H900 Gigabit 3G/4G Router Datasheet

>>| Product Introduction

The E-Lins H900 Series is a compact, ruggedized Gigabit Ethernets 3G/4G/LTE router, with option feature of Dual/Tri Band Wi-Fi (2.4Ghz + 5Ghz band1 + 5Ghz band4) and dual SIM. It is qualified for M2M (Machine to Machine), IoT (Internet of Things) and In-Vehicle applications. With an extensive list of safety and hardening certifications, the H900 is engineered to protect against extreme temperatures, humidity, shocks, vibrations, dust, reverse polarity, and transient voltage, which is widely used in more than twenty industrial fields, such as CCTV security surveillance, vehicle, Telemetry, vending machines, power control, AMR, traffic, oil field, weather forecast, environmental protection, street lamp control, post, bank and many other areas.

>>| Key Features

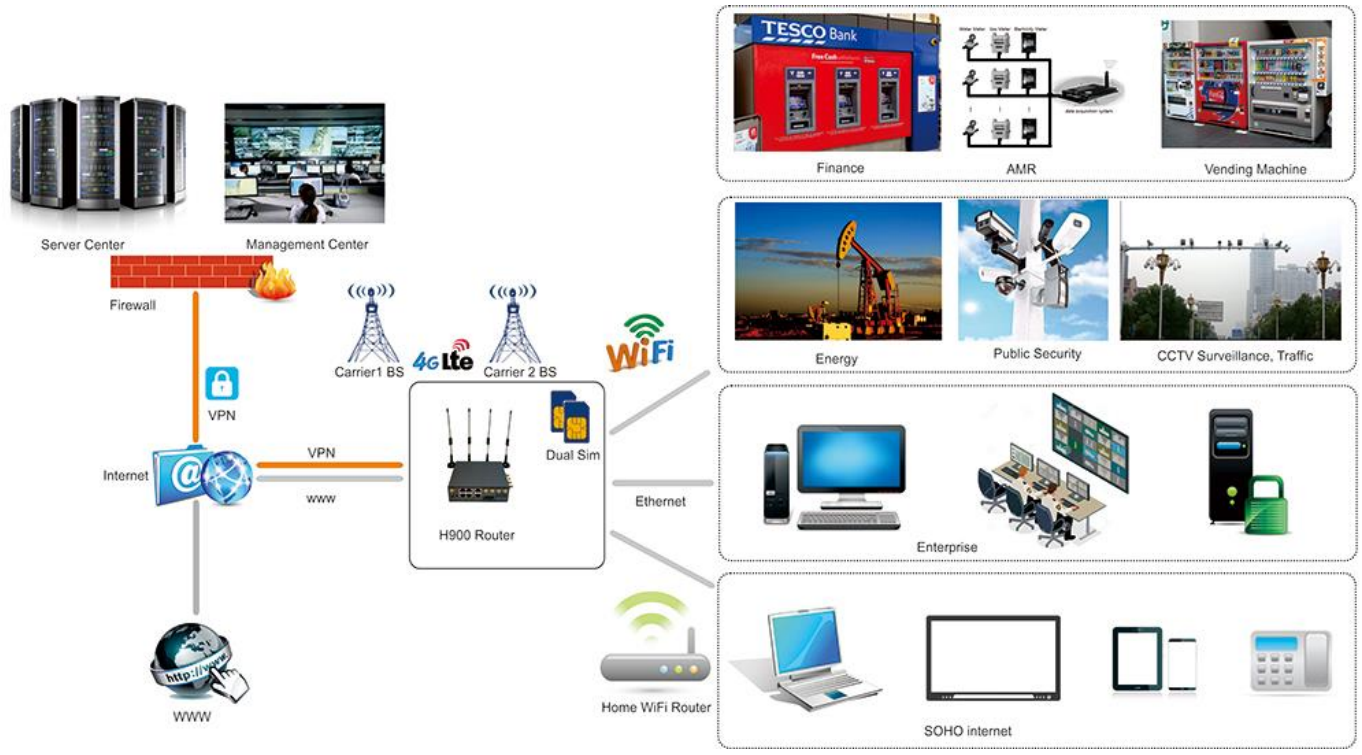
- Multi-carrier 2G/3G/4G LTE support, option with Dual SIM card slot;
- E-SIM is supported;
- LAN Gigabit Ethernets * 2 + LAN Fast Ethernets * 2 + WAN Gigabit Ethernets * 1;
- Cellular/WAN RJ45/WiFi client failover and Load Balance (Bandwidth link bonding);
- USB3.0, USB2.0 supported;
- Supports LTE Advanced with SIM-based auto-carrier selection;
- External antenna connectors for high gain antennas replacement;
- MIMO supported;
- Cloud-managed (with NMS network management system), TR-069, Web management, SMS, SSH/Telnet/Command, SNMP;
- Option dual-band or tri-band, dual concurrent WiFi (802.11 a/b/g/n/ac, 2.4Ghz + 5Ghz band1 +

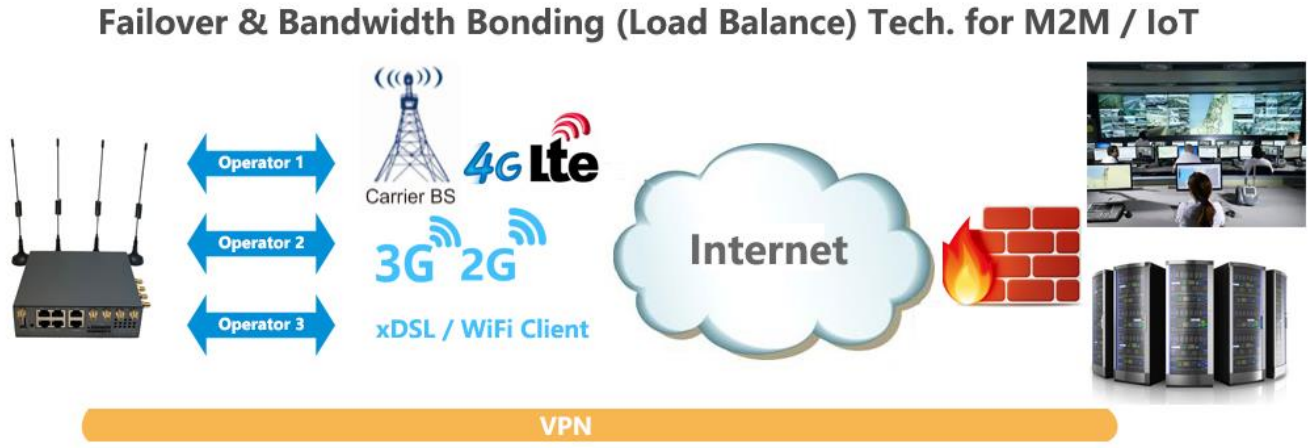
5Ghz band4);

- Certified 3G/4G/LTE enterprise/industrial grade internal modems;
- Built-in transient and reverse polarity voltage protection, over-current and over-voltage protection;
- 5-40V DC voltage input range (5-60V DC option), Dual Power Inputs / Power Failover;
- POE passive is supported;
- GPS / GNSS / Beidou supported;
- Serial Ports * 1 (RS232 or RS485);
- DI/DO port * 4;
- Supports Ethernet (T1, DSL, Cable, MetroE), WiFi as WAN, and Metro WiFi;
- Ruggedized to ensure always-on connectivity;
- Create real-time alerts to monitor uptime;
- Offer secure, guest WiFi to passengers;
- Advanced security, VPN, and stateful firewall to protect sensitive data;
- Robust Metal Case is ruggedized for vibration, shock, provide IP30 protection;
- Desktop, Wall-mount and Din-rail mount of installation;

Working Mode	
Mode No.	Description
1	Only SIM1 or SIM2
2	Switch triggered by ‘time’
3	Switch triggered by ‘signal strength’
4	Switch triggered by ‘dial fail’
5	Switch triggered by ‘data limit’
6	Switch triggered by ‘ICMP check’
7	Load Balance
8	Bonding (pending, under developing)

>>| Typical Topology





>>| Features

Main Feature	
WAN	Dual Cellular 2G/3G/4G LTE (FDD/TDD) WiFi as WAN

	Failover/Failback and Load Balance Advanced Modem Failure Check IP Passthrough WAN ports support Cell/Static IP/DHCP/PPPoE (on demand, keep alive, schedule, manual, standby)
LAN	DHCP Server, Client, Relay DNS and DNS Proxy DDNS UPnP DMZ Multicast/Multicast Proxy QoS (DSCP and Priority Queuing) MAC Address Filtering VLAN 802.1Q
WiFi (Option)	Single Band, ual-Band or Tri-Band, Dual-Concurrent 802.11 a/b/g/n/ac Up to 128 connected devices (64 per channel – 2.4 GHz and 5 GHz) WPA2 Enterprise (WiFi) Hotspot/Captive Portal SSID-based Priority
VPN AND ROUTING	IPsec Tunnel, PPTP, L2TP, GRE Tunnel, OpenVPN (option), DMVPN (option); OSPF/BGP/RIP, Virtual Server/Port Forwarding, IPv6 (option), VRRP;
MANAGEMENT	E-Lins Enterprise Cloud Network Management System (NMS) Web UI, API, CLI/SSH/Telnet Data Usage Alerts (router and per client) Advanced Troubleshooting (support) Device Alerts SNMP SMS control TR-069
SECURITY	RADIUS and TACACS+ support 802.1x authentication for Ethernet Certificate support ALGs MAC Address Filtering Advanced Security Mode (local user management only) Per-Client Web Filtering IP Filtering Content Filtering (basic) Website Filtering

	Zone-Based Object Firewall with host address (IP or FQDN), port, and mac address Other Details: NAT, SPI, port blocking, service filtering (FTP, SMTP, HTTP, RPL, SNMP, DNS, ICMP, NNTP, POP3, SSH), protocol filtering, WAN ping (allow/ignore)
OPTIMIZED IP COMMUNICATIONS	Automated WAN Failover/Failback support WAN Affinity and QoS allow prioritization of VoIP services Advanced VPN connectivity options to HQ SIP ALG and NAT to allow VoIP and UC communications to traverse firewall MAC Address Filtering 802.1p/q for LAN QoS segmentation and treatment of VoIP on LAN Private Network support (wired and 4G WAN)
Firmware update	support firmware update locally, remotely (LAN, WiFi and OTA WAN) and RMS (Remote Management System) option;
DI/DO (Digital Input and Output)	4 ports, 0-3.3V. Support status monitor via SMS and Email; Option: customers can order E-Lins switch control board (5-40VDC supported)
Others	Cellular and WiFi MIMO supported; Syslog (local and remote); DDNS; DNS proxy; Optimized EMC design; Real-time clock (NTP, support update with defined hours); WAN/LAN/Memory statistics; Local/remote profiles backup and retrieve; Modbus is supported;
Feature Details	
Redundancy and Load Balancing	Failover/failback with 4G, 3G, 2G; WAN failure detection, VRRP; Auto-dial feature, keep alive link; LCP, ICMP check; Built-in watch dog; Cellular (2G/3G/4G), RJ45 WAN (xDSL, DHCP, Fixed IP), WiFi client three line redundancy; Option Feature: Ethernet with rule selection, advanced load balancing options (round robin, spillover, data usage, rate)
Intelligent Routing	UPnP, DMZ, virtual server/port forwarding, routing rules, NAT-less routing, wired or wireless WAN-to-LAN IP passthrough, route management, per-interface routing, content filtering, IP filtering, website

	filtering, per-client Web filtering, local DHCP server, DHCP client, DHCP relay, DNS, DNS proxy, Split DNS; ALGs: PPTP, SIP, TFTP, FTP, IRC; MAC address filtering, Dynamic DNS, LAN/WAN affinity, VLAN 802.1Q (coming Q4), STP, enterprise routing protocols: BGP/OSPF/RIP, multicast proxy support, IP setting overrides, IPv6 support option;
Management	web-based GUI (local management), optional RADIUS or TACACS+ username/password; remote WAN web-based management w/ access control (HTTP, HTTPS); SNMP v1, v2c, & v3; CLI over SSH, SSH to serial, SSH to telnet; API; one-button firmware upgrade; modem configuration, update, and management; modem data usage w/ alerts, per-client data usage; custom AT scripting to modems; SMS; TR-069; Option: Enterprise Cloud Network Management System (NMS): cloud-enabled management and application platform (subscription-based);
VPN	IPsec – Tunnel, NAT-T, and transport modes; connect to E-Lins, Cradlepoint, Cisco/Linksys, CheckPoint, Watchguard, Juniper, SonicWall, Adtran and others; Hash (MD5, SHA128, SHA256, SHA384, SHA512), Cipher (AES, 3DES, DES) , IPSec over L2TP support; GRE tunneling; PPTP support; L2TP, L2TP over IPSec support; VPN pass-through; OpenVPN support (option); DMVPN (option); Certificate support (option); multiple networks supported in a single tunnel, site-to-site dynamic VPN with NHRP; VTI Tunnel support;
SMS, SMS Control and Alarm	Receive and Send the SMS; WAN Cell APN configuration via SMS; SMS/Voice Control and Alarm. SMS or Call to control router to be online, offline, reboot, signal and status monitor; SMS is default feature, Voice is option; SMS text sending and receiving;

>>| Specifications

Main	
Hardware	CPU: 880Mhz dual core;

	RAM: 1Gb DDR3, option for up to 4Gb DDR3; Flash: 128Mb, option for up to 8Gbit;
WAN	Integrated Category 18/12/11/9/6/4/3 LTE Advanced LTE modem (with DC-HSPA+/ EVDO/3G and 2G failover); One 10/100/1000Mbps Gigabit Ethernet ports – cable/DSL/T1/satellite/Metro Ethernet; WiFi as WAN, Metro WiFi; MIMO “N” 2.4 GHz; 802.11 a/b/g/n/AC;
LAN	Dual-band, dual-concurrent WiFi; 802.11 a/b/g/n/AC; 2 LAN/WAN switchable 10/100/1000Mbps Gigabit Ethernet ports; 2 LAN/WAN switchable 10/100Mbps Fast Ethernet ports with POE;
Ports	Power (POE, 2 Pin Terminal Block for wire connection) 5 Ethernet LAN/WAN 2 cellular antenna connectors (SMA) 1 GPS antenna connector (SMA) 4-6 WiFi antenna connectors (SMA) Serial connector *1 – RS232 / RS485 (Terminal Socket) 4 Digital I/O ports (Terminal Socket) USB3.0 port + USB2.0 port Console Port (Terminal Socket + RJ45 type)
Power	Dual Power Inputs / Power Failover; DC input steady state voltage range: 5-40 VDC / 5-60VDC option, (requires inline fuse for vehicle installations); For 9–24 VDC installations, use a 3 A fuse; For > 24 VDC installations, use a 2.5 A fuse; Reverse polarity and transient voltage protection per ISO 7637-2 Ignition sensing (automatic ON and time-delay OFF); Power consumption: Idle: typical=100mA@12VDC; Maximum=500mA@12VDC; Tx/Rx: typical=300mA@12VDC; Maximum=800mA@12VDC; 12VDC 2A adapter recommended
LEDs	SYS, ERR, VPN, WiFi, USB, WAN, LAN*4, SIM1 Online, SIM2 Online, Signal1, Signal2, Signal3
UIM/SIM Card Slot	Support 1.8V/3V UIM/SIM cards, two sim card slots; E-SIM is supported;
Others	Reset button, console port
Size	PCBA: 128mm x 108mm x 29mm With case: 132mm x 112mm x 45mm
Weight	About 410g (not including the antenna)

	About 550g (including the antenna) About 750g (including all accessories, without package)
Temperature	All models: −35 °C to 75 °C ambient air operating; All models: −40 °C to 85 °C storage;
Humidity (non-condensing)	5% to 95% operating 5% to 95% storage
Case	Aluminum alloy; Black color; Customization is available
Cellular	
Compatible Mobile Networks	4G LTE (FDD/TDD) UMTS WCDMA (HSUPA/HSDPA/HSPA/HSPA+/DC-HSPA+) GSM EDGE/GPRS CDMA1x CDMA2000 EVDO Rev 0, Rev A, Rev B TD-SCDMA/TD-LTE
Cellular Frequency	4G FDD LTE: Band 1 – 2100Mhz Band 2 – 1900Mhz Band 3 –1800Mhz Band 4 – AWS(1700/2100Mhz) Band 5 – 850Mhz Band 7 – 2600MHz Band 8 – 900Mhz Band 9 – 1700Mhz Band 12 – 700Mhz Band 13 – 700Mhz Band 14 – 700Mhz Band 17 – 700Mhz Band 18 – 850Mhz Band 19 – 800Mhz Band 20 – 800Mhz Band 21 – 1500Mhz Band 25 – 1900Mhz G Block Band 26 – 850Mhz Band 28 – 700Mhz Band 29 – 700Mhz (SDL) Band 30 – 2300Mhz Band 31 – 450Mhz Band 32 – 1500Mhz (SDL) Band 66 – 1700Mhz

	Band 72 – 450Mhz And other more FDD band… 4G TDD LTE (TD-LTE): Band 48 – 3600Mhz (CBRS) Band 46 – 5200Mhz Band 43 – 3700Mhz Band 42 – 3500Mhz (CBRS) Band 41 – 2500/2600Mhz Band 40 – 2300Mhz Band 39 – 1900Mhz Band 38 – 2600Mhz And other more TDD band… UMTS/HSPA/HSUPA/HSPA/HSPA+/DC-HSPA+ (WCDMA/FDD): 2100MHz(B1)/1900MHz (B2)/1800MHz (B3)/ 1700MHz /AWS (B4)/850MHz (B5)/900MHz (B8)/800MHz (B6)/1800MHz (B9)/850MHz (B19) Quad-band EGSM 850/900/1800/1900Mhz; CDMA1x/EVDO: 800/1900Mhz, option for 450Mhz; 3G TD-SCDMA: 2010~2025MHz/1880~1920MHz Notes: There are many different band and frequencies. Please confirm the detailed band and frequency with your carriers before order.
Bandwidth	4G LTE (CAT1/3/4/6/9/11/12/18) FDD LTE: downlink 100Mbps / 150Mbps / 300Mbps / 600Mbps / 1200Mbps; uplink 50Mbps / 150Mbps / 300Mbps / 600Mbps; TDD LTE: 150Mbps downlink, 50Mbps uplink; DC-HSPA+: Downlink 42Mbps, Uplink 5.76Mbps; HSPA+(H): Downlink 21Mbps, Uplink 5.76Mbps; HSPA+(L): Downlink 14.4Mbps, Uplink 5.76Mbps; HSUPA: Downlink 7.2Mbps, Uplink 5.76Mbps; HSDPA: Downlink 7.2 Mbps, Uplink 384k bps; WCDMA/UMTS: Downlink/Uplink 384 kbps; EDGE: Downlink 384 kbps, Uplink 118 kbps; GPRS: Downlink 108 kbps, Uplink 42.8 kbps;

	CDMA1x: Downlink/Uplink 153.6kbps; CDMA EVDO: Rev B: 14.7Mbps downlink, 5.4Mbps uplink Rev A: 3.1Mbps downlink, 2.4Mbps uplink Rev O: 2.4Mbps downlink, 153.6kbps uplink 3G TD-SCDMA: 2.8Mbps Notes: the bandwidth is peak value. Real value depends on carrier network support.
Network and Band Lock Feature (Option)	Default is unlocked, can use this feature to lock
WiFi (WLAN)	
Wi-Fi (Option)	802.11a/b/g/n/AC; Can be used as AP and client; Frequency Range: 2.4Ghz: 2.412 ~ 2.472Ghz 5Ghz Band 1: 5150~5250MHz 5Ghz Band 4: 5475~5850MHz Speed: 802.11n in 300Mbps; 802.11AC options in 600Mbps, 867Mbps, 1300Mbps, 1730Mbps, 2033Mbps, or even higher (Depends on WiFi module option); Notes: default is 802.11a/b/g/n 2.4Ghz WiFi. Option: Dual-Band Dual-Concurrent or Tri-Band Tri-Concurrent 802.11 a/b/g/n/AC, Wave2, MU-MIMO; Up to 128-250 connected devices (64 per channel – 2.4 GHz and 5 GHz); High gain WiFi module option;
Others	
Warranty	1 Year default. Option extends up to 5 years maximum; Other warranty services can be customized;
Package Contents	H900 Series wireless Router Ethernet Cable

	Power Adapter Cellular Antenna, WiFi Antenna Others depends on option features (GPS antenna, Serial Cable, etc.)
OEM / ODM Services	Yes

>>| Order Part Number

H900 Series Router Order Models											
Part Number	**4G LTE**	**3G**	**2G**	**USB**	**WiFi**	**Serial**	**GPS**	**DI DO**	**5-60VDC**	**Market**	**Marks**
H900t-F1	Y	Y	Y	Y	O	O	O	O	O	Asia, Europe, South America, Africa	CAT3/4/6/9/11/12 /16/18
H900t-F4	Y	Y	Y	Y	O	O	O	O	O	North America	CAT3/4/6/9/11/12 /16/18
H900t-F5	Y	Y	Y	Y	O	O	O	O	O	Japan	CAT3/4/6/9/11/12 /16/18
H900t-TF1	Y	Y	Y	Y	O	O	O	O	O	customized for some operators	CAT4
H900t-TF2	Y	Y	Y	Y	O	O	O	O	O	customized for some operators	CAT4
H900t450-F1	Y			Y	O	O		O	O	customized for some operators	CAT3 or CAT4, 450Mhz
H900p		Y	Y	Y	O	O	O	O	O	Global	
H900ev450		Y		Y	O	O		O	O	customized for some operators	450Mhz
Y = supported O = option											

H900xx --- XXX (option features)

W: WiFi / WLAN
WW: Dual module WiFi / WLAN
G: GPS / GNSS / Beidou
RS232/RS485: DTU feature, Serial RS232 or RS485 for choice
60V: DC input 5-60V (default is 5-40V)
DIO: Digital input and output, 2-4 ports

t: 4G LTE version. Support FDD LTE or TDD LTE or FDD+TDD LTE. Back compatible to 3G/2G.
w: 3G WCDMA version. Support HSUPA/HSDPA/UMTS/EDGE/GPRS/GSM.
p: 3G WCDMA version. Support HSPA+/HSUPA/HSDPA/UMTS/EDGE/GPRS/GSM. Option for DC-HSPA+.
ev: 3G CDMA2000 version. Support EVDO/CDMA1x.
td: 3G TD-SCDMA2000 version. Support TD-HSUPA/TD-HSDPA/EDGE/GPRS/GSM.

Notes: 3
1) option feature can be selected one or all
2) for LTE version, please confirm your LTE band and Network Carrier with order to avoid wrong selection