BSF 3604

BSF 3604 Dual Fibre Dual Window (1510/1550)

Key features

- High power, 36 dBm
- Optimized for low noise figure.
- Full monitoring and control though SNMP, webserver or AEM monitoring software via OMU.
- The unique combination of high output power and highly linear power amplifiers ensures large coverage with uniformly excellent signal quality
- Optimized for low noise figure.
- Second optical transceiver module for redundant fibre applications (dual wavelength for use with fibre splitter at the OMU)

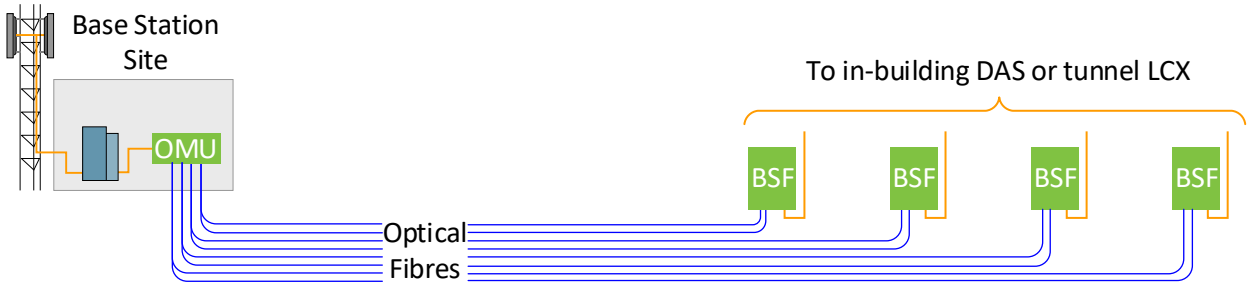
The BSF 3604 is a fibre optic fed TETRA repeater (supports other technologies within supported frequencies ranges, DMR, P25, LTE etc). The repeater is part of a system that is fed from a PBE Axell Optical Master Unit (OMU). RF signals are coupled off from a nearby base station by the OMU which modulates the RF to optical signals which are distributed via fibre optic cables to one or several remote BSF repeaters. The maximum optical loss allowed for is 10 dBo of fibre between the OMU and the most distant last remote unit that the OMU supports.

These remote BSF repeaters can be installed up to 20 km from the base station site, offering great flexibility when providing RF coverage in areas where off air reception is not a preferable or possible solution. The remote BSF repeaters demodulate the optical signal to RF and feed it to a Distributed Antenna System (DAS) or Leaky Feeder array to distribute the RF signal throughout the area to be covered. The high output power of the remote BSF repeaters results in a need to deploy fewer remote sites, which lowers the capital expenditures for the deployment.

The fibre optic system is easily remotely monitored and controlled by PBE Axell's effective supervision tool, Active Element Manager (AEM).

Automatic optical gain setting

The system gain is adjusted for optical loss in the fibre by measuring the level of a pilot carrier sent from the OMU. The level of the received pilot carrier is continuously monitored.



Technical specification

Electrical specifications				
General frequency ranges available: Other frequency bands and duplex options available upon request within the 330 MHz to 520 MHz public safety band.		Downlink	Uplink	Bandwidth
		390 MHz to 395 MHz	380 MHz to 385 MHz	5 MHz
		395 MHz to 400 MHz	385 MHz to 390 MHz	5 MHz
		420 MHz to 425 MHz	410 MHz to 415 MHz	5 MHz
		425 MHz to 430 MHz	415 MHz to 420 MHz	5 MHz
		460 MHz to 465 MHz	450 MHz to 455 MHz	5 MHz
		465 MHz to 470 MHz	455 MHz to 460 MHz	5 MHz
		390 MHz to 397 MHz	380 MHz to 387 MHz	7 MHz
		423 MHz to 430 MHz	413 MHz to 420 MHz	7 MHz
		390 MHz to 396.5 MHz	380 MHz to 386.5 MHz	6.5 MHz
Number of frequency bands		1 duplexed		
Duplex distance (in one band)		10 MHz (others upon request)		
Impedance		50 Ω		
Output power/carrier (DL) per band	1 carrier:	+36 dBm		
	2 carriers:	+33 dBm		
	3-4 carriers:	+30 dBm		
	8 carriers:	+27 dBm		
IP3		Typical +68 dBm		
Noise figure (UL)		<6 dB, 5 dB typical at maximum gain		
Group delay		2 µs max		
Fibre optic loss compensation		Implemented		
Spurious emissions from RF port		< -36 dBm		
Intermodulation products		< -60 dBc or < -36 dBm		
Optical module optical specification				
Maximum optical output power		+3 dBm ±2 dB		
Maximum optical input power		+2 dBm		
Wavelengths		1310nm DL / 1510nm & 1550nm UL		
Power Requirements				
Voltage options		120 V ac, 60Hz or 230 V ac, 50Hz, or -48 V dc		
Power Consumption		<100 W, typical		
External connection				
Local Maintenance Terminal		RS232		
RF Port		7/16 DIN female or 4.3/10 DIN female		
Optical Port		SC/APC female		
Remote connection		Via fibre link to OMU as standard Option: factory configured for Ethernet alarm reporting		
Mechanical and Environmental specification				
Dimensions (H x W x D)		540 mm x 382 mm x 198 mm		
Weight		28 kg		
Cooling		Convection		
Mounting		Aluminium (IP65) wall-mount enclosure		
Operating Temperature		-25˚C to +55˚C		
Storage		-30˚C to +70˚C		
Humidity		0 to 95% RHNC		
Compliance				
EU Directives		2014/53/EU (RED) (EU) 2015/863 (RoHS3)		
Complies with: RED	Safety	EN 62368-1, EN 60825-1, EN 50385		
	EMC	EN 301 489-1, EN 301 489-5		
	Radio	EN 302 561		