

# H685 Cellular Router Datasheet



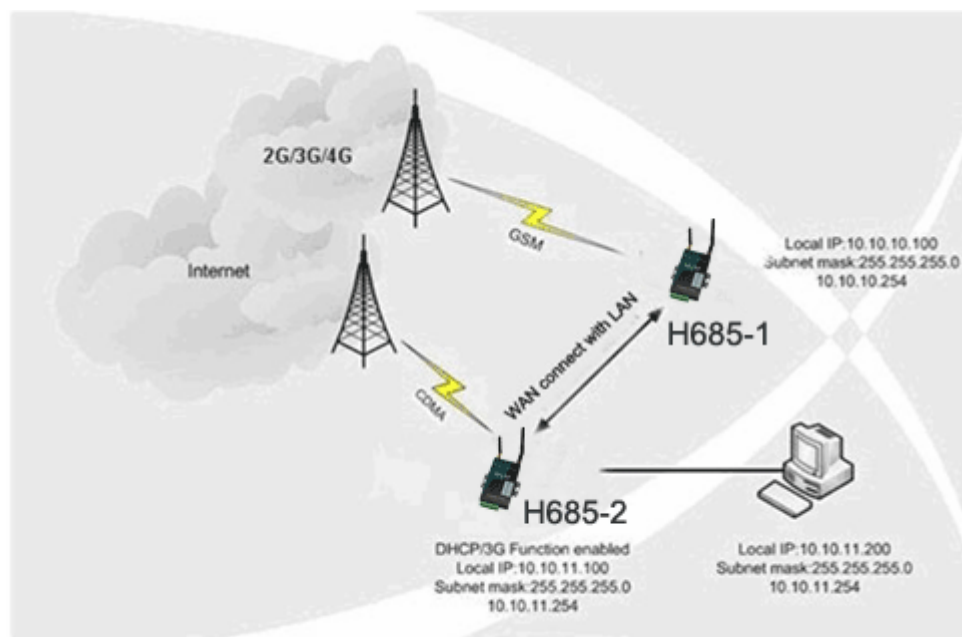
## >>| Product Introduction

The H685 series Cellular Router designed for establish a 2G/3G/4G cellular and Wi-Fi wireless network and share a cellular broad band Internet connection. The H685 series Cellular Router enables users to quickly create a secure Wi-Fi (802.11 b/g/n) network and provide access to the Internet using a cellular network. By connect to cellular mobile network; an Internet connection can be accessed and shared virtually anywhere within a wireless broadband network.

E-Lins' mobile data products are widely used in more than twenty industrial fields, such as power control, water schedule, traffic, oil field, weather forecast, environmental protection, street lamp control, post, bank and many other areas.

## >>| Typical Topology





Dual H685 Typical Application Diagram

Dual H685 Application Combination type	
<b>H685-1</b>	<b>H685-2</b>
Network A	Network B
Network A	Network A
<p>It means H685-1 and H685-2 can be same network, also can be different network.                      Network A can be any one of GSM/GPRS/EDGE/UMTS/HSDPA/HSUPA/HSPA/HSPA+/4G LTE/CDMA1x/EVDO;                      Network B can be any one of GSM/GPRS/EDGE/UMTS/HSDPA/HSUPA/HSPA/HSPA+/4G LTE/CDMA1x/EVDO;                      Please specify with us which network you will use before order.</p>	

## >>| Industrial Application

- Remote Data Monitor and Control
- CCTV, security surveillance
- Water, gas and oil flow metering and schedule
- AMR (automatic meter reading)
- Power station monitoring and control
- Remote POS (point of sale) terminals, ATM,
- Traffic signals monitor and control, Traffic info guidance
- Oil field, weather forecast, environmental protection, street lamp monitoring and control
- Early Warning of Mountain Torrent

- Fleet management
- Power distribution network supervision
- Central heating system supervision
- Weather station data transmission
- Hydrologic data acquisition
- Vending machine
- Telemetry, SCADA
- Vehicle logistics and diagnostics controlling
- Parking meter and Taxi Monitor
- Telecom equipment supervision (Mobile base station, microwave or optical relay station)

## >>| Specification

Wireless	
<b>Compatible Mobile Networks</b>	UMTS WCDMA (HSUPA/HSDPA/HSPA/HSPA+/DC-HSPA+) GSM EDGE/GPRS CDMA1x CDMA2000 EVDO Rev 0, Rev A, Rev B TD-SCDMA/TD-LTE 4G LTE (FDD/TDD)
<b>Cellular Frequency</b>	UMTS/HSPA/HSUPA/HSPA/HSPA+/ DC-HSPA+ (WCDMA/FDD): 850/1900/2100 MHz, option for 850/900/1900/2100Mhz/1700Mhz/AWS;  3G TD-SCDMA: 2010~2025MHz/1880~1920MHz  Quad-band EGSM 850/900/1800/1900;  CDMA1x/EVDO: 800/1900Mhz, option for 450Mhz;  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 12--700Mhz Band 13--700(B13)Mhz

	<p>Band 17--700(B17)/AWS          Band 19—800Mhz          Band 20--DD800Mhz          Band 21          Band 25 –1900Mhz G Block          Band 31– 450Mhz          Other FDD band...</p> <p>4G TDD LTE (TD-LTE):          Band 41 – 2500/2600Mhz          Band 40 -- 2300Mhz          Band 39 – 1900Mhz          Band 38 -- 2600Mhz          Other TDD band...</p> <p>Notes: There are many different band and frequencies for 4G LTE. Please confirm the detailed band and frequency with your carriers before order.</p>
<p><b>Bandwidth</b></p>	<p>4G LTE:          FDD LTE: 100Mbps downlink, 50Mbps uplink;          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          Rev A: 3.1Mbps downlink, 2.4Mbps uplink          Rev O: 2.4Mbps downlink, 153.6kbps uplink</p> <p>3G TD-SCDMA: 2.8Mbps</p> <p>Notes: the bandwidth is peak value. Real value depends on carrier network support.</p>

<b>Network and Band Lock Feature (Option)</b>	Default is unlocked, can use this feature to lock
<b>Main Features and Performance</b>	
<b>USB Host</b>	No
<b>SMS and SMS/Voice Control and Alarm</b>	Receive and Send the 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
<b>GPS (Option)</b>	GPS feature
<b>DTU (Option)</b>	With DTU feature (Serial to Cellular Gateway feature, RS232 or RS485 port option). Details: Serial Baudrate: 300bps, 600bps, 1200bps, 2400bps, 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps; Serial Parity: none, even, odd; Serial Databits: 7, 8; Serial stopbits: 1, 2; Serial flow control: none, hardware, software; Mode: Server (up to 4 server centre, can OEM to be more), Client; Protocol: TCP, UDP ; Heart Beat : Yes;
<b>VPN</b>	PPTP, L2TP, IPSec, GRE, Tunnel (PPTP server, PPTP client, L2TP client, IPSec client, IPsec server)
<b>OpenWRT (Option)</b>	Optional
<b>VRRP (Option)</b>	Optional
<b>Route</b>	Static Route; Optional for Dynamic Route (BGP, BGPD, OSPF, Zebra, Rip);
<b>SNMP</b>	Support V1, V2. V3
<b>VLAN</b>	Support multi-LAN IP address, support two IP address
<b>Wi-Fi(WLAN)</b>	Optional, 802.11b/g/n; 150Mbps default. 300Mbps optional. Can be used as AP and client; Frequency from 2.4GHz to 2.483GHz, Access Points, Routers and Gateway Server Applications, wireless up to 254 PC users
<b>Fail Over Redundancy</b>	Auto-dial feature, keep alive link;

<b>(network Backup feature)</b>	<p>LCP, ICMP check;                  Built-in watch dog;                  Cellular (2G/3G/4G), RJ45 WAN (xDSL, DHCP, Fixed IP), WiFi client three line redundancy;                  Two H685 dual sim same network(Network1+ Network1);                  Two H685 dual sim two network (Network2+ Network 2);                  Two H685 dual sim dual mode network (WCDMA+CDMA2000, WCDMA+LTE, CDMA2000+LTE);</p> <p>Cold Backup is default, Hot Backup is option;                  Cold Backup=WAN RJ45 and Cellular WAN not online at the same time. One line online and the other line standby, switch freely with triggers;                  Hot Backup=WAN RJ45 and Cellular WAN are online at the same time. Data goes the main line, and switch to the other line. Hot Backup switch time is shorter than Cold Backup.</p>
<b>POE</b>	POE for LAN/WAN RJ45, need work with POE adapter.
<b>Firmware update</b>	support firmware update locally or remotely (LAN, WiFi and OTA WAN)
<b>Syslog</b>	local and remote
<b>DDNS</b>	Yes
<b>DHCP Server</b>	Yes
<b>Others</b>	<p>DNS proxy;                  Optimized EMC design;                  Real-time clock (NTP, support update with defined hours);                  WAN/LAN/Memory statistics;                  Local/remote profiles backup and retrieve;</p>
<b>Management System</b>	Option
<b>Protocol</b>	
<b>Protocol support</b>	TCP, UDP, SMTP, POP, ICMP, FTP, PPP, PPPoE, DHCP, DDNS, DNS, WPS, DMZ, NAT, xDSL, NTP, QoS, etc.
<b>Security</b>	
<b>Firewall</b>	<p>support 64/128 bits WEP, 802.1x, WPA, and WPA2                  support WDS                  support WPA1/2 – PSK</p>

	support WPA1/2 – 802.1x support EAP – TLS, TTLS, LEAP, PEAP TKIP, AES encryption support access with user name & password. support access control base WAN/LAN interface support access control base source IP address defense DOS attack, support SYN flooding, IP surfing, ping of Death, fragile, teardrop, land etc. support PAP & CHAP support IP filtering support content filtering support NAT/NAPT/Port forwarding/DMZ
<b>Advanced Firewall Features</b>	Stateful Packet Inspection (SPI) VPN Pass-through
<b>Media Access Control</b>	CSMA/CA with ACK
<b>Certifications</b>	REDIUS Client
<b>Interface</b>	
<b>LAN/WAN</b>	1X 10/100M LAN port (RJ45 interface) 1X 10/100M WAN port (RJ45 interface) (WAN RJ45 can convert into LAN RJ45 to get 2 LAN RJ45) WAN ports support Cell/Static IP/DHCP/PPPoE (on demand, keep alive, schedule, manual)
<b>Antenna</b>	2 antenna for Wi-Fi (detachable, SMA interface * 1, Internal *1) 3 antenna for Cellular and GPS (detachable, 50Ω SMA female interface), Cellular support diversity receiving (MIMO) option
<b>Led</b>	SYS*1 VPN*1 Cell Signal*1 Cell*1 WAN*1 LAN*1 WiFi*1
<b>Button</b>	Reset
<b>Console</b>	1 console port
<b>Serial port</b>	RS232 or RS485 built-in terminal block interface

<b>IO Port (option)</b>	2
<b>Management</b>	Easy to use and management; Web/Telnet/SSH/CLI, support remote management
<b>At command</b>	Supported
<b>UIM/SIM Card Slot</b>	Support 1.8V/3V UIM/SIM cards, one sim card slot
<b>DC Jack</b>	Two types of input jack for DC 2.5mm DC jack * 1 Terminal Block * 1
<b>Power</b>	
<b>Power supply</b>	DC5V-50V , typical DC 9V1A or 12V1A, 12v CAR USE; DC5V~40V is the default, DC5V~50V is the option
<b>Current</b>	Idle: about 100mA@12VDC Communication: about 260mA@12VDC
<b>Software</b>	
<b>Device Management</b>	WEB interface (Internet Explorer v6 or Later; Mozilla Firefox v1.5 or Later, or other Java-enabled Browsers,Chome,Opera,Safari)
<b>Minimum System Requirements</b>	Mobile Internet Access Subscription and Internet PC Adapter Computer with: Windows 8.1, 8, 7, Vista , Windows XP SP2, Windows 2000 SP4, or Mac OS® X (v10.4/v10.3), Linux, other OS support internet browser; CD-ROM Drive Network Interface Card
<b>Physical</b>	
<b>Operating Temperature</b>	Storage Temperature: -40 ~ 85°C Working Temperature: -30 ~ 75°C
<b>Humidity</b>	95% Maximum (Non-condensing)
<b>Dimensions</b>	PCBA: 96mm x 56mm x 14mm With case: 100mm x 60mm x 21mm
<b>Weight</b>	220g (not including the antenna) 330g (including the antenna) 650g (including all accessories, without package)



<b>Color</b>	Metal Gray-Black, OEM is available
<b>Others</b>	
<b>Warranty</b>	1 Year default. Option extends to 5 years maximum.
<b>Package Contents</b>	H685 Series wireless Router Ethernet Cable Power Adapter Antenna Others depends on option features

## >>| H685 model and types

H685 x - - - XXX (option)



**W:** WiFi WLAN

**G:** GPS

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

**50V:** DC input 5~50V support, default is 5~40V

**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

Notes: please be informed the following features are option. Please indicate before order.

1) Cellular diversity receiving MIMO (with this feature, router can get better signal and speed)

- 2) WiFi Feature
- 3) GPS feature
- 4) Serial to cellular feature, RS232 or RS485 can choose one
- 5) Voice/SMS control
- 6) DC5V~50V (default is DC5V~40V)
- 7) Dynamic Route.

## >>| Package & Accessories

- The H685 Series wireless Router
- Ethernet Cable
- Power Adapter
- Antenna
- Others depends on option features



DB15 to DB9 Cable

DB9 serial cable

RJ45 to DB9 Cable

USB Cable



EU Power Supplier

US Power Supplier

AU Power Supplier

Desktop Power Supplier  
EU, US, AU, UK for choice

UK Power Supplier



Metal Magnetic-Mount W/ Cable

Rubber antenna

Rubber Magnetic-Mount W/ Cable

CD-Rom with Manual/Data

### Notes:

- 1) We packed the units with free accessories; default packed depends on stock and the device's feature requirement. If you need specify the type, please inform us when you order.
- 2) Different places have different band and frequency. Signal quality affects the data speed. The antenna in the

packages is free default. It's a world-wide use type. Our free antenna may not get good signal or good speed in your area. Please get the dedicated antenna for your area yourself to get the best signal and data speed.

3) E-Lins has high gain antenna for option.