APPLICATION FOR CERTIFICATION

On Behalf of

Elitegroup Computer Systems Co., Ltd.

Intelligent Gateway

Model No. : GWS-QX.

FCC ID : WL6GWS-QX

Brand: ECS

Prepared for : Elitegroup Computer Systems Co., Ltd.
No. 239, Sec. 2, TiDing Blvd,
Taipei, Taiwan 11493

Prepared by : AUDIX Technology Corporation
EMC Department
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File Number	:	C1M1409210
Report Number	:	EM-F140584
Date of Test	:	2014. 09. 24 ~ 11. 25
Date of Report	:	2014. 11. 25

TABLE OF CONTENTS

TEST REPORT CERTIFICATION

Applicant	:	Elitegroup Computer Systems Co., Ltd.
Manufacturer	:	Golden Elite Technology (SHENZHEN) CO., LTD.
EUT Description	:	Intelligent Gateway
FCC ID	:	**WL6GWS-QX**

(A) Model No.	:	GWS-QX.
(B) Serial No.	:	N/A
(C) Brand	:	ECS
(D) Power Supply	:	DC 24V
(E) Test Voltage	:	AC 120V, 60Hz (Via AC Adapter)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C, Oct 2013
(FCC 47 CFR Part 15C, §15.205 and §15.207 and §15.209 and §15.247)
And ANSI C63.4:2003

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C limits.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the requirements of FCC standard.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Test: 2014. 09. 24 ~ 11. 25 Date of Report: 2014. 11. 25

Producer: Tina Huang
(Tina Huang/Administrator)

Signatory: Ben Cheng
(Ben Cheng/Manager)

1. DESCRIPTION OF REVISION HISTORY

Edition No.	Date of Revision	Revision Summary	Report Number
0	2014. 11. 25	Original Report.	EM-F140584

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product	Intelligent Gateway
Model Number	GWS-QX. (The dots "." in the model name cab be 0 to 9, A to Z, a to z, "-", " ", "_", "\", "/" or blank, for marketing use only.) The model GWS-QX is test in this report
Serial Number	N/A
Brand Name	ECS
Applicant	Elitegroup Computer Systems Co., Ltd. No. 239, Sec. 2., TiDing Blvd., Taipei, Taiwan 11493
Manufacturer	Golden Elite Technology (SHENZHEN) CO., LTD. No.1, Nan-Huan Rd., ShaJing, BaoAn, Shenzhen, China
FCC ID	WL6GWS-QX
Fundamental Range	802.11b/g/n-HT20: 2412MHz ~ 2462MHz 802.11n-HT40: 2422MHz ~ 2452MHz Bluetooth and BLE: 2402MHz ~ 2480MHz
Frequency Channel	802.11b/g/n-HT20: 11 channels 802.11n-HT40: 7 channels Bluetooth: 79 channels BLE: 40 channels
Radio Technology	802.11b: DSSS Modulation (DBPSK/DQPSK/CCK) 802.11g: OFDM Modulation (BPSK/QPSK/16QAM/64QAM) 802.11n: OFDM Modulation (BPSK/QPSK/16QAM/64QAM) Bluetooth: FHSS (GFSK,π/4DQPSK, 8-DPSK) BLE: GFSK
Data Transfer Rate	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 150Mbps BT: 1/2/3Mbps BLE: 1Mbps
Antenna Type	Type: External Dipole Antenna + RF Cable Assembly, VSO, M/N 13-130-764090
Antenna Gain	3.1dBi
Date of Receipt of Sample	2014. 09. 19
Date of Test	2014. 09. 24 ~ 11. 25
Note: This EUT has 2.4GHz (WLAN, Bluetooth and BLE) function. See below for related test reports based on radio functionality. 1. The 2.4GHz (WLAN and BLE) function has tested in other report of EM-F140584. 2. The Bluetooth function has been test in other report of EM-F140585.	

2.2. Description of Key Component Lists

Item	Supplier	Model / Type	Character
CPU	Intel	Quark SoC X1021	400MHz
Memory	---	---	DDR3 1G (512MB x 2)
Storage	---	---	Mirco SD 8GB up to 32G
Wi-Fi +BT Combo Module	AzureWave (REALTEK)	AW-NB159H (RTL8723BE)	Wi-Fi with Bluetooth 4.0/3.0 + HS Combo Half Mini Card
AC Adapter	Asian Power Devices Inc.	DA-120B24	Input: AC 100-240V, 47-63Hz, 2.0A Output: DC 24V, 5A
	DC Power Cord: Non-Shielded, Undetachable, 1.8m AC Power Cord: Non-Shielded, Detachable, 1.8m (3pin)		
RS-232 Cable	Shielded, Detachable, 1.6m		

Remark: For a more detailed features description, please refer to the manufacturer's specifications or the user manual.

2.3. Data Rate Relative to Output Power

802.11b			
Channel	Modulation	Date Rate (Mbps)	**Power (dBm)**
1	BPSK	1	**18.31**
1	BPSK	2	**18.29**
1	QPSK	5.5	**18.28**
1	QPSK	11	**18.20**

802.11g			
Channel	Modulation	Date Rate (Mbps)	**Power (dBm)**
1	BPSK	6	**22.57**
1	BPSK	9	**22.54**
1	QPSK	12	**22.56**
1	QPSK	18	**22.43**
1	16-QAM	24	**22.42**
1	16-QAM	36	**22.41**
1	64-QAM	48	**22.51**
1	64-QAM	54	**22.45**

802.11n-HT20				**802.11n-HT40**			
Channel	Modulation	Date Rate (Mbps)	**Power (dBm)**	Channel	Modulation	Date Rate (Mbps)	**Power (dBm)**
1	BPSK	6.5	**21.56**	3	BPSK	6.5	**21.72**
1	QPSK	13	**21.51**	3	QPSK	13	**21.68**
1	QPSK	19.5	**21.45**	3	QPSK	19.5	**21.61**
1	16-QAM	26	**21.39**	3	16-QAM	26	**21.63**
1	16-QAM	39	**21.40**	3	16-QAM	39	**21.57**
1	64-QAM	52	**21.35**	3	64-QAM	52	**21.48**
1	64-QAM	58.6	**21.31**	3	64-QAM	58.6	**21.44**
1	64-QAM	65	**21.30**	3	64-QAM	65	**21.31**

2.4. Test Configuration for Each Test Item

Test Item	**802.11b**	**802.11g**	**802.11n-HT20**	**802.11n-HT40**
	Data Rate for Test (Mbps)			
6db Bandwidth	1	6	6.5	6.5
Maximum Peak Output Power	1	6	6.5	6.5
Emission Limitations	1	6	6.5	6.5
Band Edges	1	6	6.5	6.5
Power Spectral Density	1	6	6.5	6.5

2.5. Tested Supporting System Details

2.5.1. Support Peripheral Unit

No.	Product	Brand	Model No.	Serial No.	Approval
1.	PC System	Acer	Veriton M2630G	N/A	By DoC
2.	LCD Monitor	LG	22LK330	N/A	By DoC
		ASUS	VE228N	N/A	By DoC
3.	USB Keyboard	Agilent	K120	N/A	By DoC
		Lenovo	KU-0225	0904414	By DoC
4.	USB Mouse	Acer	Mini N5	N/A	By DoC
		Lenovo	MO28UOL	4413524	By DoC

2.5.2. Used Cable Lists

Cable Description Of The Above Support Units	
1.	Power Cord: Non-Shielded, Detachable, 1.8m (3 Pin)
2.	D-Sub Cable: Shielded, Detachable, 1.8m Bonded two ferrite cores Power Cord: Non-Shielded, Detachable, 1.8m
3.	USB Cable: Shielded, Undetachable, 1.8m
4.	USB Cable: Shielded, Undetachable, 1.8m

2.6. Description of Test Facility

Name of Firm	:	**AUDIX Technology Corporation** **EMC Department** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
Test Location & Facility (C8/AC)	:	**No. 8 Shielded Room** **Semi-Anechoic Chamber** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan May 11, 2012 File on Federal Communication Commission Registration Number: 90993
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724

2.7. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Conduction Test	150kHz~30MHz	±3.43dB
Radiation Test (Distance: 3m)	30MHz~300MHz	± 2.91dB
	300MHz~1000MHz	± 2.74dB
	Above 1GHz	± 5.02dB

Remark：Uncertainty = $ku_c(y)$

Test Item	Uncertainty
6dB Bandwidth	± 0.05kHz
Maximum peak output power	± 0.33dBm
Emission Limitations	± 0.13dB
Band edges	± 0.13dB
Power spectral density	± 0.13dB

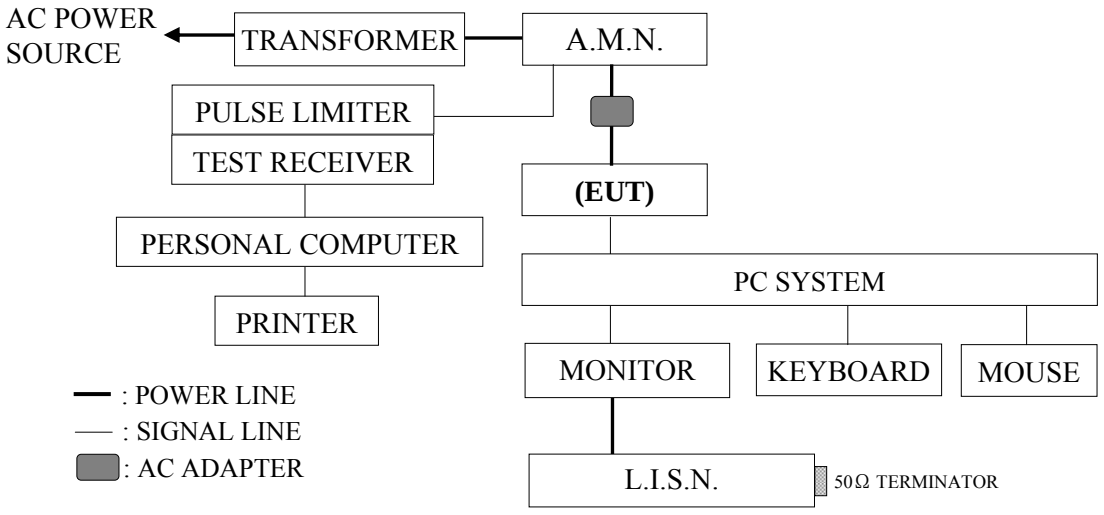
3. CONDUCTED EMISSION MEASUREMET

3.1. Test Equipments

The following Test equipments were used during the conducted emission measurement：(No. 8 Shielded Room)

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESR3	101774	2014. 02. 19	1 Year
2.	A.M.N.	R&S	ESH2-Z5	100366	2014. 06. 21	1 Year
3.	L.I.S.N.	Kyoritsu	KNW-407	8-855-9	2013. 12. 26	1 Year
4.	Pulse Limiter	R&S	ESH3-Z2	100354	2014. 01. 18	1 Year

3.2. Block Diagram of Test Setup



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3.3. Powerline Conducted Emission Limit (§15.207)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark 1.: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.
2.: The lower limit applies at the band edges.

3.4. Operating Condition of EUT

3.4.1. Setup the EUT and simulator as shown on 3.2.

3.4.2. Turn on the power of all equipment.

3.4.3. Set to EUT (Intelligent Gateway) on transmitting and receiving during all testing.

3.5. Test Procedure

The EUT link to power adapter was placed on the table which was above the ground by 80cm and adapter's power cord connected to the AC mains through an Artificial Mains Network (A.M.N.). This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.)
Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions simulators of the interface cables should be manipulated according to ANSI C63.4-2003 regulation during conducted measurement.

The bandwidth of the R&S Test Receiver ESR3 was set at 9kHz.

The frequency range from 150kHz to 30MHz was checked.

All the final readings from Test Receiver were measured with the Quasi-Peak detector and Average detector. Remark: If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary)

3.6. Conducted Emission Measurement Results

PASSED.
(All the emissions not reported below are too low against the prescribed limits.)

EUT was performed during this section testing and all the test results are attached in next pages.

EUT：Intelligent Gateway M/N：GWS-QX

Test Date：2014. 09. 26 Temperature：26℃ Humidity：64%

The details are as follows：

Mode	Reference Test Data	
	Neutral	Line
1.	# 2	# 1

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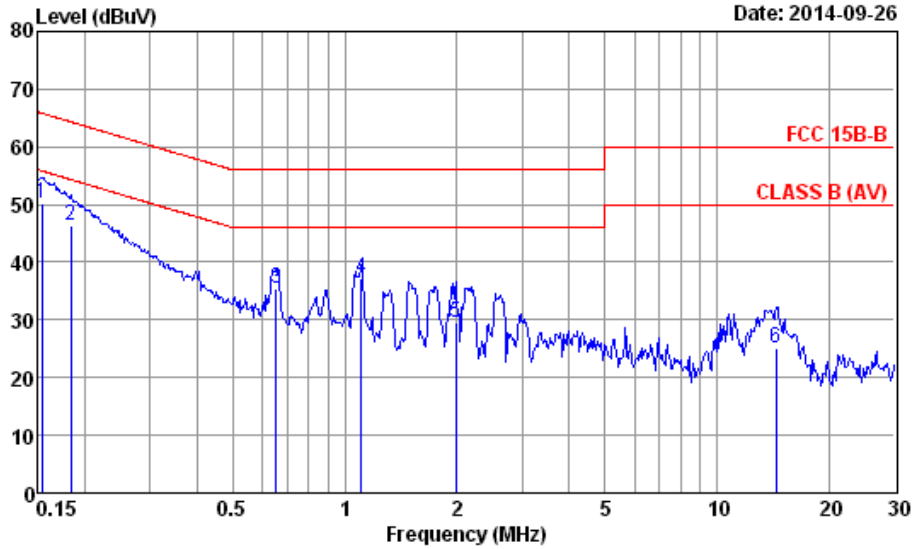
No.53-11, Dingfu, Linkou Dist.,New Taipei City
24442, Taiwan R.O.C.
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:emc@audixtech.com

Data: 2 File: D:\test data\REPORT\2014\C1M1409XXX\C1M1409210-C-D(rf).EM6 (4)



Site no. : No.8 Shielded Room
Condition : ESH2-Z5 366
Limit : FCC 15B-B
Env. / Ins. : 26°C / 64% ESR3 (1774)
EUT : GWS-QX
Power Rating : 120Vac/60Hz
Test Mode : OPERATING

Data no. : 2
Phase : NEUTRAL
Engineer : John

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.153	0.21	0.02	9.85	40.04	50.12	65.82	15.70	QP
2	0.183	0.21	0.03	9.85	36.36	46.45	64.33	17.88	QP
3	0.654	0.23	0.04	9.85	25.32	35.44	56.00	20.56	QP
4	1.106	0.23	0.04	9.86	27.11	37.24	56.00	18.76	QP
5	1.991	0.25	0.06	9.84	19.29	29.44	56.00	26.56	QP
6	14.364	0.64	0.17	9.91	14.45	25.17	60.00	34.83	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

AUDIX TECHNOLOGY Corp. EMC Department
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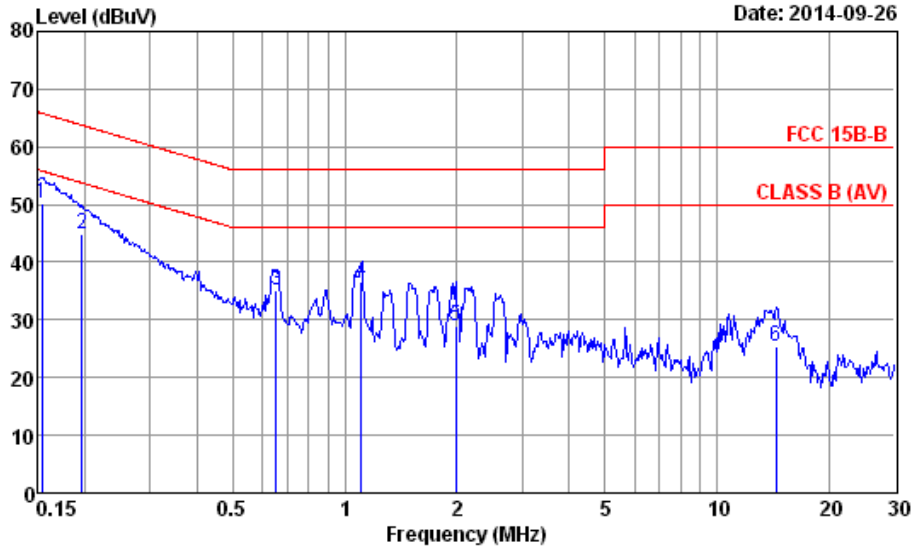
Data: 1 File: D:\test data\REPORT\2014\C1M1409XXX\C1M1409210-C-D(rf).EM6 (4)



Site no. : No.8 Shielded Room
Condition : ESH2-Z5 366
Limit : FCC 15B-B
Env. / Ins. : 26°C / 64% ESR3 (1774)
EUT : GWS-QX
Power Rating : 120Vac/60Hz
Test Mode : OPERATING

Data no. : 1
Phase : LINE
Engineer : John

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.153	0.18	0.02	9.85	40.00	50.05	65.82	15.77	QP
2	0.197	0.18	0.03	9.85	34.96	45.02	63.76	18.74	QP
3	0.654	0.20	0.04	9.85	25.09	35.18	56.00	20.82	QP
4	1.106	0.21	0.04	9.86	26.63	36.74	56.00	19.26	QP
5	1.991	0.24	0.06	9.84	18.82	28.96	56.00	27.04	QP
6	14.364	0.56	0.17	9.91	14.61	25.25	60.00	34.75	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

4. RADIATED EMISSION MEASUREMENT

4.1. Test Equipments

The following Test equipments were used during the radiated emission measurement:

4.1.1. For Frequency Range 30MHz~1000MHz (at Semi-Anechoic Chamber)

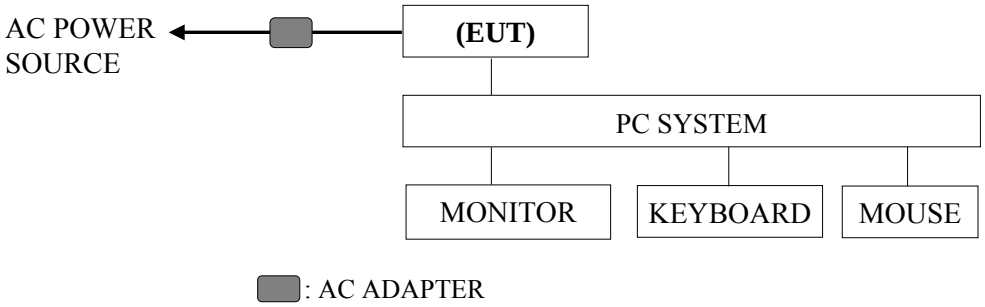
Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2014. 09. 15	1 Year
2.	Test Receiver	R & S	ESCS30	100338	2014. 06. 24	1 Year
3.	Amplifier	HP	8447D	2944A06305	2014. 02. 18	1 Year
4.	Bilog Antenna	CHASE	CBL6112D	33821	2014. 08. 02	1 Year

4.1.2. For Frequency Above 1GHz (at Semi-Anechoic Chamber)

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2014. 09. 15	1 Year
2.	Test Receiver	R & S	ESCS30	100338	2014. 06. 24	1 Year
3.	Amplifier	HP	8447D	2944A06305	2014. 02. 18	1 Year
4.	2.4GHz Notch Filter	K&L	7NSL10-2441. 5E130.5-00	1	2014. 06. 12	1 Year
5.	3G High Pass Filter	Microware Circuits	H3G018G1	484796	2014. 06. 12	1 Year
6.	Horn Antenna	EMCO	3115	9609-4927	2014. 06. 16	1 Year
7.	Horn Antenna	EMCO	3116	2653	2014. 10. 10	1 Year

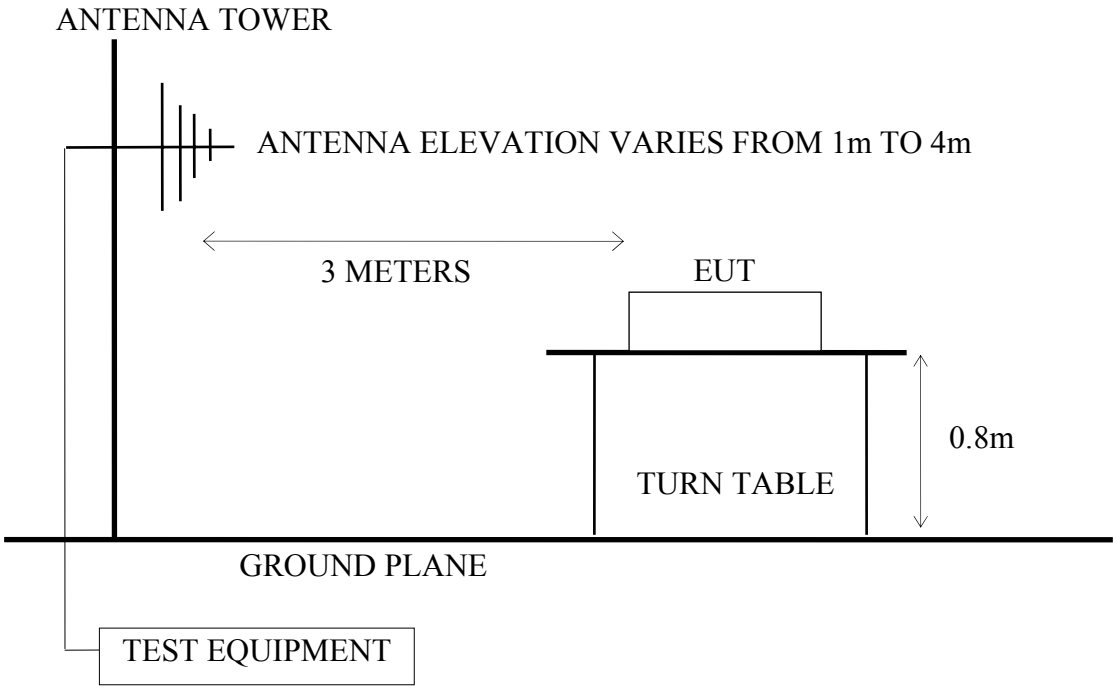
4.2. Test Setup

4.2.1. Block Diagram of connection between EUT and simulators

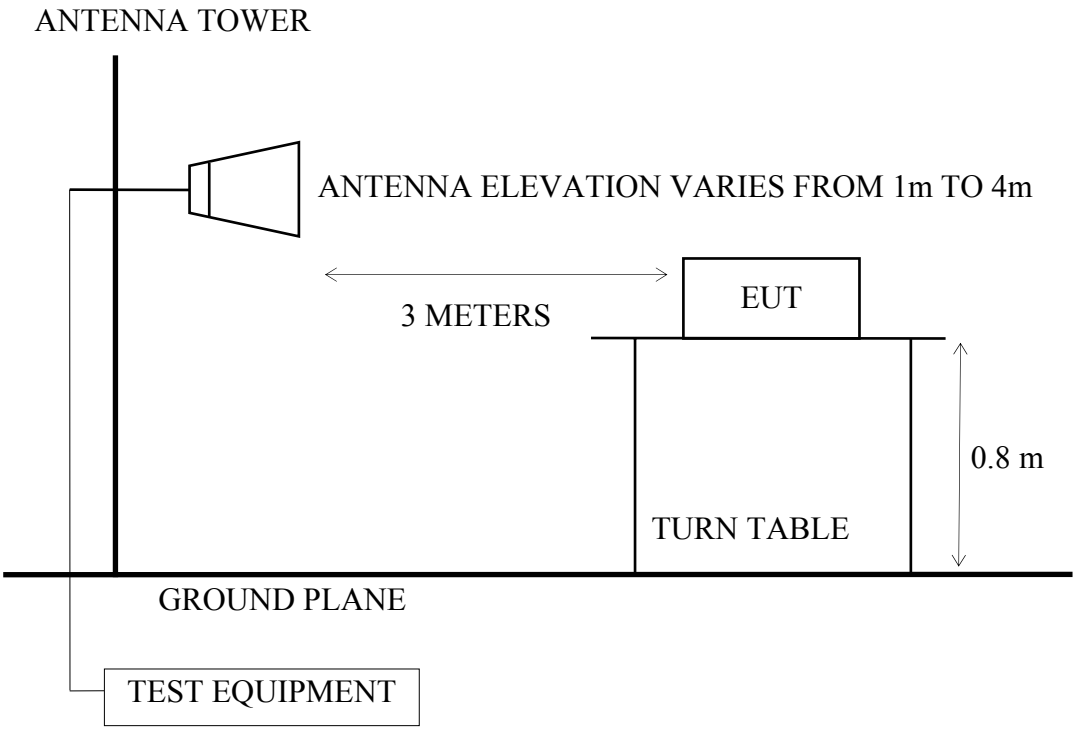


EUT: INTELLIGENT GATEWAY

4.2.2. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000MHz



4.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for above 1GHz



4.3. Radiated Emission Limits (§15.209)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMITS	
		μV/m	dBμV/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark：(1) Emission level (dBμV/m) = 20 log Emission level (μV/m)
(2) The tighter limit applies at the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
(4) The limits in this table are based on CFR 47 Part 15.205(a)(b) and Part 15.209 (a).
(5) The over 1GHz limit, FCC limit is used based on CFR 47 Part 15.35(b) and Part 15.205(b) & Part 15.209(e) and Part 15.207(c).

4.4. Operating Condition of EUT

4.4.1. Set up the EUT (Intelligent Gateway) and simulator as shown on 4.2.

4.4.2. To turn on the power of all equipments.

4.4.3. The EUT was set the PC System using test program “Teraterm”.

4.4.4. The EUT supports 802.11b/g/n-HT20/n-HT40 and BLE modes, In WLAN Mode, we performed pre-scan high, middle, low channels for each mode for spurious emission and listed the worst channel of each mode in test report.

The worst channel of each mode as following:

Mode	Type	Channel	Frequency
1	802.11b	CH 11	2462MHz
2	802.11g	CH 6	2437MHz
3	802.11n-HT20	CH 6	2437MHz
4	802.11n-HT40	CH 6	2437MHz

4.5. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna could be moved up and down between 1 to 4 meters to find out the maximum emission level. Broadband antennas such as calibrated biconical and log-periodical antenna or horn antenna were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to FCC ANSI C63.4-2003 regulation.

The bandwidth of the R&S Test Receiver ESCS30 was set at 120kHz. (For 30MHz to 1000MHz)

The resolution bandwidth and video bandwidth of test spectrum analyzer is 1MHz for peak detection (PK) at frequency above 1GHz.

The resolution bandwidth of test spectrum analyzer is 1MHz and the video bandwidth is 10Hz for average detection (AV) at frequency above 1GHz.

The frequency range from 30MHz to 25GHz (Up to 10^{th} harmonics from fundamental frequency) was checked. 30MHz to 1000MHz was measured with Quasi-Peak detector.

Pursuant to ANSI 63.4: 4.2, peak detector is an alternate option for frequency from 30MHz to 1000MHz.

Above 1GHz was measured with peak and average detector. For frequency from 1000Hz o 25000Hz, we checked it in 1 meter distance and with a shorter cable 2 meter instead of original's. There is no signal exist.

Pursuant to ANSI C63.4 8.3.1.2, when peak value complies with the average limit, we didn't perform measurement in average detector.

4.6. Test Results

PASSED.
(All emissions not reported below are too low against the prescribed limits.)

4.6.1. For WLAN Function

Test Date: 2014. 09. 29 Temperature: 26℃ Humidity: 43%

For Frequency Range 30MHz~1000MHz:
The EUT was tested in restricted bands and all the test results are listed in section 4.6.1.1

No	Test Mode	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1	802.11b	CH 11	2462MHz	Transmit	# 2	# 1
2	802.11g	CH 6	2437MHz		# 2	# 1
3	802.11n-HT20	CH 6	2437MHz		# 2	# 1
4	802.11n-HT40	CH 6	2437MHz		# 2	# 1

* Above all final readings were measured with Peak detector.

Frequency above 1GHz:
The emissions (up to 25GHz) not reported are too low to be measured.

For Restricted Bands:
The EUT was tested in restricted bands and all the test results are listed in section 4.6.1.2. (The restricted bands defined in part 15.205(a))

No	Test Mode	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1	802.11b	CH 1	2412MHz	Transmit	# 3, # 4	# 1, # 2
2		CH 11	2462MHz		# 7, # 8	# 5, # 6
3	802.11g	CH 1	2412MHz		# 3, # 4	# 1, # 2
4		CH 11	2462MHz		# 7, # 8	# 5, # 6
5	802.11n-HT20	CH 1	2412MHz		# 3, # 4	# 1, # 2
6		CH 11	2462MHz		# 7, # 8	# 5, # 6
7	802.11n-HT40	CH 3	2422MHz		# 3, # 4	# 1, # 2
8		CH 9	2452MHz		# 7, # 8	# 5, # 6

4.6.1.1. For 30-1000MHz Frequency Range Measurement Results

802.11b, Transmit, Frequency: 2462MHz

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11b 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	99.84	10.90	3.22	14.26	28.38	43.50	15.12	Peak
2	350.10	14.43	5.20	11.06	30.69	46.00	15.31	Peak
3	831.22	20.20	7.28	8.85	36.33	46.00	9.67	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11b 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	41.64	12.45	2.53	23.53	38.51	40.00	1.49	Peak
2	98.87	10.72	3.21	14.77	28.70	43.50	14.80	Peak
3	350.10	14.43	5.20	7.31	26.94	46.00	19.06	Peak
4	900.09	20.58	7.54	4.77	32.89	46.00	13.11	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

802.11g, Transmit, Frequency: 2437MHz

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11g 2437MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	93.05	9.67	3.17	15.34	28.18	43.50	15.32	Peak
2	350.10	14.43	5.20	13.56	33.19	46.00	12.81	Peak
3	900.09	20.58	7.54	5.77	33.89	46.00	12.11	Peak
4	996.12	21.07	8.09	7.83	36.99	54.00	17.01	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11g 2437MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	41.64	12.45	2.53	24.90	39.88	40.00	0.12	Peak
2	120.21	12.28	3.37	13.59	29.24	43.50	14.26	Peak
3	350.10	14.43	5.20	9.70	29.33	46.00	16.67	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

802.11n-HT20, Transmit, Frequency: 2437MHz

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n20 2437MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	137.67	11.35	3.51	8.92	23.78	43.50	19.72	Peak
2	255.04	12.47	4.36	13.27	30.10	46.00	15.90	Peak
3	350.10	14.43	5.20	14.80	34.43	46.00	11.57	Peak
4	998.06	21.07	8.09	10.81	39.97	54.00	14.03	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n20 2437MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	42.61	11.98	2.55	20.74	35.27	40.00	4.73	Peak
2	120.21	12.28	3.37	14.78	30.43	43.50	13.07	Peak
3	350.10	14.43	5.20	11.20	30.83	46.00	15.17	Peak
4	690.57	18.69	6.70	10.98	36.37	46.00	9.63	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

802.11n-HT40, Transmit, Frequency: 2437MHz

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2437MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	42.61	11.98	2.55	10.87	25.40	40.00	14.60	Peak
2	350.10	14.43	5.20	15.22	34.85	46.00	11.15	Peak
3	949.56	20.83	7.82	5.32	33.97	46.00	12.03	Peak
4	995.15	21.07	8.09	5.34	34.50	54.00	19.50	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2437MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	43.58	11.52	2.56	25.89	39.97	40.00	0.03	Peak
2	93.05	9.67	3.17	17.06	29.90	43.50	13.60	Peak
3	450.98	16.31	6.08	8.86	31.25	46.00	14.75	Peak

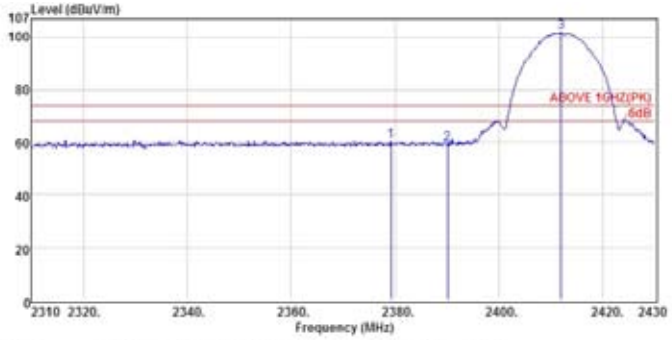
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

4.6.1.2. Restricted Bands Measurement Results

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

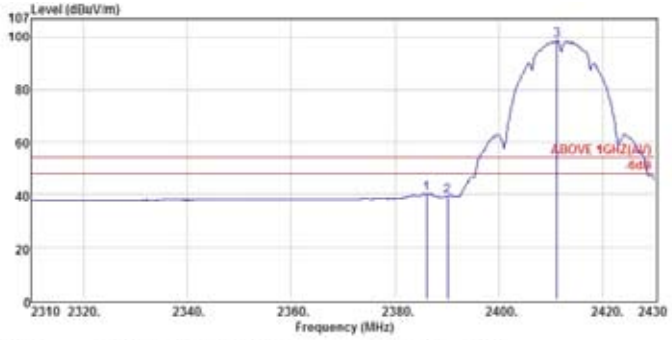
Test Mode: 802.11b , Transmit, Channel: 01, Frequency: 2412MHz



Site no. : Audix NO.1 Chamber Data no. : 3
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28°C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11b 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2379.24	28.19	5.22	26.87	60.28	74.00	13.72	Peak
2	2390.04	28.20	5.24	25.81	59.25	74.00	14.75	Peak
3	2411.88	28.22	5.27	68.41	101.90	74.00	-27.90	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 4
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28°C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11b 2412MHz

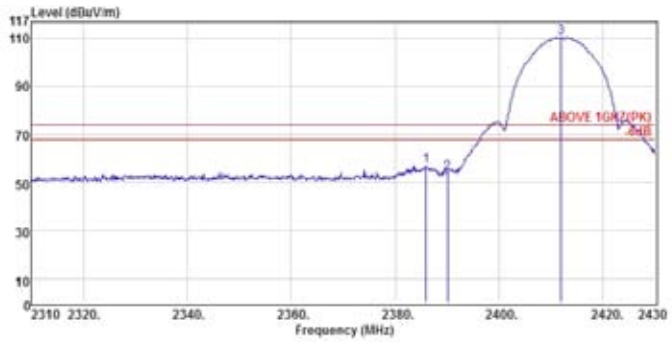
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2386.08	28.20	5.23	6.88	40.31	54.00	13.69	Average
2	2390.04	28.20	5.24	8.08	39.50	54.00	14.50	Average
3	2411.16	28.22	5.27	65.15	98.64	54.00	-44.64	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

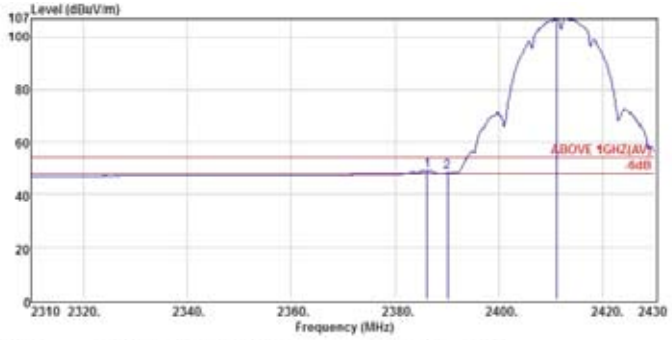
Test Mode: 802.11b , Transmit, Channel: 01, Frequency: 2412MHz



Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28oC / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11b 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2385.96	28.20	5.23	23.63	57.06	74.00	16.94	Peak
2	2390.04	28.20	5.24	20.42	53.86	74.00	20.14	Peak
3	2411.88	28.22	5.27	77.15	110.64	74.00	-36.64	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

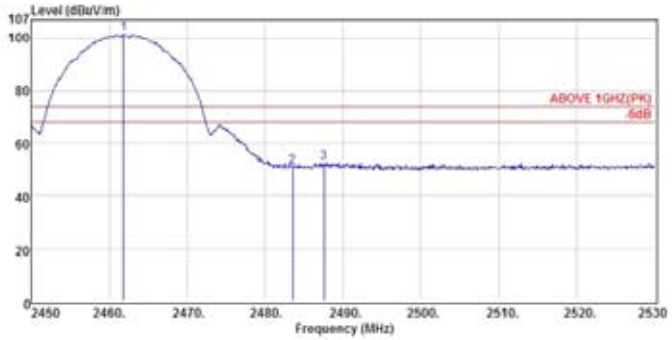


Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28oC / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11b 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2386.20	28.20	5.23	15.68	49.11	54.00	4.89	Average
2	2390.04	28.20	5.24	15.00	48.44	54.00	5.56	Average
3	2411.16	28.22	5.27	73.71	107.20	54.00	-53.20	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

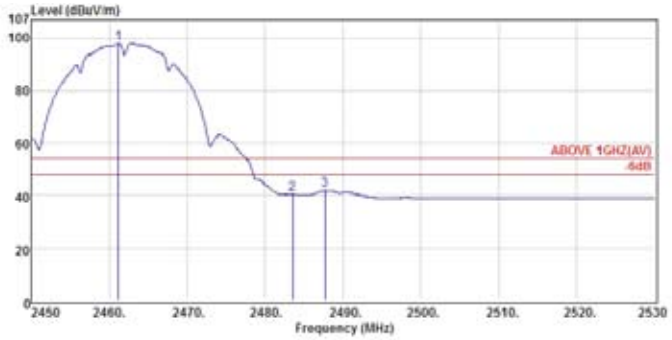
Date of Test :	2014. 09. 29	Temperature:	24℃
EUT:	Intelligent Gateway	Humidity:	43%
Test Mode:	802.11b , Transmit, Channel: 11, Frequency: 2462MHz		



Site no. : Audix NO.1 Chamber Data no. : 7
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28xC / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11b 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2461.84	28.27	5.34	67.65	101.26	74.00	-27.26	Peak
2	2483.52	28.29	5.37	17.42	51.08	74.00	22.92	Peak
3	2487.52	28.29	5.37	18.98	52.64	74.00	21.36	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28xC / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11b 2462MHz

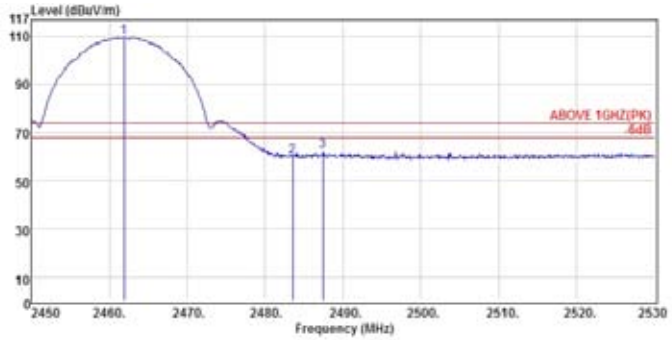
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2461.20	28.27	5.34	64.40	98.01	54.00	-44.01	Average
2	2483.52	28.29	5.37	6.82	40.48	54.00	13.52	Average
3	2487.68	28.29	5.37	8.32	41.98	54.00	12.02	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

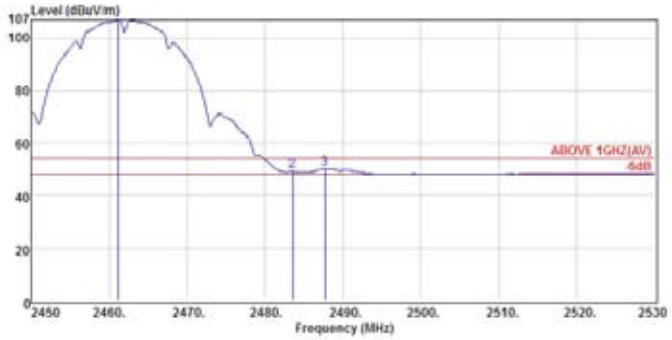
Test Mode: 802.11b , Transmit, Channel: 11, Frequency: 2462MHz



Site no. : Audix NO.1 Chamber Data no. : 5
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11b 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2461.92	28.27	5.34	76.09	109.70	74.00	-35.70	Peak
2	2483.52	28.29	5.37	28.38	80.04	74.00	13.96	Peak
3	2487.44	28.29	5.37	28.37	62.03	74.00	11.97	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 6
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11b 2462MHz

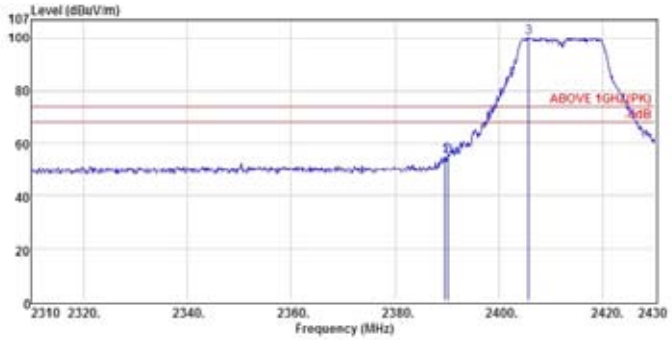
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2461.20	28.27	5.34	73.32	106.93	54.00	-52.93	Average
2	2483.52	28.29	5.37	15.49	49.15	54.00	4.85	Average
3	2487.68	28.29	5.37	16.54	50.20	54.00	3.80	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

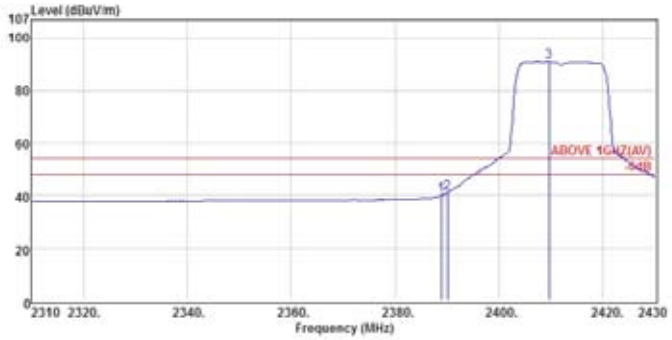
Test Mode: 802.11g , Transmit, Channel: 01, Frequency: 2412MHz



Site no. : Audix NO.1 Chamber Data no. : 3
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11g 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2389.56	28.20	5.24	21.41	54.85	74.00	19.15	Peak
2	2390.04	28.20	5.24	22.04	55.48	74.00	18.52	Peak
3	2405.64	28.22	5.26	66.57	100.05	74.00	-26.05	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 4
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11g 2412MHz

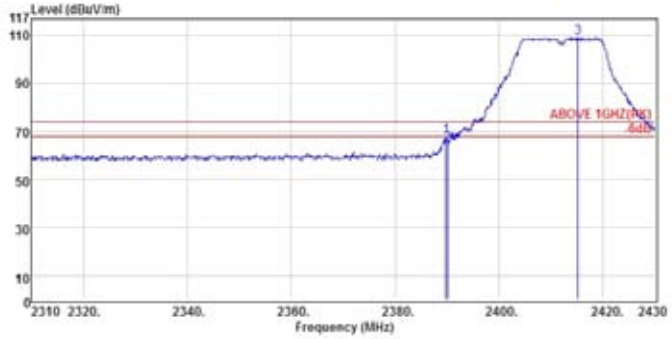
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.84	28.20	5.24	6.64	40.08	54.00	13.92	Average
2	2390.04	28.20	5.24	7.72	41.16	54.00	12.84	Average
3	2409.60	28.22	5.27	57.54	91.03	54.00	-37.03	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

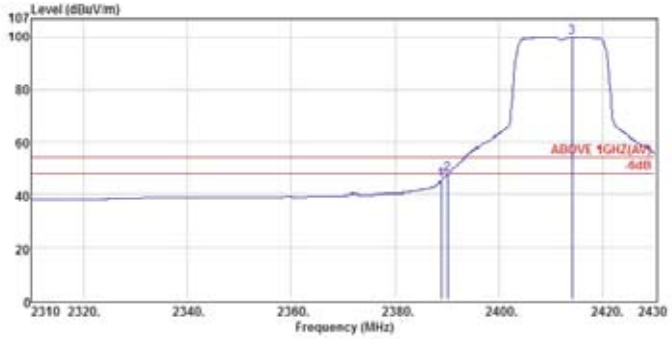
Test Mode: 802.11g , Transmit, Channel: 01, Frequency: 2412MHz



Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11g 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2389.80	28.20	5.24	34.29	67.73	74.00	6.27	Peak
2	2390.04	28.20	5.24	31.38	64.82	74.00	9.18	Peak
3	2415.12	28.22	5.27	75.54	109.03	74.00	-35.03	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11g 2412MHz

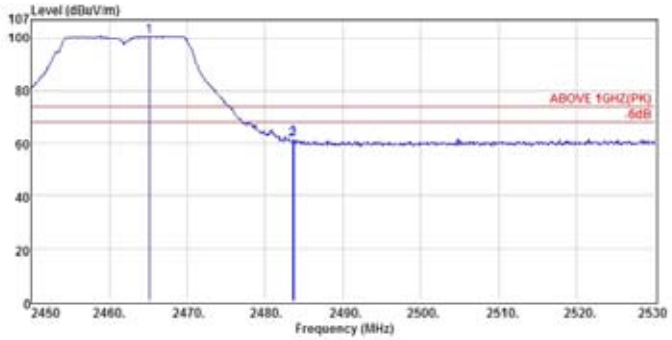
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.84	28.20	5.24	11.86	45.30	54.00	8.70	Average
2	2390.04	28.20	5.24	14.18	47.82	54.00	6.38	Average
3	2414.04	28.22	5.27	66.53	100.02	54.00	-46.02	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

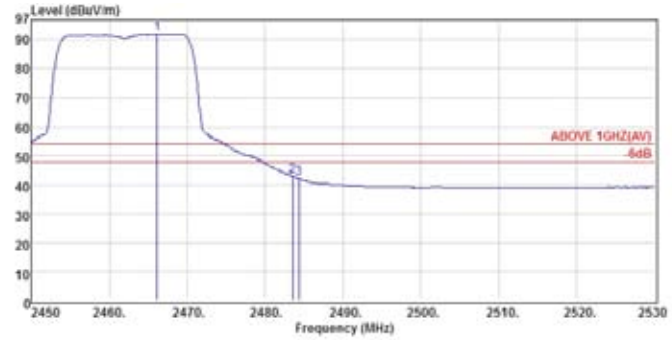
Test Mode: 802.11g , Transmit, Channel: 11, Frequency: 2462MHz



Site no. : Audix NO.1 Chamber Data no. : 7
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11g 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2465.12	28.27	5.34	67.12	100.73	74.00	-26.73	Peak
2	2483.52	28.29	5.37	27.49	61.15	74.00	12.85	Peak
3	2483.68	28.29	5.37	28.16	61.82	74.00	12.18	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11g 2462MHz

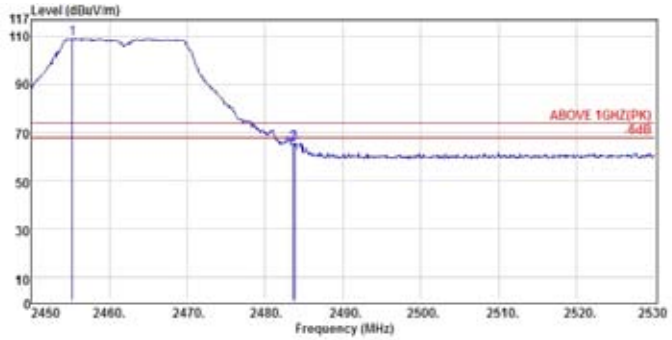
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2466.16	28.27	5.34	58.42	92.03	54.00	-38.03	Average
2	2483.52	28.29	5.37	9.29	42.95	54.00	11.05	Average
3	2484.32	28.29	5.37	8.50	42.16	54.00	11.84	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

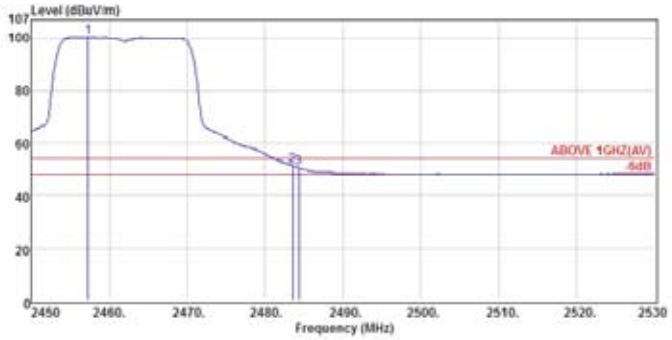
Test Mode: 802.11g , Transmit, Channel: 11, Frequency: 2462MHz



Site no. : Audix NO.1 Chamber Data no. : 5
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11g 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2455.28	28.26	5.33	75.46	109.05	74.00	-35.05	Peak
2	2483.52	28.29	5.37	31.45	65.11	74.00	8.89	Peak
3	2483.76	28.29	5.37	32.18	65.84	74.00	8.16	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 6
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11g 2462MHz

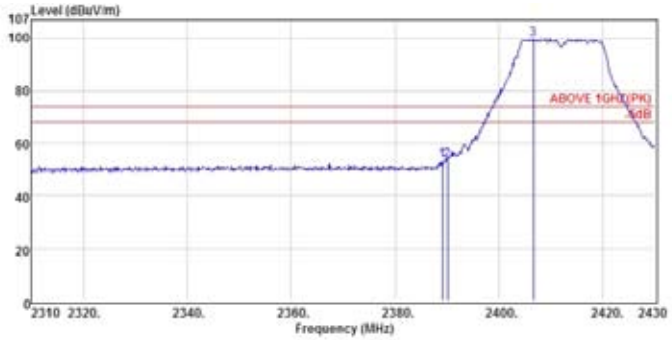
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2457.28	28.26	5.33	66.66	100.25	54.00	-46.25	Average
2	2483.52	28.29	5.37	17.71	51.37	54.00	2.63	Average
3	2484.32	28.29	5.37	16.91	50.57	54.00	3.43	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

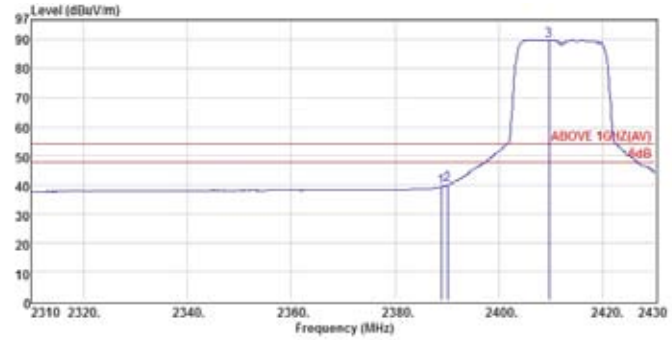
Test Mode: 802.11n-HT20 , Transmit, Channel: 01, Frequency: 2412MHz



Site no. : Audix NO.1 Chamber Data no. : 3
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n20 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2389.08	28.20	5.24	20.01	53.45	74.00	20.55	Peak
2	2390.04	28.20	5.24	20.08	53.50	74.00	20.50	Peak
3	2406.60	28.22	5.26	66.00	99.48	74.00	-25.48	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 4
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n20 2412MHz

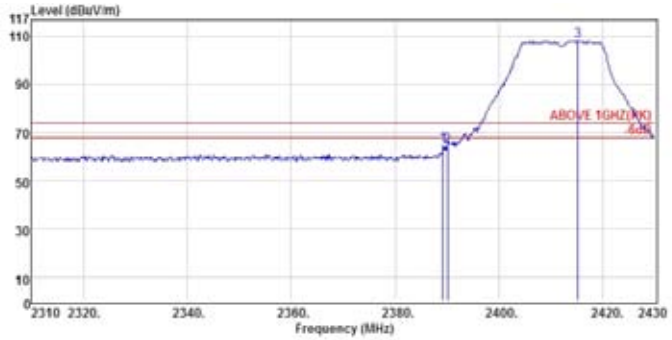
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.84	28.20	5.24	5.86	39.30	54.00	14.70	Average
2	2390.04	28.20	5.24	6.56	40.00	54.00	14.00	Average
3	2409.60	28.22	5.27	56.46	89.95	54.00	-35.95	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

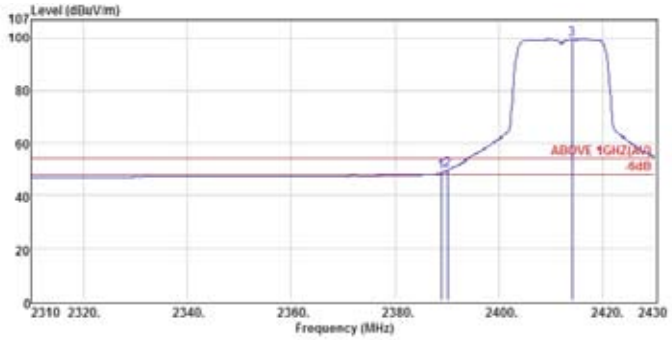
Test Mode: 802.11n-HT20 , Transmit, Channel: 01, Frequency: 2412MHz



Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n20 2412MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2389.20	28.20	5.24	31.26	64.70	74.00	9.30	Peak
2	2390.04	28.20	5.24	30.78	64.22	74.00	9.78	Peak
3	2415.12	28.22	5.27	74.60	108.09	74.00	-34.09	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n20 2412MHz

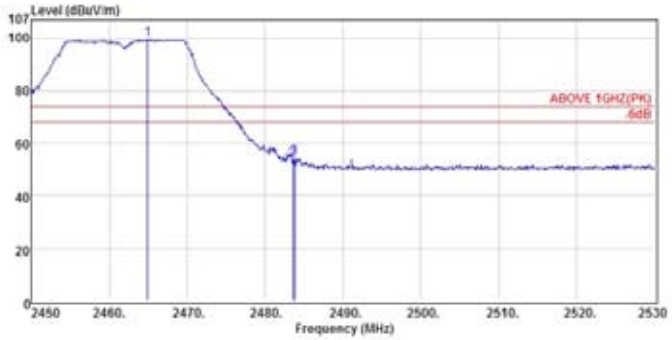
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.84	28.20	5.24	15.32	48.76	54.00	5.24	Average
2	2390.04	28.20	5.24	18.16	49.60	54.00	4.40	Average
3	2414.04	28.22	5.27	65.95	99.44	54.00	-45.44	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

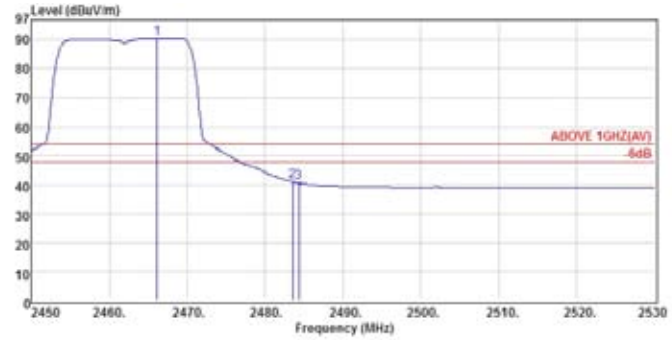
Test Mode: 802.11n-HT20 , Transmit, Channel: 11, Frequency: 2462MHz



Site no. : Audix NO.1 Chamber Data no. : 7
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n20 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2464.96	28.27	5.34	85.74	99.35	74.00	-25.35	Peak
2	2483.52	28.29	5.37	20.08	53.72	74.00	20.28	Peak
3	2483.76	28.29	5.37	20.77	54.43	74.00	19.57	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n20 2462MHz

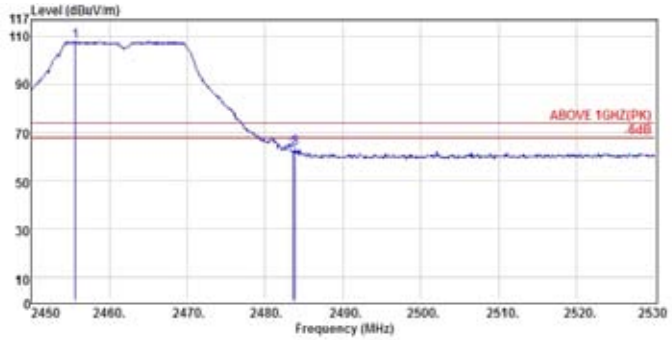
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2466.16	28.27	5.34	56.99	90.60	54.00	-36.60	Average
2	2483.52	28.29	5.37	7.47	41.13	54.00	12.87	Average
3	2484.32	28.29	5.37	7.03	40.69	54.00	13.31	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

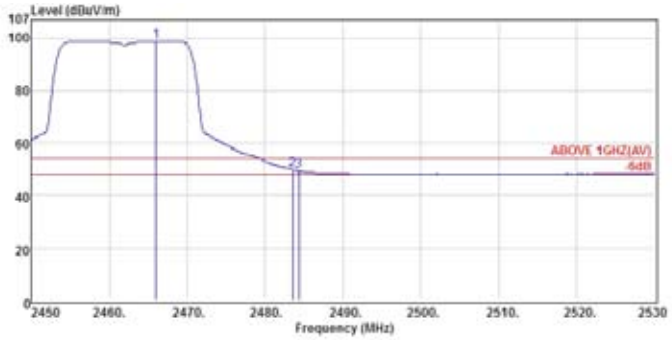
Test Mode: 802.11n-HT20 , Transmit, Channel: 11, Frequency: 2462MHz



Site no. : Audix NO.1 Chamber Data no. : 5
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n20 2462MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2455.68	28.26	5.33	74.22	107.81	74.00	-33.81	Peak
2	2483.52	28.29	5.37	28.93	62.59	74.00	11.41	Peak
3	2483.84	28.29	5.37	30.05	63.71	74.00	10.29	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 6
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n20 2462MHz

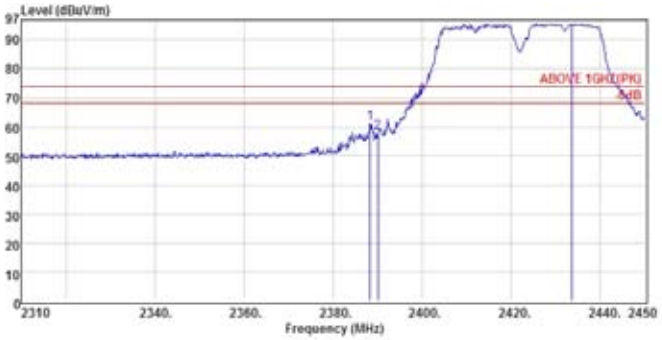
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2466.00	28.27	5.34	65.18	98.79	54.00	-44.79	Average
2	2483.52	28.29	5.37	18.24	49.90	54.00	4.10	Average
3	2484.32	28.29	5.37	15.78	49.44	54.00	4.56	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

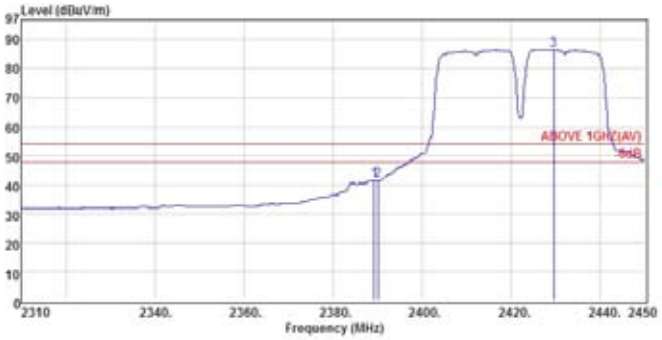
Test Mode: 802.11n-HT40 , Transmit, Channel: 3, Frequency: 2422MHz



Site no. : Audix NO.1 Chamber Data no. : 3
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2422MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.26	28.20	5.24	27.84	61.28	74.00	12.72	Peak
2	2390.08	28.20	5.24	24.47	57.91	74.00	16.09	Peak
3	2433.62	28.24	5.30	62.12	95.66	74.00	-21.66	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 4
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2422MHz

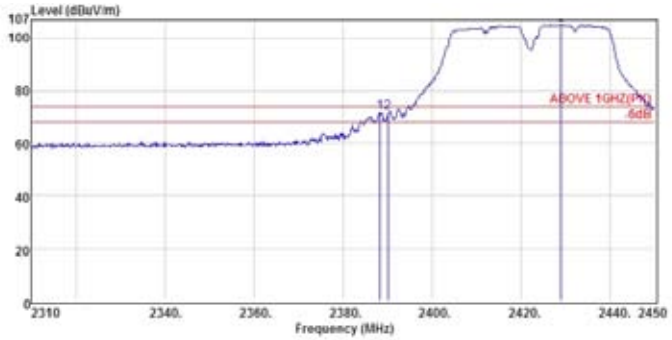
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2389.24	28.20	5.24	8.10	41.54	54.00	12.46	Average
2	2390.08	28.20	5.24	7.95	41.39	54.00	12.61	Average
3	2423.56	28.24	5.29	53.18	86.71	54.00	-32.71	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

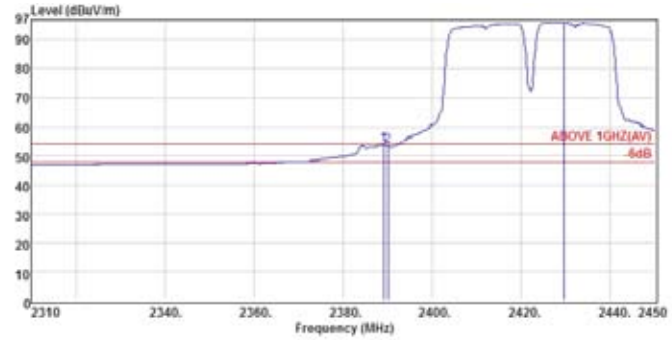
Test Mode: 802.11n-HT40 , Transmit, Channel: 3, Frequency: 2422MHz



Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2422MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.26	28.20	5.24	38.05	71.49	74.00	2.51	Peak
2	2390.08	28.20	5.24	38.28	71.72	74.00	2.28	Peak
3	2428.86	28.24	5.29	71.59	105.12	74.00	-31.12	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

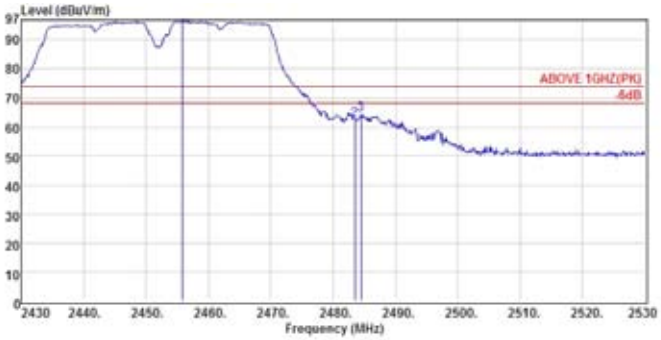


Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2422MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2389.10	28.20	5.24	20.18	53.62	54.00	0.38	Average
2	2390.08	28.20	5.24	19.85	53.29	54.00	0.71	Average
3	2428.56	28.24	5.29	62.55	96.08	54.00	-42.08	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

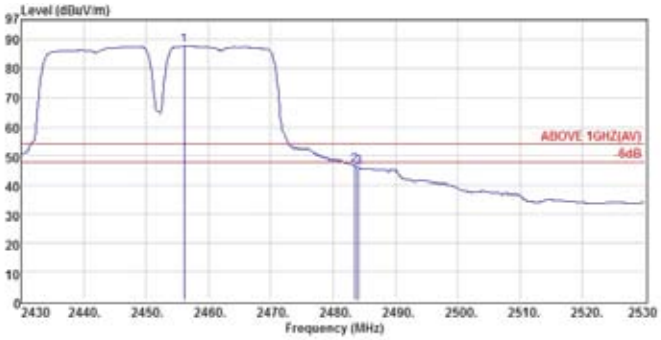
Date of Test :	2014. 09. 29	Temperature:	24℃
EUT:	Intelligent Gateway	Humidity:	43%
Test Mode:	802.11n-HT40 , Transmit, Channel: 9, Frequency: 2452MHz		



Site no. : Audix NO.1 Chamber Data no. : 7
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2452MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2455.90	28.26	5.33	63.04	96.63	74.00	-22.63	Peak
2	2483.50	28.29	5.37	28.89	62.55	74.00	11.45	Peak
3	2484.50	28.29	5.37	30.61	64.27	74.00	9.73	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2452MHz

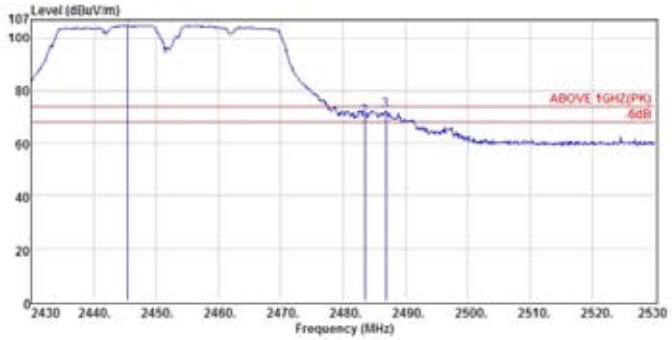
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2456.10	28.26	5.33	54.29	87.88	54.00	-33.88	Average
2	2483.50	28.29	5.37	12.85	46.51	54.00	7.49	Average
3	2484.10	28.29	5.37	12.19	45.85	54.00	8.15	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 09. 29 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

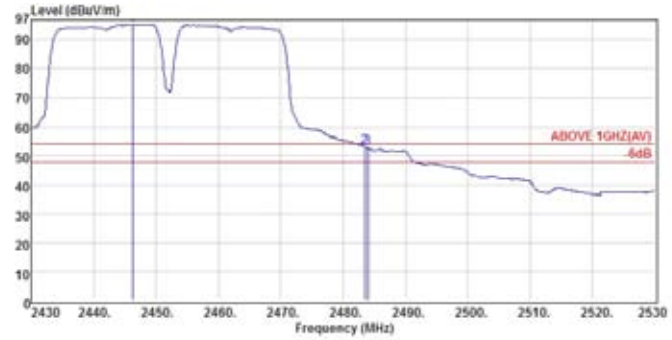
Test Mode: 802.11n-HT40 , Transmit, Channel: 9, Frequency: 2452MHz



Site no. : Audix NO.1 Chamber Data no. : 5
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2452MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2445.50	28.25	5.32	71.30	104.87	74.00	-30.87	Peak
2	2483.50	28.29	5.37	36.32	69.98	74.00	4.02	Peak
3	2486.80	28.29	5.37	38.79	72.45	74.00	1.55	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 6
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2452MHz

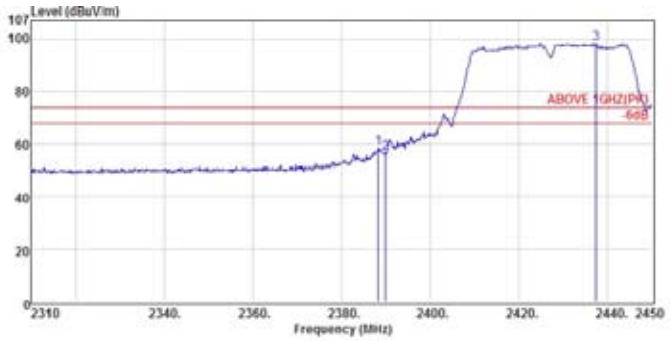
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2440.20	28.25	5.32	61.64	95.21	54.00	-41.21	Average
2	2483.50	28.29	5.37	19.48	53.14	54.00	0.86	Average
3	2484.00	28.29	5.37	19.02	52.68	54.00	1.32	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 11. 25 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

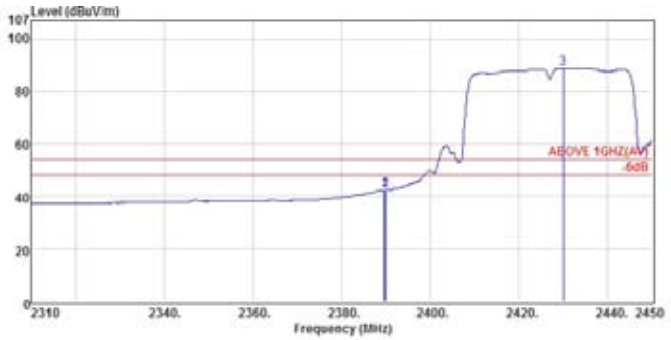
Test Mode: 802.11n-HT40 , Transmit, Channel: 4, Frequency: 2427MHz



Site no. : Audix NO.1 Chamber Data no. : 11
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2427MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.26	28.20	5.24	25.15	58.59	74.00	15.41	Peak
2	2389.94	28.20	5.24	23.24	56.68	74.00	17.32	Peak
3	2437.40	28.24	5.30	64.56	98.10	74.00	-24.10	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 12
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2427MHz

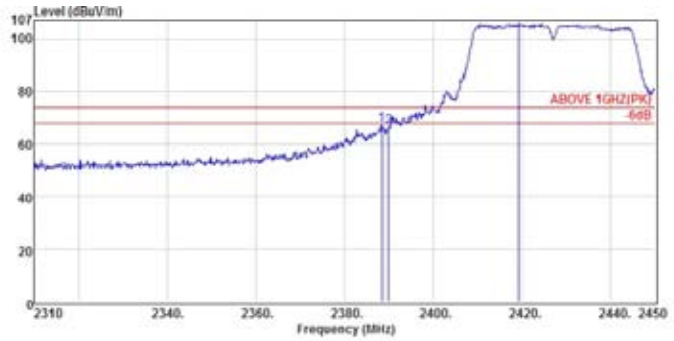
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2389.66	28.20	5.24	8.84	42.28	54.00	11.72	Average
2	2389.94	28.20	5.24	8.30	42.34	54.00	11.66	Average
3	2429.98	28.24	5.29	55.32	88.85	54.00	-34.85	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 11. 25 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

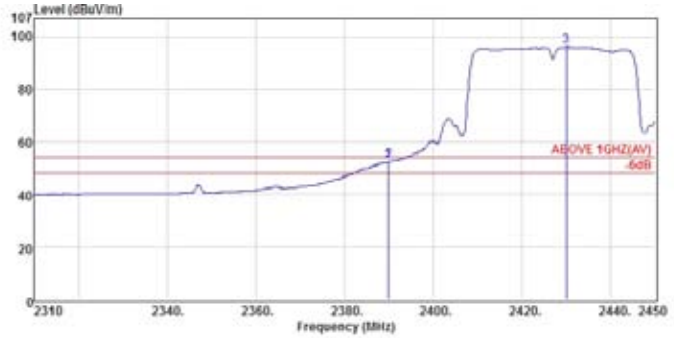
Test Mode: 802.11n-HT40 , Transmit, Channel: 4, Frequency: 2427MHz



Site no. : Audix NO.1 Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2427MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.40	28.20	5.24	33.69	67.13	74.00	6.87	Peak
2	2389.94	28.20	5.24	33.13	66.57	74.00	7.43	Peak
3	2419.34	28.23	5.28	72.52	106.03	74.00	-32.03	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 10
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2427MHz

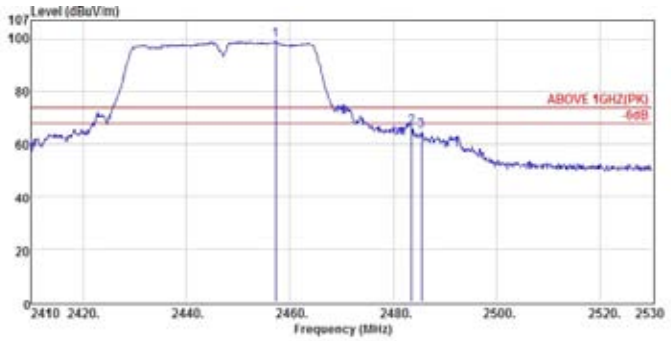
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2389.80	28.20	5.24	18.91	52.35	54.00	1.65	Average
2	2389.94	28.20	5.24	18.94	52.38	54.00	1.62	Average
3	2429.98	28.24	5.29	62.55	96.08	54.00	-42.08	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 11. 25 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

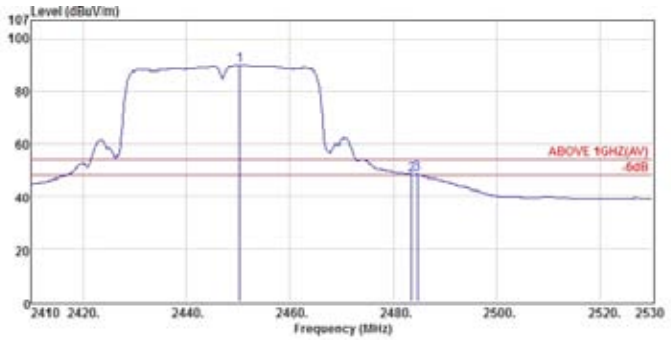
Test Mode: 802.11n-HT40 , Transmit, Channel: 8, Frequency: 2447MHz



Site no. : Audix NO.1 Chamber Data no. : 15
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2447MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2457.28	28.26	5.33	65.73	99.32	74.00	-25.32	Peak
2	2483.56	28.23	5.37	32.58	66.24	74.00	7.76	Peak
3	2485.48	28.23	5.37	31.33	64.99	74.00	9.01	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 16
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2447MHz

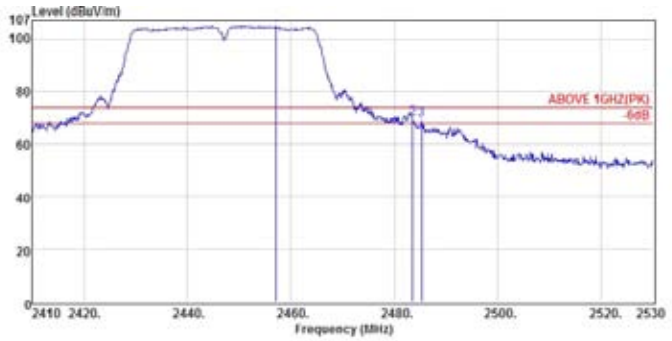
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2450.32	28.25	5.32	58.28	89.83	54.00	-35.83	Average
2	2483.56	28.23	5.37	14.63	48.23	54.00	5.71	Average
3	2484.64	28.23	5.37	14.68	48.34	54.00	5.66	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test : 2014. 11. 25 Temperature: 24℃

EUT: Intelligent Gateway Humidity: 43%

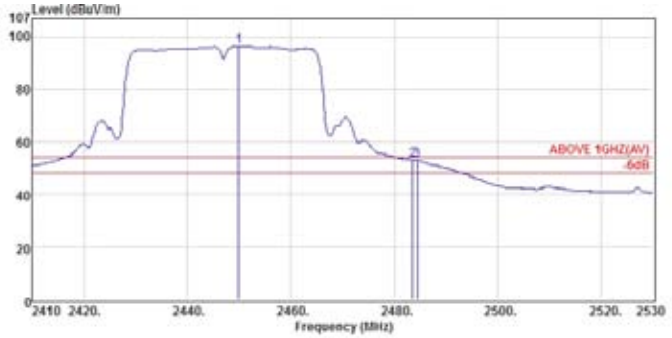
Test Mode: 802.11n-HT40 , Transmit, Channel: 8, Frequency: 2447MHz



Site no. : Audix NO.1 Chamber Data no. : 13
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2447MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2457.04	28.26	5.33	71.41	105.00	74.00	-31.00	Peak
2	2483.56	28.23	5.37	35.92	69.58	74.00	4.42	Peak
3	2485.24	28.23	5.37	35.68	69.34	74.00	4.66	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 14
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : 802.11n40 2447MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2449.96	28.25	5.32	82.73	96.30	54.00	-42.30	Average
2	2483.56	28.23	5.37	19.28	52.92	54.00	1.08	Average
3	2484.40	28.23	5.37	19.21	52.87	54.00	1.13	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

4.6.2. For BLE Function

Test Date: 2014. 10. 16 Temperature: 26℃ Humidity: 43%

For Frequency Range 30MHz~1000MHz:
The EUT was measured during this section testing and all the test results are listed in section 4.6.2.1

No	Test Mode	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1.	BLE	CH 0	2402MHz	Transmit	# 2	# 1
2.	BLE	CH 19	2440MHz		# 2	# 1
3.	BLE	CH 39	2480MHz		# 2	# 1

* Above all final readings were measured with Peak detector.

Frequency above 1GHz:
The emissions (up to 25GHz) not reported are too low to be measured.

For Restricted Bands:
The EUT was tested in restricted bands and all the test results are listed in section 4.6.2.2. (The restricted bands defined in part 15.205(a))

No	Test Mode	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1	BLE	CH 0	2402MHz	Transmit	# 3, # 4	# 1, # 2
2		CH 39	2480MHz		# 7, # 8	# 5, # 6

4.6.2.1. For 30-1000MHz Frequency Range Measurement Results

BLE, Transmit, Frequency: 2402MHz

Site no. : Audix NO.1 Chamber
Dis. / Ant. : 3m CBL6112D 33821
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2402MHz BLE

Data no. : 2
Ant. pol. : HORIZONTAL
Engineer : Sam

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	179.38	9.14	3.83	15.61	28.58	43.50	14.92	Peak
2	350.10	14.43	5.20	9.10	28.73	46.00	17.27	Peak
3	800.18	20.02	7.16	3.80	30.98	46.00	15.02	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber
Dis. / Ant. : 3m CBL6112D 33821
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2402MHz BLE

Data no. : 1
Ant. pol. : VERTICAL
Engineer : Sam

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	75.59	7.10	2.95	27.77	37.82	40.00	2.18	Peak
2	122.15	12.18	3.39	25.00	40.57	43.50	2.93	Peak
3	513.06	17.16	6.45	7.91	31.52	46.00	14.48	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

BLE, Transmit, Frequency: 2440MHz

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2442MHz BLE

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	175.50	9.28	3.80	15.31	28.39	43.50	15.11	Peak
2	250.19	12.40	4.33	10.84	27.57	46.00	18.43	Peak
3	350.10	14.43	5.20	10.18	29.81	46.00	16.19	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2442MHz BLE

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	37.76	14.45	2.48	16.76	33.69	40.00	6.31	Peak
2	129.91	11.75	3.45	20.36	35.56	43.50	7.94	Peak
3	649.83	18.53	6.61	7.39	32.53	46.00	13.47	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

BLE, Transmit, Frequency: 2480MHz

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2480MHz BLE

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	179.38	9.14	3.83	15.78	28.75	43.50	14.75	Peak
2	355.92	14.55	5.25	9.00	28.80	46.00	17.20	Peak
3	801.15	20.04	7.17	5.61	32.82	46.00	13.18	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2480MHz BLE

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	40.67	12.98	2.52	19.30	34.80	40.00	5.20	Peak
2	131.85	11.66	3.46	17.00	32.12	43.50	11.38	Peak
3	832.19	20.22	7.29	6.90	34.41	46.00	11.59	Peak

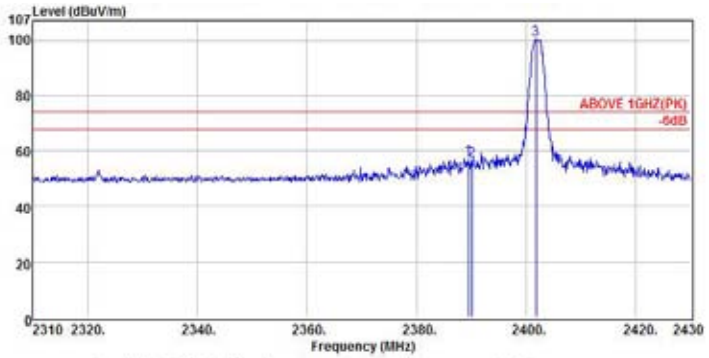
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

4.6.2.2. Restricted Bands Measurement Results

Date of Test： 2014. 09. 29 Temperature： 26℃

EUT： Intelligent Gateway Humidity： 43%

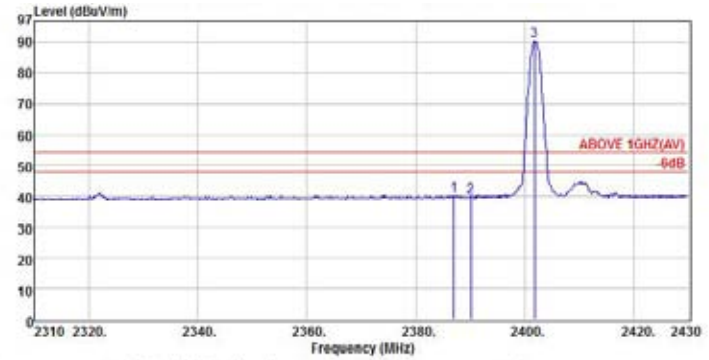
Test Mode： BLE, Transmit, Channel: 0, Frequency: 2402MHz



Site no. : Audix NO.1 Chamber Data no. : 3
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2402MHz BLE

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2389.44	28.20	5.24	23.75	57.19	74.00	16.81	Peak
2	2390.04	28.20	5.24	23.24	56.68	74.00	17.32	Peak
3	2401.80	28.21	5.25	66.93	100.39	74.00	-26.39	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 4
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2402MHz BLE

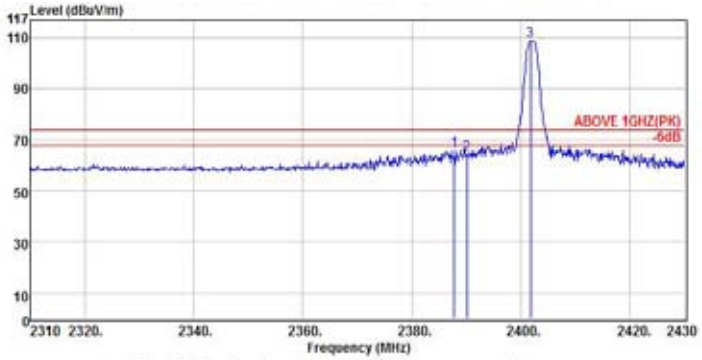
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.32	28.20	5.23	6.70	40.13	54.00	13.87	Average
2	2390.04	28.20	5.24	6.32	39.76	54.00	14.24	Average
3	2401.80	28.21	5.25	57.22	90.68	54.00	-36.68	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test： 2014. 09. 29 Temperature： 26℃

EUT： Intelligent Gateway Humidity： 43%

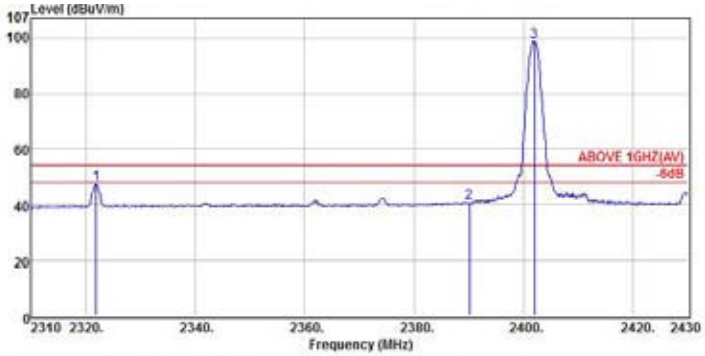
Test Mode： BLE, Transmit, Channel: 0, Frequency: 2402MHz



Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2402MHz BLE

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2387.76	28.20	5.24	32.40	65.84	74.00	8.16	Peak
2	2390.04	28.20	5.24	30.77	64.21	74.00	9.79	Peak
3	2401.80	28.21	5.25	75.40	108.86	74.00	-34.86	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2402MHz BLE

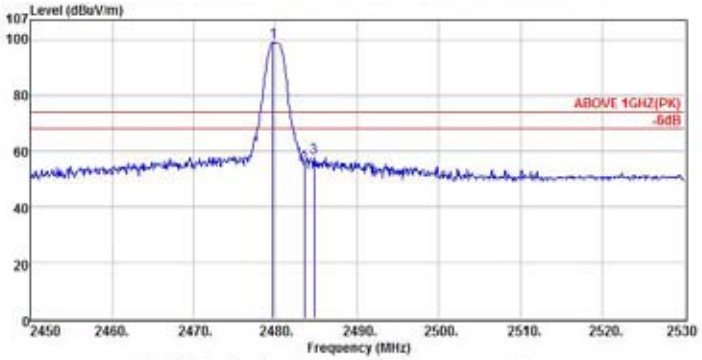
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2321.88	28.13	5.14	13.96	47.23	54.00	6.77	Average
2	2390.04	28.20	5.24	7.16	40.60	54.00	13.40	Average
3	2401.92	28.21	5.26	65.35	98.82	54.00	-44.82	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test： 2014. 09. 29 Temperature： 26℃

EUT： Intelligent Gateway Humidity： 43%

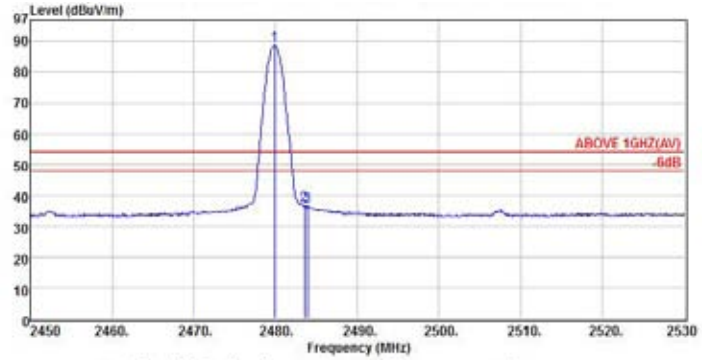
Test Mode： BLE, Transmit, Channel: 39, Frequency: 2480MHz



Site no. : Audix NO.1 Chamber Data no. : 7
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2480MHz BLE

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2479.68	28.28	5.36	65.23	98.87	74.00	-24.87	Peak
2	2483.52	28.29	5.37	21.42	55.08	74.00	18.92	Peak
3	2484.72	28.29	5.37	24.07	57.73	74.00	16.27	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GWS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2480MHz BLE

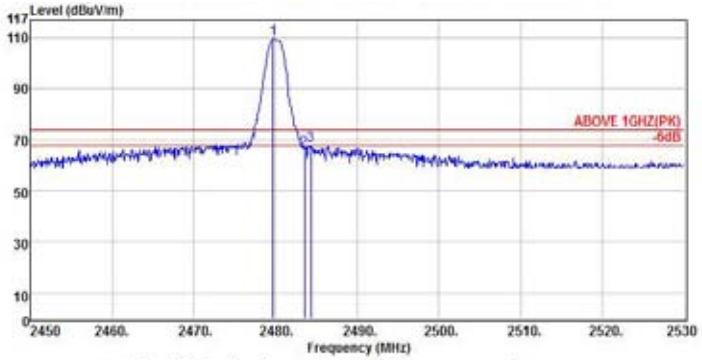
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2479.92	28.28	5.36	55.07	88.71	54.00	-34.71	Average
2	2483.52	28.29	5.37	3.00	36.66	54.00	17.34	Average
3	2483.92	28.29	5.37	2.84	36.50	54.00	17.50	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test： 2014. 09. 29 Temperature： 26℃

EUT： Intelligent Gateway Humidity： 43%

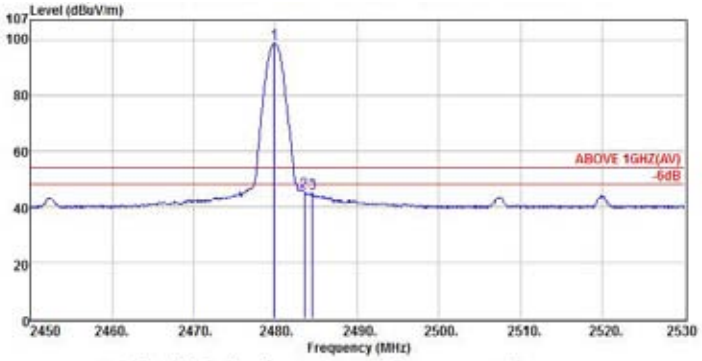
Test Mode： BLE, Transmit, Channel: 39, Frequency: 2480MHz



Site no. : Audix NO.1 Chamber Data no. : 5
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GMS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2480MHz BLE

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2479.68	28.28	5.36	75.88	109.52	74.00	-35.52	Peak
2	2483.52	28.29	5.37	32.33	65.99	74.00	8.01	Peak
3	2484.32	28.29	5.37	34.24	67.90	74.00	6.10	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 26*C / 43% N9010A Engineer : Sam
EUT : GMS-QX
Power Rating : AC 120V/60Hz
Test Mode : Tx2480MHz BLE

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2479.84	28.28	5.36	65.07	98.71	54.00	-44.71	Average
2	2483.52	28.29	5.37	11.63	45.29	54.00	8.71	Average
3	2484.56	28.29	5.37	11.36	45.02	54.00	8.98	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

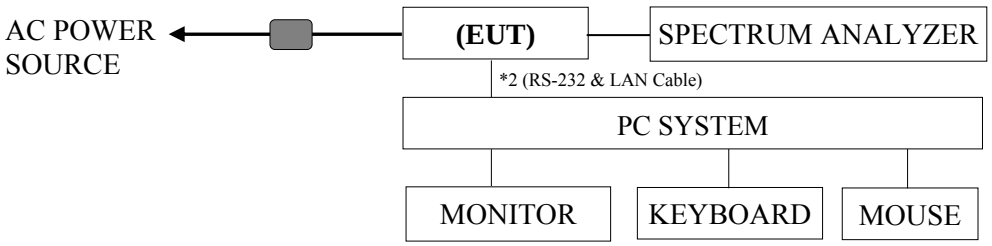
5. 6dB BANDWIDTH MEASUREMENT

5.1. Test Equipment

The following test equipment was used during the Emission Bandwidth measurement:

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 14	1 Year

5.2. Block Diagram of Test Setup



EUT: INTELLIGENT GATEWAY

5.3. Specification Limits [§15.247(a)(2)]

The minimum 6dB bandwidth shall be at least 500kHz.

5.4. Operating Condition of EUT

The test program "Teraterm" for WLAN and BLE was used to enable the EUT to transmit data at different channel frequency individually.

5.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 1.5% EBW, VBW≥3xRBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.
The measurement guideline was according to KDB 558074 D01 DTS Meas Guidance is v03r02.

5.6. Test Results

PASSED. All the test results are attached in next pages.

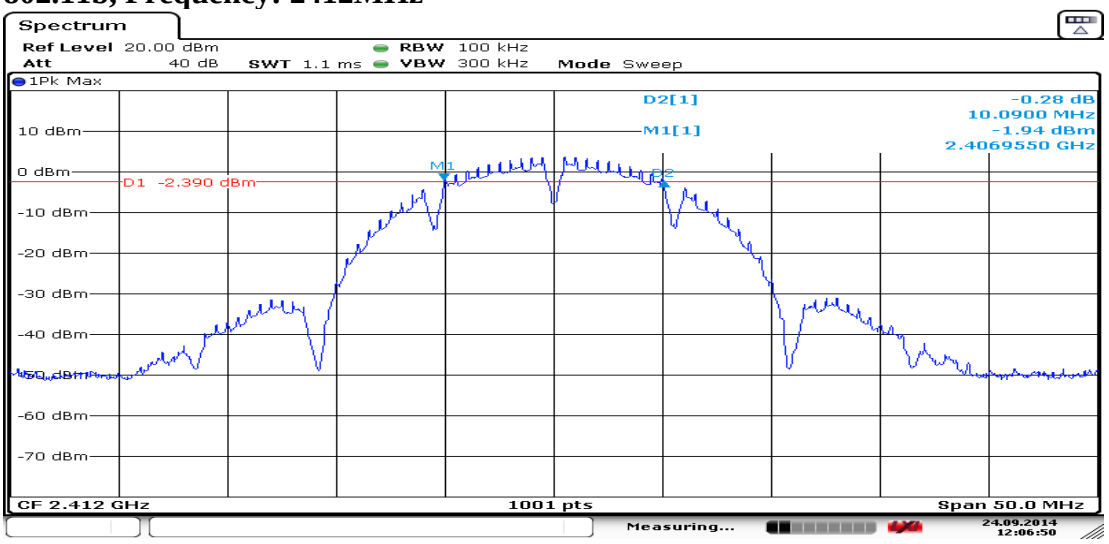
5.6.1. WLAN Function

Test Date : 2014. 09. 24 Temperature : 26℃ Humidity : 50%

No	Test Mode	Channel	Frequency	**6dB Bandwidth(MHz)**
1	802.11b	CH 1	2412MHz	**10.0900**
2		CH 6	2437MHz	**10.1100**
3		CH 11	2462MHz	**10.0900**
4	802.11g	CH 1	2412MHz	**16.6330**
5		CH 6	2437MHz	**16.5830**
6		CH 11	2462MHz	**16.5830**
7	802.11n-HT20	CH 1	2412MHz	**16.6330**
8		CH 6	2437MHz	**16.5830**
9		CH 11	2462MHz	**16.5830**
10	802.11n-HT40	CH 3	2422MHz	**36.5630**
11		CH 6	2437MHz	**36.5630**
12		CH 9	2452MHz	**36.5630**

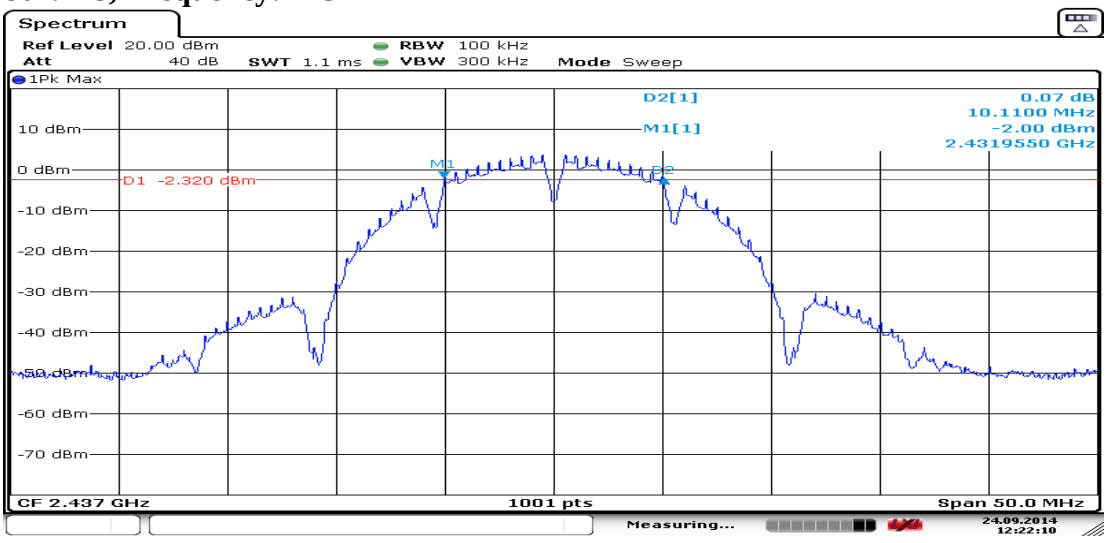
[Limit: least 500kHz]

802.11b, Frequency: 2412MHz



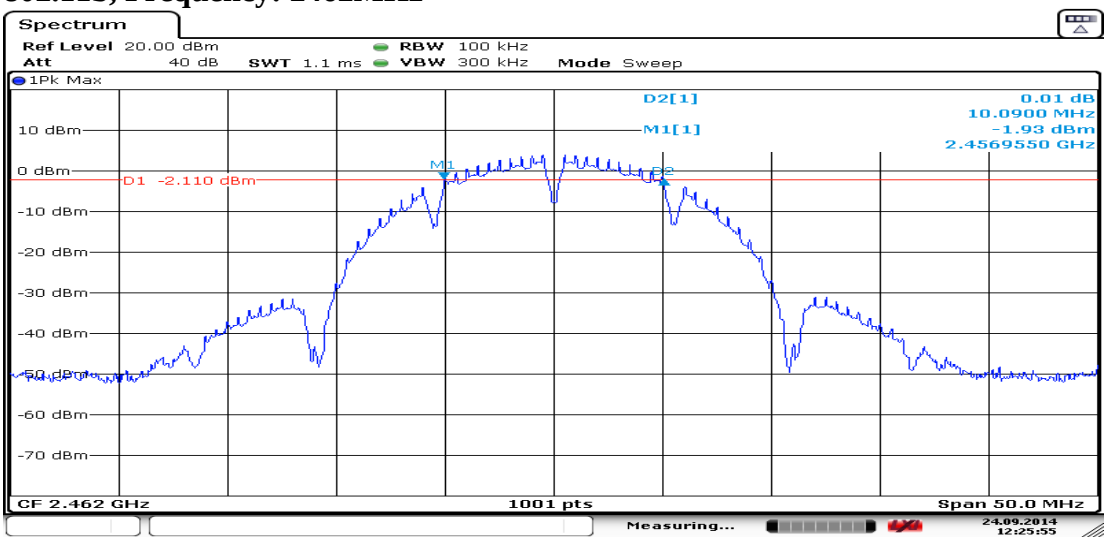
Date: 24.SEP.2014 12:06:50

802.11b, Frequency: 2437MHz



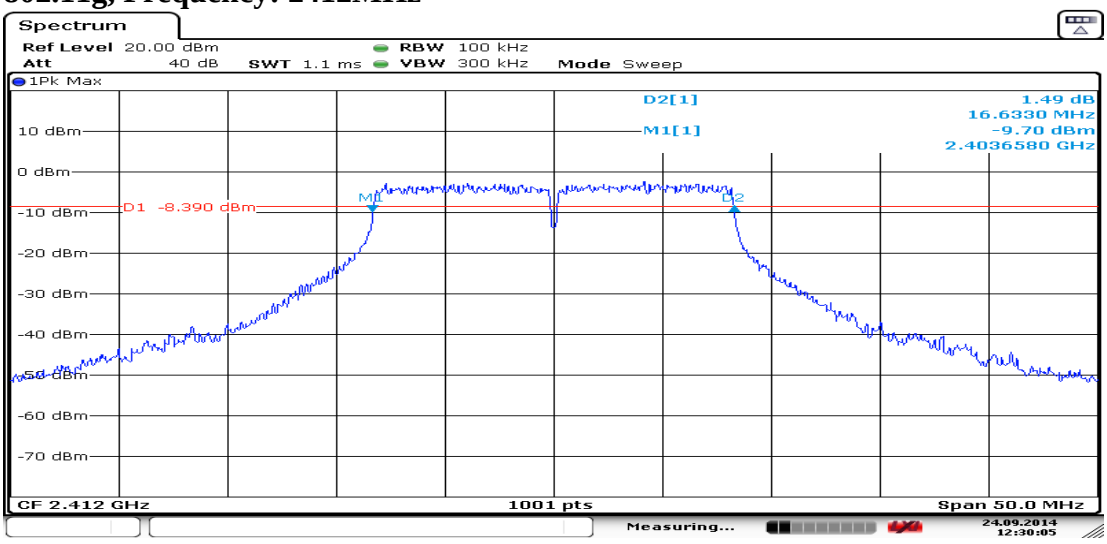
Date: 24.SEP.2014 12:22:10

802.11b, Frequency: 2462MHz



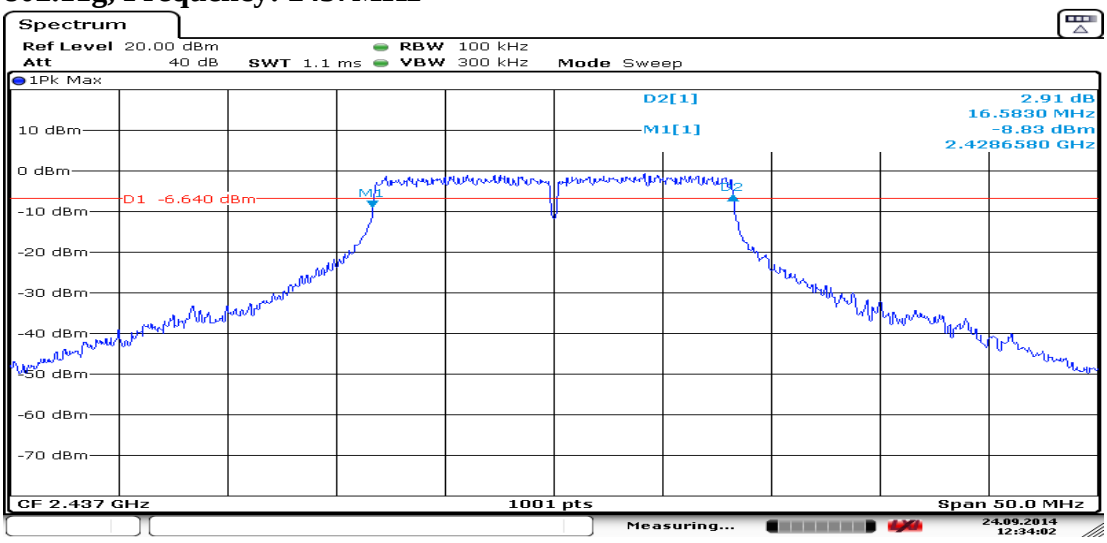
Date: 24.SEP.2014 12:25:55

802.11g, Frequency: 2412MHz



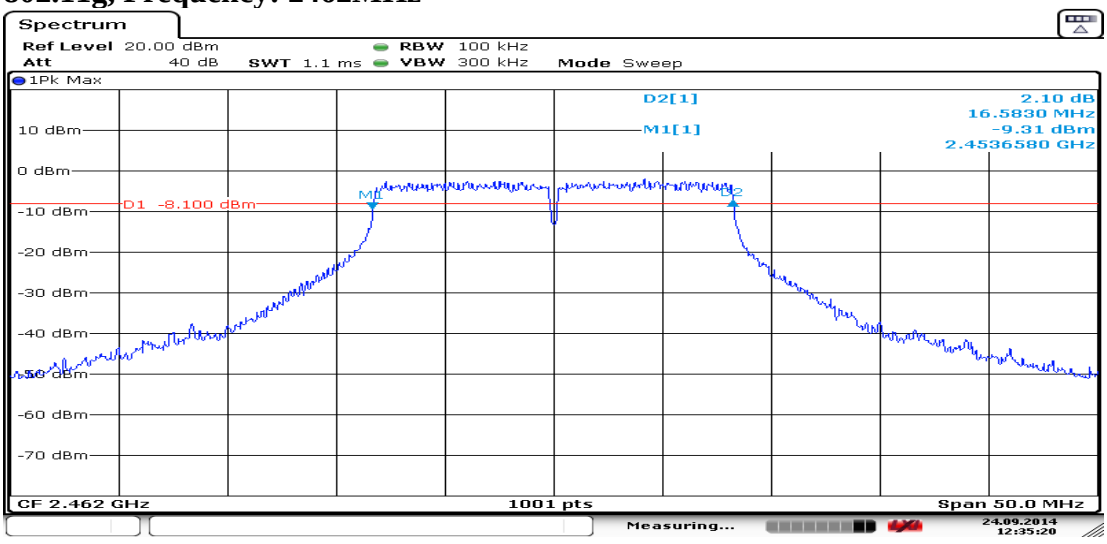
Date: 24.SEP.2014 12:30:05

802.11g, Frequency: 2437MHz



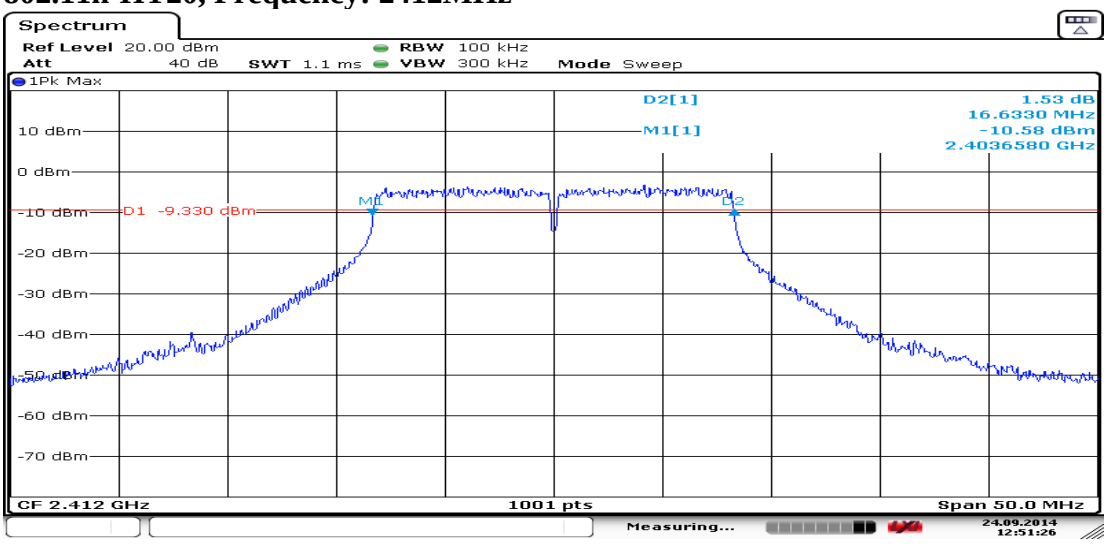
Date: 24.SEP.2014 12:34:02

802.11g, Frequency: 2462MHz



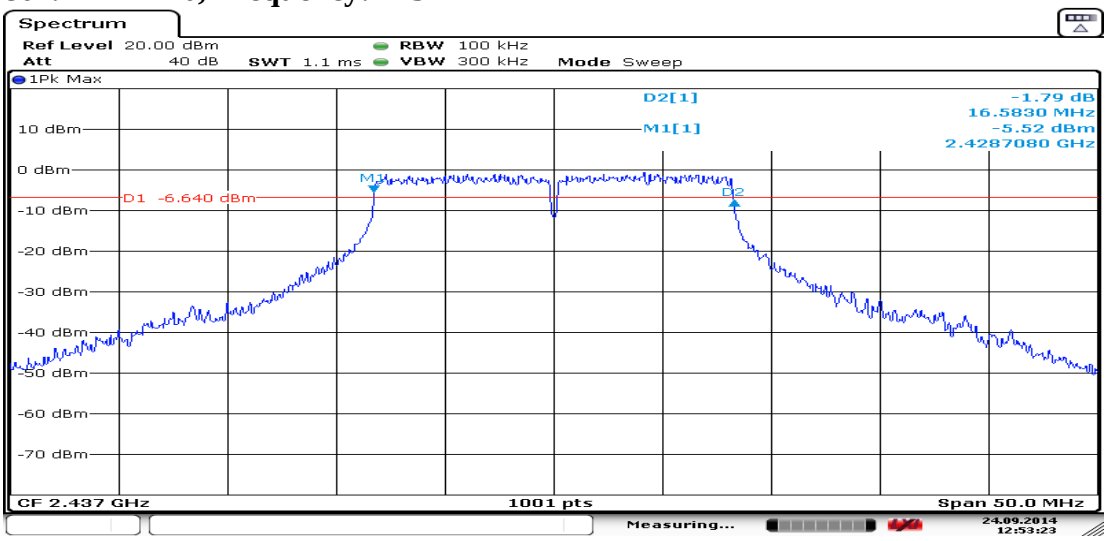
Date: 24.SEP.2014 12:35:20

802.11n-HT20, Frequency: 2412MHz



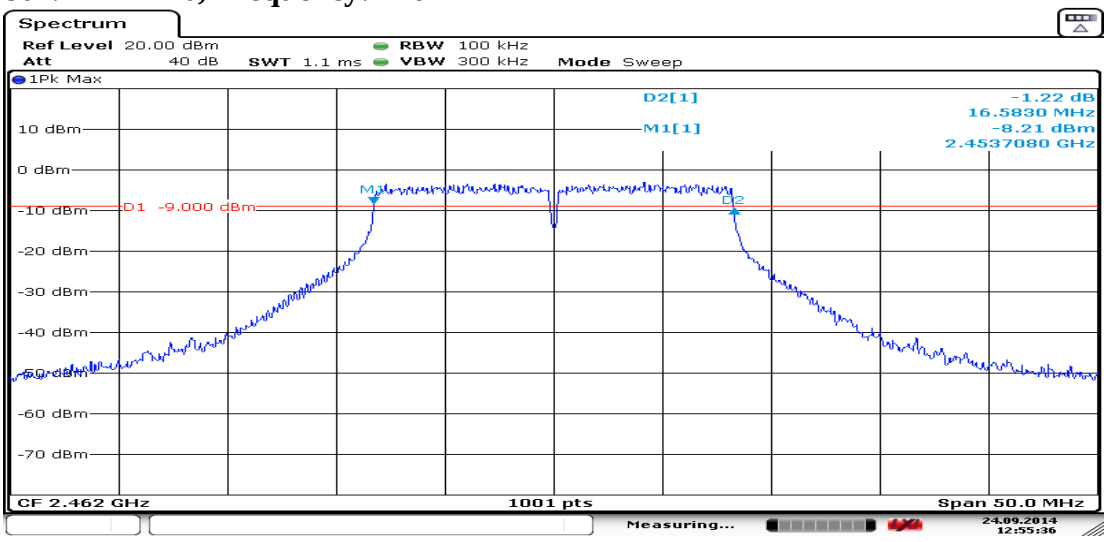
Date: 24.SEP.2014 12:51:26

802.11n-HT20, Frequency: 2437MHz



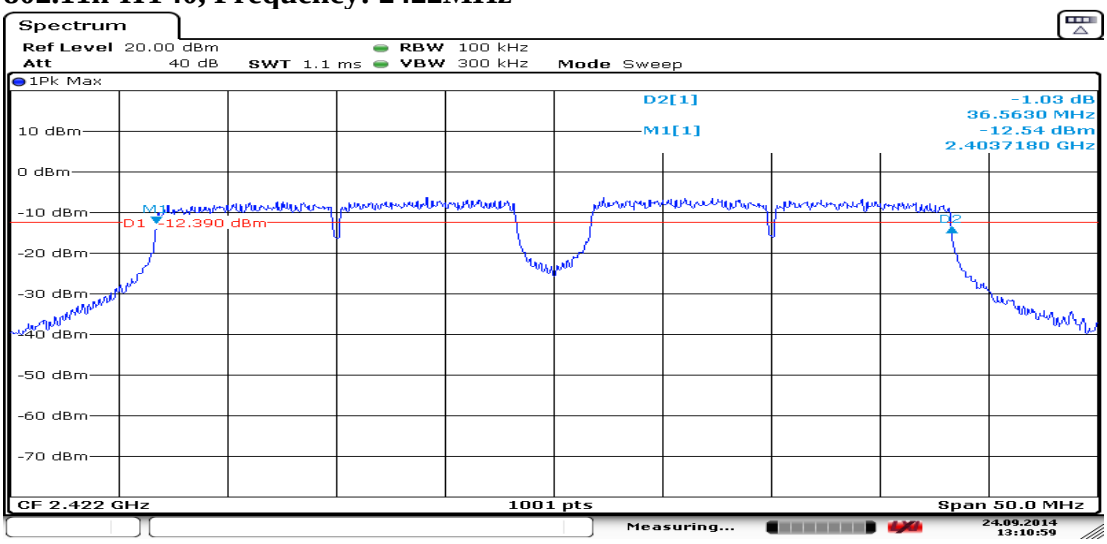
Date: 24.SEP.2014 12:53:23

802.11n-HT20, Frequency: 2462MHz



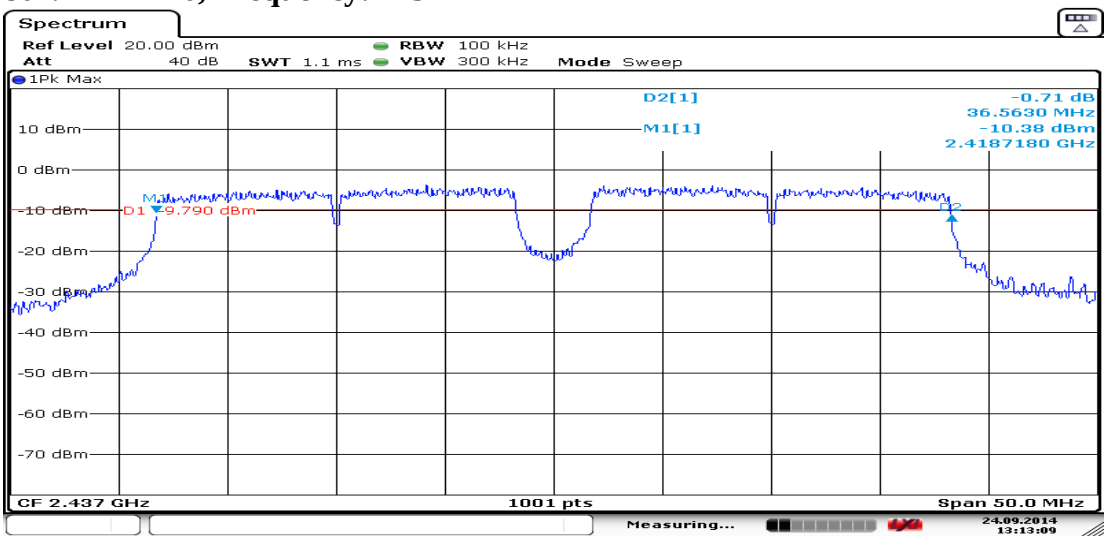
Date: 24.SEP.2014 12:55:36

802.11n-HT40, Frequency: 2422MHz



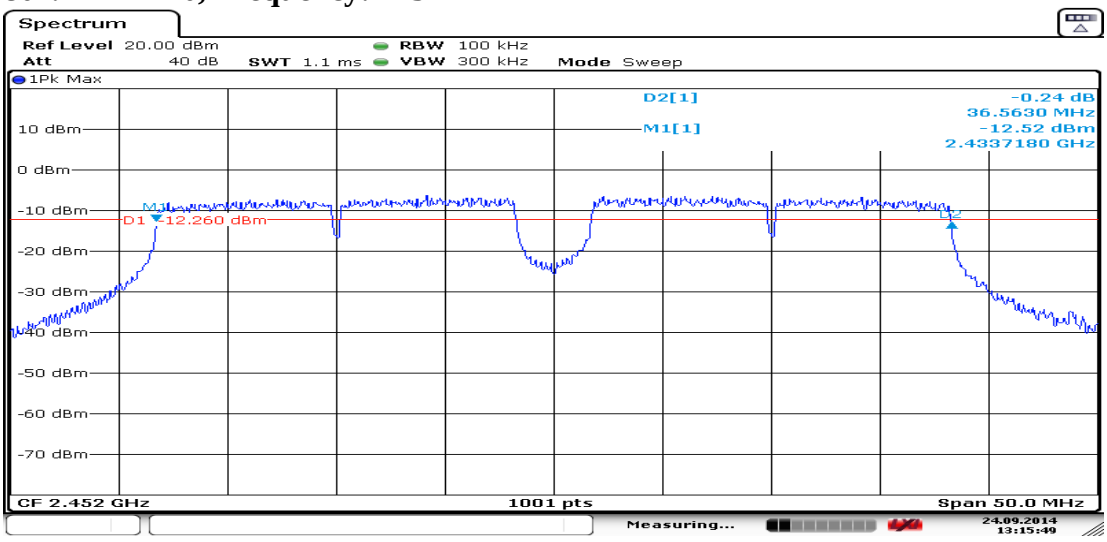
Date: 24.SEP.2014 13:10:59

802.11n-HT40, Frequency: 2437MHz



Date: 24.SEP.2014 13:13:09

802.11n-HT40, Frequency: 2452MHz



Date: 24.SEP.2014 13:15:49

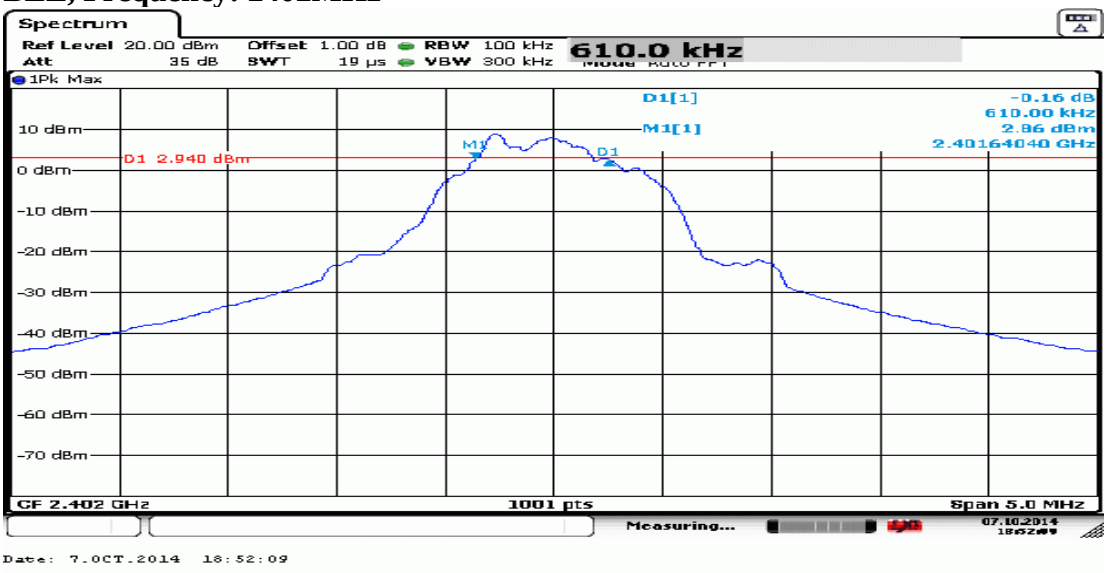
5.6.2. BLE Function

Test Date : 2014. 10. 07 Temperature : 24℃ Humidity : 58%

No	Test Mode	Channel	Frequency	**6dB Bandwidth(kHz)**
1	BLE	CH 0	2402MHz	610
2		CH 19	2440MHz	610
3		CH 39	2480MHz	610

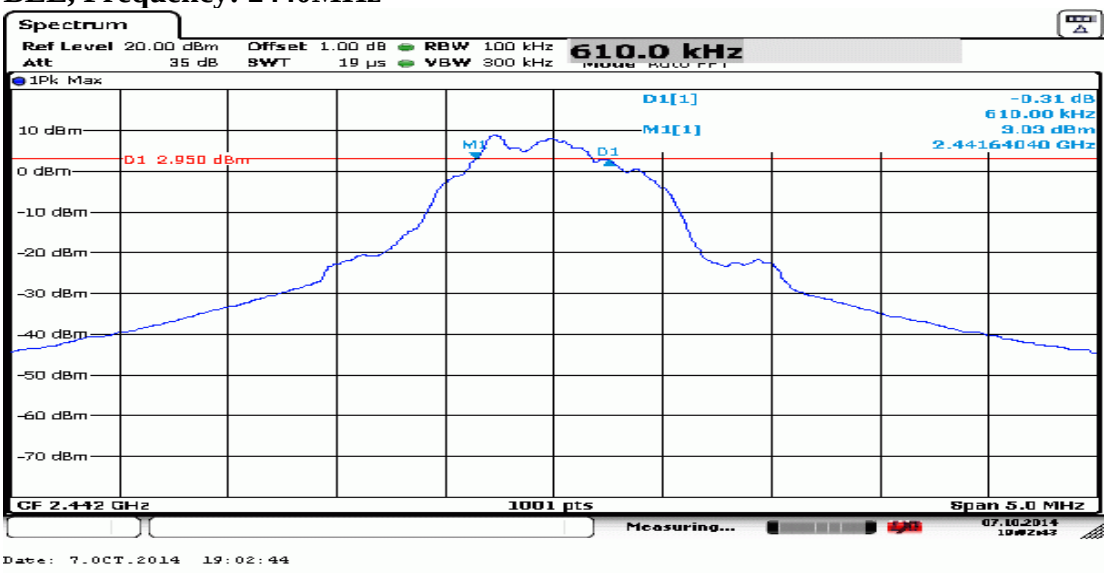
[Limit: least 500kHz]

BLE, Frequency: 2402MHz



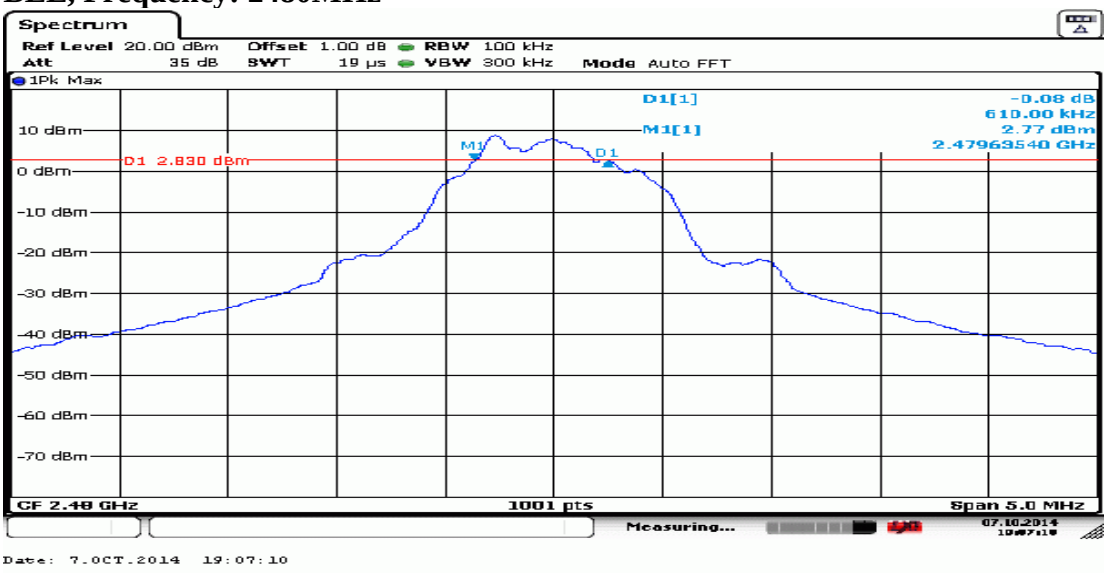
Date: 7.OCT.2014 18:52:09

BLE, Frequency: 2440MHz



Date: 7.OCT.2014 19:02:44

BLE, Frequency: 2480MHz



Date: 7.OCT.2014 19:07:10

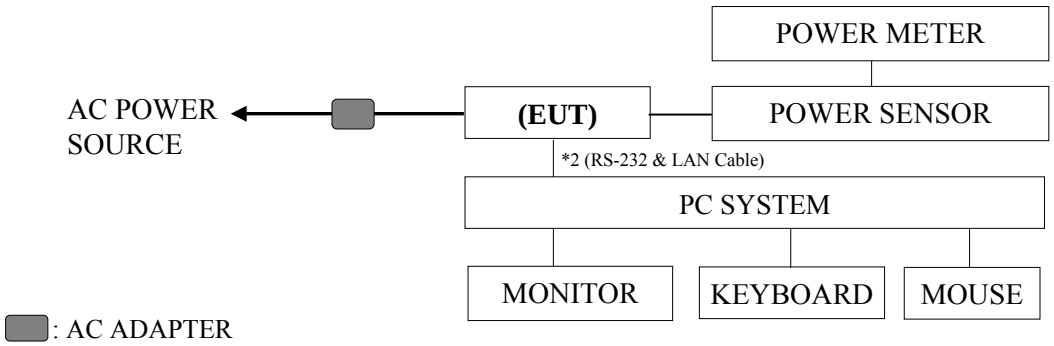
6. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

6.1. Test Equipments

The following Test equipments were used during the maximum peak output power measurement:

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Power Meter	Anritsu	ML2495A	1145008	2013. 10. 23	1 Year
2.	Power Sensor	Anritsu	MA2411B	1126096	2013. 10. 23	1 Year

6.2. Block Diagram of Test Setup



EUT: INTELLIGENT GATEWAY

6.3. Specification Limits (§15.247(b)-(3))

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5MHz is: 1Watt. (30dBm)

6.4. Operating Condition of EUT

The test program "Teraterm" for WLAN and BLE was used to enable the EUT to transmit data at different channel frequency individually.

6.5. Test Procedure

The transmitter output was connected to the power sensor and record the reading of power meter.
The measurement guideline was according to KDB 558074 D01 DTS Meas Guidance is v03r02.

6.6. Test Results

PASSED. All the test results are listed below.

6.6.1. WLAN Function

Test Date: 2014. 09. 24 Temperature: 26℃ Humidity: 50%
Test Date: 2014. 11. 25 Temperature: 25℃ Humidity: 53%

No	Test Mode	Channel	Frequency	Peak Output Power (dBm)	Power Setting
1	802.11b	CH 1	2412MHz	18.31	47
2		CH 6	2437MHz	18.19	46
3		CH 11	2462MHz	18.50	46
4	802.11g	CH 1	2412MHz	22.57	54
5		CH 6	2437MHz	23.65	57
6		CH 11	2462MHz	22.91	53
7	802.11n-HT20	CH 1	2412MHz	21.56	52
8		CH 6	2437MHz	23.33	57
9		CH 11	2462MHz	21.90	50
10	802.11n-HT40	CH 3	2422MHz	21.72	53
11		CH 6	2437MHz	23.33	58
12		CH 9	2452MHz	21.89	52
13	802.11n-HT40	CH 4	2427MHz	23.22	58
14		CH 8	2447MHz	22.84	56

[Limit: 1Watt. (30dBm)]

6.6.2. BLE Function

Test Date : 2014. 10. 07 Temperature : 24℃ Humidity : 58%

No	Test Mode	Channel	Frequency	Peak Output Power (dBm)	Power Setting
1.	BLE	CH 0	2402MHz	6.70	47
2.		CH 19	2440MHz	6.85	46
3.		CH 39	2480MHz	6.66	46

[Limit: 1Watt. (30dBm)]

7. EMISSION LIMITATIONS MEASUREMENT

7.1. Test Equipment

The following test equipment was used during the emission limitations test：

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 14	1 Year

7.2. Block Diagram of Test Setup

The same as section.5.2

7.3. Specification Limits [§15.247(c)]

7.3.1. In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (See Section 15.205(c)).(※This test result attaching to §4.6.1.2 and §4.6.2.2)

7.3.2. The reference level for determining limit of emission limitations is according to the value measured indicated in plots at section 9.6.

7.4. Operating Condition of EUT

Test program RF Test is used for enabling the EUT transmitting continuing.

7.5. Test Procedure

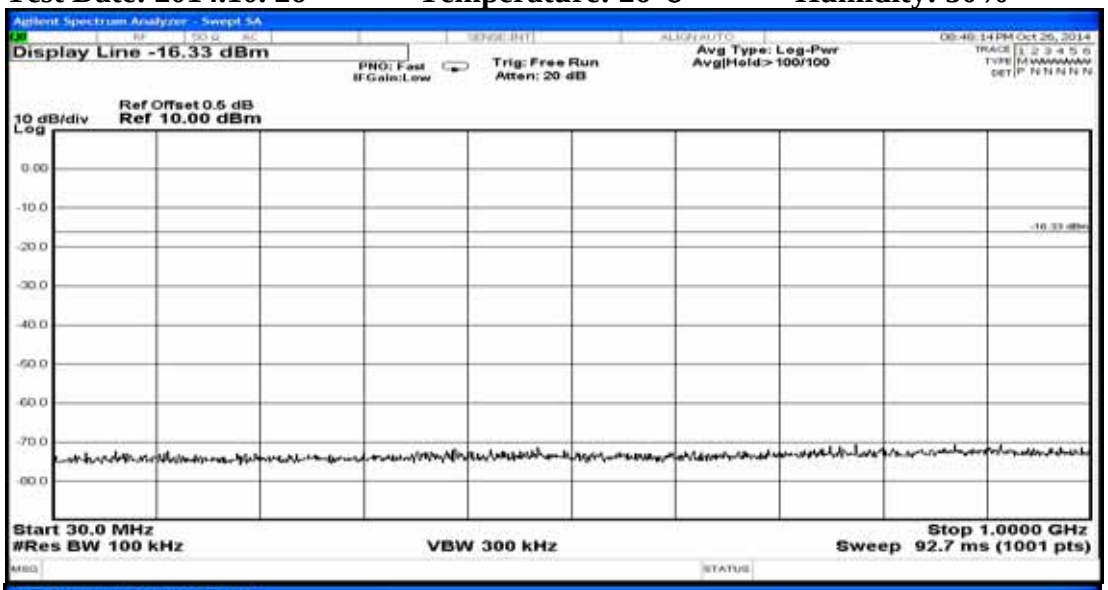
The RF output of EUT was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 100kHz RBW and 300kHz VBW.
The measurement guideline was according to KDB 558074 D01 DTS Meas Guidance is v03r02.

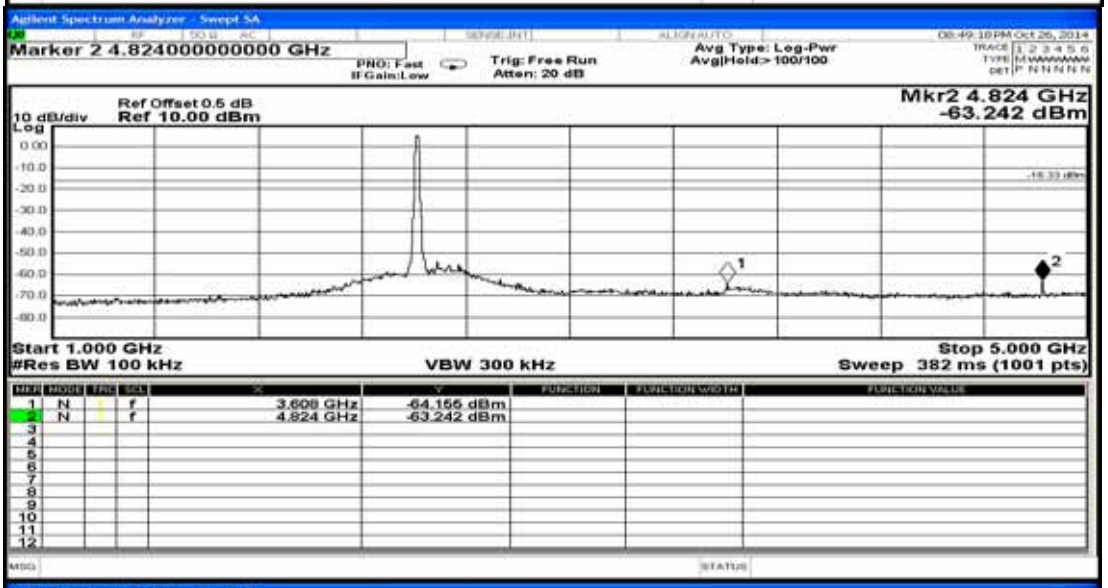
7.6. Test Results

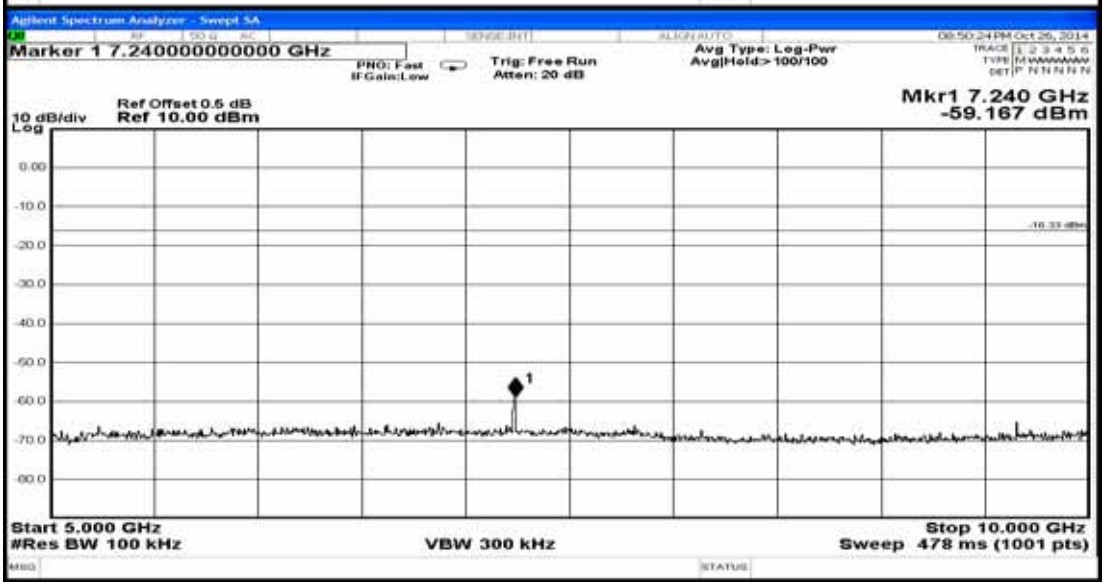
PASSED. The testing data was attached in the next pages.

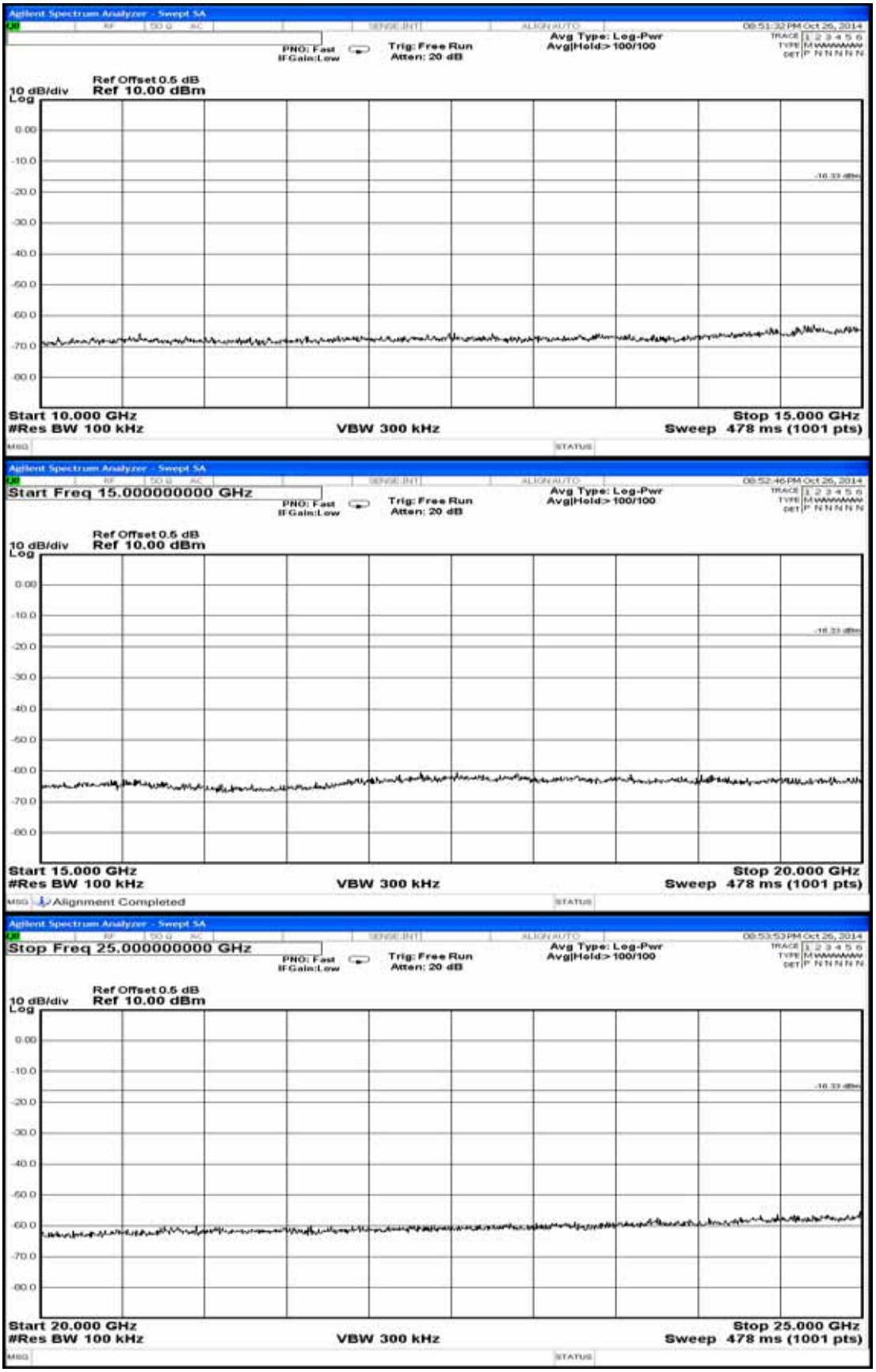
7.6.1. WLAN Function

802.11b, Frequency: 2412MHz
Test Date: 2014.10. 26 Temperature: 26℃ Humidity: 50%

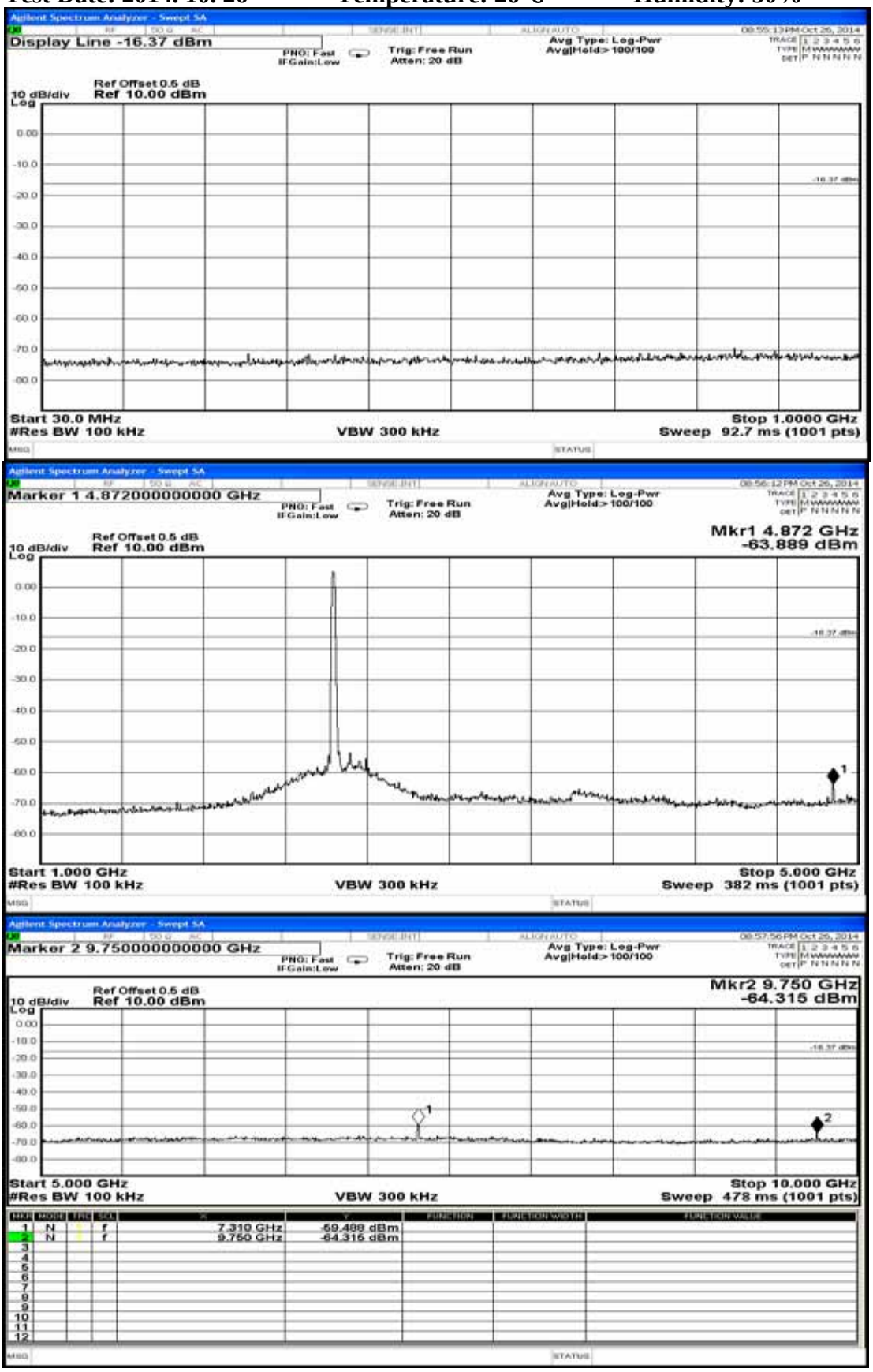


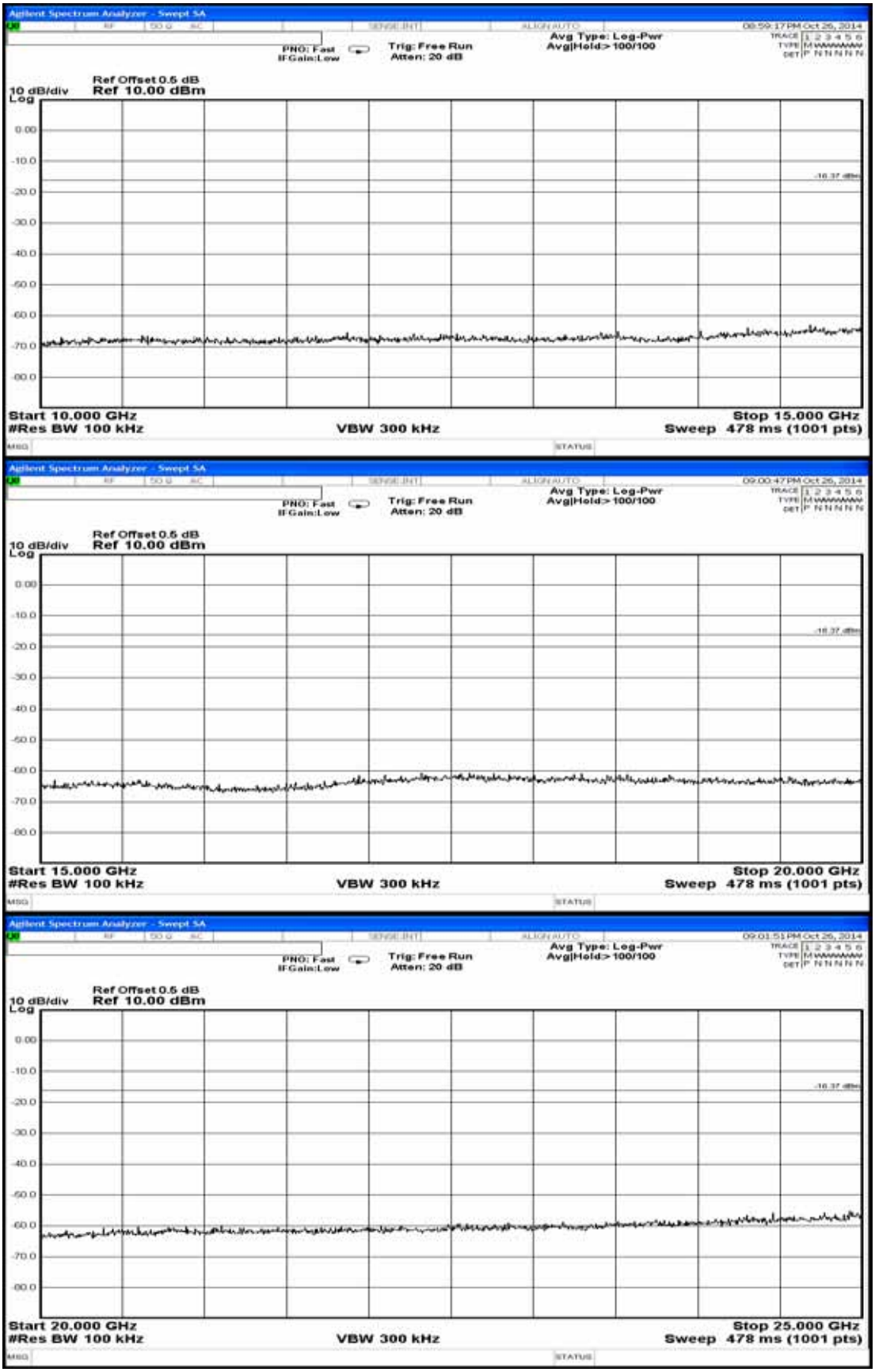




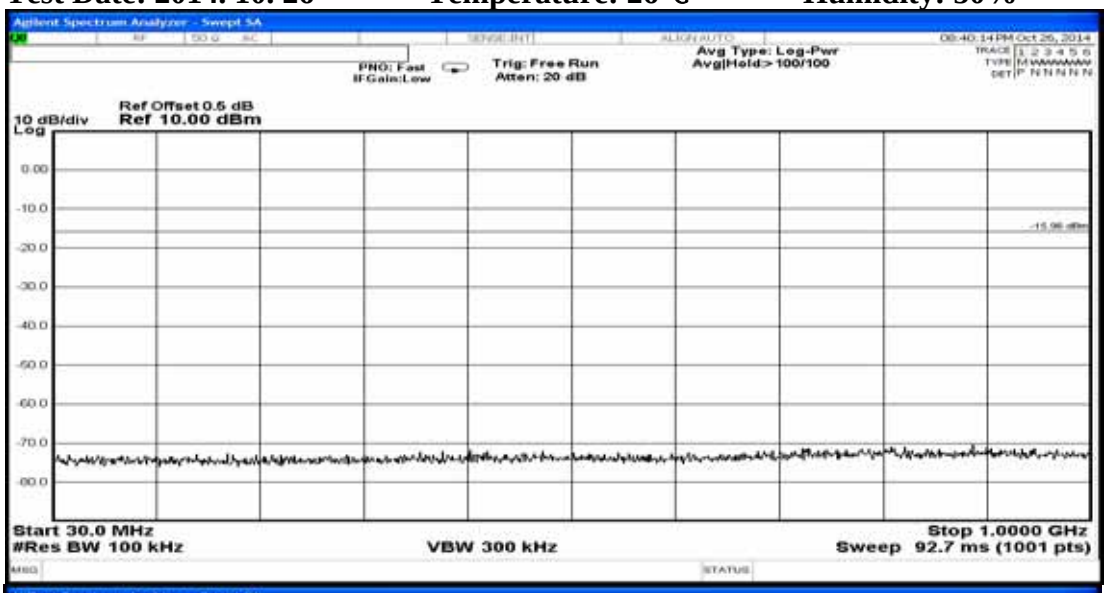

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Leg-Pwr
Avg|Hold:>100/100
08:51:32 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Start Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Leg-Pwr
Avg|Hold:>100/100
08:52:46 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Alignment Completed
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Leg-Pwr
Avg|Hold:>100/100
08:53:53 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

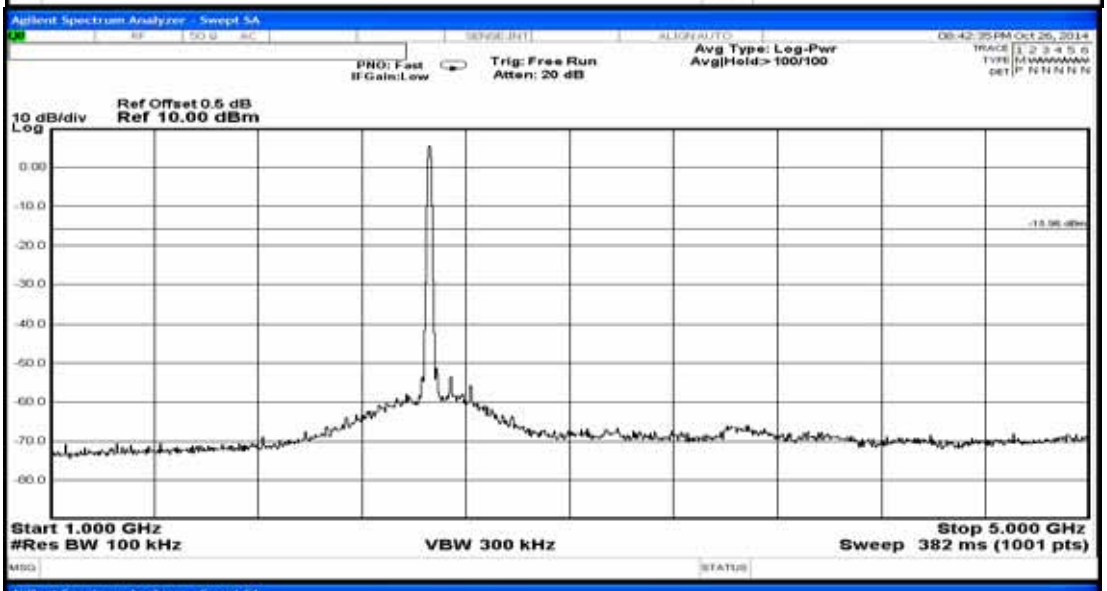
802.11b, Frequency: 2437MHz
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity: 50%

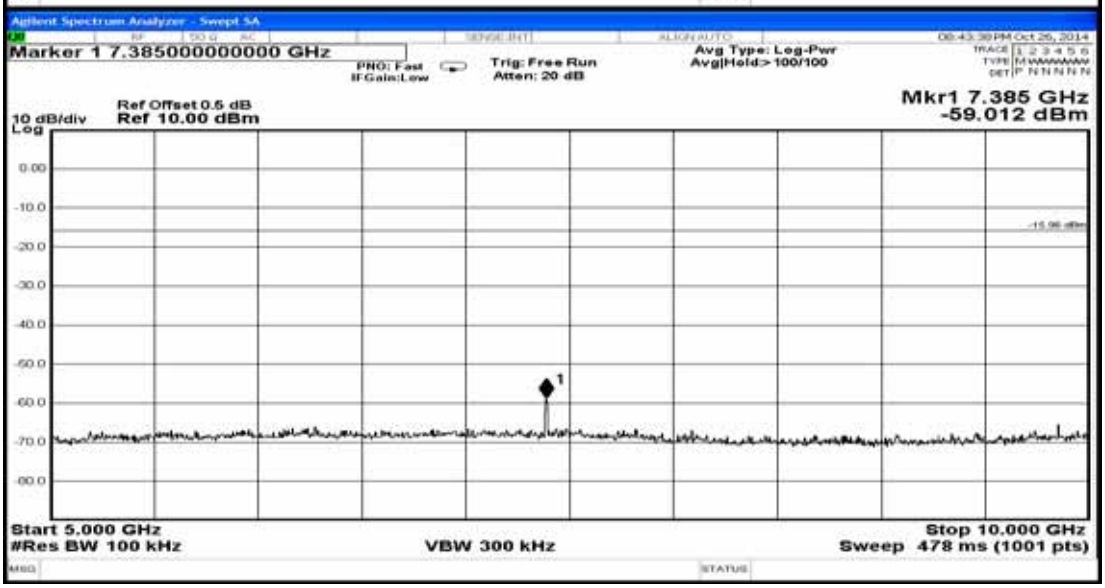


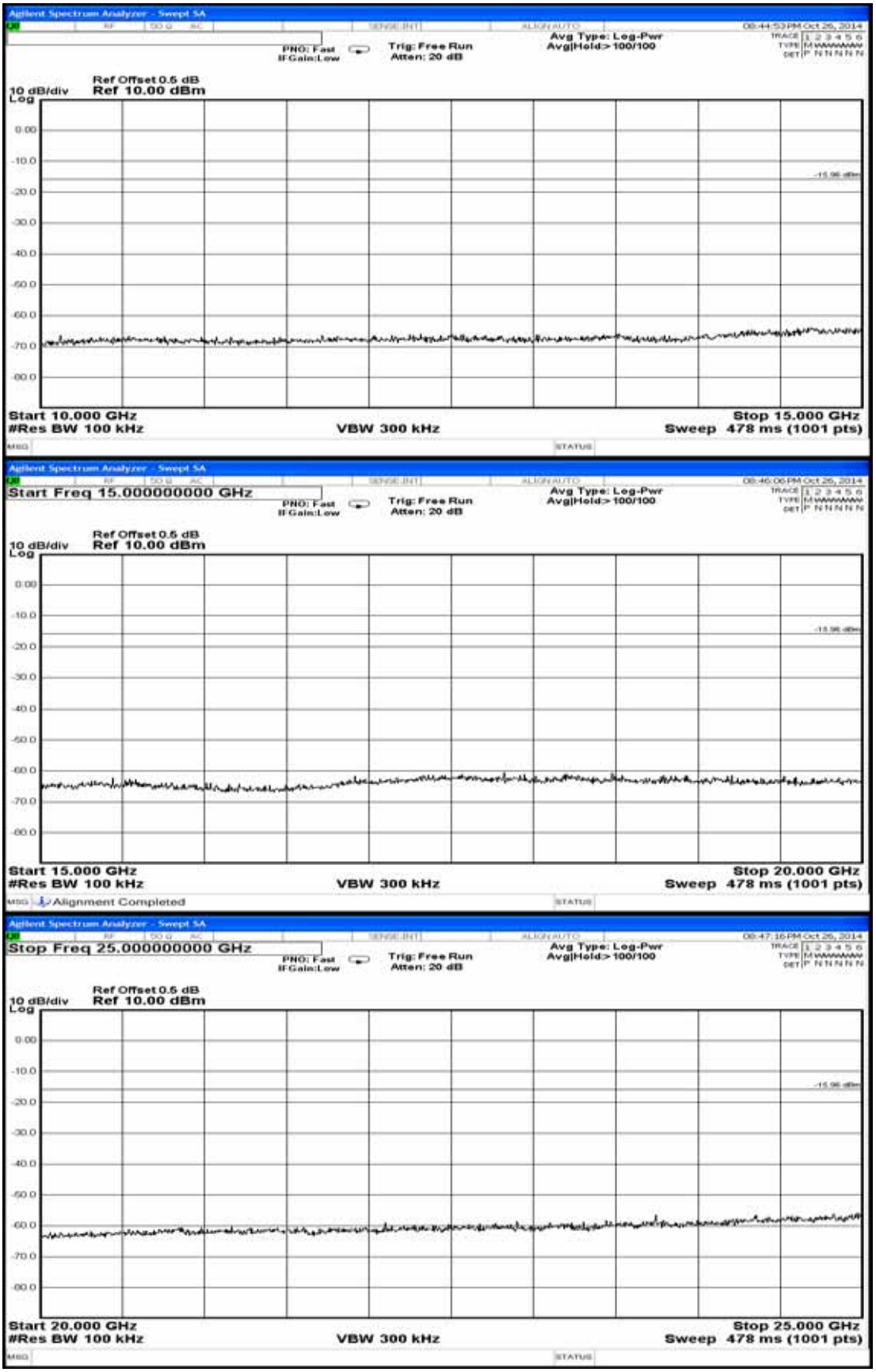

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:59:17 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-16.37 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:00:47 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-16.37 dBm
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:01:51 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-16.37 dBm
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

802.11b, Frequency: 2462MHz
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity: 50%

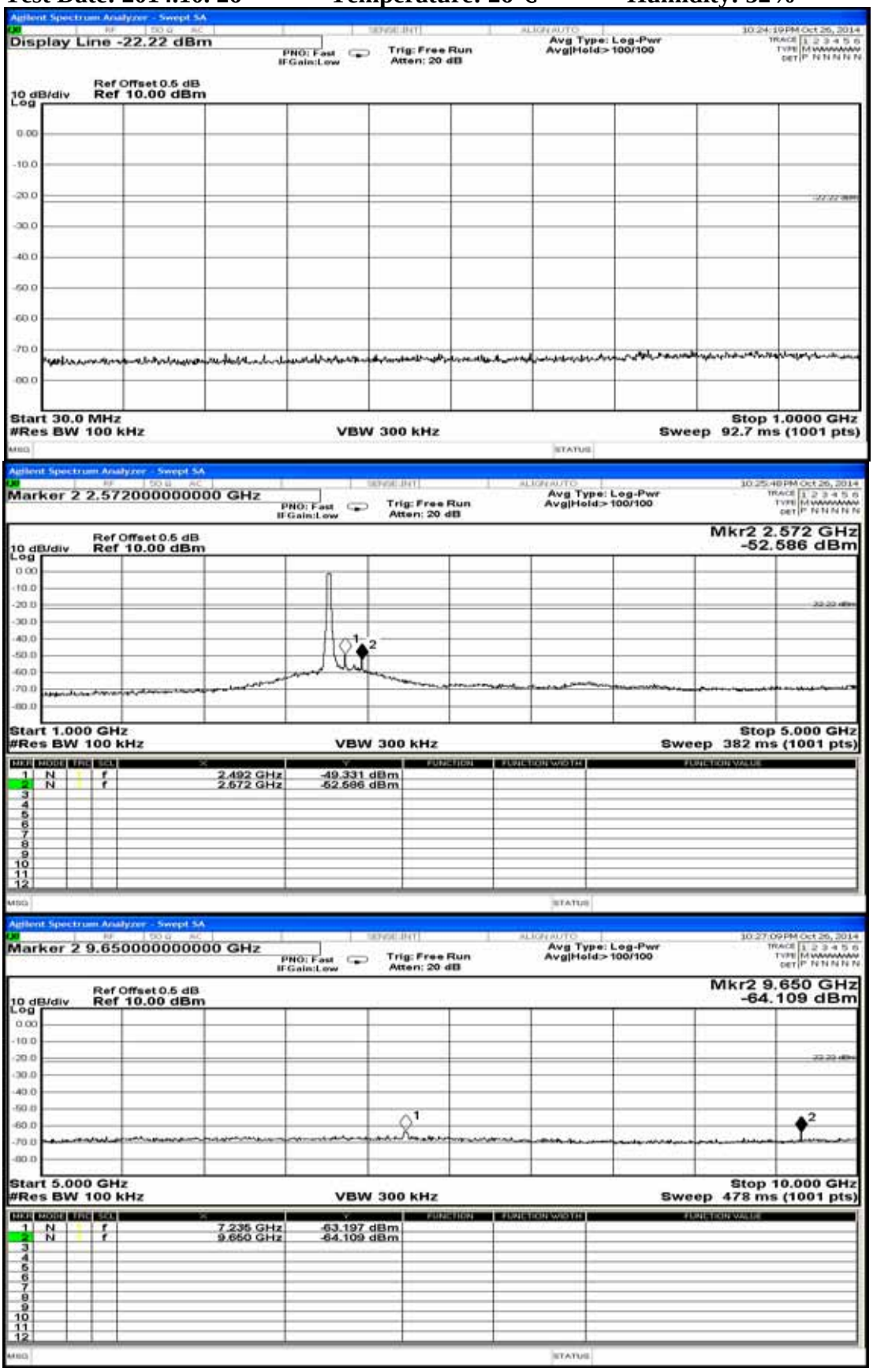


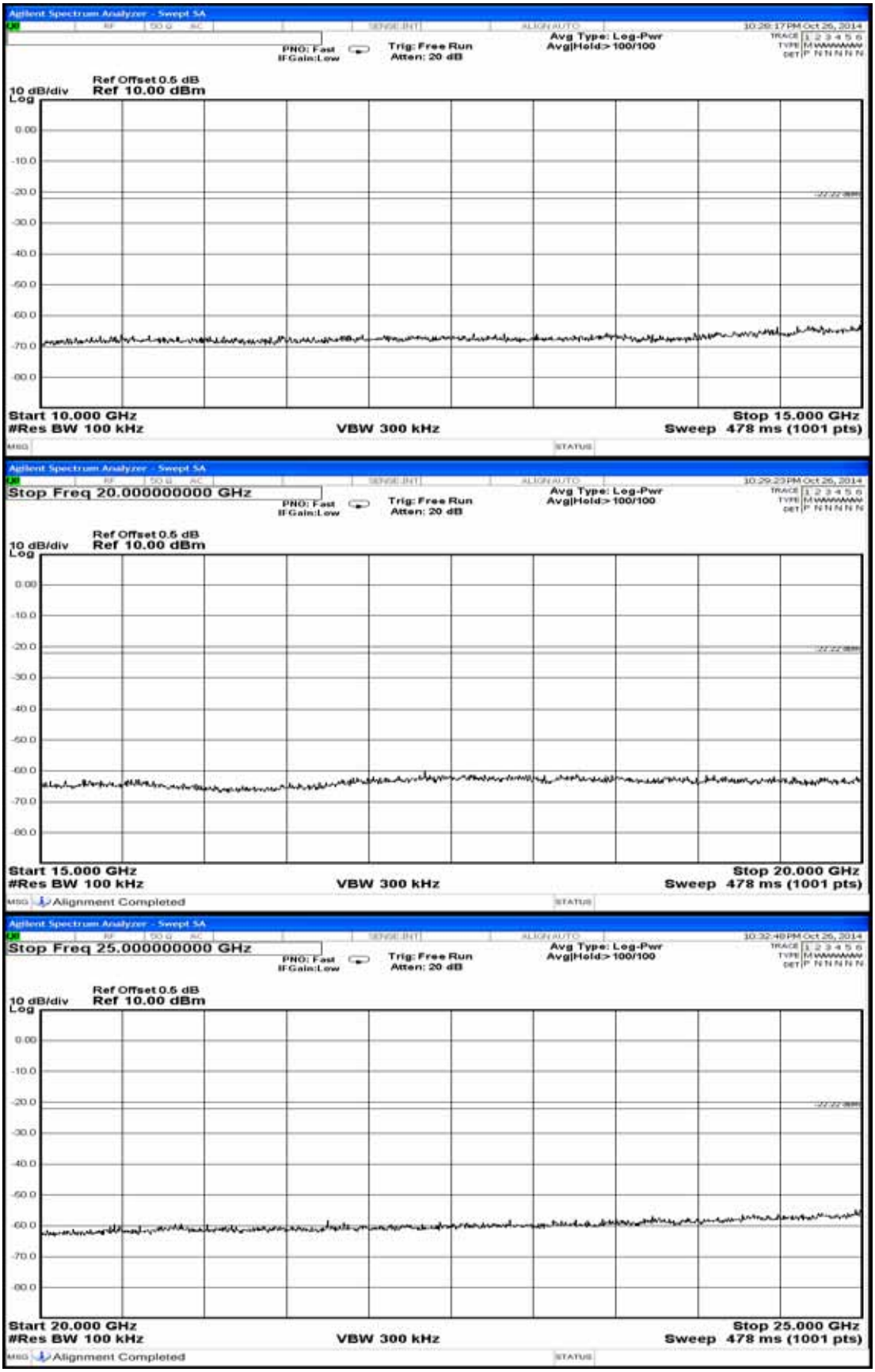




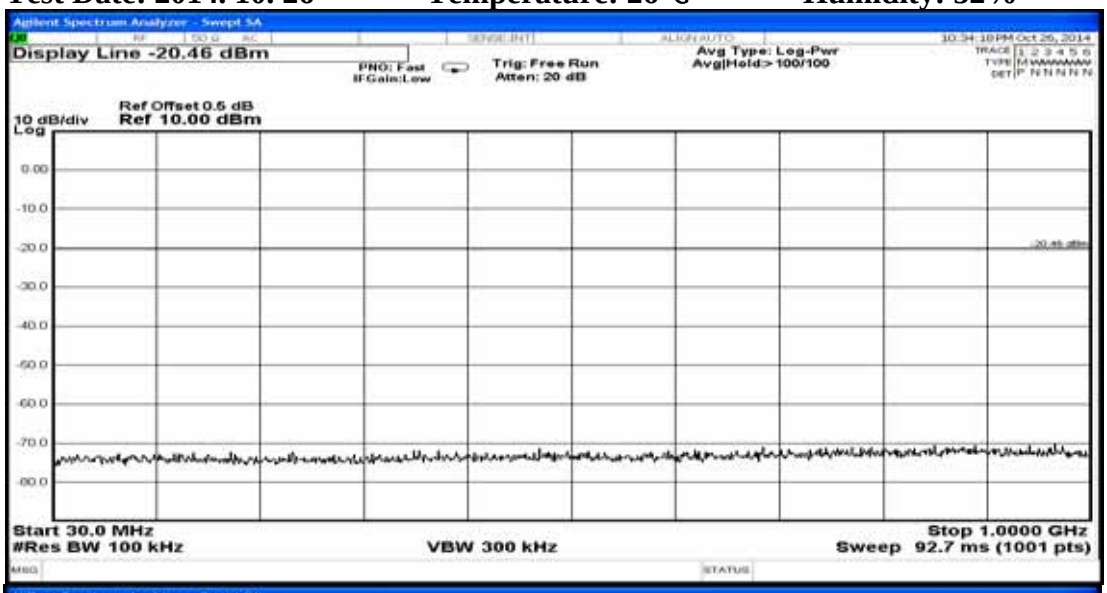

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Leg-Pwr
Avg|Hold:>100/100
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Start Freq 15.000000000 GHz
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Alignment Completed
Stop Freq 25.000000000 GHz
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

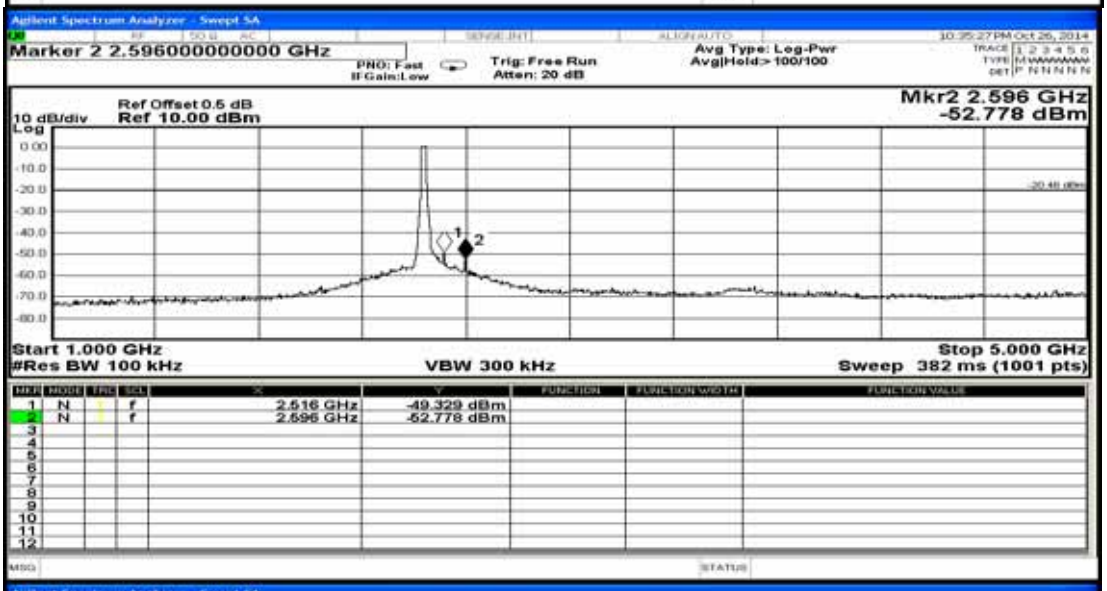
802.11g, Frequency: 2412MHz
Test Date: 2014.10. 26 Temperature: 26℃ Humidity: 52%

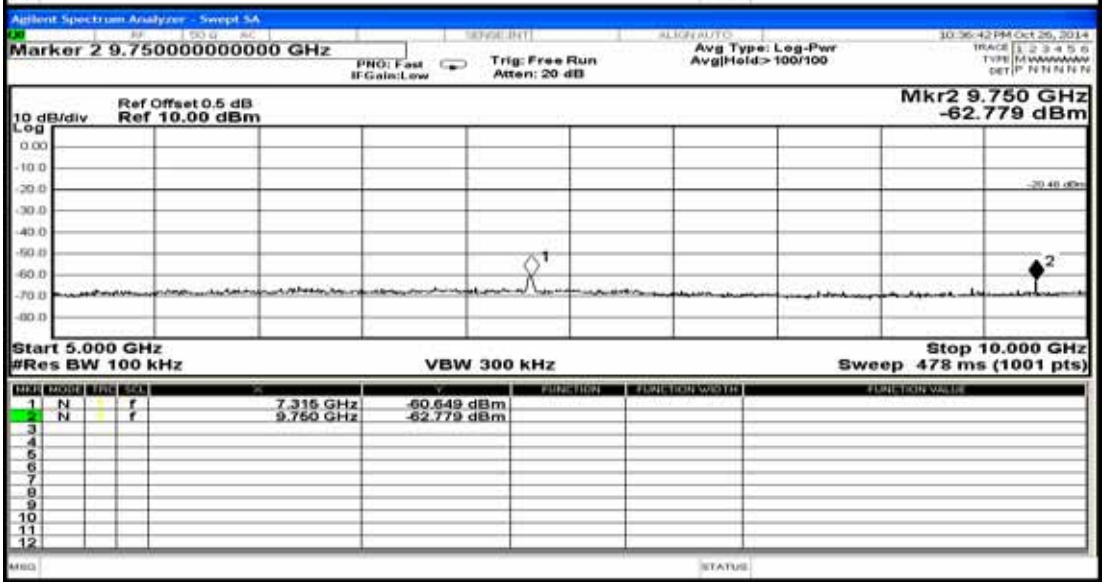


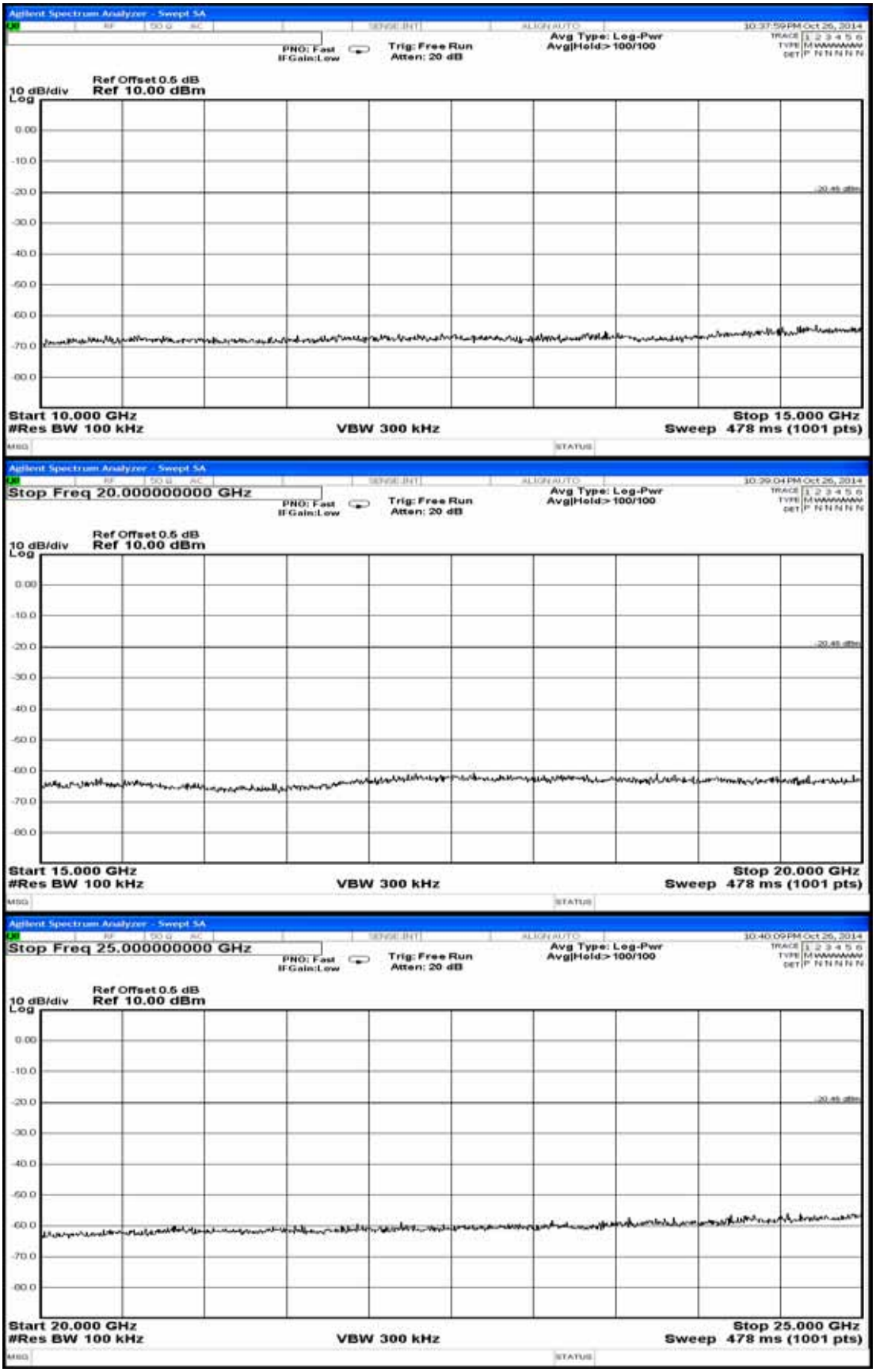

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:28:17 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 20.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:29:23 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Alignment Completed
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:32:40 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)
Alignment Completed

802.11g, Frequency: 2437MHz
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity: 52%

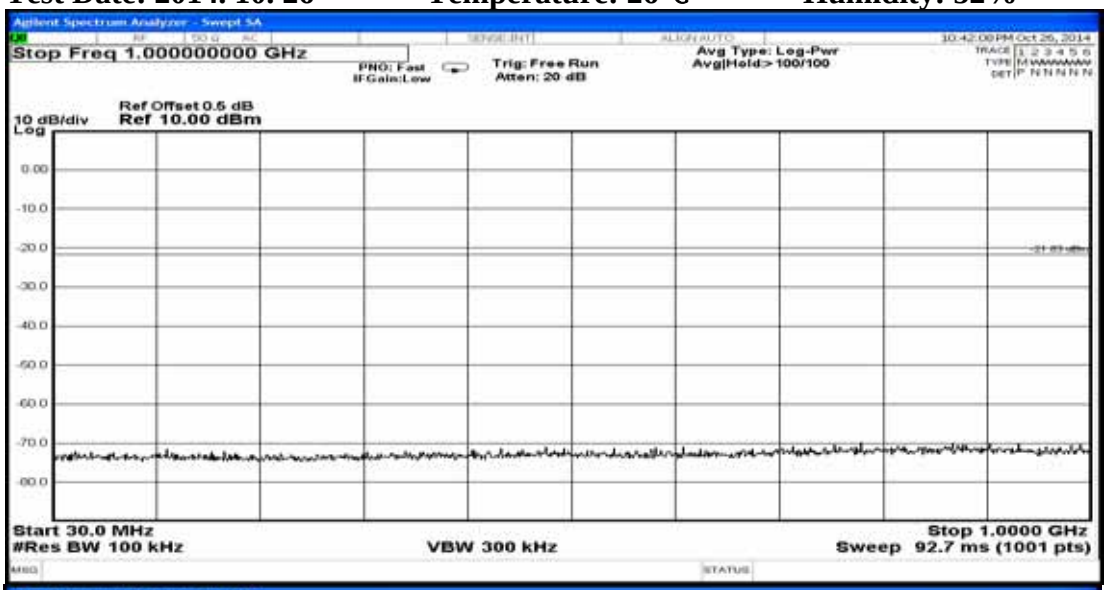


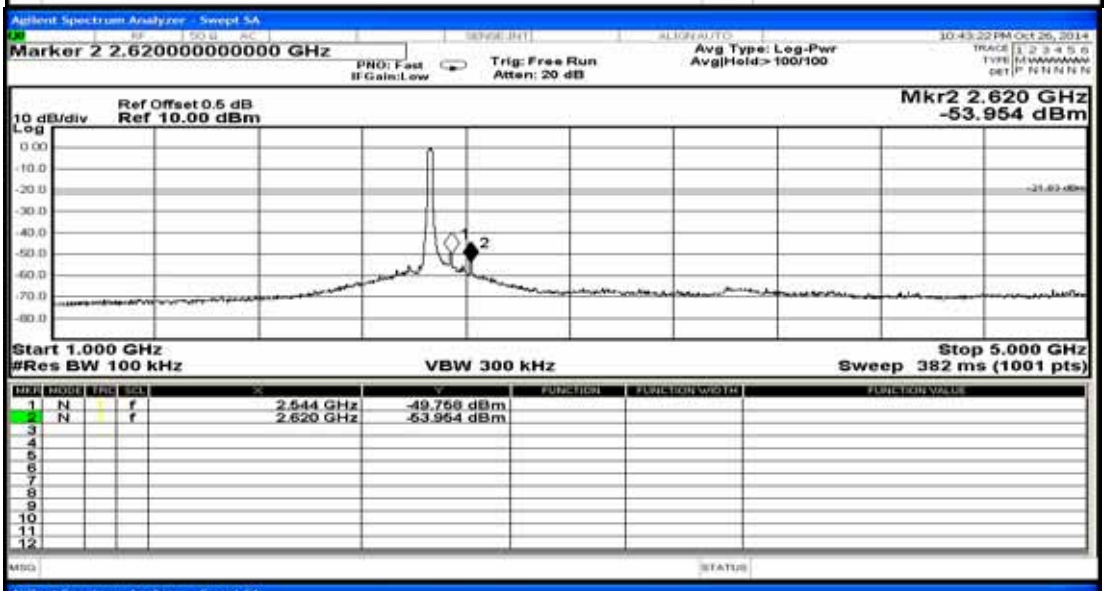


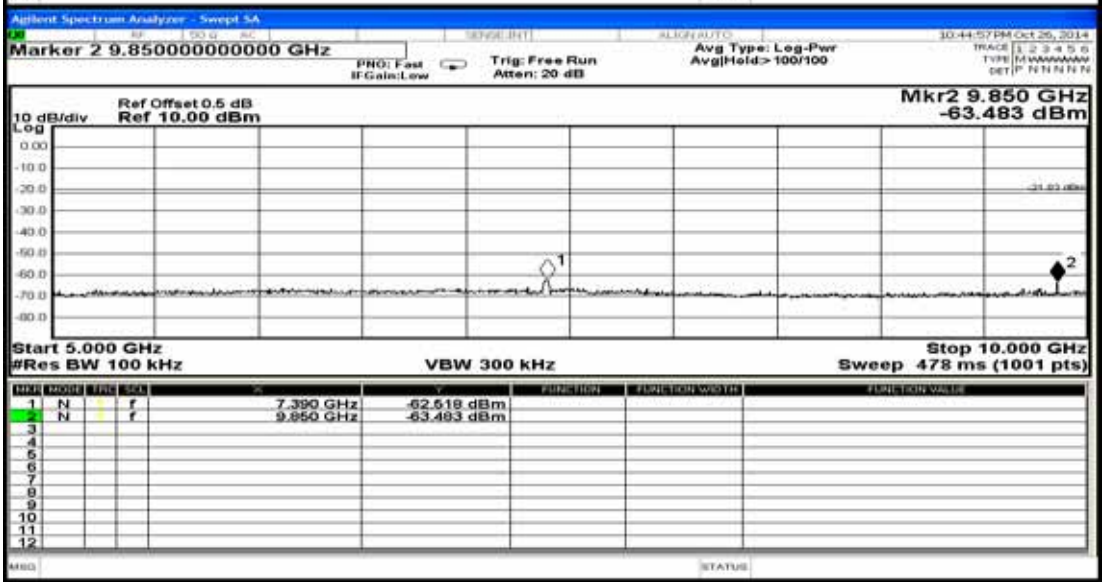


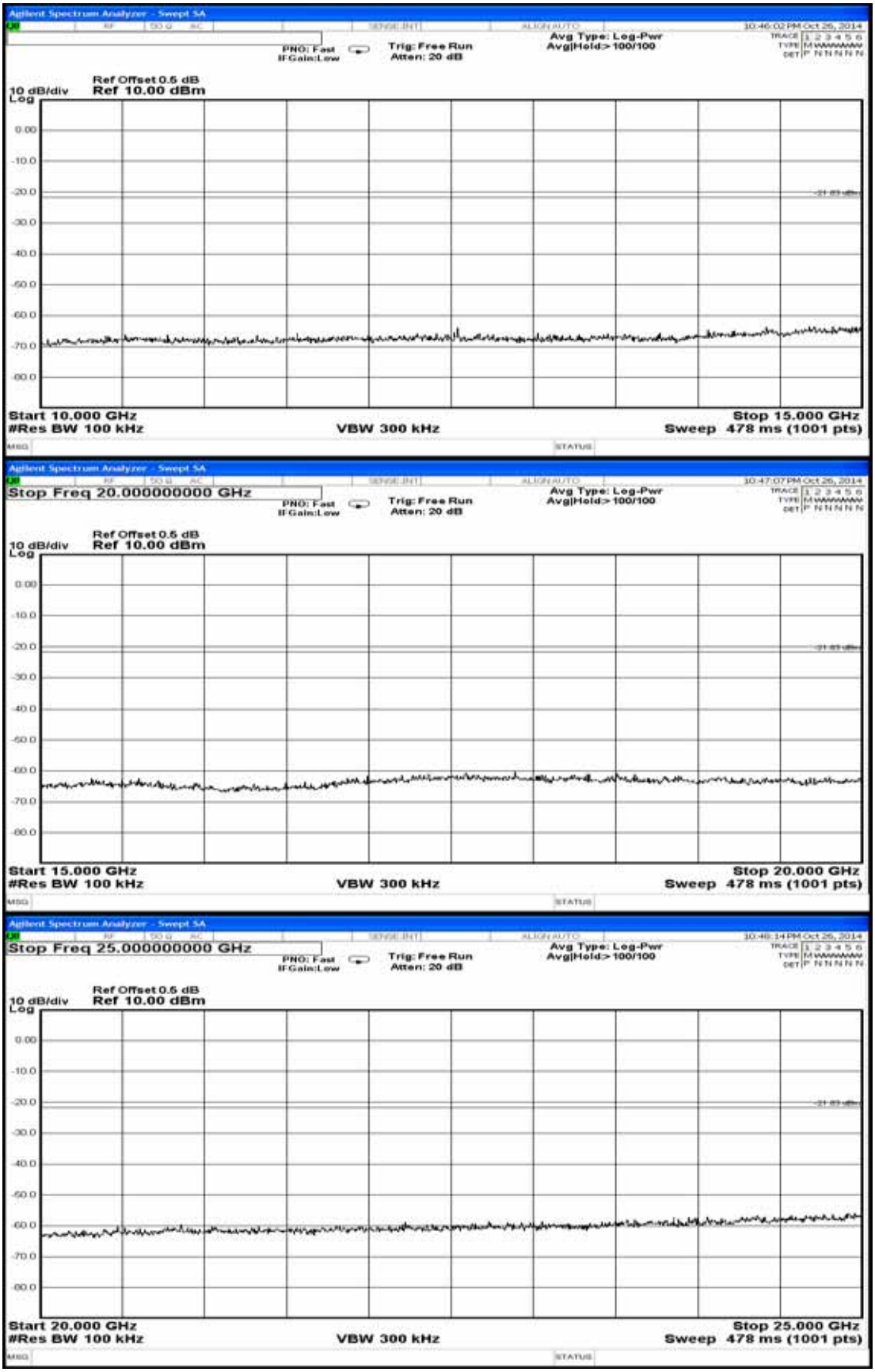

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Leg-Pwr
Avg|Hold:>100/100
10:37:59 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 20.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Leg-Pwr
Avg|Hold:>100/100
10:39:04 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Leg-Pwr
Avg|Hold:>100/100
10:40:09 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

802.11g, Frequency: 2462MHz
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity: 52%

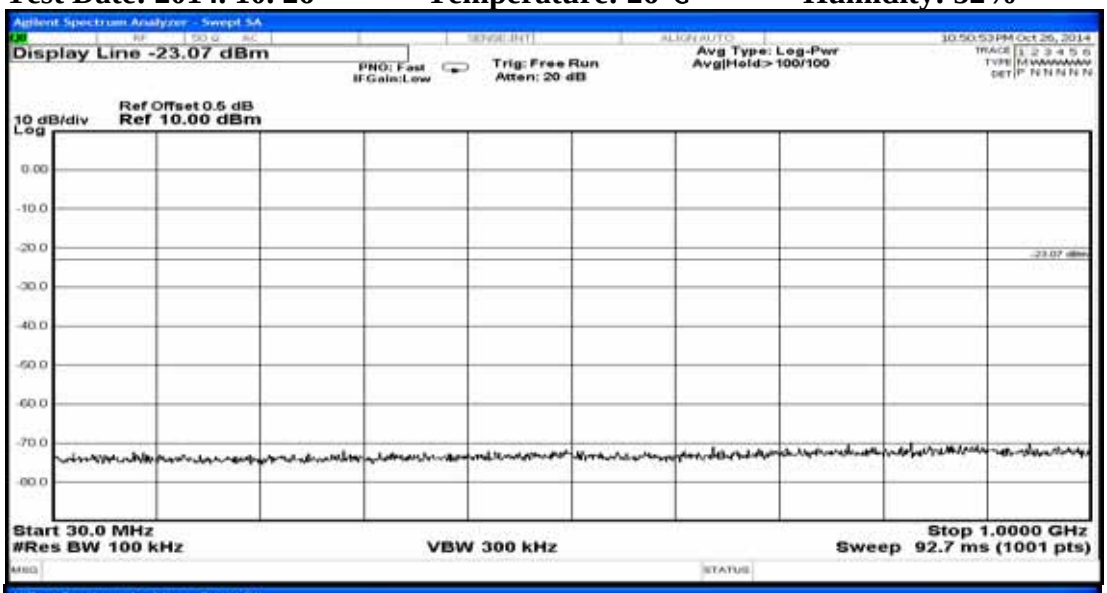


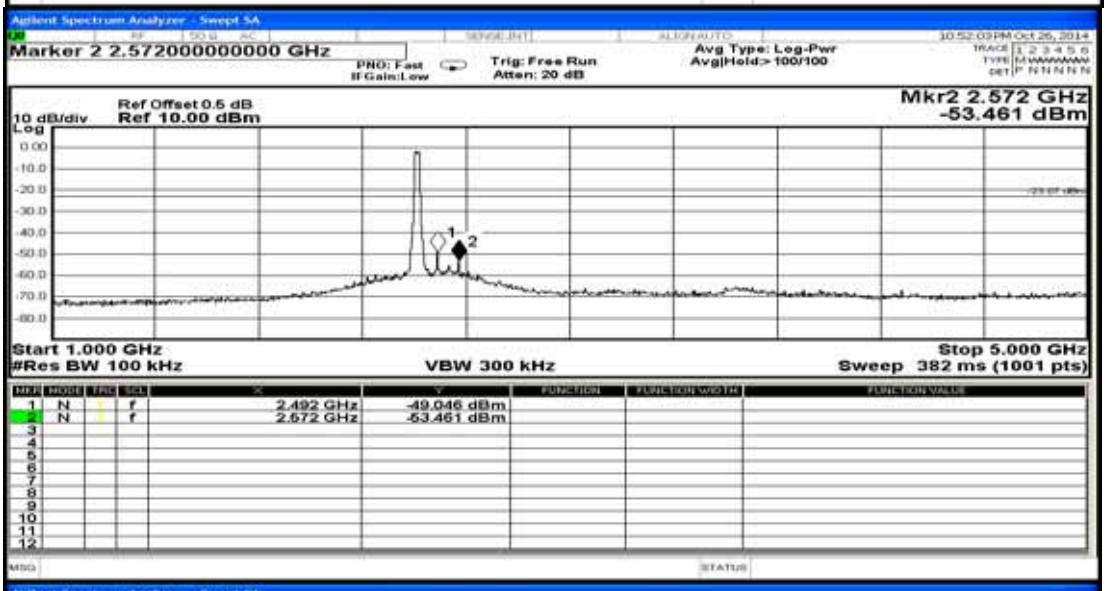


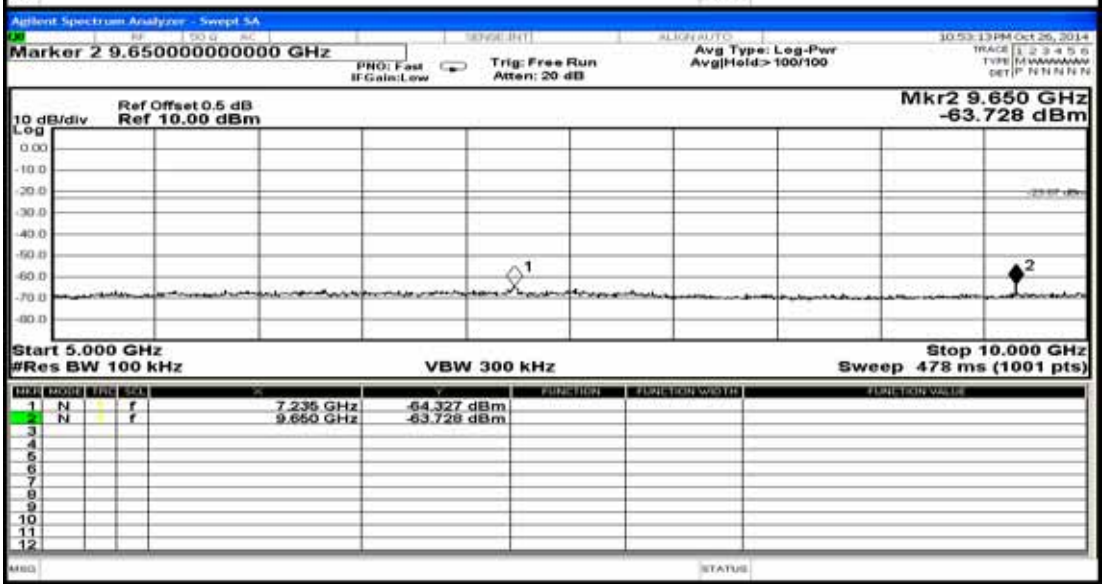


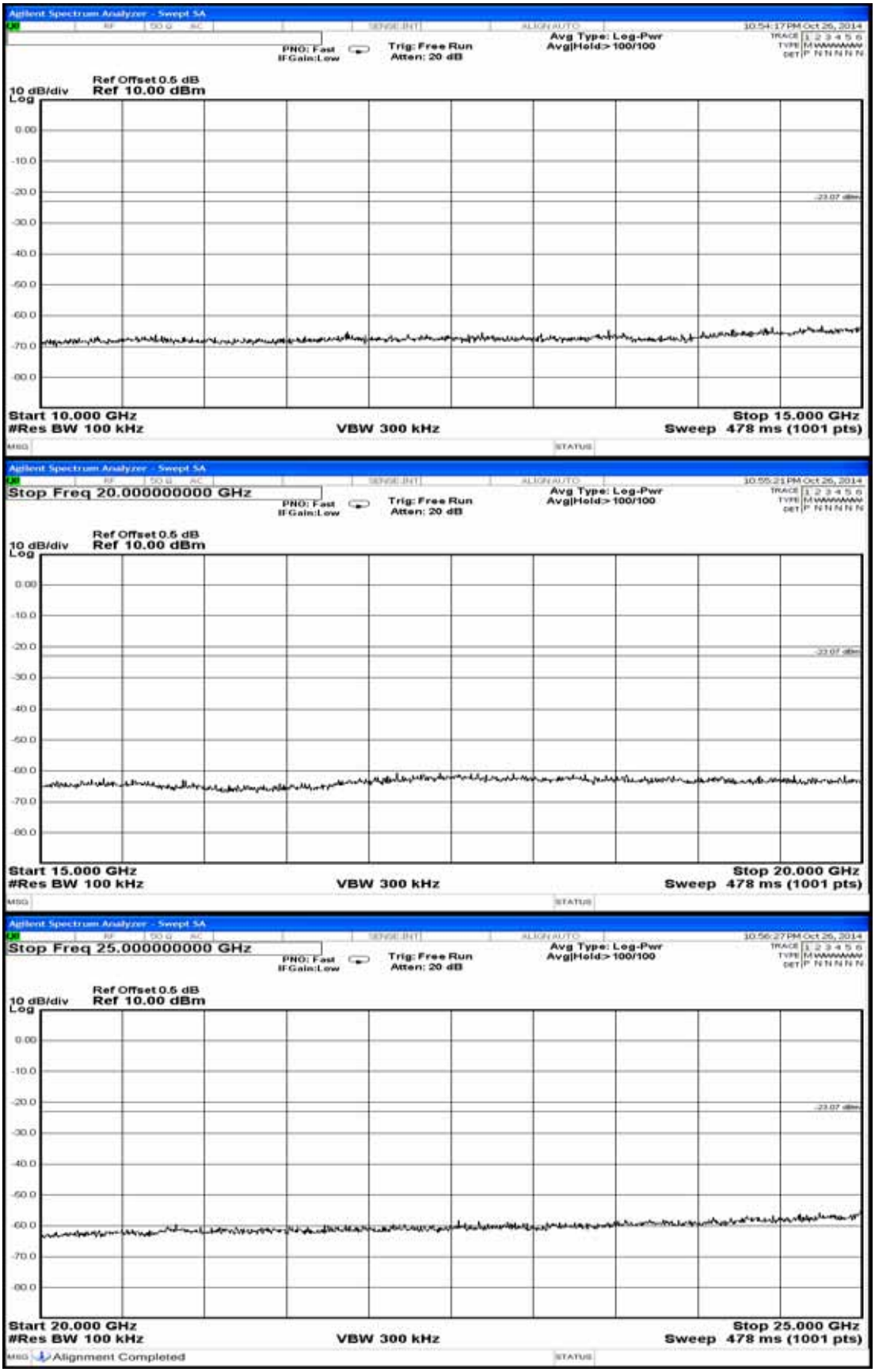

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Leg-Pwr
Avg|Hold:>100/100
10:46:02 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 20.000000000 GHz
10:47:07 PM Oct 26, 2014
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
10:48:14 PM Oct 26, 2014
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

802.11n-HT20, Frequency: 2412MHz
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity: 52%

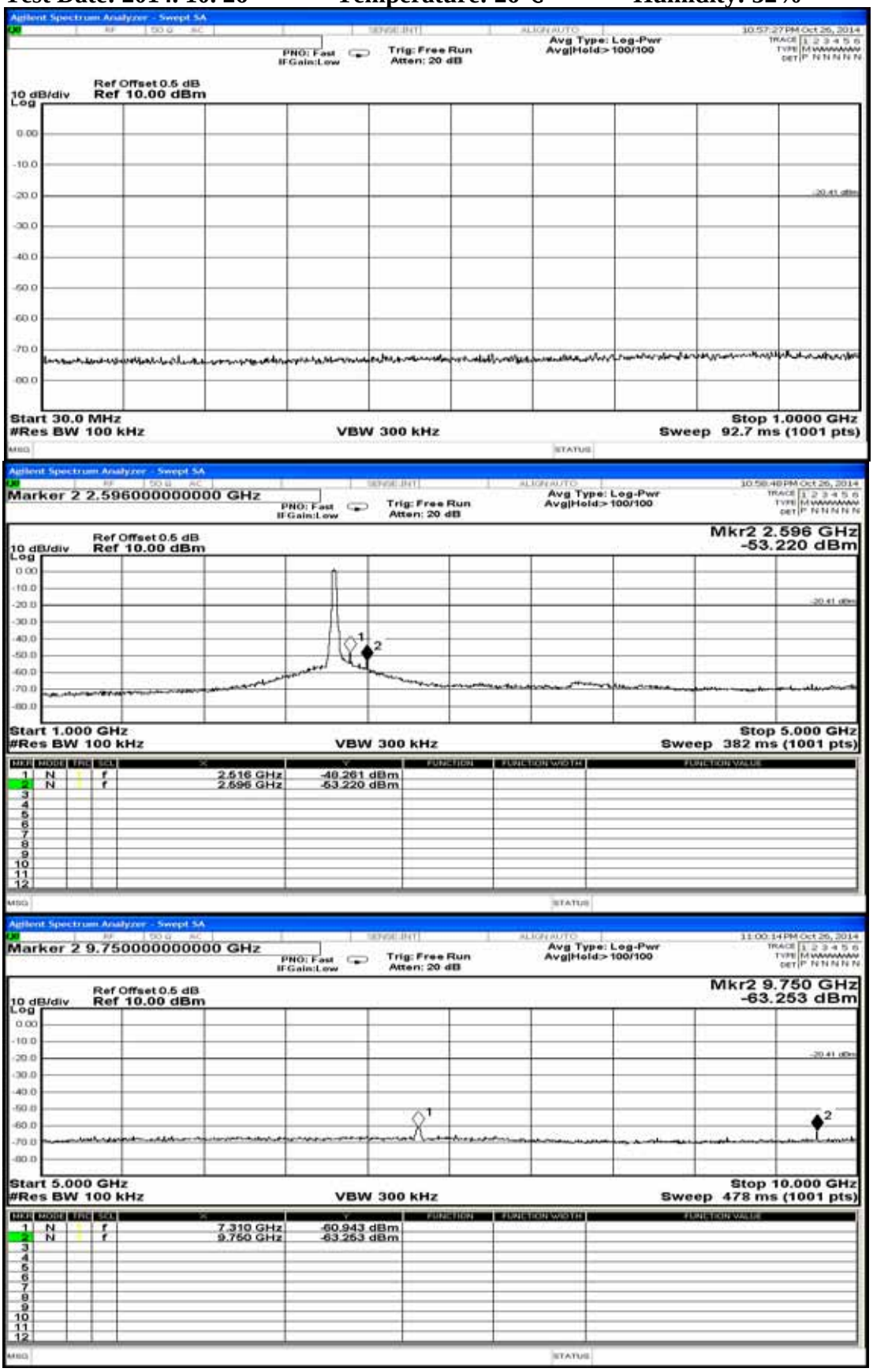


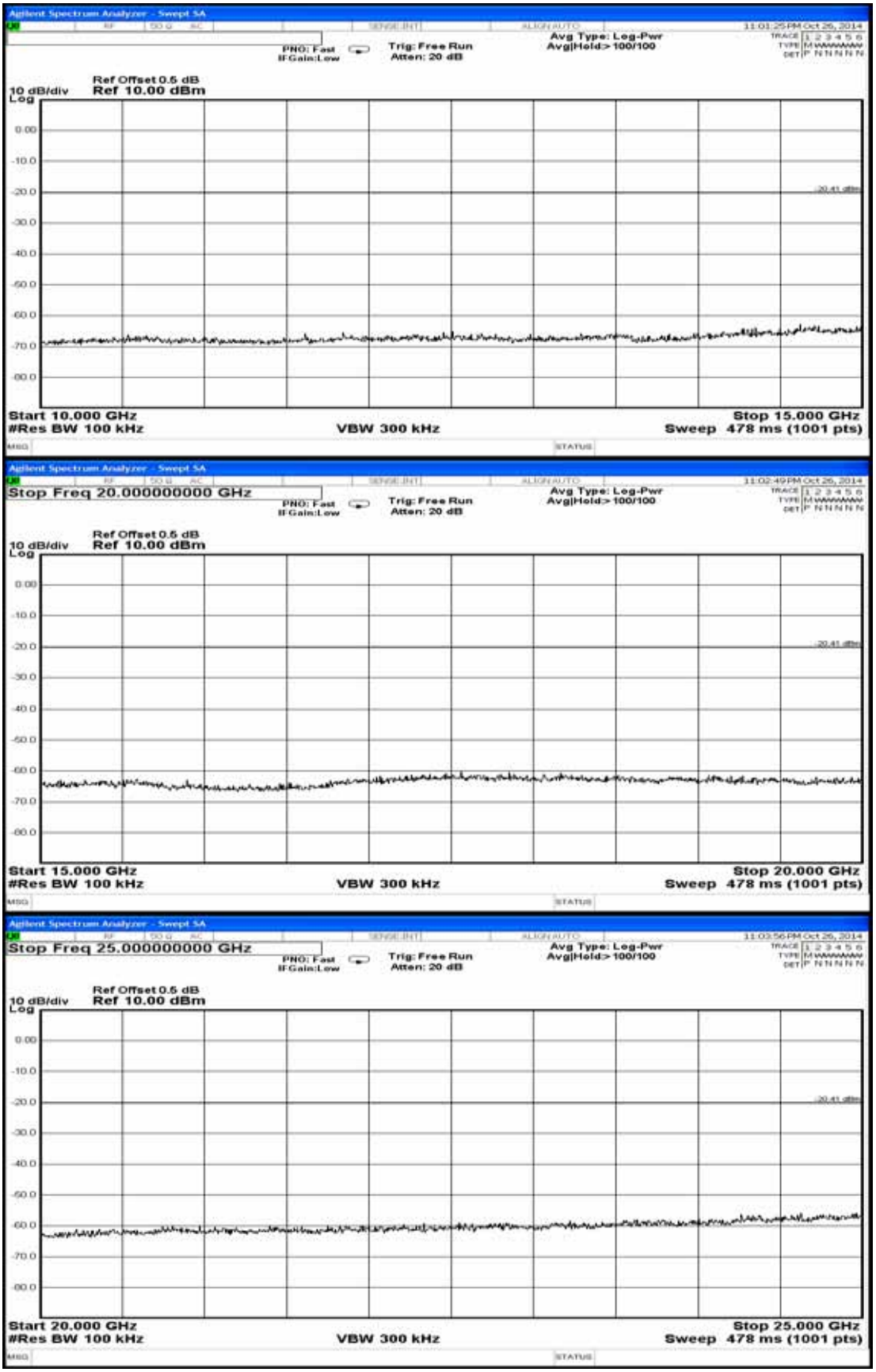




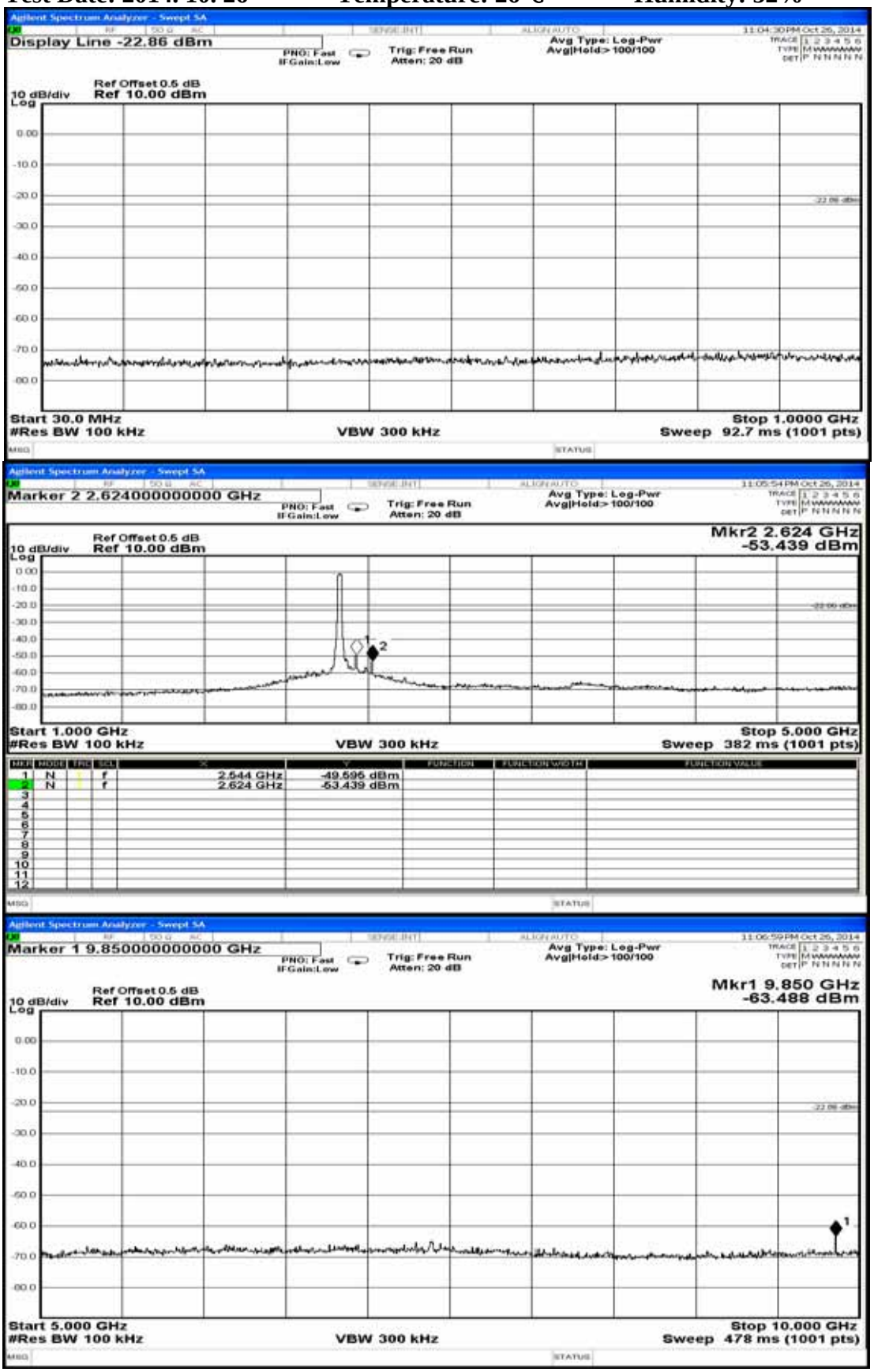

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:54:17 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 20.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:55:21 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
10:56:27 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)
Alignment Completed

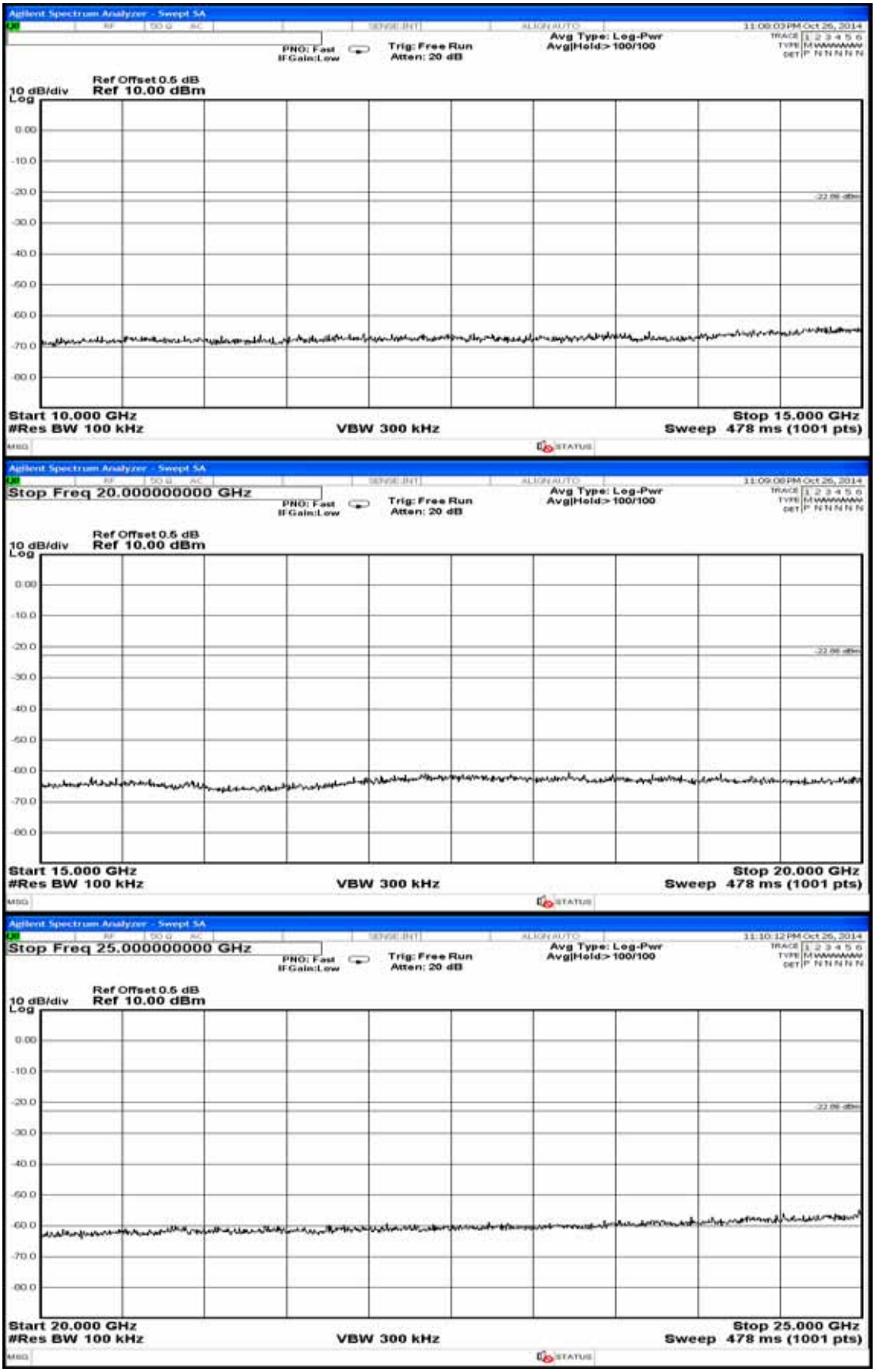
802.11n-HT20, Frequency: 2437MHz
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity: 52%



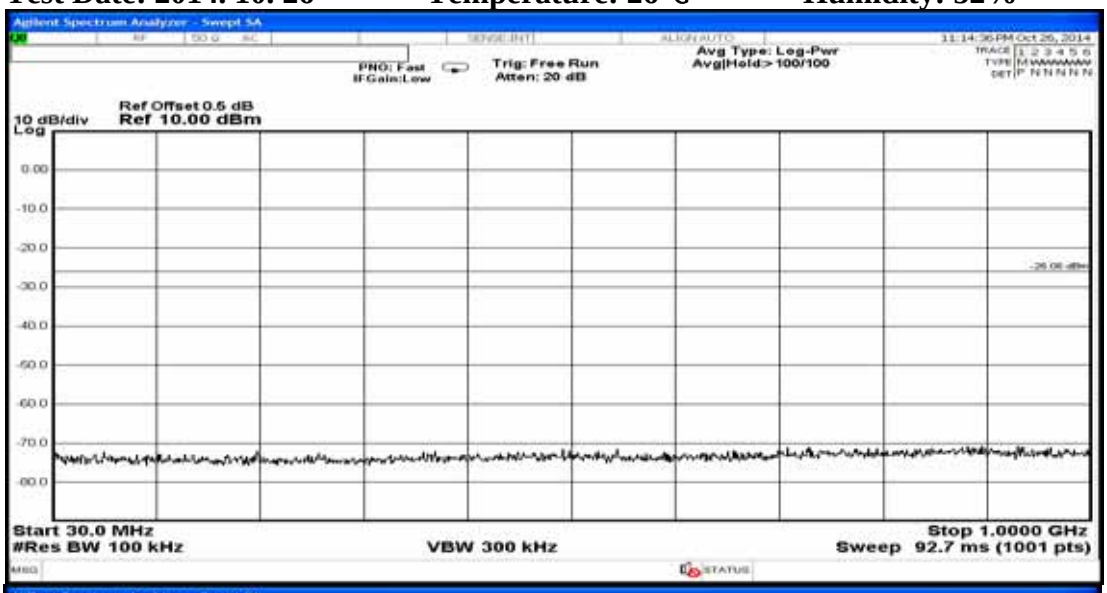

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:01:25 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 20.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:02:49 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:03:56 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

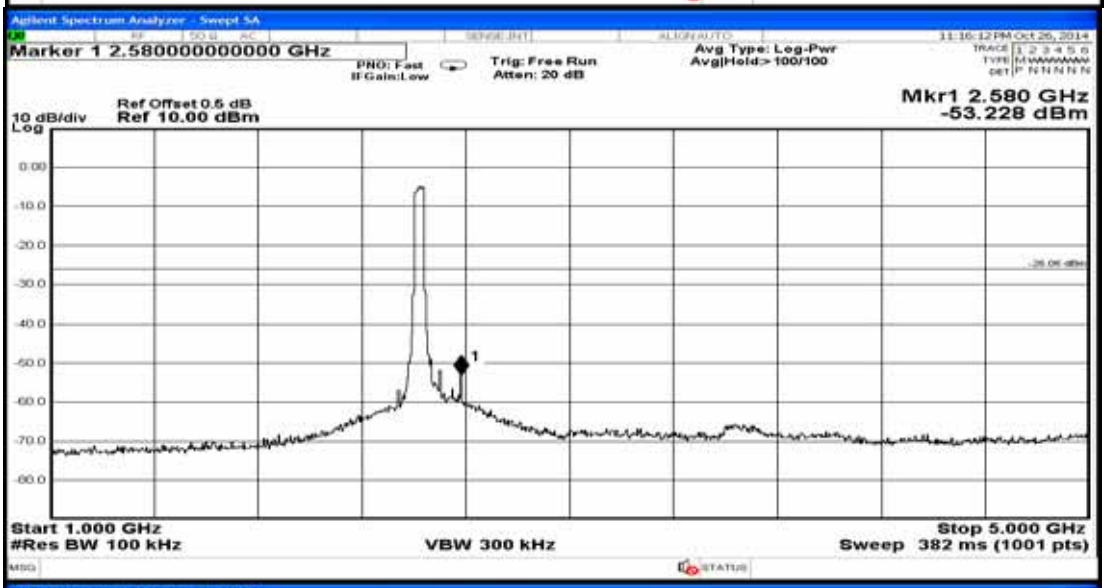
802.11n-HT20, Frequency: 2462MHz
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity: 52%

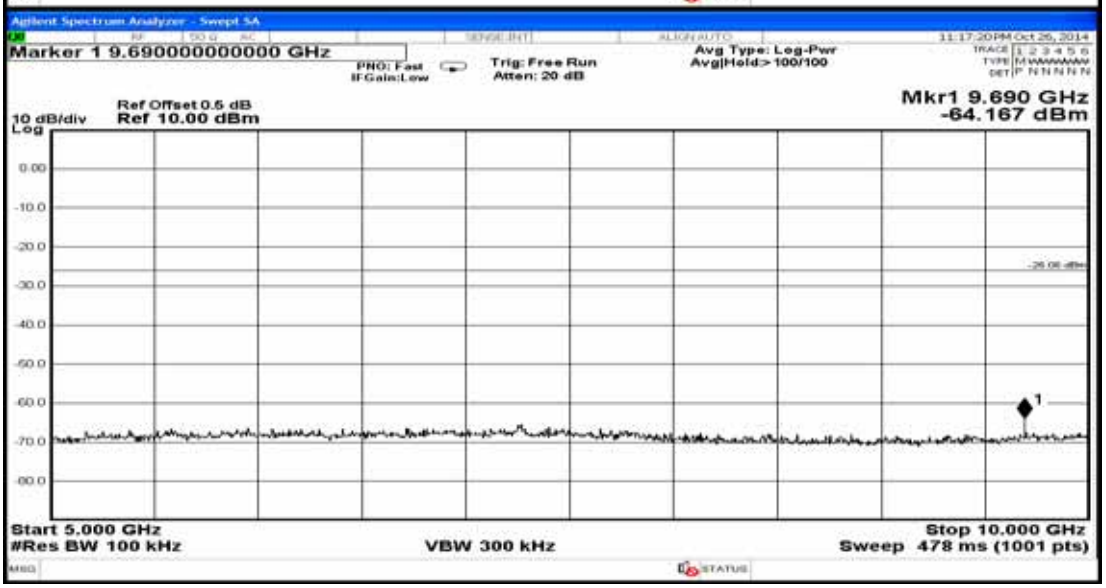


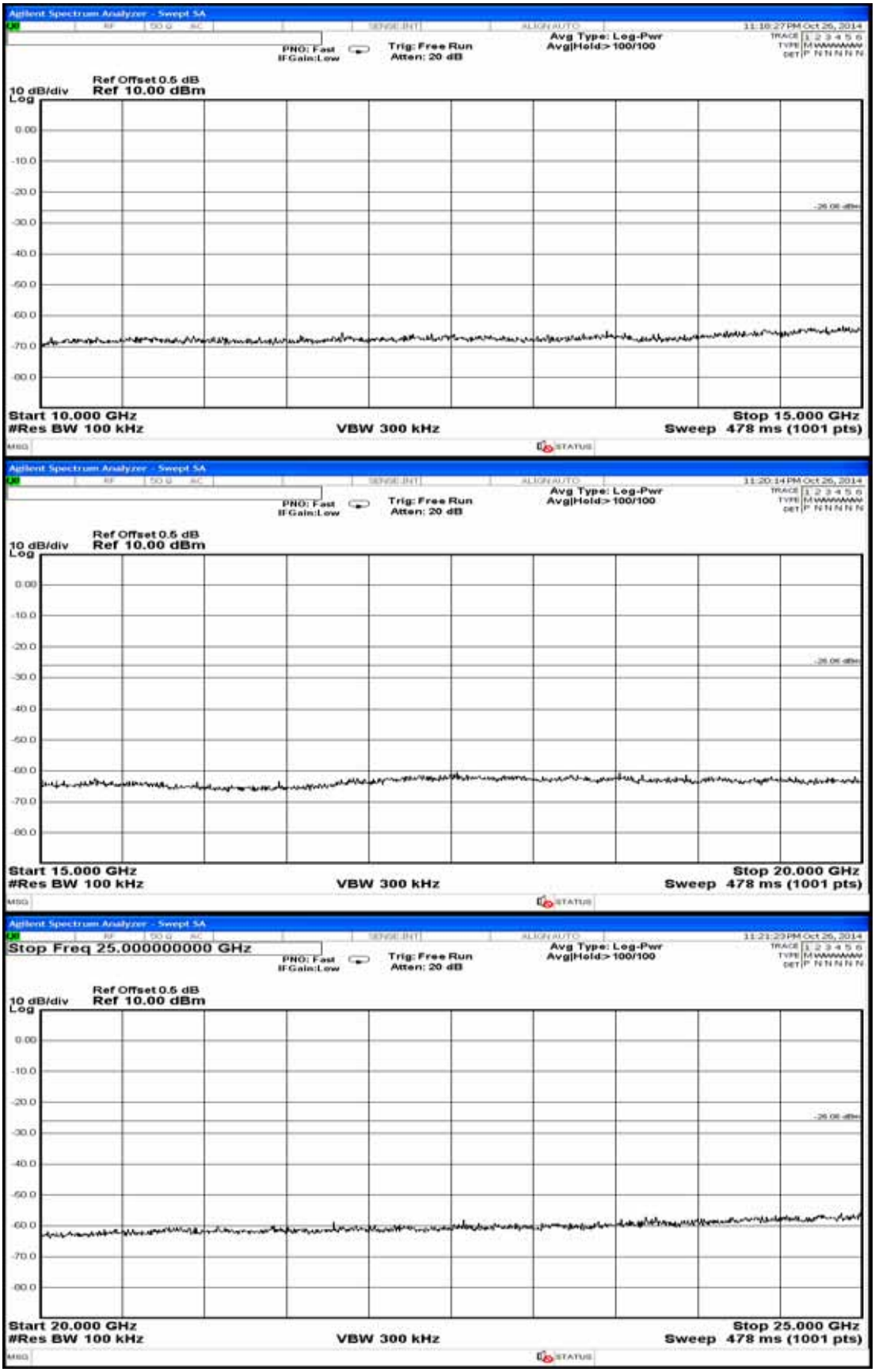

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:09:03 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Ref 10.00 dBm
Log
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 20.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:09:08 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Ref 10.00 dBm
Log
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:10:12 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Ref 10.00 dBm
Log
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

802.11n-HT40, Frequency: 2422MHz
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity: 52%

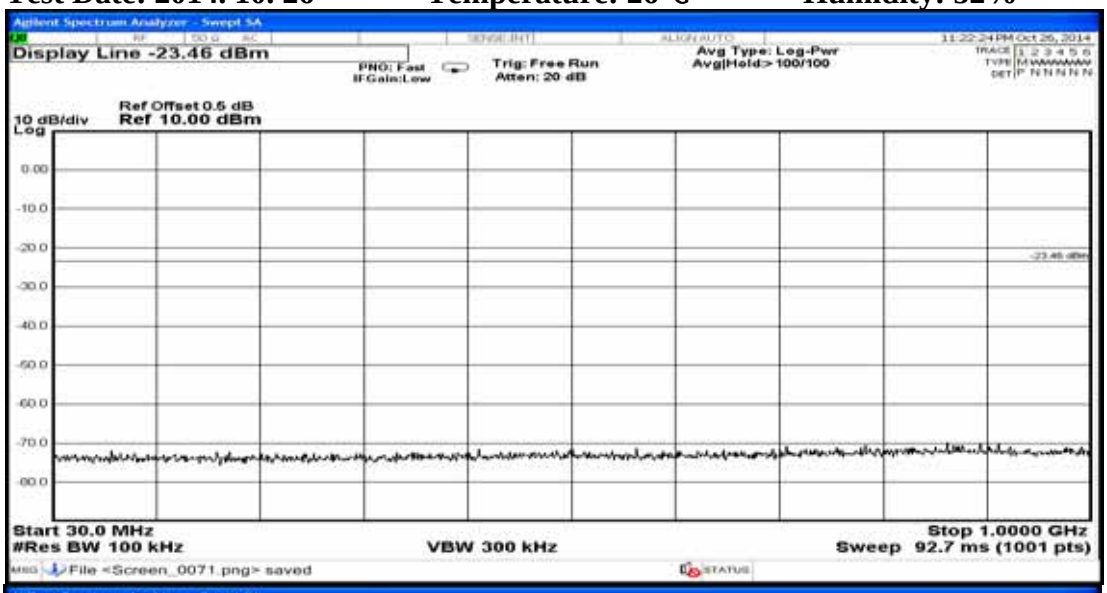


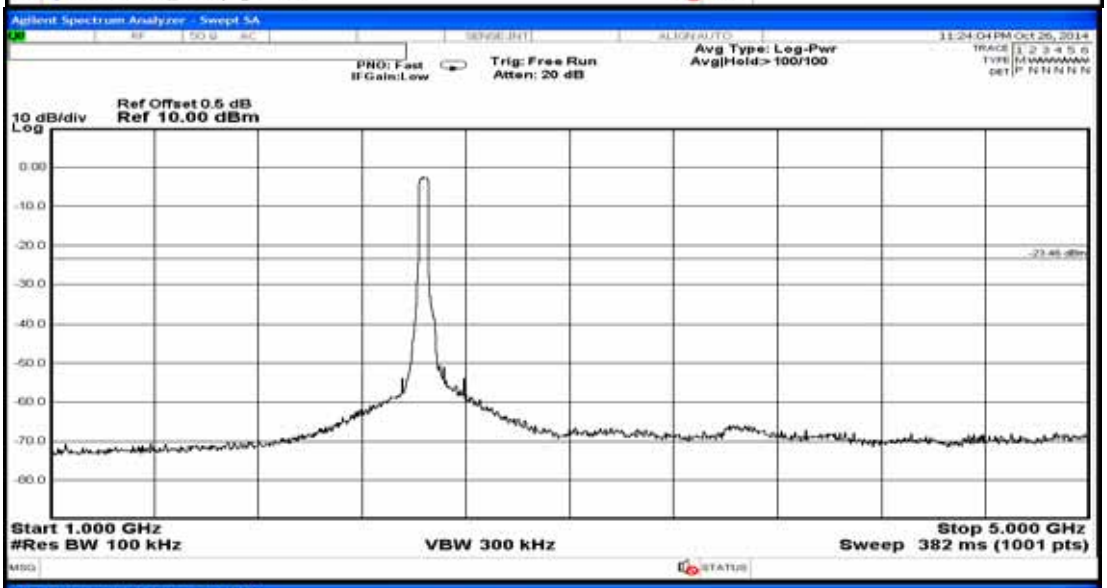


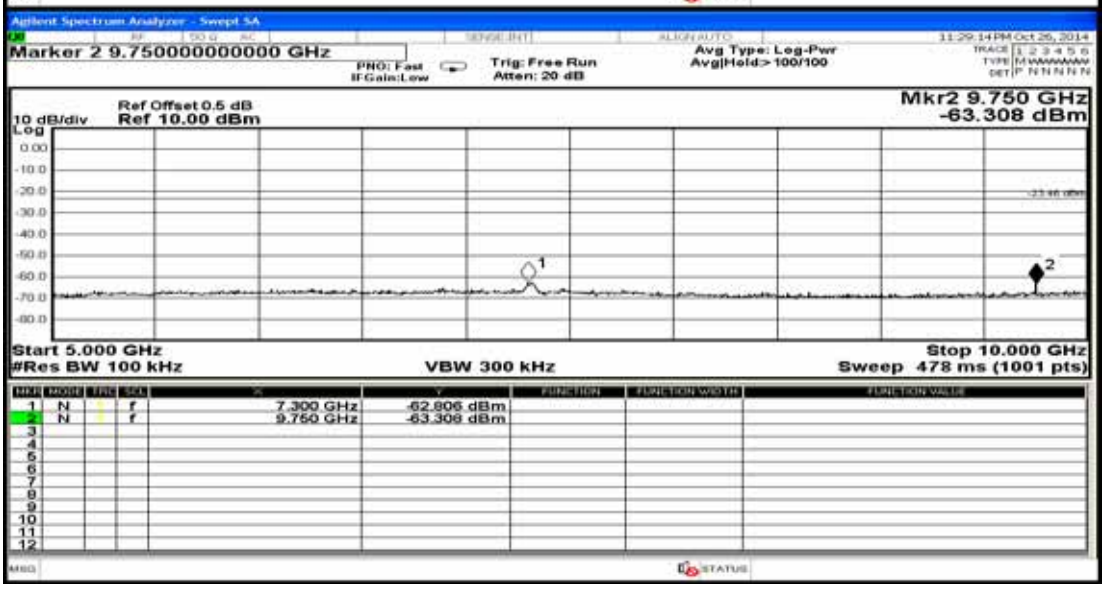


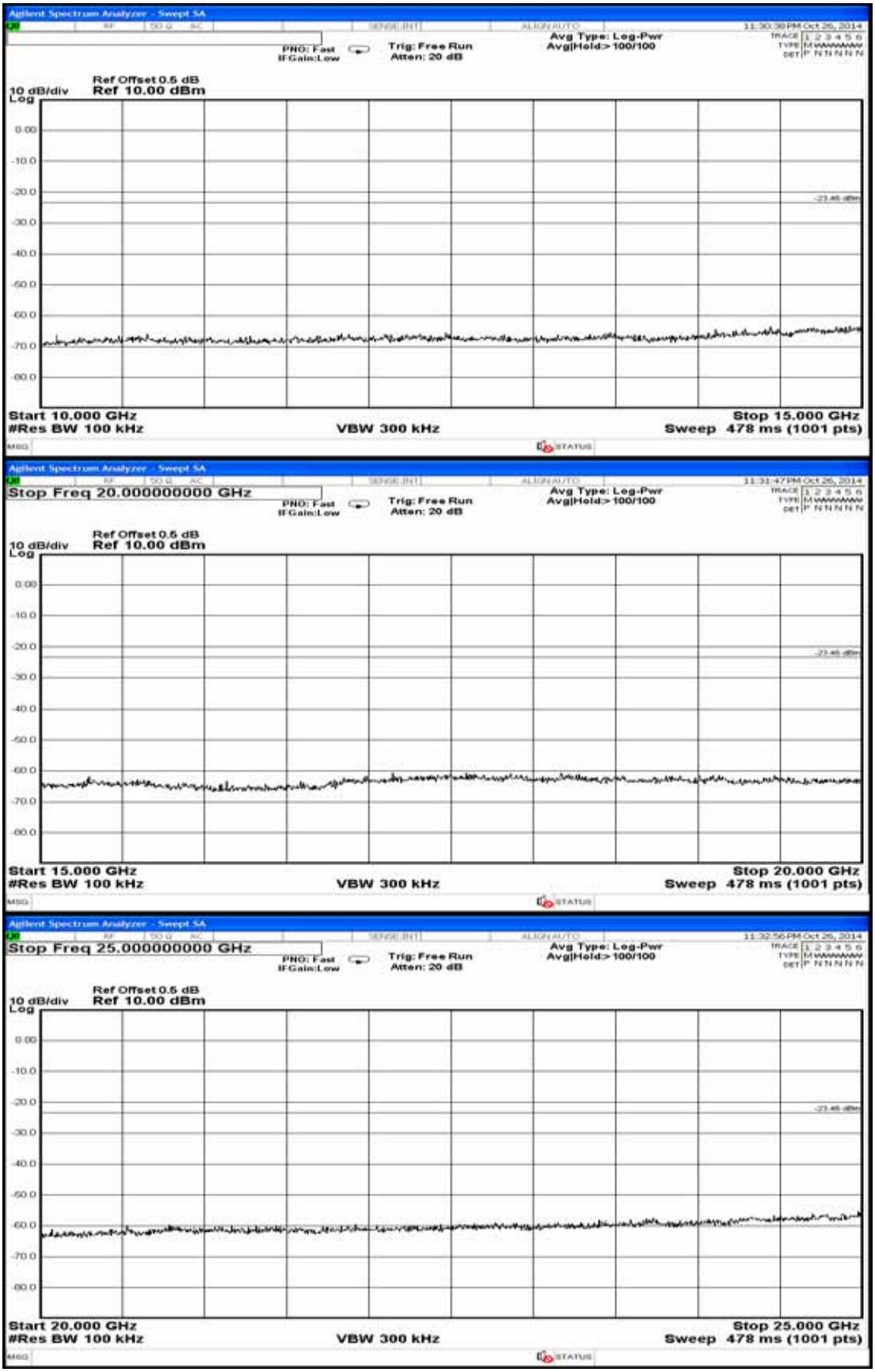

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:18:27 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:20:14 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:21:23 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

802.11n-HT40, Frequency: 2437MHz
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity: 52%

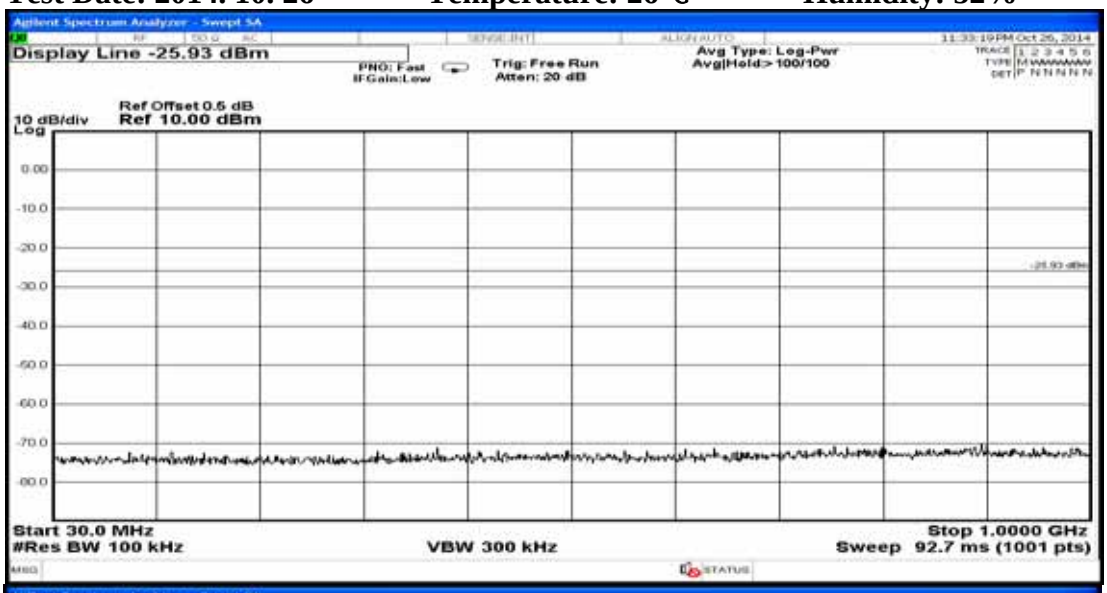


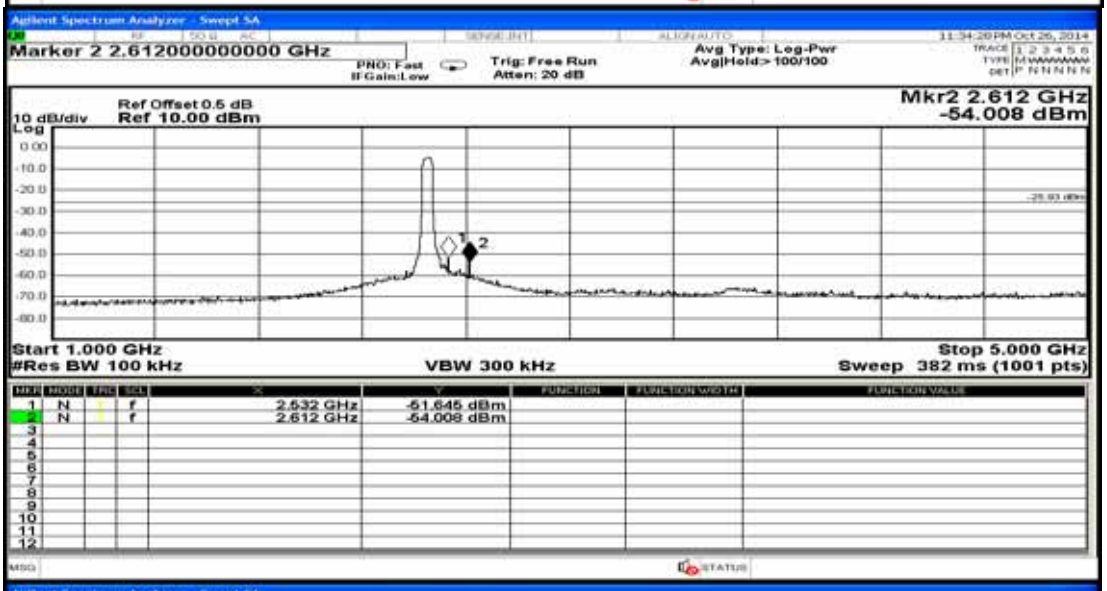


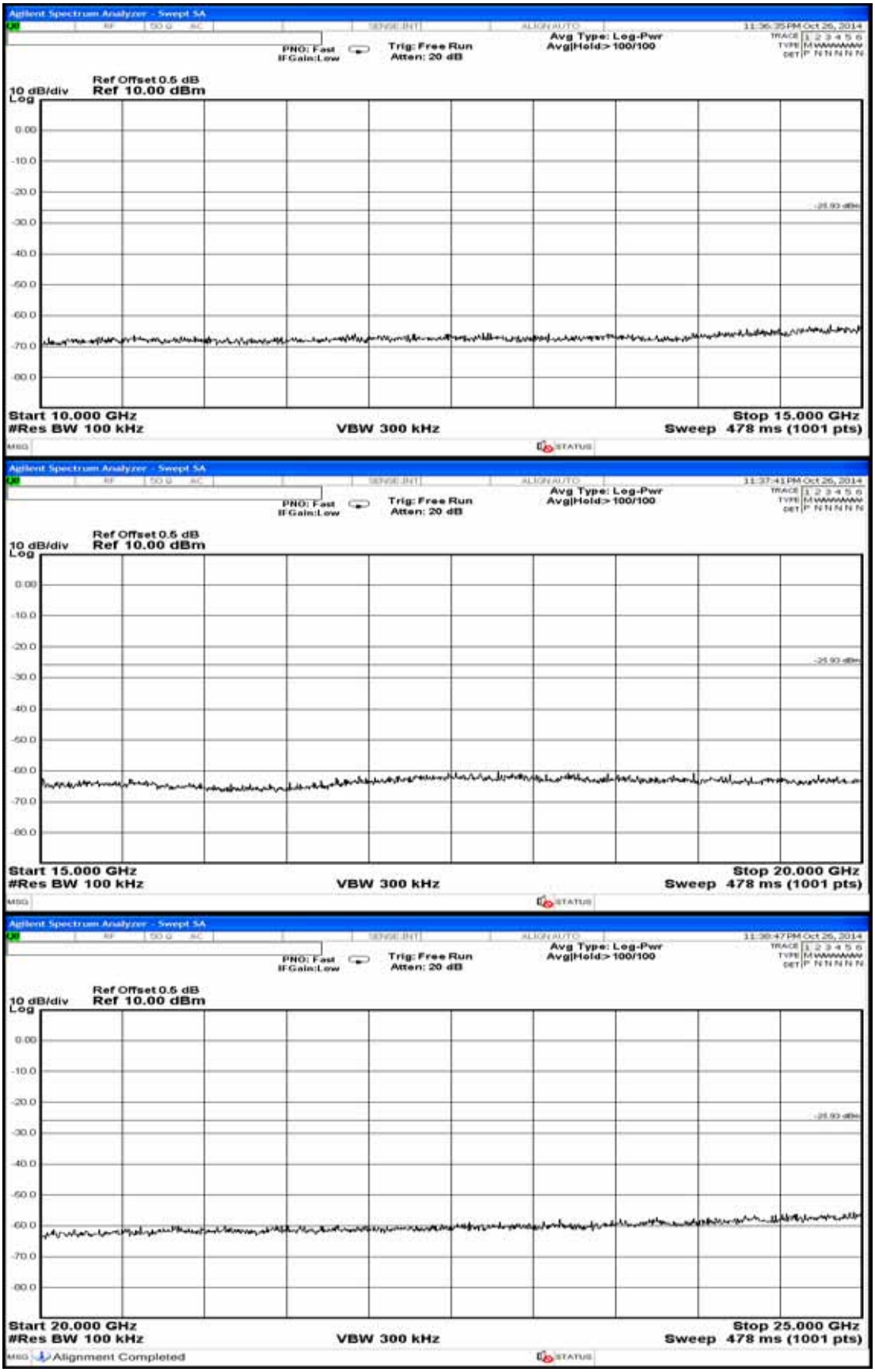



Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:30:30 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 20.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:31:47 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:32:56 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

802.11n-HT40, Frequency: 2452MHz
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity: 52%

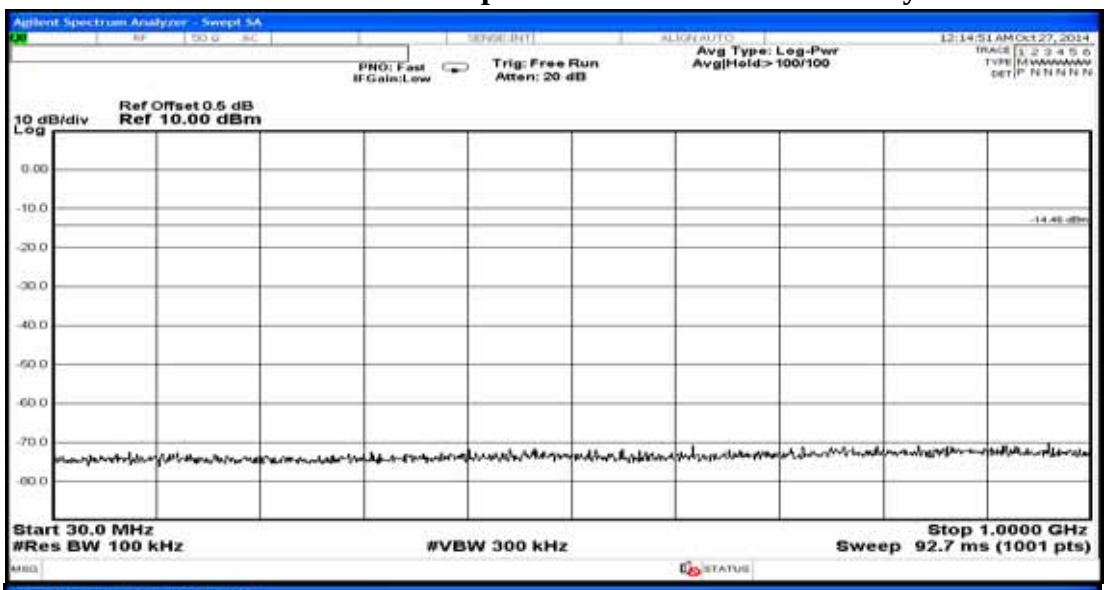


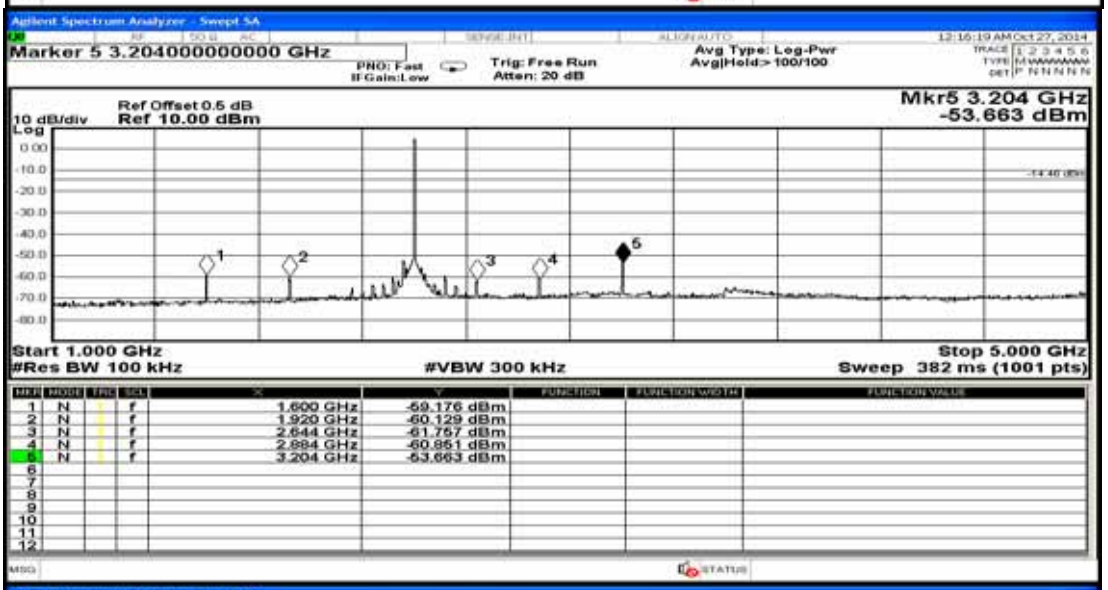


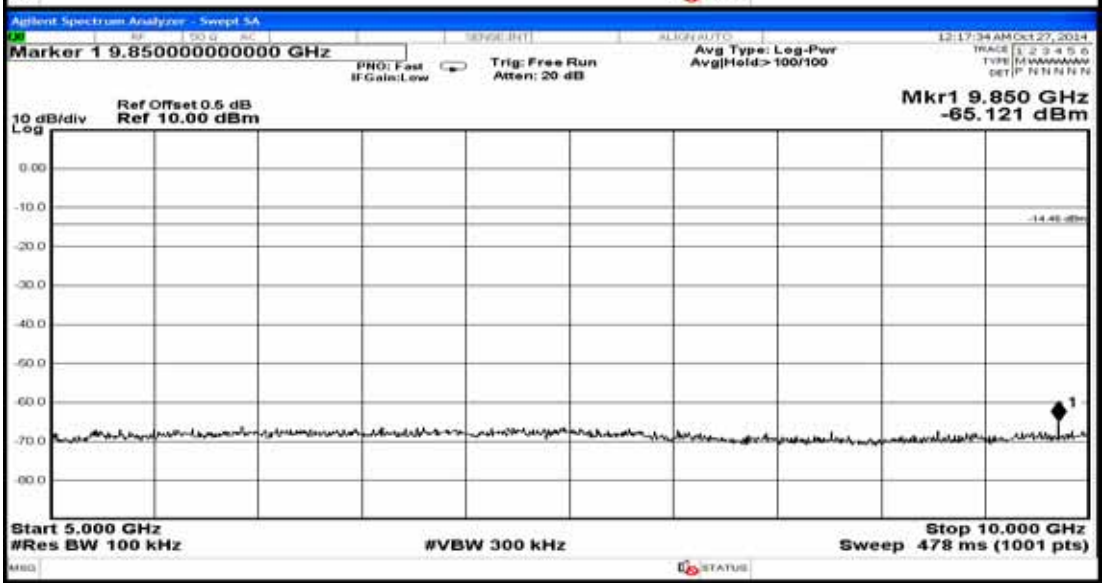

Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:36:35 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-25.90 dBm
Start 10.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:37:41 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
-25.90 dBm
Start 15.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
11:38:47 PM Oct 26, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
-25.90 dBm
Start 20.000 GHz
#Res BW 100 kHz
VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)
Alignment Completed

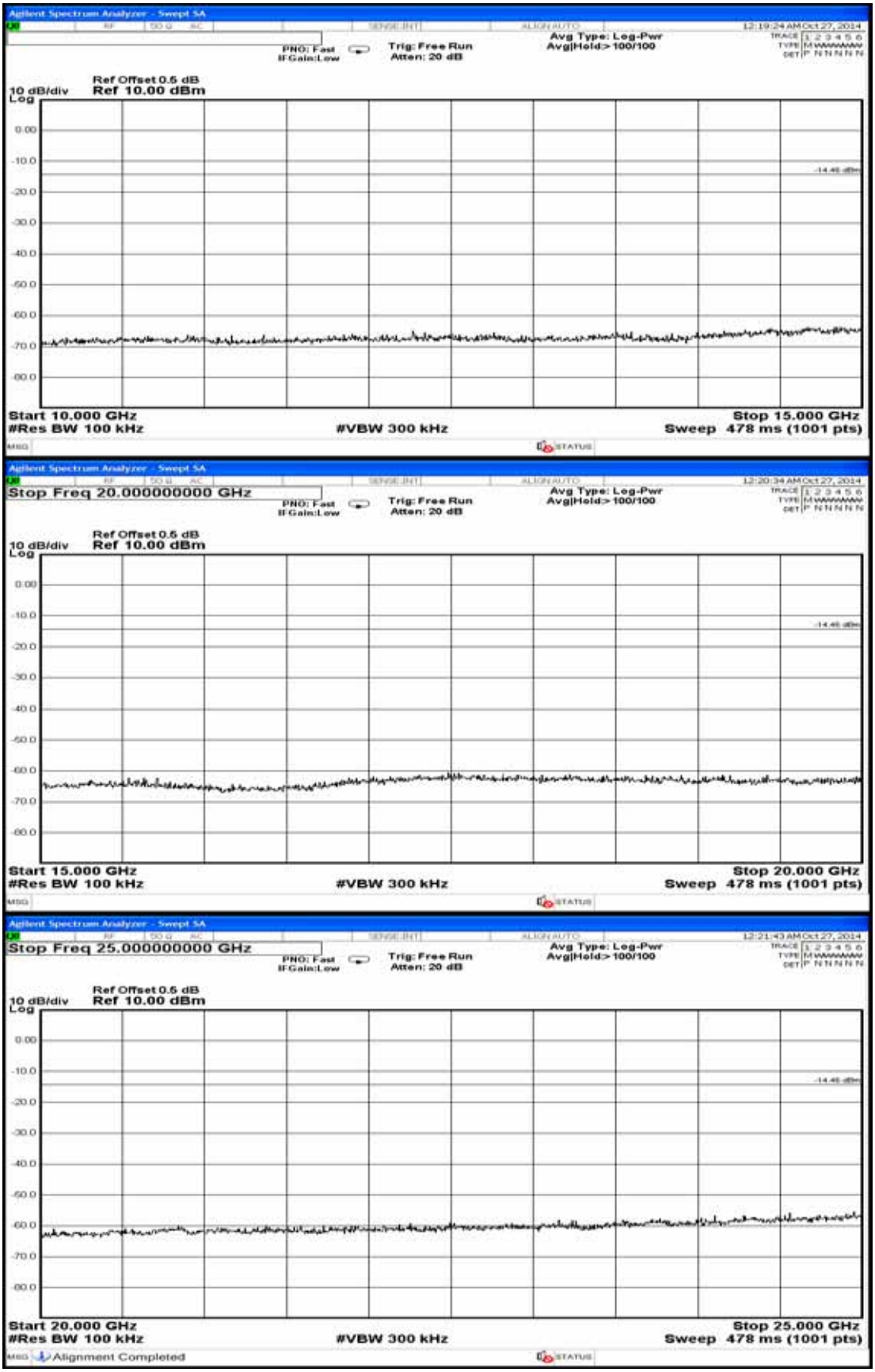
7.6.2. BLE Function

BLE, Frequency: 2402MHz
Test Date : 2014. 10. 27 Temperature : 24℃ Humidity : 58%

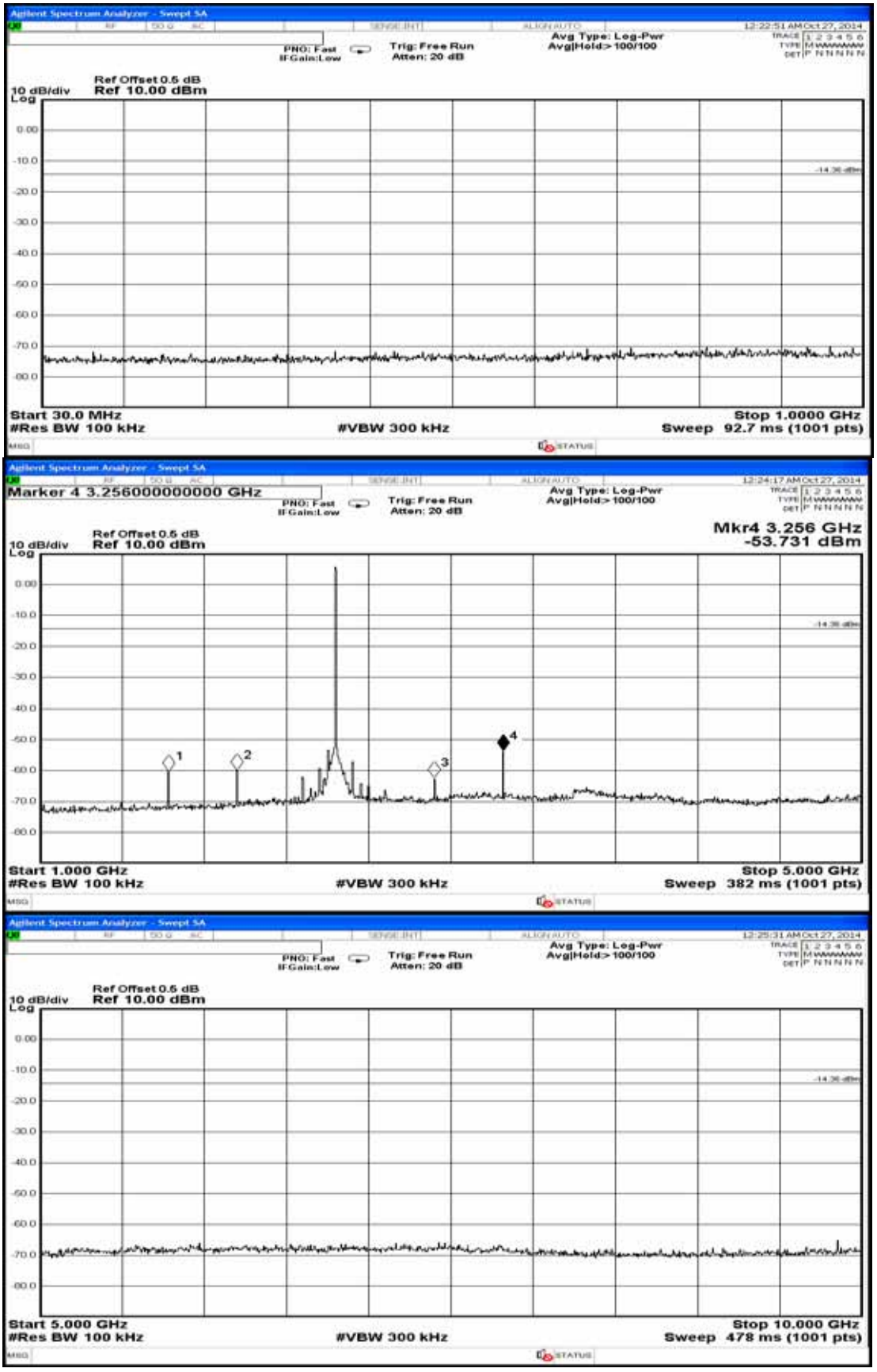


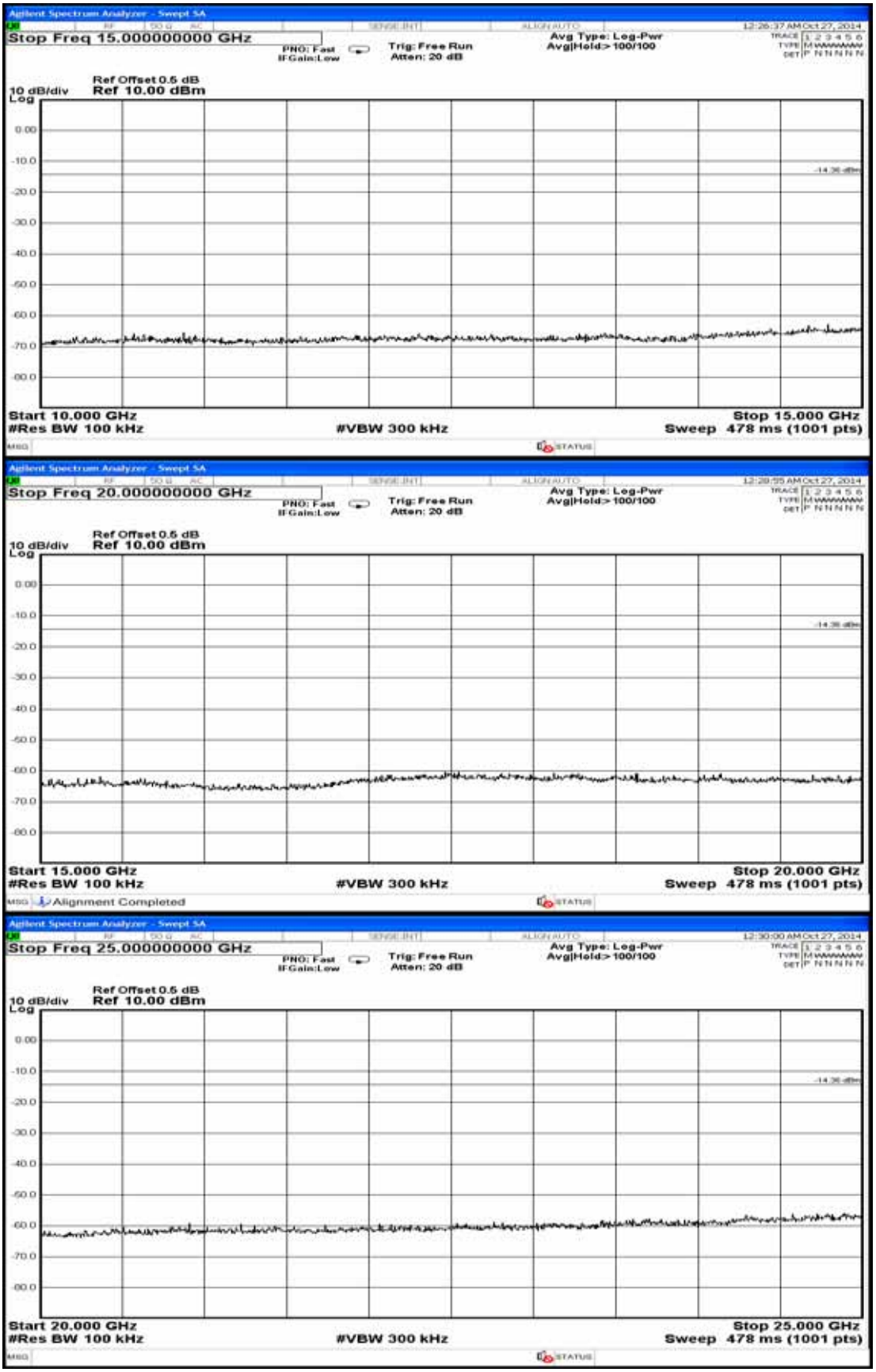




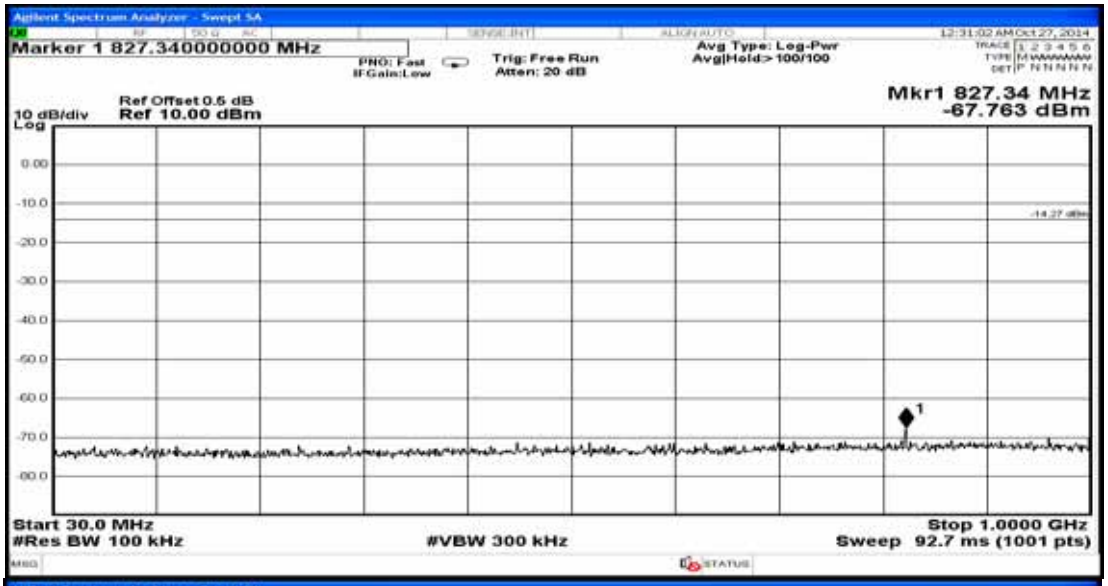

Agilent Spectrum Analyzer - Swept SA
12:19:24 AM Oct 27, 2014
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-14.46 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 20.000000000 GHz
12:20:34 AM Oct 27, 2014
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-14.46 dBm
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
12:21:43 AM Oct 27, 2014
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-14.46 dBm
Start 20.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)
Alignment Completed

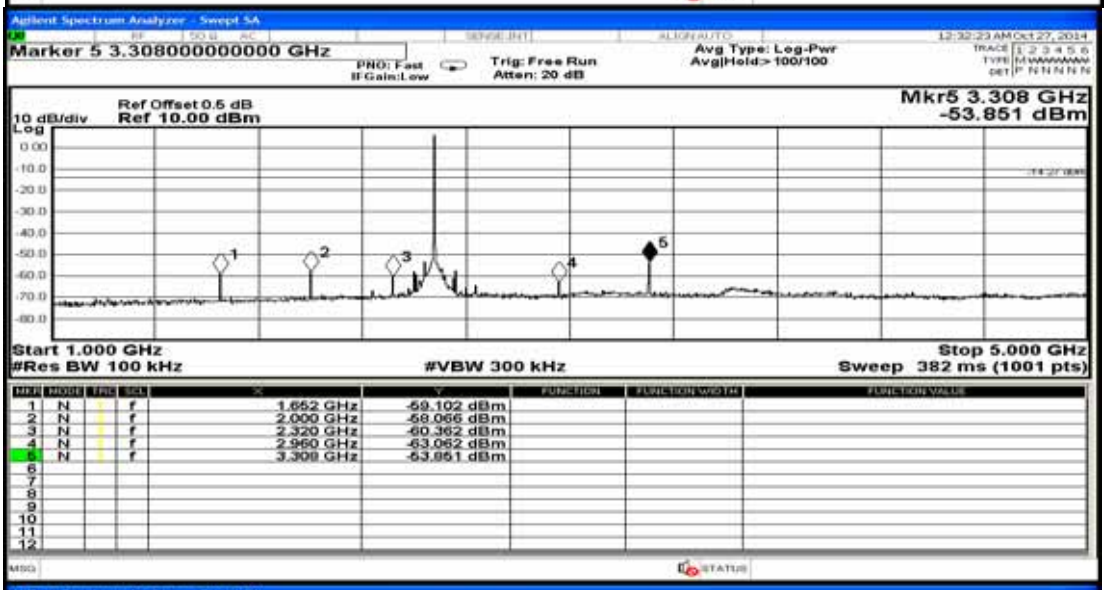
BLE, Frequency: 2440MHz
Test Date : 2014. 10. 27 Temperature : 24℃ Humidity : 58%

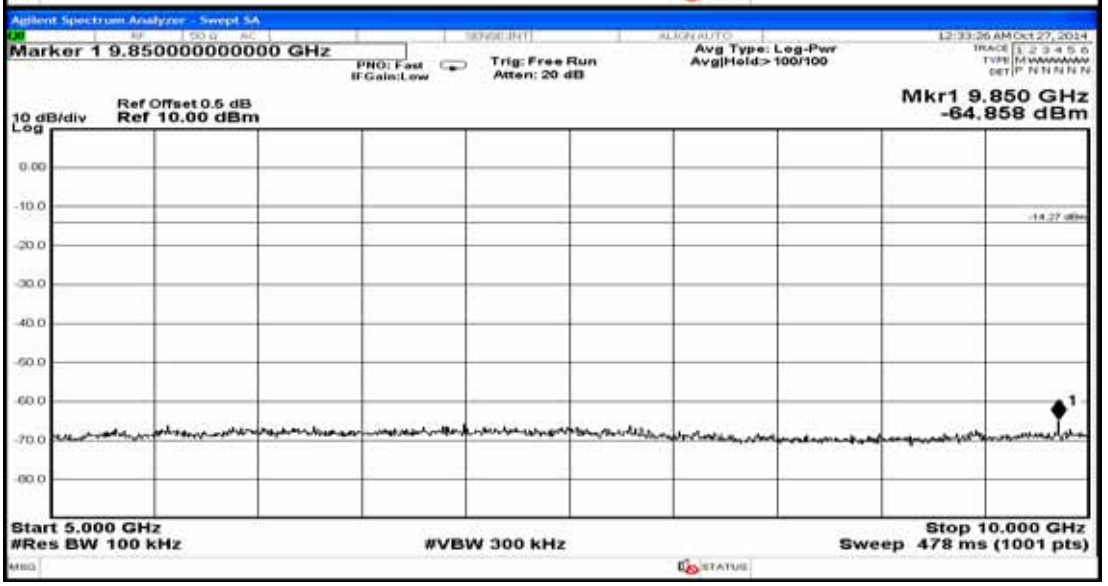


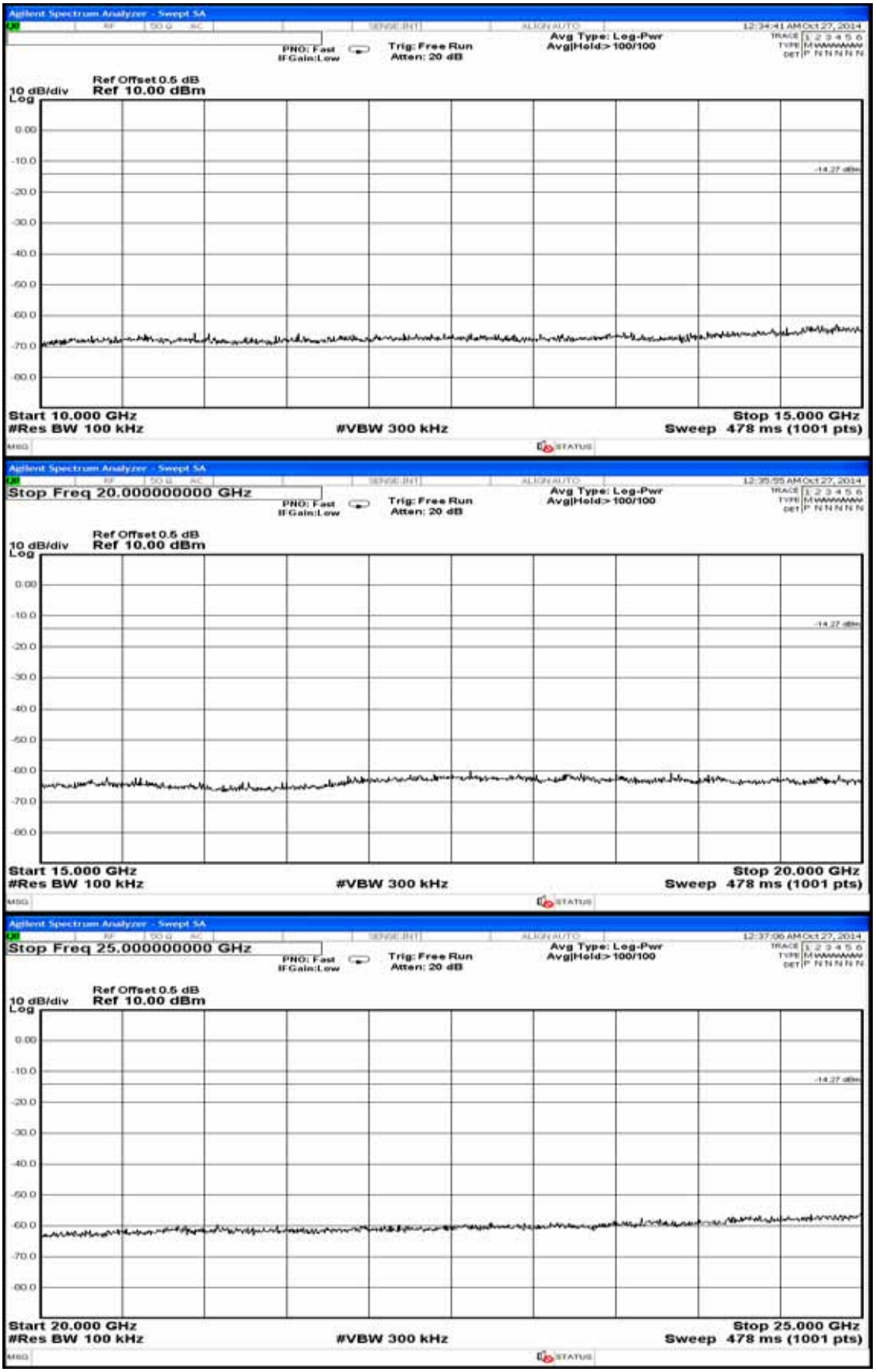

Agilent Spectrum Analyzer - Swept SA
Stop Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
12:26:37 AM Oct 27, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 20.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
12:28:55 AM Oct 27, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Alignment Completed
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
12:30:00 AM Oct 27, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Start 20.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

BLE, Frequency: 2480MHz
Test Date : 2014. 10. 27 Temperature : 24℃ Humidity : 58%








Agilent Spectrum Analyzer - Swept SA
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
12:34:41 AM Oct 27, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
-14.27 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 20.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
12:35:55 AM Oct 27, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
-14.27 dBm
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 20.000 GHz
Sweep 478 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA
Stop Freq 25.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
12:37:06 AM Oct 27, 2014
Ref Offset 0.6 dB
10 dB/div
Log
Ref 10.00 dBm
-14.27 dBm
Start 20.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 478 ms (1001 pts)

8. BAND EDGES MEASUREMENT

8.1. Test Equipment

The following test equipment was used during the band edges measurement:

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 14	1 Year

8.2. Block Diagram of Test Setup

The same as section.5.2.

8.3. Specification Limits [§15.247(c)]

The highest level should be at least 20 dB below reference level as measured in section 9.6.

8.4. Operating Condition of EUT

The test program "Teraterm" for WLAN and BLE was used to enable the EUT to transmit data at different channel frequency individually.

8.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. Set both RBW=100 kHz and VBW to 300kHz with suitable frequency span including 100kHz bandwidth from band edge.

The measurement guideline was according to KDB 558074 D01 DTS Meas Guidance is v03r02.

8.6. Test Results

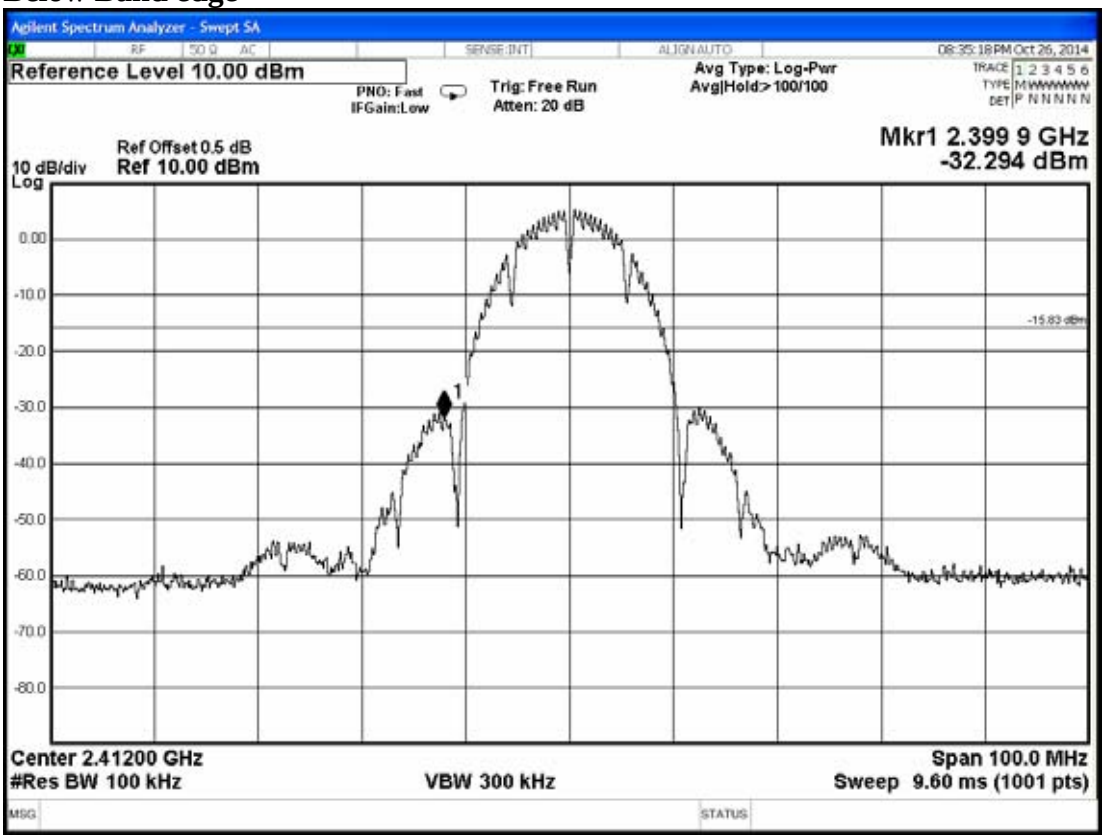
PASSED. All the test results are attached in next pages.

8.6.1. WLAN Function

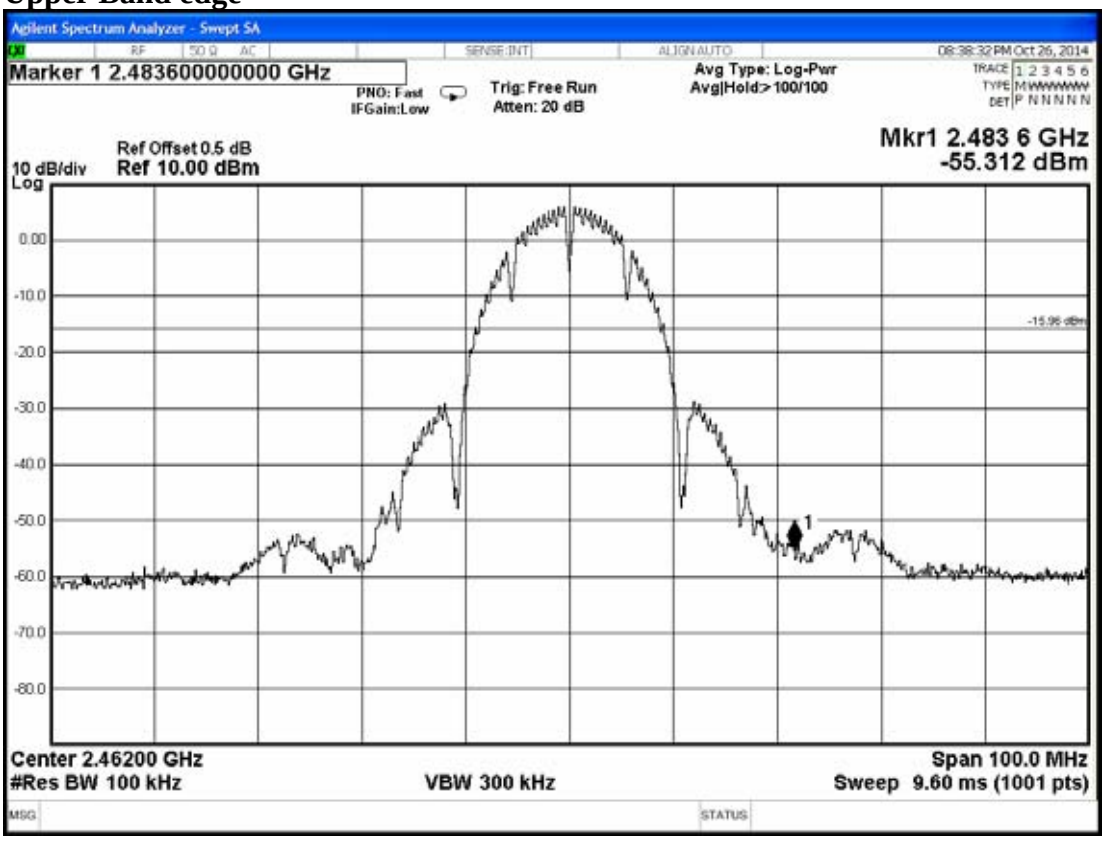
Test Date: 2014. 10. 26 Temperature: 26℃ Humidity : 50%

802.11b

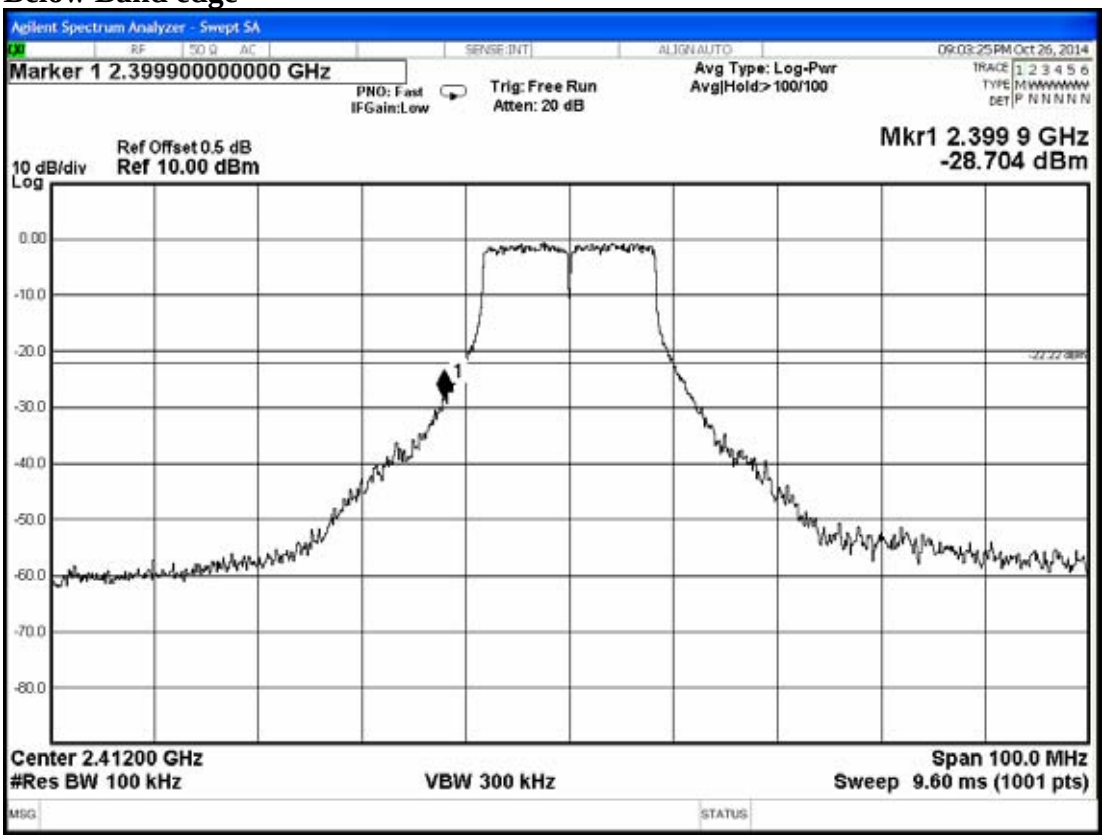
Below Band edge



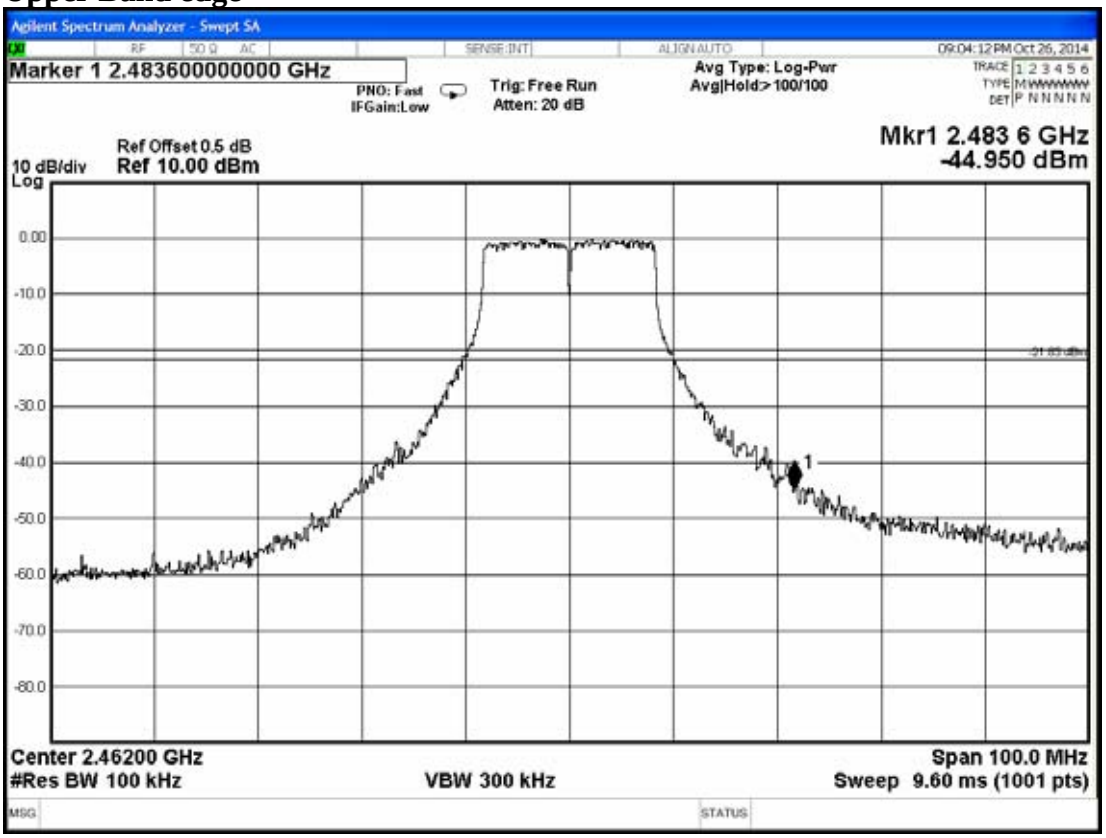
Upper Band edge



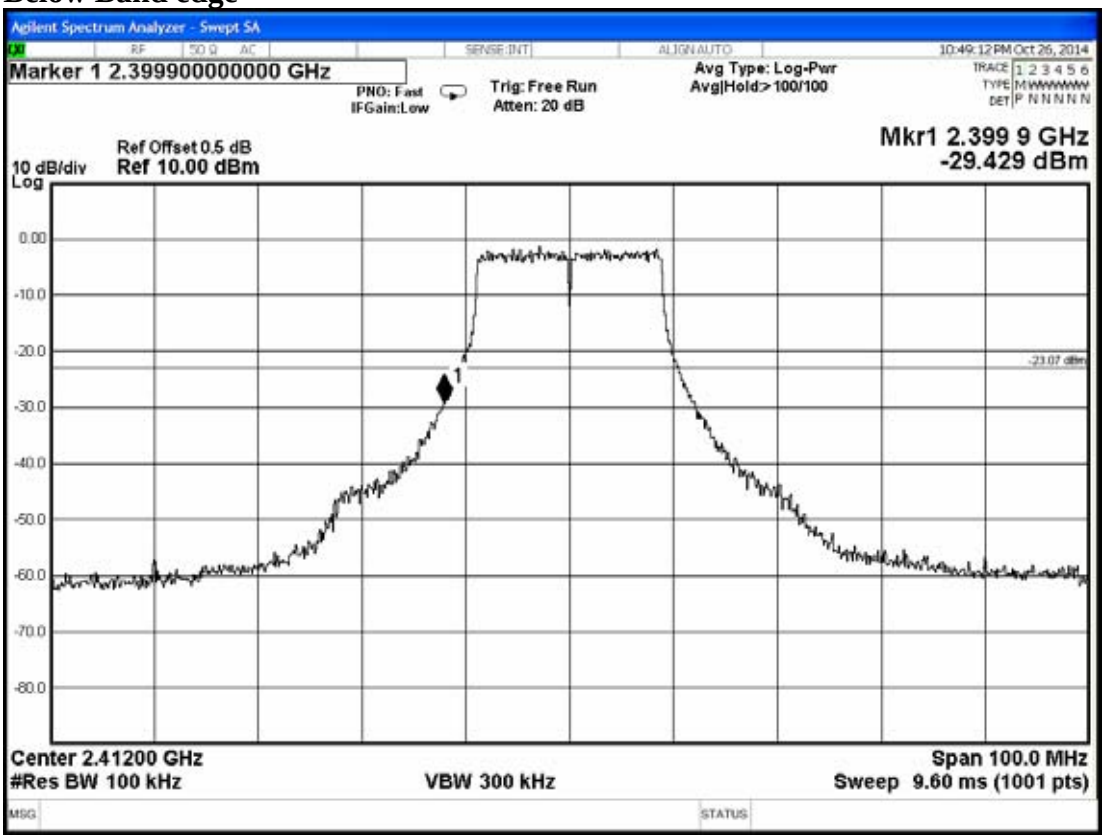
802.11g
Below Band edge



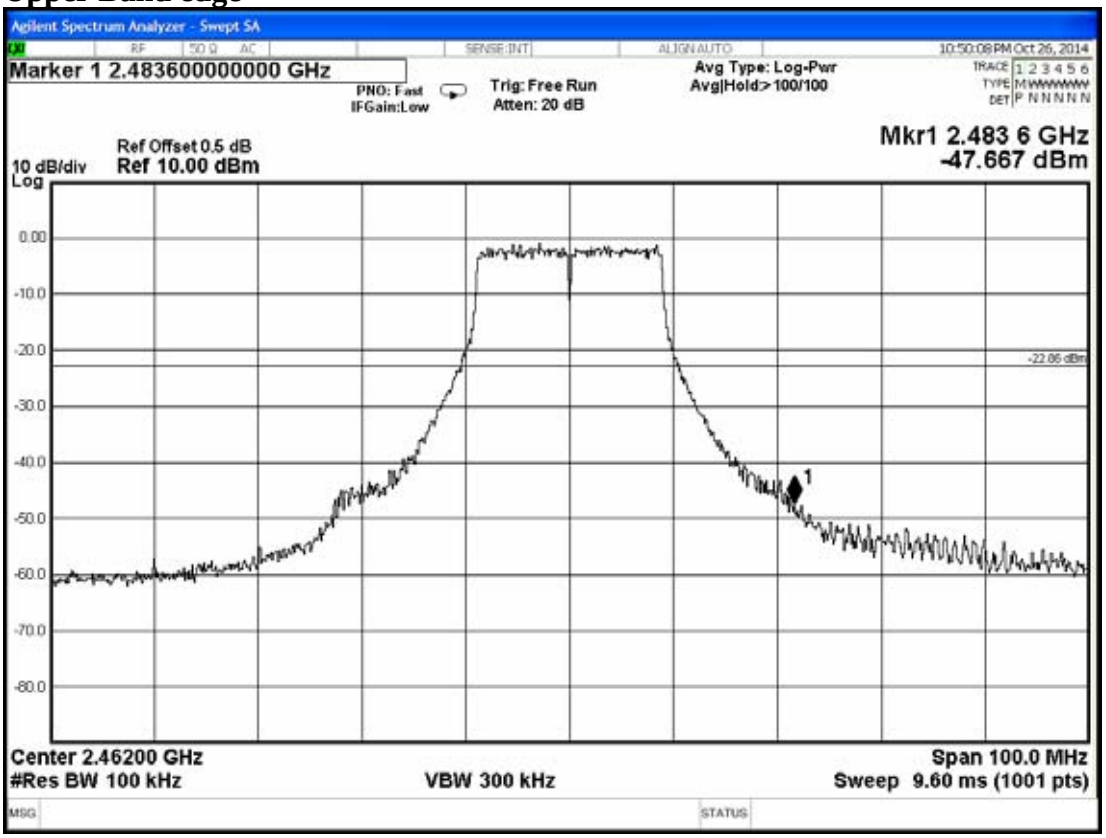
Upper Band edge



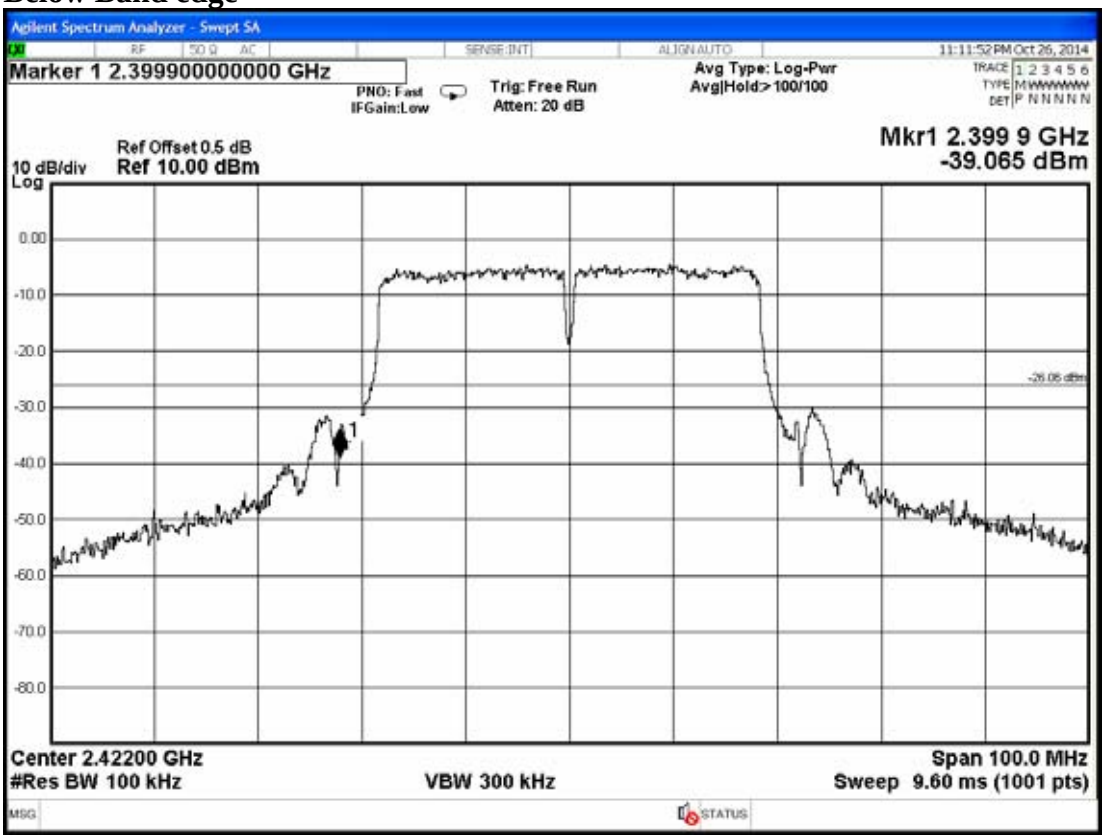
802.11n-HT20
Below Band edge



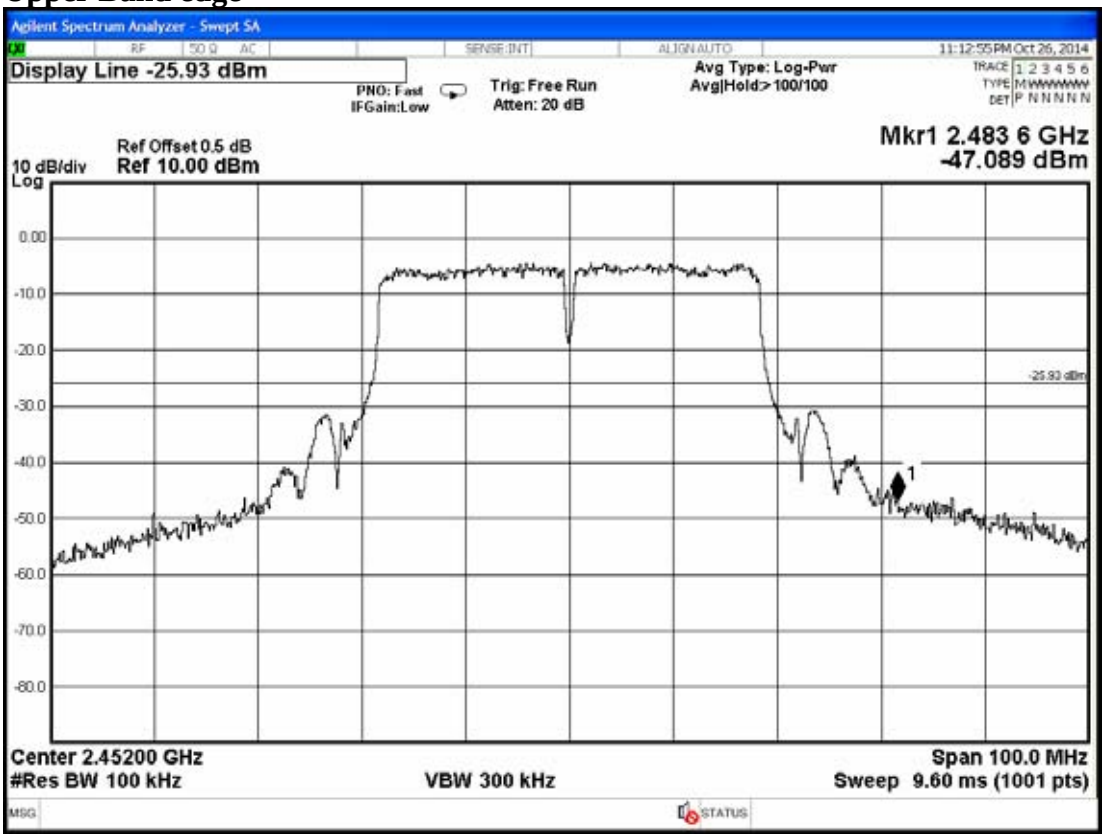
Upper Band edge



802.11n-HT40
Below Band edge



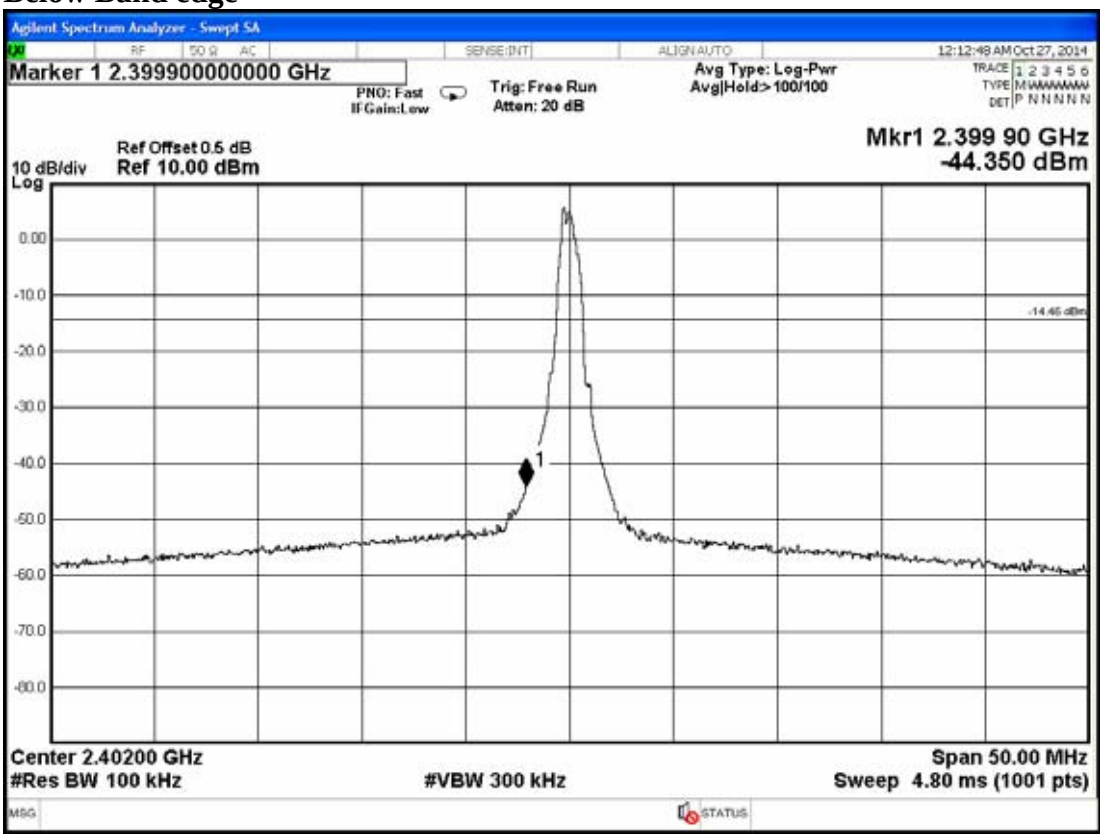
Upper Band edge



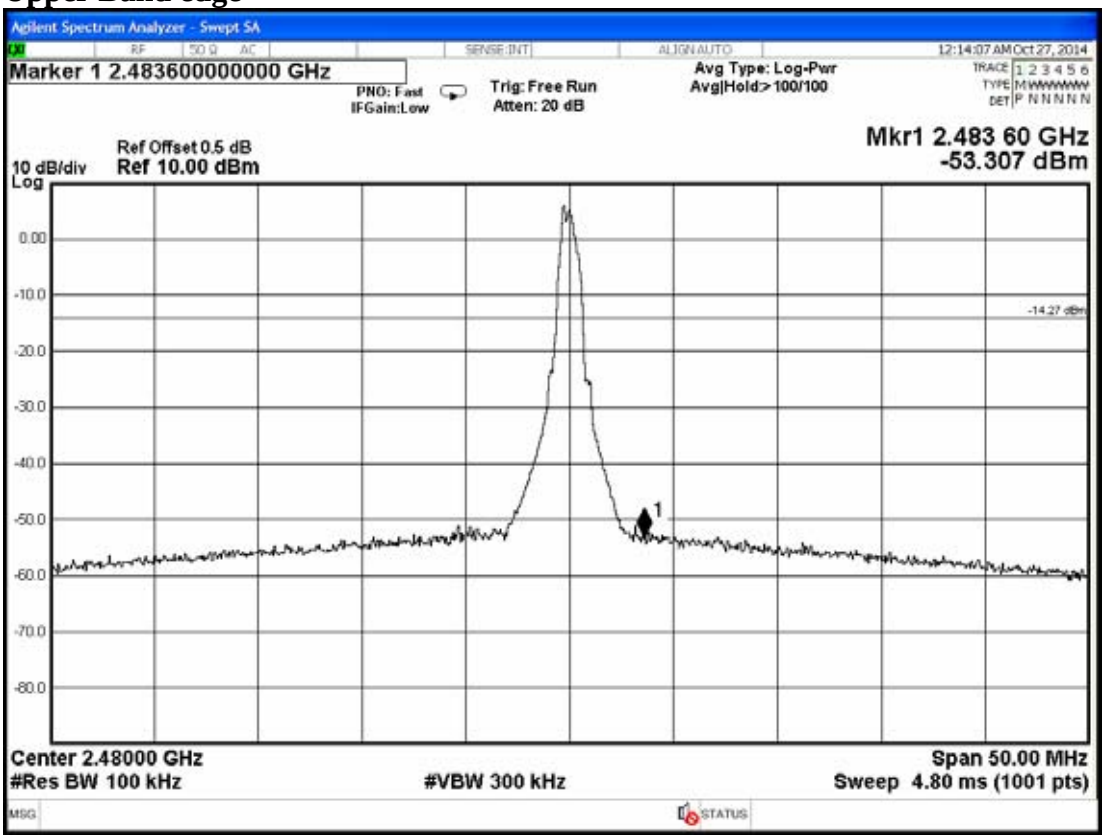
8.6.2. BLE Function

Test Date : 2014. 10. 27 Temperature : 24℃ Humidity : 58%

Below Band edge



Upper Band edge



9. POWER SPECTRAL DENSITY MEASUREMENT

9.1. Test Equipment

The following test equipment was used during the power spectral density measurement:

Item	Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	R&S	FSV30	101181	2014. 03. 14	1 Year
		Agilent	N9030A-526	MY53310269	2014. 09. 19	1 Year

9.2. Block Diagram of Test Setup

The same as section.5.2.

9.3. Specification Limits [§15.247(d)]

The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band.

9.4. Operating Condition of EUT

The test program "Teraterm" for WLAN and BLE was used to enable the EUT to transmit data at different channel frequency individually.

9.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using 100kHz RBW and ≥300kHz VBW, set sweep time = Auto.
The measurement guideline was according to KDB 558074 D01 DTS Meas Guidance is v03r02.

9.6. Test Results

PASSED. All the test results are attached in next pages.

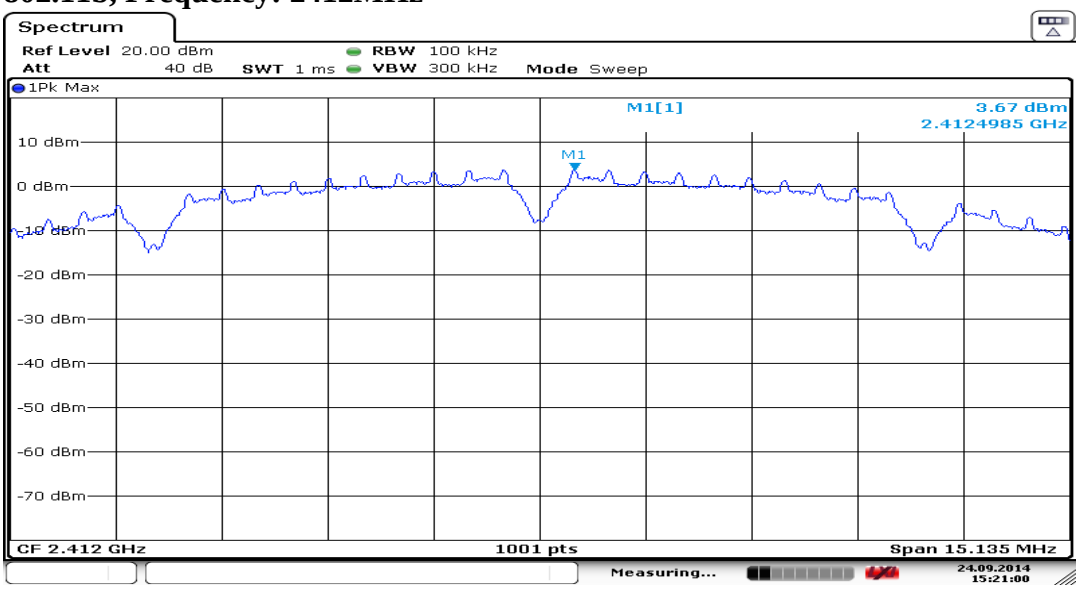
9.6.1. WLAN Function

Test Date : 2014. 09. 24 Temperature : 26℃ Humidity : 50%

No	Test Mode	Channel	Frequency	**Power Spectral Density (dBm)**
1	802.11b	CH 1	2412MHz	**3.67**
2		CH 6	2437MHz	**3.63**
3		CH 11	2462MHz	**4.04**
4	802.11g	CH 1	2412MHz	**-2.22**
5		CH 6	2437MHz	**-0.46**
6		CH 11	2462MHz	**-1.83**
7	802.11n-HT20	CH 1	2412MHz	**-3.07**
8		CH 6	2437MHz	**-0.41**
9		CH 11	2462MHz	**-2.86**
10	802.11n-HT40	CH 3	2422MHz	**-6.06**
11		CH 6	2437MHz	**-3.46**
12		CH 9	2452MHz	**-5.93**

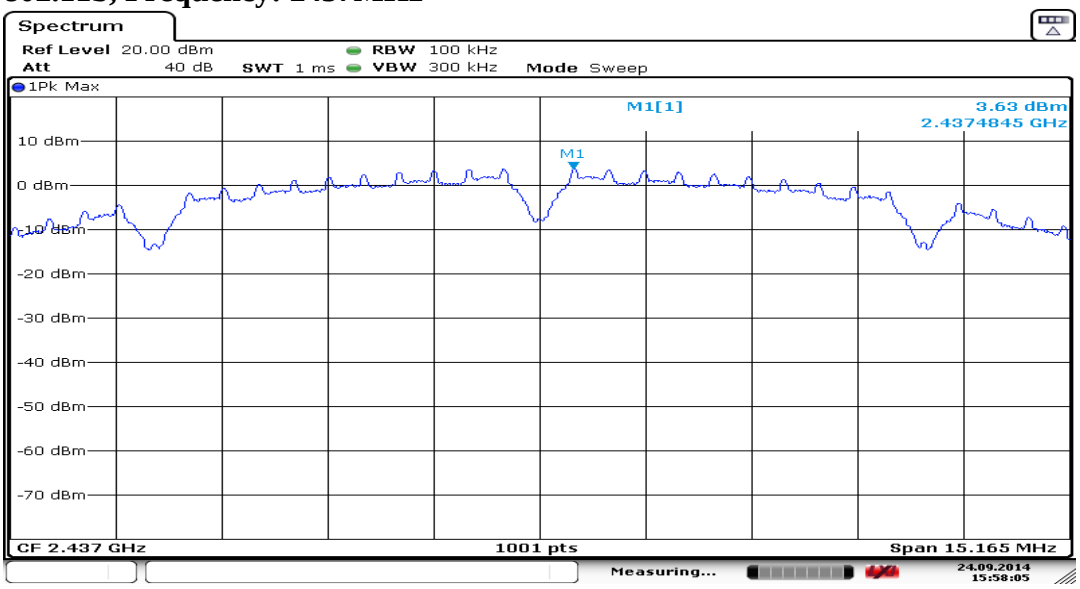
[Limit: 8dBm]

802.11b, Frequency: 2412MHz



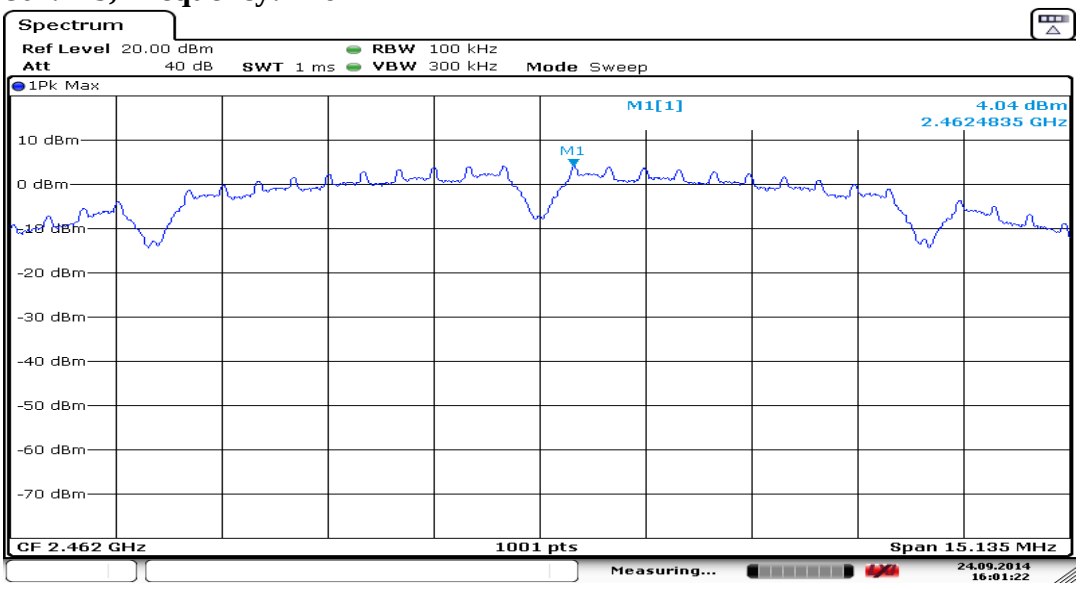
Date: 24.SEP.2014 15:21:01

802.11b, Frequency: 2437MHz



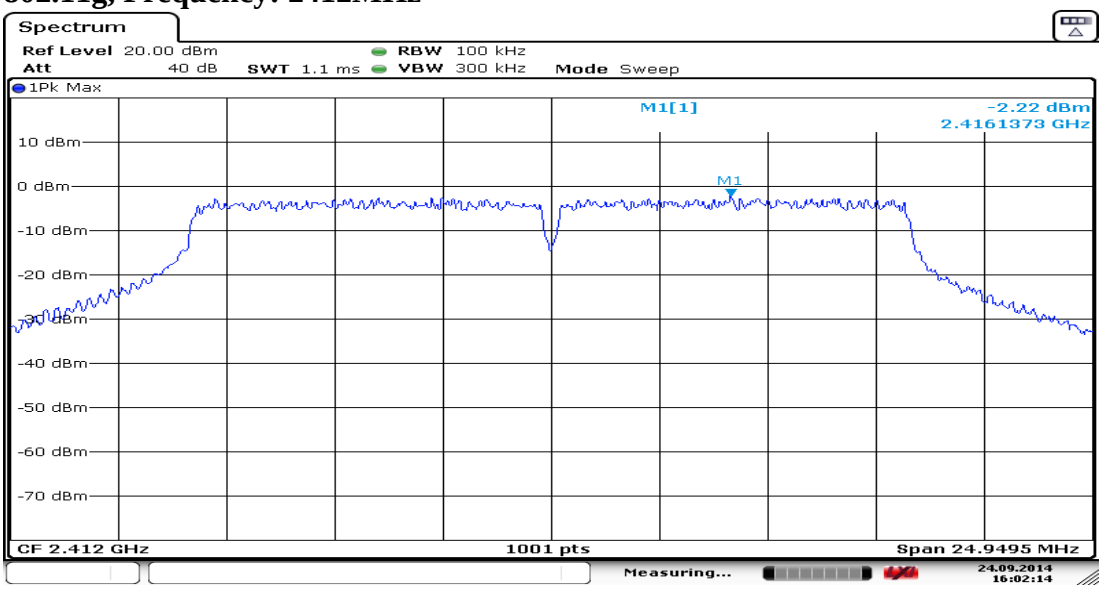
Date: 24.SEP.2014 15:58:05

802.11b, Frequency: 2462MHz



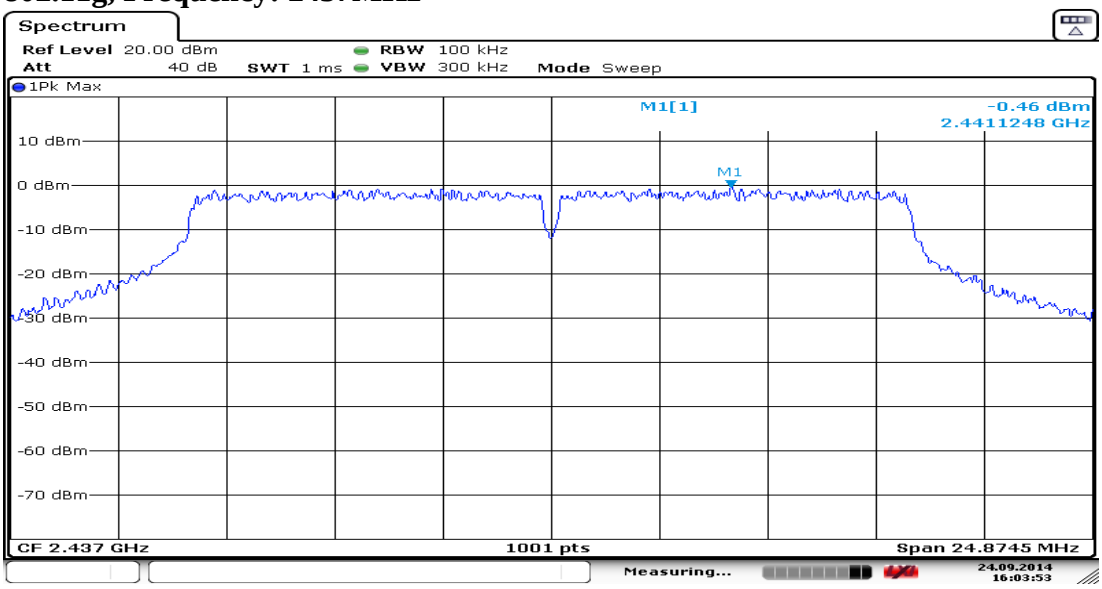
Date: 24.SEP.2014 16:01:23

802.11g, Frequency: 2412MHz



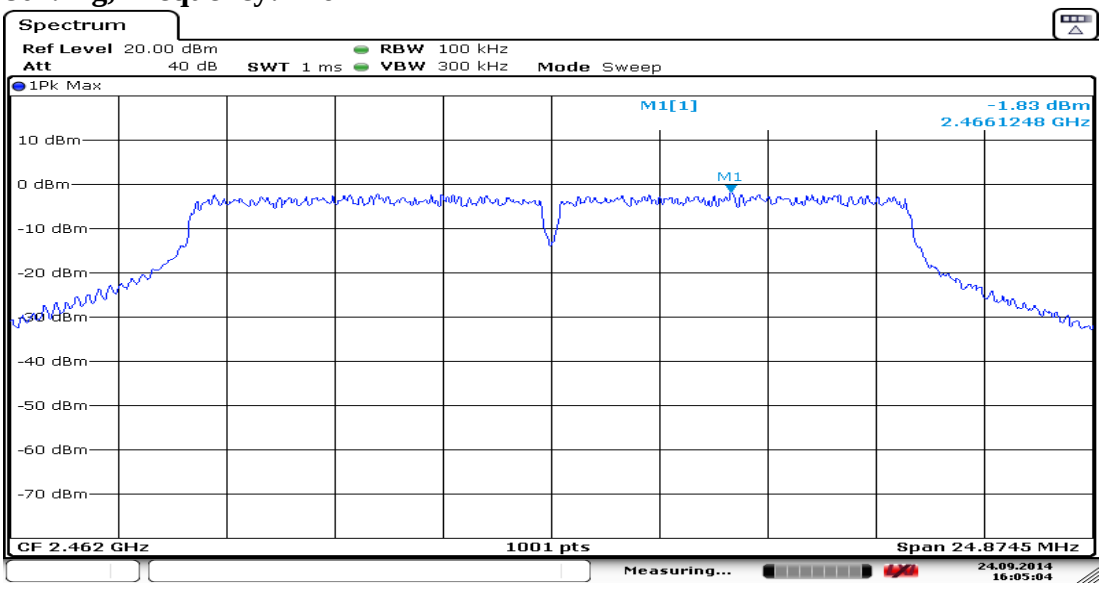
Date: 24.SEP.2014 16:02:15

802.11g, Frequency: 2437MHz



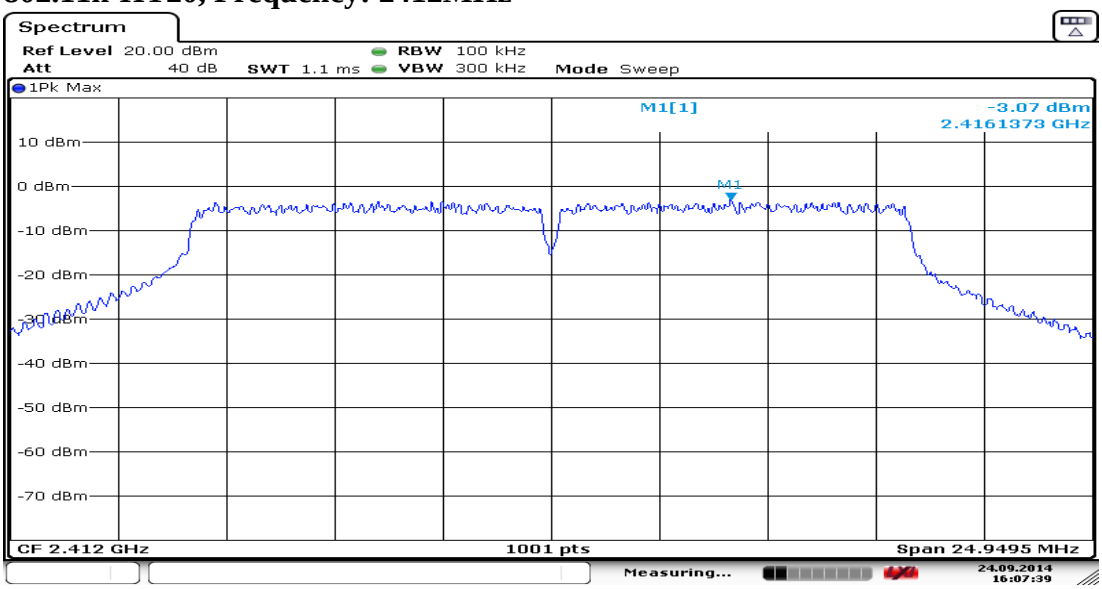
Date: 24.SEP.2014 16:03:54

802.11g, Frequency: 2462MHz



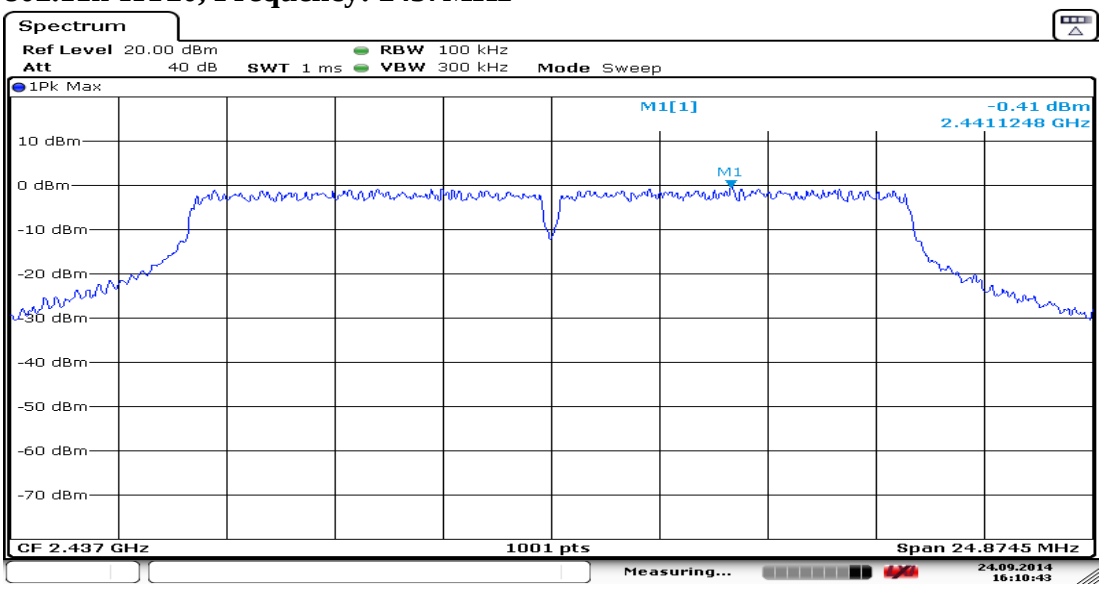
Date: 24.SEP.2014 16:05:04

802.11n-HT20, Frequency: 2412MHz



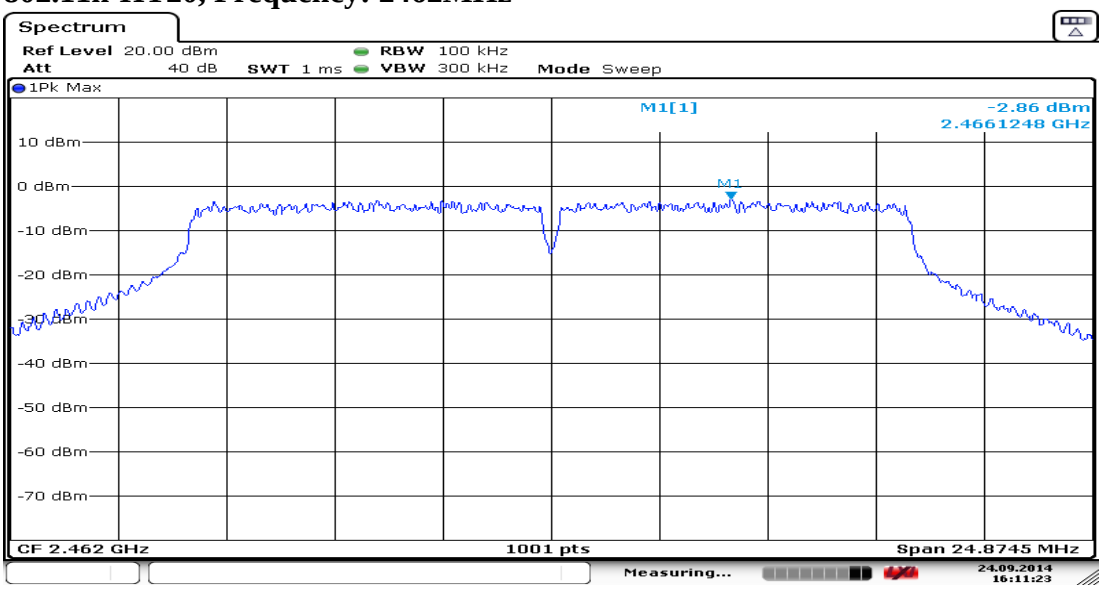
Date: 24.SEP.2014 16:07:39

802.11n-HT20, Frequency: 2437MHz



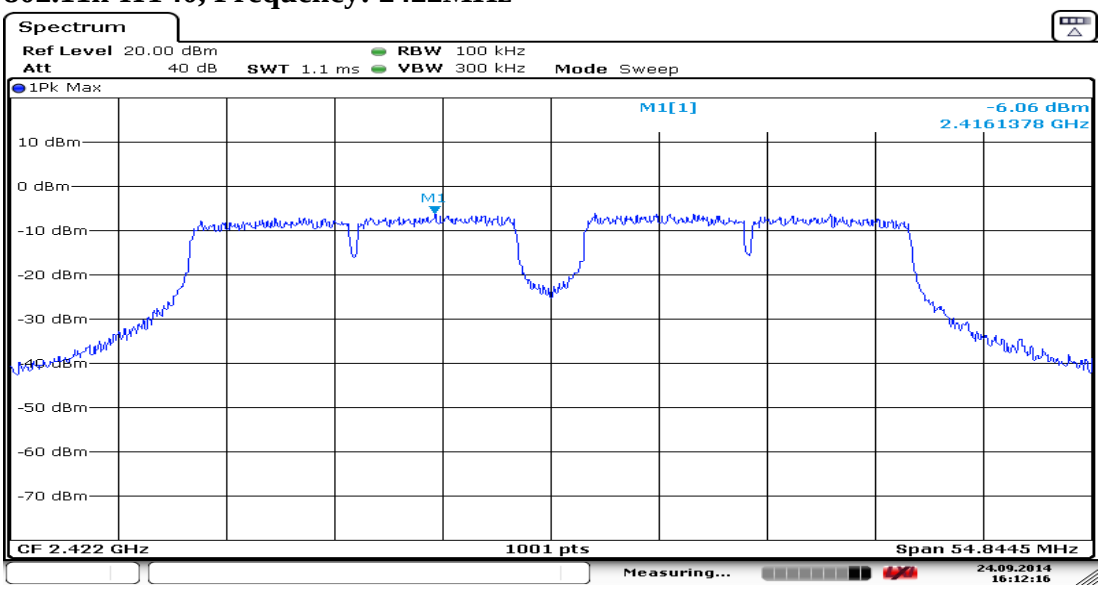
Date: 24.SEP.2014 16:10:43

802.11n-HT20, Frequency: 2462MHz



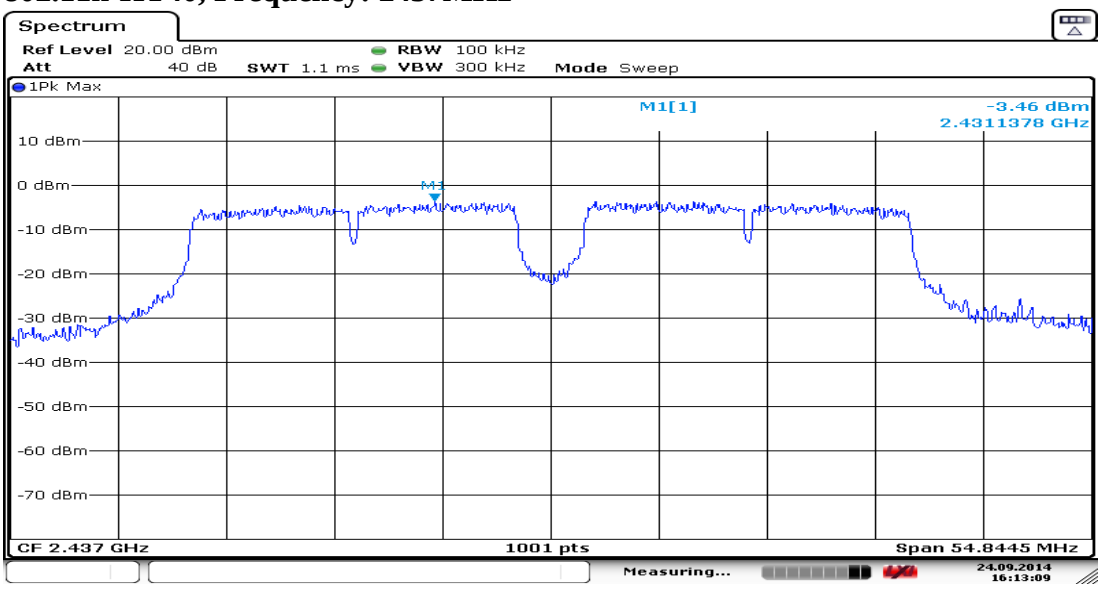
Date: 24.SEP.2014 16:11:23

802.11n-HT40, Frequency: 2422MHz



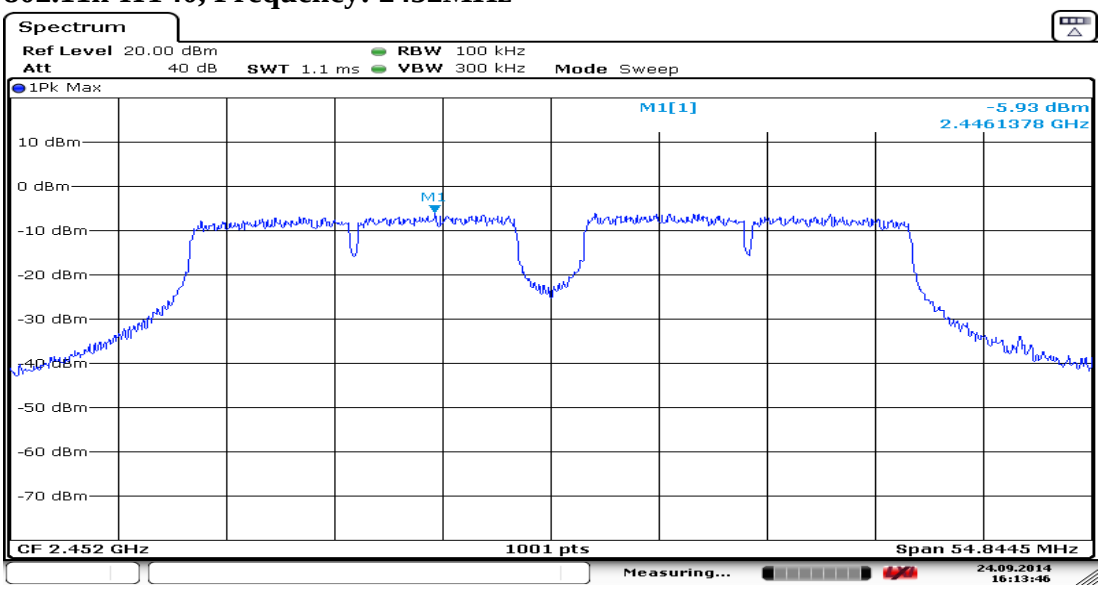
Date: 24.SEP.2014 16:12:16

802.11n-HT40, Frequency: 2437MHz



Date: 24.SEP.2014 16:13:09

802.11n-HT40, Frequency: 2452MHz



Date: 24.SEP.2014 16:13:47

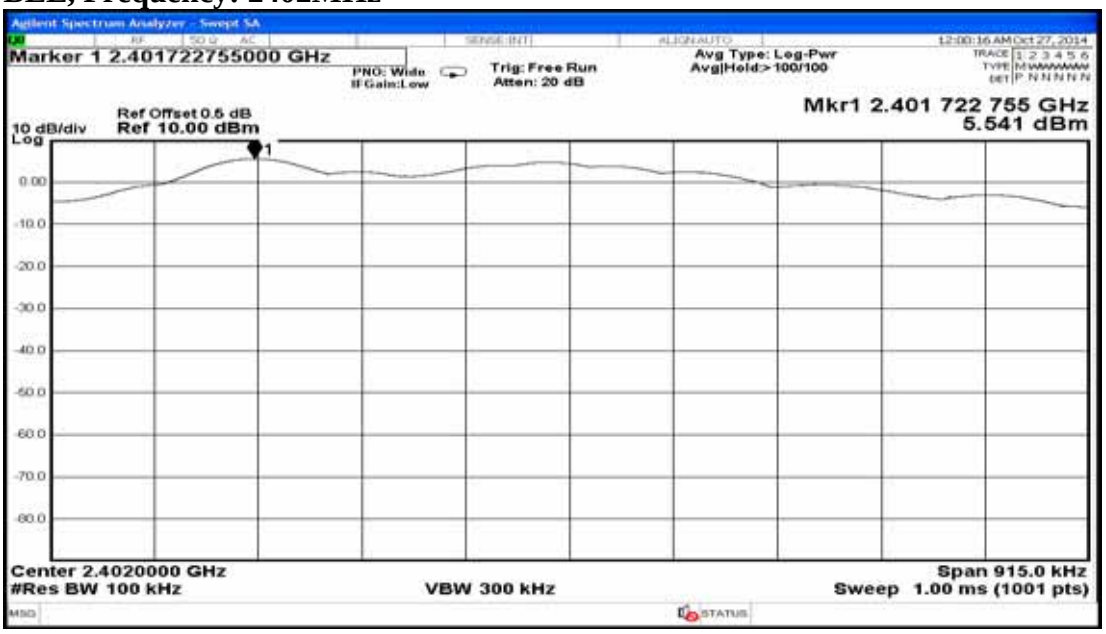
9.6.2. BLE Function

Test Date : 2014. 10. 27 Temperature : 24℃ Humidity : 58%

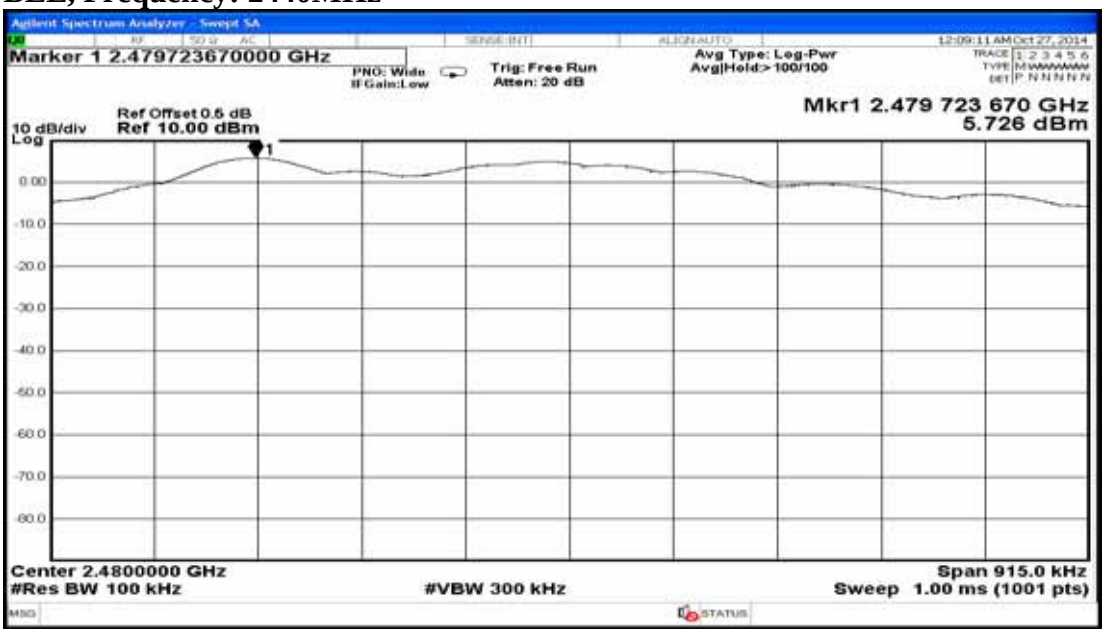
No	Test Mode	Channel	Frequency	**Power Spectral Density (dBm)**
1	BLE	CH 0	2402MHz	**5.541**
2		CH 19	2440MHz	**5.726**
3		CH 39	2480MHz	**5.641**

[Limit: 8dBm]

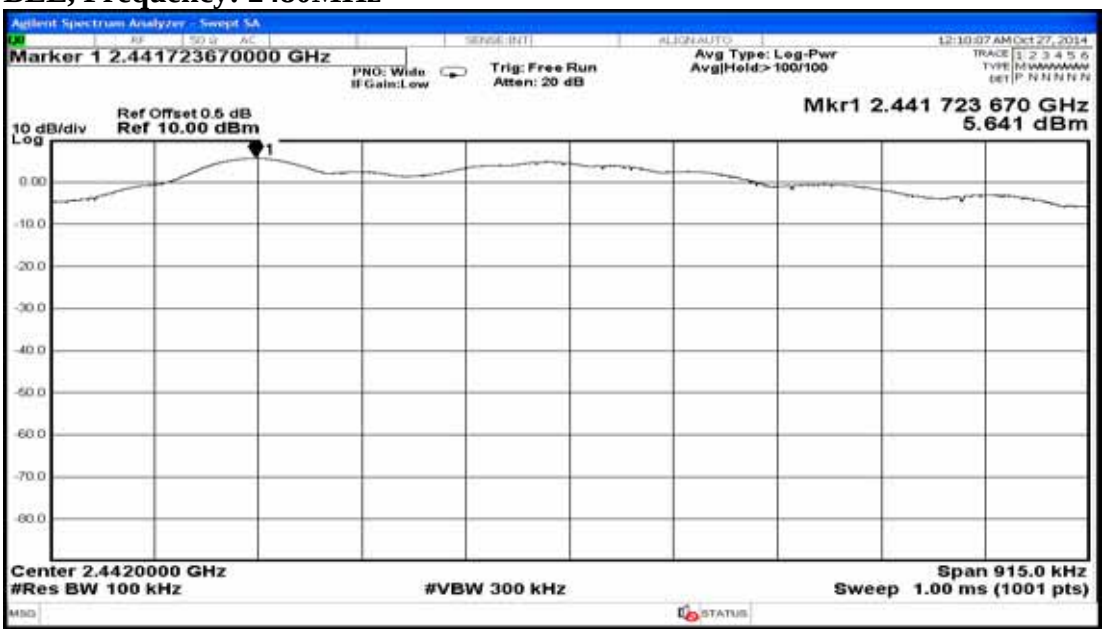
BLE, Frequency: 2402MHz



BLE, Frequency: 2440MHz



BLE, Frequency: 2480MHz



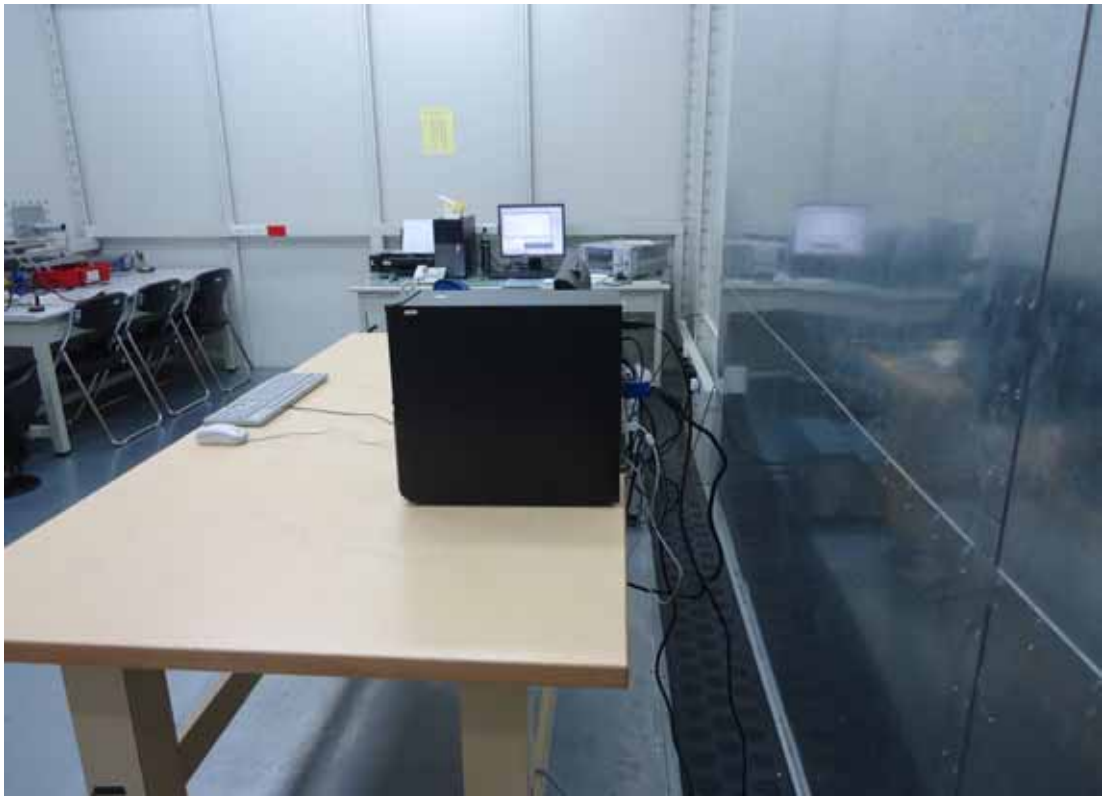
10. DEVIATION TO TEST SPECIFICATIONS

【NONE】

11. PHOTOGRAPHS

11.1. Photos of Conducted Disturbance Measurement

FRONT VIEW OF CONDUCTED MEASUREMENT



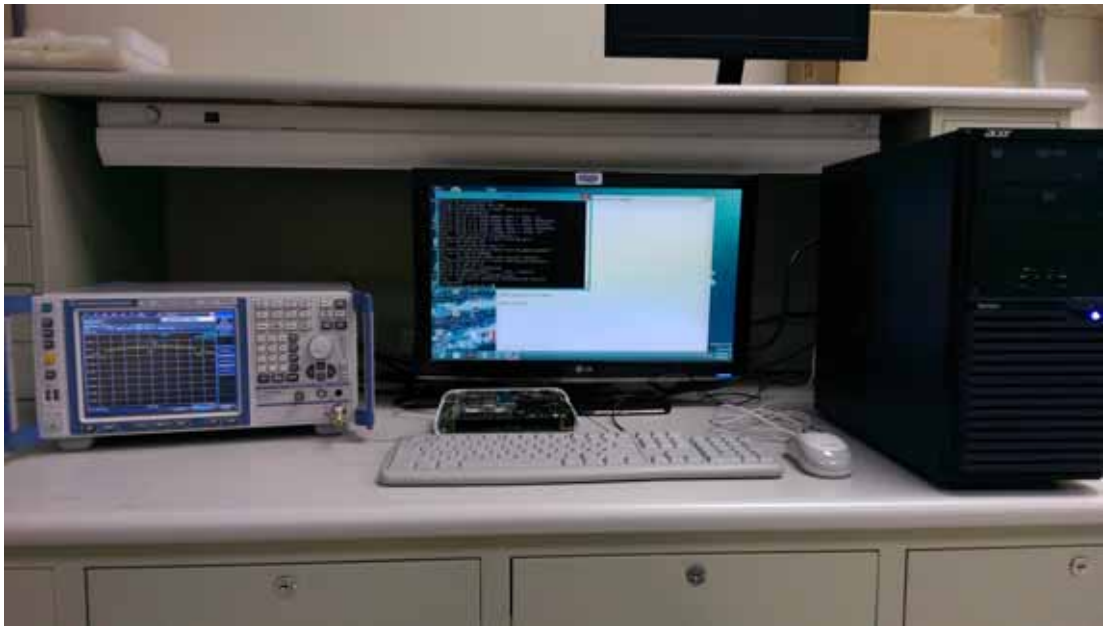
BACK VIEW OF CONDUCTED MEASUREMENT

11.2.Photos of Radiated Measurement at Semi-Anechoic Chamber

11.2.1. Frequency Range 30MHz-1GHz

11.2.2. Frequency Range Above 1GHz

11.3.Photo of Section RF Conducted Measurement



11.4.Photo of Maximum Peak Output Power Measurement