



Setel's SmartBox - V™



Versatility, independence, security
in one box over FleetBroadband



Version 2.0

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Revision history table

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1. Overview

SmartBox-V™ is a natural extension of Setel's Intelligent Vessel solution, designed for use in heavy seas and a perfect match for the connectivity requirements of both newbuilds as well as retrofitted vessels.

With Setel's SmartBox-V™, all maritime companies can bridge the gap between ship and onshore systems as well as streamlining communication processes and cutting costs.

This innovative solution fits neatly with existing information and communication technologies (ICT) systems and provides a complete and secure approach for both ship operators' needs and crew welfare services onboard.



2. Typical users

The SmartBox-V™ solution enables maritime companies to meet their ICT needs by allowing them to:

- Monitor and calculate performance
- Evaluate and control the usability of bandwidth/volume
- Have real time remote access for monitoring and support
- Apply corporate policy in communications
- Enhance crew morale and improve crew retention

3. Key features

The main features of SmartBox-V™ are summarised below:

- Multiple data connectivity solution
Manual or auto selection for least cost routing (FB, VSAT, 3G, Wi-Fi, etc.) can support multiple IP terminals and dial up (F77) under the same interface. There is total integration with existing networks.
- Vessel-office integration
Using either a private or hosted space based visible sensor (SBVS) hub, a secure seamless virtual private network (VPN) connection is initiated from vessel to shore. This allows for remote management and traffic reduction.
- Powerful firewall and routing
There are strict firewall rules, "black-hole" routing and secure socket layer v3 (SSL v3) encryption prevents man-in-the-middle attacks.
- Crew welfare services
Crew internet café, Wi-Fi access and telephone services. Centralised personal identification number (PIN) management and pre-payment central control for data and voice. Extensive reporting and integration with Intelligent Office.
- Email and data transfer
Standard POP3/SMTP and IMAP with encryption (web mail access support IMAP/POP3) and account portability. Public folders and shared contacts. Filtering and attachments conversion. Size/duration/calls restrictions. Differential file synchronisation.
- Voice over Internet Protocol (VoIP) Telephony integration

Internal VoIP private branch exchange (PBX), integration with Office's PBX, supports FleetBroadband (FB) and very small aperture terminal (VSAT) terminals via IP trunks and analog voice interfaces.

- Bandwidth and traffic management and monitoring

Granular control on allowed traffic, Layer-7 filtering, traffic prioritisation. Detailed metrics on bandwidth and traffic are obtained with real time monitoring tools for onboard and cumulative monitoring on the hub side.

- Advanced proxy services

Powerful content filtering, restriction policy and web caching both on board and centrally. Removal of advertising and pop-ups.

- Traffic notification system

The traffic notification system is fully supported with three Alert levels and the capability to block inter-vessel communications while allowing remote access from the office.

4. Benefits to FleetBroadband users

Setel's SmartBox-V™ solution offers the following main benefits:

- Demonstrable, immediate return on investment (ROI) guaranteed by least-cost routing (LCR) in data traffic, bandwidth optimisation, remote monitoring.
- Seamless stable and secure operation, remote network management and data gathering.
- Embedded functionality (e-mail, firewall, VoIP) minimises third party add-ons on corporate structure, making it simple and economical to maintain.
- Smart and automatic terminal/air time services selection optimises selection.
- Reduced traffic and bandwidth with advanced filtering and compression.
- Real time reporting and monitoring provides an unparalleled decision support tool.
- Extensive crew welfare assists crew retention.
- Continuously adapting to new operational and functional requirements, it provides a secure investment for the future.
- Simple to use and install and easy to customise and adapt.
- Proven lower total cost (LTC) of ownership.
- 24/7 customer service and technical support.

5. Setting up SmartBox-V™

Before setting-up SmartBox-V™, the customer needs to fill out a prerequisites form to allow for easy and on-the-spot configuration.

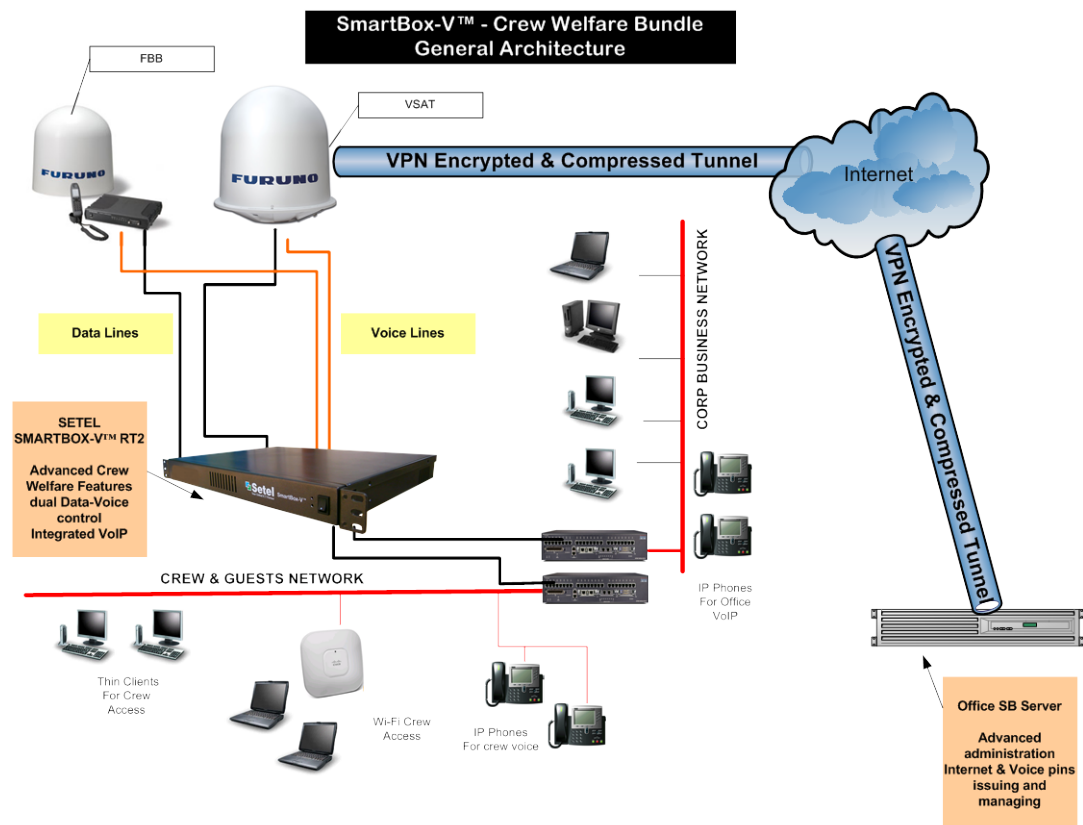
SmartBox-V™ comes pre-configured, with two or more active networking interfaces depending on deployment. The different network interfaces are either labelled on the case and/or will be accompanied by the relevant documentation, containing configuration information should it need to be altered.

Connect each network interface with the relevant network equipment (network switch, satellite terminal, etc.) using Cat5E/6 cables terminated at RJ45 plugs.

Using the configuration webpage on <http://169.254.254.1/setup>, follow the easy set-up guide to fully configure the appliance by entering the information on the prerequisites form.


Equipment needed

- Satellite terminal
- Network cables
- Network switches for customers' local area network (LAN) and ELAN
- Optional FXS/FXO up to eight ports card for connecting with PBX or provide analog telephony



6. Technical summary for SmartBox-V™ and SmartBox-V™ powered by Cisco

The technical features of the SmartBox-V™ series are summarised below.

Features	SmartBox-V™	SmartBox-V™ powered by Cisco 
Public hub/private hub	All modes supported (public, private and no hub)	All modes supported (public, private and no hub)
Types of satellite terminals supported	All types	All types
Number of supported WANs	Up to 13 IP	At least 8 IP, expandable
Support of physical separation of LANs	Fully supported (i.e. corporate LAN and crew/entertainment LAN)	Fully supported (i.e. corporate LAN and crew/entertainment LAN)
Service selection	All modes fully supported (auto, manual, semi-auto)	All modes fully supported (auto, manual, semi-auto)
VPN	Standard feature	Standard feature
On-board firewall	Fully supported, standard and advanced	Fully supported, standard and advanced
Quality of service (QoS) control	Supported on both ends	Supported on both ends
Virtual local area network (VLAN) support	Fully supported	Fully supported
Uniform resources locator (URL) filtering	Per site/group and white/black list support	Per site/group and white/black list support
Category filtering	Fully supported, L7-filtering with iptables	Fully supported, L7-filtering with iptables
Presentation layer filtering	Fully supported	Fully supported
Port and IP filtering	Fully supported and integrated	Fully supported and integrated
User access control	Pin generation and prepaid setup fully supported	Pin generation and prepaid setup fully supported
Support time and volume based internet pin cards	Both are fully supported	Both are fully supported

VoIP technology	Fully supported through Asterisk PBX (included)	Fully supported through Cisco call manager express (included)
Volume notification and alerts	Traffic notification system is available with three alert levels and auto-suspend capability	Traffic notification system is available with three alert levels and auto-suspend capability
Traffic reporting and monitoring	Fully supported, on both vessel and hub for the whole fleet	Fully supported, on both vessel and hub for the whole fleet
Advertisement blocking	Fully supported	Fully supported
Corporate policy	Fully supported	Fully supported
Storage on-board	Standard 64GB SSD	Standard 64GB SSD
File Sync	Fully supported	Fully supported
Proxy services (content filtering and web caching)	Fully supported (both on vessel and on hub)	Fully supported (both on vessel and on hub)
email server	Fully supported	Fully supported
Acceleration	Line acceleration as standard feature	Line acceleration as standard feature
Inmarsat TCP PEP	Fully supported and integrated	Fully supported and integrated

7. Test results

The results of the SmartBox-V™ VPN over FleetBroadband compression tests are shown below.

FleetBroadband traffic tests

File	Original size	Transferred size	Compression (%)
Word document (.doc)	1032192	643395	37
Picture file (.jpg)	1032192	1232826	-8
Picture file (.bmp)	1080056	136258	87
Picture file (.tiff)	1292866	1021473	20
Text file (.txt)	1024313	243078	76
Excel file (.xls)	1025536	499763	51
Zip file (.zip)	1398053	1399483	-1

8. Customisation required

No customisation required.

9. Further details and support

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