DATASHEET

Taoglas EDGE Locate™ EL10

High Precision GNSS Solution

The Taoglas EDGE Locate™ solution is an ultra low-power IoT hardware platform providing high precision GNSS for high volume navigation and autonomous applications in an off-the-shelf, compact form factor.

The Taoglas EDGE Locate™ GNSS L1/ L2/E5 hardware platform combines the antenna, RF electronics and receiver technology delivering reliable high accuracy positioning.

Key Features

- High-end RTK receiver
- Integrated and validated multi-band antenna
- Integrated u-blox ZedF9P multi-band GNSS Receiver
- Concurrent reception of GPS, GLONASS, Galileo and BeiDou
- Advanced anti-spoofing and anti-jamming
- PMOD compatible and easy to integrate into third-party hardware
- Pre-certified and validated electronics
- Easy integration with EDGE Connect for full cellular connectivity
- REACH & RoHS Compliant

Key Benefits

- Ultra low power platform in an off the shelf compact form factor
- Future-proof your IoT deployments and optimize location based performance with high precision GNSS and RTK
- Quickly and effectively build IoT devices without having to invest in costly and lengthy RF design, integration and testing processes

Ordering information

EL10A Taoglas® EDGE™ Locate - cmLevel Positioning Module (With USB to PMOD interface)
EL10B Taoglas® EDGE™ Locate - cmLevel Positioning Module (Module Only)

Typical Applications

UAV | Micro Mobility | Agriculture and Machine Control | Robotic Guidance | Professional Sports | Survey and Mapping

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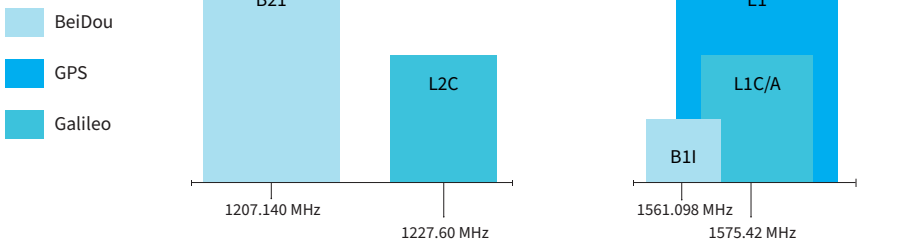
Supported Bands and Signals



GNSS Electrical				
Frequency (MHz)	1227.6	1561	1575.42	1602
Group Delay	80	30	25	30
PCO (cm)	7.9	7	6.3	7
PCV (cm)	7	7	0.1	0.1

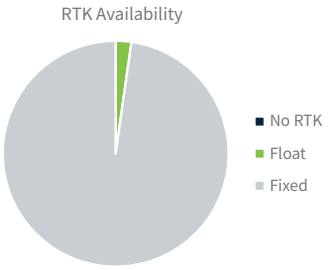
Field Test

Taoglas have tested our range of High Precision GNSS antennas in an open sky view environment to simulate the expected values that an end-user may expect in a field test. All field tests are performed on a static rooftop test set up in an open sky environment for at least 6 hours.

Receiver: Ublox ZED-F9P

Characteristics:

- Multi-band GNSS: 184-channel GPS L1C/A L2C, Galileo: E1B/C, BeiDou: B1I B2I, QZSS: L1C/A L2C
- Multi-band RTK with fast convergence times and reliable performance
- Nav. update rate RTK up to 20 Hz
- Position accuracy = RTK 0.01 m + 1 ppm CEP



2D Accuracy Table					
Test Condition	Correction Service	CEP (50%)	DRMS (68%)	2DRMS (95-98.2%)	TTFF (sec)
Edge Locate Board	RTK DISABLED	61.85 cm	74.2 cm	148.41 cm	31.5
	RTK ENABLED	1.11 cm	1.34 cm	2.68 cm	31.5

*U-Center 2D Acc is equivalent to DRMS

Power Consumption

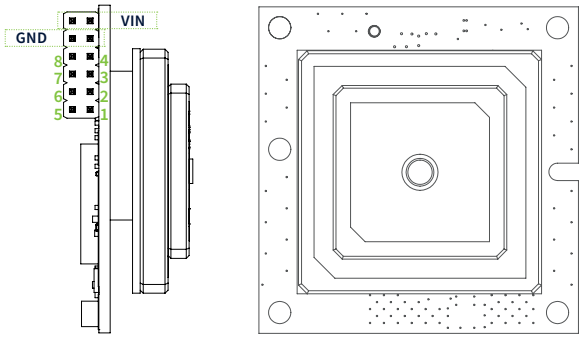
Symbol	Parameter	Conditions	GPS+GLO+GAL+BDS	GPS	Unit
IPEAK	Peak current	Acquisition	130	120	mA
I_{VCC} [10]	VCC curent	Acquisition	90	75	mA
I_{VCC} [10]	VCC curent	Tracking	85	68	mA

Low Power Mode: 1.4 mA to achieve a warm start. VCC/VIN Range - 3.3-5.5V.
For more information please refer to the U-blox ZED-F9P datasheets.

Notes:
UART and SPI switchable by resistor population
UART up to 921600 bps (default 38400)
SPI up to 5.5 MHz clock and 125kb/s throughput

Data Format:
See U-blox ZED-F9P datasheet

Mechanical Specifications



Width: 47 mm
Length: 48 mm
Height: 19 mm
Weight: 40g

For further information on the antenna used, the **AGPSF.36**, please refer to the Datasheet

System Interface

PMOD Connector Pinout

1 **EN** Power enable (active high)
2 **INT** External interrupt for ZF9 module, unused
3 **TXR** TX ready, interrupt for data ready when using SPI
4 **GEO** Geofence status from ZF9
5 **CS** Chip select when using SPI
6 **MOSI** ZF9 SPI input when using SPI and ZF9 UART_TXD when using UART
7 **MISO** ZF9 SPI output when using SPI and ZF9 UART_RXD when using UART
8 **SCK** SPI clock when using SPI