DATASHEET
EL.1A - EDGE Locate™
High Precision GNSS Solution

TAOGLAS®
Next Gen IoT

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

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

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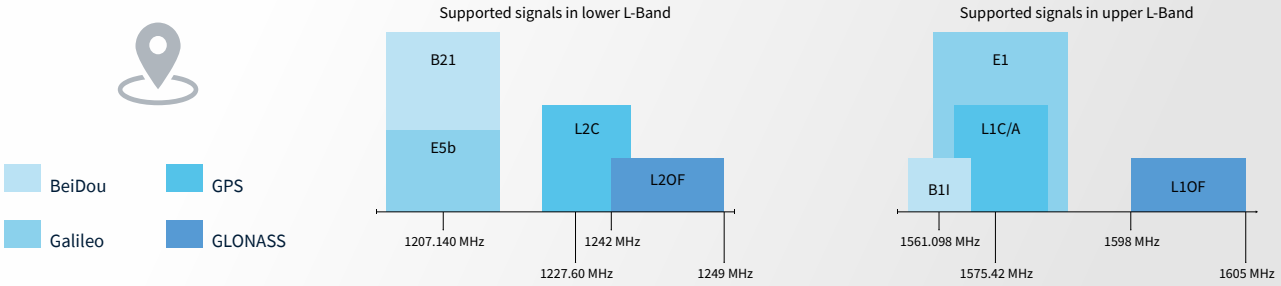
Supported Bands and Signals



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

				Without RTK			With RTK						
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)	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	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
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_{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.

System Interface

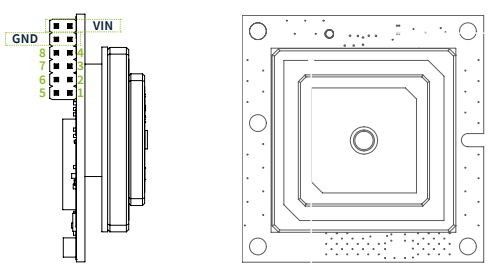
PMOD Connector Pinout

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**

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