Nexus DSC firmware/catalogues releases

1.4.20 released 18th of September 2023
Firmware and catalogues

Firmware date: 2022.09.18

Changes:
- Added support for AZ100 mount drive system
- Changed 'Select List' to 'List' in Find->From Observing List mode)

Bug fixes:
- Fixed a problem with disappearing status line in the top right corner of the display (time, battery, GPS, WiFi)

Catalogues: ADCTS133.BIN
Changes:
- Updated all double star catalogues
- Updated all open cluster catalogues to fix a problem with observing lists

1.4.11 released 17th of November 2022
Firmware and catalogues

Firmware date: 2022.11.17

Changes:
- Updated menu icons
- Changed the order of encoder steps in Settings->Telescope->Adjust — now the order is Altitude/Dec encoder steps then Azimuth/RA encoder steps; the same order is in Settings->Telescope bottom line
- Added three alignment methods: one star, two stars without altitude reference and three stars
- Changed reporting of alignment status for the two star alignment
- Added a mode to display current telescope position in equatorial and horizontal coordinates (Find->Telescope Position)
- Changed to show all catalogues in alphabetical order
- Implemented additional handling of LX200 commands for compatibility with Stellarium Mobile
- Added handling of GOTO commands from Stellarium for Desktop
- Improved handling of AZ-EQ5/6 and AZ-GTi mounts
- Changed to use the currently available orbital elements from MPC
- Added a test mode for display
- Added 'UNLOCK'/'LOCK' function when using Astro Lock with a motor driven telescope mount
- Changed handling of modifying of Serial/USB port parameters to take affect without a need to power cycle the unit

Bug fixes:
- Fixed a problem with incorrect date reported by the GPS module
- Fixed a bug with displaying parameters of double stars
- Fixed a bug in MPoint — when updating already added object it was adding a new one instead
- Fixed a bug with setting slew rates to ServoCAT when using a planetarium application
- Fixed a bug when incorrect target coordinates are returned when using LX200 protocol
- Corrected to return a valid alignment status through LX200 protocol

- Fixed an issue when the keypad backlight brightness was not restored when the ESC was pressed

Catalogues: ADCTS130.BIN
Changes:
- Updated all double star catalogues
- Updated observing logs from Steve Gottlieb

1.3.7 released 10th of June 2019
Firmware and catalogues

Firmware date: 2019.06.10

Changes:
- Added indexed access to observing lists' entries

Bug fixes:
- Fixed a problem with not saving enabled catalogues in Settings->Find mode
- Fixed a problem with the disengage limit being ignored when Astro Lock is engaged

Catalogues: ADCTS128.BIN
Changes:
- Corrected King open clusters catalogue
- Corrected NGC catalogue (a number of objects were erroneously defined as globular clusters)

1.3.6 released 3rd of June 2019
Firmware and catalogues

Firmware date: 2019.06.01

Changes:
- Changed the user interface to remove redundant OK on-screen button
- Modified settings to include separate settings for Align and Find modes
- Added a one star alignment mode
- Added an option to display horizontal coordinates in Find mode
- Added a daily visibility graph to Find mode
- Changed font size to a large font to display catalogue name and object name in Align and Find mode
- Modified the Align I/II screens to a tabbed interface
- Modified the Find->From Catalogue screen to a tabbed interface
- Added a sound indication when establishing communications with ServoCAT
- Added separate options to limit the display of objects within altitude limits for Find and Align modes

Bug fixes:
- Fixed a problem with incorrectly functioning sync in some circumstances

Catalogues: ADCTS127.BIN
Changes:
- Updated Common Named catalogue
- Updated the WDS to the latest version
- Corrected Named Stars catalogue
- Updates some catalogues to be correctly referenced by Steve Gottlieb's observing notes

<u>1.2.1 released 5th of November 2018</u>

Firmware and catalogues

Firmware date: 2018.11.05

Changes:
- Implemented a new tracking method with AstroLock™ that can be tuned in Settings->AstroLock
- Added an ability to switch quickly to a catalogue in Find->From Catalogue mode; current catalogue index is displayed in this mode
- Added display of catalogue indices in settings specifying which catalogues are displayed in Find->From Catalogue mode and in Tour/Identify modes
- Added paging to object's description and observing log (use 4 and 6 keys to display previous/next three lines of text)
- Added telescope control panel to issue GOTO, Stop and slew commands for telescopes equipped with ServoCAT, SiTech, SkyTracker, ScopeDog; the telescope control panel is available in all Find modes
- Added an option to reverse the scrolling direction when using up/down keys (in Settings->Other parameters->Reverse scrolling)
- Increased the maximum number of objects returned in Tour and Identify modes to 256
- Added display of motors' encoder tics when using SiTech servo controller
- Updated GPS info display
- Added displaying of variable stars information when using GCVS
- Added support for ScopeDog motor controller

Bug fixes:
- Fixed a problem with incorrectly set time and date when using GPS sync
- Fixed a bug preventing Nexus DSC from establishing communications with TheSky X and TheSky HD
- Fixed issues with random telescope moves when scrolling through solar system objects catalogues and connected to ServoCAT/SiTech/SkyTracker motor controllers
- Fixed incorrect behavior when using the OTA on the right side of AZ-EQ6
- Fixed incorrect slewing of AZ-EQ6 when aligning
- Corrected to display seconds correctly for the sidereal clock

Catalogues: ADCTS125.BIN

Changes:
- Added CGCG and GCVS catalogues
- Updated the WDS to the latest version
- Corrected UGCA, Berkley, Czernik, Dolidze, Lynga and Ruprecht catalogues
- Updates most catalogues to be correctly referenced by Steve Gottlieb's observing notes
- Added Steve Gottlieb's observing notes for Index Catalogue and updated NGC observing notes

<u>1.1.28 released 12th of March 2018</u>

Firmware and catalogues

Firmware date: 2017.03.10

Changes:
- Added an option to display only visible objects (within set altitude limits) in Align/Find mode - during scrolling only; selected in Settings->Other Parameters
- Added playing sounds in case of:
a) Finished GOTO
b) Executing a GOTO outside altitude limits

- Added a delayed set of display brightness (the selected brightness is set after the specified delay) — it is set in Settings->Display/Keypad
- Added a sleep mode for display (the display is turned off after inactivity for the selected time period, turned back on by pressing any key) — it is set in Settings->Display/Keypad
- Added an option to select the displayed precision of the distance to the object (number of digits after the decimal point) — it is set in Settings->Display/Keypad
- Added Solar system objects tracking (including Moon)
- Implemented new tracking method when used with ServoCAT/SiTech/SkyTracker
- Enabled selection of the epoch in Find->Object at RA/Dec mode (J2000 or JNOW)
- Enabled selection of the epoch for communications (J2000 or JNOW)
- Added observation logs for all NGC object from Steve Gottlieb
- Added an option to use Nexus DSC as a WiFi to serial or WiFi to USB serial bridge
- Allowed fast paging when selecting catalogues (4- previous page, 6 - next page)
- Allow issuing GOTO/slew commands from Nexus DSC when using it with ServoCAT/AZ-EQ6/5
- Added a preliminary support for AZ-EQ5/AZ-EQ6
- Improved the MPoint (enabling the model is now obvious)
- Added a display of calculated pointing model terms in MPoint Analyse mode (by pressing the right arrow key)

Bug fixes:
- Fixed a problem with the epoch in the Identify mode
- Fix issues with the WiFi (in some cases Nexus DSC would reset itself when used with ServoCAT and SkySafari)

Catalogues: ADCTS122.BIN
Changes:
- 22 new catalogues were added (please refer to the document 'List of catalogues used in Nexus DSC' for the list) with the total number of objects of over 2.44 million

1.1.25 released 30th of March 2017
Firmware and catalogues

Firmware date: 2017.03.28

Bug fixes:
- Fixed a problem with being unable to perform the two star alignment when the mount type is set to either German Equatorial or Equatorial Fork
- Corrected occasional freezing when using some catalogues
- Stopped overriding the display precision when changing telescopes

Catalogues: ADCTS118.BIN
Changes:
- PK and PN catalogues have been corrected to allow correctly select an object from those catalogues

1.1.24 released 24th of January 2017
Firmware and catalogues

Firmware date: 2017.01.24
New:
- Added a sync function
- Added ability to use SkySafari to perform the two star alignment
- Optimized to handle up to 500000 steps per second encoder speeds

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- Added ability to sync on an object from SkySafari
- Added an option to select the precision of displayed offsets to the target object (0.1°,0.01°,0.001°)
- Changed names of stars in Named Stars catalogue in accordance with spellings adopted by IAU

Bug fixes:
- Corrected occasional freezing when turning Nexus DSC on while encoders are rotating
- Stopped occasional freezing in Identify/Tour mode when Bayer catalogue was selected
- Enabled altitude limits in case of receiving commands from SkySafari

Catalogues: ADCTS116.BIN
Changes:
- Some catalogues have been reviewed and corrected

1.1.19-1.1.23 — internal releases

1.1.18
Firmware only

Firmware date: 2016.05.10
New:
- Added an option to enable/disable catalogues displayed in the list of Find->From Catalogue (in Settings->Other Parameters)
- Added 'OK' button press emulation from ServoCAT's hand controller
- Added sounds for the alignment (can be disabled in Settings-> Other Parameters)
- Changed the layout of Telescope settings
- Changed the layout for Test->Encoders to display the coordinates in degree in a large font instead of encoder tics
- Added an option to reverse the directional arrows

1.1.16-1.1.17 — internal releases

1.1.15 released 23rd of September 2015
Firmware and catalogues

Firmware date: 2015.09.21
New:
- Starts at the Align icon now

Bug fixes:
- Corrected issuing a GOTO command to ServoCAT when the WiFi protocol is set to ServoCAT
- Stopped occasional freezing in Identify/Tour mode when Comets were enabled in the catalogues list

Catalogues: ADCTS115.BIN
New catalogues:
- Asterisms
- Barnard dark nebulae
- Common Named deep sky objects
- Galactic planetary nebulae (listed as Planetary Nebulae)
- Perek-Kohoutek planetary nebulae
Note: Some catalogues in this release were based on the database compiled by Saguaro Astronomy Club — with permission.

Changes:
- NGC catalogue has been reviewed and corrected
- MCG has been corrected for objects with declination below 0 degrees

1.1.11 released 3rd of September 2015
Firmware and catalogues

Firmware date: 2015.09.3
New:
- Designators containing Greek letters are now shown the name of the letter in English

Bug fixes:
- Corrected the default network mask

Catalogues: ADCTS11.BIN
Changes:
- Bayer, Bright Stars and Flamsteed catalogues have been corrected to correctly show information for double stars

1.1.10 released 2nd of September 2015
Firmware and catalogues

Firmware date: 2015.09.01

New:
- Enhanced Identify mode
- Added two Tour modes:
- Tour within a specified radius of where the telescope is pointing
- Tour within a constellation
- Object display now shows if the object is outside the altitude limits
- Adding an object to the MPoint sampling run can now be done in Find/Identify/Tour modes
- Added two additional Test modes – Serial and USB
- Added a preliminary support for SkyTracker
- Added Asterisms, Bayers, Flamsteed, Palomar, SAO and Terzan catalogues
- Added support for asteroids and comets
- Numeric keypad can now be used to select an object for the alignment
- Named Stars and Planets are now included in Identify/Tour modes

Bug fixes:
- Incorrect local time when DST is enabled
- Corrected some entries in Messier catalogue
- Fixed a bug with reading Observing list
- Fixed a bug in handling of communications with Stellarium
- Corrected the position of 'Use Model' checkbox in MPoint Analyse
- Fixed problems using Nexus DSC with TheSky (versions 6 and X)
- Fixed a problem with imprecisions of the GPS location
- Fixed incorrect directions to objects when using a German equatorial mount and selecting an object over the meridian
- Fixed incorrect display of declination for objects at 0 to –1 degrees

1.0.15–1.1.9
Intermediate releases

1.0.14
Fixed a crash when updating catalogues and the micro SD card is not present
Corrected the MCG database
Changed the brightness level to be in 0 to 255 range
Added support for observing lists
Enabled support for SiTech motor controller
Enabled Stellarium protocol
Changed the large font to a font with thin lines

Fixed a bug that prevented saving the value of the altitude reference angle with the current scope
'GPS sync' synchronises the date now as well as the time
Fixed incorrect reporting of alignment error

1.0.8
Updated to support longer descriptions for objects.
Updated catalogues to include Arakelian galaxies, Melotte and MCG.

1.0.7
Fixes problems with performing GOTO commands with latest ServoCAT's firmware.
Added altitude limits for GOTOs.
Enabled Equatorial Platform timer.

1.0.5
Added more parameters to WiFi settings.
Fixed a problem with changing WiFi settings.
Enabled a test mode for WiFi.
Enabled GOTO commands for ServoCAT (when using a planetarium software)

1.0.4
Added a function to restore the factory settings.
Fixed a problem with GPS information screen – UTC time.
Changed the battery current to reflect the description in the User Manual.

1.0.3
Fixed a problem with getting the GPS location (for Norther hemisphere).
Fixed a problem with GPS information screen – satellites in view.
Encoder test mode works now with encoders other than 10K steps
Fixes issues with incorrect setting of telescope parameters (when switching between telescopes)
WiFi enable/disable now works without a power cycle

1.0.0
Initial release