

## Studio Technologies Releases Dante-Enabled Leader Clocks

### The New Model 5402 and Updated Model 5401A Offer Precise Timing Signals for Dante Applications

Studio Technologies, manufacturer of high-quality audio, video, and fiber-optic solutions, introduces two Dante Leader Clocks for supporting the timing needs of Dante-compliant devices: the updated Model 5401A Dante Leader Clock and the new Model 5402 Dante Leader Clocks with GNSS Synchronization. Both products deliver precise timing signals for use in Dante audio-over-IP applications. The synchronization needs of Dante devices connected to a local area network (LAN) can be seamlessly supported using the PTPv1 (IEEE® 1588-2002) protocol. For Dante's implementation of AES67 and ST2110, both the Model 5401A and Model 5402 provide support for the PTPv2 (1588-2008) protocol.

"With Dante ubiquitous in fixed and mobile facilities of all sizes and types, a dedicated Leader Clock can enhance system performance," says Gordon Kapes, president of Studio Technologies. "The new Model 5402 and updated Model 5401A are designed to provide optimum performance, flexibility and system integrity. Utilizing a dedicated Leader Clock can help make system deployment and maintenance a much easier task."

Both the Model 5401A and Model 5402 can serve as the Dante Leader Clock for literally hundreds of Dante devices that can be simultaneously active on a LAN. Additional resources, including the units' ability to generate sine-wave audio tones, adds to their range of benefits. Any required configuration can be easily performed using the webpage interface or by way of the graphics display and controls provided on the front panel. Ethernet connections are made using standard RJ45 jacks and redundant powering is supported by way of AC Mains and 12 volts DC inputs. The lightweight units mount in one-space of a standard 19-inch equipment rack.

"The Model 5401A builds on the strengths of the popular Model 5401 while offering significant improvements," says Kapes. "Specifically, we added a third 'GigE' Ethernet port to allow independent redundant Dante audio and management

networks. In addition, we implemented firmware updating by way of a standard USB flash drive. This is a change from the previous method that used file transfer protocol (FTP), something that contemporary network security practices often restricts.”

The Model 5402 offers all the capabilities of the Model 5401A with the additional timing precision provided by an integrated GNSS receiver. This allows the Leader Clock’s timing reference to be derived from the four major satellite constellations: GPS (US), Galileo (Europe), BeiDou (China) and GLONASS (Russia). In addition, GPS capability can be augmented with the unit’s support of the QZSS (Japan) constellation. With satellite-based timing capability, multiple Model 5402 units can be utilized at geographically diverse locations and provide a common synchronization source for all associated Dante devices. A high-performance, weather-resistant GNSS antenna is included with each Model 5402, ensuring that full “out-of-the-box” functionality can be quickly achieved.

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