

Technical data

proAMP104X	
Signal frequency ranges	Forward: 470 .. 862 MHz; return 5 .. 10 MHz
Forward gain	4 dB
Return gain	3 dB (active in Mode 2 only)
Noise figure, typical and (max.)	3.0 (3.5) dB
Output capability ¹	89 dBμV
Max. recommended input level ¹	85 dBμV
Isolation between outputs	≥ 16 dB
Input filter characteristic	≥26 dB rejection (relative to passband gain) for all frequencies ≤ 400 MHz
DC power requirement	Mode 1: 5 .. 12 V DC ² at 25 mA; Mode 2: 9 V DC ³ at 35 mA ⁴
Infrared remote receiver power out	8.5 V at 10 mA max. (each output), active in Mode 2 only, s/c protected
Signal connector type	Type-F (IEC 60169-24)
Operating temperature range	-10 .. +40 °C
EMC standard	BS EN 50083-2: 2001

Notes

1. Signal handling capabilities are given for 5 analogue TV channels plus up to 6 DTT multiplexes at ≤ 14 dB relative level.
2. Limiting values 4.8 .. 18 V (powered via DC power port or any output, Mode 1).
3. Limiting values 8.5 .. 12.6 V (powered via input, Mode 2).
4. Excludes current drawn by infrared receiver 'eyes'.

Special note

Certain features of this amplifier are the subject of patent application GB 0602324.6

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. Proception Limited reserves the right to change product designs and specifications without prior notice.

Proception Limited,
177-187 Rutland Road
SHEFFIELD
S3 9PT
United Kingdom

Web: <http://www.proception.co.uk/>
e-mail: support@proception.co.uk



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PROception

proAMP104X
Compact dual-mode
4-way UHF amplifier

INSTALLATION INSTRUCTIONS

Features

This versatile amplifier is an addition to the PROception range of UHF multi-way distribution amplifiers. The unit has two modes of operation, allowing it to be used either as a straight forward multi-way 'aerial amplifier' for off-air signal distribution, or as a 'return-path amplifier' for distribution of the UHF loop-through output of a Sky* receiver. In the latter mode full support is provided for remote infrared receivers ('eyes'). The use of 'F' connectors makes the amplifier easy to use and helps to ensure good system screening.

- Dual-mode operation – can operate as an aerial amplifier, or as a return-path amplifier with Sky* remote control facilities.
- Flexible powering options: 5 - 15 V (local or remote) for aerial-amplifier mode; 9 V from Sky* receiver for return-path mode.
- Automatic mode selection. 2-colour LED indicates operating mode.
- Excellent noise figure and output capability.
- Input filtered below 470 MHz to reduce risk of interference problems from CB, private mobile radio, TETRA, etc.
- Suitable for both digital and analogue applications, fully DTT-compatible.

Application guide

See application example diagrams on page 2.

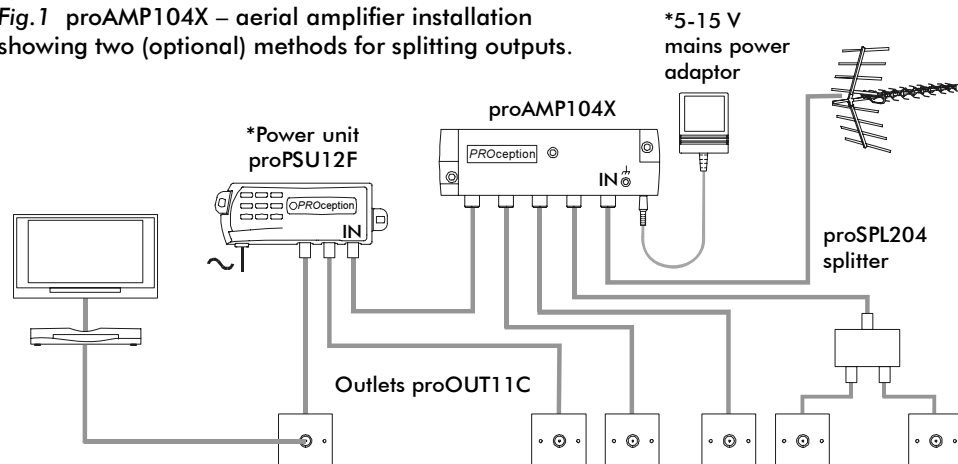
Mode 1 – aerial-amplifier mode (green LED): in this mode the unit functions as a straightforward 4-way UHF amplifier. The input will usually come directly from the UHF antenna. Line-power (5 - 15 V DC) can be supplied via any of the four outputs. Alternatively, if a mains supply is available near the amplifier, a local AC/DC mains power adaptor may be used instead of line-powering. In Mode 1 no power is passed to unpowered outputs and the return-path amplifier function is completely disabled.

Mode 2 – return-path mode (orange LED): this mode is automatically enabled when the amplifier is powered via its input. Usually the input will be fed directly from the second RF output (RF OUT-2) of a Sky Digibox or Sky+* receiver, which should have its 9 V powering enabled (see over). In return-path mode power is present at all outputs for powering remote infrared receiver 'eyes,' such as the PROception proSAT1EYE. Infrared receiver power is individually short-circuit protected, so that a DC short at any output will not affect operation of remote control via the other outputs.

The relatively low forward gain of the amplifier (4 dB) is sufficient to compensate for additional download cable losses in most systems, whilst avoiding intermodulation and other overload problems which easily result from the use of excessive gain. Where more gain is needed in aerial-amplifier mode (for example in installations with very long cable runs, or in weak signal areas) the proMHD14M or proMHD14V 4-way masthead amplifiers should be considered instead (these alternative products do not provide return-path capability).

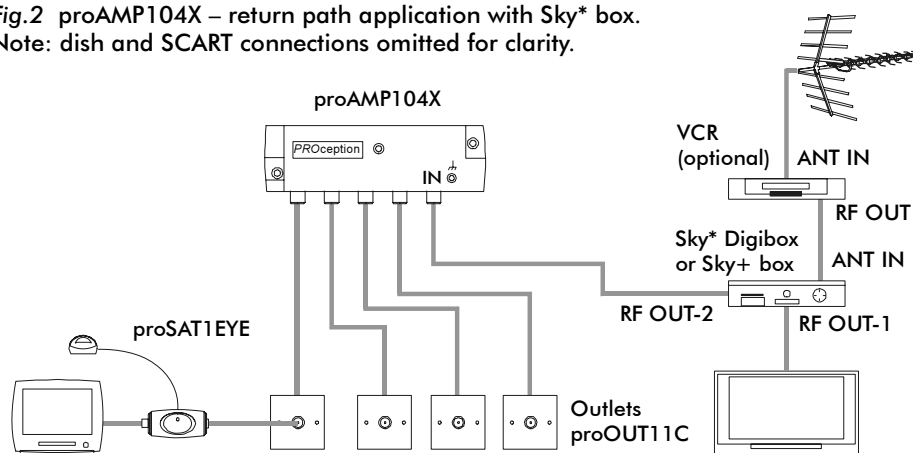
* "Sky" and "Sky+" are registered trade marks of British Sky Broadcasting Group PLC.
† "Freeview" is a registered trade mark of DTV Services Ltd.

Fig.1 proAMP104X – aerial amplifier installation showing two (optional) methods for splitting outputs.



*alternative power supply options

Fig.2 proAMP104X – return path application with Sky* box. Note: dish and SCART connections omitted for clarity.



Powering options

Power for operation in **Mode 1** can be supplied by any of the following three options:

- a PROception proPSU11F or proPSU12F 12 V power unit connected in any of the output lines (Fig 1);
- a local AC/DC power adaptor capable of providing 5 - 15 V at 25 mA (such as the PROception proPSA123) connected to the DC power port (Fig. 1). The adaptor need not be regulated and needs to have a standard 2.1 mm DC connector with the correct polarity (centre pin +ve);
- a DVB-T (Freeview[†]) receiver of a type which can provide 5 V DC power from its antenna socket. A separate power unit will not be required if this type of receiver is in use on any of the outputs, provided that it can be left connected continuously to the mains supply.

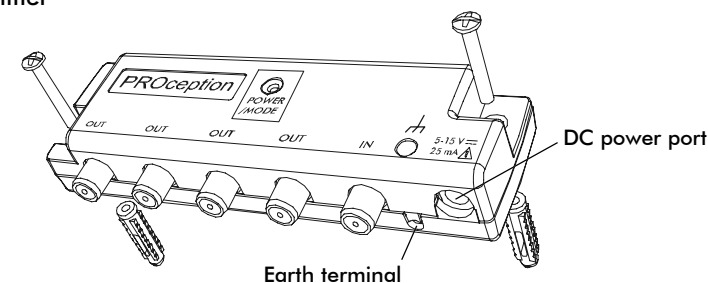
In **Mode 2** 9 V power is provided to the input of the proAMP104X by the Sky* receiver (Fig. 2). The latter **must** be configured in its INSTALLER SET-UP menu to provide power on RF OUT-2. On the Sky handset press SERVICES, 4, 0, 1, SELECT, then select the SECOND OUTLET POWER SUPPLY option. Set this to be ON (the default state is OFF), SAVE SETTINGS and BACK UP out of the menu. Most Sky* receivers (rated at 75 mA on RF OUT-2) can supply sufficient current to power the proAMP104X together with up to four industry-standard infrared 'eye' receivers. For older Sky* receivers with only 50 mA current rating the current consumption can be reduced sufficiently by adopting one of the following two measures:

- use only PROception proSAT1EYE Mk. 2 'eyes.' The Mk. 2 version of this product (distinguished by its hard-wired RF output lead) has a reduced current consumption of <5 mA;
- alternatively connect a local AC/DC power adaptor capable of providing 12 - 15 V at 25 mA such as the PROception proPSA123 to the DC power port. The adaptor need not be regulated and needs to have a standard 2.1 mm DC connector with the correct polarity (centre pin +ve). This power unit will power the forward-path amplifier function and will reduce the loading on the Sky* receiver by approximately 25 mA.

Location and fixing

Choose a location for the amplifier which is dry and not subject to prolonged ambient temperature conditions of less than -10 °C or more than + 40 °C. The unit should be fixed as illustrated in Figure 3.

Fig.3 Fixing the amplifier



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 manufacturer's instructions, will give the best results. The importance of achieving sound braid connections cannot be overstressed. Connectors should be tightened with a spanner, not left finger-tight.

Mains power supply

Any fixed wiring installed to supply power for this amplifier should comply with BS 7671 (IEE wiring regulations, 16th Edition) and, where relevant, Part P of the building regulations.

System equipotential bonding

A bonding terminal is provided on the amplifier for use where necessary (see Fig. 3). Distribution systems supplying signals to more than one household should comply with the safety requirements of BS EN 60728-11. This effectively requires earthed equipotential bonding of the system. (The use of isolated outlet plates is no longer recommended since they compromise screening integrity and allow ingress of interference.)