HRG Crystal™

GEONYX™ Family

GNSS threats proof artillery pointing & positioning system / Inertial Navigation System (INS)

Geonyx™ is designed for the most demanding artillery systems such as howitzers (towed, tracked, truck-mounted), multiple rocket launchers, mortars and light guns. Thanks to its high pointing accuracy, Geonyx™ is also perfectly suited for mobile radars and forward observer systems.

Robustness and reliability
Being hard-mounted on the weapon, Geonyx™ withstands high shocks of artillery guns, without the need of an external shock-absorbing mount. Thanks to the embedded HRG* Crystal™, Geonyx™ is the most reliable INS on the market.

Operational efficiency
Designed for time-sensitive missions in the most constrained operational environments (jammed or denied GNSS*), Geonyx™ provides:
- A full range of pointing accuracies from 2 mils to 0.5 mils to meet all system requirements
- Autonomous True North finding in less than 5 minutes
- On-the-move alignment without GNSS
- Autonomous navigation without GNSS
- Shoot-and-scoot capability
- Multiple Rounds Simultaneous Impact (MRSI) capability
- High positioning accuracy in the harshest conditions
- Jamming, Spoofing and Meaconing algorithms detection (NavWar Option)
- With the NavWar Option, Geonyx™ automatically stops GPS hybridization following threat detection on GNSS signal reception

SAFRAN

Technical specifications

Optimized architecture

- Size : 205/245 x 158 x 169 mm
- Weight : 6.4 kg
- Consumption : < 17W
- Hard-mounted on guns (no external mount needed)
- Immune to magnetic stress & high vibration/shocks
- Full interchangeability with SIGMA 30 Family
- Gyro technology : HRG Crystal™

Maintenance

- MTBF (Mean Time Between Failure) : > 100,000 hours

Flexible Interfaces

- Embedded GNSS receiver (external GNSS possible)
- RS422
- Ethernet
- CANBUS

Navigation standards

- Environment : MIL-STD-810
- Electrical : MIL-STD-1275
- EMC : MIL-STD-461

Already qualified on numerous major artillery systems

European in-house technology

Subject to French export control authorization

ITAR Free

Full NAVWAR capability (jamming, spoofing and meaconing detection)

© Expal - EIMOS

© Nexter - Caesar

Performances

	GEONYX™ SP	GEONYX™ HP	GEONYX™ XP	GEONYX™ XP+
Heading (RMS*) at 65° lat. (⇔ seclat)	2 mils (⇔ 0.85 mils)	1 mils (⇔ 0.42 mils)	0.9 mils (⇔ 0.38 mils)	0.5 mils (⇔ 0.21 mils)
Pitch & Roll (RMS)	0.75 mils	0.5 mils	0.35 mils	0.2 mils
Horizontal Position (CEP*)	0.15% DT	0.1% DT	0.05% DT	0.04% DT
Vertical Position (EP*)	0.15% DT	0.1% DT	0.02% DT	0.02% DT
Static alignment** time without GNSS / Alignment on-the-move** without GNSS	< 5 min / <10 min	< 5 min / < 10 min	< 5 min / < 10 min	< 10 min / < 20 min
NavWar Option	Available	Available	Available	Available

*INS: Inertial Navigation System / HRG: Hemispherical Resonator Gyro / GNSS: Global Navigation Satellite System / RMS: Root Mean Square / CEP: Circular Error Probable / EP: Error Probable

** Time to full performance