



# IP and Wireless

## Local Loop Bypass Solution for Alarm Systems and Dial Modems

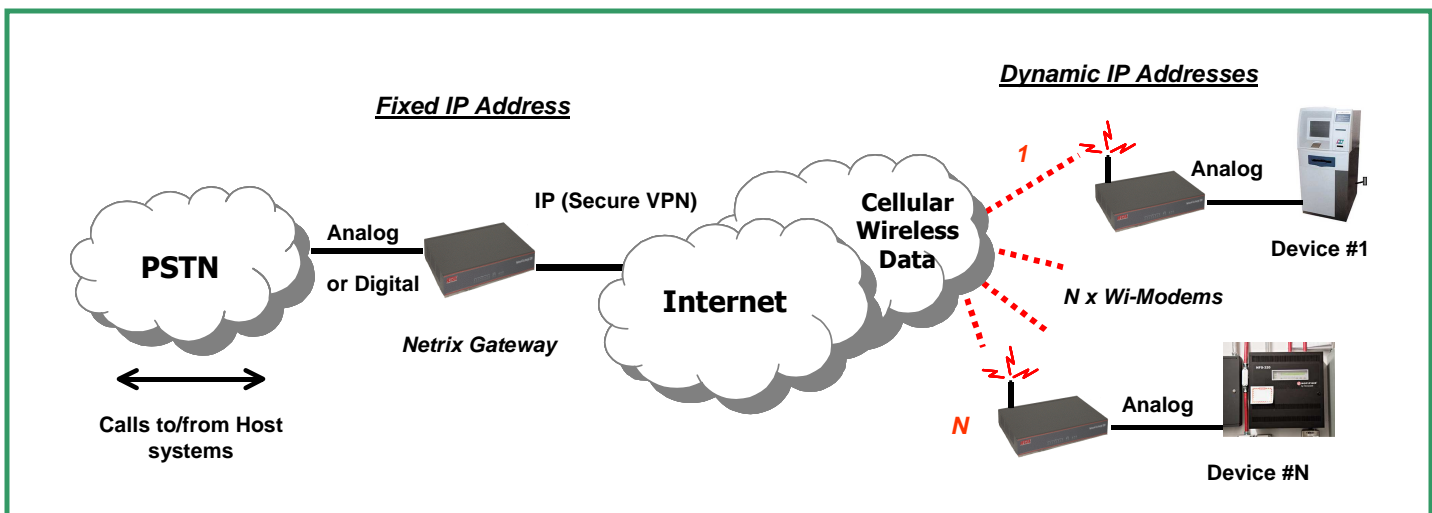
### Description

NSGDatacom's **Wi-Modem** is a low-cost, high-performance, Wireless solution for local loop bypass of dial-up systems with embedded analog modems such as alarm panels, Point of Sale, telemetry, meters, remote medical monitoring terminals and more.

The **Wi-Modem** accepts the analog telephone cable from a standard dial-up device, interprets the dial string and connects over a cellular wireless (M2M) data connection to a **Netrix** Gateway which connects to the PSTN. The need for a physical telephone line connection is completely eliminated at the remote (wireless) end of the link and may be replaced with a substantially more economical IP connection using the cellular data service.

For established applications the **Wi-Modem** can be pre-programmed by the factory for deployment requiring no further configuration by the customer prior to use. The user simply connects the existing telephone cord from the device to the **Wi-Modem**, connects the power supply and the terminal device operates as normal. Should the **Wi-Modem** need reconfiguring it may be securely accessed and remotely managed by the customer or a qualified NSG affiliate.

A typical installation with one **Netrix** Gateway supporting multiple dial devices is shown below.



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### Operation

NSGDatacom's **Wi-Modem** and **Netrix** Gateway are intelligent devices pre-programmed to understand and decode the dial modem protocols being deployed using protected techniques\*. Information passed between the NSG devices is proprietary and highly efficient. The dial protocols supported include many of the standard V-series modem protocols, the Ademco Contact ID (FSK) alarm protocol, Fax, DTMF tones and other customer specific variants.

The **Wi-Modem** unit is available with an embedded Wireless module or can operate over an external IP connection such as an external Wireless router. The **Netrix** Gateway may support a single remote unit or may support many hundreds of remote units, depending on the specific customer application. Both analog and digital (T1/E1) versions of the Gateway are available. The Gateway may be at a location controlled by the customer or at a third party site, such as a CLEC. A CLEC may provide PSTN access with Direct Inward Dial (DID) capability (ie. a unique PSTN number) assigned to each remote. DID capability may only be required if calls are to be made from the PSTN towards the remote wireless units.

### Security

The system operates using a secure system of registration by the remote units with the Gateway upon power up. The Gateway will only initiate or accept calls between itself and known remotes. Each remote has a unique digital certificate for initial verification and a VPN tunnel may be invoked for added security during data transfer.

### Implementation

As described above the remote units may be preprogrammed and installed as simple plug and play devices. However, this assumes that the system has been previously tested and its operation verified by NSG and the customer. Standard dial-up devices will operate with one of the base configurations in the Wi-Modem units. However devices that use modified protocols or other techniques (such as caller ID) to qualify or initiate data transfer may require special configuration or (in some cases) additional customer-specific protocol enhancement. NSG follows a structured plan of implementation outlined below to confirm proper operation in new applications.

1. Initial technical review is undertaken with the customer to determine viability of operation. Mutual understanding/commitment to proceed is agreed based on success of a trial.
2. A trial unit is programmed to operate as required through a temporary Gateway device at NSG. Testing of the trial unit is undertaken with the customer equipment.
3. In the event of a successful trial implementation is confirmed.
4. In the event of an unsuccessful trial, the trial unit is returned with no further customer commitment. NSG may provide a quotation for engineering changes if customization/enhancement is feasible.



\* (Patent #8687650 - April 2014).

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