

## H720 Dual SIM 4G Router Datasheet



### >>| Product Introduction



The E-Lins H720 Series is a compact, ruggedized 3G/4G/LTE and Dual SIM cellular networking solution designed for mission-critical connectivity in the most challenging environments. 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 H720 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 with Dual SIM card slot
- ◆ Cellular/WAN RJ45/WiFi client failover and Load Balance (Bandwidth link bonding)
- ◆ Supports LTE Advanced with SIM-based auto-carrier selection
- ◆ External antenna connectors for high gain antennas replacement
- ◆ MIMO supported
- ◆ Cloud-managed (with E-Lins NMS network management system), TR-069, Web management, SMS, SSH/Telnet/Command, SNMP
- ◆ WiFi (802.11 a/b/g/n, 2.4Ghz)
- ◆ Certified 3G/4G/LTE enterprise/industrial grade internal modems

- ◆ Built-in transient and reverse polarity voltage protection
- ◆ 5-40V DC voltage input range (5-60V DC option), Dual Power Inputs / Power Failover;
- ◆ POE (Power over Ethernet)
- ◆ GPS / GNSS support
- ◆ Serial Port
- ◆ 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 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

Dual SIM 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

## >>| Typical Topology



## Failover & Bandwidth Bonding (Load Balance) Tech. for M2M / IoT



## >>| Features

### Main Feature

<b>WAN</b>	Dual Cellular 2G/3G/4G LTE (FDD/TDD) WiFi as WAN Failover/Failback and Load Balance (Bandwidth bonding)
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	Advanced Modem Failure Check IP Passthrough WAN ports support Cell/Static IP/DHCP/PPPoE (on demand, keep alive, schedule, manual, standby)
<b>LAN</b>	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
<b>WiFi</b>	802.11 a/b/g/n Up to 64 connected devices WPA2 Enterprise (WiFi) Hotspot/Captive Portal SSID-based Priority
<b>VPN AND ROUTING</b>	IPsec Tunnel, PPTP, L2TP, GRE Tunnel, OpenVPN (option), DMVPN (option); OSPF/BGP/RIP, Virtual Server/Port Forwarding, IPv6 (option), VRRP;
<b>MANAGEMENT</b>	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
<b>SECURITY</b>	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)
<b>OPTIMIZED IP COMMUNICATIONS</b>	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)
<b>Firmware update</b>	support firmware update locally, remotely (LAN, WiFi and OTA WAN) and RMS (Remote Management System) option;
<b>DI/DO (Digital Input and Output)</b>	4 ports, 0-3.3V. Support status monitor via SMS and Email; Option: customers can order E-Lins switch control board (5-40VDC supported)
<b>Others</b>	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;
<b>Feature Details</b>	
<b>Redundancy and Load Balancing</b>	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)
<b>Intelligent Routing</b>	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;
<b>Management</b>	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);
<b>VPN</b>	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;
<b>SMS, SMS Control and Alarm</b>	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	
<b>Hardware</b>	CPU: 580Mhz; RAM: 512Mb DDR, option up to 2Gbit; Flash: 128M, option for up to 4Gbit;
<b>WAN</b>	Integrated Category 12/9/6/4/3 LTE Advanced LTE modem (with

	DC-HSPA+/ EVDO/3G and 2G failover); One 10/100Mbps Ethernet ports – cable/DSL/T1/satellite/Metro Ethernet; WiFi as WAN, Metro WiFi; MIMO “N” 2.4 GHz; 802.11 a/b/g/n;
<b>LAN</b>	802.11 a/b/g/n; Five LAN/WAN switchable 10/100Mbps Ethernet ports;
<b>Ports</b>	Power (DC Jack, 2 Pin Terminal Block for wire connection) 5 Ethernet LAN/WAN 2-4 cellular antenna connectors (SMA) 1 GPS antenna connector (SMA) 2 WiFi antenna connectors (SMA) Serial connector – RS232 / RS485 (Terminal Socket) 4 Digital I/O ports (Terminal Socket) Console Port (Terminal Socket)
<b>Power</b>	Dual or Tri Power Inputs / Power Failover;  POE (Power over Ethernet, support 5-40VDC default, if the POE voltage is 48V, please order 5-60VDC version);  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
<b>LEDs</b>	SYS, VPN, WiFi, Cell1, Cell2, Cell Signal1, Cell Signal2 LAN (10/100M) 1, 2, 3, 4, WAN, GPS
<b>UIM/SIM Card Slot</b>	Support 1.8V/3V UIM/SIM cards, two sim card slots
<b>Others</b>	Reset button, console port,
<b>Size</b>	PCBA: 168mm x 111mm x 16mm With case: 180mm x 114mm x 32mm
<b>Weight</b>	705~725g (not including the antenna) About 850g (including the antenna) About 960g (including all accessories, without package)

<b>Temperature</b>	All models: -35 °C to 75 °C ambient air operating; All models: -40 °C to 85 °C storage;
<b>Humidity (non-condensing)</b>	5% to 95% operating 5% to 95% storage
<b>Case</b>	Alloy-metal; Black color; Customization is available
<b>Cellular</b>	
<b>Compatible Mobile Networks</b>	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
<b>Cellular Frequency</b>	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...



	<p>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...</p> <p>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)</p> <p>Quad-band EGSM 850/900/1800/1900Mhz;</p> <p>CDMA1x/EVDO: 800/1900Mhz, option for 450Mhz;</p> <p>3G TD-SCDMA: 2010~2025MHz/1880~1920MHz</p> <p>Notes: There are many different band and frequencies. Please confirm the detailed band and frequency with your carriers before order.</p>
<b>Bandwidth</b>	<p>4G LTE  FDD LTE:  downlink 100Mbps / 150Mbps / 300Mbps / 600Mbps / 1200Mbps;  uplink 50Mbps / 150Mbps / 300Mbps / 600Mbps;  TDD LTE: 150Mbps downlink, 50Mbps uplink;</p> <p>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;</p> <p>EDGE: Downlink 384 kbps, Uplink 118 kbps;  GPRS: Downlink 108 kbps, Uplink 42.8 kbps;</p> <p>CDMA1x: Downlink/Uplink 153.6kbps;  CDMA EVDO:  Rev B: 14.7Mbps downlink, 5.4Mbps uplink</p>

	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.
<b>Network and Band Lock Feature (Option)</b>	Default is unlocked, can use this feature to lock
<b>WiFi (WLAN)</b>	
<b>Wi-Fi</b>	802.11a/b/g/n; Can be used as AP and client;  Frequency Range: 2.412 ~ 2.472Ghz  Speed: 802.11n in 300Mbps;
<b>Others</b>	
<b>Warranty</b>	1 Year default. Option extends up to 5 years maximum; Other warranty services can be customized;
<b>Package Contents</b>	H720 Series wireless Router Ethernet Cable Power Adapter Cellular Antenna, WiFi Antenna Others depends on option features (GPS antenna, Serial Cable, etc.)
<b>OEM / ODM Services</b>	Yes

## >>| Order Part Number

H720 Series Router Order Models											
Part Number	4G LTE	3G	2G	POE	WiFi	Serial	GPS	DI DO	5-60VDC	Market	Marks
H720t-F1	Y	Y	Y	Y	O	O	O	O	O	Asia, Europe,	CAT3/4/6/9/12

										South America, Africa	
H720t-F4	Y	Y	Y	Y	O	O	O	O	O	North America	CAT3/4/6/9/12
H720t-F5	Y	Y	Y	Y	O	O	O	O	O	Japan	CAT3/4/6/9/12
H720t-TF1	Y	Y	Y	Y	O	O	O	O	O	customized for some operators	CAT4
H720t-TF2	Y	Y	Y	Y	O	O	O	O	O	customized for some operators	CAT4
H720t450-F1	Y			Y	O	O		O	O	customized for some operators	CAT3 or CAT4, 450Mhz
H720p		Y	Y	Y	O	O	O	O	O	Global	
H720ev450-2		Y		Y	O	O		O	O	customized for some operators	450Mhz
Y = supported O = option											

**H720 -xx --- XXX (option features)**



**W:** WiFi WLAN

**G:** GPS / GNSS

**RS232/RS485:** DTU feature (cellular to serial), RS232 or RS485 for choice

**60V:** DC input 5-60V supported, default is 5-40V

**DIO:** digital input and output feature, 2-4 ports

**t:** 4G LTE version. Support FDD LTE or TDD LTE or FDD+TDD LTE, back compatible to 3G and 2G

**w:** 3G WCDMA HSPA version, support HSUPA/HSDPA/UMTS/EDGE/GPRS/GSM

**p:** 3G WCDMA HSPA+ version, support HSPA+/HSUPA/HSDPA/UMTS/EDGE/GPRS/GSM

**eva:** 3G CDMA2000 EVDO version, support EVDO RevA/EVDO Rev0/CDMA1x

**evb:** 3G CDMA2000 EVDO version, support EVDO RevB/EVDO RevA/EVDO Rev0/CDMA1x

**td:** 3G TD-SCDMA version, support TD-HSUPA/TD-HSDPA/TD-SCDMA/EDGE/GPRS/GSM

**e:** 2G EDGE version, support EDGE/GPRS/GSM

**g:** 2G GPRS version, support GPRS/GSM

**c:** 2G CDMA version, support CDMA1x

**Notes:**

- 1) option feature can be select one or all
- 2) for LTE version, please confirm your LTE band and Network Carrier with order to avoid wrong selection
- 3) if there is one "x", means built-in one module; If there is two "xx", means built-in two modules