

## Safety Instructions

### OVERHEATING

This modulator is intended for use in moderate climates only. It should not be used in tropical regions. The recommended ventilation clearances and other precautions given in the relevant section of this instruction leaflet should be observed to prevent overheating. No unit should be fixed where it is likely to become smothered by soft furnishing fabrics such as curtains, or by thermal insulation material in a roof space or building void. Mains powered equipment should not be left resting on a carpet

### WATER AND FIRE RISKS

The appliance is not waterproof. It is intended for indoor use only and must not be fixed where it could be exposed to dripping or splashing water. Objects containing liquids should not be placed on or near the appliance. To prevent risk of fire, no object with a naked flame should be placed on or near the appliance, or its associated wiring.

### MAINS PLUG AND DISCONNECTION FROM THE SUPPLY

The appliance is supplied with a standard fused plug fitted. If this is unsuitable, refer to the instructions below. If you need to change the fuse in the fitted plug, a 3 Amp fuse to BS 1362 carrying the ASTA or BSI approval mark must be used. Always replace the plastic fuse carrier when renewing the fuse. The plug (or other means of disconnection from the supply, if used) should remain readily accessible for operation when necessary. The LED display on this equipment should not be regarded as providing reliable indication of supply disconnection.

### CHANGING THE PLUG

If the fitted mains plug is not suitable for the socket-outlets in use, it should be cut off and a new plug fitted.

**Wiring the new plug:** Instructions supplied with the new plug should be followed. The brown wire must be connected to the live (L) terminal of the plug and the blue wire to the neutral (N) terminal. Neither wire should be connected to the earth (E) terminal of a 3-pin plug (the appliance does not require an earth connection). Ensure that the cord grip in the plug is correctly used and clamps the sheath of the cord firmly.

**Fuse Rating:** If the new plug is a fused type, the fuse fitted should be rated at not more than 3 Amp.

**Caution:** The old plug should be destroyed immediately since it would be dangerous if plugged into a live socket.

## 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.

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# PROception

## proMOD1 Mk 2 UHF AV modulator

### INSTALLATION AND OPERATION INSTRUCTIONS

The proMOD1 Mk2 is a general purpose AV modulator for use where a UHF TV signal needs to be generated from the output of equipment which does not have an internal modulator.

#### Features

- Standard AV inputs on SCART socket (phono adapter supplied).
- UK (System I ) double-sideband modulated output.
- UHF output channel selectable in range E21 to E69 (setting automatically restored on power-up).
- VHF-UHF loop-through input.
- Built-in mains power supply.

#### Applications

- CCTV security cameras, DVD players, camcorders, games, etc.

#### Location

The modulator can be located in any convenient position and does not require fixing. Clearance of at least 50 mm should be allowed above and around the unit for ventilation. Avoid positioning the modulator on top of a stack of other equipment as this may result in overheating.

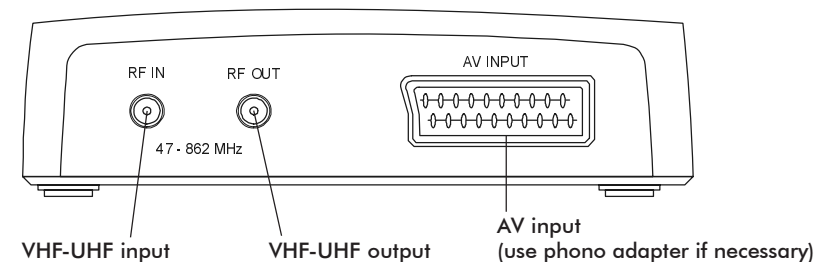
**Do not leave the modulator resting on a carpet or install it where it may become smothered with curtains or other soft furnishing fabrics. When installing the modulator in a roof space ensure that it will not come into contact with thermal insulation material.**

#### RF signal connections

To preserve RF screening integrity the signal connections to the modulator should be made using good quality coaxial cable and connectors. This is particularly important in a system carrying digital terrestrial TV (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 over-stressed. Connectors should be tightened with a spanner, not left finger-tight.

Fig. 1 - Rear view showing connections



## Mains power supply

The modulator is supplied with a fitted mains plug and may be plugged directly into a 13 A (BS 1363) socket outlet. If socket outlets of a different type are in use, please refer to the safety instructions on page 4. The mains plug should remain readily accessible to permit disconnection of the unit from the supply.

Alternatively the plug may be cut off and the modulator wired into a readily accessible fused connection unit, fitted with an approved 3 A fuse to BS 1362. This method of connection is recommended for permanent distribution system applications, since it reduces the risk of tampering and accidental disconnection.

If the modulator is **not** connected to the mains using the fused plug supplied, or a fused connection unit, it must be protected by means of a fuse or MCB at the final distribution board of rating not exceeding 6 A. A readily accessible isolating switch should be provided to allow the unit to be disconnected from the supply when necessary.

Any fixed wiring installed to supply power to this modulator should comply with BS 7671 (IEE wiring regulations) and, where relevant, Part P of the building regulations. The proMOD1 Mk2 modulator is of Class 2 construction and does not require a protective earth connection. This does not obviate the need to provide a circuit protective (earth) conductor in the supply wiring, as required by BS 7671.

## System equipotential bonding

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.) Bonding may be effected using a proBAR5 equipotential bonding bar.

## Setting the output channel number

The channel setting buttons on the front of the unit are normally locked to protect against accidental change or tampering. To change the output channel setting proceed as follows:

1. Press and hold both buttons together for about two seconds. The channel no. display will start to flash.
2. While the display is flashing, adjust the channel no. as required using the ▲ or ▼ button.
3. When the display stops flashing (about two seconds after the last button press) the new channel setting is stored in the non-volatile memory.
4. Repeat from Step 1 if necessary, to try a different channel, or if the time-out occurred too soon.

If the output channel is changed after installation, all TV receivers which are using the modulator's output will need to have their appropriate channel settings retuned.

## Notes on channel selection

Choice of an appropriate modulator channel setting is important to avoid interference problems.

- The modulator output should not be set on the same channel as any off-air analogue or digital signal carried on the system. Using a channel which coincides with an off-air DTT signal is a common cause of a noisy looking modulator picture.
- Also avoid adjacent channels ( $N \pm 1$  relationship).

- Avoid any combination which results in signals spaced 5 channels apart ( $N \pm 5$  relationship).
- The old 'avoid  $N \pm 9$ ' rule can usually be ignored, due to the improved image rejection of modern TVs.
- Any other modulators in the same system (in VCRs, etc.) are subject to the same rules, which also apply between modulators.
- To check for interference to other channels caused by the modulator, disconnect the RF IN and RF OUT cables and link them together using a back-to-back adapter.
- To check for interference caused by an off-air or other upstream system-generated signal to the modulator's output channel, unplug or disable the relevant input feed to RF IN.

Information on UK TV transmitter channel numbers can be found at the following Web URLs:

[http://www.bbc.co.uk/reception/transmitters/tv\\_trans/index.shtml](http://www.bbc.co.uk/reception/transmitters/tv_trans/index.shtml)

[http://www.ofcom.org.uk/static/reception\\_advice/index.asp.html](http://www.ofcom.org.uk/static/reception_advice/index.asp.html)

(Information subject to change)

## Technical data

TV system	System I (ITU-R Rec. BT.470) (note 1)
Modulation spectrum type	double-sideband
Output UHF channel	E21 .. E69 (set from front panel, stored in non-volatile memory)
Output signal level	75 dB $\mu$ V (typical, peak sync.)
RF loop-through bandwidth	47 .. 862 MHz
RF loop-through gain	1.5 dB
Video input level	1 V p-p (internal 75 $\Omega$ termination)
Audio input level	200 mV RMS sine for $\pm 20$ kHz peak deviation (1 kHz modulating frequency) (note 2)
Power requirement	230 V AC 50 Hz at 4 W (5.5 VA), supplied with fitted mains plug to BS 1363

1. Tolerances given in the ITU-R Recommendation are not applicable.
2. The L & R inputs are added to provide a mono signal for modulation. (Quoted sensitivity applies with both channels driven.)

## SCART connector pin connections (NC = no internal connection to pin.)

pin no.	connection	pin no.	connection
1	NC	11	NC
2	R audio in	12	NC
3	NC	13	Ground
4	Ground (audio)	14	Ground
5	Ground	15	NC
6	L audio in	16	NC
7	NC	17	Ground (video)
8	NC	18	Ground
9	Ground	19	NC
10	NC	20	Video in (CVBS)
		21	Ground (shell)

Fig.2 SCART connector pin numbers (view towards socket)

