


MOTOROLA WIRELESS BROADBAND

PTP 800

Licensed Ethernet Microwave



Outdoor Unit (ODU)

Compact Modem Unit (CMU)

PTP 800 Family of Products	
PTP 11800	11 GHz
PTP 18800	18 GHz
PTP 23800	23 GHz
PTP 26800	26 GHz

High-Performance, Scalable Solutions

The Motorola Point-to-Point Licensed Ethernet Microwave solutions – PTP 800 – operate in the 11, 18, 23 and 26 GHz¹ licensed bands, at up to 368 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 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.

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. For those network environments where rack space is scarce or non-existent, the CMU can be mounted on a wall or set on a table.

The One Point Wireless Suite's PTP LINKPlanner tool allows you to accurately 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, obtain configuration details to speed deployment, display a comprehensive overview of your entire wireless network via Google™ Earth and receive a complete licensed-microwave Bill-of-Materials to simplify the ordering process.

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 PTP 800 modules operating in additional frequencies between 6 and 38 GHz will be available in a series of subsequent product releases.

SPECIFICATION SHEET – PTP 800

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

Radio Technology	Remarks
RF band ²	11 GHz Band: 10.7 – 11.7 GHz (FCC/IC only) 18 GHz Band: 17.7 – 19.7 GHz 23 GHz Band: 21.2 – 23.6 GHz 26 GHz Band: 24.25 – 26.5 GHz (ETSI only)
Channel size	Configurable from 7 to 56 MHz
Transmit power	Maximum transmit power up to 25.5 dBm
Receiver sensitivity	-88.9 dBm at QPSK
Modulation	Fixed mode, QPSK, 8PSK, 16/32/64/128/256 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 368 Mbps at the Ethernet (full duplex)
Latency	To < 115 µs @ 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 FCC	17.7 ~ 19.7	21.2 ~ 23.6	24.25 – 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	Maximum Throughput – Mbps (1518 Bytes/Frame)											
	7 MHz	13.75 MHz	14 MHz	27.5 MHz	28 MHz	55 MHz	56 MHz	10 MHz	20 MHz	30 MHz	40 MHz	50 MHz
256 QAM 0.91						364.9	368.6					
256 QAM 0.80				166.9	170.4	343.6	347.1		113.6	177.4	236.5	301.6
128 QAM	34.4	69.8	71.0	148.0	151.1	300.4	303.5	50.7	102.2	155.1	206.8	258.6
64 QAM	30.0	60.7	61.8	122.7	125.3	252.6	255.2	42.2	93.3	130.4	181.8	217.4
32 QAM	N/A	49.4	50.2	99.1	101.2	N/A	N/A	34.2	67.8	103.6	150.7	178.6
16 QAM	19.5	40.0	40.7	73.3	74.8	150.9	152.4	27.7	58.5	77.9	103.8	150.5
8PSK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20.2	40.3	59.1	78.9	103.7
QPSK	9.5	19.4	19.8	37.0	37.8	76.3	77.1	13.3	28.5	39.4	52.5	65.7

Transmit Power						
Modulation	Maximum Transmit Power – ETSI (dBm)			Maximum Transmit Power – FCC (dBm)		
	Frequency (GHz)			Frequency (GHz)		
	18	23	26	11	18	23
QPSK	25.5	25.0	25.0	19.0	23.5	23.0
8PSK	N/A	N/A	N/A	19.0	20.0	22.0
16 QAM	22.0	22.0	22.0	19.0	20.0	22.0
32 QAM	22.0	22.0	22.0	19.0	20.0	22.0
64 QAM	17.0	17.0	17.0	19.0	15.0	17.0
128 QAM	17.0	17.0	17.0	19.0	15.0	17.0
256 QAM	15.0	15.0	15.0	19.0	15.0	15.0

Receive Sensitivity					
	Modulation	Frequency (GHz)			
		11	18	23	26
Receive Sensitivity @ 55/56 MHz channel (dBm)	256 QAM 0.91		-62.5	-61.9	-61.9
	256 QAM 0.80		-62.6	-63.9	-63.9
	128 QAM 0.82		-65.7	-66.8	-66.8
	64 QAM 0.82		-68.9	-69.8	-69.8
	32 QAM 0.84		N/A	N/A	N/A
	16 QAM 0.79		-75.3	-76.2	-76.2
	QPSK 0.80		-81.1	-82.0	-82.0
Receive Sensitivity @ 27.5/28 MHz channel (dBm)	256 QAM 0.80		-65.7	-65.1	-65.1
	128 QAM 0.84		-68.8	-68.2	-68.2
	64 QAM 0.82		-72.0	-71.4	-71.4
	32 QAM 0.85		-74.5	-73.9	-73.9
	16 QAM 0.79		-78.4	-77.8	-77.8
	QPSK 0.80		-84.2	-83.6	-83.6
Receive Sensitivity @ 13.75/14 MHz channel (dBm)	128 QAM 0.76		-71.9	-71.3	-71.3
	64 QAM 0.82		-74.3	-73.8	-73.8
	32 QAM 0.87		-76.3	N/A	N/A
	16 QAM 0.88		-79.2	-78.7	-78.7
Receive Sensitivity @ 7 MHz channel (dBm)	QPSK 0.86		-85.9	-85.4	-85.4
	128 QAM 0.76		-74.8	-74.3	-74.3
	64 QAM 0.82		-77.3	-76.8	-76.8
	32 QAM 0.87		N/A	N/A	N/A
	16 QAM 0.88		-82.2	-81.7	-81.7
	QPSK 0.88		-88.9	-88.4	-88.4

Receive Sensitivity					
	Modulation	Frequency (GHz)			
		11	18	23	26
Receive Sensitivity @ 50 MHz channel (dBm)	256 QAM 0.83		-62.7	-62.2	
	128 QAM 0.82		-66.3	-65.8	
	64 QAM 0.82		-69.5	-69.0	
	32 QAM 0.87		-71.8	-71.3	
	16 QAM 0.91		-73.8	-73.3	
	8PSK 0.84		-77.1	-76.6	
	QPSK 0.80		-81.7	-81.2	
Receive Sensitivity @ 40 MHz channel (dBm)	256 QAM 0.80	-64.2	-64.2	-63.7	
	128 QAM 0.82	-67.3	-67.3	-66.8	
	64 QAM 0.88	-69.9	-69.9	-69.4	
	32 QAM 0.92	-72.0	-72.0	-71.5	
	16 QAM 0.79	N/A	-76.9	-76.4	
	8PSK 0.80	N/A	-79.1	-78.6	
	QPSK 0.80	N/A	-82.7	-82.2	
Receive Sensitivity @ 30 MHz channel (dBm)	256 QAM 0.80	-65.4	-65.4	-64.9	
	128 QAM 0.82	-68.5	-68.5	-68.0	
	64 QAM 0.82	-71.7	-71.7	-71.2	
	32 QAM 0.84	-74.3	-74.3	-73.8	
	16 QAM 0.79	N/A	-78.1	-77.6	
	8PSK 0.80	N/A	-80.3	-79.8	
Receive Sensitivity @ 20 MHz channel (dBm)	QPSK 0.80	N/A	-83.9	-83.4	
	256 QAM 0.76		-67.6	-67.1	
	128 QAM 0.83		-69.8	-69.3	
	64 QAM 0.94		-69.4	-68.9	
	32 QAM 0.84		-75.8	-75.3	
	16 QAM 0.91		-78.1	-77.6	
Receive Sensitivity @ 10 MHz channel (dBm)	8PSK 0.83		-81.1	-80.6	
	QPSK 0.88		-85.1	-84.6	
	128 QAM 0.83	-72.5	-72.5	-72.0	
	64 QAM 0.82	N/A	-75.8	-75.3	
	32 QAM 0.87	N/A	-77.8	-77.3	
	16 QAM 0.88	N/A	-80.7	-80.2	
Receive Sensitivity @ 10 MHz channel (dBm)	8PSK 0.86	N/A	-83.0	-82.5	
	QPSK 0.86	N/A	-87.4	-86.9	

