ElettraSuite VS3000-2
The latest TETRA vehicle mobile radio

ELETTRA *SUITE*

radio terminals

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SELEX Communications
A Finmeccanica Company

The latest TETRA vehicle mobile radio from SELEX Communications, the ElettraSuite VS3000-2 is a top quality high performance mobile designed for professional users relying on mission critical communications.

OVERVIEW

The **ElettraSuite VS3000-2** is the latest SELEX Communications equipment with a new front panel especially developed for easy of use. It's rich set of features and new functions offer a complete set of TETRA services and make the VS3000-2 a powerful, flexible, user friendly device specifically designed to satisfy the highest demands of professional users.

NEW FEATURES

New Front Panel

The VS3000-2 includes a new, **high resolution, graphic display** that ensures excellent visibility in all lighting conditions. The VS3000-2 provides a new **user-friendly keypad** and simple and intuitive navigation menus, for rapid access to all the TETRA functions to ease operation under the most challenging circumstances.

Data Terminal Interfaces

The VS3000-2 is the only terminal on the market, which provides a **PEI interface on Bluetooth®.** This ease of connection to any data source enables the VS3000-2 transceiver, without its front panel, to be used to transmit data, for applications such as telemetry or control of remote alarms.The VS3000-2 also provides a USB interface, for fast updates of the software.

Flexible connectivity to audio accessories

The VS3000-2 allows connection of audio accessories via a built in **wireless Bluetooth®** interface. A number of devices including headsets can be connected, for example under a helmet for a motorcycle configuration.

New Languages supported

Now, in addition to a large number of other languages, the VS3000-2 can be configured to display Chinese characters.

MAIN FUNCTIONS

Dual Mode

The VS3000-2 is the only TETRA mobile on the market that that can also operate as a **conventional FM radio**. The VS3000-2

can be easily switched between conventional analogue FM and TETRA modes. This ability together with the extended switching bandwidth of the VS3000-2 allows a soft migration from analogue UHF to TETRA services and interoperability with legacy technology.

Repeater and Gateway

The VS3000-2 can operate both as a TETRA Repeater or a Gateway to communicate without the presence of the network and to extend the coverage of the network itself.

The switching between the three modes of operation (TETRA Mobile; Repeater and Gateway) can be easily and quickly achieved via the menu or specific keys to create a TETRA ad-hoc network for inside buildings, underground locations or in poor TETRA coverage areas.

The VS3000-2 can also provide a call monitoring function when operating in either Repeater mode or Gateway mode, to monitor the traffic over the network.

GPS Location service

The VS3000-2 incorporates the latest, **high sensitivity GPS** technology with an accuracy of a few metres for advanced Automatic Vehicle Location applications. The GPS can periodically send an accurate user's position to ensure assistance in all hazardous situations. The transmission protocol for the location data over the air-interface is in accordance with the **ETSI LIP standard**.

Multi Slot Operation

The VS3000-2 provides for full multi-slot data transmission **up to 4 slots**, allowing the maximum TETRA data rate capacity, to support a wide range of data applications such as file transfer, database interrogation and image transmission, both in **circuit and IP packet data mode**. Simultaneous Voice and Data transmission can be supported using different timeslots.

Secure Communication

In order to protect the critical speech and/or data communications from potential eavesdroppers the VS3000-2 in TETRA mode supports a high level of communication security through the adoption of: Authentication, dynamic key Air Interface

encryption and End-to-End (E2E) encryption. In addition to the TETRA standard E2E encryption, **user specific algorithms** for E2E encryption can be supported.

Mechanical Characteristics

The VS3000-2 case is sturdy and water proof (IP67), it meets the **strictest military** environmental standards for working in all shock and vibration conditions. A special **tamper proof** version of the VS3000-2 is available.

SELECTION OF THE MAIN TETRA FEATURES SUPPORTED

- Repeater
- Gateway
- Individual calls
- Group calls
- Emergency calls
- Broadcast calls
- Priority and Emergency calls
- PABX, PSTN, PDN Interconnection
- Direct Mode Operation (also with Repeater and Gateway)
- Short Data Service (status/text messages)
- Location Services
- End-to-End Encryption
- TETRA Supplementary Services
- Up to 4 time slots transmission data calls
- Single and multi slot Circuit Data services
- Single and multi slot IP Packet Data services
- Dynamic key "Air interface Encryption"

Data storage capacity

- 1472 TMO/DMO talk groups
- 1000 static entries in the phone directory
- 200 phone book entries
- 10 predefined or user defined text messages
- 72 predefined status messages
- 20 recent individual calls
- 20 recent received messages.

ACCESSORIES

- Telephone style handset with PTT
- Hands free kit
- Microphone
- Loudspeaker

ElettraSuite VS3000-2, typical installation in a car

Technical characteristics

TMO/DMO FUNCTIONALITIES

Voice services

- Individual Half and full duplex calls to TETRA and PABX/PSTN users
- Group calls (with Open Channel and Late entry)
- Emergency call (individual or group)
- Pre-emptive Priority calls (including freeing of resources)
- Short Number Addressing
- Calling Line Identity presentation
- Talking Party Identification
- DTMF Dialling

Data Services

- Status and SDS messaging
- Packet Data (single and multi slot)
- Circuit Data (single and multi slot)
- Concurrent services management capability for voice calls and packet data Transmission

Security

- PIN code access
- MS Authentication
- Air Interface Encryption ETSI EN 300 392-7 TEA1/TEA2/TEA3
- End-to-End Encryption (IDEA and AES algorithm)
- Tamper Protection Option

Other Services

- DGNA Dynamic group Number assignment
- Phone Book
- Call History
- Transmit Inhibit (TXI)
- Call authorized by dispatcher
- Priority Group Scanning
- Ambience Listening
- Chinese Language

Repeater Services

- Individual voice calls (with or without presence checking)
- Group calls (also to open group - late entry)
- Emergency group call
- Call pre-emption
- SDS messaging
- Calling Party Identification

Gateway Services

- Individual and group calls (in either direction)
- Emergency group call (in either direction)
- Call pre-emption of existing call (in either direction)
- Late entry
- Calling Line Identity presentation
- Talking Party Identification
- Monitoring of other gateways

Integrated GPS

- 12 Channel GPS receiver
- -155 dBm acquisition Sensitivity
- -159 dBm tracking Sensitivity
- Accuracy 5-8 metres

External Interfaces

- RS232 data terminal Interface (PEI) ETSI EN 300 392-5
- Extended AT Command Interface
- PEI on Bluetooth
- Remote Front Panel connector
- GPS Antenna connector
- Loudspeaker connector
- USB

FIXED CONFIGURATION

ElettraSuite FC3000-GTW is the fixed version of ElettraSuite VS3000-2 and can be mains or DC powered. It maintains all the main characteristics of the VS3000-2, including being a Gateway and a DMO Repeater type 1A.

Its main accessories are:

- microphone;
- foot PTT;
- microphone for fixed console (with or without PTT lock);
- handset with mechanical base;
- Bluetooth® antenna.

Fixed station, ElettraSuite FC3000-GTW,

TECHNICAL DATA

Equipment type:	TETRA (TErrestrial Trunked RAdio) mobile radio
Frequency bands:	• 380 to 430 MHz • 410 to 470 MHz • 806 to 870 MHz
Functional Modes:	Trunked Mode, Direct Mode, Direct Mode Repeater, Direct Mode Gateway

RF Power class:	• TETRA: - class 2 (10W, 40dBm) ETSI EN 300 392-2
	          - class 3 (3W, 35dBm) ETSI EN 300 392-2
	          - Adaptive power control supported
	• Analogue mode: 10W

RX Class:	Compliant to ETSI ETS 300 392-2 / 396-2 Class A + B
Power supply:	+10.8 to 15.6 Vdc nominal, typical 13.2 Vdc
AF Power:	8W @1 kHz into a 4 Ohm load
Dimensions:	48 x 172 x 188 mm (transceiver); 210 x 70.3 x 66.5 mm (front panel)
Weight:	1850 g (transceiver); 650 g (front panel)

Environmental specifications

Climatic condition:	ETSI EN 300 019-1-5 Class 5.1 (-25° to +70 °C)
Operation temperature:	ETSI EN 300 394-1 (-20° to +55°C)
Water and Dust protection:	• VS radio body: IEC 60529 class IP66 and IP67 • Control panel: IEC 60529 class IP54
Mechanical conditions:	• ETSI EN 300 019-1-5/6 classes 5/6 M3 & IEC 721 3-7 • MIL STD 810 D/E - Methods 516.4/5 procedures I/V • MIL STD 810 D/E - Methods 514.4/5 procedure I category 20
EMC	ETSI EN 301 489-18
Storage temperature:	-40°C to +70°C
Transportation temperature:	ETSI EN 300 019-1-2 class 2.3

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