

# AM-2

## In-picture audio meter

From the range of in-picture audio meters by Chromatec

### User instructions



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**IMPORTANT: PLEASE ENSURE THAT THE UNIT IS SET TO THE CORRECT OPERATING VOLTAGE BEFORE CONNECTING TO THE MAINS SUPPLY. REFER TO PAGE 3 IN ORDER TO MAKE CHANGES.**

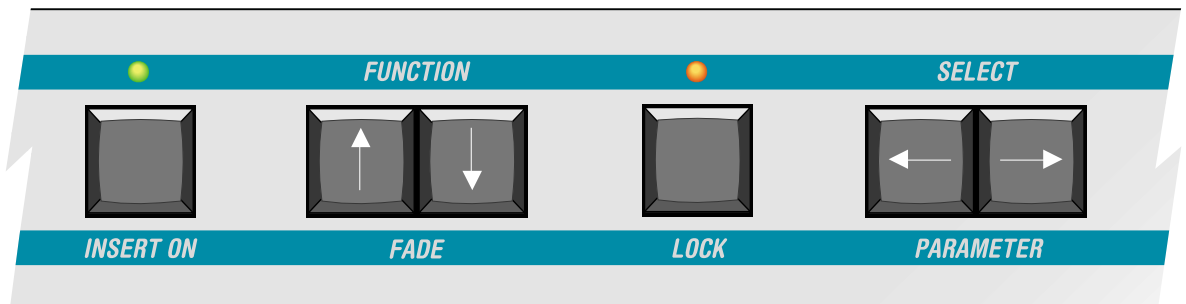
## Model overview

The Chromatec AM-2 is an in-picture and dedicated on-screen two channel audio meter for displaying level and phase. The unit may be configured to accept analogue or AES/EBU feeds depending on the input card chosen.

All of the meter scales may be displayed on a dedicated video monitor or mixed with an external video signal in order to display the meter superimposed on a television picture. The unit is supplied to operate with composite video only or both composite and YUV and RGB component video.

A comprehensive on-screen menu may be displayed in order to select all of the meter parameters, show the AM-2's input card status and display digital audio data (when a digital input card is fitted). There is provision for a wired remote control, duplicating the operation of the front panel buttons.

## Front panel buttons



### Insert On

The "Insert On" button switches the bargraphs on or off according to the configuration selected from the Menu (see next page).

Normally, the bargraphs are on as indicated by the green LED and may be superimposed on the incoming television picture or on an internally generated black background. Three options are available and are selected from the "Video Source" line of the Menu. In the "Auto" mode the AM-2 will display the bargraphs superimposed on the incoming video. If no video is present or the video is lost for more than 16 consecutive video frames the internally generated black background will automatically appear together with the superimposed bargraphs. When in the "Internal" mode the bargraphs will be displayed superimposed on the internally generated black background. In the "External" mode bargraphs may only be viewed superimposed on the incoming video. If the incoming video is lost it will not be possible to view the bargraphs until the video is reinstated.

### Function/Fade

The Fade buttons determine the mix level of the bargraphs superimposed on the incoming video or internally generated black background and operate only when the unit is locked (with the red LED off). When the unit is unlocked and in the Menu mode, these buttons are used to move the cursor up or down the Menu line in order to select a function.

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### **Lock**

The "Lock" button performs two functions depending in which mode the unit is operating. When in the locked mode with the red LED off, pressing the button briefly will reset the peak hold and over scale indicator. Unlock is activated by keeping the button pressed for about 3 seconds after which the red LED will be lit and the on-screen Menu appears, disabling the Fade function. After carrying out changes within the Menu, pressing the Lock button briefly will save the settings and return the AM-2 to the normal meter mode.

### **Select Parameter**

The "Select Parameter" buttons are disabled when the unit is locked. When the unit is unlocked the Select Parameter buttons are used to change the system settings depending on the Menu line selected.

## **Menu Display**

In order to change the numerous parameters of the AM-2 it is necessary to enter the system Menu by pressing the Lock button for approximately 3 secs, whereupon the red LED above the Lock button will light and the Menu will appear on-screen displaying the configuration previously selected. When in the unlocked mode with the Menu displayed, both the Function and Select Parameter buttons are used to change the system settings. The Function buttons are used to move the cursor up or down the Menu line and the Select Parameter buttons to select the option required. To move directly from one page to the next press the up (or down) button together with the insert button. On some menu lines where two parameters may be set, the second parameter is changed by pressing the "Insert" button together with the corresponding "Select Parameter" buttons. Those menu lines that have a red flashing cursor require confirmation of an action which is carried out by pressing both the "Insert" and "Lock" buttons simultaneously, whereupon the cursor stops flashing.

## **PAL or NTSC Operation**

The AM-2 automatically detects the incoming video standard and switches to either PAL or NTSC. If no incoming video is available and it is necessary to change the internally generated black from one format to the other then enter the system menu and change the settings of the line "Video Standard Internal" to the appropriate setting, PAL or NTSC, depending on the monitor to which it is connected.

## **Master Reset**

Master Reset is achieved by turning off the power for a few seconds, and turning it back on again while pressing both Fade/Function buttons until the bargraphs appear. A Master Reset is employed to return all settings to the factory default, or it may be carried out in the unlikely event that the unit fails to respond to the front panel push buttons.

## **Audio Connections**

There is provision for either balanced analogue or AES/EBU inputs depending on the type of input card fitted. Loop-through is provided for the AES/EBU inputs. The AM-2 automatically detects whether an analogue or digital input card is fitted and displays it's configuration in the appropriate lines of the system Menu.

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## Alarm Functionality

### Alarm Indicators

The on-screen alarm indicators comprise small coloured squares placed at the top of the respective bargraph groups. These are colour coded for each type of alarm condition and may be turned on/off.

### Alarm Master Reset

All alarms may be reset. The flashing red cursor indicates that confirmation of this action is required. This is carried out by pressing the Insert and Lock buttons simultaneously whereupon the red cursor will stop flashing.

### Alarm, Video Loss Enable

When turned on, this alarm will be triggered if incoming video sync is lost.

### Alarm, Carrier Loss Enabled

When turned on, this alarm will be triggered if both of the AES/EBU inputs are lost.

#### Set Time

Sets the time before the alarm is triggered when the AES/EBU inputs carrier signals are lost.

### Alarm, Audio Over Enable

When turned on, this alarm will be triggered if the selected audio channels exceed the selected level.

#### Set Level

The range of levels shown will change depending whether the scale displayed is analogue or digital. The correlation will change according to the value set in the Digital/Analogue Scale Ref line of the menu.

### Alarm, Audio Loss Enable

When turned on, this alarm will be triggered if the selected audio channels do not reach the selected threshold within the time set below.

#### Set Time

Sets the time before the alarm is triggered.

#### Set Threshold

Sets the threshold level below which the alarm will be triggered.

### Alarm Anti-Phase Enable

When turned on, this alarm will be triggered if the selected phase bars are out of phase according to the parameters set below.

#### Set Time

Sets the time before the alarm is triggered.

#### Set Degrees

Sets the threshold in degrees beyond which the alarm will be triggered.

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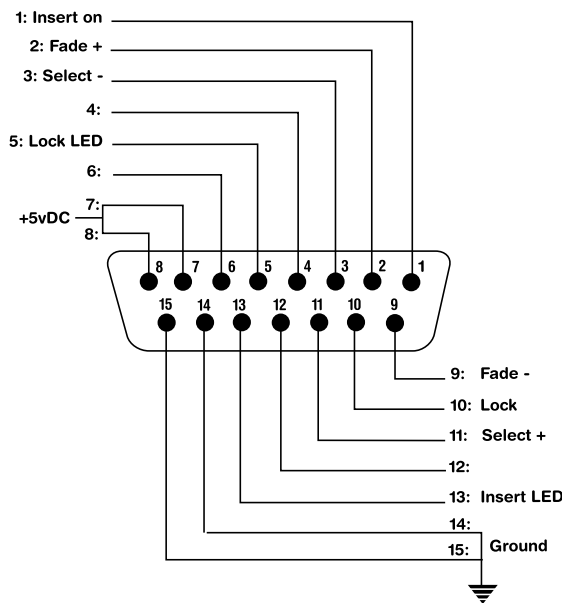
## Video Connections

The AM-2 is normally connected in-line with a monitor feed and is designed to accept PAL or NTSC standard 75W composite video, or YUV (or RGB) component video if the unit is fitted with the optional video card.

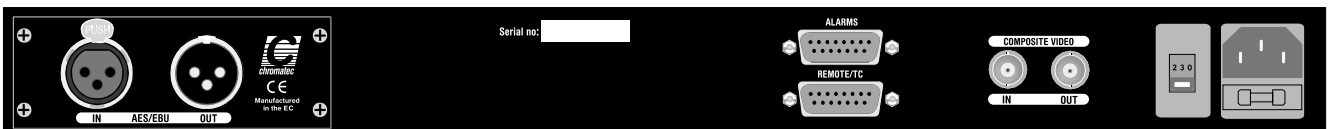
## Remote Control Connections

Remote control connections are via a 15 pin female "D" Type connector located on the rear panel which provides duplication of the front panel button and LED connections.

### Remote connections 15 pole 'D' type (female)



## Rear Panel Layout



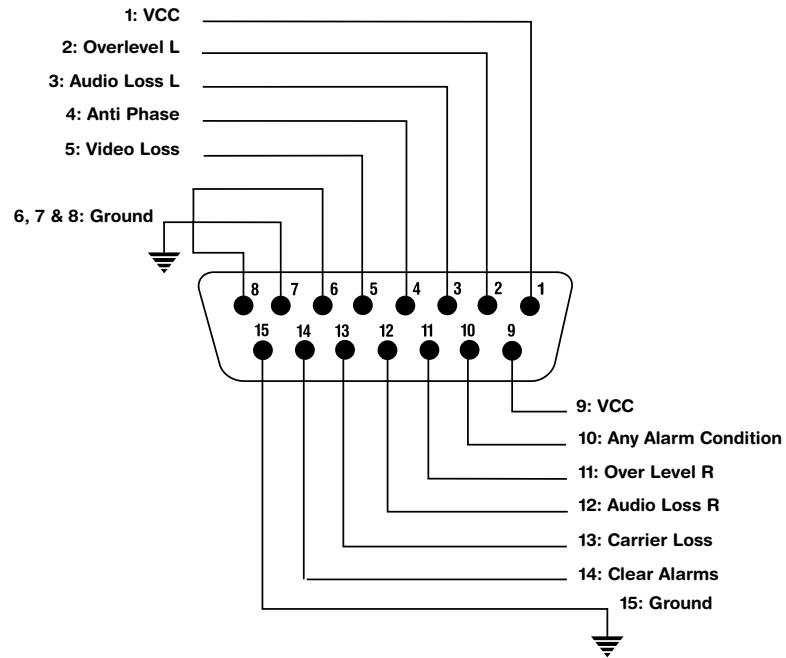
## Power Connection

The AM-2 will operate from a nominal 110VAC or 230VAC mains supply. IT IS IMPORTANT THAT THE VOLTAGE IS CORRECTLY SET BY THE SWITCH LOCATED ON THE REAR PANEL OF THE UNIT BEFORE SWITCHING ON OR CONNECTING TO THE MAINS SUPPLY.

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## Alarm Connections



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## Chromatec AM-2 Specifications

### Analogue Inputs

Input connectors: 3 pole, XLR female  
Input impedance: 20KW  
Input sensitivity: 0dBu = 0dB scale reading  
Inputs sensitivity adjustment - coarse:  $\pm 10$ dBu in 1dB steps  
Inputs sensitivity adjustment - fine:  $\pm 1$ dBu in 0.1dB steps  
Max Input level: +24dBu  
Frequency response at -3dB points: 15Hz to 23KHz  
A/D converter: Stereo 18 bit  
Sampling frequency: 48KHz  
Rectifiers: Software full wave rectifier  
Detectors: Software Peak detector  
Average detector  
Digital low-pass filters. Cut off frequency: 1.5Hz

### Digital Input

Input connector: 3 pole, XLR female  
Input type: Differential  
Input compatibility: RS422  
Output connector: 3 pole, XLR male connector  
Input interface: Transformerless professional AES/EBU  
Sampling frequency: 48KHz  
Rectifiers: Software full wave rectifier  
Detectors: Software sample detector

### Scales & Ballistics

NORDIC:	Overall dynamic range: 54dB (+12 to -42dB) Attack time: 10mSec Decay time: 1.7Sec per 20dB decay
DIN PPM:	Overall dynamic range: 55dB (+5 to -50dB) Attack time: 10mSec Decay time: 1.5Sec per 20dB decay
BBC PPM:	Overall dynamic range: 24dB +3dB down "Mark 1" (+12 to -12dB) Attack time: 10mSec Decay time: 2.8Sec per 24dB decay (from "Mark 7" to "Mark 1")
VU:	Overall dynamic range: 23dB (+3 to -20dB) Attack time: 300mSec Decay time: 300mSec per 20dB decay
VU EXT:	Overall dynamic range: 80dB (+10 to -70dB) Attack time: 300mSec Decay time: 300mSec per 20dB decay Decay time: 1.0Sec per 40dB decay
DIGITAL:	Overall dynamic range: 60dB (0 to -60dB) Attack time: One sample
DIGITAL EXTENDED:	Overall dynamic range: 80dB (0 to -80dB) Attack time: One sample Decay time: 1.5Sec per 20dB decay

### Phase Correlation Display

Attack time: 1Sec for zero to  $\pm 1$  deviation  
Decay time: 1Sec for  $\pm 1$  to zero deviation  
Input dynamic range: 45dB  
Minimum input level: -45dBu

Specification subject to change.