![SSV logo]

AT MODEM EMULATOR
IGW/936-L-MOE

- ✔ **Embedded Linux**
- ✔ **AT Modem Emulator Software**
- ✔ **1:1 Modem/CSD Replacement by IP**
- ✔ **OpenVPN Client and Server**
- ✔ **Firewall with NAT Support**
- ✔ **12 .. 24 VDC Power Supply**
- ✔ **DIN-rail Mounting**

AT Modem Emulator Gateway with LTE Router

The classic analog- and ISDN phone lines as well as the 2G- and UMTS data services are gradually turned off and switched to IP-based lines.

Many countries already turned off or plan to turn off in future. To allow an easy 1:1 replacement the AT Modem Emulator Gateway IGW/936-L-MOE enables existing modem communication applications to interact over local IP networks or VPN (Virtual Private Network) secured Internet connections instead of dialing a telephone number.

The IGW/936-L-MOE **fully replaces the modems** on both sending and receiving side and allows the further usage of applications working with AT command-based communication or CSD calls.

On the sending side, it maps a phone number with an IP address and connects to the remote side via LAN or Internet. On the remote side it detects the incoming connection and emulates an incoming call to turn the received AT commands to a ma-chine like a real physical modem.

So instead of direct phone calls the LAN or Internet can be used to connect regular communication software.

For the fast and simple integration into existing network environments the IGW/936-L-MOE also offers **AutoIP** and **UPnP**.
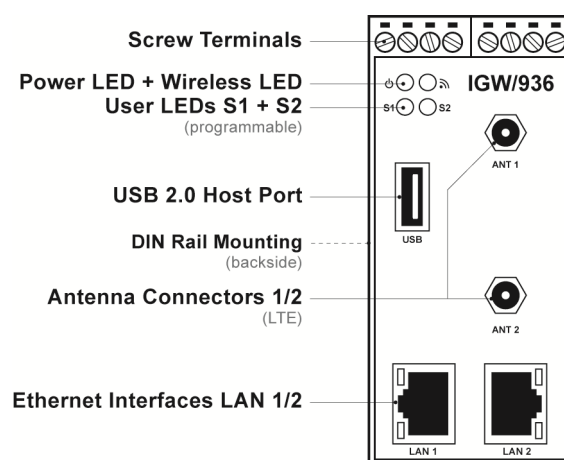
Safety & Security

To ensure the highest level of safety and security the IGW/936-L-MOE offers many integrated security functions like **OpenVPN, OpenSSL** (incl. SSL/TLS), **Firewall with NAT** support as well as **SSH**, which protect local Ethernet networks from unauthorized remote access.

All the software features of the IGW/936-L-MOE including the AT Modem Emulator settings are easily configured with the **SSV/WebUI** configuration tool with a standard web browser.

SPECIFICATIONS

Processor	
Manufacturer / Type	Texas Instruments AM3517 32-bit ARM Cortex-A8 SoC
Clock speed	600 MHz
Memory	
RAM	256 MB SDRAM
Flash	1 GB NAND memory, 8 MB NOR memory
Storage media	1x internal microSD card holder
Interfaces	
Ethernet	1x 10/100/1000 Mbps with Auto MDI-X (LAN 2, RJ45)
	1x 10/100 Mbps (LAN 1, RJ45)
USB	1x USB 2.0 Host
Serial I/Os	1x RS485 serial port (screw terminal)
	1x RS232/RS485 serial port (screw terminal)
Antenna	2x SMA female (bulkhead) connector
Special Functions	
RTC	1x Real Time Clock
Watchdog	1x Timer watchdog (hardware-based, software-configurable)
	1x Power supervisor (hardware-based)
SIM card	1x Mini-SIM card holder (accessible from the outside)

OVERVIEW

Screw Terminals
Power LED + Wireless LED
User LEDs S1 + S2 (programmable)
USB 2.0 Host Port
DIN Rail Mounting (backside)
Antenna Connectors 1/2 (LTE)
Ethernet Interfaces LAN 1/2

Wireless Module	
Mobile radio standards	GSM/UMTS/HSPA+/LTE
Transfer rates	150 Mbps peak download, 50 Mbps peak upload
Frequency bands	LTE: 2600 MHz (B7), 2100 MHz (B1), 1800 MHz (B3), 900 MHz (B8), 850 MHz (B5), 800 MHz (B20)
	WCDMA: 2100 MHz (B1), 850 MHz (B5), 900 MHz (B8)
	GSM/GPRS quad-band 850/900/1800/1900 MHz
Authentication	PAP, CHAP, CHAT, none
Supported APNs	Telekom, Vodafone, O2, E-Plus, user-defined

Software	
Operating system	Embedded Linux
Web server	lighttpd with SSL support
Programming environment	Python, PHP, Node.js, Java (JamVM 1.5 + Classpath 0.98), Bash
IP address assignment	Static, DHCP, AutoIP, UPnP
Protocol stack	ARP, ICMP, IP, TCP, UDP, Telnet, FTP, HTTP, TFTP, Modbus TCP/RTU (server + client), MQTT, OPC UA, M-Bus, ACCON AGLink
Security protocols	SSL/SSH, HTTPS, TLS 1.2, OpenVPN, IPsec
TCP servers	Telnet, (S)FTP, TFTP, HTTP
Firewall	netfilter + iptables
Proxy functions	HTTP(S), FTP, Telnet, SSH, generic TCP port mapping
Configuration	SSV/WebUI
Internet of Things Tools	Node-RED + SSV Smart Connection Nodes (optional)
	Node-RED + SSV IEC Remote Control Nodes (optional)
	Node-RED + SSV VHPready 4.0 Nodes (optional)
Miscellaneous	DynDNS support
	Firmware update over WebUI
	IEC 61850 / 60870-5-104 protocol support (optional)

Displays / Control Elements	
LEDs	1x Power
	1x Wireless
	1x System status (programmable)
	1x VPN status (programmable)

Electrical Characteristics	
Power supply	12 .. 24 VDC from external power supply
Power consumption	< 15 W

Mechanical Characteristics	
Protection class	IP20 industrial case for 35 mm DIN-rail mounting
Mass	< 270 g
Dimensions	112 mm x 100 mm x 45 mm
Operating temp.	0 .. 60 °C

Standards and Certifications	
EMC	CE
Environmental standards	RoHS, WEEE
Industrial standards	VHPready (Virtual Heat & Power Ready)

Order information	
Order number	PX-87923

USE CASE
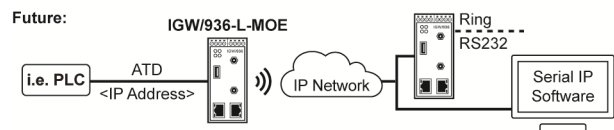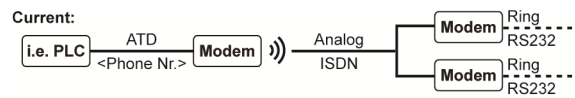
Replacing analog modems with the IGW/936-L-MOE

SCOPE OF DELIVERY

- 1x AT Modem Emulator Gateway IGW/936-L-MOE
- 1x LTE/UMTS/GSM magnetic base antenna with 3 m cable
- 1x Null modem cable MOE
- 1x USB-to-Serial adapter

STARTUP PACKAGE (OPTIONAL)

- 1x Plug-in power supply
- 1x CD-ROM

PRODUCT VARIANTS

- Customized variants with preinstalled configuration and/or individual case design on request.

SIMILAR PRODUCTS

- AT Modem Emulator Gateway IGW/922-MOE
- AT Modem Emulator Module DIL/NetPC DNP/9265-MOE
- AT Modem Emulator Module incl. Socket-Modem-Adapter DIL/NetPC DNP/9265-SMOE

COMPATIBLE PRODUCTS

- A/D-Extension IO/5640

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