PRECISE TIME
AND FREQUENCY

SOLUTIONS FOR
AEROSPACE AND DEFENSE

SPECTRACOM
SYNCHRONIZING CRITICAL OPERATIONS®

Precisely What You're Looking For

Spectracom's time and frequency products meet the diverse needs of today's aerospace and defense applications. From the flexibility required for embedded components used in integrated systems, to the security needed for mission-critical networking, Spectracom has a solution. While our reliability is vital for command and control operations, it is our personal customer service that sets us apart from other suppliers. We'll work with you to develop custom solutions. Quite simply, our job is to make sure you have the right tools for the job and support that is second to none.

Typical Applications

- Tactical radio-communications
- Strategic telecommunications / network infrastructure
- Electronic warfare
- Radar and sensors
- Test range / telemetry synchronization
- Air traffic management
- Simulation
- Satellite ground stations

Capabilities

Spectracom has broad capabilities in delivering precise time and frequency solutions. We are well into our fourth generation of products that utilize sophisticated oscillator technology, disciplining techniques, and distribution and test methods. We are well versed in a variety of standards for today's *and* tomorrow's networks. These include:

- GPS Synchronization (SAASM GPS P(Y) L1, L2 bands)
- Next-generation networking standards (IPv6)
- State-of-the-art network management tools (SNMP, syslog)
- The latest in encryption, security, and authentication (SSL/SSH, PKI, radius, LDAP)
- Time distribution (IRIG, NTP, PTP/IEEE-1588, serial time codes)
- Wireless networking
- Critical data distribution in sensor networks
- Bus-level communications (all major platforms)
- Software drivers for all major operating systems
- High performance crystal and Rubidium clocks through our sister company, SpectraTime (www.spectratime.com)

We are committed to technical excellence and depth. To these ends, we work on and with industry standards committees to advance technology and influence the future. We encourage technical dialogue with our customers to develop custom solutions for unique applications.

To learn more about how Spectracom solutions enable you to redefine your network, please contact:

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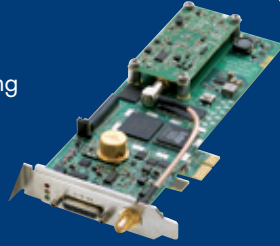
Bus-Level Timing

Timecode Reader/Generator/Processors

Plug-in slot cards provide precision timing in PCs, servers and instrument chassis utilizing industry standard form factors, communications buses, and operating systems.

TSync-PCIe PCI Express card with internal GPS receiver

- On-board precision clock keeps internal time
- Low latency timing
- Synchronization to IRIG (optional GPS)
- Time-tag external events
- Programmable alarm "match-time"
- Programmable pulse, wave output
- External event capture and programmable outputs can generate interrupts for application programming
- Generate timecode for other devices

Form Factors

- PCI Express (low-profile x1)
- PCI (3.3v universal signaling, up to 66 MHz)
- cPCI
- PC104
- VME
- PMC
- IP

TSAT-PCI-66U PCI card with external GPS receiver/antenna

Software drivers

Spectracom offers device drivers for all popular operating systems including Windows, Linux and Solaris. Our Windows-based drivers are designed with a user-friendly GUI that allows the operator to access most of the board functions.

SUPPORTED OPERATING SYSTEMS

FORM FACTOR	Windows Vista (64-bit)	Windows Vista (32-bit)	Windows 2000/XP	Windows NT	Linux (64-bit)[1]	Linux (32-bit)	LynxOS	VxWorks	Solaris[1]	SunOS	LabVIEW	eCos
PCIe	X	X	X	X	X	X			X			
PCI	X	X	X	X	X	X	X[4]		X	X[4]	X[4]	
cPCI/PMC		X	X	X		X[2]		X			X	
VME								X				X[3]
PC104		X	X	X		X						

[1] Supports multi-threaded applications on multiprocessor machines
[2] 2.4 Kernel only
[3] TSAT only
[4] PCI-U2 versions only

Time and Frequency Synchronization Instruments

Time and Frequency Synchronization System   New

SecureSync™

SecureSync™ combines Spectracom's precision master clock technology and secure network-centric approach with a compact modular hardware design. Standard master clock features are enhanced by a large number of input/output features via option cards, up to 6 cards per unit.

Lowest Cost of Ownership

- Configure-to-order: order only what you need
- Add features as your system configuration changes and grows
- Add-on products for systems requiring wide T&F distribution

Highest Reliability

- Multiple prioritized references with internal time-keeping
- Shock and vibration-tested chassis (MIL-STD-810F)
- Industry-leading product support backed by a 5-year warranty

Security-Hardened Network Appliance

- Manage protocols and ports through secure interface
- Proven operation on next-generation IPv6 networks
- Isolate management functions to a private network

SecureSync	
External Reference	GPS, SAASM GPS, 1PPS, IRIG, ASCII timecode, NTP peering/stratum2, PTPv2 (IEEE-1588) slave, Frequency, T1/E1
Internal Reference	OCXO (2 grades), Rubidium
Outputs	1PPS, IRIG, ASCII timecode, NTP server, PTPv2 (IEEE-1588) grandmaster, Frequency, T1/E1, STANAG

Master Clocks and Frequency References

Epsilon Clocks™ and Ageless® master oscillators are application-specific frequency and timing sources locked to GPS. They are available in a variety of form factors including board-level, module, and rack mount.

Epsilon Clock™ Model EC31M

Epsilon Clock Model EC1S

Epsilon Board Model EB03

Ageless® Master Oscillator Model 8195B
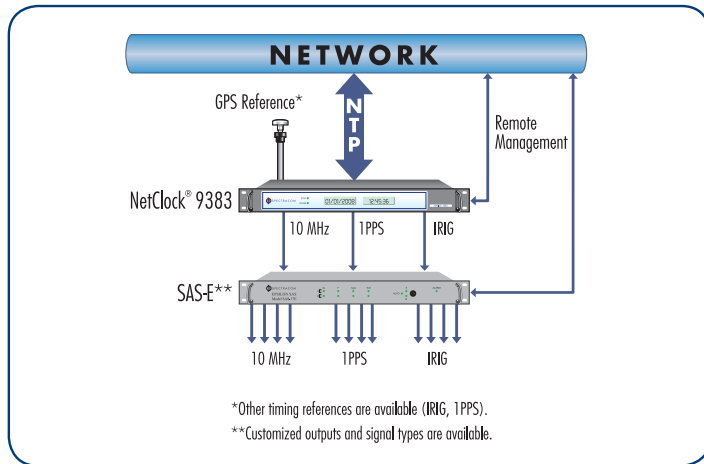
Time and Frequency Distribution

Model SAS-17E

Spectracom offers a variety of devices to enable the effective distribution of time sources and frequency references, including the flexible Epsilon Switch & Amplifier system.

- Remote management through SNMP
- Auto-failover switch offers redundancy with 2 master clocks
- Customized outputs and signal types are available

GPS Master Clock with Customized Signal Distribution

*Other timing references are available (IRIG, 1PPS).
**Customized outputs and signal types are available.

Network Time Server

NetClock® Model 9383

The 9300 series continues the NetClock® legacy of reliable, secure and manageable timing for network elements, critical devices for command centers and secure data and communications networks.

- Network protocols for hardened security and easy management
- Supports the latest network time protocol for secure, reliable network synchronization
- Proven operation on next-generation IPv6 networks
- Shock and vibration-tested chassis (MIL-STD-810F)

Model 9300	
External Reference	IRIG/1PPS, GPS, SAASM GPS
Internal Reference	OCXO, Rubidium, TCXO
Outputs	NTP, 1PPS, 10 MHz, IRIG, ASCII timecode, alarm/timer
Option	Modem for ACTS/ITU-R server/client

Time and Frequency Test and Measurement

Pendulum Instruments

Pendulum test and measurement instruments offer unique performance for high-throughput testing for the laboratory, factory and field. Time and frequency analyzers and standards, and synchronization and wireless testers are ideally suited for applications such as microwave link carrier calibrations, satellite communication equipment testing, YIG and VCO testing, RF and microwave instrumentation calibration, RF components and modules testing, and much more.

Systems and Services

Spectracom's ambition is to serve your needs long after you receive your commercial off-the-shelf product from us. Toward that aim, our systems design and development are supported by our range of integrated logistic support and service (ILS) to maintain your operational capabilities. Contact us with your project and program requirements.

SPECTRACOM

About Spectracom

For more than three decades, our customers have relied on Spectracom's time and frequency products to support vital communications networks. During this time we have developed substantial technical talent and robust product platforms while earning a great reputation for personal service and support.

We understand that one size doesn't always fit all and we will work with you to develop custom solutions. Most importantly, our support doesn't stop when your order ships. We will help you with installation, system integration, and changes in deployment.

Our expanding product portfolio includes GPS clocks, secure network time servers and master clocks, applications software, bus-level timing boards, frequency references, and test and measurement products. As we add to our product family you can continue to count on Spectracom to deliver a high degree of reliability, quality, and support.

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