

AN/VIC-5(V) "Mix and Match" System Architecture

AN/VIC-5's customizable, mix-and match, modular architecture scales to accommodate virtually any platform requirements. This intuitive, flexible approach allows users to combine system components to provide clear, noise-free communications between crewmembers inside the combat vehicle and externally to dismounted users and combat net radios. Selecting from a variety of standard modules enables system scalability to support vehicle command post operations and tactical operations centers with up to 58 users and 16 combat net radios.

	Crew Access		Combat Net Radio Interface			Ancillary Connections					
	Display	1	2	1	2	3	Loudspeaker	Ethernet Interface	Stereo Audio Interface	Single System Power Entry	Alarms
TCC	✓		✓			✓	✓	✓	✓	✓	✓
MCC	✓	✓			✓		✓	✓	✓	✓	
IOS		✓						✓			✓
DOS			✓					✓			
EOS	✓	✓		✓				✓			
DEOS	✓		✓					✓			
RIT					✓			✓			
HDI		✓						✓			
ODI		✓						✓			

AN/VIC-5(V) System Components



TCC – Tactical Control Console



MCC – Mini Control Console



EOS – Single-user Enhanced Operator Station



DEOS – Dual Enhanced Operator Station



IOS – Individual Operator Station



DOS – Dual Operator Station



RIT – Radio Interface Terminal Enhanced for remote radio control



ODI – Operator Dismounted Interface



HDI – Handset Dismounted Interface



General Expansion Unit



Wireless Expansion Unit

The Growing Cost of Auditory Disability for Veterans

An armored vehicle in motion can subject crew members and passengers to average noise levels ranging from 95 dBA SPL to more than 115 dBA SPL, creating the potential for permanent hearing loss. As the chart below illustrates, this issue has been of growing concern as the cost of auditory disability for all veterans has risen exponentially in the last decade.¹

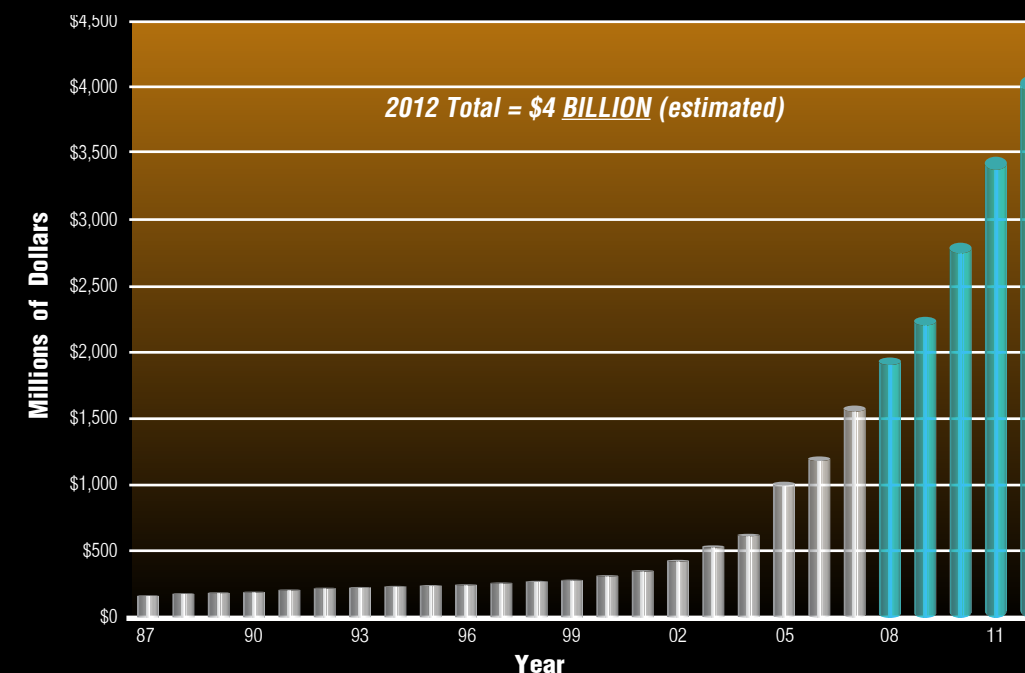
An effective form of protection for crewmembers from high vehicle noise environments can be the intercom headset. VIS-X operates with headsets that incorporate Passive Noise Reduction (PNR) and Active Noise Reduction (ANR) technologies. However, typical passive headsets provide little attenuation at the low frequencies prominent in vehicle noise, resulting in residual noise at the ear as high as 102 dBA. At this level, exposure for only 10 minutes could be hazardous.²

Speech signals are also masked by the noise, making it difficult for crew

members to understand commands. This can lead to re-sends, indecision, mistakes and fatigue.²

To overcome these challenges, NGCI offers a wide variety of VIS-X compatible headsets that incorporate ANR technology. ANR reduces vehicle noise well below the 85 dBA safety threshold, making it possible for the crew to operate safely and effectively for extended periods.

Sources: ¹“VA Service and Compensation Costs: Supporting Readiness For Life” by the National Center for Rehabilitative Auditory Research (NCRAR) and the American Tinnitus Association; ² “Protecting Crew Members Against Military Vehicle Noise” presented by NATO and OTAN at the RTO AVT Symposium on “Habitability of Combat and Transport Vehicles: Noise, Vibration and Motion,” Prague, Czech Republic, October 2004, and published in RTO-MP-AVT-110.



■ Indicates projections based on 2000 – 2008 data from NCRAR and ATA

For more information, please contact:

NORTHROP GRUMMAN

COBHAM

Northrop Grumman Cobham Intercoms LLC
7055 Troy Hill Dr
TH3 Suite 300 - MS 8824
Elkridge, MD 21075
(410) 471-7540
e-mail: vis@ngc.com

Specifications and features subject to change without notice.

AN/VIC-5(V) (VIS-X) Enhanced Vehicular Intercom System



The next generation of reliable, effective communications in any combat environment

AN/VIC-5(V) (VIS-X)

Introducing AN/VIC-5(V) (VIS-X)

Fast, safe, secure and reliable communications are an essential element of mission success on today's battlefield. In response to this need, the U.S. Army awarded Northrop Grumman Cobham Intercoms LLC (NGCI), a joint venture formed between Northrop Grumman and Cobham, with a five-year, plus five-option-year contract to provide the U.S. Army's next-generation vehicular intercom; Vehicular Intercommunication System Extended (VIS-X). Subsequently, the US Army established AN/VIC-5(V) as the official nomenclature for VIS-X.



AN/VIC-5 enables vehicle-mounted troops to communicate faster, safer and more securely even during the most demanding missions.

Key AN/VIC-5(V) System Features & Capabilities

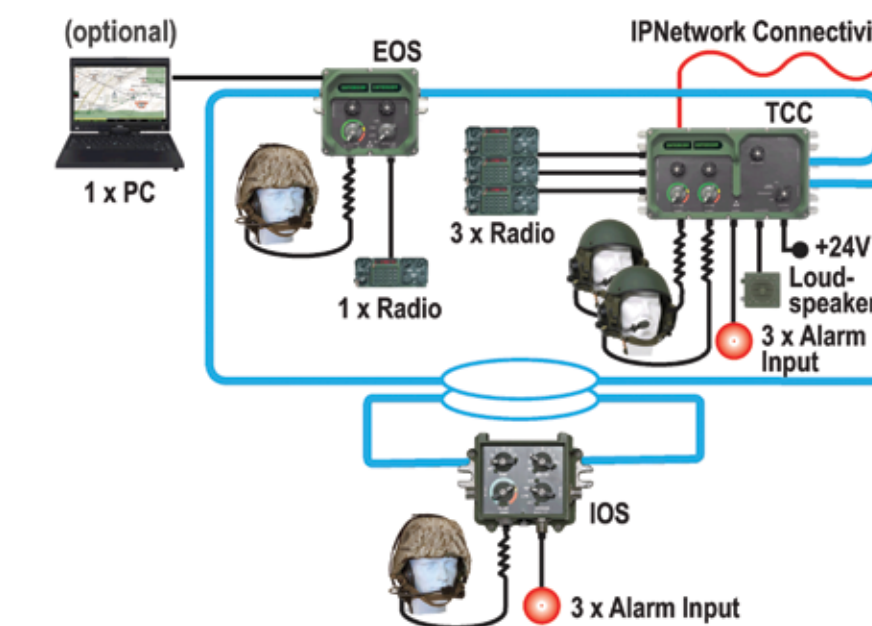
AN/VIC-5 is an integrated intercom system that supports Internet Protocol (IP) and is comprised of a range of control consoles, operator stations, cables and headsets. The system's cost effective modular design, fit-to-mission scalability and enhanced intercom features make AN/VIC-5 the best value for new military vehicle platforms and for vehicle upgrades. New features include:

- Graphical User Interface Support
- Remote radio control
- Embedded Built-in-Test (BIT)
- Multiple CODEC support
- Alphanumeric displays for system setup and control
- Embedded SIP server
- In-field software upgradeable modules
- Binaural headset compatibility
- Ethernet interfaces to support IP-based digital VoIP and IPv4 / IPv6 networks
- Additional radio and headset ports support up to 58 users and 16 combat net radios

Configurable, Modular System Architecture

AN/VIC-5's modular architecture is comprised of one Tactical Control Console (TCC), one Enhanced Operator Station (EOS), and one Individual Operator Station (IOS). Using only three system modules, this system provides the following capabilities:

- Ports for connection of CNRs (4)
- Turret and chassis alarm inputs (6)
- Programming of all system parameters
- Headset connections (4)
- Loudspeaker connection (1)
- IP connection to external network or other AN/VIC-5 equipped vehicles



Example of four-crew, four-radio system configuration

Customer Support Services

NGCI supports the government and OEMs by providing field-proven products and services to meet the full spectrum of your vehicle intercom system needs. Additionally, NGCI has an established relationship with Tobyhanna Army Depot (TYAD), part of the U.S. Army's Communications Electronics Command (CECOM) Life Cycle Management Command, and the largest, full-service electronics maintenance facility in the U.S. Department of Defense. The combined resources of NGCI and TYAD are able to provide parts and services including:

- Established Army Repair Depots
- Full NSN, nomenclature for VIC-5 system components, cables and installation kits
- Vehicle surveys
- Fully equipped vehicle system kits
- Integrated logistics support (ILS)
- Installation and design support
- Operator and maintenance training
- Depot repair
- Equipment spares
- Technical publications

Proven Reliability and Advanced Communication Technology for Today's Warfighter

AN/VIC-5(V) Intercom System Highlights

Backward Compatible With AN/VIC-3

AN/VIC-5 modules are form, fit and function replacements for AN/VIC-3 modules, allowing for module-to-module insertion or replacement without changing interconnecting cables. AN/VIC-5 also utilizes existing

AN/VIC-3 and LV-2 headsets and mounting hardware to minimize installation and lifecycle support costs.

Increased Functionality Through Module Insertion

AN/VIC-5 modules offer customers increased functionality compared to the AN/VIC-3 and LV-2. This provides current customers with an easy upgrade path via module insertion for increased functionality and continued support over the system's life cycle.

New and Enhanced Intercom Features

AN/VIC-5 modules provide new enhanced features required to meet the requirements for new vehicles and vehicle upgrades. Control consoles and operator stations enable users to leverage new features including Internet Protocol (IP) based communications & networking, remote radio control and connection to numerous cordless devices.

Future-proof Design

AN/VIC-5 incorporates an Ethernet Interface on all control consoles and operator stations, enhanced micro-processors, increased system memory, multiple CODECs, Gbit Ethernet and software upgradeable modules to provide additional communication capabilities and enable tailored future technology insertion based on the evolving needs of users.

Established Service and Support Infrastructure

NGCI has an established relationship with Tobyhanna Army Depot (TYAD), part of the U.S. Army's Communications Electronics Command (CECOM) Life Cycle Management Command, and the largest, full-service electronics maintenance facility in the U.S. Department of Defense. The combined resources of NGCI and TYAD ensure the AN/VIC-5 is fully supported over the products life cycle.

AN/VIC-5(V) System Modules & Features

AN/VIC-5 is available with a variety of control station and operator station modules. These modules enable users to scale the system to meet mission requirements and provide access to AN/VIC-5's advanced features.

- Selective calling feature enables calling to individuals or groups
- Live / VOX / PTT selection
- Radio port with RS232 for serial control of radios
- Alarm port (IOS only)

Control Station Features Include:

- Centralized system power supply
- Programming of all system parameters
- Embedded crew stations
- Daylight-readable and NVG-compatible LED displays
- Ethernet connection for system programming and connection of a Graphical User Interface (GUI)
- Embedded SIP server for VoIP

Crew Station Features Include:

- Choice of single- or dual-user variant
- Ethernet / RS232 connection
- Daylight-readable and NVG-compatible alphanumeric LED displays (enhanced crew stations)

Radio Interface Terminal

The radio interface terminal (RIT) enables system scalability by adding two additional radio ports. The RIT also provides two RS-232 connections to enable the radios to be remotely controlled from peripheral devices or a graphical user interface (GUI).



A Partnership Built on Legacy of Proven Performance

Northrop Grumman Cobham Intercoms (NGCI) is a joint venture between Northrop Grumman and Cobham Defense Systems and brings together two of the most trusted names in vehicle communication systems.

With a combined 125,000 systems in service globally, Northrop Grumman and Cobham are recognized market leaders in Vehicle Intercom Systems.

Understanding the need for reliability, quality and performance in the field, the companies have built a reputation as global leaders in digital vehicle intercom systems (VIS). Combined, Northrop Grumman and Cobham have designed, developed and delivered more than 125,000 vehicle intercom systems to customers around the world.

The companies' integrated family of VIS products provides effective, reliable and trusted command and control solutions for a wide range of platforms and configurations, from light vehicles to tactical operation centers and command posts.

Superior Reliability

The unique ring architecture of NGCI's Vehicle Intercom Systems provides dual paths for both signal data and power. This built-in redundancy results in superior reliability in the event of electronic or battle damage.

