

Rugged Industrial Firewall/Router with Gbit Switch

General Description

With the GUARD-FS, MPL has integrated several systems into one housing, a Firewall, a VPN-Gateway, a Router, as well as an Ethernet Switch with your choice of copper and/or fiber ports. You can imagine the broad use of the GUARD-FS with this variety of functionality. Basically in any application that needs to be installed in a rugged rough environment where space is an issue, the GUARD-FS is a perfect fit.

Today, everything is getting automated. Therefore security in this automated world is becoming more and more important. The key differences of industrial applications are that they require a long-term availability due to the life cycle management of the investments.

GUARD-FS Highlights

The system can be operated from -20°C to +60°C (optional -40°C to +85°C), without the need of a fan or case openings. The capability to offer copper as well as SFP ports for various fiber optical solutions make the product universal. This versatility is supported by the availability of a software development kit, the powerful 1.2 GHz ARM processor, and the 512 Mbyte built in flash that allows for customer specific extensions.

- Wide input voltage range (8V – 36VDC)
- Low power consumption (fanless)
- All connectors on one side
- Customized housing
- Firewall/Router with 3x Gbit (copper or SFP)
- Optional switch (copper and/or fiber)
- switch as managed or unmanaged version

These features make

the GUARD-FS to the ideal solution for industrial, transportation and defense applications where security, quality, reliability, low power consumption, and long-term availability are key. Just to name a few, the GUARD-FS can be used for applications such as remote monitoring & maintenance, secure communication in automation, etc..

MPL products are 100% designed and manufactured in Switzerland. All products are fanless, shock and vibration proof, low power, rugged, and long-term* available. The perfect solution for a system to be used in rugged environments.

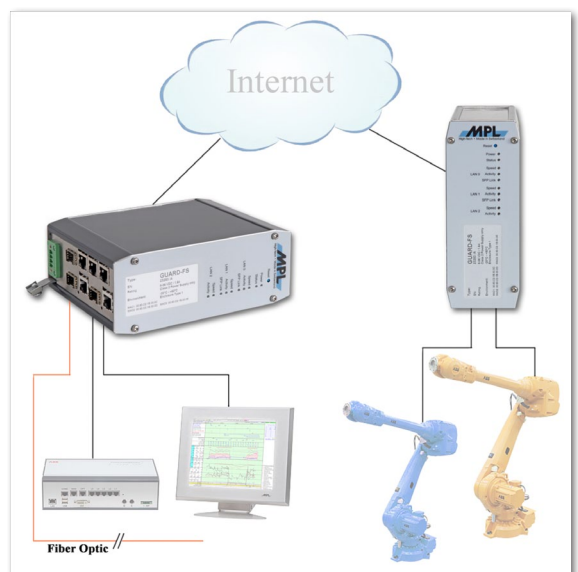
* Typically 10 years or more, 20+ years repair-ability



Firewall/Router used in sensitive environment



GUARD used as frontend in maintenance monitoring system



MPL AG is an ISO9001 certified company

Technical Features

Board Key Data		
Processor	RISC SoC 1.2GHz	Low Power CPU
Memory / Firmware	512MByte DDR2 / 512MByte NAND Flash	Soldered OnBoard
Interfaces		
Firewall ports	2 x RJ45, auto negotiation, auto MDI MDIX or 2 x SFP Slot	Either 10BaseT /100BaseTX / 1000BaseTX or 100Base-FX or 1000Base-LX SFP Modules
Switch ports	*4 x RJ45 copper ports or *2 x RJ45 and 2 x SFP * configuration depends on version ordered	Either 10BaseT /100BaseTX / 1000BaseTX or 100Base-FX or 1000Base-LX SFP Modules
Mini PCI-Express	For WLAN, GPRS, UMTS, etc.	Minicard Slot
Management Software		
Management supports:	<ul style="list-style-type: none"> • Port Based VLAN • Quality of Service (QoS) • IEEE 802.1D RSTP support • Telnet 	<ul style="list-style-type: none"> • IEEE 802.1Q VLAN • IEEE 802.1X MAC Address Checking • Port monitoring • Easy configuration via web interface
Physical / Power		
Chassis	Compact rugged chromated Aluminum with stainless steel plates, 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
Environment		
Temperature Range	-20°C 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-FS 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	

Software

The GUARD-FS 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.

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
- 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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