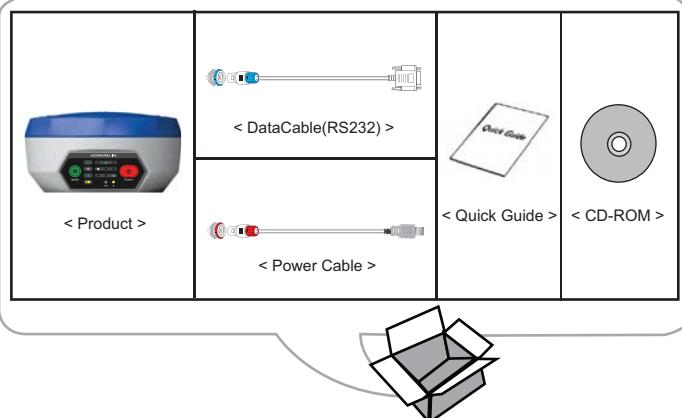


AKN Series(B/S/R) User Manual

Thank you for purchasing the AscenKorea product.
This manual is Describes how to use the AKN Series.
The household appliances (B grade)As one device is registered for EMC,
It can be used in any area.

< Product Components >

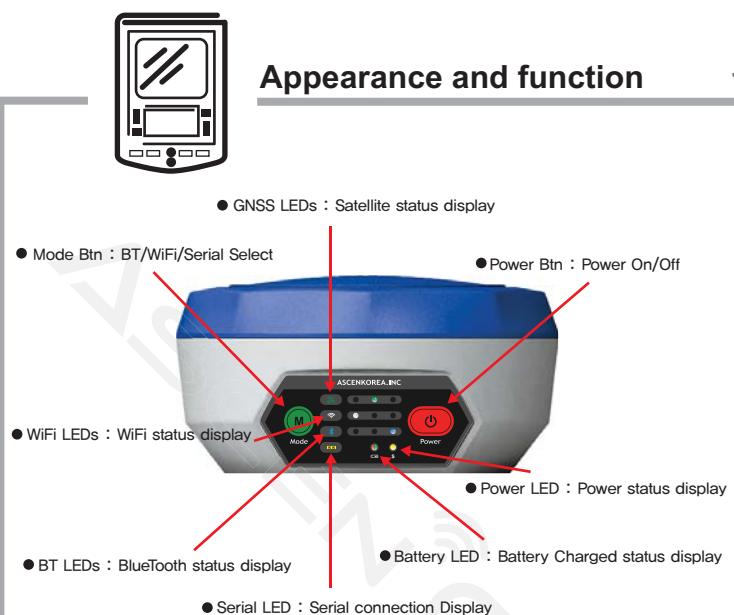


If you are not understanding the contents of this manual, please contact customer support.

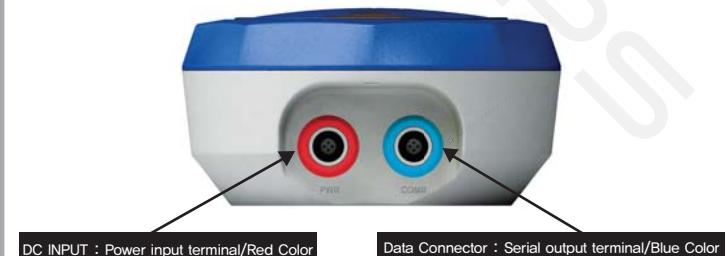
< Customer Center >

Contact phone number : +82-2-858-7810
Internet Support : <http://AscenKorea.com> / <http://FreeNavi.co.kr>
Weekdays : 09:00 ~ 18:00 : customer service
Saturday / Holidays : Closed

Appearance and function 1



[The upper Operation Panel]



[Terminal Part]



Notice before use 2

Thank you for purchasing AKN Series products.

Always better products and services, is the role of AscenKorea.

This product is a receiver of high position GNSS receiver.

GNSS Receiving state	Positional accuracy
SPS(Single Point)	1.5m RMS
DGPS(SBAS)	0.7m RMS

ex) AKN-B Specification

Notice before use



- A. Before use, please check the input voltage of the device, "AKN Series" of the input power must be applied to the **5 DCV**.
- B. Should be used the standard cable provided, other cable may cause a mal function.
- C. For built-in battery, should not be exposed long time under sunlight or around high heat.

Preparation before use 3



To get precision measurement with AKN Series, after turning on the power, should wait a certain amount of time to receive stable GNSS signal.

- A. "AKN Series" is required preparation time to get stable and precise measurements.
- B. Before using, please charge the battery.
- C. After turning on the power, please wait about 10 minutes at the same place.
 - Initial connection may take a little more time.
 - In poor reception areas or places (where the sky is obscured, tall buildings around, tunnels, leafy woods) connection may be delayed or not connected because of the low GNSS signal.
 - If the reception is bad or the connection is delayed, please move to another place with a clear view of the sky.



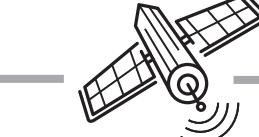
- D. After moving the location, to get stable data at that point at least 1 minutes data receiving.
- E. To get good value of position, GNSS should be located plat and stable position.
- F. To get accurate position, GNSS should be located where open sky and no buildings area.

**AKN connection at a place to be avoided**

Concentrations buildings



In the indoor space

**How to use****There is a built-in battery in this device**

- A. You can turn on when press "Power" button.
- When you press the "Power" button, the green and yellow LED turned on. When you release the "Power" button, AKN Series sound deep after 1 second.
 - When AKN Series turned on, it blink one time all of LED then GNSS and BT LED turned on except others.
- B. You can choose type of output like WiFi or BT the "Mode" button. (You can change output type, whenever press "Mode" button, mode will be changed WiFi→Serial→BT)
- C. AKN Series LED is turned on according to GNSS fix type. (Please refer the table "GNSS fix type")
- D. You can use survey program such as GNSS view and others after position fix.



AKN Panel



1. To survey exactly using AKN Series, it needs some initializing time.(for system booting, receiving GNSS information, Calculating precise position)

Connection status	Power Status	Positioning time	Remark
Initial	Turn On	10 minutes	After power on the AKN Series when survey
Remeasurement	Turn On	1 minutes	AKN Series has been turned on and fixed position then survey other location



It is possible to get fast position if GNSS turn on in advance

2. To get good GNSS signal, you should survey at the plat and high location

- If GNSS is shaken, it can cause errors in the survey.

Cautions

- ◎ According the environment of receiving, performance may be degraded.
- ◎ To get good value of position, you should survey under the clear sky view area.

**How to check the value of position via PC**Use RS232 cable (Default)

1. Connect power and data cables to the device(PC or PDA)
2. Turn on the "power" and check the LED (It will be turned on green[battery] and yellow[status] LED)
3. Check the COM port number on the PC (Control Panel - System - Device Manager - Port)
4. You can see value of position using test program (GPS view software)
5. Baud Rate is set 9600 bps



Specification and Function 8

Specification

Division	Specifications	Remark
Dimension	Φ116 X 61mm Size, 378g	
Battery	5,000mA	Charging time : 12Hours
Antenna	Built-in antenna	

Function

1) Button

Division	SW Type	Function	Remark
Power	Tact	Power On/Off When if	When the switch is pressed, system on When the switch pressed it for at least 3 seconds, system off
Mode	Tact	WiFi→Serial→BT Selection Mode	when the system is powered on BT function Default ON, Press the Mode button to change the mode WiFi→Serial →BT Selected in order

2) LED

Division	Green LED				Action Description
GNSS Status					
	Off	Off	Off	Off	GNSS Off
	On	Off	Off	Off	GNSS On - Not Fix
	On	On	Off	Off	GNSS On - 2D Or 3D Fix up
	On	Off	On	Off	GNSS On - Correction signal Use(Fix up)
	On	Off	Off	On	GNSS On - SBAS Use(Fix up)



Function

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Division	White LED				Action Description
WiFi Status					
	Off	Off	Off	Off	WiFi Off
	On	Off	Off	Off	WiFi Use - Not WiFi device connected
	On	On	Off	Off	Connected - Signal strength is weak
	On	On	On	Off	Connected - Signal strength is normal
	On	On	On	On	Connected - Signal strength is strong

Division	Blue LED				Action Description
Bluetooth Status					
	Off	Off	Off	Off	Bluetooth Off
	On	Off	Off	Off	Bluetooth Use - Not Bluetooth device connected
	On	On	Off	Off	Connected - Signal strength is weak
	On	On	On	Off	Connected - Signal strength is normal
	On	On	On	On	Connected - Signal strength is strong

Division	Yellow LED		Action Description
Serial Status			
	Off		Serial Off
	On		Transmission and reception of data through the serial



Function

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Division	Red / Green LED		Action Description
Battery Status			
	Red	Green	
	Off	Off	Power Off and Power Cable is not connected
	On	Off	Power cable is not connected and power on Power Cable is connected and full charging
	On	On	Power Cable is connected and charging

Division	Yellow LED		Action Description
Power Status			
	On		This is on when power on
	Blink		Low battery
	Off		It is off when power off

3) Connector

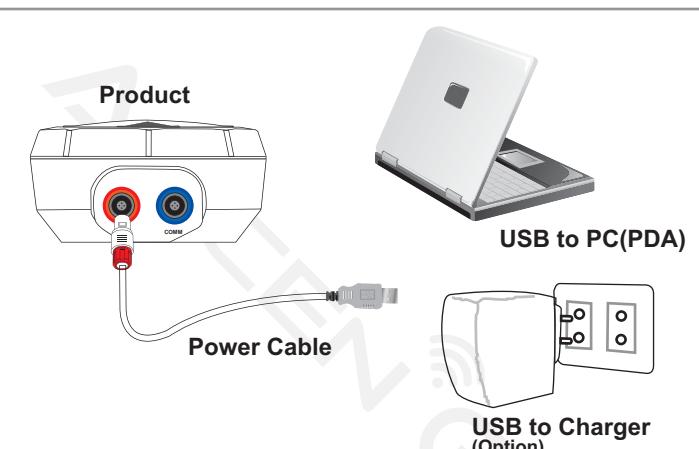
Division	type	Specification	Remarks
Power	LEMO(Red) Compatible	Input Voltage : 5V Female, Dedicated Power Cable	PC USB
Data	LEMO(Blue) Compatible	Female, Dedicated Data Cable (UART TTL - RS232 conversion)	RS232 Communication

* related inquiries, please contact us at +82-2-858-7810.



How to Charge

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Low Battery

When the battery is low, the Green LED blinks. If the battery is low and needs to be charged.

Charging the battery

1. Power cable to connect to PC(PDA) or USB charger(Option).
2. When the cable is connected, Red and green LEDs will turn on at the same time.
3. When charging is completed, Turn on a Red LED.

***The USB charger is sold separately.**

Product Warranty

Product Name : AKN Series(B/S/R)

This product is supported quality assurance, and compensation regulations are as follows.

Warranty Details

1. AS Warranty target devices : AKN Series(B/S/R)
2. AS Warranty period : One year from the date of purchase
(Cables, battery and accessories for 6 months)
3. Free service
 - within the AS warranty period, in case, the product has defect with normal use.
4. After the paid service
 - AS warranty period has elapsed, when the product is defected.
 - When failure occurs due to customer's your careless using of products.
 - Due to natural disaster, such as fire, flood, lightning, failure occurs.
 - Alteration or repair by defected.
5. AS shipping
 - Product input / output cost is user charging.
 - All the shipping change of product that has no defect is user charging.

ASCEN[®]GNSS AscenKorea Inc.(Stamp omitted)

FCC Certificate

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION : Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.



DECLARATION OF CONFORMITY

According to FCC Part 15

Applicant Name : AscenKorea Inc.

Address : Rm 710, Halla Sigma Valley, GasanDigital 2Ro 53,
GeumCheon-Gu, Seoul, Korea

Telephone : +82-2-858-7810

Declares that Product : Precision GNSS Receiver

Model Name : AKN

Report Number : CTK-2013-00416

This device complies with Part 15 of the FCC rules. Operations is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Test Laboratory:

CTK Co., Ltd.

386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea

Designation Number : 805871

Tel : +82-31-339-9970

Fax : +82-31-339-9855

Responsible Party:

Company Name : AscenKorea Inc.

Company Address : Rm 710, Halla Sigma Valley, GasanDigital 2Ro 53,
GeumCheon-Gu, Seoul, Korea

Phone : +82-2-858-7810

Fax : +82-2-858-7813

Name : Hwang, KukYeon

Signature :