Prüfbericht-Nr.: *Test report no.:*	**CN22ZE75 003**	**Auftrags-Nr.:** *Order no.:*	168344875	Seite 1 von 29 *Page 1 of 29*
Kunden-Referenz-Nr.: *Client reference no.:*	**N/A**	**Auftragsdatum:** *Order date:*	2021-11-24	
Auftraggeber: *Client:*	**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: *Test item:*	DJI Goggles 2			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	RCDS18, RCDS18B			
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		RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 March 2019	

Wareneingangsdatum: *Date of sample receipt:*	2021-12-17
Prüfmuster-Nr.: *Test sample no:*	A003185055 003 A003185055 004
Prüfzeitraum: *Testing period:*	2021-12-17 to 2021-01-20
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüfergebnis*: *Test result*:*	Pass

Please refer to photo documents

geprüft von: *tested by:*	X Hardy Suo	**genehmigt von:** *authorized by:*	X Lin Lin
Datum: *Date:* 2022-02-18		**Ausstellungsdatum:** *Issue date:* 2022-02-18	
Stellung / *Position:*	Sachverständige(r) / Expert	**Stellung** / *Position:*	Sachverständige(r) / Expert

Sonstiges / *Other:* FCC ID: SS3-RCDS1821, IC: 11805A-RCDS1821, HVIN: RCDS18, RCDS18B
This report is for 5.2GHz Wi-Fi, 5.8GHz SDR and 5.8GHz Wi-Fi.

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*

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*

5.1.8 CONDUCTED EMISSION ON AC MAINS
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 Wi-Fi and 5.8GHz Wi-Fi

Appendix B: Test Results of 5.8GHz SDR

Appendix C: 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
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 (TS8997-R&S)					
Equip. No.	**Description**	**Manufacturer**	**Model**	**Serial No.**	**Calibrated until (DD.MM.YYYY)**
G1825794	Wireless Connectivity Tester	R&S	CMW270	101375	09.08.2022
G1825795	Signal Analyzer	R&S	FSV 40	101441	09.08.2022
G1825796	Vector Signal Generator	R&S	SMBV100A	263301	09.08.2022
G1825797	Signal Generator	R&S	SMB100A	115186	09.08.2022
G1825798	OSP	R&S	OSP 150	101017	02.12.2022
G1825799	Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
G1825800	Test Software	R&S	WMS32 (V11.00.00)	N/A	N/A
G1825801	Power Meter	R&S	NRP2	107105	02.12.2022
G1829620	Power Sensor	R&S	NRP-Z81	105677	09.08.2022
G1826483	Humid & Temp Programmable Tester	BOST	NTH090-60	19040801	02.04.2022
G1826431	Shielding Room 8#	Albatross	SR8	APC17151-SR8	22.06.2024
Radio Spectrum Testing (SRD-Tonscend)					
Equip. No.	**Description**	**Manufacturer**	**Model**	**Serial No.**	**Calibrated until (DD.MM.YYYY)**
9039436	EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	28.09.2022
9039437	MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	28.09.2022
9039438	EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	28.09.2022
9039439	DC Power Supply	Keysight	E3642A	MY61276100	28.09.2022
9039440	Wireless Connectivity Tester	R&S	CMW270	102505	28.09.2022
9039441	Power Control Unit	Tonscend	JS0806-4ADC	N/A	28.09.2022
9039442	Automation Control Unit	Tonscend	JS0806-2	21C8060396	28.09.2022
9039443	Test Software	Tonscend	JS1120-3	N/A	N/A
9039444	Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A
Unwanted Emission Testing (TS9975)					
Equip. No.	**Description**	**Manufacturer**	**Model**	**Serial No.**	**Calibrated until (DD.MM.YYYY)**
G1826021	EMI Test Receiver	R&S	ESR 7	102021	10.08.2022
G1826023	Signal Analyzer	R&S	FSV 40	101439	09.08.2022
G1826024	System Controller	R&S	SCI-100	S10010038	N/A

	Interface				
G1826025	Filterbank	R&S	Wlan	100759	09.08.2022
G1826026	OSP	R&S	OSP 120	102040	N/A
G1826028	Pre-amplifier	R&S	SCU08F1	08320031	09.08.2022
G1826029	Amplifier	R&S	SCU-18F	180070	09.08.2022
G1826030	Amplifier	R&S	SCU40A	100475	09.08.2022
G1826031	Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	08.08.2022
G1826032	Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	08.08.2022
G1826033	Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	08.08.2022
G1826034	Active Loop Antenna	Schwarzbeck	FMZB 1513	302	13.09.2022
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

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 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 a DJI Goggles 2. It supports Bluetooth, 2.4GHz SDR, 2.4GHz Wi-Fi, 5.2/5.8GHz Wi-Fi and 5.8GHz SDR 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, only the model no. is different for market strategy.

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 Goggles 2
Type Designation	RCDS18, RCDS18B
Operating Voltage	External Battery operated (Max 9V, 1800 mAh)
Extreme Temperature Range	0°C ~ 40 °C
Radiofrequency operating mode	1) Bluetooth: operating within 2400-2483.5MHz, Bluetooth BLE, 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 4) 5.2GHz Wi-Fi: operating with 5150-5250MHz, supports 20MHz/40MHz/80MHz Bandwidth and IEEE 802.11 a/n20/n40/ac20/ac40/ac80 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
Technical Specification of 5.2GHz Wi-Fi	
Operating Frequency	5180-5240MHz, 802.11a/n20/n40/ac20/ac40/ac80
Type of Modulation	OFDM(BPSK/QPSK/16QAM/64QAM/256QAM)
Data Rate	6/9/12/18/24/36/48/54 Mbps for 802.11a MCS 0 ~ MCS 7 for 802.11 n20/n40 VHT-MCS 0 ~ VHT-MCS 8 for 802.11 ac20 VHT-MCS 0 ~ VHT-MCS 9 for 802.11 ac40 VHT-MCS 0 ~ VHT-MCS 9 for 802.11 ac80
Channel Number	4 channels for 802.11a/n20/ac20 2 channels for 802.11n40/ac40 1 channels for 802.11ac80

Channel Separation	20MHz, 40MHz, 80MHz
Antenna Type	Integral Antenna
Antenna Number	1Tx1Rx
Antenna Gain	2dBi
The type of wideband data transmission equipment	DTS
Technical Specification of 5.8GHz SDR	
Operating Frequency	5728.5-5846.5MHz for 1.4MHz Bandwidth 5730.12-5848.12MHz for 1.4MHz Bandwidth (CA mode) 5727.5-5844.5MHz for 3MHz Bandwidth 5730.2-5847.2MHz for 3MHz Bandwidth (CA mode) 5730.5-5844.5MHz for 10MHz Bandwidth 5735.5-5839.5MHz for 20MHz Bandwidth 5745.5-5829.5MHz for 40MHz Bandwidth
Type of Modulation	OFDM (QPSK, 16QAM, 64QAM)
Channel Number	60 channels for 1.4MHz Bandwidth 60 channels for 1.4MHz Bandwidth (CA mode) 40 channels for 3MHz Bandwidth 40 channels for 3MHz Bandwidth (CA mode) 115 channels for 10MHz Bandwidth 105 channels for 20MHz Bandwidth 85 channels for 40MHz Bandwidth
Channel Separation	2MHz for 1.4MHz Bandwidth 2MHz for 1.4MHz Bandwidth (CA mode) 3MHz for 3MHz Bandwidth 3MHz for 3MHz Bandwidth (CA mode) 1MHz for 10MHz Bandwidth 1MHz for 20MHz Bandwidth 1MHz for 40MHz Bandwidth
Antenna Type	Two Integral Antennas, and Two External Antennas
Antenna Number	1Tx4Rx for SISO mode (ANT0 or ANT1 only) 2Tx4Rx for MIMO mode (ANT0+ANT1 only)
Antenna Gain	3dBi for ANT0 3dBi for ANT1
The type of wideband data transmission equipment	DTS
Technical Specification of 5.8GHz Wi-Fi	
Operating Frequency	5745–5825MHz for 802.11 a/n20/n40/ac20/ac40/ac80
Type of Modulation	OFDM(BPSK/QPSK/16QAM/64QAM/256QAM)
Data Rate	6/9/12/18/24/36/48/54 Mbps for 802.11a MCS 0 ~ MCS 7 for 802.11 n20/n40 VHT-MCS 0 ~ VHT-MCS 8 for 802.11 ac20 VHT-MCS 0 ~ VHT-MCS 9 for 802.11 ac40 1) VHT-MCS 0 ~ VHT-MCS 9 for 802.11 ac80
Channel Number	5 channels for 802.11a/n20/ac20 2 channels for 802.11n40/ac40 1 channels for 802.11ac80

Channel Separation	20MHz, 40MHz, 80MHz
Antenna Type	Integral Antenna
Antenna Number	1Tx1Rx
Antenna Gain	3dBi
The type of wideband data transmission equipment	Non-FHSS

Table 4: RF Channel and Frequency of 5.2GHz Wi-Fi

U-NII-1					
20MHz Bandwidth		**40MHz Bandwidth**		**80MHz Bandwidth**	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230		
44	5220				
48	5240				

Table 5: RF Channel and Frequency of 5.8GHz SDR

5.8GHz 1.4MHzBandwidth (5728.5MHz-5846.5MHz)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	5728.5	21	5768.5	41	5808.5
2	5730.5	22	5770.5	42	5810.5
3	5732.5	23	5772.5	43	5812.5
4	5734.5	24	5774.5	44	5814.5
5	5736.5	25	5776.5	45	5816.5
6	5738.5	26	5778.5	46	5818.5
7	5740.5	27	5780.5	47	5820.5
8	5742.5	28	5782.5	48	5822.5
9	5744.5	29	5784.5	49	5824.5
10	5746.5	30	5786.5	50	5826.5
11	5748.5	31	5788.5	51	5828.5
12	5750.5	32	5790.5	52	5830.5
13	5752.5	33	5792.5	53	5832.5
14	5754.5	34	5794.5	54	5834.5
15	5756.5	35	5796.5	55	5836.5
16	5758.5	36	5798.5	56	5838.5
17	5760.5	37	5800.5	57	5840.5
18	5762.5	38	5802.5	58	5842.5
19	5764.5	39	5804.5	59	5844.5
20	5766.5	40	5806.5	60	5846.5

5.8GHz 1.4MHz Bandwidth (CA Mode) (5730.12MHz-5848.12MHz)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	5730.12	21	5770.12	41	5810.12

2	5732.12	22	5772.12	42	5812.12
3	5734.12	23	5774.12	43	5814.12
4	5736.12	24	5776.12	44	5816.12
5	5738.12	25	5778.12	45	5818.12
6	5740.12	26	5780.12	46	5820.12
7	5742.12	27	5782.12	47	5822.12
8	5744.12	28	5784.12	48	5824.12
9	5746.12	29	5786.12	49	5826.12
10	5748.12	30	5788.12	50	5828.12
11	5750.12	31	5790.12	51	5830.12
12	5752.12	32	5792.12	52	5832.12
13	5754.12	33	5794.12	53	5834.12
14	5756.12	34	5796.12	54	5836.12
15	5758.12	35	5798.12	55	5838.12
16	5760.12	36	5800.12	56	5840.12
17	5762.12	37	5802.12	57	5842.12
18	5764.12	38	5804.12	58	5844.12
19	5766.12	39	5806.12	59	5846.12
20	5768.12	40	5808.12	60	5848.12

5.8GHz 3MHz Bandwidth (5727.5MHz-5844.5MHz)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	5727.5	15	5769.5	29	5811.5
2	5730.5	16	5772.5	30	5814.5
3	5733.5	17	5775.5	31	5817.5
4	5736.5	18	5778.5	32	5820.5
5	5739.5	19	5781.5	33	5823.5
6	5742.5	20	5784.5	34	5826.5
7	5745.5	21	5787.5	35	5829.5
8	5748.5	22	5790.5	36	5832.5
9	5751.5	23	5793.5	37	5835.5
10	5754.5	24	5796.5	38	5838.5
11	5757.5	25	5799.5	39	5841.5
12	5760.5	26	5802.5	40	5844.5
13	5763.5	27	5805.5		
14	5766.5	28	5808.5		

5.8GHz 3MHz Bandwidth (CA Mode) (5730.2MHz-5847.2MHz)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	5730.2	15	5772.2	29	5814.2
2	5733.2	16	5775.2	30	5817.2
3	5736.2	17	5778.2	31	5820.2

4	5739.2	18	5781.2	32	5823.2
5	5742.2	19	5784.2	33	5826.2
6	5745.2	20	5787.2	34	5829.2
7	5748.2	21	5790.2	35	5832.2
8	5751.2	22	5793.2	36	5835.2
9	5754.2	23	5796.2	37	5838.2
10	5757.2	24	5799.2	38	5841.2
11	5760.2	25	5802.2	39	5844.2
12	5763.2	26	5805.2	40	5847.2
13	5766.2	27	5808.2		
14	5769.2	28	5811.2		

5.8GHz 10MHzBandwidth (5730.5MHz-5844.5MHz)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	5730.5	40	5769.5	79	5808.5
2	5731.5	41	5770.5	80	5809.5
3	5732.5	42	5771.5	81	5810.5
4	5733.5	43	5772.5	82	5811.5
5	5734.5	44	5773.5	83	5812.5
6	5735.5	45	5774.5	84	5813.5
7	5736.5	46	5775.5	85	5814.5
8	5737.5	47	5776.5	86	5815.5
9	5738.5	48	5777.5	87	5816.5
10	5739.5	49	5778.5	88	5817.5
11	5740.5	50	5779.5	89	5818.5
12	5741.5	51	5780.5	90	5819.5
13	5742.5	52	5781.5	91	5820.5
14	5743.5	53	5782.5	92	5821.5
15	5744.5	54	5783.5	93	5822.5
16	5745.5	55	5784.5	94	5823.5
17	5746.5	56	5785.5	95	5824.5
18	5747.5	57	5786.5	96	5825.5
19	5748.5	58	5787.5	97	5826.5
20	5749.5	59	5788.5	98	5827.5
21	5750.5	60	5789.5	99	5828.5
22	5751.5	61	5790.5	100	5829.5
23	5752.5	62	5791.5	101	5830.5
24	5753.5	63	5792.5	102	5831.5
25	5754.5	64	5793.5	103	5832.5
26	5755.5	65	5794.5	104	5833.5
27	5756.5	66	5795.5	105	5834.5
28	5757.5	67	5796.5	106	5835.5
29	5758.5	68	5797.5	107	5836.5

30	5759.5	69	5798.5	108	5837.5
31	5760.5	70	5799.5	109	5838.5
32	5761.5	71	5800.5	110	5839.5
33	5762.5	72	5801.5	111	5840.5
34	5763.5	73	5802.5	112	5841.5
35	5764.5	74	5803.5	113	5842.5
36	5765.5	75	5804.5	114	5843.5
37	5766.5	76	5805.5	115	5844.5
38	5767.5	77	5806.5		
39	5768.5	78	5807.5		

5.8GHz 20MHz Bandwidth (5735.5MHz-5839.5MHz)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	5735.5	36	5770.5	71	5805.5
2	5736.5	37	5771.5	72	5806.5
3	5737.5	38	5772.5	73	5807.5
4	5738.5	39	5773.5	74	5808.5
5	5739.5	40	5774.5	75	5809.5
6	5740.5	41	5775.5	76	5810.5
7	5741.5	42	5776.5	77	5811.5
8	5742.5	43	5777.5	78	5812.5
9	5743.5	44	5778.5	79	5813.5
10	5744.5	45	5779.5	80	5814.5
11	5745.5	46	5780.5	81	5815.5
12	5746.5	47	5781.5	82	5816.5
13	5747.5	48	5782.5	83	5817.5
14	5748.5	49	5783.5	84	5818.5
15	5749.5	50	5784.5	85	5819.5
16	5750.5	51	5785.5	86	5820.5
17	5751.5	52	5786.5	87	5821.5
18	5752.5	53	5787.5	88	5822.5
19	5753.5	54	5788.5	89	5823.5
20	5754.5	55	5789.5	90	5824.5
21	5755.5	56	5790.5	91	5825.5
22	5756.5	57	5791.5	92	5826.5
23	5757.5	58	5792.5	93	5827.5
24	5758.5	59	5793.5	94	5828.5
25	5759.5	60	5794.5	95	5829.5
26	5760.5	61	5795.5	96	5830.5
27	5761.5	62	5796.5	97	5831.5
28	5762.5	63	5797.5	98	5832.5
29	5763.5	64	5798.5	99	5833.5
30	5764.5	65	5799.5	100	5834.5

31	5765.5	66	5800.5	101	5835.5
32	5766.5	67	5801.5	102	5836.5
33	5767.5	68	5802.5	103	5837.5
34	5768.5	69	5803.5	104	5838.5
35	5769.5	70	5804.5	105	5839.5

5.8GHz 40MHz Bandwidth (5745.5MHz-5829.5MHz)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	5745.5	30	5774.5	59	5803.5
2	5746.5	31	5775.5	60	5804.5
3	5747.5	32	5776.5	61	5805.5
4	5748.5	33	5777.5	62	5806.5
5	5749.5	34	5778.5	63	5807.5
6	5750.5	35	5779.5	64	5808.5
7	5751.5	36	5780.5	65	5809.5
8	5752.5	37	5781.5	66	5810.5
9	5753.5	38	5782.5	67	5811.5
10	5754.5	39	5783.5	68	5812.5
11	5755.5	40	5784.5	69	5813.5
12	5756.5	41	5785.5	70	5814.5
13	5757.5	42	5786.5	71	5815.5
14	5758.5	43	5787.5	72	5816.5
15	5759.5	44	5788.5	73	5817.5
16	5760.5	45	5789.5	74	5818.5
17	5761.5	46	5790.5	75	5819.5
18	5762.5	47	5791.5	76	5820.5
19	5763.5	48	5792.5	77	5821.5
20	5764.5	49	5793.5	78	5822.5
21	5765.5	50	5794.5	79	5823.5
22	5766.5	51	5795.5	80	5824.5
23	5767.5	52	5796.5	81	5825.5
24	5768.5	53	5797.5	82	5826.5
25	5769.5	54	5798.5	83	5827.5
26	5770.5	55	5799.5	84	5828.5
27	5771.5	56	5800.5	85	5829.5
28	5772.5	57	5801.5		
29	5773.5	58	5802.5		

Table 6: RF Channel and Frequency of 5.8GHz Wi-Fi

U-NII-3					
20MHz Bandwidth		**40MHz Bandwidth**		**80MHz Bandwidth**	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755	155	5775

153	5765	159	5795
157	5785		
161	5805		
165	5825		

3.3 Independent Operation Modes

The basic operation modes are:

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

B. On, 5.8GHz SDR wireless transmitting mode
   1) Low Channel
   2) Middle Channel
   3) High Channel

C. On, 5.8GHz Wi-Fi wireless transmitting mode
   1) Low Channel
   2) Middle Channel
   3) High Channel

D. On, Normal Operation

E. 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 RCDS18 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 7: 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)

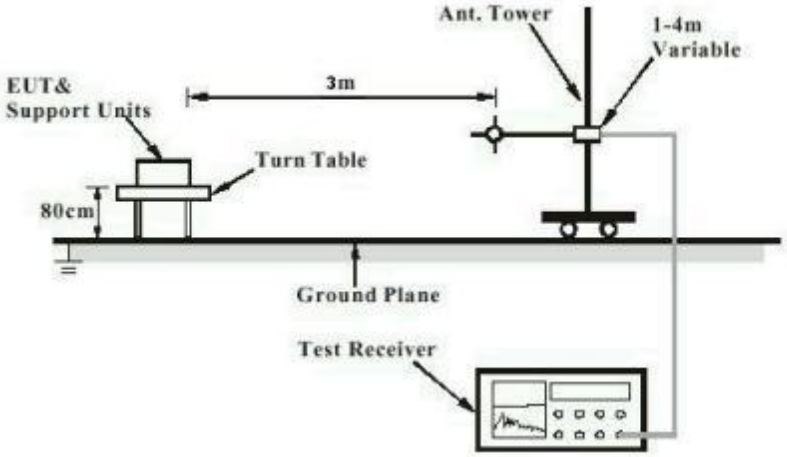


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

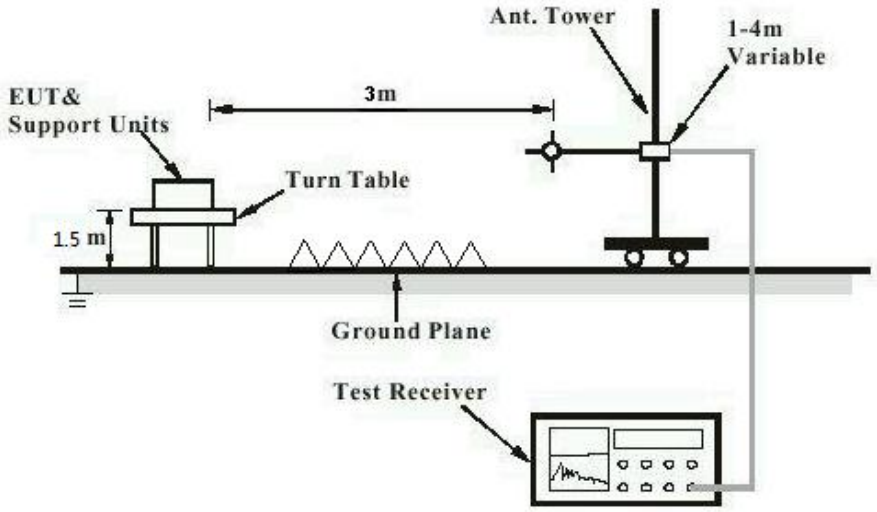


Diagram of Measurement Configuration for Mains Conduction Measurement

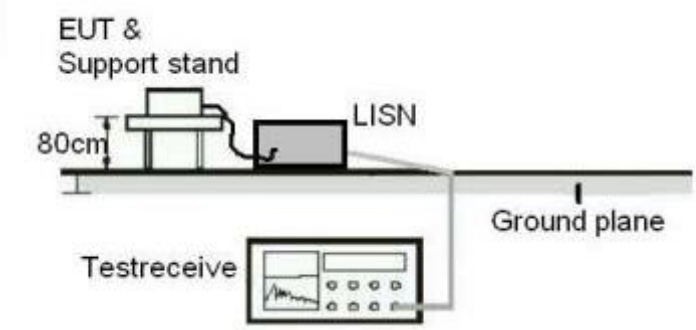


Diagram of Measurement Configuration for Conducted Transmitter Measurement

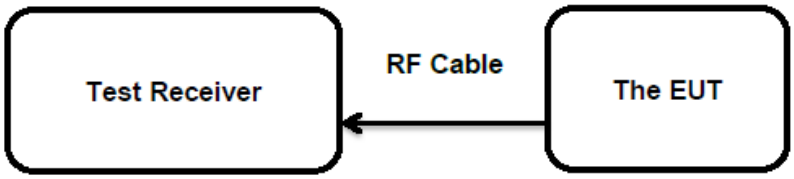
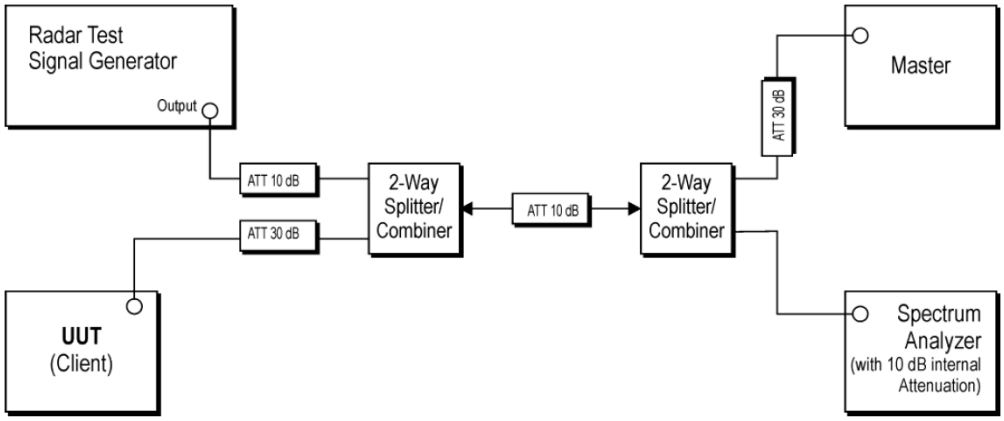


Diagram of Measurement Configuration for Dynamic Frequency Selection (DFS)



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 one internal antenna for 5.2&5.8GHz Wi-Fi, has two external antennas and two internal antennas (receiving only) for 5.8GHz SDR, the max. uncorrelated antenna gain antenna is 2dBi for 5.2GHz Wi-Fi, 3dBi for 5.8GHz Wi-Fi and 3dBi for 5.8GHz 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) RSS-247 clause 6.2
Basic standard	:	ANSI C63.10:2013
Limits	:	FCC: <250mW (24dBm) (5150-5250MHz) *<250mW (24dBm) (5250-5350MHz, 5470-5725MHz) *250 mW (24dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz, where is lesser. <1W (30dBm) (5725-5850MHz) IC: * Max e.i.r.p.<200mW (23dBm) (5150-5250MHz) *200 mW (23dBm) or 10 dBm + 10 logB, where B is the 99% emission bandwidth in MHz, where is lesser. *Max conducted output power < 250mW (24dBm) (5250-5350MHz) *250 mW (24dBm) or 11 dBm + 10 logB, where B is the 99% emission bandwidth in MHz, where is lesser. *Max e.i.r.p.<1W (30dBm) (5250-5350MHz) *1 W (30dBm) or 17 dBm + 10 log B, where B is the 99% emission bandwidth in MHz, where is lesser. Max conducted output power <1W (30dBm) (5725-5850MHz)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2021-12-17 to 2021-01-20
Input voltage	:	Full Battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Table 8: Test Result of Maximum Conducted Output Power, 5.2GHz Wi-Fi 802.11 a/n20/n40/ac20/ac40/ac80

Test Mode	Data Rate	Test Channel	Measured Power		Limit (W)
			(dBm)	(W)	
802.11a	6 Mbps	36	**16.67**	**0.0465**	< 1.0 or 0.1714*
		40	16.52	0.0449	
		48	16.59	0.0456	
802.11n (HT20)	MCS0	36	16.34	0.0431	
		40	16.21	0.0418	
		48	16.31	0.0428	
802.11n (HT40)	MCS0	38	16.54	0.0451	
		46	16.65	0.0462	
802.11ac (HT20)	MCS0	36	16.27	0.0424	
		40	16.23	0.0420	
		48	16.49	0.0446	
802.11ac (HT40)	MCS0	38	16.47	0.0444	
		46	16.60	0.0457	
802.11ac (HT80)	MCS0	42	15.18	0.0330	
Max. e.i.r.p.=16.67dBm+2dBi=18.67dBm, which is less than 36dBm=4W.					
*IC e.i.r.p. limit is 200 mW (23dBm) or 10 dBm + 10 log B, the minimum B=17.133MHz, hence the e.i.r.p. limit=22.34dBm=0.1714W, max. e.i.r.p.=16.67dBm+2dBi=18.67dBm < 22.34dBm.					

Table 9: Test Result of Maximum Conducted Output Power, 5.8GHz SDR
Worst case for SISO mode

Test Mode	Test Channel (MHz)	Measured Power		Limit (W)
		(dBm)	(W)	
1.4MHz BW	5728.5	25.54	0.3581	< 1.0
	5786.5	25.42	0.3483	
	5846.5	25.65	0.3673	
1.4MHz BW CA	5730.12	25.75	0.3758	
	5788.12	25.74	0.3750	
	5848.12	**25.93**	**0.3917**	
3MHz BW	5727.5	25.78	0.3784	
	5784.5	25.86	0.3855	
	5844.5	25.26	0.3357	
3MHz BW CA	5730.2	25.34	0.3420	
	5787.2	25.83	0.3828	
	5847.2	25.21	0.3319	
10MHz BW	5730.5	15.42	0.0348	
	5787.5	15.74	0.0375	
	5844.5	15.68	0.0370	
20MHz BW	5735.5	15.35	0.0343	
	5787.5	15.67	0.0369	
	5839.5	15.56	0.0360	
40MHz BW	5745.5	15.54	0.0358	
	5787.5	15.41	0.0348	
	5829.5	15.38	0.0345	
Max. e.i.r.p.=25.93dBm+3dBi=28.93dBm, which is less than 36dBm=4W.				

Worst case for MIMO mode

Test Mode	Test Channel (MHz)	Measured Power		Limit (W)
		(dBm)	(W)	
1.4MHz BW	5728.5	25.41	0.3475	< 1.0
	5786.5	25.26	0.3357	
	5846.5	**25.81**	**0.3811**	
1.4MHz BW CA	5730.12	25.47	0.3524	
	5788.12	25.16	0.3281	
	5848.12	25.76	0.3767	
3MHz BW	5727.5	25.35	0.3428	
	5784.5	25.71	0.3724	
	5844.5	25.44	0.3499	
3MHz BW CA	5730.2	25.50	0.3548	
	5787.2	25.59	0.3622	
	5847.2	25.47	0.3524	
10MHz BW	5730.5	16.35	0.0432	
	5787.5	16.12	0.0409	
	5844.5	15.68	0.0370	
20MHz BW	5735.5	16.18	0.0415	
	5787.5	15.95	0.0394	
	5839.5	15.79	0.0379	
40MHz BW	5745.5	16.00	0.0398	
	5787.5	15.67	0.0369	
	5829.5	15.66	0.0368	
Max. e.i.r.p.=25.81dBm+3dBi=28.81dBm, which is less than 36dBm=4W.				

Table 10: Test Result of Maximum Peak Conducted Output Power, 5.8GHz Wi-Fi 802.11 a/n20/n40/ac20/ac40/ac80

Test Mode	Data Rate	Test Channel	Measured Power		Limit (W)
			(dBm)	(W)	
802.11a	1 Mbps	149	14.98	0.0315	< 1.0
		157	14.78	0.0301	
		165	15.01	0.0317	
802.11n (HT20)	MCS0	149	14.51	0.0282	
		157	14.45	0.0279	
		165	14.46	0.0279	
802.11n (HT40)	MCS0	151	14.47	0.0280	
		159	14.50	0.0282	
802.11ac (HT20)	MCS0	149	14.51	0.0282	
		157	14.62	0.0290	
		165	14.98	0.0315	
802.11ac (HT40)	MCS0	151	14.38	0.0274	
		159	14.41	0.0276	
802.11ac (HT80)	MCS0	155	**15.18**	**0.0330**	
Max. e.i.r.p.=15.18dBm+3dBi=18.18dBm, which is less than 36dBm=4W.					

Note:

1) The cable loss is taken into account in results.
2) Antenna gain(G) of 5.2GHz Wi-Fi: 2dBi
   Antenna gain(G) of 5.8GHz SDR: 3dBi (uncorrelated antenna gain)
   Antenna gain(G) of 5.8GHz Wi-Fi: 3dBi
   e.i.r.p.=$P_{(Peak\ power)}$+ G, which is far below the 4 W

5.1.3 Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.407 (a) RSS-247 clause 6.2
Basic standard	:	ANSI C63.10:2013
Limits	:	FCC: <11dBm/MHz (5150-5250MHz 5250-5350MHz, 5470-5725MHz) <30dBm/500KHz (5725-5850MHz) IC: e.i.r.p. spectral density <10dBm/MHz (5150-5250MHz) <11dBm/1MHz (5250-5350MHz) <30dBm/500KHz (5725-5850MHz)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2021-12-17 to 2021-01-20
Input voltage	:	Full Battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A, B, C for details of test data.

5.1.4 Frequency Stability

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.407 (g) RSS-Gen Clause 6.11
Basic standard	:	ANSI C63.10:2013
Limits	:	Within assigned bands
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2021-12-17 to 2021-01-20
Input voltage	:	Full Battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A, B, C for details of test data.

5.1.5 26dB Bandwidth and 99% Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.407 RSS-Gen Clause 6.6
Basic standard	:	ANSI C63.10:2013
Limits	:	N/A
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2021-12-17 to 2021-01-20
Input voltage	:	Full Battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A, B, C for details of test data.

5.1.6 6dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.407 (e) RSS-247 clause 6.2.4.1
Basic standard	:	ANSI C63.10:2013
Limits	:	At least 500KHz (5725-5850MHz)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2021-12-17 to 2021-01-20
Input voltage	:	Full Battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A, B, C 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 RSS-247 clause 6.2 & RSS-GEN clause 8.9 and 8.10
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. • For transmitters operating in the 5.25-5.35 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. • For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz. Emissions outside the band 5470-5600 MHz and 5650-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p. • For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. • Restricted Bands meet the requirement of 15.209 limit and RSS-GEN
Kind of test site	:	3m Semi-Anechoic Chamber (below 1GHz) 3m Anechoic Chamber (above 1GHz)

Test Setup

Date of testing	:	2021-12-17 to 2021-01-20
Input voltage	:	Full Battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	23 ℃
Relative humidity	:	48 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A, B, C for details of test data.

5.1.8 Conducted Emission on AC Mains

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.207 RSS-GEN clause 8.8
Basic standard	:	ANSI C63.10:2013
Frequency range	:	0.15 - 30MHz
Limits	:	FCC Part 15.207
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2021-12-17 to 2021-01-20
Input voltage	:	AC 120V, 60Hz
Operation mode	:	D
Earthing	:	Not connected
Ambient temperature	:	25 ℃
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A, B, C for details of test data.

6. List of Tables