

Savion⁺

PRODUCT DESCRIPTION & TECHNICAL FEATURES

Handheld Professional Radio for Voice + Data service with MANET Mobile ad-hoc Broadband Network.

Services: Individual Half Duplex Voice Calls with PTT, Group calls, Broadcast Voice calls.
Embedded speaker, phone mic & speaker, headset.
Multiple Packet data sessions, in parallel with voice calls, with Quality of Service via Serial Cable.
SMS Short Message System service with Display and keyboard.

The mechanical enclosure, display, keyboard and knobs are the same of PumaT3⁺.



Neckband headset

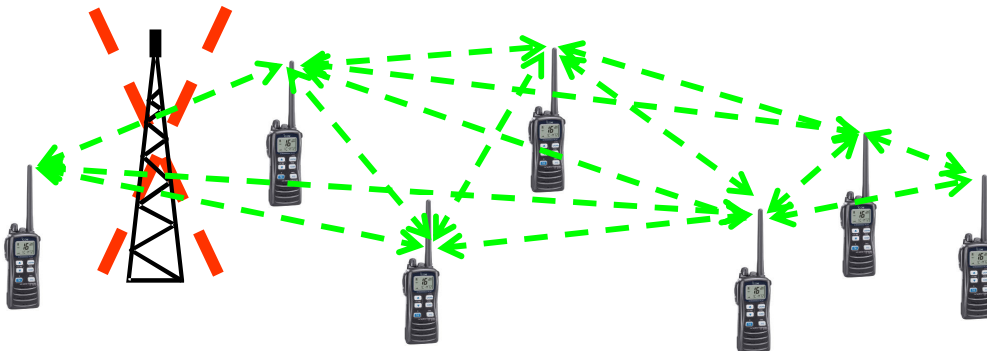
Lightweight and rugged headset with noise cancelling microphone.
ATEX certified
2G EEx ib IIC T4.



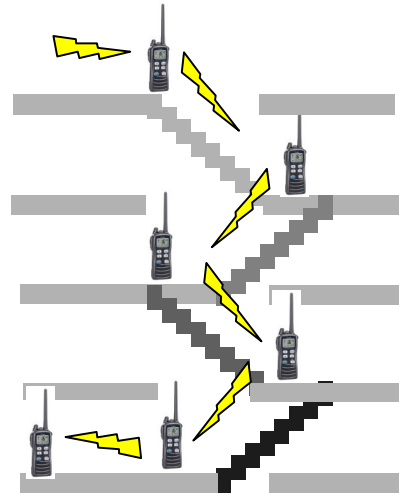
Throat microphone and speaker

Hands-free kit for use with protective masks (e.g. gas or oxygen) and clothing.
ATEX certified
2G EEx ib IIC T4.

Radios automatically create a self-configuring network without the need of any fixed infrastructure nor base station sites. Each unit automatically acts as a relay to other radios if this is required by their deployment pattern and mobility paths.



This MANET architecture provides Low Probability of Detection / Interception (LPD / LPI), long battery life, extended multihop coverage in adverse propagation conditions.



Radios relay calls and data to each other adaptively. Configuration time is less than 0.1 seconds. Relay Handovers of Radio Units from one Relay to another (multi-hop path re-configurations) are seamless, without effect on ongoing voice calls and data sessions.

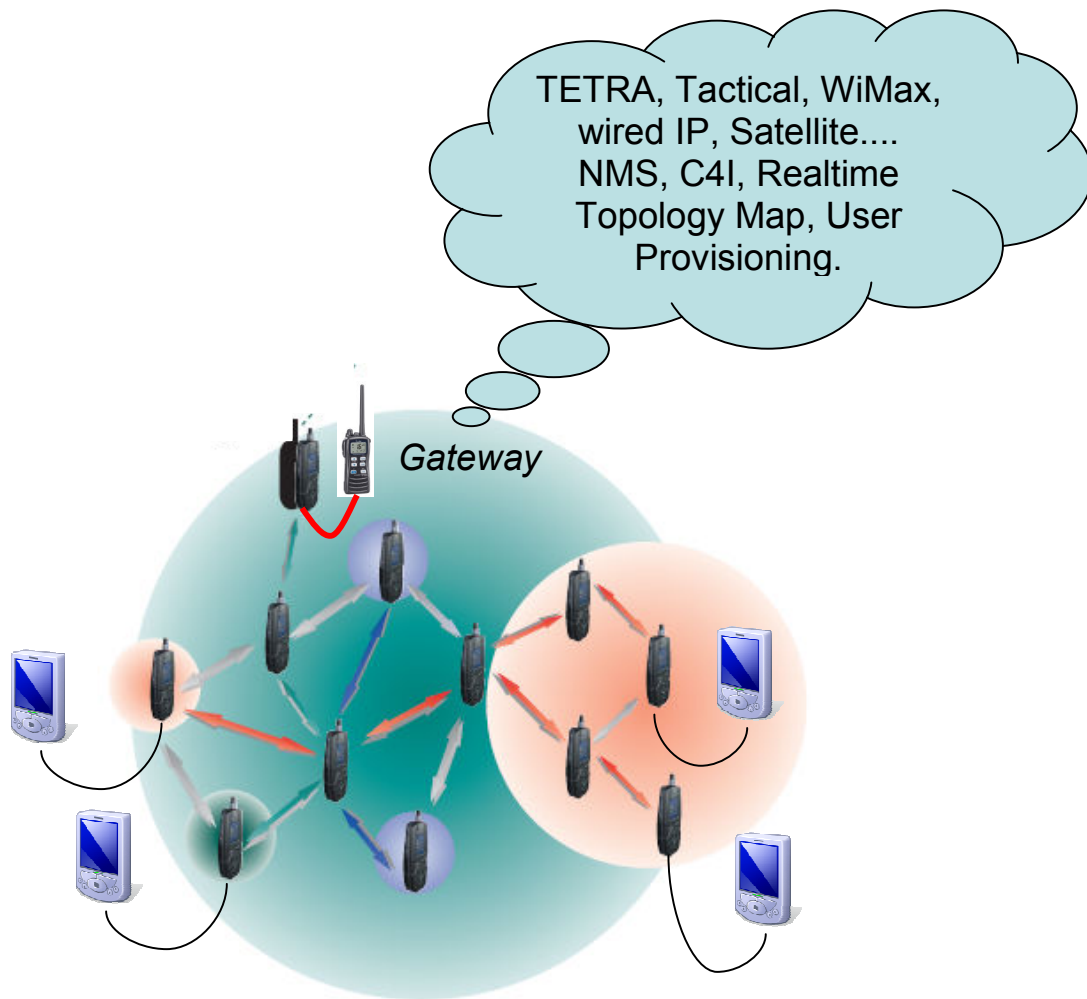
The present working band is Unlicensed 2.4 GHz. The electronic design is modular and programmable, working frequency Bands and transmitted RF power can be adapted to Custom scenarios (e.g. 900 MHz, 225 - 400 MHz).

Network and Radio firmware can be easily updated and upgraded via Serial Data connector.

PC Software can provide Management, Data Transfer and Dispatcher Console functionality via Serial Cable (Standard PumaT3+ connector).

The present MANET Network can be fully integrated to TETRA, WiMax, WiFi, Satellite, Tactical, OnBoard Naval systems into a complete Custom Solution with Voice, Data, SMS Network Management, Service Provisioning and Realtime Topology Maps.

Expected battery life is 12 hrs with 5 % active transmission time.



1. Voice and Data Functionality

Call types:

- Broadcast calls .
- Selective Private calls.
- Group calls.

Data Sessions:

- Packet Data transfers simultaneous with voice calls.
- Multiple private data sessions.

Quality of service:

Priority of Voice calls to packet data sessions.

Overall Network Throughput:	Current Release 1.0	Future Release 2.0
One Hop configuration:	360 kbps	750 kbps
Five Hop configuration:	70 kbps	150 kbps

2. Network features - Current Software version

- Mobile Ad-Hoc Network.

- No infrastructure, no Base Station sites needed.
- Fast automatic configuration of multi-hop links between units.
- 0.1 sec Network re-configuration time.
- Seamless relay handovers of Mobile radios.
- Uninterrupted voice and data Sessions.
- Each Cluster works in one Frequency channel.
- Simultaneous Data / Voice services.
- Serial connector to Palm PC.
- Self configuring multihop network.
- Automatically adaptive number of hops (1 ... 6) according to positions and mobility of users.
- 10 Simultaneous voice sessions in each Cluster
- 10 Simultaneous data sessions in each Cluster.
- 100 registered users in each Cluster.
- Network extension to any external gateway (TETRA, VHF, TCPIP, WiMax, WiFi, Global Satellite) via Serial Link and simple Protocol with integrated voice / data / management services.
- Channel selection.
- Dynamic unit ID's can be freely assigned from embedded Display or external PC via serial Interface.

3. Technical Data

Frequency band	2.4 GHz – 2.485 GHz
Equipment type	Savion ® 2 way radio device
Data rate (max)	30 Kb/s Up to 250 Kb/s
Statistic Rx sensitivity	-92 dBm
Tx output power	70 mW
FSK modulation	512KHz deviation
RF channel bandwidth	2 MHz
Audio max power	1 W into 8 ohms
Power supply	Li-Lon 1800 mAh Li-Lon 2500 mAh
Dimensions (HxWxD) & weight	147 x 62 x 40 mm, 350g including battery, excluding antenna.
Air interface protocol	Maxtech mesh network protocol®
Data terminal interface	RS232

USER DEVICES

Keys	PTT, Pre-defined call key, Emergency call key, 6 x Function / navigation keys, Standard telephone keypad.
Rotary knobs	Volume General function selector.
Display	Black and white, Dot - matrix 128 X 80 with backlight.

4. Environmental and Mechanical ratings.

The units are designed and produced to fit the following final product specifications (to be certified):

- Climatic conditions ETSI EN 300 019-1-7 and EN 300 019-2-7 class 7.3
- Dust and Rain Protection: IEC 529 class IP54
- Storage Temperature range : from -40°C to +85°C
- Transportation conditions (ETS 300 019-1-2 class 2.3)
- Plastic parts: Finishing compliant to SP-92100555.
- Aluminium parts: Colour: black, Paint: epoxy based resin, Finishing: conformal to SP-92100555.

The following ratings need to be verified and certified:

- Vibrations and shock: ETSI EN 300 019-1-7 class 7M3.
- MIL STD 810 E/F – Method 514.4/5 (vibrations)
- MIL STD 810 E/F – Method 516.4/5 (shock)
- Free fall 1 meter height on concrete surface.

Savion+ has the same connector for data, control and will be able to use the same accessories of PUMA T3+, listed below:

Accessories	Audio accessories
<ul style="list-style-type: none"> • Leather Bag (different models) • Shoulder belt • Batteries (also ATEX) • Desktop charger (single and multiple) • Travel and car charger 	<p>A range of audio accessories (also ATEX)</p> <ul style="list-style-type: none"> • Audio Kit • Audio Kit for covert mode • Neckband • Throat Microphone • Remote speaker microphone • earpiece