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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[www.taoglas.com](http://www.taoglas.com)
**DATASHEET**

**EL.1A - EDGE Locate™**

High Precision GNSS Solution

**Supported Bands and Signals**

- **Beidou**
- **GPS**
- **GLONASS**

![Supported signals in lower L-Band](image1)

- **B2I**
- **E5b**
- **L2C**
- **L1OF**

![Supported signals in upper L-Band](image2)

- **B1I**
- **E1**
- **L1C/A**
- **L1OF**

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

<table>
<thead>
<tr>
<th>ZED-F9P/GNSS Constellation Bands</th>
<th>ZED-F9P Frequency (MHz)</th>
<th>Recommended Minimum C/No for Standard Precision Acquisitions Tracking (dB-Hz)</th>
<th>Tracking C/No without RTK (dB-Hz)</th>
<th>2DRMS Positioning accuracy (cm) without RTK</th>
<th>TTFP (s) without RTK</th>
<th>Tracking C/No with RTK (dB-Hz)</th>
<th>2DRMS Positioning accuracy (cm) with RTK</th>
<th>TTFP (s) with RTK</th>
<th>Group Delay @ Zenith Variation Across Single Constellation (ns)</th>
<th>Phase Center Offset PCD (mm) including Active Circuitry</th>
<th>Axial Ratio (AR/dB) with Active Circuitry included</th>
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<tbody>
<tr>
<td>GPS L1</td>
<td>1563-1587</td>
<td>26-30/12-15</td>
<td>40</td>
<td>40</td>
<td>82</td>
<td>33.7</td>
<td>43.37</td>
<td>1.4</td>
<td>31</td>
<td>25</td>
<td>6.3</td>
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<td>GPS L2</td>
<td>1215-1239.6</td>
<td>26-30/12-15</td>
<td>40</td>
<td>33</td>
<td>82</td>
<td>33.7</td>
<td>36.16</td>
<td>1.4</td>
<td>31</td>
<td>80</td>
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<tr>
<td>Galileo E1</td>
<td>1559-1591</td>
<td>26-30/12-15</td>
<td>40</td>
<td>39</td>
<td>82</td>
<td>33.7</td>
<td>39</td>
<td>1.4</td>
<td>31</td>
<td>25</td>
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<td>Galileo E5b</td>
<td>1189-1214</td>
<td>26-30/12-15</td>
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<td>80</td>
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<td>30</td>
<td>6.3</td>
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<tr>
<td>Glonass G2</td>
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<td>82</td>
<td>33.7</td>
<td>28.8</td>
<td>1.4</td>
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<td>43</td>
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<tr>
<td>Beidou B1</td>
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<td>1.4</td>
<td>31</td>
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<td>43</td>
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</table>

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

**Power Consumption**

<table>
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<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Conditions</th>
<th>Conditions</th>
<th>GPS+GLO+GAL+BDS</th>
<th>GPS</th>
<th>Unit</th>
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<td>IPEAK</td>
<td>Peak current</td>
<td>Acquisition</td>
<td>130</td>
<td>120</td>
<td>mA</td>
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<td>I\textsubscript{VCC}\textsuperscript{10}</td>
<td>VCC current</td>
<td>Acquisition</td>
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<td>mA</td>
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<td>I\textsubscript{VCC}\textsuperscript{10}</td>
<td>VCC current</td>
<td>Tracking</td>
<td>85</td>
<td>68</td>
<td>mA</td>
<td></td>
</tr>
</tbody>
</table>

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