Multi-channel PCM audio transmission system

MAGIC ACX

Dante™ WAN BRIDGE

DDM READY — SUPPORTED PRODUCT

The system **MAGIC ACX** DANTE™ WAN Bridge enables the transmission of up to 32 uncompressed audio signals via wide area networks (WAN).

The audio connection for the audio inputs/outputs is provided by the integrated 32-channel DANTE™ interface, which has redundant GbE interfaces and of course also supports AES67.

However, there are three major problems with a wide area transmission with DANTE™:

- Possibly different clock signals at the sender and receiver
- High jitter
- Network dependent transmission delays

DANTE™ allows a maximum latency of 5 ms, which is fully sufficient in local networks.
However, in the case of long-distance transmissions (for which DANTE™ was not developed), the delay of individual IP packets can vary so much that they arrive too late at the receiving system. This inevitably makes dropouts in the audio signal audible.

The system solves the problem of different clocks by an intelligent adaptation of the sample rate (SRA = Sample Rate Adaptation).

Problems caused by high jitter as well as long transmission delays are effectively prevented in the system by an adjustable jitter buffer in the range of 2 ... 500 ms or alternatively by the automatic jitter buffer adjustment which can be activated.
Thus, transmissions via the Internet over long distances are also conceivable.

The transmission takes place via one of the two standard network interfaces. The number of channels to be transmitted is freely configurable. If required, the transmit and receive data streams can be physically separated.

- **32 audio channels via DANTE™**
- **AES67 compatible**
- **PCM16 / PCM24 / PCM32**
- **48 kHz Sampling frequency**
- **Automatic Sampling Rate Adaptation**
- **Jitter buffer up to 500 ms**
- **Audio signal detection**
- **2 x 100 Mbit/s Ethernet**
- **8 x TTL GPIO / 8 x Relay**
- **VLAN/QoS support**
- **SNMP v1, v2c**
- **System internal log file**
- **Optional redundant power supply**
- **Comfortable Windows management software**

AVT Audio Video Technologies

Management & Monitoring

The comfortable management software of the system can manage up to 10 systems in one graphical user interface. Depending on the screen resolution, several systems can be displayed on one page or on several tabs.

Up to 5 workstations can access one or more systems simultaneously.

The transmit and receive levels of all transmitted and received audio channels are displayed, including alarms for "empty" audio channels, general system information such as IP addresses and alarms as well as graphs of the time history of the jitter buffer and jitter.

Both graphs allow a representation as a short-term (5 min) or as long-term statistics (1 day). Within the statistics, periods with buffer overflow or underflow, stream and packet losses are also marked.
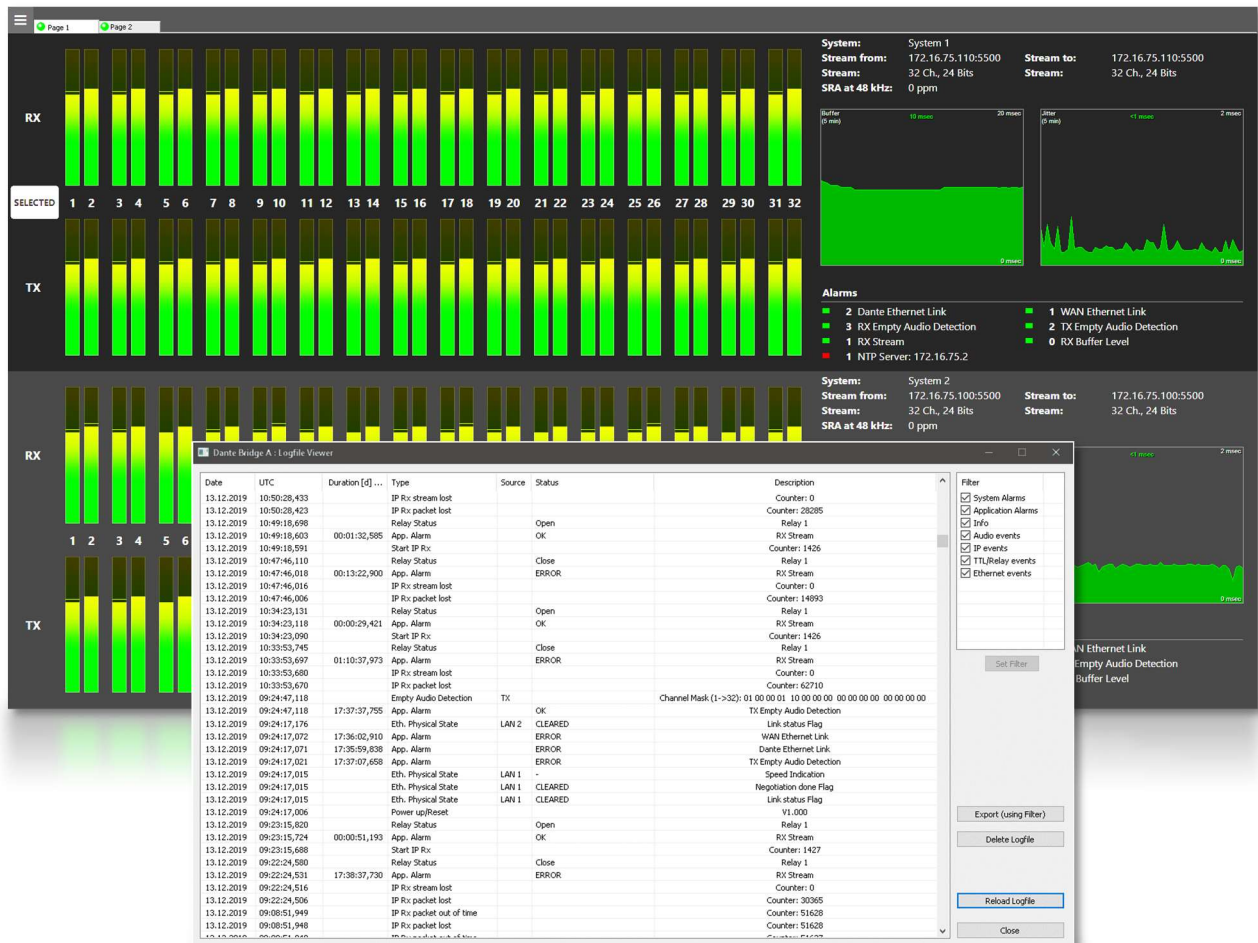
For test purposes, a sine wave generator can be activated which either outputs the signal locally via DANTE™ or sends it to the remote station.

The internal system log file allows detailed monitoring and tracking of errors that have occurred - even without a connected PC. If required, the log file can be downloaded from the system at any time via the management software and clearly displayed in the log file viewer.
For exact time information in the log file, the system has NTP synchronization.

For monitoring and alerting, the system naturally also offers SNMP. Traps can be reported to up to four network management systems.

The front display of the system also shows essential information on the status of the transmission. A basic configuration is also possible.