Prüfbericht-Nr.: *Test report no.:*	**NN22S76T 004**	**Auftrags-Nr.:** *Order no.:*	168377937	**Seite 1 von 25** *Page 1 of 25*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2022-06-14	
Auftraggeber: *Client:*	**Shenzhen Sonoff Technologies Co.,Ltd.** 3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China			
Prüfgegenstand: *Test item:*	Smart Power Meter Switch			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	POWR316, POWR320, POWR316D, POWR320D (Trademark: SONOFF)			
Auftrags-Inhalt: *Order content:*	RED approval			
Prüfgrundlage: *Test specification:*	EN 300 328 V2.2.2:2019 EN IEC 62311: 2020 EN 301 489-1 V2.2.3:2019 EN 301 489-17 V3.2.4:2020		EN IEC 60730-2-9:2019+ A1:2019 + A2:2020 EN 60730-1:2016 + A1:2019	
Wareneingangsdatum: *Date of sample receipt:*	2022-06-14			
Prüfmuster-Nr.: *Test sample no:*	A003291051-001 A003291051-004			
Prüfzeitraum: *Testing period:*	2022-06-14 to 2022-08-01			
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: *Test result*:*	Pass			

geprüft von: *tested by:*	X Breeze Jiang Signed by: Breeze Jiang	**genehmigt von:** *authorized by:*	X Lin Lin Signed by: Lin Lin
Datum: *Date:* 2022-10-18		**Ausstellungsdatum:** *Issue date:* 2022-10-18	
Stellung */ Position:*	Assistant Project Manager	**Stellung** */ Position:*	Reviewer

Sonstiges */ Other:*

This report is for Wi-Fi 802.11b/g/n of Article 3.2 Radio Spectrum and Article 3.1a Health requirements only.
Refer to TÜV Rheinland report NN22S76T 005 for details of BLE of Article 3.2 Radio Spectrum requirements.
Refer to TÜV Rheinland report NN22S76T 006 for details of Article 3.1b EMC requirements.
Refer to TÜV Rheinland report CN221TVW 001 for details of Article 3.1a Electrical Safety requirements.

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

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

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.
This test report only relates to the a. m. 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.
V05

Test Summary

5.1.1 RF OUTPUT POWER
RESULT: Pass

5.1.2 POWER SPECTRAL DENSITY
RESULT: Pass

5.1.3 DUTY CYCLE, TX-SEQUENCE, TX-GAP
RESULT: Not applicable

5.1.4 MEDIUM UTILISATION (MU) FACTOR
RESULT: Not applicable

5.1.5 ADAPTIVITY
RESULT: Pass

5.1.6 OCCUPIED CHANNEL BANDWIDTH
RESULT: Pass

5.1.7 TRANSMITTER UNWANTED EMISSIONS IN THE OUT-OF-BAND DOMAIN
RESULT: Pass

5.1.8 TRANSMITTER UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN
RESULT: Pass

5.2.1 RECEIVER SPURIOUS EMISSIONS
RESULT: Pass

5.2.2 RECEIVER BLOCKING
RESULT: Pass

5.2.3 GEO-LOCATION CAPABILITY
RESULT: Not applicable

6.1.1 ELECTROMAGNETIC FIELDS
RESULT: Pass

Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Result.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.
No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

TÜV Rheinland (Shenzhen) Co., Ltd.

Radio Spectrum Testing (TS8997)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
Wireless Connectivity Tester	R&S	CMW270	101375	2022-08-09
Signal Analyzer	R&S	FSV 40	101441	2022-08-09
Vector Signal Generator	R&S	SMBV100A	263301	2022-08-09
Signal Generator	R&S	SMB100A	115186	2022-08-09
OSP	R&S	OSP 150	101017	2022-12-02
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
Test Software	R&S	WMS32 (V11.00.00)	N/A	N/A
Power Meter	R&S	NRP2	107105	2022-12-02
Wideband Power Sensor	R&S	NRP-Z81	105677	2022-08-09
Humid & Temp Programmable Tester	BOST	NTH090-60	19040801	2023-04-02
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2024-06-22
Unwanted Emission Testing (TS8996)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
Signal Generator	R&S	SMB100A	180840	2022-08-09
Wideband Radio Communication Tester	R&S	CMW500	165339	2022-08-09
Signal Analyzer	R&S	FSV 40	101440	2022-08-09
System Controller Interface	R&S	SCI-100	S10010036	N/A
OSP	R&S	OSP 120	102041	N/A
OSP	R&S	OSP 150	101385	2022-12-02
Pre-amplifier	R&S	SCU08F1	08320030	2022-08-09

Amplifier	R&S	SCU-18F	180079	2022-08-09
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	192	2022-08-08
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218719	2022-08-08
Wideband Ridged Horn Antenna (12-18 GHz)	Steatite	QMS-00208	18312	2022-08-08
Biconical Broadband Antenna (30 MHz - 1 GHz)	Schwarzbeck	VUBA 9117	357	2024-08-02
Double Ridged Broadband Horn Antenna (1 – 18 GHz)	Schwarzbeck	BBHA 9120 D	01760	2024-07-03
Test software	R&S	EMC32 (V10.50.40)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NW9P2	N/A
3m Fully Anechoic Chamber	Albatross	FAC-3m	APC17151-FAC	2024-06-22

2.3 Uncertainty of Measurement

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

Table 2: Maximum Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	±1 x 10^{-7}
RF Power (conducted)	±2.5 dB
Radiated Emission of Transmitter, valid up to 26.5 GHz	±6 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	±6 dB
Temperature	±1 °C
Humidity	±5 %
Voltage (DC)	±1 %
Voltage (AC, <10kHz)	±2 %

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a Smart Power Meter Switch, which supported 802.11 b/g/n and BLE wireless technologies.

According to the client's declaration, the all models are the same as the original ones in circuit design, layout only different in appearance.

The device includes a wireless module same as the original ones THR320D, according to clause 6.1 of EG 203 367 V1.1.1, the conditions in which the radio product is used in the combined equipment does not deviate from the assessment conditions. Therefore, the device comply with EN 300 328 V 2.2.2 requirement only test Radio Spurious Emissions , other data refer to original report NN22S76T 001 for EN 300 328 V2.2.2.

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	Smart Power Meter Switch
Type Designation	POWR316, POWR320, POWR316D, POWR320D
Trade Mark	SONOFF
Extreme Temperature Range	-10°C - +40°C
Operating Voltage	AC 100-240V, 50/60Hz
Technical Specification of 802.11 b/g/n Wi-Fi	
Operating frequency range	2400-2483.5MHz
Operating channel frequency	2412-2472MHz for 802.11b/g/n-HT20
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(HT20) MCS0 ~ MCS7 for 802.11n(HT20)
Channel number	13 channels for 802.11b/g/n(HT20) 9 channels for 802.11n(HT40)
Channel separation	5 MHz
Type of antenna	PCB Antenna
Antenna gain	-1.04 dBi

Table 4: RF Channel and Frequency of 802.11 b/g/n - (HT20/ HT40) Wi-Fi

RF Channel	802.11 b/g/n(HT20) Frequency (MHz)	802.11 n(HT40) 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	2457
11	2462	**2462**
12	2467	/
13	**2472**	/

Test frequencies are lowest channel: 2412 MHz, middle channel: 2442 MHz and highest channel: 2472 MHz for 802.11b/g/n(HT20)

Test frequencies are lowest channel: 2422 MHz, middle channel: 2442 MHz and highest channel: 2462 MHz for 802.11n(HT40)

3.3 Independent Operation Modes

The basic operation modes are:

A. On, 802.11 b/g/n Transmitting mode
   a) Low Channel
   b) Middle Channel
   c) High Channel

B. 802.11 b/g/n Receiving mode
   a) Low Channel
   b) Middle Channel
   c) High Channel

C. Off

3.4 Noise Generating and Noise Suppressing Parts

For details refer to the Circuit Diagram.

3.5 Submitted Documents

- User Manual
- Rating Label

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

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.

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5 and chapter 7.

According to clause 3.1, all tests were performed on model *POWR320D* in this report.

This testing was carried out on all operation modes, but only the worst case was presented in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 5: List of Accessories and Auxiliary Equipment

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

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.

5 Test Results ERM

5.1 Transmitter Requirement & Test Suites

5.1.1 RF Output Power

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.2 of EN 300 328
Limit	:	Clause 4.3.2.2.3 of EN 300 328
Test suites	:	Clause 5.4.2 of EN 300 328

Test Setup

Date of testing	:	2022-06-27 to 2022-07-26
Test voltage	:	DC 5V
Test environment	:	Normal and extreme temperature
Operation mode	:	A
Ambient temperature	:	24.8 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101.4 kPa

For the measurement records, refer to the appendix A.

5.1.2 Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.3 of EN 300 328
Limit	:	Clause 4.3.2.3.3 of EN 300 328
Test suites	:	Clause 5.4.3 of EN 300 328

Test Setup

Date of testing	:	2022-06-27 to 2022-07-26
Test voltage	:	DC 5V
Test environment	:	Normal temperature
Operation mode	:	A
Ambient temperature	:	24.8 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101.4 kPa

For the measurement records, refer to the appendix A.

5.1.3 Duty Cycle, TX-sequence, TX-gap

RESULT: **Not applicable**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.4 of EN 300 328
Limit	:	Clause 4.3.2.4.3 of EN 300 328
Test suites	:	Clause 5.4.2 of EN 300 328

Exemption Conditions:

☒ These requirements apply to non-adaptive frequency hopping equipment or to adaptive frequency hopping equipment operating in non-adaptive mode.

Conclusion:

The EUT is adaptive equipment and does not support non-adaptive mode, hence this requirement is not applicable.

5.1.4 Medium Utilisation (MU) Factor

RESULT: **Not applicable**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.5 of EN 300 328
Limit	:	Clause 4.3.2.5.3 of EN 300 328
Test suites	:	Clause 5.4.2 of EN 300 328

Exemption Conditions:

☒ These requirements apply to non-adaptive equipment or to adaptive equipment when operating in non-adaptive mode. The equipment is using wide band modulations other than FHSS.

Conclusion:

The EUT is adaptive equipment and does not support non-adaptive mode, hence this requirement is not applicable.

5.1.5 Adaptivity

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.6.3 of EN 300 328
Limit	:	Clause 4.3.2.6.3.2 of EN 300 328
Test suites	:	Clause 5.4.6 of EN 300 328

Test Setup

Date of testing	:	2022-06-27 to 2022-07-26
Test voltage	:	DC 5V
Test environment	:	Normal temperature
Operation mode	:	A
Ambient temperature	:	24.8 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101.4 kPa

For the measurement records, refer to the appendix A.

5.1.6 Occupied Channel Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.7 of EN 300 328
Limit	:	Clause 4.3.2.7.3 of EN 300 328
Test suites	:	Clause 5.4.7 of EN 300 328

Test Setup

Date of testing	:	2022-06-27 to 2022-07-26
Test voltage	:	DC 5V
Test environment	:	Normal temperature
Operation mode	:	A
Ambient temperature	:	24.8 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101.4 kPa

For the measurement records, refer to the appendix A.

5.1.7 Transmitter Unwanted Emissions in the Out-of-band Domain

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.8 of EN 300 328
Limit	:	Clause 4.3.2.8.3 of EN 300 328
Test suites	:	Clause 5.4.8 of EN 300 328

Test Setup

Date of testing	:	2022-06-27 to 2022-07-26
Test voltage	:	DC 5V
Test environment	:	Normal temperature
Operation mode	:	A
Ambient temperature	:	24.8 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101.4 kPa

For the measurement records, refer to the appendix A.

5.1.8 Transmitter Unwanted Emissions in the Spurious Domain

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.9 of EN 300 328
Limit	:	Clause 4.3.2.9.3 of EN 300 328
Test suites	:	Clause 5.4.9 of EN 300 328

Test Setup

Date of testing	:	2022-07-27 to 2022-08-01
Test voltage	:	AC 230V, 50Hz
Test environment	:	Normal temperature
Operation mode	:	A
Ambient temperature	:	22.1 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101.4 kPa

For the measurement records, refer to the appendix A.

5.2 Receiver Requirement & Test Suites

5.2.1 Receiver Spurious Emissions

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.10 of EN 300 328
Limit	:	Clause 4.3.2.10.3 of EN 300 328
Test suites	:	Clause 5.4.10 of EN 300 328

Test Setup

Date of testing	:	2022-07-27 to 2022-08-01
Test voltage	:	AC 230V, 50Hz
Test environment	:	Normal temperature
Operation mode	:	B
Ambient temperature	:	22.1 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101.4 kPa

For the measurement records, refer to the appendix A.

5.2.2 Receiver Blocking

RESULT: **Pass**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.11 of EN 300 328
Limit	:	Clause 4.3.2.11.3 of EN 300 328
Test suites	:	Clause 5.4.11 of EN 300 328

Test Setup

Date of testing	:	2022-06-27 to 2022-07-26
Test voltage	:	DC 5V
Test environment	:	Normal temperature
Operation mode	:	B
Ambient temperature	:	25.7 ℃
Relative humidity	:	51 %
Atmospheric pressure	:	101.4 kPa

For the measurement records, refer to the appendix A.

5.2.3 Geo-location Capability

RESULT: **Not applicable**

Test Specification

Test standard	:	EN 300 328 V2.2.2
Test requirement	:	Clause 4.3.2.12 of EN 300 328

Exemption Conditions:

This requirement only applies to equipment with geo-location capability as defined in clause 4.3.2.12.

Conclusion:

The EUT does not support geo-location capability, hence this requirement is not applicable.

6 Safety Human Exposure

6.1 Human Exposure to Electromagnetic Fields 0Hz-300GHz

6.1.1 Electromagnetic Fields

RESULT: **Pass**

Test Specification

Test standard	:	EN IEC 62311: 2020
Limit	:	61.00 V/m

Assumed used distance from EUT to Human, 20 cm separation distance warning is required. In this section, the power density at 20 cm location is calculated to examine if it is lower than the limit.

a) Stand-alone

For Wi-Fi transmitter:

The electric field strength:

$$E = \sqrt{30PG_{(\theta,\phi)}} / r$$

Antenna gain(G):	-1.04 dBi for Wi-Fi b/g/n & BLE
Reference electromagnetic field strength (E):	61 V/m
Distance from EUT to Human (r):	0.20 m
Input power to antenna (P):	refer to below table

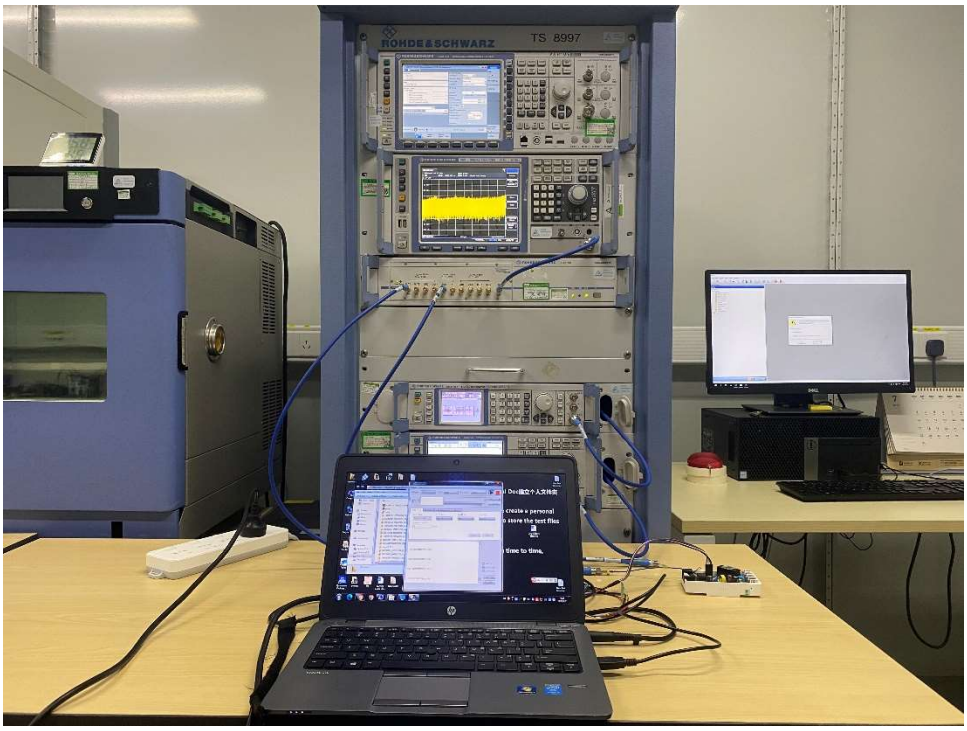
Table 6: Test Result of Max. Measured E Field Strength

Test Mode	Maximum Output Power (dBm)	Maximum Output Power (mW)	E Field Strength (V/m)	E Field Strength Limit (V/m)	Result
b mode@1 Mbps	15.15	32.73	4.95	61.00	Pass
g mode@6 Mbps	14.52	28.32	4.61	61.00	Pass
n(HT20)@MCS0	15.82	38.20	5.35	61.00	Pass
n(HT40)@MCS0	16.03	40.09	5.48	61.00	Pass
BLE	4.95	3.13	1.53	61.00	Pass
Max. Measured Value	16.03	40.09	5.48	61.00	Pass

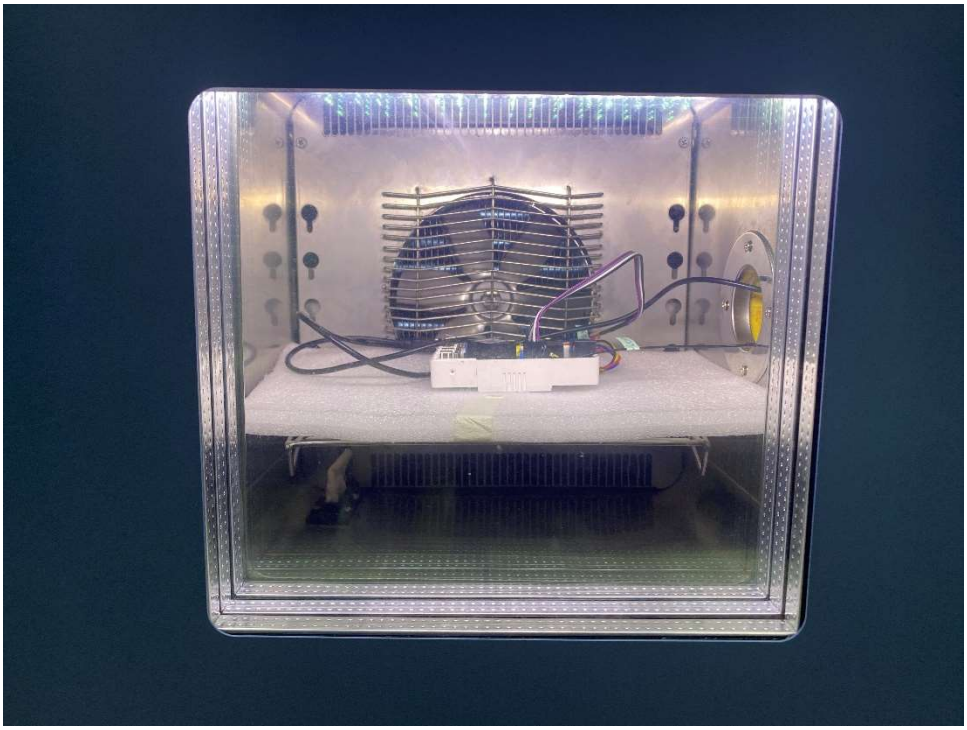
Note: According to the declaration of the applicant,the Bluetooth and wifi cannot transmit simultaneous.
Conclusion:
The device complies with the EMF directive 1999/519/EC exposure requirements since the maximum Electric Field is less than the limit 61V/m.

7 Photographs of the Test Set-Up

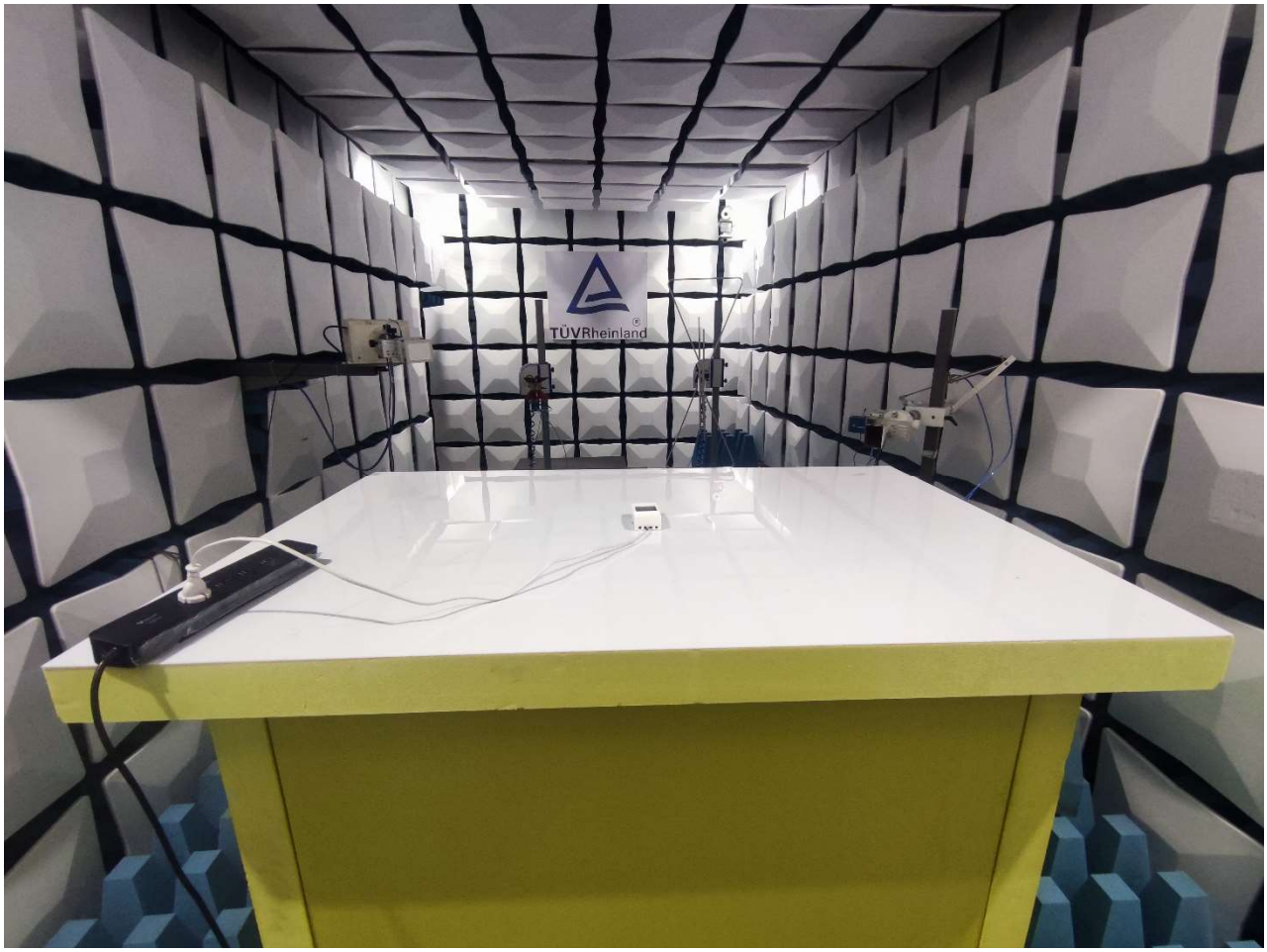
Photograph 1: Set-up for Radio Spectrum Testing, Normal Condition



Photograph 2: Set-up for Radio Spectrum Testing, Extreme Condition



Photograph 3: Set-up for Transmitter & Receiver Spurious Emissions



8 List of Tables

9 List of Photographs

Appendix A

Test Results of 2.4GHz Wi-Fi

Content

1 Appendix A.1 : RF output power

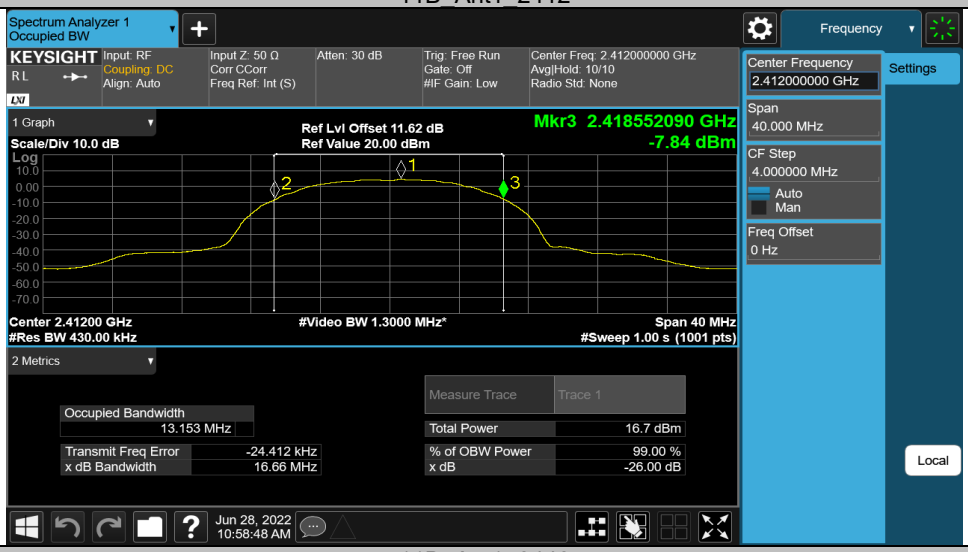
The RF output power is the mean equivalent isotropically radiated power (EIRP) during a transmission burst. Only the worst case for all test modes reported.

Test Condition	Test Mode	Antenna	Frequency [MHz]	Set Power	Burst Power [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
NTNV	11B	Ant1	2412	---	16.19	-1.04	15.15	20	PASS
			2442	---	15.89	-1.04	14.85	20	PASS
			2472	---	15.69	-1.04	14.65	20	PASS
	11G	Ant1	2412	---	15.56	-1.04	14.52	20	PASS
			2442	---	15.36	-1.04	14.32	20	PASS
			2472	---	15.39	-1.04	14.35	20	PASS
	11N20SISO	Ant1	2412	---	16.86	-1.04	15.82	20	PASS
			2442	---	16.67	-1.04	15.63	20	PASS
			2472	---	16.36	-1.04	15.32	20	PASS
	11N40SISO	Ant1	2422	---	17.07	-1.04	16.03	20	PASS
			2442	---	17.07	-1.04	16.03	20	PASS
			2462	---	16.42	-1.04	15.38	20	PASS

2 Appendix A.2 : Occupied Channel Bandwidth

TestMode	Antenna	Frequency[MHz]	OCB[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.153	2405.3991	2418.5521	2400 to 2483.5	PASS
		2442	13.115	2435.4815	2448.5965	2400 to 2483.5	PASS
		2472	13.117	2465.4444	2478.5614	2400 to 2483.5	PASS
11G	Ant1	2412	16.656	2403.6668	2420.3228	2400 to 2483.5	PASS
		2442	16.661	2433.6851	2450.3461	2400 to 2483.5	PASS
		2472	16.668	2463.6660	2480.3340	2400 to 2483.5	PASS
11N20SISO	Ant1	2412	17.670	2403.1547	2420.8247	2400 to 2483.5	PASS
		2442	17.681	2433.1731	2450.8541	2400 to 2483.5	PASS
		2472	17.696	2463.1508	2480.8468	2400 to 2483.5	PASS
11N40SISO	Ant1	2422	36.574	2403.7019	2440.2759	2400 to 2483.5	PASS
		2442	36.570	2423.7179	2460.2879	2400 to 2483.5	PASS
		2462	36.553	2443.7180	2480.2710	2400 to 2483.5	PASS

11B_Ant1_2412



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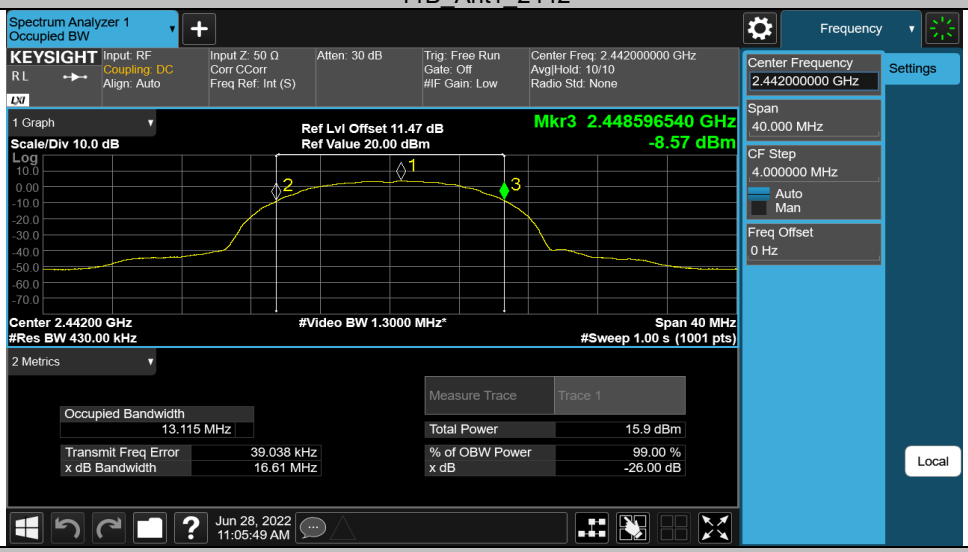
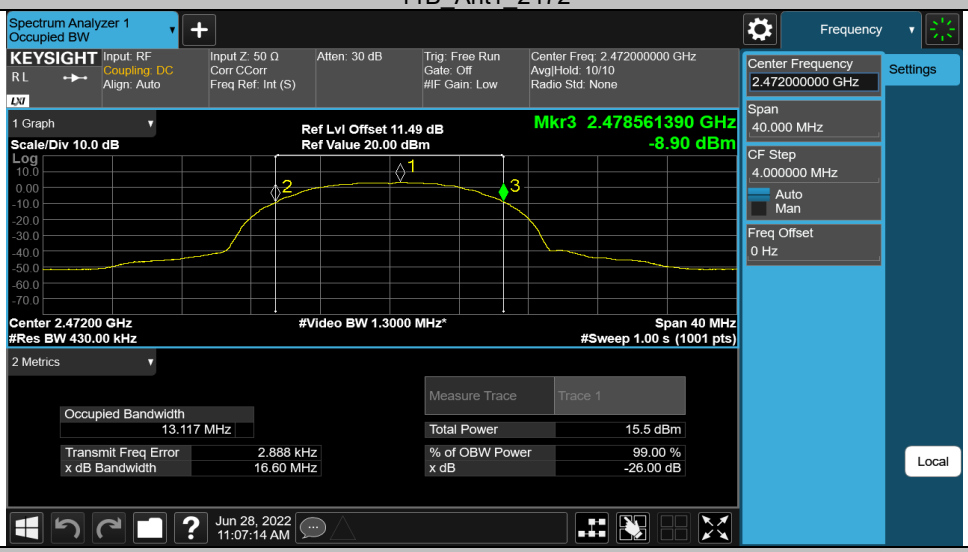
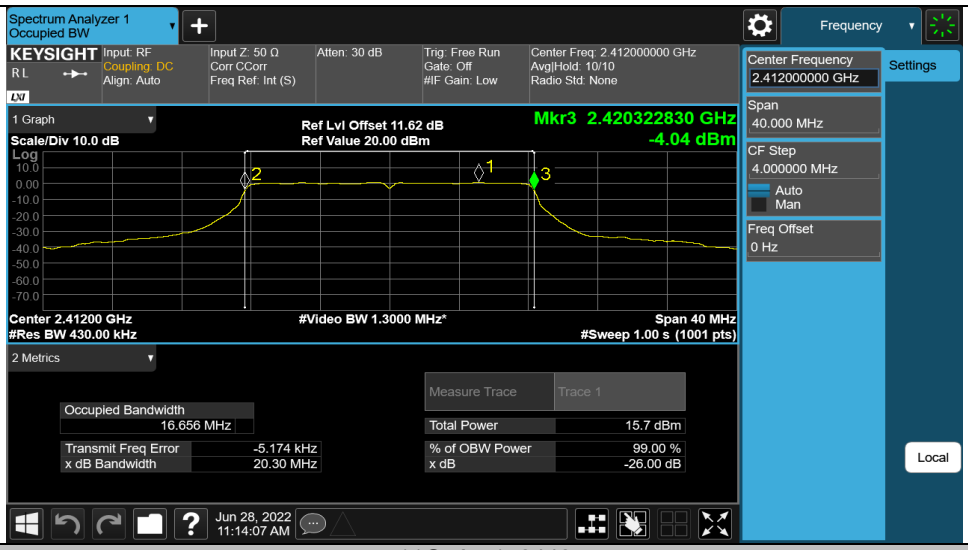


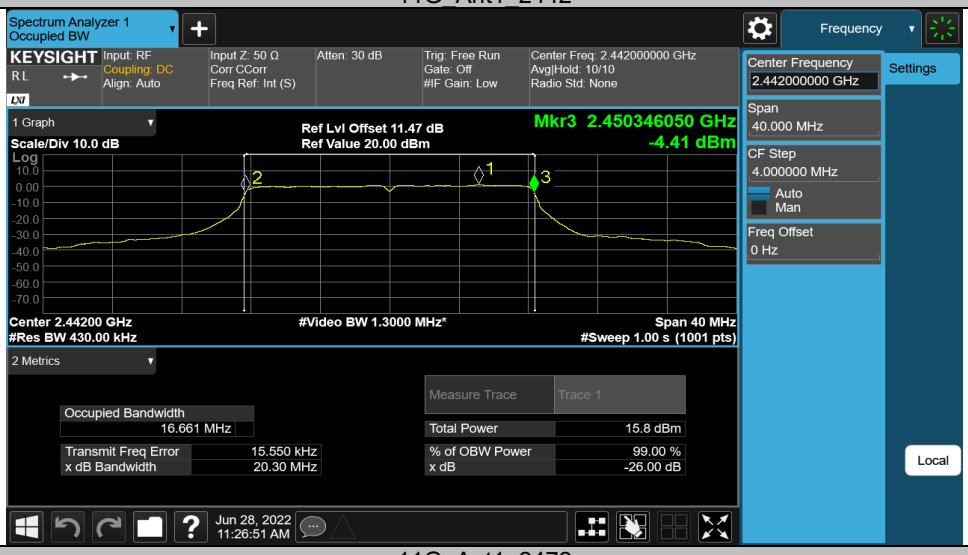
11B_Ant1_2472



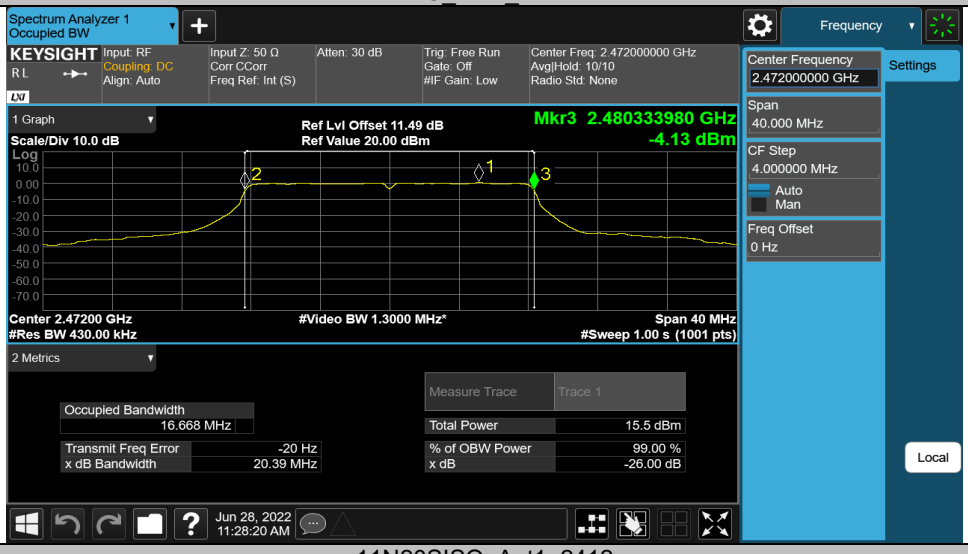
11G_Ant1_2412



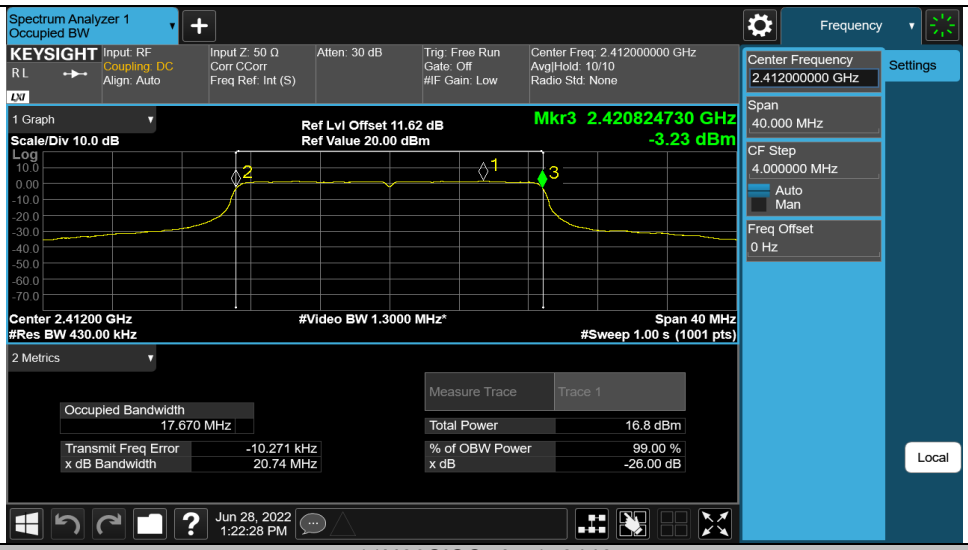
11G_Ant1_2442



11G_Ant1_2472



11N20SISO_Ant1_2412



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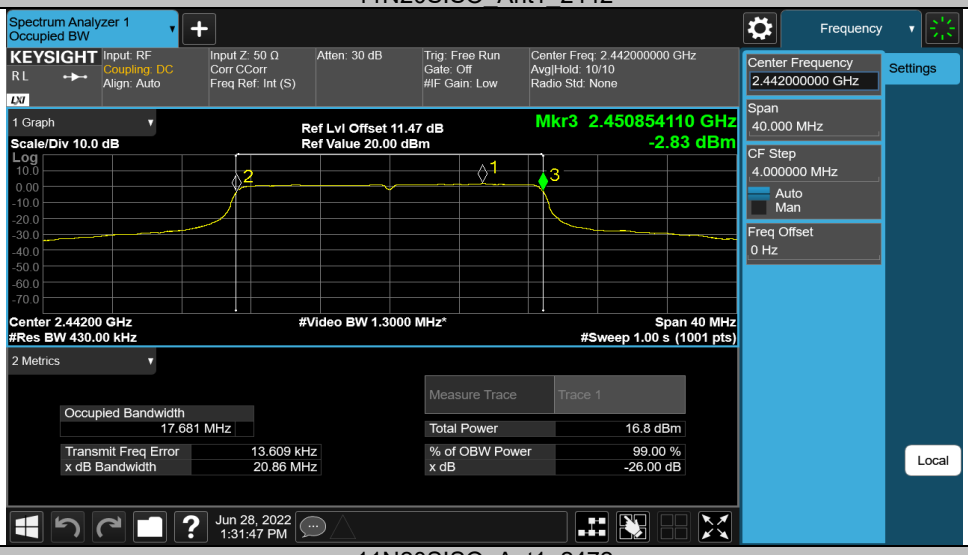
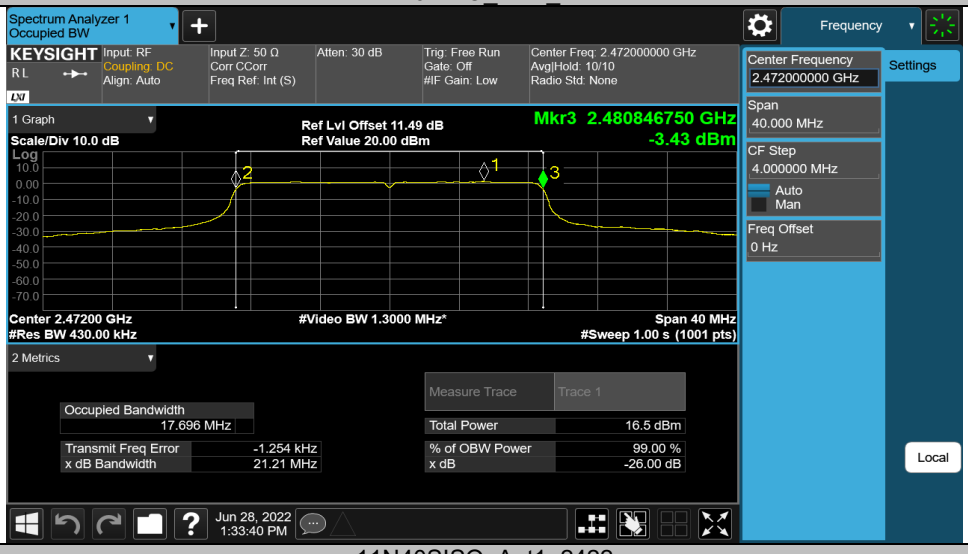
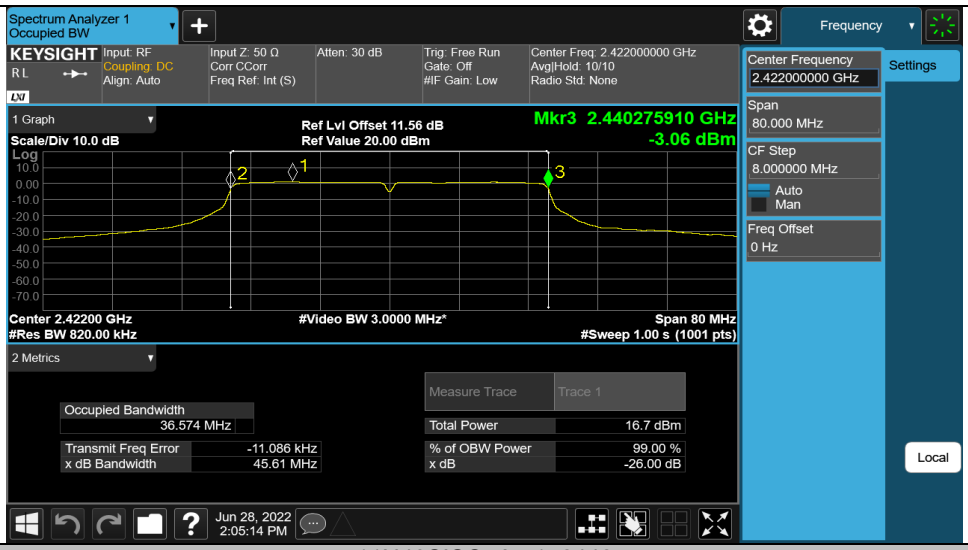


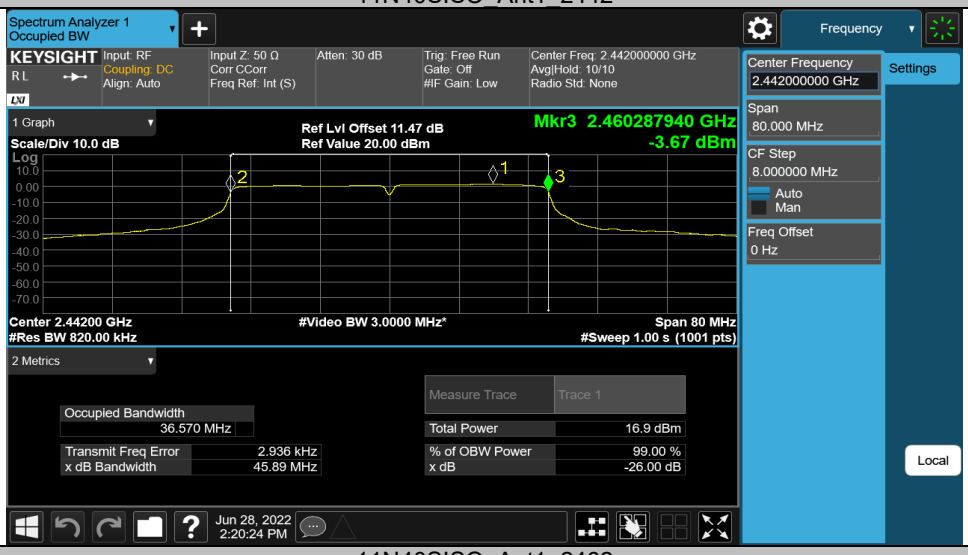
11N20SISO_Ant1_2472



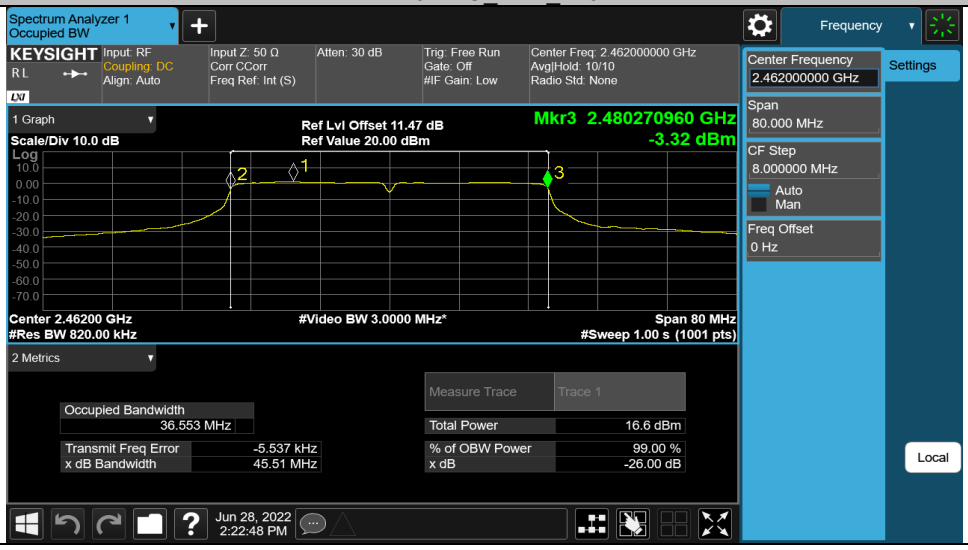
11N40SISO_Ant1_2422



11N40SISO_Ant1_2442



11N40SISO_Ant1_2462



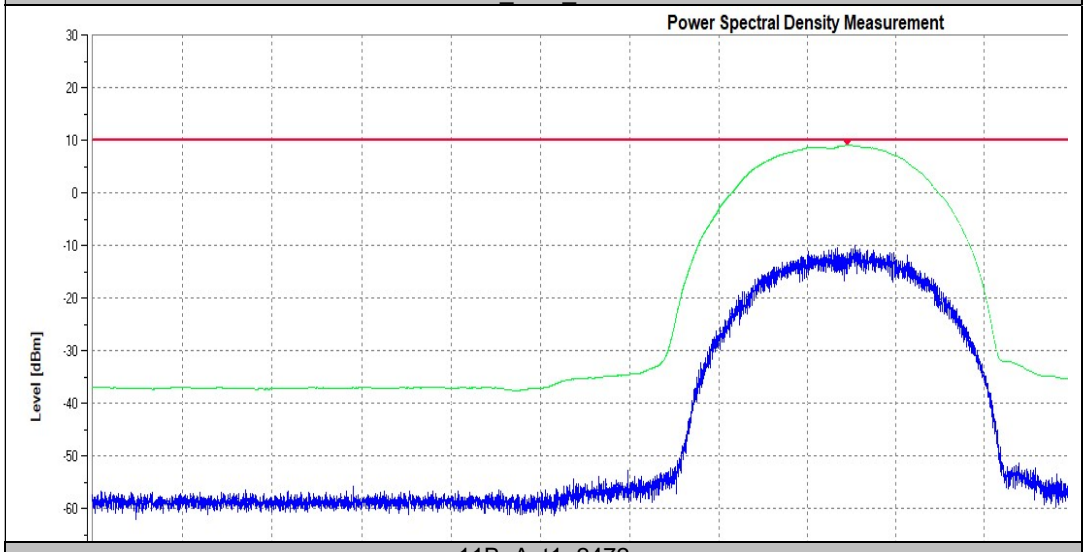
3 Appendix A.3: Power density

The power density is the mean Equivalent Isotropically Radiated Power (EIRP) density during a transmission burst. Only the worst case for all test modes reported.

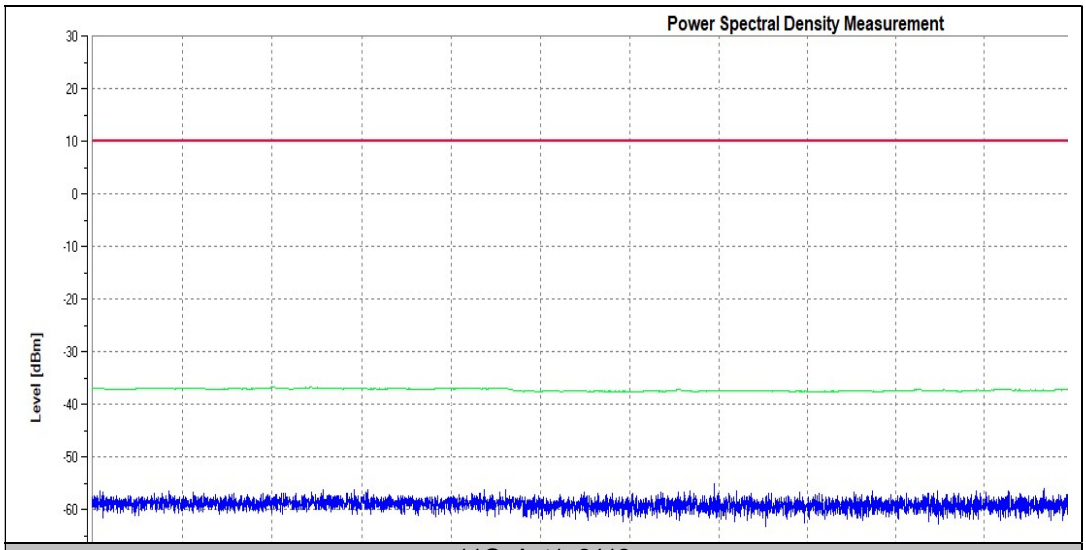
TestMode	Antenna	Frequency[MHz]	EIRP PSD[dBm/MHz]	Limit[dBm/MHz]	Verdict
11B	Ant1	2412	9.32	10	PASS
		2442	9.04	10	PASS
		2472	8.81	10	PASS
11G	Ant1	2412	5.97	10	PASS
		2442	5.97	10	PASS
		2472	5.78	10	PASS
11N20SISO	Ant1	2412	6.88	10	PASS
		2442	7.02	10	PASS
		2472	6.47	10	PASS
11N40SISO	Ant1	2422	4.23	10	PASS
		2442	4.51	10	PASS
		2462	3.61	10	PASS

11B_Ant1_2412

11B_Ant1_2442

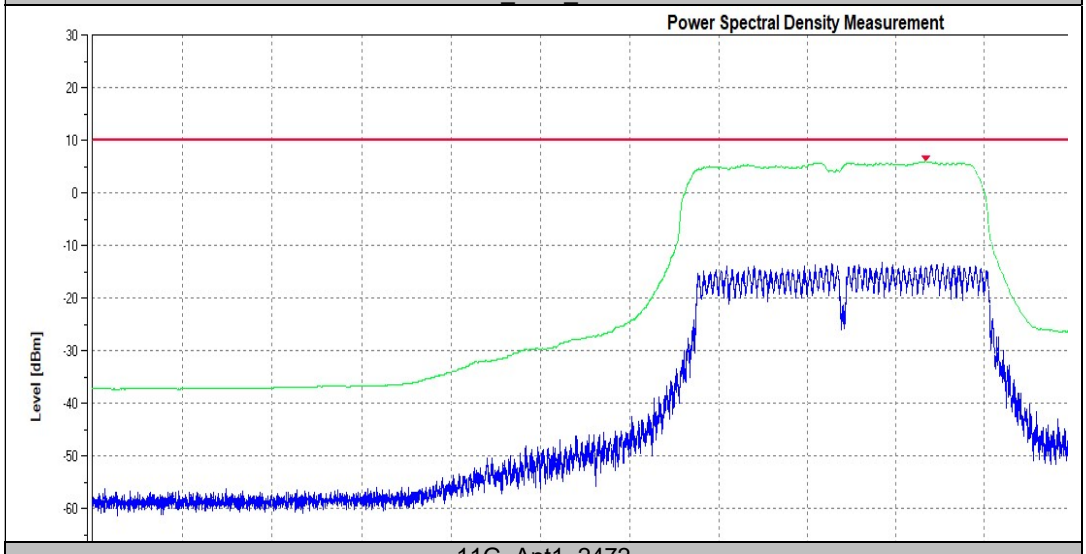


11B_Ant1_2472

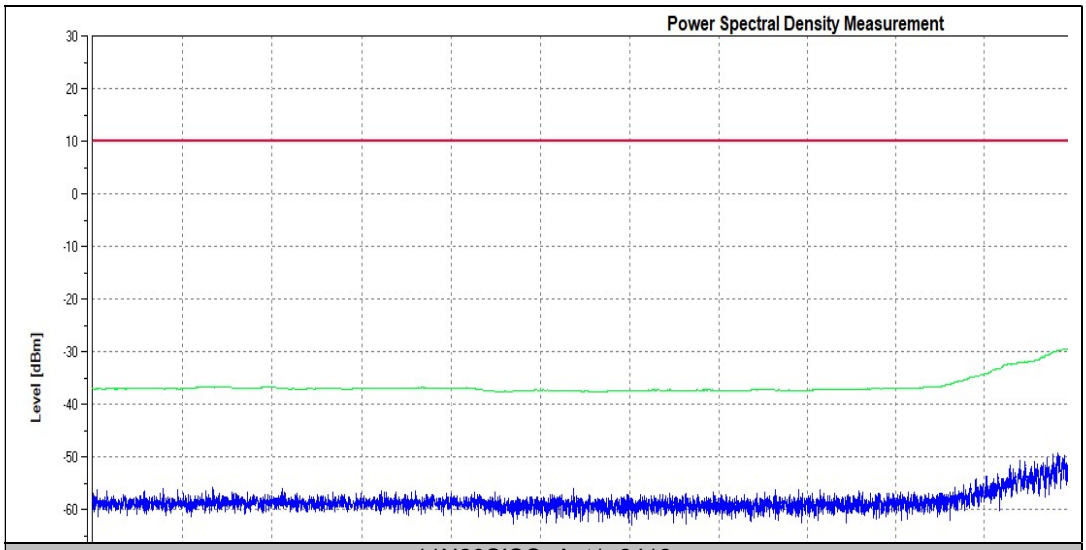


11G_Ant1_2412

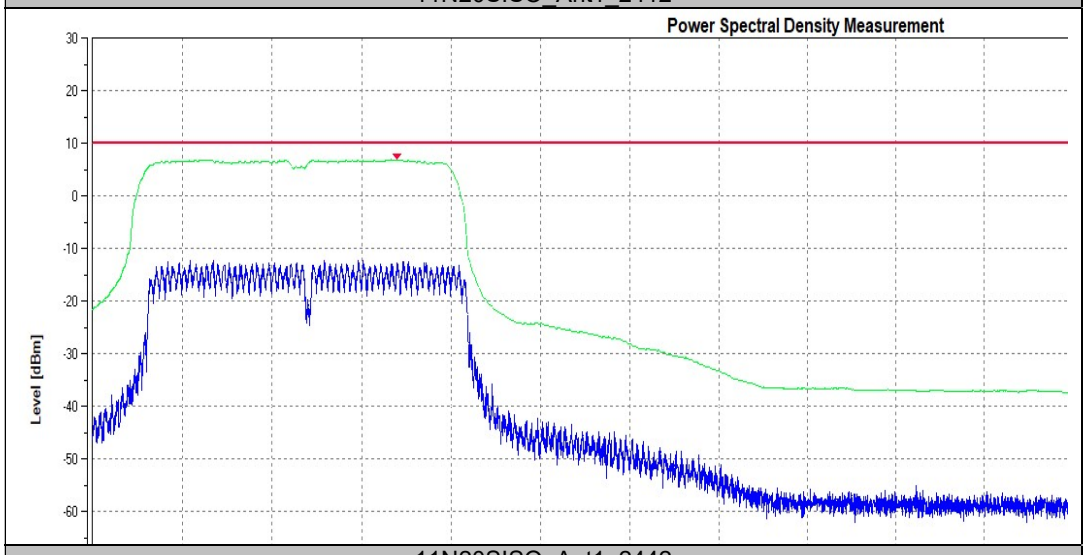
11G_Ant1_2442



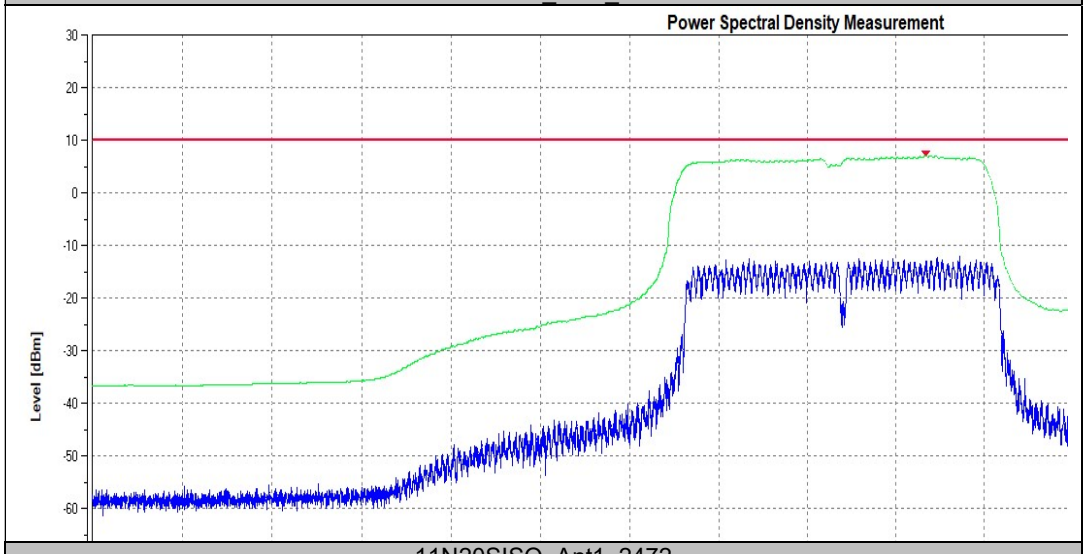
11G_Ant1_2472



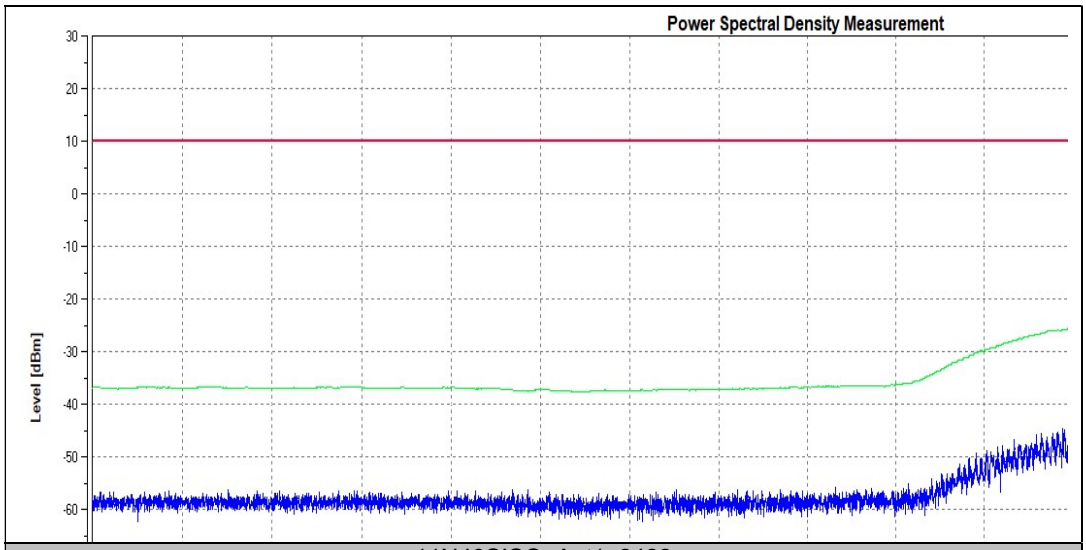
11N20SISO_Ant1_2412



11N20SISO_Ant1_2442

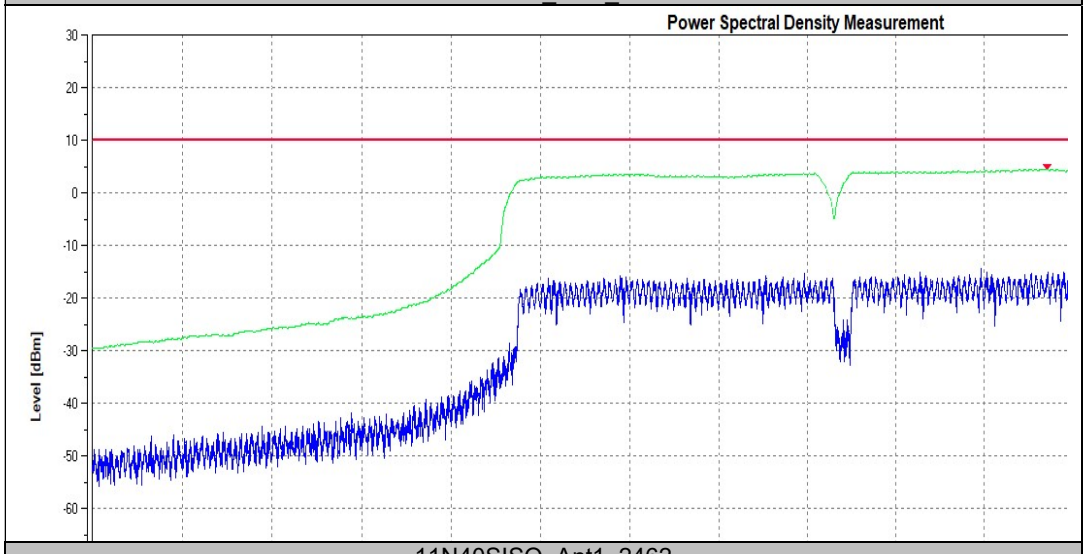


11N20SISO_Ant1_2472

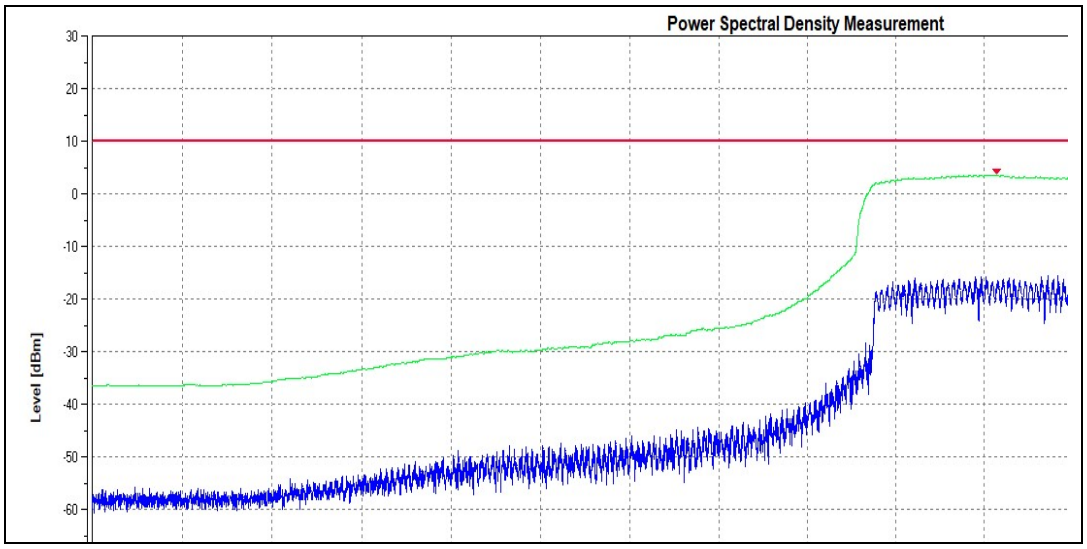


11N40SISO_Ant1_2422

11N40SISO_Ant1_2442



11N40SISO_Ant1_2462


Power Spectral Density Measurement
Level [dBm]
30
20
10
0
-10
-20
-30
-40
-50
-60

4 Appendix A.4: Adaptivity

DUT Information

EUT Name:	Smart Power Meter Switch
Model:	THR320D
Test Mode:	AD
Sample No:	A003291051-001
Test Voltage::	DC 5V
Remark:	Temp 24.5 Humi:51%
Test Standard:	EN 300328 2.2.2
Tested By:	Wenyi Yan
Reviewed By:	Terry Yin

Frequencies

2407.5MHz (2407.5 MHz)	WLAN CH 1 (2412 MHz)	2412.5MHz (2412.5 MHz)
WLAN CH 3 (2422 MHz)	2422.5MHz (2422.5 MHz)	WLAN CH 4 (2427 MHz)
2427.5MHz (2427.5 MHz)	2447.5MHz (2447.5 MHz)	WLAN CH 9 (2452 MHz)
2452.5MHz (2452.5 MHz)	WLAN CH 10 (2457 MHz)	WLAN CH 11 (2462 MHz)
2462.5MHz (2462.5 MHz)	WLAN CH 12 (2467 MHz)	2467.5MHz (2467.5 MHz)
WLAN CH 13 (2472 MHz)	2472.5 MHz (2472.5 MHz)	2409.5MHz (2409.5 MHz)
2405.5MHz (2405.5 MHz)	2477.5MHz (2477.5 MHz)	2410.5MHz (2410.5 MHz)
2420.5MHz (2420.5 MHz)	2419.5MHz (2419.5 MHz)	

Bandwidths

802.11b_20 MHz (20 MHz)	802.11g_20 MHz (20 MHz)	802.11n_20 MHz_HT20 (20 MHz)
802.11n_40 MHz_HT40 (40 MHz)	10 MHz (10 MHz)	20MHz (20 MHz)
40MHz (40 MHz)	802.11ax_20 MHz (20 MHz)	802.11ax_40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

Powerstep name (value)	Beamforming gain table names
20.000 dBm (20 dBm)	---

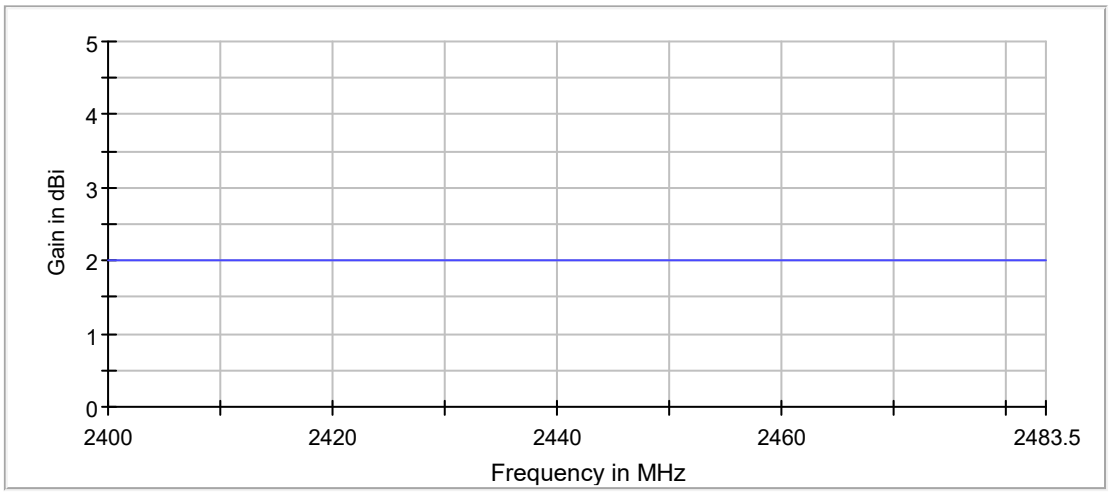
Gain Tables

Powerstep name (value)	Gain table names
20.000 dBm (20 dBm)	Port 1: 2;

DUT Settings

No. of transmission chains	1
Modulation	other
Adaptive	Yes
Short Control Signaling	Yes
LBT	Yes
Equipment Mode	Load Based
Channel Occupancy Time	13 ms
CCA	18 µs
Medical Device reverse compatibility mode	No
Receiver category	1

Gaintable 2



Gaintable: 2

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.148::inst0::instr), SN 1321.3008K39/101441, FW 3.40
Vector Generator:	VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.149::inst0::instr), SN 263301, FW 4.15.125.40
Generator:	SMB100A (SMB100A) @ VISA (ADR TCPIP::192.168.48.150::inst0::instr), SN 115186, FW 3.20.390.24 / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::inst0::instr), SN 1527.1144. /, FW 1.27.0.0

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
RF output power, Duty Cycle, Tx-sequence, Tx-gap	2412.000	20.0	20.000000	FAIL
Adaptivity	2412.000	20.0	20.000000	PASS
RF output power, Duty Cycle, Tx-sequence, Tx-gap	2472.000	20.0	20.000000	FAIL
Adaptivity	2472.000	20.0	20.000000	PASS

RF output power, Duty Cycle, Tx-sequence, Tx-gap (2412 MHz; 20.000 dBm; 802.11b_20 MHz)

Definition: The RF output power is defined as the mean equivalent isotropic radiated power (e.i.r.p.) of the equipment during a transmission burst.
Duty Cycle is defined as the ratio of the total transmitter 'on'-time to the observation period.
Tx-sequence is defined as a period in time during which a single or multiple transmissions may occur and which shall be followed by a Tx-gap.
Tx-gap is defined as a period in time during which no transmissions occur.
The Medium Utilization (MU) factor is a measure to quantify the amount of resources (Power and Time) used by non-adaptive equipment.

RF Outputpower

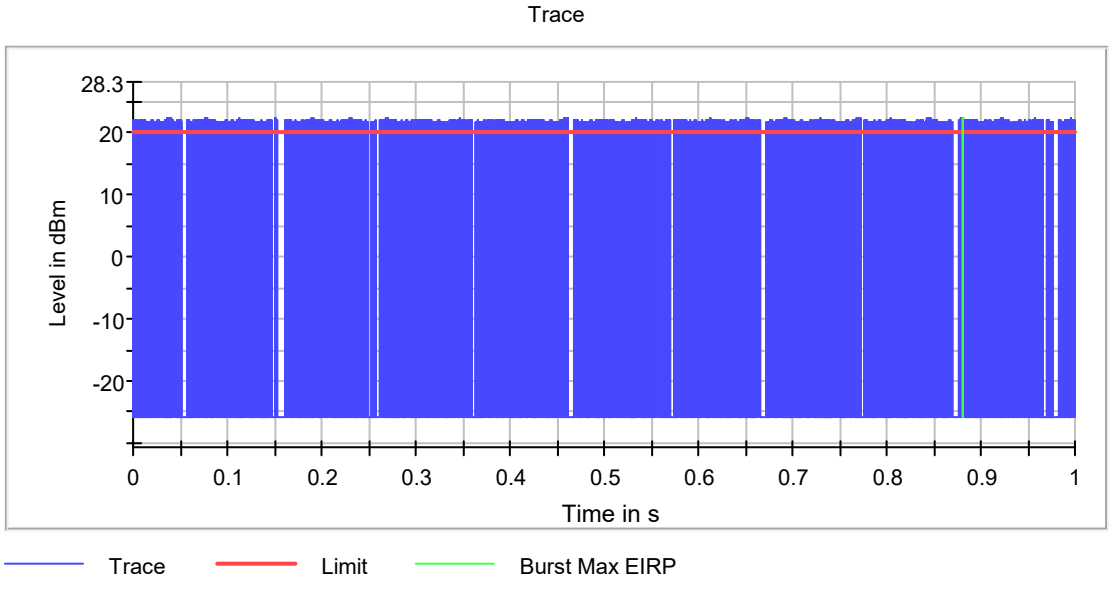
Max Burst EIRP (dBm)	Limit Max (dBm)	Max Burst RMS (dBm)	Result
22.3	20.0	20.3	FAIL

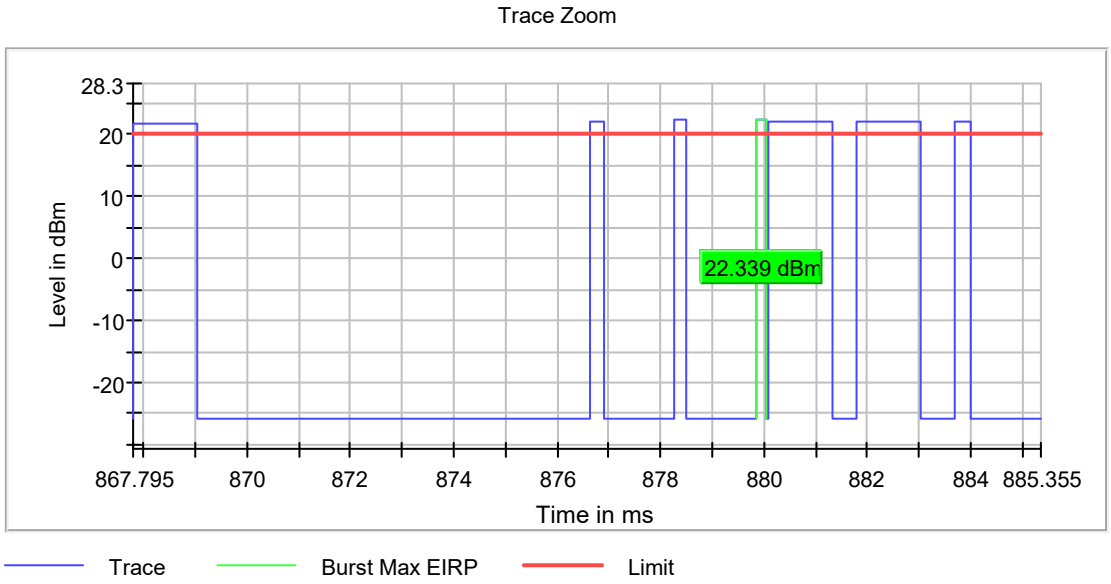
DutyCycle

DutyCycle (%)	Limit Max (%)	Result
40.930	---	PASS

MediumUtilization

MediumUtilization (%)	Limit Max (%)	Result
64.252	---	PASS





OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	**1.000 s**	**1.000 s**
Points	**1000000**	**1000000**
Time resolution	**1.000 µs**	**1.000 µs**

Adaptivity (2412 MHz; 20.000 dBm; 802.11b_20 MHz)

Summary

Result	Threshold (dBm)
PASS	0.3

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
40.938	10000.000	2.357	13.000	0.111	6451	0.042	10.399

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
40.938	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
3.248	10.000	PASS	50.000

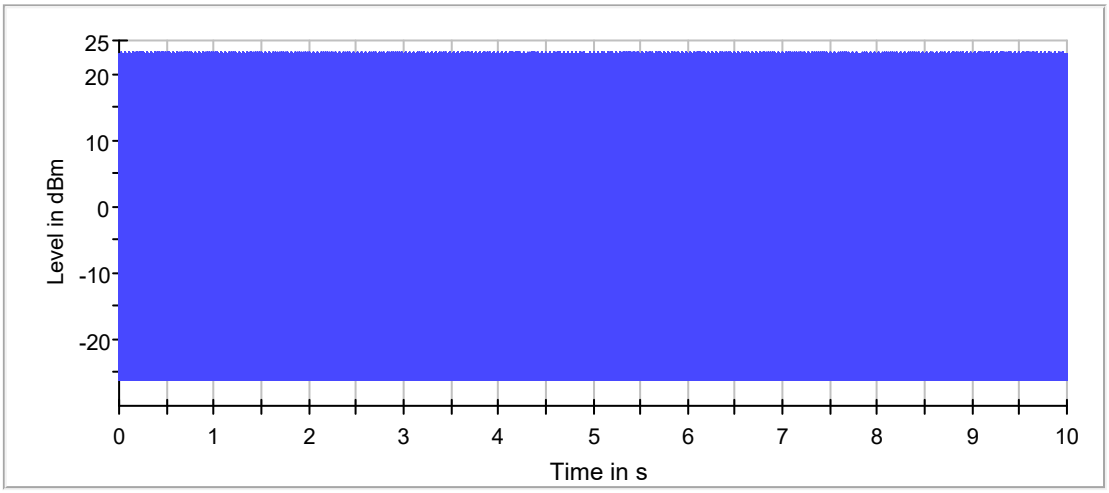
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
3.248	4576.260	4626.260	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

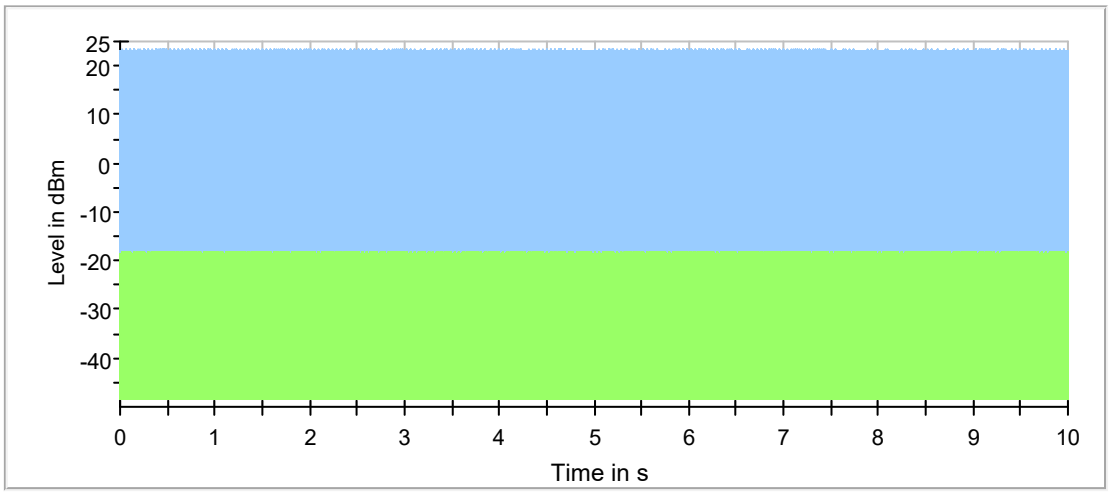
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
3.248	62000.000	13.000	1013.000	121987.000

Normal Operation



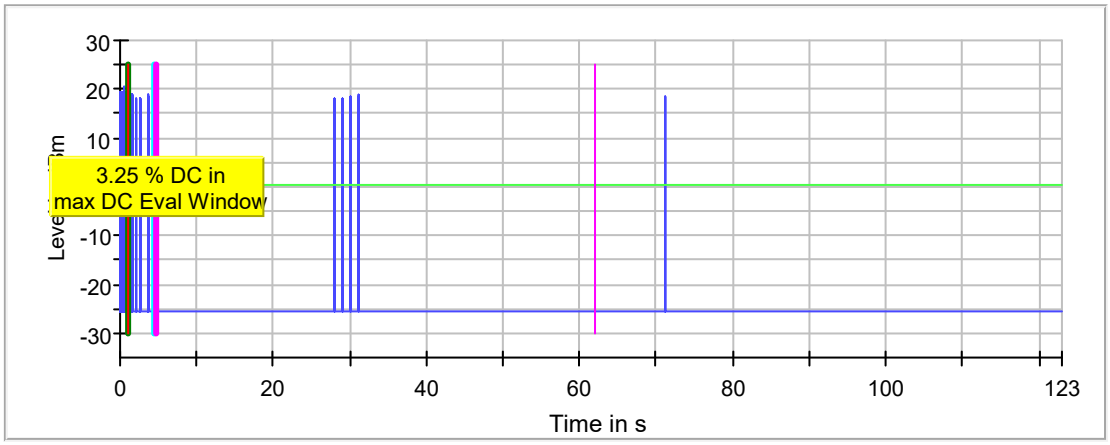
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Spectrum Analyzer Normal Operation

Setting	Instrument Value	Target Value
Center Frequency	2.41200 GHz	2.41200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	10.000 s	10.000 s
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP settings for Normal Operation

Setting	Instrument Value	Target Value
Measurement Time	10.000 s	10.000 s
Tracepoints	10000000	10000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Signal Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Spectrum Analyzer Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Center Frequency	2.41200 GHz	2.41200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	123.000 s	123.000 s
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	1.000 s	1.000 s

OSP settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Measurement Time	123.000 s	123.000 s
Tracepoints	123000000	123000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value
Frequency	2.41200 GHz
Level	-18.967 dBm (including uncertainty compensation)
Level at DUT	-53.559 dBm (including uncertainty compensation)
Waveform	AWGN_30M
Level per MHz	-35.037 dBm/MHz (including uncertainty compensation)
Level per MHz at DUT	-69.629 dBm/MHz (including uncertainty compensation)
Attenuation	34.592 dB
RF output	On

(continuation of the "Vector Generator settings for Reaction on Interferer and Blocker" table from column 2 ...)

Setting	Target Value

Frequency	**2.41200 GHz**
Level	**---**
Level at DUT	**---**
Waveform	**AWGN_30M**
Level per MHz	**-35.037 dBm/MHz (including uncertainty compensation)**
Level per MHz at DUT	**-69.629 dBm/MHz (including uncertainty compensation)**
Attenuation	**34.592 dB**
RF output	**On**

Signal Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Frequency	**2.48850 GHz**	**2.48850 GHz**
Level	**2.341 dBm**	**-0.109 dBm**
Level at DUT	**-32.550 dBm**	**-35.000 dBm**
RF output	**Off**	**On**

RF output power, Duty Cycle, Tx-sequence, Tx-gap (2472 MHz; 20.000 dBm; 802.11b_20 MHz)

Definition: The RF output power is defined as the mean equivalent isotropic radiated power (e.i.r.p.) of the equipment during a transmission burst.
Duty Cycle is defined as the ratio of the total transmitter 'on'-time to the observation period.
Tx-sequence is defined as a period in time during which a single or multiple transmissions may occur and which shall be followed by a Tx-gap.
Tx-gap is defined as a period in time during which no transmissions occur.
The Medium Utilization (MU) factor is a measure to quantify the amount of resources (Power and Time) used by non-adaptive equipment.

RF Outputpower

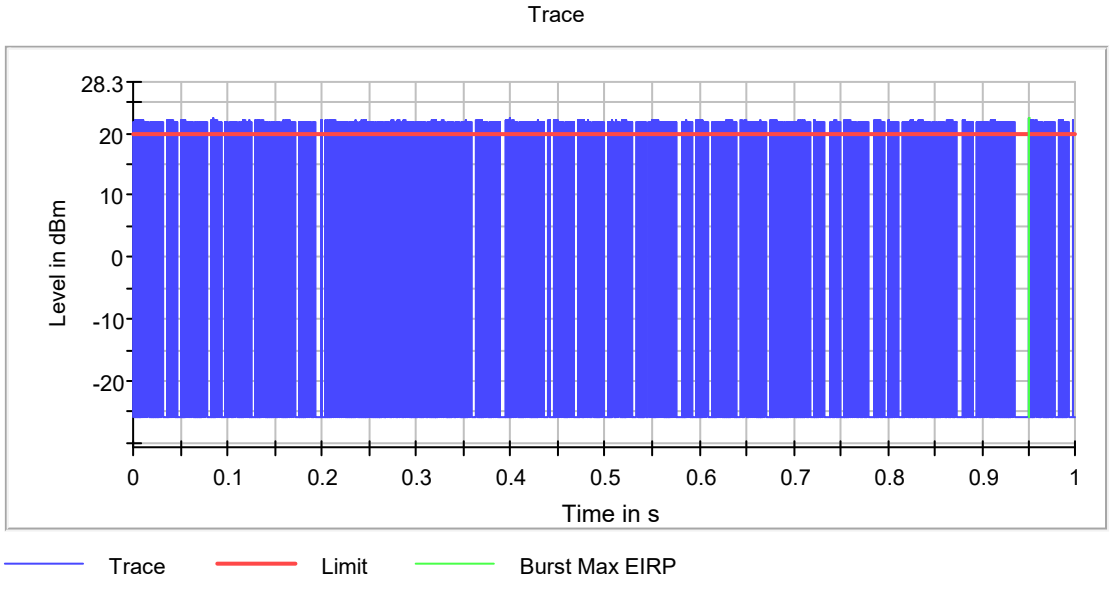
Max Burst EIRP (dBm)	Limit Max (dBm)	Max Burst RMS (dBm)	Result
22.3	20.0	20.3	FAIL

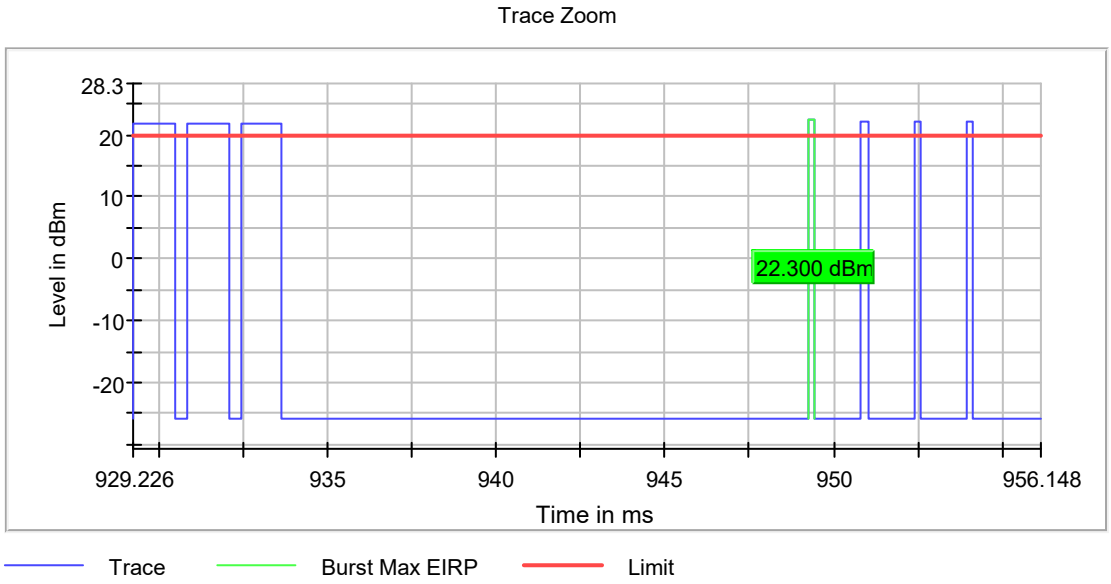
DutyCycle

DutyCycle (%)	Limit Max (%)	Result
39.679	---	PASS

MediumUtilization

MediumUtilization (%)	Limit Max (%)	Result
60.917	---	PASS





OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	**1.000 s**	**1.000 s**
Points	**1000000**	**1000000**
Time resolution	**1.000 µs**	**1.000 µs**

Adaptivity (2472 MHz; 20.000 dBm; 802.11b_20 MHz)

Summary

Result	Threshold (dBm)
PASS	0.4

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
39.542	10000.000	2.358	13.000	0.111	5440	0.041	10.754

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
39.542	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
2.030	10.000	PASS	50.000

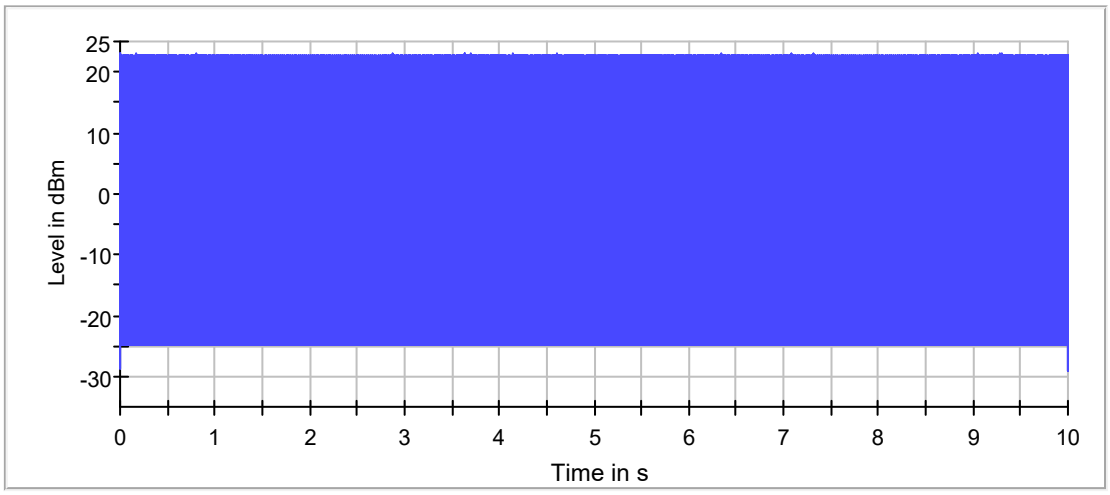
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
2.030	4609.704	4659.704	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

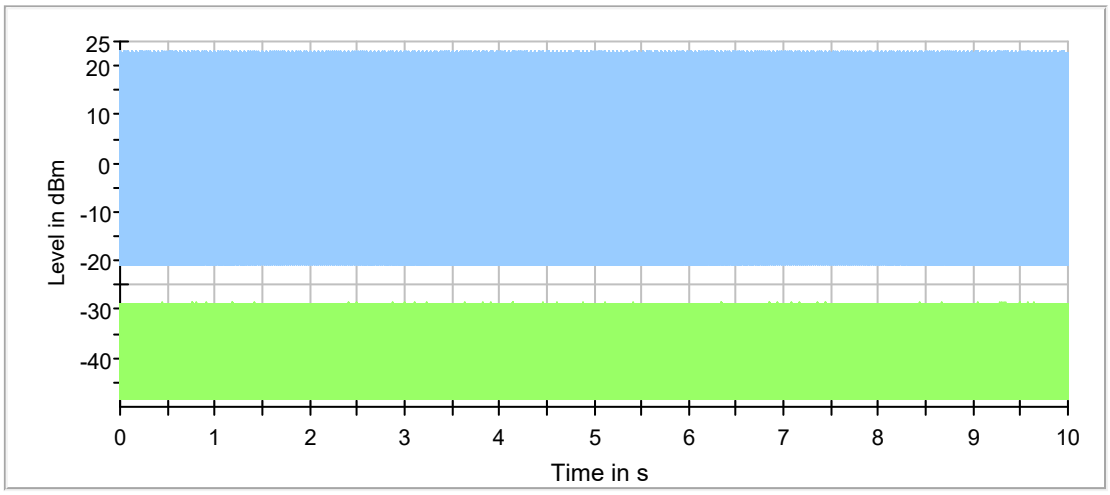
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
2.030	62000.000	13.000	1013.000	121987.000

Normal Operation



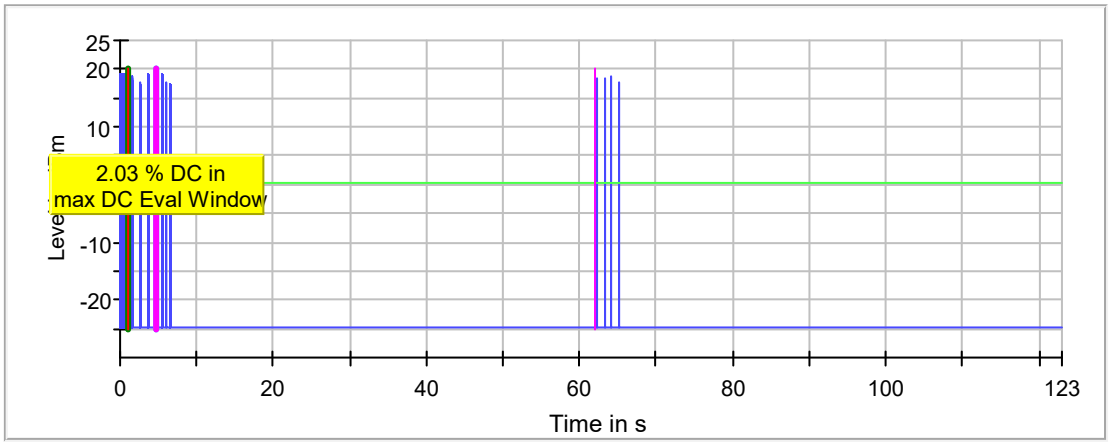
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace Threshold start of monitoring
Trigger Blocker start of evaluation
stop of evaluation

Spectrum Analyzer Normal Operation

Setting	Instrument Value	Target Value
Center Frequency	2.47200 GHz	2.47200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	10.000 s	10.000 s
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP settings for Normal Operation

Setting	Instrument Value	Target Value
Measurement Time	10.000 s	10.000 s
Tracepoints	10000000	10000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Signal Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Spectrum Analyzer Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Center Frequency	2.47200 GHz	2.47200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	123.000 s	123.000 s
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	1.000 s	1.000 s

OSP settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Measurement Time	123.000 s	123.000 s
Tracepoints	123000000	123000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value
Frequency	2.47200 GHz
Level	-18.634 dBm (including uncertainty compensation)
Level at DUT	-53.520 dBm (including uncertainty compensation)
Waveform	AWGN_30M
Level per MHz	-34.704 dBm/MHz (including uncertainty compensation)
Level per MHz at DUT	-69.590 dBm/MHz (including uncertainty compensation)
Attenuation	34.885 dB
RF output	On

(continuation of the "Vector Generator settings for Reaction on Interferer and Blocker" table from column 2 ...)

Setting	Target Value

Frequency	**2.47200 GHz**
Level	**---**
Level at DUT	**---**
Waveform	**AWGN_30M**
Level per MHz	**-34.704 dBm/MHz (including uncertainty compensation)**
Level per MHz at DUT	**-69.590 dBm/MHz (including uncertainty compensation)**
Attenuation	**34.885 dB**
RF output	**On**

Signal Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Frequency	**2.39500 GHz**	**2.39500 GHz**
Level	**-0.109 dBm**	**-0.542 dBm**
Level at DUT	**-34.567 dBm**	**-35.000 dBm**
RF output	**Off**	**On**

DUT Information

EUT Name:	Smart Power Meter Switch
Model:	THR320D
Test Mode:	AD
Sample No:	A003291051-001
Test Voltage::	DC 5V
Remark:	Temp 24.5 Humi:51%
Test Standard:	EN 300328 2.2.2
Tested By:	Wenyi Yan
Reviewed By:	Terry Yin

Frequencies

2407.5MHz (2407.5 MHz)	WLAN CH 1 (2412 MHz)	2412.5MHz (2412.5 MHz)
WLAN CH 3 (2422 MHz)	2422.5MHz (2422.5 MHz)	WLAN CH 4 (2427 MHz)
2427.5MHz (2427.5 MHz)	2447.5MHz (2447.5 MHz)	WLAN CH 9 (2452 MHz)
2452.5MHz (2452.5 MHz)	WLAN CH 10 (2457 MHz)	WLAN CH 11 (2462 MHz)
2462.5MHz (2462.5 MHz)	WLAN CH 12 (2467 MHz)	2467.5MHz (2467.5 MHz)
WLAN CH 13 (2472 MHz)	2472.5 MHz (2472.5 MHz)	2409.5MHz (2409.5 MHz)
2405.5MHz (2405.5 MHz)	2477.5MHz (2477.5 MHz)	2410.5MHz (2410.5 MHz)
2420.5MHz (2420.5 MHz)	2419.5MHz (2419.5 MHz)	

Bandwidths

802.11b_20 MHz (20 MHz)	802.11g_20 MHz (20 MHz)	802.11n_20 MHz_HT20 (20 MHz)
802.11n_40 MHz_HT40 (40 MHz)	10 MHz (10 MHz)	20MHz (20 MHz)
40MHz (40 MHz)	802.11ax_20 MHz (20 MHz)	802.11ax_40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

Powerstep name (value)	Beamforming gain table names
20.000 dBm (20 dBm)	---

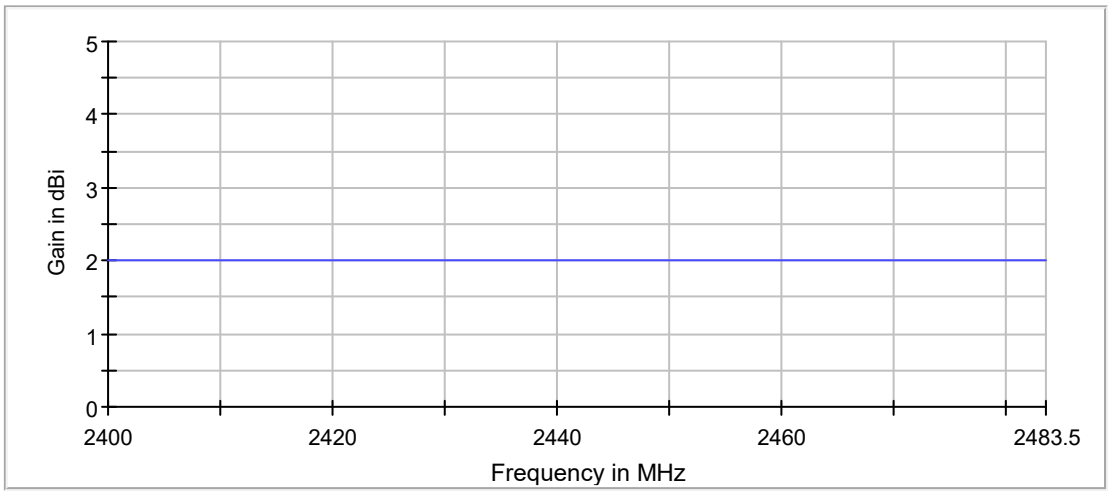
Gain Tables

Powerstep name (value)	Gain table names
20.000 dBm (20 dBm)	Port 1: 2;

DUT Settings

No. of transmission chains	1
Modulation	other
Adaptive	Yes
Short Control Signaling	Yes
LBT	Yes
Equipment Mode	Load Based
Channel Occupancy Time	13 ms
CCA	18 µs
Medical Device reverse compatibility mode	No
Receiver category	1

Gaintable 2



Gaintable: 2

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.148::inst0::instr), SN 1321.3008K39/101441, FW 3.40
Vector Generator:	VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.149::inst0::instr), SN 263301, FW 4.15.125.40
Generator:	SMB100A (SMB100A) @ VISA (ADR TCPIP::192.168.48.150::inst0::instr), SN 115186, FW 3.20.390.24 / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::inst0::instr), SN 1527.1144. /, FW 1.27.0.0

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
RF output power, Duty Cycle, Tx-sequence, Tx-gap	2412.000	20.0	20.000000	FAIL
Adaptivity	2412.000	20.0	20.000000	PASS
RF output power, Duty Cycle, Tx-sequence, Tx-gap	2472.000	20.0	20.000000	FAIL
Adaptivity	2472.000	20.0	20.000000	PASS

RF output power, Duty Cycle, Tx-sequence, Tx-gap (2412 MHz; 20.000 dBm; 802.11g_20 MHz)

Definition: The RF output power is defined as the mean equivalent isotropic radiated power (e.i.r.p.) of the equipment during a transmission burst.
Duty Cycle is defined as the ratio of the total transmitter 'on'-time to the observation period.
Tx-sequence is defined as a period in time during which a single or multiple transmissions may occur and which shall be followed by a Tx-gap.
Tx-gap is defined as a period in time during which no transmissions occur.
The Medium Utilization (MU) factor is a measure to quantify the amount of resources (Power and Time) used by non-adaptive equipment.

RF Outputpower

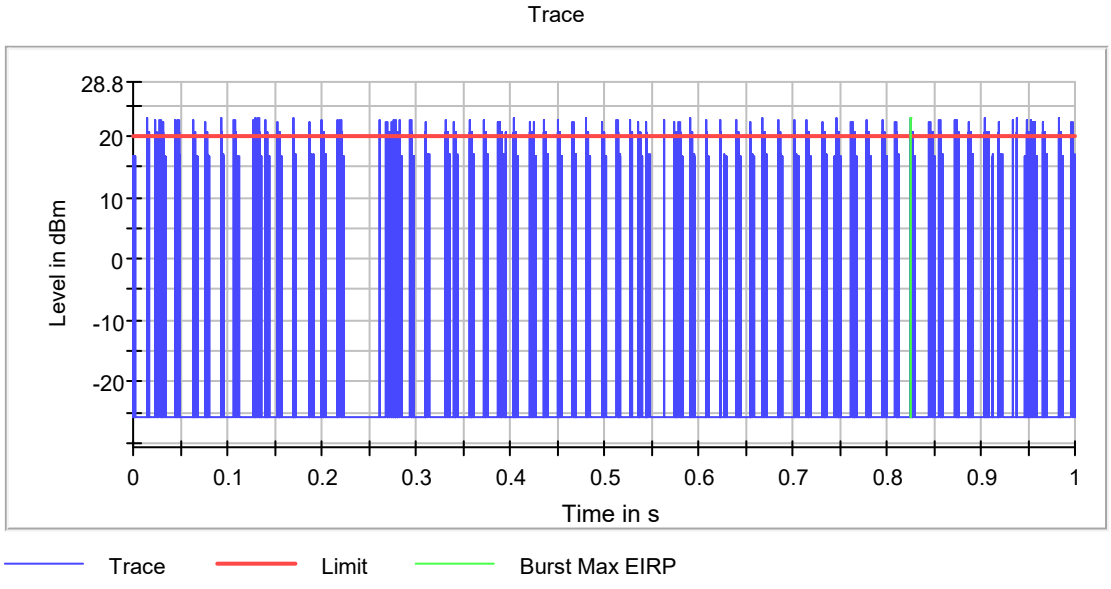
Max Burst EIRP (dBm)	Limit Max (dBm)	Max Burst RMS (dBm)	Result
22.9	20.0	20.9	FAIL

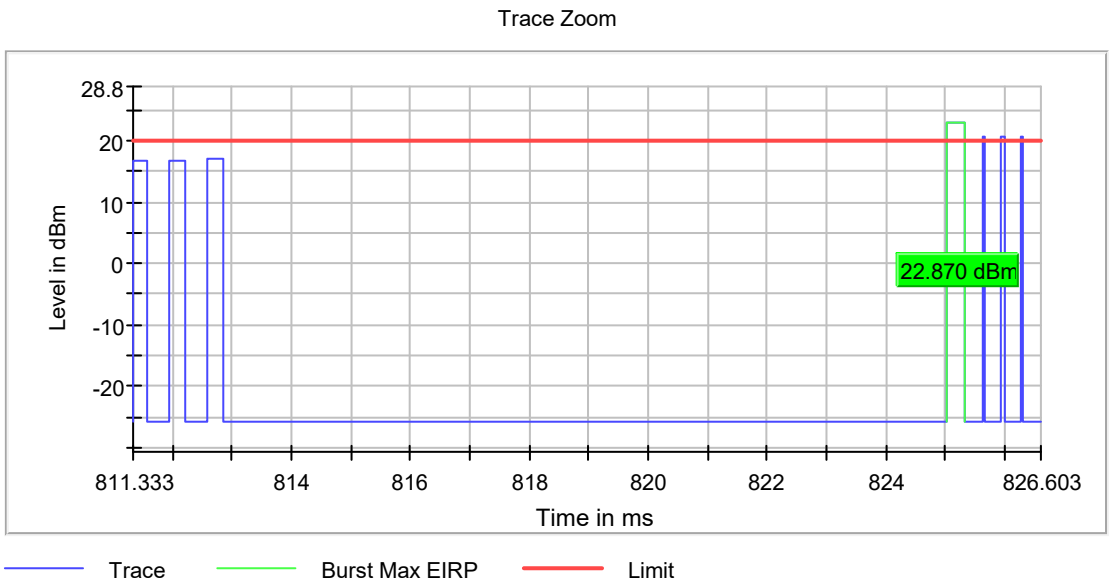
DutyCycle

DutyCycle (%)	Limit Max (%)	Result
10.277	---	PASS

MediumUtilization

MediumUtilization (%)	Limit Max (%)	Result
9.045	---	PASS





OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	**1.000 s**	**1.000 s**
Points	**1000000**	**1000000**
Time resolution	**1.000 µs**	**1.000 µs**

Adaptivity (2412 MHz; 20.000 dBm; 802.11g_20 MHz)

Summary

Result	Threshold (dBm)
PASS	0.9

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
20.170	10000.000	0.305	13.000	0.045	6007	0.042	26.176

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
20.170	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
8.520	10.000	PASS	50.000

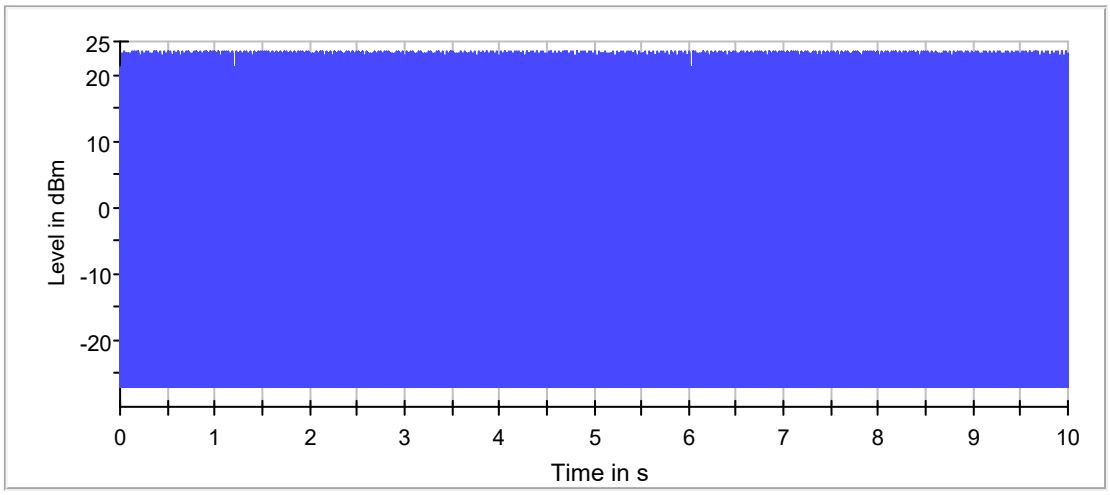
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
8.520	8676.321	8726.321	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

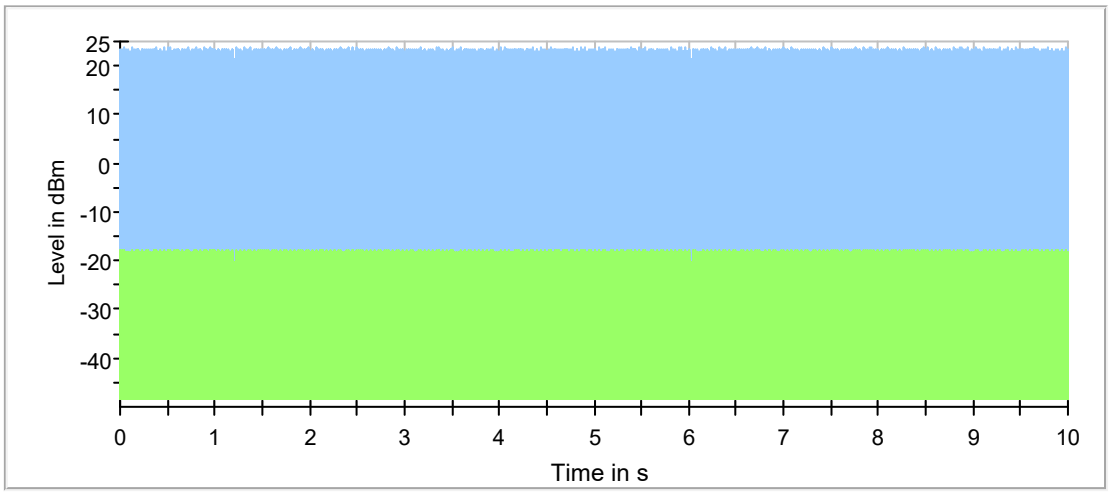
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
8.520	62000.000	13.000	1013.000	121987.000

Normal Operation



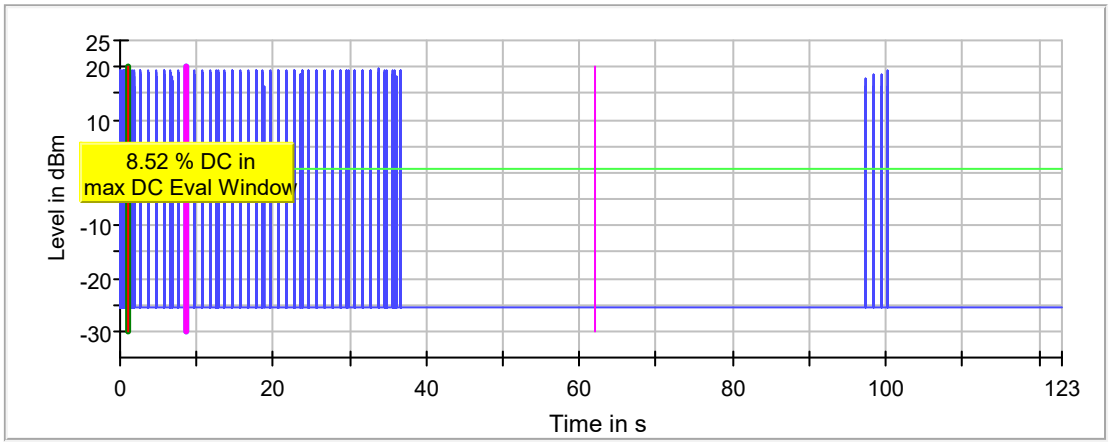
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Spectrum Analyzer Normal Operation

Setting	Instrument Value	Target Value
Center Frequency	2.41200 GHz	2.41200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	10.000 s	10.000 s
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP settings for Normal Operation

Setting	Instrument Value	Target Value
Measurement Time	10.000 s	10.000 s
Tracepoints	10000000	10000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Signal Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Spectrum Analyzer Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Center Frequency	2.41200 GHz	2.41200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	123.000 s	123.000 s
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	1.000 s	1.000 s

OSP settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Measurement Time	123.000 s	123.000 s
Tracepoints	123000000	123000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value
Frequency	2.41200 GHz
Level	-19.498 dBm (including uncertainty compensation)
Level at DUT	-54.090 dBm (including uncertainty compensation)
Waveform	AWGN_30M
Level per MHz	-35.568 dBm/MHz (including uncertainty compensation)
Level per MHz at DUT	-70.160 dBm/MHz (including uncertainty compensation)
Attenuation	34.592 dB
RF output	On

(continuation of the "Vector Generator settings for Reaction on Interferer and Blocker" table from column 2 ...)

Setting	Target Value

Frequency	**2.41200 GHz**
Level	**---**
Level at DUT	**---**
Waveform	**AWGN_30M**
Level per MHz	**-35.568 dBm/MHz (including uncertainty compensation)**
Level per MHz at DUT	**-70.160 dBm/MHz (including uncertainty compensation)**
Attenuation	**34.592 dB**
RF output	**On**

Signal Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Frequency	**2.48850 GHz**	**2.48850 GHz**
Level	**-0.542 dBm**	**-0.109 dBm**
Level at DUT	**-35.433 dBm**	**-35.000 dBm**
RF output	**Off**	**On**

RF output power, Duty Cycle, Tx-sequence, Tx-gap (2472 MHz; 20.000 dBm; 802.11g_20 MHz)

Definition: The RF output power is defined as the mean equivalent isotropic radiated power (e.i.r.p.) of the equipment during a transmission burst.
Duty Cycle is defined as the ratio of the total transmitter 'on'-time to the observation period.
Tx-sequence is defined as a period in time during which a single or multiple transmissions may occur and which shall be followed by a Tx-gap.
Tx-gap is defined as a period in time during which no transmissions occur.
The Medium Utilization (MU) factor is a measure to quantify the amount of resources (Power and Time) used by non-adaptive equipment.

RF Outputpower

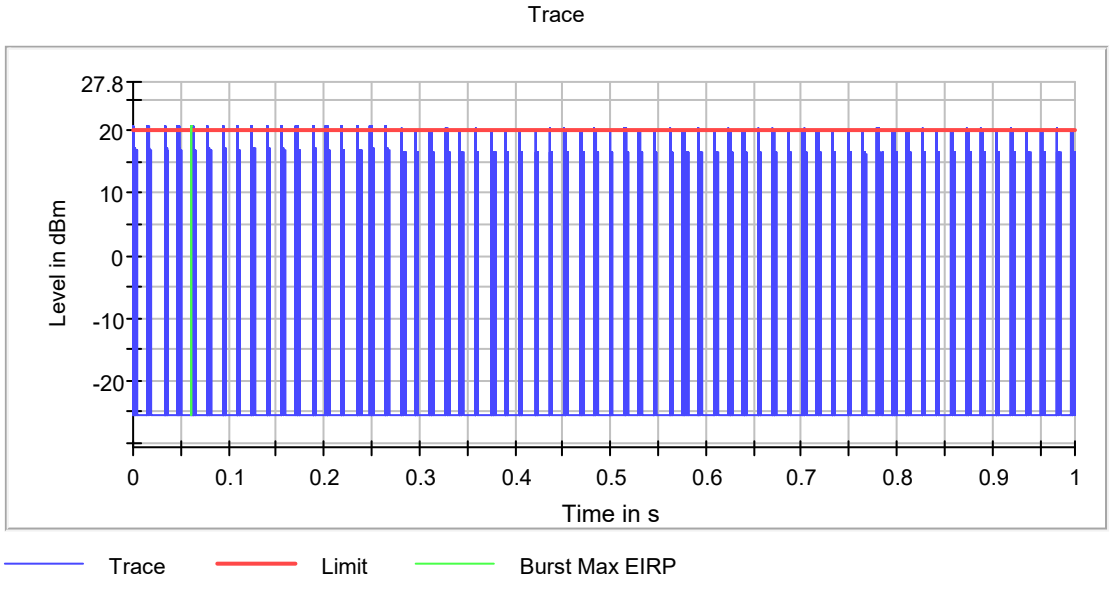
Max Burst EIRP (dBm)	Limit Max (dBm)	Max Burst RMS (dBm)	Result
20.7	20.0	18.7	FAIL

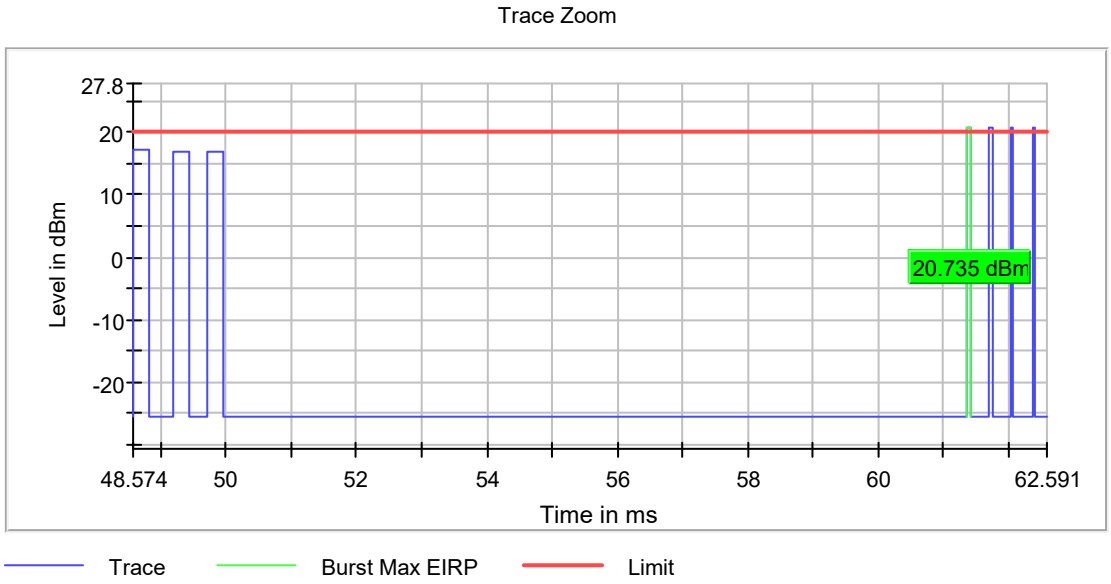
DutyCycle

DutyCycle (%)	Limit Max (%)	Result
7.789	---	PASS

MediumUtilization

MediumUtilization (%)	Limit Max (%)	Result
4.316	---	PASS





OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	**1.000 s**	**1.000 s**
Points	**1000000**	**1000000**
Time resolution	**1.000 µs**	**1.000 µs**

Adaptivity (2472 MHz; 20.000 dBm; 802.11g_20 MHz)

Summary

Result	Threshold (dBm)
PASS	0.5

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
17.716	10000.000	0.282	13.000	0.045	5137	0.042	28.279

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
17.716	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
1.368	10.000	PASS	50.000

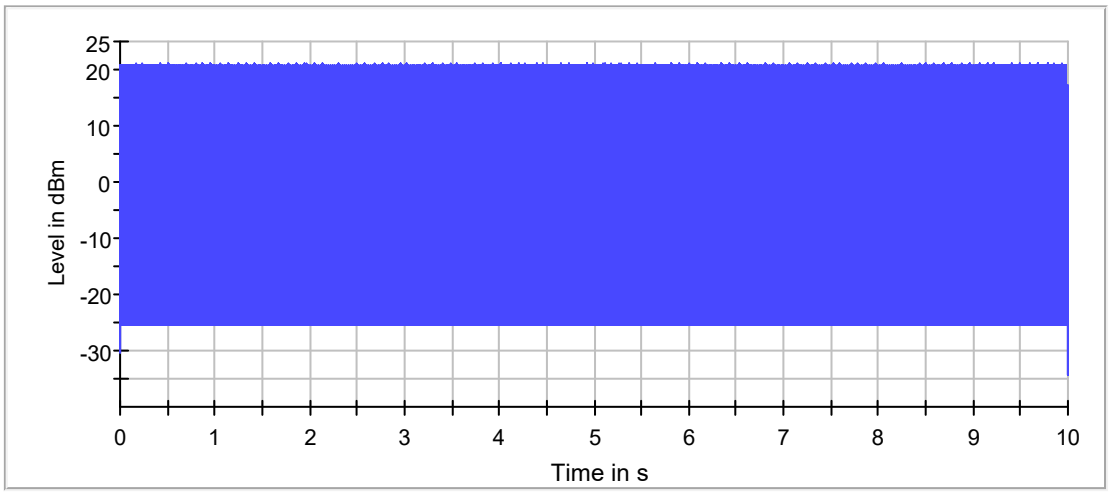
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
1.368	8781.865	8831.865	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

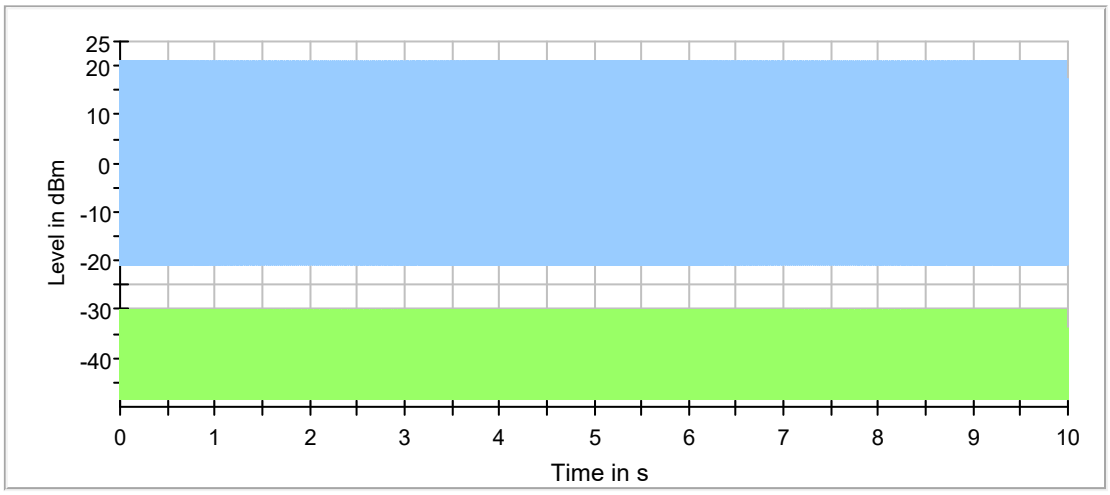
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
1.368	62000.000	13.000	1013.000	121987.000

Normal Operation



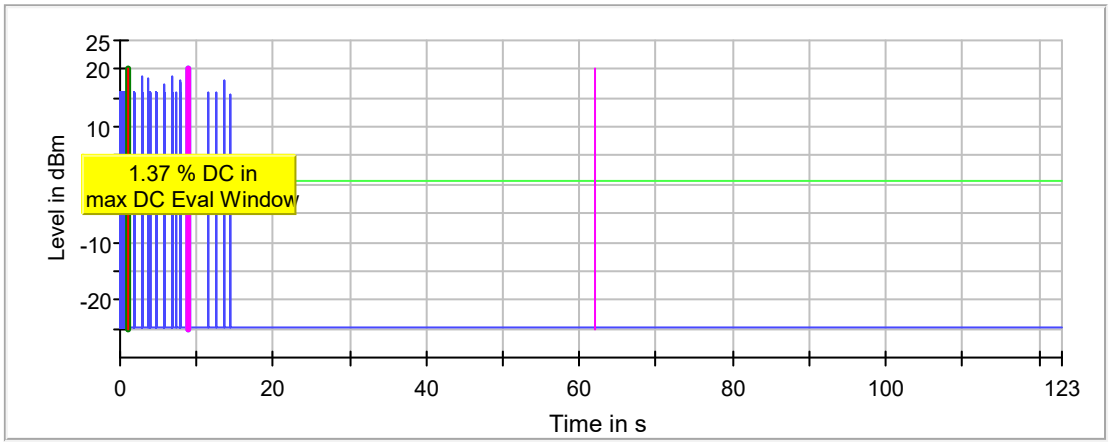
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Spectrum Analyzer Normal Operation

Setting	Instrument Value	Target Value
Center Frequency	2.47200 GHz	2.47200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	10.000 s	10.000 s
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP settings for Normal Operation

Setting	Instrument Value	Target Value
Measurement Time	10.000 s	10.000 s
Tracepoints	10000000	10000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Signal Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Spectrum Analyzer Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Center Frequency	2.47200 GHz	2.47200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	123.000 s	123.000 s
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	1.000 s	1.000 s

OSP settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Measurement Time	123.000 s	123.000 s
Tracepoints	123000000	123000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value
Frequency	2.47200 GHz
Level	-17.070 dBm (including uncertainty compensation)
Level at DUT	-51.955 dBm (including uncertainty compensation)
Waveform	AWGN_30M
Level per MHz	-33.140 dBm/MHz (including uncertainty compensation)
Level per MHz at DUT	-68.025 dBm/MHz (including uncertainty compensation)
Attenuation	34.885 dB
RF output	On

(continuation of the "Vector Generator settings for Reaction on Interferer and Blocker" table from column 2 ...)

Setting	Target Value

Frequency	**2.47200 GHz**
Level	**---**
Level at DUT	**---**
Waveform	**AWGN_30M**
Level per MHz	**-33.140 dBm/MHz (including uncertainty compensation)**
Level per MHz at DUT	**-68.025 dBm/MHz (including uncertainty compensation)**
Attenuation	**34.885 dB**
RF output	**On**

Signal Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Frequency	**2.39500 GHz**	**2.39500 GHz**
Level	**-0.109 dBm**	**-0.542 dBm**
Level at DUT	**-34.567 dBm**	**-35.000 dBm**
RF output	**Off**	**On**

DUT Information

EUT Name:	Smart Power Meter Switch
Model:	THR320D
Test Mode:	AD
Sample No:	A003291051-001
Test Voltage::	DC 5V
Remark:	Temp 24.5 Humi:51%
Test Standard:	EN 300328 2.2.2
Tested By:	Wenyi Yan
Reviewed By:	Terry Yin

Frequencies

2407.5MHz (2407.5 MHz)	WLAN CH 1 (2412 MHz)	2412.5MHz (2412.5 MHz)
WLAN CH 3 (2422 MHz)	2422.5MHz (2422.5 MHz)	WLAN CH 4 (2427 MHz)
2427.5MHz (2427.5 MHz)	2447.5MHz (2447.5 MHz)	WLAN CH 9 (2452 MHz)
2452.5MHz (2452.5 MHz)	WLAN CH 10 (2457 MHz)	WLAN CH 11 (2462 MHz)
2462.5MHz (2462.5 MHz)	WLAN CH 12 (2467 MHz)	2467.5MHz (2467.5 MHz)
WLAN CH 13 (2472 MHz)	2472.5 MHz (2472.5 MHz)	2409.5MHz (2409.5 MHz)
2405.5MHz (2405.5 MHz)	2477.5MHz (2477.5 MHz)	2410.5MHz (2410.5 MHz)
2420.5MHz (2420.5 MHz)	2419.5MHz (2419.5 MHz)	

Bandwidths

802.11b_20 MHz (20 MHz)	802.11g_20 MHz (20 MHz)	802.11n_20 MHz_HT20 (20 MHz)
802.11n_40 MHz_HT40 (40 MHz)	10 MHz (10 MHz)	20MHz (20 MHz)
40MHz (40 MHz)	802.11ax_20 MHz (20 MHz)	802.11ax_40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

Powerstep name (value)	Beamforming gain table names
20.000 dBm (20 dBm)	---

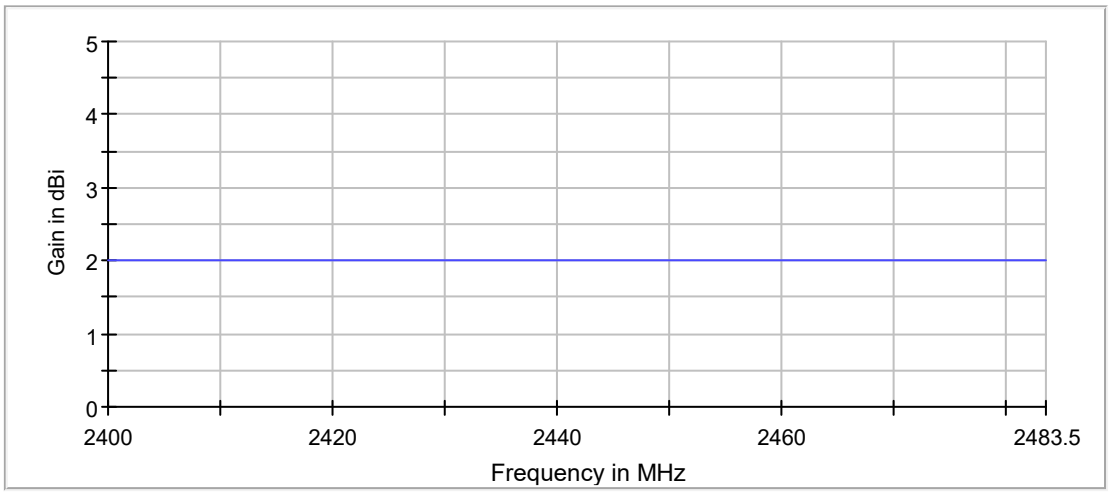
Gain Tables

Powerstep name (value)	Gain table names
20.000 dBm (20 dBm)	Port 1: 2;

DUT Settings

No. of transmission chains	1
Modulation	other
Adaptive	Yes
Short Control Signaling	Yes
LBT	Yes
Equipment Mode	Load Based
Channel Occupancy Time	13 ms
CCA	18 µs
Medical Device reverse compatibility mode	No
Receiver category	1

Gaintable 2



Gaintable: 2

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.148::inst0::instr), SN 1321.3008K39/101441, FW 3.40
Vector Generator:	VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.149::inst0::instr), SN 263301, FW 4.15.125.40
Generator:	SMB100A (SMB100A) @ VISA (ADR TCPIP::192.168.48.150::inst0::instr), SN 115186, FW 3.20.390.24 / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::inst0::instr), SN 1527.1144. /, FW 1.27.0.0

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
RF output power, Duty Cycle, Tx-sequence, Tx-gap	2412.000	20.0	20.000000	FAIL
Adaptivity	2412.000	20.0	20.000000	PASS
RF output power, Duty Cycle, Tx-sequence, Tx-gap	2472.000	20.0	20.000000	FAIL
Adaptivity	2472.000	20.0	20.000000	PASS

RF output power, Duty Cycle, Tx-sequence, Tx-gap (2412 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Definition: The RF output power is defined as the mean equivalent isotropic radiated power (e.i.r.p.) of the equipment during a transmission burst.
Duty Cycle is defined as the ratio of the total transmitter 'on'-time to the observation period.
Tx-sequence is defined as a period in time during which a single or multiple transmissions may occur and which shall be followed by a Tx-gap.
Tx-gap is defined as a period in time during which no transmissions occur.
The Medium Utilization (MU) factor is a measure to quantify the amount of resources (Power and Time) used by non-adaptive equipment.

RF Outputpower

Max Burst EIRP (dBm)	Limit Max (dBm)	Max Burst RMS (dBm)	Result
22.6	20.0	20.6	FAIL

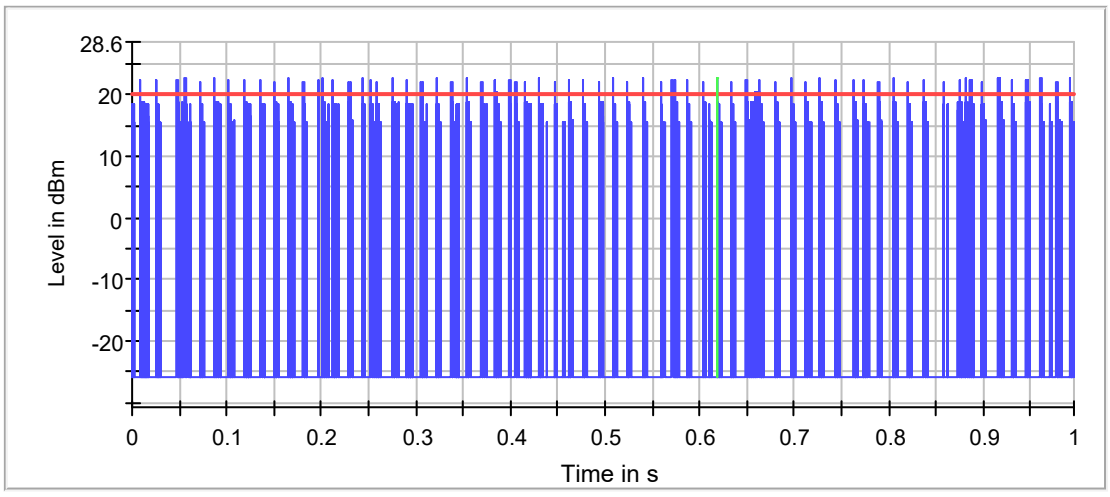
DutyCycle

DutyCycle (%)	Limit Max (%)	Result
10.546	---	PASS

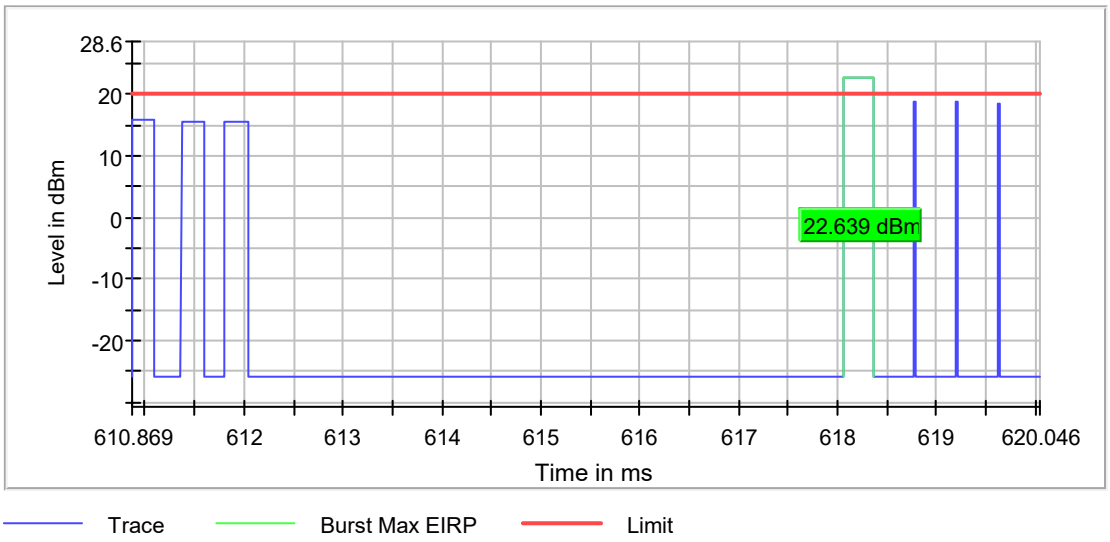
MediumUtilization

MediumUtilization (%)	Limit Max (%)	Result
7.516	---	PASS

Trace



Trace Zoom



OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	**1.000 s**	**1.000 s**
Points	**1000000**	**1000000**
Time resolution	**1.000 µs**	**1.000 µs**

Adaptivity (2412 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Summary

Result	Threshold (dBm)
PASS	0.6

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
22.295	10000.000	2.358	13.000	0.029	7189	0.033	23.626

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
22.295	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
8.582	10.000	PASS	50.000

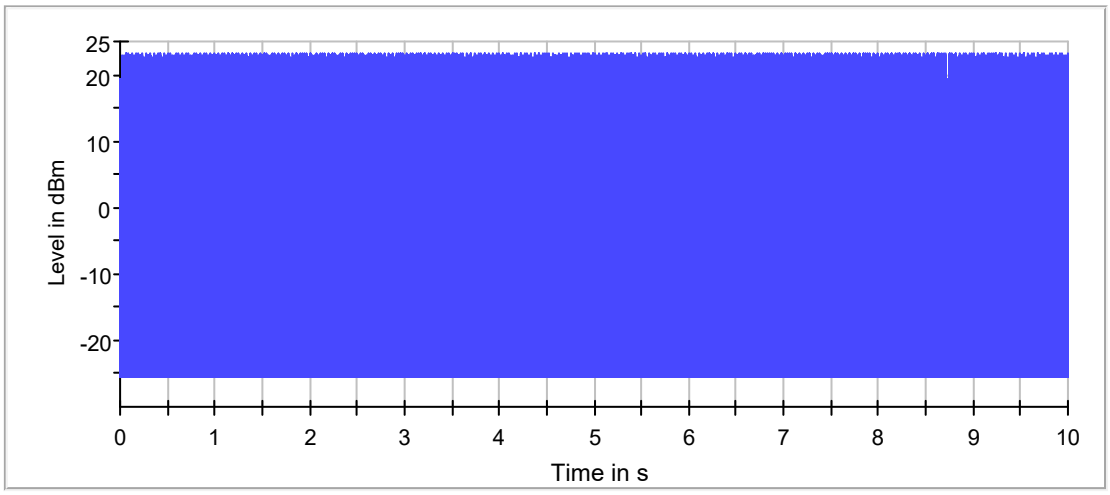
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
8.582	3974.267	4024.267	1000.000

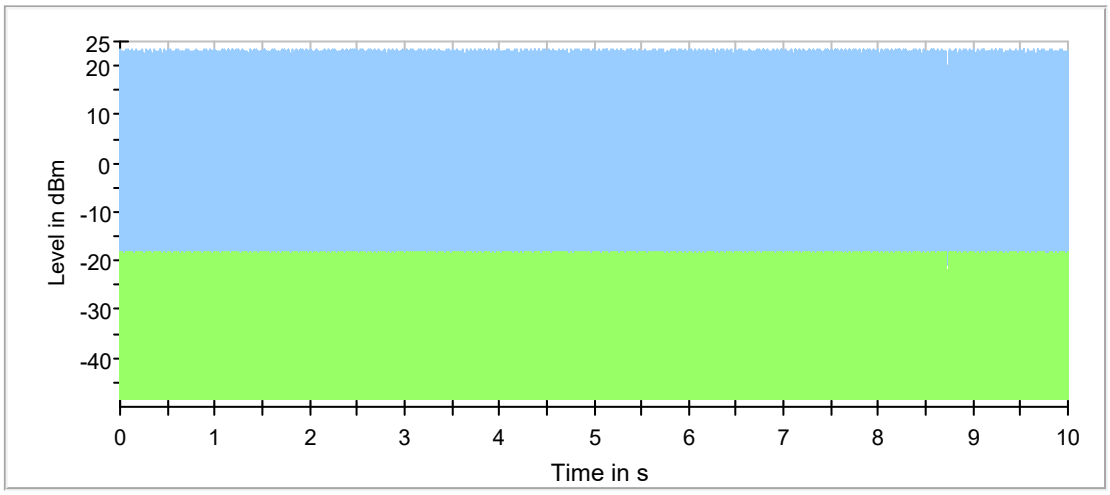
(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
8.582	62000.000	13.000	1013.000	121987.000

Normal Operation

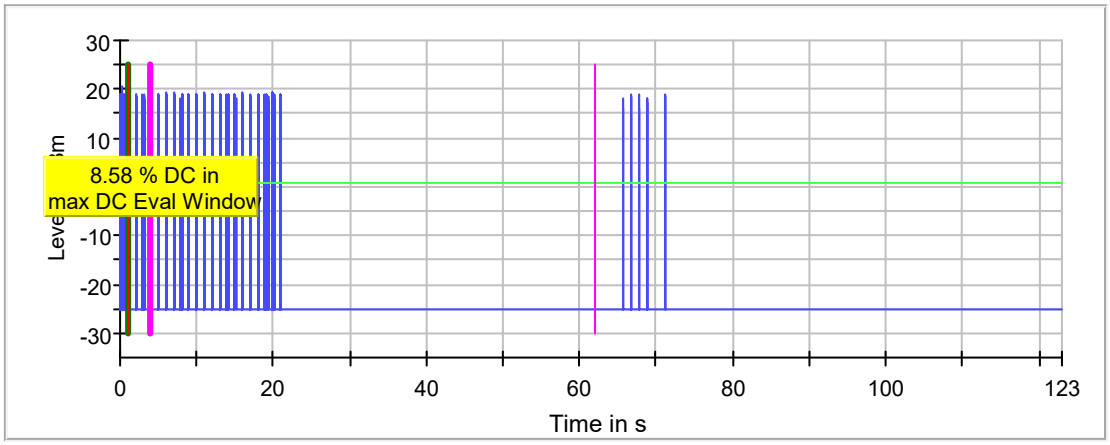


Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Spectrum Analyzer Normal Operation

Setting	Instrument Value	Target Value
Center Frequency	2.41200 GHz	2.41200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	10.000 s	10.000 s
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP settings for Normal Operation

Setting	Instrument Value	Target Value
Measurement Time	10.000 s	10.000 s
Tracepoints	10000000	10000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Signal Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Spectrum Analyzer Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Center Frequency	2.41200 GHz	2.41200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	123.000 s	123.000 s
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	1.000 s	1.000 s

OSP settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Measurement Time	123.000 s	123.000 s
Tracepoints	123000000	123000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value
Frequency	2.41200 GHz
Level	-19.267 dBm (including uncertainty compensation)
Level at DUT	-53.859 dBm (including uncertainty compensation)
Waveform	AWGN_30M
Level per MHz	-35.337 dBm/MHz (including uncertainty compensation)
Level per MHz at DUT	-69.929 dBm/MHz (including uncertainty compensation)
Attenuation	34.592 dB
RF output	On

(continuation of the "Vector Generator settings for Reaction on Interferer and Blocker" table from column 2 ...)

Setting	Target Value

Frequency	**2.41200 GHz**
Level	**---**
Level at DUT	**---**
Waveform	**AWGN_30M**
Level per MHz	**-35.337 dBm/MHz (including uncertainty compensation)**
Level per MHz at DUT	**-69.929 dBm/MHz (including uncertainty compensation)**
Attenuation	**34.592 dB**
RF output	**On**

Signal Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Frequency	**2.48850 GHz**	**2.48850 GHz**
Level	**-0.542 dBm**	**-0.109 dBm**
Level at DUT	**-35.433 dBm**	**-35.000 dBm**
RF output	**Off**	**On**

RF output power, Duty Cycle, Tx-sequence, Tx-gap (2472 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Definition: The RF output power is defined as the mean equivalent isotropic radiated power (e.i.r.p.) of the equipment during a transmission burst.
Duty Cycle is defined as the ratio of the total transmitter 'on'-time to the observation period.
Tx-sequence is defined as a period in time during which a single or multiple transmissions may occur and which shall be followed by a Tx-gap.
Tx-gap is defined as a period in time during which no transmissions occur.
The Medium Utilization (MU) factor is a measure to quantify the amount of resources (Power and Time) used by non-adaptive equipment.

RF Outputpower

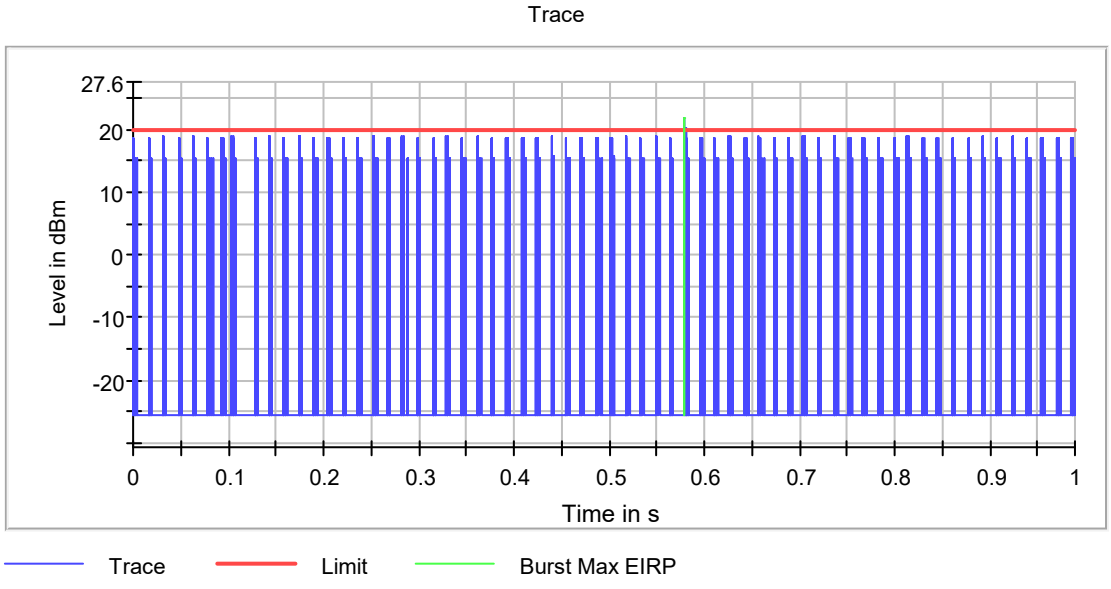
Max Burst EIRP (dBm)	Limit Max (dBm)	Max Burst RMS (dBm)	Result
22.0	20.0	20.0	FAIL

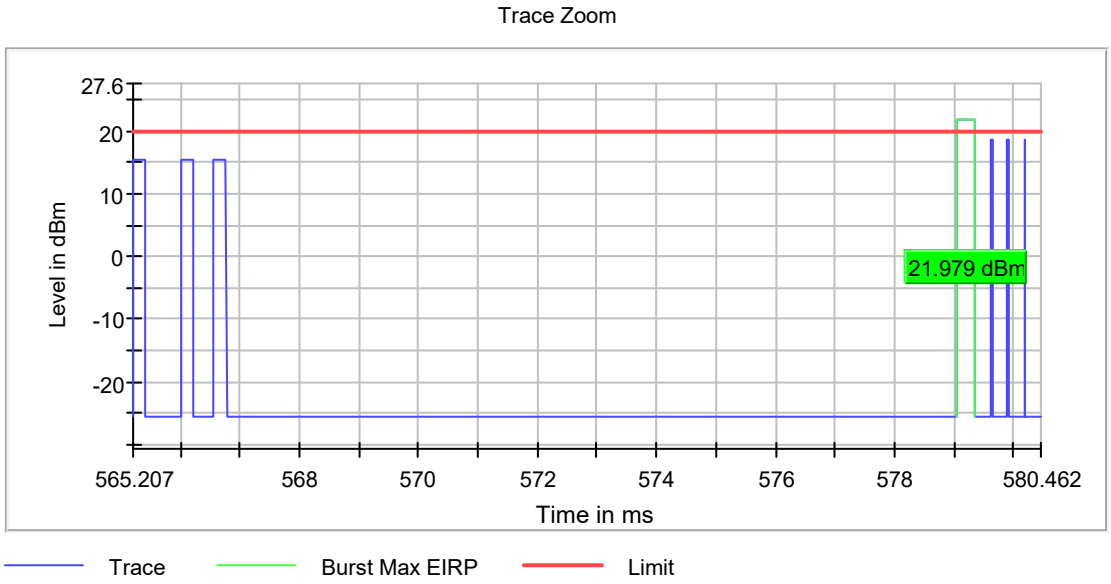
DutyCycle

DutyCycle (%)	Limit Max (%)	Result
6.251	---	PASS

MediumUtilization

MediumUtilization (%)	Limit Max (%)	Result
2.544	---	PASS





OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	**1.000 s**	**1.000 s**
Points	**1000000**	**1000000**
Time resolution	**1.000 µs**	**1.000 µs**

Adaptivity (2472 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Summary

Result	Threshold (dBm)
PASS	0.0

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
16.279	10000.000	0.305	13.000	0.029	5155	0.033	16.863

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
16.279	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
4.410	10.000	PASS	50.000

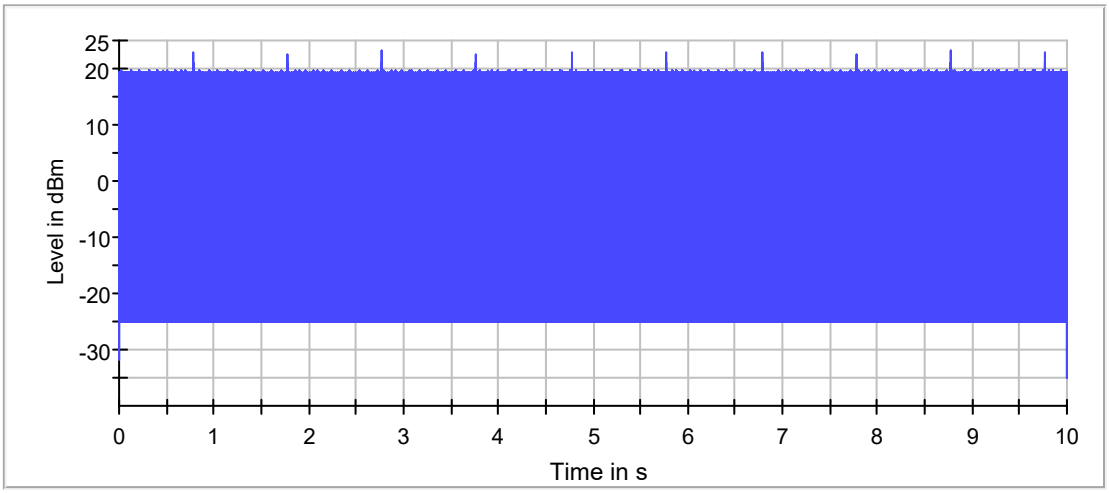
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
4.410	8949.390	8999.390	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

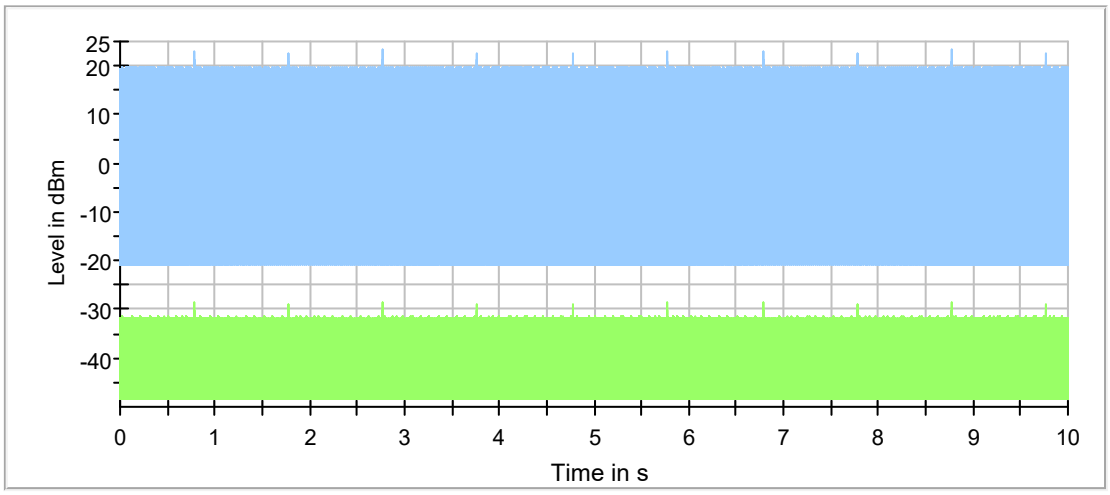
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
4.410	62000.000	13.000	1013.000	121987.000

Normal Operation



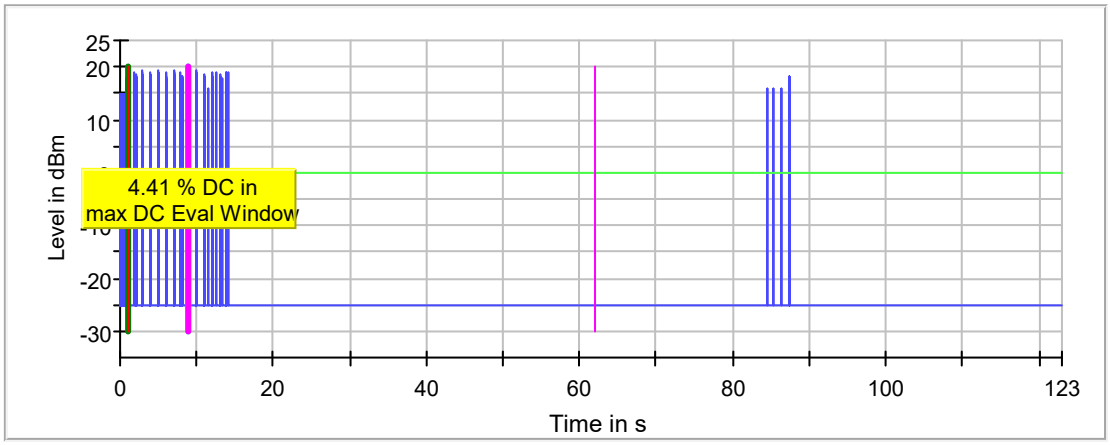
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Spectrum Analyzer Normal Operation

Setting	Instrument Value	Target Value
Center Frequency	2.47200 GHz	2.47200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	10.000 s	10.000 s
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP settings for Normal Operation

Setting	Instrument Value	Target Value
Measurement Time	10.000 s	10.000 s
Tracepoints	10000000	10000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Signal Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Spectrum Analyzer Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Center Frequency	2.47200 GHz	2.47200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	123.000 s	123.000 s
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	1.000 s	1.000 s

OSP settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Measurement Time	123.000 s	123.000 s
Tracepoints	123000000	123000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value
Frequency	2.47200 GHz
Level	-18.314 dBm (including uncertainty compensation)
Level at DUT	-53.199 dBm (including uncertainty compensation)
Waveform	AWGN_30M
Level per MHz	-34.384 dBm/MHz (including uncertainty compensation)
Level per MHz at DUT	-69.269 dBm/MHz (including uncertainty compensation)
Attenuation	34.885 dB
RF output	On

(continuation of the "Vector Generator settings for Reaction on Interferer and Blocker" table from column 2 ...)

Setting	Target Value

Frequency	**2.47200 GHz**
Level	**---**
Level at DUT	**---**
Waveform	**AWGN_30M**
Level per MHz	**-34.384 dBm/MHz (including uncertainty compensation)**
Level per MHz at DUT	**-69.269 dBm/MHz (including uncertainty compensation)**
Attenuation	**34.885 dB**
RF output	**On**

Signal Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Frequency	**2.39500 GHz**	**2.39500 GHz**
Level	**-0.109 dBm**	**-0.542 dBm**
Level at DUT	**-34.567 dBm**	**-35.000 dBm**
RF output	**Off**	**On**

DUT Information

EUT Name:	Smart Power Meter Switch
Model:	THR320D
Test Mode:	AD
Sample No:	A003291051-001
Test Voltage::	DC 5V
Remark:	Temp 24.5 Humi:51%
Test Standard:	EN 300328 2.2.2
Tested By:	Wenyi Yan
Reviewed By:	Terry Yin

Frequencies

2407.5MHz (2407.5 MHz)	WLAN CH 1 (2412 MHz)	2412.5MHz (2412.5 MHz)
WLAN CH 3 (2422 MHz)	2422.5MHz (2422.5 MHz)	WLAN CH 4 (2427 MHz)
2427.5MHz (2427.5 MHz)	2447.5MHz (2447.5 MHz)	WLAN CH 9 (2452 MHz)
2452.5MHz (2452.5 MHz)	WLAN CH 10 (2457 MHz)	WLAN CH 11 (2462 MHz)
2462.5MHz (2462.5 MHz)	WLAN CH 12 (2467 MHz)	2467.5MHz (2467.5 MHz)
WLAN CH 13 (2472 MHz)	2472.5 MHz (2472.5 MHz)	2409.5MHz (2409.5 MHz)
2405.5MHz (2405.5 MHz)	2477.5MHz (2477.5 MHz)	2410.5MHz (2410.5 MHz)
2420.5MHz (2420.5 MHz)	2419.5MHz (2419.5 MHz)	

Bandwidths

802.11b_20 MHz (20 MHz)	802.11g_20 MHz (20 MHz)	802.11n_20 MHz_HT20 (20 MHz)
802.11n_40 MHz_HT40 (40 MHz)	10 MHz (10 MHz)	20MHz (20 MHz)
40MHz (40 MHz)	802.11ax_20 MHz (20 MHz)	802.11ax_40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

Powerstep name (value)	Beamforming gain table names
20.000 dBm (20 dBm)	---

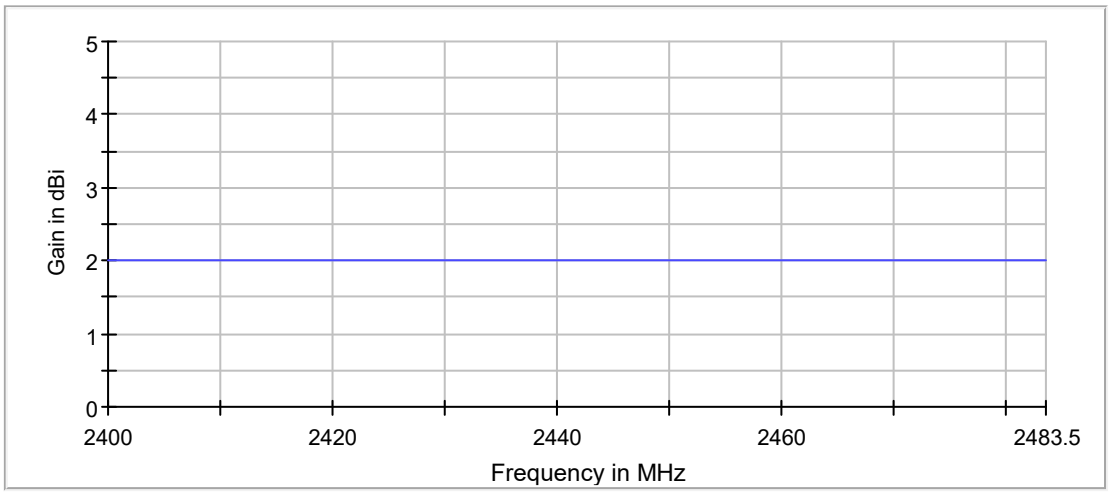
Gain Tables

Powerstep name (value)	Gain table names
20.000 dBm (20 dBm)	Port 1: 2;

DUT Settings

No. of transmission chains	1
Modulation	other
Adaptive	Yes
Short Control Signaling	Yes
LBT	Yes
Equipment Mode	Load Based
Channel Occupancy Time	13 ms
CCA	18 µs
Medical Device reverse compatibility mode	No
Receiver category	1

Gaintable 2



Gaintable: 2

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.148::inst0::instr), SN 1321.3008K39/101441, FW 3.40
Vector Generator:	VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.149::inst0::instr), SN 263301, FW 4.15.125.40
Generator:	SMB100A (SMB100A) @ VISA (ADR TCPIP::192.168.48.150::inst0::instr), SN 115186, FW 3.20.390.24 / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::inst0::instr), SN 1527.1144. /, FW 1.27.0.0

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
RF output power, Duty Cycle, Tx-sequence, Tx-gap	2412.000	20.0	20.000000	FAIL
Adaptivity	2412.000	20.0	20.000000	PASS
RF output power, Duty Cycle, Tx-sequence, Tx-gap	2472.000	20.0	20.000000	FAIL
Adaptivity	2472.000	20.0	20.000000	PASS

RF output power, Duty Cycle, Tx-sequence, Tx-gap (2412 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Definition: The RF output power is defined as the mean equivalent isotropic radiated power (e.i.r.p.) of the equipment during a transmission burst.
Duty Cycle is defined as the ratio of the total transmitter 'on'-time to the observation period.
Tx-sequence is defined as a period in time during which a single or multiple transmissions may occur and which shall be followed by a Tx-gap.
Tx-gap is defined as a period in time during which no transmissions occur.
The Medium Utilization (MU) factor is a measure to quantify the amount of resources (Power and Time) used by non-adaptive equipment.

RF Outputpower

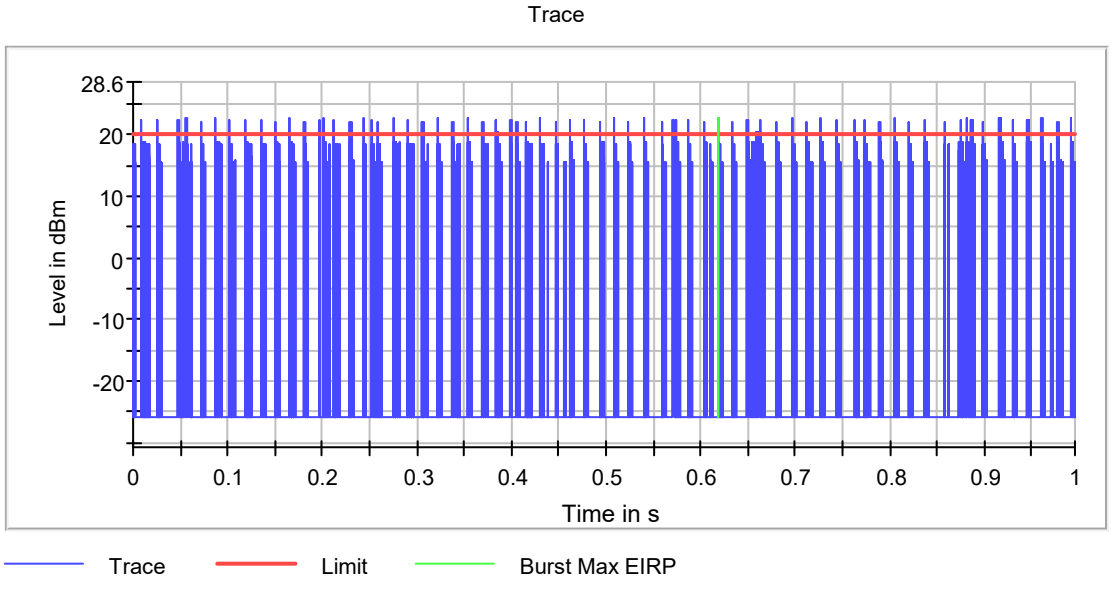
Max Burst EIRP (dBm)	Limit Max (dBm)	Max Burst RMS (dBm)	Result
22.6	20.0	20.6	FAIL

DutyCycle

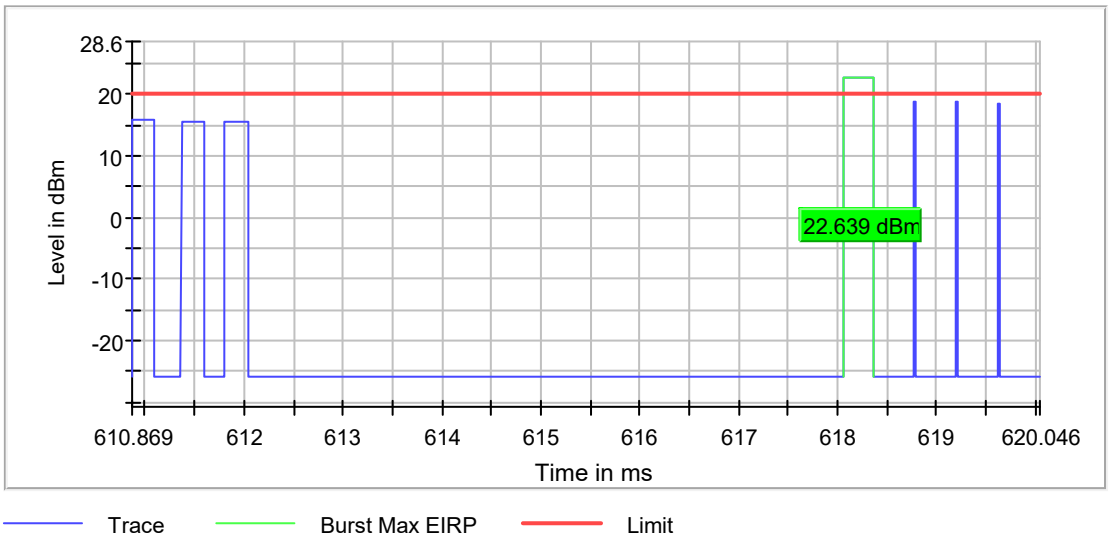
DutyCycle (%)	Limit Max (%)	Result
10.546	---	PASS

MediumUtilization

MediumUtilization (%)	Limit Max (%)	Result
7.516	---	PASS



Trace Zoom



OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	**1.000 s**	**1.000 s**
Points	**1000000**	**1000000**
Time resolution	**1.000 µs**	**1.000 µs**

Adaptivity (2412 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Summary

Result	Threshold (dBm)
PASS	0.6

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
22.295	10000.000	2.358	13.000	0.029	7189	0.033	23.626

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
22.295	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
8.582	10.000	PASS	50.000

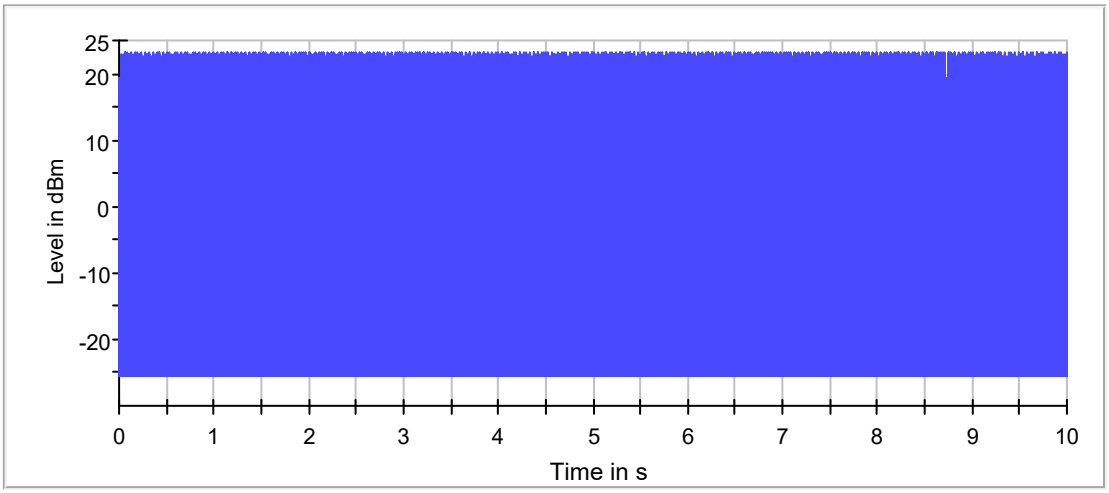
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
8.582	3974.267	4024.267	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

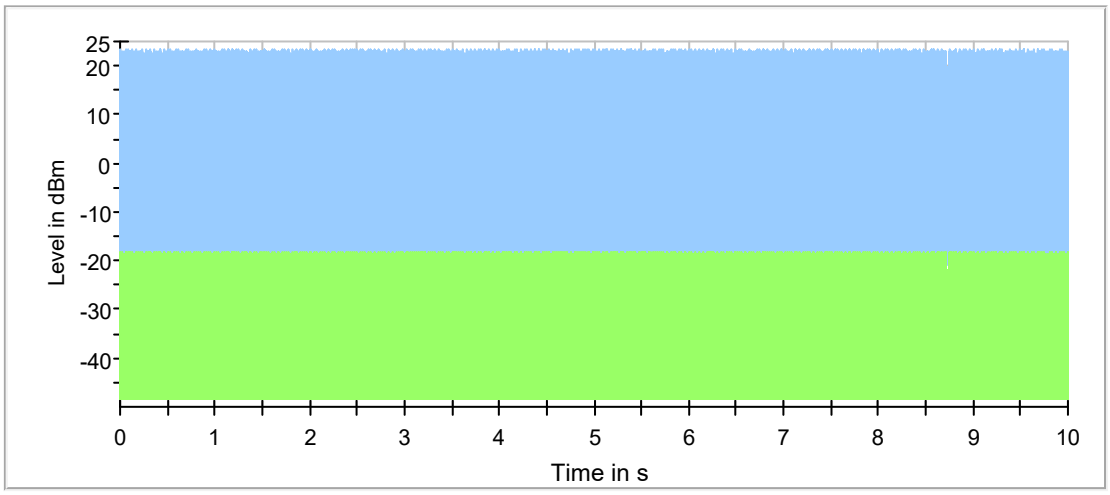
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
8.582	62000.000	13.000	1013.000	121987.000

Normal Operation



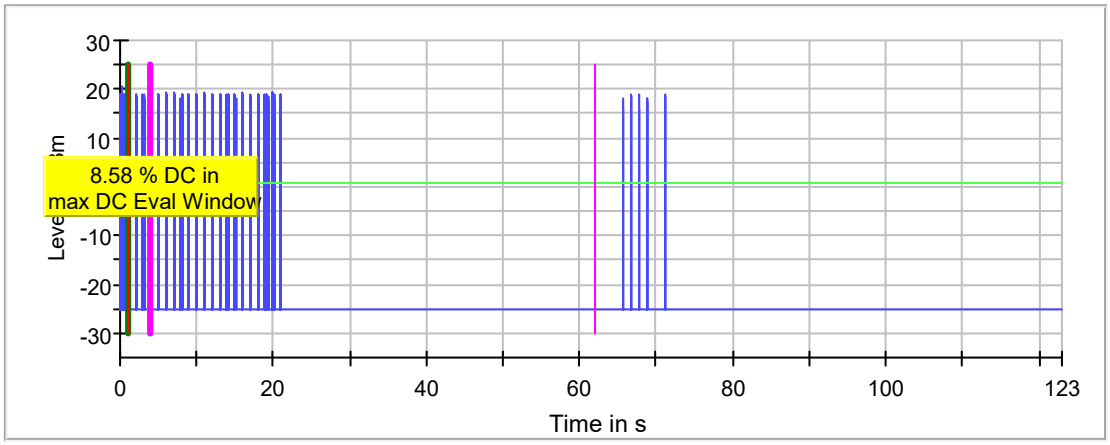
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Spectrum Analyzer Normal Operation

Setting	Instrument Value	Target Value
Center Frequency	2.41200 GHz	2.41200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	10.000 s	10.000 s
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP settings for Normal Operation

Setting	Instrument Value	Target Value
Measurement Time	10.000 s	10.000 s
Tracepoints	10000000	10000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Signal Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Spectrum Analyzer Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Center Frequency	2.41200 GHz	2.41200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	123.000 s	123.000 s
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	1.000 s	1.000 s

OSP settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Measurement Time	123.000 s	123.000 s
Tracepoints	123000000	123000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value
Frequency	2.41200 GHz
Level	-19.267 dBm (including uncertainty compensation)
Level at DUT	-53.859 dBm (including uncertainty compensation)
Waveform	AWGN_30M
Level per MHz	-35.337 dBm/MHz (including uncertainty compensation)
Level per MHz at DUT	-69.929 dBm/MHz (including uncertainty compensation)
Attenuation	34.592 dB
RF output	On

(continuation of the "Vector Generator settings for Reaction on Interferer and Blocker" table from column 2 ...)

Setting	Target Value

Frequency	**2.41200 GHz**
Level	**---**
Level at DUT	**---**
Waveform	**AWGN_30M**
Level per MHz	**-35.337 dBm/MHz (including uncertainty compensation)**
Level per MHz at DUT	**-69.929 dBm/MHz (including uncertainty compensation)**
Attenuation	**34.592 dB**
RF output	**On**

Signal Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Frequency	**2.48850 GHz**	**2.48850 GHz**
Level	**-0.542 dBm**	**-0.109 dBm**
Level at DUT	**-35.433 dBm**	**-35.000 dBm**
RF output	**Off**	**On**

RF output power, Duty Cycle, Tx-sequence, Tx-gap (2472 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Definition: The RF output power is defined as the mean equivalent isotropic radiated power (e.i.r.p.) of the equipment during a transmission burst.
Duty Cycle is defined as the ratio of the total transmitter 'on'-time to the observation period.
Tx-sequence is defined as a period in time during which a single or multiple transmissions may occur and which shall be followed by a Tx-gap.
Tx-gap is defined as a period in time during which no transmissions occur.
The Medium Utilization (MU) factor is a measure to quantify the amount of resources (Power and Time) used by non-adaptive equipment.

RF Outputpower

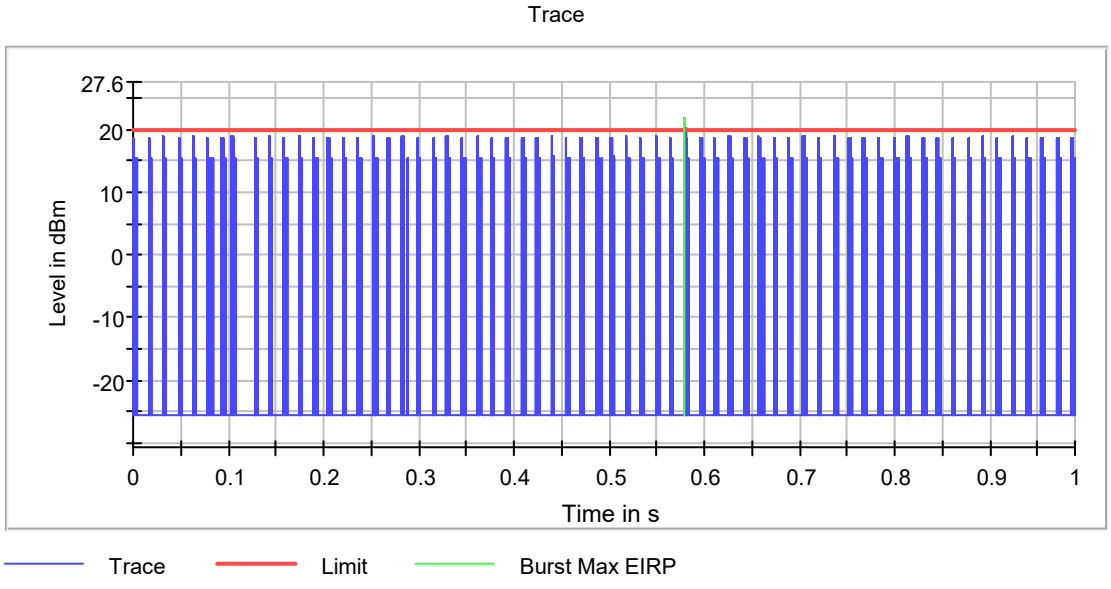
Max Burst EIRP (dBm)	Limit Max (dBm)	Max Burst RMS (dBm)	Result
22.0	20.0	20.0	FAIL

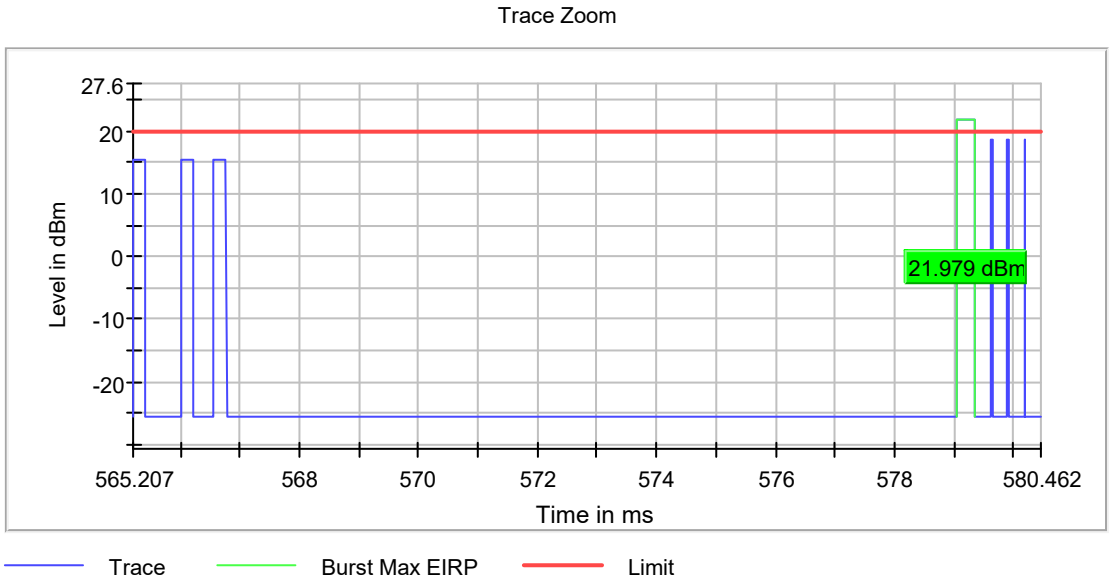
DutyCycle

DutyCycle (%)	Limit Max (%)	Result
6.251	---	PASS

MediumUtilization

MediumUtilization (%)	Limit Max (%)	Result
2.544	---	PASS





OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	**1.000 s**	**1.000 s**
Points	**1000000**	**1000000**
Time resolution	**1.000 µs**	**1.000 µs**

Adaptivity (2472 MHz; 20.000 dBm; 802.11n_20 MHz_HT20)

Summary

Result	Threshold (dBm)
PASS	0.0

Normal Operation

DutyCycle DUT (all ports) (%)	Monitoring Length (ms)	COT Max (ms)	Limit Max (ms)	COT Min (ms)	Number of COTs	CCA Time Min (ms)	CCA Time Max (ms)
16.279	10000.000	0.305	13.000	0.029	5155	0.033	16.863

(continuation of the "Normal Operation" table from column 8 ...)

DutyCycle DUT (all ports) (%)	CCA Time Limit Min (ms)	Result
16.279	0.018	PASS

Reaction on Interferer and Blocker

DC in max DC Evaluation Window (%)	Limit Max (%)	Result	Length of max DC Evaluation Window (ms)
4.410	10.000	PASS	50.000

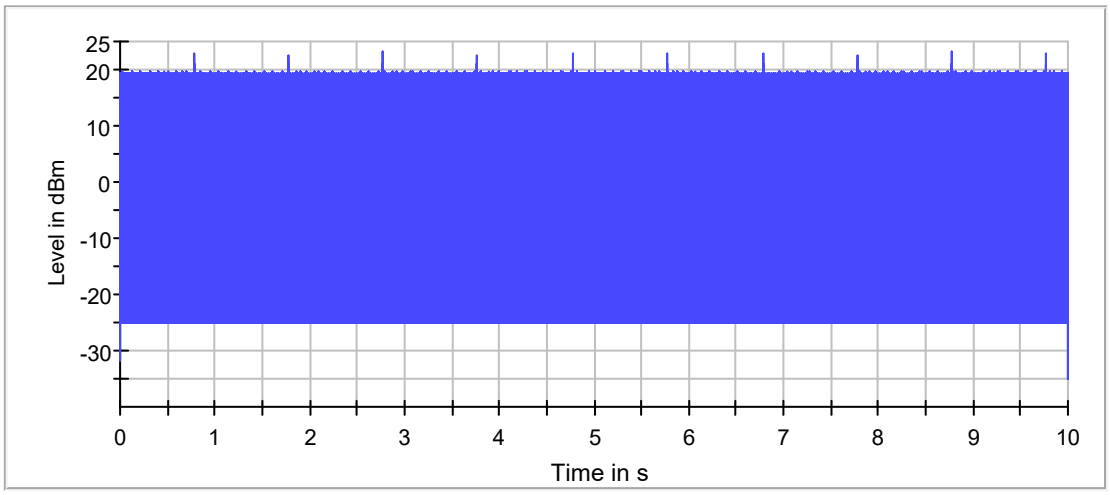
(continuation of the "Reaction on Interferer and Blocker" table from column 4 ...)

DC in max DC Evaluation Window (%)	Start of max DC Evaluation Window (ms)	Stop of max DC Evaluation Window (ms)	Interferer On (ms)
4.410	8949.390	8999.390	1000.000

(continuation of the "Reaction on Interferer and Blocker" table from column 7 ...)

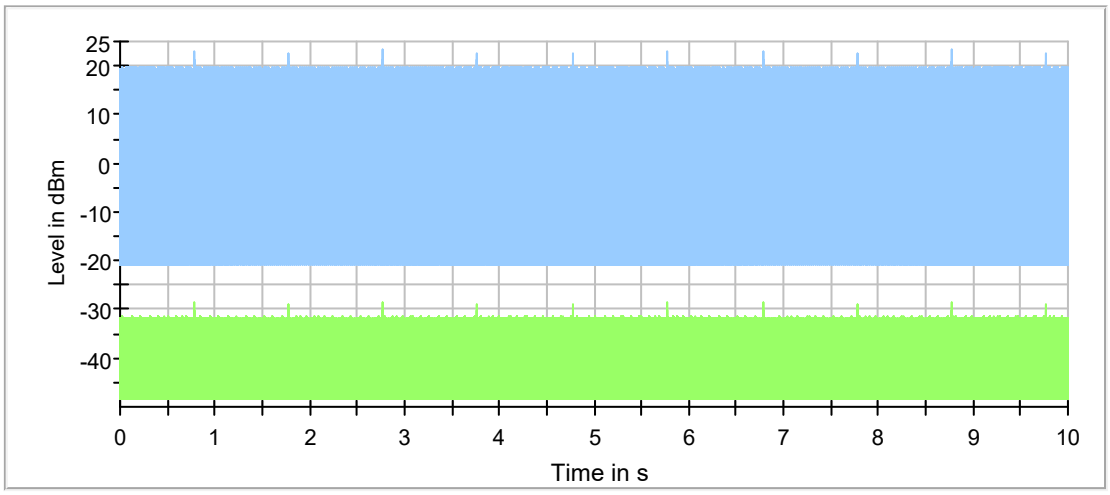
DC in max DC Evaluation Window (%)	Blocker On (ms)	Monitoring Offset (ms)	Monitoring Start (ms)	Monitoring Length (ms)
4.410	62000.000	13.000	1013.000	121987.000

Normal Operation



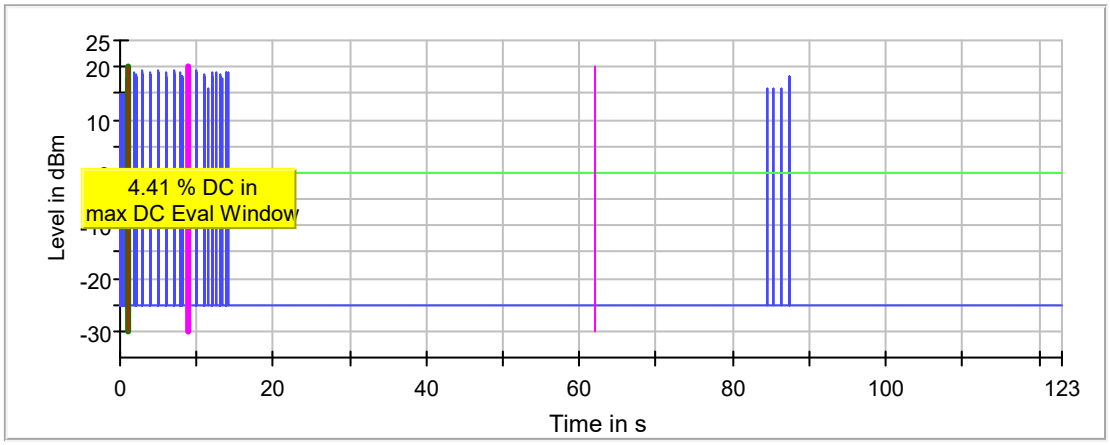
Trace

Normal Operation_Comp_DUT



DUT Companion

Interferer on



Trace
Trigger
stop of evaluation
Threshold
Blocker
start of monitoring
start of evaluation

Spectrum Analyzer Normal Operation

Setting	Instrument Value	Target Value
Center Frequency	2.47200 GHz	2.47200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	10.000 s	10.000 s
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

OSP settings for Normal Operation

Setting	Instrument Value	Target Value
Measurement Time	10.000 s	10.000 s
Tracepoints	10000000	10000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Signal Generator settings for Normal Operation

Setting	Instrument Value	Target Value
RF output	Off	Off

Spectrum Analyzer Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Center Frequency	2.47200 GHz	2.47200 GHz
Span	ZeroSpan	ZeroSpan
RBW	10.000 MHz	<= 20.000 MHz
VBW	10.000 MHz	~ 30.000 MHz
SweepPoints	30001	~ 30001
Sweeptime	123.000 s	123.000 s
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	1.000 s	1.000 s

OSP settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Measurement Time	123.000 s	123.000 s
Tracepoints	123000000	123000000
Time resolution	1.000 µs	1.000 µs
Detector	RMS	RMS

Vector Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value
Frequency	2.47200 GHz
Level	-18.314 dBm (including uncertainty compensation)
Level at DUT	-53.199 dBm (including uncertainty compensation)
Waveform	AWGN_30M
Level per MHz	-34.384 dBm/MHz (including uncertainty compensation)
Level per MHz at DUT	-69.269 dBm/MHz (including uncertainty compensation)
Attenuation	34.885 dB
RF output	On

(continuation of the "Vector Generator settings for Reaction on Interferer and Blocker" table from column 2 ...)

Setting	Target Value

Frequency	**2.47200 GHz**
Level	**---**
Level at DUT	**---**
Waveform	**AWGN_30M**
Level per MHz	**-34.384 dBm/MHz (including uncertainty compensation)**
Level per MHz at DUT	**-69.269 dBm/MHz (including uncertainty compensation)**
Attenuation	**34.885 dB**
RF output	**On**

Signal Generator settings for Reaction on Interferer and Blocker

Setting	Instrument Value	Target Value
Frequency	**2.39500 GHz**	**2.39500 GHz**
Level	**-0.109 dBm**	**-0.542 dBm**
Level at DUT	**-34.567 dBm**	**-35.000 dBm**
RF output	**Off**	**On**

5 Appendix A.5 : Tx unwanted emissions in the out-of-band domain

TestMode	Antenna	Frequency[MHz]	Freq. [MHz]	Level[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	2374.194	-49.83	-20.00	PASS
			2374.347	-49.87	-20.00	PASS
			2375.347	-50.05	-20.00	PASS
			2376.347	-49.97	-20.00	PASS
			2377.347	-50.07	-20.00	PASS
			2378.347	-50.16	-20.00	PASS
			2379.347	-50.07	-20.00	PASS
			2380.347	-50.00	-20.00	PASS
			2381.347	-49.92	-20.00	PASS
			2382.347	-49.79	-20.00	PASS
			2383.347	-49.69	-20.00	PASS
			2384.347	-49.56	-20.00	PASS
			2385.347	-49.33	-20.00	PASS
			2386.347	-49.17	-20.00	PASS
			2387.347	-49.11	-10.00	PASS
			2387.5	-49.08	-10.00	PASS
			2388.5	-49.00	-10.00	PASS
			2389.5	-48.77	-10.00	PASS
			2390.5	-48.46	-10.00	PASS
			2391.5	-48.19	-10.00	PASS
			2392.5	-48.12	-10.00	PASS
			2393.5	-47.66	-10.00	PASS
			2394.5	-43.46	-10.00	PASS
			2395.5	-38.84	-10.00	PASS
			2396.5	-35.49	-10.00	PASS
			2397.5	-34.36	-10.00	PASS
			2398.5	-33.93	-10.00	PASS
			2399.5	-33.52	-10.00	PASS
			2484	-50.15	-10.00	PASS
			2485	-50.12	-10.00	PASS
			2486	-50.05	-10.00	PASS
			2487	-49.98	-10.00	PASS
			2488	-49.90	-10.00	PASS
			2489	-49.78	-10.00	PASS
			2490	-49.68	-10.00	PASS
			2491	-49.59	-10.00	PASS
			2492	-49.58	-10.00	PASS
			2493	-49.52	-10.00	PASS
			2494	-49.57	-10.00	PASS
			2495	-49.58	-10.00	PASS
			2496	-49.63	-10.00	PASS
			2496.153	-49.66	-10.00	PASS
			2497.153	-49.74	-20.00	PASS
			2498.153	-49.78	-20.00	PASS
			2499.153	-49.82	-20.00	PASS
			2500.153	-49.55	-20.00	PASS
			2501.153	-49.51	-20.00	PASS
			2502.153	-49.53	-20.00	PASS
			2503.153	-49.53	-20.00	PASS
			2504.153	-49.55	-20.00	PASS
			2505.153	-49.59	-20.00	PASS
			2506.153	-49.59	-20.00	PASS
			2507.153	-49.61	-20.00	PASS
			2508.153	-49.65	-20.00	PASS

			2509.153	-49.68	-20.00	PASS
			2509.306	-49.69	-20.00	PASS
		2472	2374.266	-51.22	-20.00	PASS
			2374.383	-51.19	-20.00	PASS
			2375.383	-51.18	-20.00	PASS
			2376.383	-51.17	-20.00	PASS
			2377.383	-51.15	-20.00	PASS
			2378.383	-51.15	-20.00	PASS
			2379.383	-51.10	-20.00	PASS
			2380.383	-51.07	-20.00	PASS
			2381.383	-51.06	-20.00	PASS
			2382.383	-51.03	-20.00	PASS
			2383.383	-50.98	-20.00	PASS
			2384.383	-50.96	-20.00	PASS
			2385.383	-50.88	-20.00	PASS
			2386.383	-50.76	-20.00	PASS
			2387.383	-50.55	-10.00	PASS
			2387.5	-50.55	-10.00	PASS
			2388.5	-50.35	-10.00	PASS
			2389.5	-50.20	-10.00	PASS
			2390.5	-50.08	-10.00	PASS
			2391.5	-50.06	-10.00	PASS
			2392.5	-49.96	-10.00	PASS
			2393.5	-49.98	-10.00	PASS
			2394.5	-49.96	-10.00	PASS
			2395.5	-50.11	-10.00	PASS
			2396.5	-50.30	-10.00	PASS
			2397.5	-50.40	-10.00	PASS
			2398.5	-50.47	-10.00	PASS
			2399.5	-50.41	-10.00	PASS
			2484	-36.25	-10.00	PASS
			2485	-37.60	-10.00	PASS
			2486	-38.61	-10.00	PASS
			2487	-40.71	-10.00	PASS
			2488	-42.44	-10.00	PASS
			2489	-46.00	-10.00	PASS
			2490	-47.63	-10.00	PASS
			2491	-47.59	-10.00	PASS
			2492	-47.45	-10.00	PASS
			2493	-47.71	-10.00	PASS
			2494	-47.95	-10.00	PASS
			2495	-48.09	-10.00	PASS
			2496	-47.99	-10.00	PASS
			2496.117	-48.01	-10.00	PASS
			2497.117	-47.96	-20.00	PASS
			2498.117	-48.09	-20.00	PASS
			2499.117	-48.27	-20.00	PASS
			2500.117	-47.98	-20.00	PASS
			2501.117	-48.09	-20.00	PASS
			2502.117	-48.21	-20.00	PASS
			2503.117	-48.31	-20.00	PASS
			2504.117	-48.40	-20.00	PASS
			2505.117	-48.48	-20.00	PASS
			2506.117	-48.56	-20.00	PASS
			2507.117	-48.36	-20.00	PASS
			2508.117	-48.11	-20.00	PASS
			2509.117	-48.22	-20.00	PASS
			2509.234	-48.27	-20.00	PASS
11G	Ant1	2412	2366.844	-50.63	-20.00	PASS
			2367.188	-50.60	-20.00	PASS
			2367.844	-50.58	-20.00	PASS
			2368.844	-50.48	-20.00	PASS

			2369.844	-50.45	-20.00	PASS
			2370.844	-50.34	-20.00	PASS
			2371.844	-50.31	-20.00	PASS
			2372.844	-50.21	-20.00	PASS
			2373.844	-50.13	-20.00	PASS
			2374.844	-49.78	-20.00	PASS
			2375.844	-49.56	-20.00	PASS
			2376.844	-49.15	-20.00	PASS
			2377.844	-48.38	-20.00	PASS
			2378.844	-47.70	-20.00	PASS
			2379.844	-46.90	-20.00	PASS
			2380.844	-46.99	-20.00	PASS
			2381.844	-46.15	-20.00	PASS
			2382.844	-45.28	-20.00	PASS
			2383.5	-44.57	-10.00	PASS
			2383.844	-44.36	-10.00	PASS
			2384.5	-44.36	-10.00	PASS
			2385.5	-43.77	-10.00	PASS
			2386.5	-43.57	-10.00	PASS
			2387.5	-42.86	-10.00	PASS
			2388.5	-40.53	-10.00	PASS
			2389.5	-35.85	-10.00	PASS
			2390.5	-34.14	-10.00	PASS
			2391.5	-30.57	-10.00	PASS
			2392.5	-30.19	-10.00	PASS
			2393.5	-29.94	-10.00	PASS
			2394.5	-28.25	-10.00	PASS
			2395.5	-27.30	-10.00	PASS
			2396.5	-26.17	-10.00	PASS
			2397.5	-24.49	-10.00	PASS
			2398.5	-23.58	-10.00	PASS
			2399.5	-22.83	-10.00	PASS
			2484	-49.97	-10.00	PASS
			2485	-49.91	-10.00	PASS
			2486	-49.89	-10.00	PASS
			2487	-49.85	-10.00	PASS
			2488	-49.84	-10.00	PASS
			2489	-49.83	-10.00	PASS
			2490	-49.75	-10.00	PASS
			2491	-49.69	-10.00	PASS
			2492	-49.73	-10.00	PASS
			2493	-49.61	-10.00	PASS
			2494	-49.62	-10.00	PASS
			2495	-49.58	-10.00	PASS
			2496	-49.57	-10.00	PASS
			2497	-49.55	-10.00	PASS
			2498	-49.57	-10.00	PASS
			2499	-49.56	-10.00	PASS
			2499.656	-49.57	-10.00	PASS
			2500	-49.60	-10.00	PASS
			2500.656	-49.39	-20.00	PASS
			2501.656	-49.41	-20.00	PASS
			2502.656	-49.43	-20.00	PASS
			2503.656	-49.45	-20.00	PASS
			2504.656	-49.46	-20.00	PASS
			2505.656	-49.49	-20.00	PASS
			2506.656	-49.51	-20.00	PASS
			2507.656	-49.55	-20.00	PASS
			2508.656	-49.59	-20.00	PASS
			2509.656	-49.61	-20.00	PASS
			2510.656	-49.64	-20.00	PASS
			2511.656	-49.69	-20.00	PASS

			2512.656	-49.73	-20.00	PASS
			2513.656	-49.76	-20.00	PASS
			2514.656	-49.81	-20.00	PASS
			2515.656	-49.83	-20.00	PASS
			2516.312	-49.86	-20.00	PASS
			2516.656	-49.89	-20.00	PASS
		2472	2366.832	-51.33	-20.00	PASS
			2367.164	-51.33	-20.00	PASS
			2367.832	-51.30	-20.00	PASS
			2368.832	-51.30	-20.00	PASS
			2369.832	-51.27	-20.00	PASS
			2370.832	-51.25	-20.00	PASS
			2371.832	-51.25	-20.00	PASS
			2372.832	-51.31	-20.00	PASS
			2373.832	-51.16	-20.00	PASS
			2374.832	-51.16	-20.00	PASS
			2375.832	-51.14	-20.00	PASS
			2376.832	-51.10	-20.00	PASS
			2377.832	-51.10	-20.00	PASS
			2378.832	-51.09	-20.00	PASS
			2379.832	-51.06	-20.00	PASS
			2380.832	-51.03	-20.00	PASS
			2381.832	-50.99	-20.00	PASS
			2382.832	-50.97	-20.00	PASS
			2383.5	-50.86	-10.00	PASS
			2383.832	-50.77	-10.00	PASS
			2384.5	-50.60	-10.00	PASS
			2385.5	-50.56	-10.00	PASS
			2386.5	-50.51	-10.00	PASS
			2387.5	-50.48	-10.00	PASS
			2388.5	-50.46	-10.00	PASS
			2389.5	-50.42	-10.00	PASS
			2390.5	-50.34	-10.00	PASS
			2391.5	-50.34	-10.00	PASS
			2392.5	-50.30	-10.00	PASS
			2393.5	-50.25	-10.00	PASS
			2394.5	-50.20	-10.00	PASS
			2395.5	-50.18	-10.00	PASS
			2396.5	-50.15	-10.00	PASS
			2397.5	-50.09	-10.00	PASS
			2398.5	-50.12	-10.00	PASS
			2399.5	-49.99	-10.00	PASS
			2484	-22.17	-10.00	PASS
			2485	-20.50	-10.00	PASS
			2486	-23.34	-10.00	PASS
			2487	-23.19	-10.00	PASS
			2488	-24.52	-10.00	PASS
			2489	-23.04	-10.00	PASS
			2490	-26.43	-10.00	PASS
			2491	-27.31	-10.00	PASS
			2492	-27.16	-10.00	PASS
			2493	-29.60	-10.00	PASS
			2494	-31.63	-10.00	PASS
			2495	-35.00	-10.00	PASS
			2496	-37.67	-10.00	PASS
			2497	-38.57	-10.00	PASS
			2498	-39.79	-10.00	PASS
			2499	-39.34	-10.00	PASS
			2499.668	-40.52	-10.00	PASS
			2500	-40.83	-10.00	PASS
			2500.668	-40.39	-20.00	PASS
			2501.668	-40.76	-20.00	PASS

			2502.668	-42.35	-20.00	PASS
			2503.668	-42.71	-20.00	PASS
			2504.668	-42.43	-20.00	PASS
			2505.668	-43.92	-20.00	PASS
			2506.668	-45.54	-20.00	PASS
			2507.668	-46.27	-20.00	PASS
			2508.668	-47.27	-20.00	PASS
			2509.668	-47.94	-20.00	PASS
			2510.668	-48.31	-20.00	PASS
			2511.668	-48.55	-20.00	PASS
			2512.668	-48.69	-20.00	PASS
			2513.668	-48.75	-20.00	PASS
			2514.668	-48.97	-20.00	PASS
			2515.668	-49.04	-20.00	PASS
			2516.336	-49.04	-20.00	PASS
			2516.668	-49.04	-20.00	PASS
11N20SISO	Ant1	2412	2364.83	-50.27	-20.00	PASS
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			2365.83	-50.25	-20.00	PASS
			2366.83	-50.07	-20.00	PASS
			2367.83	-49.94	-20.00	PASS
			2368.83	-49.83	-20.00	PASS
			2369.83	-49.67	-20.00	PASS
			2370.83	-49.39	-20.00	PASS
			2371.83	-48.93	-20.00	PASS
			2372.83	-48.35	-20.00	PASS
			2373.83	-47.09	-20.00	PASS
			2374.83	-46.76	-20.00	PASS
			2375.83	-46.01	-20.00	PASS
			2376.83	-45.34	-20.00	PASS
			2377.83	-45.06	-20.00	PASS
			2378.83	-45.27	-20.00	PASS
			2379.83	-44.34	-20.00	PASS
			2380.83	-43.20	-20.00	PASS
			2381.83	-43.22	-20.00	PASS
			2382.5	-42.61	-10.00	PASS
			2382.83	-42.42	-10.00	PASS
			2383.5	-41.79	-10.00	PASS
			2384.5	-41.22	-10.00	PASS
			2385.5	-41.14	-10.00	PASS
			2386.5	-39.08	-10.00	PASS
			2387.5	-34.71	-10.00	PASS
			2388.5	-32.05	-10.00	PASS
			2389.5	-29.31	-10.00	PASS
			2390.5	-28.29	-10.00	PASS
			2391.5	-26.98	-10.00	PASS
			2392.5	-26.05	-10.00	PASS
			2393.5	-25.54	-10.00	PASS
			2394.5	-24.72	-10.00	PASS
			2395.5	-23.05	-10.00	PASS
			2396.5	-22.69	-10.00	PASS
			2397.5	-22.60	-10.00	PASS
			2398.5	-21.47	-10.00	PASS
			2399.5	-19.85	-10.00	PASS
			2484	-49.85	-10.00	PASS
			2485	-49.82	-10.00	PASS
			2486	-49.79	-10.00	PASS
			2487	-49.78	-10.00	PASS
			2488	-49.75	-10.00	PASS
			2489	-49.71	-10.00	PASS
			2490	-49.69	-10.00	PASS
			2491	-49.65	-10.00	PASS

			2492	-49.67	-10.00	PASS
			2493	-49.59	-10.00	PASS
			2494	-49.58	-10.00	PASS
			2495	-49.53	-10.00	PASS
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			2498	-49.52	-10.00	PASS
			2499	-49.54	-10.00	PASS
			2500	-49.53	-10.00	PASS
			2500.67	-49.29	-10.00	PASS
			2501	-49.32	-10.00	PASS
			2501.67	-49.37	-20.00	PASS
			2502.67	-49.38	-20.00	PASS
			2503.67	-49.40	-20.00	PASS
			2504.67	-49.42	-20.00	PASS
			2505.67	-49.45	-20.00	PASS
			2506.67	-49.48	-20.00	PASS
			2507.67	-49.51	-20.00	PASS
			2508.67	-49.54	-20.00	PASS
			2509.67	-49.58	-20.00	PASS
			2510.67	-49.61	-20.00	PASS
			2511.67	-49.65	-20.00	PASS
			2512.67	-49.70	-20.00	PASS
			2513.67	-49.73	-20.00	PASS
			2514.67	-49.76	-20.00	PASS
			2515.67	-49.81	-20.00	PASS
			2516.67	-49.87	-20.00	PASS
			2517.67	-52.58	-20.00	PASS
			2518.34	-53.09	-20.00	PASS
			2518.67	-53.08	-20.00	PASS
		2472	2364.804	-51.25	-20.00	PASS
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			2365.804	-51.23	-20.00	PASS
			2366.804	-51.22	-20.00	PASS
			2367.804	-51.20	-20.00	PASS
			2368.804	-51.17	-20.00	PASS
			2369.804	-51.16	-20.00	PASS
			2370.804	-51.16	-20.00	PASS
			2371.804	-51.15	-20.00	PASS
			2372.804	-51.16	-20.00	PASS
			2373.804	-51.12	-20.00	PASS
			2374.804	-51.11	-20.00	PASS
			2375.804	-51.09	-20.00	PASS
			2376.804	-51.06	-20.00	PASS
			2377.804	-51.06	-20.00	PASS
			2378.804	-51.04	-20.00	PASS
			2379.804	-53.33	-20.00	PASS
			2380.804	-53.63	-20.00	PASS
			2381.804	-53.64	-20.00	PASS
			2382.5	-53.62	-10.00	PASS
			2382.804	-53.63	-10.00	PASS
			2383.5	-53.63	-10.00	PASS
			2384.5	-53.61	-10.00	PASS
			2385.5	-53.63	-10.00	PASS
			2386.5	-53.63	-10.00	PASS
			2387.5	-53.61	-10.00	PASS
			2388.5	-53.61	-10.00	PASS
			2389.5	-53.60	-10.00	PASS
			2390.5	-53.59	-10.00	PASS
			2391.5	-53.60	-10.00	PASS
			2392.5	-53.60	-10.00	PASS
			2393.5	-53.60	-10.00	PASS

			2394.5	-53.59	-10.00	PASS
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			2396.5	-53.58	-10.00	PASS
			2397.5	-53.59	-10.00	PASS
			2398.5	-53.58	-10.00	PASS
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			2484	-53.41	-10.00	PASS
			2485	-53.39	-10.00	PASS
			2486	-53.40	-10.00	PASS
			2487	-53.38	-10.00	PASS
			2488	-53.37	-10.00	PASS
			2489	-53.38	-10.00	PASS
			2490	-53.37	-10.00	PASS
			2491	-53.38	-10.00	PASS
			2492	-53.38	-10.00	PASS
			2493	-53.48	-10.00	PASS
			2494	-53.37	-10.00	PASS
			2495	-53.39	-10.00	PASS
			2496	-53.38	-10.00	PASS
			2497	-53.40	-10.00	PASS
			2498	-53.40	-10.00	PASS
			2499	-53.38	-10.00	PASS
			2500	-53.39	-10.00	PASS
			2500.696	-53.06	-10.00	PASS
			2501	-53.07	-10.00	PASS
			2501.696	-53.03	-20.00	PASS
			2502.696	-53.06	-20.00	PASS
			2503.696	-53.05	-20.00	PASS
			2504.696	-53.07	-20.00	PASS
			2505.696	-53.06	-20.00	PASS
			2506.696	-53.06	-20.00	PASS
			2507.696	-53.05	-20.00	PASS
			2508.696	-53.06	-20.00	PASS
			2509.696	-53.05	-20.00	PASS
			2510.696	-53.06	-20.00	PASS
			2511.696	-53.04	-20.00	PASS
			2512.696	-53.05	-20.00	PASS
			2513.696	-53.05	-20.00	PASS
			2514.696	-53.05	-20.00	PASS
			2515.696	-53.06	-20.00	PASS
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			2518.696	-53.06	-20.00	PASS
11N40SISO	Ant1	2422	2326.926	-50.25	-20.00	PASS
			2327.352	-50.34	-20.00	PASS
			2327.926	-50.23	-20.00	PASS
			2328.926	-50.17	-20.00	PASS
			2329.926	-50.03	-20.00	PASS
			2330.926	-49.73	-20.00	PASS
			2331.926	-49.61	-20.00	PASS
			2332.926	-49.62	-20.00	PASS
			2333.926	-49.52	-20.00	PASS
			2334.926	-49.35	-20.00	PASS
			2335.926	-49.17	-20.00	PASS
			2336.926	-49.03	-20.00	PASS
			2337.926	-48.80	-20.00	PASS
			2338.926	-48.48	-20.00	PASS
			2339.926	-48.29	-20.00	PASS
			2340.926	-47.38	-20.00	PASS
			2341.926	-47.52	-20.00	PASS
			2342.926	-47.18	-20.00	PASS

			2343.926	-47.03	-20.00	PASS
			2344.926	-47.16	-20.00	PASS
			2345.926	-46.89	-20.00	PASS
			2346.926	-46.34	-20.00	PASS
			2347.926	-46.04	-20.00	PASS
			2348.926	-46.21	-20.00	PASS
			2349.926	-45.45	-20.00	PASS
			2350.926	-45.91	-20.00	PASS
			2351.926	-44.85	-20.00	PASS
			2352.926	-44.66	-20.00	PASS
			2353.926	-44.84	-20.00	PASS
			2354.926	-44.50	-20.00	PASS
			2355.926	-44.02	-20.00	PASS
			2356.926	-43.79	-20.00	PASS
			2357.926	-43.75	-20.00	PASS
			2358.926	-43.65	-20.00	PASS
			2359.926	-42.85	-20.00	PASS
			2360.926	-42.68	-20.00	PASS
			2361.926	-42.61	-20.00	PASS
			2362.926	-42.67	-20.00	PASS
			2363.5	-42.09	-10.00	PASS
			2363.926	-41.83	-10.00	PASS
			2364.5	-41.96	-10.00	PASS
			2365.5	-42.23	-10.00	PASS
			2366.5	-41.99	-10.00	PASS
			2367.5	-41.85	-10.00	PASS
			2368.5	-40.82	-10.00	PASS
			2369.5	-39.54	-10.00	PASS
			2370.5	-38.33	-10.00	PASS
			2371.5	-35.88	-10.00	PASS
			2372.5	-35.57	-10.00	PASS
			2373.5	-34.40	-10.00	PASS
			2374.5	-33.94	-10.00	PASS
			2375.5	-33.36	-10.00	PASS
			2376.5	-32.20	-10.00	PASS
			2377.5	-32.24	-10.00	PASS
			2378.5	-30.99	-10.00	PASS
			2379.5	-30.55	-10.00	PASS
			2380.5	-29.73	-10.00	PASS
			2381.5	-29.12	-10.00	PASS
			2382.5	-28.94	-10.00	PASS
			2383.5	-27.88	-10.00	PASS
			2384.5	-27.33	-10.00	PASS
			2385.5	-27.36	-10.00	PASS
			2386.5	-26.15	-10.00	PASS
			2387.5	-26.33	-10.00	PASS
			2388.5	-25.21	-10.00	PASS
			2389.5	-25.08	-10.00	PASS
			2390.5	-25.20	-10.00	PASS
			2391.5	-25.62	-10.00	PASS
			2392.5	-53.74	-10.00	PASS
			2393.5	-53.76	-10.00	PASS
			2394.5	-53.75	-10.00	PASS
			2395.5	-53.75	-10.00	PASS
			2396.5	-53.74	-10.00	PASS
			2397.5	-53.74	-10.00	PASS
			2398.5	-53.75	-10.00	PASS
			2399.5	-53.73	-10.00	PASS
			2484	-53.56	-10.00	PASS
			2485	-53.55	-10.00	PASS
			2486	-53.55	-10.00	PASS
			2487	-53.54	-10.00	PASS

			2488	-53.56	-10.00	PASS
			2489	-53.55	-10.00	PASS
			2490	-53.54	-10.00	PASS
			2491	-53.56	-10.00	PASS
			2492	-53.55	-10.00	PASS
			2493	-53.54	-10.00	PASS
			2494	-53.55	-10.00	PASS
			2495	-53.54	-10.00	PASS
			2496	-53.54	-10.00	PASS
			2497	-53.56	-10.00	PASS
			2498	-53.52	-10.00	PASS
			2499	-53.55	-10.00	PASS
			2500	-53.54	-10.00	PASS
			2501	-53.22	-10.00	PASS
			2502	-53.21	-10.00	PASS
			2503	-53.21	-10.00	PASS
			2504	-53.22	-10.00	PASS
			2505	-53.22	-10.00	PASS
			2506	-53.22	-10.00	PASS
			2507	-53.20	-10.00	PASS
			2508	-53.22	-10.00	PASS
			2509	-53.23	-10.00	PASS
			2510	-53.22	-10.00	PASS
			2511	-53.22	-10.00	PASS
			2512	-53.22	-10.00	PASS
			2513	-53.23	-10.00	PASS
			2514	-53.23	-10.00	PASS
			2515	-53.22	-10.00	PASS
			2516	-53.22	-10.00	PASS
			2517	-53.24	-10.00	PASS
			2518	-53.22	-10.00	PASS
			2519	-53.23	-10.00	PASS
			2519.574	-53.25	-10.00	PASS
			2520	-53.23	-10.00	PASS
			2520.574	-53.22	-20.00	PASS
			2521.574	-53.23	-20.00	PASS
			2522.574	-53.23	-20.00	PASS
			2523.574	-53.23	-20.00	PASS
			2524.574	-53.25	-20.00	PASS
			2525.574	-53.23	-20.00	PASS
			2526.574	-53.23	-20.00	PASS
			2527.574	-53.23	-20.00	PASS
			2528.574	-53.24	-20.00	PASS
			2529.574	-53.24	-20.00	PASS
			2530.574	-53.23	-20.00	PASS
			2531.574	-53.24	-20.00	PASS
			2532.574	-53.24	-20.00	PASS
			2533.574	-53.24	-20.00	PASS
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			2535.574	-53.23	-20.00	PASS
			2536.574	-53.23	-20.00	PASS
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			2545.574	-53.25	-20.00	PASS
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			2547.574	-53.23	-20.00	PASS

			2548.574	-53.26	-20.00	PASS
			2549.574	-53.24	-20.00	PASS
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			2551.574	-53.23	-20.00	PASS
			2552.574	-53.25	-20.00	PASS
			2553.574	-53.26	-20.00	PASS
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			2555.574	-53.23	-20.00	PASS
			2556.148	-53.24	-20.00	PASS
			2556.574	-53.25	-20.00	PASS
		2462	2326.947	-51.69	-20.00	PASS
			2327.394	-51.67	-20.00	PASS
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			2331.947	-51.49	-20.00	PASS
			2332.947	-51.45	-20.00	PASS
			2333.947	-51.44	-20.00	PASS
			2334.947	-51.44	-20.00	PASS
			2335.947	-51.42	-20.00	PASS
			2336.947	-51.38	-20.00	PASS
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			2340.947	-54.00	-20.00	PASS
			2341.947	-53.99	-20.00	PASS
			2342.947	-54.01	-20.00	PASS
			2343.947	-53.99	-20.00	PASS
			2344.947	-53.99	-20.00	PASS
			2345.947	-53.97	-20.00	PASS
			2346.947	-53.97	-20.00	PASS
			2347.947	-53.97	-20.00	PASS
			2348.947	-53.95	-20.00	PASS
			2349.947	-53.95	-20.00	PASS
			2350.947	-53.95	-20.00	PASS
			2351.947	-53.94	-20.00	PASS
			2352.947	-53.92	-20.00	PASS
			2353.947	-53.93	-20.00	PASS
			2354.947	-53.92	-20.00	PASS
			2355.947	-53.92	-20.00	PASS
			2356.947	-53.93	-20.00	PASS
			2357.947	-53.90	-20.00	PASS
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			2364.5	-53.86	-10.00	PASS
			2365.5	-53.87	-10.00	PASS
			2366.5	-53.86	-10.00	PASS
			2367.5	-53.85	-10.00	PASS
			2368.5	-53.85	-10.00	PASS
			2369.5	-53.84	-10.00	PASS
			2370.5	-53.83	-10.00	PASS
			2371.5	-53.83	-10.00	PASS
			2372.5	-53.84	-10.00	PASS
			2373.5	-53.84	-10.00	PASS
			2374.5	-53.84	-10.00	PASS
			2375.5	-53.83	-10.00	PASS

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			2390.5	-53.77	-10.00	PASS
			2391.5	-53.76	-10.00	PASS
			2392.5	-53.77	-10.00	PASS
			2393.5	-53.77	-10.00	PASS
			2394.5	-53.75	-10.00	PASS
			2395.5	-53.70	-10.00	PASS
			2396.5	-53.69	-10.00	PASS
			2397.5	-53.68	-10.00	PASS
			2398.5	-53.69	-10.00	PASS
			2399.5	-53.69	-10.00	PASS
			2484	-53.51	-10.00	PASS
			2485	-53.52	-10.00	PASS
			2486	-53.50	-10.00	PASS
			2487	-53.49	-10.00	PASS
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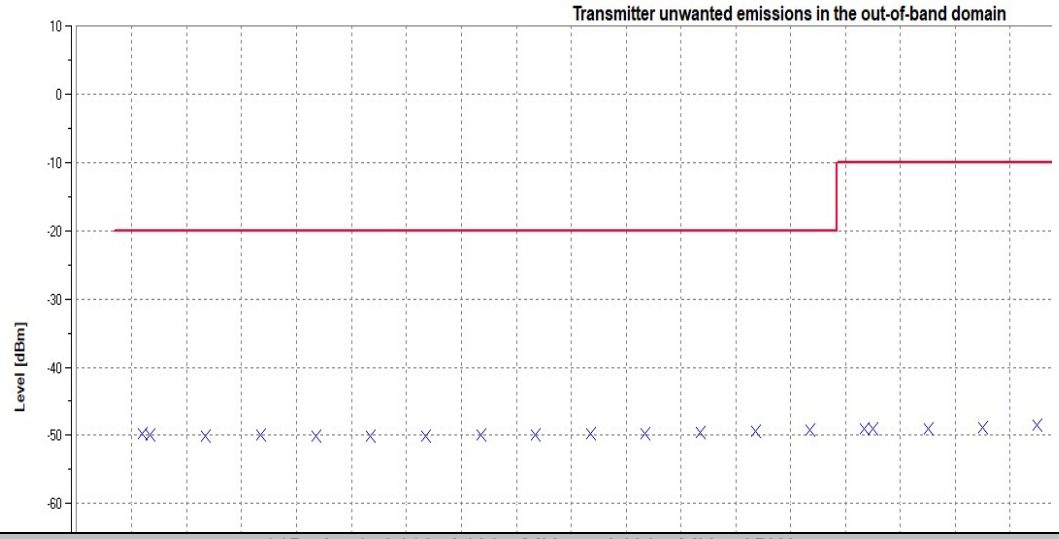
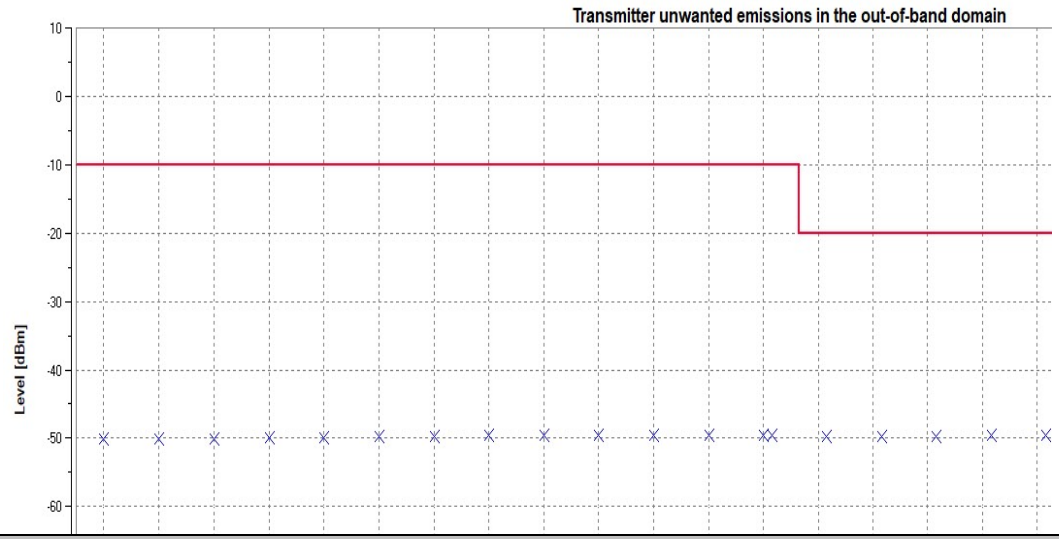
			2489	-53.49	-10.00	PASS
			2490	-53.50	-10.00	PASS
			2491	-53.48	-10.00	PASS
			2492	-53.48	-10.00	PASS
			2493	-53.49	-10.00	PASS
			2494	-53.49	-10.00	PASS
			2495	-53.49	-10.00	PASS
			2496	-53.48	-10.00	PASS
			2497	-53.48	-10.00	PASS
			2498	-53.49	-10.00	PASS
			2499	-53.50	-10.00	PASS
			2500	-53.50	-10.00	PASS
			2501	-53.17	-10.00	PASS
			2502	-53.16	-10.00	PASS
			2503	-53.17	-10.00	PASS
			2504	-53.17	-10.00	PASS
			2505	-53.16	-10.00	PASS
			2506	-53.16	-10.00	PASS
			2507	-53.16	-10.00	PASS
			2508	-53.16	-10.00	PASS
			2509	-53.18	-10.00	PASS
			2510	-53.17	-10.00	PASS
			2511	-53.17	-10.00	PASS
			2512	-53.28	-10.00	PASS
			2513	-53.39	-10.00	PASS
			2514	-53.17	-10.00	PASS
			2515	-53.17	-10.00	PASS
			2516	-53.16	-10.00	PASS
			2517	-53.17	-10.00	PASS
			2518	-53.17	-10.00	PASS
			2519	-53.16	-10.00	PASS
			2519.553	-53.17	-10.00	PASS
			2520	-53.17	-10.00	PASS

			2520.553	-53.19	-20.00	PASS
			2521.553	-53.17	-20.00	PASS
			2522.553	-53.19	-20.00	PASS
			2523.553	-53.18	-20.00	PASS
			2524.553	-53.19	-20.00	PASS
			2525.553	-53.15	-20.00	PASS
			2526.553	-53.17	-20.00	PASS
			2527.553	-53.17	-20.00	PASS
			2528.553	-53.18	-20.00	PASS
			2529.553	-53.17	-20.00	PASS
			2530.553	-53.16	-20.00	PASS
			2531.553	-53.17	-20.00	PASS
			2532.553	-53.16	-20.00	PASS
			2533.553	-53.18	-20.00	PASS
			2534.553	-53.17	-20.00	PASS
			2535.553	-53.17	-20.00	PASS
			2536.553	-53.17	-20.00	PASS
			2537.553	-53.18	-20.00	PASS
			2538.553	-53.17	-20.00	PASS
			2539.553	-53.18	-20.00	PASS
			2540.553	-53.18	-20.00	PASS
			2541.553	-53.17	-20.00	PASS
			2542.553	-53.17	-20.00	PASS
			2543.553	-53.19	-20.00	PASS
			2544.553	-53.18	-20.00	PASS
			2545.553	-53.18	-20.00	PASS
			2546.553	-53.18	-20.00	PASS
			2547.553	-53.17	-20.00	PASS
			2548.553	-53.18	-20.00	PASS
			2549.553	-53.19	-20.00	PASS
			2550.553	-53.19	-20.00	PASS
			2551.553	-53.18	-20.00	PASS
			2552.553	-53.18	-20.00	PASS
			2553.553	-53.19	-20.00	PASS
			2554.553	-53.19	-20.00	PASS
			2555.553	-53.18	-20.00	PASS
			2556.106	-53.18	-20.00	PASS
			2556.553	-53.18	-20.00	PASS

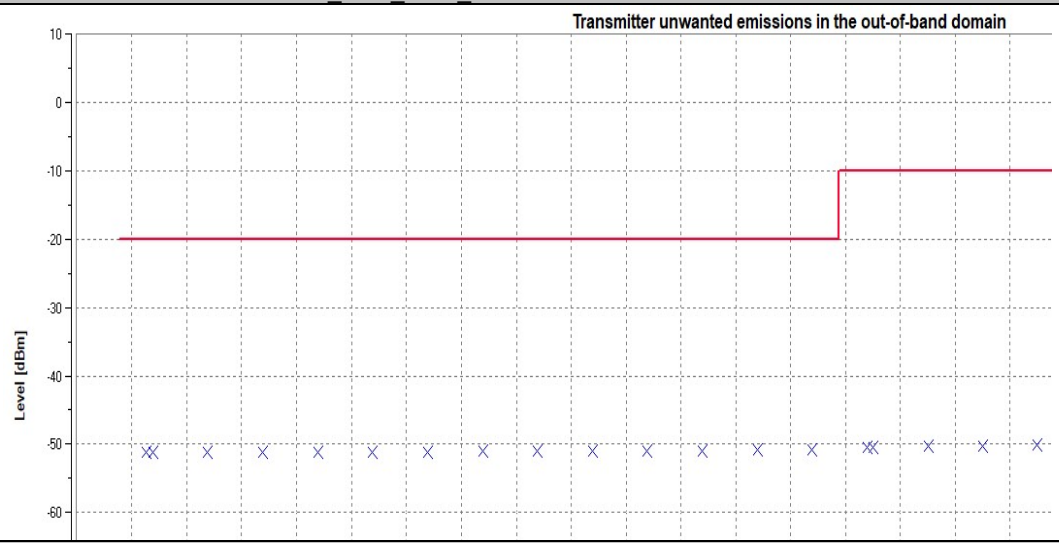
11B_Ant1_2412_2400MHz-2BW to 2400MHz



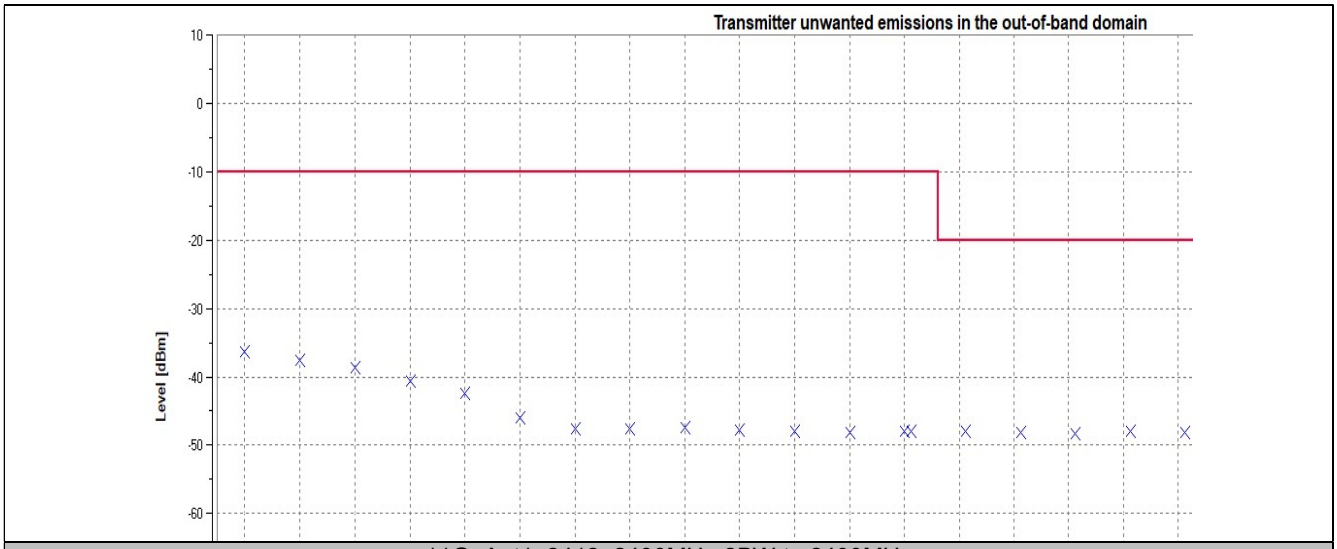
11B_Ant1_2412_2483.5MHz to 2483.5MHz+2BW



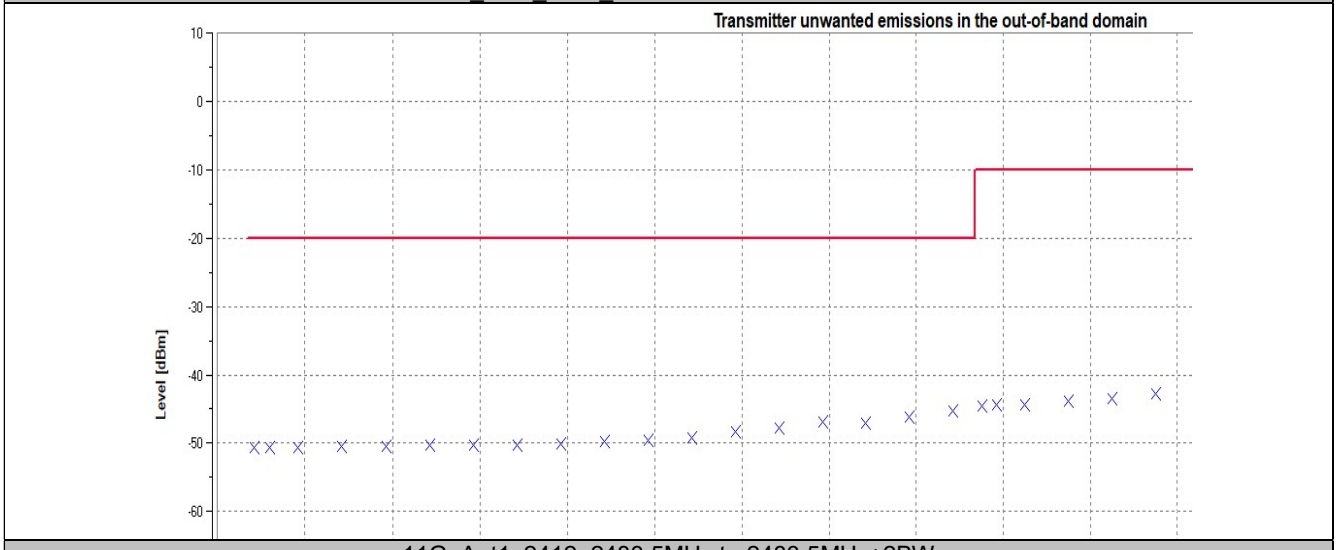
11B_Ant1_2472_2400MHz-2BW to 2400MHz



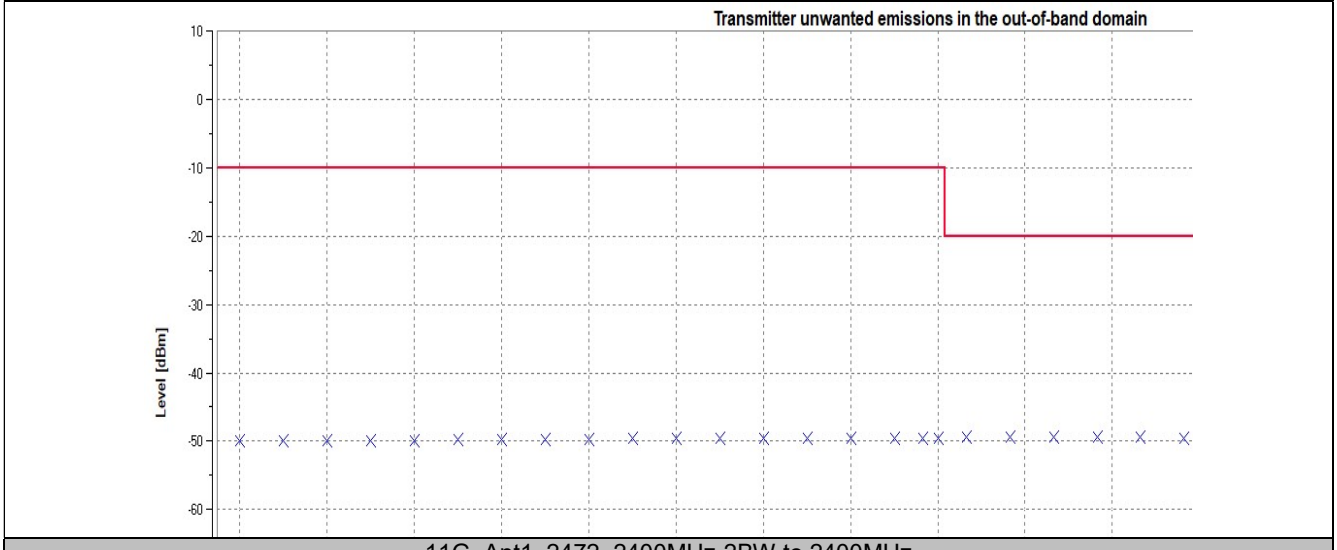
11B_Ant1_2472_2483.5MHz to 2483.5MHz+2BW



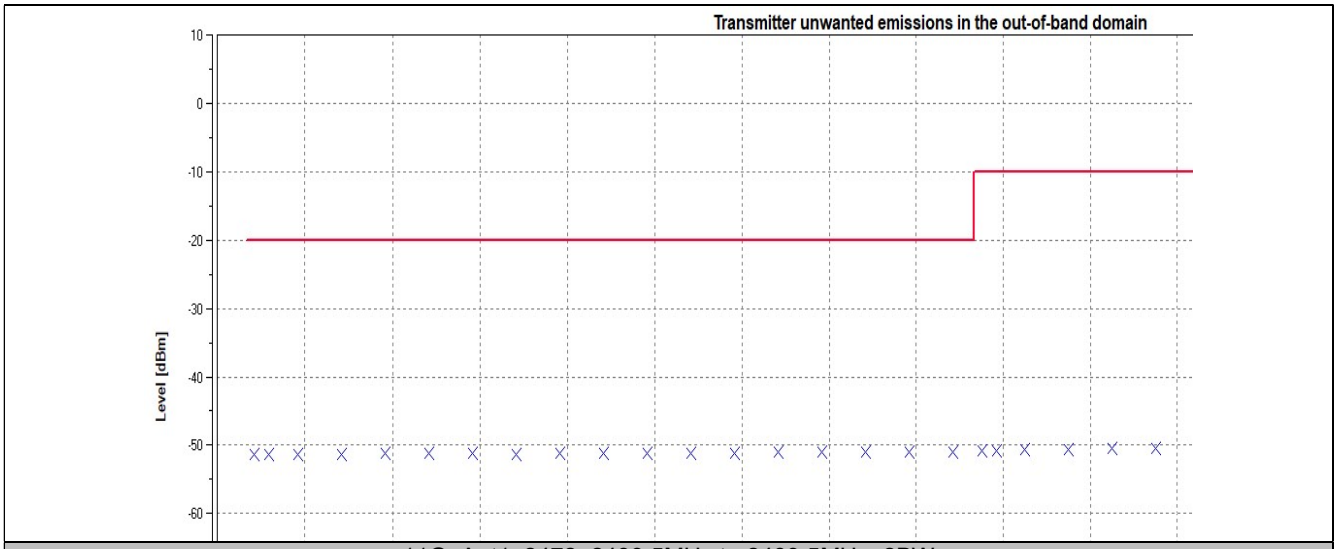
11G_Ant1_2412_2400MHz-2BW to 2400MHz



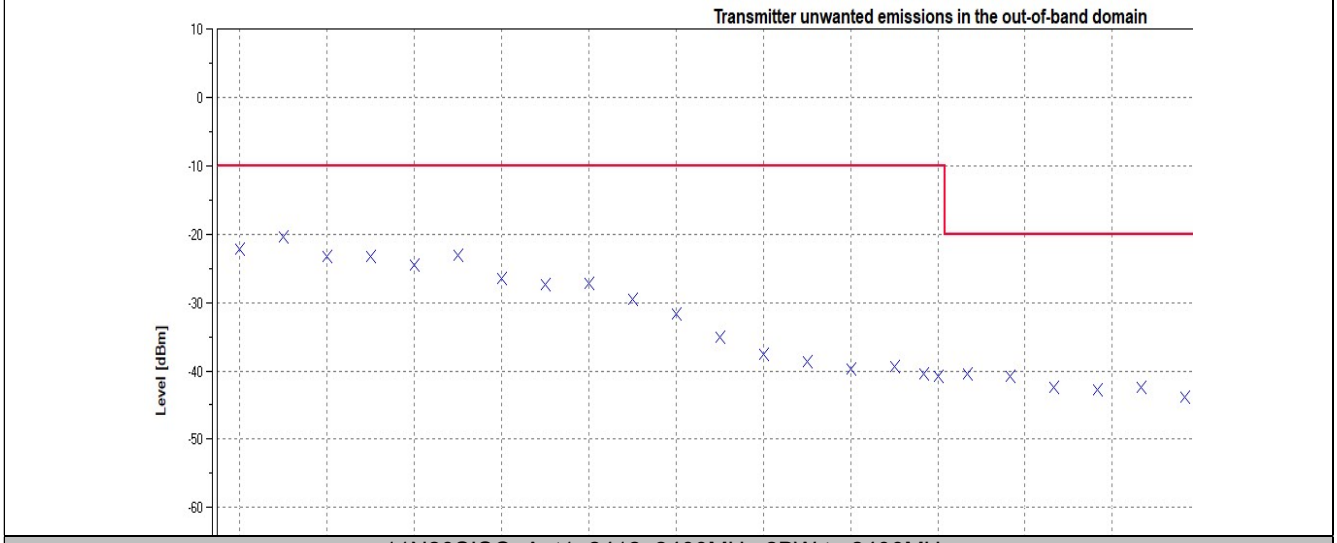
11G_Ant1_2412_2483.5MHz to 2483.5MHz+2BW



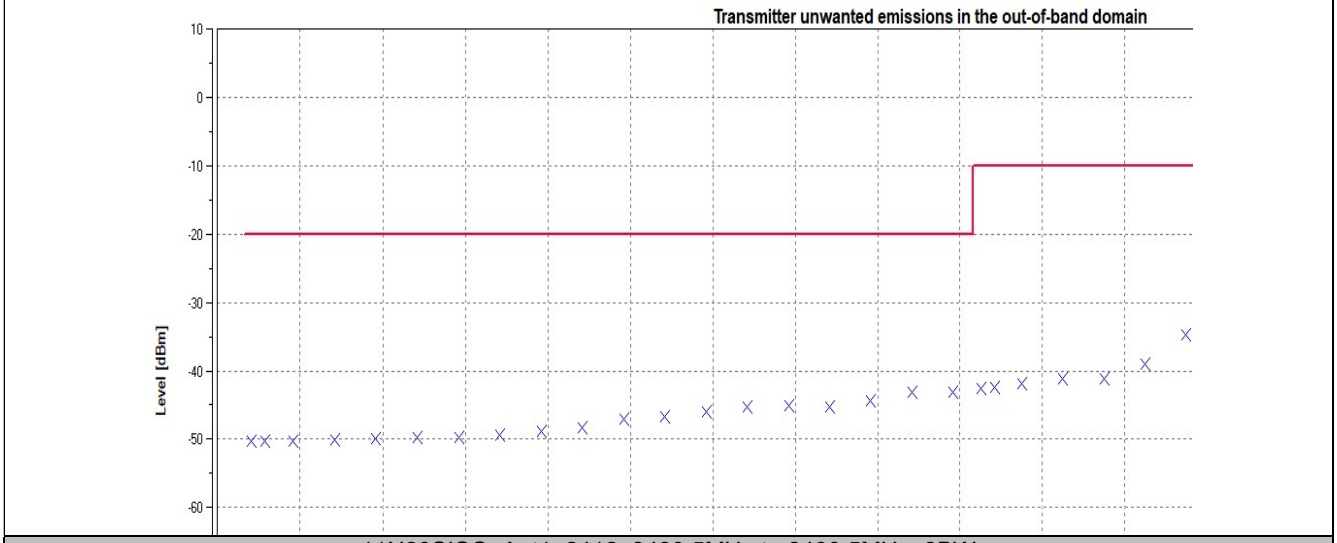
11G_Ant1_2472_2400MHz-2BW to 2400MHz



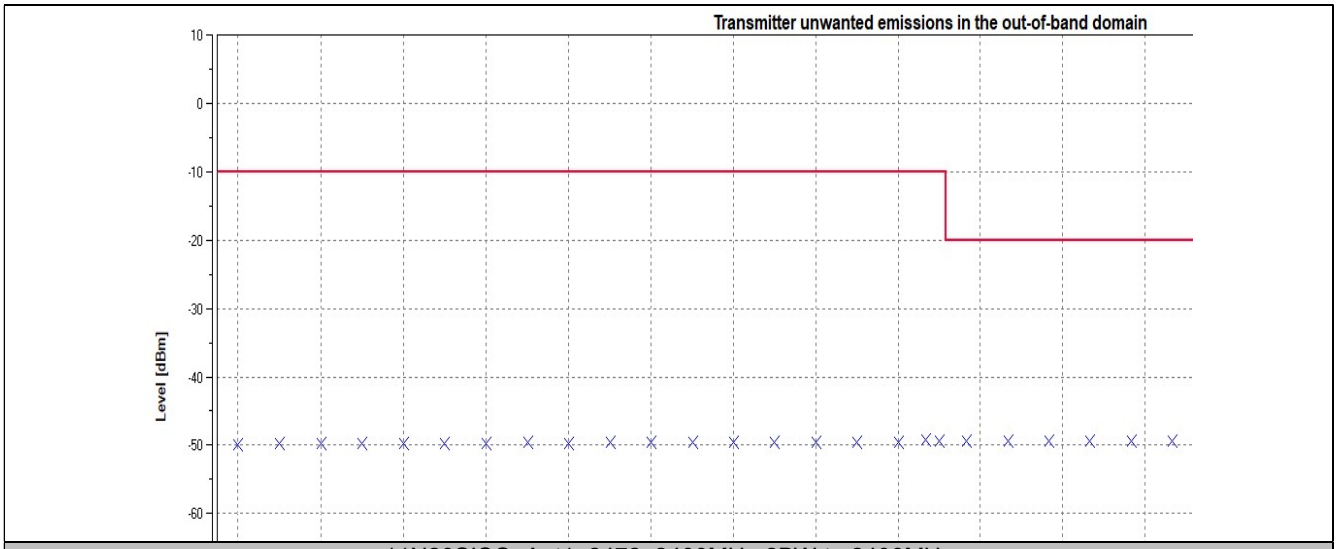
11G_Ant1_2472_2483.5MHz to 2483.5MHz+2BW



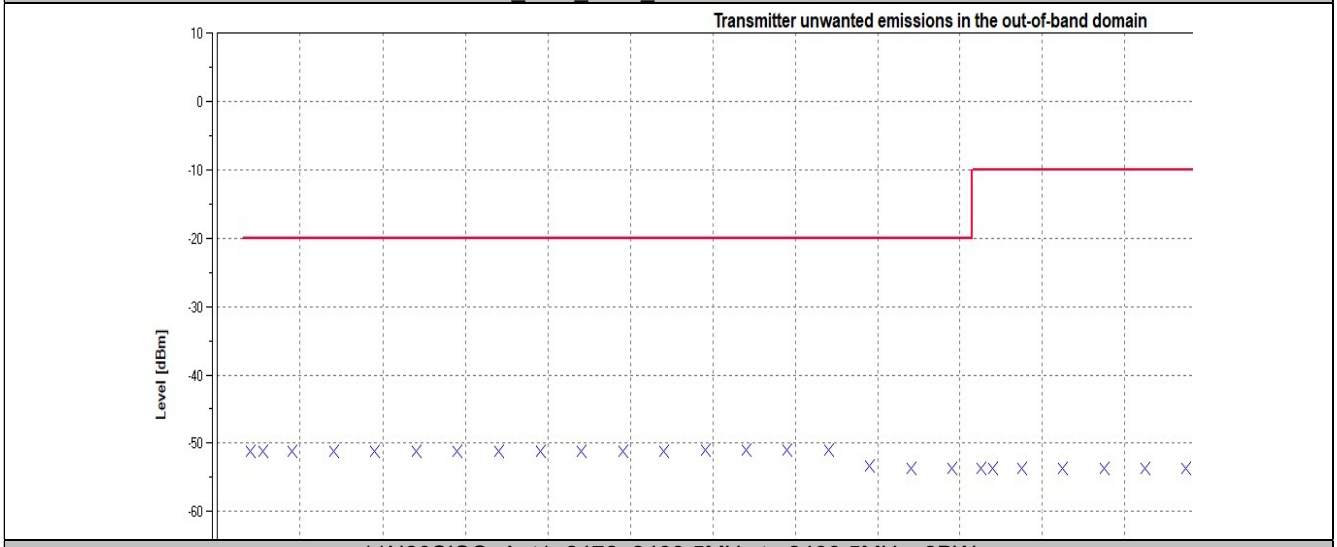
11N20SISO_Ant1_2412_2400MHz-2BW to 2400MHz



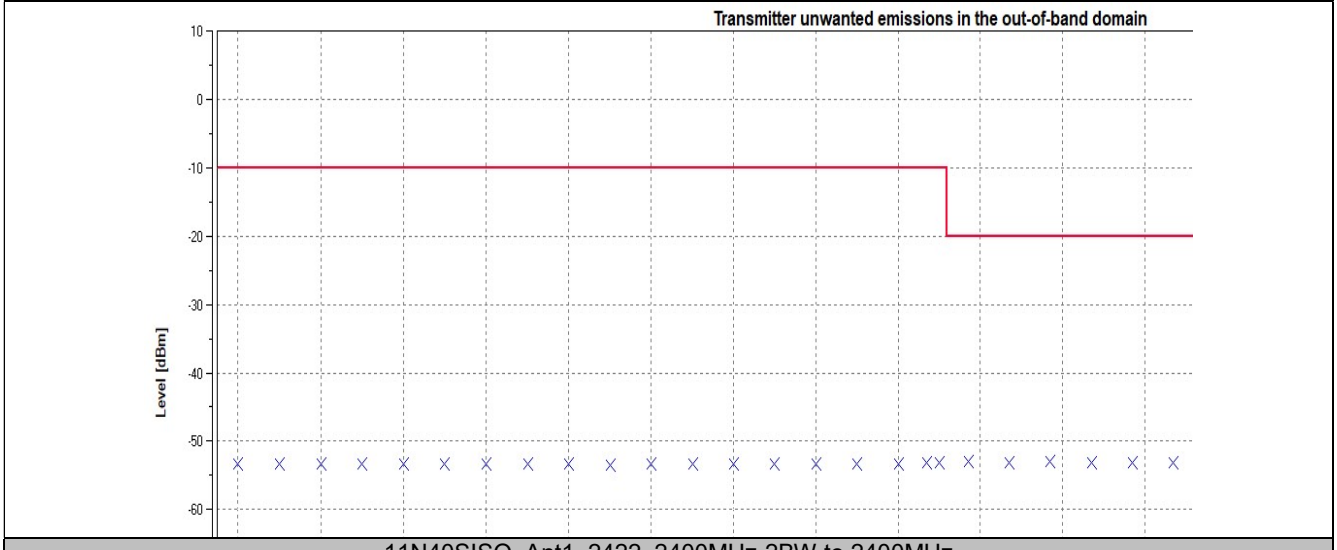
11N20SISO_Ant1_2412_2483.5MHz to 2483.5MHz+2BW



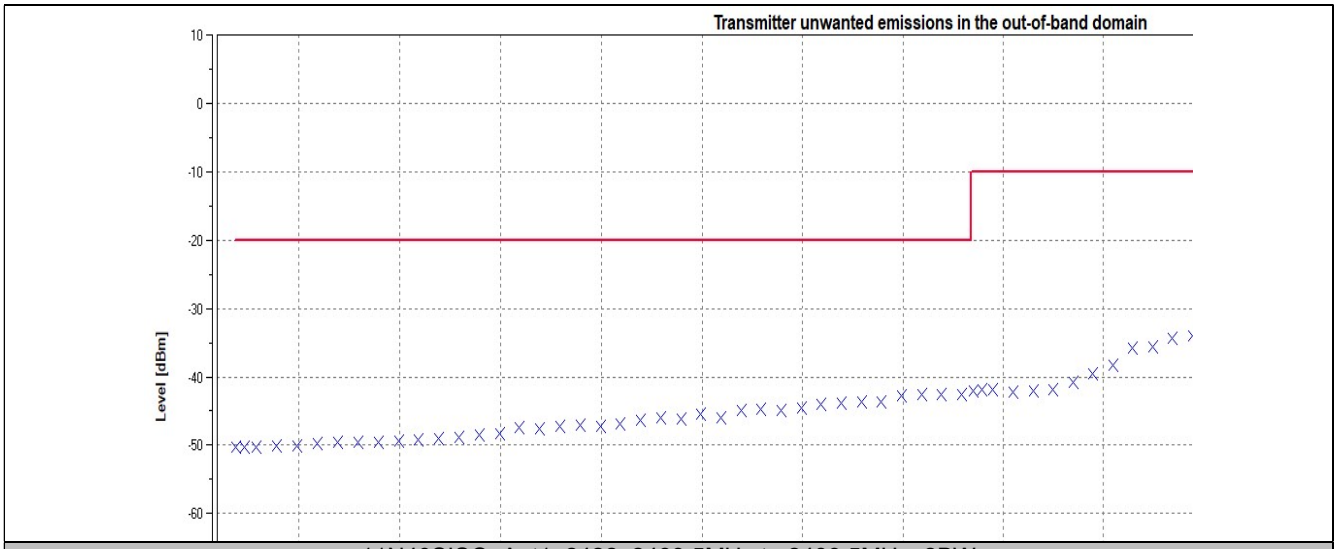
11N20SISO_Ant1_2472_2400MHz-2BW to 2400MHz



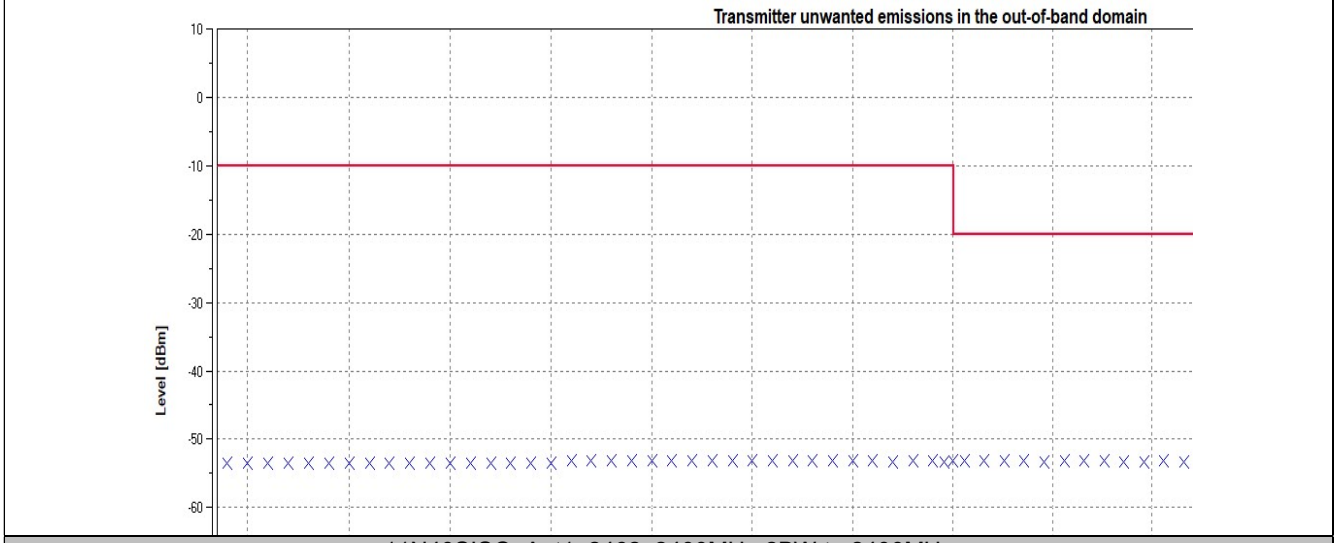
11N20SISO_Ant1_2472_2483.5MHz to 2483.5MHz+2BW



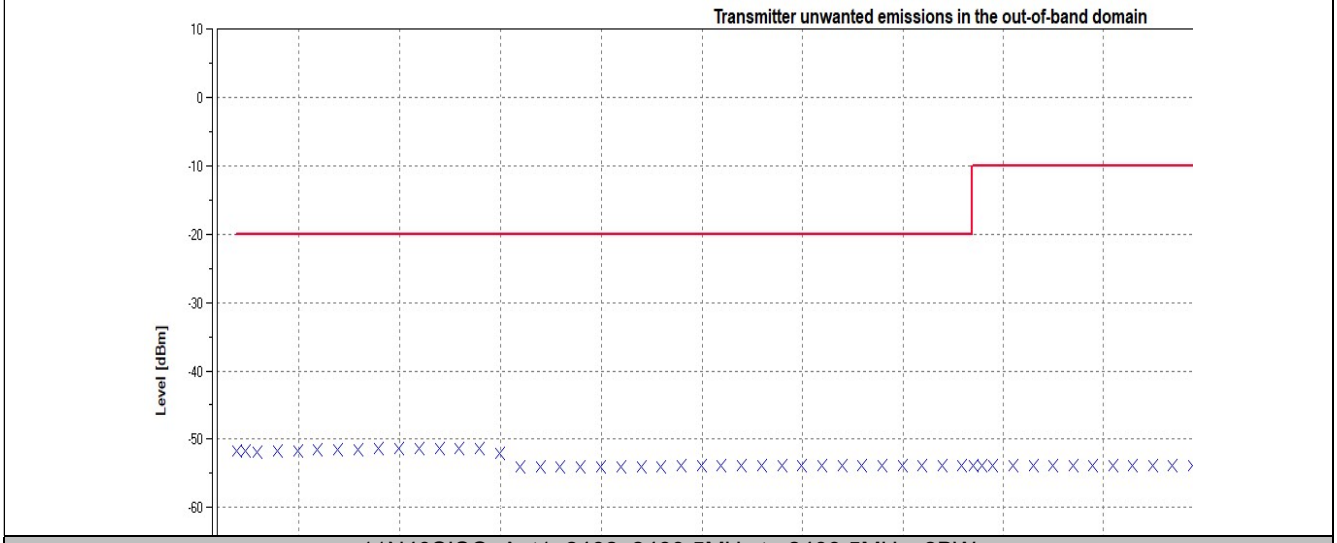
11N40SISO_Ant1_2422_2400MHz-2BW to 2400MHz



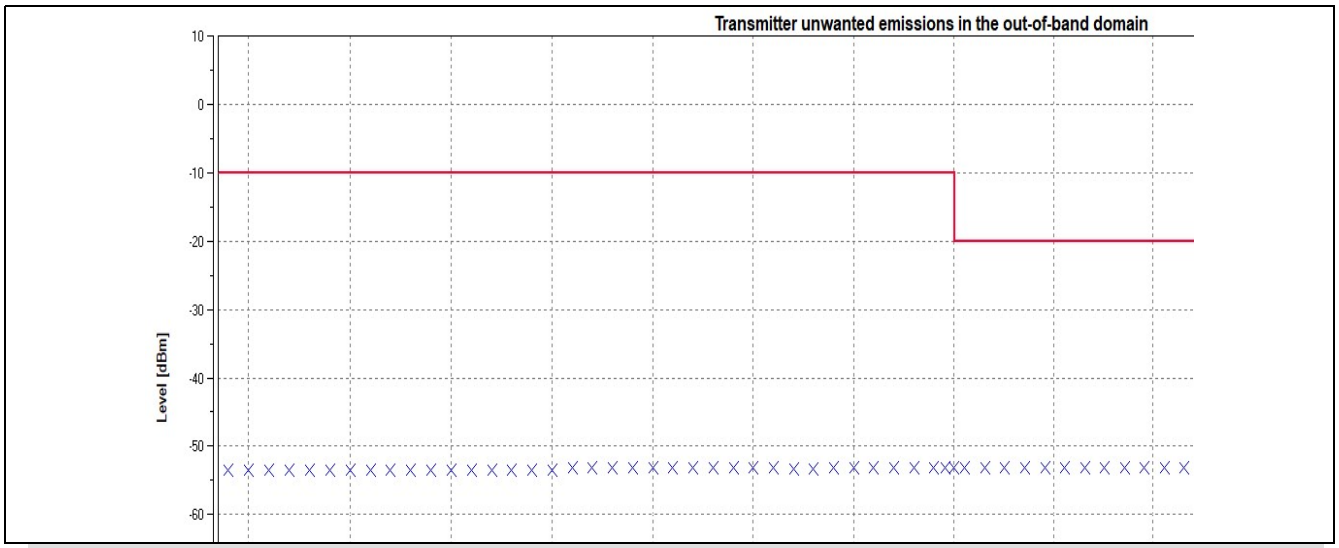
11N40SISO_Ant1_2422_2483.5MHz to 2483.5MHz+2BW



11N40SISO_Ant1_2462_2400MHz-2BW to 2400MHz



11N40SISO_Ant1_2462_2483.5MHz to 2483.5MHz+2BW


Transmitter unwanted emissions in the out-of-band domain
Level [dBm]
10
0
-10
-20
-30
-40
-50
-60

6 Appendix A.6: Receiver Blocking

The Receiver blocking is a measure of the ability of the equipment to receive a wanted signal on its operating channelwithout exceeding a given degradation in the presence of an unwanted signal (blocking signal) at frequencies other than those of the operating band..Only the worst case for all test modes reported.

EUT Name:	Smart Power Meter Switch
Model:	THR320D
Test Mode:	RB
Sample No:	A003291051-001
Test Voltage::	DC 5V
Remark:	Temp 24.5 Humi:51%
Test Standard:	EN 300328 2.2.2
Tested By:	Wenyi Yan
Reviewed By:	Terry Yin

Frequencies

WLAN CH 1 (2412 MHz)	WLAN CH 7 (2442 MHz)	WLAN CH 13 (2472 MHz)
WLAN CH 11 (2462 MHz)		

Bandwidths

12.138MHz (12.138 MHz)	12.406MHz (12.406 MHz)	12.919MHz (12.919 MHz)
13.91MHz (13.91 MHz)	14.058MHz (14.058 MHz)	14.103MHz (14.103 MHz)
15.15528Mhz (15.15528 MHz)	20MHz (20 MHz)	

Power

20.000 dBm (20 dBm)

Beamforming Gain

Powerstep name (value)	Beamforming gain table names
20.000 dBm (20 dBm)	---

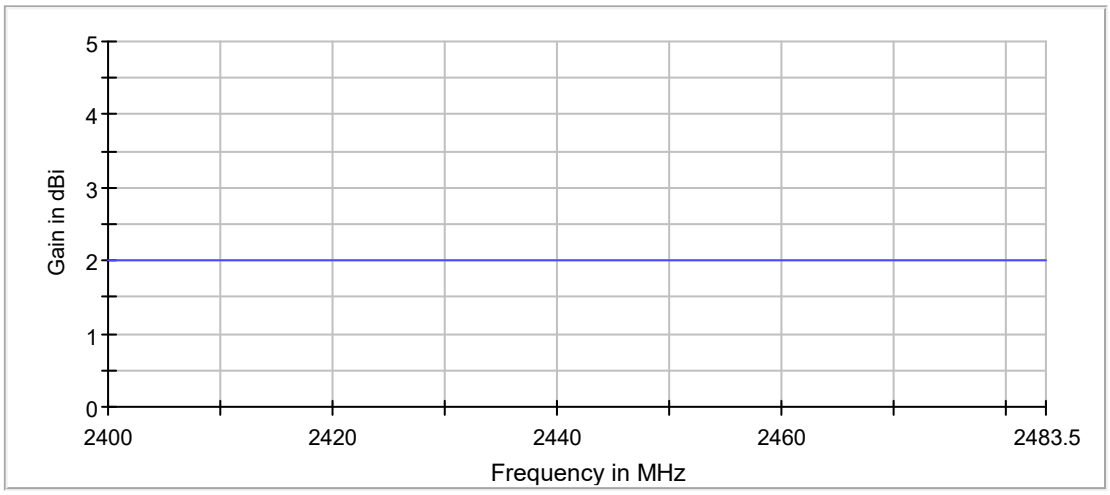
Gain Tables

Powerstep name (value)	Gain table names
20.000 dBm (20 dBm)	Port 1: 2;

DUT Settings

No. of transmission chains	1
Modulation	other
Adaptive	Yes
Short Control Signaling	Yes
LBT	Yes
Equipment Mode	Load Based
Channel Occupancy Time	6 ms
CCA	20 µs
Medical Device reverse compatibility mode	No
Receiver category	1

Gaintable 2



Gaintable: 2

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.148::inst0::instr), SN 1321.3008K39/101441, FW 3.40
Vector Generator:	VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.149::inst0::instr), SN 263301, FW 4.15.125.40
Generator:	SMB100A (SMB100A) @ VISA (ADR TCPIP::192.168.48.150::inst0::instr), SN 115186, FW 3.20.390.24 / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::inst0::instr), SN 1527.1144. /, FW 1.27.0.0

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Occupied Channel Bandwidth	**2412.000**	**20.0**	**20.000000**	**PASS**
Receiver Blocking	**2412.000**	**20.0**	**20.000000**	**PASS**

Receiver Blocking (2412 MHz; 20.000 dBm; 20MHz)

Definition: Receiver blocking is a measure of the ability of the equipment to receive a wanted signal on its operating channel without exceeding a given degradation in the presence of an unwanted signal (blocking signal) on frequencies other than those of the operating band.

Summary

DUT Frequency (MHz)	Receiver Category	Companion RMS burst power (dBm)	Result
2412.000000	1	---	PASS

Measurement Overview

Blocking Frequency (MHz)	Result no Offset	Result Offset 1	Result Offset 2	Result
2380.000000	PASS	not tested	not tested	PASS
2300.000000	PASS	not tested	not tested	PASS
2330.000000	PASS	not tested	not tested	PASS
2360.000000	PASS	not tested	not tested	PASS

Measurements

#	Blocking Frequency (MHz)	Blocking Frequency Offset (MHz)	Generator Frequency (MHz)	Blocking Level at DUT (dBm)	Generator Level (dBm)	Attenuation Generator to DUT (dB)
1	2380.000000	0.000000	2380.000000	-32.0	2.3	34.3
2	2380.000000	10.000000	---	---	---	---
3	2380.000000	-10.000000	---	---	---	---
4	2300.000000	0.000000	2300.000000	-32.0	1.7	33.7
5	2300.000000	13.664597	---	---	---	---
6	2300.000000	-13.664597	---	---	---	---
7	2330.000000	0.000000	2330.000000	-32.0	1.8	33.8
8	2330.000000	13.664597	---	---	---	---
9	2330.000000	-13.664597	---	---	---	---
10	2360.000000	0.000000	2360.000000	-32.0	2.1	34.1
11	2360.000000	13.664597	---	---	---	---
12	2360.000000	-13.664597	---	---	---	---

(continuation of the "Measurements" table from column 7 ...)

#	Level of Wanted Signal at DUT (dBm)	Wanted Level Offset (dB)	Attenuation Companion to DUT (dB)	Result
1	-66.0	0.0	47.7	PASS
2	-63.0	3.0	---	not tested
3	-69.0	-3.0	---	not tested
4	-72.0	0.0	47.7	PASS
5	-72.0	0.0	---	not tested
6	-72.0	0.0	---	not tested
7	-72.0	0.0	47.7	PASS
8	-72.0	0.0	---	not tested
9	-72.0	0.0	---	not tested
10	-72.0	0.0	47.7	PASS
11	-72.0	0.0	---	not tested
12	-72.0	0.0	---	not tested

DUT Monitoring

#	Blocking Frequency (MHz)	Blocking Frequency Offset (MHz)	Name	Value	Limit Min	Limit Max	Result
1	2380.000000	0.000000	PER	0.000	---	10.000	PASS
2	2300.000000	0.000000	PER	0.000	---	10.000	PASS
3	2330.000000	0.000000	PER	0.000	---	10.000	PASS
4	2360.000000	0.000000	PER	0.000	---	10.000	PASS

EUT Name:	Smart Power Meter Switch
Model:	THR320D
Test Mode:	RB
Sample No:	A003291051-001
Test Voltage::	DC 5V
Remark:	Temp 24.5 Humi:51%
Test Standard:	EN 300328 2.2.2
Tested By:	Wenyi Yan
Reviewed By:	Terry Yin

Frequencies

WLAN CH 1 (2412 MHz)	WLAN CH 7 (2442 MHz)	WLAN CH 13 (2472 MHz)
WLAN CH 11 (2462 MHz)		

Bandwidths

12.138MHz (12.138 MHz)	12.406MHz (12.406 MHz)	12.919MHz (12.919 MHz)
13.91MHz (13.91 MHz)	14.058MHz (14.058 MHz)	14.103MHz (14.103 MHz)
15.15528Mhz (15.15528 MHz)	20MHz (20 MHz)	

Power

20.000 dBm (20 dBm)

Beamforming Gain

Powerstep name (value)	Beamforming gain table names
20.000 dBm (20 dBm)	---

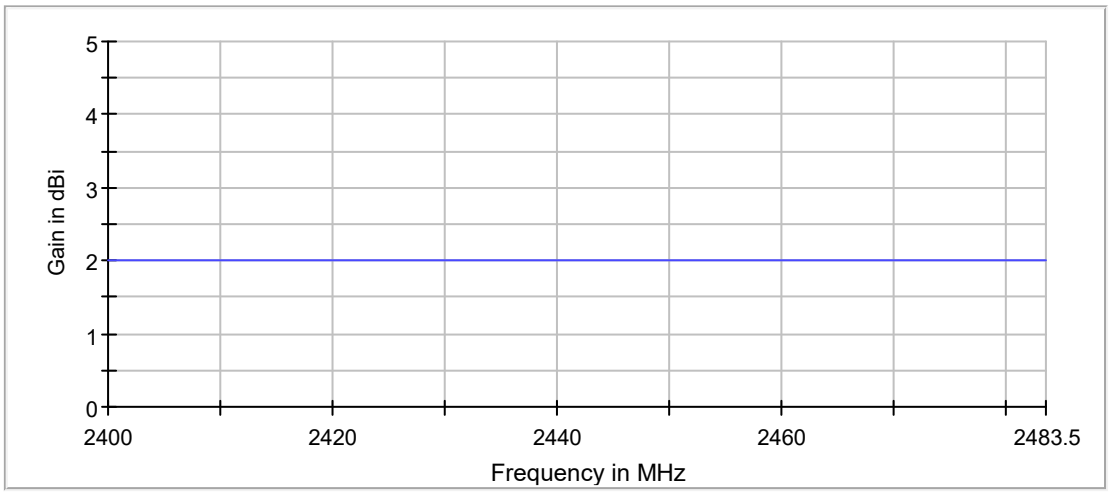
Gain Tables

Powerstep name (value)	Gain table names
20.000 dBm (20 dBm)	Port 1: 2;

DUT Settings

No. of transmission chains	1
Modulation	other
Adaptive	Yes
Short Control Signaling	Yes
LBT	Yes
Equipment Mode	Load Based
Channel Occupancy Time	6 ms
CCA	20 µs
Medical Device reverse compatibility mode	No
Receiver category	1

Gaintable 2



Gaintable: 2

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.148::inst0::instr), SN 1321.3008K39/101441, FW 3.40
Vector Generator:	VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.149::inst0::instr), SN 263301, FW 4.15.125.40
Generator:	SMB100A (SMB100A) @ VISA (ADR TCPIP::192.168.48.150::inst0::instr), SN 115186, FW 3.20.390.24 / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::inst0::instr), SN 1527.1144. /, FW 1.27.0.0

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Occupied Channel Bandwidth	**2472.000**	**20.0**	**20.000000**	**PASS**
Receiver Blocking	**2472.000**	**20.0**	**20.000000**	**PASS**

Receiver Blocking (2472 MHz; 20.000 dBm; 20MHz)

Definition: Receiver blocking is a measure of the ability of the equipment to receive a wanted signal on its operating channel without exceeding a given degradation in the presence of an unwanted signal (blocking signal) on frequencies other than those of the operating band.

Summary

DUT Frequency (MHz)	Receiver Category	Companion RMS burst power (dBm)	Result
2472.000000	1	---	PASS

Measurement Overview

Blocking Frequency (MHz)	Result no Offset	Result Offset 1	Result Offset 2	Result
2504.000000	PASS	not tested	not tested	PASS
2524.000000	PASS	not tested	not tested	PASS
2584.000000	PASS	not tested	not tested	PASS
2674.000000	PASS	not tested	not tested	PASS

Measurements

#	Blocking Frequency (MHz)	Blocking Frequency Offset (MHz)	Generator Frequency (MHz)	Blocking Level at DUT (dBm)	Generator Level (dBm)	Attenuation Generator to DUT (dB)
1	2504.000000	0.000000	2504.000000	-32.0	2.8	34.8
2	2504.000000	10.000000	---	---	---	---
3	2504.000000	-10.000000	---	---	---	---
4	2524.000000	0.000000	2524.000000	-32.0	2.7	34.7
5	2524.000000	13.664597	---	---	---	---
6	2524.000000	-13.664597	---	---	---	---
7	2584.000000	0.000000	2584.000000	-32.0	2.5	34.5
8	2584.000000	13.664597	---	---	---	---
9	2584.000000	-13.664597	---	---	---	---
10	2674.000000	0.000000	2674.000000	-32.0	2.3	34.3
11	2674.000000	13.664597	---	---	---	---
12	2674.000000	-13.664597	---	---	---	---

(continuation of the "Measurements" table from column 7 ...)

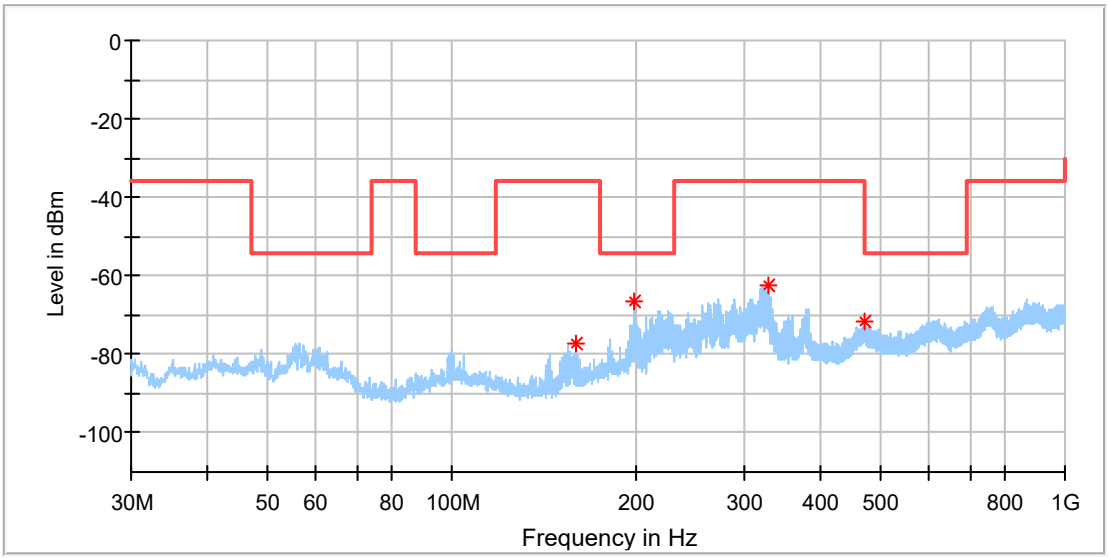
#	Level of Wanted Signal at DUT (dBm)	Wanted Level Offset (dB)	Attenuation Companion to DUT (dB)	Result
1	-66.0	0.0	48.6	PASS
2	-69.0	-3.0	---	not tested
3	-63.0	3.0	---	not tested
4	-72.0	0.0	48.6	PASS
5	-72.0	0.0	---	not tested
6	-72.0	0.0	---	not tested
7	-72.0	0.0	48.6	PASS
8	-72.0	0.0	---	not tested
9	-72.0	0.0	---	not tested
10	-72.0	0.0	48.6	PASS
11	-72.0	0.0	---	not tested
12	-72.0	0.0	---	not tested

DUT Monitoring

#	Blocking Frequency (MHz)	Blocking Frequency Offset (MHz)	Name	Value	Limit Min	Limit Max	Result
1	2504.000000	0.000000	PER	0.267	---	10.000	PASS
2	2524.000000	0.000000	PER	0.000	---	10.000	PASS
3	2584.000000	0.000000	PER	0.133	---	10.000	PASS
4	2674.000000	0.000000	PER	0.000	---	10.000	PASS

7 Appendix A.7 : Transmitter unwanted emissions

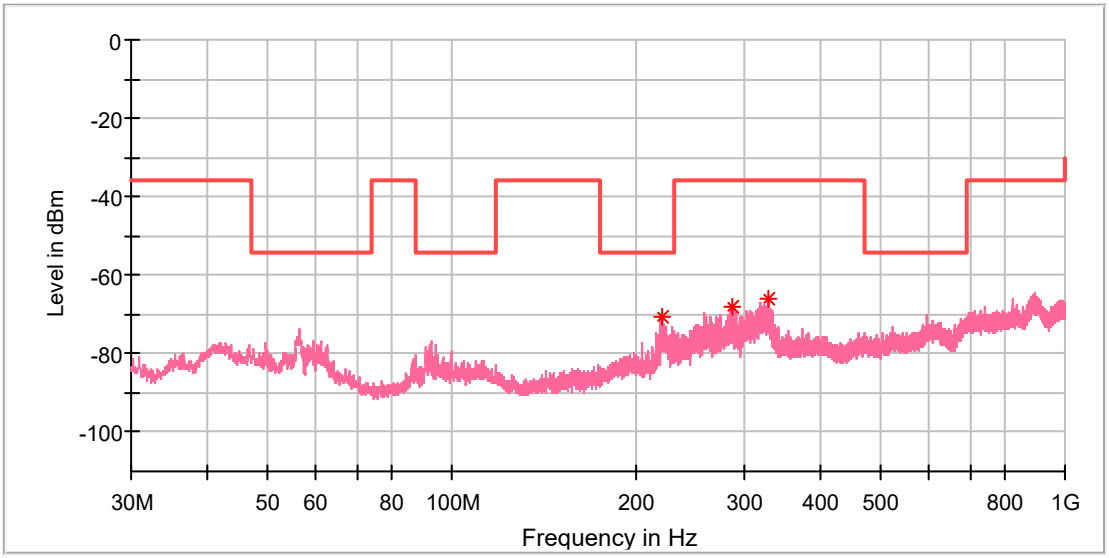
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	TX_11B20 L CH
Test Voltage:	AC 230V 50Hz
Remark:	Temp:21.8;Humi:54%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
159.834500	-77.41	-36.00	41.41	150.0	H	124.0	-120.3
197.761500	-66.58	-54.00	12.58	150.0	H	317.0	-117.5
328.954000	-62.24	-36.00	26.24	150.0	H	352.0	-114.4
472.853500	-71.76	-54.00	17.77	150.0	H	344.0	-109.2

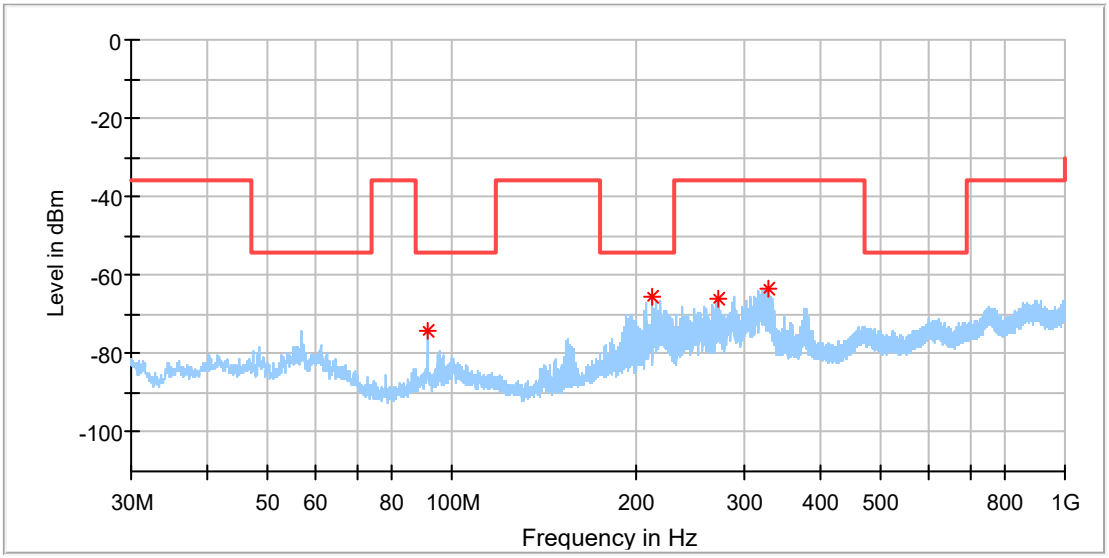
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	TX_11B20 L CH
Test Voltage:	AC 230V 50Hz
Remark:	Temp:21.8;Humi:54%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
220.120000	-70.46	-54.00	16.46	150.0	V	152.0	-118.1
286.177000	-67.91	-36.00	31.91	150.0	V	82.0	-117.0

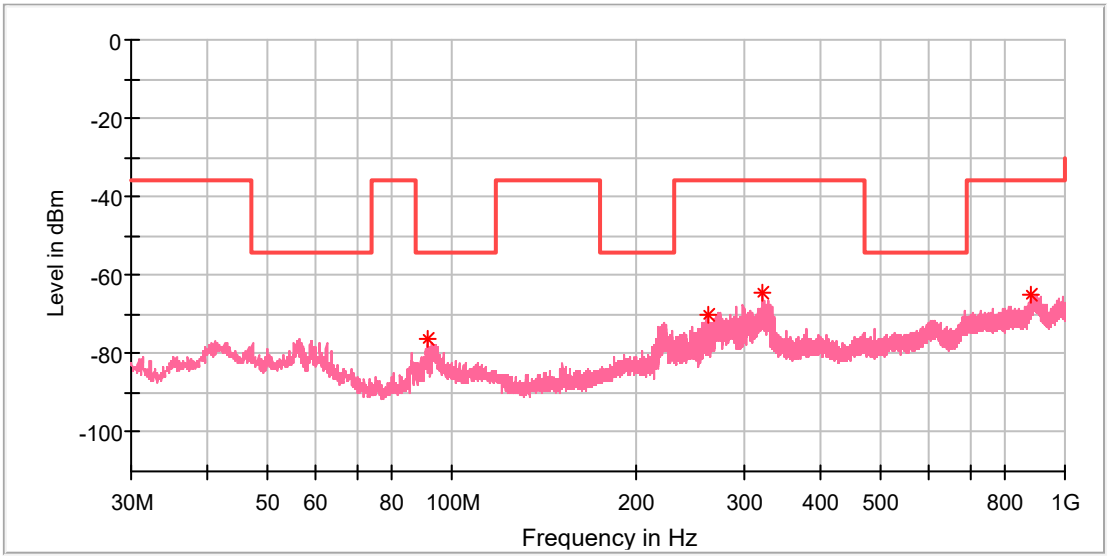
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	TX_11B20 H CH
Test Voltage:	AC 230V 50Hz
Remark:	Temp:21.8;Humi:54%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
91.546500	-74.21	-54.00	20.21	150.0	H	92.0	-120.6
212.554000	-65.69	-54.00	11.69	150.0	H	310.0	-118.3
272.839500	-66.12	-36.00	30.12	150.0	H	316.0	-117.5
327.208000	-63.49	-36.00	27.49	150.0	H	316.0	-114.6

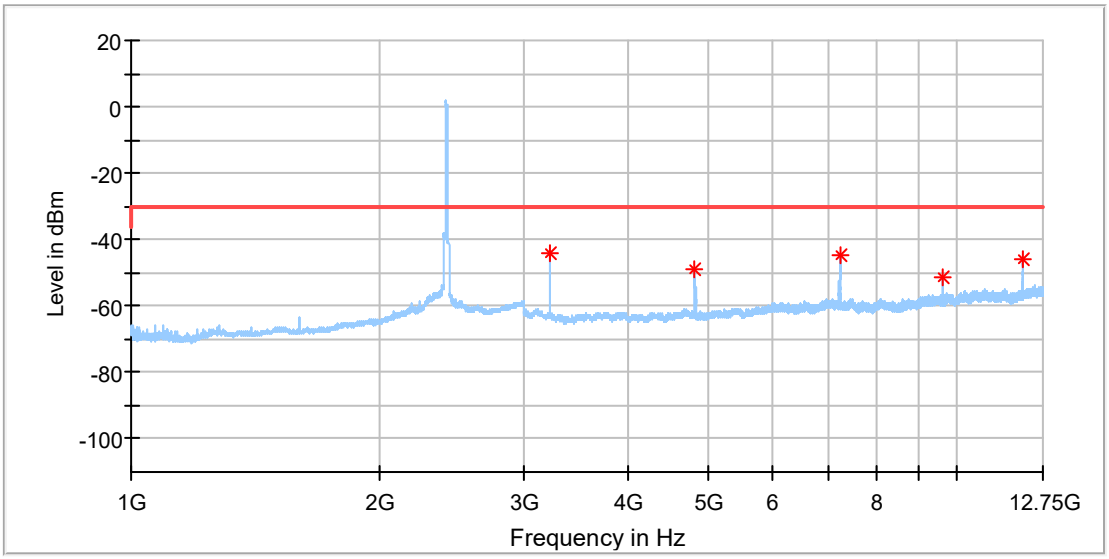
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	TX_11B20 H CH
Test Voltage:	AC 230V 50Hz
Remark:	Temp:21.8;Humi:54%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
91.546500	-76.11	-54.00	22.11	150.0	V	179.0	-119.8
262.266500	-69.91	-36.00	33.91	150.0	V	181.0	-117.3
320.709000	-64.52	-36.00	28.52	150.0	V	106.0	-114.1
881.175000	-65.06	-36.00	29.06	150.0	V	211.0	-103.3

EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	TX_11B20 L CH
Test Voltage:	DC3.3V
Remark:	Temp:23.5;Humi:59%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

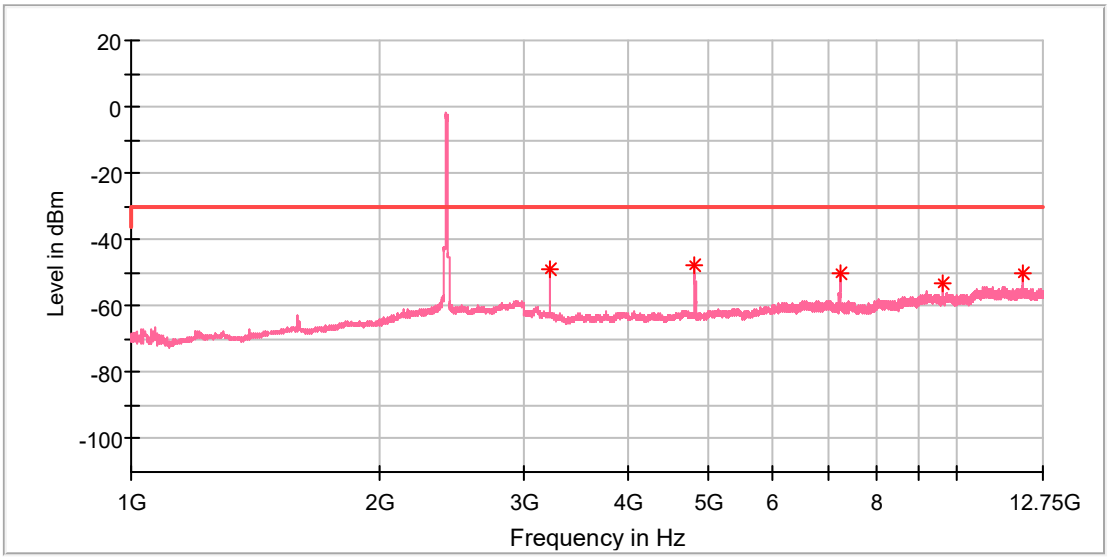


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3216.000000	-43.92	-30.00	13.92	150.0	H	323.0	-96.6
4823.500000	-48.65	-30.00	18.65	150.0	H	215.0	-94.8
7233.803572	-44.66	-30.00	14.66	150.0	H	290.0	-90.8
9648.375000	-51.33	-30.00	21.33	150.0	H	310.0	-89.8
12061.500000	-46.06	-30.00	16.06	150.0	H	57.0	-87.7

The highest waveform in the figure is Wi-Fi Fundamental.
Remarks: The emission over limit is fundamental frequency signal which can be ignored.

EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	TX_11B20 L CH
Test Voltage:	DC3.3V
Remark:	Temp:23.5;Humi:59%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

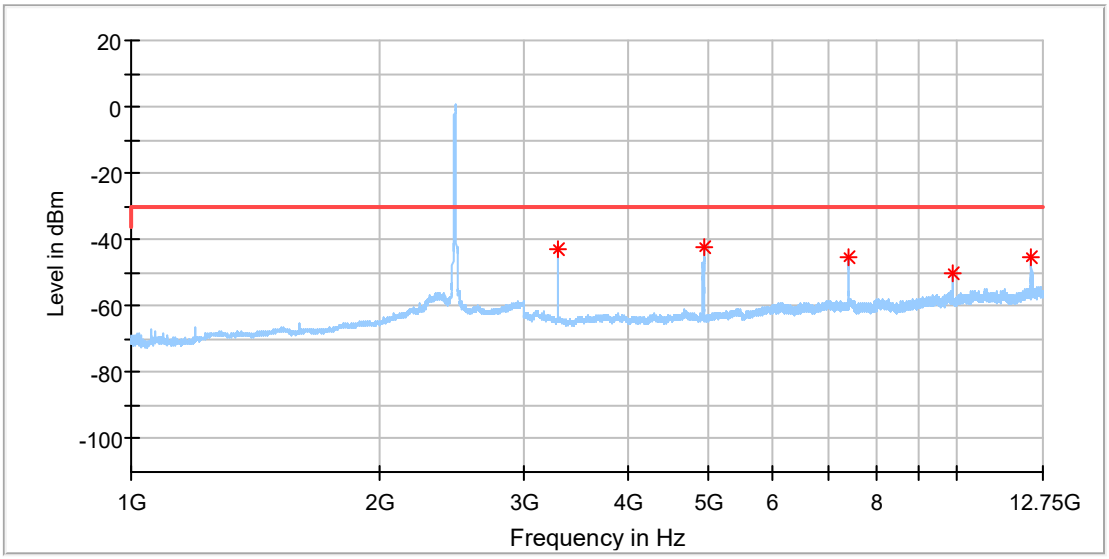


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3216.000000	-48.84	-30.00	18.84	150.0	V	223.0	-96.3
4823.500000	-47.45	-30.00	17.45	150.0	V	59.0	-95.1
7233.803572	-50.07	-30.00	20.07	150.0	V	297.0	-91.4
9648.375000	-53.03	-30.00	23.03	150.0	V	61.0	-89.4
12060.053571	-49.85	-30.00	19.85	150.0	V	50.0	-87.1

The highest waveform in the figure is Wi-Fi Fundamental.
Remarks: The emission over limit is fundamental frequency signal which can be ignored.

EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	TX_11B20 H CH
Test Voltage:	DC3.3V
Remark:	Temp:23.5;Humi:59%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin

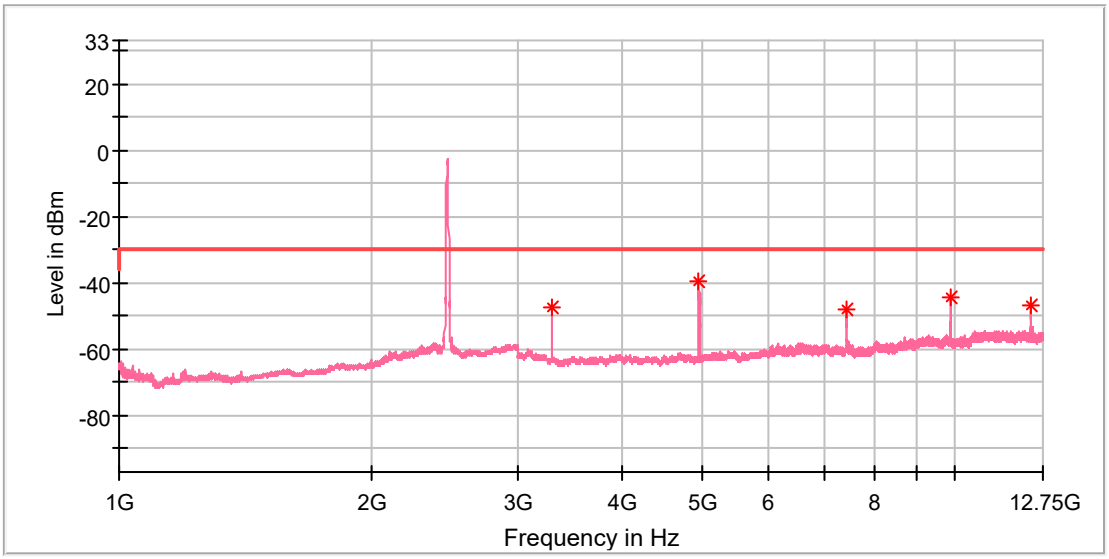


Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3296.000000	-42.86	-30.00	12.86	150.0	H	164.0	-97.5
4944.000000	-42.19	-30.00	12.19	150.0	H	52.0	-94.8
7415.089286	-45.04	-30.00	15.04	150.0	H	285.0	-90.9
9888.000000	-50.20	-30.00	20.20	150.0	H	55.0	-89.3
12360.428571	-45.16	-30.00	15.16	150.0	H	55.0	-86.8

The highest waveform in the figure is Wi-Fi Fundamental.
Remarks: The emission over limit is fundamental frequency signal which can be ignored.

EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	TX_11B20 H CH
Test Voltage:	DC3.3V
Remark:	Temp:23.5;Humi:59%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



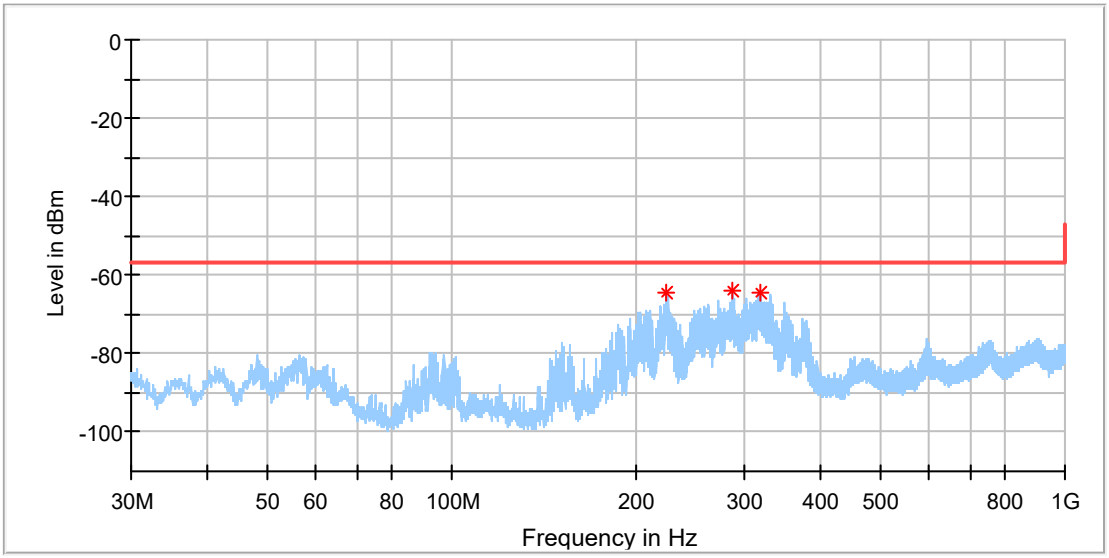
Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3296.000000	-47.69	-30.00	17.69	150.0	V	241.0	-97.4
4943.500000	-39.42	-30.00	9.42	150.0	V	62.0	-95.1
7415.571429	-47.85	-30.00	17.85	150.0	V	348.0	-91.8
9888.000000	-44.37	-30.00	14.37	150.0	V	56.0	-89.1
12360.910714	-47.04	-30.00	17.04	150.0	V	60.0	-87.3

The highest waveform in the figure is Wi-Fi Fundamental.
Remarks: The emission over limit is fundamental frequency signal which can be ignored.

8 Appendix A.8 : Receiver spurious emissions

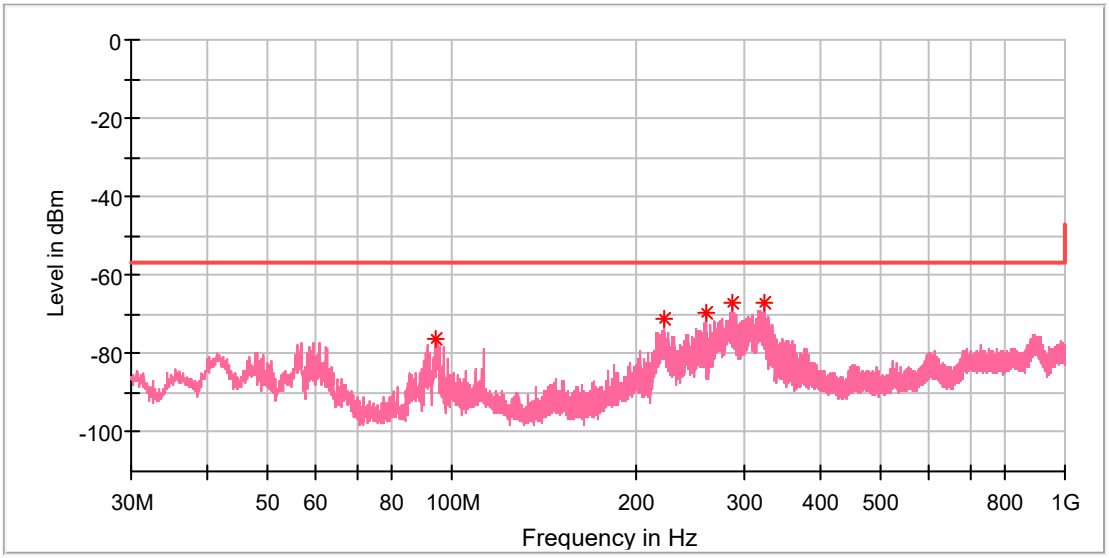
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	RX_11B20 L CH
Test Voltage:	AC 230V 50Hz
Remark:	Temp:21.8;Humi:54%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
224.388000	-64.21	-57.00	7.21	150.0	H	338.0	-117.0
287.341000	-64.06	-57.00	7.06	150.0	H	322.0	-116.8
318.478000	-64.21	-57.00	7.21	150.0	H	318.0	-115.0

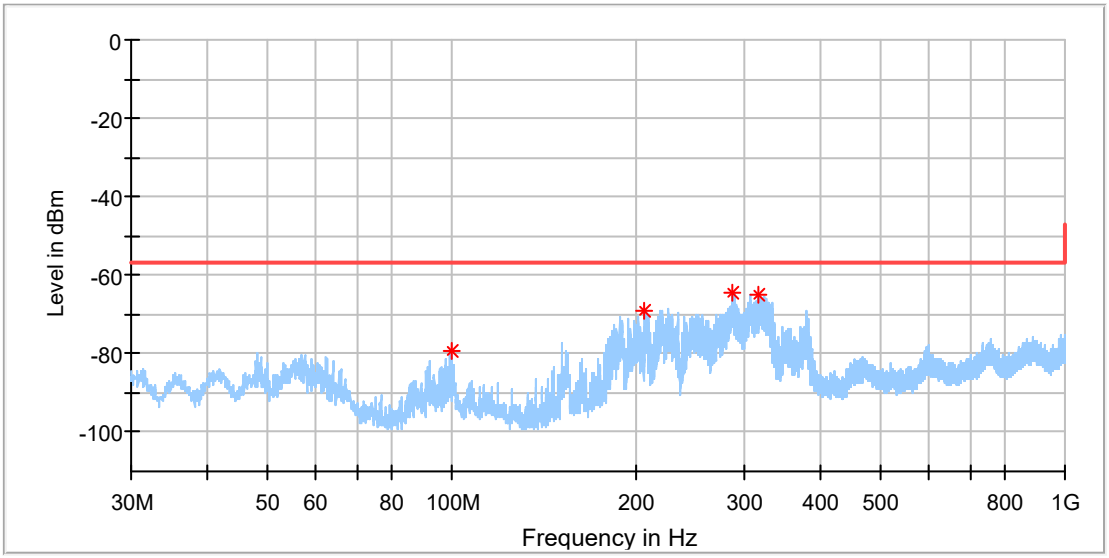
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	RX_11B20 L CH
Test Voltage:	AC 230V 50Hz
Remark:	Temp:21.8;Humi:54%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
94.165500	-76.07	-57.00	19.07	150.0	V	93.0	-119.0
222.254000	-71.17	-57.00	14.17	150.0	V	151.0	-117.8
259.308000	-69.33	-57.00	12.33	150.0	V	151.0	-117.0
286.613500	-67.11	-57.00	10.11	150.0	V	104.0	-117.0
323.570500	-67.14	-57.00	10.14	150.0	V	47.0	-113.7

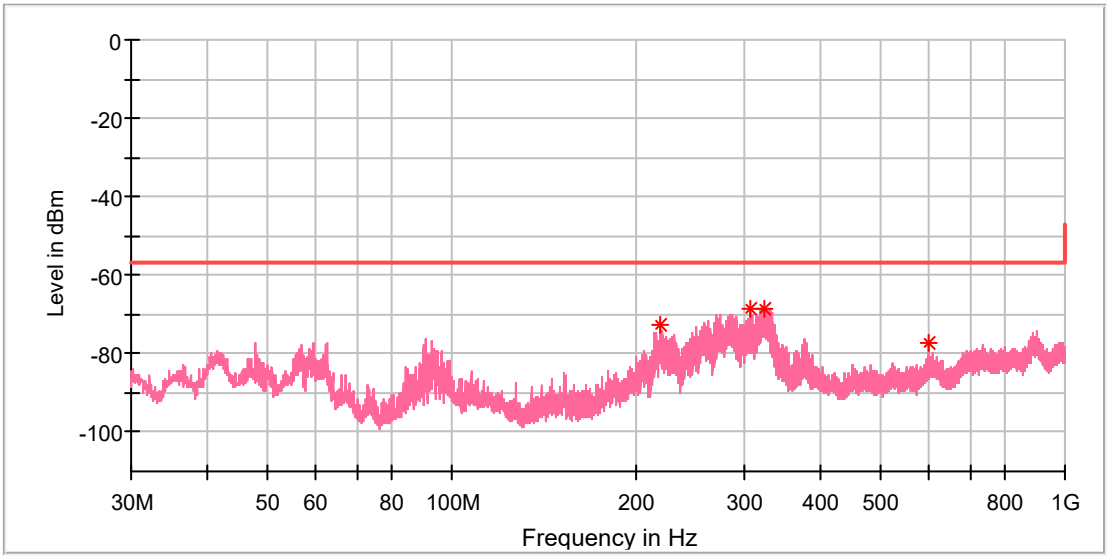
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	RX_11B20 H CH
Test Voltage:	AC 230V 50Hz
Remark:	Temp:21.8;Humi:54%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
100.131000	-79.34	-57.00	22.34	150.0	H	136.0	-119.0
206.588500	-69.01	-57.00	12.01	150.0	H	290.0	-118.4
287.535000	-64.27	-57.00	7.27	150.0	H	321.0	-116.8
316.732000	-64.92	-57.00	7.92	150.0	H	316.0	-115.1

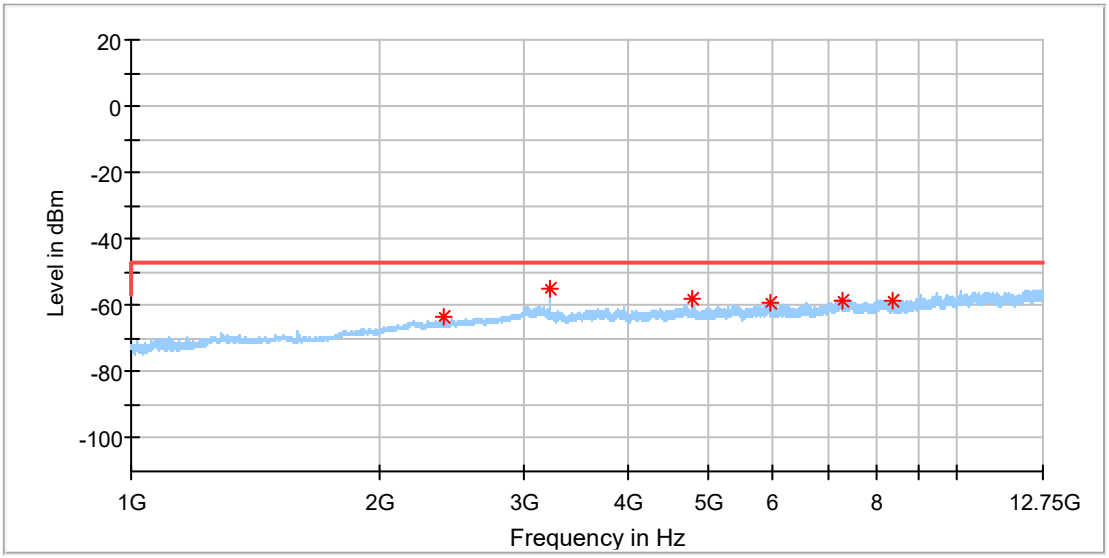
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	RX_11B20 H CH
Test Voltage:	AC 230V 50Hz
Remark:	Temp:21.8;Humi:54%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
218.083000	-72.64	-57.00	15.64	150.0	V	46.0	-118.3
305.965000	-68.73	-57.00	11.74	150.0	V	162.0	-115.7
323.619000	-68.40	-57.00	11.40	150.0	V	61.0	-113.7
600.020500	-77.12	-57.00	20.12	150.0	V	46.0	-108.7

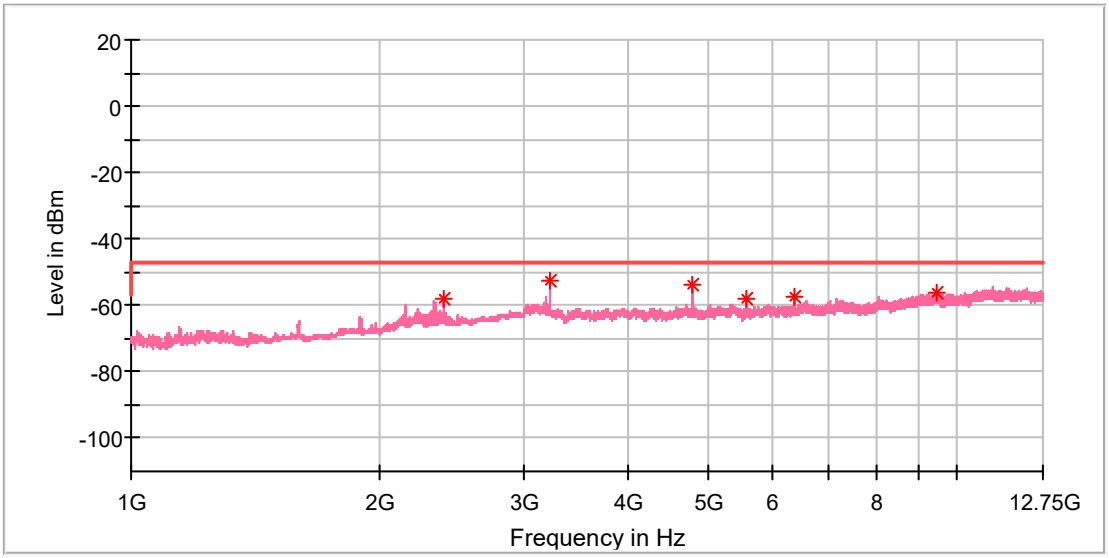
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	RX_11B20 L CH
Test Voltage:	DC3.3V
Remark:	Temp:23.5;Humi:59%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2390.000000	-63.56	-47.00	16.56	150.0	H	209.0	-94.8
3215.583333	-55.16	-47.00	8.16	150.0	H	67.0	-96.6
4779.916667	-57.90	-47.00	10.90	150.0	H	133.0	-94.7
5945.041667	-59.40	-47.00	12.40	150.0	H	328.0	-91.7
7272.125000	-58.62	-47.00	11.62	150.0	H	98.0	-91.0
8379.833333	-58.34	-47.00	11.34	150.0	H	239.0	-91.4

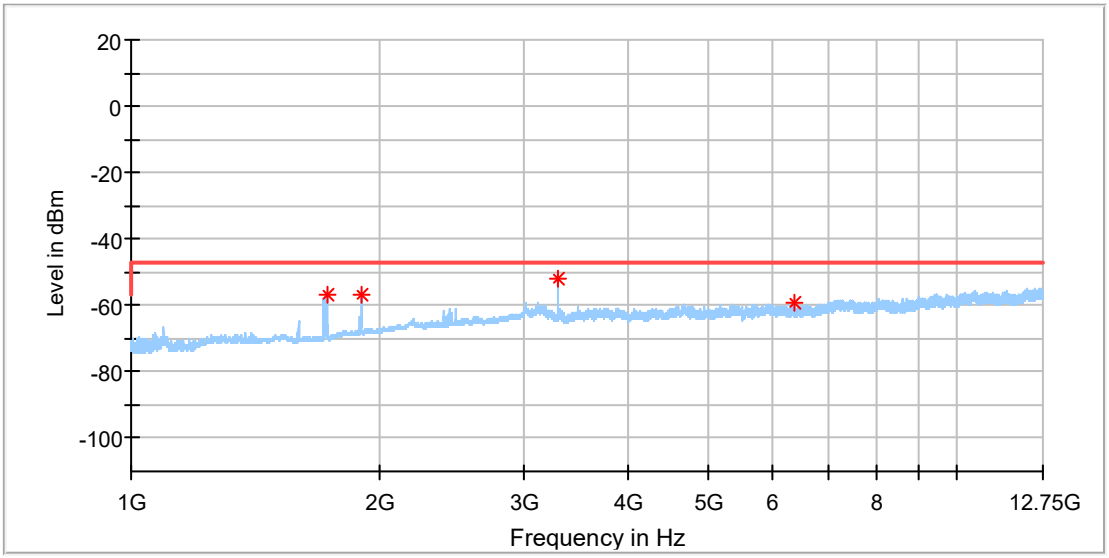
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	RX_11B20 L CH
Test Voltage:	DC3.3V
Remark:	Temp:23.5;Humi:59%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2390.000000	-58.18	-47.00	11.18	150.0	V	95.0	-94.8
3215.583333	-52.71	-47.00	5.71	150.0	V	42.0	-96.2
4789.125000	-53.65	-47.00	6.65	150.0	V	219.0	-95.1
5579.958333	-57.93	-47.00	10.93	150.0	V	164.0	-93.3
6381.083333	-57.64	-47.00	10.64	150.0	V	15.0	-91.9
9500.000000	-55.97	-47.00	8.97	150.0	V	156.0	-88.8

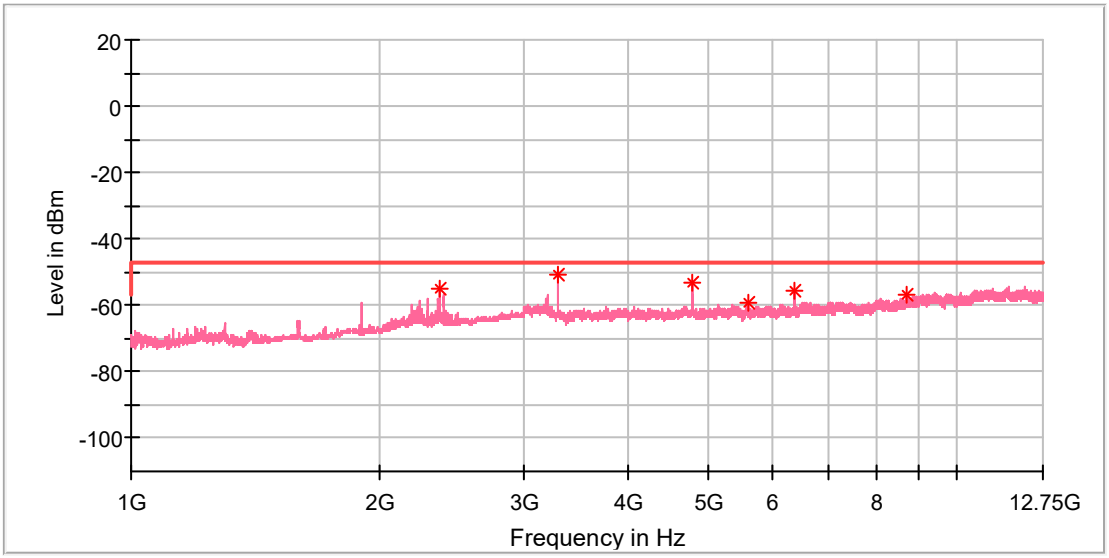
EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	RX_11B20 H CH
Test Voltage:	DC3.3V
Remark:	Temp:23.5;Humi:59%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1725.500000	-56.55	-47.00	9.55	150.0	H	68.0	-99.0
1904.000000	-56.65	-47.00	9.65	150.0	H	344.0	-96.9
3295.750000	-52.22	-47.00	5.22	150.0	H	69.0	-97.5
6385.416667	-59.44	-47.00	12.44	150.0	H	259.0	-92.3

EUT Name:	Smart Power Meter Switch
Model:	POWR320D
Sample No:	A003291051-004
Test Mode:	RX_11B20 H CH
Test Voltage:	DC3.3V
Remark:	Temp:23.5;Humi:59%
Test standard:	EN 300328
Tested By:	Xiqiang Ma
Reviewed by	Terry Yin



Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2364.000000	-54.95	-47.00	7.96	150.0	V	65.0	-94.9
3295.750000	-50.80	-47.00	3.81	150.0	V	69.0	-97.4
4779.375000	-53.29	-47.00	6.29	150.0	V	205.0	-95.0
5587.541667	-59.40	-47.00	12.40	150.0	V	148.0	-93.3
6381.083333	-55.57	-47.00	8.57	150.0	V	188.0	-91.9
8718.375000	-56.61	-47.00	9.61	150.0	V	104.0	-90.2