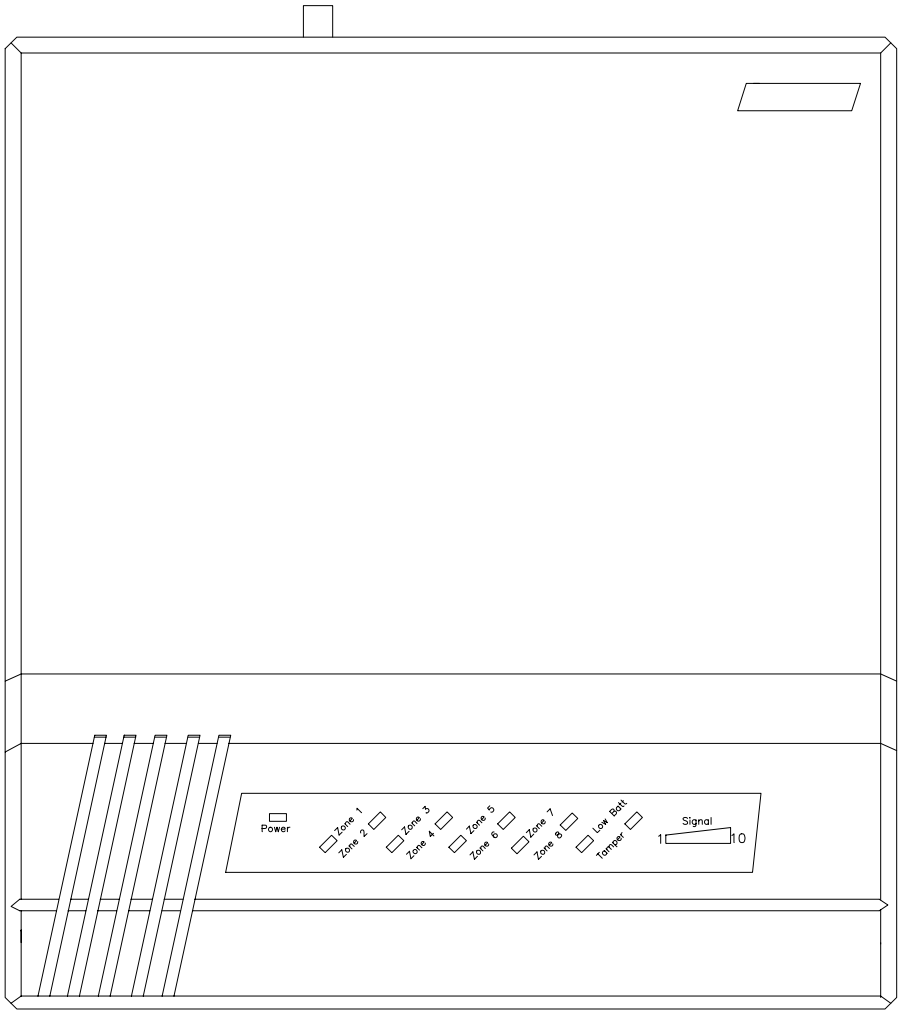
SCOPE COMMUNICATIONS UK LTD

8 Zone Receiver System



User Manual

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Preface

Important Installation Information

It is the purchasers' responsibility to determine the suitability of this equipment and its derivatives for any given application, Scope cannot give specific advice in this manual, as each use will require independent evaluation.

Scope has, wherever possible, employed extra safeguards to monitor the system's performance. Certain system installations, operational requirements or budgets may, however, limit the effectiveness of these safeguards. Again, the suitability of the system for any given application must therefore be decided by the installer and their customer, relative to the application and risk.

Good working practice dictates that a suitable system installation log must be generated, together with a record of the dates when the system has been manually checked, (with the aid of signal strength meters etc.) enabling the system performance to be compared with the original installation data.

For UK equipment, Scope has no control of the use and application of the frequencies issued by OFCOM. Some equipment that is licensed may have greater protection than other equipment which is operated on a WT Act License Exempt basis.

The supply of this equipment is governed by our standard terms and conditions of sale, which can be found on the reverse of all order acknowledgements*, proforma invoices*, delivery notes, price lists and invoices. Alternatively, these can be provided on request.

* Faxed proforma invoices and quotations refer to "conditions available upon request".

Important Safety Information

Scope products are designed to operate safely when installed and used according to general safety practices. The following requirements should be observed at all times.

Do NOT subject this equipment to:
Mechanical shock
Excessive humidity or moisture
Extremes of temperature
Corrosive liquids

This equipment is designed for indoor use, unless expressly stated otherwise, and must not be used in classified Hazardous Areas, including areas containing explosive or flammable vapours, unless express authorisation has been given in writing by the manufacturer. If in doubt, consult your local product dealer for further information.

Do not obstruct any slots or openings in the product. These are provided for ventilation to ensure reliable operation of the product and to protect it from overheating.

Only use a damp cloth for cleaning (not liquid or aerosol based cleaners), and ensure that any power is removed from the unit prior to beginning the cleaning operation.

Removal of covers from the equipment must only be undertaken by authorised service personnel, who must ensure that power is isolated prior to removal.

Installation

Installation must only be undertaken by an Approved contractor, who shall ensure that all work is carried out in compliance with National Wiring Regulations. For mains powered equipment, a readily accessible isolating fuse or switched socket must be located within 1 metre of the equipment.

No User Serviceable Parts

Alteration or modification to any part of this equipment, without the prior written consent of the manufacturer, will invalidate all Approvals and Warranties attaching to the equipment. Further liability for the operation of the equipment, under the applicable law, will pass to the user, who will absolve the manufacturer of any further responsibility for it's correct operation and use.

Liability

Scope does not accept liability for any damage or injury, howsoever caused as the result of misuse of this equipment. It is the responsibility of the user to ensure that the equipment is operated in the manner for which it was intended and that it is the correct item of equipment for the required task.

Warranty

This product is warranted as free from defects of workmanship and materials for a period of one year from the original purchase date. During this time, if there is a defect or malfunction of this product, Scope will, with proof of purchase, repair or replace at it's discretion any defective parts, free of charge. This does not include where the adjustments, parts and repair are necessary due to circumstances beyond the control of Scope, including but not limited to fire or other casualty, accident, neglect, abuse, abnormal use or battery leakage damage.

WARNING ! No User Serviceable Parts
Celui-ci ne contient aucune piece pouvant etre reparee par l'utilisateur

Caution ! Risk of electric shock, do not open.
Attention ! Risque de choc electrique, ne pas ouvrir.

Alteration or modification to any part of this equipment, without the prior written consent of the manufacturer, will invalidate all manufacturer approvals and warranties. No adjustments can be undertaken except by qualified and licensed persons as authorised by Scope.

WARNING ! SAFETY
This equipment must only be used with an Approved mains cord set rated at 5A minimum. The cord set must only be fitted to a grounded, fused outlet or spur rated 5A minimum.

This product complies with the essential requirements of the R&TTE Directive 1999/5/EC
Copies of the Declaration of Conformity covering this product can be obtained from Scope at: Quantum House, Steamer Quay, Totnes TQ9 5AL United Kingdom.

Do not discard. At end of life this equipment must be sent to an authorised waste treatment centre. Contact Scope at the above address for further details.

Overview

The 8 Zone Receiver Decoder is equipped with 8 zone relays, a Battery Low relay, a Tamper relay and a Common relay, and is designed to run from a mains supply with a battery back-up, although battery operation can be acceptable under certain circumstances providing sufficient standby facilities are available. Expansion is achieved by linking additional decoders to the first in parallel. (Refer to the connection diagrams and component layouts.)

Mode Switches (1-4 common to all units)

The first 2 switches define the channel configuration. The options available are:

MODE SWITCHES SW1 OFF SW2 OFF: For use with 8 off Single-Zone Transmitters.

MODE SWITCHES SW1 ON, SW2 OFF: For use with 4 off Two-Zone Transmitters.

MODE SWITCHES SW1 OFF, SW2 ON: For use with 2 off Four-Zone Transmitters.

These settings are read on power-up. Should they need to be altered a power-down is necessary before the new settings are implemented.

Mode Switch 3

This switch allows you to determine whether remote resets from the transmitters should clear the relevant panel display, or whether to allow only resets at the panel itself. The choice is set as follows:

MODE SWITCH SW 3 OFF: ALLOW REMOTE RESET.
MODE SWITCH SW3 ON: RESET ONLY AT PANEL

A remote reset will not clear its channel if a Tamper/24 hr zone is present on that transmitter.

MODE Switch 4		**TEST CALL FUNCTION DISABLE**
SW4	OFF	TEST CALL MONITORING ENABLED
SW4	ON	TEST CALL MONITORING DISABLED

The test call monitoring function will alert the user to any missed test calls from any transmitter by flashing the relevant zone. In certain circumstances where the channel is being used to switch a device, this could cause problems; therefore the ability to disable this function is included. Alternatively, the first zone of each transmitter and its corresponding zone on each receiver, can be dedicated to supervisory functions. In this case a loss of a test call signal will not affect any equipment attached to the receiver.

Relay Switching 8 Channel Receiver Functions Only.

This section is applicable only to decoders with individual zone relay switches. This software incorporates a filter. In the event of a zone trigger the software will filter any repeats for a period of two minutes. The relays can now be set either as latched or momentary, depending on the status of switches 5 and 6 as follows:

SWITCH	5	6	
MODE 1	OFF	OFF	ALL LATCH
MODE 2	ON	OFF	5 SECS MOMENTARY
MODE 3	OFF	ON	30 SECS MOMENTARY

MODE 4 ON ON 125 SECS MOMENTARY

All mode switch functions become current during power-up. ie if you alter the settings of the mode switches, then you must power down the unit for ten seconds then power-up again. This is also true of the identity switch settings.

Setting the Identity (example only, codes can start from 1)

The identity for the receiver is set by the IDENT bank of DIL switches (SEE TABLE), this sets the base code number to match the first transmitter. The internal software will then automatically set the incremented numbers acceptable to the receiver, depending on how the MODE switches are set either 8 x 1, 4 x 2 or 2 x 4.

Base Transmitter number	Configuration	Transmitter codes accepted
100	8 x 1	100-107
100	4 x 2	100-103
100	2 x 4	100-101

To expand the system by 8 zones set the additional decoder module base code as follows:-

Configuration	First decoder base number	Expanded decoder base number
8 x 1	100	108
4 x 2	100	104
2 x 4	100	102

The front panel of the digital receiver will display zone triggers and switch the 3 output relays in the following way:-

1). Standard Trigger = Latched Zone LED and Latched Common Relay
2). Tamper/24 hr zone = Latched Zone LED + Latched Tamper/24 hr zone LED and Latched Tamper/24 hr zone Relay
3). Missed Test Call = Flashing Zone LED
4). Low Battery = Latched Zone LED + Latched Low Battery LED and Latched Low Battery Relay.

In the event that more than one type of trigger is received at the same time, the panel will sequence through the events in order of priority. E.g. Trigger Zone 1 plus Tamper/24 hr zone Zone 7. The panel will display the standard zone trigger for 5 seconds and switch to the Tamper/24 hr zone display for five seconds, repeated continuously until reset. In the unlikely event that all four trigger types were active at the same time, they would each be displayed sequentially for 5 seconds before repeating the sequence until each condition is reset. All conditions for this decoder can be reset at either the transmitter or the decoder, with the exception of the Tamper/24 hr zone which can only be reset at the decoder. The Tamper/24 hr zone can only be reset from the decoder via the keyswitch. By restricting key reset access you can enforce attendance at the location site if required. If you wish to remove a transmitter from service a power down is required to avoid missing test calls being reported. Note: minimum power down time required is 10 seconds to allow discharge. At this time you should also send transmissions from all other transmitters to sign them back onto the system.

Range Tests

1) Using the Analogue Meter

Connect the signal strength meter to the port indicated on the component layout after removing the LED driver connection (remember to reconnect this lead after tests are completed). When the receiver is powered, the signal meter will register a reading of around 1.6 / 2.2 on the upper scale. This shows the background noise level that the transmitter must exceed, to communicate reliably with the receiver. You can then set the transmitter into test mode, which will cause a continuous transmission to occur. The reading on the meter will now show the signal level being received. It must be stressed that this reading is not linear over the scale; a reading of 6 is not twice a reading of 3. :-

Meter reading	Approximate Signal Strength in Micro volts
4.0	1
4.4	2
6.0	10
6.4	15
8.0	100
10.0	1000

A reading of 1 micro volt over the background noise level would be recognised as a basic signal whereas 2 micro volts or more would be classified as a solid signal. Anything greater than this is a bonus and can only assist the reliability of the system. Always aim for the strongest possible signal. If you can improve the signal by the addition of improved aerials it is always recommended where signal levels are below 10 micro volts.

2) Using the on-board LED Display

This works in a similar way but cannot provide the same degree of accuracy as the Analogue meter. There are 10 LED segments which correspond to the approximate equivalent numeric value as expressed for the analogue reading. Eg: 4 segments equals 1uV, 8 segments equals 100uV.

Expansion Connections

Link the AF, 0V and +12V terminals on the master decoder board to the same terminals on each subsequent expansion decoder board (see Diagram 1 below).

Diagram 1

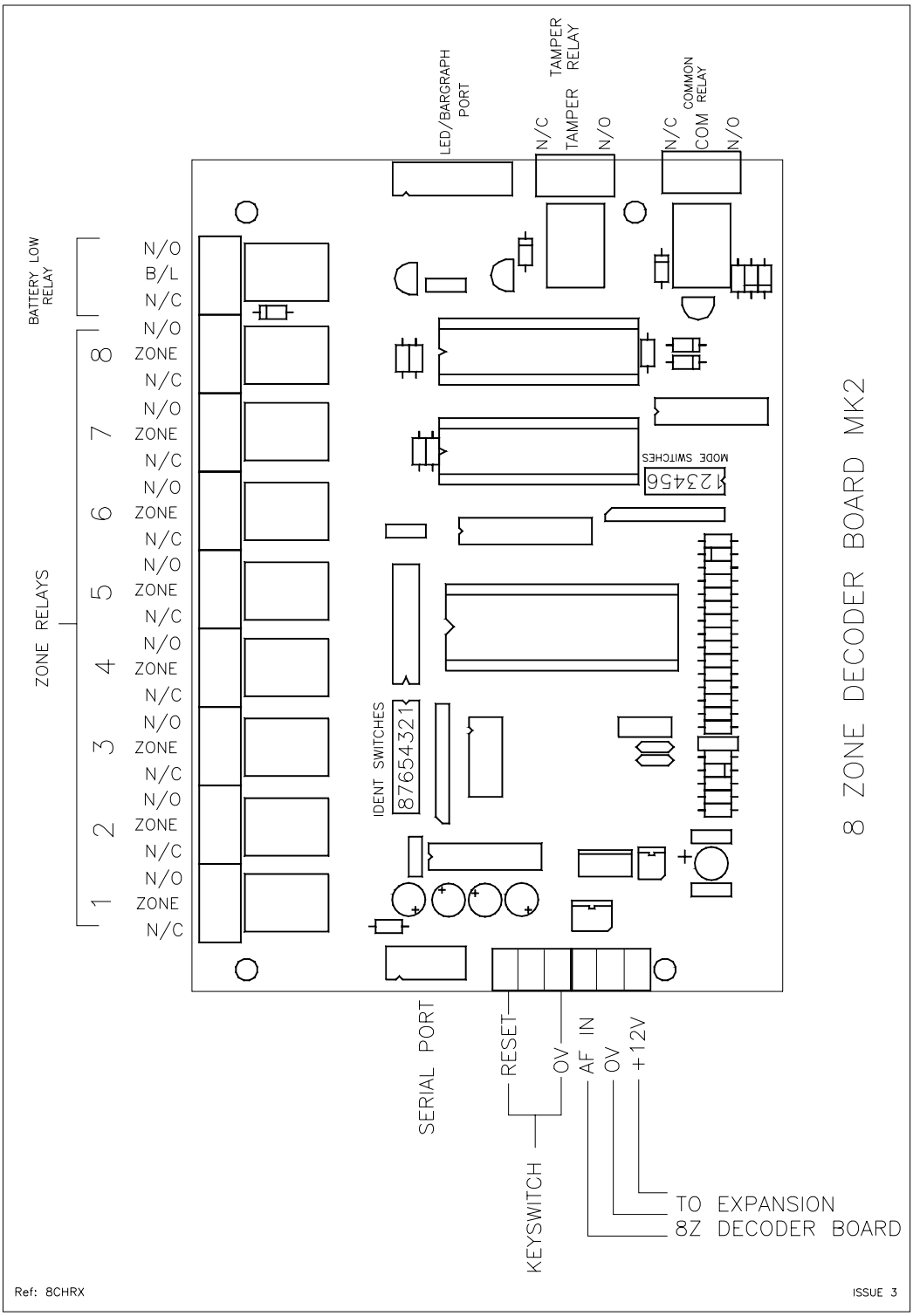
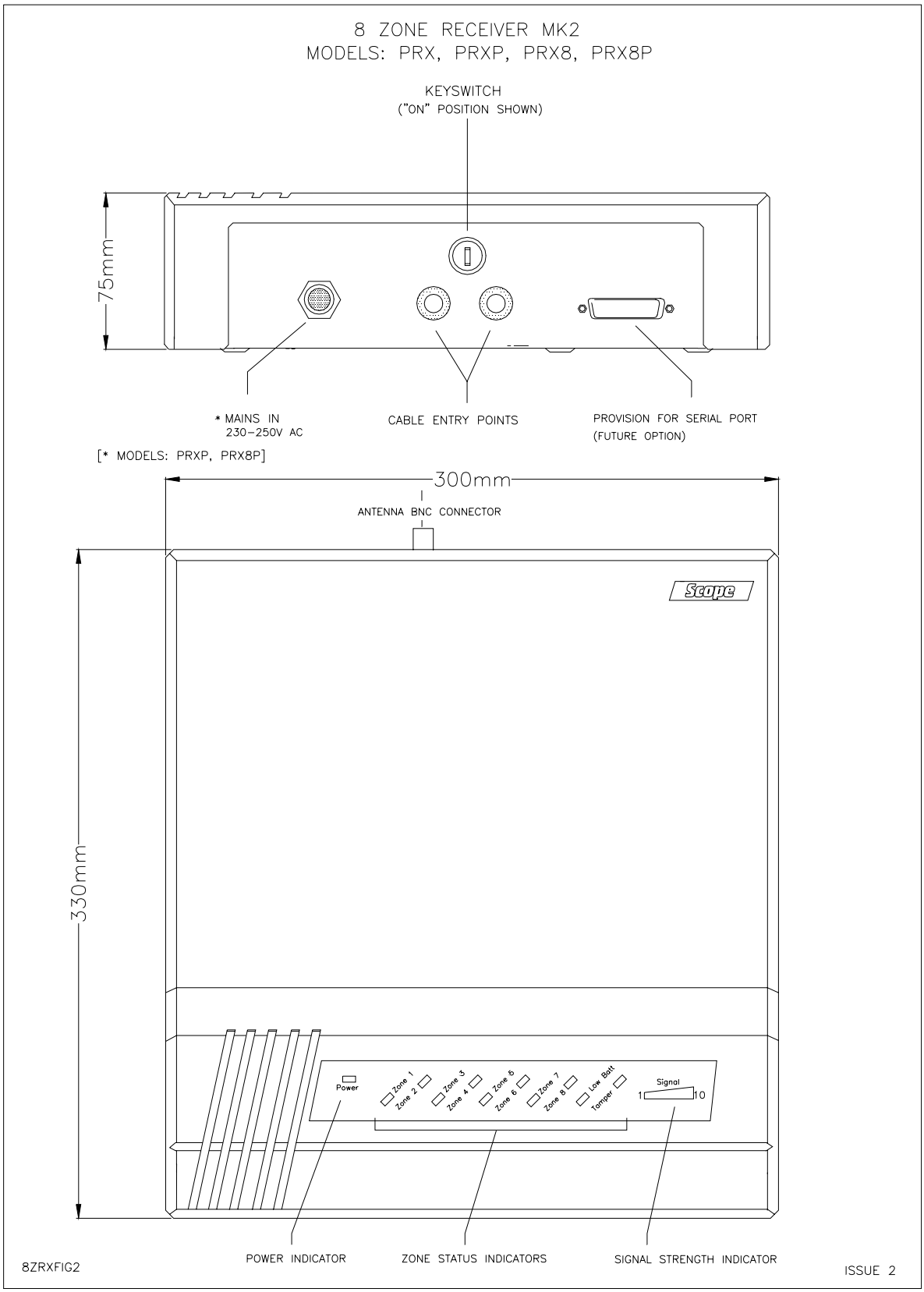

LED/BARGRAPH PORT
TAMPER RELAY
N/C TAMPER N/O
COMMON RELAY
N/C COM N/O
BATTERY LOW RELAY
N/O
B/L
N/C
ZONE RELAYS
8 ZONE
N/O
ZONE
N/C
7 ZONE
6 ZONE
5 ZONE
4 ZONE
3 ZONE
2 ZONE
1 ZONE
MODE SWITCHES
123456
IDENT SWITCHES
87654321
8 ZONE DECODER BOARD MK2
SERIAL PORT
RESET
0V
AF IN
0V
+12V
KEYSWITCH
TO EXPANSION
8Z DECODER BOARD
Ref: 8CHRX
ISSUE 3

Diagram 2


8 ZONE RECEIVER MK2
MODELS: PRX, PRXP, PRX8, PRX8P
KEYSWITCH
("ON" POSITION SHOWN)
75mm
* MAINS IN
230–250V AC
CABLE ENTRY POINTS
PROVISION FOR SERIAL PORT
(FUTURE OPTION)
[* MODELS: PRXP, PRX8P]
300mm
ANTENNA BNC CONNECTOR
330mm
Scope
Power
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Zone 6
Zone 7
Zone 8
Low Batt
Tamper
Signal
1
10
POWER INDICATOR
ZONE STATUS INDICATORS
SIGNAL STRENGTH INDICATOR
8ZRXFIG2
ISSUE 2

Example Binary Code Table (SW = switch, 1=ON, 0=OFF)

Decimal Value	1	2	4	8	16	32	64	128
Transmitter no:	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
001	1	0	0	0	0	0	0	0
002	0	1	0	0	0	0	0	0
003	1	1	0	0	0	0	0	0
004	0	0	1	0	0	0	0	0
005	1	0	1	0	0	0	0	0
006	0	1	1	0	0	0	0	0
007	1	1	1	0	0	0	0	0
008	0	0	0	1	0	0	0	0
009	1	0	0	1	0	0	0	0
010	0	1	0	1	0	0	0	0
011	1	1	0	1	0	0	0	0
012	0	0	1	1	0	0	0	0
013	1	0	1	1	0	0	0	0
014	0	1	1	1	0	0	0	0
015	1	1	1	1	0	0	0	0
016	0	0	0	0	1	0	0	0
017	1	0	0	0	1	0	0	0
018	0	1	0	0	1	0	0	0
019	1	1	0	0	1	0	0	0
020	0	0	1	0	1	0	0	0
021	1	0	1	0	1	0	0	0
022	0	1	1	0	1	0	0	0
023	1	1	1	0	1	0	0	0
024	0	0	0	1	1	0	0	0
025	1	0	0	1	1	0	0	0
026	0	1	0	1	1	0	0	0
027	1	1	0	1	1	0	0	0
028	0	0	1	1	1	0	0	0
029	1	0	1	1	1	0	0	0
030	0	1	1	1	1	0	0	0
031	1	1	1	1	1	0	0	0
032	0	0	0	0	0	1	0	0
033	1	0	0	0	0	1	0	0
034	0	1	0	0	0	1	0	0
035	1	1	0	0	0	1	0	0
036	0	0	1	0	0	1	0	0
037'	1	0	1	0	0	1	0	0
038	0	1	1	0	0	1	0	0
039	1	1	1	0	0	1	0	0
040	0	0	0	1	0	1	0	0
041	1	0	0	1	0	1	0	0
042	0	1	0	1	0	1	0	0
043	1	1	0	1	0	1	0	0
044	0	0	1	1	0	1	0	0
045	1	0	1	1	0	1	0	0
046	0	1	1	1	0	1	0	0
047	1	1	1	1	0	1	0	0
048	0	0	0	0	1	1	0	0
049	1	0	0	0	1	1	0	0
050	0	1	0	0	1	1	0	0