



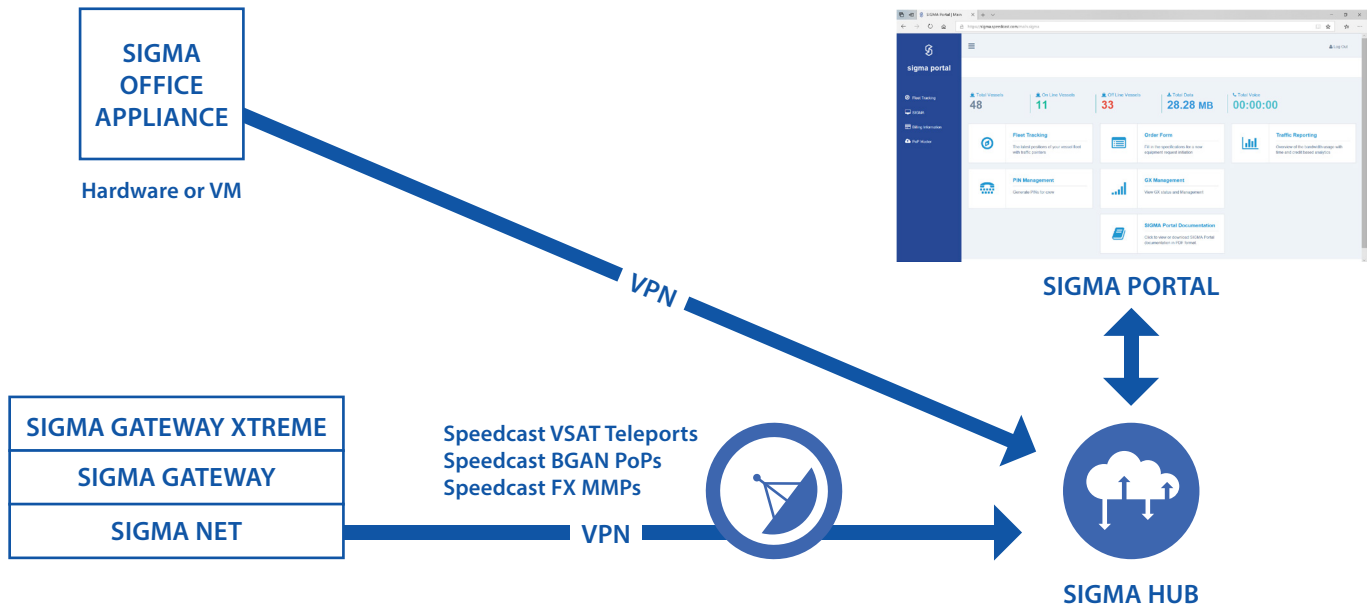
The Speedcast SIGMA™ suite of products is based on a single, integrated platform for the maritime market. It provides superior all-in-one services, designed for scalability and modular architecture, enabling you to quickly adapt to the changing needs of your business.

SIGMA provides a state-of-the-art network management setup that seamlessly manages Speedcast's global VSAT, L-band, Fleet Xpress, 4G/LTE, Wi-Fi and MSS services. It provides automated and efficient management of multiple secured WAN links. The built-in cyber-security offers protection from a broad array of threats, with support for all security and networking services. Traffic can be segregated between multiple VPNs, such as customer VPN, Crew VPN, Admin VPN, and third-party VPN. With SIGMA products, customers can experience high availability and performance in a secure and integrated environment.

## THE SIGMA PRODUCT FAMILY

- **SIGMA Portal:** A user-friendly customer management platform for centralized services and reports. New SIGMA Portal Modules are exposed as RESTful APIs and allow third-parties M2M interconnection.
- **SIGMA Net:** A powerful VSAT and MSS network management device that provides automated management of multiple WAN links and facilitates network segmentation between business critical applications, crew communications and management data.
- **SIGMA Gateway:** A network device that manages Speedcast's global VSAT, L-Band, Fleet Xpress, 4G/LTE and Wi-Fi services; provides a secured environment hosting third-party Virtual Machines (VM); and delivers high availability and performance via the integrated Inmarsat Type-approved Soft Network Service Device (SoftNSD) for Fleet Xpress.
- **SIGMA Gateway Xtreme:** The highly available version of SIGMA Gateway with Active-Active cluster between two nodes; and is designed to withstand harsh maritime environments.
- **SIGMA Hub:** World-class cloud server supporting SIGMA suite of products reliably and securely.
- **SIGMA Office:** Extends SIGMA connectivity to customer's office via a hardware or a VM.
- **SIGMA Protocol:** An application layer protocol based on Java Socket technology and uses the client-server model.
- **SIGMA Mobile:** A smartphone app for crew internet connectivity and telephony via SIP client for internal and external calls using PIN codes. Available on Android; iOS is coming soon.

## THE SIGMA ECOSYSTEM



### SCALABLE

- Allows for easy integration into an existing ship's network. Ensures that a ship's business network is segmented from other lower priority networks, such as the crew network.
- With SIGMA on-board, a vessel can provide crew services via a Wi-Fi connection, allowing crew members to access the Internet, send email or make phone calls from handheld devices using a simplified voucher generation and management from shore.
- Brings secure M2M or Internet of Things (IoT) connectivity to vessels and unparalleled voice services with the integrated Session Initiation Protocol (SIP) server, allowing for the flexibility to set up voice routing as required.

### SECURE

- Provides a secure virtualized environment where third party VM can be hosted and completely managed via the SIGMA Portal, allowing for remote configuration and dedicated resource allocation.
- Provides enhanced confidentiality by isolating customer data and networks; protects both infrastructure and remote sites with minimal attack target surface.

### INTEGRATED

- Can be managed from shore via SIGMA Portal, which provides fully featured and interactive reporting transferred via SIGMA network devices' WAN links on-board.
- Vessel and fleet tracking is displayed with GPS location reports extracted from existing equipment on-board.

### RUGGED, REDUNDANT AND COMPACT

- Designed to be redundant on hardware and software. Hardware redundant parts include Power Supply, fans (Hot Swappable), Hard Disks (2 Disks in RAID1), RAM (4). CPU (2) and Ethernet modules (up to 4 x 8ports, fully distributed).
- Consumes only 1U of rack space. Implementation of the SIGMA can save up to 5U of rack space, compared to a separate NSD, router, server and network switch appliances.
- Link management with automatic or manual failover between available WAN links to mitigate downtime and maintain operations.
- Bandwidth control and optimization to prioritize interactive or time-critical traffic and prevent traffic clog of the network.



## ADDITIONAL FEATURES

- **Crew Services:** Crew members can stay in touch with friends and family ashore via SIGMA's truly flexible social connectivity options, which include an innovative single voucher based BYOD (Bring Your Own Device) Internet and voice calling access. A comprehensive portal allows for simplified voucher generation and management from shore.
- **Telephony:** Fully featured Private Branch Exchange (PBX) including billing platform on-board. Can support extremely granulate rate plans.
- **Integrated Wi-Fi Management:** Directly manage Wireless Access Points installed on-board, SSID's and Wi-Fi Zones, and generate per user usage reports.
- **Remote Access and Visibility:** Includes always-on VPN with SIGMA Hub, where VPN can be initiated remotely, providing transparent access for any WAN link or type of IP assignment.
- **Real-time Reporting:** SIGMA portal provides real-time analytics with visualization on network status, latency amounts and signal strength.
- **Cyber Secure Shipping:** Use SIGMA Gateway to provide the safety of next generation firewalls for the maritime world via an optional virtualized system onboard, advanced malware protection, URL filtering and next-gen intrusion prevention, reducing the risk of cyber-crime affecting vessel operations.

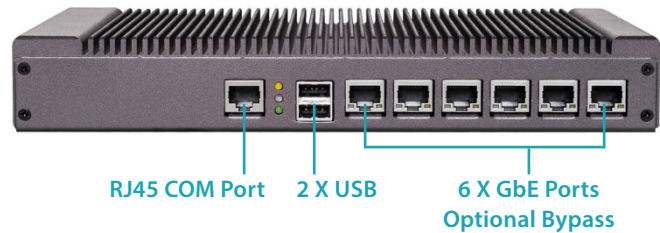
## SPECIFICATIONS

### SIGMA NET

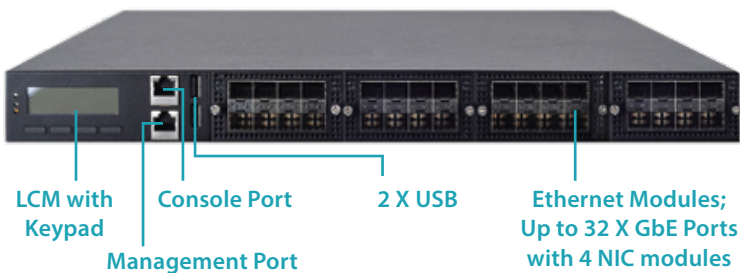
Built with RoHS compliant parts and production processes with an embedded ultra-low voltage ATOM. 1.8GHz CPU delivers power-efficient processing while the Intel ICH8M system logic provides PCI-E bus network bandwidth.

- 3 WAN Ports (integrated switch)
  - VSAT/FX
  - FBB/Iridium Backup
  - 3G/4G/LTE, WiFi
- 3 LAN Ports (integrated switch)
  - Business LAN: Corporate services (Email, PMS etc.)
  - Crew LAN: Crew Welfare - Prepaid services (Voice & Data)
  - Custom LAN: M2M services (ECDIS, VDR etc.)

*Dimensions: 268 x 40 x 145 mm*



*Dimensions: 438 x 44 x 630 mm*



### SIGMA GATEWAY

Dual Intel "Haswell-EP" processors built-in, with a total of 16 cores and includes an internal 2.5" HDD, CF Socket, USB 2.0 ports, Mini-PCIe and console connection options

- In-built network switches
- 8 up to 32 LAN
- 3 WAN ports
- Fleet Xpress network service device
- Software

### SIGMA GATEWAY XTREME

Fully supports failover and redundancy with its four swappable fans and redundant PSU. It virtually eliminates planned and unplanned downtime by maintaining a 24/7 real-time operation.

- Implements "Active-Active" Cluster for load sharing
- Provides high availability with full redundancy
- Resources distribution
- Managed PDU offers powerful remote management
- Offers up to 32 ports for switching all managed by SIGMA Portal and on-board user interface

*Dimensions: 438 x 44 x 630 mm X 2*

