

## ETHERHAUL RANGE



### Design a Future-Proof Wireless Network

The Etherhaul Range radios delivers ultra high capacity wireless point-to-point Ethernet connectivity that future-proofs your backhaul network. With throughput of up to 1000 Mbps over the uncongested 60GHz and 80GHz spectrum using TDD or FDD, service providers and businesses can deploy affordable, spectrum efficient, high capacity wireless links that are easy to install and maintain.

#### Typical Applications

- ✓ Mobile Backhaul
- ✓ Fiber Extension
- ✓ Business Broadband Connectivity
- ✓ LAN to LAN Connectivity

### Based on a Cost Reducing All-Silicon Technology

The Etherhaul Range is based on advanced integrated-silicon technology, which increases reliability and reduces size and cost. The result is a very small, very light radio with a 90-year MTBF and an unbeatable price/throughput.

### Easy Spectrum Acquisition in Urban Areas

The E-band and V-band spectrum is uncongested, even in dense urban areas. Use of a high-gain, pencil-beam antenna guarantees available spectrum anywhere and maximizes spectrum re-use. E-band also offers low licensing fees and quick licensing processes. The V-band spectrum is unlicensed.

### Streamline Operations with Carrier Ethernet & Synchronization

The Etherhaul Range has MEF-compliant integrated carrier Ethernet that streamlines operations with bandwidth-aware QoS, service management and OAM. For mobile operators, built-in synchronization with Sync-E or 1588V2 ensures smooth performance over packet backhaul.

### Asymmetric Capacity Optimization

Operating in TDD allows you to set-up asymmetric capacity configuration. Match your upload/ download rates to your application and optimize use of spectrum.

### Build Up Resiliency and Availability

The Etherhaul Range has an integrated L2 switch and an extra port so you can deploy in ring, mesh or any high resiliency topology you need. It also incorporates Hitless Adaptive Bandwidth Coding and Modulation for high availability.

### Small Size, Easy to Deploy & Manage

The all-outdoor radio has a tiny footprint that eases site acquisition. Its light weight and small size contribute to a quick and easy installation. Easy to use web GUI manages local and remote units.

### Field Proven Best Seller

The Etherhaul Range is the world's best selling millimeter wave radio. Thousands of units have been deployed and are performing reliably in varying weather conditions all over the globe.

### Improves the Bottom Line

The Etherhaul Range provides a fast return on investment (ROI) and minimizes total cost of ownership (TCO). The all-silicon design delivers unbeatable price/MB; small and light form factor lowers installation costs, and the high reliability reduces site visits.

The Etherhaul Range is a class leading wireless outdoor bridge that has been optimised for long transmission distances and designed to be extremely compact and rugged.

Couple this with the FREE **SilverView** NMS and you have an outstanding feature packed solution.

Etherhaul Range	60GHz NO Licensed Links 100-1000Mbps <i>SIL TDD601-PCP</i>	80GHz Licensed Links TDD 700Mbps <i>SIL TDD801-PCP</i> <i>SIL TDD803-PCP</i>	80GHz Licensed Links FDD 1000Mbps <i>SIL FDD801-PCP</i> <i>SIL FDD803-PCP</i>
<b>Radio</b>			
Frequency, duplexing scheme	57-64GHz, TDD	71-76GHz, TDD	71-76/81-86GHz, FDD
Modulation	QPSK-1/QPSK-2/QPSK-3/QAM16/QAM64	QPSK-1/QPSK-2/QPSK-3/QAM16	QPSK-1/QPSK-2/QPSK-3/QAM16/QAM64
Adaptive rate	Hitless adaptive bandwidth, coding and modulation, boosting system gain by 25dB	Hitless adaptive bandwidth, coding and modulation, boosting system gain by 21dB	Hitless adaptive bandwidth, coding and modulation, boosting system gain by 25dB
Throughput	Up to 1000 Mbps aggregated (with asymmetric/symmetric downlink/uplink rate)	700 Mbps aggregated (with asymmetric/symmetric downlink/uplink rate)	1000 Mbps full duplex
Transmission Distance	200-500m	1.3Km (1ft antennas) 3Km (2ft antennas)	1.3Km (1ft antennas) 3Km (2ft antennas)
Antenna	Integrated, 35dBi	Integrated 1ft (31cm), 43dBi ; External 2ft (65cm), 50dBi	Integrated 1ft (31cm), 43dBi ; External 2ft (65cm), 50dBi
Power	Wide-voltage input: ±21+57VDC PoE+ (IEEE 802.3at)	PoE+ (IEEE 802.3at) Wide-voltage input: ±21+57VDC	PoE+ (IEEE 802.3at with power boost)
<b>Network</b>			
Interfaces	3xGbE copper ports	2xGbE combo ports, each either RJ-45 or SFP slot	2xGbE ports: 1000BaseT ports
Management, provisioning & commissioning	Web GUI (one click management of local & remote units), embedded CLI, SNMPv2/3, in-band, out-of-band Zero touch turn-up, TACACS+, RADIUS	Web GUI (one click management of local & remote units), embedded CLI, SNMPv2/3, in-band, out-of-band Zero touch turn-up, TACACS+, RADIUS	Web GUI (one click management of local & remote units), embedded CLI, SNMPv2/3, in-band, out-of-band Zero touch turn-up, TACACS+, RADIUS
Ethernet Features	VLAN (IEEE 802.1q) and VLAN stacking (Q-in-Q, IEEE 802.1ad Provider Bridge) IEEE 802.1d Transparent Bridging QoS, traffic shaping and policing MEF 9,14 and 21 compliant Ethernet OAM and CFM (IEEE 802.1ag / ITU-T Y.1731 / IEEE 802.3ah) Ethernet Ring Protection (ITU-T G.8032) Jumbo frames up to 16k	VLAN (IEEE 802.1q) and VLAN stacking (Q-in-Q, IEEE 802.1ad Provider Bridge) IEEE 802.1d Transparent Bridging QoS, traffic shaping and policing MEF 9,14 and 21 compliant Jumbo frames up to 16k	IEEE 802.1d Transparent Bridging QoS aware forwarding Jumbo frames up to 16k
Synchronisation	IEEE 1588v2 TC Synchronous Ethernet ITU-T G.8261/8262/8264	N/A	IEEE 1588v2 Optimized Transport Synchronous Ethernet ITU-T G.8261/8262/8264
Network topologies	Ring, daisy chain, mesh	Ring, daisy chain, mesh	Ring, daisy chain, mesh
<b>Security</b>			
Encryption	AES 128-bit and 256-bit	AES 128-bit and 256-bit	AES 128-bit and 256-bit
<b>Other</b>			
Environmental	Operating temperature: -45° ÷ +55°C Ingress protection rating: IP67	Operating temperature: -45° ÷ +55°C Ingress protection rating: IP67	Operating temperature: -45° ÷ +55°C Ingress protection rating: IP67
Regulatory	ETSI EN 302 217, FCC 47 CFR part 101, CE marked, EMC, safety UL60950	ETSI EN 302 217, FCC 47 CFR part 101, CE marked, EMC, safety UL60950	ETSI EN 302 217, FCC 47 CFR part 101, CE marked, EMC, safety UL60950
Dimensions	ODU (H x W x D) - 15 cm x 15.5 cm x 9cm (5.9" x 6.1" x 3.54")	ODU (H x W x D) - 24.5 cm x 22.5 cm x 7 cm (9.7" x 8.9" x 2.75") ODU + 1ft antenna (Dia. x Depth) - 31 cm x 13 cm (12.2" x 4.3") ODU + 2ft antenna (Dia. x Depth) - 65 cm x 37 cm (25.6" x 15.35")	ODU (H x W x D) - 24.5 cm x 22.5 cm x 5 cm (9.7" x 8.9" x 2") ODU + 1ft antenna (Dia. x Depth) - 31 cm x 13 cm (12.2" x 4.3") ODU + 2ft antenna (Dia. x Depth) - 65 cm x 37 cm (25.6" x 15.35")
Weight	ODU + Antenna: 1.8 kg (3.9 lbs)	ODU + 1ft antenna: 4.5 kg (9.9 lbs) ODU + 2ft antenna: 10.7Kg (23.5 lbs)	ODU + 1ft antenna: 4.5 kg (9.9 lbs) ODU + 2ft antenna: 10.7Kg (23.5 lbs)

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SilverNet Limited reserve the right to change specifications and other information within this document without notice and your attention is brought to the fact that performance figures are under ideal conditions. Actual performance will depend on many environmental factors and it is recommended that a site survey is undertaken prior to installation.

Please also note that this equipment may also be subject to local legislative restrictions such as Band C operation within the UK. It is the end user's responsibility to ensure that the installation complies with any such restrictions that are in force.



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