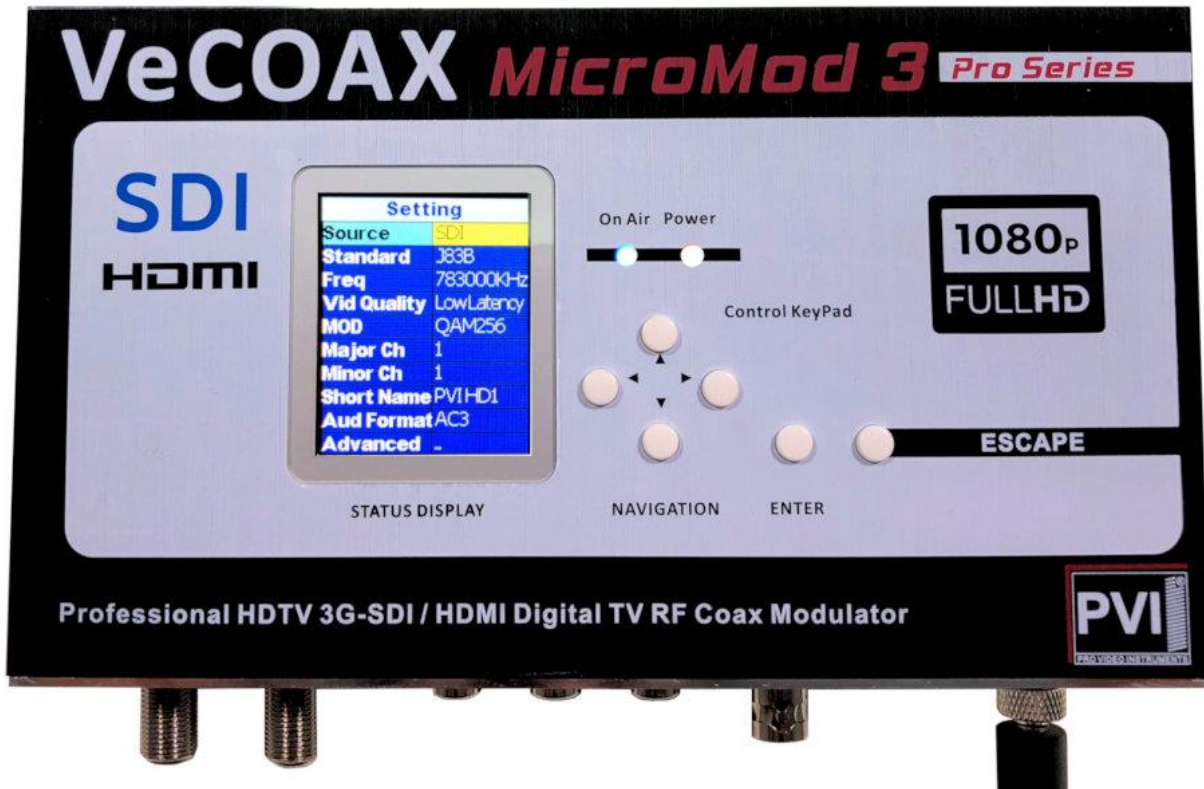




VeCOAX *MicroMod-3* 3G-SDI



VECOAX MICROMOD 3 AV + HDMI RF MODULATOR MANUAL

VECOAX MICROMOD 3 AV + HDMI RF MODULATOR

PRODUCT SPECS & FEATURES

Power - 12v/DC (12v/1A)

All Major TV Encoder standards build-in. No need to reprogram or flash the unit to a different Format.

Supports QAM (J.83B Digital Cable), ATSC (Digital Over the Air Channels), ISDBTb, DVBT, DVB-C, DMBT

Compact Design makes installation easy.

Works with most TV brands, including Samsung, Sony, Vizio, LG, and More.

Receives on TVs as its own HDTV channel as a FULL HD signal Up to 1080P with Dolby Digital Audio (AC3)

Easy Plug and Play Setup with customization options available in the easy to use menu via onboard Color Display and/or Web Interface.

Works With any HD Video HDMI source or Composite Video Source (CVBS) *(720P or 1080P/I Fixed Resolution).

Can be mixed with other HDTV signals such as Digital Cable or Over the Air Channels* (depending on Frequencies available for you to use)

Modular – Expandable – Reliable - 5 Year Warranty - Affordable

NOTE: BEFORE INSTALLATION



Please test each unit UNMOUNTED ON A TEST BENCH with your Test TV before installing your units to ensure you are receiving the Test Pattern signal. Then Program your unit. If installing Multiple units, make sure each unit has its own frequency it's broadcasting on as well as it's own Major/Minor.

This makes troubleshooting easier.

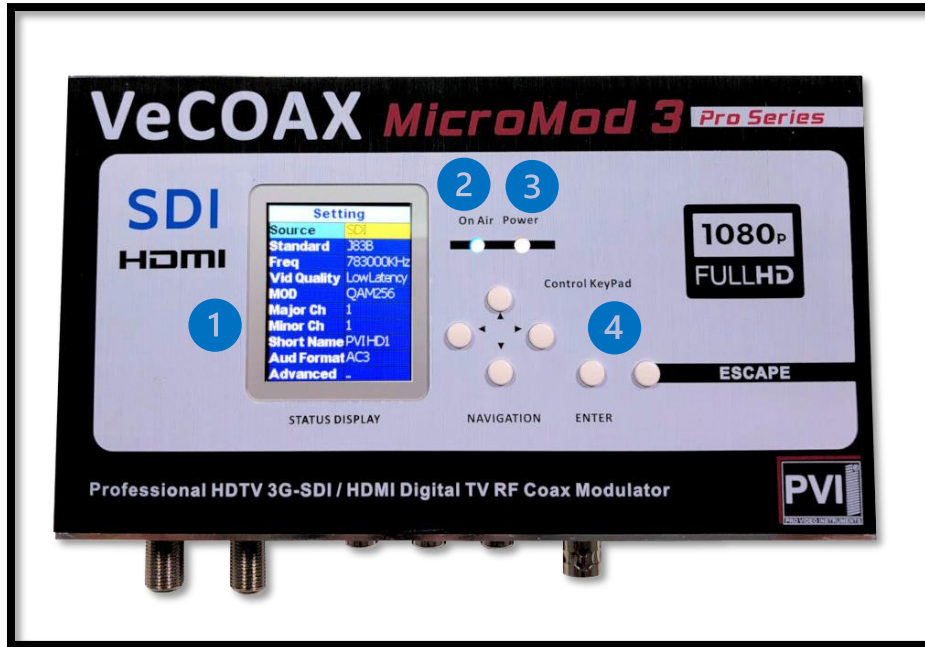
To test your unit, simply connect your TV with a short piece of Coax cable to the RF out of the Unit. No HDMI needs to be connected for this test.

Scan for channels on the connected TV. Depending on your supported TV standards, scan for digital channels.

After the scan is complete, you can tune to channel 1.1, and the test pattern will be visible.

By default, our unit is set to QAM (J.83B Cable) mode. To configure the unit beyond the default settings, see the [WEB INTERFACE CONFIGURATION GUIDE](#) on Page 6 for web interface setup, or see the [ON-BOARD DISPLAY](#) on Page 10 to use the on-board menu.

DEVICE LAYOUT



1) On-Board Menu Display	7) 3G SDI Input
2) BLUE On-Air Indicator Light	8) HDMI Input
3) RED Power Indicator Light	9) DC 12V Power In
4) Menu Navigation Keys	10) Web Management Port (Ethernet)
5) RF In / RF Out	
6) Composite Video / Closed Caption	

STATUS INDICATOR LIGHTS

BLUE ON-AIR LED		RED POWER LED	
SOLID	RF SIGNAL BROADCASTING	SOLID	POWERED ON
OFF	NO BROADCASTING	OFF	NO POWER

QUICK SETUP GUIDE WITH DEFAULT SETTINGS – USA/CANADA

It is recommended to test the device first on a test bench for your application before making it a permanent installation to your system so troubleshooting is easier. By default, the unit is set to QAM (J.83B) Mode with a Frequency of 783.000 MHz which is physical channel 122. Channel numbers are Major 1, Minor 1. The TV will pick up the channel on Cable channel 1.1 and display our PVI logo when no HDMI is connected.

1. Connect your included Power adapter into the unit. After a few seconds, the Power LED and On-Air LED will both be steady lit.
2. Connect a short piece of coax cable to your TV's RF In and the other end to the unit's RF Out.
3. Auto Scan for Channels on your TV. If prompted for signal type, select Digital Cable.
4. Once the scan is complete, tune to the Channel found on your TV. You should see a PVI test pattern screen.
5. Connect your HDMI source cable. Please ensure that your HDMI source, such as a DVD player, is set to a Fixed Resolution of 1080P or 720P.
6. Once you have inserted a valid HDMI Video Signal into the HDMI port, the On-Air LED will turn off then turn back on.
7. After a few seconds, you should see the video playing on your Channel.

To configure the unit beyond the default settings, see the [WEB INTERFACE CONFIGURATION GUIDE](#) on Page 6 for web interface setup, or see the [ON-BOARD DISPLAY](#) on Page 10 to use the on-board menu.

NETWORK CONNECTION VIA WINDOWS PC

These steps walk you through setting a Windows PC to a Static IP address, to allow an Ethernet connection with the unit on its default IP address of 192.168.0.136.

1. Connect your PC to the Network Port of the VeCOAX unit via Ethernet cable.
2. On your PC, in the Control Panel, open Network and Sharing Center (Network and Internet for Windows 8 and above)
3. Once you have Network and Sharing Center open, click on “Change adapter settings.”
4. Right Click on your Local Ethernet connection and click on “Properties.”
5. Once the Ethernet Properties are open click on, “Internet Protocol Version 4 (TCP/IPv4),” and click on, “Properties.”
6. In the Properties, select “Use the following IP address” and set the static IP: 192.168.0.100.
7. Click OK.

You are now ready to connect. See [WEB INTERFACE CONFIGURATION GUIDE](#) on Page 6 for details.

NETWORK CONNECTION VIA MAC OS X

These steps walk you through setting a Mac running OS X to a Static IP address, to allow an Ethernet connection with the unit on its default IP address of 192.168.0.136.

1. Connect your Mac to the Network Port of the VeCOAX unit via Ethernet cable.
2. From the Apple menu, select System Preferences, then select Network.
3. Select Ethernet.
4. From the Configure IPv4 menu, select Manually.
5. Enter the IP address 192.168.0.100.
6. Enter the Subnet Mask 255.255.255.0.
7. It is not necessary to enter DNS or Router.
8. Click Apply.

You are now ready to connect. See [WEB INTERFACE CONFIGURATION GUIDE](#) on Page 6 for details.

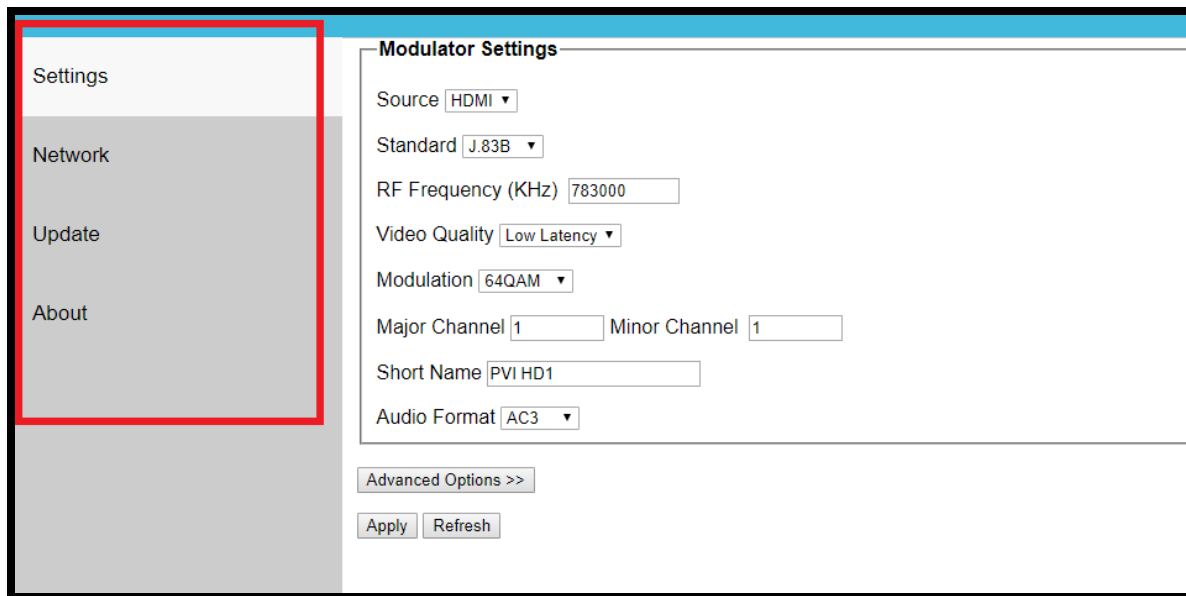
WEB INTERFACE CONFIGURATION GUIDE

To log into the web interface: Open an internet browser window on your connected computer and navigate to the IP address of the unit. **DEFAULT IP ADDRESS: 192.168.0.136**

If the address was changed and you're unsure what it is, you can find the address in the onboard menu, by going to Settings -> Advanced -> IP Settings.

Default User Name: admin Default Password: admin

Once you have logged into the unit, you will see the SETTINGS page. This will display all your inputs, as well as your video standard, frequency, and other settings.



On the left-hand side, there is a navigation bar, where you can select different menus for further configuration.

- **SETTINGS:** Here you can change your broadcast settings for each channel of your unit, including the broadcast standard and frequency.
- **NETWORK:** Here you can change the IP address, subnet mask, and gateway for accessing the web interface.
- **UPDATE:** Here you can apply firmware updates to your unit, if directed to do so by PVI support staff.
- **ABOUT:** Here you can find the unit's firmware version.

SETTINGS TAB: Modify the modulator's settings for the channel, including frequency, major/minor, etc.

- **SOURCE:** Select the video source input. (HDMI, CVBS, HDMI + Analog Audio, SDI, SDI + Analog Audio)
- **STANDARD:** select the TV standard format you wish this channel to broadcast on. J.83B Cable, ATSC, DVB-T, ISDB-T, etc.
- **RF FREQUENCY:** Enter the broadcast frequency that corresponds to your desired channel. (See the Channels Appendices for more info.)
- **VIDEO QUALITY:** Change the video latency mode as needed (see page 12).
- **MODULATION MODE:** Change between the modulation modes for certain formats such as J.83B, DVB-T, and ISDB-T.
- **MAJOR:** First number of the digital channel. (i.e. for channel "1.3", "1" is the Major)
- **MINOR:** Second number of the digital channel. i.e. for channel "1.3", "3" is the Minor)
- **SHORT NAME:** Name of the channel (e.g. ESPN, DVD, FOX, etc.).
- **AUDIO FORMAT:** Change the audio format of the channel. AC3 is recommended for USA, Canada, Mexico. Please ensure your HDMI source is set to Stereo PCM audio.

Click **APPLY** to lock in changes.

Audio Format: AC3

Advanced Options <<

TS ID	1	Service ID	1
Network ID	1	ONID	1
PMT PID	32	PCR PID	48
Video PID	48	Audio PID	49

CVCT Mode: Auto

1080P Conversion: Interlace

RF Attenuator (dB): 0

Mixer Mode: Normal

Fixed EDID: Auto

Apply Refresh

ADVANCED OPTIONS MENU: Allows adjustments of PSIP and other features of the unit.

These features include:

- **CVCT MODE:** This option allows you to adjust the VCT broadcast mode. Sometimes TVs prefer a certain VCT mode to display the Major/Minor channel info correctly. If you run into this issue change the mode and try rescanning again.

- **1080P CONVERSION:** If your TV Tuner is older and only supports 1080i video this will automatically downgrade any 1080P video to 1080i for compatibility. Auto is the default mode.
- **RF ATTENUATION:** Built-in digital Attenuator to lower the RF output level. The default setting is 0 dB, which is full strength. The higher the number, the lower the signal strength.
- **MIXER MODE:** Used for combability in QAM for older TV's that still use ATSC 1.0 format. By default, we are in the max combability mode for all TVs. if you have issues finding the TV or the channel is found but the screen is black and only audio plays switch to Alternate mode.
- **FIXED EDID:** Auto is the default mode which allows any HDMI source to feed into the unit to pass its set resolution. If you have issues where your HDMI source is not being detected by the unit then set this option to the desired resolution supported by your HDMI source, e.g. 1080, 1080i, 720p. This sends a command to the HDMI source that the only support resolution is the valve set in this option. This forces the resolution to be stuck in the set value and may not change.

Click APPLY to lock in changes.

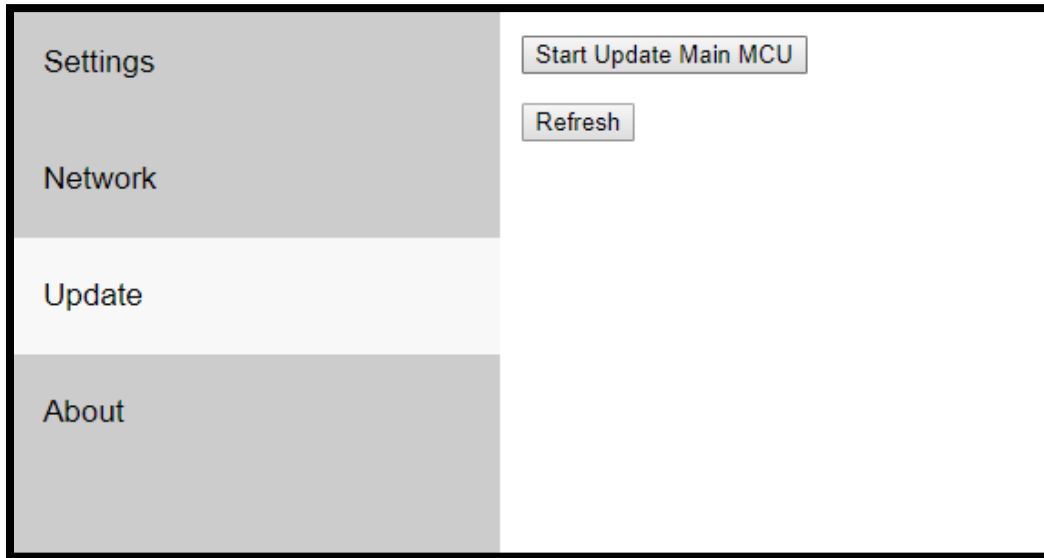
Settings	IP Address <input type="text" value="192.168.0.136"/>
Network	Subnet Mask <input type="text" value="255.255.255.0"/>
Update	Default Gateway <input type="text" value="192.168.0.1"/>
About	<input type="button" value="Apply"/> <input type="button" value="Refresh"/>

NETWORK TAB: ONLY CHANGE IF YOU ARE INTEGRATING THE UNIT INTO AN EXISTING IP NETWORK. This menu will allow you to change your device's IP Address and other network settings. Generally, you will only need to change these once, when you configure your unit.

- **IP ADDRESS:** Change only as needed to meet the requirements of your network (Match the first 2 octets with your network's settings). If you are using an unmanaged network, or only direct connection, you can leave it as the default.
- **SUBNET MASK:** You may need to change this one if your network is heavily managed, or if you are going through a switch. Otherwise, the default should work fine.

- **GATEWAY:** Like your IP address, you will need to configure this to match your current network settings.

Click **APPLY** to lock in changes. If the IP Address, etc., is changed, be sure to use the new IP Address to access the unit's web interface.



UPDATE TAB: Provides the interface for unit Firmware updates. **ONLY USE AS DIRECTED BY PVI SUPPORT STAFF.**

ABOUT TAB: Provides Firmware Version information.

ON BOARD DISPLAY - QAM (J.83B DIGITAL CABLE)

Setting	
Source	HDMI
Standard	J83B
Freq	783000K
Vid Quality	LowLatency
MOD	QAM64
Major Ch	1
Minor Ch	1
Short Name	PVIHD1
Aud Format	AC3
Advanced	...

These are the Defaults and Good starting point for **PLUG N PLAY** setup.

If you have more than one unit please ensure you change the **FREQUENCY**, **MAJOR/MINOR**, and **SHORT NAME** so they don't overlap and create issues.

With the above default, the unit outputs on 783 MHz as channel 1.1.

- **SOURCE** – Set your Video Source as HDMI, CVBS, HDMI + Analog Audio, SDI, SDI + Analog Audio
- **STANDARD** – Set your TV standard depending on your needs, location, and support format of your TV.
- **FREQ** – Set your Frequency using our QAM Frequency chart starting on page 26. TVs will scan for the Frequency, then store the channel as the Major/Minor channel number you have set on the Unit.
- **VID QUALITY** – Set the Latency Mode of your Video.
- **MOD** – Modulation Mode you wish to use. QAM64 is the default and works with 99% of TVs QAM256 is used in applications that require it such as with other coax systems that use QAM256 or only support QAM256 mode
- **MAJOR CHANNEL** – This is the Major channel number that will be displayed and stored in the TV's Virtual Channel Table (VCT). (For example, for channel "10.1", "10" is the Major channel number.)
- **MINOR CHANNEL** – This is the Minor channel number that will be displayed and stored in the TV's Virtual Channel Table (VCT). (For example, for channel "10.2", "2" is the Minor channel number.) If you wish to have many channels with the same Major number, use the Minor number to differentiate.
- **SHORT NAME** – Name of the Channel you wish to use. 4-6 Characters max depending on TV.
- **AUDIO FORMAT** – Set your desired Audio Format. AC3 is the Default Standard for ATSC and QAM mode.
- **ADVANCED** – Advanced options for users who require Specific PIDs or Fixed EDID information. **Please don't change these** unless you understand your required PIDs or EDID per Cable Provider instructions or PVI Tech Support request.

ON BOARD DISPLAY - ATSC

Setting	
Source	HDMI
Standard	ATSC
Freq	473000K
Vid Quality	LowLatency
Major Ch	1
Minor Ch	1
Short Name	PVIHD1
Aud Format	AC3
Advanced	...
Theme	1

These are the Defaults and Good starting point for **PLUG N PLAY** setup.

If you have more than one unit please ensure you change the **FREQUENCY, MAJOR/MINOR**, and **SHORT NAME** so they don't overlap and create issues.

With the above default, the unit outputs on 473 MHz as channel 1.1.

- **SOURCE** – Set your Video Source as HDMI, CVBS, HDMI + Analog Audio, SDI, SDI + Analog Audio
- **STANDARD** – Set your TV standard depending on your needs, location, and support format of your TV.
- **FREQ** – Set your Frequency using our ATSC Frequency chart starting on page 36. TVs will scan for the Frequency, then store the channel as the Major/Minor channel number you have set on the Unit.
- **VID QUALITY** – Set the Latency Mode of your Video.
- **MAJOR CHANNEL** – This is the Major channel number that will be displayed and stored in the TV's Virtual Channel Table (VCT). (For example, for channel "10.1", "10" is the Major channel number.)
- **MINOR CHANNEL** – This is the Major channel number that will be displayed and stored in the TV's Virtual Channel Table (VCT). (For example, for channel "10.2", "2" is the Minor channel number.) If you wish to have many channels with the same Major number, use the Minor number to differentiate.
- **SHORT NAME** – Name of the Channel you wish to use. 4-6 Characters max depending on TV.
- **AUDIO FORMAT** – Set your desired Audio Format. AC3 is the Default Standard for ATSC and QAM mode.
- **ADVANCED** – Advanced options for users who require Specific PID's or Fixed EDID information. **Please don't change these** unless you understand your required PIDs or EDID per Cable Provider instructions or PVI Tech Support request.

ON BOARD DISPLAY - DVB-T GENERIC

Setting	
Source	HDMI
Standard	DVB-T
Freq	474000K
BW	8M
Vid Quality	LowLatency
MOD	QAM64
FFT	8K
GI	1/16
CR	5/6
LCN	1

These are the Defaults and Good starting point for **PLUG N PLAY** setup.

If you have more than one unit please ensure you change the **FREQUENCY**, **LCN**, and **SHORT NAME** so they don't overlap and create issues.

- **SOURCE** – Set your Video Source as HDMI, CVBS, HDMI + Analog Audio, SDI, SDI + Analog Audio
- **STANDARD** – Set your TV standard depending on your needs, location, and support format of your TV.
- **FREQ** – Set your Frequency using our DVB-T Frequency chart starting at page 36. TVs will scan for the Frequency and the Frequency Channel it relates to.
- **VID QUALITY** – Set the Latency Mode of your Video.
- **MOD** – Modulation Mode you wish to use. QAM64 is the default and works with 99% of TVs
QAM256 is used in applications that require it such as with other coax systems that use QAM256 or only support QAM256 mode
- **LCN** – Logical channel number can be set here. This is the channel number that will be stored and displayed on the TV
- **SERVICE NAME** – Name of the Channel you wish to use. 4-6 Characters max depending on TV.
- **AUDIO FORMAT** – Set your desired Audio Format. MPEG is the default for DVB-T.
- **ADVANCED** – Advanced options for users who require Specific PID's or Fixed EDID information.
Please don't change these unless you understand your required PIDs or EDID per Cable Provider instructions or PVI Tech Support request.

ON BOARD DISPLAY - DVB-C

Setting	
Source	HDMI
Standard	DVB-C
Freq	474000K
Sym. Rate	6875K
Vid Quality	LowLatency
MOD	QAM256
LCN	1
Service	PVIHD1
Aud Format	MPEG
Advanced	...

These are the Defaults and Good starting point for PLUG N PLAY setup.

If you have more than one unit please ensure you change the **FREQUENCY**, **LCN**, and **SHORT NAME** so they don't overlap and create issues.

- **SOURCE** – Set your Video Source as HDMI, CVBS, HDMI + Analog Audio, SDI, SDI + Analog Audio
- **STANDARD** – Set your TV standard depending on your needs, location, and support format of your TV.
- **FREQ** – Set your Frequency using our Frequency chart at www.pvisupport.com. TVs will scan for the Frequency and the Frequency Channel it relates to.
- **SYM. RATE** – Set the Symbol Rate appropriate for your region.
- **VID QUALITY** – Set the Latency Mode of your Video.
- **MOD** – Modulation Mode you wish to use. QAM256 is default for DVB-C
- **LCN** – Logical channel number can be set here. This is the channel number that will be stored and displayed on the TV.
- **SERVICE NAME** – Name of the Channel you wish to use. 4-6 Characters max depending on TV.
- **AUDIO FORMAT** – Set your desired Audio Format. MPEG is the default format for DVB-C.
- **ADVANCED** – Advanced options for users who require Specific PID's or Fixed EDID information. **Please don't change these** unless you understand your required PID's or EDID per Cable Provider instructions or PVI Tech Support request.

ON BOARD DISPLAY – ISDBT

Setting	
Source	HDMI
Standard	ISDB
Freq	473143K
Vid Quality	LowLatency
Key ID	1
Service	PVIHD1
Aud Format	AAC
Advanced	...
Theme	1

These are the Defaults and Good starting point for PLUG N PLAY setup.

If you have more than one unit please ensure you change the **FREQUENCY, KEY ID, and SHORT NAME** so they don't overlap and create issues.

- **SOURCE** – Set your Video Source as HDMI, CVBS, HDMI + Analog Audio, SDI, SDI + Analog Audio
- **STANDARD** – Set your TV standard depending on your needs, location, and support format of your TV.
- **FREQ** – Set your Frequency using our Frequency chart at www.pvisupport.com. TVs will scan for the Frequency and the Frequency Channel it relates to.
- **VID QUALITY** – Set the Latency Mode of your Video.
- **KEY ID** – Set your Key ID channel number.
- **SERVICE NAME** – Name of the Channel you wish to use. 4-6 Characters max depending on TV.
- **AUDIO FORMAT** – Set your desired Audio Format. AAC is the default standard for ISDBT.
- **ADVANCED** – Advanced options for users who require Specific PIDs or Fixed EDID information. **Please don't change these** unless you understand your required PIDs or EDID per Cable Provider instructions or PVI Tech Support request.

ON BOARD DISPLAY – DTMB

Setting	
Source	HDMI
Standard	DTMB
Freq	474000K
Vid Quality	LowLatency
Mode	10
LCN	1
Service	PVIHD1
Aud Format	MPEG
Advanced	...
Theme	1

These are the Defaults and Good starting point for **PLUG N PLAY** setup.

If you have more than one unit please ensure you change the **FREQUENCY**, **LCN**, and **SERVICE NAME** so they don't overlap and create issues.

- **SOURCE** – Set your Video Source as HDMI, CVBS, HDMI + Analog Audio, SDI, SDI + Analog Audio
- **STANDARD** – Set your TV standard depending on your needs, location, and support format of your TV.
- **FREQ** – Set your Frequency here. Because of the wide range that DTMB covers, please search for these online to determine the Frequencies available for your region.
- **VID QUALITY** – Set the Latency Mode of your Video.
- **MODE** – Modulation mode can be set here depending on your needs for your region
- **LCN** – Logical channel number can be set here. This is the channel number that will be stored and displayed on the TV
- **SERVICE NAME** – Name of the Channel you wish to use. 4-6 Characters max depending on TV.
- **AUDIO FORMAT** – Set your desired Audio Format. MPEG is default for DTMB.
- **ADVANCED** – Advanced options for users who require Specific PID's or Fixed EDID information. **Please don't change these** unless you understand your required PID's or EDID per Cable Provider instructions or PVI Tech Support request.

ON BOARD DISPLAY - ADVANCED MENU

Advanced	
TSID	1
Service ID	1
CVCT Mode	Auto
PMT PID	32
Video PID	48
PCR PID	48
Audio PID	49
1080P Conv	Auto
RF Atten	0 dB
Mixer Mode	Normal

These are the Defaults and Good starting point for **PLUG N PLAY** setup.

Please do not modify these settings unless instructed or you understand these settings.

If you require a specific PID set by your Service provider for Coax STB injection, then please change as per their requirements.

Changing these numbers can create unwanted effects on your channel if not careful.

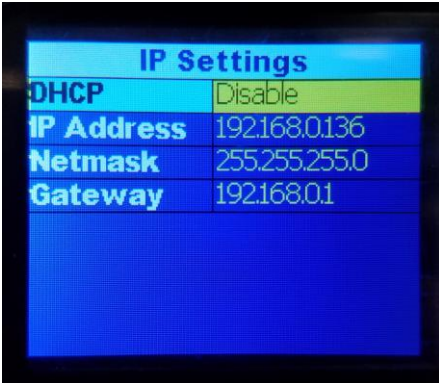
- **TS ID** – Transport ID Number. Used for Identification of the Mpeg Transport Stream. Default 1
- **SERVICE ID** – Also known as the Program ID
- **CVCT MODE** – Allows the changing of the VCT Mode for TV tuners that have trouble registering the assigned Major Minor channel and short name. This option only shows in J.83B standard
- **PMT** – Program Mapping Table Identification Number. Metadata of the MPEG transport stream. Contains the PIDS. Default 32
- **VIDEO PID** – Identification number for the Mpeg Video transport stream. Default is 48
- **PCR PID** – Program Clock rate PID. Required to be the same number as Video PID to ensure the Video and Encoder PID's are synced correctly and Identified in the Transport stream.
- **AUDIO PID** – Identification number for the Mpeg Audio in the transport stream. Default is 49
- **1080P CONV**– This option will downscale 1080P video to 1080i automatically when in interlace mode. If you switch to Auto mode, the unit will not downscale 1080P video and pass through the resolution to your tv. Use to support TV tuners that don't support 1080P video.
- **RF ATTEN** – Built-in signal attenuation (reduction). Reduces signal strength by up to 30 dB. 0 is full strength.
- **MIXER MODE** – Compatibility mode for older tuners that still use DVB ATSC 1.0. If you are having issues with certain TVs not picking up the channel, please try the Alternate mode.
- **FIXED EDID** – Set to force video resolution via HDMI from source device. HDMI only. By default, the unit accepts the resolution from the source device (Auto).
- **IP SETTINGS** - Set the IP Address of Web Interface and other settings. (See Page 17).
- **RESET** - Restore unit to factory settings.

Terms:

PID = (Packet Identifier)

CVCT = (Cable Virtual Channel Table)

ADVANCED MENU – IP SETTINGS



IP Settings	
DHCP	Disable
IP Address	192.168.0.136
Netmask	255.255.255.0
Gateway	192.168.0.1

These are the Defaults and Good starting point for **PLUG N PLAY** setup.

Access this menu by going to Settings -> Advanced -> IP Settings.

- **DHCP** – Allows IP address of unit to be set automatically by your network. Disabled by default.
- **IP ADDRESS** – Set the IP Address for the Web Interface of the unit. Default is 192.168.0.136.
- **NETMASK** – Set the Subnet Mask, default is 255.255.255.0.
- **GATEWAY** – Set the Default Gateway, default is 192.168.0.1.

INSTALLING MULTIPLE UNITS

To install multiple units on the same coax network, make sure to **CHANGE** the Frequencies, Major/Minor, and Short Name of each unit **BEFORE** you connect them to the same coax network, so there will be no Channel Conflicts. By default, each unit will be set the same. Please Test each unit directly connected to a Test TV first with a short piece of coax before making it a permanent installation such as a rack mount to make troubleshooting easier.

If you have other modulators or Digital signals you must find a harmony between the RF levels and Frequencies that are available such as ATSC (Over the Air Antenna) signal. Check the operating frequencies of the other signals (i.e. other modulators, OTA channels, etc.), and be sure to set these units to other valid frequencies.

Depending on your setup we **recommend** for you to use an active splitter or combiner with more than 6 units, 40+ TVs or using multiple splitters (each splitter will lower the DB level 5-10dbs depending on the quality) to ensure you get a clear signal to all your TVs no matter the distance. If your system works without one, then it is not necessary.

COMBINING SERVICE PROVIDERS SIGNALS OR ATSC WITH YOUR DEVICE

For Combining ATSC (Over the Air channels) you must find the frequencies that are used by your local stations. This information can usually be found online by searching for, “(insert your local area) ATSC frequency chart.” This typically shows all the Frequencies used in your area. Find the ones that are not used and write those down. Set your device(s) to those unused frequencies. Test using your Test TV.

For combining with Cable Service provider, the same rules apply. You can contact the local service provider of your basic cable to find the frequencies that they use and find the ones that are available for you to use. If you wish to inject into a Digital Cable Converter box or STB(set-top box) most of the time the service provider will include a channel you may broadcast onto or some providers require a specific PIDs to be set which can be set in the [ADVANCED OPTIONS MENU](#) in order for the Set Top box to be able to read the channel.

AUDIO ENCODING SETTINGS

The unit has three standards of Audio Encoding. Depending on your local and supported format per TV you can set the following:

- **AC3 – 2.1 Dolby Digital Audio US/Canada Standard for Broadcasting**
- **MPEG – MPEG 2 Layer II used in DVB-T EU Standard.**
- **ACC - Advanced *Audio* Coding or MPEG-4. Used in some ATSC broadcasts and ISDBT format. Supported by Most TVs worldwide.**

TROUBLESHOOTING

NO VIDEO

Check for the TEST PATTERN using a test TV, using the unit's basic setup with default settings.

1. Connect the unit to TV via coax cable. DO NOT connect the HDMI source.
2. Run channel scan on TV (Auto or Cable). After the channel scan, the TV will find the default channel (1.1).
3. Tune the TV to default channel. TV will show a test pattern ("No Valid Video Input.")

Check for TEST PATTERN using intended channel settings.

1. On the unit's web interface, set signal standard, Frequency (channel), Major & Minor Channel numbers to what you wish to use.
2. Confirm that the Frequency is not being used by any other equipment and the Major/Minor channel number being used is unique.
3. Run channel scan on TV. TV will find the programmed channel.
4. Tune to the programmed channel. TV will show a test pattern ("No Valid Video Input.")

If no TEST PATTERN...

- Check coax cable connection between TV and unit. Test with a different cable if possible.
- Check the TV scan method. Make sure TV is set to scan for the signal type (STANDARD) set on the unit's menu. (ATSC corresponds to Over the Air, J83B is QAM Digital cable, etc.) FOR DEFAULT SETTINGS: set TV to scan for Auto or Cable.
- In rare cases, some TVs may not be able to display the test pattern. Rule this out by connecting a "dumb" HDMI signal source (e.g. DVD player), then scan for channels on the TV.
- Test with another TV to rule out TV issue if possible.

If TEST PATTERN works but there is NO VIDEO from intended source...

- Check HDMI cable connection between source and unit. Disconnect HDMI source and reconnect it to establish a new HDMI handshake. Test with a different cable if possible.
- Check resolution settings on the source. Recommended setting is 1080p FIXED or 720p FIXED. If the source is a computer, set Display to "Extended mode" or "Extend these displays" and set to 1920x1080 or 1280x720.
- In the web interface, go to Advanced Options > Fixed EDID setting, and change from Auto to match the fixed resolution setting on the source. For instance, if the source is set to 1080p Fixed, change Fixed EDID to 1080p.
- Test with a different source (e.g. DVD player) if possible
- If possible, test with a different TV with a different make/model.
- Use default settings on the unit. (Reset the unit to default settings, by pressing the Enter and Escape keys simultaneously, and pressing Enter when prompted to "Recall Default Settings.")

TV DOESN'T FIND THE UNIT'S CHANNEL DURING A CHANNEL SCAN

- Make sure the TV has completed its channel scan. (Channel scan time can range from 2 to 30 minutes or more and depends on the TV make/model.)
- Check the TV scan method. Make sure TV is set to scan for the signal type (STANDARD) set on the unit's menu. (ATSC corresponds to Over the Air, J83B is QAM Digital cable, etc.) FOR DEFAULT SETTINGS: set TV to scan for Auto or Cable.
- Check the frequency setting. Make sure the frequency is a valid frequency. To choose a valid frequency, see the [CHANNEL FREQUENCY APPENDICIES](#) starting at page 18.
- If the steps above don't work, in the web interface, go to Advanced Options > Mixer Mode and set from Normal to Alternate, then rescan on the TV.

VIDEO IS CHOPPY, DISTORTED, PIXELATED

- Check HDMI cable connection between source and unit. Disconnect HDMI source and reconnect it to establish a new HDMI handshake. Test with a different cable if possible.
- Check Coax cable connection between unit and TV. Test with a different cable if possible.
- Check resolution settings on the source, and ensure it's set to one FIXED resolution. Recommended setting is 1080p FIXED or 720p FIXED. If the source is a computer, set Display to "Extended mode" or "Extend these displays" and set to 1920x1080 or 1280x720.
- On the unit, go to Advanced Options > Fixed EDID setting, and change from Auto to match the fixed resolution setting on the source. For instance, if the source is set to 1080p Fixed, change Fixed EDID to 1080p.
- Change Video Quality on the unit from "Low Latency" to "Average" or "High".
- If STANDARD is J83B (i.e. QAM), change MOD from QAM256 to QAM64.
- Test with a different source (e.g. DVD player) if possible.
- Check Signal Strength. Signal strength that is too high can cause digital artifacts (blocks) to appear on the screen. To resolve, in the unit's menu go to Advanced Options > RF Attenuator, then change from 0db - 15db and retest.

VIDEO DROPS OUT RANDOMLY OR WHEN I CHANGE CHANNELS ON SOURCE DEVICE

- Check resolution settings on the source, and ensure it's set to one FIXED resolution. Recommended setting is 1080p FIXED or 720p FIXED. If the source is a computer, set Display to "Extended mode" or "Extend these displays" and set to 1920x1080 or 1280x720.
- On the unit, go to Advanced Options> Fixed EDID setting, and change from Auto to match the fixed resolution setting on the source. For instance, if the source is set to 1080p Fixed, change Fixed EDID to 1080p.
- Audio setting issues can also cause full video dropouts. Check HDMI Audio Out settings on the source device. Set to Stereo PCM Linear or Dolby Digital 2 Channel (Uncompressed).

VIDEO CUTS OUT COMPLETELY AFTER A FEW HOURS OF USE

- Some source devices (Set Top Boxes, etc.) have power-saving features that can turn off or de-sync the HDMI connection after hours of inactivity. Check power settings on the source device and turn off any power-saving modes. (This will vary from device to device.)
- Check resolution settings on the source. Recommended setting is 1080p FIXED or 720p FIXED. If the source is a computer, set Display to “Extended mode” or “Extend these displays” and set to 1920x1080 or 1280x720.
- On the unit, go to Advanced Options > Fixed EDID setting, and change from Auto to match the fixed resolution setting on the source. For instance, if the source is set to 1080p Fixed, change Fixed EDID to 1080p.

CAN'T LOG INTO THE WEB INTERFACE

- Check that the unit is powered on and connected to your computer or network via Ethernet patch cable.
- If connecting directly to your computer, check that your computer is set to a static IP address in the same network segment as the unit. (See page 5 for direction on how to set a static IP address.
- Check the On-Board menu (Settings -> Advanced -> IP Settings) to verify you are using the correct address.
- Reset the unit to default settings, by pressing the Enter and Escape keys simultaneously, and pressing Enter when prompted to “Recall Default Settings.”

UNIT DOESN'T WORK WITH VIDEO SWITCHERS OR MIXERS

- Ensure the Video Switcher supports EDID. EDID support is required for our modulators to understand the signal from HDMI source.

NO AUDIO OR POOR AUDIO (VIDEO IS WORKING)

- Check HDMI Audio Out settings on the source device. Set to Stereo PCM Linear or Dolby Digital 2 Channel (Uncompressed).
- Check other audio settings on the source device to confirm audio is not turned off or muted.
- Check HDMI cable connection between source and unit. Disconnect HDMI source and reconnect it to establish a new HDMI handshake. Test with a different cable if possible.
- Test with a different source (e.g. DVD player) if possible.

AUDIO IS NOT IN SYNC WITH VIDEO

- This may occur if the audio output goes separately to a sound system before the video goes through the unit. You can purchase an audio delayer to sync the audio before it goes into your sound system or take the audio feed directly from the output of a TV tuned to the channel.
- To fix, adjust the Audio Delay settings on the affected TV. (This varies from TV to TV, see your TV documentation for more info.)

UNIT WON'T POWER ON

- Check the connection between the power supply and the unit. The cable screws securely into the DC jack on the side of the unit.
- Check the connector, cable, and power supply to make sure there is no damage.
- Check that you are using the original power supply for your model.
- Test using a different power supply for this model, if one is available.
- Test with a different known working outlet.
- Ensure that all the nuts on the connector are secure and not loose.

LOSING OTHER CHANNELS WHEN CONNECTING UNIT TO EXISTING COAX NETWORK

- There may be a channel conflict. Check the unit's Frequency and Major/Minor settings and make sure they do not match any other equipment in the network.
- The unit's signal output may oversaturate other signals on the network. To attenuate the signal from the unit, in the menu go to Advanced Options > RF Attenuator, then change from 0db, in 5db to 10db increments, and retest. Also, consider amplifying the other signals in the network to achieve ideal balance.

NOT ALL OF MY TVS PICK UP THE CHANNEL(S) IN A NETWORK WITH MULTIPLE TVS

- There may be a channel conflict. Check the unit's Frequency and Major/Minor settings and make sure they do not match any other equipment in the network.
- There may be signal loss on the coax network between the unit and the affected TVs. To check for this, remove the unit from the network and connect it directly to the affected TV. Then, rescan for channels.
- If the above test works, add an amplifier to your network before the affected TVs.

MY TV DOESN'T ACCEPT DIGITAL SIGNAL (ANALOG ONLY)

- Many older TVs (sold before 2009) only accept analog cable or over-the-air signals. These TVs will require a digital converter box. Typically, these are sold as Digital to Analog converter boxes or set-top boxes.
- If using a converter box, set the STANDARD on the unit's menu to match the type of converter box. (For Over-the-Air, set the unit to ATSC. For Cable, set the unit to J83B.)

ON AIR LED LIGHT IS BLINKING OR OFF (POWER LIGHT IS ON)

- Check resolution settings on the source. Recommended setting is 1080p FIXED or 720p FIXED. If the source is a computer, set the display to “Extended mode” or “Extend these displays” and set to 1920x1080 or 1280x720.
- On the unit, go to Advanced Options> Fixed EDID setting, and change from Auto to match the fixed resolution setting on the source. For instance, if the source is set to 1080p Fixed, change Fixed EDID to 1080p.

F.A.Q – FREQUENTLY ASKED QUESTIONS**INSTALLING MULTIPLE UNITS? –**

Please see page 9 “Installing Multiple Units” Each unit MUST have its own frequency and major channel number.

QUESTIONS ABOUT THE DIFFERENT STANDARDS? -

This refers to the broadcast standard of the RF output. North American standards are J.83B (digital QAM Cable) and ATSC (digital over-the-air antenna). International broadcast standards supported include DVB-T, DVB-C, ISDBT, and DTMB. Be sure to use a standard that is compatible with your TV and region.

WHAT IS THE ADVANCED OPTIONS MENU? –

The Advanced Options Menu allows adjustments of PSIP and other tweaks such as the Units RF strength. See page 7.

TRYING TO MIX SIGNAL WITH OTHER MODULATORS? –

Please ensure you don't set our unit on the same frequency as your other modulators as well as balancing the RF level. If you broadcast our unit on the same frequency as your other modulators it will cancel each other out or cause unwanted results on your TV image such as two channels split on one screen. Please see Page 10 for more information.

MIXING OVER THE AIR ATSC SIGNALS WITH OUR UNIT?

Please see page 10 for more information.

MORE THAN TWO UNITS ONLY PICKING UP A FEW CHANNELS AND NOT ALL?

Ensure that each unit has its own Frequency, Major, Minor, and Channel Name.

If you have multiple units connected with a splitter or coax combiner, please check the signal coming from the combiner directly plugged into a TV and scan for channels. You should be able to pick up all the channels. If not, we might need to amplify the signal. Coax has a lot of variables to account for, so we always need to start from the source and work our way up. Sometimes cheap splitters or combiners can introduce harmonics that create noise causing the TV to skip a channel because it's too dirty of a signal to pick up. It is rare but happens from time to time with cheaper coax combining equipment.

BALANCING SIGNAL - SIGNAL NOT REACHING ALL THE TVS

This could be that the signal strength isn't enough to reach all your TV sets. For example, if you have 12 TVs in a chain and the last 3 won't pick up your channel, then you can buy an inexpensive coax amplifier from online and add it to the coax line on the unit to boost the signal to reach the last 3 TV sets.

Please note in some cases after amplification of the signal the first few TVs might start to see digital artifacts or signal issues. This is due to the Signal becoming stronger for the first few TVs and as the signal travels down the coax cable it slowly becomes attenuated which results in the other TVs not having this issue. To combat this, please add an inline digital attenuator, or use the Advanced Options > RF Attenuator option.

WHAT IS EDID?

Extended Display Identification Data (EDID) is a metadata format for display devices to describe their capabilities to a video source (e.g. graphics card or set-top box). It is the Basic HDMI language used for device to communicate their supported resolution as well as audio formats. When you plug let's say a 4k Blu-ray player into your TV and your TV only supports 1080P. The TV will communicate this with the Blu-ray and the Blu-ray responds by setting its resolution automatically to 1080P and not 4k.

CHANGING THE CHANNEL ON MY SET TOP BOX RECEIVER CAUSES ME TO LOSE THE CHANNEL FOR 15-45 SECONDS BEFORE DISPLAYING AGAIN.

Please ensure that your HDMI source is set to a Fixed 1080i/p or 720P and only one resolution is selected. If you are still having issues, please try using our advance menu > Fixed EDID > 1080 or 720, depending on the supported resolution from your HDMI source.

WHAT DOES MAJOR AND MINOR DO?

Major and Minor are used as a reference number for your TV to understand. When you tune to channel 10.1 the tuner goes to the frequency you have set on the unit. When a TV scans it looks for the Frequency first and then sees the attached VCT (virtual channel table) data attached to that channel. This then overwrites the Physical channel number as shown in the frequency chart (783.00mhz is physical channel 122) and stores the channel with the assigned Major/Minor you have set on the unit.

WHAT IS THE DIFFERENCE BETWEEN FREQUENCY CHANNEL LISTED ON THE CHARTS VERSUS THE MAJOR MINOR CHANNEL NUMBER?

The frequency listed on the charts is what is called the Physical channel number. When no VCT (virtual channel table) is assigned, the Tuner defaults to the Physical channel number. (For example, 783.000mhz QAM is channel 122.) When VCT is enabled and a Major/minor is set on the unit, the TV will overwrite its normal programming and use the Assigned number such as 10.1 or 1.1 which is the default on the unit. Most modern TVs won't accept or save a channel without VCT so by default we cannot disable VCT to ensure the max compatibility with all TVs. If you wish to use the same Channel number as the Physical channel number, then set the Major/Minor to match. For example, 195.000Mhz QAM is physical channel 10. So, we set the Major/Minor to 10.1. Each digital cable channel must have a Major and Minor. So, all Channels will display its Major and Minor number 10.1, 11.1, 12.1, 13.1 etc.

TECH SUPPORT – CONTACT US

Before contacting us, please read this manual carefully, as it covers ALL and EVERY aspect to set this product as per your needs, using pictures and examples.

Should you need any additional support, to submit a support ticket, please go to www.pvisupport.com and click "Submit a Ticket". Our support staff will address your questions very quickly right after you post the ticket.

We strongly suggest that you open a ticket first before calling, so we can best support you.

Our tech support department is active MON-FRI 9:30 AM – 5 PM US EST TIME. Tickets posted outside of this time window or on weekends and holidays are responded to ASAP the following business day.

Free phone tech support is available by calling +1 407 720 6101 ext #2, MON-FRI 9:30 AM – 5 PM US EST TIME.

CHANNEL FREQUENCY APPENDICES

USA J83B CABLE CHANNELS APPENDIX

NORTH AMERICAN DIGITAL QAM CABLE TELEVISION CHANNELS / FREQUENCIES

SUGGESTED DEFAULT = 783000KHZ (783 MHZ) = frequency channel 122

6 MHz Apart

Note: this is just the frequency the VeCOAX will use on the coax cable **spectrum**

IT IS NOT the memory position number on the TV

You can set ANY memory position number on the TV by setting the Major/Minor Number as you prefer. **EXAMPLE** 1.1 so it will go to the button number 1 on the TV remote

Channel Number	QAM / CDSREF Carrier (MHz)
Subband "T" Channels	6 MHz Apart
Lowband	
2	57.00
3	63.00
4	69.00
1	75.00
5	79.00 or 81.00
6	85.00 or 87.00
Midband	
95	93.00

96	99.00
97	105.00
98	111.00
99	117.00
Midband	
14	123.00
15	129.00
16	135.00
17	141.00
18	147.00
19	153.00
20	159.00
21	165.00
22	171.00
Highband	
7	177.00
8	183.00
9	189.00

10	195.00
11	201.00
12	207.00
13	213.00
Superband	
23	219.00
24	225.00
25	231.00
26	237.00
27	243.00
28	249.00
29	255.00
30	261.00
31	267.00
32	273.00
33	279.00
34	285.00
35	291.00

36	297.00
Hyperband	
37	303.00
38	309.00
39	315.00
40	321.00
41	327.00
42	333.00
43	339.00
44	345.00
45	351.00
46	357.00
47	363.00
48	369.00
49	375.00
50	381.00
51	387.00
52	393.00

53	399.00
54	405.00
55	411.00
56	417.00
57	423.00
58	429.00
59	435.00
60	441.00
61	447.00
62	453.00
63	459.00
64	465.00
Ultraband	
65	471.00
66	477.00
67	483.00
68	489.00
69	495.00

70	501.00
71	507.00
72	513.00
73	519.00
74	525.00
75	531.00
76	537.00
77	543.00
78	549.00
79	555.00
80	561.00
81	567.00
82	573.00
83	579.00
84	585.00
85	591.00
86	597.00
87	603.00

88	609.00
89	615.00
90	621.00
91	627.00
92	633.00
93	639.00
94	645.00
Jumboband	
100	651.00
101	657.00
102	663.00
103	669.00
104	675.00
105	681.00
106	687.00
107	693.00
108	699.00
109	705.00

110	711.00
111	717.00
112	723.00
113	729.00
114	735.00
115	741.00
116	747.00
117	753.00
118	759.00
119	765.00
120	771.00
121	777.00
122	783.00
123	789.00
124	795.00
125	801.00
126	807.00
127	813.00

128	819.00
129	825.00
130	831.00
131	837.00
132	843.00
133	849.00
134	855.00
135	861.00
136	867.00
137	873.00
138	879.00
139	885.00
140	891.00
141	897.00
142	903.00
143	909.00
144	915.00
145	921.00

146	927.00
147	933.00
148	939.00
149	945.00
150	951.00
151	957.00
152	963.00
153	969.00
154	975.00
155	981.00
156	987.00
157	993.00
158	999.00

USA ATSC AIR CHANNELS APPENDIX

NORTH AMERICAN DIGITAL ATSC OFF AIR TELEVISION CHANNELS / FREQUENCIES

SUGGESTED DEFAULT = 473000kHz (473 MHz) = frequency channel 14

6 MHz Apart

Note: this is just the frequency the VeCOAX will use on the coax cable

IT IS NOT the memory position number on the TV

You can set ANY memory position number on the TV by setting the Major/Minor Number as you prefer. **EXAMPLE** 1.1 so it will go to the button number 1 on the TV remote

(frequencies in MHz)

6 MHz Apart

Channel	ATSC FREQUENCY
2	57
3	63
4	69
5	79
6	85

VHF high-band (band III)

Channel	ATSC FREQUENCY
7	177
8	183
9	189
10	195
11	201
12	207

13	213
UHF band	
Channel	ATSC FREQUENCY
14	473
15	479
16	485
17	491
18	497
19	503
20	509
21	515
22	521
23	527
24	533
25	539
26	545
27	551
28	557
29	563
30	569
31	575
32	581
33	587
34	593
35	599

36	605
37	611
38	617
39	623
40	629
41	635
42	641
43	647
44	653
45	659
46	665
47	671
48	677
49	683
50	689
51	692
Channel	ATSC FREQUENCY
52	701
53	707
54	713
55	719
56	725
57	731
58	737
59	743

60	749
61	755
62	761
63	767
64	773
65	779
66	785
67	791
68	797
69	803
Channel	ATSC FREQUENCY
70	809
71	815
72	821
73	827
74	833
75	839
76	845
77	851
78	857
79	863
80	869
81	875
82	881
83	887

LATIN AMERICA ISDBT CHANNELS APPENDIX

SUGGESTED DEFAULT = 473142KHZ (473.142 MHz) = freq channel 14

(frequencies in kHz) 6 MHz Apart	
Channel	ISDBT FREQUENCY
14	473142
15	479142
16	485142
17	491142
18	497142
19	503142
20	509142
21	515142
22	521142
23	527142
24	533142
25	539142
26	545142
27	551142
28	557142
29	563142
30	569142
31	575142
32	581142
33	587142

34	593142
35	599142
36	605142
37	***NOT USED***
38	617142
39	623142
40	629142
41	635142
42	641142
43	647142
44	653142
45	659142
46	665142
47	671142
48	677142
49	683142
50	689142
51	695142
52	701142
53	707142
54	713142
55	719142
56	725142
57	731142
58	737142

59	743142
60	749142
61	755142
62	761142
63	767142
64	773142
65	779142
66	785142
67	791142
68	797142
69	803142

DVB-T CHANNELS APPENDIX

Please download the DVB-T additional PDF for your country available on our Tech Support Website – pvisupport.com

EUROPE/NEW ZEALAND = 8 MHz band

AUSTRALIA = 7 MHz Band

COLOMBIA = 6 MHz Band

END