



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# E220 SERIES



## Highly versatile, reliable and rugged routers

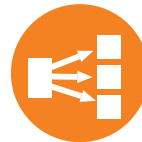
Available in 3G and LTE and with WAN, LAN, Wi-Fi and serial connectivity, the E220 series of M2M routers is designed for mission-critical enterprise applications.



**Advanced Failover**

Maximise uptime by seamlessly switching between multiple Internet interfaces

**Advanced Load Balancing**



Spread or bind your data traffic across the multiple Internet interfaces, based on data type, source or destination and the relative WAN connectivity costs



**Multiple Tunnelling Schemes**

Secure your data using a variety of VPN tunnelling schemes, including PPTP, L2TP, OpenVPN, GRE and IPsec

**RS-485 Operation**



Integrate sensors and third-party devices over the RS-485 serial port to provide seamless connectivity to IP networks



D2SPHERE™ device management services let you monitor, diagnose, control and update your Maestro and FALCOM devices. Information such as signal strength, geographic location, battery state, temperature, device firmware and software versions can be remotely monitored, stored and presented to help you to manage quality and service and prevent downtime.

## E220 Series specifications

### HARDWARE

<b>Material</b>	Brushed aluminium alloy, DIN Rail mountable
<b>Dimensions</b>	61.25 x 85.75 x 24.5 mm without connectors
<b>Weight</b>	Approx. 165 g
<b>Operating status LED x 6</b>	Alert / Power / Cellular signal, Network and Activity / Wi-Fi
<b>Operating temperature range</b>	All Lite models: -20°C ~ +55°C All other models: -30°C ~ +70°C
<b>DDR2 SDRAM</b>	All Lite models: 512 Mbit All other models: 1 Gbit

### SOFTWARE

<b>Administration / Network Protocols</b>	Web-based user interface, set-up wizard, console log viewer, save / load configuration, NTP, SMS / OTA remote configuration, TR-069 capable
<b>Redundancy</b>	Ethernet, cellular, Wi-Fi - configurable as failover or load-balancing
<b>Resilience</b>	Network connectivity watchdog (configurable), internal application watchdog
<b>Wi-Fi</b>	Client or Access Point (approx. 40-user), multiple SSID, WEP, WPA, WPA-PSK / WPA2-PSK security modes
<b>M2M services</b>	Compatible with D2SPHERE™ device management services
<b>Security</b>	Zone-based firewall, VLAN, DMZ, HTTPS local and remote connection, SIM PIN
<b>Performance / Fault Management</b>	Real time processor load and interface (WAN / LAN / Wi-Fi), traffic analysis, ICMP, trace-route, NS lookup
<b>Routing</b>	DHCP, static routing, port-forwarding, traffic routing, static/dynamic DNS, DNS proxy, NAT, STP
<b>VPN</b>	PPTP client, L2TP, OpenVPN client / server / pass-through, GRE, IPsec
<b>Industrial Protocols</b>	Modbus RTU to TCP support, Modbus master

### INTERFACES

<b>LAN</b>	RJ45 connector with Tx / Rx LEDs
<b>RS-485</b>	Full- and half-duplex, 6 kV contact, 8 kV air discharge protection / 5-pin, 2.5 mm pitch COMBICON connector Dedicated RTC with 20-day retention
<b>Wi-Fi</b>	IEEE 802.11b/g/n, 2T2R @2.4 GHz (300 Mbps maximum data rate), RP-SMA antenna connector x 2
<b>WAN</b>	RJ45 connector with Tx / Rx LEDs; user-configurable to LAN #2
<b>Cellular</b>	SMA antenna connector x 1 (E225 models) or x 2 (E224 and E228 models)
<b>SIM</b>	Mini SIM 1.8 V / 3.0 V MFF SIM and / or embedded SIM (eUICC) (factory option)
<b>Location Services*</b>	Either IZat™ gen. 8C gpsOne (Mk II model) or Concurrent GPS, Galileo and either GLONASS (factory setting) or Beidou (other models)
<b>Digital I/O x 2</b>	Input - detection, 5 V ~ 48 V DC Output - open collector, max. output 200 mA 3-pin, 2.5 mm pitch COMBICON connector with common ground

### POWER

<b>Main Source</b>	Roadworthy** 10.8 V ~ 60 V DC on a 2-pin Micro-Fit™ 3.0 female connector
<b>Alternate source***</b>	Class 3 PD-PoE with seamless fall-back onto the main source
<b>Last Gasp*</b>	Approx. 5-minute via two 96 mWh Li-ion batteries (not functional below -10°C)

\*Not available on Lite models  
\*\*Compliant with ISO 7637-2:2011 and 2004 as well as ISO 21848:2005  
\*\*\*Not available on Lite and Mk II models

MODEL NAME	TERRITORIES OR OPERATOR(S)	CELLULAR TYPE	BANDS	FALLBACK MODE(S)	BANDS	GNSS	PLANNED CERTIFICATIONS	FCS (*)	ORDER CODE
E225 Lite	EMEA, [most of] Asia Pacific	3G <sup>a</sup>	1/8	2G	3/8	*	RED, GCF		E225LITE#02
E224	EMEA	LTE cat. 1	3/8/20	3G <sup>b</sup>	1/5/8	same as E228's	RCM, NCC		E224#38K#38
	Asia Pacific		3/5/8/28				RED, GCF		E224#358S#158
E225	EMEA, [most of] Asia Pacific	3G <sup>a</sup>	1/8	2G	3/8		JPA, JRF, NBTC		E225#02
	World		1/2/5/8				2/3/5/8		E225
E228 Mk II	EMEA	LTE cat. 4	1/3/7/8/20/28	3G <sup>c</sup> ; 2G	1/8; 3/8	IZat™ gen. 8C gpsOne	RED, GCF	Apr. '18	E228MKII#02
	Asia Pacific		1/3/5/7/8/28	3G <sup>c</sup>	1/5/8		RCM, KCC, NCC	May '18	E228MKII#04
	China, India		1/3/5 TDD 40/41	3G <sup>c</sup> ; 2G	1/8; 3/8		CCC, NAL, SRRC	Sep. '18	E228MKII#078
E228	AT&T Wireless, Rogers User-configurable to Verizon Wireless		2/4/5/17	3G <sup>c</sup>	2/5	Concurrent GPS, Galileo and either GLONASS (factory setting) or Beidou	FCC, PTCRB, AT&T Wireless, Verizon Wireless		E228#245DH#25
	Asia Pacific		3/7/28	*	N/A		RCM, NCC		E228#37S
	NTT docomo		1/19/21	*	N/A		JPA, JRF		E228#1JL
	KDDI	1/11/18	KCC				E228#1BI		
	South Korea	1/3/5/7	E228#1357						

Please consult us regarding the models or features shown in grey which are subject to MOQ and other considerations

Uplink / Downlink maximum data rates – 3G: 5.76 / <sup>(a)</sup> 7.2; or <sup>(b)</sup> 10.1; or <sup>(c)</sup> 42.2 Mbps;  
– LTE cat. 1: 5 / 10 Mbps (FDD); 3.1 / 8.96 Mbps (TDD)  
– LTE cat. 4: 50 / 150 Mbps (FDD); 35 / 130 Mbps (TDD)

\* First customer shipment