microwave photonic systems

MPS... Microwave and Fiber Optic Components & Systems
Expand your RF Horizons
Microwave Photonic Systems

Microwave Photonic Systems, Inc. (MPS) is a full service design and integration engineering firm that specializes in the development and manufacture of Radio Frequency, Microwave and Fiber Optic products. MPS combines industry experience, technical competence and a cohesive work environment to provide industry leading design and applications engineering. A focus on developing and maintaining client relationships complements MPS’s technical capabilities and defines our corporate culture.

MPS provides products and services to a wide array of government and military agencies, prime contractors, commercial customers, advanced research facilities and educational institutions all over the globe. Our customer base spans the Broadband, Defense, Telecommunications, SATCOM and Wireless markets.

MPS’s continual investment into research and product development has produced a wealth of core technologies from which vertically integrated systems solution can migrate from initial concept to field deployment.

*MPS…Expand your RF Horizons.*
MPS maintains a professional and multi-disciplined engineering staff with the requisite skills to deliver varying levels of standardized products, turnkey solutions and custom engineering services. The fundamental technology at the core of any MPS system is Radio Frequency (RF) to Fiber Optic (FO) conversion. This technology, coupled with expert capabilities in advanced circuit design, mixed format signal integration, and embedded microprocessor control allows MPS to design, manufacture and deploy sophisticated RF Photonic components, subsystems and systems. MPS’s wealth of experience facilitates our ability to provide a finished product that fulfills our customer’s expectations for cost, delivery, and performance. MPS offers varying tiers of services across the following functional elements...

**Systems Engineering & Design**
- Requirements Definition & Specification Development
- Analysis, Modeling & Simulation (Component & System Level)
- Hardware & Software Design, Development, Integration & Test

**Product Development & Manufacturing**
- RF, Microwave and Photonic Subsystems
- Optical Passive Components and Fiber Optic Cabling

**Field Service & Support**
- Optical Splicing & Terminations / Cable Plant Testing and Certification
- Site Surveys and Field Installations
- RF Systems Alignment, Calibration & Commissioning

**Contract Manufacturing & Procurement**
- Build To Print of Mechanical, Electrical, and Optoelectronic Devices
- Established Supply Chain - Value Added Sourcing Agent

**Engineering Capabilities**

MPS’s deep rooted commercial and defense experience base, coupled with corporate retention of critical core technologies and professional staff allows MPS to execute due diligence to the essential interface requirements in the development, manufacture, test and deployment of a “system of systems.” MPS focuses on the customer’s needs to clearly define all systems architectural boundaries, shared interfaces, and mission critical capabilities.

**The cornerstone to successful deployment of MPS products is based upon...**
- Methodical Systems Engineering Approach to Design
- Broad Base of Programmatic Support Experience
- Advanced Computational RF Link Budget Models
- Expert Capabilities in RF Signal Propagation Analysis
- Leading Edge RF and Photonic Test and Measurement Lab Facilities
- In-House Ability to Design, Document, Fabricate and Test Military Grade RF and FO Cable Assemblies.
MPS Markets: Principal Business Areas

**MIL SATCOM**
MPS has supported various Agencies and Program Offices in identifying the appropriate mix of products to support their tactical deployment schemes and offer robust, interoperable, high performance RF Photonic transport solutions. MPS offers varying integration levels for both fixed site terminals as well as mobile applications.

**Electronic Warfare**
The modern battle space signal Electromagnetic Environment (EME) can leverage the inherent benefits of fiber cabling as an all dielectric medium for the transmission and detection of RF signal traffic. MPS proprietary technology provides unprecedented Spurious Free Dynamic Range (SFDR) essential to the operational effectiveness of any EW system.

**Terrestrial RF Communications**
Service providers managing broadband fiber optic networks call upon MPS’s equipment to provide transmission of Telephony, High Speed Internet and analog signals (CATV). Mobile broadcast of sporting activities, news engagements or other live events is often supported by MPS products specifically developed for integration into Mobile Vans, Temporary Shelters, and Forward Staged Network Operations Centers.

**GPS Navigation & Timing Synchronization**
Critical operations requiring accurate timing and synchronization necessitate high reliability products capable of meeting stringent performance specifications. MPS equipment can remote these critical timing and synchronization signals without impact to system performance. In-Building and Shipboard systems solutions available.

**Fiber Optic Cabling**
MPS offers commercial telecommunications grade as well as military ruggedized optical interconnect solutions. MPS maintains stocking levels of all major commercial grade and military cable, connectors and optical termini. Custom cable assemblies or build-to-print assemblies are offered for shipboard, mobile, airborne and field deployed conditions as well as commercial applications for manufacturing facilities in the mining and drilling industries.

**Distributed Antenna Systems**
Distributed Antenna Systems are essential when complete signal coverage is required within buildings, substructures, tunnels, parking garages etc. Concrete and steel of these structures attenuate the radio signals to a point that handheld radios (trunking) and cellular phones can no longer receive adequate signal levels. MPS manufactures a suite of in-building repeaters and fiber optic devices that address these degraded signal environments.
Product Overview

**Passive Optical Components**
MPS designs, manufactures, and markets an extensive inventory of Passive Optical Network (PON) modules and components under the MPS® series label. The MPS series of PON devices can be sold separately or integrated into higher order assemblies. These assemblies can be configured to meet various performance specifications in order to be compatible with the customer’s form, fit, and functional requirements.

**Optical Network Cabling**
MPS manufactures specialty and military qualified optical cable assemblies; such as, harsh environment optical cables, small form factor optical harnesses, TFOCA, M28876 and M38999 multi-channel optical cables.

**Optical Link Modules**
MPS designs, manufactures, and markets a broad line of digital and analog IF and RF fiber optic link modules under the MP® series label. The MP series includes transceivers, transmitters, and receivers spanning the DC to 22 GHz frequency range.

**Optical Link Systems**
MPS offers highly integrated systems solutions that call upon the entire product offering of MPS. These systems are designed for major communication networks or earth terminals requiring highly reliable systems with the ability to provide Ethernet Links, Redundant Switching, Frequency Timing and Reference, as well as comprehensive Monitor and Control capabilities.

**In-Building Repeaters**
MPS leverages RF and Microwave component design knowledge and fiber optic systems integration expertise to develop in-building repeaters targeted towards the Public Safety and Mobile Subscriber markets. Systems include 400 to 900 MHz Trunked Radio and Public Safety, as well as, PCS, LTE and WiMax.

For more information about products, download our most recent catalog at www.b2bphotonics.com.
MPS was founded in 1996 with the purpose of designing, manufacturing and deploying custom RF transmission solutions that utilized fiber optic cable as the transport medium. Operating from a 15,000 square foot facility located in West Chester, Pennsylvania, MPS has grown to a full service engineering firm that provides a broad base of components, systems, and turnkey engineering solutions to the Private, Commercial and Military Defense arenas. MPS’s commitment to quality and customer satisfaction has resulted in an international client base that includes some of the world’s most critical communications infrastructure and defense systems platforms.

To learn more about MPS products and services, contact us today.

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