M802IP®
Field Deployable System

M802IP® is SITTI field deployable VCS solution belonging to the MULTIFONO® M800IP® VoIP family, explicitly designed for military mobile applications. It is the perfect synthesis between SITTI proven experience in Civil and Military Air Traffic Control (ATC) services and the specific requirements of field deployable systems for "heavy duty" environments. M802IP® is built on the extremely reliable architecture of M800IP® MULTIFONO® VOIP Voice Communication System, and it further emphasizes the characteristics of modularity, robustness and ease of deployment.

M802IP® architecture is based on three main building blocks:

- **Switching Unit** - M802IP® dual redundant Gigabit LAN backbone, built and managed by distributed Switching Units, connected via fiber optic multi-mode links. Two independent LAN switches (powered by independent AC/DC modules) are included in a single 4U-unit, available with 100BASETX or 100BASEFX LAN connections, respectively to Interface Units and Controller Working Positions (CWP).
- **Interface Unit** - Standard VoIP and legacy Radio and Telephone interfaces of many different kinds are provided in a single 8U high subrack, powered by two independent AC/DC modules and connected to M802IP® dual redundant Gigabit backbone via redundant 100BASETX connections. These are some of the available line interfaces (non exhaustive list):
  - **ED137 VoIP Radio and Telephone interfaces.**
  - E1 / QSIG / ISDN BRI / ISDN - PRI interfaces. Analogue telephone interfaces (FXS, FXO, 4W E&M, LB, MFC-R2)
  - Analogue 4W E&M radio interfaces, with UART data interface for radio parameters management (directly from CWPs)
- **Controller Working Positions** - A rugged protective case includes a complete Controller Working Position, composed by 12" resistive touch-computer, binaural headset, handset and loudspeaker. CWPs are powered by an external AC/DC module and are connected to M802IP® dual redundant Gigabit backbone via two redundant 100BASEFX fiber links.

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M802IP® Technical Information

Basic Characteristics

- VoIP Digital Technology
- EUROCAE ED137 Standard Compliant
- Dual redundant Gigabit LAN backbone
- Very high reliability (99.9999%)
- Conformal coated PCBs
- IP65 protection grade / MIL-STD-810F-compliant solution during transfer, with protective case closed
- Elastomeric mounts to absorb shock and vibration
- Operating temperature range: from -20°C to +55°C
- AC input 110 / 220 Vac
- Max Power Consumption
  - Interface Unit 150 W
  - Switching Unit 40 W
  - CWP 40 W
- External dimensions (HxDxW):
  - Interface Unit 506 x 740 x 583 mm
  - Switching Unit 328 x 740 x 583 mm
  - CWP 474 x 149 x 415 mm

Radio and Telephone Remote Gateways (GVS)

- VoIP according to EUROCAE ED137
- Multiple connections from remote VCSs
- Automatic failed radio replacement procedure
- eAudio compression

Analogue Telephone Interfaces

- 2/4 wires in-band + E&M
- Local Battery (LB)
- Central Battery (CB)
- PABX / PSTN / PBX
- Satellite
- MFC R2 + no.5 (analogue)
- DTMF
- IVA20

Radio Interfaces

- VoIP according to EUROCAE ED137
- 4 wires standard E&M analogue links
- E1, Nx64, ATS-QSIG digital links
- In Band Signalling (IBS)
- Phantom Signalling

Digital Telephone Interfaces

- VoIP according to EUROCAE ED137 standard
- QSIG
- ATS-QSIG
- ISDN Primary + Basic Rate
- MFC
- E1
- nx64
- TETRA

Radio Management

- Best Signal Selection (BSS)/Multi-Site Voting
- Delay compensation
- Echo suppression
- Automatic new radio search in case of failure
- Legacy protocols from a variety of different radio manufacturers
- SNMP radio management

M802IP® Usage Scenarios

- Military Applications
- Air Defence Operational Centres
- Navy/Cost-Guard Control Rooms
- Fire Brigades Operations Control
- Police Control Rooms
- Civil Protection and Emergency Control Centres

...wherever secure, reliable, controlled communication is required...

Main Features

Extremely Resistant - M802IP® building blocks are very resistant to impact, shock and vibration, as well as water and dust during transportation (IP65 protection grade with front and rear cover mounted). Wide operating temperature range is granted (from -20°C to +55°C). Printed circuit boards are protected with conformal coating.

High Redundancy - M802IP® utilises SITTI M800IP® MULTIFONO® reliable architecture regarding dual redundant Gigabit backbone structure, as well as for Interface Units and CWPs connections to the backbone via redundant LAN copper or optic links. Interface and Switching Units power modules are independent and duplicated. The unparalleled redundancy criteria of MULTIFONO® line interface are available in the M802IP® field deployable version as well, thus granting very high availability figures (99.9999%).

Easy Deployment and Expandability - The wide use of snap-in MIL connectors and the reduced number of connecting cables between building blocks make M802IP® easily deployable and expandable. All M802IP® building blocks have two recessed wheels and have positive stacking, aligning at the front face.

Wide range of line interfaces and functions - A wide range of line interface modules are available for the Interface Unit building block, together with a large variety of standard features for radio management (Best Signal Selection, Climax, Delay Compensation, Audio Compression, etc..)