



Gateway Datasheet

CONNECTED E-PAPER INFRASTRUCTURE

Reliable indoor connectivity
for scalable electronic paper deployments.

- 8 CHANNELS
- LORA + FLRC (Fast Long Range Communication)



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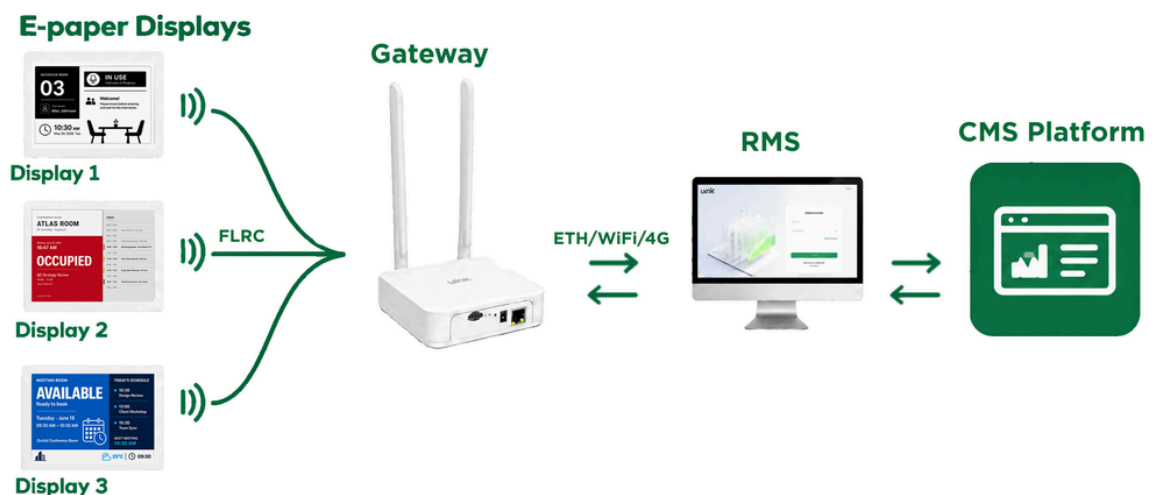
1. Product Overview

A robust, connected gateway built for high-density e-paper communication.

uink gateway is a robust 8-channel indoor gateway based on the LoRa chip and a high-performance quad-core CPU. It supports connections with **more than 2,000 nodes**, with line-of-sight coverage up to **15 km** and about **2 km** in urbanized environments. It supports **Ethernet, Wi-Fi and cellular backhaul, and a built-in network server.**

The uink gateway integrates **FLRC (Fast Long Range Communication)**, a high-speed modem combining GMSK (Gaussian Minimum Shift Keying) modulation with forward error correction and interleaving, operating in the Sub-1 GHz ISM band. By combining Sub-1 GHz penetration with high-speed data rates and convolutional coding, FLRC delivers both extended coverage and low-latency throughput.

The gateway is one of the earliest in the industry to deploy FLRC in electronic paper display communication, setting a new benchmark for range, responsiveness, and energy efficiency.



2. Key Features

- Quad-core industrial processor with 2GB DDR4 RAM.
- LoRa chip with lower power consumption and higher traffic handling.
- Multi-backhaul: Ethernet, 4G cellular and Wi-Fi.
- uink RMS for centralized remote management.
- VPN support including IPsec, OpenVPN, L2TP, PPTP, DMVPN and WireGuard.
- Built-in network server with MQTT/HTTP API.
- Multiple PHY Support: Supports LoRa, FLRC modulation modes.

3.Specifications

PARAMETER	SPECIFICATION
HARDWARE SPECIFICATIONS	
CPU	Quad-core 1.5 GHz, 64-bit ARM Cortex-A53
Memory	2 GB DDR4 RAM
Flash	32 GB eMMC
LoRa® Antenna	External Antenna
FLRC Antenna	External Antenna
LoRa® Channel	8
Frequency Band	CN470 / EU868 / US915
Sensitivity	-140 dBm @ 292 bps
TX Power	27 dBm Max
LoRa® Protocol	V1.0 Class A/B/C and V1.0.2 Class A/B/C
FLRC Protocol	Proprietary Protocol
ETHERNET INTERFACE	
Port	1 × RJ45 WAN Port (PoE PD supported)
Physical Layer	10/100/1000 Base-T (IEEE 802.3)
Data Rate	10/100/1000 Mbps, Auto-Sensing
MDI/MDIX	Auto MDI/MDIX
Mode	Full or Half Duplex, Auto-Sensing
Ethernet Isolation	1.5 kV RMS
WI-FI INTERFACE	
Antenna	Internal Antenna
Standards	IEEE 802.11 b/g/n, 2.4 GHz
TX Power	802.11b: 18 dBm ±2 dBm; 802.11g: 15 dBm ±2 dBm; 802.11n 2.4 GHz: 13–14 dBm ±2 dBm depending on mode
CELLULAR INTERFACE (OPTIONAL)	
Network	4G LTE
TX Power	Class 3 (23 dBm ±2 dB)
Antenna	Internal Antenna
SIM Slot	1 × mini SIM-2FF
OTHER INTERFACES & FUNCTIONS	
Reset	1 × RST button
LED Indicators	Power, Status, LoRa
Power Connector	1 × DC Male Jack Connector (2.1 × 5.5 mm)
System Functions	Built-in Watchdog, RTC, Timer
POWER SUPPLY & CONSUMPTION	
Power Input	DC 9–24 V by power connector, 802.3af PoE
Typical Power Consumption	2.9 W
Maximum Power Consumption	4.2 W
PHYSICAL CHARACTERISTICS	
Material & Color	ABS, White
Weight	205g
Dimensions	125*125*30 mm
Installation	Desktop, Wall or Pole Mounting

PARAMETER	SPECIFICATION
ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature	-40°C to +70°C (-40°F to +158°F) Reduced Cellular Performance Above 60°C
Storage Temperature	-40°C to +80°C (-40°F to +180°F)
Relative Humidity	0% to 95% (non-condensing) at 25°C/77°F
SOFTWARE SPECIFICATIONS	
Supported Devices	Around 2,000 Class A/B/C devices (10 min uplink interval)
Packet Forwarder	Supported
Noise Analyzer	Scans frequency noise for channel selection
Packet Filter	Blocklist / Allowlist
Data Retransmission	Re-transmit data packets after network recovery
FUOTA	FUOTA supported end devices
NETWORK & SECURITY	
Network Protocols	PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, etc.
VPN Tunnel	OpenVPN / IPsec / PPTP / L2TP / GRE / DMVPN / WireGuard
Firewall	Access Control, DMZ, Port Mapping (DNAT), MAC Binding, IP & Domain Filtering
DDNS	Supported
Wi-Fi Mode	AP or Client mode
Wi-Fi Security	AP: WPA-PSK/WPA2-PSK authentication, WEP/TKIP/AES encryption Client: WPA-PSK/WPA2-PSK/WPA-Enterprise/WPA2-Enterprise authentication, WEP/TKIP/AES encryption
MANAGEMENT	
Configuration	Web, CLI (SSH/Telnet), SMS, On-demand dial up, SNMP, HTTP API, MQTT API, uink RMS
Update	Web, uink RMS
Remote Management	uink RMS
Event Alarm	Power On, Network Up/Down, OTA Fail, etc.
Diagnostics	Logs, Reboot, Delete
Authority	Multiple Levels of User Authority

4. Hardware Overview

