



# SF-3050

- Sapphire™ GNSS Engine
  - 66 Channel GNSS Receiver
- Multi-Constellation Support
  - GPS & GLONASS
- Software Upgradeable Receiver
- Integrated StarFire™ with 5 centimeter global accuracy
- Ultra RTK™ (GPS + GLONASS)



**NAVCOM**  
A John Deere Company

[www.navcomtech.com](http://www.navcomtech.com)

NavCom's SF-3050 family of integrated StarFire™/RTK Extend™ Receivers provide 5cm-level position accuracy, anywhere in the world, anytime.



Powered by the new Sapphire™ Engine, the SF-3050 provides 66 channel tracking, including multi-constellation support for GPS and GLONASS. It also provides patented interference rejection and anti-jamming capabilities.

Offering the "freedom to choose," the SF-3050 is fully upgradeable allowing users to upgrade from an autonomous receiver to a variety of augmentation capabilities with just a software bundle upload. This flexible framework makes the SF-3050 ideal for any application.

## FEATURES

- "All-in-view" parallel tracking with 66 channels
- SBAS (WAAS/EGNOS/MSAS/GAGAN) tracking
- Built-in StarFire receiver
- L1, L2, L5, G1, & G2 full wavelength carrier phase tracking
- C/A, P1, P2, L2C, L5, G1 & G2 code tracking
- High sensitivity / low signal level tracking
- Fast acquisition / re-acquisition
- Superior interference suppression (both in-band & out-of-band)
- Patented multipath rejection
- StarFire Over IP delivery (Optional)
- RTK Extend™
- StarFire Over the Air (OTA) Licensing Capable
- Minimal data latency
- Data message formats
  - NMEA-0183: ALM, GBS, GGA, GLL, GRS, GSA, GST, GSV, RMC, RRE, VTG, ZDA, NCT proprietary
  - Differential Correction: RTCM 2.3 and 3.0, SBAS, and StarFire (proprietary)
  - RTK Correction: CMR/CMR+, RTCM, NavCom Proprietary UltraRTK™
  - Receiver Control: NavCom Proprietary commands (ASCII)
- Configurable as RTK base or rover
- Programmable output rates
- Event marker input
- 1 PPS output
- Communication Ports: 2 x RS232 (1 - Changable to RS422), 1 x USB 2.0 (Host or Device), Bluetooth™ and Ethernet (10T/100T)
- 2GB Internal Data Storage

## SPECIFICATIONS

### PERFORMANCE<sup>1</sup>

- **Accuracy (RMS)**

	Horizontal / Vertical
RTK: <40km	1cm + 0.5ppm / 2cm + 1ppm
StarFire	<5cm / <10cm
Code DGPS: <200kms	45cm + 3ppm / 90cm + 3ppm
Velocity:	0.01ms
RTK Extend (<15min)	3cm + 1ppm / 6cm + 2ppm
- **User programmable output rates:**

Position Velocity Time:	1Hz, 5Hz, 10Hz, 25Hz, 50Hz, 100Hz
Raw data:	1Hz, 5Hz, 10Hz, 25Hz, 50Hz, 100Hz
- **Data Latency:**

Position Velocity Time:	< 10ms at all rates
Raw measurement data:	< 10ms at all rates
- **Time-to-first-fix:**

Cold / Warm / Hot	< 60s / < 50s / < 20s
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 (typical values measured per ION-STD 101)
- **Dynamics (Speed & altitude are restricted by export laws):**

Acceleration:	up to 6g
Speed:	< 515 m/s (1000knots)
Altitude:	< 18.3 km <sup>2,3</sup> (60,000ft <sup>2,3</sup> )

### PHYSICAL/ENVIRONMENTAL

- **Size (L x W x H):** 164mm x 117mm x 60mm (6.47in x 4.60in x 2.37in)
- **Weight:** 0.5kg (1.1lbs)
- **Power:**

Input:	AC/DC Adapter 110/220VAC, 12VDC Nominal 0.5A (9.0V to 32VDC)
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- **Temperature (ambient):**

Operating:	-40° to +70° C (-40° to +158° F)
Storage:	-40° to +85° C (-40° to +185° F)
- **Humidity:** 95% non-condensing
- Tested in accordance with MIL-STD-810F for low pressure, solar radiation, humidity, salt fog, shock and vibration
- Rated IP67 (dust tight/waterproof) in accordance with IEC 60529
- Tested in accordance with FCC/CE regulations for electromagnetic interference
- **Connectors:**

Port	Antenna	COM1/LAN	COM2/USB	Power
Connector Type	TNC (female)	9 pin female circular	9 pin female circular	9 pin male circular
I/O Function	Antenna Input	Ethernet COM1 (RS232)	USB 2.0 COM2 (RS232/RS422)	PWR Input

<sup>1</sup> Performance dependent on location, satellite geometry, atmospheric conditions and GNSS corrections

<sup>2</sup> Restricted by USA export laws.

<sup>3</sup> Supported in software. The receiver hardware must be placed in a pressurized environment for altitudes > 12.2km (40,000 ft.)

Technical specifications subject to change at NavCom's discretion

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Rear Panel of the SF-3050