

iVIS

Intelligent Vehicle Intercom System

The iVIS (Intelligent Vehicle Intercom System) represents a family of next generation IP based intercom systems and components for use in Military Tactical Vehicles (both Wheeled and Tracked). The system provides intercom services between commander, crew members and vehicle radio systems. The iVIS is a comprehensive solution for in-vehicle voice and data communication, tactical network connectivity and battle management system interoperability.

Designed and tested to meet MIL Standard specifications, the rugged iVIS interoperates with tactical and commercial radios. This enables crew members to communicate with dismounted personnel and other vehicles or command centers through HF, VHF, UHF, IP Radios and satellite communications technology. GVA interface compatibility iVIS is future ready for multi-vendor, multi equipment operation.

As the iVIS is used in high noise environments, it supports Active Noise Reduction (ANR) headsets and robust software-based noise-reduction technologies and algorithms which ensure clear voice and acoustic protection. It is extremely robust, ruggedized, stand-alone system that can operate under severe environmental conditions and provides high reliability.



APPLICATION

- iVIS is designed to meet modern communication needs of combat vehicle crew.
- It is best suited for communication needs of all types of light and heavy combat vehicles like Armored Personnel Carriers (APC) and Main Battle Tanks (MBT).

FEATURES

- Cost effective modular design with scalability.
- IP based broadband voice communication (128 KBps linear PCM codec) and networking.
- Provision of wireless crew units inside a vehicle.
- Supports up to 12 crew members (including Commander) and 8 Combat Net Radios(CNR) and 3 speakers.
- Scalable from voice intercom to large Command Post Networking solutions
- Individual or Central power supply feed to all units.
- Optional independent GVA compatible power supply source for each unit
- User friendly Graphical User Interface (GUI) for programming of various parameters (Optionally APIs).
- Monaural and binaural headsets compatibility.
- Integrated intercom and communication between vehicles.
- Provision of function keypad and Emergency operation control knob.
- Multi-PTT headset compatibility up to 4 PTTs.
- Use of state of art, ANR headsets and regular passive headsets for tactical vehicles.
- All radio ports feature RS232 interfaces for seamless command and control.
- Independent selection and control of radio by each crew member.
- Option of Rebroadcasting of radios in use.
- Wireless/wired connection between vehicles.
- Low power consumption by use of high efficiency power circuit and control circuits.
- Tailored system to fit mission scalability.
- Compact, light weight and rugged design to suit mission critical requirements.
- Option of connecting field telephone.
- Independent operation of all units. There is no master and no slave.
- Power on self test (POST)
- BITE (built-in test equipment) to trace faults to the lowest level.
- Option of interface for vehicle alarms and speakers for voice broadcast

TYPICAL APPLICATIONS

iVIS is a high-performance intercom and multimedia networking system engineered for easy operation and crystal-clear communications. Using Active Noise Reduction headsets, it ensures reliable voice communication inside the vehicle and over radios, while also supporting data exchange, GPS, alarms, and sensors, computer terminals for complete command and control.

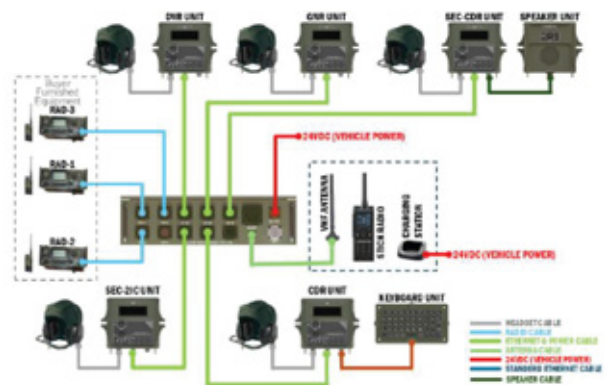
Built with IP/Ethernet interfaces, iVIS connects directly to the tactical internet and supports standard IP-based applications, enabling seamless platform-to-platform communication through networking radios. With the option to integrate a multiport Ethernet switch, it eliminates the need for additional hardware, reducing system complexity.



Designed with a strong focus on customer requirements, iVIS offers flexibility to match specific platform configurations. Its modular and scalable architecture, based on a 10/100Mb Ethernet ring, ensures a high degree of interoperability across Combat Net Radios (CNRs) and other systems. From light armored vehicles to large combat platforms, iVIS provides a cost-effective, mission-ready solution that meets both current and future operational demands.

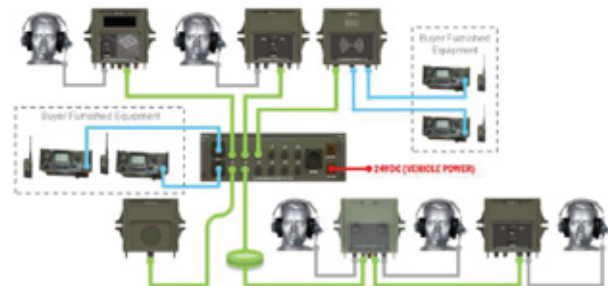
INFANTRY FIGHTING VEHICLE – BMP

- iVIS for a typical infantry fighting vehicle configuration consists of one Commander, two section commander, one driver and one gunner along with three Combat Net Radios (CNR).
- The Central Switch Unit is connected to the power system of vehicle and distributes power to all other connected units.
- All units have independent and full control of CNR connected to the system, including re-broadcast.
- Each crew unit has independent volume control and optional display for desired information like alarms, channel, frequency of operation etc.
- Choice of multiple modes of operations (Programs) along with CNR's channel selection



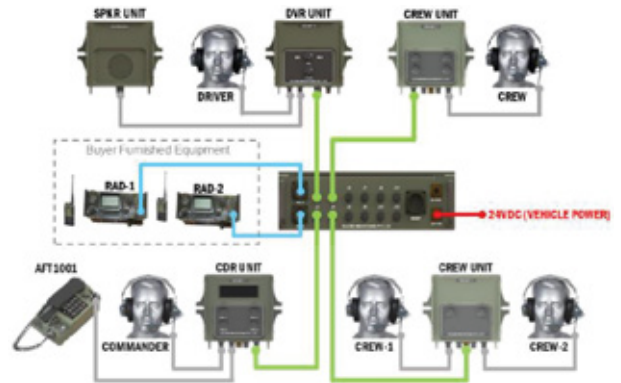
MAIN BATTLE TANKS

- iVIS in a typical battle tank consists of Commander, Driver and three Crew members along with up to four CNRs.
- Vehicle power can be fed to any of units connected in the ring architecture, which in turn feeds power supply to other units.
- Advanced star and daisy chain architecture with no single point of failure.
- No master and no slave.
- Broadband IP connectivity to all nodes.
- Command and control of connected radios.
- Night parking mode of operation.
- Wireless option for communication via Slip-ring.



COMBAT VEHICLE

- iVIS for a typical Combat Vehicle configuration consists of two Commanders and up to 10 Crew members along with up to 6 CNRs.
- The central unit is typically a tactical Ethernet switch supporting Power over Ethernet, which is connected to the power system of vehicle and distributes power to all other connected units.
- Each Commander and Crew unit can drive external speaker and supports interface for vehicular alarms.
- Each crew unit has independent volume control and optional display for desired information like alarms, channel number, frequency of operation etc.



SPECIFICATIONS

Central Switch Unit (CSU)

- Tactical Ethernet switch with up to 6 Ethernet interfaces.
- Ethernet Management port for management.
- Up to 4 no of Radio Interfaces with voice and data connectivity.
- Powered using vehicle power.
- Built-in protections and filters.
- Provision for SPE (Single Pair Ethernet)
- Vehicle Interface RS232/RS485 and CAN
- Connection to alarm sensors (8 inputs)
- Connection to speaker
- Dedicated provision for connecting a VHF/UHF antenna for Stick Radio.
- Provides power and Ethernet of 1 GBPS to all units for operation and data transfer.

User Unit

- 4×20 day visible OLED display.
- Rotary volume control for connected headset.
- Radio Selection knob.
- User login and access control.
- Binaural headset compatibility.
- Additional Function Keypad.
- Additional Run-Time Operations Knob with pre-programmed function.
- Optional provision for connection to speaker or external alarms or additional headset or radio and USB QWERTY keypad.

Speaker Unit

- Option of 4W/8W Speaker
- Volume control for speaker volume
- Provision to connect to any user unit.

Alarm Interface Unit

- Connect alarm sensors.
- 8 inputs for sensors.
- 4 output nodes.
- Compatible with all user units.

Stick Unit

- Binaural headset compatibility.
- Rotary volume control for connected headset.
- Additional Radio Selection knob.
- Extra user option for two user on same stick.

Radio Interface Unit

- 2 radio interfaces supported
- Remote powered (Power Over Data cable)
- Provision for connecting vehicle power
- RS232/485 interface to Radios for command and control

System and Maintenance

- High endurance components with 15-year shelf and service life.
- MTBF > 12000 | MTTR < 6 hours.
- Field scalable using add on units.
- Built In Test Equipment (BITE).
- Power On Self Test (POST) .
- User friendly GUI for setup and maintenance.

Power Supply/vehicle power

- DC In (nominal) : 24V DC.
- DC In (range) : 18-36V DC.
- Standard: MIL-STD-1275.
- Protections : Reverse voltage, short circuit, open circuit, surge, lightning, basic EMP

Mounting and Accessories

- All units can mount directly on the body of the vehicle
- Provision of mounting brackets to fit into existing mounting position

Environmental Compliance

- Operating Temp. : -30 to +60°C.
- Relative humidity : 0 - 95%.
- EMI/EMC: MIL-STD-461E/F.
- Ruggedization: JSS55555 L2H/L2J, MIL-STD-810G

Stick Radio

- VHF/UHF Radio built-in antenna
- Range upto 2000 meters
- Volume control for speaker volume
- Provision to connect to any user unit.



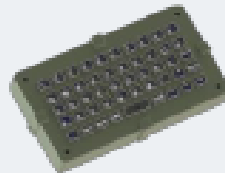
Tactical Headset

- Ruggedized audio interfaces featuring advanced noise cancellation
- Mono/Stereo ANR/PNR variants with bail out.
- 3 Position PTT (On/Off/Momentary)
- Operating noise environment up to 95dBA
- Passive Noise cancelling headset with PTT



QWERTY Keyboard

- Keyboard Unit connects to any User Unit
- Enables sending text messages.
- Features adjustable, dimmable backlighting.
- Multiplexed functions keys with number row.
- Fn keys can be assigned to special functions



Field Telephone AFT1001/IPT1001/HFT1001)

- Compatibility with both Analogue Field Phone (AFT1001) and IP Field Phone (IPT1001)
- MIL Grade CB/LB/Radio/Auto answer modes
- Access to CNRs and Crew members



This publication is not to be regarded as a complete system specification, or to be used as a contract document.

We reserve the right to change the design or specifications without prior notice.

