CMA Testing and Certification Laboratories
廠商會檢定中心

TEST REPORT

Report No.	:	AV0056553(2) Date : 06 Oct 2017
Application No.	:	LV031314(1)
Applicant	:	C-MAX Asia Limited Room 117, 1/F, Liven House, 61-63 King Yip Street, Kwun Tong, Hong Kong
Sample Description	:	One(1) item of submitted sample stated to be Bluetooth 5.0 Module of Model No. CMM-9304-V2.1 Sample registration no. : RV038614-001 Radio Frequency : 2402MHz – 2480MHz Transceiver Rating : DC 3V No. of submitted sample : Four (4) piece (s)
Date Received	:	18 Sep 2017
Test Period	:	20 Sep 2017 to 29 Sep 2017
Test Requested	:	FCC Part 15 Certification (15.247), FCC Part 15 Verification Procedure
Test Method	:	47 CFR Part 15 (10-1-15 Edition), ANSI C63.4 – 2014, ANSI C63.10 – 2013 KDB 558074 D01 DTS Meas Guidance v04
Test Engineer	:	Mr. LEUNG Shu-kan, Ken
Test Result	:	See attached sheet(s) from page 2 to 61.
Conclusion	:	The submitted sample was found to comply with requirement of FCC Subpart B and C.

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____

Mr. WONG Lap-pong, Andrew
Manager
Electrical Division

FCC ID: 2ABBX179304V21

CMA Industrial Development Foundation Limited
Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, N.T., Hong Kong.
Tel: (852) 2698 8198 Fax: (852) 2695 4177 E-mail: info@cmatcl.com Web Site: http://www.cmatcl.com

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1 General Information

1.1 General Description

The equipment under test (EUT) is a transceiver module for 2.4GHz wireless device. It is highly optimized for Bluetooth 5.0 Single Mode (Bluetooth Low Energy) link application requiring ultra low power consumption. It offers a plug and play solution for any BLE application up to the link layer, without any additional hardware nor RF layout.
The EUT is power by 3V dc. The EUT contain shielding, internal grounding and built in with a folded-dipole PCB antenna. The EUT can mount on other device through surface mount or plug in through two 8-pin 1.27 mm connector.

The brief circuit description is listed as follows:

- X1 and its associated circuit act as oscillator
- L1, C9, C10 and its associated circuit act as antenna matching
- U1 and its associated circuit act as controller

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1.2 Location of the test site

FCC Registered Test Site Number: 416666

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 – 2013. A Semi-Anechoic Chamber Testing Site is set up for investigation and located at:

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.10 – 2013. A shielded room is located at :

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
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New Territories,
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1.3 List of measuring equipment

Equipment	Manufacturer	Model No.	Serial No.	Calibration Due Date	Calibration Period
EMI Test Receiver	R&S	ESCI	100152	15 Nov 2017	1Year
Spectrum Analyzer	R&S	FSV40	100964	08 Feb 2018	1Year
Biconical Antenna	Rohde & Schwarz	HK116	837414/004	17 Aug 2018	1Year
Log Periodic Antenna	Teseq	UPA6109	43666	27 Jul 2018	1Year
Loop Antenna	EMCO	6502	00056620	25 Jan 2018	2Years
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-531	19 Dec 2018	2Years
Broadband Pre-Amplifier	Schwarzbeck	BBV 9718	9718-119	21 Dec 2018	2Years
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170442	02 Aug 2018	2Years
Broadband Pre-Amplifier	Schwarzbeck	BBV 9719	9719-010	02 Aug 2018	2Years
Horn Antenna	Schwarzbeck	BBHA 9120C	9120C 594	26 Jul 2018	2Years
Pre-amplifier	Schwarzbeck	BBV9718	BBV9718 297	24 Jul 2018	2Years
Coaxial Cable	Schaffner	RG 213/U	N/A	18 May 2018	1Year
Coaxial Cable	Suhner	RG 214/U	N/A	18 May 2018	1Year
Coaxial Cable	Suhner	Sucoflex_104	N/A	20 Dec 2017	1Year
LISN	R&S	ESH3-Z5	100038	16 Jan 2018	1Year
Coaxial Cable	Tyco Electronics	RG 58C/U	N/A	12 Feb 2018	1Year
TS8997 Testing System					
Spectrum Analyzer	R&S	FSV 40	101190	09 Aug 2018	1Year
Vector Generator	R&S	SMBV100A	262024	09 Aug 2018	1Year
Generator	R&S	SMB100A	103230	09 Aug 2018	1Year
OSP	R&S	OSP	OSP120 V02	09 Aug 2018	1Year

Support equipment:

Adaptor
Model: A1299

Supply by CMA

FCC ID: 2ABBX179304V21

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1.4 Measurement Uncertainty

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%.

Radiated emissions

Frequency	Uncertainty (U_{lab})
30MHz ~ 200MHz (Horizontal)	4.59dB
30MHz ~ 200MHz (Vertical)	4.49dB
200MHz ~1000MHz (Horizontal)	4.94dB
200MHz ~1000MHz (Vertical)	4.97dB
1GHz ~6GHz	4.52dB
6GHz ~18GHz	4.58dB

Line-conducted emissions

Frequency	Uncertainty (U_{lab})
150kHz~30MHz	2.80dB

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2 Description of the emission test

2.1 Test Procedure

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 – 2013.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground for below 1GHz measurement and 1.5m high above the ground for above 1GHz measurement. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is placed 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1 m above the ground.

For 30MHz to 1GHz, broadband antenna with its vertical and horizontal plane is placed 3m from the EUT and rotated about its vertical and horizontal axis for maximum response at each azimuth about the EUT. And the reference point of antenna shall be 1 m above the ground.

For above 1GHz, horn antenna with its vertical and horizontal plane is placed 3m from the EUT and rotated about its vertical and horizontal axis for maximum response at each azimuth about the EUT. Preamplifier and High Pass filter was used for measurements. The reference point of antenna shall be 1 m above the ground.

The device was rotated through three orthogonal to determine which attitude and configuration produce the highest emission during measurement for Radiated Emission measurement.

The EUT will connect to TS 8997 testing system for direct conducted measurement.

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2.2 Conducted Emission Measurement Data

Environmental conditions:

Parameter	Recorded value	
Ambient temperature:	26	° C
Relative humidity:	65	%

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
RF output power	2402.000	0.0	1.000000	PASS
Power Spectral Density	2402.000	0.0	1.000000	PASS
Minimum Emission Bandwidth 6 dB	2402.000	0.0	1.000000	PASS
Band Edge low	2402.000	0.0	1.000000	PASS
Tx Spurious Emission	2402.000	0.0	1.000000	PASS
Rx Spurious Emission	2402.000	0.0	1.000000	PASS
RF output power	2440.000	0.0	1.000000	PASS
Power Spectral Density	2440.000	0.0	1.000000	PASS
Minimum Emission Bandwidth 6 dB	2440.000	0.0	1.000000	PASS
Tx Spurious Emission	2440.000	0.0	1.000000	PASS
Rx Spurious Emission	2440.000	0.0	1.000000	PASS
RF output power	2480.000	0.0	1.000000	PASS
Power Spectral Density	2480.000	0.0	1.000000	PASS
Minimum Emission Bandwidth 6 dB	2480.000	0.0	1.000000	PASS
Band Edge high	2480.000	0.0	1.000000	PASS
Tx Spurious Emission	2480.000	0.0	1.000000	PASS
Rx Spurious Emission	2480.000	0.0	1.000000	PASS

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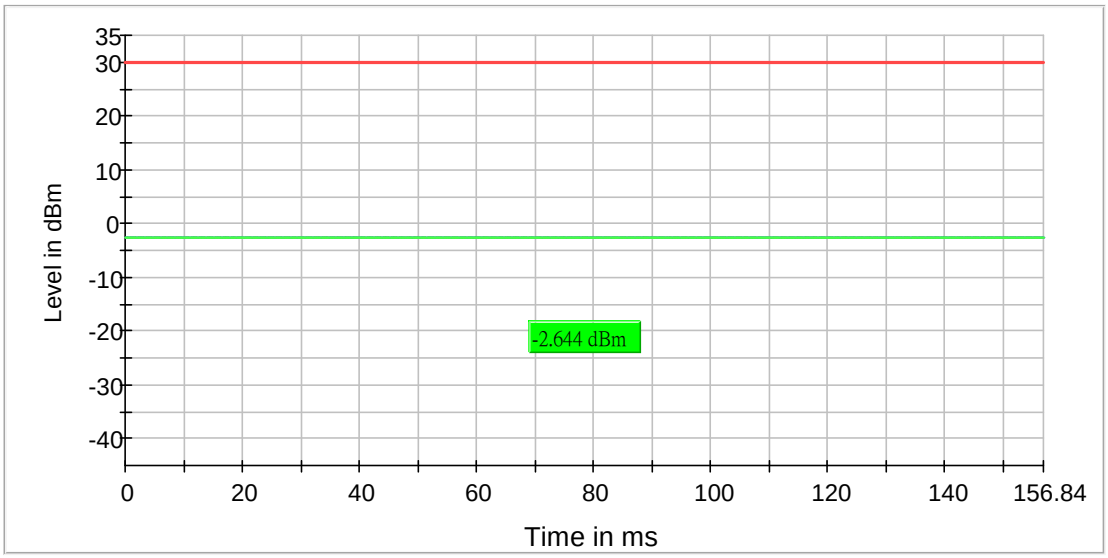
RF output power (2402 MHz)

Result

DUT Frequency (MHz)	RF output power (dBm)	Limit Max (dBm)	DutyCycle (%)	Result
2402.000000	-2.6	30.0	15.694	PASS



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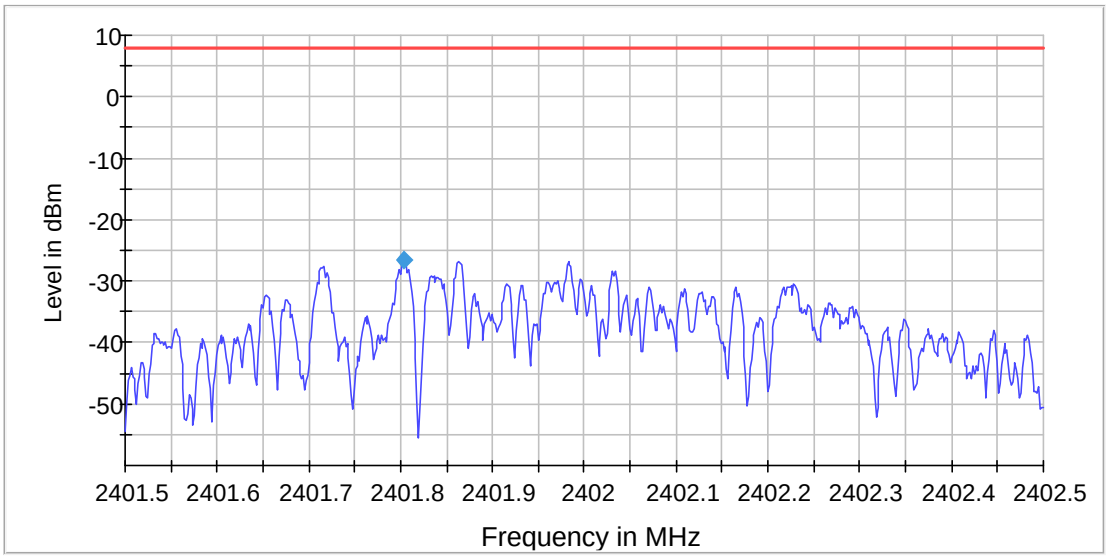
Power Spectral Density (2402 MHz)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2402.000000	2401.803144	-26.615	8.0	PASS



Measurement

Setting	Instrument Value	Target Value		Setting	Instrument Value	Target Value
Start Frequency	2.40150 GHz	2.40150 GHz		Stablemode	Trace	Trace
Stop Frequency	2.40250 GHz	2.40250 GHz		Stablevalue	0.30	0.30
Span	1.000 MHz	1.000 MHz		Run	3 / max. 150	max. 150
RBW	3.000 kHz	<= 3.000 kHz		Stable	3 / 3	3
VBW	10.000 kHz	>= 9.000 kHz				
SweepPoints	667	~ 667				
Sweeptime	667.000 ms	667.000 ms				
Reference Level	-10.000 dBm	-10.000 dBm				
Attenuation	10.000 dB	AUTO				
Detector	RMS	RMS				
SweepCount	1	1				
Filter	3 dB	3 dB				
Trace Mode	Max Hold	Max Hold				
Sweeptype	Sweep	AUTO				
Preamp	off	off				

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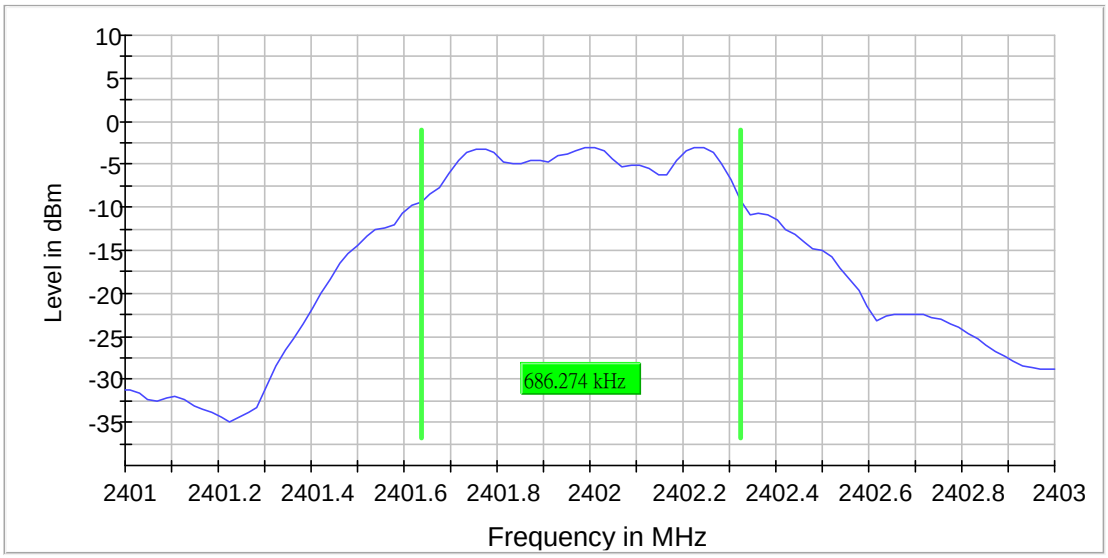
Minimum Emission Bandwidth 6 dB (2402 MHz)

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Max Level (dBm)	Result
2402.000000	0.686274	0.500000	---	2401.637255	2402.323529	-3.1	PASS



Measurement

Setting	Instrument Value	Target Value		Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz		Stablemode	Trace	Trace
Stop Frequency	2.40300 GHz	2.40300 GHz		Stablevalue	0.30	0.30
Span	2.000 MHz	2.000 MHz		Run	47 / max. 150	max. 150
RBW	100.000 kHz	~ 100.000 kHz		Stable	15 / 15	15
VBW	300.000 kHz	~ 300.000 kHz				
SweepPoints	101	~ 20				
Sweeptime	18.938 µs	AUTO				
Reference Level	-10.000 dBm	-10.000 dBm				
Attenuation	10.000 dB	AUTO				
Detector	MaxPeak	MaxPeak				
SweepCount	100	100				
Filter	3 dB	3 dB				
Trace Mode	Max Hold	Max Hold				
Sweeptype	FFT	AUTO				
Preamp	off	off				

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Band Edge low (2402 MHz)

Result

DUT Frequency (MHz)	Result
2402.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
2401.823908	-16.5

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.925042	-53.7	17.1	-36.5	PASS
2399.875069	-55.7	19.1	-36.5	PASS
2399.775125	-56.5	19.9	-36.5	PASS
2399.825097	-57.1	20.6	-36.5	PASS
2399.725153	-57.3	20.8	-36.5	PASS
2399.625208	-58.7	22.2	-36.5	PASS
2399.675180	-58.7	22.2	-36.5	PASS
2399.275403	-58.8	22.3	-36.5	PASS
2399.575236	-59.0	22.4	-36.5	PASS
2399.375347	-59.1	22.5	-36.5	PASS
2399.325375	-59.3	22.7	-36.5	PASS
2399.425319	-59.5	23.0	-36.5	PASS
2399.525264	-59.5	23.0	-36.5	PASS
2399.175458	-59.8	23.2	-36.5	PASS
2399.475292	-60.0	23.4	-36.5	PASS

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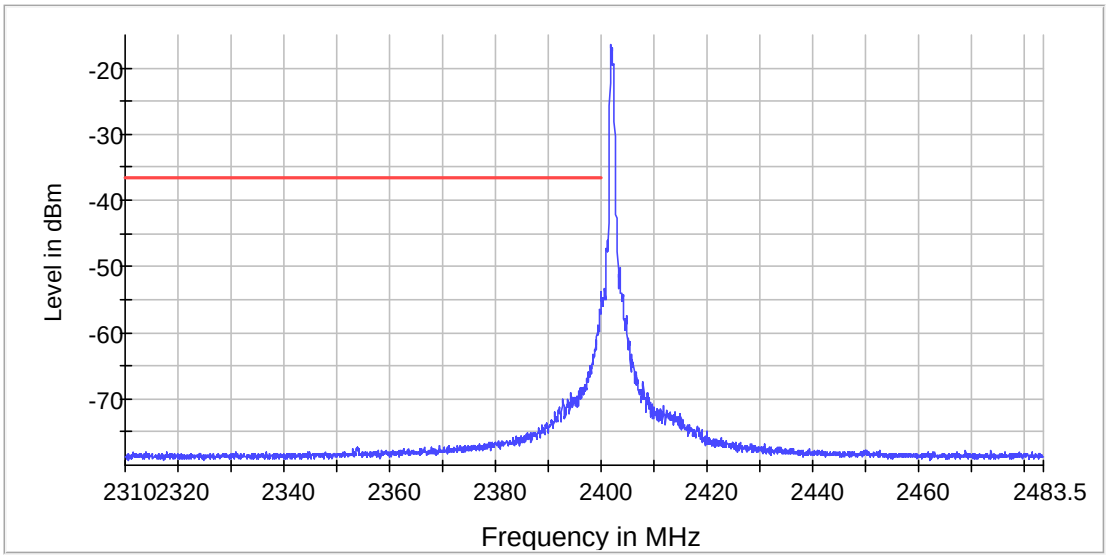

Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 s	1.670 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	RMS	RMS
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 15	max. 15
Stable	3 / 3	3

Measurement 2

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	1.800 s	1.800 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	RMS	RMS
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 15	max. 15
Stable	3 / 3	3

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Tx Spurious Emission (2402 MHz)

Result

DUT Frequency (MHz)	Result
2402.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2386.254909	-51.4	10.2	-41.2
2399.250268	-33.3	10.9	-22.5
2385.755087	-52.4	11.2	-41.2
2386.754730	-52.8	11.6	-41.2
2388.254195	-53.0	11.7	-41.2
2387.754373	-53.0	11.7	-41.2
2382.756159	-54.2	13.0	-41.2
2382.256337	-54.4	13.2	-41.2
2389.253838	-54.7	13.5	-41.2
2384.755444	-55.2	14.0	-41.2
2385.255266	-55.3	14.1	-41.2
2392.252767	-36.6	14.2	-22.5
2391.752945	-36.8	14.3	-22.5
2392.752588	-36.8	14.3	-22.5
2376.758301	-55.6	14.4	-41.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2400.000000	2483.500000	2	2
2483.500000	7000.000000	2	2
7000.000000	26000.000000	2	2

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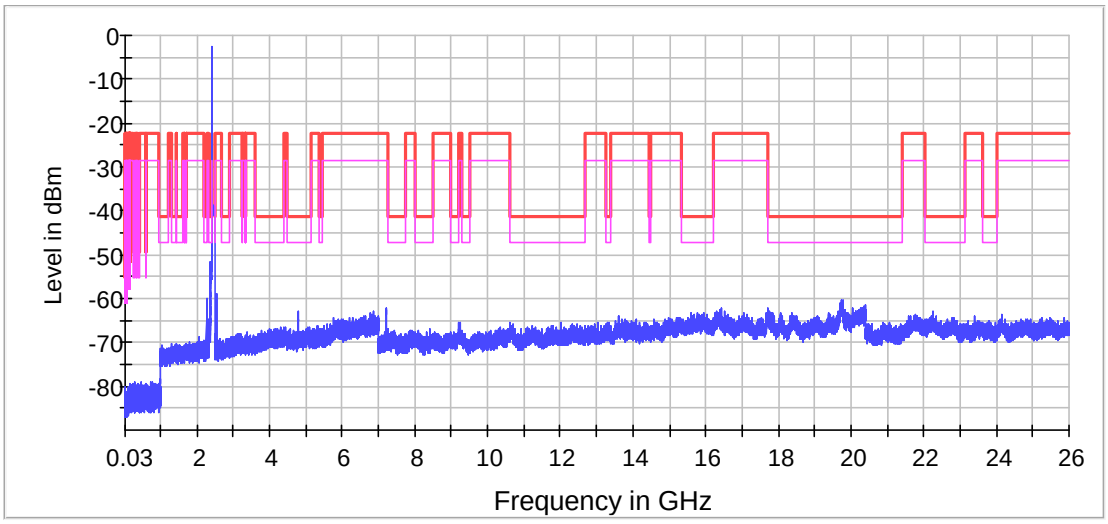

× Limit [limit.Result:1] × Sum Level [trace.Result:1]

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	19400	~ 19400
Sweeptime	19.400 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	2800	~ 2800
Sweeptime	2.800 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

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Rx Spurious Emission (2402 MHz)

Result

DUT Frequency (MHz)	Result
2402.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
19721.830430	-60.2	19.0	-41.2
19689.832114	-60.4	19.1	-41.2
19706.831219	-60.4	19.2	-41.2
19730.829956	-60.5	19.3	-41.2
19729.830009	-60.6	19.3	-41.2
19745.829167	-60.8	19.5	-41.2
19743.829272	-60.8	19.6	-41.2
19733.829798	-61.0	19.8	-41.2
19724.830272	-61.1	19.8	-41.2
19747.829062	-61.1	19.9	-41.2
20396.794906	-61.1	19.9	-41.2
19712.830904	-61.2	20.0	-41.2
19758.828483	-61.2	20.0	-41.2
19716.830693	-61.2	20.0	-41.2
19722.830377	-61.3	20.0	-41.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	7000.000000	2	2
7000.000000	26000.000000	2	2

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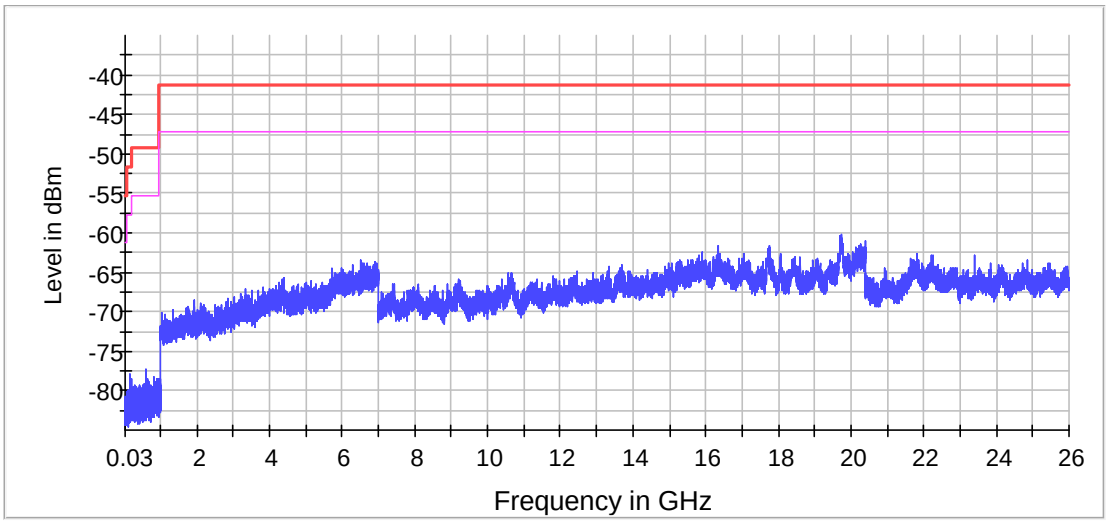

Limit [limit.Result:1] Threshold [limit 2.Result:1]

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
Sweeptime	9.700 ms	AUTO
Reference Level	-67.000 dBm	-67.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	6000	~ 6000
Sweeptime	6.000 ms	AUTO
Reference Level	-67.000 dBm	-67.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

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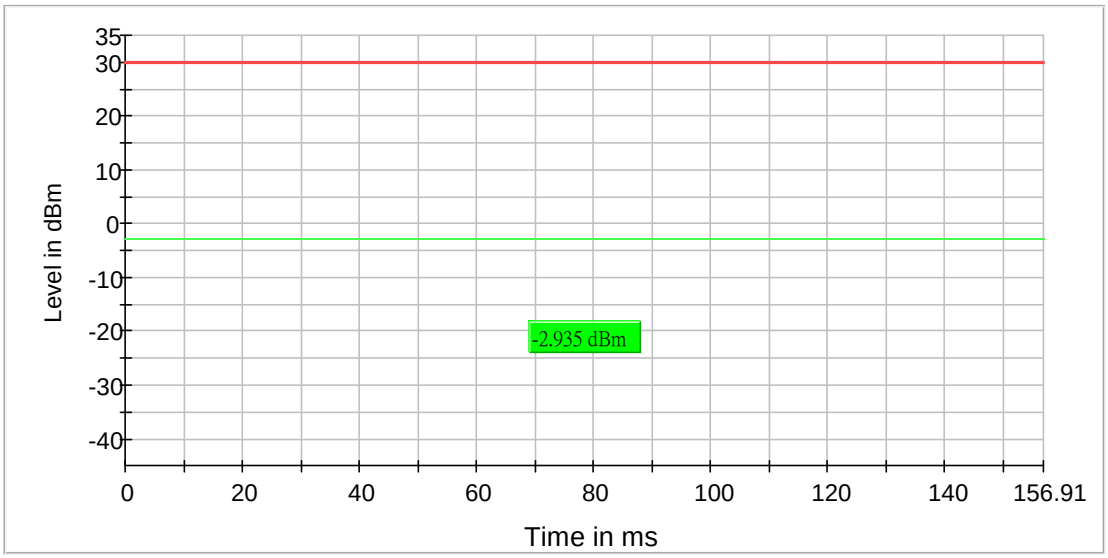
TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

RF output power (2440 MHz)

Result

DUT Frequency (MHz)	RF output power (dBm)	Limit Max (dBm)	DutyCycle (%)	Result
2402.000000	-2.6	30.0	15.694	PASS



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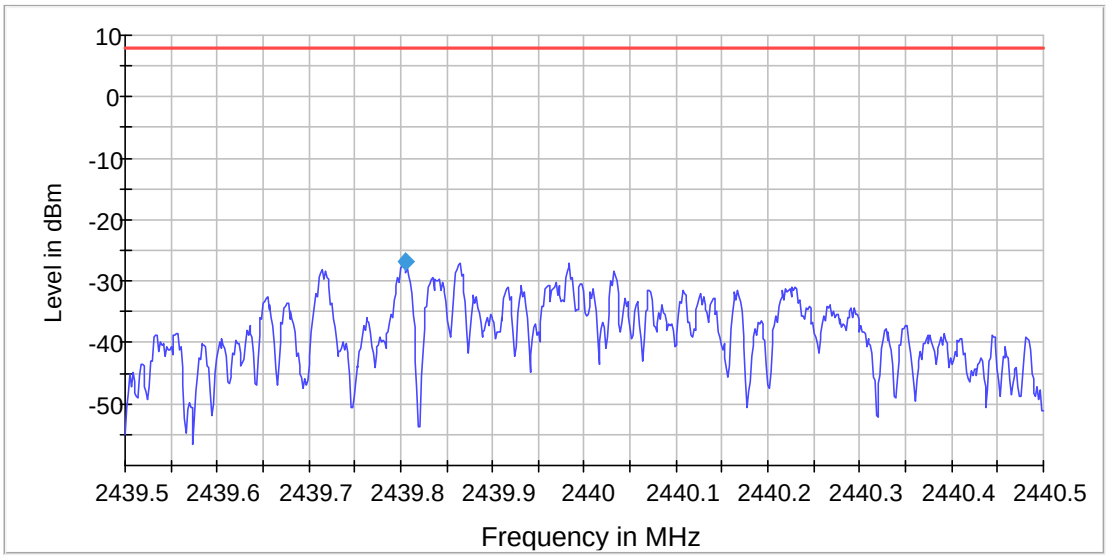
TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

Power Spectral Density (2440 MHz)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2440.000000	2439.804641	-26.839	8.0	PASS



Measurement

Setting	Instrument Value	Target Value		Setting	Instrument Value	Target Value
Start Frequency	2.43950 GHz	2.43950 GHz		Stablemode	Trace	Trace
Stop Frequency	2.44050 GHz	2.44050 GHz		Stablevalue	0.30	0.30
Span	1.000 MHz	1.000 MHz		Run	3 / max. 150	max. 150
RBW	3.000 kHz	<= 3.000 kHz		Stable	3 / 3	3
VBW	10.000 kHz	>= 9.000 kHz				
SweepPoints	667	~ 667				
Sweeptime	667.000 ms	667.000 ms				
Reference Level	-10.000 dBm	-10.000 dBm				
Attenuation	10.000 dB	AUTO				
Detector	RMS	RMS				
SweepCount	1	1				
Filter	3 dB	3 dB				
Trace Mode	Max Hold	Max Hold				
Sweeptype	Sweep	AUTO				
Preamp	off	off				

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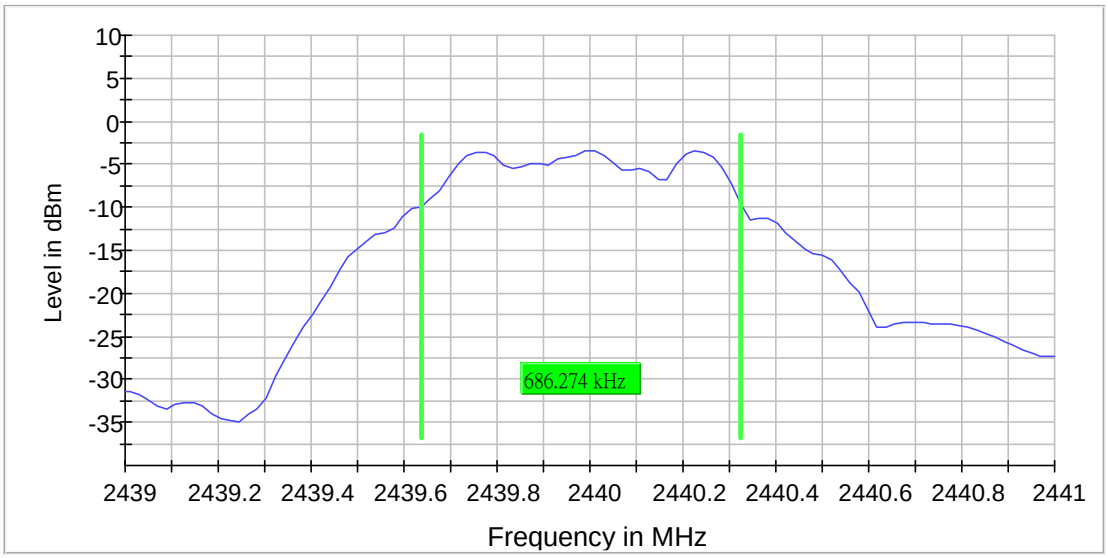
TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

Minimum Emission Bandwidth 6 dB (2440 MHz)

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Max Level (dBm)	Result
2440.000000	0.686274	0.500000	---	2439.637255	2440.323529	-3.5	PASS



Measurement

Setting	Instrument Value	Target Value		Setting	Instrument Value	Target Value
Start Frequency	2.43900 GHz	2.43900 GHz		Stablemode	Trace	Trace
Stop Frequency	2.44100 GHz	2.44100 GHz		Stablevalue	0.30	0.30
Span	2.000 MHz	2.000 MHz		Run	25 / max. 150	max. 150
RBW	100.000 kHz	~ 100.000 kHz		Stable	15 / 15	15
VBW	300.000 kHz	~ 300.000 kHz				
SweepPoints	101	~ 20				
Sweeptime	18.938 µs	AUTO				
Reference Level	-10.000 dBm	-10.000 dBm				
Attenuation	10.000 dB	AUTO				
Detector	MaxPeak	MaxPeak				
SweepCount	100	100				
Filter	3 dB	3 dB				
Trace Mode	Max Hold	Max Hold				
Sweeptype	FFT	AUTO				
Preamp	off	off				

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TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

Tx Spurious Emission (2440 MHz)

Result

DUT Frequency (MHz)	Result
2440.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
19754.437223	-60.4	19.1	-41.2
19724.751578	-60.5	19.3	-41.2
19713.471033	-60.7	19.5	-41.2
19714.064746	-61.0	19.7	-41.2
19690.909943	-61.0	19.8	-41.2
19734.250984	-61.1	19.9	-41.2
19704.565340	-61.2	19.9	-41.2
19717.627023	-61.2	20.0	-41.2
19677.254547	-61.3	20.1	-41.2
19765.124055	-61.4	20.1	-41.2
19697.440785	-61.4	20.2	-41.2
19720.595588	-61.5	20.3	-41.2
19784.716580	-61.5	20.3	-41.2
19785.310293	-61.5	20.3	-41.2
19776.998313	-61.6	20.3	-41.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2400.000000	2483.500000	2	2
2483.500000	7000.000000	2	2
7000.000000	26000.000000	2	2

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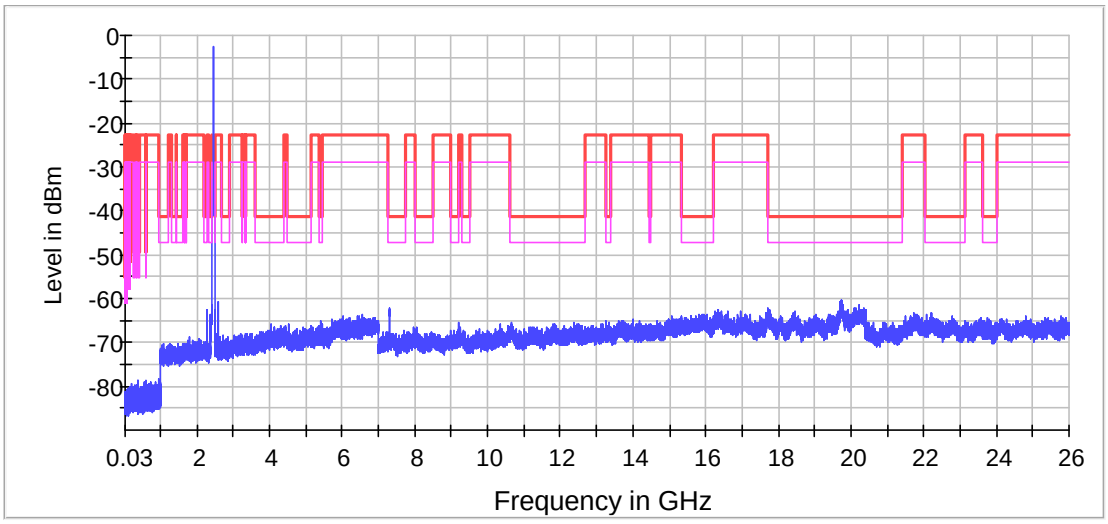
TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017



× Limit [limit.Result:1] × Sum Level [trace.Result:1]

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	19400	~ 19400
Sweeptime	19.400 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	2800	~ 2800
Sweeptime	2.800 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

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TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

Rx Spurious Emission (2440 MHz)

Result

DUT Frequency (MHz)	Result
2440.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
20395.794958	-60.5	19.2	-41.2
19755.828641	-60.6	19.3	-41.2
19707.831167	-60.6	19.4	-41.2
19714.830798	-60.6	19.4	-41.2
19719.830535	-60.7	19.4	-41.2
19713.830851	-60.8	19.6	-41.2
19739.829483	-60.9	19.6	-41.2
19740.829430	-60.9	19.6	-41.2
19718.830588	-60.9	19.7	-41.2
20393.795063	-61.0	19.7	-41.2
19767.828009	-61.0	19.7	-41.2
19773.827693	-61.0	19.8	-41.2
19741.829377	-61.1	19.8	-41.2
19747.829062	-61.1	19.9	-41.2
19732.829851	-61.1	19.9	-41.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	7000.000000	2	2
7000.000000	26000.000000	2	2

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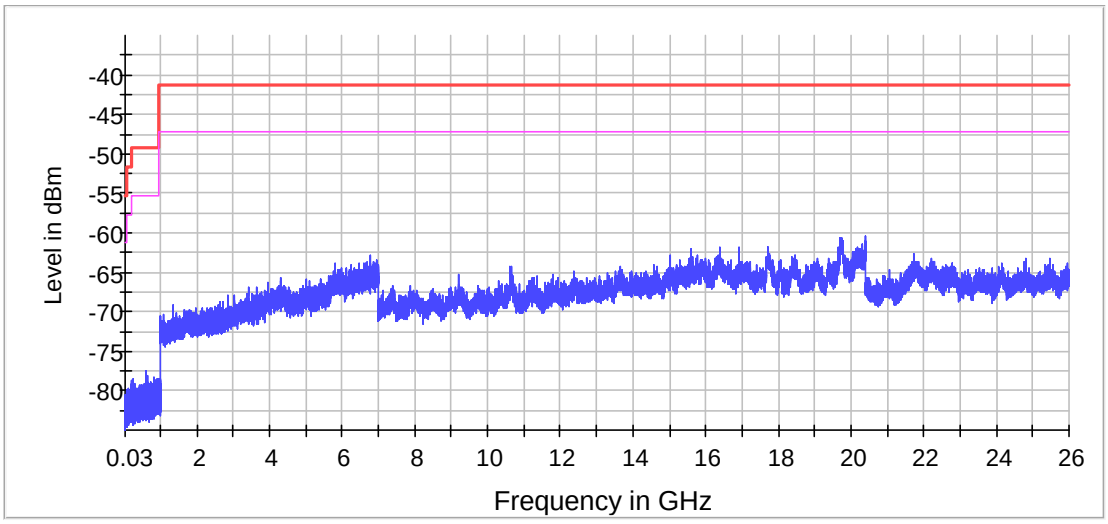

Limit [limit.Result:1] Threshold [limit 2.Result:1]

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
Sweeptime	9.700 ms	AUTO
Reference Level	-67.000 dBm	-67.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	6000	~ 6000
Sweeptime	6.000 ms	AUTO
Reference Level	-67.000 dBm	-67.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

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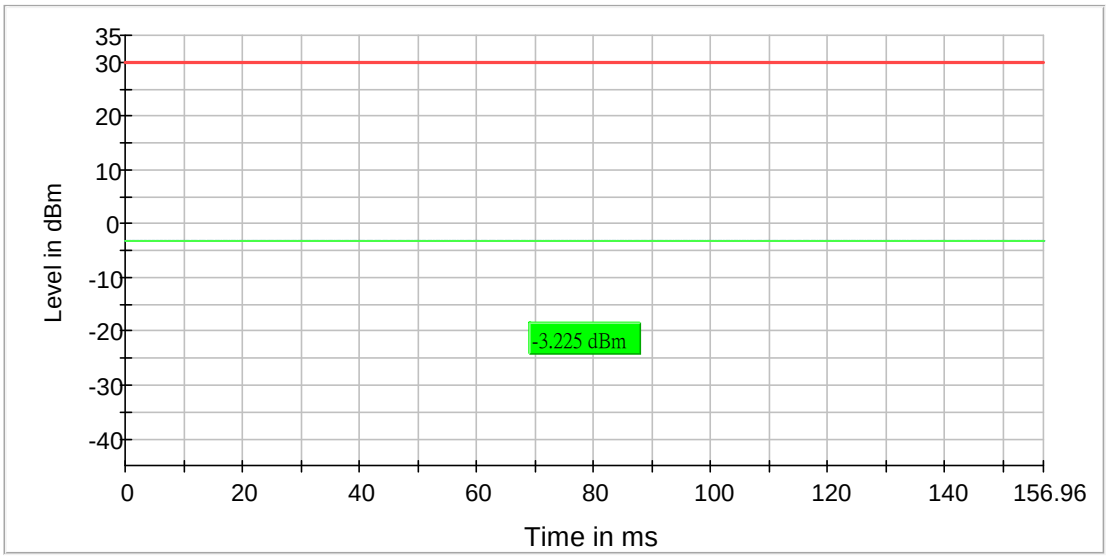
TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

RF output power (2480 MHz)

Result

DUT Frequency (MHz)	RF output power (dBm)	Limit Max (dBm)	DutyCycle (%)	Result
2480.000000	-3.2	30.0	15.706	PASS



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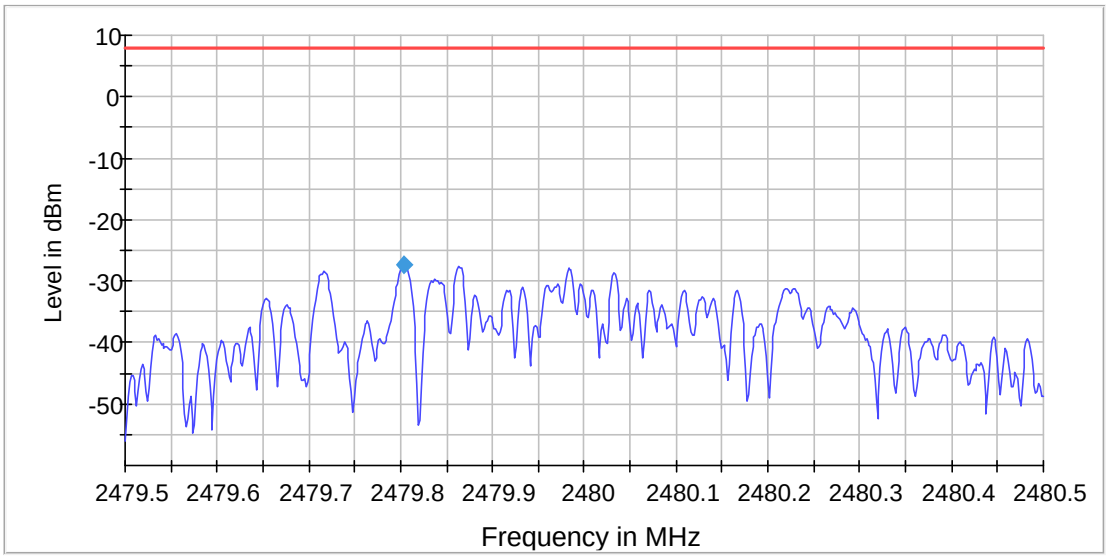
TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

Power Spectral Density (2480 MHz)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2479.803144	-27.268	8.0	PASS



Measurement

Setting	Instrument Value	Target Value		Setting	Instrument Value	Target Value
Start Frequency	2.47950 GHz	2.47950 GHz		Stablemode	Trace	Trace
Stop Frequency	2.48050 GHz	2.48050 GHz		Stablevalue	0.30	0.30
Span	1.000 MHz	1.000 MHz		Run	3 / max. 150	max. 150
RBW	3.000 kHz	<= 3.000 kHz		Stable	3 / 3	3
VBW	10.000 kHz	>= 9.000 kHz				
SweepPoints	667	~ 667				
Sweeptime	667.000 ms	667.000 ms				
Reference Level	-10.000 dBm	-10.000 dBm				
Attenuation	10.000 dB	AUTO				
Detector	RMS	RMS				
SweepCount	1	1				
Filter	3 dB	3 dB				
Trace Mode	Max Hold	Max Hold				
Sweeptype	Sweep	AUTO				
Preamp	off	off				

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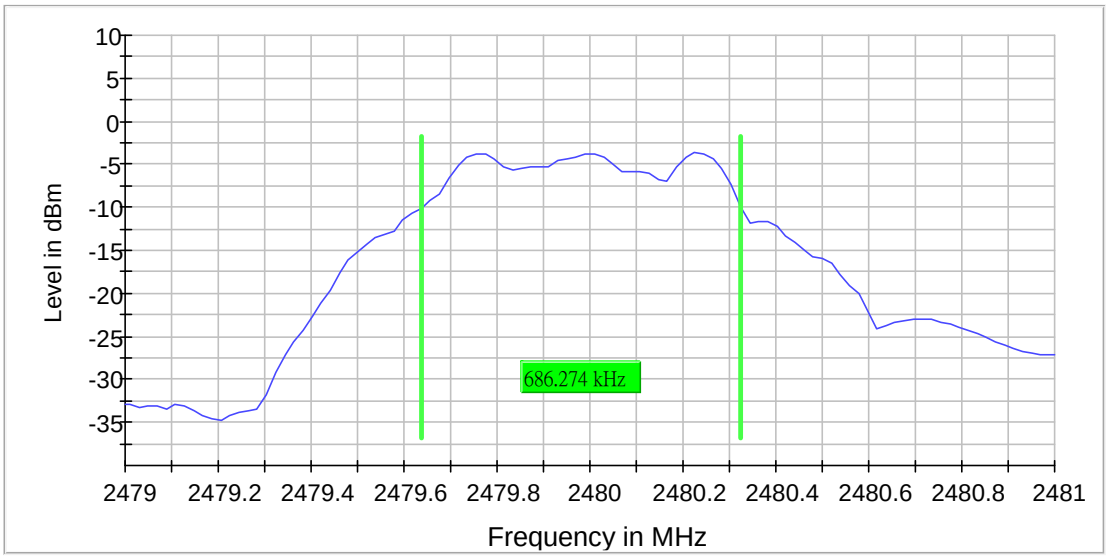
TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

Minimum Emission Bandwidth 6 dB (2480 MHz)

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Max Level (dBm)	Result
2480.000000	0.686274	0.500000	---	2479.637255	2480.323529	-3.7	PASS



Measurement

Setting	Instrument Value	Target Value		Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz		Stablemode	Trace	Trace
Stop Frequency	2.48100 GHz	2.48100 GHz		Stablevalue	0.30	0.30
Span	2.000 MHz	2.000 MHz		Run	32 / max. 150	max. 150
RBW	100.000 kHz	~ 100.000 kHz		Stable	15 / 15	15
VBW	300.000 kHz	~ 300.000 kHz				
SweepPoints	101	~ 20				
Sweeptime	18.938 µs	AUTO				
Reference Level	-10.000 dBm	-10.000 dBm				
Attenuation	10.000 dB	AUTO				
Detector	MaxPeak	MaxPeak				
SweepCount	100	100				
Filter	3 dB	3 dB				
Trace Mode	Max Hold	Max Hold				
Sweeptype	FFT	AUTO				
Preamp	off	off				

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TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

Band Edge high (2480 MHz)

Result

DUT Frequency (MHz)	Result
2480.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
2479.777229	-17.3

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2483.574773	-61.4	24.1	-37.3	PASS
2483.524924	-61.9	24.6	-37.3	PASS
2483.624622	-62.9	25.6	-37.3	PASS
2484.073263	-63.9	26.6	-37.3	PASS
2483.724320	-63.9	26.6	-37.3	PASS
2483.674471	-64.0	26.8	-37.3	PASS
2484.023414	-64.1	26.8	-37.3	PASS
2483.973565	-64.3	27.0	-37.3	PASS
2483.923716	-64.3	27.0	-37.3	PASS
2484.172961	-65.0	27.8	-37.3	PASS
2483.774169	-65.1	27.8	-37.3	PASS
2484.123112	-65.2	27.9	-37.3	PASS
2483.873867	-65.4	28.1	-37.3	PASS
2483.824018	-65.4	28.1	-37.3	PASS
2484.222810	-65.6	28.3	-37.3	PASS

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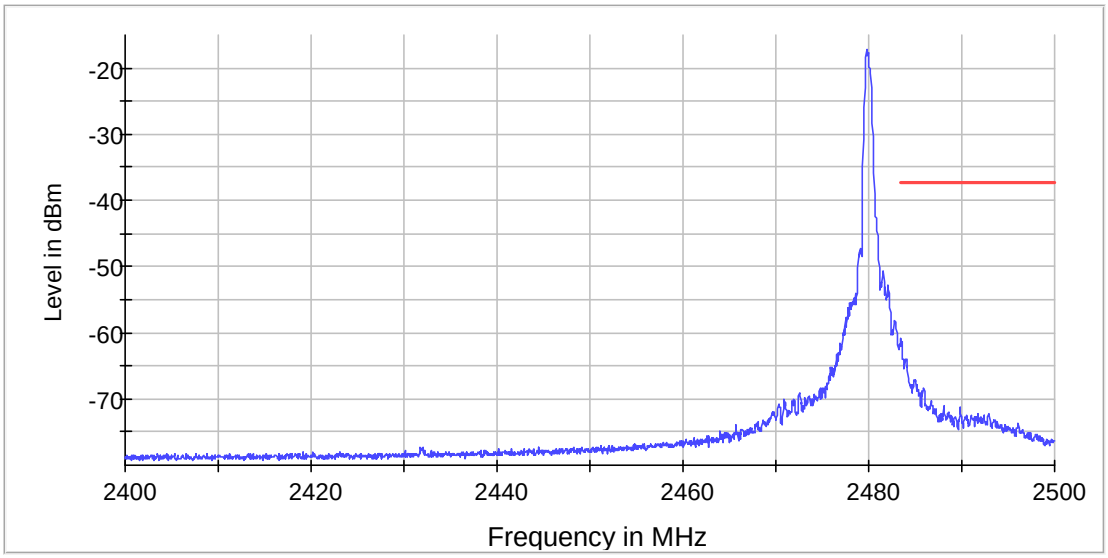

Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 s	1.670 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	RMS	RMS
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 15	max. 15
Stable	3 / 3	3

Measurement 2

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	330	~ 330
Sweeptime	330.000 ms	330.000 ms
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	RMS	RMS
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 15	max. 15
Stable	3 / 3	3

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TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

Tx Spurious Emission (2480 MHz)

Result

DUT Frequency (MHz)	Result
2480.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2483.749972	-33.9	-54.7	-41.2	13.4	PASS
2487.249585	-41.5	-64.6	-41.2	23.4	PASS
2491.249142	-45.9	-65.9	-41.2	24.7	PASS
2495.748644	-41.2	-68.4	-41.2	27.1	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2483.749972	-33.9	-7.3	-41.2
2484.749862	-40.6	-0.7	-41.2
2495.748644	-41.2	-0.1	-41.2
2484.249917	-41.4	0.2	-41.2
2485.749751	-41.5	0.3	-41.2
2487.249585	-41.5	0.3	-41.2
2485.249806	-43.7	2.5	-41.2
2489.249364	-44.4	3.1	-41.2
2486.749640	-44.7	3.4	-41.2
2488.749419	-44.7	3.4	-41.2
2491.249142	-45.9	4.6	-41.2
2487.749530	-47.2	6.0	-41.2
2488.249474	-47.5	6.3	-41.2
2486.249696	-47.6	6.4	-41.2
2497.248478	-51.4	10.1	-41.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2400.000000	2483.500000	2	2
2483.500000	7000.000000	2	2
7000.000000	26000.000000	2	2

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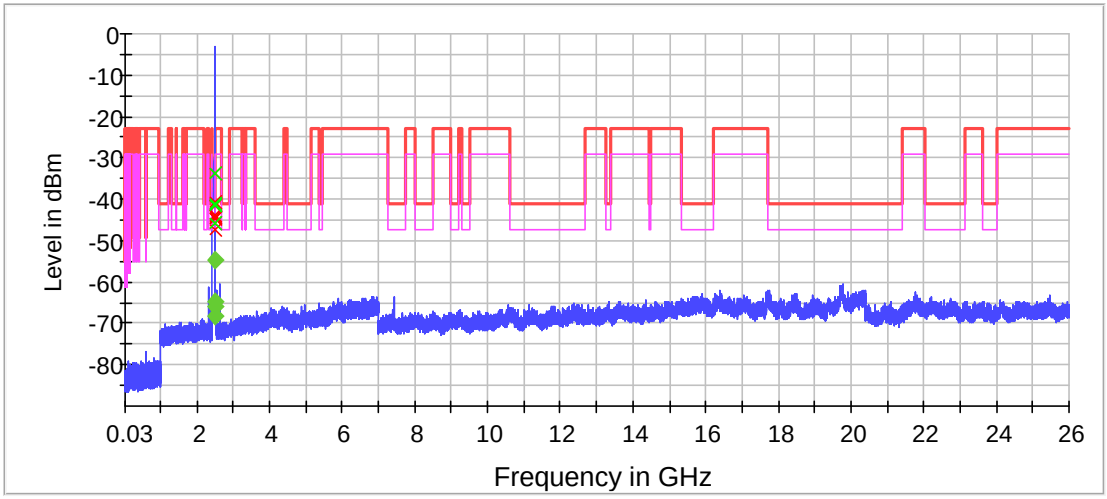
TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017



Limit [limit.Result:1] Sum Level [trace.Result:1]
Threshold [limit 2.Result:1] Critical [Over Limit.Result:1]

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	19400	~ 19400
Sweeptime	19.400 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	2800	~ 2800
Sweeptime	2.800 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

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Final Measurement 2

Setting	Instrument Value	Target Value
Span	ZeroSpan	ZeroSpan
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	~ 3.000 MHz
SweepPoints	10001	~ 10001
Sweeptime	1.000 s	1.000 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off

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Rx Spurious Emission (2480 MHz)

Result

DUT Frequency (MHz)	Result
2480.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
19722.830377	-60.1	18.9	-41.2
19745.829167	-60.2	19.0	-41.2
19731.829904	-60.3	19.0	-41.2
19717.830640	-60.5	19.3	-41.2
19727.830114	-60.6	19.4	-41.2
20121.809378	-60.6	19.4	-41.2
20150.807852	-60.7	19.4	-41.2
19695.831798	-60.8	19.6	-41.2
19715.830746	-60.9	19.7	-41.2
19726.830167	-60.9	19.7	-41.2
19767.828009	-61.0	19.7	-41.2
19748.829009	-61.0	19.7	-41.2
19709.831062	-61.0	19.8	-41.2
19693.831904	-61.0	19.8	-41.2
19747.829062	-61.1	19.9	-41.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	7000.000000	2	2
7000.000000	26000.000000	2	2

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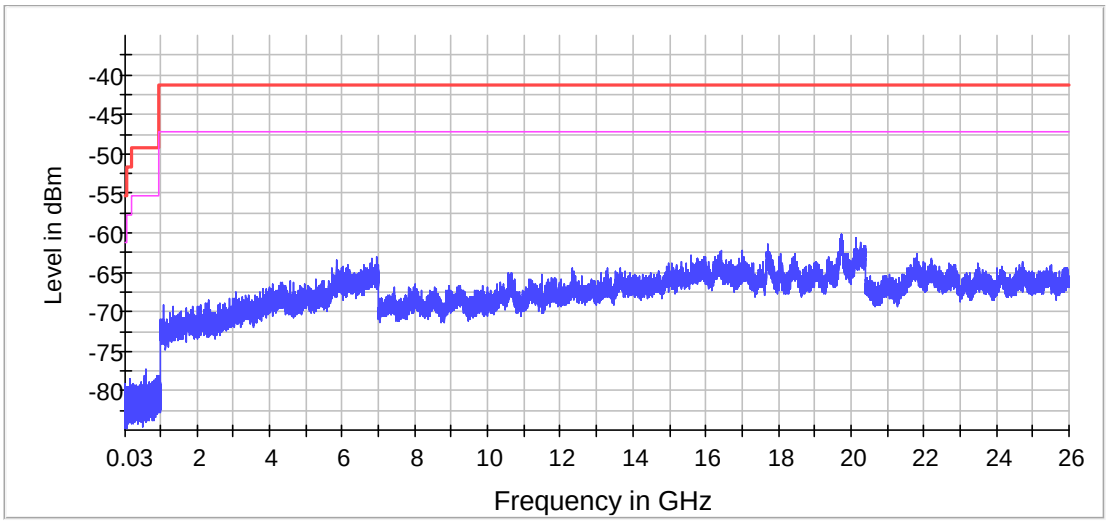
Report No. : AV0056553(2) Date : 06 Oct 2017



Limit [limit.Result:1] Threshold [limit 2.Result:1]

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	9700	~ 9700
Sweeptime	9.700 ms	AUTO
Reference Level	-67.000 dBm	-67.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	6000	~ 6000
Sweeptime	6.000 ms	AUTO
Reference Level	-67.000 dBm	-67.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30	0.30
Run	3 / max. 150	max. 150
Stable	3 / 3	3

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2.3 Radiated Emission Measurement Data

Environmental conditions:

Parameter	Recorded value	
Ambient temperature:	28	° C
Relative humidity:	60	%

Testing frequency range: 9kHz to 26GHz Mode: Transmission
Measurement: Quasi-peak (9kHz – 1GHz), Peak and Average(above 1GHz)
RBW: 200Hz (below 150kHz), 9kHz (150kHz – 30MHz), 120kHz (30MHz – 1GHz), 1MHz (above 1GHz)
VBW: 1kHz (below 150kHz), 30kHz (150kHz – 30MHz), 300kHz (30MHz – 1GHz,), 3MHz (above 1GHz, Peak measurement), 10Hz (above 1GHz, Average measurement)

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV)	Transducer Factor (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)	Measurement (Peak/ Average)
2401.705	H	86.9	- 4.2	82.7	114.0	- 31.3	Peak
2402.194	V	95.1	- 4.2	90.9	114.0	- 23.1	Peak
2430.700	H	87.3	- 4.2	83.1	114.0	- 30.9	Peak
2440.174	V	95.6	- 4.2	91.4	114.0	- 22.6	Peak
2480.180	H	88.6	- 4.3	84.3	114.0	- 29.7	Peak
2480.175	V	95.7	- 4.3	91.4	114.0	- 22.6	Peak
4803.864	H	35.7	3.7	39.4	74.0	- 34.6	Peak
4804.018	V	35.8	3.7	39.5	74.0	- 34.5	Peak
4879.908	H	37.2	3.7	40.9	74.0	- 33.1	Peak
4879.828	V	35.7	3.7	39.4	74.0	- 34.6	Peak
4959.731	H	36.4	4.0	40.4	74.0	- 33.6	Peak
4959.916	V	36.2	4.0	40.2	74.0	- 33.8	Peak

Remark: Other emissions more than 20dB below the limit are not reported.
If Peak measurement values are lower than average limit, average measurement is not necessary.

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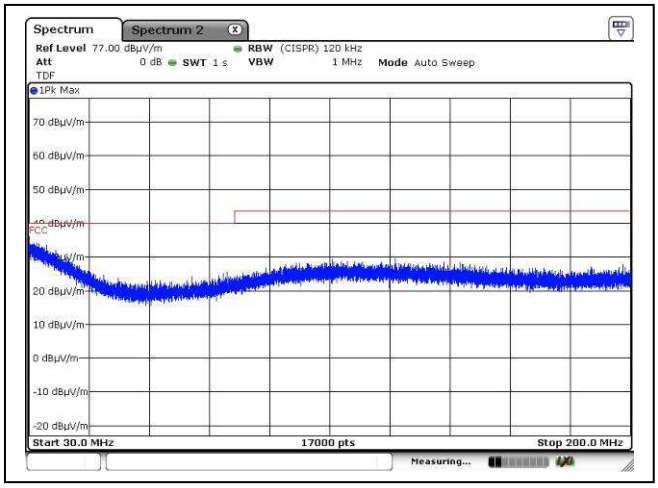
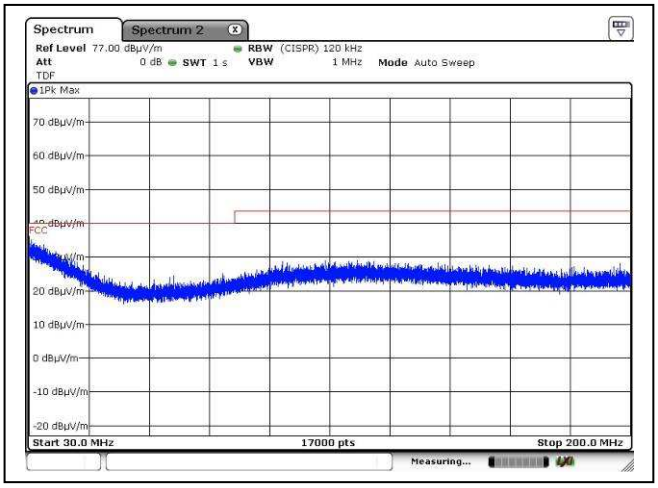
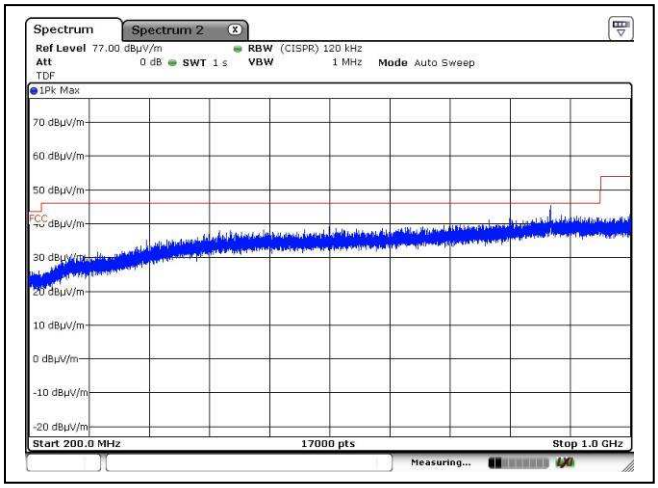
2.3 Radiated Emission Measurement Data (Con't)



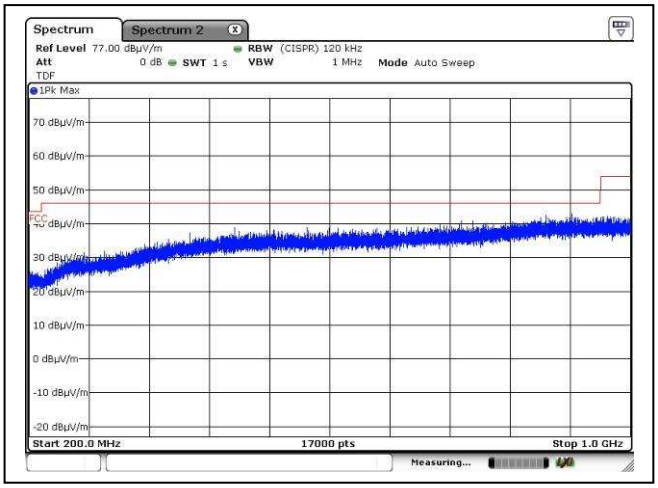
Lower channel, 30MHz – 200MHz, Horizontal



Lower channel, 30MHz – 200MHz, Vertical



Lower channel, 200MHz – 1GHz, Horizontal



Lower channel, 200MHz – 1GHz, Vertical

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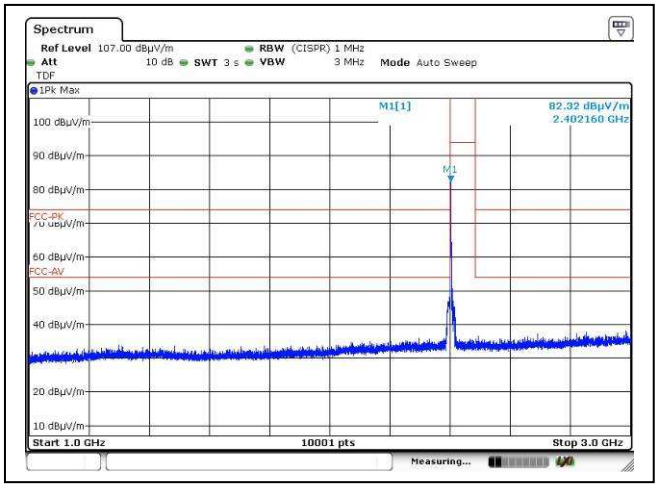
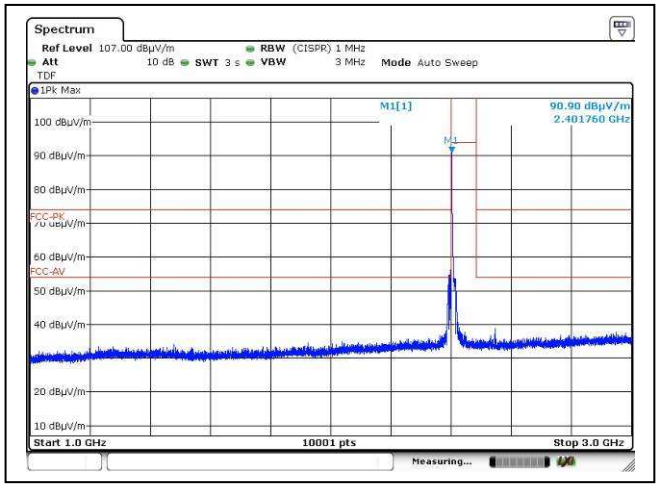
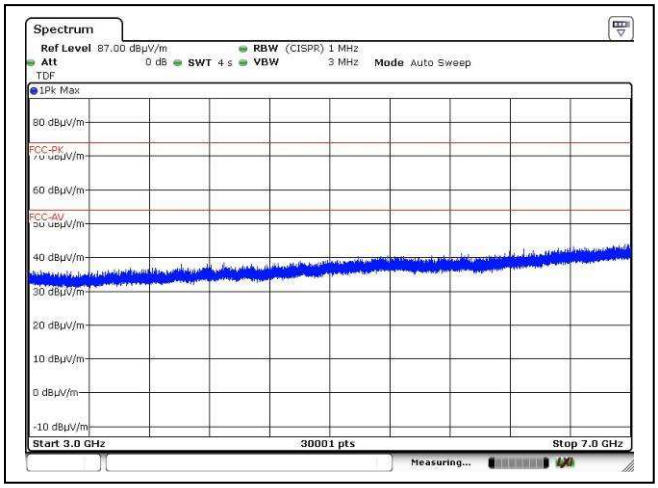
2.3 Radiated Emission Measurement Data (Con't)



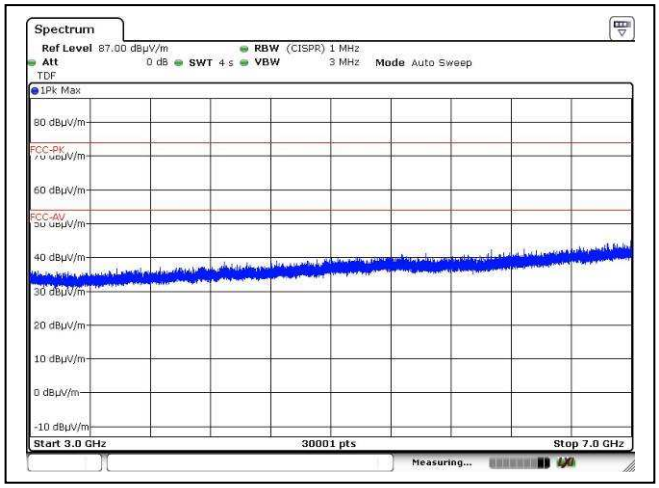
Lower channel, 1GHz – 3GHz, Horizontal



Lower channel, 1GHz – 3GHz, Vertical



Lower channel, 3GHz – 7GHz, Horizontal



Lower channel, 3GHz – 7GHz, Vertical

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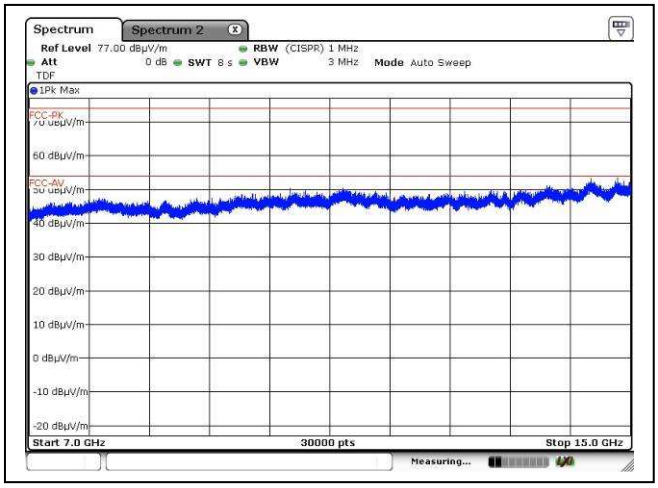
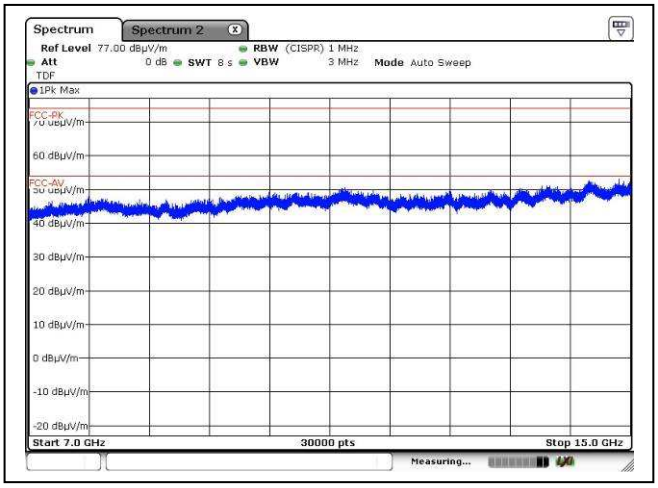
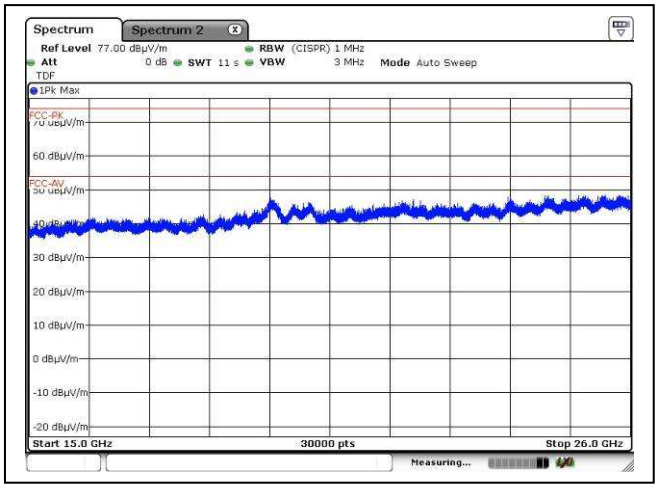
2.3 Radiated Emission Measurement Data (Con't)



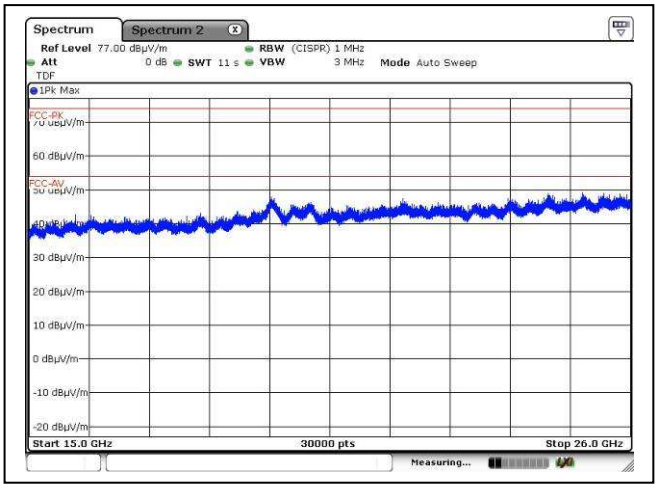
Lower channel, 7GHz – 15GHz, Horizontal



Lower channel, 7GHz – 15GHz, Vertical



Lower channel, above 15GHz, Horizontal



Lower channel, above 15GHz, Vertical

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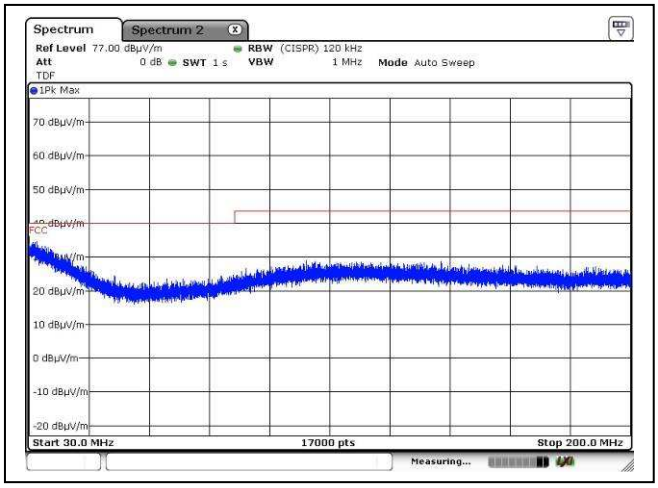
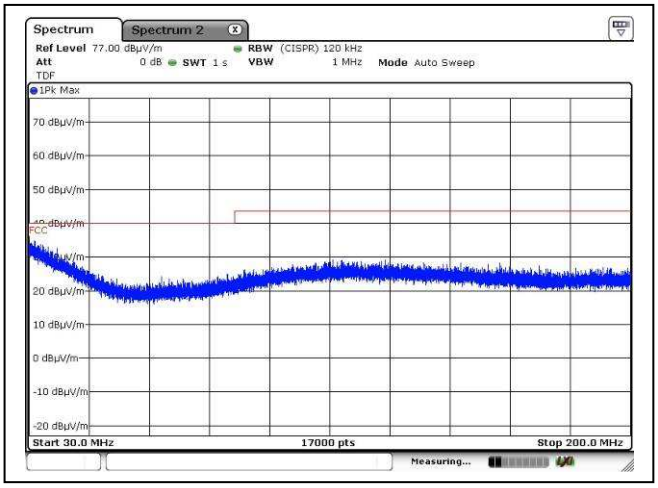
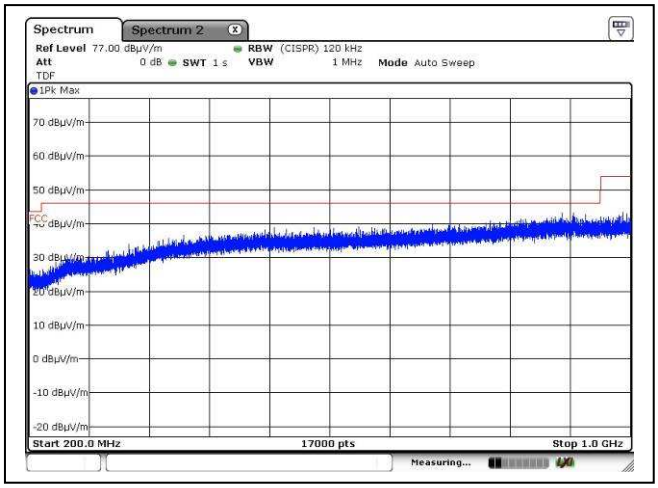
2.3 Radiated Emission Measurement Data (Con't)



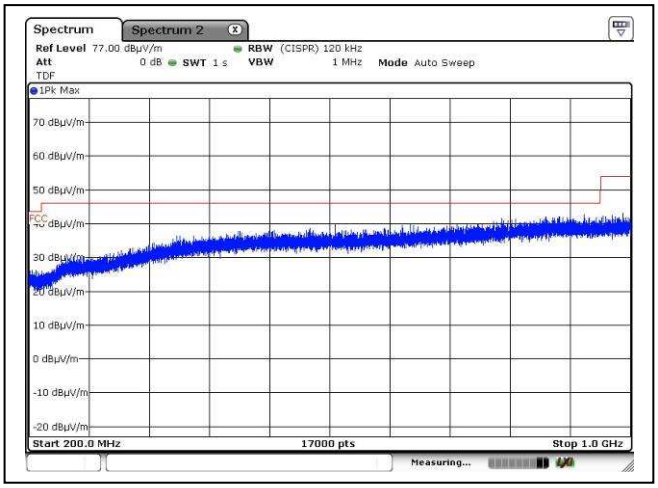
Middle channel, 30MHz – 200MHz, Horizontal



Middle channel, 30MHz – 200MHz, Vertical



Middle channel, 200MHz – 1GHz, Horizontal



Middle channel, 200MHz – 1GHz, Vertical

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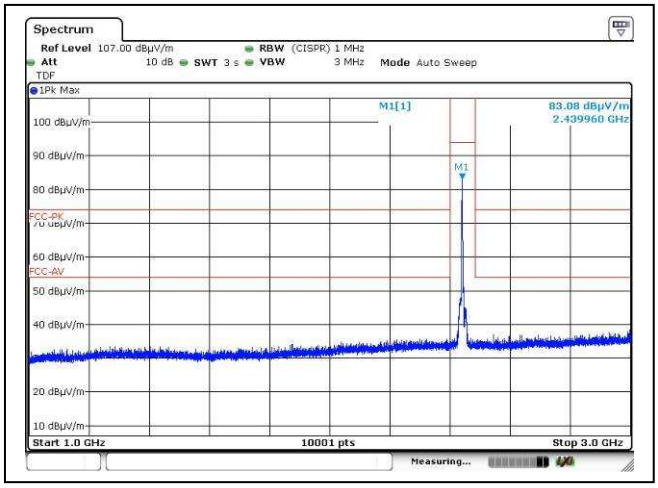
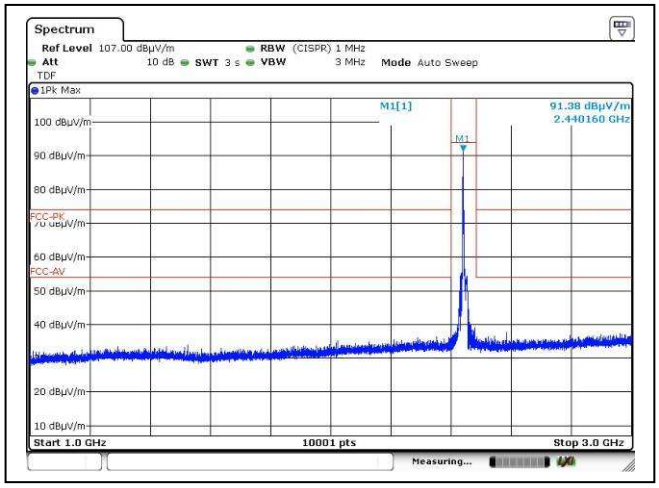
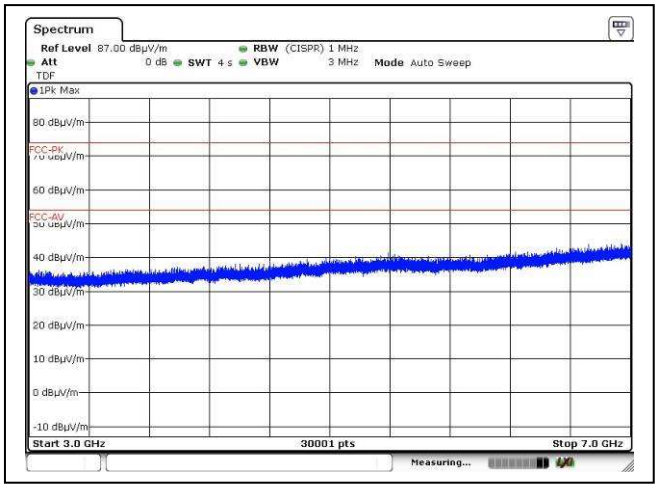
2.3 Radiated Emission Measurement Data (Con't)



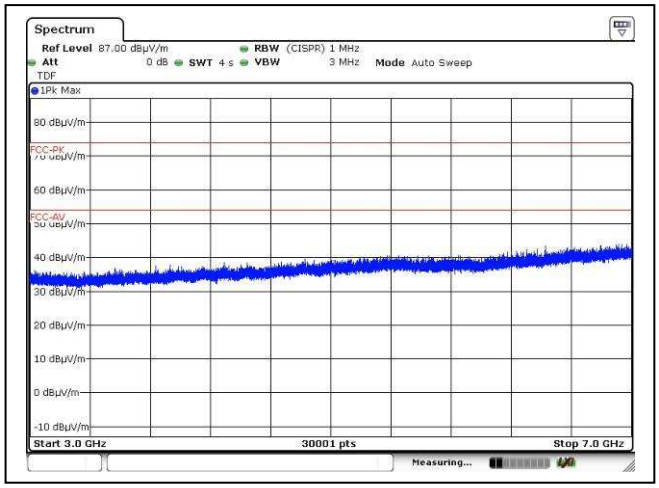
Middle channel, 1GHz – 3GHz, Horizontal



Middle channel, 1GHz – 3GHz, Vertical



Middle channel, 3GHz – 7GHz, Horizontal



Middle channel, 3GHz – 7GHz, Vertical

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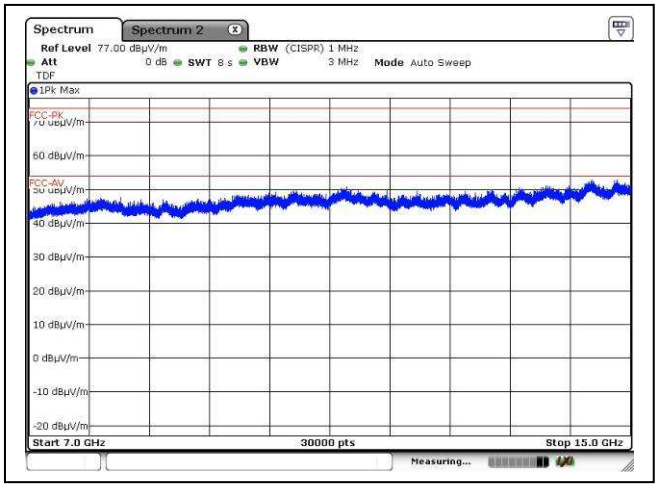
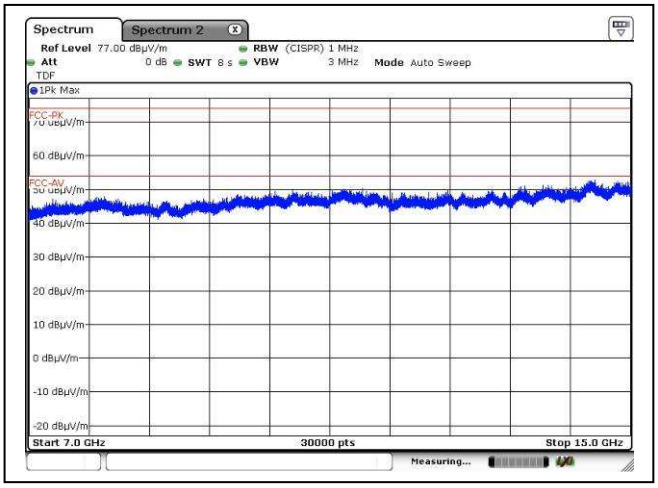
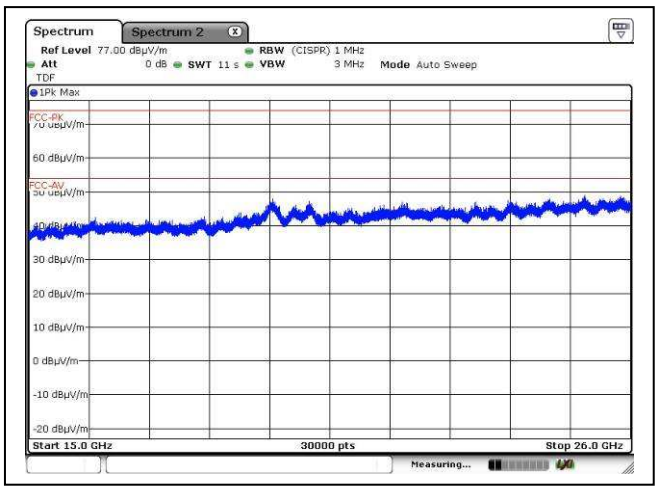
2.3 Radiated Emission Measurement Data (Con't)



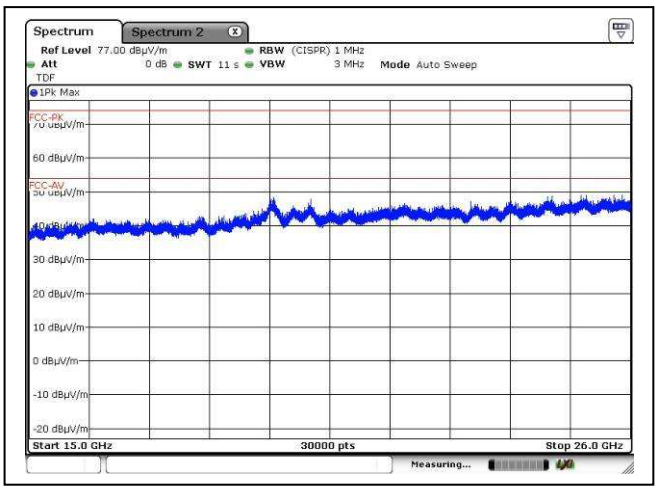
Middle channel, 7GHz – 15GHz, Horizontal



Middle channel, 7GHz – 15GHz, Vertical



Middle channel, above 15GHz, Horizontal



Middle channel, above 15GHz, Vertical

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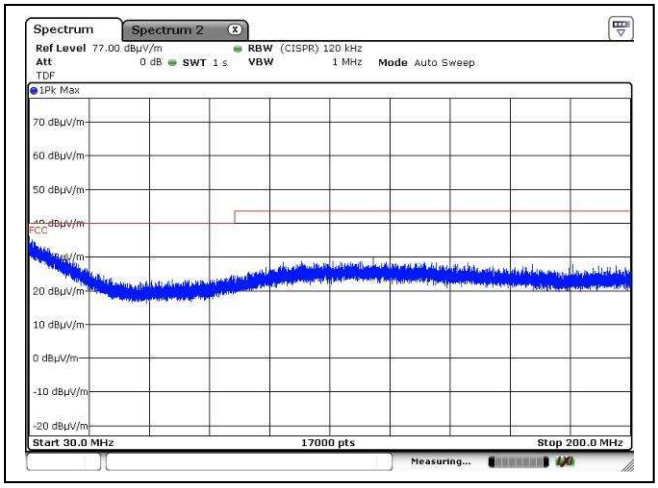
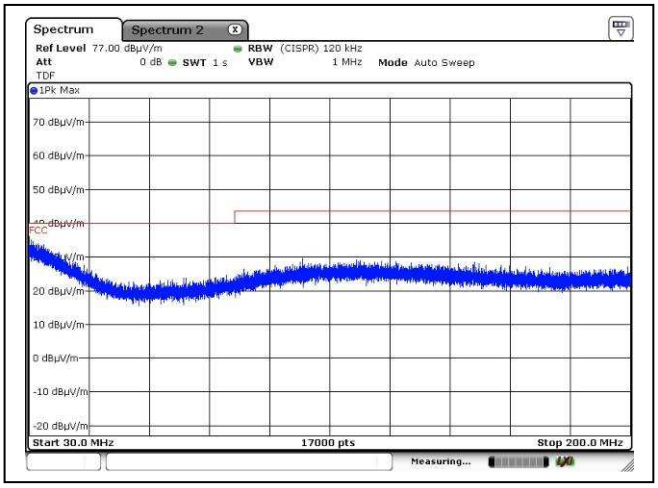
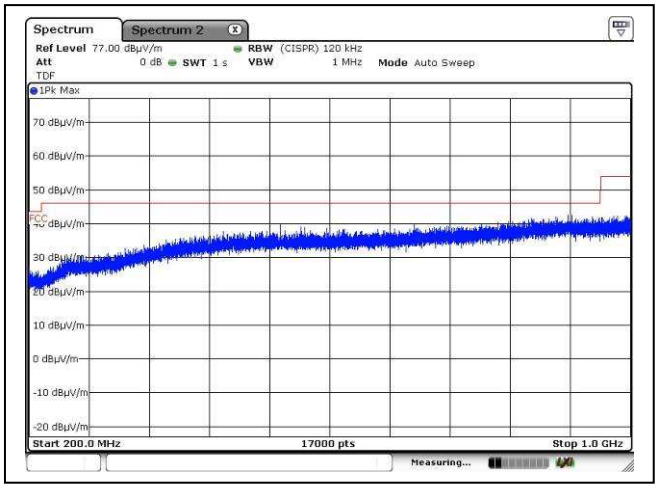
2.3 Radiated Emission Measurement Data (Con't)



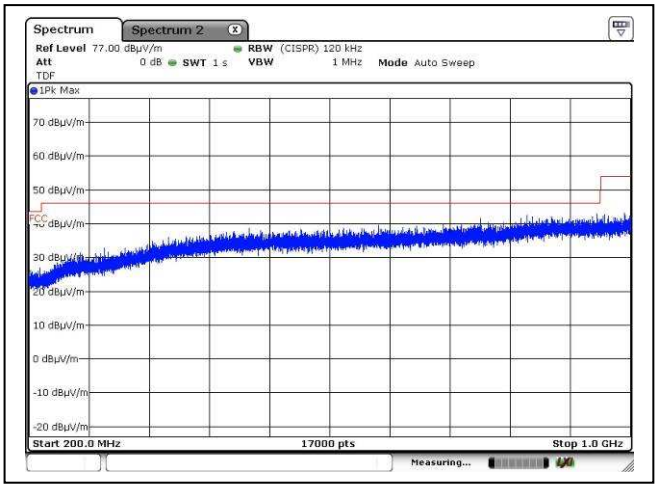
Higher channel, 30MHz – 200MHz, Horizontal



Higher channel, 30MHz – 200MHz, Vertical



Higher channel, 200MHz – 1GHz, Horizontal



Higher channel, 200MHz – 1GHz, Vertical

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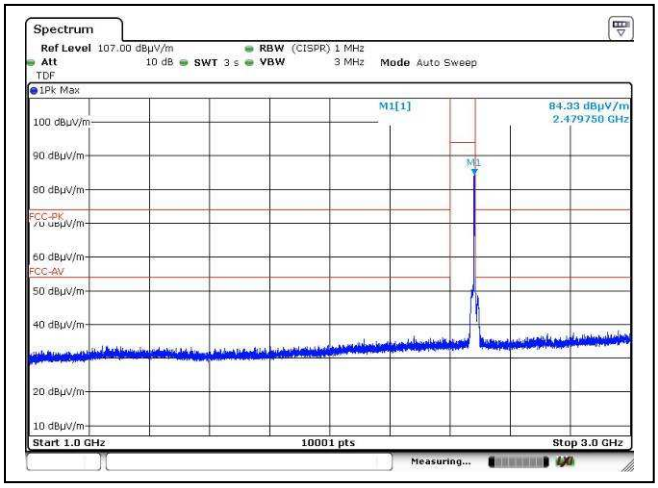
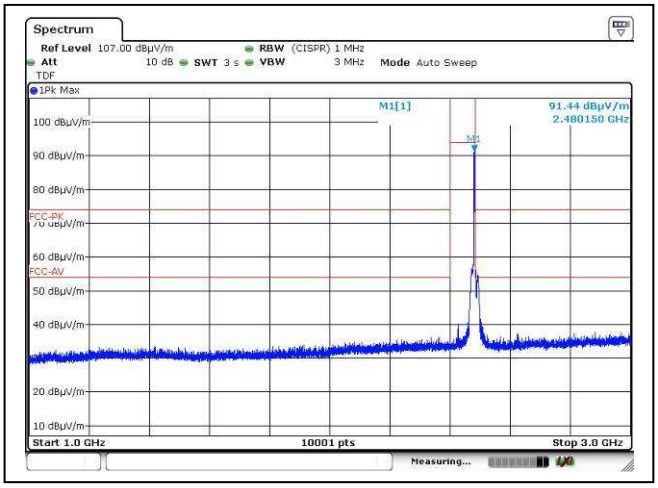
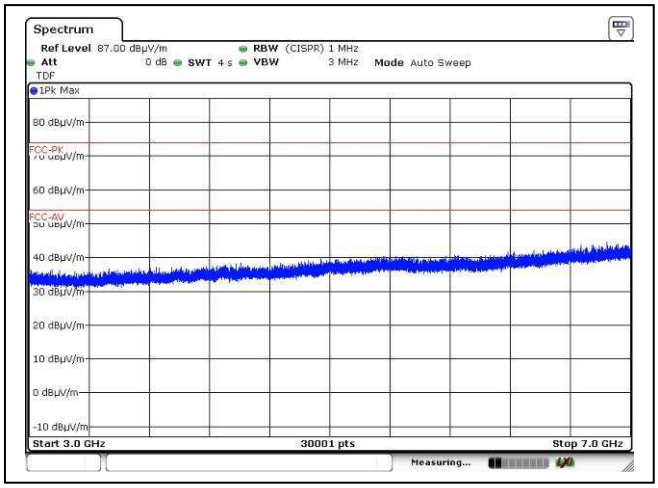
2.3 Radiated Emission Measurement Data (Con't)



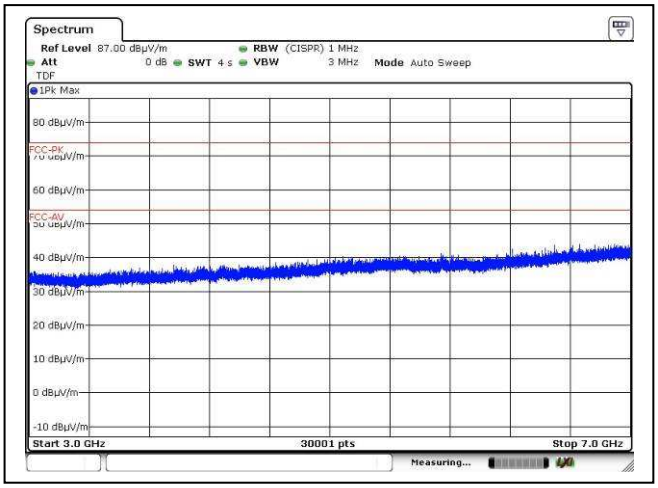
Higher channel, 1GHz – 3GHz, Horizontal



Higher channel, 1GHz – 3GHz, Vertical



Higher channel, 3GHz – 7GHz, Horizontal



Higher channel, 3GHz – 7GHz, Vertical

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TEST REPORT

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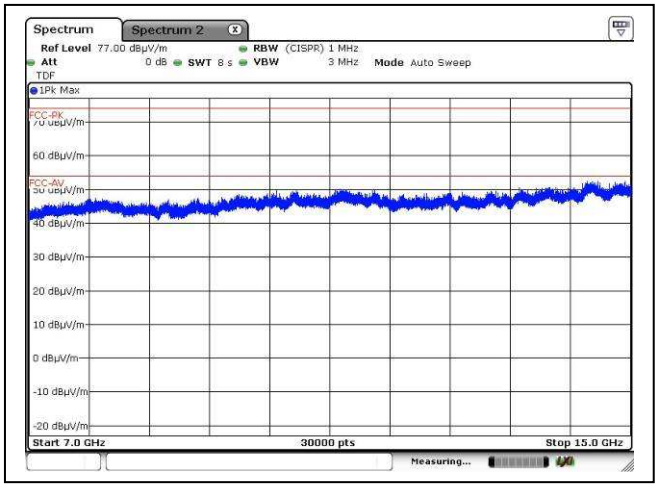
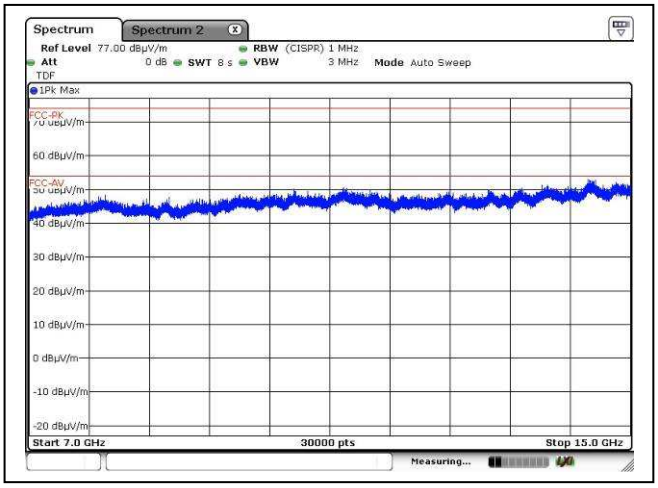
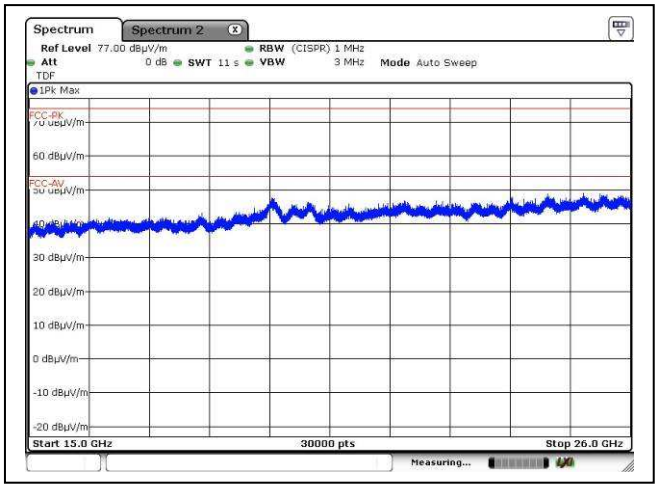
2.3 Radiated Emission Measurement Data (Con't)



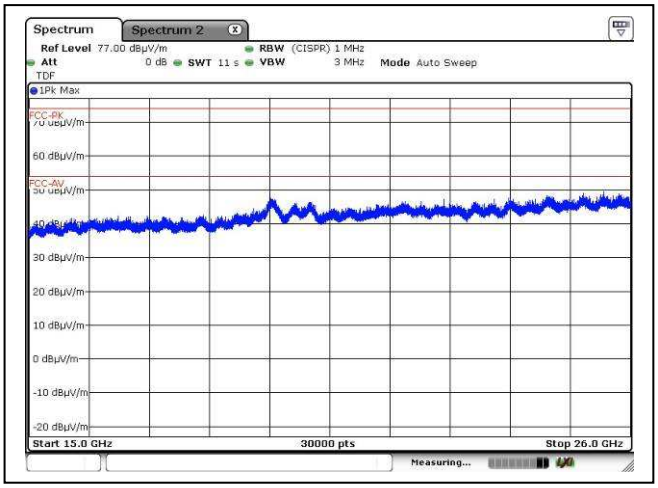
Higher channel, 7GHz – 15GHz, Horizontal



Higher channel, 7GHz – 15GHz, Vertical



Higher channel, above 15GHz, Horizontal



Higher channel, above 15GHz, Vertical

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2.3 Radiated Emission Measurement Data (Con't)

Environmental conditions:

Parameter	Recorded value	
Ambient temperature:	28	° C
Relative humidity:	60	%

Testing frequency range: 9kHz to 26GHz Mode: Receiving
Measurement: Quasi-peak (9kHz – 1GHz), Peak (above 1GHz)
RBW: 200Hz (below 150kHz), 9kHz (150kHz – 30MHz), 120kHz (30MHz – 1GHz), 1MHz (above 1GHz)
VBW: 1kHz (below 150kHz), 30kHz (150kHz – 30MHz), 300kHz (30MHz – 1GHz,), 3MHz (above 1GHz)

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV)	Transducer Factor (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)

Remark: No specified emission found

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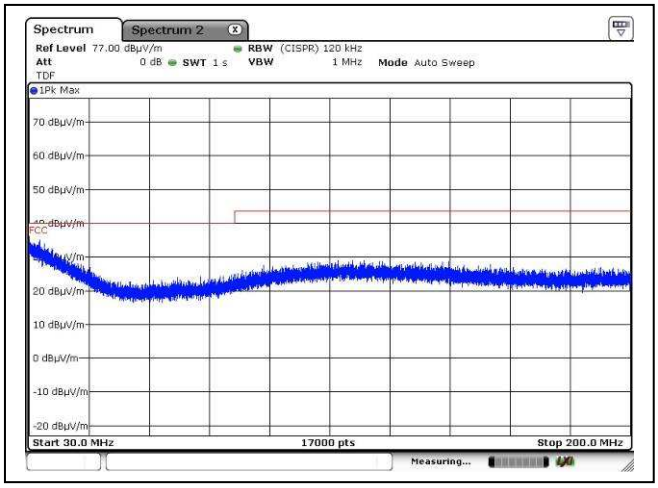
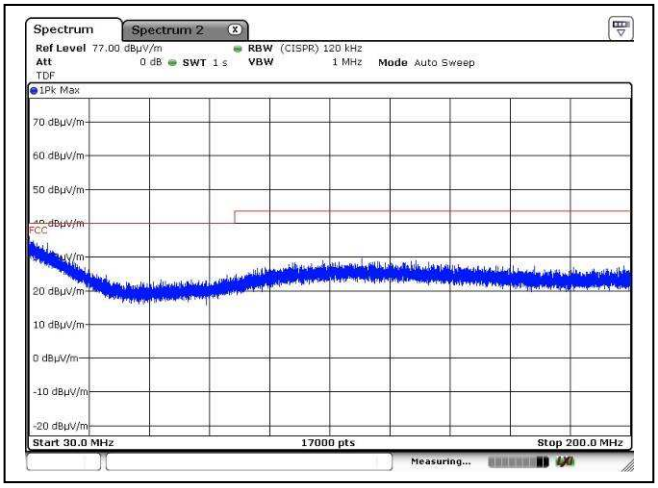
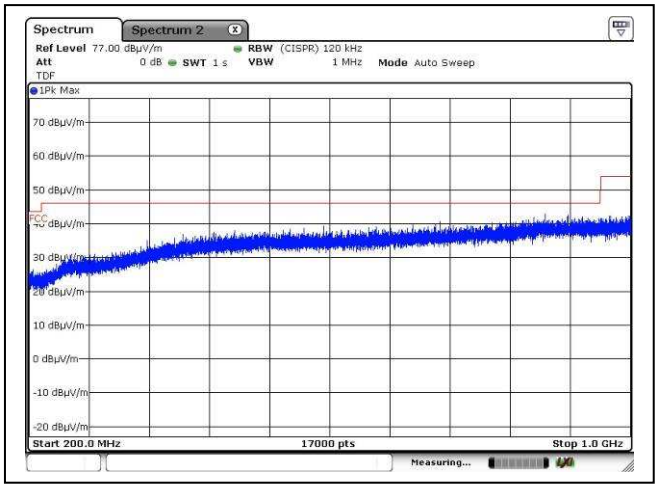
2.3 Radiated Emission Measurement Data (Con't)



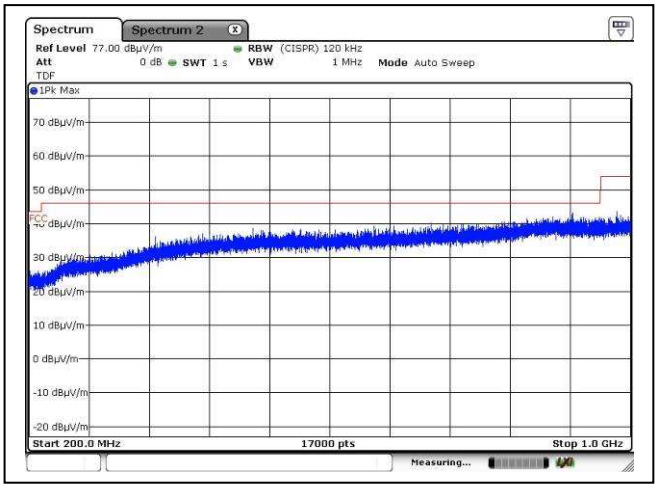
Receiving mode, 30MHz – 200MHz, Horizontal



Receiving mode, 30MHz – 200MHz, Vertical



Receiving mode, 200MHz – 1GHz, Horizontal



Receiving mode, 200MHz – 1GHz, Vertical

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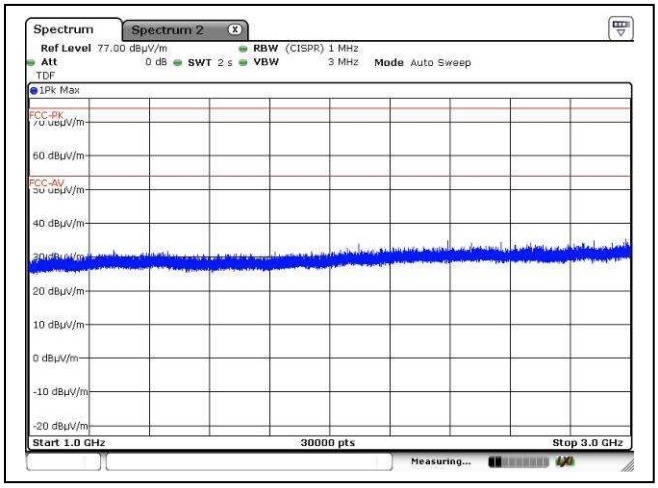
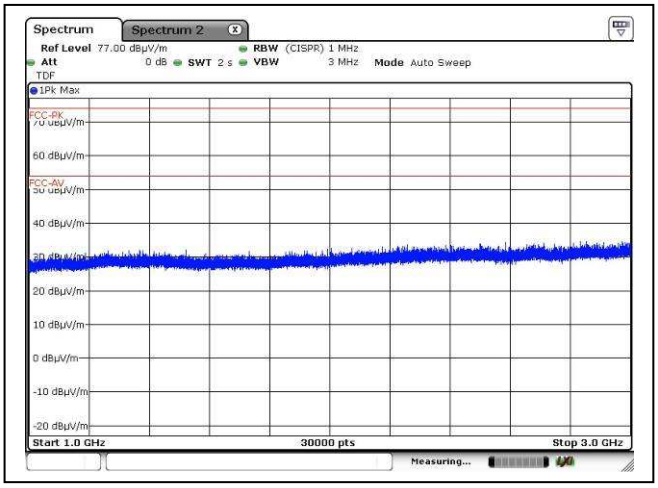
TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

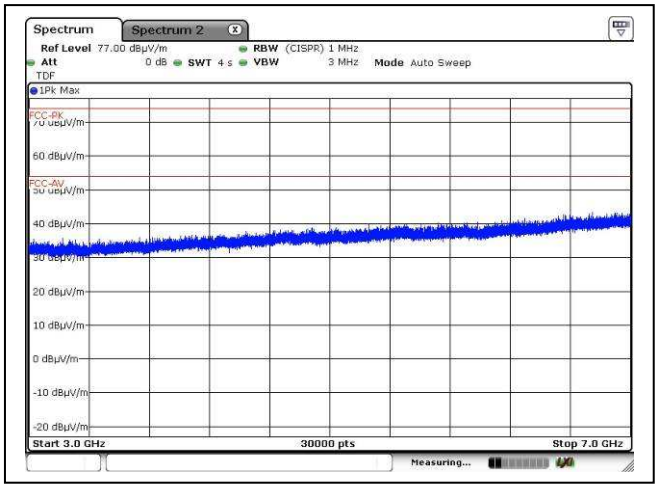
2.3 Radiated Emission Measurement Data (Con't)



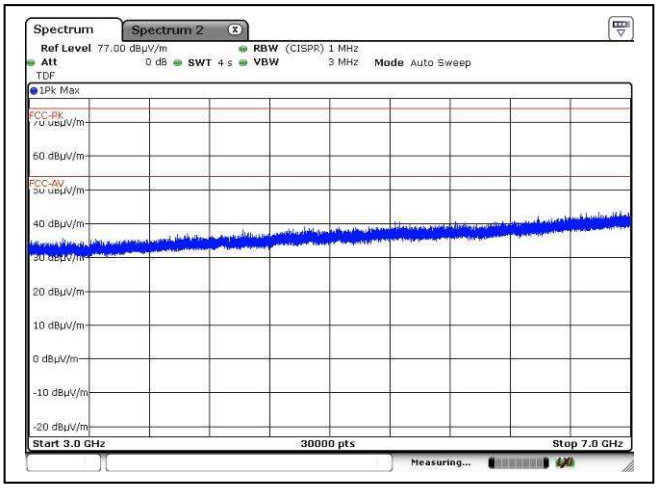
Receiving mode, 1GHz – 3GHz, Horizontal



Receiving mode, 1GHz – 3GHz, Vertical



Receiving mode, 3GHz – 7GHz, Horizontal



Receiving mode, 3GHz – 7GHz, Vertical

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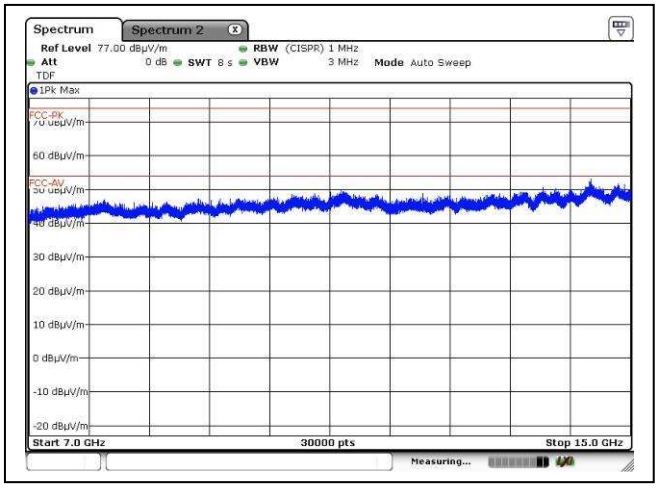
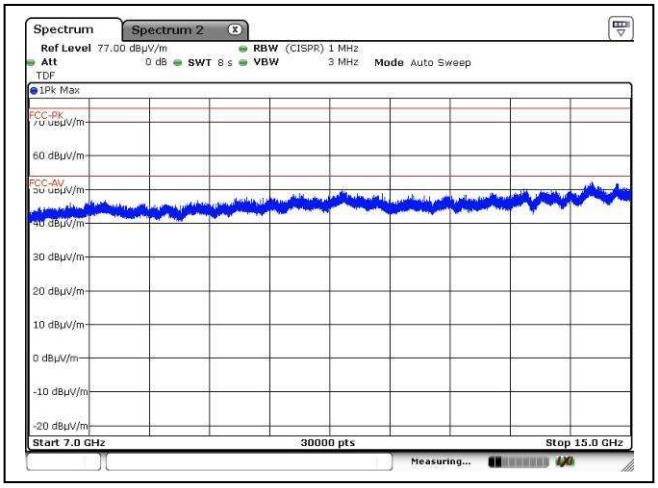
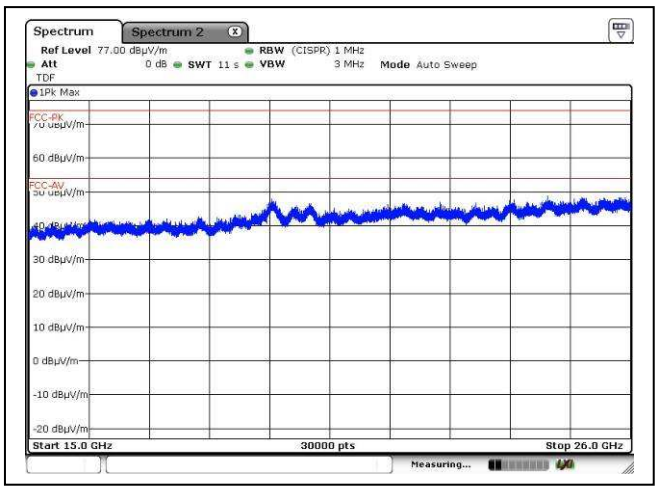
2.3 Radiated Emission Measurement Data (Con't)



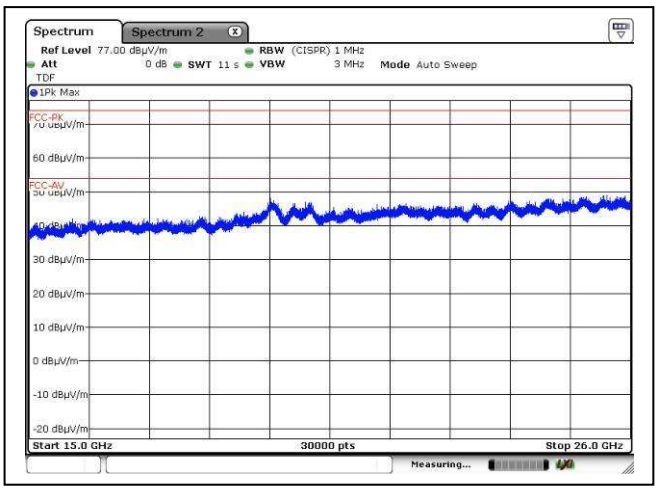
Receiving mode, 7GHz – 15GHz, Horizontal



Receiving mode, 7GHz – 15GHz, Vertical



Receiving mode, above 15GHz, Horizontal



Receiving mode, above 15GHz, Vertical

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3 Description of the Line-conducted Test

3.1 Test Procedure

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.10 – 2013. The EUT was setup as described in the procedures, and both lines were measured.

3.2 Test Result

The EUT connected to an adaptor for operating

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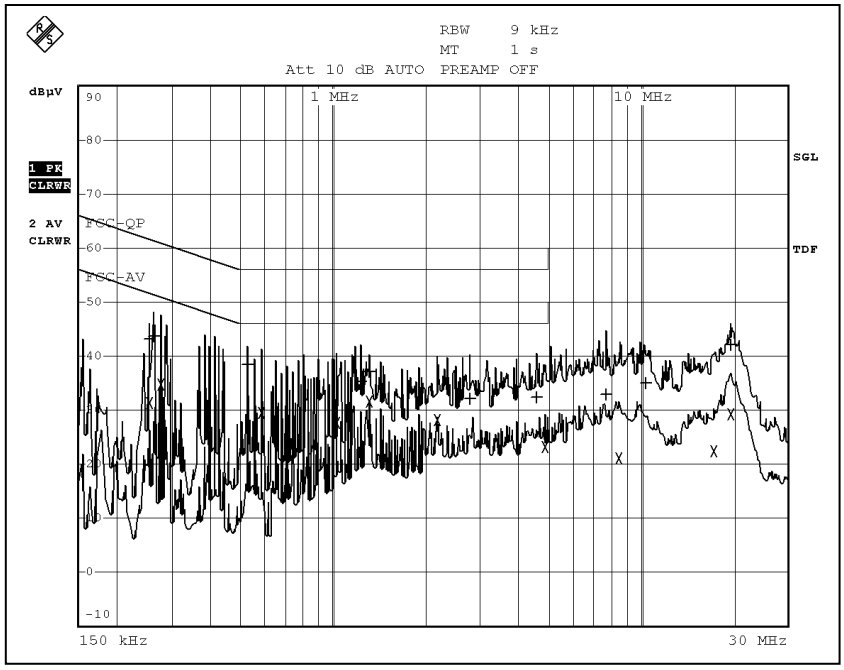
3.3 Graph and Table of Conducted Emission Measurement Data



EDIT PEAK LIST (Final Measurement Results)

Trace1:	FCC-QP
Trace2:	FCC-AV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	253.5 kHz	43.19 N gnd	-18.44
2 Average	253.5 kHz	31.42 N gnd	-20.22
1 Quasi Peak	262.5 kHz	43.78 N gnd	-17.56
2 Average	276 kHz	34.70 N gnd	-16.22
1 Quasi Peak	522.5 kHz	38.40 N gnd	-17.59
2 Average	585.5 kHz	29.59 N gnd	-16.40
2 Average	1.0265 MHz	27.58 N gnd	-18.41
1 Quasi Peak	1.2335 MHz	35.26 N gnd	-20.73
1 Quasi Peak	1.3145 MHz	37.06 N gnd	-18.93
2 Average	1.3145 MHz	31.51 N gnd	-14.48
2 Average	2.174 MHz	28.17 N gnd	-17.82
1 Quasi Peak	2.795 MHz	32.08 N gnd	-23.91
1 Quasi Peak	4.5725 MHz	32.48 L1 gnd	-23.51
2 Average	4.9145 MHz	23.28 N gnd	-22.71
1 Quasi Peak	7.7315 MHz	32.89 L1 gnd	-27.10
2 Average	8.483 MHz	21.19 L1 gnd	-28.80
1 Quasi Peak	10.4 MHz	35.11 N gnd	-24.88
2 Average	17.303 MHz	22.44 N gnd	-27.55
2 Average	19.6025 MHz	29.36 N gnd	-20.63
1 Quasi Peak	19.697 MHz	42.17 N gnd	-17.82

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4 Photograph

4.1 Photographs of the Test Setup for Radiated Emission and Conducted Emission

For electronic filing, the photos are saved with filename 2ABBX179304V21 TSup.pdf.

4.2 Photographs of the External and Internal Configurations of the EUT

For electronic filing, the photos are saved with filename 2ABBX179304V21 ExPho.pdf and 2ABBX179304V21 InPho.pdf.

4.3 Antenna requirement

Appendices A5 shows the antenna is permanently attached and cannot be changed. Therefore it fulfils the section 15.203 requirement

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TEST REPORT

Report No. : AV0056553(2) Date : 06 Oct 2017

5 Appendices

A1	Photos of the set-up of Radiated Emissions	3	pages
A2	Photos of the set-up of Conducted Emissions	1	page
A3	Photos of the set-up of Line-conducted Emissions	1	page
A4	Photos of External Configurations	2	pages
A5	Photos of Internal Configurations	1	page
A6	ID Label/Location	1	page

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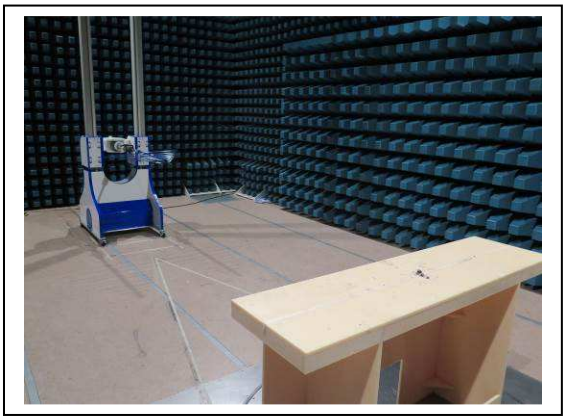
A1. Photos of the set-up of Radiated Emissions

30MHz – 200MHz



200MHz – 1GHz

Tested by: Mr. LEUNG Shu-kan, Ken

Reviewed by: Mr. WONG Lap-pong, Andrew

FCC ID: 2ABBX179304V21

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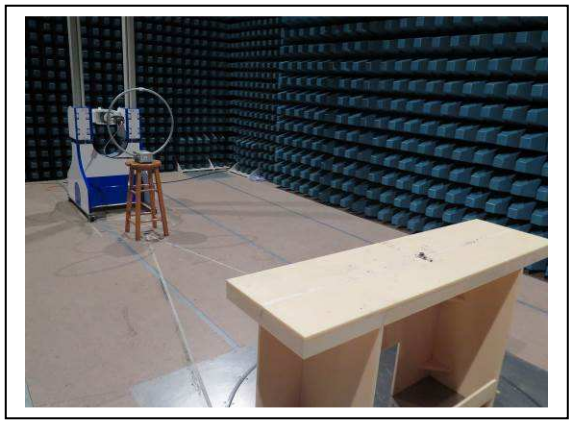
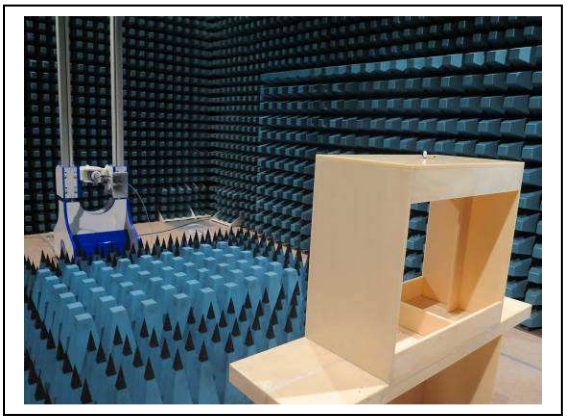
Report No. : AV0056553(2) Date : 06 Oct 2017

A1. Photos of the set-up of Radiated Emissions



9kHz – 30MHz



Above 1GHz

Tested by: Mr. LEUNG Shu-kan, Ken

Reviewed by: Mr. WONG Lap-pong, Andrew

FCC ID: 2ABBX179304V21

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TEST REPORT

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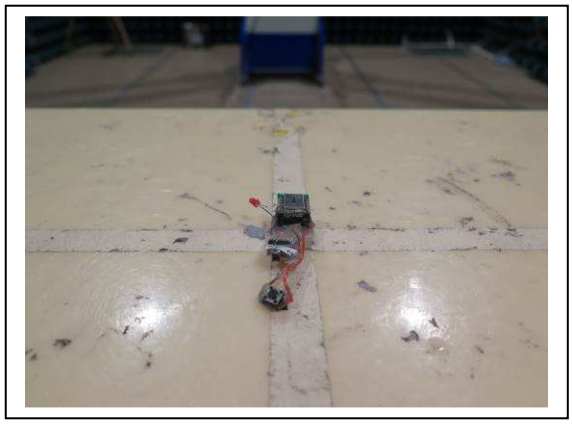
A1. Photos of the set-up of Radiated Emissions



Tested by: Mr. LEUNG Shu-kan, Ken

Reviewed by: Mr. WONG Lap-pong, Andrew

FCC ID: 2ABBX179304V21

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A2. Photos of the set-up of Conducted Emissions

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Reviewed by: Mr. WONG Lap-pong, Andrew

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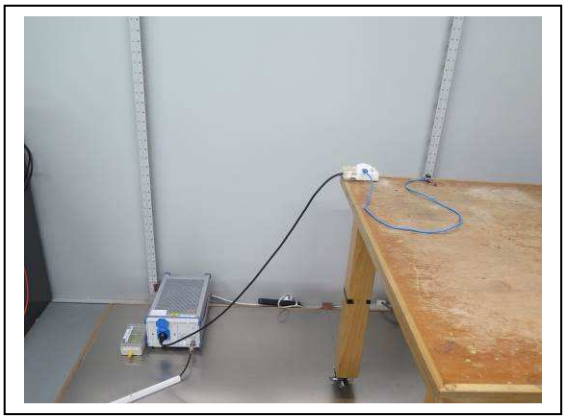
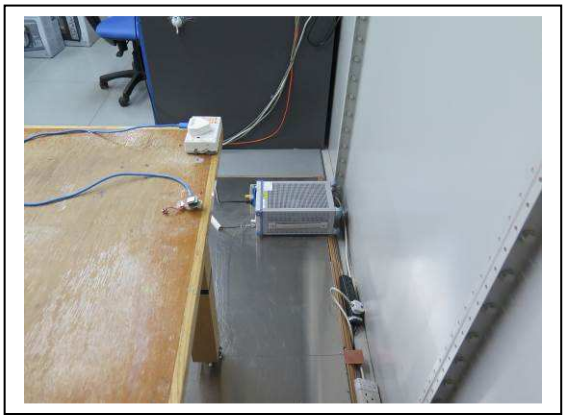
A3. Photos of the set-up of Line-conducted Emissions



Front view



Side view

Tested by: Mr. LEUNG Shu-kan, Ken

Reviewed by: Mr. WONG Lap-pong, Andrew

FCC ID: 2ABBX179304V21

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A4 Photos of External Configurations

External Configuration 1
(with pin header)

External Configuration 2
(with pin header)

Tested by: Mr. LEUNG Shu-kan, Ken

Reviewed by: Mr. WONG Lap-pong, Andrew

FCC ID: 2ABBX179304V21

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TEST REPORT

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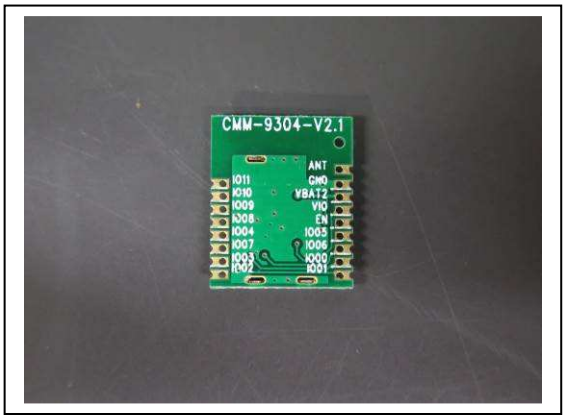
A4 Photos of External Configurations

External Configuration 3
(without pin header)



External Configuration 4
(without pin header)

Tested by: Mr. LEUNG Shu-kan, Ken

Reviewed by: Mr. WONG Lap-pong, Andrew

FCC ID: 2ABBX179304V21

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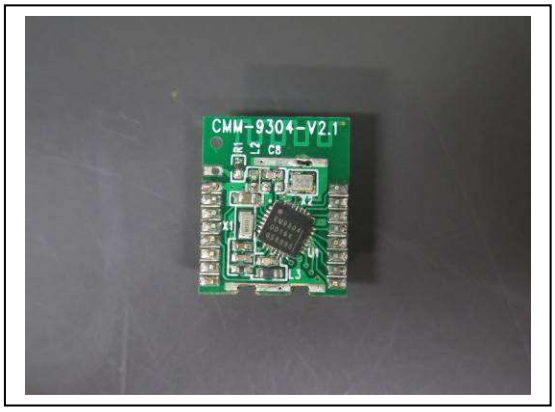
A5 Photos of Internal Configurations



Internal Configuration 1

EUT Antenna

Tested by: Mr. LEUNG Shu-kan, Ken

Reviewed by: Mr. WONG Lap-pong, Andrew

FCC ID: 2ABBX179304V21

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A6 ID Label / Location

ID Label 1

ID Label 2

***** End of Report *****

Tested by: Mr. LEUNG Shu-kan, Ken

Reviewed by: Mr. WONG Lap-pong, Andrew

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