

RedMAX™ Maestro

GPS-based WiMAX Base Station Clock



Features & Benefits:

- Cost-effective, high quality GPS Clock
- Enables tighter frequency reuse plans
- Improves spectral efficiency by eliminating BS self interference
- Increases bandwidth and throughput
- Enhanced network reliability
- Improved overall customer experience
- Extended holdover time
- Rugged design
- EMC, ESD & Safety certified

WiMAX networks require precise base station synchronization for the effective transmission of broadband traffic. With more than 100 WiMAX Forum Certified™ networks deployments worldwide, Redline is recognized as a leader in the planning and implementation of successful, high-capacity WiMAX networks. Based on this experience, Redline has developed the RedMAX™ Maestro, a GPS (Global Positioning System) based reference clock designed to help service providers maintain optimum performance in their networks and to deliver reliable services to their customers.

Importance of Synchronization

With Time Division Duplexing (TDD) operation, the base station and the subscribers transmit at the same frequency. Proper timing between downlink and uplink bursts is key to minimizing potential interference and ensuring good performance. Poor synchronization, on the other hand, leads to high bit error rates and packet loss. The subscriber then experiences delays due to the need for packet retransmissions.

The Benefits

The RedMAX™ Maestro GPS-based base station clock meets ITU-T recommendation G.811 for reference clock sources. It is a highly accurate yet cost-effective reference clock, specifically designed for operation in WiMAX networks. Only one clock is required to synchronize up to six sectors at a base station site.

When RedMAX base station sector controllers are synchronized to the RedMAX™ Maestro, downlink and uplink transmissions will not overlap, and intra-sector interference is minimized. The ability to reduce interference - both within the cell and between neighbouring cells - translates to tighter frequency reuse, and hence more efficient utilization of allocated spectrum and channels.

The RedMAX™ Maestro also reduces bit and packet errors that can occur with WiMAX solutions that do not have proper synchronization, and provides enhanced link quality. This maximizes bandwidth and throughput - a key factor in helping service providers profitably deliver the high quality voice, video, and data services their customers demand. The RedMAX™ Maestro delivers the high performance WiMAX network needed to effectively capitalize on emerging service offering opportunities and support the stricter quality-of-service requirements of advanced VoIP services. The result is a significant increase in both customer satisfaction and network operating revenue.

RedMAX GPS Clock System Specifications

Output: 1PPS:

Level: 2.4VP P \pm 20%, (AC-MOS/50w) Square wave, 50
Pulse Width: 200ms
Rise Time: 20ns
Connector: SMA

Hold-Over performances:

Long term stability: 1x10-10/day, 2x10-8/year
Frequency stability: 6x10-10 pp (-5C to +55C)

Management:

RS-232C local manager on DB9 or RJ-45 connector
TOD (Time-of-Day) output compliant to NMEA0183
GUI-based Configuration and Monitoring software

EMC, ESD & Safety - CE Mark:

EMC: Certified to EN55022: 2005 and
EN55024: 2005
Safety: Conformance to EN60950-1: 2001

Environmental Characteristics:

Operating temperature: -5 to +55°C
Storage temperature: -40° to +85°C
Humidity: 95% non-condensing

Mechanical:

Constructed for working under harsh conditions, as described in
ETS 300-019-2-3.2
Size (H x W x D):
44.5 x 482.6 x 220mm (1.75"x19"x8.7")
44.5 x 482.6 x 245mm (1.75"x19"x9.7") (incl. connectors)
Weight: 2kg (4.40 lbs)

Superior Support

Redline's complete family of RedMAX™ products is backed by the best support programs in the industry. To enable the best support possible in every region of the world, Redline delivers its program through its global network of Redline Certified Partners which provide responsive customer and solution support everywhere Redline's products are available - all fully backed by Redline's professional support and service experts.

Redline has assembled a truly world-class, multi-lingual partner support organization along with a Technical Assistance Centre staffed by experienced support engineers who ensure you always get the help you need - when you need it most.



Leading the
WiMAX Revolution

About Redline Communications

Redline Communications is the leading provider of standards-based wireless broadband solutions. Redline's RedMAX™ WiMAX Forum Certified™ systems and award-winning RedCONNEX™ family of broadband wireless infrastructure products enable service providers and other network operators to cost-effectively deliver high-bandwidth services including voice, video and data communications.

Redline is committed to maintaining its wireless industry leadership with the continued development of WiMAX and other advanced wireless broadband products. With more than 35,000 installations in 75 countries, and a global network of over 100 partners, Redline's experience and expertise helps service providers, enterprises and government organizations roll out the services and applications that drive their business forward.

gps_clock_datasheet_051707 (mm/dd/yy) ©2007 Redline Communications Inc. All Rights Reserved. Specifications subject to change without notice.