# VHF/UHF CABLE REPEATER

## KRP-500 series

NEW


- High gain Rx & Tx amplifiers
- Low noise figure, high IP3
- Built-in Power Supply
- Mains/Battery Change-over
- Multiple Protection
- Light & Tone Remote Signalling

Eipionir UKT DOO

## DESIGNATION and DESCRIPTION

Cable repeater KRP-500 is dedicated for cable loss compensation, primary on the sites with rather long coaxial cables between the transceiver and antenna. On multi-transceiver sites, using of Cable repeaters gives opportunity to separate antennas in order to achieve EMC, with simultaneous utilization of transceiver's generic parameters (sensitivity and output power). On very long cables in excess of 120m - using minimum RG-214/U grade cable - KRP-500 is irreplaceable.

It can be used on Base or Fixed station sites, where half duplex operation is required.

Receive amplifier is provided by front-end band-pass filter, tuned to adequate radio network's sub-band. Highly efficient RF filters decrease influence of the always present EM disturbances. Sensitivity of the receiver is maintained unchanged thanks to very low noise factor. High IP3 ("third order intercept point") and P1dB ("1dB compression point") provide high dynamic range of the receive amplifier.

Transmit amplifier's hybrid module, mounted on robust heat sink, provide a stable full-power operation. Efficient band-pass filter ensures low level of harmonics and spurious signals on the antenna output.

Device also comprises two low-voltage DC current sources - Voltage Regulator and lead-acid Battery Charger. Constant charging of the external battery ensures long-term (up to 6 hours) device autonomy in case of mains voltage disappearance.

Cable repeaters are manufactured for 2m (KRP-520) and 0,7m (KRP-507) operational bands. Available colors are Black-mat and Olive-gray.

Input and Output coaxial connectors are on the Front panel as well as the indication lamps for Input Power and Output Power. On the Back-side find their place: Fuse Holders, Mains and Battery sockets and Intercom's push button switch (push while use) and socket for microphone/loudspeaker (MiZ-6).

## FEATURES

- Adequate receive and transmit signal amplifying is obtained in specific sub-bands, with cable up to 120m in length; simultaneous charging of the lead-acid battery.
- In absence of the mains voltage, battery is automatically switched to amplifiers. Automatically changeover to supply from battery is provided also, in case that mains voltage drops under specified value.
- Battery is charged according to I/U model: the first phase with constant current, until full battery voltage is achieved; and the second phase, with constant voltage ("trickle charging").
- Lead-acid 60Ah battery provides 6-hours autonomy in simplex transceiver's common duty cycle: 10% of time with transmitter's and 90% with receiver's (stand-by) consumption.
- In case of power supply missing, KRP-500 provides bypassing of the internal amplifiers and enabling transceiver to operate with the full RF output power.
- Overload and short circuit protection is provided with melting fuses and internal electronic circuit on both - Voltage Regulator and Battery Charger. Equipment is protected also against polarity reversal during battery connection.
- Light indication of the correct input and output RF levels is available on the front panel.
- Light signalling on the front panel follows activation of any protection, as well as mains voltage drop under specific value. Tone signaling is forwarded through RF cable toward the Master Station.
- Service intercom feature is provided through RF cable.

## TECHNICAL SPECIFICATIONS

| REPEATER TYPE | | KRP-520 | KRP-507 |
|---|---|---|---|
| **GENERAL** | | | |
| Frequency range (MHz) | | 146÷174 | 430÷470 |
| Mode of operation | | Simplex, Half duplex | |
| Cable length (m) | | Up to 120; RG-213/U or similar | |
| Mains voltage range ($V_{AC}$) | | 190 ÷ 240 | |
| Battery voltage range ($V_{DC}$) | | 11,3 ÷ 14,8 | |
| Change-over mains voltage ($V_{AC}$) | | 185 ± 3 | |
| Operating temperature range (°C) | | -25 ÷ +55 | |
| Storage temperature range (°C) | | -40 ÷ +70 | |
| Dimensions (mm) | | WHD: 220x120x340 | |
| Weight, approximate (kg) | | 6,8 | |
| Input connector | | Female reduced UHF socket | |
| Output (antenna) connector | | Female UHF socket | |
| **TRANSMIT RF AMPLIFIER** | | | |
| Output power | | 20W±1dB | |
| Input power | | 0,5W±1dB | |
| Spurious signals (dBc) | | Better than -60 | |
| Switchable bandwidth (MHz) | | 40 | 60 |
| **RECEIVE RF AMPLIFIER** | | | |
| Gain (dB) | | 9±1 | |
| Noise figure (dB) | | Better than 1 | |
| Third order intercept point (IP3) | | 0dBm | |
| 1-dB compression point (P1dB) | | -10dBm | |
| Switchable bandwidth (MHz) | | 7 | 15 |
| **INTERNAL VOLTAGE REGULATOR** | | | |
| Output voltage ($V_{DC}$) | | 13,5 ± 0,5 | |
| Output current ($A_{DC}$): | Transmit mode | ≤ 0,2 | |
| | Receive mode | ≤ 4.5 | ≤ 6.5 |
| Output voltage AC comp. (mVeff) | | ≤ 35 | |
| **BATTERY CHARGER** | | | |
| Charging current (A) | | ≤ 5 | |
| Full battery voltage (V) | | 14,5 ± 0,2 | |
| Low limit battery voltage (V) | | 10,5 ± 0,2 | |

- May be changed without notice -


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