CORNET
SWITCHING SYSTEMS

MTX-R Black Tactical Switch

Automated Secure Voice Switching

Key Features and Functions

- Fiber or Copper Extension
- SNMP Control (v1, v3, v6 compatible)
- Dual Terminal Control
- Non-blocking Crosspoint Design
- Hot Swappable System Cards
- Multi-level Security Access
- Battery Backed Dual NVRAM
- Redundant Control Cards
- Redundant Power Supplies
- Non-intrusive expansion capability
- Automatic Crosspoint Testing
- Test and Monitor bus function
- Built-in Spare Switching
- UPS power for backup operations
- Switches all standard Digital Interfaces
- Switches Wideband (25 kHz) Analog
- Multi-Point Switching
- Broadcast Mode
- Meets requirements of MIL-S-901
- IP Interface controlled with industry-standard Session Initiation Protocol (SIP)

Black Tactical Switch

The Cornet Switching Systems, Inc. MTX-R Black Tactical Switch (BTS) is a ruggedized non-blocking, high-speed digital matrix switch designed for shipboard applications. The MTX-R BTS allows the interconnection of 512 digital or Wideband (25 kHz) analog ports.

System Description

The MTX-R BTS supports 512 ports with any combination of lines and trunks. It performs automated switching and control of clear and encrypted signals between modems, encryption devices, radio transmitters and receivers. The BTS switch may be set up with either 16 fiber optic or copper I/O cards that will connect a maximum of 32, 16-port port concentrator units (PCU). To minimize the impact of a path failure, a "spare" switch card can be configured to perform automatic or manual backup.

Two internal testing methods are used to ensure reliable data cross points within the matrix engine. For ease of maintenance, all MTX-BTS cards are hot swappable, allowing replacement or addition of cards without first turning off the power.

The BTS switches are configured with PCU's that perform the user interface function. Analog port cards (trunk and line interfaces) pass 25 kHz. Digital port cards are available in most standard WAN interface types including EIA-232, EIA-530, V.35, X.21 and several non-standard configurations. Interfaces such as EIA-232 and EIA-530 and most WAN interfaces (including TADIL-A and MIL-188) are connected in full duplex mode. When in full duplex mode the switch configures two separate paths, one for transmit signals and another for receive signals. All ports have the ability to run simultaneously at 10 Mbps
without interference or signal degradation.

Control

The IPGate AC provides far more inter-connect possibilities than traditional "tunnelling" units which are basically an IP pipeline connection between two devices. The distributed architecture in the IPGate AC unit allows any-to-any connectivity between ports and devices enabling a user to create a "Virtual Matrix".

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Specifications

MATRIX GENERAL

Matrix Type:	Single Crosspoint, Electronic
Blocking Factor:	None
Broadcast Capability:	1 to All
Shock and vibration:	MIL-STD-901D Grade A, MIL STD-167-1
Temperature:	Operating: 0° C to +50° C
Non-Operating:	-50° C to +100° C
Humidity:	98% RH non-condensing
Altitude:	Up to 3050m above sea level

Power Requirements

Matrix Input Power:	1.5A @ +/-12VDC
PCU1:	2A @ 5 VDC Fully loaded
PCU2:	3A @120 VAC Fully loaded
Fan Panel DC:	.45A @+12VDC per fan (3 and 6 fans available)
Fan Panel AC:	.18A @+120VDC per fan (3 and 6 fans available)
Power Supply:	350 Watts.

Physical Dimensions

Engine Chassis	19”W x 15.75” H x 20”D
Power Supply	19”W x 5.25”H x 17.5”D
PCU	19”W x 3.5”H x 13”D
Fan Panel	19”W x 1.75”H x 16”D

Weight

Matrix Engine:	75 lbs
Fan Panel: 1	0 lbs
PCU:	20 lbs
Engine Power Supply:	30 lbs

MTBF Figures

Matrix Engine Chassis:	59,669 Hours
Switch Card:	103,219 Hours
DS-1 Switch I/O Card:	55,973 Hours
Recorder Switch I/O:	15,184 Hours
Control Card:	292,552 Hours
Control I/O Card:	173,930 Hours

Power Supplies

Engine Power Supply:	100,000 Hours per module
PCU Power Supply:	100,000 Hours per module
UPS Ruggedized	50,000 Hours

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