

# 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:

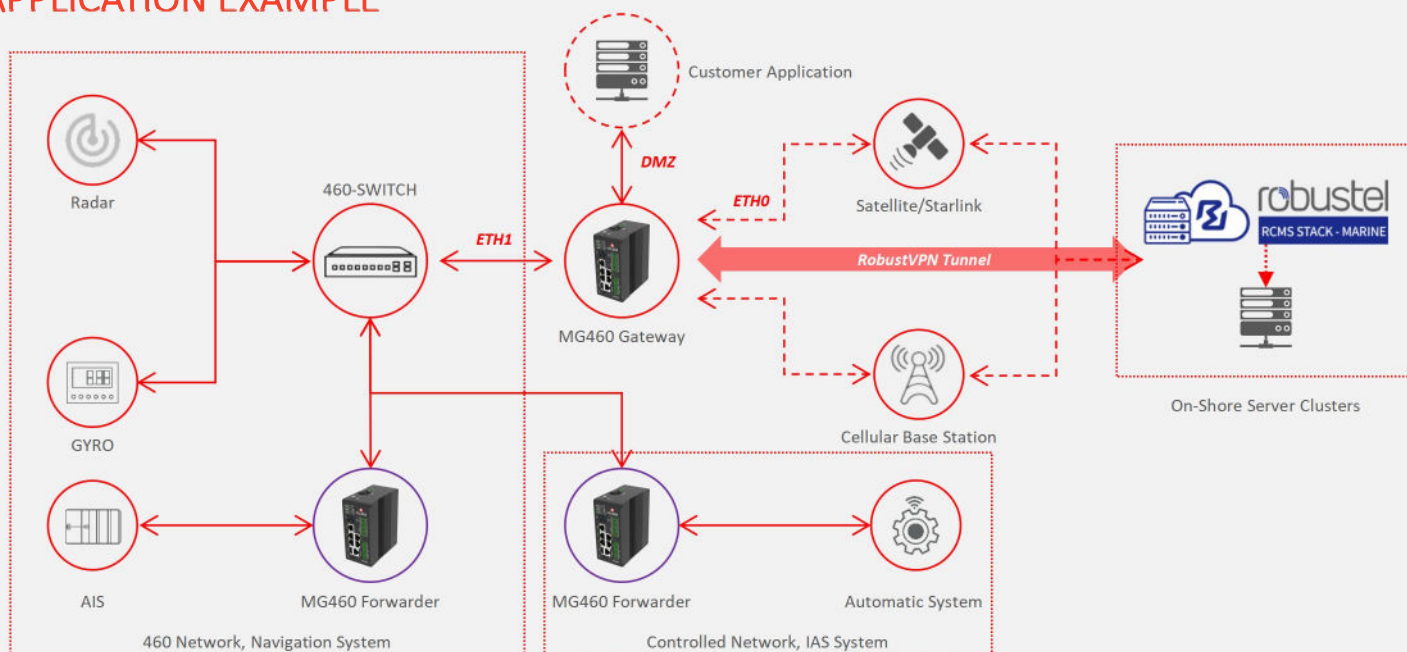
- **Secure Internal Connectivity:** It establishes a secure connection between the 460-network and other controlled networks on the vessel, such as Integrated Automation Systems (IAS), enabling safe and reliable data exchange.
- **Network Segmentation via VLAN:** It leverages VLAN technology to segment 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 1000 Mbps 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
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 ALT, 4 x USR
Watchdog	External

### Software (Basic features of MG Core)

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	MG Core (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 MG Core)

Apps*	Language, etc.
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\*Request on demand. For more Apps please visit [www.robustel.com](http://www.robustel.com).

### 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: 9.0 W@24 V
	Max: 25.5 W@24 V

### Physical Characteristics

Ingress protection	IP30
Housing & Weight	Metal, 588 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	A014700010	/	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.