


MOTOROLA WIRELESS BROADBAND

PTP 800

Licensed Ethernet Microwave


Outdoor Unit

Compact Modem Unit
**PTP 800 Series
Family of Products**

PTP 11800	11 GHz
PTP 18800	18 GHz
PTP 23800	23 GHz
PTP 26800	26 GHz

High-Capacity, Carrier-Grade Wireless Ethernet Bridges

The Motorola Point-to-Point Wireless Ethernet Bridges – PTP 800 Series¹ – operate in the 11, 18, 23 and 26 GHz licensed bands, at up to 364 Mbps throughput (full duplex) and with user-configured channel bandwidths from 7 to 56 MHz. With upgradeable capacity from 10 Mbps to full capacity via software key, the systems offer exceptional cost efficiency and scalability. In addition, PTP 800 bridges provide cost-effective, high-performance, ultra-reliable connectivity for a variety of enterprises, including corporations, Internet Service Providers (ISPs), schools, universities, hospitals, utility companies, railroads, municipalities and government agencies.

Adaptive Coding and Modulation (ACM) enables PTP 800 Series transmitters and receivers to negotiate the highest mutually sustainable data rate, then dynamically “up shift” and “down shift” the rate as radio path conditions change. This capability helps PTP 800 radios deliver the highest spectral efficiency and maximum throughput possible for the radio path while providing the highest link availability.

With its small footprint and split-mount architecture, which includes an outdoor unit (ODU) and a compact modem unit (CMU), the PTP 800 installs quickly and easily. The One Point Wireless Suite’s PTP LINKPlanner tool allows you to project performance characteristics prior to purchase based on your specific radio path conditions. You can plan and optimize a single link or multiple links simultaneously and obtain a comprehensive overview of your entire wireless network via Google™ Earth.

Motorola Wireless Broadband

The PTP 800 bridges are included in Motorola’s comprehensive portfolio of reliable and cost-effective wireless broadband solutions that, together with our WLAN solutions, provide and extend coverage both indoors and outdoors. The Motorola Wireless Broadband portfolio offers high-speed Point-to-Point, Point-to-Multipoint, Mesh, WiFi and WiMAX networks that support data, voice and video communications, enabling a broad range of fixed and mobile applications for public and private systems. With Motorola’s innovative software solutions, customers can design, deploy and manage a broadband network, maximizing up-time and reliability while lowering installation costs.

¹ This document provides features and specifications for the PTP 800 Series prior to general availability. As a result, PTP 800 product features and specifications are subject to change without notice.

SPECIFICATION SHEET – PTP 800

Motorola 11, 18, 23 and 26 GHz Licensed Ethernet Microwave – PTP 800 Series

Radio Technology	Remarks
RF band ²	11 GHz Band: 10.7 – 11.7 GHz (FCC only) 18 GHz Band: 17.7 – 19.7 GHz 23 GHz Band: 21.2 – 23.6 GHz 26 GHz Band: 24.5 – 26.5 GHz (ETSI only)
Channel size	Configurable from 7 to 56 MHz
Transmit power	Maximum transmit power up to 28 dBm
Receiver sensitivity	-90 dBm at QPSK
Modulation	Fixed or dynamic, adapting between QPSK and 256 QAM
Error correction	Low Density Parity Check (LDPC) code
Duplex scheme	FDD
Security and encryption	Optional FIPS-197 compliant 128/256-Bit AES Encryption
	² Regulatory conditions for RF bands may vary by geographic location and should be confirmed prior to system purchase.

Ethernet Bridging

Protocol	IEEE 802.3 802.1p/1Q (served by 8 queues) 802.1ad (Q-in-Q)
Frame size	Up to 9600 bytes
User data throughput	10 to 364 Mbps at the Ethernet (full duplex)
Latency	< 115 us @ full capacity with 64 bytes
User traffic interface	100 / 1000 Base T (RJ-45) – auto MDI/MDIX, 1000 Base SX option

Management & Installation

Network management	Inband and out-of-band
Protocol	SNMP v1/v2c
EMS	Web GUI management, Motorola One Point Wireless Suite
Out-of-band interface	10 / 100 Base T (RJ-45)
Installation	ODU – RSSI output assistance for link alignment
Connection	IF cable between outdoor unit (ODU) and compact modem unit (CMU), distance up to 1000 ft. (300 meters)

Physical

Physical configuration	Split mount – Compact Modem Unit (CMU) and Outdoor Unit (ODU)
Dimensions	Outdoor Unit (ODU): Diameter 10.5" (26.7 cm), Depth 3.5" (8.9 cm) Compact Modem Unit (CMU): Width 7.1" (18.0 cm), Height 1.4" (3.5 cm), Depth 8.7" (22.0 cm)
Weight	Outdoor Unit (ODU): 10.1 lbs (4.6 kg) Compact Modem Unit (CMU): 2.4 lbs (1.1 kg)
Wind speed survival	Outdoor Unit (ODU): 150 mph (242 kph)
Power source	-48V DC (-40.5V DC to -60V DC)
Power consumption	80 W (max), ODU + CMU

Environmental & Regulatory

Operating temperature	Outdoor Unit: -27° F (-33° C) to +131° F (+55° C) – EN 300 019-1-4 Compact Modem Unit: -27° F (-33° C) to +131° F (+55° C) – EN 300 019-1-3
Humidity	Outdoor Unit: Up to 100% Compact Modem Unit: Up to 95%, non-condensing
Safety	UL 60960; IEC 60950; EN 60950; CSA 22.2 No. 60950
EMC	USA: FCC Part 15, Class B Europe: EN 301 489-4

Radio Performance				
Frequency	11 GHz	18 GHz	23 GHz	26 GHz
Standard	FCC	ETSI / FCC	ETSI / FCC	ETSI
Available Date	Oct. '09	Oct. '09	Oct. '09	Oct. '09
Frequency Range (GHz)	10.7 ~ 11.7	17.7 ~ 19.7	21.2 ~ 23.6	24.5 – 26.5 ETSI
T/R Spacing (MHz) FCC	490, 500	1560	1200	
Channel Spacing (MHz) FCC	10, 30, 40	10, 20, 30, 40, 50	10, 20, 30, 40, 50	
T/R Spacing (MHz) ETSI		1008, 1010	1008, 1232	1008
Channel Spacing (MHz) ETSI		7, 13.75, 27.5, 55	7, 14, 28, 56	7, 14, 28, 56
RF Channel Selection	Via Web GUI			
System Configuration	1 + 0			
ATPC Range (dB)	Transmit Power Control - Adaptive, lower power limit varies with RF band and modulation mode up to 1dBm minimum.			

Radio Throughput										
Modulation	Profile	Maximum Throughput – Mbps (1518 Bytes/Frame)								
		7 MHz	14 MHz	28 MHz	56 MHz	10 MHz	20 MHz	30 MHz	40 MHz	50 MHz
QPSK	0	10	20	38	77	14	29	40	53	66
8PSK	1	15	31	57	115	21	41	59	79	104
16 QAM	2	20	41	75	151	28	59	78	104	151
32 QAM	3	25	51	101	201	35	68	104	151	179
64 QAM	4	30	62	126	253	42	94	131	182	218
128 QAM	5	35	71	151	301	51	103	155	208	259
256 QAM	6	39	79	171	344	54	120	178	237	302
256 QAM	7			181	364		126	188	251	320

Transmit Power					
	Modulation	Frequency (GHz)			
		11	18	23	26
Maximum Transmit Power (dBm)	QPSK	28	25.5	25	25
	8PSK	26	22	22	22
	16 QAM	26	22	22	22
	32 QAM	26	22	22	22
	64 QAM	21	17	17	17
	128 QAM	21	17	17	17
	256 QAM	19	15	15	15

Receive Sensitivity ³						
	Modulation	Profile	Frequency (GHz)			
			11	18	23	26
Receive Sensitivity @ 56/55 MHz channel (dBm)	QPSK	0	-82	-81	-81	
	8PSK	1	-78	-78	-78	
	16 QAM	2	-76	-76	-76	
	32 QAM	3	-72	-72	-72	
	64 QAM	4	-70	-69	-69	
	128 QAM	5	-67	-66	-66	
	256 QAM	6	-64	-64	-64	
	256 QAM	7	-63	-62	-62	
Receive Sensitivity @ 28 MHz channel (dBm)	QPSK	0	-85	-84	-84	
	8PSK	1	-81	-81	-81	
	16 QAM	2	-79	-79	-79	
	32 QAM	3	-75	-75	-75	
	64 QAM	4	-73	-72	-72	
	128 QAM	5	-70	-69	-69	
	256 QAM	6	-67	-67	-67	
	256 QAM	7	-66	-65	-65	
Receive Sensitivity @ 14 MHz channel (dBm)	QPSK	0	-87	-86	-86	
	8PSK	1	-82	-82	-82	
	16 QAM	2	-80	-79	-79	
	32 QAM	3	-77	-77	-77	
	64 QAM	4	-75	-75	-75	
	128 QAM	5	-73	-72	-72	
	128 QAM	6	-68	-67	-67	
Receive Sensitivity @ 7 MHz channel (dBm)	QPSK	0	-90	-89	-89	
	8PSK	1	-85	-85	-85	
	16 QAM	2	-83	-82	-82	
	32 QAM	3	-80	-80	-80	
	64 QAM	4	-78	-78	-78	
	128 QAM	5	-76	-75	-75	
	128 QAM	6	-71	-70	-70	

³ Sensitivity limits specified in this document represent typical values, and, as preliminary data, these values are subject to change.

Receive Sensitivity ³						
	Modulation	Profile	Frequency (GHz)			
			11	18	23	26
Receive Sensitivity @ 50 MHz channel (dBm)	QPSK	0	-82	-82		
	8PSK	1	-78	-77		
	16 QAM	2	-75	-74		
	32 QAM	3	-73	-72		
	64 QAM	4	-70	-70		
	128 QAM	5	-67	-67		
	256 QAM	6	-64	-64		
	256 QAM	7	-61	-61		
Receive Sensitivity @ 40 MHz channel (dBm)	QPSK	0	-83	-83	-83	
	8PSK	1	-80	-80	-79	
	16 QAM	2	-78	-78	-77	
	32 QAM	3	-73	-73	-72	
	64 QAM	4	-71	-71	-70	
	128 QAM	5	-68	-68	-68	
	256 QAM	6	-66	-66	-65	
	256 QAM	7	-64	-64	-64	
Receive Sensitivity @ 30 MHz channel (dBm)	QPSK	0	-85	-85	-84	
	8PSK	1	-81	-81	-81	
	16 QAM	2	-79	-79	-78	
	32 QAM	3	-75	-75	-75	
	64 QAM	4	-72	-72	-72	
	128 QAM	5	-69	-69	-69	
	256 QAM	6	-67	-67	-66	
	256 QAM	7	-66	-66	-66	
Receive Sensitivity @ 20 MHz channel (dBm)	QPSK	0	-86	-86		
	8PSK	1	-83	-82		
	16 QAM	2	-81	-80		
	32 QAM	3	-77	-77		
	64 QAM	4	-75	-74		
	128 QAM	5	-71	-71		
	256 QAM	6	-69	-68		
	256 QAM	7	-65	-65		
Receive Sensitivity @ 10 MHz channel (dBm)	QPSK	0	-88	-88	-88	
	8PSK	1	-84	-84	-83	
	16 QAM	2	-81	-81	-81	
	32 QAM	3	-79	-79	-78	
	64 QAM	4	-77	-77	-76	
	128 QAM	5	-74	-74	-73	
128 QAM	6	-69	-69	-69		

