The Synchronization Experts.

Company Introduction

North American SynchroPhasor Initiative Meeting and Vendor Show

October 18-19, 2022
Charlotte, NC.
Founded in 1979

- HQ in Bad Pyrmont, Northern Germany
- Entirely Focused on Synchronization
- Global NTP & PTP Technology Leader
- Consistent Track Record of Growth
Entirely Focused on Synchronization
Since 1979
Meinberg Serves Many Markets

Emerging: Power Grid, Broadcast, Finance
Established: Datacenter, Telecom, Defense
Why does the Network need to be Synchronized?

**Power Grid**
- Match power generation to demand
- Measure power flows in multiple substations simultaneously
- Protect equipment from overload and outages

**Broadcast**
- “Lip Sync”
- Synchronize audio and video inputs from multiple sources, local and remote

**Finance**
- Time stamp orders and trades
- Prove that banks execute trades in order submitted (follow the law)
- Measure speed of trading algorithms

https://www.meinberg-usa.com/
POWER GRID

- Frequency Deviation Monitoring
- Substation Automation
- SCADA System: IEDs, MUs, PMUs
- Synchrophasor Measurements
- Travelling-wave Fault Detection
- Anti-Jamming & Anti-Spoofing

- Digital Substation Evolution
  IRIG → NTP → PTP
- IEEE 1588 PTP v2
- IEEE C.37.238
- IEC/IEEE 61850-9-3
- IEC 62439-3 HSR/PRP

Generation

Transmission

Distribution

M3000

M1000

M500

microSync

Displays, Slave Clocks, & Signal Distribution
Remote Sports & News Collection
Outside Broadcast Van

Studio
Production

Distribution & Streaming
Infrastructure

- Blackburst (PAL/NTSC) with VITC
- Tri-Level Sync
- DARS
- LTC
- AES Genlock/Word Clock

SDI ➔ IP

- SMPTE ST 2022
- SMPTE ST 2110
- SMPTE ST 2059
- AES67

microSync

M1000

M3000

BROADCAST
Meinberg Accessory Products

- **Signal Distribution Unit (SDU)** – 1:12 or 1:24 fanout of PPS, 10 Mhz, IRIG, and E1/T1 signals

- **Fiber-Optic Converter (CON)** – enables long-distance (2k or 10 km) transmission of PPS, 10 MHz, IRIG, and RS232 signals over fiber

- **SyncBox N2X** – converts NTP or PTP to IRIG, 10 MHz, PPS, DCF77, and serial time telegrams

Very popular in power grid and defense applications
PC Clock Products

- **PCIe Clocks** – GPS clocks and IRIG Time Code Receiver & Generators
- **USB Clocks** – converts IRIG to USB
- **IEEE-1588 PCIe NICs** – PTP time stamping
Meinberg Software Products

- Meinberg PTP Client
- MPS v2 NTP/PTP Simulation Software
- Oregano PTP Stack
- NetSync Monitor
- PTP Track Hound (FREE)
Thank You!

Visit our booth

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