UFirebird II
UC6580

Dual-frequency Multi-constellation
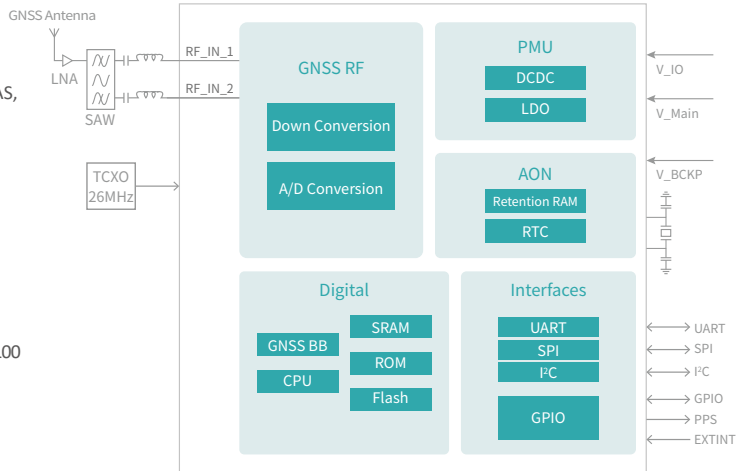GNSS Positioning SoC

Automotive Grade

Industrial Grade

UFirebird II 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. UFirebird II 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, low power design, 5 × 5 mm QFN40 package

» Supports GPS, BDS, GLONASS, Galileo, QZSS and SBAS, including BDS-3; supports single system standalone positioning and multi-system joint positioning

» L1+L5 dual frequencies, excellent multi-path mitigation ability

» Single point positioning accuracy better than 1.5 m

» Ultra high sensitivity: tracking -162 dBm, acquisition -148 dBm

» Industrial grade & automotive grade, and the automotive grade chip qualified according to AEC-Q100

» Supports A-GNSS and DGNSS

Ordering Information

Supply at multiples of 3000 pieces

Applications

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

Performance

Channel	96 channels	
Frequency	GPS	L1 + L5
	BDS	B1I/B1C* + B2a
	Galileo	E1 + E5a
	GLONASS	G1
	QZSS	L1 + L5
	NavIC	L5*
	SBAS	L1
Single Point Positioning (CEP)	Horizontal: 1.5 m	
	Vertical: 2.5 m	
Velocity Accuracy (RMS)	0.02 m/s	
Time Accuracy (RMS)	5 ns, peak-to-peak value 30 ns (24 h)	
TTFF	Cold start < 26 s	
	Hot start < 2 s	

Sensitivity	Tracking	-162 dBm
	Cold Start	-148 dBm
	Hot Start	-156 dBm
	Reacquisition	-159 dBm
Update Rate	GNSS 1 Hz / 5 Hz / 10 Hz	
Differential Data	RTCM V3.X	
Data Format	NMEA 0183,Unicore	
Power Supply	VCC: 1.7 ~ 3.6 V	
	VIO: 1.7 ~ 3.6 V	
	Vbackup: 1.7 ~ 3.6 V	
Power Consumption @3V	< 40 mA	
Interfaces	1 × UART	
	2 × I²C	
	1 × SPI*	

	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