E210 SERIES

maestro
empowering wireless

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

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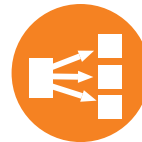
State-of-the-art load balancing, multiple VPN tunneling schemes including IPsec, cellular / WAN / Wi-Fi failover scheme

Multiple interfaces

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

SNAP CAP™

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

Industrial Automation

Sales & Payment

Infrastructure & Transportation

D2SPHERE™

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.
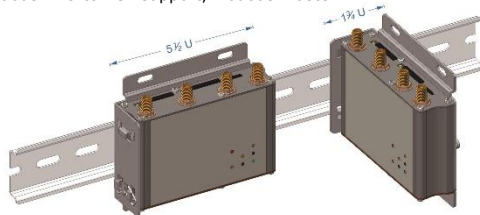
E210 SERIES SPECIFICATIONS

HARDWARE

MATERIAL	Brushed aluminium alloy
DIMENSIONS	92.5 x 57.2 x 22.5 mm without connectors
WEIGHT	Approx. 150 g
TEMPERATURE & HUMIDITY RANGES	✓ *Operating*: -20 °C ~ +60 °C; up to 95% RH ✓ Storage: -40 °C ~ +85 °C; up to 95% RH
CPU	✓ MIPS32® 24KEc™ CPU running at 580 MHz ✓ Built-in 64 KB [resp. 32 KB] instruction [resp. data] cache
SPI FLASH MEMORY	32 MB
DDR2 SDRAM	128 MB
POWER-OFF TIMEKEEPING	RTC with an approx. 100-day data retention period; courtesy of a 15 mWh lithium manganese battery (not functional below -20 °C on "XTR" models)
POWER CONSUMPTION	Data pending...

ePack SOFTWARE SUITE

ADMINISTRATION AND NETWORK PROTOCOLS	Web-based user interface, setup wizard, console log viewer, save / load configuration, NTP, SMS / OTA remote configuration, TR-069 capable
REDUNDANCY	Ethernet, Cellular, Wi-Fi – configurable as failover or load balancing
RESILIENCE	Network connectivity watchdog (configurable), internal application watchdog
WI-FI	Client or Access point (approx. 40-user), multiple SSID, WEP, WPA, WPA-PSK / WPA2-PSK security modes
DEVICE MANAGEMENT SERVICES	via either our own D2SPHERE™ platform or third-party platforms such as TrinitySMART, Thingworx, Thing+, Cumulocity, etc.
SECURITY	Zone-based firewall, VLAN, DMZ, HTTPS local and remote connection, SIM PIN
PERFORMANCE AND FAULT MANAGEMENT	Real time processor load and interface (WAN / LAN / Wi-Fi), traffic analysis, ICMP, trace-route, NS lookup
ROUTING	DHCP, static routing, port forwarding, traffic routing, static / dynamic DNS, DNS proxy, NAT, STP
VPN	PPTP client, L2TP, OpenVPN client / server / passthrough, GRE, IPsec
INDUSTRIAL PROTOCOLS	Modbus RTU to TCP support, Modbus master

OPERATION AND CONTROLS

POWER	8 V dc ~ 32 V dc with SLOW START; via the upper row of a dual row, 4-pin, Micro-Fit™ 3.0 header
I/Os	Two digital I/Os; via the lower row of the same header ✓ INPUT: 0 V dc ~ 1 V dc → ZERO; 1.4 V ~ 36 V dc → ONE ✓ OUTPUT: open collector; 100 mA max.; 36 V dc max.
RESET BUTTON	Short (2 s ≤ < 10 s) / Long (≥ 10 s) press for Soft / Hard Reset
RS-232	Full implementation; via a 9-pin sub-D connector
10/100BASE-T ETHERNET	One LAN port and one WAN port, user-reconfigurable as second LAN port; via RJ-45 connectors fitted with two LEDs
CELLULAR (details in the table below)	One- or two-antenna models as: ✓ dual mode LTE-M1 / NB-IoT (E213[G]); or 3G (E215); via an SMA antenna connector; or ✓ 3G (E216); or LTE cat. 1 (E214[G]); or LTE cat. 4 (E218); via two SMA antenna connectors
DUAL SIM	Dual SIM / Single standby ("DSSS"); via two mini-SIM held in trays
LOCATION SERVICES	IZat™ gen. 8C gpsOne; via an SMA antenna connector (E21xG models only)
WI-FI	IEEE 802.11b/g/n; via an RP-SMA antenna connector
DATA STORAGE	via a user-accessible microSD card (not provided)
OPERATING STATUS LEDs	Seven as (i) green for POWER; blue for (ii) SIM; (iii) Wi-Fi; amber for (iv) Activity; (v) Network; (vi) Signal; (vii) red for ALERT

FACTORY OPTIONS (subject to MOQ and other considerations)

"XTR"	-30 °C ~ +70 °C operating temperature range
DDR2 SDRAM	Doubled to 256 MB
LOCATION SERVICES	IZat™ gen. 8C gpsOne; via an SMA antenna connector (E213, E214#02 and E214#078 models only)
ALTERNATE DATA STORAGE	64 MB [resp. 1 GB] of internal NAND Flash memory, arranged in 512-byte [resp. 2,048-byte] pages, substituted for the standard microSD card holder
MFF SIM	Substitution of an (i) 'MFF + mini'; or (ii) 'mini + MFF'; or (iii) 'MFF + MFF' duo for the standard 'mini-SIM + mini-SIM' duo

ACCESSORIES (besides power adapters, antennas, etc.)

SNAP CAP™	A 'magic' 5-pin, 3.5 mm pitch, COMBICON plug that converts E210 series' RS-232 operation to isolated, half- or full-duplex (user-selectable via a slide switch), RS-485 operation
DIN RAIL CLIP	Dual 5½ U / 1¾ U mounting; doubling as a mounting bracket; optional blocking up of the microSD and two mini-SIM cards

MODEL NAME	TERRITORIES OR OPERATOR(S)		CELLULAR TYPE [1]	BANDS [2]	FALLBACK MODE(S) [1]	BANDS [2]	LOCATION SERVICES	PLANNED CERTIFICATIONS [3]	FCS [4]	ORDER CODE
E213	World		Dual mode LTE-M1 / NB-IoT	✓ LTE-M1: 12[a]/28/13/20/26[b]/8/3[e]/4/2/1 ✓ NB-IoT: 28/20/5[c]/8/3/1	2G [λ2]	5/8/3/2	same as E214G's	TBD	Jun. '18	E213
E214	EMEA		LTE cat. 1	28/20/8/3/1/7	3G [ζ3]; 2G [λ3]	8/1; 8/3	✕	RED [5], GCF	Sep. '18	E214#02
	Asia Pacific			28/5/8/3	3G [ζ2]	5/8/1	✕	RCM; NCC; NBTC; SIRIM; IDA	Jun. '18	E214#358S#158
	China; India			5/3/1/ TDD 40/41[f]	3G [ζ3]; 2G [λ3]	8/1; 8/3	same as E214G's	CCC, NAL, SRRC; WPC	Dec. '18	E214#078
E214G	Verizon Wireless			13/4	✕	N/A	IZat™ gen. 8C gpsOne	FCC [6], Verizon Wireless	Jun. '18	E214G#01
	AT&T Wireless, T-Mobile USA, Sprint			12[a]/5/4/2	3G [ζ3]	5/4/2		IC; FCC [6], PTCRB, AT&T Wireless		E214G#00
E215	EMEA, [most of] Asia Pacific		3G [ζ1]	8/1	2G [λ1]	8/3		RED, GCF; SIRIM	Jun. '18	E215#02
E216	Israel; Australia & New Zealand; NTT docomo; Thailand; Indonesia		3G [ζ2]	5/8/1	✕	N/A	✕	Postel		E216
E218	NTT docomo		LTE cat. 4	19[d]/21/1				JPA, JRF		E218#1JL
	KDDI			18/11/1						E218#1BI

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

[1] Uplink / Downlink maximum data rates
- 2G: [λ1] 85.6 / 236.8; or 236.8 / [λ2] 236.8; or [λ3] 296 kbps
- NB-IoT: 65 / 27 kbps
- LTE-M1: 375 / 300 kbps
- LTE cat. 1: 5 / 10 Mbps (FDD); 3.1 / 8.96 Mbps (TDD)
- 3G: 5.76 / [ζ1] 7.2; or [ζ2] 10.1; or [ζ3] 42.2 Mbps
- LTE cat. 4: 50 / 150 Mbps (FDD); 35 / 130 Mbps (TDD)

[2] Ranked by increasing frequencies
[a] Also North America's B17 subset
[b] Also KDDI's B18 and North America's B5 subsets
[c] Also NTT docomo's B19 subset
[d] Also Japan's B6 subset
[e] Also Japan's B9 subset
[f] In fact, the 2535 MHz ~ 2655 MHz subset of B41

[3] Besides MIL-STD-810G
[4] First customer shipment [date of]
[5] Also EN 60950-1
[6] Also Class I Division 2 for use in explosive atmospheres as a factory option subject to MOQ and other considerations

18 April 2018