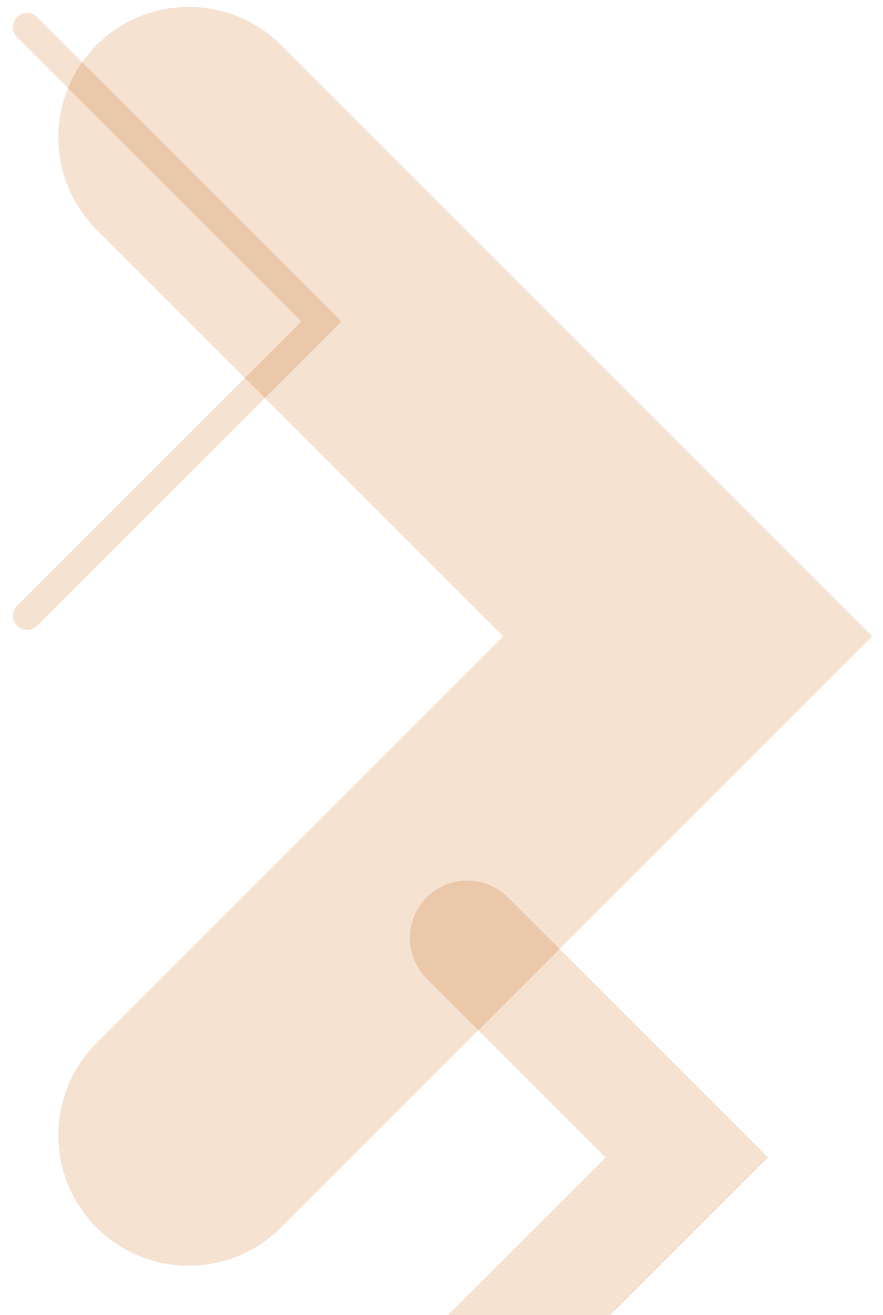




MOTOROLA WIRELESS BROADBAND

PTP 800 Ordering Guide for North America



Issue: 1.1
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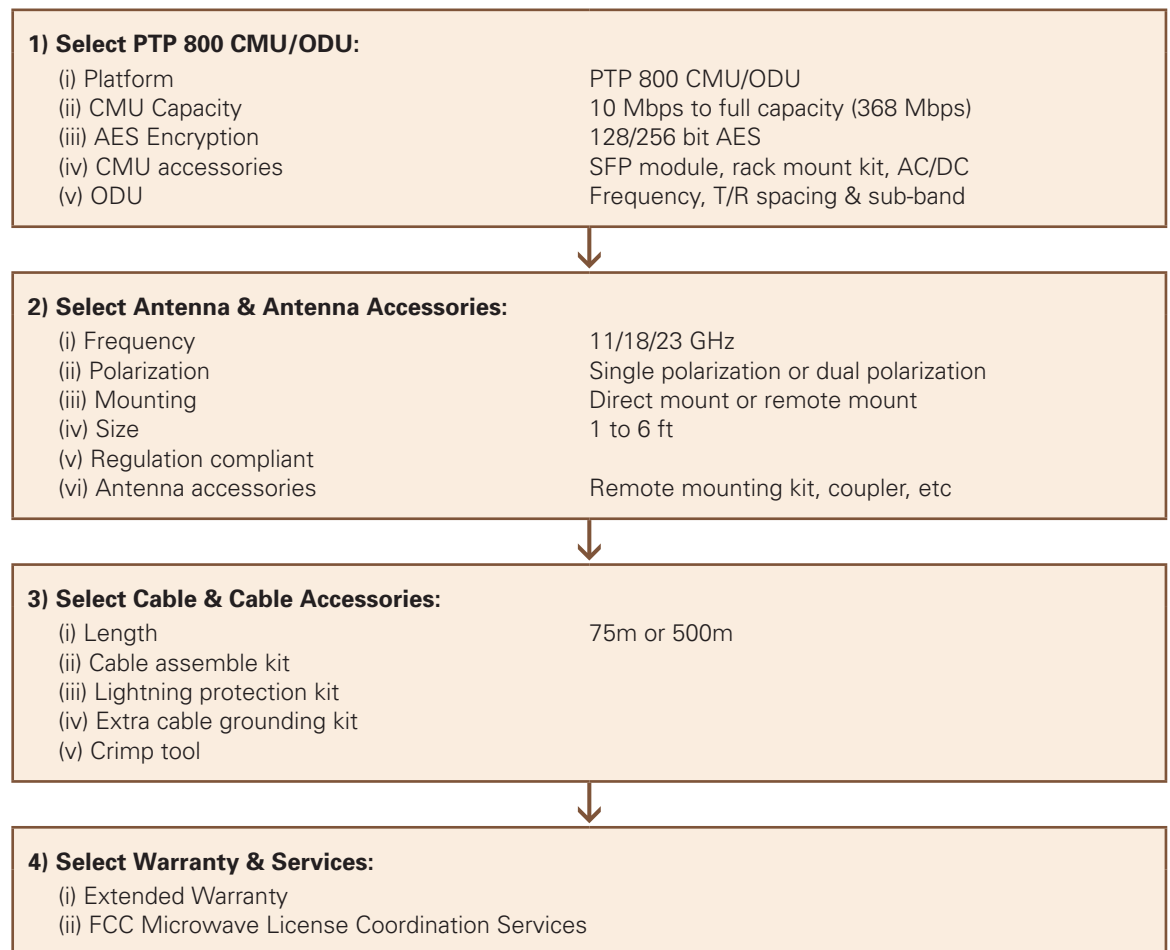


1. Introduction

This Ordering Guide covers the Motorola PTP 800 Licensed Ethernet Microwave solution. It is intended to provide a structured guide to ordering a link with any accessories and ancillary items for a successful installation.

Before ordering a link, Motorola recommends that the customer completes a site survey and designs the link using Motorola's PTP LINKPlanner tool which is available at www.motorola.com/ptp. Included in Motorola's One Point Wireless Suite, PTP LINKPlanner is a customized tool for planning and optimizing PTP 800 links. After a link has been planned and optimized to the desired performance, its built-in configuration feature generates a complete licensed-microwave Bill-of-Materials (BOM), showing all the components and accessories required for link installation.

As shown below, selecting everything that is required is a four step process.



2. PTP 800 CMU/ODU

2.1

PTP 800 Compact Modem Unit (CMU)

The PTP 800 CMU is frequency independent. Two CMUs are required for each link. Each CMU package includes a wall-mount kit and a DC connector.

P/N	Description
WB3480AA	PTP 800 Modem 1000/100BaseT with Capacity Cap 10 Mbps



2.2

CMU Capacity

All PTP 800 CMUs are set to a 10-Mbps capacity cap as the default from the factory. Customers can upgrade the CMU's throughput capacity to a greater capacity with a software license key. Capacity upgrades do not require any hardware changes or cause any service interruption during the upgrade changeover.

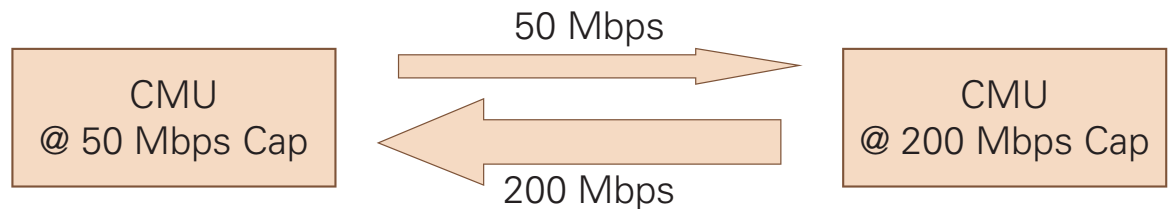
Capacity-upgrade license keys are provided on a per-unit basis and define the maximum throughput capacity for all incoming traffic over the CMU's Ethernet user port.

2.2.1

Asymmetric Capacity Control

Each PTP 800 CMU within a link can be set to a different capacity cap to support an asymmetric throughput configuration.

For example, a customer may want 50 Mbps for the uplink and 200 Mbps for the downlink. If so, one CMU can be set with a 50-Mbps capacity cap while, at the other end of the link, the CMU can be set as 200 Mbps.



2.2.2

Capacity Upgrade Options

The PTP 800 supports "single-step" capacity upgrades and flexible "step-by-step" capacity-upgrade options from 10 Mbps to full capacity (368 Mbps). The customer can choose either method to upgrade the capacity of a CMU. Applications, budget considerations, deployment timing and future bandwidth requirements can all impact the customer's decision as to which method is best, and the choice is entirely at the customer's discretion.

2. PTP 800 CMU/ODU continued

2.2.2.1

Single-Step Capacity Upgrade

With a single-step upgrade, a customer can upgrade the CMU to the targeted throughput cap regardless of the CMU's current capacity.

P/N	Description
WB3538	PTP 800 Modem Capacity Cap - 20 Mbps (per Unit)
WB3539	PTP 800 Modem Capacity Cap - 30 Mbps (per Unit)
WB3540	PTP 800 Modem Capacity Cap - 40 Mbps (per Unit)
WB3541	PTP 800 Modem Capacity Cap - 50 Mbps (per Unit)
WB3542	PTP 800 Modem Capacity Cap - 100 Mbps (per Unit)
WB3543	PTP 800 Modem Capacity Cap - 150 Mbps (per Unit)
WB3544	PTP 800 Modem Capacity Cap - 200 Mbps (per Unit)
WB3545	PTP 800 Modem Capacity Cap - 300 Mbps (per Unit)
WB3546	PTP 800 Modem Capacity Cap - Full Capacity (per Unit)

2.2.2.2

Step-by-Step Capacity Upgrade

For a step-by-step upgrade, the CMU can be upgraded from the current capacity to next capacity level. The CMU's current capacity must match the throughput capacity of the license key.

P/N	Description
WB3547	PTP 800 Modem Capacity Cap upgrade from 20 -> 30 Mbps key (per Unit)
WB3548	PTP 800 Modem Capacity Cap upgrade from 30 -> 40 Mbps key (per Unit)
WB3549	PTP 800 Modem Capacity Cap upgrade from 40 -> 50 Mbps key (per Unit)
WB3550	PTP 800 Modem Capacity Cap upgrade from 50 -> 100 Mbps key (per Unit)
WB3551	PTP 800 Modem Capacity Cap upgrade from 100 -> 150 Mbps key (per Unit)
WB3552	PTP 800 Modem Capacity Cap upgrade from 150 -> 200 Mbps key (per Unit)
WB3553	PTP 800 Modem Capacity Cap upgrade from 200 -> 300 Mbps key (per Unit)
WB3554	PTP 800 Modem Capacity Cap upgrade from 300 -> Full Capacity key (per Unit)

2.3

Encryption

PTP 800 systems support 128-bit and 256-bit AES encryption as security options. The encryption is enabled via a license key which unlocks the functionality in the CMU. The AES license key is provided on a per-unit basis.

P/N	Description
WB3555	PTP 800 Series AES License Key 128bit - End only
WB3556	PTP 800 Series AES License Key 256bit - End only

2. PTP 800 CMU/ODU continued

**2.4
CMU Accessories**

**2.4.1
Optical Interface**

Customers can choose SFP plug-in modules to enable fiber Gig-E interfaces on CMUs. No license key is required to enable the fiber port. Two different SFP modules are available:

P/N	Description
01010430001	SFP SX Gig-E Optical Pluggable Module - 850 nm
01010431001	SFP LX Gig-E Optical Pluggable Module - 1310 nm



**2.4.2
CMU Rack Mount Kit**

Two CMUs can be mounted on a 19-inch rack using a single CMU rack mount kit.

P/N	Description
WB3486A	PTP 800 Modem 19" Rack mount installation Kit



2. PTP 800 CMU/ODU continued

2.4.3

AC/DC Converter and Mains Lead

The PTP 800 CMU uses -48 VDC input. The AC/DC converter supports AC to DC conversion for customers who have AC only. The input power range is 90 ~ 264 Vac. One mains lead cable needs to be ordered separately.

P/N	Description
WB3622A	AC-DC Power Supply Converter (no lead cable included)
WB3618A	Mains Lead - US 3pin to C5 (PTP 800 AC-DC PSU)



2.5

PTP 800 Outdoor Unit (ODU)

The PTP 800 ODU will support the following frequencies in the initial release.

FCC/IC: 11/18/23 GHz



2. PTP 800 CMU/ODU continued

The PTP 800 ODU is frequency dependent. A pair of ODUs is required to set up a link which needs to be on the same sub-band and the same T/R spacing, with one end being Hi and the other end being Lo.

Ordering details for the FCC standard are as shown in the following table.

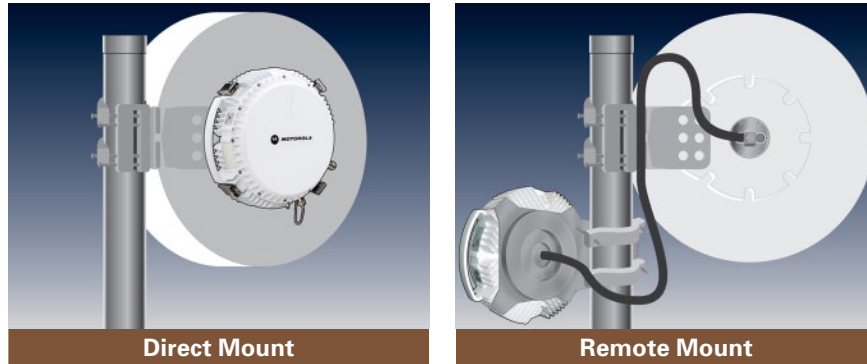
FCC STANDARD				
P/N	Description	Main Frequency	T/R Spacing	Sub-Band
01010208001	ODU-A 11GHz, TR 490 & 500, Lo, B5 (10700.0 - 10890.0 MHz), Rectangular WG, Neg Pol	11 GHz	490 & 500 MHz	B5-Lo
01010208002	ODU-A 11GHz, TR 490 & 500, Hi, B5 (11200.0 - 11390.0 MHz), Rectangular WG, Neg Pol			B5-Hi
01010208003	ODU-A 11GHz, TR 490 & 500, Lo, B6 (10855.0 - 11045.0 MHz), Rectangular WG, Neg Pol			B6-Lo
01010208004	ODU-A 11GHz, TR 490 & 500, Hi, B6 (11355.0 - 11545.0 MHz), Rectangular WG, Neg Pol			B6-Hi
01010208005	ODU-A 11GHz, TR 490 & 500, Lo, B7(11010.0 - 11200.0 MHz), Rectangular WG, Neg Pol			B7-Lo
01010208006	ODU-A 11GHz, TR 490 & 500, Hi, B7 (11510.0 - 11700.0 MHz), Rectangular WG, Neg Pol			B7-Hi
01010209013	ODU-A 18GHz, TR1560, Lo, B3 (17700.0 - 18140.0 MHz), Rectangular WG, Neg Pol	18 GHz	1560 MHz	B3-Lo
01010209014	ODU-A 18GHz, TR1560, Hi, B3 (19260.0 - 19700.0 MHz), Rectangular WG, Neg Pol			B3-Hi
01010210005	ODU-A 23GHz, TR1200, Lo, B5 (21200.0 - 21600.0 MHz), Rectangular WG, Neg Pol	23 GHz	1200 MHz	B5-Lo
01010210006	ODU-A 23GHz, TR1200, Hi, B5 (22400.0 - 22800.0 MHz), Rectangular WG, Neg Pol			B5-Hi
01010210007	ODU-A 23GHz, TR1200, Lo, B6 (21600.0 - 22000.0 MHz), Rectangular WG, Neg Pol			B6-Lo
01010210008	ODU-A 23GHz, TR1200, Hi, B6 (22800.0 - 23200.0 MHz), Rectangular WG, Neg Pol			B6-Hi
01010210009	ODU-A 23GHz, TR1200, Lo, B7 (22000.0 - 22400.0 MHz), Rectangular WG, Neg Pol			B7-Lo
01010210010	ODU-A 23GHz, TR1200, Hi, B7 (23200.0 - 23600.0 MHz), Rectangular WG, Neg Pol			B7-Hi

3. Antenna & Antenna Accessories

Motorola provides both single-polarization antennas and dual-polarization antennas for PTP 800 radios using the Andrew ValuLine series (VHLP, VHLPX).

3.1 Mounting options

There are two different mounting options for the ODU: direct mount and remote mount.



Direct mount: In a direct-mount configuration, the ODU is mounted directly to the antenna using clips. It can only be supported with a customized single-polarization antenna equipped with a Motorola antenna interface.

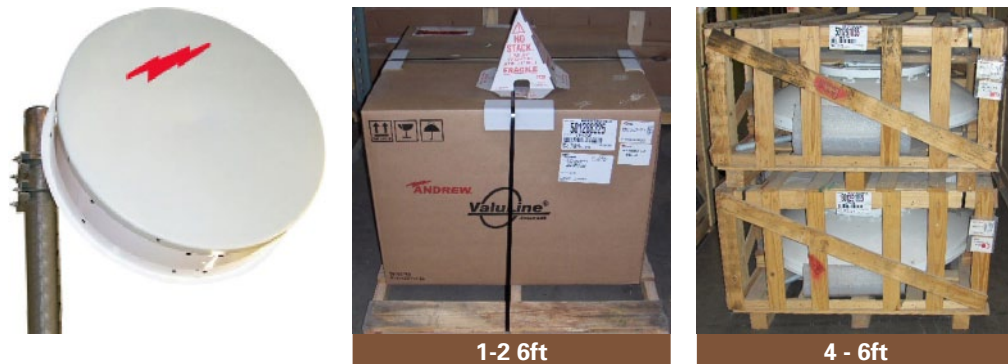
Remote mount: When the remote-mount option is chosen, the ODU is mounted using an ODU Remote Mount Kit and connected to the antenna using a flexible waveguide. For a remote mount installation, the following flexible waveguide flanges are used:

Frequency	Antenna Flange	Remote Mount Kit Flange	Flexible Waveguide Flange	Waveguide Type	Notes
11 GHz	PDR100	UBR120	UBR120 / PBR120	WR75	A tapered transition is required (PBR120/UDR100)
18 GHz	PBR220	UBR220	UBR220 / PBR220	WR42	
23 GHz	PBR220	UBR220	UBR220 / PBR220	WR42	

3.2 Antenna options

Antennas are available for 11 GHz, 18 GHz, and 23 GHz frequencies. Motorola provides customized single-polarization antennas from Andrew for direct mounting to ODUs, and Andrew standard single- and dual-polarization for remote mounting to ODUs.

Note: All ValuLine antennas are pre-assembled with little assembly work required on site.



3. Antenna & Antenna Accessories continued

Ordering details are provided in the following table.

P/N	Description	Antenna Interface	FCC Part 101	Canada SRSP
Single Polarization High Performance Antenna – Motorola Interface				
85010089001	2' HP Antenna, 10.70-11.70GHz, Single Pol, Mot Interface	Mot	Cat B	-
85010089002	2.5' HP Antenna, 10.70 ~ 11.70 GHz, Single Pol, Mot Interface	Mot	Cat B	-
85010089003	2.6' HP Antenna, 10.70 ~ 11.70 GHz, Single Pol, Mot Interface	Mot	Cat A	-
85010089004	4' HP Antenna, 10.70 ~ 11.70 GHz, Single Pol, Mot Interface	Mot	Cat A	-
85010089005	6' HP Antenna, 10.70 ~ 11.70 GHz, Single Pol, Mot Interface	Mot	Cat A	310.7B
Single Polarization High Performance Antenna – Andrew Interface				
85010089006	1' HP Antenna, 17.70 ~ 19.70 GHz, Single Pol, Mot Interface	Mot	n/a	-
85010089007	2' HP Antenna, 17.70 ~ 19.70 GHz, Single Pol, Mot Interface	Mot	Cat A	317.8A
85010089008	2.5' HP Antenna, 17.70 ~ 19.70 GHz, Single Pol, Mot Interface	Mot	Cat A	317.8A
85010089009	4' HP Antenna, 17.70 ~ 19.70 GHz, Single Pol, Mot Interface	Mot	Cat A	317.8A
85010089010	6' HP Antenna, 17.70 ~ 19.70 GHz, Single Pol, Mot Interface	Mot	Cat A	317.8A
Single Polarization High Performance Antenna – Andrew Interface				
85010089011	1' HP Antenna, 21.20 ~ 23.60 GHz, Single Pol, Mot Interface	Mot	Cat A	321.8B
85010089012	2' HP Antenna, 21.20 ~ 23.60 GHz, Single Pol, Mot Interface	Mot	Cat A	321.8B
85010089013	2.5' HP Antenna, 21.20 ~ 23.60 GHz, Single Pol, Mot Interface	Mot	Cat A	321.8A
85010089014	4' HP Antenna, 21.20 ~ 23.60 GHz, Single Pol, Mot Interface	Mot	Cat A	321.8A
85010089015	6' HP Antenna, 21.20 ~ 23.60 GHz, Single Pol, Mot Interface	Mot	Cat A	321.8A
Single Polarization High Performance Antenna – Andrew Interface				
85010091001	2' HP Antenna, 10.70-11.70 GHz, Single Pol, PDR100	PDR100	Cat B	-
85010091002	2.5' HP Antenna, 10.70 ~ 11.70 GHz, Single Pol, PDR100	PDR100	Cat B	-
85010091003	2.6' HP Antenna, 10.70 ~ 11.70 GHz, Single Pol, PDR100	PDR100	Cat A	-
85010091004	4' HP Antenna, 10.70 ~ 11.70 GHz, Single Pol, PDR100	PDR100	Cat A	-
85010091005	6' HP Antenna, 10.70 ~ 11.70 GHz, Single Pol, PDR100	PDR100	Cat A	310.7B
Dual Polarization High Performance Antenna – Andrew Interface				
85010092001	2' HP Antenna, 10.70-11.70 GHz, Dual Pol, PDR100	PDR100	Cat B	-
85010092002	2.5' HP Antenna, 10.70 ~ 11.70 GHz, Dual Pol, PDR100	PDR100	Cat B	-
85010092003	2.6' HP Antenna, 10.70 ~ 11.70 GHz, Dual Pol, PDR100	PDR100	Cat A	-
85010092004	4' HP Antenna, 10.70 ~ 11.70 GHz, Dual Pol, PDR100	PDR100	Cat A	-
85010092005	6' HP Antenna, 10.70 ~ 11.70 GHz, Dual Pol, PDR100	PDR100	Cat A	310.7B
Dual Polarization High Performance Antenna – Andrew Interface				
85010092006	1' HP Antenna, 17.70 ~ 19.70 GHz, Dual Pol, PBR220	PBR220	n/a	-
85010092007	2' HP Antenna, 17.70 ~ 19.70 GHz, Dual Pol, PBR220	PBR220	Cat A	317.8A
85010092008	2.5' HP Antenna, 17.70 ~ 19.70 GHz, Dual Pol, PBR220	PBR220	Cat A	317.8A
85010092009	4' HP Antenna, 17.70 ~ 19.70 GHz, Dual Pol, PBR220	PBR220	Cat A	317.8A
85010092010	6' HP Antenna, 17.70 ~ 19.70 GHz, Dual Pol, PBR220	PBR220	Cat A	317.8A
Dual Polarization High Performance Antenna – Andrew Interface				
85010092011	1' HP Antenna, 21.20 ~ 23.60 GHz, Dual Pol, PBR220	PBR220	Cat A	321.8B
85010092012	2' HP Antenna, 21.20 ~ 23.60 GHz, Dual Pol, PBR220	PBR220	Cat A	321.8B
85010092013	2.5' HP Antenna, 21.20 ~ 23.60 GHz, Dual Pol, PBR220	PBR220	Cat A	321.8A
85010092014	4' HP Antenna, 21.20 ~ 23.60 GHz, Dual Pol, PBR220	PBR220	Cat A	321.8A
85010092015	6' HP Antenna, 21.20 ~ 23.60 GHz, Dual Pol, PBR220	PBR220	Cat A	321.8A

3. Antenna & Antenna Accessories continued

3.3 Antenna Accessories

3.3.1 Remote Mounting Kit

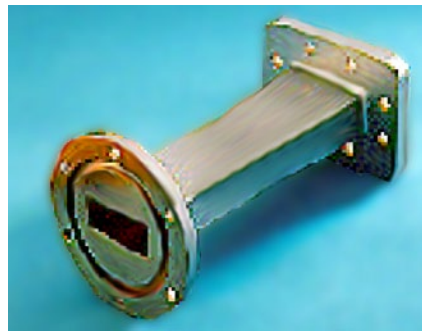
A remote mounting kit is required for all remote mounting installations with both single-polarization and dual-polarization antennas. One remote mounting kit is required per ODU.

For an 11 GHz installation, a transition module is also required for the remote mounting kit in order to fit all interfaces from the remote mounting kit to the antenna.

P/N	Description
07010109003	ODU Remote Mount Kit 11 ~ 13 GHz - UBR120 output
07010109005	ODU Remote Mount Kit 18 ~ 26 GHz - UBR220 output
58010077001	Tapered Transition, WR75 - WR90, PBR120, UDR100



Remote Mounting Kit

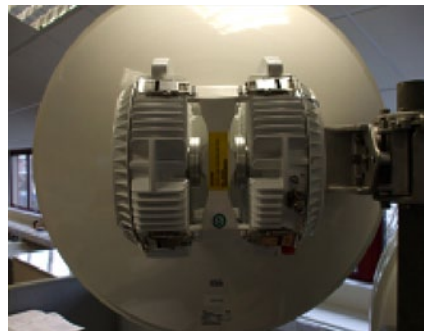


Tapered Transition

3.3.2 ODU Coupler Mounting Kit

An ODU coupler-mounting kit is required for a 1+1 configuration (1+1 will be available in a future release) or 2+0 configuration (two links sharing the same antenna but running on different channels).

The ODU coupler mounting kit supports direct mounting, using an Andrew-customized single-polarization antenna with a Motorola interface.



The ODU coupler mounting kit can be remote mounted with the ODU remote mounting kit. Two different couplers are available:

- Symmetric 3 db coupler
- Asymmetric 6 db couplers

3. Antenna & Antenna Accessories continued

P/N	Description
07010110005	ODU Coupler Mounting Kit 11 GHz - 3db
07010110006	ODU Coupler Mounting Kit 11 GHz - 6db
07010110011	ODU Coupler Mounting Kit 18 GHz - 3db
07010110012	ODU Coupler Mounting Kit 18 GHz - 6db
07010110013	ODU Coupler Mounting Kit 23 GHz - 3db
07010110014	ODU Coupler Mounting Kit 23 GHz - 6db

3.3.3

Flex Waveguide and Hangers

A flexible waveguide is required for the ODU remote-mounting configuration. One flex waveguide is required per remote mounting kit.

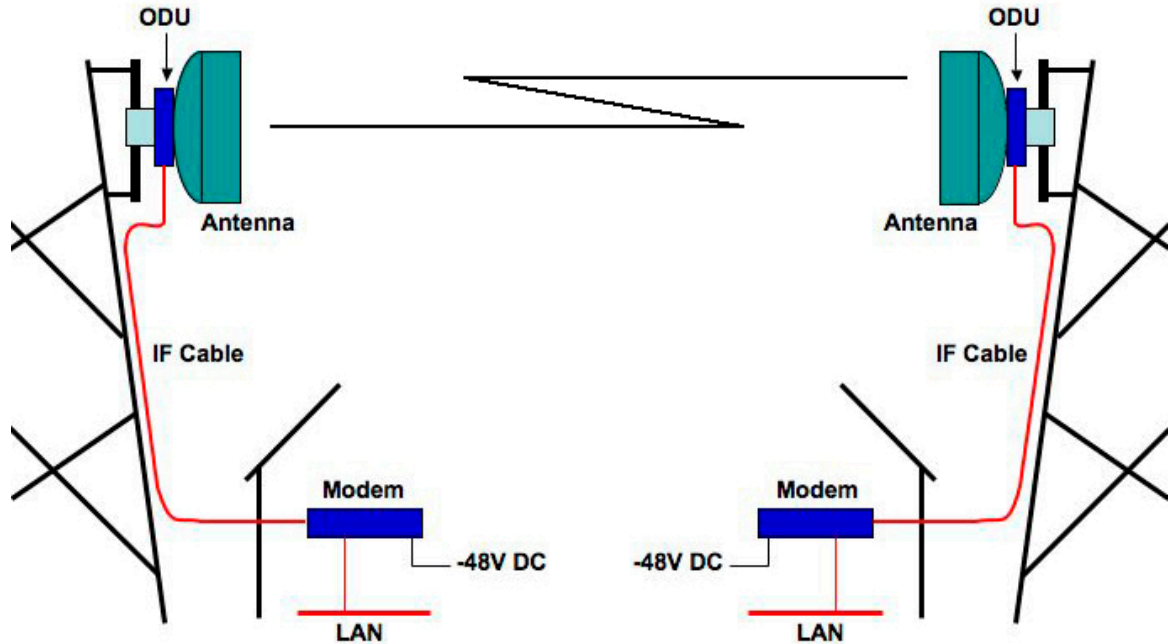
The flexible waveguide is available in a 3-foot length. During installation, two hangers are recommended per flexible waveguide.

P/N	Description
58010076005	3' Flex Waveguide 11 ~ 13 GHz - UBR120/ PBR120
58010076011	3' Flex Waveguide 18 ~ 26 GHz - UBR220/ PBR220
07010118003	WR75 FLEX-TWIST HANGER KIT - 11~13 GHz
07010118005	WR42 FLEX-TWIST HANGER KIT - 18 ~ 26 GHz



4. Cable and Cable Accessories

The PTP 800 ODU and CMU are connected by a single coaxial IF cable. An installation will comprise an antenna, ODU, CMU and IF cable and all the installation hardware to deploy the PTP 800.



4.1 Cable

The Andrew CNT400 cable is recommended for a PTP 800 installation. It is available in 75 meters (246 ft) or 500 meters (1640 ft) in a reel.

P/N	Description
30010194001	50 Ohm Braided Coaxial Cable - 75 meters
30010195001	50 Ohm Braided Coaxial Cable - 500 meters



4. Cable and Cable Accessories continued

4.2

Cable Assembly Kit

One cable assembly kit is required per IF drop cable installation.

P/N	Description
WB3616A	Coaxial Cable Installation Assembly Kit (w/o LPU End Kit)



The cable assembly kit includes:

	Component Description	Qty	Notes
1	ODU ground cable	1	0.8m, with an M5 lug eye on both ends
2	LPU grounding cable	2	0.6m, with an M5 and M10 lug eye on each side
3	ODU to LPU cable	1	0.7m jumper cable with N-type connector
4	Cable grounding kit	2	One cable grounding kit provided for the bottom of the tower and one at the entry to the building. Same as P/N: 01010419001
5	N-type connectors for the drop cable	4	Two connectors provided for the drop cable and two for the bottom SPD to CMU cable.
6	Vinyl insulating tape, 19mm (¾ inch)	1	0.19m
7	Vinyl insulating tape, 51mm (2inch)	1	0.51m
8	Self-amalgamating tape	1	3.0 m
9	Tie wraps	50	
10	Instruction sheet	1	
11	Packing List	1	

4. Cable and Cable Accessories continued

4.3

Lightning Protection Kit

One lightning protection kit is required per IF drop cable installation. The kit includes two surge protection units and one mounting kit.

P/N	Description
WB3657A	LPU END KIT PTP 800 (1 kit required per coaxial cable)



The Polyphaser BGXZ series surge protection unit is recommended for a PTP 800 installation. The lightning protection kit includes:

	Component Description	Qty	Notes
1	BGXZ Surge protection unit	2	From Polyphaser
2	Mounting kit for surge protection unit	1	

4.4

Cable Grounding Kit

The Andrew 223158-2 cable grounding kit is recommended. Two cable grounding kits are already included in the PTP 800 cable assembly kit (see details in section 4.2).

The following kits are available for extra cable grounding:

P/N	Description
01010419001	Coaxial Cable Grounding Kits for 1/4" and 3/8" cable



4. Cable and Cable Accessories continued

4.5

Crimp Tool

A crimp tool is required to make the N-type connectors for the IF cable.

P/N	Description
66010063001	Crimp tool for N-type connector





5. Warranty and Services

5.1

Standard Warranty

With the purchase of a PTP 800 link (two CMUs and two ODUs), Motorola provides a 12-month limited warranty on hardware components with 30-day repair-and-return terms for damaged parts, plus minor software enhancements as available and 24 x 7 telephone support. Damaged units are shipped to a Motorola Repair Center where the units are repaired and returned within 30 days.

In addition, two Extended Warranty options are available. Each PTP 800 Extended Warranty is provided on a per-link basis and covers two CMUs and two ODUs.

5.2

Extended Warranty with All Risks Advanced Replacement

This warranty upgrades and extends the initial 12-month Standard Warranty to include All Risks equipment coverage with the Advanced Replacement program. The All Risks feature provides coverage for virtually all types of equipment damage, including lightning, dropped units, vandalism, fire and other types of damage. Under the Advanced Replacement program, replacement units are shipped from the UK the next business day after receipt of a confirmed RMA, and Motorola pays shipping costs in both directions. Delivery times will depend on ship-to location and customs. This warranty also includes minor software enhancements as they become available and 24 x 7 telephone support.

P/N	Description
WB3560	PTP 800 Upgrade to All Risks Advanced Replacement Program During 1st Year Warranty
WB3561	PTP 800 Extended Warranty & All Risks Advanced Replacement Program, 1 Additional Yr
WB3562	PTP 800 Extended Warranty & All Risks Advanced Replacement Program, 2 Additional Yrs
WB3563	PTP 800 Extended Warranty & All Risks Advanced Replacement Program, 4 Additional Yrs

5.3

Extended Warranty with Repair-and-Return

This warranty extends the initial 12-month Standard Warranty with 30-day repair-and-return terms through the second, third or fifth years of ownership. The warranty also includes minor software enhancements as they become available and 24 x 7 telephone support. Typically, this option is chosen when one or more spare units are purchased for use as replacement units.

P/N	Description
WB3557	PTP 800 Extended Warranty, 1 Additional Yr
WB3558	PTP 800 Extended Warranty, 2 Additional Yrs
WB3559	PTP 800 Extended Warranty, 4 Additional Yrs

5. Warranty and Services *continued*

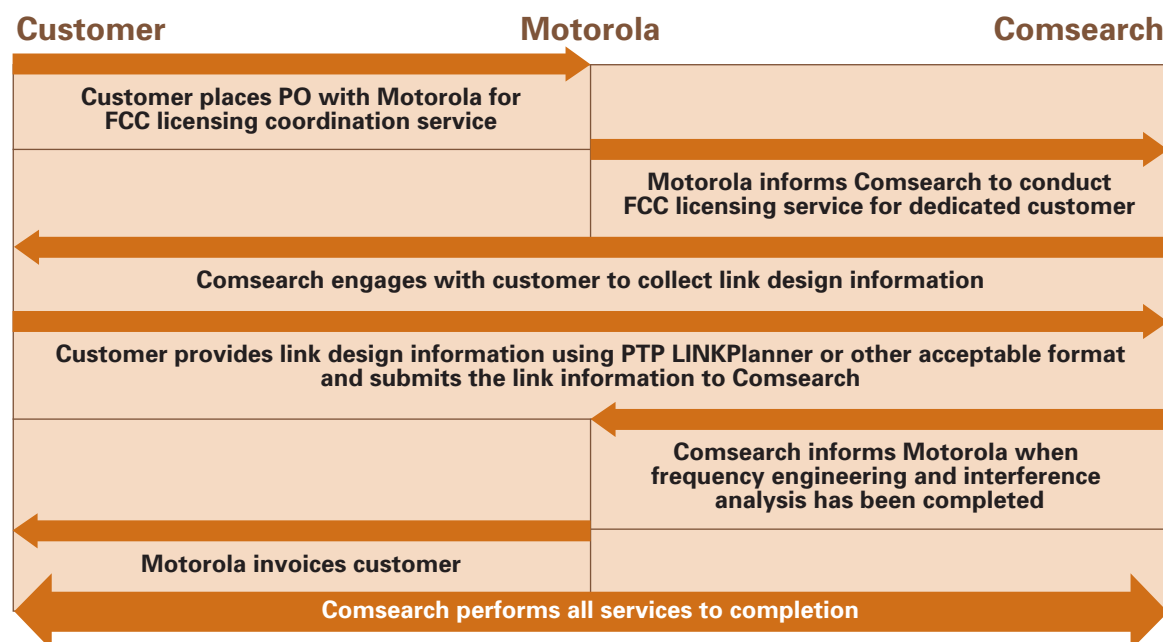
5.4

FCC Microwave License Coordination Services

For customers in the United States, Motorola offers FCC license coordination services through our partnership with Comsearch. The service covers link study, Prior Coordination Notification (PCN), FCC application filling, Schedule-K completion and a one- year license protection warranty.

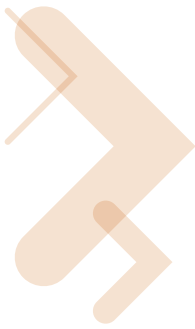
P/N	Description
WB3659	FCC Microwave license coordination services (each hop)

The following chart shows the process between Comsearch, Motorola and the end customer.



Below is an overview of the FCC licensing services that Motorola offers through its partnership with Comsearch.

- 6 ~ 26 GHz FCC microwave frequency coordination services include:
 - Frequency selection, interference analysis and engineering documentation
 - PCN and case resolution
 - FCC application preparation and filing, with Schedule-K completion
- The microwave license coordination service fee covers:
 - A single path, including multiple frequency pairs within the same band, if requested
 - Revisions to the original order at no additional cost before the license grant is provided – such revisions are not for new paths
 - One-year of frequency-protection service after the PCN is issued
- FCC licensing fee:
 - The license coordination service fee does NOT include the FCC licensing fee (\$660 per transmit site).
 - The FCC licensing fee may be waived or discounted if the customer is a local government, municipality, education, hospital, etc.
 - The FCC licensing fee can be paid by the customer directly via the FCC web page or paid through Comsearch.
- A dedicated support contact is provided for Motorola and its customers at:
 - Phone: 1-877-881-8249
 - Email: Motorola_MW_Support@Comsearch.com.



6. Software

There is no requirement to order software separately. The radios are shipped pre-loaded with operational software. The latest software can be downloaded from www.motorola.com/ptp

For out-of-warranty products, a software support contract needs to be purchased in order to get the latest software.

P/N	Description
WB3106A	1 Year PTP Software Support Contract (1-2 Links)
WB3107A	1 Year PTP Software Support Contract (3-5 Links)
WB3108A	1 Year PTP Software Support Contract (6+ Links)

Appendix: Complete BOM List Examples for PTP 800

Example 1: 1+0 Configuration (100 Mbps, 18 GHz, Direct Mount)

Items	P/N	Description	Qty	Remarks
1	WB3480AA	PTP 800 Modem 1000/100BaseT with Capacity Cap 10 Mbps	2	
2	WB3542	PTP 800 Modem Capacity Cap - 100 Mbps (per Unit)	2	
3	01010209013	ODU-A 18GHz, TR1560, Lo, B3 (17700.0 - 18140.0 MHz), Rectangular WG, Neg Pol	1	
4	01010209014	ODU-A 18GHz, TR1560, Hi, B3 (19260.0 - 19700.0 MHz), Rectangular WG, Neg Pol	1	
5	85010089008	2.5' HP Antenna, 17.70 ~ 19.70 GHz, Single Pol, Mot Interface	2	Direct mount - single pol
6	30010194001	50 Ohm Braided Coaxial Cable - 75 meter	2	
7	WB3616A	Coaxial Cable Installation Assembly Kits (w/o Surge Arrestor)	2	
8	WB3657A	LPU END KIT PTP 800 (1 kit required per Coaxial cable)	2	
Optional				
9	WB3556	PTP 800 Series AES License Key 256-bit - End only	2	
10	01010430001	SFP SX Gig-E Optical Pluggable Module - 850 nm	2	
11	WB3486A	PTP 800 Modem 19" Rack mount installation Kit	2	
12	WB3622A	AC-DC Power Supply Converter (no lead cable included)	2	
13	WB3618A	Mains Lead - US 3pin to C5 (PTP 800 AC-DC PSU)	2	
14	01010419001	Coaxial Cable Grounding Kits for 1/4" and 3/8" cable	0	
15	66010063001	Crimp tool for N-type connector	1	Recommend
16	WB3559	PTP 800 Extended Warranty, 4 Additional Yrs	1	
17	WB3659	FCC Microwave License Coordination Services	1	U.S. customer only

Example 2: 1+0 Configuration (100 Mbps, 11 GHz, Remote Mount)

Items	P/N	Description	Qty	Remarks
1	WB3480AA	PTP 800 Modem 1000/100BaseT with Capacity Cap 10 Mbps	2	
2	WB3542	PTP 800 Modem Capacity Cap - 100 Mbps (per Unit)	2	
3	01010208001	ODU-A 11GHz, TR 490 & 500, Lo, B5 (10700.0 - 10890.0 MHz), Rectangular WG, Neg Pol	1	
4	01010208002	ODU-A 11GHz, TR 490 & 500, Hi, B5 (11200.0 - 11390.0 MHz), Rectangular WG, Neg Pol	1	
5	85010091003	2.6' HP Antenna, 10.70 ~ 11.70 GHz, Single Pol, PDR100	2	Remote mount – single pol
6	07010109003	ODU Remote Mount Kit 11 ~ 13 GHz - UBR120 output	2	
7	58010077001	Tapered Transition, WR75 - WR90, PBR120, UDR100	2	Only required for 11 GHz installation
8	58010076005	3' Flex Waveguide 11 ~ 13 GHz - UBR120/ PBR120	2	
9	07010118003	WR75 FLEX-TWIST HANGER KIT - 11~13 GHz	4	
10	30010194001	50 Ohm Braided Coaxial Cable - 75 meter	2	
11	WB3616A	Coaxial Cable Installation Assembly Kits (w/o Surge Arrestor)	2	
12	WB3657A	LPU END KIT PTP 800 (1 kit required per Coaxial cable)	2	
Optional				
13	WB3556	PTP 800 Series AES License Key 256-bit - End only	2	
14	01010430001	SFP SX Gig-E Optical Pluggable Module - 850 nm	2	
15	WB3486A	PTP 800 Modem 19" Rack mount installation Kit	2	
16	WB3622A	AC-DC Power Supply Converter (no lead cable included)	2	
17	WB3618A	Mains Lead - US 3pin to C5 (PTP 800 AC-DC PSU)	2	
18	01010419001	Coaxial Cable Grounding Kits for 1/4" and 3/8" cable	0	
19	66010063001	Crimp tool for N-type connector	1	Recommend
20	WB3559	PTP 800 Extended Warranty, 4 Additional Yrs	1	
21	WB3659	FCC Microwave License Coordination Services	1	U.S. customer only

Appendix: Complete BOM list examples for PTP 800 continued

Example 3: 2+0 Configuration, 736 Mbps (368+368 – 368 Mbps each link, 18 GHz, Direct Mount, Share a Single-Polarization Antenna)				
Items	P/N	Description	Qty	Remarks
1	WB3480AA	PTP 800 Modem 1000/100BaseT with Capacity Cap 10 Mbps	4	
2	WB3546	PTP800 Modem Capacity Cap - Full Capacity (per Unit)	4	
3	01010209013	ODU-A 18GHz, TR1560, Lo, B3 (17700.0 - 18140.0 MHz), Rectangular WG, Neg Pol	2	
4	01010209014	ODU-A 18GHz, TR1560, Hi, B3 (19260.0 - 19700.0 MHz), Rectangular WG, Neg Pol	2	
5	85010089008	2.5' HP Antenna, 17.70 ~ 19.70 GHz, Single Pol, Mot Interface	2	Direct mount - single pol
6	07010110011	ODU Coupler Mounting Kit 18 GHz - 3db	2	
7	30010194001	50 Ohm Braided Coaxial Cable - 75 meter	4	
8	WB3616A	Coaxial Cable Installation Assembly Kits (w/o Surge Arrestor)	4	
9	WB3657A	LPU END KIT PTP 800 (1 kit required per Coaxial cable)	4	
Optional				
10	WB3556	PTP 800 Series AES License Key 256-bit - End only	4	
11	01010430001	SFP SX Gig-E Optical Pluggable Module - 850 nm	4	
12	WB3486A	PTP 800 Modem 19" Rack mount installation Kit	2	
13	WB3622A	AC-DC Power Supply Converter (no lead cable included)	4	
14	WB3618A	Mains Lead - US 3pin to C5 (PTP 800 AC-DC PSU)	4	
15	01010419001	Coaxial Cable Grounding Kits for 1/4" and 3/8" cable	0	
16	66010063001	Crimp tool for N-type connector	1	Recommend
17	WB3559	PTP 800 Extended Warranty, 4 Additional Yrs	2	
18	WB3659	FCC Microwave License Coordination Services	1	U.S. customer only

Example 4: 2+0 Configuration, 736 Mbps (368+368 – 368 Mbps Each Link, 18 GHz, Remote Mount, Share a Dual-Polarization Antenna)				
Items	P/N	Description	Qty	Remarks
1	WB3480AA	PTP 800 Modem 1000/100BaseT with Capacity Cap 10 Mbps	4	
2	WB3546	PTP800 Modem Capacity Cap - Full Capacity (per Unit)	4	
3	01010209013	ODU-A 18GHz, TR1560, Lo, B3 (17700.0 - 18140.0 MHz), Rectangular WG, Neg Pol	2	
4	01010209014	ODU-A 18GHz, TR1560, Hi, B3 (19260.0 - 19700.0 MHz), Rectangular WG, Neg Pol	2	
5	85010092008	2.5' HP Antenna, 17.70 ~ 19.70 GHz, Dual Pol, PBR220	2	Remote mount - dual pol
6	07010109005	ODU Remote Mount Kit 18 ~ 26 GHz - UBR220 output	4	
7	58010076011	3' Flex Waveguide 18 ~ 26 GHz - UBR220/ PBR220	4	
8	07010118003	WR75 FLEX-TWIST HANGER KIT - 11~13 GHz	8	
9	30010194001	50 Ohm Braided Coaxial Cable - 75 meter	4	
10	WB3616A	Coaxial Cable Installation Assembly Kits (w/o Surge Arrestor)	4	
11	WB3657A	LPU END KIT PTP 800 (1 kit required per Coaxial cable)	4	
Optional				
12	WB3556	PTP 800 Series AES License Key 256-bit - End only	4	
13	01010430001	SFP SX Gig-E Optical Pluggable Module - 850 nm	4	
14	WB3486A	PTP 800 Modem 19" Rack mount installation Kit	2	
15	WB3622A	AC-DC Power Supply Converter (no lead cable included)	4	
16	WB3618A	Mains Lead - US 3pin to C5 (PTP 800 AC-DC PSU)	4	
17	01010419001	Coaxial Cable Grounding Kits for 1/4" and 3/8" cable	0	
18	66010063001	Crimp tool for N-type connector	1	Recommend
19	WB3559	PTP 800 Extended Warranty, 4 Additional Yrs	2	
20	WB3659	FCC Microwave License Coordination Services	1	U.S. customer only



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