

M110 SERIES



Intelligent industrial modem

Maestro 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 SUITE
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 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.

M110 SERIES SPECIFICATIONS

HARDWARE

MATERIAL	Brushed aluminium alloy
DIMENSIONS	60 x 66 x 21 ⁻⁷ mm without connectors
WEIGHT	Approx. 95 g
OPERATING TEMPERATURE RANGE	<ul style="list-style-type: none"> ✓ -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	Data pending...

MPACK SOFTWARE SUITE

CONNECTIVITY	<ul style="list-style-type: none"> ✓ Dial-up ✓ TCP / UDP permanent client / server or on-demand client with two TCP / UDP sockets for failover ✓ Network connectivity watchdog
MISCELLANEOUS FEATURES	<ul style="list-style-type: none"> ✓ Support for concatenated SMS ✓ Conversion between Modbus RTU and Modbus TCP ✓ Configurable text and recipient(s) upon Last Gasp
DOTA	via user's HTTP server or D2SPHERE™
CONFIGURATION	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
I/Os	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.
RESET BUTTON	Short / Long press for Reset / Reset to factory settings
RS-232	Full implementation; via a 9-pin sub-D connector
USB 2.0	via a Type-C connector
CELLULAR (details in the table below)	One- or two-antenna models as: ✓ 2G (M111); or NB-IoT (M112); or LTE-M1 as well as dual mode LTE-M1 / NB-IoT (M113); or 3G (M115); via an SMA antenna connector; or ✓ LTE cat. 1 (M114); via two SMA antenna connectors
SIM	mini-SIM held in a tray
OPERATING STATUS LEDS	Two as Power / Cellular signal
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 of the mini-SIM tray

ACCESSORIES (besides power adapters, antennas, etc.)

FACTORY OPTIONS (subject to MOQ and other considerations)

SNAP CAP™ A 'magic' 5-pin, 3⁻⁵ mm pitch, COMBICON plug that converts M110 series' RS-232 operation to isolated, half- or full-duplex (user-selectable via a slide switch), RS-485 operation



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
M111	World excl. Japan, Korea	2G ^{A1}	5/8/3/2				CE ⁵ , GCF	May '18	M111
M112	World	NB-IoT	28/20/5/8/3/1				TBD	Oct. '18	M112
M113	The USA, Australia, Japan, South Korea, Taiwan, China, Singapore	Dual mode LTE-M1 / NB-IoT	12 ^a /28/13/20/26 ^b /8/3/4/25 ^d /1/TDD 39 (LTE-M1 only)	*	N/A	*	ISED; FCC ⁵ , PTCRB, Verizon Wireless, AT&T Wireless; RCM; JPA, JRF; NCC; CCC, NAL, SRRC; IDA	May '18	M113#NFB
	EMEA and [most of] Asia Pacific								
M114	EMEA	LTE cat. 1	20/3/7				CE ⁵ , GCF	May '18	M114#37K#38
	AT&T Wireless, T-Mobile USA, Sprint		12 ^a /5/4/2	3G	5/2	ISED; FCC ⁵ , PTCRB, AT&T Wireless	M114#245C#25		
	Asia Pacific		28/8/3		1	RCM; NCC; NBTC	M114#38S#1		
	NTT docomo		19/1	*	N/A	JPA, JRF	M114#11		
M115	EMEA and [most of] Asia Pacific	3G	8/1				TBD	May '18	M115#02
	Japan		5/8/3/1	2G ^{A2}	5/8/3/2	JPA, JRF	M115#05		
	World					TBD	M115		

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^B / 85^B; or 236^B / ^{A2} 236^B; or ^{A3} 296 kbps
 - NB-IoT: 62⁵ / 27⁻² kbps
 - LTE-M1: 375 / 375 kbps
 - LTE cat. 1: 5⁻² / 10⁻³ Mbps
 - 3G: 5⁻⁷⁶ / 7⁻² Mbps

² Ranked by increasing frequencies

^a Also North America's B17 subset
^b Also KDDI's B18 and North America's B5 subsets, the latter containing NTT docomo's B19 subset, itself containing Japan's B6 subset
^c Also Japan's B9 subset
^d Also North America's B2 subset

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

19 June 2018