LinkStar-STX3

Satellite Transmitter
Near Global Coverage for Critical Information

The *LinkStar-STX3* satellite radio is the next generation in simplex based communications powered by *Globalstar*™, the world's most modern satellite network. *Globalstar* has reduced the size of its Simplex Transmitter Unit (STX2) by 2/3 allowing for a compact, low power design and efficient communications. Using the *Globalstar* Simplex data network, the *LinkStar-STX3* allows information to be transmitted from areas well beyond the reach of reliable cellular coverage around the globe, in near space, and in low Earth Orbit!

The *LinkStar-STX3* provides opportunities to integrate satellite connectivity into products used for vehicle and asset tracking, remote data reporting and data logger reporting that have limited size requirements. Affordable pricing, low power consumption and its small size make the *LinkStar-STX3* satellite transmitter a highly efficient device ready for integration in a wide variety of applications.

The *LinkStar-STX3* uses the *Globalstar STX3* module, a low cost, simplex module which sends one-way data messages via the *Globalstar* Simplex Network when integrated into a tracking or monitoring device. The *LinkStar-STX3* is ideal for delivering remote sensing, tracking and monitoring applications on the ground, in aviation, near space and in low Earth Orbit.

Coverage Map - Ground.
In Space coverage is near Global!
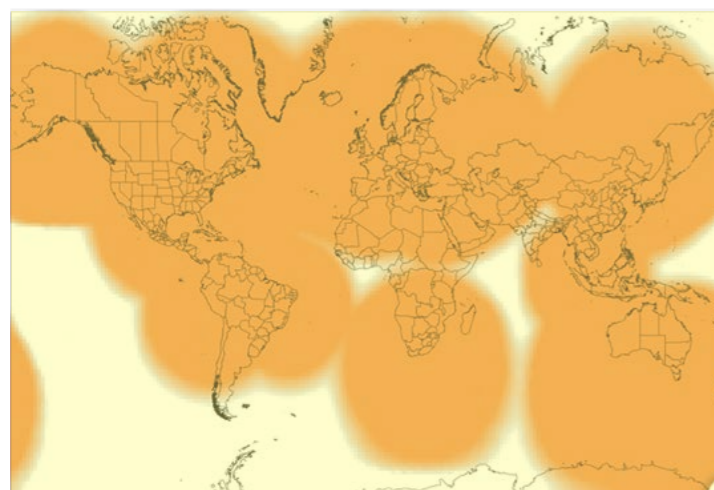
ADVANTAGES AND FEATURES

- Increases reliability through multiple transmissions
- Global coverage
- Low power consumption
- Standard radio is a *BeagleBone* cape designed to work with the *BeagleBone Black*, allowing for immediate development, testing, and use!
- Development APIs for the *STX3* module, GPS and other components!
- Surface mount design - custom boards can easily developed to meet a range of demanding applications.
- Versatile use: *LinkStar-STX3* can be integrated for use in a wide range of applications including satellites, near space payloads, liquid petroleum gas (LPG) tanks, water tanks, pipelines, electricity, meters, cars, trucks, boats and sea or land containers

LinkStar-STX3 Radio and Module

Globalstar

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LinkStar-STX3

Satellite Transmitter

LinkStar-STX3 DEVELOPER BUNDLE INCLUDES

- *LinkStar-STX3 radio*
- *Communicator software*
- *QuickSAT/VMS* Management System
- Antenna
- *Industrial BeagleBone Black* Computer
- GPS
- Enclosure

Enclosure is designed to IEC52, IP65 and NEMA 1, 2, 4, 4x, 12, and 13 specifications, UL Listed to UL508-4x specifications, UV stabilized polycarbonate with UL94-V2 flammability rating

TECHNICAL SPECIFICATIONS

SIZE

LinkStar-STX3 with *BeagleBone Black (BBB)*:
Height: 86.36 mm
Length: 53.34 mm
Depth: 29.11 mm *BBB/LinkStar-STX3*
Mass: 48.19 g *BBB/LinkStar-STX3*

OPERATING TEMPERATURE RANGE

-40 to +80 °C

DIGITAL POWER SUPPLY OPERATIONAL VOLTAGE

5.0 Volts

RF POWER SUPPLY VOLTAGE

3.0 to 5.0 Volts

CERTIFICATION

FCC CFR Part 25 Modular, FCC Part 15A, *Globalstar*

TECHNOLOGY

Operates over the *Globalstar*™ Simplex Data Network

OPERATIONAL MODES

SLEEP MODE

Vcc is applied to the unit, no transmissions are pending, no serial activity

ACTIVE MODE

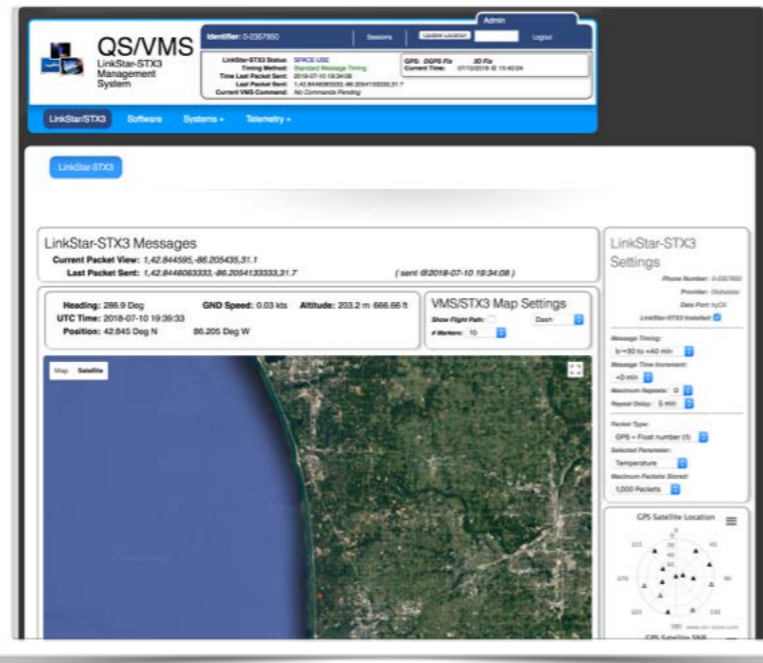The STX3 is active and responding to the serial port, but is not transmitting

STANDBY MODE

The STX3 is inactive between transmission burst, but is not transmitting

TRANSMIT MODE

The unit is transmitting an RF packet

QuickSAT/VMS
Web Interface for the LinkStar-STX3

ANTENNA

STX3

TW2500: 4.25 dBic dual-feed patch, 1610 - 1620 MHz with weather-proof, magnetic mount enclosure with threaded base holes for screw down attach

GPS

Active 28 dB weather-proof magnetic mount antenna, T1 1575.42±1.023 MHz

DEVELOPMENT ENVIRONMENT

COMPUTER

Modified Industrial *BeagleBone Black*

ENVIRONMENT

Debian Linux, *QuickSAT/VMS*, MySQL, Apache, PHPMYADMIN, Python, PHP, Javascipt, HTML5, C, C++, Bash

MEMORY

4 GB plus microSD port

PORTS

I2C (2), USB, UARTS (3), GPIO (32), GND, Analog In (7), 3.3V

APIs

STX3, GPS (NMEA) *AdaFruit* and *NovAtel* 6XX and 7XX series, Serial Communications, I2C, BMP Sensor

DATA TABLES

View data stored in the on board database through the *QuickSAT/VMS* interface

DATA EXPORT

CSV, Excel, SQL, PDF

DATA PLOTTING

Plot up to 4 numerical valued measurements including GPS data on one graph. Export graphs to PNG, JPG, PDF, SVG

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