

FV-5A “GPS Receiver Module”

Overview:

FV-5A module combines high sensitivity, exceptionally low power consumption and a USB port in a small module measuring just 17 x 22 mm.

The -160 dBm tracking sensitivity extends positioning coverage into places where GPS was not possible before, and enables solutions using smaller or covert antennas. Its small form factor and SMT pads allow for fully automatic assembly processes with standard pick-and-place equipment and reflow soldering, enabling cost-efficient, high-volume production.

The combination of these features makes this module suitable for a broad spectrum of GPS products whose key requirements include high sensitivity, low power consumption and small size.

FixNOW power saving mode

Supports passive and active antennas

Antenna short and open circuit detection and protection

Firmware can be updated by flash

Operating temperature range: -40°C to 85°C



Features:

40mA supply current at $V_{cc} = 2.7 V$
(Power reduction by more than 35% compared to predecessor modules)

USB connectivity

Significantly lower battery backup current

Configurable I/O and UART voltage levels

RoHS compliant (lead-free)

50 channel

ANTARIS 4 positioning engine

4 Hz maximum position update rate

Assisted GPS (MS-Assisted, MS-Based)

DGPS and full SBAS (WAAS, EGNOS) support

Specification FV-5A
GPS Receiver Module:

Parameter	Specification
Receiver Type	50 channels GPS L1 Frequency, CA Code GALILEO Open Service L1 frequency
Start up Time	Cold Start 32s Warm Start 32s Hot Start <1 s Aided Start <3 (All satellites @ -130 dB)
Sensitivity	Tracking & Acquisition -160dBm Reacquisition -160dBm Cold Start -143dBm
Horizontal Accuracy	Autonomous <2.5m CEP (50%, 24 hours static, -130dBm) SBAS <2.0 m SEP < 3.5 m
Accuracy of Timepulse Signals	RMS 30ns 99% < 60ns Timepulse Configurable: 0.25.....1000Hz
Max navigation Update Rate	4 Hz
Velocity Accuracy	0.1 m/s (50% @30m/s)
Heading Accuracy	0.5 degrees (50% @30m/s)
Dynamics	<4G
Operational Limits	Velocity 600 m/s