Prüfbericht-Nr.: *Test report no.:*	**CN23PXI2 003**	**Auftrags-Nr.:** *Order no.*:	168400062	Seite 1 von 23 *Page 1 of 23*
Kunden-Referenz-Nr.: *Client reference no.:*	**N/A**	**Auftragsdatum:** *Order date:*	2022-11-23	
Auftraggeber: *Client:*	**SZ DJI TECHNOLOGY CO., LTD.** Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen, China			
Prüfgegenstand: *Test item:*	DJI Mavic 3 Pro, DJI Mavic 3 Pro Cine			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	L2S, L2E			
Auftrags-Inhalt: *Order content*:	Test Report			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart E Section 15.407 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209			

Wareneingangsdatum: *Date of sample receipt:*	2022-12-06	Please refer to photo documents
Prüfmuster-Nr.: *Test sample no:*	A003384103-003 A003384103-004	
Prüfzeitraum: *Testing period:*	2022-12-06 to 2023-01-13	
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüfergebnis*: *Test result*:*	Pass	

geprüft von: *tested by:*	X Hardy Suo	**genehmigt von:** *authorized by:*	X Lin Lin
Datum: *Date:* 2023-02-03		**Ausstellungsdatum:** *Issue date:* 2023-02-03	
Stellung / *Position:*	Sachverständige(r) / Expert	**Stellung** / *Position:*	Sachverständige(r) / Expert

Sonstiges / *Other:*

FCC ID: SS3-L2ES2212
This report is for 5.2GHz SDR.

Applicant & Manufacturer: SZ DJI TECHNOLOGY CO., LTD., Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen, China

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

V05

TEST SUMMARY

5.1.1 Antenna Requirement
RESULT: Pass
5.1.2 Maximum output power
RESULT: Pass
5.1.3 Power Spectral Density
RESULT: Pass
5.1.4 Frequency Stability
RESULT: Pass
5.1.5 26dB Bandwidth and 99% Bandwidth
RESULT: Pass
5.1.6 6dB Bandwidth
RESULT: Pass
5.1.7 Radiated Spurious Emission
RESULT: Pass

TABLE OF CONTENTS

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 5.2GHz SDR

Appendix B: Photographs of the Test Set-up

2. Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China

FCC Accreditation Designation No.: CN1260

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Equip. No.	Description	Manufacturer	Model	Serial No.	Calibrated until (DD.MM.YYYY)
9039436	EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	10.10.2023
9039437	MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	10.10.2023
9039438	EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	10.10.2023
9039439	DC Power Supply	Keysight	E3642A	MY61276100	10.10.2023
9039440	Wireless Connectivity Tester	R&S	CMW270	102505	10.10.2023
9039441	Power Control Unit	Tonscend	JS0806-4ADC	N/A	10.10.2023
9039442	Automation Control Unit	Tonscend	JS0806-2	21C8060396	10.10.2023
9039443	Test Software	Tonscend	JS1120-3	N/A	N/A
9039444	Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A
Equip. No.	**Description**	**Manufacturer**	**Model**	**Serial No.**	**Calibrated until (DD.MM.YYYY)**
G1826021	EMI Test Receiver	R&S	ESR 7	102021	02.08.2023
G1826023	Signal Analyzer	R&S	FSV 40	101439	01.08.2023
G1826024	System Controller Interface	R&S	SCI-100	S10010038	N/A
G1826025	Filterbank	R&S	Wlan	100759	01.08.2023
G1826026	OSP	R&S	OSP 120	102040	N/A
G1826028	Pre-amplifier	R&S	SCU08F1	08320031	02.08.2023
G1826029	Amplifier	R&S	SCU-18F	180070	02.08.2023
G1826030	Amplifier	R&S	SCU40A	100475	02.08.2023
G1826031	Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	06.08.2024
G1826032	Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	06.08.2024
G1826033	Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	27.08.2024
G1826034	Active Loop Antenna	Schwarzbeck	FMZB 1513	302	06.08.2024
G1826036	Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
G1826037	Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
G1826433	3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	22.06.2024

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 Uncertainty of Measurement

The value of the measurement uncertainty of each parameter is listed as below:

Table 2: Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	±1 x 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
Radiated Emission (3m SAC), 30MHz to 1000MHz	± 4.52 dB
Radiated Emission (3m SAC), above 1000MHz	± 4.37 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 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 No. 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** (**E**quipment **U**nder **T**est) is an aircraft (DJI Mavic 3 Pro with model L2S, DJI Mavic 3 Pro Cine with model L2E). It supports Bluetooth BLE, 2.4GHz SDR, 2.4GHz Wi-Fi, 5.2GHz SDR, 5.8GHz SDR, 5.8GHz Wi-Fi, GPS/BDS/Galileo and ADS-B functions.
*remark: SDR means specific defined radio, and cannot changes radio specification via software / firmware by end-users.

According to the declaration of the applicant, the electrical circuit design and PCB layout are identical, the different is that L2E has an additional SSD than L2S.

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

For details refer to user manual and circuit diagram.

3.2 Ratings and System Details

Table 3: Technical Specification

General Information of EUT	**Value**
Kind of Equipment	DJI Mavic 3 Pro, DJI Mavic 3 Pro Cine
Type Designation	L2S (product name: DJI Mavic 3 Pro) L2E (product name: DJI Mavic 3 Pro Cine)
Operating Voltage	DC 15.4V (Re-charged Battery, 15.4 V, 5000mAh, 77Wh)
Extreme Temperature Range	-10ºC to +40ºC
Radiofrequency operating mode	1) Bluetooth: operating within 2400-2483.5MHz, supports BT 5.1@BLE only, 1Mbps&2Mbps 2) 2.4GHz SDR: operating within 2400-2483.5MHz, supports 1.4MHz/3MHz/10MHz/20MHz/40MHz Bandwidth 3) 2.4GHz Wi-Fi: operating within 2400-2483.5MHz, supports 20MHz/40MHz Bandwidth and IEEE 802.11 b/g/n20/n40/ax20/ax40 4) 5.2GHz SDR: operating within 5150-5250MHz, supports 10MHz/20MHz/40MHz Bandwidth 5) 5.8GHz SDR: operating within 5725-5850MHz, supports 1.4MHz/3MHz/10MHz/20MHz/40MHz Bandwidth 6) 5.8GHz Wi-Fi: operating within 5725-5850MHz, supports 20MHz/40MHz/80MHz Bandwidth and IEEE 802.11 a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80 7) GPS & BDS & Galileo (receiver): operating within 1559-1610MHz 8) ADS-B (receiver): operating at 978MHz (1MHz Bandwidth) and 1090MHz (2MHz Bandwidth)
Technical Specification of 5.2GHz SDR	
Operating Frequency	5157-5245MHz for 10MHz Bandwidth 5161-5240MHz for 20MHz Bandwidth 5170-5230MHz for 40MHz Bandwidth
Type of Modulation	OFDM (QPSK, 16QAM, 64QAM)
Channel Number	89 channels for 10MHz Bandwidth 80 channels for 20MHz Bandwidth

	61 channels for 40MHz Bandwidth
Channel Separation	1MHz for 10MHz Bandwidth 1MHz for 20MHz Bandwidth 1MHz for 40MHz Bandwidth
Antenna Type	Integral Antenna
Antenna Number	1Tx4Rx for SISO mode (ANT0 or ANT1 or ANT2 or ANT3) 2Tx4Rx for MIMO mode (ANT0+ANT1, or ANT0+ANT3, or ANT2+ANT1, or ANT2+ANT3)
Antenna Gain	3dBi for ANT0 1dBi for ANT1 1dBi for ANT2 3dBi for ATN3
The type of wideband data transmission equipment	DTS

Table 4: RF Channel and Frequency of 5.2GHz SDR

5.2GHz 10MHzBandwidth (5157MHz-5245MHz)							
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	5157	24	5180	47	5203	70	5226
2	5158	25	5181	48	5204	71	5227
3	5159	26	5182	49	5205	72	5228
4	5160	27	5183	50	5206	73	5229
5	5161	28	5184	51	5207	74	5230
6	5162	29	5185	52	5208	75	5231
7	5163	30	5186	53	5209	76	5232
8	5164	31	5187	54	5210	77	5233
9	5165	32	5188	55	5211	78	5234
10	5166	33	5189	56	5212	79	5235
11	5167	34	5190	57	5213	80	5236
12	5168	35	5191	58	5214	81	5237
13	5169	36	5192	59	5215	82	5238
14	5170	37	5193	60	5216	83	5239
15	5171	38	5194	61	5217	84	5240
16	5172	39	5195	62	5218	85	5241
17	5173	40	5196	63	5219	86	5242
18	5174	41	5197	64	5220	87	5243
19	5175	42	5198	65	5221	88	5244
20	5176	43	5199	66	5222	89	5245
21	5177	44	5200	67	5223		
22	5178	45	5201	68	5224		
23	5179	46	5202	69	5225		

5.2GHz 20MHzBandwidth (5161MHz-5240MHz)							
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	5161	21	5181	41	5201	61	5221
2	5162	22	5182	42	5202	62	5222
3	5163	23	5183	43	5203	63	5223
4	5164	24	5184	44	5204	64	5224
5	5165	25	5185	45	5205	65	5225
6	5166	26	5186	46	5206	66	5226
7	5167	27	5187	47	5207	67	5227
8	5168	28	5188	48	5208	68	5228
9	5169	29	5189	49	5209	69	5229
10	5170	30	5190	50	5210	70	5230
11	5171	31	5191	51	5211	71	5231
12	5172	32	5192	52	5212	72	5232
13	5173	33	5193	53	5213	73	5233
14	5174	34	5194	54	5214	74	5234
15	5175	35	5195	55	5215	75	5235
16	5176	36	5196	56	5216	76	5236
17	5177	37	5197	57	5217	77	5237
18	5178	38	5198	58	5218	78	5238
19	5179	39	5199	59	5219	79	5239
20	5180	40	5200	60	5220	80	5240

5.2GHz 40MHzBandwidth (5170MHz-5230MHz)							
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	5170	17	5186	33	5202	49	5218
2	5171	18	5187	34	5203	50	5219
3	5172	19	5188	35	5204	51	5220
4	5173	20	5189	36	5205	52	5221
5	5174	21	5190	37	5206	53	5222
6	5175	22	5191	38	5207	54	5223
7	5176	23	5192	39	5208	55	5224
8	5177	24	5193	40	5209	56	5225
9	5178	25	5194	41	5210	57	5226
10	5179	26	5195	42	5211	58	5227
11	5180	27	5196	43	5212	59	5228
12	5181	28	5197	44	5213	60	5229
13	5182	29	5198	45	5214	61	5230
14	5183	30	5199	46	5215		
15	5184	31	5200	47	5216		
16	5185	32	5201	48	5217		

3.3 Independent Operation Modes

The basic operation modes are:

A. On, 5.2GHz SDR wireless transmitting mode
   1) Low Channel
   2) Middle Channel
   3) High Channel

B. On, Normal Operation

C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Application Form
- Circuit Diagram
- Instruction Manual
- Photo Documents
- Technical Description
- Bill of Material
- Rating Label

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.

4.2 Test Operation

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 L2E in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 5: List of Accessories and Auxiliary Equipment

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

4.4 Countermeasures to Achieve ERM 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)

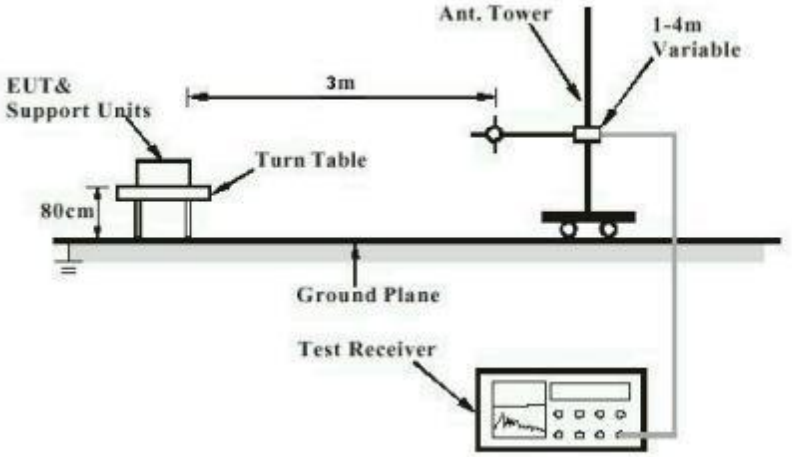


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

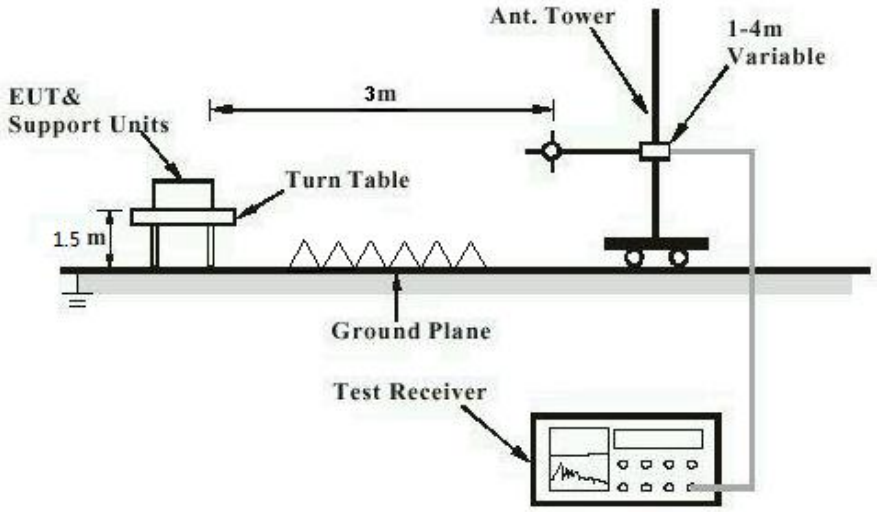
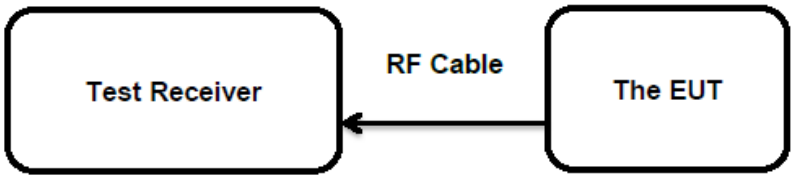


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5. Test Results

5.1 Radio Test Requirement & Test Suites (5GHz Bands)

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification
Test standard : FCC Part 15.203

According to the manufacturer declared, the EUT has internal antennas, the max. uncorrelated antenna gain antenna is 3dBi for 5.2GHz SDR, permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum output power

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.407 (a)
Basic standard	:	ANSI C63.10:2013
Limits	:	<1W (30dBm) (5725-5850MHz)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-12-06 to 2023-01-13
Input voltage	:	Full Battery
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Table 6: Test Result of Maximum Conducted Output Power, 5.2GHz SDR

Worst case for SISO mode

Test Mode	Test Channel (MHz)	Measured Average Power		Limit (W)
		(dBm)	(W)	
10MHz BW	5157	9.74	0.0094	< 1.0
	5160	10.01	0.0100	
	5161	12.07	0.0161	
	5162	14.05	0.0254	
	5163	15.98	0.0396	
	5201	16.33	0.0430	
	5245	16.26	0.0423	
20MHz BW	5161	6.85	0.0048	
	5162	9.32	0.0086	
	5163	12.88	0.0194	
	5167	13.94	0.0248	
	5170	15.45	0.0351	
	5200	16.25	0.0422	
	5240	16.18	0.0415	
40MHz BW	5170	8.69	0.0074	
	5173	9.66	0.0092	
	5180	11.85	0.0153	
	5187	13.42	0.0220	
	5188	14.40	0.0275	
	5189	15.86	0.0385	
	5200	**16.50**	**0.0447**	
	5230	16.34	0.0431	
Max. e.i.r.p.=16.50dBm+3dBi=19.50dBm, which is less than 36dBm=4W.				

Worst case for MIMO mode

Test Mode	Test Channel (MHz)	Measured Average Power		Limit (W)
		(dBm)	(W)	
10MHz BW	5157	11.66	0.0147	< 1.0
	5160	12.41	0.0174	
	5161	14.42	0.0277	
	5162	16.43	0.0440	
	5163	17.70	0.0589	
	5201	18.02	0.0634	
	5245	18.18	0.0658	
20MHz BW	5161	8.67	0.0074	
	5162	11.27	0.0134	
	5163	14.75	0.0299	
	5167	15.90	0.0389	
	5170	17.21	0.0526	
	5200	17.94	0.0622	
	5240	18.07	0.0641	
40MHz BW	5170	10.23	0.0105	
	5173	11.42	0.0139	
	5180	13.53	0.0225	
	5187	15.14	0.0327	
	5188	16.13	0.0410	
	5189	17.55	0.0569	
	5200	18.13	0.0650	
	5230	**18.18**	**0.0658**	

Max. e.i.r.p.=18.18dBm+3dBi=21.18dBm, which is less than 36dBm=4W.

Note:

1) The cable loss is taken into account in results, e.i.r.p.=$P_{(Peak\ power)}$+ G
2) Antenna gain(G) of 5.2GHz SDR: 3dBi (uncorrelated antenna gain)

5.1.3 Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.407 (a)
Basic standard	:	ANSI C63.10:2013
Limits	:	<30dBm/500KHz (5725-5850MHz)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	Refer to test data
Input voltage	:	Full Battery
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A for details of test data.

5.1.4 Frequency Stability

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.407 (g)
Basic standard	:	ANSI C63.10:2013
Limits	:	Within assigned bands
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-12-06 to 2023-01-13
Input voltage	:	Full Battery
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A for details of test data.

5.1.5 26dB Bandwidth and 99% Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.407
Basic standard	:	ANSI C63.10:2013
Limits	:	N/A
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	Refer to test data
Input voltage	:	Full Battery
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A for details of test data.

5.1.6 6dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.407 (e)
Basic standard	:	ANSI C63.10:2013
Limits	:	At least 500KHz (5725-5850MHz)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	Refer to test data
Input voltage	:	Full Battery
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A for details of test data.

5.1.7 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.407(b) & FCC Part 15.205 & FCC Part 15.209
Basic standard	:	ANSI C63.10:2013
Limits	:	• For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz. • Restricted Bands meet the requirement of 15.209 limit
Kind of test site	:	3m Semi-Anechoic Chamber (below 1GHz) 3m Anechoic Chamber (above 1GHz)

Test Setup

Date of testing	:	2022-12-06 to 2023-01-13
Input voltage	:	Full Battery
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	23 ℃
Relative humidity	:	48 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A for details of test data.

6. List of Tables