

## BSF 3604-2B-2F-WM

Band selective, fibre optic, TETRA repeater,  
Dual band, dual fibre for EMEA & APAC

### Key features

- High power, 36 dBm in each band (with one carrier).
- Two non adjacent frequency bands in one compact enclosure.
- Dual SC/APC F/O interfaces.
- Optimized for low noise figure.
- Full monitoring, supervision and alarm handling through SNMP, Webserver or AEM monitoring software via the fibre connection to the associated OMUs.
- The unique combination of high output power and high linearity of the power amplifiers ensures large coverage with uniformly excellent signal quality.



The BSF 3604-2B-2F-WM is a fibre optic fed TETRA repeater. This dual band, dual fibre version processes two different (non-adjacent) bands in one enclosure and utilises two WDM fibre connections for redundant fibre link applications.

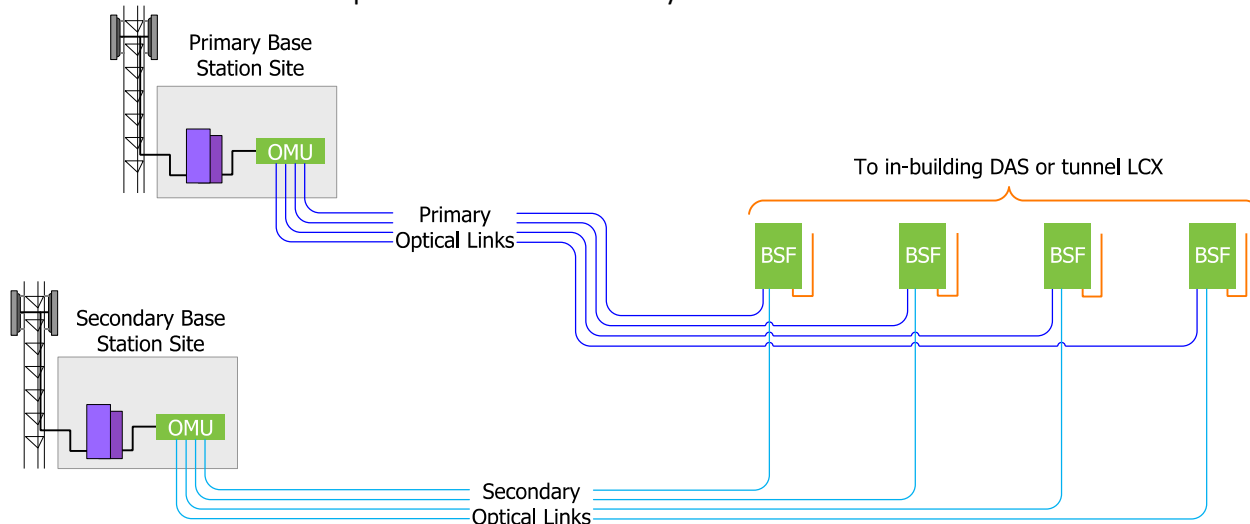
The BSF repeater is part of a system that is fed from two PBE Axell Optical Master Units (OMU). The maximum optical loss allowed for is 10 dBo between the OMUs and the most distant last remote unit that the OMUs support. This offers great flexibility when providing RF coverage in areas where it is not possible to rely on off air transmission.

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 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

RF Specification				
General frequency ranges available (others upon request up to 520 MHz, bands must be non-adjacent)	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		2		
Duplex distance (in one band)		10 MHz (others upon request)		
Impedance		50 Ω		
Downlink output power/carrier per band		1 carrier: +36 dBm 2 carriers: +33 dBm 3-4 carriers: +30 dBm 8 carriers: +27 dBm		
IP3		> +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 electrical specification				
Maximum optical output power		+3 dBm ±2 dB		
Maximum optical input power		+2 dBm		
Power Requirements				
Supply Voltage		120 V ac 60Hz or 230 V ac 50Hz or -48 V dc		
Power Consumption		<180 W, typical		
External connection				
Local Maintenance Terminal		RS232		
RF Port		Qty. 1, N type, female		
Optical Ports		Qty. 2, SC/APC, female		
Modem antenna connector( if fitted)		N- Type female		
Remote connection		Via OMU or (optional) GSM, GSM-R PSTN modem or Ethernet		
Mechanical and Environmental specification				
Dimensions		540mm x 382mm x 313mm		
Weight		≈ 30 kg		
Enclosure		Aluminium (IP65) wall-mount enclosure		
Cooling		Convection		
Mounting		19" rackmount		
Operating Temperature		-25 °C to 55 °C		
Storage		-30 °C to 70 °C		
Humidity		0 to 95% RHNC		
Compliance				
Complies with RED:	Safety	EN 62368-1, EN 50385		
	EMC	EN 301 489-1, EN 301 489-5		
	Radio	EN 302 561		