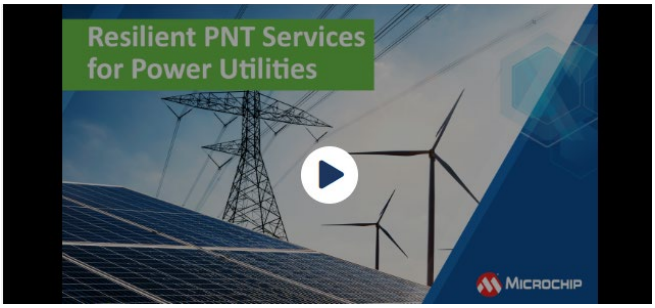
Resilient PNT Services for Power Utilities

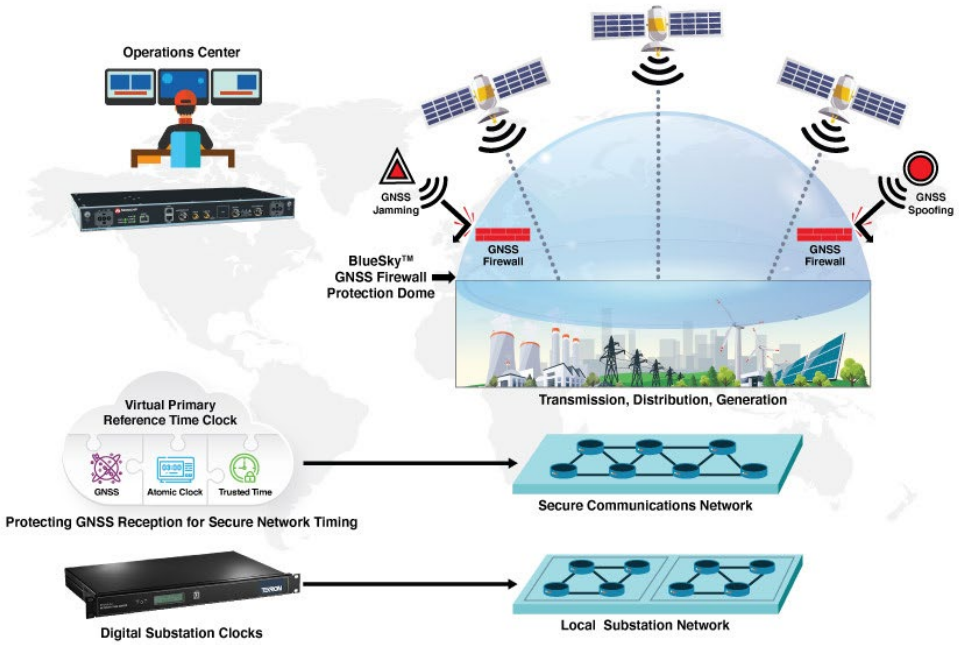
Learn About Power Utility Timing Architectures

The virtual Primary Reference Time Clock is an innovative architecture that delivers precise timing for power utilities with reduced reliance on Global Navigation Satellite System based timing signals.



Critical Infrastructure for power generation and distribution relies on the use of Position Navigation and Timing (PNT) services delivered by Global Navigation Satellite System (GNSS) for monitoring and control of power generation and distribution. The modern smart grid is a highly distributed architecture that is dependent on accurate timing for coordination, protection, and control systems.

Power utility operators also rely on timing services from GNSS for their secure and private network communications. These networks deliver critical time information to the local network for event monitoring and logging while providing a high-accuracy common time base which is used to synchronize every device on the network. These networks are also able to deliver PNT information into the telecommunications backbone, allowing for accurate delivery of voice communication and telemetry data throughout the entire power utility's wide area network. **Tekron International** is now part of Microchip, expanding our portfolio of field-proven timing solutions for the power industry.



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To support secure and private network communications, the Virtual Primary Reference Time Clock (vPRTC) is a highly secure and resilient network-based timing architecture that blends our secure GNSS firewall technology, high-precision atomic system clocks and a portfolio of trusted time solutions to meet the expanding needs of modern critical infrastructures such as those required by the power and utility industry.

The combination of GNSS visibility and the vPRTC architecture provides power utility operators with a dual-purpose solution for the use of PNT services as delivered by GNSS. It provides situational awareness about the health of GNSS reception by monitoring and evaluating key GNSS observables in real time to determine if there is risk in the use of PNT delivered by GNSS. It also offers a layer of protection that enables more responsible use of PNT services, including greater resiliency if live-sky delivery of PNT by GNSS is disrupted, degraded, or worse, becomes unavailable. Like a network firewall, this solution creates a dome of protection that strengthens the overall use of PNT services by GNSS for critical power utility infrastructures.