

# Mobilogix

## ATD300B

### Theory of operation:

This is an asset tracker equipped with LTE CAT1, GNSS, Accelerometer, and BLE capabilities.

The device will remain in a sleep mode while in a stationary position. The device can wake up from either of the following scenarios.

In scenario 1, the device will wake up and go into a “Stolen Mode”, meaning the device has been moved without authorized consent from the home server. In this mode the tracker will begin broadcasting location and sensor information to home server, so the correct actions can be taken to retrieve the stolen device.

In scenario 2, the device obtains authorized consent to be moved and goes into a “Trip” mode. In this mode the device logs and broadcasts sensor and location information so the users trip can later be analyzed. After the user has deactivated the tracker Via the LTE CAT1 network or BLE, the device will go back into a sleep mode to conserve power.

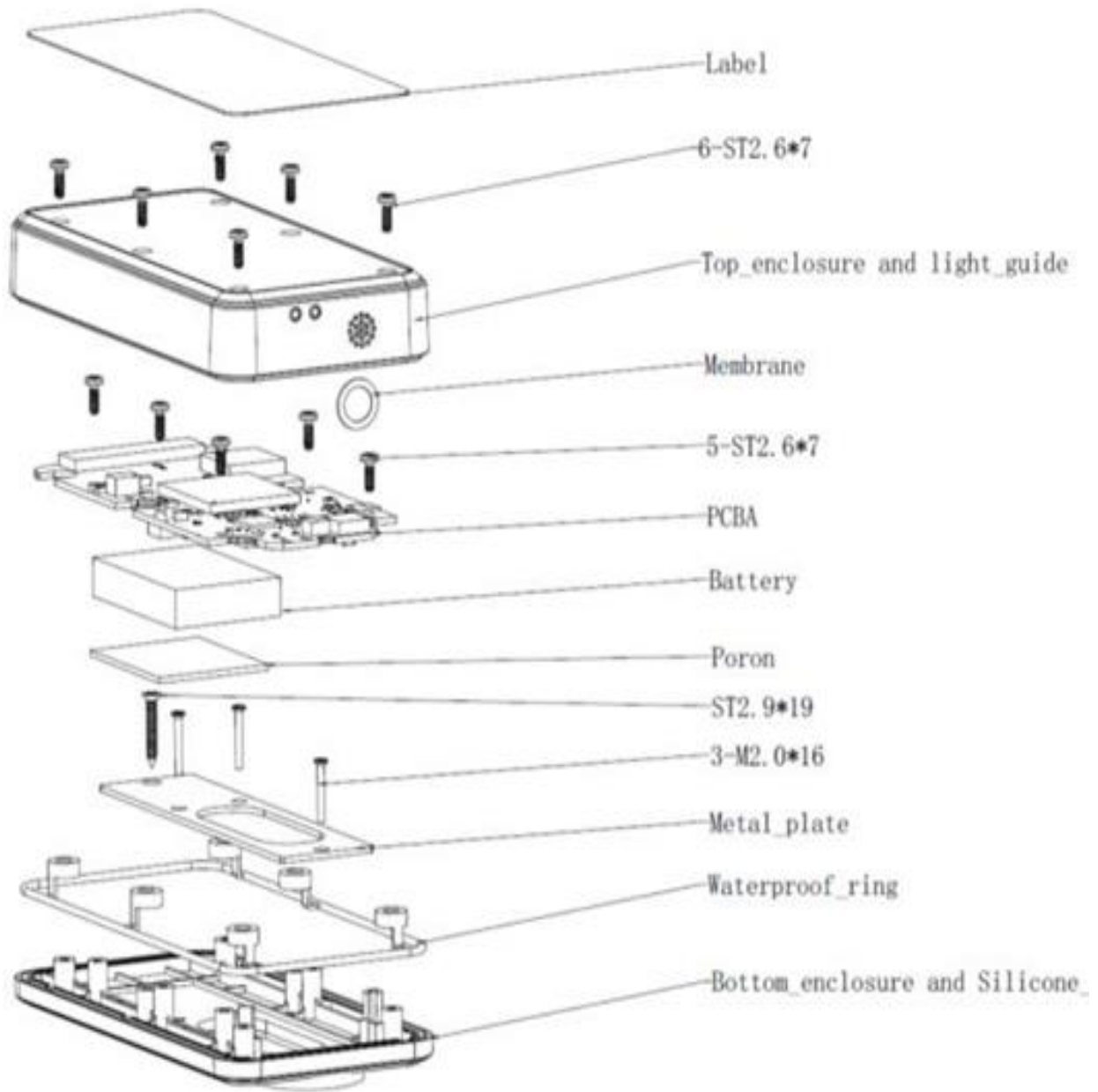
The device will draw, majority of its power from the trackers host asset, this is a much larger supply. However, there will be a smaller onboard Li-Po battery attached to the tracker, just in case the host’s supply runs out. There is no physical on/off switch on this device. Once it is connected to a supply it will begin to run, unless, a BLE or cellular command gives the tracker a shutdown command.



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### Module Assembly Summary:



5500 Trabuco Road, Suite 150, Irvine, CA 92620  
Tel: (949) 748-8895

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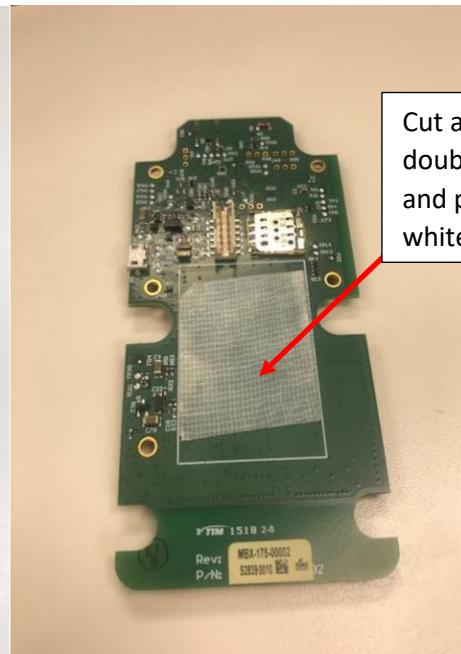
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## ATD300B

### Module Assembly Detail:



Cut a 45mm piece of double sided tape and place inside white rectangle

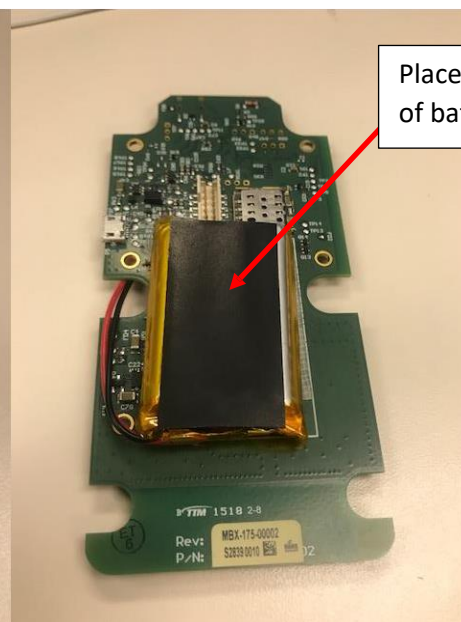
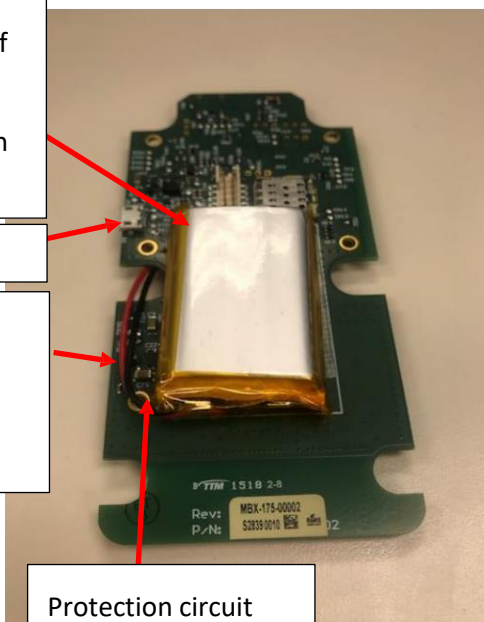
Place battery on double sided tape with protection circuit facing end of board.

Keep battery within white rectangle

USB connector

Make sure wire leads are on the same side as USB connector

Protection circuit



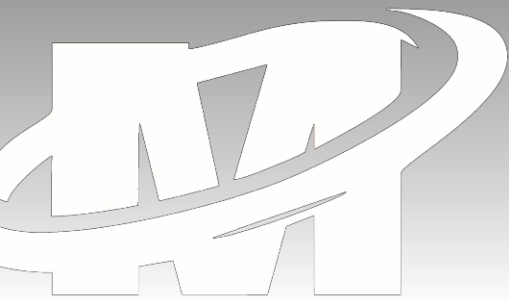
Place foam on top of battery

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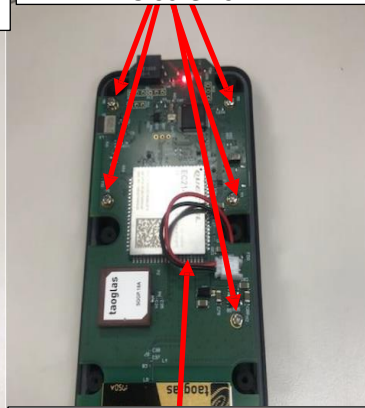
## ATD300B

Place metal plate inside groove located on bottom



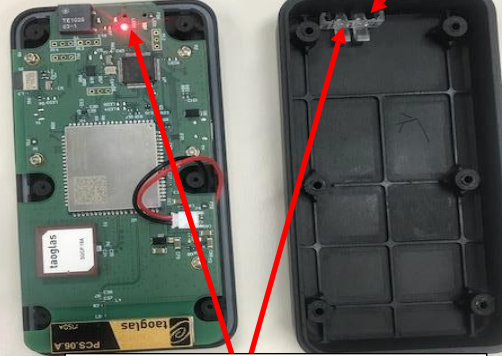
Bottom piece of enclosure

Place board with battery stack-up on bottom piece of enclosure. Secure with 5 screws.

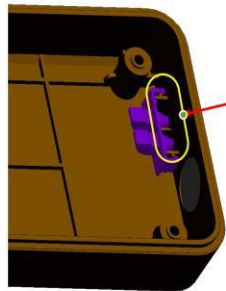


Don't plug in battery connector until PCB is screwed down

Light pipes



When putting enclosure together, light pipes go on top of PCB LEDs



Fill this slot with glue, local enclosure vendors can do it.



Use 6 of the same screws as used for PCB to secure enclosure

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## ATD300B

### Power On and OFF



#### Power ON

- When battery is connected, the device automatically powers on. The device does not have a button or power switch. The ATD300B Asset Tracking Device will be mounted on top of a host device, which will supply power to charge the internal battery.

#### Power OFF

- When the ATD300B Asset Tracking Device is in an idle state, it enters into its lowest power consumption state, or low power mode.





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## ATD300B

### FCC Interference Statement (Part 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 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.

### FCC Part 15 Clause 15.21

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

FCC Part 15.19(a) [interference compliance statement], unless the following statement is already provided on the device label

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.



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## ATD300B

### ISED RSS-Gen Notice

This device complies with Industry Canada's licence-exempt RSSs. 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.

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;
- 2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### FCC RF Exposure Guidance Statement

In order to comply with FCC/ISED RF Exposure requirements, this device must be installed to provide at least 20 cm separation from the human body at all times.

### ISED RF Exposure Guidance Statement

In order to comply with FCC/ISED RF Exposure requirements, this device must be installed to provide at least 20 cm separation from the human body at all times.

Afin de se conformer aux exigences d'exposition RF FCC / ISED, cet appareil doit être installé pour fournir au moins 20 cm de séparation du corps humain en tout temps.





Hardware Components and Specifications	
Component/Spec	Description
Quectel EC21-AU modem	<ul style="list-style-type: none"><li>Qualcomm MDM 9307 chipset</li><li>LTE CAT1</li><li>3GPP Rel. 11</li><li>FOTA</li><li>Embedded GPS/GNSS</li></ul>
Antennas	Embedded Cellular/GNSS/Bluetooth
Operating Frequency Band (RF)	GSM850 : 824.2-848.8MHz (TX), 869.2-893.8MHz (RX) GSM900 : 880-915MHz (TX), 925-960MHz (RX) GSM1800 : 1710-1785MHz(TX),1805-1880MHz (RX) GSM1900 : 1850.2-1909.8MHz (TX), 1930.2-1989.8MHz (RX) WCDMA850: 824-849MHz (TX), 869-894MHz (RX) WCDMA900: 880-915MHz (TX), 925-960MHz (RX) WCDMA1900: 1850-1910MHz (TX), 1930-1990MHz (RX) WCDMA2100: 1920-1980MHz (TX), 2110-2170MHz (RX) LTE BAND 1:1920-1980MHz (TX); 2110-2170MHz (RX) LTE BAND 2:1850-1910MHz (TX); 1930-1990MHz (RX) LTE BAND 3:1710-1785MHz (TX); 1805-1880MHz (RX) LTE BAND 4: 1710-1755MHz (TX); 2110-2155MHz (RX) LTE BAND 5: 824-849MHz (TX); 869-894MHz (RX) LTE BAND 7: 2500-2570MHz (TX); 2620-2690MHz (RX) LTE BAND 8: 880-915MHz (TX); 925-960MHz (RX) LTE BAND 28: 703-748MHz (TX); 758-803MHz (RX) LTE BAND 40: 2300-2400MHz (TX)/(RX)  BT: 2402-2480 MHz(TX&RX) GPS:1575.42MHz(RX)
Modulation mode	GSM: GMSK EDGE: 8PSK WCDMA: Uplink: BPSK; Downlink: QPSK/16QAM/ 64QAM LTE: QPSK, 16QAM Bluetooth: GFSK, $\pi/4$ -DQPSK, 8DPSK GPS: BPSK
Max. of Transmit power	GSM850/900:33±2dBm GSM1800/1900:30±2dBm EGPRS 850/900: 27±2dBm, EGPRS 1800/1900: 26±2dBm WCDMA850/900/1900/2100: 24+1/-3dBm LTE: Band 1/2/3/4/5/7/8/28/40: 23±2.7dBm BLE: 3.68dBm





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## ATD300B

Maximum of Antenna's Gain	WCDMA850: 1.42dBi WCDMA900: 1.42dBi WCDMA1900: 1.42dBi WCDMA2100: 1.42dBi GSM850: 1.42dBi GSM900: 1.42dBi DCS1800: 1.42dBi PCS1900: 1.42dBi LTE B1: 1.42dBi LTE B3: 1.42dBi LTE B7: 1.42dBi
SIM card slot	3FF Verizon SIM
Power ON/OFF	Powered by Lithium Polymer battery
Battery	Rechargeable Lithium Polymer <ul style="list-style-type: none"><li>• 3.7V</li><li>• 2000mAh</li></ul>
Charging	Internal battery will be charged by host power supply
Operating temperature	-20°C to +65°C
Dimensions	138.50 x 69.50 x 31mm
Certifications	FCC/IC/Verizon

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