Outdoor Unit for Digital MW Radio Systems 4 to 38GHz Frequency Range

Main Features
- High Linearity allowing highest order modulation schemes.
- Very low power Consumption.
- Compact and Lightweight.
- Very low Phase Noise.
- SW Selectable BW.
- Superior reliability – High MTBF.
- Fully Calibrated over the temperature range.
- Proprietary quick release WG Antenna Interface.

Options
- HP version (available up to 13GHz)
- WB version for 56 ch. BW operation
- -50 °C (-58 °F) Operational.
- Customized IF Frequency / Telemetry Interface.
- Customer Specific IDU Interface.
- 17 & 24GHz cross polarization versions for licence-exempt ISM bands

The Outdoor Unit provides a flexible and cost-effective solution to System Integrators for PDH and SDH radio systems; operating in the licensed bands from 4 to 38 GHz, the ODU Family is the best solution for fast time to market, highest performances and reliability.

The 17 and 24 GHz Cross ODU are specifically designed to meet the requirements of the ISM bands. They operate with Tx and Rx Crosspolarized through an OMT into a circular Waveguide.

The ODU is SW configurable ODU, settings and readings are available through Customer Specific Telemetry Protocol. A built in microcontroller provides full calibration of Transmit Power and Receive Signal Level (RSL) by means precise and reliable algorithms. Additionally, the ODU enhanced software allows inventory modules ID, setting and fine tuning of several parameters and downloadable field upgrades.

The advanced features and enhanced capabilities of the ODU make it the ideal solution for Radio Links from 2 to 310 Mbps capacity, with modulation schemes from QPSK to 128 QAM and channel BW from 3.5 to 56 MHz.

The small size of the modules allows to eventually fit them into the customer standard ODU housing, upon request.
### FREQUENCY SPECIFIC ODU PARAMETERS

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Standard</th>
<th>Operating Frequency (GHz)</th>
<th>TX Output Power dBm - STD (HI)</th>
<th>Noise Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>4GHz</td>
<td>ETSI/FCC</td>
<td>3.80 to 5.80</td>
<td>+27 (+32)</td>
<td>&lt;4 dB</td>
</tr>
<tr>
<td>6GHz</td>
<td>ETSI/FCC</td>
<td>5.90 to 6.40</td>
<td>+24 (+29)</td>
<td>&lt;4 dB</td>
</tr>
<tr>
<td>7/8GHz</td>
<td>ETSI</td>
<td>7.10 to 8.50</td>
<td>+21 (+26)</td>
<td>&lt;4.5 dB</td>
</tr>
<tr>
<td>10/11GHz</td>
<td>ETSI/FCC</td>
<td>10.00 to 10.70</td>
<td>+23 (+31)</td>
<td>&lt;4.5 dB</td>
</tr>
<tr>
<td>11GHz</td>
<td>ETSI/FCC</td>
<td>10.70 to 11.70</td>
<td>+22 (+28)</td>
<td>&lt;4.5 dB</td>
</tr>
<tr>
<td>13GHz</td>
<td>ETSI</td>
<td>12.75 to 13.25</td>
<td>+22 (+28)</td>
<td>&lt;4.5 dB</td>
</tr>
<tr>
<td>15GHz</td>
<td>ETSI</td>
<td>14.40 to 15.35</td>
<td>+25</td>
<td>&lt;4.5 dB</td>
</tr>
<tr>
<td>18GHz</td>
<td>ETSI/FCC</td>
<td>17.70 to 19.70</td>
<td>+23</td>
<td>&lt;4.5 dB</td>
</tr>
<tr>
<td>23GHz</td>
<td>ETSI/FCC</td>
<td>21.20 to 23.60</td>
<td>+22</td>
<td>&lt;5.5 dB</td>
</tr>
<tr>
<td>26GHz</td>
<td>ETSI/FCC</td>
<td>24.50 to 26.50</td>
<td>+21</td>
<td>&lt;6.0 dB</td>
</tr>
<tr>
<td>38GHz</td>
<td>ETSI/FCC</td>
<td>37.00 to 39.50</td>
<td>+18</td>
<td>&lt;6.5 dB</td>
</tr>
</tbody>
</table>

Note: HP Option output power between brackets

### ODU PARAMETERS

- **TX IF interface**: 350 MHz, -5 to -33dBm
- **Rx IF Interface**: 140 MHz, -12 +/-2 dB over the AGC Range
- **Telemetry Interface**: Customer specific
- **Power control Range**: >25 dB
- **Power setting resolution**: 0.5 dB
- **Power setting accuracy**: 2 dB
- **Rx AGC Range**: -20 to -90 dBm
- **SSB tx/rx Phase Noise**: 4 - 6 - 7 - 8 GHz, 11 - 13 -15 GHz
- **dBc@10KHz**: -82
- **dBc@100KHz**: -103
- **dBc@1MHz**: -123
- **Synthesizer Step**: 0.25 MHz
- **Frequency Stability**: 2.5 ppm
- **Standard Compliance**: Radio ESTI EN 302 217, EN 301 216, EN 301 128, EN 300 198
  - Power Supply ETSI EN 300 132-2
  - EMC / Safety ETSI EN 301 489 / IEC EN 60950

### MECHANICAL / ENVIRONMENTAL

- **Dimensions**: D 260mm, H 160mm
- **Weight**: 6.0 kg
- **Operating Temperature**: -33° to +55°C
- **Altitude**: Up to 4500 meters
- **Humidity**: 100% all weather
- **Power Input**: -48V DC (-36 to -62V DC)
- **Power Consumption**: <25 watts, <35W for HP option
- **Cooling**: Natural convection
- **Coaxial Interfaces**: N-type female
- **IDU-ODU Cable**: Belden 9913/RG-8, up to 300m
- **Antenna interface**: Coaxil N-type connector (6-11 GHz); proprietary direct mount (13 GHz and above)
- **Standards Compliance**: ETSI ETS 300 019