

PDI Headend Electronics



PDI-SE-1 & PDI-SE-2 STEREO GENERATORS

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OPERATING INSTRUCTIONS ARE INCLUDED
IN THIS CATALOG, SO AS TO PROVIDE YOU
AN ONGOING REFERENCE

TECHNICAL SUPPORT
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1-800-242-1606



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INTRODUCTION

The PDI-SE-1 and PDI-SE-2 stereo encoders, utilizing new technology, offer the CATV system operator low cost, user friendly ways to upgrade existing channels for BTSC Stereo. They will work with most CATV video modulators. Incorporated in the unit is dbx® licensed companding giving the subscriber rich SURROUND SOUND Stereo. Balancing of stereo signals from any local source is easily accomplished using front panel controls and deviation meters. The PDI-SE-1 and PDI-SE-2 require only 1 3/4" of rack space to hold either one or two encoders.

SPECIFICATIONS

Frequency Response	20HZ to 14kHz +/- 1dB
Separation	26dB 20HZ to 14kHz typical
Pilot Rejection	50dB
Signal To Noise Ratio	-65dB, overall through receiver or precision demodulator
Compressor	L-R: dbx®
Audio Input Impedance	100 kohms, Balanced or Unbalanced
Normal Input Level (APL)	0 dBm, adjustable +/- 10dB
Distortion	0.5% maximum TDH
Output Level	3.5 V p-p at 600 ohms
Deviation	±25kHz, mono ±50kHz, stereo ±100kHz, maximum
4.5MHz Option	
Output Level	40dBmV (adjustable ±10dB)
Spurious Output	-60 dBc
Frequency Tolerance	±0.0025%
General	
Dimensions	18" x 1 3/4" x 6 1/2"
Power Requirement	105-125VAC, 50-60Hz, 15W
Weight	5 lb. net

FEATURES

- Left and right level control
- LED metering
- dbx® licensed companding
- Baseband or optional 4.5 MHz output
- Requires just 1 3/4" of rack space
- 2 year warranty
- UL Listed Canada/U.S.
- ISO 9002 certified

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OPERATING INSTRUCTIONS

1. BTSC/MTS STEREO / MPX OUT TO MODULATOR

- a.) Your TV modulator must be capable of accepting a baseband BTSC composite stereo audio signal. Some modulators require a slight modification to pass a BTSC stereo signal. For example, most modulators have a 75 microsecond pre-emphasis network used for mono audio or it will have some kind of audio limiting in its path. If this is present in the modulator, it must be removed. Please contact your modulator manufacturer if necessary, for proper setup instructions. In most cases, this is accomplished by moving a jumper or flipping a switch on the modulator.
- b.) Run a shielded audio cable from the "MPX OUT" on the PDI Stereo Encoder to the "AUDIO IN" on the TV modulator.
(see Diagram 7 c.)

2. VIDEO HOOK UP (see Diagram 7 c.)

- a.) Apply a 1V p-p video signal to the "VIDEO IN" on the PDI Stereo Encoder. Attach a cable from the "VIDEO OUT" on the Encoder to the "VIDEO IN" on the TV modulator. If any scrambling is being done, be sure to loop the video signal through the PDI stereo encoder first before cabling the scrambler. The PDI stereo Encoder will not function properly if it is receiving sync-suppressed scrambled video.

(BASEBAND STEREO)-MPX OUT

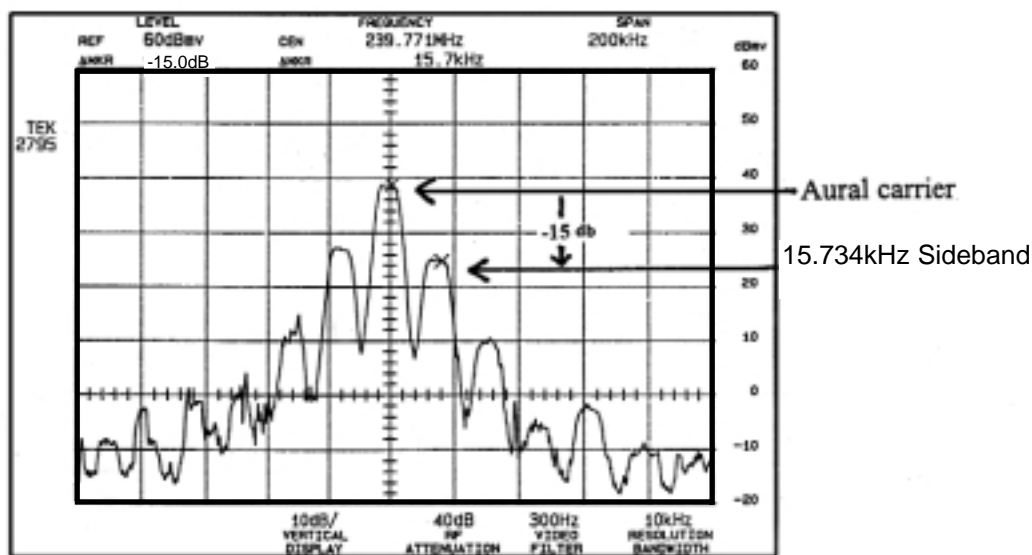
3. SETTING THE AURAL CARRIER DEVIATION USING A SPECTRUM ANALYZER

- a.) **DO NOT!** hook audio to the PDI Stereo Encoder at this time.
- b.) At this point, the PDI Encoder and the TV Modulator should be powered up.
"MPX OUT" of the Stereo Encoder should be hooked to "AUDIO IN" on the TV modulator.
A 1V p-p video source should be connected to the "VIDEO IN" on the encoder. (SYNC DET.) LED should be lit on the encoder's front panel.
The "VIDEO OUT" on the Stereo Encoder should be connected to the "VIDEO IN" on the TV modulator.

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(BASEBAND STEREO)-MPX OUT CONTINUED

- c.) Observe the RF out of the TV modulator in the Spectrum Analyzer.
Place the aural carrier on center frequency.
Set amplitude to 10dBmV/per div.
Set the span/horizontal to 200kHz. (20kHz per div.)
For best picture, 3kHz to 10kHz resolution bandwidth is suggested.
- d.) To set the deviation correctly, observe the aural carrier in the spectrum analyzer. Check the amplitude of the 15.734kHz stereo sidebands relative to the audio carrier. Still with **NO** audio signal present, adjust the audio deviation control on the TV modulator so that the upper 15.734kHz stereo pilot sideband to the right of the aural carrier to -15dB down (+/- .25 dB) from the aural carrier.
(See diagram:)



e.) **Important!**

Once this level is set, the audio level/deviation control on the TV modulator should not be adjusted any further. If more or less volume is needed during operation, adjust the level from the PDI Stereo Encoder level controls or at the audio source.

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4. AUDIO INPUTS

The PDI Stereo Encoder requires left and right audio input signals.

BALANCED SOURCE- (See Diagram 7 a.)

Run a pair of shielded two-conductor cables from the left and right side of the audio source. Connect them to the left and right audio inputs on the PDI Stereo Encoder. Be sure that the **"PLUS"** goes to the "+" and the **"NEG"** goes to the "-" with the **"SHIELD"** to "GND."

UNBALANCED SOURCE- (See Diagram 7 b.)

Connect the **"PLUS"** to the "+". Connect the **"SHIELD"** and the **"NEG"** to "GND" also connect the "-" on the terminal to "GND" on the terminal.

5. AUDIO LEVELS

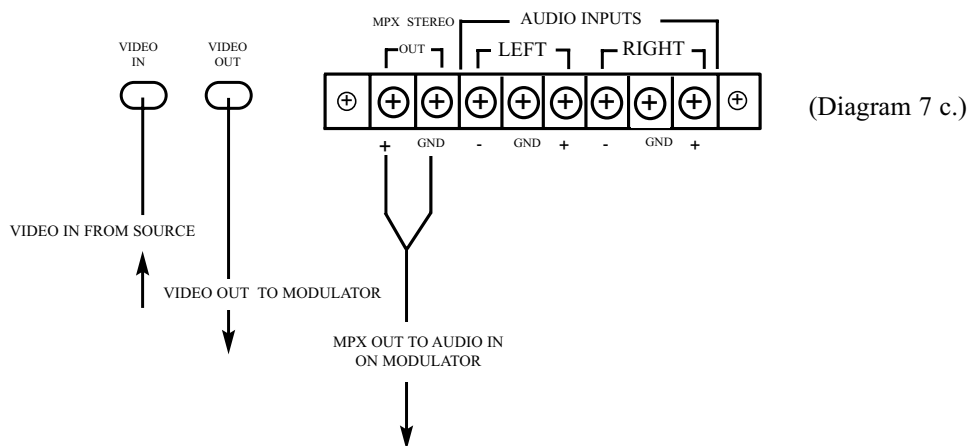
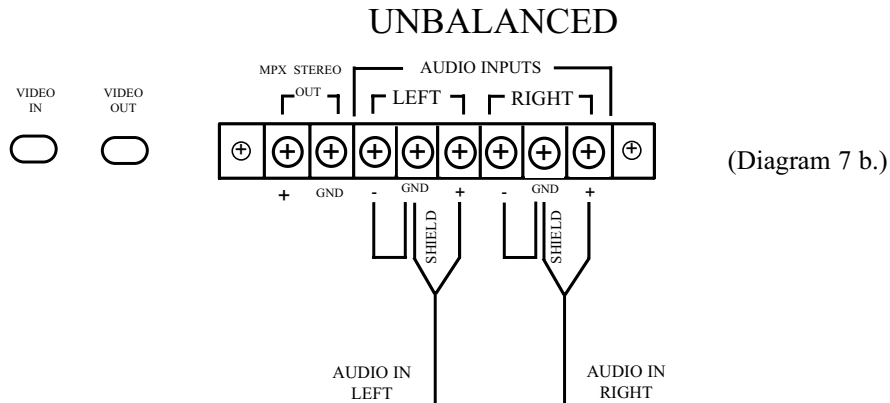
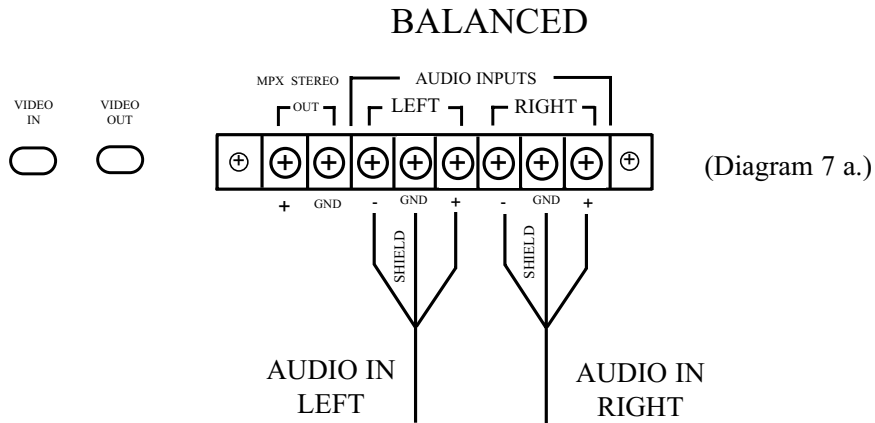
The PDI Stereo Encoder has left and right level controls on the front Panel. Audio levels are monitored with dual peak reading 10-LED bar graphs.

Adjust the left and right audio levels so that both meters read approximately "0" VU (yellow) +/-1 Occasional peaks at +2 (red) are fine. Peaking at +3 is unacceptable as this will probably cause distorted audio.

6. 4.5 OPTION

If your PDI Stereo Encoder has the 4.5 output option, there is no need for setting aural carrier deviation with a spectrum analyzer. All settings are done internally at the factory. Your modulator must have a 4.5 input and a way of turning off its aural carrier.

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INSPECTION

When the unit is delivered, immediately inspect the unopened box for signs of obvious damage. Note any problem on the carrier's delivery tickets before signing. If later inspection reveals concealed damage, a claim must be filed with the carrier within 10 days. Save all packing materials for inspection by the carrier or in case the unit should ever need to be returned to the factory for service. In case of obvious physical damage do not attempt to operate the modulator as further damage could result. Contact your distributor or the factory if you need assistance. The unit should be allowed to warm up for at least an hour before testing to assure that it meets specifications. Any unused port should be terminated after the setup procedure is completed.

WARRANTY 2 years

Passive Devices, Inc. (PDI) equipment has been thoroughly tested and found to be in proper operating condition when shipped from the factory and is warranted to be free from defects in materials or workmanship that may develop within two years of the date of purchase.

PDI agrees to remedy such or furnish a new part, or at its option an entire unit, or any part of a unit that discloses such defect, provided that the unit or part is returned to PDI or a PDI authorized service facility according to the terms listed below.

Prior authorization with a return authorization number issued by PDI or its representative is required for all returns. The purchaser shall be responsible for all freight charges on shipments to PDI unless otherwise authorized. Charges to return a unit or part to a purchaser will be paid by PDI. Claims for damage in shipment to the purchaser must be filed by the purchaser with the carrier in accordance with the carrier's regulations. All PDI shipping containers meet the requirements of the consolidated freight classification standard.