



POINT-TO-POINT

TrangoLINK-45™

45 Mbps OFDM Wireless Ethernet Bridge
Multi-band: 5.2, 5.3, 5.4 or 5.8 GHz*

POINT-TO-POINT HIGH-CAPACITY BACKHAUL NETWORKS

The TrangoLINK-45® is a 5 GHz multi-band wireless backhaul radio that delivers up to 45 Mbps of sustained usable data throughput using OFDM technology. The multi-band feature provides a choice of 5.2, 5.3, 5.4 or 5.8 GHz in the convenience of one radio, enabling valuable operational flexibility in high RF noise environments. With unmatched interference mitigation and carrier-class performance, TrangoLINK-45™ offers an exceptional value for ISP backhaul, enterprise and municipal connectivity, IP video surveillance, leased-line replacement and “last mile” dedicated connectivity solutions (Internet, T1).

Industry Best Interference Mitigation

- » Built-in *Auto RF RX Threshold* for superior interference mitigation—maintains superb link integrity in high noise floor
- » Dynamic Frequency Selection (DFS) in 5.3/5.4 GHz
- » Automatic Repeat reQuest (ARQ), Forward Error Correction (FEC)
- » Automatic RF Transmit Power Control (ATPC)
- » Site survey tools

Management Features

- » Remote & local management via Telnet, SNMP and HTTP
- » Asymmetrical bandwidth control, and remote temperature and input voltage measurements
- » Built-in LED alignment tool, universal mounting bracket to minimize deployment costs

Compact/Rugged Designed for Outdoor Deployment

- » Fully weatherized outdoor units
- » Encased in a heavy-duty aluminum housing
- » Rugged conduit adapter, while offering a small footprint
- » Powered using Power-over-Ethernet (PoE) ensuring ease of installation and quick deployment

Highlights

- Up to 45 Mbps usable data throughput
- Multi-band versatility: 5.2, 5.3, 5.4, 5.8 GHz *
- Quality of Service (QoS) and VLAN support
- *Auto RF RX Threshold* for superior interference mitigation
- Up to 45-mile range
- Orthogonal Frequency Division Multiplexing (OFDM)

Performance & Flexibility

- » License-exempt ISM band, lower U-NII band, upper U-NII band *
- » OFDM radio with a contention-free point-to-point protocol
- » User-selectable data rates of 6, 12, 18, 24, 36, 48 and 54 Mbps
- » Packet aggregation allows superior FTP performance over long transmission ranges
- » Adaptive Rate Modulation

Antenna Versatility

- » INT models feature built-in dual-polarity panel antenna
- » EXT model features two connectors for external antenna
- » All models feature horizontal or vertical antenna polarity that is software-selectable

Channel Flexibility & Frequency Agility

- » 24 possible non-overlapping channels across the U-NII and ISM bands *
- » Up to 24 channels combined with dual-polarized antennas allows for exceptional frequency agility *

Security and Authentication

- » MAC level address authentication
- » 128-bit proprietary encryption, over-the-air data scrambling
- » Two-level password control via SSL for secure operation

Compatibility / Range Chart

MODEL	PART NUMBER	MODEL TYPE	ANTENNA	RANGE / FADE MARGIN †	
				5 MBPS	45 MBPS
TrangoLINK-45™	P5055M-19-US / IC	Radio w/ integrated 19 dBi Antenna	Internal, 19 dBi	12 miles / 16 dB	2 miles / 10 dB
TrangoLINK-45™	P5055M-23-US / IC	Radio w/ integrated 23 dBi Antenna	Internal, 23 dBi	20 miles / 21 dB	6 miles / 12 dB
TrangoLINK-45™	P5055M-EXT-US / IC	Connectorized radio	External, 34 dBi †	45 miles / 36 dB	20 miles / 22 dB

‡ At 5725-5850 of the ISM band.

† Based on third-party antenna not supplied by Trango.

Specifications

RADIO PARAMETERS																	
Frequencies of Operation *	5170 MHz - 5335 MHz (U-NII), 5490 MHz - 5710 MHz (U-NII), and 5725 MHz - 5850 MHz (ISM)																
Channels *	24 possible non-overlapping channels (US model: 21 / Europe model: 19 / OEM model: 24) *																
Channel Spacing	20 MHz																
RF Power Output models: P5055M-23 / P5055M-EXT	<table border="1"> <thead> <tr> <th>Model</th> <th>U-NII (5250 MHz - 5335 MHz)</th> <th>U-NII (5490 MHz - 5710 MHz)</th> <th>ISM (5725 MHz - 5850 MHz)</th> </tr> </thead> <tbody> <tr> <td>US / IC models</td> <td>6 dBm / 2 dBm</td> <td>6 dBm / 2 dBm</td> <td>21 dBm @ 6 Mbps; 17 dBm @ 54 Mbps</td> </tr> <tr> <td>Europe model</td> <td>0 dBm / N/A</td> <td>7 dBm / 3 dBm</td> <td>N/A</td> </tr> <tr> <td>OEM model</td> <td>15 dBm @ 6 Mbps, 14 dBm @ 54 Mbps</td> <td>15 dBm @ 6 Mbps, 14 dBm @ 54 Mbps</td> <td>21 dBm @ 6 Mbps, 17 dBm @ 54 Mbps</td> </tr> </tbody> </table>	Model	U-NII (5250 MHz - 5335 MHz)	U-NII (5490 MHz - 5710 MHz)	ISM (5725 MHz - 5850 MHz)	US / IC models	6 dBm / 2 dBm	6 dBm / 2 dBm	21 dBm @ 6 Mbps; 17 dBm @ 54 Mbps	Europe model	0 dBm / N/A	7 dBm / 3 dBm	N/A	OEM model	15 dBm @ 6 Mbps, 14 dBm @ 54 Mbps	15 dBm @ 6 Mbps, 14 dBm @ 54 Mbps	21 dBm @ 6 Mbps, 17 dBm @ 54 Mbps
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Antenna Polarizations	Horizontal/Vertical (software switchable)																
Modulation Format	OFDM (BPSK, QPSK, 16 QAM, 64 QAM)																
Modulation Speeds	6, 12, 18, 24, 36, 48 and 54																
Regulatory Compliance *	FCC/ANSI: FCC 15.109, FCC 15.203, FCC 15.205, FCC 15.207, FCC 15.209, FCC 15.247, FCC 15.407, Class B Digital device verification Industry Canada: IC-RSS210; ETSI:EN-301-489-17 (EMC), EN-301-893 (radio compliance), EN 60950 (safety), EN 50385 (RF-exposure)																
Receiver Sensitivity (10-5 BER)	-90 dBm (6 Mbps mode) to -73 dBm (54 Mbps mode) typical																
DATA AND OPERATIONAL PARAMETERS																	
User Data Throughput	5 Mbps (6 Mbps mode) to 45 Mbps (54 Mbps mode)																
Upstream/Downstream Throughput	Dynamic, automatically adjusts to match demand																
Bandwidth Control	Asymmetrical MIR bandwidth control																
Latency	< 5 ms																
Interference Handling	Forward Error Correction (FEC) & Automatic Retransmit Request (ARQ)																
Security	Proprietary MAC address authentication; over the air data scrambling; two level password control																
Encryption	128-bit STEP (Secure Trango Encryption Protocol)																
Configuration & Management	Telnet, SNMP, HTTP; TFTP server daemon for firmware upgrades; Built-in Link Performance tests; Remote temperature and input voltage measurement.																
DFS / ATPC	DFS/ATPC support for operation in U-NII band																
PHYSICAL INTERFACES																	
Ethernet (via shielded RJ45)	10/100 BaseT, auto-sense, auto-negotiate																
Reset Switch	Reset radio to factory default: IP address, subnet mask, gateway and password																
LED Indicators	7 LEDs including 4 RSSI																
ANTENNA OPTIONS																	
TrangoLINK-45™ P5055M-19-US / IC (integrated antenna)	Gain: 19 dBi, E-plane Beamwidth: 18°, H-Plane Beamwidth: 18° Dimensions: 8.5" x 7.75" x 1.25" (216 mm x 197 mm x 32 mm); Weight: 2 lbs (.91Kg)																
TrangoLINK-45™ P5055M-23-US / IC (integrated antenna)	Gain: 23 dBi, E-plane Beamwidth: 9°, H-Plane Beamwidth: 9° Dimensions: 14.6" x 14.6" x 1.58" (371 mm x 371 mm x 40 mm); Weight: 5.5 lbs (2.51Kg)																
TrangoLINK-45™ P5055M-EXT-US / IC (optional external antenna †)	28 to 34 dBi dual-polarized dish antennas, 2-4 ft. diameter †																
POWER PARAMETERS																	
Power Method	Power-over-Ethernet (PoE) via DC voltage injected at PoE J-box																
Voltage Input Limits into Radio	10.5 VDC to 24 VDC max																
Standard power supply	90 - 260 VAC																
PoE Cat-5 max cable Length	300 feet on 24AWG STP Cat-5 cable																
Power	10 watts nominal																
PHYSICAL AND ENVIRONMENTAL																	
External Antenna Connector	SMA reverse polarity (-EXT Models only)																
Mounting Provision	Mounts to wall or pole (1" diameter or greater)																
Reset Button	Reset password and IP configuration																
Radio enclosure	All-weather, powder coated, heavy duty aluminum construction with conduit adapter																
Radio dimensions	P5055M-EXT-US stand-alone radio: 7" x 7"; P5055M-19-US and P5055M-23-US models: see Antenna Options																
Radio Weight	P5055M-EXT-US stand-alone radio: 3 lbs; P5055M-19-US and P5055M-23-US models: see Antenna Options																
Temperature Range	-40° to 60° C (-40° to 140° F)																
User Interface	RJ45 (shielded)																

* Legal regulations for specific frequencies vary from region to region—users are responsible for complying with their local regulations.



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