

PDi
PD196-426R4
SET
TOP
BOX
INTERFACE
MODULE



PDi PD196-426R4 Set Top Box Interface Module User Manual

[Home](#) » [PDi](#) » PDi PD196-426R4 Set Top Box Interface Module User Manual 

Contents

- [1 PDi PD196-426R4 Set Top Box Interface Module](#)
- [2 Specifications](#)
- [3 Product Usage Instructions](#)
- [4 Introduction](#)
- [5 Connections](#)
- [6 Central Style](#)
- [7 TV Setup](#)
- [8 Verifying and Troubleshooting Connections](#)
- [9 Main Menu](#)
- [10 Programming the Interface Module](#)
- [11 Keypad Programming \(Mapping\) Instructions](#)
- [12 Operation](#)
- [13 Troubleshooting](#)
- [14 Appendix A Control Device \(TV\) Key Reference](#)
- [15 Appendix B – STB Command Reference](#)
- [16 Limited Warranty](#)
- [17 FAQ's](#)
- [18 Documents / Resources](#)
 - [18.1 References](#)
- [19 Related Posts](#)



PDi PD196-426R4 Set Top Box Interface Module



Specifications

- **Model:** PDi BELLA-HD Interface
- **Document Number:** PD196-426R4
- **Manufacturer:** PDi Communication Systems, Inc.
- **Country of Origin:** USA
- **Website:** www.PDiarm.com and www.mymedTV.com
- **Phone:** 800.628.9870

Product Usage Instructions

TV Setup

Follow the specific setup instructions based on your TV model:

- A-Series TVs: [Instructions]
- medTABC or medTABD TVs: [Instructions]
- Most Earlier PDi TVs: [Instructions]

Verifying and Troubleshooting Connections

To ensure proper connections and troubleshoot any issues:

- Check the Power LED indicator.
- Refer to the troubleshooting section of the user manual for detailed steps.

Danger: This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit

Warning: This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

**CAUTION: RISK OF ELECTRIC SHOCK,
DO NOT OPEN!**

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

CAUTIONS AND WARNINGS

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

WARNING: To prevent injury, this apparatus must be securely attached to the equipment rack in accordance with the installation instructions.

WARNING: Do not install this equipment in a confined space such as a bookcase or similar unit.

Modifications

Any changes or modifications made to this device that are not expressly approved by PDI may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

Safety Instructions

To avoid any malfunctions of the unit and associated components and unwanted electric shock or fire accidents, please observe the following:

- Review the manual for your STB unit for safety instructions
- Review the manual for your PDI TV for safety instructions
- Review the manual for the rack unit.

Placement

Avoid placing the unit in surroundings with:

- High temperature (over 40 C) or high humidity (over 90%).
- Direct sunlight or heat sources, like radiators or ovens.
- Excessive dust.
- Electrostatic effect.
- Vibration, impact, or tilted surface.

Wet Areas

- Avoid rain and moisture.
- DO NOT set containers with liquid, such as vases, on top of the unit.
- Avoid placing the unit in areas where there is dripping and/or splashing.
- Avoid placing unit near standing water.

Oxygen Environment

DO NOT use in an oxygen tent or an oxygen chamber. Such use may cause a fire hazard.

SERVICING

User Servicing

If your product is not operating correctly or exhibits a marked change in performance and you are unable to restore normal operation by following the detailed procedure in its operating instructions, do not attempt to service it yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Damage Requiring Service

Unplug this product and refer servicing to qualified service personnel under the following conditions:

- If liquid has been spilled, or objects have fallen into the product.
- If the product has been exposed to rain or water.
- If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- If the product has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance which indicates a need for service.

Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in safe operating conditions.

Cleaning & Disinfecting

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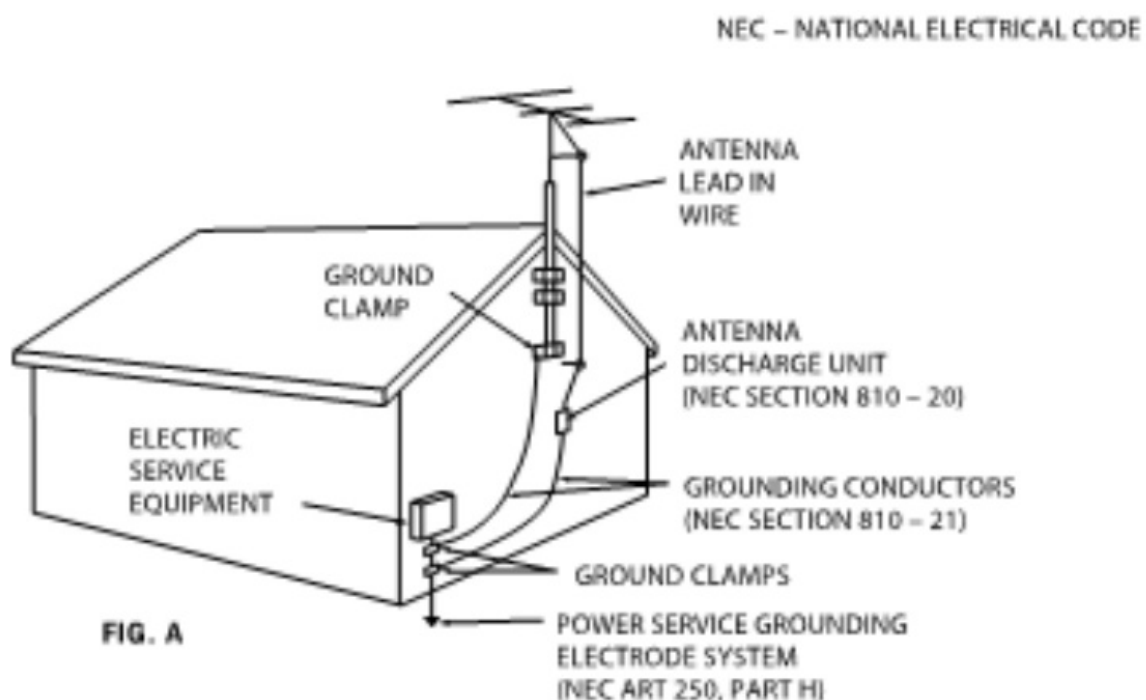
IMPORTANT SAFETY INSTRUCTIONS

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 is 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 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.

15. This appliance should be mounted in an equipment rack as recommended by the manufacturer.
16. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
17. If an outside antenna or cable system is connected to the video product, be sure the antenna or cable system is grounding so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.



NOTE: This reminder is provided to call the CATV system installer's attention to article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Introduction

Traditionally a facility pays for dozens or hundreds of cable/satellite channels but only has a small number of set-top boxes, each locked on a single channel, and combined onto the cable plant. When a patient wants to view a channel that isn't on the cable plant, the nurse must go to the head end and change one of the receivers or tell the patient the channel is not available. To provide the full channel package to each patient, the set-top box may be placed next to each TV in the patient area. Unfortunately, when the IR remote is used by one patient to change channels, any TV nearby will also change.

The PDi Interface Module is designed to improve the patient experience interacting with a TV at a facility in which the channels come from a cable/satellite set-top box. It allows direct access to all set-top box functions via PDi TV keypad, IR remote, and pillow speaker. It gives patients access to every channel the facility is paying for and allows patients to easily switch between cable/satellite, in-house DVD, and rooftop antenna channels. The interface module can pay for itself by eliminating modulators, splitters, and combiners in most environments. It removes the need to modulate signals for distribution by sending HDMI from each set-top box directly to an associated TV. It offers customizable key mapping and works in many retrofit installations. Best of all it's made in America!

Compatibility

The PDi interface module uses HDBase-T technology to bring uncompressed HDMI signals from the set-top box at the head-end to the TV. It also forms a communication bridge between the PDi TV and set-top box. As of this print, the following set-top boxes have been tested to work with the PDi interface module starting with the minimum firmware version shown. Contact PDi for compatibility with other models.

Provider	Set-top Box Model	PDi Interface Module Min Firmware Version
Amino	Amino Kamai 7X	V5.06
Cablevision	Scientific Atlanta Explorer 4250HD	V5.04
Charter/Spectrum	Motorola DCH6200	V5.04
Charter/Spectrum	Motorola DCT2224	V5.04
Comcast/Xfiniti	Pace DC50X	V5.04
Comcast/Xfiniti	Pace PXD01ANI	V5.04
Comcast/Xfiniti	Comcast PR150B	V5.04
Comcast/Xfiniti	Comcast RNG110	V5.04
COX	COX 3250HD (Scientific Atlanta Explorer 3250HD)	V5.04
COX	COX DTA250HD	V5.04
DirecTV	DirecTV H25	V5.00
Dish	Dish ViP211k	V5.04
Dish	Dish ViP222k	V5.04
Haivision	Haivision Stingray	V5.04
Haivision	Haivision Mantaray	V5.04
Time Warner Cable/Spectrum	Cisco DTA 271HD	V5.04
Time Warner Cable/Spectrum	Cisco 8742 HDC	V5.04
Time Warner Cable/Spectrum	Spectrum100-H	V5.04
Time Warner Cable/Spectrum	Spectrum101-T	V5.04
Verizon		V5.04

Mounting and Powering the Interface Module

The PDi interface module is designed to slide into an industry standard 12 slot mini-mod chassis. It is powered by a DirecTV set-top box or the mini-mod chassis' power supply. Power by the DirecTV set-top box in place of the chassis power supply reduces cost of the rack and allows for 3 or 4 additional modules to be placed in each chassis, for a total of 15 or 16.

Compatible chassis include, but are not limited to:

Brand	Mini-Mod Chassis	Chassis Power (non DirecTV)
ATX Networks	MPC-12C	MPC-PSF12/16
Blonder Tongue	MIRC-12V	MIPS-12D
Drake®	RMM-12	PSM121
Holland	HMR	HMPS

When it is more desirable to have the set-top box and interface module located outside a rack, the module may be

used in a stand-alone configuration without the need for a mini-mod chassis. If not powered by a DirecTV set-top box, then the PDi PD106-747 power adapter (not included) should be used to power the interface module. Since the interface module uses very little energy, it has no special ventilation requirements.

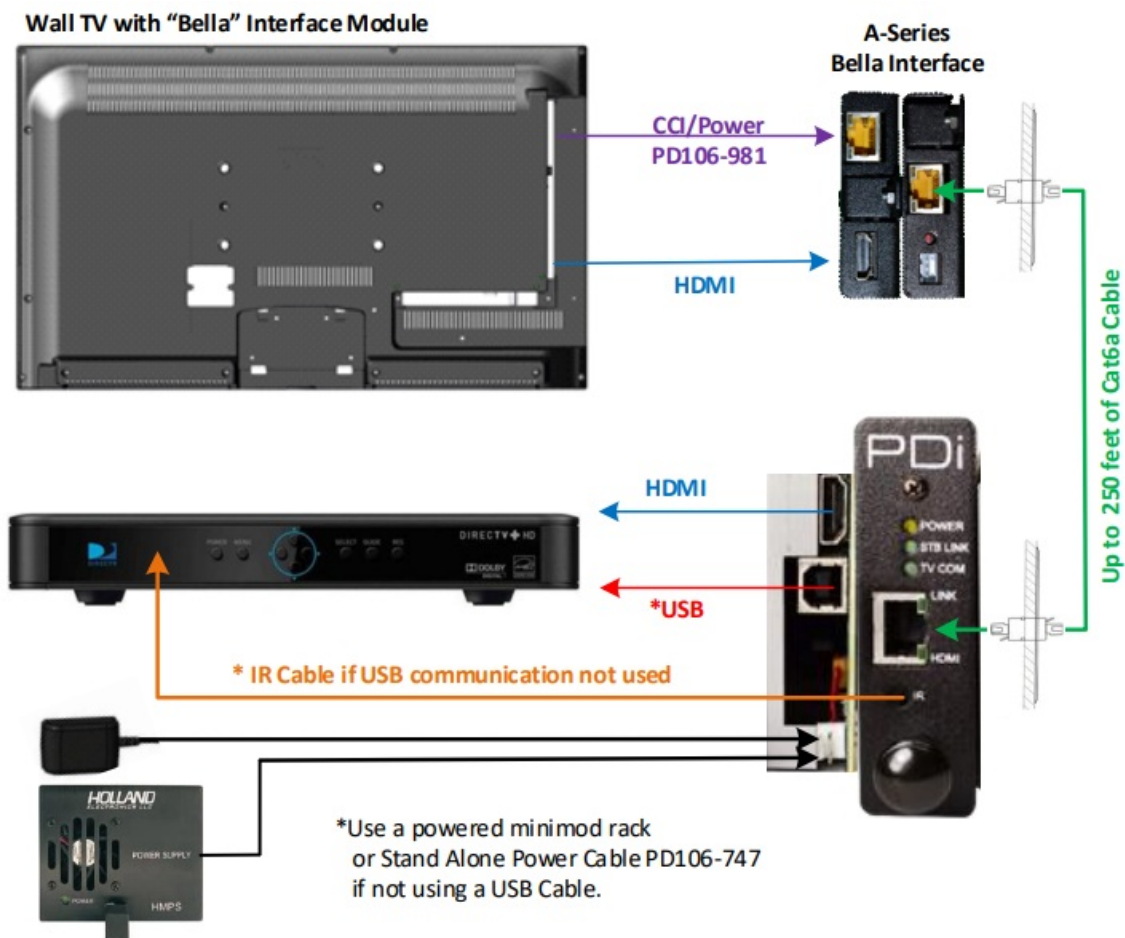
Connections

The PD295-004 BELLA-HD interface module connects to the TV via standard CAT6a cable. CAT6a provides a higher bandwidth needed for the HDMI video signal and the length should not exceed 250 feet. Bella must be powered via the rack mounted chassis, a standalone power adapter, or via a USB power connection. The IR Emitter cable must also be connected to the module and adhered to the IR window of the corresponding set-top box. CAT6a, HDMI and power cables are not provided with the Bella.

Wall Mounted Televisions

Wall Mounted TV – Data, Power, and IR Emitter Cable Installation

1. Connect 26 pin connector of CCI/POWER cable to the TV's 26 pin connector and the other end to the CCI connector on the BELLA CCI port as shown below.
2. Connect an HDMI cable between the BELLA interface box and the TV.
3. Connect the CAT6a cable to the RJ45 port on the PD295-004 interface module.
4. Remove adhesive backer from the module and secure it to the rear of the TV.
5. For rack mounted interface module, connect rack minimod power cable to PD295-004. For stand-alone mounting, connect power cord PD106-747 to PD295-004.



Wall Mounted TV – RF Cable Installation

The RF Output Signal cable from each set-top box (STB) must also be routed to each remotely located television. Please refer to the STB installation instructions for details.



Arm Mounted Televisions

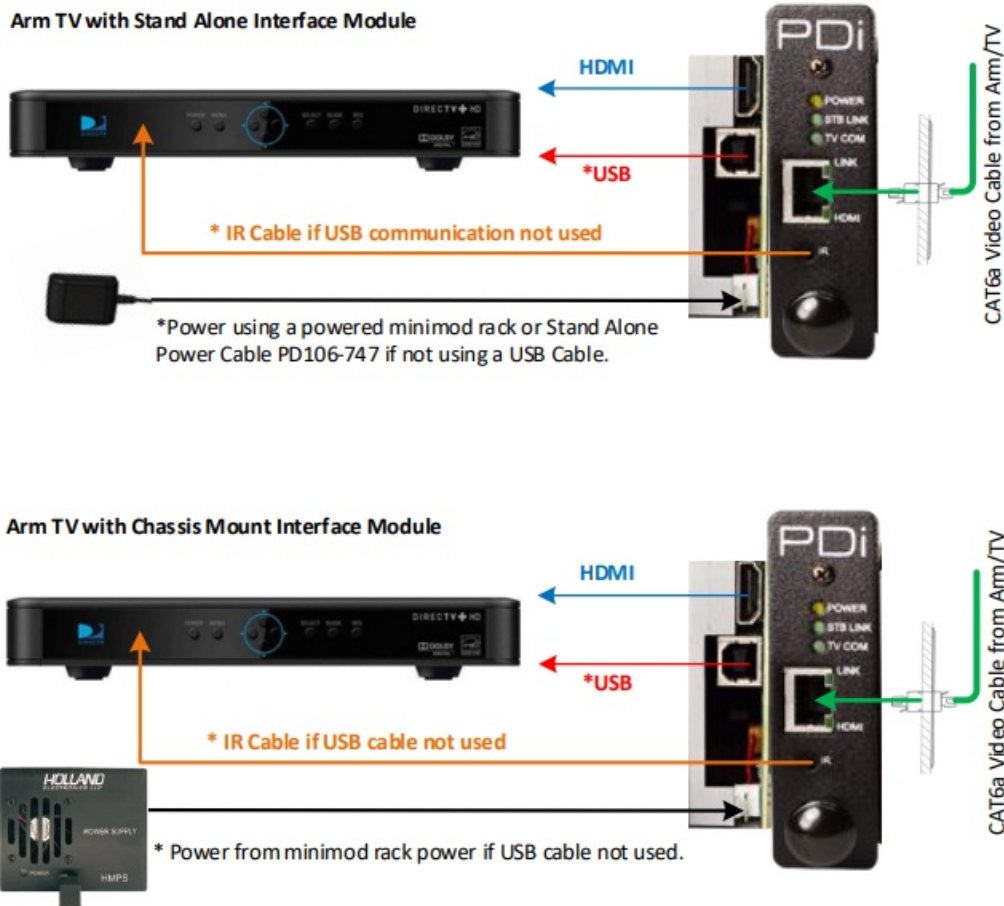
The PD295-004 interface module is also compatible with several of the PDi Arm Mounted televisions that incorporate a BELLA interface. Models such as the medTV and medTAB can be used successfully with the interface module when ordered with the BELLA option.

NOTE: Each TV and its Support Arm must be pre-wired with a CAT6a data cable. Please contact PDi Communication Systems or your PDi distributor for assistance should your TV and/or Arm lack this cable.

Arm Mounted TV Data, Power, and IR Emitter Cable Installation

The CAT6a cable used to connect the remotely located TV to the interface module should not exceed 250 feet in length. CAT6a, HDMI and power cables are not provided with the interface module.

1. Connect one end of the CAT6a cable to the Data Cable from the Arm/TV. The in-room Data Connection is typically wall mounted as illustrated below.
2. Connect the other end of the CAT6a cable to the RJ45 port on the front of the PD295-004 interface module.
3. If using a DirecTV set-top box, connect the USB cable to the PD295-004. No other power supply is needed.
4. Connect the IR Emitter cable to the interface module if used (see note below).
5. Remove adhesive backer from IR Emitter and secure it to the IR receiver window of the STB.
6. For a chassis mounted interface module, connect chassis power cable to PD295-004. For stand-alone mounting, connect power cord PD106-747 to PD295-004.



Arm Mounted TV RF Cable Installation

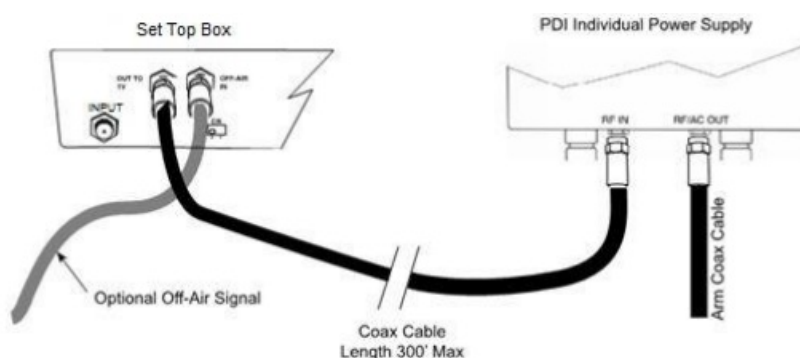
Unlike AC powered wall mounted TV's, PDi arm mounted television models receive their RF signal and TV power combined along a connecting coax cable from an external power source. Special consideration must be used in handling the low voltage AC power found on the RF signal coax cable.

Two types of external power supplies are used with arm mounted televisions: individual or central style. The individual power supply mounts near the TV injecting power from a nearby AC outlet onto the incoming coaxial cable. The central supply injects power onto 10 separate coax cables simultaneously and mounts in a wiring closet as far as 150 feet away from the TV's. Connection of the RF signal coax cable for each style of power supply is detailed below.

Individual Style Power Supply RF Cable Installation

1. Signal connections for an arm mounted TV powered from an individual power supply requires a single coax cable no longer than 300 feet, connected at the set-top box's "Output to TV" connection.
2. Some set-top boxes also allow for the connection of an external Antenna or other signal source via an "OFF-AIR IN" connection. Please consult your set-top box installation instructions for details.

NOTE: The drawing below is representative of the typical set-top box. Your box may vary in appearance.



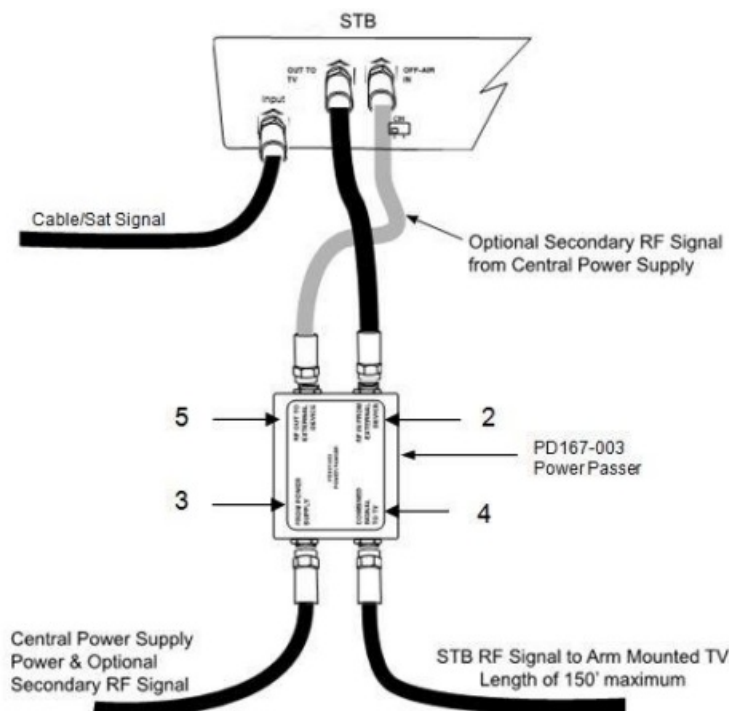
Central Style

Power Supply RF Cable Installation

Low voltage AC TV power is present on each central power supply TV coax cable. A PDi Power Passer (part number PD167-003) is required to route the AC power on the coax cable around any externally connected device such as the Satellite Box. A Power Passer is required for each TV/STB connection. For new installations, the use of a PDI-772HE-IND instead of PDI-772-HE will eliminate the need for the power passers.

NOTE: The PD167-003 Power Passer is an optional device NOT supplied with the interface module and is only required for centrally powered arm mounted televisions. Please contact PDi or your PDi distributor to order this device.

1. Remove power from the TV at the central power supply.
2. Connect a coaxial cable from the STB “OUT TO TV” to the Power Passer’s “RF IN FROM EXTERNAL DEVICE”.
3. Locate the coaxial cable from the central power supply. Connect this cable to “FROM POWER SUPPLY”.
4. Connect the coaxial cable from the TV to “COMBINED SIGNAL TO TV.” The TV coax should be limited to 150’ to accommodate the central power supply coax length limitations.
5. Connect an Optional Secondary RF signal coaxial cable from the Power Passer’s “RF OUT TO EXTERNAL DEVICE” to the set-top box “OFF-AIR IN”. This connection is only necessary if you wish to view TV signals that are already present on your system in addition to set-top box signals.

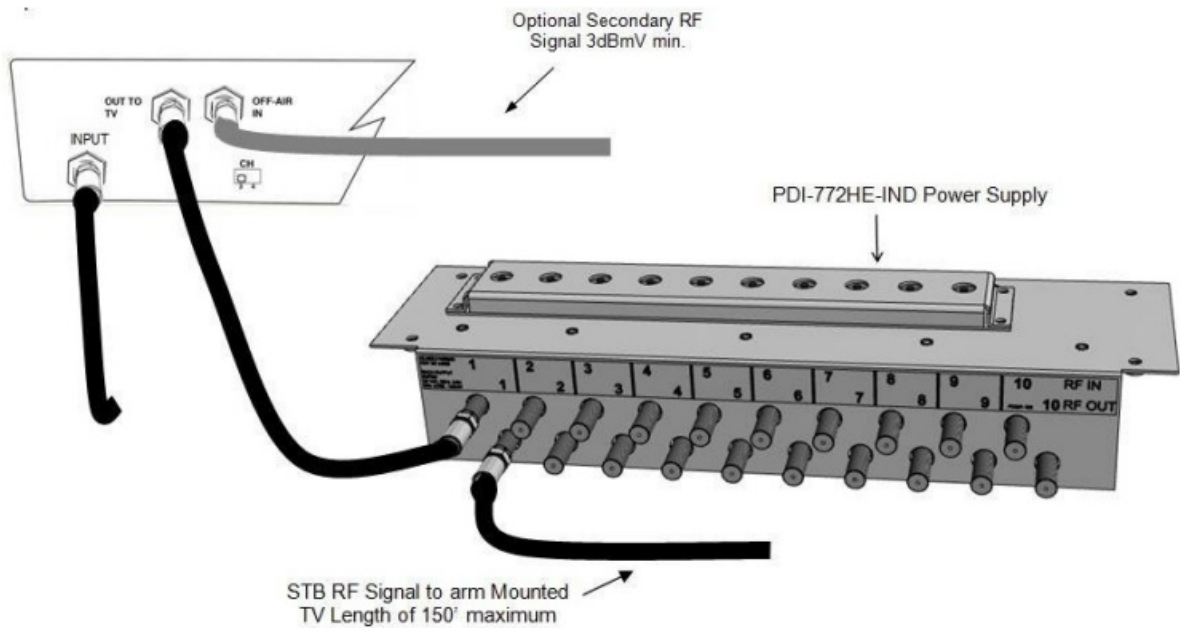


Central Style PDI-772HE-IND Power Supply RF Cable Installation

Low voltage AC TV power is present on each central power supply TV RF out port. Each RF In port is designed to be connected to a separate RF source with minimal loss and high isolation.

1. Remove power from the TV at the central power supply.
2. Connect a coaxial cable from the set-top box “OUT TO TV” to one of the 10 “RF IN” ports on the PDI-772HE-IND.
3. Connect the coaxial cable from the TV to “RF OUT”. The TV coax should be limited to 150’ to accommodate the central power supply coax length limitations.

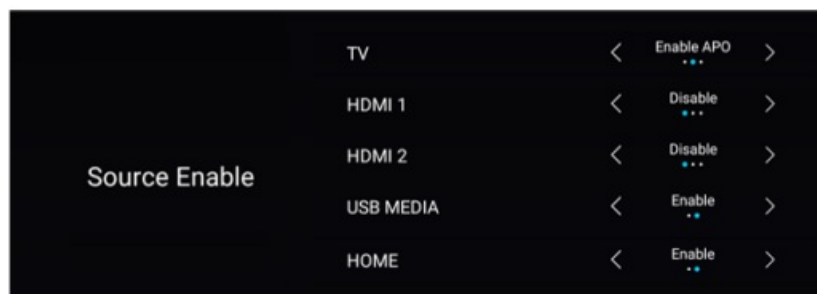
4. Connect an Optional Secondary RF signal coaxial cable to the set-top box "OFF-AIR IN". This connection is only necessary if you wish to view TV signals that are already present on your system in addition to set-top box signals. Signal strength entering the set-top box should be +3dBmV to +10dBmV.



TV Setup

A-Series

To establish communication to interface module the CCI port on the TV must be active and you must have a PDI programming remote PD108-420 (not included).



1. From the TV, open the TV Setup Menu by pressing SETUP on the programming remote.
2. Select "Sources" and then select "Source Enable". Set each item as detailed below. The TV Source Setup must properly reflect the actual connections to the TV. Incorrect settings will result in loss of programming or the addition of blank signal sources. In most installations, both cable/satellite and off-air programming is delivered over RF so the "TV" must be enabled. If the cable/satellite channels are delivered over an alternate method such as HDMI, then that source must be enabled. All unused sources should be disabled.

medTABC or medTABD

medTAB14C or -D, medTAB19C or -D, and medTAB16C or -D are compatible with PDi interface modules. To establish communication to interface module the CCI port on the TV must be active. Setup on the medTAB14 and medTAB16 can be completed with a PDi programming remote PD108-420 (not included). medTAB19 setup is completed through onscreen touchscreen controls.

1. From the TV app, open the TV Settings Menu, by pressing SETUP on the programming remote or by pressing

Settings on the touchscreen TV controls. Enter password (“45066” is factory default).

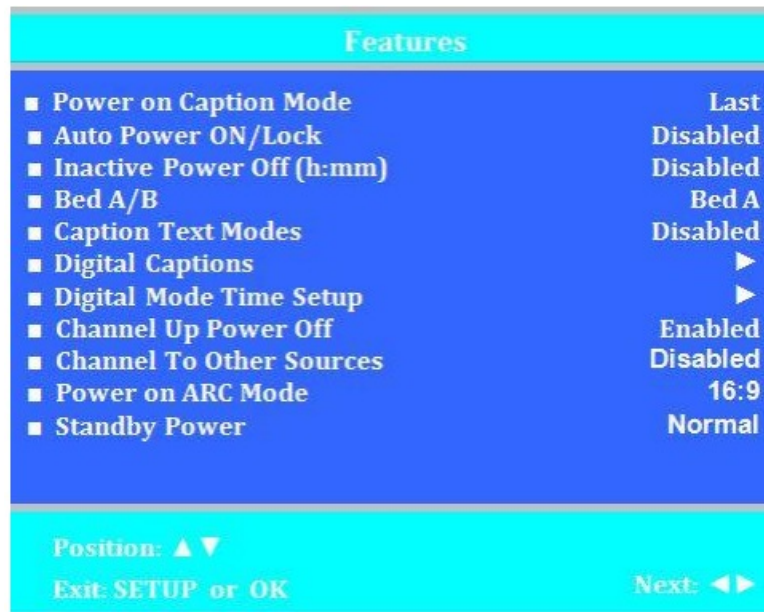
2. Select “Advanced Option”.
3. Select “Features” then select “Input Sources”. Set each item as detailed below.

The TV Source Setup must properly reflect the actual connections to the TV. Incorrect settings will result in loss of programming or the addition of blank signal sources. In most installations, both cable/satellite and off-air programming is delivered over RF so the “TV” must be enabled. If the cable/satellite channels are delivered over an alternate method such as HDMI, then that source must be enabled. All unused sources should be disabled.

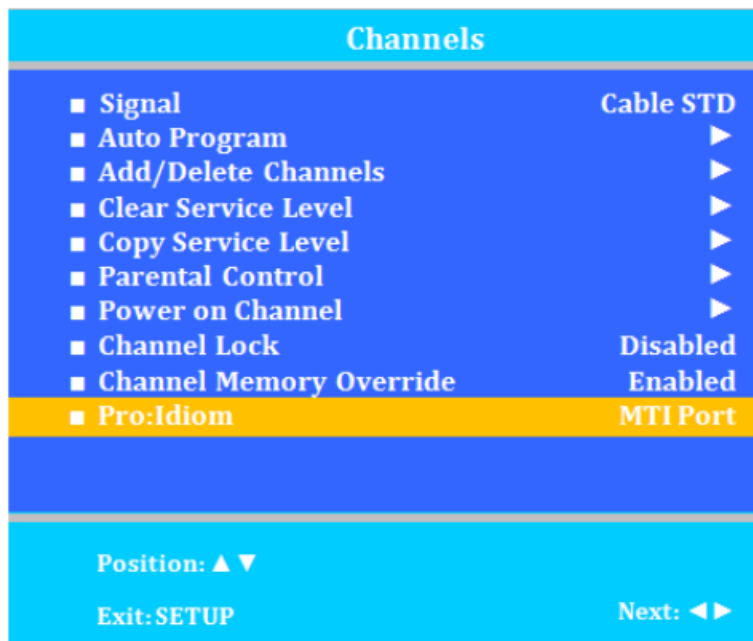
Most Earlier PDi TVs

To establish communications to the interface module, the CCI port on the TV must be active and you must have a PDi programming remote PD108-420 (not included). Follow the steps below:

1. Press SETUP to enter the TV’s setup menu.
2. From the setup menu select “Features”.
3. If the “Standby Power” setting shows in this menu, change it to “Normal”. Some TV’s do not have this setting so this step can be ignored. Other TV’s may operate the interface module on any “Standby Power” setting. This can be determined by trying it or contacting PDi.



4. From the initial setup menu, select “Channels”.
5. Change the “Pro:idiom” option to “MTI Port” or “Data Port”. Some TV’s do not have this setting. In that case, this step can be ignored.



6. From the initial setup menu, select “Sources”. Set each item as detailed below.

The TV Source Setup must properly reflect the actual connections to the TV. Incorrect settings will result in loss of programming or the addition of blank signal sources. In most installations, both cable/satellite and off-air programming is delivered over RF so the “TV Tuner” must be enabled. If the cable/satellite channels are delivered over an alternate method such as HDMI, then that source must be enabled. All unused sources should be disabled.



Verifying and Troubleshooting Connections

The following steps verify the data connections between the STB and TV. These instructions assume you have followed the previous connection and TV setup sections of this manual.

1. Power the TV.
2. Power the set-top box.
3. Power the interface module. Note-If using a DirectTV box, power is through the USB cable.
4. Examine the front mounted status lights on the PD295-004 interface module. It contains a POWER, STB (set-top box), TV COM, LINK, and HDMI status lights.
 1. Each light will turn green (yellow for power) when properly connected.

2. A dark (Off) status light indicates a problem.
3. A blinking STB LINK LED indicates data transfer. HDMI blinking means HDMI video content is not copy protected.
4. All 5 lights lit indicate all connections are working properly and HDMI is being sent to the TV.



Please review the “Troubleshooting” section for additional help.

NOTE: While the LINK light indicates a working connection to the TV, it does not confirm the audio/video (HDMI) from the STB is connected to the correct TV.

POWER	STB LINK	TV COM	LINK	HDMI	SUGGESTIONS
OFF	OFF	OFF	OFF	OFF	1. Verify interface module is powered (USB or Power adapter)
ON	ON	ON	ON	ON	1. All connections are proper – HDMI may be solid green or blinking.
ON	ON	OFF	OFF	OFF	1. No CAT6a/CAT5e connection to TV. 2. No power on TV.
ON	ON	OFF	ON	ON	1. CCI connection problem inside TV.
ON	ON	ON	ON	OFF	1. No HDMI signal from set-top box. 2. HDMI connection problem inside TV.
ON	OFF	ON	ON	ON	1. IR blaster cable unplugged or USB disconnected from set-top box. 2. DirecTV set-top box needs reset. Press RESET button on set-top box. Wait 2 minutes for box to reboot.

Power LED

- On – Yellow Solid – Indicates that the minimod processor has power and is running properly.
- Off – No power supplied to the minimod, either through the USB or power connector.

STB Link LED

Note: If a DirecTV box is not used or is used but not connected with the USB cable, this LED will not be active. The minimod box can be powered with a separate wall wart and the IR output used to control the set-top box.

- On – Green – Indicates communication between the minimod and the DirecTV set-top box. It may take up to 2 minutes after power is cycled before the light will turn on.

- Off – No set-top box communication. Check USB cable connection. Cycle power to set-top box.

TV COM LED

- On – Green – Indicates communication to the remote TV. This may blink occasionally indicating TV communication.
- Off – No TV communication. If this light is off and the TV LINK light is on solid, there is a CCI cable connection problem inside the TV.

LINK LED

- On – Green – Solid – Indicates an active connection to the remote TV. This indicator is different in functionality than the TV COMM led. This indicates the CAT6 cable connection is good between the minimod and the TV, but not necessarily communication to the TV board. See the TV COMM description above.
- Off – No CAT6 connection to the TV. If this light is off and the POWER light is on solid, there is a CAT6 cable connection problem between the minimod and the TV.

HDMI LED

- On – Green – Blinking – Indicates an active HDMI video stream connection to the TV. This indicator is different in functionality than the TV COMM led. This indicates the CAT6 cable connection is good between the minimod and the TV, but not necessarily communication to the TV board. See the TV COMM description above.
- Off – If this light is off and the TV LINK light is on, check the HDMI input connection. If both TV LINK and TV HDMI lights are off, there is no CAT6 connection to the TV. If this light is off and the POWER light is on solid, there is a CAT6 cable connection problem between the minimod and the TV. The HDMI input can be working and this light be off if the HDMI signal is not being received by the TV.

Interface Module Setup Menus

The interface module is configurable from Setup menus accessed by the TV programming remote or onscreen touchscreen controls. The following instructions assume you have connected the TV, interface module, STB, and the various components according to the previous instructions contained in this manual.

Accessing Interface Module Setup Menus on medTABc or medTABD

1. Make certain the STB and interface module are powered. See the instructions that came with the STB for more details.
NOTE: Some set-top boxes (STBs) require several minutes following application of initial power to effectively respond to commands. Please allow enough time for the STB to properly initialize.
2. From the TV app, open the TV Settings Menu, by pressing SETUP on the programming remote or by pressing Settings on the touchscreen TV controls. Enter password ("45066" is the factory default).
3. Select Advanced Option then press SETUP on the programming remote OR tap anywhere on the screen to open the STB interface module setup menu.
4. Press the "CH ▲" or "CH ▼" on the programming remote OR use the touchscreen navigation arrows ▲ ▼ to highlight the desired option. To advance to the next page, press "CH ▼" or ▼ when the bottom item on the list is highlighted.
5. Press "VOL ►" or "VOL ◀" on the programming remote OR use the touchscreen navigation arrows ► ◀ to cycle

through a menu item's setting options.

6. When finished, press **SETUP** on the programming remote OR press **Settings** on the touchscreen controls to exit the "interface module setup" menu and save changes. **NOTE:** FAILURE TO EXIT the interface module setup menu by following this step 6 could result in patient access to interface module setup menus.

Accessing Interface Module Setup Menus on most PDi TVs

1. Make certain the STB and interface module are powered. See the instructions that came with the STB for more details.

NOTE: Some set-top boxes (STBs) require several minutes following application of initial power to effectively respond to commands. Please allow enough time for the STB to properly initialize.

2. Stand in front of the TV and press the **SETUP** button on the PD108-420 programming remote
3. When the TV Setup menu appears on the TV's screen, press **SETUP** a second time to display the interface module setup menu.
4. Press the "CH ▲" or "CH ▼" on the remote to highlight the desired option. To advance to the next page, press "CH ▼" when the bottom item on the list is highlighted.
5. Press "VOL ►" or "VOL ◀" on the remote to cycle through a menu item's setting options.
6. When finished, press **SETUP** to exit the "interface module setup" menu and save changes.

Main Menu

Key Menus

Menus 1, 2, 3, 4 and 5 provide the mapping content of a control device's keypad buttons. The factory default settings are shown in the menus pictured here in this manual. A complete listing of STB functions is provided in appendix A. The left menu column "- TV KEY -" contains a listing of common control buttons found on pillow speakers, remotes, and television keypads. The right menu column "- STB COMMAND-" contains default settings that work well with most STB's. Adjustment can only be made to items in the right column.

NOTE: A STB menu item that is blank does not provide any STB control functionality and will operate the standard TV function.

INTERFACE MODULE SETUP	
STB Model	DirecTV USB
Settings / Diagnostics	>
TV Keys	>
Numeric Keys	>
Navigation Keys	>
Media Play Keys	>
Misc Keys	>
Save: SETUP/OK Cancel: POWER	

INTERFACE MODULE SETUP	
-TV KEY-	-STB COMMAND-
CH Up	CH+
CH Dn	CH-
Vol Up	
Vol Dn	
Last/Prev Ch	Prev Channel
OK / Sel / Enter	Select
CC	
ARC/Ratio	Down Arrow
Mute	
Sleep	Up Arrow
SAP/MTS	
Return: SETUP/OK/LAST	

INTERFACE MODULE SETUP	
-TV KEY-	-STB COMMAND -
0	Digit 0
1	Digit 1
2	Digit 2
3	Digit 3
4	Digit 4
5	Digit 5
6	Digit 6
7	Digit 7
8	Digit 8
9	Digit 9
Dash (-)	Info
Return: SETUP/OK/LAST	

INTERFACE MODULE SETUP	
-TV KEY-	-STB COMMAND -
Up Arrow	Up Arrow
Dn Arrow	Down Arrow
Lt Arrow	Left Arrow
Rt Arrow	Right Arrow
Menu	Guide
Home	
Guide	Guide
Info	Info
Recall/Star (*)	Prev Channel
Exit:	Exit
Back (Nav)	Back
Return: SETUP/OK/LAST	

INTERFACE MODULE SETUP	
-TV KEY-	-STB COMMAND -
Play	Play
Pause	Pause
Stop	Stop
Eject	Record
Rewind	Rewind
Fast Forward	FFWD
Last Track	Replay
Next Track	Advance
Return: SETUP/OK/LAST	

INTERFACE MODULE SETUP	
-TV KEY-	-STB COMMAND -
TV/FM	Exit
TV/AV/Input	
Ch List	Guide
DVD Menu	Guide
RED	
GREEN	
YELLOW	
BLUE	
Return: SETUP/OK/LAST	

Settings Menu

Settings / Diagnostics Menu provides STB configuration settings and firmware information.

MENU ITEM	EXPLANATION
TV Input for STB	Sets the TV's signal type input to correspond to the STB's signal output. The majority of STB's utilize modulated RF as the signal type and is the type shown in this instruction manual. TUNER is the default setting. Additional settings are available for STB's with different output signal types.
Restore Defaults for STB	Press vol ► to restore all interface settings, for the selected STB model, to factory defaults. NOTE: Each STB model has a unique set of Factory Defaults. Selecting "Restore Factory Defaults" changes the parameters to the Factory Defaults for the selected STB model and does not change the "STB Model" selection. The default settings for each supported STB are detailed below in "Appendix B – STB Functions and Default Mapping Reference"
Flash Intface Pwr LED	This provides a diagnostic tool to help determine if the TV is connected to the expected Satellite Interface and STB. If "Flash Intface Pwr LED" is turned on, the "POWER" LED on the Satellite Interface module controlled by this TV will flash rapidly. The STB controlled by this interface will also turn on and off continuously. NOTE: This is not a stored parameter. It is automatically set to "OFF" by cycling power to the interface module.
Power Save	If "Power Save" is turned ON, the STB will be automatically powered off when the TV is turned off
Interface F/W Ver	PDi set-top box Interface firmware version
TV CCI Ver	CCI communication protocol version reported by TV
IR Cable	Connection status of IR Emitter cable to the interface module.

Programming the Interface Module

Programming the IR Code Set

The Interface Module sends infrared (IR) codes that mimic the set-top box's remote control. Therefore, the interface must know which set-top box is being controlled to send the proper codes.

NOTE: Changing the STB Model does not change the previous STB Key selections. If the STB Model is changed, the STB Key selections should be reviewed to determine if they are the desired mappings for the installation.

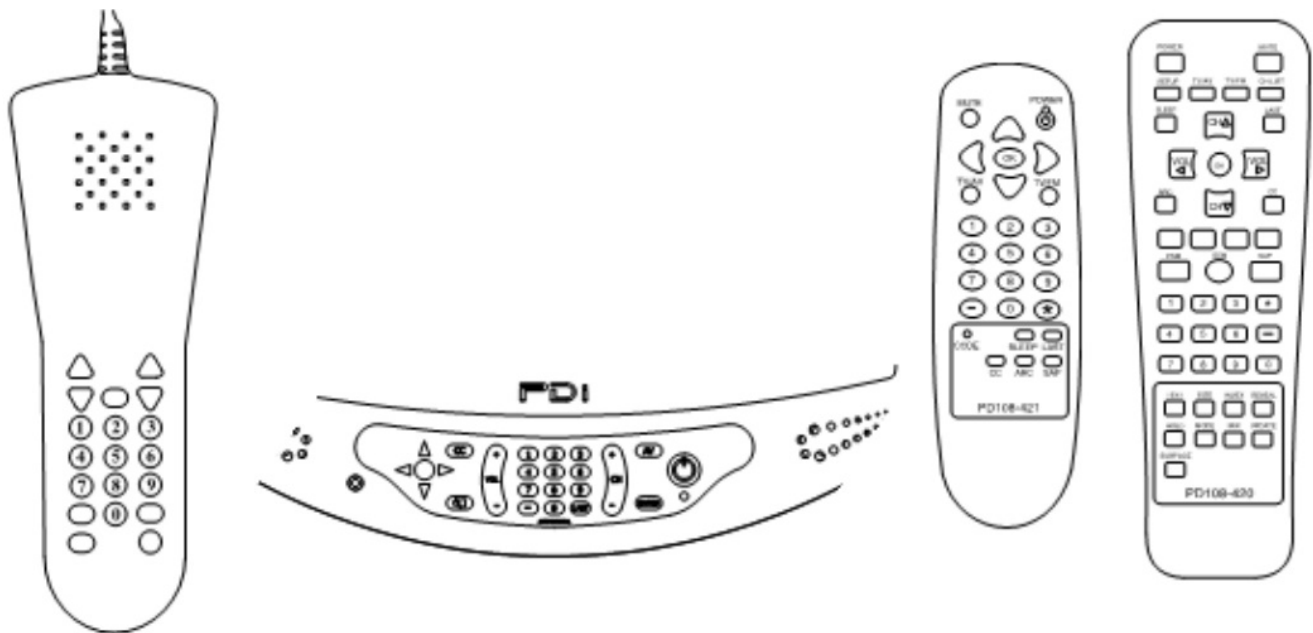
1. Enter the Interface Module Setup Menu (See "Understanding Interface Module Setup Menus" earlier in this manual).
2. Set "STB Model" to match the actual model of the STB.
3. Perform a factory reset (See Restoring Factory Default Settings later in this manual).

INTERFACE MODULE SETUP	
STB Model	Amino
Settings / Diagnostics	>
TV Keys	>
Numeric Keys	>
Navigation Keys	>
Media Play Keys	>
Misc Keys	>
Save: SETUP/OK Cancel: POWER	

Provider	Set-top Box Model	On Screen "STB Model" Setting
Amino	Amino Kamai 7X	Amino
Cablevision	Scientific Atlanta Explorer 4250HD	SciAtl/Cisco
Charter/Spectrum	Motorola DCH6200	Moto/Arris
Charter/Spectrum	Motorola DCT2224	Moto/Arris
Comcast/Xfiniti	Pace DC50X	Cmcst X1
Comcast/Xfiniti	Pace PXD01ANI	Cmcst X1
Comcast/Xfiniti	Comcast PR150B	Cmcst Legacy
Comcast/Xfiniti	Comcast RNG110	Cmcst Legacy
COX	COX 3250HD (Scientific Atlanta Explorer 3250HD)	SciAtl/Cisco
COX	COX DTA250HD	Cox DTA250HD
Dish	Dish ViP211k	Dish
Dish	Dish ViP222k	Dish
Haivision	Haivision Stingray	Hai Stingray
Haivision	Haivision Mantaray	Hai Mantaray
Time Warner Cable/Spectrum	Cisco DTA 271HD	SciAtl/Cisco
Time Warner Cable/Spectrum	Cisco 8742 HDC	SciAtl/Cisco
Time Warner Cable/Spectrum	Spectrum100-H	SciAtl/Cisco
Time Warner Cable/Spectrum	Spectrum101-T	SciAtl/Cisco
Verizon		Moto/Arris

Keypad Programming (Mapping) Instructions

The set-top box (STB) can be controlled remotely by any of the following that incorporate a keypad: Pillow Speaker, TV's Keypad (Arm Mounted TV's), or Handheld Remote Control. In other words, any control device that incorporates a keypad capable of controlling the TV can also control the set-top box.



Control Button	STB Function
Menu	Guide
(-)	Guide

Keypad Programming or Mapping involves assigning key functions to the corresponding set-top box (STB) functions. It is common practice to designate a control button to activate the STB's Channel "Guide" feature. This feature allows for quicker selection of satellite channels. Some common control buttons used for "Guide" are listed below. Your installation may vary depending upon the control device's availability of these particular buttons.

1. Enter the Interface Module Setup Menu (See "Understanding Interface Module Setup Menus" earlier in this manual).
2. Select menu pages 1 through 5.
3. For each "TV Key" on the left column, set the matching "STB COMMAND" on the right column to the desired STB function.

Programming the STB Signal Input Type

The Interface Module must be programmed so that it knows which TV source input needs the keys to be mapped to the STB. When any other signal source is selected, all keys will operate normally.

1. Enter the Interface Module Setup Menu (see "Understanding Interface Module Setup Menus" earlier in this manual)
2. Select menu "Settings / Diagnostics".
3. Set "TV Input for STB" to match the connection to the STB. This is usually "HDMI 1".
4. Exit setup. Verify the STB signal is now displayed on the television.

INTERFACE MODULE SETUP	
TV Input For STB	HDMI 1
Restore Defaults for STB	>
Flash Intface Pwr LED	Off
Power Save	On
DIAGNOSTICS	
IR Interface F/W Ver	V5.06
TV CCI Ver	V5.2
IR Cable	Connected
Return: SETUP/OK/LAST	

Restoring Factory Default Settings

The Interface Module configuration can be reset to factory defaults. Resetting to defaults cannot be undone. If the Interface is connected to a PDI-P19W the default configuration will be optimized for the P19W's keypad. It will not match the settings that came preloaded onto the Interface.

1. Enter the Interface Module Setup Menu (See "Understanding Interface Module Setup Menus" earlier in this manual).
2. Select menu "Settings / Diagnostics".
3. Highlight the "Restore Factory Defaults" item.
4. Press "VOL ►" to restore factory defaults. The operation will happen immediately and cannot be undone.

INTERFACE MODULE SETUP	
TV Input For STB	HDMI 1
Restore Defaults for STB	>
Flash Intface Pwr LED	Off
Power Save	On
DIAGNOSTICS	
IR Interface F/W Ver	V5.06
TV CCI Ver	V5.2
IR Cable	Connected
Return: SETUP/OK/LAST	

Operation

PDi Interface Module operation is straight forward once configured. Site installations that involve a secondary "Off Air" signal require additional instruction to provide a worry-free patient viewing experience.

Cable/Satellite TV Operation

1. Turn the TV on. A channel from the set-top box should be displayed.
2. Channel the TV Up or Down. The set-top box channel should follow.
3. Press the designated Guide button or press "00". A channel guide should appear.
4. Select a channel from the Guide. The viewed set-top box channel should follow the selection.

Off-Air TV Operation (Optional)

1. If using the TV Tuner for cable/satellite programming, press the control button designated for STB Power (see section "Programming for Off-Air Non-Satellite Channels Using OFF-AIR RF Pass-Thru").
If using an input other than RF Tuner for cable/satellite programming, press the TV/AV key repeatedly until the TV Tuner source is selected.
2. The STB signal should disappear.
3. Channel the TV Up or Down. The TV should now tune the Off-Air channels (non-STB channels).
4. If using the TV Tuner for cable/satellite programming, press the control button designated for STB Power again.
If using an input other than RF Tuner for cable/satellite programming, press the TV/AV key again until the cable/satellite box source is selected.
5. The Off-Air channel should disappear and be replaced with a cable/satellite channel.
6. Press the TV's power button to turn off the TV at any time.

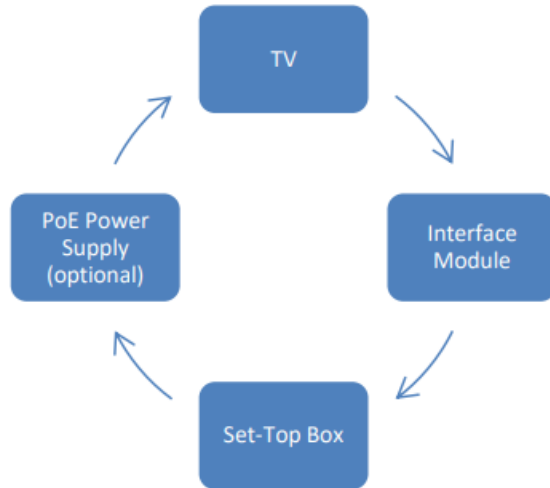
Troubleshooting

Symptom	Resolution
The set-top box is being controlled by IR interference from other remotes or IR emitters	<p>Depending on the location of the set-top box, the set-top box may experience interference from fluorescent lights, IR remotes or from other IR emitters on set-top boxes in the same area.</p> <p>The IR emitter supplied with the PD295-004 allows the pass through of other external IR signals through its outward facing side. This IR emitter also sends the IR signal out the side opposite the cable entry, besides sending the signal through the side mounted to the set-top box.</p> <p>Fluorescent lights emit IR noise that reduces the sensitivity of the set-top box IR receiver.</p> <p>If there is a possibility that the IR emitter can be exposed to unwanted IR signals in the area, it is recommended that the IR emitter be covered with tape that blocks IR.</p>
Set-top box and TV are out of sync Set-top box is ON when the TV is OFF or Set-top box is OFF when the TV is ON	<p>It is possible that the TV power state and the set-top box power state get out of synchronization; the set-top box is off when the TV is on. To correct this problem, turn both the TV OFF and set-top box OFF.</p> <p>If the problem persists, the IR emitter cable may not be aimed well enough for the set-top box to receive the proper signal. Try moving the IR emitter and then covering it with black tape as suggested above.</p>

TV turns on but does not control the set-top box. There may be only a black screen or a fixed satellite channel that cannot be changed.

There can be many causes including a locked up set-top box, miswiring, or incorrect configuration settings.

1. Reset the set-top box using one of two ways.
 - a. Push the reset button on the set-top box.
 - b. Remove power from the set-top box for 30 seconds.
2. Check the wiring. The signal loop must be correct and complete. The CCI cable from the TV must connect to the Interface Module which is in turn connected by IR emitter to the STB that is sending audio/video and optionally power to the same TV.



- a. Visually verify as many connection points as possible. Sometimes this is not easy, so proceed to the next step.
- b. Verify all 3 LEDs are lit for the Interface Module that is supposed to be connected to this TV. See "Verifying and Troubleshooting"

	<p>Connections". If they are lit there is certainly a connection to a TV and set-top box, but possibly not to the correct devices.</p> <p>c. Turn on "Flash Intface Pwr LED" to identify the Interface Module connected to this TV as well as the STB which is being controlled by this TV. See section "Interface Module Setup Menus". Verify the correct Interface Module has a blinking POWER LED and that the expected STB is slowly turning on and off.</p> <p>3. Check the Interface Module configuration.</p> <p>a. Verify the Interface Module "STB Model" parameter is set properly. See "Programming the IR Code Set", page 18.</p> <p>b. Verify the Interface Module "TV Input for STB" parameter is set to the source input (such as TUNER, HDMI 1, etc.) that matches the set-top box's connection to the TV. See "Programming the STB Signal Input Type", page 20.</p> <p>c. If the video input to the TV is RF/TUNER, verify the Interface Module "TV Chan for STB" parameter is set to the channel that matches the set-top box's RF modulator. See "Programming the STB Signal Input Type", page 20.</p> <p>Additional steps for Dish receivers: Dish receivers must be set to Primary Remote Address #1 for proper operation. Verify the remote address setting by pressing "System Info" on the Dish receiver's front panel. The system Information screen displays on the TV showing the Primary Remote Address. If the value is not 1, then follow these steps to reset it.</p> <ol style="list-style-type: none"> 1. Turn off all other nearby Dish receivers. 2. Aim the Dish IR remote at the powered on receiver. 3. Press and hold SAT on the Dish IR remote control, for about three seconds, until all mode buttons light up. Release SAT. 4. Use the NUMBER PAD on the Dish remote to enter the number 1. 5. Press POUND(#). If the address was entered correctly, SAT will flash three times. 6. Press RECORD on the Dish remote. The TV screen should update. Make sure the Primary Remote Address shown on the System Information screen is now '1'. 7. Press SELECT to remove the System Information screen.
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Appendix A Control Device (TV) Key Reference

A listing of Control Device Keys is provided below. Each control device key can be programmed to send a supported command to a connected set-top box. Please refer to sections "TV Setup" and "Understanding Interface Module Setup Menus" for programming details.

NOTE: A "Control Device Key" (also referenced as a 'TV Key') is a key located on the front panel of a PDi TV and/or on a PDi TV compatible controller (IR remote control, pillow speaker, or wireless control device).

Control Device Key
Ch Up
Ch Down
Vol Up
Vol Down
Menu

Last/Prev Ch
OK/Sel/Enter
CC
ARC/Ratio
Mute
Sleep
0
1
2
3
4
5
6
7
8
9
Play
Pause
Stop
Eject
Rewind
Fast Forward
Last Track
Next Track
Up Arrow
Down Arrow
Left Arrow
Right Arrow
Dash (-)
TV/FM
TV/AV/Input
SAP/MTS
Ch List

Guide
Info
Recall/Star (*)
Exit
Back (Nav)
Home
DVD Menu
RED
GREEN
YELLOW
BLUE

Appendix B – STB Command Reference

A listing of all STB commands for each of the compatible set-top box is provided below. Refer to section “Understanding Interface Module Setup Menus” for programming details to change the “STB Model” selection and to change the “STB Command” that a “Control Device Key” controls.

NOTE: The set-top box may not support all the functions shown.

Available STB Commands

	Default STB Command							
Control Device Key	Cmcst X1	Cmcst Legacy	SciAt/ Cisco	Dish	Moto/Arris	Hai Stingray	Hai Mantaray	Cox DTA 250 HD
Ch Up	CH+	CH+	CH Up	CH Up	CH Up	CH+	CH+	CH+
Ch Dn	CH-	CH-	CH Down	CH Down	CH Down	CH-	CH-	CH-
Vol Up								
Vol Down								
Menu	Guide	Guide	Guide	Guide	Guide	Guide	Guide	Guide
Last/Prev Ch	Last	Last	Last	Recall	Last	Enter/Flback	Prev Channel	Last
OK/Select/Enter	OK/Select	OK/Select	Select	Select	Select	OK	OK	Select
CC						Green/CC	CC	CC
ARC/Ratio	Down Arrow	Down Arrow	Down Arrow	Down Arrow	Down Arrow	Down Arrow	Down Arrow	Down Arrow
Mute								
Sleep	Up Arrow	Up Arrow	Up Arrow	Up Arrow	Up Arrow	Sleep	Up Arrow	Up Arrow

[illegible]

Info	Info	Info	Info	Info	Info	Info	Info	Info
------	------	------	------	------	------	------	------	------

	Default STB Command							
Control Device Key	Cmcst X1	Cmcst Legacy	SciAt/ Cisco	Dish	Moto/Arris	Hai Stingray	Hai Mantaray	Cox DTA 250 HD
Recall/Star (*)	Last	Last	Last	Recall	Last	Enter/ Flipack	Prev Chan	Last
Exit	Exit	Exit	Exit	Cancel	Exit	Cancel/ Clear	Cancel/ Clear	Exit
Back (Nav)						Jump Back	Prev Chan	Last
Home								
DVD Menu	Menu	Menu	Guide	Guide	Guide	Menu	Settings	Menu
RED	Red (C)	Red (C)	Red (C)	Red	Red (C)	Red/Mute	Red	
GREEN	Help	Help	Green (D)	Green	Green (D)	Green/CC	Green	
YELLOW	Yellow (A)	Yellow (A)	Yellow (A)	Yellow	Yellow (A)	Yellow	Yellow	
BLUE	Blue (B)	Blue (B)	Blue (B)	Blue	Blue (B)	Blue	Blue	

	Default Setting							
Parameter	Cmcst X1	Cmcst Legacy	SciAt/ Cisco	Dish	Moto/Arris	Hai Stingray	Hai Mantaray	Cox DTA 250 HD
TV Input for STB	Tuner	Tuner	Tuner	Tuner	Tuner	Tuner	Tuner	Tuner
TV Chan for STB	003	003	003	003	003	003	003	003
Power Save	On	On	On	On	On	On	On	On

Limited Warranty

PDi Communication Systems Inc., ("PDi") standard warranty information is found at PDiarm.com. For information regarding authorized servicing and all other information pertaining to this warranty, please contact PDI COMMUNICATION SYSTEMS, INC. at 40 Greenwood Ln, Springboro, Ohio 45066 or phone [800-628-9870](tel:800-628-9870) and ask for the PDi ProServices team.

PDi Communication Systems, Inc. 40 Greenwood Ln Springboro, Ohio 45066 **USA** www.PDiarm.com and www.mymedTV.com **Phone** 800.628.9870

FAQ's

Q: What should I do if the Power LED is not turning on?

A: Check the power source and connections. If the issue persists, refer to the troubleshooting section in the user

manual.


Q: Can I use non-shielded cables with the device?

A: No, connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

Q: How do I clean and disinfect the device?

A: Use a soft, dry cloth to clean the device. Avoid using liquid or chemical cleaners to prevent damage.

Documents / Resources

	<p>PDi PD196-426R4 Set Top Box Interface Module [pdf] User Manual</p> <p>PD196-426R4 Set Top Box Interface Module, PD196-426R4, Set Top Box Interface Module, Box Interface Module, Interface Module, Module</p>
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References

- [medTV powered by PDi](#)
- [PDi | medTV Patient Televisions to Improve Patient Experience](#)
- [User Manual](#)

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