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TUV SUD PSB Pte Ltd - 1 Science Park Drive, Singapore 118221

RF Exposure Assessment for Location Tracking Tag

Date: 30 June 2018

Model: STG-821W

Antenna description: Internal Chip Antenna 3.35dBi

FCC ID: VPE- STG-821W

Company Name: Cadi Scientific Pte Ltd

Rules:

KDB 447498 D01 General RF Exposure Guidance v06,

Calculations:

- Clause 4.3.1. Standalone SAR test exclusion considerations,
SAR test exclusion for 2400MHz, 5mm distance is 9.68mW
- Clause 6.3. Low transmission duty factor devices (applicable for location trackers)
Maximum average output power at Antenna terminal:
P: +14dBm [WLAN 2412 – 2462 MHz] + 2dB tolerance = 16dBm
D: Duty cycle: 20 % = 0.2
Max. power of channel, including tune-up tolerance = P*D= 7.97mW

Results:

Max. power of channel, including tune-up tolerance, $7.97\text{mW} \leq 9.68\text{mW}$ so Standalone SAR test exclusion applies for device.

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STG-821W - Declaration of Transmit Duty Cycle

Product Information

Model: STG-821W
Hardware version: STG821W v1.2
Antenna description: Internal Chip Antenna 3.35dBi
FCC ID: VPE-STG-821W
Company Name: Cadi Scientific Pte Ltd
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Wireless Modes, Power and Tune-up Tolerance

Wireless Mode	Channel, Data Rate	Ave no-gap power	Tune-up tolerance
802.11b	1, 1Mbps	+14dBm	+/- 2dB
802.11b	6, 1Mbps	+14dBm	+/- 2dB
802.11b	11, 1Mbps	+14dBm	+/- 2dB
802.11g	1, 6Mbps	+13dBm	+/- 2dB
802.11g	6, 6Mbps	+13dBm	+/- 2dB
802.11g	11, 6Mbps	+13dBm	+/- 2dB
MCS0	1, 6.5Mbps	+12dBm	+/- 2dB
MCS0	6, 6.5Mbps	+12dBm	+/- 2dB
MCS0	11, 6.5Mbps	+12dBm	+/- 2dB

Declaration of Maximum Transmit Duty Cycle

The STG-821W is a location tracking tag. It will periodically broadcast a WiFi packet so that the receiving server can determine the tag's location. The WiFi packet is a broadcast packet only and thus there is no handshake with the WiFi access points. As such the packet transmit time is fixed and this allows the transmit duty cycle to be controlled.

The tags' firmware has a built-in scheduler that controls the periodicity of the broadcast and ultimately limits the transmit duty cycle to less than 0.2 (20%). This limit on the transmit duty cycle is not user configurable.

Declared maximum transmit duty cycle: 0.2 (or 20%)

Firmware Version

All firmware versions of STG-821W shall comply with the above declared maximum transmit duty cycle and the maximum transmit duty cycle is not user configurable.

HCNg

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CTO
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