RADIO TEST REPORT

For

Static Var Generator

Model No.: SVG-400-35K-4L, 5 Kvar, 10Kvar, 15Kvar, 20Kvar, 35Kvar, 50Kvar, 70Kvar, 100Kvar

Prepared for	:	Cook Cooper Electric (shanghai) Co., Ltd.
Address	:	Room A56, 4th Floor, Block B 505 Xinbei Road Minhang District Shanghai

Prepared By	:	Guangdong KAIXU Testing Technology Co., Ltd.
Address	:	Room 215, Building 2, No. 123, Dongcheng Section, Guanlong Road, Dongcheng Street, Dongguan City, Guangdong Province, China

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Report Number	:	KTi251107E310
Date of Receipt	:	Nov. 07, 2025
Date of Test	:	Nov. 07-18, 2025
Date of Report	:	Nov. 19, 2025

Table of contents

Test Result Certification

Applicant's name:	Cook Cooper Electric (shanghai) Co., Ltd.
Address:	Room A56, 4th Floor, Block B 505 Xinbei Road Minhang District Shanghai
Manufacture's name:	Cook Cooper Electric (shanghai) Co., Ltd.
Address:	Room A56, 4th Floor, Block B 505 Xinbei Road Minhang District Shanghai
Product name:	Static Var Generator
Trademark:	Cooke kolb
Model name:	SVG-400-35K-4L, 5 Kvar, 10Kvar, 15Kvar, 20Kvar, 35Kvar, 50Kvar, 70Kvar, 100Kvar
Standards:	EN 300 328 V2.2.2 (2019-07)

This device described above has been tested by Guangdong KAIXU Testing Technology Co., Ltd.. and the test results show that the equipment under test (EUT) is in compliance with the Radio equipment requirements. And it is applicable only to the tested sample identified in the report.

Tested by:	Kevin Yang	
	Kevin Yang	Nov. 19, 2025
Reviewed by:	Terry Huang	
	Terry Huang	Nov. 19, 2025
Approved by:	Store Chu	
	Store Chu	Nov. 19, 2025

GUANGDONG KAIXU TESTING TECHNOLOGY CO., LTD. KTi APPROVAL

1 General Description

1.1 Description of the EUT

Product name:	Static Var Generator
Model name:	SVG-400-35K-4L
Series Model:	5 Kvar, 10Kvar, 15Kvar, 20Kvar, 35Kvar, 50Kvar, 70Kvar, 100Kvar
Different of series model:	All models are identical for each other except the model number.
Power source:	AC220-400V, 50/60Hz, 50A Max
Battery:	N/A
Adapter information:	N/A
RF specification	
Operating frequency range:	802.11b/g/n(HT20): 2412MHz to 2472MHz; 802.11n(HT40): 2422MHz to 2452MHz
Channel number:	802.11b/g/n(HT20): 11; 802.11n(HT40): 7;
Modulation type:	802.11b: DSSS(CCK, DBPSK, DQPSK); 802.11g: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n(HT20): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna(s) type:	PCB Antenna
Antenna(s) gain:	0dBi

1.2 Description of test modes

No.	Emission test modes
Mode1	802.11b mode
Mode2	802.11g mode
Mode3	802.11n(HT20) mode
Mode4	802.11n(HT40) mode
Mode5	Receiving mode

1.2.1 Operation channel list

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	6	2437	11	2462
2	2417	7	2442	12	2467
3	2422	8	2447	13	2472
4	2427	9	2452	/	/

5	2432	10	2457	/	/

Note: The test software provided by manufacturer is used to control EUT for working in engineering mode, that enables selectable channel, and capable of continuous transmitting mode.

Test Software:
For power setting, refer to below table.

Mode	2412MHz	2442MHz	2472MHz
802.11b	-4	-4	-4
802.11g	-4	-4	-4
802.11n(HT20)	-4	-4	-4

1.3 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15°C ~ 35°C
Humidity:	20% RH ~ 75% RH
Atmospheric pressure:	98 kPa ~ 101 kPa

ENV	Temperature (°C)	Voltage (V)
LTNV	-10	207
NTNV	0	230
HTNV	40	253

1.4 Description of support units

The EUT was tested as an independent device.

1.5 Measurement uncertainty

Measurement	Uncertainty
RF output power, conducted	±1 dB
Power Spectral Density, conducted	±1 dB
Time	±1 %
Occupied channel bandwidth	±3 %
Unwanted Emissions, conducted	±1 dB
Radiated spurious emissions (30MHz~1GHz)	4.7dB
Radiated spurious emissions (1GHz~18GHz)	5.3dB
Temperature	±1 °C
Humidity	± 5 %

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2 Summary of Test Result

No.	Item	Standard	Requirement	Result
1	RF Power	ETSI EN 300 328 V2.2.2 (2019-07)	Clause 4.3.2.2.1	Pass
2	Power Spectral Density	ETSI EN 300 328 V2.2.2 (2019-07)	Clause 4.3.2.3.1	Pass
3	Adaptivity (Channel access mechanism)	ETSI EN 300 328 V2.2.2 (2019-07)	Clause 4.3.2.6.1	Pass
4	Occupied Channel Bandwidth	ETSI EN 300 328 V2.2.2 (2019-07)	Clause 4.3.2.7.1	Pass
5	Transmitter unwanted emissions in the out-of-band domain	ETSI EN 300 328 V2.2.2 (2019-07)	Clause 4.3.2.8.1	Pass
6	Transmitter unwanted emissions in the spurious domain	ETSI EN 300 328 V2.2.2 (2019-07)	Clause 4.3.2.9.1	Pass
7	Receiver spurious emissions	ETSI EN 300 328 V2.2.2 (2019-07)	Clause 4.3.2.10.1	Pass
8	Receiver Blocking	ETSI EN 300 328 V2.2.2 (2019-07)	Clause 4.3.2.11.1	Pass

3 Test Facilities and accreditations

3.1 Test laboratory

Test laboratory:	Guangdong KAIXU Testing Technology Co., Ltd..
Laboratory location:	Room 215, Building 2, No. 123, Dongcheng Section, Guanlong Road, Dongcheng Street, Dongguan City, Guangdong Province, China
Telephone:	(86-755)85254458
Fax:	(86-755)85254458

4 List of test equipment

RF Conducted Test Equipment

Name of Equipment	Manufacturer	Model	Serial No.	Calibration Due	Cal. Interval
Pulse limiter	Rohde&Schwarz	ESH3-Z2	KTi-EL-201	Mar. 03, 2025	1
LISN impedance network TWO-LINE V-WORK	Rohde&Schwarz	ENV216	KTi-EL-202	Mar. 03, 2025	1
EMI Test Receiver	Rohde&Schwarz	ESCI	KTi-EL-203	Mar. 03, 2025	1
Test Software	Tonscend	JS32-CE Version 5.0.0			

Radiated Emissions Test Equipment

Name of Equipment	Manufacturer	Model	Serial No.	Calibration Due	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCI7	KTi-EL-205	Mar. 03, 2025	1
Logarithmic Periodic Broadband Antenna	Schwarzbeck	VULB9168	KTi-EL-209	Mar. 06, 2025	3
Preamplifier	HP	EM330	KTi-EL-210	Mar. 03, 2025	1
3m standard semi-anechoic chamber	Taihe MaoRui	9*6*6	KTi-EL-234	Oct. 12, 2024	5
Test Software	Tonscend	JS32-RE Version 5.0.0			

5 Radio Spectrum Matter Test Results (RF)

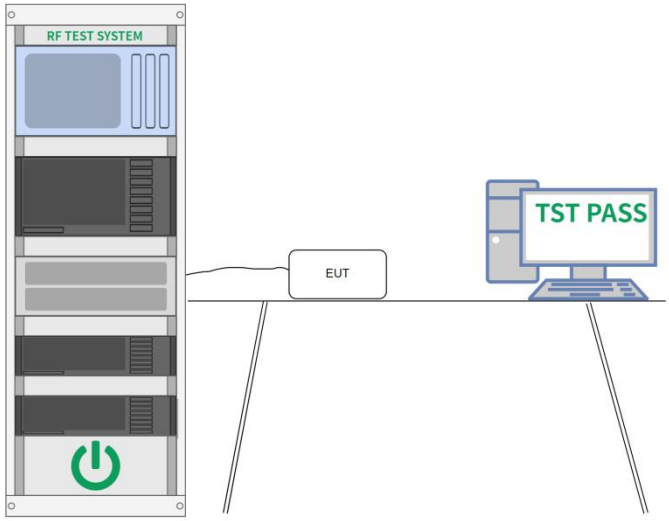
5.1 RF Power

Test Requirement:	Clause 4.3.2.2.1
Test Limit:	<=20dBm
Test Method:	Clause 5.4.2.2.1
Procedure:	Clause 5.4.2.2.1.2

5.1.1 E.U.T. Operation:

Operating Environment:					
Temperature:	28.3 °C	Humidity:	56.4 %	Atmospheric Pressure:	100 kPa
Test mode:	Mode1, Mode2, Mode3				

5.1.2 Test Setup Diagram:



5.1.3 Test Data:

Condition	Mode	Channel	Antenna	Max Burst RMS Power (dBm)	Max EIRP (dBm)	Limit (dBm)	Number of Burst	Result
NT/NV	IEEE 802.11b	1	0	10.14	10.14	≤20	23	PASS
		13		10.92	10.92		24	PASS
	IEEE 802.11g	1		11.51	11.51		14	PASS
		13		11.48	11.48		14	PASS
	IEEE 802.11n_20	1		11.98	11.98		26	PASS
		13		11.97	11.97		26	PASS
	IEEE 802.11n_40	3		11.75	11.75		46	PASS
		11		11.36	11.36		46	PASS

Condition	Mode	Channel	Antenna	Duty Cycle(%)	Tx-Sequence(ms)	Tx-Gap(ms)	Medium Utilization (MU) factor
NT/NV	IEEE 802.11b	1	0	98.82	8.37	0.09	51.02
		13		98.82	8.38	0.09	48.47
	IEEE 802.11g	1		93.03	1.35	0.09	65.84
		13		93.09	1.35	0.09	65.38
	IEEE 802.11n_20	1		86.24	0.64	0.09	85.68
		13		86.6	0.65	0.09	68.19
	IEEE 802.11n_40	3		74.64	0.3	0.1	55.87
		11		74.87	0.3	0.1	51.16

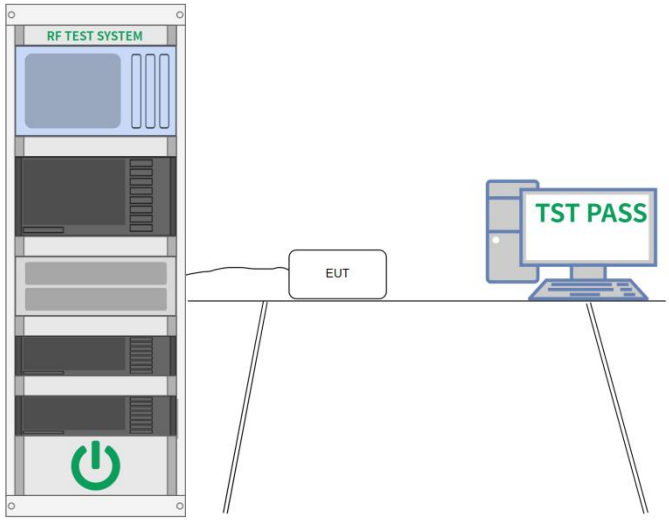
5.2 Power Spectral Density

Test Requirement:	Clause 4.3.2.3.1
Test Limit:	<=10dBm/MHz
Test Method:	Clause 5.4.3.2.1
Procedure:	Clause 5.4.3.2.1

5.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	28.3 °C	Humidity:	56.4 %	Atmospheric Pressure:	100 kPa
Test mode:	Mode1, Mode2, Mode3				

5.2.2 Test Setup Diagram:



5.2.3 Test Data:

Condition	Mode	Channel	Ant.	Peak Power(dBm)	Limit (dBm)	Result
NT/NV	IEEE 802.11b	1	0	8.94	10	PASS
		13	0	8.68	10	PASS
	IEEE 802.11g	1	0	8.03	10	PASS
		13	0	8.02	10	PASS
	IEEE 802.11n_20	1	0	9.22	10	PASS
		13	0	8.36	10	PASS
	IEEE 802.11n_40	3	0	4.91	10	PASS
		11	0	4.74	10	PASS

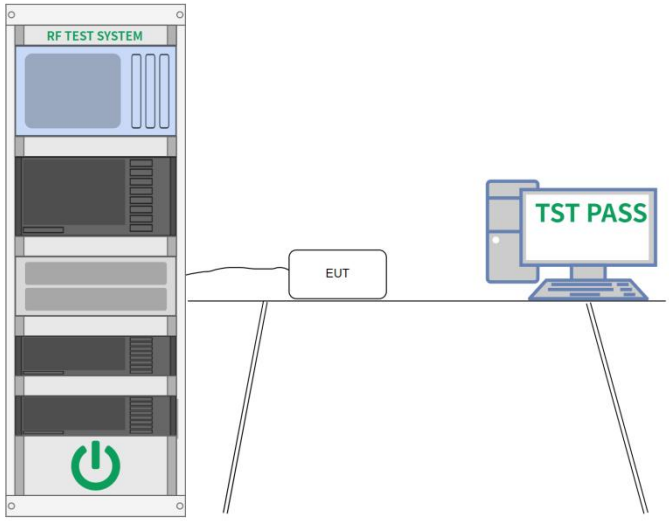
5.3 Adaptivity (Channel access mechanism)

Test Requirement:	Clause 4.3.2.6.1
Test Limit:	Clause 4.3.2.6.3.2.3
Test Method:	Clause 5.4.6.2.1.4

5.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	28.3 °C	Humidity:	56.4 %	Atmospheric Pressure:	100 kPa
Test mode:	Mode1, Mode2, Mode3				

5.3.2 Test Setup Diagram:



5.3.3 Test Data:

Mode	Channel	TxOn Point	TxOn + TxOff Point	Duty cycle(%)	Limit	Result
IEEE 802.11b	1	69	999	6.9110	10	PASS
	13	44	999	4.4070	10	PASS
IEEE 802.11g	1	36	999	3.6058	10	PASS
	13	45	999	4.5072	10	PASS
IEEE 802.11n_20	1	40	999	4.0064	10	PASS

Note: only the data of the worst mode are reflected.

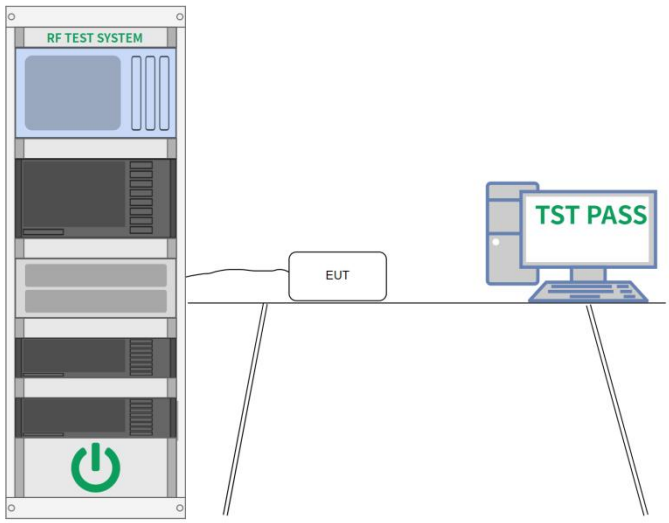
5.4 Occupied Channel Bandwidth

Test Requirement:	Clause 4.3.2.7.1
Test Limit:	Clause 4.3.2.7.3
Test Method:	Clause 5.4.7.2.1
Procedure:	Clause 5.4.7.2

5.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	28.3 °C	Humidity:	56.4 %	Atmospheric Pressure:	100 kPa
Test mode:	Mode1, Mode2, Mode3				

5.4.2 Test Setup Diagram:



5.4.3 Test Data:

Mode	Channel	Ant.	Frequency (MHz)	Occupied Bandwidth (MHz)	FL (MHz)	FH (MHz)	Limit	Result
IEEE 802.11b	1	0	2412	13.594	2405.032	2418.624	2400 MHz to 2483.5 MHz	PASS
	13		2472	13.412	2465.348	2478.76		PASS
IEEE 802.11g	1		2412	16.470	2403.692	2420.16		PASS
	13		2472	16.436	2463.764	2480.196		PASS
IEEE 802.11n_20	1		2412	17.650	2403.092	2420.74		PASS
	13		2472	17.614	2463.176	2480.788		PASS
IEEE 802.11n_40	3		2422	36.107	2403.808	2439.912		PASS
	11		2462	36.016	2443.944	2479.952		PASS

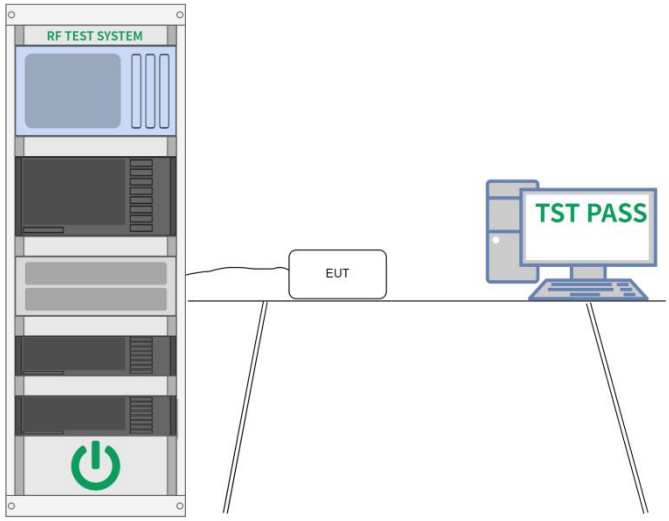
5.5 Transmitter unwanted emissions in the out-of-band domain

Test Requirement:	Clause 4.3.2.8.1
Test Limit:	Clause 4.3.2.8.3
Test Method:	Clause 5.4.8.2.1
Procedure:	Clause 5.4.8.2.1

5.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	28.3 °C	Humidity:	56.4 %	Atmospheric Pressure:	100 kPa
Test mode:	Mode1, Mode2, Mode3				

5.5.2 Test Setup Diagram:



5.5.3 Test Data:

Mode	Channel	Ant.	Test Freq. (MHz)	OOB Emission (dBm)	Segments	Limit (dBm)	Margin (dB)	Result
IEEE 802.11b	1	0	2399.5	-38.20	2 400 MHz - BW to 2 400 MHz	-10	-28.20	PASS
IEEE 802.11b			2380.865	-46.50	2 400 MHz - 2 BW to 2 400 MHz - BW	-20	-26.50	PASS
IEEE 802.11b			2485	-47.00	2 483,5 MHz to 2 483,5 MHz + BW	-10	-37.00	PASS
IEEE 802.11b			2510.635	-47.87	2 483,5 MHz + BW to 2 483,5 MHz + 2 BW	-20	-27.87	PASS
IEEE 802.11b	13		2399.5	-50.71	2 400 MHz - BW to 2 400 MHz	-10	-40.71	PASS
IEEE			2374.088	-52.18	2 400 MHz - 2	-20	-32.18	PASS

802.11b					BW to 2 400 MHz - BW			
IEEE 802.11b			2484	-43.20	2 483,5 MHz to 2 483,5 MHz + BW	-10	-33.20	PASS
IEEE 802.11b			2499.412	-49.84	2 483,5 MHz + BW to 2 483,5 MHz + 2 BW	-20	-29.84	PASS
IEEE 802.11g	1		2399.5	-20.71	2 400 MHz - BW to 2 400 MHz	-10	-10.71	PASS
IEEE 802.11g			2373.03	-46.69	2 400 MHz - 2 BW to 2 400 MHz - BW	-20	-26.69	PASS
IEEE 802.11g			2486	-47.50	2 483,5 MHz to 2 483,5 MHz + BW	-10	-37.50	PASS
IEEE 802.11g			2507.47	-48.41	2 483,5 MHz + BW to 2 483,5 MHz + 2 BW	-20	-28.41	PASS
IEEE 802.11g	13		2388.5	-47.33	2 400 MHz - BW to 2 400 MHz	-10	-37.33	PASS
IEEE 802.11g			2379.064	-48.38	2 400 MHz - 2 BW to 2 400 MHz - BW	-20	-28.38	PASS
IEEE 802.11g			2485	-23.84	2 483,5 MHz to 2 483,5 MHz + BW	-10	-13.84	PASS
IEEE 802.11g			2502.436	-45.66	2 483,5 MHz + BW to 2 483,5 MHz + 2 BW	-20	-25.66	PASS
IEEE 802.11n_20	1		2399.5	-19.86	2 400 MHz - BW to 2 400 MHz	-10	-9.86	PASS
IEEE 802.11n_20			2372.85	-45.25	2 400 MHz - 2 BW to 2 400 MHz - BW	-20	-25.25	PASS
IEEE 802.11n_20			2484	-45.27	2 483,5 MHz to 2 483,5 MHz + BW	-10	-35.27	PASS
IEEE 802.11n_20			2501.65	-47.51	2 483,5 MHz + BW to 2 483,5 MHz + 2 BW	-20	-27.51	PASS
IEEE 802.11n_20	13		2394.5	-47.00	2 400 MHz - BW to 2 400 MHz	-10	-37.00	PASS
IEEE 802.11n_20			2372.886	-48.56	2 400 MHz - 2 BW to 2 400 MHz - BW	-20	-28.56	PASS
IEEE 802.11n_20			2484	-24.10	2 483,5 MHz to 2 483,5 MHz + BW	-10	-14.10	PASS
IEEE 802.11n_20			2505.614	-46.07	2 483,5 MHz + BW to 2 483,5 MHz + 2 BW	-20	-26.07	PASS
IEEE 802.11n_40	11		2398.5	-47.17	2 400 MHz - BW to 2 400 MHz	-10	-37.17	PASS
IEEE 802.11n_40			2359.484	-49.88	2 400 MHz - 2 BW to 2 400	-20	-29.88	PASS

					MHz - BW			
IEEE 802.11n_40			2487	-28.38	2 483,5 MHz to 2 483,5 MHz + BW	-10	-18.38	PASS
IEEE 802.11n_40			2541.016	-47.34	2 483,5 MHz + BW to 2 483,5 MHz + 2 BW	-20	-27.34	PASS
IEEE 802.11n_40	3		2394.5	-24.61	2 400 MHz - BW to 2 400 MHz	-10	-14.61	PASS
IEEE 802.11n_40			2357.393	-47.68	2 400 MHz - 2 BW to 2 400 MHz - BW	-20	-27.68	PASS
IEEE 802.11n_40			2484	-45.66	2 483,5 MHz to 2 483,5 MHz + BW	-10	-35.66	PASS
IEEE 802.11n_40			2530.107	-48.71	2 483,5 MHz + BW to 2 483,5 MHz + 2 BW	-20	-28.71	PASS

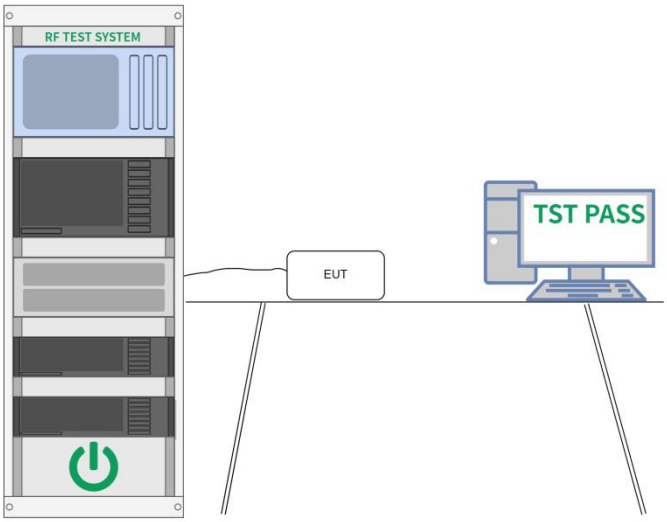
5.6 Transmitter unwanted emissions in the spurious domain

5.6.1 Limit:

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in following table .

Frequency range	Maximum power, e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz)	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 694 MHz	-54 dBm	100 kHz
694 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 12,75 GHz	-30 dBm	1 MHz

5.6.2 Test Setup Diagram:



5.6.3 Test Data:

Mode	Ch.	Ant.	Start Frequency (MHz)	Stop Frequency (MHz)	Mark Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
IEEE 802.11b	1	0	30	47	37.15	-75.533	-36	-39.533	PASS
			47	74	66.45	-72.629	-54	-18.629	PASS
			74	87.5	78.70	-74.366	-36	-38.366	PASS
			87.5	118	111.90	-71.071	-54	-17.071	PASS
			118	174	152.91	-64.121	-36	-28.121	PASS
			174	230	192.66	-60.879	-54	-6.879	PASS
			230	470	367.92	-52.928	-36	-16.928	PASS
			470	694	604.63	-59.470	-54	-5.470	PASS
			694	1000	960.00	-65.465	-36	-29.465	PASS
			1000	12750	3369.7	-40.005	-30	-10.005	PASS
	13		30	47	32.65	-77.607	-36	-41.607	PASS
			47	74	65.30	-72.655	-54	-18.655	PASS
			74	87.5	81.00	-78.479	-36	-42.479	PASS
			87.5	118	108.75	-70.146	-54	-16.146	PASS
			118	174	152.21	-64.631	-36	-28.631	PASS
			174	230	193.21	-62.451	-54	-8.451	PASS
			230	470	370.67	-52.616	-36	-16.616	PASS
			470	694	471.77	-60.935	-54	-6.935	PASS
			694	1000	823.49	-64.232	-36	-28.232	PASS
			1000	12750	3370.3	-40.212	-30	-10.212	PASS
IEEE 802.11g	1		30	47	30.45	-76.867	-36	-40.867	PASS
			47	74	66.05	-71.780	-54	-17.780	PASS
			74	87.5	75.65	-77.563	-36	-41.563	PASS
			87.5	118	109.15	-69.873	-54	-15.873	PASS
			118	174	152.51	-64.186	-36	-28.186	PASS
			174	230	229.61	-61.992	-54	-7.992	PASS
			230	470	371.27	-52.802	-36	-16.802	PASS
			470	694	602.78	-54.978	-54	-0.978	PASS
			694	1000	960.00	-67.962	-36	-31.962	PASS
			1000	12750	3370.0	-39.574	-30	-9.574	PASS
	13		30	47	30.40	-76.704	-36	-40.704	PASS
			47	74	65.15	-71.455	-54	-17.455	PASS

			74	87.5	83.15	-77.138	-36	-41.138	PASS
			87.5	118	105.90	-70.412	-54	-16.412	PASS
			118	174	152.16	-63.618	-36	-27.618	PASS
			174	230	229.76	-61.267	-54	-7.267	PASS
			230	470	369.42	-52.762	-36	-16.762	PASS
			470	694	480.17	-61.376	-54	-7.376	PASS
			694	1000	704.18	-55.201	-36	-19.201	PASS
			1000	12750	3370.0	-40.124	-30	-10.124	PASS
IEEE 802.11n_20	1		30	47	46.70	-77.511	-36	-41.511	PASS
			47	74	65.30	-72.062	-54	-18.062	PASS
			74	87.5	81.90	-77.187	-36	-41.187	PASS
			87.5	118	108.80	-69.774	-54	-15.774	PASS
			118	174	152.91	-64.219	-36	-28.219	PASS
			174	230	229.66	-61.546	-54	-7.546	PASS
			230	470	368.67	-52.865	-36	-16.865	PASS
			470	694	470.22	-60.551	-54	-6.551	PASS
			694	1000	960.00	-67.487	-36	-31.487	PASS
			1000	12750	3370.0	-39.638	-30	-9.638	PASS
	13		30	47	31.25	-76.340	-36	-40.340	PASS
			47	74	64.65	-71.738	-54	-17.738	PASS
			74	87.5	85.90	-77.478	-36	-41.478	PASS
			87.5	118	109.70	-69.512	-54	-15.512	PASS
			118	174	153.21	-63.810	-36	-27.810	PASS
			174	230	192.06	-61.914	-54	-7.914	PASS
			230	470	369.52	-52.743	-36	-16.743	PASS
			470	694	471.72	-61.537	-54	-7.537	PASS
			694	1000	709.34	-55.185	-36	-19.185	PASS
			1000	12750	3370.0	-40.299	-30	-10.299	PASS
IEEE 802.11n_40	11		30	47	30.00	-66.689	-36	-30.689	PASS
			47	74	64.10	-71.582	-54	-17.582	PASS
			74	87.5	79.35	-76.671	-36	-40.671	PASS
			87.5	118	108.85	-69.200	-54	-15.200	PASS
			118	174	152.46	-64.039	-36	-28.039	PASS
			174	230	192.06	-60.966	-54	-6.966	PASS
			230	470	370.02	-52.477	-36	-16.477	PASS

			470	694	683.93	-58.510	-54	-4.510	PASS
			694	1000	695.18	-63.976	-36	-27.976	PASS
			1000	12750	3370.0	-39.104	-30	-9.104	PASS
	3		30	47	30.00	-65.657	-36	-29.657	PASS
			47	74	64.45	-70.719	-54	-16.719	PASS
			74	87.5	78.60	-76.592	-36	-40.592	PASS
			87.5	118	106.65	-69.311	-54	-15.311	PASS
			118	174	152.26	-63.871	-36	-27.871	PASS
			174	230	229.31	-61.007	-54	-7.007	PASS
			230	470	367.87	-52.777	-36	-16.777	PASS
			470	694	621.53	-54.613	-54	-0.613	PASS
			694	1000	804.84	-67.286	-36	-31.286	PASS
			1000	12750	3370.0	-39.325	-30	-9.325	PASS

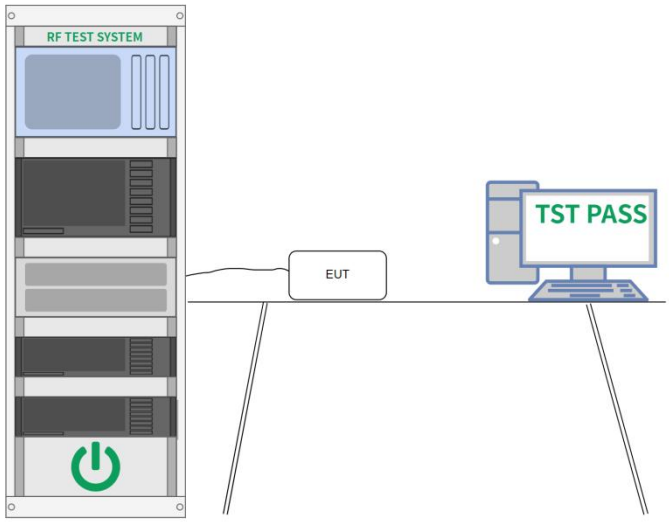
5.7 Receiver spurious emissions

5.7.1 Limit:

The spurious emissions of the receiver shall not exceed the values given in following table .

Frequency range	Maximum power, e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz)	Bandwidth
30 MHz to 1GHz	-57 dBm	100 kHz
1 GHz to 12,75 GHz	-47 dBm	1 MHz

5.7.2 Test Setup Diagram:



5.7.3 Test Data:

TestMode	Antenna	Freq(MHz)	Freq. [MHz]	Level[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	950.77	-77.87	-57.00	PASS
			6989.37	-54.53	-47.00	PASS
		2472	256.79	-77.8	-57.00	PASS
			6902.81	-54.83	-47.00	PASS
11G	Ant1	2412	814.73	-78.01	-57.00	PASS
			6985.45	-53.43	-47.00	PASS
		2472	798.43	-78.15	-57.00	PASS
			6947.46	-54.72	-47.00	PASS
11N20SISO	Ant1	2412	952.18	-78.88	-57.00	PASS
			6893.02	-53.85	-47.00	PASS
		2472	949.41	-78.09	-57.00	PASS
			6988.19	-53.9	-47.00	PASS

Remark: This Report only show the test plots of the worst case.

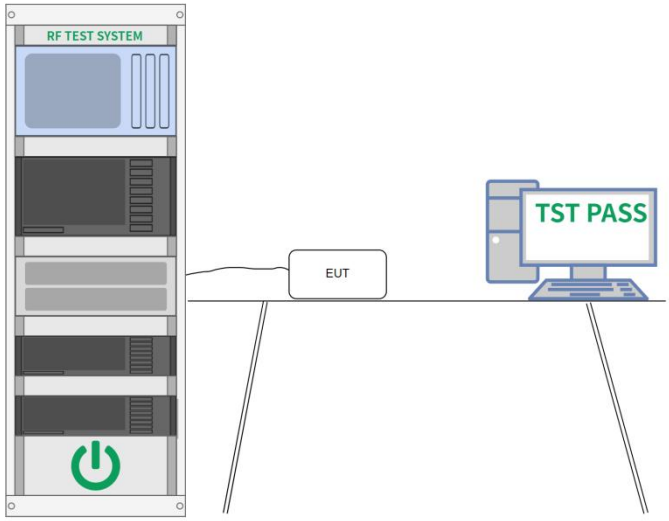
5.8 Receiver Blocking

Test Requirement:	Clause 4.3.2.11.1
Test Limit:	Clause 4.3.2.11.4
Test Method:	Clause 5.4.11.2.1
Procedure:	Clause 5.4.11.2.1

5.8.1 E.U.T. Operation:

Operating Environment:					
Temperature:	28.3 °C	Humidity:	56.4 %	Atmospheric Pressure:	100 kPa
Test mode:	Mode4				

5.8.2 Test Setup Diagram:

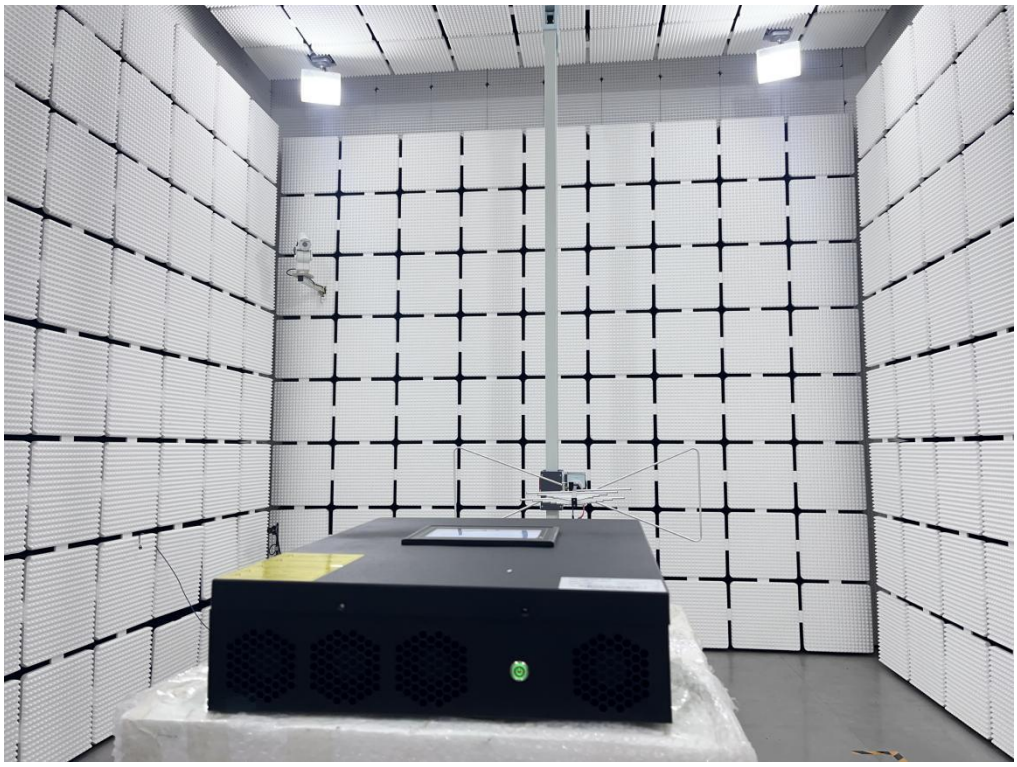
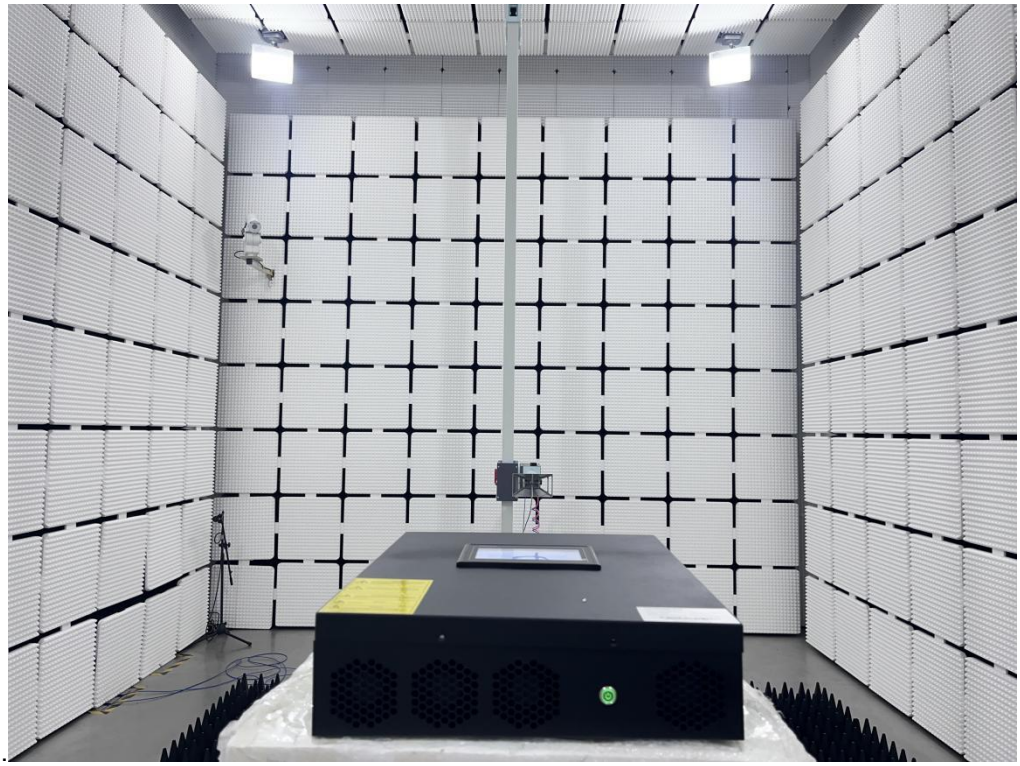


5.8.3 Test Data:

Wanted signal mean power from companion device (dBm)	Channel frequency (MHz)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	PER (%)	PER limit
-68	2412	2380	-30.66	2.92	≤10%
	2412	2504		3.20	≤10%
-74	2412	2300		3.25	≤10%
	2412	2330		2.89	≤10%
	2412	2360		1.96	≤10%
	2412	2524		3.81	≤10%
	2412	2584		1.90	≤10%
	2412	2674		2.63	≤10%
-68	2472	2380	-30.69	1.98	≤10%

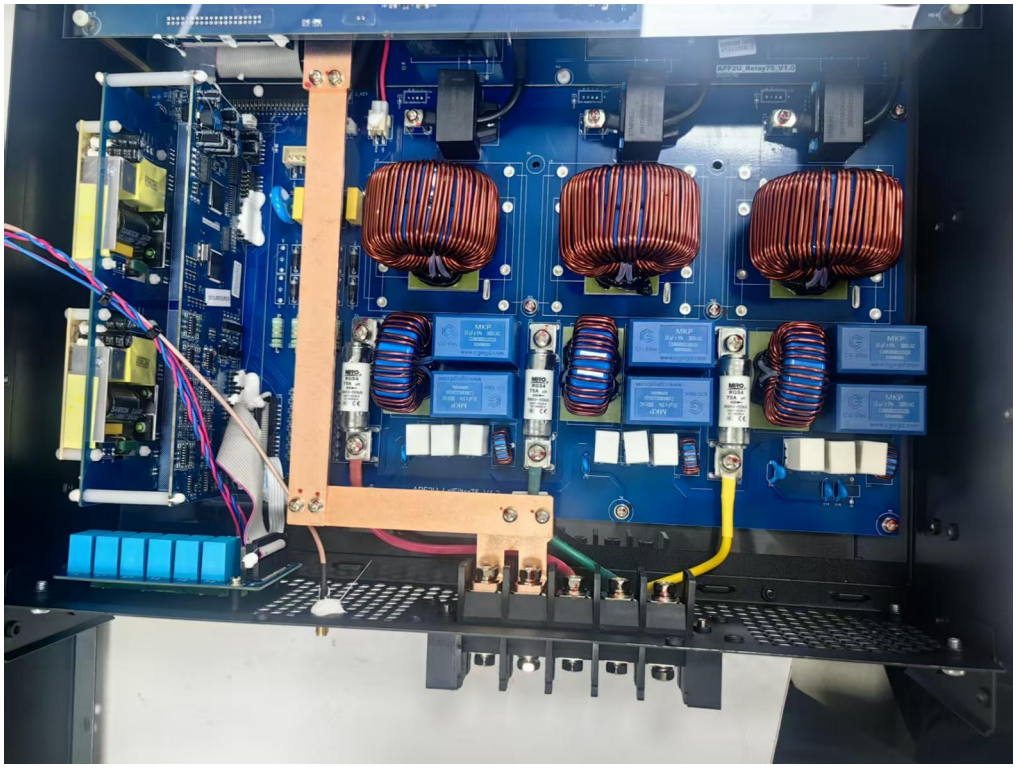
	2472	2504		2.73	≤10%
-74	2472	2300		1.68	≤10%
	2472	2330		2.36	≤10%
	2472	2360		2.60	≤10%
	2472	2524		2.04	≤10%
	2472	2584		3.13	≤10%
	2472	2674		1.94	≤10%
Test result: Pass					
Note: 1. The equipmentbelongs to receiver gategory 1 and it shall be tested operating at lowest data transmitting speed, Lowest channel and highest channel. 2. For 2380MHz,2504MHz:Wanted signal mean power(dBm)= (-133dBm + 10 × log10(OCBW)) or (-68 dBm) whichever is less For all blocking signal frequency other than 2380MHz,2504MHz: Wanted signal mean power(dBm)= (-139 dBm + 10 × log10(OCBW)) or (-74 dBm) whichever is less 3. When required blocking signals injected, communication link between the UUT and the associated companion device remains, and the performance still meet the minimum performance criterion PER≤10%.					

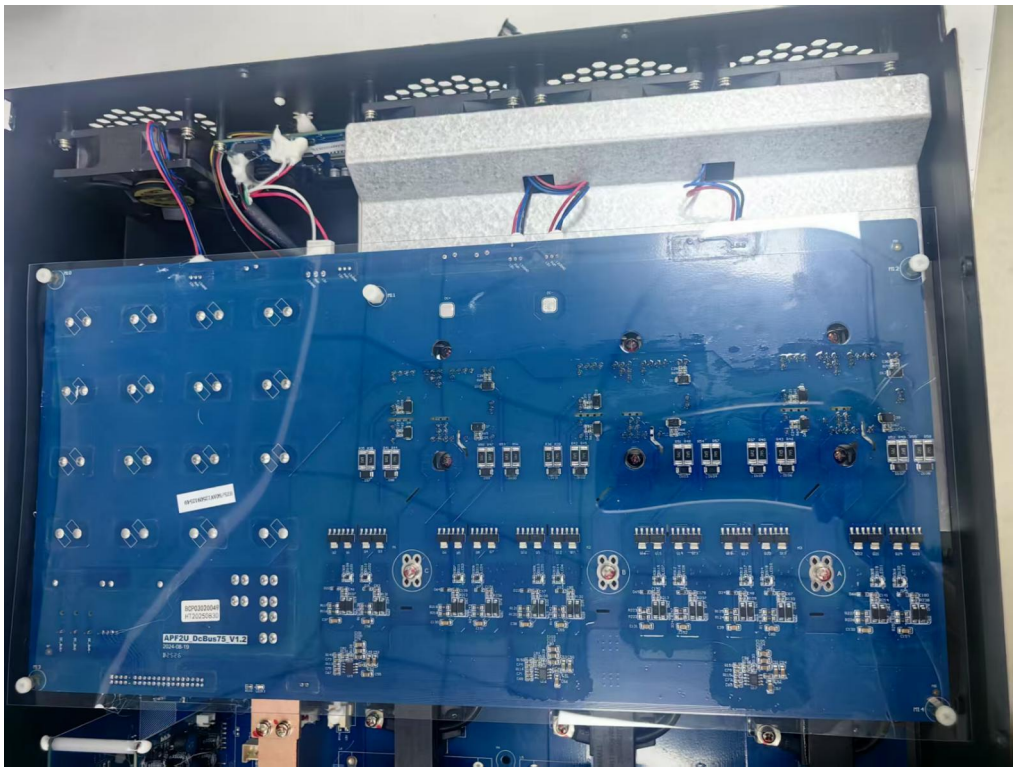
Photographs of the Test Setup

Receiver spurious emissions(30MHz to 1GHz)

Receiver spurious emissions(1 GHz to 12,75 GHz)


Photographs of the EUT


N
N
C
B
A




APF2U_DcBus75_V1.2


MKP

Appendix

Appendix 1: Information for testing

- **The type of wideband data transmission equipment:**

☐ FHSS
☒ non-FHSS

- **In case of FHSS:**

- In case of non-Adaptive FHSS equipment:
  The number of Hopping Frequencies:
- In case of Adaptive FHSS equipment:
  The maximum number of Hopping Frequencies:
  The minimum number of Hopping Frequencies:
- The (average) dwell time:

- **Adaptive/non-adaptive equipment:**

☐ non-adaptive Equipment
☒ adaptive Equipment without the possibility to switch to a non-adaptive mode
☐ adaptive Equipment which can also operate in a non-adaptive mode

- **In case of adaptive equipment:**

The maximum Channel Occupancy Time implemented by the equipment: ms
☐ The equipment has implemented an LBT mechanism
- In case of non-FHSS equipment:
  ☐ The equipment is Frame Based equipment
  ☐ The equipment is Load Based equipment
  ☐ The equipment can switch dynamically between Frame Based and Load Based equipment
  The CCA time implemented by the equipment: ..... µs
  ☒ The equipment has implemented a DAA mechanism
  ☐ The equipment can operate in more than one adaptive mode

- **In case of non-adaptive Equipment:**

The maximum RF Output Power (e.i.r.p.): 11.98 dBm
The maximum (corresponding) Duty Cycle: %
Equipment with dynamic behaviour, that behaviour is described here. (e.g. the different combinations of duty cycle and corresponding power levels to be declared):

- **The worst case operational mode for each of the following tests:**

- RF Output Power: 802.11b
- Power Spectral Density: 802.11b
- Duty cycle, Tx-Sequence, Tx-gap:
- Accumulated Transmit time, Frequency Occupation & Hopping Sequence (only for FHSS equipment):
- Hopping Frequency Separation (only for FHSS equipment):
- Medium Utilization: N/A
- Adaptivity & Receiver Blocking: 802.11b
- Nominal Channel Bandwidth: 802.11n(HT20)
- Transmitter unwanted emissions in the OOB domain: 802.11b
- Transmitter unwanted emissions in the spurious domain: 802.11b
- Receiver spurious emissions: 802.11b

- **The different transmit operating modes (tick all that apply):**

☒ Operating mode 1: Single Antenna Equipment
  ☒ Equipment with only one antenna
  ☐ Equipment with two diversity antennas but only one antenna active at any moment in time
  ☐ Smart Antenna Systems with two or more antennas, but operating in a (legacy) mode where only one antenna is used (e.g. IEEE 802.11™ legacy mode in smart antenna systems)
☐ Operating mode 2: Smart Antenna Systems - Multiple Antennas without beam forming
  ☐ Single spatial stream/Standard throughput/(e.g. IEEE 802.11™ legacy mode)
  ☐ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1

☐ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2

NOTE 1: Add more lines if more channel bandwidths are supported.

☐ Operating mode 3: Smart Antenna Systems - Multiple Antennas with beam forming

☐ Single spatial stream/Standard throughput (e.g. IEEE 802.11™ legacy mode)

☐ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1

☐ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2

NOTE 2: Add more lines if more channel bandwidths are supported.

• In case of Smart Antenna Systems:

• The number of Receive chains:

• The number of Transmit chains:

☐ symmetrical power distribution

☐ asymmetrical power distribution

In case of beam forming, the maximum (additional) beam forming gain: dB

NOTE: The additional beam forming gain does not include the basic gain of a single antenna

• Operating Frequency Range(s) of the equipment:

• Operating Frequency Range 1: 2412 MHz to 2472 MHz

• Operating Frequency Range 2: MHz to MHz

NOTE: Add more lines if more Frequency Ranges are supported.

• Nominal Channel Bandwidth(s):

• Nominal Channel Bandwidth 1: 36.107 MHz

• Nominal Channel Bandwidth 2: MHz

• NOTE: Add more lines if more Frequency Ranges are supported.

• Type of Equipment (stand-alone, combined, plug-in radio device, etc.):

☒ Stand-alone

☐ Combined Equipment

☐ Plug-in radio device

☐ Other:

• The normal and the extreme operating conditions that apply to the equipment:

Normal operating conditions (if applicable):

Operating temperature: °C

Other (please specify if applicable):

Extreme operating conditions:

Operating temperature range: Minimum: -10 °C Maximum 40 C

Other (please specify if applicable): …… Minimum: …… Maximum ……

Details provided are for the: ☐ stand-alone equipment

☐ combined equipment

☐ test jig

• The intended combination(s) of the radio equipment power settings and one or more antenna assemblies and their corresponding e.i.r.p. levels:

• Antenna Type:

☒ Integral Antenna (information to be provided in case of conducted measurements)

Antenna Gain: 1 dBi

If applicable, additional beamforming gain (excluding basic antenna gain): ..... dB

☐ Temporary RF connector provided

☐ No temporary RF connector provided

☐ Dedicated Antennas (equipment with antenna connector)

☐ Single power level with corresponding antenna(s)

☐ Multiple power settings and corresponding antenna(s)

Number of different Power Levels: .....

Power Level 1: ..... dBm

Power Level 2: ..... dBm

Power Level 3: ..... dBm

NOTE 1: Add more lines in case the equipment has more power levels.

NOTE 2: These power levels are conducted power levels (at antenna connector).

• For each of the Power Levels, provide the intended antenna assemblies, their corresponding gains (G) and the resulting e.i.r.p. levels also taking into account the beamforming gain (Y) if applicable

Power Level 1: .12.98dBm

Number of antenna assemblies provided for this power level:

Assembly #	Gain (dBi)	e.i.r.p. (dBm	Part number or model name
1			
2			
3			
4			

NOTE 3: Add more rows in case more antenna assemblies are supported for this power level.

Power Level 2: ..... dBm

Number of antenna assemblies provided for this power level: .....

Assembly #	Gain (dBi)	e.i.r.p. (dBm	Part number or model name
1			
2			
3			
4			

NOTE 4: Add more rows in case more antenna assemblies are supported for this power level.

Power Level 3: ..... dBm

Number of antenna assemblies provided for this power level: .....

Assembly #	Gain (dBi)	e.i.r.p. (dBm	Part number or model name
1			
2			
3			
4			

NOTE 5: Add more rows in case more antenna assemblies are supported for this power level.

• The nominal voltages of the stand-alone radio equipment or the nominal voltages of the combined equipment or test jig in case of plug-in devices:

Details provided are for the: ☒ stand-alone equipment
☐ combined equipment
☐ test jig

Supply Voltage ☒ AC mains State AC voltage 230 V
☐ DC State DC voltage V

In case of DC, indicate the type of power source
☐ Internal Power Supply
☐ External Power Supply or AC/DC adapter
☐ Battery
☐ Other:

• Describe the test modes available which can facilitate testing:

• The equipment type (e.g. Bluetooth®, IEEE 802.11™, IEEE 802.15.4™, proprietary, etc.):

IEEE 802.11™

• If applicable, the statistical analysis referred to in clause 5.4.1 q)

(to be provided as separate attachment)

• If applicable, the statistical analysis referred to in clause 5.4.1 r)

(to be provided as separate attachment)

- **Geo-location capability supported by the equipment:**

☐ Yes

☐ The geographical location determined by the equipment as defined in clause 4.3.1.13.2 or clause 4.3.2.12.2 is not accessible to the user

☒ No

----End of Report----