

# VHF Fiber Optic Repeater (Band Selective)

## OPRP-VHF-UxDx

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### Description

VHF Series of Fiber Optic Band Selective Repeater is the best and more reliable solution to extend and improve the coverage area of VHF TETRA telecommunication systems. Fiber Optic Band Selective Repeater consists of two modules, Master and Slave. Master module can be used directly coupled from BTS (Cable-Access FOR) or can be connected to a donor antenna receiving signals from the BTS (Wireless-Access FOR), while Slave module provides service area with system coverage. Fiber Optic Repeaters amplifies in both directions, uplink and downlink a continuous bandwidth, factory tuned. Its rugged construction and easy field maintenance reduces operational costs and ensures a high MTBF.

Typical applications of this line of repeaters are indoor situations such as tunnels, buildings, subways, and outdoor scenarios such as stadiums, rural areas and dense urban areas.

### Features & Benefits

**Auto diagnostics:** Master and Slave units are equipped with microprocessor modules that controls the units operational parameters. This self check capability provides an instantaneous alarm output under failure situation, via local LEDs. Microprocessor module verifies amplifiers status, PA status, power supply status, intermediate filters status, battery backup status and temperature levels.

**Single Master & Multiple Slaves:** Single unit can handle up to four Slaves simultaneously.

**WDM:** Uplink and Downlink transmission in different wavelength with built-in WDM for single fiber optic operation.

**Control:** Repeaters can be controlled locally via the control panel or via RS-232, and can be remote controlled using OMS (Operation and Maintenance Software) via wireless connection. In both situations, local and remote. Repeater parameters can be adjusted (UL gain, DL gain, RF ON/OFF, intermediate filters characteristics) and alarms can be supervised (amplifiers status, PA status, power supply status, battery backup status, temperature).

**Manual gain control:** Uplink and Downlink gain levels can be adjusted to meet system planning requirements. Both chains (UL and DL) can be adjusted independent, digitally, in 1dB steps. This gain control can be done locally via tac switches, via RS232 (OMS) or can be done remote via wireless connection (OMS). Gain values are shown via built-in digital displays, for an easy and fast reading.

**Automatic Gain Control (AGC):** Repeaters are equipped with Automatic Gain Control (AGC) that acts in both Uplink and Downlink chains independent. The presence of an AGC allows a maximum power operation with low intermodulation generation, and provides a lineal operation that ensures a high quality signals amplification.

**Battery backup:** Repeaters can be powered with AC or DC. Battery backup mode is available for continuous operation in case of AC or Power Supply failure, or when no AC is available.

**Weatherproof enclosure:** Units are equipped with IP65 enclosures, to allow a simple and easy installation procedure since no special weather protection are required. Standard fixing method is wall mounting, Pole mounting brackets are available as optional.

# Providers of wireless coverage solutions

## RF Specifications

Item	Specification		Remark
	Up-Link	Down-Link	
Frequency range	136 – 174mhz		
Passband BW	1-3Mhz(Customized)		
Downlink to Uplink separation	5Mhz		
Output Power	-10-0 dBm(1-5W)	30-40dBm(1-10W)	Cable-Access FOR
	30-33 dBm(1-2W)	30-40dBm(1-10W)	Wireless-Access FOR
Nominal Gain	50 dB, both modules with 10dB optical loss		Cable-Access FOR
	80 dB, both modules with 10dB optical loss		Wireless-Access FOR
Pass Band Ripple	$\pm \leq 2$ dB		
Gain Adjust Rang	0-30dB in 1 dB steps		
AGC Rang	0-30dB		
Max. ALC level	$\geq 25$ dB		
Intermodulation attenuation	FCC compliant or ETSI compliant (based on output power levels)		
Spurious emission	9kHz-1GHz	$\leq -36$ dBm	
	1GHz-12.75GHz	$\leq -30$ dBm	
Noise Figure.	$\leq 5$ dB(at maximum output power)		
Group delay	$\leq 6$ us		
VSWR	$\leq 1.5$		
RF Connectors	N – female		
Impedance	<b>50 Oms</b>		
Fiber, recommended	Single mode, WDM included		
Wavelengths	1310 and 1550 uM		
Optical Ports	FC/APC female(Or Customized)		

## Supervising Specifications

Self diagnostic platform	Microprocessor based
Alarms	Yes, amplifiers status, power amplifiers status, power supply failure, battery backup failure, temperature, AGC, RF overload, poor antenna isolation.
Local management and supervising	Built-in gain adjustment interface and alarms/status LEDs, PC access via RS-232 (OMS)
Remote management and supervising	Remote access via wireless GSM SMS modem OR GPRS Modem OR Ethernet, option RC (OMS)

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## Electrical & Mechanical Specifications

AC Supply Or DC Supply		110/220 VAC
Housing		IP65
Temp rang		-30 to +60 °C
Size, W×D×H, in mm	A Class	660×408×212
	B Class	600×450×260
Weight	A Class	40Kgs(Probably, different models will be small differences)
	B Class	38Kgs(Probably, different models will be small differences)
Mounting		Wall mounting as standard, Option PK for pole mounting.

## Photo



## Cable-Access FOR Local Unit

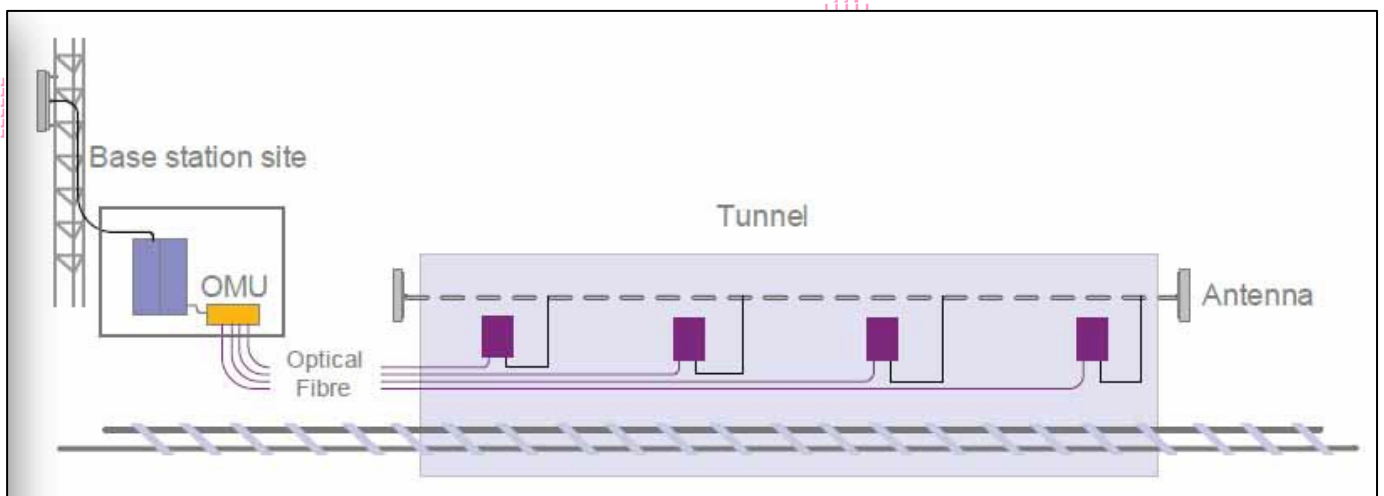
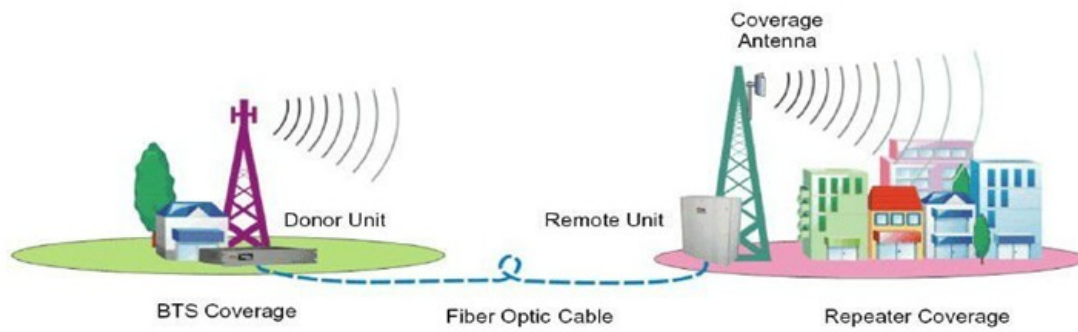


## Wireless-Access FOR Local Unit& Remote Unit

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## Application

### Cable-Access FOR:



### Wireless-Access FOR:

