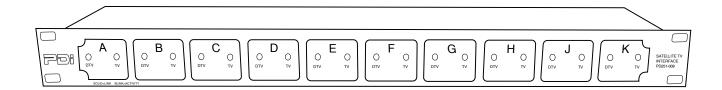


## Installation / Operation Manual

## PD251-009 Satellite Interface





MODEL NUMBER: PD251-009

**DESCRIPTION: Satellite TV Interface Installation Manual** 

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### **CAUTIONS AND WARNINGS**



This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

**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.
- $\bullet\ \ \$  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

- Unplug before cleaning.
- Use a soft cloth to clean.
- Do not use harsh chemicals such as solvents.

#### COPYRIGHT, DISCLAIMER, TRADEMARKS

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#### Trademarks

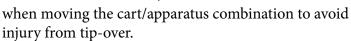
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**DESCRIPTION: Satellite TV Interface Installation Manual** 

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### IMPORTANT SAFETY INSTRUCTIONS

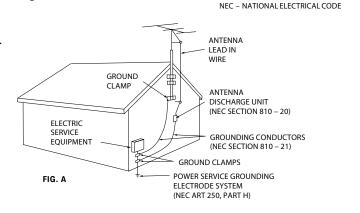
- 1. Read these instructions.
- 2. Keep these instructions.
- 3. Heed all warnings.
- 4. Follow all instructions.
- 5. Do not use this apparatus near water.
- 6. Clean only with dry cloth.
- 7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8. Do 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 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



- 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 no fall and liquids are not spilled into the enclosure through

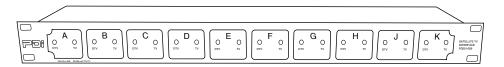
openings.

17. If an outside antenna or cable system is connected to the video product, be sure the antenna or cable system is grounded 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.

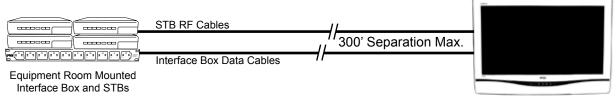
Page 4



Introduction The PD251-009 Satellite Interface Box is designed to allow control of a DirectTV® Set Top Box (STB) using a PDI remote control, PDI TV front panel keys, or attached TV pillow speaker. The PD251-009 Satellite Interface Box provides the following benefits.

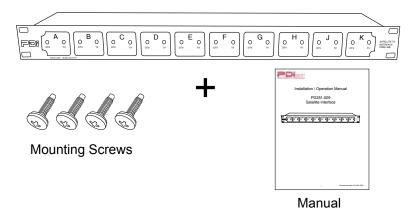
- Eliminates the need for the STB remote control.
- Reduces patient area equipment clutter.
- Up to 10 STBs can be controlled by a single PD251-009 Interface box.
- Fits a standard 19-inch rack with a height of only 1U.
- Powered from the connected STB.

The Satellite Interface is not compatible with STB's from other vendors such as Dish Network® or local cable companies. Please contact PDI for a complete listing of compatible STB models.

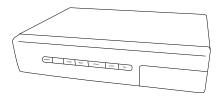


Patient Room Mounted TV

#### Included Materials



Customer Provided Materials



Satellite Box



USB 2 Cable A to B Style



Data Cable CAT 5



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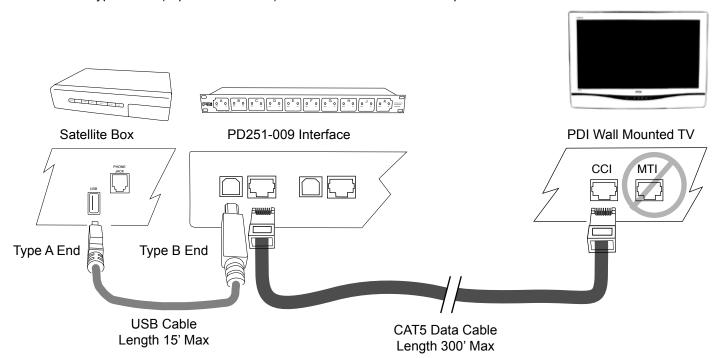
#### **Connections**

#### Wall Mounted Televisions

The PD251-009 Satellite Interface is compatible with all PDI TVs that have a CCI port. The CCI port is located on the back of the TV with the other connectors. The CAT5 data cable used to connect the TV to the Interface should not exceed 300 feet in length. CAT5 cables are not provided with the Satellite Interface.

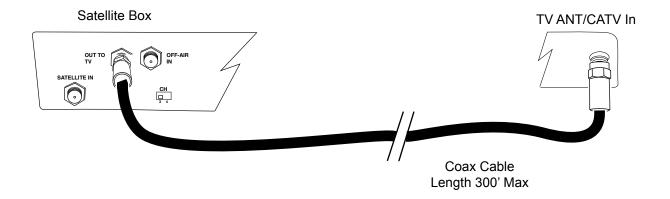
#### Wall Mounted TV - Data Cable Installation

- 1. Connect one end of the CAT5 cable to the TV's CCI port. Be careful not to connect to the MTI port which is usually next to the CCI port.
- 2. Connect the other end of the CAT5 cable to the RJ45 ports on the PD251-009 Satellite Interface.
- 3. Connect the Type-A end (Flat Connector) of the USB cable to the port marked "USB" on the Satellite Box.
- 4. Connect the Type-B end (Square Connector) of the USB cable to the USB port on the PD251-009 Satellite Interface.



#### Wall Mounted TV - RF Cable Installation

The RF Output Signal cable from each Satellite Box must also be routed to each remotely located Television. Please refer to the Satellite Box installation instructions for details.





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#### **Connections**

#### Arm Mounted Television

The PD251-009 Satellite Interface is also compatible with several of the PDI Arm Mounted televisions that incorporate a CCI Port. Models such as the PDI-P15X and PDI-P19X can be used successfully. The PDI-P10LCD series arm mounted TV can NOT be used with the PD251-009 Satellite Interface as it does not have a CCI Port.

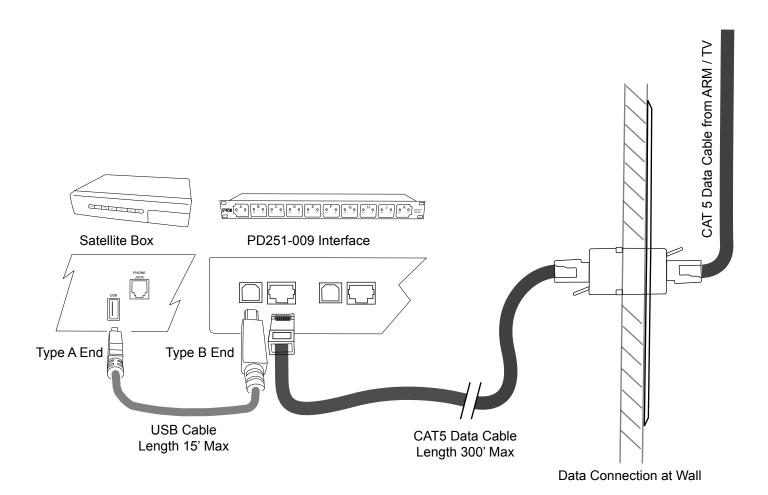


NOTE: Each TV and its Support Arm must be pre-wired with a CAT5 data cable. Please contact PDI Communication Systems or your PDI distributor for assistance should your TV and/or Arm lack this cable.

#### Arm Mounted TV - Data Cable Installation

The CAT5 data cable used to connect the remotely located TV to the Interface should not exceed 300 feet in length. CAT5 cables are not provided with the Satellite Interface.

- 1. Connect one end of the CAT5 cable to the Data Cable from the Arm/TV. The in-room connection is typically wall mounted as illustrated below.
- 2. Connect the other end of the CAT5 cable to the RJ45 port on the PD251-009 Satellite Interface.
- 3. Connect the Type-A end (Flat Connector) of the USB cable to the port marked "USB" on the Satellite Box.
- 4. Connect the Type-B end (Square Connector) of the USB cable to the USB port on the PD251-009 Satellite Interface.





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#### **Connections**

#### Arm Mounted Televisions - Continued

Wall mounted PDI televisions receive power through a conventional AC outlet. PDI arm mounted television models receive their RF signal and TV power combined together 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.

#### RF Cable Installation

Two types of external power supplies are used with arm mounted televisions: individual style power supply or central style power supply. Connection of the RF signal coax cable for each style of power supply is detailed.

#### **Arm Mounted TV**

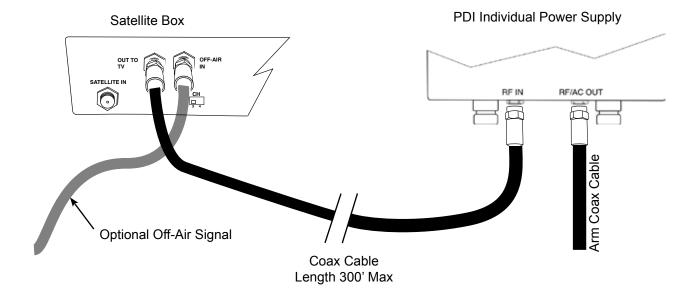
#### Individual Style Power Supply - RF Signal Cable Installation

Signal connections for an arm mounted TV powered from an individual power supply require a single coax cable no longer than 300 feet, connected at the Satellite Box's "Output to TV" connection.

Some Satellite Boxes also allow for the connection of an external Antenna or other signal source via an "OFF-AIR IN" connection. Please consult your Satellite Box installation instructions for details.



NOTE: The drawing below is representative of the typical Satellite Box. Your box may vary in appearance.





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#### Arm Mounted TV

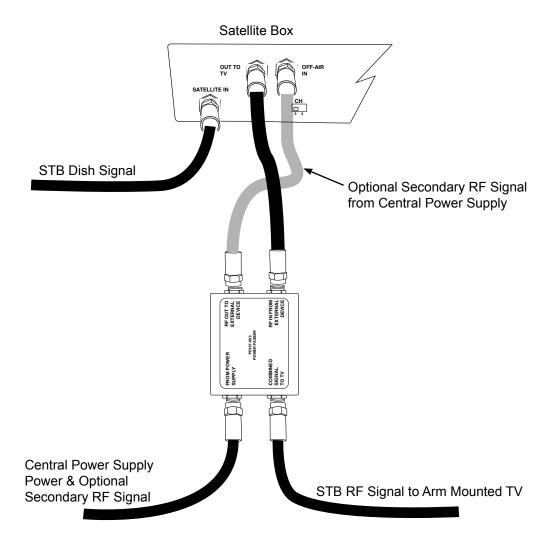
#### Central Style Power Supply - RF Signal Cable Installation

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.



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

- 1. Remove power from the TV at the central power supply.
- 2. Locate the coaxial cable from the central power supply. Connect this cable to "FROM POWER SUPPLY".
- 3. 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.
- 4. Connect an Optional Secondary RF signal coaxial cable from the Power Passer's "RF OUT TO EXTERNAL DEVICE" to the Satellite 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 Satellite Box signals.
- 5. Connect a coaxial cable from the Satellite Box "OUT TO TV" to the Power Passer's "RF IN FROM EXTERNAL DEVICE".



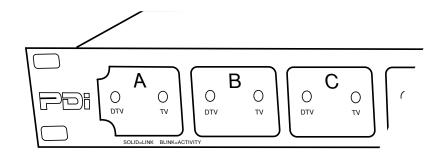


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#### Initial Setup

The following steps verify the Data connections between the STB and TV.

- 1. Power the STB box. The PDI interface box receives power from the externally connected STB.
- 2. Power the TV.
- 3. Examine the front mounted status lights on the PD251-009 Satellite Interface box. Each channel contains a DTV (STB Box) status light and a TV status light. Each light will turn Green when properly connected.



4. A dark (Off) status light indicates a problem.

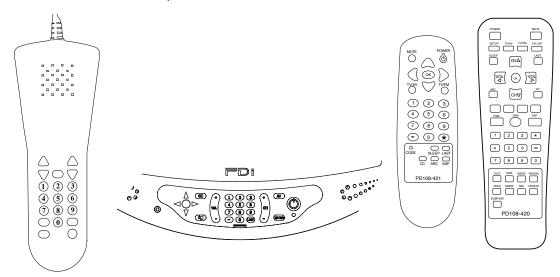
DTV LIGHT	TV LIGHT	SUGGESTIONS
OFF	OFF	Verify STB is powered.     Verify USB cable is properly connected.
OFF	ON	Verify USB cable is properly connected.     Allow additional time for Satellite box to initialize. Recheck.
ON	OFF	<ol> <li>Verify TV is powered.</li> <li>Verify connections at Interface box, TV Wall Plate, and TV CCI port.</li> <li>Make certain data cable is connected to the TV's CCI port (not MTI port).</li> </ol>
ON	ON	All connections are proper.



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#### Setup of the Keypad

The STB box 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.



#### Keypad Programming (Mapping) Instructions

Keypad Programming or Mapping involves assigning key functions to the corresponding Set Top Box (STB) functions. The following instructions assume you have connected the TV, Satellite Interface, STB, and the various components according to the previous instructions contained in this manual.

1. Make certain the STB box is 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 Box 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. Press SETUP on the remote to exit.



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#### STB Interface Setup Menus

#### Menus 1 ~ 3

Menus 1, 2, and 3 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 the television keypads.

The right menu column "- STB -" contains default settings that work well with most STB's. Adjustment can only be made to items in the right column.



NOTE: An STB menu item that is blank does not provide any STB control functionality.

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.

Control Button STB Functio	
Menu	Guide
(-)	Guide

	STB INTERFACE SETUP 1/4
-TV KEY-	-STB-
CH Up	CH+
CH Dn	CH-
Vol Up	
Vol Dn	
Back / Last	Prev Channel
OK / Sel / Ent	Select
CC	
ARC	Down Arrow
Mute	
Sleep	Up Arrow
SAP	•
Exit: SETUP	

	STB INTERFACE SETUP 2/4	
-TV KEY-		-STB-
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
Exit: SETUP		

	STB INTERFACE SETUP 3/4	
-TV KEY-		-STB-
Up Arrow		Up Arrow
Dn Arrow		Down Arrow
Lt Arrow		Left Arrow
Rt Arrow		Right Arrow
Menu		Guide
TV / FM		Exit
Exit: SETUP		

### **Menu 4**Menu 4 provides STB configuration settings and firmware information.

MENU ITEM	EXPLANATION	
STB Signal Input	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 should be the default setting. Additional settings are available for STB's with different signal types.	
STB Channel	Sets the channel the TV tunes to view the STB's signal. This setting should match the STB's "CH" switch setting which is usually 3 or 4.	
Interface F/W Ver	PDI Satellite Interface Firmware Version	
DTV Command Ver	Set Top Box (STB) Firmware Version	

STB INTERFACE SETUP 4/4	
STB Signal Input	Tuner
STB Channel	003
Interface F / W Ver	V 2.01
DTV Command Ver	V 1.4
Exit: SETUP	



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### Programming a Television's Off-Air Non-Satellite Channels

The Set Top Box (STB) can be remotely turned off, which allows any signal connected to the "OFF-AIR" input of the STB to be active and then viewed downstream by the TV. The Off-Air signal could be a DVD player for an in-house movie channel, an externally connected antenna for local over-the-air channels, or cable TV channels. See pages 7 or 8 for details regarding connection of an Off-Air signal.



NOTE: Off-Air signals are optional and may not be available at the facility, in which case this instruction section may be skipped.

To view an Off-Air signal, the patient must turn Off the STB. A control key must be assigned to perform this function. The control key should NOT be the TV's POWER button as it is used to power the TV On and Off. Instead, another key must be selected. Below are some suggestions for STB "Power" keys that might be utilized on some common control devices.

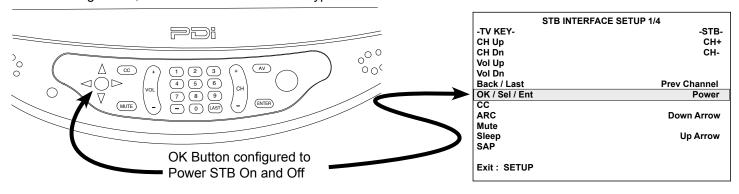
CONTROL DEVICE	SUGGESTED CONTROL KEY
Pillow Speaker	ALT, MENU
TV Keypad	MENU, OK, AV
Remote	TV/AV

#### An Example

A facility has an outside antenna that contains several local TV channels that they wish to provide to their patients for viewing in addition to Satellite TV channels.

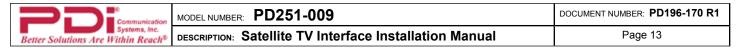
The facility is equipped with the PDI-P15X arm mounted television powered remotely from a central style power supply. The Off-Air antenna signal is connected to the input of the central power supply and the STB is connected using the Optional Secondary RF Coax cable as shown on page 6.

For this configuration, the OK button on the TV's keypad is chosen to Power the STB On and Off.



Now, Exit the STB INTERFACE SETUP menu by pressing the SETUP button on the programming remote.

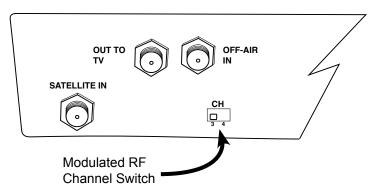
Pressing the "OK" button on the TV's keypad should power the STB On and Off with each keypress. The only remaining setup involves programming the TV for the Off-Air channels while the STB is Off. The TV's channel programming is not required to include the STB's channel as well. For example, if the STB is set for channel 3 output, the same channel could be omitted from the TV's channel table, if no local channel 3 is available. Please see the programming instructions specific to the model PDI TV being used.



#### Programming a Television for Satellite Only Channels

The steps that follow are generic in nature - please refer to the television's manual for specific channel programming instructions. These steps assume the satellite interface is connected and functioning.

- 1. Make note of the STB's channel number. The illustration depicts the channel as number 3 in this example.
- 2. Locate the PDI TV programming remote control and turn the TV On.
- 3. Pressing the remote control's SETUP button once for the TV's setup menu, then press SETUP a second time to activate the Satellite TV Interface's menu.



- 4. Select menu "STB INTERFACE SETUP 4/4".
- 5. Set the "STB Channel" to match the same channel as noted in step 1.
- 6. Exit setup. Verify the STB signal is now displayed on the television.

STB INTERFACE SETUP 4/4	
STB Signal Input	Tuner
STB Channel	003
Interface F / W Ver	V 2.01
DTV Command Ver	V 1.4
Exit : SETUP	

### Operation

PDI Satellite Interface 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.

#### **Satellite Operation**

- 1. Turn the TV On. A satellite channel should be displayed.
- 2. Channel the TV Up or Down. The satellite channel should follow.
- 3. Press the designated Guide button. A channel guide should appear.
- 4. Select a channel from the Guide. The viewed satellite channel should follow the selection.

#### Off-Air TV Operation (Optional)

- 5. Press the control button designated for STB Power. The STB signal should disappear.
- 6. Channel the TV Up or Down. The TV should now tune the Off-Air channels (non-STB channels).
- 7. Press the control button designated for STB Power again. The Off-Air channel should disappear and be replaced with a satellite channel.
- 8. Press the TV's power button to turn Off the TV at any time.



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**Appendix A - Control Device / STB Functions Default Mapping**A default listing of all the Control Device keys and also the possible STB function "keys" are provided. The listing is shown with default settings. Each STB Function can be changed. Please refer to pages 10 and 11 for programming details.

Control Device Key	STB Function
Right Arrow	Right Arrow
Left Arrow	Left Arrow
SLEEP, Up Arrow	Up Arrow
ARC, Down Arrow	Down Arrow
,	Enter
Dash (-)	Info
( )	Active
	List
	Back
	(-)
	Pause
	Rewind
	Play
	Stop
	Fast Forward
	Record
	Replay
	Advance
Ok, Select, Enter	Select
	Power ON
	Power OFF
CH+	CH+
CH-	CH-
MENU(Yellow Button)	Guide
TV/FM	Exit
	Power
LAST	Prev Channel
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
	Red
	Yellow
	Green
	Blue
	Menu
	Format

# PDI Limited Warranty

PDI Communication Systems (PDI) warrants this product, except as set forth below, ONLY TO THE ORIGINAL PURCHASER to be FREE FROM DEFECTIVE MATERIAL AND WORKMANSHIP from the date of original purchase for a period of 2 years for parts and 2 years for labor ("The Warranty Period"). THIS LIMITED WARRANTY IS VALID ONLY IN THE FIFTY (50) UNITED STATES, THE DISTRICT OF COLUMBIA, AND CANADA.

If this product is found to be defective, PDI will repair or replace defective parts at no charge to the original owner during the warranty period. Such repair and replacement services shall be rendered by PDI or a PDI Authorized Servicer during normal business hours. Parts used for replacement or repair are warranted only for the remainder of the Warranty Period.

To return a product for service please obtain a Return Material Authorization (RMA) from PDI. Products returned without a RMA will not be serviced.

#### WHAT IS NOT COVERED

This limited warranty provided by PDI does NOT cover:

- 1. Product which has been subject to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, or if affixed to any attachment not specified for the product;
- 2. Product that has either the model number or serial number altered, tampered with, defaced or removed;
- 3. Initial installation and removal for repair;
- 4. Operational adjustments covered in the Owner's Manual, normal maintenance, and cleaning;
- 5. Damage that occurs in shipment, due to act of God, and cosmetic damage;
- 6. Signal reception problems and failures due to line power surge;
- 7. The cost for shipping the product to PDI's service center;
- 8. Accessories;
- 9. Batteries;

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