# **MS-7UG65**

## LoRaWAN® Gateway

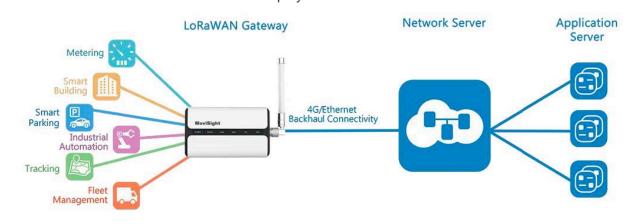
### **MoviSight**

Datasheet



MS-7UG65 is a robust 8-channel indoor LoRaWAN<sup>®</sup> gateway. Adopting SX1302 LoRa chip and high-performance quad-core CPU, MS-7UG65 supports connection with more than 2000 nodes. MS-7UG65 has line of sight up to 15 km and can cover about 2 km in urbanized environment, which is ideally suited to smart office, smart building and many other indoor applications.

MS-7UG65 supports not only multiple back-haul backups with Ethernet, Wi-Fi and cellular, but also has integrated mainstream network servers (such as TTI, ChirpStack, etc.)
 Application Example and built-in network server and MoviSight IoT Cloud for easy deployment.



#### Features

- Quad-core industrial processor with big memory
- Equip with SX1302 chip, handling a higher amount of traffic with lower consumption
- 8 half/full-duplex channels
- IP65 enclosure and industrial design for parts of outdoor environment applications like eaves
- Desktop, wall or pole mounting
- Multi backhaul backups with Ethernet, cellular (4G/3G) and Wi-Fi
- DeviceHub and MoviSight IoT Cloud provide easy and centralized management of remote devices
  - Dimensions(mm)

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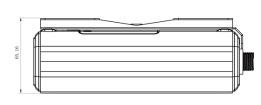
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### Specifications

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Hardware System	
CPU	Quad-core 1.5 GHz, 64-bit ARM Cortex-A53
Memory	512 MB DDR4 RAM
Flash	8 GB eMMC
LoRaWAN	
Antenna	2 × Internal Antennas (Optional: 1 × 50 $\Omega$ N-Female External Connector)
, anconna	
Channel	8 (Half/Full-duplex)

- Enable security communication with multiple
  VPNs like IPsec/OpenVPN/L2TP/PPTP/DMVPN
- Compatible with mainstream network servers like The Things Industries, ChirpStack, etc.
- Detect and analyze the noise level and provide intuitive diagram for deployment
- Built-in network server and MQTT/HTTP/HTTPS API for easily integration
- Embedded Python SDK for users secondary development
- Fast and user-friendly programming by Node-RED development tool

ProtocolV1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class CEthernet InterfaceI × RJ45 (PoE PD supported)Physical Layer10/100/1000 Base-T (IEEE 802.3)Data Rate10/100/1000 Mbps (Auto-Sensing)InterfaceAuto MDI/MDIXModeFull or Half Duplex (Auto-Sensing)Wi-FrinterfaceNoto Sensing)AntennaInternal AntennaStandardsIEEE 802.11 b/g/n, 2.4GHzModeAP or Client modeSecurityWPA/WPA2 authentication, WEP/TKIP/AES encryption802.11b: 18 dBm +/-2.0 dBm (MSD)802.11g: 15 dBm +/-2.0 dBm (S4 Mbps)Standards802.11g: 15 dBm +/-2.0 dBm (MCSD_HT20)802.11g: 15 dBm +/-2.0 dBm (MCSD_HT20)802.11m@2.4 GHz: 14 dBm +/-2.0 dBm (MCSD_HT20)802.11m@2.4 GHz: 13 dBm +/-2.0 dBm (MCSD_HT40)802.11m@2.4 GHz: 13 dBm +/-2.0 dBm (MCSD_HT40)801.11m@2.4 GHz: 13 dBm +/-2.0 dBm (MCSD_HT40) </th <th>Output Power</th> <th>27dBm Max</th>	Output Power	27dBm Max	
Port1 × RJ45 (PoE PD supported)Physical Layer10/100/1000 Base-T (IEEE 802.3)Data Rate10/100/1000 Mbps (Auto-Sensing)InterfaceAuto MDI/MDIXModeFull or Half Duplex (Auto-Sensing)Wi-Fi InterfaceAntennaInternal AntennaStandardsIEEE 802.11 b/g/n, 2.4GHzModeAP or Client modeSecurityWPA/WPA2 authentication, WEP/TKIP/AES encryption802.11b: 18 dBm +/-2.0 dBm (11 Mbps)802.11g: 15 dBm +/-2.0 dBm (6 Mbps)802.11g: 15 dBm +/-2.0 dBm (MCS0_HT20)802.11m@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)802.11m@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT20)802.11m@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)802.11m@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)	Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C	
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Data Rate10/100/1000 Mbps (Auto-Sensing)InterfaceAuto MDI/MDIXModeFull or Half Duplex (Auto-Sensing)Wi-Fi InterfaceInternal AntennaStandardsIEEE 802.11 b/g/n, 2.4GHzModeAP or Client modeSecurityWPA/WPA2 authentication, WEP/TKIP/AES encryptionSecurityWPA/WPA2 authentication, WEP/TKIP/AES encryptionSecuritySecurity: 15 dBm +/-2.0 dBm (11 Mbps)802.11p: 15 dBm +/-2.0 dBm (54 Mbps)802.11p: 15 dBm +/-2.0 dBm (MCS0_HT20)802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT20)802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS1_HT40)802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS1_HT40)803.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS1_HT40)804.11n804.11n805.11n805.11n <trr>805.11n</trr>	Port	1 × RJ45 (PoE PD supported)	
Interface      Auto MDI/MDIX        Mode      Full or Half Duplex (Auto-Sensing)        Wi-Fi Interface      Internal Antenna        Antenna      Internal Antenna        Standards      IEEE 802.11 b/g/n, 2.4GHz        Mode      AP or Client mode        Security      WPA/WPA2 authentication, WEP/TKIP/AES encryption        Security      B02.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)        B02.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)      B02.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)        Sol_11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)      B02.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)        Sitt Slot </td <td>Physical Layer</td> <td>10/100/1000 Base-T (IEEE 802.3)</td>	Physical Layer	10/100/1000 Base-T (IEEE 802.3)	
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Wi-Fi Interface        Antenna      Internal Antenna        Standards      IEEE 802.11 b/g/n, 2.4GHz        Mode      AP or Client mode        Security      WPA/WPA2 authentication, WEP/TKIP/AES encryption        802.11b: 18 dBm +/-2.0 dBm (11 Mbps)      802.11b: 15 dBm +/-2.0 dBm (6 Mbps)        802.11g: 15 dBm +/-2.0 dBm (54 Mbps)      802.11g: 15 dBm +/-2.0 dBm (MCS0_HT20)        802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)      802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)        802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)      802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)        802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)      802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)        802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)      802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)        802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)      802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)        802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)      802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)        Cellular Interface (Optional)      Antenna      Internal Antenna        SIM Slot      1 (mini SIM-2FF)      Others        Reset Button      1 × RST      Console Port      1 × Type-C        LED Indicators      1 × POWER, 1 × STATUS, 1 × LORa, 1 × Wi-Fi, 1 × LTE, 1 × ETH	Interface	Auto MDI/MDIX	
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StandardsIEEE 802.11 b/g/n, 2.4GHzModeAP or Client modeSecurityWPA/WPA2 authentication, WEP/TKIP/AES encryption802.11b: 18 dBm +/-2.0 dBm (11 Mbps) 802.11g: 15 dBm +/-2.0 dBm (6 Mbps) 802.11g: 15 dBm +/-2.0 dBm (6 Mbps) 802.11g: 15 dBm +/-2.0 dBm (MCS0_HT20) 802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)Cellular Interface (>tional)Internal AntennaAntennaInternal AntennaSIM Slot1 (mini SIM-2FF)OthersVReset Button1 × RSTConsole Port1 × Type-CLED Indicators1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETHBuilt-inWatchdog, RTC, TimerSoftwarePPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.VPN TunnelOpenVPN/IPsec/PPTP/L2TP/GRE/DMVPNFirewallACL/DMZ/Port Mapping/MAC Binding/URL FilterWanagementWeb, CLL, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Wi-Fi Interface		
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802.11b: 18 dBm +/-2.0 dBm (11 Mbps)        802.11g: 15 dBm +/-2.0 dBm (6 Mbps)        802.11g: 15 dBm +/-2.0 dBm (6 Mbps)        802.11g: 15 dBm +/-2.0 dBm (MCS0_HT20)        802.11m@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)        802.11m@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)        802.11m@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)        802.11m@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)        802.11m@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)        Cellular Interface (Optional)        Antenna        Internal Antenna        SIM Slot      1 (mini SIM-2FF)        Others        Reset Button      1 × RST        Console Port      1 × Type-C        LED Indicators      1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETH        Built-in      Watchdog, RTC, Timer        Software      PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.        VPN Tunnel      OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN        Firewall      ACL/DMZ/Port Mapping/MAC Binding/URL Filter        Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Mode	AP or Client mode	
802.11g: 15 dBm +/-2.0 dBm (6 Mbps)        802.11g: 15 dBm +/-2.0 dBm (54 Mbps)        Tx Power      802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)        802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)      802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)        802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)      802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)        Cellular Interface (>tional)      802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)        Antenna      Internal Antenna        SIM Slot      1 (min SIM-2FF)        Others      1 × RST        Console Port      1 × RST        Console Port      1 × Type-C        LED Indicators      1 × POWER, 1 × STATUS, 1 × LORa, 1 × Wi-Fi, 1 × LTE, 1 × ETH        Built-in      Watchdog, RTC, Timer        Software      PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.        VPN Tunnel      OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN        Firewall      ACL/DMZ/Port Mapping/MAC Binding/URL Filter        Management      Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Security	WPA/WPA2 authentication, WEP/TKIP/AES encryption	
802.11g: 15 dBm +/-2.0 dBm (54 Mbps)Tx Power802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)Cellular Interface (>tional)AntennaInternal AntennaSIM Slot1 (mini SIM-2FF)OthersConsole Port1 × RST1 × RSTConsole Port1 × Type-CLED Indicators1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETHBuilt-inWatchdog, RTC, TimerSoftwarePPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.VPN TunnelOpenVPN/IPsec/PPTP/L2TP/GRE/DMVPNFirewallACL/DMZ/Port Mapping/MAC Binding/URL FilterManagementWeb, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT		802.11b: 18 dBm +/-2.0 dBm (11 Mbps)	
Tx Power    802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)      802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)    802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT20)      802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)    802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)      Cellular Interface (Uptional)      Antenna    Internal Antenna      SIM Slot    1 (mini SIM-2FF)      Others    1 x RST      Console Port    1 x Type-C      LED Indicators    1 x POWER, 1 x STATUS, 1 x LoRa, 1 x Wi-Fi, 1 x LTE, 1 x ETH      Built-in    Watchdog, RTC, Timer      Software    PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.      VPN Tunnel    OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN      Firewall    ACL/DMZ/Port Mapping/MAC Binding/URL Filter      Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT		802.11g: 15 dBm +/-2.0 dBm (6 Mbps)	
Network ProtocolsNetwork ProtocolsNetwork ProtocolsPPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.VPN TunnelOpenVPN/IPsec/PPTP/L2TP/GRE/DMVPNWeb, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT		802.11g: 15 dBm +/-2.0 dBm (54 Mbps)	
802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)Cellular Interface (>ptional)AntennaInternal AntennaSIM Slot1 (mini SIM-2FF)OthersIt may anternaReset Button1 × RSTConsole Port1 × Type-CLED Indicators1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETHBuilt-inWatchdog, RTC, TimerSoftwarePPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.VPN TunnelOpenVPN/IPsec/PPTP/L2TP/GRE/DMVPNFirewallACL/DMZ/Port Mapping/MAC Binding/URL FilterManagementWeb, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Tx Power	802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)	
802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)      Cellular Interface (Optional)      Antenna    Internal Antenna      SIM Slot    1 (mini SIM-2FF)      Others      Reset Button    1 × RST      Console Port    1 × Type-C      LED Indicators    1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETH      Built-in    Watchdog, RTC, Timer      Software      Network Protocols    PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.      VPN Tunnel    OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN      Firewall    ACL/DMZ/Port Mapping/MAC Binding/URL Filter      Management    Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT		802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS7_HT20)	
Cellular Interface (Optional)AntennaInternal AntennaSIM Slot1 (mini SIM-2FF)OthersIReset Button1 × RSTConsole Port1 × Type-CLED Indicators1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETHBuilt-inWatchdog, RTC, TimerSoftwarePPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.VPN TunnelOpenVPN/IPsec/PPTP/L2TP/GRE/DMVPNFirewallACL/DMZ/Port Mapping/MAC Binding/URL Filter Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT		802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)	
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SIM Slot1 (mini SIM-2FF)OthersIReset Button1 × RSTConsole Port1 × Type-CLED Indicators1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETHBuilt-inWatchdog, RTC, TimerSoftwarePPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.VPN TunnelOpenVPN/IPsec/PPTP/L2TP/GRE/DMVPNFirewallACL/DMZ/Port Mapping/MAC Binding/URL Filter Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Cellular Interface (Optional)		
Others      Reset Button    1 × RST      Console Port    1 × Type-C      LED Indicators    1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETH      Built-in    Watchdog, RTC, Timer      Software    PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.      VPN Tunnel    OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN      Firewall    ACL/DMZ/Port Mapping/MAC Binding/URL Filter      Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Antenna	Internal Antenna	
Reset Button1 × RSTConsole Port1 × Type-CLED Indicators1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETHBuilt-inWatchdog, RTC, TimerSoftwarePPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.VPN TunnelOpenVPN/IPsec/PPTP/L2TP/GRE/DMVPNFirewallACL/DMZ/Port Mapping/MAC Binding/URL Filter Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	SIM Slot	1 (mini SIM-2FF)	
Console Port1 × Type-CLED Indicators1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETHBuilt-inWatchdog, RTC, TimerSoftwarePPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.VPN TunnelOpenVPN/IPsec/PPTP/L2TP/GRE/DMVPNFirewallACL/DMZ/Port Mapping/MAC Binding/URL Filter Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Others		
LED Indicators    1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETH      Built-in    Watchdog, RTC, Timer      Software    PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.      VPN Tunnel    OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN      Firewall    ACL/DMZ/Port Mapping/MAC Binding/URL Filter      Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Reset Button	1 × RST	
Built-inWatchdog, RTC, TimerSoftwarePPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.VPN TunnelOpenVPN/IPsec/PPTP/L2TP/GRE/DMVPNFirewallACL/DMZ/Port Mapping/MAC Binding/URL Filter Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Console Port	1 × Type-C	
Software      Network Protocols    PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.      VPN Tunnel    OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN      Firewall    ACL/DMZ/Port Mapping/MAC Binding/URL Filter      Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	LED Indicators	1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETH	
Network ProtocolsPPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.VPN TunnelOpenVPN/IPsec/PPTP/L2TP/GRE/DMVPNFirewallACL/DMZ/Port Mapping/MAC Binding/URL Filter Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Built-in	Watchdog, RTC, Timer	
Network Protocols    ARP, SNTP, Telnet, SSH, MQTT, etc.      VPN Tunnel    OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN      Firewall    ACL/DMZ/Port Mapping/MAC Binding/URL Filter      Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Software		
ARP, SNTP, Telnet, SSH, MQTT, etc.      VPN Tunnel    OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN      Firewall    ACL/DMZ/Port Mapping/MAC Binding/URL Filter      Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	Network Protocols	PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS,	
Firewall ACL/DMZ/Port Mapping/MAC Binding/URL Filter Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT		ARP, SNTP, Telnet, SSH, MQTT, etc.	
Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT Management	VPN Tunnel	OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN	
Management	Firewall	ACL/DMZ/Port Mapping/MAC Binding/URL Filter	
Cloud, Yeastar Workplace Platform	Management	Web, CLI, SMS, On-demand dial up, DeviceHub, MoviSight IoT	
		Cloud, Yeastar Workplace Platform	

Reliability	WAN Failover	
Арр	Python SDK, Node-RED	
Power Supply and Consumption		
Power Input	1. DC Jack Connector for 9-24 VDC power supply	
	2. 1 × 802.3 af PoE input	
Power Consumption	Typical 2.9 W, Max 4.2 W	
Physical Characteristics		
Ingress Protection	IP65	
Dimensions	180 x 110 x 56.5 mm (7.09 x 4.33 x 2.22 in)	
Installation	Desktop, Wall or Pole Mounting	
Environmental		
Operating	-40°C to +70°C (-40°F to +158°F)	
Temperature	Reduced Cellular Performance Above 60°C	
Storage Temperature	-40°C to +85°C (-40°F to +185°F)	
Ethernet Isolation	1.5 kV RMS	
Relative Humidity	0% to 95% (non-condensing) at 25°C/77°F	
Approvals		
Regulatory	CE, FCC, IC	
Environmental	RoHS	