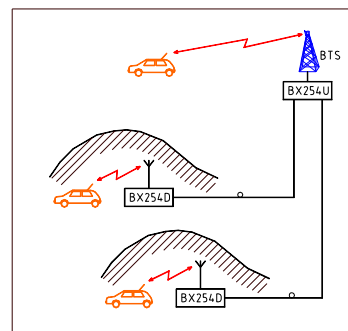


CHANNEL SELECTIVE REPEATER WITH OPTICAL COUPLING

BX 254U BX 254D

DESCRIPTION

BX 254 is a configuration of channel selective repeater designed for the distribution of one simplex radio channel in the band of 80 or 160 MHz into one up to four remote radio sites. The configuration consists of the BX 254U base part and one up to four BX 254D radio parts. The radio signals are distributed from the signal sources (e.g. from BTS base station) into the remote coverage sites by the help of a pair of optical fibers. The maximal length of the optical fibers line is 20 km. By the usage of this repeater is possible to reach the improvement of the coverage in areas where radio signal intensity from base station drops, e.g. in ground shifts and valleys. Except of the extension of the radio signal coverage in open field it is possible to use this repeater for the coverage of underground areas of the buildings, e.g. in warehouses and garages. The configuration is optionally equipped with the remote monitoring facility.



BX 254U is a base part which enables the direct connection of the base radio station including the antenna for the local coverage. It is possible to connect one up to four remote radio parts on it by the help of optical fibers. The base part is supplied with the internal power supply unit and it is designed for installation into the buildings protected against the environmental effects.



BX 254D is a channel selective repeater in both DL and UL directions designed for two-way amplification of one simplex radio channel in the specified band. This repeater is connected with the base part by the help of optical fibers. The base directional or omnidirectional antenna is connected on the radio interface. The repeater can be optionally equipped with the internal power pack or external back-up power supply. It is designed for installation in the areas which are not protected against the environmental effects.



The monitoring of the configuration includes the base and radio parts and it can be optionally equipped with the signaling into the local control system, with monitoring display and with remote monitoring.

The optical receivers and transmitters and the power supply of the BX 254U base part are monitored under the operational states.

The function of the amplifiers, the active electronic filters, the power supply fault, the temperature of the power amplifier (PA) and the internal temperature of the box are controlled under the operational state in the BX 254D repeaters. Also the unauthorised entering into the repeater cabinet, the optical receiver and transmitter and the back-up power supply function (if used) are checked.

The monitoring enables the remote switching On/Off of the final stage (PA) of the repeater.

The base part is equipped with the status contact without voltage in the local control system for signaling of the BX 254 repeaters system state. It is possible to find out the details regarding the eventual system fault of the repeaters and to localize the position of the fault component with help of monitoring display in the base part.

The remote monitoring of the configuration enables the continuous monitoring of the repeater basic parameters via the inbuilt GPRS modem anywhere in the reach of GSM operator signal. The remote monitoring system can be delivered in two versions:

The full version of the remote monitoring enables to monitor the repeater state on the computer in the Operational and Maintenance Center - OMC. Service staff is notified of the changes in the stage of the repeaters, can to check the parameters, and provides the preventive maintenance interventions into the system before the fault occurs.

If the fault occurs, it is possible to send the alarm message to the chosen workplace by E-mail or in the form of SMS message. The OMC can be established by another operator for extensive systems.

The simplified version of the remote monitoring is suitable for individual repeater monitoring. According to the configuration the SMS messages regarding the repeater state are regularly sent or the requirements for sending of the information about the state are received or if the fault occurs the repeater status word is sent.

TECHNICAL SPECIFICATION OF BX 254U

Type	BX 254U	
Frequency range	MHz	Bands 80 or 160
Bandwidth	MHz	25 (20; 12,5)
Modulation		analogue / digital
DL output power from BTS	dBm	+20 to +44
UL output power to BTS	dBm	- 45 to -90
Impedance	Ω	50
Maximum attenuation of the optical path	dB	12
Power supply	V / A	230 / 0,3 AC
Operating temperature range	$^{\circ}\text{C}$	-25 to +55
Protection		IP20
Dimensions w x h x d	mm	600 x 360 x 400
Weight	kg	max. 26
Optical connection of one BX254D repeater	Two singlemode fibres SM 9/125 μm , connectors DIN / APC	
Connectors for antenna and BTS	„N“ type - female	

TECHNICAL SPECIFICATION OF BX 254D

Type	BX 254D	
Frequency range	MHz	Bands 80 or 160
Bandwidth	MHz	25 (20; 12,5)
Modulation		analogue / digital
DL output power	dBm	+22 to + 40
UL output power	dBm	-30 to -95
Gain DL	dB	65 to 95 (adjustable)
Gain UL	dB	40 to 70 (adjustable)
Gain regulation		manual / automatic (ALC)
VSWR		< 1,3
Impedance	Ω	50
Maximum attenuation of the optical path	dB	12
AC Power supply	V / A	230 / 0,65 AC
Power supply from BZ 105	V / A	24 / 4,5 DC
Overvoltage protection		2nd level - Type 2 by the EN 61643-11
Operating temperature range	$^{\circ}\text{C}$	-25 to +55
Protection		IP54
Dimensions w x h x d	mm	420 x 545 x 210
Weight	kg	max. 25
Optical connection	Two singlemode optical fibre SM 9/125 μm , connectors DIN / APC	
Antenna connector	„N“ type – female	

NOTE: Operating frequency range

On client's request, the BX 254D repeater can be set up to different operating band frequencies, such as:

- 80 MHz: 68 to 73 MHz, 73 to 78 MHz, 78 to 86 MHz
- 160 MHz: 158 to 166 MHz, 166 to 174 MHz

BZ 105 POWER PACK (OPTIONAL)

Type	BZ 105	
Model	power pack, backed up	
Input	V / A	230 / 0.7 AC
Output voltage / current	V / A	24 / 5 DC
Back up time at load 4A	hour	4,5
Operating temperature	$^{\circ}\text{C}$	-25 to +55
Protection		IP 54
Dimensions w x h x d	mm	350 x 700 x 240
Weight	kg	52