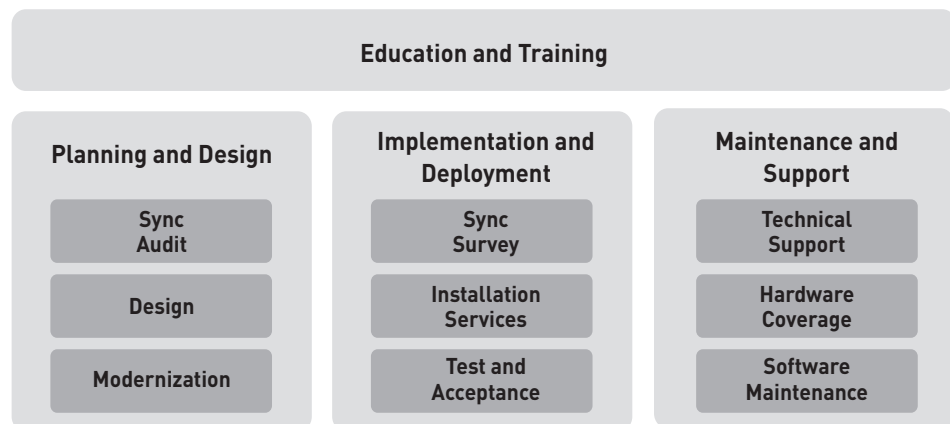# Microsemi Global Services

Global Services For Your Synchronization Infrastructure

Microsemi® provides synchronization services that assist customers with the planning, deployment, and maintenance of synchronization infrastructure. Services are designed to help lower costs, streamline processes, ensure quality, and deliver the highest level of performance from your synchronization network.

Education and Training		
Planning and Design	**Implementation and Deployment**	**Maintenance and Support**
Sync Audit	Sync Survey	Technical Support
Design	Installation Services	Hardware Coverage
Modernization	Test and Acceptance	Software Maintenance

Microsemi's industry leadership in deployment of next generation synchronization networks and industry cooperation with the SyncWorld™ Ecosystem Program provides your organization with broad and deep knowledge to ensure your synchronization plan is successful.

The Microsemi Global Services team serves a wide variety of domestic and international customers in both public and private sectors. Our team of specialists provide comprehensive service solutions across a wide range of applications including:

- Synchronization for global communications networks, based on both traditional TDM distribution and new packet timing synchronization.

- Time and frequency solutions for Aerospace and Defense applications.

- High precision frequency standards, including Cesium atomic clocks, Hydrogen Masers, and TimeScale systems which ensemble multiple sources to produce a common timing standard.

- Time and frequency sources and distribution systems for public utilities and energy management.

- Network time servers and timing measurement solutions for enterprise networks.

Microsemi understands that each business within these markets has unique requirements, and we have established processes, people, and systems that are organized to address their specific needs. Microsemi's team also works with a network of global partners across the globe. These partners are trained and certified by Microsemi using our 25 plus years of synchronization experience.

Whether you are conducting a modernization project or constructing a completely new synchronization network, Microsemi and our partner network can provide the local and global coverage.

Our service products include:
- Education & Training
- Planning & Design Services
- Implementation & Deployment Services
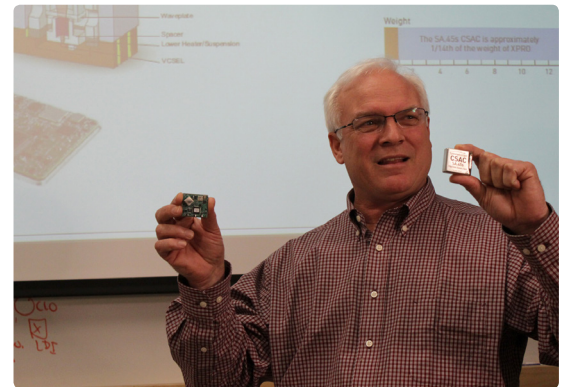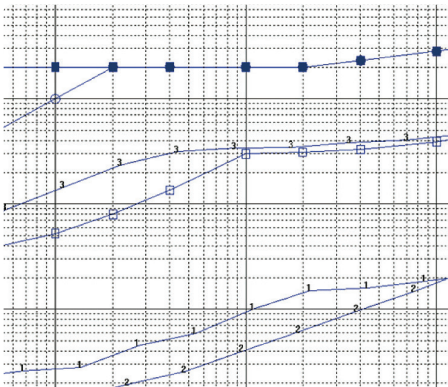- Maintenance & Support Services

Education & Training

Education courses are designed to develop synchronization expertise in your organization. This includes instruction on synchronization theory, as well as hands on practical training to ensure best practice implementation of synchronization networks and solutions. Instructors include synchronization and design engineers, field implementation experts, as well as world renowned synchronization scientists.

Training courses conducted by expert instructors are available for all Microsemi products. Courses at our training centers include hands-on work in live network environments within the Microsemi labs in San Jose (California, USA), Boulder (Colorado, USA), Munich (Germany) and New Delhi (India),

Our curriculum is designed for delivery globally. This means that your personnel around the world will receive the same high quality instruction wherever they take our training courses.

More than ever before, constructing and maintaining a synchronization network requires knowledge on the latest standards and underlying core synchronization technologies. As networks evolve to packet timing, a thorough understanding of IEEE 1588 (PTP) and Synchronous Ethernet (SyncE) is important across your design and operations organizations.

Planning & Design Services

Sync Audit

A comprehensive review of your synchronization performance is captured and documented using the Microsemi Sync Audit service. Utilizing precise timing instruments and sophisticated synchronization audit software, we make reference measurements and assess your network's performance. The report highlights any timing source problems and it can also be used to facilitate the design and management of advanced synchronization solutions. We provide the expert synchronization analysis to find and resolve any uncertainties in your timing network.

In addition to performance measurements, we can also audit the structure of a pre-existing synchronization network to help maintain the integrity of your network and avoid timing outages regardless of the sync equipment manufacturer. Using our advanced auditing, testing and verification procedures, we can update your timing source and network element records, check your network's compliance with current telecom standards to determine if your installed equipment is providing you with optimum performance.

When the audit is complete, you receive an updated record of timing sources, with all documented changes and recommendations. It's an efficient way to monitor capacity and plan for network growth.

Audits can be leveraged before, during, and after deployment of synchronization equipment in order to proactively identify maintenance issues before they become critical problems.

Network Synchronization Design

Any time you build a new synchronization network it is important to incorporate best sync practices.

Microsemi will conduct a comprehensive review and evaluate your network sync architecture and taking into account performance requirements, reliability and network evolution. We then incorporate standards recommendations and global best practices for synchronization.
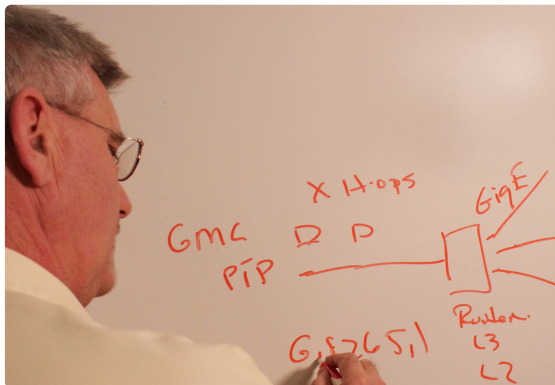
The result is a written recommendation for the right combination of equipment to meet your network needs, both now and in the future.

Modernization Planning

Many customers may already have a pre-existing synchronization network in place. However, transmission technologies have evolved from TDM based to SONET/SDH and now to packet-based transmission. As a result, synchronization and timing networks need to evolve and 'modernize' as well. We can help you develop a plan by defining needs by office type, recommending the best products for your timeline, and budget with proper documentation to help you clarify your objectives and plan for a smooth implementation.

Our experienced professionals can assist you with network synchronization design, expansion, disaster recovery planning, Product Change Notice (PCN) implementation, or other special projects.

Deployment & Implementation Services

Microsemi products are designed to operate in a customer's unique and sophisticated environment. Installed properly, Microsemi products will exceed your expectations. Deployment and implementation services ensure proper and successful installation and commissioning. We adhere to strict quality controls and always use our certified installation personnel.

Site Survey

To ensure the installation goes smoothly, we offer our Site Survey service. This includes a pre-installation checklist to identify any issues before work begins and identifies any obstacles so we can plan around them. The Site Survey describes exactly what is needed for a successful installation, covering all the details such as cable length, type of conduit and optimum GPS antenna location (if applicable). The result is an all-inclusive statement of work which covers all installation responsibilities and ensures no hidden costs.

Installation

The Microsemi installation package includes planning, parts, and labor necessary to ensure successful network implementation of equipment into the overall synchronization network .

Throughout the installation, all the details from floor to roof are delivered by trained, certified personnel. The appropriate level of project management is always included at no additional charge. Project management includes coordinating equipment delivery and on-site work as well as commissioning and final test and acceptance. Regular status reports can be provided for multiple site projects.
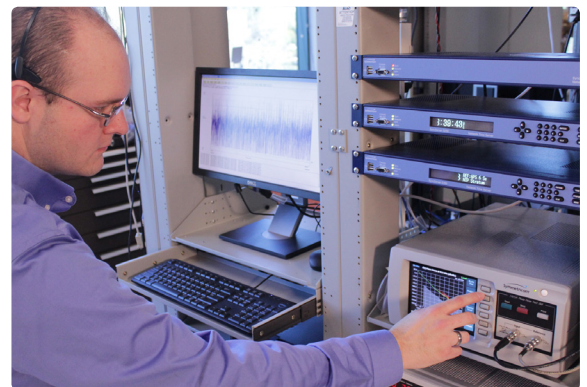
Ordering installation services means the job will be done correctly and on-time. We can do the work during or after normal business hours. We can also schedule a rush installation if you need it right away. Our trained staff will make sure your Microsemi equipment is in place and working properly before we leave.

Test and Acceptance

Test and Acceptance can be conducted at the factory and/or on-site at the customer location. Test criteria ranges from verifying individual product specifications to validating end-to-end performance such as PTP packet transport delay over a live network.

Customer Test and Acceptance procedures verify that the installed equipment meets operational and performance requirements. Test criteria is based on industry standards, and Microsemi's global experience in deployment of timing solutions worldwide.

In cases where an installation is performed by a third party contractor, our certified engineers can perform the test and acceptance procedures to verify installation quality prior to commissioning.

Maintenance & Support Services

Synchronization maintenance programs enable lower overall synchronization network maintenance, extend the product lifecycle to maximize ROI and, optimize the reliability and performance of your synchronization network.

Technical Support

At the core of our maintenance services is Microsemi Technical Support. Microsemi provides worldwide support for customers which is available 24 hours a day, 7 days a week and 365 days a year. Microsemi's Technical Support organization consists of synchronization experts with not only in depth knowledge of Microsemi's synchronization products, but also deep understanding of the industry standards, networking technologies and network architectures that go into a synchronization network. Most importantly, the staff has years of "hands-on" experience that customers and partners can benefit from in both responding to routine questions as well as restoring emergency situations.

Especially in packet timing distribution, synchronization issues can become very difficult to track down, requiring not only technical "people" resources, but also laboratory resources to re-create the problem. Microsemi maintains lab environments and support staff in North America, Latin America, Europe and throughout Asia Pacific. These simulation labs are equipped with Microsemi products and technology solutions so that an engineer can accurately mirror a customer environment to ensure a proposed solution will solve the customer's problem. Throughout a Technical Support engagement the goal of every Microsemi engineer is to use the best resources at hand to solve the issue and provide thorough knowledge transfer.

On-Site Technical Support

When Microsemi equipment problems can't be resolved remotely, one of the Microsemi technical experts will travel on-site. The equipment will be evaluated to identify and correct the problem (spare parts are supplied by the customer or Microsemi's Express Loaner Service).

On-Site Technical Support services are available on an annual contract basis with guaranteed response times or on a case-by-case basis as you need the support.

Platform Maintenance

In order to continue providing customers with long product lifecycles, Microsemi has evolved the service offerings to put more emphasis on software maintenance and the technical support required to assist customers with next generation timing deployments.

The new Platform Maintenance service bundles together Microsemi's industry leading technical support, along with all software maintenance. As part of Platform Maintenance, customer will receive all updates as well as all upgrades including all patches, point releases, maintenance releases and related documentation for your purchased version of software during the contract period.

Network Management Software Maintenance

With Network Management Software Maintenance, customers will receive all patches, point releases, maintenance releases and related documentation for the purchased version of network management software during the contract period.

A contract can also include on-site installation of new releases or remote monitoring of the network by the Microsemi staff, including dispatch of maintenance personnel to resolve alarms.

Extended Hardware Warranty

Extended Hardware Warranty contracts are available for Microsemi products. They extend the initial return-to-factory repair warranty services and help you avoid the time and expense necessary in requesting, purchasing and processing payments for individual transactions.

The Hardware Warranty provides for predictable budgeting when allocating annual repair expenses. Modules or systems repaired as part of the extended Hardware Warranty are themselves fully warranted and certified by Microsemi.

Rapid Replacement Service

The rapid replacement service contract provides advance replacements for any failed units with a single phone call or email. The annual contract removes the need to issue and pay for separate purchase orders to obtain replacement spares or repair units.

SyncServer Express Loaner Service

The SyncServer® Express Loaner Service, available in the United States and Canada, ships a loaner SyncServer network time server overnight to the customer location in the event the time server fails.

The Express Loaner contract enables the customer to notify Microsemi and a unit is immediately dispatched overnight to your specified location. Once delivered and installed, Microsemi is remotely available to assist with set-up and commissioning.

Direct Cesium Tube Replacement

Direct Cesium Tube Replacements program is available for many models of cesium instruments manufactured by Microsemi, Agilent® and FEI®.

To expand the life cycle of any of these cesium products and restore performance at less than the cost of purchasing a new unit, the program will replace the cesium tube.

Additionally, calibration services are available for selected cesium, rubidium, and quartz instruments. As these products are normally deployed in critical, high reliability timing applications, the calibration service helps ensure your unit's performance is meeting expectations. Cesium units undergo a Frequency Accuracy Stability measurement in the factory, and are calibrated to published specifications from the United States Naval Observatory (USNO). Rubidium and quartz units are calibrated to factory standard specifications. A physical evaluation is also conducted on each product, to ensure optimal performance.

These programs are supported by Microsemi's factory warranty ranging from 5 to 12 years dependant on model purchased.

QUALITY ASSURED

Our Quality Management System maintains certifications to ISO 9001, TL 9000 and AS 9100 with the aim of anticipating the needs of customers in Enterprise, Telecommunications, Government or Aerospace markets. Customer Needs Come First.

MICROSEMI GLOBAL SERVICES

Microsemi Global Services is the dedicated services division of Microsemi, Inc. We offer services designed to help you lower costs, streamline processes, ensure quality, and save time. We are 100% focused on service, delivering the support you need to increase customer satisfaction and grow your business.

Leading the world in precise time solutions.

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for communications, defense & security, aerospace and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, Calif., and has approximately 3,600 employees globally. Learn more at www.microsemi.com.

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Power Matters.™

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