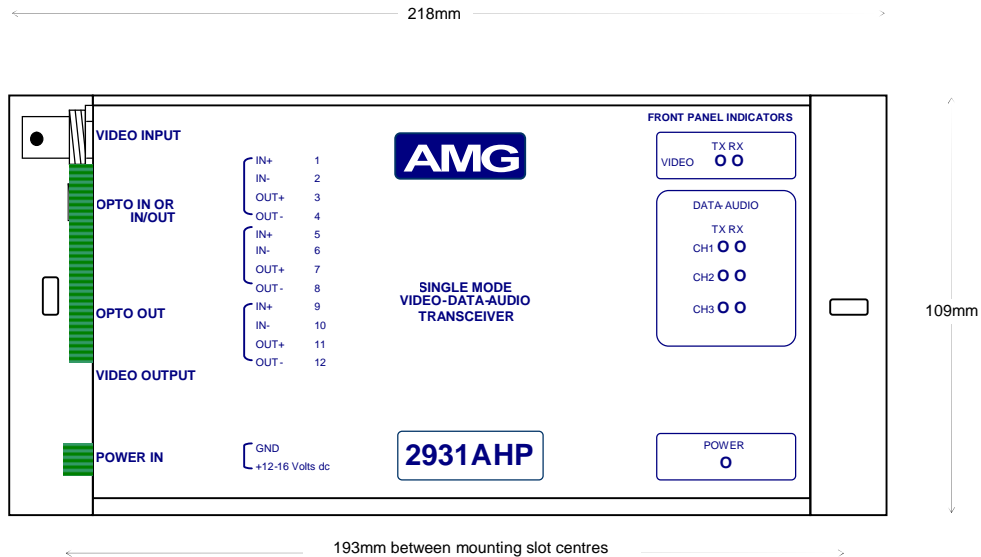




# AMG2931AHP Instruction Sheet

**AMG2931AHP Standalone Single Channel Video High Power Fibre Optic Transmitter for use on Singlemode Optical Fibre with three bi-directional data/audio channels individually configured with daughter boards**



The AMG2931AHP transmits a video signals over a singlemode optical fibre. It is designed to operate with an AMG2932AHP or an AMG2932ARHP Video Receiver. It also has the capacity to transmit and receive three independent data or audio signals over the same optical fibre as the video.

### Video Input Connection

- Connectors ..... 75 ohm BNC Socket.
- Input Impedance ..... 75 ohm terminated.
- Input Level ..... 1 volt p-p nominal (+3dB overload).
- Frequency Response ..... 10Hz to 5.75MHz min.

### Optical Connection

- Connectors..... Single optical connector FC/PC Style

### Optical Transmit

- Launch Power ..... >+0dBm typ.
- Wavelength..... 1550nm nominal.

### Optical Receive

- Optical Sensitivity ..... 35dBm typ.
- Wavelength..... 1310nm nominal.

### Power Connection

Power Supply ..... +12 volts D.C. to +16 volts D.C. at 300mA  
Connector ..... Removable screw terminal connector (3.5mm spacing)  
See equipment label for connection details

### Data Connections

Data Connector ..... 12 way removable screw terminal connector (3.5mm spacing)

The actual data connections within each channel slot will depend on which data or audio daughter boards are fitted. The data channel slot connections are as follows:

Slot No	Pin No.	Pin Description
Slot 1	1	Channel 1 IN+
	2	Channel 1 IN-
	3	Channel 1 OUT+
	4	Channel 1 OUT-
Slot 2	5	Channel 2 IN+
	6	Channel 2 IN-
	7	Channel 2 OUT+
	8	Channel 2 OUT-
Slot 3	9	Channel 3 IN+
	10	Channel 3 IN-
	11	Channel 3 OUT+
	12	Channel 3 OUT-

The daughter board options are as follows:

Option Code	Part No.	Interface Type
1	X04057	RS422/485
2	X04049	RS232
3	X04058	20mA Current Loop
4	X04059	TTL
5	X12578	Contact Closure
6	X13038	FTT10A Echelon Lonworks*
0	X14542	4-wire Audio

\*Special information on using this daughter board is found on page 5 of this document

See daughter board data sheets for actual pin out descriptions for the respective channels

### Dimensions

Height ..... 109mm  
Width ..... 218mm  
Depth ..... 39mm

### Mounting Details

The AMG2931AHP is designed to be mounted onto a panel via the two mounting slots of 4.5mm x 10mm.

## Indicators

Power .....	Green	–	unit powered
	Off	–	no power applied to unit
Video TX .....	Green	–	video signal present on video input BNC and being transmitted
	Off	–	no video present on video input BNC
Video RX .....	Red/Green	–	optical connection to AMG2932A(R)HP OK.
	Off	–	optical loss to AMG2932A(R)HP too high

## Data-Audio

### *(When data slot contains a data daughter board)*

TX .....	Green	–	logic one present on the corresponding data input
	Red	–	data transitions on the corresponding data input
	Off	–	logic zero present on the corresponding data input

This represents the data signals being transmitted on the optical fibre

RX .....	Green	–	logic one present on the corresponding data output
	Red	–	data transitions on the corresponding data output
	Off	–	logic zero present on the corresponding data output

This represents the data signals being received on the optical fibre

### *(When data slot contains an audio daughter board)*

TX .....	Green	–	when an audio level between –40dBm and +0dBm is on the audio input (600ohm).
	Red	–	when an audio level above 0dBm is on the audio input. (600ohm).
	Red/Green	–	when an audio level peaking above 0dBm is on the audio input. (Note audio daughter board will accept up to +6dBm (600ohm)).
	Off	–	when an audio level is below –40dBm on the audio input. (600ohm).

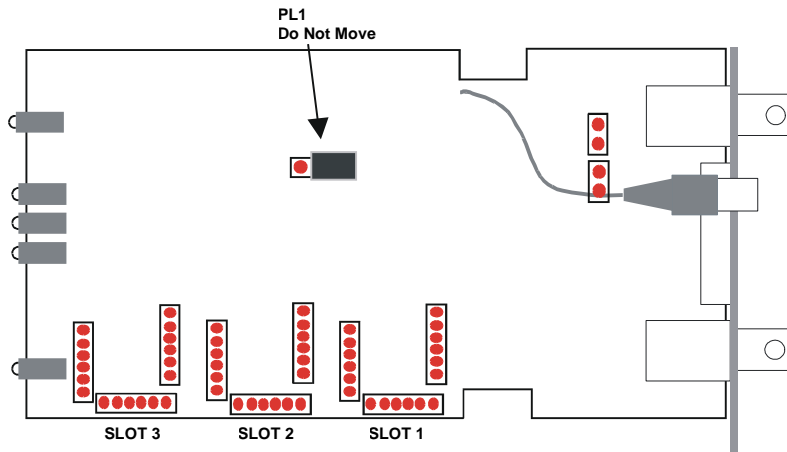
This represents the audio signals being transmitted on the optical fibre

RX .....	Green	–	when an audio level between –40dBm and +0dBm is on the audio output (600ohm).
	Red	–	when an audio level above 0dBm is on the audio output. (600ohm).
	Red/Green	–	when an audio level peaking above 0dBm is on the audio output. (Note audio daughter board will transmit up to +6dBm (600ohm)).
	Off	–	when an audio level is below –40dBm on the audio output. (600ohm).

This represents the audio signals being received from the optical fibre

## Installing and Removing the Data or Audio Daughter Boards

The data and audio daughter boards are fitted to the main PCB either at the factory or in the field. There are three daughter board slots corresponding to the Data/Audio channels one, two and three. The diagram below illustrates the positions of the three interface Daughter Board channels connectors.



To install the Interface Daughter Boards:

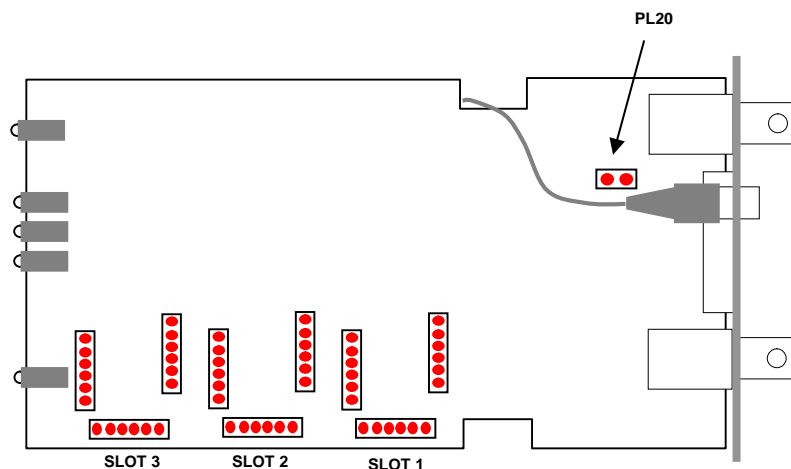
1. Remove the main PCB from the housing as follows:  
**Note:** - The 2900's PCB is static sensitive. Handle it with proper care and normal electrostatic Discharge (ESD) procedures. Use properly grounded protection (for example, wrist straps) when handling the PCB.
  - 1.1. Loosen and remove the two screws on the top and bottom of the unit's rear panel.
  - 1.2. Ensure that the optical fibre is not trapped.
  - 1.3. Slide the rear panel out.
  - 1.4. The PCB is attached to the rear panel.
2. Align the daughter board with the desired slot connectors and press into place.
3. Check that all the pins are correctly seated into their correct socket. The set of six pins parallel to the bottom of the main board on each slot are only used when an audio daughter board is fitted.
4. Fill other slots as required.
5. Re-insert the main PCB into the housing taking care not to trap the optical fibre
6. Fasten the rear panel with the screws.

To remove an Interface Daughter Board:

1. Remove the main PCB from the housing as above.
2. Grasp the Interface Daughter Board you wish to remove and away from the main board.
3. Re-insert the main PCB into the house as above

## Using X13038 FTT10A Daughter Boards

The X13038 FTT10A Daughter Board allows transmission of Echelon Lonworks FTT10A signals between AMG2900A Transceivers.



The data connections are as follows. The actual pin numbers would depend on which slot the boards are fitted.

Slot No	Pin No.	Pin Description
Slot 1	1	Channel 1 NET_A
	2	Channel 1 NET_B
	3	Channel 1 NET_A
	4	Channel 1 NET_B
Slot 2	5	Channel 2 NET_A
	6	Channel 2 NET_B
	7	Channel 2 NET_A
	8	Channel 2 NET_B
Slot 3	9	Channel 3 NET_A
	10	Channel 3 NET_B
	11	Channel 3 NET_A
	12	Channel 3 NET_B

The FTT10A net should be terminated at some point. This can be provided by the AMG2900A **for Slot 1 only** by fitting PL20 – see above.

Data-Audio LED's

*(When data slot contains a FTT10A daughter board)*

TX .....Green – data channel present but not transmitting  
 Red/Green – data channel transmitting  
 Off – FTT10A board not fitted

This represents the data signals being transmitted on the optical fibre

RX .....Green – data channel present but not receiving  
 Red/Green – data channel receiving  
 Off – FTT10A board not fitted

This represents the data signals being received on the optical fibre

## **Safety**

The 2900A series of products uses a Class 1 laser system in accordance with EN 60825-2:2000 and as such the optical power emitted from the optical connector is regarded as eye safe under all operating conditions.

However it is always advisable to follow good practice when working with optical fibre systems. This includes:

- Do not stare with unprotected eyes or with any unapproved collimating device at fibre ends or connector faces, or point them at other people.
- Use only approved filtered or attenuating viewing aids

For other safety issues and advice on good practice associated with the optical fibres systems see EN 60825-2:2000 or your local safety officer.

There are no user serviceable parts within the AMG2931AHP except the daughter boards. In case of problem or failure contact your local support centre or AMG Systems Ltd, Technical Support Department on tel. +44 (0) 1767 600777.

See product data sheet for full specification.