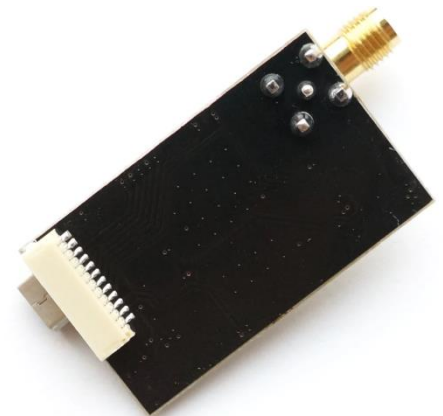


## Features:

- On-board Ultra low noise 3.3 V voltage regulator with noise 9 nV/ $\sqrt{\text{Hz}}$
- **USB, I2C** (SDA,SCL), **SPI** and two **UART** (Tx,Rx) interfaces
- Mini USB connector
- 12 pin JST SH connector
- SMA antenna connector
- 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: 38x22 mm without SMA
- Weight 9 gram

## Reference: ELT0087

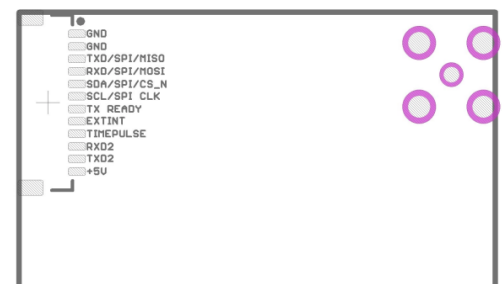


## GNSS FEATURES

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 <b>ZED-F9P-0xB:</b> GPS L2C, GLO L2OF, GAL E5b, BDS B2I, QZSS L2C <b>ZED-F9P-1xB:</b> 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