Power utilities are driving a grid modernization process that includes substation and Distribution Automation (DA) to achieve a more reliable, resilient, and cost-effective electric system.

To realize this process, a reliable, high-capacity wireless network is required to enable devices to sense the operating conditions of the grid and adjust overall power flow to optimize performance without dispatching an operating crew.

Addressing the needs of utility companies for greater visibility and control, RADWIN’s Point-to-Point (PtP) and Point-to-MultiPoint (PtMP) solutions deliver high-performance and reliable wireless broadband connectivity to substations and a wide variety of intelligent grid devices.
Solutions for Power Utilities

**JET series Smart Beamforming Point-to-MultiPoint:**

- Up to 1.5Gbps per sector / 6Gbps per cell
- Bi-directional beamforming antenna
- Innovative air interface
- Support 3.4-3.8 GHz or 4.9- 6.0 GHz bands
- Guaranteed SLA
- High uplink system gain in limited EIRP ETSI & FCC
- 25dbm transmission power across all modulations
- High packets-per-second (PPS) for VoIP and CCTV
- High frequency reuse of 1:2
- Up to 90% uplink traffic transmission for power utility applications
- Dynamic channel bandwidth selection (D-CBS)

**RADWIN 2000 Point-to-Point:**

- Outdoor and all-indoor alternatives
- High Capacity – up to 750Mbps
- Long range – up to 120Km/ 75miles
- Dynamic channel bandwidth selection (D-CBS) - maximizing link capacity in congested spectrum
- Configurable asymmetric capacity
- Ruggedized IP67 outdoor units.
RADWIN advantages for Power Utilities

» Highest capacity to support reliable substation connectivity, distribution automation and Advanced Metering Infrastructure (AMI) backhaul
» Higher bandwidth and spectrum efficiency
» Lower costs and faster Time-To-Market (TTM) alternative to fiber
» Service Level Assurance (SLA)
» Network redundancy and increased availability
» Unified synchronization, eliminating self-interference
» High durability with IP67 rated units

Applications:
» Leased line replacement
» WiMAX system replacement
» Reliable connectivity to substations:
  › SCADA
  › IEDs
  › Monitoring and control
  › Security gateways and routers
  › VoIP phones
  › Video surveillance
» AMI connectivity - backhauling wireless concentrators
» Recloser control and fault monitoring

Substation Automation: High speed connectivity to substations with RADWIN PtMP/PtP systems
### Technical Data

<table>
<thead>
<tr>
<th></th>
<th>RADWIN JET DUO</th>
<th>RADWIN JET PRO</th>
<th>RADWIN 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Point-to-MultiPoint</td>
<td>Point-to-MultiPoint</td>
<td>Point-to-Point</td>
</tr>
<tr>
<td><strong>Net Aggregate Throughput</strong></td>
<td>Up to 1.5Gbps</td>
<td>Up to 750Mbps</td>
<td>10Mbps up to 750Mbps</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>Up to 40km/ 25miles</td>
<td>Up to 40Km/ 25miles</td>
<td>Up to 120Km/ 75miles</td>
</tr>
<tr>
<td><strong>Frequency Multi-Band</strong></td>
<td>4.9-6.0GHz</td>
<td>4.9-5.9GHz</td>
<td>2.3-2.4GHz, 3.4-3.8GHz, 4.9-6.0GHz</td>
</tr>
<tr>
<td><strong>MIMO/Antenna Diversity</strong></td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>Beamforming antenna at Base Station</strong></td>
<td>Supported</td>
<td>Supported</td>
<td>-</td>
</tr>
<tr>
<td><strong>Latency</strong></td>
<td>Constant per Subscriber Unit: Typical 4 to 10msec</td>
<td>Constant per subscriber unit: Typical 4 to 10msec</td>
<td>&lt;3msec</td>
</tr>
<tr>
<td><strong>TDD Synchronization</strong></td>
<td>Intra and Inter-Site Built-in GPS receiver</td>
<td>Intra and Inter-Site Built-in GPS receiver</td>
<td>Intra and Inter-Site</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>SNMPv1, SNMPv3, AES 128-bit encryption</td>
<td>SNMPv1, SNMPv3, AES 128-bit encryption</td>
<td>SNMPv1, SNMPv3, AES 128-bit encryption</td>
</tr>
<tr>
<td><strong>Bandwidth allocation</strong></td>
<td>Guaranteed bandwidth per site</td>
<td>Guaranteed bandwidth per site</td>
<td>Guaranteed bandwidth per site</td>
</tr>
<tr>
<td><strong>Operating Temperatures</strong></td>
<td>-35°C to 60°C/-31°F to 140°F</td>
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<td>-35°C to 60°C/-31°F to 140°F</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>100% condensing, IP67</td>
<td>100% condensing, IP67</td>
<td>100% condensing, IP67</td>
</tr>
</tbody>
</table>

RADWIN is a leading provider of Point-to-Multipoint and Point-to-Point broadband wireless solutions. Incorporating the most advanced technologies such as a Beamforming antenna and an innovative Air Interface, RADWIN’s systems deliver optimal performance in the toughest conditions including high interference and obstructed line-of-sight. Deployed in over 170 countries, RADWIN’s solutions power applications including backhaul, broadband access, private network connectivity, video surveillance transmission as well as delivering broadband on the move for trains, vehicles and vessels.

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