proxim wireless

GigaLink 6221e/6232e MMW Transceiver

GigaLink 6421e/6432e/6451e/6651e
MMW Transceiver

GigaLink 7451e MMW Transceiver

High-Capacity Wireless Backhaul

Proxim Wireless offers extremely reliable, secure and easily-deployed solutions for interconnecting corporate and telecommunications networks. This portfolio includes:

- **GigaLink®** – Alternative to fiber, up to a Gigabit speed
- **Lynx.GX®** – Cellular voice and data backhaul, up to DS3 interface
- **Tsunami.GX®** - Carrier-class IP Ethernet bridge for voice and data backhaul for service providers and enterprise applications
- **TeraBridge™** – Ethernet backhaul or traditional telecommunications converged voice and data networks
- **QuickBridge®** – Complete "hop-in-a-box" Ethernet bridge for campus and small business networks

Proxim Wireless is a global provider in scalable broadband wireless networking. From Wi-Fi to wireless Gigabit Ethernet – our WLAN, mesh, point-to-multipoint and point-to-point products are available through our extensive global channel network.

High-Capacity Point-to-Point Link for Secure Connectivity

Proxim's GigaLink Series includes an array of full-duplex point-to-point wireless bridges that offer affordable, highly reliable, secure, outdoor links in the 57-64 GHz unlicensed frequency band and the 71-76 GHz licensed E-band. Available in Fast Ethernet, OC-3/STM-1 and Gigabit Ethernet interfaces, GigaLink systems offer the performance of fiber at a fraction of the costs. As the first FCC Part 15.255-certified millimeter wavelength system operating in the 57.05 to 64 GHz band, these field-proven millimeter wave transceivers represent one of the most reliable wireless solutions available today.

Gigalink System Features:

High Reliability

- Third-generation, mature product line
- Extremely high link availability up to 99.999% with direct fiber interface
- Lower latency than physical fiber at equivalent distances

Extensive Security

- Narrow beam width increases security and enables virtually interference-free operation
- Highly cost-effective Patented Direct Digital Modulation transparent to any encryption technique
- Physical layer interface transports only binary data bits

Reduces Total Cost of Ownership (TCO) with Ease of Installation and Management

- Compact size and weight designed for outdoor deployments
- Direct network interface at terminal eliminates the need for an IDU
- Custom network planning and link deployment tools
- GUI-based integrated management and SNMP capabilities

License-Free Bands for Short and Medium Range Links

Operating in the 57-64 GHz frequency band, the GigaLink license-free models are available in short and medium ranges with up to Gigabit speeds. With no requirement for license purchase, the GigaLink 60 GHz links enable quick and easy deployment – delivering fiber capacity at a fraction of the cost and time. Due to the unique oxygen absorption properties of the 60 GHz spectrum, many same frequency systems can be co-located in the same area without interference. GigaLink 60 GHz License-free models feature:

- Fast Ethernet (125 Mbps), OC-3/STM (155 Mbps) and Gigabit Ethernet (1.25 Gbps) full-duplex bandwidths
- Short and medium range support up to 1 km
- Integrated 29 dBi Patch Antenna or Integrated 40 dBi Parabolic Antenna

Licensed E-Band for Extended Range

Operating in the 71-76 GHz E-band, the GigaLink 7451e provides a solution for longer link requirements beyond the reliable range of the license-free 60 GHz models. Delivering the capacity and simplicity of fiber, Model 7451e provides high capacity full-duplex, true wire speed connectivity up to 1.25 Gbps at ranges in excess of 8 km[1]. GigaLink 74 GHz Licensed models feature:

- Gigabit Ethernet (1.25 Gbps) full-duplex bandwidths
- Long range support in excess of 8km
- Integrated 44 dBi Parabolic Antenna

[1] Under ideal operating conditions, Maximum Range at 99.9% availability, Crane region D2.
  See Maximum Link Range chart at www.proxim.com/products/gigalink

PRODUCT MODEL	MODEL 6221E	MODEL 6421E	MODEL 6232E
DESCRIPTION	GigaLink 6221e 60 GHz, 125 Mbps, 100BASE-FX, Integral Patch Array Antenna for short ranges (Part# 605-906221-101)	GigaLink 6421e 60 GHz, 125 Mbps, 100BASE-FX, Integral 13 in. Parabolic Antenna for medium ranges (Part# 605-906421-101)	GigaLink 6232e 60 GHz, 155 Mbps, OC3-STM1, Integral Patch Array Antenna for short ranges (Part# 605-906232-101)
FREQUENCY BAND	57.05 to 64 GHz	57.05 to 64 GHz	57.05 to 64 GHz
FULL-DUPLEX BANDWIDTH	125 Mbps	125 Mbps	155 Mbps
RANGE[1]	20 to 430 m (65 to 1,410 ft)	180 to 1,230 m (590 to 4,035 ft)	20 to 415 m (65 to 1,361 ft)
RF INJECTION POWER INTO ANTENNA	10 mW	8 mW	10 mW
ANTENNA GAIN	29 dBi Integral Patch Array	40 dBi Integral 13 in Parabolic	29 dBi Integral 13 in Patch Antenna Array
3 DB BEAM WIDTH	3.5 degrees	1.0 degree	3.5 degrees
MOUNTING	L-Bracket and Gimbal for 2.5 in and 4 in diameter mast	L-Bracket and Gimbal for 2.5 in and 4 in diameter mast	L-Bracket and Gimbal for 2.5 in and 4 in diameter mast
STANDARD MOUNT	OD Pipe or Wall Mount	OD Pipe or Wall Mount	OD Pipe or Wall Mount
INTERFACES			
DATA	MMF 1310 nm version, compatible with 100 Base-FX, FC Connectors	MMF 1310 nm version, compatible with 100 Base-FX, FC Connectors	MMF 1310 nm, compatible with SDH-1, STM-1 and OC-3, FC Connectors
MANAGEMENT	10 Base-T, RJ-45 Modular (with adapter cable)	10 Base-T, RJ-45 Modular (with adapter cable)	10 Base-T, RJ-45 Modular (with adapter cable)
INSTALLATION	10 Base-T, RJ-45 Modular (with adapter cable)	10 Base-T, RJ-45 Modular (with adapter cable)	10 Base-T, RJ-45 Modular (with adapter cable)
POWER	NEMA 5-15P	NEMA 5-15P	NEMA 5-15P
ENVIRONMENTAL			
TEMPERATURE			
OPERATING	-20° to 60°C	-20° to 60°C	-20° to 60°C
STORAGE	-30° to 85°C	-30° to 85°C	-30° to 85°C
RELATIVE HUMIDITY	95% (non-condensing)	95% (non-condensing)	95% (non-condensing)
ELECTRICAL			
INPUT VOLTAGE	94 to 264 VAC, 50/60 Hz	94 to 264 VAC, 50/60 Hz	94 to 264 VAC, 50/60 Hz
MAX INPUT CURRENT	0.85 Amp	0.85 Amp	0.85 Amp
POWER CONSUMPTION	85 Watts	85 Watts	85 Watts
MANAGEMENT			
LOCAL	Lap-top based software provided	Lap-top based software provided	Lap-top based software provided
REMOTE	SNMP v1	SNMP v1	SNMP v1
PHYSICAL			
DIMENSIONS			
PACKAGED	2 Cartons (each): 17 x 14 x 21 in (431 x 356 x 533 mm)	2 Cartons (each): 18 x 20 x 21 in (457 x 508 x 533 mm)	2 Cartons (each): 17 x 14 x 21 in (431 x 356 x 533 mm)
WEIGHTS			
PACKAGED	2 Cartons (each): 28 lbs (12.7 kg)	2 Cartons (each): 39 lbs (17.7 kg)	2 Cartons (each): 28 lbs (12.7 kg)
REGULATORY			
ELECTROMAGNETIC	FCC - Part 15.255 (Cert No. 02700000-30-30) IC - 4505A-00003030	FCC - Part 15.255 (Cert No. 02700000-30-30) IC - 4505A-00003030	FCC - Part 15.255 (Cert No. 02700000-30-30) IC - 4505A-00003030
WARRANTY	1 Year on parts and labor	1 Year on parts and labor	1 Year on parts and labor
PACKAGE CONTENTS	• GigaLink 6221e radio with integral 13 in patch array antenna (Qty 2) • AC/DC power module with mounting kit (Qty 2) • 10BASE-T adapter cable and spare connector kit (Qty 2) • Fiber loop-back jumper cable (Qty 2) • FC/SC adapter cable and SC-SC coupler (Qty 2) • Mounting L-Bracket for wall/pole mount (Qty 2) • Pan and Tilt adjustable Gimbal (Qty 2) • Gigamon software on CD-Rom (Qty 1) • Field and Installation manual (Qty 1)	• GigaLink 6421e radio with integral 13 in parabolic antenna (Qty 2) • AC/DC power module with mounting kit (Qty 2) • 10BASE-T adapter cable and spare connector kit (Qty 2) • Fiber loop-back jumper cable (Qty 2) • FC/SC adapter cable and SC-SC coupler (Qty 2) • Mounting L-Bracket for wall/pole mount (Qty 2) • Pan and Tilt adjustable Gimbal (Qty 2) • Gigamon software on CD-Rom (Qty 1) • Field and Installation manual (Qty 1)	• GigaLink 6232e radio with integral 13 in patch array antenna (Qty 2) • AC/DC power module with mounting kit (Qty 2) • 10BASE-T adapter cable and spare connector kit (Qty 2) • Fiber loop-back jumper cable (Qty 2) • FC/SC adapter cable and SC-SC coupler (Qty 2) • Mounting L-Bracket for wall/pole mount (Qty 2) • Pan and Tilt adjustable Gimbal (Qty 2) • Gigamon software on CD-Rom (Qty 1) • Field and Installation manual (Qty 1)

[1]Under ideal operating conditions; Maximum Range at 99.9% availability, Crane Rain Region D2.
See Maximum Link Range chart at www.proxim.com/products/gigalink

PRODUCT MODEL	MODEL 6432E	MODEL 6451E-AC / MODEL 6451E-DC	MODEL 6651E-AC / MODEL 6651E-DC
DESCRIPTION	GigaLink 6432e 60 GHz, 155 Mbps, OC3-STM1, Integral 13 in. Parabolic Antenna for medium ranges (Part# 605-906432-101)	GigaLink 6451e-AC 60 GHz link, 1.25 Gbps, 1000SX, Integral 13 in Parabolic Antenna for short ranges, AC Power (Part # 605-906451-101) GigaLink 6451e-DC 60 GHz link, 1.25 Gbps, 1000SX, Integral 13 in Parabolic Antenna for short ranges, DC Power (Part# 605-906451-201)	GigaLink 6651e-AC 60 GHz, Link, 1.25 Gbps, 1000SX, Integral 13 in Parabolic Antenna for medium ranges, AC Power (Part # 605-906651-101) GigaLink 6651e-DC 60 GHz, Link, 1.25 Gbps, 1000SX, Integral 13 in Parabolic Antenna for medium ranges, DC Power (Part# 605-906651-201)
RADIO/SYSTEM SPECS			
FREQUENCY BAND	57.05 to 64 GHz	57.05 to 64 GHz	57.05 to 64 GHz
FULL-DUPLEX BANDWIDTH	155 Mbps	1.25 Gbps	1.25 Gbps
RANGE[1]	175 to 1,210 m (574 to 3,970 ft)	20 to 440 m (66 to 1,430 ft)	300 to 1,142 m (975 to 3,711 ft)
RF INJECTION POWER INTO ANTENNA	8 mW	8 mW	10 mW
ANTENNA GAIN	40 dBi Integral 13 in Parabolic	40 dBi Integral 13 in Parabolic	41 dBi Integral 13 in Parabolic
3 DB BEAM WIDTH	1.0 degree	1.0 degree	0.9 degree
MOUNTING	L-Bracket and Gimbal for 2.5 in and 4 in diameter mast	Adjustable Precision Azimuth and Elevation Mount	Adjustable Precison Azimuth and Elevation Mount
STANDARD MOUNT	OD Pipe or Wall Mount	2.75 to 4.5 in OD Pipe Mount only	2.75 to 4.5 in OD Pipe Mount only
INTERFACES			
DATA	MMF 1310 nm, compatible with SDH-1, STM-1 and OC-3, FC Connectors	MMF 850 nm, compatible with 1000 Base-SX, FC Connectors	MMF 850 nm, compatible with 1000 Base-SX, FC Connectors
MANAGEMENT	10 Base-T, RJ-45 Modular (with adapter cable)	100 Base-FX, MMF 1310 nm, FC connector	100 Base-FX, MMF 1310 nm, FC connector
INSTALLATION	10 Base-T, RJ-45 Modular (with adapter cable)	100 Base-T, RJ-45 Modular (with adapter cable)	100 Base-T, RJ-45 Modular (with adapter cable)
POWER	NEMA 5-15P	MIL-C-5015-type connector (accepts 12 to 16-AWG three conductor power cable)	MIL-C-5015-type connector (accepts 12 to 16-AWG three conductor power cable)
ENVIRONMENTAL			
TEMPERATURE			
OPERATING	-20° to 60°C	-30° to 60°C	-30° to 60°C
STORAGE	-30° to 85°C	-40° to 85°C	-40° to 85°C
RELATIVE HUMIDITY	95% (non-condensing)	95% (non-condensing)	95% (non-condensing)
ELECTRICAL			
INPUT VOLTAGE	94 to 264 VAC, 50/60 Hz	6451e-AC: 100 to 230 VAC, 50/60 GHz; 6451e-DC: -48 VDC nominal (-40 to -57 VDC)[2]	6651e-AC: 94 to 264 VAC, 50/60 Hz; 6651e-DC: -48 VDC nominal (-40 to -57 VDC)[2]
MAX INPUT CURRENT	0.85 Amp	6451e-AC: 0.9 to 0.5 Amps; 6451e-DC: 1.2 Amps	6651e-AC: 0.9 to 0.5 Amps; 6651e-DC: 1.2 Amps
POWER CONSUMPTION	85 Watts	90 Watts	90 Watts
MANAGEMENT			
LOCAL	Lap-top based software provided	Lap-top based software provided	Lap-top based software provided
REMOTE	SNMP v1	SNMP v1	SNMP v1
PHYSICAL			
DIMENSIONS			
PACKAGED	2 Cartons (each): 18 x 20 x 21 in (457 x 508 x 533 mm)	2 Cartons (each): 18 x 20 x 21 in (457 x 508 x 533 mm)	2 Cartons (each): 18 x 20 x 21 in (457 x 508 x 533 mm)
WEIGHTS			
PACKAGED	2 Cartons (each): 39 lbs (17.7 kg)	6451e-AC - 2 Cartons (each): 45 lbs (20.4 kg) 6451e-DC - 2 Cartons (each): 38 lbs (17.2 kg)	6651e-AC - 2 Cartons (each): 45 lbs (20.4 kg) 6651e-DC - 2 Cartons (each): 38 lbs (17.2 kg)
REGULATORY			
ELECTROMAGNETIC	FCC - Part 15.255 (Cert No. 02700000-30-30) IC - 4505A-00003030	FCC - Part 15.255 (FCCID No. 02700001-30-30) IC - 4505A-00013030	FCC - Part 15.255 (FCCID No. 02700001-30-30) IC - 4505A-00013030
WARRANTY	1 Year on parts and labor	1 Year on parts and labor	1 Year on parts and labor
PACKAGE CONTENTS	• GigaLink 6432e radio with integral 13 in parabolic antenna (Qty 2) • AC/DC power module with mounting kit (Qty 2) • 10BASE-T adapter cable and spare connector kit (Qty 2) • Fiber loop-back jumper cable (Qty 2) • FC/SC adapter cable and SC-SC coupler (Qty 2) • Mounting L-Bracket for wall/pole mount (Qty 2) • Pan and Tilt adjustable Gimbal (Qty 2) • Gigamon software on CD-Rom (Qty 1) • Field and Installation manual (Qty 1)	• GigaLink 6451e-AC or 6451e-DC radio with integral 13 in parabolic antenna (Qty 2) • DC power connector assembly (Qty 2) • 100 BASE-T adapter cable (Qty 2) • Fiber loop-back jumper cable (Qty 2) • FC/SC adapter cable and SC-SC coupler (Qty 2) • Precision adjustable azimuth and elevation mount (Qty 2) • Gigamon software on CD-Rom (Qty 1) • Field and Installation manual (Qty 1) • Universal AC Power module with DC cable assembly included with 6451e-AC (Qty 2)[2]	• GigaLink 6651e-AC or 6651e-DC radio with integral 13 in parabolic antenna (Qty 2) • DC power connector assembly (Qty 2) • 10BASE-T adapter cable (Qty 2) • Fiber loop-back jumper cable (Qty 2) • FC/SC adapter cable and SC-SC coupler (Qty 2) • Mount arm and associated hardware (Qty 2) • Pole-Mounted gimbal (Qty 2) • Gigamon software on CD-Rom (Qty 1) • Field and Installation manual (Qty 1) • Universal AC Power module with DC cable assembly - included with Model 6651e-AC only (Qty 2)[2]

[1]Under ideal operating conditions; Maximum Range at 99.9% availability, Crane Rain Region D2. See Maximum Link Range chart at www.proxim.com/products/gigalink
[2]DC versions do not include power module. Require -48 VDC power source.

PRODUCT MODEL — MODEL 7451E-AC / MODEL 7451E-DC

DESCRIPTION	GigaLink 7451e-AC 71-76 GHz, Link, 1.25 Gbps, 1000SX, Integral 13 in Parabolic Antenna for long ranges, AC Power, (Part # 605-907451-101) GigaLink 751e-DC 71-76 GHz, Link, 1.25 Gbps, 1000SX, Integral 13 in Parabolic Antenna for long ranges, DC Power, (Part# 605-907451-201)
RADIO/SYSTEM SPECS	
FREQUENCY BAND	71-76 GHz "Light Licensed" E-band
FULL-DUPLEX BANDWIDTH	1.25 Gbps
RANGE[1]	600 m to 8,200 m (1,950 to 26,650 ft)
RF INJECTION POWER INTO ANTENNA	10 mW
ANTENNA GAIN	44 dBi Integral 13 in Parabolic
3 DB BEAM WIDTH	0.8 degree
MOUNTING	Adjustable Precison Azimuth and Elevation Mount
STANDARD MOUNT	2.75 in to 4.5 in OD Pipe Mount only
INTERFACES	
DATA	MMF 850 nm, compatible with 1000 Base-SX, FC connectors
MANAGEMENT	100 Base-FX, MMF 1310 nm, FC connectors
INSTALLATION	100 Base-T, RJ-45 Modular (with adapter cable)
POWER	MIL-C-5015-type connector (accepts 12 to 16-AWG three conductor power cable)
ENVIRONMENTAL	
TEMPERATURE	
OPERATING STORAGE	-30° to 60°C -40° to 85°C
RELATIVE HUMIDITY	95% (non-condensing)
ELECTRICAL	
INPUT VOLTAGE	7451e-AC: 94 to 264 VAC, 50/60 Hz; 7451e-DC: -48 VDC nominal (-40 to -57 VDC)[2]
MAX INPUT CURRENT	7451e-AC: 0.9 to 0.5 Amps; 7451e-DC: 1.2 Amps
POWER CONSUMPTION	90 Watts
MANAGEMENT	
LOCAL	Lap-top based software provided
REMOTE	SNMP v1
PHYSICAL	
DIMENSIONS	
PACKAGED	2 Cartons (each): 18 x 20 x 21 in (457 x 508 x 533 mm)
WEIGHTS	
PACKAGED	7451e-AC - 2 Cartons (each): 45 lbs (20.4 kg); 7451e-DC - 2 cartons (each): 38 lbs (17.2 kg)
REGULATORY	
ELECTROMAGNETIC	FCC - Part 101, 47CFR
WARRANTY	1 Year on parts and labor
PACKAGE CONTENTS	• GigaLink 7451e-AC or 7451e-DC radio with integral 13 in parabolic antenna (Qty 2) • DC power connector assembly (Qty 2) • 10BASE-T adapter cable (Qty 2) • Fiber loop-back jumper cable (Qty 2) • FC/SC adapter cable and SC-SC coupler (Qty 2) • Mount arm and associated hardware (Qty 2) • Pole-Mounted gimbal (Qty 2) • Gigamon software on CD-Rom (Qty 1) • Field and Installation manual (Qty 1) • Universal AC Power module with DC cable assembly - included with Model 7451e-AC only (Qty 2)[2]

APPLICATIONS

- Wireless Bridge for Fast Ethernet and Gigabit Ethernet interfaces
- Enterprise LAN and PBX extension
- WAN extension redundancy
- ISP remote POP
- ISP direct customer connections using point-to-point
- Extension of existing fiber network

[1] Under ideal operating conditions; Maximum Range at 99.9% availability, Crane Rain Region D2. See Maximum Link Range chart at www.proxim.com/products/gigalink

[2] DC versions do not include power module. Require -48 VDC power source.

For detailed technical specifications, please go to **http://www.proxim.com/products/gigalink**

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