Shenzhen Huatongwei International Inspection Co., Ltd.
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TEST REPORT

Report Reference No. ..... :	**TRE1702000704**	R/C…….: 34168
FCC ID ..... :	**YPVITALCOMBLINK**	
Applicant's name ..... :	**ITALCOM GROUP**	
Address.....:	1728 Coral Way, Coral Gables, Miami, Florida, United States	
Manufacturer.....:	UTCOM TECHNOLOGY CO.,LIMITED	
Address.....:	4C, Block A, Central Avenue Building, BaoYuan Road, Xixiang Town, Baoan District, Shenzhen, 518012	
Test item description ..... :	Smart phone	
Trade Mark .....:	NYX	
Model/Type reference.....:	BLINK	
Listed Model(s) .....:	-	
Standard ..... :	**FCC CFR Title 47 Part 15 Subpart E Section 15.407**	
Date of receipt of test sample……..:	Feb. 08, 2017	
Date of testing……:	Feb. 09, 2017 - Feb. 15, 2017	
Date of issue……...:	Feb. 16, 2017	
Result..... ……..:	**PASS**	

Compiled by (position+printedname+signature)...:	File administrators Becky Liang	Becky Liang
Supervised by (position+printedname+signature)....:	Project Engineer Lion Cai	Lion Cai
Approved by (position+printedname+signature)....:	RF Manager Hans Hu	Hans Hu

Testing Laboratory Name ..... :	**Shenzhen Huatongwei International Inspection Co., Ltd.**
Address.....:	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Contents

1. Test standards and Report version

1.1. Applicable Standards

The tests were performed according to following standards:
FCC Rules Part 15.407: General technical requirements.

ANSI C63.10-2013:AmericanNationalStandardforTestingUnlicensedWirelessDevices

KDB789033 D02 V01R02: GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES PART 15, SUBPART E

1.2. Report version

Version No.	Date of issue	Description
00	Feb. 16, 2017	Original

2. Test Description

ReportSection	Test Item	FCC Rule	Result
4.1	Antenna Requirement	15.203	Pass
4.2	Line Conducted Emission (AC Main)	15.207	Pass
4.3	Maximum Conducted Output Power	15.407 (a.1)(a.2)(a.3)	Pass
4.4	Maximum Power Spectral Density	15.407 (a.1)(a.2)(a.3)	Pass
4.5	99% Occupied Bandwidth	Part 2.1049	Pass
4.6	26dB Bandwidth	15.407(a.5)	Pass
4.7	Radiated Emissions & Bandedge	15.407(b.1)(b.2)(b.4)	Pass
4.8	Frequency Stability	15.407(g)	Pass
4.9	TPC and DFS	15.407(h)	N/A

Remark: 1. The measurement uncertainty is not included in the test result.
2. N/A: means this test item is not applicableforthis device according to the technology characteristic of device.

3. SUMMARY

3.1. Client Information

Applicant:	ITALCOM GROUP
Address:	1728 Coral Way, Coral Gables, Miami, Florida, United States
Manufacturer:	UTCOM TECHNOLOGY CO.,LIMITED
Address:	4C, Block A, Central Avenue Building, BaoYuan Road, Xixiang Town, Baoan District, Shenzhen, 518012

3.2. Product Description

Name of EUT	Smart phone
Trade Mark:	NYX
Model No.:	BLINK
Listed Model(s):	-
IMEI :	352873080000387
Power supply:	DC 3.7V From internal battery
Adapter information:	Input: 100-240Va.c., 50/60Hz, 0.15A Output: 5Vd.c., 500mA
5G WIFI	
Supported type:	802.11a/802.11n
Modulation:	BPSK /QPSK /16QAM /64QAM
Operation frequency:	Band I:5150MHz-5250MHz
Channel Bandwidth	802.11a/n(H20):20MHz 802.11n(H40):40MHz
Channel separation:	5MHz
Antenna type:	Integral antenna
Antenna gain:	1.0 dBi

3.3. Operation state

➢ **Test frequency list**

According to section 15.31(m), regards to the operating frequency range over 10 MHz, must select three channel which were tested. the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the above gray bottom.

20MHz				40MHz			
Band	Test Channel	Channel	Frequency (MHz)	Band	Test Channel	Channel	Frequency (MHz)
Band I	Low	36	5180	Band I	Low	38	5190
		40	5200		High	46	5230
	Mid	44	5220				
	High	48	5240				

➢ **Data Rated**

Preliminary tests were performed in different data rate, and found which the below bit rate is worst case mode, so only show data which it is a worst case mode.

Mode	datarate (worst mode)
802.11a	6Mbps
802.11n(H20)	MCS0
802.11n(H40)	MCS0

➢ **Test mode**

For RF test items:

the engineering test program was provided and enabled to make EUT continuous transmit/receive. The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

For AC power line conducted emissions:

the EUT was set to connect with the WLAN AP under large package sizes transmission.

3.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

		Length (m) :	
		Manufacturer :	
		FCCID:	
		Model No. :	

3.5. Modifications

No modifications were implemented to meet testing criteria.

4. TEST ENVIRONMENT

4.1. Address of the test laboratory

Laboratory:Shenzhen Huatongwei International Inspection Co., Ltd.
Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China
Phone: 86-755-26748019 Fax: 86-755-26748089

4.2. Test Facility

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

CNAS-Lab Code: L1225
Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: February 28, 2015. Valid time is until February 27, 2018.

A2LA-Lab Cert. No. 3902.01
Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until February 27, 2018.

FCC-Registration No.: 317478
Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 317478, Renewal date Jul. 18, 2014, valid time is until Jul. 18, 2017.

IC-Registration No.: 5377B
Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B on Dec.03, 2014, valid time is until Dec.03, 2017.

ACA
Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

4.3. Equipments Used during the Test

Conducted Emission (AC Main)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal
1	Artificial Mains	Rohde&Schwarz	ESH2-Z5	100028	2016/11/13
2	EMI Test Receiver	Rohde&Schwarz	ESCI3	100038	2016/11/13
3	Pulse Limiter	Rohde&Schwarz	ESHSZ2	100044	2016/11/13
4	EMI Test Software	Rohde&Schwarz	ES-K1 V1.71	N/A	N/A

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal
1	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	2016/11/13
2	EMI TEST RECEIVER	Rohde&Schwarz	ESI 26	100009	2016/11/13
3	EMI TEST Software	Audix	E3	N/A	N/A
4	TURNTABLE	ETS	2088	2149	N/A
5	ANTENNA MAST	ETS	2075	2346	N/A
6	EMI TEST Software	Rohde&Schwarz	ESK1	N/A	N/A
7	HORNANTENNA	ShwarzBeck	9120D	1011	2016/11/13
8	Amplifer	Sonoma	310N	E009-13	2016/11/13
9	JS amplifer	Rohde&Schwarz	JS4-00101800-28-5A	F201504	2016/11/13
10	High pass filter	Compliance Direction systems	BSU-6	34202	2016/11/13
11	HORNANTENNA	ShwarzBeck	9120D	1012	2016/11/13
12	Amplifer	Compliance Direction systems	PAP1-4060	120	2016/11/13
13	Loop Antenna	Rohde&Schwarz	HFH2-Z2	100020	2016/11/13
14	TURNTABLE	MATURO	TT2.0	----	N/A
15	ANTENNA MAST	MATURO	TAM-4.0-P	----	N/A
16	Horn Antenna	SCHWARZBECK	BBHA9170	25841	2016/11/13
17	ULTRA-BROADBAND ANTENNA	Rohde&Schwarz	HL562	100015	2016/11/13

Maximum Peak Output Power / Power Spectral Density / 26dB Bandwidth					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal
1	Spectrum Analyzer	Rohde&Schwarz	FSP	1164.4391.40	2016/11/13
2	Power Meter	Anritsu	ML2480B	100798	2016/11/13
3	Power Sensor	Anritsu	MA2411B	100258	2016/11/13

The Cal.Interval was one year

4.4. Environmental conditions

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

Temperature:	15~35°C
lative Humidity:	30~60 %
Air Pressure:	950~1050mba

4.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01"Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics;Part 1"and TR-100028-02 "Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics;Part 2 " and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	MeasurementUncertainty	Notes
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	1.60 dB	(1)
Radiated spurious emission 9KHz-40 GHz	2.20 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emissio 1~18GHz	5.16 dB	(1)
Radiated Emissio 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	---------	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

5. TEST CONDITIONS AND RESULTS

5.1. Antenna requirement

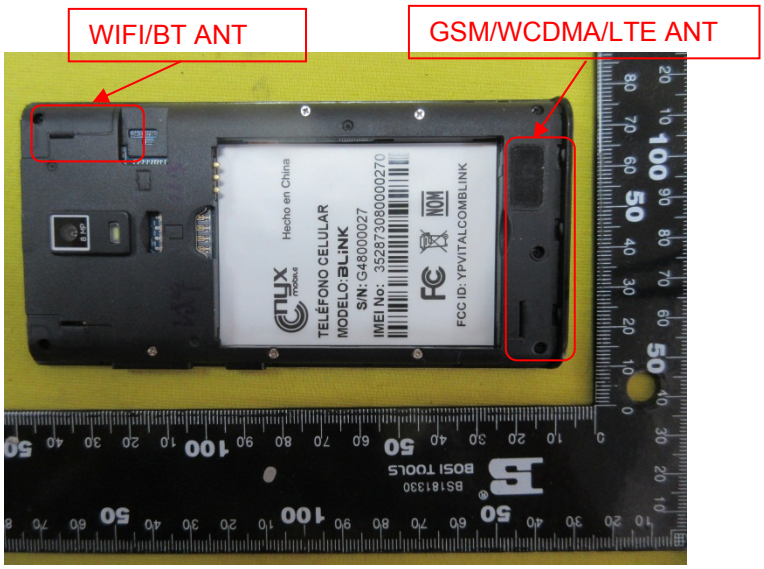
Requirement

FCC CFR Title 47 Part 15 Subpart C Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of anantenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Test Result:

The antenna is integral antenna, the best case gain of the antenna is 1.0dBi.



5.2. Conducted Emission (AC Main)

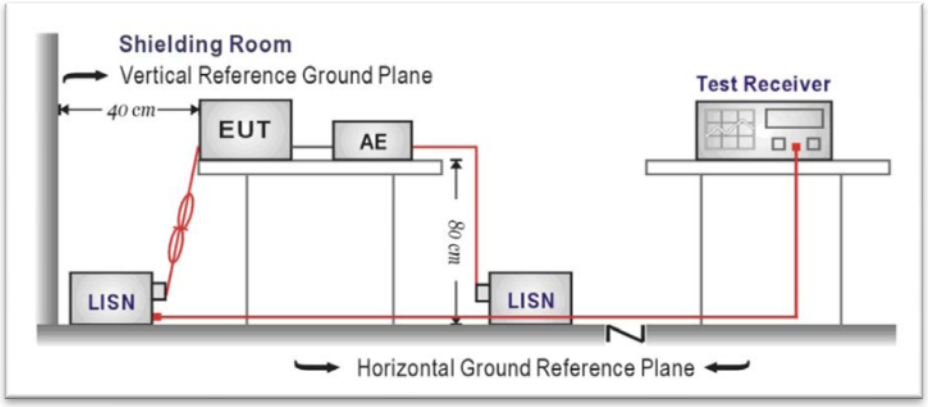
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10:2013 for compliance to FCC 47CFR 15.247 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above theconducting ground plane. The vertical conducting plane was located 40 cm to the rear of theEUT. All other surfaces of EUT were at least 80 cm from any other grounded conductingsurface.
3. The EUT and simulators are connected to the main power through a line impedancestabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for themeasuring equipment.
4. The peripheral devices are also connected to the main power through aLISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor,was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were foldedback and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHzusing a receiver bandwidth of 9 kHz.

TEST MODE:

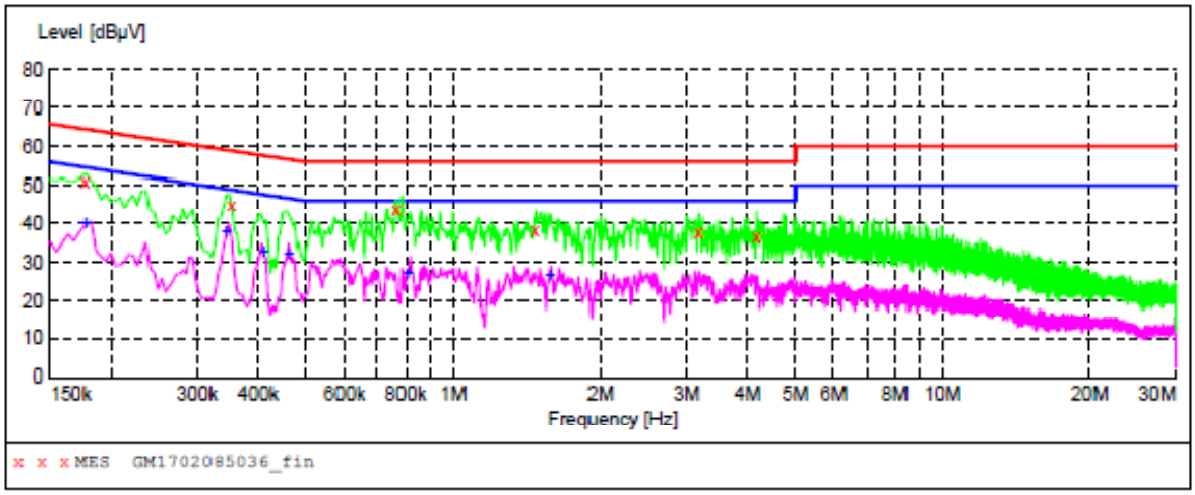
Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:
1) Transd=Cable lose+ Pulse Limiter Factor + Artificial Mains Factor
2) Margin= Limit -Level

Test mode:AC 120V	5G WIFI	Polarization	L



MEASUREMENT RESULT: "GM1702085036_fin"

2/8/2017 4:55PM

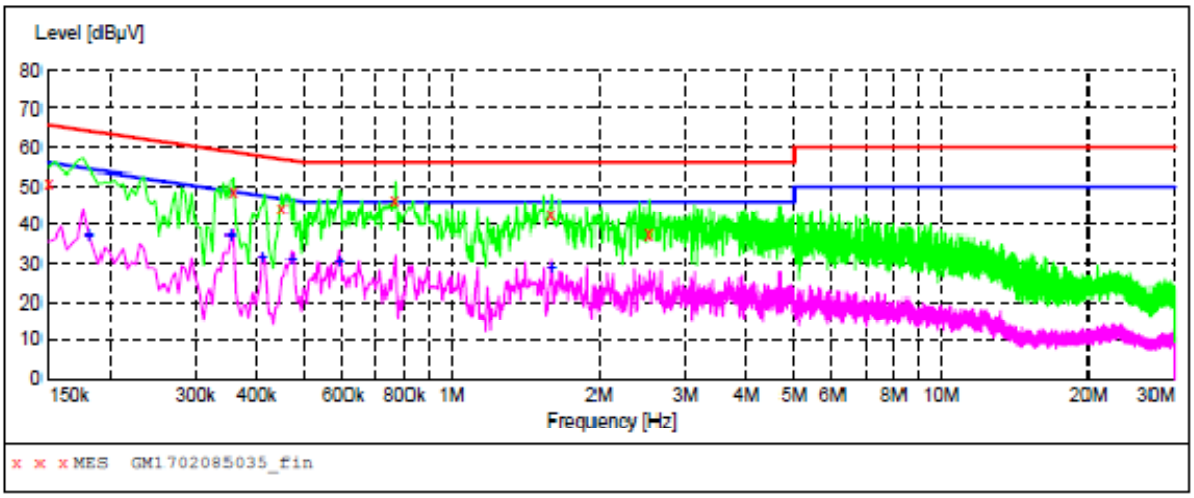
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.177000	50.80	10.4	65	13.8	QP	L1	GND
0.352500	45.00	10.2	59	13.9	QP	L1	GND
0.766500	43.70	10.2	56	12.3	QP	L1	GND
1.468500	38.00	10.2	56	18.0	QP	L1	GND
3.183000	37.30	10.2	56	18.7	QP	L1	GND
4.182000	36.50	10.3	56	19.5	QP	L1	GND

MEASUREMENT RESULT: "GM1702085036_fin2"

2/8/2017 4:55PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.177000	40.30	10.4	55	14.3	AV	L1	GND
0.343500	37.90	10.2	49	11.2	AV	L1	GND
0.411000	33.30	10.2	48	14.3	AV	L1	GND
0.460500	32.30	10.2	47	14.4	AV	L1	GND
0.807000	27.70	10.2	46	18.3	AV	L1	GND
1.576500	26.80	10.2	46	19.2	AV	L1	GND

Test mode: AC 120V	5G WIFI	Polarization	N



MEASUREMENT RESULT: "GM1702085035_fin"

2/8/2017 4:51PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	51.10	10.4	66	14.9	QP	N	GND
0.357000	48.60	10.2	59	10.2	QP	N	GND
0.451500	44.50	10.2	57	12.3	QP	N	GND
0.766500	46.40	10.2	56	9.6	QP	N	GND
1.590000	42.60	10.2	56	13.4	QP	N	GND
2.535000	37.50	10.2	56	18.5	QP	N	GND

MEASUREMENT RESULT: "GM1702085035_fin2"

2/8/2017 4:51PM

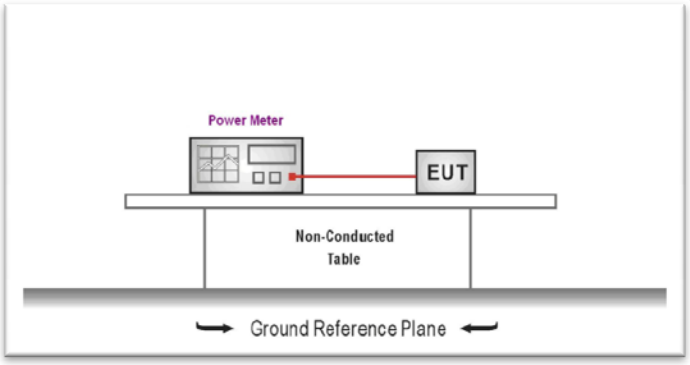
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.181500	37.40	10.3	54	17.0	AV	N	GND
0.352500	37.60	10.2	49	11.3	AV	N	GND
0.411000	32.10	10.2	48	15.5	AV	N	GND
0.469500	31.30	10.2	47	15.2	AV	N	GND
0.591000	31.10	10.2	46	14.9	AV	N	GND
1.594500	29.40	10.2	46	16.6	AV	N	GND

5.3. Maximum Conducted Output Power

LIMIT

FCC CFR Title 47 Part 15 Subpart E Section 15.407:
In the 5.15 – 5.25GHz band, the maximum permissible conducted output power is 250mW (23.98dBm)
In the 5.25 – 5.35GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) and 11 dBm + 10log10(26dB BW) = 11 dBm + 10log10(18.87) = 23.76dBm.
In the 5.725 – 5.850GHz band, the maximum permissible conducted output power is 1W (30dBm).

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was tested according to KDB789033 D02 V01R02 requirements.
2. The maximum conducted output power may be measured using a broadband AVG RF power meter.
3. Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power
4. Record the measurement data.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

	Type	Channel	Output power (dBm)	Limit (dBm)	Result
Band I 5150-5250MHz	802.11a	Low	17.65	24.00	Pass
		Mid	17.03		
		High	16.51		
	802.11n(H20)	Low	18.07	24.00	Pass
		Mid	17.02		
		High	16.94		
	802.11n(H40)	Low	18.27	24.00	Pass
		High	16.81		

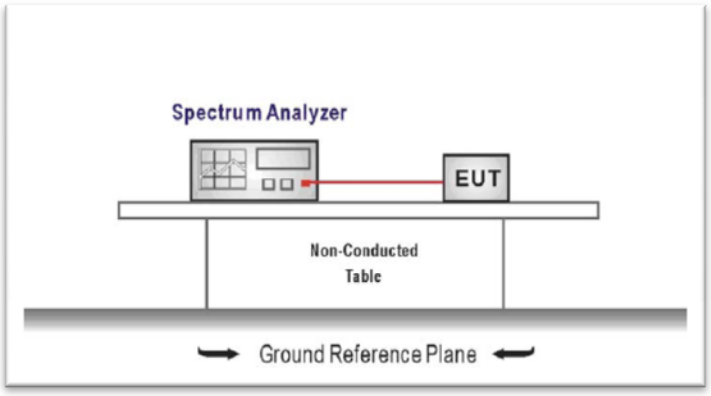
5.4. Maximum Power Spectral Density

LIMIT

FCC CFR Title 47 Part 15 Subpart E Section 15.407:

In the 5.15 – 5.25GHz, 5.25 – 5.35GHz, 5.47 – 5.725GHz bands, the maximum permissible power spectral density is 11dBm/MHz.
In the 5.725 – 5.850GHz band, the maximum permissible power spectral density is 30dBm/500kHz.

TEST CONFIGURATION



TEST PROCEDURE

According KDB 789033 D02 v01r02 – Section F
1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire emission bandwidth of the signal
3. RBW = 1MHz, 4. VBW = 3MHz
7. Number of sweep points > 2 x (span/RBW)
8. Sweep time = auto
6. Detector = power averaging (RMS)
7. Trigger was set to free run for all modes
8. Trace was averaged over 100 sweeps
9. The peak search function of the spectrum analyzer was used to find the peak of the spectrum.

TEST MODE:

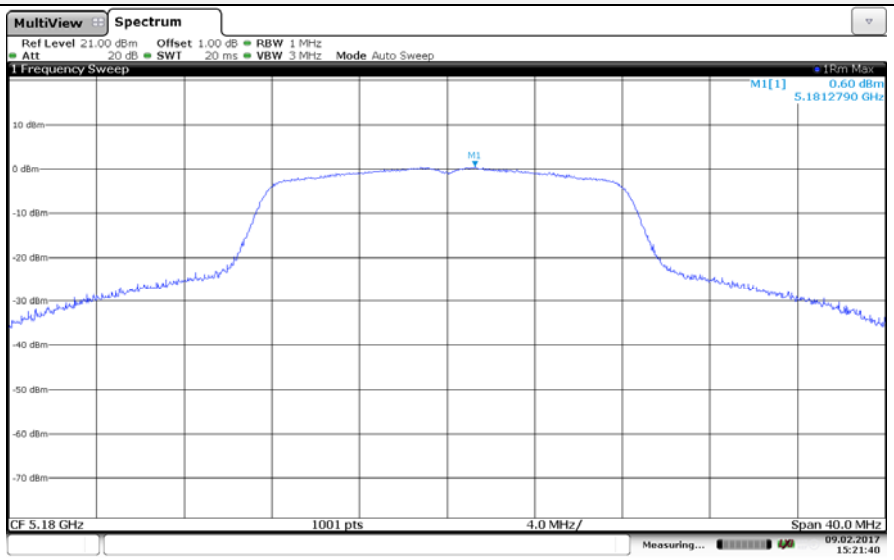
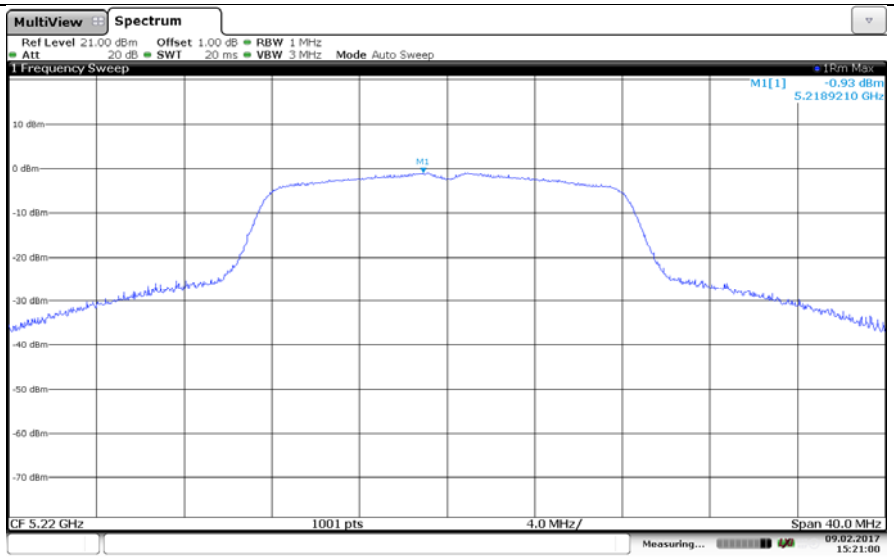
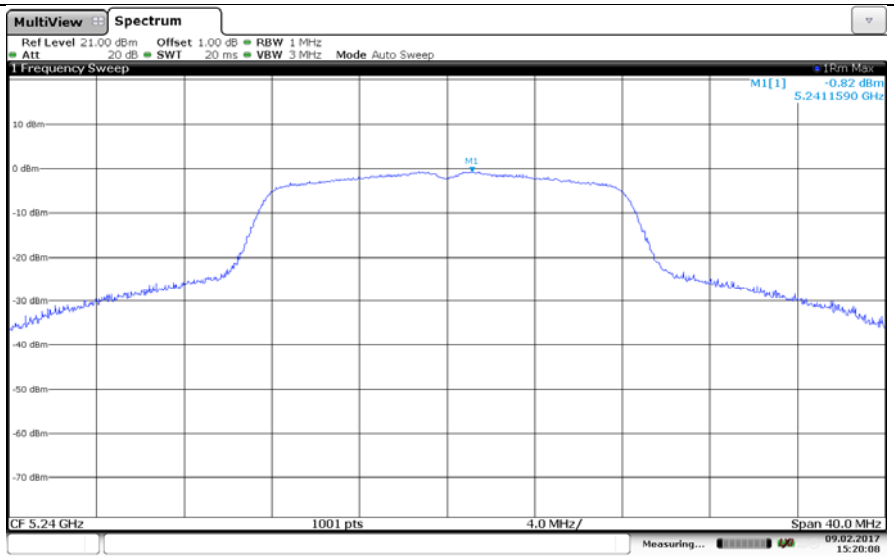
Please refer to the clause 3.3

TEST RESULTS

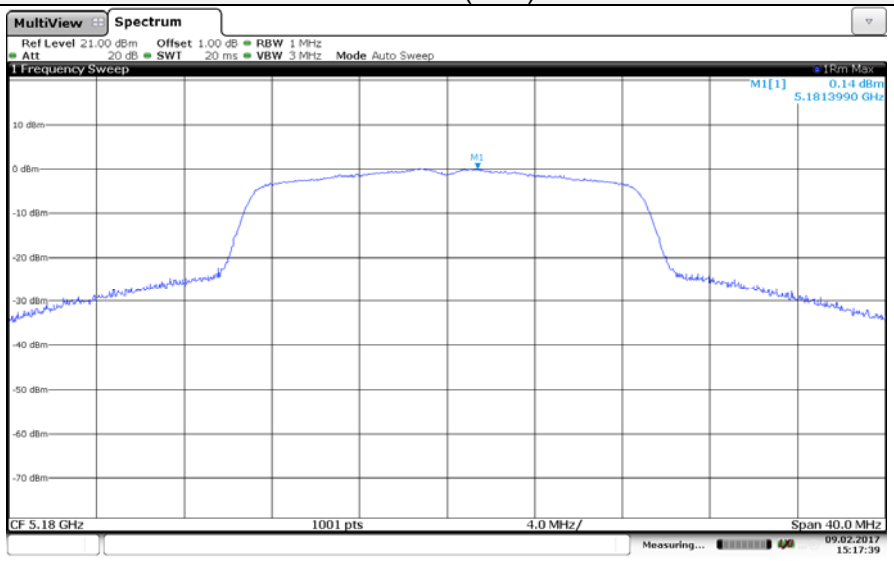
☒ **Passed** ☐ **Not Applicable**

	Type	Channel	PSD (dBm/MHz)	Limit (dBm/MHz)	Result
Band I 5150-5250MHz	802.11a	Low	0.60	11.00	Pass
		Mid	-0.93		
		High	-0.82		
	802.11n(H20)	Low	0.14	11.00	Pass
		Mid	-1.30		
		High	-1.16		
	802.11n(H40)	Low	-3.56	11.00	Pass
		High	-4.03		

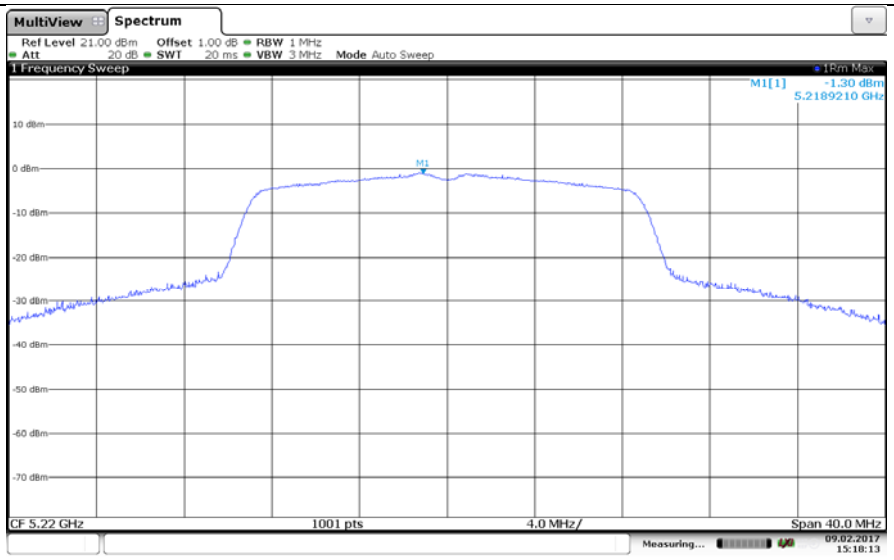
Test plot as follows:

Band I
802.11a

Low

Mid

High

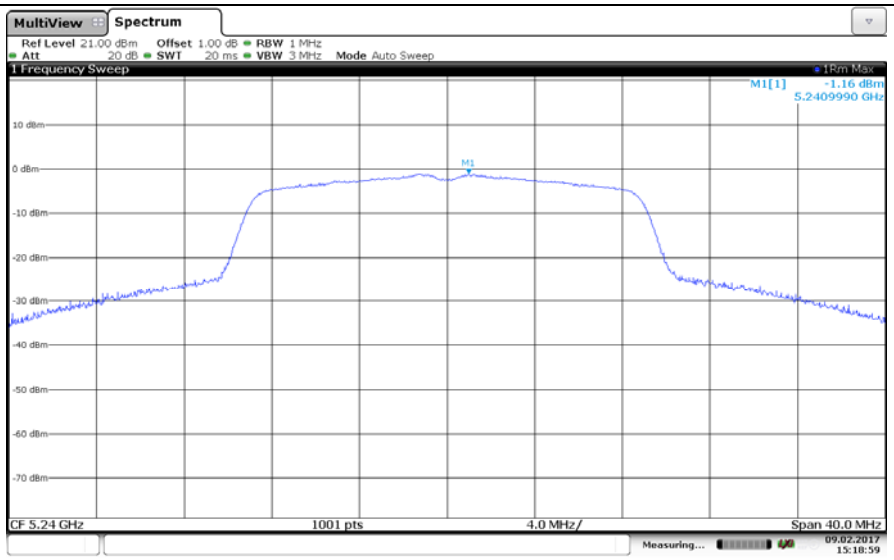
802.11n(H20)



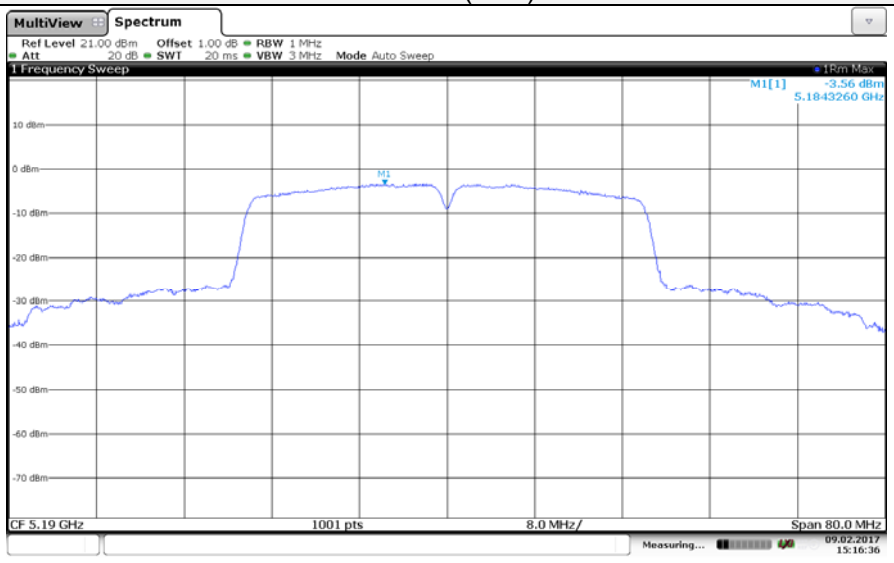
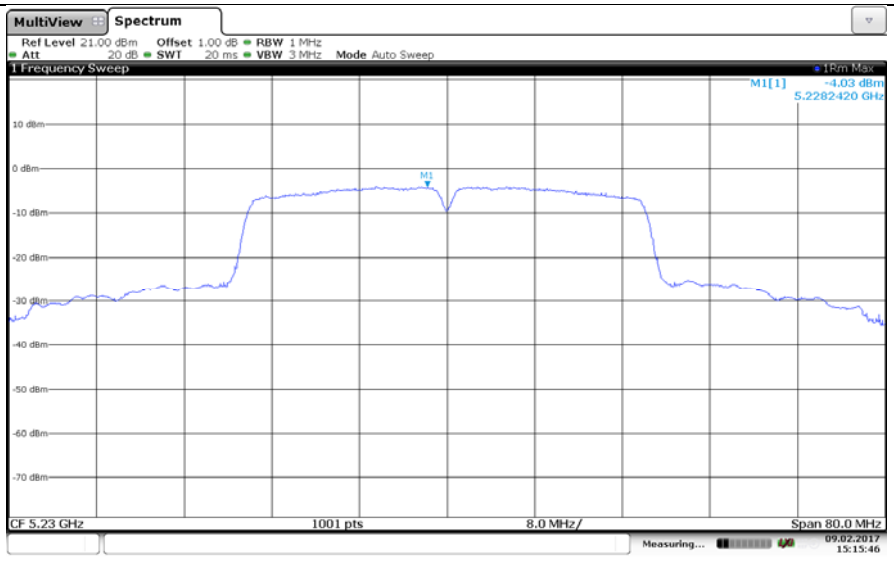
Low



Mid



High

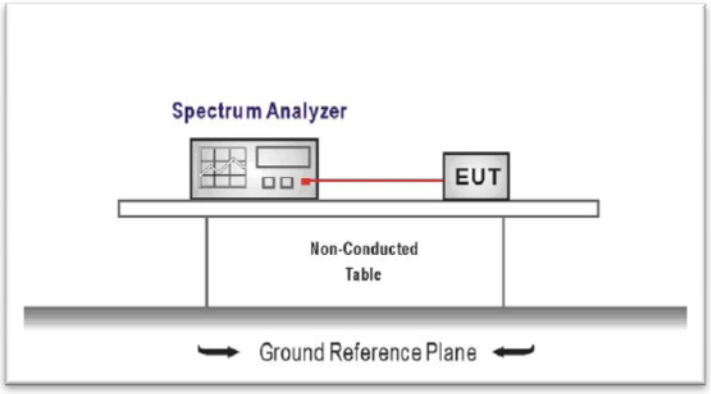
802.11n(H40)

Low

High

5.5. 99% Occupied Bandwidth

LIMIT

N/A

TEST CONFIGURATION



TEST PROCEDURE

According KDB 789033 D02 v01r02 – Section D
1. Set center frequency to the nominal EUT channel center frequency
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 · RBW
5. peak detection and max hold mode (until the trace stabilizes)
6. Use the 99 % power bandwidth function of the instrument

TEST MODE:

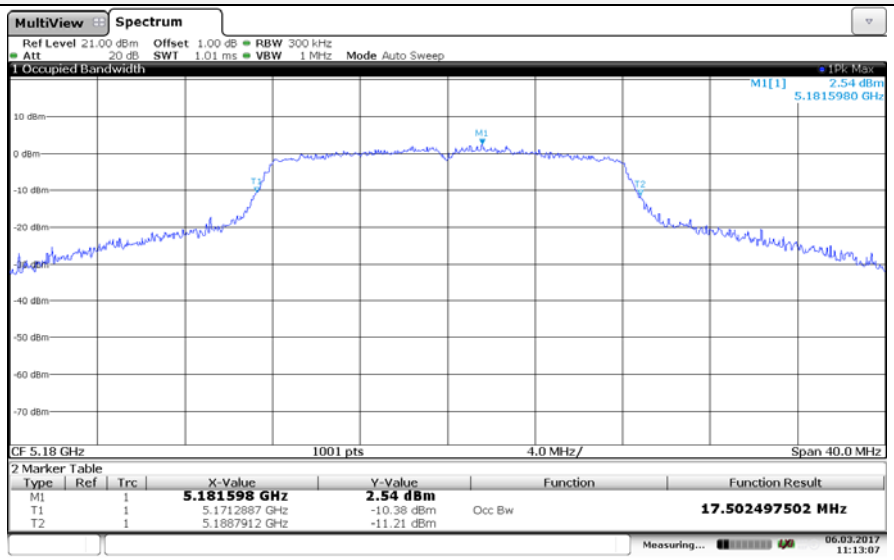
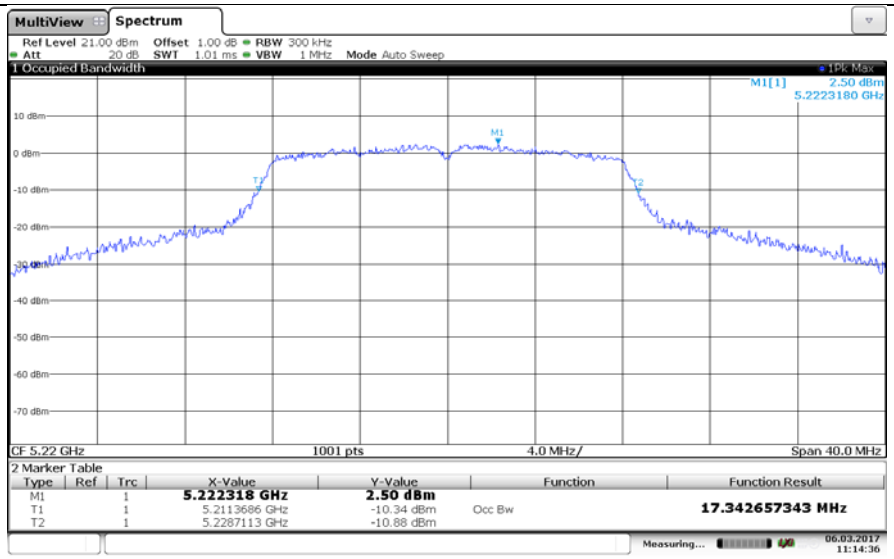
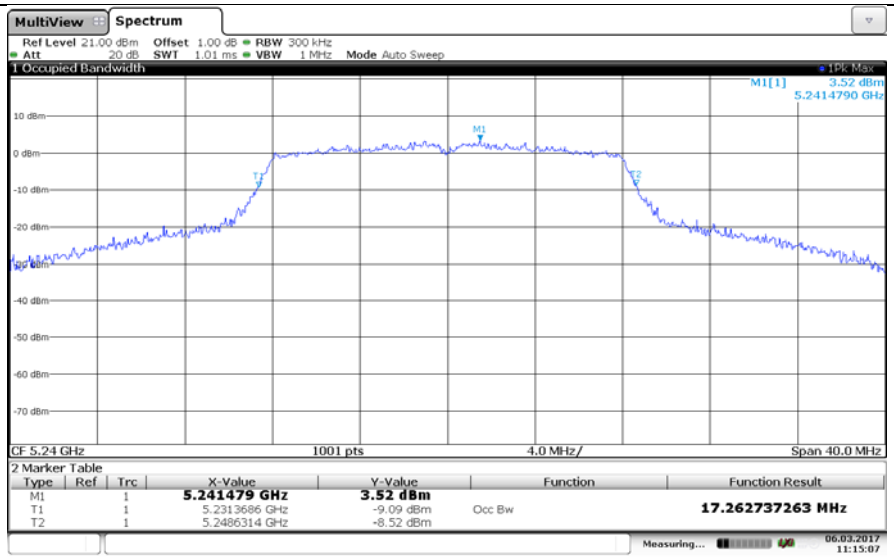
Please refer to the clause 3.3

TEST RESULTS

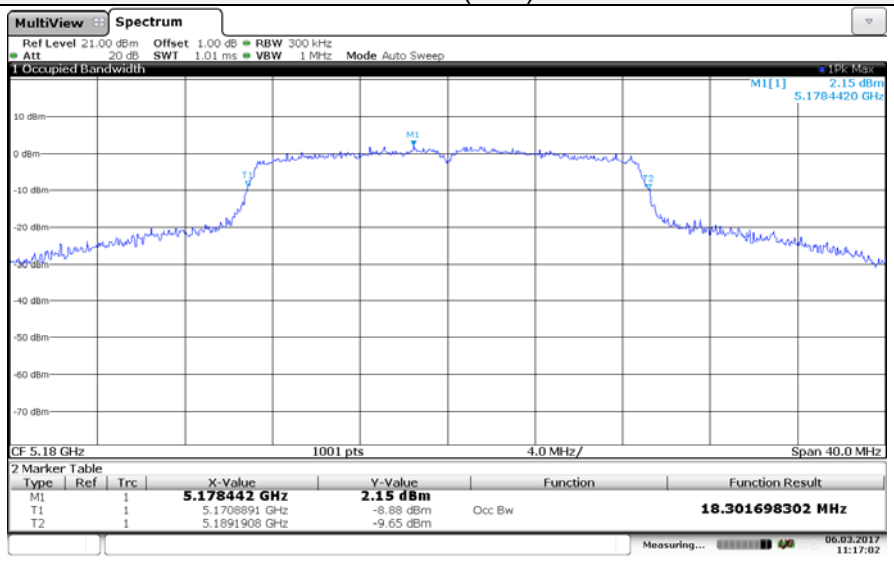
☒ **Passed** ☐ **Not Applicable**

	Type	Channel	99% Occupied Bandwidth(MHz)	Limit	Result
Band I 5150-5250MHz	802.11a	Low	17.50	-	Pass
		Mid	17.34		
		High	17.26		
	802.11n(H20)	Low	18.30	-	Pass
		Mid	18.22		
		High	18.10		
	802.11n(H40)	Low	37.32	-	Pass
		High	36.92		

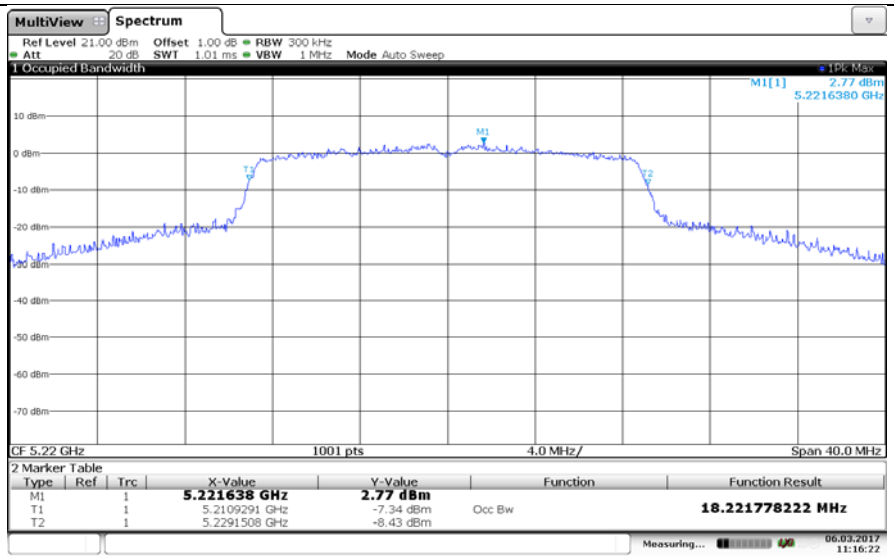
Test plot as follows:

Band I
802.11a

Low

Mid

High

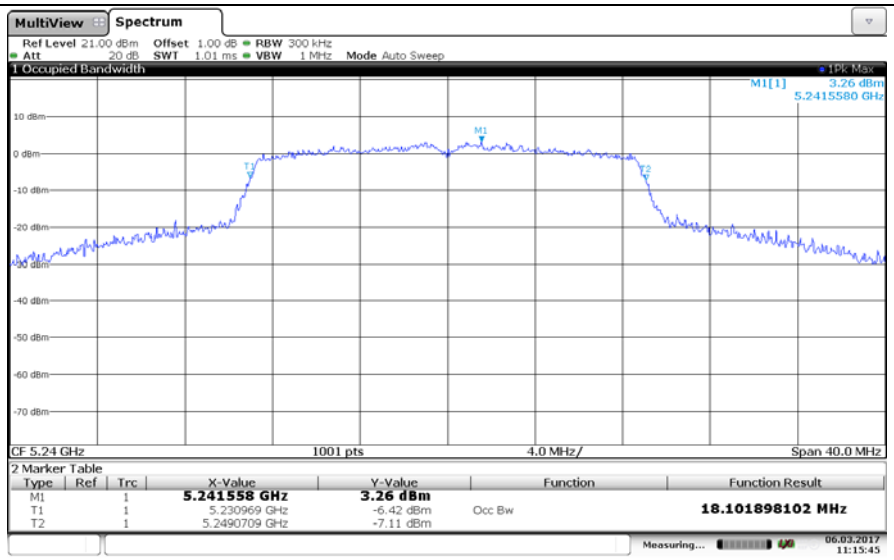
802.11n(H20)



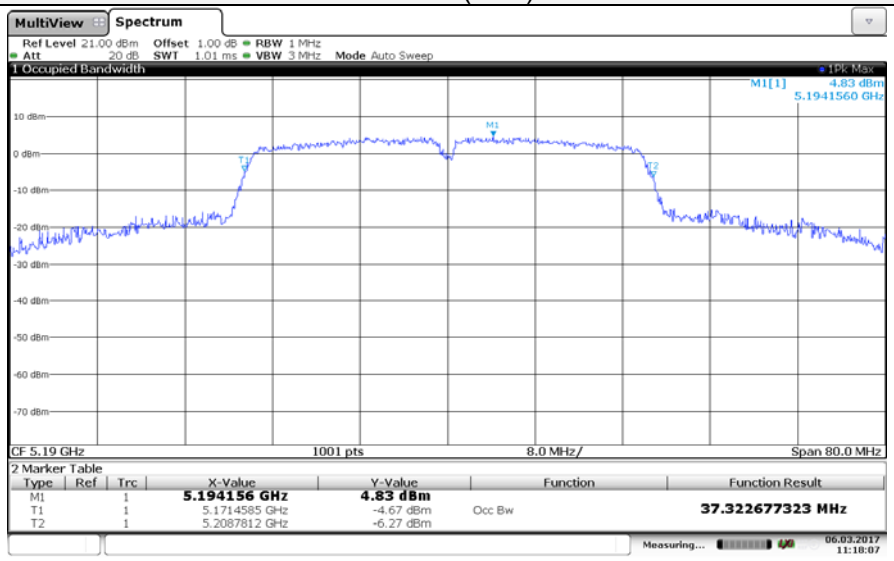
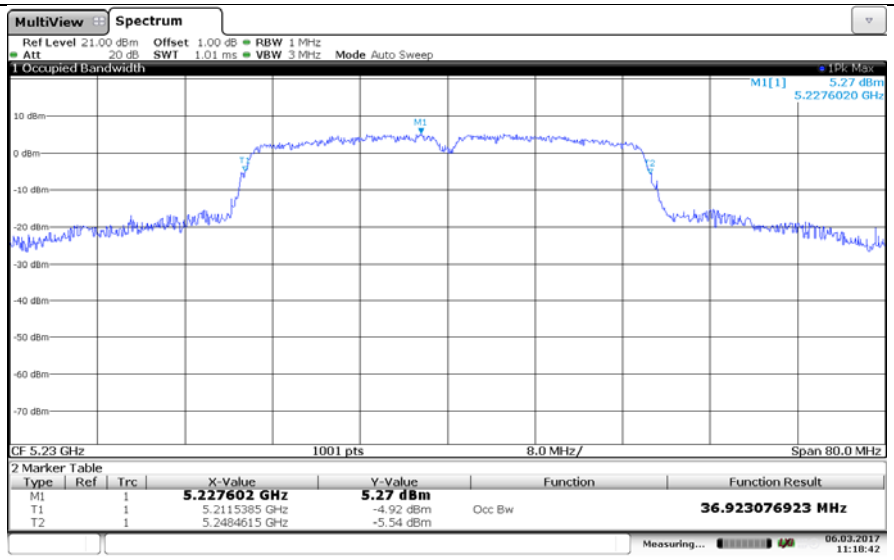
Low



Mid



High

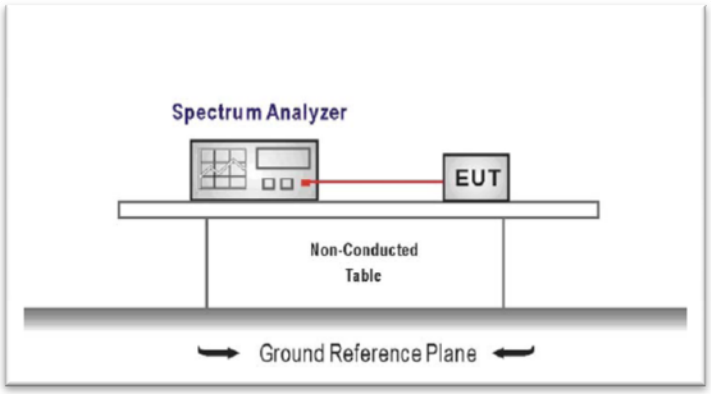
802.11n(H40)

Low

High

5.6. 26dB bandwidth

LIMIT

The bandwidth at 26dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in KDB 789033 D02 v01r02, and at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26dB bandwidth.

TEST CONFIGURATION



TEST PROCEDURE

According KDB 789033 D02 v01r02 – Section C
1. The signal analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 26. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = approximately 1% of the emission bandwidth
3. VBW > 3 x RBW
4. Detector = Peak
5. Trace mode = max hold

TEST MODE:

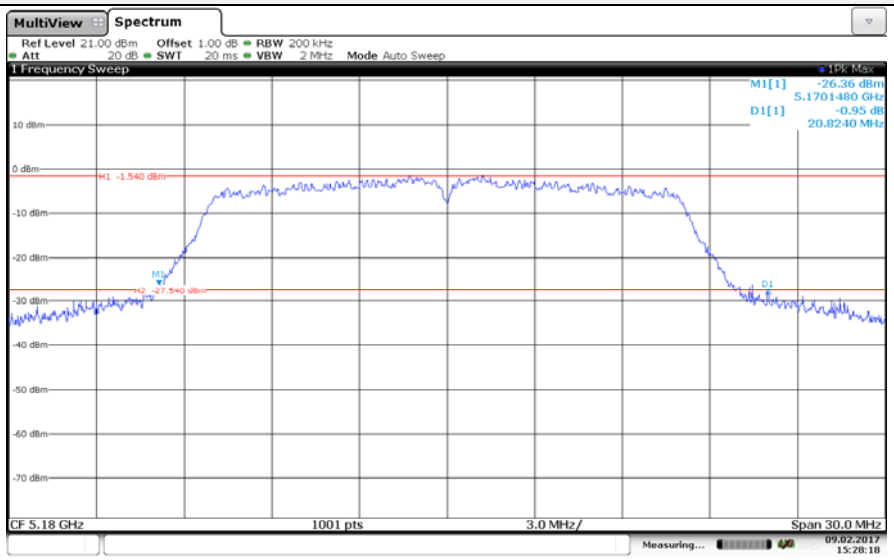
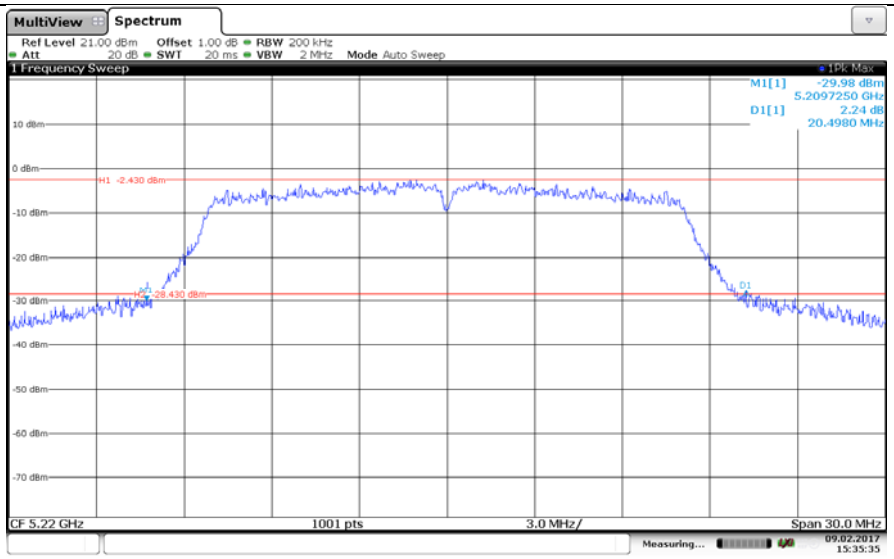
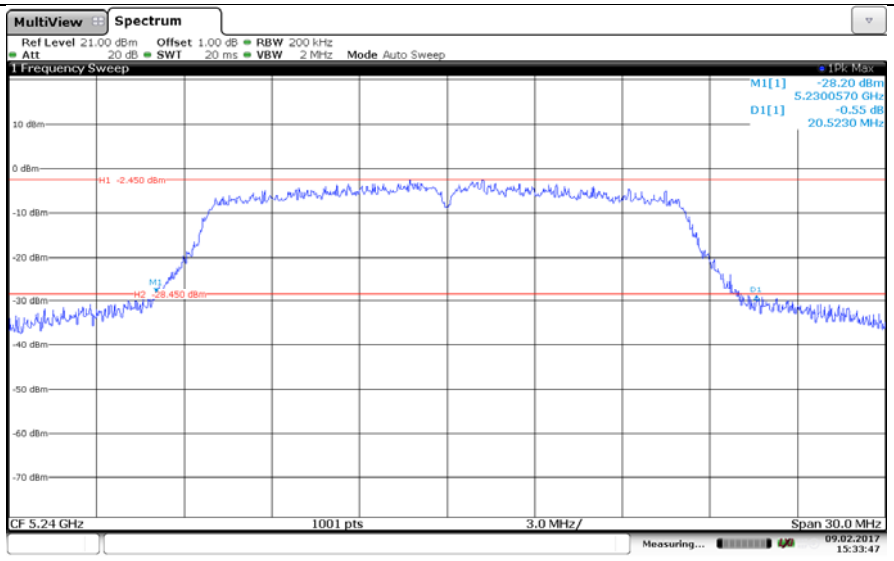
Please refer to the clause 3.3

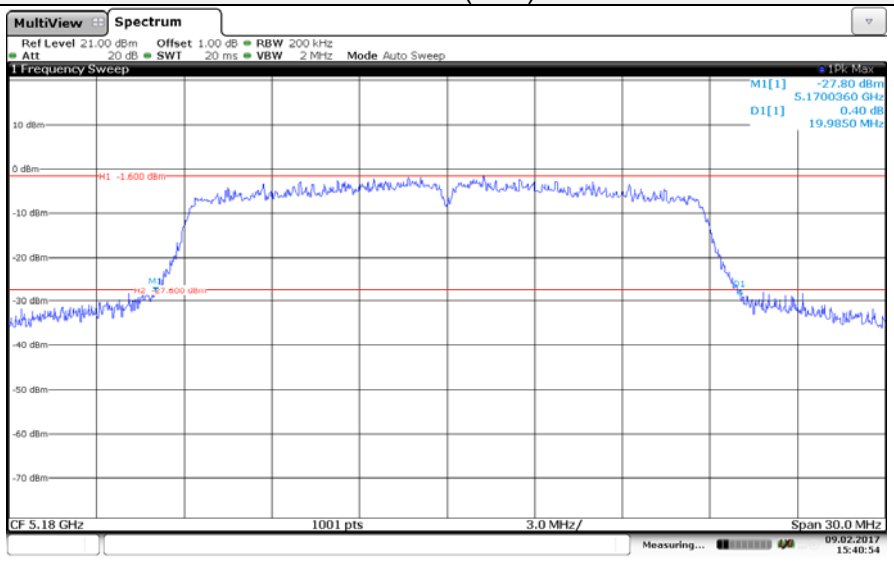
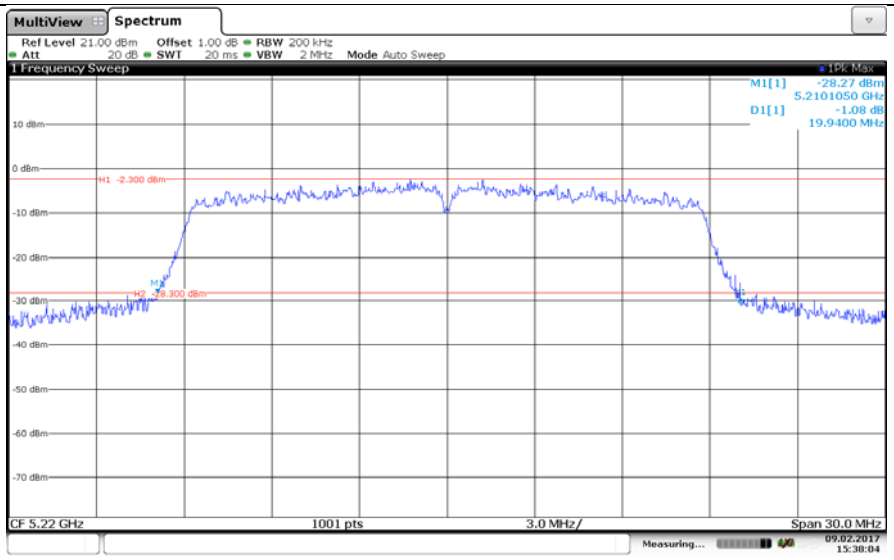
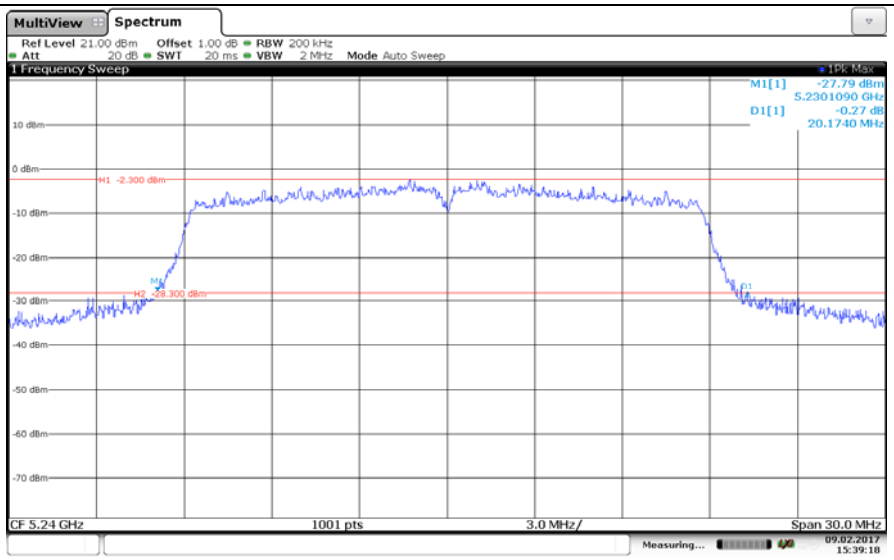
TEST RESULTS

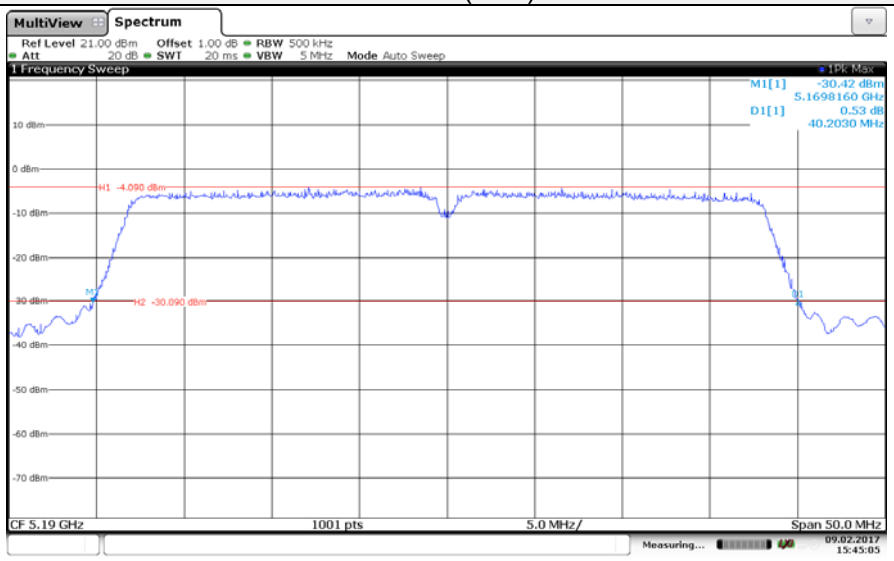
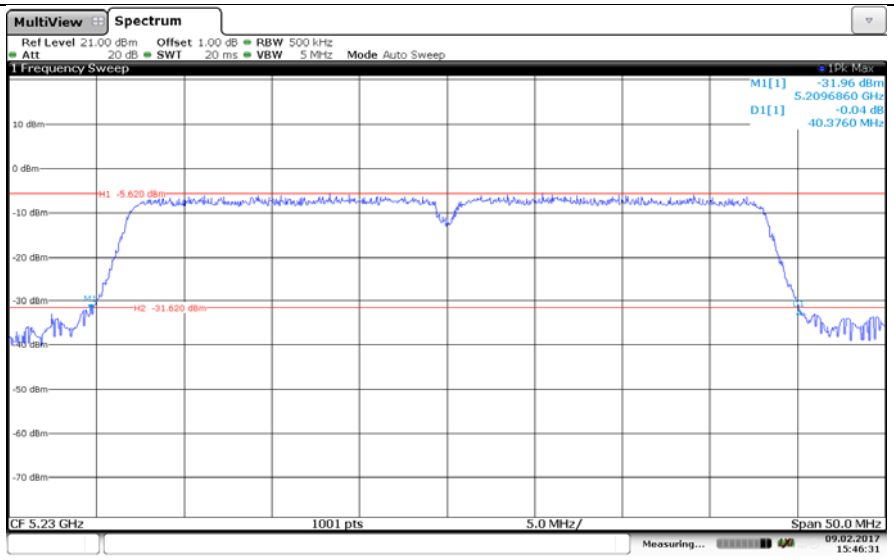
☒ **Passed** ☐ **Not Applicable**

	Type	Channel	26dB Bandwidth (MHz)	Limit	Result
Band I 5150-5250MHz	802.11a	Low	20.82	-	Pass
		Mid	20.50		
		High	20.52		
	802.11n(H20)	Low	19.99	-	Pass
		Mid	19.94		
		High	20.17		
	802.11n(H40)	Low	40.20	-	Pass
		High	40.38		

Test plot as follows:

Band I
802.11a

Low

Mid

High

802.11n(H20)

Low

Mid

High

802.11n(H40)

Low

High

5.7. Radiated Emissions & Bandedge

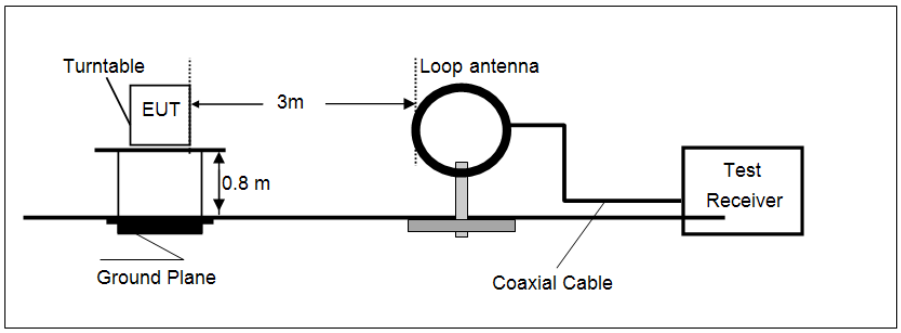
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

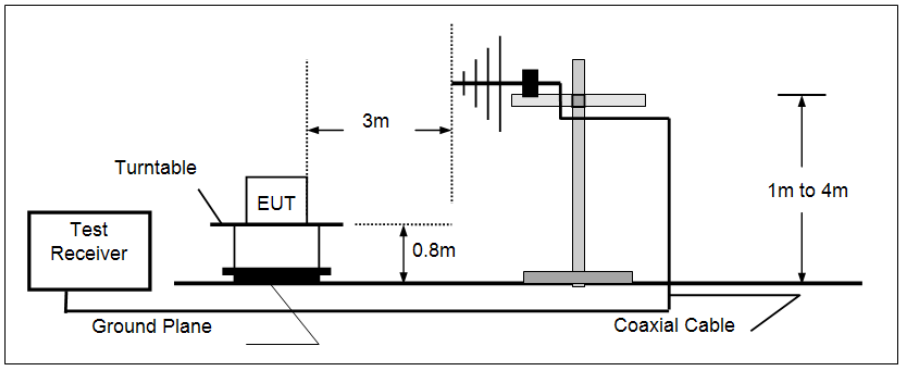
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

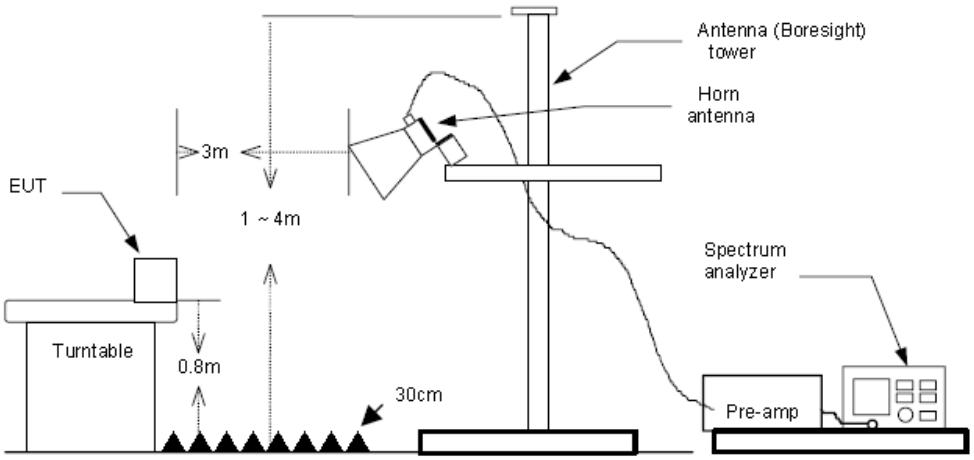
- 9KHz ~30MHz



- 30MHz ~ 1GHz



- Above 1GHz



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10:2013 for compliance to FCC 47CFR 15.407 requirements.
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1GHz,and 1.5m for above 1GHz. The turn table is rotated360 degrees to determine the position of the maximum emission level.
3. The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna. In order to find themaximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.
5. Use the following spectrum analyzer settings
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Below 1GHz, RBW=120KHz, VBW=300KHz, Sweep=auto, Detector function=peak, Trace=max hold; If the emission level of the EUT measured by the peak detectoris 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, theemission measurement will be repeated using the quasi-peak detector and reported.
   (3) Above 1GHz, RBW=1MHz, VBW=3MHz for Peak value
   RBW=1MHz, VBW=3MHz RMS detector for Average value.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

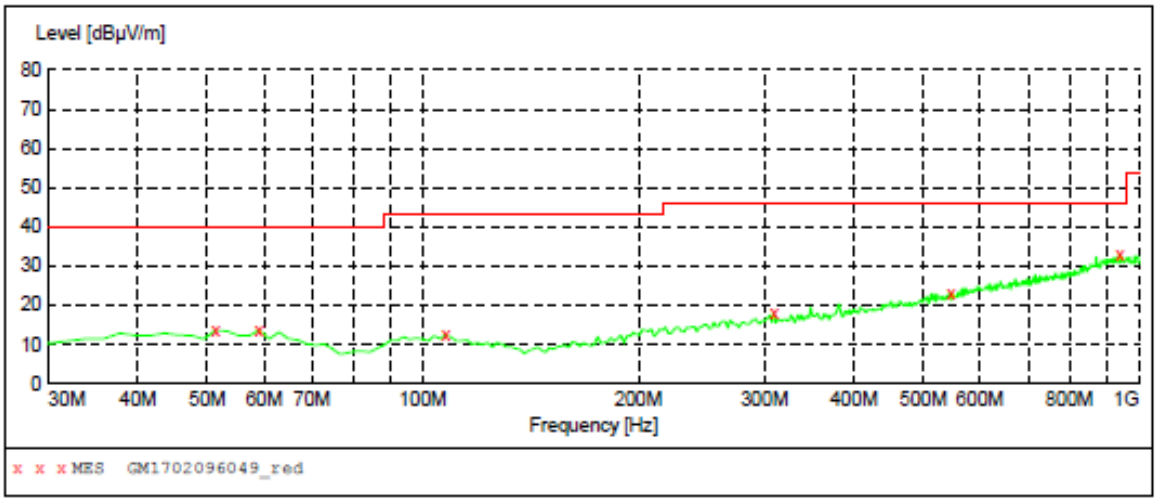
☒ **Passed** ☐ **Not Applicable**

Measurement data:

■ **9kHz ~ 30MHz**

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

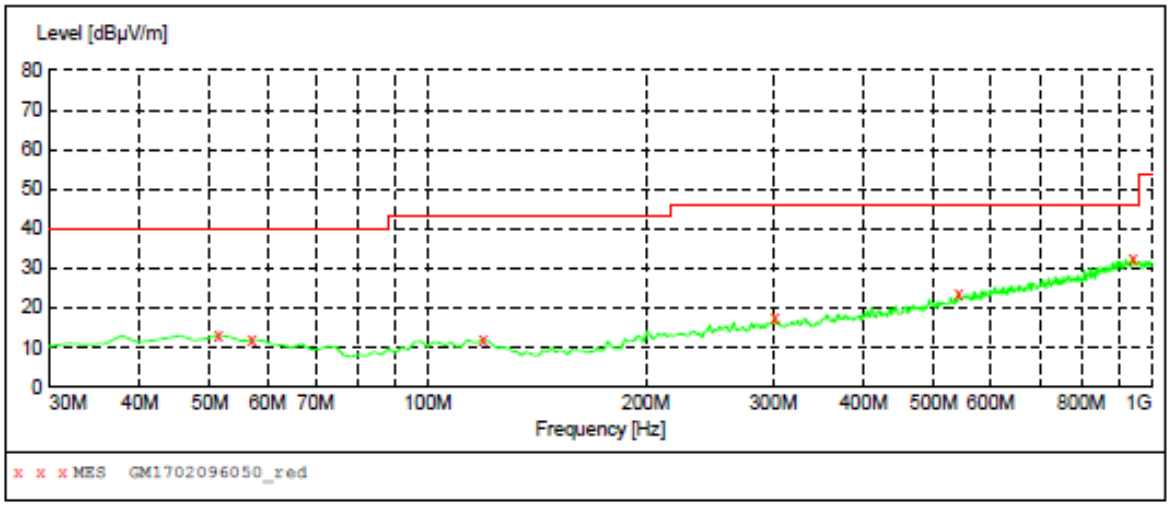
■ **30MHz ~ 1GHz**



MEASUREMENT RESULT: "GM1702096049_red"

2/9/2017 1:44PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
51.340000	13.60	-16.3	40.0	26.4	QP	300.0	271.00	HORIZONTAL
59.100000	13.70	-17.1	40.0	26.3	QP	100.0	255.00	HORIZONTAL
107.600000	12.40	-17.7	43.5	31.1	QP	300.0	7.00	HORIZONTAL
309.360000	17.80	-12.7	46.0	28.2	QP	300.0	112.00	HORIZONTAL
546.040000	23.20	-6.3	46.0	22.8	QP	300.0	308.00	HORIZONTAL
939.860000	32.90	1.5	46.0	13.1	QP	100.0	182.00	HORIZONTAL



MEASUREMENT RESULT: "GM1702096050_red"

2/9/2017 1:46PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarizatior
51.340000	13.10	-16.3	40.0	26.9	QP	100.0	303.00	VERTICAL
57.160000	11.90	-16.9	40.0	28.1	QP	100.0	207.00	VERTICAL
119.240000	12.00	-18.2	43.5	31.5	QP	100.0	159.00	VERTICAL
301.600000	17.50	-12.9	46.0	28.5	QP	100.0	75.00	VERTICAL
542.160000	23.50	-6.5	46.0	22.5	QP	100.0	268.00	VERTICAL
941.800000	32.60	1.5	46.0	13.4	QP	100.0	255.00	VERTICAL

Remark:Transd=Cable lose+ Antenna factor- Pre-amplifier;Margin=Limit -Level

Above 1GHz

Band I for 802.11a Low									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
5150.00	11.46	31.56	9.43	0.00	52.45	74.00	-21.55	Vertical	Peak
5180.00	61.65	31.64	9.45	0.00	102.74	-	-	Vertical	
10360.00	42.16	33.08	12.59	38.05	49.78	74.00	-24.22	Vertical	
15540.00	*					74.00	-	Vertical	
5150.00	9.66	31.56	9.43	0.00	50.65	74.00	-23.35	Horizontal	
5180.00	53.76	31.64	9.45	0.00	94.85	-	-	Horizontal	
10360.00	41.01	33.08	12.59	38.05	48.63	74.00	-25.37	Horizontal	
15540.00	*					74.00	-	Horizontal	
5150.00	5.59	31.56	9.43	0.00	46.58	54.00	-7.42	Vertical	Average
5180.00	53.79	31.64	9.45	0.00	94.88	-	-	Vertical	
10360.00	37.14	33.08	12.59	38.05	44.76	54.00	-9.24	Vertical	
15540.00	*					54.00	-	Vertical	
5150.00	4.77	31.56	9.43	0.00	45.76	54.00	-8.24	Horizontal	
5180.00	48.68	31.64	9.45	0.00	89.77	-	-	Horizontal	
10360.00	37.34	33.08	12.59	38.05	44.96	54.00	-9.04	Horizontal	
15540.00	*					54.00		Horizontal	

Band I for 802.11a High									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
5240.00	63.55	30.91	8.99	0.00	103.45	-	-	Vertical	Peak
5250.00	11.90	31.78	9.49	0.00	53.17	74.00	-20.83	Vertical	
10500.00	43.27	33.01	12.61	38.04	50.85	74.00	-23.15	Vertical	
15750.00	*					74.00		Vertical	
5240.00	55.57	31.78	9.49	0.00	96.84	-	-	Horizontal	
5250.00	6.78	35.44	10.53	0.00	52.75	74.00	-21.25	Horizontal	
10500.00	38.15	38.20	12.17	38.08	50.44	74.00	-23.56	Horizontal	
15750.00	*					74.00		Horizontal	
5240.00	54.97	30.91	8.99	0.00	94.87	-	-	Vertical	Average
5250.00	7.59	31.78	9.49	0.00	48.86	54.00	-5.14	Vertical	
10500.00	37.40	33.01	12.61	38.04	44.98	54.00	-9.02	Vertical	
15750.00	*					54.00		Vertical	
5240.00	47.36	31.78	9.49	0.00	88.63	-	-	Horizontal	
5250.00	1.89	35.44	10.53	0.00	47.86	54.00	-6.14	Horizontal	
10500.00	32.70	38.20	12.17	38.08	44.99	54.00	-9.01	Horizontal	
15750.00	*					54.00		Horizontal	

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measuring frequencies from 1 GHz to 40GHz of highest fundamental frequency.*

Band I for 802.11n(H40) Low									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
5150.00	11.76	31.56	9.43	0.00	52.75	74.00	-21.25	Vertical	Peak
5190.00	63.71	31.68	9.46	0.00	104.85	-	-	Vertical	
10380.00	43.04	33.09	12.59	38.06	50.66	74.00	-23.34	Vertical	
15570.00	*					74.00		Vertical	
5150.00	10.76	31.56	9.43	0.00	51.75	74.00	-22.25	Horizontal	
5190.00	56.70	31.68	9.46	0.00	97.84	-	-	Horizontal	
10380.00	43.03	33.09	12.59	38.06	50.65	74.00	-23.35	Horizontal	
15570.00	*					74.00		Horizontal	
5150.00	6.86	31.56	9.43	0.00	47.85	54.00	-6.15	Vertical	Average
5190.00	58.38	31.68	9.46	0.00	99.52	-	-	Vertical	
10380.00	37.46	33.09	12.59	38.06	45.08	54.00	-8.92	Vertical	
15570.00	*					54.00		Vertical	
5150.00	6.53	31.56	9.43	0.00	47.52	54.00	-6.48	Horizontal	
5190.00	49.71	31.68	9.46	0.00	90.85	-	-	Horizontal	
10380.00	38.26	33.09	12.59	38.06	45.88	54.00	-8.12	Horizontal	
15570.00	*					54.00		Horizontal	

Band I for 802.11n(H40) High									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
5230.00	62.95	30.91	8.99	0.00	102.85	-	-	Vertical	Peak
5250.00	12.09	31.78	9.49	0.00	53.36	74.00	-20.64	Vertical	
10460.00	43.30	33.01	12.61	38.04	50.88	74.00	-23.12	Vertical	
15690.00	*					74.00		Vertical	
5230.00	55.60	31.78	9.49	0.00	96.87	-	-	Horizontal	
5250.00	6.68	35.44	10.53	0.00	52.65	74.00	-21.35	Horizontal	
10460.00	38.65	38.20	12.17	38.08	50.94	74.00	-23.06	Horizontal	
15690.00	*					74.00		Horizontal	
5230.00	57.62	30.91	8.99	0.00	97.52	-	-	Vertical	Average
5250.00	7.61	31.78	9.49	0.00	48.88	54.00	-5.12	Vertical	
10460.00	36.94	33.01	12.61	38.04	44.52	54.00	-9.48	Vertical	
15690.00	*					54.00		Vertical	
5230.00	48.67	31.78	9.49	0.00	89.94	-	-	Horizontal	
5250.00	0.88	35.44	10.53	0.00	46.85	54.00	-7.15	Horizontal	
10460.00	33.59	38.20	12.17	38.08	45.88	54.00	-8.12	Horizontal	
15690.00	*					54.00		Horizontal	

Remark:

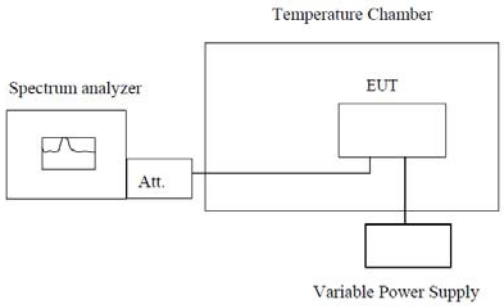
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measuring frequencies from 1 GHz to 40GHz of highest fundamental frequency.*

5.8. Frequency stability

LIMIT

Within Operation Band

TEST CONFIGURATION



Note : Measurement setup for testing on Antenna connector

TEST PROCEDURE

1. The equipment under test was connected to an external DC power supply and input rated voltage.
2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
3. The EUT was placed inside the temperature chamber.
4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25℃ operating frequency as reference frequency.
5. Turn EUT off and set the chamber temperature to –20℃. After the temperature stabilized for approximately 30 minutes recorded the frequency.
6. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.

TEST MODE:

Please refer to the clause 3.3

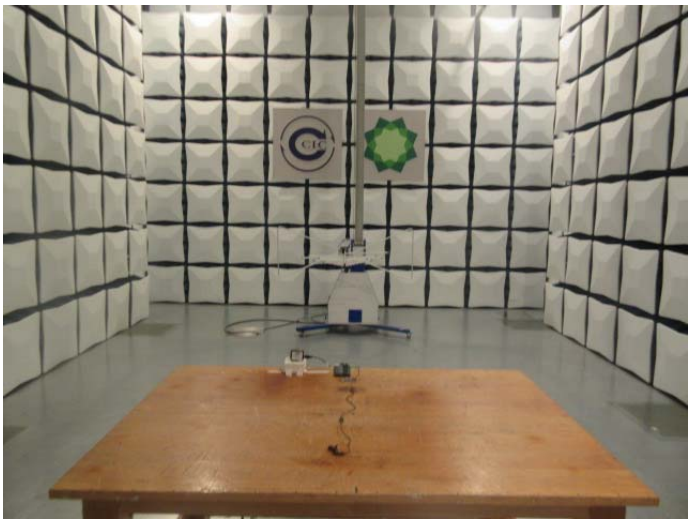
TEST RESULTS

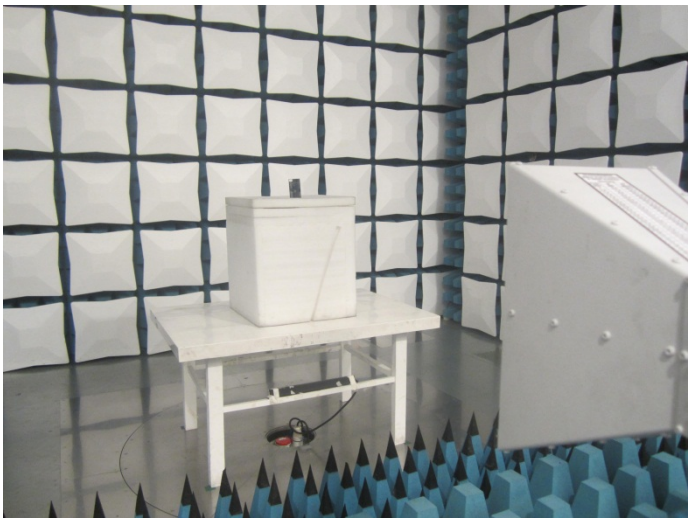
☒ **Passed** ☐ **Not Applicable**

Band I for 802.11a Low				
Voltage(%)	Power(VDC)	TEMP(℃)	Freq.Dev(kHz)	Deviation(ppm)
100%	3.70	-30	23.461	4.53
100%		-20	22.896	4.42
100%		-10	22.247	4.29
100%		0	22.178	4.28
100%		+10	22.046	4.26
100%		+20	22.000	4.25
100%		+30	22.089	4.26
100%		+40	22.104	4.27
100%		+50	22.136	4.27
Low Battery power	3.50	+20	22.798	4.40
High Battery power	4.20	+20	22.354	4.32

6. Test Setup Photos of the EUT

Radiated Emission





Conducted Emission (AC Mains)

7. External and Internal Photos of the EUT

Reference to Test Report No.: TRE1702000701.

.....End of Report.....