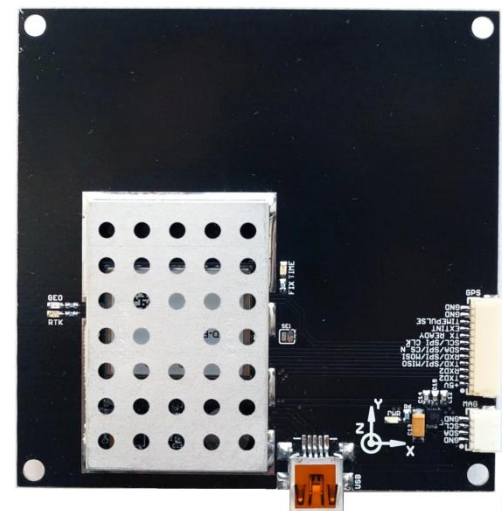


Features:

- On board Ultra low noise 3.3 V voltage regulator with noise 9 nV/√Hz
- **USB, I2C** (SDA,SCL), **SPI** and two **UART** (Tx,Rx) interfaces
- Mini USB connector
- 12 pin JST SH connector and 4 pin JST SH for LIS3MDL magnetometer
- MultiBand GPS L1, GPS L2 and GPS L5 band, GLONASS, Galileo and BeiDou Operation antenna
- L1/L2 or L1/L5 options
- u-center GPS evaluation software
- Extensive visualization and evaluation features
- Time pulse LED, GEO LED, RTK LED
- Backup supercapacitor
- Dimensions: 70x70 mm
- Weight 66 gram

Reference: ELT0118



GNSS FEATURES

Receiver type	184-channel u-blox F9 engine Beidou, Galileo, GLONASS, GPS/QZSS
GNSS platform	Concurrent GNSS
GNSS bands	GPS L1C/A, GLO L1OF, GAL E1B/C, BDS B1I, QZSS L1C/A L1S L5, SBAS L1C/A ZED-F9P-0xB: GPS L2C, GLO L2OF, GAL E5b, BDS B2I, QZSS L2C ZED-F9P-1xB: GPS L5, GAL E5a, BDS B2a, NavIC L5
Oscillators	TCXO

PERFORMANCE

Horizontal pos. accuracy					
PVT	1.5 m CEP				
SBAS	1.0 m CEP				
RTK	0.01 m + 1 ppm CEP				
SPARTN	< 0.06 m CEP (GPS+GLO+GAL)				
CLAS	0.04 m CEP (GPS+GLO+GAL)				
Vertical pos. accuracy					
PVT	2.0 m R50				
SBAS	1.5 m R50				
RTK	0.01 m + 1 ppm R50				
SPARTN	< 0.12 m R50				
CLAS	0.08 m R50				
Convergence time					
RTK	< 10 s				
SPARTN	< 45 s				
CLAS	< 70 s				
Acquisition			Nav. update rate		
	Cold start	Hot/Aided start	RTK	PVT	RAW
GPS+GLO+GAL+BDS	25 s	2 s	7 Hz	9 Hz	15 Hz
GPS+BDS+GAL	25 s	2 s	10 Hz	10 Hz	18 Hz
GPS+GAL	30 s	2 s	15 Hz	20 Hz	25 Hz
GPS+GLO	25 s	2 s	14 Hz	20 Hz	25 Hz
GPS+BDS	30 s	2 s	13 Hz	16 Hz	25 Hz
GPS	30 s	2 s	20 Hz	25 Hz	25 Hz
Velocity accuracy	0.05 m/s				
Dynamic heading accuracy	0.3 deg				
Sensitivity:					
Tracking and Navigation	-167 dBm				
Reacquisition	-160 dBm				
Cold start	-148 dBm				
Hot start	-157 dBm				

OTHER FEATURES

Anti-jamming	Active CW detection and removal Dual onboard band pass filter
Anti-spoofing	Advanced anti-spoofing algorithms
Security	Secure boot Secure firmware update
Memory	Flash
RAW data support	Carrier phase, code phase and pseudo-range, Doppler on all signals
Operating temperature	0 °C to +50 °C
Supply voltage	4.5 V to 5.5 V
Supply current	<130 mA (without external antenna)
External antenna requirements	Supply voltage 3.0 V Consumption current <50 mA