

# AM-2E

## In-picture audio meter & alarm system

Series II Card

From the range of in-picture audio meters by Chromatec

### User instructions

**IMPORTANT:**

**Please refer to the Caution on page 3 before proceeding**



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# AM-2E

In-picture audio meter  
& alarm system

## CAUTION

**PLEASE NOTE THAT IT IS NECESSARY TO POWER-DOWN THE UNIT BEFORE REMOVING OR REPLACING ANY OF THE AM-2E CARDS.**

**This is achieved by removing the IEC power connector located at the rear of the AM-2F frame or by switching off the power at source. No responsibility can be taken by the manufacturer for damage caused to the cards as a result of not observing these instructions.**

**See page 3.**

# AM-2E

In-picture audio meter  
& alarm system

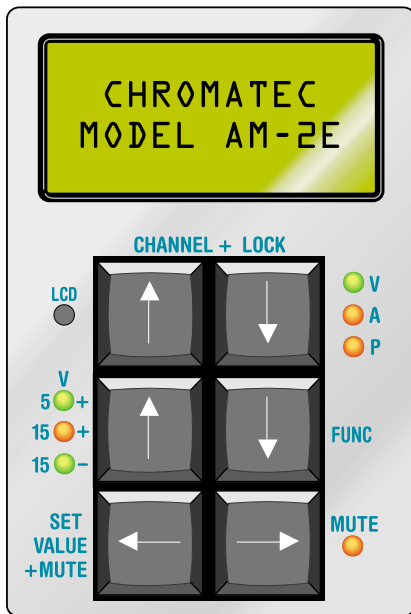
**IMPORTANT:** Please ensure that the unit is set to the correct operating voltage before connecting to the mains supply.  
Refer to page 3 in order to make changes.

## Model overview

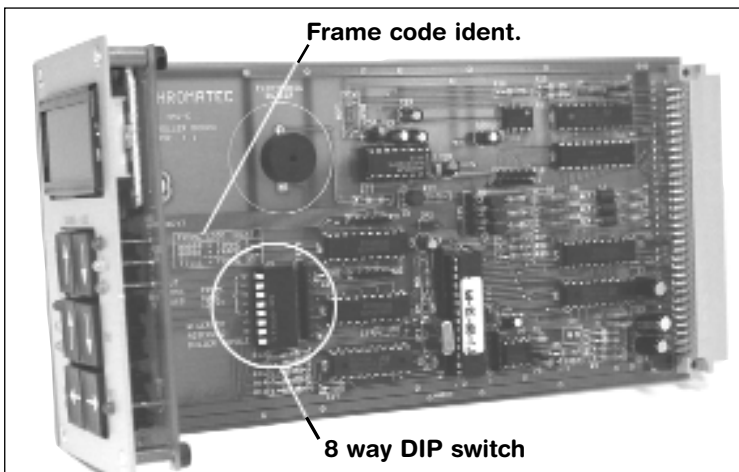
The model AM-2E is a multi-channel Eurocard in-picture audio meter and alarm system enabling any number of stereo audio bargraphs to be displayed in colour on multiples of composite video monitors. Also, to provide alarm outputs in the event of video loss, audio loss or sustained anti-phase for each channel pair. The superimposed (mixed) bargraphs may be quarter, half or full height and can be placed anywhere on screen and adjusted for fade level. Standard scales and ballistics may be selected together with an out-of-phase indicator and peak-hold cursor. A video relay bypass is effected in the event of power loss to each Eurocard in order to maintain video continuity. A frame can hold up to 16 Eurocards. Several frames may be linked via the data ports enabling any size of system. Any frame may be "grabbed" and used as the master in order to carry out system settings and alarm resets.

All frames are shipped with 'lite' PC software for remote alarms monitoring and reset.

## Control module - front panel controls



**Diagram 1. Control module showing position of 8 way DIP switch and frame code ident. legend**



The main system controls are located on a sub-panel located within the open window of the removeable front panel.

A 12 x 2 character LCD displays the system menu and channel(s) selected. System lock/ un-lock is effected by pressing both Channel + Lock buttons (top pair) simultaneously for about three seconds. In the Menu mode these buttons assign controls to the Eurocards individually by number, or collectively by selecting FRM for all cards in the frame or ALL for all cards in the system (which may comprise several frames).

The Function buttons (middle pair) scroll up or down the system menu and the Set Value buttons (bottom pair) select the appropriate parameter. LED alarm indicators adjacent to the Channel + Lock buttons

flash to indicate the appropriate alarm condition and an internal buzzer sounds. Pressing both Set Value buttons mutes the buzzer on that frame and the adjacent LED flashes to indicate that an alarm condition still remains.

## Control module - internal controls

An 8 way DIP switch enables the frame to be identified when used with other frames in the system and also allows the buzzer to be enabled or disabled at power on.

# AM-2E

## In-picture audio meter & alarm system

A maximum number of 32 frames can be linked together in this way. See Diagram 1.

Switches 0 - 4 are used to identify the frame # by binary code ranging from 0 - 31. Frame #1 is coded as binary 0 (all five switches off), frame #2 is coded as binary 1, etc.

The cards of the frame #1 are then identified as 1 - 16, frame #2 by the numbers 17 - 32, etc.

Switches 5 & 6 are not used and should remain off.

Switch 7 determines whether the buzzer is “enabled” or “disabled” at power on. The buzzer activation may also be controlled from the system menu.

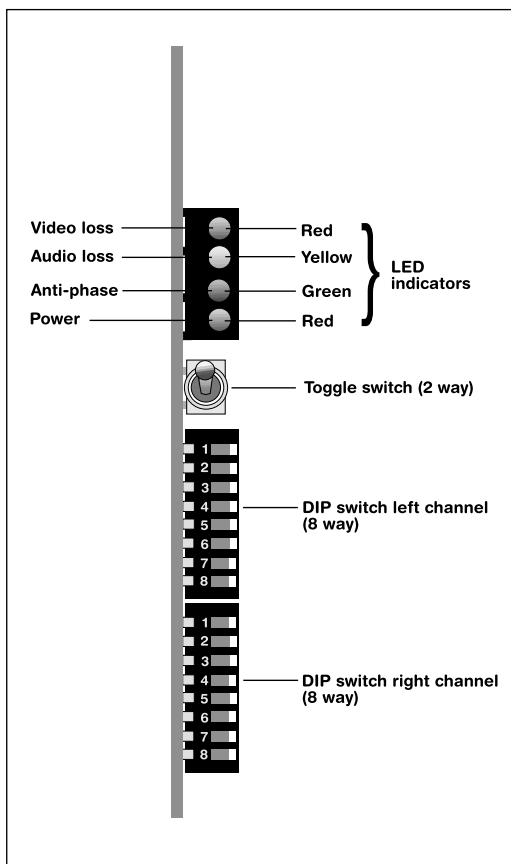
## Eurocards

Each AM-2E Eurocard comprises a complete in-picture audio meter and alarm unit with two balanced analogue audio inputs together with a composite video input and output.

Also, three alarm outputs for video loss, audio loss and sustained anti-phase.

Connections to each Eurocard are via multi-pole DIN connectors that mate with the backplane of the system frame.

There are LED indicators on the front edge of each Eurocard to indicate an alarm condition on that card together with a power present indicator (see Diagram 2). A two-way toggle switch allows the video input to be switched directly to the output without passing through the card. This would be used in an emergency situation in the unlikely event of a problem with the card. 2 x 8 way DIP switches (one for each audio channel) allow the audio input sensitivity to be set in the range of 0dB  $\pm$ 20dB. The upper switch bank is for the left channel, lower for the right channel.



Switch #1 on only	-10dBu
Switch #2 on only	-6dBu
Switch #3 on only	0dBu
Switch #4 on only	+4dBu
Switch #5 on only	+6dBu
Switch #6 on only	+8dBu
Switch #7 on only	+10dBu
Switch #8 on only	+16dBu
All switches off	+20dBu

## PAL/NTSC selection

The selection between PAL/NTSC is made by 2 jumpers on the Eurocard. Jumper A should be located between the center and outside pins to provide PAL (default), or between the center and inside pins to provide NTSC. Jumper B should be in place for PAL or removed or relocated onto one pin only for NTSC mode. See Diagram 3.

**Diagram 2: Front edge of Eurocard showing LED indicators and DIP switches**

# AM-2E

In-picture audio meter  
& alarm system

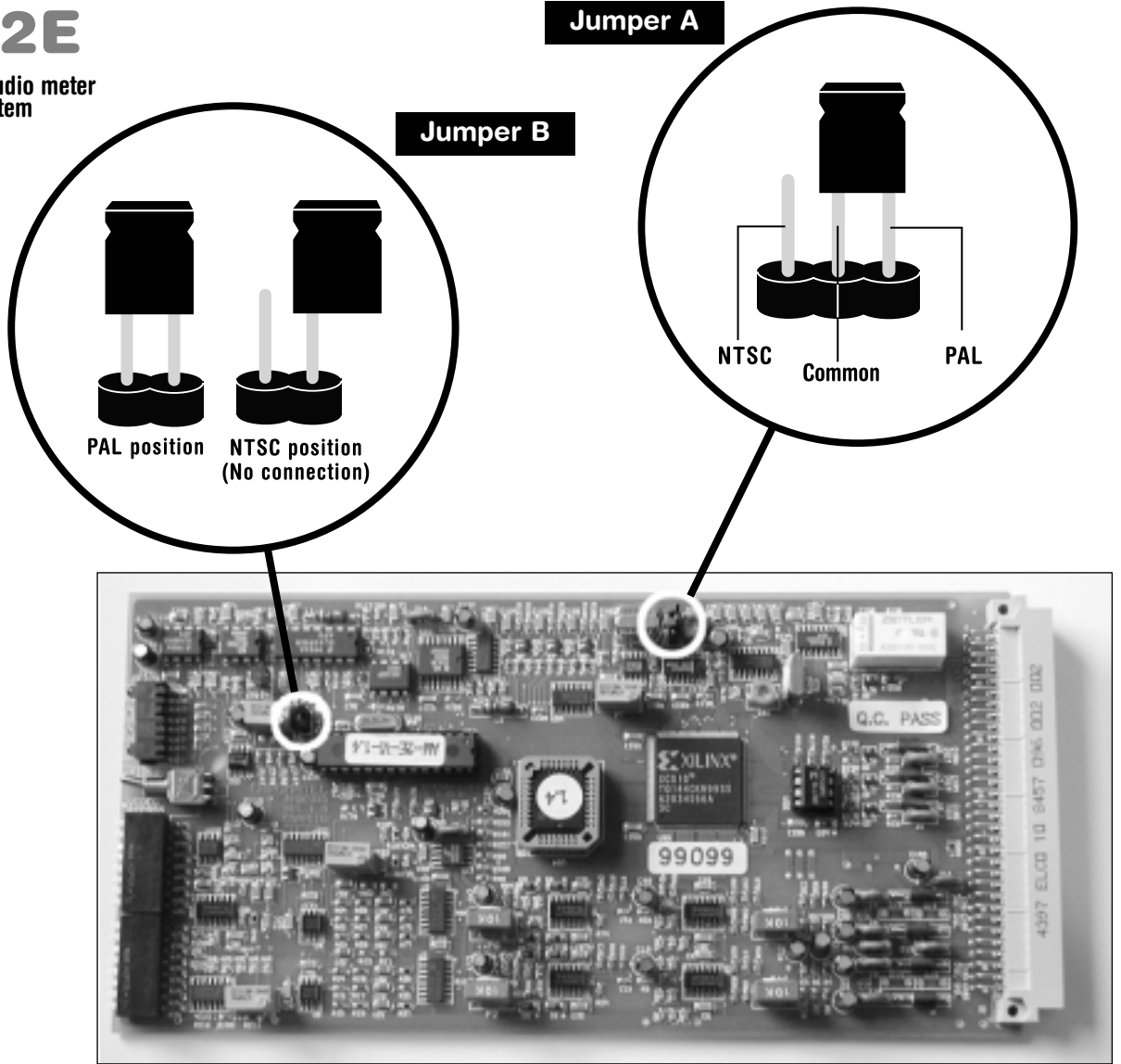


Diagram 3: Jumper positions for PAL/NTSC

## Frame

In keeping with normal practice it is recommended that the frame is rack mounted with 1U of free space above and below the unit. A support system to each frame in addition to the front panel fixings is also suggested.

Each frame is supplied with one control module and may be fitted with up to sixteen AM-2E Eurocards. The front panel may be removed by unscrewing the two retaining screws. Cards may then be inserted into the card guides or removed. All connections are on the rear panel. Audio & alarm connections use Phoenix type connectors, video inputs and outputs are BNC and all data connections are via 9 pole "D" type connectors.

## Power Connection

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

## Caution

Please note that it is necessary to power-down the unit before removing or replacing any of the AM-2E cards. This is achieved by removing the IEC power connector located at the rear of the AM-2F frame or by switching off the power at source. No responsibility can be taken by the manufacturer for damage caused to the cards as a result of not observing these instructions.

To ensure the the efficient running of the unit the cooling fans must be checked for operation at least once a year and kept clean and free from obstructions.

# AM-2E

## In-picture audio meter & alarm system

In Menu Mode: Top buttons assign controller to each card frame or system.  
Middle buttons select Menu Page & Bottom buttons select value

\* Indicates default setting

Function	Values	Remarks
ALARMS RESET	[ALL]* [AUD LOSS] [VID LOSS] [PHASE]	Use the bottom buttons to select the alarm type to reset. Use the top buttons to select ALL for all cards in the system, FRM for all cards in the frame or select an individual card by number. Numbers will only appear for cards present in the frame. Reset is then performed by pressing both bottom buttons simultaneously. All alarm LEDs will then flash briefly to indicate that the reset function has been performed. Use the middle down-arrow button to go to the next menu page.
AUDIO LOSS	[ON] [OFF]*	Selecting ON activates the audio loss alarm according to the parameters set on the two following pages.
SET TIME	[5 SECS] [10 SECS]* to...[60 SECS]	This is the time period before the audio loss alarm is activated. Between 5 and 60 Secs time is incremented in 10 Sec steps.
SET LEVEL	[-40dB] to...[0dB]*	The threshold level of the audio loss alarm may be set in 10dB steps.
VIDEO LOSS	[ON] [OFF]*	If the video input is lost the video loss alarm is activated. The corresponding card then defaults to internal black.
ANTI-PHASE	[ON] [OFF]*	If there is sustained anti-phase between the left and right channels of the audio feed the alarm will be activated.
SELECT SCALE	[BBC]* [DIN] [VU] [NORDIC]	Standard scales and ballistics may be selected.
BAR SIZE	[QTR] [HALF]* [FULL]	The bargraph size for each card may be selected, quarter, half or full size according to requirements.
BAR SIDE	[LEFT]* [RIGHT]	The bargraph may be placed on the left or right side of the video monitor screen.
HOR.POSITION	[0] [23]* [255]	The precise horizontal position of the bargraph may be adjusted by a value of 0-255.
VER.POSITION	[0] [144]* [255]	The precise vertical position of the bargraph may be adjusted by a value of 0-255.
FADE LEVEL	[0] [20]* [25]	The fade (mix) level of the bargraph in relation to the video picture may be adjusted by a value of 0-25.
PHASE BAR	[ON]* [OFF]	The phase indicator located at the top of the bargraph may be turned on or off.
PEAK-HOLD	[OFF] [1 SEC]* [various] [INFINITE]	This sets the hold time of the peak-hold cursor at the top of the left and right channel bargraphs. Various values are available. In the INFINITE setting the cursor retains indication of the highest level reached on the respective channel until reset by selecting another value or by pressing both middle buttons simultaneously.
FLASHING BAR	[ON] [OFF]*	When ON an alarm condition (except video loss) will result in the whole bargraph flashing on/off. If video is lost or not present the bargraph will remain on the internally generated black signal but will not flash.
VIDEO BYPASS	[ON] [OFF]*	Incoming video is switched directly to the video output of the card bypassing the bargraph generator.
ALARM BUZZER	[ON] [OFF]*	Each frame is fitted with an audible alarm. This is activated in any alarm condition on that frame and may be muted by pressing the two bottom buttons simultaneously. A red LED will light to indicate that the sounder is set to ON but muted.
SET DEFAULTS	[ON] [OFF]*	Resets the card, frame or system (selected by the top two buttons) to the defaults shown*. This is only activated by holding both "Set Value" (bottom) buttons for approximately 3 seconds as a safeguard against accidental resetting. The control LEDs will flash as a confirmation and the value will revert to [OFF].

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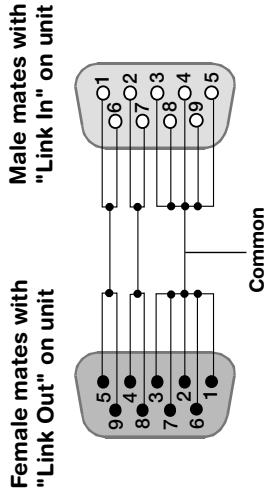
In-picture audio meter & alarm system

## Rear panel layout & connections

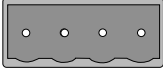
- Video connectors - BNC 750hm
- Audio connectors - Phoenix 3 way
- Alarm connectors - Phoenix 4 way
- Link connectors - 9 pole D type

AM-2E RS232 Cable	
AM-2E End (9pin D Male)	PC End (9pin D Female)
1	2
2	3
3	7
5 (shield)	5

## AM-2E Link Lead

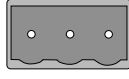


## Alarms Outputs



- Pin 4: Anti-phase
- Pin 3: Audio loss
- Pin 2: Video loss
- Pin 1: Ground

## Audio Left & Right inputs



- Pin 3: Cold
- Pin 2: Hot
- Pin 1: Ground

