



Tap Point Device

User Information & Installation Instructions

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Purpose

The purpose of this document is to provide the necessary information required for personnel to operate, maintain, and repair the Tap Point safely and efficiently.

The device is being manufactured for the Applicant's internal use only, at theme parks affiliated with the Applicant, and will not be sold to third parties unaffiliated with the Applicant. The devices also will be mounted in locations not accessible to the public. The device will be serviceable only by professionally designated technicians under a Non-Disclosure Agreement (NOA).

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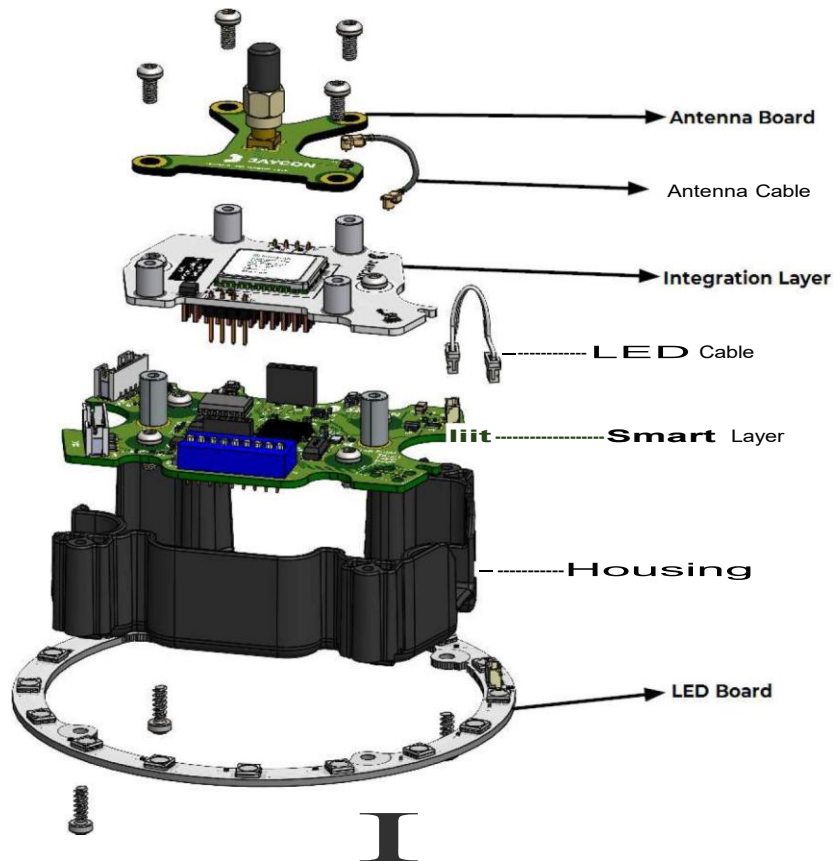
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1. Tap Point Overview

The Tap Point consists of two primary mechanical components, the housing and the over-molded horn, and four PCBs: the Smart Layer, Integration Layer, Antenna PCB, and LED Ring. Together, the four PCBs and the housing form one assembly, which is secured to the steering wheel with two screws, while the over-molded horn attaches directly to the steering wheel with two opposing setscrews. This configuration facilitates servicing, as the Tap Point assembly can be removed as a single unit. The Power Injector PCB and three individual cables (Tap Point Cable, OMX Adapter Cable, and PB Splitter Cable) connect the Tap Point to the rest of the RV.

1.1. Exploded View of the Tap Point Device



1.2. Dimension & Weight

- Diameter: 117mm
- Height: 55 mm
- Weight: 200g

1.3. Components

- Tap Point Assembly
 - Housing
 - Smart Layer
 - Integration Layer
 - Antenna PCB
 - LED PCB
 - LED Cable
 - Antenna Cable
- Power Injector
- Tap Point Cable
- PB Splitter Cable
- OMX Adapter Cable
- Over-molded Horn

1.4. Connectivity Summary

This section shows the connections of the Tap Point to the ride vehicle. Refer to Tap Point's Single Line Diagram for a complete graphic of the Tap Points' connections.



1.5. Tap Point Assembly

1.5.1. Internal Connections

The Tap Point assembly contains two internal cables: the LED Cable and the Antenna Cable. Both cables feature identical connectors on each end, allowing them to be connected in either orientation.

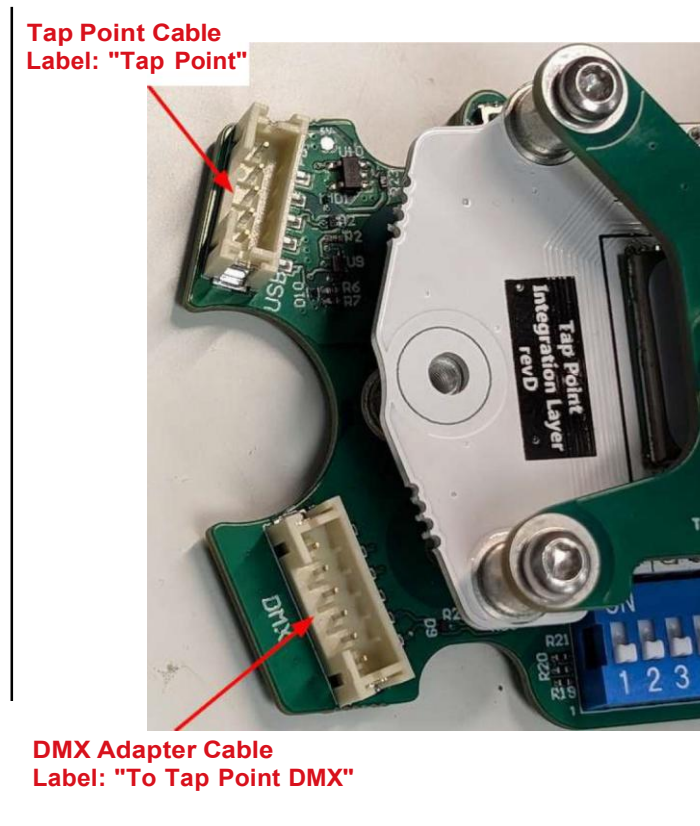
- **LED Cable:** Connects the Smart Layer to the LED ring
- **Antenna Cable:** Connects the Integration Layer to the Antenna Board

1.5.2. External Connections

The Tap Point assembly connects to the Ride Vehicle system via the Tap Point cable and the DMX Adapter cable.

- **Tap Point Cable:** Provides power and communicates the game's computer USB data pair from the sa2612 REV3 RFID.
- **DMX Adapter Cable:** Receives DMX signals from "sa2612 REV3 RING"

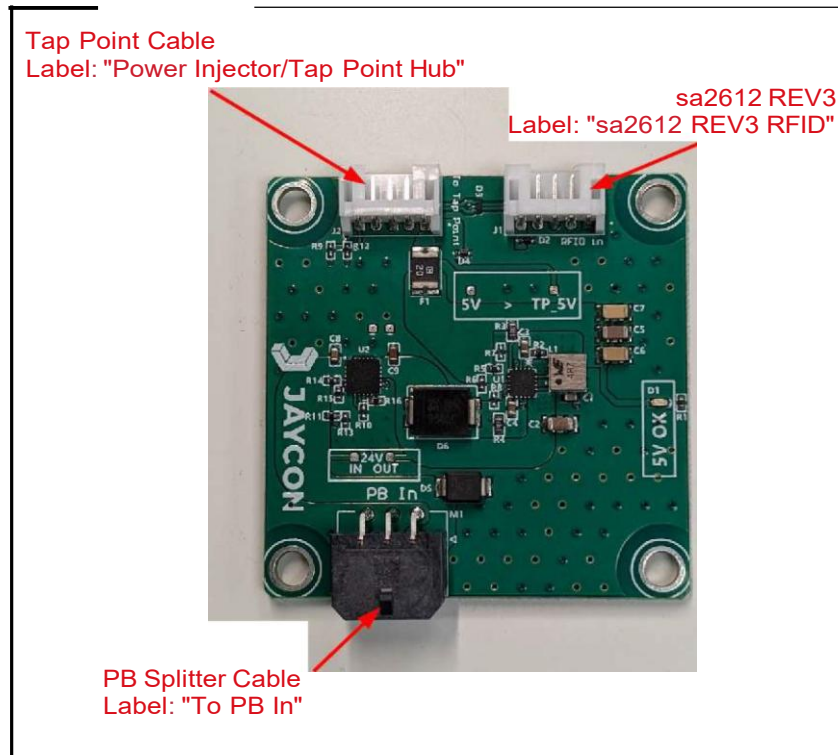




1.5.3. Power Injector

The Power Injector board has three connections.

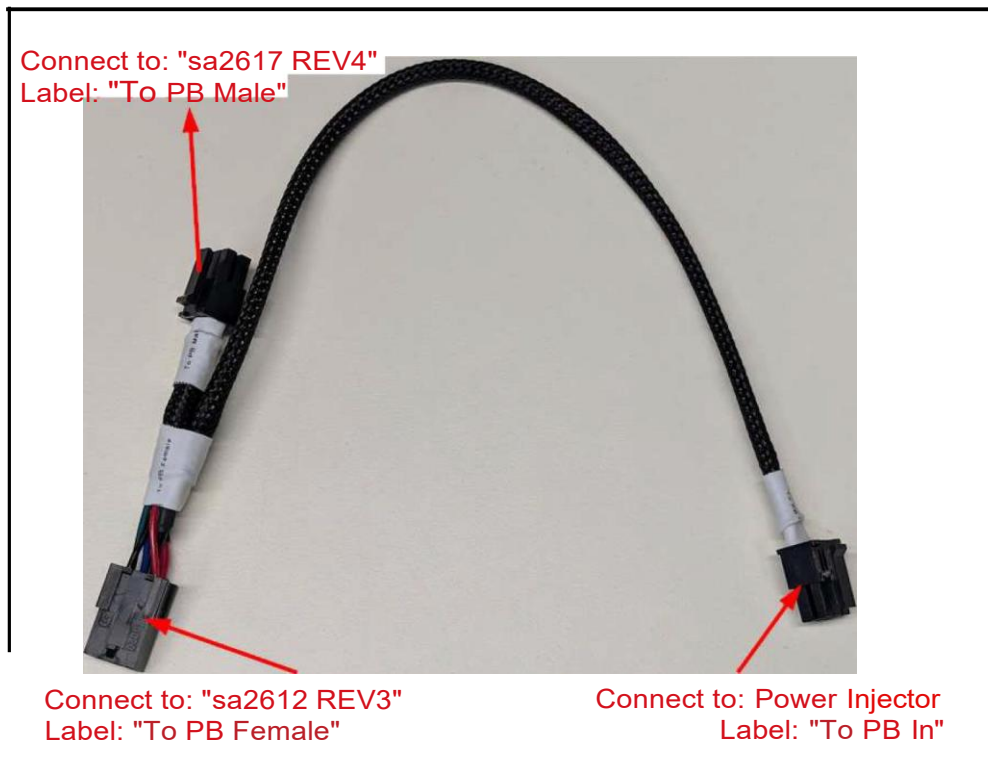
- **"To Tap Point"**: Connects to the Tap Point Cable on the end labeled "Tap Point."
- **"RFID In"**: Connects to the sa2612 REV3 cable on the end labeled "sa2612 REV3 RFID."
- **"PB In"**: Connects to the PB Splitter Cable on the end labeled "To PB In."



1.5.4. PB Splitter Cable

The PB Splitter Cable has three labeled ends.

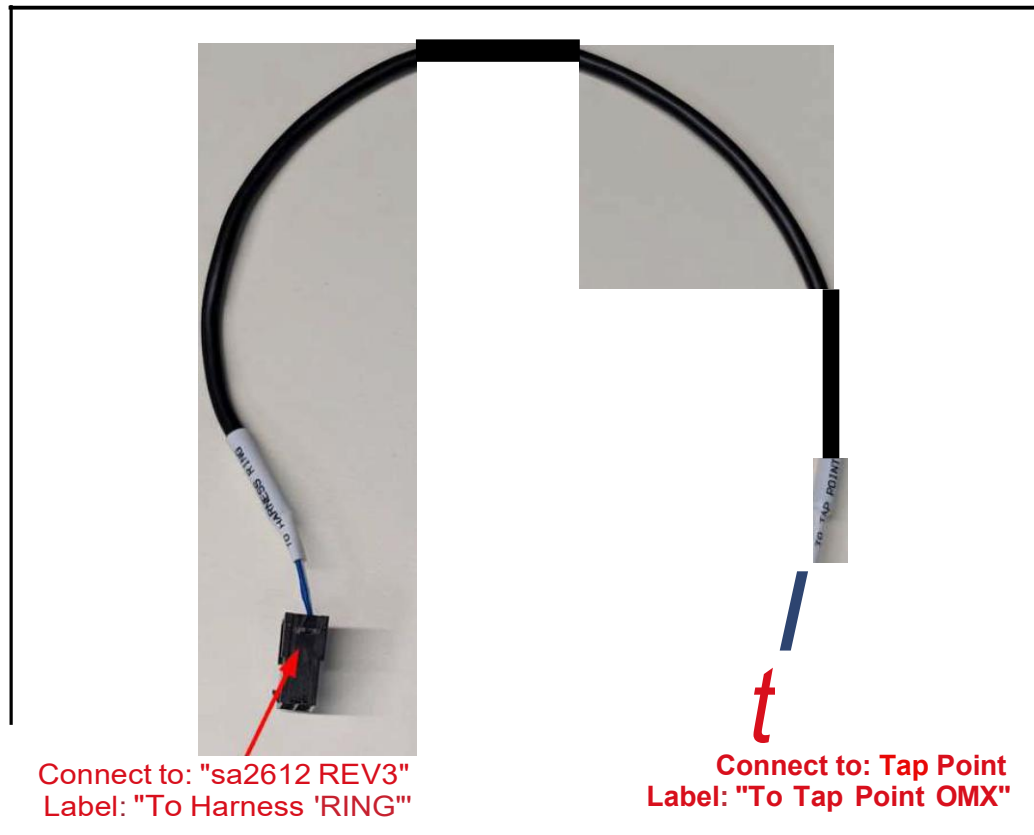
- **"To PB Female"**: connects to the sa2612 REV3 cable, which has the label "sa2612 REV3 PB" on the end.
- **"To PB Male"**: Connects to the sa2617 REV4 cable on the end labeled "sa2617 PB".
- **"To PB In"**: Connects to the Power Injector on the board connector labeled "PB In."



1.5.5. DMX Adapter Cable

The OMX Adapter Cable has 2 labeled ends.

- **"To Harness 'RING'"**: Connects to the sa2612 REV3 cable on the end labeled "sa2612 REV3 RING."
- **"To Tap Point DMX"**: Connects to the Tap Point's Smart Layer board connector labeled "OMX."



1.5.6. Tap Point Cable

The Tap Point Cable has 2 labeled ends.

- **"Power Injector/Tap Point Hub"**: Connects to the Power Injector on the board connector labeled "To Tap Point."
- **"Tap Point"**: Connects to the Tap Point's Smart Layer board connector labeled "USB."

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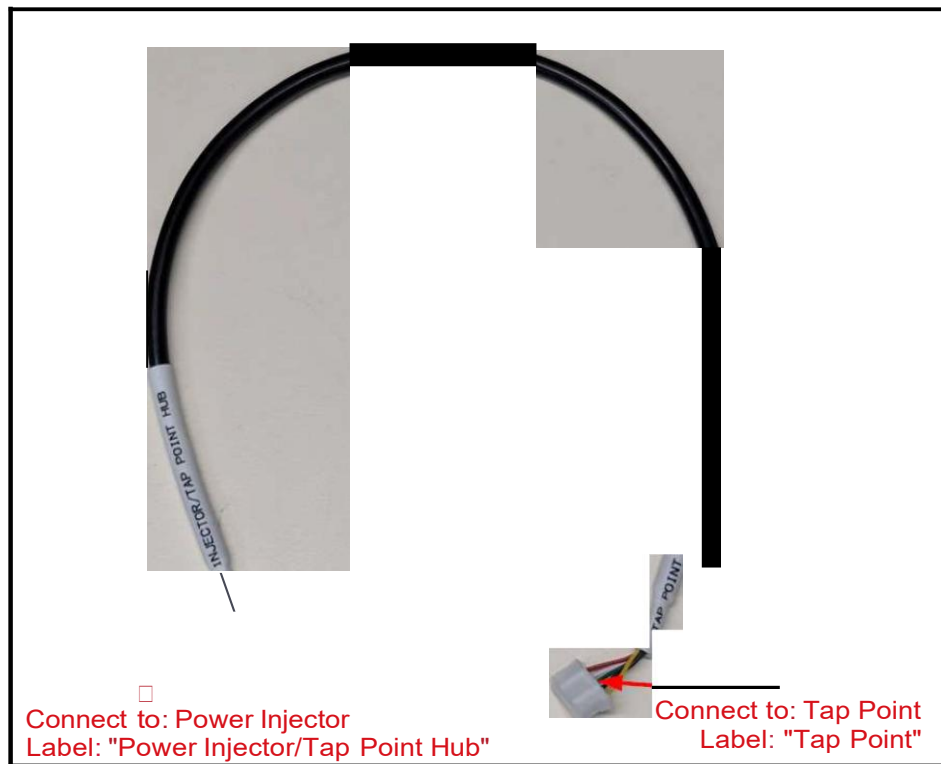
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2. Set up outside the RV

To set up the Tap Point, the following Jaycon-provided items are required:

- AS-7000082: Tap Point 904/MK Assembly
- AS-7000700: Tap Point Power Injector Board
- AS-1000079: Tap Point Cable
- AS-1000107: Tap Point Overmolded Horn
- 24V Power supply
- Custom power cable
- Custom USB cable

The Tap Point device needs to be powered via the Power Injector board to provide enough current. Additionally, a custom USB cable can be connected to the Power Injector on one end and to a PC on the other to communicate with the device.

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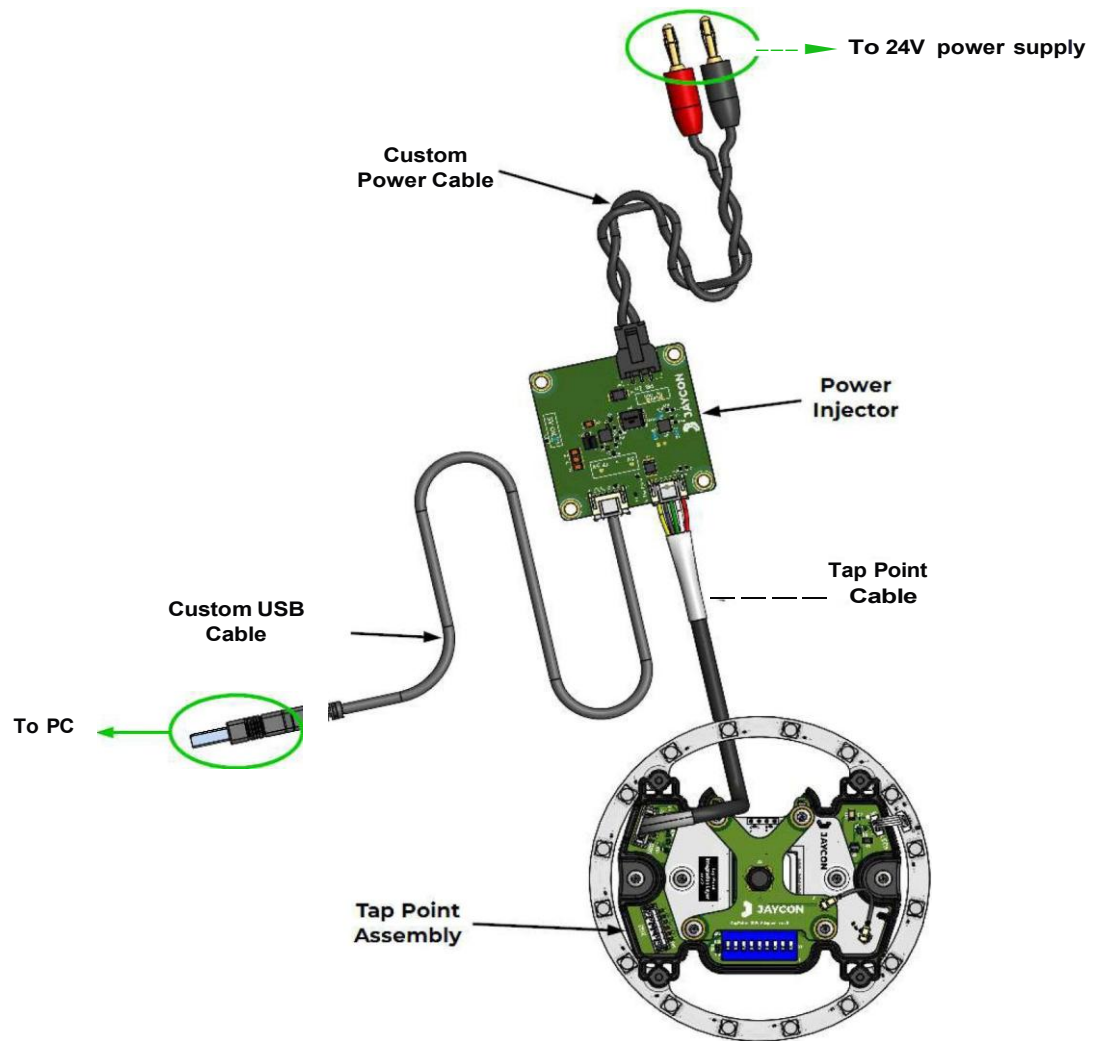
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The following image shows an overview of the connections:



Stack the overmolded horn on top of the assembly:

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3. Equipment Operations Modes

3.1. Initialization Phase

The boot-up process is where the device initializes all the hardware and software modules. This happens when powering up the device or when exiting the **DFU mode** (due to new firmware being flashed to the device).

LED Patterns

Begin Initialization: "Blue pulse"

End Initialization: "1 red pulse, 1 green pulse, 1 blue pulse" that will happen right after this phase ends.

3.2. Regular Mode

The primary state for regular functionality. The device gets into this mode right after the initialization phase.

- The device is initially set to the "RFID Low Power" setting.
- The device plays any DMX sequence that it receives.
- The device is listening and acting on commands sent through the SDK.

3.3. DFU Mode

The state in which the device is waiting for a new firmware to be flashed. During this mode, the device is not operational (all modules are off, and it doesn't respond to commands).



4. Equipment Maintenance

Important: Before maintenance, ensure the Tap Point is not scanning and the LEDs are off. Wait 2-3 minutes after removing the over-molded horn to allow the boards to cool down.

4.1. Cables and Connections Inspection

Activity Name	Tap Point Cables and Connections Inspection		
Frequency	6 months	Notes/ Comments	-
Objective	To ensure the integrity and proper connection of Tap Point Cables		
Maintenance Process Instructions			
Step	Procedure		Check
01	Ensure cables (both internal and external) are properly connected and not loose. These cables are the Tap Point Cable' (external - connects to the Power Injector), 'OMX Adapter Cable' (external - connects to sa2612), 'PB Splitter Cable' (external - connects to sa2612). 'LED Cable' (internal - connects inside the Tap Point assembly), 'Antenna Cable' (internal - connects inside the Tap Point assembly)		☐

4.2. Hardware Inspection

Activity Name	Tap Point Hardware Inspection		
Frequency	1 Year	Notes/ Comments	The heatsink, which is used for heat dissipation, is attached to the PCB with adhesive. Elevated temperatures over time can degrade the adhesive, leading to improper adhesion of the heatsink. Regular inspection (every six months) is required to assess

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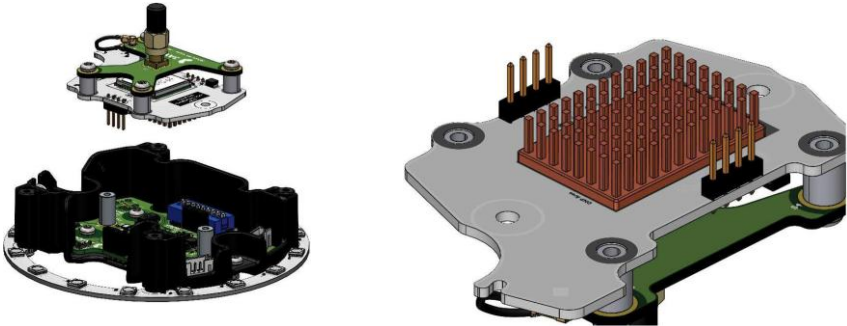


			the condition of the heatsink.
Objective	To ensure the integrity of the Tap Point assembly's hardware		
Maintenance Process Instructions			
Step	Procedure		Check
01	Ensure the housing is not damaged and the fasteners securing it are in place and not loose.		☐
02	Ensure the fasteners securing the Antenna Board and Integration Layer are not loose.		☐

4.3. Heatsink Inspection

Activity Name	Tap Point Heatsink Inspection		
Frequency	6 months	Notes/ Comments	The heatsink, which is used for heat dissipation, is attached to the PCB with adhesive. Elevated temperatures over time can degrade the adhesive, leading to improper adhesion of the heatsink. Regular inspection {every six months) is required to assess the condition of the heatsink.
Objective	To inspect the heatsink on the Integration Layer and replace it if necessary		
S.No	Tools/Hardware Checklist		
1	TIO Screwdriver		☐
2	99% Isopropyl Alcohol {if replacement needed)		☐
3	Heatsink {MI-1000801) {if replacement needed)		☐
4	Threadlocker {Loctite Blue 242 or similar)		☐
Maintenance Process Instructions			
Step	Procedure		
01	Unscrew the 2 M3x0.5mmx6mm screws securing the Integration Layer - Antenna Board stack.		☐



		
02	Remove the Integration Layer - Antenna Board stack by lifting it upwards. Examine the adhesion of the heatsink to the board. If signs of poor adhesion are present, such as peeling, lifting, or inadequate contact with the board, remove the heatsink, clean the area with isopropyl alcohol, and install the replacement heatsink {MI-1000807}. 	☐
03	Reassemble the Tap Point by following the steps backward. Use a thread locker when installing the fasteners for step I {M3x6 mm x 0.5 mm}.	☐



S. Equipment Troubleshooting Guide

Issue	No-tag detection
Possible reasons	- Tap Point <i>off</i> - Tap Point on, but no USB communication - Tap Point on, and USB communication is working, but not in scanning mode - Tap Point on, USB communication working, in scanning mode, but hardware malfunction
Troubleshooting Instructions	
Possible Reason	Procedure
Tap Point is not on	- Ensure that the Power Injector 'SV OK' LED is on - Ensure the integrity of every connection described in the 'Connectivity Summary.'
USB communication is not working	- Verify that the correct COM port is selected - Verify that a response is obtained from the Tap Point using the SOK
The Tap Point is not in scanning mode	- Verify that the command to scan has been sent to the Tap Point
Hardware malfunction	- At boot, the Tap Point will illuminate blue its LED ring. Then, it will proceed to play the OMX pattern it receives (or breathing green in case of no OMX signals). If there is a hardware issue preventing the Integration Layer from communicating with the Smart Layer, it will remain blue. - If the Integration Layer can communicate with the Smart Layer, verify that the antenna connection is not compromised. Ensure that the Antenna Cable is clipped on both ends and that the SMA antenna is properly screwed down on the Antenna Board. - Verify that communication can be established to the Tap Point using the SOK. - To troubleshoot Tap Point communication, the Tap Point Dashboard can also be used. - Replace the Integration Layer and or Antenna Board

Issue	Incorrect/Faulty Light Patterns
Possible reasons	- Tap Point <i>off</i> - Tap Point on, but no OMX is present - Tap Point on, OMX present, but incorrect DIP switch setting - Tap Point on, OMX present, correct DIP switch setting, but hardware malfunction - Tap Point on, OMX present, correct DIP switch setting, no hardware malfunction, but not in normal mode
Troubleshooting Instructions	
Possible Reason	Procedure
Tap Point is not on	- Ensure that the Power Injector 'SV OK' LED is on - Ensure the integrity of every connection described in the 'Connectivity Summary.'

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OMX not present	- Verify that the OMX signal (provided by others) is being sent to the Tap Point. After boot, if OMX is not present, the Tap Point will illuminate its LED ring in a green breathing pattern until it sees a OMX signal.
Incorrect DIP switch setting	- Verify that the DIP switch is correctly set to the desired value
The Tap Point is not in normal operation mode.	- Verify that the Tap Point operation mode does not take over LED control and allows OMX patterns to be played.
Hardware malfunction	- At boot, the Tap Point will illuminate blue its LED ring. Then, it will proceed to play the OMX pattern it receives (or breathing green in case of no OMX signals). If there is a hardware issue preventing the Integration Layer from communicating with the Smart Layer, it will remain blue. - Verify that the LED ring is not visibly damaged. - Verify that the LED cable is not damaged and that it's connected on both ends. - Replace the LED cable and/or the LED board.

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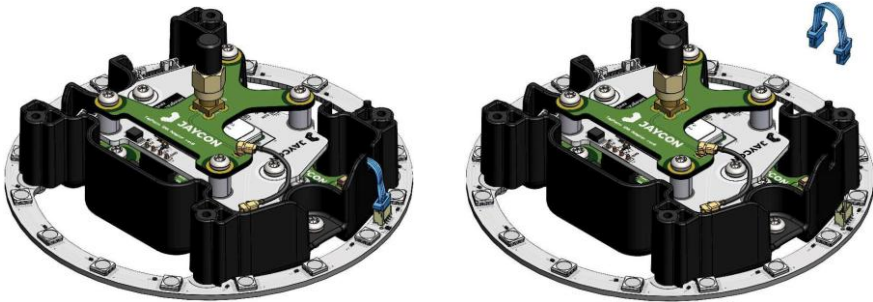
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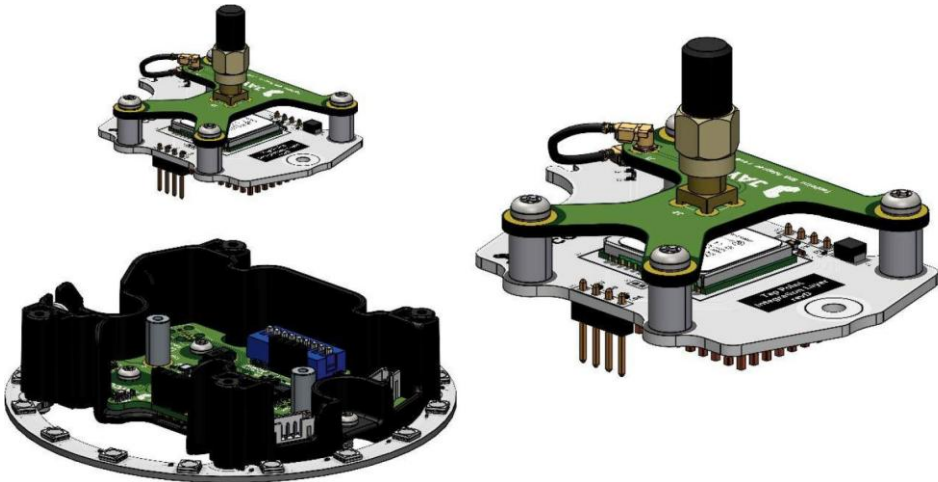
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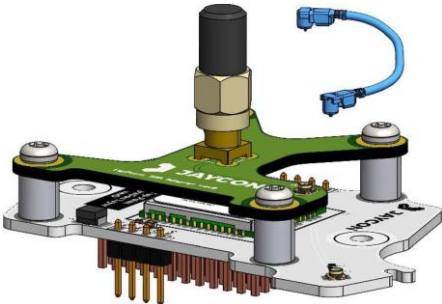
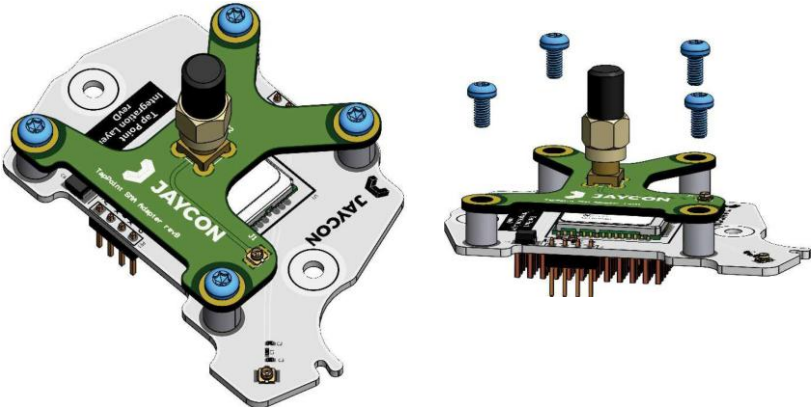
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6. Equipment Repair Instructions

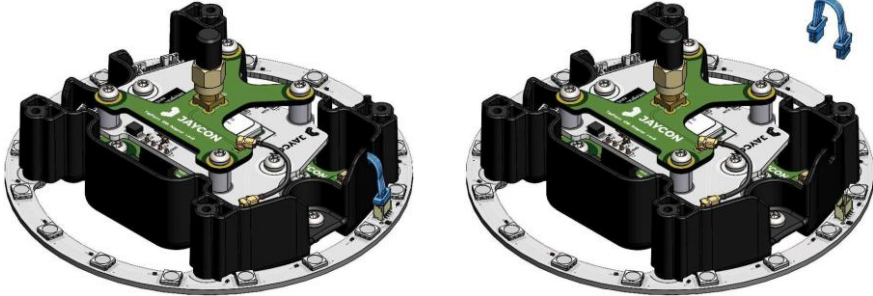
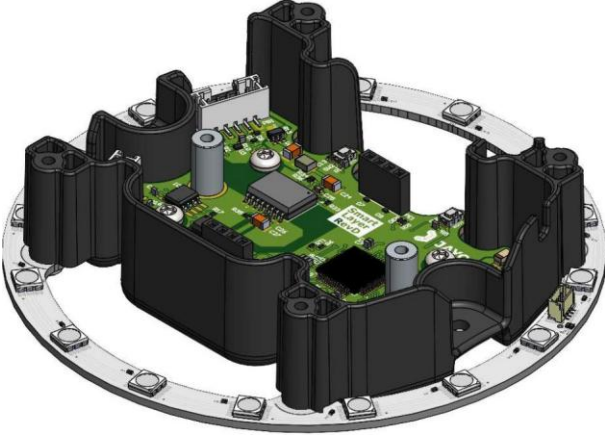
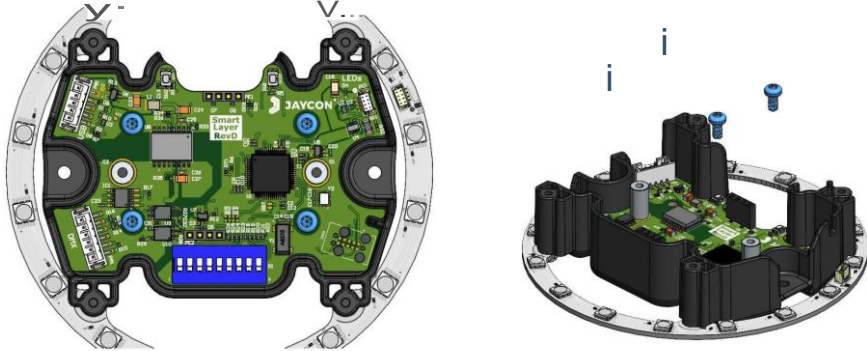
Activity Name	Replace the LED board and cable	
S.No	Tools/Hardware Checklist	
	T10 Screwdriver	☐
Maintenance Process Instructions		
Step	Procedure	
01	Remove the LED cable by pulling it upwards. 	☐
02	Remove the LED board by unscrewing the 4 M3 x 8mm thread-forming screws. 	☐
03	Repeat the steps above backward to replace with the new board/cable.	☐

Activity Name	Replace the Antenna Board, Integration Layer, and/or Antenna Cable	
S.No	Tools/Hardware Checklist	
	TIO Screwdriver	☐
2	Threadlocker (Loctite Blue 242 or similar)	☐
Maintenance Process Instructions		
Step	Procedure	
07	Unscrew the 2 M3x0.5mmx6mm screws securing the Integration Layer -Antenna Board stack. 	☐
02	Remove the Integration Layer -Antenna Board stack by lifting it upwards. 	☐

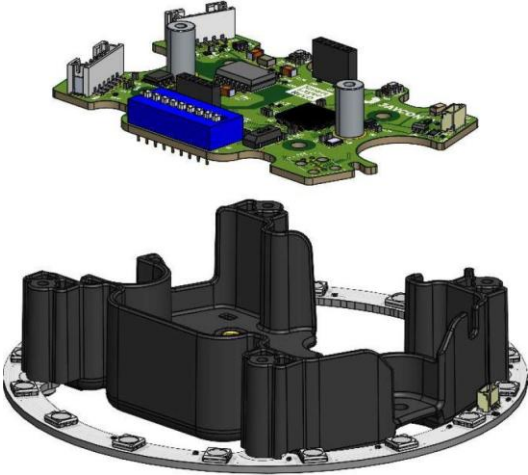
03	Remove the Antenna Cable. 	☐
03	Unscrew the 4 M3x0.5mmx6mm screws securing the Antenna Board to the Integration Layer. 	☐
04	Repeat the steps above backward to replace with the new boards/cable. Use a thread locker when installing the M3x0.5mmx6mm fasteners.	☐

Activity Name	Replace Smart Layer	
S.No	Tools/Hardware Checklist	
1	T10 Screwdriver	☐
2	Threadlocker (Loctite Blue 242 or similar)	☐
Maintenance Process Instructions		
Step	Procedure	



01	Remove the LED Cable by pulling it upwards. 	☐
02	Remove the Antenna Board+ Integration Layer stack following previous instructions 	☐
03	Unscrew the 4 M3x0.5mmx6mm screws securing the Smart Layer to the housing. 	☐
04	Remove the Smart Layer by lifting it up	☐



		
05	Repeat the steps above backward to replace with the new boards/cable. Use a thread locker when installing the M3x0.5mmx6mm fasteners.	☐



7. FCC Information

FCC ID: 2BCG5-RV-TP

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 UNDESIRE OPERATION.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

NOTE: 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.

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This unit complies with FCC RF Exposure limits for an uncontrolled environment. To comply with FCC RF exposure limit requirements, the device must be operated at a minimum distance of 5mm (.0764 feet) between the device and any person's body.

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