D-SBR HP
High Power, Digital, Single Band Repeater
Channel Selective and Band Selective

Key features
- 37 dBm output power, 90 dB gain
- A range of models supporting one of the following frequency bands: 900 MHz, 1800 MHz, 2100 MHz
- Supports up to 12 sub-bands with optional non-contiguous sub-bands enabled by programmable innovative DSP filtering
- Specific gain and power settings for each sub-band supporting single and multi-operator applications
- Supports up to three technology per repeater: GSM, WCDMA, LTE
- Interference Mitigation Oscillation Prevention (IMOP) technology prevents oscillations and balances coverage.
- MCPA technology supporting top level EVM, ACRR and emission performance, supports latest LTE technologies

The High Power D-SBR HP, Digital Single Band Repeaters are specifically designed for outdoor and in-building GSM/WCDMA/LTE applications.

Each single-band repeater can be configured for up to 12 contiguous or optionally non-contiguous sub-bands in the relevant band.

State of the art, DSP filtering based design enables user configurable customization of individual sub-band parameters according to site needs. This includes bandwidth, gain and power setting, as well as selection of any one of the supported technologies per sub-band. This allows providing different levels according to the requested service (i.e. GSM, WCDMA).

The repeaters utilise the IMOP mechanism, a robust way of dealing with poor isolation margin, protecting the system from oscillation and maintaining repeater operation.

IMOP is an innovative algorithm that ensures that the repeater will never oscillate by measuring the isolation between the donor and service antennas and adjusting the gain accordingly. This allows for safe operation in a dynamic environment.

Using an advanced ALC mechanism each one of the sub-bands has an individual gain and ALC setting, hence it is possible to support multi technologies (2G, 3G and 4G) and multi operator functionality in one unit.

Highly linear Power Amplifier components (MCPA) and advanced DSP filtering provide top level performance that supports high throughput of the latest LTE technology.

The efficient thermal characteristics of the D-SBR HP and robust design result in high system reliability. The repeaters support intuitive web management GUI that can be accessed using any standard browser (no client installation required) through a local or remote connection via a wireless modem.

Alarm notifications are sent via SNMP traps or SMS. Using the Axell Wireless advanced supervision and control management software (AEM), the entire deployment of repeaters can be monitored and controlled from a single management point.

The D-SBR HP high power digital repeater is a cost-effective way to complete the coverage in a cellular network. Axell Wireless’ proprietary IMOP technology guarantees a quick and simple setup that will meet coverage needs without degradation of network performance.
## Technical specification

<table>
<thead>
<tr>
<th>Model</th>
<th>Frequency Range DL</th>
<th>Frequency Range UL</th>
<th>Composite Output Power DL</th>
<th>Composite Output Power UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-SBR 4007E</td>
<td>703-733 MHz</td>
<td>758-788 MHz</td>
<td>+40 dBm</td>
<td>+28 dBm</td>
</tr>
<tr>
<td>D-SBR 3709</td>
<td>880-915 MHz</td>
<td>925-960 MHz</td>
<td>+37 dBm</td>
<td>+23 dBm</td>
</tr>
<tr>
<td>D-SBR 3718</td>
<td>1805-1880 MHz</td>
<td>1710-1785 MHz</td>
<td>+37 dBm</td>
<td>+28 dBm</td>
</tr>
<tr>
<td>D-SBR 3921</td>
<td>2110 - 2170 MHz</td>
<td>1920 - 1980 MHz</td>
<td>+39 dBm</td>
<td>+28 dBm</td>
</tr>
</tbody>
</table>

### Common parameters

- **Number of Filters**: 1 to 8 or 1 to 12 (model dependent)
- **Filter Bandwidth**: 200 kHz – 20 MHz
- **Passband Gain (max)**: 90 dB
- **Passband Ripple**: ± 2.5 dB
- **Gain Attenuation Range**: 0-25 dB (in 1 dB steps)
- **Noise Figure @ Maximum Gain (typical)**: 5 dB
- **Propagation Delay**: 6 µs
- **Total RF Input Power (No Damage)**: + 10dBm
- **Impedance Level**: 50 Ohm
- **V.S.W.R**: 1.5:1
- **Power Supply**: 120/230 VAC
- **Power Consumption**: ≈ 250 W

### Interfaces

- **RF Connectors**: Base/Mobile N-Type, Female
- **Communications**: RJ-45
- **Alarms**: Two external alarms, configurable via the Web GUI

### Mechanical & Environmental

- **Dimension W x H x D**: 540 x 382 x 313 mm
- **Weight**: 28 kg to 33 kg, model dependent
- **Enclosure**: IP65
- **Installation**: Wall mount, rack mount
- **Operating temperature**: -20 to +50 °C (-4 to +122 °F)
- **Storage temperature**: -30 to +70 °C (-22 to +158 °F)

### Compliance

- **EMC**: EN 301 489-1 V2.2.0 - EN 301 489-50 V2.2.0
- **Radio**: EN 303 609 V12.5.1 - EN 301 908-1 V11.1.1 - EN 301 908-11 V11.1.2 - EN 301 908-15 V11.1.2

This specification sheet applies to the following repeater models:

- **D-SBR 4007E-8**: 700 MHz, high power - 8 sub bands, 40 dBm with WCDMA modem
- **D-SBR 3709-8**: 900 MHz, high power - 8 sub bands, 37 dBm with WCDMA modem
- **D-SBR 3718-8**: 1800 MHz, high power - 8 sub bands, 37 dBm with WCDMA Modem
- **D-SBR 3921-8**: 2100 MHz, high power - 8 sub bands, 39 dBm with WCDMA Modem

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