PSB Singapore

Choose certainty.
Add value.

RF Exposure Assessment for Location Tracking Tag

Date: 30 Nov 2017

Model: STG-873W
Antenna description: Internal Chip Antenna 3.35dBi
FCC ID: VPE-STG-873W
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, declared by applicant:
  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, 7.97mW ≤ 9.68mW so Standalone SAR test exclusion applies for device.

STG-873W - Declaration of Transmit Duty Cycle

Product Information

Model:	STG-873W
Hardware version:	MainPCB_0v4
	RadioPCB_0v3
Antenna description:	Internal Chip Antenna 3.35dBi
FCC ID:	VPE-STG-873W
Company Name:	Cadi Scientific Pte Ltd
Company Address:	31 Ubi Road 1, #07-01A, Aztech Building, Singapore 408694, Singapore
Contact Name:	Ng Hon Cheong
Telephone:	+65 62762676
Fax:	+65 62766216
Email:	honcheong.ng@cadi.com.sg

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-873W 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-873W shall comply with the above declared maximum transmit duty cycle and the maximum transmit duty cycle is not user configurable.

HCNg

_____
Ng Hon Cheong
CTO
Cadi Scientific Pte Ltd