



FCC TEST REPORT

Report No: STS1503041F03

Issued for

Product Name:	Wireless AC600 Dual-Band USB Mini Adapter
Brand Name:	IOGEAR
Model No.:	GWU635
FCC ID:	QLE-GWU635
Test Standard:	FCC Part 15.247

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TEST RESULT CERTIFICATION

Applicant's name.....: ATEN Technology, Inc., dba IOGEAR
Address: 19641 Da Vinci, Foothill Ranch, CA 92610
Manufacture's Name: Winstars Technology Limited
Address: Block 4, Taisong Industrial Park, Dalang Street, Longhua Town,
Bao'an District, Shenzhen, China

Product description

Product name: Wireless AC600 Dual-Band USB Mini Adapter
Model and/or type reference ..: GWU635

Standards: FCC Part15.247

Test procedure.....: ANSI C63.10-2009

This device described above has been tested by STS, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test.....:

Date (s) of performance of tests: 10 Feb . 2015 ~11 March . 2015

Date of Issue.....: 12 March. 2015

Test Result: **Pass**

Testing Engineer :

(Tony Liu)

Technical Manager :

(Vita Li)

Authorized Signatory :

(Bovey Yang)





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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247 (a)(2)	6dB Bandwidth	PASS	
15.247 (b) (reference KDB 558074 d05 v02. /9.1.2)	Peak Output Power	PASS	
15.247 (c)	Radiated Spurious Emission	PASS	
15.247 (d)	Conducted Spurious Emission	PASS	
15.247 (e)	Power Spectral Density	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

1.1 TEST FACILITY

Shenzhen STS Test Services Co., Ltd.

Add. : 1/F, Building 2, Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China.

FCC Registration No.: 842334; IC Registration No.: 12108A-1

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Wireless AC600 Dual-Band USB Mini Adapter	
Trade Name	IOGEAR	
Model Name	GWU635	
Product Description	The EUT is a wireless USB Mini Adapter	
	Operation Frequency:	802.11b/g/n 20: 2412~2462 MHz 802.11n 40: 2422~2452MHz
	Modulation Type:	CCK/OFDM/DBPSK/DAPSK
	Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n(20/40MHz):300/150/144.44/130/117/115.56/104/86.67/78/52/6.5Mbps
	Number Of Channel	802.11b/g/n20: 11CH 802.11n 40: 7CH
	Antenna Designation:	Please see Note 3.
	Antenna Gain (dBi)	2 dbi
Channel List	Please refer to the Note 2.	
Ratings	DC 5V from USB Port	
Hardware version number	N/A	
Software versioning number	N/A	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

Channel List for 802.11b/g/n(20MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

Channel List for 802.11n(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
03	2422	06	2437	09	2452		
04	2427	07	2442				
05	2432	08	2447				



3. Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	PIFA Antenna	NA	2	N/A





2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n(20)CH1/ CH6/ CH11
Mode 4	802.11n(40) CH3/ CH6/ CH9
Mode 5	Link Mode

For Conducted Emission	
Final Test Mode	Description
Mode 5	Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n CH1/ CH6/ CH11
Mode 4	802.11n(40) CH3/ CH6/ CH9
Mode 5	Link Mode

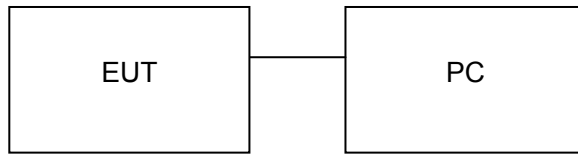
Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported



2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TEST

Configure:



2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Wireless AC600 Dual-Band USB Mini Adapter	IOGEAR	GWU635	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	YES	1.5m	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Spectrum Analyzer	Agilent	E4407B	MY50140340	2014.10.25	2015.10.24
Test Receiver	R&S	ESCI	101427	2014.10.25	2015.10.24
Bilog Antenna	TESEQ	CBL6111D	34678	2014.10.27	2015.10.26
Horn Antenna	R&S	9120D	152265	2014.10.27	2015.10.26
Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2014.07.06	2015.07.05
Amplifier	Agilent	8449B	60538	2014.10.25	2015.10.24
Loop Antenna	ARA	PLA-1030/B	1029	2014.06.08	2015.06.07
Power Meter	Anritsu	ML2495A	1204003	2014.10.25	2015.10.24
Power Sensor	Anritsu	MA2411B	100309	2014.10.25	2015.10.24
Low frequency cable	N/A	R01	N/A	2014.10.25	2015.10.24
High frequency cable	N/A	R02	N/A	2014.10.25	2015.10.24

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	102086	2014.10.25	2015.10.24
LISN	R&S	ENV216	101242	2014.10.25	2015.10.24
LISN	EMCO	3810/2NM	000-23625	2014.10.25	2015.10.24
Conduction Cable	HUBER+SU HNER	C01	N/A	2014.10.25	2015.10.24



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

Operating frequency band. In case the emission fall within the restricted band specified on Part 15.247&207(a) limit in the table below has to be followed.

FREQUENCY (MHz)	Class B (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

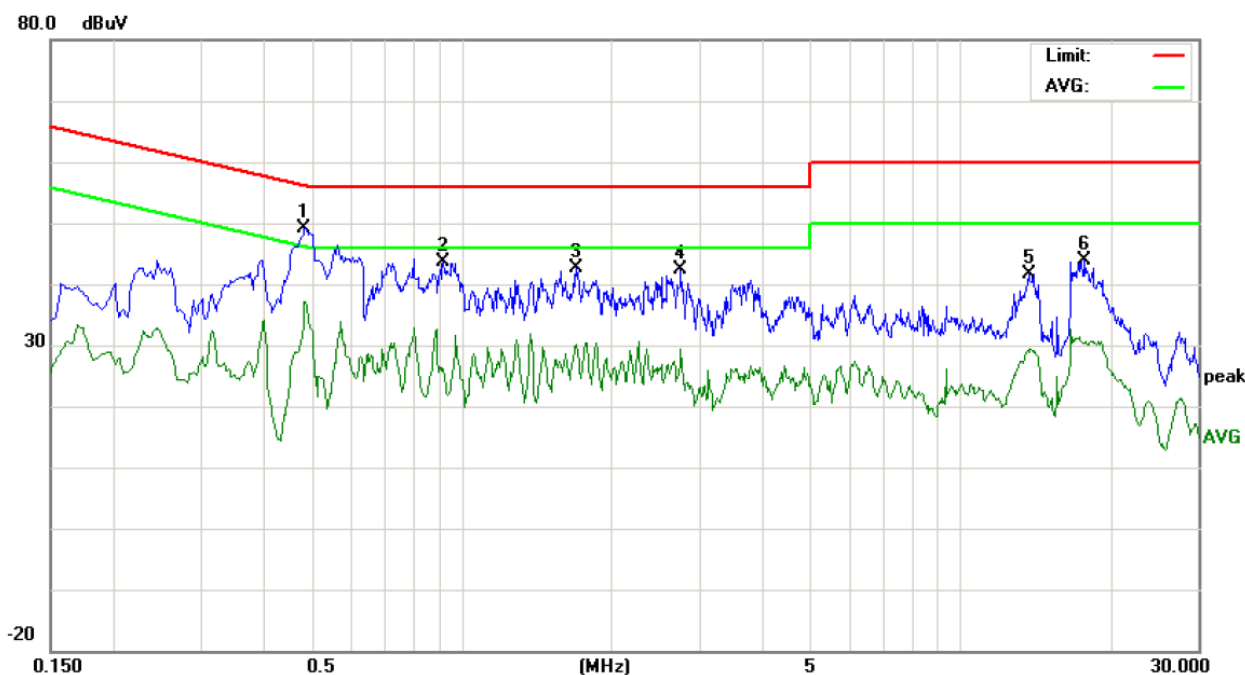
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz



3.1.2 TEST RESULTS

EUT:	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	23 °C	Relative Humidity :	50%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V	Test Mode :	Link Mode



Site: Conduction

Phase: L

Temperature: 26

Limit: FCC Class B Conduction(QP)

Power: AC 120V/60Hz

Humidity: 60 %

EUT: Wireless AC600 Dual-Band USB Mini Adapter

M/N: GWU635

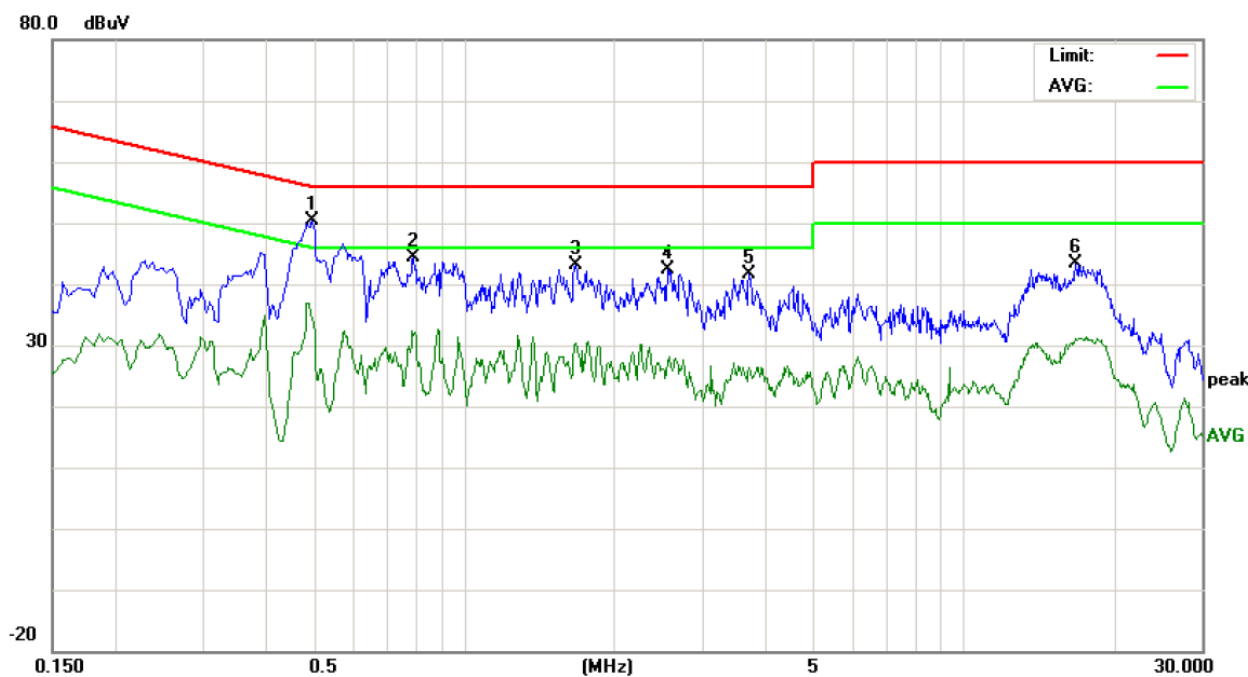
Mode: Link Mode

Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.4860	38.74		26.86	10.39	49.13		37.25	56.24	46.24	-7.11	-8.99	P	
2	0.9220	33.29		15.66	10.40	43.69		26.06	56.00	46.00	-12.31	-19.94	P	
3	1.7020	32.32		19.81	10.32	42.64		30.13	56.00	46.00	-13.36	-15.87	P	
4	2.7540	31.92		18.80	10.49	42.41		29.29	56.00	46.00	-13.59	-16.71	P	
5	13.7260	31.57		18.74	10.13	41.70		28.87	60.00	50.00	-18.30	-21.13	P	
6	17.8100	33.65		20.22	10.12	43.77		30.34	60.00	50.00	-16.23	-19.66	P	



EUT:	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	23 °C	Relative Humidity :	50%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V	Test Mode :	Link Mode



Site: Conduction

Phase: **N**

Temperature: 26

Limit: FCC Class B Conduction(QP)

Power: AC 120V/60Hz

Humidity: 60 %

EUT: Wireless AC600 Dual-Band USB Mini Adapter

M/N: GWU635

Mode: Link Mode

Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.4980	40.01		24.26	10.40	50.41		34.66	56.03	46.03	-5.62	-11.37	P	
2	0.7940	34.10		21.32	10.28	44.38		31.60	56.00	46.00	-11.62	-14.40	P	
3	1.6780	32.79		20.00	10.32	43.11		30.32	56.00	46.00	-12.89	-15.68	P	
4	2.5660	32.03		17.11	10.45	42.48		27.56	56.00	46.00	-13.52	-18.44	P	
5	3.7260	31.22		16.01	10.47	41.69		26.48	56.00	46.00	-14.31	-19.52	P	
6	16.8300	33.23		20.94	10.13	43.36		31.07	60.00	50.00	-16.64	-18.93	P	



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

6 dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on Part 15.247&205(a), then the Part 15.247&209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower



Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz (Peak/AV)
Stop Frequency	10th carrier harmonic(Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz / 10Hz

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

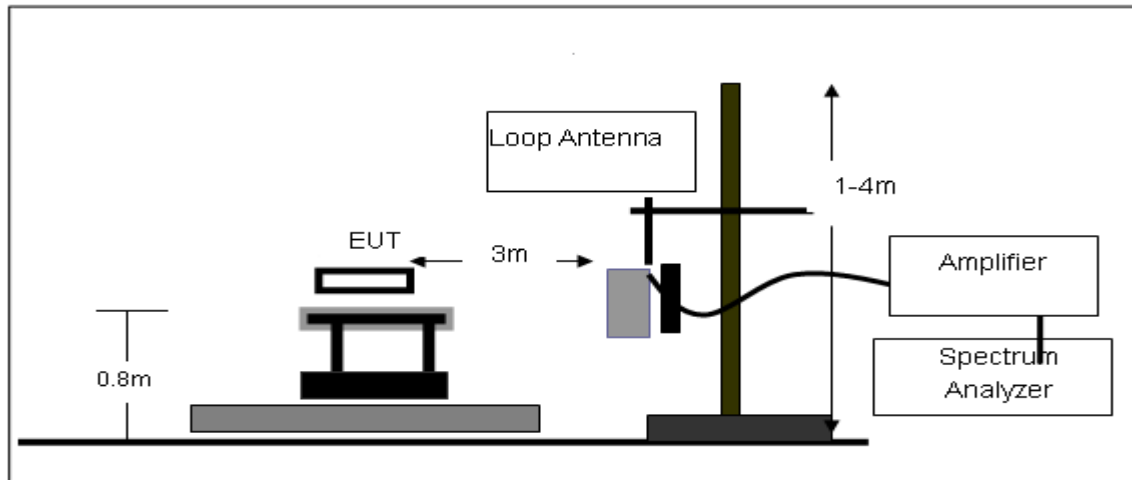
- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

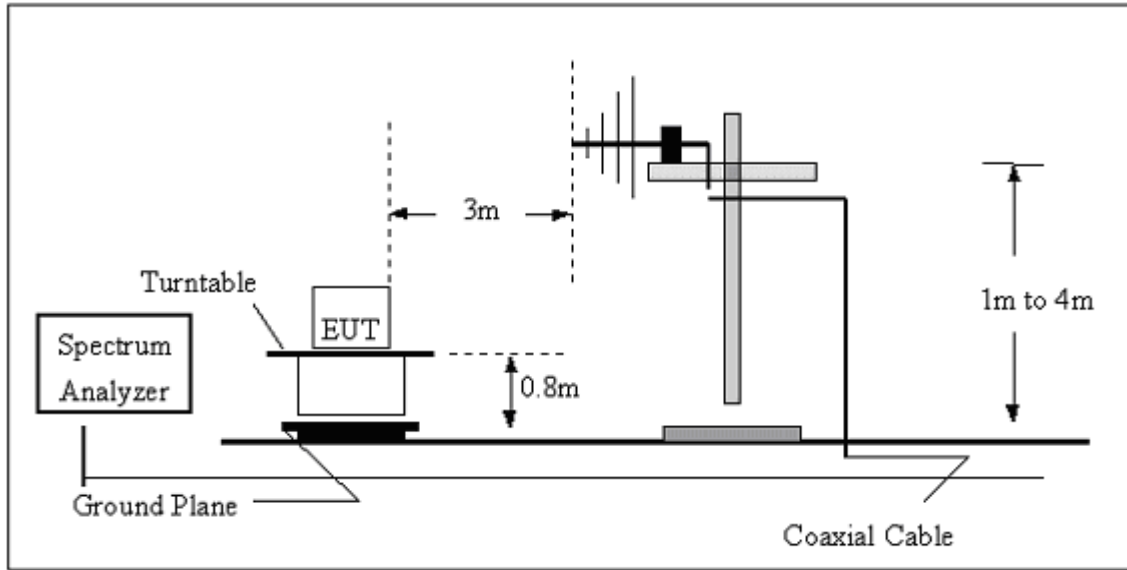
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 TEST SETUP

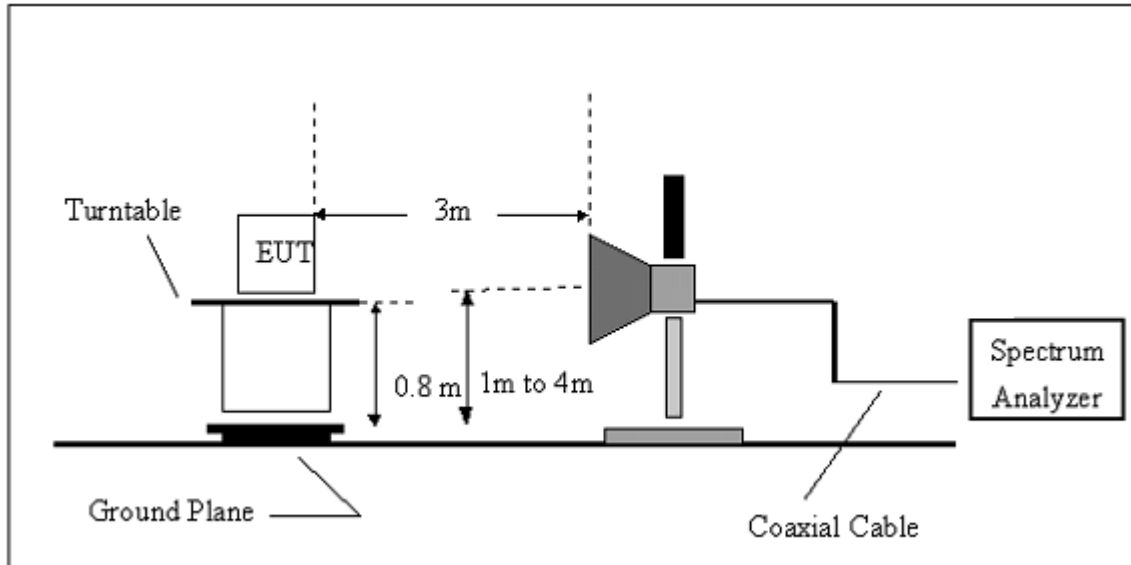
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



3.2.5 TEST RESULT

9KHz-30MHz

EUT:	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 5V
Test Mode :	Link mode	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

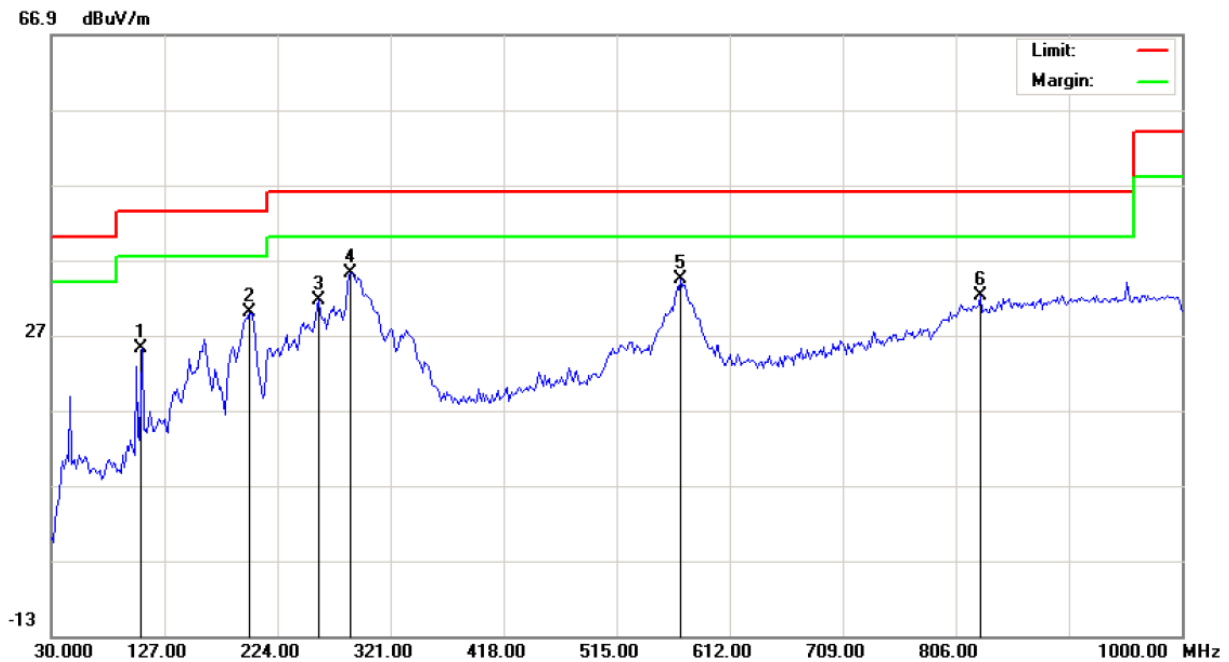
Distance extrapolation factor = $40 \log (\text{specific distance/test distance})(\text{dB})$;

Limit line = specific limits(dBuv) + distance extrapolation factor.



30MHz - 1000MHz

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	Link mode	Polarization :	Horizontal



Site: site #1

Polarization: **Horizontal**

Temperature: 26

Limit: FCC Class B 3M Radiation

Power: DC 5V

Humidity: 60 %

EUT: Wireless AC600 Dual-Band USB Mini Adapter Distance:

M/N: GWU635

Mode: Link Mode

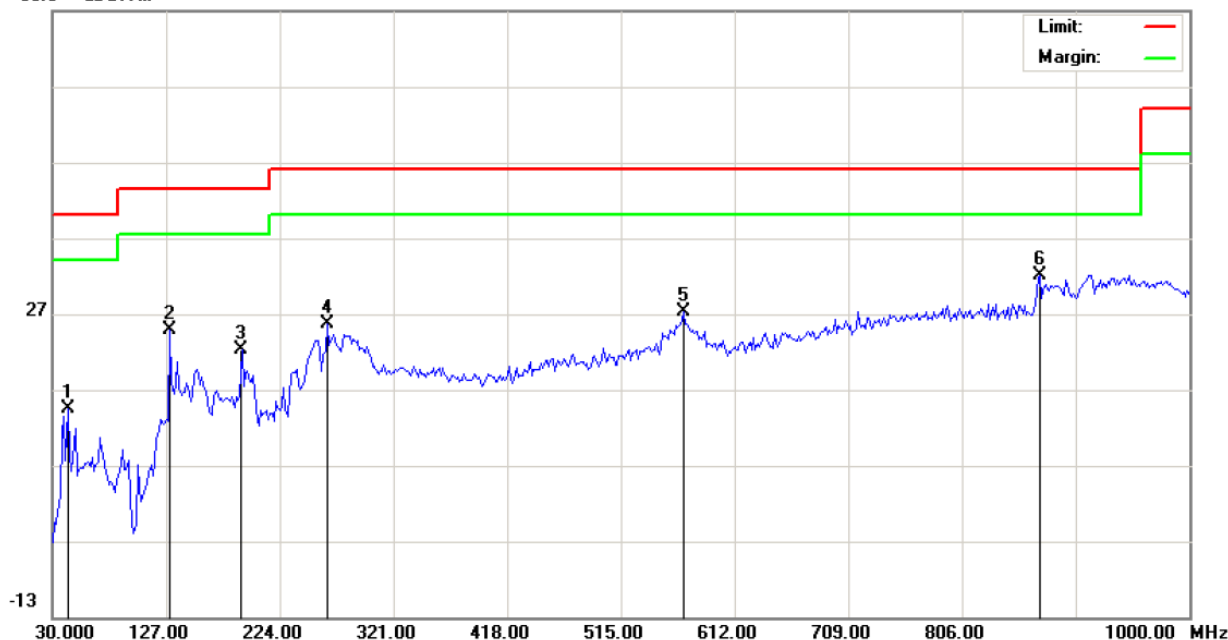
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		107.5999	14.20	11.00	25.20	43.50	-18.30	peak			
2		199.7500	18.10	11.99	30.09	43.50	-13.41	peak			
3		259.5667	17.49	14.19	31.68	46.00	-14.32	peak			
4	*	287.0500	20.15	15.02	35.17	46.00	-10.83	peak			
5		569.9666	11.44	22.98	34.42	46.00	-11.58	peak			
6		827.0167	4.80	27.31	32.11	46.00	-13.89	peak			



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	Link mode	Polarization :	Vertical

66.9 dBuV/m



Site: site #1

Polarization: **Vertical**

Temperature: 26

Limit: FCC Class B 3M Radiation

Power: DC 5V

Humidity: 60 %

EUT: Wireless AC600 Dual-Band USB Mini Adapter Distance:

M/N: GWU635

Mode: Link Mode

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		42.9333	5.74	8.71	14.45	40.00	-25.55	peak			
2		130.2333	13.69	11.13	24.82	43.50	-18.68	peak			
3		191.6665	11.04	11.11	22.15	43.50	-21.35	peak			
4		264.4166	11.33	14.34	25.67	46.00	-20.33	peak			
5		568.3500	4.59	22.57	27.16	46.00	-18.84	peak			
6	*	872.2833	4.16	27.89	32.05	46.00	-13.95	peak			



Above 1000MHz

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1 (802.11b Mode)/2412	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.091	46.35	10.44	56.79	74	-17.21	peak
4824.042	36.27	10.44	46.71	54	-7.29	AVG
7236.092	42.38	12.39	54.77	74	-19.23	peak
7236.041	28.29	12.39	40.68	54	-13.32	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1 (802.11b Mode)/2412	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.111	49.28	10.39	59.67	74	-14.33	peak
4924.129	33.36	10.39	43.75	54	-10.25	AVG
7386.109	48.27	12.68	60.95	74	-13.05	peak
7386.079	30.75	12.68	43.43	54	-10.57	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH6 (802.11b Mode)/2437	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.079	48.23	10.39	58.62	74	-15.38	peak
4924.100	34.56	10.39	44.95	54	-9.05	AVG
7386.103	47.65	12.68	60.33	74	-13.67	peak
7386.069	30.28	12.68	42.96	54	-11.04	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH6 (802.11b Mode)/2437	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.117	48.93	10.39	59.32	74	-14.68	peak
4924.056	33.78	10.39	44.17	54	-9.83	AVG
7386.125	48.15	12.68	60.83	74	-13.17	peak
7386.110	31.25	12.68	43.93	54	-10.07	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11 (802.11b Mode)/2462	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.046	50.36	10.39	60.75	74	-13.25	peak
4924.094	35.38	10.39	45.77	54	-8.23	AVG
7386.136	48.79	12.68	61.47	74	-12.53	peak
7386.117	31.25	12.68	43.93	54	-10.07	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11 (802.11b Mode)/2462	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.108	49.18	10.39	59.57	74	-14.43	peak
4924.034	33.78	10.39	44.17	54	-9.83	AVG
7386.097	49.65	12.68	62.33	74	-11.67	peak
7386.060	30.79	12.68	43.47	54	-10.53	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1 (802.11g Mode)/2412	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.070	46.79	10.44	57.23	74	-16.77	peak
4824.054	36.86	10.44	47.3	54	-6.7	AVG
7236.091	42.79	12.39	55.18	74	-18.82	peak
7236.119	29.63	12.39	42.02	54	-11.98	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1 (802.11g Mode)/2412	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.061	46.38	10.44	56.82	74	-17.18	peak
4824.074	37.89	10.44	48.33	54	-5.67	AVG
7236.055	42.86	12.39	55.25	74	-18.75	peak
7236.075	29.68	12.39	42.07	54	-11.93	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH6 (802.11g Mode)/2437	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.104	46.58	10.4	56.98	74	-17.02	peak
4874.059	27.56	10.4	37.96	54	-16.04	AVG
7311.139	44.65	12.75	57.4	74	-16.6	peak
7311.129	26.34	12.75	39.09	54	-14.91	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH6 (802.11g Mode)/2437	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.134	49.63	10.4	60.03	74	-13.97	peak
4874.124	35.96	10.4	46.36	54	-7.64	AVG
7311.099	48.76	12.75	61.51	74	-12.49	peak
7311.111	33.64	12.75	46.39	54	-7.61	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11 (802.11g Mode)/2462	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.057	49.89	10.39	60.28	74	-13.72	peak
4924.063	33.76	10.39	44.15	54	-9.85	AVG
7386.134	48.53	12.68	61.21	74	-12.79	peak
7386.116	31.25	12.68	43.93	54	-10.07	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11(802.11g Mode)/2462	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.077	47.23	10.39	57.62	74	-16.38	peak
4924.120	34.52	10.39	44.91	54	-9.09	AVG
7386.036	45.39	12.68	58.07	74	-15.93	peak
7386.109	33.87	12.68	46.55	54	-7.45	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1(802.11n Mode)/20MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.080	46.58	10.44	57.02	74	-16.98	peak
4824.101	36.76	10.44	47.2	54	-6.8	AVG
7236.062	42.64	12.39	55.03	74	-18.97	peak
7236.023	28.57	12.39	40.96	54	-13.04	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1(802.11n Mode)/20MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.050	46.76	10.44	57.2	74	-16.8	peak
4824.108	37.86	10.44	48.3	54	-5.7	AVG
7236.054	51.67	12.39	64.06	74	-9.94	peak
7236.054	32.36	12.39	44.75	54	-9.25	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH6(802.11n Mode)/20MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.060	51.35	10.4	61.75	74	-12.25	peak
4874.026	32.78	10.4	43.18	54	-10.82	AVG
7311.078	48.14	12.75	60.89	74	-13.11	peak
7311.100	27.64	12.75	40.39	54	-13.61	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH6(802.11n Mode)/20MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.112	48.75	10.4	59.15	74	-14.85	peak
4874.155	32.67	10.4	43.07	54	-10.93	AVG
7311.150	47.86	12.75	60.61	74	-13.39	peak
7311.112	26.73	12.75	39.48	54	-14.52	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11(802.11n Mode)/20MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.068	50.45	10.39	60.84	74	-13.16	peak
4924.091	35.76	10.39	46.15	54	-7.85	AVG
7386.167	43.87	12.68	56.55	74	-17.45	peak
7386.112	31.67	12.68	44.35	54	-9.65	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11(802.11n Mode)/20MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.115	51.12	10.39	61.51	74	-12.49	peak
4924.090	35.37	10.39	45.76	54	-8.24	AVG
7386.134	42.46	12.68	55.14	74	-18.86	peak
7386.126	28.87	12.68	41.55	54	-12.45	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH3(802.11n Mode)/40MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4844.069	47.27	10.5	57.77	74	-16.23	peak
4844.125	31.58	10.5	42.08	54	-11.92	AVG
7266.251	48.49	12.5	60.99	74	-13.01	peak
7266.212	30.25	12.5	42.75	54	-11.25	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH3(802.11n Mode)/40MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4844.285	47.46	10.5	57.96	74	-16.04	peak
4844.221	30.78	10.5	41.28	54	-12.72	AVG
7266.165	48.65	12.5	61.15	74	-12.85	peak
7266.202	29.13	12.5	41.63	54	-12.37	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH6(802.11n Mode)/40MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.167	48.76	10.4	59.16	74	-14.84	peak
4874.214	33.85	10.4	44.25	54	-9.75	AVG
7311.116	47.57	12.75	60.32	74	-13.68	peak
7311.082	32.79	12.75	45.54	54	-8.46	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH6(802.11n Mode)/40MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.457	47.76	10.4	58.16	74	-15.84	peak
4874.458	34.38	10.4	44.78	54	-9.22	AVG
7311.577	46.56	12.75	59.31	74	-14.69	peak
7311.539	35.45	12.75	48.2	54	-5.8	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH9(802.11n Mode)/40MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4904.303	49.78	10.29	60.07	74	-13.93	peak
4904.272	35.46	10.29	45.75	54	-8.25	AVG
7356.212	48.76	12.79	61.55	74	-12.45	peak
7356.188	31.05	12.79	43.84	54	-10.16	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH9(802.11n Mode)/40MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4904.078	50.75	10.29	61.04	74	-12.96	peak
4904.138	34.24	10.29	44.53	54	-9.47	AVG
7356.358	48.15	12.79	60.94	74	-13.06	peak
7356.400	32.05	12.79	44.84	54	-9.16	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



3.2.6 TEST RESULTS (BAND EDGE)

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1(802.11b Mode)	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	79.63	-13	66.63	74	-7.37	peak
2399.900	61.45	-13	48.45	54	-5.54	AVG
2400.000	80.36	-12.99	67.37	74	-4.41	peak
2400.000	61.79	-12.99	48.8	54	-5.74	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1(802.11b Mode)	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	81.24	-13	68.24	74	-5.76	peak
2399.900	61.27	-13	48.27	54	-5.73	AVG
2400.000	79.67	-12.99	66.68	74	-7.32	peak
2400.000	59.89	-12.99	46.9	54	-7.1	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11(802.11b Mode)	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	78.97	-12.78	66.19	74	-7.81	peak
2483.500	60.27	-12.78	47.49	54	-6.51	AVG
2483.600	79.67	-12.77	66.9	74	-7.1	peak
2483.600	60.74	-12.78	47.96	54	-6.04	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11(802.11b Mode)	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	78.64	-12.78	65.86	74	-8.14	peak
2483.500	60.12	-12.78	47.34	54	-6.66	AVG
2483.600	78.97	-12.77	66.2	74	-7.8	peak
2483.600	59.08	-12.77	46.31	54	-7.69	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1(802.11g Mode)	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	77.35	-13	64.35	74	-9.65	peak
2399.900	59.97	-13	46.97	54	-7.03	AVG
2400.000	78.27	-12.99	65.28	74	-8.72	peak
2400.000	58.76	-12.99	45.77	54	-8.23	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1(802.11gMode)	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	79.68	-13	66.68	74	-7.32	peak
2399.900	60.75	-13	47.75	54	-6.25	AVG
2400.000	78.86	-12.99	65.87	74	-8.13	peak
2400.000	62.95	-12.99	49.96	54	-4.04	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11(802.11g Mode)	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	79.68	-12.78	66.9	74	-7.1	peak
2483.500	63.76	-12.78	50.98	54	-3.02	AVG
2483.600	76.89	-12.77	64.12	74	-9.88	peak
2483.600	61.08	-12.77	48.31	54	-5.69	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11(802.11g Mode)	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	76.78	-12.78	64	74	-10	peak
2483.500	60.05	-12.78	47.27	54	-6.73	AVG
2483.600	75.34	-12.77	62.57	74	-11.43	peak
2483.600	61.57	-12.77	48.8	54	-5.2	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1(802.11n Mode)/20MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	78.96	-13	65.96	74	-8.04	peak
2399.900	57.65	-13	44.65	54	-9.35	AVG
2400.000	79.63	-12.99	66.64	74	-7.36	peak
2400.000	58.53	-12.99	45.54	54	-8.46	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH1(802.11n Mode)/20M	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	79.12	-13	66.12	74	-7.88	peak
2399.900	59.85	-13	46.85	54	-7.15	AVG
2400.000	78.76	-12.99	65.77	74	-8.23	peak
2400.000	59.86	-12.99	46.87	54	-7.13	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11(802.11n Mode)/20MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	77.89	-12.78	65.11	74	-8.89	peak
2483.500	56.25	-12.78	43.47	54	-10.53	AVG
2483.600	76.83	-12.77	#VALUE!	74	#VALUE!	peak
2483.600	57.29	-12.77	44.52	54	-9.48	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH11(802.11n Mode)/20MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	75.63	-12.78	60.45	74	-13.55	peak
2483.500	60.12	-12.78	46.84	54	-7.16	AVG
2483.600	76.13	-12.78	60.45	74	-13.55	peak
2483.600	60.07	-12.78	46.84	54	-7.16	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH3(802.11n Mode)/40M	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	79.17	-13	66.17	74	-7.83	peak
2399.900	59.31	-13	46.31	54	-7.69	AVG
2400.000	78.64	-12.99	65.65	74	-8.35	peak
2400.000	58.96	-12.99	45.97	54	-8.03	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH3(802.11n Mode)/40MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2399.900	79.62	-13	66.62	74	-7.38	peak
2399.900	54.39	-13	41.39	54	-12.61	AVG
2400.000	78.86	-12.99	65.87	74	-8.13	peak
2400.000	55.15	-12.99	42.16	54	-11.84	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH9(802.11n Mode)/40MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	78.15	-12.78	65.37	74	-8.63	peak
2483.500	59.56	-12.78	46.78	54	-7.22	AVG
2483.600	77.97	-12.77	65.2	74	-8.8	peak
2483.600	61.04	-12.77	48.27	54	-5.73	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	CH9(802.11n Mode)/40MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2483.500	78.35	-12.78	65.57	74	-8.43	peak
2483.500	60.12	-12.78	47.34	54	-6.66	AVG
2483.600	78.76	-12.78	65.98	74	-8.02	peak
2483.600	59.04	-12.78	46.26	54	-7.74	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

4. CONDUCTED SPURIOUS EMISSIONS

4.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz 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 20 dB below that in the 100 kHz 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 the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

4.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	1MHz/3MHz
Trace-Mode:	Max hold

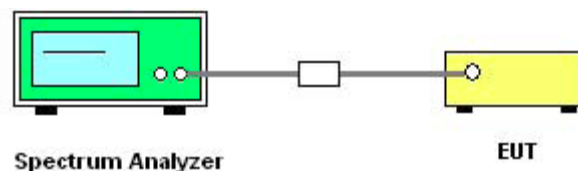
For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2350 to 2450 MHz Upper Band Edge: 2433.5 to 2533.5 MHz
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz/1MHz. In order to make an accurate measurement, set the span greater than RBW.

4.5 EUT OPERATION CONDITIONS

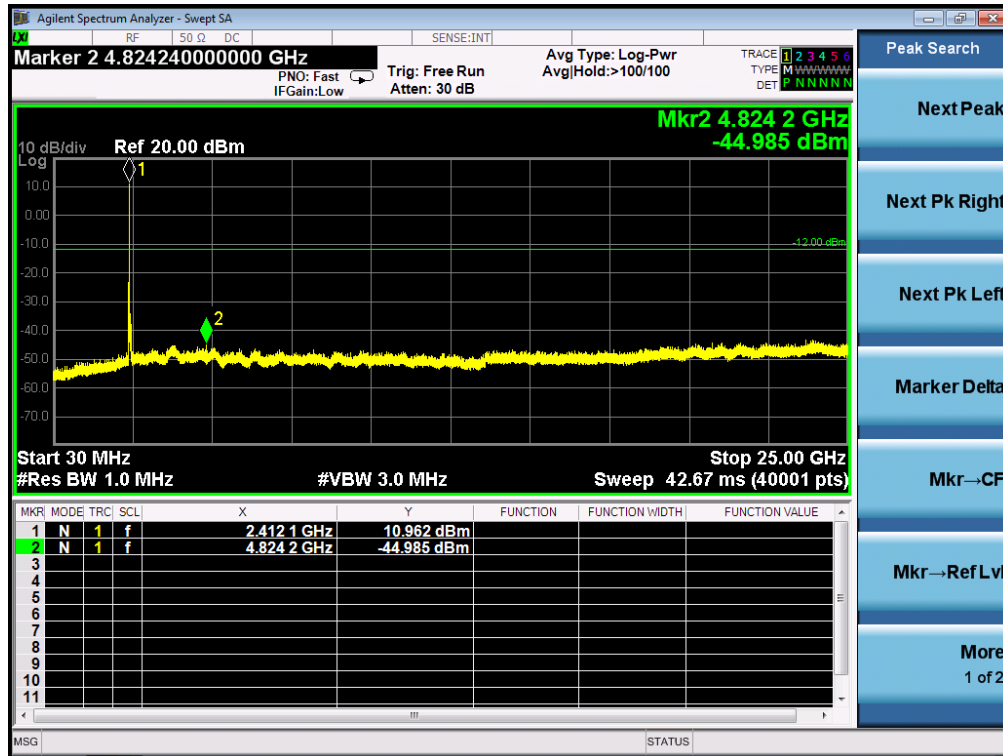
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



4.6 TEST RESULTS

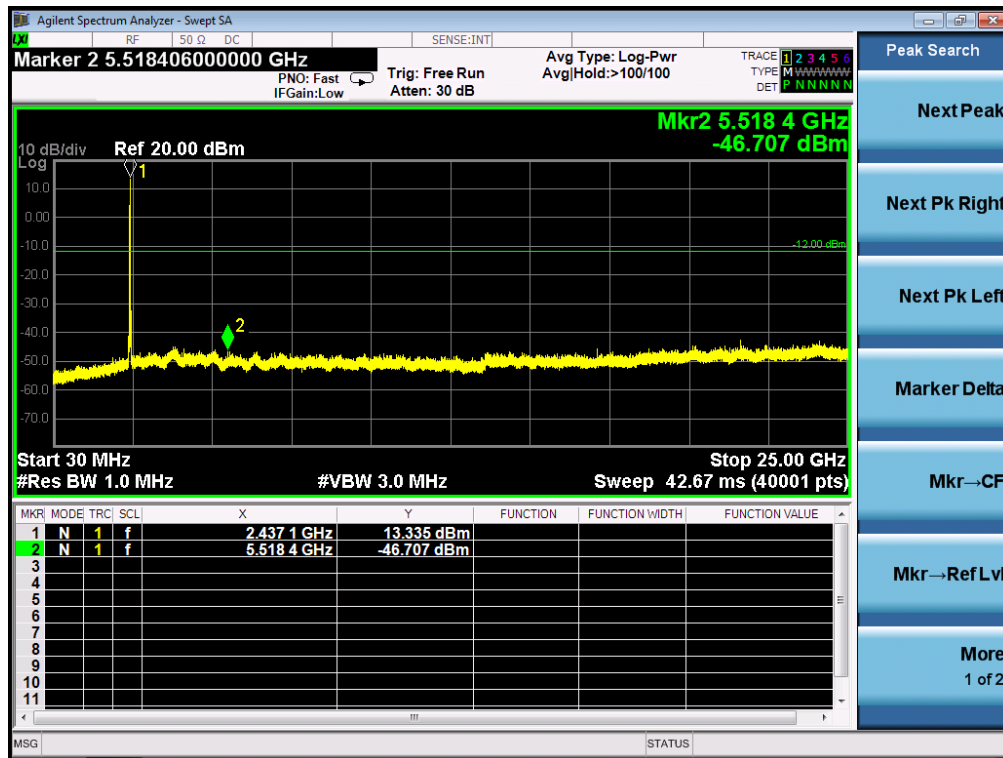
EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX b Mode /CH01, CH06, CH11		

CH 01

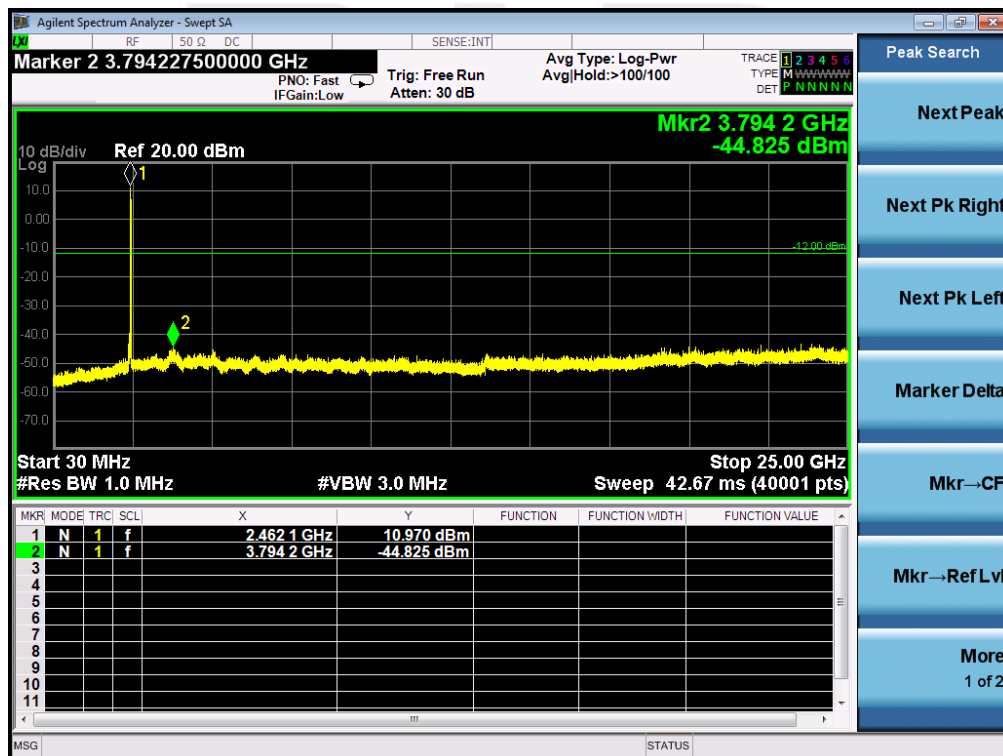




CH 06



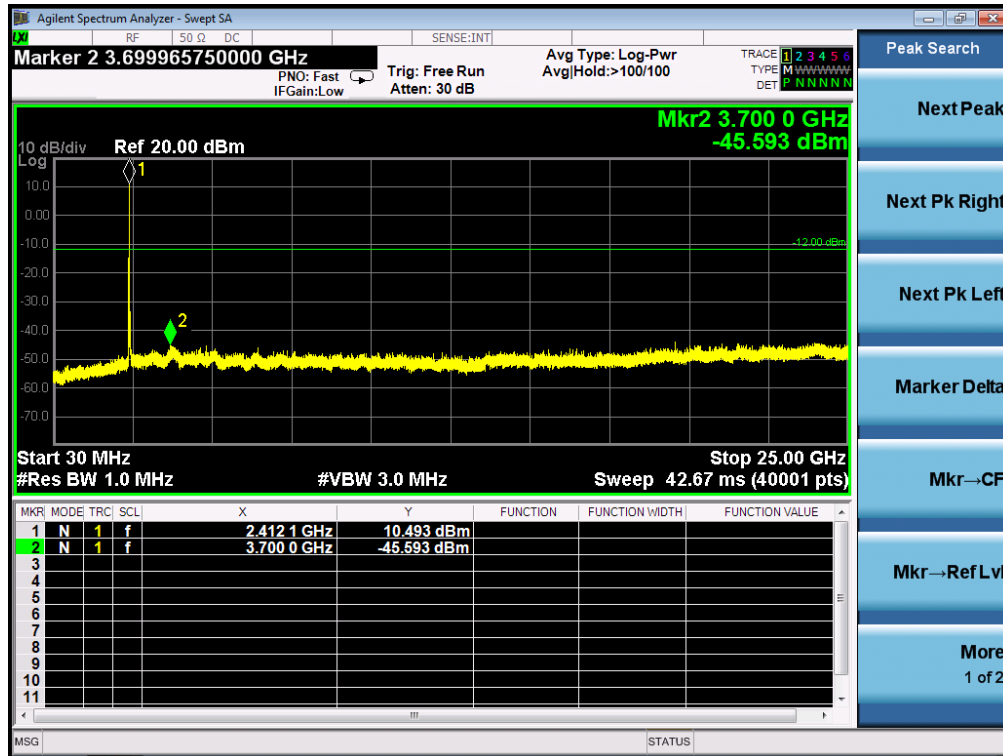
CH 11





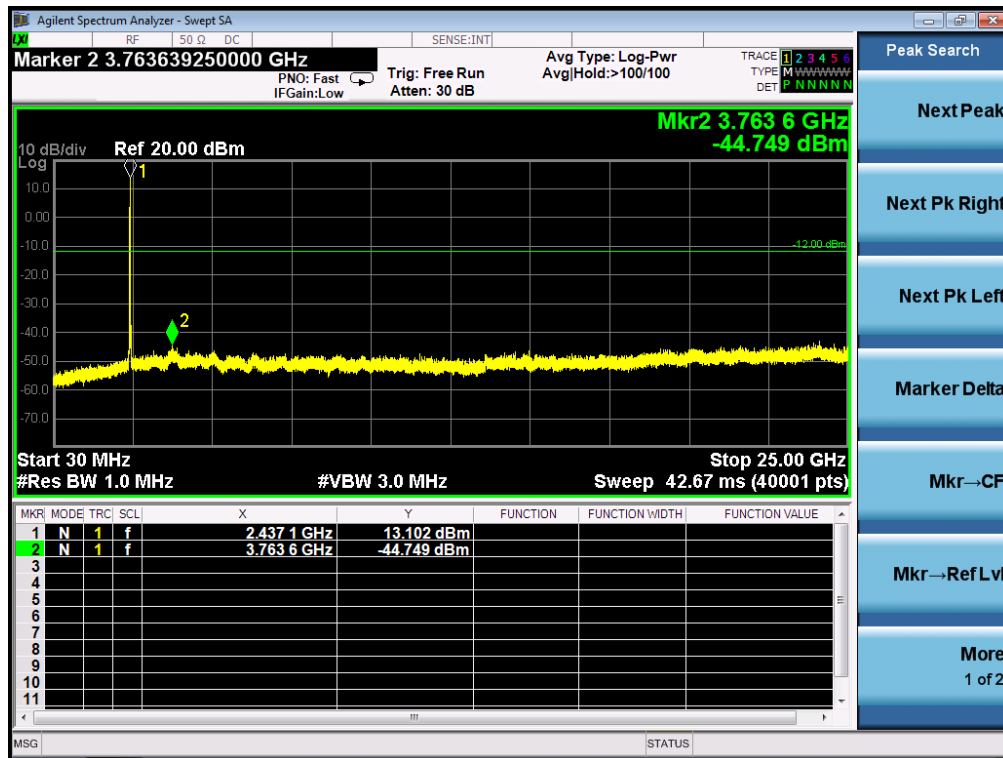
EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX g Mode /CH01, CH06, CH11		

CH 01

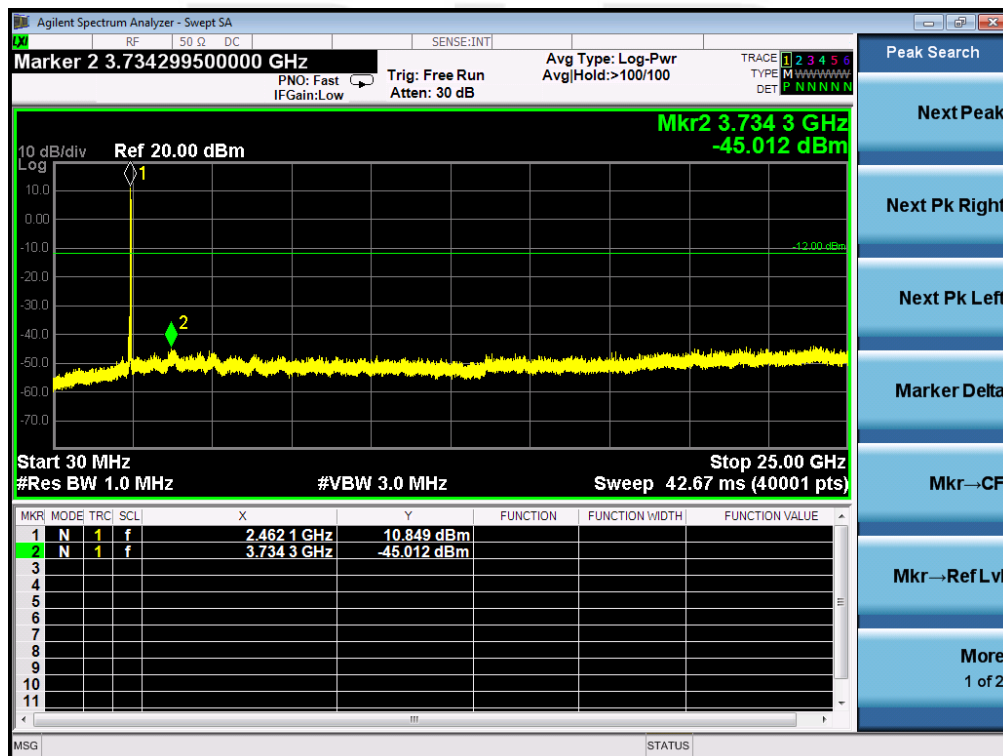




CH 06



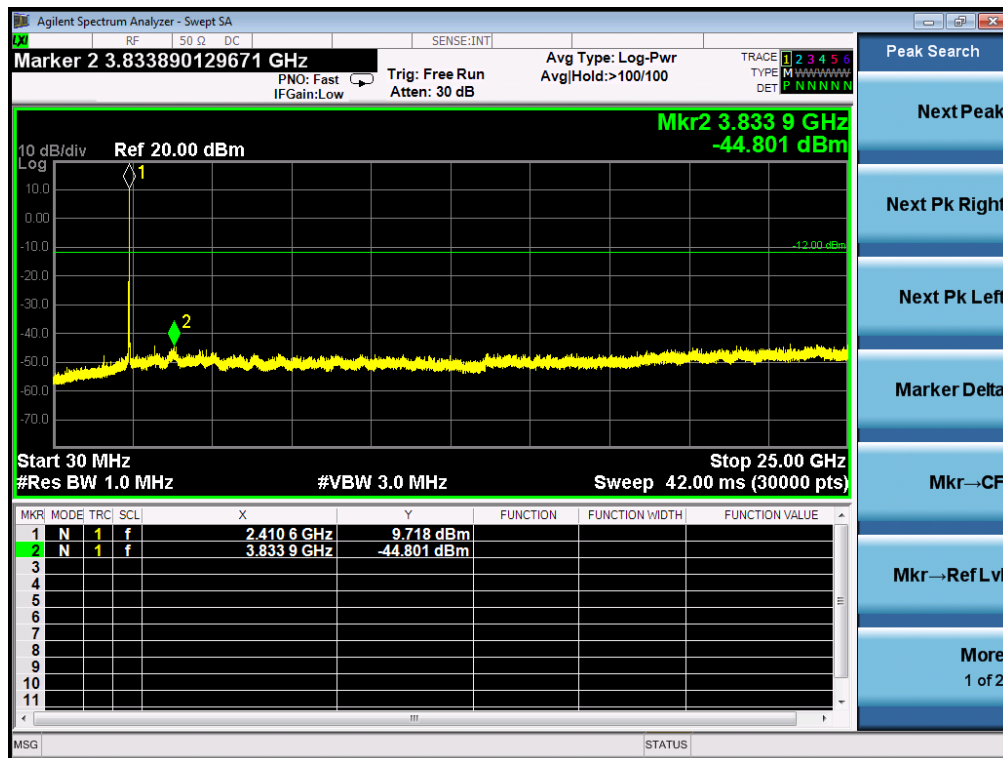
CH 11





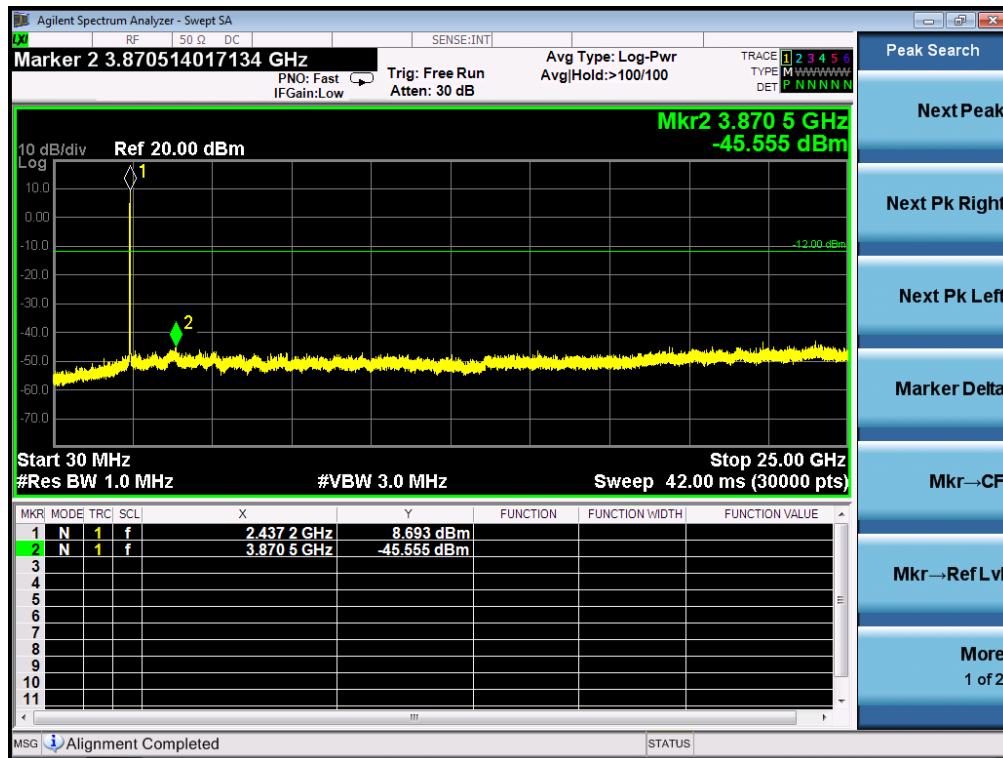
EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX n Mode(20M) /CH01, CH06, CH11		

CH 01

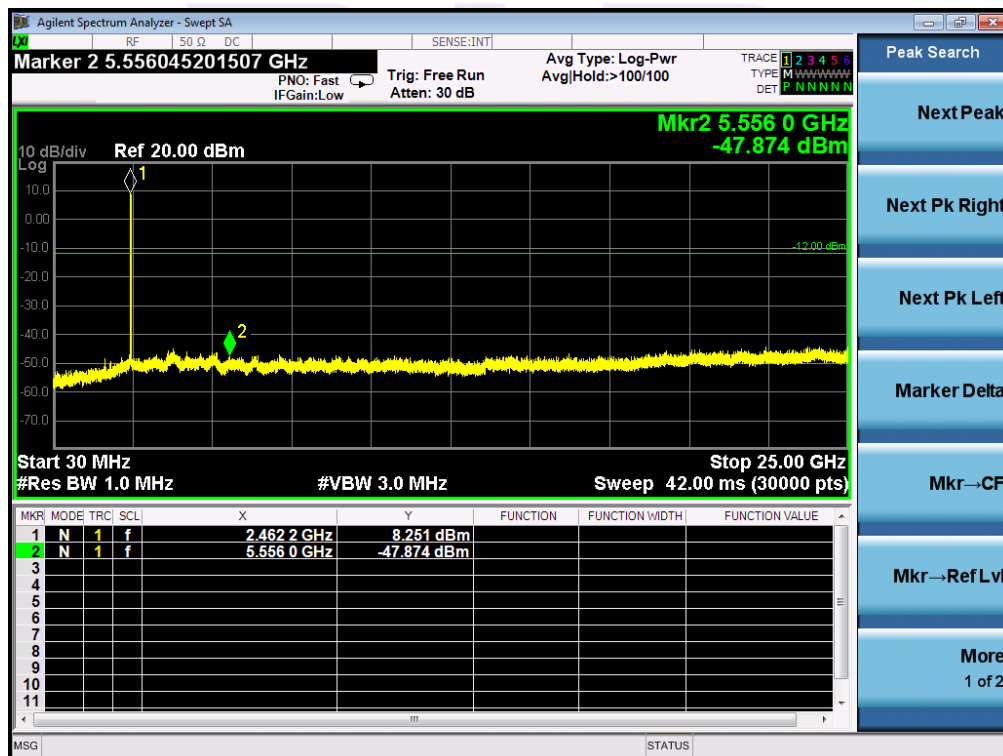




CH 06



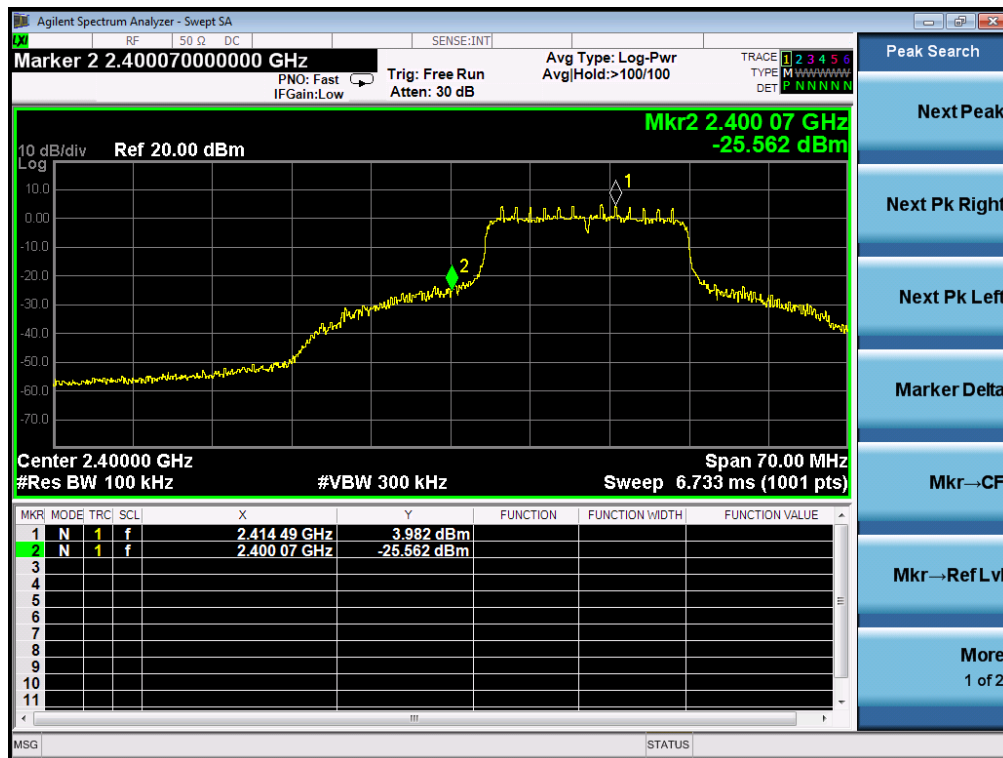
CH 11





Band edge

CH 01



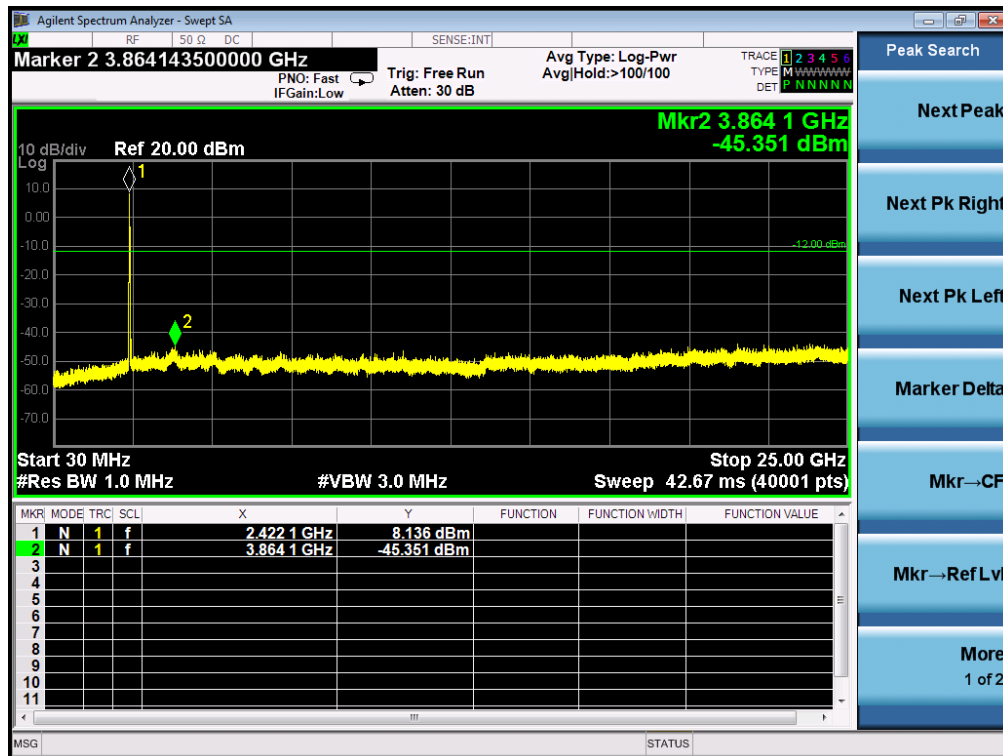
CH 11





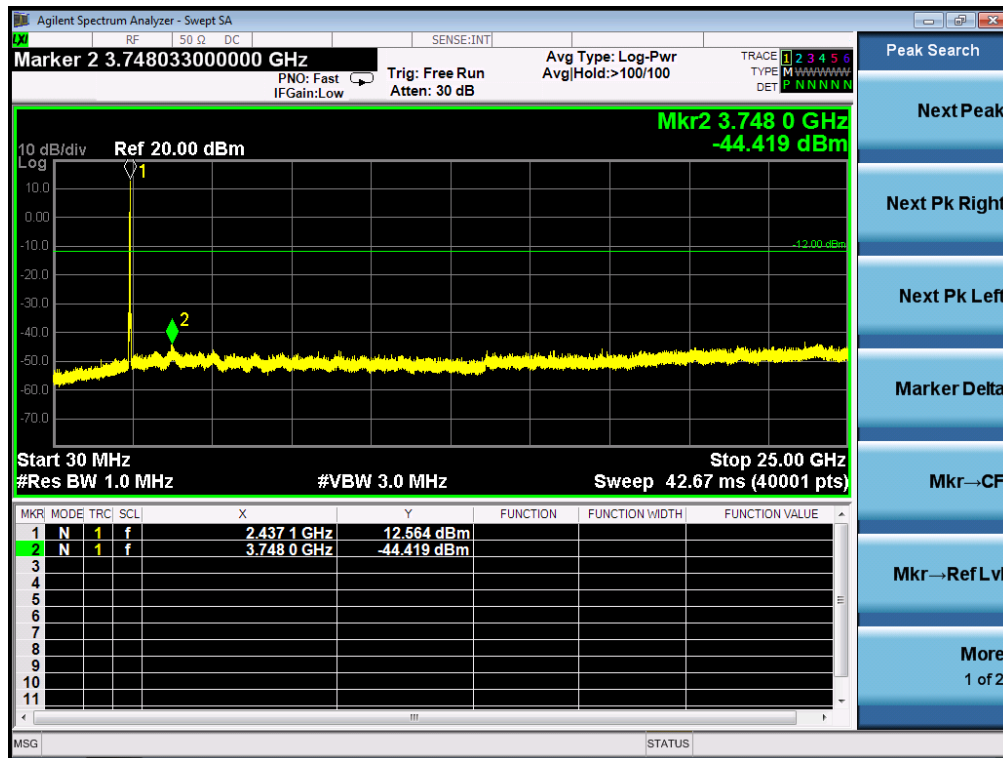
EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX n Mode(40M) /CH03, CH06, CH09		

CH 03

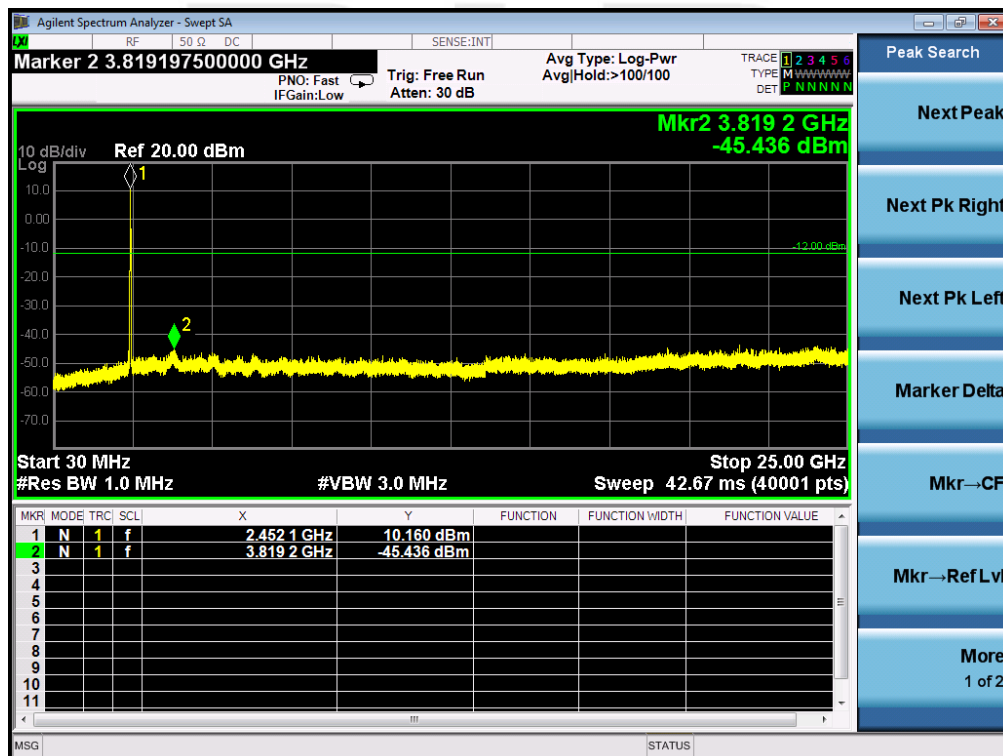




CH06



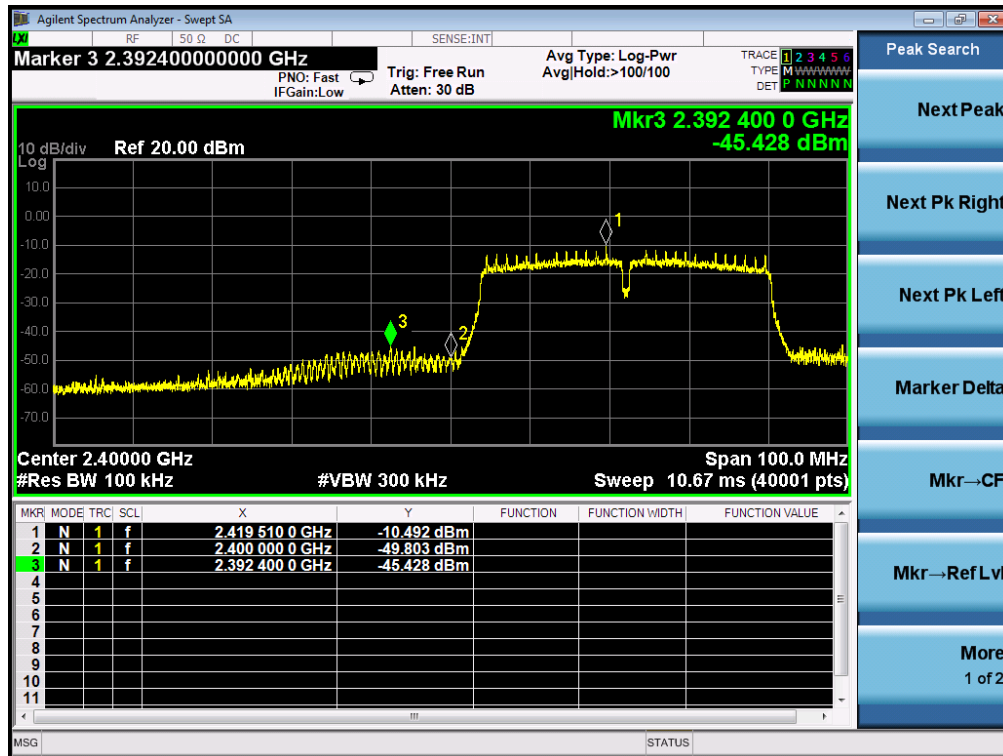
CH09



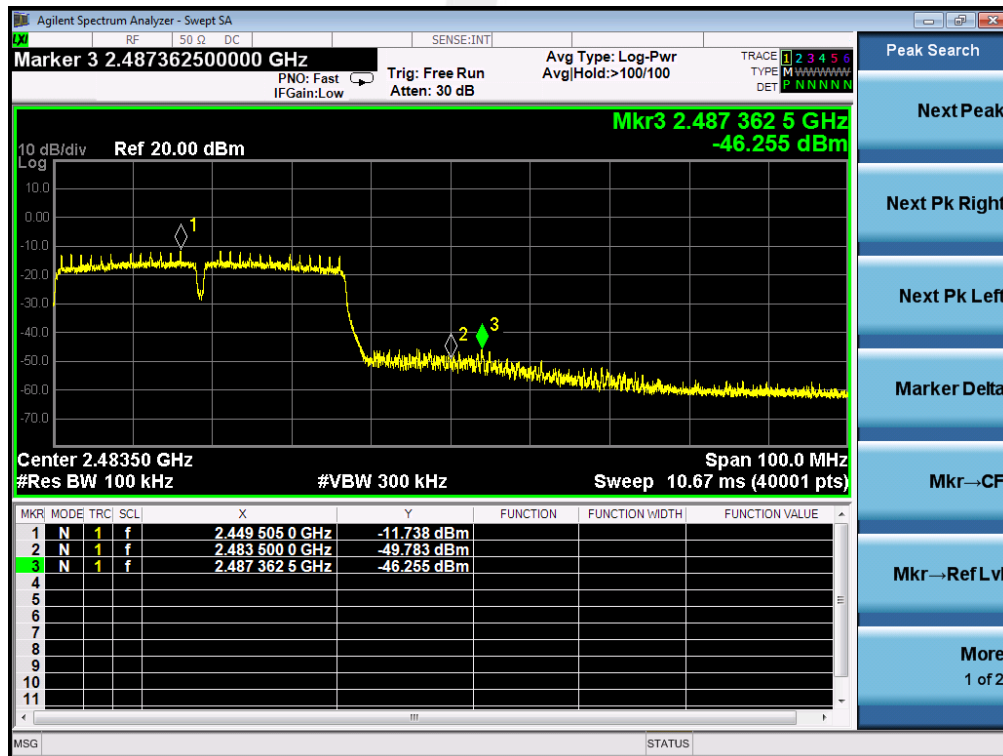


Band edge

CH03



CH 09





5. POWER SPECTRAL DENSITY TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

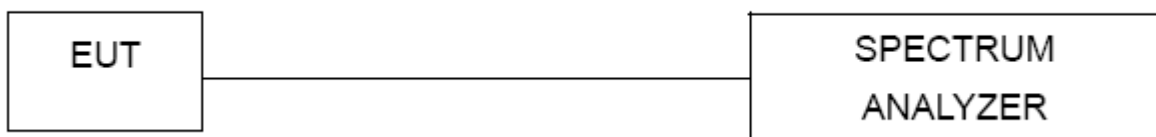
5.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW ≥ 3 kHz.
4. Set the VBW $\geq 3 \times$ RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

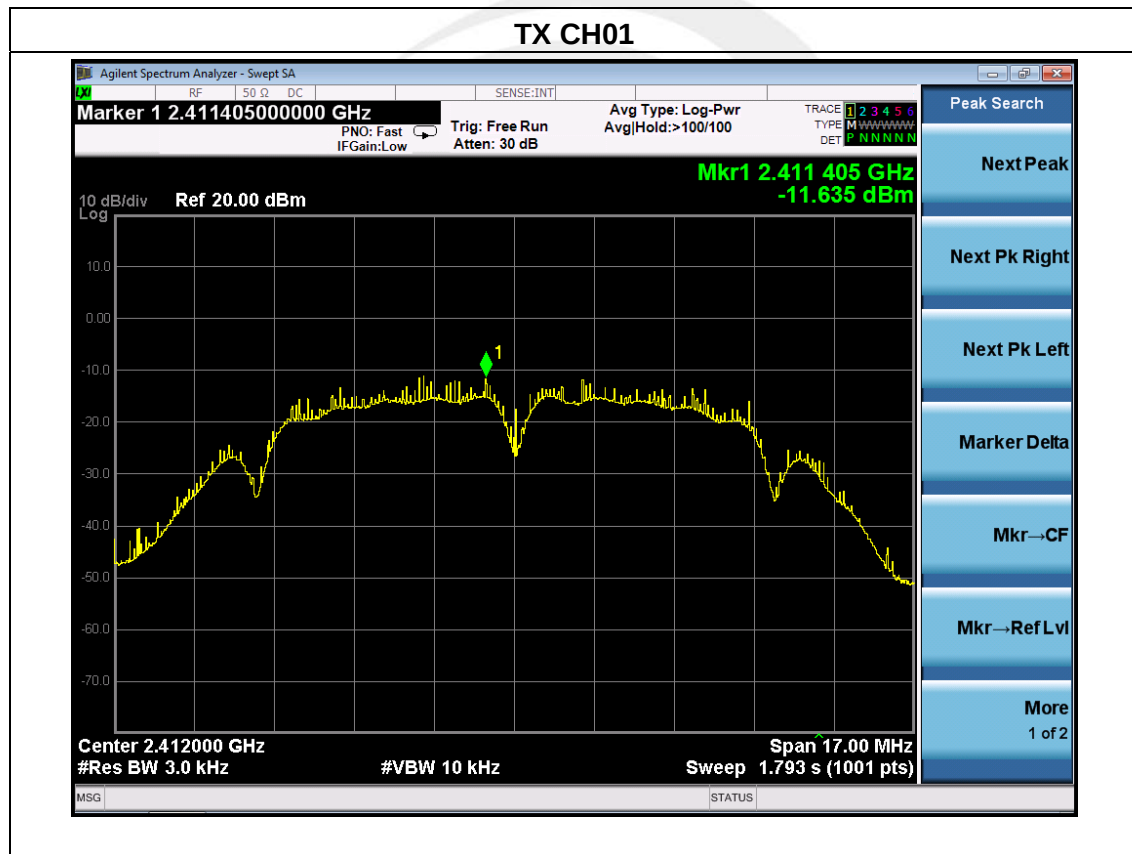
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



5.6 TEST RESULTS

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX b Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-11.635	8	PASS
2437 MHz	-12.499	8	PASS
2462 MHz	-11.772	8	PASS





TX CH06



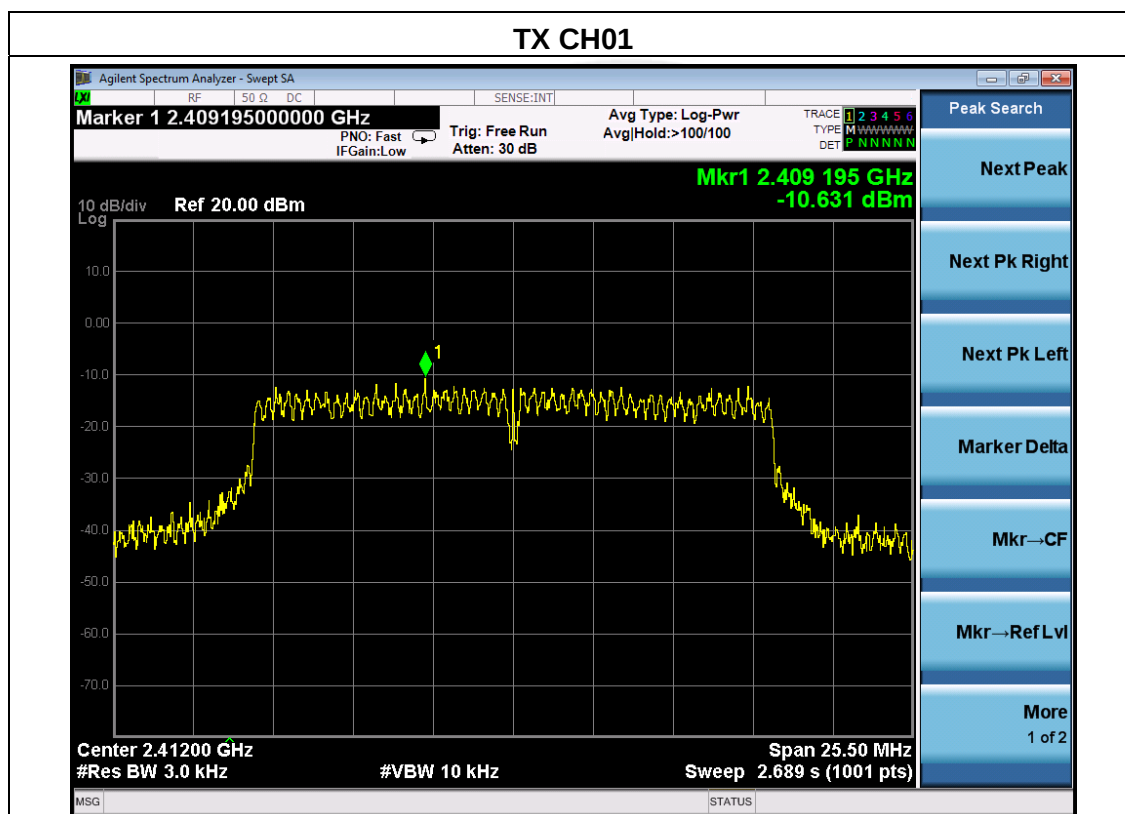
TX CH11





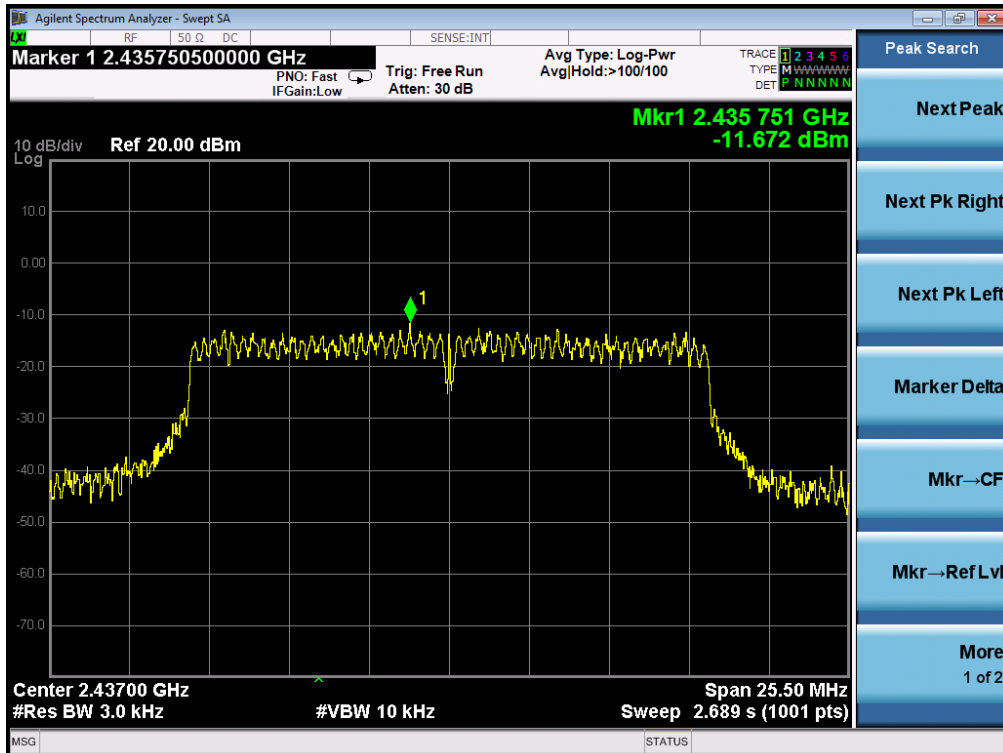
EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX g Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-10.634	8	PASS
2437 MHz	-11.672	8	PASS
2462 MHz	-13.100	8	PASS

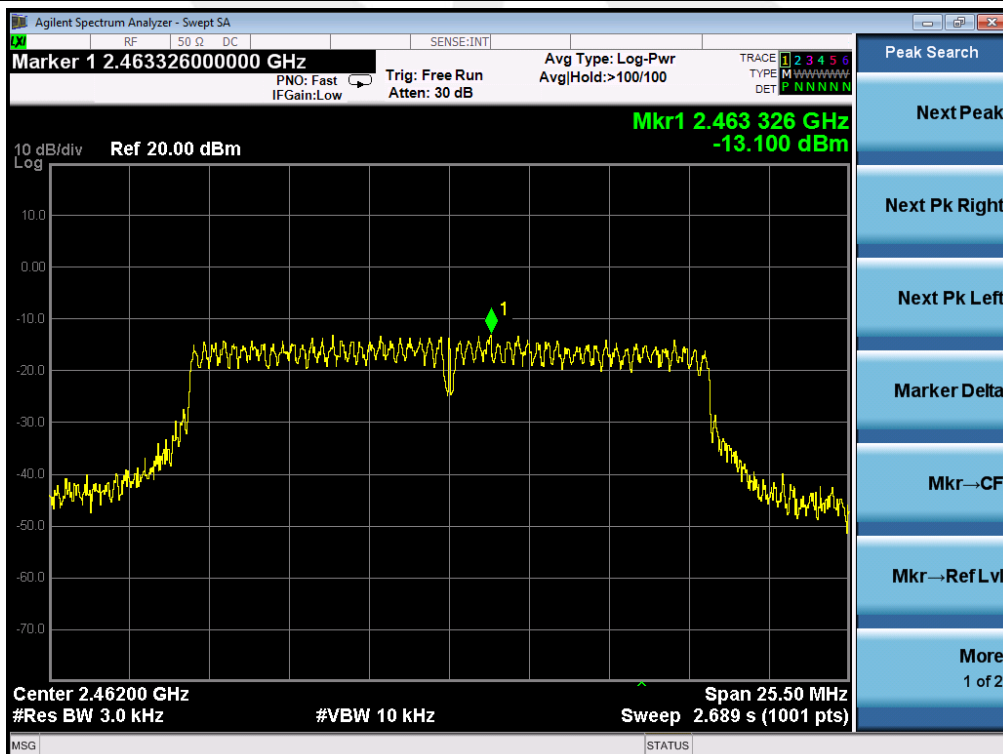




TX CH06



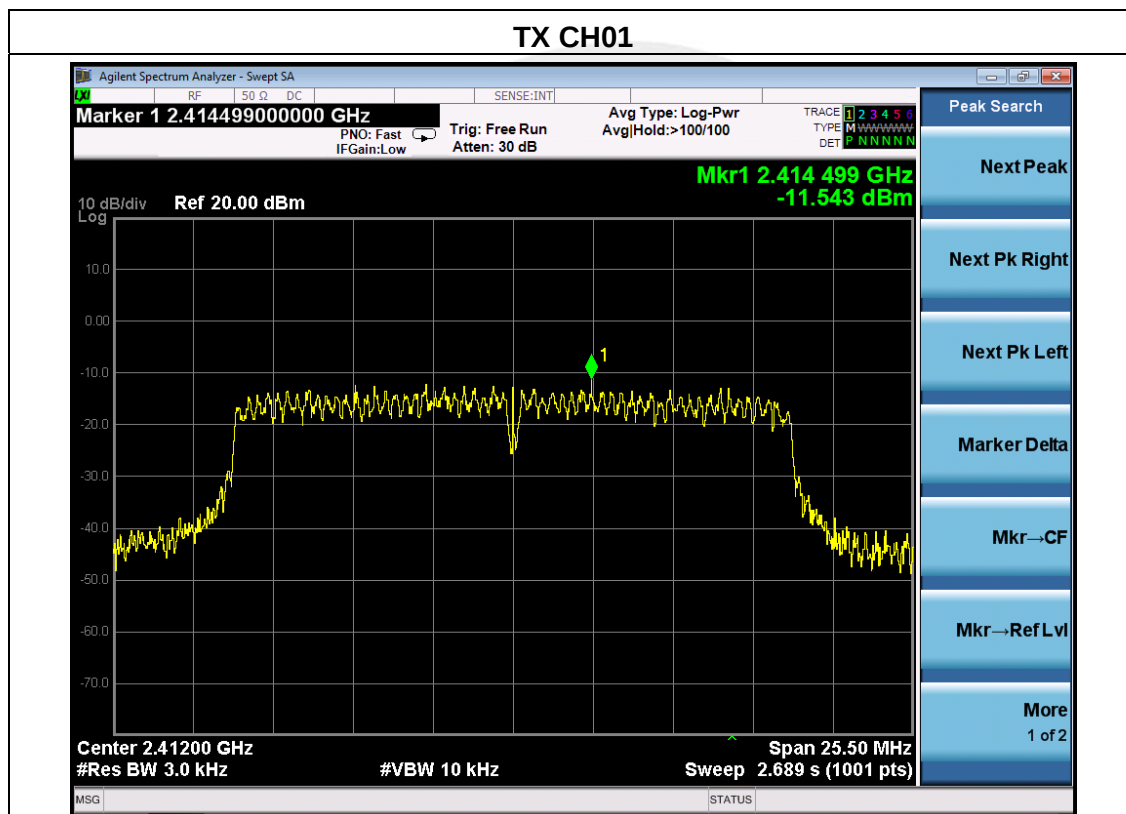
TX CH11





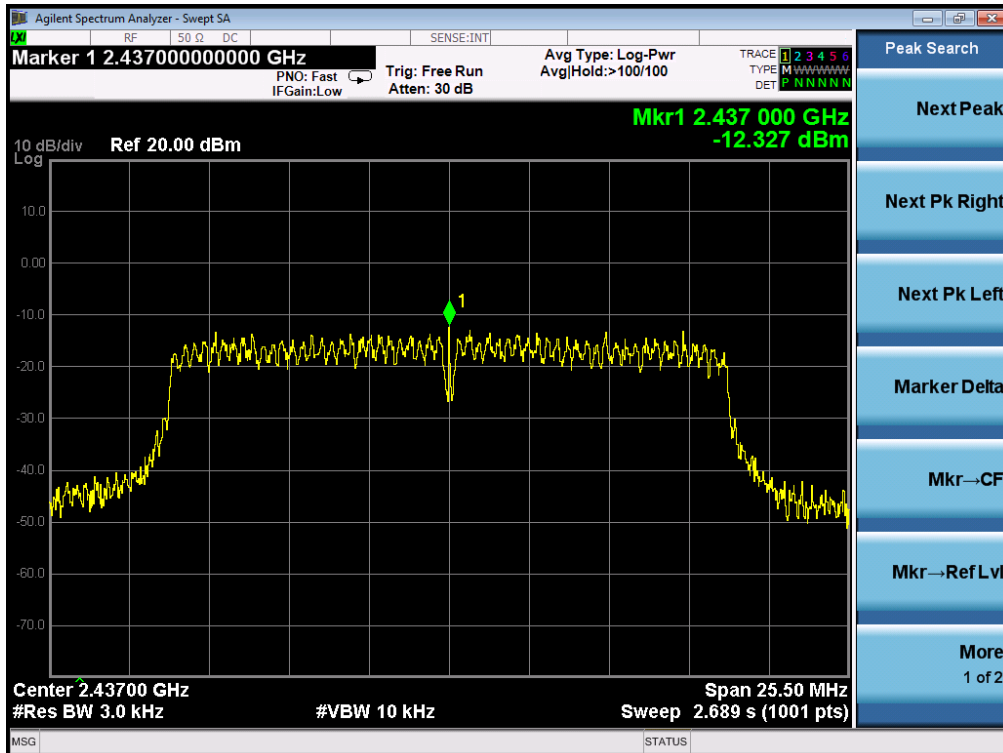
EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX n Mode(20M) /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-11.543	8	PASS
2437 MHz	-12.327	8	PASS
2462 MHz	-11.918	8	PASS

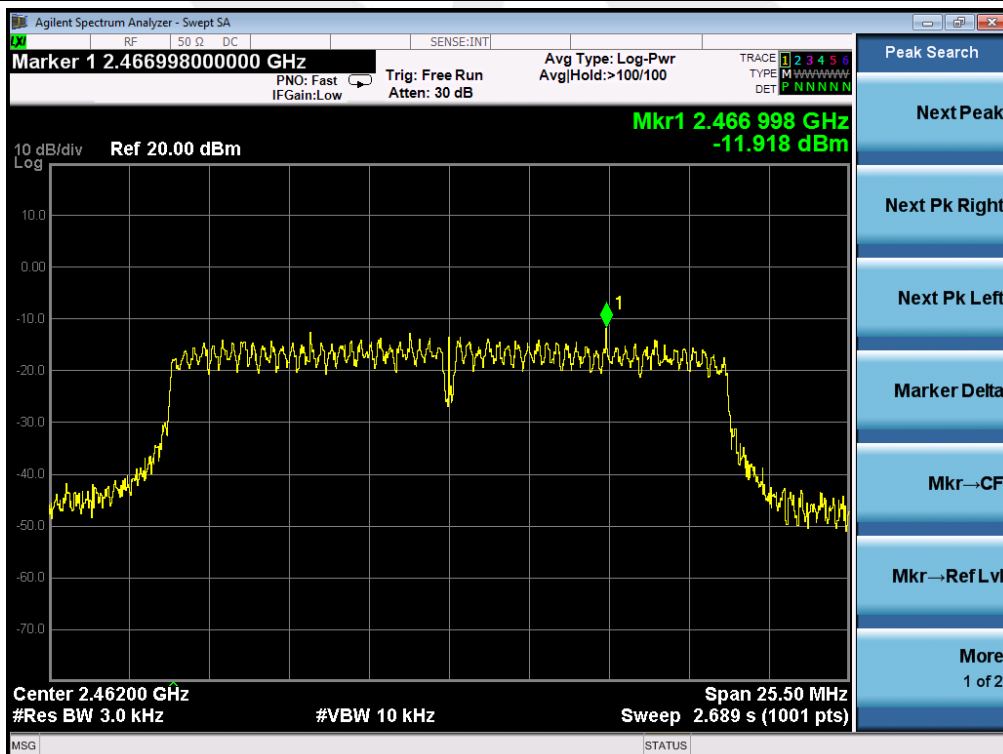




TX CH06



TX CH11

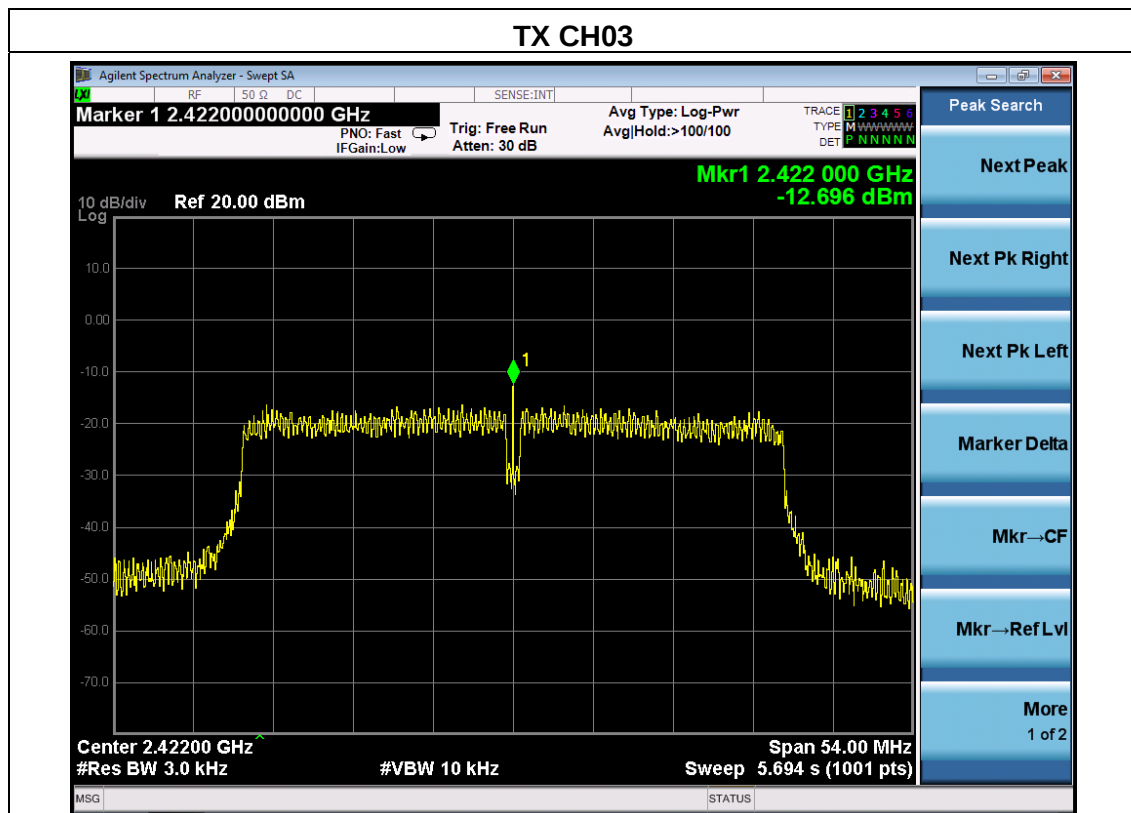




EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX n Mode(40M) /CH03, CH06, CH09		

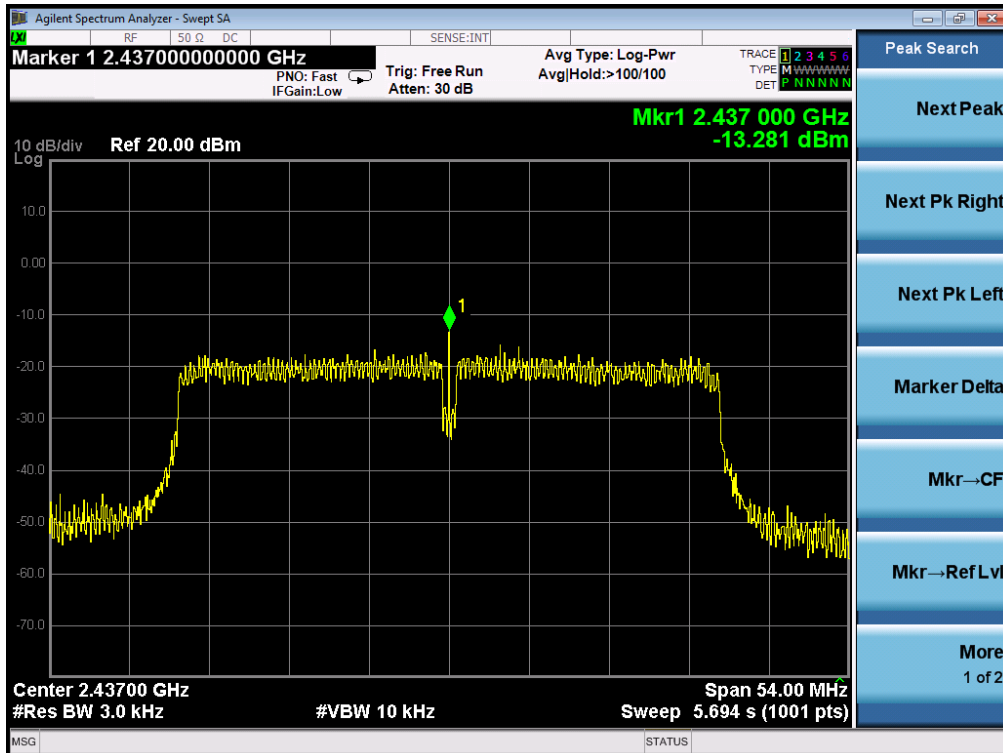
Frequency	Power Density (dBm)	Limit (dBm)	Result
2422 MHz	-12.696	8	PASS
2437 MHz	-13.281	8	PASS
2452 MHz	-13.138	8	PASS

TX CH03

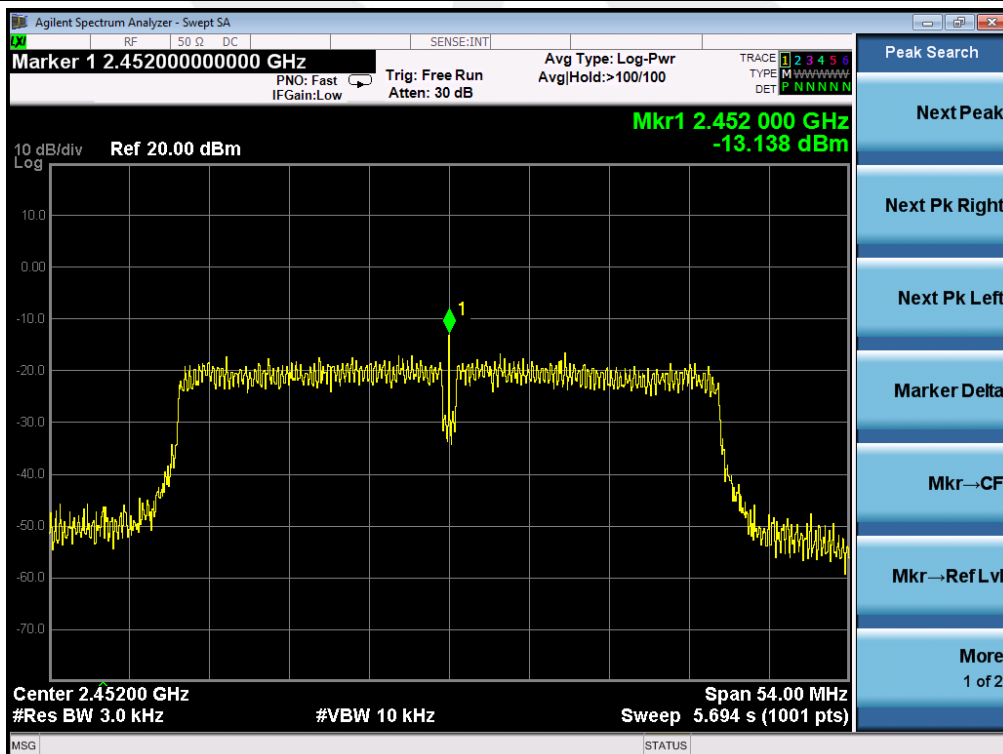




TX CH06



TX CH09





6. BANDWIDTH TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

6.2 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

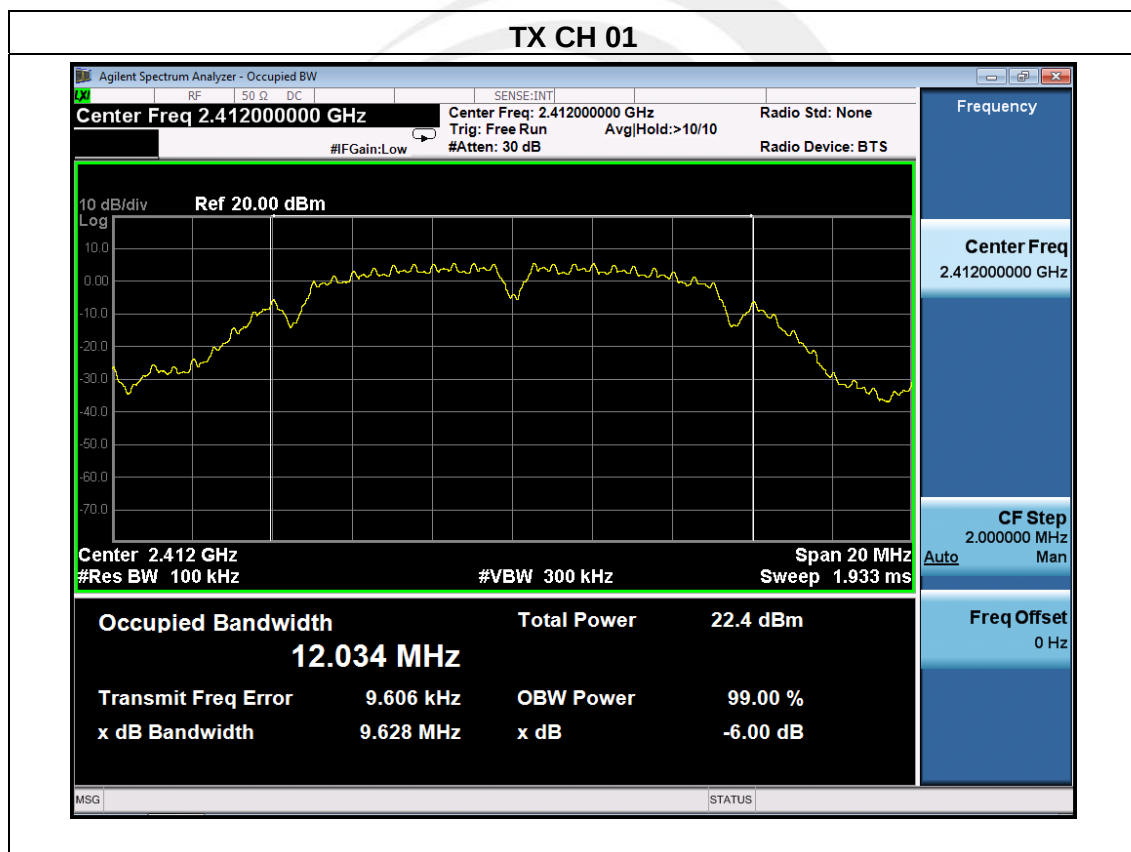
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



6.6 TEST RESULTS

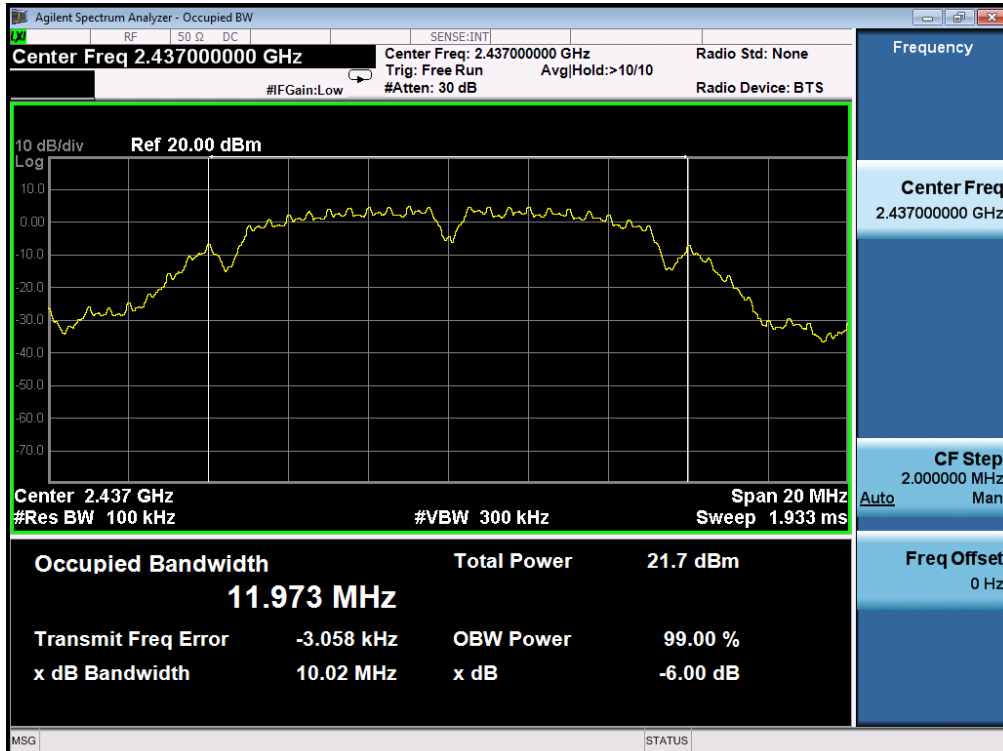
EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX b Mode /CH01, CH06, CH11		

Frequency	6dB Bandwidth (MHz)	Channel Separation (MHz)	Result
2412 MHz	9.628	>=500KHz	PASS
2437 MHz	10.02	>=500KHz	PASS
2462 MHz	9.129	>=500KHz	PASS

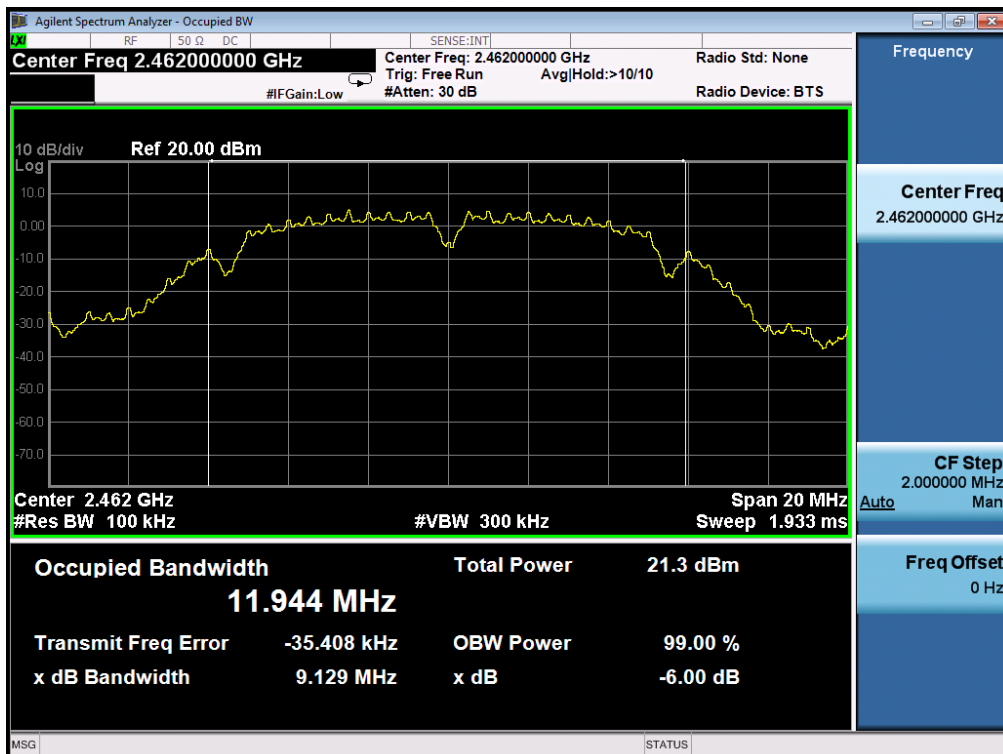




TX CH 06



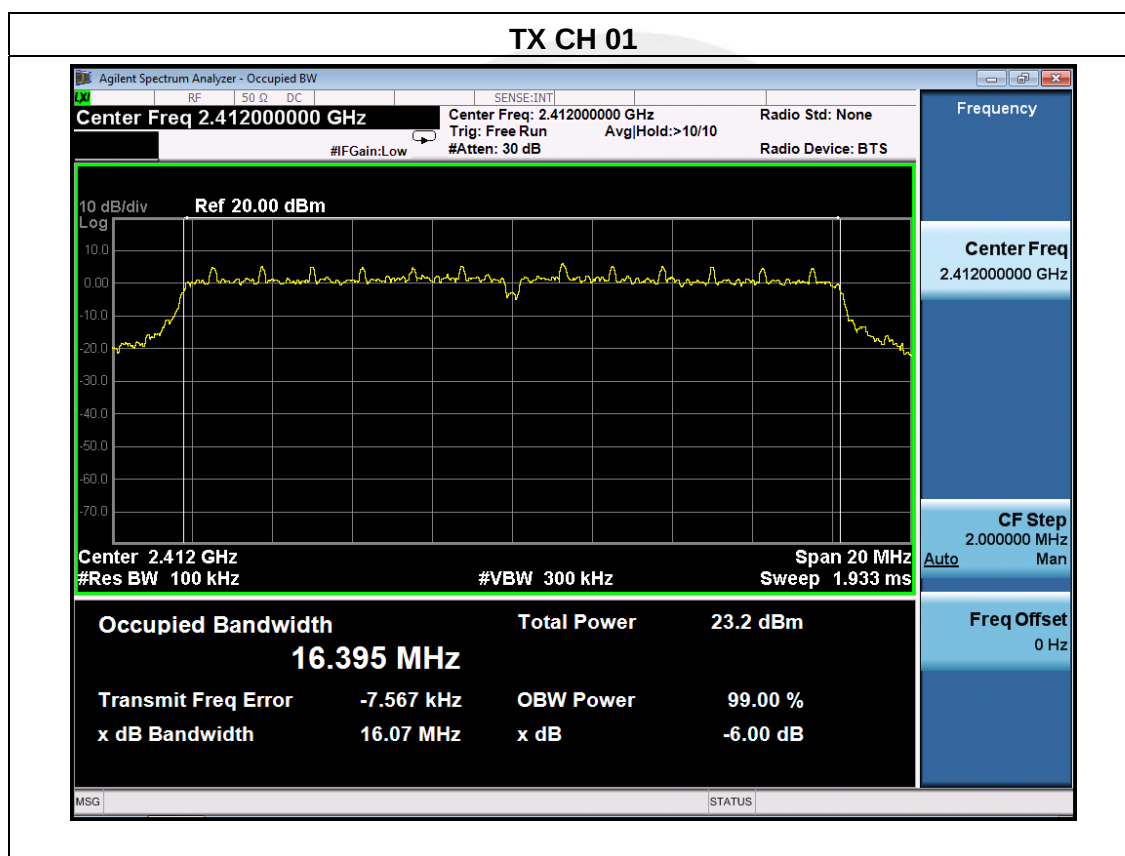
TX CH 11





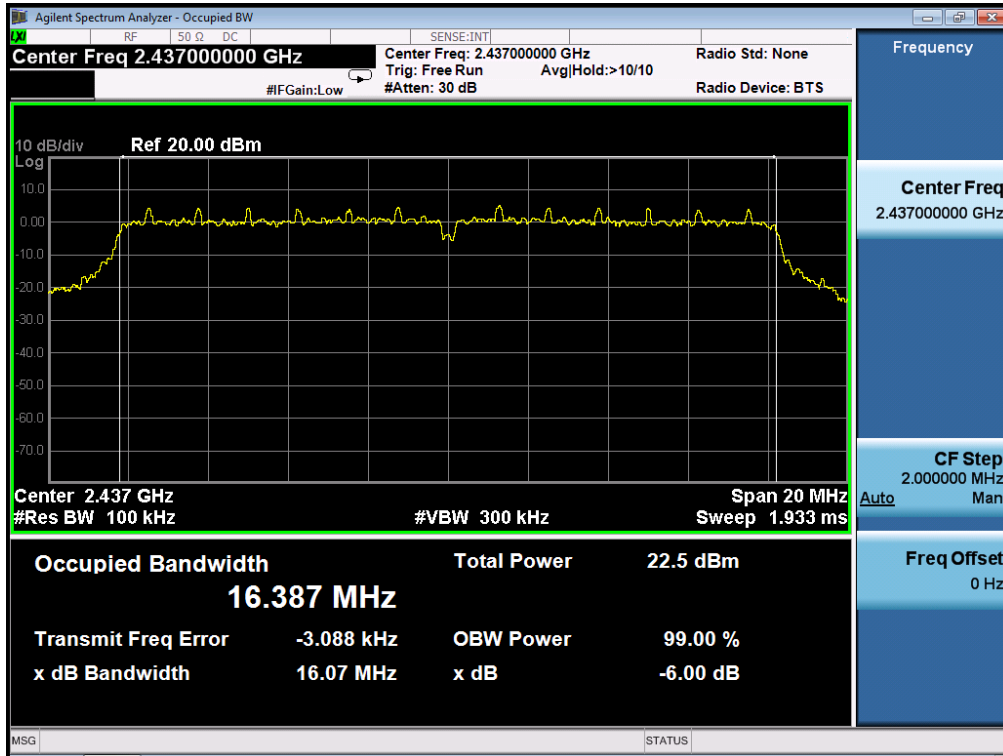
EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX g Mode /CH01, CH06, CH11		

Frequency	6dB Bandwidth (MHz)	Channel Separation (MHz)	Result
2412 MHz	16.07	>=500KHz	PASS
2437 MHz	16.07	>=500KHz	PASS
2462 MHz	16.08	>=500KHz	PASS

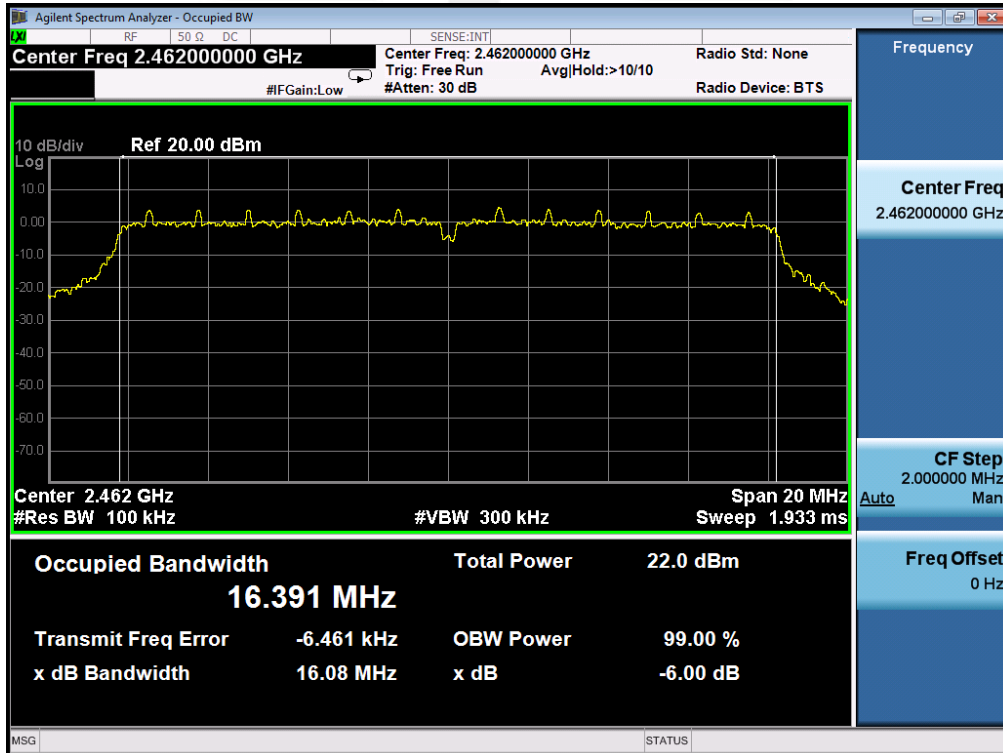




TX CH 06



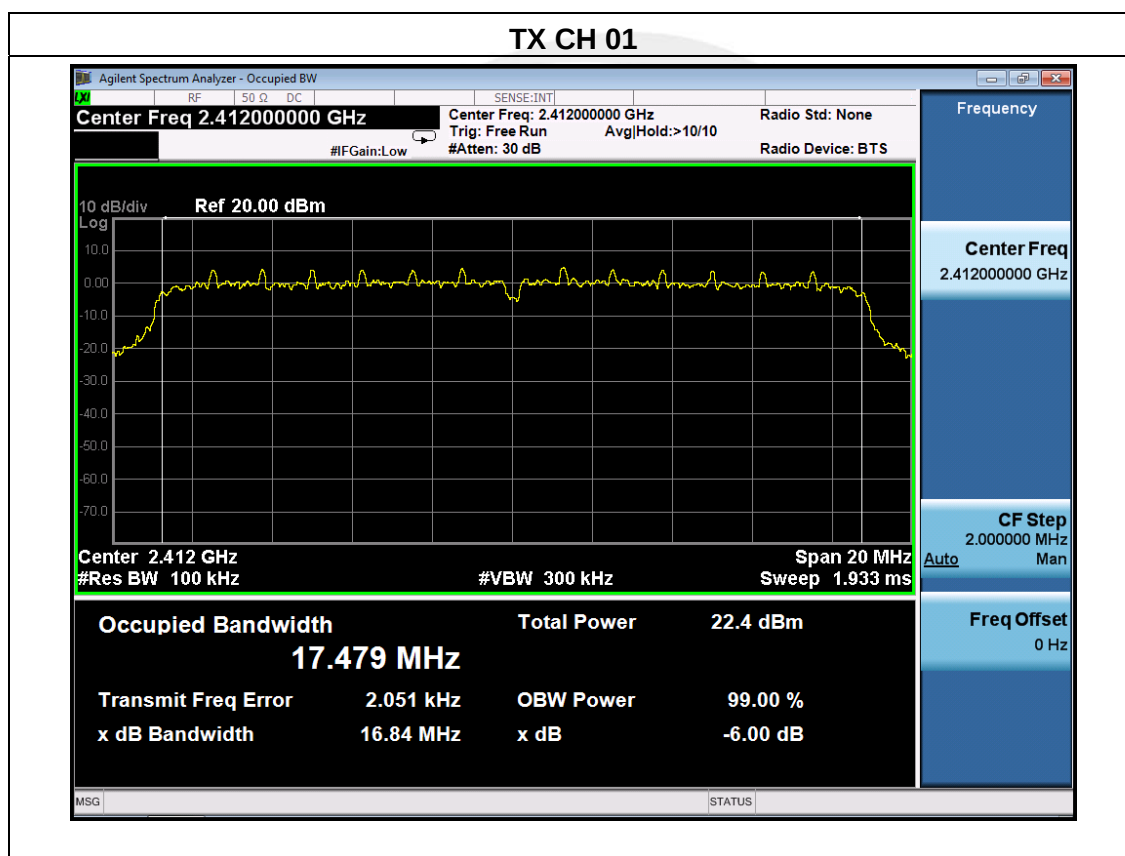
TX CH 11





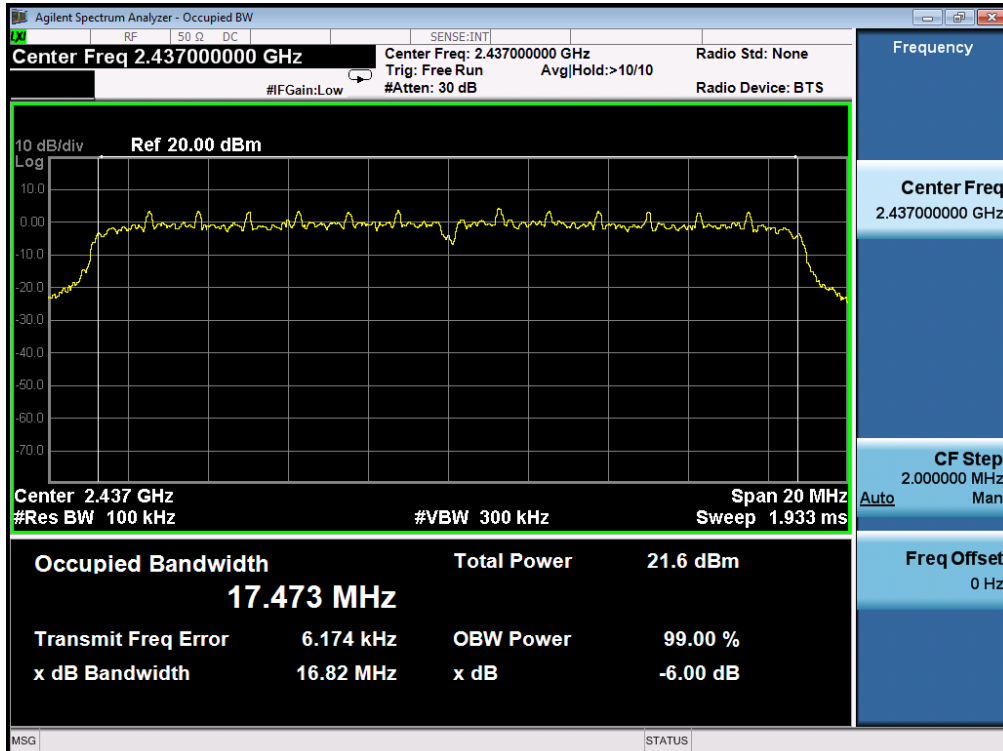
EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX n Mode(20M) /CH01, CH06, CH11		

Frequency	6dB Bandwidth (MHz)	Channel Separation (MHz)	Result
2412 MHz	16.84	>=500KHz	PASS
2437 MHz	16.82	>=500KHz	PASS
2462 MHz	16.95	>=500KHz	PASS

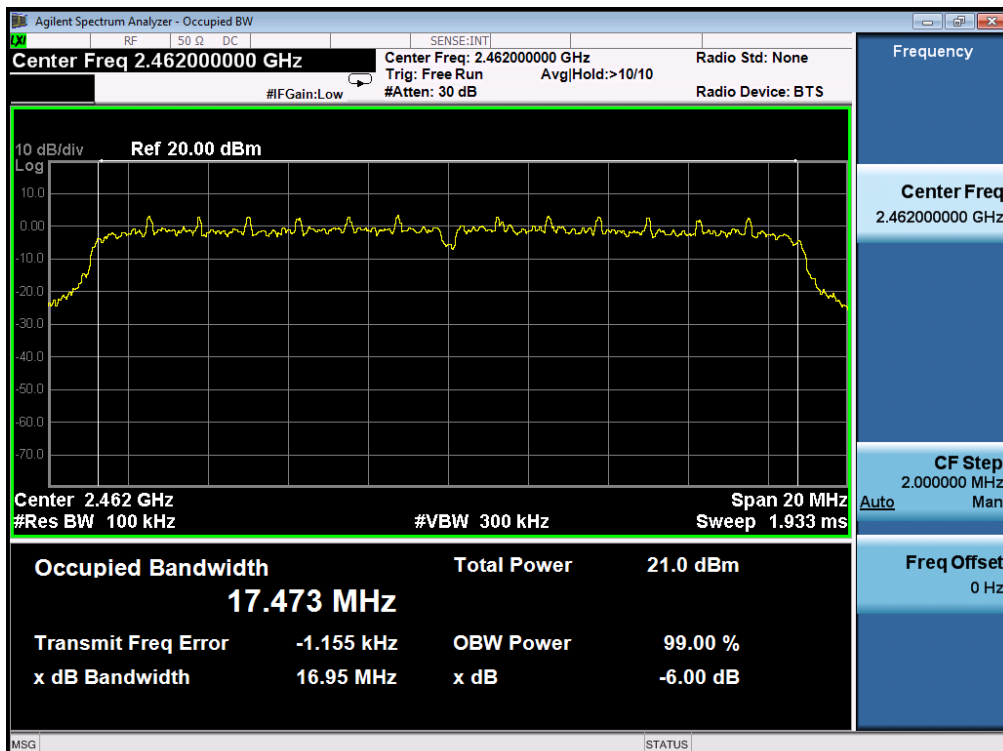




TX CH 06



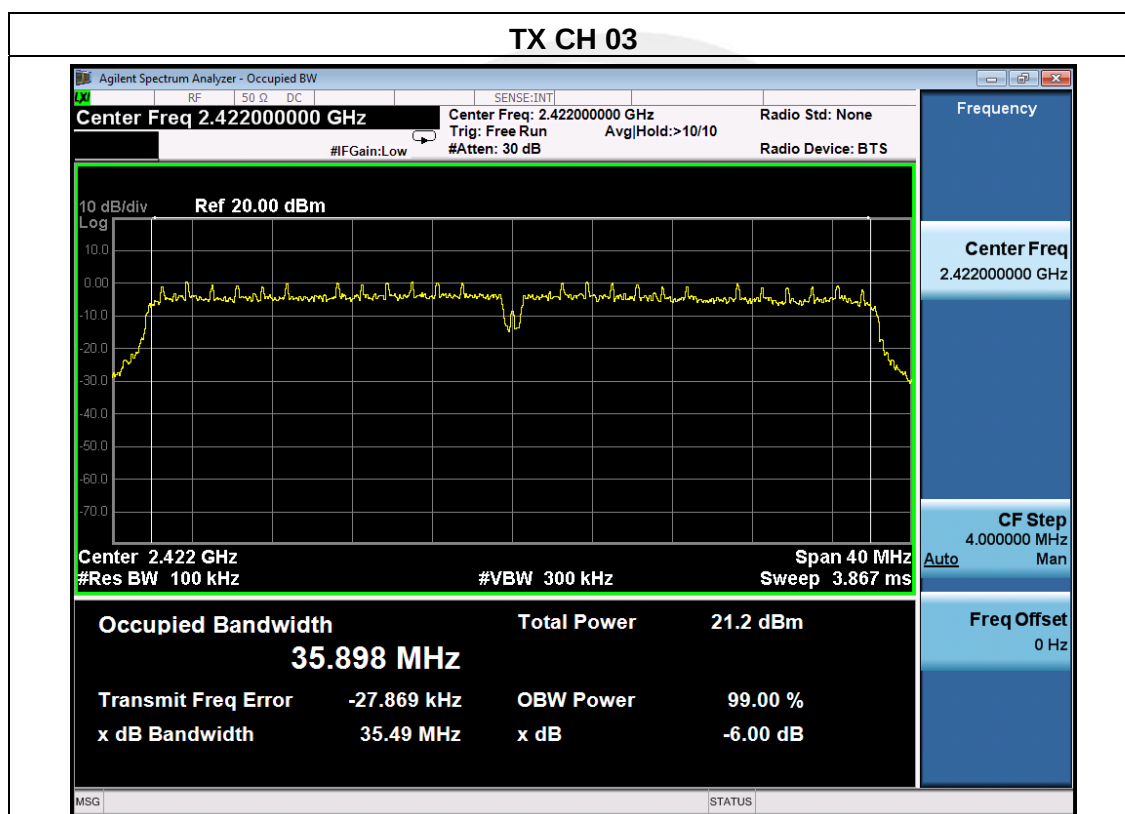
TX CH 11





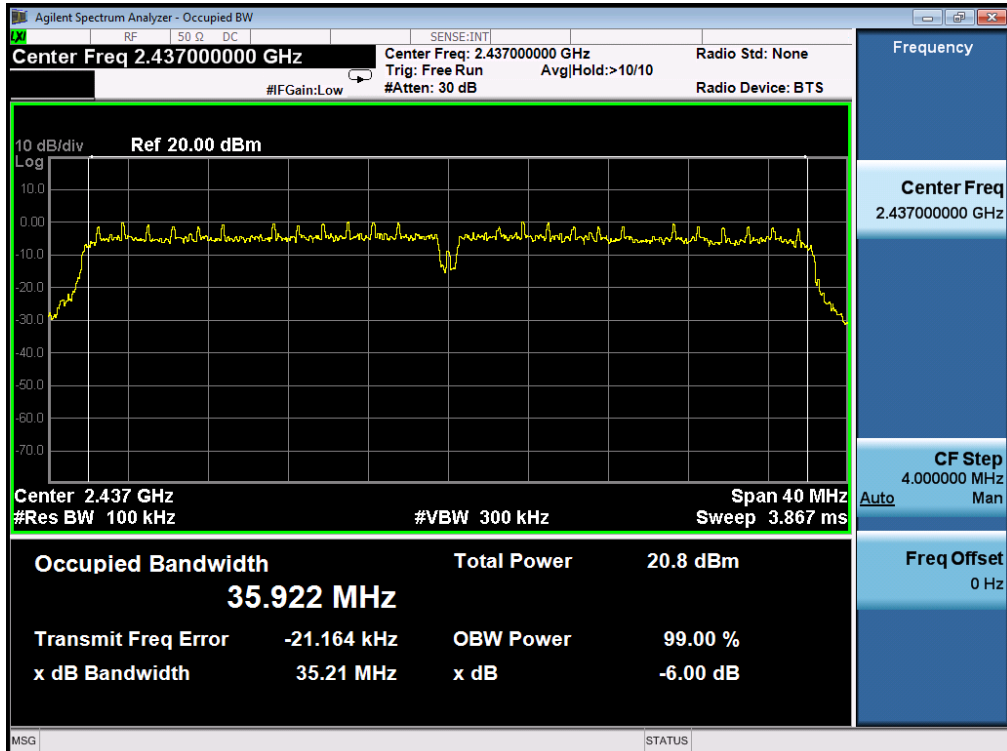
EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX n Mode(40M) /CH03, CH06, CH09		

Frequency	6dB Bandwidth (MHz)	Channel Separation (MHz)	Result
2422 MHz	35.49	>=500KHz	PASS
2437 MHz	35.21	>=500KHz	PASS
2452 MHz	35.19	>=500KHz	PASS

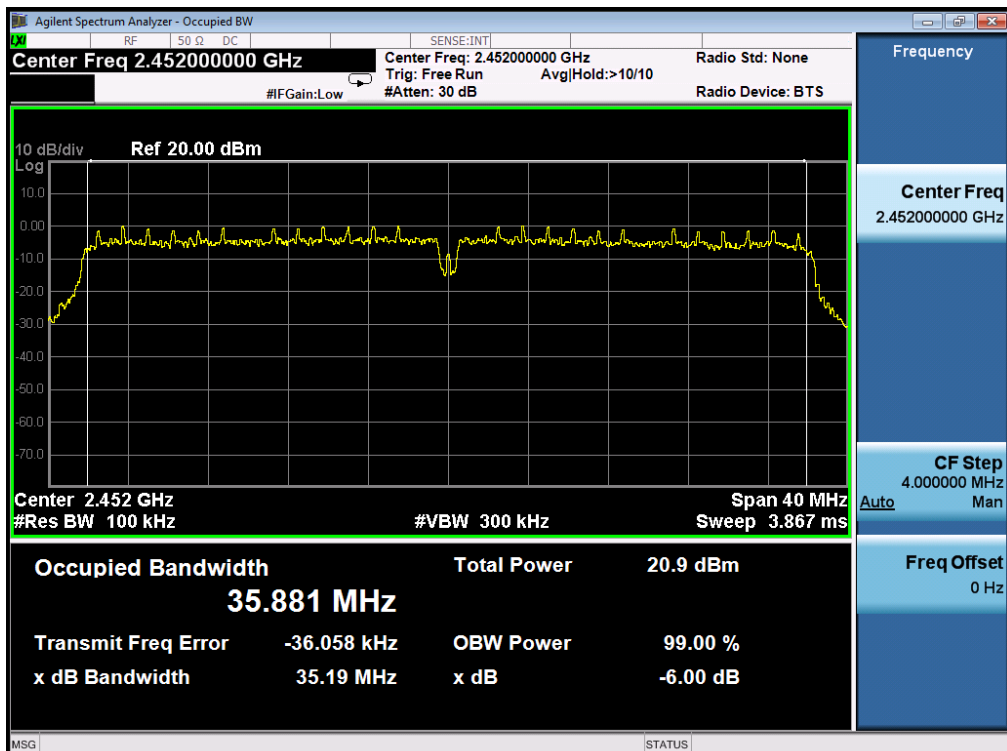




TX CH 06



TX CH 09





7. PEAK OUTPUT POWER TEST

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

7.2 TEST PROCEDURE

- a. The EUT was directly connected to the Power Sensor&Power meter

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



7.6 TEST RESULTS

EUT :	Wireless AC600 Dual-Band USB Mini Adapter	Model Name. :	GWU635
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V
Test Mode :	TX b/g/n(20M,40M) Mode /CH01, CH06, CH11		

TX 802.11b Mode			
Test Channe	Frequency	Peak Conducted Output Power	LIMIT
	(MHz)	(dBm)	dBm
CH01	2412	19.56	30
CH06	2437	19.78	30
CH11	2462	19.34	30

TX 802.11g Mode			
Test Channe	Frequency	Peak Conducted Output Power	LIMIT
	(MHz)	(dBm)	dBm
CH01	2412	16.55	30
CH06	2437	16.47	30
CH11	2462	16.83	30

TX 802.11n20 Mode			
Test Channe	Frequency	Peak Conducted Output Power	LIMIT
	(MHz)	(dBm)	dBm
CH01	2412	15.69	30
CH06	2437	15.37	30
CH11	2462	15.47	30

TX 802.11n40 Mode			
Test Channe	Frequency	Peak Conducted Output Power	LIMIT
	(MHz)	(dBm)	dBm
CH03	2422	14.47	30
CH06	2437	14.59	30
CH09	2452	14.71	30



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

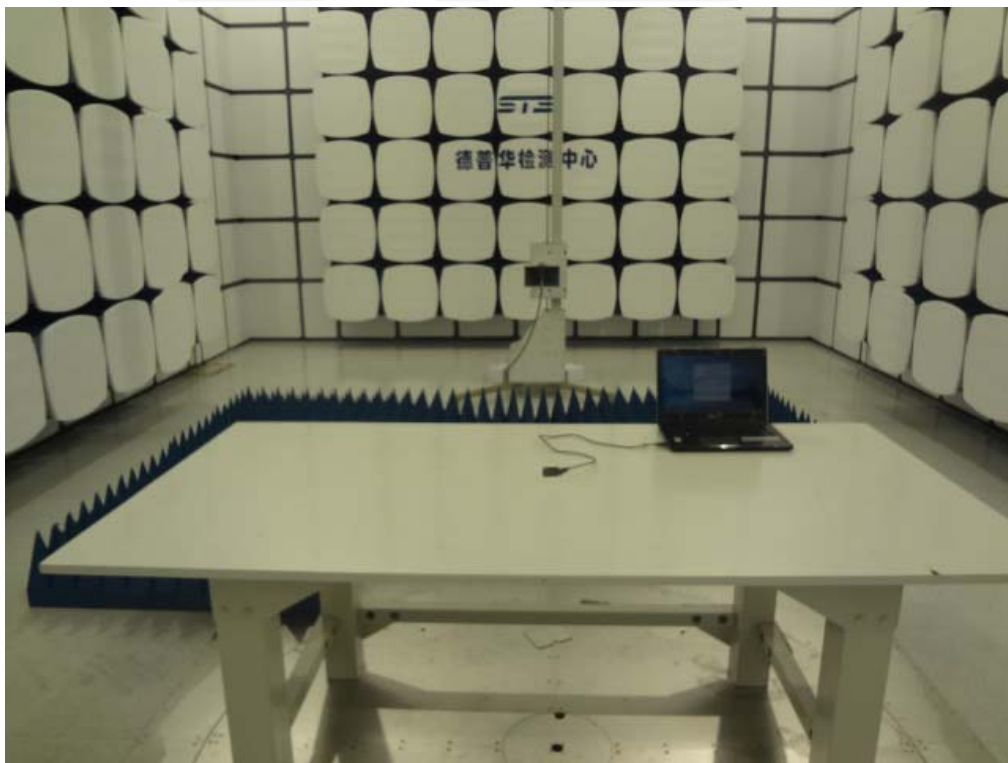
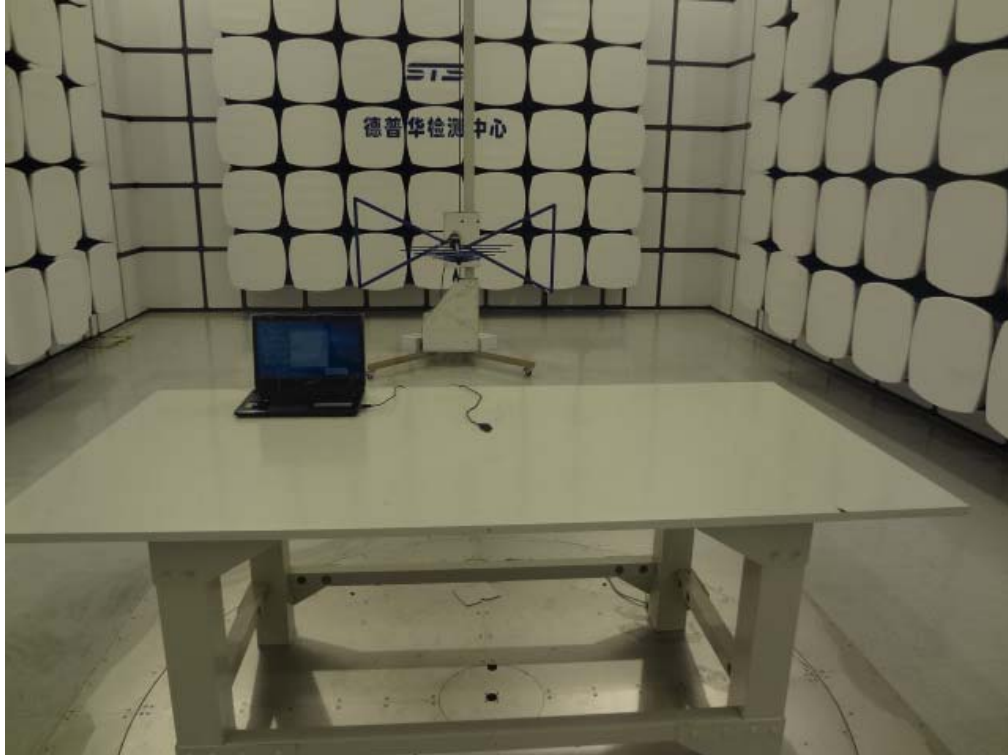
8.2 EUT ANTENNA

The EUT antenna is PIFA Antenna. It comply with the standard requirement.



APPENDIX - PHOTOS OF TEST SETUP

Radiated Measurement Photos



Conducted Measurement Photos

