

POINT-TO-POINT

TrangoLINK Giga® 11 GHz

Split-Architecture Full Duplex Licensed Microwave IP/TDM Wireless Backhaul System

HIGH-CAPACITY POINT-TO-POINT WIRELESS NETWORK LINK

TrangoLINK Giga® is a high-performance 11 GHz licensed microwave wireless point-to-point system designed for carrier Ethernet, WiMAX/ISP broadband backhaul, mobile network backhaul, private enterprise WAN/LAN extensions, and municipal and public wireless networks.

TrangoLINK Giga® provides a full duplex wireless connection over the air that is ideal for mixed traffic that requires both IP and traditional TDM T1/E1 connectivity.

Each TrangoLINK Giga® consists of two indoor units (IDU) and two outdoor units (ODU). The ODU attaches easily to an external antenna that delivers high link gain and availability.

Benefits

- » Low cost of ownership
- » Excellent system gain for longer range and higher availability
- » No right-of-way issues, unlike fiber deployment
- » Fast ROI relative to fiber and other traditional options

Easy Setup and Deployment

- » Minimal maintenance, "set and forget"
- » Split-mount architecture with direct-mount slip-fit ODU and 1U rackmount unit IDU
- » Easy alignment via real-time digital LED RSSI indicators directly on both ODU and IDU
- » Easily upgrade throughput *as you need it*, with no hardware replacements and no forklift upgrades
- » Pay-as-you-grow 2-tier throughput upgrade path

Highlights

- Up to 480+ Mbps (240+ Mbps full duplex)
- Extremely low latency, <160 μs (typical)
- Supports FCC, IC, and ETSI channel sizes of 10, 20, 30 and 40 MHz ‡
- Standard 2-year manufacturer warranty

Performance

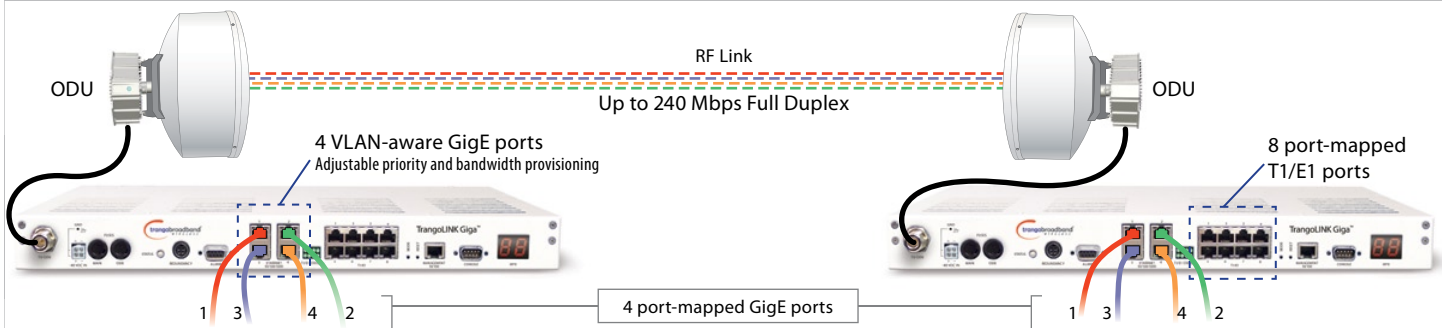
- » Highly flexible bandwidth management options
- » Selectable filters for improved sensitivity
- » Flexible modulation for greater spectral efficiency
- » Supports jumbo packets in GigE mode
- » Port Priority assignment (VLAN) and QoS features
- » Four configurable 10/100/1000 BaseT ports for payload
- » Eight T1/E1 ports that are automatically added to or dropped from the data stream when connected or disconnected

Fail Safe Features for High Reliability

- » Hot standby configuration for protection against equipment failure
- » Supports dual power supplies for power redundancy

Management

- » Network management through SSH, SNMP, HTTP, and Serial port
- » Built in loop back and far end monitoring



Specifications

| RADIO PARAMETERS | | Band 1 | | Band 2 | | | |
|--|---|--|--------------------|---|--------------------------------|--------------------|--------------------|
| Frequency of Operation (ODU) † | FCC/IC (490 MHz duplex spacing) | Band 1A: 10.715 to 10.945 GHz Band 1B: 11.215 to 11.435 GHz | | Band 2A: 10.955 to 11.185 GHz Band 2B: 11.445 to 11.685 GHz | | | |
| | ETSI (490 MHz duplex spacing) | Band 1A: 10.715 to 10.945 GHz Band 1B: 11.215 to 11.435 GHz | | Band 2A: 10.955 to 11.185 GHz Band 2B: 11.445 to 11.685 GHz | | | |
| Channel Size ‡ | 10 MHz / 20 MHz / 30 MHz / 40 MHz | | | | | | |
| RF Power Output (max per modulation) | QPSK | 16QAM | 32QAM | 64QAM | 128QAM | 256QAM | |
| | +22 dBm | +22 dBm | +22 dBm | +21 dBm | +20 dBm | +19 dBm | |
| Modulation Format | Selectable from QPSK, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM | | | | | | |
| Receiver Sensitivity | -64 dBm (256 QAM maximum speed); -89 dBm (QPSK minimum speed) | | | | | | |
| Features | ATPC (Automatic Transmit Power Control), Modulation Shifting, Forward Error Correction | | | | | | |
| Regulatory Compliance ‡ | FCC/ANSI: Part 101, Part 15 Class B Unintentional Radiator Industry Canada (IC): SRSP-310.7 Issue 2 ETSI: EN 302 217-2-1, EN 302 217-2-2, ITU R F.387-10, CEPT 12-06E | | | | | | |
| DATA | | | | | | | |
| Data Throughput/ RSSI (1E10 ⁻⁶ BER) ‡ | Speeds are uni-directional. For aggregate full duplex speeds, multiply throughput numbers below by 2. | | | | | | |
| Legend Basic Package = 108 Mbps maximum License Key 1 = 240 Mbps maximum * | Channel Size | QPSK / RSSI | 16QAM / RSSI | 32QAM / RSSI | 64QAM / RSSI | 128QAM / RSSI | 256QAM / RSSI |
| | 10 MHz | 15 Mbps / -89 dBm | 32 Mbps / -82 dBm | 36 Mbps / -79 dBm | 45 Mbps / -76 dBm | 52 Mbps / -73 dBm | N/A |
| | 20 MHz | 32 Mbps / -86 dBm | 68 Mbps / -79 dBm | 76 Mbps / -76 dBm | 93 Mbps / -73 dBm | 110 Mbps / -70 dBm | 118 Mbps / -67 dBm |
| | 28 / 30 MHz | 45 Mbps / -84 dBm | 95 Mbps / -78 dBm | 108 Mbps / -74 dBm | 132 Mbps / -72 dBm | 155 Mbps / -68 dBm | 167 Mbps / -66 dBm |
| | 40 MHz | 65 Mbps / -83 dBm | 137 Mbps / -76 dBm | 155 Mbps / -72 dBm | 190 Mbps / -70 dBm | 223 Mbps / -66 dBm | 240 Mbps / -64 dBm |
| Packet Size | 64-9600 bytes | | | | | | |
| Flow Control | Yes, via Ethernet pause frames (GigE mode only) | | | | | | |
| Security | Authentication uses 2 level password | | | | | | |
| Configuration & Management | SSH, HTTPS, Console (RS232), Ethernet, SNMPV2 | | | | | | |
| Remote firmware update | TFTP client in radio unit | | | | | | |
| ANTENNA | Model/Description | Gain | | | 3 dB Beamwidth | | |
| Antenna options | AD11G-2 / 2-foot antenna with slip-fit mount | 34.3 dBi mid-band | | | 3.4° | | |
| | AD11G-3 / 3-foot antenna with slip-fit mount | 37.1 dBi mid-band | | | 2.6° | | |
| | AD11G-4 / 4-foot antenna with slip-fit mount | 40.4 dBi mid-band | | | 1.7° | | |
| | AD11G-6 / 6-foot antenna with slip-fit mount | 43.8 dBi mid-band | | | 1.1° | | |
| POWER | | | | | | | |
| Input for Indoor Unit (IDU) | -40.5 to -57 VDC | | | | | | |
| Power Consumption | IDU: < 70 Watts; ODU: < 20 Watts | | | | | | |
| MECHANICAL & ENVIRONMENTAL | | INDOOR UNIT | | | OUTDOOR UNIT (without antenna) | | |
| Enclosure | 19-inch rackmount, 1U height | | | Cast Aluminum | | | |
| Indicators | 2-digit LED RSSI indicator; Ethernet speed and activity for each port; Backup OK indicator; Fault indicator; Power indicator | | | 2-digit LED "in dBm" RSSI indicator for alignment | | | |
| IF/power/control connection | N-Female | | | N-Female | | | |
| Dimensions (height x width x length) | 1.75 x 19 x 13 inches | | | 12 x 12 x 6.8 inches | | | |
| Weight | 6 lbs | | | 13.5 lbs | | | |
| Temperature Range (operational) | 14° to 122° F (-10° to +50° C) | | | -40° to 131° F (-40° to +55° C) | | | |
| Humidity | 95% non condensing | | | 100% condensing | | | |
| Interfaces | 4 GigaEthernet ports RJ45 (10/100/1000BaseT ports) 8 T1/DS1 ports RJ45 | | | N/A | | | |
| Out of band Management port | 1 Ethernet port RJ45 | | | N/A | | | |
| Alarms | 2 inputs – TTL ; 2 outputs – Dry contact closure isolated 50V 1A | | | N/A | | | |
| Power connector | 4 Pin Terminal Block to support redundant power supplies | | | N/A | | | |
| Redundancy (1+1) | 4 pin circular | | | N/A | | | |
| Console | DB9 | | | N/A | | | |
| Antenna Connector | N/A | | | Slip-fit mount / Optional waveguide adapter: WR90 / UBR100 | | | |
| 1+1 Protection Coupler | N/A | | | < -17 dB Return Loss, 3.8 dB Insertion Loss (typical) 20 dB port-to-port Isolation | | | |

* Based on purchasable Option Key. Contact sales for more information.

‡ Legal regulations for specific frequencies vary from region to region—users are responsible for complying with their region's regulations.



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