

# DATASHEET

## EL.1A - EDGE Locate™

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 **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

### Typical Applications





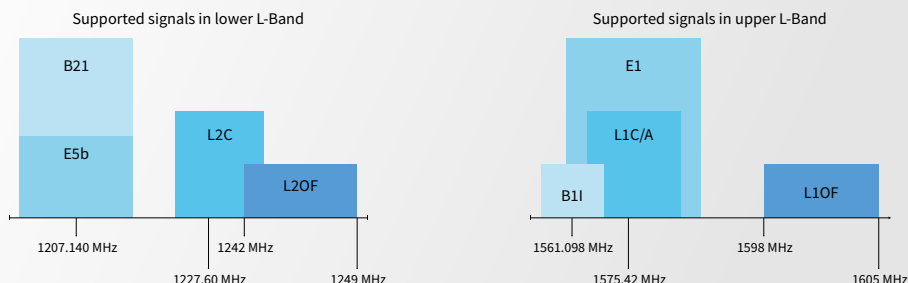
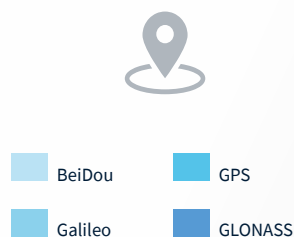
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## EL.1A - EDGE Locate™

### High Precision GNSS Solution

**TAOGLAS**  
Next Gen IoT

#### Supported Bands and Signals



#### High precision GNSS Receiver – EDGE Locate™ Static Open Sky Testing Results

ZED-F9P GNSS Constellation Bands	ZED-F9P Frequency Bands (MHz)	Recommended Minimum C/No for Standard Precision Acquisition/Tracking (dB-Hz)	Recommended Minimum C/No for RTK (dB-Hz)	Without RTK			With RTK			Group Delay @ Zenith Variation Across Single Constellation (ns)	Phase Center Offset PCO (cm)	Phase Center Variation PCV (mm) including Active Circuitry	Axial Ratio (AR/dB) with Active Circuitry included
				Tracking C/No without RTK (dB-Hz)	2*DRMS Positioning accuracy (cm) - without RTK	TTFF (s) without RTK	Tracking C/No with RTK (dB-Hz)	2*DRMS Positioning accuracy (cm) - with RTK*	TTFF (s) with RTK				
GPS L1	1563-1587	26-30/ 12-15	40	40	82	33.7	43.37	1.4	31	25	6.3	1	3
GPS L2	1215-1239.6	26-30/ 12-15	40	33	82	33.7	36.16	1.4	31	80	7.9	70	5
Galileo E1	1559-1591	26-30/ 12-15	40	39	82	33.7	39	1.4	31	25	6.3	1	3
Galileo E5b	1189-1214	26-30/ 12-15	40	33	82	33.7	31.5	1.4	31	80	43	70	18
Glonass G1	1598-1605	26-30/ 12-15	40	33	82	33.7	28.6	1.4	31	30	6.3	1	11
Glonass G2	1242-1249	26-30/ 12-15	40	28	82	33.7	28.8	1.4	31	25	43	70	18
Beidou B1I	1559-1563	26-30/ 12-15	40	40	82	33.7	36.42	1.4	31	30	6.3	1	3
Beidou B2I	1200-1214	26-30/ 12-15	40	33	82	33.7	28.8	1.4	31	25	43	70	18

\* All outdoor measurements performed on the rooftop of the Taoglas R&D Labs facility in Dublin, Ireland.

#### Power Consumption

Symbol	Parameter	Conditions	GPS+GLO+GAL+BDS	GPS	Unit
IPEAK	Peak current	Acquisition	130	120	mA
I <sub>VCC</sub> <sup>10</sup>	VCC current	Acquisition	90	75	mA
I <sub>VCC</sub> <sup>10</sup>	VCC current	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.

#### 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

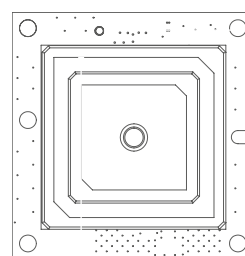
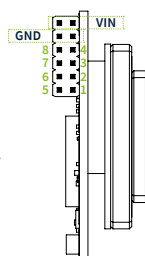
##### Notes:

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

For further details go to [www.taoglas.com/product/edge-locate](http://www.taoglas.com/product/edge-locate)

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