E210 Series

LANTRONIX®
CONNECT SMART. DO MORE.™

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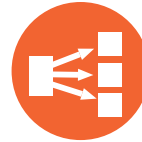
State-of-the-art load balancing, multiple VPN tunneling schemes including IPsec, cellular / WAN / Wi-Fi failover scheme

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 Lantronix Mobility Solutions 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 (MM)	$92^{.5}$ x $57^{.2}$ x $22^{.5}$ without connectors
WEIGHT (G)	Approx. 150
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)
POWER CONSUMPTION (W)	All figures worst-case (60 °C, 32 V, all subsystems fired on, etc.) ✓ Idle: $0^{.96}$ (E215); $1^{.10}$ (E214); $1^{.10}$ (E218) ✓ Standby: $2^{.31}$ (E215); $2^{.63}$ (E214); $2^{.63}$ (E218) ✓ Communication (Tx max.): $5^{.54}$ (E215); $6^{.18}$ (E214); $6^{.18}$ (E218)

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 MANAGE-MENT 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 isolated 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 header
10/100BASE-T ETHERNET	One LAN port and one WAN port, user-reconfigurable as second LAN port; via RJ-45 headers fitted with two LEDs
WI-FI	1T1R Wi-Fi 4; via an RP-SMA antenna connector
CELLULAR (details in the table below)	One- or two-antenna models as: ✓ 3G E215[G]; LTE-M1 E213G; via an SMA antenna connector ✓ LTE cat. 1 E214[G]; LTE cat. 4 E218[G]; via two SMA antenna connectors (main and diversity)
DUAL SIM	Dual SIM / Single standby ("DSSS"); via two mini-SIM held in trays
LOCATION SERVICES	Concurrent GPS and GLONASS (E215G, E213G); IZat™ gen. 8C gpsOne (E214G, E218G); via a dedicated SMA antenna connector
DATA STORAGE	via a user-accessible microSD card (not provided)
OPERATING STATUS LEDS	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)

"XTR"	-30 °C ~ +70 °C operating temperature range
DDR2 SDRAM	Doubled to 256 MB
ALTERNATE DATA STORAGE	64 MB [resp. 1 GB] of internal Flash memory, arranged in 512- [resp. 2,048-] byte pages, substituted for the standard microSD card holder
MFF SIM(s)	Combination of (i) 'MFF + mini'; or (ii) 'mini + MFF'; or (iii) 'MFF + MFF' SIMs, substituted for the standard two mini-SIM trays
LOCATION SERVICES	IZat™ gen. 8C gpsOne (E214#02, E214#078, E218#04 only); via a dedicated SMA antenna connector

ADD-ON

SNAP CAP™	SC485, 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

ESSENTIAL ACCESSORIES

POWER CORDS	KDC42 or KDC44 (the latter with two more stripped wires for I/Os)
REMOTE, ADHESIVE, CELLULAR AND CELLULAR / GNSS ANTENNAS	All IP67-rated, except for A31M0 (IP33) and A31H0 (N/A) ✓ A31M0 or A31H0, LTE: E215 ✓ A14M0 or A14H0, '2-in-1' LTE + GNSS: E215G, E213G ✓ A32M0 or A32H0, '2-in-1' LTE + LTE: E214, E218 ✓ A33M0 or A33H0, '3-in-1' LTE + LTE + GNSS: E214G, E218G
WI-FI ANTENNAS	L-shaped, hinged, A24C0 (while stocks last) or A21H0
DIN RAIL CLIP	BR551, dual mount 5½ U or 1½ U; mounting bracket too

MODEL NAME	TERRITORIES OR OPERATOR(S)	CELLULAR TYPE [1]	BANDS [2]	FALLBACK MODE(S) [1]	BANDS [2]	LOCATION SERVICES	PLANNED / OBTAINED CERTIFICATIONS [3]	PLANNED / MADE FCS [4]	ORDER CODE
E215	EMEA; South-East Asia; South Asia	3G ^{ζ1}	8/1	2G ^{λ1}	8/3	✕	**EN300328**, CE [7]	Aug. '18	E215F002S
E214	ANZ; Thailand	LTE cat. 1	28/5/8/3	3G ^{ζ2}	5/8/1	IZat™ gen. 8C gpsOne	**RCM**; **NBTC**	Dec. '18	E214F003S
	EMEA; Taiwan; Malaysia		28/20/8/3/1/7	3G ^{ζ3}; 2G ^{λ3}	8/1; 8/3		**CE** [7]; NCC; **SIRIM**		E214F002S
	China; Indonesia; India		5/8/3/1; TDD 40/41^a				Postel; ETA, TEC		E214F00CS
E218	Brazil; ANZ; Thailand; Malaysia; Singapore	LTE cat. 4	28/5/8/3/1/7	✕	5/8/1; 8/3	✕	Anatel; RCM; NBTC; SIRIM; IMDA	TBD	E218F004S
	ANZ; Taiwan		28/3/7		N/A		RCM; NCC		E218F003S
	NTT docomo		19/21/1				JRF, JPA		E218F005S
	KDDI		18/11/1				JRF, JPA		E218F006S
	LG U⁺		5/3/1/7				KC, LG U⁺		E218F009S
E215G	World	3G ^{ζ1}	5/8/2/1	2G ^{λ1}	5/8/3/2	Concurrent GPS and GLONASS [6]	TBD	TBD	E215G00FS
E213G		LTE-M1 [5]	12^b/28/13/14/20/ 27/26^c/8/3^d/66^e/25^f/1	✕	N/A			Mar. '20	E213G00FS
				2G $^?$	5/8/3/2			Jun. '20	E213G002S
E214G	Verizon Wireless	LTE cat. 1	13/4	✕	N/A	IZat™ gen. 8C gpsOne	**FCC** [8], **Verizon Wireless**	Nov. '18	E214G001S
	AT&T Wireless, T-Mobile USA, Sprint		12^b/5/4/2	3G ^{ζ3}	5/4/2		**ISED**; **FCC** [8]; **PTCRB**, **AT&T Wireless**		E214G000S
	North America		71/12^b/13/14/26^c/66^e/25^f				E214G001S's AND 0S's	TBD	E214G00AS
E218G	Japan	LTE cat. 4	18/19/8/11/21/3^d/1		6/19/1		JRF, JPA		E218G007S

Please consult us regarding the models shown in grey, or the features shown in grey italics, 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*
- *3G: $5^{.76}$ / ^{ζ1} $7^{.2}$; or ^{ζ2} $10^{.1}$; or ^{ζ3} $42^{.2}$ Mbps*
- *LTE-M1 [resp. NB-IoT]: 375 / 300 [resp. $62^{.5}$ / $27^{.2}$] kbps currently; 1,000 / 600 [resp. 140 / 120] kbps in Jul. '20 via a 3GPP Release 14 software update*
- *LTE cat. 1: 5 / 10 Mbps (FDD); $3^{.1}$ / $8^{.96}$ Mbps (TDD)*
- *LTE cat. 4: 50 / 150 Mbps (FDD); 35 / 130 Mbps (TDD)*

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

[3] *Besides **MIL-STD-810H**, by Switzerland's SGS*
[4] *First customer shipment [date of]*
[5] *Additional NB-IoT type in case of E213G002S*
[6] *Either Sony's CXD5603-based (any E213G) or Qualcomm's SiRFstarV-based (E215G)*
[7] *Based on compliance with RED; EN 60950-1; etc.*
[8] *Also, Class I Division 2 for use in explosive atmospheres, as a factory option subject to MOQ and other considerations*