

Test Report No.10041775 001

Appendix D: Radiated Spurious Emission Data

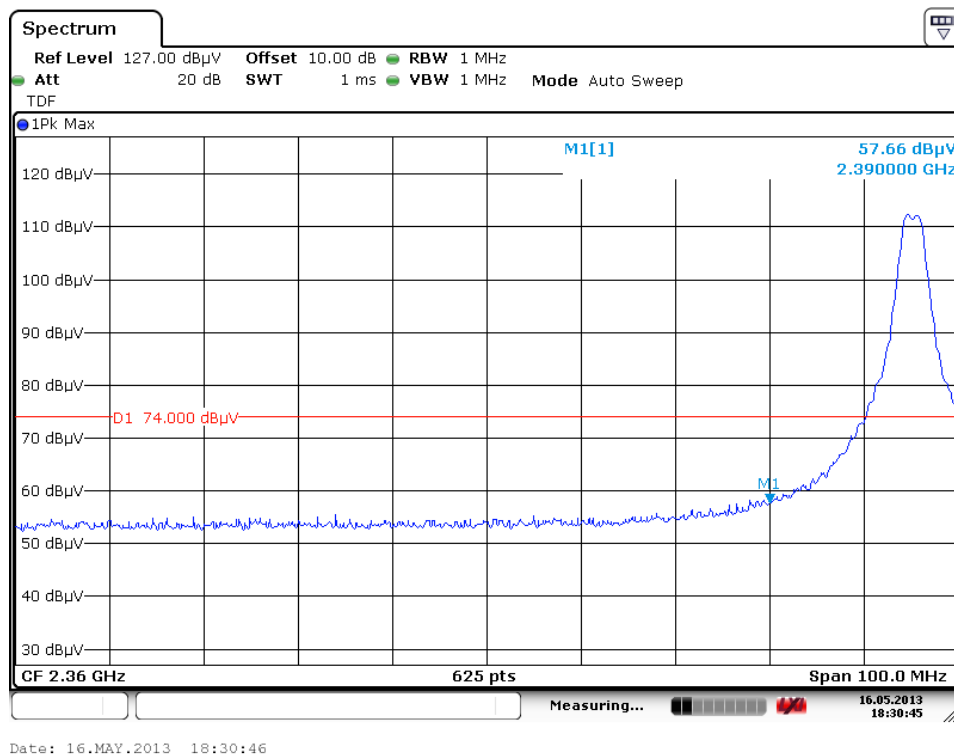
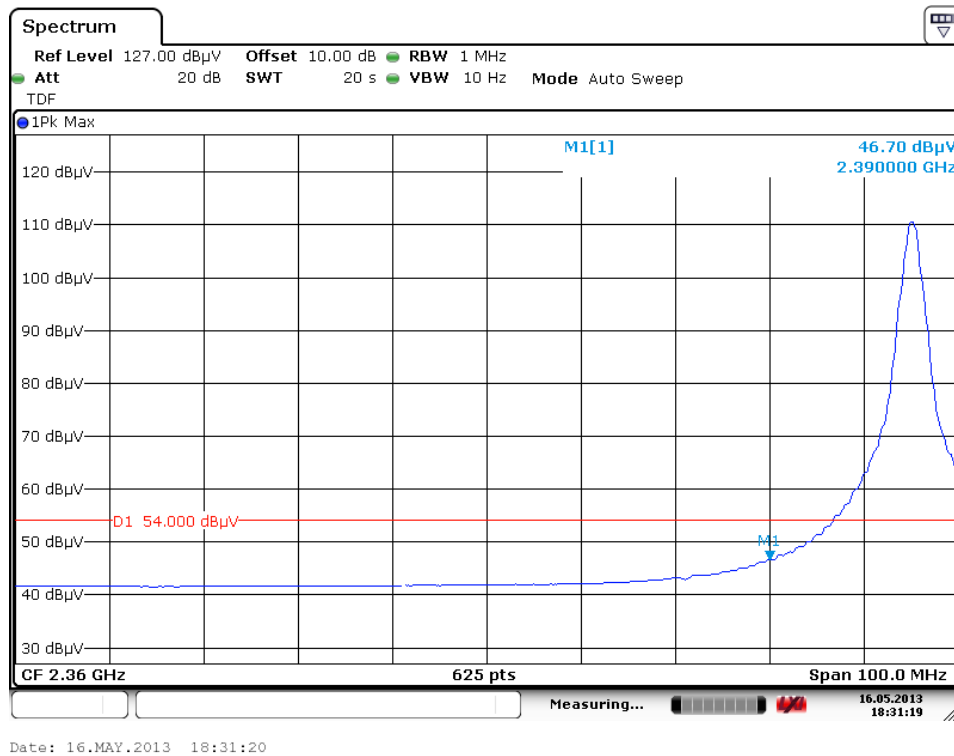
(File: 10041775AppendixD)

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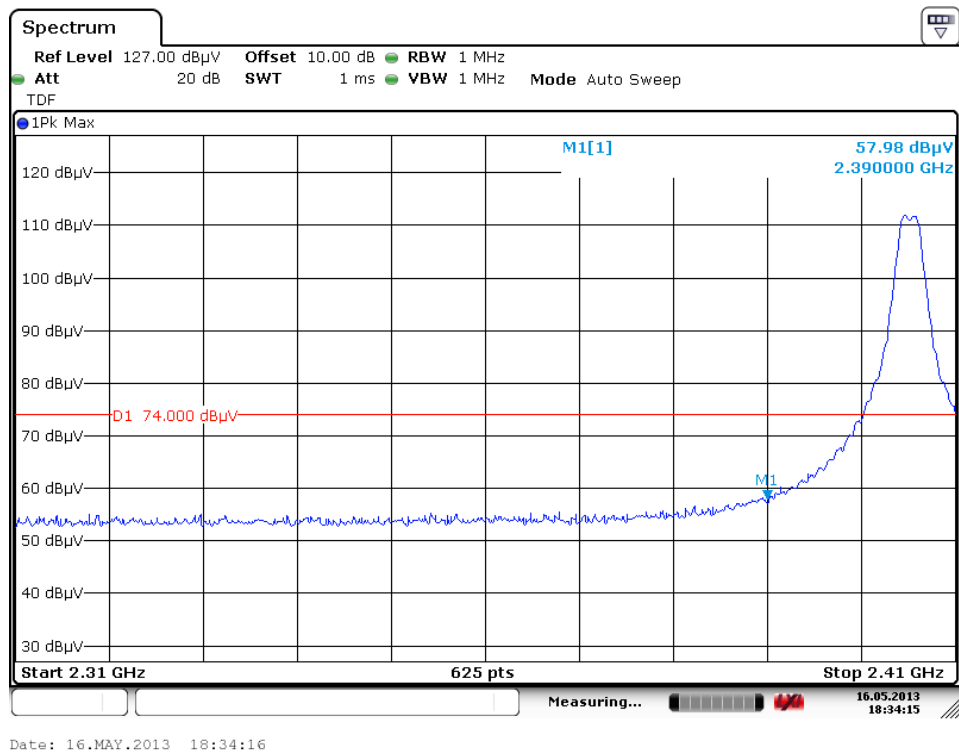
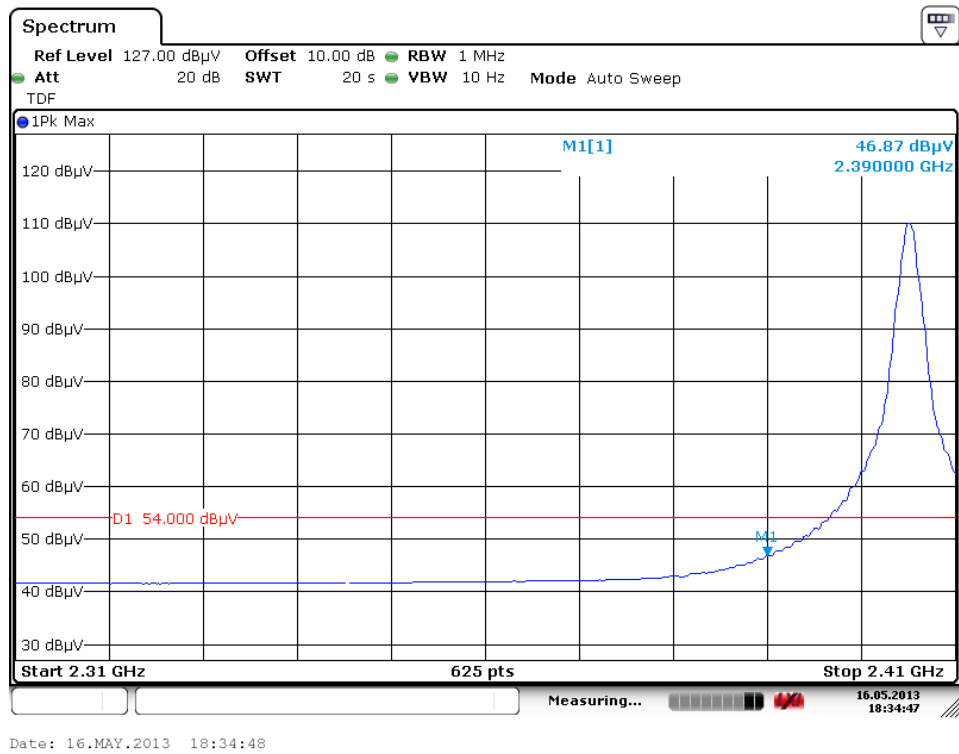
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Radiated Bandedge

Low Channel (Hor)



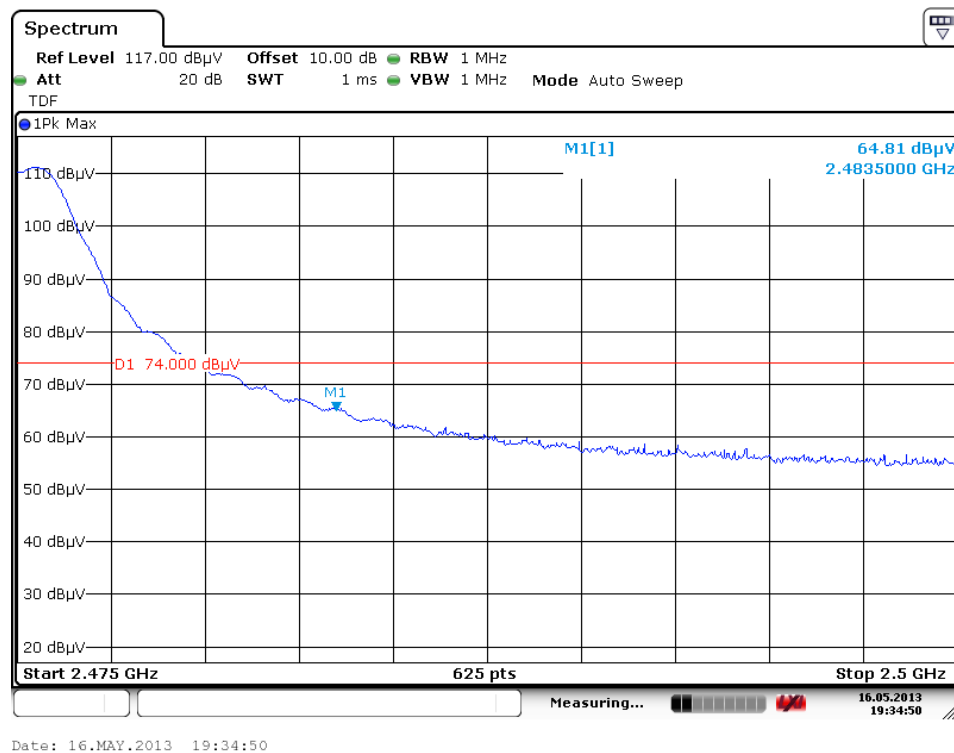
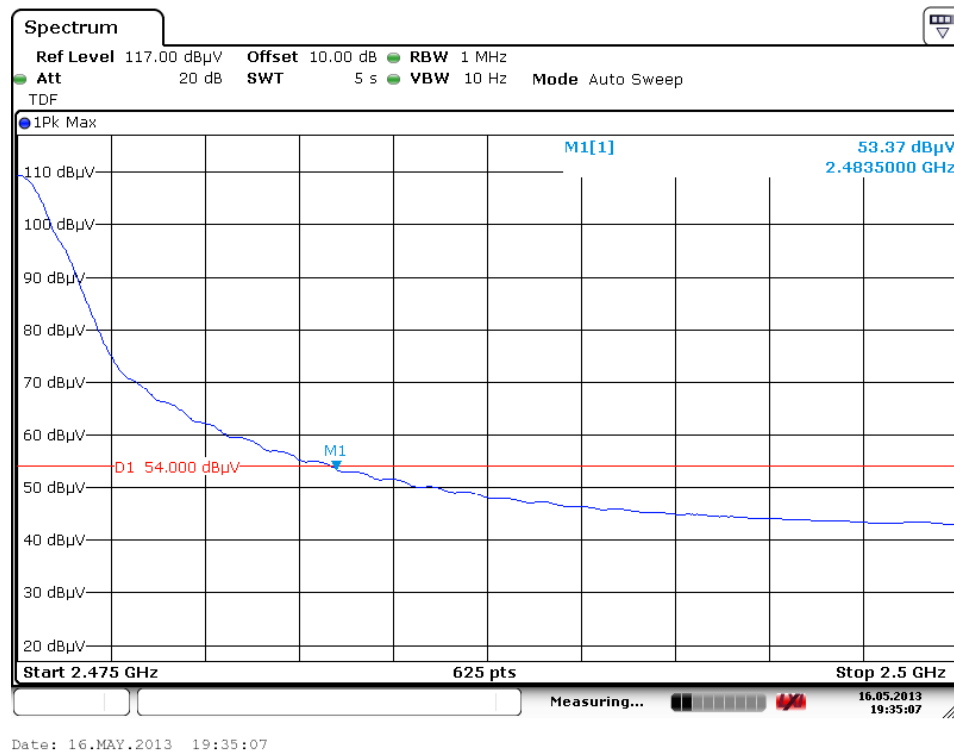
Low Channel (Ver)



Spurious Emissions, Band Edge, 2.35-2.5G

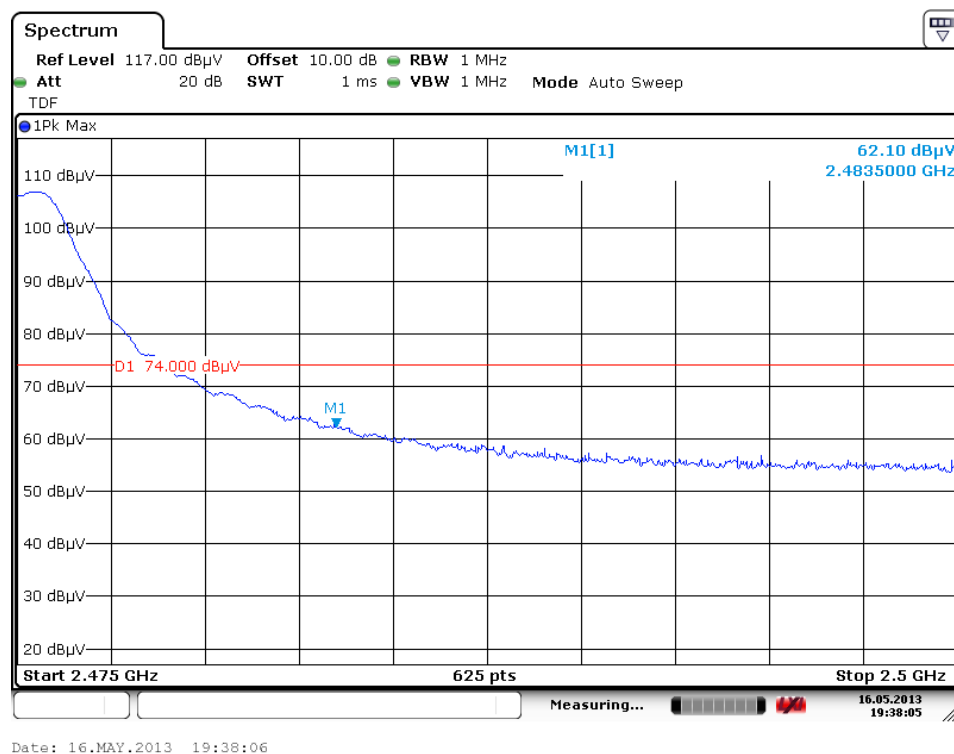
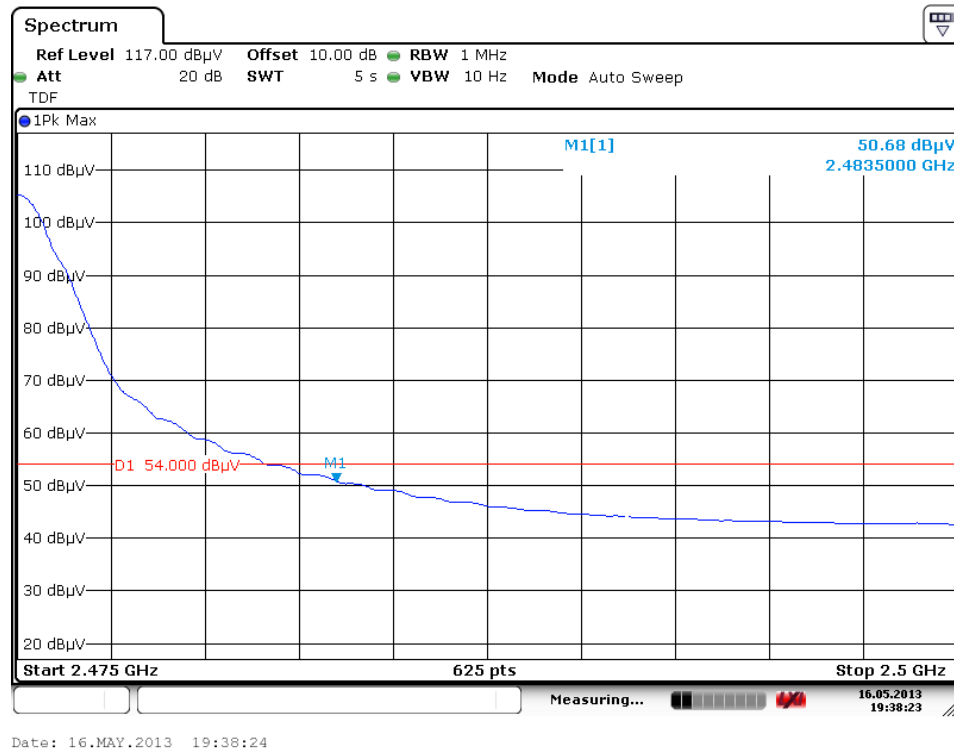
Radiated Bandedge

High Channel (Hor) 2475



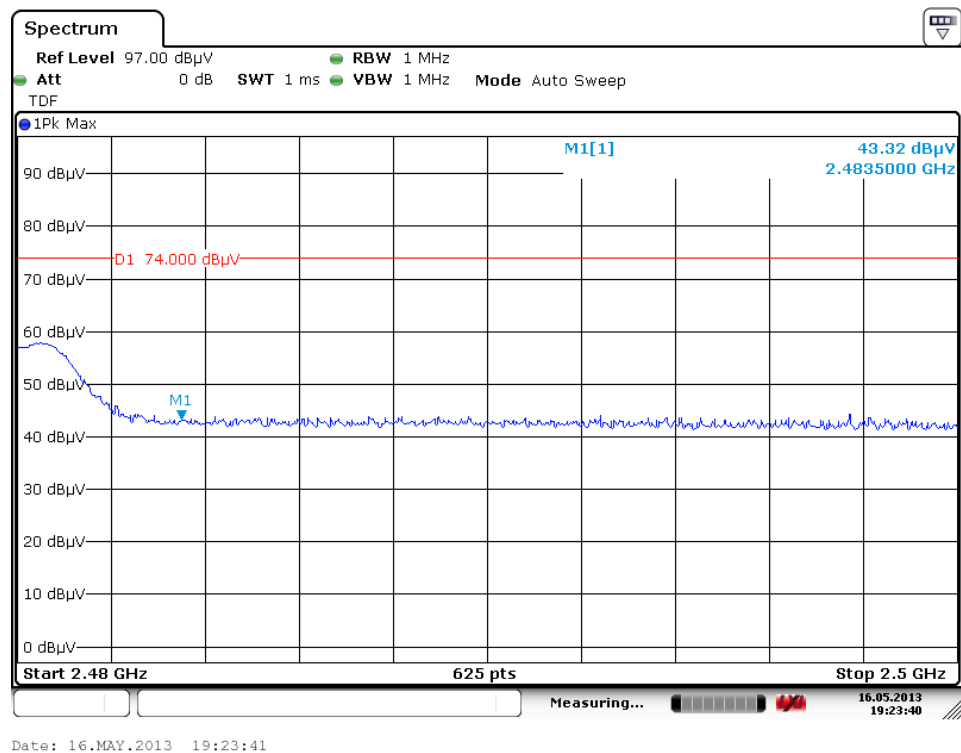
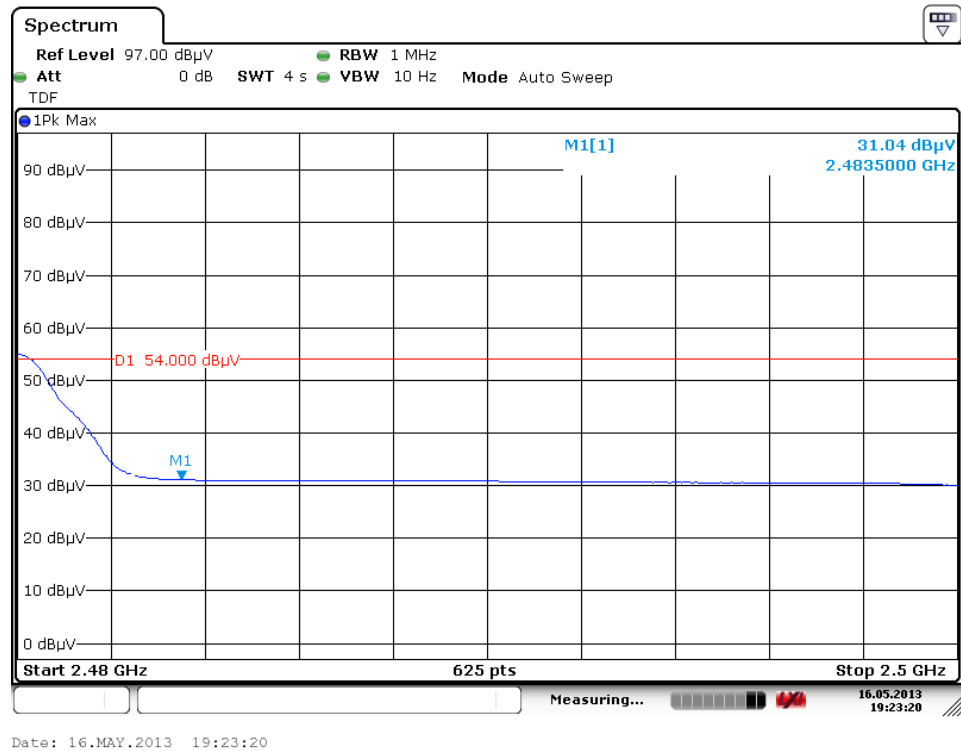
Spurious Emissions, Band Edge, 2.35-2.5G

High Channel (Ver) 2475



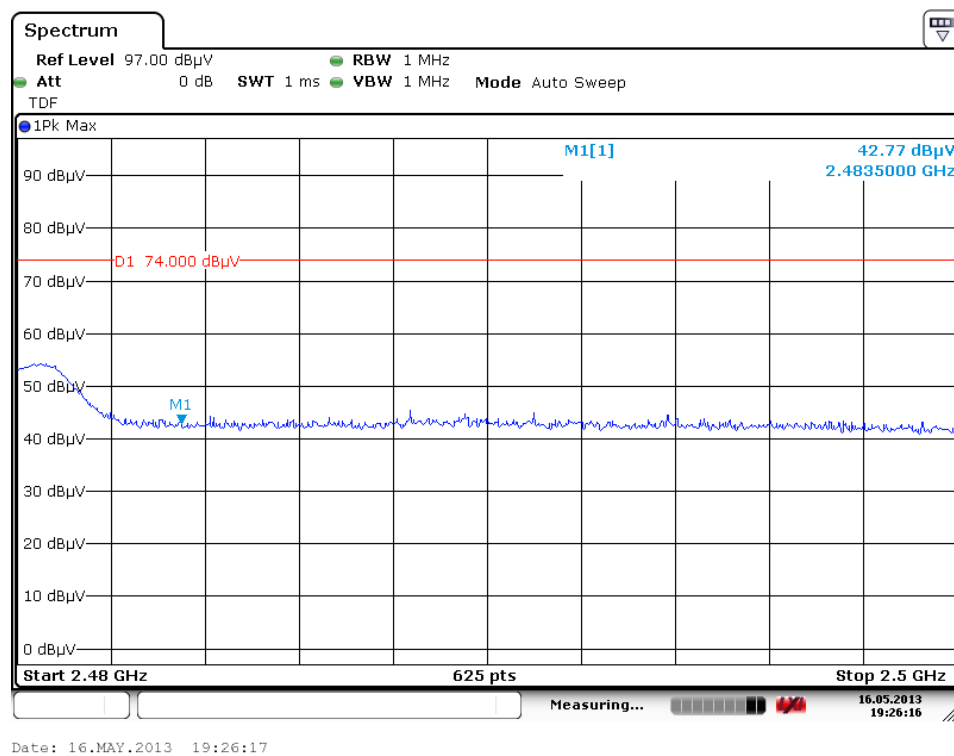
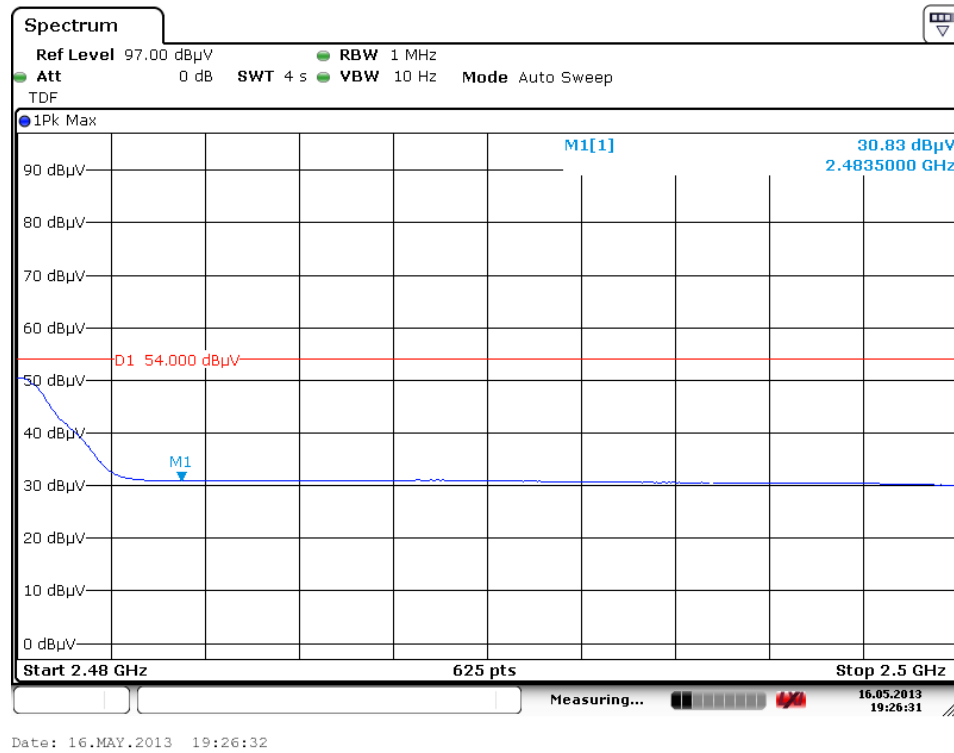
Radiated Bandedge

High Channel (Hor) 2480



Spurious Emissions, Band Edge, 2.35-2.5G

High Channel (Ver) 2480



Spurious Emissions, Band Edge, 2.35-2.5G

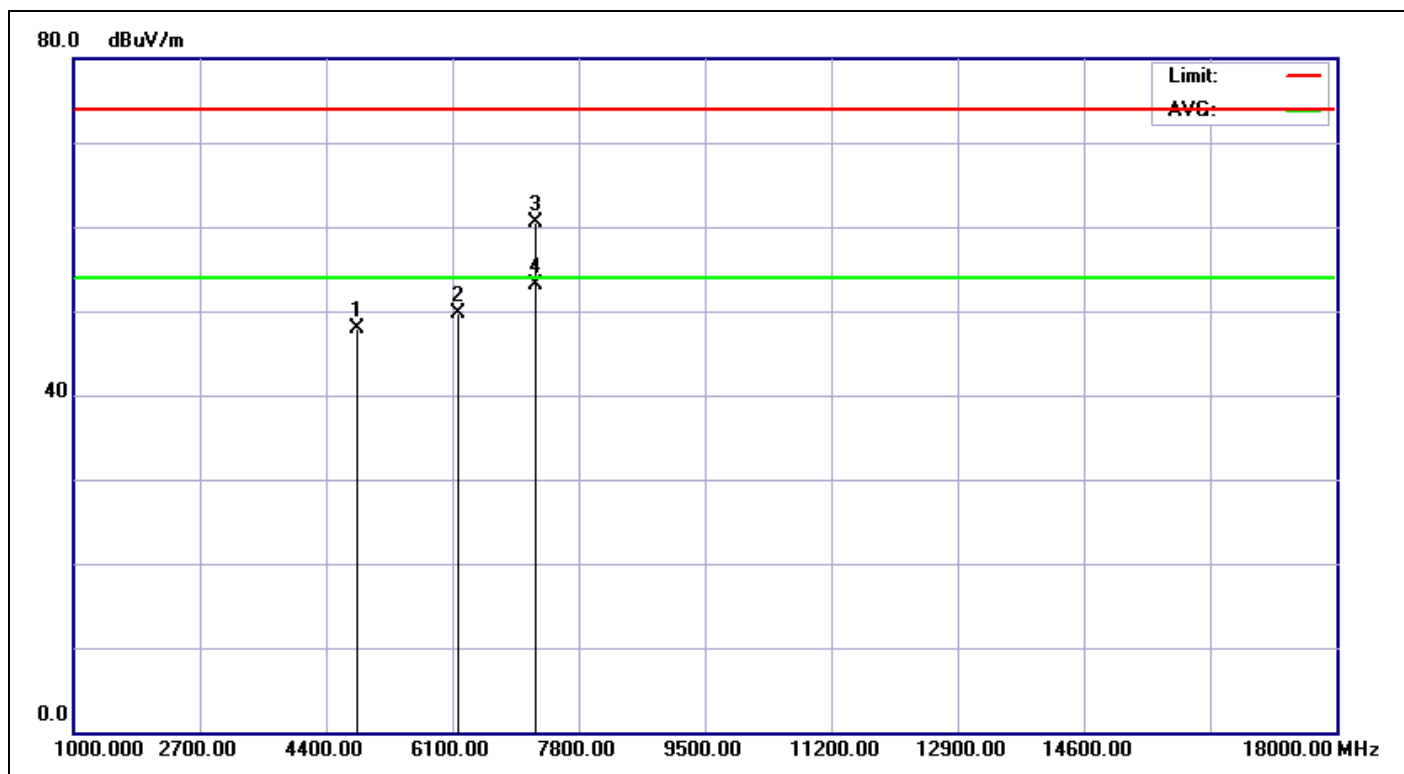
Spurious Emissions, TX Mode, 1-18G



TUV Taiwan

11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



Service No.: 114008287_AT357HPA

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2013/5/16 PM 08:08:15

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 23(°C)/61%

Model No.: AT357HPA

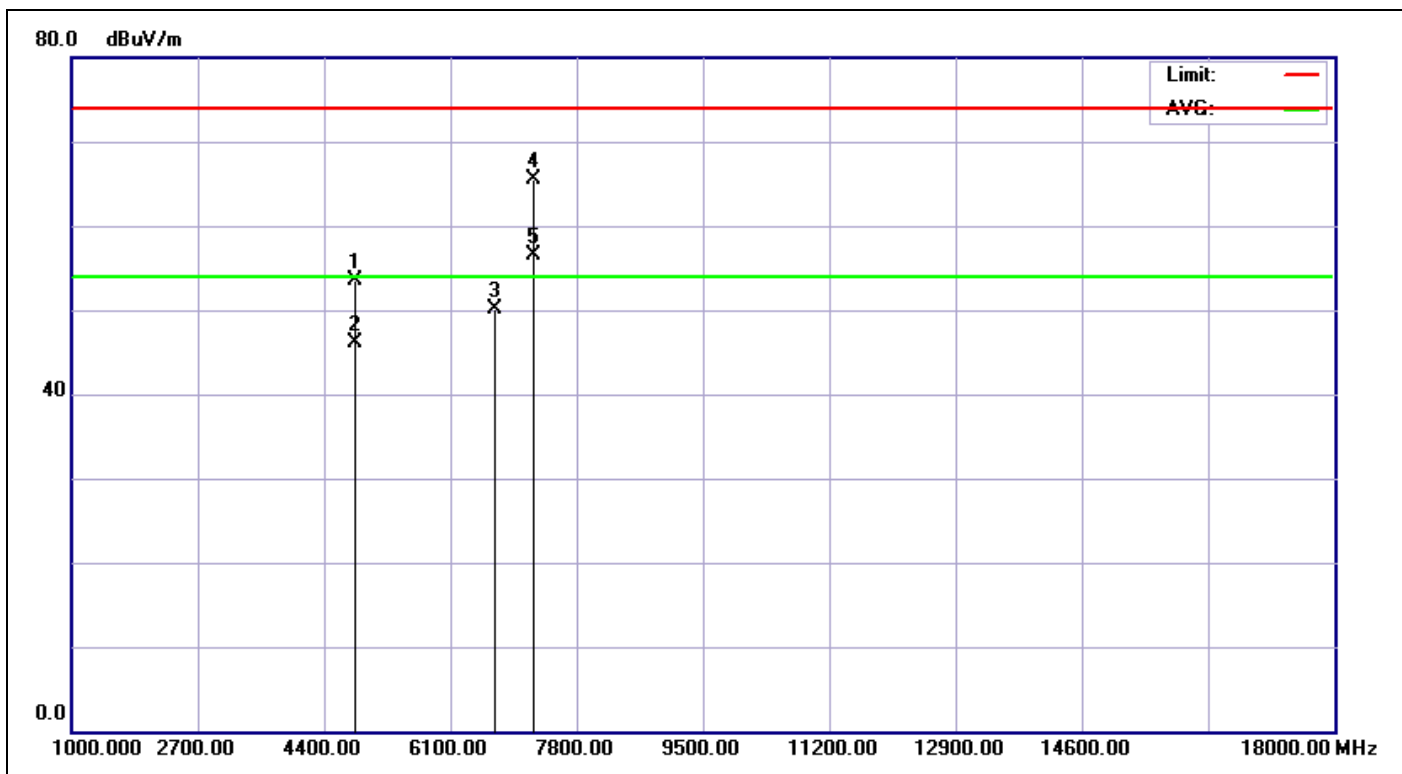
Test Engineer: Hugo Chang

Test Mode: CH2405 TX

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4814.103	-2.72	50.56	47.84	74.00	-26.16	peak			
2	6176.282	4.30	45.42	49.72	74.00	-24.28	peak			
3	7211.538	5.44	55.14	60.58	96.18	-35.60	peak			
4	7211.538	5.44	47.62	53.06	94.37	-41.31	AVG			

Spurious Emissions, TX Mode, 1-18G



Service No.: 114008287_AT357HPA

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/5/16 PM 08:12:41

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 23(°C)/61%

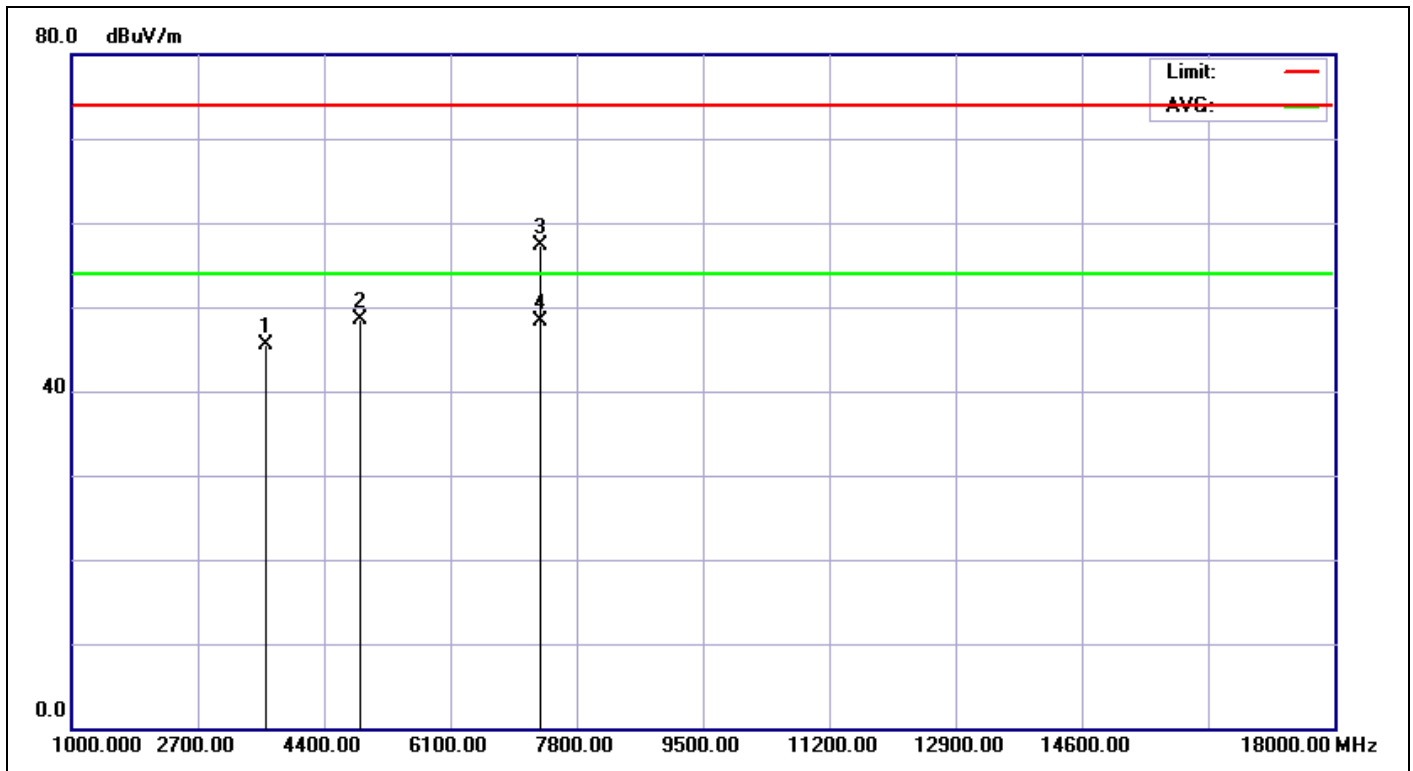
Model No.: AT357HPA

Test Engineer: Hugo Chang

Test Mode: CH2405 TX

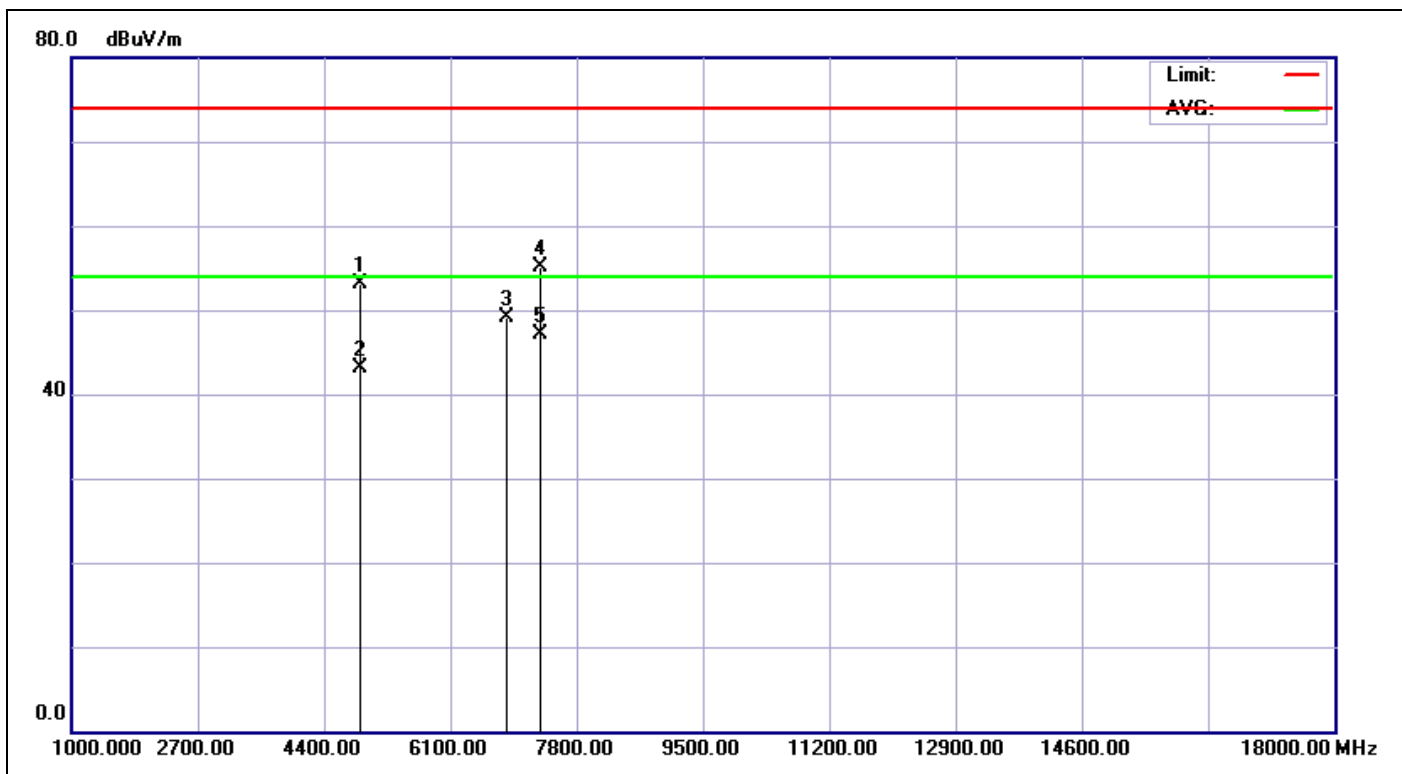
Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4814.103	-2.72	56.28	53.56	74.00	-20.44	peak			
2	4814.103	-2.72	48.84	46.12	54.00	-7.88	AVG			
3	6693.910	5.22	44.85	50.07	74.00	-23.93	peak			
4	7211.538	5.44	60.09	65.53	89.60	-24.07	peak			
5	7211.538	5.44	51.14	56.58	87.70	-31.12	AVG			



Service No.:	114008287_AT357HPA	Test Distance:	3M
Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2013/5/16 PM 07:45:41
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	23(°C)/61%
Model No.:	AT357HPA	Test Engineer:	Hugo Chang
Test Mode:	CH2445		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	3615.385	-5.77	51.32	45.55	74.00	-28.45	peak			
2	4895.833	-2.50	51.06	48.56	74.00	-25.44	peak			
3	7320.513	5.74	51.48	57.22	74.00	-16.78	peak			
4	7320.513	5.74	42.59	48.33	54.00	-5.67	AVG			



Service No.: 114008287_AT357HPA

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/5/16 PM 07:48:32

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 23(°C)/61%

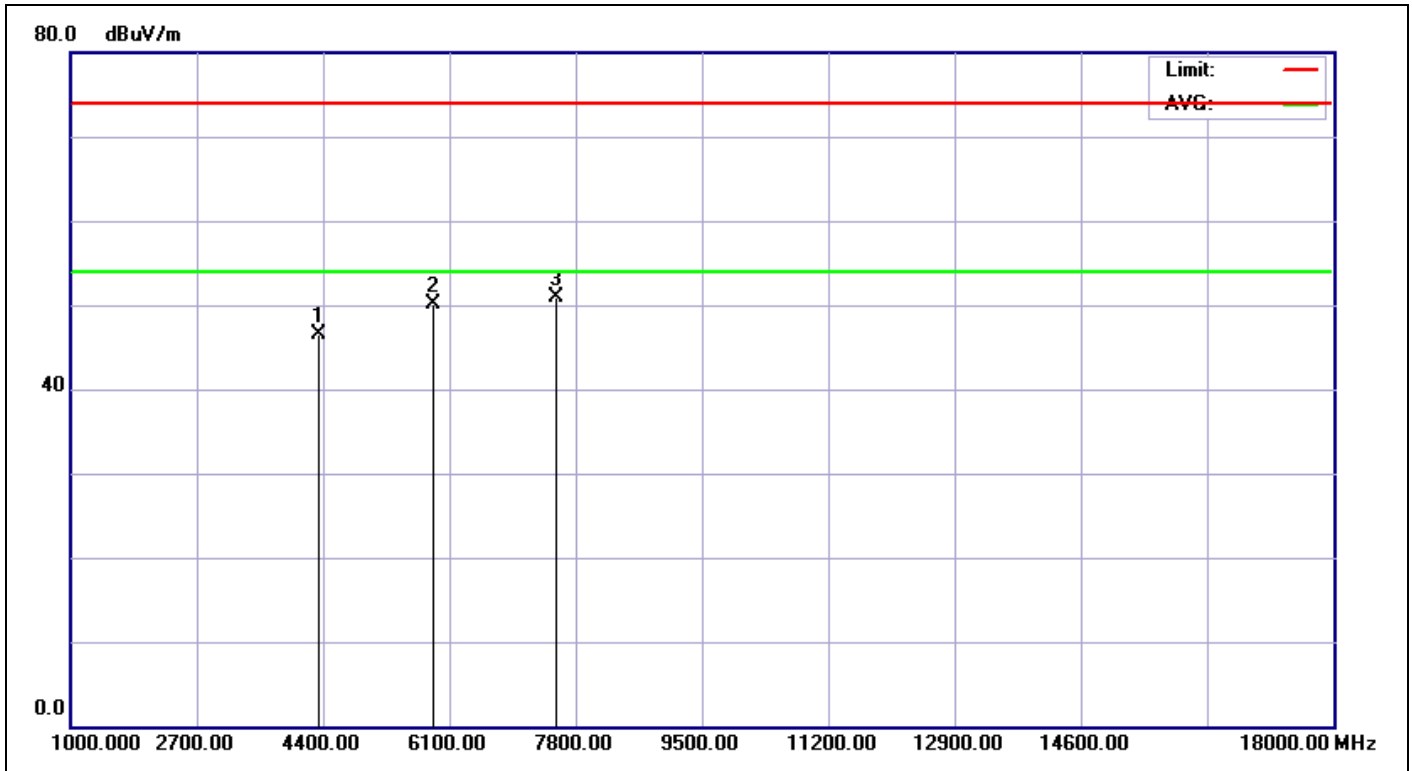
Model No.: AT357HPA

Test Engineer: Hugo Chang

Test Mode: CH2445

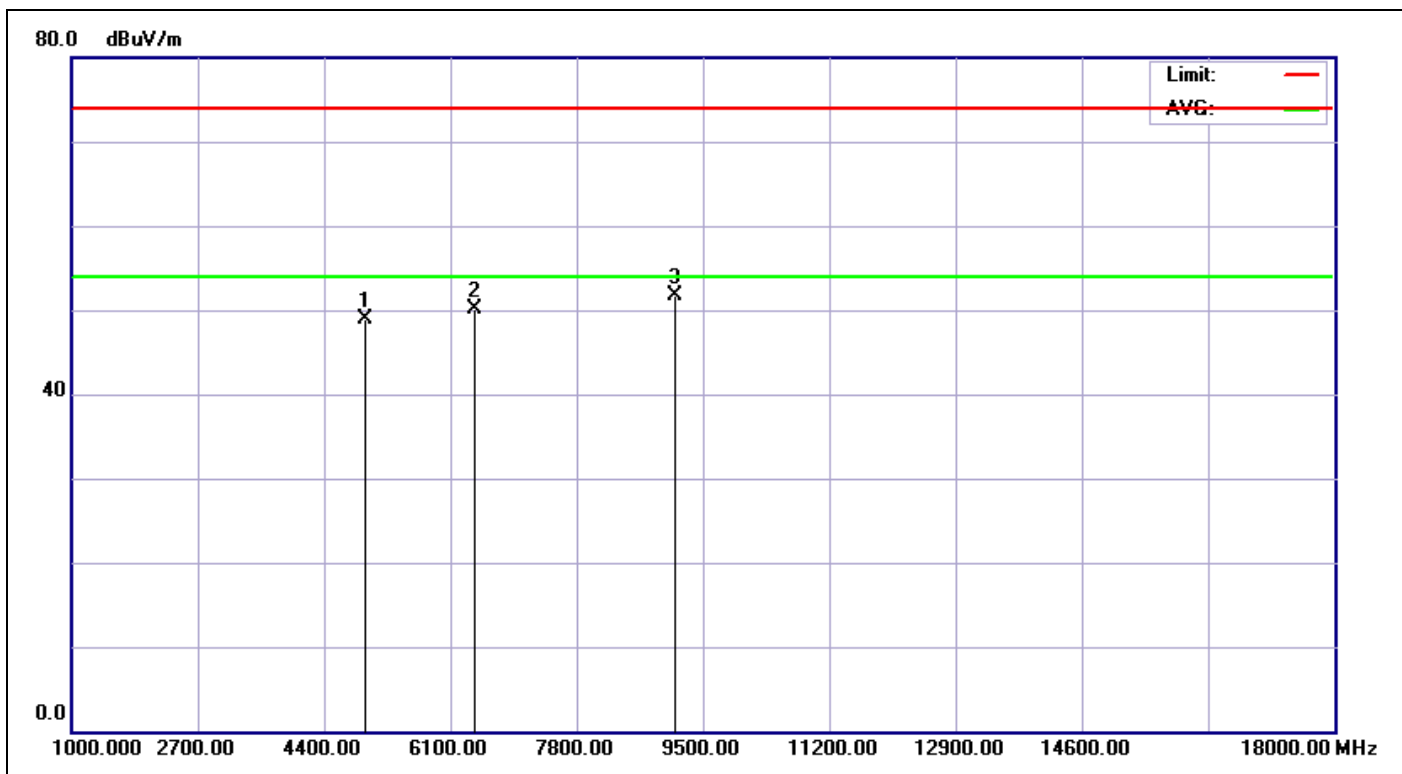
Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4895.833	-2.50	55.65	53.15	74.00	-20.85	peak			
2	4895.833	-2.50	45.63	43.13	54.00	-10.87	AVG			
3	6848.000	5.03	44.07	49.10	74.00	-24.90	peak			
4	7320.513	5.74	49.46	55.20	74.00	-18.80	peak			
5	7320.513	5.74	41.42	47.16	54.00	-6.84	AVG			



Service No.:	114008287_AT357HPA	Test Distance:	3M
Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2013/5/16 PM 07:54:24
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	23(°C)/61%
Model No.:	AT357HPA	Test Engineer:	Hugo Chang
Test Mode:	CH2475		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4350.962	-4.12	50.54	46.42	74.00	-27.58	peak			
2	5876.603	2.83	47.23	50.06	74.00	-23.94	peak			
3	7538.462	6.23	44.72	50.95	74.00	-23.05	peak			



Service No.: 114008287_AT357HPA

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/5/16 PM 07:56:08

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 23(°C)/61%

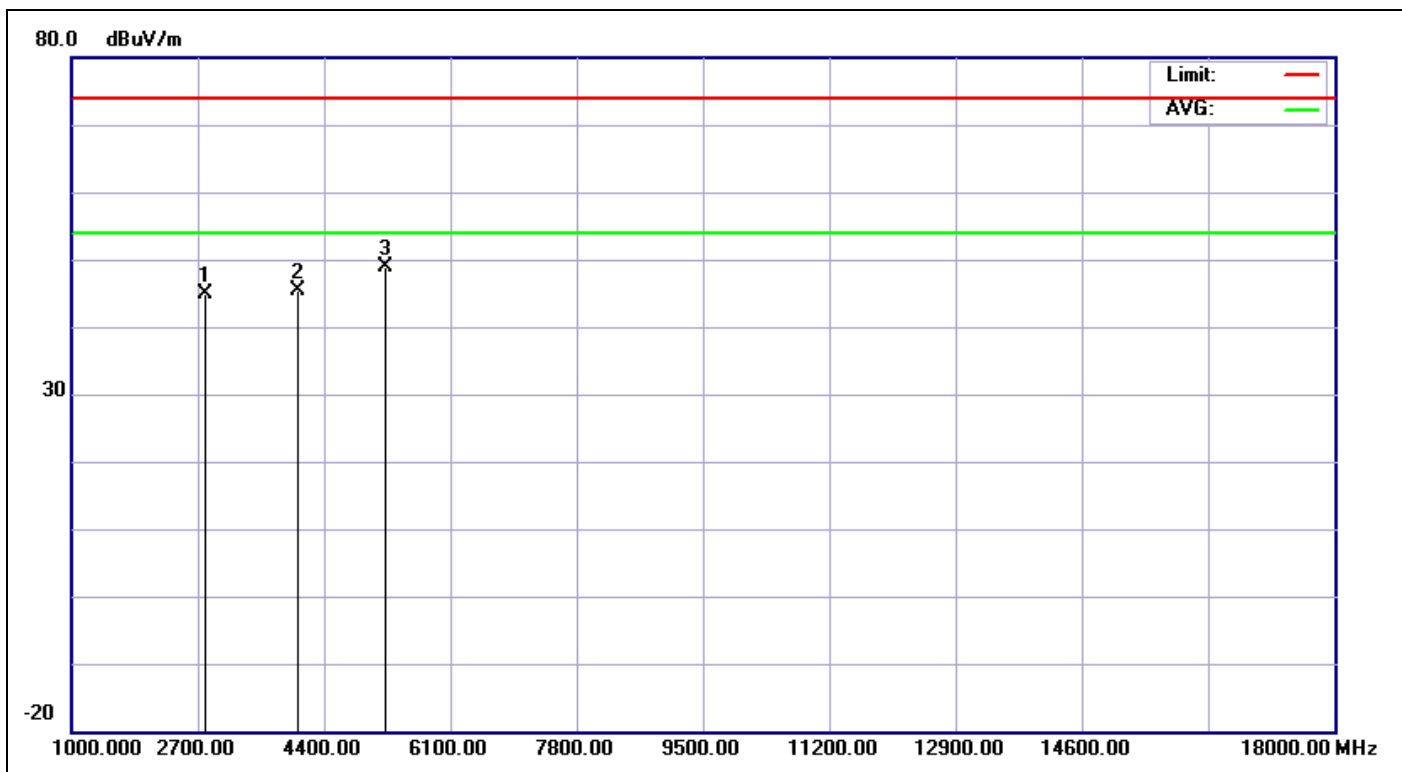
Model No.: AT357HPA

Test Engineer: Hugo Chang

Test Mode: CH2475

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4950.320	-2.36	51.20	48.84	74.00	-25.16	peak			
2	6421.474	5.16	44.88	50.04	74.00	-23.96	peak			
3	9118.590	6.81	44.87	51.68	74.00	-22.32	peak			



Service No.: 114008287_AT357HPA

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2013/5/1 PM 02:15:17

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 20(°C)/57%

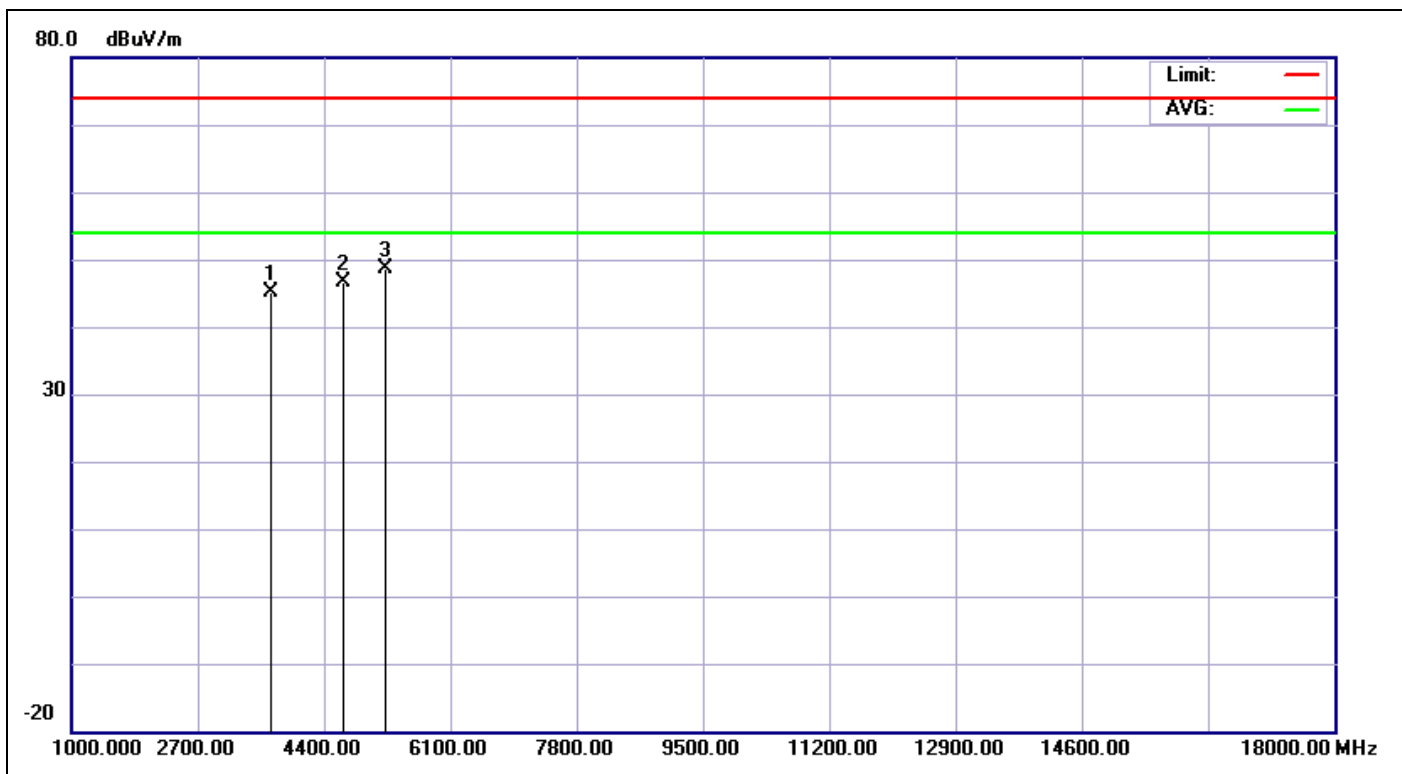
Model No.: AT357HPA

Test Engineer: Hugo Chang

Test Mode: CH2480

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2798.077	-6.83	51.61	44.78	74.00	-29.22	peak			
2	4051.282	-5.30	50.61	45.31	74.00	-28.69	peak			
3	5222.756	-1.14	50.05	48.91	74.00	-25.09	peak			



Service No.:	114008287_AT357HPA	Test Distance:	3M
Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2013/5/1 PM 02:16:42
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	20(°C)/57%
Model No.:	AT357HPA	Test Engineer:	Hugo Chang
Test Mode:	CH2480		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	3697.115	-5.71	50.77	45.06	74.00	-28.94	peak			
2	4650.641	-3.15	49.69	46.54	74.00	-27.46	peak			
3	5222.756	-1.14	49.80	48.66	74.00	-25.34	peak			

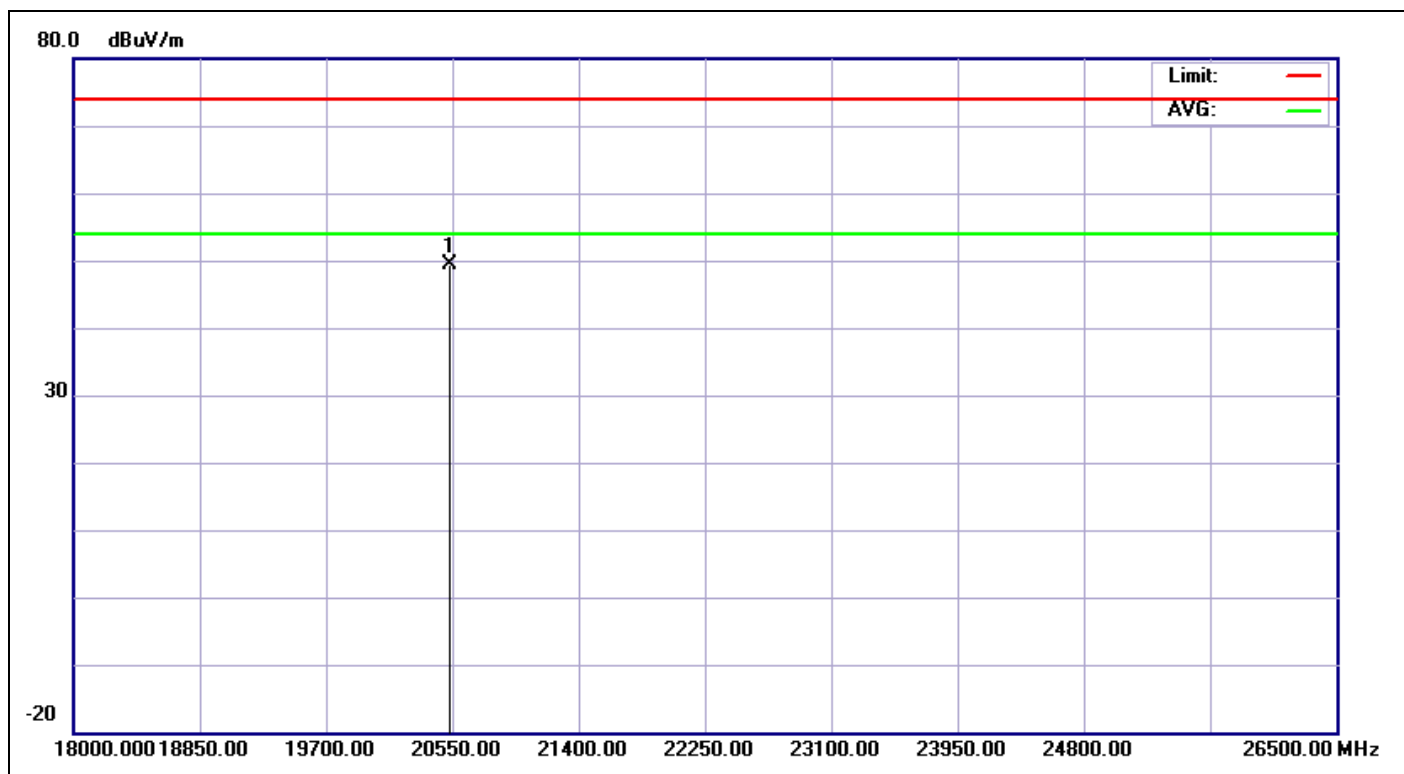
Spurious Emissions, TX Mode, 18-26G



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Service No.: 114008287_AT357HPA

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2013/5/1 PM 01:34:28

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 20(°C)/57%

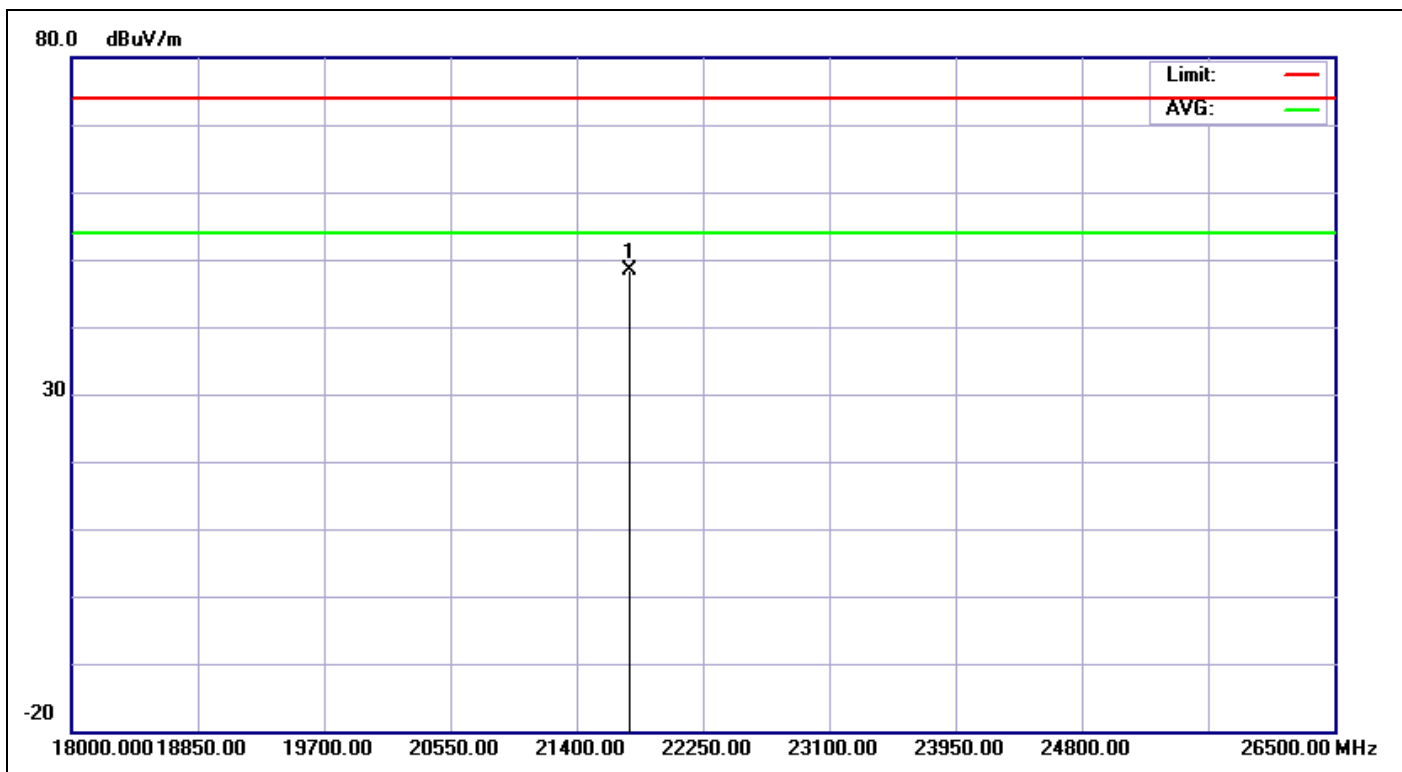
Model No.: AT357HPA

Test Engineer: Hugo Chang

Test Mode: CH2405

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	20533.654	29.58	19.68	49.26	74.00	-24.74	peak			



Service No.: 114008287_AT357HPA

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/5/1 PM 01:35:03

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 20(°C)/57%

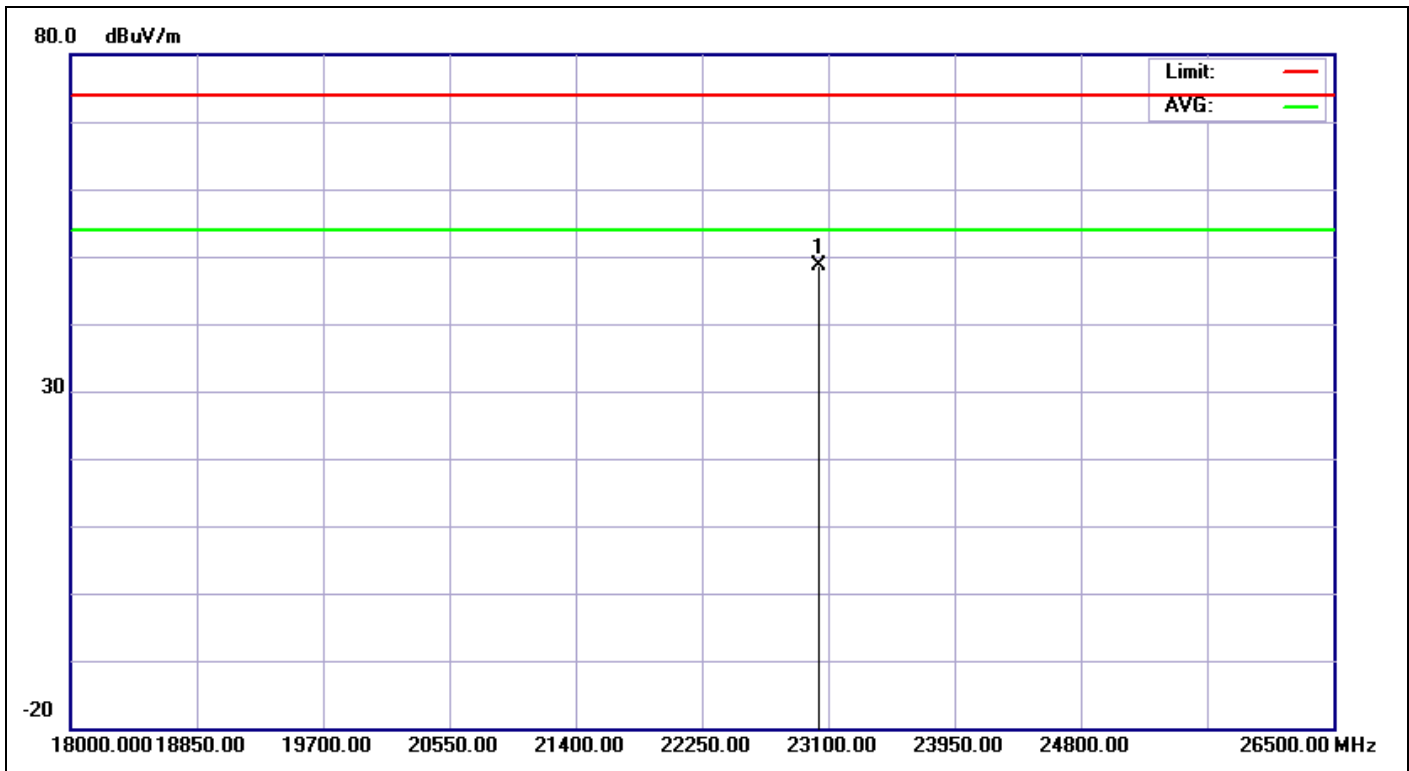
Model No.: AT357HPA

Test Engineer: Hugo Chang

Test Mode: CH2405

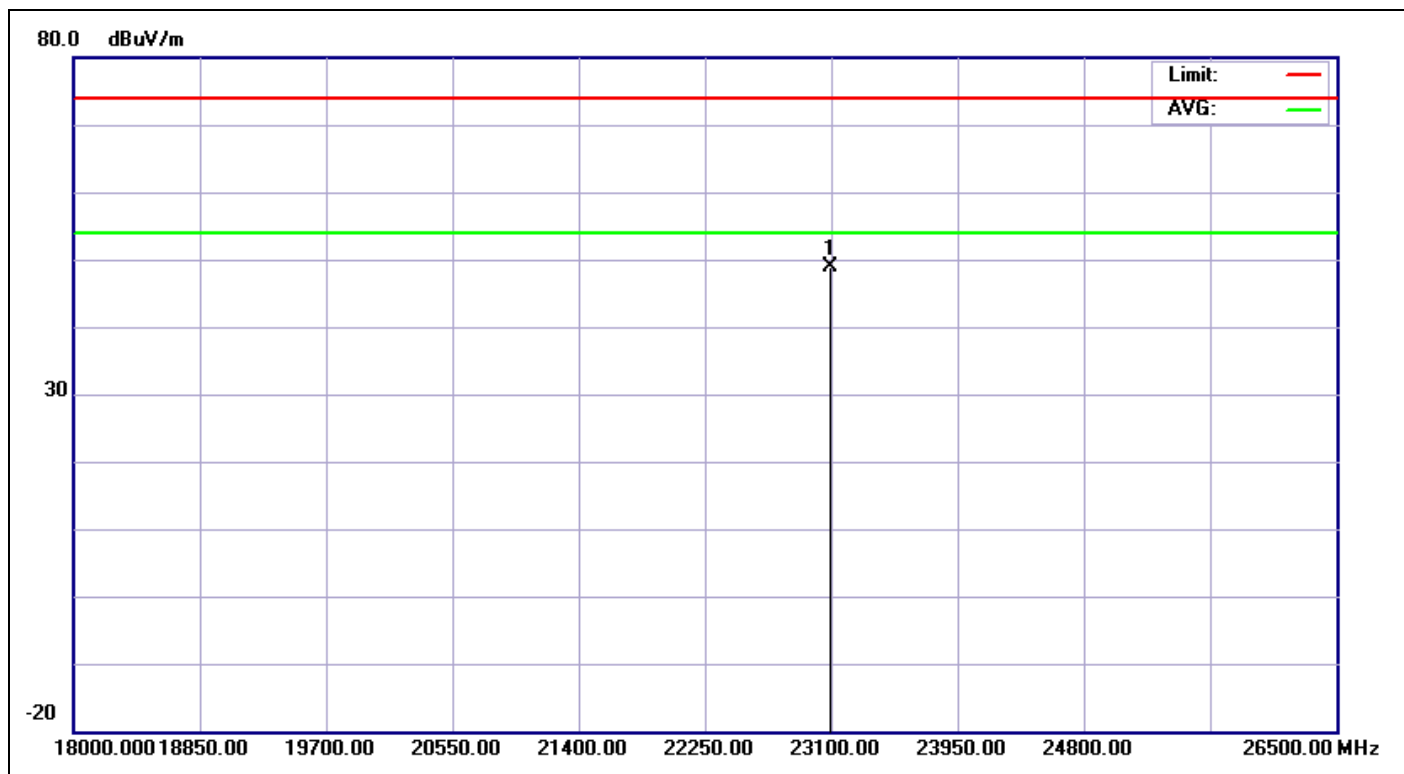
Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	21759.615	29.42	18.96	48.38	74.00	-25.62	peak			



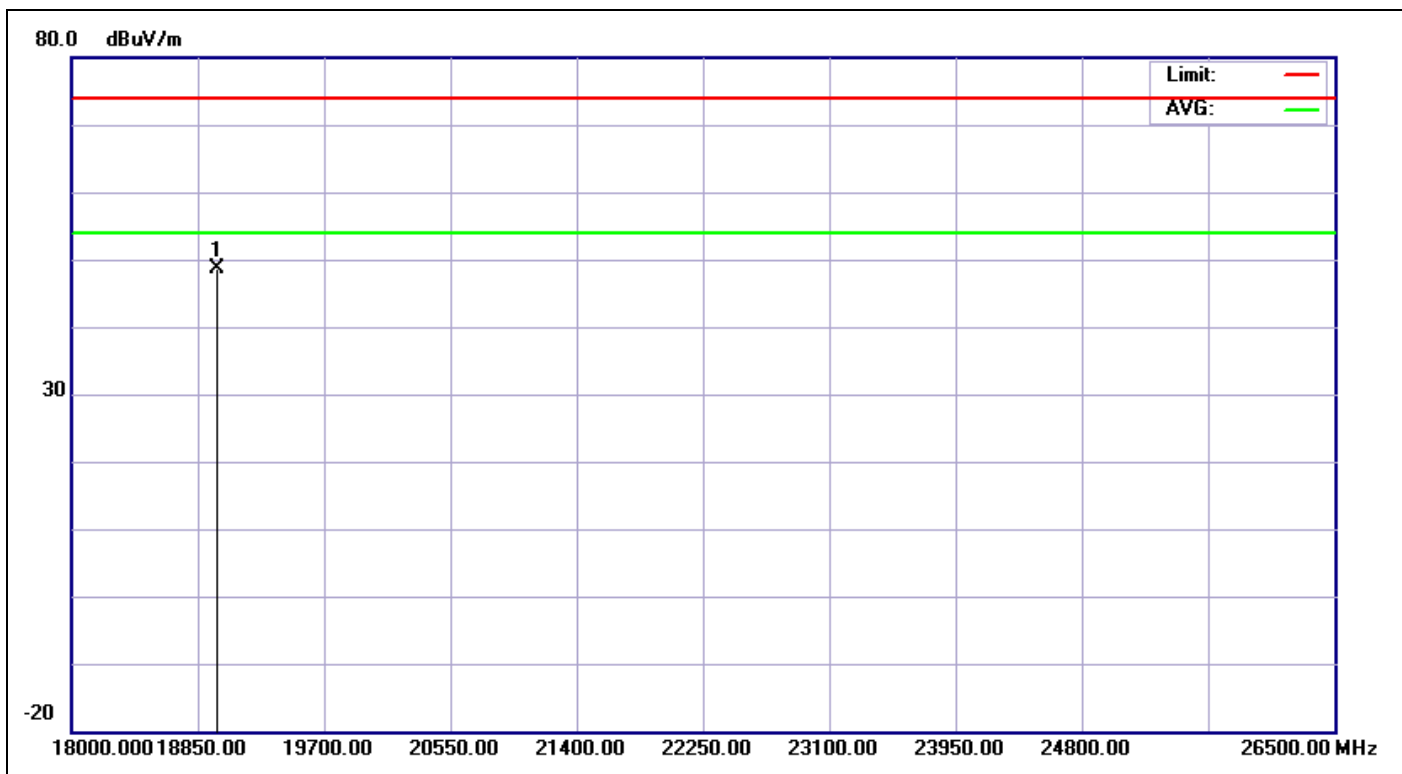
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Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2013/5/1 PM 01:35:32
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	20(°C)/57%
Model No.:	AT357HPA	Test Engineer:	Hugo Chang
Test Mode:	CH2445		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	23040.064	30.27	18.39	48.66	74.00	-25.34	peak			



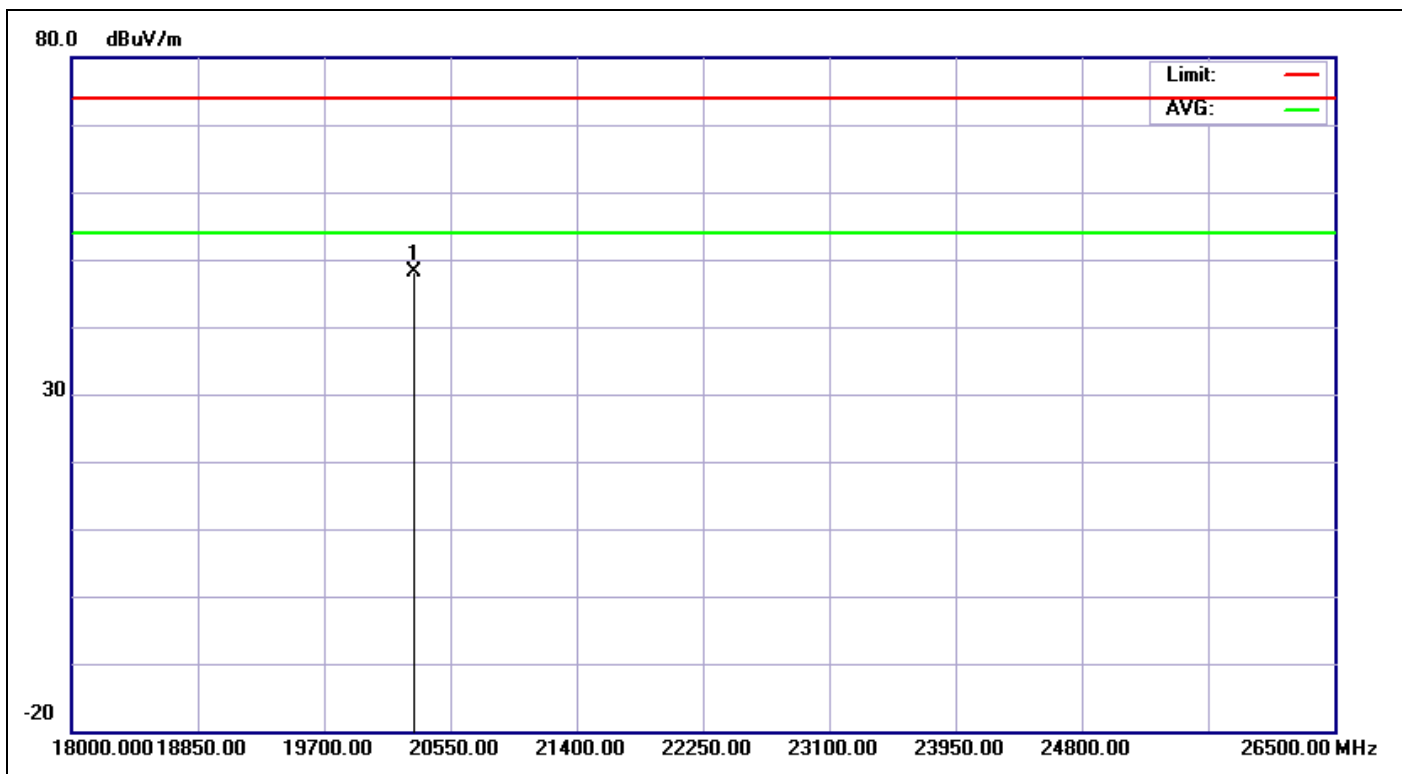
Service No.:	114008287_AT357HPA	Test Distance:	3M
Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2013/5/1 PM 01:35:56
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	20(°C)/57%
Model No.:	AT357HPA	Test Engineer:	Hugo Chang
Test Mode:	CH2445		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	23094.551	30.24	18.61	48.85	74.00	-25.15	peak			



Service No.:	114008287_AT357HPA	Test Distance:	3M
Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2013/5/1 PM 01:36:25
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	20(°C)/57%
Model No.:	AT357HPA	Test Engineer:	Hugo Chang
Test Mode:	CH2475		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	18980.769	29.93	18.81	48.74	74.00	-25.26	peak			



Service No.: 114008287_AT357HPA

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/5/1 PM 01:36:51

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 20(°C)/57%

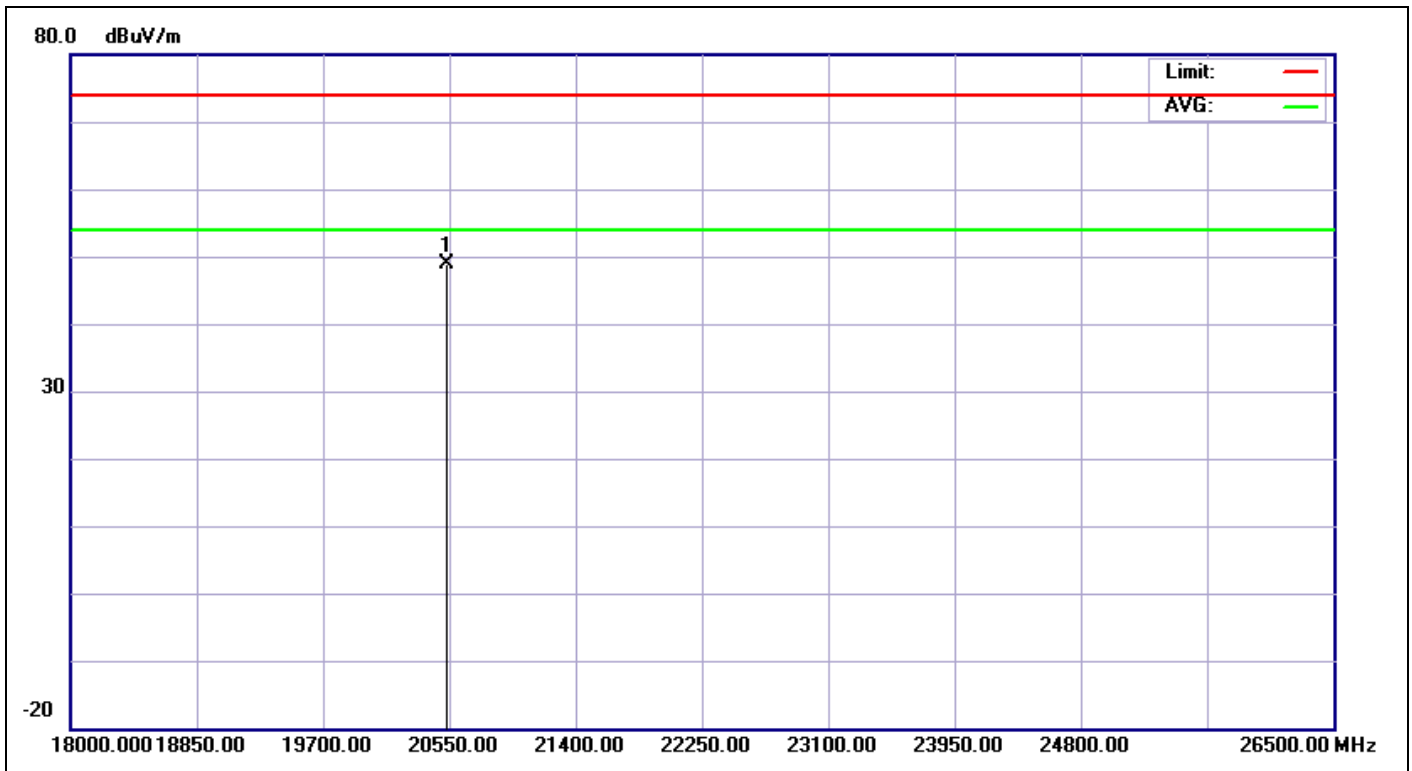
Model No.: AT357HPA

Test Engineer: Hugo Chang

Test Mode: CH2475

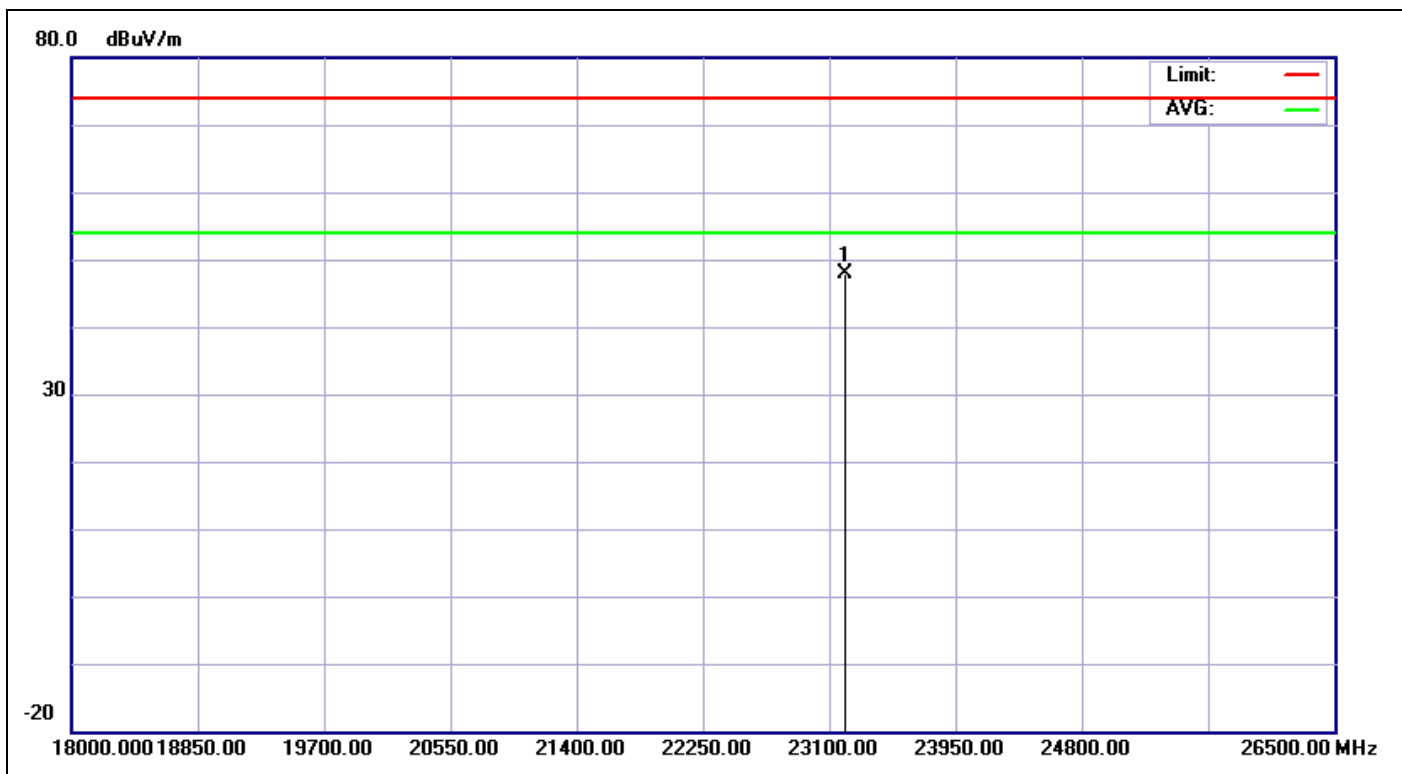
Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	20302.083	29.47	18.76	48.23	74.00	-25.77	peak			



Service No.:	114008287_AT357HPA	Test Distance:	3M
Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2013/5/1 PM 01:37:23
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	20(°C)/57%
Model No.:	AT357HPA	Test Engineer:	Hugo Chang
Test Mode:	CH2480		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	20533.654	29.58	19.27	48.85	74.00	-25.15	peak			



Service No.: 114008287_AT357HPA

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/5/1 PM 01:37:46

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 20(°C)/57%

Model No.: AT357HPA

Test Engineer: Hugo Chang

Test Mode: CH2480

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	23203.526	30.21	17.75	47.96	74.00	-26.04	peak			

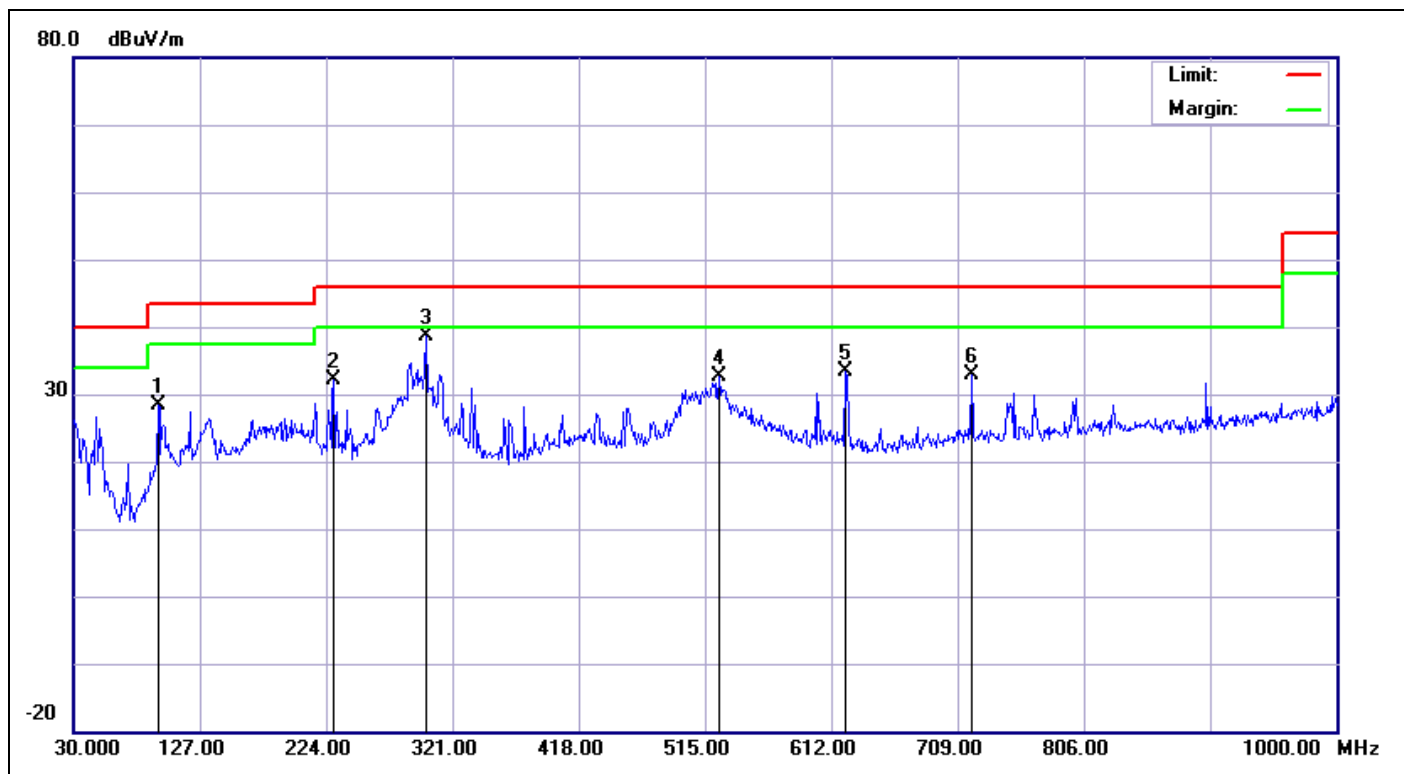
Spurious Emissions, TX Mode, 30M-1G



TUV Taiwan

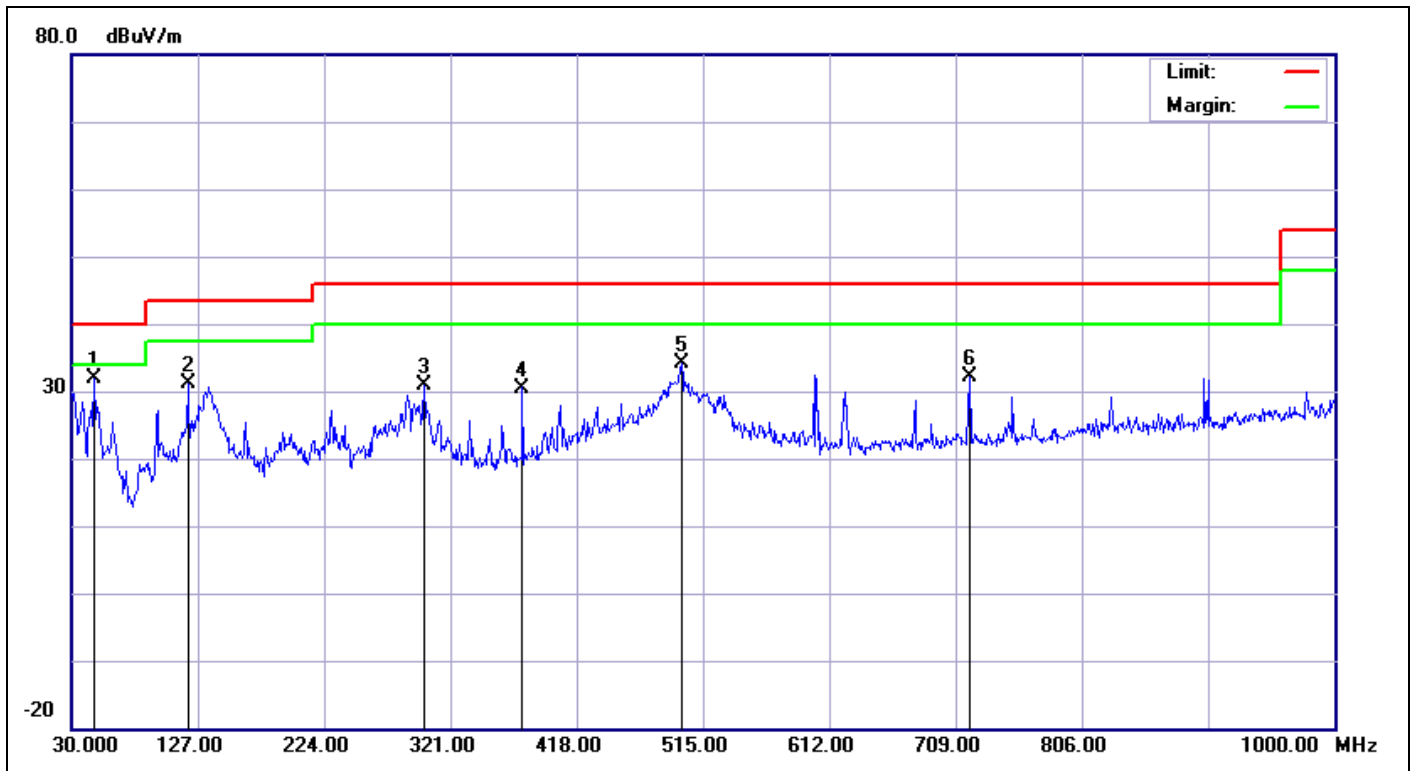
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114008287_AT357HPA	Test Distance:	3M
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2013/5/1 PM 03:45:19
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	20(°C)/57%
Model No.:	AT357HPA	Test Engineer:	Hugo Chang
Test Mode:			
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	94.9900	-15.91	44.35	28.44	43.50	-15.06	QP			
2	229.8200	-13.57	45.67	32.10	46.00	-13.90	QP			
3	300.6300	-10.36	48.88	38.52	46.00	-7.48	QP			
4	525.6700	-7.05	39.66	32.61	46.00	-13.39	QP			
5	622.6700	-5.72	39.02	33.30	46.00	-12.70	QP			
6	719.6700	-4.60	37.45	32.85	46.00	-13.15	QP			



Service No.:	114008287_AT357HPA	Test Distance:	3M
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2013/5/1 PM 03:46:51
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	20(°C)/57%
Model No.:	AT357HPA	Test Engineer:	Hugo Chang
Test Mode:			
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	47.4600	-15.71	47.48	31.77	40.00	-8.23	QP			
2	119.2400	-13.35	44.38	31.03	43.50	-12.47	QP			
3	300.6300	-10.36	41.22	30.86	46.00	-15.14	QP			
4	376.2900	-8.98	39.48	30.50	46.00	-15.50	QP			
5	498.5100	-7.28	41.45	34.17	46.00	-11.83	QP			
6	719.6700	-4.60	36.77	32.17	46.00	-13.83	QP			