

BSF-3604

Band selective fibre optic TETRA repeater with options for redundant fibre operation and redundant PSU and amplifier modules.

Key features

- High power, +36 dBm, +40 dBm with redundant PA.
- Optimized for low noise figure.
- Can optionally be upgraded with a second optical transceiver module for redundant fibre applications.
- Redundant PSU/HPA options available.
- Remote supervision and alarm handling is realized through the fibre connection to the master site or optionally via Ethernet.
- The unique combination of high output power and highly linear power amplifiers ensures large coverage with uniformly excellent signal quality.



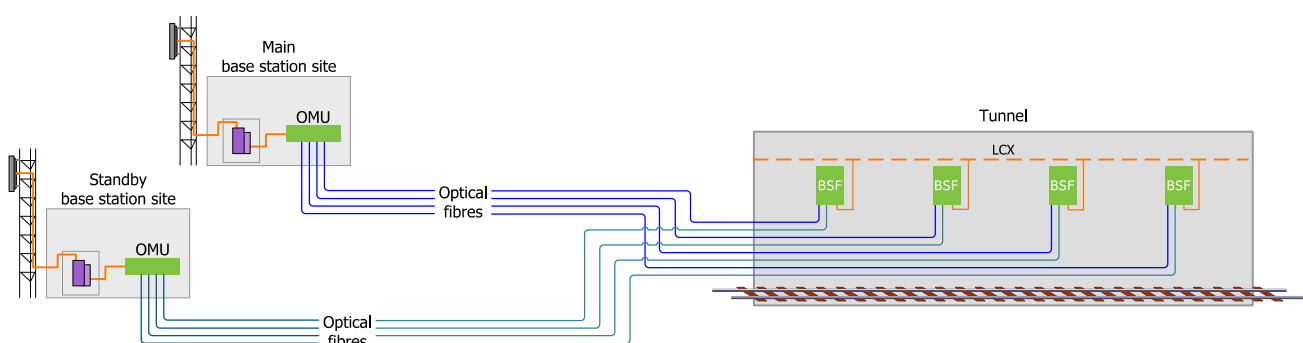
The BSF 3604 is a fibre optic fed TETRA repeater. The repeater is part of a system that is fed from an Optical Master Unit (OMU). The maximum optical loss allowed for is 10 dBo between the OMU and the most distant last remote unit that the OMU supports. This offers great flexibility when providing RF coverage in areas where it is not possible to rely on off air transmission. The standard unit has single PSU and power amplifier modules and is configured for a single fibre optic connection. Options are available for dual redundancy of the PSU and power amplifier modules and also configuration for operation from dual redundant fibre optic connections.

The BSF 3604 provides up to +36 dBm (+40 dBm with redundant PA) composite output power while utilizing convection cooling techniques eliminating the need for fans and increasing Mean Time Between Failure (MTBF) values. The higher output power levels decrease the number of BSF nodes required for deployment which in turn lowers capital and reoccurring costs.

PBE Axell's robust fibre optic system allows BSF nodes to be installed up to 20 km from the base station providing greater flexibility when designing radio frequency coverage for distributed antenna systems. Furthermore, PBE Axell can provide a complete line of passive products including combiners, filters and couplers etc.

Automatic optical gain setting.

The gain in the downlink chains is automatically adjusted by continuous monitoring of the level of pilot carriers sent from the Optical Master Units thus keeping the downlink gain at an optimum level.



Technical specification

| Parameter | | Specification | |
|-------------------------------------|--------------|--|--------------------|
| Frequency bands available | | Downlink | Uplink |
| | | 390 MHz to 395 MHz | 380 MHz to 385 MHz |
| | | 395 MHz to 400 MHz | 385 MHz to 390 MHz |
| | | 420 MHz to 425 MHz | 410 MHz to 415 MHz |
| | | 425 MHz to 430 MHz | 415 MHz to 420 MHz |
| | | 460 MHz to 465 MHz | 450 MHz to 455 MHz |
| | | 465 MHz to 470 MHz | 455 MHz to 460 MHz |
| Operator bandwidth | | 5 MHz | |
| Duplex distance | | 10 MHz | |
| Impedance | | 50 Ω | |
| D/L Output power | 1 carrier | +36 dBm with single PA, +40 dBm with redundant PA | |
| | 2 carriers | +34 dBm with single PA, +37 dBm with redundant PA | |
| | 3-4 carriers | +31 dBm with single PA, +34 dBm with redundant PA | |
| | 8 carriers | +28 dBm with single PA, +31 dBm with redundant PA | |
| IP3 | | > +68 dBm | |
| Noise figure (U/L) | | ≤4 dB (≤3 dB on average) | |
| Group delay | | 1 μs (band pass filters are >2 MHz wide) | |
| Fibre optic loss compensation | | Implemented | |
| Spurious emissions from RF port | | < -36 dBm | |
| Intermodulation products | | < -60 dBc or < -36 dBm | |
| Gain UL/DL | | 30 dB including OMU with splitter losses | |
| Optical module(s) | | | |
| Maximum optical output power | | +3 dBm ±2 dB (Twin Fibre available) | |
| Maximum optical input power | | +2 dBm | |
| Optical Port(s) | | SC/APC female | |
| Power Requirements | | | |
| Voltage Options | | 230 V ac, 50Hz or 120 V ac, 60Hz or -48 V dc | |
| Power Consumption | | <200 W, typical | |
| External connection | | | |
| Local Maintenance Terminal | | RS232 | |
| RF Port | | 7/16 DIN female | |
| Remote connection | | Via fibre connection to OMU or optionally via Ethernet | |
| Mechanical and Environmental | | | |
| Dimensions & weights | Single PSU | 540 mm x 382 mm x 198 mm, 28 kg | |
| | Dual PSU | 540 mm x 382 mm x 313 mm, 33 kg | |
| Enclosure | | Aluminium (IP65) | |
| Cooling | | Convection | |
| Operating Temperature | | -25 °C to +55 °C | |
| Storage | | -30 °C to +70 °C | |
| Humidity | | 0 to 95% RHNC | |
| MTBF | | <100,000 hours | |
| Compliance | | | |
| Complies with: | Safety | EN 62368-1, EN 60825-1, EN 50385 | |
| | EMC | EN 301 489-1, EN 301 489-5, EN 50121-4 | |
| | Radio | EN 302 561 | |

| Ordering information | |
|-------------------------|---|
| Identification/Part No. | Description |
| BSF-3604 | BSF3604 5 MHz single PA PSU |
| BSF-3604-RR | BSF3604 5 MHz Redundant PA, Redundant PSU |
| BSF-3604-RR-FO2 | BSF3604 5 MHz Redundant PA, Redundant PSU, Dual Fibre Modules |