Expand the possibilities!

Integrate Onyx with your solution.

ONYX

- 255 Channel GNSS Engine
- Multi-Constellation Support
  - GPS & GLONASS Nav
  - BEIDOU & GALILEO Measurements
- Software Upgradeable Board
- Integrated StarFire™ with 5 cm global accuracy
- Ultra RTK™ (GPS + GLONASS)

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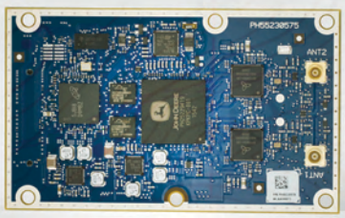
ONYX

Integrated StarFire™/RTK GNSS Engine



NavCom's next generation GNSS engine provides 255 channel tracking, including multi-constellation support for GPS and GLONASS. It also provides patented interference rejection and anti-jamming capabilities. Integrated StarFire™ five centimeter global accuracy makes *Onyx* ideal for high accuracy surveying, control and guidance of mobile platforms. The compact form factor offers durability and reliability for your precise positioning system integration. StarFire is supported on 3-separate channels providing on-board capability for tracking redundant or enhanced signals.

FEATURES

- "All-in-view" parallel tracking with 255 channels
- SBAS (WAAS/EGNOS/MSAS/GAGAN) tracking
- Built-in 3-channel StarFire receiver and demodulator
- GPS: L1 – CA, P1
  L2 – P2, L2CL, L2CM
  L5 – L5I, L5Q
- Glonass: G1 – G1C, G1P
  G2 – G2C, G2P
- Beidou: B1 – B1I
  B2 – B2I
- Galileo: E1 – E1B, E1C
  E5A – E5AI, E5AQ
  E5B – E5BI, E5BQ
- **High sensitivity / low signal level tracking**
- Fast acquisition / re-acquisition
- Superior interference suppression (both in-band & out-of-band)
- Patented multipath rejection
- 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, SBAS, and StarFire (proprietary)
  - RTK Correction: RTCM 2.3, 3.0, and MSM, NavCom Proprietary UltraRTK™
  - Receiver Control: NavCom Proprietary commands (ASCII/binary)
- Configurable as RTK base or rover
- Programmable output rates
- Event marker input
- 1 PPS output
- Communication Ports: 2 x TTL (3V)

PERFORMANCE[1]

• 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
Heading[2]	0.1°
• User programmable output rates	
Position Velocity Time:	1Hz, 5Hz, 10Hz, 25Hz
Raw data:	1Hz, 5Hz, 10Hz, 25Hz
• Data Latency	
Position Velocity Time:	< 10ms at all rates
Raw measurement data:	< 10ms at all rates
• Time-to-first-fix	
Cold / Warm / Hot	< 65s / < 55s / < 20s
(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 (60,000ft)

PHYSICAL/ENVIRONMENTAL

• Size (L x W x H):	100mm x 60.7 mm x 13.27 mm (3.94in x 2.39in x 0.52in)
• Weight:	30g (1 oz)
• Power	
Input:	+ 3.3V, ± 5% at 0.8A
Output:	accepts up to +5.5V ± 0.5V at 100mA (for antenna bias via RF connector)
• Temperature (ambient)	
Operating & Storage:	-40°C to +70° C (-40°C to +85° C)
• Connectors	
I/O & PWR:	40 pin dual row socket header 2 - Configurable serial ports up to 230.4 Kbps
RF:	2x MCX-F connectors

(1) Performance dependent on location, satellite geometry, atmospheric conditions, and GNSS corrections.

(2) Requires two Onyx boards

Technical specifications subject to change at NavCom's discretion

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