

Variable Gain UHF Masthead Amplifiers

Instruction Manual

PROception

PROMHD11V PROMHD14V

These advanced masthead amplifiers complement the PROception fixed-gain range and offer the convenience of variable gain, easily adjusted on-site. The range comprises a one-way preamplifier and a 4-way distribution amplifier, each with an excellent combination of good input filtering, low noise figure and high output capability. The use of F connectors makes them easy to use with a wide range of cable sizes and helps to ensure good system screening.

Amplifiers are not fitted with 4G filtration. If necessary a separate 4G filter should be fitted. These are supplied free by at800 or can be purchased from www.blake-uk.com.

Features:

- One-way and four-way products.
- Gain adjustable over a 15 dB range.
- Excellent noise figures, maintained over a wide gain range using inter-stage gain control.
- Inputs filtered below 470 MHz to reduce risk of interference problems from CB, private mobile radio, TETRA, etc.
- Ideal for both digital and analogue applications.
- High input and output capabilities.
- Channels 61-68 can be used for locally modulated signals.

Application guide:

See *application example diagrams on page 2*.

PROMHD11V-This single-output low-noise preamplifier offers gain adjustable between 7 and 22 dB, allowing it to be used for almost all applications where UHF signals need to be boosted, including feeding very long downlead cable runs (up to 100 m of 100 size cable). This amplifier may also be used with passive distribution accessories (splitters and taps) to construct a small distribution system to feed a number of points.

PROMHD14V-This 4-output amplifier provides a popular DTT-compatible solution to the problem of providing multiple TV points in an older building. The gain can be adjusted over the range 1 to 16 dB, allowing satisfactory operation of the system over a wide range of received signal level. The amplifier can be powered via any of its outputs, providing flexibility in the location of the power unit.

Gain control adjustment:

Both amplifiers are supplied with the gain controls set to minimum. When installation work (including aerial alignment) is complete, the gain control should be adjusted to obtain satisfactory results. To adjust the gain use a small (3 mm) flat-blade screwdriver, or a suitable service engineers trimming tool. The control should rotate freely between its end-stops and requires very little force to adjust. Take care not to apply excessive force, particularly at the ends, as this could result in damage to the amplifier. When working outdoors in wet weather, take care not to let rain water enter through the gain adjustment hole.

Avoid using excessive gain which may lead to receivers and set-top boxes, etc. being overloaded, in turn leading to cross-modulation and other deleterious effects. In the majority of cases it will prove satisfactory to set the analogue signal levels at the receiver inputs to around 70 dBµV, and to check that the digital levels exceed 47 dBµV. With typical downlead losses this means that the levels at the amplifier output will need to be around 75 dBµV (analogue) and not less than 52 dBµV (digital). The latter figures will need to be increased appropriately where long downlead cable runs are involved, or where the digital signals are particularly low, relative to the analogue levels. In all cases the input and output analogue levels should not exceed the maximum values given in the data table on page 4.

Features	PROMHD11V	PROMHD14V
Number of outputs	1	4
Signal frequency range	470-862MHz	
Noise figure	2.2 (2.6) dB	2.2 (2.6) dB
Gain	7-22dB	1-16dB
Output capability	102dBµV	94dBµV
Maximum recommended input	80dBµV	80dBµV
Isolation between outputs	-	> 16dB
DC power requirement	12V@50mA	
Input filter characteristic	>26dB rejection (relative to passband gain) for all frequencies <400MHz	
Signal connector type	'1F'(IEC 60169-24)	
Operating temperature range	-10 - +50 °C	

Notes:

1. Noise figures in table apply at maximum gain. Typical noise figure at 10 dB gain reduction is 0.4 dB for both types.
2. Signal handling capability is given for 5 analogue TV channels plus up to 6 DTT multiplexes at < -14 dB relative level.
3. Through-power to the input is not provided (all products have a DC grounded input).

2 Year Guarantee

This guarantee covers failure of your PROception product resulting from manufacturing defect within a period of 2 years from the date of supply to the end-user. This guarantee does not cover damage to the product caused by abuse, tampering, defective installation or natural causes such as lightning discharge. Repair or attempted repair, other than by the manufacturer, will render this guarantee void. This guarantee does not affect a consumer's statutory rights.

Performance data given are typical unless otherwise stated. We reserve the right to change product designs and specifications without prior notice.

Website: www.proception.co.uk

Email: support@proception.co.uk

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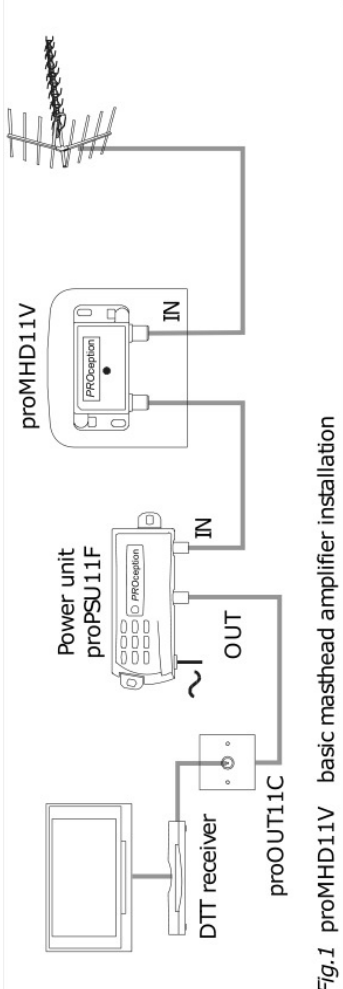


Fig.1 proMHD11V basic masthead amplifier installation

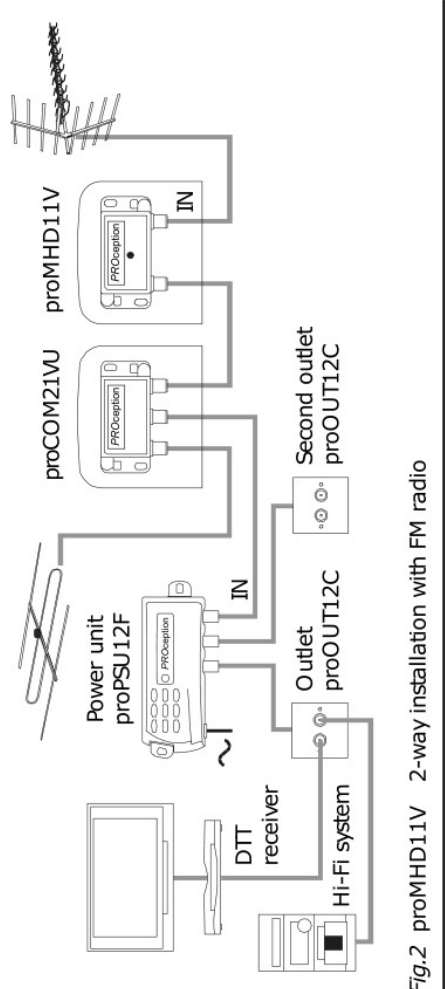


Fig.2 proMHD11V 2-way installation with FM radio

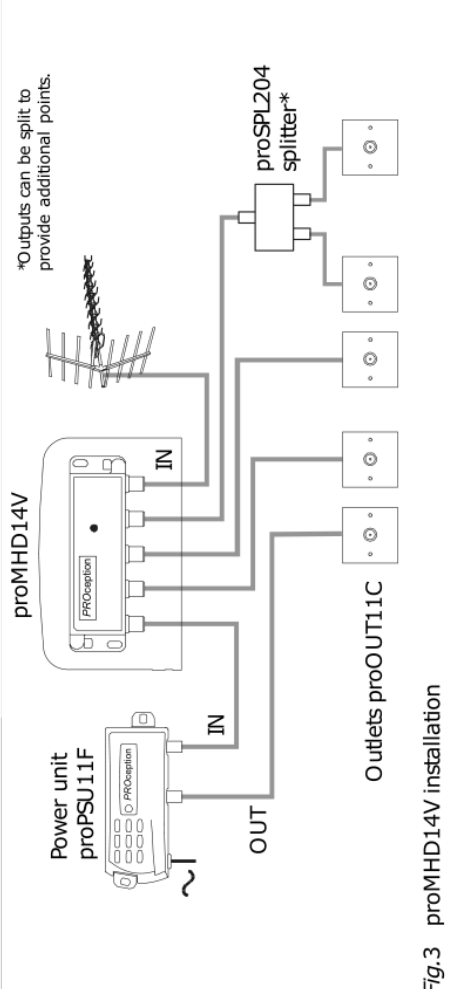


Fig.3 proMHD14V installation

Powering and power units:

Both amplifiers are compatible with the PROPSU11F (1-way) and PROPSU12F (2-way) power units and also with multi-way amplifier types PROAMP24, PROAMP26 and PROAMP28. The PROMHD14V distribution amplifier may be powered via any of its outputs. Use of the PROPSU11C (1-way IEC connector) power unit should be restricted to single-point applications only, in conjunction with the PROMHD11V amplifier.

Fixing:

Methods for mounting the amplifier are illustrated in Figures 4 to 6. The cable tie fixing is intended to support the weight of the amplifier only. Cables should be taped to the mast at intervals of approximately 400 mm to ensure that their weight is adequately supported. Being fully screened, these amplifiers will not be affected by proximity to antennas. However clearance of not less than 300 mm from the nearest part of an antenna should be observed to avoid degrading the antenna's performance. Manufacturer's instructions regarding routing of the cable from the antenna terminal box must be followed if provided.

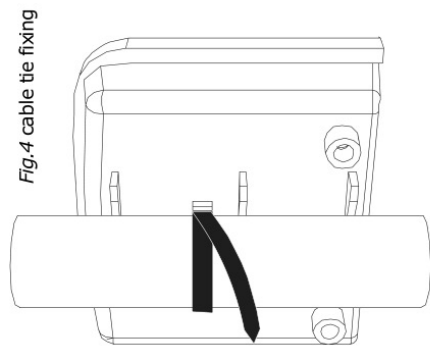


Fig.4 cable tie fixing

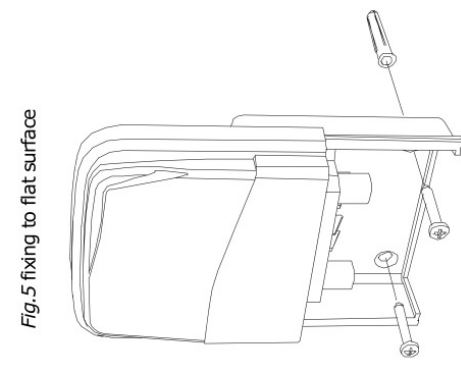


Fig.5 fixing to flat surface

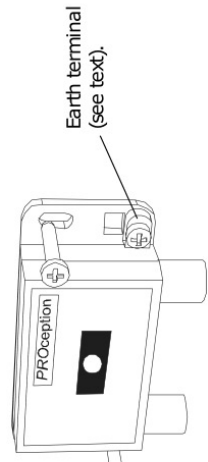


Fig.6 Fixing the amplifier module directly (indoor application only, discard mouldings).

Signal connections:

To preserve RF screening integrity the signal connections to the amplifier should be made using good quality coaxial cable and connectors. This is particularly important with DTT to minimise the ingress of impulsive electrical interference. The use of cable benchmarked under the CAI scheme is recommended.

Crimp F connectors, used in accordance with the manufacturers instructions, will give the best results. The importance of achieving sound braid connections cannot be over stressed.

System earth bonding:

Earth bonding terminals are provided on the amplifier castings for use where necessary. Distribution systems supplying signals to more than one household should comply with the safety requirements of EN 60728-1.1. This effectively requires the system to be earth bonded. (The use of isolated outlet plates is no longer recommended since they compromise screening integrity and allow ingress of interference.)