CORNET
SWITCHING SYSTEMS

TVCS Omni

Cornet Switching Systems' TVCS Omni is a JITC certified, highly compact communications, conferencing, and interconnect solution. The TVCS Omni provides conferencing and any-to-any voice connectivity for the military, homeland security, and first-responders.

A member of the widely-deployed TVCS family of switches and interconnect gateways, the scalable TVCS Omni is ideally suited for mission operation centers requiring medium sized C2 voice systems. The TVCS Omni connects operators with operators (intercom), and COTS devices such as COMSEC equipment, military radios, land line phones, and PBX in two-party or multi-party conferences. The solution combines TDM switching architecture with the flexibility of the IP networking facilities. For applications requiring all or selected audio session-recording, the system supports an external recorder or includes an optional recorder card with enough memory to record continuously for 30 days. Since each radio channel is individually recorded, users can easily select the required radio channel for playback.

A vital component of the TVCS Omni solution is the CS-Commander, a soft voice phone that runs on a PC and lets operators establish intercom calls, intercom conferences, radio calls, and radio conferences. The CS-Commander also enables an operator to participate in more than one session from the same headset using operations-specific HMI screens. Additional hardware offered is a Jack Box that provides supervisor monitoring and over-ride, a hand or foot PTT, and a headset.

Key Features

Media Gateway
- TDM and IP backplanes with VoIP gateway
- Three types of VoIP conferences: intercom, radio, monitor
- Configuration stored on Micro SD card
- Individual and group volume control
- Active noise filtering for every radio gateway port
- Automated Gain Control (AGC) for every interface
- Session Initiation Protocol (SIP)
- IP voice networking between the operators, radios, telephony, speakers and recorders
- Optional internal recorder card
- External recorder supported
- Recording of both active and inactive radios
- Each radio channel is separately recorded
- facilitating select radio channel playback

CS-Commander: Multi-functional Operator Interface
Console
- Soft VoIP phone
- Headset, PTT switch, and a multi-connection Jack Box
- Standards-based human-machine interface (HMI) runs on COTS Operating Systems
- Multiple Level Precedence and Preemption
- PTT methods: hand, foot, and finger-onglass (FOG)
- Color-coded indicators reflect various states of operations
- Intercom calling: point-to-point, preset and ad hoc nets

IntelView Administration Software
- Configuration, monitoring, and control

Benefits

- Simultaneously listen to multiple intercom and radio conferences for better situational awareness
- Reduced communications and infrastructure costs
- Wide range of device compatibility (radios, intercoms, phones, encryptors, and speakers)

Scalability

Each TVCS Omni consists of:
- Processor card with T1/E1/PRI gateway
- Four Conferencing cards (two standard)
- Recorder card (optional)
- Media Gateway cards - 12 slots:
    - 4-port radio gateway card
    - 4-port telephone gateway card
    - 4-port E&M gateway card

Specifications

Controller Card

T1/E1/PRI:	Four ports per card; conform to ITU T1.403/G. 703
Line Rate:	1.544 Mbps/2.048 Mbps
Framing:	D4/ESF/ITU G.704
Line Code:	AMI/B8ZS/HDB3
Impedance:	100 ohm/120 ohm
Voice Gateway:	Supports 128 VoIP Phones
Signaling Protocol:	SIP and SIP Trunking
CODECS:	G.711, G.729, and G.726
Protocols:	DMF relay, SIP info
Ethernet:	Two RJ-45 ports - 10/100Base-T copper One fiber port - 1000Base-X SM or MM
Local Removable Memory:	Micro SD card as the Non-volatile RAM for configuration storage
Power Supply Module:	Dual AC power supply trays120/240 VAC 50/60 Hz

Unit Management

Local Status:	LED: call activity, volume control, line status
Console Port:	Front panel COM port access for local serial terminal access
Remote Management:	IntelView PC application
Access Control:	Password protected, multiple simultaneous management accesses

Mechanical

Dimensions:	17.78 cm H x 51.5 cm D x 48.3 cm (7" H x 20.3" D x 19" W)
Weight:	Less than 45 lbs depending on the number of cards used

Environmental

Operating Temperature:	0°C to +50° C
Storage Temperature:	-20°C to +60°C
Humidity:	0% to 95% non condensing
EMI/EMC:	FCC, CE EN 55022, EN 55024
Product Safety:	EN/IEC/UL 60950-1

Radio Gateway Card

Ports:	4 per card (2 per card with radio/crypto control)
Input/Output Impedance:	Balanced and unbalanced 600 ohms
Input Levels:	-46 dBm to + 10 dBm adjustable 300 Hz to 3400 Hz
Output Levels:	-20 dBm to + 10 dBm adjustable 300 Hz to 3400 Hz
PTT Output Type:	Open drain
PTT Output Polarity:	Active low
Support for Specific Radios:	Provided by specific cable for each radio type
Radio Control/Data:	Asynchronous RS-232

Telephone Gateway Card

Ports:	4 per card
Encoding:	µ-law and A-law
Open Loop Resistance:	>10K ohms
Ring voltage Detection:	Minimum 15 VRMS
Dial:	DTMF
Surge Protection:	Yes

E&M Gateway Card

Ports:	4 per card
Encoding:	µ-law and A-law
Impedance:	Balanced 600 ohms
Wire Mode:	4-wire
Signaling:	Unbalanced and balanced

Solid State Recorder Card: Various size drives available up to 1 TB

Voice Recording:	Internal to the TVCS Omni chassis
Recording Time:	Typically 30 days of simultaneous recording of 32 audio streams: 128 GB
Audio File Identification:	Using time stamps and channel number