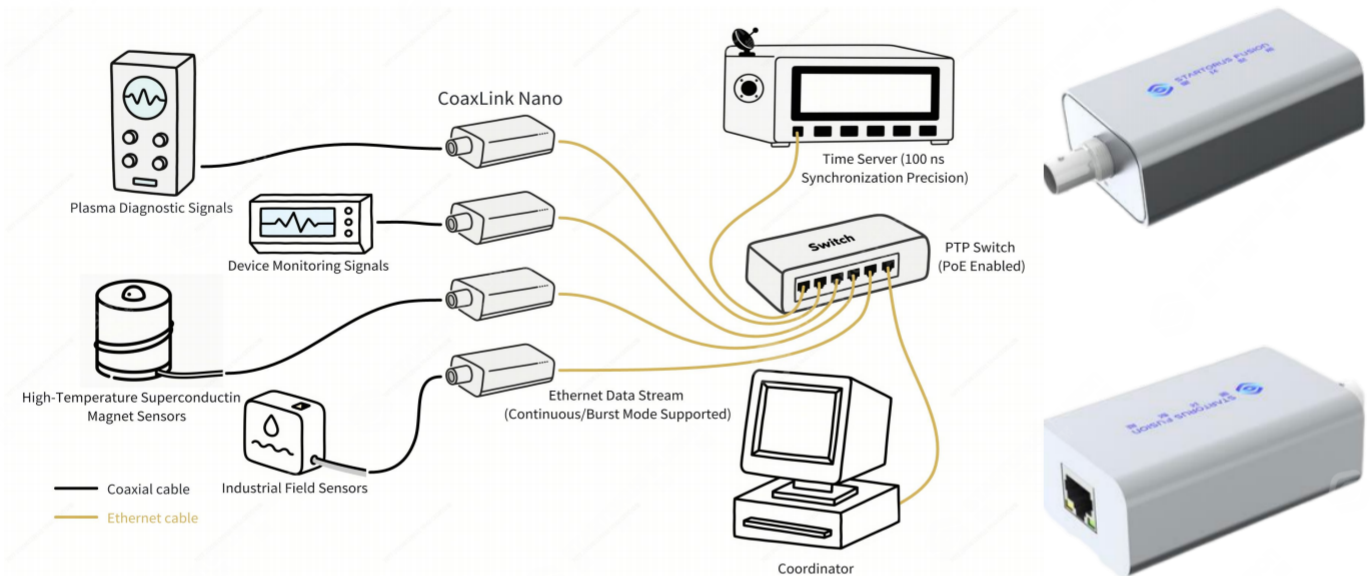


CoaxLink Nano

Introduction



The CoaxLink Nano is a compact, high-speed, precision-synchronized data acquisition device designed to convert analog signals into Ethernet data streams. It combines inherent isolation, high sampling rates, high conversion accuracy, precise synchronization, simplified connectivity, a compact size, robust network communication, and strong expandability and management capabilities. This highly integrated, flexible, and reliable signal acquisition solution is tailored for applications such as nuclear fusion plasma diagnostics, monitoring of fusion devices and high-temperature superconducting magnets, and industrial testing. Equipped with a core sampling rate of 2 MS/s and 16-bit resolution, the device can accurately capture fine details of rapidly changing voltage signals. Its Ethernet interface fully integrates the IEEE-1588 Precision Time Protocol (PTP), enabling multiple devices in distributed systems to achieve microsecond- or even nanosecond-level time synchronization, thus forming a fully synchronized measurement network.

Users can flexibly initiate acquisition via precision time-synchronized triggering, making it ideal for complex experimental and industrial environments (with the CoaxLink Pro offering enhanced nanosecond-precision hardware triggering, supporting optocoupler isolation, wireless commands, and isolated 485 commands). The device supports multiple acquisition modes (real-time streaming / fixed-length mode) and data transmission modes (continuous streaming / burst mode), all configurable via software to intelligently adapt to different network conditions and testing requirements. This configurability ensures data integrity while maximizing transmission efficiency. Acquired data can be streamed in real time to a host computer via UDP for monitoring and analysis, or temporarily stored in the local buffer to prevent data loss.

Applications

The CoaxLink Nano delivers specialized value across multiple fields, primarily targeting scenarios that require high-precision voltage signal acquisition and analysis. Typical applications include nuclear fusion plasma diagnostic signal acquisition; monitoring of fusion devices and high-temperature superconducting magnets; monitoring of power system transient phenomena; laboratory sensor signal acquisition; rotating machinery vibration analysis; front-end signal acquisition for high-energy physics experiments; and industrial automation process control.

Parameters

Model	CoaxLink Nano
Number of Channels	1
Maximum Sampling Rate	2 MS/s
Resolution	16 Bits
Memory Depth	10 Mpts
Input Type	Differential Input
Input Impedance	1 MΩ
Input Voltage Range	± 10 V
Overvoltage Protection	± 30 V
Offset Error	0.01% FS
Integral Non-Linearity (INL)	± 4 LSB
Differential Non-Linearity (DNL)	± 2 LSB
Common-Mode Rejection Ratio (CMRR)	> 80 dB @ 1 kHz
Signal-to-Noise Ratio (SNR)	83 dB
Temperature Stability	< 25 ppm/°C
Isolation Voltage	2250 VDC
Clock Synchronization	IEEE-1588v2 Supported
Acquisition Modes	Real-Time Streaming / Fixed-Length Mode
Data Transfer Modes	Continuous Streaming / Burst Mode
Trigger Method	Software Trigger
Host Interface	10/100 M Ethernet
Data Protocol	UDP
Power Supply	PoE (802.3af/at)