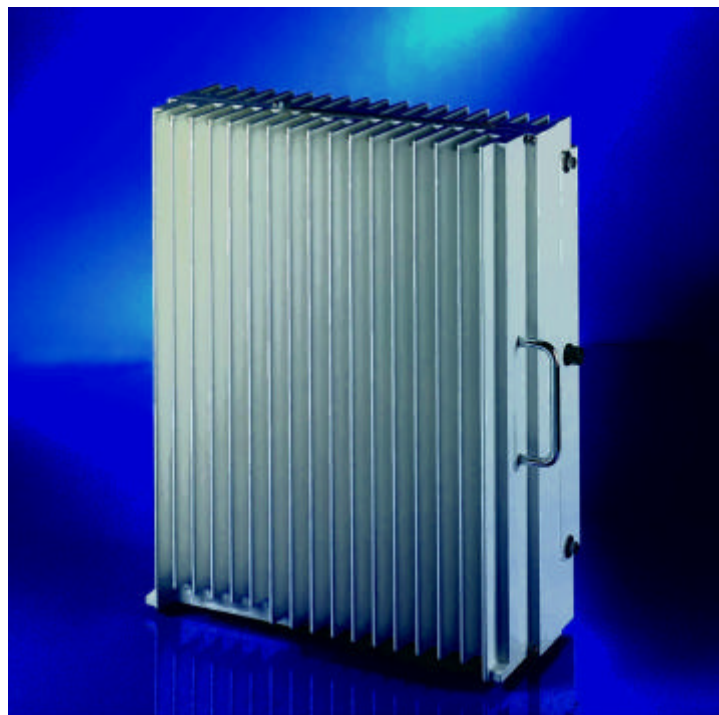


**User's manual for  
band or channel selective Repeater  
MRx01B Power**



## HEALTH AND SAFETY WARNINGS

### Installer

**Warning:** Any over the air radiated use of this product is intended to be used with either Roof Top (Building-mount) or Pole Mounted (Non-building-mount) Antennas.

Antenna installation must conform within the following guidelines to meet FCC RF exposure limits, otherwise a environmental evaluation is required if:

**Broadband PCS (subpart E): Non-building-mounted antennas:** height above ground level to lowest point of antenna < 10m Radio (Part 24) and total power of all channels > 2000 W ERP (3280 W EIRP).

**Building-mounted antennas:** Total power of all channels > 2000 W ERP (3280 W EIRP).

**Cellular Radiotelephone Service (Part 22, subpart H): Non-building-mounted antennas:** height above ground level to lowest point of antenna < 10m Radio (Part 22) and total power of all channels > 1000 W ERP (1640 W EIRP).

**Building-mounted antennas:** Total power of all channels > 1000 W ERP (1640 W EIRP).

**Private Land Mobile Radio\Specialized Mobile Radio (Part 90): Non-building-mounted antennas:** height above ground level to lowest point of antenna < 10m Radio (Part 90) and total power of all channels > 1000 W ERP (1640 W EIRP).

**Building-mounted antennas:** Total power of all channels > 1000 W ERP (1640 W EIRP).

*For any clarification, please refer to FCC rules, 47 CFR ch. I, part 1.1307*

- ☞ **Note:** The electrical installation has to be performed in accordance with the safety regulations of the local authorities. Due to safety reasons the electrical installation must be performed by qualified personnel. The cover of this unit should not be opened while power is applied. Subsequent installation, commissioning and maintenance activities that require the unit to be powered with the cover open shall only be carried out by suitably qualified personnel.
- ☞ **Note:** The grounding of the Unit has to be performed by all means. A grounding bolt is provided at the cabinet in order to connect the earth bonding cable.
- ☞ **Note:** The Unit is heavy-weight. Make sure that a suitable mounting surface is used. Only adequate manpower is allowed to handle the system.
- ☞ **Note:** ESD precautions have to be observed! Before maintenance work use the available grounding system to connect ESD protection measures.

## **1 INTRODUCTION**

### **1.1 Intended purpose**

Cellular telephone systems transmit signals in two directions between base stations and mobile telephones within the signal coverage area.

If weak signal transmissions occur within the coverage area because of indoor applications, topological conditions or distance from the transmitter, a repeater is used to extend transmission range. In the downlink path the repeater picks up the signal from a donor antenna of an existing cell, amplifies and re-transmits it into the desired dark spot. In the uplink direction the repeater receives signals from mobile stations present in its coverage area and re-transmits them to the corresponding base station.

The over the air radiated use of this repeater is intended to be used with either Roof Top or Pole Mounted Antennas. To provide coverage in a indoor application one must mount the antennas on or outside the building structure that is occupied. This must be done in a matter that conforms to the FCC RF exposure ( See health and Safety section of this manual).

### **1.2 About the MRx01B Power**

This repeater bi-directionally amplifies signals between multiple mobiles and a single base station in the frequency band. It is employed where poor topological conditions cause weak field strengths. It can provide highly selective amplification of band segments or channels in the frequency band.

The MRx01B Power can be set-up locally or remotely. A PCMCIA slot for modem operation is an available option. The repeater has a large number of functions that can be monitored and changed by the operators via a terminal emulation program or the MIKOM OMC software platform. An easy to understand and simple to learn communication language is available to help the operator query status reports from the repeater or to change settings.

### 1.3 Modular design

**Note:** It is not possible to combine MRx01 units / modules with other MRx01 units / modules without verifying FCC Approval and RF Exposure Compliance ( See health and Safety section of this manual).

*For any clarification, please refer to FCC rules, 47 CFR ch. I, part 1.1307*

The MRx01B repeater's modular design provides the flexibility in addressing present and future system needs. Each repeater is custom configured. The main unit includes equipment common to all systems ( cabinet, control module, power supply, mother board ). To this main unit hardware modules are added as needed. In addition to different duplexers, a wide range of conversion modules can be selected depending on the used network system.

MRx01B Power modules operating in PCS1900, AMPS800, or LMR\IDEN800 bands are available.