

# 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.

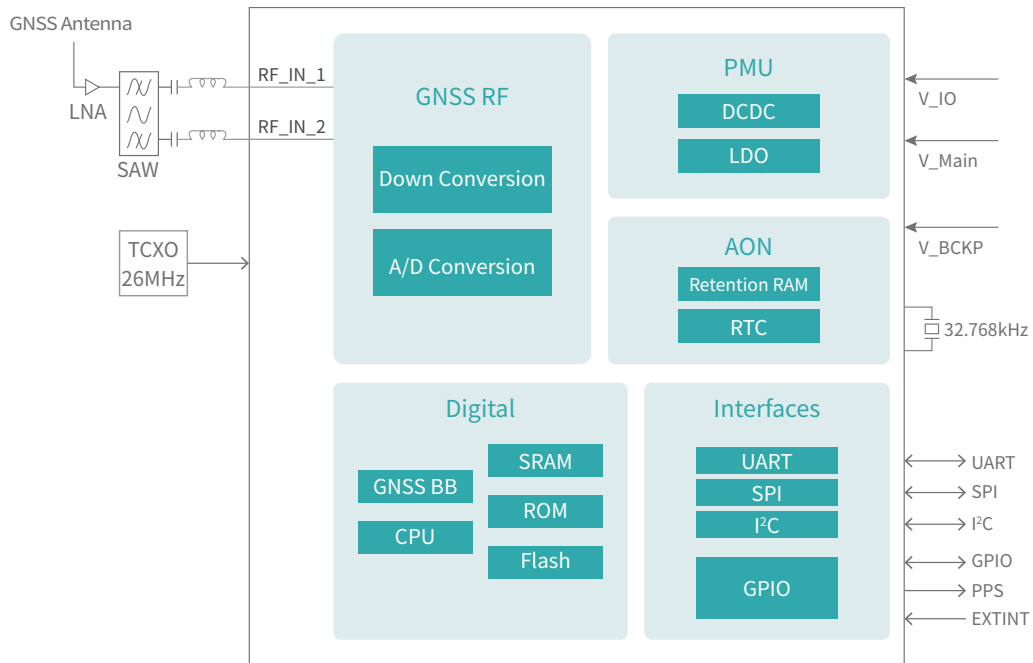
## Features

- › 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

## Performance

Channel	96 channels
Frequency	GPS L1C/A, L5
	BDS B1I, B1C, B2a
	Galileo E1, E5a
	GLONASS G1
	QZSS L1C/A,L1S,L5
Single Point Positioning (CEP)	Horizontal: 1.5 m
	Vertical: 2.5 m
Velocity Accuracy (RMS)	0.05 m/s
Time Accuracy (RMS)	20 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	-160 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	2 x UART	
	1 x I <sup>2</sup> C	
	1 x 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