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Wirnet™ iStation

LoRaWAN® Outdoor Gateway for the Internet of Things

The "Wirnet™ iStation" is the ideal gateway to support your smart city, smart industry or any other smart project, combining simplicity of installation, unique superior coverage and operational excellence.

Smart Cities

Smart Industry

Smart Metering

Smart Agriculture & Environment

Kerlink is certified ISO9001: 2015 by AFNOR certification. The Quality Management System gives high priority to Customer satisfaction and progress implementation.

afaq ISO 9001 Qualité AFNOR CERTIFICATION

Key Features

- **Outdoor LoRa® Gateway,**
- Carrier grade casing (**IP67**) for industrial use,
- Supported unlicensed bands : 863-874.4MHz (EMEA, India), 902-928MHz (North America), 915-928MHz (APAC, Latin America),
- Supported LoRaWAN® regional parameters: EU863-870, IN865-867, RU864-870, US902-928, AU915-928, AS923, KR920-923,
- **8ch RX (125 kHz, multi Spreading Factor) + 1ch RX (250KHz or 500kHz, mono Spreading Factor) + 1ch RX (FSK) to get 10ch RX + 1ch TX,**
- Backhaul connectivity: 4G Worldwide module with 3G/2G fallback and Ethernet (RJ45),
- Powered by:
  - — PoE (Injector, switch, …), both Mode A and Mode B (802.3af specifications),
  - — +/- 48VDC through RJ45 (isolated power),
- **Highly secured device relying on a Trustzone firmware**

Key Differentiators

High performance, reliability & robustness

- **Carrier grade design** with excellent heat dissipation
- Semtech Reference Design v1.5 components.

Security HW and SW architecture

- SecureBoot (Signed firmware),
- SecureStorage (keys and certificates in secured area) using Trusted Execution Environment solution,
- Secured links and backhaul protection (OpenVPN/IPsec),
- Reboot (watchdog) and recovery to previous Management config (or factory config if the boot issue is not fixed).

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Easy deployment

- No need to open the casing during installation (waterproof connectors for RJ45, SIM card…),
- Easy installation mounting kit,
- **Fully integrated and internal antennas** GPS, 4G, LoRa (peak gain=2,6dBi) : no external antenna installation required (external LoRa antenna 3dBi or 6dBi possible as an option),
- Easy access to connectivity:
  - — Ethernet 10/100 Mbps (RJ45),
  - — SIM card (mini-SIM format),
  - — Two LEDs controlled by SW (programmable):
    - 1 x green LED for power,
    - 1 x red LED for system status (update, boot behavior, LoRa status, backhaul…),
- USB (Type C) connector for debug probe,
- Multifunction button for On/Off/Reset/Factory reset,
- Remotely configurable, manageable, via intuitive Web GUI,

Technical Features

- Sniffer for LBT (Listen Before Talk),
- Built-in high rejection SAW filters,
- Rx Sensitivity: -141 dBm (SF12),
- Conducted TX Power: configurable from 5dBm to 27 dBm,
- Range -40°C +60°C,
- Humidity: 95%,
- Size : 265 x 165 x 100 mm,
- Weight : 1,4kg (mounting kit included),
- Spectrum analysis compliant,
- Capacitor for clean shut down of applications in case of power failure,
- Casing: IP67 Alu (Back), Polycarbonate (Front), Inox (mounting kit),
- Surge protection of the RF LoRa link (option),
- CPU: ARM Cortex A9,
- DDRAM 256MB,
- 8GB eMMC (6GB available for user),

Software Features

- Same Kerlink software on all i-Series (for infrastructure homogeneity and easy maintenance
- **Dynamic web interface (On-the fly modifications),**
- **Programmable Gateway:** Toolchain, libraries and header files for compilation of in-house SW, or extra packages additions,
- **Including:**

- Operating System: KerOS with embedded GNU/Linux based on Yocto LTS and Kernel LTS,
- Native Language Support: Python3, C/C++ and Shell,
- Kerlink Common Packet Forwarder (Semtech Packet Forwarder, GWMP), Basic Station

Added-Value Services for all gateways

- Lifetime Guarantee
- Access to Kerlink Wiki
- Zero Touch Provisioning (ZTP) and Zero Touch Maintenance (ZTM)
- Access to embedded Chirpstack LNS

More options:

- **Maintain offer** : Priority support, Access to Wanesy Maganement Cockpit including inventory, Software packages management, remote reboot, alerting features
- **Operate offer** : SLAs, Network Operating Center, Pro-Active and preventive maintenance, Reports and recommendations for network optimization

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Available from
CONCEPT 13
www.concept13.co.uk
(The LoRaWAN Experts)

Thanks to their expertise and experience, Kerlink teams are fully mobilized to help you develop your business and reduce your operational and commercial risks. **Don't hesitate to contact us:**

All product specifications are subject to change without notice (V3.3)

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Certifications

868	915	923
• Europe	• USA • Canada	• Australia • New-Zealand • Japan • Singapore

Many other countries already planned,
(additional information on demand)

Wirnet™ iStation - Ordering references

Product Ordering References

Reference	Designation	Description	ISM Frequencies
PDTIOT-ISS04	Wirnet iStation 868 MHz	8CH LoRa, 2G/3G/4G backhaul + ETH backhaul	863-874.4MHz
PDTIOT-ISS05	Wirnet iStation 915 MHz	8CH LoRa, 2G/3G/4G backhaul + ETH backhaul	902-928MHz
PDTIOT-ISS06	Wirnet iStation 923 MHz	8CH LoRa, 2G/3G/4G backhaul + ETH backhaul	915-928MHz

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Common accessories for outdoor installation

KLK03524	Self-amalgamating tape - 3m	Mounting accessories for outdoor installation
KLK03540	Stainless Steel Hose clamp	Mounting accessories for outdoor installation
ACCIOT-POW01	DC/DC converter	DC/DC converter with USB-C output for solar panels installation

868 Accessory Ordering References

PoE INJECTOR		Description	Recommendation
KLK03525	POE Injector	PoE Injector 30 W indoor – 48V DC Input	
KLK03505	POE Injector	PoE Injector 30 W indoor - AC Input - EU	
KLK03554	In addition to KLK03505	AC Power supply cable for **UK (IEC-320-C13)**	
KLK03596	POE Injector	PoE Injector - 30 W Outdoor - AC Input	
EXTERNAL ANTENNA (optional)			
KLK03198	Antenna	Antenna Omnidir 868Mhz 3 dBi - N male	
ACCIOT-KAN01	Antenna	Antenna kit Omni 868 MHz 6 dBi	
(Outdoor) CAVITY FILTER			
KLK03410_01	Cavity filter 865-870 MHz	865-870 MHz, EU coexistence LTE800, RGSM	
KLK02523	Cavity filter 865-867 MHz	India	
KLK02916	CAVITY FILTER 863-873 MHz - OUTDOOR	EU coexistence high power emitters	Former ACCIOT-CAV04
SURGE PROTECTION			
KLK02817	Surge Protection for POE link - Outdoor	PoE Surge protection - Outdoor	Recommended
KLK02818	Surge Protection for POE link - Indoor	PoE Surge protection - Indoor	Recommended
KLK02900	Surge Protection for Lora link - Outdoor	RF coaxial Surge protection - Outdoor	Recommended
DEBUG			
ACCIOT-SDE01	Debug Probe	Universal Debug Probe	

915 Accessory Ordering References

PoE INJECTOR		Description	Recommendation
KLK03525	POE Injector	PoE Injector 30 W indoor – 48V DC Input	
KLK03505	POE Injector	PoE Injector 30 W indoor - AC Input - EU	
KLK03506	POE Injector	PoE Injector 30 W indoor - AC Input - US	
KLK03596	POE Injector	PoE Injector - 30 W Outdoor - AC Input	
EXTERNAL ANTENNA (optional)			
KLK03199	Antenna	Antenna Omnidir 915/923Mhz 3 dBi - N male	
ACCIOT-KAN02	Antenna	Antenna kit Omni 915/923 MHz 6 dBi	
ACCIOT-KAN03	Antenna + 1m cable + support included	Antenna kit Omni 915/923 Mhz 3 dBi	
SURGE PROTECTION			
KLK02817	Surge Protection for POE link - Outdoor	PoE Surge protection - Outdoor	Recommended
KLK02818	Surge Protection for POE link - Indoor	PoE Surge protection - Indoor	Recommended
KLK02900	Surge Protection for Lora link - Outdoor	RF coaxial Surge protection - Outdoor	Recommended
(Outdoor) CAVITY FILTER			
KLK02973	Cavity filter 902-928MHz	USA, Canada, Mexico	
KLK02909_01	CAVITY FILTER 920-928 MHz - OUTDOOR	USA, Canada, Mexico	Former ACCIOT-CAV03
DEBUG			
ACCIOT-SDE01	Debug Probe	Universal Debug Probe	

923 Accessory Ordering References

PoE INJECTOR		Description	Recommendation
KLK03505	POE Injector	PoE Injector 30 W indoor - AC Input - EU	
KLK03055	In addition to KLK03505	AC Power supply cable for **Japan (IEC-320-C13)**	
KLK03553	In addition to KLK03505	AC Power supply cable for **Australia (IEC-320-C13)**	
KLK03596	POE Injector	PoE Injector - 30 W Outdoor - AC Input	
EXTERNAL ANTENNA (optional)			
KLK03199	Antenna	Antenna Omnidir 915/923Mhz 3 dBi - N male	
ACCIOT-KAN02	Antenna	Antenna kit Omni 915/923 MHz 6 dBi	
ACCIOT-KAN03	Antenna + 1m cable + support included	Antenna kit Omni 915/923 Mhz 3 dBi	
SURGE PROTECTION			
KLK02817	Surge Protection for POE link - Outdoor	PoE Surge protection - Outdoor	Recommended
KLK02818	Surge Protection for POE link - Indoor	PoE Surge protection - Indoor	Recommended
KLK02900	Surge Protection for Lora link - Outdoor	RF coaxial Surge protection - Outdoor	Recommended
(Outdoor) CAVITY FILTER			
KLK02522	Cavity filter 920-925 MHz	South Korea, Singapore, HK, Taiwan, Thailand, Cambodia	
KLK02523	Cavity filter 920-925 MHz	India, Irak, Jordania	
KLK02905	Cavity filter 918-923 MHz	Indonesia Malaysia, Vietnam, Mynanmar	
KLK02906	Cavity filter 915-920 MHz	Philippines, Israel, Cuba	
KLK03306_02	Cavity filter 915-928 MHz	APAC, LATAM	
KLK02909_01	CAVITY FILTER 920-928 MHz - OUTDOOR	New-Zealand, Japan, Costa Rica, Venezuela (former ACCIOT-CAV03)	
DEBUG			
ACCIOT-SDE01	Debug Probe	Universal Debug Probe	