UFirebird II
UC6580

Dual-frequency

Multi-constellation

GNSS Positioning SoC

Automotive Grade

Industrial Grade

UFirebirdII is a dual-frequency multi-constellation GNSS SoC with low power consumption and miniature design developed by Unicore Communications. It integrates RF and baseband on a single chip, adopts multi-path mitigation technology, anti-jamming technology and high precision GNSS positioning technology. UFirebirdII supports GPS, GLONASS, BDS, Galileo, NAVIC and QZSS multi-constellation joint positioning, and also supports SBAS signal processing, providing fast and accurate positioning service. It is suitable for vehicle navigation, robotic applications, UAVs, and handheld devices, with excellent performance especially in urban multi-path environment.

Product Features

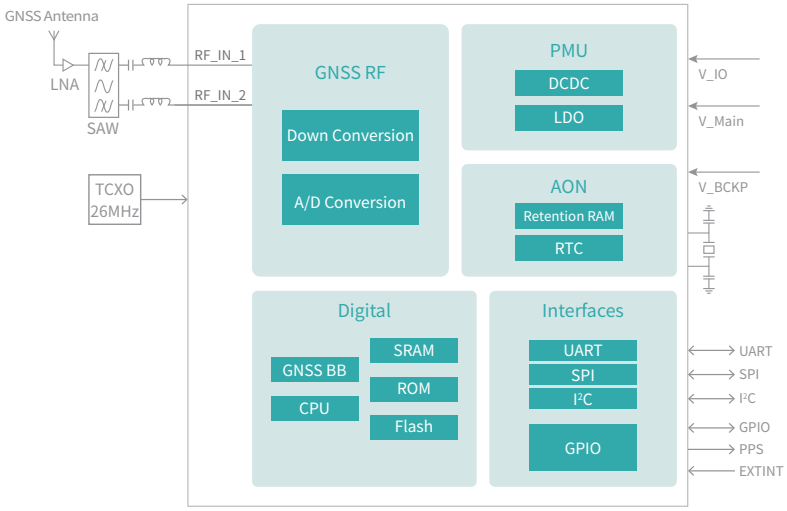
- 96 channels
- Compact size with low-power design
- Concurrent reception of four satellite systems
- Supports L1 + L5 or L1 + L2 dual frequencies; excellent multi-path mitigation algorithm that greatly enhances users' experience compared to single-frequency solution especially in urban multi-path environments
- Ultra-high sensitivity RF and baseband design with the acquisition sensitivity over -148dBm and tracking sensitivity over -165dBm
- AEC-Q100 compliant (UC6580A)

Ordering Information

Supply at multiples of 3000 pieces

Applications

- UAV
- Automated Delivery Vehicle
- Sharing Bike/Scooter
- Intelligent Driving
- Smart Agriculture



Performance

Channels	96 channels		
Constellations		Mode 1	Mode 2
	GPS	L1 + L5	L1 + L2
	BDS	B1I/B1C* + B2a	B1I/B1C* + B2I
	Galileo	E1 + E5a	E1 + E5b
	GLONASS	G1	G1 + G2
	QZSS	L1 + L5	L1 + L2
	NavIC	L5*	-
	SBAS	L1	L1
Horizontal Positioning Accuracy (RMS)	Single Point: 1.5 m		
	RTK: 1 cm + 1 ppm		
Vertical Positioning Accuracy (RMS)	2.5 m		
Velocity Accuracy (RMS)	0.02 m/s		
Time Accuracy (RMS)	5 ns, peak-to-peak value 30 ns (24h)		

TTFF	Cold start < 26 s
	Hot start < 1 s
Power Consumption @3V	Tracking < 40 mA
	Acquisition < 40 mA
Sensitivity	Tracking: -165 dBm
	Acquisition: -148 dBm
Interfaces	UART × 2 I2C × 2
	SPI × 2
Power Supply	VCC: 1.7 ~ 3.6 V
	VIO: 1.7 ~ 3.6 V
	Vbackup: 1.7 ~ 3.6 V
Data Format	NMEA-0183, Unicore, RTCM V3.x
Update Rate	GNSS 1 Hz / 5 Hz / 10 Hz

	Product	Package	Flash	Operating Temp.	Grade
	UC6580A	QFN40 5.0 × 5.0 × 0.85 mm	Yes	-40 ~ + 105 °C	Automotive
	UC6580I	QFN40 5.0 × 5.0 × 0.85 mm	Yes	-40 ~ + 85°C	Industrial

NOTE: * Supported by specific firmware