

V.150.1 GATEWAY SOLUTION

Intelligent, Any-to-Any Switching, Provides a Cost Effective Solution for Bridging Networks

NET and **General Dynamics** recently conducted an interoperability demonstration, showing 100% inter-working between the Sectéra® line of secure instruments. At the heart of the configuration was the VX secure voice gateway V.150.1 solution, which provides any-to-any switching between SIP, H.323, TDM / PSTN and Analog instruments.

The NET Universal Modem Relay functionality enables secure interoperability between the Sectéra vIPer™ SIP phone and:

- TDM / PSTN based Sectéra vIPer phone
- POTS secure analog phone using the Sectéra WireLine terminal
- Sectéra GSM and Edge Smartphone using the Cellular network

for government entities looking to deploy IP-based voice networks. The systems combine the functionality of a media gateway, call control intelligence, H.323/SIP inter-working device, media server and industry leading secure communications gateway in a single, compact chassis. Backed by a robust suite of security features, the platform supports a wide range of voice and call routing features.

VX Series secure voice gateways enable government agencies to reliably deploy secure communications over an IP network by providing a robust and reliable gateway solution between secure instruments and their technologies. NET's bandwidth efficiency, frame packing techniques, QoS parameters, and the recently added V.150.1 Universal Modem Relay (UMR) support, allow reliable secure phone interoperability between fixed site IP or TDM locations, remote POTS/IP users, or satellite based reachback users. These capabilities, along with support for the DoD's Multi Level Precedence and Preemption (MLPP) implementation provides a comprehensive solution for any government telephony network.

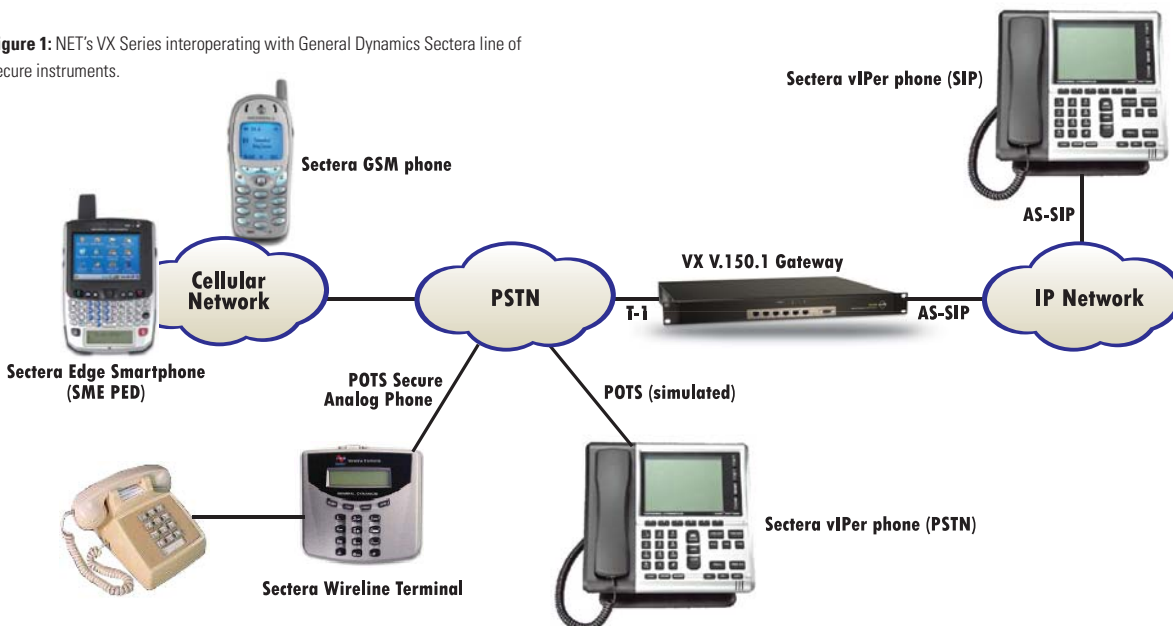
The VX Secure Voice Gateways

The VX Series of secure voice gateways is a scalable and an intelligent VoIP product line from NET. The secure voice capabilities are available on VX400, VX900, VX900T, and VX1800 models. Interface densities range from 4 FXS and 2 Ethernet ports on the VX400 to 24 T1/E1 and 2 Ethernet ports on the VX1800. With a wide range of interfaces and features supported, the VX secure voice gateway is a compelling solution

Secured Communications

NET is an industry leader in providing reliable and efficient transport of secure telephone calls across IP networks. The VX Series gateway's Secure Telephone Unit (STU) relay feature has been providing robust and reliable transport across bandwidth constrained or unreliable IP networks for years. The success of this technology is based on the VX gateway's ability to interact with the modem signals coming from the

Figure 1: NET's VX Series interoperating with General Dynamics Sectera line of secure instruments.



secure device and providing a solution for the fundamental issues that cause problems with carrying modem signals across an IP network.

- **Compression Algorithms.** Modem signals are not designed to be compressed, and doing so will cause modem synchronization problems.
- **Satellite Delay.** The delay inherent to satellite hops causes severe modem synchronization problems.
- **G.711.** A 64 kbps channel will allow a secure instrument to synchronize across an IP network. However, any disruption to the packets or any amount of jitter will cause synchronization problems. In a bandwidth constrained environment, 64 kbps per call is not an option.

The VX secure voice gateway provides solutions for all of these issues, and with the addition of V.150.1 Universal Modem Relay, the gateway can provide interoperability between the newest secure phone technology and the legacy modem based units. VX gateway V.150.1 implementation uses the same proven demodulation / modulation technology, and provides bandwidth optimization, security protection, and jitter management to each phone call.

V.150.1 Universal Modem Relay

V.150.1 UMR is a standards based implementation for carrying any type of modem signal across an IP network. The technology reliably carries modem traffic by using Simple Packet Relay Protocol (SPRT). The V.150.1 specification is an extension of what NET has been doing for years with the VX Series secure voice gateway platform in transporting STU, STE, and FNBT phones

across IP networks. The standard also provides a methodology for inter-working between the newer IP based instruments and the legacy devices mentioned above.

The VX Series secure voice gateway's V.150.1 implementation supports two modes of operation: Modem Relay Mode (MRM) and Pass Through Mode (PTM).

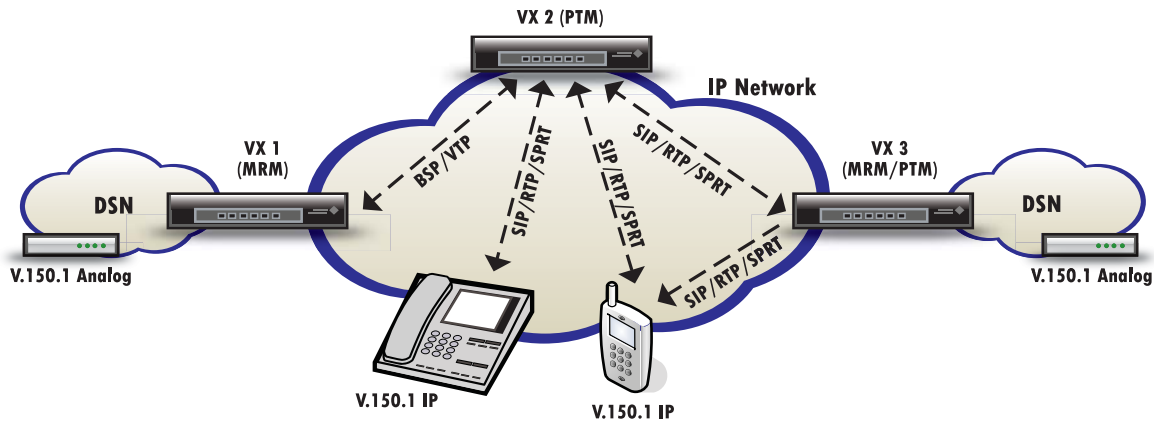
MODEM RELAY MODE (MRM/UNIVERSAL MODEM RELAY)

When working in a Modem Relay Mode, the VX secure voice gateway will perform termination of V.8, V.34, V.34bis, V.32 modulations. The gateway is deployed between DSN or PSTN and an IP network. In this mode, the VX gateway provides interoperability between legacy units like STE (Secure Terminal Equipment), and FNBDT (Future Narrowband Digital Terminal) technology running V.150.1.

PASS THROUGH MODE

When working in Pass Through Mode, the VX Secure Voice Gateway sits in the IP network cloud and acts as a proxy server. In this mode, the VX gateway provides call routing and voice services for V.150.1 compliant IP equipment, as well as transport traffic from VX gateway working as an Universal Modem Relay equipment.

Figure 2: NET's VX Series supporting two modes of operation: Modem Relay Mode (MRM) and Pass Through Mode (PTM)



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