

## CCLink Digital Microwave Radio Point-To-Point Voice and Data Link 5.9 - 6.4 GHz U.S. Licensed Band



- Small, reliable and cost-effective licensed band links for exclusive frequency allocations
- Operates in the 5900 - 6400 MHz US Common Carrier Band (FCC Part 101) in the less-congested narrow (5 MHz or smaller) channels
- Full duplex, Point-to-point wireless T1 and Ethernet data communications up to 30 miles with standard configuration
- User selectable RF bandwidth, user allocated data bandwidth between voice and data circuits
- Advanced Forward Error Correction (FEC) improves range and availability over other units.
- High spectral density fits more information into narrow, noise-resistant RF channels
- No special tuning or adjustment at the site.

### Product Description

The CCLink Radio is a flexible, carrier-class wireless link enabling users to add voice and data capacity to their networks quickly and without the traditional expense and difficulty of licensed wireless. Installation is fast and easy. Simply mount the box, align the antenna, and connect the unit to the network via standard network cables.

Employing advanced 16QAM modulation, CCLink provides very high spectral efficiency, allowing operation in as few as one pair of the 1.25 MHz channel allocations of FCC Part 101. Multiple CCLink systems may be collocated without interference.

The user can configure CCLink to occupy a pair of 1.25 , 2.5 or 5 MHz RF channels. CCLink provides both a T1 and Ethernet interface. The wider the RF channel, the higher the Ethernet data rate. The T1 is user configurable as a fractional T1 with any number of enabled time slots. Disabled time slot bandwidth is automatically reallocated to the Ethernet channel.

The unit comes preconfigured with default settings, but if system parameters need to be changed, customers can easily make changes via a Web Page based management system. Management can be local or remote.

The CCLink Radio is configured as a weatherproof stand-alone Outdoor Unit (ODU) with N type connector for an external antenna, or as a single Indoor Radio (IDR) with the same features in a 19 or 23 inch 1U rack mounted enclosure. The radio link complies with FCC Part 101 regulations and type approval is pending. The radio can operate as an Outdoor Unit alone, or an Indoor Radio alone for enhanced control and configuration flexibility.

### Applications

Fixed point-to-point wireless links can be established for WAN, backhaul, internet and PBX links between facilities. Systems can be reconfigured and redeployed as needs change.



## CCLink Digital Microwave Radio Point-To-Point Voice and Data Link 5.9 – 6.4 GHz U.S. Licensed Band

Model	Freq Band	RF BW	Threshold	Max. Output Power
<b>CCL-A-ODU-48</b> ODU with "N" female connector for use with an external antenna, 48V	5900 to 6400 MHz	1.25 MHz	-89 dBm	+20 dBm at connector
		2.5 MHz	-86 dBm	+20 dBm at connector
		5.0 MHz	-81 dBm	+20 dBm at connector

**Ethernet Throughput:** Ethernet data rate depends on RF BW and DS0s active: *MBPS, each direction*

# of DS0s Enabled:	0	2	4	8	12	16	24
1.25 MHz RF Channels	2.0	1.9	1.7	1.5	1.2	1.0	0.4
2.5 MHz RF Channels	4.0	3.9	3.8	3.5	3.3	3.0	2.5
5.0 MHz RF Channels	12.2	12.1	12.0	11.7	11.4	11.2	10.7

### Typical Operating Ranges (1 MHz Channel)

External 6' Dish Antenna: .....20 miles with 99.999% availability; 29 miles with 99.99% availability

Maximum Receive Level: .....-30 dBm error free (+10dBm w/o damage)

RF Modulation:.....16QAM, Frequency Division Duplex

Forward Error Correction: .....robust concatenated Reed-Solomon coding with interleaving

Regulatory Compliance:.....FCC Part 101 Type Acceptance Pending

Network Management and Control: .....10/100Base T Ethernet, SNMP compatible, full remote control of all radios on the system

Channelization.....Per FCC Part 101 allocation, non-overlapping

Test Points.....External RSSI jack, used to align antenna.

Alarms and Monitoring.....IDU LEDs, IDU alarm relays, IDU alarm inputs, and Network Management link with full status and control

### Line Interfaces

T1 Digital Interface:.....T1 / Fractional T1: DSX-1 per Telcordia GR-499, selectable B8ZS/AMI encoding, build-out and framing. User selectable number of DS0 slots, from 1 to 24.

Ethernet .....10/100BaseT per IEEE 802.3, full duplex, auto MDI-X, Layer 2 packet switch, QoS sorting, rich user-configured feature set.

### Power and Environmental Characteristics

DC Power Options: .....(48V) 18 to 75 VDC or (12V) 9 - 18 VDC 30 Watts max.

Operating Environment: .....ODU -40 to +70 C, 0-100% humidity, unsheltered outdoor  
IDR -40 to +70 C, 0-95% humidity, indoor environment

### Physical Dimensions

Outdoor Unit:.....12 x 12 x 4 inches, not including mount

IDR: .....19 or 23 inch rack mountable, 1U (1.75 inches) high