

# E210 SERIES



## Cost-effective, rugged LTE routers

With WAN, LAN, Wi-Fi and serial connectivity, the E210 Series of M2M routers is designed for mission-critical industrial applications



### MULTIPLE LTE OPTIONS

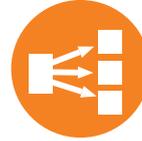
Not only LTE cat. 4 but also LTE cat. 1 and dual mode LTE-M1 / NB-IoT, which are suited better to applications requiring low data throughput but high resilience and reliability



### MULTIPLE INTERFACES

To connect easily to any legacy or modern equipment with RS-232, LAN, WAN and Wi-Fi

### ADVANCED ROUTING FEATURES



State-of-the-art load balancing, multiple VPN tunneling schemes including IPsec, cellular / WAN / Wi-Fi failover scheme

### SNAP CAP™



Snappily converts E210 Series' RS232 port into an isolated, half- or full-duplex, RS-485 port



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 of service and prevent downtime.

# E210 SERIES SPECIFICATIONS

## HARDWARE

<b>MATERIAL</b>	Brushed aluminium alloy
<b>DIMENSIONS (MM)</b>	92.5 x 57.2 x 22.5 without connectors
<b>WEIGHT (G)</b>	Approx. 150
<b>TEMPERATURE &amp; HUMIDITY RANGES</b>	<ul style="list-style-type: none"> <li>✓ <b>*Operating*</b>: -20 °C ~ +60 °C; up to 95% RH</li> <li>✓ Storage: -40 °C ~ +85 °C; up to 95% RH</li> </ul>
<b>CPU</b>	<ul style="list-style-type: none"> <li>✓ MIPS32® 24KEc™ CPU running at 580 MHz</li> <li>✓ Built-in 64 KB [resp. 32 KB] instruction [resp. data] cache</li> </ul>
<b>SPI FLASH MEMORY</b>	32 MB
<b>*DDR2 SDRAM*</b>	128 MB
<b>POWER-OFF TIMEKEEPING</b>	RTC with an approx. 100-day data retention period; courtesy of a 15 mWh lithium manganese battery (not functional below -20 °C)
<b>POWER CONSUMPTION (W)</b>	<p>All figures worst-case (60 °C, 32 V, all subsystems fired on, etc.)</p> <ul style="list-style-type: none"> <li>✓ Idle: 0.96 (E215); 1.10 (E214); 1.10 (E218)</li> <li>✓ Standby: 2.31 (E215); 2.63 (E214); 2.63 (E218)</li> <li>✓ Communication (Tx max.): 5.54 (E215); 6.18 (E214); 6.18 (E218)</li> </ul>

## EPAK SOFTWARE SUITE

<b>ADMINISTRATION AND NETWORK PROTOCOLS</b>	Web-based user interface, setup 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>DEVICE MANAGEMENT SERVICES</b>	via either our own D2SPHERE™ platform or third-party platforms such as TrinitySMART, Thingworx, Thing+, Cumulocity, etc.
<b>SECURITY</b>	Zone-based firewall, VLAN, DMZ, HTTPS local and remote connection, SIM PIN
<b>PERFORMANCE AND 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 / passthrough, GRE, IPsec
<b>INDUSTRIAL PROTOCOLS</b>	Modbus RTU to TCP support; Modbus master



## OPERATION AND CONTROLS

<b>POWER</b>	8 V dc ~ 32 V dc with SLOW START; via the upper row of a dual row, 4-pin, Micro-Fit™ 3.0 header
<b>I/Os</b>	Two digital I/Os; via the lower row of the same header <ul style="list-style-type: none"> <li>✓ INPUT: 0 V dc ~ 1 V dc → ZERO; 1.4 V ~ 36 V dc → ONE</li> <li>✓ OUTPUT: open collector; 100 mA max.; 36 V dc max.</li> </ul>
<b>RESET BUTTON</b>	Short (2 s ≤ < 10 s) / Long (≥ 10 s) press for Soft / Hard Reset
<b>RS-232</b>	Full implementation; via a 9-pin sub-D header
<b>10/100BASE-T ETHERNET</b>	One LAN port and one WAN port, user-reconfigurable as second LAN port; via RJ-45 headers fitted with two LEDs
<b>WI-FI</b>	IEEE 802.11b/g/n; via an RP-SMA antenna connector
<b>CELLULAR</b> (details in the table below)	One- or two-antenna models as: <ul style="list-style-type: none"> <li>✓ LTE-M1 E213G; 3G E215[G]; via an SMA antenna connector</li> <li>✓ LTE cat. 1 E214[G]; LTE cat. 4 E218[G]; via two SMA antenna connectors (main and diversity)</li> </ul>
<b>*DUAL SIM*</b>	Dual SIM / Single standby ("DSSS"); via two mini-SIM held in trays
<b>*LOCATION SERVICES*</b>	Concurrent GPS and GLONASS (E213G, E215G); IZat™ gen. 8C gpsOne (E214G, E218G); via a dedicated SMA antenna connector
<b>*DATA STORAGE*</b>	via a user-accessible microSD card (not provided)
<b>OPERATING STATUS LEDS</b>	Seven as green for (i) POWER; blue for (ii) SIM; (iii) Wi-Fi; amber for (iv) Activity; (v) Network; (vi) Signal; red for (vii) ALERT

### \*FACTORY OPTIONS\* (subject to MOQ and other considerations)

<b>"XTR"</b>	-30 °C ~ +70 °C operating temperature range
<b>DDR2 SDRAM</b>	Doubled to 256 MB
<b>ALTERNATE DATA STORAGE</b>	64 MB [resp. 1 GB] of internal Flash memory, arranged in 512- [resp. 2,048-] byte pages, substituted for the standard microSD card holder
<b>MFF SIM(S)</b>	Combination of (i) 'MFF + mini'; or (ii) 'mini + MFF'; or (iii) 'MFF + MFF' SIMs, substituted for the standard two mini-SIM trays
<b>LOCATION SERVICES</b>	IZat™ gen. 8C gpsOne (E214#02, E214#078, E218#04 only); via a dedicated SMA antenna connector
<b>ADD-ON</b>	A 9-pin male sub-D plug that 'snappily' converts any E210 unit into an isolated, half- or full-duplex (user-selectable via a slide switch) RS-485 unit via a 5-pin, 3.5 mm pitch, COMBICON header
<b>SNAP CAP™</b>	

## ESSENTIAL ACCESSORIES

<b>POWER CORDS</b>	ACC-CA10 or ACC-CA10-F; the latter with two stripped wires for I/Os
<b>REMOTE, ADHESIVE, CELLULAR AND CELLULAR / GNSS ANTENNAS</b>	All IP67-rated, except for ACC-A31 (IP33) and ACC-A31H (N/A) <ul style="list-style-type: none"> <li>✓ ACC-A31 or ACC-A31H LTE: E215</li> <li>✓ ACC-A14 or ACC-A14H '2-in-1' LTE + GNSS: E213G, E215G</li> <li>✓ ACC-A32 or ACC-A32H '2-in-1' LTE x 2: E214, E218</li> <li>✓ ACC-A33 or ACC-A33H '3-in-1' LTE x 2 + GNSS: E214G, E218G</li> </ul>
<b>WI-FI ANTENNAS</b>	L-shaped, hinged, ACC-A24 (while stocks last) or ACC-A21
<b>DIN RAIL CLIP</b>	ACC-DIN-E210: dual mount 5 1/2 U or 1 1/2 U; mounting bracket too

MODEL NAME	TERRITORIES OR OPERATOR(S)	CELLULAR TYPE <sup>1</sup>	BANDS <sup>2</sup>	FALLBACK MODE(S) <sup>1</sup>	BANDS <sup>2</sup>	LOCATION SERVICES	PLANNED / OBTAINED CERTIFICATIONS <sup>3</sup>	PLANNED / MADE FCS <sup>4</sup>	ORDER CODE
E215	EMEA; South Asia; South-East Asia	3G <sup>1</sup>	8/1	2G <sup>1</sup>	8/3	*	CE <sup>7</sup>	Aug. '18	E215#02
E214	ANZ; Thailand	LTE cat. 1	28/5/8/3	3G <sup>2</sup>	5/8/1	IZat™ gen. 8C gpsOne	<b>RCM; NBTC</b>	Dec. '18	E214#358S#158
	EMEA; Malaysia		28/20/8/3/1/7	8/1; 8/3	<b>CE<sup>7</sup>; SIRIM</b>		E214#02		
	China; Indonesia; India		5/8/3/1; TDD 40/41 <sup>a</sup>	3G <sup>2</sup> ; 2G <sup>1</sup>	CCC, SRRC, CTA; Postel		E214#078		
E218	Brazil; ANZ; Thailand; Malaysia; Singapore	LTE cat. 4	28/5/8/3/1/7	*	N/A	*	Anatel; RCM; NBTC; SIRIM; IMDA	TBD	E218#04
	ANZ; Taiwan		28/3/7				NCC		E218#37S
	NTT docomo		19/21/1				JRF, JPA		E218#1JL
	KDDI		18/11/1				KC, LG U+		E218#1BI
	LG U+		5/3/1/7						E218#1357
E215G	World	3G <sup>1</sup>	5/8/2/1	2G <sup>1</sup>	5/8/3/2	Concurrent GPS and GLONASS <sup>6</sup>	TBD	TBD	E215G
E213G	World	LTE-M1 <sup>5</sup>	12 <sup>b</sup> /28/13/14/20/27/26 <sup>c</sup> /8/3 <sup>d</sup> /66 <sup>e</sup> /25 <sup>f</sup> /1	*	N/A		TBD	Oct. '19	E213G-NN
				2G <sup>?</sup>	8/3				Apr. '20
E214G	Verizon Wireless	LTE cat. 1	13/4	*	N/A	IZat™ gen. 8C gpsOne	<b>FCC<sup>8</sup>; Verizon Wireless</b>	Nov. '18	E214G#01
	AT&T Wireless, T-Mobile USA, Sprint		12 <sup>b</sup> /5/4/2	3G <sup>3</sup>	5/4/2		<b>ISED; FCC<sup>8</sup>; PTCRB, AT&amp;T Wireless</b>		E214G#00
	North America		12 <sup>b</sup> /13/14/5/66 <sup>e</sup> /2				E214G#01's AND #00's		Apr. '20
E218G	Japan	LTE cat. 4	18/19/8/11/21/3 <sup>d</sup> /1		6/19/1		JRF, JPA	Oct. '19	E218G#05

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

<sup>1</sup> Uplink / Downlink maximum data rates

- 2G: <sup>1</sup> 85.6 / 236.8; or 236.8 / <sup>2</sup> 236.8; or <sup>3</sup> 296 kbps  
 - NB-IoT: 62.5 / 27.2 kbps  
 - LTE-M1: 375 / 300 kbps  
 - LTE cat. 1: 5 / 10 Mbps (FDD); 3<sup>1</sup> / 8.96 Mbps (TDD)  
 - 3G: 5.76 / <sup>1</sup> 7.2; or <sup>2</sup> 10.1; or <sup>3</sup> 42.2 Mbps  
 - LTE cat. 4: 50 / 150 Mbps (FDD); 35 / 130 Mbps (TDD)

<sup>2</sup> Ranked by increasing frequencies

<sup>a</sup> More precisely, B41's 2535 MHz ~ 2655 MHz subset, suited to China's three operators and incl. TDD B38  
<sup>b</sup> incl. North America's ("NorAm's") B17  
<sup>c</sup> incl. KDDI's B18 as well as NorAm's B5, the latter incl. NTT docomo's B19, itself incl. Japan's B6 (3G)  
<sup>d</sup> incl. Japan's B9  
<sup>e</sup> incl. NorAm's B10, itself incl. NorAm's B4  
<sup>f</sup> incl. NorAm's B2

<sup>3</sup> Besides **MIL-STD-810H**

<sup>4</sup> First customer shipment [date of]  
<sup>5</sup> LTE-M1 (E213G-NN); dual mode LTE-M1 / NB-IoT (E213G)  
<sup>6</sup> Either Sony's CXD5603-based (E213G) or Qualcomm's SiRFstarV-based (E215G)  
<sup>7</sup> Based on compliance with RED; EN 60950-1; etc.

<sup>8</sup> Also, Class 1 Division 2 for use in explosive atmospheres, as a factory option subject to MOQ and other considerations

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