

FALCOM Smart Antenna FSA03

High sensitivity GPS receiver and SARANTEL quadrifilar helix antenna in a single board solution

- u-blox - UBX-G5010 single chip
- 50 channel u-blox 5 engine
- High sensitivity for indoor fixes
- Extremely fast TTFF at low signal levels
- Galileo capable
- Online / Offline A-GPS support
- Integrated TCXO
- On chip 384 KB ROM
- ARM7 baseband CPU
- Battery backup
- Temperature range: -40 to +85 °C
- Sarantel quadrifilar helix antenna



The FALCOM FSA03

is a combination between the latest GPS chip from u-blox and a quadrifilar helix antenna. Powered by the high performance 50 channel u-blox 5 technology, this smart antenna provides excellent performance at an economical price. A 32 channel engine with over 1 million effective correlators is capable of massive parallel searches across the time/frequency space. This enables a Time To First Fix (TTFF) of less than 1 second while long correlation/dwell times make possible the best-in-class acquisition and tracking sensitivity.

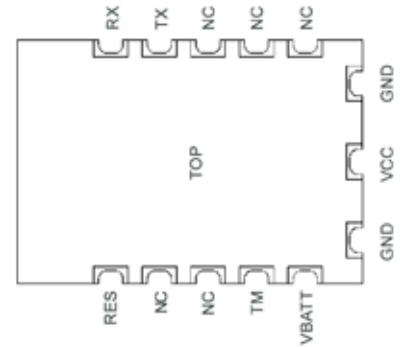
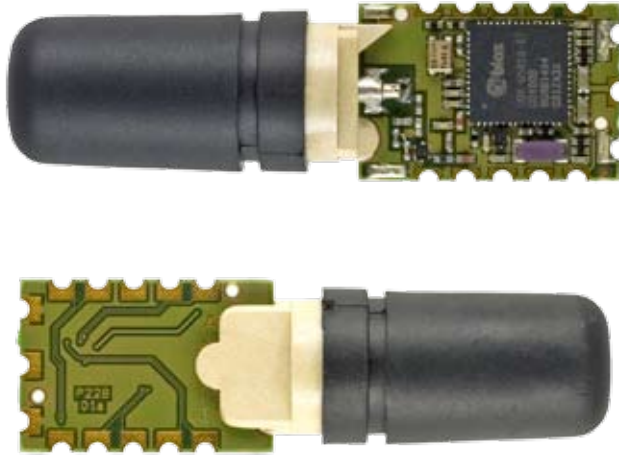
The FSA03 supports the u-blox AssistNow Online and AssistNow Offline-GPS services.

The FSA03 comes with SuperSense, providing ultra-fast acquisition/reacquisition and exceptional tracking sensitivity. SuperSense enables best-in-class tracking and navigation in difficult signal environments such as urban canyons or indoor locations.

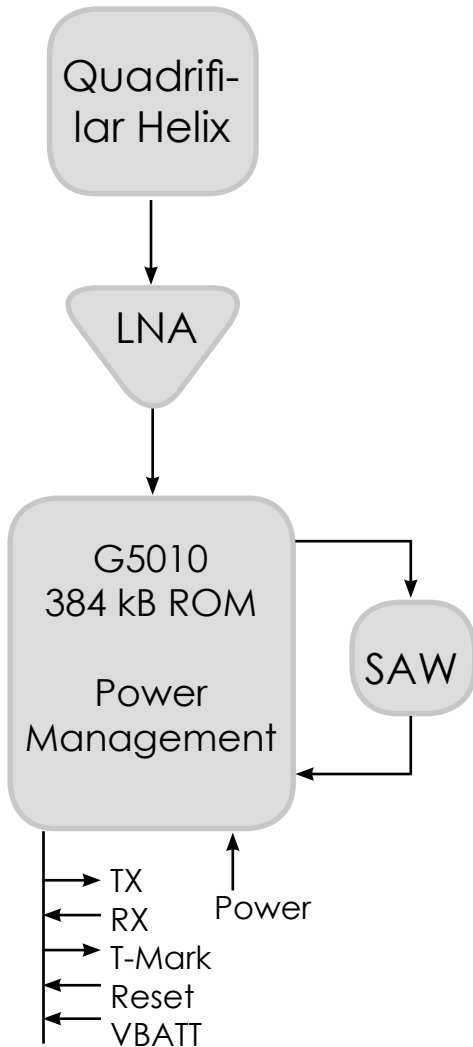
u-blox 5 technology has been developed with GALILEO in mind. When GALILEO-L1 signals become available, the FSA03 will be capable of receiving these signals. The necessary software to process the signal will be included in the ROM of future smart antenna version.

For more information please refer to the datasheet of the UBX-G5010 from u-blox.

Detail views and PIN out



Block diagram



Technical specification

Smart antenna FSA03	
Receiver type	
Tracking	L1, C/A code
Channel	50
Max. update rate	4 Hz
Protocol support	NMEA, UBX binary
Time to first position (TTFF)*	
Cold start	29 sec
Warm start	29 sec
Hot start	< 1 sec
Sensitivity	
Tracking	-160 dBm
Autonm. acquisition	-144 dBm
Electrical characteristics	
Power supply	3.3 V
Current consumption	40 mA appr.
Quadrifilar Helix	
Frequency	1575.42 MHz
Gain	-3.5 dBic
Efficiency	23 % total spherical
Efficiency	45 % upper spherical
Beamwidth	120 degrees
VSWR	< 2.0 : 1
Dimensions (Antenna & GPS receiver)	
L x W x D	50.8 x 14.8 x 13.2 mm

* All satellites at -130 dBm

Note: Specifications and information given in this document are subject to change by FALCOM without notice. For latest product information see www.falcom.de