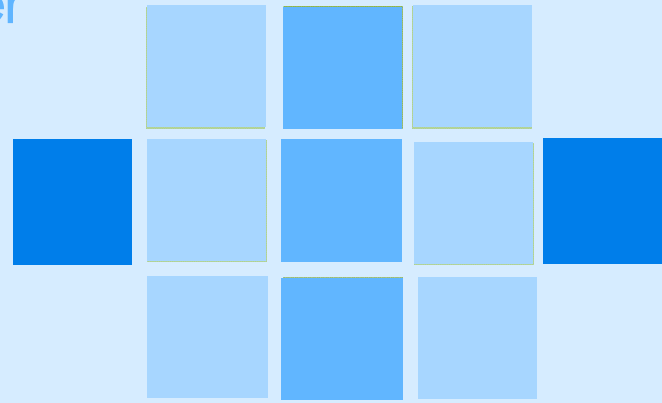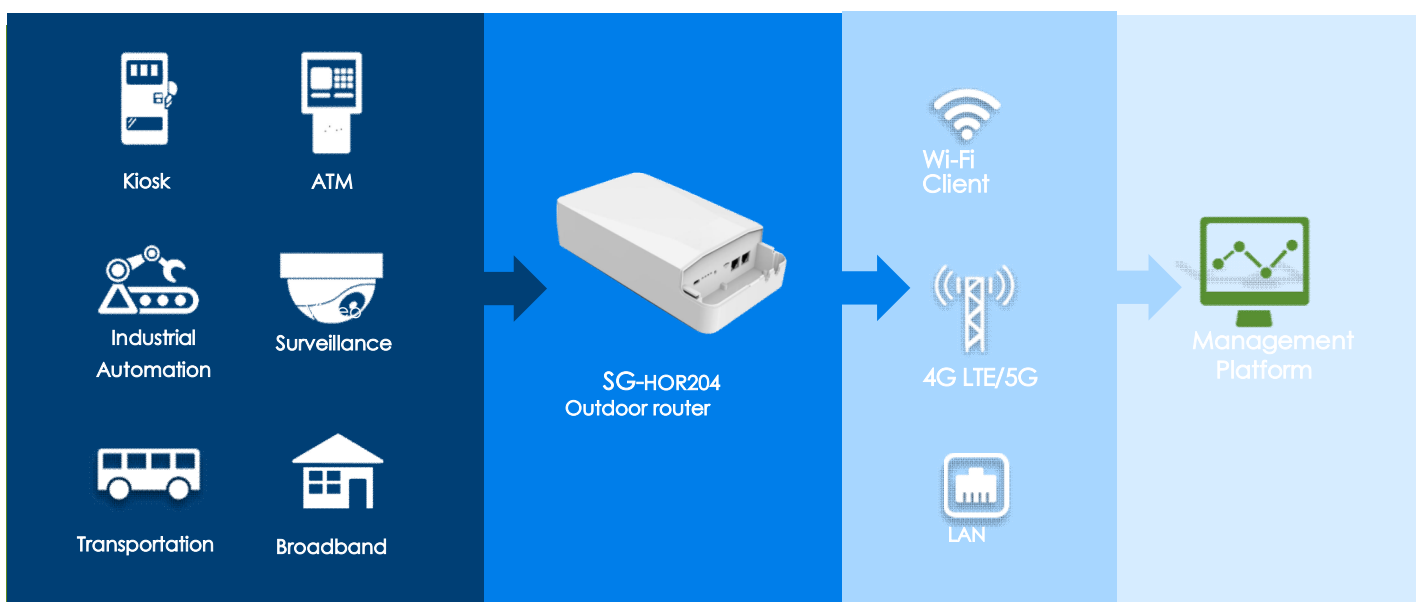# SG-HOR204 4G/5G outdoor router

(V1.01)

SIGNAL TECH SG-HOR204 Cellular outdoor router is a wireless communication product developed based on 4G LTE/5G network requirements. Supports 4G LTE/5G global frequency band. Supports 4G LTE CAT 6, CAT 12 or 5G Internet access. The maximum downlink bandwidth of 4G LTE is 300Mbps~600Mbps, and the maximum uplink bandwidth is 50Mbps~150Mbps. Or support 5G NSA. Up to 2.5Gbps (DL)/650Mbps (UL), 5G SA. Maximum 2.1Gbps (DL)/900Mbps (UL) access bandwidth service. It supports 2 Gigabit Ethernet ports. The equipment is designed to meet waterproof and dustproof requirements. Protection class IP65. providing stable and high-speed wireless broadband access for home and business users. Optional support for WIFI 2.4GHz/5GHz dual-band function to meet the access and sharing needs of more than 60 users' WIFI hotspots.Supports GPS positioning function, which is convenient for users to monitor operation and maintenance.

TYPICAL APPLICATION

Kiosk　　ATM

Industrial Automation　　Surveillance

Transportation　　Broadband

SG-HOR204 Outdoor router

Wi-Fi Client

4G LTE/5G

LAN

Management Platform

Product features

◆ Wireless Mobile Broadband 3G / 4G/5G Connection. Supports 3G/4G/5G global frequency bands.
◆ Supports 4G LTE CAT 6, CAT 12 or 5G high speed internet access.
◆ System crashes and automatically recovers. The system automatically maintains the data link and is permanently online.
◆ Supports Multiple VPN tunnels for data encryption.

Designed for industrial usage

◆ Power Input Range. POE DC +12V to +36 VDC
◆ Industrial design for harsh environment.
◆ ABS fireproof plastic material shell.

Easy to use and easy maintenance

◆ User friendly web interface for user interaction.
◆ Supports Central Management Platform.
◆ Supports local web UI and remote FOTA update firmware.

Operating system

◆ Built-in OpenWRT 18.06 operating system. Supports user secondary application development.

SPECIFICATIONS

Cellular feature – 4G LTE CAT 6，CAT 12 Version	
3G/4G data connectivity	It provides data connectivity on LTE-FDD, LTE-TDD, DC-HSDPA, HSPA+, HSDPA, HSUPA and WCDMA networks.
3G/4G Frequency bands	Version E. 　LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32(**Optional**) 　LTE-TDD: B38/B40/B41/B42(**Optional**) /B43(**Optional**) 　WCDMA: B1/B3/B5/B8 Verison A. 　LTE-FDD: B2/B4/B5/B7/B12/B13/B14B25/B26/B29/B30/B66/B71 　LTE-TDD: B41/B48 Version LA. 　LTE-FDD: B2/B4/B5/B7/B8/B28/B66 　LTE-TDD: B42(**Optional**) /B43(**Optional**) 　WCDMA: B2/B4/B5/B8 Remarks. More frequency bands or requirementes please contact with us.
3G/4G Data rates	4G LTE--CAT 6 　LTE-FDD Max 300M(DL) , Max 50Mbps (UL) 　LTE-TDD Max 226M (DL) , Max 28Mbps (UL). 4G LTE-CAT 12 　LTE-FDD. Max 600Mbps (DL)，Max 150Mbps (UL) . 　LTE-TDD. Max 430Mbps (DL)，Max 90Mbps (UL). HSPA+. 　DL 42Mbps, UL 11.2Mbps. WCDMA. 　DL 384Kbps, UL 384Kbps
3G/4G Transmitting Power	◆ Class 3 (23 dBm±2 dB) for LTE-TDD bands ◆ Class 3 (23 dBm±2 dB) for LTE-FDD bands ◆ Class 3 (24 dBm+ 1/-3 dB) for WCDMA bands

3G/4G LTE Receiving Sensitivity	WCDMA B1 , -106.7 dBm WCDMA B2 , -104.7 dBm WCDMA B3 , -103.7 dBm WCDMA B4 , -106.7 dBm WCDMA B5 , -104.7 dBm WCDMA B6 , -106.7 dBm WCDMA B8 , -103.7 dBm WCDMA B19 , -106.7 dBm LTE-FDD B1(10MHz) , -96.3 dBm LTE-FDD B2(10MHz) , -94.3 dBm LTE-FDD B3(10MHz) , -93.3 dBm LTE-FDD B4(10MHz) , -96.3 dBm LTE-FDD B5(10MHz) , -94.3 dBm LTE-FDD B7(10MHz) , -94.3 dBm LTE-FDD B8(10MHz) , -93.3 dBm LTE-FDD B12(10MHz) , -93.3 dBm LTE-FDD B13(10MHz) , -93.3 dBm LTE-FDD B14(10MHz) , -93.3 dBm LTE-FDD B17(10MHz) , -93.3 dBm LTE-FDD B18(10MHz) , -96.3 dBm LTE-FDD B19(10MHz) , -96.3 dBm LTE-FDD B20(10MHz) , -96.3 dBm LTE-FDD B25(10MHz) , -92.8 dBm LTE-FDD B26(10MHz) , -93.8 dBm LTE-FDD B28(10MHz) , -94.8 dBm LTE-FDD B30(10MHz) , -95.3 dBm LTE-FDD B32(10MHz) , -96.3 dBm LTE-FDD B66(10MHz) , -95.8 dBm LTE-FDD B71(10MHz) , -94.3 dBm LTE-TDD B38(10MHz) , -96.3 dBm LTE-TDD B39(10MHz) , -96.3 dBm LTE-TDD B40(10MHz) , -96.3 dBm LTE-TDD B41(10MHz) , -94.3 dBm LTE-TDD B42(10MHz) , -95 dBm LTE-TDD B43(10MHz) , -95 dBm LTE-TDD B46(20MHz) , -88.5 dBm LTE-TDD B48(10MHz) , -95 dBm
LTE features	**CAT 6 version.** ◆ Supports 3GPP Rel-12 CAT 6 FDD and TDD standard. ◆ Supports uplink QPSK and 16 QAM modulation. ◆ Supports downlink QPSK , 16 QAM and 64 QAM. ◆ Supports 1.4MHz to 40MHz (2 CA) RF bandwidth. **CAT 12 version.** ◆ Supports 3GPPRel-12 CAT 12 FDD and TDD standard. ◆ Supports uplink QPSK ,16 QAM and 64 QAM modulation. ◆ Supports downlink QPSK , 16 QAM ,64 QAM and 256 QAM. ◆ Supports 1.4MHz to 60MHz (3 CA) RF bandwidth.
UMTS features	◆ Supports 3GPP Rel-9 DC-HSDPA,DC-HSUPA,HSPA+,HSDPA,HSUPA and WACDMA ◆ Supports QPSK ,16 QAM and 64 QAM modulation.
Antennas	◆ 2*2 MIMO 4G internal antennas or 4*4 MIMO 4G internal antenna, with 50 Ω impedance. ◆ 1* GPS antenna.(**Optional**).

Cellular feature– 5G version

3G/4G/5G data connectivity	It provides data connectivity on 5G NR SA and NSA, LTE-FDD, LTE-TDD, DC-HSDPA, HSPA+, HSDPA,HSUPA and WCDMA networks.

3G/4G/5G Frequency bands	**5G NR SA.**
	  n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48*/n66/n71/n77/n78/n79
	5G NR NSA.
	  n38/n41/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
	LAA B46
	WCDMA.
	  B1/B2/B3/B4/B5/B8/B19
	
	Remarks. More frquency bands or requirements please contact with us.

3G/4G/5G Data rates	◆ **5G NSA.** Max 2.5Gbps (DL)/650Mbps (UL) ◆ **5G SA.** Max 2.1Gbps (DL)/900Mbps (UL) ◆ **LTE.** Max 1.0Gbps (DL)/200Mbps (UL) ◆ **DC-HSDPA.** Max 42Mbps (DL) ◆ **HSUPA.** Max 5.76Mbps (UL) ◆ **WCDMA** Max 384Kbps (DL)/384Kbps (UL)
3G/4G/5G Transmitting Power	◆ Class 3 (24dBm+1/-3dB) for WCDMA bands. ◆ Class 3 (23dBm±2dB) for LTE-FDD bands. ◆ Class 3 (23dBm±2dB) for LTE-TDD bands. ◆ Class 3 (23dBm±2dB) for 5G NR bands. ◆ Class 2 (26dBm±2dB) for LTE B38/B40/B41/B42 bands. ◆ Class 2 (26dBm±2dB) for 5G NR n41/n77/n78/n79 bands .
5G NR features	◆ 3GPP Rel-15 ◆ Modulation: - Uplink 256QAM - Downlink 256QAM ◆ Downlink 4 ×4 MIMO on n1/n2/n3/n7/25/n38/n40/n41/n48/n66/n77/n78/n79 ◆ Uplink 2 × 2 MIMO on n41/n77/n78/n79 ◆ SCS 15 kHz and 30 kHz ◆ 5G NR refarmed band bandwidth ≤ 20 MHz ◆ 5G NR n41/n77/n78/n79 bandwidth ≤ 100 MHz ◆ SA and NSA operation modes ◆ NSA on n41/n77/n78/n79 ◆ SA on all the 5G bands ◆ Option 3x, 3a, and Option 2
LTE features	◆ Supports up to CA Cat 20 FDD and TDD ◆ Supports uplink QPSK, 16-QAM and 64-QAM and 256-QAM modulation ◆ Supports downlink QPSK, 16-QAM and 64-QAM and 256-QAM modulation ◆ Supports 1.4MHz to 20MHz (5×CA) RF bandwidth ◆ Supports 4 * 4 MIMO in DL direction
UMTS features	◆ Supports 3GPP R8 DC-HSDPA, HSPA+, HSDPA standard. ◆ Supports QPSK, 16-QAM and 64-QAM modulation.

Antennas	◆ 4 * 4 MIMO internal antennas, with 50 Ω impedance.
	◆ 4 *4 MIMO 5G antenna.
	◆ 1* GPS antenna. (**Optional**)
	◆ ANT2_GNSSL1,Antenna 2 interface.
	  - 5G NR (n77/n78/n79 MIMO2,n41 DRX).
	  - LTE MHB MIMO2
	  - B42/B43/B48 MIMO2
	  - LAA DRX
	  - GNSS L1
	  - 1400–6000 MHz

GNSS/GPS (Optional)

GNSS features	◆ Gen9HT of Qualcomm ◆ Protocol: NMEA 0183, Data Update Rate: 1Hz. ◆ GPS,GLONASS,BeiDou(COMPASS)/Galileo. ◆ GPS/Galileo/QZSS.1575.42 ±1.023 (L1) MHz ◆ Galileo.1575.42 ±2.046 (E1) MHz ◆ QZSS. 1575.42 (L1) MHz ◆ GLONASS. 1597.5–1605.8 MHz ◆ BeiDou. 1561.098 ±2.046MHz

SIM card feature

SIM card	Supports 1* SIM slots, 1.8V / 3V . Or 1* eSIM card. (**Optional**)

Hardware feature

CPU	MTK7621A, MIPS1004KC, 880Mbps,Dual-core.
MEMORY	FLASH 16MByte, DDR3 64MByte
Hardware interface	2* LAN gigabit Ethernet ports. 1*USB2.0 port.
Watchdog	Built-in watchdog feature.
Key button	Reset
Protection level	Ethernet port , Contact electric shock, +/-4KV, air discharge: +/-8KV.
LED status indicator	PWR ,SYS, Net, WAN, LAN,WLAN
Standard Power	POE power supply input. DC 24V/1A
Power Supply	POE power supply input. DC +12/1.5A~36V/0.5A
Peak current	Max current. 2.5A
Working current	Max 360 mA,2.15W @24 V
Power Consumption	**Idle.** 80mA, 0.96W @12 V **Data link.** Max 360 mA, 2.15W @24 V **Peak.** Max 470mA , 3.2W @24V
Temperature	Operating Temperature -20~+60°C, Storage Temperature -30~+70°C
Environment humidty	5%~95% ,no condensation.
Ingress Protection	IP65
Housing	ABS fireproof plastic material, white shell.
Dimensions	250mm * 145mm * 67.5mm
Installations	Wall or pole mounted.
Weight	484g

Wi-Fi （Optional）

WLAN	◆ IEEE 802.11b/g/n/ac. ◆ Supports 20MHz,40MHz,80MHz in 5GHz band, and 20MHz,40MHz bandwidth in 2.4GHz band. ◆ Max bandwidth 300Mbps in 2.4GHz band. Max bandwidth 867Mbps in 5GHz band.
Wireless Mode	Access Point (AP), Client
Wireless Speed	300Mbps @2.4GHz, 867Mbps @ 5GHz.

Wireless Security	Supports WPA, WPA2,WPAI, WEP, TKIP encryption.
Frequency Bands	2.4 GHz/5GHz

WIFI transmit power	**2.4GHz Tx power.**
	  TX CCK, 11Mbps @ -20dBm
	  HT40,MCS 8 @ -20dBm
	  HT40,MCS 15 @ -17dBm
	
	5GHz Tx power.
	  6Mbps OFDM @ -19.5dBm
	  54Mbps OFDM @ -18dBm
	  HT20,MCS 0 @ -18.5dBm
	  HT20,MCS 7 @ -17dBm
	  HT40,MCS 0 @ -18.5dBm
	  HT40,MCS 7 @ -17dBm
	  VHT80,MCS 0 @ -18.5dBm
	  VHT80,MCS 9 @ -16dBm

WIFI Rx Sensitivity	**2.4GHz Rx sensitivity.**
	  1Mbps CCK @ -98dBm
	  2Mbps CCK @ -94dBm
	  5.5Mbps CCK @ -92dBm
	  11Mbps CCK @ -89dBm
	
	5GHz Rx sensitivity.
	  6Mbps OFDM @ -93.5dBm
	  9Mbps OFDM @ -91.5dBm
	  12Mbps OFDM @ -91dBm
	  18Mbps OFDM @ -88.5dBm
	  24Mbps OFDM @ -84.5dBm
	  36Mbps OFDM @ -82dBm
	  48Mbps OFDM @ -77dBm
	  54Mbps OFDM @ -76dBm

Antennas	2*2 MIMO internal antennas, with 50 Ω impedance.
WIFI hotspot sharing	Supports more than 60 users to share WIFI access to the Internet.
Software feature	
Parameter settings	Supports automatic detection of MNC and MCC parameters of global operators. Built-in global operator APN, user name, password and other network parameters. At the same time, manual setting of network parameters is supported.
Dial method	After the device is powered on, the system automatically dials up to connect to the network.
Protocol	Supports PPTP,L2TP,IPSEC VPN,TCP,UDP,DHCP,HTTP,DDNS,TR-069,HTTPS,SSH,SNMP etc protocol.
Routing	Supports static routing, multiple routing tables.
Bridge	Supports 4G/5G bridge mode feature.
Multiple APN	Supports multiple APN access network.
System Assurance	Supports system automatic detection mechanism, automatic recovery of system abnormality or crash.
Data Link Assurance	Built-in data link maintenance and self-recovery mechanism.
Firewall	Support flexible access control of TCP, UDP, ICMP packets. Supports port Mapping, NAT etc feature.

DDNS	Supported some service providers, others can be configured manually. .
Firmware update	Supports local WebUI and remote OTA update firmware.
VLAN	Supports VLAN feature.
Embedded system	OpenWRT 18.06
Application development	Supports secondary development of application functions based on our device motherboard software.
VPN	
VPN Feature	Supports OpenVPN, IPSEC VPN,PPTP,L2TP etc VPN feature.
MONITORING & MANAGEMENT	
Web GUI	HTTP, Firmware Upgrade
Command Line Interface	SSHv2 ,telnet
Management platform	Remote Management Platform

Dimensions.