

United Nations/China/ European Space Agency Training Course on the Use  
and Applications of Global Navigation Satellite Systems 4 – 8 December 2006

# Introduction to GNSS Products Made In China

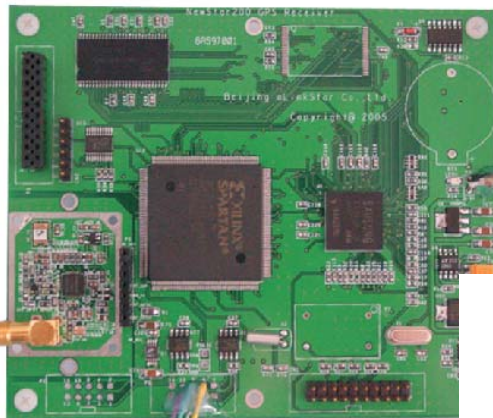
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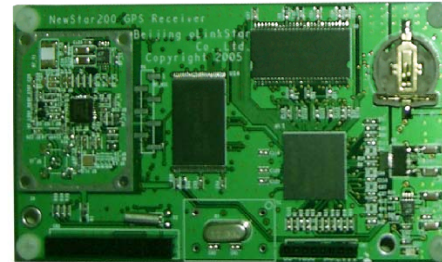
# Contents

1. GNSS Receivers and Chipsets for Aviation
2. GNSS Receivers and Chipsets for Handheld
3. GNSS Development platforms
4. GNSS Seminars and Training Courses
5. GNSS Turnkey Solutions

# NewStar200 GNSS Receivers for Aviation



NewStar200A  
NewStar200B



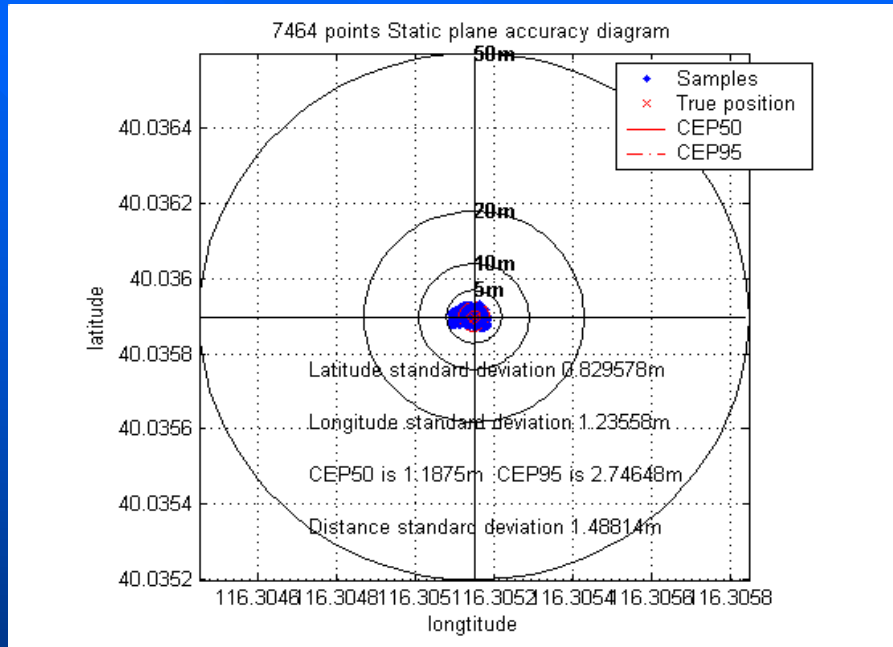
NewStar200E  
NewStar200F



NewStar200C  
NewStar200D

Created and made in China by oLinkStar Co., Ltd.

# Features of the NewStar200 GNSS Receiver



## Features:

Signals: GPS/GLONASS (Galileo + BD)

Channel: 16 Parallel or more

Horizontal Accuracy: <10m, 2D

Vertical Accuracy: <15m, 2D

HSpeed Accuracy: 0.05m/s

Vspeed Accuracy: 0.1m/s

Requisition Time: <1second

Hot Start Time: <10second

Warm Start Time: <45second

Ave Cold Start: <70second

1PPS output:  $\pm 100\text{ns}$

Position Update Rate: 1Hz、5Hz、10Hz

Data Format: NMEA0183 V3.0 or internal Binary

Interface: RS422 or RS232

Power: 5VDC  $\pm 10\%$

Operation Temp:  $-40^{\circ}\text{C} \sim +75^{\circ}\text{C}$

1. Fast Startup: 6seconds with preloaded data
2. Multi Update Rate: 1Hz、5Hz、10Hz or more
3. Design on user's request

Accuracy, Continuity, Availability, Integrity.

# OLS-1 GNSS Lab for Training Purposes



**NS-TTS**  
GNSS Signal Repeater



**NS230**  
Wireless  
GPS Tracker



**NS100**  
GNSS Simulator



**Vehicle**  
Monitor



**GPS**  
Navigator



**NewStar150C**  
Programmable  
GNSS Training  
Platform



**NewStar150**  
GNSS Training Platform

## Specifications:

- 1、 Calculate SV Positions in ECEF
- 2、 Calculate GNSS signal transmission errors: Ionospheric delay, Tropospheric error, Relativistic error, Error analysis and programming
- 3、 Calculate C/N0s
- 4、 Calculate DOPs
- 5、 Calculate user Position, Velocity and Time
- 6、 Satellite in view prediction based on Almanac
- 7、 Transform between ECEF and LLA
- 8、 Transform between UTC, GNSS and Local Time
- 9、 Generating NMEA0183 Data
- 10、 Car Navigation Demonstration
- 11、 Handheld GNSS Tracker

## Suitable for:

GNSS Students and Engineers

Learn How the GNSS Receiver works by experiment and programming.

# OLS-2 GNSS Receiver Design House



NS-TTS GNSS  
Signal Repeater



NewStar210  
GNSS IF Signal Digitizer



GNSS Simulator



NewStar210A  
GNSS IF Signal Digitizer with  
Data Replay



NewStar100  
GNSS RCVR Platform

## Specifications:

1. GPS/GLONASS, (Galileo, BD2) Signals
2. GNSS RF, IF, Base-band, Algorithms, and Software
3. Provide GNSS CDMA Signal Correlation Source Code
4. Provide GNSS PVT solution source code
5. Provide source code for Signal search, tracking, demodulation
6. GNSS Signal Digitizer
7. GNSS IF Data Storage, Processing, and Replay
8. ID Data Storage: 32Mbps
9. IF Data Replay: 0.5Mbps to 32Mbps

## Suitable for:

GNSS Receiver Designers, Developers, Researchers.  
GNSS Signal Analysis, Algorithm design, GNSS Satellite Monitoring, Integrity Algorithm, Software GNSS receiver design.

GNSS RF, IF, Correlation, Algorithms, Hardware, Software.



# OLS-3 GNSS Lab for Integrity Research



NS-TTS GNSS  
Signal Repeater



NewStar210A  
GNSS IF Signal Digitizer  
and Replay

Specifications:

1. GPS/GLONASS, (Galileo, BD2) Signals
2. GNSS RF, IF, Base-band, Algorithms, and Software
3. Provide GNSS CDMA Signal Correlation Source Code
4. Provide GNSS PVT solution source code
5. Provide source code for Signal search, tracking, demodulation
6. GNSS Signal Digitizer
7. GNSS IF Data Storage, Processing, and Replay
8. ID Data Storage: 32Mbps
9. IF Data Replay: 0.5Mbps to 32Mbps
10. Generated Interferences
11. Generated IF Interferences
12. Generate GNSS RF Signal

**Suitable for:**

High End GNSS Receiver Designers, GNSS Interfering researchers, Integrity monitoring, Algorithm Design, Hardware/Software Development.



NS Simulator



NewStar200I  
Integrity Monitor Unit



NewStar100  
GNSS RCVR Platform



Accessories



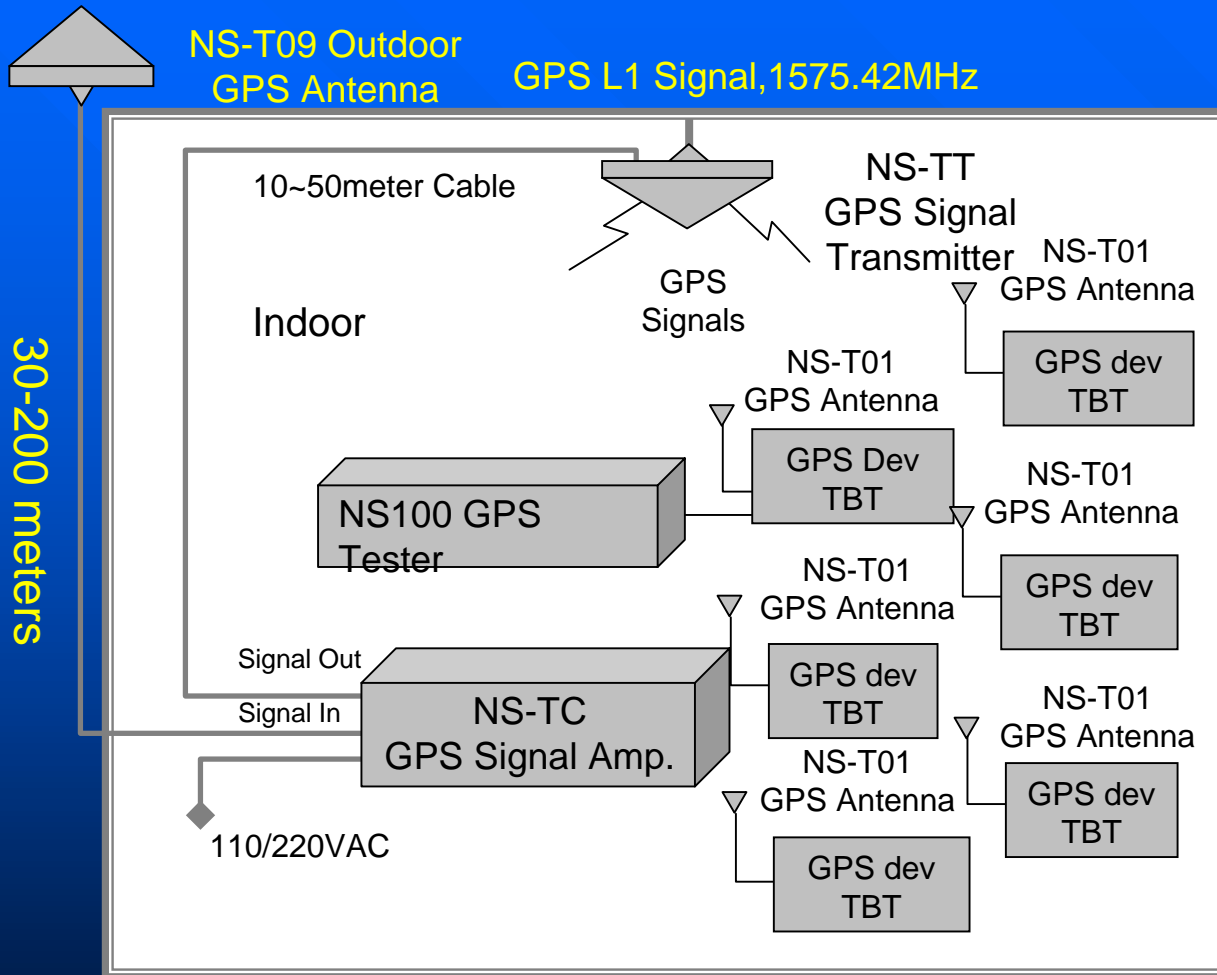
GNSS  
Signal Generation  
Tools



GNSS RF Signal  
Generation Unit

**GNSS Interference, Evil Signal Analysis, Open Hardware and Software.**

# Testing Solution for Receiver Production Lines



## Functions:

1. Receive outdoor GPS Signals, Transmit the signals into Labs, Production Area, Stores, and any place which need GPS Signal but can not receive them directly.
2. Testing GPS terminals, Receivers, OEB boards for their accuracy, quality, sensitivity, starting time, etc.

## Features:

1. Unlimited number of GPS equipments to be tested
2. Wireless
3. Easy to install, easy to use.

Suitable for:

GPS Lab, GPS terminal production line, Training room, GPS stores, etc.

**Quality Test, Sensitivity Measurement.**

OLinkStar Co., Ltd.

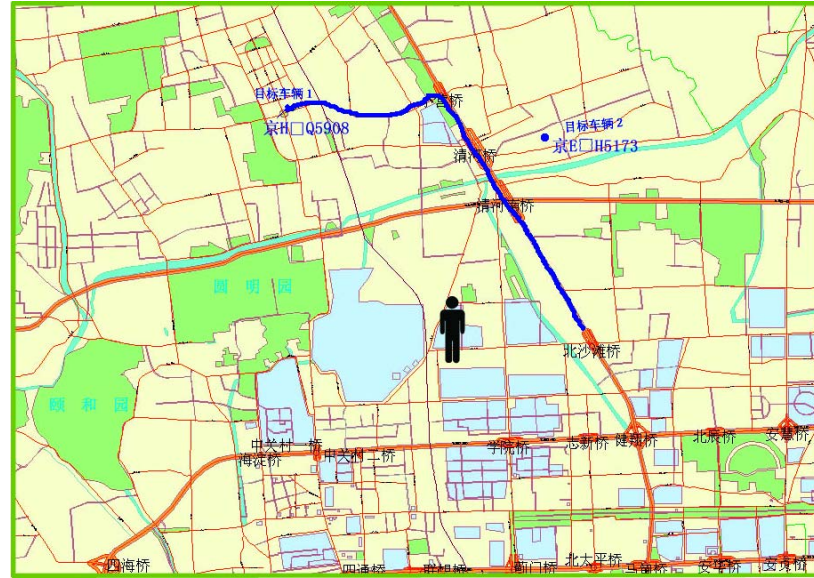


# NS230 Wireless GPS Tracker

Receiving GPS Signal, Positioning at real-time, transmit position, velocity, time messages back to office for monitoring, commanding, tracking, etc..



Size: 72\*44\*24mm  
Weight: 68g(Incl Antennas、Battery)



GIS Map for the who country. Water-proof design. Long term battery. Small size. Easy to Install. Safe and reliable.



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Tracking Vehicles, Airplanes, Animals, Hikers, etc.

OLinkStar Co., Ltd.

# GNSS Seminars and Training Courses

Five Days Program Teaches You How to Create a High Quality GNSS Receiver.

Day 1: GNSS Base-Band Design, NavData Demodulation, Measurements hardware and software design

Day 2: Signal search, tracking, synchronizing. ECEF, Time Systems Coordinates and conversion, Transmission Errors and their Calculation

Day 3: Position, Velocity, Time Solution

Day 4: Anti-Interfering, Anti-Spoofing, DGPS, RTK

Day 5: Experiment on real-time devices

**Course Schedule and Contents are available upon request.**

# GNSS Solutions by OLinkStar

1. Design GNSS Receiver ASIC upon user's request
2. Provide GNSS Receiver IP Core
3. GNSS Integrity Monitoring System Design and Development
4. GNSS Augmentation System Design and Development
5. Advanced GNSS Training Courses

OLinkStar are will to provide long term,high quality services to GNSS society.

## About OLinkStar Co., Ltd.

OLinkStar Co., Ltd. is a high-tech company located in Beijing, China engaged in GNSS Receiver and chipsets product design, marketing, and sales. Current products include:

- GNSS Receivers for high end users
- GNSS Receiver Develop Platforms
- GNSS System Solutions
- GNSS Receiver Design Courses

Multi-years experiences in GNSS receiver design.



# Qualification



OLinkStar Co., Ltd.

High-tech, Top 50, GNSS Patents, Support ...

# OLinkStar Professional GNSS Team

OLinkStar Co., Ltd. has built an excellent team engaged on GNSS kernel technologies including:

- ☆ GNSS RF Signal Processing
- ☆ GNSS IF Signal and Data Processing
- ☆ GNSS Base-Band Hardware and Software
- ☆ GNSS Base-Band Hardware and Software
- ☆ GNSS Algorithms, Software Design and Development
- ☆ GNSS Integrity Augmentation system design
- ☆ GNSS Augmented receiver design and development
- ☆ GNSS signal generation technology
- ☆ Embedded CPU, FPGA, RTOS, C++, Matlab, GIS

**Well established team with 10 years experiences.**



# OLinkStar Advanced GNSS Training Courses



OLinkStar Co., Ltd.

Our students on GNSS are all around China.

Welcome to visit OLinkStar Co., Ltd.

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**Thanks!**