



Prüfbericht-Nr.: <i>Test report no.:</i>	CN24F0Q2 003	Auftrags-Nr.: <i>Order no.:</i>	168438695	Seite 1 von 26 Page 1 of 26
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2023-08-09	
Auftraggeber: <i>Client:</i>	SZ DJI TECHNOLOGY CO., LTD Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen, China			
Prüfgegenstand: <i>Test item:</i>	DJI Goggles 3			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	TKGS3 (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 3 August 2023 RSS-Gen Issue 5 February 2021			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2023-11-13	Please refer to Photo Document		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003598699-029~032 A003598699-014, 024			
Prüfzeitraum: <i>Testing period:</i>	2023-11-24 - 2024-01-09			
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>		genehmigt von: <i>authorized by:</i>		
Datum: <i>Date:</i>	2024-02-21 <small>Signed by: Bell Hu</small>	Ausstellungsdatum: <i>Issue date:</i>	2024-02-21 <small>Signed by: Jonathan Li</small>	
Stellung / Position:	Sachverständige(r)/Expert	Stellung / Position:	Sachverständige(r)/Expert	
Sonstiges / <i>Other:</i>	FCC ID: SS3-TKGS323, IC: 11805A-TKGS323, PMN: DJI Goggles 3, HVIN: TKGS3 This report is for 2.4GHz SDR, 2.4GHz Wi-Fi and 2.4GHz.			
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>			
<small>* Legende:</small>	<small>P(ass) = entspricht o.g. Prüfgrundlage(n)</small>	<small>F(ail) = entspricht nicht o.g. Prüfgrundlage(n)</small>	<small>N/A = nicht anwendbar</small>	<small>N/T = nicht getestet</small>
<small>* Legend:</small>	<small>P(ass) = passed a.m. test specification(s)</small>	<small>F(ail) = failed a.m. test specification(s)</small>	<small>N/A = not applicable</small>	<small>N/T = not tested</small>
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 above mentioned 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

Prüfbericht-Nr.: CN24F0Q2 003
Test report no.:

Seite 2 von 26
Page 2 of 26

Anmerkungen
Remarks

1	<p>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</p> <p><i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i></p>
2	<p>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.</p> <p><i>As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.</i></p>
3	<p>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</p> <p><i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i></p>
4	<p>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</p> <p><i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information about the resulting risk based of this decision rule please refer to ILAC G8:2019.</i></p>

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK 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 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

Contents

1	GENERAL REMARKS	5
1.1	COMPLEMENTARY MATERIALS.....	5
2	TEST SITES.....	6
2.1	TEST FACILITIES	6
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	6
2.3	TRACEABILITY	7
2.4	CALIBRATION.....	7
2.5	MEASUREMENT UNCERTAINTY.....	7
2.6	LOCATION OF ORIGINAL DATA.....	8
2.7	STATUS OF FACILITY USED FOR TESTING	8
3	GENERAL PRODUCT INFORMATION	9
3.1	PRODUCT FUNCTION AND INTENDED USE	9
3.2	RATINGS AND SYSTEM DETAILS.....	9
3.3	INDEPENDENT OPERATION MODES.....	12
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	12
3.5	SUBMITTED DOCUMENTS.....	12
4	TEST SET-UP AND OPERATION MODES.....	13
4.1	PRINCIPLE OF CONFIGURATION SELECTION	13
4.2	TEST OPERATION AND TEST SOFTWARE	13
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	13
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	13
4.5	TEST SETUP DIAGRAM	14
5	TEST RESULTS	16
5.1	TRANSMITTER REQUIREMENT & TEST SUITES.....	16
5.1.1	<i>Antenna Requirement.....</i>	<i>16</i>
5.1.2	<i>Maximum Peak Conducted Output Power</i>	<i>17</i>
5.1.3	<i>Conducted Power Spectral Density.....</i>	<i>20</i>
5.1.4	<i>6dB Bandwidth</i>	<i>21</i>
5.1.5	<i>99% Bandwidth.....</i>	<i>22</i>
5.1.6	<i>Conducted Spurious Emissions Measured in 100 kHz Bandwidth.....</i>	<i>23</i>
5.1.7	<i>Radiated Spurious Emission</i>	<i>24</i>
5.1.8	<i>Conducted Emission on AC Mains.....</i>	<i>25</i>
6	PHOTOGRAPHS OF THE TEST SET-UP	26
7	LIST OF TABLES.....	26

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 2.4GHz

Appendix B: Test Results of 2.4GHz SDR

Appendix C: Test Results of 2.4GHz Wi-Fi

Appendix D: 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, 518110, Shenzhen, P. R. China.

FCC Accreditation Designation 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. Date	Cal. until
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	2023-09-22	2024-09-21
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	2023-09-22	2024-09-21
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	2023-09-22	2024-09-21
DC power supply	Keysight	E3642A	MY61276100	2023-09-22	2024-09-21
Power Control Unit	Tonscend	JS0806-4ADC	N/A	2023-09-22	2024-09-21
Automation Control Unit	Tonscend	JS0806-2	21C8060396	2023-09-22	2024-09-21
Test Software	Tonscend	JS1120-3	N/A	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A	N/A
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2021-06-22	2024-06-22
Unwanted Emission Testing (TS9975)					
Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2023-07-26	2024-07-25
Signal Analyzer	R&S	FSV 40	101439	2023-07-26	2024-07-25
System Controller Interface	R&S	SCI-100	S10010038	N/A	N/A
Filterbank	R&S	Wlan	100759	2023-07-26	2024-07-25
OSP	R&S	OSP 120	102040	N/A	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2023-07-26	2024-07-25
Amplifier	R&S	SCU-18F	180070	2023-07-26	2024-07-25
Amplifier	R&S	SCU40A	100475	2023-07-26	2024-07-25
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2022-08-07	2024-08-06

Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2022-08-07	2024-08-06
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2022-08-28	2024-08-27
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2022-08-07	2024-08-06
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2021-06-22	2024-06-22

Conducted Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102680	2024-02-23
Artificial Mains Network	R&S	ENV216	101445	2024-02-23
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.

Table 2: Measurement Uncertainty

Parameter	Uncertainty (k=2)
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	±4.17 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB

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 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) 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, 518110, Shenzhen, P. R. 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 Goggles 3. It supports Bluetooth dual mode, 2.4GHz, 2.4GHz Wi-Fi, 5.2/5.8GHz Wi-Fi, 2.4GHz SDR, 5.2/5.8GHz 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 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	DJI Goggles 3
Type Designation:	TKGS3
Trademark:	DJI
FCC ID:	SS3-TKGS323
IC:	11805A-TKGS323
PMN:	DJI Goggles 3
HVIN:	TKGS3
Operating Voltage:	7.2V DC by built-in battery or DC 5V/9V by AC/DC adapter
Testing Voltage:	Fully charged battery
Radiofrequency operating mode:	1) Bluetooth: operating within 2400-2483.5MHz, Classic Bluetooth (BR&EDR), Bluetooth BLE (1Mbps&2Mbps) 2) 2.4GHz SDR: operating within 2400-2483.5MHz, supports 1.4MHz/3MHz/5MHz/10MHz/20MHz/40MHz/60MHz Bandwidth 3) 2.4GHz Wi-Fi: operating within 2400-2483.5MHz, supports 20MHz/40MHz Bandwidth and IEEE 802.11 b/g/n20/n40 4) 2.4GHz: operating within 2400-2483.5MHz, GFSK, 1Mbps&2Mbps 5) 5.2GHz Wi-Fi: operating with 5150-5250MHz, supports 20MHz/40MHz/80MHz Bandwidth and IEEE 802.11 a/n20/n40/ac20/ac40/ac80 6) 5.2GHz SDR: operating within 5150-5250MHz, supports 10MHz/20MHz/40MHz Bandwidth *(For US only, not supported in IC) 7) 5.8GHz SDR: operating within 5725-5850MHz, supports 1.4MHz/3MHz/5MHz/10MHz/20MHz/40MHz/60MHz/80MHz Bandwidth 8) 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 2.4GHz SDR	
Operating Frequency:	2403.5-2469.12MHz for 1.4MHz Bandwidth 2405.5-2468.2MHz for 3MHz Bandwidth 2404.5-2469.5MHz for 5MHz Bandwidth

	2407.5-2467.5MHz for 10MHz Bandwidth 2412.5-2462.5MHz for 20MHz Bandwidth 2422.5-2452.5MHz for 40MHz Bandwidth 2432.5-2442.5MHz for 60MHz Bandwidth
Type of Modulation:	OFDM (QPSK, 16QAM, 64QAM)
Channel Number:	108 channels for 1.4MHz Bandwidth 66 channels for 3MHz Bandwidth 130 channels for 5MHz Bandwidth 153 channels for 10MHz Bandwidth 51 channels for 20MHz Bandwidth 31 channels for 40MHz Bandwidth 11 channels for 60MHz Bandwidth
Antenna Type:	Integral Antenna
Antenna Number:	1TX for SISO mode (ANT0 or ANT1 or ANT2 or ANT3) 2TX for MIMO mode (ANT0+ANT1, or ANT0+ANT3, or ANT2+ANT1, or ANT2+ANT3, uncorrelated signal)
Antenna Gain:	2dBi for ANT0 / ANT1 3.5dBi for ANT2 / ANT3 (Provided by the Client)
The type of wideband data transmission equipment:	DTS
Technical Specification of 2.4GHz Wi-Fi	
Operating Frequency:	2412 - 2462 MHz for 802.11b/g/n(HT20) 2422 - 2452 MHz 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 ~ MCS7 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:	1
Antenna Gain:	4 dBi (Provided by the Client)
Technical Specification of 2.4GHz	
Operating Frequency:	2402 MHz to 2474 MHz
Type of Modulation:	GFSK
Channel Number:	37 channels
Channel Separation:	2MHz
Data Rate:	1Mbps, 2Mbps
Antenna Type:	Integral Antenna
Antenna Number:	1
Antenna Gain:	1.82 dBi (Provided by the Client)

Prüfbericht - Nr.: CN24F0Q2 003
Test Report No.:

 Seite 11 von 26
 Page 11 of 26

Table 4: RF Channel and Frequency of 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	/
11	2462	/

Table 5: RF Channel and Frequency of 2.GHz

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	/	/
8	2418	18	2438	28	2458	/	/
9	2420	19	2440	29	2460	/	/

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, 2.4GHz wireless transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. On, 2.4GHz SDR wireless transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- C. On, 2.4GHz Wi-Fi wireless transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- ID Label and Location Info
- User Manual
- Operation Description

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 testing were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model TKGS3 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 6: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Laptop	Lenovo	T480	PF-16A6N8	/
AC/DC Adapter	/	PD-30CN	/	Input: 100-240V, 50/60Hz, 0.8A Max Output: 3.3-11V, 2.72A or 5V/3A or 9V/3A or 12V/2.5A or 15V/2A

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)

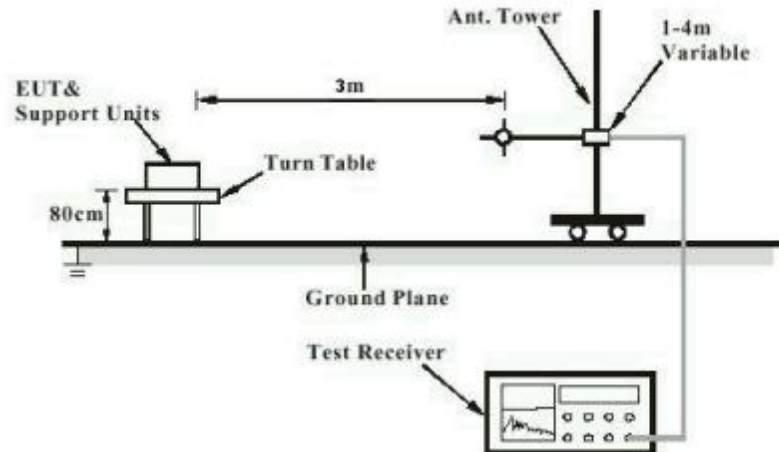


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

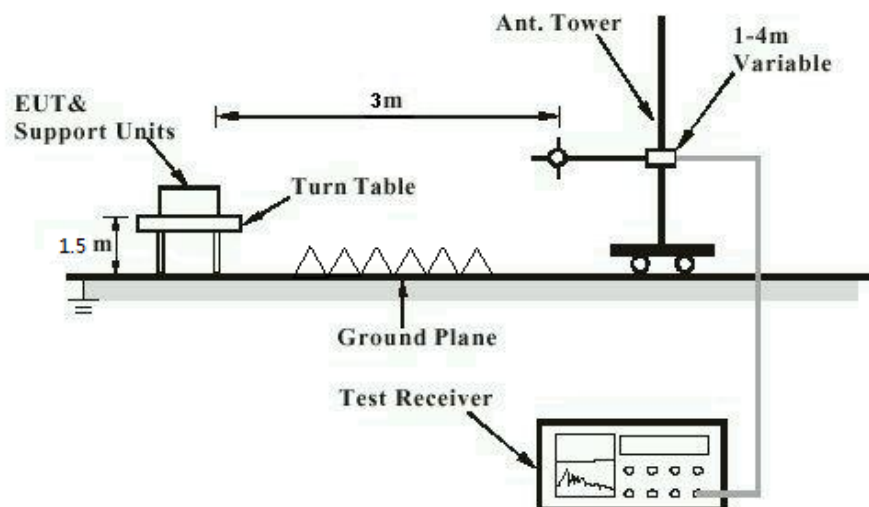


Diagram of Measurement Configuration for Mains Conduction Measurement

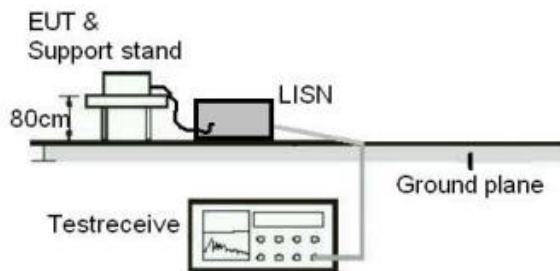
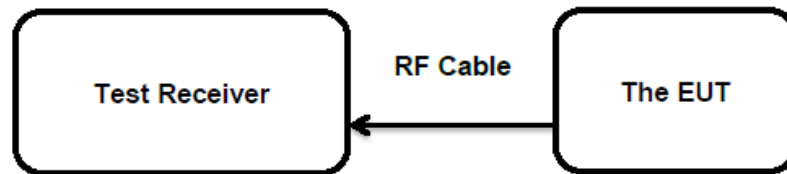


Diagram of Measurement Configuration for Conducted Transmitter Measurement



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
RSS-Gen Clause 6.8
Limit : the use of antennas with directional gains that do not
exceed 6 dBi

The EUT have Integral Antennas, the max. uncorrelated antenna gain antenna is 1.82dBi for 2.4GHz SRD, 4dBi for 2.4GHz Wi-Fi, 3.5dBi 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 Peak 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	: < 1 W (Maximum Conducted Peak Power) e.i.r.p. <4W
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-11-28 to 2024-01-03
Input voltage	: Fully charged battery
Operation mode	: A, B, C
Test channel	: Low / Middle / High
Ambient temperature	: 25.2 °C
Relative humidity	: 37 %
Atmospheric pressure	: 101 kPa

For details refer to following test result.

Table 7: Test Result of Maximum Conducted Output Power, 2.4GHz

Test Mode	Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
			(dBm)	(W)	
2.4GHz	1 Mbps	2402	21.53	0.1422	< 1.0
		2438	21.76	0.1500	
		2474	21.46	0.1400	
	2 Mbps	2402	21.43	0.1390	
		2438	21.79	0.1510	
		2474	21.68	0.1472	
Maximum Measured Value			21.79	0.1510	
Max. e.i.r.p.=21.79dBm+1.82dBi=23.61dBm, which is less than 36dBm=4W.					

Table 8: Test Result of Maximum Conducted Output Power, 2.4GHz Wi-Fi

Test Mode	Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
			(dBm)	(W)	
802.11b	1 Mbps	2412	17.40	0.0550	< 1.0
		2437	17.02	0.0504	
		2462	17.24	0.0530	
802.11g	6 Mbps	2412	22.18	0.1652	
		2437	21.75	0.1496	
		2462	22.14	0.1637	
802.11n (HT20)	MCS0	2412	21.33	0.1358	
		2437	21.90	0.1549	
		2462	21.28	0.1343	
802.11n (HT40)	MCS0	2422	21.95	0.1567	
		2437	21.39	0.1377	
		2452	21.38	0.1374	

Maximum Measured Value	22.18	0.1652	
Max. e.i.r.p.=22.18dBm+4dBi=26.18dBm, which is less than 36dBm=4W.			

Table 9: Test Result of Maximum Conducted Output Power, 2.4GHz SDR

Worst case: SISO mode (ANT 1)

Test Mode	Test Channel (MHz)	Measured Average Power		Limit (W)
		(dBm)	(W)	
1.4MHz BW	2403.5	27.48	0.5598	< 1.0
	2435.5	28.82	0.7621	
	2459.12	27.57	0.5715	
	2469.12	20.53	0.1130	
3MHz BW	2405.5	28.68	0.7379	
	2435.5	28.91	0.7780	
	2462.2	27.44	0.5546	
	2468.2	23.12	0.2051	
5MHz BW	2404.5	25.92	0.3908	
	2409.5	26.18	0.4150	
	2434.5	28.91	0.7780	
	2464.5	27.45	0.5559	
	2469.5	22.72	0.1871	
10MHz BW	2407.5	24.82	0.3034	
	2412.5	26.15	0.4121	
	2437.5	28.89	0.7745	
	2465.5	27.03	0.5047	
	2467.5	25.52	0.3565	
20MHz BW	2412.5	26.33	0.4295	
	2437.5	28.92	0.7798	
	2458.5	25.62	0.3648	
	2460.5	25.28	0.3373	
	2462.5	24.69	0.2944	
40MHz BW	2422.5	24.94	0.3119	
	2437.5	27.99	0.6295	
	2450.5	25.50	0.3548	
	2452.5	24.08	0.2559	
60MHz BW	2432.5	23.55	0.2265	
	2437.5	25.84	0.3837	
	2442.5	25.10	0.3236	
Maximum Measured Value		28.92	0.7798	
Max. e.i.r.p.=28.92dBm+2dBi=30.92dBm, which is less than 36dBm=4W.				

Antenna Gain: 2dBi for Ant1

Worst case: MIMO mode (ANT 0+3)

Test Mode	Test Channel (MHz)	Measured Average Power		Limit (W)
		(dBm)	(W)	
1.4MHz BW	2403.5	28.39	0.6902	< 1.0
	2435.5	27.22	0.5272	
	2469.12	25.32	0.3404	
3MHz BW	2405.5	28.64	0.7311	
	2435.5	28.34	0.6823	
	2468.2	25.27	0.3365	
5MHz BW	2404.5	28.39	0.6902	
	2434.5	28.12	0.6486	
	2464.5	27.77	0.5984	
	2469.5	24.73	0.2972	

10MHz BW	2407.5	26.53	0.4498
	2437.5	28.12	0.6486
	2467.5	26.27	0.4236
20MHz BW	2412.5	24.79	0.3013
	2422.5	26.90	0.4898
	2437.5	28.31	0.6776
	2452.5	27.03	0.5047
	2462.5	23.92	0.2466
40MHz BW	2422.5	23.22	0.2099
	2427.5	26.27	0.4236
	2437.5	27.13	0.5164
	2447.5	24.51	0.2825
	2452.5	21.05	0.1274
60MHz BW	2432.5	24.50	0.2818
	2437.5	25.46	0.3516
	2442.5	22.56	0.1803
Maximum Measured Value		28.64	0.7311
Max. e.i.r.p.=28.64dBm+3.5dBi=32.14dBm, 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 2.4GHz: 1.82dBi
 Antenna gain(G) of 2.4GHz Wi-Fi : 4dBi
 Antenna gain(G) of 2.4GHz SDR: 3.5dBi (uncorrelated antenna gain)

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	: 2023-11-28 to 2024-01-03
Input voltage	: Fully charged battery
Operation mode	: A, B, C
Test channel	: Low / Middle / High
Ambient temperature	: 25.2 °C
Relative humidity	: 37 %
Atmospheric pressure	: 101 kPa

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

Prüfbericht - Nr.: CN24F0Q2 003
Test Report No.:Seite 21 von 26
Page 21 of 26

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 : 2023-11-28 to 2024-01-03

Input voltage : Fully charged battery

Operation mode : A, B, C

Test channel : Low / Middle / High

Ambient temperature : 25.2 °C

Relative humidity : 37 %

Atmospheric pressure : 101 kPa

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

Prüfbericht - Nr.: CN24F0Q2 003
Test Report No.:Seite 22 von 26
Page 22 of 26

5.1.5 99% Bandwidth

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

Test standard : FCC Part 15.247(a)
RSS-Gen clause 6.7

Basic standard : ANSI C63.10: 2013

Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-11-28 to 2024-01-03

Input voltage : Fully charged battery

Operation mode : A, B, C

Test channel : Low / Middle / High

Ambient temperature : 25.2 °C

Relative humidity : 37 %

Atmospheric pressure : 101 kPa

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

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	: 2023-11-28 to 2024-01-03
Input voltage	: Fully charged battery
Operation mode	: A, B, C
Test channel	: Low / Middle / High
Ambient temperature	: 25.2 °C
Relative humidity	: 37 %
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.

Prüfbericht - Nr.: **CN24F0Q2 003**
Test Report No.:Seite 24 von 26
Page 24 of 26

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 & 5.5
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	: 2023-11-29 to 2024-01-09
Input voltage	: Fully charged battery
Operation mode	: A, B, C
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.

5.1.8 Conducted Emission on AC Mains

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

Test standard	: FCC Part 15.207(a) RSS-Gen Section 8.8
Basic standard	: ANSI C63.10: 2013
Frequency range	: 0.15 – 30MHz
Classification	: Class B
Limits	: FCC Part 15.207(a) RSS-Gen Table 4
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-11-24
Input voltage	: AC 120V, 60Hz
Operation mode	: A, B, C
Earthing	: Not connected
Ambient temperature	: 25.0 °C
Relative humidity	: 51.2 %
Atmospheric pressure	: 101 kPa

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

6 Photographs of the Test Set-Up

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

7 List of Tables

Table 1: List of Test and Measurement Equipment.....	6
Table 2: Measurement Uncertainty	7
Table 3: Technical Specification of EUT.....	9
Table 4: RF Channel and Frequency of Wi-Fi 802.11 b/g/n.....	11
Table 5: RF Channel and Frequency of 2.GHz	11
Table 6: List of Accessories and Auxiliary Equipment.....	13
Table 7: Test Result of Maximum Conducted Output Power, 2.4GHz	17
Table 8: Test Result of Maximum Conducted Output Power, 2.4GHz Wi-Fi.....	17
Table 9: Test Result of Maximum Conducted Output Power, 2.4GHz SDR.....	18