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TST 3010

Encryption Terminal for the
TST 3000 Mobile Encryption System

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1. General Description

The TST 3000 is a flexible, modular system, which can be tailored to individual needs. Compact and robust construction, power-saving electronics and very simple operation are the essential features of the entire product family.

Careful selection of the electronic components will assure a high degree of system availability. The modular construction and speed with which individual components can be replaced also guarantee easy repair because even in emergency situations non-technical personnel can quickly and efficiently exchange components.

The following modules are available:

- TST 3010 Encryption terminal as the central module which controls all functions and all other modules
- TST 3030 Thermo-printer for the Latin and/or Arabic ASCII character set
- TST 3040 Power supply for 110 V~ or 230 V~.
- TST 3070 Acoustic coupler which can be very well adapted for older telephone receivers.
- TST 3000-912 Mounting plate with shock and vibration absorbers for housing the individual module and a protective case with a water/dust proof cover.

2. Technical Description of the TST 3010 Encryption Terminal

The encryption terminal is the central module which controls all functions and all other modules. It contains the encryption processor, the keyboard, the display (either LCD or LED), the message buffer for up to 9 different messages with a total size of up to 25,000 characters, and the modem.

The terminal can be supplied with either a Latin or Arabic keyboard. The Arabic script complies with the ATU standard with automatic character selection.

Operation of the device is guided by dialogues which assures a short familiarization period. Access to stored messages is password protected. After three consecutive erroneous password entries, the contents of the device's entire memory (customer-specific settings and parameters, keys and messages) are automatically deleted. After that a new password can be entered but the deleted information remains lost.

For easy processing of recurring messages, up to 9 user-defined formats can be stored. These can be programmed into the TST 3010 by Timmann (EPROM) or by the user himself, and thus can be changed or deleted at any time. Because these formats are stored at both the sending and receiving sides, they need not be transmitted along with the message and are still accessible to both sides. This allows for marked reduction of message transmission time.

Via its integrated modem, the TST 3010 can be plugged directly into a radio set (HF-SSB, UHF, VHF) or into a telephone line, and into other modules of the TST 3000 product series (e.g. the TST 3030 printer). Depending on its design, the modem will run at speeds of 300, 1,200, 2,400 or 4,800 bits per second and contains automatic error correction (FEC). Thus messages can be sent via poor transmission channels and be received without error.

The TST 3010 keyboard is made of rubber and is thus absolutely silent when used.

The message buffer is set up so that incoming messages always have priority over all other operations. This ensures that even in the most extreme case no messages will be lost.

The TST 3010 is protected against water splashes and is impervious to sand and provides an average availability of 25,000 hours (MTBF). A waterproof version is available as an option.

To minimize cross-talk with other system components, the TST 3010 has its own voltage stabilizers, which enable an external operating voltage of between 12 V= and 30.5 V=. The TST 3010 memories are supplied with a lithium battery which has a guaranteed life span of 5 years.

TST 3010, Top View:

Figure 1

Depiction of the Key Distribution Process:

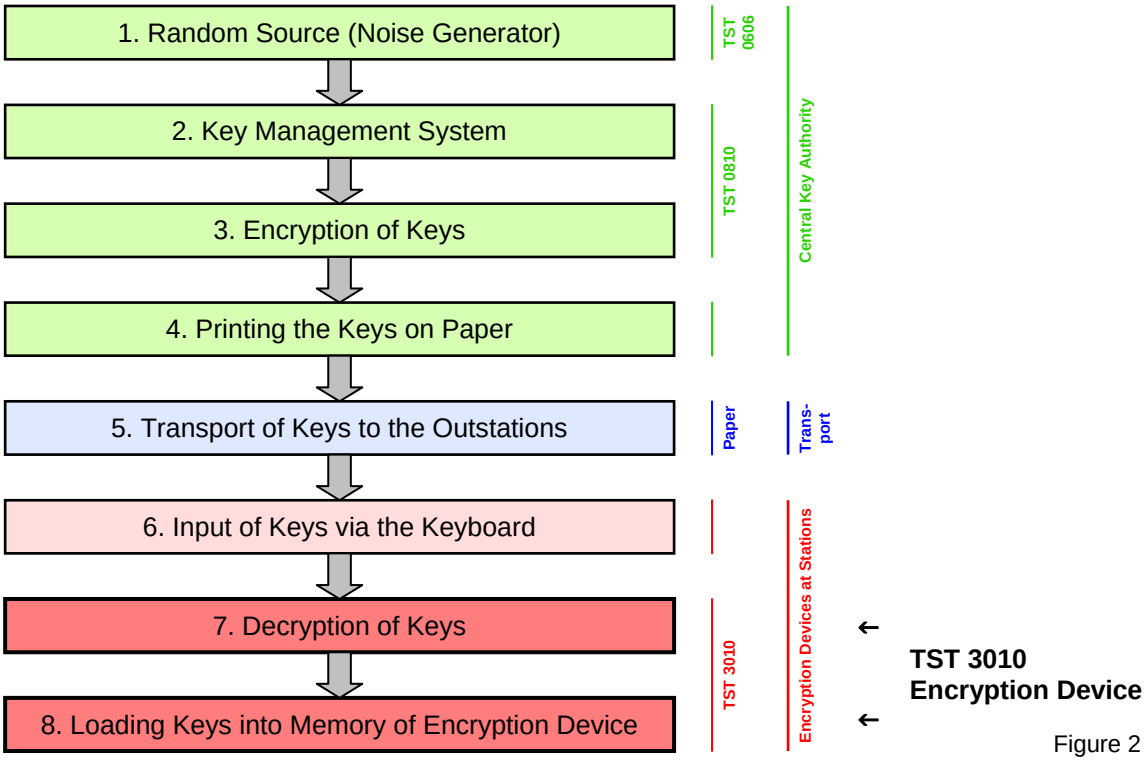

Figure 2

- Steps 1 to 4 take place at the key distribution centre and are considered to be secure.
- Step 5 represents key transport. This process is in principle the weakest link in the key distribution chain.
- Steps 6 to 8 take place at the outstations and are considered secure.

Steps 3 and 7 are optional.

3. Technical Data for the TST 3010

Mechanical Specifications (guidelines):

Height:	5 cm
Width:	29 cm
Depth:	10 cm
Weight:	1.8 kg

Electrical Specifications:

Supply Voltage:	+10.5 V= to +32 V=
Power Consumption:	1 W with LCD displays 4 W with LED displays

Ambient Temperature:

Storage:	-20 °C to +70 °C
Operation:	-10 °C to +65 °C, non-condensing -20 °C to +75 °C, upon request

Shock and Vibration:

Specifications: 810 C/514.2 and 516.

Maximum allowable altitude:

Normal zero: + 18,000 feet

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4. Full View TST 3010

Figure 3

5. Accessories

TST 0606	*Random Noise Generator for producing cryptographic keys.*
TST 0810	*Key Management System for administering cryptographic keys (generation, administration and distribution) – the TST 0606 device is part of the TST 0810 Key Management System and is included in its scope of supply.*
TST 3030	*Thermo Printer.*
TST 3040	*Power Supply.*
TST 3070	*Acoustic Coupler.*