

7. Radiated Spurious Emission

Name of Test	Radiated Spurious Emission
Base Standard	FCC 15.247(d), 15.209, 15.205

Test Result: Complies
Measurement Data: See Tables below

Method of Measurement:

Reference FCC document: KDB558074, ANSI C63.4

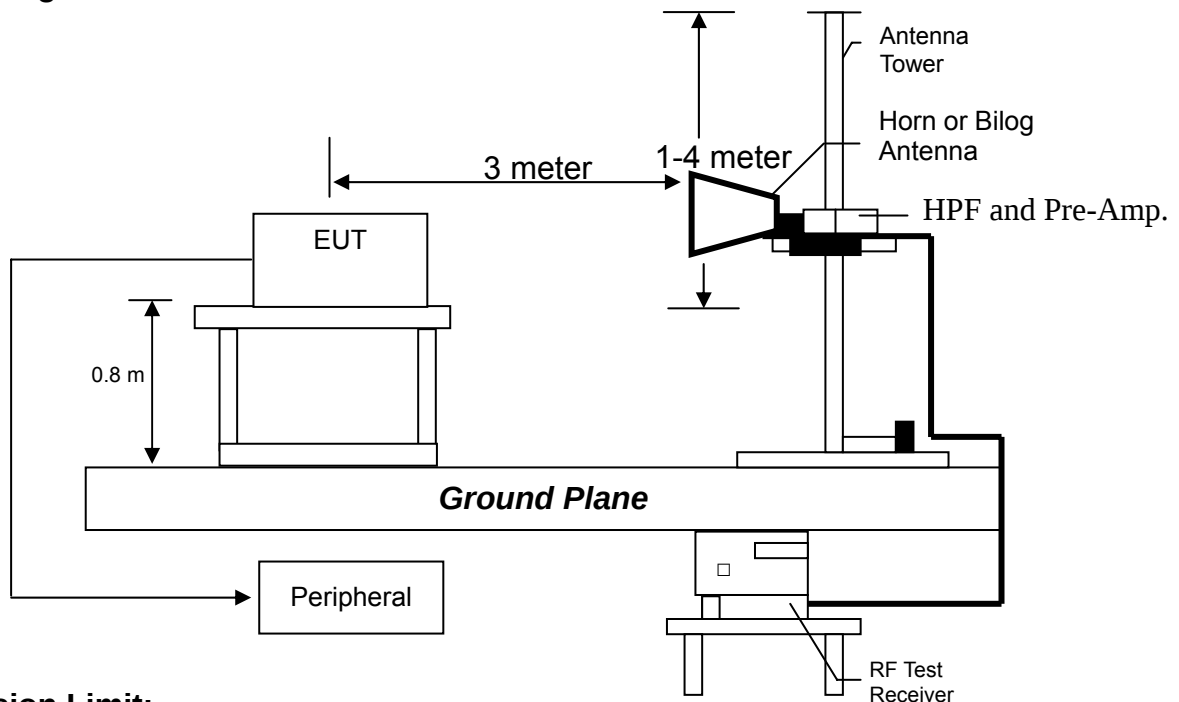
The frequency range from 30 MHz to 1000 MHz using Bilog Antenna.
The frequency range over 1 GHz using Horn Antenna.

Radiated emissions were investigated cover the frequency range from 30 MHz to 1000 MHz using a receiver RBW of 120 kHz record QP reading, and the frequency over 1 GHz using a spectrum analyzer RBW of 1 MHz and 10 Hz VBW record Average reading. (15.209 paragraph), the Peak reading (1 MHz RBW/VBW) recorded also on the report.

The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meters and down to 1 meter. The measurement for radiated emission will be done at the distance of three meters unless the signal level is too low to measure at that distance. In the case of the reading under noise floor, a pre-amplifier is used and/or the test is conducted at a closer distance. And then all readings are extrapolated back to the equivalent 3 meters reading using inverse scaling with distance.

The EUT configuration please refer to the "Spurious set-up photo.pdf".

Test Diagram:



Emission Limit:

The spurious Emission shall test through the 10th harmonic. 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).

Frequency (MHz)	Limits (dBμV/m@ 3 meter)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Remark:

1. In the above table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

Measurement results: frequencies equal to or less than 1 GHz

The test was performed on EUT under 802.11b, 802.11g and 802.11n continuously transmitting mode. Channel 1, 6, 11 were verified. The worst case occurred at 802.11b Tx channel 1.

EUT : NBG4615
Worst Case : 802.11b Tx at channel 1

Polarization (circle)	Frequency (MHz)	Detector	Corr. Factor (dB/m)	Reading (dBuV)	Calculated dBuV/m	Limit (dBuV/m)	Margin (dB)
Vertical	74.62	QP	10.39	28.56	38.95	40.00	-1.05
Vertical	249.22	QP	12.22	23.16	35.37	46.00	-10.63
Vertical	374.35	QP	15.06	24.22	39.28	46.00	-6.72
Vertical	384.05	QP	16.40	24.54	40.94	46.00	-5.06
Vertical	624.61	QP	20.75	21.23	41.98	46.00	-4.02
Vertical	874.87	QP	23.70	20.07	43.77	46.00	-2.23
Horizontal	74.62	QP	11.29	21.38	32.66	40.00	-7.34
Horizontal	249.22	QP	12.36	30.75	43.11	46.00	-2.89
Horizontal	374.35	QP	15.48	22.68	38.15	46.00	-7.85
Horizontal	384.05	QP	16.74	24.93	41.67	46.00	-4.33
Horizontal	624.61	QP	20.88	24.27	45.14	46.00	-0.86
Horizontal	874.87	QP	24.12	20.81	44.92	46.00	-1.08
Horizontal	1000.00	QP	25.78	15.00	40.77	54.00	-13.23

Remark:

1. Corr. Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Corr. Factor

Measurement results: frequency above 1GHz

EUT : NBG4615
Test Condition : 802.11b Tx at channel 1 (DAC0)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
3210.00	PK	V	35.54	34.62	44.53	43.61	54	-10.39
4824.00	PK	V	36.07	37.77	53.41	55.11	74	-18.89
4824.00	AV	V	36.07	37.77	51.26	52.96	54	-1.04
4824.00	PK	H	36.07	37.77	43.21	44.91	54	-9.09

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11b Tx at channel 6 (DAC0)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4874.00	PK	V	36.07	37.77	52.90	54.60	74	-19.40
4874.00	AV	V	36.07	37.77	50.92	52.62	54	-1.38
4874.00	PK	H	36.07	37.77	42.21	43.91	54	-10.09

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11b Tx at channel 11 (DAC0)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4924.00	PK	V	36.07	37.77	46.75	48.45	54	-5.55
4924.00	PK	H	36.07	37.77	40.62	42.32	54	-11.68

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11g Tx at channel 1 (DAC0)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4824.00	PK	V	36.07	37.77	57.66	59.36	74	-14.64
4824.00	AV	V	36.07	37.77	43.65	45.35	54	-8.65
4824.00	PK	H	36.07	37.77	43.9	45.6	54	-8.40

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11g Tx at channel 6 (DAC0)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4874.00	PK	V	36.07	37.77	55.58	57.28	74	-16.72
4874.00	AV	V	36.07	37.77	42.53	44.23	54	-9.77
4874.00	PK	H	36.07	37.77	44.93	46.63	54	-7.37

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11g Tx at channel 11 (DAC0)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4924.00	PK	V	36.07	37.77	49.62	51.32	54	-2.68
4924.00	PK	H	36.07	37.77	40.37	42.07	54	-11.93

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11g Tx at channel 1 (DAC1)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4824.00	PK	V	36.07	37.77	40.62	42.32	54	-11.68
4824.00	PK	H	36.07	37.77	38.58	40.28	54	-13.72

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11g Tx at channel 6 (DAC1)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4874.00	PK	V	36.07	37.77	40.50	42.20	54	-11.80
4874.00	PK	H	36.07	37.77	39.15	40.85	54	-13.15

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11g Tx at channel 11 (DAC1)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4924.00	PK	V	36.07	37.77	41.45	43.15	54	-10.85
4924.00	PK	H	36.07	37.77	38.50	40.20	54	-13.80

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11n HT20 Tx at channel 1 (DAC0+DAC1)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4824.00	PK	V	36.07	37.77	58.12	59.82	74	-14.18
4824.00	AV	V	36.07	37.77	42.70	44.40	54	-9.60
4824.00	PK	H	36.07	37.77	43.66	45.36	54	-8.64

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615

Test Condition : 802.11n HT20 Tx at channel 6 (DAC0+DAC1)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
4874.00	PK	V	36.07	37.77	56.16	57.86	74	-16.14
4874.00	AV	V	36.07	37.77	41.55	43.25	54	-10.75
4874.00	PK	H	36.07	37.77	45.44	47.14	54	-6.86

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615

Test Condition : 802.11n HT20 Tx at channel 11 (DAC0+DAC1)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
3270.00	PK	V	35.54	34.62	47.32	46.40	54	-7.60
4924.00	PK	V	36.07	37.77	48.39	50.09	54	-3.91
4924.00	PK	H	36.07	37.77	40.56	42.26	54	-11.74

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11n HT40 Tx at channel 3 (DAC0+DAC1)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
3210.00	PK	V	35.54	34.62	48.49	47.57	54	-6.43
4844.00	PK	V	36.07	37.77	48.12	49.82	54	-4.18
4844.00	PK	H	36.07	37.77	39.98	41.68	54	-12.32

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11n HT40 Tx at channel 6 (DAC0+DAC1)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
3240.00	PK	V	35.54	34.62	45.16	44.24	54	-9.76
4874.00	PK	V	36.07	37.77	48.42	50.12	54	-3.88
4874.00	PK	H	36.07	37.77	41.31	43.01	54	-10.99

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz.The data value listed above which is higher than the system noise floor.

EUT : NBG4615
Test Condition : 802.11n HT40 Tx at channel 9 (DAC0+DAC1)

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Preamp. Gain (dB)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
3270.00	PK	V	35.54	34.62	46.90	45.98	54	-8.02
4904.00	PK	V	36.07	37.77	43.87	45.57	54	-8.43
4904.00	PK	H	36.07	37.77	38.33	40.03	54	-13.97

Remark:

1. Correction Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Correction Factor – Preamp. Gain
3. The frequency measured ranges from 1GHz to 25GHz. The data value listed above which is higher than the system noise floor.

8. Emission on Band Edge

Name of Test	Emission Band Edge
Base Standard	FCC 15.247(d)

Test Result: Complies
Measurement Data: See Tables & plots below

Method of Measurement:

Reference FCC document: KDB558074, ANSI C63.4

The frequency range from 30 MHz to 1000 MHz using Bilog Antenna.

The frequency range over 1 GHz using Horn Antenna.

Radiated emissions were investigated cover the frequency range from 30 MHz to 1000 MHz using a receiver RBW of 120 kHz record QP reading, and the frequency over 1 GHz using a spectrum analyzer RBW of 1 MHz and 10 Hz VBW record Average reading. (15.209 paragraph), the Peak reading (1 MHz RBW/VBW) recorded also on the report.

Test Mode: 802.11b (DAC0)

Channel	Measurement Freq.Band (MHz)	Detector	The Max. Field Strength in Restrict Band (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
1 (lowest)	2310-2390	PK	61.88	74	-12.12
		AV	53.28	54	-0.72
11 (highest)	2483.5-2500	PK	62.39	74	-11.61
		AV	53.27	54	-0.73

Test Mode: 802.11g (DAC0)

Channel	Measurement Freq.Band (MHz)	Detector	The Max. Field Strength in Restrict Band (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
1 (lowest)	2310-2390	PK	63.20	74	-10.80
		AV	51.82	54	-2.18
11 (highest)	2483.5-2500	PK	70.94	74	-3.06
		AV	53.42	54	-0.58

Test Mode: 802.11g (DAC1)

Channel	Measurement Freq.Band (MHz)	Detector	The Max. Field Strength in Restrict Band (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
1 (lowest)	2310-2390	PK	63.06	74	-10.94
		AV	53.20	54	-0.80
11 (highest)	2483.5-2500	PK	63.87	74	-10.13
		AV	53.23	54	-0.77

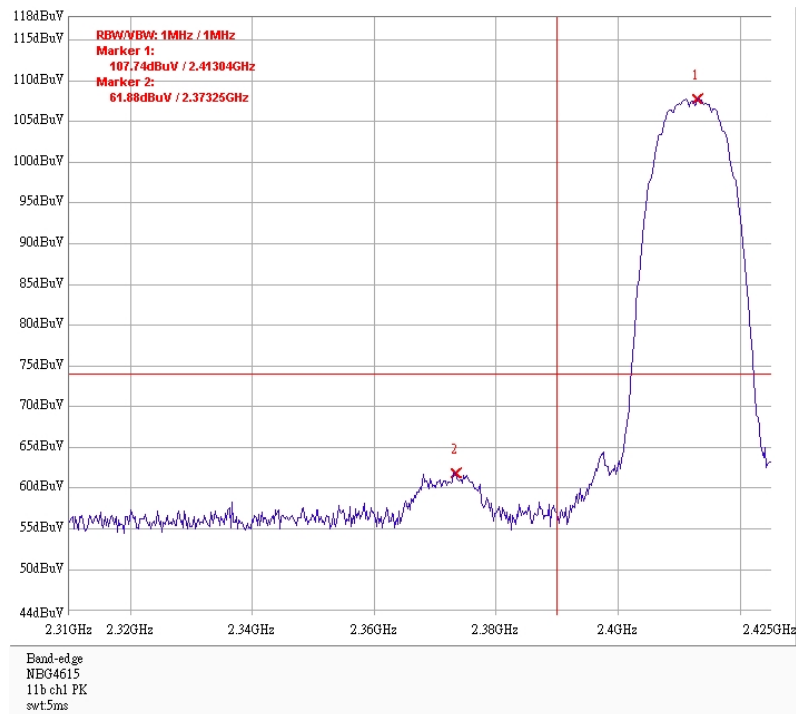
Test Mode: 802.11n HT20 (DAC0+DAC1)

Channel	Measurement Freq.Band (MHz)	Detector	The Max. Field Strength in Restrict Band (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
1 (lowest)	2310-2390	PK	63.09	74	-10.91
		AV	52.32	54	-1.68
11 (highest)	2483.5-2500	PK	64.59	74	-9.41
		AV	51.35	54	-2.65

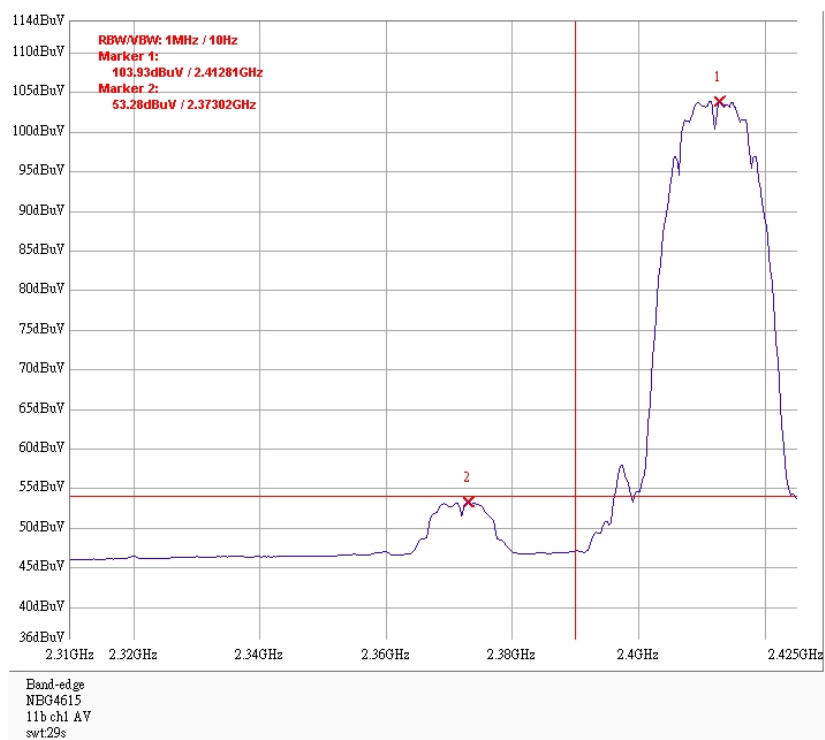
Test Mode: 802.11n HT40 (DAC0+DAC1)

Channel	Measurement Freq.Band (MHz)	Detector	The Max. Field Strength in Restrict Band (dBuV/m)	Limit @ 3 m (dBuV/m)	Margin (dB)
3 (lowest)	2310-2390	PK	63.23	74	-10.77
		AV	51.91	54	-2.09
9 (highest)	2483.5-2500	PK	65.31	74	-8.69
		AV	53.33	54	-0.67

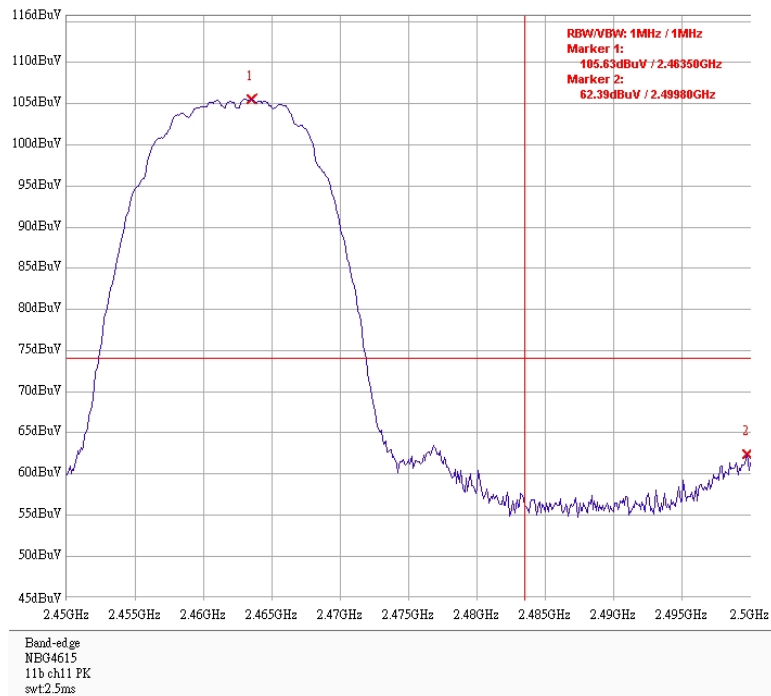
Band edge @ 802.11b mode channel 1 PK (DAC0)



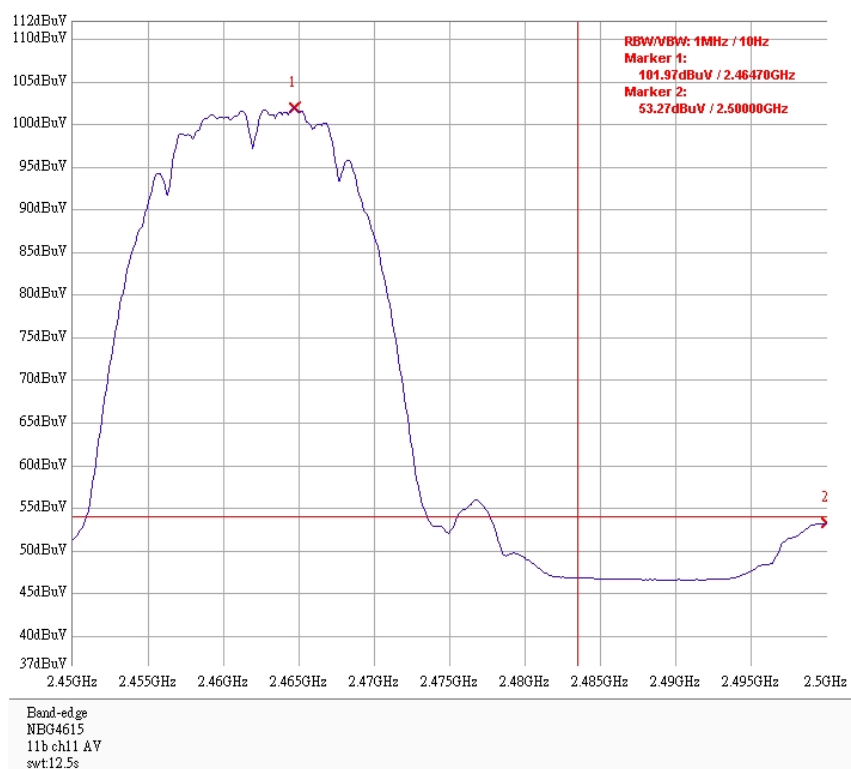
Band edge @ 802.11b mode channel 1 AV (DAC0)



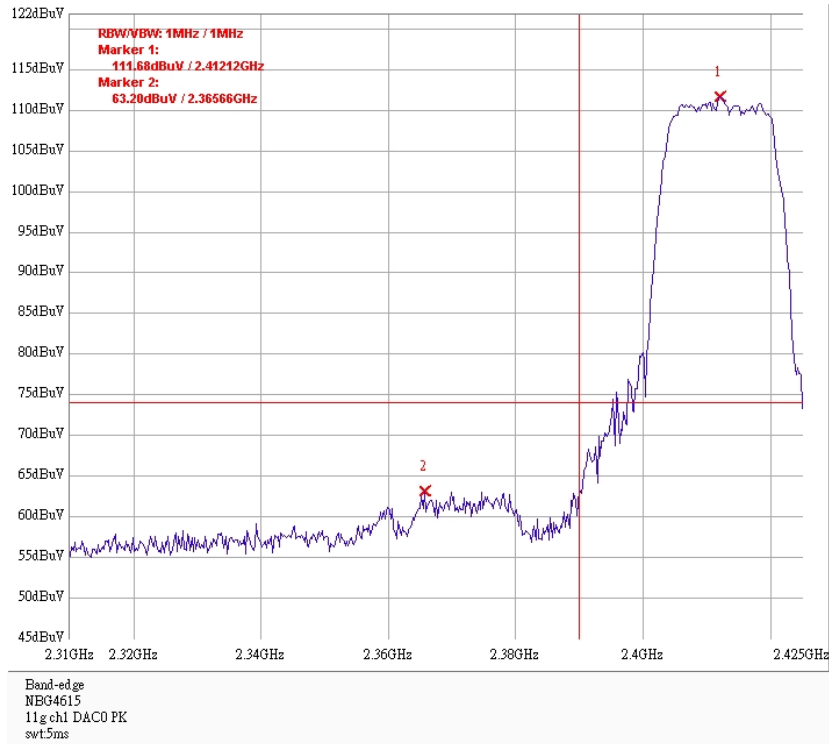
Band edge @ 802.11b mode channel 11 PK (DAC0)



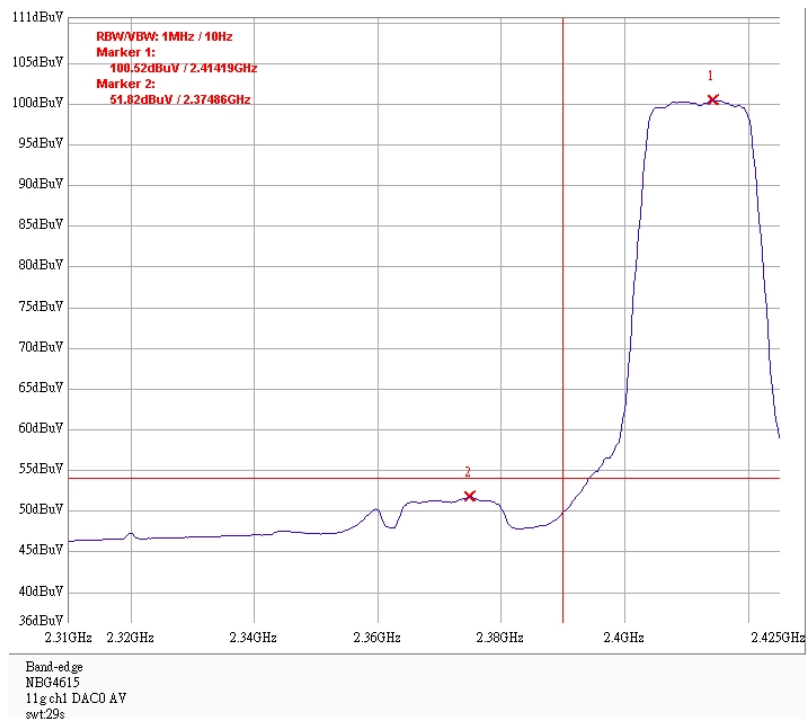
Band edge @ 802.11b mode channel 11 AV (DAC0)



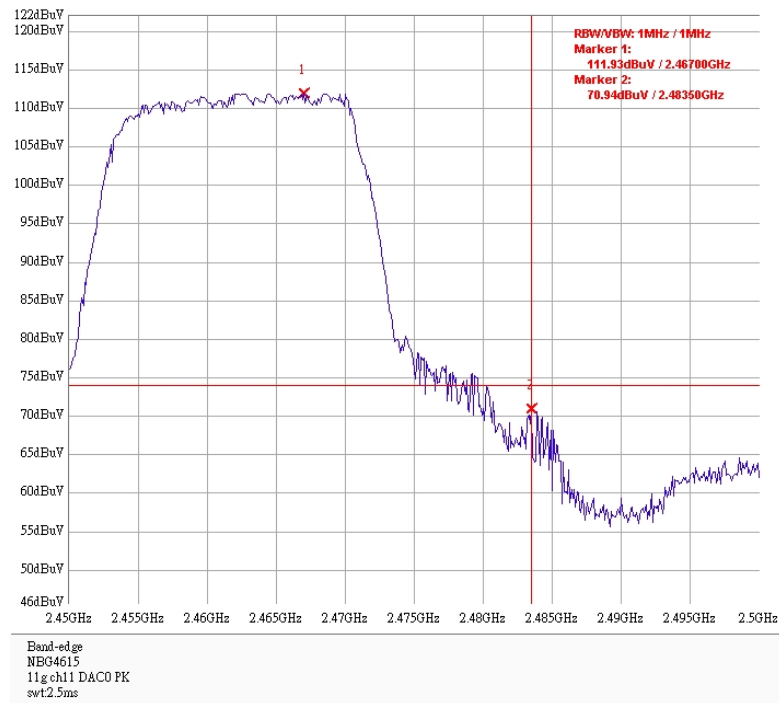
Band edge @ 802.11g mode channel 1 PK (DAC0)



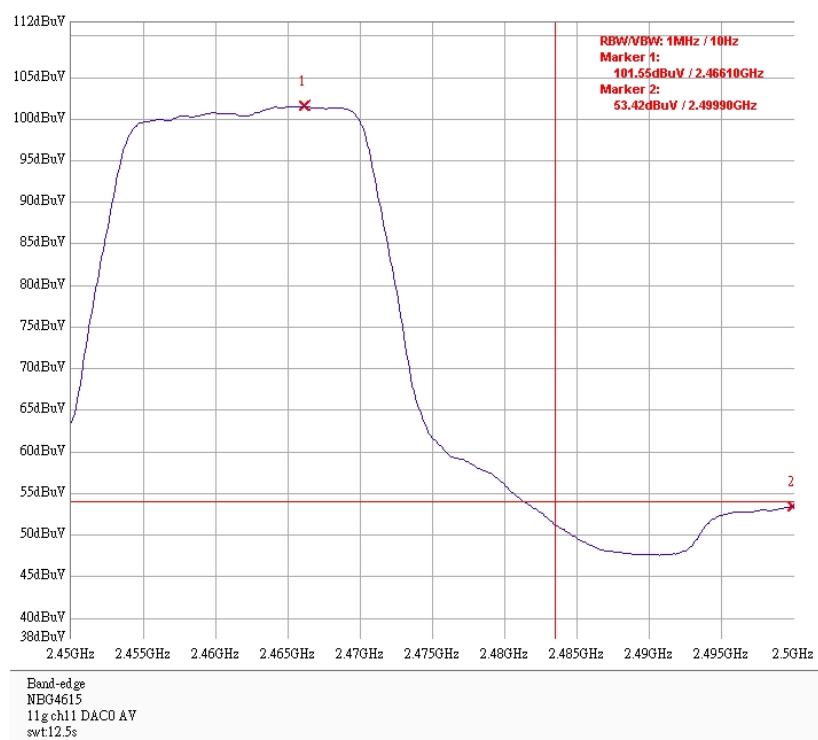
Band edge @ 802.11g mode channel 1 AV (DAC0)



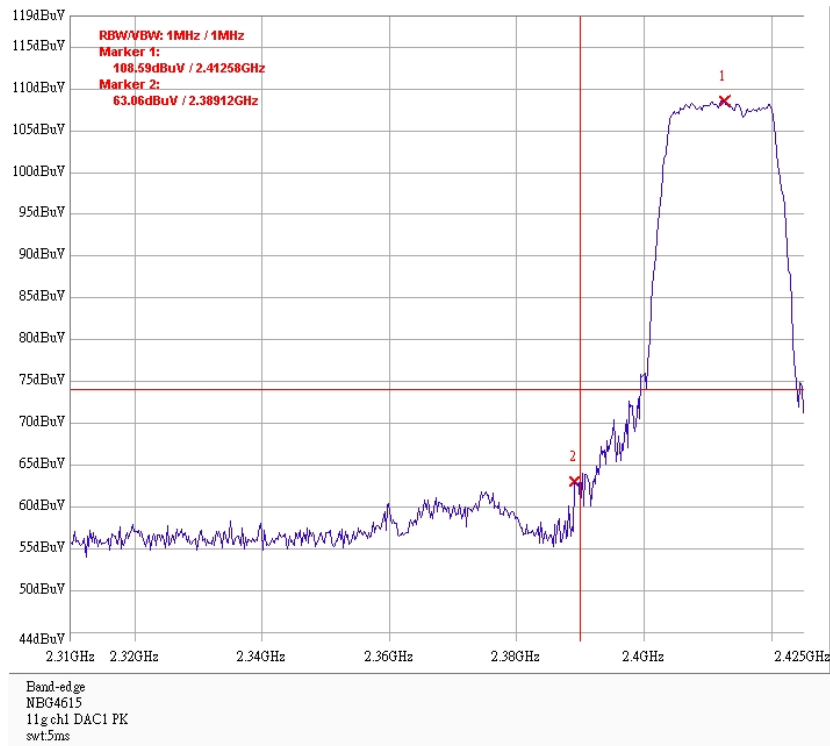
Band edge @ 802.11g mode channel 11 PK (DAC0)



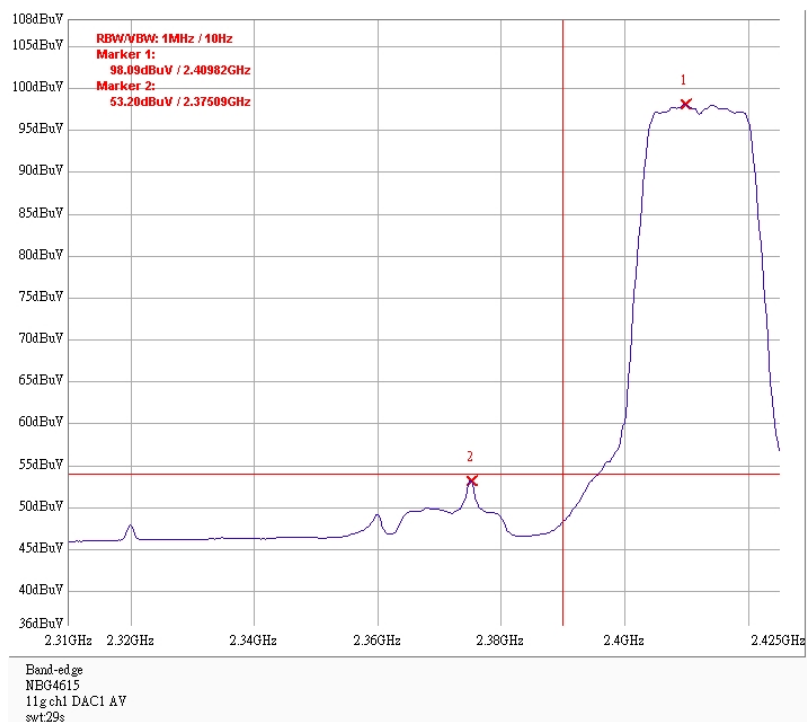
Band edge @ 802.11g mode channel 11 AV (DAC0)



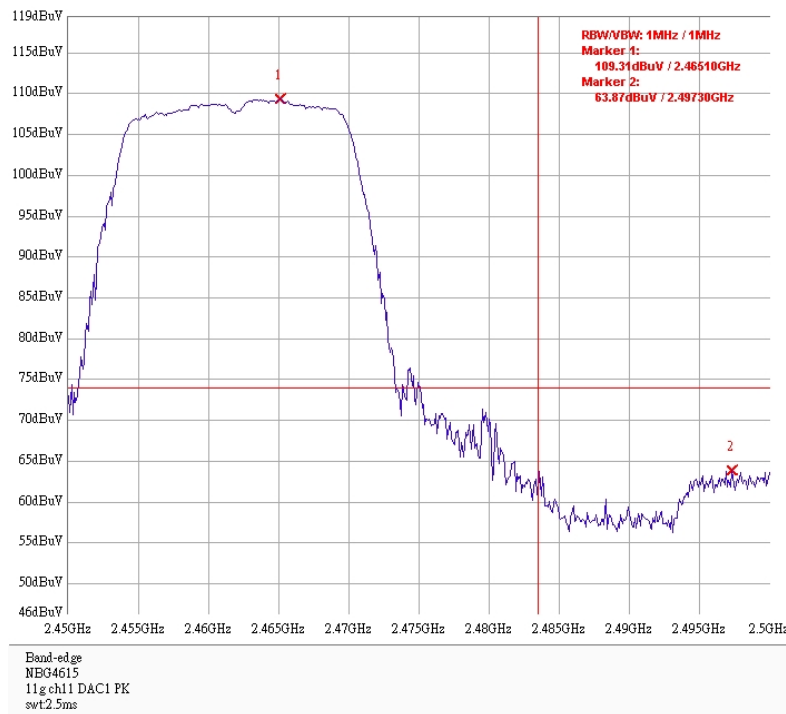
Band edge @ 802.11g mode channel 1 PK (DAC1)



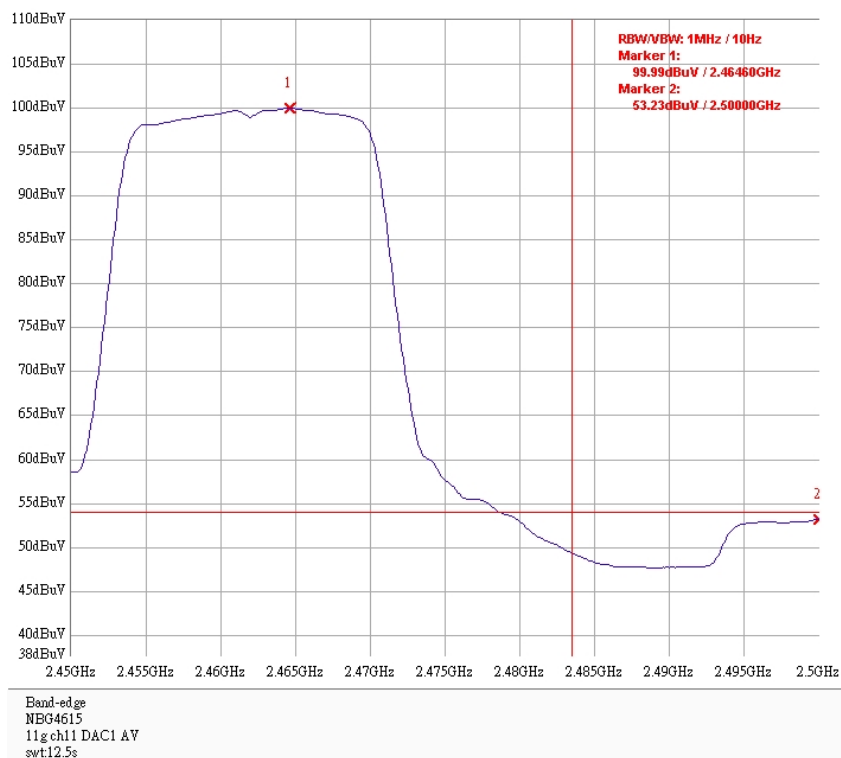
Band edge @ 802.11g mode channel 1 AV (DAC1)



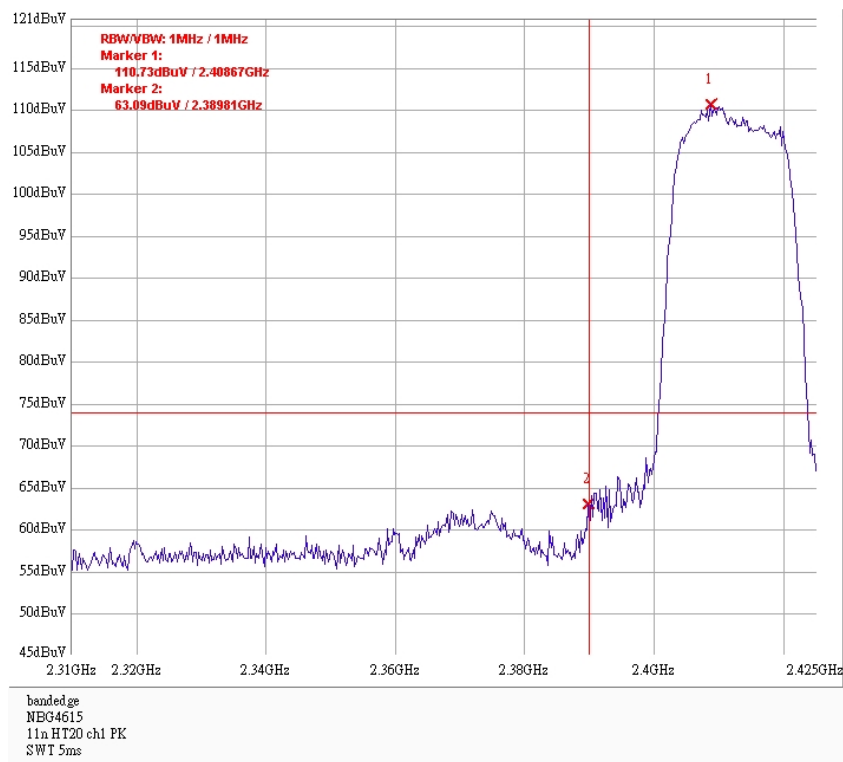
Band edge @ 802.11g mode channel 11 PK (DAC1)



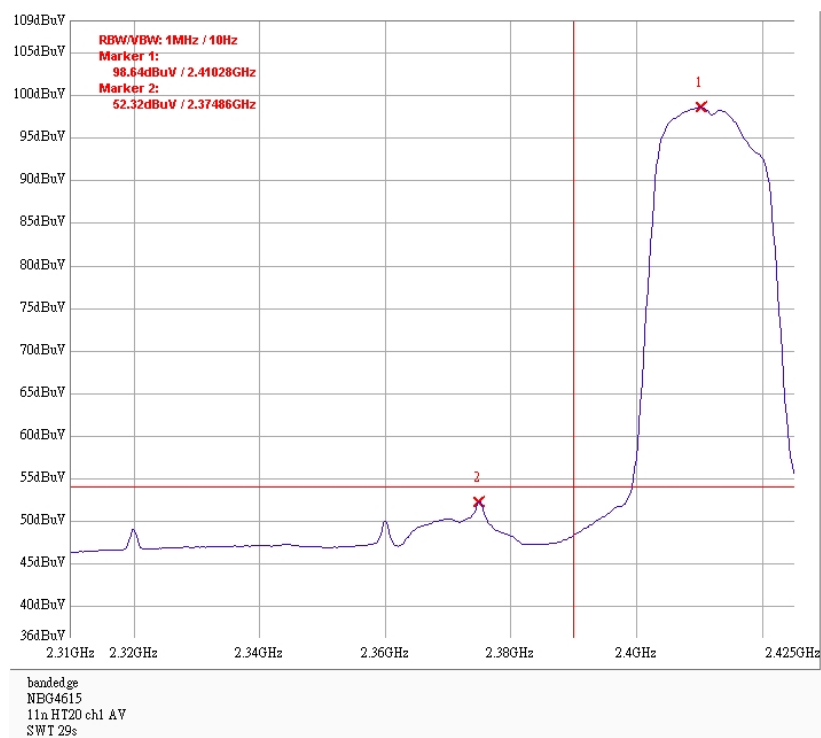
Band edge @ 802.11g mode channel 11 AV (DAC1)



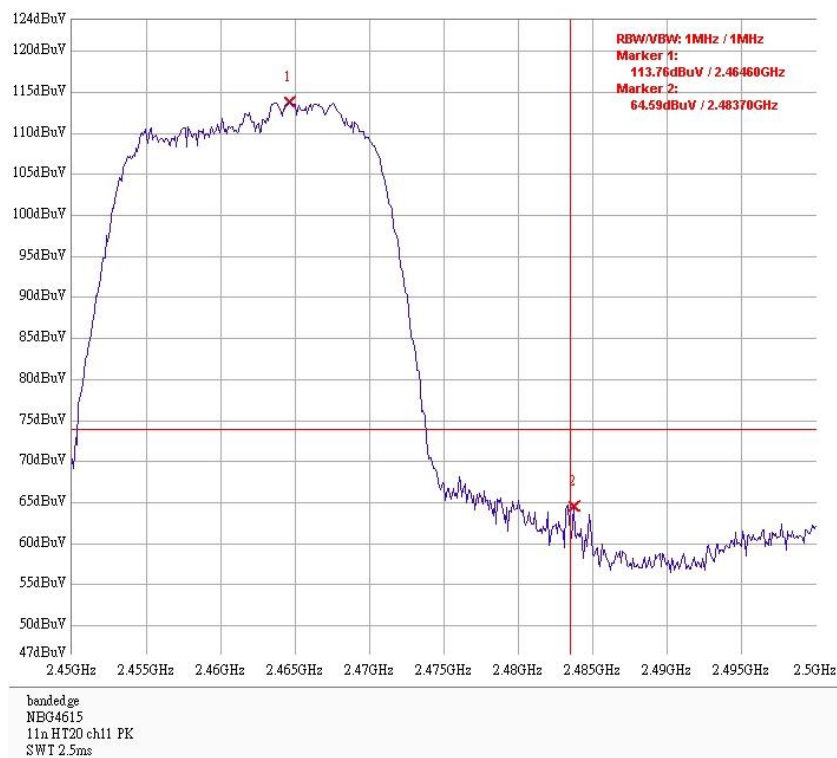
Band edge @802.11n HT20 mode channel 1 PK (DAC0+DAC1)



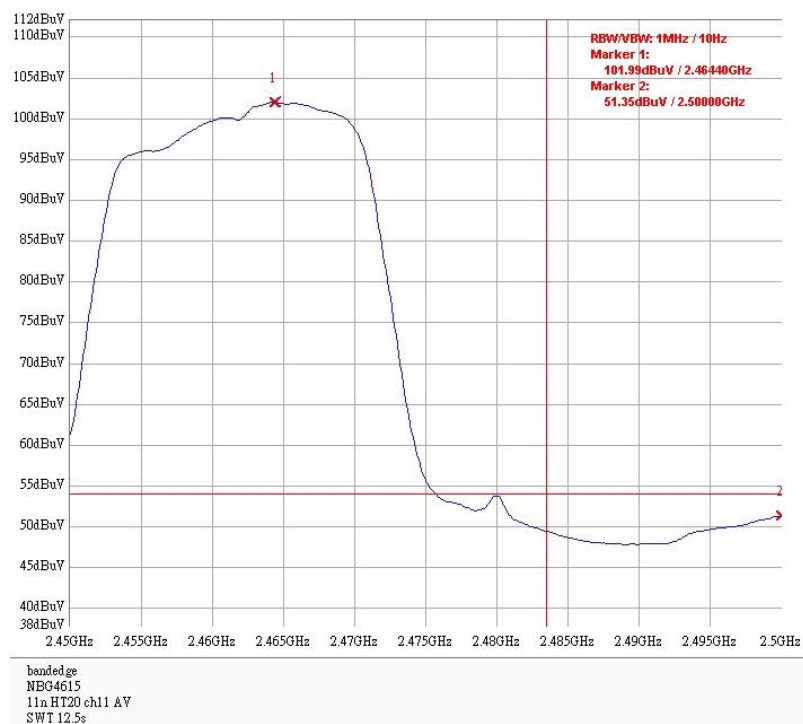
Band edge @802.11n HT20 mode channel 1 AV (DAC0+DAC1)



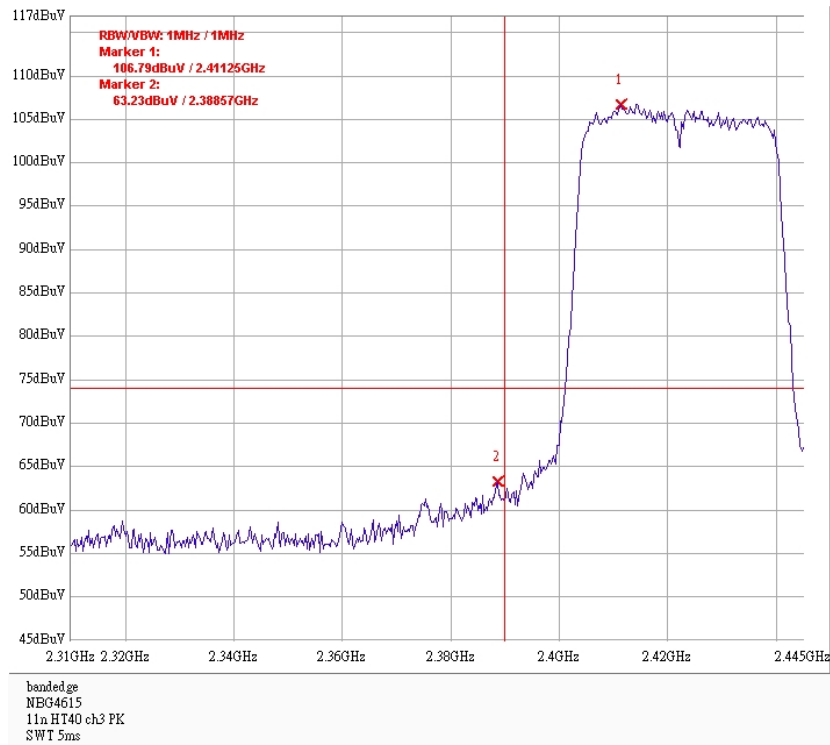
Band edge @802.11n HT20 mode channel 11 PK (DAC0+DAC1)



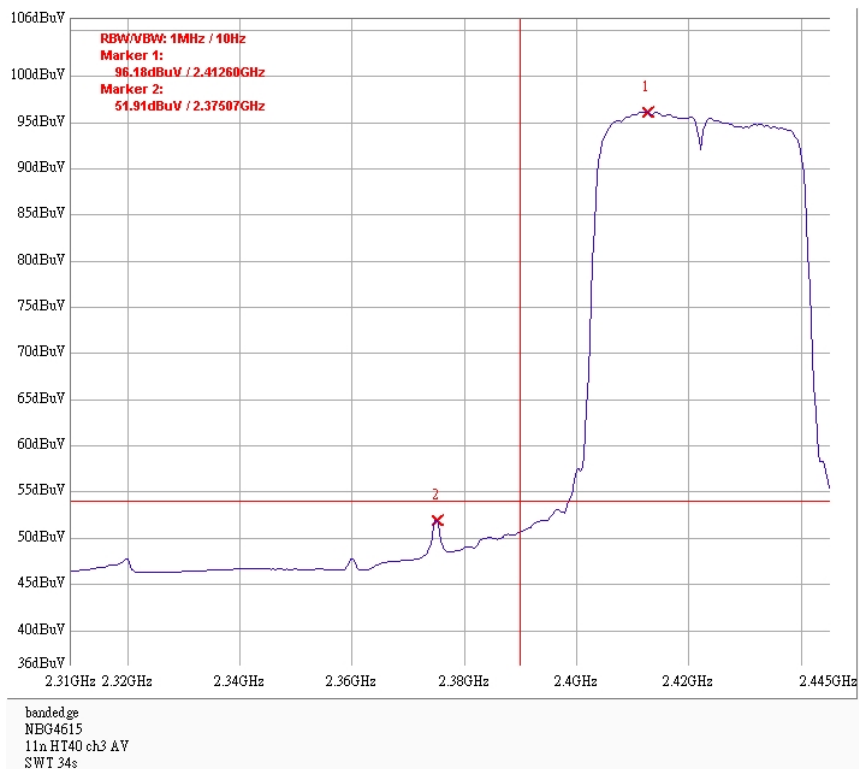
Band edge @802.11n HT20 mode channel 11 AV (DAC0+DAC1)



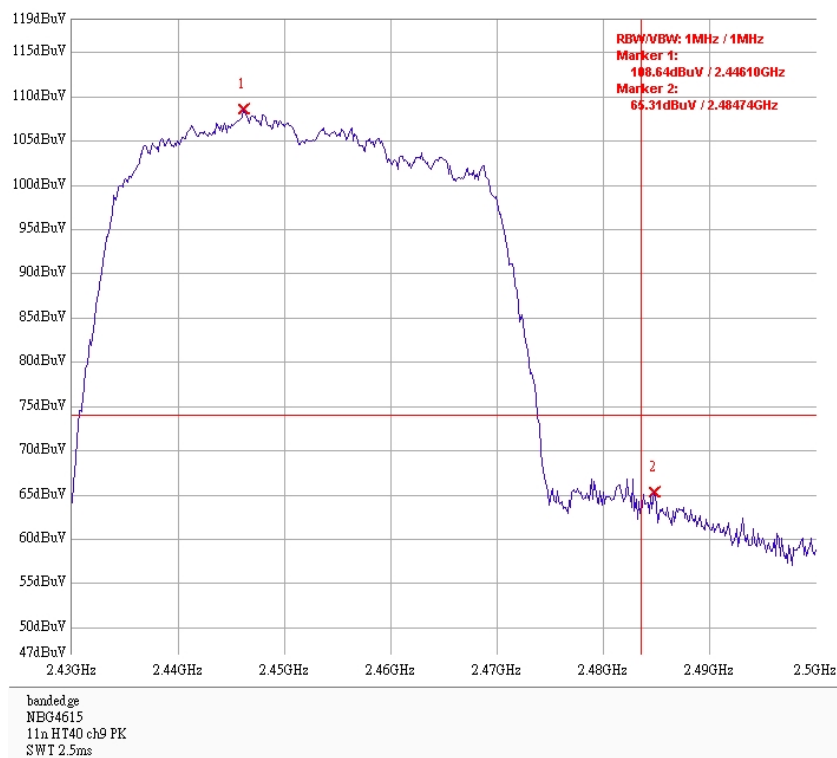
Band edge @802.11n HT40 mode channel 3 PK (DAC0+DAC1)



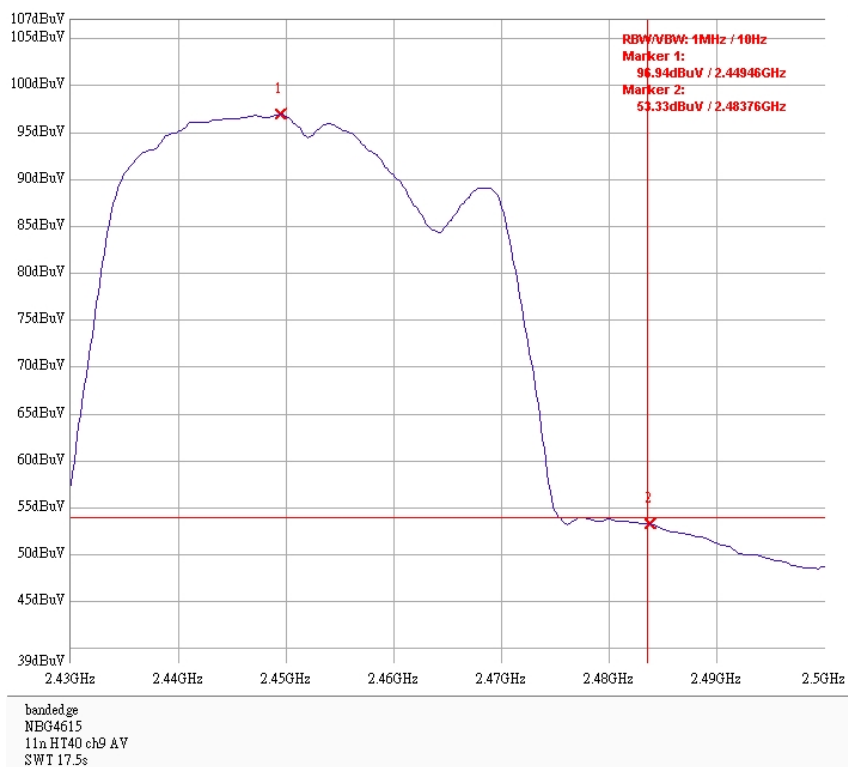
Band edge @802.11n HT40 mode channel 3 AV (DAC0+DAC1)



Band edge @802.11n HT40 mode channel 9 PK (DAC0+DAC1)



Band edge @802.11n HT40 mode channel 9 AV (DAC0+DAC1)



9. AC power line conducted emission

Name of Test	AC power line conducted emission
Base Standard	FCC 15.207

Test Result: Complies
Measurement Data: See Tables & plots below
Method of Measurement:
Reference FCC document: KDB558074, ANSI C63.4

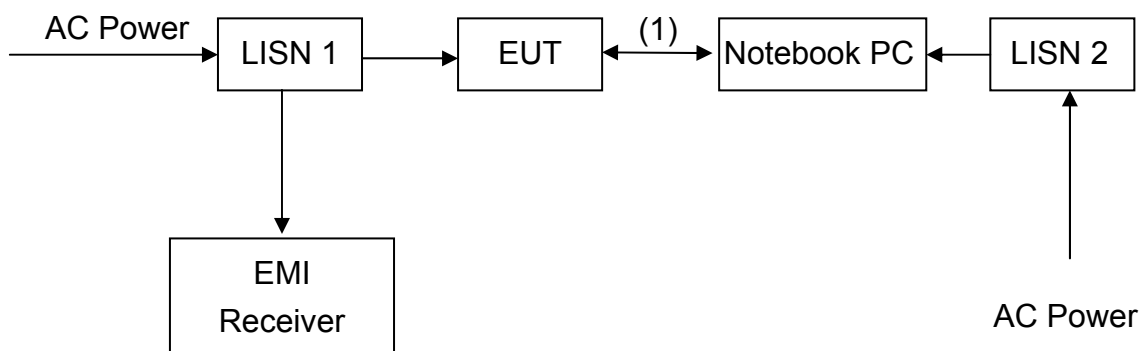
The EUT are connected to the main power through a line impedance stabilization network (LISN). This provides a 50 ohm/50 uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm/ 50 uH coupling impedance with 50 ohm termination.

Both sides (Line and Neutral) of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4/2003 on conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 9kHz.

The EUT configuration please refer to the "Conducted set-up photo.pdf".

Test Diagram:



(1) RJ-45 UTP Cat.5 10 meter

Emission Limit:

Freq. (MHz)	Conducted Limit (dBuV)	
	Q.P.	Ave.
0.15~0.50	66 – 56*	56 – 46*
0.50~5.00	56	46
5.00~30.0	60	50

*Decreases with the logarithm of the frequency.

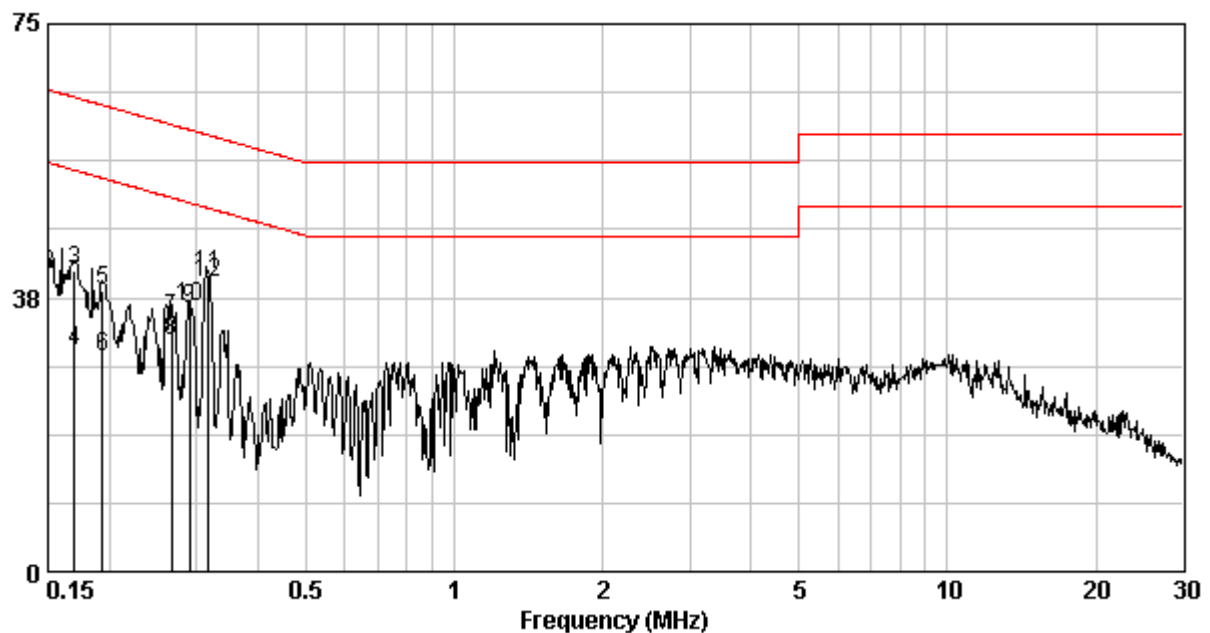
Note: The EUT was tested while in continues transmit mode.

Phase : Line
EUT : NBG4615
Test condition : Continuously mode
Remark : Adapter 1

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level Av (dBuV)	Limit Av (dBuV)	Margin (dB)	
						Qp	Av
0.15	0.81	40.71	66.00	29.87	56.00	-25.29	-26.13
0.17	0.81	41.31	64.99	30.26	54.99	-23.68	-24.73
0.19	0.81	38.49	63.89	29.44	53.89	-25.40	-24.45
0.27	0.52	34.67	61.20	31.49	51.20	-26.54	-19.72
0.29	0.43	36.21	60.50	36.02	50.50	-24.29	-14.48
0.32	0.35	40.68	59.83	39.54	49.83	-19.15	-10.29

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)

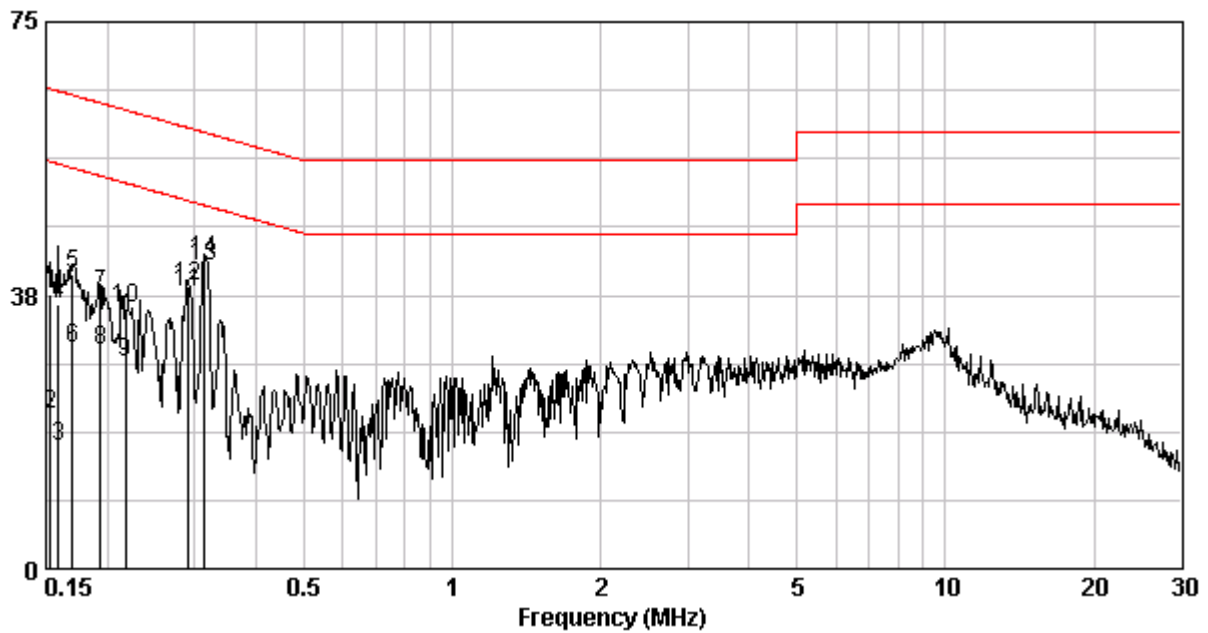


Phase : Neutral
EUT : NBG4615
Test condition : Continuously mode
Remark : Adapter 1

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level Av (dBuV)	Limit Av (dBuV)	Margin (dB)	
						Qp	Av
0.15	0.11	37.63	65.82	21.08	55.82	-28.20	-34.75
0.16	0.11	36.26	65.52	16.66	55.52	-29.26	-38.86
0.17	0.11	40.51	64.99	30.17	54.99	-24.48	-24.82
0.19	0.11	37.67	63.89	29.94	53.89	-26.22	-23.95
0.22	0.11	35.82	62.92	28.38	52.92	-27.10	-24.54
0.29	0.11	38.70	60.50	37.81	50.50	-21.80	-12.69
0.32	0.11	42.43	59.83	41.56	49.83	-17.40	-8.27

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)

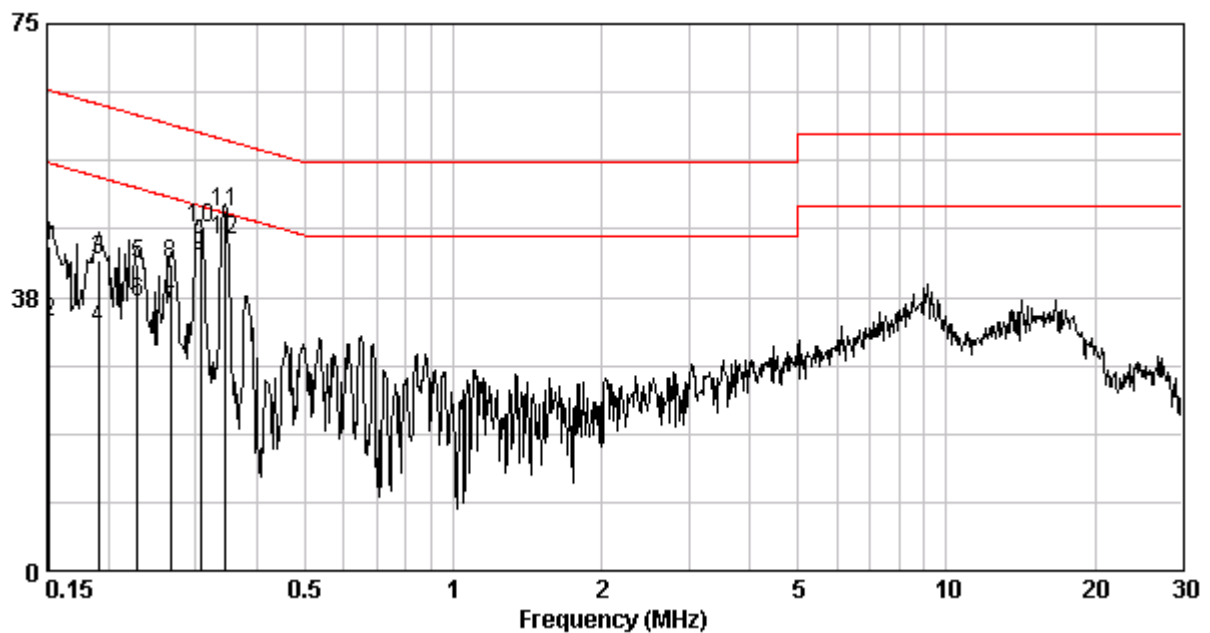


Phase : Line
EUT : NBG4615
Test condition : Continuously mode
Remark : Adapter 2

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level Av (dBuV)	Limit Av (dBuV)	Margin (dB)	
						Qp	Av
0.15	0.81	44.43	65.91	34.17	55.91	-21.49	-21.75
0.19	0.81	42.62	64.02	33.17	54.02	-21.40	-20.85
0.23	0.67	42.17	62.48	36.89	52.48	-20.31	-15.59
0.27	0.52	41.97	61.20	35.66	51.20	-19.24	-15.55
0.31	0.37	47.04	60.06	43.18	50.06	-13.02	-6.88
0.34	0.26	49.06	59.09	45.46	49.09	-10.03	-3.63

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)

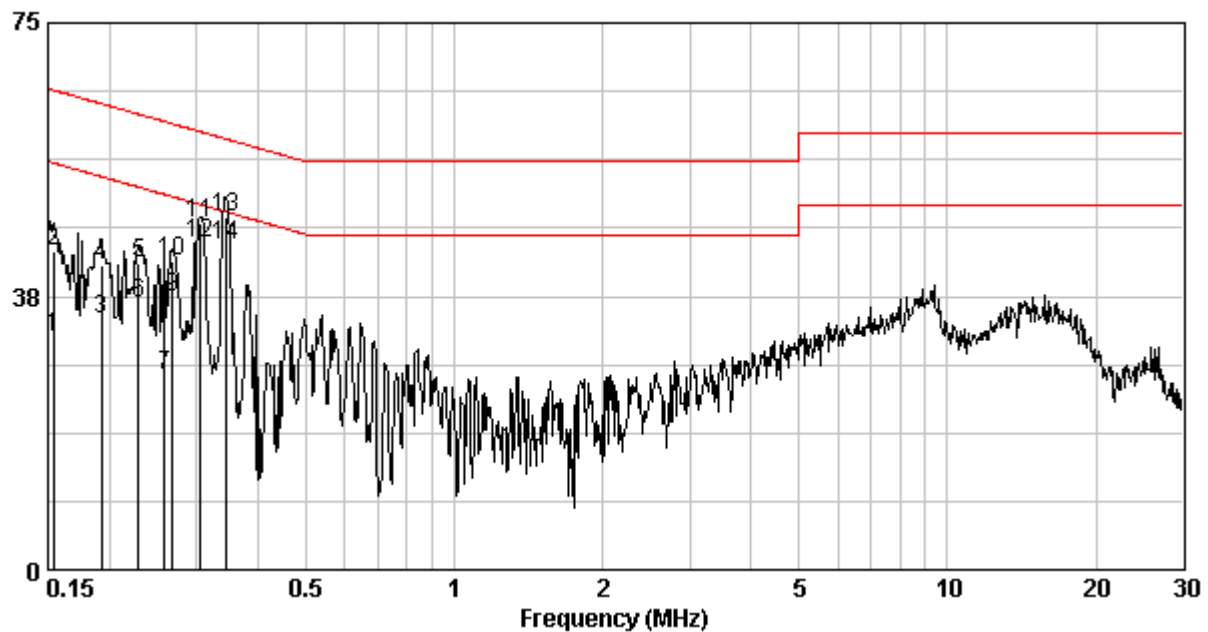


Phase : Neutral
EUT : NBG4615
Test condition : Continuously mode
Remark : Adapter 2

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level Av (dBuV)	Limit Av (dBuV)	Margin (dB)	
						Qp	Av
0.15	0.11	43.77	65.78	31.87	55.78	-22.01	-23.91
0.19	0.11	41.84	63.93	34.31	53.93	-22.10	-19.63
0.23	0.11	42.10	62.48	36.67	52.48	-20.38	-15.81
0.26	0.11	35.48	61.47	26.61	51.47	-25.99	-24.86
0.27	0.11	42.39	61.16	37.39	51.16	-18.77	-13.77
0.31	0.11	47.47	60.10	44.77	50.10	-12.64	-5.34
0.35	0.11	48.33	59.08	44.55	49.08	-10.75	-4.53

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)

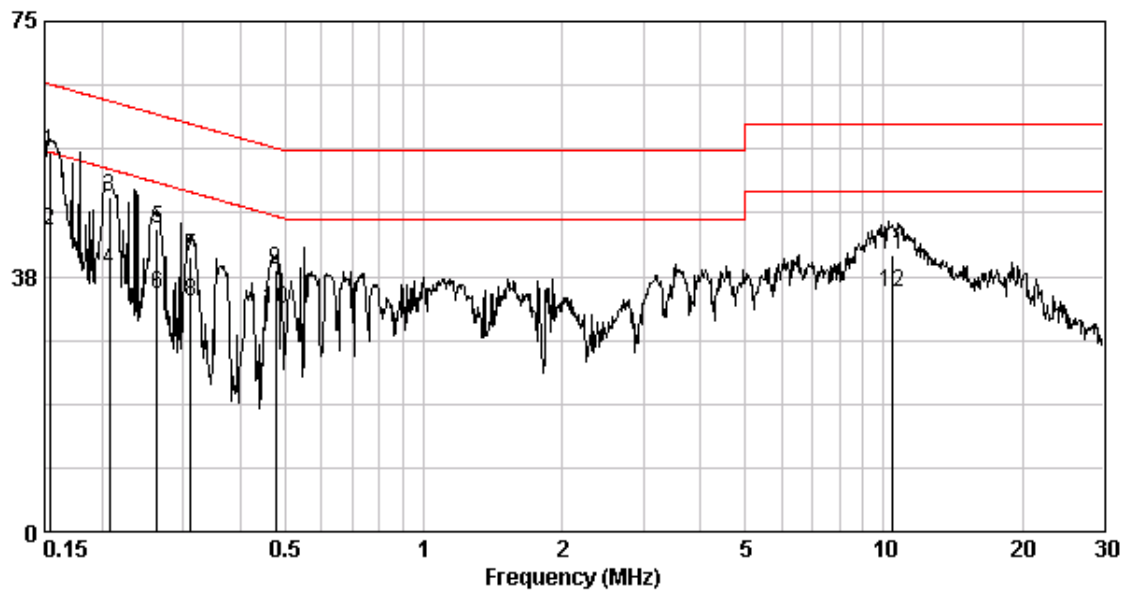


Phase : Line
EUT : NBG4615
Test condition : Continuously mode
Remark : Adapter 3

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level Av (dBuV)	Limit Av (dBuV)	Margin (dB)	
						Qp	Av
0.15	0.81	55.75	65.78	44.33	55.78	-10.03	-11.45
0.21	0.77	49.29	63.32	38.49	53.32	-14.03	-14.83
0.26	0.53	44.37	61.34	34.98	51.34	-16.96	-16.35
0.31	0.36	40.51	59.93	33.69	49.93	-19.42	-16.24
0.48	0.11	38.52	56.41	32.59	46.41	-17.89	-13.82
10.40	0.52	40.59	60.00	35.20	50.00	-19.41	-14.80

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)

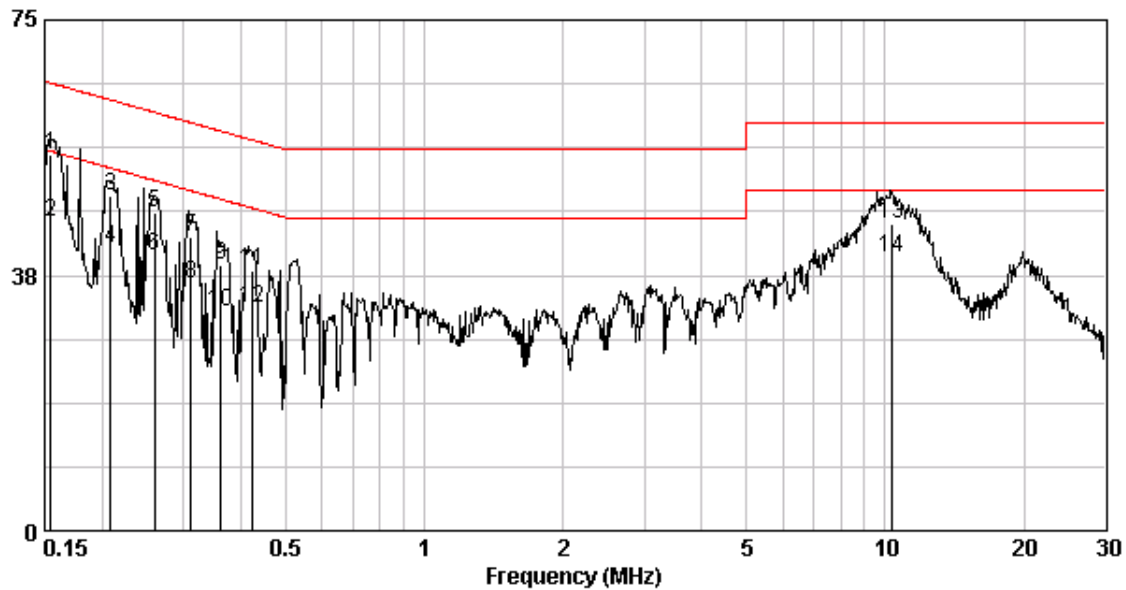


Phase : Neutral
EUT : NBG4615
Test condition : Continuously mode
Remark : Adapter 3

Frequency (MHz)	Corr. Factor (dB)	Level Qp (dBuV)	Limit Qp (dBuV)	Level Av (dBuV)	Limit Av (dBuV)	Margin (dB)	
						Qp	Av
0.15	0.11	55.30	65.74	45.40	55.74	-10.44	-10.34
0.21	0.11	49.30	63.27	41.41	53.27	-13.97	-11.86
0.26	0.11	46.61	61.42	40.26	51.42	-14.82	-11.17
0.31	0.11	43.11	59.93	36.37	49.93	-16.82	-13.56
0.36	0.11	38.91	58.69	32.24	48.69	-19.79	-16.46
0.42	0.11	38.08	57.42	32.69	47.42	-19.34	-14.73
10.34	0.40	44.96	60.00	39.98	50.00	-15.04	-10.02

Remark:

1. Correction Factor (dB)= LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Level (dBuV) – Limit (dBuV)



Appendix A: Test Equipment List

Equipment	Brand	Frequency range	Model No.	Last Cal.	Cal. interval
EMI Test Receiver	Rohde & Schwarz	9kHz~2.75GHz	ESCS 30	2010/9/3	1 year
EMI Test Receiver	Rohde & Schwarz	9kHz~3GHz	ESCI	2009/12/8	1 year
Spectrum Analyzer	Rohde & Schwarz	9kHz~30GHz	FSP 30	2010/8/16	1 year
Spectrum Analyzer	Rohde & Schwarz	20Hz~40GHz	FSEK 30	2010/1/18	1 year
Horn Antenna	SCHWARZBECK	1GHz~18GHz	BBHA9120D	2010/8/31	2 years
Bilog Antenna	SCHWARZBECK	25MHz~1.7GHz	VULB 9168	2009/9/22	2 years
Turn Table	HDGmbH	N/A	DS 420S	N/A	N/A
Antenna Tower	HDGmbH	N/A	MA 240	N/A	N/A
Pre-Amplifier	MITER	100MHz~26.5GHz	AFS42-00102 650	2009/10/27	2 years
LISN	Rohde & Schwarz	9KHz~30MHz	ESH3-Z5	2009/3/13	2 years
Power Meter	Anritsu	100kHz ~ 65GHz (video bandwidth:65MHz)	2495A	2010/10/20	1 year
Power Sensor	Anritsu	300MHz ~ 40GHz (video bandwidth:50MHz)	2411B	2010/10/20	1 year

Note: The above equipments are within the valid calibration period.

Measurement Uncertainty:

Measurement uncertainty was calculated in accordance with TR 100 028-1.

Parameter	Uncertainty
Radiated Emission	±5.056 dB
Conducted Emission	±2.786 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.