Logic Wireless Puck – User Manual

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1 Document Information

Project name	Logic Wireless Puck – User Manual
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SharePoint Online document number	TBC

2 Version Control

Version	Date	Author	Revision
1	07/09/24	SH	Initial draft
2	19/09/24	SH	Updated compliance statements
3	23/09/24	SH	Added model number details
4	27/09/24	SH	Updated WLAN frequency and CE MPE.
5	05/12/24	SH	Updated WLAN and Bluetooth power.
6	10/12/24	SH	Updated WLAN frequency and Bluetooth protocol.

3 Related Documentation

Title	Release	Notes
Logic Wireless Puck Configuration & Connection	1	Available for download from the Logic Wireless Support Portal.
Logic Wireless Puck Pairing Bluetooth Devices	1	Available for download from the Logic Wireless Support Portal.
Logic Wireless Puck Tait DMR Mobile Radio Configuration	1	Available for download from the Logic Wireless Support Portal.
Logic Wireless Puck Tait P25 Mobile Radio Configuration	1	Available for download from the Logic Wireless Support Portal.

4 Introduction

The Logic Wireless Puck (LWP-TM-100) can be connected to a Tait TM8000 or TM9000 series mobile radio to provide GNSS location, Bluetooth audio and Wi-Fi connectivity to the host device. The Logic Wireless Puck is designed for indoor use only. When fitted to a vehicle, the Puck must be installed in a safe manner, in adherence to the vehicle manufacturers instructions and all applicable local laws.

4.1 Compliance Information

The Logic Wireless Puck meets and exceeds the following regulatory requirements (where applicable):

- CFR Title 47 Part 15B and 15C
- CFR Title 47 Part 2.1091
- ICES-003
- RSS-247
- RSS-102
- EN 301 489-1/-17/-19
- EN55032/EN55035
- EN 300 328
- EN 303 413
- EN62311
- EN62368-1

4.2 FCC Compliance Statement

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.
This device 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 radiated 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.

4.3 FCC RF Exposure Statement

This device meets the government's requirements for exposure to radio waves.
This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.
This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

4.4 FCC Caution

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

4.5 Industry Canada Compliance Statement

This device complies with Industry Canada licence exempt RSS standard(s). 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

4.6 Industry Canada RF Exposure Statement

This device complies with ISED RSS-102 RF exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the IC RSS-102 RF exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

Cet appareil est conforme aux limites d'exposition aux rayonnements de la CNR-102 définies pour un environnement non contrôlé. Afin d'éviter la possibilité de dépasser les limites d'exposition aux fréquences radio de la CNR-102, la proximité humaine à l'antenne ne doit pas être inférieure à 20 cm (8 pouces) pendant le fonctionnement normal.

4.7 CE Declaration of Conformity

Hereby, Logic Wireless Ltd declares that the 802.11b/g/n and Bluetooth radio communication is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.logicwireless.co.nz. This device can be used with a separation distance of 20 cm (8 inches) to the human body.

4.8 UKCA Declaration of Conformity

Hereby, Logic Wireless Ltd declares that the 802.11b/g/n and Bluetooth radio communication is in compliance with RER 2017 (SI 2017/1206). The full text of the UK declaration of conformity is available at the following internet address: www.logicwireless.co.nz.

4.9 WEEE (Waste Electrical and Electronic Equipment

The crossed-out wheel bin symbol on the product, literature, or packaging reminds you that all electrical and electronic products, batteries, and accumulators must be taken to separate collection at the end of their working life. This requirement applies to the European Union and other locations where separate collection systems are available. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please do not dispose of these products as unsorted municipal waste, but hand it in at an official collection point for recycling.

5 General Specifications

5.1 Model Information

- Type Code (M/N): LWPTM1
- FCC ID: 2BK8ILWPTM1
- IC: 33052-LWPTM1

5.2 Dimensions

- Diameter: 85mm
- Height: 25mm
- Cable Length: 3000mm
- Connector: DB15 Male
- Housing: ASA (LI911) Injection Moulded

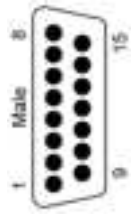
5.3 RF

- WLAN: 802.11b/g/n, 2400-2483.5 MHz, Maximum Transmit Power 17.5dBm (CE)
- Bluetooth: BT v5.2, 2402-2480MHz, Maximum Transmit Power 8.5dBm (CE)

5.4 Environmental

- Operating Temperature: -30°C to +60°C (-22°F to +140°F)
- Indoor use only

5.5 Connector Pin Locations

	Pin	Signal Name	Description
	1		
	2		
	3	Aux_RXD	Asynchronous serial port – radio receive
	4	Aux_GPI3	Ignition Sense passthrough from radio (Yellow wire)
	5		
	6		
	7	Audio Tap In	Audio from Puck to radio
	8	13.8V Switched	Switched power supply from host radio
	9	Aux_GPIO6	External PTT2 passthrough from radio (Blue wire)
	10	Aux_GPIO4	Future Use
	11	Aux_TXD	Asynchronous serial port – radio transmit
	12	Aux_GPI1	External PTT1
	13	Audio Tap Out	Audio from radio to Puck
	14		
	15	Ground	Ground

6 LED Status Indicator Description

6.1 Device (Left)

LED	State
Off	Idle – not connected
Orange	Power on
Red – Flashing	Error
Green	Wi-Fi connected
Blue	Wi-Fi and PPP connected

6.2 GPS (Middle)

LED	State
Off	OK – current valid fix
Green	Connected
Red – Flashing	Error

6.3 Bluetooth (Right)

LED	State
Off	Connected – paired to device
Orange	Searching for paired device
Red – Flashing	Error
Red	Disconnected
Blue – Flashing	Pairing

7 Preparation For Use

Before installing the Logic Wireless Puck or connecting it to the Tait mobile radio:

- Ensure the host Tait mobile radio is installed in a safe manner in full accordance with the manufacturer's Installation and Operation Manual.
- Ensure the host Tait mobile radio is configured per the Logic Wireless Tait DMR/P25 Mobile Radio Configuration Guide.

8 Installation

The Logic Wireless Puck is designed for indoor use only. When installing in a vehicle, the recommended location is either adhered to top of the dashboard near the A-pillar, or under the dashboard.

Before starting to install a Logic Wireless Puck, make sure that the installation will meet all safety requirements identified below, then choose the best path for the power cable and test the proposed position.

8.1 Important Safety Requirements

Warning: Check before drilling holes in the vehicle. Select points where drilling will not damage existing wiring, fuel tanks, fuel lines, brake pipes, or battery cables.

Warning: Avoid obstructions. When mounted, the device must not obstruct or endanger the occupants of the vehicle. The device must not obscure the driver's vision, interfere with control of the vehicle, or obstruct any airbags.

Warning: Mount the device securely. The device must not break loose in the event of a collision. An unsecured device can seriously injure vehicle occupants.

Warning: If the vehicle is a fuel or gas tanker, observe the special conditions that must be observed when installing radio equipment on fuel or gas tankers.

Warning: If the vehicle is powered by LPG (liquefied petroleum gas), observe LPG requirements. If the LPG container is in a sealed-off space within the interior of the vehicle, a radio equipment installation must conform to the National Fire Protection Association Standard NFPA 58. The standard states that the radio equipment installation must meet the following requirements:

- The space containing the radio equipment shall be isolated by a seal from the space containing the LPG container and its fitting.
- Outside filling connections shall be used for the LPG container and its fittings.
- The LPG container space shall be vented to the outside of the vehicle.

Warning: Avoid interference with vehicle electronics. Install the device and the power cable clear of all other electronic systems and cables. Some electronic devices in the vehicle may malfunction when a radio is transmitting. Devices that can be affected include electronic fuel injection systems, electronic anti-skid braking systems, electronic cruise control systems, and vehicle indicators (turn signals). Interference can occur if the electronic device is not adequately protected against RF energy. If the vehicle contains such equipment, consult the vehicle manufacturer or vehicle dealer to determine whether these electronic circuits will perform normally when a radio is transmitting.

9 Troubleshooting

9.1 No Power / No LED

1. Check the host Tait mobile radio is connected and turned on.
2. Check for +13.8VDC between pins 8 (13V8 switched) and 15 (ground) on the host Tait mobile radio.
3. Check the Logic Wireless Puck cabling to ensure it is intact and not damaged.
4. Check LED indicators are enabled in the Logic Wireless Puck configuration.
5. Return the device to Logic Wireless for assessment.

9.2 No Wi-Fi Connection

1. Check Wi-Fi credentials are configured correctly in the Logic Wireless Puck.
2. Check Wi-Fi is enabled in the Logic Wireless Puck configuration.
3. Use the Logic Wireless Puck to scan for available Wi-Fi networks to view desired network is visible with adequate signal strength.
4. Try an alternative Wi-Fi network or cellular hotspot.
5. Return the device to Logic Wireless for assessment.

9.3 No PPP Connection

1. Check the host Tait mobile radio is configured per the Logic Wireless Puck Tait DMR/P25 Mobile Radio Configuration Guide.
2. Try an alternative Tait mobile radio.
3. Check the Logic Wireless Puck cabling to ensure it is intact and not damaged.
4. Return the device to Logic Wireless for assessment.

9.4 No GNSS Connection

1. Check the host Tait mobile radio is configured per the Logic Wireless Puck Tait DMR/P25 Mobile Radio Configuration Guide.
2. Check the Logic Wireless Puck has a clear, unstructured view of the sky and away from any buildings, trees or overhead cover.
3. Check GPS is enabled in the Logic Wireless Puck configuration.
4. Try an alternative Tait mobile radio.
5. Check the Logic Wireless Puck cabling to ensure it is intact and not damaged.
6. Return the device to Logic Wireless for assessment.

9.5 No Bluetooth Connection

1. Check the host Tait mobile radio is configured per the Logic Wireless Puck Tait DMR/P25 Mobile Radio Configuration Guide.
2. Check Bluetooth is enabled in the Logic Wireless Puck configuration.
3. Try an alternative Bluetooth device.
4. Check the Logic Wireless Puck cabling to ensure it is intact and not damaged.
5. Return the device to Logic Wireless for assessment.

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