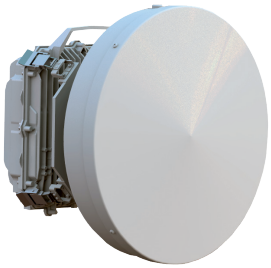
ULTRALINK-GX80



UltraLink™-GX80
(with parabolic antenna 30 cm)

All-Outdoor Gigabit Packet Radio

Overview

UltraLink™-GX80, a compact all-outdoor Ethernet radio operating in the entire E-Band (71-76 / 81-86 GHz), is ideally suited for use in demanding applications requiring ultra-high capacity and extended range. Using FDD, it achieves throughputs of up to 10 Gbit/s full duplex, while offering a complete set of networking and packet Frequency and Phase synchronization features. Operating as an Ethernet bridge, the radio unit offers 1 x Gigabit Ethernet plus 2 x 1/10 Gigabit Ethernet data interfaces enabling deployment flexibility in complex network topologies without requiring external switches. When operating in CPRI transport mode, three of the unit's interfaces can be used for CPRI transport, up to Option 7. UltraLink™-GX80 is designed to be easily mounted on poles, while its installation and provisioning features, such as "zero-touch" provisioning (via Bluetooth - connected LCT), enable convenience and speed of installation and maintenance. UltraLink™-GX80 is ideally suited for use in for 4G/4G+/5G RAN macro cell backhaul and fronthaul applications, as well as, transport applications in Metro and aggregation networks as a fiber substitute.

Radio Specifications

Operating Frequencies, MHz	71,000 to 76,000 / 81,000 to 86,000
Channel Sizes, MHz	250 / 500 / 1,000 / 1,500
Duplexing Scheme	FDD
Ethernet Throughput, Gbit/s	up to 10
Modulation (adaptive)	4-QAM to 256-QAM
Link Adaptation	Hitless 7 state ACM mechanism based on link quality metrics
Error Correction Coding	LDPC / Reed Solomon
Configurations	1+0 / 1+1 / 2+0 / RLA / XPIC
Antenna Options	Parabolic 30 cm / 44 dBi and 60 cm / 50 dBi (Compliant with ETSI EN 302 217 Class 3)

Mechanical & Environmental Specifications

Dimensions (H x W x D), mm	290 x 240 x 96
Weight, kg	4.5 (excluding the mounting kit)
Power Supply Options	• Direct DC: -40.5 V to -57 V • Power over Ethernet (PoE)
Power Consumption, W	70
Operating Temperature	-33 °C to +55 °C (normal) / -50 °C to +55 °C (extended)

Radio Performance

Modulation	L1 Throughput (Mbit/s)[1]				Tx Power, dBm	Rx Thresholds @ BER 10^{-6}, Typ., dBm				System Gain @ BER 10^{-6}, Typ., dB (without antennas)			
	250 MHz	500 MHz	1000 MHz	1500 MHz		250 MHz	500 MHz	1000 MHz	1500 MHz	250 MHz	500 MHz	1000 MHz	1500 MHz
256-QAM	1,511	3,021	5,853	10,000	15	-58.6	-55.6	-47.9	-45.5	73.6	70.6	62.9	60.5
128-QAM	1,293	2,586	5,010	9,050	15	-62.3	-59.3	-52.2	-49.7	77.3	74.3	67.2	64.7
64-QAM	1,066	2,133	4,133	7,465	16	-65.6	-62.6	-55.7	-53.3	81.6	78.6	71.7	69.3
32-QAM	800	1,599	3,098	5,597	16	-69.0	-66.0	-59.1	-56.7	85.0	82.0	75.1	72.7
16-QAM	639	1,279	2,478	4,476	16	-72.4	-69.4	-62.6	-60.2	88.4	85.4	78.6	76.2
4-QAM Hi	320	639	1,239	2,238	20	-79.3	-76.3	-69.6	-67.1	99.3	96.3	89.6	87.1
4-QAM Lo	211	422	817	1,476	20	-81.7	-78.7	-72.0	-69.5	101.7	98.7	92.0	89.5

Features & Networking Specifications

- **Interfaces**
  - 3 x SFP+, 1 x RJ45, 1 x USB
  - Depending on the operating mode the interfaces are:
    - Ethernet Mode
      - 2 x 10GBASE-SR/LR SFP+ or 1000BASE-X
      - 1 x SFP+ Combo (RLA/Protection)
      - 1 x 10/100/1000BASE-T (RJ45)
      - 1 x USB/Local Management
    - CPRI Mode
      - 3 x CPRI SFP+ up to Option 7
      - 1 x 10/100/1000BASE-T (RJ45) for Inband management
      - 1 x USB/Local Management
- **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)
  - CE 2.0 services (E-Line, E-LAN, E-TREE, E-ACCESS)
  - 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))
- **Synchronization**
  - ITU-T G.8261 / G.8262 / G.8264 (Synchronous Ethernet)
  - IEEE 1588v2 TC, BC
- **Management**
  - Intracom Telecom NMS (uni|MS™)
  - Through Android tablet application over Bluetooth interface
  - Embedded Web Server (WebUI)
  - File Transfer (FTP)
  - SNMPv2, v2c, v3
  - CLI
  - IPv4, IPv6
  - Syslog
  - LLDP (Link Layer Discovery Protocol)
- **CE**
  - CE Marked
- **Spectrum**
  - ECC / REC (05)07
  - ETSI EN 302 217-2-2
- **EMC / EMI**
  - ETSI EN 301 489-1
  - ETSI EN 301 489-4
  - EN 55022
- **Electrical Safety**
  - EN 60950-1
  - EN 60950-22
  - EN 50385 (RF Exposure)
- **Environmental**
  - ETSI EN 300019-2-4 V2.2.2, Class 4.1/4M5 (Operation)
  - ETSI EN 300 019-2-1 v2.1.2, Class 1.2 (Storage)
  - ETSI EN 300 019-2-2 v2.1.2, Class 2.3 (Transportation)
  - IEC 60529, Class IP67 (Protection against dust and water)

[1] 256-Byte frame with MHS.

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12-2016