

MG460 Forwarder

Maritime Cyber Security Forwarder

A Maritime 460-Forwarder Compliance to IEC61162-460 Standards



INTRODUCTION

The **MG460 Forwarder** is a maritime communication device fully compliant with the **IEC 61162-460 standard**. It facilitates seamless data exchange between controlled network devices and the 460-network, ensuring reliable, standardized communication for enhanced maritime operations. The MG460 Forwarder plays two critical roles in maritime networks:

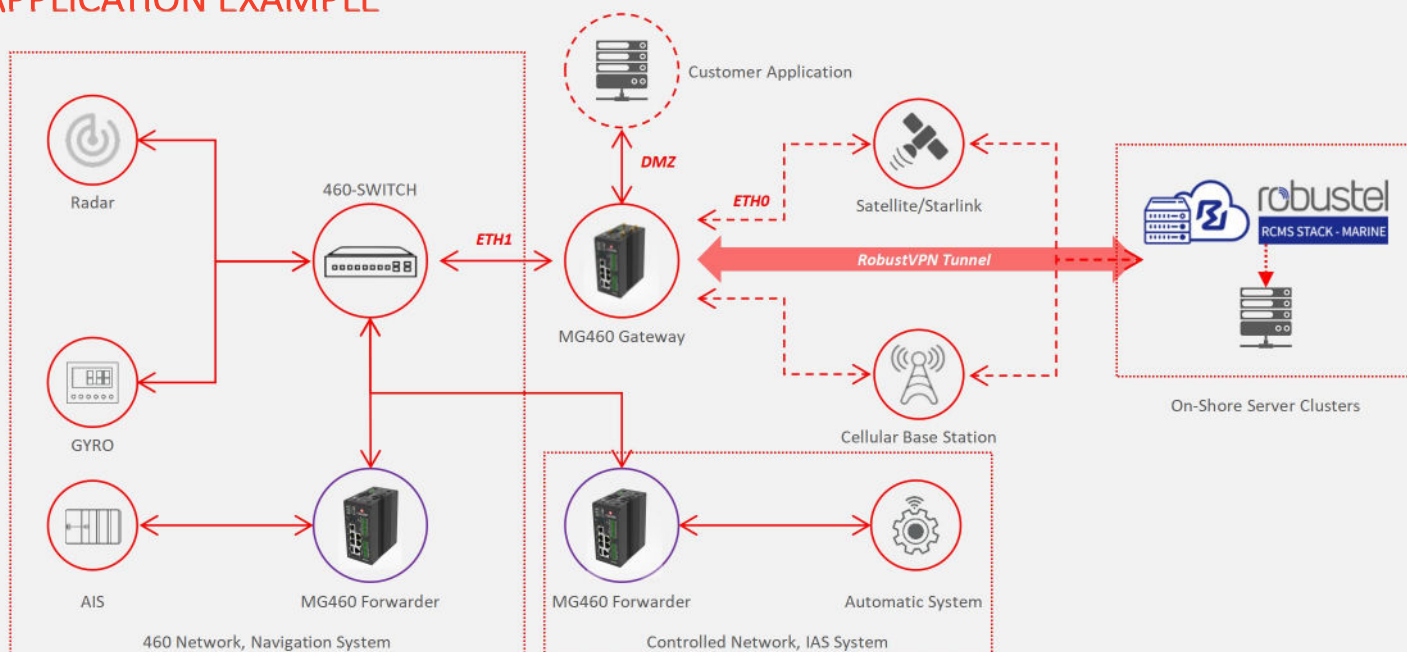
- **Secure Internal Connectivity:** It establishes a secure connection between the 460-network and other controlled networks on the vessel, such as Integrated Automation Systems (IAS), enabling safe and reliable data exchange.
- **Network Segmentation via VLAN:** It leverages VLAN technology to segment the 460-network into distinct sections, optimizing traffic flow and balancing network load for improved performance and efficiency.

By leveraging the **MG460 Gateway** and **MG460 Forwarder**, users can rapidly build a secure OT and IT architecture for vessels, ensuring compliance with **UR E27** requirements and enhancing overall operational safety and efficiency.

KEY FEATURES

- Compliance with IEC61162-1, IEC61162-2, IEC61162-460 edition 3
- Compliance with UR E10 and IEC60945 standards
- DNV Certification as 460-Forwarder
- Traffic Priority Management
- IGMP Proxy Support
- Network Monitoring and Alerts
- High-performance compute engine with 1.6 GHz CPU + 64 GB eMMC Flash for running complex applications
- Linux Debian system for user software development and deployment
- 5 x 1000Mbps Ethernet ports, each with its own firewall for enhanced security
- 2 x RS-232/RS-422/RS-485 (software configurable) ports for connecting to industrial/legacy devices
- 2 x DI & 2 x Relay Output for simple monitoring and control
- Expanded microSD slot for recording system logs and navigation data
- Industrial-grade design to ensure uninterrupted network connectivity

APPLICATION EXAMPLE



SPECIFICATIONS

Hardware System	
CPU	Quad core Cortex-A53, 1.6 GHz
NPU	2.3 TOPS
RAM	4 GB DDR4
Flash	64 GB eMMC
Ethernet Port	
Number of ports	5 x RJ45, 10/100/1000 Mbps
	Compliance with 1000BASE-T, LAN or WAN
Magnet isolation protection	1 KV
Serial Port	
Number of ports	2 x RS-232/RS-485/RS-422 (software configurable)
Connector	2 x 5-pin 3.5 mm terminal block
ESD protection	8 KV Air, 4 KV Contact
Baud rate	300 bps to 115200 bps
Signal definition	RS-232: TXD, RXD, GND, CTS, RTS
	RS-485: Data+ (A), Data- (B), GND
	RS-422: RX+, RX-, TX+, TX-, GND
Console Port	
Number of ports	1 x RS-232
Connector	RJ45
Baud rate	115200 bps
Signal definition	TXD, RXD, GND
Digital Input Port	
Number of ports	2 x DI, wet contact
Connector	4-pin 3.5 mm terminal block
Isolation	Bi-directional optocoupler (DI)
Absolute maximum VDC	+30 V DC
Absolute maximum ADC	100 mA
Signal definition	DI1+, DI1-, DI2+, DI2-
Relay Output Port	
Number of ports	2 x Relay Output
Connector	6-pin 3.5 mm terminal block
Absolute maximum VDC	+48 V DC
Absolute maximum ADC	100 mA
Signal definition	NC1, NO1, COM1, NC2, NO2, COM2
USB Port	
Number of ports	2 x USB 3.0 (host), Type A, 5 V, 900 mA
	1 x USB 2.0 (OTG), Type C
Others	
Reset button	1 x RST
SD	1 x microSD
HDMI	1 x HDMI
LED indicators	1 x RUN, 1 x Signal, 1 x MDM, 1 x VPN, 2 x USR
Watchdog	External

Software (Basic features of RobustOS Pro)	
Network protocols	TCP, UDP, DHCP, ICMP, NAT, HTTP, HTTPS, ARP, NTP, Telnet, VLAN, SSH2, COS, QOS, IGMP Snooping, IGMP Proxy, etc.
Firewalls	DMZ, anti-DoS, Filtering (IP/Domain name/MAC address), Port Mapping, Access Control
Remote management	Web, CLI
Serial port protocols	Transparent, TCP Client/Server, UDP, Modbus RTU Gateway
Others	SNMP
SDK	
Operating system	RobustOS Pro (Based on Debian 11 (bullseye))
Supported programming languages	C, C++, Python, Java, Node.js etc. (for users to develop own applications)
Debian Repository available	
Flash available for SDK	62 GB
RAM available for SDK	2.5 GB

App Center (Available Apps for RobustOS Pro)	
Apps*	Language, etc.
*Request on demand. For more Apps please visit www.robustel.com .	

Cloud Platform	
Robustel Cloud Manager Service (RCMS)	RobustLink, RobustVPN, Operation Console

Power Supply and Consumption	
Connector	2-pin 3.5 mm terminal block with lock
Input voltage	24 V DC, reverse polarity protection, surge protection
Power consumption	Idle: 8.76 W@24 V
	Max: 25.44 W@24 V

Physical Characteristics	
Ingress protection	IP30
Housing & Weight	Metal, 649 g
Dimensions	58 x 111 x 128 mm
Installations	Desktop, wall mounting and 35 mm DIN rail mounting
Operating temperature	-30 ~ +70 °C
Storage temperature	-40 ~ +85 °C
Relative humidity	5 ~ 95% RH (non-condensing)

Regulatory and Type Approvals	
Environmental	RoHS2.0
EMI	EN 55032 Conducted Emission Class B
	EN 55032 Radiated Emission Class A
EMS	EN 61000-3-2 (Harmonic Current)
	EN 61000-3-3 (Voltage Flicker)
	EN 61000-4-2 (ESD) Contact Level 3, Air Level 3
	EN 61000-4-3 (RS) Level 3
	EN 61000-4-4 (EFT) Level 3
	EN 61000-4-5 (Surge) Level 3
	EN 61000-4-6 (CS) Level 2
	EN 61000-4-11 (Dips)

ORDERING INFORMATION

Model	Order Code	Frequency Bands*	Country/Region	Certification	Package Contains
MG460-A5ZAZ-NU	A014700008	/	Global	CE, UKCA, RCM, CB, FCC, IC	1 x MG460 Forwarder (B Code: B014700009) 1 x DIN Rail Mounting Kit

*For more information about frequency bands in different countries, please contact your Robustel sales representative.