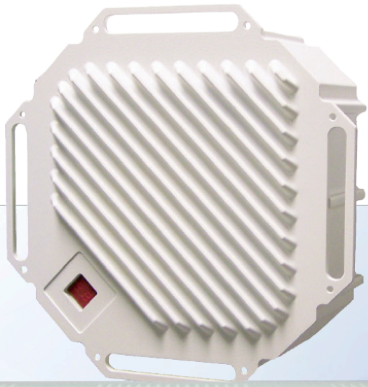




Innovating Microwave Backhaul™



POINT-TO-POINT

TrangoLINK Giga® 18 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 18 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 a 2-, 3- or 4-foot external antenna to achieve the desired link 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 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 620+ Mbps (310+ Mbps full duplex)
- Extremely low latency: < 100 µs (.10 ms), typical
- Supports FCC, IC, and ETSI channel sizes of 10, 20, 27.5, 30, 40, 50, 55 and 56/80 MHz ‡
- Standard 2-year manufacturer warranty

Performance

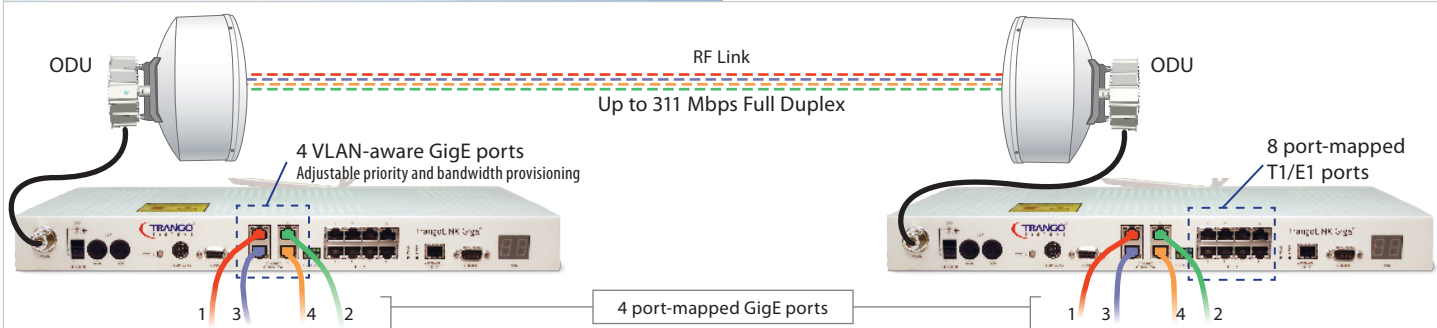
- » Highly flexible bandwidth management options
- » Selectable filters for improved sensitivity
- » Flexible modulation for greater spectral efficiency
- » Supports jumbo packets in GigE mode
- » Port Priority assignment (VLAN) and QoS features
- » Four configurable 10/100/1000 BaseT ports for payload
- » 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 (1560 MHz duplex spacing)	Band 1A ODU: 17.700 to 18.140 GHz Band 1B ODU: 19.265 to 19.700 GHz			N/A		
	ETSI (1010 MHz duplex spacing)	Band 1A ODU: 17.7275 to 18.1675 GHz Band 1B ODU: 18.7375 to 19.1775 GHz			Band 2A ODU: 18.1950 to 18.6625 GHz Band 2B ODU: 19.2050 to 19.6725 GHz		
Channel Size ‡	10 MHz / 20 MHz / 27.5 MHz / 30 MHz / 40 MHz / 50 MHz / 55 MHz / 56/80 Mhz						
RF Power Output (max per modulation)	QPSK	16QAM	32QAM	64QAM	128QAM	256QAM	
	+20 dbm	+20 dbm	+20 dbm	+19 dbm	+18 dbm	+17 dbm	
Modulation Format	Selectable from QPSK, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM						
Receiver Sensitivity	-62 dBm (256 QAM maximum speed); -88 dBm (QPSK minimum speed)						
Features	ATPC (Automatic Transmit Power Control), Modulation Shifting, Forward Error Correction						
Regulatory Compliance ‡	FCC/ANSI: Part 101, Part 15 Class A Unintentional Radiator Industry Canada (IC): SRSP-317.8 Issue 2 ETSI: EN 302 217-2-1 V1.2.1, EN 302 217-2-2 V1.2.2, EN 301 489, ITU R F.595-8, CEPT 12-03E						
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 = 311 Mbps maximum *	Channel Size	QPSK / RSSI	16QAM / RSSI	32QAM / RSSI	64QAM / RSSI	128QAM / RSSI	256QAM / RSSI
	10 MHz	15 Mbps / -88 dBm	32 Mbps / -82 dBm	36 Mbps / -78 dBm	44 Mbps / -76 dBm	N/A	N/A
	20 MHz	32 Mbps / -85 dBm	68 Mbps / -78 dBm	76 Mbps / -75 dBm	93 Mbps / -72 dBm	110 Mbps / -69 dBm	N/A
	27.5 / 30 MHz	45 Mbps / -84 dBm	95 Mbps / -77 dBm	108 Mbps / -73 dBm	132 Mbps / -71 dBm	155 Mbps / -67 dBm	167 Mbps / -65 dBm
	40 MHz	65 Mbps / -82 dBm	137 Mbps / -75 dBm	155 Mbps / -72 dBm	189 Mbps / -69 dBm	223 Mbps / -66 dBm	240 Mbps / -63 dBm
	50 MHz	76 Mbps / -81 dBm	161 Mbps / -75 dBm	182 Mbps / -71 dBm	222 Mbps / -69 dBm	262 Mbps / -65 dBm	282 Mbps / -63 dBm
	55, 56 / 80 MHz	82 Mbps / -81 dBm	178 Mbps / -74 dBm	201 Mbps / -70 dBm	246 Mbps / -68 dBm	290 Mbps / -64 dBm	311 Mbps / -62 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	AD18G-2 / 2-foot antenna with slip-fit mount			38.6 dBi		2.0°	
	AD18G-3 / 3-foot antenna with slip-fit mount			42.0 dBi		1.3°	
	AD18G-4 / 4-foot antenna with slip-fit mount			44.5 dBi		1°	
POWER							
Input for Indoor Unit (IDU)	-40.5 to -57 VDC						
Power Consumption	IDU: < 70 Watts; ODU: < 30 Watts						
MECHANICAL & ENVIRONMENTAL		INDOOR UNIT			OUTDOOR UNIT		
Enclosure	19-inch rackmount, 1U height			Cast Aluminum with RSSI window			
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	5.6 lbs			13.5 lbs			
Temperature Range	14° to 122° F (-10° to +50° C)			-40° to 136° F (-40° to +58° 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: WR42 / UBR 220			

* 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 local regulations.



WWW.TRANGOSYS.COM

Trango Systems, Inc.

14118 Stowe, Suite B, Poway, CA 92064

Tel.: +1 (858) 391-0010 | Fax: +1 (858) 391-0020 | Email: sales@trangosys.com

