

GUARD-F1

Rugged Industrial Gigabit Firewall/Router

General Description

The GUARD-F1 expands the MPL Networking product range with a rugged Industrial Gigabit Firewall and VPN Router. The GUARD-F1 comes with 3 Gigabit Ethernet interfaces. Two of them are either available as copper or SFP ports and one is available as copper port. The specifically designed 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. GUARD-F1 can be tailor made to your needs – even with IP67 housing and MIL connectors.

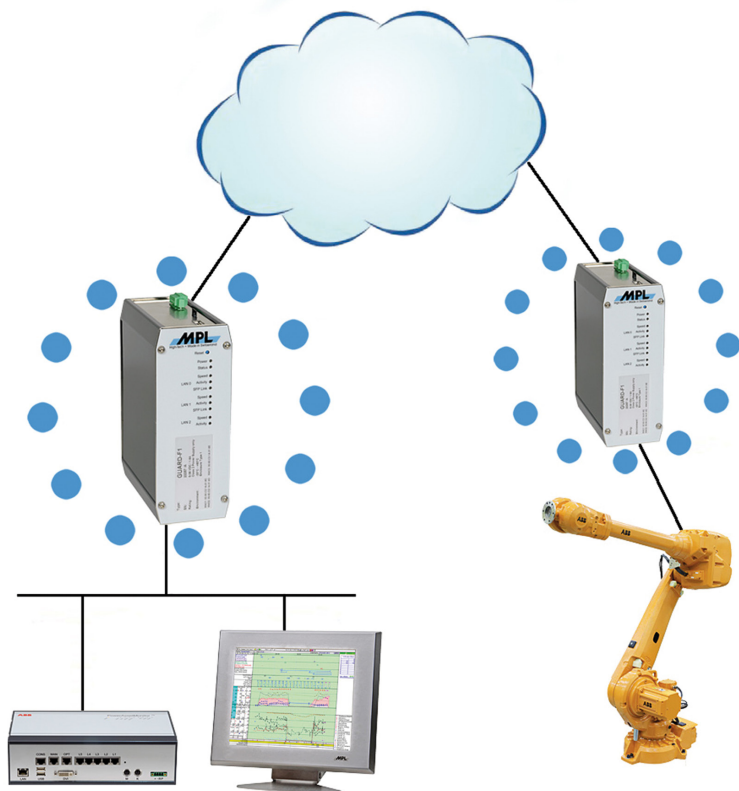
GUARD-F1 Highlights

The operation temperature range is from -20°C to +60°C and optionally even -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 make the product universal. The internal mini-PCIe slot allows various extensions (WLAN, GPRS...). Additional available: an external USB connector and a microSD Memory Card Slot for easy logging and/or configuration capabilities. The GUARD-F1 can be customized over an optionally back-plane for additional interfaces; 2 SATA Ports, 3 USB Ports, 2 PCI express Ports.

- Wide Input voltage range (8 – 36VDC)
- 3x 1Gbit Ethernet ports, two can be used either as RJ45 or as SFP port
- Supports SFP Modules which conform to the SFP Multi Source Agreement (MSA)
- 100Base-FX or Gigabit Ethernet compatible (Single and Multimode)

These features make

the GUARD-F1 to the ideal solution for all rugged industrial and defense applications, where security, quality, reliability, low power consumption, and long-term availability are key. The GUARD-F1 can be used just to name a few; for remote monitoring and maintenance, secure communication in automation, etc..



Technical Features GUARD-F1

Board Key Data

Processor	RISC SoC 1.2GHz	Low Power CPU
Memory	512MByte DDR2	Soldered OnBoard
Firmware	512MByte NAND Flash	Soldered OnBoard

Interfaces

1 x Ethernet	10BaseT /100BaseTX / 1000BaseTX	1 x RJ45 connector, auto negotiation, auto MDI MDIX
2 x Ethernet	Either 10BaseT /100BaseTX / 1000BaseTX or 100Base-FX or 1000Base-LX SFP Modules	2 x RJ45 connector, auto negotiation, auto MDI MDIX 2 x SFP Slot
1 x USB2	1 external port	Type A connectors, ESD protected
1 x microSD Slot	For microSD Memory Card	Can be used as external storage (configuration, logging)
Mini PCI-Express	For WLAN, GPRS, UMTS or similar expansions	Minicard Slot

Physical / Power

Chassis	Compact rugged chromated Aluminum with stainless steel plates	DIN-rail or flange mounting, no ventilation holes
Size & Weight	62.1 x 162.1 x 118 mm	0.94kg / 2lb including housing
Power	8 – 36VDC	Power consumption < 9 W, reverse polarity protection
Temperature Range	-20°C up to +60°C optionally -40°C to +85°C	No fan, no openings, values at full CPU load
Humidity	5% - 95% none condensing	Optional coating available

Standard Compliance

The GUARD-F1 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-810-F, EN 60601, EN 60950

Software

The GUARD-F1 comes pre-installed with an adapted version of OpenWRT (<http://www.openwrt.org>). This Linux based embedded distribution provides all functionality required for operation as IPV4 and/or IPV6 firewall and router.

Most of the configuration of the firmware installed can be done using a web based interface. For more specialized requirements, a console based configuration utility is available. All configuration is stored on the device in a human friendly text format and can be modified using a text editor, too.

Functions and protocols:

- TCP/IP V4 and V6
- IPsec
- QoS (Quality Of Service) capable
- 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)
- Avahi (aka RendezVous/Bonjour/ZeroConf) support

Internal GUARD-F1 Expansions

- MAGBES-11
4-port manageable switch (4xRJ45)
- MAGBES-12
4-port manageable switch (2xRJ45 plus 2 xSFP Port/Fibre)

Options

- Wall mounting instead of DIN-Rail
- Heavy duty housings (MIL IP67) with MIL connectors
- Extended temperature / coating
- Customized versions and expansions

GUARD-F1 Versions

GUARD-F1	Rugged Industrial Firewall/Router with 3 Gigabit Ethernet ports (1 x RJ45 and 2 x RJ45/SFP slots), pre-installed OpenWRT embedded Linux distribution. (Housing has to be added separately)
GUARD-F12	Rugged Industrial Firewall/Router with 3 Fast Ethernet ports on M12 connectors, pre-installed OpenWRT embedded Linux distribution. For Railways with EN50155 certificate. (Housing has to be added separately)
GUARD-Cx	GUARD Solution assembled & mounted according the customer needs & requirements (e.g. with special housing, depopulated parts, installing a customers application, ...)

