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PDI IPTV
App

PDI IPTV App User Guide

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PDi

PDI IPTV App

OVERVIEW

The PDI IPTV & Multimedia App, also known as PDi IPTV Player, is found on PDi A-Series TVs and medTAB products. It is a multimedia player that can show live and on demand content. The source of the content can be live streaming multicast over ethernet/wifi, or it can be on-demand content from a local USB or on premises server such as DLNA or FTP. Traditional sources of content such as RF cable and HDMI are controlled by a separate app on the med TV or medTAB. This document applies to PDI TV Player v1.0.6 and higher.

IPTV INFRASTRUCTURE
This user guide assumes that an IPTV system has been installed correctly. Additional information about IPTV, including what to consider when designing the infrastructure for an IPTV distribution system, can be found here: **https://www.pdiarm.com/iptv** Be sure to download PDi's white paper, "Designing IPTV Infrastructure for PDi TV and TAB."

IP ADDRESSING

- Each video channel from the head end must be assigned a unique IP multicast socket (address and port).
- TV channels may be single program (SPTS) or multiprogram (MPTS) transport streams.
- PDi TV's must have a unicast host address assigned either by DHCP or static. The TV will not listen for multicast packets without a unicast address assigned to the TV.
- For IPTV channel assignment, PDi recommends using administratively scoped multicast address space as defined in RFC 2365.
- The following IP addressing scheme is used by default. It is recommended to follow this when creating your custom lineup so troubleshooting is easier.
    - The channel number range is 1 to 9999.
    - The multicast range is 239.255.0.1 through 239.255.99.99 and the default port is 1234.
    - The last octet of the IP address represents the lower 2 digits of the channel number.
    - The 3rd octet of the IP address represents the hundreds and thousands digits of the channel number.
    - Examples of default channel numbers:
      TV channel 1 is on udp://239. 255. 00. 01: 1234
      TV channel 105 is on udp://239. 255. 01. 05: 1234
      TV channel 500 is on udp://239. 255. 05. 00: 1234
      TV channel 9999 is on udp://239. 255. 99. 99: 1234

A-SERIES TVS – MODEL NUMBERS ENDING IN A OR B

The following instructions include upgrading TV firmware to the latest v2.XX version. You must have a RED PDi programmer remote, PD108-520 (or a PD108-420 remote with overlay sticker PD227-298). A USB or wireless keyboard and mouse is recommended but not required.

UPDATE TV FIRMWARE

The default TV application on PDi's A-Series TVs (model numbers AXXA, AXXB) is RF(coax)-based. The IPTV player must be enabled. The first step to enabling IPTV is to update the TV firmware to at least v2.60.

- From the TV Main Menu, press TV SETUP on programmer remote -> Common -> System Upgrade
- Check for system update
- DON'T POWER OFF. Unit will reboot.
- If an update was found and installed, repeat the steps above to get back to the OTA screen but don't check for an update yet.
- Change OTA Settings so the "1" in the 5th and 6th lines are "2"

  1build.prop -> 2build.prop .1ota.zip -> .2ota.zip
- Check for system update.
- DON'T POWER OFF. Unit will reboot.

To check to see what version of FW is loaded:
From the TV Application press TV SET UP on programmer remote -> Common >System Info -> TV Version. Verify that the TV firmware is at least 2.60.

IPTV INITIAL SETUP THROUGH SETUP WIZARD

Once the TV firmware updates and the TV reboots, the TV will go through the Setup Wizard. The final step of the Setup Wizard will be selecting the RF (coax) TV application or the IPTV (Cat) TV application. Select IPTV in this final step. Once IPTV is enabled, the TV application on the Main Menu will now be PDi's IPTV player.

ACCESS TO HOSPITAL SETTINGS

From the main menu or form within the IPTV application:

1. Press the TV/AV button on the program remote. Navigate to TV and press OK.
2. Select Cancel on scan for channels pop up menu.
3. Press TV Setup on the red remote. You now have access to all of the hospital TV settings.

CONFIGURE IPTV CHANNELS

From within the IPTV application:

1. Press TV Setup on program remote.
2. Password is 45066 OK
3. See IPTV App Settings section below

A-SERIES TVS – MODEL NUMBERS ENDING IN C

You must have a RED PDi programmer remote, PD108-520 (or a PD108-420 remote with overlay sticker PD227-298). A USB or wireless keyboard and mouse is recommended but not required.

IPTV INITIAL SETUP THROUGH SETUP WIZARD

The final step of the Setup Wizard on PDi's A-Series TVs (models AXXC) is selecting the RF (coax) TV application or the IPTV (Cat) TV application. Select IPTV in this final step. Once IPTV is enabled, the TV application on the

Main Menu will now be PDi's IPTV player.

CHANGE TO IPTV – RESET CONFIGURATION
To reset the TV's configuration to use the IPTV application instead of the RF application or to connect to GENiO:

1. From the TV home screen, switch the program remote to mouse mode by pressing the mouse button on the remote. You will see a message on the TV indicating the TV is now in mouse mode.
2. With the navigation arrows, move the mouse to the medTV logo (or other logo if the TV has been previously customized through GENiO) in the top left corner of the screen. Press and hold the OK button on the remote until a password entry window appears.
3. Enter the default password 45066. NOTE: The TV will still be in mouse mode. The numbers can be entered with the keypad on the remote but to select OK, you will need to navigate the mouse cursor to the OK button. Alternatively, you can put the TV back in keyboard mode by pressing the mouse button on the remote.
4. The Device Management Menu below will appear. With the TV in keyboard mode, press 2 on the remote to reconfigure the device through the set up wizard.

ACCESS TO HOSPITAL SETTINGS

From the main menu or form within the IPTV application:

1. Press the TV/AV button on the program remote. Navigate to TV and press OK.
2. Select Cancel on scan for channels pop up menu.
3. Press TV Setup on the red remote. You now have access to all of the hospital TV settings

   CONFIGURE IPTV CHANNELS

   From within the IPTV application:
4. Press TV Setup on program remote.
5. Password is 45066 OK
6. See IPTV App Settings section below

APP SETTINGS

SETTINGS OVERVIEW

The following is an overview of the IPTV setting menu:

Section	Menu item	Description
Channels	Channel configurator	See Channel Configuration section below for detailed instructions
	Video debug mode	Information about channels to help debug issues
	Closed captions type	Select CEA-608 or CTA-708. If one setting doesn't work, try the other.
	Encryption mode	Defaults to ProIdiom-M. If channels are not encrypted, there is no harm in having an encryption mode enabled.**None –** No decryption will be applied.**ProIdiom-M** – Call PDi to set the decryption key of the TV. This decryption key will need to be entered into the headend when setting up ProIdiom-M encryption.**AES-128** – Call PDi for setting the decryption key of the TV. This decryption key will need to be entered into the headend when setting up AES-128 encryption.**ProIdiom-M DISH Smartbox** – key defaults into the hardware, no configuration required
User controls	Remote control mode / Pillow speaker mode	**Normal** – select if pillow speaker/remote has navigational arrows**Option** – select if pillow speaker/remote has 0-9 number keys and an option button where a selection must be confirmed**Timer** – select if pillow speaker/remote has 0-9 number keys and a button that allows user to cycle through menus and when the desired option is chosen, it will be implemented when menu times out
	Close when reaching first or last channel	If enabled, channel up past the highest channel or channel down past the lowest channel will take the user to the Main Menu

Section	Menu item	Description
Defaults	Default Channel	First time IPTV is opened and after a datawipe, the IPTV player will tune to this channel. Otherwise, the IPTV player will stay on the last channel watched by user
	Default captions on	Set default to have closed captions on or off
	Default aspect ratio	**Full** – default setting**Zoom** – 4:3 channels that are broadcast in 16:9 often get framed in black by the TV so the image only takes up part of the screen. With the Zoom aspect ratio, these images will fill the entire screen**16:94:3**
Media sources	Enable USB play	When using IPTV on PDi TVs, there are two USB media players available. PDi recommends using this IPTV USB media player and disabling the other media playerTo access the IPTV USB media player, insert USB drive and then use TV/AV button to select. A browser will display all media available on the USB
	Enable DLNA play	Use TV/AV button to access DLNA media
	Select DLNA server	Menu will automatically display possible DLNA servers it finds on the network. Choose the correct server and OK.
Debugging	Enable tracing	For developer debugging only
System	Open system settings	Opens the android settings
	Change app settings passcode	Default passcode is 45066
	About version	Access information about the IPTV player version and publish date

CHANNEL CONFIGURATOR

To Configure the Channel list:

1. Press TV SETUP on programmer remote from within the IPTV player
2. Select Channel Configurator
3. Select the + button and then select Add channel or Add channel range.

Default Channels
A default channel list exists when the channel configurator is empty. See the section "IP Addressing" earlier in this guide.

Add Channel Range

Menu item	Description
Starting ID	This will be the lowest channel number. Many facilities elect to have the first channel start at Channel 2
Channel count	this should be set to the number of IPTV channels available on your system
IP rollover at 99	If this box is checked, the channel lineup will be user-readable. For example, channel 99 will be 239.255.0.99, channel 100 will be 239.255.1.00. If unchecked, channel 255 will be 239.255.0.255 and channel 256 will be 239.255.1.1
Group	Assigning a group for each channel allows you to group or organize channels by channel type. Available groups: None, Sports, Kids, News, Broadcast, Lifestyle, Music, Movies, Shopping, Other
Protocol	select UDP or RTP
Starting IP	default is 239.255.0.1This can be any valid multicast group address (224.0.0.0 – 239.255.255.255)
Port	default is 1234
Is audio	check this box only if the channel is a music or other audio-only channel. Checking this box will enable the IPTV player to display album covers or images if available from the headend
SAVE	The channel edits must be saved or they will be lost.

Add Single Channel

New channel

ID	*Will be used to determine channel order* 1
Enabled	☑
Group	None ▾
Protocol	UDP ▾
Source IP	SSM source IP address of the channel (may be blank)
IP	*IP address of the channel* 239.255.0.1
Port	*Stream port* 1234
Program number	*The PAT program number to play* 0
tvg-id	Should be an id compatible with Tivo
Channel name	Name displayed to the user

Menu item	Description
ID	Enter the desired channel number for the IP stream. The default will be the lowest available channel number.
Enabled	Check the box to put the channel in your channel map
Group	Assigning a group for each channel allows you to group or organize channels by channel type. Available groups: None, Sports, Kids, News, Broadcast, Lifestyle, Music, Movies, Shopping, Other
Protocol	select UDP or RTP
IP	Enter the IP address for the channel. This can be any valid multicast group address (224.0.0.0 – 239.255.255.255)
Port	default is 1234
Program number	If your head end system takes off air channels (from an antenna) that have subchannels (ie. 16-1, 16-2, 16- 3, etc.) and puts them straight to IP, the system will randomly pick only one of the subchannels. To add in the rest of the subchannels, you can add each subchannel manually if you know the MPEG program number from the Program Association Table as assigned by the broadcaster.The MPEG program number can be learned through your PC running an app such as VLC, or through a handheld device such as the Televes H30 Evolution with IPTV monitoring capability.Plug the Televes into your IPTV network. Enter the IP address of the applicable channel. Navigate through the menus to find the SID number.
Tvg-id	Requires a Tivo subscription. Provides access to a full program guide with TVG-IDs provided by Tivo.
Channel name	Name field must be populated, even if just by a channel number
Channel image	Add url to an icon
Is audio	check this box only if the channel is a music or other audio only channel. Checking this box will enable the IPTV player to display album covers or images if available from the headend
SAVE	Be sure to hit save!

After adding channels by range or by individual channel and hitting save, the channel list will be displayed.

Edit Entire Channel Map

Across the top of the Channel configurator page are settings that will apply to the entire map

- Import/export channel list to/from USB
- Jump to will take you to the specific channel you want to edit
- Disable all channels
- Enable all channels
- Undo
- Clear all channels
- Save

Edit Channel Map

Each channel is a line item in the channel configurator From here you can:

- Enable/disable channel

- Reorder channel

- Delete channel

- Edit individual channel

Edit Individual Channels

To edit an individual channel, from within the channel map, select the pencil icon for that channel.

Menu item	Description
ID	Enter the desired channel number for the IP stream. The default will be the lowest available channel number.
Enabled	Check the box to put the channel in your channel map
Group	Assigning a group for each channel allows you to group or organize channels by channel type. Available groups: None, Sports, Kids, News, Broadcast, Lifestyle, Music, Movies, Shopping, Other
Protocol	select UDP or RTP
IP	Enter the IP address for the channel. This can be any valid multicast group address (224.0.0.0 – 239.255.255.255)
Port	default is 1234
Program number	If your head end system takes off air channels (from an antenna) that have subchannels (ie. 16-1, 16-2, 16- 3, etc.) and puts them straight to IP, the system will randomly pick only one of the subchannels. To add in the rest of the subchannels, you can add each subchannel manually if you know the MPEG program number from the Program Association Table as assigned by the broadcaster.The MPEG program number can be learned through you PC or through a device such as the Televes H30 Evolution with IPTV functionality.Plug the Televes into your IPTV network. Enter the IP address of the applicable channel. Navigate through the menus to find the SID number.
Tvg-id	Requires a Tivo subscription. Provides access to a full program guide with TVG-IDs provided by Tivo.
Channel name	Name field must be populated, even if just by a channel number
Channel image	Add url to an icon
Is audio	check this box only if the channel is a music or other audio only channel. Checking this box will enable the IPTV player to display album covers or images if available from the headend
SAVE	Be sure to hit save!

Minimizing the soft keyboard

If the soft keyboard pops up when using a physical keyboard, press the back button on the programmer remote to minimize the soft keyboard.

TO CHECK THE VERSION OF THE IPTV PLAYER

- From the IPTV player, press TV SETUP on red remote -> 45066 OK
- Scroll down to About Version
- The top number is the version. The second is the release date.

VIDEO DEBUG MODE

- Check the box to enable then press the back button on the remote to view.
- There are two sections of information, TRACKS and STATS
- By default, you will see Tracks will show you the codec, resolution, framerate and available closed captions. To switch to STATS, right to highlight stats and press ok. You may need to arrow up before arrowing right.

- Stats show the IP address, Media source

	Menu item	Description
IO	Host IP address(es)	TV's host IP address
	Media Source	Multicast stream url that is playing
	Elapsed Time	Time on the current channel in days:hours:min:sec
	Program ID	MPEG program number that is playing
	Program name	MPEG program name found in the stream
	Demux bitrate	Bandwidth of the program that is playing
	Input bitrate	Bandwidth of the full stream. If the channel has multiple subchannels this will be much larger than the demux rate.
	Demux corrupted	Corrupted packet counter
	Demux discontinuity	Discontinuity counter
	Demux read bytes	Total bytes read from the stream that is playing
Audio	Decoded	
	Played	
	Lost	
Video	Decoded	
	Displayed	
	Lost	
Encryption	Selected Mode	Encryption mode selected in the admin settings.
	Details	Diagnostic details of the decryption engine. This data varies.

CONFIGURATION FILES

PROIDIOM-M SITEKEY FILE
ProIdiom-M encryption requires a unique, site specific 32-byte key code. It must be shared with the headend transcoder and each TV. After creating the 32 byte (64 hexadecimal digit) key code, it must be copied into a file called sitekey.txt.

AES-128 SITEKEY FILE
AES-128 encryption requires a custom 16-byte cipher key and 16 byte initialization vector. They must be shared with the headend transcoder and each TV. After creating both 16-byte (32 hexadecimal digit) codes, they must be copied to a file called aeskey.txt. The cipher key should be copied to the file first followed by the initialization vector on the next line.

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** 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

- **Q: What should I do if my TV firmware is not at least v2.60?**

  A: Follow the instructions provided in the user manual to update the TV firmware to at least version 2.60.

- **Q: Can I access both live and on-demand content using the PDi IPTV Player?**

  A: Yes, the PDi IPTV Player can display both live streaming multicast content and on-demand content from local USB or servers like DLNA or FTP.

Documents / Resources

PDi SOFTWARE USER GUIDE PDi IPTV & MULTIMEDIA PLAYER APP USER GUIDE for A-SERIES TVs mymedTV.com powered by PDi	**PDi PDI IPTV App** [pdf] User Guide PD196I960R1, A-SERIES TV, PDI IPTV App, App

References

- **User Manual**