Nexus DSC *Pro*

Introduction

Nexus DSC *Pro* is a digital setting circles computer with optional WiFi interface for your telescope. It works with most popular telescopes – on equatorial or Alt-Azimuth mounts.

Nexus DSC *Pro* is a very sophisticated device for locating celestial object in the sky. Only two rotary encoders have to be fitted to your telescope in order to be able to locate celestial object with Nexus DSC *Pro*.

Product Features

Below is a short outline of main features of Nexus DSC *Pro*.

Technical specifications

- CPU – 32 bit, Arm® Cortex®-M7 400MHz
- Memory – 32MB internal FLASH
- External memory – up to 1TB on a micro SD card
- 3.12" Red OLED screen (256x64 pixels) with 256 levels of brightness
- Full numeric keypad with adjustable back light (100 levels)
- 0.7W speaker with a full volume control (0-100)
- Built-in GPS receiver with support for GPS and GLONASS
- Environmental sensor – barometric pressure, relative humidity and temperature
- Built-in 5200mAh(19.24Wh) rechargeable Lithium battery
- Operating temperature range from -20 ^{o}C to +50 ^{o}C (-5 ^{o}F to +120 ^{o}F)
- Humidity 10%-90% non-condensing
- Optional WiFi interface
  - FCC / CE/ IC certified 2.4GHz IEEE 802.11b/g transceiver (GS2011MIPS)
  - Supports Access Point and infrastructure WiFi networks
  - Secure Wi-Fi authentication schemes
  - Class I WiFi device (up to 150 meters)
  - Uses 2412 ~ 2484MHz Unlicensed ISM band (channels 1-14)
  - Output power 0.08 Watts

- One RS232 port
- One USB port
- Upgradeable firmware and catalogues (firmware is upgraded using the micro SD card)
- Can be charged/powered by an external power source of 5-16V DC; can be charged from a cigarette lighter socket in a car
- Reverse polarity protection
- RoHS compliant
- Size: 140 x 120 x 30mm (5.5" x 4.7" x 1.2")
- Weight: 260g (9oz)

Digital setting circles specifications

- Intuitive graphical user interface
- Supports Alt-Az mounts, Equatorial Mounts, Equatorial Platforms
- Supports a one, a two star and a three stars alignment methods
- Filter objects by magnitude, constellation and object type
- Internal FLASH memory contains a database of more than 73500 objects:
  - Named stars
  - Bright stars, Flamsteed, Bayer, Asterisms
  - Planets, Sun, Moon
  - Common named objects
  - Full catalogues: Abell Galaxy Clusters, Abell Planetaries, Arakelian, Arp Peculiar Galaxies, Barnard, Caldwell, Collinder, ESO, Herschel, Hickson Compact Groups, King, LBN, Markarian galaxies, Messier, Minkowski planetaries, IC, NGC, Palomar Globulars, PK, PN, Sharpless, Stock, Terzan, Trumpler, UGC
- More than 2.4 million objects are located on the supplied microSD card:
  - Comets and Asteroids (updatable from the MPC)
  - HyperLEDA catalogue (PGC)
  - MCG, SAO
  - Full Washington Double Stars catalogue
- Displays object's information: magnitude, size, surface brightness, spectral class, double star separations, galaxies morphology, alternative names, rise time, set time, transit time etc.
- Identify function; can also display up to 1024 nearby objects
- Tour function
- Supports a multi point telescope pointing analysis system for telescope pointing corrections
- Supports rotary encoders with up to 9999999 steps per revolution; supports up to 100,000,000 steps per second
- Shows internal battery status – remaining capacity, current power consumption and percentage of charge remaining
- Can be interfaced to a tablet/smartphone/computer using a standards RS232 interface or optional WiFi interface
- Internal real-time clock can be synchronised with GPS time
- Time display of local time, UTC and local sidereal time
- Supports LX200 emulation
- Supports ServoCAT, SiTech, SkyTracker motor controllers