TETRA

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professional personal communication

T-NEBULA
Transportable TETRA
infrastructure based
on Ethernet / IP

SCN A

POWER SYSTEM A

PSI AC

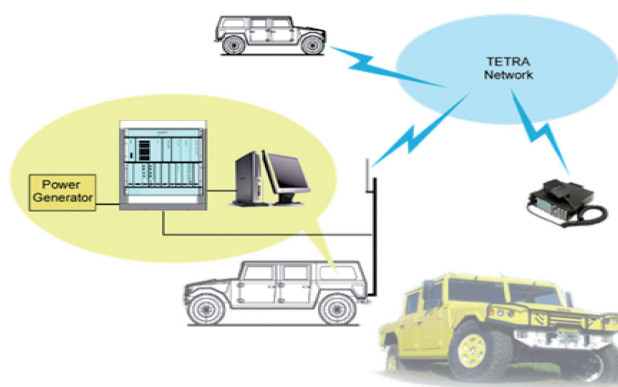teltronic   NEBULA   TETRA

SBS1 A
BSR1

BSR

NEBULA

The deployment of mobile communications systems is becoming a critical necessity for public safety today. A rapid response in a crisis scenario requires flexible solutions with maximum configuration potential and must allow a high density of users.

Teltronic, leader in the development of professional communication infrastructures, presents T-NEBULA, a TETRA system that is fully transportable and quick to install, designed for operation in the harshest of climatic conditions.

Based on the innovative NEBULA system from Teltronic, T-NEBULA adapts perfectly to the needs of each client, whether as an independent system or as a mobile solution connected to a fixed TETRA infrastructure. Its design, based on Ethernet, minimises the size of the central node, allowing a powerful, high capacity solution, which is easy to configure in easily transportable racks.

The flexibility in its design means it can be used in different operating environments:

· It may form part of a special radio communications vehicle, including easy connection to an Operations Centre via Ethernet.
· It may be installed outdoors, in tents or in communications buildings to cover specific needs during events, VIP escort, etc.

The transportable system from Teltronic is fully modular and the different elements of the system are distributed in racks especially designed for easy transport and user-defined configurations.

The main modules are:

· T-PSU (Transportable Power Supply Unit)
· T-BSR (Transportable Site Base Station)
· T-SCN (Transportable System Control Node)
· T-NMS (Transportable Network Management System)

Mobile:

Using a specially approved trailer, T-NEBULA may be easily transported. The trailer is composed of an electro-welded chassis, twin-axle with brake and rubber bar suspension. Inertia lead of up to 3500 kg and electrical installation according to DIN standards.

Self-sufficiency:

The trailer includes a motor-generator set that ensures the system is available at all times:
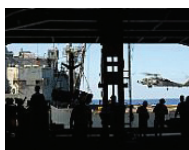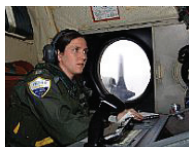
· 6kVA.
· Closed-circuit water cooling of engine.
· Automatic start-up and shut-down system in case of absence/presence of voltage.
· Fuel tank with 70 litre-capacity.
· Well sound proofed.
· An automatic fuel supply system from an external tank.

Maximum coverage:

* 40 W of RF power.
· Telescopic stainless steel mast with load capacity of up to 200 kg.
· Can be lowered to 90° from vertical to facilitate the installation of antennas or radio links.
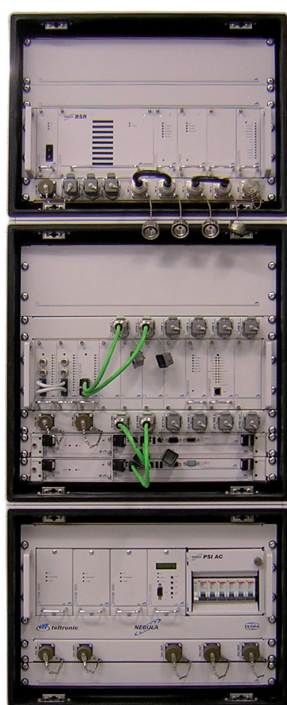
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T-NEBULA incorporates the maximum levels of security:

· Authentication

· Mutual Authentication

· Class 3 air encryption (TEA1,TEA2,TEA3)

· E2E encryption with personalised algorithms for each client.

· OTAR – over the air rekeying

· KMC – Key Management Centre - for secure management of the system keys.

· Management of separate E2E encryption keys that allows it to be managed by independent bodies within the TETRA network.

E2EE

The confidentiality of communication in the system is assured by using the most powerful E2E encryption system on the market:

- Secure design with tamper-proof modules.
- 128 bit key – making intrusion by brute force impossible.

· Voice services supported:
- Individual semi-duplex (TMO/DMO) and duplex calls.
- Group calls (TMO/DMO).
- Broadcast calls.
- Late entry.

· Data services supported
- SDS type 1, 2, 3, 4 with or without TL.
- GPS user positions.

· E2EE telephone gateways: allow secure calls to telephones.

· E2EE line dispatcher gateways: allow secure communications with the Control Centre.

TETRA-Portfolio

Teltronic offers a full range of mobile, portable, and dispatcher radio terminals for voice and data transmision, as well as professional solutions based on TETRA technology.

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Services supported

Mobility management
Registration/De-registration.
Cell reselection (handover).
Security class 3
Authentication (terminal and mutual).
Air Interface Encryption DCK.
Protocols TEA1, TEA2 & TEA3.
Over the air rekeying OTAR.
Enable/Disable.
E2EE, including Line Dispatcher or Telephone Gateway.
Voice services
Individual /Group, Semiduplex / Duplex, PABX/ PSTN,
Normal/Priority/Emergency
Multiple group management.
Main supplementary services:
Dynamic Group Number Assignment (DGNA).
Late Entry(LE).
Ambience Listening (AL).
Calling Line Identification (CLI).
Talking Party Identification (TPI).
Priority Call (PC).
Preemptive Priority Call (PPC).
Call Retention (CR).
Barring of Outgoing Calls (BOC).
Barring of Incoming Calls (BIC).
Data services
Status to individual or group address.
SDS (type 1, 2, 3 & 4) to individual or group address (with or without TL).
Simultaneous Status & SDS data on a voice call.
SCCH Secondary Control Channel.
Circuit Mode Data.
Packet Mode Data.

Main Technical Features

Available Links:
Synchronous:
    - E1(G703/G704), V35, ISDN BRI(S/T), G703 codirectional.
Asynchronous:
    - Level 2: VLAN, WLAN, WIMAX.
    - Level 3: Low level Routers with IRB or L2TP (CISCO routers
      from 1700).
Frequency Bands:
RX/TX: 350-370, 380-400, 410-430, 450-470 MHz (full band switching)
RX: 806 - 825 MHz / TX: 851 – 870 MHz
Processors:
CNC & NMS server: CompactPCI.
Other boards: RISC 32 bits (50 MIPS).
Transmitter (100% duty cycle)
Transmitted power: 40 W (46 dBm). Control from 0,6 to 40W in 2db steps
[32 W for the 350-370 MHz band]
Current consumption per carrier: 200W
Receiver
Receiver Class A. Diversity 2 and 3.
Typical Static/dynamic sensitivity: -117,5/-108,5 dBm.
Internal Synchronisation:
Internal OCXO. Frequency accuracy: 0,2 ppm (11 years maintenance
free)
Gateways
PABX / PSTN telephone.
3rd PARTY PORTAL. Enables connection of 3rd party applications.
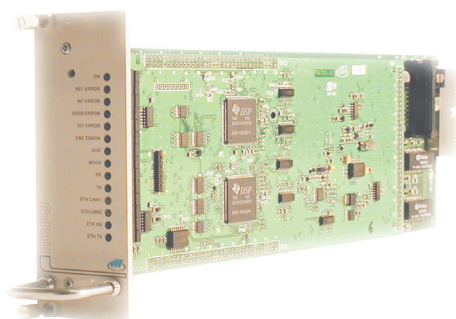Enables voice, status, SDS and packet data.
SMS to GSM.
VoIP for Line Dispatcher.
VoIP for Voice Recorder.
Remote maintenance Gateway.

Teltronic conducts continous reseach and development for all products and therefore reserves the right to modify equipment