YHiot Technology

G6500 4G IoT Gateway

G6500 4G IoT Gateway Datasheet

Yinghua G6500 series 4G IoT Gateway is a programmable IoT gateway with rich protocols and I/O interface. It uses OpenWrt based Linux OS, and offers C/C++, Python programmable embedded environment for IoT developers and programmers to implement their applications in easy way. It has rich I/O interface, like RJ45, RS232/RS485, DI/DO, USB, WIFI, GPS, and rich protocols such as MQTT, Modbus RTU/TCP, Modbus to Json, TCP/UDP, to collect and transfer the data from diverse sensors and controllers to the server, also remotely control the equipment. It is using Industrial Grade equipment design standards, passed CE,FCC and EMC test, stable and reliable, widely used in Smart Energy, Agriculture, Traffic, Finance and other IoT projects.

MEET THE G6500 4G IOT GATEWAY

I： OpenWrt based Linux OS, provides programmable environment via C/C++, Python, LUA, SDK .

II： Rich interfaces: 4-LAN, 1-WAN, 1-USB, 2-DI, 2-Relay, 1-RS232, 1-RS485, WIFI(802.11b/g/n), GPS(Option).

III： Rich protocols: MQTT, Modbus RTU/TCP, TCP/UDP, HTTP, SNMP.

IV： Full support for IPV4 and IPV6 network technology.

V： Detects a network problem and redial automatically , ensuring the customer’s SLAs are upheld.

VI： Free service to monitor, configure and control all terminals via Cloud.

VII： Web UI, telnet & SSH CLI, AT Command configuration.

VIII： 5-35V DC power supply, Low-voltage, over current, over voltage, anti-reverse protection.

IX： Dedicated hardware and software watchdog are designed to support system running reliable.

SPECIFICATIONS

MOBILE

Mobile module	4G (LTE) – Cat 4 up to 150 Mbps downlink, 50Mbps uplink 4G (LTE) – Cat 1 up to 10 Mbps downlink, 5Mbps uplink
Status	Signal strength (RSSI), Attached network, IMSI, ICCID
APN	Auto APN, Customized APN

WIRELESS

Wireless mode	IEEE 802.11b/g/n, Access Point (AP)
WiFi security	WPA2-PSK, WEP, WPA-EAP, WPA-PSK; AES-CCMP, TKIP, Auto Cipher modes, client separation
SSID	SSID stealth mode and access control based on MAC address
WiFi users	Up to 30 simultaneous connections

PHYSICAL INTERFACE

WAN	1 x WAN port (can be configured to LAN) 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX

LAN	4 x LAN port, 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX
Serial	1x RS232 (Built-in 8KV ESD protection) & 1x RS485 (Built-in 15KV ESD protection), 6-pin Industrial terminal block
USB	1 x USB 2.0(up to 128G), for User Program, Data Storage and Firmware Upgrade
Relay	2, up to 5A output, to control the power supply of external devices
DI(Digital Input)	2, DC 0-30V input, to check the status of external devices
CAN(Option)	1x standard CAN interface
GPS (Option)	Built in external GPS module
SIM	1 Standard SIM card slot,1.8 V/3 V, external SIM holder
Antenna	2 x SMA for LTE, 1 x SMA for WiFi antenna connectors
LED	3 x Signal strength LEDs, 1 x Alarm LED, 1 x Run status LED,1 x Power LED,1 x VPN status LED, 1 x WIFI LED
Reset	Reboot/Factory reset button

NETWORK

Routing	Static routing, Dynamic routing (BGP, OSPF v2, RIP v1/v2, RIPng, OSPF6)
Network protocols	TCP, UDP, IPv4, IPv6, ICMP, NTP, DNS, HTTP, TLS, ARP, VRRP, PPP, PPPoE, UPnP, SSH, DHCP, Telnet client, SNMP
Serial Port	MQTT, Transparent (TCP Client/Server, UDP Client/Server), Modbus Gateway (Modbus RTU to Modbus TCP)
Connection monitoring	Ping Reboot, Periodic Reboot, LCP and ICMP for link inspection
Firewall	SPI Firewall, DoS attack, VPN traversal, Access Control, Port Mapping, DMZ Mapping, Access Control List(ACL), IP-MAC binding and Clone function
DHCP	Static and dynamic IP allocation, DHCP Relay
QoS	Traffic priority queuing by source/destination, service, protocol or port
DDNS	Supported >25 service providers, others can be configured manually
Network backup	VRRP, Mobile and Wired, each of which can be used as backup, using automatic failover

SECURITY

Attack prevention	DDOS prevention (SYN flood protection, SSH attack prevention, HTTP/HTTPS attack prevention)
VLAN	Port and tag based VLAN separation

WEB filter	Blacklist for blocking out unwanted websites, whitelist for specifying allowed sites only
Access control	Flexible access control of TCP, UDP, ICMP packets, MAC address filter

VPN

OpenVPN	Multiple clients can be running simultaneously, 10 encryption methods
OpenVPN Encryption	DES-CBC, RC2-CBC, DES-EDE-CBC, DES-EDE3-CBC, DESX-CBC, BF-CBC, RC2-40-CBC, CAST5-CBC, RC2-64-CBC, AES-128-CBC, AES-192-CBC, AES-256-CBC
IPsec	IKEv1, IKEv2, supports up to 10 x VPN IPsec tunnels (instances), with 5 encryption methods (DES, 3DES, AES128, AES192, AES256)
GRE	GRE tunnel
PPTP, L2TP	Client/Server services can run simultaneously

SERIAL TRANSMISSION

TCP/UDP SERVER

Parameters	Port, Baud rate, Parity, Data bits, Stop bits, Flow control

TCP/UDP CLIENT

Parameters	Port, Baud rate, Parity, Data bits, Stop bits, Flow control, Heartbeat
Data center	Supported 4 server run simultaneously

MONITORING & MANAGEMENT

WEB UI	HTTP, status, configuration, FW update,troubleshoot, event log, system log, kernel log
FOTA	Firmware update from sever, automatic notification
SNMP	SNMP (v1, v2, v3)

IOT PLATFORMS

Cloud of Things	Allows monitoring Network info, Availability
Configure	Configure parameters, Update firmware

SYSTEM CHARACTERISTICS

CPU	Mediatek MIPS 24Kc 580 MHz

RAM	128 MB, DDR2
FLASH storage	16 MB, SPI Flash

FIRMWARE / CONFIGURATION

WEB UI	Update FW from file, check FW on cloud, configuration backup and restore
FOTA	Update FW/configuration from cloud platform
RMS	Update FW/configuration for multiple devices
Keep settings	Update FW without losing current configuration

POWER

Connector	2-pin with 3.5 mm terminal block
Input voltage range	5 – 35 VDC, reverse polarity protection, surge protection
Power consumption	< 5 W Max

PHYSICAL SPECIFICATION

Casing material	Metal housing, DIN rail mounting option
Dimensions (W x H x D)	145 x 112.5 x 44 mm
Weight	790 g

OPERATING ENVIRONMENT

Operating temperature	-40 °C to 75 °C
Operating humidity	10% to 90% non-condensing
Ingress Protection Rating	IP30

REGULATORY & TYPE APPROVALS

Regulatory	CE, FCC, CCC

EMI IMMUNITY

Standards	Draft EN 301 489-1 V2.2.0, Draft EN 301 489-17 V3.2.0, Draft EN 301 489-52 V1.1.0 FCC 47 CFR Part 15B (2017), ANSI C63.4 (2014)

ESD	EN61000-4-2:2009
RS	EN 61000-4-3:2006 + A1:2008 + A2:2010
EFT	EN 61000-4-4:2012
Surge immunity (AC Power Line)	EN 61000-4-5:2006
Surge immunity (Ethernet ports)	EN 61000-4-5:2014, clause 7.1 of ITU-T K21
CS	EN 61000-4-6:2009
DIP	EN 61000-4-11:2004

RF

Standards	EN 300 328 V2.1.1, EN 301 511 V12.5.1, EN 301 908-1 V11.1.1, EN 301 908-2 V11.1.1, EN 301 908-13 V11.1.1 FCC 47 CFR Part 15C (2017), FCC 47 CFR Part 2 (2017), FCC 47 CFR Part 22H (2017), FCC 47 CFR Part 24E (2017), FCC 47 CFR Part 27C (2017) RSS-Gen Issue 4 (2014), RSS-247 Issue 2 (2017), RSS-132 Issue 3 (2013), RSS-133 Issue 6 (2013), RSS-139 Issue 3, RSS-130 Issue 1

ORDER

Model	Region	LTE CAT4 (-C4)	LTE CAT1 (-C1)
G6500A	AT&T/ Verizon/ T-mobile, Canada	LTE-FDD: B2/B4/B5/B12/B13/B14/B66/B71; WCDMA: B2/B4/B5	No
G6500E	EMEA/Korea/Thailand/India	LTE-FDD: B1/B3/B7/B8/B20/B28A LTE-TDD: B38/B40/B41; WCDMA: B1/B8 ;	LTE-FDD: B1/B3/B5/B7/B8/B20 WCDMA: B1/B5/B8; GSM: B3/B8
G6500AU	Latin America/ANZ, Australia	LTE-FDD: B1/B2 /B3/B4/B5/B7/B8/B28; LTE-TDD: B40 WCDMA: B1/B2/B5/B8;	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28; LTE-FDD: B40 WCDMA: B1/B2/B5/B8;
G6500J	Japan	LTE-FDD: B1/B3/B8/B18/B19/B26; LTE-TDD: B41; WCDMA: B1/B6/B8/B19	No
G6500G	Global	LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/ B19/B20/B25/B26/B28 LTE TDD: B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19	No

STANDARD PACKAGE

				
G6500 4G Gateway	24W PSU	Ethernet cable, 1m	2 LTE antenna,1.5m cable	1 WiFi antenna

Note: The PSU can be customized.