Carrier Class Licensed Microwave Backhaul Solutions

High-Capacity Point-to-Point Native Ethernet Wireless Networks

TrangoLINK Giga®
Licensed Split Architecture Microwave Backhaul

TrangoLINK® Apex
Licensed All-Outdoor Microwave Backhaul

TrangoLINK-45™
Unlicensed Microwave Wireless Bridge

The ultimate solution for fixed and mobile backhaul transport is highly scalable, flexible, economical, easy to deploy, and extremely fast with minimal latency—Trango microwave backhaul products embody all of these qualities and more.

Trango backhaul equipment is your ultimate solution for microwave point-to-point wireless connectivity.
**LICENCED MICROWAVE BACKHAUL**

**TrangoLINK® Apex**

*All-Outdoor Licensed Backhaul*

- Up to 750 Mbps throughput
- Ultra low latency, <100 µS, for *triple play* bandwidth-intensive applications
- All-outdoor integrated radio and modem design for zero footprint installation
- Support for FCC, IC, and ETSI standards

TrangoLINK® Apex delivers high-capacity carrier-grade availability, superior performance and fast ROI in a compact all-outdoor radio. This highly-flexible native Ethernet backhaul solution is the only licensed microwave All-Outdoor Unit (AOU) offering these market-exclusive features:

- Hitless Adaptive Modulation
- True hot standby 1+1 link protection with Rapid Port Shutdown
- Real-time digital LED RSSI indicator
- Optical/fiber data interface
- 2 data ports with a separate management port

**Flexibility & Performance**

- High spectral efficiency of up to 7.5 bits/Hz
- LDPC (Low Density Parity Check) for improved receive sensitivity
- Power-over-Ethernet (PoE) or direct power, -48 Volt
- GigE copper interface data port, PoE capable
- Fast Ethernet copper management port, PoE capable
- GigE optical/fiber interface data port
- Flexible modulations, bandwidth and throughput controls
- 3-tier upgrade path for pay-as-you-grow OPEX efficiency

10 / 11 GHz – **TrangoLINK® Apex 11**

- Up to 520+ Mbps throughput (260+ Mbps Full Duplex)
- Supports channel sizes 10, 20, 28, 30 and 40 MHz

15 GHz – **TrangoLINK® Apex 15**

- Up to 480+ Mbps throughput (240+ Mbps Full Duplex)
- Supports channel sizes 14, 20, 28 and 40 MHz

18 GHz – **TrangoLINK® Apex 18**

- Up to 750+ Mbps throughput (375+ Mbps Full Duplex)
- Supports channel sizes 10, 20, 27.5, 30, 40, 50, 55, and 56/80 MHz

23 GHz – **TrangoLINK® Apex 23**

- Up to 750+ Mbps throughput (375+ Mbps Full Duplex)
- Supports channel sizes 10, 20, 28, 30, 40, 50, and 56 MHz
TrangoLINK Giga®
Split-Architecture Licensed Backhaul

- Up to **620+ Mbps** throughput
- Ultra low latency for video, VoIP and data *triple play* applications
- 4 GigE IP ports, 8 T1/E1 TDM ports, for easy TDM to IP migration and mixed traffic
- Support for FCC, IC, and ETSI standards

TrangoLINK Giga® supports all types of TDM and Ethernet/IP traffic, making it ideal for mixed traffic, OC3 replacement, or an easy all-IP migration. Designed from the ground up for high-capacity cellular/WiMAX/WISP backhaul, public and private networks, and LAN extensions, TrangoLINK Giga® delivers industry-leading latency, unequalled flexibility, carrier-grade reliability and unmatched economics.

**6 GHz – TrangoLINK Giga® 6**
- Up to **330+ Mbps** throughput (**165+ Mbps** Full Duplex)
- Supports channel sizes 10, 28, and 30 MHz
- Full Capacity out of the box, no option key necessary

**10 / 11 GHz – TrangoLINK Giga® 11**
- Up to **480+ Mbps** throughput (**240+ Mbps** Full Duplex)
- Supports channel sizes 10, 20, 28, 30 and 40 MHz

**15 GHz – TrangoLINK Giga® 15**
- Up to **480+ Mbps** throughput (**240+ Mbps** Full Duplex)
- Supports channel sizes 10, 20, 28, 30 and 40 MHz

**18 GHz – TrangoLINK Giga® 18**
- Up to **620+ Mbps** throughput (**310+ Mbps** Full Duplex)
- Supports channel sizes 10, 20, 27.5, 30, 40, 50, 55, and 56/80 MHz

**23 GHz – TrangoLINK Giga® 23**
- Up to **620+ Mbps** throughput (**310+ Mbps** Full Duplex)
- Supports channel sizes 10, 20, 28, 30, 40, 50, and 56 MHz

**IP/TDM Mixed Traffic Ultimate Flexibility**
- Native Ethernet and native TDM
- Ideal for Ethernet backhaul and TDM to IP migration
- Four configurable GigE ports (10/100/1000 BaseT) for payload
- GigE ports have port priority assignment (VLAN) and QoS features supporting eight priorities and four queues
- Eight T1/E1 ports with data stream auto add/drop
- All ports are port-mapped and operate simultaneously

**Shared Features**
- Real-time digital LED RSSI indicators
- Flexible modulation settings for greater spectral efficiency
- Fast modulation shifting
- Ethernet native for optimal network scalability
- Supports jumbo packets in GigE mode
- Port Priority assignment (VLAN) and QoS features
- Supports hot standby, link redundancy, 1+1 protection
- Supports ring/mesh/star network topologies, with RPS
- Excellent system gain for longer range, higher availability
- In-band management and out-of-band management
- Network management via SSH, SNMP, and HTTP browser