

IOT GATEWAY

IOT GATEWAY DATASHEET

COSGrid IoT gateway is a cutting-edge network router designed to facilitate seamless connectivity and communication between IoT devices, its users and the cloud . By leveraging the power of 5G, our gateway ensures ultra-fast and reliable data transfers, minimizing latency and maximizing throughput. Our COSGrid IoT gateway is not only a hardware device but also encompasses powerful software programs that enhance its functionality. It is designed to seamlessly integrate with existing IoT ecosystems, making it highly versatile and adaptable to various IoT deployments. With COSGrid, businesses and organizations can experience enhanced connectivity, improved data security, and streamlined device management.



COSGrid IoT gateway- I4XG Hardware

COSGRID IOT GATEWAY KEY HIGHLIGHTS

- **5G Connectivity** : 5G Gateway & Wi-Fi for reliable IoT Use cases & reliable Indoor/outdoor connectivity
- **Real Time Monitoring** : Device status, Network Traffic, Data Throughput & packet loss
- **Zero Touch Provisioning** : Configures network devices without requiring manual intervention.
- **Remote Management**: Enables remote configuration, monitoring, and troubleshooting through a user-friendly interface.
- **Ease of management** : Web GUI & Mobile App support for device onboarding
- **Multi-Protocol Support**: Compatible with multiple communication protocols such as MQTT, CoAP, HTTP/HTTPS, Modbus, and more.
- **Edge Computing**: Supports local data processing and analysis to reduce latency and minimize bandwidth usage.
- **Secure Connectivity**: Advanced encryption standards such as TLS/SSL for secure data transmission.
- **Scalability**: Easily integrates with a variety of IoT devices and scales to meet growing network demands.
- **Cloud Integration**: Seamlessly connects to cloud platforms for remote monitoring, management, and analytics.

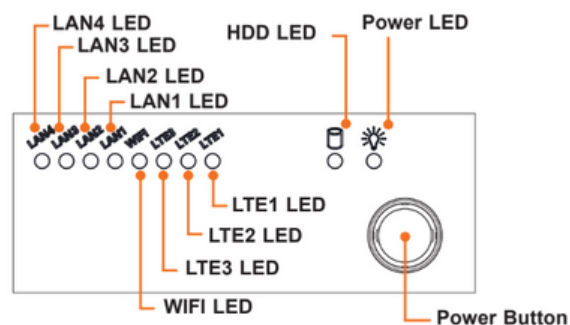
COSGRID IOT GATEWAY SPECIFICATIONS

Mobile	
Module	5G Sub-6GHz SA 1/2 Gbps DL (4x4 MIMO) or higher , 900/600 Mbps UL (2x2) Quectel RG500U EA 5G
Cellular Band	5G NR NSA: n41/n77/n78/n79 5G NR SA:n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48*/n66/ n71/ n77/ n78/n79 LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/ B66/B71 LTE - TDD: B34/B38/B39/B40/B41/B42/B43/B48
Connected Band Status	Displays the currently connected frequency band (e.g., 2.4GHz, 5GHz) for Wi-Fi and cellular networks.
IMSI (International Mobile Subscriber Identity)	Identifies the subscriber within the mobile network.
ICCID (Integrated Circuit Card Identifier)	Unique identifier of the SIM card used in the device.
SMS/Call Status	Provides information on the status of SMS (Short Message Service) and voice calls.
USSD (Unstructured Supplementary Service Data)	Supports sending and reading USSD messages for mobile network services.
APN (Access Point Name)	Configurable APN settings for mobile network access.
Multiple PDNs (Packet Data Networks)	Ability to use different PDNs for multiple network access services, allowing flexibility in network configuration.
Status	
Signal Strength - Status	
RSSI (Received Signal Strength Indicator)	Measures the received signal strength of a wireless network (dBm).
SINR (Signal-to-Interference-plus-Noise Ratio)	Indicates signal quality by comparing the signal to noise and interference (dB).
RSRP (Reference Signal Received Power)	Measures the received signal power from the cell tower (dBm).
RSRQ (Reference Signal Received Quality)	Provides a quality measure of the received signal (dB).
EC/IO (Energy per chip/Interference)	Measures the energy level per chip relative to interference for signal clarity (dB).
RSCP (Received Signal Code Power)	Measures the received signal strength from a CDMA network (dBm).
Bytes Sent/Received	Real-time monitoring of data throughput (MB/s or KB/s) for effective traffic management.
Access Points	
Supports 802.11b/g/n/ac	Enables compatibility with Wi-Fi networks of various standards, including 802.11b, g, n, and ac.
Wi-Fi Security	Supports the latest Wi-Fi security protocols (WPA3, WPA2, WPA, WEP, and TKIP) for encrypted communication.
Simultaneous Wi-Fi Users	Supports up to 30 simultaneous Wi-Fi user connections, making it suitable for high-density environments. - Intel Processor
Optional LPWAN Support	Optional support for LoRa and Sigfox LPWAN technologies for long-range, low-power IoT applications.
Routing Support	
Network Protocol Support	Supports all necessary network protocols (e.g., TCP/IP, HTTP, MQTT, CoAP) for seamless IoT device communication.
Static and Dynamic Routing	Offers both static and dynamic routing capabilities to efficiently manage data paths.
Static and Dynamic IP Allocation	Supports both static and dynamic IP allocation to devices, ensuring flexibility in network configuration.
VLAN & VPN Support	
Multiple Clients/Server Support	Allows simultaneous operation of multiple clients and servers over the same network.
WireGuard VPN Support	Built-in WireGuard VPN client and server support for secure, encrypted communication.
Port and Tag-based VLAN Separation	Supports VLAN separation based on port and tag configurations to isolate network traffic.
IPsec VPN Support	Supports up to 5 VPN IPsec tunnels with AES/DES encryption for secure communication.

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Firewall & Security Features	
Pre-configured Firewall Rules	Enable firewall rules via the WebUI for immediate protection.
CLI Firewall Configuration	Allows unlimited firewall customization through the CLI for advanced users.
NAT/NAT-T Support	Supports Network Address Translation (NAT) and NAT Traversal (NAT-T) for secure and efficient data routing.
DDOS Prevention	Includes features to prevent DDoS attacks, such as port scan prevention.
Custom SIM Card Data Limits	Allows setting custom data limits for SIM card usage to manage network resources effectively.
Web Filtering	Enables URL filtering through a blacklist (block unwanted websites) and whitelist (allow only specified websites).
Management and Monitoring	
Status and Configuration	Easily accessible status and configuration settings through the WebUI, CLI, or centralized cloud management platform.
Firmware Updates	Supports firmware updates directly from the server with automatic notifications for the latest firmware versions.
Device Data Monitoring	Monitors key device data, including mobile data, network info, availability, device model, revision, serial number, and more.
Connection Monitoring	Monitors mobile cell ID, ICCID, IMEI, connection type, operator, signal strength, WAN type, and IP address in real-time.
Mobile Network Monitoring	Tracks WAN type, WAN IP, mobile operator name, mobile signal strength, and mobile network type for comprehensive network health monitoring.
Management API	Provides management access via HTTP/HTTPS API, enabling integration with third-party monitoring and management platforms.
Traffic Flow Analytics	Applications, per-endpoints, per-branch level usage analytics
WAN Monitoring	WAN Links and VPN tunnels health monitoring and real-time alerts
Hardware Appliance	
Processor / CPU	Intel® Celeron® J3455 Processor, Quad Core, 2M Cache, 1.5GHz2.3GHz,
Drive Support	60 GB SSD
Memory	Integrated memory controller supports up to 8GB DDR3L 1866MHz Non-ECC SO-DIMM
Expansion Slots	Three M.2 B-Key (USB) 2242/3042 with Nano SIM Slots (4G/ 5G support) One M.2 E-Key 2230 (Wifi) Expansion Slots
I/O Ports LAN:	Four Gigabit Ethernet ports
Digital I/O	Supported via USB ports
System Cooling	One 4-cm PWM system fan
Antenna	8 Antennas : 6 LTE/5G Antenna (4 Front + 2 Side) + 2 Wifi Antenna
USB	Two USB3.0 ports (rear)
Display	One HDMI
Power Supply	60 watt power adapter for 12VDC, 5A
Form Factor	3.5" SBC 7.48 x 1.72 x 4.72 in. (190 x 44 x 120 mm) (WxDxH)
STATUS LED	
Continuous on red	An overheat condition has occurred.(This may be caused by cable congestion.)
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Blinking red (0.25Hz)	Power failure, check for a non-operational power supply.
Solid blue	UID has been activated locally to locate the server in a rack environment
Blinking blue	UID has been activated using IPMI to locate the server in a rack environment.

COSGRID IOT GATEWAY HARDWARE - CONTROL PANEL



Feature	Description
Power Button	Applies or removes power from the power supply to the server; standby power is maintained
Power LED	Indicates power is being supplied to the system power supply; illuminated when the system is operating normally
HDD LED	Indicates hard drive activity when flashing
LTE1 LED	WAN connection
LTE2 LED	WAN connection
LTE3 LED	WAN connection
LAN1 LED	Indicates network activity on LAN port 1 when flashing
LAN2 LED	Indicates network activity on LAN port 2 when flashing
LAN3 LED	Indicates network activity on LAN port 3 when flashing
LAN4 LED	Indicates network activity on LAN port 4 when flashing
WIFI LED	Wireless Network connection

COSGRID IOT GATEWAY HARDWARE -ASSEMBLY

