

Test Report No.10041627 001

Appendix D: Radiated Spurious Emission Data

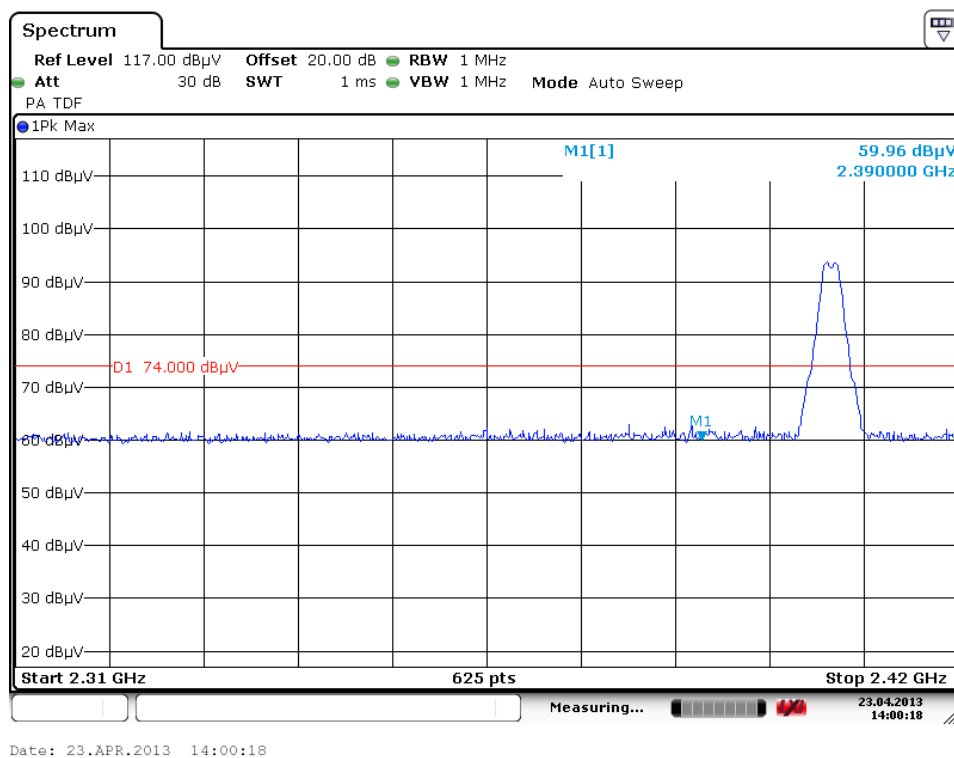
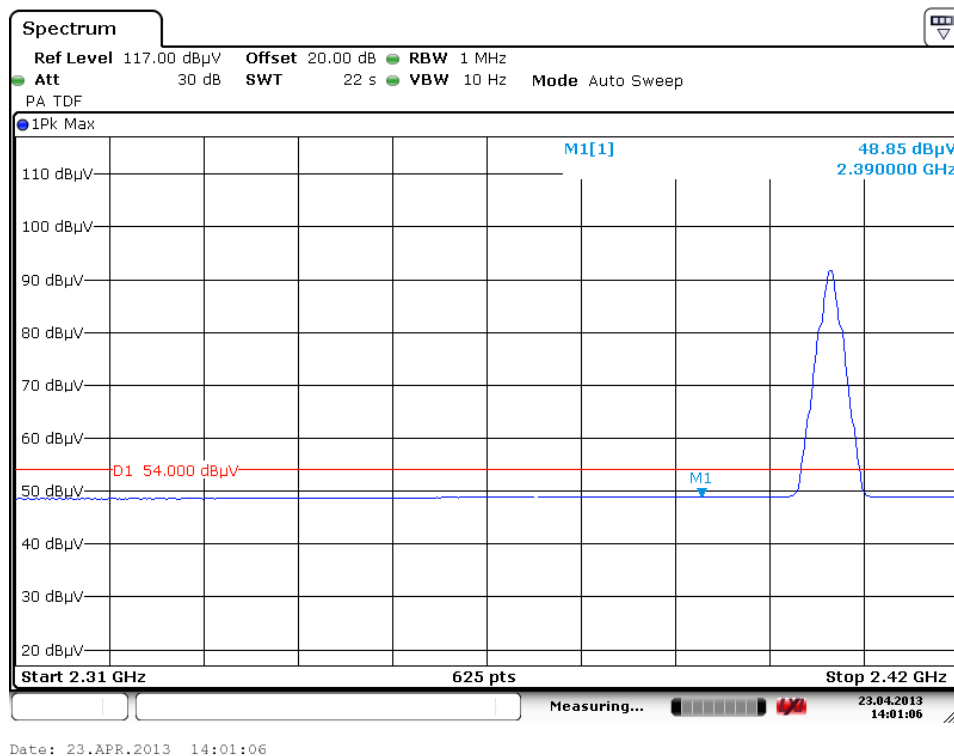
(File: 10041627AppendixD)

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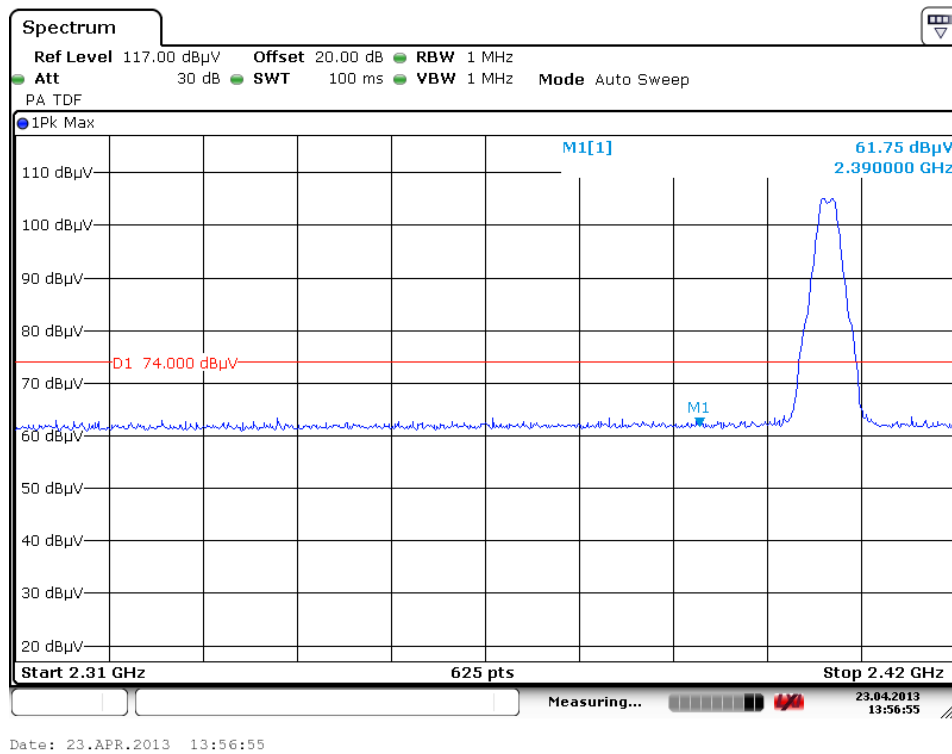
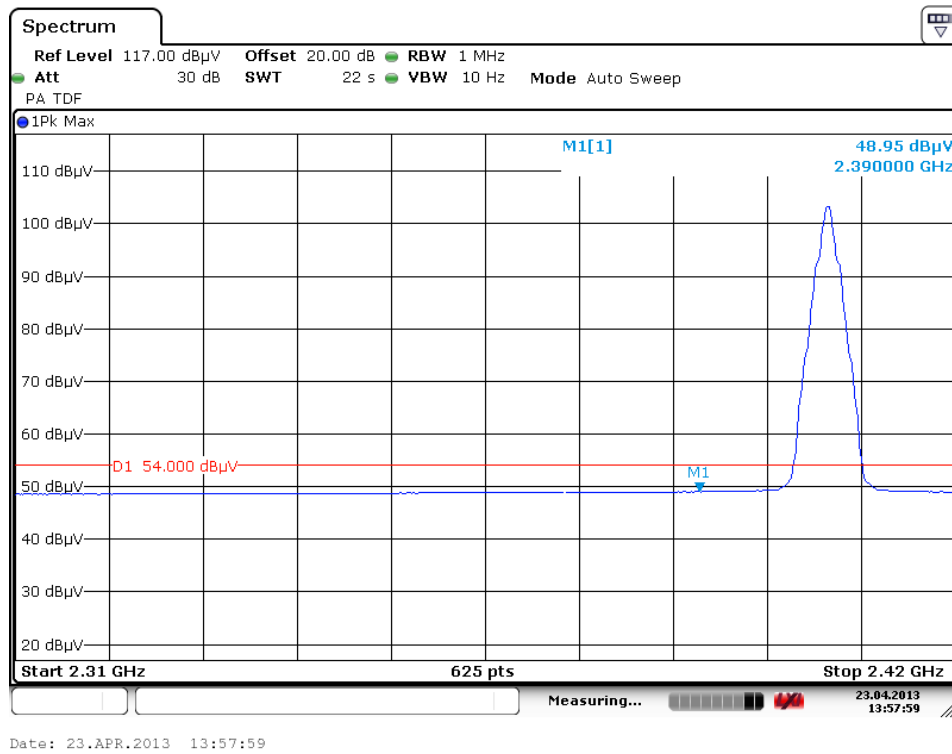
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Radiated Bandedge

Low Channel (Hor)



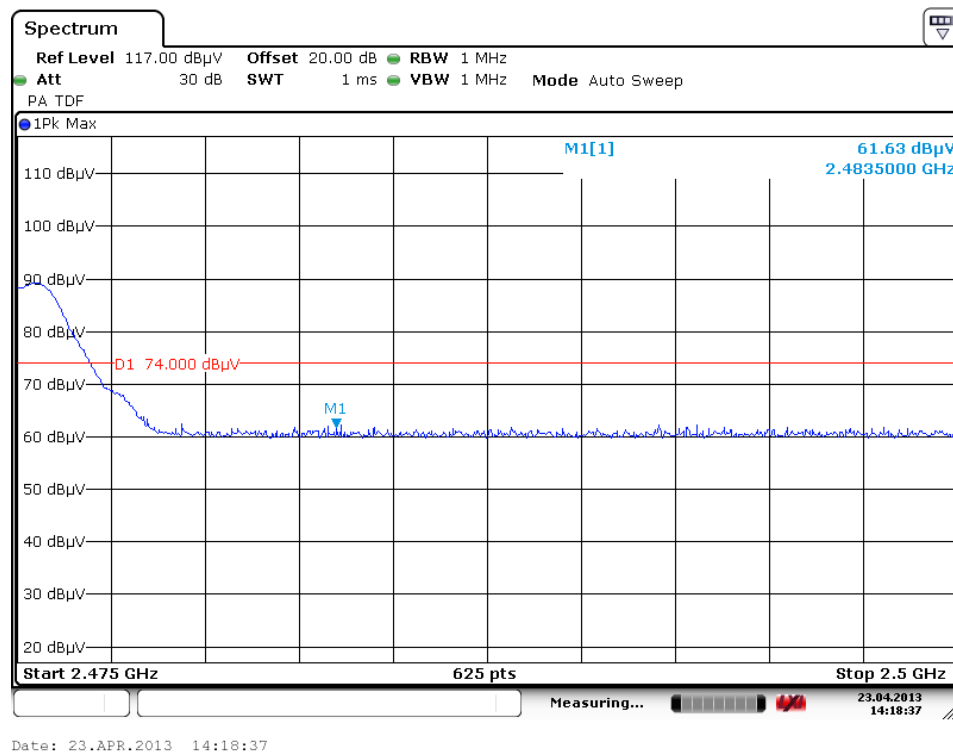
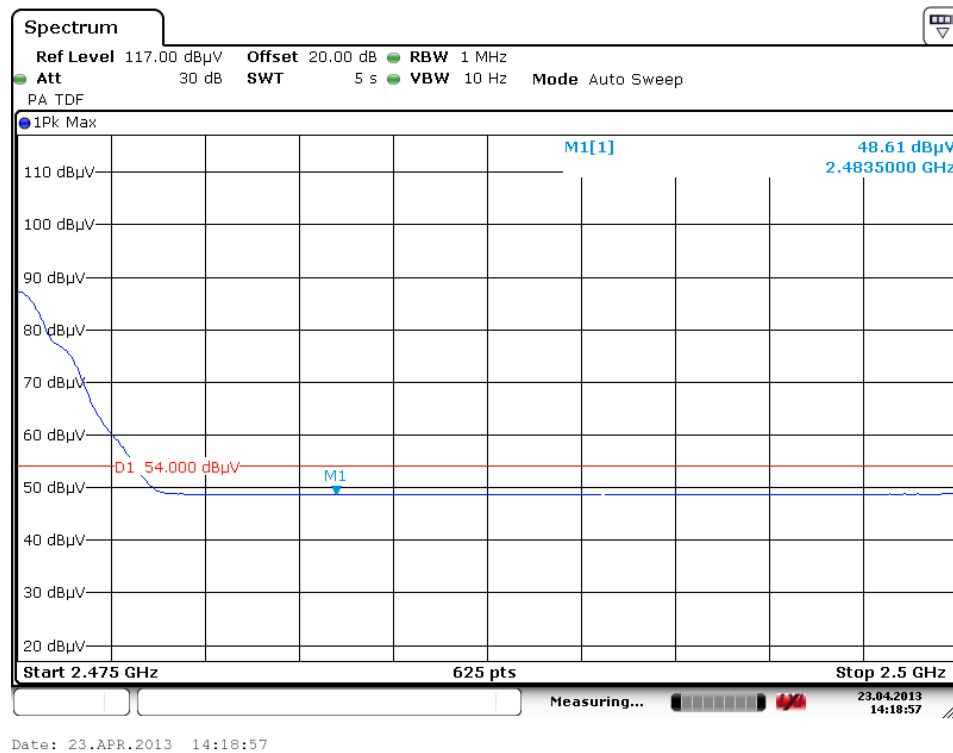
Low Channel (Ver)



Spurious Emissions, Band Edge, 2.35-2.5G

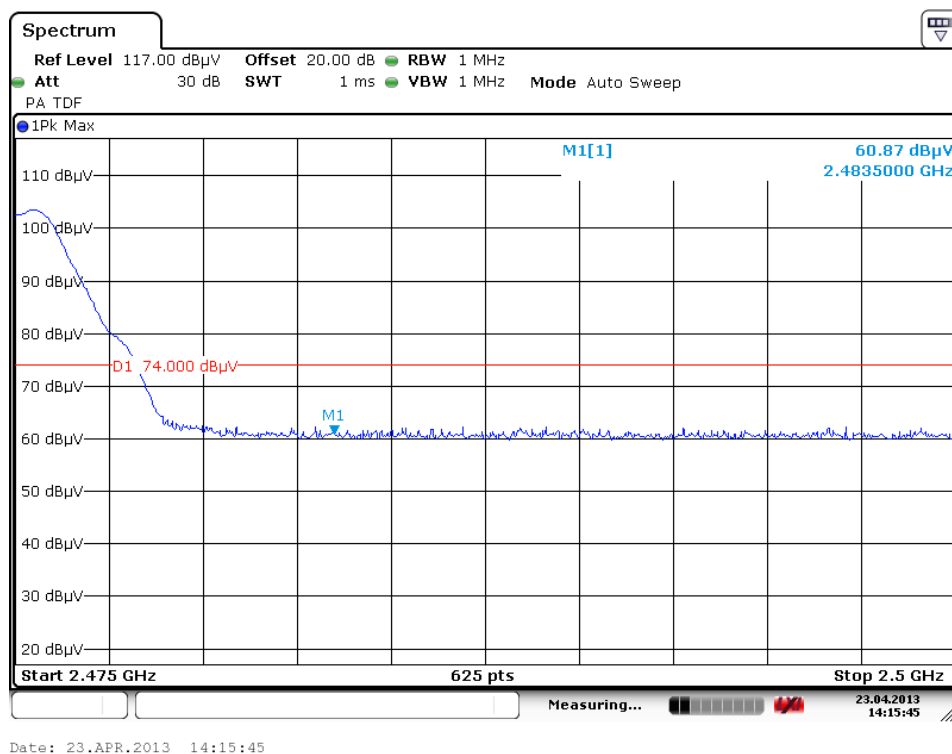
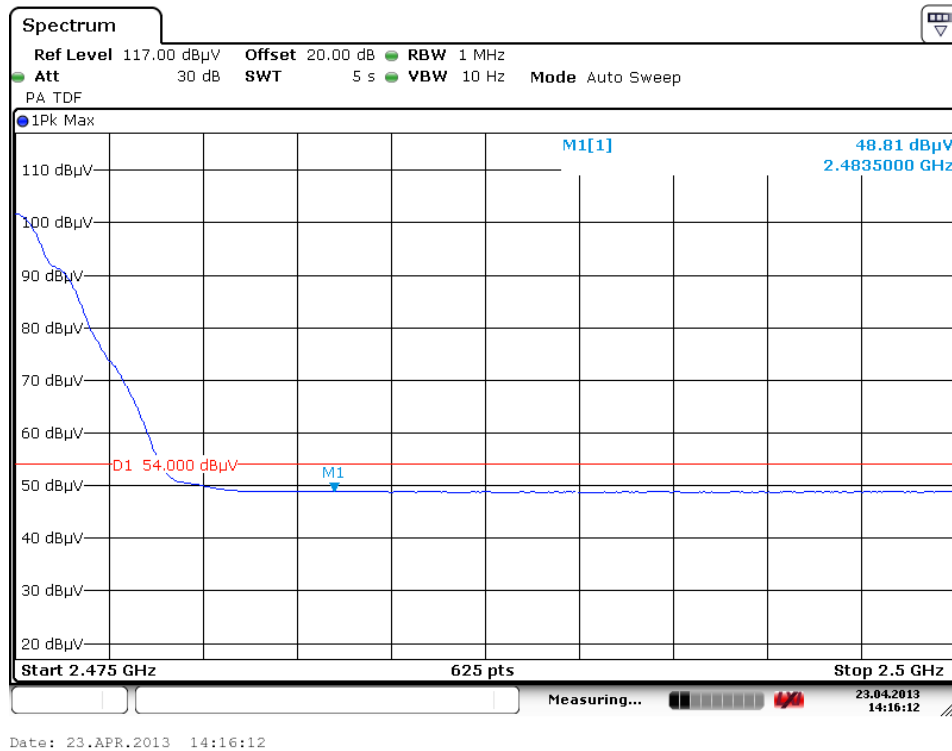
Radiated Bandedge

High Channel (Hor) 2475



Spurious Emissions, Band Edge, 2.35-2.5G

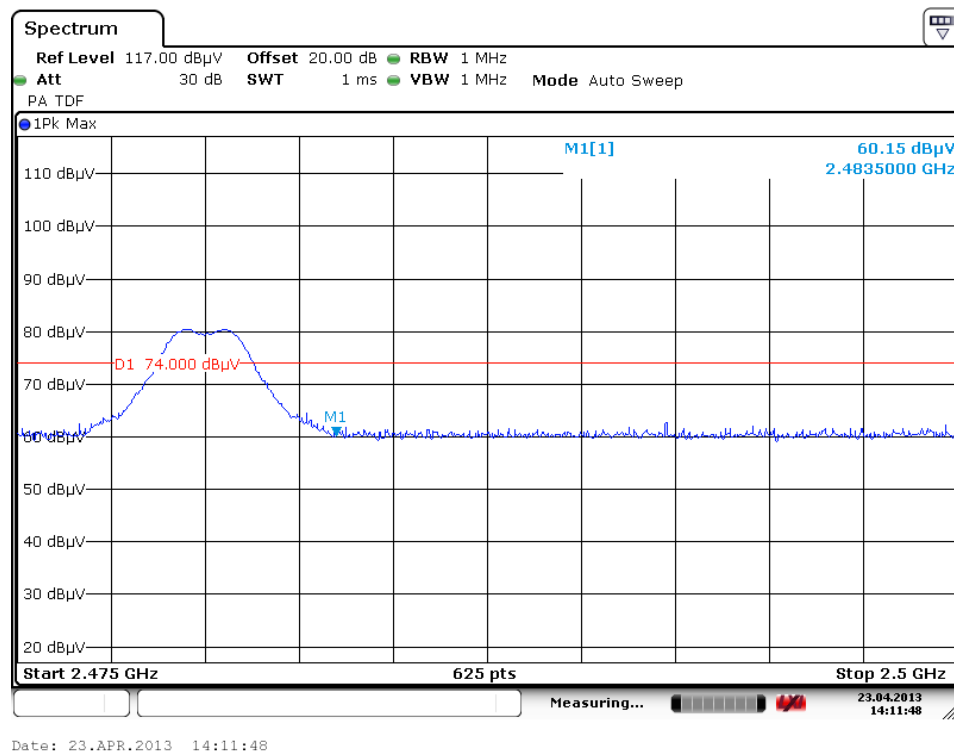
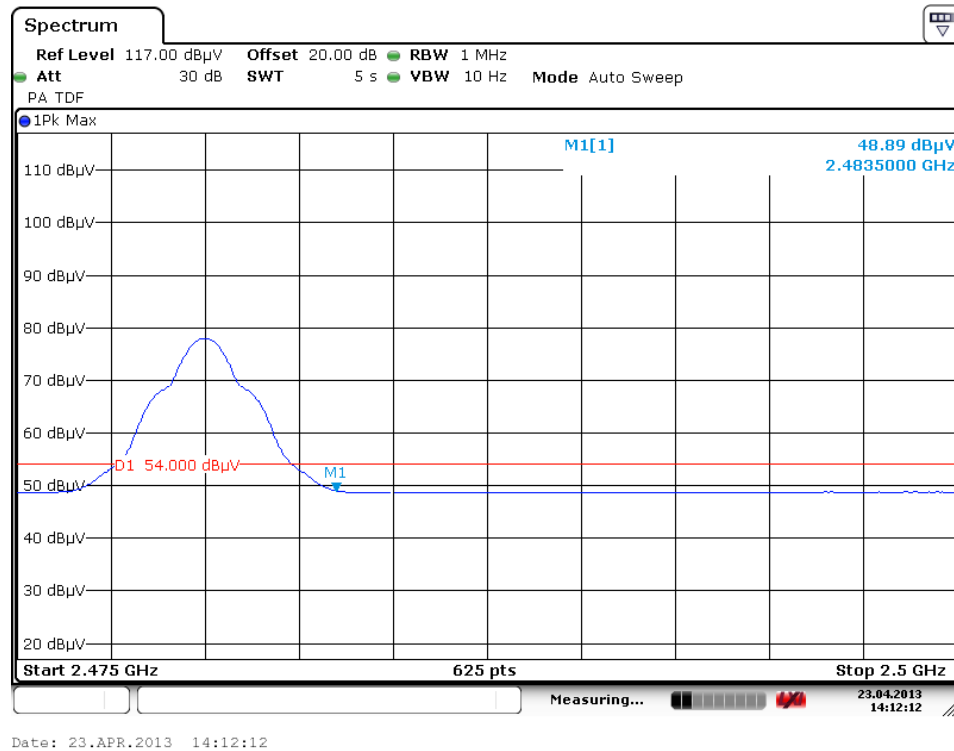
High Channel (Ver) 2475



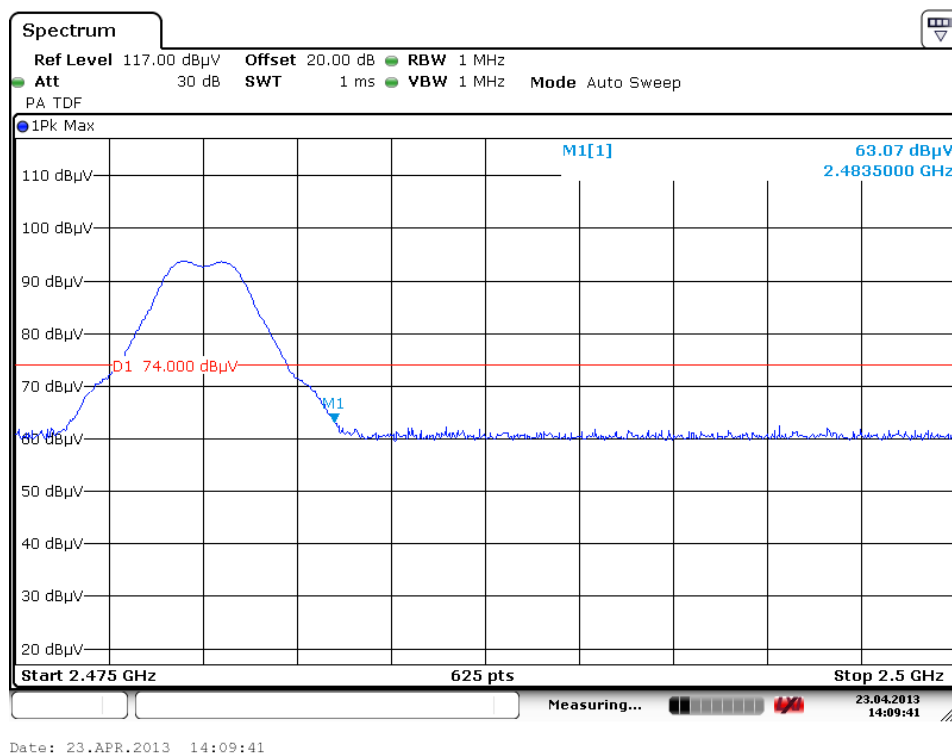
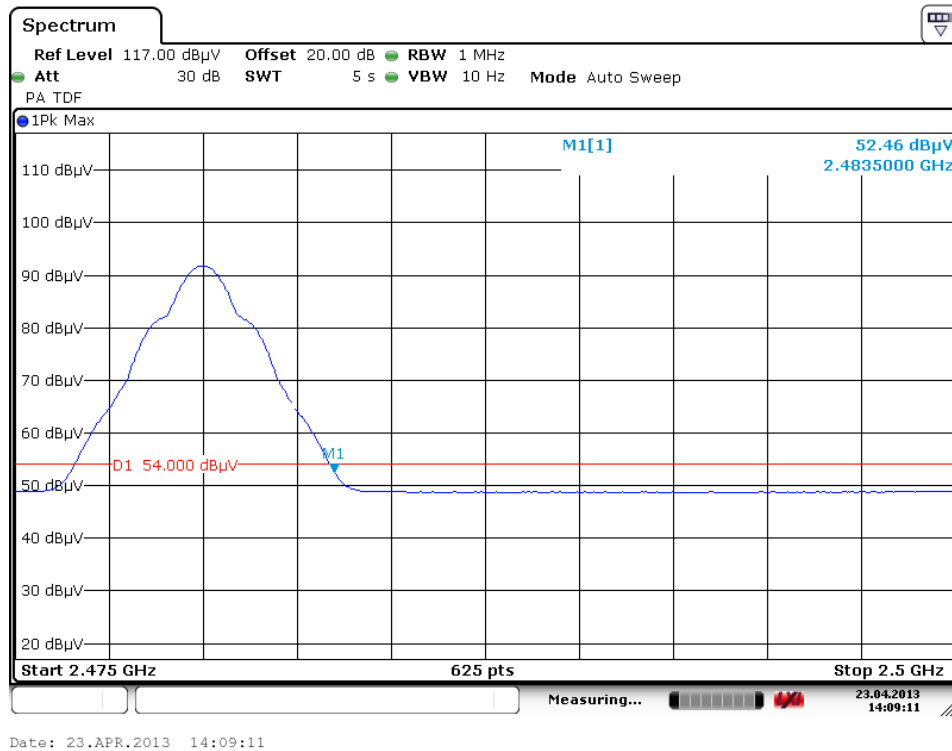
Spurious Emissions, Band Edge, 2.35-2.5G

Radiated Bandedge

High Channel (Hor) 2480



High Channel (Ver) 2480



Spurious Emissions, Band Edge, 2.35-2.5G

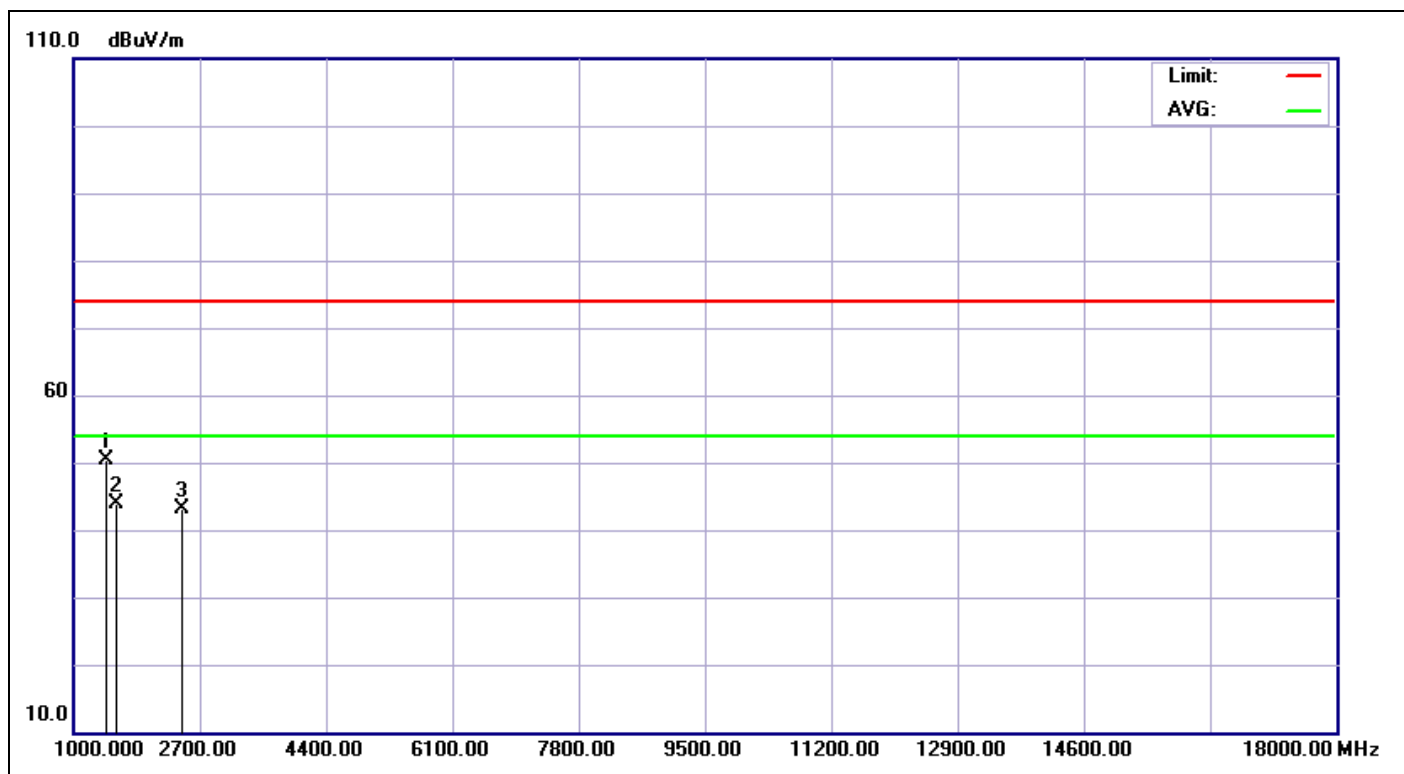
Spurious Emissions, TX Mode, 1-18G



TUV Taiwan

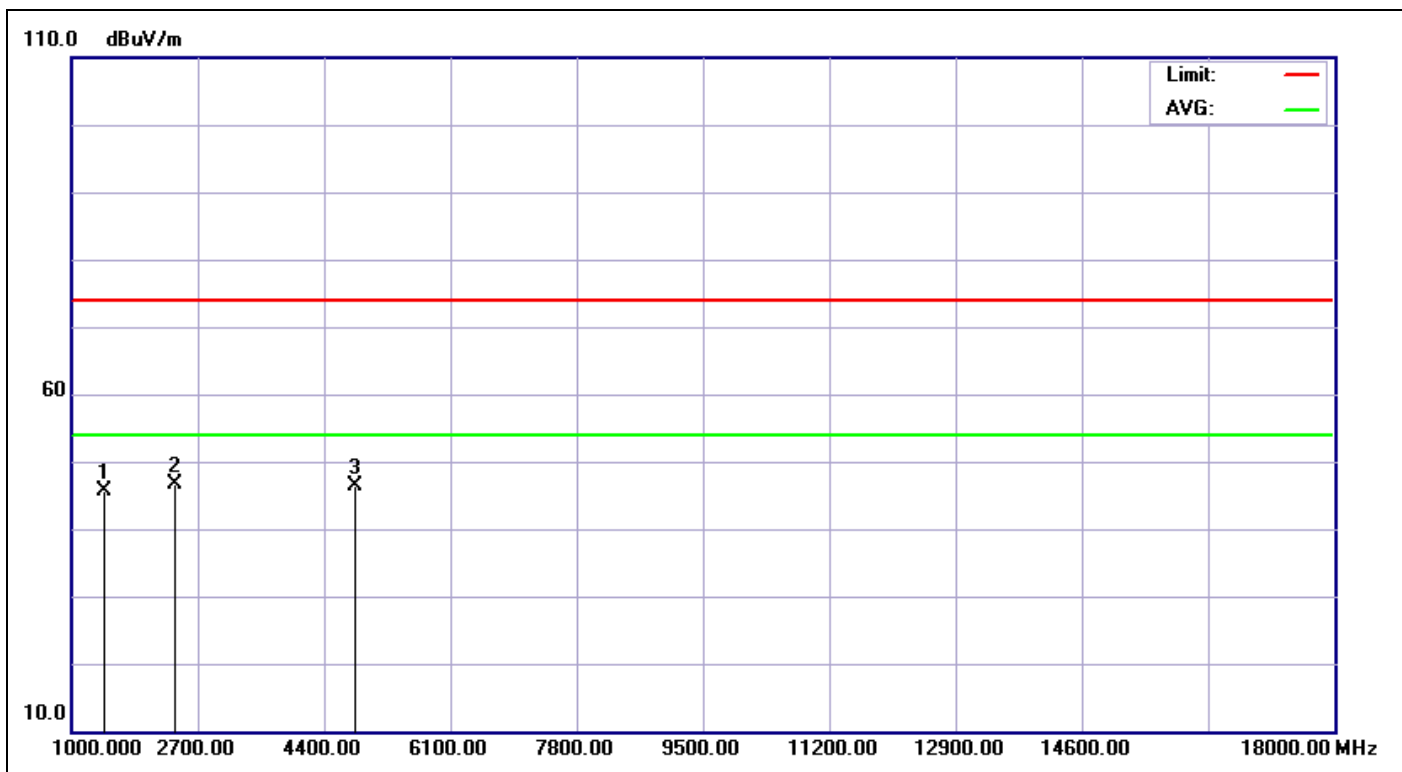
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

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



Service No.:	114008287_AT2530	Test Distance:	3M
Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2013/4/23 PM 02:59:27
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	22(°C)/61%
Model No.:	AT2530	Test Engineer:	Neil Tsai
Test Mode:	TX 2405		
Remark:	Power setting: +4.5 dBm		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1435.897	-13.73	64.18	50.45	74.00	-23.55	peak	100	322	
2	1572.115	-13.42	57.39	43.97	74.00	-30.03	peak	100	280	
3	2471.154	-11.02	54.23	43.21	74.00	-30.79	peak	100	4	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/4/23 PM 03:00:30

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

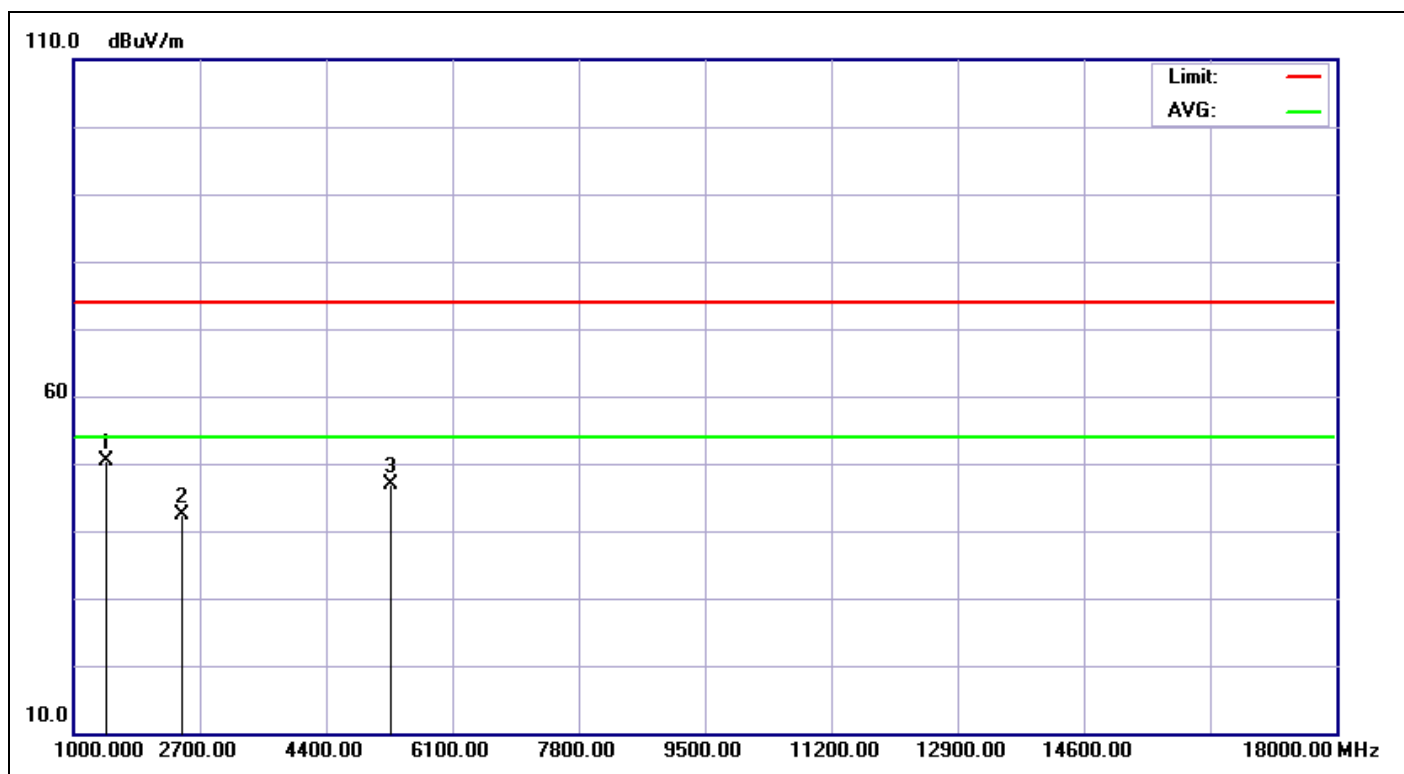
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2405

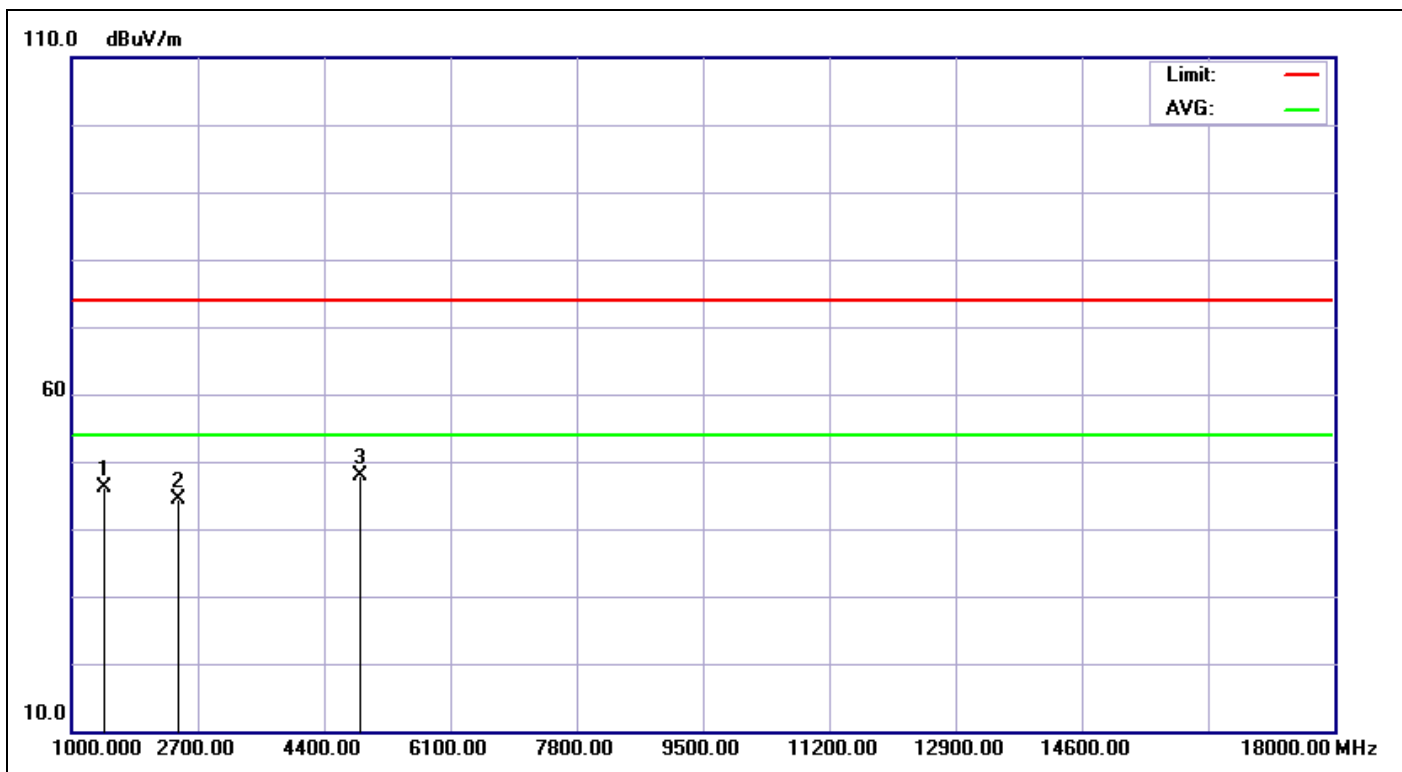
Remark: Power setting: +4.5 dBm

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1435.897	-13.73	59.33	45.60	74.00	-28.40	peak	100	337	
2	2389.423	-11.10	57.75	46.65	74.00	-27.35	peak	100	301	
3	4814.102	-4.41	50.83	46.42	74.00	-27.58	peak	100	211	



Service No.:	114008287_AT2530	Test Distance:	3M
Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2013/4/23 PM 02:34:02
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	22(°C)/61%
Model No.:	AT2530	Test Engineer:	Neil Tsai
Test Mode:	TX 2445		
Remark:	Power setting: +4.5 dBm		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1435.897	-13.73	64.18	50.45	74.00	-23.55	peak	200	326	
2	2471.154	-11.02	53.38	42.36	74.00	-31.64	peak	200	355	
3	5277.243	-2.24	49.14	46.90	74.00	-27.10	peak	200	107	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/4/23 PM 02:35:04

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

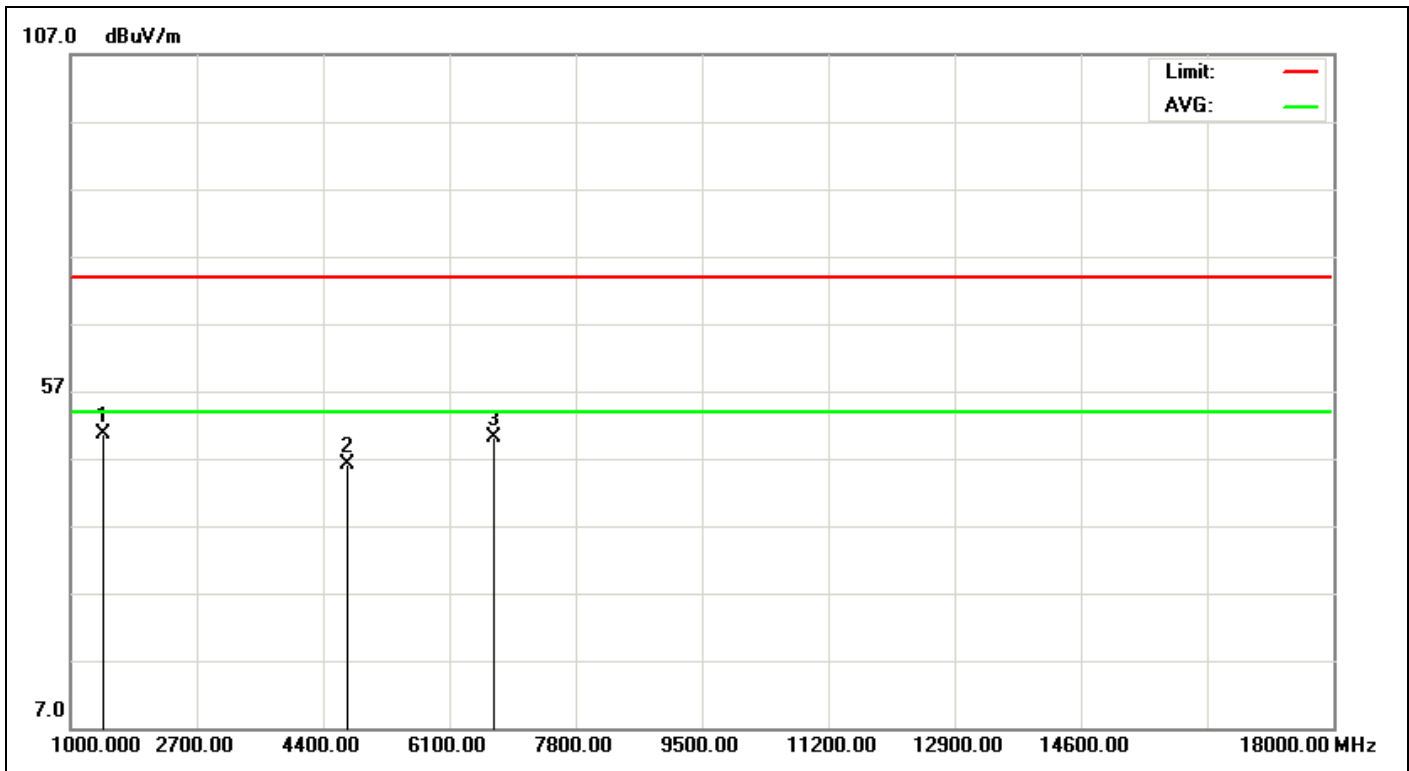
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2445

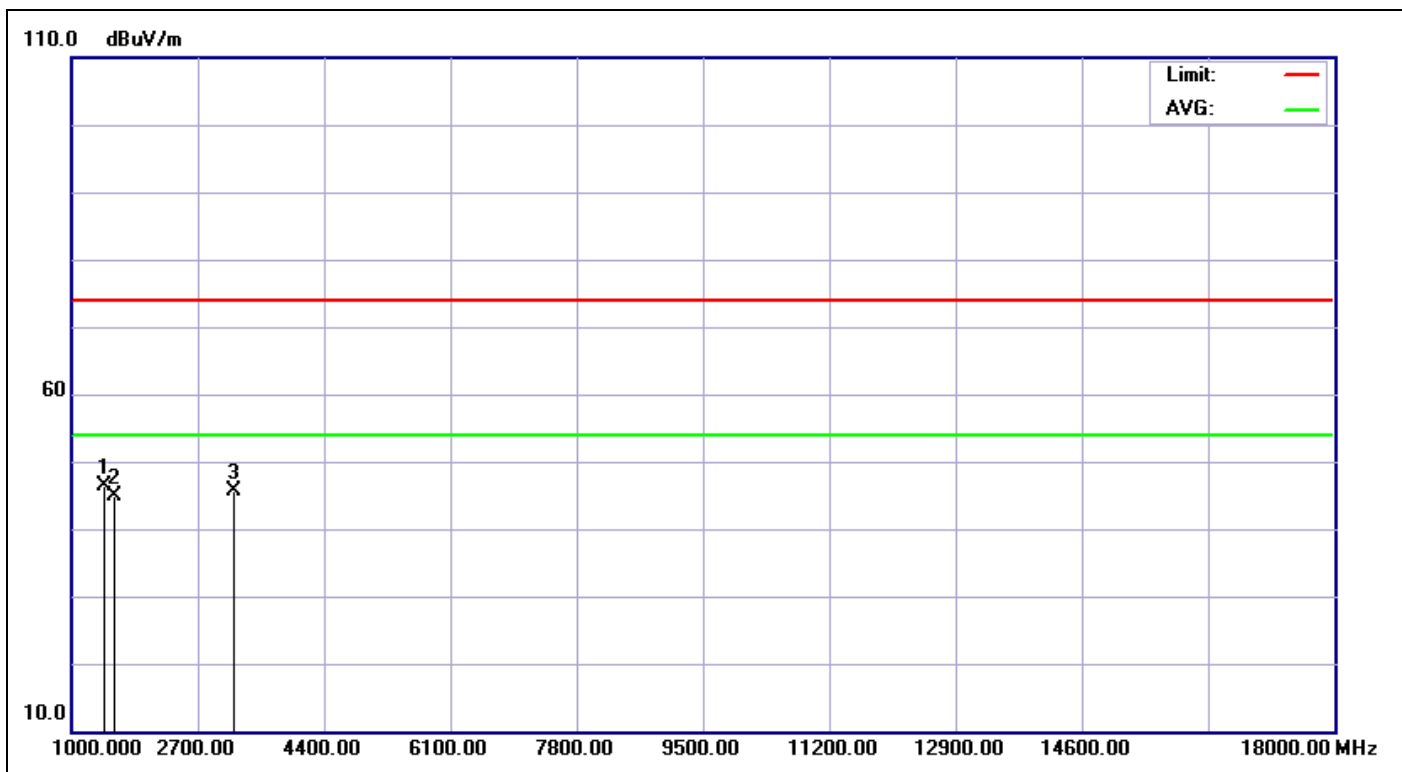
Remark: Power setting: +4.5 dBm

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1435.897	-13.73	59.82	46.09	74.00	-27.91	peak	200	340	
2	2443.910	-11.05	55.33	44.28	74.00	-29.72	peak	200	298	
3	4895.833	-4.13	52.03	47.90	74.00	-26.10	peak	200	211	



Service No.:	114008287_AT2530	Test Distance:	3M
Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2013/4/23 PM 02:25:34
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	22(°C)/61%
Model No.:	AT2530	Test Engineer:	Neil Tsai
Test Mode:	TX 2475		
Remark:	Power setting: +4.5 dBm		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1435.897	-13.73	64.42	50.69	74.00	-23.31	peak	100	320	
2	4732.372	-4.70	50.75	46.05	74.00	-27.95	peak	100	40	
3	6693.910	4.96	45.18	50.14	74.00	-23.86	peak	200	334	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/4/23 PM 02:30:02

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

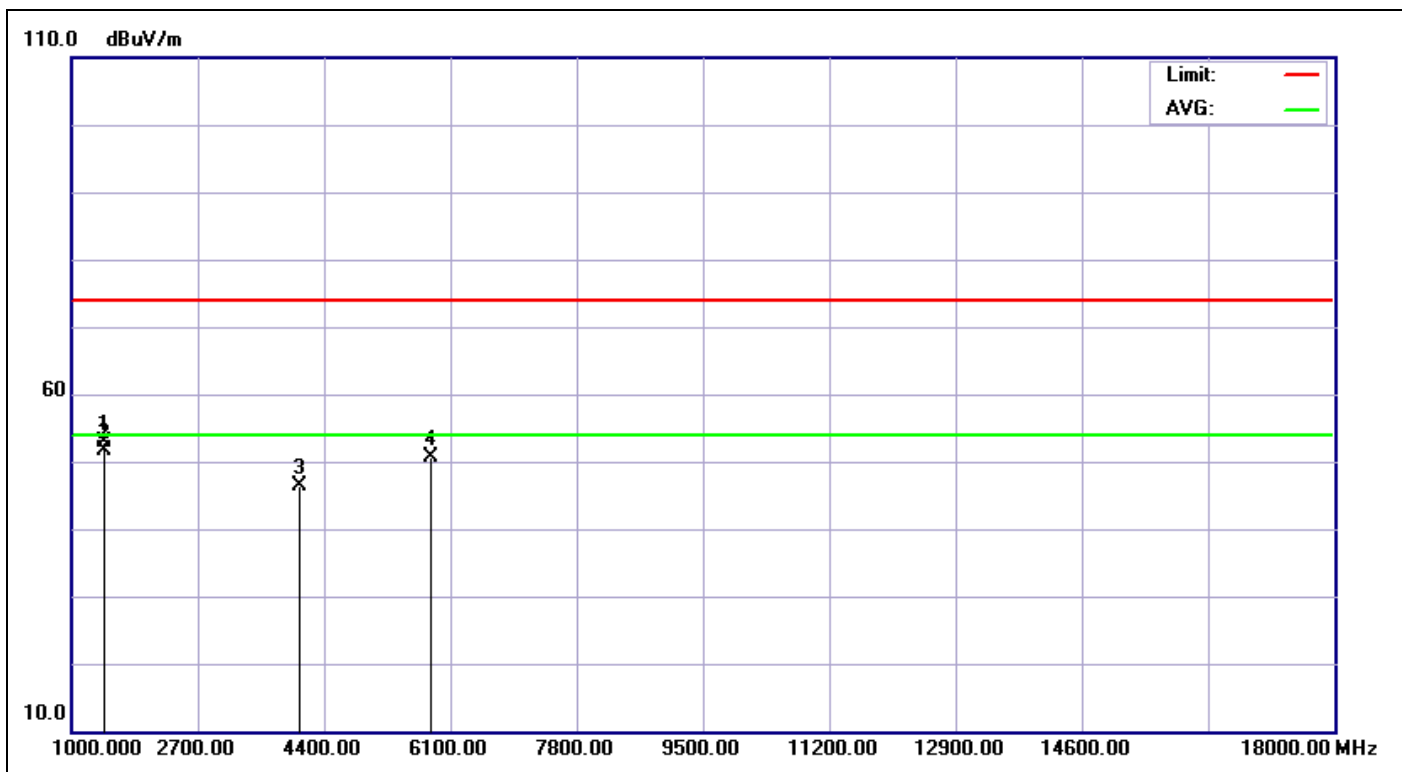
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2475

Remark: Power setting: +4.5 dBm

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1435.897	-13.73	60.10	46.37	74.00	-27.63	peak	100	320	
2	1572.115	-13.42	58.39	44.97	74.00	-29.03	peak	200	359	
3	3179.487	-9.31	54.82	45.51	74.00	-28.49	peak	100	294	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2013/4/23 PM 03:03:16

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

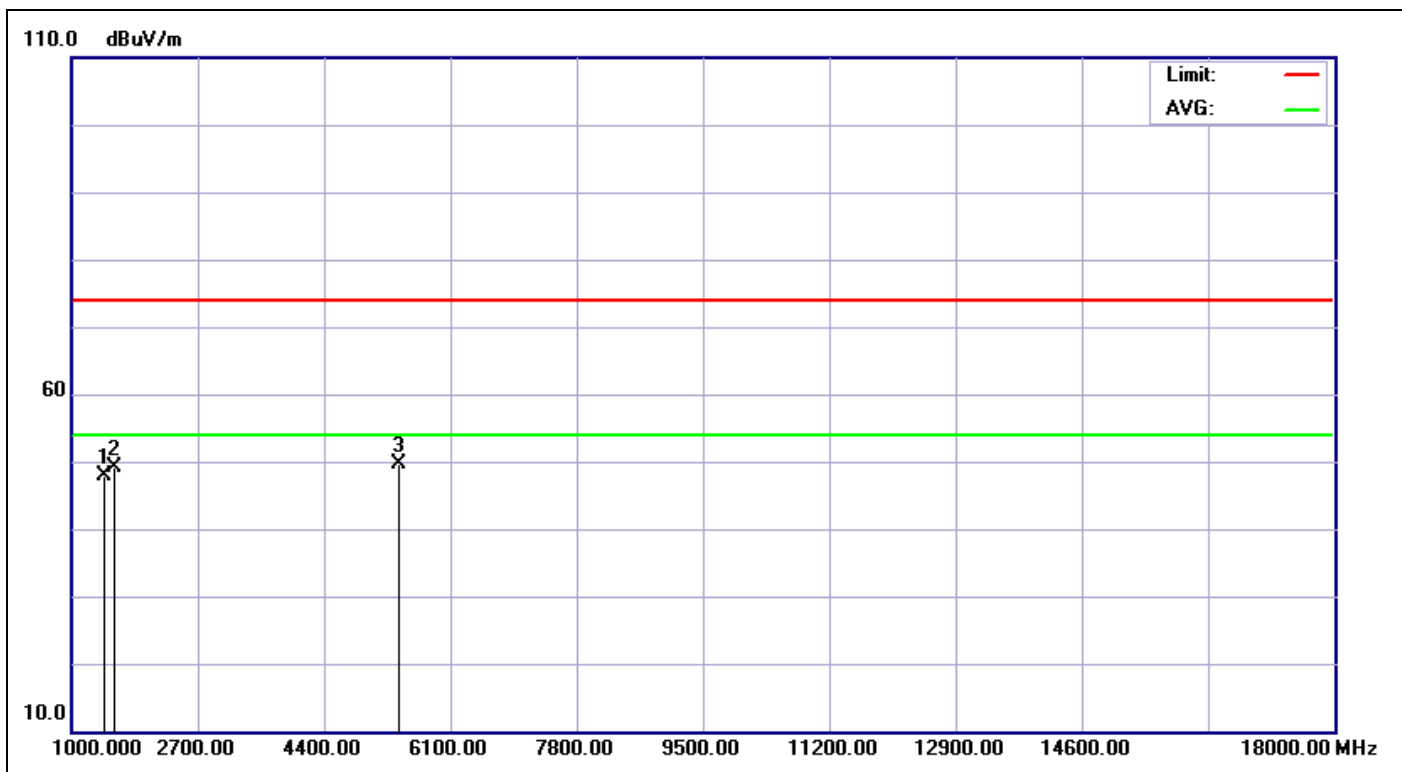
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2480

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1435.897	-11.73	64.52	52.79	74.00	-21.21	peak	100	326	
2	1435.897	-11.73	63.43	51.70	54.00	-2.30	AVG	100	326	
3	4078.526	-5.08	51.35	46.27	74.00	-27.73	peak	100	0	
4	5849.359	3.33	47.26	50.59	74.00	-23.41	peak	100	249	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/4/23 PM 03:04:19

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2480

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1435.897	-11.73	59.62	47.89	74.00	-26.11	peak	100	352	
2	1572.115	-11.42	60.56	49.14	74.00	-24.86	peak	100	295	
3	5413.462	0.51	49.21	49.72	74.00	-24.28	peak	100	298	

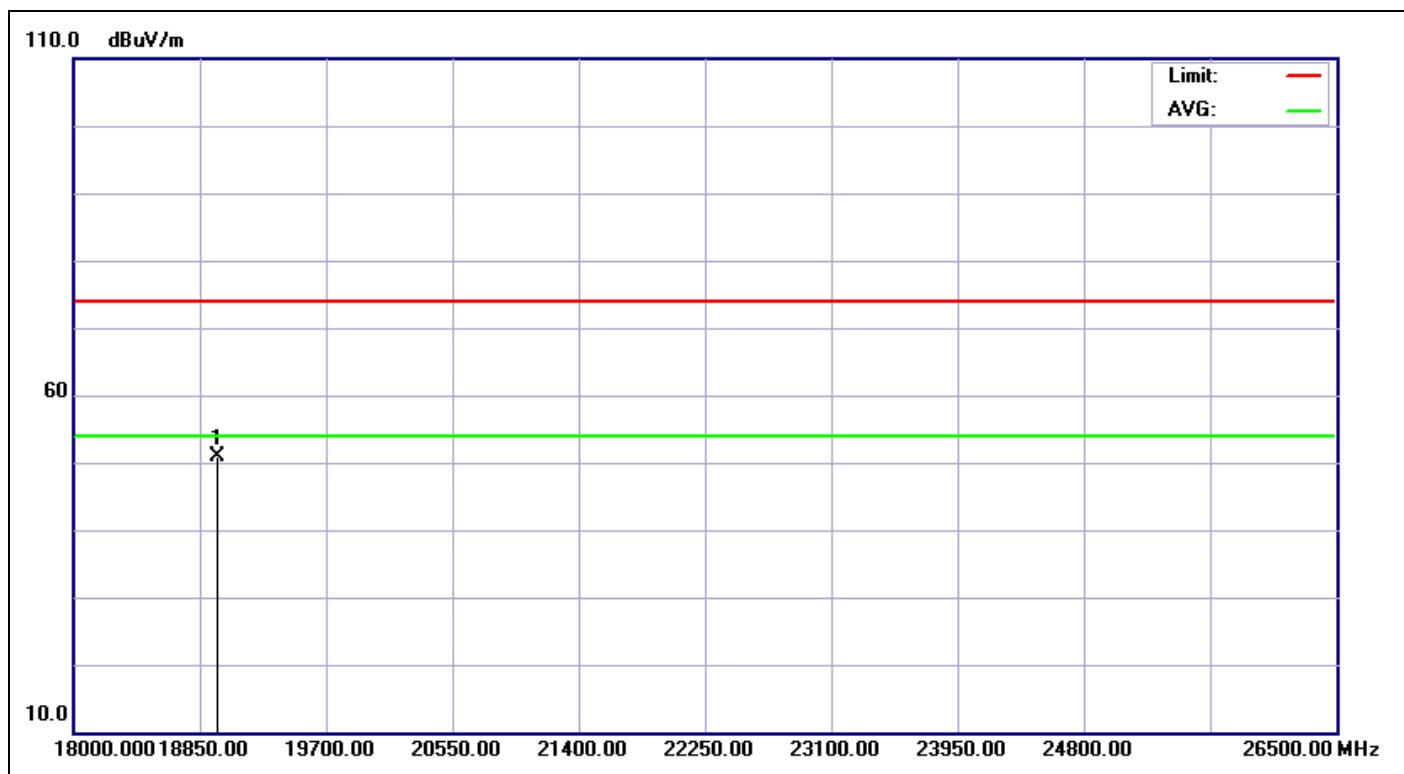
Spurious Emissions, TX Mode, 18-26G



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_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2013/4/23 PM 03:38:20

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

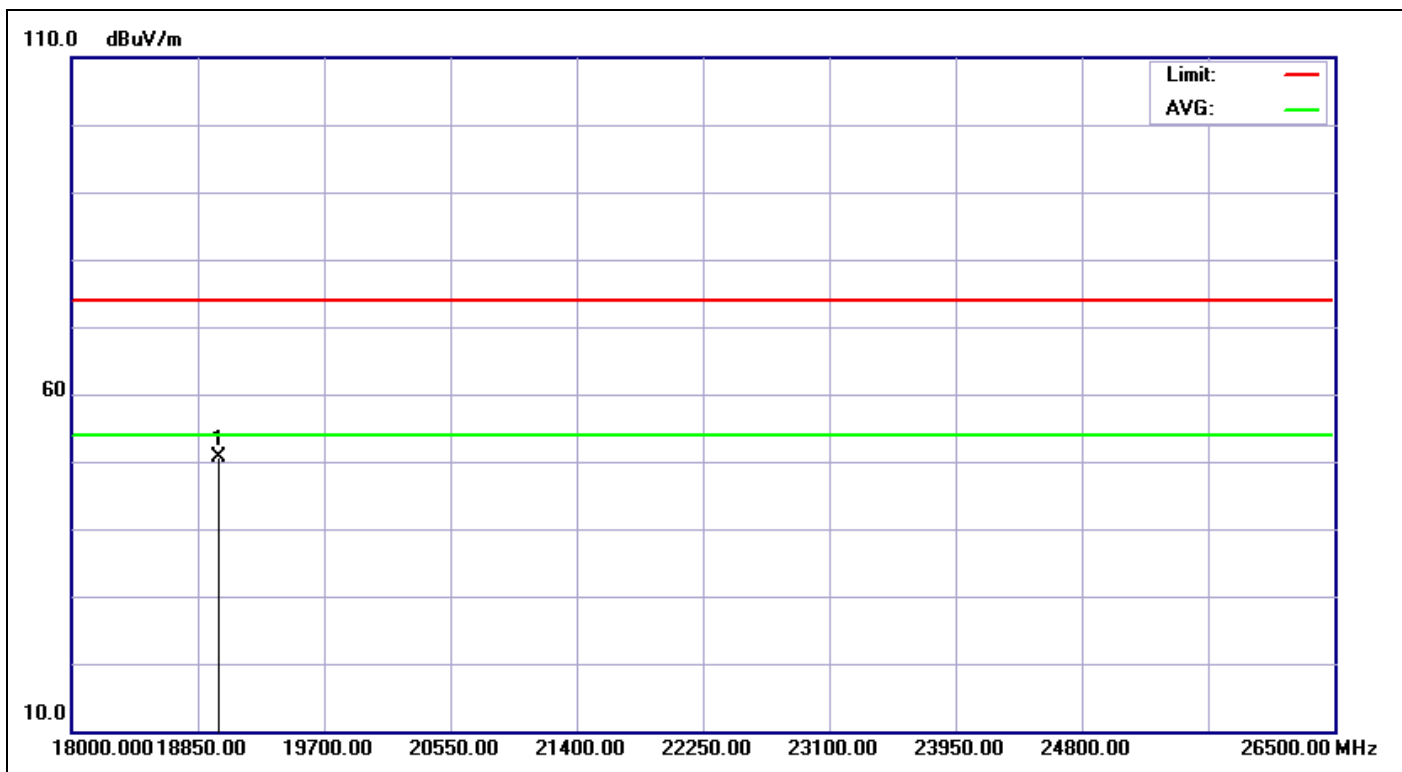
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2405

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	18967.147	29.88	20.92	50.80	74.00	-23.20	peak	100	263	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/4/23 PM 03:39:22

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

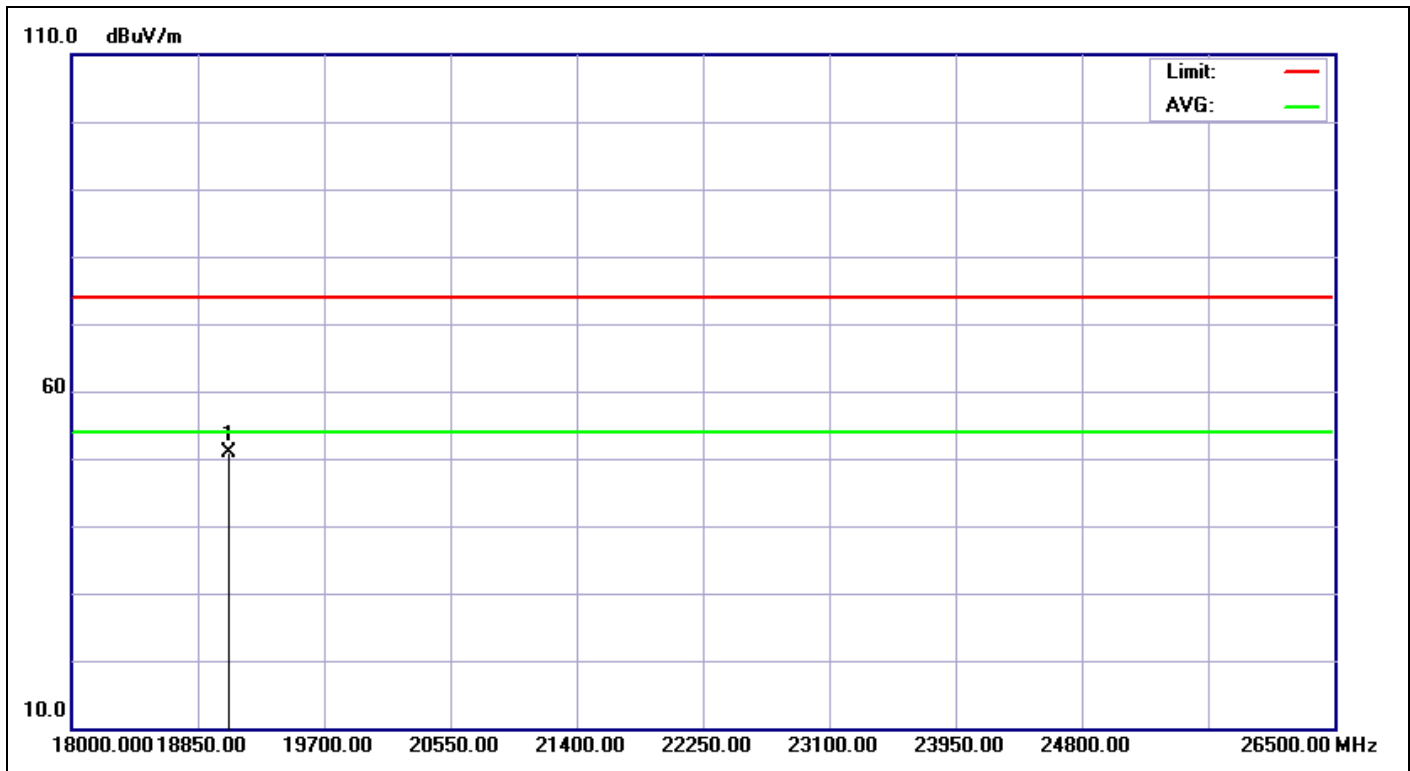
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2405

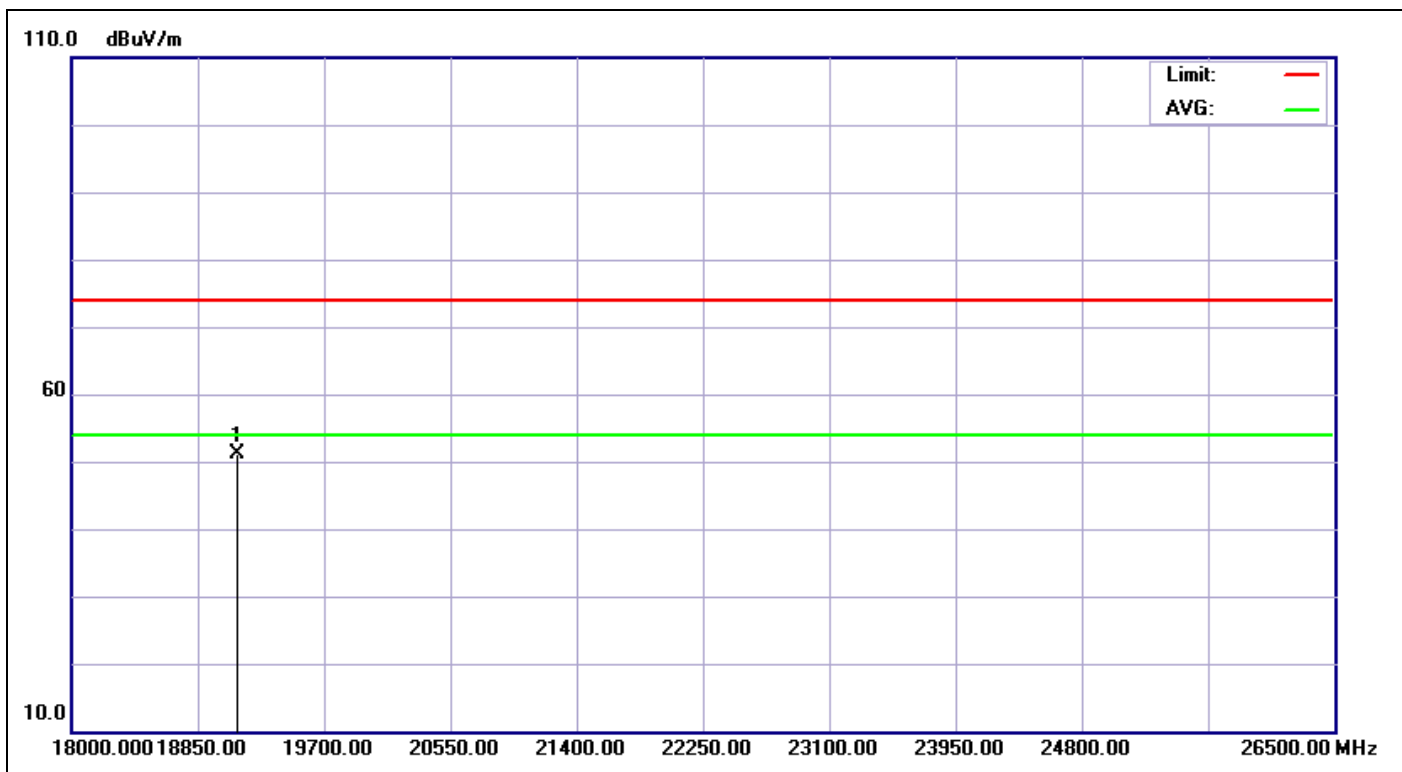
Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	18994.391	29.96	20.61	50.57	74.00	-23.43	peak	100	113	



Service No.:	114008287_AT2530	Test Distance:	3M
Test Standard:	FCC above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2013/4/23 PM 03:35:33
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%):	22(°C)/61%
Model No.:	AT2530	Test Engineer:	Neil Tsai
Test Mode:	TX 2445		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19062.500	29.84	21.11	50.95	74.00	-23.05	peak	100	360	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/4/23 PM 03:36:36

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

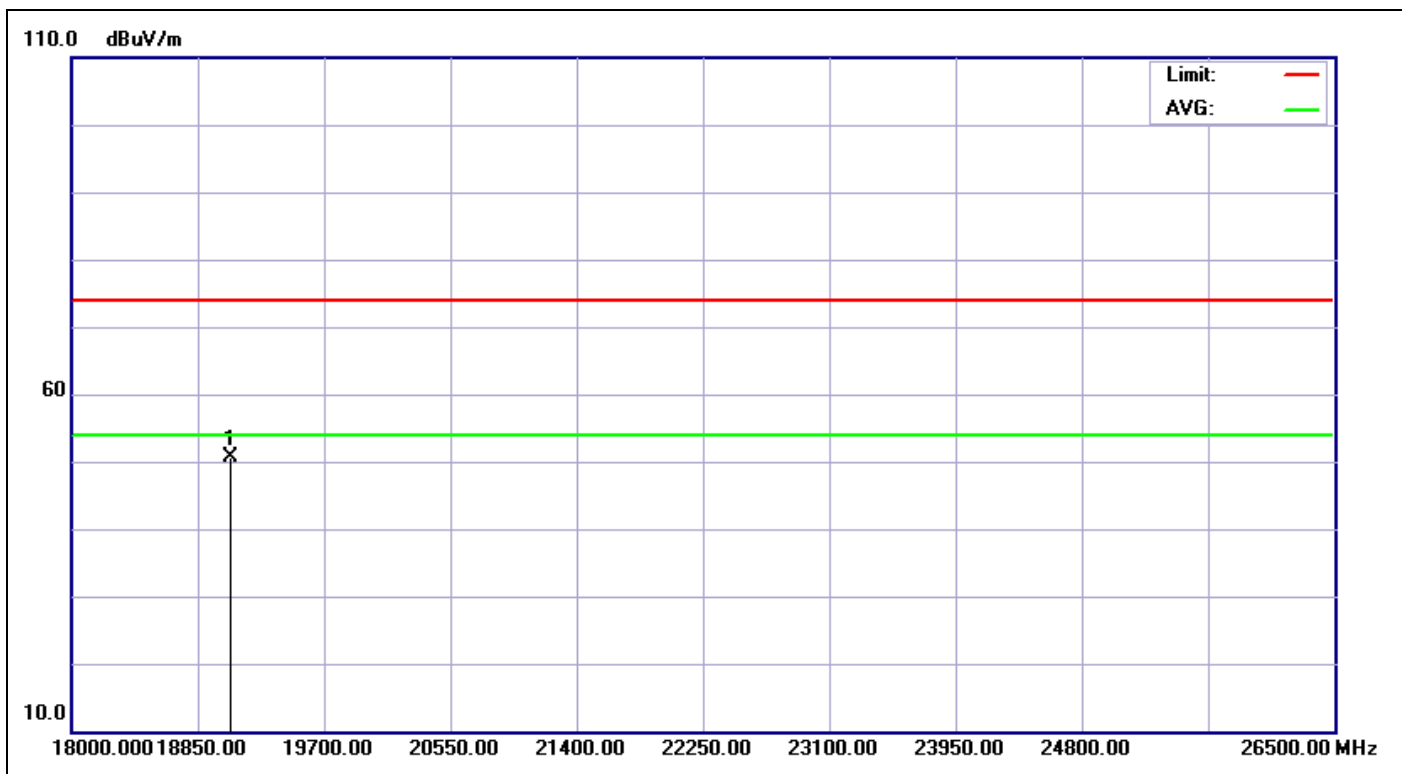
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2445

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19116.987	29.72	21.38	51.10	74.00	-22.90	peak	100	128	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2013/4/23 PM 03:32:14

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

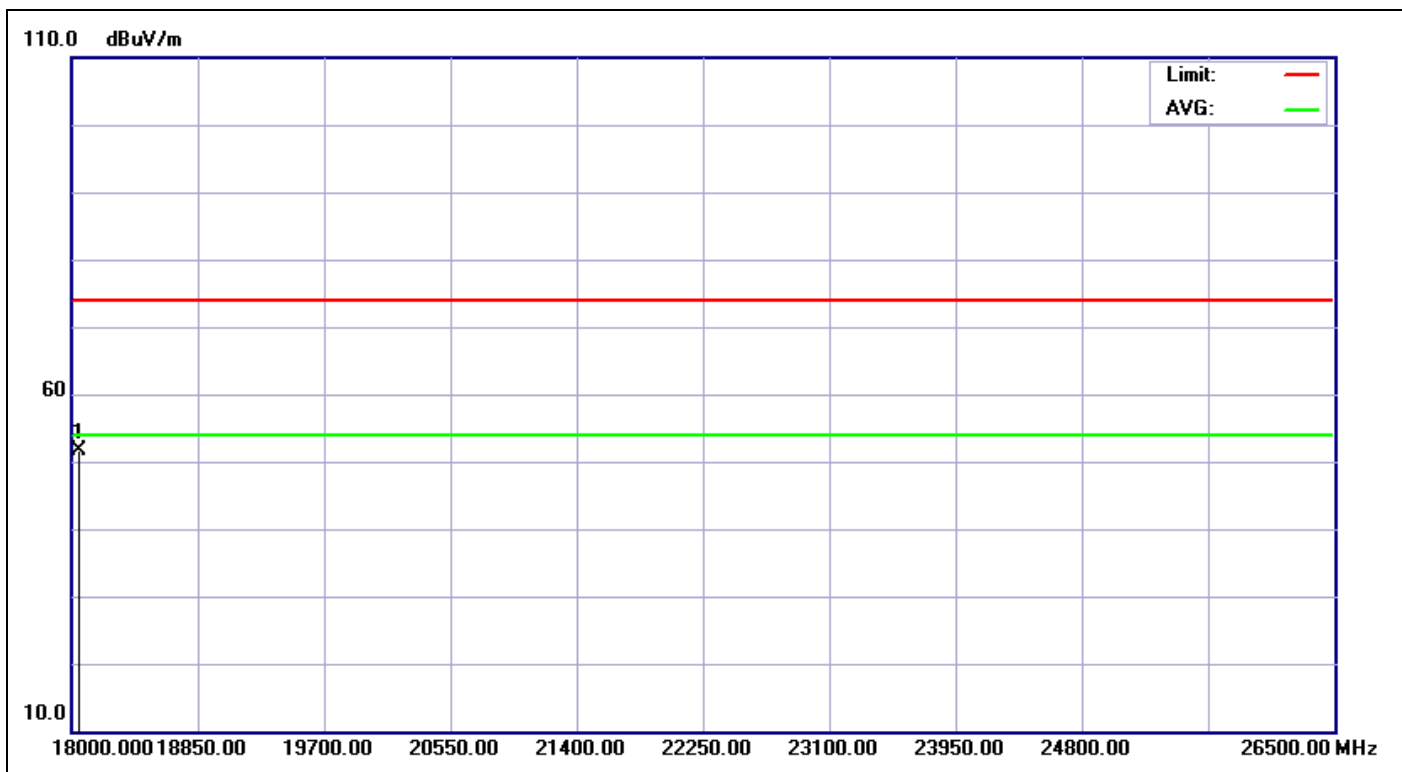
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2475

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19076.122	29.81	20.78	50.59	74.00	-23.41	peak	100	144	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/4/23 PM 03:33:33

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

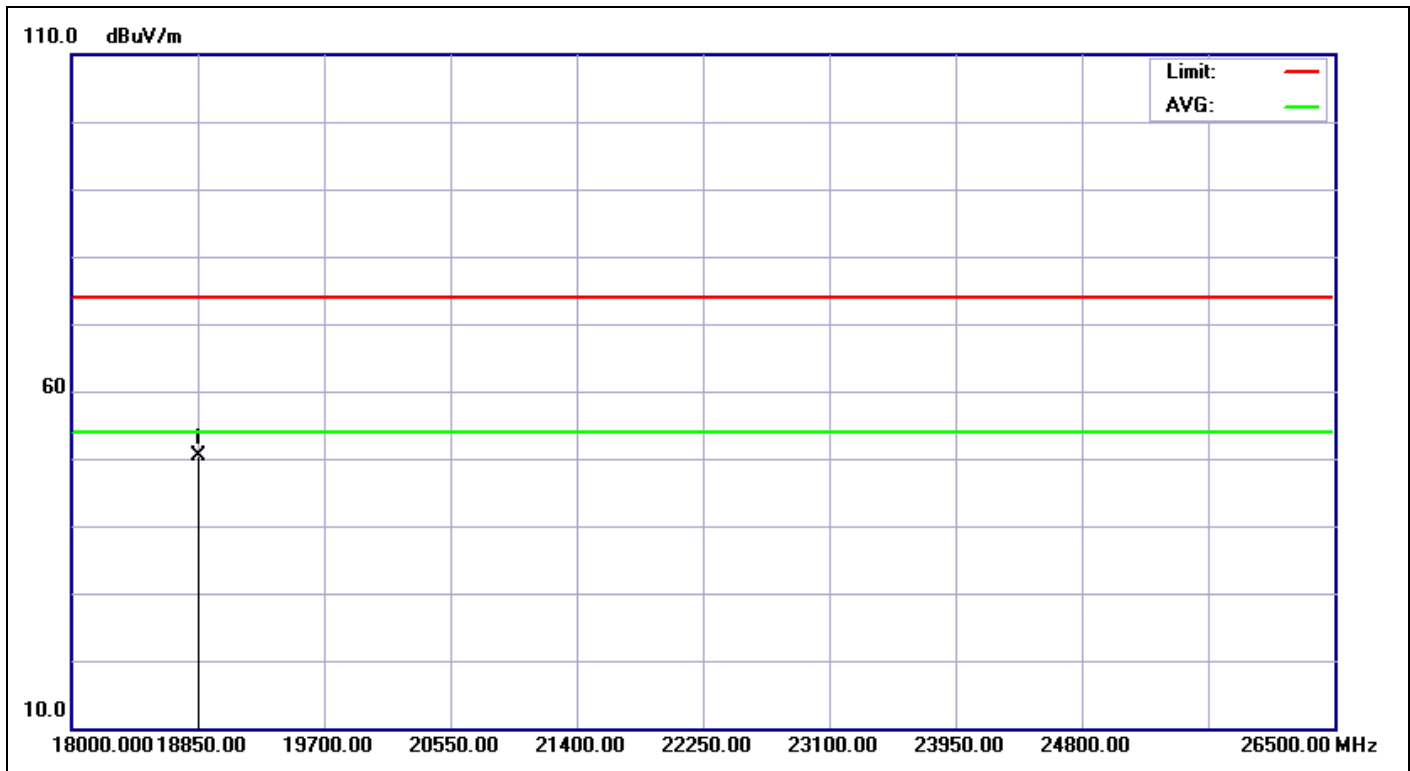
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2475

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	18054.487	28.63	22.94	51.57	74.00	-22.43	peak	100	152	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2013/4/23 PM 03:29:41

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

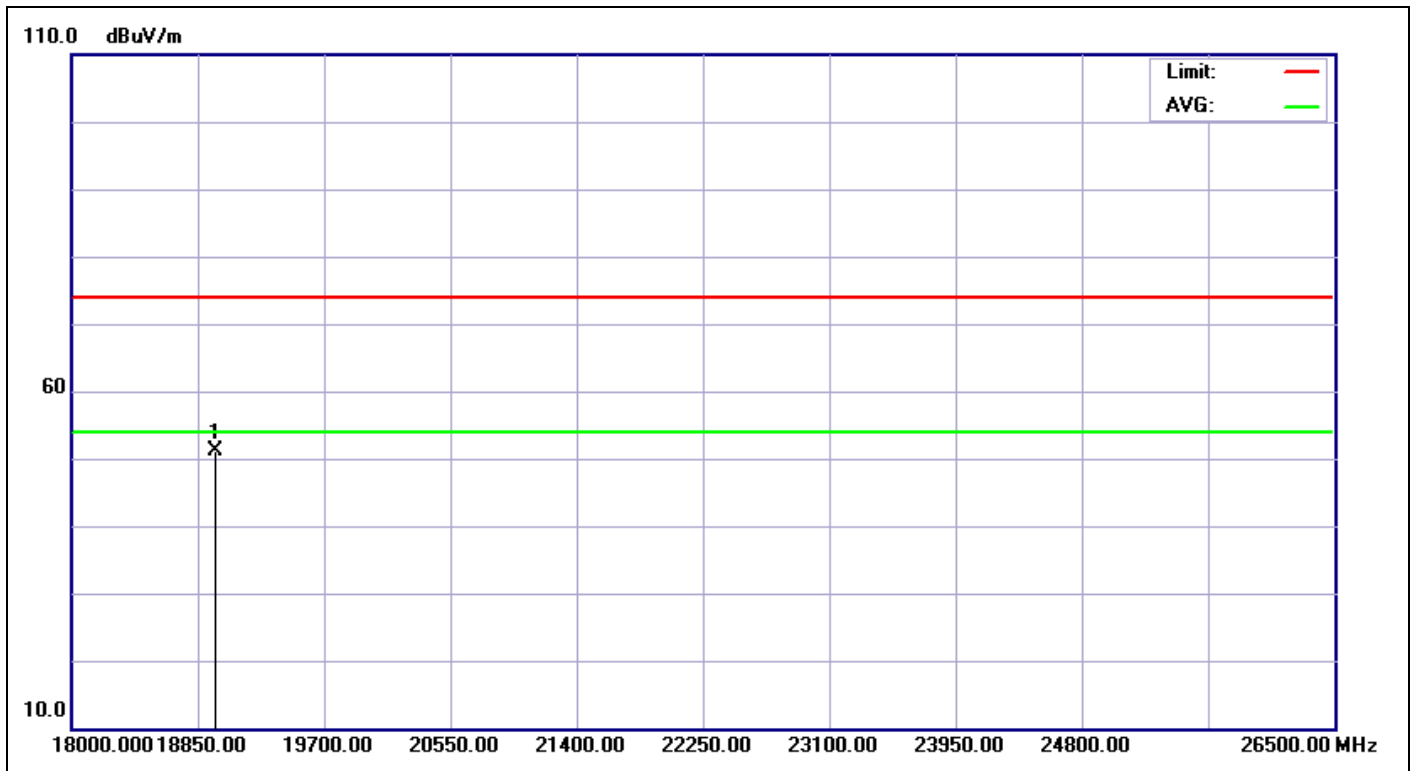
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2480

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	18858.173	29.54	20.93	50.47	74.00	-23.53	peak	100	54	



Service No.: 114008287_AT2530

Test Distance: 3M

Test Standard: FCC above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2013/4/23 PM 03:30:44

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2480

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	18967.147	29.88	21.13	51.01	74.00	-22.99	peak	100	360	

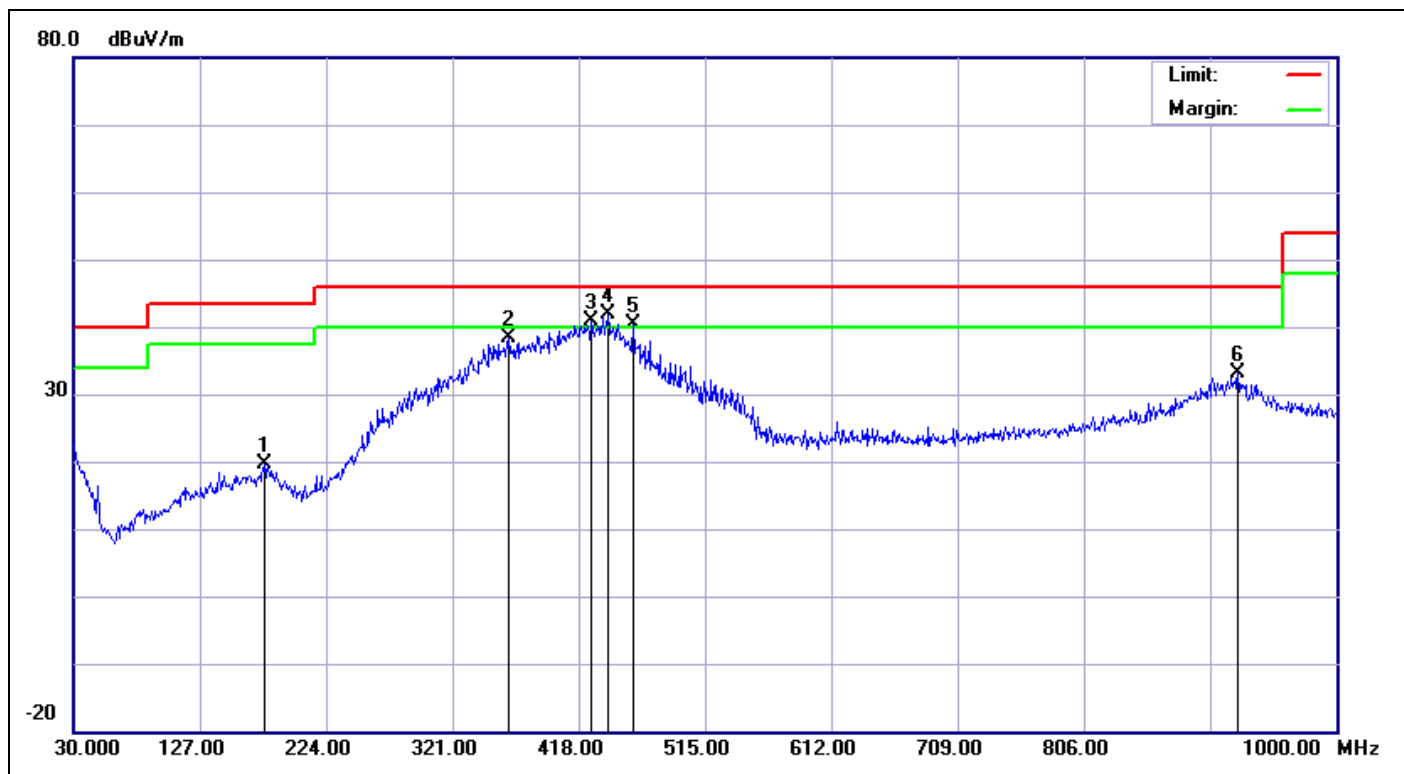
Spurious Emissions, TX Mode, 30M-1G



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_AT2530

Test Distance: 3M

Test Standard: FCC Class B 3M Radiation

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2013/4/23 PM 05:45:36

Applicant: AAC

Test Rating: DC 3V

Product: ZigBee module

Temp.(°C)/Hum.(%): 22(°C)/61%

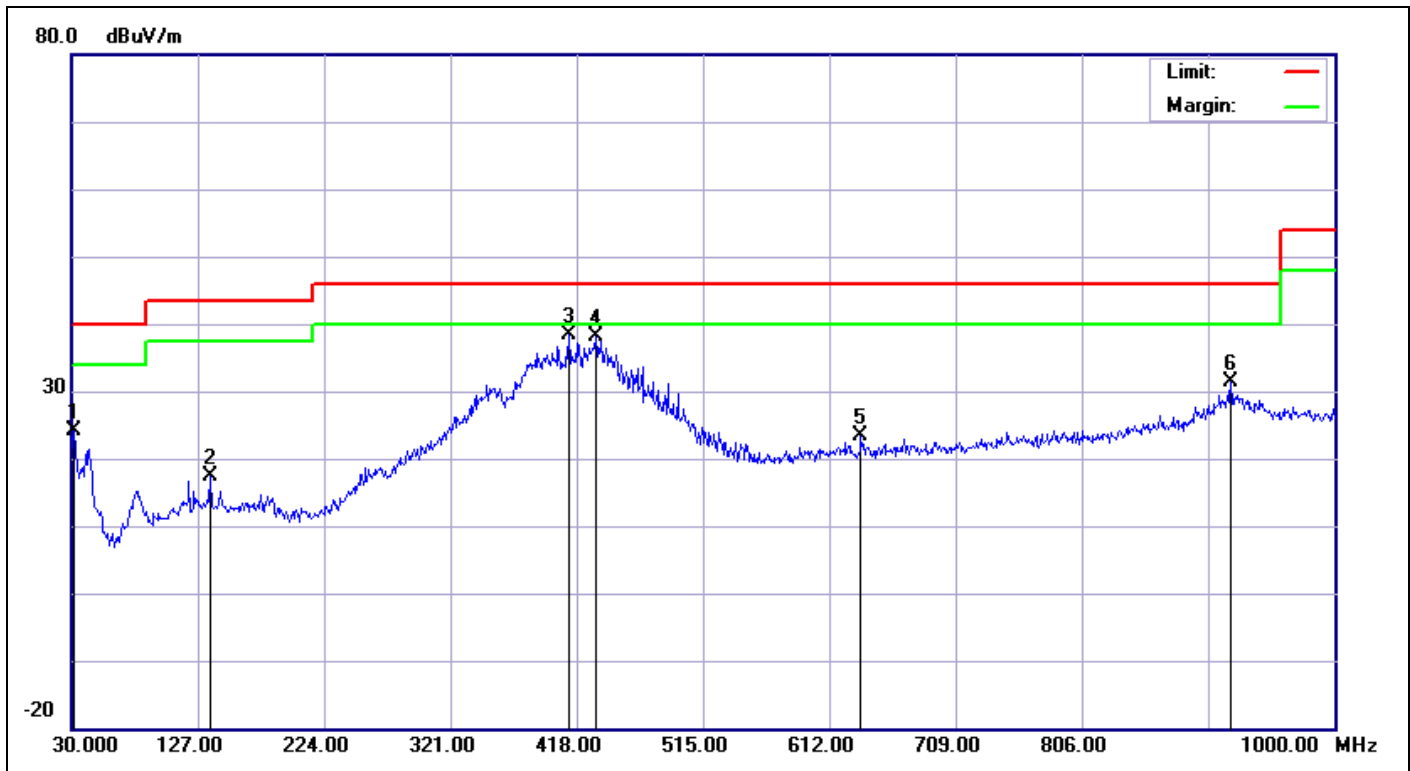
Model No.: AT2530

Test Engineer: Neil Tsai

Test Mode: TX 2445

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	176.4699	-15.30	34.98	19.68	43.50	-23.82	QP	200	12	
2	364.6499	-9.19	47.64	38.45	46.00	-7.55	QP	100	166	
3	427.6999	-8.18	49.08	40.90	46.00	-5.10	QP	100	339	
4	440.3100	-8.02	49.96	41.94	46.00	-4.06	QP	100	349	
5	459.7099	-7.78	48.09	40.31	46.00	-5.69	QP	200	358	
6	924.3400	-1.32	34.41	33.09	46.00	-12.91	QP	100	46	



Service No.:	114008287_AT2530	Test Distance:	3M
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2013/4/23 PM 05:49:16
Applicant:	AAC	Test Rating:	DC 3V
Product:	ZigBee module	Temp.(°C)/Hum.(%)	22(°C)/61%
Model No.:	AT2530	Test Engineer:	Neil Tsai
Test Mode:	TX 2445		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	31.9400	-7.11	31.21	24.10	40.00	-15.90	QP	100	130	
2	136.6999	-12.87	30.25	17.38	43.50	-26.12	QP	100	290	
3	412.1800	-8.38	46.71	38.33	46.00	-7.67	QP	200	73	
4	432.5500	-8.12	46.35	38.23	46.00	-7.77	QP	200	69	
5	636.2500	-5.59	28.88	23.29	46.00	-22.71	QP	100	88	
6	920.4600	-1.43	32.71	31.28	46.00	-14.72	QP	100	274	