

## D-CSR 3604 NBF

Digital channel selective repeater for public safety with 30 kHz narrow band filter

### Key features

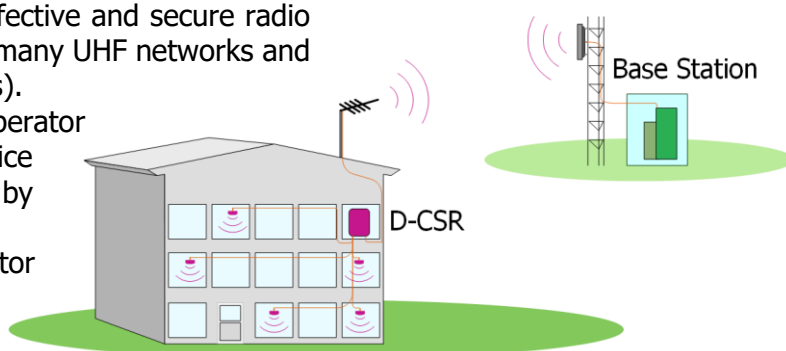
- Large repeater coverage footprint due to high output power and gain.
- Channel selective with 30 kHz narrow band filter.
- Very low propagation delay leading to higher security, resilience and availability of information.
- Easy system implementation with built-in commissioning tools.
- Time-slot based ALC minimizes noise contribution.
- Supervision available over various wireless modems.
- Built in spectrum analyser.
- Wall mount or 19" rack-mount configurations available.



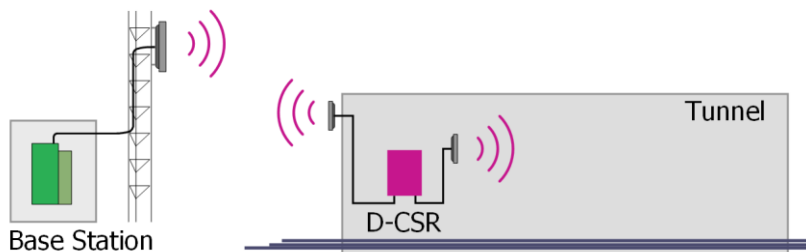
The D-CSR 3604 provides quick, cost-effective and secure radio coverage in any TETRA, TETRAPOL and many UHF networks and can handle up to eight carriers (channels).

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.

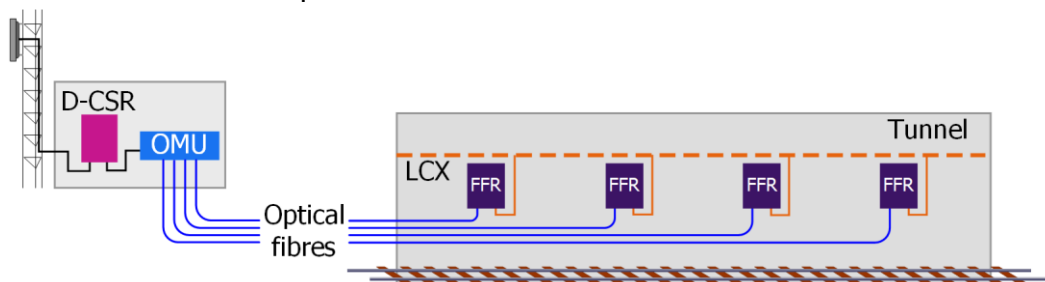
The wireless interface permits the operator to remotely configure RF parameters as well as monitor alarms on a continuous basis. Supervision is available over various wireless modems.



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



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



## Technical specification

| Electrical specifications                                                         | Downlink                                                                                                                                                                                             | Uplink                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Typical frequency ranges include:<br><br>(others bands upon request up to 520MHz) | 390 MHz to 395 MHz<br>390 MHz to 396.5 MHz<br>390 MHz to 397 MHz<br>395 MHz to 400 MHz<br>420 MHz to 425 MHz<br>423 MHz to 430 MHz<br>425 MHz to 430 MHz<br>460 MHz to 465 MHz<br>465 MHz to 470 MHz | 380 MHz to 385 MHz<br>380 MHz to 386.5 MHz<br>380 MHz to 387 MHz<br>385 MHz to 390 MHz<br>410 MHz to 415 MHz<br>413 MHz to 420 MHz<br>415 MHz to 420 MHz<br>450 MHz to 455 MHz<br>455 MHz to 460 MHz |
| Number of channels                                                                | Up to 8                                                                                                                                                                                              |                                                                                                                                                                                                      |
| Channel frequency options                                                         | any channel within band: 30 kHz (low delay) - 30 kHz (high selectivity)                                                                                                                              |                                                                                                                                                                                                      |
| Impedance                                                                         | 50 Ω                                                                                                                                                                                                 |                                                                                                                                                                                                      |
| Noise figure                                                                      | 4.5 dB at maximum gain                                                                                                                                                                               |                                                                                                                                                                                                      |
| Group delay                                                                       | <30 μs low delay - <60 μs high selectivity                                                                                                                                                           |                                                                                                                                                                                                      |
| ALC                                                                               | Time-slot based per channel                                                                                                                                                                          |                                                                                                                                                                                                      |
| Squelch *                                                                         | Settable                                                                                                                                                                                             |                                                                                                                                                                                                      |
| 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 TS 101-789-1)                                                                                                                                                                  |                                                                                                                                                                                                      |
| Remote control and alarm supervision                                              | Ethernet                                                                                                                                                                                             |                                                                                                                                                                                                      |
|                                                                                   | IP-based via GSM/EDGE (850/900/1800/1900), UMTS,                                                                                                                                                     |                                                                                                                                                                                                      |
|                                                                                   | Circuit Switched via GSM/EDGE (850/900/1800/1900) or PSTN                                                                                                                                            |                                                                                                                                                                                                      |
| Power requirements                                                                | 230VAC 50Hz or 110VAC 60Hz or -48 VDC                                                                                                                                                                |                                                                                                                                                                                                      |
| Power consumption                                                                 | 180 W, typical                                                                                                                                                                                       |                                                                                                                                                                                                      |
| Environmental specification                                                       |                                                                                                                                                                                                      |                                                                                                                                                                                                      |
| Operating temperature                                                             | -25°C to + 50°C                                                                                                                                                                                      |                                                                                                                                                                                                      |
| Storage temperature                                                               | -30°C to + 70°C                                                                                                                                                                                      |                                                                                                                                                                                                      |
| Humidity                                                                          | 0 to 95% RHNC                                                                                                                                                                                        |                                                                                                                                                                                                      |
| Complies with<br>Radio Equipment Directive including                              | EN 301 489-5, ETSI TS 101 789-1, EN 62 368                                                                                                                                                           |                                                                                                                                                                                                      |
| Mechanical specification                                                          | Wall mount                                                                                                                                                                                           | Rack mount                                                                                                                                                                                           |
| Dimensions (H x W x D)                                                            | 540 mm x 382 mm x 198 mm                                                                                                                                                                             | 4U, 19", 450 mm deep                                                                                                                                                                                 |
| Enclosure (Sealing)                                                               | Aluminium (IP65)                                                                                                                                                                                     | Aluminium (IP30)                                                                                                                                                                                     |
| Weight                                                                            | 22 kg                                                                                                                                                                                                | 18 kg                                                                                                                                                                                                |
| Cooling                                                                           | Convection                                                                                                                                                                                           |                                                                                                                                                                                                      |
| External connection                                                               |                                                                                                                                                                                                      |                                                                                                                                                                                                      |
| RF ports                                                                          | 7/16 DIN female                                                                                                                                                                                      | N type female                                                                                                                                                                                        |
| External alarm inputs                                                             | 4                                                                                                                                                                                                    |                                                                                                                                                                                                      |
| Alarm relay output                                                                | Dry contact                                                                                                                                                                                          |                                                                                                                                                                                                      |

\* 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.



4U, 19" rack mount version

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E&OE, specification subject to revision without notice.