IED®

Innovative Electronic Designs

IEDT9016DSP

Description

The T9008DSP, T9016DSP, T9024DSP, and T9032DSP Digital Signal Processing Mainframes provide digital audio network connections, utilizing CobraNet® technology, to an IED audio network controller such as a GLOBALCOM vACS®, Titan Series output mainframes (T9160 or T9116) or the DNA series of amplifier mainframes. Local inputs can connect to analog connections located on the back of the mainframe and then be distributed throughout the system over the network.

The unit provides various internal routing and mixing functions that are capable of routing audio signals to and from the audio network to the input and output connections on the back of the mainframe. A combiner object is available for systems that require room combining such as a convention/conference center, hotel meeting facility, or any other facility containing rooms with movable partitions. Digital Signal Processing is provided on each output channel and includes level controls, paging routing, and automatic ducking of background music and program sources when announcements are made. The mainframe contains integrated supervision that monitors the each signal path and reports any failures to the IED fault reporting system.

The typical application for a T90xxDSP mainframe is as a centralized distribution and routing hub to distribute audio signals to Titan Series output mainframes. The T9160 Integrated Power Amplifier mainframe, T9116 Zone Output Processor, or DNA78x4 Digital Network 4ch Power Amplifier units function as endpoint output devices in a system and provide zone outputs to the system loud-speakers. In the case of the T9116, it provides line-level output to powered loudspeakers or external amplifiers. The announcement controller is responsible for routing announcements from digital microphone stations or recorded messages. The T90xxDSP unit is used to distribute additional program sources to the output mainframes in the system.

The mainframe requires 2 rack units (3.5") of vertical space in a 19" equipment rack/cabinet. All cooling is front to back, so no additional vertical space is required in the rack for cooling. All input and output connections are provided on the back using plug-in lugless compression-type screw terminals.

Audio signals enter the mainframe using the local analog connections or through the Ethernet connection using CobraNet® technology. The combination of the Titan Series DSP mainframes, digital output mainframes (T9160, T9116, DNA), GLOBALCOM controller, 1000vACS, IED 500ACS with IED 510N Digital Audio Network card, and IED 524 or 528 digital microphone stations comprises a completely digital/network connected audio/paging system.

IEDT9016DSP

Specifications

Capacities

Maximum Number of Local Program/BGM Inputs

T9008DSP 8
T9016DSP 16
T9024DSP 24
T9032DSP 32

Maximum Number of Outputs

T9008DSP 8
T9016DSP 16
T9024DSP 24
T9032DSP 32

Connectors

Program/Background Music Inputs
plug-in lugless compression-type screw terminals

T9008DSP 8
T9016DSP 16
T9024DSP 24
T9032DSP 32

Outputs
plug-in lugless compression-type screw terminal blocks

T9008DSP 8
T9016DSP 16
T9024DSP 24
T9032DSP 32

Aux Line Level Outputs 6
plug-in lugless compression-type screw terminal blocks

Ethernet

Network Audio and Control ....2 - 100Base-T modular RJ-45
For redundant networks

Test Signal Out, Test In, Monitor Out and Monitor In 4
plug-in lugless compression-type screw terminals

AC Power Cord

120VAC Operation .... (2) Belden/Volex 17250
240VAC Operation .... (2) Belden/Volex 17850

Digital Signal Processing Functions

Level Controls

T9008DSP (Program/BGM/Overall)...8/8/8
T9016DSP (Program/BGM/Overall)...16/16/16
T9024DSP (Program/BGM/Overall).......................................24/24/24
T9032DSP (Program/BGM/Overall).......................................32/32/32

Built-in Testing

Automated multi-frequency and 20kHz testing of all channels.

Monitoring

Capability to listen to any test point plus additional monitor-only points in the mainframe locally or via the network at another location.

Electrical

All of the following specifications apply with program input via the network (CobraNet®), or with direct inputs to the power amplifier.

Frequency Response..±0.2 dB, 20 Hz - 20 kHz
Total Harmonic Distortion. THD .... <0.01%, 20 Hz - 20 kHz
Signal-to-Noise Ratio, S/N ....>93 dB, 22 Hz - 22 kHz, weighted
Maximum Input .... +14 dBu
Maximum Output .... +14 dBu

Gain

Via the network ....Unity
Local Input ....25 dB, Max

Analog-to-Digital Converter, A/D..24 bit
Digital-to-Analog Converter, D/A..24 bit
Internal processing ....32-bit, floating point
Sample Rate... 48 k
Latency.. <1 ms
Crosstalk .... < −75 dB, f = 2 kHz

AC Power Requirements

Quiescent power..83 W

Mechanical

Size, overall

Width, with ears .... (48.3 cm) 19"
Height... (8.9 cm) 3.5"
Depth .... (43.2 cm) 17"

Mounting Depth (rack depth) .... (44.2 cm) 17.4"
for proper fan operation add a minimum of 2" (5.1 cm) clearance

Weight

T9160 with supplied rack ears.................................(5.44 kg) 12.0 lbs
Extra rear rack ears..(0.68 kg) 1.5 lbs

Cooling fans

For digital electronics 1

Mounting Ear Location Options............................. 3 (front, rear, bottom)

Environmental

Operating Temperature Range ....(+32 °F - +122 °F) 0 °C - +50 °C
Storage Temperature Range .... (−40 °F - +158 °F) −40 °C - +70 °C