



SHADOW V2

Offenders Bracelet

User Manual



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Change control:

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Version	Change	Made By	Date	



1 SAFETY WARNINGS

Read the safety warning section carefully before installation.

By following these requirements and recommendations you will avoid dangerous situations.

- 🔊 | The bracelet must be firmly fastened on the offender's ankle.
- 🔊 | The equipment uses a standard USB 5 Volts 1-2 Ampere Power Bank.
- 🔊 | Only a Power Bank that has the local standard and safety approval can be used.
- 🔊 | Do not touch before unplugging the Power Bank if the device is damaged.
- 🔊 | Only authorized and qualified personnel may dismantle the equipment.
- 🔊 | The programming must be performed using a second class PC.

CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED
BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING
TO THE INSTRUCTIONS

Federal Communications Commission (FCC) Statement

15.21

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

15.105(b)

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.





This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) this device may not cause interference and
- 2) this device must accept any interference, including interference that may cause undesired operation of the device.

RF exposure:

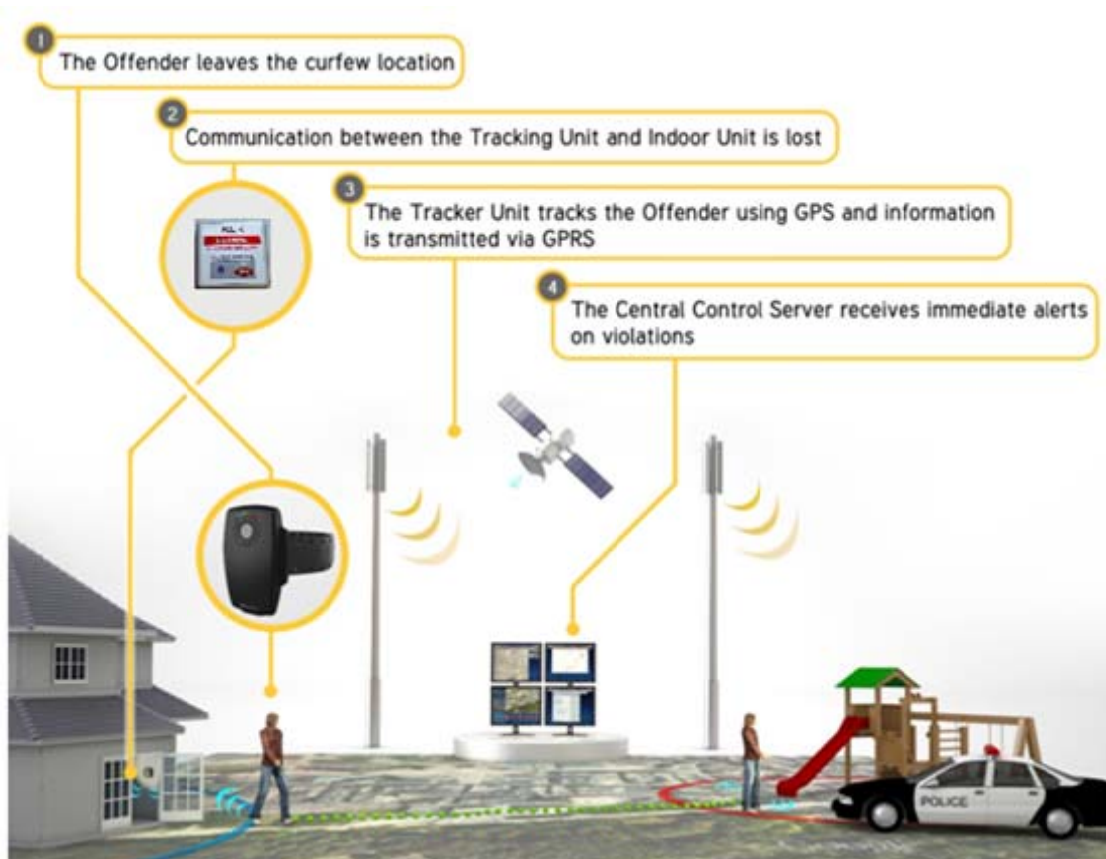
To comply with the FCC RF exposure compliance requirements, this device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.



2 SYSTEM OVERVIEW

TRACK Groups' offender tracking, monitoring and surveillance system provides continuous, real-time electronic monitoring of offenders, allowing maximum movement, enabling routine activities. The system provides seamless and automatic monitoring whether the offender is indoors or outdoors.

The system includes an offender tracking unit, an indoor Beacon and the control center application. Designed to be worn on the offenders ankle with a fiber optic strap, the offender tracking unit incorporates both RF and GPS capabilities in a single unit. The indoor Beacon is installed in the curfew location to monitor the offenders' presence while indoors. The offender tracking unit communicate with the control center over GPRS. The Control Center Application is a secured web based application that collects, analyzes and displays the information sent from the end devices.



3 ABOUT THE OFFENDERS BRACELET

The Offenders Bracelet provides continuous RF monitoring indoors and GPS tracking outdoors in the same device, reporting to the control center on alarms as they occur. A fiber optic strap is used to secure the Offenders Bracelet around the offenders' leg, above the ankle.

The Offenders Bracelet incorporates three tamper mechanisms, which are used to report on possible tampering of the tags' physical modules:

- 🔦 **Strap Tamper** - generated once the fiber optic strap is cut or opened.
- 🔦 **Case Tamper** - generated once the Offenders Bracelets' case is opened.
- 🔦 **Cellular Jamming** - The Offenders Bracelets' cellular modem detects any attempts of jamming. This information is transferred from the modem to the tag and reported to the control center once communication is restored.

A low battery alarm is generated once the battery reaches a level of approximately 3.5v. A beeping sound, LED and vibrate are activated to notify the offender that charging is required. The Offenders Bracelet is charged with a mini USB or off-the-shelf battery pack charger. In GPS Tracking mode, the tag provides approximately 36 hour battery life and it is highly advised that the offender charges the Offenders Bracelet, on a daily basis, for at least 2-3 hours.

Information about the charging status and battery voltage are included in every status message sent to the control center.

The Offenders Bracelet incorporates a 3G cellular modem to communicate with the control center. The Offenders Bracelet's communication method is GPRS. The tag uses an internal retry mechanism to alternate between the available Server IP's and modem numbers.

The tag communicates with the control center according to pre-defined time intervals, which are set for **normal** mode. As long as the offender is compliant, the tag communicates with the control center in normal mode (e.g. every 2 minutes). Once the offender leaves his house\work (e.g. Where the Beacon device is placed) the Offenders Bracelet transmit position every 1 minuet .

If the Offenders Bracelet fails to communicate with the control center according to its pre-defined time intervals, the Control Center Application alters on a "Disconnect" alarm.

The Offenders Bracelet can be remotely configured with information such as server connection details, communication retry attempts, GPS sampling intervals and communication time periods in normal mode and position intervals.

The front panel is designed with 3 color LEDs and a push button. The LEDs indicate GPS availability and battery status. The push button (Optional) is used as a panic button for the offender in cases of emergency.



3.1 OFFENDERS BRACELET COMPONENTS



4 ABOUT THE BEACON

BEACON Unit is a RF based device, used to acknowledge the offenders' presence in chosen locations (e.g. home, work) and to provide continuous monitoring indoors.

In addition to its monitored offender.

The Beacon Unit should be placed as close as possible to the center of the curfew location, on a stable surface or alternatively affixed to the wall .

The Beacon incorporates **accelerometer as a tamper mechanisms that** generated once the Beacon Unit is sensed change in one of the axes (X,Y,Z) calibrate to alert on 2% change.

The Beacon contains 2 AA batteries, the battery level is transmitted in every packet. The Shadow device will alert when the Beacon battery is low.

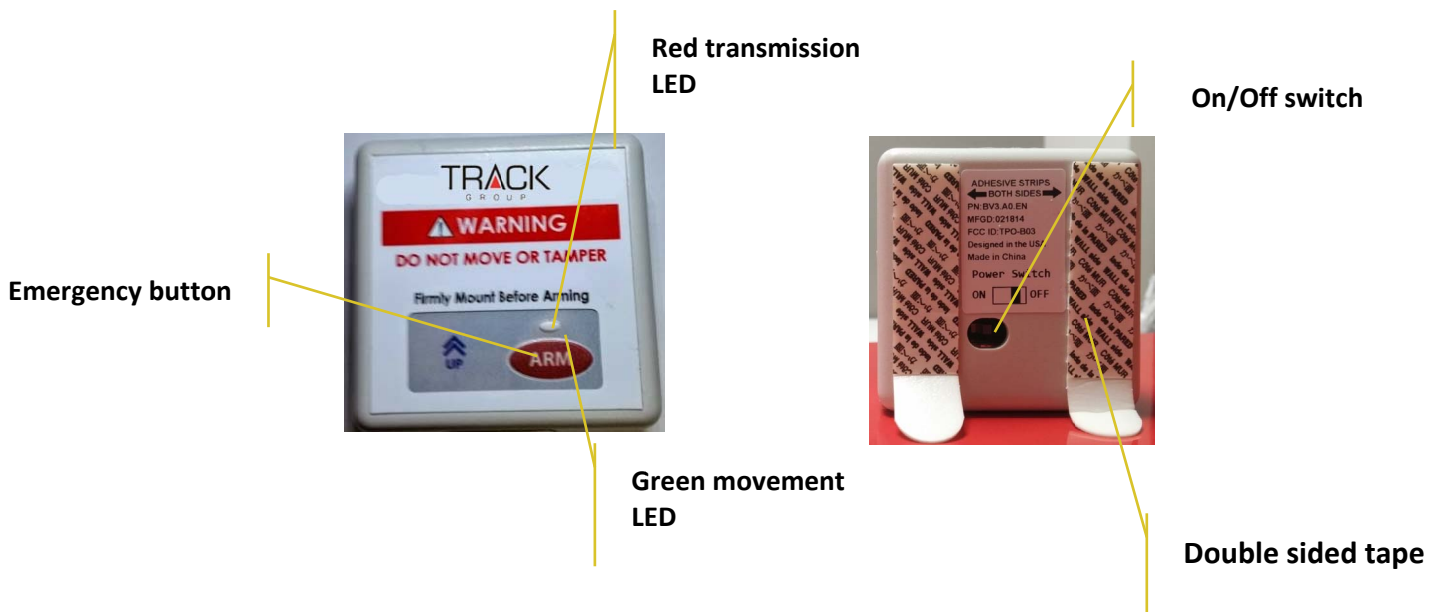
The Beacon Unit incorporates a ISM 433.92MHz RF transceiver to send signals to the Shadow V2 .

The front panel of the Beacon includes 2 LEDs that indicate , movement and transmission .

When the Accelerometer detect change of 2% in one of the axes (X,Y,Z) the Green LED will light in every packet transmit (e.g Every 20 seconds) .

The Red LED will light in each transmission.

4.1 BEACON UNIT COMPONENTS



5. INSTALLATION INSTRUCTIONS

5.1 PREPARATIONS

1.	Verify that you have all kit components:
	- Beacon - Offenders Bracelet - Offenders Bracelet power charger - Fiber optic strap - Portable battery pack
2.	Verify that you have the necessary installation tools:
	- Strap cutting tool - Needle-nose pliers - T25 Allen key - Double sided tape(on the Beacon itself) - Spare straps and locking pins
3.	Verify that the Offenders Bracelets' battery is fully charged
	Connect the supplied power bank to the Offenders Bracelets' charging connector for 2-3 hours.
4	Programming kit for beacon device
	- Debugger and Programmer for RF System-on-Chips by Texas instruments, 8051-based system-on-chips. - proprietary adapter

5.2 INSTALL THE OFFENDERS BRACELET

1.	Power up the tag by connecting the supplied power bank to the Offenders Bracelets' charging connector.
2.	Verify that the Power LED turns Green.
3.	Disconnect the tag from the power bank. It is now ready for use.
4.	Insert the side of the strap that has four holes into the right bracket of the tag.



			
5.	Lock the strap by pushing in one of the locking pins.		
			
6.	Place the tag above the offenders' ankle bone and on the external part of the leg, facing out. The charging connector should be facing down.		
7.	Measure the strap length needed to get to the left bracket, and add one more link.		
			
8.	Cut the strap using the supplied cutting tool.		

	
9.	Place the tag back to its right location, above the ankle bone and facing out, and insert the strap into the left bracket.
	
10.	Move the tag around, make sure that the strap is not too tight or too loose.
11.	Lock the strap by pushing in the second locking pin.

5.3 INSTALL THE BEACON

1.	Find the best location for the Beacon Unit
	 As close as possible to the center of the curfew location
2.	Turn ON the Beacon
3.	Place the unit on a stable table or shelf; alternatively mount the unit to the wall using its own double sided tape.

5.4 REQUEST FOR SERVICE START

1.	Once the installation of the Offenders Bracelet and Beacon has been completed, contact the control center and request to begin the service.
2.	Wait for confirmation on successful activation before leaving the premises.



6 REMOVAL INSTRUCTIONS

6.1 PREPARATIONS

1.	Verify that you have the necessary dismantling tools:
	• Strap cutting tool • Needle-nose pliers • T25 Allen key

6.2 REQUEST FOR SERVICE END

1.	Before removing the equipment in the offenders' curfew location, contact the control center and request to deactivate the units.
2.	Wait for confirmation on successful deactivation before moving to the next steps.

6.3 REMOVE THE OFFENDERS BRACELET

1.	Using the provided cutting tool, cut the strap.
2.	Use the T25 Allen key to press into the locking brackets to release the locking pins.
	
3.	Using the needle-nose pliers, pull out the locking pin and release the strap from each side of the tag.
	

6.4 REMOVE THE BEACON

1.	Remove the unit from the wall or the surface where it has been placed.
2.	Turn OFF the Beacon unit.

6.5 PACK THE EQUIPMENT

1.	Place the equipment back in the original case:  Beacon  Offenders Bracelet  Offenders Bracelet power charger  Portable battery pack
2.	Collect the remaining of the strap and locking pins. Dispose them only after leaving the offenders curfew location.



7 CLEANING INSTRUCTIONS

1.	Using an Alcohol Prep pad, thoroughly clean the front, rear and sides of the Offenders Bracelet.
	
2.	In the same manner, clean the Beacon .

