

APPLICATION FOR CERTIFICATION

On Behalf of

Powertech Industrial Co., Ltd.

ZigBee Tracking Smart Strip

Model No. : M9PG040000

FCC ID : NHS-M9PG04

Prepared for : Powertech Industrial Co., Ltd.
10F, No. 407, Chung Shan Rd., Sec 2
Chung Ho City, Taipei Hsien, 235 Taiwan

Prepared by : AUDIX Technology Corporation
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TEST REPORT CERTIFICATION

Applicant : Powertech Industrial Co., Ltd.
 Manufacturer : Dongguan Quan Sheng Electric Co., Ltd.
 EUT Description : ZigBee Tracking Smart Strip
 FCC ID : NHS-M9PG04
 (A) Model No. : M9PG040000
 (B) Serial No. : N/A
 (C) Power Supply : DC 7.5V
 (D) Test Voltage : AC 120V/60Hz (Via I.T.E Power Supply)

Measurement Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART C, Oct. 2011
 (FCC CFR 47 Part 15C, §15.207, §15.249, §15.209)
 AND ANSI C63.4/2003

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

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

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

Date of Test : Jul. 30 ~ Aug. 31, 2012 Date of Report : Aug. 31, 2012

Producer : 
 (Julie Hsu/Administrator)

Signatory: 
 (Leon Liu/Deputy General Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	ZigBee Tracking Smart Strip
FCC ID	:	NHS-M9PG04
Model Number	:	M9PG040000
Applicant	:	Powertech Industrial Co., Ltd. 10F, No. 407, Chung Shan Rd., Sec 2 Chung Ho City, Taipei Hsien, 235 Taiwan
Manufacturer	:	Dongguan Quan Sheng Electric Co., Ltd. Chu-Tang 2nd Industrial Park Hou-Chieh Town Dongguan Guangdong 523963 China.
Fundamental Range	:	2405MHz ~ 2480MHz
Antenna Connector Requirement	:	Compliance with FCC §15.203
Frequency Channel	:	11 channels
Radio Technology	:	OQKSP
I.T.E Power Supply	:	HON-KWANG, M/N HK-S-075A050-US Input: 100-240V~, 50/60Hz, 0.2A Output: DC 7.5V, 0.5A DC Power Cord: Non-Shielded, Detachable, 1.5m
Date of Receipt of Sample	:	Jul. 27, 2012
Date of Test	:	Jul. 30 ~ Aug. 31, 2012

1.2. Tested Supporting System Details

1.2.1. PC SYSTEM (LINK TO EUT)

Model Number : SHNGC-M003MT
 Serial Number : SGH014R6GM
 FCC ID : By DoC
 BSMI ID : R33002
 Manufacturer : HP (Brand: HP)
 VGA Card : ASUS, M/N EAH4350SILENT/DV512MD2
 FCC by DoC, BSMI ID: D33005
 LAN Cable : Non-Shielded, Detachable, 1.8m
 Power Cord : Non-Shielded, Detachable, 1.8m

1.2.2. LCD MONITOR

Model Number : VE228S
 Serial Number : N/A
 FCC ID : By DoC
 Brand : ASUS
 Data Cable (D-Sub) : Shielded, Detachable, 1.8m
 Bonded two ferrite cores
 Power Cord : Non-Shielded, Detachable, 1.8m

1.2.3. HP Office 4500 Series PRINTER

Model Number : SNPRC-0902-01
 Serial Number : CN96PBK00D
 FCC ID : By DoC
 BSMI ID : R33001
 Manufacturer : Hewlett Packard
 USB Cable : Shielded, Detachable, 1.8m
 Adapter : Lite-On, HP P/N: 0957-2269
 DC Cord: Non-Shielded, Undetachable, 1.8m
 Power Cable: Non-Shielded, Detachable, 0.5m
 (2 Pin)

1.2.4. PS2 KEYBOARD

Model Number : KB-0316
 Serial Number : BAUEL0HVBYD0J8
 FCC ID : By DoC
 BSMI ID : R33001
 Manufacturer : HP (Brand: HP)
 Data Cable : Non-Shielded, Undetachable, 1.8m

1.2.5. USB MOUSE

Model Number : M-UAE96
 Serial Number : FATSK0K8FYKADK
 FCC ID : By DoC
 BSMI ID : T41126
 Manufacturer : HP (Brand: HP)
 Data Cable : Shielded, Undetachable, 1.8m

1.2.6. I-POD PLAYER

Model Number : A1204
 Serial Number : 4H722TFHVTE
 FCC ID : FCC ID by DoC
 BSMI ID : R33057
 Manufacturer : APPLE
 USB Data Cable : Shielded, Undetachable, 1m

1.2.7. POWER SOCKET

Model Number : N/A
 Manufacturer : N/A
 AC Power Cord : Non-Shielded, Detachable, 1.8m (3 Pin)

1.3. Description of Test Facility

Name of Firm : **AUDIX Technology Corporation**
EMC Department
 No. 53-11, Dingfu, Linkou Dist.,
 New Taipei City 244, Taiwan, R.O.C.

Test Facility & Location (C3/AC) : **No. 3 Shielded Room &**
 No. 67-4, Dingfu, Linkou Dist.,
 New Taipei City 244, Taiwan, R.O.C.

Semi-Anechoic Chamber
 No. 53-11, Dingfu, Linkou Dist.,
 New Taipei City 244, Taiwan, R.O.C.
 Renewal on May 11, 2012
 Federal Communication Commission
 Registration Number: 90993

NVLAP Lab. Code : 200077-0

TAF Accreditation No : 1724

1.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	± 1.73 dB
Radiation Test (Distance: 3m)	30MHz~300MHz	± 2.91 dB
	300MHz~1000MHz	± 2.94 dB
	Above 1GHz	± 5.02 dB

Remark : Uncertainty = $ku_c(y)$

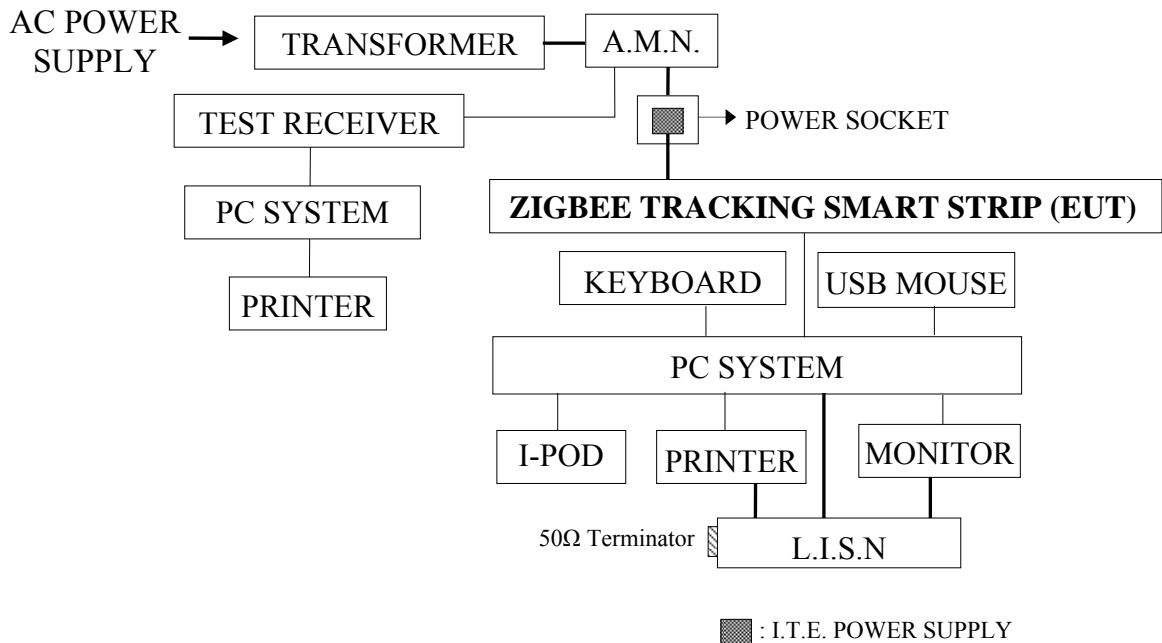
2. POWERLINE CONDUCTED EMISSION MEASUREMENT

2.1. Test Equipment

The following test equipment was used during the conducted emission measurement :
(No. 4 Shielded Room)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R & S	ESCS30	100337	Apr. 09, 12'	Apr. 08, 13'
2.	A.M.N.	Kyoritsu	KNW-244C	8-1373-5	Mar. 27, 12'	Mar. 26, 13'
3.	Pulse Limiter	Kyoritsu	KNW-407	8-1370-9	Mar. 08, 12'	Mar. 07, 13'

2.2. Block Diagram of Test Setup



2.3. Powerline Conducted Emission Limit (§15.207)

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

Remark1.: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2.: The lower limit applies at the band edges.

2.4. Operating Condition of EUT

- 2.4.1. Setup the EUT (ZigBee Tracking Smart Strip) as shown on 2.2.
- 2.4.2. Turn on the power of all equipment.
- 2.4.3. The PC system was running test software by Windows XP and through EUT (ZigBee Tracking Smart Strip) to ping PC systems via EUT's LAN port during all testing.
- 2.4.4. The other peripheral devices were driven and operated in turn during all testing.

2.5. Test Procedure

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

The bandwidth of the R & S Test Receiver ESCS 30 was set at 9kHz.

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

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

2.6. Powerline Conducted Emission Measurement Results

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

The EUT was measured during this section testing and all the test results are listed in next pages.

EUT : ZigBee Tracking Smart Strip Model No. : M9PG040000

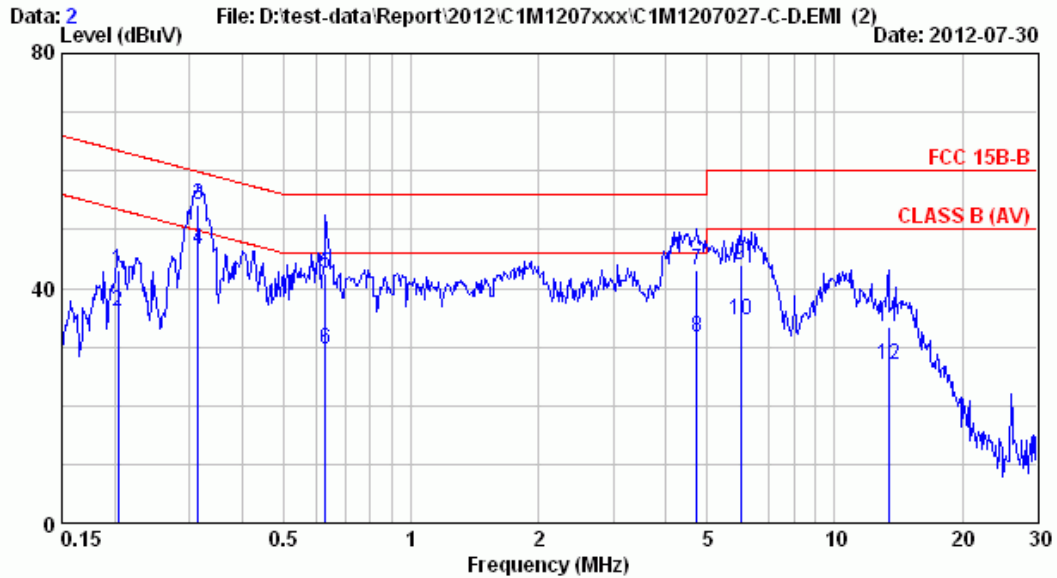
Test Date : Jul. 30, 2012 Temperature : 25 Humidity : 54%

The details are as follows :

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



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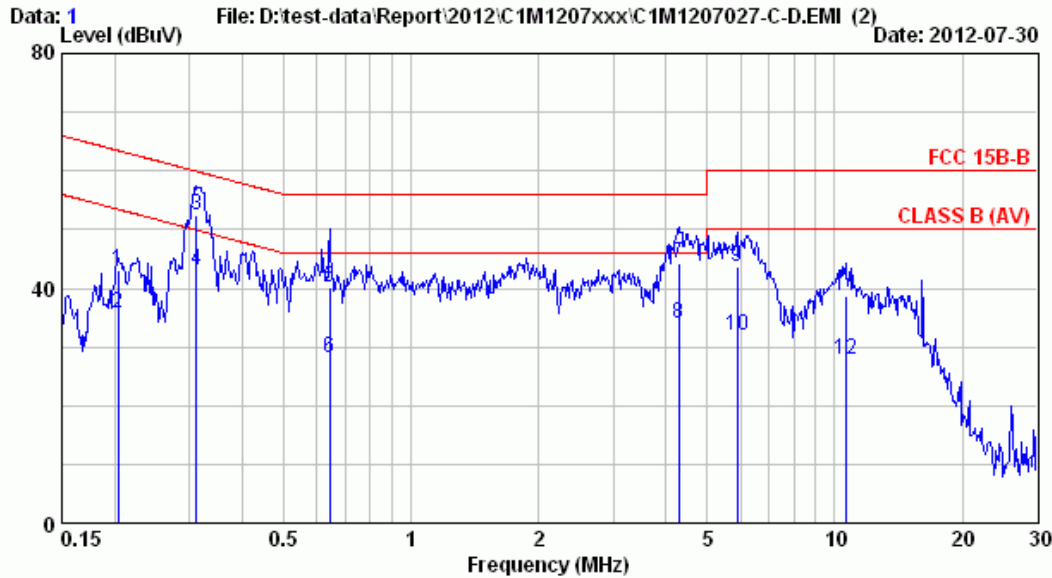
Site : No.3 Shielded Room Data : 2
 Condition : KNW-244C Phase : NEUTRAL
 Limit : FCC 15B-B
 Env. / Ins. : 25°C / 52% ESCS 30 (337) Engineer: Dennis
 EUT M/N : M9PG040000
 Power Rating : 120Vac / 60Hz
 Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.204	0.10	0.20	42.89	43.19	63.45	20.26	QP
2	0.204	0.10	0.20	35.75	36.05	53.45	17.40	AVERAGE
3	0.315	0.10	0.20	53.95	54.25	59.84	5.59	QP
4	0.315	0.10	0.20	46.31	46.61	49.84	3.23	AVERAGE
5	0.627	0.10	0.20	42.15	42.45	56.00	13.55	QP
6	0.627	0.10	0.20	29.18	29.48	46.00	16.52	AVERAGE
7	4.721	0.22	0.60	42.25	43.07	56.00	12.93	QP
8	4.721	0.22	0.60	30.82	31.64	46.00	14.36	AVERAGE
9	5.993	0.24	0.60	43.25	44.09	60.00	15.91	QP
10	5.993	0.24	0.60	33.59	34.43	50.00	15.57	AVERAGE
11	13.408	0.37	0.70	32.25	33.32	60.00	26.68	QP
12	13.408	0.37	0.70	25.78	26.85	50.00	23.15	AVERAGE

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



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Site : No.3 Shielded Room Data : 1
 Condition : KNW-244C Phase : LINE
 Limit : FCC 15B-B
 Env. / Ins. : 25°C / 52% ESCS 30 (337) Engineer: Dennis
 EUT M/N : M9PG040000
 Power Rating : 120Vac / 60Hz
 Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.204	0.10	0.20	42.89	43.19	63.45	20.26	QP
2	0.204	0.10	0.20	35.41	35.71	53.45	17.74	AVERAGE
3	0.312	0.10	0.20	52.17	52.47	59.93	7.46	QP
4	0.312	0.10	0.20	42.90	43.20	49.93	6.73	AVERAGE
5	0.644	0.10	0.20	39.95	40.25	56.00	15.75	QP
6	0.644	0.10	0.20	27.85	28.15	46.00	17.85	AVERAGE
7	4.292	0.22	0.60	43.45	44.27	56.00	11.73	QP
8	4.292	0.22	0.60	33.16	33.98	46.00	12.02	AVERAGE
9	5.898	0.28	0.60	42.76	43.64	60.00	16.36	QP
10	5.898	0.28	0.60	30.99	31.87	50.00	18.13	AVERAGE
11	10.620	0.40	0.70	37.68	38.78	60.00	21.22	QP
12	10.620	0.40	0.70	26.77	27.87	50.00	22.13	AVERAGE

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

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

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

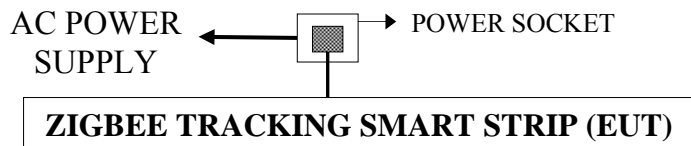
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 12'	Aug. 06, 13'
2.	Test Receiver	R & S	ESCS30	100265	Aug. 25, 11'	Aug. 24, 12'
3.	Pre-Amplifier	HP	8447D	2944A06305	Feb. 13, 12'	Feb. 11, 13'
4.	Biconical Antenna	CHASE	VBA6106A	1264	Mar. 03, 12'	Mar. 02, 13'
5.	Log Periodic Antenna	Schwarzbeck	UHALP9108 -A	0810	Mar. 03, 12'	Mar. 02, 13'

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 12'	Aug. 06, 13'
2.	Amplifier	HP	8449B	3008A00529	Dec. 09, 11'	Dec. 08, 12'
3.	Horn Antenna	EMCO	3115	9609-4927	Jul. 05, 12'	Jul. 04, 13'
4.	Horn Antenna	EMCO	3116	2653	Oct. 07, 11'	Oct. 06, 12'

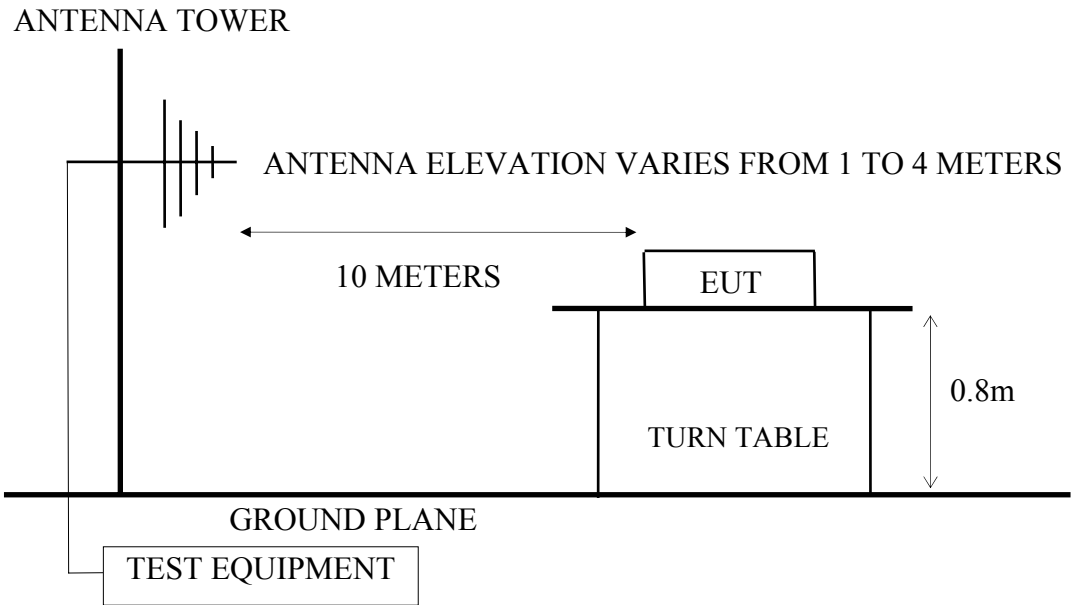
3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of connection between EUT and simulators

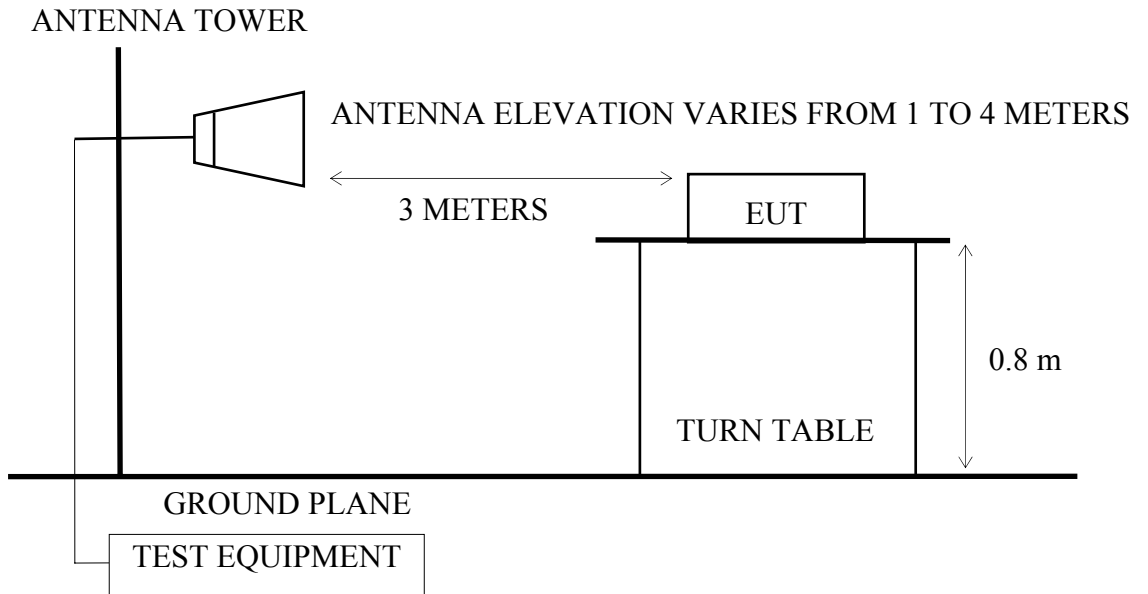


■ : I.T.E. POWER SUPPLY

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



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



3.3. Radiated Emission Limits (§15.209)

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

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

3.4. Fundamental Frequency Limits [§15.249(a)]

FUNDAMENTAL FREQUENCY MHZ	LIMITS
2400-2485	114 dBµV/m (Peak)
	94 dBµV/m (Average)

3.5. Operating Condition of EUT

- 3.5.1. Setup the **EUT (ZigBee Tracking Smart Strip)** as shown on 3.2.
- 3.5.2. Turn on the power of all equipment.
- 3.5.3. The EUT was set to continuously transmit signals at 2405Hz、 2450MHz and 2480MHz during testing.

3.6. Test Procedure

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

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

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

The frequency range from 30MHz to 25GHz (Up to 10th harmonics from fundamental frequency) was checked.

Above 1GHz was measured with peak and average detector. For frequency from 2.68GHz to 25GHz, we checked it in 1 meter distance and with a shorter cable 2 meter instead of original's. There is no signal exist

3.7. Radiated Emission Measurement Test Results

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

EUT : ZigBee Tracking Smart Strip Model No. : M9PG040000

Test Date : Aug. 08, 2012 Temperature : 25 Humidity : 61%
 Test Date : Aug. 31, 2012 Temperature : 25 Humidity : 61%

For Frequency Range 30MHz~1000MHz:

The EUT was measured during this section testing and all the test results are listed in section 3.7.1.

Mode	Channel	Frequency	Test Mode	Reference Test Data	
				Horizontal	Vertical
1.	11	2405MHz	Transmit	# 2, # 4	# 1, # 3
2.	20	2450MHz		# 2, # 4	# 1, # 3
3.	26	2480MHz		# 2, # 4	# 1, # 3

* Above all final readings were measured with Quasi-Peak detector.

For Frequency above 1GHz:

The EUT was measured during this section testing and all the test results are listed in section 3.7.2.

Mode	Channel	Frequency	Test Mode
1.	11	2405MHz	Transmit
2.	20	2450MHz	
3.	26	2480MHz	

*There is no emission be found at 2680-25000MHz frequency.

For Restricted Bands:

The EUT was measured during this section testing and all the test results are listed in section 3.7.3. (The restricted bands defined in part 15.205(a))

Mode	Channel	Frequency	Test Mode	Reference Test Data	
				Horizontal	Vertical
1.	11	2405MHz	Transmit	# 2	# 1
3.	26	2480MHz		# 3	# 4

For Fundamental Frequency:

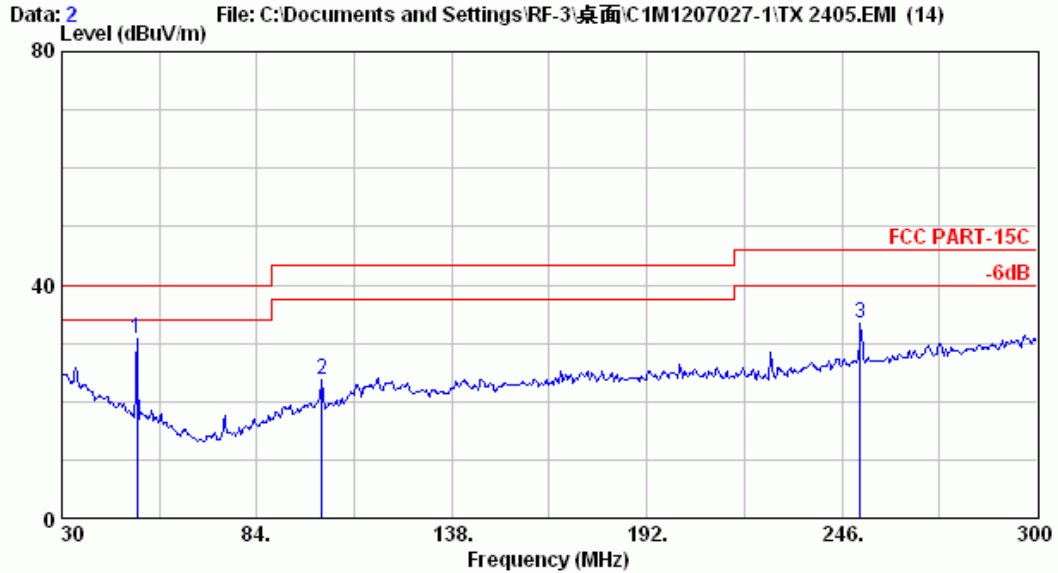
The EUT was measured during this section testing and all the test results are listed in section 3.7.4.

Mode	Channel	Frequency	Test Mode	Reference Test Data
1.	11	2405MHz	Transmit	# 1
2.	20	2450MHz		# 1
3.	26	2480MHz		# 1

3.7.1. Frequency Range 30MHz-1000MHz Measurement Result



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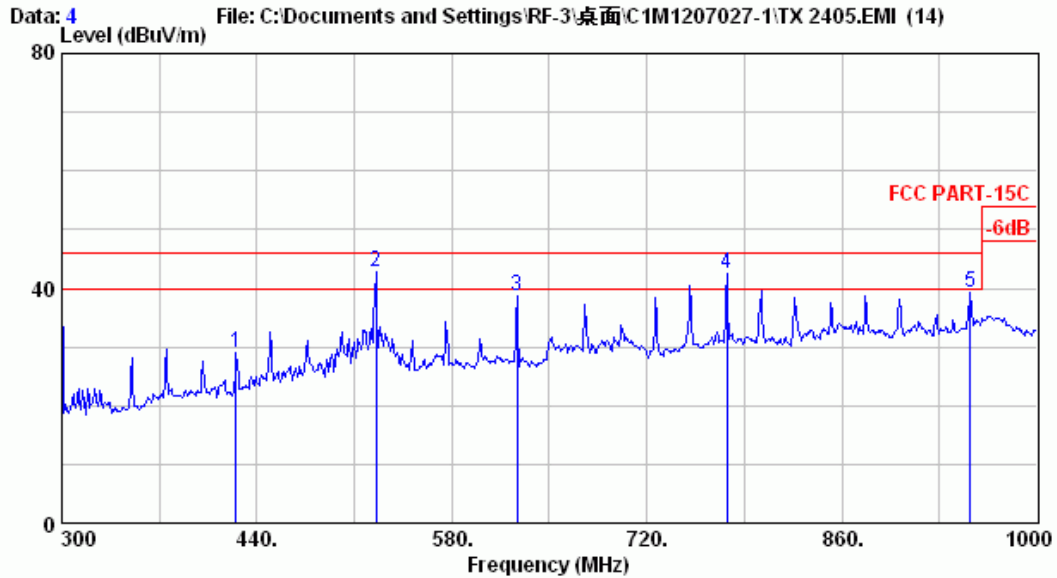
Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2405

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	50.790	16.28	1.50	12.99	30.77	40.00	9.23	Peak
2	102.090	17.29	2.10	4.25	23.64	43.50	19.86	Peak
3	251.130	23.90	3.50	6.11	33.51	46.00	12.49	Peak

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



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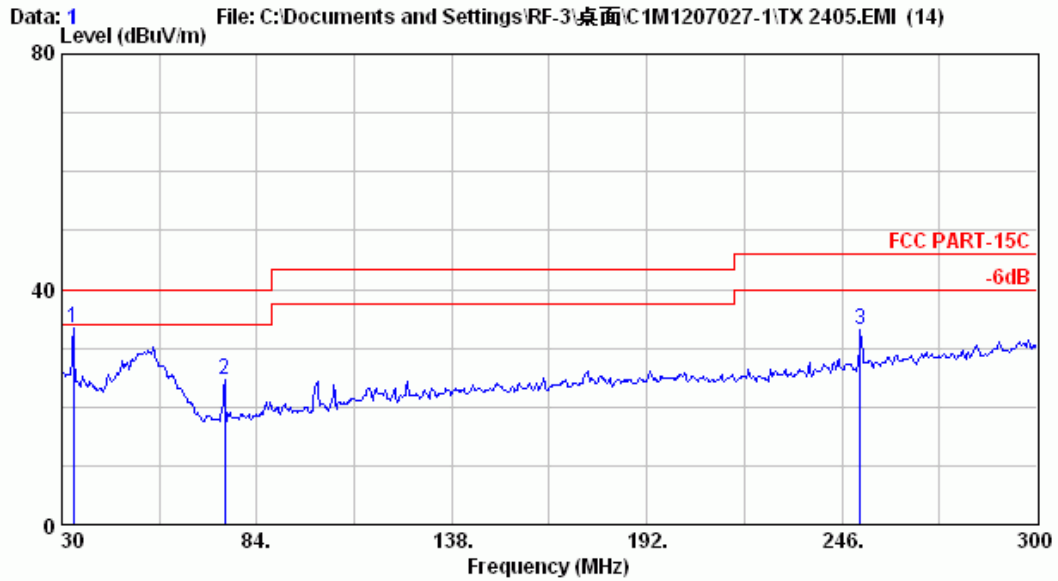
Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2405

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	425.300	17.19	5.10	6.66	28.95	46.00	17.05	Peak
2	525.400	19.66	6.90	16.17	42.73	46.00	3.27	Peak
3	626.900	21.20	6.30	11.23	38.74	46.00	7.26	Peak
4	777.400	24.18	6.80	11.58	42.57	46.00	3.43	Peak
5	952.400	25.99	7.60	5.79	39.37	46.00	6.63	Peak

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



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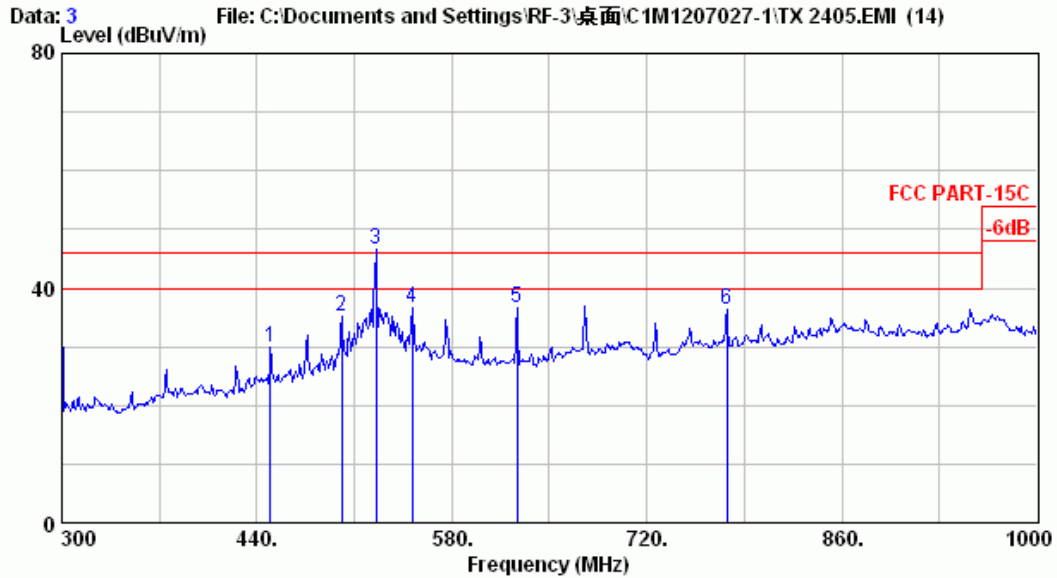
Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2405

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	33.240	23.42	1.10	8.97	33.49	40.00	6.51	Peak
2	75.090	12.72	1.80	10.07	24.59	40.00	15.41	Peak
3	251.130	23.90	3.50	5.59	32.99	46.00	13.01	Peak

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



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Site no. : A/C Chamber Data no. : 3
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2405

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	449.800	17.65	5.40	6.85	29.89	46.00	16.11	Peak
2	500.900	18.87	6.52	9.65	35.05	46.00	10.95	Peak
* 3	525.400	19.66	6.90	20.02	46.58	46.00	-0.58	Peak
4	551.300	19.13	6.80	10.75	36.69	46.00	9.31	Peak
5	626.900	21.20	6.30	9.17	36.68	46.00	9.32	Peak
6	777.400	24.18	6.80	5.33	36.32	46.00	9.68	Peak

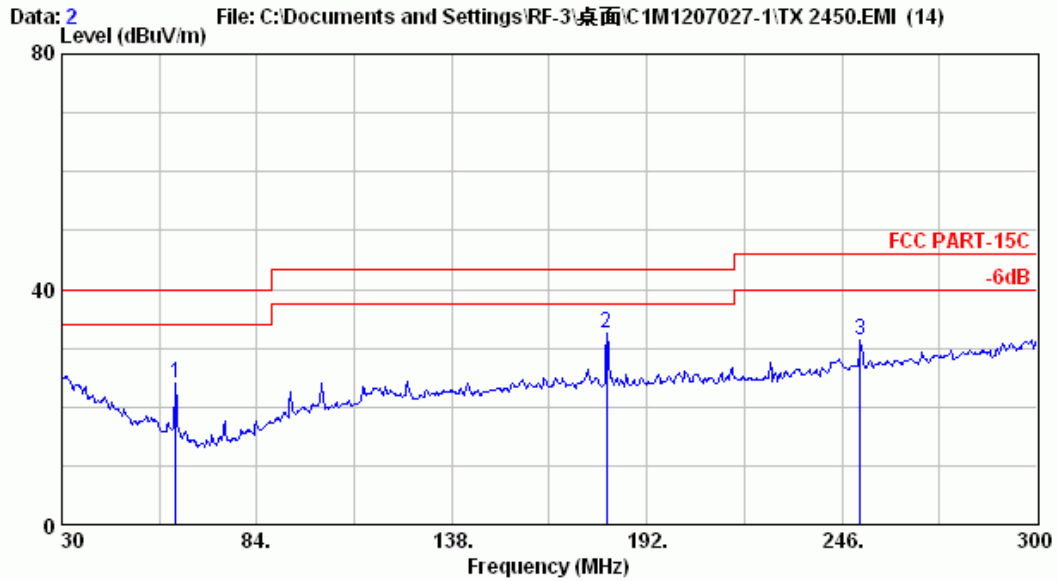
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Emission Frequency (MHz)	Peak Value (dB/m)	Limit (dBuV/m)	Margin (dB)
525.40	46.58	51.59	5.01

Remarks: 1. Limit = Peak Power – 50 = 101.59-50 = 51.59
 2. The emission level of this frequency is below the fundamental frequency level 50dB.



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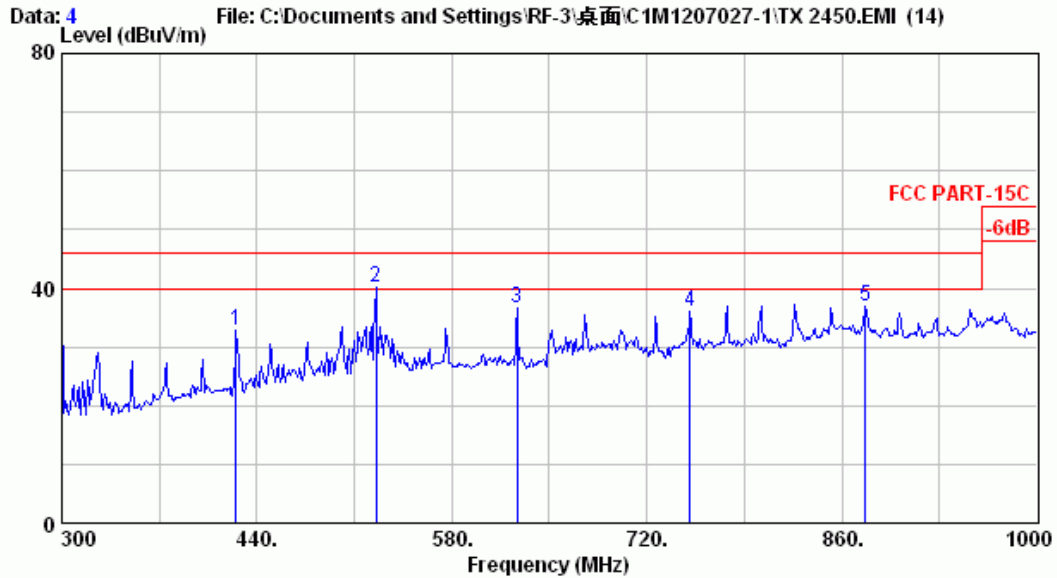
Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2450

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	61.590	12.28	1.60	10.10	23.98	40.00	16.02	Peak
2	180.930	21.32	2.90	8.38	32.60	43.50	10.90	Peak
3	251.130	23.90	3.50	4.07	31.47	46.00	14.53	Peak

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



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Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2450

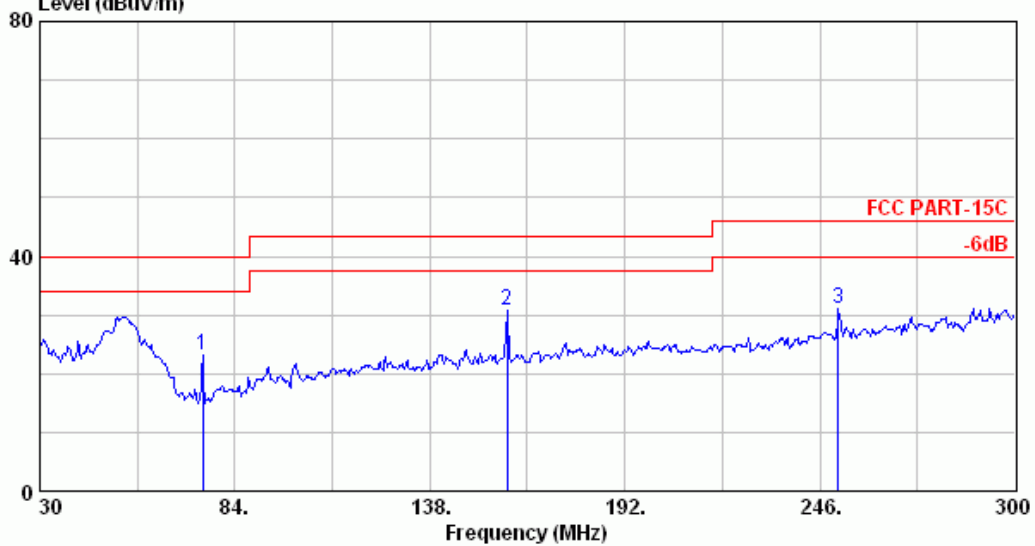
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	425.300	17.19	5.10	10.58	32.87	46.00	13.13	Peak
2	525.400	19.66	6.90	13.61	40.17	46.00	5.83	Peak
3	626.900	21.20	6.30	9.19	36.70	46.00	9.30	Peak
4	750.800	23.35	6.70	6.14	36.19	46.00	9.81	Peak
5	876.800	25.35	7.30	4.19	36.84	46.00	9.16	Peak

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



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Data: 1 File: C:\Documents and Settings\RF-3\桌面\C1M1207027-1\TX 2450.EMI (14)



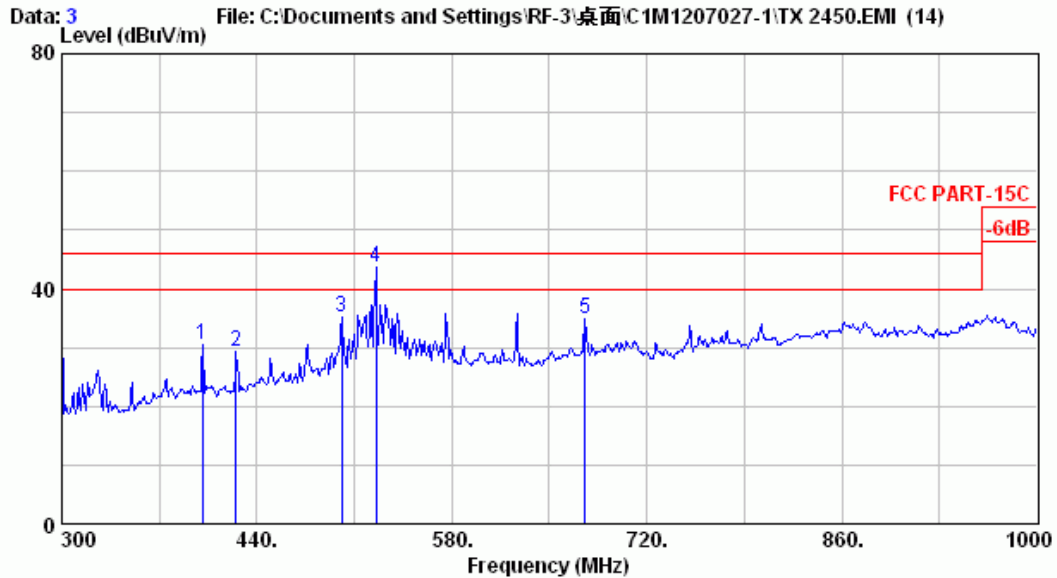
Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2450

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	75.090	12.72	1.80	8.63	23.15	40.00	16.85	Peak
2	159.330	20.78	2.70	7.40	30.88	43.50	12.62	Peak
3	251.130	23.90	3.50	3.59	30.99	46.00	15.01	Peak

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



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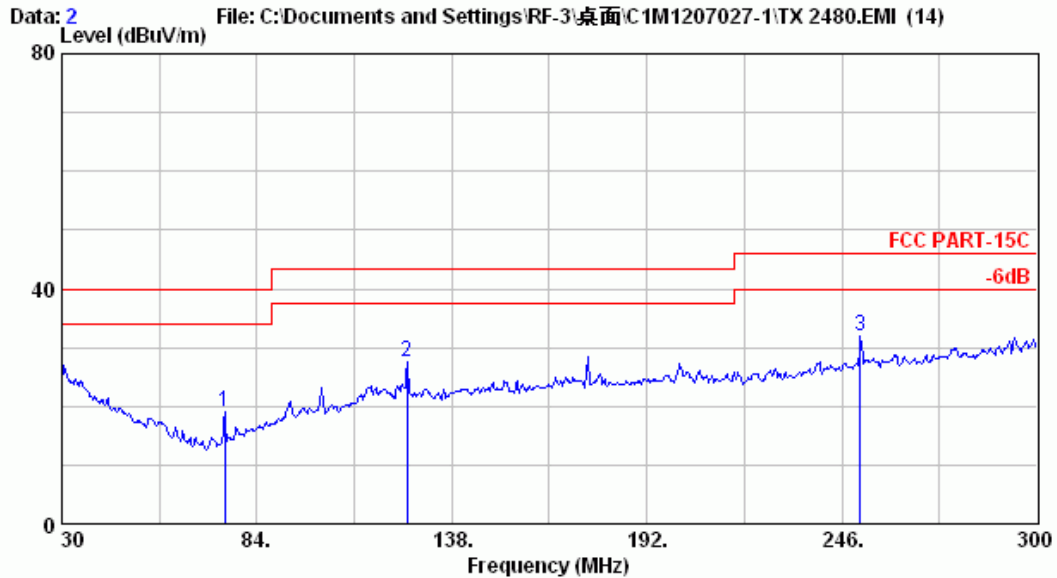
Site no. : A/C Chamber Data no. : 3
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2450

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	400.800	17.66	4.80	7.90	30.36	46.00	15.64	Peak
2	425.300	17.19	5.10	7.06	29.35	46.00	16.65	Peak
3	500.900	18.87	6.52	9.77	35.17	46.00	10.83	Peak
4	525.400	19.66	6.90	17.23	43.79	46.00	2.21	Peak
5	675.900	22.89	6.40	5.60	34.88	46.00	11.12	Peak

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



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Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2480

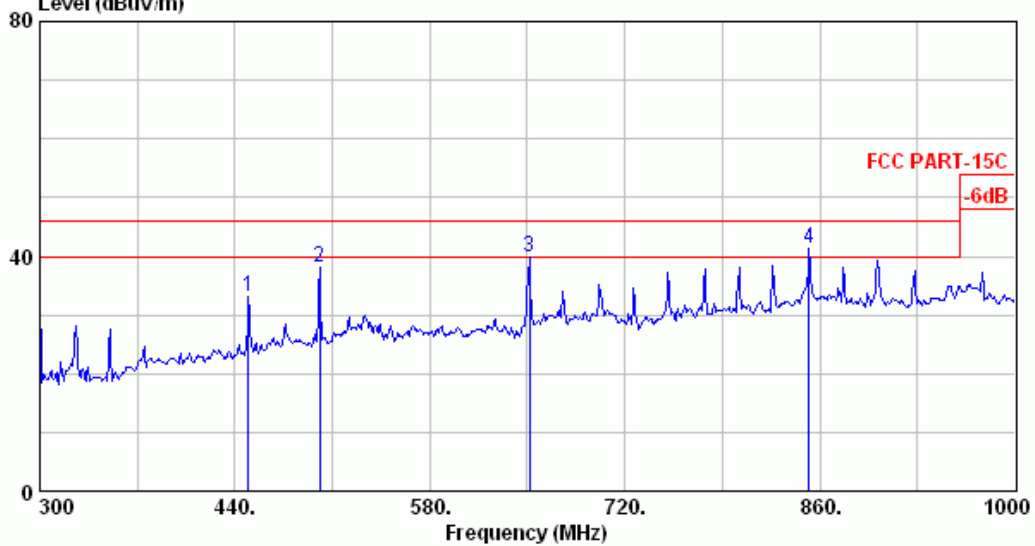
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	75.090	12.72	1.80	4.52	19.04	40.00	20.96	Peak
2	125.580	19.49	2.38	5.56	27.42	43.50	16.08	Peak
3	251.130	23.90	3.50	4.56	31.96	46.00	14.04	Peak

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



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Data: 4 File: C:\Documents and Settings\RF-3\桌面\C1M1207027-1\TX 2480.EMI (14)



Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2480

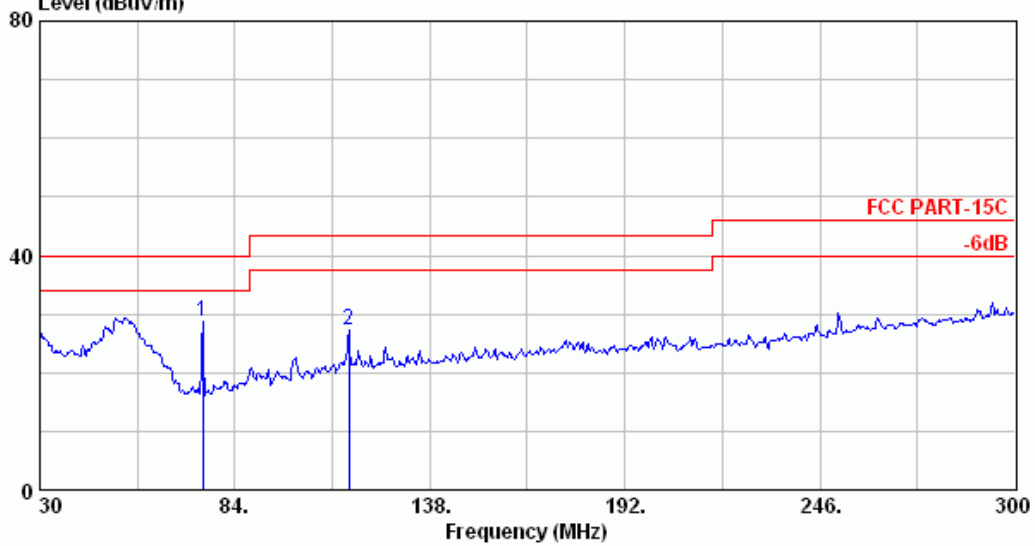
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	449.800	17.65	5.40	10.19	33.23	46.00	12.77	Peak
2	500.900	18.87	6.52	12.76	38.16	46.00	7.84	Peak
3	651.400	21.72	6.30	11.82	39.83	46.00	6.17	Peak
4	852.300	25.70	7.10	8.49	41.29	46.00	4.71	Peak

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



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Data: 1 File: C:\Documents and Settings\RF-3\桌面\C1M1207027-1\TX 2480.EMI (14)



Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% Qjianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2480

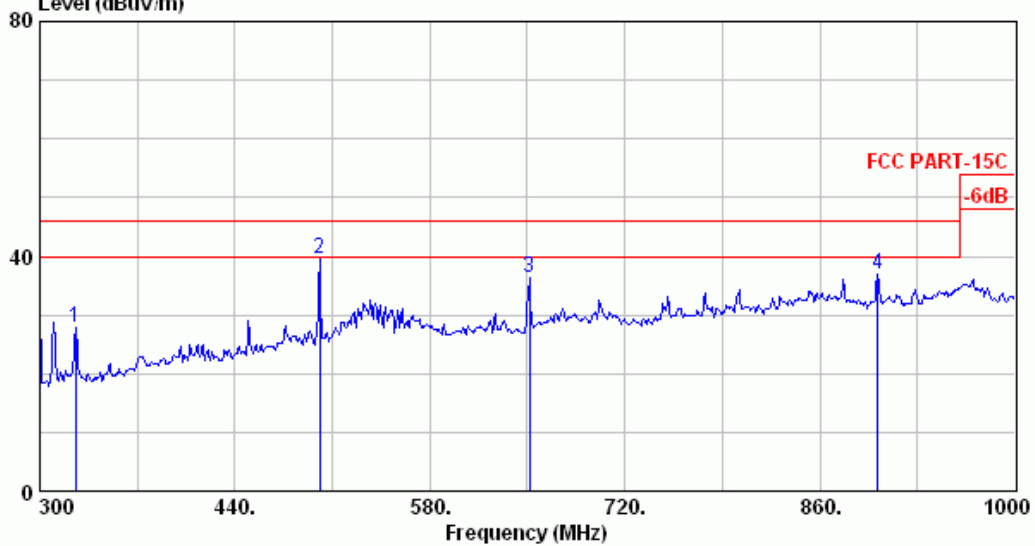
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	75.090	12.72	1.80	14.14	28.66	40.00	11.34	Peak
2	115.590	18.69	2.30	6.22	27.21	43.50	16.29	Peak

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



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Data: 3 File: C:\Documents and Settings\RF-3\桌面\C1M1207027-1\TX 2480.EMI (14)



Site no. : A/C Chamber Data no. : 3
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 25°C/61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : TX2480

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	325.900	15.15	4.20	8.49	27.84	46.00	18.16	Peak
2	500.900	18.87	6.52	14.09	39.49	46.00	6.51	Peak
3	651.400	21.72	6.30	8.19	36.20	46.00	9.80	Peak
4	901.300	24.95	7.40	4.49	36.84	46.00	9.16	Peak

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

3.7.2. Frequency Range Above 1GHz Measurement Results

Date of Test : Aug. 08, 2012 Temperature : 25
 EUT : ZigBee Tracking Smart Strip Humidity : 61%
 Test Mode : Frequency: 2405MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
1401.520	25.46	5.14	12.82	43.42	74.00	30.58
1426.720	25.51	5.22	13.09	43.82	74.00	30.18
1552.720	25.95	5.81	11.50	43.26	74.00	30.74

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. All final readings of measurement were with Peak values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1401.520	43.42	-26.42	17.00	54.00	37.00
1426.720	43.82	-26.42	17.40	54.00	36.60
1552.720	43.26	-26.42	16.84	54.00	37.16

Remarks: 1. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 "T" means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 2. Average value=Peak value+ Duty Cycle Factor
 3. All final readings of measurement were with Average values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Date of Test : Aug. 08, 2012 Temperature : 25

EUT : ZigBee Tracking Smart Strip Humidity : 61%

Test Mode : Frequency: 2405MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)	Limits (dBμV/m)	Margin (dB)
1376.320	25.36	5.07	13.19	43.62	74.00	30.38
1426.720	25.51	5.22	12.72	43.45	74.00	30.55
1650.160	26.27	6.49	11.70	44.46	74.00	29.54

- Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. All final readings of measurement were with Peak values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1376.320	43.62	-26.42	17.20	54.00	36.80
1426.720	43.45	-26.42	17.03	54.00	36.97
1650.160	44.46	-26.42	18.04	54.00	35.96

- Remarks: 1. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 "T" means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 2. Average value=Peak value+ Duty Cycle Factor
 3. All final readings of measurement were with Average values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Date of Test : Aug. 08, 2012 Temperature : 25

EUT : ZigBee Tracking Smart Strip Humidity : 61%

Test Mode : Frequency: 2450MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
1401.520	25.46	5.14	14.39	44.99	74.00	29.01
1451.920	25.60	5.28	12.97	43.86	74.00	30.14
1552.720	25.95	5.81	11.66	43.42	74.00	30.58
1725.760	26.59	7.00	12.08	45.67	74.00	28.33

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. All final readings of measurement were with Peak values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1401.520	44.99	-26.42	18.57	54.00	35.43
1451.920	43.86	-26.42	17.44	54.00	36.56
1552.720	43.42	-26.42	17.00	54.00	37.00
1725.760	45.67	-26.42	19.25	54.00	34.75

Remarks: 1. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 "T" means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 2. Average value=Peak value+ Duty Cycle Factor
 3. All final readings of measurement were with Average values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Date of Test : Aug. 08, 2012 Temperature : 25

EUT : ZigBee Tracking Smart Strip Humidity : 61%

Test Mode : Frequency: 2450MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)	Limits (dBμV/m)	Margin (dB)
1401.520	25.46	5.14	12.70	43.30	74.00	30.70
1451.920	25.60	5.28	11.40	42.29	74.00	31.71

- Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. All final readings of measurement were with Peak values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1401.520	43.30	-26.42	16.88	54.00	37.12
1451.920	42.29	-26.42	15.87	54.00	38.13

- Remarks: 1. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 "T" means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 2. Average value=Peak value+ Duty Cycle Factor
 3. All final readings of measurement were with Average values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Date of Test : Aug. 08, 2012 Temperature : 25

EUT : ZigBee Tracking Smart Strip Humidity : 61%

Test Mode : Frequency: 2480MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
1351.120	25.31	4.98	12.12	42.41	74.00	31.59
1401.520	25.46	5.14	13.05	43.65	74.00	30.35
1451.920	25.60	5.28	13.41	44.30	74.00	29.70
1552.720	25.95	5.81	10.67	42.43	74.00	31.57

- Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. All final readings of measurement were with Peak values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1351.120	42.41	-26.42	15.99	54.00	38.01
1401.520	43.65	-26.42	17.23	54.00	36.77
1451.920	44.30	-26.42	17.88	54.00	36.12
1552.720	42.43	-26.42	11.70	54.00	42.30

- Remarks: 1. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 "T" means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 2. Average value=Peak value+ Duty Cycle Factor
 3. All final readings of measurement were with Average values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Date of Test : Aug. 08, 2012 Temperature : 25

EUT : ZigBee Tracking Smart Strip Humidity : 61%

Test Mode : Frequency: 2480MHz

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)	Limits (dBμV/m)	Margin (dB)
1351.120	25.31	4.98	12.85	43.14	74.00	30.86
1401.520	25.46	5.14	14.39	44.99	74.00	29.01
1451.920	25.60	5.28	12.41	43.30	74.00	30.70

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. All final readings of measurement were with Peak values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1351.120	43.14	-26.42	16.72	54.00	37.28
1401.520	44.99	-26.42	18.57	54.00	35.43
1451.920	43.30	-26.42	16.88	54.00	37.12

Remarks: 1. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 "T" means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 2. Average value=Peak value+ Duty Cycle Factor
 3. All final readings of measurement were with Average values.
 4. The pre-amplifier factor has been subtracted by test program actively.

3.7.3. Restricted Bands Measurement Results

Date of Test : Aug. 31, 2012 Temperature : 25

EUT : ZigBee Tracking Smart Strip Humidity : 61%

Test Mode : Frequency: 2405MHz

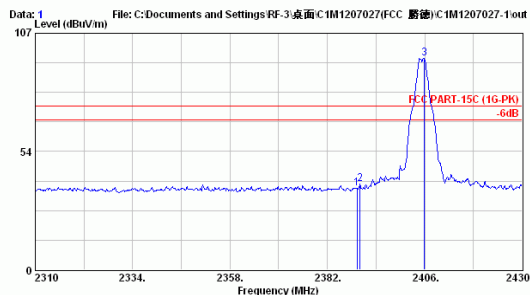
	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Peak *	2386.680	28.47	6.33	2.68	37.48	74.00	36.52

	Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Average *	2386.68	37.48	-26.42	11.06	54.00	42.94

- Remark :
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2430MHz).
 3. ‘*’ The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.
 4. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 ‘T’ means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 5. The pre-amplifier factor has been subtracted by test program actively.



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Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m 3115 (4927) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PH)
 Env. / Ins. : E4446A 25°C/61% Qjianlun_hung
 BUT : M9PG040000
 Power Rating : AC120 / 60Hz
 Test Mode : TX2405

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2389.320	28.47	6.34	1.95	36.76	74.00	37.24	Peak
2	2390.040	28.47	6.34	4.02	38.84	74.00	35.16	Peak
3	2405.880	28.51	6.36	60.83	95.70	74.00	-21.70	Peak

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

Date of Test : Aug. 31, 2012 Temperature : 25

EUT : ZigBee Tracking Smart Strip Humidity : 61%

Test Mode : Frequency: 2405MHz

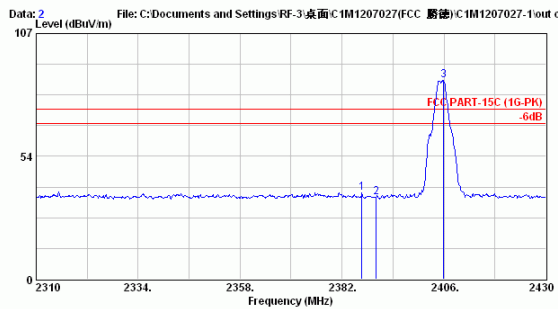
	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Peak *	2390.040	28.47	6.34	4.02	38.84	74.00	35.16

	Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Average *	2390.040	38.84	-26.42	12.42	54.00	41.58

- Remark :
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2430MHz).
 3. ‘*’ The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.
 4. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 ‘T’ means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 5. The pre-amplifier factor has been subtracted by test program actively.



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Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 25°C/61% Djianlun_hung
 EUT : M9P040000
 Power Rating : AC120 / 60Hz
 Test Mode : TX2405

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2386.680	28.47	6.33	2.68	37.48	74.00	36.52	Peak
2	2390.040	28.47	6.34	1.04	35.86	74.00	38.14	Peak
3	2405.880	28.51	6.36	51.70	86.57	74.00	-12.57	Peak X

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

Date of Test : Aug. 31, 2012 Temperature : 25

EUT : ZigBee Tracking Smart Strip Humidity : 61%

Test Mode : Frequency: 2480MHz

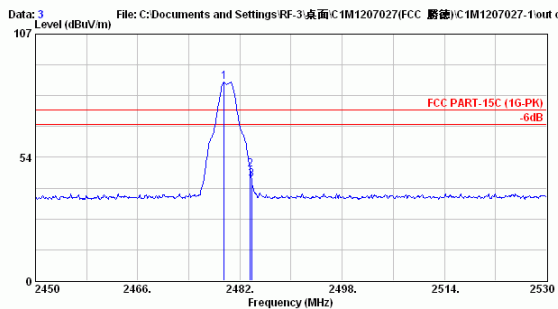
	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Peak *	2483.600	28.66	6.45	12.96	48.07	74.00	25.93

	Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Average *	2483.60	48.07	-26.42	21.65	54.00	32.35

- Remark :
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2450-2530MHz).
 3. ‘*’ The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.
 4. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 ‘T’ means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 5. The pre-amplifier factor has been subtracted by test program actively.



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	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2479.520	28.66	6.44	51.00	86.10	74.00	-12.10	Peak X
2	2483.600	28.66	6.45	12.96	48.07	74.00	25.93	Peak
3	2483.840	28.66	6.45	8.60	43.72	74.00	30.28	Peak

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

Date of Test : Aug. 31, 2012 Temperature : 25

EUT : ZigBee Tracking Smart Strip Humidity : 61%

Test Mode : Frequency: 2480MHz

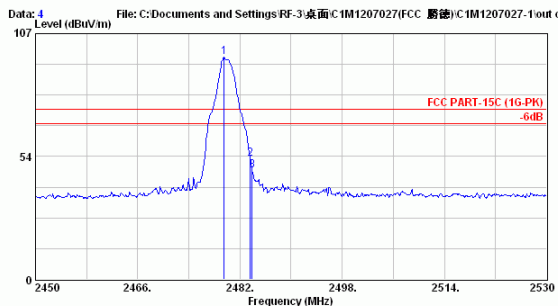
	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Horizontal (dBμV)	Emission Level Horizontal (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Peak *	2483.600	28.66	6.45	17.30	52.41	74.00	21.59

	Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Average *	2483.60	52.41	-26.42	25.99	54.00	28.01

- Remark :
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2450-2530MHz).
 3. ‘*’ The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.
 4. Duty Cycle Correction Factor = $20\log(\text{cumulative on/T}) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 ‘T’ means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 5. The pre-amplifier factor has been subtracted by test program actively.



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Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 25°C/61% Djianlun_hung
 EUT : M9PG040000
 Power Rating : AC120 / 60Hz
 Test Mode : TX2480

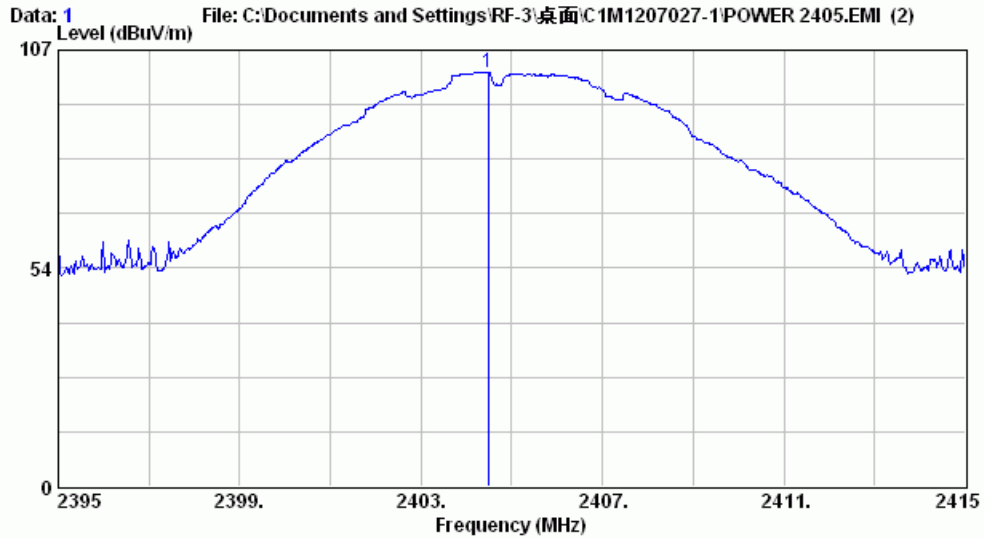
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2479.520	28.66	6.44	61.58	96.68	74.00	-22.68	Peak
2	2483.600	28.66	6.45	17.30	52.41	74.00	21.59	Peak
3	2483.920	28.66	6.45	12.35	47.47	74.00	26.53	Peak

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

3.7.4. Fundamental Frequency



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Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
 Limit :
 Env. / Ins. : E4446A 25°C / 61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : POWER 2405

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)
2404.480	28.51	6.36	66.72	101.59

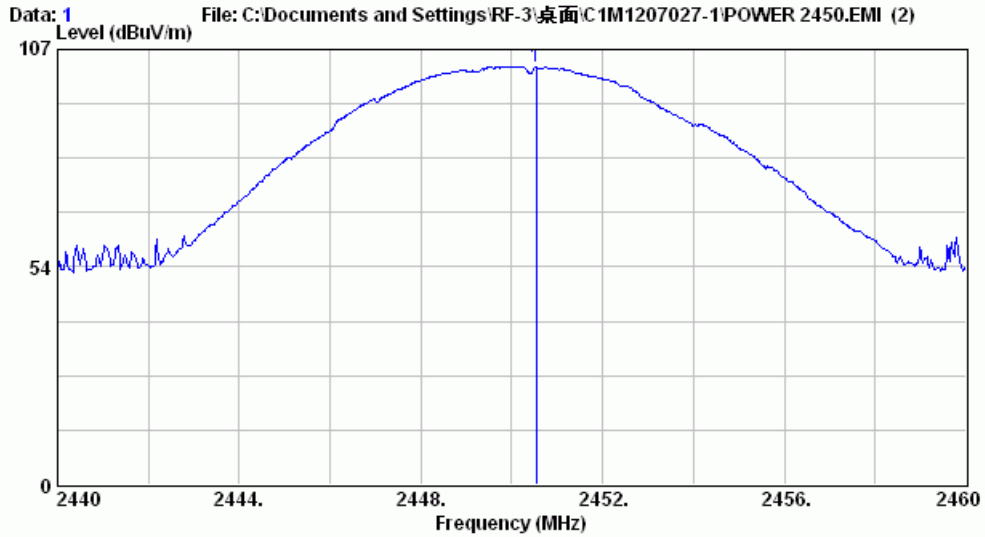
- Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. All final readings of measurement were with Peak values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2404.48	101.59	-26.42	75.17	93.97	18.80

- Remarks: 1. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 "T" means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 2. Average value=Peak value+ Duty Cycle Factor
 3. All final readings of measurement were with Average values.
 4. The pre-amplifier factor has been subtracted by test program actively.
 5. Vertical is the worst polarization, thus we don't list horizontal result.



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 Email:ttmc@ttmc.com.tw



Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m 3115 (4927) Ant. pol. : VERTICAL
 Limit :
 Env. / Ins. : E4446A 25°C / 61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : POWER 2450

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)
2450.540	28.59	6.41	67.82	102.81

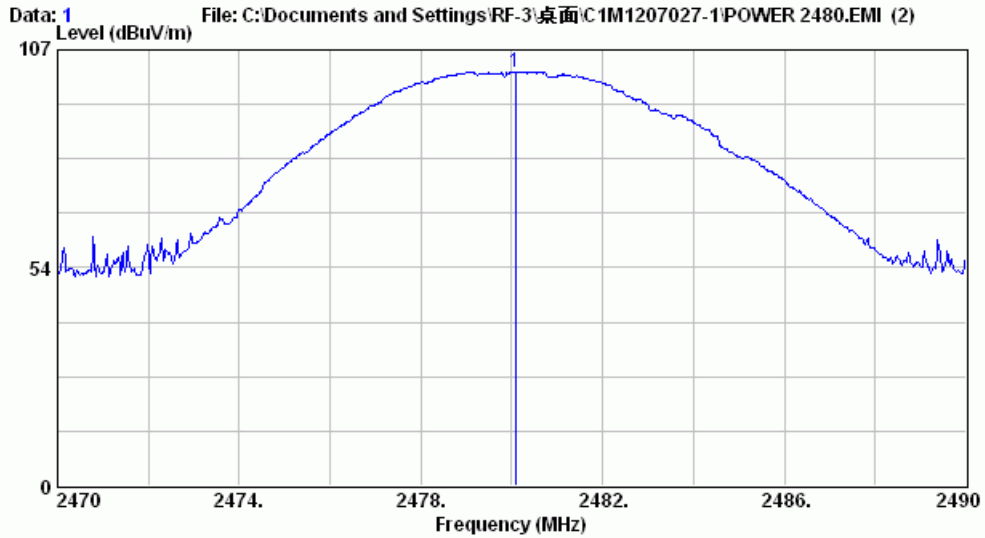
- Remarks:
1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. All final readings of measurement were with Peak values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2450.54	102.81	-26.42	76.39	93.97	17.58

- Remarks:
1. Duty Cycle Correction Factor = $20\log(\text{cumulative on/T}) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 "T" means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 2. Average value=Peak value+ Duty Cycle Factor
 3. All final readings of measurement were with Average values.
 4. The pre-amplifier factor has been subtracted by test program actively.
 5. Vertical is the worst polarization, thus we don't list horizontal result.



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Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m 3115 (4927) Ant. pol. : VERTICAL
 Limit :
 Env. / Ins. : E4446A 25°C / 61% □jianlun_hung
 EUT : M9PG040000
 Power Rating : AC120V / 60Hz
 Test Mode : POWER 2480

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading Vertical (dBμV)	Emission Level Vertical (dBμV/m)
2480.080	28.66	6.44	66.53	101.64

- Remarks:
1. Emission level=Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.
 3. All final readings of measurement were with Peak values.
 4. The pre-amplifier factor has been subtracted by test program actively.

Emission Frequency (MHz)	Peak Value (dB/m)	Duty Cycle Correction Factor (dB)	Average Value Vertical (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2480.08	101.64	-26.42	75.22	93.97	18.75

- Remarks:
1. Duty Cycle Correction Factor = $20\log(\text{cumulative on}/T) = 20\log(1.000\text{ms}/20.93\text{ms}) = -26.42$
 "T" means the period of the pulse train or 100ms if the pulse train length is greater than 100ms
 2. Average value=Peak value+ Duty Cycle Factor
 3. All final readings of measurement were with Average values.
 4. The pre-amplifier factor has been subtracted by test program actively.
 5. Vertical is the worst polarization, thus we don't list horizontal result.

4. DUTY CYCLE FACTOR

4.1. Test Equipment

The following test equipment was used during the duty cycle factor measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9010A-507	MY49061167	Oct. 20, 11'	Oct. 19, 12'

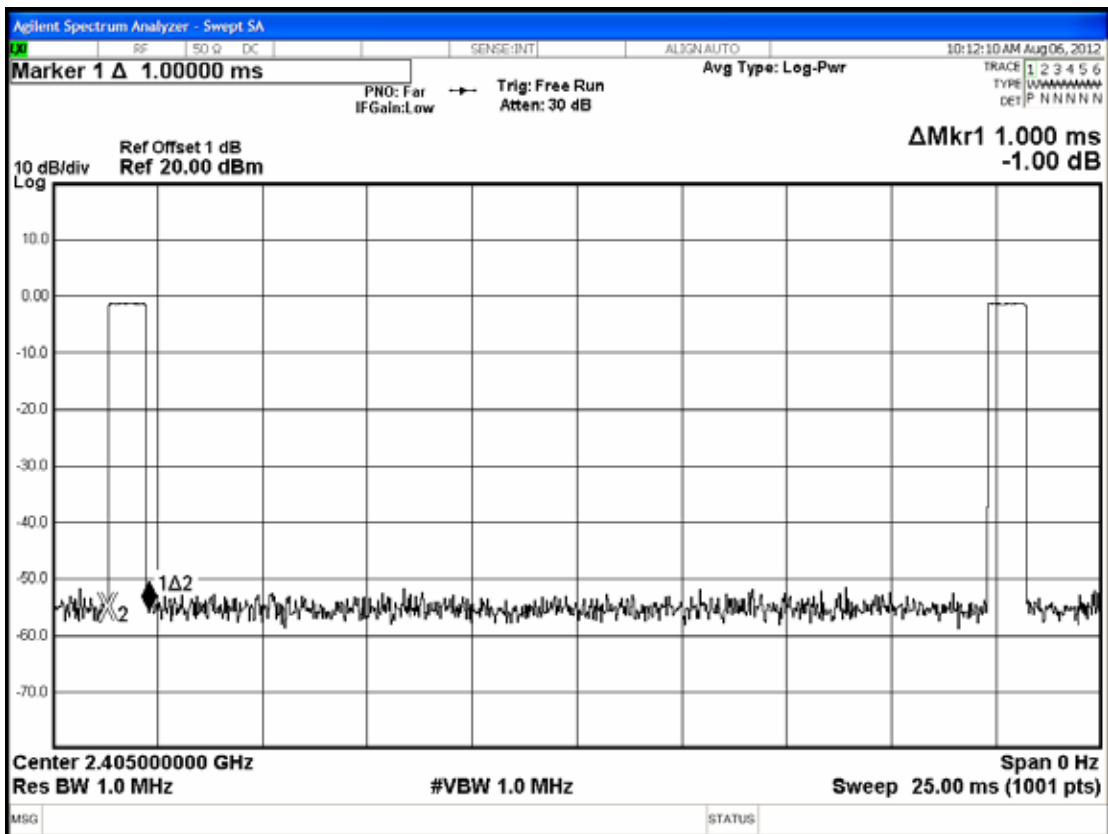
4.2. Block Diagram of Test Setup

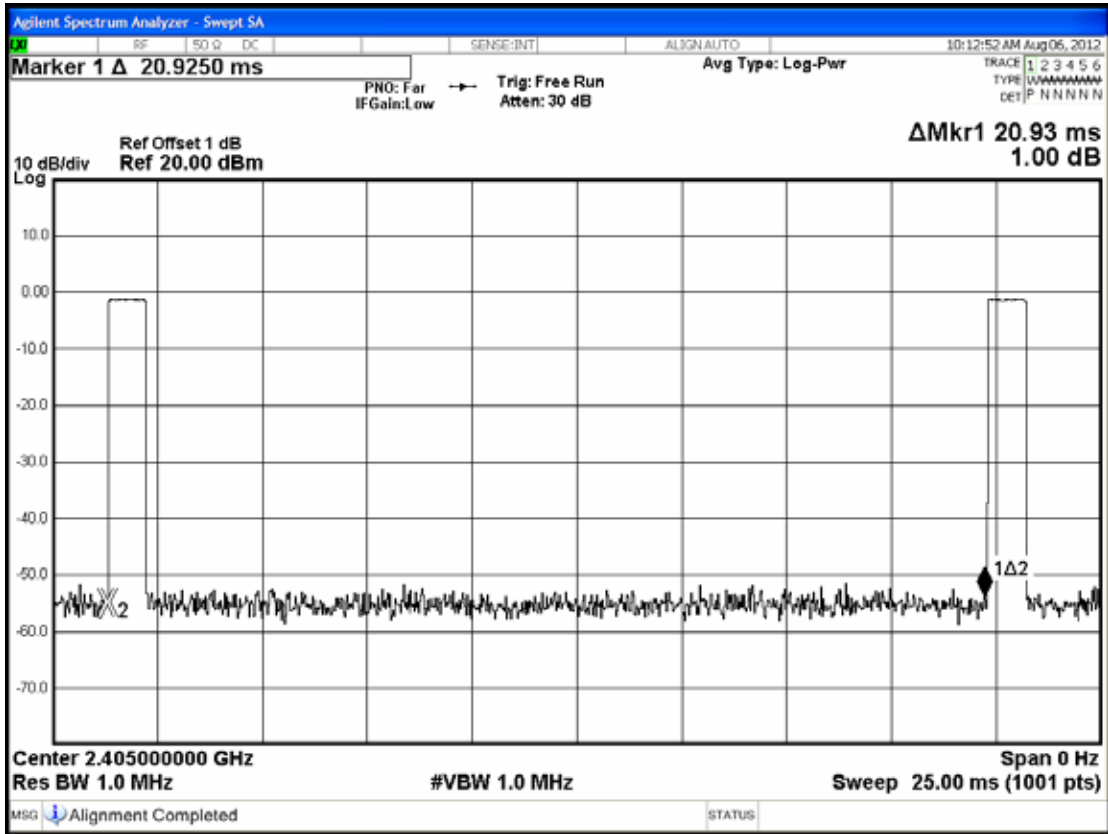


4.3. Test Results

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

Test Date: Aug. 06, 2012 Temperature : 26 Humidity : 60 %





$$T_{on} = 1.000\text{ms}$$

$$T_{(on + off)} = 20.93\text{ms}$$

5. DEVIATION TO TEST SPECIFICATIONS

【NONE】