Tachyon Datasheet

This is a preliminary datasheet and is subject to change.

Overview

Tachyon is a 5G-connected single-board computer (SBC) that takes the technology inside a modern smartphone and packs it into a Raspberry Pi form factor to power portable and remote computing devices. With a powerful Qualcomm Dragonwing™ SoC, an AI accelerator, and Particle's application infrastructure, Tachyon combines all of the edge computing power, connectivity, and software necessary to embed intelligence into anything, anywhere.

- Qualcomm QCM6490 8-core Kryo™ 670 CPU (1x 2.7GHz, 3x 2.4GHz, 4x 1.9GHz).
- 5G sub-6Hz cellular connectivity and Wi-Fi 6E with on-device antennas
- 8GB RAM and 128GB with built-in UFS storage
- Adreno 643 GPU and 12 TOPS NPU
- USB-C 3.1 PD with DisplayPort and PD, 2x PCIe lanes, and DSI 4-lane
- 2 x CSI 4-lane with ISP, supporting 20+ pre-integrated camera sensors
- Powered by USB-C or lithium-ion battery with integrated battery charger
- Secure boot and encrypted filesystem

CPU INFORMATION

AI Engine

GPU Name	Qualcomm® Adreno™ 643L
CPU Name	Qualcomm® Adreno™ 643L
GPU Name	Qualcomm® Kryo™ 670
Qualcomm® Hexagon™ Processor Name	Qualcomm® Hexagon™ 770
Qualcomm® Hexagon™ Processor Features	Qualcomm® Hexagon™ Tensor Accelerator Qualcomm® Hexagon™ Scalar Accelerator Qualcomm® Hexagon™ Vector eXtensions (HVX) Qualcomm® Hexagon™ Voice Assistant Accelerator Large shared AI memory
Qualcomm® Sensing Hub Generation	2nd
Qualcomm® Sensing Hub Features	Qualcomm® Sensing Hub
Tera Operations Per Second (TOPS)	12 TOPS

CPU

Name	Qualcomm® Kryo™ CPU, Qualcomm® Kryo™ 670
Number of cores	8
Architecture	64-bit
Clock speed	1x 2.7GHz, 3x 2.4GHz, 4x 1.9GHz

GPU

Name	Qualcomm® Adreno™ 643L
Clock Speed	Up to 812 MHz
APIs	OpenGL® ES 3.2 DirectX® FL 12 OpenCL™ 2.0 FP Vulkan® 1.1

DSP

Name	Qualcomm® Hexagon™

Location

Sensor-assisted Positioning	Sensor-assisted Positioning
Satellite Systems	GLONASS, NavIC, QZSS, Galileo, Beidou, SBAS, GPS
Frequency Support	Dual (L1/L5)
Accuracy	Lane-level, Sidewalk-level
Features	Global Freeway Vehicle Navigation

Radio

- 3GPP Rel-15 specification, and supports both 5G NSA and SA modes with 4G/ 3G fallback
- 5G & LTE Multiple-Input Multiple-Output (MIMO) technology
- Wi-Fi 6E & DBS, IEEE 802.11a/ b/ g/ n/ ac/ ax, Wi-Fi 2 × 2 MU-MIMO
- Bluetooth 5.2

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BLOCK DIAGRAM

imageOverlay src="../assets/images/tachyon/block-diagram.svg" alt="Block diagram" --}}

POWER

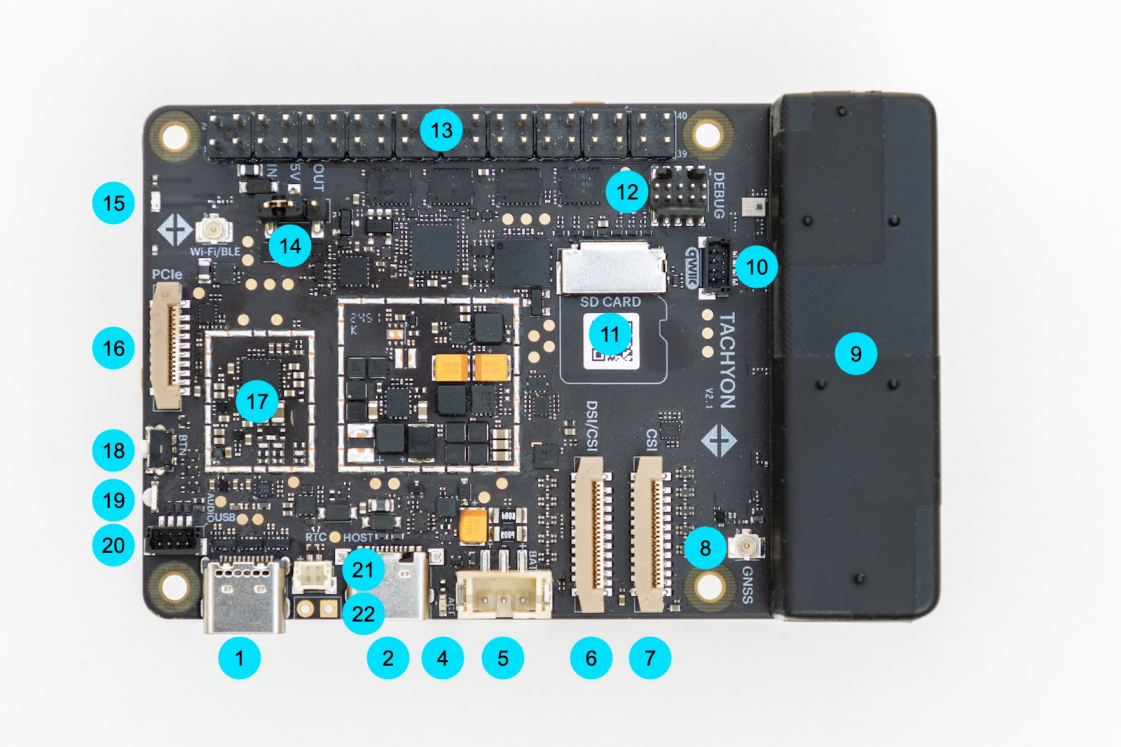
Power can be supplied by:

- Primary USB-C (USB1)
- LiPo battery (3-pin JST-PH connector)
- 40-pin expansion HAT connector (when selected by jumper)

Antennas

- The Tachyon includes built-in antennas for:
  - Cellular
  - Wi-Fi (2.4 GHz and 5 GHz) and BLE
- The Tachyon includes a U.FL connectors for:
  - GNSS (GPS)
- Wi-Fi operation in the 5150-5250 MHz band is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

Connections



Label	Description
1	Primary USB (USB1)
2	Secondary USB (USB2)
4	Activity LED
5	LiPo battery connector
6	DSI/CSI connector - DISP_CAM1 (display or camera)
7	CSI connector - CAM2 (camera only)
8	GNSS antenna
9	Built-in cellular antenna
10	QWIIC connector (3.3V I2C)
11	SD card (optional)
12	Debug connector (optional)
13	Raspberry Pi 40-pin expansion HAT connector
14	HAT 5V power direction jumper
15	Wi-Fi chip antenna
16	PCIe expansion connector
17	Device info (serial number data matrix code)
18	Button (power and mode)
19	Primary LED
20	Audio card connector
21	RTC battery connector (optional)
22	Connection for external button (optional)

PRIMARY USB (USB1) (1)

- Supports USB 3.1 (Key Port)
- Power & Data
  - Supports USB Power Delivery (USB PD) for powering the device.

    - Functions as a USB host or USB device depending on connection type.
- Video Output & Adapter Support
    - Supports USB-C adapters that combine USB, power, and HDMI output.
    - Acts as a PD sink when using a usb-c hub adapter.
- Can output HDMI over USB-C hub.

SECONDARY USB (USB2) (2)

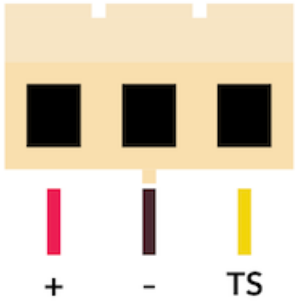
- USB 2.0 only.
- Standard USB-C connectivity.
- Supports USB hubs and can provide 5V power to connected devices.

ACTIVITY LED (4)

The Activity LED (4), located near the USB ports, provides system-level feedback, including disk operations, network activity, and battery charging status.

LIPO BATTERY CONNECTOR (5)

The Tachyon uses a 3.7V LiPo battery with a 3-pin JST-PH connector. The pack contains a 10K NTC thermistor temperature sensor.



Facing the plug on the battery side

DSI/CSI CONNECTOR - DISP_CAM1 (DISPLAY OR CAMERA) (6)

- This MIPI connection port supports either a camera or display
- Aligns with Raspberry Pi implementations for MIPI camera/display adapters.
- You can either use two cameras or one camera and one display using the two MIPI ports
- Based on 4-lane MIPI DSI, supports up to 2.5 Gbps/ lane, (1200 × 2520) @ 144 fps
- Supports DisplayPort 1.4, up to 4K (3840 × 2160) @ 60 fps
- Supports Wi-Fi Miracast 4K @ 60 fps

CSI CONNECTOR - CAM2 (CAMERA ONLY) (7)

- This MIPI connection port supports a camera
- Aligns with Raspberry Pi implementations for MIPI camera/display adapters.
- 4 × 4-lane MIPI CSI, up to 2.5 Gbps/ lane
- 3 × ISP, up to 3 × 27 MP @ 24 fps or 3 × 22 MP @ 30 fps; 36 MP + 27 MP @ 24 fps or 36 MP + 22 MP @ 30 fps; 36 MP @ 30 fps

GNSS ANTENNA (8)

- The recommended antenna is the `PARANTGN1`, included in your alpha tester kit.

- If using your own active antenna, the LNA gain must be less than 17dB.
- Software support will be provided in a future release.

BUILT-IN CELLULAR ANTENNA (9)

- This module contains the Wi-Fi and cellular antennas.
- Do not attempt to open the antenna module as it is very difficult to reassemble.

QWIIC CONNECTOR (3.3V I2C) (10)

- Follows the SparkFun Qwiic/Adafruit STEMMA QT standard for easy I2C expansion.
- Enables connection to various sensors and peripherals.
- Sensors and peripherals can generally be daisy-chained together.
- 4-pin JST 1mm connector, keyed.
- 3.3V I2C.

There is additional information on the Qwiic ecosystem in the Qwiic page in the Particle docs. Note that since Tachyon is Linux-based, you will need different libraries than you would for Particle or Arduino, but there are libraries for many popular Qwiic boards.

SD CARD (OPTIONAL) (11)

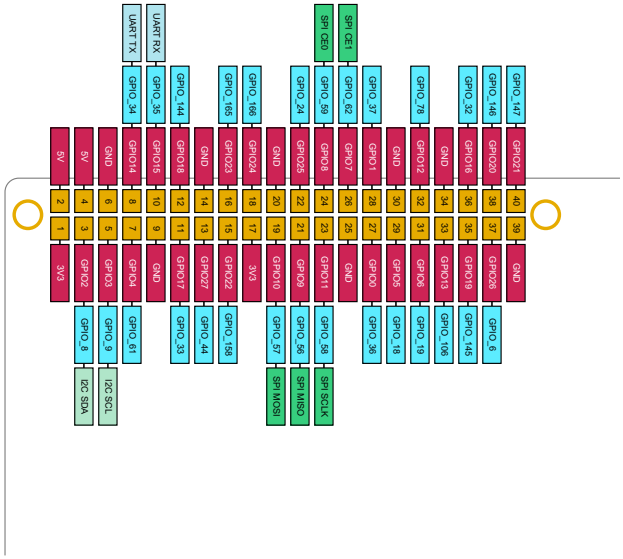
- Plug in any standard SD card into this slot.
- Optional for user data storage; operating system is stored on internal flash memory.
- SD 3.0, supports 4-bit SDIO

DEBUG CONNECTOR (OPTIONAL) (12)

- Provides UART access for system debugging and interaction.
- Used for:
  - SysCon UART (system controller communication).
  - Linux module UART (direct serial console access).
  - Battery communication (if applicable).

This connectors attaches to the debug adapter using a 10-pin (2x5) ribbon cable.

RASPBERRY PI 40-PIN EXPANSION HAT CONNECTOR (13)



- I2C (also connected to Qwiic port)
- SPI
- UART serial
- All GPIO are 3.3V only (not 5V tolerant outside of the 5V power pin)

HAT 5V POWER DIRECTION JUMPER (14)

Use the jumper to connect either `IN` or `OUT` to the center `5V` pin.

- `IN` means 5V is into the HAT, from the Tachyon.
- `OUT` means the HAT outputs power to power the Tachyon.

When in `IN` mode:

- 5V is not powered when in standby mode.
- 5V can be used even when powered only by LiPo battery.

When in `OUT` mode:

- Supply 5V at 2A to power the Tachyon to the 5V and GND pins on the 40-pin HAT connector.

WI-FI CHIP ANTENNA (15)

- Dual-band Wi-Fi and BLE chip antenna.

Alpha versions of the Tachyon have a U.FL connector marked **Wi-Fi/BLE**. This connector is not operational and will be removed in future versions of the Tachyon.

PCIE EXPANSION CONNECTOR (16)

- PCIe 3.0 x1 slot

- Matches the Raspberry Pi PCIe implementation.
- 2-lane PCIe Gen 3, supports NVMe

DEVICE INFO (SERIAL NUMBER DATA MATRIX CODE) (17)

- This data matrix code contains the serial number
- The serial number is also printed as numbers and letters on the bottom side label.

BUTTON (POWER AND MODE) (18)

The Tachyon board has a single button (18), located next to the primary LED, which is used for managing device states. It allows users to power on, enter programming mode, suspend, wake up, force power off, and trigger custom actions in user space.

PRIMARY LED (19)

The primary LED (19) on the Tachyon board provides critical information about the device's current mode and status.

The LED indicates:

- The Tachyon's core mode (e.g., off, standby, update, or operation).
- The Tachyon's status within that mode (e.g., booting, connected, or error states).

AUDIO CARD CONNECTOR (20)

- This is a 4 pin connector that gives analog audio in / out on the Tachyon board
- Software support will be added in a future release

RTC BATTERY CONNECTOR (OPTIONAL) (21)

- Uses RTC modules for the Raspberry Pi that typically contain a Lithium coin cell battery.
- Helps retain time between power cycles but does not provide full power-loss protection.

CONNECTION FOR EXTERNAL BUTTON (OPTIONAL) (22)

- Connect these two pads to an external momentary switch to allow the button operations to be done from an external button.

Technical specification

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ABSOLUTE MAXIMUM RATINGS

RECOMMENDED OPERATING CONDITIONS

WI-FI SPECIFICATIONS

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I/O CHARACTERISTICS

The CPU runs at 1.8V, but I/O on the expansion HAT connector is is 3.3V. Levels are translated using TI TXS0108E bidirectional level translators.

- Maximum data rates:
  - 110Mbps (push-pull)
  - 1.2Mbps (open-drain)
- 1.65V to 5.5V on B port
- ESD protection exceeds JESD 22 (A port, CPU-side):
  - 2000 V Human Body Model (A114-B)
  - 150 V Machine Model (A115-A)
  - 1000 V Charged-Device Model (C101)
- IEC 61000-4-2 ESD (B port, expansion connector side):
  - ± 8kV Contact Discharge
  - ± 6kV Air Discharge

ABSOLUTE MAXIMUM RATINGS

These values are from the TXS0108E datasheet and assume V_{CCB} is 3.3V.

Parameter	Min	Max	Unit
Input voltage	-0.5	6.5	V
Voltage applies to any output in high or low state	-0.5	3.8	V
Input clamp current I_K		-50	mA
Output clamp current I_{OK}		-50	mA
Continuous output current I_O	-50	50	mA
Continuous output current I_O	-50	50	mA

RECOMMENDED OPERATING CONDITIONS

Parameter	Min	Max	Unit
High-level input voltage V_{IH}	2.9	3.3	V
Low-level input voltage V_{IL}	0	0.15	V
Input transition rise or fall rate Δt/Δv		10	ns/V

Timing requirements

Parameter		Test Conditions	Min	Max	Unit
Data rate		Push-pull driving		70	Mbps
		Open-drain driving		0.8	
t_W	Pulse duration, data inputs	Push-pull driving	15.3		ns
		Open-drain driving		1250	

SWITCHING CHARACTERISTICS

Parameter		Test Conditions		Min	Max	Unit
t_{PHL}	Propagation delay time (high-to-low output)	Output	Push-pull driving		5.7	ns
			Open-drain driving	3.1	9.3	
t_{PLH}	Propagation delay time (low-to-high output)	Output	Push-pull driving		6.5	ns
			Open-drain driving	126	486	
t_{PHL}	Propagation delay time (high-to-low output)	Input	Push-pull driving		7.4	ns
			Open-drain driving	2.5	7.3	
t_{PLH}	Propagation delay time (low-to-high output)	Input	Push-pull driving		5.8	ns
			Open-drain driving	129	459	
t_{rB}	Input rise time	B-port rise time	Push-pull driving	1.2	5.2	ns
			Open-drain driving	73	546	
t_{fB}	Input fall time	B-port fall time	Push-pull driving	0.9	3.9	ns
			Open-drain driving	1	9.6	
$t_{SK(O)}$	Skew (time), output	Channel-to-channel	Push-pull driving		1	ns
	Maximum date rate	A or B	Push-pull driving	60		Mps
			Open-drain driving	0.8		

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POWER CONSUMPTION

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RADIO SPECIFICATIONS

Frequency bands

Frequency Bands	North America (TACH8NA)	Rest of World (TACH8ROW)
5G SA/NSA	n2/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 29/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78	n1/ 3/ 5/ 7/ 8/ 20/ 28/ 38/ 40/ 41/ 77/ 78/ 79
5G MIMO	4 × 4 MIMO (DL): n1/ 3/ 7/ 38/ 40/ 41/ 77/ 78/ 79 2 × 2 MIMO (UL): n38/ 40/ 41/ 77/ 78/ 79	4 × 4 MIMO (DL): n2/ 7/ 25/ 30/ 38/ 41/ 48/ 66/ 70/ 77/ 78 2 × 2 MIMO (UL): n38/ 41/ 48/ 77/ 78
LTE	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 17/ 25/ 26/ 29/ 30/ 38/ 41/ 42/ 43/ 46/ 48/ 66/ 71	B1/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 17/ 18/ 19/ 20/ 26/ 28/ 32/ 34/ 38/ 39/ 40/ 41/ 42
LTE MIMO	4 × 4 MIMO (DL): B2/ 4/ 7/ 25/ 30/ 38/ 41/ 42/ 43/ 48/ 66	4 × 4 MIMO (DL): B1/ 3/ 7/ 38/ 40/ 41/ 42
WCDMA	-	B1/ 2/ 4/ 5/ 6/ 8/ 19
GSM/EDGE	-	B2/ 3/ 5/ 8
WLAN	2.4 & 5 & 6 GHz 802.11a/ b/ g/ n/ ac/ ax, Supports DBS, 2 × 2 MU-MIMO	2.4 & 5 & 6 GHz 802.11a/ b/ g/ n/ ac/ ax, Supports DBS, 2 × 2 MU-MIMO

Bluetooth	Bluetooth 5.2	Bluetooth 5.2
GNSS	GPS/ GLONASS/ BDS/ NavIC/ Galileo/ QZSS/ SBAS; L1 + L5	GPS/ GLONASS/ BDS/ NavIC/ Galileo/ QZSS/ SBAS; L1 + L5

Data rate

Data rate	North America (TACH8NA)	Rest of World (TACH8ROW)
5G SA	2.1 Gbps (DL)/ 900 Mbps (UL)	2.1 Gbps (DL)/ 900 Mbps (UL) 9
5G NSA	2.5 Gbps (DL)/ 550 Mbps (UL)	2.5 Gbps (DL)/ 550 Mbps (UL)
LTE	1.2 Gbps (DL)/ 200 Mbps (UL)	1.2 Gbps (DL)/ 200 Mbps (UL)
DC-HSPA+	42 Mbps (DL)/ 5.76 Mbps (UL)	42 Mbps (DL)/ 5.76 Mbps (UL) 2
WCDMA	-	384 kbps (DL)/ 384 kbps (UL)
EDGE	-	296 kbps (DL)/ 236.8 kbps (UL)
GSM	-	107 kbps (DL)/ 85.6 kbps (UL)

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SCHEMATICS

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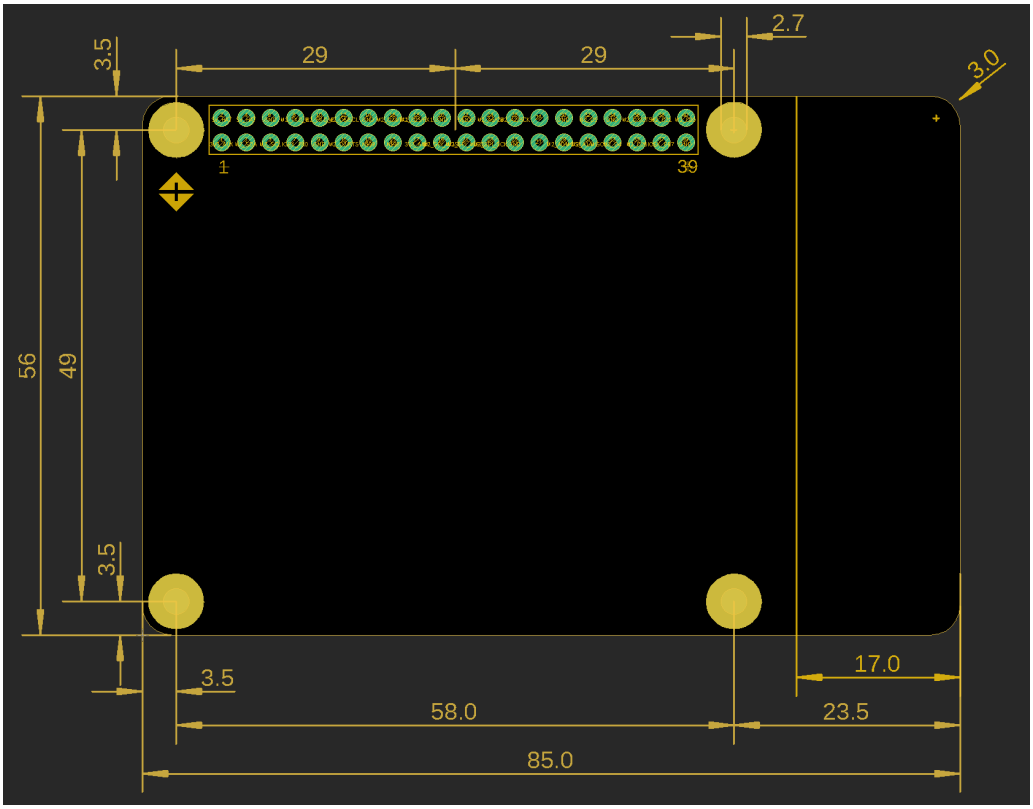
Mechanical specifications

DIMENSIONS AND WEIGHT

- Dimensions: 85mm x 56mm
- Weight: 55g (approximate)
- Height: 18.5mm (from top of antenna to bottom of feet)



Dimensions are in millimeters.

Product Handling

ESD PRECAUTIONS

The M-SoM contains highly sensitive electronic circuitry and is an Electrostatic Sensitive Device (ESD). Handling an M-SoM without proper ESD protection may destroy or damage it permanently. Proper ESD handling and packaging procedures must be applied throughout the processing, handling and operation of any application that incorporates the Particle M-SoM. ESD precautions should be implemented on the application board where the M-SoM is mounted. Failure to observe these precautions can result in severe damage to the M-SoM!

CONNECTORS

The 40-pin expansion had connector is static sensitive and should be handled carefully.

FCC ISED CE Warnings and End Product Labeling Requirements

Federal Communication Commission Interference Statement 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 Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. 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.

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

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling The final end product must be labeled in a visible area with the following:

- Contains FCC ID:

Manual Information to the End User The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user’s manual of the end product which integrates this module.

Outdoor Use (US)

To be compliant to FCC §15.407(a) the EIRP is not allowed to exceed 125 mW (21 dBm) at any elevation angle above 30° (measured from the horizon) when operated as an outdoor access point in U-NII-1 band, 5.150-5.250 GHz.

Canada Statement 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'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Caution Exposure: This device meets the exemption from the routine evaluation limits in section 2.5 of RSS102 and users can obtain Canadian information on RF exposure and compliance. Le dispositif répond à l'exemption des limites d'évaluation de routine dans la section 2.5 de RSS102 et les utilisateurs peuvent obtenir des renseignements canadiens sur l'exposition aux RF et le respect.

The final end product must be labelled in a visible area with the following: The Industry Canada certification label of a module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labelled to display the Industry Canada certification number of the module, preceded by the words "Contains transmitter module", or the word "Contains", or similar wording expressing the same meaning, as follows:

- Contains transmitter module ISED:

This End equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

The end user manual shall include all required regulatory information/warning as shown in this manual.

Outdoor use (CA)

- Operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- Operation in the 5600-5650 MHz band is not allowed in Canada. High-power radars are allocated as primary users (i.e., priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

- Le dispositif de fonctionnement dans la bande 5150-5250 MHz est réservé à une utilisation en intérieur pour réduire le risque d'interférences nuisibles à la co-canal systèmes mobiles par satellite
- Opération dans la bande 5600-5650 MHz n'est pas autorisée au Canada. Haute puissance radars sont désignés comme utilisateurs principaux (c.-àutilisateurs prioritaires) des bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer des interférences et / ou des dommages à dispositifs LAN-EL.

EUROPEAN UNION (CE)

UNITED KINGDOM

UKCA Conformity:

Radio Equipment Regulations 2017 (S.I. 2017/1206)

OUTDOOR USE (WORLD)

This device is restricted to indoor use when operating in the 5150 to 5350 MHz frequency range. This restriction applies in: AT, BE, BG, CH, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IS, IT, LI, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, UA, UK(NI).

Certification documents

Country compatibility

TACH8NA - COUNTRY COMPATIBILITY

Country	Technologies	Carriers
Canada	4G, 5G	Telus
Mexico	4G, 5G	Movistar
United States	4G, 5G	AT&T, US Cellular

TACH8ROW - COUNTRY COMPATIBILITY

Country	Technologies	Carriers
Australia	4G, 5G	Optus
Austria	2G, 3G, 4G, 5G	3 (Drei)
Belgium	2G, 3G, 4G, 5G	Base, Orange, Proximus
Bulgaria	2G, 3G	A1, Telenor, Vivacom
Cyprus	2G, 3G	Cytamobile-Vodafone
Czechia	2G, 4G, 5G	O2, T-Mobile, Vodafone
Denmark	2G, 3G, 4G	3 (Tre), TDC, Telenor, Telia
Estonia	2G, 3G, 4G	Elisa, Tele2, Telia
Finland	2G, 4G	DNA, Elisa, Telia
France	2G, 3G, 4G, 5G	Bouygues, Free Mobile, Orange, SFR
Germany	2G, 3G, 4G, 5G	O2, Telekom, Vodafone
Greece	2G, 4G, 5G	Cosmote, Vodafone, Wind
Hungary	2G, 3G, 4G, 5G	T-Mobile, Telenor, Vodafone
Iceland	2G, 3G, 4G	Nova, Siminn
India	2G, 3G, 4G	Vodafone
Ireland	2G, 4G, 5G	3 (Tre), Vodafone
Italy	2G, 3G, 4G, 5G	TIM, Vodafone, Wind
Japan	4G, 5G	KDDI
Lithuania	2G, 3G, 4G, 5G	Bite
Luxembourg	2G, 3G, 4G	Orange, POST, Tango
Netherlands	2G, 3G, 4G, 5G	KPN, T-Mobile, Vodafone
New Zealand	3G, 4G, 5G	Spark
Norway	2G, 4G	Telenor, Telia
Poland	2G, 3G, 4G, 5G	Orange, Play, Plus, T-Mobile
Portugal	2G, 3G, 4G, 5G	MEO, NOS, Vodafone
Romania	2G, 3G, 4G, 5G	Orange, Telekom Romania, Vodafone
Slovakia	2G, 4G	O2, Orange, Telekom
Slovenia	2G, 3G, 4G, 5G	A1, Mobitel
South Africa	2G, 3G, 4G, 5G	MTN
South Korea	4G, 5G	LG U+
Spain	2G, 3G, 4G, 5G	Orange, Telefonica, Vodafone, Yoigo
Sweden	2G, 3G, 4G, 5G	3 (Tre), Tele2, Telenor, Telia
Switzerland	3G, 4G, 5G	Sunrise, Swisscom
United Kingdom	2G, 3G, 4G, 5G	3, O2, Vodafone

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TACH8ROW - Additional countries

The following countries are not officially supported by the TACH8ROW at this time, but may be compatible. In some cases, the device may only be compatible with some carriers, or some bands.

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Ordering information

SKU	Description
TACH8NA	Tachyon 8GB RAM / 128GB Flash (NorAm), [x1]
TACH8ROW	Tachyon 8GB RAM / 128GB Flash (EMEA), [x1]

Revision history

Revision	Date	Author	Comments
pre	2025-03-03	RK	Initial version