

Transparent Gateway

The Asvito Transparent Gateway

The Asvito Transparent Gateway (TPGtw) is a cellular TCP/IP based gateway for industrial systems. It uses the Sierra Wireless 2.75G and 3G Fastrack series modems, and the basic feature is to provide a transparent interface between a field device and back end systems, eliminating the need for any other device to control the link.



Gateway operation

The Asvito Transparent Gateway (TPGTW) provides a transparent TCP/IP link between various field equipment and back end servers, eliminating the need for other device for controlling the connection, like a PLS. Field equipment suitable for interfacing are data loggers, alarm systems, GPS devices, device network interfaces, field bus interfaces (CAN, Profibus, Modbus) or any other system which can be connected using data carriers like Ethernet, RS232, I2C, SPI or GPIO.

The default configuration is a TCP / IP client waiting for the field equipment to produce data over the local data carrier (Ethernet, RS232, I2C, SPI or GPIO). When new data are received, the TPGtw will buffer the data and automatically set up a connection to a back end server and deliver the data. The connection is kept open until the communication timeout is reached. The communication timeout timer is reset each time data are sent over the interface, in either direction.

In device server mode TPGtw will buffer any incoming data while waiting for an incoming connection from the back end system. When the connection is established, the data is delivered.

The data is as default sent over a TCP / IP socket connection to the remote servers. If the socket connection fails (e.g. bearer failure), SMS is used as fall back to make sure that the data is sent to the server.

To enable fleet control and remote upgrade of the software, the TPGtw supports a remote AT interface and DOTA (download over the air). The remote AT interface enables remote control of the modem by issuing AT commands. The user is able to execute almost all AT commands defined by Open AT and the application specific commands. Using DOTA the application and the Open AT firmware can be upgraded to support new features without having to send people in the field. The remote AT interface and the DOTA function is initiated using SMS.

Features

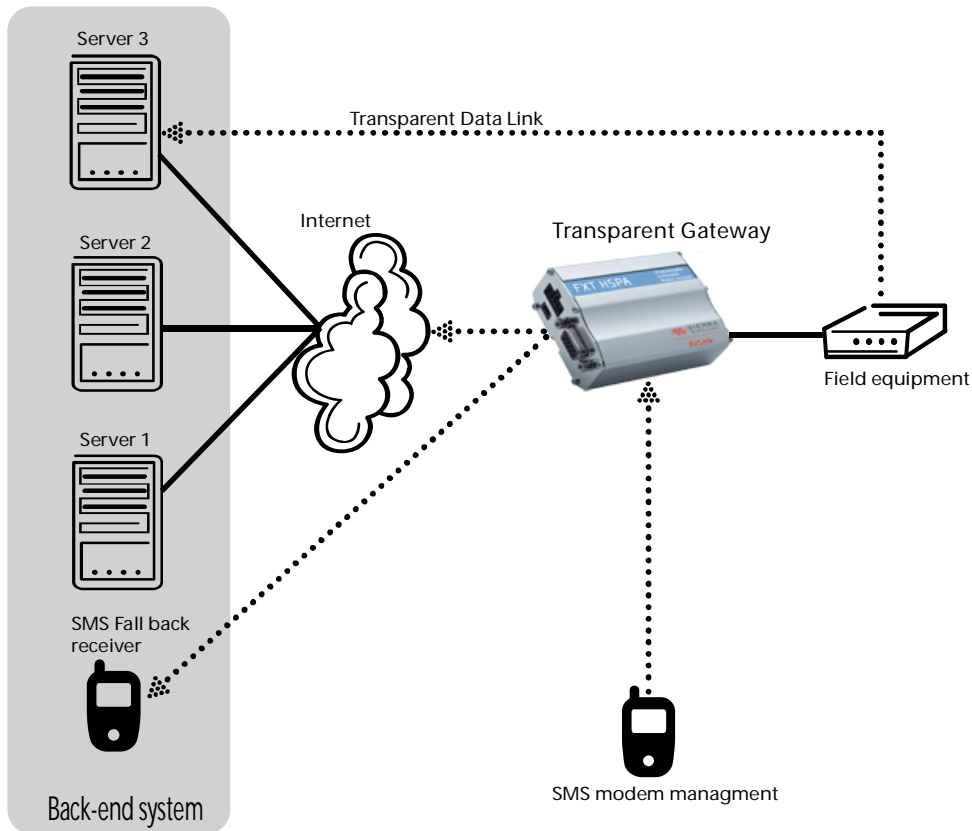
- Multiple cellular interfaces
- Takes full control of the communication
- Binary transparent interface
- Buffering data during glitches
- Supports multiple data carriers
- Advanced cellular interface handling
- Back end server redundancy
- TCP client, server & dual mode
- SMS fallback
- Fleet control
- Extensive user documentation



Supported hardware

- Sierra Wireless Fastrack Supreme 10/20s
- Sierra Wireless Fastrack Extreme
- Sierra Wireless Fastrack Xtend
- Sierra Wireless WMP 100

Transparent Gateway



Technical specification

Wireless band: GSM Quad Band (850 / 900 / 1800 / 1900 MHz)

Processor: ARM 946, 32 bit, 104 MHz, 88 MIPS max

Dimensions: 73x54.5x25.5 (88x54.5x25.5) mm

Operating range: 5.5V to 32.0V

Current consumption: 480 mA average, 2.1A peak at 5.5V

Antenna impedance: 50 Ohms nominal, Gain: 0 dBi, VSWR: 2

Environmental characteristics:
Full performance: -20 to +55 C
Degraded performance: -30 to +85 C
Storage: -40 to 85

Configuration

The gateway application must be configured before the modem device is connected to the field equipment. Parameters which are needed:

- IP addresses of all the supported back end servers.
- Communication port.
- Communication timeout.
- GPRS Bearer settings (APN, APN Username, APN Password).
- Serial line parameters (baud rate, data bits, parity bits, stop bits and flow control).
- SMS Phone number for backup (optional).
- DOTA settings (FTP server, and login)
- Remote AT settings.

Tailoring

The gateway application can easily be tailored to meet specific features, protocols, operation mode or other functionality specified by the customer. For example to send data to several data harvest servers, or other data carrier protocols like FTP, HTTP, WebServices or Mail (SMTP / POP3).

Highlights

- Supports any field device using a serial line
- Highly suitable for field equipment with no or limited programming support
- Have complete control over the connection
- Just fit it the modem directly to the equipments serial port
- Can be delivered preconfigured with **your** settings