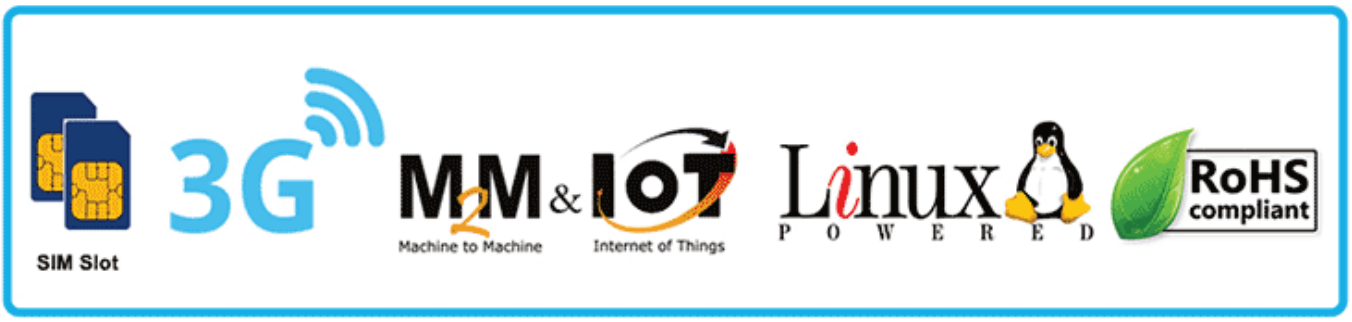
H685 3G IP Modem Datasheet

>>| Product Introduction



The E-Lins H685 3G serial gateway is a compact, ruggedized cellular networking solution gateway 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. Super mini size suitable for embedding applications.

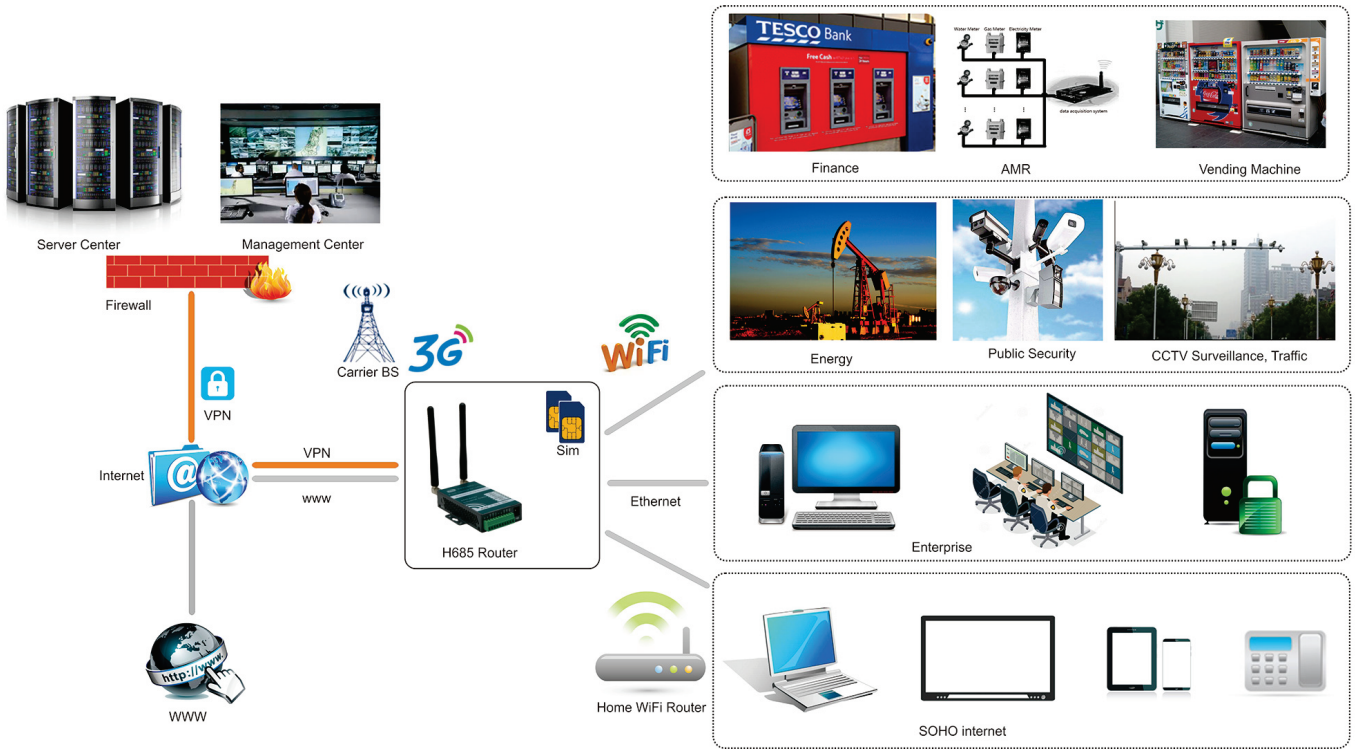
In addition to the robustness, reliability, security, friendly-using, the H685 is competent to be engineered to protect against extreme temperatures, humidity, shocks, vibrations, dust, reverse polarity, and transient voltage, which is widely used in more than twenty industrial fields, such as CCTV security surveillance, AMR, vehicle, retails, vending machines, power control, water schedule, traffic, oil field, weather forecast, environmental protection, street lamp control, post, bank and many other fields.

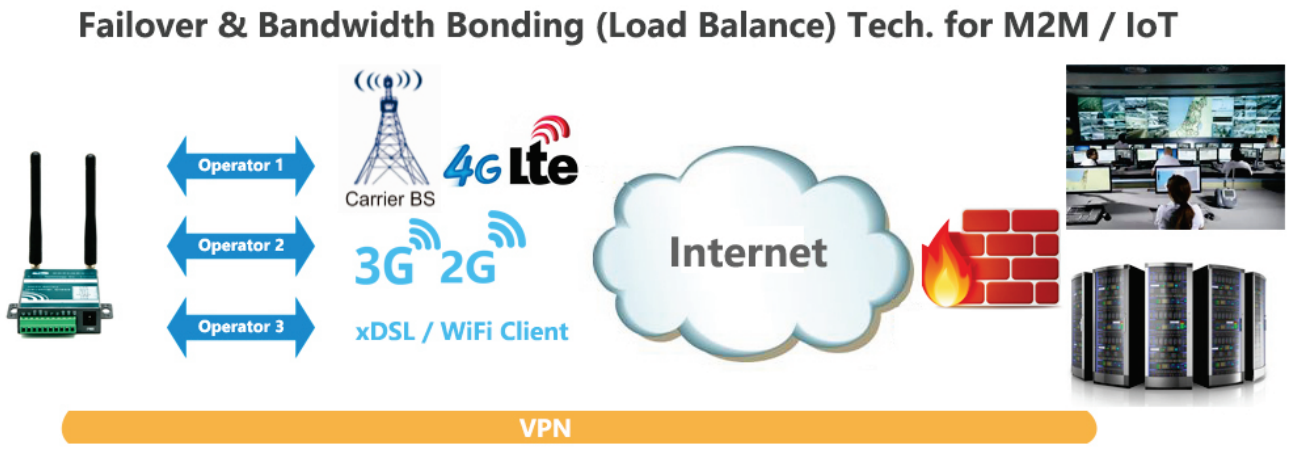
>>| Key Features

- Multi-carrier 2G/3G support with SIM card slot
- Cellular/WAN RJ45/WiFi client failover and Load Balance (Bandwidth link bonding)
- Cloud-managed (with NMS network management system), TR-069, Web management, SMS, SSH/Telnet/Command, SNMP
- WiFi (802.11 a/b/g/n, 2.4Ghz)
- Certified 3G 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 (Power over Ethernet)
- GPS / GNSS support
- Serial Port (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
- Desktop, Wall-mount and Din-rail mount of installation
- External antenna connectors for high gain antennas replacement
- MIMO supported

>>| Typical Topology





>>| Features

Main Feature	
WAN	Cellular 2G/3G WiFi as WAN Failover/Failback and Load Balance (Bandwidth bonding) 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	802.11 a/b/g/n Up to 64 connected devices 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 3G WAN)
Firmware update	support firmware update locally, remotely (LAN, WiFi and OTA WAN) and NMS (Network 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;
Feature Details	
Redundancy and Load Balancing	Failover/failback with 3G, 2G; WAN failure detection, VRRP; Auto-dial feature, keep alive link; LCP, ICMP check; Built-in watch dog; Cellular (2G/3G), 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: 580Mhz; RAM: 512Mb DDR, option up to 2Gbit; Flash: 128M, option for up to 4Gbit;
WAN	Integrated 3G modem (with 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;
LAN	802.11 a/b/g/n; 1 or 2 LAN/WAN switchable 10/100Mbps Ethernet ports;
Ports	Power (DC Jack, 2 Pin Terminal Block for wire connection) 2 Ethernet LAN/WAN 2 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)
Power	Dual or Tri Power Inputs / Power Failover; POE (Power over Ethernet, support 5-40VDC default, it 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
LEDs	SYS*1, VPN (IPSec)*1, Cell Signal*1, Cell*1, WAN*1, LAN*1, WiFi*1
UIM/SIM Card Slot	Support 1.8V/3V UIM/SIM cards
Others	Reset button, console port,
Size	PCBA: 96mm x 56mm x 14mm With case: 100mm x 60mm x 21mm
Weight	220g (not including the antenna) 330g (including the antenna) 650g (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	Metal Gray-Black; Customization is available
Cellular	
Compatible Mobile Networks	UMTS WCDMA (HSUPA/HSDPA/HSPA/HSPA+/DC-HSPA+) GSM EDGE/GPRS CDMA1x CDMA2000 EVDO Rev 0, Rev A, Rev B TD-SCDMA
Cellular Frequency	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	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	802.11a/b/g/n; Can be used as AP and client; Frequency Range: 2.412 ~ 2.472Ghz Speed: 802.11n in 300Mbps;
Others	
Minimum System Requirements	Windows, Linux, Mac OS, IOS, Symbian, Android, other OS support web browser;
Warranty	1 Year default. Option extends up to 5 years maximum; Other warranty services can be customized;

Package Contents	H685 Series 3G IP Modem 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

H685 -x --- 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

H685 Series IP Modem Order Models											
Part Number	**4G LTE**	**3G**	**2G**	**USB**	**WiFi**	**Serial**	**GPS**	**DI DO**	**DC5-60V**	**Market**	**Marks**
H685t-F1	Y	Y	Y		O	O	O	O	O	Asia, Europe, South America,	CAT3/4/6/9/12

										Africa	
H685t-F4	Y	Y	Y		O	O	O	O	O	North America	CAT3/4/6/9/12
H685t-F5	Y	Y	Y		O	O	O	O	O	Japan	CAT3/4/6/9/12
H685t-TF1	Y	Y	Y		O	O	O	O	O	customized for some operators	CAT4
H685t-TF2	Y	Y	Y		O	O	O	O	O	customized for some operators	CAT4
H685t450-F1	Y				O	O		O	O	customized for some operators	CAT3 or CAT4, 450Mhz
H685p		Y	Y		O	O	O	O	O	Global	
H685ev450-2		Y								customized for some operators	450Mhz
Y = supported O = option											