



SAR Evaluation Report

Application No.: SZEM1906014844CR
Applicant: Traxxas LP
Address of Applicant: 6250 Traxxas Way Mckinney, Tx 75070, USA
Manufacturer: JASON TOYS&ELECTRONICS CO., LTD
Address of Manufacturer: NO.133 Wugong Road, Wugu District, New Taiei City 24886, Taiwan
Equipment Under Test (EUT):
EUT Name: TQi RADIO SYSTEM
Model No.: 6530B, 6525B, 6529B ♣
 ♣ Please refer to section 4.1 of this report which indicates which model was actually tested and which were electrically identical.
Trade mark: Traxxas
FCC ID: XVE-TRX1028
Standards: 47 CFR Part 1.1307
 47 CFR Part 2.1093
 KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2019-07-11
Date of Test: 2019-07-11 to 2019-08-01
Date of Issue: 2019-08-07

Test Result :	PASS*
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* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu
 EMC Laboratory Manager



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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-08-07		Original

Authorized for issue by:			
			
		<hr/> Harry Wu /Project Engineer	
			
		<hr/> Eric Fu /Reviewer	





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4 General Information




4.1 General Description of EUT

Power supply:	DC 6.0V(4 x 1.5V "AA" Batteries)
System:	Frequency hopping system & Digital modulation technique
Operation Frequency:	2414-2453MHz
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	1MHz
Antenna Type:	PCB Antenna
Antenna Gain:	0dBi

Remark:

Model No.: 6528B, 6529B, 6530B

Only the model 6530B was tested, since the electrical circuit design, layout, components used, internal wiring and functions were identical for all the above models, with only difference on model name and below details:

Model No.	6530B	6529B	6528B
	Main – 4 Channels (4 control switches)	Main – 3 Channels (3 control switches)	Main – 2 Channels (2 control switches)
			





4.2 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.4 Deviation from Standards

None.

4.5 Abnormalities from Standard Conditions

None.

4.6 Other Information Requested by the Customer

None.





5 Equipment List

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2018-09-25	2019-09-24
Coaxial Cable	SGS	N/A	SEM031-02	2019-07-11	2020-07-10
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2018-09-25	2019-09-24

6 SAR Evaluation

6.1 RF Exposure Compliance Requirement

6.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

6.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\left[\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

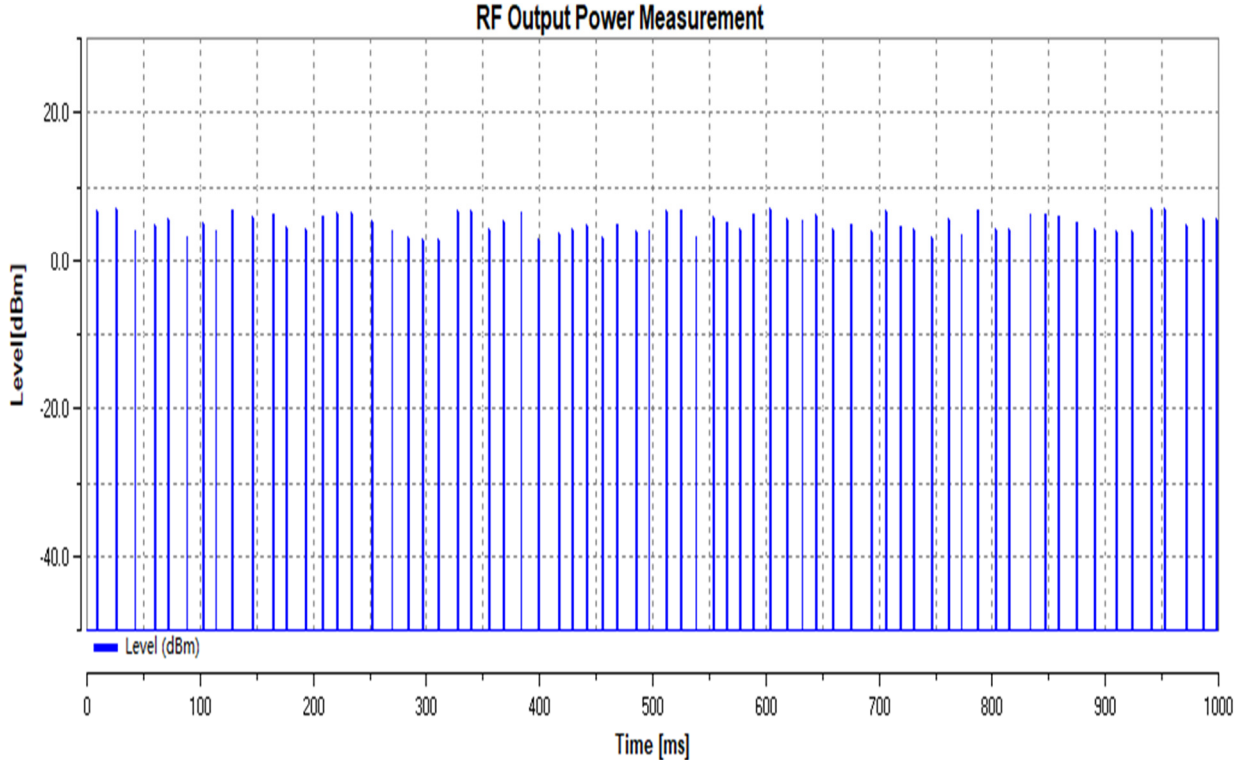
The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

6.1.3 EUT RF Exposure





FHSS:



Duty cycle=5.99%

The Conducted Output Power of the EUT is 12.87dBm(19.36mW).

Source-based time-averaging power:

$$(19.36 \times 5.99\%) \text{ mW} = 1.16 \text{ mW};$$

According to the formula, calculate the test exclusion thresholds:

$[(\text{max. power of channel, including tune-up tolerance, mW}) /$

$(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

$$\text{General RF Exposure} = (1.16 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.414 \text{ GHz}} = 0.36 \tag{1}$$

SAR requirement: $S=3$ (2)

$$(1) < (2)$$

(*)Max. power refer to Report No.: SZEM190601484402





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DSSS:

Channel	Frequency (MHz)	Averaging power (dBm)	Averaging power (mW)
Lowest	2414	5.68	3.70
Middle	2433	5.13	3.26
Highest	2453	4.99	3.16

The Averaging power is 5.68 dBm on the lowest channel 2.414 GHz (*)
5.68 dBm logarithmic terms convert to numeric result is nearly 3.70 mW
According to the formula. calculate the test exclusion thresholds:

$$\text{General RF Exposure} = \frac{(\text{Max. Power of channel, including tune-up tolerance, mW}) * \sqrt{f \text{ (GHz)}}}{(\text{min. test separation distance, mm})}$$

$$\text{General RF Exposure} = (3.70 \text{ mW} / 5 \text{ mm}) * \sqrt{2.414 \text{ GHz}} = 1.15 \quad (1)$$

SAR requirement:

$$S = 3.0 \quad (2)$$

$$(1) < (2)$$

So the SAR report is not required.

(*) Max. power refer to Report No.:SZEM19061484402

- End of the Report -



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Shenzhen Branch Testing & Calibration Laboratory

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