

# SkyLink CG2X

## Compact High Capacity Gigabit Ethernet PTP Radio System

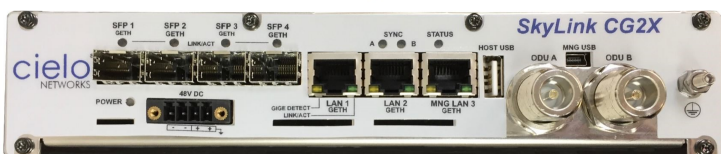
*Delivering High Bandwidth Licensed Microwave Solutions*

## Features

- High Capacity Digital Microwave System — up to 1000 Mbps
- Licensed band PTP digital microwave system for all FCC/NTIA/ETSI bands at 4/6/7/8/11/13/15/18/23/26/32/39 GHz
- Scalable GigE IP bandwidth - up to 494 Mbps Ethernet for 1+0, 988 Mbps for 2+0
- Payload: Six GigE User Ports and One GigE NMS Port with integrated Ethernet Switch
- Scalable modulation - QPSK, 16, 32, 64, 128, 256, 512, and 1024 QAM
- Future capacity support over 1 Gbps for 80 MHz channels.
- Dynamic Hitless Adaptive Modulation and advanced forward error correction techniques for improved link performance
- AES 128-bit / 256-bit Encryption
- 1+1 Hot-Standby and 2+0 Support in a single unit
- 1+1 / 2+2 Split architecture for full redundancy
- Compact IDU size of one RU height & one half 19-inch rack width
- Common compatible IDU for all ODU RF bands
- User friendly Web GUI management solution
- SNMP remote management

## Applications

- Fixed Wireless Access & Fiber Network Extension
- 5G Wireless and WISP Backhaul
- Enterprise and Private Networks
- Government, Defense, and Public Safety Networks
- Critical Infrastructure Communications Redundancy
- Star, Cascade (“daisy chain”), or Ring Network Topologies



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# Technical Specifications

# SkyLink CG2X

General Information	L6 / U6 GHz	11 GHz	18 GHz	23 GHz
Frequency Range	5.9-6.4 / 6.5-6.9 GHz	10.7 - 11.7 GHz	17.7 - 19.7 GHz	21.2 - 23.6 GHz
T-R Spacing	252.04 / 160 & 170 MHz	490 MHz	1560 MHz	1200 MHz
RF Channel Spacing	10/30/60 MHz	10/30/40/80 MHz	10/20/30/40/50/80 MHz	10/20/30/40/50 MHz
Emission Designator	10M0D7W/ 30M0D7W/60M0D7W	10M0D7W/30M0D7W 40M0D7W/56M0D7W	10M0D7W/20M0D7W/30M0D7W/ 40M0D7W/50M0D7W/60M0D7W	10M0D7W/20M0D7W/30M0D7W/ 40M0D7W/50M0D7W
Frequency Accuracy	5 PPM			

Radio Information	6 GHz								11 GHz							
Modulation	QPSK	16QAM	32QAM	64QAM	128QAM	256QAM	512QAM	1024QAM	QPSK	16QAM	32QAM	64QAM	128QAM	256QAM	512QAM	1024QAM
Transmit Power	29 dBm	27 dBm	27 dBm	24 dBm	24 dBm	24 dBm	21 dBm	21 dBm	27 dBm	25 dBm	25 dBm	21 dBm	21 dBm	21 dBm	18 dBm	18 dBm
Receiver Sensitivity (BER 10e-6)	-81 dBm	-76 dBm	-73 dBm	-70 dBm	-67 dBm	-64 dBm	-62 dBm	-61 dBm	-82 dBm	-77 dBm	-74 dBm	-71 dBm	-69 dBm	-64 dBm	-62 dBm	-61 dBm
Receiver Overload (BER 10e-6)	-20 dBm	-20 dBm	-20 dBm	-23 dBm	-23 dBm	-23 dBm	-23 dBm	-23 dBm	-20 dBm	-20 dBm	-20 dBm	-23 dBm	-23 dBm	-23 dBm	-23 dBm	-23 dBm

Radio Information	18 GHz								23 GHz							
Modulation	QPSK	16QAM	32QAM	64QAM	128QAM	256QAM	512QAM	1024QAM	QPSK	16QAM	32QAM	64QAM	128QAM	256QAM	512QAM	1024QAM
Transmit Power	25 dBm	22 dBm	22 dBm	17 dBm	17 dBm	17 dBm	14 dBm	14 dBm	25 dBm	22 dBm	22 dBm	17 dBm	17 dBm	17 dBm	14 dBm	14 dBm
Receiver Sensitivity (BER 10e-6)	-87 dBm	-80 dBm	-73 dBm	-70 dBm	-68 dBm	-65 dBm	-63 dBm	-62 dBm	-86 dBm	-80 dBm	-74 dBm	-71 dBm	-69 dBm	-65 dBm	-63 dBm	-62 dBm
Receiver Overload (BER 10e-6)	-20 dBm	-20 dBm	-20 dBm	-23 dBm	-23 dBm	-23 dBm	-23 dBm	-23 dBm	-20 dBm	-20 dBm	-20 dBm	-23 dBm	-23 dBm	-23 dBm	-23 dBm	-23 dBm

		Capacity Bandwidth - Typical with Strong FEC								
		Modulation	QPSK	16QAM	32QAM	64QAM	128QAM	256 QAM	512 QAM	1024 QAM
RF Channel Size	10 MHz		15 Mbps	30 Mbps	38 Mbps	46 Mbps				
	20 MHz		30 Mbps	61 Mbps	77 Mbps	92 Mbps	107 Mbps	123 Mbps	138 Mbps	154 Mbps
	30 MHz		46 Mbps	92 Mbps	115 Mbps	138 Mbps	161 Mbps	184 Mbps	208 Mbps	231 Mbps
	40 MHz		61 Mbps	123 Mbps	154 Mbps	184 Mbps	215 Mbps	246 Mbps	277 Mbps	308 Mbps
	50 MHz		76 Mbps	152 Mbps	190 Mbps	229 Mbps	267 Mbps	305 Mbps	343 Mbps	381 Mbps
	60 MHz		91 Mbps	182 Mbps	227 Mbps	273 Mbps	318 Mbps	364 Mbps	410 Mbps	455 Mbps

		Capacity Bandwidth - Maximum with Light FEC								
		Modulation	QPSK	16QAM	32QAM	64QAM	128QAM	256 QAM	512 QAM	1024 QAM
RF Channel Size	10 MHz		17 Mbps	34 Mbps	43 Mbps	52 Mbps				
	20 MHz		34 Mbps	69 Mbps	86 Mbps	104 Mbps	121 Mbps	138 Mbps	156 Mbps	173 Mbps
	30 MHz		52 Mbps	104 Mbps	130 Mbps	156 Mbps	182 Mbps	208 Mbps	234 Mbps	260 Mbps
	40 MHz		69 Mbps	138 Mbps	173 Mbps	208 Mbps	243 Mbps	277 Mbps	312 Mbps	347 Mbps
	50 MHz		86 Mbps	172 Mbps	215 Mbps	258 Mbps	301 Mbps	344 Mbps	387 Mbps	430 Mbps
	60 MHz		102 Mbps	205 Mbps	256 Mbps	308 Mbps	359 Mbps	410 Mbps	462 Mbps	513 Mbps

## Payload

Ethernet: 15 to 1000 Mbps

## Physical Interfaces

### Ethernet

4xSFP Slot (1Gbps/2.5Gbps)  
2xRJ-45 10/100/1000Base-TX  
1xRJ-45 10/100/1000Base-TX (NMS or User)

### Modem/IF Module

IDU: 2 x N - Female  
ODU: N - Female  
Frequency: TX: 350 MHz / RX: 140 MHz

## Power

### Input Voltage

-48VDC: -36 to -60 VDC

### Power Consumption

IDU: 30W  
ODU: 35W (per ODU)

## Encryption

AES: 128 or 256 bit

## Management

### Remote Access

SNMP V2, V3  
Web-Based GUI (HTTP/HTTPS)  
Telnet/SSH - Command Line Interface  
Interface: 10/100/1000Base-TX, RJ-45

### Local Access

Ethernet: GUI/Telnet  
Interface: USB

### Topology

In-Band and Out-of-Band Management with embedded switch

### RSL Measurement

Voltage output at ODU with BNC Interface and Web-GUI

## Environmental

### Indoor Unit

Operating Temperature: -5° to +45°C  
Relative Humidity: 0 to 95%, non-condensing  
Altitude: 4,500 m

### Outdoor Unit

Operating Temperature: -33° to +55°C  
Relative Humidity: 0 to 100%  
Altitude: 4,500 m

## Mechanical

### Indoor Unit

Size: 8.5W x 9.9D x 1.8H inches (1RU)  
Weight: 5.0 pounds

### Outdoor Unit

Size: 10.9 x 9.4 diameter x 3.6 deep inches  
Weight: 9.5 pounds

# Data Capacity

# SkyLink CG2X

		Capacity Bandwidth - Strong FEC								
		Modulation	QPSK	16QAM	32QAM	64QAM	128QAM	256 QAM	512 QAM	1024 QAM
RF Channel Size	10 MHz		15 Mbps	30 Mbps	38 Mbps	46 Mbps				
	20 MHz		30 Mbps	61 Mbps	77 Mbps	92 Mbps	107 Mbps	123 Mbps	138 Mbps	154 Mbps
	30 MHz		46 Mbps	92 Mbps	115 Mbps	138 Mbps	161 Mbps	184 Mbps	208 Mbps	231 Mbps
	40 MHz		61 Mbps	123 Mbps	154 Mbps	184 Mbps	215 Mbps	246 Mbps	277 Mbps	308 Mbps
	50 MHz		76 Mbps	152 Mbps	190 Mbps	229 Mbps	267 Mbps	305 Mbps	343 Mbps	381 Mbps
	60 MHz		91 Mbps	182 Mbps	227 Mbps	273 Mbps	318 Mbps	364 Mbps	410 Mbps	455 Mbps

		Capacity Bandwidth - Medium FEC								
		Modulation	QPSK	16QAM	32QAM	64QAM	128QAM	256 QAM	512 QAM	1024 QAM
RF Channel Size	10 MHz		16 Mbps	33 Mbps	41 Mbps	49 Mbps				
	20 MHz		33 Mbps	66 Mbps	82 Mbps	99 Mbps	115 Mbps	132 Mbps	148 Mbps	165 Mbps
	30 MHz		49 Mbps	99 Mbps	123 Mbps	148 Mbps	173 Mbps	198 Mbps	223 Mbps	247 Mbps
	40 MHz		66 Mbps	132 Mbps	165 Mbps	198 Mbps	231 Mbps	264 Mbps	297 Mbps	330 Mbps
	50 MHz		81 Mbps	163 Mbps	204 Mbps	245 Mbps	286 Mbps	327 Mbps	368 Mbps	409 Mbps
	60 MHz		97 Mbps	195 Mbps	244 Mbps	293 Mbps	342 Mbps	391 Mbps	439 Mbps	488 Mbps

		Capacity Bandwidth - Light FEC								
		Modulation	QPSK	16QAM	32QAM	64QAM	128QAM	256 QAM	512 QAM	1024 QAM
RF Channel Size	10 MHz		17 Mbps	34 Mbps	43 Mbps	52 Mbps				
	20 MHz		34 Mbps	69 Mbps	86 Mbps	104 Mbps	121 Mbps	138 Mbps	156 Mbps	173 Mbps
	30 MHz		52 Mbps	104 Mbps	130 Mbps	156 Mbps	182 Mbps	208 Mbps	234 Mbps	260 Mbps
	40 MHz		69 Mbps	138 Mbps	173 Mbps	208 Mbps	243 Mbps	277 Mbps	312 Mbps	347 Mbps
	50 MHz		86 Mbps	172 Mbps	215 Mbps	258 Mbps	301 Mbps	344 Mbps	387 Mbps	430 Mbps
	60 MHz		102 Mbps	205 Mbps	256 Mbps	308 Mbps	359 Mbps	410 Mbps	462 Mbps	513 Mbps

Medium FEC - reduce receiver sensitivity by 1dB from specification

Light FEC - reduce receiver sensitivity by 2 dB from specification