



# Setel

PowerLine Limited



Seatrade  
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## Setel PowerLine Limited Technical Datasheet 2016

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### Where to buy:



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## About

### Setel PowerLine Limited

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Setel PowerLine specialise in the design and implementation of network solutions based on our suite of INDUSTRIAL GRADE PowerLine products.

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Our EMC compliant solution removes the costs and associated challenges of running network cable in a vessel environment. By injecting the IP signal onto the vessel's powergrid, we bypass the need for any major works or downtime in vessel operations.

By invisibly retrofitting in just a matter of hours, our solutions are revolutionising the way IP networks are deployed within vessels, regardless of size or age. Designed to deliver full coverage networks for the enablement of multiple applications such as CCTV, Wi-Fi, Telemedicine, RFID tracking and LAN connectivity, this cost-effective solution provides a full coverage IP backbone, designed to future-proof the vessel for all IP requirements.

Full connectivity for new builds and existing tonnage designed to operate in harsh marine environments, this INDUSTRIAL GRADE solution allows for the creation of high speed, fully scalable networks.

Setel PowerLine's solution reduces costs and improves all aspects of safety, security, communication and crew welfare, leading to a vast overall improvement in operational performance.

Connectivity previously not deemed viable is now a reality.

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Setel PowerLine are creating the Smartships of tomorrow –

T O D A Y !



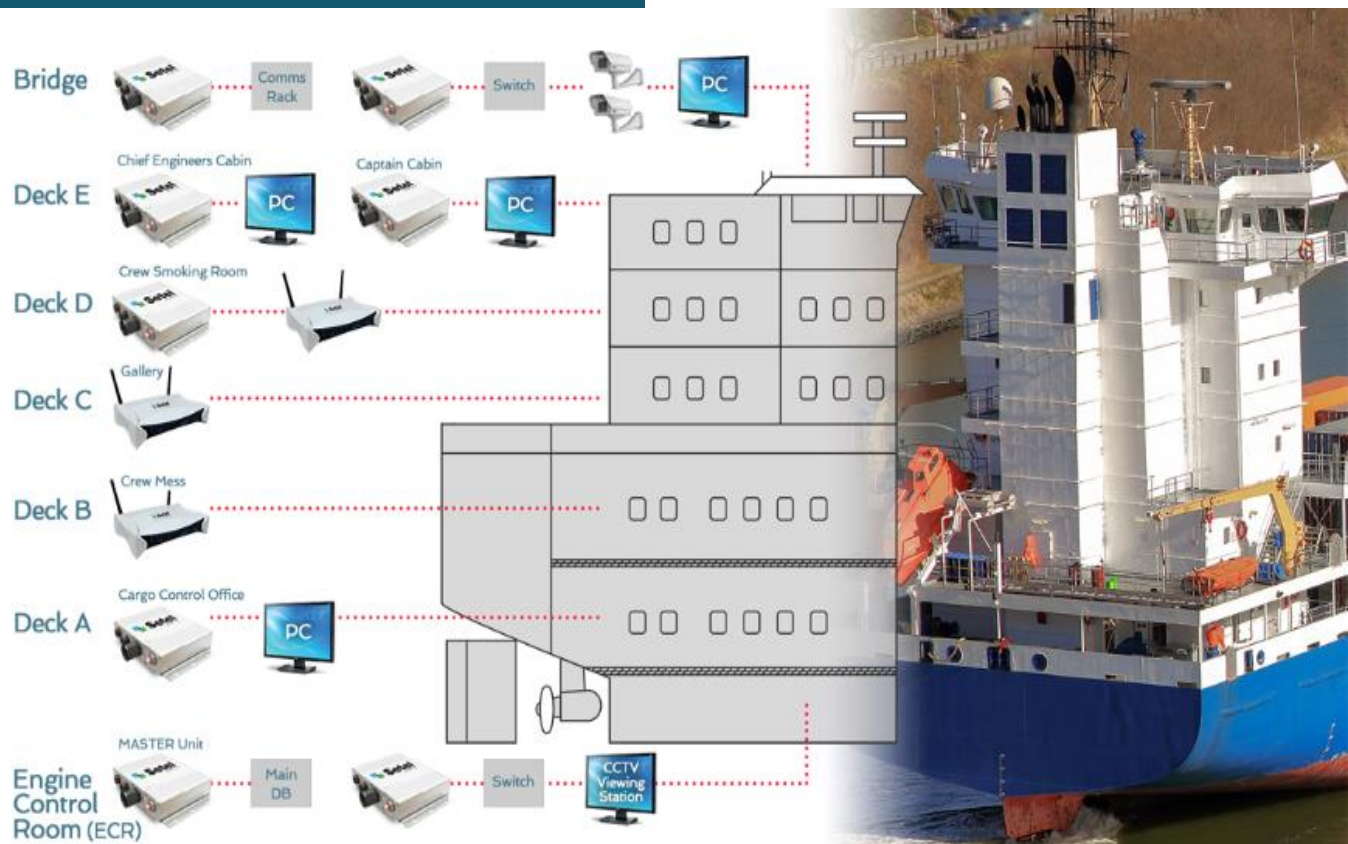
## Key Features

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- Full connectivity for new builds and existing tonnage.
- Retrofitted in a matter of hours.
- Full vessel coverage.
- No drilling, cabling or operational downtime.
- 200Mb high capacity technology.
- Fully scalable networks.
- EMC accreditation for vessel use.
- Secure transmission.
- Comprehensive QoS Architecture.
- Triple Play (Data, Voice, Video).
- Powerful management & control.

**NOT** based on the common domestic Home plug variant, this is an INDUSTRIAL GRADE Solution designed to operate in harsh marine environments.





## Commissioning Method

A Setel PowerLine Gateway device is fitted to the main electrical Distribution Board (DB) housed in the Engine Control Room (ECR). This injects our IP signal onto the electrical and lighting infrastructure across the entire vessel.

**OPTIMISATION** – The SETEL network works on a broad frequency range that is optimised to ensure no interference with frequencies carrying critical capabilities such as comms or navigation systems.

**REMOTE ACCESS** – The SETEL network connects to satellite or 4G, enabling remote access to CCTV and vessel systems as well as data transfer onshore.

**MULTIPLE PERIPHERALS** – Add as many IP capable applications as required, such as cameras, Wi-Fi Units, LAN points.

**SITUATIONAL AWARENESS** – ECRs become Citadels, with full situational awareness including both internal and external access to all camera feeds. Access to this info can be made available for external security personnel.

## Futureproof Plug & Play Solutions

LAN, CCTV and Wi-Fi can all be delivered together at the same time over the Setel PowerLine network. It delivers a myriad of, not only the most current IP based solutions, but also futureproofs your vessel or platform for subsequent IP applications.

**LAN NETWORKS** – As requirements change just add further Setel PowerLine Gateway devices to provide enhanced LAN connectivity in ANY location that has power or lighting.

**CCTV NETWORKS** – Use Setel PowerLine Gateway devices to connect CCTV cameras, network video recorders and viewing stations.

**Wi-Fi NETWORKS** – Setel PowerLine Wireless Access Points (WAPs) plug into any electrical access point to instantly deliver Wi-Fi coverage.

**SYSTEM MONITORING** – Setel PowerLine can access the network remotely to ensure the SETEL network is constantly performing to optimal levels as well as allowing routine system maintenance on behalf of the client.

# Setel Vessel Gateway Device

## SPL-HDG-GWY



The extremely rugged Setel GATEWAY Device (GWY) is a smart device designed to be deployed in 3 separate modes to deliver vessel-wide connectivity.

**MASTER** – To inject an IP signal across the vessel's electrical and lighting infrastructure.

Connection Method: To the main electrical Distribution Board (DB) using our PowerLine coupling device.

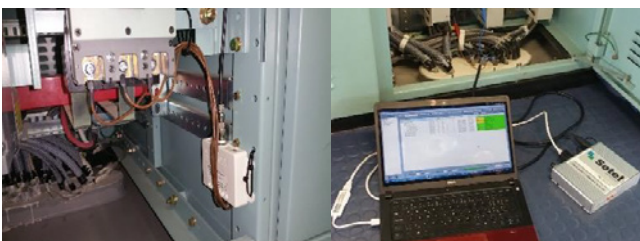
**SLAVE** – To connect any physical peripheral with an IP address to the network, such as CCTV cameras, 3<sup>rd</sup> Party Wireless APs, PCs and monitoring systems. It can also be used to connect to the vessel's external communication system.

Connection Method: The Gateway is supplied with a flying lead to simply plug into any available sockets on-board or be terminated in a fused spur.

**REPEATER** – There may be a requirement to boost the PowerLine Signal to obtain full vessel coverage, in which case the Gateway is placed in REPEATER mode.

Connection Method: Either coupled onto Sub DBs or plugged into available sockets as per required network design.

A high degree of network planning flexibility can be obtained along with remote configuration. SNMP based management enables rapid provisioning, diagnosis and testing. This allows for networks to be designed and optimised around specific applications.



## SPEEDS Up To 200Mb

### PHYSICAL & ENVIRONMENTAL

#### Operating Temperature

-40° to +85° (as standard).

#### Humidity

10%- 95% (non-condensing).

#### MTF

11.4 year mean time between failures.

#### Housing

Dimensions(mm): 180 x 135 x 40 (7" x 5" x 16").

#### Environmental Rating

IP56/IP68 as standard. Others available.

#### Power Supply

85-265 VAC, 50/60Hz, DC 12 VDC. Max 7W Consume.

#### EMC

Conforms to FCC Part 15 limits.

Carrier outputs can be adjusted to meet local limits.

Supports deep notching for interference control and EMC Compliance.

### FREQUENCY USAGE

2-34MHz bandwidth, fully configurable.

### NETWORKING

#### Interfaces

2 x 10/100 Base T Fast Ethernet, PLC or coaxial port.

#### Bridging

Integral IEEE 802.1d bridging between PLC and Ethernet with optimised spanning tree protocol.

Support for up to 1024 MAC addresses.

#### Configuration and Management

Automatic using DHCP/TFTP and RADIUS.

Integral management with support for SNMP v1, v2 & v3.

#### Modulation

OFDM technology & powerful error correction system allows robust performance in harsh conditions.

Bit loading per carrier responds to received SNR.

#### CoS & QoS

Packets auto-classified with 802.1p, IPTOS or manual.

Up to 8 service classes with priority classification engine.

Maximum latency and jitter programmable for each CoS.

#### Standards Compliance

IEEE 802.3u, 802.1P, 802.1Q, FCC Part 15, OPERA, EN 50412, EN 55022, EN 60950.

#### Security

Powerful 3DES/AES encryption.

IEEE 802.1q VLAN and Proprietary VLAN.

# Setel Deck WAP Unit

## SPL-CPE-WAP



The Setel Deck WAP is the perfect unit to enable a Wi-Fi network without the need to run any new cables.

The Deck WAP Unit combines powerful PowerLine technology with a Wireless interface to create a low-cost scalable network that provides high-speed connectivity and can work in places traditional Wi-Fi won't such as steel vessels, offshore platforms, ports, marinas and areas with strong RF interference.

Simply connect the unit's power cable into an electrical plug point and it immediately joins the SETEL network. The WAP supports triple play applications such as VoIP, live streaming and IPTV. It incorporates wireless auto channel select and can perform at speeds up to 200Mbps.

The Deck WAP Unit can be fitted permanently or simply held on-board to be deployed to provide "Plug & Play" connectivity wherever and whenever required, for emergencies or temporary requirements.

NB: Any other 3<sup>rd</sup> Party Wireless Access Points can be used in place of the Setel PowerLine WAP Unit, but it will require a Setel PowerLine GWY device to connect it to the network.



## SPEEDS Up To 200Mb

### PHYSICAL & ENVIRONMENTAL

Full coverage and flexibility even into the remotest locations.

#### Standards & Regulations

Ethernet specifications: IEEE 802.3, IEEE 802.3x, IEEE 802.3u, Auto MDI/MDIX.

#### BPL/BPL Security

Up to 200 Mbps.  
DES & 3DES data encryption.

#### BPL Frequency Band

2MHz ~ 34MHz.

#### Wi-Fi Security

WPS (Wi-Fi Protected Setup).  
Support for 64/128 bit WEP encryption.  
Support for WPA-PSK/WPA2-PSK security.

#### Quality of Service

Priority Mapping Based on IEEE 802.1p.  
Parameterized QoS.

#### Power Supply

Input: 100 ~ 240V AC, 50 ~ 60 Hz.

#### Environmental Conditions

Operating Temperature : 0 ~ 40 (32~ 104).

Operating Humidity : 20% ~ 95%, Non-condensing other housings available, contact FDN for options.

#### Physical Dimension

175mm (W) x 119mm (D) x 41mm (H), (6.9" x 4.7" x 1.6").



Creating the Smartships of tomorrow – TODAY!

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The Setel PowerLine network is a widely adopted, cost-effective solution to deliver all your connectivity and communication requirements no matter the age or size of your vessels or platforms.

Including but not limited to:

- Internet Access
- Satellite Distribution
- Wi-Fi for Crew Welfare
- CCTV Security
- Condition Based Maintenance
- VoIP Telephony
- RFID Tracking
- Operational Communications
- Equipment Monitoring
- Telemedicine
- Situational Awareness
- Anti-Piracy Solutions
- Container Monitoring
- Crew & Passenger Tracking
- Internal LAN Expansion

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All these and more, delivered at the same time over the same Setel PowerLine network, and retrofitted invisibly in a matter of hours!

**Smart Ships use PowerLine**

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