

APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
Modern Marketing Concepts, Inc.

PATRIARCH

Model No.: CR7007X-XX("X" can be replaced by letter from "A" to "Z" or blank)

FCC ID: AUSCR7007D

Prepared for : Modern Marketing Concepts, Inc.
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Report No. : ATE20172124
Date of Test : November 15, 2017
Date of Report : November 15, 2017

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Test Report Certification

Applicant : Modern Marketing Concepts, Inc.
 Manufacturer : TIMSEN INTERNATIONAL LIMITED
 EUT Description : PATRIARCH
 Model No. : CR7007X-XX("X" can be replaced by letter from "A" to "Z" or blank)
 Trade Mark : CROSLEY

Measurement Procedure Used:

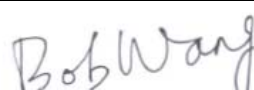
FCC Rules and Regulations Part 15 Subpart C Section 15.247: 2017 ANSI C63.10: 2013

The EUT was tested according to DTS test procedure of Apr 05, 2017 KDB558074 D01 DTS Meas Guidance v04 for compliance to FCC 47CFR 15.247 requirements

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : November 15, 2017
 Date of Report: November 15, 2017

Prepared by : 
 (Bob Wang, Engineer)

Approved & Authorized Signer : 
 (Sean Liu, Manager)



1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	PATRIARCH
Model Number	:	CR7007X-XX("X" can be replaced by letter from "A" to "Z" or blank)
		(Note: We hereby state that these models are identical in interior structure, electrical circuits and components, and just model names are different for the marketing requirement. The EMC test model is CR7007D-MA.)
Trade Mark	:	CROSLEY
Bluetooth version	:	BT V4.1
Frequency Range	:	2402MHz-2480MHz
Number of Channels	:	40
Antenna Gain	:	1dBi
Antenna type	:	Integral Antenna
Power Supply	:	AC 120V; 60Hz
Modulation mode	:	GFSK
Applicant	:	Modern Marketing Concepts, Inc.
Address	:	1220 E Oak, St. Louisville, Kentucky, 40204, United States
Manufacturer	:	TIMSEN INTERNATIONAL LIMITED
Address	:	5F, 447 Tianhe Bei Road, Guangzhou, China
Date of sample received	:	November 10, 2017
Date of Test	:	November 15, 2017
Sample No.	:	1701732

1.2.Carrier Frequency of Channels

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

1.3.Special Accessory and Auxiliary Equipment

N/A

1.4. Description of Test Facility

EMC Lab	:	Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358
		Listed by Innovation, Science and Economic Development Canada (ISED) The Registration Number is 5077A-2
		Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193
		Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	:	Shenzhen Accurate Technology Co., Ltd.
Site Location	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

1.5. Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 7, 2017	1 Year
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 7, 2017	1 Year
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 7, 2017	1 Year
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 7, 2017	1 Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 13, 2017	1 Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 13, 2017	1 Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 13, 2017	1 Year
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 13, 2017	1 Year
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 7, 2017	1 Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 7, 2017	1 Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 7, 2017	1 Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 7, 2017	1 Year

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

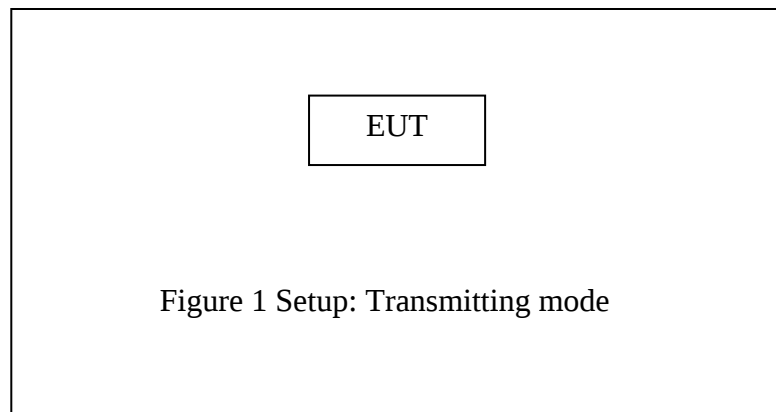
The mode is used: **BLE Transmitting mode**

Low Channel: 2402MHz

Middle Channel: 2440MHz

High Channel: 2480MHz

3.2.Configuration and peripherals



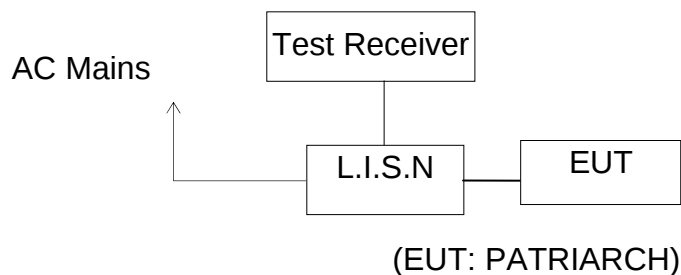
4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.247(a)(2)	6dB Bandwidth Test	Compliant
Section 15.247(e)	Power Spectral Density Test	Compliant
Section 15.247(b)(3)	Maximum Peak Output Power Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.247(d) Section 15.209	Radiated Spurious Emission Test	Compliant
Section 15.207	AC Power Line Conducted Emission Test	Compliant
Section 15.203	Antenna Requirement	Compliant

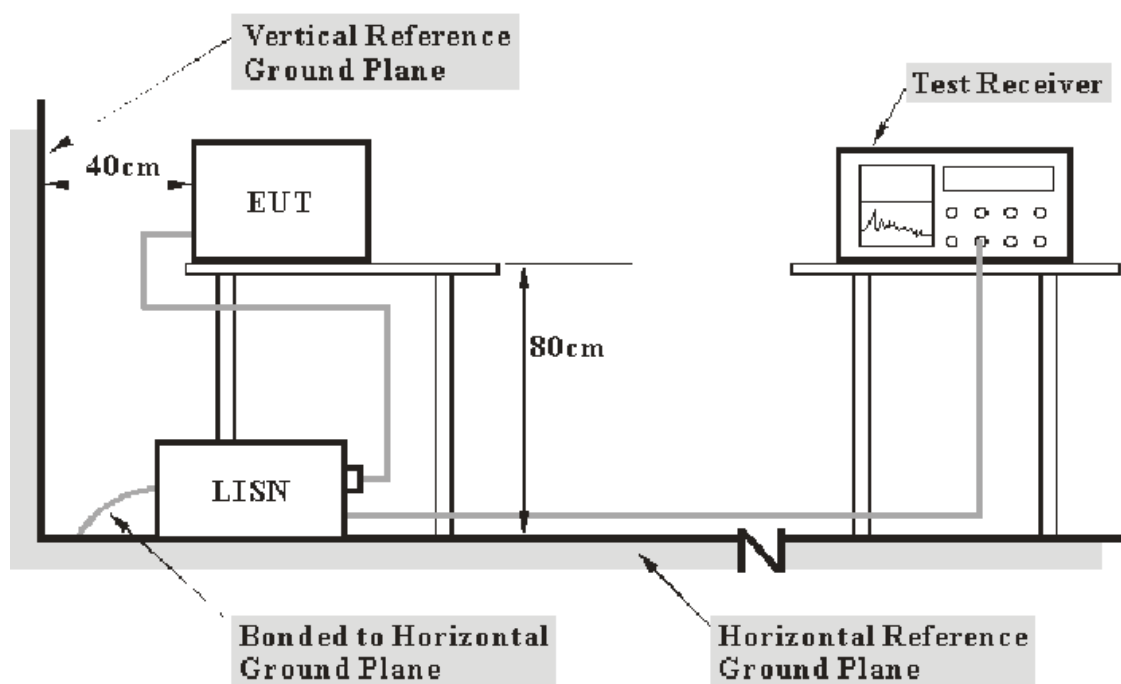
5. POWER LINE CONDUCTED MEASUREMENT

5.1. Block Diagram of Test

5.1.1. Block diagram of connection between the EUT and simulators



5.1.2. Test System Setup



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

5.2.Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μ V)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0
NOTE1: The lower limit shall apply at the transition frequencies.		
NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

5.3.Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in test mode and measure it.

5.5.Test Procedure

The EUT is put on the plane 0.8 m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

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

5.6.Data Sample

Frequency (MHz)	Transducer value (dB)	QuasiPeak Level (dB μ V)	Average Level (dB μ V)	QuasiPeak Limit (dB μ V)	Average Limit (dB μ V)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
0.150000	10.8	41.40	36.10	66.0	56.0	24.6	19.9	Pass

Frequency(MHz) = Emission frequency in MHz

Transducer value(dB) = Insertion loss of LISN + Cable Loss

Level(dB μ V) = Quasi-peak Reading/Average Reading + Transducer value

Limit (dB μ V) = Limit stated in standard

Margin = Limit (dB μ V) - Level (dB μ V)

Calculation Formula:

Margin = Limit (dB μ V) - Level (dB μ V)

5.7. Power Line Conducted Emission Measurement Results

PASS.

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

Test mode : BT communicating AC 120V/60Hz)								
EUT mode : CR7007D-MA								
MEASUREMENT RESULT: "2116-4_fin"								
2017-11-15 11:03								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	41.40	10.8	66	24.6	QP	L1	GND	
0.440000	31.40	11.0	57	25.7	QP	L1	GND	
1.258000	32.70	11.2	56	23.3	QP	L1	GND	
2.135000	28.50	11.3	56	27.5	QP	L1	GND	
5.440000	24.60	11.5	60	35.4	QP	L1	GND	
19.450000	26.00	11.7	60	34.0	QP	L1	GND	
MEASUREMENT RESULT: "2116-4_fin2"								
2017-11-15 11:03								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	36.10	10.8	56	19.9	AV	L1	GND	
0.776000	31.40	11.1	46	14.6	AV	L1	GND	
1.146000	26.80	11.2	46	19.2	AV	L1	GND	
2.145000	22.80	11.3	46	23.2	AV	L1	GND	
5.155000	17.00	11.4	50	33.0	AV	L1	GND	
19.220000	14.60	11.7	50	35.4	AV	L1	GND	
MEASUREMENT RESULT: "2116-3_fin"								
2017-11-15 11:01								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	41.90	10.8	66	24.1	QP	N	GND	
0.874000	41.20	11.1	56	14.8	QP	N	GND	
1.090000	41.90	11.1	56	14.1	QP	N	GND	
2.230000	37.50	11.3	56	18.5	QP	N	GND	
5.755000	26.70	11.5	60	33.3	QP	N	GND	
18.060000	24.10	11.7	60	35.9	QP	N	GND	
MEASUREMENT RESULT: "2116-3_fin2"								
2017-11-15 11:01								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	36.20	10.8	56	19.8	AV	N	GND	
0.776000	31.50	11.1	46	14.5	AV	N	GND	
1.800000	25.50	11.2	46	20.5	AV	N	GND	
2.260000	22.90	11.3	46	23.1	AV	N	GND	
5.985000	20.10	11.5	50	29.9	AV	N	GND	
13.295000	14.40	11.6	50	35.6	AV	N	GND	

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

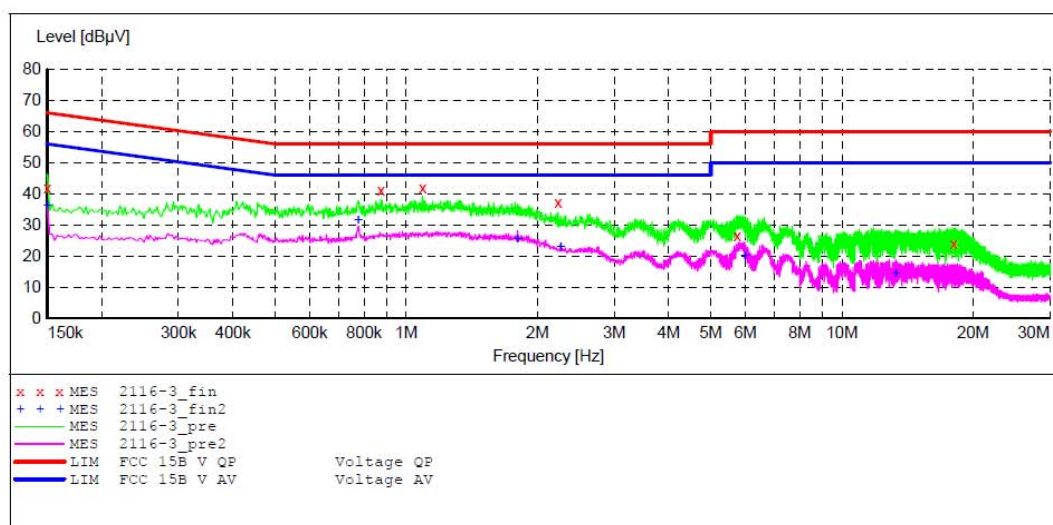
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART15 B

EUT: PATRIARCH M/N:CR7007D-MA
 Manufacturer: TIMSEN INTERNATIONAL LIMITED
 Operating Condition: BT communicating
 Test Site: 1#Shielding Room
 Operator: Frank
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20172124
 Start of Test: 2017-11-15 / 10:57:49

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "2116-3_fin"

2017-11-15 11:01

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	41.90	10.8	66	24.1	QP	N	GND
0.874000	41.20	11.1	56	14.8	QP	N	GND
1.090000	41.90	11.1	56	14.1	QP	N	GND
2.230000	37.50	11.3	56	18.5	QP	N	GND
5.755000	26.70	11.5	60	33.3	QP	N	GND
18.060000	24.10	11.7	60	35.9	QP	N	GND

MEASUREMENT RESULT: "2116-3_fin2"

2017-11-15 11:01

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	36.20	10.8	56	19.8	AV	N	GND
0.776000	31.50	11.1	46	14.5	AV	N	GND
1.800000	25.50	11.2	46	20.5	AV	N	GND
2.260000	22.90	11.3	46	23.1	AV	N	GND
5.985000	20.10	11.5	50	29.9	AV	N	GND
13.295000	14.40	11.6	50	35.6	AV	N	GND

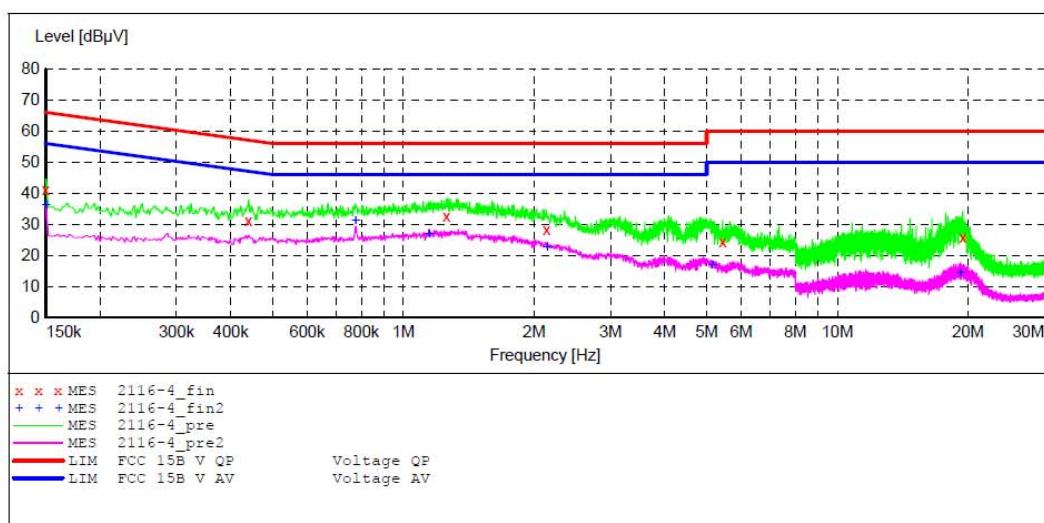
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART15 B

EUT: PATRIARCH M/N:CR7007D-MA
 Manufacturer: TIMSEN INTERNATIONAL LIMITED
 Operating Condition: BT communicating
 Test Site: 1#Shielding Room
 Operator: Frank
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20172124
 Start of Test: 2017-11-15 / 11:01:45

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "2116-4_fin"

2017-11-15 11:03

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	41.40	10.8	66	24.6	QP	L1	GND
0.440000	31.40	11.0	57	25.7	QP	L1	GND
1.258000	32.70	11.2	56	23.3	QP	L1	GND
2.135000	28.50	11.3	56	27.5	QP	L1	GND
5.440000	24.60	11.5	60	35.4	QP	L1	GND
19.450000	26.00	11.7	60	34.0	QP	L1	GND

MEASUREMENT RESULT: "2116-4_fin2"

2017-11-15 11:03

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	36.10	10.8	56	19.9	AV	L1	GND
0.776000	31.40	11.1	46	14.6	AV	L1	GND
1.146000	26.80	11.2	46	19.2	AV	L1	GND
2.145000	22.80	11.3	46	23.2	AV	L1	GND
5.155000	17.00	11.4	50	33.0	AV	L1	GND
19.220000	14.60	11.7	50	35.4	AV	L1	GND

6. 6DB BANDWIDTH MEASUREMENT

6.1. Block Diagram of Test Setup



(EUT: PATRIARCH)

6.2. The Requirement For Section 15.247(a)(2)

Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

6.3. EUT Configuration on Measurement

The equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480 MHz. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

6.5. Test Procedure

6.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

6.5.2. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

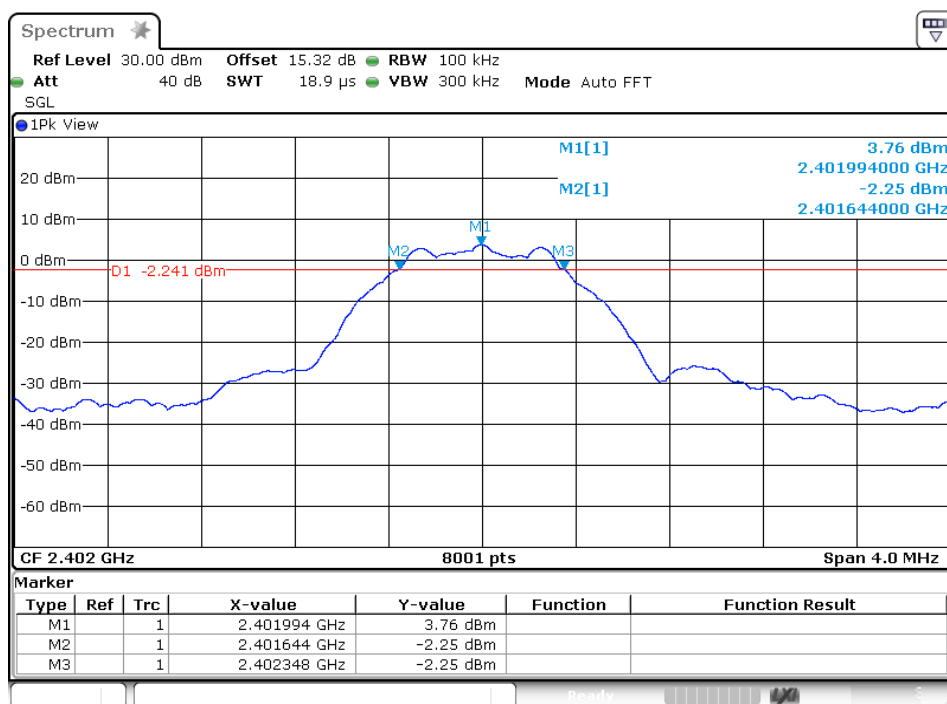
6.5.3. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

6.6.Test Result

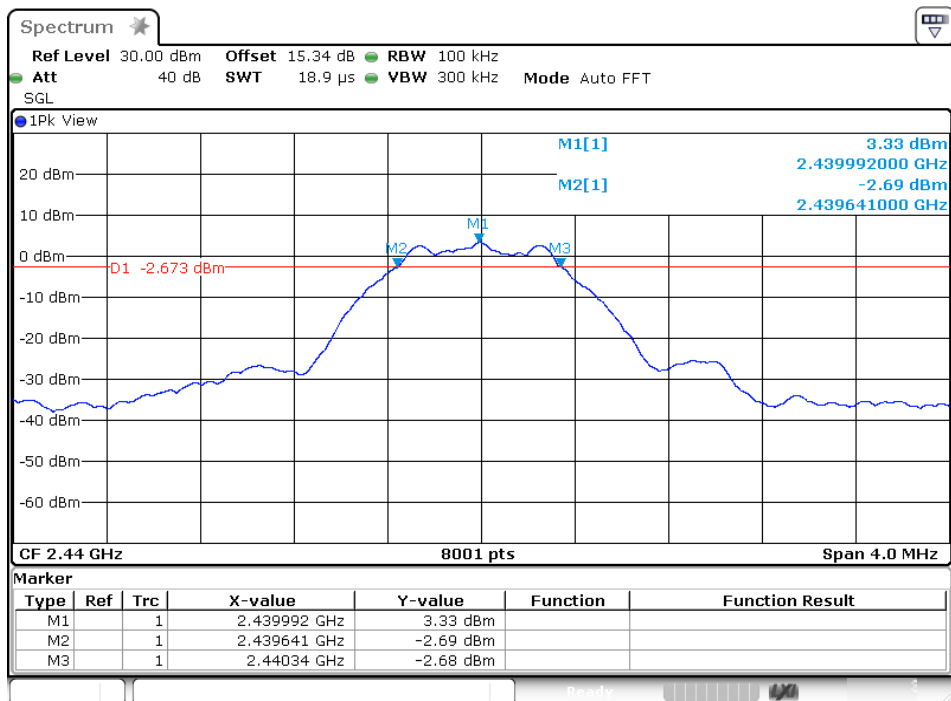
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit(MHz)	PASS/FAIL
0	2402	0.704	0.5	PASS
19	2440	0.699	0.5	PASS
39	2480	0.697	0.5	PASS

The spectrum analyzer plots are attached as below.

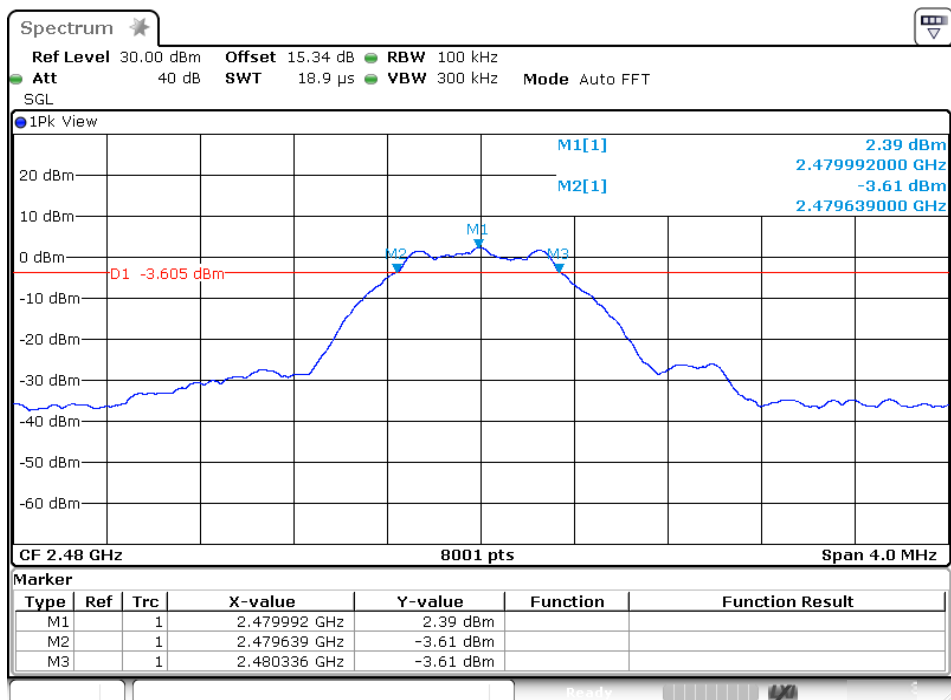
channel 0



channel 19



channel 39



7. MAXIMUM PEAK OUTPUT POWER

7.1. Block Diagram of Test Setup



(EUT: PATRIARCH)

7.2. The Requirement For Section 15.247(b)(3)

Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

7.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.4. Operating Condition of EUT

7.4.1. Setup the EUT and simulator as shown as Section 7.1.

7.4.2. Turn on the power of all equipment.

7.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480 MHz. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

7.5. Test Procedure

7.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2. Set RBW of spectrum analyzer to 3 MHz and VBW to 3 MHz.

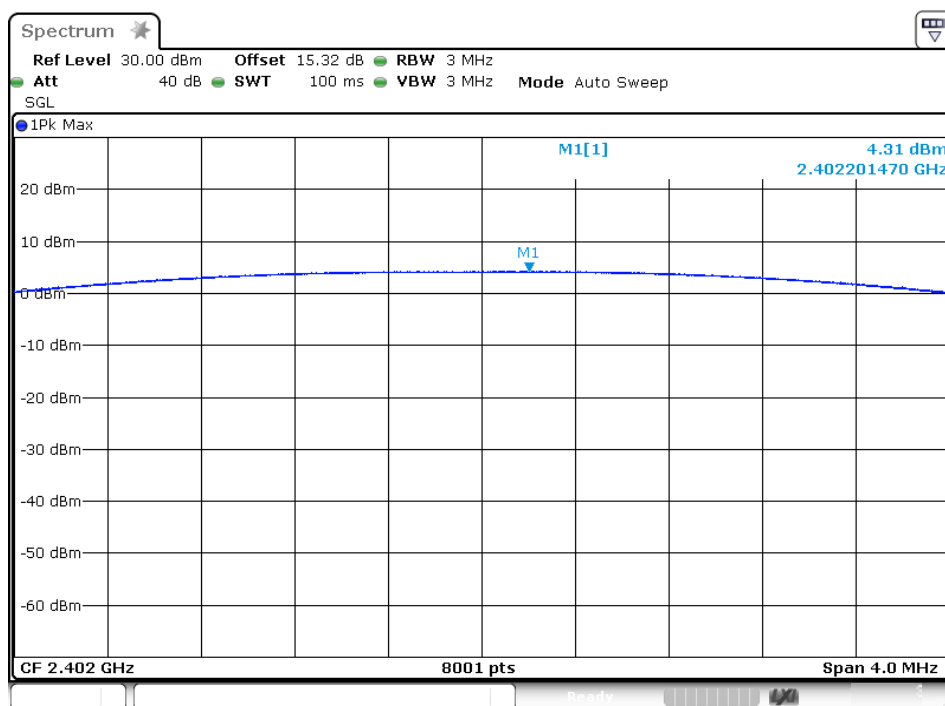
7.5.3. Measurement the maximum peak output power.

7.6.Test Result

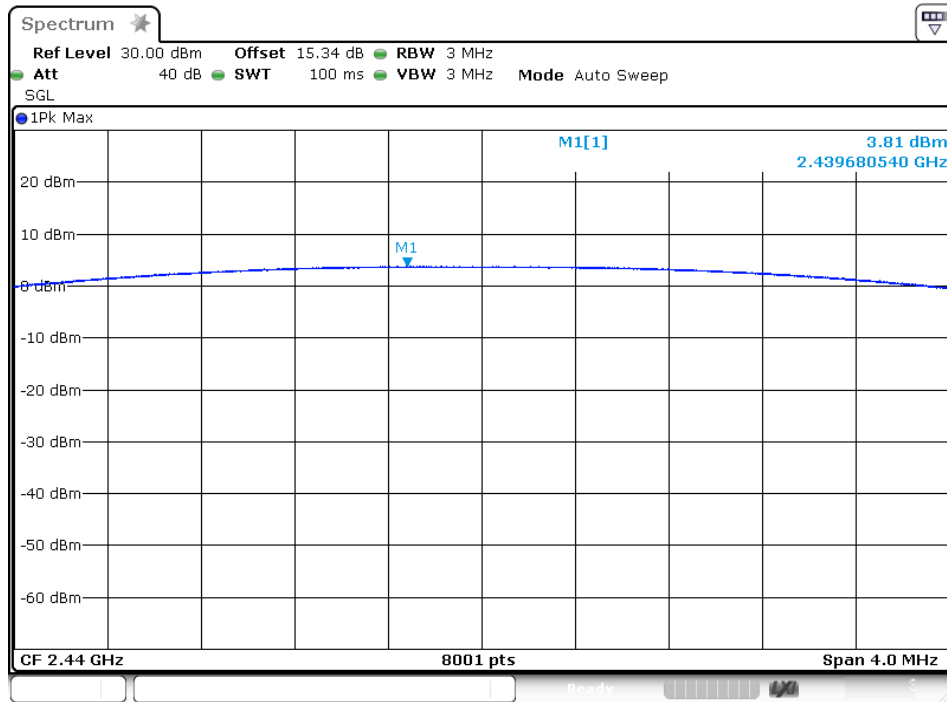
Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Limit (dBm)	Pass / Fail
0	2402	4.31	30	PASS
19	2440	3.81	30	PASS
39	2480	2.94	30	PASS

The spectrum analyzer plots are attached as below.

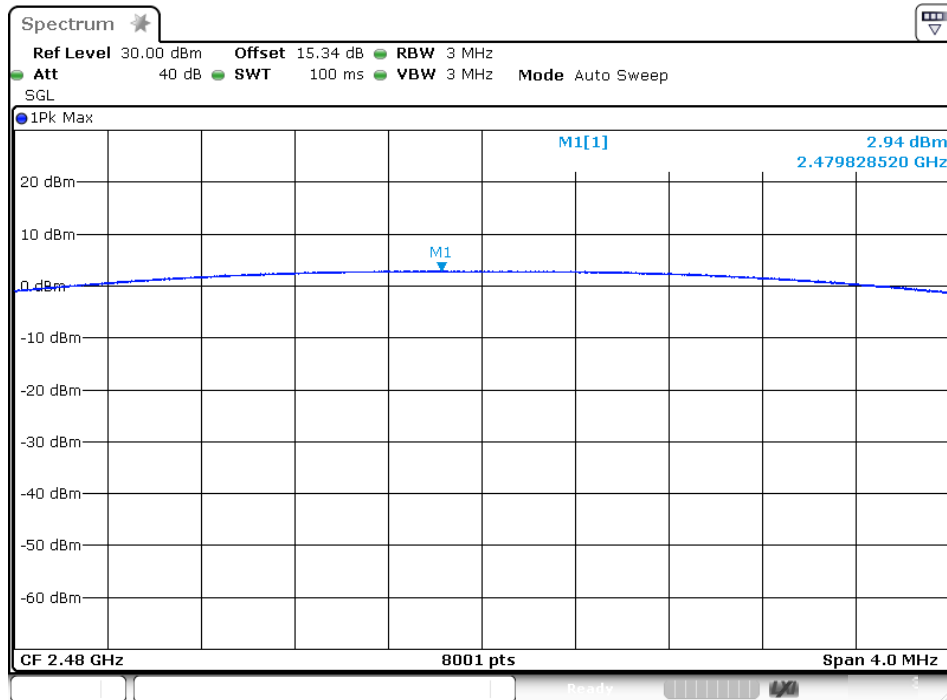
channel 0



channel 19

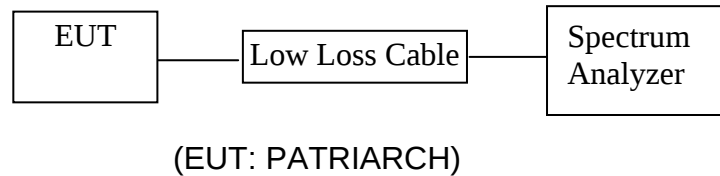


channel 39



8. POWER SPECTRAL DENSITY MEASUREMENT

8.1. Block Diagram of Test Setup



8.2. The Requirement For Section 15.247(e)

Section 15.247(e): For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4. Operating Condition of EUT

8.4.1. Setup the EUT and simulator as shown as Section 8.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

8.5. Test Procedure

8.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.2. Measurement Procedure PKPSD:

8.5.3. This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

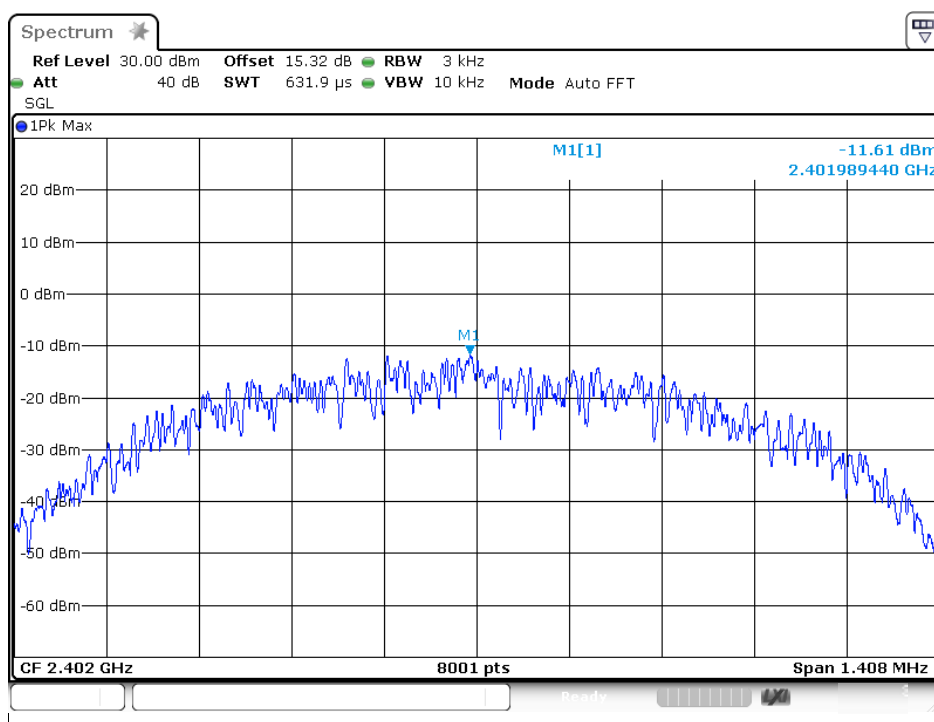
8.5.4. Measurement the maximum power spectral density.

8.6. Test Result

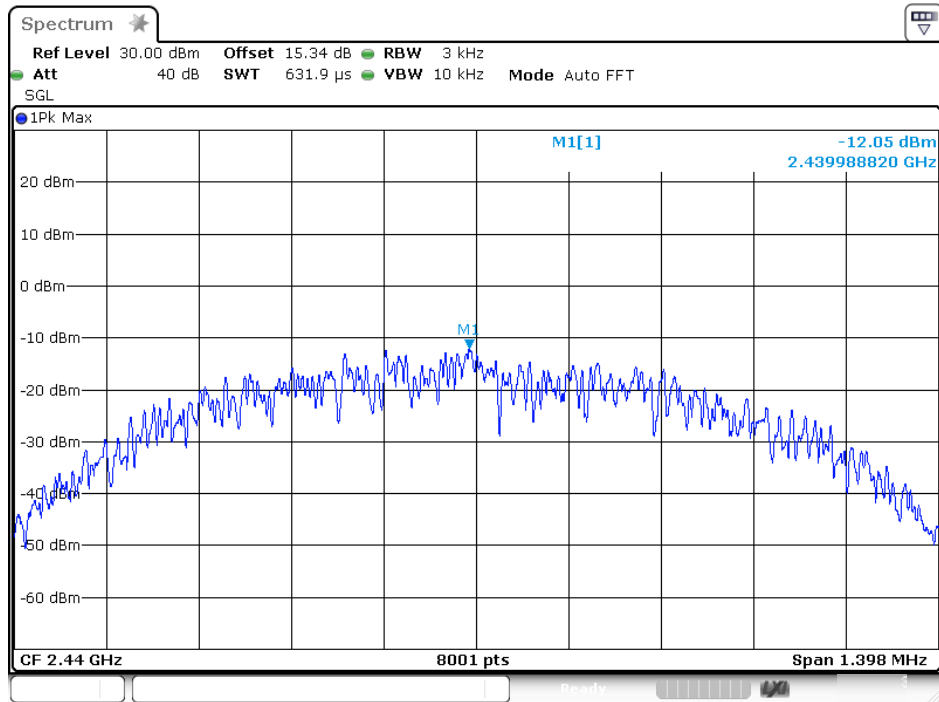
CHANNEL NUMBER	FREQUENCY (MHz)	PSD (dBm/3KHz)	LIMIT (dBm/3KHz)	PASS/FAIL
0	2402	-11.61	8	PASS
19	2440	-12.05	8	PASS
39	2480	-12.81	8	PASS

The spectrum analyzer plots are attached as below.

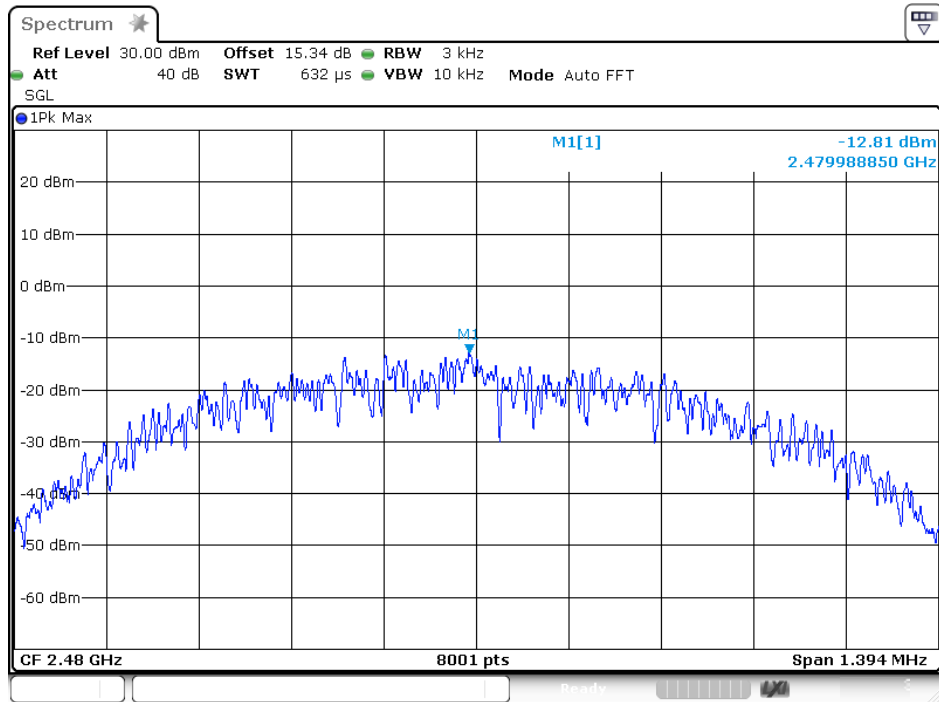
channel 0



channel 19



channel 39



9. BAND EDGE COMPLIANCE TEST

9.1. Block Diagram of Test Setup



(EUT: PATRIARCH)

9.2. The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

9.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.4. Operating Condition of EUT

9.4.1. Setup the EUT and simulator as shown as Section 9.1.

9.4.2. Turn on the power of all equipment.

9.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480 MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

9.5. Test Procedure

Conducted Band Edge:

9.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

9.5.2. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

9.5.3. Radiate Band Edge:

9.5.4. The EUT is placed on a turntable, which is 0.1m above the ground plane and worked at highest radiated power.

9.5.5. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

9.5.6. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

9.5.7. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

9.5.8. RBW=100kHz, VBW=300kHz.

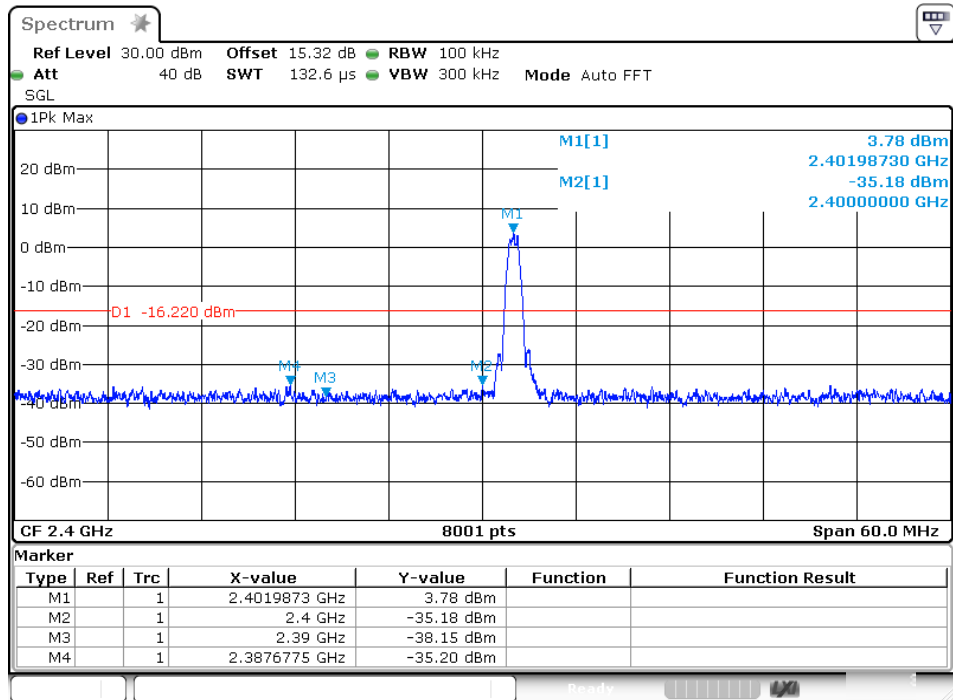
9.5.9. The band edges was measured and recorded.

9.6. Test Result

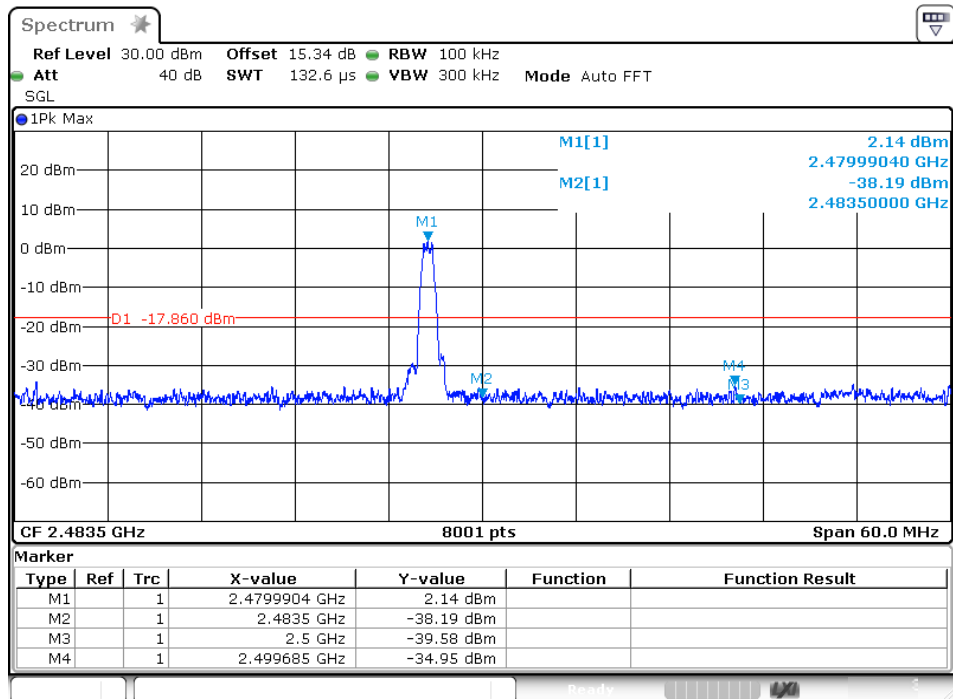
Pass

Channel	Frequency	Delta peak to band emission	Limit(dBc)
0	2.4GHz	31.40	20
39	2.4835GHz	36.05	20

channel 0



channel 39



Radiated Band Edge Result

Date of Test:	November 15, 2017	Temperature:	25°C
EUT:	PATRIARCH	Humidity:	50%
Model No.:	CR7007D-MA	Power Supply:	AC 120V/60Hz
Test Mode:	TX (2402MHz) GFSK	Test Engineer:	Frank

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2390.000	30.12	38.14	-3.96	26.16	34.18	54.00	74.00	-27.84	-39.82	Vertical
2400.000	49.17	58.01	-3.91	45.26	54.10	54.00	74.00	-8.74	-19.90	Vertical
2390.000	30.48	38.14	-3.96	26.52	34.18	54.00	74.00	-27.48	-39.82	Horizontal
2400.000	46.45	55.51	-3.91	42.54	51.60	54.00	74.00	-11.46	-22.40	Horizontal

Date of Test:	November 15, 2017	Temperature:	25°C
EUT:	PATRIARCH	Humidity:	50%
Model No.:	CR7007D-MA	Power Supply:	AC 120V/60Hz
Test Mode:	TX (2480MHz) GFSK	Test Engineer:	Frank

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2483.500	40.48	50.55	-3.50	36.98	47.05	54.00	74.00	-17.02	-26.95	Vertical
2500.000	30.99	39.58	-3.42	27.57	36.16	54.00	74.00	-26.43	-37.84	Vertical
2483.500	36.45	44.55	-3.50	32.95	41.05	54.00	74.00	-21.05	-32.95	Horizontal
2500.000	30.78	39.58	-3.42	27.36	36.16	54.00	74.00	-26.64	-37.84	Horizontal

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:
Result = Reading + Corrected Factor
3. Display the measurement of peak values.



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Job No.: frank2017 #1510

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2402MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Horizontal

Power Source: AC 120V/60Hz

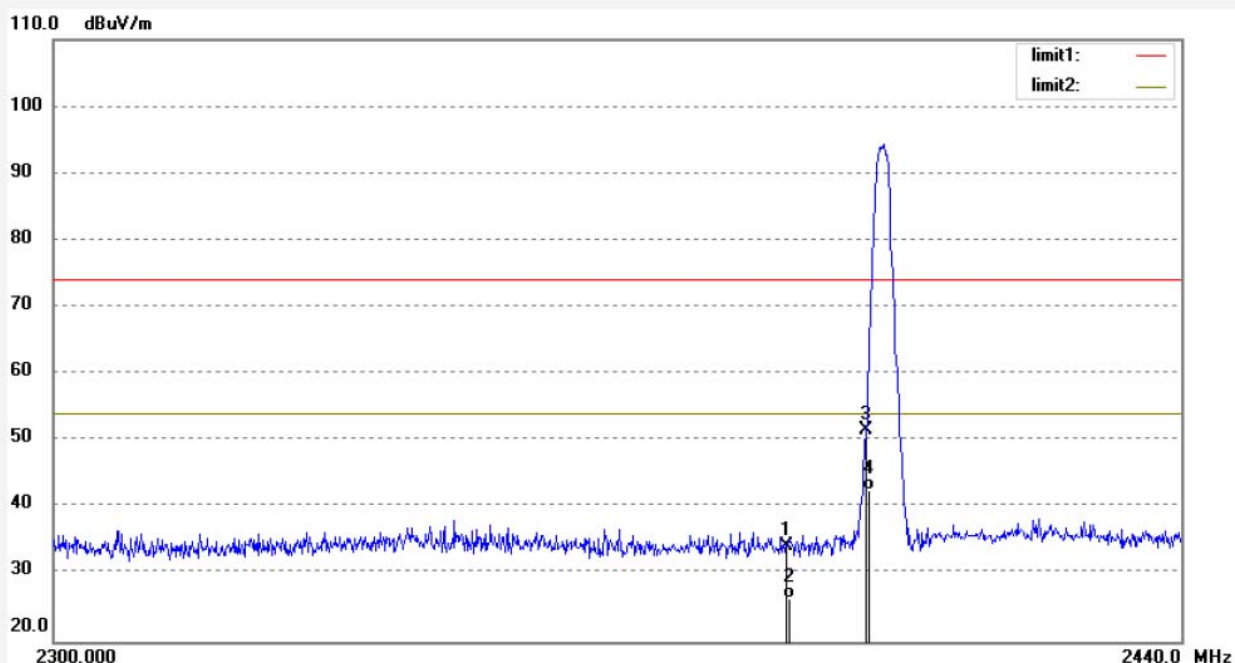
Date: 17/11/15

Time: 11/24/08

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	38.14	-3.96	34.18	74.00	-39.82	peak	200	183	
2	2390.000	30.48	-3.96	26.52	54.00	-27.48	AVG	200	183	
3	2400.000	55.51	-3.91	51.60	74.00	-22.40	peak	200	128	
4	2400.000	46.45	-3.91	42.54	54.00	-11.46	AVG	200	128	

Job No.: frank2017 #1511

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2402MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Vertical

Power Source: AC 120V/60Hz

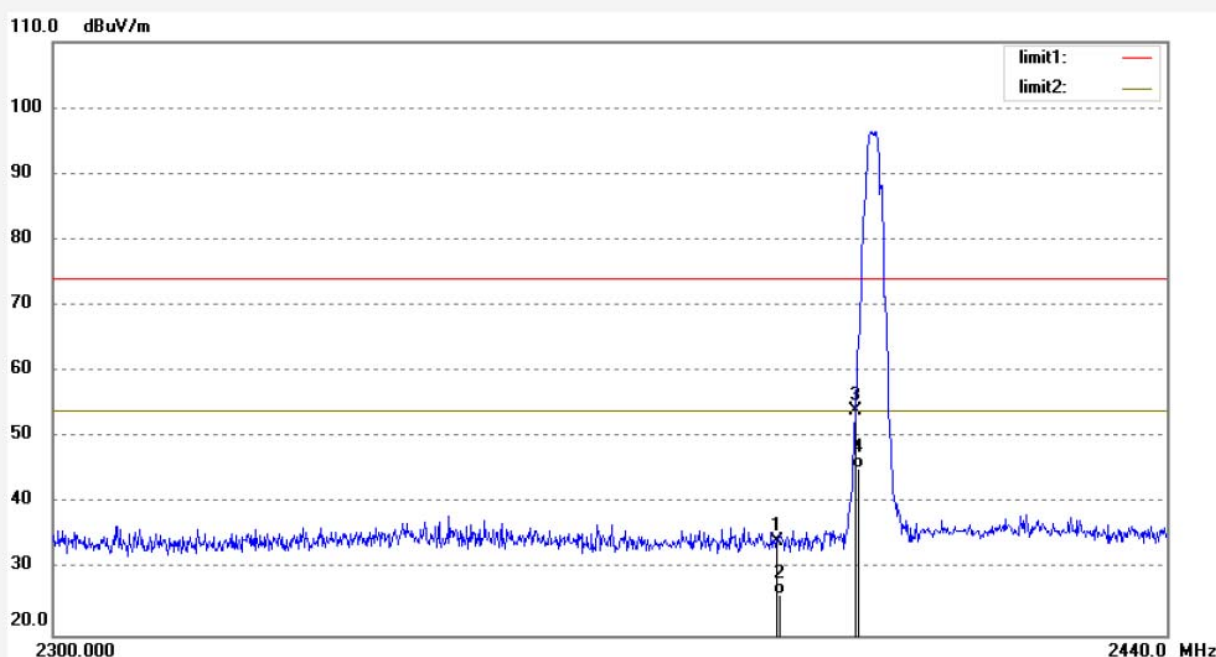
Date: 17/11/15

Time: 11/24/08

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	38.14	-3.96	34.18	74.00	-39.82	peak	150	134	
2	2390.000	30.12	-3.96	26.16	54.00	-27.84	AVG	150	134	
3	2400.000	58.01	-3.91	54.10	74.00	-19.90	peak	250	127	
4	2400.000	49.17	-3.91	45.26	54.00	-8.74	AVG	250	127	

Job No.: frank2017 #1512

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2480MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Vertical

Power Source: AC 120V/60Hz

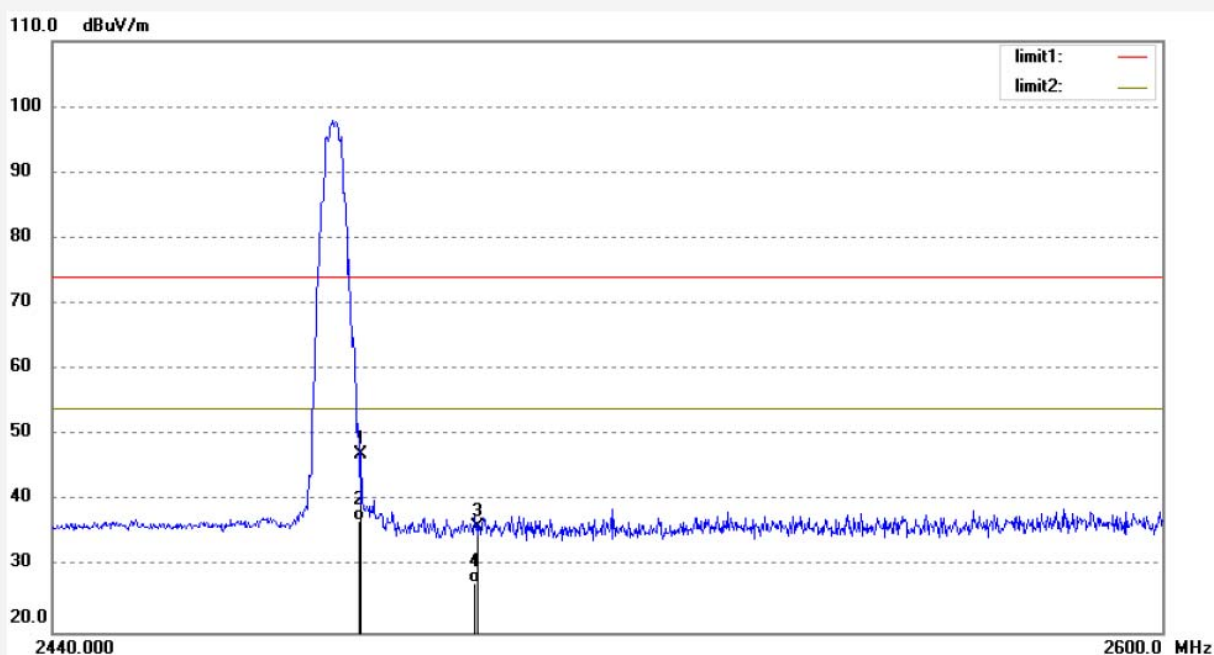
Date: 17/11/15

Time: 11/30/18

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	50.55	-3.50	47.05	74.00	-26.95	peak	200	120	
2	2483.500	40.48	-3.50	36.98	54.00	-17.02	AVG	200	120	
3	2500.000	39.58	-3.42	36.16	74.00	-37.84	peak	200	357	
4	2500.000	30.99	-3.42	27.57	54.00	-26.43	AVG	200	357	

Job No.: frank2017 #1513

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2480MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Horizontal

Power Source: AC 120V/60Hz

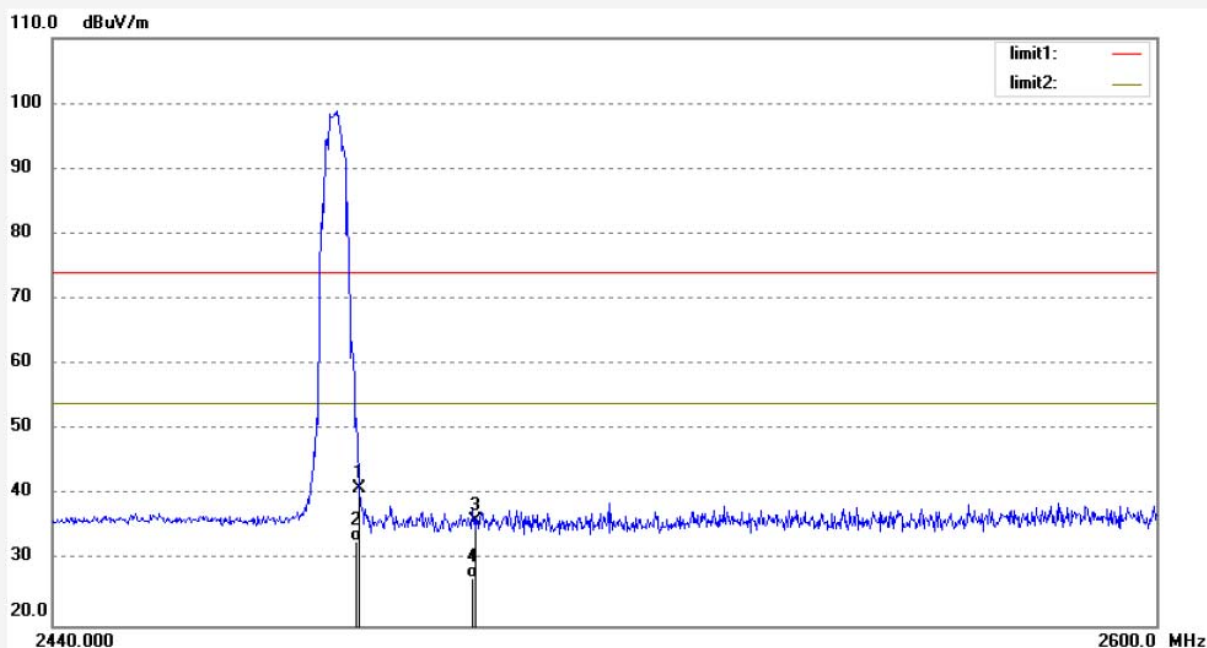
Date: 17/11/15

Time: 11/30/18

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	44.55	-3.50	41.05	74.00	-32.95	peak	300	134	
2	2483.500	36.45	-3.50	32.95	54.00	-21.05	AVG	300	134	
3	2500.000	39.58	-3.42	36.16	74.00	-37.84	peak	250	278	
4	2500.000	30.78	-3.42	27.36	54.00	-26.64	AVG	250	278	

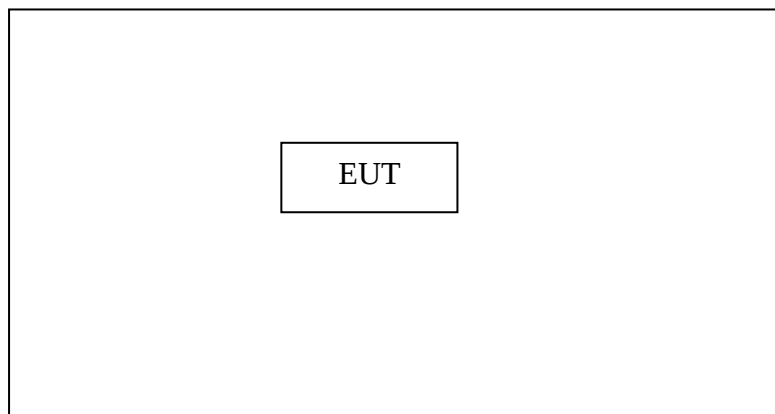
Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:
Result = Reading + Corrected Factor
3. Display the measurement of peak values.

10.RADIATED SPURIOUS EMISSION TEST

10.1.Block Diagram of Test Setup

10.1.1.Block diagram of connection between the EUT and peripherals

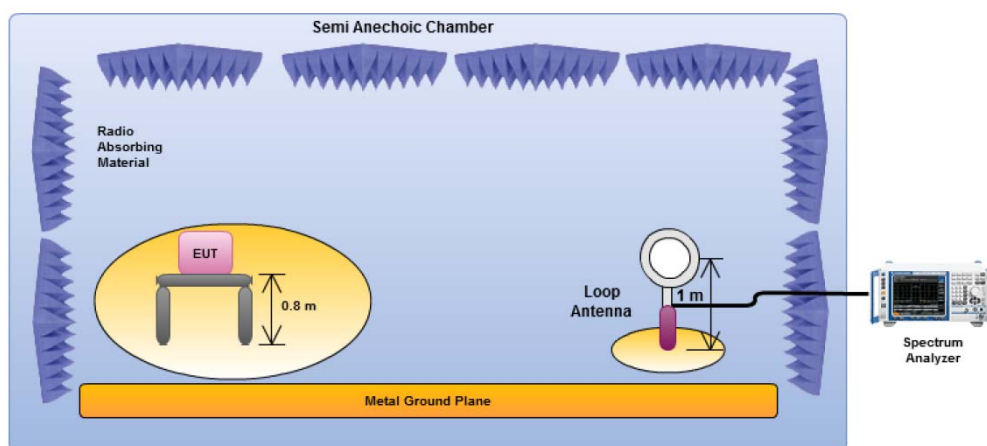


Setup: Transmitting mode

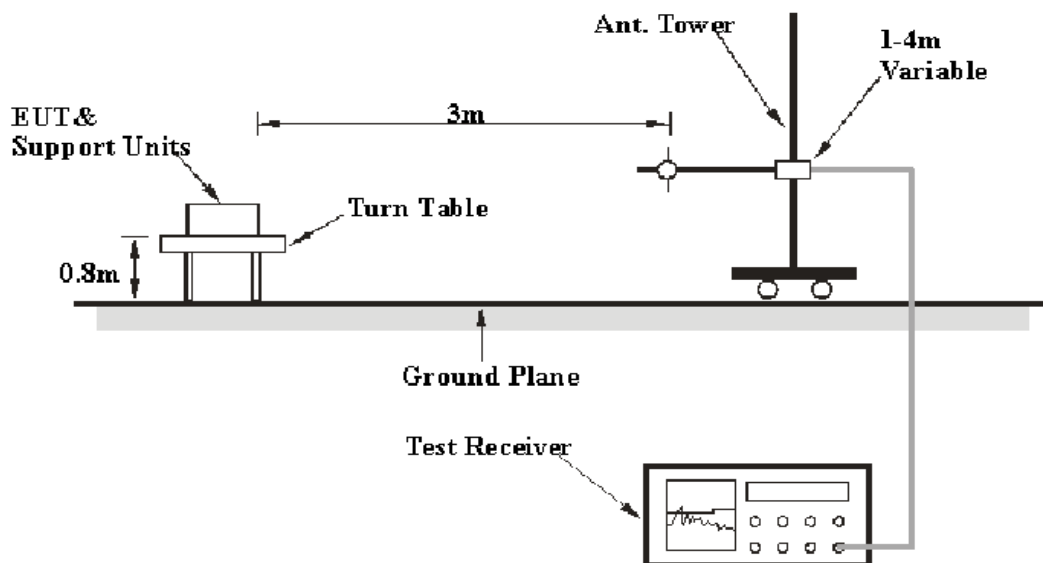
(EUT: PATRIARCH)

10.1.2.Semi-Anechoic Chamber Test Setup Diagram

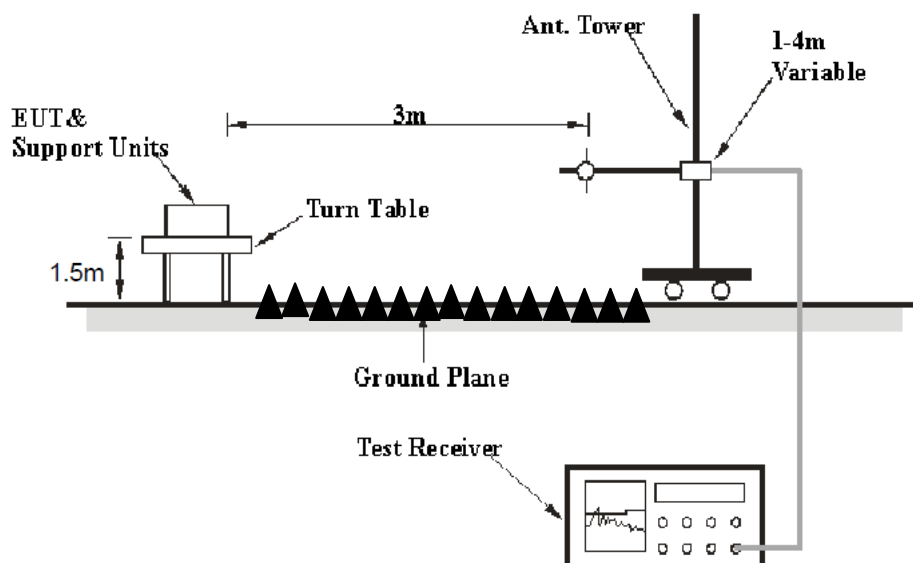
Below 30MHz



Below 1GHz:



Above 1GHz:



10.2.The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging

over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

10.3.Restricted bands of operation

10.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510

²Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

10.4.Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.5. Operating Condition of EUT

10.5.1. Setup the EUT and simulator as shown as Section 10.1.

10.5.2. Turn on the power of all equipment.

10.5.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

10.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground (Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground (Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 9 kHz in below 30MHz. and set at 120 kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 9 kHz to 25GHz is checked.

The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

10.7.Data Sample

Frequency (MHz)	Reading (dB μ v)	Factor (dB/m)	Result (dB μ v/m)	Limit (dB μ v/m)	Margin (dB)	Remark
30.6378	34.92	-8.68	26.24	40.00	-13.76	QP

Frequency(MHz) = Emission frequency in MHz

Reading(dB μ v) = Uncorrected Analyzer/Receiver reading

Factor (dB/m) = Antenna factor + Cable Loss – Amplifier gain

Result(dB μ v/m) = Reading(dB μ v) + Factor(dB/m)

Limit (dB μ v/m) = Limit stated in standard

Margin (dB) = Result(dB μ v/m) - Limit (dB μ v/m)

QP = Quasi-peak Reading

Calculation Formula:

Margin(dB) = Result (dB μ V/m)–Limit(dB μ V/m)

Result(dB μ V/m)= Reading(dB μ V)+ Factor(dB/m)

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

10.8.The Field Strength of Radiation Emission Measurement Results

PASS.

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. *: Denotes restricted band of operation.

3. The radiation emissions from 18-25GHz are not reported, because the test values lower than the limits of 20dB.

Job No.: frank2017 #1498

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2402MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Vertical

Power Source: AC 120V/60Hz

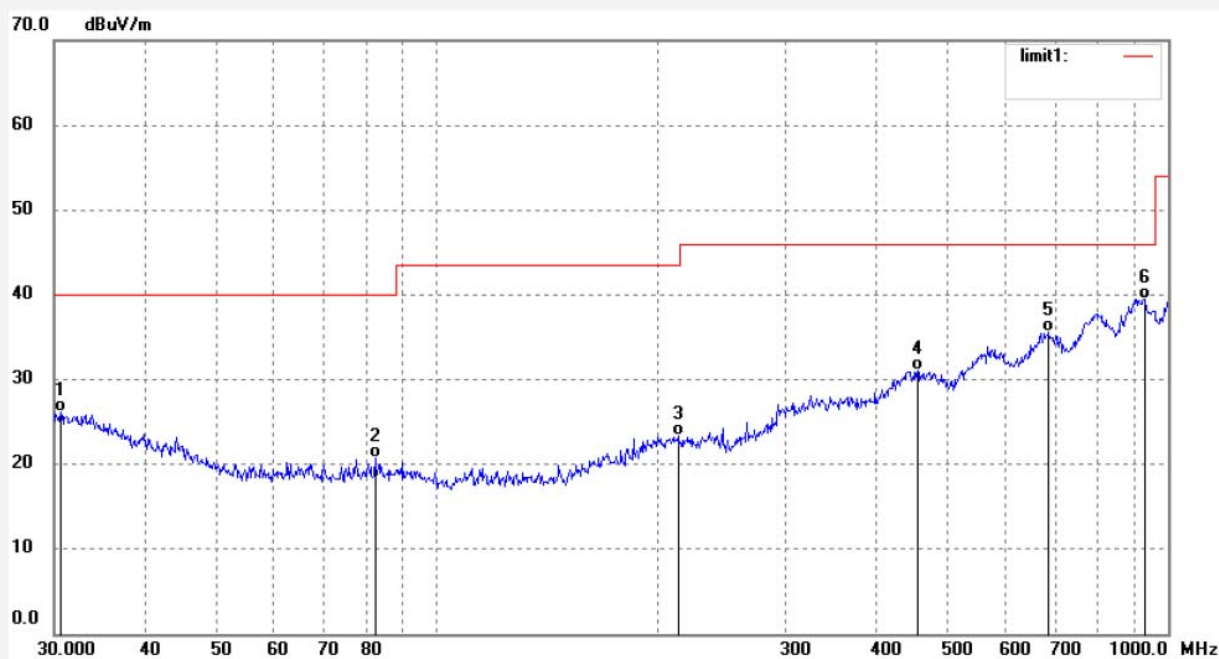
Date: 2017/11/15

Time: 15:36:22

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.6378	34.92	-8.68	26.24	40.00	-13.76	QP	100	135	
2	82.3588	36.12	-15.44	20.68	40.00	-19.32	QP	100	45	
3	213.7633	34.79	-11.35	23.44	43.50	-20.06	QP	100	79	
4	454.3100	35.97	-4.94	31.03	46.00	-14.97	QP	100	245	
5	687.1507	36.22	-0.57	35.65	46.00	-10.35	QP	100	112	
6	929.0081	35.94	3.58	39.52	46.00	-6.48	QP	100	123	



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Job No.: frank2017 #1499

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2402MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Horizontal

Power Source: AC 120V/60Hz

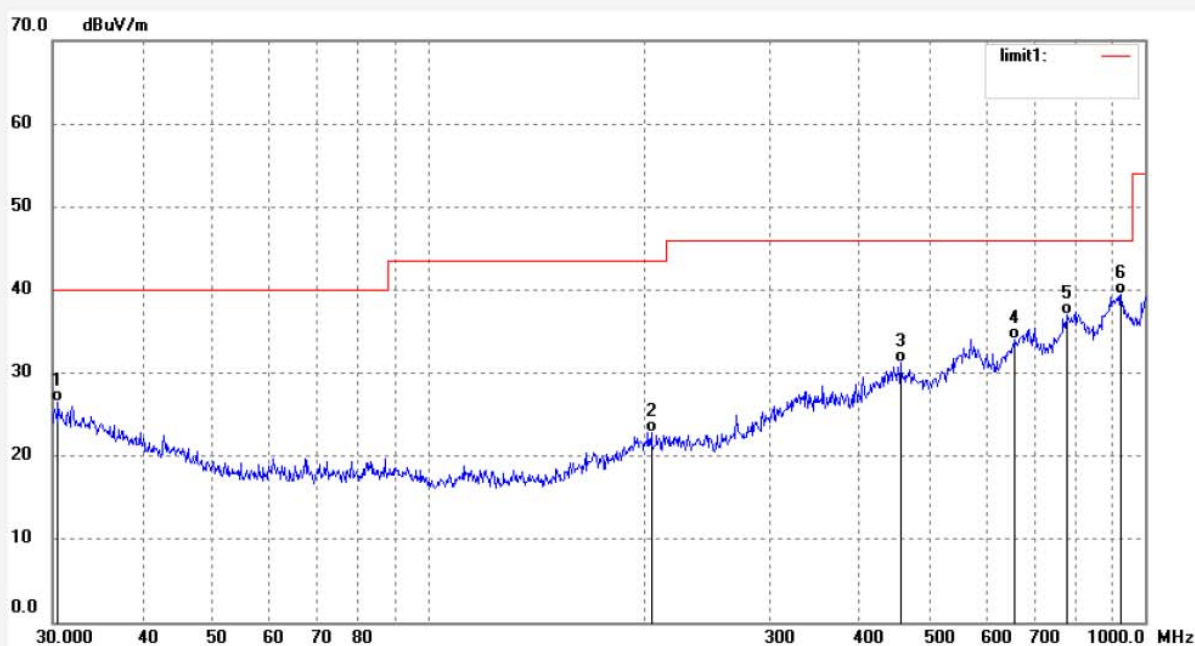
Date: 2017/11/15

Time: 15:36:48

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.5305	35.17	-8.64	26.53	40.00	-13.47	QP	200	214	
2	204.9550	34.31	-11.43	22.88	43.50	-20.62	QP	200	145	
3	455.9057	36.16	-4.90	31.26	46.00	-14.74	QP	200	244	
4	658.8361	35.18	-1.07	34.11	46.00	-11.89	QP	200	325	
5	776.8777	36.09	0.86	36.95	46.00	-9.05	QP	200	305	
6	925.7563	35.89	3.55	39.44	46.00	-6.56	QP	200	123	

Job No.: frank2017 #1500

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2440MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Horizontal

Power Source: AC 120V/60Hz

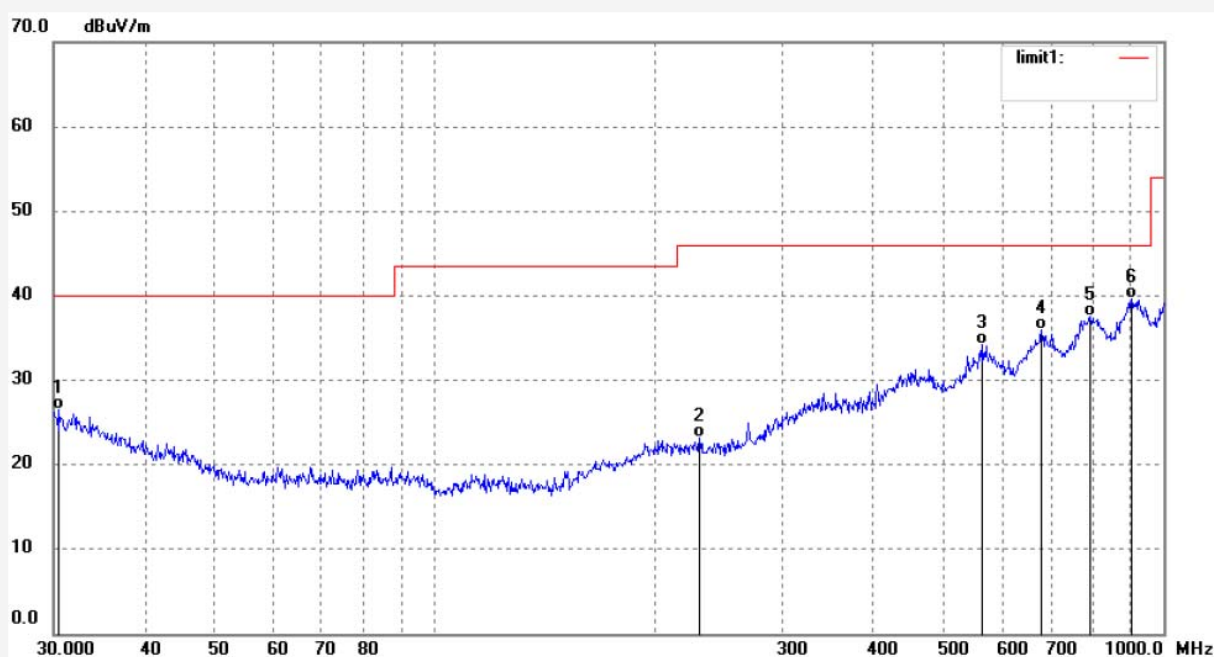
Date: 2017/11/15

Time: 15:37:12

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.5305	35.17	-8.64	26.53	40.00	-13.47	QP	200	12	
2	230.9068	34.24	-11.12	23.12	46.00	-22.88	QP	200	114	
3	564.6389	37.12	-2.86	34.26	46.00	-11.74	QP	200	139	
4	679.9600	36.58	-0.69	35.89	46.00	-10.11	QP	200	278	
5	793.3958	36.39	1.16	37.55	46.00	-8.45	QP	200	360	
6	903.3093	36.52	3.16	39.68	46.00	-6.32	QP	200	121	



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Job No.: frank2017 #1501

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2440MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Vertical

Power Source: AC 120V/60Hz

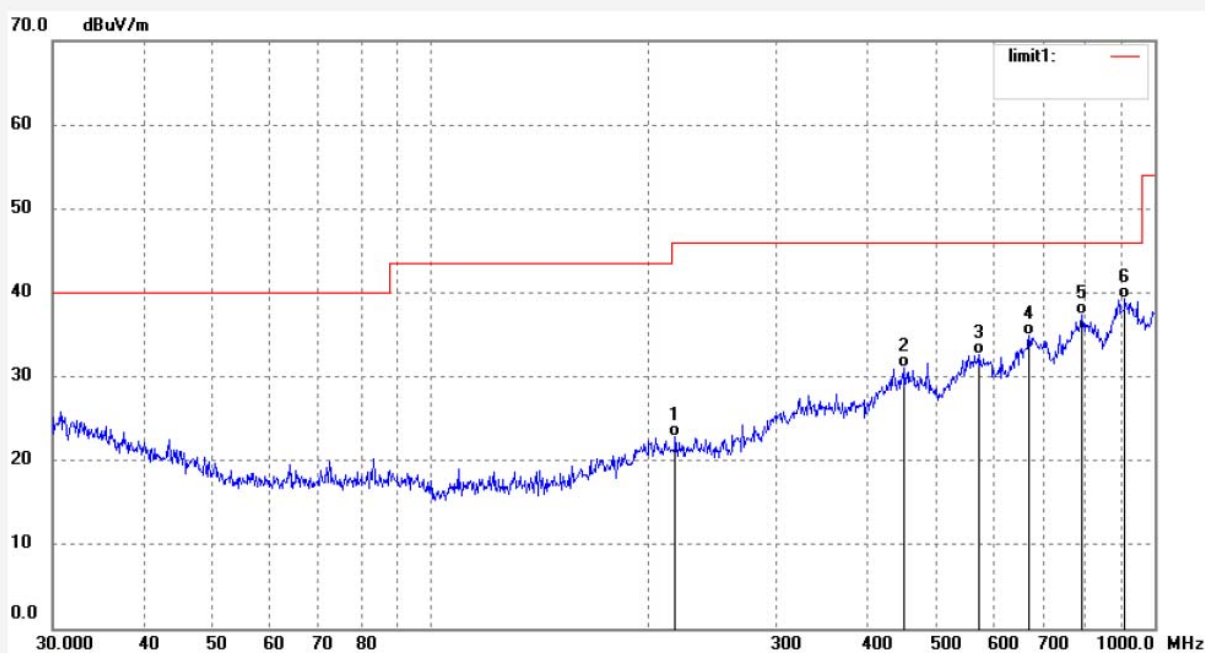
Date: 2017/11/15

Time: 15:37:31

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	217.5442	34.09	-11.31	22.78	46.00	-23.22	QP	100	120	
2	449.5557	36.17	-5.06	31.11	46.00	-14.89	QP	100	248	
3	572.6144	35.34	-2.68	32.66	46.00	-13.34	QP	100	357	
4	670.4892	35.77	-0.85	34.92	46.00	-11.08	QP	100	324	
5	793.3958	36.19	1.16	37.35	46.00	-8.65	QP	100	279	
6	909.6666	36.09	3.25	39.34	46.00	-6.66	QP	100	186	

Job No.: frank2017 #1502

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2480MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Vertical

Power Source: AC 120V/60Hz

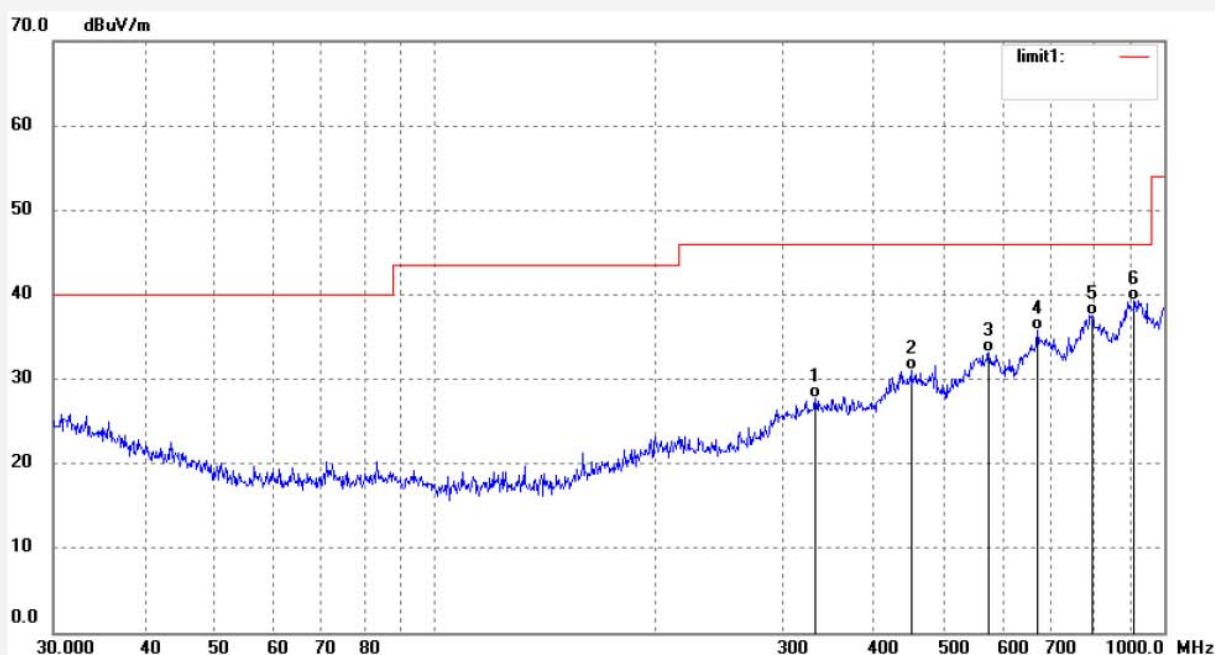
Date: 2017/11/15

Time: 15:37:45

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	332.5187	35.04	-7.34	27.70	46.00	-18.30	QP	100	202	
2	449.5557	36.17	-5.06	31.11	46.00	-14.89	QP	100	123	
3	574.6258	35.89	-2.65	33.24	46.00	-12.76	QP	100	157	
4	670.4892	36.58	-0.85	35.73	46.00	-10.27	QP	100	168	
5	796.1829	36.40	1.20	37.60	46.00	-8.40	QP	100	127	
6	909.6666	36.09	3.25	39.34	46.00	-6.66	QP	100	360	



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Job No.: frank2017 #1503

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2480MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Horizontal

Power Source: AC 120V/60Hz

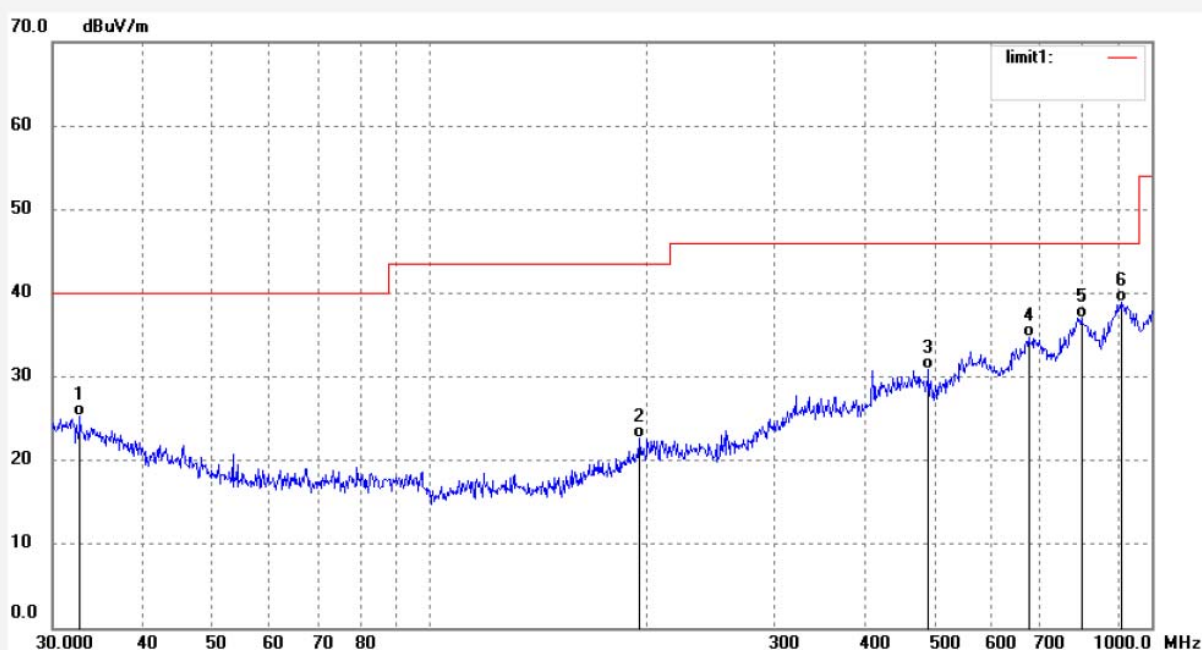
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Time: 15:37:58

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.7486	34.44	-9.21	25.23	40.00	-14.77	QP	200	157	
2	195.1365	34.66	-11.92	22.74	43.50	-20.76	QP	200	100	
3	490.7447	35.35	-4.39	30.96	46.00	-15.04	QP	200	147	
4	675.2078	35.49	-0.77	34.72	46.00	-11.28	QP	200	186	
5	798.9796	35.85	1.22	37.07	46.00	-8.93	QP	200	279	
6	906.4823	35.76	3.21	38.97	46.00	-7.03	QP	200	358	



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Job No.: frank2017 #1504

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2402MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Vertical

Power Source: AC 120V/60Hz

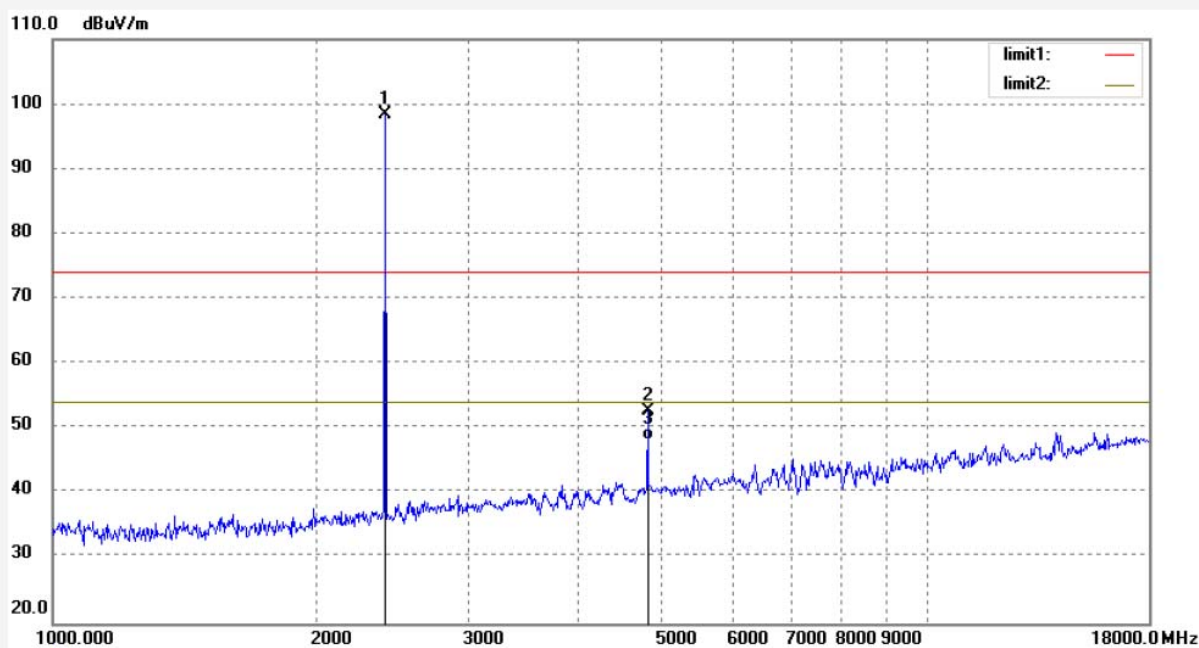
Date: 17/11/15

Time: 11/09/05

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	102.30	-3.91	98.39			peak	150	216	
2	4804.000	49.06	3.75	52.81	74.00	-21.19	peak	150	124	
3	4804.000	44.45	3.75	48.20	54.00	-5.80	AVG	150	124	



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Job No.: frank2017 #1505

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2402MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Horizontal

Power Source: AC 120V/60Hz

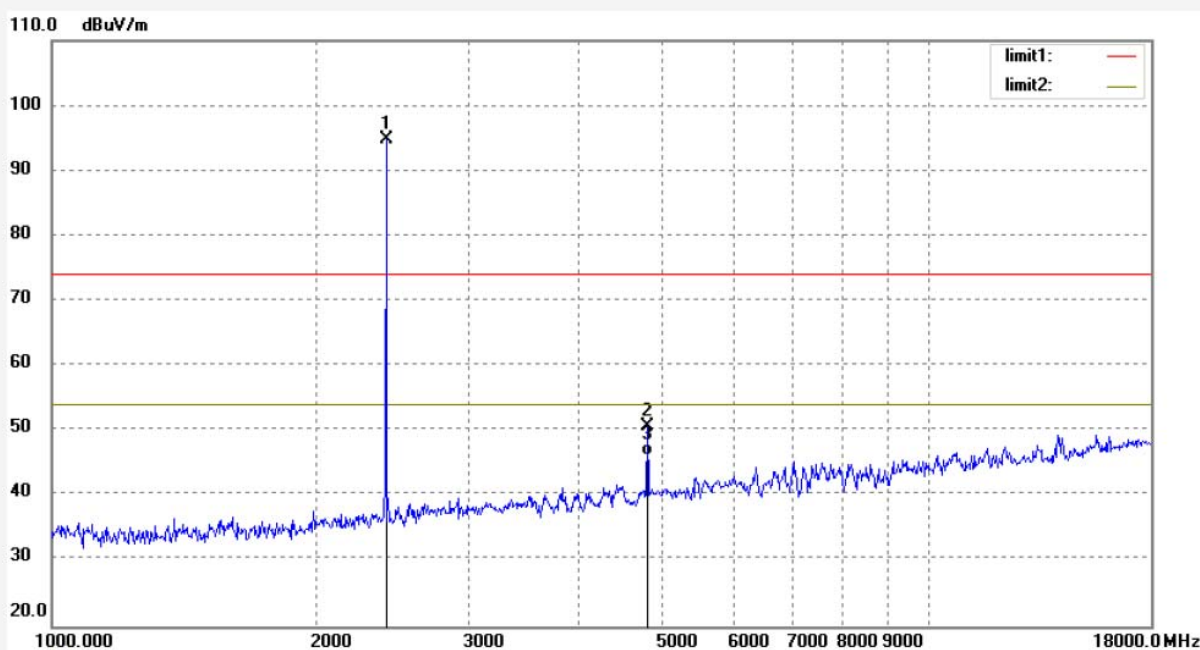
Date: 17/11/15

Time: 11/09/05

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	98.76	-3.87	94.89			peak	150	159	
2	4804.000	46.94	3.70	50.64	74.00	-23.36	peak	200	128	
3	4804.000	42.45	3.70	46.15	54.00	-7.85	AVG	200	128	



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Job No.: frank2017 #1506

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2440MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Horizontal

Power Source: AC 120V/60Hz

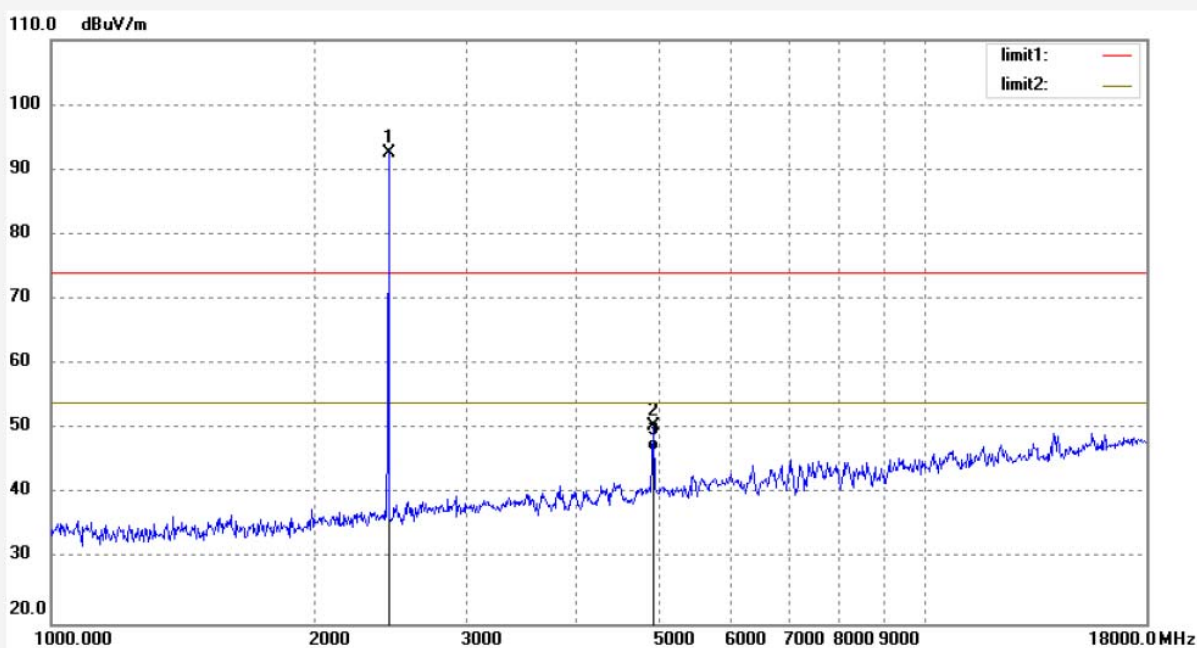
Date: 17/11/15

Time: 11/09/05

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.000	96.31	-3.73	92.58			peak	150	32	
2	4880.000	46.24	4.18	50.42	74.00	-23.58	peak	200	184	
3	4880.000	42.42	4.18	46.60	54.00	-7.40	AVG	200	184	

Job No.: frank2017 #1507

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2440MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Vertical

Power Source: AC 120V/60Hz

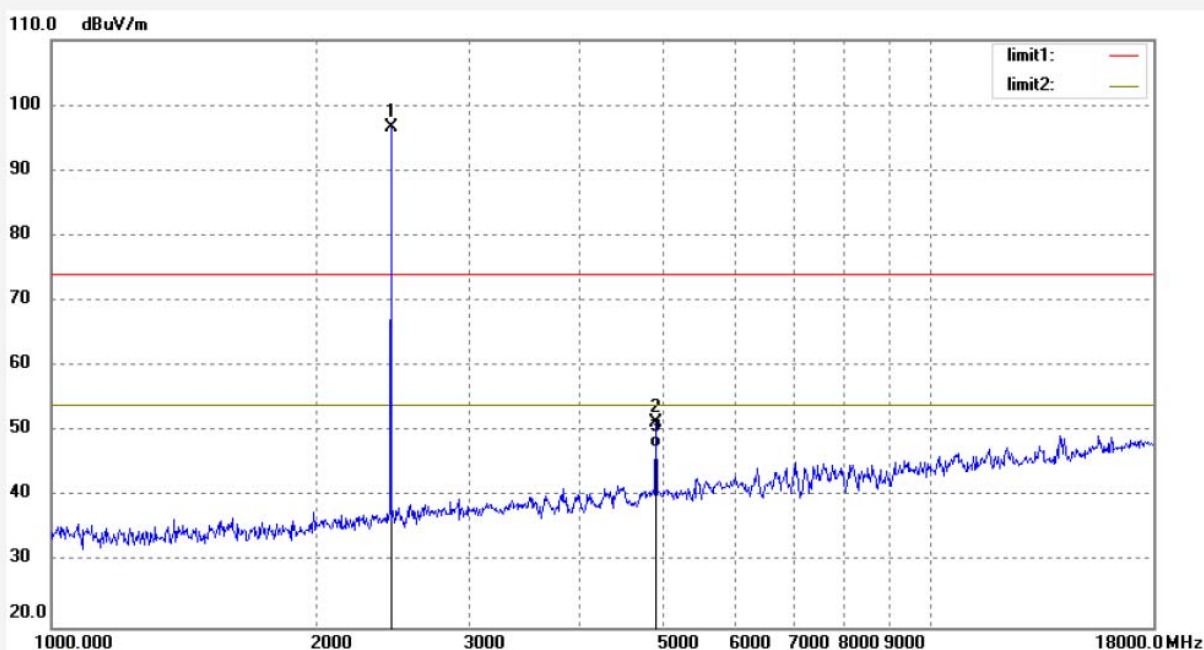
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Time: 11/09/05

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.000	100.31	-3.73	96.58			peak	150	222	
2	4880.000	47.31	4.11	51.42	74.00	-22.58	peak	150	121	
3	4880.000	43.45	4.11	47.56	54.00	-6.44	AVG	150	121	



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Job No.: frank2017 #1508

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2480MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Vertical

Power Source: AC 120V/60Hz

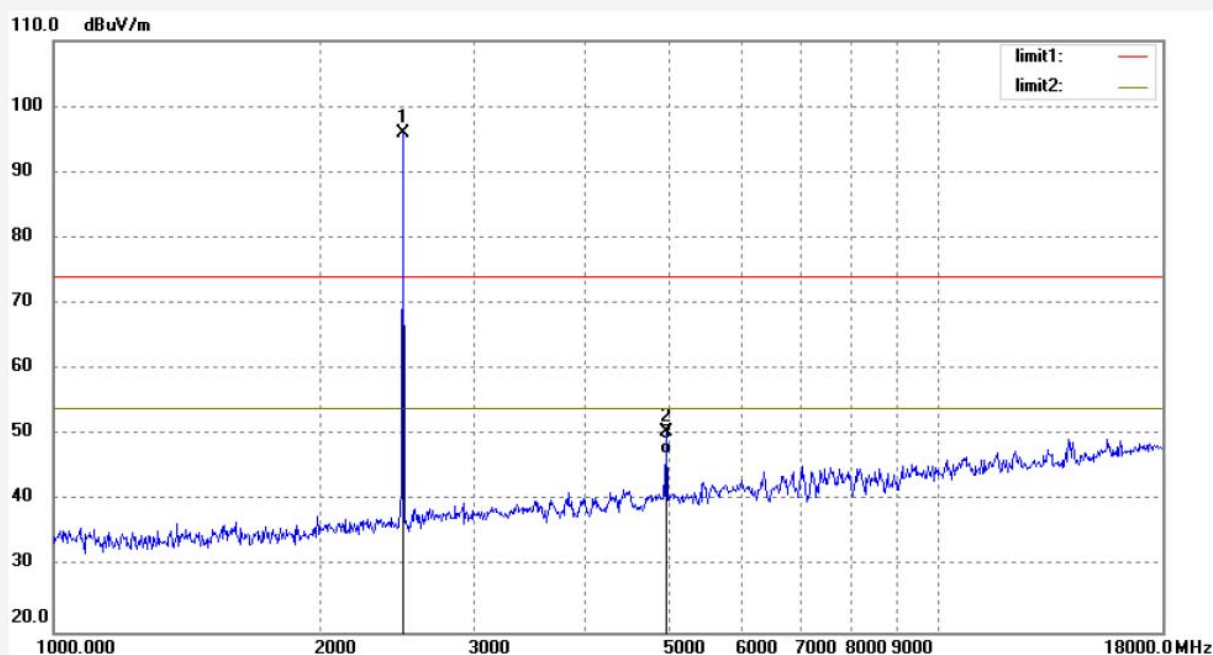
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Time: 11/09/05

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	99.33	-3.48	95.85			peak	150	113	
2	4960.000	46.22	4.37	50.59	74.00	-23.41	peak	150	347	
3	4960.000	42.78	4.37	47.15	54.00	-6.85	AVG	150	347	

Job No.: frank2017 #1509

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: PATRIARCH

Mode: TX2480MHz

Model: CR7007D-MA

Manufacturer: TIMSEN INTERNATIONAL LIMITED

Polarization: Horizontal

Power Source: AC 120V/60Hz

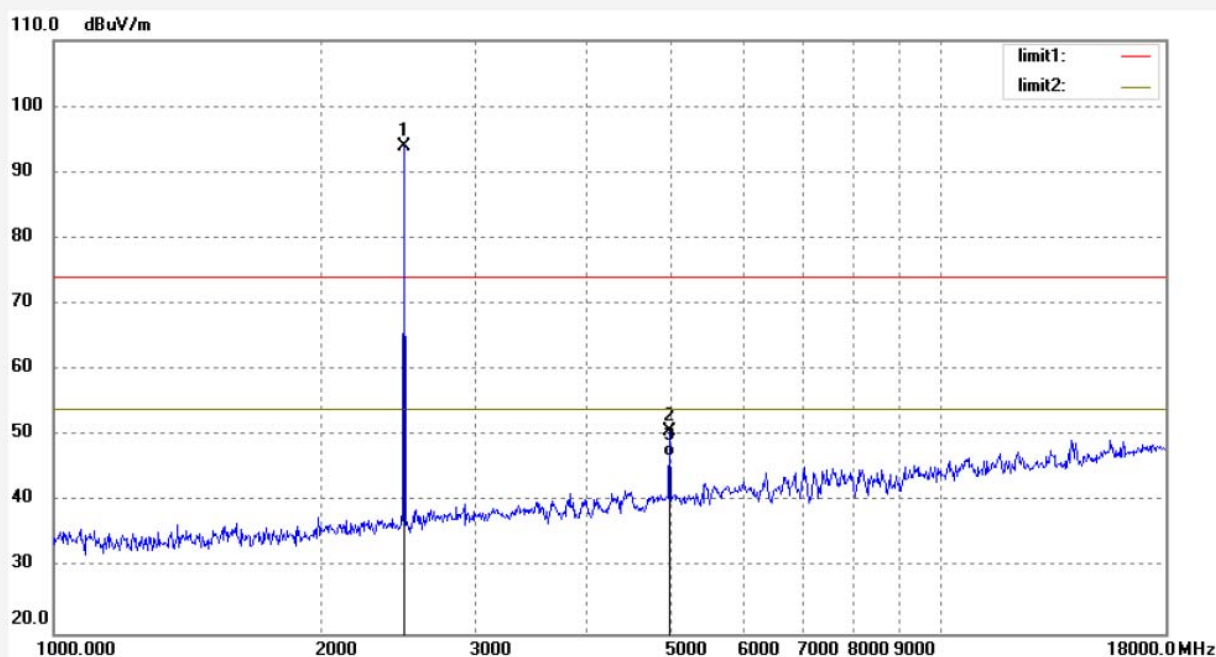
Date: 17/11/15

Time: 11/09/05

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172124



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	97.33	-3.48	93.85			peak	150	135	
2	4960.000	46.31	4.42	50.73	74.00	-23.27	peak	200	327	
3	4960.000	42.48	4.42	46.90	54.00	-7.10	AVG	200	327	

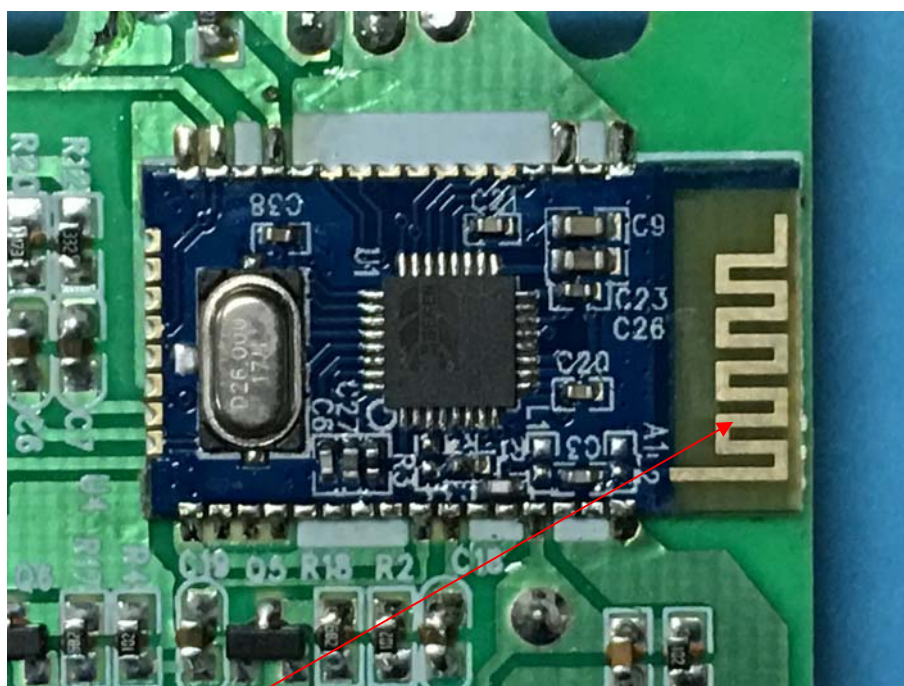
11.ANTENNA REQUIREMENT

11.1.The Requirement

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

11.2.Antenna Construction

Device is equipped with external Antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 1.0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna

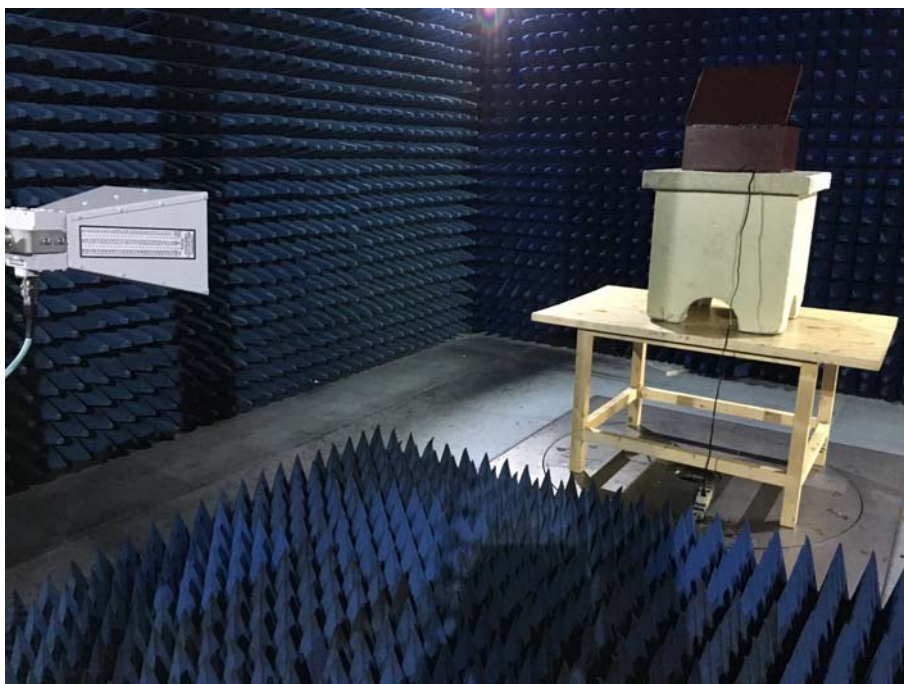
12.PHOTOGRAPHS

12.1.Photo of Power Line Conducted Emission Measurement



12.2.Photo of Radiation Emission Measurement





12.3.Photo of EUT

