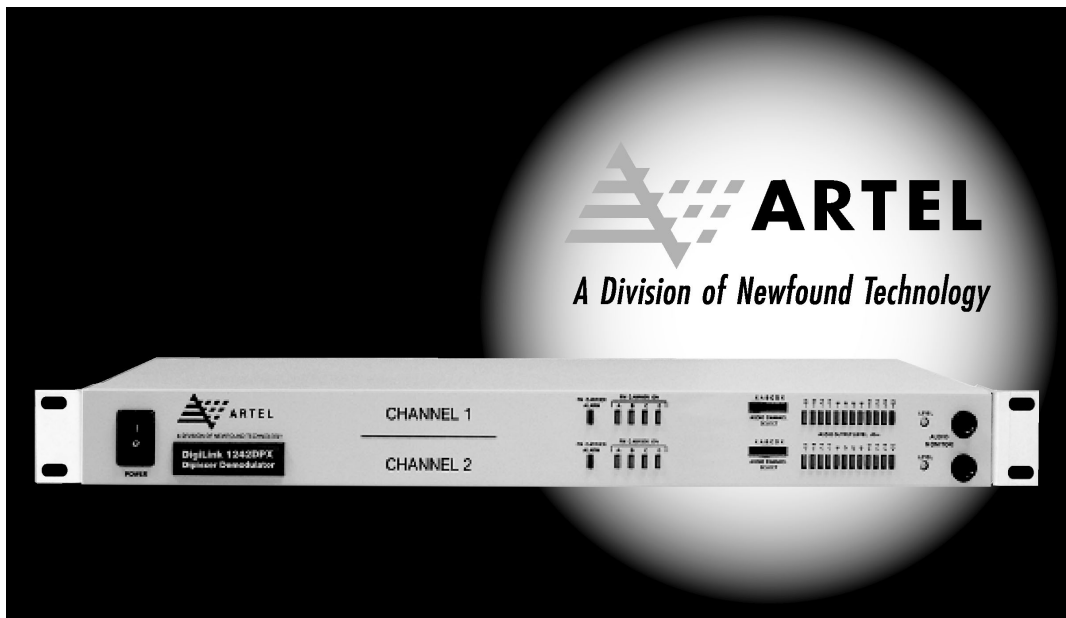


DigiLink 1242

**Diplexed Audio/Video
Modulator and Demodulator Units**



**Installation and
Operation Guide**

DigiLink 1242

**Diplexed
Audio/Video
Modulator and
Demodulator Units**



ARTEL

A Division of Newfound Technology

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Newfound Technology Inc.
330 Codman Hill Road
Boxborough, MA 01719
(978) 263-5775

www.artel.com

ESD CAUTIONS

The DL1242 contains components that can be damaged by electrical static discharge if covers are removed. Ensure that you connect an approved anti-static wrist strap to your wrist and then connect it to an electrical ground before installing or removing covers from the unit.

CAUTION

This manual is intended for use by trained service personnel. The use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous exposure to electrical shock hazard.

SAFETY LISTING

CSA listed, file # 1721787

CSA 60950-1-03/UL 60950-1 1st ed NRTL Cert.

NETWORK EQUIPMENT-BUILDING SYSTEMS (NEBS)

This product is NEBS-compliant. Contact factory for details.

FEDERAL COMMUNICATIONS COMMISSIONS NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user must correct the interference at the user's own expense.

Compliance with applicable regulations depends on the use of shielded I/O cables. The user is responsible for procuring the appropriate cables.

CANADIAN EMISSIONS REQUIREMENTS

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur la matériel brouilleur: "Appareils Numériques", NMB-003 édictée par le Ministère des Communications.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications.

INTERNATIONAL EMC REQUIREMENTS

This equipment has been tested and found to comply with the limits of the following international standards.

EN55 024	Immunity
EN55 022	Radiated and Conducted Emissions
CISPR 22	Class A

Declaration of Conformity

We,
Newfound Technology Inc.

Located at
330 Codman Hill Road
Boxborough, MA 01719

declare under our sole responsibility that the following Diplexed
Audio/Video Modulator and Demodulator products:

DL1242DPX, DL1242MPX

to which this declaration relates, is in conformity with the following
standards and other normative documents:

Product Safety: CSA 60950-1-03/UL60950-1

EMC: EN55 022

NEBS: GR-63, GR-1089

The aforementioned products follow the provisions of the Low
Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

Name: Barry J. Flahive

Title: Vice President of Engineering

Date: January, 2006

About This Guide

This reference manual provides instructions for installing, configuring, and operating the DigiLink 1242 Diplexed Audio/Video Modulator and Demodulator systems (hereafter referred to as the DL1242).

The DigiLink 1242 Diplexed Audio/Video Modulator and Demodulator system consists of the DL1242MPX modulator and the DL1242DPX demodulator.

- The DL1242MPX and DL1242DPX have an AC power supply.
- The DL1242MPX-48 and DL1242DPX-48 have a DC power supply.

Audience

This manual is intended for the following trained and qualified service personnel who are responsible for installing and operating the DL1242:

- System installer
- Hardware technician
- System operator

How to Use This Manual

This manual contains the following chapters and appendix:

Section	Provides
Chapter 1, "Unpacking and Installing"	Describes how to unpack and install free-standing, rack-mount, or wall-mount DL1242 units. Provides configuration quick-start tables.
Chapter 2, "DigiLink 1242 MPX Diplexed Audio/Video Modulator"	Describes the DL1242 audio/video modulator operation and front and rear panel components. Contains instructions for setting the DL1242 modulator switches.
Chapter 3, "DigiLink 1242 DPX Diplexed Audio/Video Demodulator"	Describes the DL1242 audio/video and front and rear panel components. Contains instructions for setting the DL1242 demodulator switches.
Appendix A, "DigiLink 1242 Modulator MPX and Demodulator DPX Specifications"	Contains video, audio, electrical, environmental, and mechanical specifications for the DL1242 modulator and demodulator units.

Symbols and Conventions

This manual uses the following symbols and conventions.

Caution

A caution means that a specific action you take or fail to take could cause harm to the equipment or to the processing.



A warning describes an action you take or fail to take that could result in death, serious physical injury, or destruction of property.

Note: Important related information, reminders, and recommendations.

Italics—used for emphasis, for indicating the first occurrence of a new term, and for book titles

1. Numbered list—where the order of the items is important
- Bulleted list—where the items are of equal importance and their order is unimportant

Newfound Technology Customer Service

You can reach customer service by e-mail at customercare@newfoundtech.com or by telephone:

In the US call (800) 225-0228, then select 1 for technical support.

Outside the US call (978) 263-5775, then select 1 for technical support.

When requesting assistance, please be ready to provide the following information:

- Your name and telephone number
- Product model and serial number
- Brief description of the problem
- List of symptoms
- Steps you have already taken to try to resolve the problem

If the product is damaged

If any portion of the unit is damaged, forward an immediate request to the delivering carrier to perform an inspection of the product and to prepare a damage report. Save the container and all packing materials until the contents are verified.

Concurrently, report the nature and extent of the damage to Newfound Technology Customer Service so that action can be initiated to either repair or replace the damaged items.

Do not return any items to Newfound Technology until you obtain instructions from Customer Service.

Report the problem or deficiency to Customer Service along with the model number and serial number. Upon receipt of this information, Newfound Technology will provide service instructions, or a *Return Authorization Number* and shipping information.

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1

Unpacking and Installing

This chapter describes how to unpack DL1242 modulators and demodulators and install them as free-standing, rack-mount, or wall-mount units. It also provides modulator and demodulator configuration quick-start tables

This chapter contains the following sections:

- Site Requirements (page 1-2)
- Required Tools and Equipment (page 1-3)
- Unpacking the Unit (page 1-3)
- Installing the Unit (page 1-4)
- Quick-Start Configurations (page 1-7)
- Power Connection (page 1-8)

Site Requirements

Before you select an installation site for the DL1242, read the electrical, environmental, and physical requirements specified in Appendix A.



Warning

Do not remove the DL1242 cover.

There are electrical shock hazards present in the unit if the cover is removed, and there are no operator-serviceable components beneath it.

Failure to observe this caution could result in injury and damage to equipment. The warranty is voided if you break the warranty seals.



Required Tools and Equipment

To install the DL1242 as a rack-mounted or wall-mount unit, you need:

- A screwdriver
- Four screws

Unpacking the Unit

1. Remove the unit from the shipping carton. Set aside the packing material in case you need to repackage the unit later.
2. Check the configuration of the unit against the items listed on the packing slip. If you find any discrepancies, report them in accordance with the instruction in About This Guide.

Installing the Unit

The DL1242 can be placed on a flat surface as a free-standing unit or rack-mounted in a standard 48.26 cm (19 inch) wide equipment cabinet. As you position the DigiLink for installation, keep in mind that all cables will connect to the back of the unit.

Refer to Appendix A for environmental specifications.

Cooling Considerations

The DL1242 uses forced air convection cooling as the primary means of cooling the device. Cool ambient air is drawn through the unit by a single axial fan integral to the unit. Note that it is important that the location of the device be well ventilated or provided with forced air within the environment to avoid re-circulation of air through the unit.

Figure 1-1 shows the position of the fan and ventilation openings. Care must be taken not to obscure these items with cables, mounting hardware, or other articles that may restrict airflow through the unit. In general, allow 3 inches of clearance around the sides and rear of the unit.

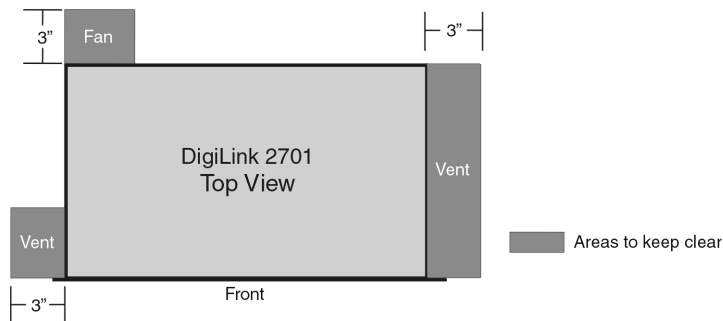


Figure 1-1. Device Ventilation/Cooling



Vertical Spacing

The DL1242 is housed in an enclosure that is 1 RU in height. In general, it is permissible to mount units without leaving a space between adjacent units. However, in racks with poor ventilation (low air flow) or high operating temperatures, heat density considerations may make it necessary to leave a 1 RU space between units. Operation in an environment (within the equipment rack) of over 40 degrees Celsius for extended periods of time is not recommended.

Installing the DL1242 as a Free-standing Unit

To install the DL1242 as a free-standing unit, position the unit on a selected flat surface. Be sure to allow for adequate ventilation as described in Cooling Considerations (page 1-4).

Wall-mounting the Unit

To install the DL1242 as a wall-mounted unit:

1. Remove the three screws securing the mounting brackets to the unit.
2. Rotate the mounting brackets 90° to position the flange parallel to the top of the unit.
3. Replace the three screws to secure the mounting brackets to the unit.
4. Attach the unit to the wall.

Rack-mounting the Unit

Before you rack-mount the unit, determine if you want to flush-mount or mid-mount the chassis into the cabinet. Flush-mounting sets the front edge of the unit even with the front edge of the rack. Mid-mounting causes the front edge of the unit to protrude from the front of the rack.

The DL1242 mounting brackets are factory pre-installed for a flush-mount installation.

To mid-mount the chassis:

1. Remove the three screws securing each mounting bracket to the unit.
2. Rotate the mounting brackets 180° so that the flanges are facing the rear of the unit.
3. Replace the three screws to secure each mounting bracket to the unit.

Once the mounting brackets are in position, you are ready to install the unit.

To install the DigiLink into a rack:

1. Raise the unit to the appropriate installation height.
2. Align the screw holes on the mounting brackets with the screw holes on the equipment rack.
3. Install the screws through the mounting brackets on the unit and into the mounting brackets on the rack. The unit requires two screws for each side of the chassis.



Quick-Start Configurations

The following tables provide the basic video cabling and switch settings required to pass video streams between a pair of DL1242 devices (modulator and demodulator). These settings are meant as quick-start references only.

Table 1-1. Modulator Quick-Start Configuration

Item	Description	Location	Connection/Setting
VIDEO INPUT	BNC Connector	Rear panel	Connect a coax cable between the VIDEO INPUT connector and the source device.
AUDIO INPUTS	Screw terminal block 3-position	Rear panel	Connect shield twisted-pair cables between the AUDIO INPUT connectors and the source device.
VIDEO OUTPUT	BNC Connector	Rear panel	Connect a coax cable between the VIDEO OUTPUT connector and the destination device.

Table 1-2. Demodulator Quick-Start Configuration

Item	Description	Location	Connection
VIDEO INPUT	BNC Connector	Rear panel	Connect a coax cable between the VIDEO INPUT connector and the source device.
AUDIO OUTPUTS	Screw terminal block 3-position	Rear panel	Connect a shield twisted-pair cable between the AUDIO OUTPUT connector and the destination device.
VIDEO OUTPUT	BNC Connector	Rear panel	Connect a coax cable between the VIDEO OUTPUT connector and the destination device.

Power Connection

DL1242 products are available with either an AC or DC power supply. Before you install the AC or DC power cord, refer to Appendix A for a complete understanding of the system's electrical and environmental specifications.

AC Connection

The AC connector is located on the DL1242's rear panel and requires a three-prong IEC 320-C13 115/230 VAC power cord.

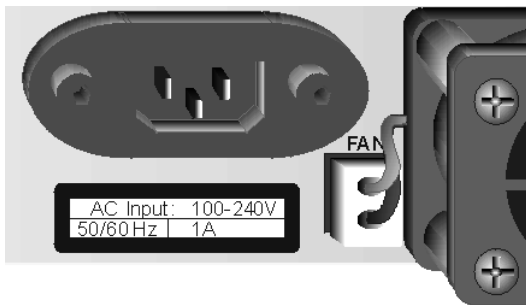


Figure 1-2. AC Connector

To connect an AC power cord to a power source:

1. Make sure that the POWER switch is in the 0 (OFF) position.
2. Plug the AC power cord into the power receptacle at the rear of the unit.
3. Plug the power cord into a three-wire grounding receptacle.

DC Connection

The DC versions of the DL1242's use a -48 VDC input connector terminal block.



Caution

When connecting a DC power supply, make sure that you are connecting the DL1242 to a -48 VDC (-38.4 ... -57.6 VDC) source that is isolated from any AC power and is reliably grounded to earth.

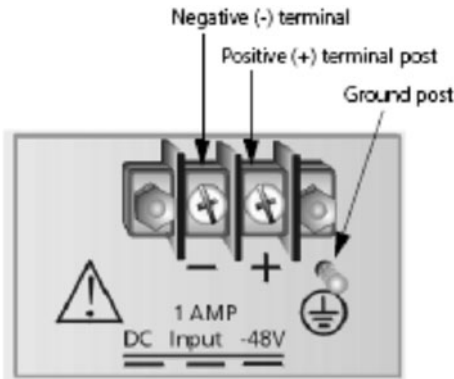


Figure 1-3. DC Power Supply Terminal Block

To connect a DC-powered DL1242 to a power source:

1. Locate the terminal block assembly on the rear of the unit and remove the clip-on protective cover (not shown).
2. Loosen the two terminal-post screws (3) marked - and +.
3. Install the DC power-source cables and tighten the screws to secure the connectors to the terminal block. Ensure that the spade connector terminations position under the screw heads.

Caution

Before installing the spade connectors, make sure that the polarity of the DC connections is correct. Reversed polarity can blow the DC input fuse and may cause damage to the power supply.

4. Secure the ground cable to the ground post.
5. Reinstall the protective cover onto the DC terminal block.

6. Connect the other end of the power cable into an approved safety extra low voltage (SELV) energy output source.

Note: Each DL1242 product consumes less than 35 W from a nominal 48 VDC circuit. For sizing an external protection circuit, slow blow (time delay) fusing, such as a T1.0 fuse is recommended. If fast blow (fast-acting) fuses are used, a minimum fuse capacity of 2.5 A per device is recommended to prevent nuisance trips.



2

DigiLink 1242 MPX Diplexed Audio/Video Modulator

This chapter contains the following sections:

- Modulator Description (page 2-2)
- Modulator Front Panel Indicators and Controls (page 2-3)
- Modulator Front Panel (page 2-5)
- Using Audio Subcarriers (page 2-6)
- Modulator Rear Panel Switches and Connectors (page 2-7)
- Modulator Rear Panel (page 2-9)

Modulator Description

The DigiLink 1242 Modulator diplexes (combines) up to four baseband audio signals (per video signal) to each of two video signals. The modulator generates industry-standard FM audio subcarriers, which are modulated with the audio information and are combined with the video signal. The standard audio subcarrier frequencies are 5.8 MHz, 6.4 MHz, 7.5 MHz, and 8.2 MHz. The FM modulators employ industry standard 75-microsecond pre-emphasis of the audio.

As shown in Figure 2-1 below, each channel of the DigiLink 1242 modulator unit contains a video input, four switchable audio inputs, a switchable low-pass filter, four FM subcarrier modulators, a combiner network, and a video output.

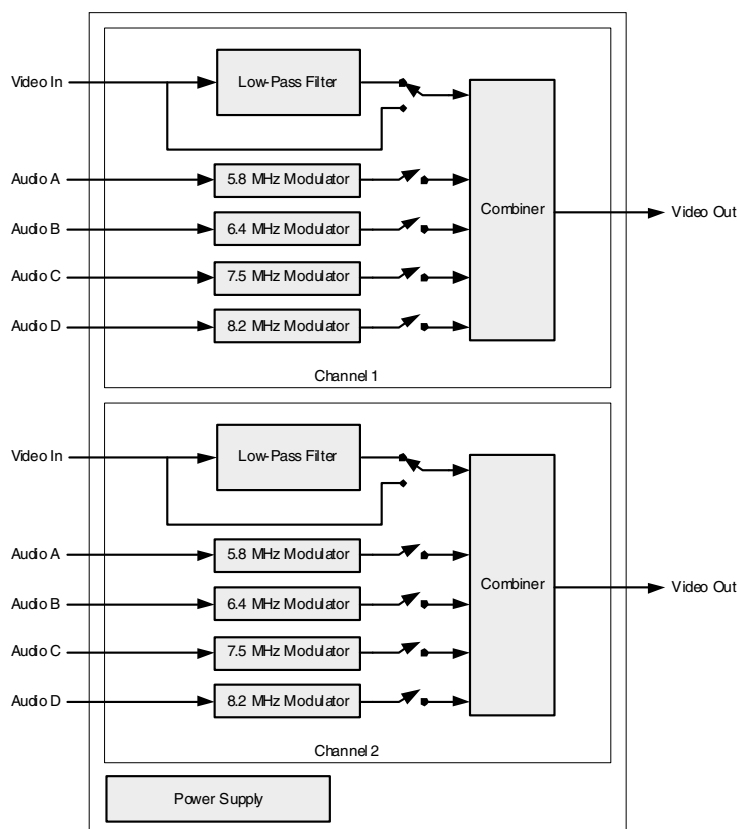


Figure 2-1. Modulator Block Diagram



Modulator Front Panel Indicators and Controls

Figure 2-2 illustrates the controls and status indicators present on the front panel of the DigiLink 1242 MPX.

- 1:** POWER. Main power switch.
- 2:** FM CARRIER LEVEL ADJUST: The carrier amplitude controls (A, B, C, and D) may be used to adjust the FM carrier amplitudes to 100 millivolts, peak-to-peak. The adjustment range is $\pm 10\%$.
- 3:** FM CARRIER ALARM: When illuminated, this red LED indicates that the amplitude of one or more of the RF subcarrier outputs is below the required level.
- 4:** FM CARRIER ON (A, B, C, and D). When illuminated, these LEDs indicate that the corresponding FM modulator has been enabled (via the dip switches on the rear of the modulator unit). If an LED is flashing, it indicates that the corresponding FM modulator has been enabled, but the FM subcarrier is not present at the video output connector or is below the amplitude required for specified performance.
- 5:** AUDIO GAIN ADJUST. The audio gain controls (A, B, C, and D) are used to set the insertion gain of the corresponding audio channel to 0.0 dB. The adjustment range is +3dB to -20dB.

Note: These gain controls set the FM carrier deviation. If a particular FM subcarrier is being used (i.e., it is enabled), then its corresponding gain control should be set so that the +18 dBm LED of the audio bargraph (see item #7) is fully "on" when a test signal of +18.1 dBm @ 1 kHz is applied to the corresponding audio input connector. With a test signal of +17.9 dBm applied, the +18 dBm LED must be completely "off". With a test signal of exactly 18.0 dBm applied, the +18 dBm LED may flicker, glow dimly or be fully "on" or "off". Failure to make this adjustment properly, may result in over or under modulation of the FM subcarrier, which can affect the end-to-end insertion gain of the audio channel.

6: AUDIO CHANNEL SELECT. The audio monitor channel selector switch determines which of the four audio channels (A through D) will drive the audio-level bargraph indicator and the audio headset jack. The audio monitoring functions are totally passive; there is no effect on the input audio signals. When the switch is in either of the "X" positions, the audio monitor function is disabled.

7: AUDIO OUTPUT LEVEL. The audio-level bargraph indicator displays the peak program level of the selected audio channel. This indicator is also used to set and check the deviation of the FM subcarriers (See Item #5).

8: AUDIO MONITOR LEVEL. The audio monitor level control may be adjusted for a comfortable listening level at the audio monitor headset jack. As stated above, this control has no effect on the actual input audio level.

9: AUDIO MONITOR. The audio monitor headset jack accepts a standard 1/4 inch phone plug. Headsets may be low or high impedance type. Monaural or stereo headsets may be used. Because only one channel is being monitored, stereo headsets will have both left and right earphones driven with the same signal.



Modulator Front Panel

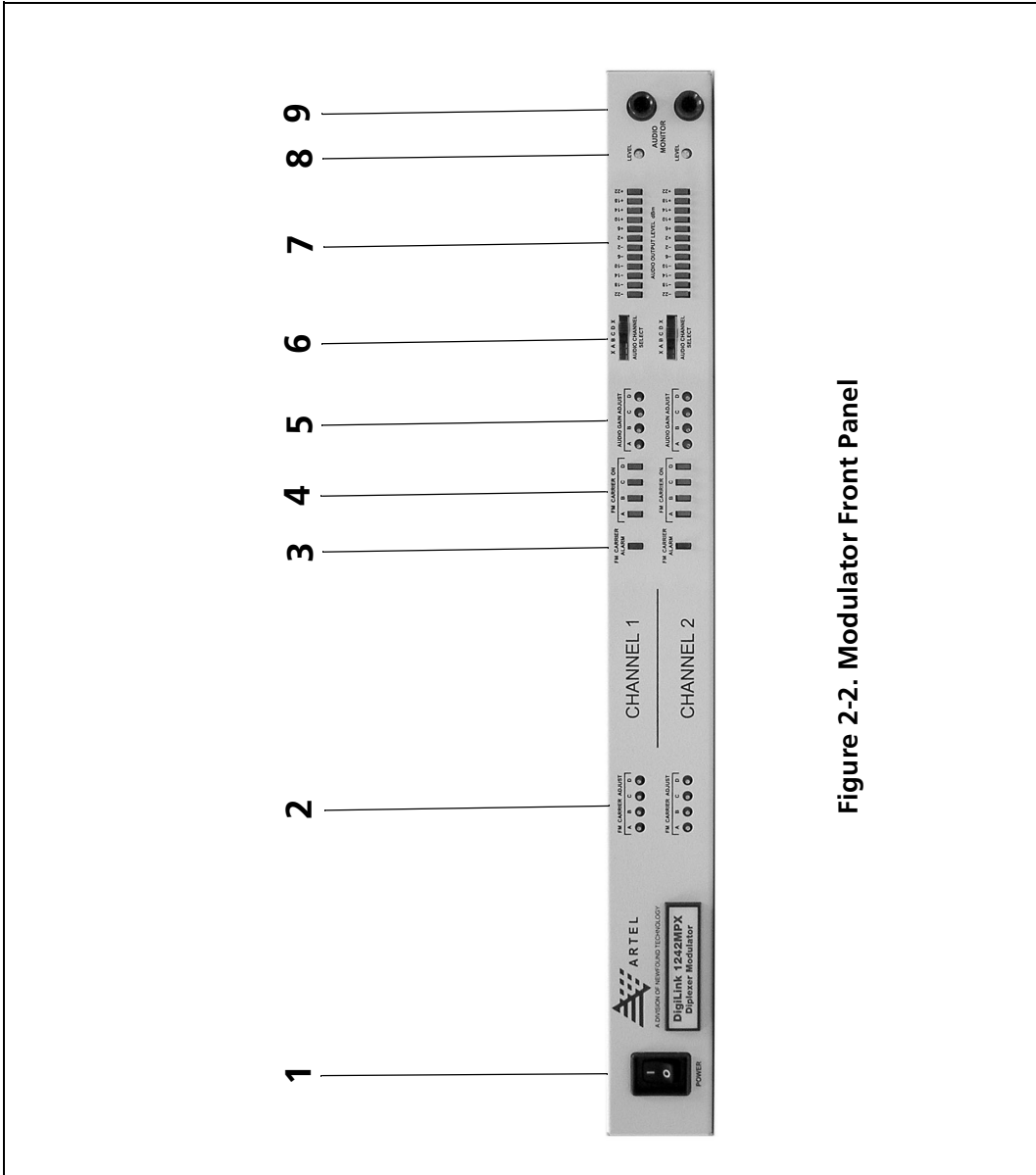


Figure 2-2. Modulator Front Panel

Using Audio Subcarriers

If one or more audio subcarriers are to be combined with the video output signal, then the appropriate FM carrier(s) must be enabled by setting the *FM Carrier Disable* DIP switches on the rear of the DigiLink 1242 MPX unit to the "DOWN" position.

When switch "A" is *down*, it enables the 5.8 MHz subcarrier output. The subcarrier will be FM modulated by the baseband audio signal being input to the channel "A" audio input connector.

When switch "B" is *down*, it enables the 6.4 MHz subcarrier output. The subcarrier will be FM modulated by the baseband audio signal being input to the channel "B" audio input connector.

When switch "C" is *down*, it enables the 7.5 MHz subcarrier output. The subcarrier will be FM modulated by the baseband audio signal being input to the channel "C" audio input connector.

When switch "D" is *down*, it enables the 8.2 MHz subcarrier output. The subcarrier will be FM modulated by the baseband audio signal being input to the channel "D" audio input connector.

Note: Although it is not *required*, it is good practice to only enable those RF subcarriers that are actually needed in a particular application.



Modulator Rear Panel Switches and Connectors

Figure 2-4 illustrates the switches and connections present on the rear panel of the DL1242 MPX.

1,2,3,5: AUDIO INPUT CONNECTORS. The audio input connections are made via the four 3-pin, removable, screw wire clamp connectors at the left rear of the unit. The audio channels are designated A through D.

Inputs are terminated internally with 600 ohms. Each audio connector provides a balanced two-wire plus shield connection as shown in Figure 2-3.

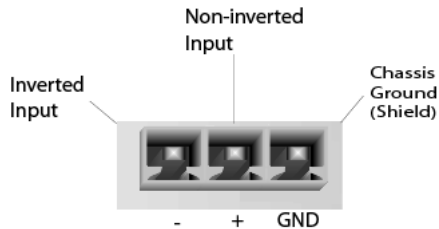


Figure 2-3. Audio Input Connectors

4: FM CARRIER DISABLE. These switches (labeled A, B, C, and D) permit the user to deactivate those audio subcarriers that are not required.

When switch "A" is down, it enables the 5.8 MHz subcarrier output. The subcarrier will be FM modulated by the baseband audio signal being input to the "Audio A in" connector.

When switch "B" is down, it enables the 6.4 MHz subcarrier output. The subcarrier will be FM modulated by the baseband audio signal being input to the "Audio B in" connector.

When switch "C" is down, it enables the 7.5 MHz subcarrier output. The subcarrier will be FM modulated by the baseband audio signal being input to the "Audio C in" connector.

When switch “D” is down, it enables the 8.2 MHz subcarrier output. The subcarrier will be FM modulated by the baseband audio signal being input to the “Audio D in” connector.

Note: All audio RF subcarriers that are enabled will appear at the diplexer output BNC connector.

6: VIDEO FILTER SWITCH. This switch enables the user to bypass the lowpass “brickwall” video filter in the diplexer filter/combiner circuit. It should normally be set to the “IN” position. If the user is certain that the video signal being input to the unit does not contain signal components above 5.2 MHz, then the switch may be set to the “OUT” position. This will result in slightly improved frequency response and reduced chroma/luma delay error.

7: VIDEO INPUT CONNECTOR. The input video signal is connected to the “video input” BNC connector.

8: VIDEO OUTPUT CONNECTOR. The combined (diplexed) audio/video signal is output via the “video output” connector. This signal must be terminated with a 75 Ohm load.

9: POWER CONNECTION. For AC powered units, connect to source of 90 VAC to 254 VAC, 47 Hz to 53 Hz. For -48 VDC powered units, connect to source of -38.4 VDC to -57.6 VDC.

Caution

For DC powered units, observe polarity of input power.



Modulator Rear Panel

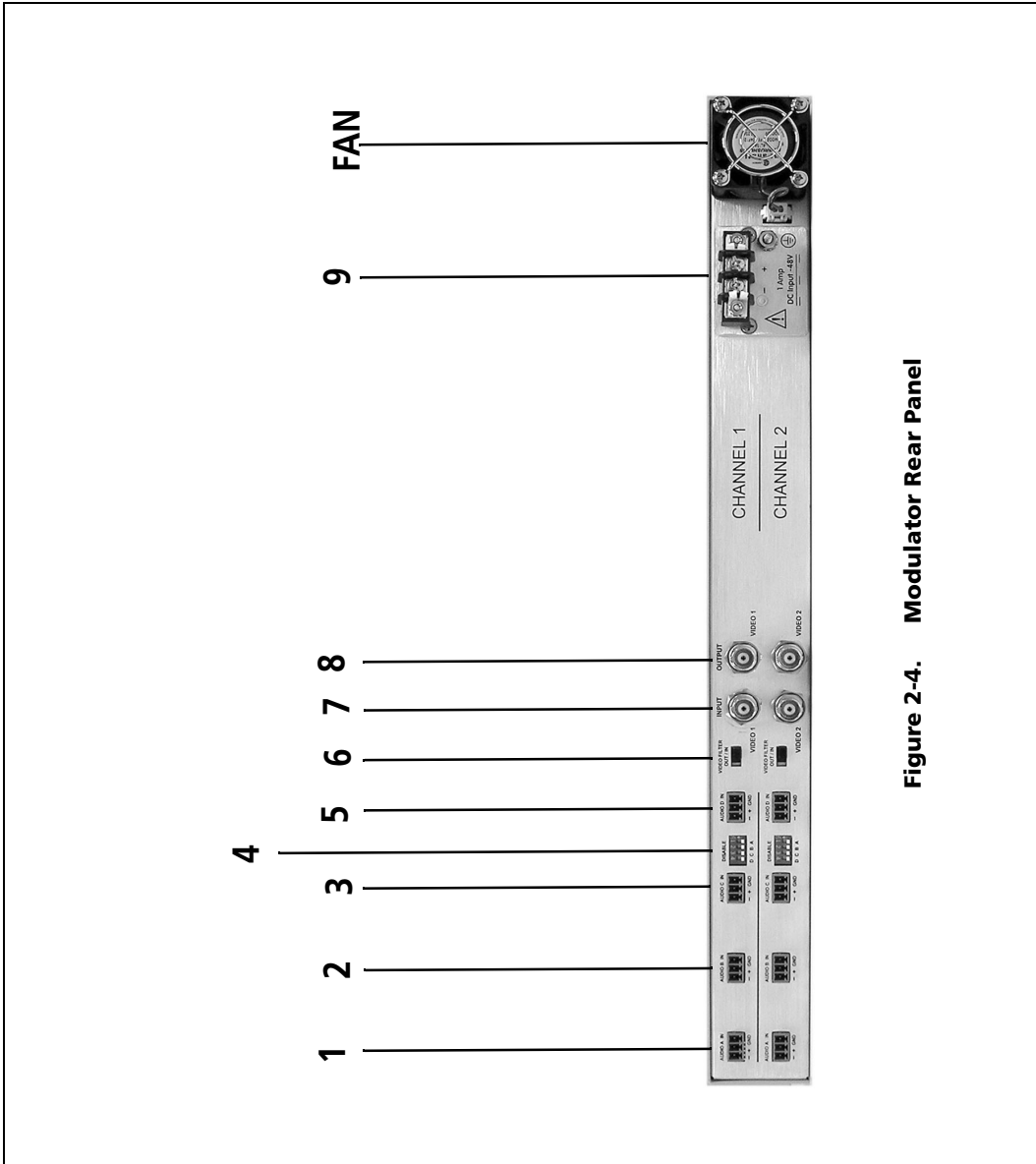


Figure 2-4. Modulator Rear Panel



3

DigiLink 1242 DPX Diplexed Audio/Video Demodulator

This chapter contains the following sections:

- Demodulator Description (page 3-2)
- Demodulator Front Panel Indicators and Controls (page 3-3)
- Demodulator Front Panel (page 3-4)
- Using Audio Subcarriers (page 3-5)
- Demodulator Rear Panel Switches and Connectors (page 3-6)
- Demodulator Rear Panel (page 3-7)

Demodulator Description

The DigiLink 1242 demodulator separates and demodulates up to four audio baseband signals (per video signal) from each of two video signals. The demodulator recognizes industry-standard FM audio subcarriers, which have been combined with the video signal. The standard audio subcarrier frequencies are 5.8 MHz, 6.4 MHz, 7.5 MHz, and 8.2 MHz. The FM demodulators employ industry standard 75-microsecond de-emphasis of the audio.

As shown in Figure 3-1 below, each channel of the DigiLink 1242 demodulator unit contains a video input, a band-split filter, four switchable FM subcarrier demodulators, four audio outputs, and a video output.

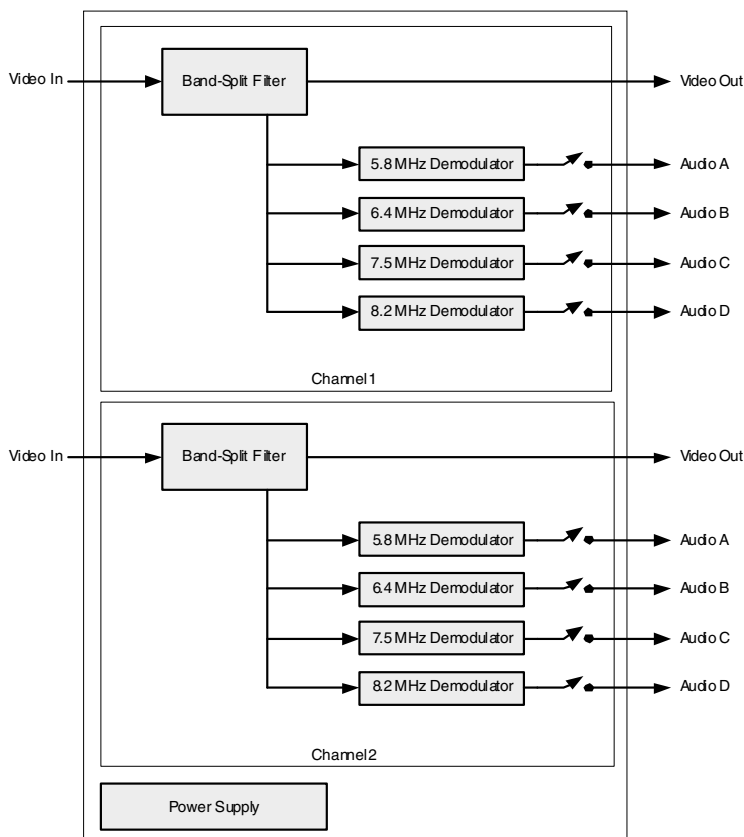


Figure 3-1. Demodulator Block Diagram



Demodulator Front Panel Indicators and Controls

Figure 3-2 illustrates the controls and status indicators present on the front panel of the DigiLink 1242 DPX demodulator.

1: POWER. Main power switch (AC or DC).

2: FM CARRIER ALARM. When illuminated, this LED indicates that the amplitude of one of the input RF subcarriers is below the required level.

3, 4, 5, 6: FM CARRIER ON (A, B, C, and D): When illuminated, these LEDs indicate that the corresponding FM demodulator has been enabled (via the dip switches on the rear of the demodulator unit). If an LED is flashing, it indicates that the corresponding FM demodulator has been enabled, but the FM subcarrier is not present at the VIDEO INPUT connector or is below the amplitude required for specified performance.

7: AUDIO CHANNEL SELECT. The audio monitor channel selector switch determines which of the four audio channels (A through D) will drive the audio level bargraph indicator and the audio headset jack. The audio monitoring functions are totally passive; there is no effect on the audio signals being output at the rear audio output connectors. When the switch is in either "X" position, the audio monitor function is disabled.

8: AUDIO OUTPUT LEVEL. The audio level bargraph indicator displays the peak program level of the selected audio channel.

Note: There are no audio input-level controls in the demodulator unit. The audio input will not overload (clip) unless the FM deviation exceeds +/-250 KHz.

9: AUDIO MONITOR LEVEL. The audio monitor level control may be adjusted for a comfortable listening level. As stated above, this control has no effect on the actual audio level being output at the rear audio output connectors.

10: AUDIO MONITOR: The audio monitor headset jack accepts a standard 1/4 inch phone plug. Headsets may be low or high impedance type. Monaural or stereo headsets may be used. Because only one channel is being monitored, stereo headsets will have both left and right earphones driven with the same signal.

Demodulator Front Panel

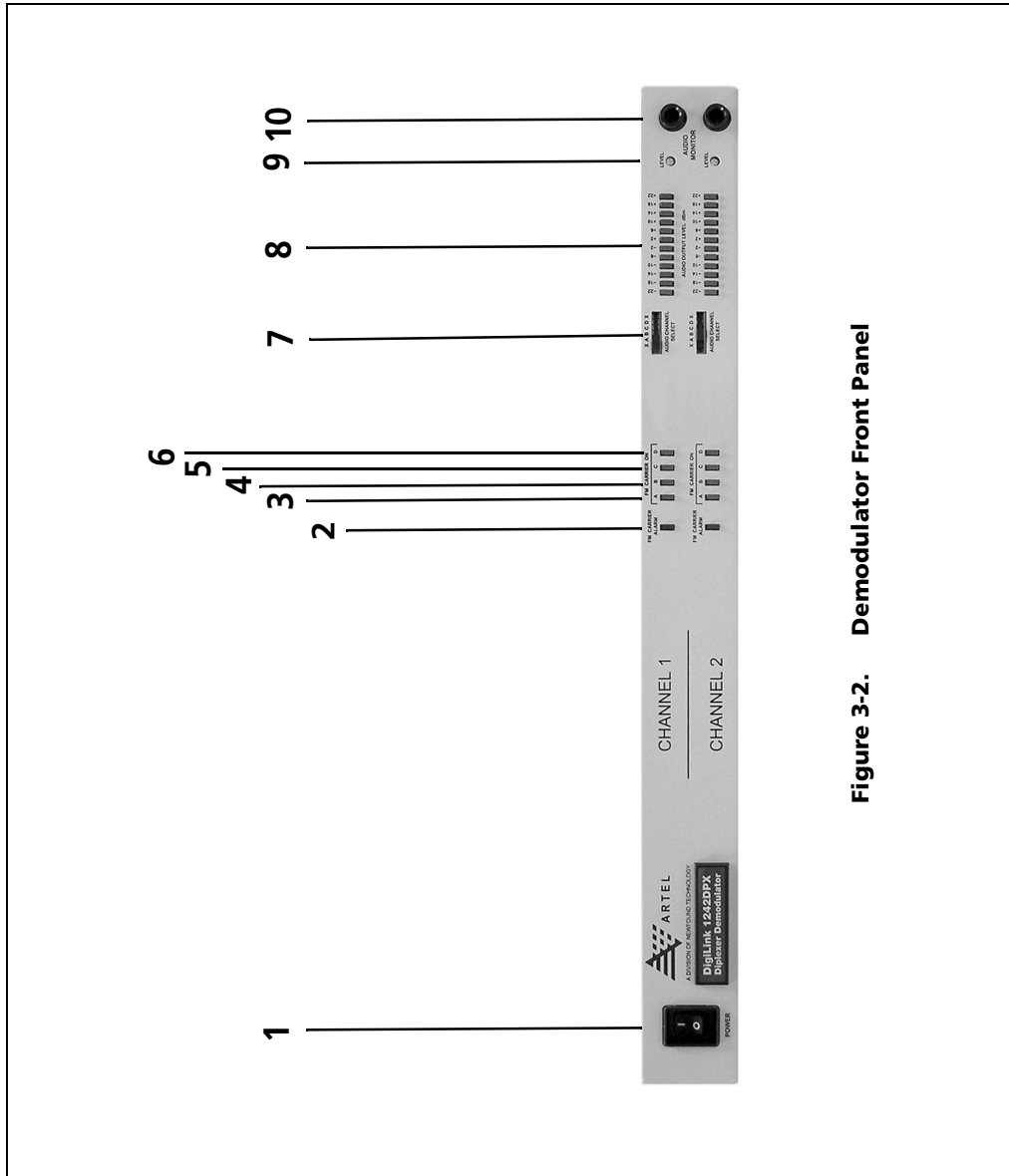


Figure 3-2. Demodulator Front Panel



Using Audio Subcarriers

If one or more audio subcarriers are present with the input video signal, the baseband audio can be output by setting the appropriate FM Detector Disable DIP switches on the rear of the DL1242 DPX unit to the "DOWN" position.

When switch "A" is *down*, it enables the 5.8 MHz demodulator. The baseband audio output will appear at the "Audio A out" connector of the unit.

When switch "B" is *down*, it enables the 6.4 MHz demodulator. The baseband audio output will appear at the "Audio B out" connector of the unit.

When switch "C" is *down*, it enables the 7.5 MHz demodulator. The baseband audio output will appear at the "Audio C out" connector of the unit.

When switch "D" is *down*, it enables the 8.2 MHz demodulator. The baseband audio output will appear at the "Audio D out" connector of the unit.

Note: Only enable those demodulators for which subcarriers are present. Doing otherwise will cause an *FM Carrier Alarm*.

Demodulator Rear Panel Switches and Connectors

Figure 3-4 illustrates the switches and connectors present on the back panel of the DL1242 DPX.

1, 2, 3, 4: Audio Output Connectors. The audio output connections are made via the four 3-pin, removable, screw wire clamp connectors on the rear of the 1242 unit. The audio channels are designated A through D.

Each audio connector provides a balanced two-wire plus shield connection as shown in Figure 3-3.

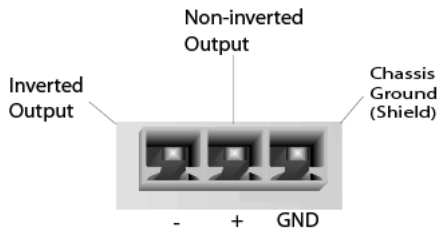


Figure 3-3. Two-wire Plus Shield Connection

Shielded twisted pair cable is recommended for these audio connections. If multi-pair cable is used, each pair should be individually shielded to maintain the excellent noise and cross-talk performance of the DigiLink 1242 system. Shields should be grounded at only one end of the cable in order to eliminate ground loops. Grounding of the shield at the driven (source) end of the cable is usually preferable.

5: VIDEO OUTPUT CONNECTORS. This signal must be terminated with a 75 ohm load.

6: VIDEO INPUT CONNECTORS. The band-splitting filter input impedance is 75 ohms (at the video input connector), it must be driven by a 75 ohm source impedance. This sharp cutoff, delay-equalized, lowpass filter separates the audio subcarriers from the video signal. The audio subcarriers are routed to the internal FM demodulators, the video signal is output via the video output connector.



Demodulator Rear Panel

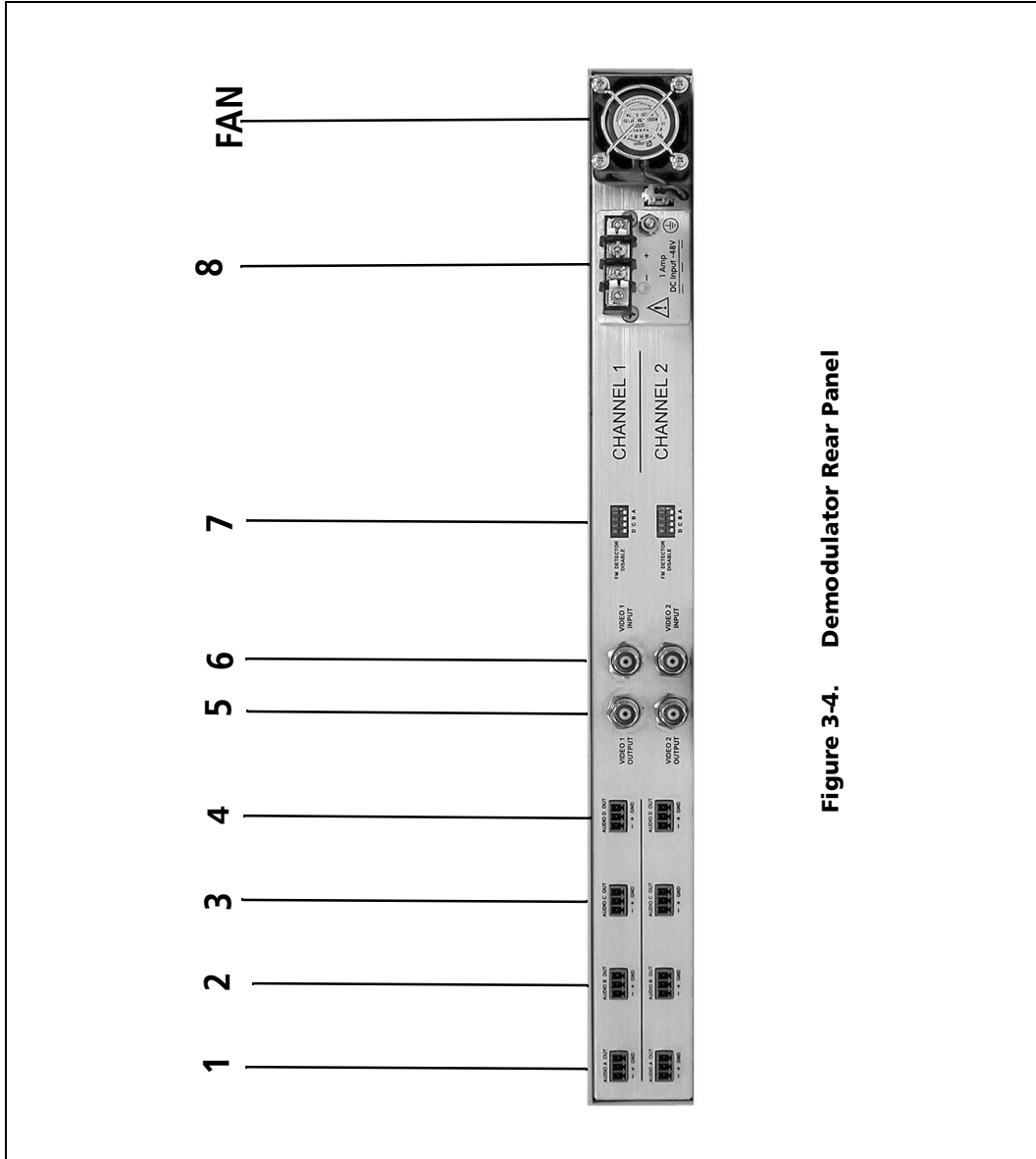


Figure 3-4. Demodulator Rear Panel

7: FM DETECTOR DISABLE SWITCHES. The switches labeled A, B, C, and D permit the user to deactivate those audio subcarrier demodulators for which RF carrier signals are not present in the video signal. This prevents the *FM CARRIER ALARM* from activating when unused carrier signals are not present.

When switch "A" is *down*, it enables the 5.8 MHz demodulator. The baseband audio output will appear at the "Audio A out" connector of the unit.

When switch "B" is *down*, it enables the 6.4 MHz demodulator. The baseband audio output will appear at the "Audio B out" connector of the unit.

When switch "C" is *down*, it enables the 7.5 MHz demodulator. The baseband audio output will appear at the "Audio C out" connector of the unit.

When switch "D" is *down*, it enables the 8.2 MHz demodulator. The baseband audio output will appear at the "Audio D out" connector of the unit.

All possible combinations of switch settings are allowed.

8: POWER CONNECTION. For AC powered units, connect to source of 90 VAC to 254 VAC, 47 Hz to 63 Hz. For -48 VDC powered units, connect to source of -38.4 VDC to -57.6 VDC.

Caution

For DC powered units, observe polarity of input power.

A

DigiLink 1242 Modulator MPX and Demodulator DPX Specifications

DigiLink 1242 Modulator and Demodulator Specifications

Table A-1. Modulator and Demodulator Video Specifications

Amplitude response versus frequency (50-IRE-unit sine wave):	
0.5 MHz.....+0.7 to -0.7 IRE units	4.2 MHz.....+0.8 to -0.8 IRE units
1.0 MHz.....+0.9 to -0.9 IRE units	4.9 MHz.....+1.0 to -1.0 IRE units
2.0 MHz.....+1.0 to -1.0 IRE units	
3.0 MHz.....+1.2 to -1.1 IRE units	
3.58 MHz....+0.6 to -0.6 IRE units	
Chrominance-to-luminance gain inequality	+2 to -2 IRE units
Chrominance-to-luminance intermodulation	1 IRE unit
Chrominance-to-luminance delay inequality	+20 to -20ns
Chrominance-Nonlinear Phase	1.0 degree
Chrominance-Nonlinear Gain	
20-IRE-unit chroma signal	±1 IRE unit
80-IRE-unit chroma signal	±1 IRE unit
Field-time Waveform Distortion	3 IRE units p-p
Line-time Waveform Distortion	0.5 IRE units p-p
Short-time Waveform Distortion	2%
Long-time Waveform Distortion	8 IRE units peak, 3-second settling time +5.9 to -5.5 IRE units
Dynamic gain of picture signal	2 IRE units
Dynamic gain of the synchronizing signal	1.2 IRE units
Insertion Gain	0dB ± 0.5dB



Insertion Gain Variation Hourly Over one second	+1.0 to -1.0 IRE units +0.5 to -0.5 IRE units
Signal-to-Weighted-Random-Noise Ratio (10 kHz-4.2 MHz)	73 dB
Signal-to-Low-Frequency-Noise Ratio (0-10 kHz)	75 dB
Signal-to-Periodic-Noise-Ratio (300 Hz-4.2 MHz)	80 dB
Luminance Nonlinearity	1 IRE unit
Transient Synchronizing Signal Nonlinearity	1 IRE unit
Differential Gain	1%
Differential Phase	0.5 degrees p-p
Input Connector	BNC (75 Ohms)
Output Connector	BNC (75 Ohms)
Return Loss	>30 dB

**Table A-3. Modulator and Demodulator Power, Temperature, and Mechanical Specifications**

Power, Temperature, and Mechanical Specifications		
Input Voltage:	AC option:	90 to 254 VAC, 47 to 63 Hz
	DC option:	-38.4 to -57.6 VDC
Input Power		40 Watts (maximum)
Operating		0° C to +40° C
Shipping & Storage		-40° C to +80° C
Size		1.75" high x 19" wide x 10.50" deep
Weight		7.5 pounds (max.)



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