

5-port Rugged Industrial Gigabit Firewall/Router

General Description

The GUARD-F2 adds to the MPL Networking product range an additional rugged Industrial Gigabit Firewall and VPN Router. The GUARD-F2 comes with 5 Gigabit Ethernet interfaces. The proven GUARD housing allows to operate the Firewall in harsh environments without the need of fans or ventilation holes and can easily be mounted on a 35mm DIN rail or wall. The compact housing offers sufficient space to add a MAGBES (Managed Gigabit Switch) or other peripherals. The GUARD-F2 can be tailor made to your needs, even with IP67 housing and MIL connectors or Open Frame with locking headers.

GUARD-F2 Highlights

The operation temperature range is from -20°C to +60°C and optionally up to -40°C to +85°C without fan or case openings. The capability to offer copper as well as SFP ports for various fiber optical solutions makes the product universal. The internal miniPCIe slot allows various extensions (WLAN, GPRS...).

- Wide Input voltage range (8 – 36VDC)
- 5 x 1Gbit Ethernet ports (fiber ports optional)
- Supports of SFP modules according SFP Multi Source Agreement (MSA)
- 10/100Base-FX or 1000Base-FX Ethernet compatible (Single and Multimode)
- EAL4 support (optional)

These features make

the GUARD-F2 to the ideal and most secure solution for all rugged industrial and defense applications, where quality, reliability, low power consumption, and long-term availability are key. The GUARD-F2 can be used, e.g. for railway, maritime or defense applications and the OpenWRT gives you the security you need in your environment.



All MPL products are 100% designed and manufactured in Switzerland.

MPL AG is an ISO9001 certified company



GUARD e.g. used in industrial environment



MIL version of GUARD



Open-Frame version, used in maritime environment with locking headers



GUARD used in railway environment

Technical Features

Board Key Data	
Processor	SoC 1.91GHz, 2MB L2 Cache, 64bit low power CPU
Memory / Firmware	Up to 8GB ECC RAM, 32GB on-board soldered eMMC Flash
Bootloader/BIOS	On-board soldered 8MB Flash, MPL designed BIOS/Bootloader
TPM	Trusted Platform Support 1.2 - optional 2.0 (EAL4)
Indicator LEDs	Power, 4 x LAN, 1 user programmable LEDs
Interfaces	
USB	1 x USB 3.0 ports, 2 x USB 2.0 ports
LAN	5 x GbE ports (Intel i210) on RJ45, ESD protected connectors
Serial Ports	1 x full modem RS232 port, ESD protected external DB9 connector 1 x RS232/485 (optional)
mPCIe	1 x mPCIe full size card socket, shared with mSATA
Physical	
Chassis	Compact rugged chromated Aluminum, no ventilation holes
Size & Weight	62.1 x 162.1 x 118 mm / 0.94kg including housing
Power	
Input Voltage	8 - 36 VDC input range, ESD and EMC protected power input Over voltage protection, reverse polarity protection, and load dump protection Reset / Power button, Ignition input for vehicles (available on a 4-pin Mini-DIN connector)
Power consumption	8 - 18 Watt, Speed Step Technology, all LANs operational
Environment	
Operating Temperature	-20°C to +60°C (-4°F to +140°F), with full CPU, 3D video and memory usage, fanless -40°C to +85°C, fanless, final test in climate chamber with test protocol (optional)
Storage Temperature	-45°C up to +85°C (-49°F to +185°F)
Humidity	5% - 95% none condensing, optional coating available
Standard Compliance	
The GUARD Family is designed to meet or exceed the most common standards. Particular references are:	
EMC	EN 55022, EN 55024, EN 61000, MIL-STD-461E
Shock & Vibration	EN 60068
Environmental & Safety	EN 50155, MIL-STD-810G, EN 60601, EN 60950
Approval List	CE, IEC 60945, IACS E10

Software

The GUARD-F2 comes preinstalled with an adapted version of OpenWrt (www.openwrt.org). This Linux based embedded distribution provides all functionality required for operation as IPV4 and/or IPV6 firewall and router. The vast amount of additional packages available in conjunction with MPL support allows you to create a solution for every routing or firewall project.

Functions and protocols:

- TCP/IP V4 and V6, IPsec
- QoS (Quality Of Service) capable
- SIIT(IPV4-over-IPV6 translation)
- Miredo/Teredo (IPV6 over IPV4 tunneling)
- PPP (Point-to-Point Protocol)
- Network address translation
- Multi WAN Setup (failover and load balancing)
- DHCP Server for IPV4 and IPV6
- DNS server/forwarder
- Support for dynamic DNS providers
- OpenVPN support
- OpenConnect client support
- Firewall based on Linux iptables
- SSH and telnet device access
- Snort (lightweight intrusion detection)
- Routing daemons (OSPF, RIP, BGP, ...)

Packaging

Chassis version	footprint	height	weight	
DIN Rail	62 x 120mm	162.1mm	1.2 kg (2.7 lb.)	custom color or foil available
Flange	62 x 123mm	198.05mm	1.25 kg (2.8 lb.)	custom color or foil available
Open Frame	min. 102 x 153mm	min. 23mm	0.6 kg (1.32 lb.)	custom cooling plate available
IP67 MIL	175 x 182mm	min. 66mm	2.1 kg (4.66 lb.)	custom housings and connectors available
The aluminum housings are internally chromated, externally powder coated or anodized, no ventilation holes				

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