



AMU1-BA
AUDIO MONITORING
UNIT

Handbook

Television Systems Limited.
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EC DECLARATION OF CONFORMITY

Application of Council Directives Nos:
EC Low Voltage Directive (73/23/EEC)(OJ L76 26.3.73)(LVD).
Amendment: (93/68/EEC) (OJ L220 30.8.93).

Conformity Standards Declared:

EN 60950

EMC Directive: 89/336/EEC, Amended 92/31/EEC.

Conformity Standards Declared:

EN 50081-1: 1992- EMC- Generic Emissions, Part 1.

EN 50082-1: 1997- EMC- Generic Immunity, Part 1.

EN61000-3-2: 1995- Current Harmonic Emissions.

EN61000-3-3: 1995- Voltage Fluctuations & Flicker.

Manufacturer's Name: Television Systems Ltd
Manufacturer's Address: Vanwall Road
Maidenhead SL6 4UB
England
United Kingdom

Type of Equipment: Audio Video Monitoring Unit

Model No: AMU1-BA

Part Number: TSLP- AMU1-BA

Date CE Mark Affixed: 16/07/02

I, the undersigned, declare that the equipment specified above conforms to the quoted Directives and Standards.

Place: Maidenhead, England

Signature: _____

Date: _____

Print: R CHAMBERS

Position: PRODUCT MANAGER



Installation.

Unless otherwise stated TSL equipment may be installed at any angle or position within an operating temperature range of 5° - 30° C .

All TSL equipment conforms to the EC Low Voltage Directive:

EC Low Voltage Directive (73/23/EEC)(OJ L76 26.3.73)(LVD). Amendment: (93/68/EEC) (OJ L220 30.8.93).

In all cases the chassis of the equipment must be earthed on installation.

The external power supply provided with this product may be one of two types:

1. A Class 2 double insulated type with a 'figure of eight' mains input connector.
2. A Class or Level 3 type with an IEC mains input connector. This type offers a functional earth and **NOT A SAFETY EARTH** via the earth pin of the IEC mains input connector to the outer of the of the co axial power connector.

All metal panels are bonded together.

Check that the voltage selector setting (if fitted) and the fuse rating is correct for the local mains supply.

WARRANTY, MAINTENANCE AND REPAIR

All TSL equipment is guaranteed for one year from the date of delivery to the customer's premises. If the equipment is to be stored for a significant period, please contact TSL concerning a possible extended warranty period.

Failure during warranty

If any TSL product should fail or become faulty within the warranty period, first please check the PSU fuses.

All maintenance work must be carried out by trained and competent personnel.

If equipment has to be returned to TSL for repair or re-alignment, please observe the following overleaf:

TSL Returns Procedure

Please telephone +44 (0)1628 676200 (Fax: +44 (0)1682 676299) and ask for Production Sales who will provide a Returns Number. This will enable us to track the unit effectively and will provide some information prior to the unit arriving.

For each item, this unique Returns Number must be included with the Fault Report sent with the unit.

A contact name and telephone number are also required with the Fault Report sent with the unit.

Fault report details required.

- Company:
- Name:
- Address:
- Contact Name:
- Telephone No:
- Returns Number:
- Symptoms of the fault (to include switch setting positions, input signals etc):

Packing

Please ensure that the unit is well packed as all mechanical damage is chargeable. TSL recommends that you insure your equipment for transit damage.

The original packaging, when available, should always be used when returning equipment..

If returned equipment is received in a damaged condition, the damage should be reported both to TSL and the carrier immediately.

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1.0 Introduction

The AMU1-BA 1RU x 285mm deep Audio Monitoring Unit with a TSL Bargraph for Audio level measurement.

The following features are standard:

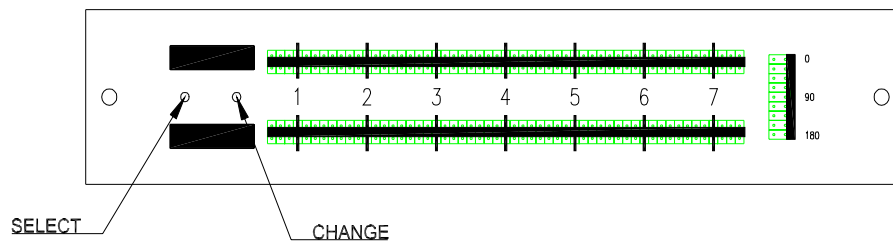
- Six switch selectable stereo analogue inputs.
- Phase reverse switch.
- Out-of-phase error indication.
- Additive output switch selection.
- Two x 10 Watts into 4 Ω loudspeaker amplifiers.
- Headphone outputs with LS muting.
- Fixed or variable stereo line outputs.
- RS422 remote control option
- Loudness Indication (Based on ISO226)

2.0 Front Panel Controls

2.1 Input and Meter Selection Buttons

1 – 6 Analogue I/Ps. A1 (Left Channel) is fed to the top bargraph and A2 (Right Channel) is fed to the bottom bargraph.

Ø Rev Momentary phase reverse between A1 and A2.



TSL Bargraph

2.2 Bargraph Set-up Menus.

These are accessed via the select & change buttons located between the two alphanumeric displays to the left of the unit (see diagram above). The top display shows the function & the bottom gives the state.

2.2.1 Pressing select once gives:

P	E	A	K
H	D		0

The zero toggles between 0, 1 and 2 when the change button is pressed. 0 is off, and 1 is on and the highest level point is displayed. HD 2 operates only in the PPM mode and displays the level numerically with the reference marker. With HD 0 selected the alphanumeric display is off.

2.2.2 Pressing select a second time gives:

D	I	S	P
B	A	R	

All the LEDs are lit up to the highest level displayed.

Pressing the change button gives:

D	I	S	P
D	O	T	

Only the highest level LED is lit.

2.2.3 Pressing select a third time gives:

R	S	P	N
1m s			

Pressing the change button gives:

.1 ms			

This changes the response for the relevant scales. (10mA,VU, 10mB)

2.2.4 Pressing select a fourth time gives:

I	D		0
O	N		

This enables the unit to display the reference markers which are nominally set to 0dB. These are set as follows for the appropriate scales fitted: PPM 4 for UK, TEST for EBU, - 4 for VU, - 6 for DIN, 0 or Test for Nordic, -18dB or - 20 dB for Digital.

When the change button is depressed the markers are not displayed and an OFF indication is displayed in the lower display.

2.2.5 Pressing select for a fifth time gives:

B	R	G	T

Depressing the change button changes the brightness or intensity of the display. Successive presses decrease brightness.

2.2.6 Pressing select for a sixth time gives:

I	/	P	:
A	n	l	g

Depressing the change button changes the input from Analogue to digital (AES)

2.2.7 Pressing select for a seventh time gives:

S	C	L	E
E	B	U	

Depressing the change button defines which scale is in use. (EBU PPM, DIN, PPM, Nordic, EBU Digital, UK PPM or VU).

2.2.8 Pressing select for a eighth time gives:

0	R	E	F
	-	1	8

Depressing the change button selects the digital reference. (- 18 or -20)

2.2.9 Pressing select for a ninth time gives:

L	O	U	D
O	N		

Depressing the change button turns the loudness indication on or off.

2.3 Output Switching

Right A1 / A2 / Left

These buttons select the Analogue Left or Right signals of the metered Input to the Left or Right monitoring outputs.

The buttons toggle. Additive mixing is possible if two or more buttons are selected together.

DIM

Approximately 16dB of attenuation is switched into the audio path.

CUT/MUTE

The front panel button **CUT**(s) the signal to all O/Ps. Remote Mute of either or both of the LS O/Ps and Variable Line O/Ps are possible via a rear connector.

A ground is required on the appropriate pin to activate the **MUTE** condition.

The Headphones O/P and the Variable Line O/P may be varied.

3.0 Pin-out Details

3.1 Analogue XLR Connectors

XLRS	PIN	FUNCTION
ANALOG 1	1	GND
ANALOG 1	2	1 IN+
ANALOG 1	3	1 IN-
ANALOG 2	1	GND
ANALOG 2	2	2 IN+
ANALOG 2	3	2 IN-

3.2 Audio Input / Output Connector – D25 Socket Pinouts

D 25 SOCKET ON AMU PIN NO	AUDIO INPUTS	D 25 SOCKET ON AMU PIN NO	AUDIO INPUTS
1	Chassis		
2	Aux Ch3 Left +	14	Aux Ch3 Left –
3	Aux Ch3 Right –	15	Aux Ch3 Left Scrn
4	Aux Ch3 Right Scrn	16	Aux Ch3 Right +
5	Aux Ch4 Left +	17	Aux Ch4 Left –
6	Aux Ch4 Right –	18	Aux Ch4 Left Scrn
7	Aux Ch4 Right Scrn	19	Aux Ch4 Right +
8	Aux Ch5 Left +	20	Aux Ch5 Left –
9	Aux Ch5 Right –	21	Aux Ch5 Left Scrn
10	Aux Ch5 Right Scrn	22	Aux Ch5 Right +
11	Aux Ch6 Left +	23	Aux Ch6 Left –
12	Aux Ch6 Right –	24	Aux Ch6 Left Scrn
13	Aux Ch6 Right Scrn	25	Aux Ch6 Right +

3.3 Auxiliary Connector – D25Socket (NOT USED ON ANALOGUE UNITS)

3.4 Serial, A1 & A2 Output – D15 Plug.

D15 PIN	EXTERNAL FUNCTION
1	AGND
2	A1-
3	A2+
4	N/U
5	TX-
6	RX+
7	0V
8	Chassis
9	A1+
10	AGND
11	A2-
12	N/U
13	TX+
14	RX-
15	0V

4.0 Configuration Switch Functions (NOT USED)

5.0 General Notes

Please note that some American equipment has the function of the XLR pins 2 & 3 reversed.

TSL product is wired to the European standard

6.0 AMU1- BA Technical Specifications

Power Supply

Supply Voltage	12v, DC
Power Consumption	50 watts Max.

Physical Dimensions

Height	44mm (1RU)
Width	483mm (19")
Depth	285mm
Weight	3500gm

Inputs 1 and 2

Connector Type	XLR Female 3 pin. Pin 1 Gnd, Pin 2 hot, Pin 3 cold.
Signal	Balanced line level audio.
Frequency Response	30Hz to 25kHz
Impedance	>20k Ω

Inputs 3 - 6

Connector Type	D25.
Signal	Balanced line level audio.
Frequency Response	30Hz to 25kHz \pm 1dB
Impedance	>20k Ω

Variable Line Output.

Connector	XLR 3 pin Male
Impedance	50 Ω
Output Levels	Through level control with 0dB gain.

Fixed Line Output and Control

Connector	D15
Signal	Fixed line output and serial data port

Headphone Output.

Connector	Stereo Jack socket type A gauge
Impedance	50 Ω
Output Levels	Through level control with 0dB gain.

Loudspeaker Outputs.

Connectors	4mm Binding Posts
Output rating	Max 10W per Ch into 4 Ω ,

Loudness algorithm Based on ISO 226

