audio Out Left and Right connectors on the set-top.</td>
<td><img src="image1" alt="S-VIDEO IN" /></td>
<td><img src="image2" alt="S-VIDEO IN" /></td>
</tr>
<tr>
<td>For VCRs or DVD recorders with Video In and Left and Right audio connectors, use the Video Out and the Audio Out connectors (Left and Right) on the set-top.</td>
<td><img src="image3" alt="VIDEO OUT" /></td>
<td><img src="image4" alt="VIDEO IN" /></td>
</tr>
</tbody>
</table>

See the connection diagram on page 26 for an example.
Connecting to an HDTV with an HDMI Connector

Cable Used in this Configuration

- 1 HDMI Cable

Notes:
- The HDMI port on the TV must support high-bandwidth digital content protection (HDCP).
- The HDMI interface supports Dolby® Digital 5.1 audio.

![WARNING: Electric shock hazard! Unplug all electronic devices before connecting or disconnecting any device cables to the set-top.](image)

Set-Top

Back of HDTV

T14738
Connecting to an HDTV with a DVI Connector

Cables Used in this Configuration
- 1 HDMI-to-DVI Cable or 1 HDMI Cable and 1 HDMI-to-DVI Adapter
- 1 Audio Left/Right Cable (You can also use an optical cable [indicated by the dotted line] instead of the Audio Left/Right Cable as shown in the diagram, dependent upon your TV’s capabilities.)

Notes:
- The DVI port on the TV must support high-bandwidth digital content protection (HDCP).
- When you connect the HDMI connector to the DVI connector on your HDTV, you need an HDMI-to-DVI adapter and a separate audio connection.

⚠️ WARNING:
Electric shock hazard! Unplug all electronic devices before connecting or disconnecting any device cables to the set-top.

Set-Top

Back of HDTV

T14739
Connecting to an HDTV with Component (YPbPr) Connectors

Cables Used in this Configuration

- 1 Component Video Cable (YPbPr)
- 1 Audio Left/Right Cable (You can also use an optical cable [indicated by the dotted line] instead of the Audio Left/Right Cable as shown in the diagram, dependent upon your TV’s capabilities.)

⚠️ WARNING:

Electric shock hazard! Unplug all electronic devices before connecting or disconnecting any device cables to the set-top.
Connecting to an SDTV with Component (YPbPr) Connectors

Cables Used in this Configuration
• 1 Component Video Cable (YPbPr)
• 1 Audio Left/Right Cable

Note: The set-top must be set to the proper standard-definition mode.

⚠️ WARNING:
Electric shock hazard! Unplug all electronic devices before connecting or disconnecting any device cables to the set-top.
Connecting to an SDTV with an S-Video Connector

Cables Used in this Configuration

- 1 S-Video Cable
- 1 Audio Left/Right Cable

WARNING:
Electric shock hazard! Unplug all electronic devices before connecting or disconnecting any device cables to the set-top.
Connecting to an SDTV with an RCA-Type Connector

Cables Used in this Configuration

- 1 RCA-type Video Cable
- 1 Audio Left/Right Cable

⚠️ WARNING:

Electric shock hazard! Unplug all electronic devices before connecting or disconnecting any device cables to the set-top.
Connecting to an SDTV with a Coaxial Cable

Cable Used in this Configuration

- 1 Coaxial Cable

**Note:** You must set the channel on your TV to the channel designated by your service provider (usually channel 3). Contact your service provider for the channel information.

**WARNING:**
Electric shock hazard! Unplug all electronic devices before connecting or disconnecting any device cables to the set-top.

Set-Top

![Diagram of SDTV connections showing Coaxial Cable]

Coaxial Cable

Back of SDTV

T14744
Connecting to a Home Theater System with Component (YPbPr) Connectors

Cables Used in this Configuration

- 1 Component Video Cable (YPbPr)
- 1 Audio Left/Right Cable (You can also use an optical cable [indicated by the dotted line] instead of the Audio Left/Right Cable as shown in the diagram.)

Notes:
- This connection requires that audio is provided by the home theater system.
- Consult the user guide that came with your home theater system for information on connecting your other video and audio devices.

⚠️ WARNING: ⚠️
Electric shock hazard! Unplug all electronic devices before connecting or disconnecting any device cables to the set-top.

Set-Top

Back of Home Theater Receiver
Connecting to a Stereo VCR or DVD Recorder (optional)

The diagram below shows how to connect a recording device to your set-top. Although it is possible to watch TV using a connection through your VCR or DVD recorder to the TV, this connection may not provide the best picture, and HDTV users are restricted to an SD format. In addition, some content is copy protected and passing this content through the recording device may result in a picture that cannot be viewed.

For these reasons, the connection shown is best used to provide only video and audio to your recording device and not for normal TV viewing. The connection from the recording device to the TV (only used for playback of recorded material) depends on the type of device being used, the outputs that are supported, and the inputs that remain available for use on your TV.

Consult the owner’s manuals provided with your TV and recording device for more details on connection options.

**Cables Used in this Configuration**

- 1 RCA-type Video Cable
- 1 Audio Left/Right Cable

---

**WARNING:**

Electric shock hazard! Unplug all electronic devices before connecting or disconnecting any device cables to the set-top.

---

Connecting your TV directly to the Audio/Video output of your set-top will assure a more vivid picture and enhance your viewing enjoyment.
Troubleshooting

If the set-top does not perform as expected, the following tips may help. If you need further assistance, contact your service provider.

No Picture

- Verify that the power to your TV is turned on.
- If the set-top is plugged into a wall switch, verify that the switch is in the ON position.
- For the model ISB7005 wireless set-top, verify that the set-top and wireless access point devices are powered on.
- Verify that all cables are properly connected.
- If your system includes a VCR, DVD recorder, or stereo, verify that you have properly connected the device to the set-top.
- Verify that you are using the proper input selection to the home theater set-top or TV.
- Verify that the set-top is set to the proper screen type and resolution.
- If you are using coaxial cable to connect to your TV, verify that the TV is tuned to the channel designated by your service provider (usually channel 3). Contact your service provider for the channel information.

Wireless Set-Top Signal Strength

- Verify that you are able to receive wireless signal. See page 11 for details.
- Optimal operating conditions for wireless set-tops can vary. Performance depends on many factors, including distance from the access point, building materials, interference, and other environmental conditions.

No Color or Incorrect Color

- Verify that the current TV program is broadcast in color.
- Adjust the TV color controls.
- If you are using a component video connection (YPbPr), check that all connectors are completely and properly plugged into the set-top and TV.
- If you are using a component video connection (YPbPr) and your HDTV has only RGB or RGB-HV connectors, you must use an adapter. You can obtain the adapter through an electronic parts retailer.

No Sound

- If your setup includes a VCR, DVD recorder, or stereo, verify that you have properly connected the device to the set-top.
- Verify that the volume is turned up.
- Verify that the mute function is not on.
- Verify the proper input selection to the home theater set-top or TV.
- If you are using coaxial cable to connect to your TV, verify that the TV is tuned to the correct channel.
Avoid Screen Burn-In

Images such as letterbox bars or side bars, bright closed-captioning backgrounds, station logos, or any other stationary images may cause the display in your HDTV to age unevenly; this is known as screen burn-in. Refer to the owner’s manual that came with your HDTV for more information.

⚠️ CAUTION:
Avoid screen burn-in.
Do not display the same fixed images on your HDTV screen for extended periods of time.
Frequently Asked Questions

What Is Digital Television?
Digital television (DTV) is a huge leap forward in television technology compared to analog television that has been widely available since the 1940s. DTV is delivered and displayed using digital encoding, similar to the way a PC operates. By using digital technology, there is no variation in picture and sound quality from the origination point until it is displayed on your television. You always receive a high-quality picture without the wavy lines or static you might sometimes get from a weak analog signal. Another feature of digital television is digital surround sound using Dolby Digital technology, which is the same technology used to produce the sound you hear in movie theaters.

What Is Standard-Definition Television?
Standard-definition television (SDTV) is basic digital television programming delivered by your service provider. Typically, the SDTV screen is the same, nearly square shape as an analog television screen. Digital images on an SDTV set are crisp and clear—noticeably better than on a standard analog television set using an antenna to receive over-the-air signals.

What Is High-Definition Television?
High-definition television (HDTV) is a completely new way to send and receive television broadcast signals. HDTV images are made up of pixels that are much smaller and closer together than those used in standard analog television, and there are millions of them. Thus, HDTV can display five to six times the detail of analog television to deliver picture quality that is much more realistic, dimensional, and precise. SDTV programs can be viewed on an HDTV.

Are Local TV Stations or Other Programmers Broadcasting in HDTV?
Many local TV stations and programmers are transmitting digital signals. However, transmitting a digital signal does not mean transmitting an HDTV signal. Some stations are using the new bandwidth to broadcast several standard-definition channels. Most stations and programmers, once they begin broadcasting in digital, are offering HD content from their parent network (for example, CBS, ABC, NBC, Fox, and PBS). Contact your service provider for more information.

Why Aren’t All the Shows I Watch in High-Definition?
A high-definition program must originate in HD format and be broadcast in HD format. Having an HDTV system does not mean that everything you watch will be viewed in high-definition. Getting the signal from a digital source also does not mean it is high-definition.

Why Are Some HDTVs 4:3 Aspect Ratio and Others 16:9?
The aspect ratios differ because television manufacturers build both standard-screen and wide-screen HDTVs to appeal to consumer viewing preferences. The two aspect ratios are as follows:

- On standard-screen (4:3) HDTVs, the programming is displayed in letterbox format in the middle of the screen. There are bars surrounding the picture.
- On wide-screen (16:9) HDTVs, the programming is displayed on the full screen.

What Is HDMI and Does it Support Dolby Digital 5.1 Audio?
The High-Definition Multimedia Interface (HDMI) is an uncompressed, all-digital audio/video interface. The Dolby Digital audio format that provides up to 5.1 separate channels of surround sound, and is the standard used for DVD-Video. HDMI supports standard, enhanced, or high-definition video, plus multi-channel digital audio, such as Dolby Digital audio, on a single cable.
What Is the Difference Between a Standard-Screen and a Wide-Screen HDTV?
The type of screen your HDTV has (wide-screen or standard-screen) determines how the set-top displays programs on the screen. The picture format for an HDTV is a combination of aspect ratio and screen resolution and is different for standard-screen and wide-screen HDTVs.

What Is Aspect Ratio?
An aspect ratio is the ratio of the width to the height of the TV screen. The aspect ratios differ because the television industry manufactures both standard-screen and wide-screen HDTVs to appeal to consumer viewing preferences.

What Is the Screen Resolution?
The screen resolution indicates the amount of detail that the picture displays. Resolution is identified by the number of display lines on the screen. The techniques that an HDTV uses to “paint” the picture on the screen are referred to as progressive and interlaced.

With the progressive scanning method, the lines are drawn on the screen one at a time in sequential order. Progressive scanning results in a more detailed image on the screen and is also less susceptible to the flicker commonly associated with interlaced scanning. The interlaced method involves refreshing pixels in alternation – first the odd lines and then the even lines.

For advanced setup, select the screen resolution that your TV can support. Refer to your HDTV user manuals to choose the proper screen resolution (480i, 720p, 1080i, or 1080p) for your setup.

For example, a screen resolution of 1080i indicates that the screen shows 1080 lines in an interlaced display, and 720p indicates that the screens shows 720 lines in a progressive display.

A standard-screen HDTV has a 4x3 aspect ratio. The screen is 4 units wide for every 3 units tall.

A screen resolution of 480i fills the screen.

A wide-screen HDTV is one-third wider than a standard-screen HDTV. The screen is 16 units wide for every 9 units tall.

A screen resolution of 720p or 1080i fills the screen.
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FCC Compliance
United States FCC Compliance
This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against such interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the service provider or an experienced radio/television technician for help.

Any changes or modifications not expressly approved by Cisco Systems, Inc., could void the user’s authority to operate the equipment.

For operation within 5.15 – 5.25 GHz frequency range, it is restricted to indoor environment.

The information shown in the FCC Declaration of Conformity paragraph below is a requirement of the FCC and is intended to supply you with information regarding the FCC approval of this device. The phone numbers listed are for FCC-related questions only and not intended for questions regarding the connection or operation for this device. Please contact your service provider for any questions you may have regarding the operation or installation of this device.

FCC Declaration of Conformity
This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: 1) the device may not cause harmful interference, and 2) the device must accept any interference received, including interference that may cause undesired operation.

Canada EMI Regulation
This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la class B est conforme à la norme NMB-003 du Canada.

Software and Firmware Use
The software described in this document is protected by copyright law and furnished to you under a license agreement. You may only use or copy this software in accordance with the terms of your license agreement.

The firmware in this equipment is protected by copyright law. You may only use the firmware in the equipment in which it is provided. Any reproduction or distribution of this firmware, or any portion of it, without our express written consent is prohibited.

Disclaimer
Cisco Systems, Inc. assumes no responsibility for errors or omissions that may appear in this guide. We reserve the right to change this guide at any time without notice.

The maximum performance for wireless is derived from IEEE Standard 802.11 specifications. Actual performance can vary, including lower wireless network capacity, data throughput rate, range and coverage. Performance depends on many factors, conditions and variables, including distance from the access point, volume of network traffic, building materials and construction, operating system used, mix of wireless products used, interference and other adverse conditions.

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With respect to each AVC/H.264 product, we are obligated to provide the following notice:

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ENERGY STAR® Notice
Cisco has tested and confirmed that the ISB7000 set-top models meet the Qualification Criteria specified in the ENERGY STAR Program Requirements for Set-top Boxes Version 3.0.

ROVI CORPORATION COPYRIGHT NOTICE
This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights of Rovi Corporation. Use of this copyright protection technology must be authorized by Rovi Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Rovi Corporation. Reverse engineering and disassembly are prohibited.

IC (Industry Canada) Notice
Notice: The Industry Canada (formerly Canadian Department of Communications) label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The department does not guarantee the equipment will operate to the user’s satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company’s inside wiring and a single-line individual service may be authorized by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution:

The device for the band 5150–5250 MHz is only for indoor use to reduce potential for harmful interference to co-channel mobile satellite systems.

The maximum antenna gain permitted (for devices in the bands 5250–5725 MHz (5.48 dBi) to comply with the e.i.r.p. limit; and
The maximum antenna gain permitted (for devices in the band 5725–5825 MHz (3.44 dBi)) to comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate, as stated in section A9.2(3).

High power radars are allocated as primary users (meaning they have priority) of 5250–5350 MHz and 5650–5750 MHz and these radars could cause interference and/or damage to LE-LAN devices.

**RF Exposure Statements**

**Note:** This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 7.9 inches (20 cm) between the radiator and your body.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

**ISB7005** with PCB antenna and max. antenna gain is 5.48 dBi in 5G.

**US**

This system has been evaluated for RF exposure for humans in reference to ANSI C 95.1 (American National Standards Institute) limits. The evaluation was based on evaluation per ANSI C95.1 and FCC CET Bulletin 65C rev 01.01. The minimum separation distance from the antenna to general bystander is 7.9 inches (20 cm) to maintain compliance.

**Canada**

This system has been evaluated for RF exposure for humans in reference to Canada Health Code 6 (2009) limits. The evaluation was based on evaluation per RSS-102 Rev 4. The minimum separation distance from the antenna to general bystander is 7.9 inches (20 cm) to maintain compliance.

**Note:** The ISB7005 has disabled the 5600–5650M band by S/W to avoid 5600–5650M band for IC certification.

**EU**

This system has been evaluated for RF exposure for humans in reference to the ICNIRP (International Commission on Non-Ionizing Radiation Protection) limits. The evaluation was based on the EN 50385 Product Standard to Demonstrate Compliance of Radio Base Stations and Fixed Terminals for Wireless Telecommunications Systems with basic restrictions or reference levels related to Human Exposure to Radio Frequency Electromagnetic Fields from 300 MHz to 40 GHz. The minimum separation distance from the antenna to general bystander is 20 cm (7.9 inches).

**Australia**

This system has been evaluated for RF exposure for humans as referenced in the Australian Radiation Protection standard and has been evaluated to the ICNIRP (International Commission on Non-Ionizing Radiation Protection) limits. The minimum separation distance from the antenna to general bystander is 20 cm (7.9 inches).

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**CE Compliance**


This declaration is only valid for configurations (combinations of software, firmware and hardware) supported or provided by Cisco Systems for use within the EU. The use of software or firmware not supported or provided by Cisco Systems may result in the equipment no longer being compliant with the regulatory requirements.

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**National Restrictions**

This product operates in the 5 GHz Wi-Fi bands and shall only be used indoors.

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