ElettraSuite PUMA T3 Plus

Powerful and reliable handheld for
mission critical communications

tetra solutions

peripheral terminals and accessories

ADAPTANET®
IP solution

ELETTRA
SUITE

SELEX
Communications
A Finmeccanica Company

The latest Dual Mode TETRA handheld from SELEX Communications the **ElettraSuite PUMA T3 Plus** is a top quality, high performance handset designed for users relying on mission critical communications

Today the communications in mission critical are fundamental in any emergency situation as an incident, natural disaster or in a simple sportive competition, where more actors (such as Police, ambulances, fire brigades etc.) are involved to resolve a critical situation. In this context the reliability of the hand held radio for the communications is vital for coordination. Our help to Customers in these sectors is summarized in the last handheld generation named **ElettraSuite PUMA T3 Plus**. This portable incorporates all TETRA functions available, all security devices and a wide range of accessories. All these things, combined to hard, durable and lightweight structure, easy to use and reliable, make of this handheld the best answer of SELEX Communications to markets needs. In optic of the cost saving and the use in existing analogue PMR network, the PUMA T3 Plus can work also in FM mode.

FUNCTIONS AND FEATURES

Best for data applications

The PUMA T3 Plus, 4 slot data transmission provides maximum TETRA data rate capacity and supports a wide range of data applications. These include file transfer, database interrogation and image transmission to increase the timeliness and efficiency of your operation. Simultaneous voice and data transmission can be carried out using different timeslots.

Easy migration from analogue to digital

Many organisations and businesses can't afford to completely replace their existing infrastructure. The PUMA T3 Plus is unique in the market in its ability to operate in both analogue and digital modes. This enables a smooth and planned migration, without disruption and guaranteed interoperability

with legacy technology. Features supported in conventional analogue mode include:
- Channel spacing of 12.5 kHz and 25 kHz.
- CTCSS tone squelch.
- Selective calls according to the CCIR and ZVEI standards.
- Simplex or semi-duplex operation.

Communicate in security!

Eavesdroppers are always a potential threat. In order to protect the critical speech/data communications and communicate in security, the PUMA T3 Plus in TETRA mode supports a high level of security. It adopts the *Authentication, End-to-End (E2E) encryption and Air-Interface dynamic key encryption.* End-to-End supports specific user algorithms.

Safety first!

For SELEX Communications, the safety of the operator is the first priority. Reflecting this imperative, the PUMA T3 Plus is equipped with an internal *"man-down"* switch. This allows for detection of the angle between the longitudinal axis of the radio and the vertical axis. The radio can be configured to send a message or to automatically launch a predefined call in the event of a man-down detection.

Efficient management of resources

The PUMA T3 Plus radio incorporates the latest high sensitivity *GPS* technology. This offers an accuracy of a few metres for tracing of worker or operational crew.
In order to optimise resources, the device periodically sends accurate position data to ensure assistance in all situations. The transmission protocol for the location data over the air-interface accords with the *ETSI LIP standard.*

PUBLIC SAFETY AND LOCAL GOVERNMENT

Ensuring security and reacting to emergencies depends on reliable and immediate communications. Effective communications are vital for activities as control in public manifestation or sportive event, covert operation, public safety, incident scene or natural disaster (e.g. earthquake) such as resource coordination, agents control and operational support. Thanks to integrated GPS and to "man-down" device, the users security is guaranteed always.
The versatility of PUMA T3-Plus allows the customer to choose the best response in every situations.

TRANSPORTATION

The transportation sector encompasses both public transport and the movement of goods. In public transport (e.g. metro line, bus), the hand held is the ideal solution for voice communications. The private transport in harbor cargo areas or in airports for logistics operations (e.g., luggage or container movement) - communications is supported.

UTILITIES AND INDUSTRY

Companies operating in utilities, power and energy sectors increasingly require secure and reliable voice and data services. Similarly, the real-time management of operational crews, often distributed in a wide area needs to be supported to ensure safe resource optimisation.

Key features

- Integrated GPS for location
- IP Packet data transmissions
- Easy connections of audio accessories
- Designed for used with gloves
- Top safety with man-down switch

Applications

- Police forces
- Local municipal police
- Ambulances and civil protection

Key features

- Best-in-class audio
- Status and SDS messaging
- Integrated GPS for location resources
- Emergency call

Applications

- Mass transit transportation; bus, tramway, metro, driverless metro, etc.
- Private companies of freight movement in port, airport
- Companies for power distribution (power electricity, water, etc.)

Intelligibility in noisy environment

The radio provides a high audio class (1W audio output power) that maintains audio performance in the typical noisy environments where specialist users from industry or public safety operate.

Ergonomic and easily usable in any situation

The PUMA T3 Plus offers *excellent ergonomic use*, unlike most TETRA handhelds on the market. The functional keypad, with wide spacing between keys, allows operation using gloves. The high resolution *colour graphical display* ensures excellent visibility in all lighting conditions. An easy and intuitive navigation menus allows rapidly to all TETRA functions and other customising settings (i.e., font size). Thanks to three types of connections, the PUMA T3 Plus supports the use of a wide range of audio and data accessories. These are:

- A built-in *Bluetooth® technology* for wireless connection of commercial voice and data devices.
- A standard *USB type B socket* (right side of the equipment) for travel charger and data downloading.
- A traditional rugged *IP54 protected connector* (handheld bottom) for connection of high quality accessories.

SELECTION OF THE MAIN TETRA FEATURES SUPPORTED

- Types of calls: individual, group, broadcast, priority and emergency (pre-emptive)
- Short Data Service (status/text messages)
- Up to 4 time slots transmission data calls
- Single and multi slot Circuit and IP Packet Data services
- PABX, PSTN, PDN interconnections
- Direct Mode Operation (also with Repeater and Gateway)
- Security: End-to-End Encryption and Dynamic key "Air interface Encryption"
- Location Services
- TETRA Supplementary Services
- Man-down switch

Data storage capacity

- 1472 TMO/DMO talking 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
- 10 recent received messages.

ACCESSORIES

- Chargers
  - Single and multiple chargers with EU, UK, USA and Schuco plug's
  - Travel charger
  - Car charger
  - USB charger
- Audio accessories
  - Mini lightweight audio kit
  - Neckband headset
  - Throat microphone and speaker
  - Speaker microphone with remote earbud
  - Large PTT
- Cables
  - Data kit and programming cable kit
  - Security data injection kit
  - USB 2.0 - RS232 adapter cable
- Carry case
  - Leather carry case
  - Leather carry case with swivel for shoulder belt
  - Leather belt loop with clip and swivel
  - Leather belt loop with swivel
- 1/4 wave antenna for extended range

TECHNICAL DATA

Functional modes:	• TETRA: Dual-mode trunking or direct, DMO with Repeater 1A and GW • Conventional FM
Frequency bands	350 to 380[1], 380 to 430, 410 to 470, 450 to 472[1], 806 to 870 MHz (only TETRA)
Channel spacing:	12,5 kHz (FM mode), 25 kHz (TETRA/FM)
Duplex spacing:	10 MHz (45 MHz only for 806-870 MHz frequency band)
Modulation:	P/4 DQPSK
Radio specifications:	• ETSI EN 300 394-1, ETSI EN 300 086-1, ETSI EN 300 113-1 and CEPT T/R 2401 Annex II, • TETRA: - Direct mode: compliant to ETSI EN 300-396-3/4/5 - Trunking mode: compliant to ETSI EN 300 392-2 (4 slots to 1W transm. power) • FM: ETSI EN 300 113-2 and ETSI EN 300 086-2
Bluetooth® performance:	ETSI EN 300 328
Output power:	• TETRA: Class 4 (1W) (compliant to ETSI EN 300-394-1) • FM: 1W (compliant to ETSI EN 300 086-1)
Receiver class:	Class A+B (compliant to ETSI EN 300 392-2)
RX static sensitivity:	-112 dBm (typical -114 dBm)
RX dynamic sensitivity:	-103 dBm (typical -105 dBm)
Transmission type:	TETRA; 4-slot data transmission and FM continuous transmission
Dimensions & weight:	(HxWxD) 151x62x40 mm, 340 g. (with battery pack, without antenna)
Power supply:	Li-Ion 2500 mAh, 3.7V
Battery autonomy:	19 h @ 5/35/60 duty cycle (TETRA TMO)[2], 13 h @ 5/15/80 duty cycle (FM protocol).
Power audio:	1W @ 4 Ohm in loudspeaker mode
Electrical specifications:	ETSI EN 300 392-2
EMC specifications:	ETSI EN 301 489-18 (TETRA), ETSI EN 301 489-5 (FM), and ETSI EN 301 489-17 (Bluetooth)
EC marked:	R&TTE directive 1999/5/EC
SAR value:	According to CENELEC EN 62209-1
Data terminal interface:	TETRA Peripheral Equipment I/F (ETSI EN 300 392-5)

(1) available on request
(2) note that the battery duration depends on received signal strength, volume level, use of the display and the backlit keypad.

Environmental conditions	
Climatic condition:	ETSI EN 300 019-1-7 class 7.3 and 7.3i (-25°C to +70°C)
Vibration:	ETSI EN 300 019-1-7 class 7M3 and MIL STD 810 E/F - Method 514.4/5.
Shock:	ETSI EN 300 019-1-7 class 7M3 and MIL STD 810 E/F - Method 516.4/5 Free fall 1 meter height on concrete surface
Dust and rain protection:	CENELEC EN 60529 class IP54
Storage temperature:	ETSI EN 300 019-1-1, Class 1.3 (humidity max. 93%)
Transportation temperature:	ETSI EN 300 019-1-2, Class 2.3 (humidity max. 93%)
Radio conformance testing spec.:	ETSI EN 300 394-1 (-25° to +55 °C)

Security	
SIM card	Integrated
Security support:	Air Interface Encryption, End-to-End Encryption
AIE algorithms:	TEA1, TEA2, TEA3
E2EE algorithms:	AES export/128, custom algorithm (IDEA, AES256, Customer developed up to 256)
AIE security classes:	Class1, Class2 (SCK), Class3 (DCK)

User devices	
Keyboard:	with 12 number keys (0-9 numbers plus * and # keys) western, 3 keys for functions navigation and 2 keys for acceptance/refuse calls (green/red colour). Available on request Chinese, Arabic and Cyrillic languages
Buttons:	ON/OFF, enhanced emergency button, PTT, auxiliary button for configurable functions
Rotary knobs:	One for group selection and audio volume
Display and LED's:	• Colour graphic display compliant with Schengen document SCH 44. Resolution of 128x80 RGB pixels with over 65,000 colours • Two LED's indicates the transmitting and/or receiving status
Connectors:	• SMA/M type for antennas and other in back side for connection to external antenna • one 12 pins connector for professional accessories (IP54) • one mini USB type B for data downloading, audio accessories and battery charge
Internal GPS:	• GPS antenna embedded in TETRA antenna • Protocol: ETSI LIP • 20 channels • -155 dBm acquisition sensitivity • -159 dBm tracking sensitivity • position accuracy 5m

SELEX Communications

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