

SECURITY IN IOT PRACTICE

BASED ON GWG TRUSTED PLATFORM



This is Geneko response to the challenges that it brings global networking of traditionally dumb or non-internet-enabled physical devices and everyday objects in the modern IoT world. In the development of this device, the absolute primacy is given to the application of state-of-the-art security solutions. It should be emphasized that it takes care of the security of the system as a whole, throughout the complete product life cycle.

Geneko GWG-T Gateway is compact and cost effective communications solution that provides cellular capabilities for fixed and mobile applications such as data acquisition, smart metering, remote monitoring, traffic control and management. GWG-T allows users to create their own applications and add functionalities that they need.

GWG-T supports a variety of radio bands options on 2G, 3G and 4G cellular technologies. It is reliable solution thanks to high performance hardware platform and VPN/Security powerful options. When coupled with the rich embedded intelligence, it is the perfect choice for a broad set of M2M solutions.

GWG-T comes with numerous connectivity options and multiple configuration methods. It allows you to connect your existing Ethernet and serial devices using basic configuration. Its small size and easy installation makes it suitable for challenging and size-constrained applications. GWG-T Gateway can be used on either desktop or mounted on a DIN rail.

Advanced security is provided by:

- **Secure Boot**

Prior to its execution a boot file stored in an external Non Volatile Memory is authenticated and deciphered - only authorized software is executed on the device

- **Ability to authenticate itself when connecting to the network**

Device identity guaranteed by Hardware Root of trust, secure key storage and certificate management

- **Powerful hardware crypto engine**

SHA512, AES: 256, TDES, True Random Number Generator

- **On-the-fly AES encryption/decryption on RAM**

- **Secure data storage**

Local file system is encrypted

- **Physical attack detection**

Tamper proof protection

- **Prevention of information leakage during code execution**

- **Securing access to memories and sensitive peripherals**

Features

- Compact, cost effective communication solution
- Cellular capabilities for M2M applications
- Support for remote Management and Monitoring
- Reliable, high performance solution
- Small-sized, convenient for easy installation and rapid deployment
- Multiple configuration methods, including web/serial console and Telnet
- Numerous connectivity options: Ethernet, RS-232, RS-422/RS-485, USB, 2/2+1/1 Digital I/O, Analog input
- 1-wire interface on GPIO connector
- Chroot environment allows the user to write scripts and adapt and develop existing functionality

Typical application

Data collection and system supervision

- Monitor and control environmental conditions
- Remote control of devices
- Extra-high voltage equipment monitoring
- Running water, gas pipe line supervision
- Centralized heating system supervision
- Environment protection data collection
- Flood control data collection
- Alert system supervision
- Weather station data collection
- Power Grid
- Oilfield
- Light Supervision
- Solar PV Power Solutions

Financial and department store

- Connection of ATM machines to central site
- Vehicle based bank service
- POS
- Vending machine
- Bank office supervision

Security

- Traffic control
- Video Surveillance Solutions

Other

- Remote Office Solution
- Remote Access Solution

Technical specifications

Interfaces and connectors

RF Characteristics - 4G LTE model (Category 4)

LTE FDD/TDD

- 800/850/900/1800/2100/2300/2500/2600 MHz
- Transfer rate (max): 150 Mbps down, 50 Mbps up

WCDMA/DC-HSPA+

- 850/900/2100 MHz
- Transfer rate (max): 42 Mbps down, 5.76 Mbps up

GSM/GPRS

- 900/1800 MHz
- Transfer rate (max): 85.6 Kbps down, 85.6 Kbps up

RF Characteristics - 3G HSPA+ model

UMTS/HSPA+

- 900/2100 MHz
- Transfer rate (max): 14.4 Mbps down, 5.76 Mbps up

GSM/GPRS/EDGE

- 850/900/1800/1900 MHz
- Transfer rate (max): 384 Kbps down, 384 Kbps up

Important note: All DL/UL speeds are given as speeds defined by standards. Actual speeds may vary and are not guaranteed.

Host Interfaces

- 10/100 Base-T RJ45 Ethernet
- RS-232 serial port, DB9 connector
- RS-422/485, 4 wires, Full-Duplex/Half-Duplex, Phoenix 1844249 connector
- USB 2.0 Mini-AB connector
- 1 or 2 SMA antenna connectors (depending on the GWG-T model)
- Mini-SIM slot (2FF), Hinge

Digital Input/Output (available on GPIO Connector)

- Digital Inputs/Outputs: 2 user selectable input or output
- Digital inputs: internal weak pull-up, active when pulled down to GND
- Digital outputs: open-drain, 4-28V, no over-current protection
- Pinout: 1: +9..36VDC with 500mA resettable PTC fuse, 2: IO1, 3: IO2, 4: 1-Wire, 5: GND

Digital Input/Output (available on Power Connector)

- Digital Inputs/Outputs: 1 output, 1 ignition sense input
- Digital Output: open-drain, 4-28V, 350 mA resettable fuse
- Ignition Sense Input: active when pulled up to 9-36 VDC
- Pinout: 1: +9..36VDC (also Analog Input), 2: GND, 3: Ignition Sense Input, 4: Digital Output

Analog Input (available on Power Connector)

- Analog Input Range: 9-36 VDC
- Pinout: 1: +9..36 VDC (also Analog Input), 2: GND, 3: Ignition Sense Input, 4: Digital Output

Protocols and features

- Network: TCP/IP, UDP/IP, DNS, DHCP client, DHCP server, DynDNS
- Routing: NAT, Static routes, PAT, Port forwarding, RIP, VRRP, DMZ Support, Firewall (IP Filtering, MAC Filtering)
- Application: SMS remote control, SMS sending, Telnet/SSH, SNMP, NTP, CLI, Remote Management, Connection Manager
- Chroot: Support for shell scripts, LUA, Perl and compiled C/C++ executables - Python interpreter included with variety of modules (optional)
- Serial: Serial over Ethernet, Modbus (TCP/IP and serial RTU), Console on Serial port
- USB port as serial port
- VPN/Security: IPsec, SSL, and GRE VPN Client; Up to 3 VPN Tunnels; AES, Blowfish; IKE Encryption; OpenVPN, L2TP, PPTP; Tunnels using certificates (CA certificates, private certificate, key certificate, CRL certificates); Tunnels using pre-shared key files
- Other: Radius; Timed Actions; Advanced scripting functions; System control; LED management; GPIO; Ping utility; Settings backup (Export/Import configuration); Logs reading

Power

- Input: 9-36 VDC
- Input protection: Reverse polarity, transients, overcurrent (internal 1 A time-lag fuse)

Physical

- Dimensions (L x W x H): 101 x 88 x 30 mm
- Weight: 248 gr
- Status LEDs: Power, Signal, Network, LAN (on Ethernet connector: Link, Activity)
- Housing: Steel sheet 0.8 mm
- DIN rail mounting kit (optional)

Environmental

- Operating Temperature: -20°C to +70°C
- Storage Temperature: -40°C to +85°C
- Relative Humidity: 5% to 95% (non-condensing)
- IP rating: IP40
- Ethernet Isolation: 1.5 kV RMS
- RS-485 Port Protection (ESD): 2 kV

Certifications

QMS **ISMS** **CE** certified
 ISO 9001:2015 ISO/IEC 27001:2014

Important note: Please refer to the latest version of Hardware Guide about the specifications. Geneko reserves the right to make changes or improvements to any of the products without prior notice.

Ordering information

Model	GPRS/EDGE	HSPA+	LTE	RS-232	RS-422/RS-485	Eth Port	USB 2.0	Digital I/O on GPIO	Digital I/O on power c.	1-Wire interface	Analog input
GWG-T 30	●	●	—	●	●	●	●	2/2	1/1	●	1
GWG-T 40	●	●	●	●	●	●	●	2/2	1/1	●	1

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