



Electric & Electronic Systems
For Remote Data Delivery and Control



Secondary Network Monitor

CEMesh[®] PLC and Cellular Built-in

Easy To Install • Modular Sensing • Affordable

Introducing Secondary Network Monitoring

Power Systems Integrity, Inc. (PSI) developed an advanced Secondary Network Monitoring System that is easy to install.

No communication wiring is required! CEMesh[®] uses the power delivery system as the communications wiring.

PSI's two way communication system is a generalized communication backbone for use in a low voltage secondary network.

CEMesh[®]

The underground (LAN) portion of the communications is a **Meshed Network** power line carrier (PLC) communication system called **CEMesh[®]**. The PSI hardware that embodies this system consists of a Gateway and Remote Monitoring Units for use in **virtually any underground sensing application**.

CEMesh[®] is the low cost and scalable two-way communications LAN between PSI Meshed Network Sensors (MNS) and the PSI CEMesh[®] to IP gateway that can **back-haul virtually any measured parameter**.

Individual MNS nodes participate as routers for other nodes. This makes CEMesh[®] less expensive to implement and operate than conventional PLC networks involving radial branches and centralized collectors.

CEMesh[®] will provide a **technical and economic advantage** over other technologies for utility automation applications like meter reading.

Utility Tested

PSI has field proven experience with NEMA 4 and IP68 Mesh Network PLC telemetry applications over Low Voltage Secondary Networks. The PSI system is ready for field deployment across any secondary networks or spot networks.

Communications

From the gateway, PSI can use virtually any Wide Area Network (WAN), and would typically use a CDMA wireless modem to relay information via the internet back to the server or utility control station. The WAN to the internet can present the information using utility specified protocols or whatever wireless WAN is the most effective in the area of operation. Since the communications are two way, the reverse takes place when the utility central control sends messages down to the sensors.

Smart Build-out

PSI field deployments utilize a smart build-out approach based upon network system measurements combined with measured CEMesh[®] communications performance.

As the MNS system is deployed, the sensors feature automatic detection and registration of newly installed remote devices.

An asynchronous serial port supports DNP 3.0 devices such as Network Protector relays.

Applications

PSI's Network Monitor senses Voltage, Current, Temperature, and Calculates Phase Angle, and PF. The system also accepts inputs from other IED's and sensors, such as Manhole gases like H₂ and CH₄.

Benefits

Secondary Network Monitoring improves visibility of the Network providing a tool for condition-based maintenance that will lead to improved network planning and performance. Combined, these benefits have an impact on:

- Improved system reliability and availability
- Optimizing manpower and asset utilization
- Improving public safety
- Improved fault detection, location, and restoration of service
- Reduced collateral damage due to cable burnouts
- Online peak load monitoring
- AMR backhaul through PSI's fixed network