

ULTRALINK™-BX70



UltraLink™-BX70
(with direct-mount antenna)

All-Outdoor Gigabit Packet Radio

Overview

UltraLink™-BX70 is an ultra-compact all-outdoor Ethernet high-capacity radio operating in the 71-76 GHz part of the E-Band spectrum that is ideally suited for use in cost-sensitive applications. Using TDD duplexing mode, it achieves throughputs of up to 1.6 Gbit/s aggregate, while offering a complete set of Carrier Ethernet networking features. UltraLink™-BX70 is designed to be easily mounted on poles and lamp posts, to enable convenience and speed of installation in traditional telco, as well as, street-level environments. The radio unit features two Gigabit Ethernet ports and an embedded Ethernet Bridge enabling deployment flexibility in complex network topologies. A number of applications can benefit from the use of UltraLink™-BX70: last-mile delivery of wireless Gigabit To The Home (GTTH) services, delivery of broadband service to enterprises and Multi-Dwelling Units (MDUs), connectivity for government / public service buildings, utilities & industrial complexes, IP camera backhaul and Wi-Fi access point backhaul. A hardware version with PoE out interface facilitates the powering configuration of PoE-powered backhauled devices.

Radio Specifications

Operating Frequencies, MHz	71,000 to 76,000
Channel Sizes, MHz	250
Duplexing Scheme	TDD
Ethernet Throughput, Gbit/s	Up to 1.6 (aggregate)
TDD split ratios	1:1, 3:1, 5:1, 7:1 and inverse
Modulation (adaptive)	4-QAM to 256-QAM
Link Adaptation	Hitless 7 state ACM mechanism based on link quality metrics
Forward Error Correction	Reed Solomon / LDPC
Antenna Options	<ul style="list-style-type: none"> • Direct-mount, low-profile 30 cm / 43 dBi • Parabolic 30 cm / 45 dBi and 60 cm / 50 dBi

Mechanical & Environmental Specifications

Dimensions (H x W x D), mm	200 x 200 x 40
Weight, kg	<3 (excluding the mounting kit)
Power Supply	Power over Ethernet (PoE)
Power Consumption, Unit (typ.), W	29 (up to 60 W with PoE out)
Operating Temperature	-33 °C to +55 °C ⁽¹⁾

⁽¹⁾ The unit is functional down to -50 °C but specifications are not guaranteed below -33 °C.

Radio Performance

Modulation	Aggregate L1 Rate (Mbit/s) ⁽²⁾⁽³⁾	Max Tx Power, dBm	ATPC Range, dB	Rx Thresholds @ BER 10 ⁻⁶ , Typ., dBm	System Gain @ BER 10 ⁻⁶ , Typ., dB
256-QAM	1,591	5	10	-50.2	55.2
128-QAM	1,361	5	10	-54.2	59.2
64-QAM	1,132	6	11	-57.7	63.7
32-QAM	844	6	11	-60.9	66.9
16-QAM	673	6	11	-64.7	70.7
4-QAM	336	8	13	-72.0	80.0
4-QAM Lo	221	8	13	-74.1	82.1

Features & Networking Specifications

• Interfaces

- Option 1
 - › 1 x 100/1000 Base-T (RJ45) (PoE in)
 - › 1 x SFP (1000 Base-X) (optical)
- Option 2
 - › 2 x 100/1000 Base-T (1 x PoE in + 1 x PoE out)

• Networking Features

- IEEE 802.1Q (VLAN)
- IEEE 802.1p
- IEEE 802.1ad (Provider Bridge (Q-in-Q))
- IEEE 802.1w (RSTP)
- IEEE 802.3ad (Static LAG)
- ITU-T G.8032 (ERP)
- MEF Carrier Ethernet (CE) EPL & EVPL, E-LAN & EV-LAN
- Jumbo Frames: 9,600 bytes

• Bridge Security

- MAC Anti-Spoofing
- Port Flooding Protection
- Broadcast Storm Control

• Quality of Service (QoS)

- Eight QoS classes (8 queues)
- Packet Classification per Interface / VLAN ID / P-Bits / DSCP / IPv6 TC / MPLS EXP
- Service Policing: two rate, three-color (MEF compliant)
- Queue Management:
 - › Tail drop
 - › WRED
- Egress shaping
- Queuing Schemes:
 - › Strict Priority (SP)
 - › Weighted Round Robin (WRR)
 - › Weighted Fair Queuing (WFQ)
 - › Hybrid: 1 or 2 queues SP plus 7 or 6 queues WRR or WFQ

• Ethernet OAM

- IEEE 802.1ag (Service OAM (CFM))
- ITU-T Y.1731 (Performance Monitoring)
- IEEE 802.3ah (Link OAM (EFM))

• Management

- Intracom Telecom NMS (unilMS™)
- Embedded Web Server (WebUI)
- File Transfer (FTP)
- SNMPv2, v2c, v3
- Command Line Interface (CLI)
- IPv4, IPv6
- Syslog
- LLDP (Link Layer Discovery Protocol)
- Historical Performance in the Element

• CE

- CE Marked

• Spectrum

- ETSI EN 302 217-2-2

• EMC / EMI

- ETSI EN 301 489-1
- ETSI EN 301 489-4
- EN 55032

• Electrical Safety

- EN 60950-1
- EN 60950-22
- EN 50385 (RF Exposure)

• Environmental

- ETSI EN 300019-2-4, Class 4.1/4M5 (Operation)
- ETSI EN 300 019-2-1, Class 1.2 (Storage)
- ETSI EN 300 019-2-2, Class 2.3 (Transportation)
- IEC 60529, Class IP67 (Protection against dust and water)

⁽²⁾ 68-Byte frame with MHS.

⁽³⁾ The capacity per direction is determined by the selected TDD split ratio.