Dual SIM Industrial 4G VPN Router with Wi-Fi

for 4G LTE/ HSPA/UMTS/EDGE/GPRS Networks

8E4589 _ 4G Industrial VPN

Quick Guide
7D2049   rev. 1.0   04/2016

PREFACE

In order to guarantee your safety and a correct functioning, be sure to follow these safety warnings. The whole set (with cables included) must be installed in a place lacking of or distant from:
- Dust, humidity, high temperatures and direct exposure to sunlight.
- Heat irradiating objects, which may damage your device or cause any other problem.
- Objects producing a high electromagnetic field (Hi-Fi speakers, etc.).
- Corrosive liquids or chemical substances.

ENVIRONMENTAL CONDITIONS

Environment temperature: from -20° C to +65°C   Relative humidity: from 5% to 95% RH

CLEANING INFORMATION

Use a soft dry cloth and avoid any solvents or abrasive materials.

SHOCKS OR VIBRATIONS

Caution against shocks or vibrations.

DECLARATION CE OF CONFORMITY

We, Digicom S.p.A. registered office at: Via Volta 39 – 21010 Cardano al Campo (Varese – Italy) declare under our sole responsability that the product with name **4G Industrial VPN** Type: Dual SIM Industrial 4G VPN Router with Wi-Fi, Category: Device for the Information Technology satisfies the basic requirement of the below indicated Directive:
- 1999/5/EC 9th March 1999, R&TTE (concerning radio equipment and telecommunication terminal equipment and the acknowledgment of their conformity) Law Decree 9th May 2001, n.269, (G.U. n. 156 of 7-7-2001).
  As indicated in conformity with the requirements of following Reference Standards or of other regulations documents:

EN 301 489-1	EN 301 489-7	EN 301 489-17	EN 301 489-24	EN 300 328
EN 62311	EN 301 511	EN 301 908-1	EN 301 908-2	
EN 60950-1 +A11 +A1 +A12 +A2				

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ASSISTANCE AND CONTACTS

Most of questions can be answered by looking up in the Support > F.A.Q. section of our website at www.digicom.it.
If you can't find the answer you're looking for, please contact our Technical Support at **support@digicom.it**

SAFETY WARNINGS

Read these instructions and norms carefully before powering the device. Violation of such norms may be illegal and cause hazard situations. For any of the described situations please refer to the specific instructions and norms.

The device is a low power radio transmitter and receiver. When it is ON, it sends and receives radio frequency (RF) signals.

The device produces magnetic fields. Do not place it next to magnetic supports such as floppy disks, tapes, etc.

Operating your device close to other electrical and electronic equipment - such as a television, phone, radio or a personal computer - may cause interferences.

INTERFERENCES
The device, like all other wireless devices, is subject to interferences that may reduce its performances.

ROAD SAFETY
Do not use your device while driving. In case of use on cars, you must check that the electronic equipment is shielded against RF signals. Do not place the device in the air bag deployment area.

AIRCRAFT SAFETY
Switch off your device when on board aircrafts by disconnecting the power supply and deactivating the internal backup battery. Using GSM devices on aircrafts is illegal.

HOSPITAL SAFETY
Do not use the device near health equipment, especially pacemakers and hearing aids, in order to avoid potential interferences. Take care when utilizing the device inside hospitals and medical centres, which make use of equipment that could be sensitive to external RF signals. Switch it off when use is expressly forbidden.

EXPLOSIVE MATERIALS
Do not use the device in refuelling points, near fuel or chemicals. Do not use the device where blasting is in progress. Observe restrictions and follow any specific regulation or instruction.

INSTRUCTIONS FOR USE
Do not use the device in direct contact with the human body and do not touch the antenna if not strictly necessary.
Use approved accessories only. Consult documentation regarding any possible device connected to the device. Do not connect incompatible products.

1. INTRODUCTION

1

Congratulations for choosing Digicom product.

Digicom 4G Industrial VPN is an enterprise-class cellular router offering state-of-the-art mobile connectivity for machine to machine (M2M) applications.

⚠ **For further details on the functionalities, the parameters and the conditions of use, please refer to the complete User's Guide available online on www.digicom.it**

1.1. OVERVIEW

- Dual SIM redundancy for continuous cellular connections; it supports 2G/3G/4G.
- Various interfaces: 2xLAN/ 1xLAN, 1xWAN.
- WAN: static, PPPOE and DHCP client.
- Multiple links backup and ICMP detection.
- VPN tunnel: IPSec/ OpenVPN/GRE.
- Auto reboot via SMS/ Timing.
- Flexible Management methods: Web/SMS/CLI.
- Firmware upgrade via Web/CLI/SMS.
- Advanced Firewall: filtering, port mapping, DMZ.
- Support DDNS.
- Support VRRP.
- Wide range input voltages from 9 to 26 VDC.
- The metal case can be mounted on a DIN-rail, on the wall or it can be put on desktop.
- Built-in Watchdog, Timer.

1.2. PACKING CONTENT

The package contains the following items:
- Digicom 4G Industrial VPN Router
- 1 3-pin pluggable terminal block for power connector
- 1 Ethernet cable
- 1 35mm Din-Rail mounting kit
- 1 AC/DC Power Supply Adapter (12VDC, 1A)
- 1 4G/3G/2G omnidirectional antenna (3m. cable)
- 2 Wi-Fi omnidirectional antenna

1.3. SPECIFICATIONS

Cellular Interface
- Standards: GSM/GPRS/EDGE/UMTS/HSPA+/FDD LTE
- FDD LTE: max. 150/50 Mbps (DL/UL)
- TDD LTE: max.112/10 Mbps (DL/UL)
- DC-HSPA+: 42/5.76 Mbps (DL/UL)
- HSPA+: max. 21.6/5.76 Mbps (DL/UL)
- EDGE: 236.8 kbps (DL/UL)
- GPRS: 85.6 kbps (DL/UL)
- SIM: 2 x (3V & 1.8V)
- Antenna Interface: SMA Female (1xMAIN and 1xAUX)

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Ethernet Interface
- Number of Ports: 2 x LAN or 1 x LAN, 1xWAN (10/100Mbps)
- Isolation Protection: 1.5KV

WLAN Interface (Optional)
- Standards: 802.11b/g/n, support AP and Client mode
- Data speed: 2*2 MIMO, 300Mbps
- Frequency Band: 2.412 - 2.485 GHz
- Security: WEP, WPA, WPA2
- Encryption: 64/128 AES, TKIP
- Antenna Interface: RP-SMA Female

System
- Reset button
- LED Indicators: RUN, PPP, USR, 3 x RSSI

CPU & Memory
- CPU: 535MHz
- SDRAM: 64MB
- FLASH: 16MB

Software
- Network protocols: PPP, TCP, UDP, DHCP, ICMP, NAT, DMZ, DDNS, VRRP, HTTP, HTTPs, DNS, ARP, SNTP, Telnet, etc.
- VPN tunnel: IPSec/OpenVPN/GRE
- Firewall: SPI, anti-DoS, Filter, Access Control
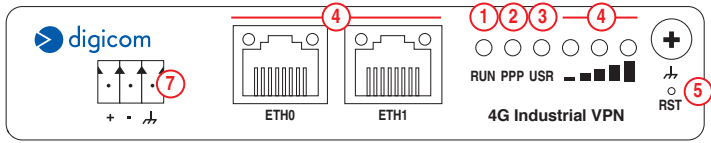- Management: Web, SMS

Power Supply and Consumption
- Power Supply Interface: 3.5mm terminal block
- Input Voltage: 9 to 26 VDC
- Power Consumption: Idle: 300 mA @ 12 V
- Data Link: 1A (peak) @ 12 V

Mechanical Characteristics
- Housing & Weight: Metal, 300g
- Dimension: (L x W x H): 127.5mm x 82.5mm x 29.5mm
- Installation: 35mm Din-Rail or wall mounting or desktop

2. INSTALLATION

2.1. FRONT VIEW

LED Indicators

	NAME	COLOR	STATUS	FUNCTION
1	RUN	Green	Blinking	Router is ready
			On	Router is starting
			Off	Router is power off
2	PPP	Green	Blinking	PPP Indicator: Null
			On	PPP Indicator: PPP connection is up
			Off	PPP Indicator: PPP connection is down
3	USR	Green	Blinking	SIM: using backup SIM card
				NET: register to a low level network
			Off after blinking	SIM: working fine
				NET: working fine
			Light up	OpenVPN: OpenVPN is connected
				IPSec: IPSec is connected
				GRE: GRE is connected
			Off after lighting up	OpenVPN: OpenVPN is disconnected
				IPSec: IPSec is disconnected
				GRE: GRE is disconnected
		Green	On	Signal level: 21-31 (Perfect signal level)
		Yellow	On	Signal level: 11-20 (Average signal level)
		Red	On	Signal level: 1-10 (Exceptional signal level)

4. When the network is disconnected, those three signal LEDs are designed as a binary combination code to indicate a series of error report.
(Green Yellow Red) On: 1 Off: 0

001	AT command failed
010	no SIM card detected
011	requires PIN code
100	requires PUK code
101	registration failed
110	something wrong happened in the module

⚠ **Note: The user can select display status of USR LED. For details please refer to Service->Advanced section.**

Reset Button

	FUNCTION	OPERATION
5	Reboot	Push the button for 2~7 seconds under working status
	Restore to factory default setting	Please keep pressing the "RST" button once power on the router, until LED lights blink one by one circularly
		When the six LED lights start blinking one by one, please release the pressing operation within 5 seconds. In this time the router loads default successfully.

Ethernet Port

There are two Ethernet ports in 4G Industrial VPN router, ETH1 is the LAN interface and ETH0 can be the LAN or WAN interface.
The Eth0 factory default is as LAN interface.
Each Ethernet port has two LED indicators. The yellow one is Link indicator and the green one doesn't mean anything.
There are three status of Link indicator. Please refer to the table below.

6	INDICATOR	STATUS	DESCRIPTION
	Link Indicator	Off	Connection is down
		On	Connection is up
		Blink	Data is being transmitted

Ground the Router

Grounding and wiring the router helps limiting the effects of noise due to electromagnetic interference (EMI).
We suggest to connect the ground connector to a well-grounded mounting surface such as a metal panel.

Power Supply

7   The power supply range is 9 to 26 VDC.

⚠   **Note: Please take care about the polarity, and do not make reverse connection.**

2.2. REAR VIEW

As shown in the following pictures, 4G Industrial VPN router has two SIM card slots.

Install SIM Card

- **Remove slot cover**
    1. Make sure power supply is disconnected.
    2. Use a screwdriver to remove the screw on the cover, and then remove the cover, you will find the SIM Card slots.
- **Inserting SIM Card**
    3. Insert the SIM card. Press the card with your fingers until you hear "a click sound". Then use a screwdriver to screw the cover.
- **Removing SIM Card**
    4. Make sure router is powered off.
    5. Press the card until you hear "a click sound" till the card will pop up to be pulled out.

⚠️ **Notes:**

1. **Please use the specific M2M SIM card when the device works under extreme temperature conditions (temperature exceeding 0-40 C), because the long-time working of regular SIM card in harsh environment (temperature exceeding 0-40 C) may increase the possibility of SIM card failure.**
2. **Don't forget to screw the cover for again-theft.**
3. **Don't touch the metal surface of the SIM card in case information in the card is lost or destroyed.**
4. **Don't bend or scratch your SIM card. Keep the card away from electricity and magnetic fields.**
5. **Make sure router is powered off before inserting or removing your SIM card.**

Connect the External Antenna

Connect the router to an external antenna connector. Make sure the antenna is within the correct frequency range and it is screwed tightly.

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Mount the Router
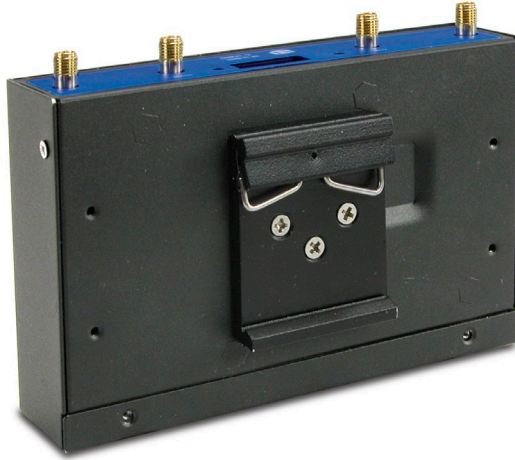
The 4G Industrial VPN router may be placed on a horizontal surface such as a desktop, mounted on a DIN-rail.