FCC/IC - TEST REPORT

Report Number	:	**64.790.18.01983.01**	Date of Issue:	July 2, 2018
Model	:	CE-OSK201		
Product Type	:	Smart Kit		
Applicant	:	GD Midea Air-conditioning Equipment Co.,Ltd		
Address	:	Midea Industrial District , Beijiao ,Shunde, Foshan, Guangdong FOSHAN, China		
Manufacturer	:	GD Midea Air-conditioning Equipment Co.,Ltd		
Address	:	Midea Industrial District , Beijiao ,Shunde, Foshan, Guangdong FOSHAN, China		
Test Result	:	■ **Positive** ☐ **Negative**		
Total pages including Appendices	:	43		

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2 Details about the Test Laboratory

Details about the Test Laboratory
Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12&13, Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2, Nanshan District,
Shenzhen City, 518052,
P. R. China

Telephone: 86 755 8828 6998
Fax: 86 755 8828 5299

FCC Accredited test firm : Designation Number- CN5009

IC registration number: 10320A

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3 Description of the Equipment Under Test

Product:	Smart Kit
Model no.:	CE-OSK201
FCC ID:	2ADQOMDNA18
IC:	12575A-MDNA18
Options and accessories:	Nil
Rating Input:	DC 5V
RF Transmission Frequency:	2412MHz-2462MHz
No. of Operated Channel:	802.11b/g/n20: 11 channel 802.11n40: 7 channel
Modulation:	802.11b: CCK DSSS 802.11g: OFDM 802.11n20: OFDM 802.11n40: OFDM
Antenna Type:	Internal Printed PCB antenna
Antenna Gain:	1.8dBi
Description of the EUT:	The EUT is a WIFI adaptor and only can use for products of Midea group.

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4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2017 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators
RSS-247 Issue 2 February 2017	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSS) and Licence-Exempt Local Area Network (LE-LAN) Devices

All the test methods were according to KDB558074 D01 DTS Meas Guidance issued by April 8, 2016 and ANSI C63.10 (2013).

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5 Summary of Test Results

Technical Requirements				
FCC Part 15 Subpart C				
Test Condition			Pages	Test Result
§15.207	RSS-GEN 8.8	Conducted emission AC power port	10	Pass
§15.247(b)(1)	RSS-247 Clause 5.4(2)	Conducted peak output power	13	Pass
§15.247(e)	RSS-247 Clause 5.2(2)	Power spectral density*	14	Pass
§15.247(a)(2)	RSS-247 Clause 5.2(1)	6dB bandwidth	15	Pass
§15.247(a)(1)	RSS-247 Clause 5.1(1)	20dB bandwidth and 99% Occupied Bandwidth	--	N/A
§15.247(a)(1)	RSS-247 Clause 5.1(2)	Carrier frequency separation	--	N/A
§15.247(a)(1)(iii)	RSS-247 Clause 5.1(4)	Number of hopping frequencies	--	N/A
§15.247(a)(1)(iii)	RSS-247 Clause 5.1(4)	Dwell Time	--	N/A
§15.247(d)	RSS-247 Clause 5.5	Spurious RF conducted emissions	20	Pass
§15.247(d)	RSS-247 Clause 5.5	Band edge	34	Pass
§15.247(d) & §15.209 &	RSS-247 Clause 5.5 & RSS-GEN 6.13	Spurious radiated emissions for transmitter	39	Pass
§15.203	RSS-GEN 8.3	Antenna requirement	See note 2	Pass

Note 1: N/A=Not Applicable.
Note 2: The EUT uses Internal Printed PCB antenna, which gain is 1.8dBi. In accordance to §15.203, it is considered sufficiently to comply with the provisions of this section.

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6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID:2ADQOMDNA18, IC:12575A-MDNA18 complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C, RSS- 247 and RSS-Gen rules.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

☐ - **Not** Performed

The Equipment under Test

■ - **Fulfills** the general approval requirements.

☐ - **Does not** fulfill the general approval requirements.

Sample Received Date:	May 25, 2018
Testing Start Date:	May 28, 2018
Testing End Date:	July 11, 2018

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Reviewed by:	Prepared by:
Tony Liu	Kevin Ouyang

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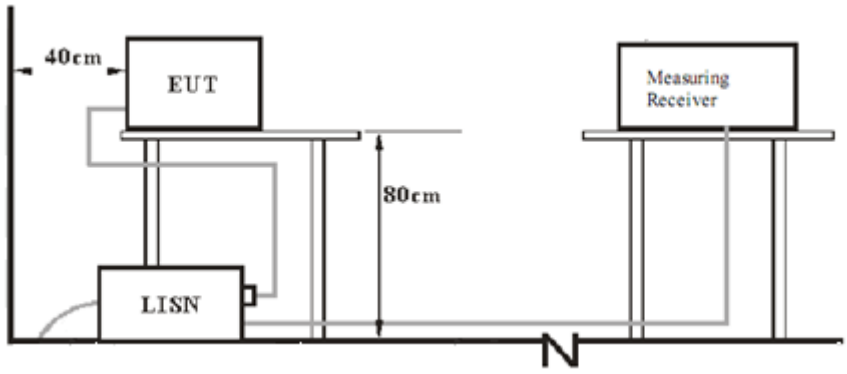
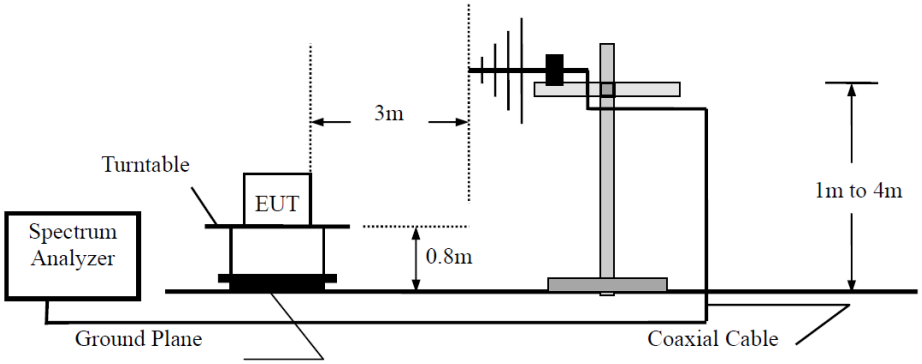
7 Test Setups

7.1 AC Power Line Conducted Emission test setups

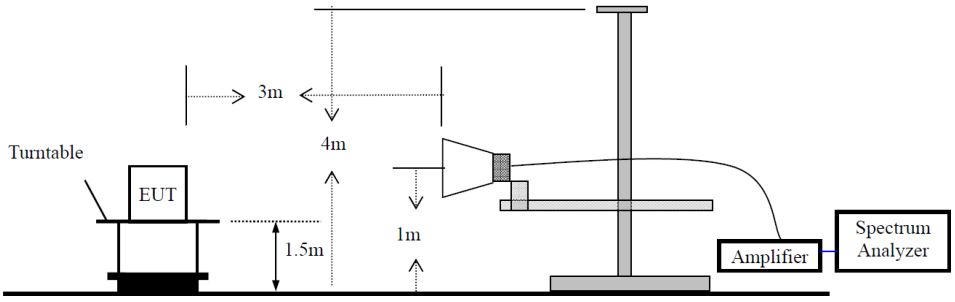


7.2 Radiated test setups

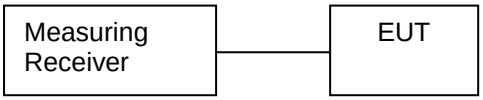
Below 1GHz



Above 1GHz



7.3 Conducted RF test setups



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8 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)
Air-conditioner	Midea	/
Software	/	Ameba Mptool

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9 Technical Requirement

9.1 Conducted Emission

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

Frequency MHz	QP Limit dBµV	AV Limit dBµV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency

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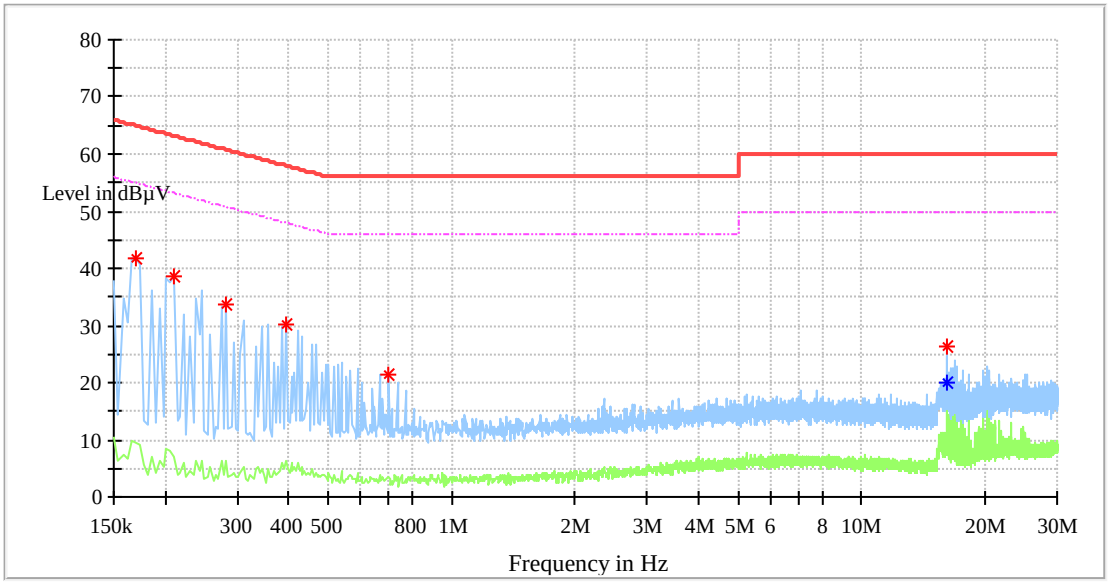
Test data:

Conducted Emission

Product Type	:	Smart Kit
M/N	:	CE-OSK201
Operating Condition	:	WiFi function on.
Test Specification	:	L
Comment	:	AC 120V/60Hz
Test date	:	2018-07-11



No significant emission was detected within 10 dB to limit

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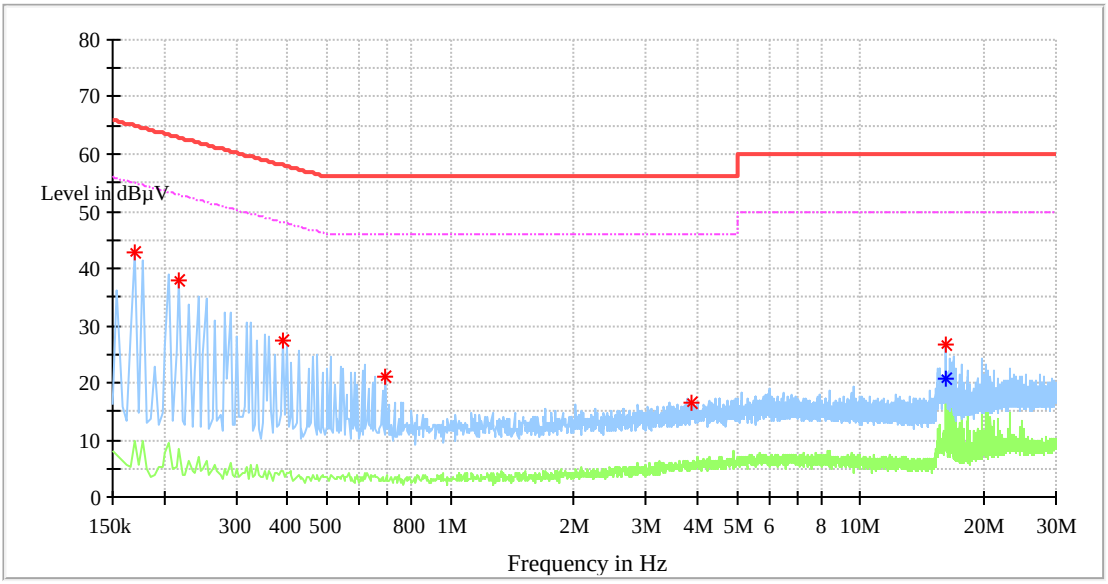
Conducted Emission

Product Type	:	Smart Kit
M/N	:	CE-OSK201
Operating Condition	:	WiFi function on.
Test Specification	:	N
Comment	:	AC 120V/60Hz
Test date	:	2018-07-11



No significant emission was detected within 10 dB to limit

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9.2 Conducted peak output power

Test Method

1. Use the following spectrum analyzer settings:
   Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel
   RBW > the 20 dB bandwidth of the emission being measured, VBW≥RBW,
   Sweep = auto, Detector function = peak, Trace = max hold
2. Add a correction factor to the display.
3. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power

Limits

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1	≤30

Conducted peak output power

802.11b modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2412MHz	14.56	Pass
Middle channel 2437MHz	15.08	Pass
High channel 2462MHz	14.51	Pass

802.11g modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2412MHz	17.51	Pass
Middle channel 2437MHz	17.85	Pass
High channel 2462MHz	17.66	Pass

802.11n20 modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2412MHz	17.59	Pass
Middle channel 2437MHz	17.97	Pass
High channel 2462MHz	17.78	Pass

802.11n40 modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2422MHz	16.04	Pass
Middle channel 2437MHz	16.48	Pass
High channel 2452MHz	16.37	Pass

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9.3 Power spectral density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

1. Set analyzer center frequency to DTS channel center frequency. RBW=3kHz,VBW≥3RBW,Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold
2. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
3. Repeat above procedures until other frequencies measured were completed

Limit

Limit
≤ 8 dBm/3KHz

802.11b modulation Test Result

Frequency MHz	Power spectral density	Limit dBm/3KHz	Result
2412	-2.12	8	Pass
2437	-1.69	8	Pass
2462	-2.26	8	Pass

802.11g modulation Test Result

Frequency MHz	Power spectral density	Limit dBm/3KHz	Result
2412	-6.07	8	Pass
2437	-6.67	8	Pass
2462	-6.14	8	Pass

802.11n20 modulation Test Result

Frequency MHz	Power spectral density	Limit dBm/3KHz	Result
2412	-7.41	8	Pass
2437	-6.72	8	Pass
2462	-7.06	8	Pass

802.11n40 modulation Test Result

Frequency MHz	Power spectral density	Limit dBm/3KHz	Result
2422	-11.54	8	Pass
2437	-11.3	8	Pass
2452	-11.5	8	Pass

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9.4 6 dB Bandwidth

Test Method

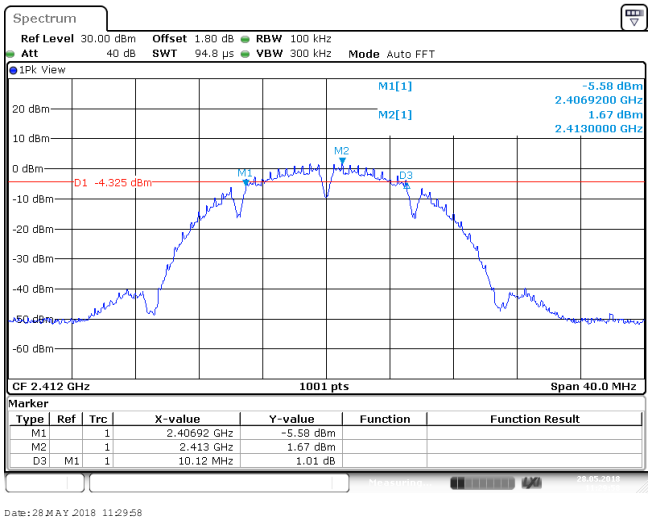
1. Use the following spectrum analyzer settings:
RBW=100K, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 6, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.
3. Allow the trace to stabilize, record the X dB Bandwidth value.

Limit

Limit [kHz]
≥500

802.11b modulation Test Result

Frequency MHz	6 dB Bandwidth MHz	Limit kHz	Result
2412	10.120	500	Pass
2437	10.160	500	Pass
2462	10.160	500	Pass



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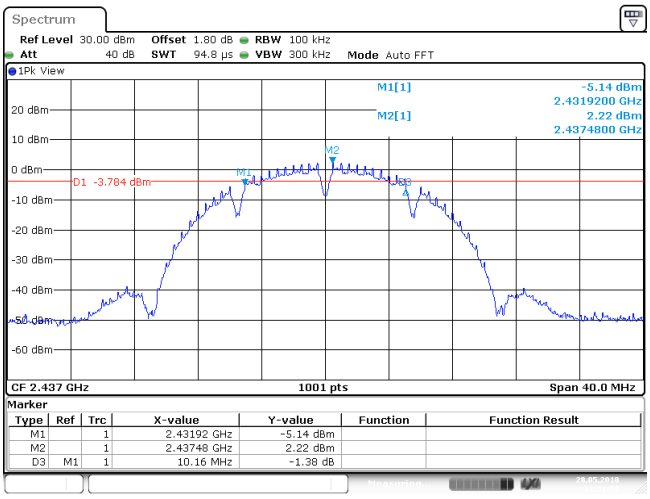

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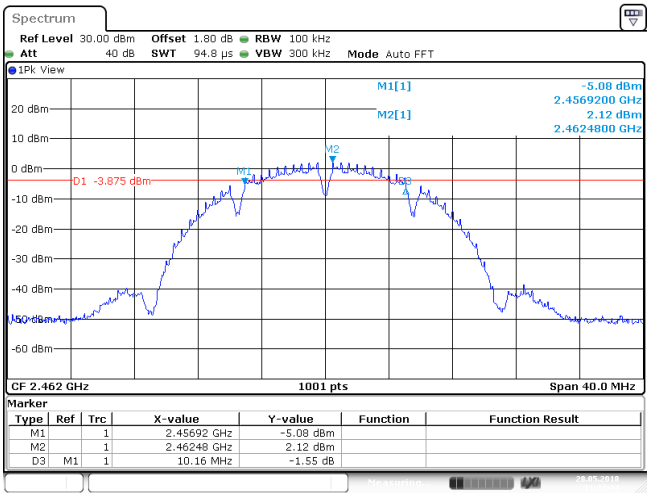

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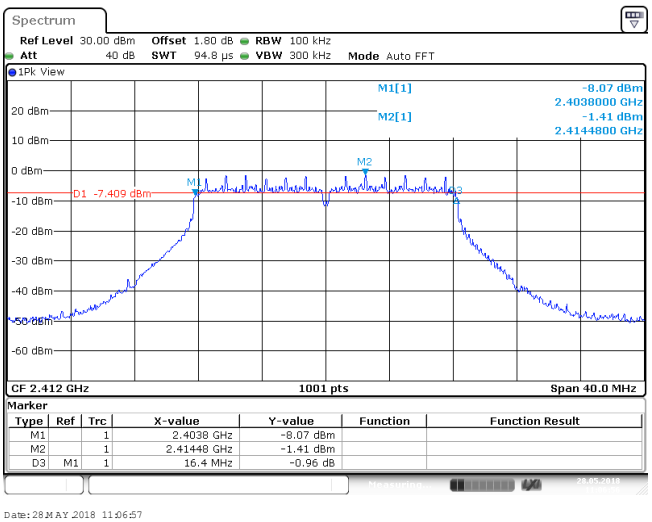
802.11g modulation Test Result

Frequency	6 dB Bandwidth	Limit	Result
MHz	MHz	kHz	
2412	16.400	500	Pass
2437	16.400	500	Pass
2462	16.400	500	Pass



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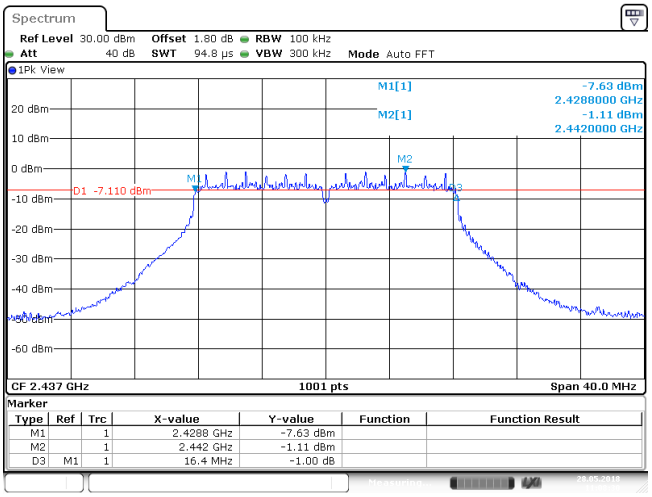

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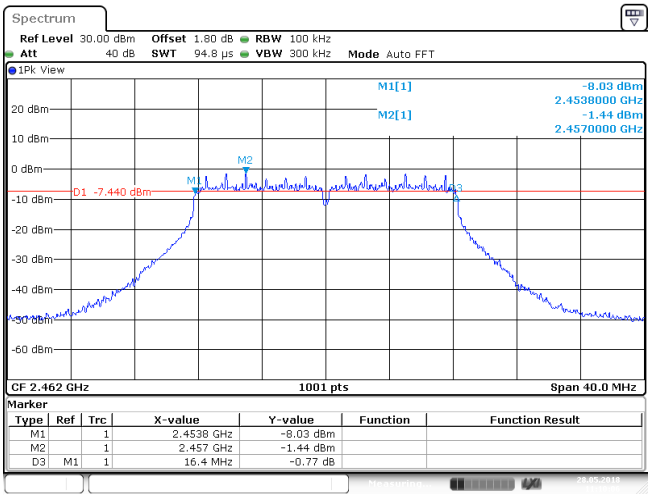

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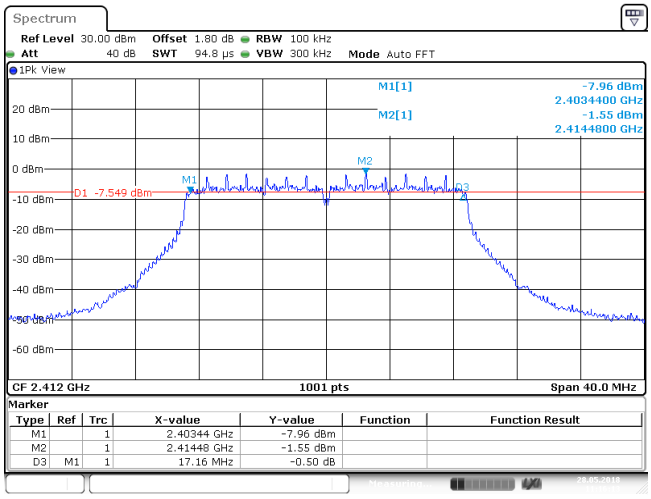
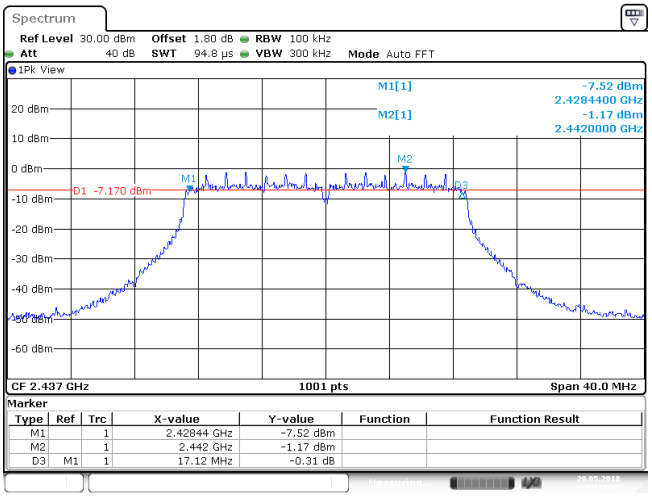
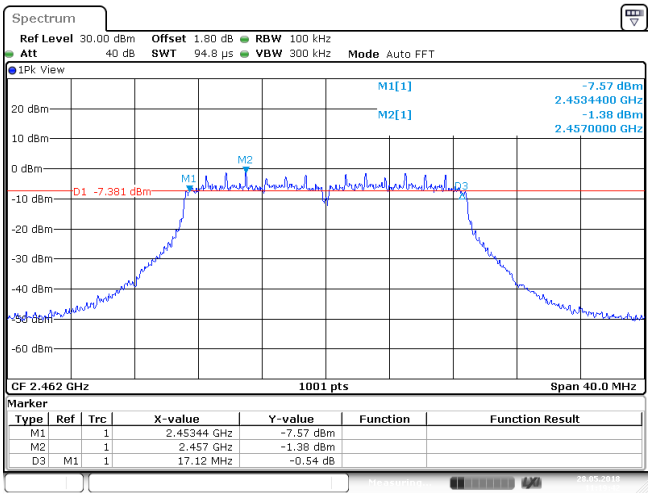
802.11n20 modulation Test Result

Frequency	6 dB Bandwidth	Limit	Result
MHz	MHz	kHz	
2412	17.160	500	Pass
2437	17.120	500	Pass
2462	17.120	500	Pass







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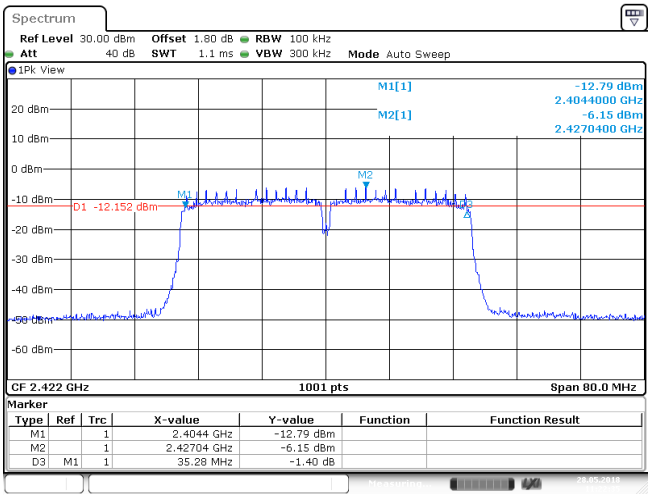
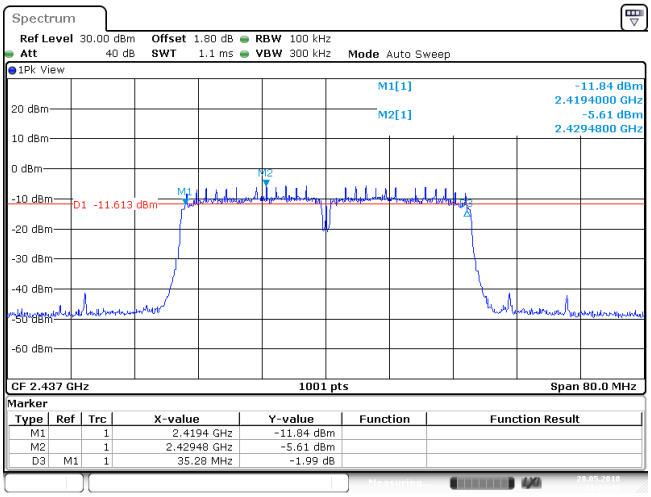
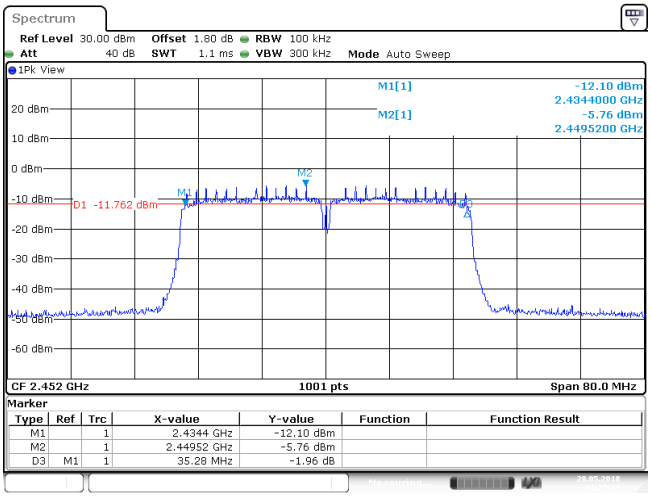
802.11n40 modulation Test Result

Frequency	6 dB Bandwidth	Limit	Result
MHz	MHz	kHz	
2422	35.280	500	Pass
2437	35.280	500	Pass
2452	35.280	500	Pass







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9.5 Spurious RF conducted emissions

Test Method

1. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
   RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
3. The level displayed must comply with the limit specified in this Section. Submit these plots.
4. Repeat above procedures until all frequencies measured were complete.

Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20

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Spurious RF conducted emissions

Test Result:

TestMode	Channel(MHz)	FreqRange(MHz)	RefLevel(dBm)	Result(dBm)	Limit(dBm)	Verdict
11B	2412	30~1000	2.04	-56.46	-17.96	PASS
11B	2412	1000~26500	2.04	-42.8	-17.96	PASS
11B	2437	30~1000	2.57	-56.2	-17.43	PASS
11B	2437	1000~26500	2.57	-42.24	-17.43	PASS
11B	2462	30~1000	2.52	-54.37	-17.48	PASS
11B	2462	1000~26500	2.52	-42.97	-17.48	PASS
11G	2412	30~1000	-2.16	-52.27	-22.16	PASS
11G	2412	1000~26500	-2.16	-41.94	-22.16	PASS
11G	2437	30~1000	-1.31	-51.73	-21.31	PASS
11G	2437	1000~26500	-1.31	-42.88	-21.31	PASS
11G	2462	30~1000	-1.68	-52.28	-21.68	PASS
11G	2462	1000~26500	-1.68	-42.34	-21.68	PASS
11N20SISO	2412	30~1000	-1.67	-52.48	-21.67	PASS
11N20SISO	2412	1000~26500	-1.67	-40.92	-21.67	PASS
11N20SISO	2437	30~1000	-1.51	-52.21	-21.51	PASS
11N20SISO	2437	1000~26500	-1.51	-41.91	-21.51	PASS
11N20SISO	2462	30~1000	-1.70	-51.55	-21.7	PASS
11N20SISO	2462	1000~26500	-1.70	-42.6	-21.7	PASS
11N40SISO	2422	30~1000	-6.25	-51.69	-26.25	PASS
11N40SISO	2422	1000~26500	-6.25	-42.09	-26.25	PASS
11N40SISO	2437	30~1000	-5.80	-51.48	-25.8	PASS
11N40SISO	2437	1000~26500	-5.80	-41.73	-25.8	PASS
11N40SISO	2452	30~1000	-6.14	-51.53	-26.14	PASS
11N40SISO	2452	1000~26500	-6.14	-42.02	-26.14	PASS

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Test Graphs:

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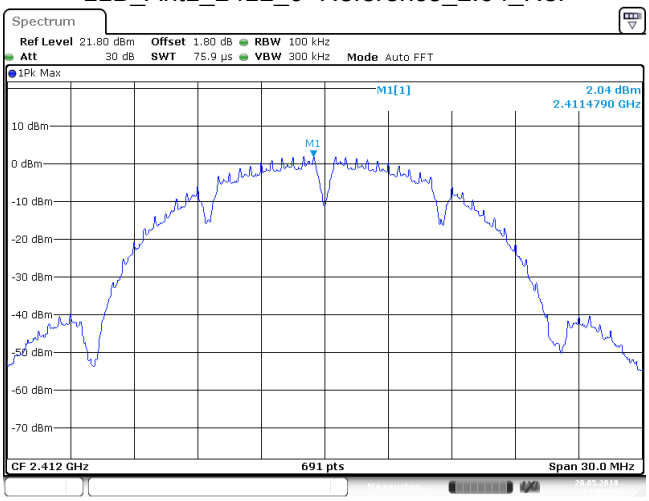

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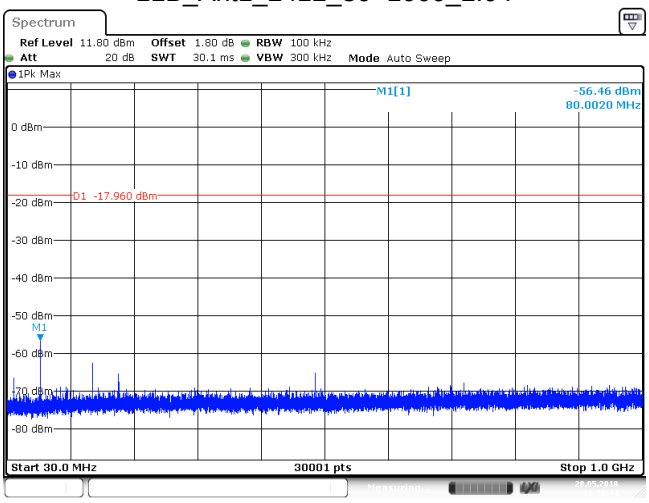

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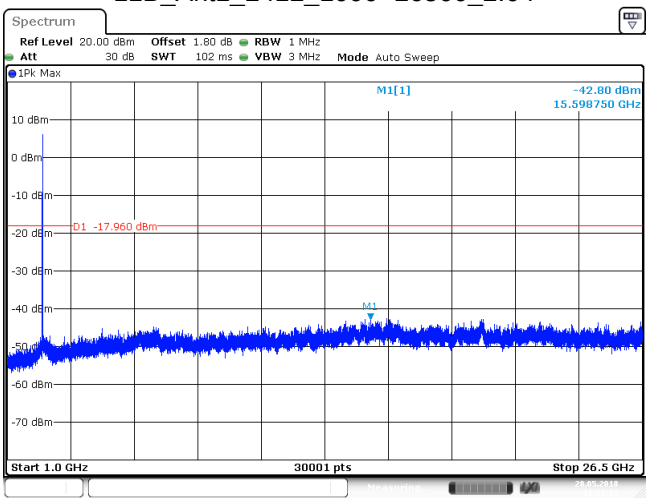

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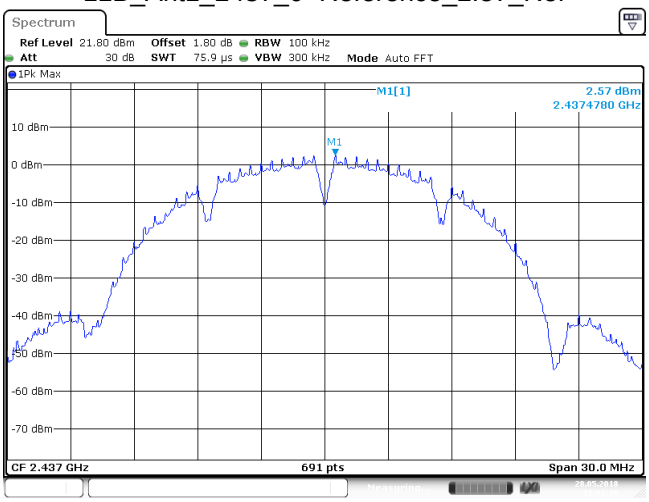
11B_Ant1_2437_0~Reference_2.57_Ref



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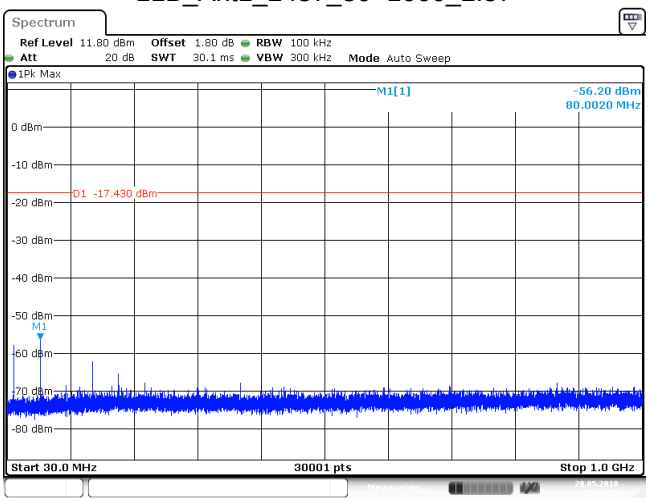
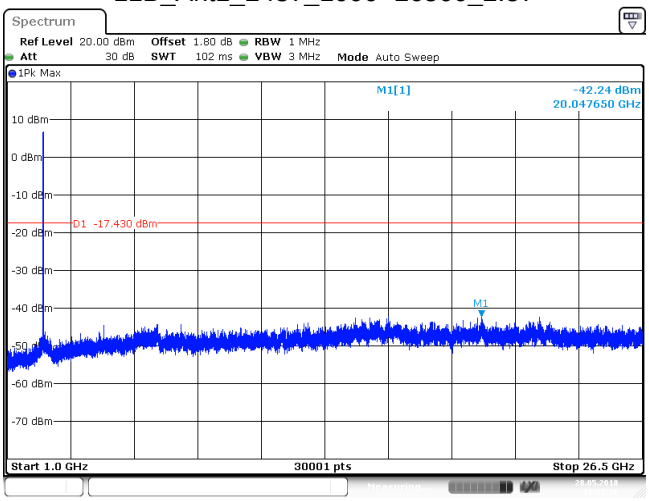


11B_Ant1_2437_1000~26500_2.57



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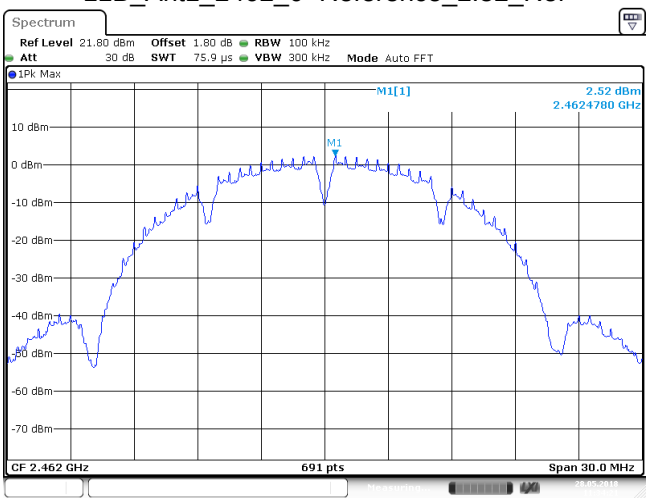
11B_Ant1_2462_0~Reference_2.52_Ref



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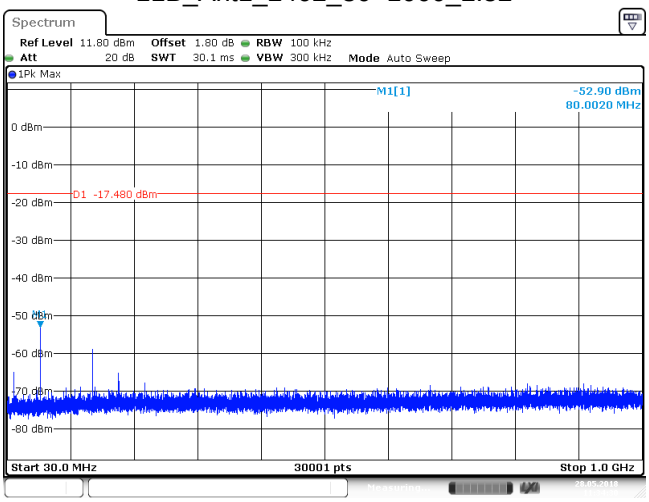

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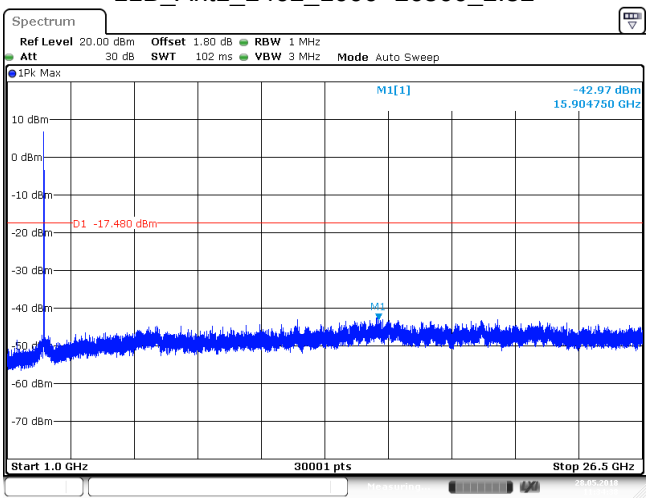

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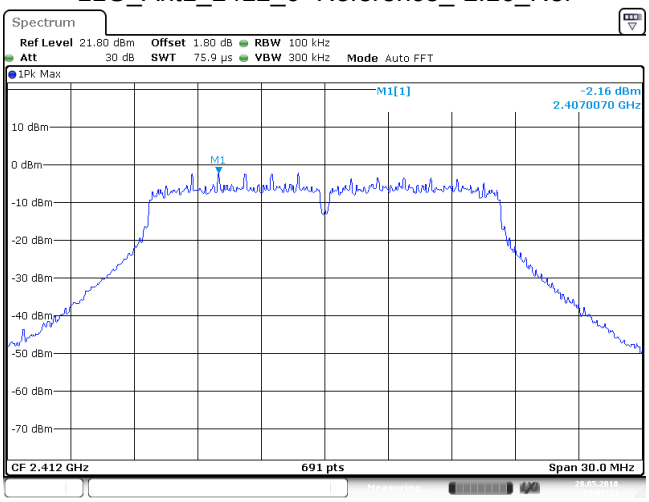
11G_Ant1_2412_0~Reference_-2.16_Ref



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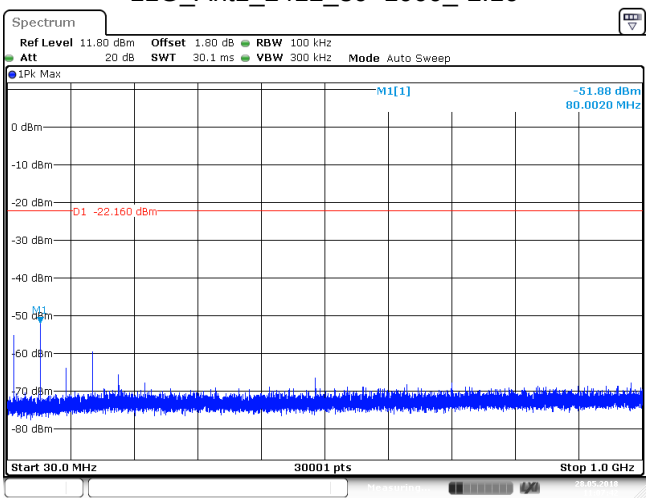

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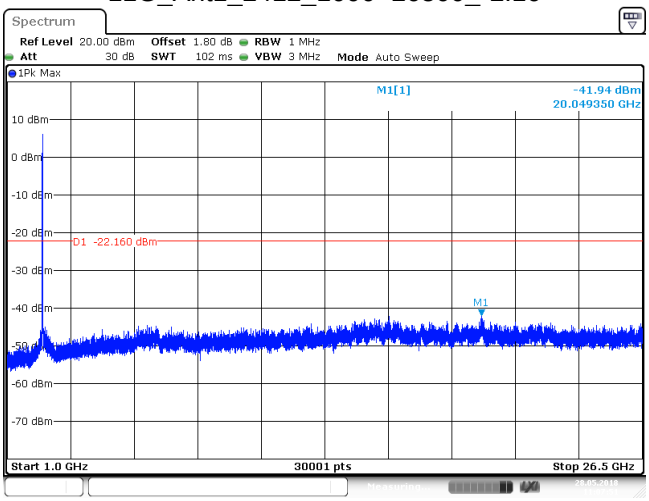

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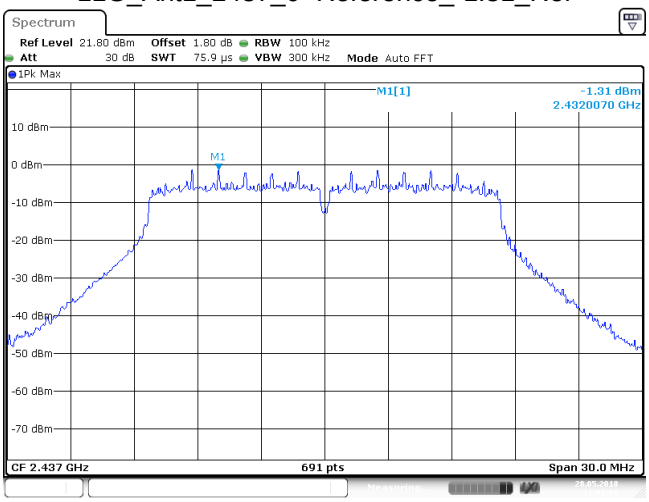
11G_Ant1_2437_0~Reference_-1.31_Ref



Date: 28.MAY.2018 11:08:58

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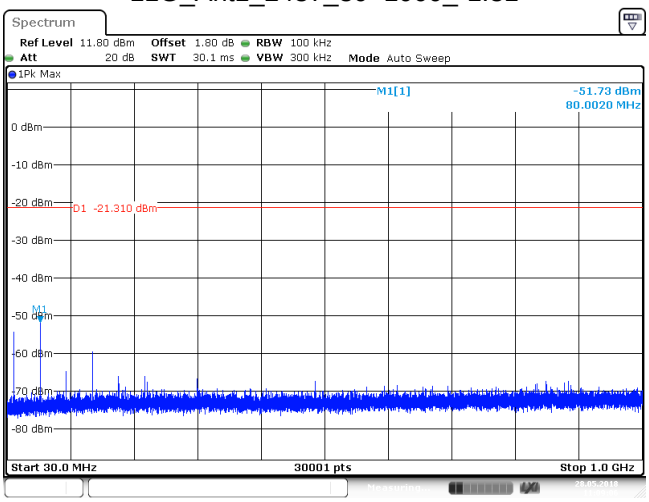

Date: 28.MAY.2018 11:09:07

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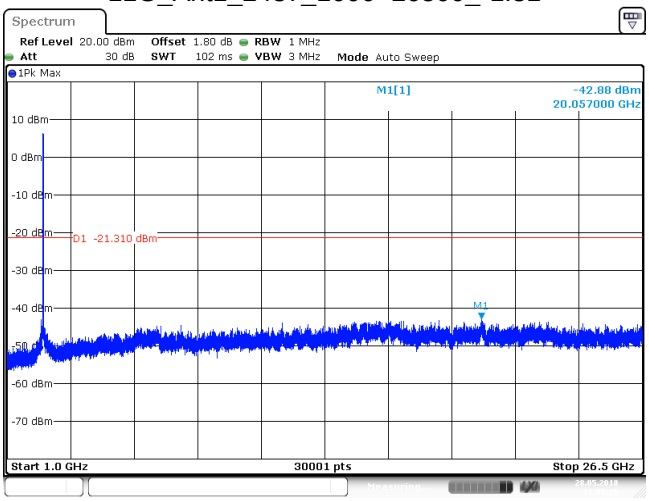

Date: 28.MAY.2018 11:09:16

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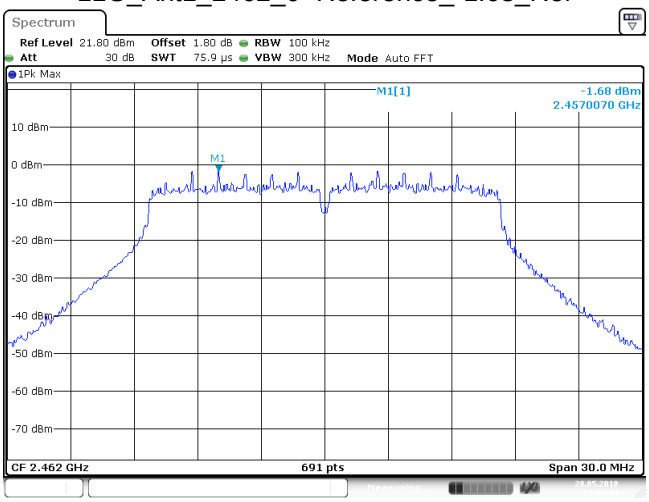
11G_Ant1_2462_0~Reference_-1.68_Ref



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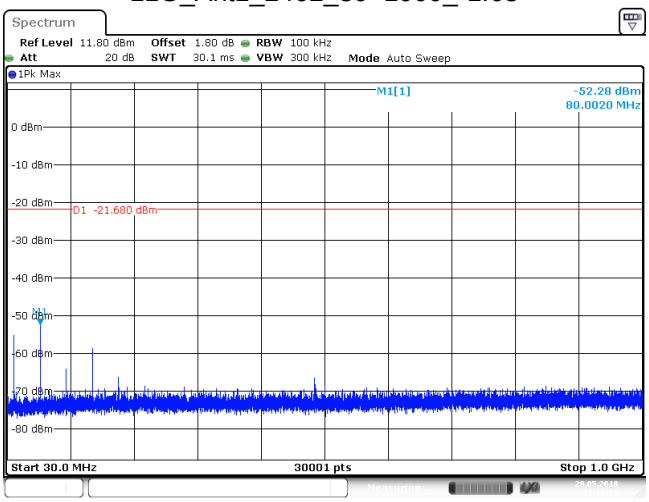

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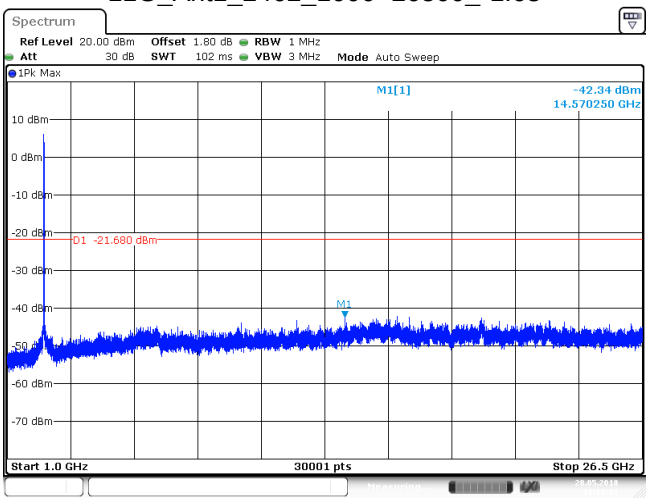

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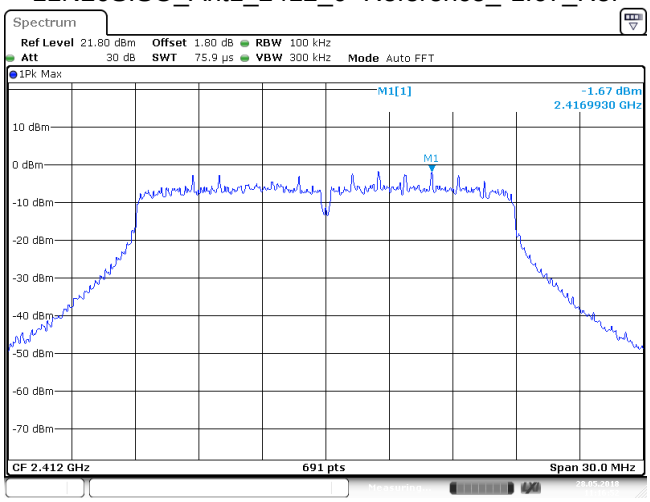
11N20SISO_Ant1_2412_0~Reference_-1.67_Ref



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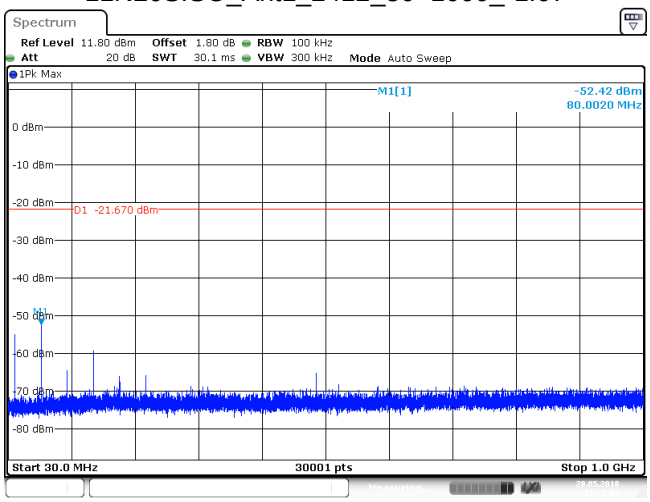

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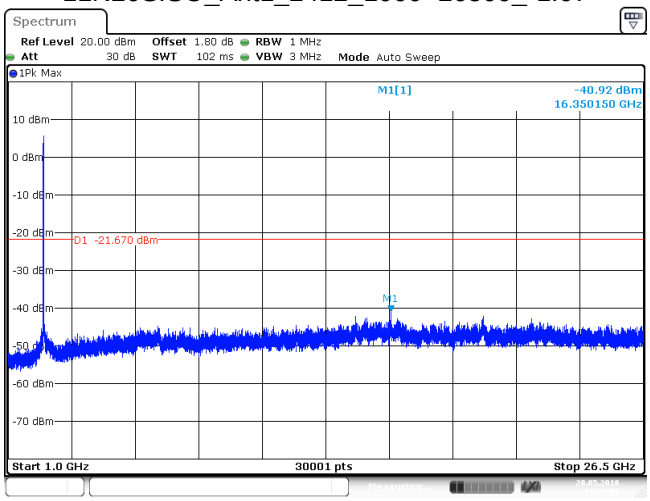

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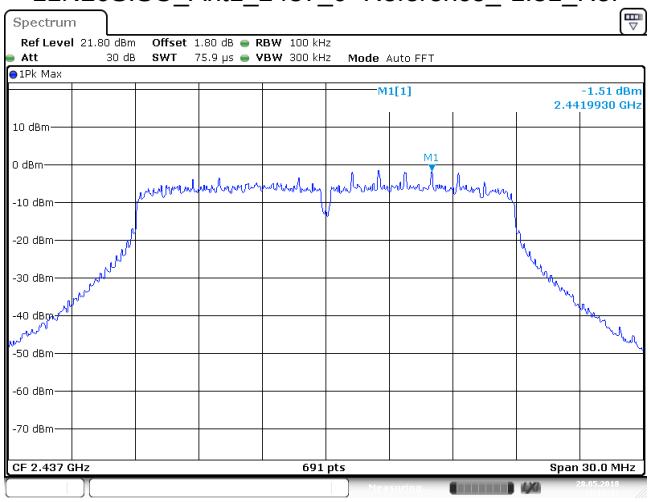
11N20SISO_Ant1_2437_0~Reference_-1.51_Ref



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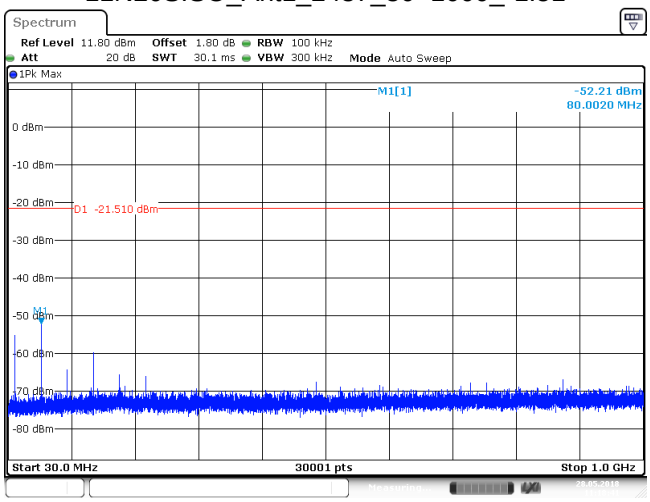

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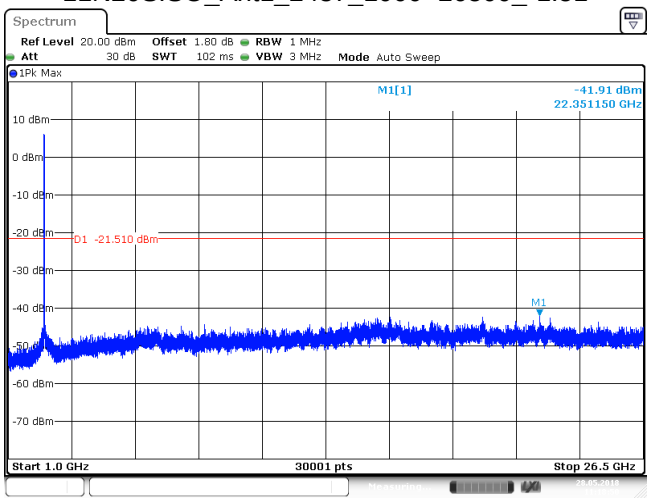

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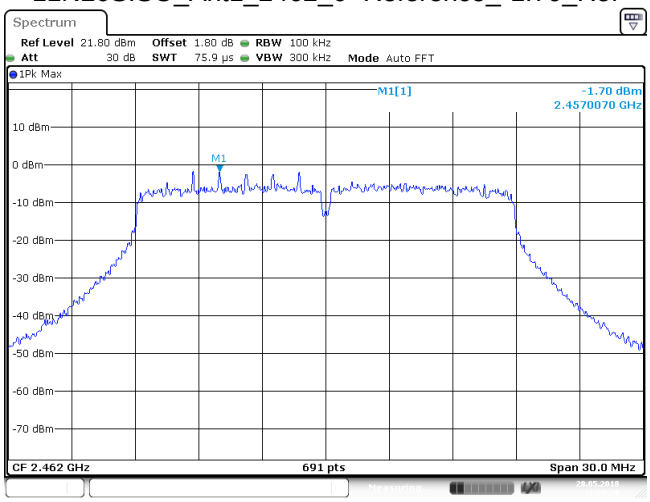
11N20SISO_Ant1_2462_0~Reference_-1.70_Ref



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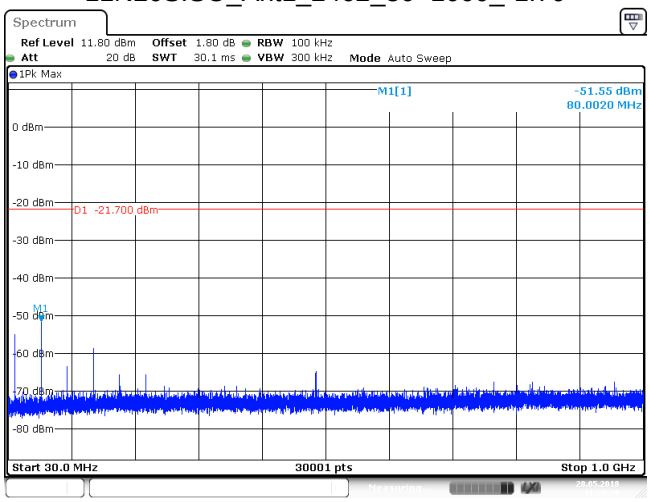

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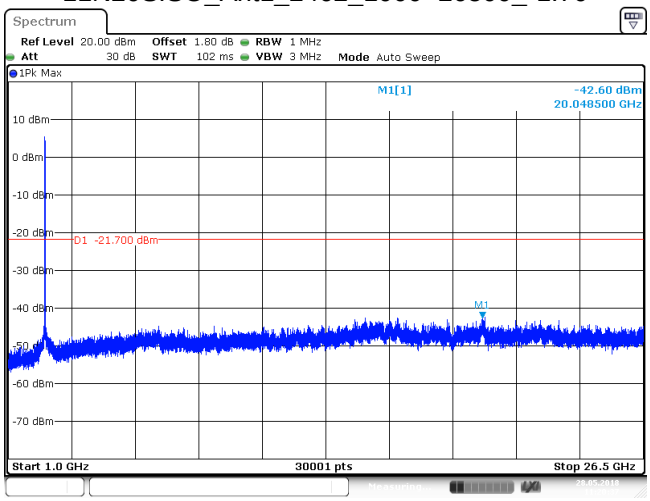

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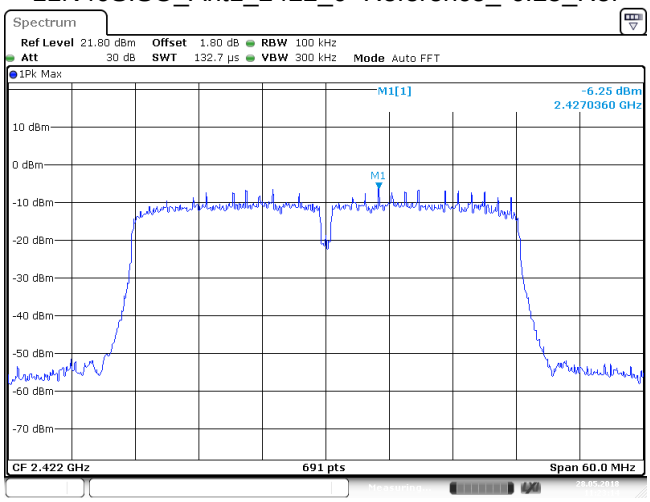
11N40SISO_Ant1_2422_0~Reference_-6.25_Ref



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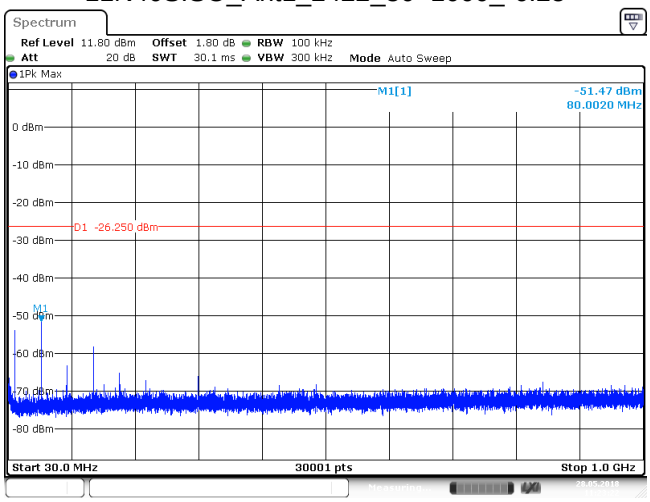

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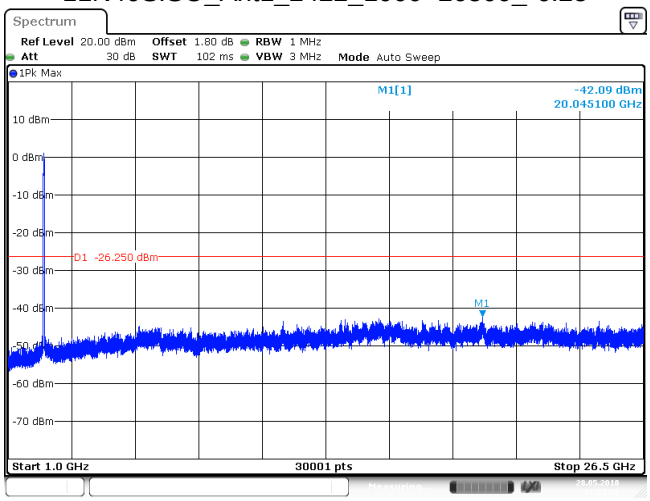

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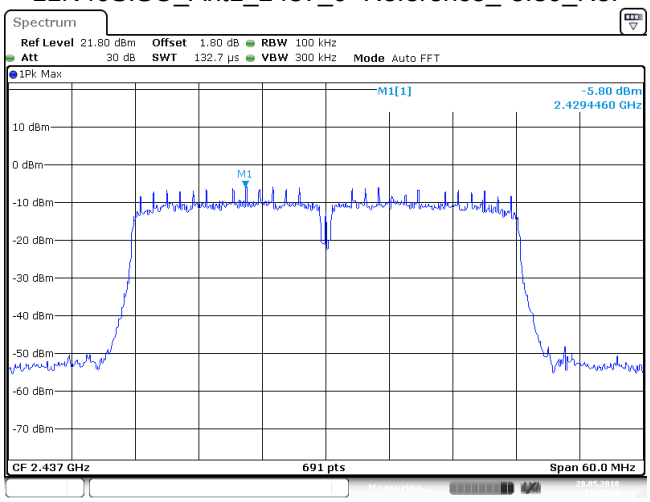
11N40SISO_Ant1_2437_0~Reference_-5.80_Ref



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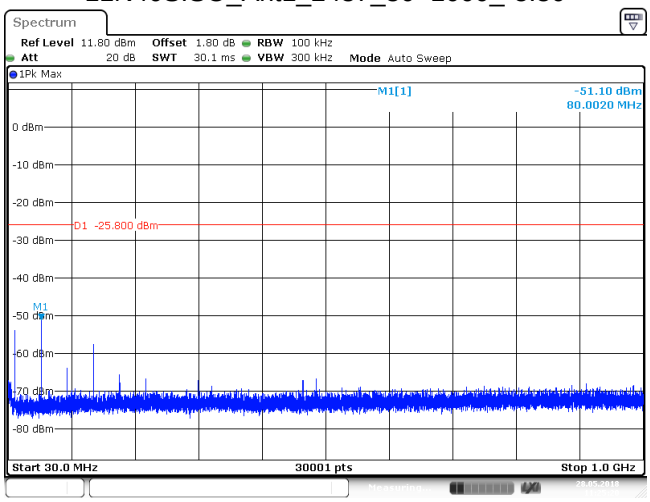

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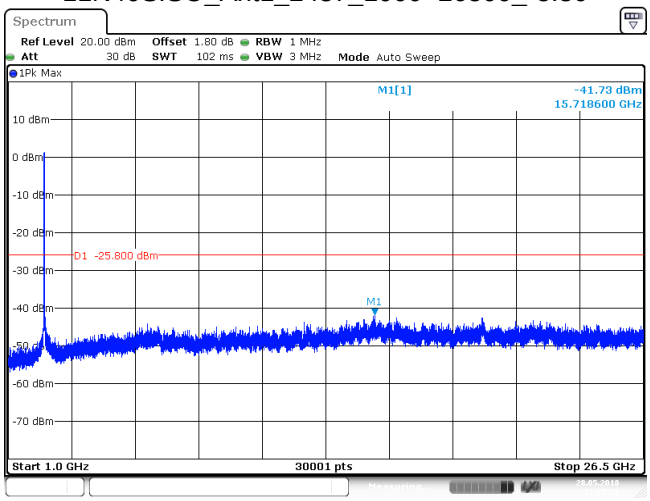

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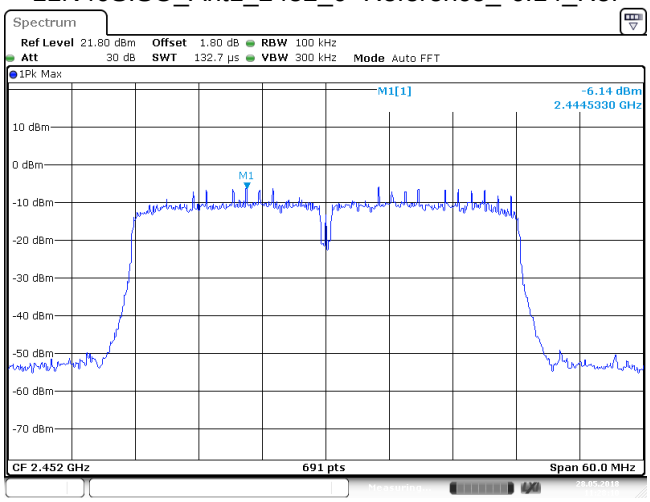
11N40SISO_Ant1_2452_0~Reference_-6.14_Ref



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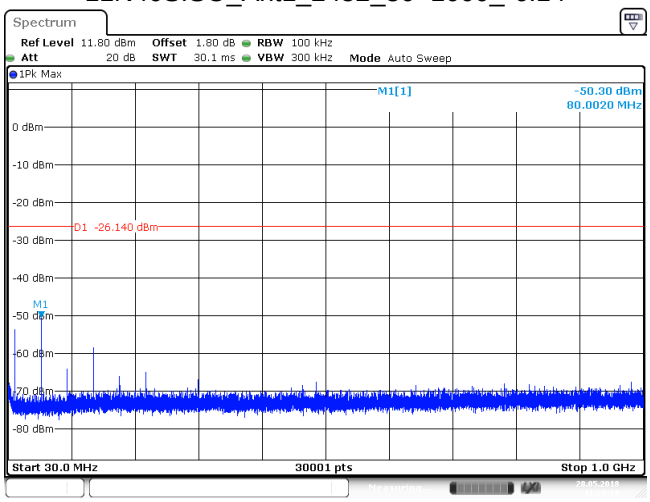

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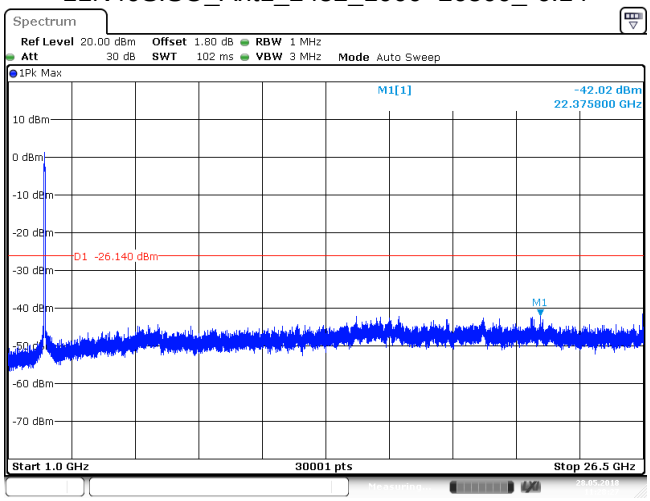

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9.6 Band edge testing

Test Method

1 Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold
2 Allow the trace to stabilize, use the peak and delta measurement to record the result.
3 The level displayed must comply with the limit specified in this Section. .
4 Repeat the test at the hopping off and hopping on mode, submit all the plots.

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

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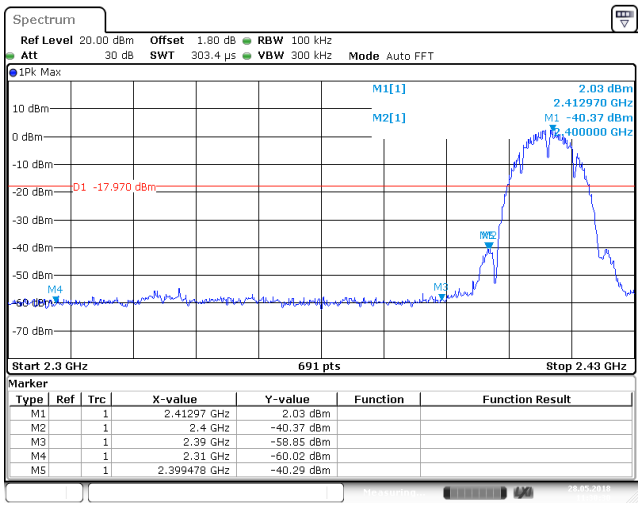
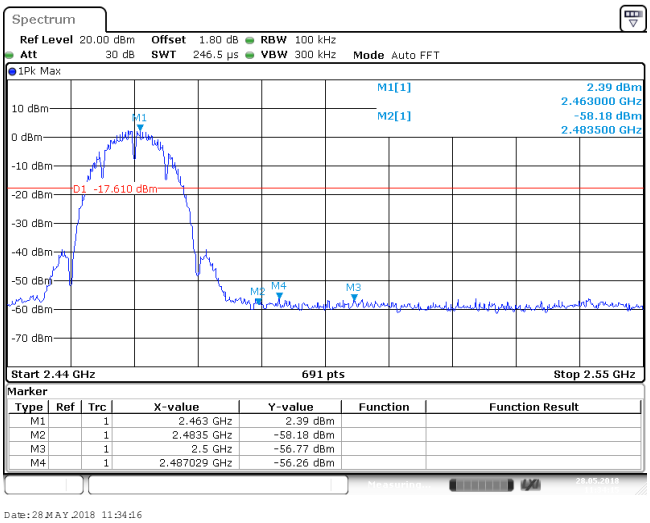
Band edge testing

802.11b Modulation Test Result





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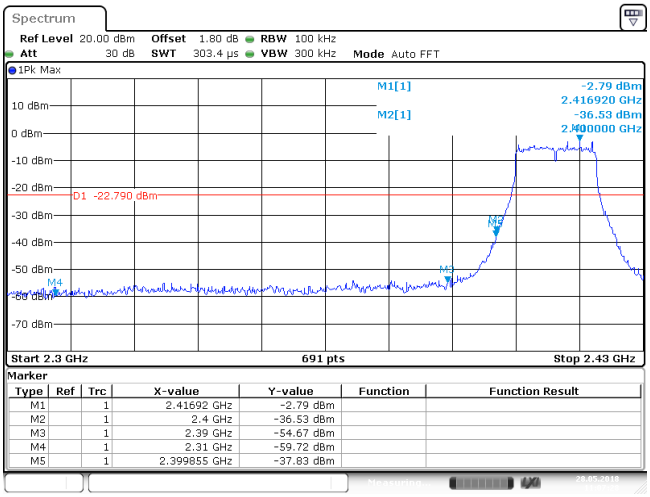
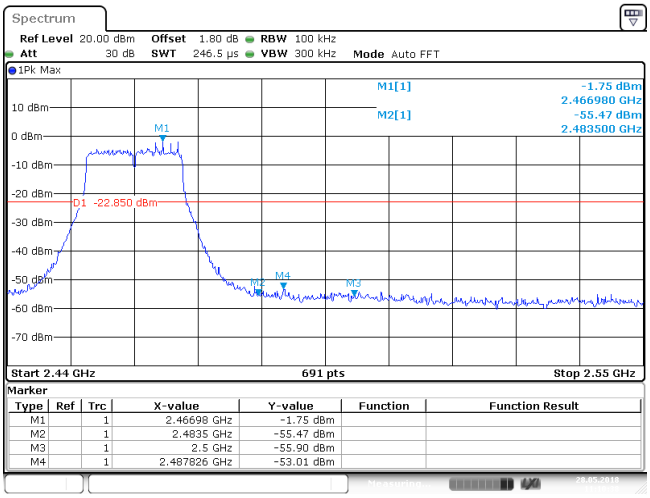
802.11g Modulation Test Result



Date: 28.MAY.2018 11:07:28



Date: 28.MAY.2018 11:10:38

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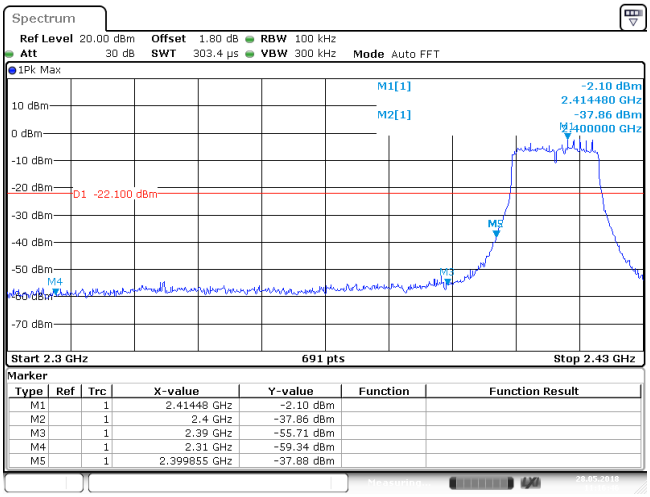
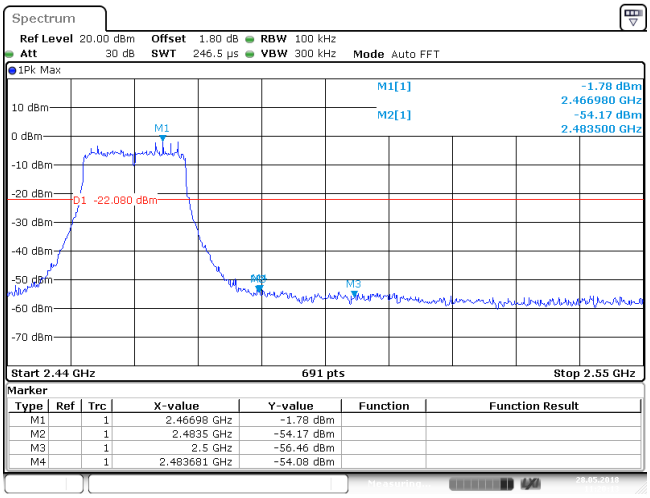
802.11n(20) Modulation Test Result



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41448 GHz	-2.10 dBm		
M2		1	2.4 GHz	-37.86 dBm		
M3		1	2.39 GHz	-55.71 dBm		
M4		1	2.31 GHz	-59.34 dBm		
M5		1	2.399855 GHz	-37.88 dBm		

Date: 28.MAY.2018 11:16:46



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46698 GHz	-1.78 dBm		
M2		1	2.4835 GHz	-54.17 dBm		
M3		1	2.5 GHz	-56.46 dBm		
M4		1	2.483681 GHz	-54.08 dBm		

Date: 28.MAY.2018 11:20:14

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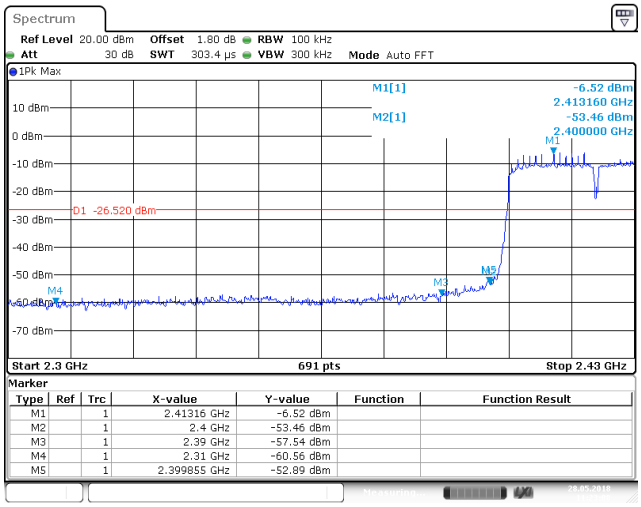
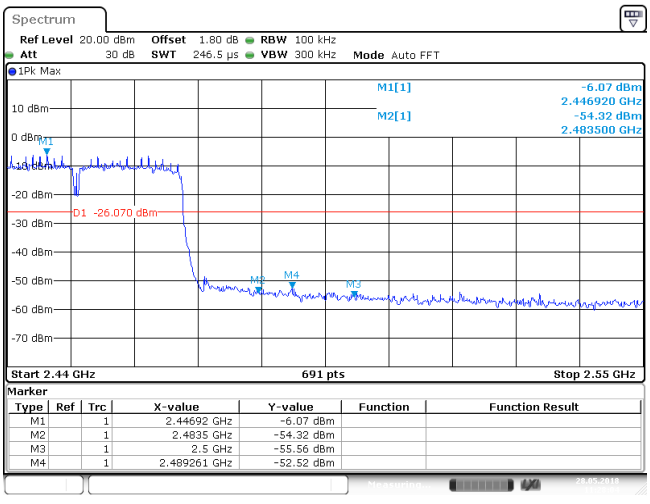
802.11n(40) Modulation Test Result



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41316 GHz	-6.52 dBm		
M2		1	2.4 GHz	-53.46 dBm		
M3		1	2.39 GHz	-57.54 dBm		
M4		1	2.31 GHz	-60.56 dBm		
M5		1	2.399855 GHz	-52.89 dBm		

Date: 28.MAY.2018 11:23:08



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.44692 GHz	-6.07 dBm		
M2		1	2.4835 GHz	-54.32 dBm		
M3		1	2.5 GHz	-55.56 dBm		
M4		1	2.489261 GHz	-52.52 dBm		

Date: 28.MAY.2018 11:28:04

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9.7 Spurious radiated emissions for transmitter

Test Method

1: The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

2: The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.

3: The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

4: For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

5: Use the following spectrum analyzer settings According to C63.10:

For Above 1GHz

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 1MHz, VBW≥RBW for peak measurement and VBW = 10Hz for average measurement, Sweep = auto, Detector function = peak, Trace = max hold.

For Below 1GHz

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 100 KHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

Note:

1: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Quasi-peak detection (QP) at frequency below 1GHz.

2: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for peak detection (PK) at frequency above 1GHz.

3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average ((duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (20log(1/duty cycle)).

4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.

Limit

The radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section15.205, must comply with the radiated emission limits specified in section 15.209.

Frequency MHz	Field Strength uV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

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Spurious radiated emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.
Pretest all modulation type, report the data of the worst case.
Transmitting spurious emission test result as below:
Emission below 1GHz

Frequency (MHz)	QP (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB)
40.454444	28.27	40.00	11.73	V	-24.9
199.965556	25.39	43.50	18.11	V	-28.7
276.218333	32.86	46.00	13.14	V	-21.1
369.338333	30.51	46.00	15.49	V	-23.4
468.008889	33.30	46.00	12.70	V	-22.6
566.679444	31.75	46.00	14.25	V	-19.3
59.207778	14.78	40.00	25.22	H	-27.0
122.096111	23.28	43.50	20.22	H	-30.4
199.642222	33.73	43.50	9.77	H	-29.2
288.289444	32.12	46.00	13.88	H	-22.4
480.026111	35.84	46.00	10.16	H	-22.9
872.229444	30.95	46.00	15.05	H	-15.7

Emission between 1G-25GHz
802.11b Modulation:
2412MHz Test Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB)
1266.187500	29.66	74.00	44.34	V	-11.8
2228.062500	33.57	74.00	40.43	V	-6.4
2288.500000	36.98	74.00	37.02	V	-6.2
2573.687500	30.65	74.00	43.35	V	-5.1
7052.343750	39.61	74.00	34.39	V	6.2
10027.50000	40.95	74.00	33.05	V	9.8
13046.71875	44.17	74.00	29.83	V	13.3
1265.000000	28.11	74.00	45.89	H	-12.0
1651.750000	28.88	74.00	45.12	H	-9.4
2341.250000	35.03	74.00	38.97	H	-6.2
2504.687500	33.70	74.00	40.30	H	-5.4
4844.062500	41.72	74.00	32.28	H	2.6
8741.250000	39.97	74.00	34.03	H	8.7
12502.03125	42.58	74.00	31.42	H	12.6

2437MHz Test Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB)
1269.000000	30.02	74.00	43.98	V	-11.8
2391.187500	29.59	74.00	44.41	V	-5.9
2587.062500	28.54	74.00	45.46	V	-5.0
5052.187500	37.41	74.00	36.59	V	3.0
6751.406250	39.36	74.00	34.64	V	5.4
8772.656250	41.08	74.00	32.92	V	9.0
1268.875000	28.48	74.00	45.52	H	-12.0
1769.000000	29.31	74.00	44.69	H	-8.7
2365.062500	34.34	74.00	39.66	H	-6.1
3763.593750	33.69	74.00	40.31	H	-0.7
6209.531250	36.00	74.00	38.00	H	4.1
8769.843750	41.74	74.00	32.26	H	8.9

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2462MHz Test Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB)
1251.000000	28.47	74.00	45.53	V	-12.0
1396.062500	30.00	74.00	44.00	V	-11.0
2198.562500	35.28	74.00	38.72	V	-6.4
4976.718750	35.39	74.00	38.61	H	2.7
7071.562500	38.81	74.00	35.19	H	5.9
8683.593750	40.52	74.00	33.48	H	8.4
1252.937500	28.10	74.00	45.90	H	-12.1
1597.375000	29.85	74.00	44.15	H	-9.7
2377.250000	32.85	74.00	41.15	H	-6.1
2544.687500	35.30	74.00	38.70	H	-5.4
4611.562500	35.80	74.00	38.20	V	1.6
7033.593750	39.01	74.00	34.99	V	6.1
9510.000000	42.74	74.00	31.26	V	9.0

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10 Test Equipment List

List of Test Instruments

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
CE	EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2018-7-14
	LISN	Rohde & Schwarz	ENV4200	100249	2018-7-14
	LISN	Rohde & Schwarz	ENV432	101318	2018-7-14
	LISN	Rohde & Schwarz	ENV216	100326	2018-7-14
	ISN	Rohde & Schwarz	ENY81	100177	2018-7-14
	ISN	Rohde & Schwarz	ENY81-CA6	101664	2018-7-14
	High Voltage Probe	Rohde & Schwarz	TK9420(VT9420)	9420-584	2018-7-14
	RF Current Probe	Rohde & Schwarz	EZ-17	100816	2018-7-14
	Attenuator	Shanghai Huaxiang	TS2-26-3	080928189	2018-7-7
	Test software	Rohde & Schwarz	EMC32	Version9.15.00	N/A
C	Signal Generator	Rohde & Schwarz	SMB100A	108272	2018-7-7
	Signal Analyzer	Rohde & Schwarz	FSV40	101030	2018-7-7
	Vector Signal Generator	Rohde & Schwarz	SMU 200A	105324	2018-7-7
	RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	101226/100851	2018-7-7
RE	EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2018-7-14
	Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2018-7-14
	Horn Antenna	Rohde & Schwarz	HF907	102294	2018-7-14
	Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2018-7-14
	Signal Generator	Rohde & Schwarz	SMY01	839369/005	2018-7-7
	Attenuator	Agilent	8491A	MY39264334	2018-7-7
	3m Semi-anechoic chamber	TDK	9X6X6	----	2020-7-14
	Test software	Rohde & Schwarz	EMC32	Version 9.15.00	N/A

C - Conducted RF tests

- Conducted peak output power
- 6dB bandwidth
- 20dB bandwidth and 99% Occupied Bandwidth
- Carrier frequency separation
- Number of hopping frequencies
- Dwell Time
- Power spectral density
- Spurious RF conducted emissions
- Band edge

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11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.83dB; Vertical: 4.91dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-25000MHz	Horizontal: 4.89dB; Vertical: 4.88dB;
Uncertainty for Conducted Emission 150KHz-30MHz	U=3.5dB(k=2)

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