SIMETEL

AUDIO-DATA MATRIX SI-1593

DESCRIPTION

Audio-Data Matrix SI-1593 is one of the latest additions to the line of ancillary units for military and military-type radio communication systems.

The matrix switches 32 audio/data inputs into 32 audio/data outputs in a full fan-out and non-blocking mode which allows switching of any one of the 32 inputs into all the 32 outputs at the same time.

The matrix has connection capability to any receiver with at least three lines (fan-in capability). The matrix comes with a BITE capability.

The matrix can be locally controlled by using a Touch screen LCD display or remotely controlled over a RS 232/485-422 serial line.

The control logic resides in a double microprocessor card provided with a programmable RS 232 or RS 422 serial line.

The primary CPU board is controlled by the CPU backup, which, if it detects, via watch dog, an blocks of functionality, takes control of the electronic control BUS

The capability of switching both audio and data lines (RS232/422/TTL) makes the matrix extremely versatile for use in a wide range of applications.

Optionally, a PTT matrix with 32 inputs and 32 outputs (opto-isolated) can be supplied for association with the SI-1593.
When jointly operated, the two matrices (Audio/Data and PTT) are still independent in the setting of the node configurations, i.e. opening and closing of the PTT nodes is completely independent of the opening and closing of the Audio-Data nodes

The matrix is configured in a 3U 19" Standard Rack Cabinet suitable for fixed/semifixed ground-based and shipboard installations.

The composition of the matrix includes:
- q.ty 1 control and monitoring CPU card, used also to support the RS 232/485 serial communications and to manage the optional 32 PTT inputs,
- q.ty 4 matrix cards, 32 Audio/Data inputs 8 balanced outputs each,
- q.ty 2   input cards for termination of the balanced input lines
- q.ty 1   optional card for management of the output PTTs
- q.ty 1   power supply
- q.ty 1 LCD display set for local control of the matrix nodes and monitoring of the matrix configuration on the display
- q.ty 1 3U 19" Standard Rack Cabinet

The design of the matrix is based on state-of-art solid state technologies and an advanced modular construction which allows replacement of the faulty modules without service interruptions, with the only exception of the CPU Units and Front Panel.
The core switching and control modules are arranged in a dual redundant "hot stand-by" configuration with automatic change over on detection of a failure.

The "on duty" replacement of the faulty module significantly reduces the MTTR time.

It is also possible, when less than the 32 outputs provided by the 4 matrix cards are required, to configure the matrix for reduced capabilities.

The matrix is provided with interfaces for 600Ohm balanced lines and balanced/unbalanced data lines at data rates up to 300kbit/sec.
The maximum path loss is less than 0.25 dB. The isolation between any two cross-points is better than 60 dB. The signal delay is less than 350 microseconds.

For all the interconnections, use is made of flat cables terminated with connectors, all the inputs and outputs are protected against short-circuit and overvoltage conditions.

.

TECHNICAL CHARACTERISTICS

Number of audio inputs	32
Number of audio outputs	32
Input/output gain (audio matrices)	0 dB ± 0,5 dB
Audio bandwidth	DC to 200 KHz
Decoupling between inputs	> 70 dB
Decoupling between outputs	> 70 dB
Transverse decoupling	> 70 dB
Switching time	< 1 mS
Input/output impedance	600 Ohm nominal, programmable for high impedance
Input level	+ 20 dBm max.
Harmonic Distortion	Less than -33 dB relative to a single tone with a level of 0 dBm at 1 KHz
Number of optional PTT inputs (optional)	32, opto-isolated
Number of PTT outputs (optional)	32, opto-isolated
Communication protocol	STX/ETX dedicated
Communication interface	RS 232- RS 422 4/2 wires dip-switch programmable 19200 BPS
Primary power	220 Vac/115 Vac
Size	3 U 19" Rack Standard, 357mm depth
Operating temperature	0°C to +50°C, extended to -20°C to +50°C upon request (LCD excluded)
Frequency Response	In-band response does not vary more than ±1 dB between 20 Hz – 3400 Hz
Power	220 VAC ± 10%, 47 – 63 Hz single phase