

# Wirnet™ iStation M2

LoRaWAN® Outdoor 8 channels Gateway for the Internet of Things



The Wirnet™ iStation M2 is a new-generation gateway designed for outdoor project, combining ultra-low power consumption, solar panels compatibility, superior coverage and operational excellence with effortless installation



Smart Cities  
& Public Operators



Smart Metering



Smart Agriculture  
& Environment

## Key Features

- **Outdoor LoRa® Gateway**
- Carrier grade casing (**IP67**) for industrial use
- Supported unlicensed bands : 863-873MHz (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 (125kHz BW, 8 x 8 channels LoRa® packet detectors 8 x SF5-SF12 LoRa® demodulators, 8 x SF5-SF10 LoRa® demodulators) + 1ch RX (250kHz or 500kHz, mono Spreading Factor LoRa® demodulator) + 1ch RX (FSK) to get 10ch RX + 1ch TX
- Backhaul connectivity: **4G/5G cellular, Ethernet, Wi-Fi,**
- Powered by:
  - PoE+ (Injector, switch, ...), both Mode A and Mode B (802.3af/at specifications)
  - Auxiliary DC supply (12V nominal)
  - Compatible with solar panel (low power consumption)
- Highly secured device relying on a Trustzone firmware
- Certifications: CE, FCC, ISED - refer to Kerlink Wiki for others

## Key Differentiators

### High performance, reliability & robustness

- **Lifetime Guarantee**
- Product **developed and manufactured in France**
- Low power consumption record
- **Carrier grade and robust design with excellent heat dissipation**
- Quick and easy installation for rapid deployment
- Semtech LoRa® Corecell Gateway Reference Design

### 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)

All product specifications are subject to change without notice (V1.0)

## Easy deployment

- No need to open the casing during installation (waterproof connectors for RJ45, SIM card...)
- Easy installation mounting kit
- 4 internal antennas: Main and auxiliary cellular (diversity), GNSS, Wi-Fi/BLE
- 1 external antenna: LoRa
- Easy access to connectivity:
  - Ethernet 10/100 Mbps (RJ45)
  - Modem LTE Cat6 or 5G RedCap in M.2 format, with worldwide coverage
  - SIM card (mini-SIM format)
- 10-56VDC auxiliary DC input
- Two LEDs controlled by SW (programmable):
  - 1 x green LED for power
  - 1 x red LED for system status (update, boot behavior, power...)
- USB (Type C) connector for configuration & 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)
- VSWR measurement at antenna port antenna adaptation measurement and radio auto diagnostic tools
- Auxiliary DC voltage monitoring
- Gateway current consumption measurement
- Built-in high rejection SAW filters
- Rx Sensitivity: - 127dBm to - 140dBm
- Conducted TX Power: configurable from 0dBm to 27dBm,
- Range -40°C +60°C
- Humidity Range : 0-95%
- Approx. weight: 1.3 kg (mounting kit included)
- Approx. Size: 265 x 165 x 95 mm
- In-band and out-of band spectrum analysis
- Internal battery storage 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),
- Embedded surge protection on Ethernet and DC input (gas tube)
- CPU & Memory: iMX8X Lite processor, 8GB eMMC, 1GB LPDDR4 RAM
- LoRa core: Semtech SX1302 + 2x SX1250, SX1303 ready

## Solar Panel Deployment



- Compatible with Kerlink Solar kit powering
- 2 sizes available: 80Wc and 30Wc
- Internal battery 12V - 52 Ah
- 10 days Autonomy, 100% availability 24/7, 365 days a year

## Software Features

- Same Kerlink software on all KerOS 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
- Compliance with the EU RED Delegated Act 2022/30 (RED Cyber)

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.**

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communication is everything

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## Added-Value Services for all gateways

- **Access to Kerlink Wiki**

The Kerlink Wiki gives you full access to comprehensive and up-to-date documentation about the delivered solution: installation and setup instructions, configuration steps, connectivity options, etc.

The content of the wiki at the time of ordering is **the reference** and prevails in case of discrepancy.

Consult it before buying to ensure the solution fits your needs: [Click here](#)

- **Zero Touch Provisioning (ZTP) and Zero Touch Maintenance (ZTM)**
- Integration with main LNS providers (Netmore, Actility, Lorient, ChirpStack, Orbiwise, TTN)

## Available Options

### **Maintain Program**

For customers aiming to enhance their IoT network based on Kerlink gateways.

**Including:**

- Unlimited level 2/3 support
- Team of dedicated experts
- Response within 8 working hours
- Clear history and tracking
- Personalized support
- Access to our Wansey Management Cockpit
  - Real-time overview of your gateway's health
  - Precise monitoring of your network's performance

### **Operate offer**

For customers focused on their core business.

**Including:**

- Maintain Program
- Kerlink commitment on data air availability (SLAs)
- Network Operating Center with dedicated experts monitoring your network
- Pro-active and preventive maintenance
- Monthly reports about health of network (and recommendations)
- Dedicated Account manager

For more informations about our Maintain Program or our Operate offer, contact us: [sales@kerlink.com](mailto:sales@kerlink.com)

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





## Wirnet™ iStation M2 - Ordering references

### Product Ordering References

Reference	Designation	Description	ISM Frequencies
PDTIOT-ISM200	Wirnet iStation M2 868 MHz	8CH LoRa, 4G backhaul + Wifi backhaul + ETH backhaul	863-873 MHz
PDTIOT-ISM201	Wirnet iStation M2 915 MHz	8CH LoRa, 5G backhaul + Wifi backhaul + ETH backhaul	902-928 MHz
PDTIOT-ISM202	Wirnet iStation M2 923 MHz	8CH LoRa, 4G backhaul + Wifi backhaul + ETH backhaul	915-928 MHz

## Autonomous Kit Ordering References

Reference	Designation	Description
ACCIOT-AK00	30Wc Autonomous kit	Autonomous kit 30Wc, 320Wh battery
ACCIOT-AK01	80Wc Autonomous kit	Autonomous kit 80Wc, 640Wh battery
ACCIOT-BP00	Bird protection	Bird protection for autonomous kit

## 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

## 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 <b>UK (IEC-320-C13)</b>	
KLK03596	POE Injector	PoE Injector - 30 W Outdoor - AC Input	
<b>EXTERNAL ANTENNA (optional)</b>			
KLK03198	Antenna	Antenna Omnidir 868MHz 3 dBi - N male	
ACCIOT-KAN00	Antenna + 1m cable + support included	Antenna kit Omni 868MHz 3dBi	
ACCIOT-KAN09-02	Antenna + 1m cable + support included	Antenna kit Omni 863-928 MHz	
<b>(Outdoor) CAVITY FILTER</b>			
KLK03410	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	EU coexistence high power emitters	Former ACCIOT-CAV04
<b>SURGE PROTECTION</b>			
KLK03806	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
<b>DEBUG</b>			
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	
<b>EXTERNAL ANTENNA (optional)</b>			
KLK03199	Antenna	Antenna Omnidir 915/923MHz 3 dBi - N male	
ACCIOT-KAN03	Antenna + 1m cable + support included	Antenna kit Omni 915/923 MHz 3 dBi	
ACCIOT-KAN09-02	Antenna + 1m cable + support included	Antenna kit Omni 863/928 MHz 6 dBi	
<b>SURGE PROTECTION</b>			
KLK03806	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
<b>(Outdoor) CAVITY FILTER</b>			
KLK02973	Cavity filter 902-928MHz	USA, Canada, Mexico	
<b>DEBUG</b>			
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 <b>Japan (IEC-320-C13)</b>	
KLK03553	In addition to KLK03505	AC Power supply cable for <b>Australia (IEC-320-C13)</b>	
KLK03596	PoE Injector	PoE Injector - 30 W Outdoor - AC Input	
<b>EXTERNAL ANTENNA (optional)</b>			
KLK03199	Antenna	Antenna Omnidir 915/923MHz 3 dBi - N male	
ACCIOT-KAN03	Antenna + 1m cable + support included	Antenna kit Omni 915/923 MHz 3 dBi	
ACCIOT-KAN09-02	Antenna + 1m cable + support included	Antenna kit Omni 863/928 MHz 6 dBi	
<b>SURGE PROTECTION</b>			
KLK03806	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
<b>(Outdoor) CAVITY FILTER</b>			
KLK02522	Cavity filter 920-925 MHz	South Korea, Singapore, HK, Taiwan, Thailand, Cambodia	
KLK02905	Cavity filter 918-923 MHz	Indonesia Malaysia, Vietnam, Myanmar, South-Korea	
KLK02906	Cavity filter 915-920 MHz	Philippines, Israel, Cuba	
KLK03306	Cavity filter 915-928 MHz	APAC, LATAM	
KLK02909	Cavity filter 920-928 MHz	New-Zealand, Japan, Costa Rica, Venezuela (former ACCIOT-CAV03)	
<b>DEBUG</b>			
ACCIOT-SDE01	Debug Probe	Universal Debug Probe	