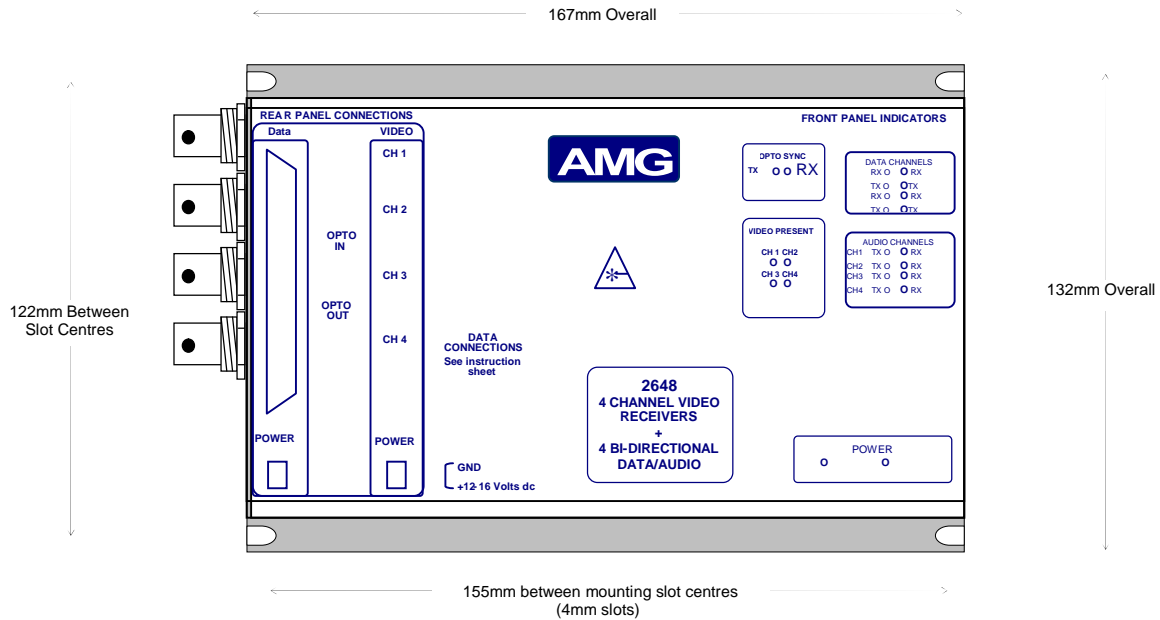




# AMG2648 Instruction Manual

## 4 Channel Video RX Unit with 4 bi-directional data and 4 bi-directional audio



The **AMG2648** is a four channel video receive unit. It also has the capacity to transmit and receive four data and four audio signals. The data and audio interfaces are enabled by fitting data and audio interface daughter boards. All the signals are transmitted and received over two multimode mode optical fibres. The **AMG2648** is a standalone unit.

The **AMG2648** is designed to operate with **AMG2647(R)** four channel video transmit unit with four channels of bi-directional audio and with four channels of bi-directional data.

### Connections

#### Video Output Connections

No of Channels .....	4
Connectors .....	75 ohm BNC Socket.
Output Impedance .....	75 ohm terminated.
Output Level .....	1 volt p-p nominal
Frequency Response .....	10Hz to 5.75MHz min.

#### Data and Audio Connections

No. of Data Channels .....	4
No. of Audio Channels .....	4
Connector .....	All on one 37 way D-Type female connector - shielded.
Connections .....	See below for connection and configuration

## Optical Connections

OPTO OUT  
 Connector .....FC/PC  
 Optical Launch Power .....-5dBm  
 Wavelength ..... 1310nm

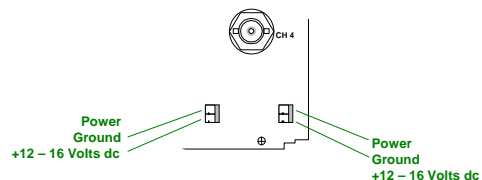
Note: - The transmission distance on multimode fibre will tend to be limited by the bandwidth of the fibre rather than the optical dynamic range. It is recommended that 50/125 optical fibre is used as this will have a higher bandwidth than 62.5/125 fibre. The **AMG2647** and **AMG2648** will transmit and receive over a minimum of 1km of 62.5/125 fibre and will typically transmit and receive over 2km of 50/125. The transmission distance will typically be longer than this but will depend of the performance of the optical fibre.

OPTO IN  
 Connector .....FC/PC  
 Optical Sensitivity ..... -22dBm  
 Wavelength ..... 1310nm

## Power Connection

Connector .....removable screw terminal connector (3.5mm spacing)  
 Manufacturers Part No. Phoenix/Combicom MC1-5/2-ST-3.5  
 AMG Part No.G00047-00  
 Power requirement ..... 12 volts to 16 volt DC @  
 700mA (1 amp turn on  
 current)

Connections..... See schematic  
 +12 – 16 Volts on lower pin  
 0 Volts on upper pin



## Indicators

Power.....	Green	– unit powered
	Off	– no power applied to unit
Opto Sync RX .....	Green	– optical channel receiving
	Off	– optical channel not receiving
Opto Sync TX .....	Green	– optical channel transmitting
	Off	– optical channel not transmitting
Video Present .....	Green	– video signal present on video the channel indicated.
	Red/Green	– video channel available on the fibre but no video signal being transmitted
	Off	– no video channel available on the fibre.
(when data slot contains a data daughter board)		
Data Present TX .....	Green	– logic one present on the data input
	Red	– logic zero present on the data input
	Off	– tri-state off or no connection on the data input
This represents the data signals being transmitted on the optical fibre		
Data Present RX.....	Green	– logic one present on the corresponding data output
	Red	– logic zero present on the data output
	Off	– tri-state off on the data output

This represents the data signals being received on the optical fibre  
(When audio slot contains an audio daughter board)

- Audio Present 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

- Audio Present 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

## Physical Information

### Dimensions

- Height ..... 3U Plug-in
- Width..... 14HP
- Depth ..... 170mm excluding connectors
- Weight..... 800grams

## Data and Audio Channel Configuration and Connection

The **AMG2648** has a capacity for 4 bi-directional data and 4 bi-directional audio channels. For these channels to be present, appropriate data daughter boards have to be fitted onto the main data motherboard.

### Data and Audio Channel Configuration

The data and audio daughter board's slots are accessed by removing the 2600 unit from the case. (See below for **removal from the case**).

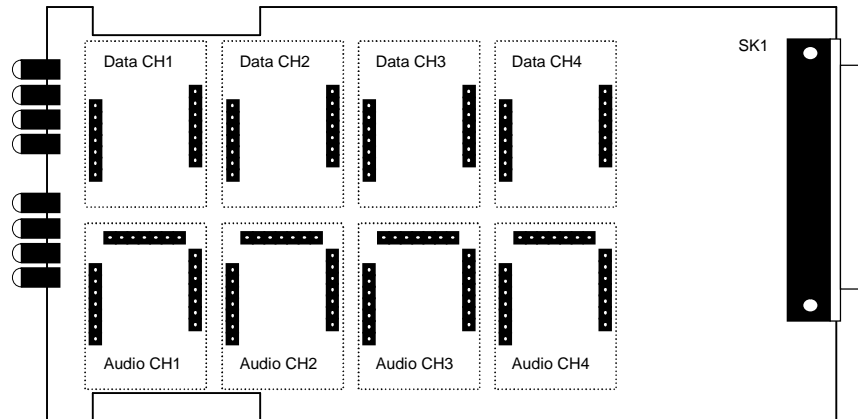
In order to enable a data channel an appropriate daughter board should be fitted in the upper data channel slots on the main data motherboard. Each data interface board enables one bi-directional channel. The data interface daughter board options are as follows:

Option Code	Part No.	Description
1	X04057	RS422/485 Data Interface Daughter Board
2	X04049	RS232 Data Interface Daughter Board
3	X04058	20mA Current Loop Data Interface Daughter Board
4	X04059	TTL Data Interface Daughter Board
5	X12578	Contact Closure Data Interface Daughter Board
6	X13038	FTT10A Echelon Lonworks Data Interface Daughter Board

In order to enable an audio channel an appropriate daughter board should be fitted in the lower audio channel slots on the main data motherboard. Each audio interface board enables one bi-directional channel. The audio interface daughter board part number is as follows:

Option Code	Part No.	Description
0	X14542	4 Wire Audio Interface Daughter Board

The channel slots are as follows:



### Data and Audio Fitting Instruction

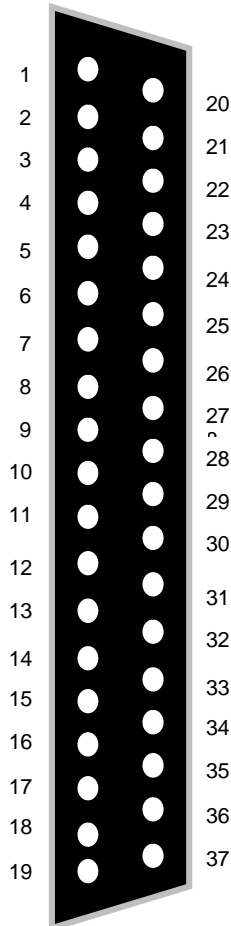
The data and audio daughter boards pushed on to the pin headers mounted on the main data motherboard. Ensure that the connectors are lined up correctly and not offset before pushing firmly in place. Note that the data and audio channel numbers are associated with each slot. This allocates the pin numbers on the rear panel.

### Data and Audio Connections

The data and audio channel pin numbers are as follows:

Pin No.	Description
1	DATA CH1 IN +
2	DATA CH1 IN -
3	DATA CH2 IN +
4	DATA CH2 IN -
5	DATA CH3 IN +
6	DATA CH3 IN -
7	DATA CH4 IN +
8	DATA CH4 IN -
9	GND
10	GND
11	GND
12	AUDIO CH1 IN +
13	AUDIO CH1 IN -
14	AUDIO CH2 IN +
15	AUDIO CH2 IN -
16	AUDIO CH3 IN +
17	AUDIO CH3 IN -
18	AUDIO CH4 IN +
19	AUDIO CH4 IN -

SK1 PIN NUMBERS  
LOOKING INTO THE  
SOCKET



Pin No.	Description
20	DATA CH1 OUT +
21	DATA CH1 OUT -
22	DATA CH2 OUT +
23	DATA CH2 OUT -
24	DATA CH3 OUT +
25	DATA CH3 OUT -
26	DATA CH4 OUT +
27	DATA CH4 OUT -
28	GND
29	GND
30	AUDIO CH1 OUT +
31	AUDIO CH1 OUT -
32	AUDIO CH2 OUT +
33	AUDIO CH2 OUT -
34	AUDIO CH3 OUT +
35	AUDIO CH3 OUT -
36	AUDIO CH4 OUT +
37	AUDIO CH4 OUT -

See Data or Audio Daughter Board Instruction Sheet for specific data type connections

### **Removal from the Case**

**Note:** - The 2600 PCB's are static sensitive. Handle with proper care and use normal electrostatic discharge (ESD) procedures. Use properly grounded protection (for example, wrist stamps) when handling the PCB.

In order to remove the case (to access data and audio interface daughter boards)

- 1.1. Loosen and remove the four screws on the top and bottom of the unit's rear panel.
- 1.2. Slide the PCB assembly connected to the rear panel out of the case.

Ensure that the optical fibre is not trapped.

The data and audio interface daughter boards plug into the appropriate slots on the data motherboard.

When re-inserting the main PCB into the housing take care not to trap the optical fibre or the board interconnection cables.

Fasten the rear panel with the screws.

### **Safety**

The 2600 series of products uses a Class 1 laser system in accordance with EN 60825-2:2000.

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.

### **Maintenance and Repair**

There are no user serviceable parts within the AMG2600 products.

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 unit data sheet for full specification.