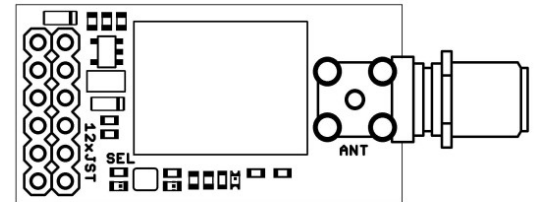


Features:

- Continuous navigation in urban environment, even at signal loss, with speed or wheel-tick information from the vehicle
- On-board low noise 3.3 V voltage regulator and RF filter for noise blocking
- **USB, I2C, SPI and UART (Tx, Rx) RAW** data out available
- **U.FL (I-PEX) active antenna connector**
- Active GNSS antenna support
- 12 pin JST SH connector
- Time pulse LED, Power LED
- u-center GPS evaluation software
- Extensive visualization and evaluation features
- Backup supercapacitor
- Dimensions: **36x18 mm**
- Weight: **3.3 gr.**

Reference: ELT0051



RX/SPI MOSI (1) +5V
 TX/SPI MISO (2) SCL/SPI CLK
 EXTINT1 (3) SDA/SPI CS
 USB D(+) (4) USB D(-)
 EXTINT0 (5) TIMEPULSE
 TIMEPULSE<2> (6) GND

GNSS FEATURES

| | |
|---------------|--|
| Receiver type | 72-channel u-blox M8 engine GPS/QZSS L1 C/A, GLONASS L10F, Beidou B1I, Galileo E1B/C, SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGAN |
| GNSS platform | Concurrent GNSS |
| GNSS bands | L1C/A, L10F, E1-B/C, B1I |
| Oscillators | Crystall Oscillator |

PERFORMANCE

| | |
|---------------------------------|--|
| Position accuracy (GPS) | 1.5 m CEP (with SBAS) 2.5 m CEP (without SBAS) |
| Attitude accuracy (GPS) | 3.0 m CEP (with SBAS) |
| Position error during GNSS loss | Rear wheel ticks 12% Gyro + speed pulse 3% Gyro + speed pulse + accelerometer 2% |
| Max nav. update rate | 30 Hz |
| Nav update rate (PVT) | 2 Hz |
| Navigation latency | <10 ms |
| Max sensor output rate | 100 Hz |
| Acquisition | Cold start Hot start Aided start |
| GPS+GLONASS | 26 s 1.5 s 3 s |
| GPS | 30 s 1.5 s 3 s |
| GLONASS | 31 s 1.5 s 3 s |
| Beidou | 39 s 1.5 s 7 s |
| Galileo | 57 s 1.5 s 7 s |
| Velocity accuracy | 0.05 m/s |
| Heading accuracy | 1 deg |
| Sensitivity (GPS+GLO): | |
| Tracking and Navigation | -167 dBm |
| Reacquisition | -160 dBm |
| Cold start | -148 dBm |
| Hot start | -157 dBm |

OTHER FEATURES

| | |
|-------------------------------|--|
| Anti-spoofing | Spoofing detection |
| Memory | Flash |
| Operating temperature | 0 °C to +50 °C |
| Supply voltage | 4.5 V to 5.5 V |
| Supply current | <45 mA (without external antenna) |
| External antenna requirements | Supply voltage 3.0 V Consumption current <50 mA |