Timing & Synchronization

GNSS Time and Frequency Instruments

Timing and Synchronization

Timing and synchronization are indispensable in our increasingly digital, networked world. Precise, accurate time enables virtually all infrastructures such as data centers, wired and wireless communications, financial exchanges, industrial networks, smart powergrid, and other secure communications. Wireless networks, for example, rely on highly accurate timing and synchronization for smooth cell-to-cell transfers of the mass of voice, video and mobile data deluging the networks daily. Precise timing is similarly vital for financial networks processing billions of dollars in transactions daily.

Achieving highly accurate precision time is no easy feat from a technological perspective, so it's important to find a resource you can trust. Our end-to-end timing solutions generate, distribute, and apply precise time for multiple industries, including communications, aerospace/defense, IT infrastructure, financial services, industrial and more. Microchip customers range from communications service providers and network equipment manufacturers to governments and their suppliers worldwide.

Leveraging Microchip's advanced portfolio of timing technologies, services, and solutions, we enable our customers to build more reliable networks and systems supporting today's precise timing standards, including:

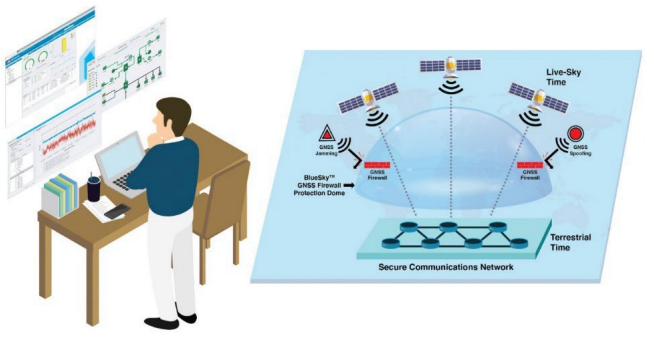
- GPS-based timing
- IEEE 1588 Precision Time Protocol (PTP)
- Network Time Protocol (NTP)
- Synchronous Ethernet (SyncE) and
- Data-over-Cable Service Interface Specifications (DOCSIS) timing

Updates to GPS Data Validation Rules

Microchip is continuously tracking GPS signal activity.

Microchip's worldwide deployment of atomic clocks and GPS systems are used as a reference frame to continuously analyze GPS data for changes including spoofing threats, jamming attacks, multipath signal interference, atmospheric activity and any other effect that degrades GPS performance.

Unified Management of "Terrestrial Time" and "Live-Sky Time" Sources to Enable Resilient Timing for Critical Infrastructure



Secure GNSS Distribution Systems

Product	Product Photo	Product Features
SyncServer S650		• <15ns RMS to UTC (USNO) through GNSS • <1x10-12 Frequency accuracy • Popular timing signal inputs/outputs standard in the base timing I/O module (IRIG B, 10 MHz, 1PPS) • Four standard GbE ports with NTP hardware timestamping, two additional 10 GbE ports optional • Superior 10 MHz Low Phase Noise Options • Galileo / GLONASS / BeiDou / QZSS / SBAS Option • DISA/DoDIN Approved Product
SyncServer S650-M Code		• <50 ns RMS to UTC (USNO) via GPS • GPS M-Code MPE-M Type II PPS L1/L2 receiver • <1x10^{-12} Frequency accuracy • Most popular timing signal inputs/outputs are standard in the base timing I/O module (IRIG B, 10 MHz, 1PPS) • Four standard GbE ports, all with patented NTP/PTP hardware timestamping, two additional 10 Gbe ports optional • Superior 10 MHz Low Phase Noise Options • DISA/DoDIN Approved Product
BlueSky™ GNSS Firewall 2200		• Identifies and protects GNSS systems from spoofing and jamming • Integrates seamlessly between existing GNSS antenna and receiver system(s) • Optional internal MAC (Miniature Atomic Clock) or external 1PPS and 10MHz timing reference inputs for extended holdover • Remote CLI in addition to secure and easy-to-use web interface • Centralized control and BlueSky Performance Monitoring using Microchip's TimePictra management platform
SyncSystem 4380A		• Accuracy <10ns RMS (Time); <1E-13 @1 day (Frequency) • Phase Noise: -110dBc/Hz (1 Hz Offset) • Network management interface • Remote software upgradeable • Redundant power supplies and hot-swappable input/output modules

Support

Microchip is committed to supporting its customers in developing products faster and more efficiently. We maintain a worldwide network of field applications engineers and technical support ready to provide product and system assistance. For more information, please visit www.microchip.com:

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- Evaluation samples of any Microchip device: www.microchip.com/sample
- Knowledge base and peer help: www.microchip.com/forums
- Sales and Global Distribution: www.microchip.com/sales

Training

If additional training interests you, Microchip offers several resources including in-depth technical training and referencematerial, self-paced tutorials and significant online resources.

- Overview of Technical Training Resources: www.microchip.com/training
- MASTERs Conferences: www.microchip.com/masters
- Developer Help Website: www.microchip.com/developerhelp
- Technical Training Centers: www.microchip.com/seminars

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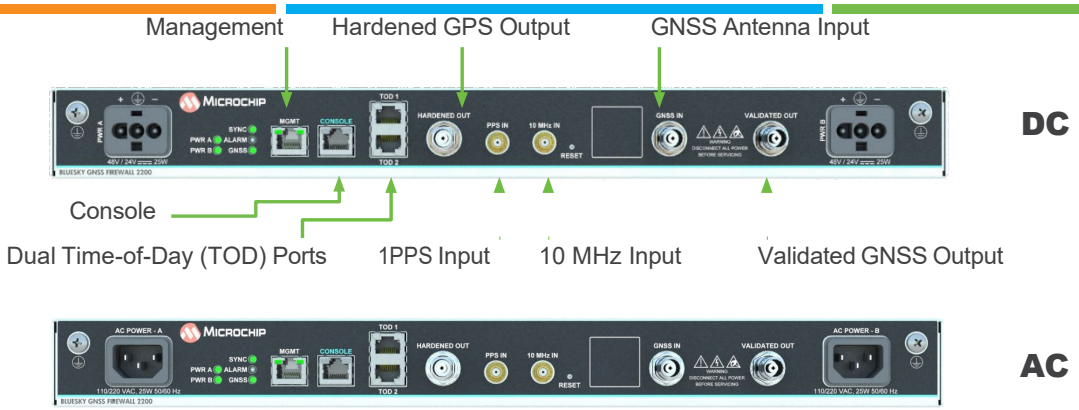
BlueSky GNSS Firewall 2200



Services

Microchip provides a wide range of services. With over 40 years of designing timing systems for mission-critical applications, Microchip has comprehensive support resources available to ensure that customers are able to use all of the available features.

For additional information, please register through the online support portal at my.microsemi.com. A broad collection of information is available through the portal and Microchip will keep you informed of important updates once you have reigstered

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