



# PRX4SERL

Four Zone Receiver Decoder



## Operating Manual

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## Limited Warranty Agreement

Your Microframe system is warranted against failure due to defects in workmanship or material for a period of one (1) year from the date of purchase. Microframe Corporation will repair or replace any defective unit. Obvious abuse or mishandling of the unit is NOT covered by this warranty.

## Merchandise Return

If your unit does not work satisfactorily, please give us a call. We may be able to solve the problem by telephone. If it becomes necessary to return your Unit to the factory, please observe the following:

1. Place unit in a sturdy box with sufficient packing material.
2. If requested, include the power supply. It is not necessary to return the cable and connectors unless they are the problem.
3. Return the system insured and prepaid since we are not responsible for shipping damages and losses on returned units.

## Warranty Service

For warranty service, please contact Microframe Corporation at 1-800-635-3811. A technician will gladly assist you.

## Assistance

For any product assistance or maintenance help, contact Microframe Corporation by telephone at 1-800-635-3811 or by e-mail at support@microframecorp.com.

## Safety

Do not install substitute parts or perform any modification to the product without first contacting Microframe Corporation.

## Warning

All power transformers, line cords, and electrical equipment should be kept out of the reach of children and away from water. (If you are installing cable in an air plenum area, such as a drop ceiling used for air return, you must use plenum-rated cable. The cable supplied from Microframe is rated CL2 and is approved for installation everywhere indoors except plenum areas.)

## Life Support Policy

**Microframe's products are not authorized for use as components in life support devices or systems without the express written approval of the president of Microframe Corporation.** As used herein:

1. Life support devices or systems are defined as systems which support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user or any one depending on the system.

2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

## Disclaimer

We are constantly striving to improve our products. Due to this, specifications are subject to change without notice.

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## PRX4SERL Four-Zone Receiver Decoder

### Overview

**PRX4SERL:** Up to four capcode ranges (either alphanumeric or numeric) can be used to latch four corresponding relays and their respective front panel LEDs. The relays can be globally reset either using a preset over the air capcode or by depressing the Reset switch. Optional software is available which only latches the relays for 3 seconds (for 1200 baud TX systems only). Ask our technical sales team for further details. The PRX4SERL has the added facility of an RS232 serial port, providing a data logging function (text only). The unit can optionally be configured to send Scope protocol for onward transmission (using a Scope transmitter on a different frequency).

Power input for both units is 12V dc @ 0.5A, via the blue latching connector provided.

### Section 1: Installation

Certain precautions in sighting of the unit apply. As with all radio equipment, attention must be given to the aerial selected and where the unit is mounted in relation to the transmitter being monitored. If the unit is to be used with a second transmitter, it should be sited as centrally as possible within the secondary area to be covered, although it must of course be within adequate distance of the originating transmitter. The unit should be at least two meters away from any transmitter.

It is therefore essential that adequate signal reception is checked before fitting the unit in the desired location. Using a Yaesu VR-120D Communications Receiver programmed to the required frequency, a signal strength of 5 or greater is deemed to be sufficient to provide a reliable consistent link. Readings below this level may lead to poor reception in adverse atmospheric conditions.

Ranges of up to 1 mile can be achieved, except where signal paths are severely obstructed due to reflections or physical obstacles in the way. Such conditions may be experienced where there are a large number of metallic structures around the site, or where the receiver is sited in a hollow, i.e. below the level of the transmitter or its aerial.

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To mount the unit on the wall, remove the two screws from the front of the case and separate the cover from the base plate.

The base plate should be fixed to an even wall surface using suitable screws fitted through the 4.75 mm holes provided in the chassis plate. Check that the chassis plate does not bend and that the screws do not snag or pinch any internal cables.

**Warning:** Do not use the chassis plate as a template for drilling the holes into the wall. Hammer drills may irreparably damage the quartz crystals on the printed circuit boards.

Connect the antenna to the unit via the BNC connector located at the top of the housing. If the antenna is an external type, care should be taken to ensure that certain installation criteria are met as detailed below.

### ***Some major points to consider when installing equipment:***

1. Never install antennae near or adjacent to telephone, public address or data communication lines or overhead power cables.
2. Avoid, wherever possible, running antenna coax alongside other cables and avoid kinks and coils. Pre-terminated cable should not be altered.
3. Avoid mounting the receiver in the immediate vicinity of telephone exchanges or computer equipment.
4. Always use **50 ohm** coaxial cable between the antenna and the receiver. If cable runs exceed 5 meters, always use low loss 50 ohm cable such as RG213 or UR67 to a maximum of 15 meters.

**Coaxial cable intended for TV, Satellite or CCTV installations is normally 75 OHM and therefore totally unsuitable for any receiver installation manufactured by Scope.**

5. Also remember that the performance of the system will be affected by the type of material the unit is mounted on and its surroundings.

The following is a list of materials that this receiver will be adversely affected by if mounted on or if mounted in close proximity to:

- a) Foil back plasterboard
- b) Metal mesh or wire reinforced glass
- c) Metal sheeting, large mirrors or suspended ceilings
- d) Lift shafts

All of the above can reduce the ability of the receiver to perform its functions.

6. The circuit boards within this equipment may be harmed by Electrostatic Discharge (ESD). Installers should ensure that both themselves and the system's chassis are grounded before beginning any installation, and should ensure that adequate anti-static procedures are adhered to at all times.

## **PRX4SERL Four-Zone Receiver Decoder**

Fit the required switch cables to the appropriate relays. These are labeled Zone 1 to Zone 4. Terminals are available on each relay for Normally Open, Normally closed and Common.

Finally, connect the blue latching power connector to a 12V dc @ 0.5A power supply, observing the correct polarity, as shown in diagram 1.

Where the unit has been ordered as a PRX4SERL with the serial port enabled, the 9 way D connector is used to connect the unit to a serial printer or PC for data logging purposes, or to a Scope transmitter for a repeater application. The serial port configuration is 9600 baud, N, 8, 1. A standard serial cable (null modem) is required.

### **Operation**

#### **PRX4SERL**

This unit utilizes firmware which facilitates the following features:

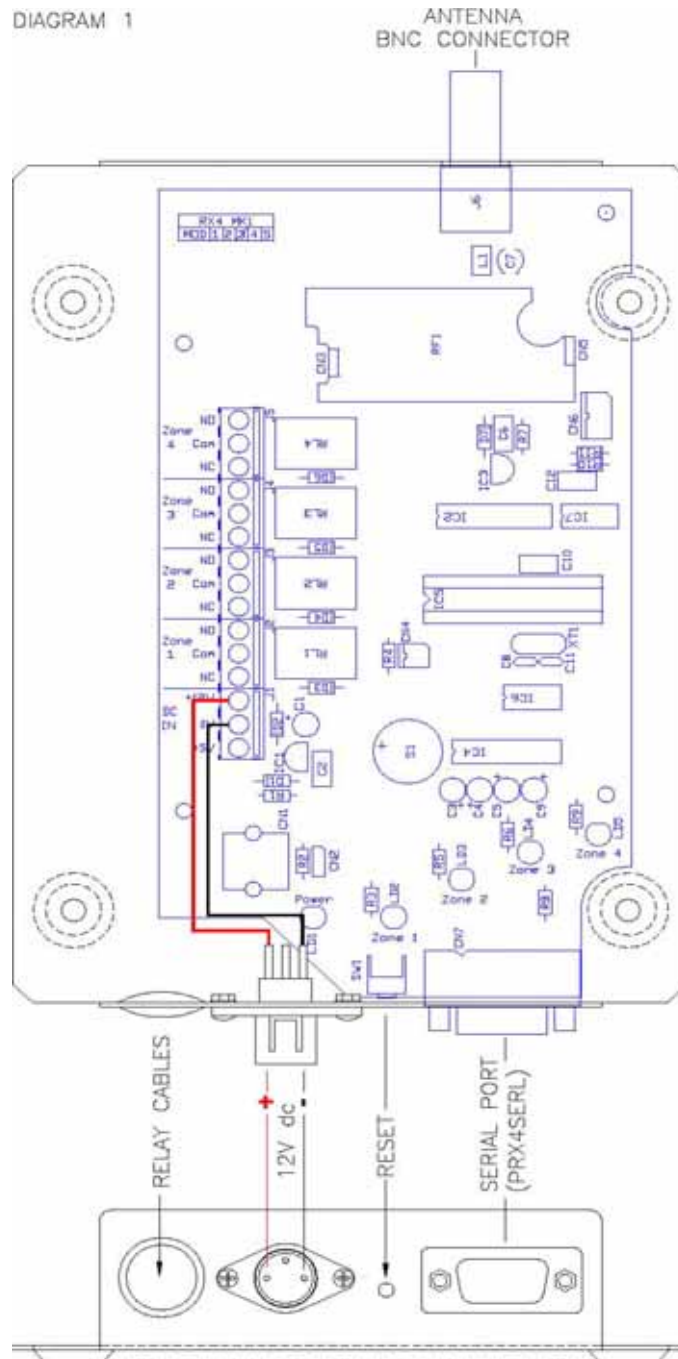
- 1) There are four configurable capcode ranges which can be specified for activating each relay. Each range can be specified as either numeric or alphanumeric. Sending a capcode within the set range will latch the relevant relay and light the corresponding onboard LED.
- 2) An on-board sounder can be configured to beep every time data is received.
- 3) Serial output is available on the 9 way D-Connector. This can be specified to output text only (for connection to a printer or PC), or Scope protocol for onward connection to another Scope transmitter (for use as a repeater).
- 4) The receiver will decode POCSAG transmissions sent at 512 baud or 1200 baud (not both). This must match the transmitter over the air baud rate.

All these features are factory set, so they need to be specified at the time of order placement.

## PRX4SERL Four-Zone Receiver Decoder

Over the air reset: transmitting capcode 0000008 will reset the unit and de-energize all the relays. Note: where the serial port has been set to output Scope protocol, it must be connected to a valid serial port for this feature to operate.

The unit can also be reset by depressing SW1 through the hole provided on the lower endplate (see Diagram 1 below).



## PRX4SERL Four-Zone Receiver Decoder

### Specification

Power Input:	12V to 13.8V dc max @ 0.5A
Power Consumption	
Standby (relays off, no serial port)	28mA
Standby (relays off, serial port connected)	38mA
Active serial decoder	63mA
Active all relays	250mA
Signal Format	POCSAG FSK NRZ (Normal or Inverted)
Frequency (fixed crystal)	In the range 440 –470MHz
Frequency Stability	+/- 10ppm
Channel Spacing	12.5 or 25KHz
Frequency Deviation	+/- 4.5KHz
Over Air Baud Rate (fixed programmable)	512 or 1200 bps
Sensitivity	Maximum
512bps	6 $\mu$ V/m
1200bps	7.5 $\mu$ V/m
Selectivity	>52dB
Image Rejection	>52dB
Spurious Rejection	>60dB
Intermodulation	>52dB
Relay Contact max rating	0.5A @ 125V ac, 1A @ 60V dc
Serial Port	RS232
Serial Configuration	N, 8, 1
Serial Port baud rate	9600



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