



Innovating Microwave Backhaul™

LTE / WiMAX / 3G / 4G

6-38 GHz



Solutions For Any Application

Carrier Infrastructure

LTE and mobile network operators require high capacity, future-proof backhaul solutions that can provide effortless migration from the TDM network infrastructure that exists today to the high capacity native-IP architecture required for next generation service delivery.

The TrangoLINK GigaPro™ split-mount system is perfectly suited for this challenge. With support for Gigabit Ethernet and native PDH/SDH, the GigaPro™ can fit into today's networks and allow reuse of capacity as network traffic shifts to an all-IP platform tomorrow.

The advanced software defined radio architecture of the GigaPro™ provides a flexible and scalable platform. Instant upgradeability from 100 Mbps to 1.5 Gbps capacity removes the worry of hardware obsolescence while link reliability improvements such as hitless ACM and hitless hardware failover options ensure a failsafe network.

Government and Public Safety

Federal, state, and municipal governments require secure, failsafe networks to carry critical Ethernet and voice traffic. Trango Systems provides point-to-point microwave backhaul solutions for the most demanding environmental applications ensuring high availability and reliable communications.

TrangoLINK GigaPro™ has built in hardware protection provisions that maintain error-free link integrity in the event of equipment failure or due to extreme environmental conditions. The GigaPro™ platform has capacity starting at 100 Mbps that can be remotely upgraded to 1.5 Gbps as the network demands increase. Proprietary data stream encoding ensures secure communications.

Private and Enterprise Networks

Private and Enterprise Networks using Trango Systems' licensed microwave systems can realize significant cost savings in recurring costs over traditional leased lines while simultaneously increasing the capacity of their LAN/WAN.

Both the TrangoLINK Apex™ and the TrangoLINK GigaPro™ feature guaranteed throughput and ultra-low latency to support video, voice and data traffic. Coupled with the most configurations for improving link reliability, the TrangoLINK™ line leads the industry with the most flexible and scalable options.

Trango Systems' products can be expanded remotely as the network capacity demands increase, via simple software updates. Remote software updates, out-of-band management and easy to learn GUIs with full SNMP support ensure a seamless transition into the most demanding LAN/WAN environments.

Fixed Wireless Networks

Trango Systems' carrier grade microwave backhaul solutions are ideal for fixed wireless service providers and wireless ISPs. Upgrading legacy license-exempt products to the highly scalable TrangoLINK™ series of licensed products will ensure a future proof network that can allow higher capacity SLAs and eliminates concern about spectrum availability for critical network segments. Operators can choose between TrangoLINK Giga/GigaPro™ - the split-mount platform, or Apex™ - the all-in-one outdoor platform.

Flexible

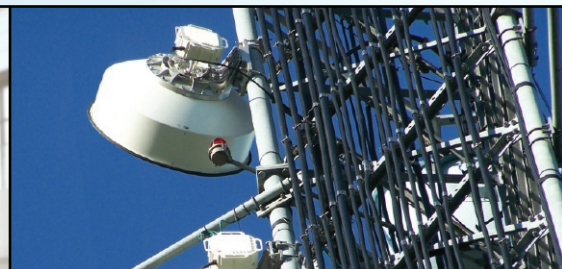
- » Full 6-38 GHz spectrum support with full complement of antennas and accessories
- » Split mount or all-in-one power over Ethernet solutions
- » Integrated GigE copper and fiber

Future-proof

- » Instant scalability from 100 Mbps to 1.5 Gbps
- » Native TDM to IP migration built in
- » Ultra-low latency (<150 µS)
- » Unmatched system gain enables smaller antennas and longer links

Failsafe

- » Ensures critical application delivery through hitless ACM
- » 99.999% availability through hitless link protection feature
- » Full redundancy support of backbone through frequency and space Diversity



The Trango Systems' Advantage

Trango Systems, Inc. is committed to delivering high quality products and services which meet or exceed customer expectations. Our mission is to innovate and deliver industry leading microwave backhaul solutions for our global customer base.

- » Unmatched system gain delivers robust link performance with smaller antennas
- » Inherent security through data stream encoding
- » Native TDM & Native IP supports seamless migration from TDM to packet based traffic
- » In house manufacturing for reduced lead times
- » Innovative engineering staff
- » Knowledgeable support staff
- » Worldwide presence for over 12 years
- » End-to-end solutions from 6-38 GHz

End-to-End Solutions for Tomorrow's Networks

Trango System's product portfolio was designed from the ground up to provide future-proof IP-centric scalability with native support for easy TDM migration and industry leading link reliability options to ensure failsafe operation. With full 6-38 GHz spectrum support, copper/fiber interfaces, and options for split or all-in-one systems, Trango Systems' microwave backhaul platform provides the flexibility to fit your network needs for tomorrow ... today.

Products

- » Split mount microwave systems
- » All-in-one microwave systems
- » Antennas
- » Combiners
- » Accessories
- » Installation support



TrangoLINK™ Product Family

NEW! TrangoLINK GigaPro™ — Dual Modem, IP & SDH/PDH Native

- » 1.5 Gbps aggregate capacity
- » Ultra low latency, <100 μ s
- » 2,000,000+ packets per second
- » Industry-leading receive system gain
- » East/West Mode
- » Frequency & Spatial Diversity
- » Hitless Link Redundancy, 1+1, 2+0
- » Hitless Adaptive Modulation

- » 6-38 GHz support
- » 2 \times STM-1/OC-3 ports
- » 4 \times GigE IP ports
- » 32 \times T1/E1 TDM ports
- » Multi-function LED display
- » Engineering order wire
- » High spectral efficiency
- » NEBS compliant



TrangoLINK Apex™ — All-in-One, IP Native

- » 750 Mbps aggregate capacity
- » 1 \times GigE optical/fiber interface data port
- » 1 \times GigE copper data port (PoE)
- » 1 \times Ethernet copper management port (PoE)
- » Hitless Adaptive Modulation
- » True hot standby 1+1 link protection with *Rapid Port Shutdown*
- » Power-over-Ethernet (PoE) or direct power, -48 Volt
- » Flexible modulations, bandwidth and throughput controls
- » Easy alignment via digital RSSI LED



TrangoLINK GigaPlus™ — Split Mount, IP & TDM Native

- » Up to 750 Mbps Aggregate Capacity
- » Industry-Leading System Gain
- » Ethernet & PDH Native
- » Compact Half-rack Unit
- » Hitless Adaptive Code Modulation (ACM)
- » 3.5-56 MHz Channel Bandwidth
- » 2 \times GigE Copper, 2 \times GigE Fiber
- » 8 \times T1/E1
- » NEBS compliant



Supporting Products

Dual Polarity Microwave Combiner

- » Combine two ODUs with only one antenna
- » Handles any polarity combination simultaneously: H/V, H/H or V/V
- » Rugged compact lightweight assembly
- » Enables max bandwidth per path (2+0)
- » Enables link protection (1+1)
- » Low insertion loss, low VSWR, and high isolation



Patent pending

High Performance Antennas

- » Supports H & V polarization for greater flexibility
- » Direct slip-fit mount for easy installation
- » Ships completely assembled for easy installation
- » ETSI Class3, RPE FCC Category A
- » Corrosive resistant: coated aluminum, hot dipped galvanized steel and stainless steel



T1/E1 Patch Panel

TDM Breakout Box for TrangoLINK GigaPro™

- » 32 or 16 T1/E1 ports
- » Option for 16 port half panel
- » LED indicators on IDU
- » 19-inch 1U rack mount



Power Supplies

Rack Mount for TrangoLINK Giga™ (-48 V)

- » Easy access front side terminal block
- » Low profile and light weight
- » 19-inch 1U rack mount



Compact Power Supply for TrangoLINK Apex™ (-48 V)

- » Low profile and light weight
- » Molex connector pre-installed
- » For use with Power-over-Ethernet Adapter



Other Accessories

- » Cables
- » Surge protectors
- » Grounding kits
- » Waveguide adapters

Power-over-Ethernet Adapter for TrangoLINK Apex™

- » Provides power & GigE over CAT5
- » ODU power & input power indicators



TrangoLINK-45™ — OFDM License-exempt Wireless Ethernet Bridge

- » Up to 45 Mbps usable data throughput
- » Multi-band: 5.2 GHz, 5.3 GHz, 5.4 GHz, 5.8 GHz
- » Industry-Best Interference Mitigation, *Auto RF RX Threshold*
- » Orthogonal Frequency Division Multiplexing (OFDM)
- » Quality of Service (QoS) and VLAN support

- » Automatic Repeat reQuest (ARQ)
- » Forwarding Error Correction (FEC)
- » Automatic RF Transmit Power Control (ATPC)
- » Dynamic Frequency Selection (DFS)
- » Adaptable Rate Modulation





Innovating Microwave Backhaul™

Trango Systems' Support

We are committed to ensuring successful installation and operation of every Trango Systems' link deployed. Our trained staff of microwave engineering professionals are available to provide pre- and post-sales consulting and support services.

- » Free technical support via telephone and e-mail
- » Path profile and radio planning services utilizing sophisticated RF Planning tools
- » Complete line of accessories available direct from Trango Systems (cables, antennas, power supplies, wave guides, etc.)
- » Technical training/certification programs
- » Extended warranties
- » After hours technical support
- » Hot Swap and Spare programs
- » Online Resources (technical manuals, white papers, etc.)
- » Emergency and scheduled On-site Support



ISO 9001:2008



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Note: Legal regulations for specific frequencies vary from region to region. Users are responsible for complying with their region's regulations.

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