Expand the possibilities!
Integrate Onyx with your solution.

- 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)

NAVCOM
A John Deere Company

www.navcomtech.com
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/SAGAN) tracking
- Built-in 3-channel StarFire receiver and demodulator
- GPS: L1 – CA, P1, L2 – L2CA, P2, L2CL, L5 – L5Q
- Glonass: G1 – G1C, G2 – G2C
- BeiDou: B1 – B1I, B2 – B2I
- Galileo: E1 – E1B, E5A – E5AQ, E5B – 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: SBAS and StarFire (proprietary)
  - RTK Correction: RTCM 2.3, 3.0, and MSG, 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

- Accuracy (RMS)
  - RTK: before final diffusion ( <15min)
  - Code DGPS: 3cm + 1ppm / 6cm + 2ppm
  - Heading: 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°F to + 158°F)
- 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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