

M12M Replacement Receiver

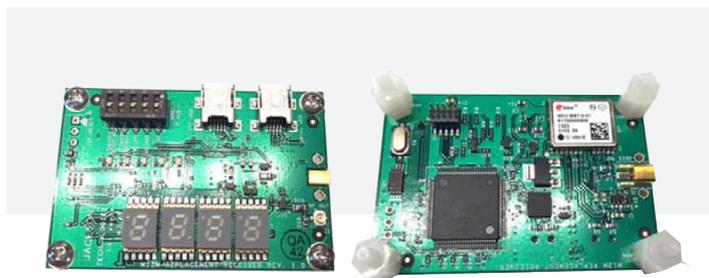
Replacement Receiver with 72 Channels GNSS support

Defense | 5G Communications | SATCOM | Transportation
 Data Center Energy | Financial | Critical Infrastructure

The VIAVI M12M Replacement Receiver is designed to be form, fit, and function compatible to the legacy Motorola®/iLotus M12+ and M12M timing and navigation receivers.

The unit is designed to replace the legacy receiver, improving positioning and timing performance, cold-start and capture time, tracking sensitivity, noise immunity especially multipath and jamming immunity, as well as adding a host of additional features such as multi-GNSS system reception.

The VIAVI M12M Replacement Receiver can be used as a stand-alone GNSS receiver via the USB interfaces, or as a plug-and-play upgrade receiver for legacy equipment.



M12M Replacement Receiver

Highlights

- Simultaneous reception of two GNSS Systems
- Runs from USB or M12M power supply
- 72 Channel GPS/Glonass/BeiDou/QZSS/SBAS receiver (any two GNSS at once)
- Adjustable 1 Hz to 10 MHz+ NCO Synthesizer, UTC synchronized
- NMEA, SCPI, and Motorola Binary Protocol support

Additional Features over M12M legacy product:

- High timing and position/velocity accuracy in 3D mobile applications
- Dual GNSS (GPS + Glonass, etc.) concurrent capability
- LED 7-segment status indicator, 5 status LED's, DIP switch
- Automatic internal 3 V Antenna Power Supply
- Two USB interfaces for configuration, control, and status
- Generic buffered NCO synthesizer output (0.25 Hz to 10 MHz+, 114 MHz typical) synchronized to GNSS, U.FI coax connector

Typical Electrical Specifications

Module Specifications	Description
Form, Fit, Function Compatibility	Motorola/iLotus M12+, M12M Timing and Navigation receivers
Dimensions	40 mm x 60 mm x 9 mm (1.575 x 2.362 x 0.35 inch)
Weight	15 grams
Data/Power Header	10 pins, 5 x 2 rows, 1.27 mm spacing (M12M compatible)
1 PPS Stability	<5 ns RMS stability, GPS Locked, and using quantization correction message
1 PPS Outputs	One 3 V CMOS outputs, one DCD# on USB port for NTP, one NCO buffered output
Position Accuracy	Better than 0.7 m RMS horizontal with GPS and SBAS (WAAS)
	Better than 0.5 m with Auto Survey mode and Position hold position
USB Control	SCPI-99 Control at 9.6 K, 19.2 K, 38.4 K, 57.6 K, 115.2 K
NMEA Output Sentences	NMEA 0183 rev. 2.3, Sentences: GGA, RMC, ZDA, GSV, PASHR, and others
Motorola Binary Protocol	TTL level serial interface on 10 pin connector, compatible to most Motorola M12M Binary sentences, 9600 baud, guaranteed to operate with Fury GPSDO
GNSS Frequency, Antenna	L1 GPS and/or Glonass, Active Antenna 3 V to 5 V, +5 dB to +35 dB
GNSS Receiver	72 Channels, GPS, Glonass, BeiDou, QZSS, SBAS: WAAS/EGNOS/MSAS/GAGAN
GNSS Sensitivity	
Acquisition	-148 dBm
Tracking	-167 dBm (GPS and Glonass)
GPS Receiver Motion Adaptive Filter Settings	Optimized depending on vehicle velocity (Auto-sensing, Auto-switching option)
Supply Voltage (Vdd)	+2.9 V to +3.45 V max
Power Consumption	0.185 W (display off)
	0.31 W (display on)
Battery Backup (optional)	Stores Almanac, Ephemeris, Time, and Date for faster cold-start
	1.4 V to 3.6 V max (3 V nominal), 15 μ A
Temperature	
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +90°C
MTBF	>600,000 Hours at +40°C

NOTE: Specifications subject to change without notice.

Product Ordering Information

Product Number	Description
22174885	M12M Replacement Receiver - RoHS



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