



XT-4860G5 User Guide

Model: XT-4860G5

FCC ID: GKM-XT4800

Version 1.8

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1 Introduction

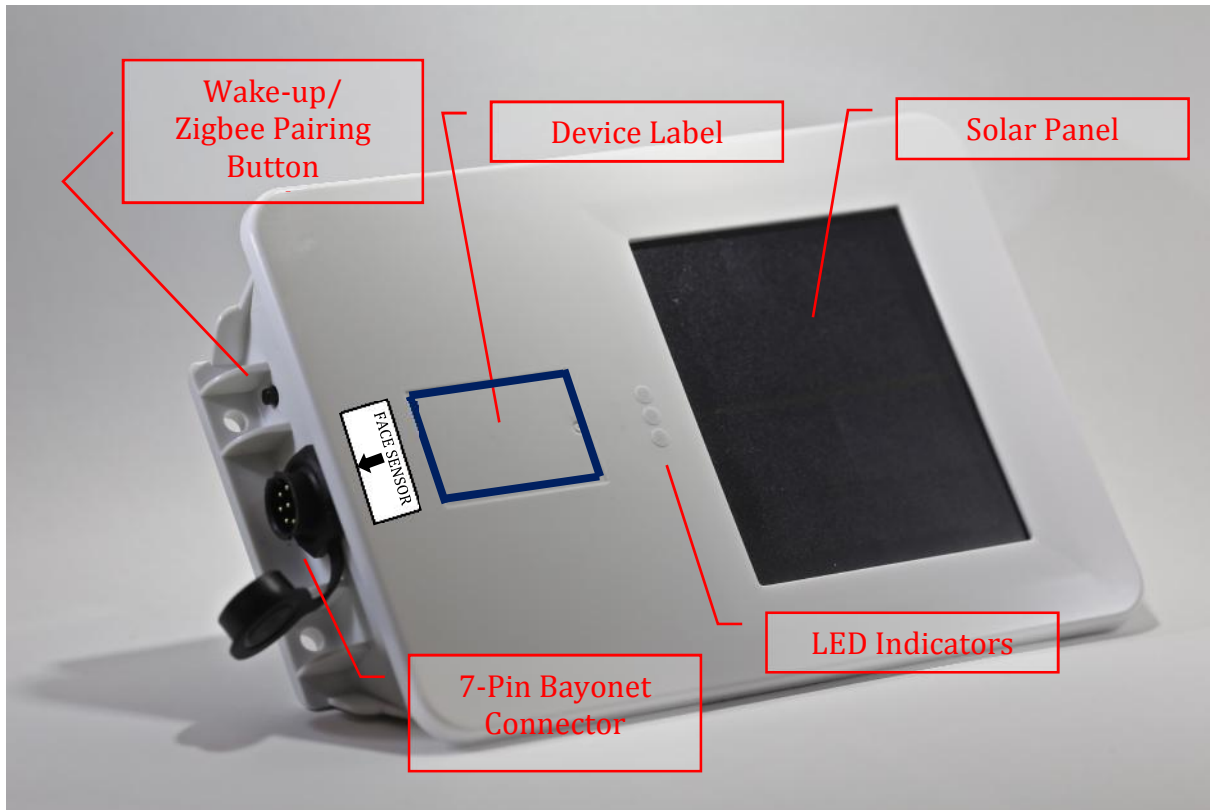
XT-4860G5 is an energy harvesting global multi-band 3G platform supporting long term, remote deployments without the need to replace the self-charging battery. This installation guide describes the physical hardware, associated parts, the different mounting options available, and a quick start-up procedure.

1.1 Feature Matrix

Feature Description	Base Unit	Zigbee® Upgrade
3G Communication Module with 2G Rollback	✓	✓
GPS Receiver for Tracking Applications	✓	✓
Supports SMS, TCP, UDP, FTP	✓	✓
Over-the-air Configuration and FW Upgrade	✓	✓
Location Polling	✓	✓
Periodic Reporting	✓	✓
Wired or Virtual Ignition On/Off Reporting	✓	✓
Direction Change Alerts	✓	✓
Speed Threshold Alerts	✓	✓
Mileage Threshold Alerts	✓	✓
Main Battery Disconnect Alerts	✓	✓
Heartbeat and Power-up/Reset Alerts	✓	✓
Ignition Idle Alert (wired ignition only)	✓	✓
Towing Start/Stop Alerts(wired ignition only)	✓	✓
Movement Start/Stop Alerts (wired ignition only)	✓	✓
2 Digital Inputs	✓	✓
Park Time Alerts (wired ignition only)	✓	✓
Virtual Odometer	✓	✓
Motion	✓	✓
Sleep/Wake Configuration Settings	✓	✓
Geofence (Radial, Rectangular, and Polygonal)	✓	✓
Device Diagnostics (Battery voltage, connectivity, etc.)	✓	✓
Wireless Sensor Connectivity		✓
Inter-device Communication		✓

2 Hardware Description

Below is a depiction of key interfaces of the XT-4860G5:



The Associated Cable Harness that interfaces with the unit is shown below:



2.1 Hardware Specifications

Technology	3G UMTS/HSDPA/HSUPA
Model	XT-4860G5
Frequency Band	Dual-band Support <ul style="list-style-type: none"> ▪ Band II – 1900 MHz ▪ Band V – 850 MHz
GPS Specification	
Receiver 50 channels	<ul style="list-style-type: none"> ▪ 50 channels
Receiver tracking Sensitivity	<ul style="list-style-type: none"> ▪ -161 dBm
Accuracy	<ul style="list-style-type: none"> ▪ +/- 2.5m CEP (50% , -130 dBm, > 6 Satellites)
Cold Start	<ul style="list-style-type: none"> ▪ <33 sec
Hot Start	<ul style="list-style-type: none"> ▪ < 1 sec
Power Requirements	
D.C. Power	<ul style="list-style-type: none"> ▪ 8-24V, 12 V nominal
Battery	<ul style="list-style-type: none"> ▪ Internal 6600mAh rechargeable Li-Ion
Physical Connection	
Interface Connector	<ul style="list-style-type: none"> ▪ 8-pin attached harness
Cellular/GPS Antenna	<ul style="list-style-type: none"> ▪ Internal
SIM Access	<ul style="list-style-type: none"> ▪ Internal
Programming	<ul style="list-style-type: none"> ▪ Serial (UART Logic Level)
Mechanical	
Case Material	<ul style="list-style-type: none"> ▪ ABS plastic with weather-proofing for outdoor use
Dimension	<ul style="list-style-type: none"> ▪ 7.6" X 4.9" X 1.4"
Weight	<ul style="list-style-type: none"> ▪ < 18 oz. (Estimated)
Operating Temperature	<ul style="list-style-type: none"> ▪ -30°C to +70°C
Certifications	
Product	<ul style="list-style-type: none"> ▪ PTCRB ▪ ATT ▪ IC ▪ IP67
Carrier	<ul style="list-style-type: none"> ▪ AT&T

2.2 Cable Harness Description

Pin #	Wire Color	Pin Name	Functional Description	Port Characteristic
1	White	IN1	Ignition Sense	8v to 24v, Internally pulled low
2	Yellow	IN2	Input port	2.4 to 24V, < 0.2 V Note: Internally pulled high
3	Black	Ground	Ground	
4	Green	Out	Output Port (Defaulted open	
5	Blue	UART-Rx	External battery negative terminal	3.3V Logic Interface Com Port Settings: Baud rate: 115200 bps; Flow control: None; 8N1
6	Brown	UART-Tx		3.3V Logic Interface Com Port Settings: Baud rate: 115200 bps; Flow control: None;8N1
7	Red	VBATT	Main battery voltage, DC	8-24 V
8	Orange	ADC	Analog Input	8-24 V

2.3 LED Description

LED	Description	Status
Cellular (Blue)	Searching for Cellular Network	LED OFF
	Cellular Carrier Lock	Fast Blinking once every 1 second
GPS (Green)	Searching for satellite	Solid
	GPS Lock	Blinking
Zigbee (Aurburn)	TBD	TBD

3 Device Mounting Options

3.1 Screw Mounting

The XT-4860G5 has two flanges (two holes per) at each end of the housing for screw mounting the device to the mounting surface.



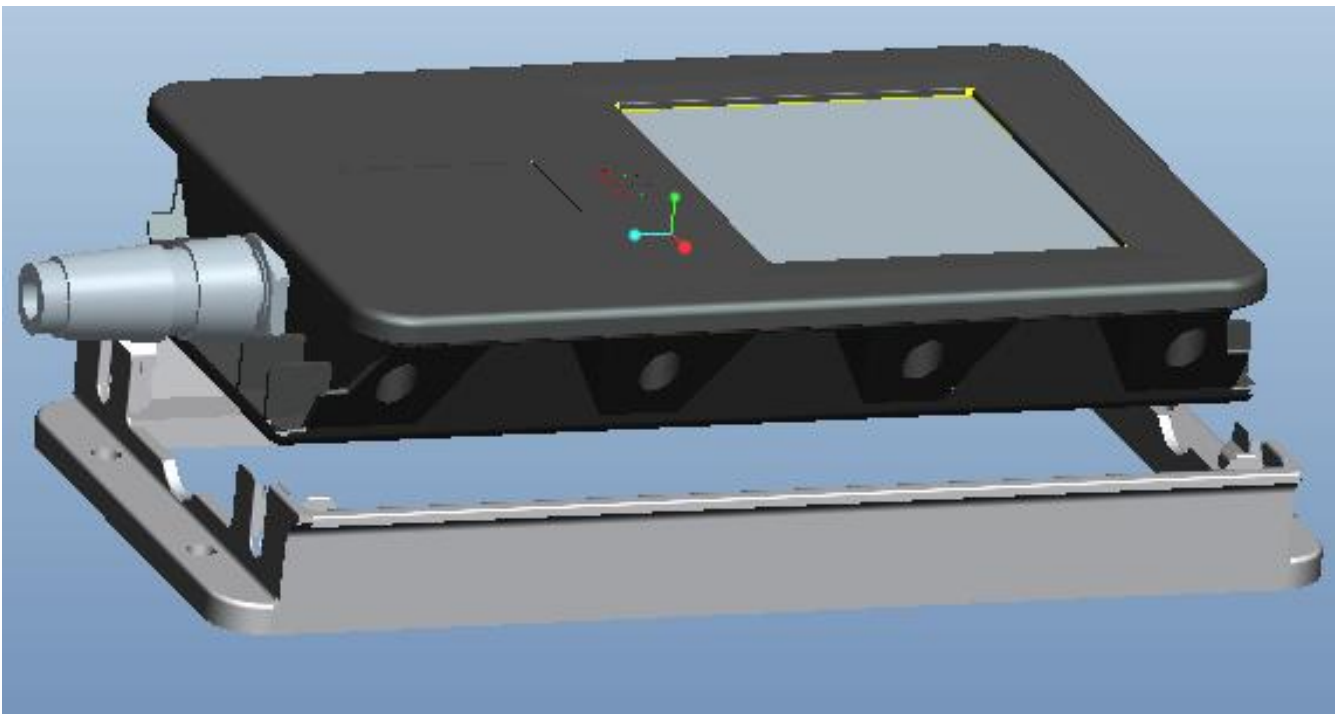
3.2 Magnetic Mounting

The XT-4860G5 can also be equipped with magnets which support a load up to 10kg.



3.3 Optional Cradle Mounting

An optional mounting cradle can be purchased for easy snap-on/snap-off device mounting for the XT-4860G5. The cradle will need to be screw-mounted on to the position desired.



4 Quick Start Guide

4.1 Device Wakeup

To start up the device, simply hold the black button located near the circular connector on the side panel of the device for 3 seconds. You should see the blue “C” LED light up and then fade out. The LED will fast-blink when the device is successfully connected to the network.



4.2 Configuring the Device via SMS

- 1) Ensure your device is active on your cellular account.
- 2) Awaken device from sleep XT-4860G5 via the “wake-up” button.
- 3) If the device needs more power, then supply 12V DC via the red wire of the cable harness.
- 4) Ensure device cellular LED is blinking based on LED definition in this document.
- 5) Using your mobile phone or SMS gateway send +XT:1008 command to the device MDN
- 6) Command: “+XT:1008,<SM>”- Sets SMS Number
- 7) Response (via SMS): \$\$<UID>,<1008>,<SM>##
- 8) Once you have set SMS to reply to your mobile or gateway, you can now send other commands to device via SMS per device protocol documentation.
 - a. Command +XT:1010 configures network settings
 - b. Command +XT:3040 and +XT:3042 configure alert and threshold settings
- 9) +XT:7008 save device configuration to permanent memory

FCC/IC: REGULATORY COMPLIANCE INFORMATION

This equipment with FCC-ID: GKM-XT4800 and IC-ID: 10281A-XT-4800, Model: XT-4860G5

is subject to the Federal Communications Commission (FCC) and Industry Canada (IC) rules.

NOTICE:

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

This device complies with Part 15 of the FCC Rules and with license exempt Radio Standard Specifications of Industry Canada.

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.

Les changements ou modifications non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur à utiliser l'équipement.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Radio frequency radiation exposure Information:

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