

Cisco BWX 8303 Basestation Timing System

Standards-compliant Mobile WiMAX systems require extremely accurate frequency and timing to ensure an optimal user experience. The Cisco® BWX 8303 Basestation Timing System receives a timing signal from a GPS antenna and provides a 1-pulse-per-second (PPS) signal along with an extremely accurate 10-MHz reference signal that is locked to the GPS timing signal. With the base stations all synchronized to the same GPS reference signal, interference in the network is reduced, allowing the user to experience the full potential of the network.

Features and Benefits

The Cisco BWX 8303 Basestation Timing System offers service providers the following benefits:

- Control and monitoring with console (DB-9) connector over RS-232, Telnet, or RJ-45 connector for Ethernet over Simple Network Management Protocol (SNMP)
- Minimum 1 hour holdover time in the event of satellite communication disruption
- Compact 1-rack-unit (1RU) design
- Maintenance-free design

Figure 1. Cisco BWX 8303 Basestation Timing System



Product Architecture

The Global Positioning System (GPS) consists of 24 satellites orbiting the earth. Originally deployed for military applications, the satellites send signals that are used commercially for extremely accurate timing and positioning functions. Each satellite transmits signals with unique identifying codes that are traceable to the United States Naval Observatory Master Clock System. GPS receivers on earth can receive these signals and calculate the position of the receiver to extreme accuracy. In addition, a local oscillator can be locked to these timing signals to generate a phase-locked 10-MHz reference signal.

The Cisco BWX 8303 provides DC power to and receives input from the GPS antenna. The internal receiver is capable of tracking up to eight satellites simultaneously; however, only four satellites are required to initially obtain frequency lock, after which the Cisco BWX 8303 can maintain the lock with just a single satellite being tracked.

The Cisco BWX 8303 provides three 10-MHz and three 1-PPS signals at the front panel, each isolated and short-circuit-protected from the other two. One Cisco BWX 8303 provides the required reference signals for three BWX 8300 or BWX 2300 Series Basestations; only a single BWX 8303 is required at a tri-sectored site.

The Cisco BWX 8303 package includes:

- One GPS antenna
- One lightning arrestor
- Three pairs of color-coded BNC cables (2 meters)
- One Ethernet cable (6 feet)
- AC unit with AC cord, DC unit with one pair of AWG 18 wires (8 feet)

Product Specifications

Table 1. Cisco BWX 8303 Specifications

Parameter	Specifications
Dimensions (H x W x D)	4.4 x 48.3 x 30.5 cm 1.75 x 19.0 x 12.0 in. (1RU) 19-in. rack mountable ¹ . Actual width is 43.2 cm (17 in.)
Weight	4.5 kg (10 lbs).
Temperature	Operating: 0 to 50°C, 32 to 122°F Storage: -20 to 70°C, -4 to 158°F
Humidity	5 to 95% non-condensing
Connectivity	Front access
Power Source (Voltage/ current)	AC: 100 to 240 VAC, 47–63 Hz / 0.5A (plug type B, CEE 7/7, or G) DC: 20 to 60 VDC / 0.5A
Power consumption	10W
Lightning protection	Cisco requires the use of primary external surge protection; this external protection is required for warranty.
Cable connectors	1x N-Type (f): GPS antenna input 6x BNC(f): 3x 1PPS and 3x 10 MHz outputs 1x DB-9(f): RS-232 console 1x RJ-45(f): Ethernet (10/100BASE-T)
BWX 8303 to GPS antenna cable loss	0 –7 dB ²
GPS channel frequency	L1, 1575.42 MHz
10-MHz outputs	Signal level: 1V(rms) into 50Ω, (13 dBm)
1-PPS outputs	Signal level: TTL, 4V into 50Ω

Note 1: Mounting ears are provided to secure the unit to the rack; however, a rear supporting bar or tray is required to support the full unit weight.

Note 2: Including lightning arrestor and all connectors. Additional loss can be accommodated using an alternative GPS antenna.

Ordering Information

To place an order, visit the [Cisco Ordering Page](#), or contact your local account representative.

Table 2 shows the part numbers for the Cisco BWX 8303 Basestation Timing System.

Table 2. Ordering Information

Product Name	Part Number
Cisco BWX 8303 Basestation Timing System, 3x Outputs, AC	WX-8303-EGU-AC-00 ¹
Cisco BWX 8303 Basestation Timing System, 3x Outputs, DC (inc. DC power cable)	WX-8303-EGU-DC-00=
CABLE, LMR240, N-N, 5 METERS	WX-CBL-J1-240-C05= ²

1. The AC BWX 8303 Basestation Timing System comes with a power cord at no extra charge. The power plug type is a configuration option in the Ordering Tool.

2. Two cables are required for new basestation and basestation timing system orders:

- Basestation to bus bar
- Bus bar to GPS antenna

Service and Support

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Additional Information

For more information about the Cisco BWX 8303 Basestation Timing System, contact your local account representative or visit: <http://www.cisco.com/go/bwx>



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