

# AN/VIC-1(N)<sup>®</sup> Vehicular Intercom System

NAPCO's new AN/VIC-1 (N)<sup>®</sup> Vehicular Intercom System is a cost effective, solid-state electronic and directly interchangeable upgrade of the original AN/VIC-1 Intercom System.

- Improved Reliability & Sound:** State-of-the-art, solid-state electronic design provides exceptional audio performance and increased MTBF (Mean Time Between Failure).
- Active Noise Reduction (ANR) Ready:** The AN/VIC-1 (N) incorporates the latest noise canceling technology when used with ANR headsets. The ANR interface provides exceptional speech intelligibility by canceling ambient noise and protecting vehicle crewmembers from long-term exposure to damaging acoustic levels.
- Fully Compatible:** The AN/VIC-1 (N) is fully compatible with the original AN/VIC-1 system, accessories, mounts and cables. It combines the same reliable design and construction characteristics of the original system - providing similar resistance to harsh battlefield conditions and environmental extremes - with the latest solid-state technology.

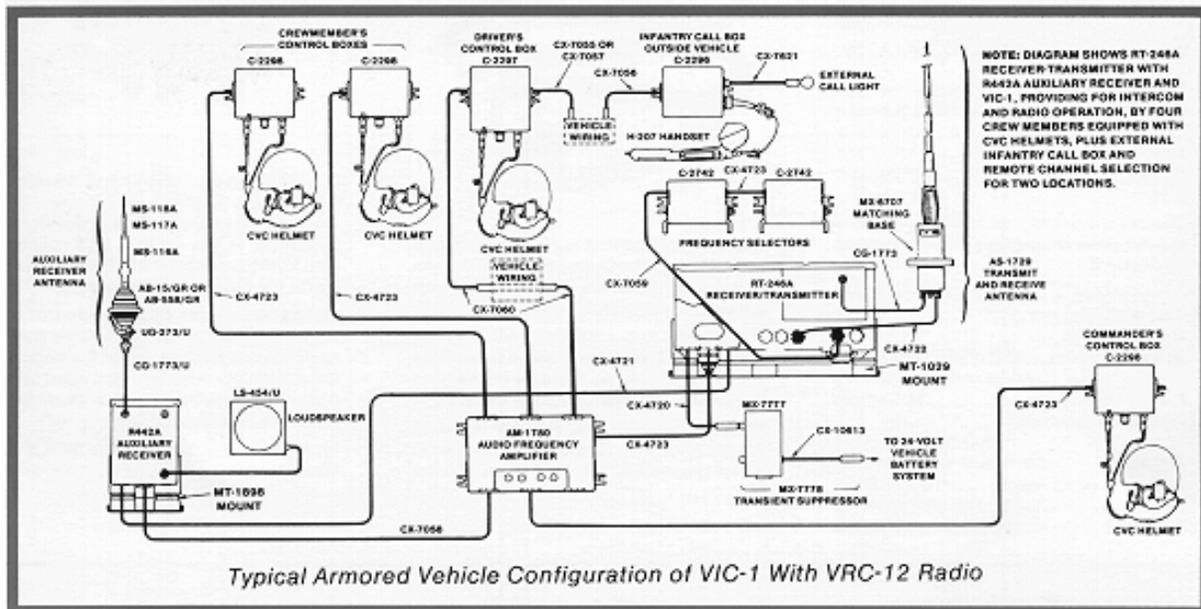


Photo: NAPCO International Inc.

The AN/VIC-1 (N) can be deployed in all vehicles where the original AN/VIC-1 is used, as well as others. The number and types of controls are dependent upon the type of vehicle and the desired operational functions.

## SYSTEM CONFIGURATION:

Typical Armored Vehicle Configuration



## SYSTEM COMPONENTS:

**AN/VIC-1 (N)<sup>®</sup> Vehicular Intercom System** provides voice communication to a maximum of five (5) crewmembers. It consists of the following components:

### AM-1780/VRC (N)<sup>®</sup> AUDIO FREQUENCY AMPLIFIER



Photo: NAPCO International Inc.

The AM-1780/VRC (N) Audio Frequency Amplifier is the main function box for the Intercommunication System. It has controls for both power and amplification. It provides connections between the amplifier and the crewmembers' audio accessories. It has a volume control and a radio/intercom selection switch. This unit amplifies intercom as well as received audio signals. It also functions as a main control box and an interconnection junction. As a control box it distributes power for intercom and radio operation, permits transmission by the commander or crewmember and accentuates intercom audio to override the received signal. As a junction box, it connects the radio set and the intercom system.

The AM-1780/VRC (N) is an enhanced solid-state replacement for the original AM-1780/VRC and B version. The redesigned AM-1780/VRC (N) eliminates all mechanical relays providing increased reliability and durability. The AM-1780/VRC (N) has ten cable receptacles located on the top (3), bottom (3) and sides (2). Operating controls – a power indicator lamp - and two pair of external interface binding posts are located on the front.

### INTERCOM SET CONTROL (ISC) C-2298/VRC

The C-2298/VRC Intercommunication Control Set provides radio and intercom facilities for the commander or other personnel in the vehicle. A selector allows reception and transmission on any or all receiver-transmitters in the system. A volume control adjusts the audio level of intercom and received signals

### INTERCOM SET CONTROL (ISC) C-2297/VRC

The C-2297/VRC Control is usually mounted at the driver's position. This box provides communications to the radio set in the vehicle – and with crewmembers inside the vehicle. Its functions are similar to those of the C-2298/VRC, but it also serves as a junction box for the C-2296/VRC. The unit includes a call indicator and means to signal the C-2296/VRC operator.



Photo: NAPCO International Inc.

### INTERCOM SET CONTROL (ISC) C-2296/VRC

The C-2296/VRC Control box is mounted outside the vehicle and provides communications to the radio set in the vehicle and with crewmembers inside the vehicle. The unit includes a connector for a call indicator and means to signal the C-2297/VRC operator. The control box is supplied with an **H-207A/VRC** Handset as part of the unit. Operating controls and two binding posts for connecting a field telephone are located in the front of the box.

## CABLE ASSEMBLY CX-4720/VRC AND CX-4723/VRC

In addition, a special purpose electrical cable assembly **CX-4720/VRC** is used to connect the vehicular power supply to the amplifier and one **CX-4723/VRC** is used to connect the amplifier to each intercom control set. While typically the AN/VIC-1 (N)<sup>®</sup> is used in vehicles, it may be used for non-vehicular installations when the correct DC power source is available. It has two line binding posts that may be used to connect a remotely located telephone or switchboard into the vehicular intercommunication system.

## COMBAT VEHICLE CREW (CVC) HELMET DH-132 SERIES

The **DH-132** CVC series of helmets usually are provided to each crewmember as an integral part of the AN/VIC-1 (N)<sup>®</sup> intercom system. The standard DH-132 and the ballistic version, **DH-132A**, provide protection to crewmen operating the vehicle. Both helmets are compatible with the environment in which they are used so that binoculars, protective masks and vehicle instruments can be used and operated without difficulty.

The helmet assemblies have three main components: shell, energy absorbing liner, and headset/microphone communications kit. With the exception of the ballistic value of the DH-132A, both helmets are identical. Superior noise attenuation and bump protection are assured by the combination of high strength outer shells and an energy absorbing liner that consists of foam sections enclosed in Nomex<sup>®</sup> mesh fabric for comfort.



Photo: NAPCO International Inc.

## ACTIVE NOISE REDUCTION (ANR) CVC HELMET SERIES

Traditional helmets rely on passive attenuation, creating a physical barrier around the ear in an attempt to seal out noise. This works well for high frequency sounds. However, it fails to block the low frequencies of engine noise and other background rumble.

Bose<sup>®</sup> electronic Acoustic Noise Canceling<sup>®</sup> headset technology actively counters this low frequency noise by generating out-of-phase “anti-noise” in the low frequency range. Speech signals are not affected – but since background noise is abated, speech intelligibility is greatly improved.

Measured by the objective method described in U.S. MIL-STD-912, Bose Acoustic Noise Canceling technology provides more than 10 decibels better protection than conventional passive hearing protectors. The result is clearer communications, less fatigue and - ultimately - a more effective military operation.

## ANR CVC HELMET TECHNICAL SPECIFICATIONS:

**Configuration:** Designed for installation in DH-132 liner, CVC helmet.

**Replaceable Units:** System consists of two (2) earcups (left and right sides), cable assemblies for earshell interconnecting, and upper cable to the bailout connector.

**Boom Mic:** M162 with 8” adjustable wire boom.

**PTT:** 3 positions, located on left earshell.

**ANC Switch:** On/Off switch on the right earshell.

**Power:** 16 to 24 VDC.

**Operating Current:** Less than 220 mA peak.

**Noise Attenuation:** 30 dB, A weighted, overall reduction in armor vehicle noise.

**Temperature:**

**Celsius:** -40° to +65° operating, -57° to +71° storage

**Fahrenheit:** -40° to +149° operating, -71° to +160° storage

**Frequency Response:** 300 Hz to 4500 Hz.

**Input Impedance:** 500 Ω

**Sensitivity:** 104 dB SPL for a 1 Vrms input.

**Reliability:** 10,000 hours calculated in accordance with MIL-HDBK-217.

# AN/VIC-1(N)<sup>®</sup> DESIGN SPECIFICATIONS:

## PHYSICAL

	Width	Height	Depth	Weight
AM-1780/VCR (N)	24.76 cm (9.75 inches)	14.60 cm (5.75 inches)	9.52 cm (3.75 inches)	3.17 kg (7 lbs.)
ISC C-2296/VRC	11.43 cm (4.50 inches)	9.52 cm (3.75 inches)	9.52 cm (3.75 inches)	1.02 kg (2.25 lbs.)
ISC C-2297/VRC	11.43 cm (4.50 inches)	9.52 cm (3.75 inches)	9.52 cm (3.75 inches)	1.02 kg (2.25 lbs.)
ISC C-2298/VRC	11.43 cm (4.50 inches)	9.52 cm (3.75 inches)	12.38 cm (4.87 inches)	1.13 kg (2.50 lbs.)

## ELECTRICAL

Power:	24 V dc nominal (dependant upon system configuration)
Distortion:	< 5% @ 600 ohms load
Audio output:	1W
Frequency Response:	300 Hz to 3,000 Hz (± 4 dB)

## ENVIRONMENTAL

Temperature Range:	
Operating	-40° to 68° C (-40° to 154° F)
Storage	-50° to 78° C (-58° to 172° F)
Humidity:	MIL-STD 810
Altitude:	MIL-STD 810
Vibration:	MIL-STD 810
Immersion:	MIL-STD 810
Fungus:	MIL-STD 810
Salt Fog:	MIL-STD 810
Sand and Dust:	MIL-STD 810

## INTERFACE

Input channels:	4
Input impedance:	150 ohms (3 channels)
	5000 ohms (1 channel)
Output impedance:	100 ohms

Address your inquiries to:



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