



NEARSPACE LAUNCH

EyeStar Radio and Black Box



SYSTEMS SNAPSHOT

- Heritage of 115+ EyeStar products flown
- 24/7 connection to satellite
- Latency of seconds
- Global connectivity
- Network in operation for over 25 years
- Asset Tracking
- Asset Health and Safety
- 100% mission success

PUBLICATIONS

"Black Box" Beacon for Mission Success, Insurance, and Debris Mitigation

GlobalStar Link: From Reentry Altitude and Beyond

TSAT GlobalStar ELaNa-5 Extremely Low Earth Orbit (ELEO) Satellite

FAQ for NSL and GlobalStar

CUSTOMERS



MILLENNIUM SPACE SYSTEMS
A Boeing Company



SPACEFLIGHT



QUALITY ASSURANCE

- ISO90001: Quality management systems
- FCC: Part 15, 25 Compliant
- MIL-SPEC parts
- 300 hour steady state burn in

About NSL

NearSpace Launch Inc. (NSL) has flown 450+ systems in the past five years, with 100% mission success for all commercial and research missions. NSL manufactures and produces Globalstar enabled communication systems (EyeStar radios), ThinSats, CubeSats, and Black Boxes. NSL was founded following the successful mission of TSAT with Globalstar. The mission proved one could effectively connect 24/7 to an NSL EyeStar radio via the Globalstar constellation. Heritage of 115+ EyeStar radios in space.

About GLOBALSTAR

Globalstar operates a low-earth-orbit (LEO) constellation of 40+ satellites and provides mobile satellite voice and data products and service packages. Customers around the world in industries such as government, emergency management, marine and oil & gas rely on Globalstar satellites constellation to be smarter and faster.

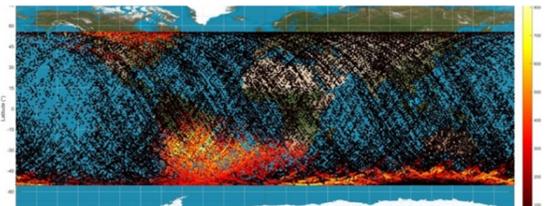
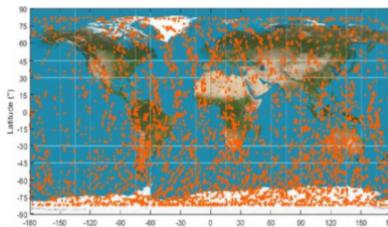


Fig. 10. GEARRS2 energetic particle data coverage map.

About EyeStar & Black Box

The NSL/Globalstar radios provide continuous connectivity for your satellite in orbit no matter where in space it is, and anytime (24/7 coverage). Real-time data at low latency of a few seconds is critical for mission success during regular, discovering satellite health problems early, making real-time data available for payload triggering, failure analysis, or monitoring attitude performance. The Simplex radios have worked well in polar and lower inclinations and for tumbling spacecraft up to 12 rpm. Packet throughput is over 90%, over 100% of the earth (see AIAA Papers #11). No ground station is necessary with the NSL radio since all secure data is available on the internet in near real-time from the Globalstar commercial ground stations.



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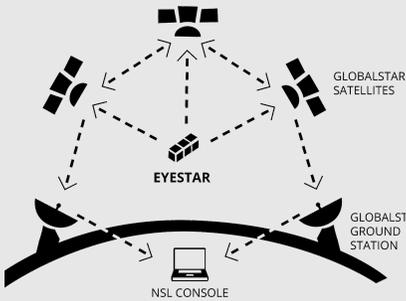
NSL HERITAGE

100%
TOTAL MISSION
SUCCESS RATE

115+
SUCCESSFUL
EYESTAR MISSIONS

60+
SATELLITE
CONSTELLATION

500+
SYSTEMS AND
SUB-SYSTEMS



CONTACT

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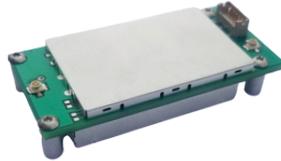
8702 E. 825 S. Upland, IN 46989

EyeStar-S3

End-to-End System, 24/7 connected to Globalstar constellation, with latency of seconds, Max 600 Kbytes/day, Anywhere-Anytime, 100% On-orbit success, Flight Ready, TRL 9, Compliant with new FCC requirements



EyeStar-Tag



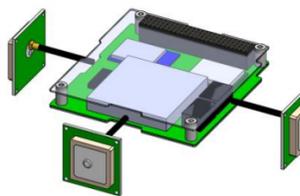
The 22 gram 5.3x2.5x0.9cm Tag and S3 can ID its satellite with Integrated GPS within a few minutes after turn-on while in LEO orbit from pole to pole 24/7. The Tag can track damaged satellites or identify problems early, several hours before ground station contact. TLE can be produced and sent automatically to the 18th Squadron and for the payload team within minutes of orbit deployment. The Black Box subsystems are TRL 9.

Black Box-Patch

140 gram 10x8.3x0.9cm Black Box and S3 can ID its satellite with GPS within a few minutes after turn-on while in LEO orbit from pole to pole 24/7. The Black Box is an independent barnacle that can track damaged satellites or identify problems early, several hours before ground station contact. TLE can be produced and sent automatically to the 18th Squadron and for the payload team within minutes of orbit deployment. The Black Box subsystems are TRL 9.



Black Box PC I04



9x9.6x1.3 cm Black Box and S3 can ID its satellite with GPS within a few minutes after turn-on while in LEO orbit from pole to pole 24/7. The Black Box is an independent system that can track damaged satellites or identify problems early, several hours before ground station contact. TLE can be produced and sent automatically to the 18th Squadron and for the payload team within minutes of orbit deployment. The Black Box subsystems are TRL 9.

Black Box-Standard

140-gram Black Box and S3 can ID its satellite with GPS within a few minutes after turn-on while in LEO orbit from pole to pole 24/7. The Black Box is an independent barnacle that can track damaged satellites or identify problems early, several hours before ground station contact. TLE can be produced and sent automatically to 18th Squadron and for the payload team within minutes of orbit deployment. The Black Box subsystems are TRL 9.



	UNIT	EYESTAR TAG	BLACK BOX PATCH	BLACK BOX PC104	BLACK BOX STANDARD
SIZE L X W X H	cm	5.3 X 2.5 X 0.9	10 X 8.3 X 0.85	9 X 9.6 X 1.3	8.9 X 7.1 X 4.1
WEIGHT	g	22	140	NA	350
POWER	v	7.2	7.2	7.2	7.2

PRODUCT	EYESTAR S3	FLIGHT PROCESSOR	RT SHIELDING	SERIAL INTERFACE	A/D INPUTS	FRAME	SIMPLEX RX	NSL GPS	3RD PARTY GPS	DC-DC ISOLATION	BATTERIES	SOLAR ARRAY	9 AXIS IMU	HORIZON SENSOR	PARTICLE DETECTOR
BLACK BOX PATCH	✓	✓	✓	✓	✓	✓	✓	✓	●	×	✓	✓	✓	✓	✓
BLACK BOX TAG	✓	✓	✓	✓	×	○	○	✓	○	×	×	×	○	○	○
BLACK BOX STANDARD	✓	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	○	●
BLACK BOX PC104	✓	✓	✓	✓	✓	×	✓	✓	●	●	●	○	✓	●	●

✓ INCLUDED ● INTEGRATED OPTION
 ✗ NOT INCLUDED ○ ADD ON OPTION