PANORAMAdtv
D I G I T A L   V I D E O   S O L U T I O N S

VAMP-24

Composite Audio and Video Monitor
with 2/4 Channel Switching, LCD
Monitor, Four 53-Segments High-Resolution
Level Meters, and Phase Indication
Document P/N **821515** Rev-**C**

CONTENTS

Important Safety Instructions

1) <u>Read these instructions.</u>

2) <u>Keep these instructions.</u>

3) <u>Heed all warnings.</u>

4) <u>Follow all instructions.</u>

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat source such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched, particularly at plugs convenience receptacles and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15) Do not expose this apparatus to rain or moisture.

16) The apparatus shall be connected to a mains socket outlet with a protective earthing connection.

CAUTION!

In products featuring an audio amplifier and speakers, the surface at the side of the unit, where the audio amplifier heat sink is internally attached, may get very hot after extended operation. When operating the unit excercise caution when touching this surface and ensure that external materials which may be adversely affected by heat are not in contact with it. There is a Hot Surface label (see diagram) attached to the aforementioned surface of the product.

Introduction

Congratulations on your selection of a PANORAMAdtv product. We are confident it represents the best performance and value available, and we guarantee your satisfaction with it.

If you have questions or comments you may contact us at:

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Hayward, CA 94544
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Section 1

General Features
and Specifications

Description
Features
Applications
General Specifications

PANORAMAdtv
DIGITAL VIDEO SOLUTIONS

VAMP-24
Audio/Video Monitor

VAMP-24 Front Panel

Description

The VAMP-24 offers the ability to monitor both audio and video from either of two selectable composite video sources (video A/B switch on front panel), and either of two banks of four analog audio inputs (audio A/B switch on front panel). All of this in a space-saving 2U unit. The built-in color LCD screen offers simple confidence monitoring of video and has front panel controls for brightness, chroma, tint (NTSC only), and contrast. The video section automatically detects and indicates the presence of NTSC or PAL signals.

Four 53-segment high-resolution level meters are provided for visually monitoring all four channels of the selected audio bank. A phase indication LED is also provided for each of two metered channel pairs. Any one or two of the four audio channels may be selected independently and sent to the left and/or right internal speakers or headphone output for audio monitoring. External speakers may be connected via terminal posts on the rear panel without the need of an external amplifier.

Features

• 4" Color LCD Video Screen with Brightness, Chroma, Tint (NTSC Only), and Contrast Controls

• Auto Detection of NTSC/PAL Signals with NTSC/ PAL Indication LED

• Self-Powered Speaker System

• Level Meters - Four High-Resolution 53-Segment Tri-Color LED Bargraphs

• Phase Indication LEDs for Metered Channel Pairs

• Video Inputs - Two Composite Video Inputs On BNC Connectors - Video A/B Switching on Front Panel

• Audio Inputs - Two Banks of Four Channels - Audio A/B Switching on Front Panel

• Separate Left/Right Channel Selection - 2/4 Switching on Front Panel

• Internal or External Speaker Switch (No Amplifier Needed)

• Headphone Jack (mutes speakers)

• Line-Level Analog Output of Selected Source on XLR Connectors

• Low Power Consumption

• SDI/AES Digital Version also Available (VAMP-2 SDI)

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Applications

The VAMP-24 is ideally suited for monitoring of multiple video feeds in VTR bays, mobile production vehicles, news and transmission control rooms, and duplication and post production applications. Designed and manufactured in the U.S., the VAMP-24 is backed by a strong warranty and a satisfaction guaranteed return policy.

General Specifications

AUDIO SPECIFICATIONS

Peak Acoustic Output: 100 dB SPL (@ 2 ft.)

Electrical Response: 20Hz -20kH (+/- 1dB)

Acoustic Response, 6th Octave: 170 Hz - 16 kHz (+/- dB) (-10 dB @ 140 Hz, 20 kHz)

Speaker Amp Power Output: 20 W Transient / 11 W Continuous RMS each side (4 ohm)

Distortion (electrical): Less than 0.1% at any level below Limit Threshold

Distortion (acoustic): Typically less than 1.5% at frequencies above 200 Hz; 6% or less at worst case

Hum and Noise: More than 70 dB below full output

Level Meters: 53-segment, high-resolution, tri-color (red/yellow/green) LED bargraphs

VIDEO SPECIFICATIONS

Input: Composite Analog - IV pk-pk NTSC/PAL Auto-sensing

Display Resolution: 480H x 234V

Screen Type, Size: TFT 4" Diagonal

Controls: Brightness, Chroma, Tint (NTSC only), and Contrast
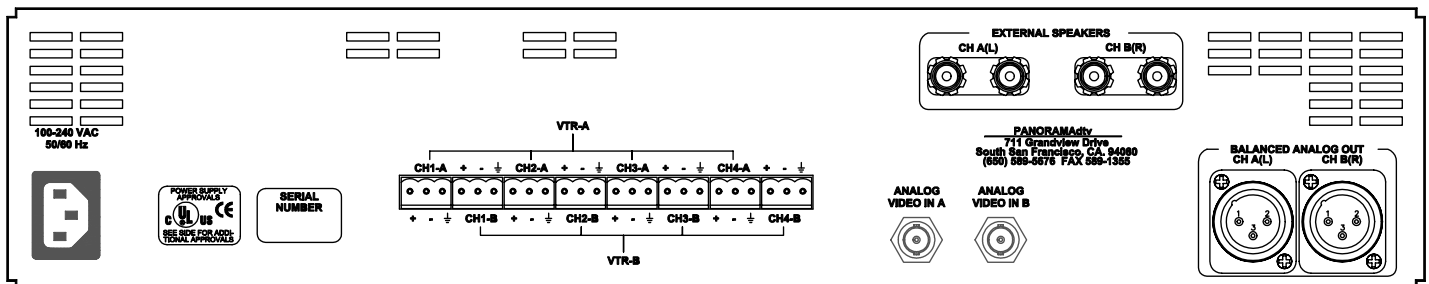
GENERAL SPECIFICATIONS

Power Requirement: 100/250-VAC, 50/60 Hz Auto Select

Power Consumption: 60W

Dimensions (HxWxD): 3.5 x 19 x 12 inches (89 x 483 x 298mm)

Weight: 17 lbs Approximately (7.7kg)

VAMP-24 Rear Panel

Units are certified to meet, at time of manufacture, all currently applicable product safety and EMC requirements, such as those of UL and CE. 0 dbV ref. 0.775V RMS. Features and specifications subject to improvement without notice.

Section 2

Operation

Installation
Front Panel Features
Rear Panel Features

Installation

FRONT VIEW
19.0"
483mm

3.5"
89mm

TOP VIEW
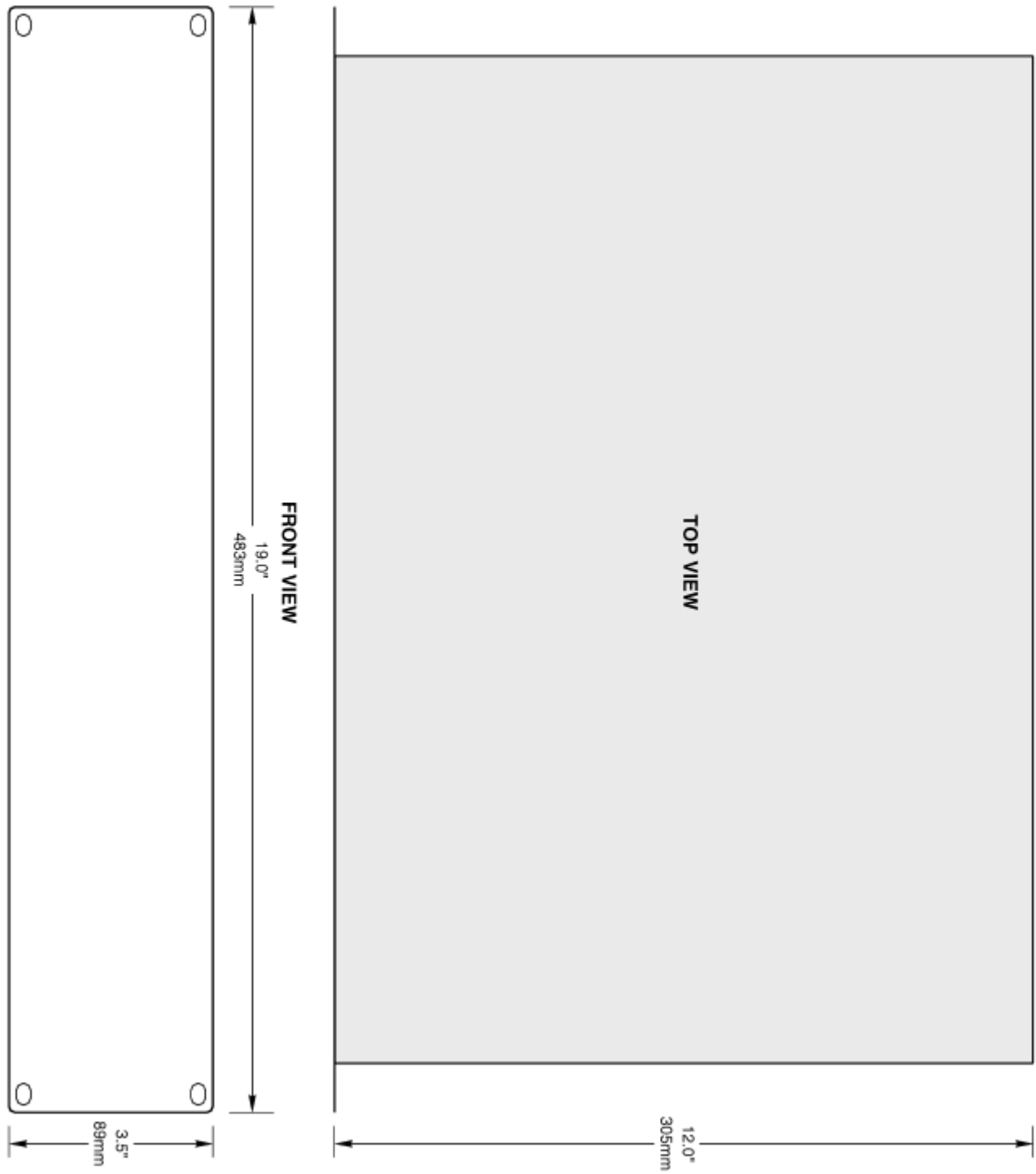
12.0"
305mm

Figure-1a: VAMP-24 Rack Mount Dimensions

<div align="center">**Installation**</div>

Unpacking

Unpack the VAMP-24 from the shipping container and inspect all articles for shipping damage. If you find any damage, notify the shipping carrier immediately for claims adjustments.

Compare the shipping box contents to the packing slip. Contact PANORAMAdtv sales representative if there are any unexplained shortages.

Power Requirements

The VAMP-24 is equipped with a world standard power supply that is capable of operating on 90-264 VAC @ 50-60 Hz. Power consumption is 60 watts, maximum. The green Power LED in the front panel center glows green to indicate the VAMP-24 is connected to mains power and an operating voltage is present.

Cooling and Airflow

It is recommended that you allow a 1RU (1.75"/25mm) space above and below the unit for air circulation.

Rack Mounting

The VAMP-24 rack mounts in a standard EIA-310-D specification 19"/483mm rack and needs 3RU (5.25"/ 133mm) of space. (See Figure-1a for unit dimensions.) Allow sufficient space at the unit rear for connector and cable clearance (approximately 4"/102mm). The VAMP-24 weighs approximately 17 pounds (7.7 kg) and rack mounts from the front panel support rails. Rear support is not required.

LCD Monitor Viewing Position: To obtain the best operator's viewing angle, mount the VAMP-24 as nearly "straight on" to the operator's position as possible (0 degrees left/right or up/down). Good image quality is assured if viewing angles are between +/- 45 degrees from the center axis in the horizontal plane (left/right). In the vertical axis, good image quality is obtained between 10 degrees looking down and 30 degrees looking up. Due to the nature of LCD's, there are certain anomalies, which can cause the displayed video to appear incorrect. If the viewer is outside the optimal LCD display viewing range, the contrast ratio, brightness, and color saturation will not be or may not appear to be, a true representation of the displayed video. Additional anomalies such as loss of resolution, apparent reversed video effect, and frame/field strobe effect with the CCFT backlight may also be observed. The LCD used in the VAMP-24 is optimized for viewing from the 12 o'clock position. That is from approximately eye height and upwards. Typically, the VAMP-24 is mounted at eye height and viewed by looking straight into the display. Going beyond the specified viewing area can cause anomalies as mentioned above.

NOTE: In PAL mode operation, the LCD driver discards every seventh line of active video so an entire video frame fits within the display screen. This is normal with most LCD's currently on the market.

General Installation Recommendations

Recommended cable type for Analog **Video** signals is: **Belden 8281 or Belden 1694A**.

Recommended cable type for Analog **Audio** signals is: **Belden 9451.**

Static Discharge: As with most electronic equipment, static discharges can damage components within the unit. Take precautions to ensure your installation environment is not subject to static discharges.

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Please refer to Figure-1b on the following page to familiarize yourself with the front panel features of the VAMP-24 unit. The following sections (Items 1-14) describe these features and are referenced, by number, to Figure-1b.

① Speakers

The speaker system is comprised of two mid-range speakers (left and right).

② Audio Level Meters - 53-Segment Bargraph Displays

Audio levels for source channels 1-4 are displayed via these four high resolution 53-segment LED bargraph meters (selected channels 1 and 2 on the left side of the front panel; channels 3 and 4 on the right side). Ballistics for these meters are factory set to display a single floating PPM 'dot' above a VU bar; each segment's color being fixed according to its position on the scale. Level gain is +4 dBu. Dynamic range for these 53-segment meters is 65dB. For more information about the level meters, see page 18.

Contact the factory for additional meter information concerning meter scales and ballistics.

③ Phase Indication - Bi-color LEDs (Red/Green)

Two audio Phase Indication LEDs are provided; one above the left pair of level meters for showing phase relationships between selected audio channels 1 and 2, and one above the right pair of level meters for showing phase relationships between selected audio channels 3 and 4. Each LED indicates the *average* phase condition by glowing green for in-phase conditions, or red for out-of-phase conditions. While it is normal for stereo signals to contain some intermittent instanateous out-of-phase and in-phase conditions (flickering red), a steady red glow of the LED almost always indicates an out-of-phase alarm condition.

④ Video Source - 2-Position Rotary Switch

This two-position rotary switch selects one of two analog composite video signal sources input on the rear panel BNC connectors (A or B). PAL or NTSC signals are automatically detected and configured for monitoring. The video source selection is independant of the audio source selection.

⑤ Headphone Jack - 1/4" Phone Connector

Select the headphone audio sources as you would for the internal speakers. When you plug in headphones, the internal or external speakers will mute. This jack accepts the standard 1/4" phone type stereo plug.

⑥ LCD Monitor Screen - TFT

View input video sources here. Select source inputs by setting the Video Source Selector Switch (Item 4) to the desired input (A or B). Screen image parameters are adjustable by four manual controls (Item 7).

⑦ LCD Monitor Display Controls - Rotary Pots

Adjust the LCD monitor image with these four controls:

• **BRIGHT**: Brightness; adjust for desired screen brightness.
• **CHROMA**: Color Saturation; adjust for desired amount of image color saturation.
• **TINT**: Tint; adjust for desired image color hue (NTCS only).
• **CONTRAST**: Contrast; adjust for desired image scene dark-to-bright contrast.
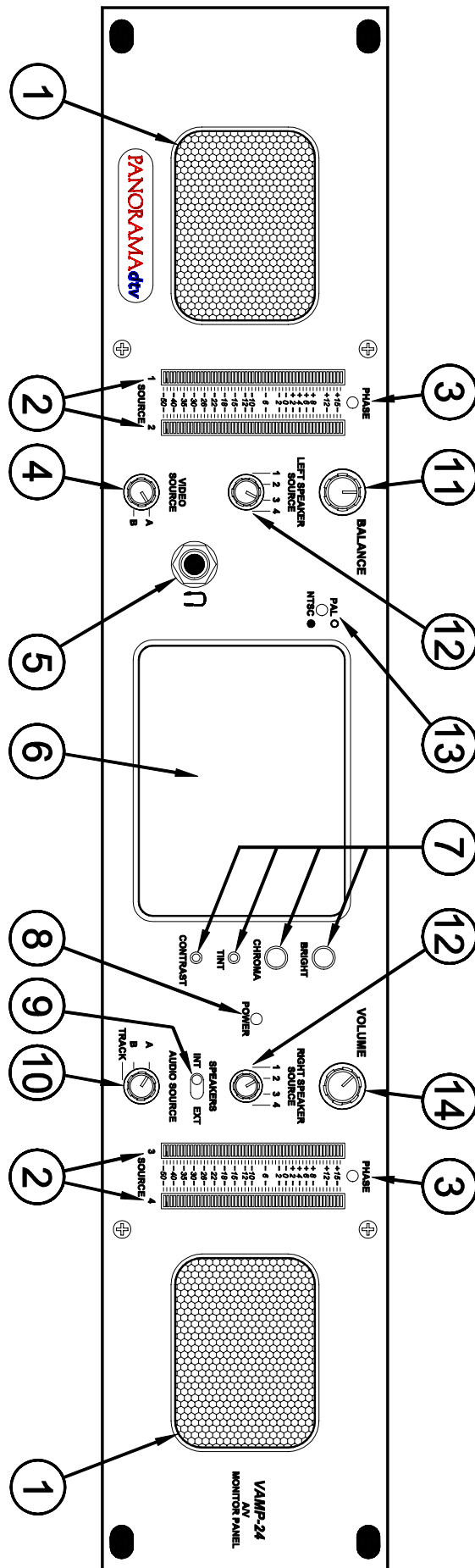
(Continued)

Figure-1b:VAM-24 Front Panel Features

(Continued)

⑧ Power Indicator - Green LED

The Power Indicator glows green when mains power is connected to the VAMP-24.

⑨ Speaker Select - Toggle Switch

This switch selects which speakers are used to monitor the selected audio channels. Internal or external speakers may be chosen. External speakers can be connected to terminal posts on the rear panel (Item E, page 15) and reproduce the same signals as selected for the internal speakers.

⑩ Audio Source Select - 2-position Rotary Switch

This switch selects which of two banks of audio input channels will be monitored. Channel banks A or B may be chosen, each one containing four channels.

⑪ Balance Control - Rotary Pot

This pans the volume balance between the left and right speakers. If the balance is adjusted hard left or right, a slight Left/Right channel mix is retained so that phase discrepancies can be discerned.

⑫ Left/Right Speaker Source - 4-Position Rotary Switches (2 each)

This switch selects which audio channels will be monitored over the left and right speakers (or headphone). The *left* speaker source switch selects any one of four channels to be monitored on the left speaker, while the *right* speaker source switch selects any one of four channels to be monitored on the right speaker. These switches will only select from the four channels in one of the two *banks* (A or B) as selected by the Audio Source Select switch (Item 10).

⑬ PAL/NTSC Indication - Green LED

This LED will glow green to indicate that the video input signal is of the PAL type. The LED will *not* light up to indicate that the signal is of the NTSC type. Video input signal type detection is automatic.

⑭ Volume Control - Rotary Pot

This controls the loudness of the audio reproduced by the internal speakers, external speakers, or connected headphone.
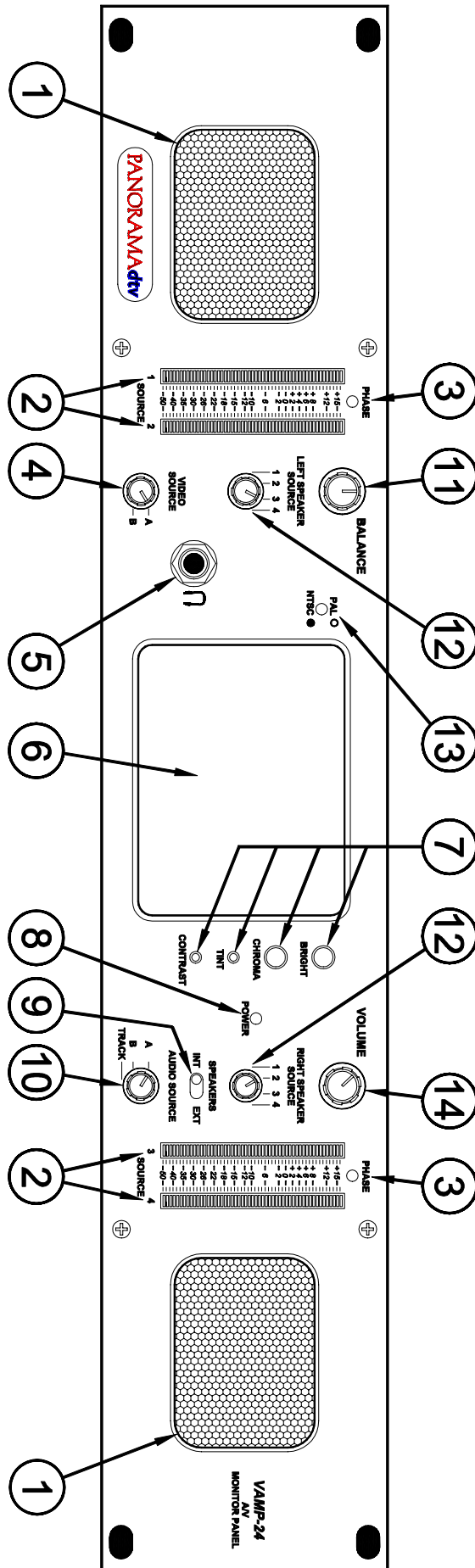
Figure-1b:VAM-24 Front Panel Features

Rear Panel Features

Please refer to Figure-1c on the following page to familiarize yourself with the rear panel features of the VAMP-24 unit. The following sections describe these features and are referenced, by letter, to Figure-1c.

(A) ## Power - IEC-320 Connector

Attach a standard IEC-320 power cord between this connector and mains power. The front panel Power LED (Item 8) will glow green to indicate that an operating voltage is present.

(B) ## Audio Inputs VTR-A (Bank A) - Phoenix Connectors

Connect four channels of analog audio signals here from a VTR or other source. The VTR-A (Bank A) connectors are interleaved with the VTR-B (Bank B) connectors (Item C). If the Audio Source select switch (Item 10) on the front panel is set to "A", then the four VTR-A channels will be available for selection for monitoring through the speakers (or headphones) via the Left and Right Speaker Source select switches (Item 12) on the front panel. Also, with this setting, all four channels of VTR-A input signals will be simultaneously displayed on the four level meters. Connector pin-out information is silk-screened below each of the VTR-A connectors. Audio source selection is independant from the video source selection.

(C) ## Audio Inputs VTR-B (Bank B) - Phoenix Connectors

Connect an additional four channels of analog audio signals here from a second VTR or other source. The VTR-B (Bank B) connectors are interleaved with the VTR-A (Bank A) connectors (see Item B). If the Audio Source select switch (Item 10) on the front panel is set to "B", then the four VTR-B channels will be available for selection for monitoring through the speakers (or headphones) via the Left and Right Speaker Source select switches (Item 12) on the front panel. Also, with this setting, all four channels of VTR-B input signals will be simultaneously displayed on the four level meters. Connector pin-out information is silk-screened above each of the VTR-B connectors. Audio source selection is independant from the video source selection.

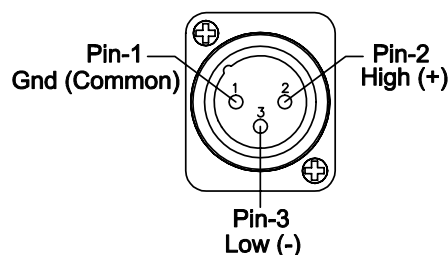**(D)** ## Video Inputs - Composite (A and B) - BNC Connectors

Connect standard composite analog video signals here. There are two inputs; A and B. Either can be selected for monitoring on the front panel LCD Monitor Screen (Item 6) by setting the Video Source select switch (Item 4) on the front panel to either A or B. PAL and NTSC video signals are automatically detected and configured for monitoring on the LCD monitor. Video source selection is independant from the audio source selection.

(E) ## External speakers - Terminal Posts

Connect external speakers here using these terminal posts. The left pair outputs the signals as selected for the left speaker while the right pair outputs the signals as selected for the right speaker. Terminal posts in each output pair are color coded for polarity; red is positive (left post) and black is negative (right post). An external amplifier is not needed to drive the external speakers.

(F) ## Selected Analog Output - XLR Connectors

These two connectors are analog outputs of the source as selected for the left and right speakers. Pin-out information is shown below.
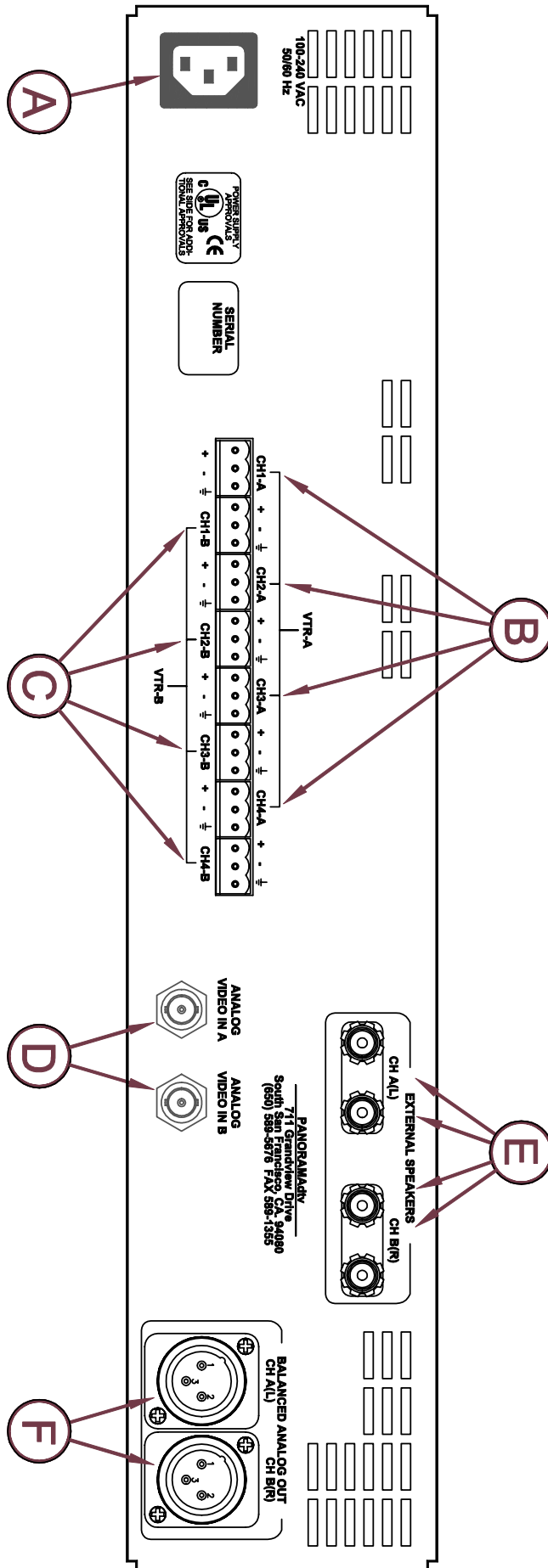

Pin-1 Gnd (Common)
Pin-2 High (+)
Pin-3 Low (-)

Figure-1c: MON3-3 Rear Panel Features

Section 3

Technical Information

Level Meters

Interconnect Block Diagram
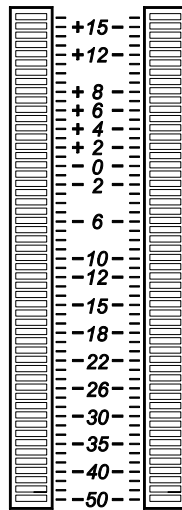
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Level Meters

53-Segment LED Bargraph Description

The 53-segment type of tri-color LED bargraph display has a total length of 2.24" (56.8 mm) and uses relatively small segments. This high resolution segment size is easy to accurately monitor, visually, for distances up to six feet (1.8 meters). Segment size is 0.158" (4 mm) x 0.04" (1 mm). Segment pitch is .039" (0.99 mm).

Each LED bargraph display section visually indicates the dynamic changes within the audio signal source(s) being monitored. Each bargraph section is always comprised of two vertically oriented bargraph "trees", representing two channels, with the scale markings located between the two "trees". The VAMP-24 uses two of these bargraph pairs to monitor a total of four channels at a time. All bargraph LED segments are of the tri-color type (green, amber, red). Ballistics for these meters are factory set to display a single floating PPM 'dot' (continuous decay of 20dB in 1.5 seconds) above a VU bar; each segment's color being fixed according to its position on the scale. Level gain is set at +4 dBu. Dynamic range for these 53-segment meters is 65dB.

Scales

Please refer to the figure below for an illustration showing the standard scale for the 53-segment bargraph display used in the VAMP-24 audio/video monitors. Custom variations of this scale are also available on special order.
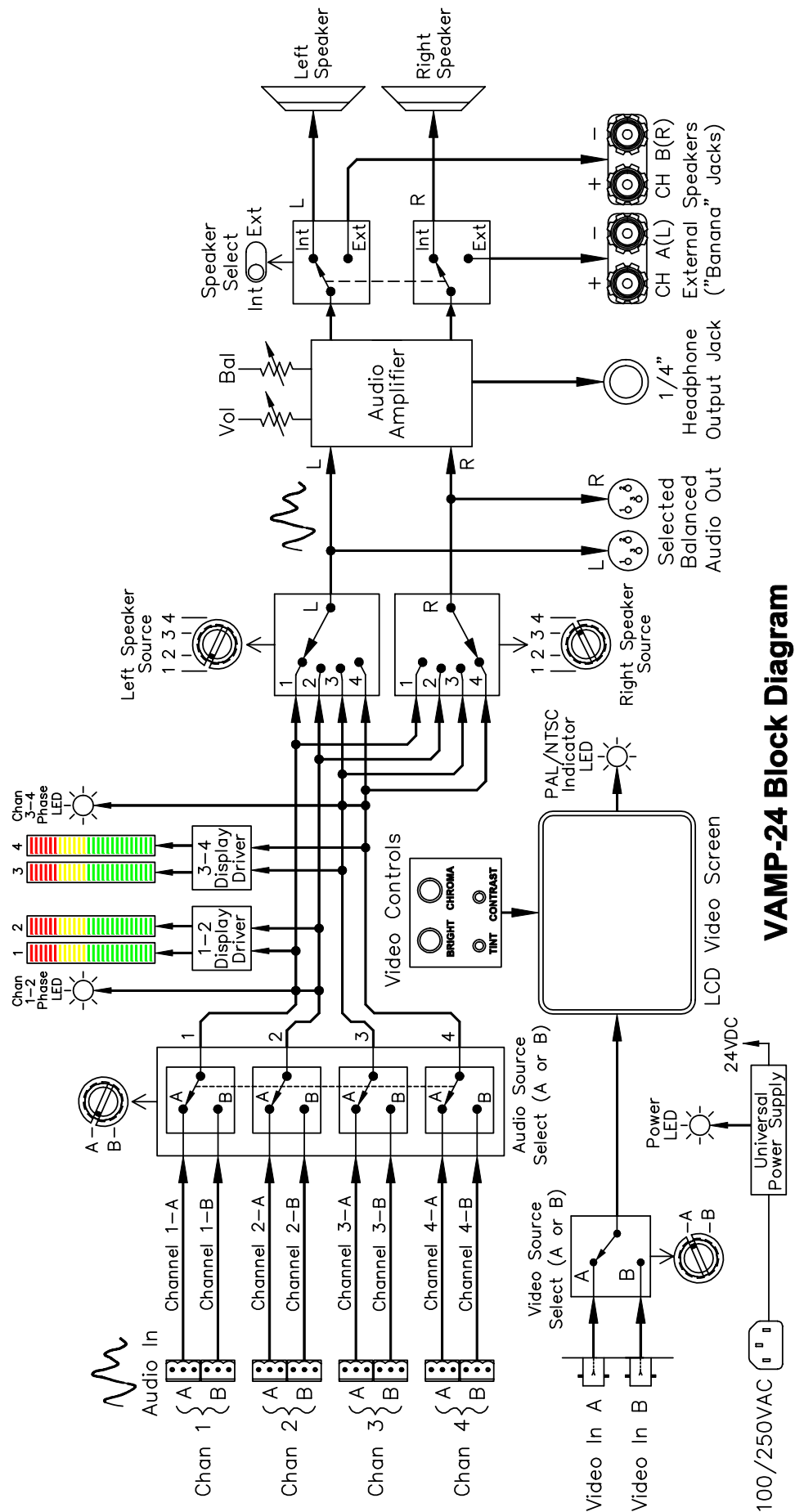

Standard 53-Segment Bargraph Analog Scale

53-Segment LED Bargraph Specifications

Dynamic range, dB:	65 dB
Midscale resolution:	1 dB
Indication Accuracy:	±0.2 dB, +10 to -30 dB
	±0.3 dB, -31 to -44 dB
	±0.5 dB -45 to -55 dB
Segment Quantity:	53
Segment size:	0.158" (4mm) x 0.04" (1mm)
Segment pitch:	0.039" (.99mm)

VAMP-24 Interconnect Block Diagram

VAMP-24 Block Diagram

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