

Technical Specifications

Operating

Voice:	Clear	voice transmitted full duplex unencrypted, Pulse and DTMF dial bypass
	Encrypted	voice transmitted full duplex encrypted, Encrypted DTMF, Remote User ID Display
	Delay	160 milliseconds when encrypted
	Compression	4,800 bps full duplex, Proprietary coding algorithm
Fax:	Clear	fax transmitted half duplex unencrypted
	Encrypted	fax transmitted half duplex encrypted, Remote fax authentication (optional)
Data:	Clear	file transmitted full duplex unencrypted
	Encrypted	file transmitted full duplex encrypted
	Operation	simultaneous voice and data
System:	Administration	two password system plus pin operation for unit management
	Key Load	secure loading of keys via fill device
	Key Management	provision for centralised or decentralised key management

Cryptography

Encryption Algorithm	128/256-bit AES or customised
Key Management	proprietary bilateral key exchange automatic random Session Key generation
Synchronisation	100 millisecond delay, satellite delay capable
External Key Load	12 customer-generated Net Keys, up to 99 updates per Key

Interfaces

Connection to PSTN/PABX	RJ-11 socket
Connection to Phone/Fax	RJ-11 socket
Connection to Inmarsat	RJ-11 socket
RS232 data port	DB9 socket

Protocols

PSTN/PABX	V.32/V.32bis, 4,800 bps to 14,400 bps
Fax	V.29, 7,200 bps or 9,600 bps; V.27ter, 2,400 bps or 4,800 bps
Data	V.32bis, 4,800 bps to 14,400 bps
Satellite	Inmarsat A, Inmarsat M4

Electrical

Signal Bandwidth	300Hz to 3,400Hz
Line Impedance	PSTN/PABX port: 600 Ohm or selectable complex impedance Phone/Fax port: fixed compromise complex impedance
PSTN Transmit Level	-9dBm nominal
PSTN Receive Level	-38dBm to -10dBm
Fax Transmit Level	-12dBm nominal
Fax Receive Level	-42dBm to -10dBm
Transmission Rate	V.32bis selectable from 4,800 bps to 14,400 bps

Power

Power Supply	external power pack, 12V DC
Current Drain	1 Amp typical in encrypted mode
Connector	2.1mm * 9.5mm coaxial power jack, centre positive
Battery	integrated, self-charging NiMH, allowing 45 minutes' operation

Physical

Size	154mm W* 62mm H* 146mm D (6.0" W * 2.4" H * 5.7" D)
Weight	650 grams (1.1lbs) including battery
Keyboard	16 keys with soft menu operation
Languages	English, Arabic, Chinese (simplified), French, Spanish, and Vietnamese
Hardware	Tamper-proof casing and emergency erase feature

Environmental

Operating Temperature	0° to 45°C
Storage Temperature	-10° to 60°C
Humidity	5% to 95% non-condensing
Altitude	to 3,000 metres



SignalGuard®

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Technical Specifications are subject to change without notification. 06/06



Trusted encryption

Rapid deployment

Alternate language display

AISEP approved to EAL2

Optional Indigenous Algorithm

Dedicated support



The Phoenix is a powerful encryption solution for security in the modern communications environment. Simple to operate, the Phoenix provides confidence to customers for secure telephone calls, sensitive faxes, and secure data file transfers.

Product Description

The Phoenix is primarily built to meet the efficiency and functionality requirements of government customers. Packaged in an ultra-modern case, the unit features a graphical LCD, remote user identification, and informative feedback. It also provides excellent voice reconstruction, with automatic fallback to compensate for noisy line conditions. It is compact, lightweight, and equipped with a built-in self-charging battery providing up to 45 minutes secure operation without mains power. The Phoenix offers complete portability providing secure communications whilst travelling, or in operational environments.

Encryption uses a 128 or 256-bit AES algorithm. Alternatively, a unique, customised algorithm can be installed to meet specific government requirements. Key management is an asymmetric key exchange with optional PIN for enhanced security. Customers can program up to 12 keys to define their security environment.

A full suite of network support tools is available to assist management of Phoenix secure networks.

At SignalGuard we understand that no two customers are the same, and the ability to customise and manage network security is a must. With this in mind we have developed a flexible and comprehensive suite of support tools to assist in the daily management of the secure network.

Keyload Utility

For customers with high network security requirements, external generation of keys is essential: the Keyload Utility makes this easy. Purpose-built for the Phoenix, the Keyload Utility is an easy to use PC-based, windows style, application allowing users to input new keys, then encrypt and save them in the precise format ready for loading into Phoenix units. It is easily integrated into an existing key management system or can be used separately to generate the keys.

Management System

Features of the Management System include inventory control of the Phoenix units and fill devices, key generation, key scheduling, and tracking of Net memberships and key issue.

Alternative Language Display

The large-format graphical LCD display allows messages to be presented in a variety of languages including non-English character sets. Besides English, the Phoenix is currently available with Arabic, Chinese (simplified), French, Spanish, and Vietnamese messages, with other languages easily accommodated.

Algorithm Replacement

Government departments seeking the highest level of control over their security environment have chosen the Phoenix above others because of the high level of customisation and the ability to integrate their own algorithms. Features include:

- High-speed arithmetic co-processor optimised for encryption
- Support of any 128 - 256 bit digital algorithm
- Support of a variety of cryptographic modes
- Import facility of custom algorithms
- Integrated development environment to assist in coding the algorithm into the assembler language required by the co-processor
- Full operation testing facility
- Output verification.

Training

Customisation is a specialised task requiring a high level of crypto mathematical expertise. SignalGuard offers an introductory training course providing an overview of the tasks involved and the skill level required. Customers wishing to implement customisation receive a further full week of intensive training.

After successfully completing this training, customers have complete control over their security environment and can implement their own desired algorithm; further SignalGuard involvement is not required.

