

WHITE PAPER

AT21201 VCG VOICE COMMUNICATION GATEWAY

Background

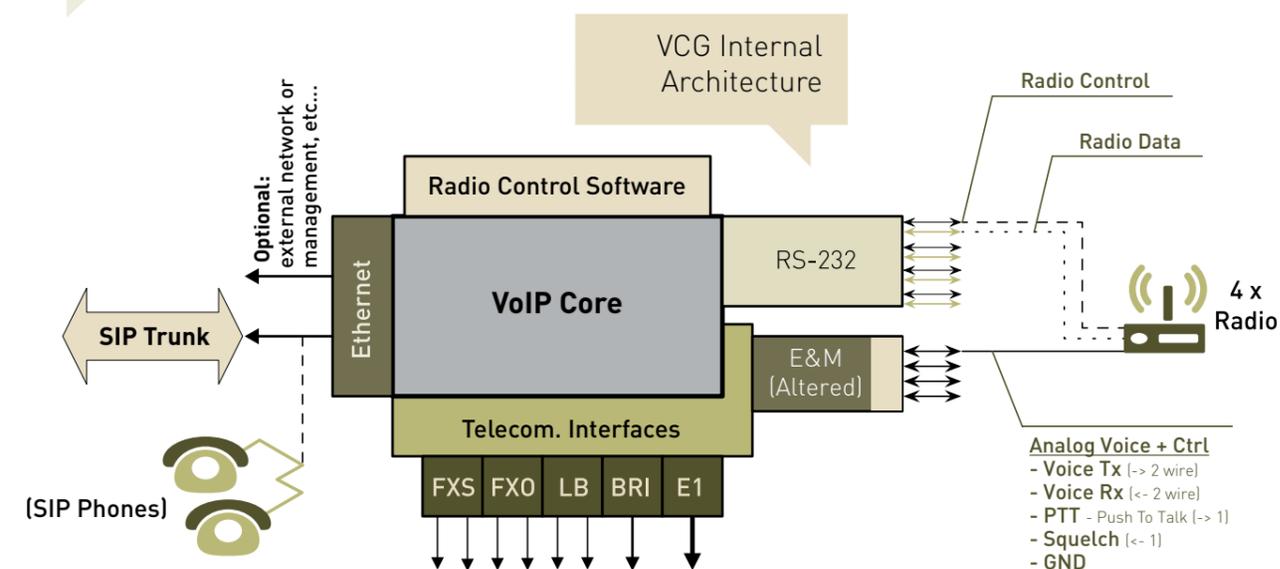
Military operations have been simplified as well as made faster, more agile, effective and combat efficient as a result of the networking of combat/operational area entities. In the area of network enabled operations, commanders and their staffs require fully automated communication with mobile units using radios in the field. Deployment and use of new IP technologies requires their integration with systems based on legacy analogue and digital technologies.



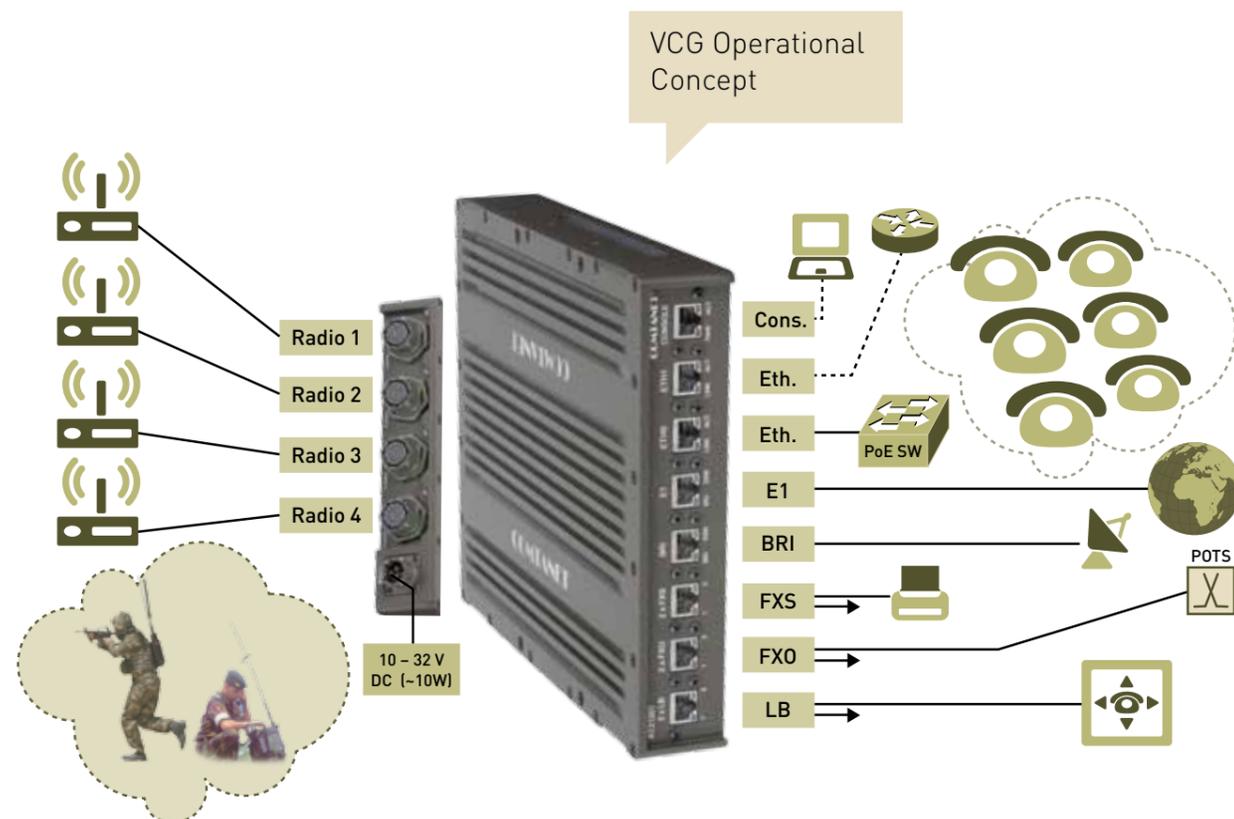
Role of VCG

The VCG is capability, which in one compact device integrates:

1. Private Branch Exchange (VoIP PBX) based upon IP protocol providing voice telecommunication services
2. Voice Gateways (VoIP GW) with broad spectrum of telecom interfaces
3. Radio Gateway (Radio GW) connecting up to four single channel radio stations - CNRI



The VCG design is based on ruggedized COTS technologies. It is comprised of a standard reliable operating system with a VoIP core. Aliter Technologies proprietary software controls the radio communications, which can be tailored to specific customer's requirements and even for different radio systems vendors.



VCG Functionalities

Software Private Branch Exchange (VoIP PBX) provides basic voice and supplementary telecommunication services. Via an IP (Ethernet) interface, it allows connection for 40 local SIP clients. Simple web based interface provides a comprehensive tool for the operators to administrate the numbering plan as well as users' priorities. Moreover, it allows changing parameters for VoIP PBX and VoIP GW.

Voice Gateways (VoIP GW) allow interactivity with non VoIP systems providing a broad spectrum of telecommunication interfaces:

- 2 x FXS analogue telephones or fax units
- 2 x FXO analogue subscriber lines of other switchboards
- 2 x LB analogue telephones or manual switchboards
- 1 x BRI digital line or ISDN BRI (2B+D) terminal unit
- 1 x E1 (2048 kb/s) circuit to other systems = ISDN PRI (30B+D)

Radio Gateway (Radio GW) provides fully automated and unmanned communications from telephone networks to radio networks and vice versa. It enables the control of predefined radio functions (channels, operating mode, selective dialing, etc.) directly from any telephone without the need to have a radio operator present at the radio device. It also allows the automatic calling of telephone users from the radio network using a dial pad of the radio.

In cases where the remote radio does not allow the sending of DTMF tones; the Radio GW will automatically connect the operator that will transfer the call to required user.

The Radio GW enables the creation of the automatic retranslation between any radios connected to the VCG. The basic features of the Radio GW are:

- Basic support for all radios using the voice interface
- Extended support for a number of types of radios
- Connection of more telephone subscribers to one radio
- PTT control (transmission/reception) by DTMF (telephone buttons) or VOX (voice)
- Creation of a connection from the radio network by the preset multiple pressing of the PTT
- Unmanned creation of the automatic radio retranslation
- Voice messages, Time-Out control, etc.

Summary

The VCG is compact (220 x 44 x 260 mm) with a ruggedized MIL-STD 810 compliant design. The device provides a broad spectrum of voice services without the need to use additional servers and network control elements. It provides the radio gateway service in such a unique way

that it is unmatched by any other similar universal device. The basic radio parameters (channel, mode, output power, etc.) can be modified directly from the telephone with no need for a special user application. As an option, the GUI application for Windows can be used as a soft telephone.