



HSE 6000 Radio Headset & Telephone Encryption



**Proven secure voice
Land Mobile Radio (LMR),
telephone and conferencing
communications for
public safety & special operations**

The small, lightweight, self-powered HSE 6000 radio headset encryptor operates with most radios; connects to corded handset telephones used with VoIP, analog and digital telephone networks; and interoperates with TCC's military secure radio DSP 9000 family. Enabled by X-NCrypt® Cross Network Cryptography, the HSE 6000 provides end-to-end secure voice communications and conferencing across radio and telephone networks.

Secure Radio Tactical Operations

The HSE 6000 radio headset encryptor is designed for the Land Mobile Radio (LMR) applications of public safety and special operations — police, special forces, border control, aircrew on the ground, covert agent and private security.

Universal Radio Encryption

With TCC's universal radio encryption, the HSE 6000 operates with any handheld or squad radio and any headset/handset, such as lapel speaker/microphone, acoustic ear-bud headset, iPod-style headset, helmet headset and throat or boom microphone headset.

Simplicity and Portability

The HSE 6000 is portable with a small, body-worn size that fits in a pocket, and weighs under 0.6 lbs (315 g). It is comfortable to wear and 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, respectively. Key management is user transparent.



HSE 6000 radio headset encryptor

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

- Proven high-end security
- Provides exceptional recovered voice quality
- Universal encryption works with most radio makes and models, and all frequency bands
- Operates with corded handset telephones used with VoIP, digital and analog telephone networks
- Interoperates with the DSP 9000 military secure radio family
- Enables secure multiparty conferencing across radio and telephone networks
- Cost-effective solution — no equipment changes and seamless network overlay
- Easy to use, deploy, manage



Crypto Management System rack mountable server and security vault



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.



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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 2³⁴⁵ bit key strength
- Vest mount, small, rugged, light-weight, 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

HSE 6000 Radio Headset and Telephone Encryption



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 connects to corded handset telephones used with VoIP, analog and digital telephone networks, and is ideal for connecting commanders and government officials to field personnel. It also has secure voice mail. Setting up a secure call with the Telephone Interconnect Kit is easy and takes less than a minute.

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, operating with most radio makes and models, and seamlessly overlaying on existing voice networks for cost-effective end-to-end security. The DSP 9000 has many years of proven in-use performance around the world, and interoperates with the HSE 6000.



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

Excluding IV: 1.54×10^{99}

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°C +60°C

Storage Temperature (excluding battery) -40°C to +85°C

Storage Temperature (battery) -20°C to +50°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



Accessory: Crypto Management System

Optional: HSE 6010 Telephone Interconnect Kit

X-NCrypt®

Cross Network Cryptography

Enabling Secure Commander's Conferencing with TCC's HSE 6000/DSP 9000 Encryption Family



DSP 9000



Airborne



Vehicle



DSP 9000 HS



Ground Troops



HSE 6000



Public Safety, Private Security & Special Operations



Naval



HSE 6010 Telephone Interconnect Kit



Commander/ Presidency



Travel

Future HSE 6020



Mobile Phone

X-NCrypt Cross Network Cryptography is the revolutionary evolution in the application of TCC's DSP 9000 military radio encryption technology, enabling secure voice communications across radio and telephone networks as well as commander's conferencing.

For more than 50 years, Technical Communications Corporation has specialized in superior-grade secure communications systems and customized solutions, supporting our CipherONE® best-in-class criteria, to protect highly sensitive voice, data and video transmitted over a wide range of networks. Government entities, military agencies and corporate enterprises in over 115 countries have selected TCC's proven security to protect their communications.



HSE 6000 Military and Law Enforcement Voice Security

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 Airborne

DSP 9000 Vehicle

DSP 9000 HS Ground Troops

HSE 6000 LMR Public Safety, Private Security & Special Operations

Naval

HSE 6010 Telephone Interconnect Kit

Commander/Presidency

Travel

X-NCrypt®
Cross Network Cryptography

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

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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°C $+60^{\circ}\text{C}$

Storage Temperature (excluding battery) -40°C to $+85^{\circ}\text{C}$

Storage Temperature (battery) -20°C to $+50^{\circ}\text{C}$

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