GEOMAX

X-PAD

User Manual

GeoMax Zenith06 Smart Antenna

English

Version 1.0

PART OF HEXAGON

Introduction

Purchase

Congratulations on the purchase of the GeoMax Zenith06 Smart Antenna.

This manual contains important safety directions as well as instructions for setting up the product and operating it. Refer to 1 Safety Directions for further information.

Read carefully through the User Manual before you switch on the product.

The content of this document is subject to change without prior notice. Ensure that the product is used in accordance with the latest version of this document.

The content of this document is subject to change without prior notice. Ensure that the product is used in accordance with the latest version of this document.

Updated versions are available for download at the following Internet address:

https://geomax-positioning.com/partner-area

Product identification

The model and serial number of your product are indicated on the type plate.

Always refer to this information when you need to contact your agency or GeoMax authorised service centre.

Trademarks

- *Bluetooth*® is a registered trademark of Bluetooth SIG, Inc.

All other trademarks are the property of their respective owners.

Validity of this manual

This manual applies to the GeoMax Zenith06 smart antenna.

Available documentation

Name	Description/Format		
Zenith06 Quick Guide	Provides an overview of the product together with technical data and safety directions. Intended as a quick reference guide.	✓	✓
Zenith06 User Manual	All instructions required in order to operate the product to a basic level are contained in the User Manual. Provides an overview of the product together with technical data and safety directions.	-	✓

GeoMax Technical Library

Refer to the Technical Library web page for all GeoMax Zenith06 smart antenna documentation and software:

- https://portal.hexagon.com/

GeoMax Technical Library offers a wide range of services and information. With direct access to GeoMax Technical Library, you are able to access all relevant services whenever it is convenient for you.

The availability of services depends on the instrument model.

Table of Contents

1 Safety Directions

1.1 General Introduction

Description

The following directions enable the person responsible for the product, and the person who actually uses the equipment, to anticipate and avoid operational hazards.

The person responsible for the product must ensure that all users understand these directions and adhere to them.

About warning messages

Warning messages are an essential part of the safety concept of the instrument. They appear wherever hazards or hazardous situations can occur.

Warning messages...

- make the user alert about direct and indirect hazards concerning the use of the product.
- contain general rules of behaviour.

For the users' safety, all safety instructions and safety messages shall be strictly observed and followed! Therefore, the manual must always be available to all persons performing any tasks described here.

DANGER, **WARNING**, **CAUTION** and **NOTICE** are standardised signal words for identifying levels of hazards and risks related to personal injury and property damage. For your safety, it is important to read and fully understand the following table with the different signal words and their definitions! Supplementary safety information symbols may be placed within a warning message as well as supplementary text.

Type	Description
DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a potentially hazardous situation or an unintended use which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a potentially hazardous situation or an unintended use which, if not avoided, may result in minor or moderate injury.
NOTICE	Indicates a potentially hazardous situation or an unintended use which, if not avoided, may result in appreciable material, financial and environmental damage.
☞	Important paragraphs which must be adhered to in practice as they enable the product to be used in a technically correct and efficient manner.

1.2 Definition of Use

Intended use

- Computing with software
- Recording measurements
- Carrying out measurement tasks using various GNSS measuring techniques
- Recording GNSS and point related data
- Remote control of product
- Data communication with external appliances
- Measuring raw data and computing coordinates using carrier phase and code signal from GNSS satellites (GNSS systems)

Reasonably foreseeable misuse

- Use of the product without instruction
- Use outside of the intended use and limits
- Disabling safety systems
- Removal of hazard notices
- Opening the product using tools, for example screwdriver, unless this is permitted for certain functions
- Modification or conversion of the product
- Use after misappropriation
- Use of products with recognisable damage or defects
- Use with accessories from other manufacturers without the prior explicit approval of GeoMax
- Inadequate safeguards at the working site

1.3 Limits of Use

Environment

Suitable for use in an atmosphere appropriate for permanent human habitation. Not suitable for use in aggressive or explosive environments.

WARNING

Working in hazardous areas, or close to electrical installations or similar situations

Life Risk.

Precautions:

- Local safety authorities and safety experts must be contacted by the person responsible for the product before working in such conditions.

1.4 Responsibilities

Manufacturer of the product

GeoMax AG, CH-9443 Widnau, hereinafter referred to as GeoMax, is responsible for supplying the product, including the user manual and original accessories, in a safe condition.

Person responsible for the product

The person responsible for the product has the following duties:

- To understand the safety instructions on the product and the instructions in the User Manual
- To ensure that it is used in accordance with the instructions
- To be familiar with local regulations relating to safety and accident prevention
- To inform GeoMax immediately if the product and the application become unsafe
- To ensure that the national laws, regulations and conditions for the operation of the product are respected

1.5 Hazards of Use

DANGER

Risk of being struck by lightning

If the product is used with accessories, for example on masts, staffs, poles, you may increase the risk of being struck by lightning. Danger from high voltages also exists near power lines. Lightning, voltage peaks, or the touching of power lines can cause damage, injury and death.

Precautions:

- Do not use the product in a thunderstorm as you can increase the risk of being struck by lightning.
- Be sure to remain at a safe distance from electrical installations. Do not use the product directly under or close to power lines. If it is essential to work in such an environment contact the safety authorities responsible for electrical installations and follow their instructions.
- If the product has to be permanently mounted in an exposed location, it is advisable to provide a lightning conductor system. A suggestion on how to design a lightning conductor for the product is given below. Always follow the regulations in force in your country regarding grounding antennas and masts. These installations must be carried out by an authorised specialist.
- To prevent damages due to indirect lightning strikes (voltage spikes) cables, for example for antenna, power source or modem should be protected with appropriate protection elements, like a lightning arrester. These installations must be carried out by an authorised specialist.
- If there is a risk of a thunderstorm, or if the equipment is to remain unused and unattended for a long period, protect your product additionally by unplugging all systems components and disconnecting all connecting cables and supply cables, for example, instrument - antenna.

DANGER

Risk of electrocution

Because of the risk of electrocution, it is dangerous to use poles, levelling staffs and extensions in the vicinity of electrical installations such as power cables or electrical railways.

Precautions:

- Keep at a safe distance from electrical installations. If it is essential to work in this environment, first contact the safety authorities responsible for the electrical installations and follow their instructions.

WARNING

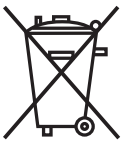
Improper disposal of product

If the product is improperly disposed of, the following can happen:

- If polymer parts are burnt, poisonous gases are produced which may impair health.
- If batteries are damaged or are heated strongly, they can explode and cause poisoning, burning, corrosion or environmental contamination.
- By disposing of the product irresponsibly you may enable unauthorised persons to use it in contravention of the regulations, exposing themselves and third parties to the risk of severe injury and rendering the environment liable to contamination.

Precautions:

-



The product must not be disposed with household waste.
Dispose of the product appropriately in accordance with the national regulations in force in your country.
Always prevent access to the product by unauthorised personnel.

WARNING

Distraction or loss of attention

During dynamic applications there is a danger of accidents occurring if the user does not pay attention to the environmental conditions around, for example obstacles, excavations or traffic.

Precautions:

- The person responsible for the product must make all users fully aware of the existing dangers.

WARNING

Lightning strike

If the product is used with accessories, for example masts, staffs, poles, you may increase the risk of being struck by lightning.

Precautions:

- Do not use the product in a thunderstorm.

WARNING

Inadequate securing of the working site

This can lead to dangerous situations, for example in traffic, on building sites and at industrial installations.

Precautions:

- Always ensure that the working site is adequately secured.
- Adhere to the regulations governing safety, accident prevention and road traffic.

WARNING

Improperly repaired equipment

Risk of injuries to users and equipment destruction due to lack of repair knowledge.

Precautions:

- Only authorised GeoMax Service Centres are entitled to repair these products.

For the AC/DC power supply:

WARNING

Electric shock due to missing ground connection

If unit is not connected to ground, death or serious injury can occur.

Precautions:

- The power cable and power outlet must be grounded!

For the AC/DC power supply and the battery charger:

WARNING

Electric shock due to use under wet and severe conditions

If unit becomes wet it may cause you to receive an electric shock.

Precautions:

- If the product becomes humid, it must not be used!
- Use the product only in dry environments, for example in buildings or vehicles.

- Protect the product against humidity.

For the AC/DC power supply and the battery charger:

WARNING

Unauthorised opening of the product

Either of the following actions may cause you to receive an electric shock:

- Touching live components
- Using the product after incorrect attempts were made to carry out repairs.

Precautions:

- Do not open the product!
- Only GeoMax authorised service centres are entitled to repair these products.

CAUTION

Unapproved chargers or cables

Connecting the charger improperly may cause serious damage to the device. Any damage caused by misuse is not covered by the warranty. Unapproved chargers or cables can cause the battery to explode or damage the device.

Precautions:

- Use only GeoMax-approved chargers, batteries, and cables.

CAUTION

Keeping the device too close to the human body during operation

Health risk

Precautions:

- Use the device at least 10 mm apart from the human body.
- This device has been tested for typical operations near the human body, for example handheld mode, with the device kept at 10 mm from the user's body.

CAUTION

Not properly secured accessories

If the accessories used with the product are not properly secured and the product is subjected to mechanical shock, for example blows or falling, the product may be damaged or people can sustain injury.

Precautions:

- When setting up the product, make sure that the accessories are correctly adapted, fitted, secured, and locked in position.
- Avoid subjecting the product to mechanical stress.

CAUTION

Dropping the product

When being dropped, the product can cause personal injury and/or mechanical damage.

Precautions:

- Ensure to have a firm grip on the product before operating it.

CAUTION

Before any cleaning procedure, ensure that the instrument is switched off and the battery has been removed.

CAUTION

Unused connectors must be protected using the attached dust cap.

NOTICE

Rooting your Android device will void your right for any warranty services and support by GeoMax!

1.6 Labelling

Labelling GeoMax Zenith06 smart antenna

2 Description of the System

2.1 General Information

Design

The Zenith06 smart antenna:

- has an integrated helix antenna and Bluetooth capability.
- supports four satellite systems: GPS, GLONASS, BeiDou, Galileo.
- supports access to external differential signals to get typically < 2 cm (2D) positioning results.
- is small, lightweight, durable and has a rubber bumper for drop protection.
- has a low power consumption and a long battery duration.
- is designed to be used on a pole.
- calculates a position from the computed ranges to all visible and activated GNSS satellites.
- can communicate with X-PAD and Zenith Manager software.

2.2 Instrument Components

Description

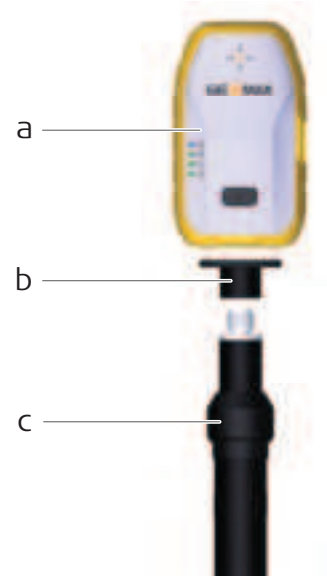
a Bluetooth LED
b RTK LED
c Position LED
d Battery LED
e ON/OFF button
f Holes for the screws to fix the pole adapter
g USB type-C port

LED indicators

LED indicator		Status	Desciption
	Bluetooth LED	flashes blue	Bluetooth is connected.
	RTK correction LED	flashes green	The instrument is receiving correction data.
	Position LED	flashes green	The position is available.
	Battery LED	flashes red	The instrument is being operated and the battery power is < 10%.
		solid red	The battery is being charged.
		solid green	The battery is fully charged or the instrument is being operated and the battery power is > 10%.

2.3 Accessories

Operation with pole

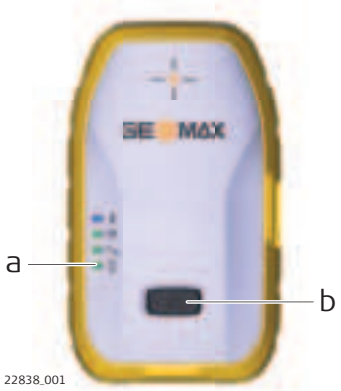


a GeoMax Zenith06 smart antenna
b Pole mount
c Carbon pole

3 Operation

3.1 Power On/Off, Charging

Description



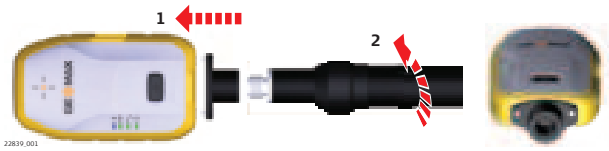
a Battery LED
b ON/OFF button

Function	Description
Power on/off	**Turn on:** Press and hold the ON/OFF button until the battery LED is green and the device beeps. ☞ The device starts booting after the first beep. Once it is booted up, the device beeps a second time. **Turn off:** Press and hold the ON/OFF button until the battery LED switches off and the device beeps.
Charging	Use the standard charger and type-C data cable to charge. The battery LED is solid red while charging and solid green when charging is finished.

3.2 Setup for the Zenith06 Smart Antenna

Setup on a pole

To attach the Zenith06 smart antenna on the top of a pole, the pole mount adapter is required - Art. 948915.



1.	Use a slot screwdriver to fix the pole mount adapter with both screws to the Zenith06 smart antenna. ☞ Make sure to fix the pole mount adapter in the correct orientation.
2.	Screw the pole clockwise into the pole mount adapter.

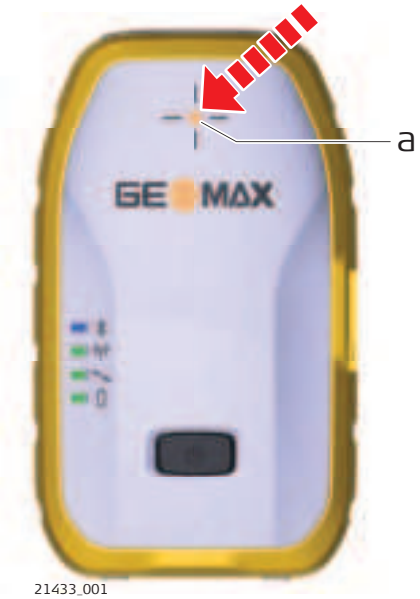
3.3 Phase Centre of the Zenith06 Smart Antenna

Phase centre

The phase centre of the Zenith06 smart antenna location is at the dot near the top of the device.

Pole mode

In pole mode, the offset from the phase centre to the top of the pole, including the pole adapter mount, is automatically accounted for. Make sure to provide the appropriate antenna height in the software.



a Phase centre position

3.4 Settings of the Zenith06 Smart Antenna

Step-by-step

1. Access the Zenith06 smart antenna settings.

In **X-PAD Ultimate**	1. Go to **Settings**. 2. Add a new GNSS device. 3. Select **Zenith06** from the dropdown list.
In **Zenith Manager**	1. Open the app and establish a connection through cable or Bluetooth.

2. When configuring the Zenith06 smart antenna, the following settings are available:
   - Antenna Height
   - Antenna Usage
   - Reset Antenna
   - Upgrade Antenna
   - Info

☞ Refer to X-PAD Ultimate or Zenith Manager documentation for more information.

4 Care and Transport

CAUTION

Unapproved chargers or cables

Connecting the charger improperly may cause serious damage to the device. Any damage caused by misuse is not covered by the warranty. Unapproved chargers or cables can cause the battery to explode or damage the device.

Precautions:

- ▸ Use only GeoMax-approved chargers, batteries, and cables.

4.1 Transport

Transport in a road vehicle

Never carry the product loose in a road vehicle, as it can be affected by shock and vibration. Always carry the product in its container and secure it.

For products for which no container is available use the original packaging or its equivalent.

Shipping

When transporting the product by rail, air or sea, always use the complete original GeoMax packaging, container and cardboard box, or its equivalent, to protect against shock and vibration.

Shipping, transport of batteries

When transporting or shipping batteries, the person responsible for the product must ensure that the applicable national and international rules and regulations are observed. Before transportation or shipping, contact your local passenger or freight transport company.

4.2 Storage

Product

Respect the temperature limits when storing the equipment, particularly in summer if the equipment is inside a vehicle. Refer to 5 Technical Data for information about temperature limits.

Battery care

- A rechargeable Li-Ion battery powers the instrument. The full performance of a new battery is achieved only after two or three complete charge and discharge cycles
- The battery can be charged and discharged hundreds of times. It eventually wears out
- Do not leave a fully charged battery connected to a charger, as overcharging may shorten its life
- If left unused, a fully charged battery loses its charge over time

Li-Ion batteries

- Refer to 5 Technical Data for information about storage temperature range
- After storage recharge batteries before using
- Protect batteries from damp and wetness. Wet or damp batteries must be dried before storing or use
- A storage temperature range of 0 °C to +30 °C / +32 °F to +86 °F in a dry environment is recommended to minimize self-discharging of the battery
- At the recommended storage temperature range, batteries containing a 40% to 50% charge can be stored for up to one year. After this storage period the batteries must be recharged

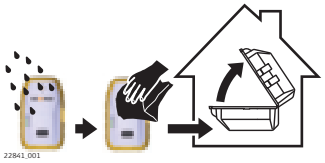
4.3 Cleaning and Drying

Product and accessories

- Use only a clean, soft, lint-free cloth for cleaning. If necessary, moisten the cloth with water or pure alcohol. Do not use other liquids; these may attack the polymer components.

Damp products

Dry the product, the container, the foam inserts and the accessories at a temperature not greater than 40 °C/104 °F and clean them. Do not repack until everything is dry. Always close the container when using in the field.



Cables and plugs

Keep plugs clean and dry. Blow away any dirt lodged in the plugs of the connecting cables.

5 Technical Data

5.1 Technical Data

Instrument

Type	Description
Satellites tracked	GPS L1C/A, L2C GLONASS L1OF, L2OF Galileo E1B/C, E5b BeiDou B1I, B2I QZSS L1C/A, L2C
Channels	184
Update rate	Up to 10 Hz
Re-aquisition	< 2 s
RTK initialisation	Typically > 120 s
Cold start time	Typically < 24 s
Hot start	Typically < 15 s
Initialisation reliability	> 99.9%
Real-time protocols	RTCM 3.0, RTCM 3.1, RTCM 3.2, RTCM 3.3, RTCM MSM
Data format	NMEA

Frequency band

Type	Frequency band [MHz]
Zenith06 smart antenna	GPS, QZSS L1: 1575.42 GPS, QZSS L2: 1227.60 GLONASS L1: 1602.5625-1611.5 GLONASS L2: 1246.4375-1254.3 Galileo E1: 1575.42 Galileo E5b: 1207.14 BeiDou B1: 1561.098 BeiDou B2: 1207.14
Bluetooth	2402…2480

Positioning

Accuracy and reliability are subject to satellite geometry (DOPs), multipath, refractions and obstructions. In static mode they are even subject to occupation times: the longer the Baseline, the longer the occupation time must be.

Type	Description
RTK (RMS)	Horizontal: typical < 2 cm (2D)

Output power

Type	Output power [mW]
GNSS	Receive only
Bluetooth	5 (Class 1)

Antenna

Type	Antenna	Gain [dBi]	Connector	Frequency band [MHz]
Bluetooth	Internal Microstrip antenna	1.0	-	-

Dimensions

Description	Value
Height	139 mm
Length	80.6 mm
Width	30.6 mm

Weight

Description	Value
Weight	<340 g

Connector

USB	1 USB Type-C connector, supports USB 2.0

Mounting

Pole	GeoMax Zenith06 smart antenna mounted on pole adapter/pole

System

Processor	Qualcomm SnapDragon
RAM	1 GB LPDDR3
Storage	8 GB eMMC

Communication

Bluetooth	BT4.2 LE

Power

Internal battery	3.8 V, 6120 mAh Type-C charging, supports 1.44 A fast charge
Input voltage	5 V DC/2 A
Power consumption	1.8 W
Working time	> 20 hours
Charge time	Typically 4 hours

Environmental specifications

Type	Operating temperature [°C]	Storage temperature [°C]
Instrument	−40 to +65	−40 to +80

External influences	Protection
Water and dust	IP67
Humidity	ISO9022-12-04 Resp. +65 °C 92%, 62 h
Drop	1.2 m once to all surfaces onto hard wood (50 mm) over concrete floor within the storage temperature range
Vibration	Withstands strong vibration. ISO9022-36-03-0 (10-150 Hz, 2 g ±0.15 mm/ 20 cycles)

5.2 Conformity to National Regulations

Conformity to national regulations

- Hereby, GeoMax AG declares that the radio equipment type Zenith06 smart antenna is in compliance with Directive 2014/53/EU and other applicable European Directives. The full text of the EU declaration of conformity is available at the following Internet address: https://geomax-positioning.com/partner-area.

CE Class 1 equipment according to European Directive 2014/53/EU (RED) can be placed on the market and be put into service without restrictions in any EEA member state.

- The conformity for countries with other national regulations not covered by the European Directive 2014/53/EU has to be approved prior to use and operation.

5.3 Dangerous Goods Regulations

Dangerous Goods Regulations

The products of GeoMax are powered by Lithium batteries.

Lithium batteries can be dangerous under certain conditions and can pose a safety hazard. In certain conditions, Lithium batteries can overheat and ignite.

☞ When carrying or shipping your GeoMax product with Lithium batteries onboard a commercial aircraft, you must do so in accordance with the **IATA Dangerous Goods Regulations**.

☞ GeoMax has developed **Guidelines** on "How to carry GeoMax products" and "How to ship GeoMax products" with Lithium batteries. Before any transportation of a GeoMax product, we ask you to consult these guidelines on our web page (http://www.geomax-positioning.com/dgr) to ensure that you are in accordance with the IATA Dangerous Goods Regulations and that the GeoMax products can be transported correctly.

☞ Damaged or defective batteries are prohibited from being carried or transported onboard any aircraft. Therefore, ensure that the condition of any battery is safe for transportation.

6 GeoMax Zenith06 smart antenna Bundle

6.1 Standard Configuration

Description

The following table shows all parts for the standard configuration.

Description	Quantity
GeoMax Zenith06 smart antenna	1
Pole mount	1
Power adaptor with 4 plugs (US, UK, EU and AU)	1
USB cable Type C – Type C, 1.5 m	1
USB cable Type C – Type A, 1.5 m	1
Arm/Belt pouch	1
USB memory stick- 8 GB	1
Cardboard box	1

6.2 Accessories

Overview

List of accesories available for the GeoMax Zenith06 smart antenna:

- Pole mount to attach the GeoMax Zenith06 smart antenna to the pole
- Carbon fibre pole
- USB memory stick- 8 GB
- Arm/Belt pouch

The pole is a standard accessory for the GeoMax Zenith06 smart antenna. To use the GeoMax Zenith06 smart antenna on a pole, the appropriate adapter is required. This mounting allows customers to use the instrument vertically with precise and stable support.

7 Software Licence Agreement/Warranty

International Limited Warranty

This product is subject to the terms and conditions set out in the International Limited Warranty which you can download from the GeoMax AG home page at http://www.geomax-positioning.com or collect from your GeoMax AG distributor.

Software Licence Agreement

This product contains software that is preinstalled on the product, or that is supplied to you on a data carrier medium, or that can be downloaded by you online according to prior authorisation from GeoMax. Such software is protected by copyright and other laws and its use is defined and regulated by the GeoMax Software Licence Agreement, which covers aspects such as, but not limited to, Scope of the Licence, Warranty, Intellectual Property Rights, Limitation of Liability, Exclusion of other Assurances, Governing Law and Place of Jurisdiction. Please make sure, that at any time you fully comply with the terms and conditions of the GeoMax Software Licence Agreement.

Such agreement is provided together with all products and can also be referred to and downloaded at the GeoMax home page at http://www.geomax-positioning.com/swlicense or collected from your GeoMax distributor.

You must not install or use the software unless you have read and accepted the terms and conditions of the GeoMax Software Licence Agreement. Installation or use of the software or any part thereof, is deemed to be an acceptance of all the terms and conditions of such Licence Agreement. If you do not agree to all or some of the terms of such Licence Agreement, you must not download, install or use the software and you must return the unused software together with its accompanying documentation and the purchase receipt to the distributor from whom you purchased the product within ten (10) days of purchase to obtain a full refund of the purchase price.

949623-1.0.1en

Original text (949623-1.0.1en)

GeoMax AG
Espenstrasse 135
9443 Widnau
Switzerland

geomax-positioning.com

FCC warning statements:

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: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation 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.

The device has been evaluated to meet general RF exposure requirement.

IC warning statements:

-English Warning Statement:

RSS-GEN ISSUE 5, 8.4 User manual notice

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

The digital apparatus complies with Canadian CAN ICES-3 (B)/NMB-3(B).

-French Warning Statement:

RSS - Gen version 5, 8.4 avis du manuel de l'utilisateur
Cet appareil contient un émetteur / récepteur sans licence conforme au RSS sans licence d'innovation, science et développement économique Canada.L'opération doit satisfaire aux deux conditions suivantes:
Cet équipement peut ne pas causer d'interférence.
L'équipement doit accepter toute interférence, y compris toute interférence qui pourrait entraîner un fonctionnement indésirable de l'équipement.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment and meets RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment has very low levels of RF energy that are deemed to comply without testing of specifc absorption ratio (SAR).Cet équipement est conforme aux limites d'exposition aux rayonnements énoncées pour un environnement non contrôlé et respecte les règles d'exposition aux fréquences radioélectriques (RF) CNR-102 de l'IC. Cet équipement émet une énergie RF très faible qui est considérée conforme sans évaluation du débit d'absorption spécifque (DAS).

This equipment should be installed and operated with minimum distance 30mm between the radiator & your body.
Lors de l'installation et du fonctionnement de cet équipement, la distance minimale entre le radiateur et le corps doit être de 30 mm.