

# **di-GPS mini IIs** **digital images GPS**

## **Users Guide**

Ver 1.00

Please visit our website [www.di-gps.com](http://www.di-gps.com) for the latest version of the user guide

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## Introduction

Thank you for purchasing the di-GPS mini IIs Receiver. The di-GPS mini IIs (digital images GPS) is specially designed for DSLR (Digital Single-lens reflex) camera. It provides real time position (latitude, longitude, elevation) and the precise time (UTM time) information to your DSLR camera. It records the locations to each digital image file so that you would never forget the exact location where you took the pictures.

di-GPS mini IIs allows you to save your present location data to your digital image file. Its State-Of-The-Art technology provides extremely fast TTFF (Time-To-First-Fix), unrivaled high sensitive and superior performance at virtually any outdoor environments. The di-GPS mini IIs can work in a place where GPS was not possible before, in the woods, under very heavy foliage, canyon, terrain obstructions, in cities with densely populated high-rise buildings and even inside a train or a car, with no external antenna required. It is designed to meet the rigorous demands of today's digital photographers.

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## Warning / Precaution for Use

- Keep out of reach of children. This device contains small parts that may pose a choking hazard. Consult a physician immediately if a child swallows any part of this device.
- Under no circumstances should you attempt to disassemble the product and repair it yourself. Doing so may result in electric shock or product malfunction. Should the product break open as the result of a fall or other accident, send the unit to Dawn Technology Limited service for inspection. For more information, please visit our web site at [www.di-gps.com](http://www.di-gps.com).
- Do not handle with wet hands or immerse in or expose to water or rain. Failure to observe this precaution could result in fire or electric shock.
- Do not use in the presence of flammable gas. Failure to observe this precaution could result in explosion or fire.
- Do not expose to flame or excessive heat.
- Do not expose to high temperatures
- Do not leave the device in a closed vehicle under the sun or in other areas subject to extremely high temperatures. Failure to observe this precaution could result in fire or in damage to the casing or internal parts.
- Turn off immediately in the event of malfunction. Should you notice smoke or an unusual smell coming from this device, remove the 10 pins connector immediately and send the unit to Dawn Technology Limited service for inspection. For more information, please visit our web site at [www.di-gps.com](http://www.di-gps.com).

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## Part Names



- A – Power Mode Switch
- B – Status LED
- C – Remote Control Socket



- E – Flash Accessory Shoe Mount
- F – Camera Strap Mount

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## Mounting

The di-GPS mini IIs receiver provides two mounting method. The GPS unit can be mounted on the flash accessory shoe or attached to the camera strap.



**di-GPS mini IIs Mounted on the flash accessory shoe.**



**di-GPS mini IIs attached to the camera strap with strap mount accessory.**

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## Connect a di-GPS mini IIs

Connect the DSLR camera and di-GPS mini IIs as described below.

1. Turn off the camera.
2. Remove the Cap from the 10 pin remote terminal on the camera body.
3. Store the Cap in a safe place.
4. Connect the di-GPS mini IIs to the camera's GPS port.
5. Switch the power mode to "On" or "Auto".
6. Turn the camera on.
7. If the di-GPS mini IIs is properly connected, the camera will display a blinking icon in the top control panel as the GPS receiver is searching for a signal. The icon will stop blinking once signal has been established and the receiver is ready to supply the current position.

di-GPS mini IIs will automatically detect the connection of the camera. It cannot be turned on when the camera is not connected whatever the power mode switch is set to "On" or "Auto". Both "On" and "Auto" mode only function when the camera is properly connected.

Each satellite broadcasts a digital message that contains two types of information. One type is ephemeris data, which includes the assigned serial number of the satellite; the status of the satellite (healthy or faulty); the current date and time. The second type is almanac data and includes precise orbital position of every satellite in the system.

At the initialize stage, di-GPS mini IIs needs all these data for the position fixed. It usually takes a minute to few minutes to receive all data. An open sky outdoor environment will enable faster acquisition process. It will take a longer time at a weak signal environment. Once di-GPS mini IIs locked to the satellites, it will take a few seconds for reacquisition even at weak signal environment.

### Note

- di-GPS mini IIs cannot be turned on when the camera are not connected.
- Please refer to user manual of your DSLR for more information on taking photographs with a GPS.
- Be sure to turn off your camera before disconnecting the di-GPS mini IIs. Do not connect or disconnect the di-GPS mini IIs while the camera is on. Failure to observe this precaution could cause a malfunction of the camera.
- Do not carry the camera by the di-GPS mini IIs or subject the camera or cord to physical shocks while the cord is connected. Failure to observe this precaution could result in physical damage of the cord.
- Re-place the caps on the camera when the terminals are not in use.

## Power Mode Switch

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### **Power mode switch set to "On"**

The di-GPS mini IIs will remain on whether the camera is turned on or off. The di-GPS mini IIs will continue to receive and track all satellites and provides instant location information to camera.

### **Power mode switch set to "Auto"**

#### **D90 GPS menu**

##### 1. Auto meter off

“GPS – Auto meter off” set to On (Enable)

The di-GPS mini IIs will turn on when the camera’s metering system is on. The di-GPS mini IIs will start looking for the satellites after the camera’s metering system is on. It may take a few seconds to few minutes to have the first position fixed, depends on the visibility of the satellites.

“GPS – Auto meter off” set to Off (Disable)

The di-GPS mini IIs will turn on when the camera is turned on and it will be turned off when the camera is turned off. The di-GPS mini IIs will start looking for the satellites after the camera turn on. It may take a few seconds to few minutes to have the first position fixed, depends on the visibility of the satellites.

##### 2. Position

The GPS position can be read on the LCD display of the camera.

Select “GPS” in the Setup Menu

Select “Position” from GPS Sub-menu

The following information will display on the LCD screen if the GPS position fixed:

Latitude : ddd mm.mmm

Longitude : ddd mm.mmm

Altitude : xx

Heading (not support for di-GPS mini IIs)

UTC: YYYY/DD/MM

### **Power mode switch set to "Off"**

The di-GPS mini IIs will turn off and it will not consume any power from the camera. The remote control socket still works when the unit is off.

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## Status LED indicator for di-GPS mini IIs fix or not fix

LED OFF : Receiver switch off / DSLR camera not connected  
LED Flashing : No fixed, Signal searching  
LED ON : Position Fixed

## GPS Icon on DSLR camera indicator for di-GPS mini IIs fix or not fix

No GPS icon display : di-GPS mini IIs not connected  
GPS icon Flashing : Not fixed. Signal searching  
GPS icon displayed : Position fixed. Current location information will be recorded in the image files.

LED on the di-GPS mini IIs will only represent the status of di-GPS mini IIs but not the reception of GPS data to the DSLR camera.

GPS data are only recorded when the GPS icon displayed in the top LCD panel of the DSLR camera. Please make sure that the GPS icon is displayed before shooting.

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## Specifications

### General

Chipset SiRF Star III Low Power  
Frequency L1, 1575.42 MHz  
C/A code 1.023 MHz chip rate  
Channels 20 channel all-in-view tracking  
Sensitivity -159 dBm

### Accuracy (Open Sky)

Position 10 meters, 2D RMS  
5 meters, 2D RMS, WAAS enabled  
Velocity 0.1 m/s  
Time 1us synchronized to GPS time

### Datum

WGS-84

### Acquisition Time (Open sky, stationary requirements)

Reacquisition 0.1 sec., average  
Hot start 1 sec., average  
Warm start 38 sec., average  
Cold start 58 sec., average

### Dynamic Conditions

Altitude 18,000 meters (60,000 feet) max  
Velocity 515 meters /second (1000 knots) max  
Acceleration Less than 4g  
Jerk 20m/sec max

### Power Source

Powered from DSLR camera via Nikon Rectangular 10 pin connector cable  
Power consumption less than 45mA

### Protocol

Baud rate 4,800 bps  
Output message NMEA 0183

### Interface

"L" Shape Nikon Rectangular 10pin connector direct connect to Nikon D90 DSLR camera

### Physical Characteristics

Dimension 44mm\*36mm\*12mm  
Weight: 40g  
Operating Temperature -10°C to +45°C  
Operating Humidity: 5% to 90%, No Condensing

\* Specifications are subject to change without any notice.

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## Warranty

- Dawn Technology Limited guarantees its product, which is determined to be defective or faulty materials and workmanship, for a period of one year after the date of purchase. During the one-year warranty, Dawn Technology will repair or replace the product free of charges. Please keep your original invoice as proof of purchase.
- Customers who have products covered under the warranty are required to contact Dawn Technology Limited by e-mail for troubleshooting issues before returning product.
- Customer should be responsible for shipping and insurance charges for returning the product to Dawn Technology Limited.
- Charges will be imposed for repair product, which is out of warranty coverage or invalid warranty.
- The guarantee is not valid if defect is due to damage caused by incorrect use, poor maintenance or if alterations or repairs have been carried out by persons not authorized by Dawn Technology Limited.
- For the device to be used correctly, the user should strictly adhere to all instructions included in the user guide and should abstain from any actions or uses that are described as undesired or which are warned against in the user guide.

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