Oscar Firmware V2.0.50 Release

January 31, 2023

Overview

This release is V2.0.50, and the model targeted for the release is Oscar. This firmware supports the upgrade through the host's built-in storage and wireless upgrade. Please upgrade the firmware according to the upgrade guide.

Features

➢ Supports multiple constellations &frequencies:

  GPS L1 C/A, L2C, L2P, L5

  GLONASS L1 C/A, L2 C/A

  BeiDou B1, B2, B3,support BDS-3

  Galileo E1, E5a, E5b

  QZSS L1 C/A, L1C, L2C, L5

➢ Supports 576 channels

➢ 410-470MHz UHF radio, 4G network, Wi-Fi, Bluetooth, NFC

➢ Various working modes

➢ Up to 16 hours working in 4G/3G/2G network and Rover radio mode

Change from Previous Versions

Issue	Type	FW
Formal release		V2.0.50
Add voice broadcast of GNSS firmware upgrade	New function	
Optimize the flashing logic of LED indicators when upgrading GNSS firmware	Bug fix	
Optimize logic to avoid GNSS upgrade failure or long time no satellite search	Bug fix	
The new firmware version can be displayed correctly after upgrading GNSS firmware	Bug fix	
Update FGO tilt library and support IMU quick start	Bug fix	
Fix the flashing logic of LED indicators during tilt initialization of the Ultimate version	Bug fix	
Fix the handover problem of the differential data format of the built-in radio station broadcast by the base station	Bug fix	
Fix the power display to avoid the abnormal display	Bug fix	
Other improvements to program functionality and stability	Bug fix	
Formal release		V2.0.3
The tilt algorithm updates using the FGO tilt library and adds a dependency library in the firmware package.	New function	
Add host interface button for tilt correction GGA output.	New function	
Repair board TILT calibration function.	Bug fix	
Add backup of device information and registration information to reduce information loss	Bug fix	
Fix the handover problem of the differential data format of the built-in radio station broadcast by the base station.	Bug fix	
The distinction between antenna ARP and APC positions is added.	New function	
Modify radio transceiver to reduce the differential age of differential data.	Bug fix	V2.0.3RC1
Add iontuc information to the static record binary file.	New function	
Fix the communication problem caused by program jamming when switching modes.	Bug fix	
Switch board serial port baud rate for upgrade to 115200, try to reduce bit error rate.	Bug fix	
Temporarily remove the process of automatically restarting the board after power on, and recover the faster speed of searching stars.	Bug fix	
Abnormal upgrade of firmware package of the whole machine and display delay of star.	Bug fix	
Fix the handover problem of the differential data format of the built-in radio station broadcast by the base station	Bug fix	

Other improvements to program functionality and stability	Bug fix	
Formal release		V2.0.2
Modify the control logic of NMEA output to Bluetooth to avoid bluetooth disconnection caused by high frequency data accumulation during Bluetooth transmission.	Bug fix	
Later versions can be forcibly rolled back and upgraded using the BUILT-IN USB flash drive of Oscar.	New function	
5 seconds after the static recording is enabled to record formally to avoid the incorrect time interval of the first several packets of static files.	Bug fix	
Prolong the startup waiting time to ensure that the board can communicate properly when the board version is checked. Otherwise, the board is not initialized when the board version is updated.	Bug fix	
Perfect the registration code application logic, in the case of star search, updating the registration code takes effect within 30 seconds without restarting.	Bug fix	
Make sure the registration code is out of date only if the star search gets the correct time.	Bug fix	
Fixed a situation where static recording ended with a stop but failed to stop.	Bug fix	
Fixed network connection problems caused by 4G port still working when wifi is started.	Bug fix	
Optimize Ntrip connections.	Bug fix	
Other improvements to program functionality and stability.	Bug fix	V2.0.2RC5
RC4 version Oscar interface error touch no submenu button is the occurrence of the program stuck.	Bug fix	
Fixed the issue of voice prompt playing twice when bluetooth is disconnected.	Bug fix	V2.0.2RC4
Fixed an issue where the Basic version of the LED status light does not work properly.	Bug fix	
Improve TCPPush and TCPServer features of Datacast.	Bug fix	
Fixed the issue that configuring the radio frequency list through bluetooth command does not take effect.	Bug fix	
Adjust the system initialization logic to solve the bluetooth non-response problem caused by the board startup failure in some cases.	Bug fix	V2.0.2RC3
Added Russian language interface.	New function	
Ntrip Caster function added.	New function	
Solved ROVER+CORS/PDA can not be set correctly.	Bug fix	V2.0.2RC2
Added the WIFI STA mode setting DHCP and static IP function	New function	
Solve the problem that The CORS connection mode of China Mobile	Bug fix	

does not work properly.		
Fixed the Crash for Oscar which is without radio.	Bug fix	
Add static recording and GGA output at 20Hz.	New function	V2.0.2RC1
Added the wireless upgrade operation page on the display.	New function	
Added device operation password setting and password verification and update functions.	New function	
Added the function of setting cut-off Angle to default.	New function	
Adjust the name displayed on the USB flash drive when connecting to PC through USB cable (DATA, UPDATE).	New function	
Added China Mobile CORS connection support.	New function	
Solve multiple electronic bubble chips installed at the same time caused by the program crash or a condition in which a tilt measurement is not available.	Bug fix	
Formal release		V2.0.1
Adjusted the traffic limiting policy for external radio transmissions, no longer limiting satellite constellations and numbers.	Bug fix	
Adjusted the parameters of radio transmission to reduce the delay of radio transmission.	Bug fix	
Adjusted the amount of data in base station radio mode +RTCM2.3.	Bug fix	
Update the firmware version of the WIFI module.	New function	
Added the ability to push outgoing data to the server via TCP.	New function	V2.0.1RC4
Added OTA upgrade capability to upgrade Oscar using host 4G network.	New function	V2.0.1RC3
Fixed an issue with incorrect static record status updates when NUWA is disconnected and reconnected.	Bug fix	V2.0.1RC2
Fixed program crash problem caused by certain situations.	Bug fix	
The mechanism of setting adaptive control board data amount according to air wave is added to improve the stability of radio transmission.	New function	V2.0.0RC1
Added network output interface (port 8000), which can be used as NMEA/Tilt log output port when WIFI is enabled, or differential data output interface in base station mode.	New function	
Added control WIFI module setting to Station mode through Bluetooth and key/panel mode, as well as corresponding SSID/ password configuration interface, etc.	New function	
Improved bluetooth connection stability, added multiple Bluetooth connections and automatic recovery mechanism for Bluetooth errors.	Bug fix	
Solved an error when requesting a list of NTRIP mount points when the 4G module was not enabled.	Bug fix	
Formal release		V2.0.0

Solved an issue where pressing the screen select key while setting the radio operating mode would trigger the machine to shut down in some cases.	Bug fix	V2.0.0RC4
Other features and software stability fixes.	Bug fix	V2.0.0RC3
Fixed bug where static Settings changed the constellation of the satellite mask.	Bug fix	V2.0.0RC2
Added base station coordinate keeping function and related Bluetooth interface.	New function	
Fixed license date information error.	Bug fix	
Added the function of setting and querying 4G module parameters through Bluetooth interface.	New function	
The Stop&Go message adds approximate location information.	New function	
Added the ability to upgrade via the host USB flash disk (you can use this function to upgrade after the next official version is released).	New function	
Added the decoding of RTCM1021-1027 data and the corresponding information update.	New function	
Added WiFi information display on OLED screen	New function	V2.0.0RC1
Resolves a problem caused by device time updates when the RTC clock is unavailable.	Bug fix	
Added APN setting function of 4G module.	New function	
Add data flow control in the external radio mode of the reference station and adjust the radio mode flow control.	New function	
Traditional Chinese support has been added to the host panel.	New function	
Added the function to query the working status of WIFI through the web page.	New function	
Added the ability to manage user logins through web pages.	New function	
Added the ability to query device information and upgrade device firmware version via web page (you can use this function to upgrade after the next official version is released).	New function	
Added the web page display positioning information, as well as the constellation and frequency point satellite information function.	New function	
Added the function of inquiring the working status of the equipment through the web page, and configuring the working mode and related parameters of the equipment .	New function	
The WiFi function is enabled and the embedded Web service function is opened, which can be configured as a hot spot for the device to connect and access the Web page service of the host device.	New function	
Solved the problem of incomplete O file tail information caused by manual stop of static recording in the recording process of RINEX, which resulted in TGO reporting error.	Bug fix	v1.4.4

Other improvements in program functionality, stability, and performance.	Bug fix	v1.4.4RC1
Solved an issue that static recording would not work in some modes.	Bug fix	
Solved the problem of no GGA output caused by NMEA frequency setting error.	Bug fix	
Fixed an issue that caused NUWA to crash when connecting NUWA in Base Station + CORS mode.	Bug fix	
Formal release		v1.4.3
In base station mode, the resolution status of the main screen is displayed as "Base" instead of "Manual Input".	Function of adjustment	v1.4.3RC2
Added the function to operate and use tilt measurements in single device mode.	New function	
Solved the problem of insufficient coordinate precision when configuring base station.	Bug fix	
Adjust the display logic of the panel LED during tilt measurement initialization.	Function of adjustment	v1.4.3RC1
Resolved the issue that the configuration of manual input base station coordinate mode failed.	Bug fix	
Formal release		v1.4.2
The antenna parameter setting and Bluetooth control interface are added to support the calculation of ground point coordinates of the reference station.	New function	v1.4.2RC3
Optimized the board's stability problem.	Bug fix	v1.4.2RC2
Other logical and performance improvements.	Bug fix	v1.4.2RC1
Solved the issue of deleting the log when resetting the board by pressing the button.	Bug fix	
Added separate control switch for NMEA output via Bluetooth and serial port; added GLL selection; added NMEA frequency selection (Nuwa interface part to be completed).	New function	v1.4.2RC1
Fixed the failure of satellite system shutting down QZSS .	Bug fix	
Fixed the problem with mask elevation angle not working for some models.	Bug fix	v1.4.1
Solved the problem that the required information for tilt cannot be synchronized caused by the output GLL information has disordered code.	Bug fix	v1.4.1RC1
Solved the problem of no antenna information after the TRS data of static record is converted by the tool.	Bug fix	
Added the output of tilt measurement results when an unauthorized Bluetooth is connected.	New function	
Solved the problem that GGA cannot be output separately when NMEA is configured via Bluetooth and output through serial port.	Bug fix	

Formal release		v1.4.0
Canceled the B2A observation output of BeiDou 3rd generation for static recording of RINEX3.02 format. Added RINEX3.04 format for this observation output.	Bug fix	v1.4.0RC5
Unified tilt state LED and Nuwa tilt valid state, optimized independent RTK and IMU status.	Bug fix	
Added Debug mode.	New function	v1.4.0RC4
Added satellite constellation selection function.	New function	
Added radio CallSign function.	New function	
Readjust tilt status LED display, optimized independent RTK and IMU status.	Bug fix	
Improved battery change mode support.	New function	v1.4.0RC3
Added French support, adjusted Japanese font.	New function	
Adjusted the tilt state LED display, RTK and IMU state become independent.	Bug fix	
Solved the problem that tilt measurement is not available in some cases.	Bug fix	v1.4.0RC2
Add tilt measurement information to serial port output.	New function	v1.4.0RC1
Updated the log download feature.	New function	
Added battery change mode, added Bluetooth connection status display.	New function	
Oscar version upgrade method is updated, subsequent versions need to press the FN button after boot up to upgrade.	New function	
The problems of insufficient static recording time, no antenna information processing after static recording and other issues such as static record display, time settings are solved.	Bug fix	
Updated the tilt measurement function, greatly improve the availability and accuracy of tilt measurement; Move tilt measurement to the working mode configuration on the Oscar screen menu.	New function	
Fixed the problem that the computer becomes blue screen when the previous version of Oscar being connected to the computer as a USB flash drive.	Bug fix	V1.3.2RC5
Temporary solution of the issue that the screen language becomes English after upgrade.	Bug fix	
Fixed the issue where the board could not obtain coordinates after upgrading or resetting	Bug fix	
Added the ability to download log with one click (synchronize the log to the USB drive partition of Oscar) and remove the original way of downloading from the USB drive.	New function	v1.3.2RC4
Resolved a problem with partitions becoming read-only.	Bug fix	

Description	Type	Version
Tuning and optimizing the logging system, you can connect Oscar as a USB flash drive to your computer to copy log documents directly.	New function	v1.3.2RC3
Solved the problem that the indicator light shows incorrectly in some cases during tilt measurement.	Bug fix	v1.3.2RC2
Optimized voice prompt volume and prompt content.	New function	
Added the ability to switch audio prompts over Bluetooth.	New function	v1.3.2RC1
The interface of audio prompt through button and LCD panel switch is added for middle and high-end models	New function	
Added audio prompt (English, Chinese) function	New function	
Formal release		v1.3.1
Fixed program crash exit due to system file node creation error under unknown conditions	Bug fix	v1.3.1 Rc3
Added logdown command. Supports setting log download via Nuwa.	New function	
Optimized static data and log space management	New function	v1.3.1 Rc2
Added radio - free hardware support	New function	
Added 20Hz static data recording function, and solved some software bugs in the static data recording part (out of order, inconsistent time interval, etc.)	New function	
Limits the radio editor's custom frequency to the radio support frequency range	New function	v1.3.1 Rc1
Added the Oscar host card type and version number to display through the screen (device information ->GNSS information) and NUWA (device information) query	New function	
Solved some upgrade incompatibility problems caused by GNSS board version number format change of Oscar host	Bug fix	
Improved the response speed of the handbook software and solved the problem of some command timeout resending	Bug fix	v1.3.0
Fixed some board card storage mount issues	New function	
Improved flashing data light display	Bug fix	v1.3.0 Rc5
Add the mandatory upgrade function of board card	New function	
Add the ability to automatically upgrade GNSS board firmware	New function	v1.3.0 Rc4
Unify all models of the machine upgrade package	New function	v1.3.0 Rc3
Disable write permission after USB access to computer	New function	v1.3.0 Rc2
Optimize GNSS board card output information, reduce the amount of board card data, and reduce delay	Bug fix	
Other system stability updates	New function	
Unified the product upgrade process of different models, and only one upgrade package is needed for the subsequent upgrade of all versions of hardware	New function	

Added function of the amount of RTCM data adapts to the station air baud rate in the base station + radio mode.	New function	
Added custom radio channel and frequency features	New function	v1.3.0 Rc1
Automatic adaptation of the station module according to PN number, increasing the frequency, protocol and baud rate of the station module.	New function	
Automatically match the system model (Basic, Advanced, Ultimate) and working mode according to product PN number	New function	
The static record section adds information about the QZSS and Galileo systems	New function	
RTCM data output for QZSS and Galileo systems in base station mode has been added	New function	
Other improvements to system stability	New function	v1.2.12
Added support for New board, adjust board message output	New function	
Send the updated status to Nuwa after the static measurement (single or automatic) is completed.	Bug fix	v1.2.11
Add the information of GALILEO and QZSS satellites in the static record RINEX file.	Bug fix	
Add the function of setting the air baud rate of the radio on the screen of the OSCAR machine and match the radio protocol.	New function	
Solve the problem of incorrectly recorded GALILEO satellite observation files in static recorded RINEX files.	Bug fix	
Solve the problem of time error and no location information in the static recorded RINEX file.	Bug fix	
Change the connection strategy of the 4G module, improve the stability of the network connection and improve the error recovery mechanism, and turn off the signal strength and system information display on the display when the SIM card is not present.	New function	
The tilt measurement function of the ultimate is turned on to optimize the available status judgment of tilt measurement.	New function	v1.2.10
Fixed the problem that some U disks cannot be upgraded correctly during system upgrade.	Bug fix	

Optimized the menu display of device disk information on the display interface of the advance and ultimate.	New function	
Fixed the system block problem after resetting the board (triggered by pressing the pwr button 5 times).	Bug fix	
Fixed occasional system unresponsiveness when frequently connecting and disconnecting Bluetooth devices.	Bug fix	v1.2.9
Added the function of downloading log files to U disk.	New function	
Added Bluetooth information display in device information.	New function	
Added status information display of 4G module in device information.	New function	
Added support for Nuwa to configure NMEA serial output.	New function	
Modified the problem that the machine cannot be set to output NMEA messages when NMEA connection and Oscar mode connection are switched multiple times.	Bug fix	
Added VRS ON / OFF setting under PDA CORS connection mode.	New function	
modify the missing position of the rinex file header.	Bug fix	
Fixed occasional system freezes when switching device modes.	Bug fix	
Increase disk capacity display and disk file deletion.	New function	
Add auto / manual selection option for static recording.	New function	
Add NMEA message serial output function, add serial baud rate setting, NMEA sentence selection, etc.	New function	v1.2.8
Add satellite information display and solution status display on the homepage of the display.	New function	
Fixed an issue where satellite information was not displayed after Nuwa connection	Bug fix	v1.2.7
Solve the problem that the system keeps resetting when setting the network base station mode.	Bug fix	
Added the Galileo ephemeris record file in the Rinex3 format for static recording, and other problems in static recording.	Bug fix	v1.2.5

Solved the problem that the differential data is output by the serial port when the base station is set to the base station handbook network.	Bug fix	
Open Galileo system.	New function	v1.2.4
Solved the problem of lack of Beidou ephemeris during static recording and incorrect station ID record, and solved the problem of synchronization between key operation and manual display of static record	Bug fix	
	Bug fix	
Modify the status of the power light to be on during the boot process.	Bug fix	
Added model verification during system upgrade to solve the problem that the system may become brick during the upgrade	Bug fix	
Added Basic, Advanced, and Ultimate releases.	New function	v1.2.3
Add FN button to enable static function.	New function	
Fixed the problem that rtd, rtcm2 data is not solved.	Bug fix	
Fixed the synchronization failure between Oscar system time and GNSS time, and a series of problems (such as incorrect static recording time).	Bug fix	
Solve the problem that Nuwa failed to configure rover PDA mode.	Bug fix	v1.2.2
Solve the problem that the status of the Ultimate indicator does not match (requires additional configuration)	Bug fix	
Solve the problem of black screen freeze	Bug fix	v1.2.1
Solve the problem with the accuracy of the core board card.	Bug fix	v1.2.0
Add several TCP connection methods	New function	
Add the NMEA mode of the Bluetooth link device.	New function	
Added some functions of tilt measurement (not released yet).	New function	
Improve the license management function and implement the license update (requires manual cooperation)	New function	

Add Rover TCP and Base Ntrip connection method (requires TC20 cooperation, the host can operate by buttons and display screen, this function is temporarily blocked).	Bug fix	v1.1.0_Rc1
Realize the function that the LED and OLED display display the upgrade status during the upgrade.	New function	
Add the function of programming SN number to FUSE	New function	
Solved the problem that the information cannot be refreshed in time after the license expires; the remaining date of the license is displayed.	Bug fix	v1.1.0
Improved the U disk upgrade function, and added display screen and LED prompts during the upgrade process.	Bug fix	
Solved the problem that when Nuwa sets static measurement, 10Hz displays 10S.	Bug fix	
Solved the problem that the program crashed without a license.	Bug fix	v1.0.0_Rc5
Added U disk upgrade function.	New function	
Solved the problem that the language of the LCD panel cannot be switched.	Bug fix	
Solved the stability issue of 4G network connection	Bug fix	v1.0.0_Rc2
Solve the problem of static non-recording caused by reading the wrong storage capacity in static measurement	Bug fix	v1.0.0_Rc2
The first two digits cannot be edited when the rover is setting the TCS network to edit the BaseID	Bug fix	