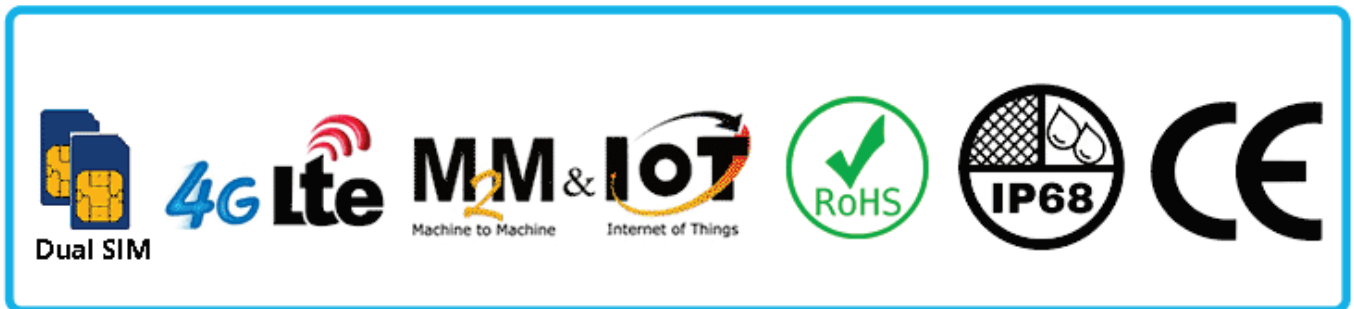


## H820QO Outdoor 4G CPE Router Datasheet



### Product Introduction



The E-Lins H820QO series is a compact, ruggedized outdoor 4G CPE router with IP68 level water proof and dust proof. It is qualified for M2M (Machine to Machine) and IoT (Internet of Things) applications.

With an extensive list of safety and hardening certifications, the H820QO is engineered to protect against extreme temperatures, humidity, shocks, vibrations, dust, reverse polarity, and transient voltage, which is widely used in SOHO internet and 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.

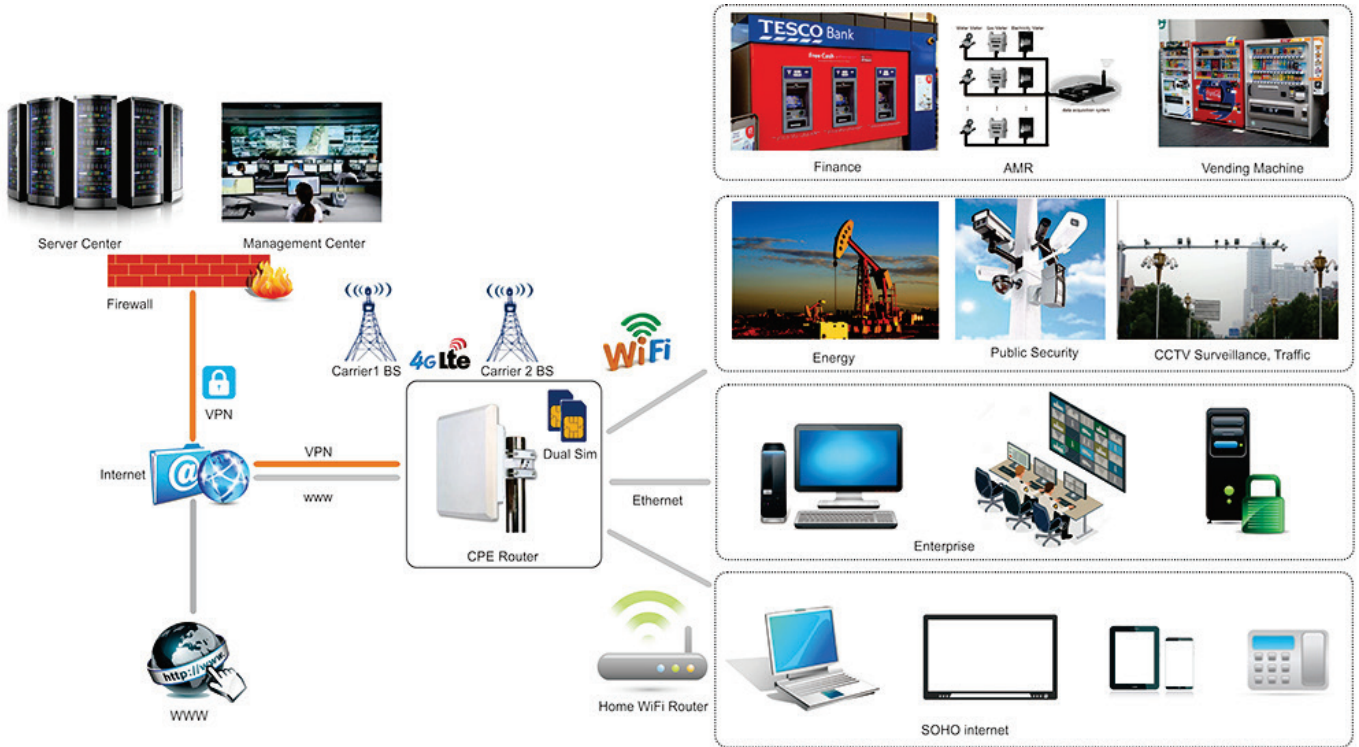
### Application Fields

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## Key Features

- ◆ IP68 outdoor water proof and dust proof
- ◆ 2G/3G/4G LTE, SIM card slot
- ◆ Cellular/WAN RJ45/Wi-Fi client failover/failback and Load Balance
- ◆ POE PD
- ◆ Built-in high gain internal Cellular and WiFi antenna, with reserved connectors for external high gain antennas
- ◆ MIMO supported
- ◆ Cloud-managed (with NMS network management system), TR-069, Web management, SMS, SSH/Telnet/Command, SNMP
- ◆ 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)
- ◆ Supports Ethernet (T1, DSL, Cable, MetroE), Wi-Fi as WAN, and Metro Wi-Fi
- ◆ Ruggedized to ensure always-on connectivity
- ◆ Create real-time alerts to monitor uptime
- ◆ Offer secure, guest Wi-Fi to passengers
- ◆ Pole mount, Desktop, Wall mount and Din-rail mount of installation
- ◆ Optional Features
  - Dual SIM online
  - Wi-Fi (802.11 a/b/g/n/ac/ax)
  - GPS/GNSS

# Typical Topology



## Failover & Load Balance Tech. for M2M / IoT



## Features & Specifications

| Main Feature          |   |
|-----------------------|---|
| <b>WAN</b>            | Cellular 2G/3G/4G LTE (FDD/TDD)<br>Wi-Fi as WAN<br>Failover/Failback/Load balance<br>Advanced Modem Failure Check<br>IP Passthrough<br>WAN ports support Cell/Static IP/DHCP/PPPoE (on demand, keep alive, schedule, manual, standby) |
| <b>LAN</b>            | DHCP Server, Client, Relay<br>DNS and DNS Proxy<br>DDNS<br>UPnP<br>DMZ<br>Multicast/Multicast Proxy<br>QoS (DSCP and Priority Queuing)<br>MAC Address Filtering<br>VLAN 802.1Q  |
| <b>Cellular</b>       | 4G LTE (FDD/TDD)<br>3.75G/3.5G/3G/2G<br>Single SIM Card; Dual SIM Optional<br>Failover/Failback and Load Balance<br>Unlocked SIM, Network and Band Lock Feature (Option)  |
| <b>Wi-Fi (option)</b> | 802.11a/b/g/n/ac/ax<br>MIMO supported<br>AP, Client, Bridge<br>Up to 64 connected devices<br>WPA2 Enterprise (Wi-Fi)<br>Hotspot/Captive Portal<br>SSID-based Priority   |
| <b>Antenna</b>        | Built-in internal 14dbi 2G/3G/4G antenna and Wi-Fi antenna<br>Option for N-type high gain antennas  |
| <b>Power</b>          | Dual Power Inputs/Power Failover;<br>POE (Power over Ethernet, support 5-40VDC default, if the POE voltage  |

|                                  |   |
|----------------------------------|---|
|                                  | <p>is 48V, please order 5-60VDC version);</p> <p>DC input steady state voltage range: 5-40 VDC/5-60VDC option, (requires inline fuse for vehicle installations);</p> <p>For 9–24 VDC installations, use a 3A fuse;</p> <p>For &gt; 24 VDC installations, use a 2.5A fuse;</p> <p>Reverse polarity and transient voltage protection per ISO 7637-2</p> <p>Ignition sensing (automatic ON and time-delay OFF);</p> <p>Power consumption:</p> <p>Idle: typical=100mA@12VDC; Maximum=500mA@12VDC;</p> <p>Tx/Rx: typical=300mA@12VDC; Maximum=800mA@12VDC;</p> <p>12VDC 2A adapter recommended</p> |
| <b>Hardware</b>                  | <p>CPU: Qualcomm chipset</p> <p>RAM: 1Gb DDR2, can be extended with requirement;</p> <p>Flash: 128Mb, can be extended with requirement;</p>   |
| <b>Ports</b>                     | <p>Power (2 Pin Terminal Block for wire connection)</p> <p>Ethernet LAN/WAN * 2</p> <p>Console Port (on board)</p>  |
| <b>LEDs</b>                      | <p>SYS*1, Cell Online*2, Cell Signal*2, WAN*1, LAN*1, Wi-Fi*1</p>   |
| <b>UIM/SIM Card Slot</b>         | <p>Support 1.8V/3V UIM/SIM cards, Dual SIM Slot</p>   |
| <b>Buttons</b>                   | <p>Reset button</p>   |
| <b>Case</b>                      | <p>IP68 grade anti-dust and anti-water enclosure for outdoor installation;</p> <p>PC+anti-UV+anti-oxidation OSP;</p> <p>Light-gray color;</p> <p>Wall-mount, Pole Mount;</p> <p>Customization is available;</p>   |
| <b>Size</b>                      | <p>PCBA: 125mm x 105mm x 20mm</p> <p>With case: 185mm x 172mm x 82mm</p>  |
| <b>Weight</b>                    | <p>About 560g (Without accessories)</p> <p>About 750g (With accessories)</p>  |
| <b>Temperature</b>               | <p>–35 °C to 75 °C ambient air operating;</p> <p>–40 °C to 85 °C storage;</p>   |
| <b>Humidity (non-condensing)</b> | <p>5% to 95% operating</p> <p>5% to 95% storage</p>   |
| <b>Package Contents</b>          | <p>H820QO series 4G outdoor router</p> <p>Ethernet Cable</p> <p>POE Power Adapter</p>   |

|                               |   |
|-------------------------------|---|
|                               | Others depends on option features (GPS antenna, etc.)   |
| <b>Warranty</b>               | 1 Year default. Option extends up to 5 years maximum;<br>Other warranty services can be customized;   |
| <b>Customization Services</b> | OEM / ODM<br>other customization service  |
| <b>Other Details</b>          |   |
| <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;<br>GRE Tunnel;<br>PPTP support;<br>L2TP, L2TP over IPsec support;<br>VPN pass-through;<br>OpenVPN (option);<br>DMVPN (option);<br>Certificate support (option);<br>multiple networks supported in a single tunnel, site-to-site dynamic VPN with NHRP; VTI Tunnel support;  |
| <b>ROUTING</b>                | OSPF/BGP/RIP, Virtual Server/Port Forwarding, IPv6 (option), VRRP;  |
| <b>MANAGEMENT</b>             | E-Lins Enterprise Cloud Network Management System (NMS)<br>Web GUI, API, CLI/SSH/Telnet<br>Data Usage Alerts (router and per client)<br>Advanced Troubleshooting (support)<br>Device Alerts<br>SNMP<br>SMS control<br>TR-069<br><br>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, 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; |
| <b>SECURITY</b>               | RADIUS and TACACS+ support<br>802.1x authentication for Ethernet<br>Certificate support   |



|                                      |   |
|--------------------------------------|---|
|                                      | ALGs<br>MAC Address Filtering<br>Advanced Security Mode (local user management only)<br>Per-Client Web Filtering<br>IP Filtering<br>Content Filtering (basic)<br>Website Filtering<br>Zone-Based Object Firewall with host address (IP or FQDN), port, and mac address<br>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<br>WAN Affinity and QoS allow prioritization of VoIP services<br>Advanced VPN connectivity options to HQ<br>SIP ALG and NAT to allow VoIP and UC communications to traverse firewall<br>MAC Address Filtering<br>802.1p/q for LAN QoS segmentation and treatment of VoIP on LAN<br>Private Network support (wired and 4G WAN)   |
| <b>Firmware update</b>               | support firmware update locally, remotely (LAN, Wi-Fi and OTA WAN) and RMS (Remote Management System) option;   |
| <b>Redundancy and Load Balancing</b> | Failover/failback with 4G, 3G, 2G; WAN failure detection, VRRP;<br>Auto-dial feature, keep alive link;<br>LCP, ICMP check;<br>Built-in watch dog;<br>Cellular (2G/3G/4G), RJ45 WAN (xDSL, DHCP, Fixed IP), Wi-Fi client three-line redundancy;<br>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>SMS, SMS Control and Alarm</b>    | Receive and send the SMS;<br>WAN Cell APN configuration via SMS;<br>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;<br>SMS text sending and receiving;   |
| <b>Others</b> | Cellular and Wi-Fi MIMO supported;<br>Syslog (local and remote);<br>DDNS;<br>DNS proxy;<br>Optimized EMC design;<br>Real-time clock (NTP, support update with defined hours);<br>WAN/LAN/Memory statistics;<br>Local/remote profiles backup and retrieve;<br>Modbus is supported; |

## Order Part Numbers

**H820QO Series Router Order Models**

| Part Number | 5G        | 4G   |      |      |       |       |       | 3G | WiFi                 |                         |                            | POE |     | Serial |       | GPS | DI/DO | 5-60VDC |
|-------------|-----------|------|------|------|-------|-------|-------|----|----------------------|-------------------------|----------------------------|-----|-----|--------|-------|-----|-------|---------|
|             |           | CAT1 | CAT4 | CAT6 | CAT12 | CAT19 | CAT20 |    | WiFi4<br>802.11b/g/n | WiFi5<br>802.11b/g/n/ac | WiFi6<br>802.11b/g/n/ac/ax | PD  | PSE | RS232  | RS485 |     |       |         |
| H820QOt     | -         | O    | D    | O    | O     | O     | O     | Y  | O                    | O                       | O                          | Y   | -   | -      | -     | O   | -     | O       |
| H820QOfrc   | 5G Redcap |      |      | O    |       |       |       | Y  | O                    | O                       | O                          | Y   | -   | -      | -     | O   | -     | O       |

D = default  
Y = supported  
O = option  
- = not supported

POE = Power Over Ethernet  
DI/DO = Digital Input & Output

**Part Number Markings Description:**

G = GPS / GNSS  
W = WiFi  
S2 = Serial RS232  
S4 = Serial RS485  
DC60V = DC 5~60V wide range voltage input

**Part Number Definition:**

H820QOx-CATn-XXX (e.g. H820QOt-CAT6-G-S2-DC60V means H820QO with CAT6 LTE, GPS/GNSS, Serial RS232 and DC 5-60V wide range input.)

**Option Accessories:**

Replacable High Gain Antennas