

Prüfbericht-Nr.: <i>Test report no.:</i>	CN22G058 002	Auftrags-Nr.: <i>Order no.:</i>	168350235	Seite 1 von 29 <i>Page 1 of 29</i>	
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2022-01-04		
Auftraggeber: <i>Client:</i>	SZ DJI TECHNOLOGY CO., LTD 14th Floor, West Wing, Skyworth Semiconductor Design Building No.18 Gaoxin South 4th Ave Nanshan District, Shenzhen, P.R. China				
Prüfgegenstand: <i>Test item:</i>	DJI RC				
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	RM330 (Trademark: DJI)				
Auftrags-Inhalt: <i>Order content:</i>	Test Report				
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247		RSS-247 Issue 2		
Wareneingangsdatum: <i>Date of sample receipt:</i>	202-02-15		Please refer to photo documents		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003211905-001~004				
Prüfzeitraum: <i>Testing period:</i>	2022-02-16 to 2022-03-09				
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüfergebnis*: <i>Test result*:</i>	Pass				
geprüft von: <i>tested by:</i>	<u><i>x Bell Hu</i></u> <small>Signed by: Bell Hu</small>		genehmigt von: <i>authorized by:</i>	<u><i>X Lin Lin</i></u> <small>Signed by: Lin Lin</small>	
Datum: <i>Date:</i>	2022-05-10		Ausstellungsdatum: <i>Issue date:</i>	2022-05-10	
Stellung / Position:	Project Manager		Stellung / Position:	Reviewer	
Sonstiges / Other:	FCC ID: SS3- RM33022, IC: 11805A- RM33022, HVIN: RM330 This report is for Bluetooth, Bluetooth BLE, 2.4GHz SDR and 2.4GHz Wi-Fi. Applicant & Manufacturer: SZ DJI TECHNOLOGY CO., LTD, 14th Floor, West Wing, Skyworth Semiconductor Design Building No.18 Gaoxin South 4th Ave Nanshan District, Shenzhen, P.R. China. Model: RM330				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>				
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar	5 = mangelhaft N/T = nicht getestet
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable	5 = poor N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>					

v05

Test Summary

5.1.1 ANTENNA REQUIREMENT*RESULT: Pass***5.1.2 MAXIMUM CONDUCTED OUTPUT POWER***RESULT: Pass***5.1.3 CONDUCTED POWER SPECTRAL DENSITY***RESULT: Pass***5.1.4 6DB BANDWIDTH***RESULT: Pass***5.1.5 99% BANDWIDTH***RESULT: Pass***5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH***RESULT: Pass***5.1.7 RADIATED SPURIOUS EMISSION***RESULT: Pass***5.1.8 CARRIER FREQUENCY SEPARATION***RESULT: Pass***5.1.9 NUMBER OF HOPPING FREQUENCY***RESULT: Pass***5.1.10 TIME OF OCCUPANCY***RESULT: Pass***5.1.11 CONDUCTED EMISSION ON AC MAINS***RESULT: Pass*

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of Bluetooth

Appendix B: Test Results of Bluetooth BLE

Appendix C: Test Results of 2.4GHz SDR

Appendix D: Test Results of 2.4GHz Wi-Fi

Appendix E: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	2022-09-28
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	2022-09-28
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	2022-09-28
DC power supply	Keysight	E3642A	MY61276100	2022-09-28
Power Control Unit	Tonscend	JS0806-4ADC	N/A	2022-09-28
Automation Control Unit	Tonscend	JS0806-2	21C8060396	2022-09-28
Test Software	Tonscend	JS1120-3	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2024-06-22
Unwanted Emission Testing (TS9975)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2022-08-10
Signal Analyzer	R&S	FSV 40	101439	2022-08-09
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2022-08-09
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2022-08-09
Amplifier	R&S	SCU-18F	180070	2022-08-09
Amplifier	R&S	SCU40A	100475	2022-08-09
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2022-08-08
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2022-08-08
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2022-08-08
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2022-09-13
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-06-22

Conducted Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102428	2022-08-10
Artificial Mains Network	R&S	ENV216	102333	2022-08-10
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-7}$
RF Power (conducted)	± 2.5 dB
Radiated Emission of Transmitter, valid up to 26.5 GHz	± 6 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	± 6 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB
Temperature	± 1 °C
Humidity	± 5 %
Voltage (DC)	± 1 %
Voltage (AC, <10kHz)	± 2 %

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B & C & D & E of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT (Equipment Under Test) is a DJI RC. It supports Bluetooth, 2.4GHz SDR, 2.4GHz Wi-Fi, 5.2/5.8GHz Wi-Fi, 5.8GHz SDR and GNSS functions.

*remark: SDR means specific defined radio, and cannot changes radio specification via software/firmware by end-users.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	DJI RC
Type Designation	RM330
Operating Voltage	AC 100-240V, 50/60Hz input via AC/DC adapter or Li-ion Battery operated (DC 3.6V 2600mA*2)
Extreme Temperature Range	-10 °C ~ 40 °C
Radiofrequency operating mode	1) Bluetooth: operating within 2400-2483.5MHz, supports Bluetooth Classic and BT 4.2@BLE, 1Mbps 2) 2.4GHz SDR: operating within 2400-2483.5MHz, supports 1.4MHz/3MHz/10MHz/20MHz Bandwidth 3) 2.4GHz Wi-Fi: operating within 2400-2483.5MHz, supports 20MHz/40MHz Bandwidth and IEEE 802.11 b/g/n20/n40 4) 5.2GHz W-Fi: operating with 5150-5250MHz, supports 20MHz/40MHz Bandwidth and IEEE 802.11 a/n20/n40 5) 5.8GHz SDR: operating within 5725-5850MHz, supports 1.4MHz/3MHz/10MHz/20MHz Bandwidth 6) 5.8GHz Wi-Fi: operating within 5725-5850MHz, supports 20MHz/40MHzBandwidth and IEEE 802.11 a/n20/n40 7) GNSS (receiver): operating within 1559-1610MHz
AC/DC adapter	Model: PD-30US Input: AC 100-240V, 50/60Hz, 0.8A Max USB-C Output: DC 3.3-11V, 2.72A or DC 9.0V, 3.0A or DC 12.0V, 2.5A
Technical Specification of Bluetooth	
Operating Frequency	2402-2480MHz
Type of Modulation	GFSK, $\pi/4$ -DQPSK, 8DPSK
Data Rate	1Mbps, 2Mbps, 3Mbps
Channel Number	79 channels for Bluetooth Classic 40 channels for Bluetooth BLE
Channel Separation	1MHz and 2MHz
Antenna Type	Integral Antenna
Antenna Number	1
Antenna Gain	3.0 dBi
The type of wideband data	FHSS for Bluetooth Classic

transmission equipment	DTS Bluetooth BLE
Technical Specification of 2.4GHz SDR	
Operating Frequency	2407.5-2465.5MHz for 1.4MHz Bandwidth 2409.12-2467.12MHz for 1.4MHz Bandwidth (CA mode) 2417.5-2456.5MHz for 3MHz Bandwidth 2405.5-2476.5MHz for 10MHz Bandwidth 2410.5-2472.5MHz for 20MHz Bandwidth
Type of Modulation	OFDM (QPSK, 16QAM, 64QAM)
Channel Number	30 channels for 1.4MHz Bandwidth 30 channels for 1.4MHz Bandwidth (CA mode) 14 channels for 3MHz Bandwidth 72 channels for 10MHz Bandwidth 63 channels for 20MHz Bandwidth
Channel Separation	2MHz for 1.4MHz Bandwidth 2MHz for 1.4MHz Bandwidth (CA mode) 3MHz for 3MHz Bandwidth 1MHz for 10MHz Bandwidth 1MHz for 20MHz Bandwidth
Antenna Type	Two Integral Antennas, only 1Tx2Rx supported.
Antenna Gain	1.5 dBi
The type of wideband data transmission equipment	DTS
Technical Specification of 2.4GHz Wi-Fi	
Operating Frequency	2412 - 2472MHz for 802.11b/g/n(HT20)/ 2422 - 2462MHz for 802.11n(HT40)
Type of Modulation	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS15 for 802.11n
Channel Number	11 channels for 802.11b/g/n(HT20) 7 channels for 802.11n(HT40)
Channel Separation	5 MHz
Antenna Type	Integral Antenna
Antenna Number	1Tx1Rx
Antenna Gain	3.0dBi
The type of wideband data transmission equipment	DTS

Table 3: RF Channel and Frequency of Bluetooth Classic

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00

7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00		

Table 4: RF Channel and Frequency of BLE

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

Table 5: RF Channel and Frequency of 2.4GHz SDR

2.4GHz 1.4MHz Bandwidth (CA Mode) (2409.12MHz-2467.12MHz)			
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
1	2409.12	16	2439.12
2	2411.12	17	2441.12
3	2413.12	18	2443.12
4	2415.12	19	2445.12
5	2417.12	20	2447.12
6	2419.12	21	2449.12
7	2421.12	22	2451.12
8	2423.12	23	2453.12
9	2425.12	24	2455.12
10	2427.12	25	2457.12
11	2429.12	26	2459.12
12	2431.12	27	2461.12
13	2433.12	28	2463.12

14	2435.12	29	2465.12
15	2437.12	30	2467.12

2.4GHz 1.4MHz Bandwidth (CA Mode) (2409.12MHz-2467.12MHz)			
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
1	2409.12	16	2439.12
2	2411.12	17	2441.12
3	2413.12	18	2443.12
4	2415.12	19	2445.12
5	2417.12	20	2447.12
6	2419.12	21	2449.12
7	2421.12	22	2451.12
8	2423.12	23	2453.12
9	2425.12	24	2455.12
10	2427.12	25	2457.12
11	2429.12	26	2459.12
12	2431.12	27	2461.12
13	2433.12	28	2463.12
14	2435.12	29	2465.12
15	2437.12	30	2467.12

2.4GHz 3MHz Bandwidth (2417.5MHz-2456.5MHz)			
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
1	2417.5	8	2438.5
2	2420.5	9	2441.5
3	2423.5	10	2444.5
4	2426.5	11	2447.5
5	2429.5	12	2450.5
6	2432.5	13	2453.5
7	2435.5	14	2456.5

2.4GHz 10MHz Bandwidth (2405.5MHz-2476.5MHz)							
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
1	2405.5	19	2423.5	37	2441.5	55	2459.5
2	2406.5	20	2424.5	38	2442.5	56	2460.5
3	2407.5	21	2425.5	39	2443.5	57	2461.5
4	2408.5	22	2426.5	40	2444.5	58	2462.5
5	2409.5	23	2427.5	41	2445.5	59	2463.5
6	2410.5	24	2428.5	42	2446.5	60	2464.5
7	2411.5	25	2429.5	43	2447.5	61	2465.5
8	2412.5	26	2430.5	44	2448.5	62	2466.5
9	2413.5	27	2431.5	45	2449.5	63	2467.5

10	2414.5	28	2432.5	46	2450.5	64	2468.5
11	2415.5	29	2433.5	47	2451.5	65	2469.5
12	2416.5	30	2434.5	48	2452.5	66	2470.5
13	2417.5	31	2435.5	49	2453.5	67	2471.5
14	2418.5	32	2436.5	50	2454.5	68	2472.5
15	2419.5	33	2437.5	51	2455.5	69	2473.5
16	2420.5	34	2438.5	52	2456.5	70	2474.5
17	2421.5	35	2439.5	53	2457.5	71	2475.5
18	2422.5	36	2440.5	54	2458.5	72	2476.5

2.4GHz 20MHz Bandwidth (2410.5MHz-2472.5MHz)					
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
1	2410.5	22	2431.5	43	2452.5
2	2411.5	23	2432.5	44	2453.5
3	2412.5	24	2433.5	45	2454.5
4	2413.5	25	2434.5	46	2455.5
5	2414.5	26	2435.5	47	2456.5
6	2415.5	27	2436.5	48	2457.5
7	2416.5	28	2437.5	49	2458.5
8	2417.5	29	2438.5	50	2459.5
9	2418.5	30	2439.5	51	2460.5
10	2419.5	31	2440.5	52	2461.5
11	2420.5	32	2441.5	53	2462.5
12	2421.5	33	2442.5	54	2463.5
13	2422.5	34	2443.5	55	2464.5
14	2423.5	35	2444.5	56	2465.5
15	2424.5	36	2445.5	57	2466.5
16	2425.5	37	2446.5	58	2467.5
17	2426.5	38	2447.5	59	2468.5
18	2427.5	39	2448.5	60	2469.5
19	2428.5	40	2449.5	61	2470.5
20	2429.5	41	2450.5	62	2471.5
21	2430.5	42	2451.5	63	2472.5

Table 6: RF Channel and Frequency of 2.4GHz Wi-Fi 802.11 b/g/n

RF Channel	802.11 b/g/n(HT20)	802.11 n(HT40)
	Frequency (MHz)	Frequency (MHz)
01	2412	
02	2417	
03	2422	2422
04	2427	2427
05	2432	2432
06	2437	2437
07	2442	2442
08	2447	2447

09	2452	2452
10	2457	2457
11	2462	2462
12	2467	
13	2472	

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth wireless transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
 - 4) Hopping mode
- B. On, Bluetooth BLE wireless transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- C. On, 2.4GHz SDR wireless transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- D. On, Wi-Fi 802.11 b/g/n wireless transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- E. On, Normal Operation
- F. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013 and ANSI C63.4: 2014.

According to clause 3.1, all tests were performed on model RM330 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 7: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N
Laptop	Lenovo	T480	PF-16A6N8

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

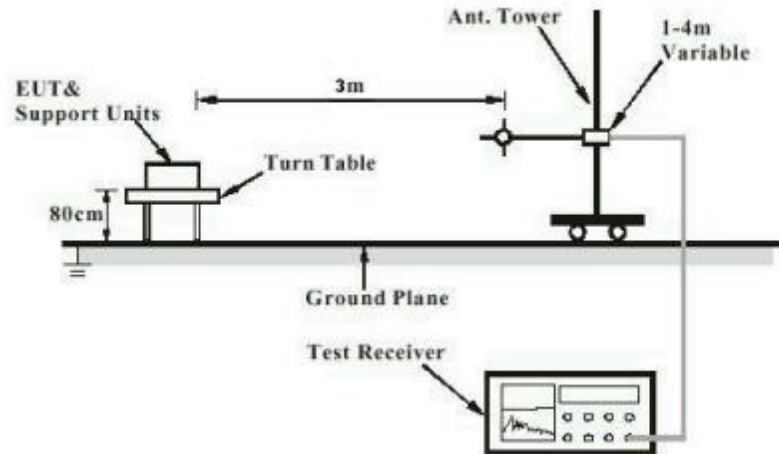


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

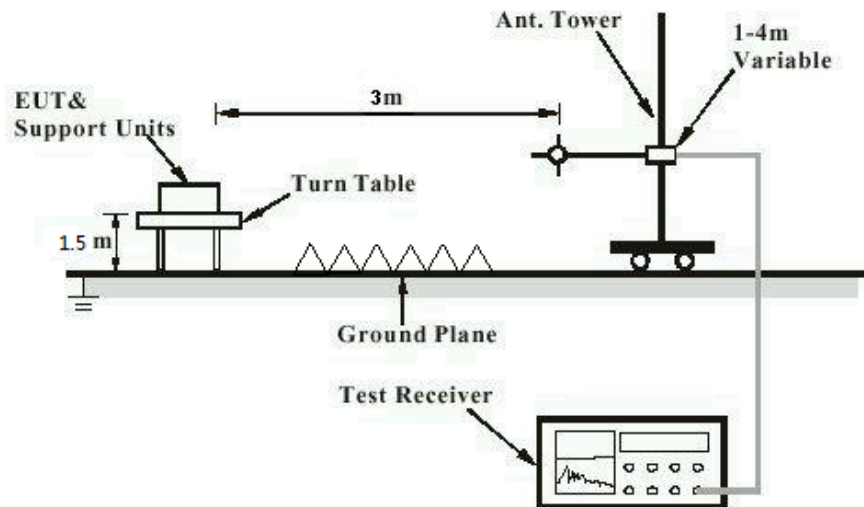


Diagram of Measurement Configuration for Mains Conduction Measurement

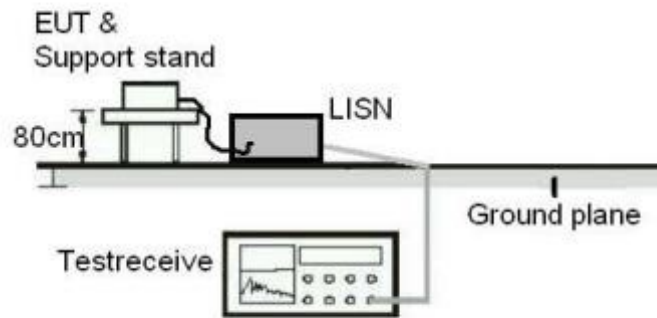
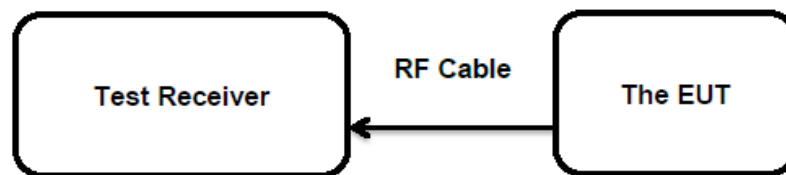


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(b)(4) and Part 15.203

According to the manufacturer declared, the EUT has internal antennas, the max gain is 3dBi for Bluetooth & 2.4GHz Wi-Fi, 1.5dBi for 2.4GHz SDR, permanent attachment and no consideration of replacement. Therefore, the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Conducted Output Power

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.247(b)(3) RSS-247 Clause 5.4(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	0.125W, 1.0 Watts
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-02-16 to 2022-02-28
Input voltage	:	Fully charged battery
Operation mode	:	A, B, C, D
Test channel	:	Low / Middle / High
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Table 8: Test Result of Maximum Peak Conducted Output Power, BDR & EDR

Test Mode	Test Channel (MHz)	Conducted Peak Output Power		Limit (W)
		(dBm)	(W)	
GFSK (BDR)	2402.0	4.05	0.0025	< 0.125
	2441.0	3.78	0.0024	
	2480.0	3.96	0.0025	
Maximum Measured Value		4.05	0.0025	
Test Mode	Test Channel (MHz)	Conducted Peak Output Power		Limit (W)
		(dBm)	(W)	
8DPSK (EDR)	2402.0	4.29	0.0027	< 0.125
	2441.0	3.99	0.0025	
	2480.0	4.16	0.0026	
Maximum Measured Value		4.29	0.0027	

Max. e.i.r.p.=4.29dBm+3dBi=7.29dBm, which is less than 36dBm=4W..

Table 9: Test Result of Maximum Peak Conducted Output Power, BLE

Test Mode	Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
			(dBm)	(W)	
GFSK (BLE)	1 Mbps	2402	3.53	0.0023	< 1.0
		2440	3.26	0.0021	
		2480	3.57	0.0023	
Maximum Measured Value			3.57	0.0023	

Max. e.i.r.p.=3.57dBm+3dBi=6.57dBm, which is less than 36dBm=4W.

Table 10: Test Result of Maximum Conducted Output Power, Wi-Fi 802.11 b/g/n

Test Mode	Data Rate	Test Channel (MHz)	Measured Average Power		Limit (W)
			(dBm)	(W)	
802.11b	1 Mbps	2412	12.01	0.0159	< 1.0
		2437	15.89	0.0388	
		2462	12.67	0.0185	
802.11g	6 Mbps	2412	12.25	0.0168	
		2437	15.84	0.0384	
		2462	12.68	0.0185	
802.11n (HT20)	MCS0	2412	12.80	0.0191	
		2437	15.90	0.0389	
		2462	12.99	0.0199	
802.11n (HT40)	MCS0	2422	11.34	0.0136	
		2437	14.18	0.0262	
		2452	11.80	0.0151	

Note 1: Max. e.i.r.p.=15.90dBm+3dBi=18.90dBm, which is less than 36dBm=4W.
 Note 2: A duty cycle greater than 98% for 802.11b, a duty cycle of greater than 87% for 802.11g/n20 and a duty cycle of greater than 75% for n40 used when in testing, the DC factors have been considered for test results as well.

Table 11: Test Result of Maximum Conducted Output Power, 2.4GHz SDR

Test Mode	Test Channel (MHz)	Measured Average Power		Limit (W)
		(dBm)	(W)	
1.4MHz BW	2407.5	24.16	0.2606	< 1.0
	2435.5	24.34	0.2716	
	2465.5	24.03	0.2529	
1.4MHz BW CA	2409.12	24.12	0.2582	
	2437.12	24.27	0.2673	
	2467.12	24.06	0.2547	
3MHz BW	2417.5	24.15	0.2600	
	2435.5	24.24	0.2655	
	2456.5	24.20	0.2630	
10MHz BW	2405.5	5.87	0.0039	
	2415.5	12.81	0.0191	
	2420.5	13.84	0.0242	
	2440.5	14.04	0.0254	
	2455.5	14.15	0.0260	
	2456.5	13.17	0.0207	
	2465.5	8.93	0.0078	
20MHz BW	2476.5	-3.96	0.0004	
	2410.5	0.27	0.0011	
	2420.5	8.41	0.0069	
	2430.5	12.33	0.0171	
	2433.5	13.35	0.0216	
	2441.5	14.44	0.0278	
	2442.5	13.40	0.0219	
	2445.5	12.46	0.0176	
	2452.5	8.74	0.0075	
2462.5	4.33	0.0027		
2472.5	-5.12	0.0003		

Note 1: Max. e.i.r.p.=24.34dBm+1.5dBi=25.84dBm, which is less than 36dBm=4W.

Note 2: A duty cycle greater than 98% used when in testing, the DC factors have been considered for test results as well.

Note:

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G) of Bluetooth: 3dBi
 Antenna gain(G) of Bluetooth BLE: 3dBi
 Antenna gain(G) of 2.4GHz SDR: 1.5dBi (Ant 0)
 Antenna gain(G) of 2.4GHz Wi-Fi: 3dBi
 e.i.r.p.=P_(Peak power)+ G, which is far below the 4 W

5.1.3 Conducted Power Spectral Density

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.247(e) RSS-247 Clause 5.2(b)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 8 dBm / 3kHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-02-16 to 2022-02-28
Input voltage	:	Fully charged battery
Operation mode	:	B, C, D
Test channel	:	Low / Middle / High
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B, C, D.

5.1.4 6dB Bandwidth

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.247(a)(2) RSS-247 Clause 5.2(a)
Basic standard	:	ANSI C63.10: 2013
Limits	:	> 500 KHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-02-16 to 2022-02-28
Input voltage	:	Fully charged battery
Operation mode	:	B, C, D
Test channel	:	Low / Middle / High
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B, C, D.

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5.1.5 99% Bandwidth

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.247(a)
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 2022-02-16 to 2022-02-28
Input voltage : Fully charged battery
Operation mode : A, B, C, D
Test channel : Low / Middle / High
Ambient temperature : 25 °C
Relative humidity : 56 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A, B, C, D.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	: ANSI C63.10: 2013
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2022-02-16 to 2022-02-28
Input voltage	: Fully charged battery
Operation mode	: A, B, C, D
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix A, B, C, D.

5.1.7 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Table 5
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2022-03-01 to 2022-03-07
Input voltage	:	Fully charged battery
Operation mode	:	A, B, C, D
Test channel	:	Low / Middle / High
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix A, B, C, D.

5.1.8 Carrier Frequency Separation

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(a)(1) RSS-247 Clause 5.1(b)
Basic standard	: ANSI C63.10: 2013
Limits	: $\geq 25\text{kHz}$ or 2/3 of 20dB bandwidth, whichever is greater
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2022-02-16 to 2022-02-28
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

5.1.9 Number of Hopping Frequency

RESULT:**Pass****Test Specification**

Test standard	:	FCC part 15.247(a)(1)(iii) RSS-247 Clause 5.1(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	≥ 15 non-overlapping channels
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-02-16 to 2022-02-28
Input voltage	:	Fully charged battery
Operation mode	:	A
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.10 Time of Occupancy

RESULT:**Pass****Test Specification**

Test standard	:	FCC part 15.247(a)(1)(iii) RSS-247 Clause 5.1(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 0.4s
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-02-16 to 2022-02-28
Input voltage	:	Fully charged battery
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.11 Conducted Emission on AC Mains

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	:	ANSI C63.10: 2013
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a) RSS-Gen Table 3
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-02-22
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Earthing	:	Not connected
Ambient temperature	:	22 °C
Relative humidity	:	64 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A, B, C, D.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix E.

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