



MOTOROLA WIRELESS BROADBAND

Motorola Point-to-Point 300 Series

Wireless Ethernet Bridges



Reliable, Cost-Effective Connectivity Virtually Anywhere

Right Performance, Right Price

Until now, many emerging companies and government agencies have had to choose between performance and price when expanding their communication capabilities. The challenges of meeting bandwidth and environmental requirements while staying within budgetary guidelines frequently meant having to buy less, pay more or simply postpone. That's no longer true. With Motorola's Point-to-Point (PTP) 300 Series solutions, you can have reliable, secure, high-throughput connectivity even in challenging environments – and still stay within your budget. As a result, growing wireless ISPs as well as small and medium-sized enterprises can realize the productivity and economic benefits of high-performance connectivity.

Robust Communications in Challenging Environments

Operating in the 5.4 and 5.8 GHz radio frequency (RF) bands at up to 25 Mbps throughput, the PTP 300 Series Wireless Ethernet Bridges are designed to reliably transport your data, voice and video communications in virtually any environment – non-line-of-sight, high-interference and long-range line-of-sight paths, over water and open terrain, even in extreme weather conditions. Motorola's unique combination of technologies makes it feasible for budget-constrained organizations to meet a variety of communication needs, including:

- Building-to-building and campus connectivity
- High-speed Internet access
- T1/E1 leased-line replacement
- Reliable traffic backhaul
- Video surveillance connectivity
- Voice-over-IP and multimedia communications

More Range to Anywhere

PTP 300 Series links have class-leading sensitivity and power output, which enable the links to go farther than comparable systems – up to 155 miles (250 km). Plus, Motorola combines Multiple Input, Multiple Output (MIMO), *i*-OFDM and our advanced signal-processing algorithms to create four simultaneous channels between pairs of transceivers at each end of the link, without losing spectrum efficiency.

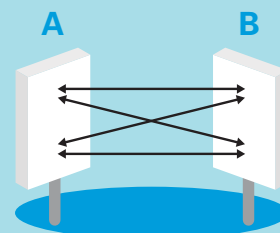
Choice and Flexibility

PTP 300 Series bridges are available in several models to meet your individual requirements.

- **5.4 and 5.8 GHz Integrated:** With up to 25 Mbps Ethernet data rate and dual built-in antennas, the 5.4 and 5.8 GHz Integrated systems are the perfect choice for obstructed and high-interference environments where high availability is a major requirement and/or T1/E1 capability is needed.
- **5.4 and 5.8 GHz Connectorized:** The PTP 300 Series Connectorized models combine all the innovative technology found in the Integrated versions with the high-gain advantage of external antennas. Over long distances and in extremely adverse environments, including deep non-line-of-sight, these solutions let you connect over greater distance and at a higher level of reliability and speed than comparable wireless bridges.

PTP 300 Series bridges also offer selectable channel sizes, varying data rates and a Line-of-Sight (LOS) mode to provide even greater flexibility to configure the solution that best meets your business and regulatory requirements, path conditions and budget.

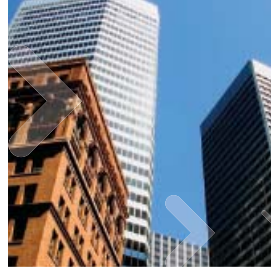
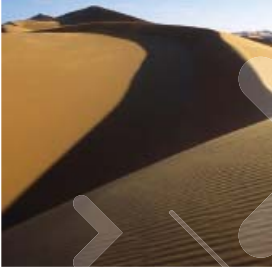
With the LOS mode, your PTP 300 link can achieve up to 50 Mbps aggregate throughput over a distance of less than six miles (10 km). If your link path is not within that distance or not totally LOS, you should operate the link in the Standard Mode to obtain the best performance in challenging environments. The LOS mode is an optional feature that requires the purchase of a license key.



Data from A to B – or B to A – is sent on four channels, significantly increasing the likelihood that data will get through.

Channel Sizes*	Standard Mode: Max. Ethernet Data Rate
5 MHz Channel	Up to 13 Mbps
10 MHz Channel	Up to 25 Mbps
15 MHz Channel	Up to 25 Mbps
Channel Sizes*	LOS Mode: Max. Ethernet Data Rate
5 MHz Channel	Up to 18 Mbps
10 MHz Channel	Up to 35 Mbps
15 MHz Channel	Up to 50 Mbps

* Local regulations should be confirmed prior to system purchase.



Robust, Secure Wireless Ethernet Bridges for Obstructed and High-Interference Environments As Well As Long-Range Line-of-Sight Links, Including Those Over Water

Motorola Wireless Broadband

PTP 300 Series solutions 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, Wi-Fi 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.

Superior Technology – Superior Results

PTP 300 Series solutions utilize the same, proven combination of technologies that has earned Motorola the number one market share in the unlicensed point-to-point global marketplace. Together these technologies enable the robustness and high performance of your links even in challenging conditions:

- **Multiple-Input Multiple-Output (MIMO):** The radio radiates multiple beams from the antenna which significantly protects against fading and greatly increases the probability of making a successful connection.
- **Intelligent Orthogonal Frequency Division Multiplexing (i-OFDM):** In addition to MIMO transmitting the data twice, i-OFDM sends transmissions over multiple frequencies, or sub-carriers, enabling high spectral efficiency, high resistance to multi-path interference and fading, and instant fade recovery.
- **Adaptive Modulation:** The transmitter and receiver negotiate the highest mutually sustainable data rate – then dynamically “upshift” and “downshift” the rate as RF conditions change to provide the maximum throughput possible for the radio path.

- **Advanced Spectrum Management with Intelligent Dynamic Frequency Selection (i-DFS):**

At power-up and throughout operation, the radio samples the band up to 400 times a second and automatically switches to the clearest channel. The 30-day, time-stamped database alerts the network operator to any interference that exists and provides statistics to help analyze these patterns. This Advanced Spectrum Management capability creates virtually interference-free performance in the band.

- **Best-In-Class Radios:** Motorola's PTP radios offer the highest system gain in their class through the use of high transmit power and ultra-sensitive receivers.

Leased Line Replacement

Because each PTP 300 bridge is equipped with a T1/E1 port, you can replace or supplement a leased line circuit, allowing you to eliminate recurring fees, extend access, support the transition to an IP-based network, and backhaul communications to locations where leased lines are not available. The T1/E1 capability is enabled through the PTP 300 Power Indoor Unit (PIDU Plus) via a simple splitter cable, so installation requires no expensive, time-consuming tower climb.

Integrated Lightning Protection

PTP 300 Series bridges provide built-in lightning protection capability, eliminating the need to deploy an external lightning protection device on a tower or wall adjacent to the radio. While the lightning protection built into the PTP 300 radio contains the protection required at the top of the tower or wall, an external PTP Lightning Protection Unit (PTP-LPU) is required near the base of the tower or wall at the cable entrance point leading to the network to protect the indoor LAN equipment. Together the lightning protection built into PTP 300 radios and the external PTP-LPU offer exceptional protection from the harmful effects of lightning. However, 100% protection is neither implied nor possible.



Typically, a PTP 300 system's performance means more productive users, less interference, lower cost of ownership and fewer connection points.

Additional Information

For more information on Motorola's PTP 300 Series bridges, refer to the PTP 54300 and 58300 Specifications Sheet. For information on Motorola's warranties for these PTP products, refer to the PTP Extended Warranty Data Sheet. To learn more about Motorola's PTP Lightning Protection Unit, reference the PTP-LPU Data and Specification Sheets.

Reassuring, Robust Security

With Motorola's unique software, each PTP 300 wireless bridge will communicate only with its user-configured counterpart at the other end of the link – and with no other. In addition, communications are encoded using a unique scrambling mechanism to secure over-the-air transmissions. Another layer of security can be applied with FIPS-197 compliant 128-bit or 256-bit AES encryption (optional).

Determine PTP Link Performance Prior To Purchase

Proper link planning is crucial to determine how a PTP 300 system will perform in your specific path conditions. With Motorola's PTP LINKPlanner, you can project link performance and throughput prior to purchase based on the characteristics of geography, distance, antenna height, transmit power and other factors specific to your desired path. Available as a stand-alone tool or as part of the One Point Wireless Suite, the PTP LINKPlanner allows you to plan and optimize multiple PTP links simultaneously and provides a comprehensive overview of your entire network via Google™ Earth.

Painless Setup and Service

Installation is fast and easy – so easy that many point-to-point links have been installed in a matter of hours. With the PTP 300's built-in audio and graphical assistance, deployment is as simple as "power up and point." Once installed, the bridges can operate for years in challenging environments and severe weather conditions.

End-to-End System Management

Designed with an intuitive graphical user interface, PTP 300 Series bridges contain embedded web servers to manage a link either locally or remotely and are designed to easily integrate with web- or SNMP-based management systems as well as Motorola's One Point Wireless Suite. The One Point Suite offers a set of powerful tools that allow you to cost-effectively design, monitor and manage all aspects of a Motorola wireless communications network from the earliest stages through ongoing operations.

Productivity Payoff

PTP 300 Series solutions are often the lower-cost option when you consider:

- The business impact from being able to connect in an area already saturated with RF or in environments that were previously inaccessible
- The economic impact from being able to provide high-speed Internet access
- The recurring-cost savings by replacing a leased line
- The productivity gained by creating a seamless local-area-network between a headquarters location and a warehouse, branch office, retail outlet, service center or other facility
- The ability to meet growing bandwidth requirements for applications such as multimedia, video surveillance or voice-over-IP
- The ability to backhaul more local loops using a single link

Put PTP 300 Bridges to Work for You

Service Providers: With high throughput, up to 99.999% availability and multi-level security, PTP 300 systems can offer highly reliable backhaul communications and help you grow subscriber networks by establishing service in distant locations.

Enterprises: PTP 300 solutions support ever-increasing communication requirements in environments where wired networks are too expensive or impossible to implement, while resisting interference and boosting performance for business-critical applications.

Vertical Markets: Whether linking separate networks within a building, linking networks in a campus environment, educating students in remote locations, sharing patient X-rays and digital images, or backhauling traffic, PTP 300 Series bridges offer reliable connectivity for multiple applications in a variety of markets, including government, transportation, hospitality, healthcare and education.



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