

## D-CSR 3604: 390 MHz to 395 MHz

Digital channel and band selective repeater for public safety  
EMEA & APAC

### Key features

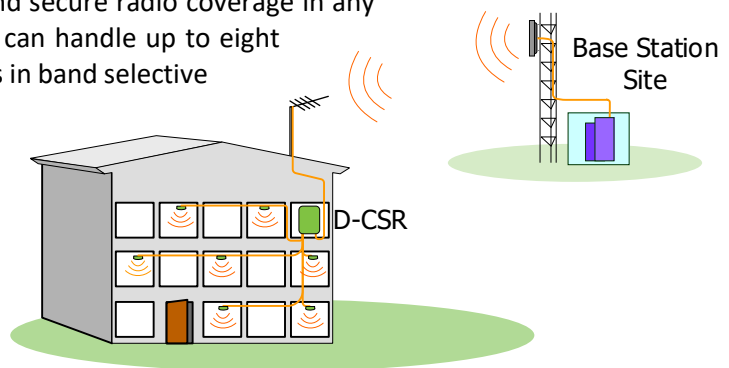
- Large repeater coverage footprint due to high output power and gain.
- Dual aspect: programmable band or channel selective mode.
- Very low propagation delay leading to higher security, resilience and availability of information.
- Easy system implementation with built-in commissioning tools.
- Time-slot based ALC minimizes noise contribution.
- Supervision available over various wireless modems.
- Built in spectrum analyser.



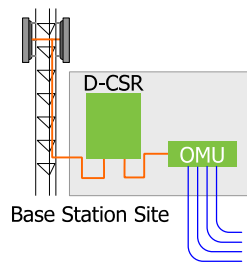
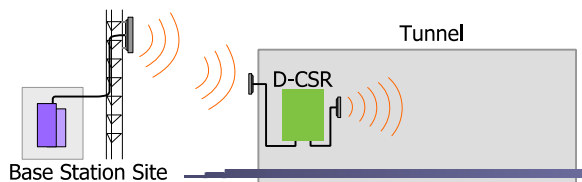
The D-CSR 3604 provides quick, cost-effective and secure radio coverage in any TETRA, TETRAPOL and many UHF networks and can handle up to eight carriers in channel selective mode or 2 sub-bands in band selective mode within the 5 MHz band.

Through the use of the D-CSR 3604 an operator can easily expand a base station's service area by filling in coverage holes caused by terrain, buildings or tunnels.

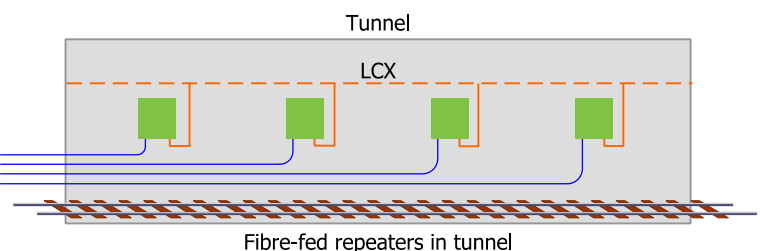
The wireless interface permits the operator to remotely configure RF parameters as well as monitor alarms on a continuous basis. Supervision is available over various wireless modems



The D-CSR 3604 can also be used to provide coverage in shorter tunnels.



Longer tunnels can be covered by connecting the repeater to a PBE Axell Optical Master Unit (OMU) that feeds a number of Fibre Fed Repeaters.



## Technical specification

| RF specifications  |        | Downlink   | Uplink             | Bandwidth |
|--|--------|--|--------------------|-----------|
| Frequency range.   |        | 390 MHz to 395 MHz   | 380 MHz to 385 MHz | 5 MHz     |
| Duplex Spacing   |        | 10 MHz   |                    |           |
| Number of channels (channel selective mode)  |        | Up to 8  |                    |           |
| Channel frequency (channel selective mode)   |        | Any channel within band:<br>TETRA : 60 kHz (high selectivity), 90 kHz (low delay)<br>NBFM : 30 kHz (8 pole), 30 kHz (4 pole) |                    |           |
| Filter options (Band selective mode)<br>up to 4 sub-bands  |        | 100 kHz to 5 MHz in 25 kHz steps   |                    |           |
| Impedance  |        | 50 Ω   |                    |           |
| Noise figure   |        | 4.5 dB at maximum gain   |                    |           |
| Group delay (TETRA mode)   |        | <12 μs (14 μs high selectivity)  |                    |           |
| Group delay (Band selective mode)  |        | <2 μs at band centre for 5 MHz filter; <7 μs at band edge  |                    |           |
| Group delay (NBFM)   |        | <27 μs, 30 kHz, 4 pole<br><60 μs, 30 kHz, 8 pole   |                    |           |
| ALC (Channel selective mode)   |        | Time-slot based per channel  |                    |           |
| ALC (Band selective mode)  |        | RMS based with frame peak hold   |                    |           |
| Squelch (Channel selective mode) (*)   |        | Settable   |                    |           |
| (*) The squelch is set to -108 dBm, which ensures correct operation for most repeater system scenarios. It will open approximately 3 dB below the static sensitivity in the repeater cell thus it will be open to any mobile on the cell border. |        |  |                    |           |
| Output power/carrier   |        | +36 dBm (1 carrier)<br>+33 dBm (2 carriers)<br>+30 dBm (4 carriers)<br>+27 dBm (8 carriers)                                  |                    |           |
| Gain   |        | 55 dB to 85 dB in 1 dB steps   |                    |           |
| Third order intercept  |        | +68 dBm, typical   |                    |           |
| Spurious emissions from RF port  |        | < -36 dBm  |                    |           |
| Intermodulation products   |        | -60 dBc (according to ETSI TS 101-789-1)   |                    |           |
| Remote control and alarm supervision   |        | IP-based via GSM/EDGE (850/900/1800/1900),<br>GSM-R, UMTS or Ethernet  |                    |           |
|  |        | Circuit Switched via GSM/EDGE(850/900/1800/1900),<br>GSM-R or PSTN   |                    |           |
| Power requirements   |        |  |                    |           |
| Voltage requirements   |        | 230 VAC 50Hz or 110 VAC 60Hz or -48 VDC  |                    |           |
| Power consumption  |        | 180 W, typical   |                    |           |
| External connection  |        |  |                    |           |
| RF Ports   |        | 7/16 DIN Female  |                    |           |
| External alarm inputs  |        | 4  |                    |           |
| Alarm relay output   |        | Dry contact  |                    |           |
| Mechanical and Environmental specification   |        |  |                    |           |
| Dimensions (H x W x D)   |        | 540 mm x 382 mm x 198 mm   |                    |           |
| Enclosure  |        | Aluminium (IP65)   |                    |           |
| Weight   |        | 22 kg  |                    |           |
| Cooling  |        | Convection   |                    |           |
| Mounting   |        | Wall mounted   |                    |           |
| Operating Temperature  |        | -25°C to + 50°C  |                    |           |
| Storage  |        | -30°C to + 70°C  |                    |           |
| Humidity   |        | 0 to 95% RHNC  |                    |           |
| Compliance   |        |  |                    |           |
| Complies with  | Safety | EN 62368-1, EN 50385   |                    |           |
|  | EMC    | EN 301 489-1, EN 301 489-5   |                    |           |
|  | Radio  | EN 302 561   |                    |           |