RED-Radio Test Report

Client Name	:	EcoFlow Inc.
Address	:	Plant A202, Founder Technology Industrial Park, Shiyan Sub-district, Bao'an District Shenzhen, Guangdong 518000 China
Product Name	:	Portable Power Station
Date	:	Jan. 21, 2022

Anbotek (SZ) Compliance Laboratory Limited * Approved *

Shenzhen Anbotek Compliance Laboratory Limited

Contents

TEST REPORT

Applicant	:	EcoFlow Inc.
Manufacturer	:	EcoFlow Inc.
Product Name	:	Portable Power Station
Model No.	:	EFD500
Trade Mark	:	
Rating(s)	:	Capacity: 3600Wh, 48V⎓ AC Input/ AC-Eingang: 220-240V~ 12.5A 50Hz/60Hz X-Stream Charge Input/ X-Stream-Ladeeingang: 2875W Max Solar/ DC Input/ Solar-/DC-Eingang: 11-150V⎓15A 1600W Max Total Output/ Ausgangsleistung Gesamt: 4260W 12V Output/ 12V-Ausgang: 12.6V⎓30A/10A/3A 504W Max AC Output/ AC-Ausgang(x4): 230V~ 50Hz 3600W total (Surge 7200W) USB-A Output/ USB-A-Ausgang(x2): 5V⎓2.4A 12W Max per port total 24W USB-A Fast Charge Output/ USB-A Schnelllade-Ausgang(x2): 5V⎓2.4A 9V⎓2A 12V⎓1.5A 18W Max per port total 36W USB-C Output(x2)/ USB-C-Ausgang(x2): 5/9/12/15/20V⎓5A 100W Max per port total 200W

Test Standard(s) : ETSI EN 300 328 V2.2.2 (2019-07)

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the ETSI EN 300 328 V2.2.2 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt	Dec. 28, 2021
Date of Test	Dec. 28, 2021 ~ Jan. 17, 2022
Prepared By	Nianxiu Chen (Nianxiu Chen)
Approved & Authorized Signer	Kingkong Jin (Kingkong Jin)

1. General Information

1.1. Client Information

Applicant	:	EcoFlow Inc.
Address	:	Plant A202, Founder Technology Industrial Park, Shiyan Sub-district, Bao'an District Shenzhen, Guangdong 518000 China
Manufacturer	:	EcoFlow Inc.
Address	:	Plant A202, Founder Technology Industrial Park, Shiyan Sub-district, Bao'an District Shenzhen, Guangdong 518000 China
Factory		EcoFlow Inc.
Address		Plant A202, Founder Technology Industrial Park, Shiyan Sub-district, Bao'an District Shenzhen, Guangdong 518000 China

1.2. Description of Device (EUT)

Product Name	:	Portable Power Station	
Model No.	:	EFD500	
Trade Mark	:	ECOFLOW	
Test Power Supply	:	AC 230V, 50Hz	
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)	
Product Description	:	Operation Frequency:	BLE: 2402-2480MHz WiFi 2.4G: 2412-2472MHz for 802.11b/g/n(HT20)
		Number of Channel:	BLE: 40 Channels WiFi 2.4G: 11 Channels for 802.11b/g/n(HT20)
		Modulation Type:	BLE: GFSK WiFi 2.4G: CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
		Antenna Type:	BLE: PCB Antenna WiFi 2.4G: PCB Antenna
		Antenna Gain(Peak):	BLE: 1 dBi (Provided by customer) WiFi 2.4G: 1 dBi (Provided by customer)
		Adapter:	N/A
Remark: 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2) This report is for WiFi 2.4G.			

1.3. Auxiliary Equipment Used During Test

N/A		

1.4. Description of Test Configuration

The system was configured for testing in engineering mode, which was provided by manufacturer.
For 2.4GHz WiFi, 13 channels are provided to testing as below table:

Channel	Frequency	Channel	Frequency
1	2412 MHz	8	2447 MHz
2	2417 MHz	9	2452 MHz
3	2422 MHz	10	2457 MHz
4	2427 MHz	11	2462 MHz
5	2432 MHz	12	2467 MHz
6	2437 MHz	13	2472 MHz
7	2442 MHz		

For 802.11b, 802.11g, and 802.11n(HT20) modes were test with channel 1, 6, 13.

1.5. Test Conditions

	Normal Test Conditions	Extreme Test Conditions
Temperature	15°C - 30°C	-10°C ~ 45°C Note: (1)
Relative Humidity	20% - 75%	N/A
Supply Voltage	AC 230V, 50Hz	N/A
Note: (1) The HT 45°C and LT -10°C was declared by manufacturer;		

1.6. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	Jul 05, 2021	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Oct. 22, 2021	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 22, 2021	1 Year
4.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Oct. 22, 2021	1 Year
5.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 22, 2021	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Oct. 22, 2021	1 Year
7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Oct. 22, 2021	2 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Oct. 22, 2021	2 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Oct. 22, 2021	2 Year
10.	Horn Antenna	A-INFO	LB-180400-KF	J211060628	Oct. 22, 2021	2 Year
11.	Pre-amplifier	SONOMA	310N	186860	Oct. 22, 2021	1 Year
12.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
13.	RF Test Control System	YIHENG	YH3000	2017430	Oct. 22, 2021	1 Year
14.	Power Sensor	DAER	RPR3006W	15I00041SN045	Oct. 22, 2021	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN046	Oct. 22, 2021	1 Year
16.	MXA Spectrum Analysis	KEYSIGHT	N9020A	MY53280032	Oct. 22, 2021	1 Year
17.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Oct. 22, 2021	1 Year
18.	Signal Generator	Agilent	E4421B	MY41000743	Oct. 22, 2021	1 Year
19.	DC Power Supply	IVYTECH	IV3605	1804D360510	Oct. 22, 2021	1 Year
20.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Oct. 22, 2021	1 Year

1.7. Measurement Uncertainty

For the test methods, according to ETSI EN 300 328 standard, the measurement uncertainty figures shall be calculated in accordance with ETR 100 028-1 [4] and shall correspond to an expansion factor (coverage factor) k = 1,96 or k = 2 (which provide confidence levels of respectively 95 % and 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Maximum measurement uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1,5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±1 °C
Humidity	±5 %
DC and low frequency voltages	±3 %
Time	±5 %
Duty Cycle	±5 %

1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102

2. Summary of Test Results

List of Measurements			
No	Test Items	Clause No.	Results
Transmitter Items			
1	RF Output Power	4.3.2.2	Complies
2	Power Spectral Density	4.3.2.3	Complies
3	Duty Cycle, TX-Sequence, TX-gap	4.3.2.4	N/A Note (2)(3)
4	Medium Utilization (MU) factor	4.3.2.5	N/A Note (2)(3)
5	Adaptivity	4.3.2.6	Complies
6	Occupied Channel Bandwidth	4.3.2.7	Complies
7	Transmitter Unwanted Emissions in the Out-Of-Band Domain	4.3.2.8	Complies
8	Transmitter Unwanted Emissions in the Spurious Domain	4.3.2.9	Complies
Receiver Items			
9	Receiver spurious emissions	4.3.1.11	Complies
10	Receiver Blocking	4.3.2.12	Complies
11	Geo-location capability	4.3.1.13	N/A Note (4)

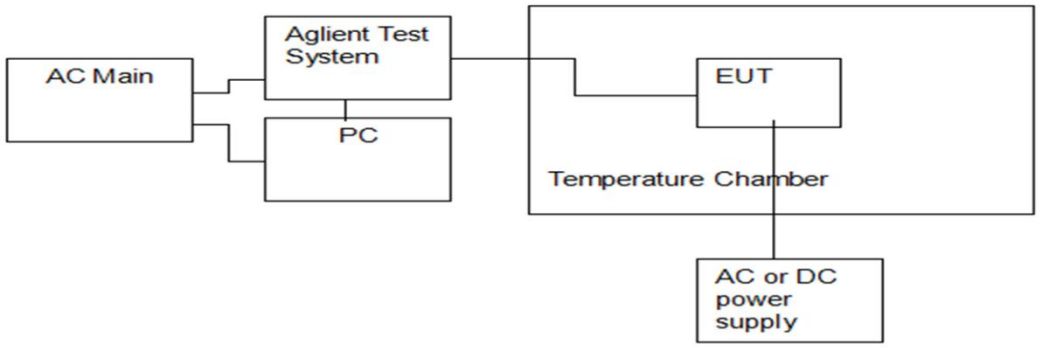
Note:
1. “N/A”: indicates test is not applicable in this Test Report.
2. Note(2) These requirements apply to non-adaptive equipment or to adaptive equipment when operating in a non-adaptive mode.The equipment is non-FHSS equipment.
3. Note(3) This requirement applies to non-adaptive equipment or to adaptive equipment when operating in a non-adaptive mode.
4.Note(4) This requirement only applies to non-FHSS equipment with geo-location capability. The device does not have geo-location capabilities.

3. RF Output Power

3.1. RF Output Power Limit

Condition	Limit
☐ Non-adaptive frequency hopping systems	Equal to or less than the value declared by the manufacturer. This declared value shall be equal to or less than 20 dBm.
☒ Adaptive frequency hopping systems	20dBm

3.2. Test Setup



3.3. Test Procedure

Refer to chapter 5.4.2.2.1 of ETSI EN 300 328 V2.2.2.

1. Run a test program to control EUT transmitting at specific channel
2. Connect the power sensor to the transmit port
3. Power Meter was setting as below:

Sample speed: 1 MS/s

Number of bursts: at least 10bursts

Detector: RMS

4. A power meter was used to read the response of the power sensor
5. Define Start time and Stop time of a burst by 30dB below the highest value of thestores samples.
6. Find the highest burst value
7. Record the power level
8. EIRP = antenna gain + power level of step 7.

3.4. Test Data

Pass

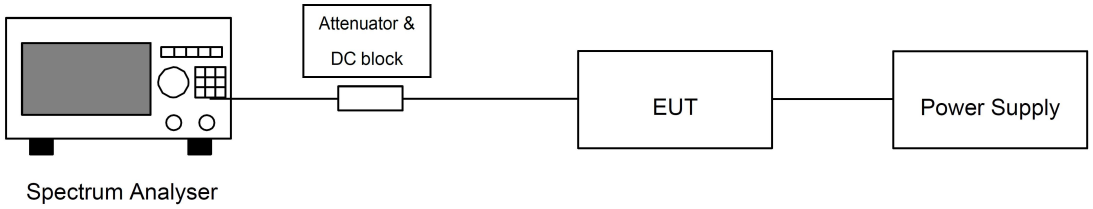
Please refer to Appendix A of the Appendix Test Data.

4. Power Spectral Density

4.1. Test Limit

Condition	Frequency BAND	Limit (e.i.r.p.)
Under normal conditions	2400 ~ 2483.5 MHz	10dBm / 1MHz

4.2. Test Setup



4.3. Test Procedure

Refer to ETSI EN 300 328 V2.2.2 Clause 5.4.3.

Connect the UUT to the spectrum analyzer and use the following settings:

Frequency range	2400MHz-2483.5MHz
RBW/VBW	10kHz/30kHz
Sweep points/time	>8350 / 10S
Detector	RMS
Trace	Max hold

4.4. Test Data

Pass

Please refer to Appendix B of the Appendix Test Data.

5. Adaptivity

5.1. Test Limit

See clause 5.1 of ETSI EN 300 328 V2.2.2 for the test conditions. These measurements shall only be performed at normal test conditions.

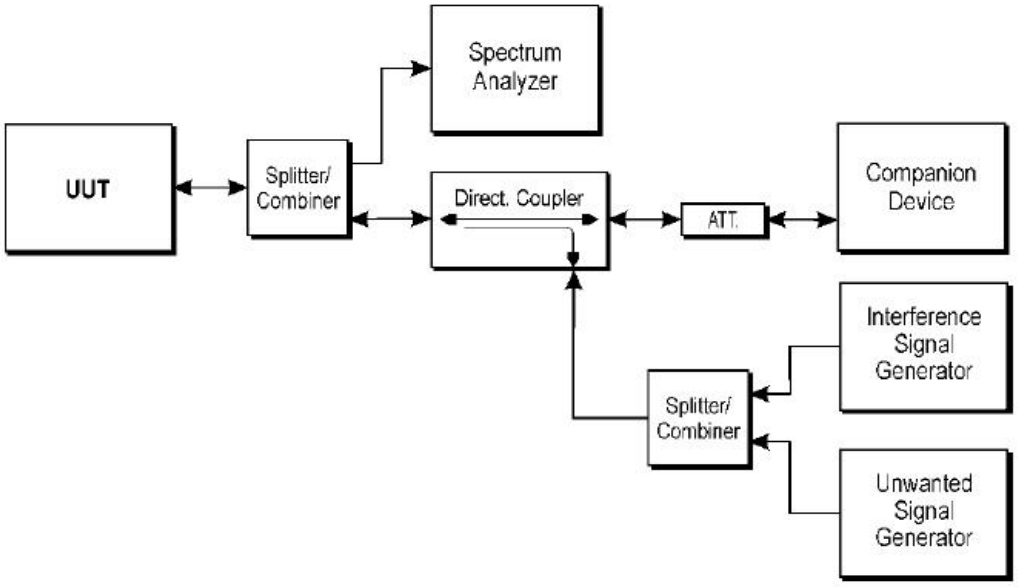
When supported by the operating frequency range of the equipment, this test shall be performed on two operating (hopping) frequencies randomly selected from the operating frequencies used by the equipment. The first (lower) frequency shall be randomly selected within the range 2 400 MHz to 2 442 MHz while the second (higher) frequency shall be randomly selected within the range 2 442 MHz to 2 483,5 MHz. The equipment shall be in a normal operating (hopping) mode.

For equipment which can operate in an adaptive and a non-adaptive mode, it shall be verified that prior to the test, the equipment is operating in the adaptive mode.

The equipment shall be configured in a mode that results in the longest Channel Occupancy Time.

Non-LBT based Detect and Avoid: 1 The channel shall remain unavailable for a minimum time equal to 1 s after which the channel may be considered again as an 'available' channel; 2 COT ≤ 40 ms; 3 Idle Period shall be minimum 5% of COT with a minimum of 100us; 4 Detection threshold level = -70dBm/MHz +10*log(100mW/Pout)(Pout in mW E.I.R.P)
LBT based Detect and Avoid (Frame Based Equipment): 1 The CCA observation time shall be not less than 18 us; 2 CCA observation time declared by the supplier; 3 COT = 1~10 ms; 4 Idle Period ≥ 5% of COT; 5 Detection threshold level = -70dBm/MHz +10*log(100mW/Pout)(Pout in mW E.I.R.P)
LBT based Detect and Avoid (Load Based Equipment): 1 The CCA observation time shall be not less than 18 us; 2 CCA declared by the manufacturer; 3 COT ≤ 13 ms; 4 Detection threshold level =-70dBm/MHz +10*log(100mW/Pout)(Pout in mW E.I.R.P)
Short Control Signalling Transmissions: Short Control Signalling Transmissions shall have a maximum TxOn / (TxOn + TxOff) ratio of 10 % within any observation period of 50 ms or within an observation period equal to the dwell time, whichever is less.

5.2. Test Setup



5.3. Test Procedure

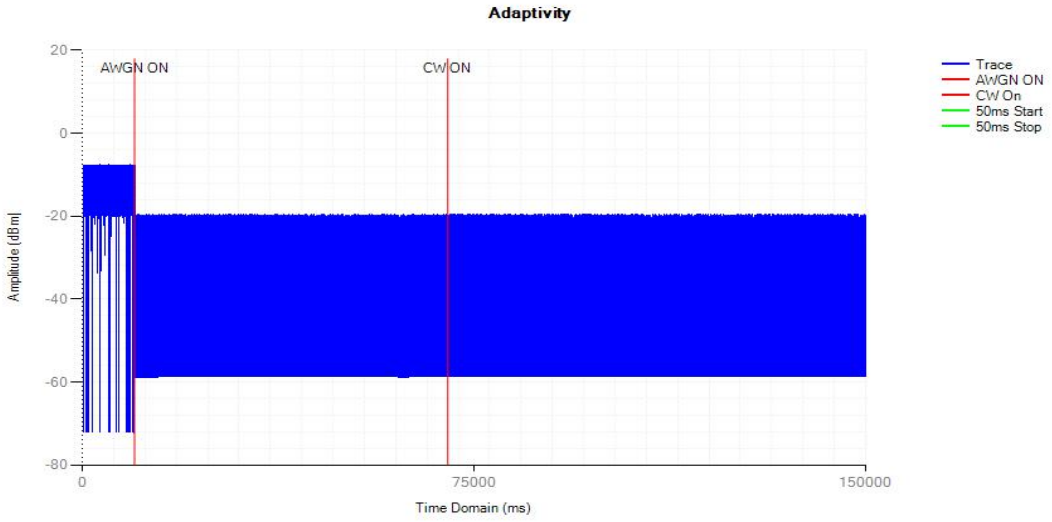
Refer to ETSI EN 300 328 V2.2.2 Clause 5.4.6

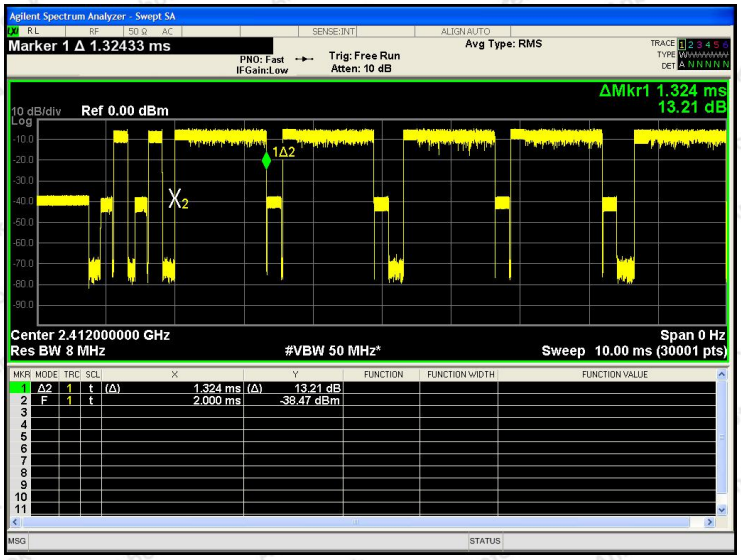
5.4. Test Data

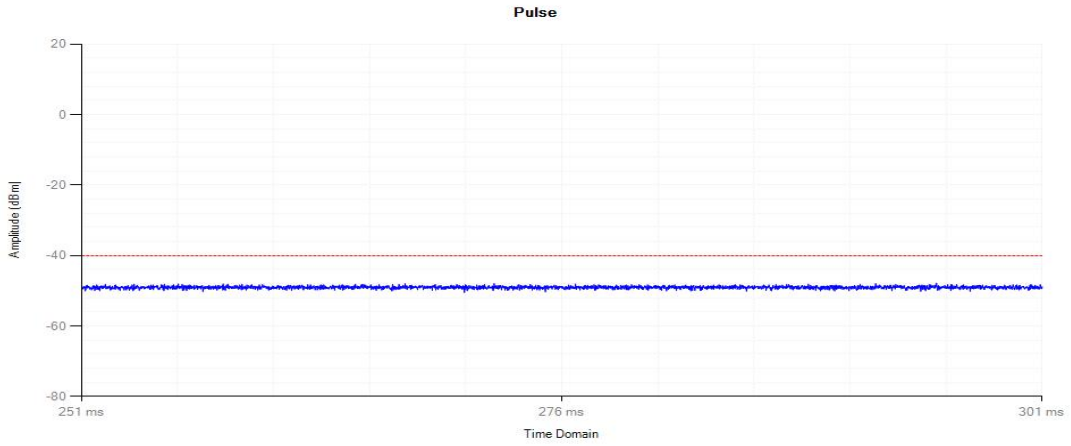
Pass

Test Mode	DUT Frequency (MHz)	AWGN Level (dBm)	Blocking Level (dBm)	Max. COT (ms)	Shot Control Width (ms)	Duty Cycle (%)	Conclusion
802.11b	2412	-63.07	-35	3.45	0	0	Pass
	2472	-63.02	-35	3.45	0	0	Pass
802.11g	2412	-61.71	-35	2.98	0	0	Pass
	2472	-61.61	-35	2.75	0	0	Pass
802.11n (HT20)	2412	-61.41	-35	2.68	0	0	Pass
	2472	-61.33	-35	2.70	0	0	Pass

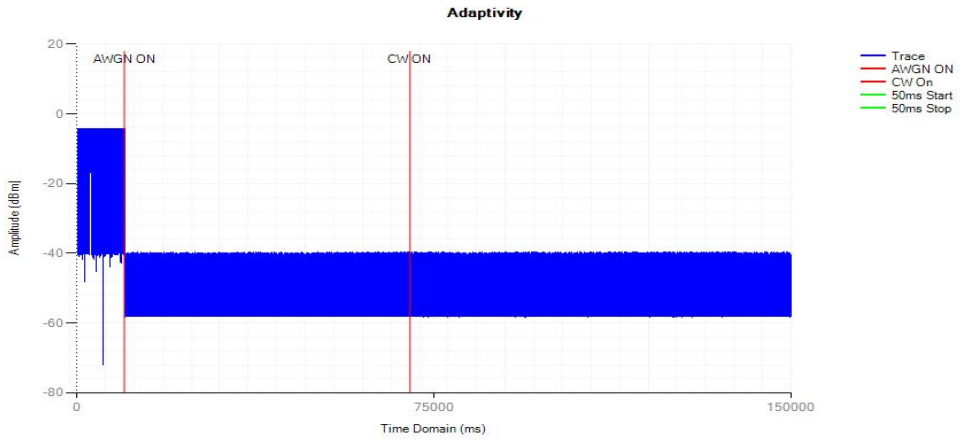
802.11b Low

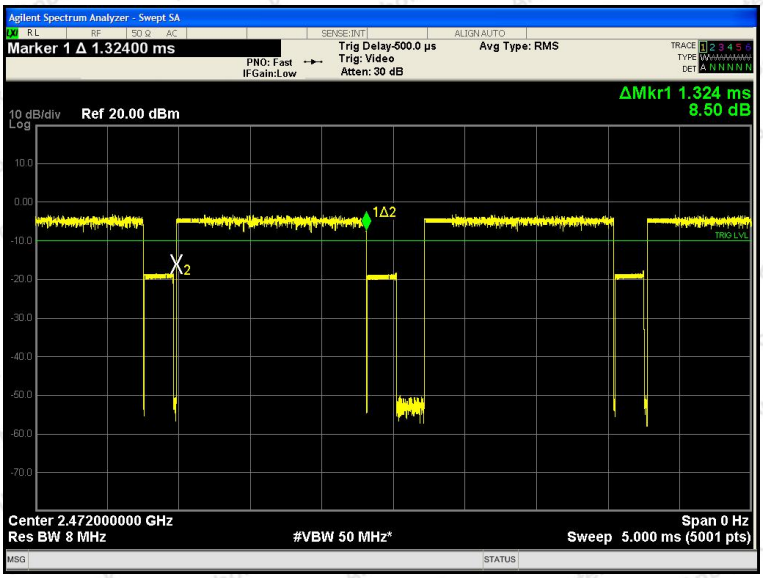

Adaptivity
AWGN ON
CW ON
Trace
AWGN ON
CW On
50ms Start
50ms Stop
Amplitude (dBm)
Time Domain (ms)

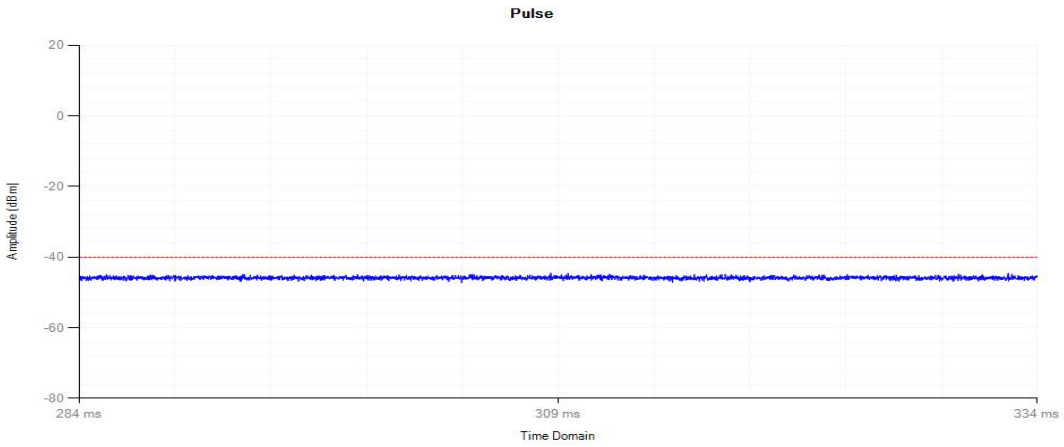

Agilent Spectrum Analyzer - Swept SA
Marker 1 Δ 1.32433 ms
Avg Type: RMS
Trig: Free Run
Atten: 10 dB
ΔMkr1 1.324 ms
13.21 dB
10 dB/div
Ref 0.00 dBm
Center 2.412000000 GHz
Res BW 8 MHz
#VBW 50 MHz*
Span 0 Hz
Sweep 10.00 ms (30001 pts)


Pulse
Amplitude (dBm)
251 ms
276 ms
301 ms
Time Domain

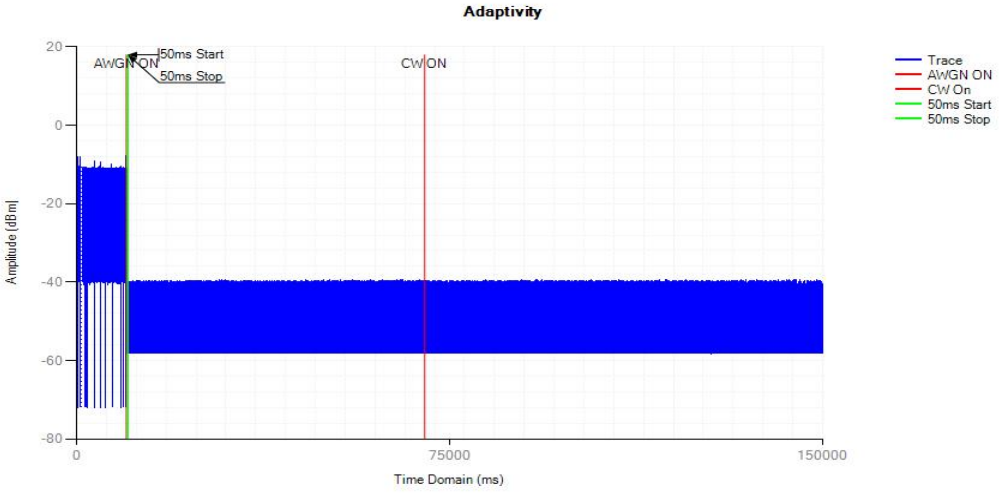
802.11b High

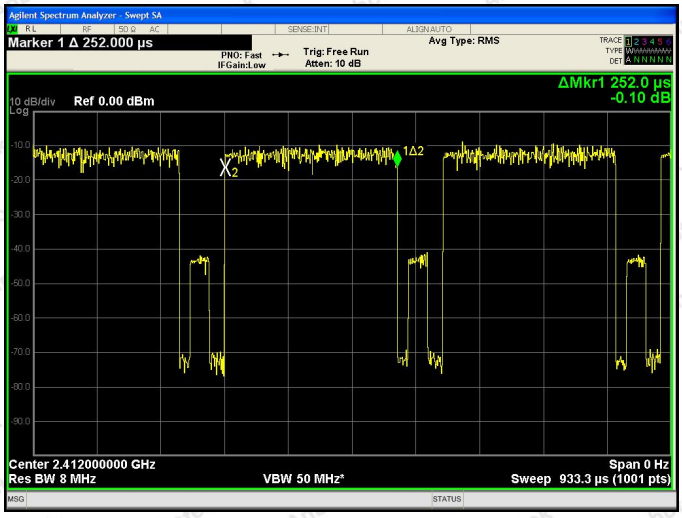

Adaptivity
AWGN ON
CW ON
Trace
AWGN ON
CW On
50ms Start
50ms Stop
Amplitude (dBm)
Time Domain (ms)


Agilent Spectrum Analyzer - Swept SA
Marker 1 Δ 1.32400 ms
Trig Delay-500.0 µs
Trig: Video
Atten: 30 dB
Avg Type: RMS
ΔMkr1 1.324 ms
8.50 dB
10 dB/div
Log
Ref 20.00 dBm
Center 2.472000000 GHz
Res BW 8 MHz
#VBW 50 MHz*
Span 0 Hz
Sweep 5.000 ms (5001 pts)

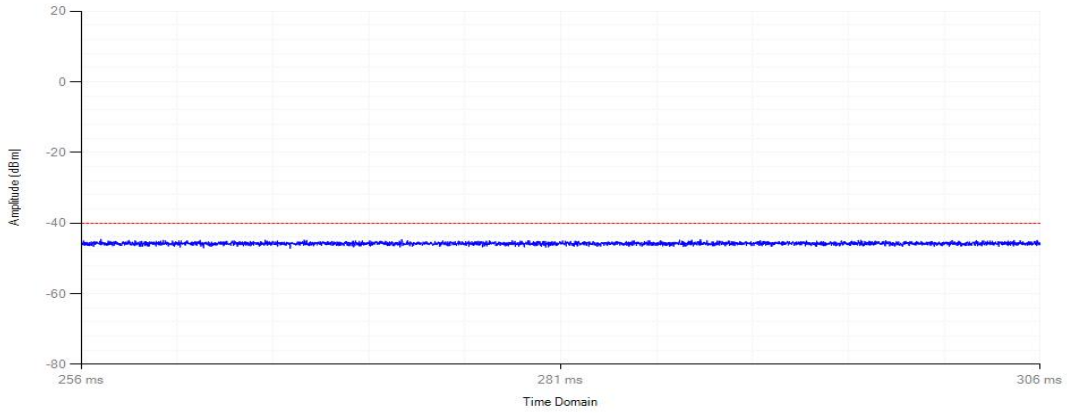

Pulse
Amplitude (dBm)
284 ms
309 ms
334 ms
Time Domain

802.11g Low

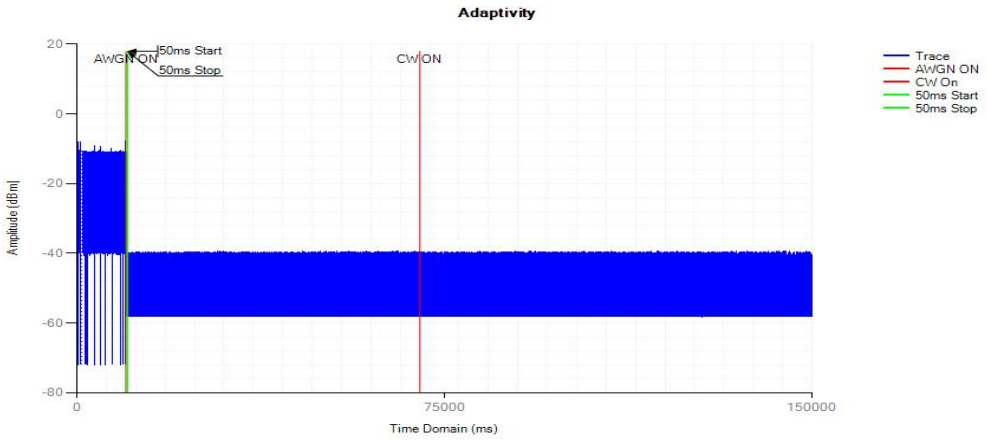




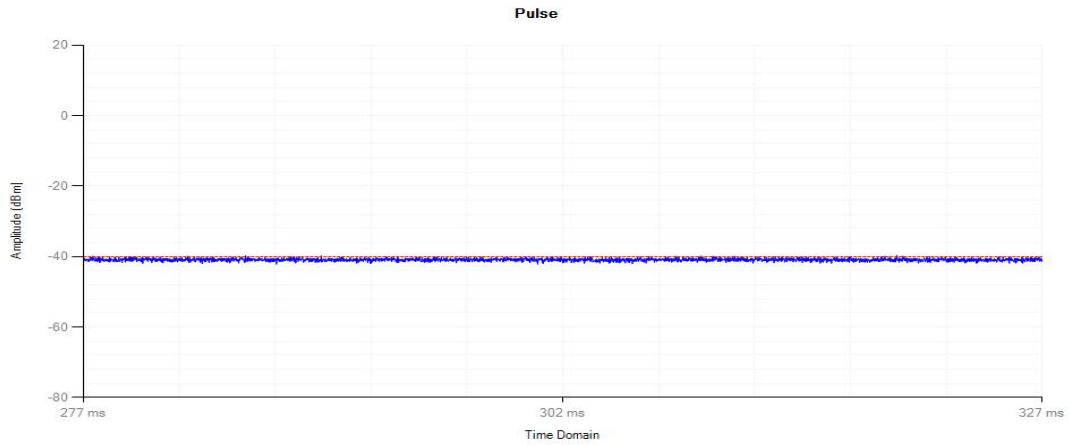
Pulse



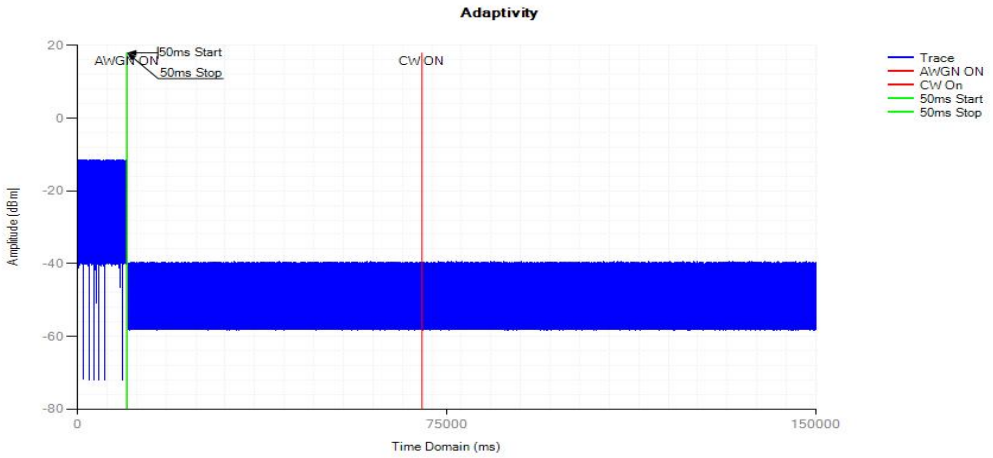
802.11g High

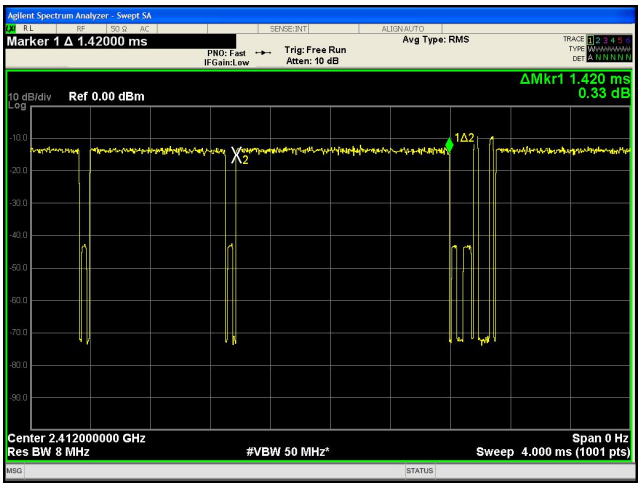

Adaptivity
AWGN ON
50ms Start
50ms Stop
CW ON
Trace
AWGN ON
CW On
50ms Start
50ms Stop
Amplitude (dBm)
Time Domain (ms)

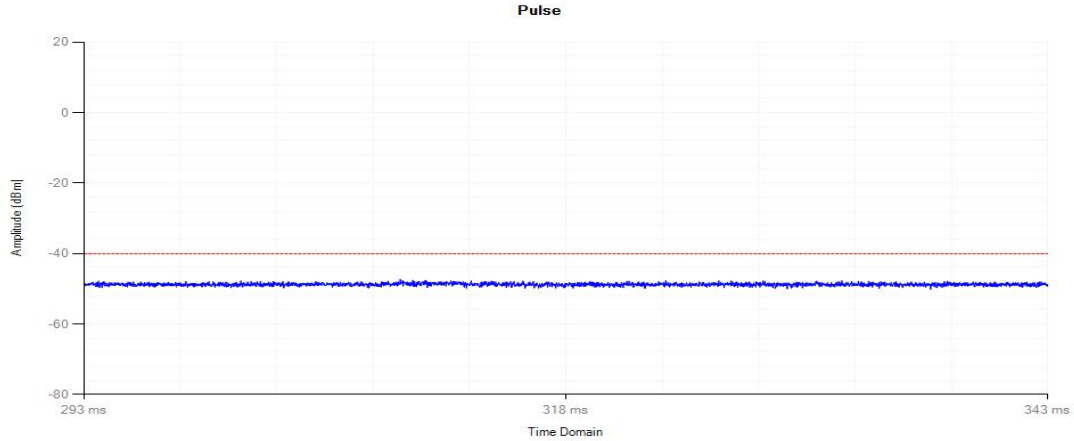

Agilent Spectrum Analyzer - Swept SA
Marker 1 Δ 252.000 µs
Avg Type: RMS
Trig: Free Run
Atten: 10 dB
ΔMkr1 252.0 µs
-2.17 dB
10 dB/div
Ref 0.00 dBm
Center 2.472000000 GHz
Res BW 8 MHz
#VBW 50 MHz*
Span 0 Hz
Sweep 1.000 ms (1001 pts)


Pulse
Amplitude (dBm)
277 ms
302 ms
327 ms
Time Domain

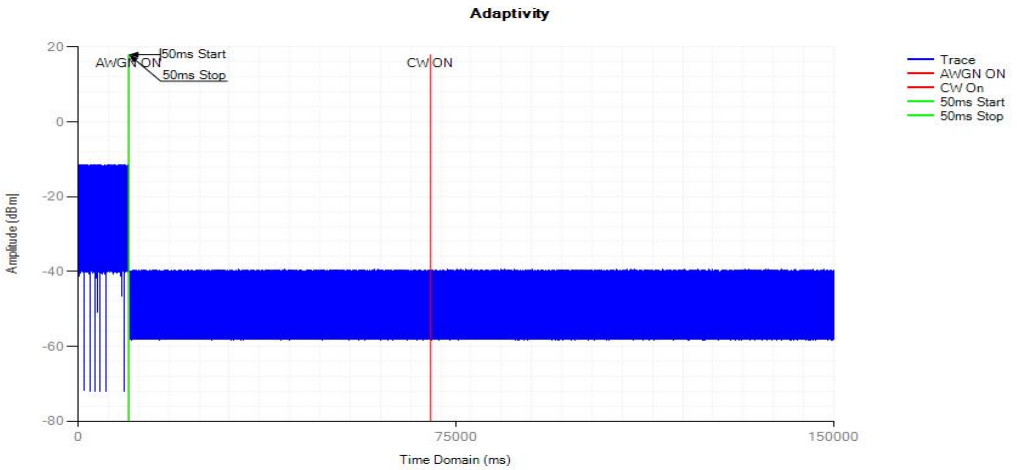
802.11n20 Low

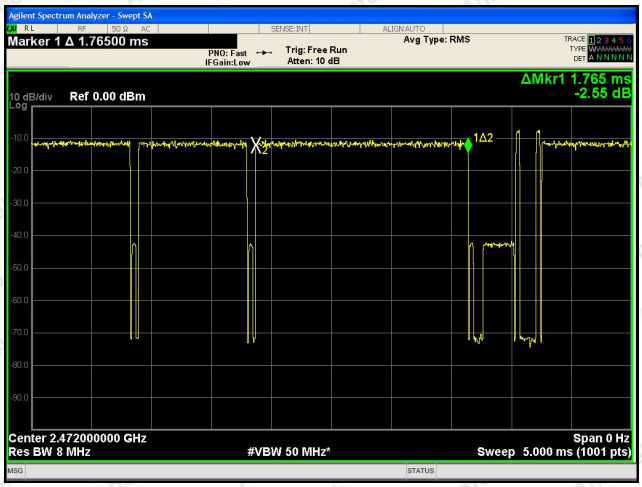


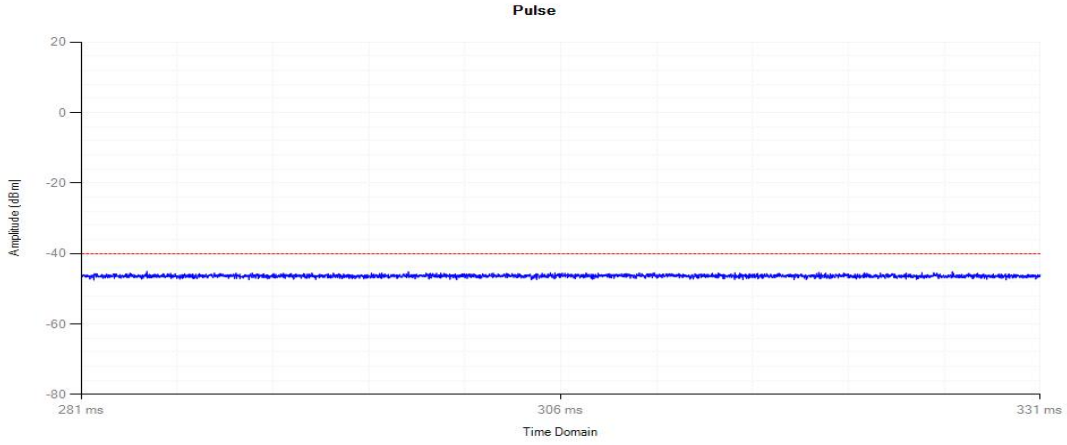




802.11n20 High





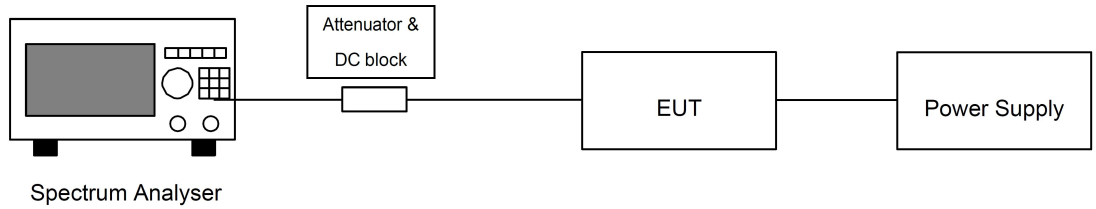


6. Occupied Channel Bandwidth

6.1. Test Limit

Condition		Limit
All types of equipment		Shall fall completely within the band 2400 to 2483.5 MHz.
Additional requirement	For non-adaptive using wide band modulations other than FHSS system and e.i.r.p >10dBm.	Less than 20MHz
	For non-adaptive Frequency Hopping system and e.i.r.p >10dBm.	Less than 5MHz

6.2. Test Setup



6.3. Test Procedure

Refer to ETSI EN 300 328 V2.2.2, clause 5.4.7for the test conditions and the measurement method.

The setting of the Spectrum Analyzer

Center Frequency	The centre frequency of the channel under test
Frequency Span	2 × Nominal Channel Bandwidth (e.g. 40 MHz for a 20 MHz channel)
Detector	RMS
RBW	~ 1 % of the span without going below 1 % (200KHz for 20MHz channel, 430KHz for 40MHz)
VBW	3 × RBW (620KHz for 20MHz channel, 1200KHz for 40MHz)
Trace	Max hold
Sweep time	1S

6.4. Test Data

Pass

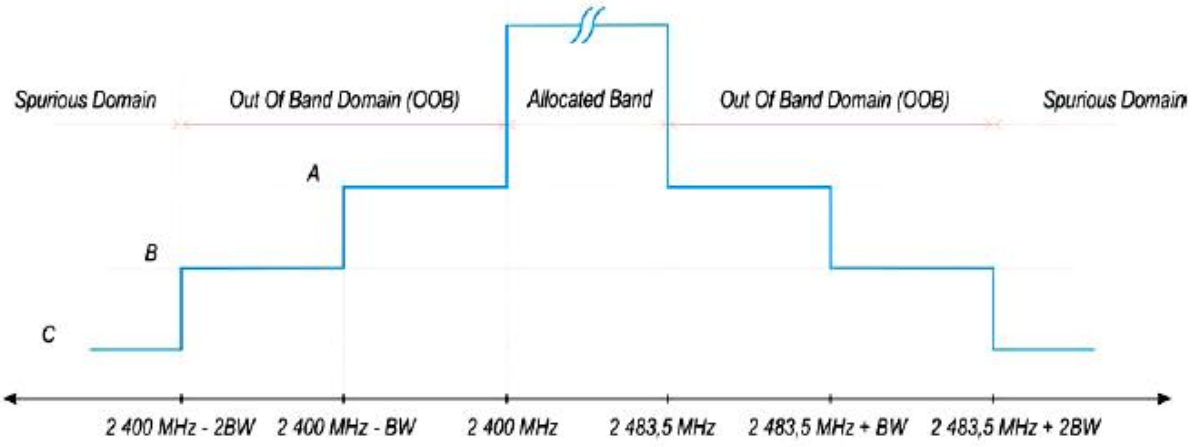
Please refer to Appendix C of the Appendix Test Data.

7. Transmitter Unwanted Emissions in the out-of-band Domain

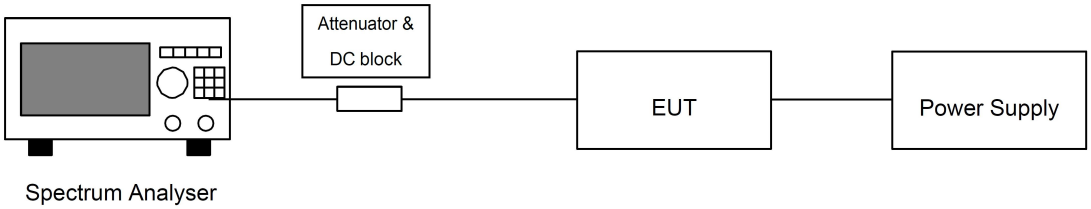
7.1. Test Limit

The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in figure as below.

Note: Within the 2400MHz to 2483.5MHz band, the Out-of band emissions are fulfilled by compliance with the Occupied Channel Bandwidth requirement in clause 4.3.2.6.



7.2. Test Setup



7.3. Test Procedure

Refer as ETSI EN 300 328 V2.2.2, clause 5.4.8 for the test conditions and the measurement method.

The setting of the Spectrum Analyzer

RBW/ VBW	1MHz/3MHz
Span	0Hz
Filter mode	Channel filter
Sweep mode	Continuous
Sweep Points	Sweep Time[s]/(1us) or 5000 points, whichever is greater
Detector	RMS
Trace mode	Max Hold
Trigger Mode	Video trigger

7.4. Test Data

Pass

Please refer to Appendix D of the Appendix Test Data.

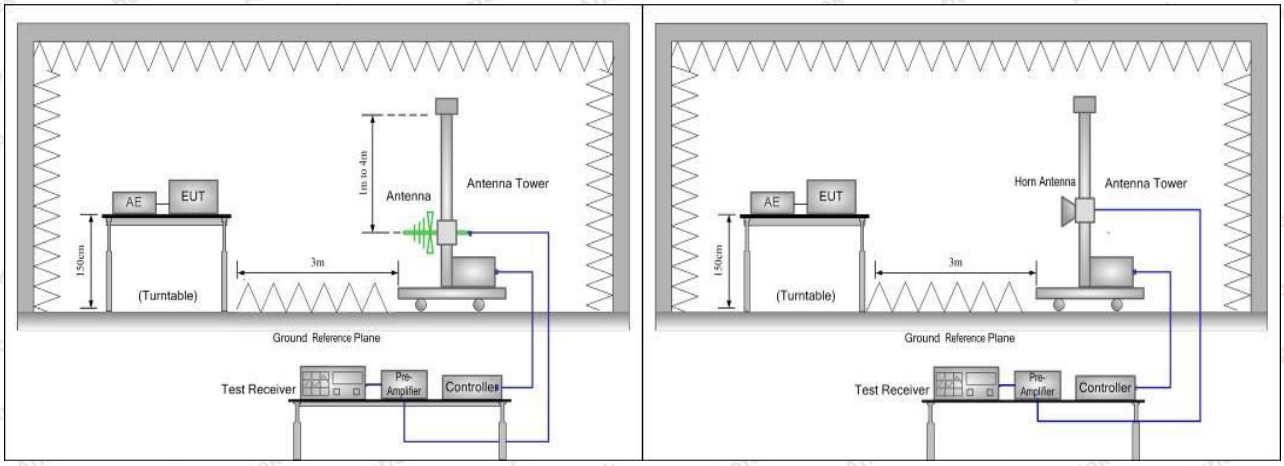
8. Transmitter Unwanted Emissions in the Spurious Domain

8.1. Test Limit

Frequency Range	Maximum Power	Bandwidth
30 MHz to 47 MHz	-36dBm	100kHz
47 MHz to 74 MHz	-54dBm	100kHz
74 MHz to 87,5 MHz	-36dBm	100kHz
87,5 MHz to 118 MHz	-54dBm	100kHz
118 MHz to 174 MHz	-36dBm	100kHz
174 MHz to 230 MHz	-54dBm	100kHz
230 MHz to 470 MHz	-36dBm	100kHz
470 MHz to 694 MHz	-54dBm	100kHz
694 MHz to 1 GHz	-36dBm	100kHz
1 GHz to 12,75 GHz	-30dBm	1MHz

8.2. Test Setup

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz. (B) Radiated Emission Test Set-Up Frequency Above 1 GHz



8.3. Test Procedure

Refer to chapter 5.4.9.2.2 of ETSI EN 300 328 V2.2.2 for radiated measurement.

1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. The measurements were performed when normal hopping was disabled. In this case measurements were performed when operating at the lowest and the highest hopping frequency.
3. The equipment was configured to operate under its worst case situation with respect to output power.
4. The test setup has been constructed as the normal use condition. Controlling software has been activated to set the EUT on specific status.

8.4. Test Data

Temperature:	23.6° C	Relative Humidity:	56 %
Pressure:	1012 hPa	Test Voltage:	AC 230V, 50Hz

Worst case: 802.11b

Test Result: 30-1000MHz

Test Mode: TX Mode			Test Channel: 802.11b		
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
50.26	-64.44	-54.00	-10.44	H	PASS
161.16	-67.63	-36.00	-31.63	H	
383.33	-67.25	-36.00	-31.25	H	
580.96	-67.68	-54.00	-13.68	H	
746.38	-72.47	-36.00	-36.47	H	
963.35	-74.94	-36.00	-38.94	H	
50.93	-68.61	-54.00	-14.61	V	
145.85	-68.83	-36.00	-32.83	V	
347.93	-70.78	-36.00	-34.78	V	
554.16	-73.95	-54.00	-19.95	V	
735.79	-72.52	-36.00	-36.52	V	
881.12	-70.02	-36.00	-34.02	V	

Test Result: above 1000MHz

Test Mode: TX Mode			Test Channel: 802.11b CH01		
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
4824.00	-49.47	-30.00	-19.47	H	PASS
7236.00	-44.56	-30.00	-14.56	H	
9648.00	-46.24	-30.00	-16.24	H	
4824.00	-51.58	-30.00	-21.58	V	
7236.00	-51.48	-30.00	-21.48	V	
9648.00	-43.68	-30.00	-13.68	V	

Test Mode: TX Mode			Test Channel: 802.11b CH13		
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
4944.00	-42.21	-30.00	-12.21	H	PASS
7416.00	-46.40	-30.00	-16.40	H	
9888.00	-47.73	-30.00	-17.73	H	
4944.00	-51.39	-30.00	-21.39	V	
7416.00	-52.32	-30.00	-22.32	V	
9888.00	-41.31	-30.00	-11.31	V	

9. Receiver Spurious Emissions

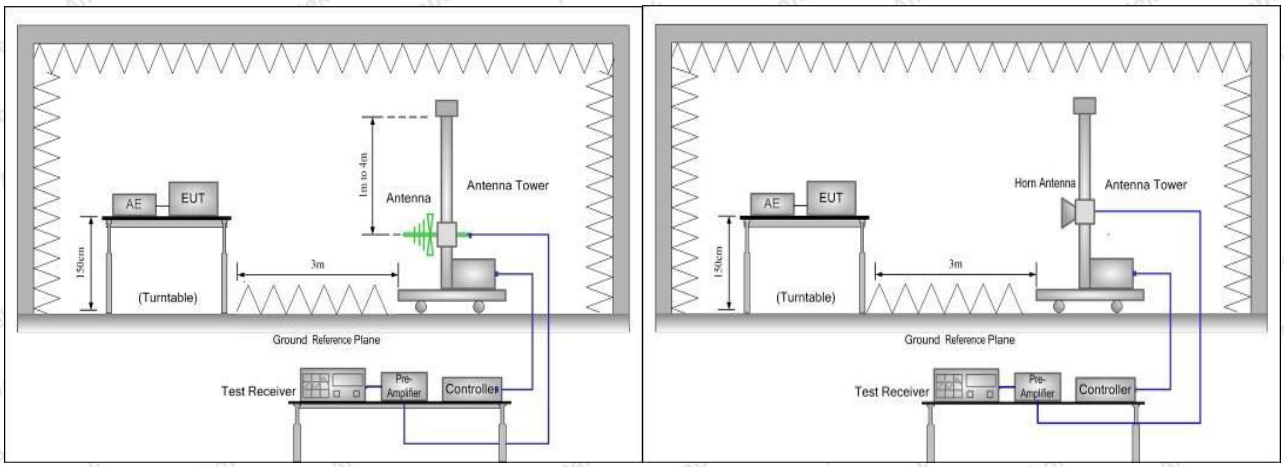
9.1. Test Limit

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

Frequency Range	Maximum Power
30MHz ~ 1GHz	-57dBm
1GHz ~ 12.75GHz	-47dBm

9.2. Test Setup

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz. (B) Radiated Emission Test Set-Up Frequency Above 1 GHz



9.3. Test Procedure

Refer as ETSI EN 300 328 V2.2.2, Refer to chapter 5.4.10.2.2 for radiated measurement.

1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. Testing was performed when the equipment was in a receive-only mode.
3. The measurements were performed when normal hopping was disabled. In this case measurements were performed when operating at the lowest and the highest hopping frequency.
4. The test setup has been constructed as the normal use condition. Controlling software has been activated to set the EUT on specific status.

9.4. Test Data

Remark: Pre-scan all modes and recorded the worst case results in this report.

Temperature:	23.6° C	Relative Humidity:	56 %
Pressure:	1012 hPa	Test Voltage:	AC 230V, 50Hz

worst case: 802.11b

Test Result: 30-1000MHz

Test Mode: RX Mode			Test Channel: 802.11 b		
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
50.85	-73.92	-57.00	-16.92	H	PASS
104.71	-65.09	-57.00	-8.09	H	
149.30	-62.35	-57.00	-5.35	H	
199.83	-73.88	-57.00	-16.88	H	
270.82	-69.72	-57.00	-12.72	H	
774.29	-67.15	-57.00	-10.15	H	
60.16	-67.27	-57.00	-10.27	V	
95.81	-69.35	-57.00	-12.35	V	
159.51	-71.08	-57.00	-14.08	V	
178.91	-69.52	-57.00	-12.52	V	
250.45	-68.02	-57.00	-11.02	V	
717.58	-64.39	-57.00	-7.39	V	

Test Result: above 1000MHz

Test Mode: RX Mode			Test Channel: 802.11b CH01		
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
4824.00	-59.12	-47.00	-12.12	H	PASS
7236.00	-67.43	-47.00	-20.43	H	
9648.00	-64.00	-47.00	-17.00	H	
4824.00	-71.69	-47.00	-24.69	V	
7236.00	-68.36	-47.00	-21.36	V	
9648.00	-68.71	-47.00	-21.71	V	

Test Mode: RX Mode			Test Channel: 802.11b CH13		
Frequency (MHz)	Level(dBm)	Limit (dBm)	Margin(dB)	Polarization	Test Result
4944.00	-60.61	-47.00	-13.61	H	PASS
7416.00	-65.10	-47.00	-18.10	H	
9888.00	-63.69	-47.00	-16.69	H	
4944.00	-65.52	-47.00	-18.52	V	
7416.00	-73.39	-47.00	-26.39	V	
9888.00	-68.57	-47.00	-21.57	V	

10. Receiver Blocking

10.1. Test Limit

This requirement applies to all receiver categories.

RECEIVER CATEGORY		
Category 1☒	Category 2☐	Category 3☐
Minimum performance criterion	PER ≦10 %☑	
	Alternative performance criteria☐	

Receiver Blocking parameters for Receiver Category 1 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 4)	Type of blocking signal
(-133 dBm + 10 × $\log_{10}$(OCBW)) or -68 dBm whichever is less (see note 2)	2 380 2 504	-34	CW
(-139 dBm + 10 × $\log_{10}$(OCBW)) or -74 dBm whichever is less (see note 3)	2 300 2 330 2 360 2 524 2 584 2 674		

NOTE 1: OCBW is in Hz.

NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 26 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 20 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Receiver Blocking parameters receiver Category 2 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + 10 × $\log_{10}$(OCBW) + 10 dB) or (-74 dBm + 10 dB) whichever is less (see note 2)	2 380 2 504 2 300 2 584	-34	CW

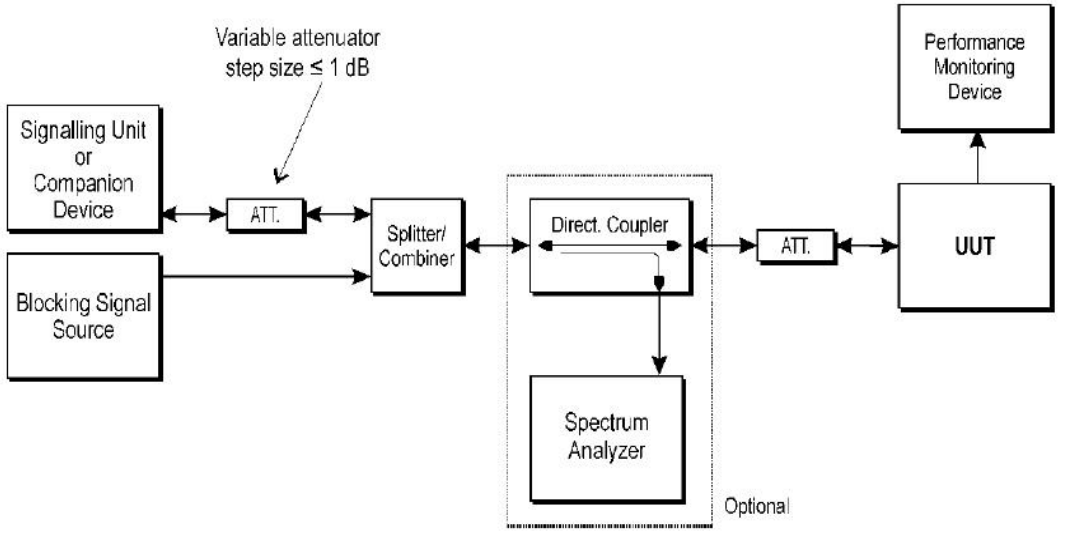
NOTE 1: OCBW is in Hz.
NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 26 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.
NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Receiver Blocking parameters receiver Category 3 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + 10 × $\log_{10}$(OCBW) + 20 dB) or (-74 dBm + 20 dB) whichever is less (see note 2)	2 380 2 504 2 300 2 584	-34	CW

NOTE 1: OCBW is in Hz.
NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative the test may be performed using a wanted signal up to P_{min} + 30 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.
NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

10.2. Test Setup



10.3. Test Procedure

Refer to chapter 5.4.11.2.1 of ETSI EN 300 328 V2.2.2

10.4. Minimum Performance Declaration

	CH	Pmin (dBm)	PER (≦10%)
802.11b	01	-91	Pass
	13	-91	Pass
802.11g	01	-91	Pass
	13	-91	Pass
802.11n(HT20)	01	-91	Pass
	13	-91	Pass

Note: Pmin is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria.

10.5. Test Data

Temperature:	24.6° C	Relative Humidity:	52 %
Pressure:	1012 hPa	Test Voltage:	AC 230V, 50Hz

802.11b: CH01

Wanted Signal Mean Power from Companion Device (dBm/MHz)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm)	Type of Blocking Signal	PER(%)	Pass / Fail
-68	2380	-34	CW	1.43	PASS
	2504			1.19	PASS
-74	2300	-34	CW	1.51	PASS
	2330			1.74	PASS
	2360			2.01	PASS
	2524			2.19	PASS
	2584			2.64	PASS
	2627			1.35	PASS

802.11b: CH13

Wanted Signal Mean Power from Companion Device (dBm/MHz)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm)	Type of Blocking Signal	PER(%)	Pass / Fail
-68	2380	-34	CW	1.05	PASS
	2504			1.73	PASS
-74	2300	-34	CW	1.62	PASS
	2330			2.24	PASS
	2360			1.98	PASS
	2524			1.85	PASS
	2584			1.37	PASS
	2627			1.25	PASS

802.11g: CH01

Wanted Signal Mean Power from Companion Device (dBm/MHz)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm)	Type of Blocking Signal	PER(%)	Pass / Fail
-68	2380	-34	CW	1.89	PASS
	2504			1.13	PASS
-74	2300	-34	CW	2.32	PASS
	2330			1.51	PASS
	2360			2.44	PASS
	2524			2.46	PASS
	2584			1.92	PASS
	2627			1.29	PASS

802.11g: CH13

Wanted Signal Mean Power from Companion Device (dBm/MHz)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm)	Type of Blocking Signal	PER(%)	Pass / Fail
-68	2380	-34	CW	1.09	PASS
	2504			1.01	PASS
-74	2300	-34	CW	2.41	PASS
	2330			1.75	PASS
	2360			2.24	PASS
	2524			1.88	PASS
	2584			3.01	PASS
	2627			1.09	PASS

802.11n20: CH01

Wanted Signal Mean Power from Companion Device (dBm/MHz)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm)	Type of Blocking Signal	PER(%)	Pass / Fail
-68	2380	-34	CW	1.50	PASS
	2504			1.90	PASS
-74	2300	-34	CW	1.64	PASS
	2330			1.86	PASS
	2360			1.62	PASS
	2524			2.19	PASS
	2584			1.43	PASS
	2627			1.55	PASS

802.11n20: CH13

Wanted Signal Mean Power from Companion Device (dBm/MHz)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm)	Type of Blocking Signal	PER(%)	Pass / Fail
-68	2380	-34	CW	1.73	PASS
	2504			1.90	PASS
-74	2300	-34	CW	1.44	PASS
	2330			1.02	PASS
	2360			1.96	PASS
	2524			1.98	PASS
	2584			2.49	PASS
	2627			2.18	PASS

Note: Antenna Gain(Peak) is 1 dBi, so the above table is given with the calculated levels.

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Radiation Emission Test

APPENDIX II -- Appendix Test Data