ELCRODAT 5-4

Secure voice and data communications

◆ For use in analog and digital (ISDN) telecommunications networks
◆ Interoperable with existing voice encryption devices (ELCROVOX 1-4D, STU-IIB, Spendex 40, TCE 500B, ELCRODAT 6-1)

◆ Crypto variables can be loaded manually via the standardized fill interface or provided automatically via a key distribution center

◆ Designed for all national and NATO levels of classified information
◆ Access to all cryptological functions protected by a personal chipcard and PIN code

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Security in communications networks

Progress is inextricably linked to the growth of high-speed, worldwide communications. Modern communications systems have become a fundamental part of our business and personal lives.

Yet these communications systems are increasingly subject to misuse and manipulation. The use of high-quality encryption devices is essential for authorities and organizations with stringent security requirements, in the military environment in particular.

Protected against eavesdropping and manipulation

The ELCRODAT 5-4 (ED 5-4) is used for encrypted voice and data transmission in analog and ISDN networks.

The ED 5-4 provides end-to-end encryption, which protects messages against eavesdropping and manipulation attacks over the entire connection.

Interfaces

The ELCRODAT 5-4 is connected to either the S_0 basic rate access of an ISDN network or to an ISDN PABX. The D channel protocol must comply with the DSS-1 guidelines (Euro ISDN).

The ED 5-4 can also be used in analog networks with a dialup connection in accordance with the ETSI TBR21 standard. Power is supplied via an external AC power adapter.

Operation

The ED 5-4 is very user-friendly: menu-driven settings and modes are configured and selected using the keyboard (full set of alphanumeric keys, graphical display LCD ¼ VGA).

The ELCRODAT 5-4 includes all the functions that can be found in any modern telephone:

◆ Programmable soft lock
◆ Direct-dialling keys
◆ Programmable redialling
◆ Electronic telephone directory

Modes of operation

The ED 5-4 can establish voice and data connections in PLAIN or CRYPTO mode. Users can switch from PLAIN to CRYPTO during a connection, but not vice versa. Security considerations prohibit the switching from CRYPTO to PLAIN once a connection has been established.
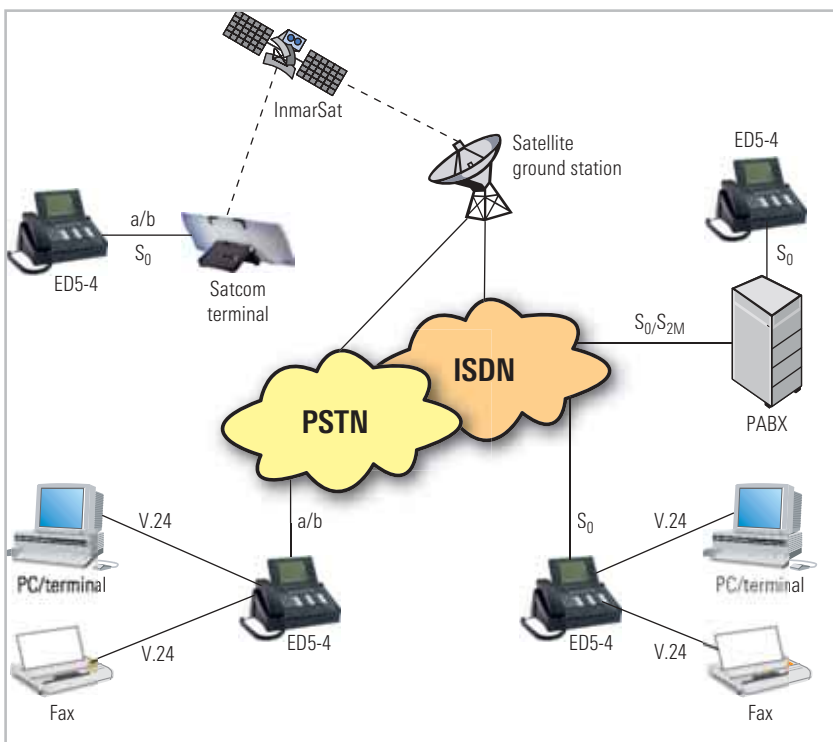
Examples of ELCRODAT 5-4 applications

N networks

For security reasons, voice and data in CRYPTO mode (in ISDN) will not be transmitted until the connection between the crypto devices has been established and crypto-synchronization has been completed successfully. The current status (PLAIN or CRYPTO) is shown on the display and also via the LEDs.

Encryption key management and encrypted operation modes

Encryption keys are supplied either automatically via a key distribution center (KDC) or locally via the standardized NATO fill interface with the corresponding fill devices.

In the CRYPTO mode, the calling ED 5-4 automatically dials the KDC before the connection to a remote terminal is set up and receives a session key in an encrypted data packet. The connection to the called party will only be set up once this operation has been completed. Both parties then communicate via the session key.

A common net encryption key is used for all connections when the device operates in the NET KEY mode. Up to 16 encryption keys for individual connections can be stored in the SPECIAL KEY mode. The encryption keys are selected by the user.

Comprehensive security measures

The ELCRODAT 5-4 meets all requirements for secure communications:

◆ Tempest-proof in accordance with AMSG 720 B
◆ Emergency zeroizing
◆ Tamper protection
◆ Symmetric NATO encryption algorithm
◆ Protection and monitoring of the crypto variables
◆ Protected access to all cryptological functions with personal chipcard and PIN code

Specifications

Operating modes	
Voice	PLAIN and CRYPTO
Data	PLAIN and CRYPTO
Operation in analog network	
Network interface	two-wire interface (a/b) in accordance with ETSI TBR21 four-wire interface (IVSN) RJ-12 female connector
Voice coding	LPC 10E (2.4 kbit/s) in accordance with STANAG 4198
Modem method	
2400 bit/s	V.22bis, V.26
9600 bit/s	V.32
Data interface	
V.24 / V.28 asynchronous	2400 bit/s
V.24 / V.28 synchronous	9600 bit/s
Operation in ISDN	
Network interface	ISDN basic rate access (S$_0$) RJ-45 female connector D channel protocol DSS-1
Voice coding	voice coding in accordance with ITU G.711

Data interface	
V.24 / V.28 asynchronous	2400 bit/s to 19200 bit/s
V.24 / V.28 synchronous	2400 bit/s to 64000 bit/s
Additional interfaces	
Fill interface	DS-101, DS-102
CIK	crypto ignition key (chipcard)

General data

Operating temperature	+5 °C to +40 °C
Storage temperature	−20 °C to +55 °C
Radiation emission shielding/EMC	
TEMPEST	in accordance with AMSG 720 B
EMC	EN 50081-1 and EN 50082-2
Dimensions (H × W × D)	approx. 195 mm × 290 mm × 260 mm
Weight	approx. 3.5 kg
Supply voltage	24 V DC from external AC power adapter (100 V to 240 V, 50 Hz to 60 Hz)
Power consumption	<20 VA
MTBF	>8000 h
Function test with BITE (built-in test equipment)	

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More information at
www.rohde-schwarz.com
(search term: ELCRODAT)

Certified Quality System

ISO 9001

REG. NO CERT-01 100 025007

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