

M110 Series

LANTRONIX®

CONNECT SMART. DO MORE.™



Intelligent industrial modem

Lantronix Mobility Solutions M110 modems are designed to provide connectivity across a broad range of M2M and IoT applications. They allow Internet connectivity via serial port to PLCs, Meters, Vending Machines. They help transporting data from any industrial device to data control servers, allowing businesses to benefit from real-time data monitoring, management and control.

AVAILABLE IN 2G, 3G,
NB-IOT, LTE-M1, LTE CAT. 1

TWO VERSATILE I/Os

LAST GASP
(factory option)

MPACK SOFTWARE
with Workbench configuration tool

Smart Metering



Oil & Gas Monitoring



Industrial Automation



POS & Kiosk



Vending Machine



SNAP CAP™

Snappily converts M110 series' RS-232 port on a 9-pin sub-D connector into an *isolated**, half- or full-duplex (user-selectable via a slide switch) RS-485 port on a 5-pin, 3.5 mm pitch, COMBICON connector.

* i.e with integrated transformer, thus allowing for 1.5 km-long cabling



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.

HARDWARE

- MATERIAL** Brushed aluminium alloy
- DIMENSIONS (MM)** 60 x 66 x 21^{1,7} without connectors
- WEIGHT (G)** Approx. 95
- OPERATING TEMPERATURE RANGE**
 - ✓ -30 °C ~ +70 °C, class A
 - ✓ -40 °C ~ +85 °C, class B
- MCU** STMicroelectronics' STM32F446
 - ✓ 32-bit ARM® Cortex™-M4 architecture; running at 168 MHz
 - ✓ Built-in 256 KB ***Flash memory*** and 128 KB RAM
- SPI FLASH MEMORY** 2 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 (70 °C, 32 V, all subsystems fired on, etc.)
 - ✓ Idle: 0^{-.96} (M111); 1^{-.10} (M113); 1^{-.10} (M114)
 - ✓ Standby: 2^{-.31} (M111); 2^{-.63} (M113); 2^{-.63} (M114)
 - ✓ Communication (Tx max.): 5^{-.54} (M111); 6^{-.18} (M113); 6^{-.18} (M114)

MPACK SOFTWARE SUITE

- CONNECTIVITY**
 - ✓ Dial-up
 - ✓ TCP / UDP permanent client / server or on-demand client with two TCP / UDP sockets for failover
 - ✓ Network connectivity watchdog
- MISCELLANEOUS FEATURES**
 - ✓ Support for concatenated SMS
 - ✓ Conversion between Modbus RTU and Modbus TCP
 - ✓ Configurable text and recipient(s) upon Last Gasp
- DOTA CONFIGURATION** via user's HTTP server or D2SPHERE™
- via Workbench through RS-232 or USB; also via SMS, Telnet or D2SPHERE™

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
- Two 2-way versatile I/Os, i.e. user-configurable, each one independently from the other, as either (i) analogue input or (ii) digital output; via the lower row of the same header
 - ✓ ANALOGUE INPUT: 0 V dc ~ 48 V dc range; 12-bit resolution
 - ✓ DIGITAL OUTPUT: open collector; 200 mA max.; 50 V dc max.
- *I/Os***
- RESET BUTTON** Short / Long press for Reset / Reset to factory settings
- RS-232** Full implementation; via a 9-pin sub-D header
- USB 2.0** via a Type-C header
- One- or two-antenna models as:
 - ✓ 2G M111; 3G M115; NB-IoT M112; dual mode LTE-M1 / NB-IoT M113; via an SMA antenna connector; or
 - ✓ LTE cat. 1 M114; via two SMA antenna connectors (main and diversity)
- *SIM*** mini-SIM held in a tray
- OPERATING STATUS LEDS** Two as Power / Cellular signal

FACTORY OPTIONS (subject to MOQ and other considerations)

- LAST GASP** Allows for sending at least five 30-character SMS at one-second intervals; courtesy of two industrial-grade super caps
- FLASH MEMORY** Doubled to 512 KB
- 3-WAY I/Os** Third possible configuration as (iii) analogue input suited to current loop sensors (aka 4 mA ~ 20 mA sensors)
- MFF SIM** In lieu or, for dual SIM operation, in addition of the mini-SIM tray

ADD-ON

- SNAP CAP™** SC485, a 9-pin male sub-D plug that 'snappily' converts any M110 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)
- USB CORD** KUCA1, 0^{-.8} metre-long, Type-C plug ↔ Type-A plug
- REMOTE, ADHESIVE, ANTENNAS** All IP67-rated, except for ACC-A31 (IP33) and ACC-A31H (N/A)
 - ✓ A31M0 or A31H0, LTE: M111, M115, M112, M113
 - ✓ A32M0 or A32H0, '2-in-1' LTE + LTE: M114
- DIN RAIL CLIP** BR350, 3½ U



MODEL NAME	TERRITORIES OR OPERATOR(S)	CELLULAR TYPE ²	BANDS ²	FALLBACK MODE ¹	BAND(S) ²	LOCATION SERVICES	PLANNED / OBTAINED CERTIFICATIONS ³	PLANNED / MADE FCS ⁴	ORDER CODE
M111	World excl. Japan, Korea	2G ^{A1}	5/8/3/2	*	N/A		CE ⁷	Aug. '18	M111F00FS
M115	World ⁵	3G	5/8/3/1	2G ^{A2}	5/8/3/2		TBD		M115F00FS
M112	China	NB-IoT	5/8/3				CCC, SRRC, CTA	TBD	M112F008S
			28/20/5/8/3				TBD		M112F00FS
M113	World ⁶	Dual mode LTE-M1 / NB-IoT	12 ^a /28/13/20/26 ^b /8/3 ^c /4/25 ^d	*	N/A		ISED; FCC⁸; PTCRB, Verizon Wireless, AT&T Wireless; RCM; JRF, JPA, NTT docomo, Soft-Bank; KC, SK telecom	Sep. '18	M113F00FS
	EMEA; South-East Asia; South Asia		12 ^a /13/20/5/8/3/4/26/28 (roaming only)	2G ^{A3}	5/8/3/2	*	TBD	Jan. '19	M113F002S
M114	EMEA	LTE cat. 1	20/3/7		8/3		CE ⁷	May '19	M114F002S
	Verizon Wireless		13/4	*	N/A		FCC ⁸ , Verizon Wireless	TBD	M114F001S
	AT&T Wireless, T-Mobile USA, Sprint		12 ^a /5/4/2	3G	5/2		ISED; FCC⁸; PTCRB, AT&T Wireless	Oct. '19	M114F000S
	Asia Pacific		28/8/3		1		RCM; NCC	Oct. '18	M114F003S
	NTT docomo		19/1	*	N/A		JRF, JPA, NTT docomo	TBD	M114F005S

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: ^{A1} 42.8 / 85.6; or 236^B / ^{A2} 236.8; or ^{A3} 296 kbps
- 3G: 5^{-.76} / 7^{-.2} Mbps
- NB-IoT: 62^{-.5} / 27^{-.2} kbps
- LTE-M1: 375 / 375 kbps
- LTE cat. 1: 5^{-.2} / 10^{-.3} Mbps

² Ranked by increasing frequencies

- ^a incl. North America's ("NorAm's") B17
- ^b incl. KDDI's B18 as well as NorAm's B5, the latter incl. NTT docomo's B19, itself incl. Japan's B6 (3G)
- ^c incl. Japan's B9
- ^d incl. NorAm's B2

³ Besides **MIL-STD-810H**, by Switzerland's SGS

⁴ First customer shipment [date of]

⁵ A special software build is available for NTT docomo

⁶ In case of M113, three special software builds are available for North America, Japan and South Korea

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