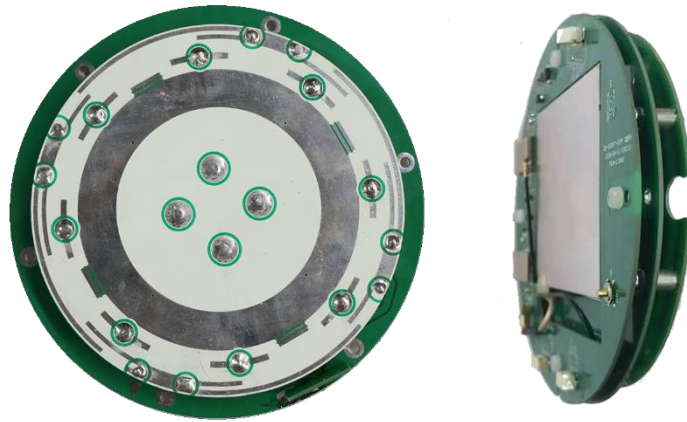


MX600 All-in-One GNSS Receiver Card

U-blox GNSS Receiver + LTE Comm + Integrated Antenna

Highlights

- ✧ Integrated GNSS module and LTE module together
- ✧ High gain GNSS and LTE integrated antenna
- ✧ U-blox GNSS receiver supports all GNSS system
- ✧ Support Automobile Dead Reckoning (ADR)
- ✧ Built in 3D Inertial Measurement Unit (IMU)
- ✧ Built in Wheel Tick (WT) Sensor
- ✧ The maximum data transmission rate reaches 30Hz
- ✧ Extra I/O port for external LIDAR and odometer
- ✧ Compact and Low-powered



Introduction

The MX600 All-in-One GNSS receiver card integrated with U-blox GNSS receiver module, mobile 3G/4G LTE communication module and integrated antenna all together, that cater for outdoor auto robot that requires precise positioning assistance, such as auto lawnmower. The GNSS receiver provides decimeter-level positioning with high availability, while making use of all four GNSS constellations simultaneously.

The MX600 supports Automotive Dead Reckoning (ADR) that uses a 3D inertial measurement unit (IMU) embedded in the GNSS receiver module, as well as the speed pulses from the vehicle wheel tick (WT) sensor. The GNSS receiver combines GNSS and dead reckoning measurements and computes a position solution at rates of up to 2 Hz with non-priority navigation mode. In priority navigation mode the navigation rate can be increased using IMU-only data to deliver accurate, low-latency position measurements at rates up to 30 Hz.

LTE Cat 4 Wireless Communication Module supports 3G/4G mobile network and is used for transport RTK differential data. The module adopts 3GPP Rel-11 LTE technology, and supports maximum downlink speed of 150 Mbps and the uplink 50 Mbps.

**** Remark: The current LTE module is designed for North America district, for other specified LTE frequency required, please contact our company representative.**

MX600 All-in-One GNSS Card Specification

Item	Specification	
GNSS Receiver	Chip set	ZED-F9K-00B
	GPS	L1C/A, L2C
	GLONASS	L1OF, L2OF
	BDS	B1I, B2I
	Galileo	E1B/C, E5b
	QZSS	L1C/A, L2C
Position Accuracy (RTK)	Horizontal	0.8 m
	Vertical	1 m
Time to First Fix (TTFF)	Cold start	26 s
	Hot start	2 s
	Re-convergence (RTK)	≤ 10 s
Sensitivity	Cold start	-147 dBm
	Hot start	-158 dBm
	Reacquisition	-157 dBm
Update Rate	Priority mode	30 Hz
	Non-priority mode	2 Hz
LTE Cat 4 Module*	LTE-FDD	B2 / 4 / 5 / 12 / 13 / 14 / 66 / 71
	WCDMA	B2 / 4 / 5
	Authentication	FCC, PTCRB, IC, GCF
Communication Port	UART	2
	USB	1
	SPI	1
	I2C	1
GNSS Antenna	GPS	L1 / L2 / L5
	GLONASS	L1 / L2 / L3
	BDS	B1 / B2 / B3
	Galileo	E1 / E5a / E5b / E6
	QZSS	L1 / L2 / L5 / L6
	IRNSS	L5
	Polarization	RHCP
	Axial Ratio	≤ 3 dB
	V.S.W.R.	≤ 2.0
	Peak Gain	5.5 dBi
	Impedance	50 Ω
	Phase Center Error	± 2 mm
	Horizontal coverage angle	360°
	Connector	MMCX-JW
LTE Antenna	Gain	0.5 dBi
	Impedance	50 Ω
	Connector	IPEX
Low Noise Amplifier (LNA)	L1 Band Gain	32 ± 2dB
	L2 Band Gain	34 ± 2dB
	Noise Figure	≤ 2 dB
	Passband flatness	± 2 dB
	Supply Voltage	+3.3 ~ +12VDC
	Operation Current	≤ 45 mA
	Impedance	50 Ω
	V.S.W.R.	≤ 2.0
	Differential transmission delay	≤ 5 nS
Environmental	Operating Temperature	-40 ~ +85 °C
	Storage temperature	-55 ~ +85 °C
	Humidity (Non condense)	95%
Physical	Dimension	Φ127.8 x 32.5 mm

*The current LTE module is designed for North America district, for other specified LTE frequency required, please contact our company representative.