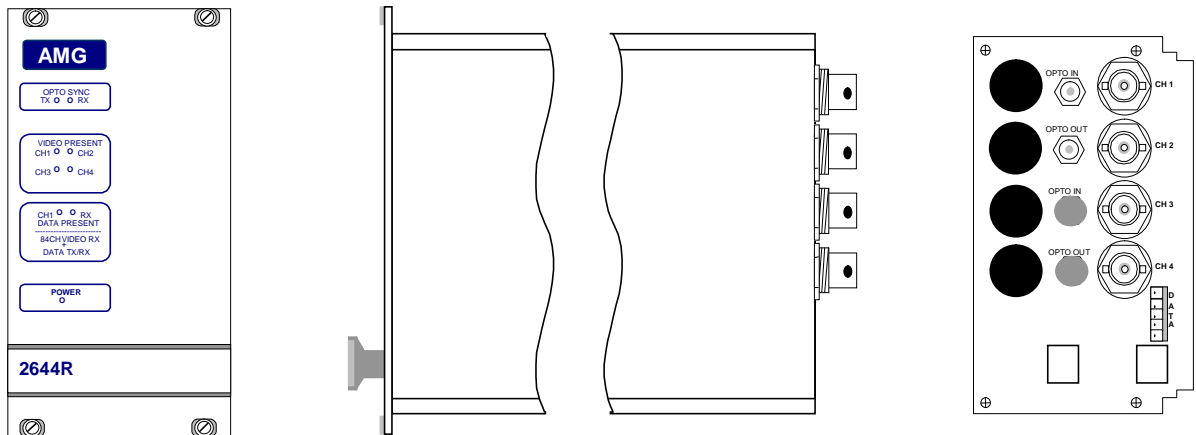




AMG2644R Instruction Manual

Four Channel Video Receive Unit with Bi-directional Data



AMG2644R is a rackmount four channel video receive unit. It also provides a single RS485/RS422 or RS232 bi-directional data channel. The **AMG2644R** is designed to plug into an **AMG2000** or an **AMG2005** subrack which in turn fits into a 19" rack system.

The **AMG2644R** is designed to operate, with either an **AMG2643R** or **AMG2643** 4 channel video and bi-directional data rackmount or standalone transmit unit respectively, over two Singlemode optical fibres in a point to point system.

Connections

Video Output Connections

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

Optical Connections

OPTO OUT

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

OPTO IN

Connector	FC/PC
Optical Sensitivity	-22dBm
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 **AMG2643R** and **AMG2644R** will transmit and receive over a minimum of 1km of 50/125 fibre and will typically transmit and receive over 2km of 50/125.

Power Connection

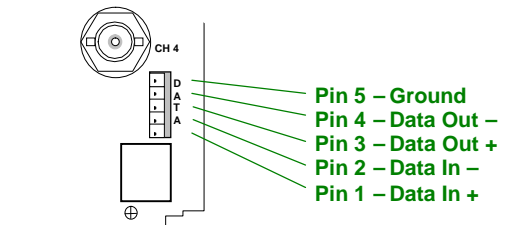
Power supply	from plug in connection on the 2000 or 2005 subrack
Power consumption	10 Watts max.

Data Connections

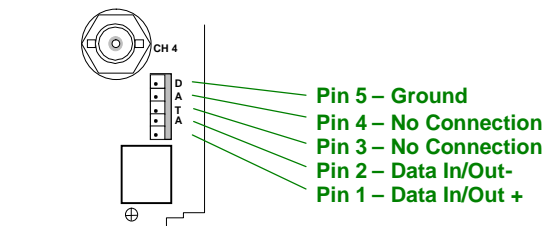
Data Connector 5 way removable spring terminal connector (2.5mm spacing)
 Manufacturers Part No. Phoenix/Combicom FK-MC-0.5/5-ST-2.5
 AMG Part No G15098-00

Data Channels 1

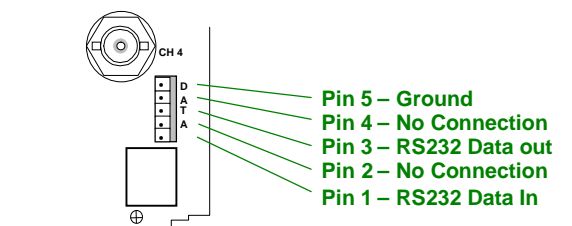
Connections RS422 4 wire See schematic



Connections RS485 4 wire See schematic



Connections RS232 See schematic



Protocol..... RS232
 SW1 switch position 9 on, switch position 10 on
 SW2 all off

RS485 2wire
 SW1 switch position 9 off, switch position 10 off
 SW2 see below

RS422 4 wire Bus'ed or point to point
 SW1 switch position 9 off, switch position 10 off
 SW2 see below

See below for **Configuration of the RS485 / RS422 data channel** and description of tristate operation

Indicators

Power.....	Green	– unit powered
	Off	– no power applied to unit
Opto Sync TX	Green	- optical channel transmitting
	Off	- optical channel not transmitting
Opto Sync RX	Green	- optical channel receiving
	Off	- optical channel not receiving
Video Present CH1-4.....	Green	– video signal present on video output BNC
	Red/Green	- Channel present, no video
	Off	– no channel present thus no video present on video channel BNC
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

Physical Information

Dimensions

Height 2U Plug-in
 Width..... 14HP
 Depth 170mm excluding connectors
 Weight..... 750grams

Mounting Details

The unit is designed to be mounted within a 2000 or 2005 Subrack on standard card guides. Note the AMG standard racks are supplied with guide rails every 7HP. In order to fit this unit in the subrack, 1 set of card guides have to be removed by pulling gently on the card guides.

The 2000 series subrack is fitted with a 50 watt power supply.
 The 2005 series subrack is fitted with a 100 watt power supply.

Configuration of the Data Channel

SW1 and SW2 determine the protocol of the data channel. This can be RS232, RS485 or RS422. (See below for **removal from the case** and access to SW1 and SW2)

Mode 1 – RS485 two wire half duplex transmission.

Mode 2 – RS422 four wire full duplex transmission.

In this mode the RS422 output will transmit a tristate condition as well as logic high and logic low for systems which require bus-ing of the RS422 four-wire connection.

MODE	Configuration Details	SW2 position 1	SW2 position 2	SW2 position 3	SW2 position 4	SW1 position 9	SW1 position 10
1	RS-422 4 wire Point-to-Point - and RS-422 BUS system	OFF	OFF	OFF	OFF	OFF	OFF
2	RS-485 2 wire BUS systems	OFF	ON	ON	ON	OFF	OFF

The data input for both the RS485 and the RS422 modes detects a tri-state input condition by monitoring the differential voltage level across the input. A differential level below 500mV positive or negative will be detected as a tristate condition. A level above 500mV positive or negative will be detected as a logic 1 or logic zero respectively. **It is important therefore to terminate the RS485 bus or the RS422 input bus using 120ohms if a pre-bias is present on the RS485 or RS422 bus.** A large number of third party equipment manufacturers apply a pre-bias on their RS485 bus. This pre-bias is applied by pulling one arm of the RS485 bus high (+5 volts) and the other arm low (0 volts) using high value resistors within the third party equipment. In order to ensure that the AMG2700 equipment detects a tri-state condition, then these resistors should have a value above 1kohm.

Mode 3 – RS232 full duplex transmission.

MODE	Configuration Details	SW2 position 1	SW2 position 2	SW2 position 3	SW2 position 4	SW1 position 9	SW1 position 10
3	RS-232 Point to Point	OFF	OFF	OFF	OFF	ON	ON

Note: - the data channel is set at Mode 1 – RS485 operation at the factory unless otherwise requested.

SW1 Switch Settings

All SW1 switch settings are set at the factory as follows:

Switch Position	Description	Setting
1	Video channel configuration	OFF
2	Video channel configuration	OFF
3	Video channel configuration	OFF
4	Primary / Secondary Board Setting	ON
5	Dual Redundant / Not dual redundant	OFF
6	Master	ON
7	Full Scale Calibration Output	OFF
8	On board data / Separate data card	ON
9	RS232 Select	OFF
10	RS232 Select	OFF

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 straps) when handling the PCB.

In order to remove the case (to access SW1 and SW2)

- 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.
- 1.3. Ensure that the optical fibre is not trapped.

SW1 and SW2 can be found on the bottom right hand corner of each board and are labelled, close to the rear panel. The switch position are labelled on the switch, switch position 1 is always the furthest from the edge of the PCB.

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.