HSE 6000 Military and Law Enforcement Voice Security

Universal Voice Encryption

Secures Land Mobile Radios (LMR)

Sea-Air-Land (SEAL) Operations

Vehicle Intercom Systems (ICS)

and

Telephone Voice Communications

The HSE 6000 is a Body-Worn, Vest-Mounted, Battery-Powered, Small and Light Weight In-Line COMSEC device connecting between a headset, helmet or handset and a radio, ICS or telephone. Powered by *X-NCrypt*® End-to-End Cross Network Cryptography, the HSE 6000 closes the security gap; between incompatible radios; across HF, VHF, UHF and SATCOM frequencies; between Analog, Digital and SDR radios; Analog, Digital and VoIP telephones; and radios and telephones.

Land Mobile Radio (LMR) Operations

The HSE 6000 LMR unit is designed to secure voice communications for public safety and special operations, including police, special forces, border patrol, covert agents and private security. It connects to the radio and headset or handset directly.

Sea, Air, Land (SEAL) Operations

The HSE 6000 SEAL also supports aircraft and vehicle intercommunication systems (ICS) for Sea, Air and Land applications. It connects directly to the ICS' audio connectors without modification to avionics or vehicle communication system.

Universal Voice Encryption

The HSE 6000 builds on the DSP 9000 End-to-End Universal Radio Encryption technology, closing the voice security gap between radios and telephones from different manufacturers and of different technologies, securing voice communication across HF, VHF, UHF and SATCOM frequencies; between Analog, Digital and SDR radios; between Analog, Digital and VoIP telephones; and across radios and telephone networks.

It is ideal for securing Coalition Forces Counter-Terrorism Naval, Airborne, Vehicle, Manpack and handheld Operations.

Cryptographic Strength

The same superior-grade security of TCC's military DSP 9000 secure radio solution is provided in the HSE 6000. TCC's Enhanced Domain Transform algorithm is controlled by a highly non-linear digital key stream generator. Tools are available for algorithm customization.

Prior to deployment, the security officer generates keys and interface settings with TCC's Crypto Management System and easily loads them into the HSE 6000 with TCC's SmartModule® key fill device. A three-tier keying architecture, together with a randomly generated Initialization Vector, provide a new key stream for encrypting the audio. Additionally, Auto Key Change mode periodically updates the Local Key in use. Downline key indexing automatically sets the receiving HSE 6000's to the correct key.

Benefits

- Secures voice between analog, digital and SDR radios

- Secures voice between analog, digital and VoIP phones

- Secures voice between radios and telephones

- Enables secure multiparty conferencing across radio and telephone networks

- Military grade encryption with 2^{345} bit key strength

- Vest mount, small, rugged, lightweight, battery powered

- LMR for Land Mobile Radios

- SEAL for Aircraft and Vehicle Intercom Systems (ICS)

- Audible cipher transmission Start/End notification

Crypto Management System rack-mountable server and security vault

TECHNICAL COMMUNICATIONS CORPORATION

Simplicity and Portability

The HSE 6000 is a small, body-worn size that fits in a pocket, and weighs under 0.6 lbs (315 g). It has a long battery life of 12 hours constantly running before needing to be recharged. A quick exchange of the battery pack is easily done in the field. The HSE 6000 is also simple to operate. Users just select the cipher or plain mode switch to speak securely or in the clear. Key management is user transparent.

HSE 6010 Telephone Interconnect Kit

The HSE 6000 with our Telephone Interconnect Kit (HSE 6010) enables both secure radio to secure telephone communication, and secure telephone-to-telephone communication. It secures telephone communications across VoIP, analog and digital telephone networks, and is ideal for connecting commanders and government officials to field personnel. It also encrypts voicemail messages. Setting up a secure call with the Telephone Interconnect Kit is quick and easy.

DSP 9000 Military Secure Radio Family

DSP 9000 secure radio encryption is available in base station, Manpack, radio-embedded, and handset configurations. It uses a digital signal processor to ensure exceptional recovered voice quality and cryptographic security. It is also a universal secure radio encryption solution and interoperates with the HSE 6000.

End-to-End Secure Voice and Conferencing Across Networks and Applications

HSE 6000 SEAL   DSP 9000
Airborne   Vehicle
Naval

DSP 9000 HS
Ground Troops

HSE 6000 LMR
Public Safety, Private Security & Special Operations

HSE 6010 Telephone Interconnect Kit

Commander/Presidency   Travel

X-NCrypt®
Cross Network Cryptography

X-NCrypt Cross Network Cryptography enables secure voice communications across radio, satellite and telephone networks, as well as commander's conferencing.

Full-Featured ICS Support

HSE 6000 SEAL model is designed to be used by the crew member with Naval, Airborne & Ground Intercom Systems (ICS), enabling on-board and dismounted secure communications. It connects directly between the helmet and the ICS.

Secure voice ICS feature highlights include:

- Secure community groups for segregated secure communication over the same ICS
- Binaural (stereo) earphones
- Support for bias/no bias microphone requirements
- ICS Hot MIC
- Full-duplex bypass and dead-battery bypass
- Cipher Transmission START/END audio notification

HSE 6000 Technical Specifications

Cryptography
Enhanced Domain Transform algorithm controlled by a non-linear key generator

Key Architecture
Local Key — two independent key banks, 100 each (200 total)
Network Key
System Key
Initialization Vector (IV) — generated in software at each PTT sync actuation

Total Key Diversity
Including IV: 1.01×10^{104}

Self Powered
Rechargeable Li-ion battery pack
Power 12-hour battery life — constant usage
Quick exchange battery pack

Environmental
Operational Temperature $-15^{o}C$ $+60^{o}C$
Storage Temperature (excluding battery) $-40^{o}C$ to $+85^{o}C$
Storage Temperature (battery) $-20^{o}C$ to $+50^{o}C$
Humidity: MIL-STD-810G
Immersion: IEC 60529 IP67
Vibration: MIL-STD-810G
Shock: MIL-STD-810G
EMI: MIL-STD-461F

User Interface
Language independent symbols for connections and buttons
Load and bank select buttons
Battery status indicator
Emergency erase button

Key Fill Device and Port
SmartModule key fill

Accessories:
Crypto Management System
HSE 6010 Telephone Interconnect Kit

Models:
HSE 6000 LMR for Land Mobile Radio applications
HSE 6000 SEAL for ICS applications

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