

APPLICATION FOR CERTIFICATION

On Behalf of

AVITA Corporation

IR Thermometer

Model No.: TS28B

FCC ID: UV3TSW-10XX

Prepared for : AVITA Corporation
9F, No.78, Sec.1, Kwang-Fu Rd., San-Chung,
Taipei County, Taiwan, 241

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TABLE OF CONTENTS

Description	Page
TEST REPORT CERTIFICATION	4
1. GENERAL INFORMATION	5
1.1. Description of Device (EUT).....	5
1.2. Tested Supporting System Details	5
1.3. Description of Test Facility	6
1.4. Measurement Uncertainty	6
2. CONDUCTED EMISSION MEASUREMENT.....	7
3. RADIATED EMISSION MEASUREMENT	8
3.1. Test Equipment.....	8
3.2. Test Setup	8
3.3. Radiated Emission Limits (§15.209)	10
3.4. Operating Condition of EUT	10
3.5. Test Procedure	10
3.6. Radiated Emission Measurement Results.....	11
4. 20dB BANDWIDTH MEASUREMENT	54
4.1. Test Equipment.....	54
4.2. Block Diagram of Test Setup.....	54
4.3. Specification Limits (§15.247(a)(1))	54
4.4. Operating Condition of EUT	54
4.5. Test Procedure follow DA00-705.....	54
4.6. Test Results.....	55
5. CARRIER FREQUENCY SEPARATION MEASUREMENT	58
5.1. Test Equipment.....	58
5.2. Block Diagram of Test Setup.....	58
5.3. Specification Limits (§15.247(a)(1))	58
5.4. Operating Condition of EUT	58
5.5. Test Procedure follow DA00-705.....	58
5.6. Test Results.....	59
6. TIME OF OCCUPANCY MEASUREMENT	62
6.1. Test Equipment.....	62
6.2. Block Diagram of Test Setup.....	62
6.3. Specification Limits (§15.247(a)(1)(iii))	62
6.4. Operating Condition of EUT	62
6.5. Test Procedure follow DA00-705.....	62
6.6. Test Results.....	63
7. NUMBER OF HOPPING CHANNELS MEASUREMENT	67
7.1. Test Equipment.....	67
7.2. Block Diagram of Test Setup.....	67
7.3. Specification Limits (§15.247(a)(1)(iii))	67
7.4. Operating Condition of EUT	67
7.5. Test Procedure follow DA00-705.....	67
7.6. Test Results.....	67
8. MAXIMUM PEAK OUTPUT POWER MEASUREMENT	69
8.1. Test Equipment.....	69
8.2. Block Diagram of Test Setup.....	69
8.3. Specification Limits (§15.247(b)-(1)).....	69
8.4. Operating Condition of EUT	69
8.5. Test Procedure follow DA00-705.....	69

8.6. Test Results.....70

9. EMISSION LIMITATIONS MEASUREMENT.....73

9.1. Test Equipment.....73

9.2. Block Diagram of Test Setup.....73

9.3. Specification Limits (§15.247(c)).....73

9.4. Operating Condition of EUT73

9.5. Test Procedure follow DA00-705.....73

9.6. Test Results.....74

10. BAND EDGES MEASUREMENT.....77

10.1. Test Equipment.....77

10.2. Block Diagram of Test Setup77

10.3. Specification Limits (§15.247(c))77

10.4. Operating Condition of EUT77

10.5. Test Procedure follow DA00-70577

10.6. Test Results78

11. DEVIATION TO TEST SPECIFICATIONS80

12. PHOTOGRAPHS81

12.1. Photos of Radiated Measurement at Semi-Anechoic Chamber..... 81

12.2. Photo of Section RF Conducted Measurement 82

TEST REPORT CERTIFICATION

Applicant : AVITA Corporation
 EUT Description : IR Thermometer
 FCC ID : UV3TSW-10XX
 (A) Model No. : TS28B
 (B) Serial No. : N/A
 (C) Power Supply : DC 3V
 (D) Test Voltage : DC 3V (Via Batteries or Notebook PC)

Measurement Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART C, Oct. 2009
AND ANSI C63.4/2003

(FCC CFR 47 Part 15C, §15.205, §15.207, §15.209 and §15.247)

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. 28, 2010 Date of Report : Sep. 27, 2010

Producer : 
 (Tina Huang/Administrator)

Review: 
 (Henning Chang/Supervisor)

Signatory: 
 (Ben Cheng/Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	IR Thermometer
Model Number	:	TS28B
FCC ID	:	UV3TSW-10XX
Applicant	:	AVITA Corporation 9F, No.78, Sec.1, Kwang-Fu Rd., San-Chung, Taipei County, Taiwan, 241
Fundamental Range	:	2400MHz ~ 2483.5MHz
Channel Number	:	79
Radio Technology	:	FHSS (GFSK) Modulation
Antenna Gain	:	3.0dBi
Date of Receipt of Sample	:	Jul. 27, 2010
Date of Test	:	Jul. 28, 2010

1.2. Tested Supporting System Details

1.2.1. NOTEBOOK PC

Model Number	:	PP2130
Serial Number	:	5Y32KSQZ40ME
BSMI ID	:	3912A556
FCC ID	:	FCC By DoC
Manufacturer	:	LG (Brand Compaq)
USB Cable	:	Shielded, Detachable, 1.0m

1.3. Description of Test Facility

Name of Firm : **AUDIX Technology Corporation**
EMC Department
 No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang,
 Taipei Hsien, Taiwan

Test Location & Facility (AC) : **Semi-Anechoic Chamber**
 No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang,
 Taipei Hsien, Taiwan.
 May 14, 2009 File on
 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)
Radiation Test (Distance: 3m)	30MHz~300MHz	±2.91dB
	300MHz~1000MHz	±2.94dB
	Above 1GHz	± 5.02dB

Remark : Uncertainty = $ku_c(y)$

Test Item	Uncertainty
20dB Bandwidth	± 0.2kHz
Carrier Frequency Separation	± 0.2kHz
Time Of Occupancy	± 0.03sec
Maximum peak Output power	± 0.52dBm
Emission Limitations	± 0.13dB
Band Edges	± 0.13dB

2. CONDUCTED EMISSION MEASUREMENT

【The EUT only employs DC power for operation, no conductive emission limits are required according to FCC Part 15 Section §15.207】

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

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

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8564EC	3946A00249	Oct. 27, 09'	Oct. 26, 10'
2.	Test Receiver	R & S	ESCS30	100338	Jul. 08, 10'	Jul. 07, 11'
3.	Amplifier	HP	8447D	2944A06305	Feb. 03, 10'	Feb. 02, 11'
4.	Log Periodic Antenna	Schwarzbeck	UHALP 9108-A	0810	Mar. 13, 10'	Mar. 12, 11'
5.	Biconical Antenna	CHASE	VBA6106A	1264	Mar. 13, 10'	Mar. 12, 11'

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

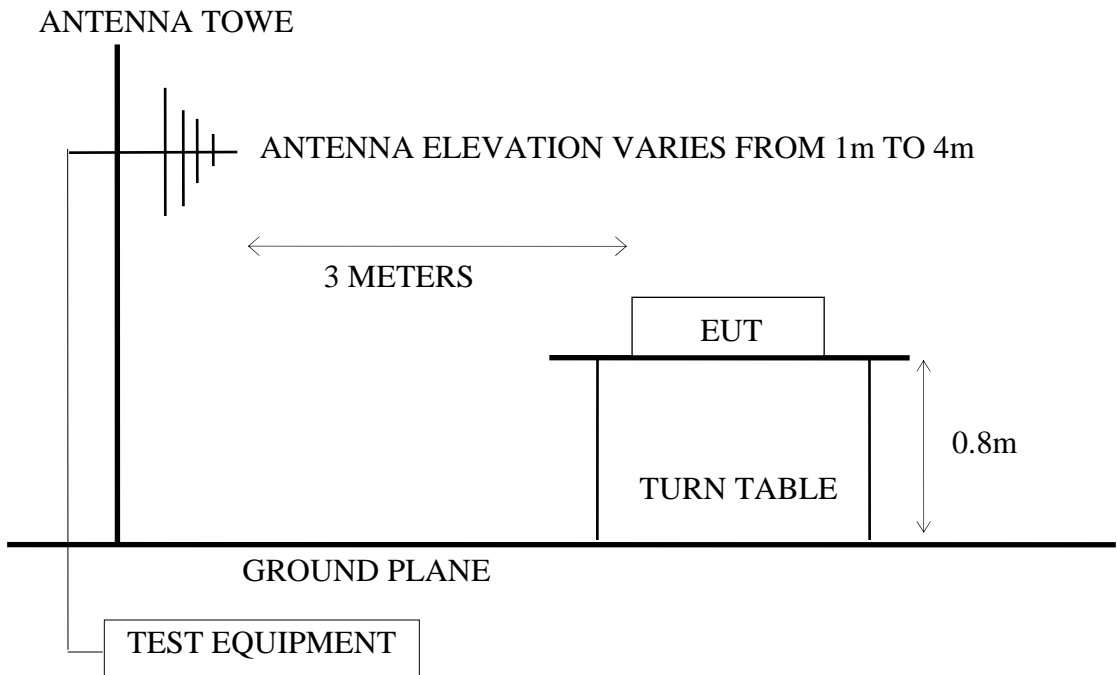
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8564EC	3946A00249	Oct. 27, 09'	Oct. 26, 10'
2.	Amplifier	HP	8449B	3008A00529	Dec. 15, 09'	Dec. 14, 10'
3.	Horn Antenna	EMCO	3115	9112-3775	May 10, 10'	May 09, 11'
4.	Horn Antenna	EMCO	3116	2653	Oct. 02, 09'	Oct. 01, 10'

3.2. Test Setup

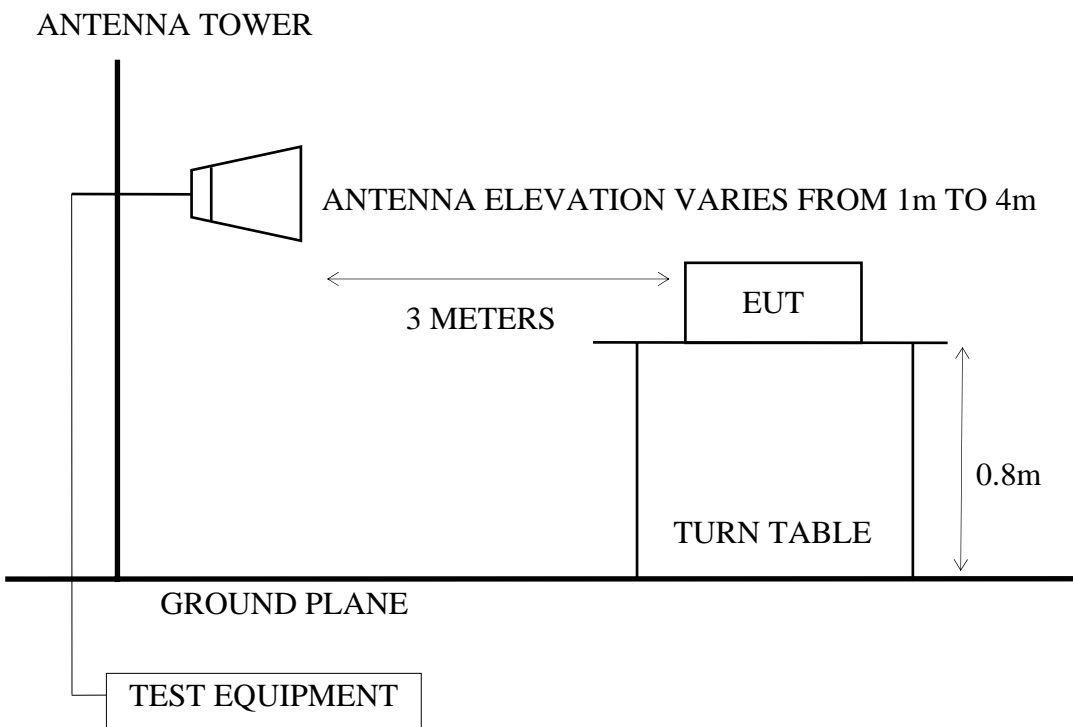
3.2.1. Block Diagram of connection between EUT and simulators

IR THERMOMETER (EUT)

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	
		$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
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 $\text{dB}\mu\text{V/m}$ (Peak) 54.0 $\text{dB}\mu\text{V/m}$ (Average)	

- Remark :
- (1) Emission level ($\text{dB}\mu\text{V/m}$) = 20 log Emission level ($\mu\text{V/m}$)
 - (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. Operating Condition of EUT

- 3.4.1. Set up the EUT (IR Thermometer) and simulator as shown on 3.2.
- 3.4.2. To turn on the power of all equipment.
- 3.4.3. The EUT was set the Notebook PC using test program "CSR Bluesuiet".
- 3.4.4. Transmit Mode: The EUT was set to continuously transmit signals at 2402MHz、2441MHz and 2480MHz during testing.
- 3.4.5. Receive Mode: The EUT was set to continuously receive signals at 2441MHz during testing.

3.5. 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 antenna such as calibrated biconical and log-periodical antennas or horn antennas 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 ESCS30 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 resolution bandwidth of test spectrum analyzer is 1MHz and the video bandwidth is 3kHz for average detection (AV) at frequency above 1GHz.

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

The frequency range from 30MHz to 25GHz (Up to 10th harmonics from fundamental frequency) was checked. 30MHz to 1000MHz was measured with Quasi-Peak detector. Above 1GHz was measured with peak and average detector. For average reading in frequency from 5.5G 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.

3.6. Radiated Emission Measurement Results

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

EUT : IR Thermometer

M/N : TS28B

Test Date : Jul. 28, 2010 Temperature : 28 °C Humidity : 59 %

Radiation tests on three different axes, we assessed the value and we selected the worst radiation position “stand” for our measured results.

For Frequency Range 30MHz~1000MHz:

The EUT select **worst position “stand”** and with following test modes were performed during this section testing and all the test results are listed in section 3.6.1.

Mode	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2402MHz (CH0)	# 8	# 7
2.		2441MHz (CH39)	# 7	# 8
3.		2480MHz (CH78)	# 8	# 7
4.	Receiving	2441MHz (CH39)	# 7	# 8

* All above final readings were measured with Quasi-Peak detector.

For Frequency above 1GHz:

The EUT select **worst position “stand”** and with following test modes was performed during this section testing and all the test results are listed in section 3.6.2.

Mode	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2402MHz (CH0)	# 1, 4, # 9, 12	# 2, 3 # 10, 11
2.		2441MHz (CH39)	# 2, 3, # 10, 11	# 1, 4 # 9, 12
3.		2480MHz (CH78)	# 1, 4, # 9, 12	# 2, 3 # 10, 11
4.	Receiving	2441MHz (CH39)	# 2, 3, # 10	# 1, 4, # 9

* Above all final readings were measured with Peak detector and Average detector.

For Restricted Bands:

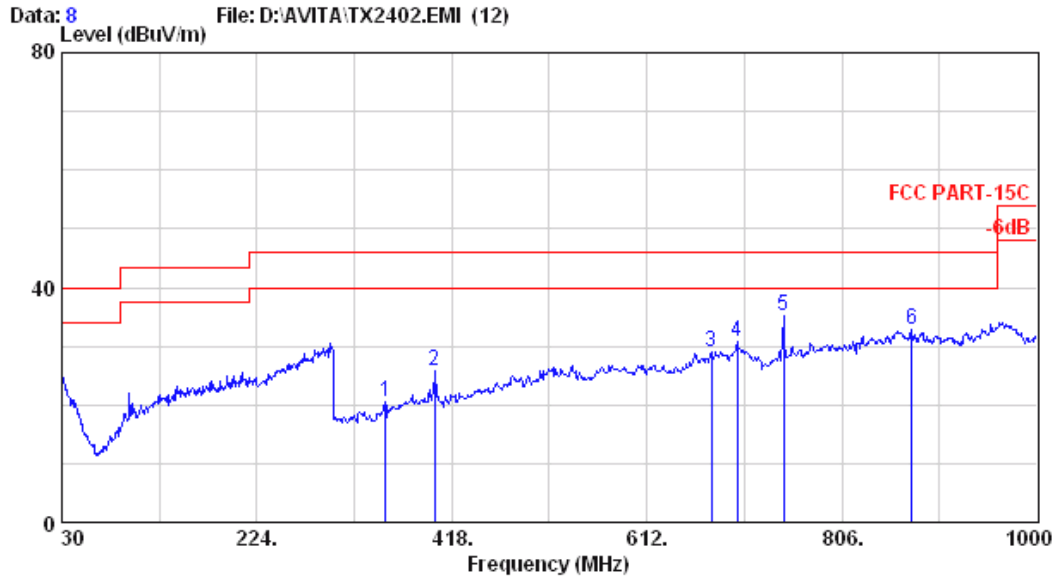
The EUT was tested in restricted bands and all the test results are listed in section 3.6.3. (The restricted bands defined in part 15.205(a))

Mode	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2402MHz (CH0)	# 1, # 4	# 2 , # 3
2.		2480MHz (CH78)	# 7, # 6	# 8, # 5

3.6.1. 30MHz~ 1000MHz Frequency Range Measurement Result



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Site no. : A/C Chamber Data no. : 8
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402

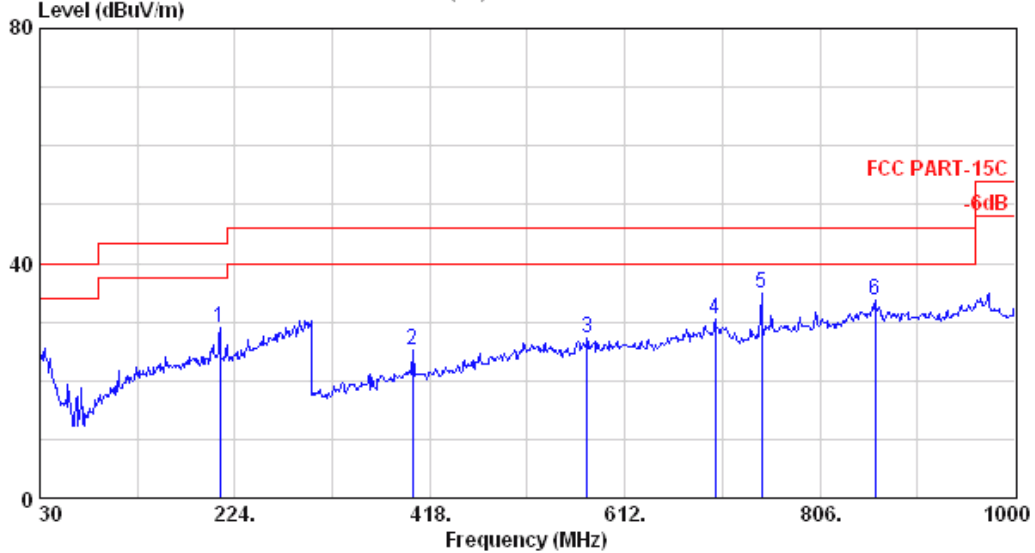
	Ant.	Cable	Emission				
Freq. (MHz)	Factor (dB/m)	Loss (dB)	Reading (dBµV)	Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	352.040	15.55	4.30	0.73	20.59	46.00	25.41
2	400.540	17.66	4.80	3.26	25.72	46.00	20.28
3	676.020	22.89	6.40	-0.31	28.97	46.00	17.03
4	702.210	23.53	6.50	0.79	30.82	46.00	15.18
5	747.800	23.11	6.70	5.26	35.07	46.00	10.93
6	875.840	25.35	7.30	0.17	32.81	46.00	13.19

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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 Email:ttmc@ttmc.com.tw

Data: 7 File: D:\AVITA\TX2402.EMI (12)



Site no. : A/C Chamber Data no. : 7
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402

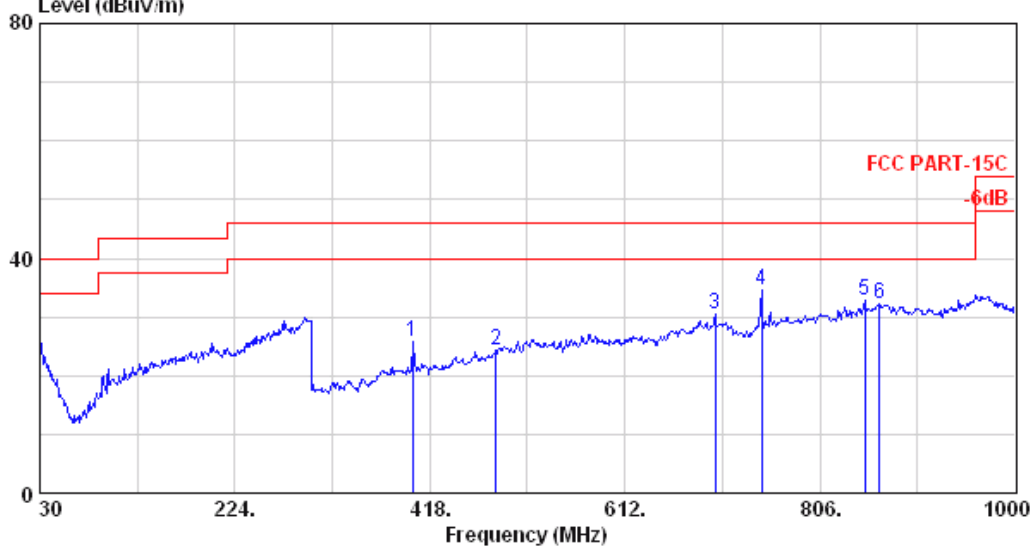
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	209.450	21.81	3.16	4.00	28.97	43.50	14.53	
2	400.540	17.66	4.80	2.73	25.19	46.00	20.81	
3	574.170	21.10	6.44	-0.22	27.32	46.00	18.68	
4	702.210	23.53	6.50	0.55	30.58	46.00	15.42	
5	747.800	23.11	6.70	4.96	34.77	46.00	11.23	
6	861.290	26.09	7.20	0.43	33.72	46.00	12.28	

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: 7 File: D:\AVITA\TX2441.EMI (12)



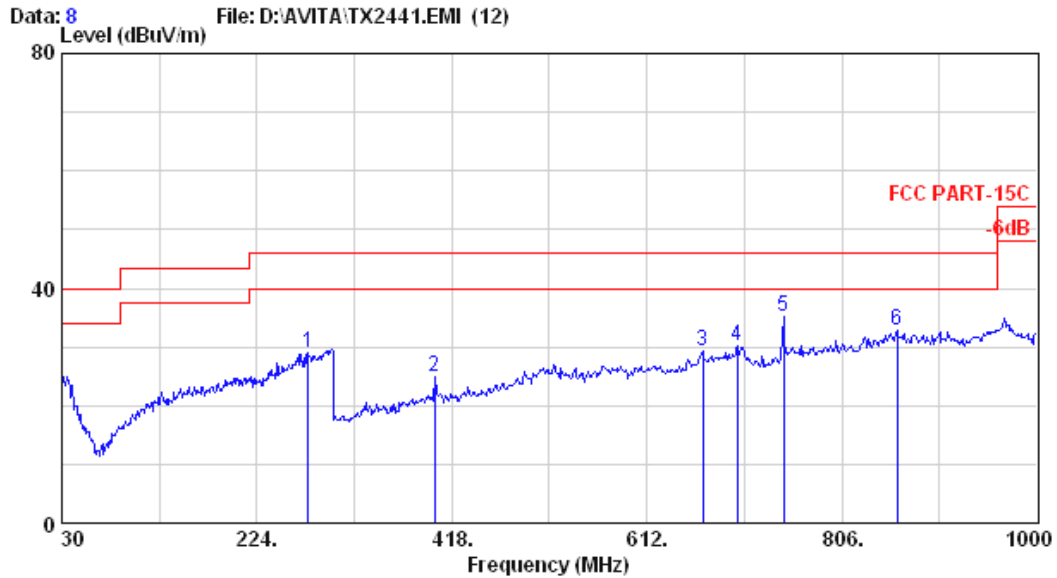
Site no. : A/C Chamber Data no. : 7
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2441

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	400.540	17.66	4.80	3.29	25.75	46.00	20.25	
2	483.960	18.84	6.14	-0.57	24.41	46.00	21.59	
3	702.210	23.53	6.50	0.58	30.61	46.00	15.39	
4	747.800	23.11	6.70	4.80	34.61	46.00	11.39	
5	850.620	25.63	7.10	0.14	32.87	46.00	13.13	
6	865.170	26.00	7.20	-0.95	32.25	46.00	13.75	

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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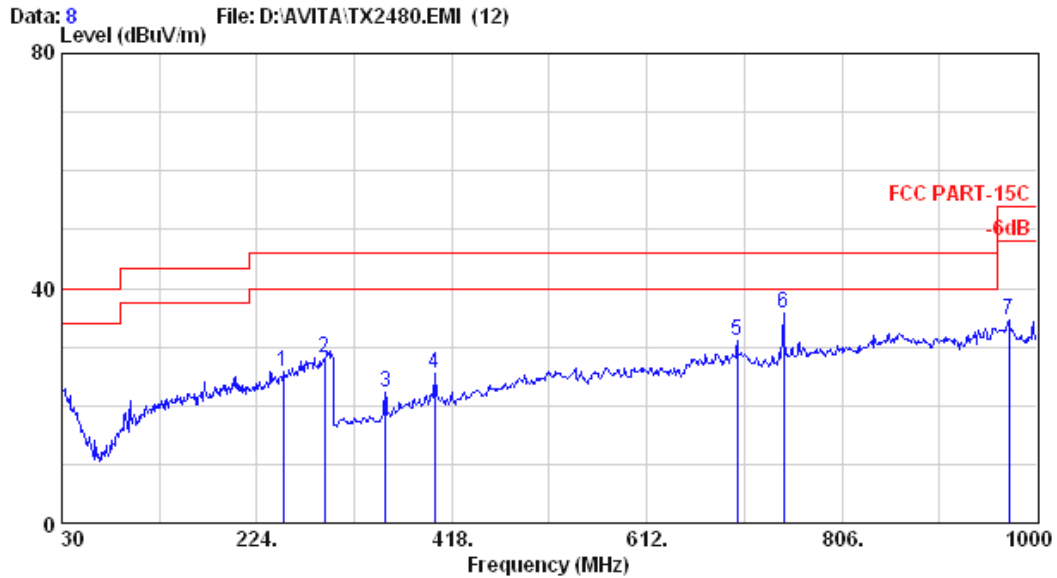
Site no. : A/C Chamber Data no. : 8
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2441

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	275.410	25.25	3.70	0.20	29.14	46.00	16.86	
2	400.540	17.66	4.80	2.51	24.97	46.00	21.03	
3	667.290	22.80	6.40	0.14	29.34	46.00	16.66	
4	702.210	23.53	6.50	0.22	30.25	46.00	15.75	
5	747.800	23.11	6.70	5.40	35.21	46.00	10.79	
6	861.290	26.09	7.20	-0.45	32.84	46.00	13.16	

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. : 8
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2480

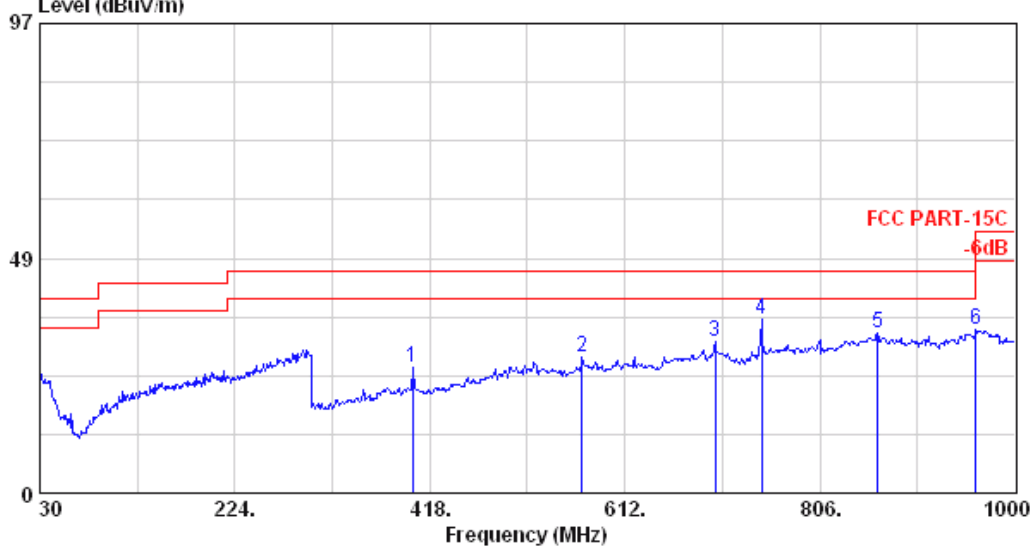
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	250.190	23.83	3.50	-1.40	25.92	46.00	20.08	
2	290.930	26.14	3.90	-1.91	28.13	46.00	17.87	
3	352.040	15.55	4.30	2.54	22.40	46.00	23.60	
4	400.540	17.66	4.80	3.15	25.61	46.00	20.39	
5	702.210	23.53	6.50	0.90	30.93	46.00	15.07	
6	747.800	23.11	6.70	5.83	35.64	46.00	10.36	
7	971.870	26.79	7.70	0.16	34.65	54.00	19.35	

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: 7 File: D:\AVITA\TX2480.EMI (12)



Site no. : A/C Chamber Data no. : 7
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2480

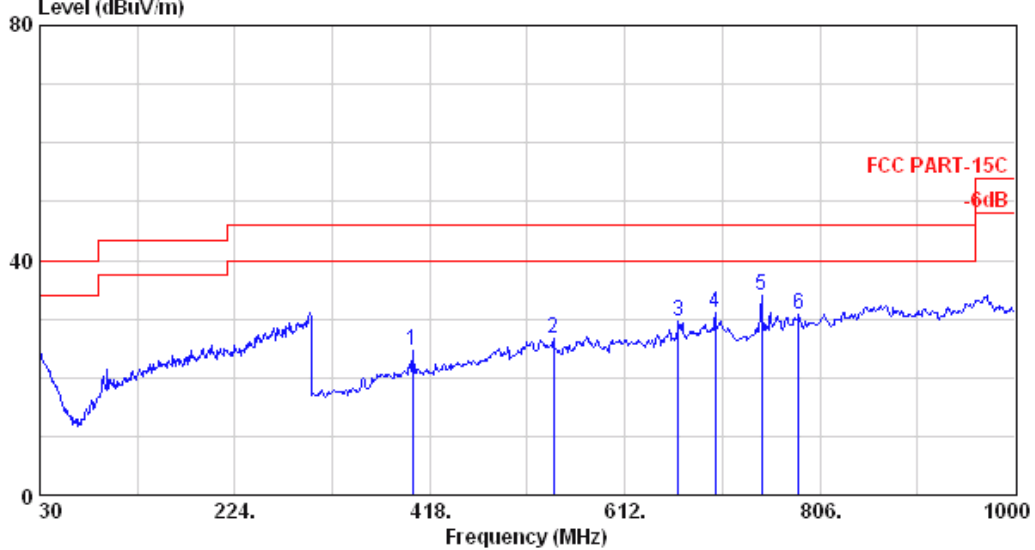
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	400.540	17.66	4.80	3.61	26.07	46.00	19.93	
2	569.320	21.17	6.50	0.37	28.05	46.00	17.95	
3	702.210	23.53	6.50	1.17	31.20	46.00	14.80	
4	747.800	23.11	6.70	5.92	35.73	46.00	10.27	
5	863.230	26.09	7.20	-0.12	33.17	46.00	12.83	
6	961.200	26.50	7.60	-0.37	33.73	54.00	20.27	

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: 7 File: D:\AVITA\RX2441.EMI (10)



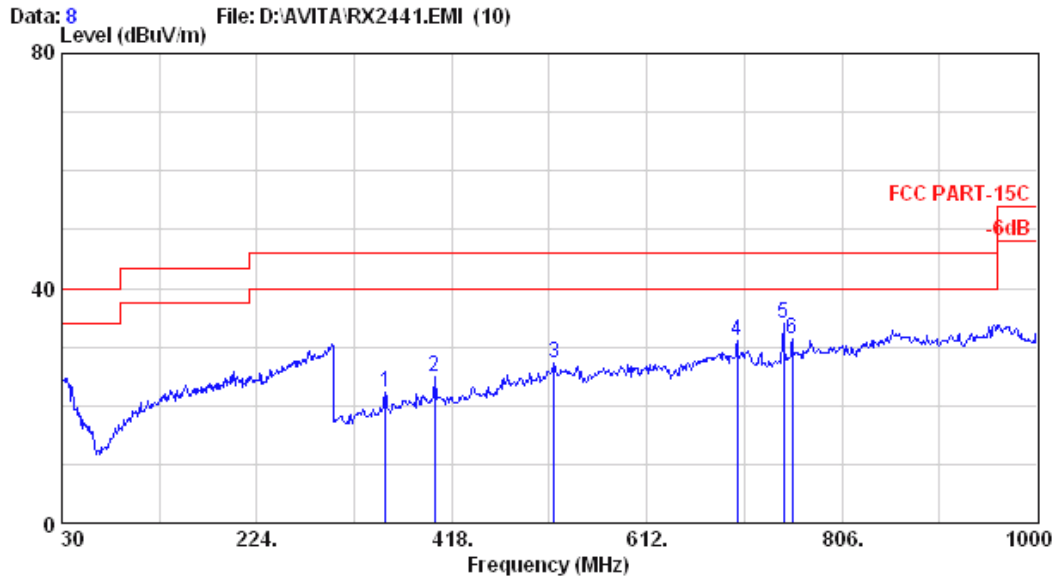
Site no. : A/C Chamber Data no. : 7
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : RX2441

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	400.540	17.66	4.80	2.11	24.57	46.00	21.43	
2	541.190	19.25	7.01	0.43	26.69	46.00	19.31	
3	665.350	22.65	6.40	0.59	29.64	46.00	16.36	
4	702.210	23.53	6.50	1.07	31.10	46.00	14.90	
5	747.800	23.11	6.70	4.07	33.88	46.00	12.12	
6	784.660	23.87	6.90	-0.06	30.71	46.00	15.29	

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. : 8
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : RX2441

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	352.040	15.55	4.30	2.27	22.13	46.00	23.87	
2	400.540	17.66	4.80	2.53	24.99	46.00	21.01	
3	519.850	19.99	6.90	0.29	27.18	46.00	18.82	
4	702.210	23.53	6.50	1.15	31.18	46.00	14.82	
5	747.800	23.11	6.70	4.19	34.00	46.00	12.00	
6	756.530	23.59	6.73	1.12	31.44	46.00	14.56	

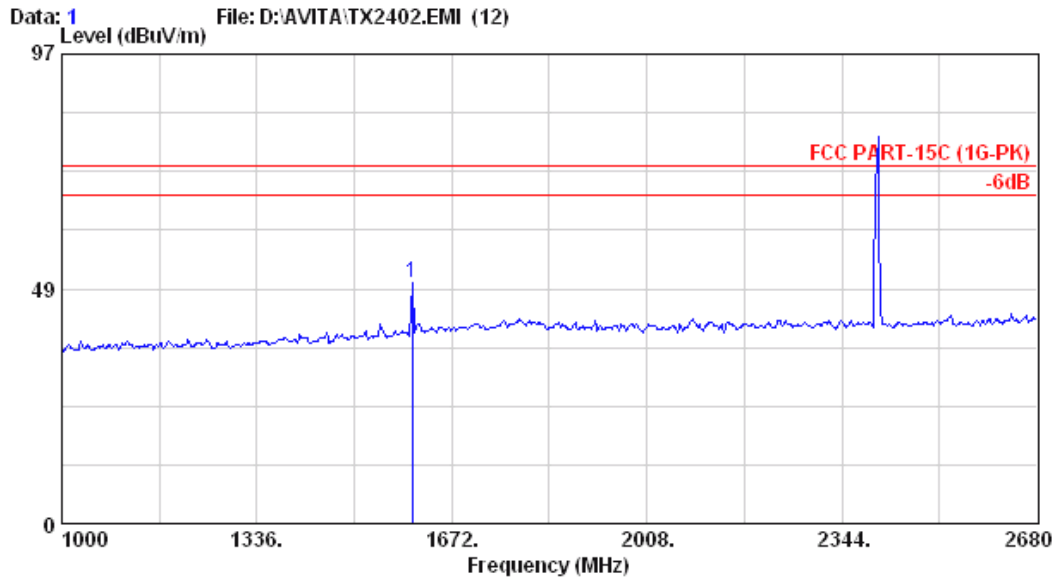
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

3.6.2. Above 1GHz Frequency Range Measurement Results

Test Mode: Transmitting Mode, Frequency: 2402MHz (CH0)



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Site no.	: A/C Chamber	Data no.	: 1
Dis. / Ant.	: 3m 3115(3775)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 28°C /59%		
EUT	: IR Thermometer M/N:TS28B		
Power Rating	: DC 3V		
Test Mode	: TX2402		

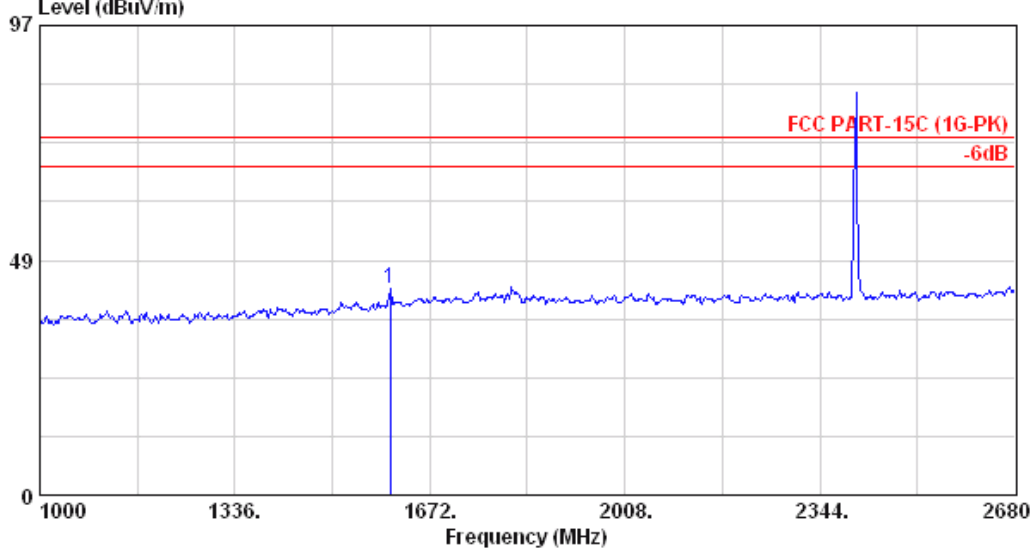
	Ant. Factor	Cable Loss	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1 1603.120	26.10	6.18	17.35	49.63	74.00	24.37	Peak

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: 2 File: D:\AVITA\TX2402.EMI (12)



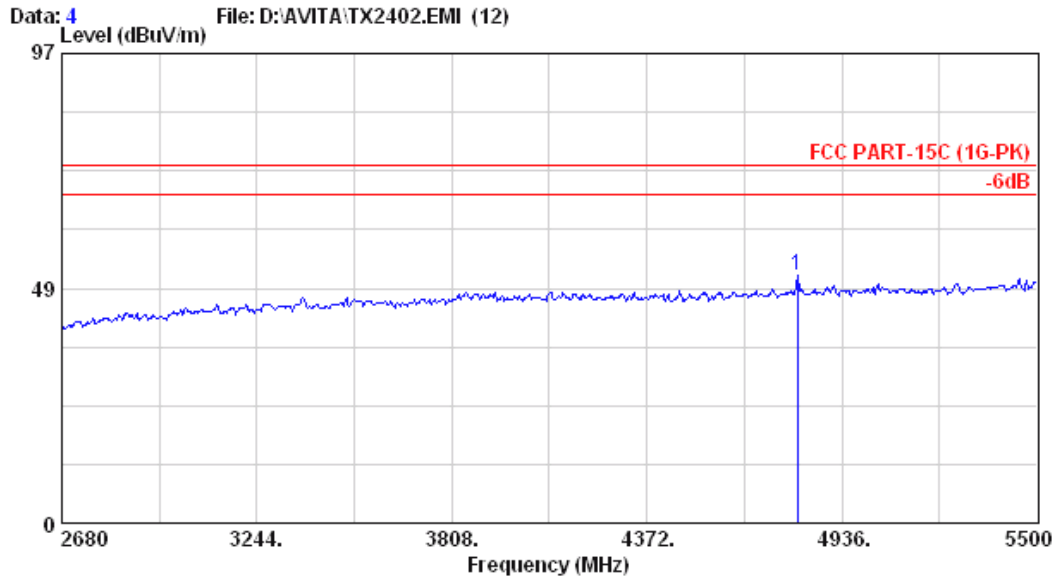
Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark	
-----	1	1603.120	26.10	6.18	10.29	42.57	74.00	31.43	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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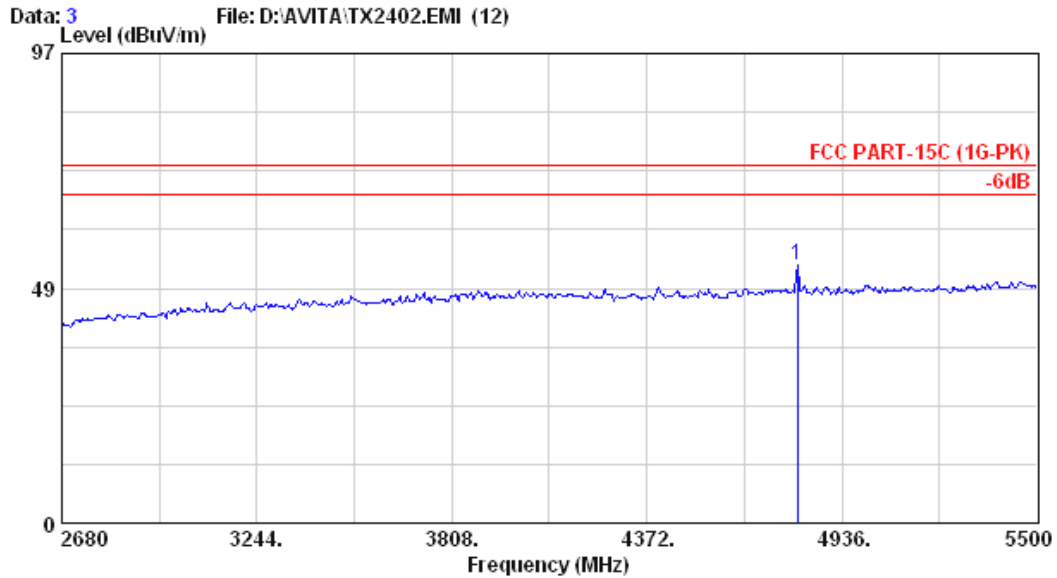
Site no.	: A/C Chamber	Data no.	: 4
Dis. / Ant.	: 3m 3115(3775)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 28°C /59%	Engineer	: Jarwei Wang
EUT	: IR Thermometer M/N:TS28B		
Power Rating	: DC 3V		
Test Mode	: TX2402		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark	
-----	1	4806.280	32.92	9.14	9.10	51.16	74.00	22.84	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 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402

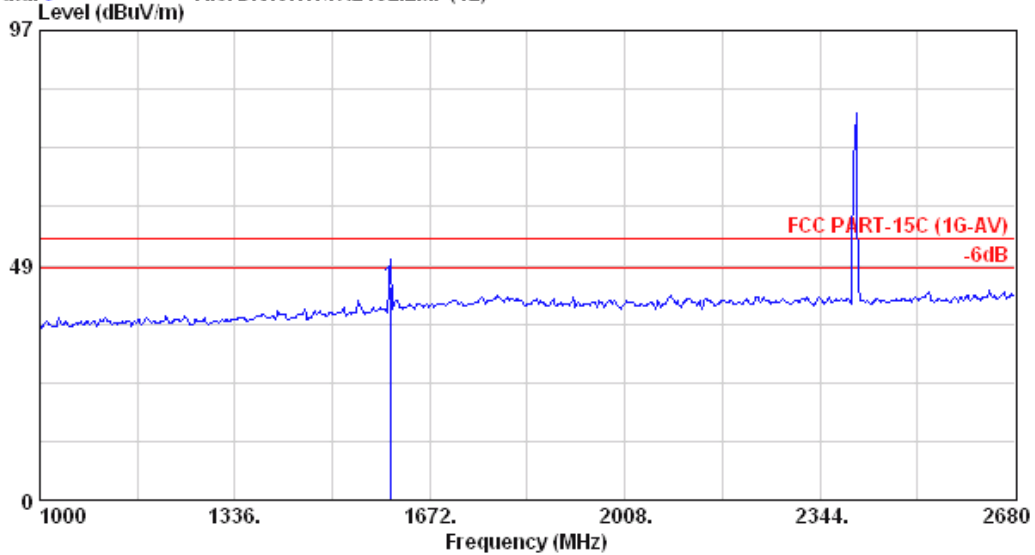
	Freq.	Ant. Factor	Cable Loss	Reading	Emission Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dBμV)	(dBμV/m)	(dBμV/m)	(dB)	
1	4806.280	32.92	9.14	11.34	53.40	74.00	20.60	Peak

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: 9 File: D:\AVITA\TX2402.EMI (12)



Site no. : A/C Chamber Data no. : 9
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402

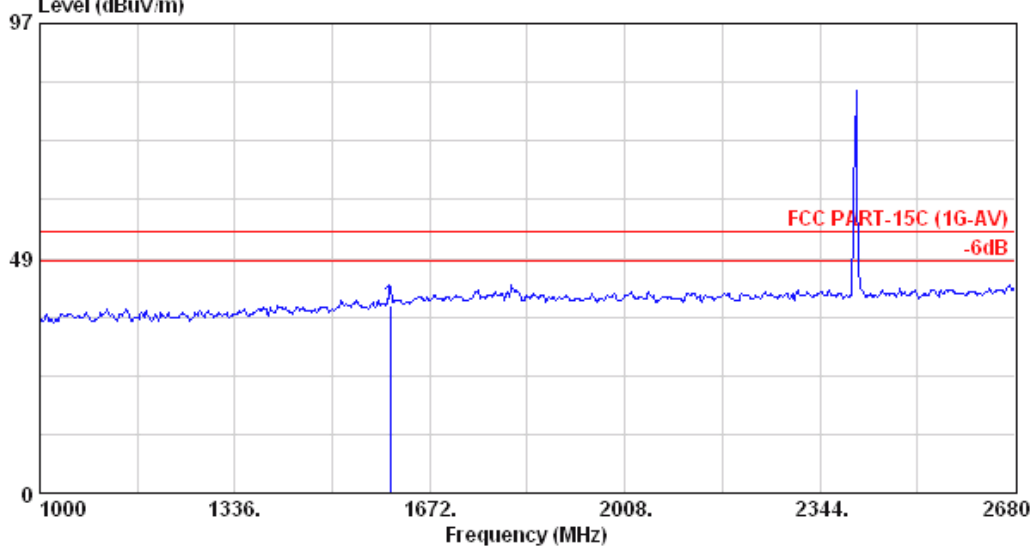
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark	
-----	1	1603.120	26.10	6.18	11.63	43.91	54.00	10.09	Average

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: 10 File: D:\AVITA\TX2402.EMI (12)



Site no. : A/C Chamber Data no. : 10
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402

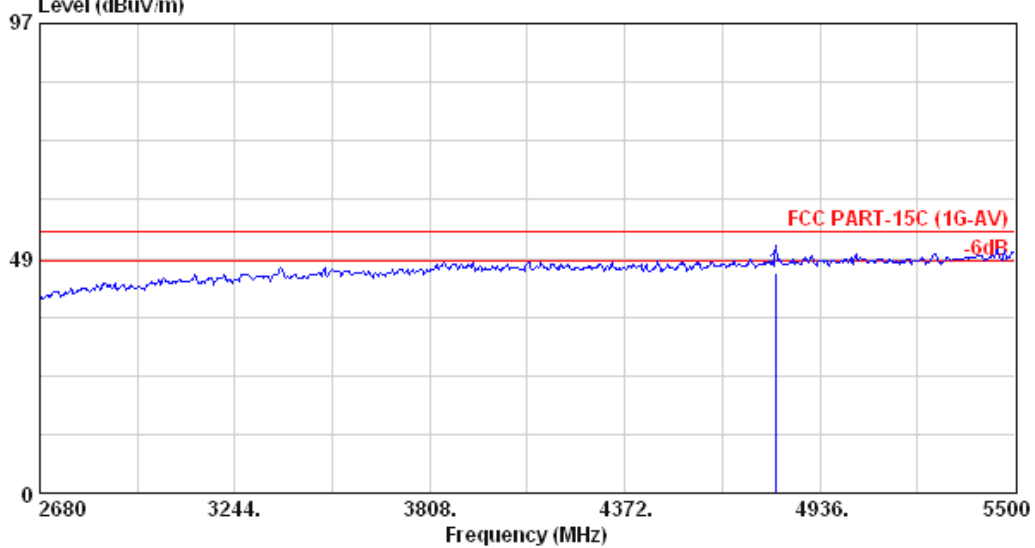
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1603.120	26.10	6.18	6.59	38.87	54.00	15.13	Average

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: 12 File: D:\AVITA\TX2402.EMI (12)



Site no. : A/C Chamber Data no. : 12
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402

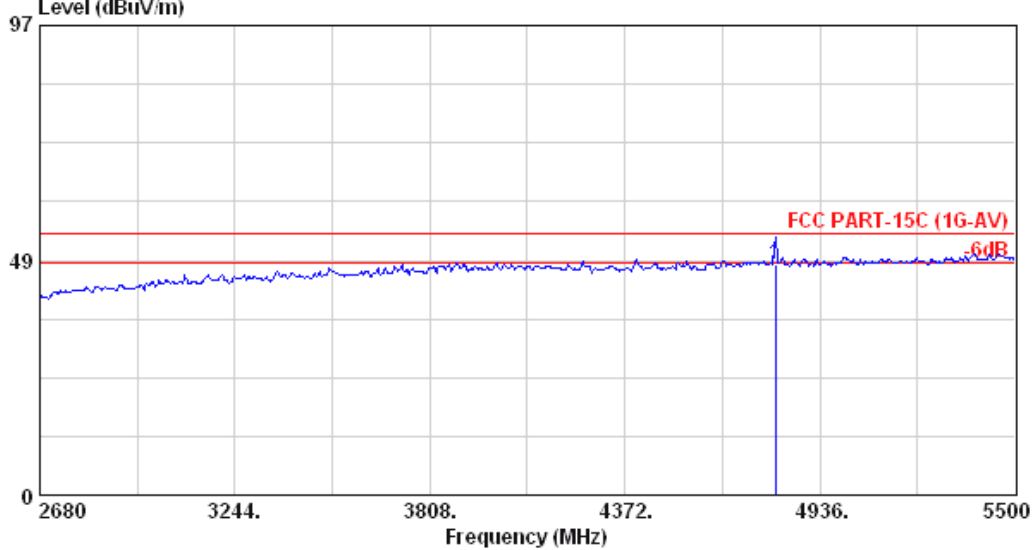
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
-----	1	4806.280	32.92	9.14	3.29	45.36	54.00	8.64 Average

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: 11 File: D:\AVITA\TX2402.EMI (12)



Site no.	: A/C Chamber	Data no.	: 11
Dis. / Ant.	: 3m 3115(3775)	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-AV)		
Env. / Ins.	: 8564EC 28°C /59%	Engineer	: Jarwei Wang
EUT	: IR Thermometer M/N:TS28B		
Power Rating	: DC 3V		
Test Mode	: TX2402		

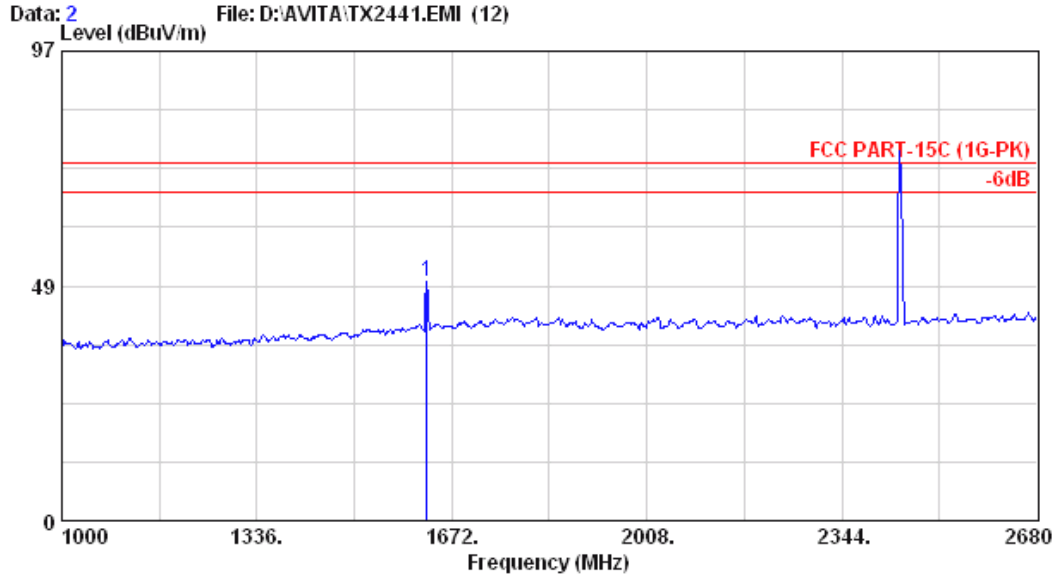
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
-----	1	4806.280	32.92	9.14	5.52	47.59	54.00	6.41 Average

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

Test Mode: Transmitting Mode, Frequency: 2441MHz (CH39)



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Site no.	: A/C Chamber	Data no.	: 2
Dis. / Ant.	: 3m 3115(3775)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 28°C /59%	Engineer	: Jarwei Wang
EUT	: IR Thermometer M/N:TS28B		
Power Rating	: DC 3V		
Test Mode	: TX2441		

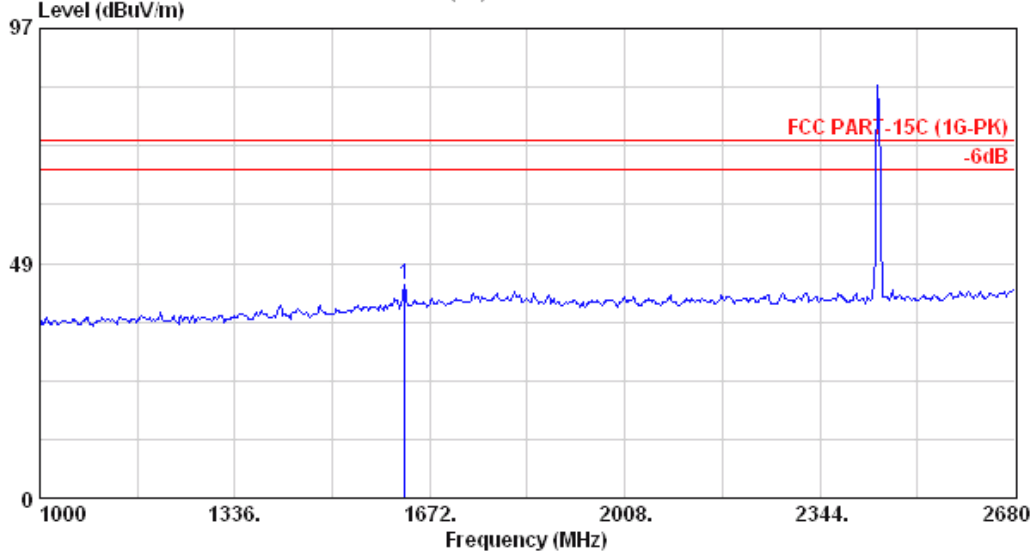
	Ant. Factor	Cable Loss	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1 1628.320	26.23	6.36	16.94	49.53	74.00	24.47	Peak

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: D:\AVITA\TX2441.EMI (12)



Site no.	: A/C Chamber	Data no.	: 1
Dis. / Ant.	: 3m 3115(3775)	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 28°C /59%	Engineer	: Jarwei Wang
EUT	: IR Thermometer M/N:TS28B		
Power Rating	: DC 3V		
Test Mode	: TX2441		

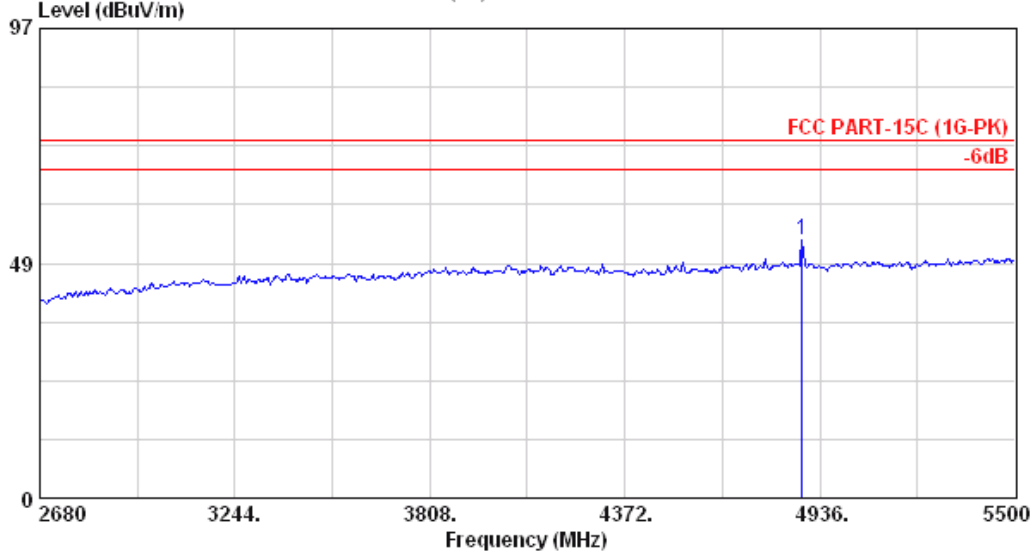
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1628.320	26.23	6.36	11.39	43.98	74.00	30.02	Peak

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: D:\AVITA\TX2441.EMI (12)



Site no. : A/C Chamber Data no. : 3
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2441

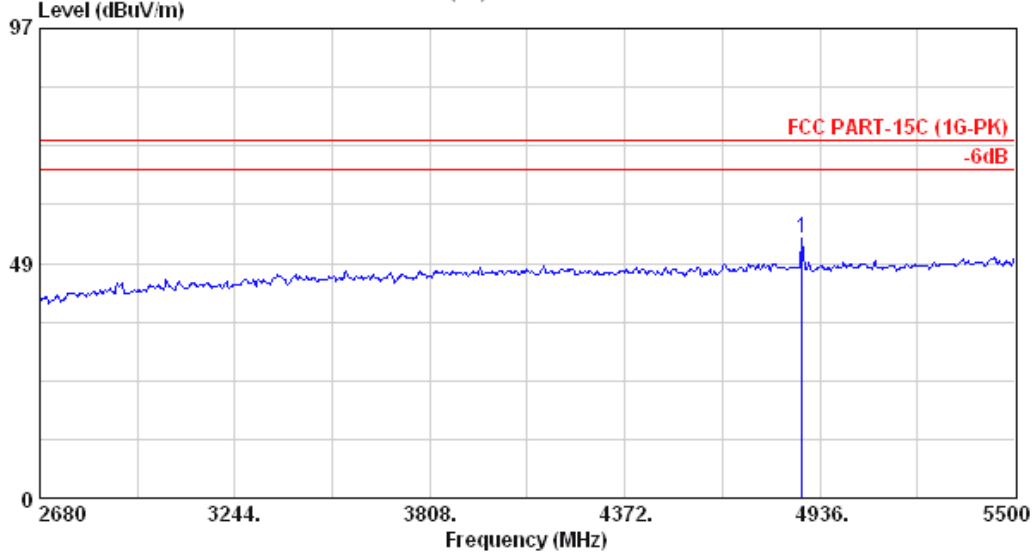
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark	
-----	1	4885.240	33.09	9.15	11.11	53.35	74.00	20.65	Peak

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: D:\AVITA\TX2441.EMI (12)



Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2441

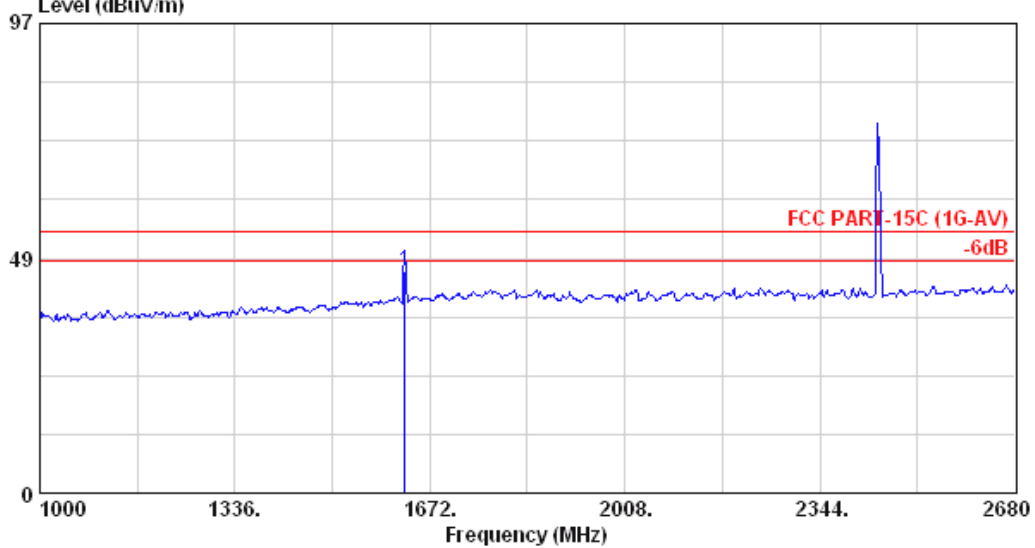
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark	
-----	1	4885.240	33.09	9.15	11.34	53.58	74.00	20.42	Peak

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: 10 File: D:\AVITA\TX2441.EMI (12)



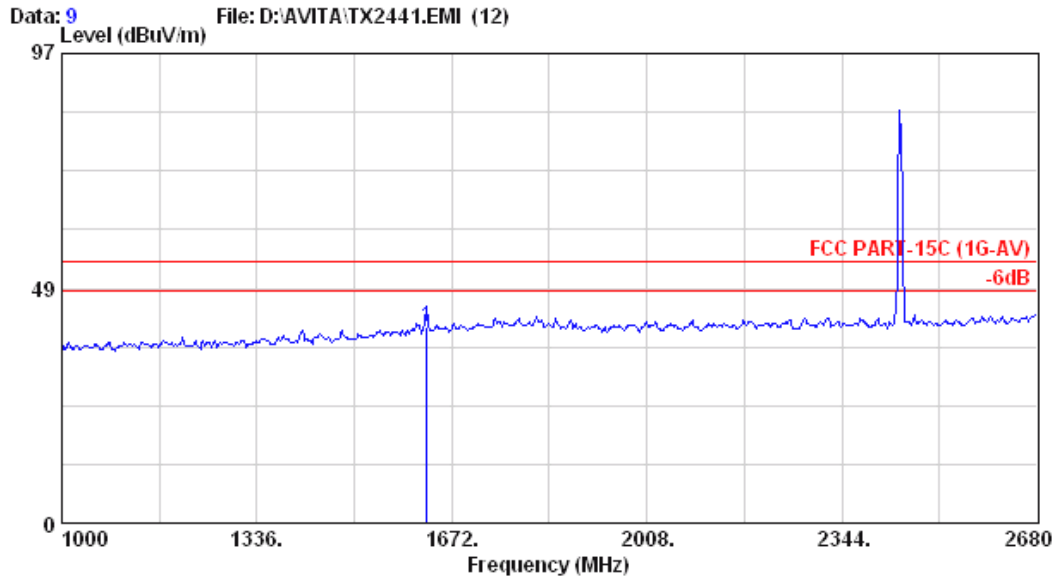
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 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2441

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1628.320	26.23	6.36	13.15	45.74	54.00	8.26	Average

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. : 9
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2441

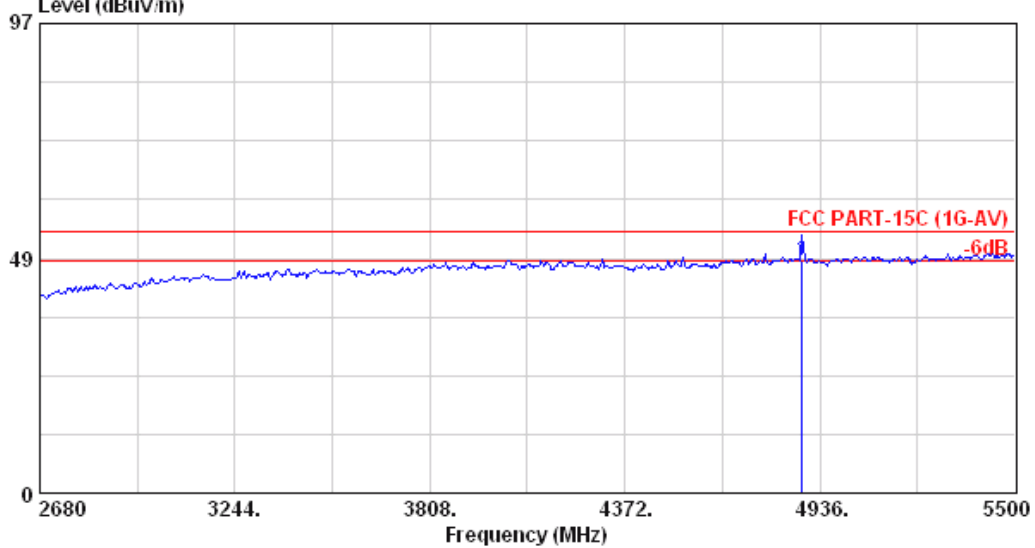
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1628.320	26.23	6.36	8.00	40.59	54.00	13.41	Average

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: 11 File: D:\AVITA\TX2441.EMI (12)



Site no. : A/C Chamber Data no. : 11
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2441

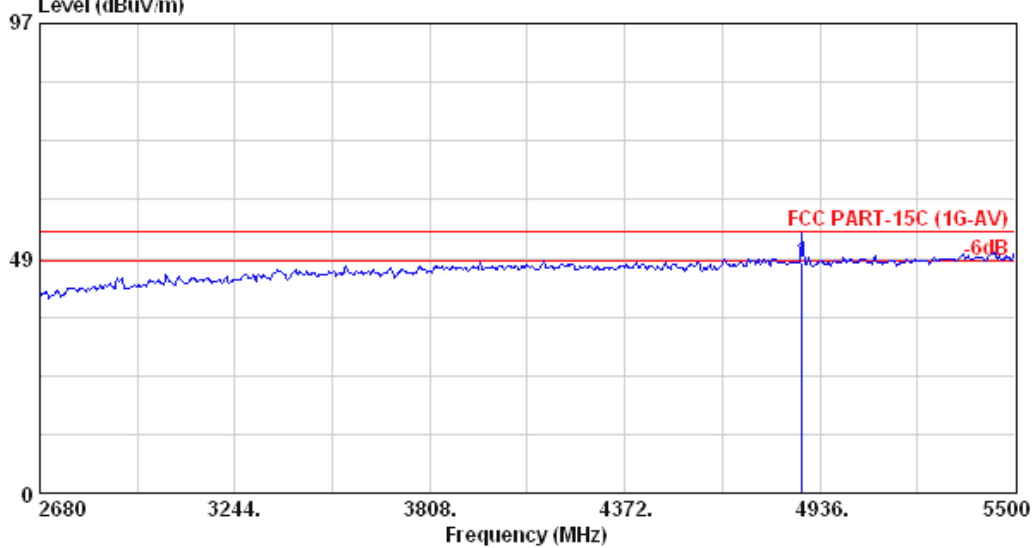
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	4885.240	33.09	9.15	5.79	48.03	54.00	5.97	Average

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: 12 File: D:\AVITA\TX2441.EMI (12)



Site no. : A/C Chamber Data no. : 12
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2441

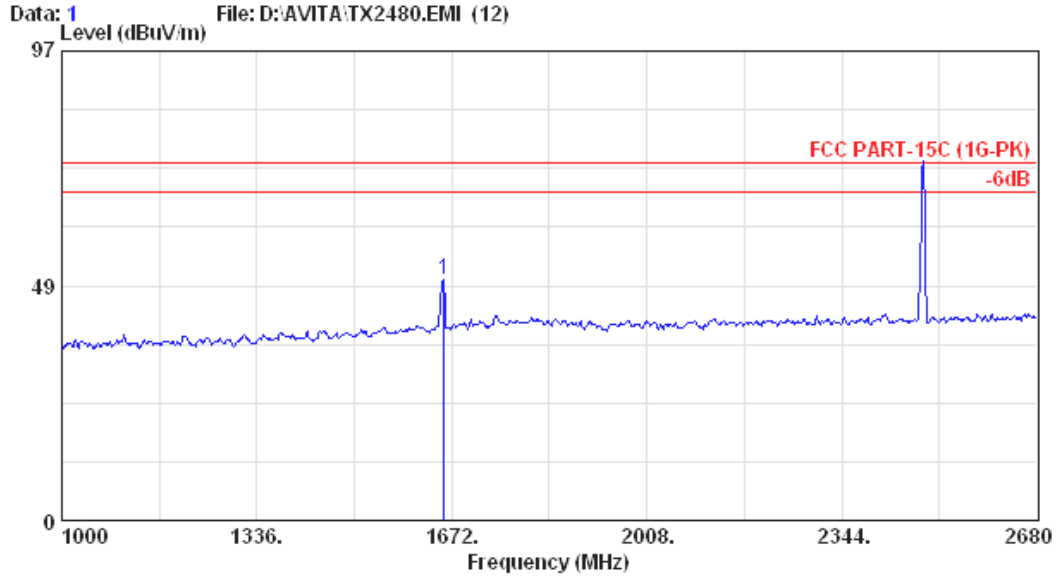
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
-----	1	4885.240	33.09	9.15	5.45	47.69	54.00	6.31 Average

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

Test Mode: Transmitting Mode, Frequency: 2480MHz (CH78)



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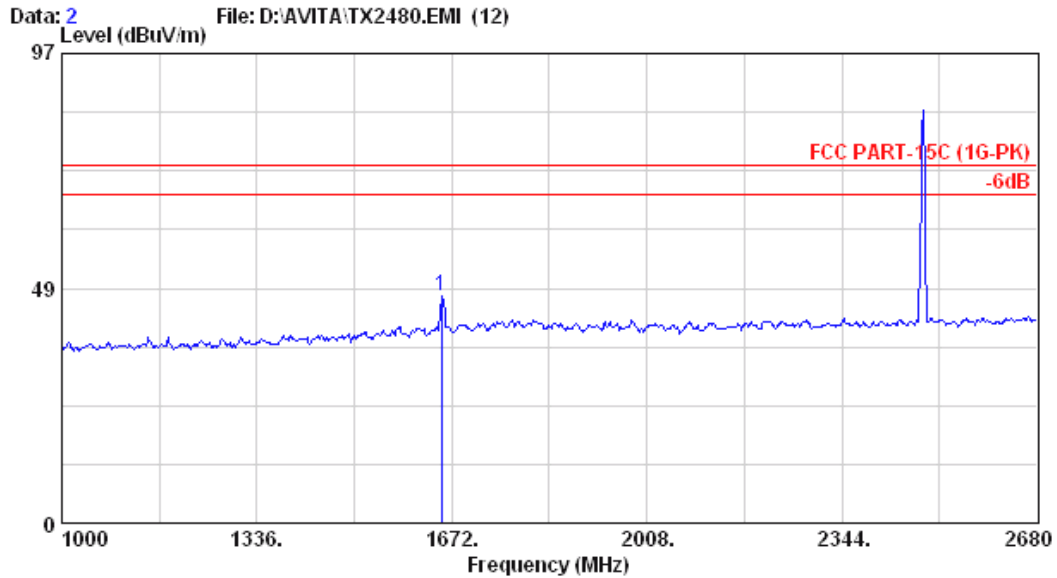
Site no.	: A/C Chamber	Data no.	: 1
Dis. / Ant.	: 3m 3115(3775)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)	Engineer	: Jarwei Wang
Env. / Ins.	: 8564EC 28°C /59%		
EUT	: IR Thermometer M/N:TS28B		
Power Rating	: DC 3V		
Test Mode	: TX2480		

	Ant. Factor	Cable Loss	Emission Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1 1658.560	26.37	6.56	16.80	49.73	74.00	24.27	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 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2480

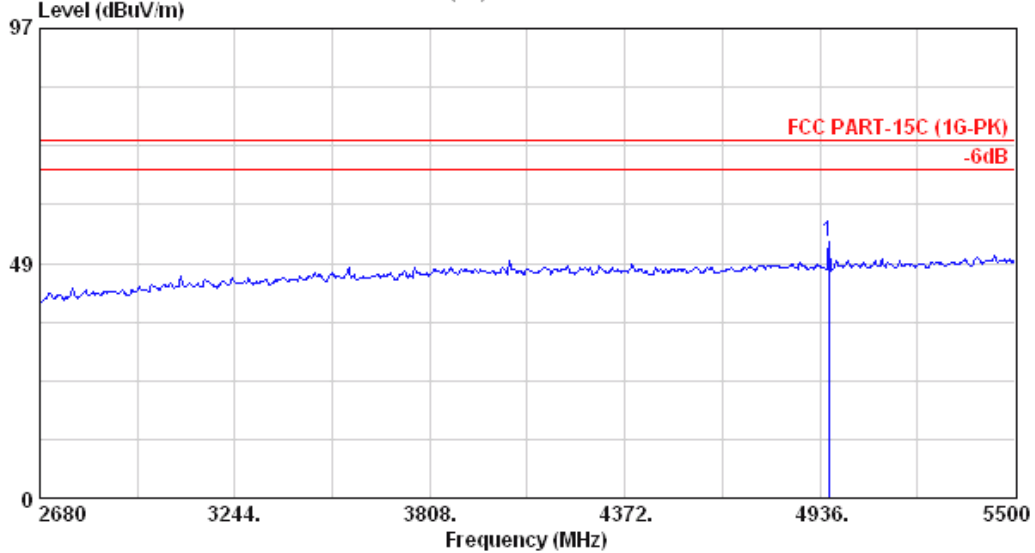
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1653.520	26.30	6.52	14.17	46.99	74.00	27.01	Peak

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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Data: 4 File: D:\AVITA\TX2480.EMI (12)



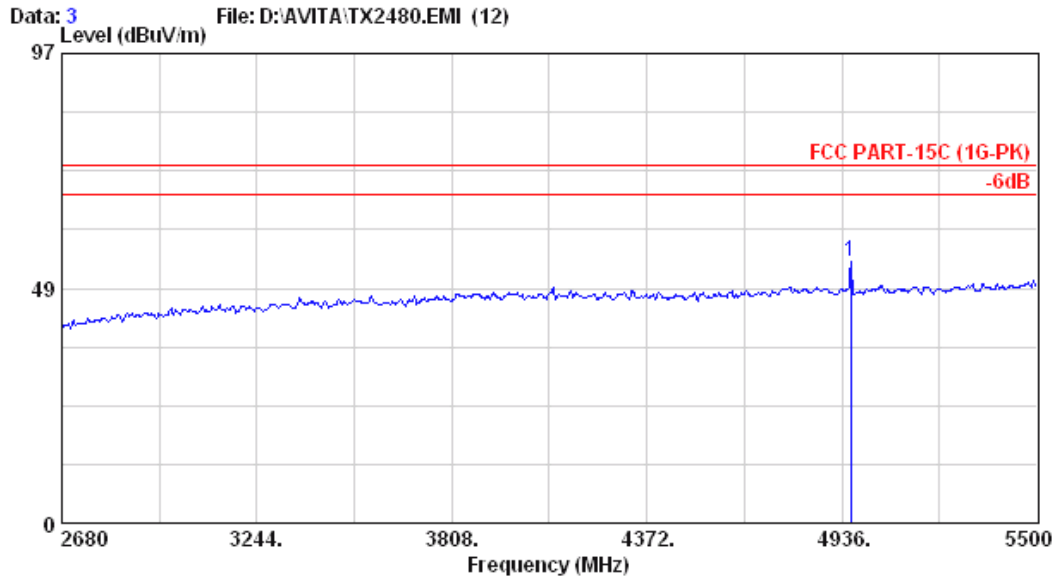
Site no.	: A/C Chamber	Data no.	: 4
Dis. / Ant.	: 3m 3115(3775)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 28°C /59%	Engineer	: Jarwei Wang
EUT	: IR Thermometer M/N:TS28B		
Power Rating	: DC 3V		
Test Mode	: TX2480		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark	
-----	1	4961.380	33.23	9.12	10.67	53.02	74.00	20.98	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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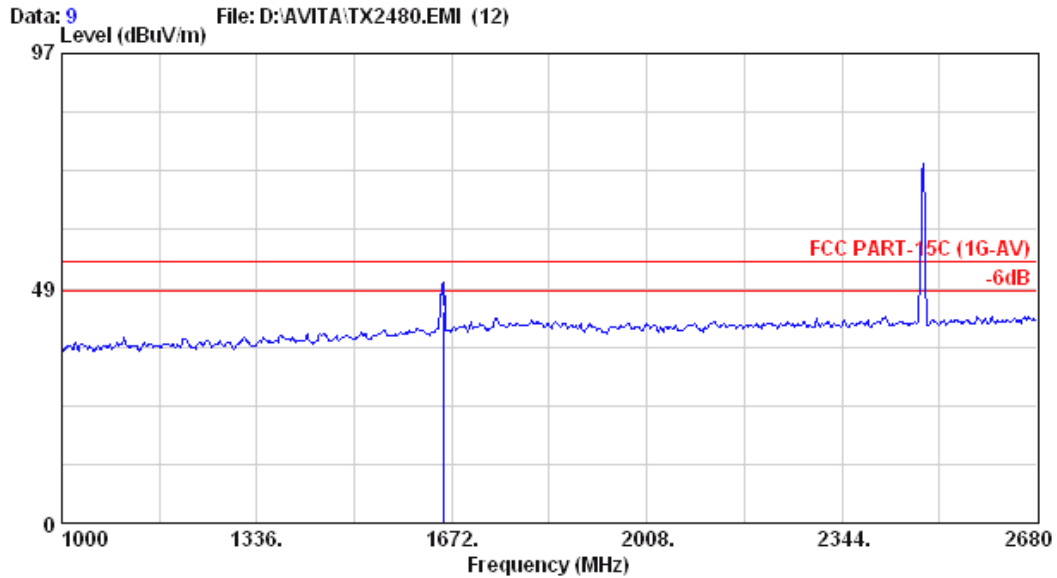
Site no. : A/C Chamber Data no. : 3
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2480

	Freq.	Ant. Factor	Cable Loss	Reading	Emission Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4961.380	33.23	9.12	11.56	53.91	74.00	20.09	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. : 9
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2480

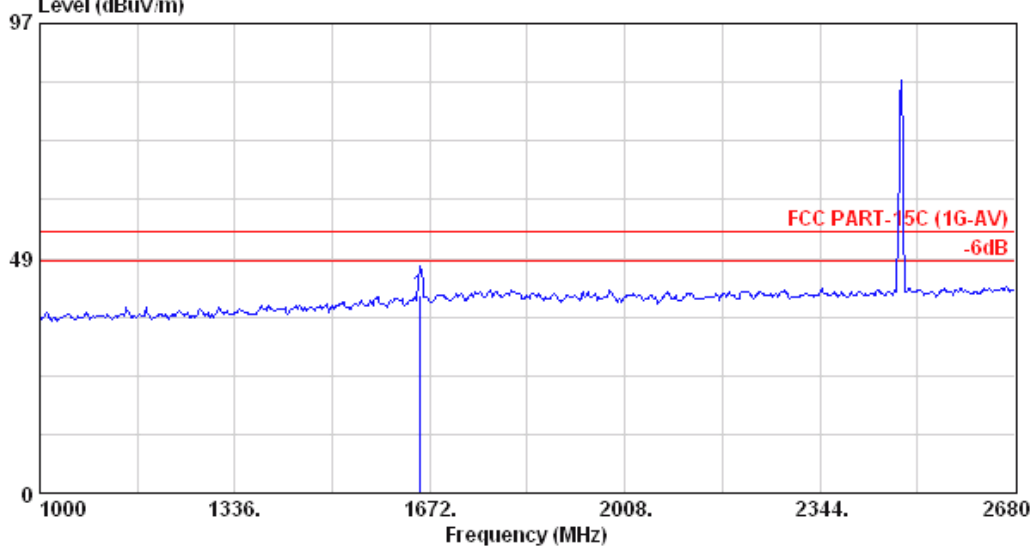
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
-----	1	1658.560	26.37	6.56	10.83	43.76	54.00	10.24 Average

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: 10 File: D:\AVITA\TX2480.EMI (12)



Site no. : A/C Chamber Data no. : 10
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2480

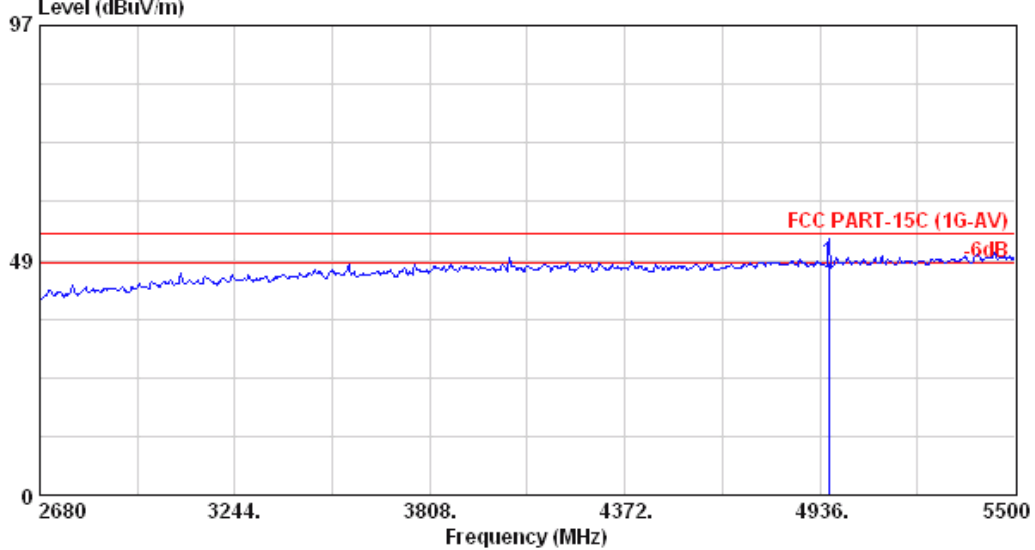
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1653.520	26.30	6.52	8.18	41.00	54.00	13.00	Average

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: 12 File: D:\AVITA\TX2480.EMI (12)



Site no. : A/C Chamber Data no. : 12
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2480

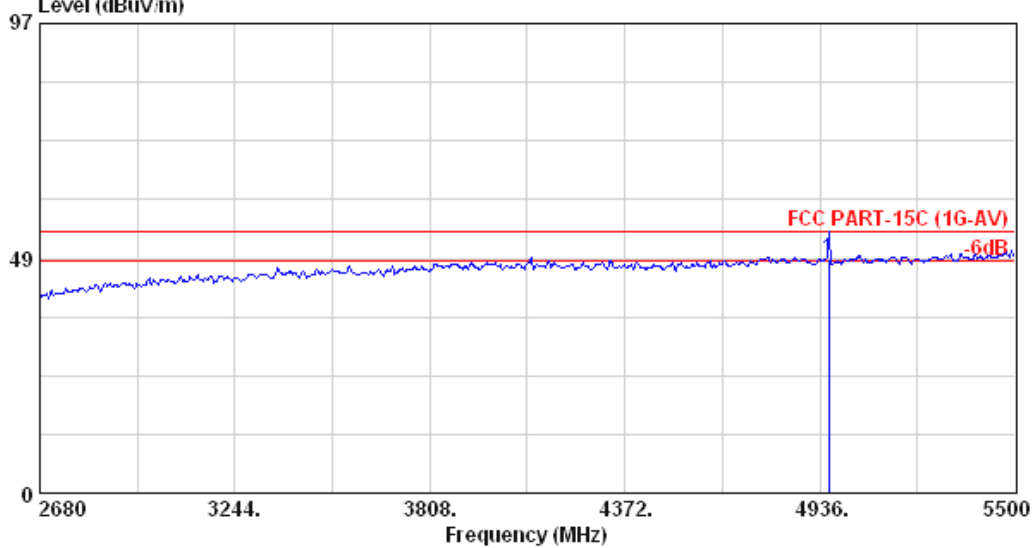
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	4961.380	33.23	9.12	5.54	47.89	54.00	6.11	Average

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: 11 File: D:\AVITA\TX2480.EMI (12)



Site no.	: A/C Chamber	Data no.	: 11
Dis. / Ant.	: 3m 3115(3775)	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-AV)		
Env. / Ins.	: 8564EC 28°C /59%	Engineer	: Jarwei Wang
EUT	: IR Thermometer M/N:TS28B		
Power Rating	: DC 3V		
Test Mode	: TX2480		

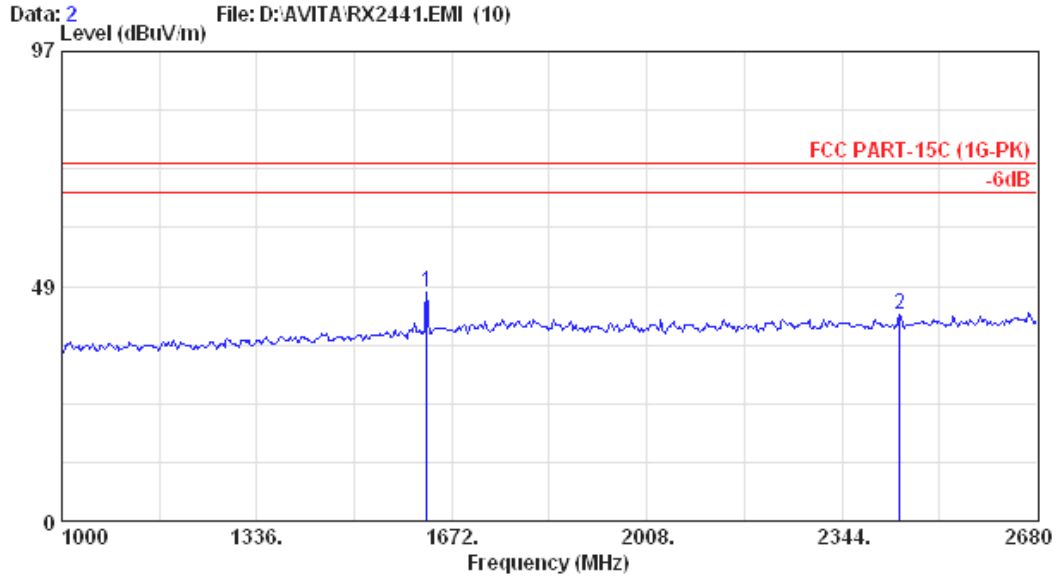
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
-----	1	4961.380	33.23	9.12	5.89	48.24	54.00	5.76 Average

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

Test Mode: Receiving Mode, Frequency: 2441MHz (CH39)



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Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : RX2441

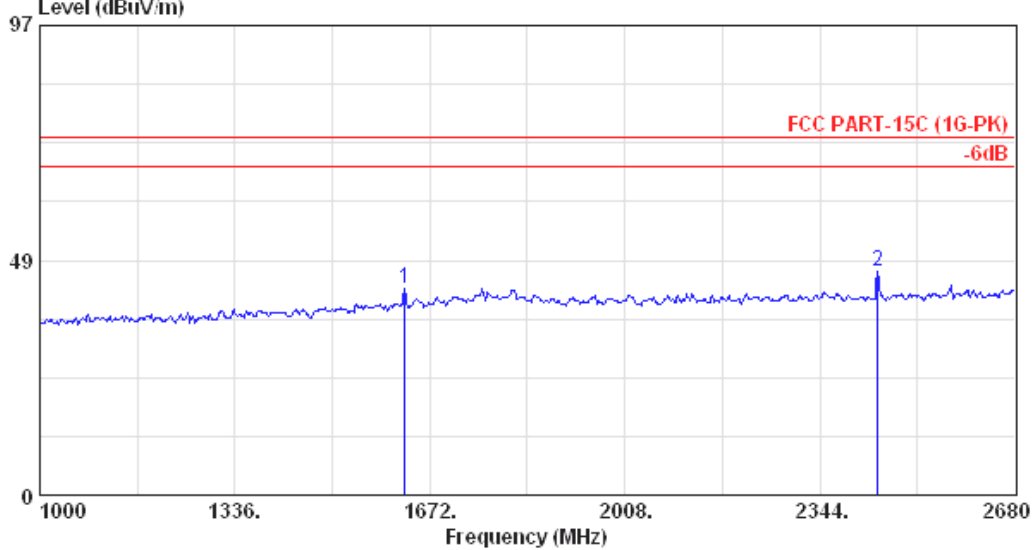
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1628.320	26.23	6.36	14.69	47.28	74.00	26.72	Peak
2	2443.120	28.15	6.40	8.20	42.75	74.00	31.25	Peak

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: D:\AVITA\RX2441.EMI (10)



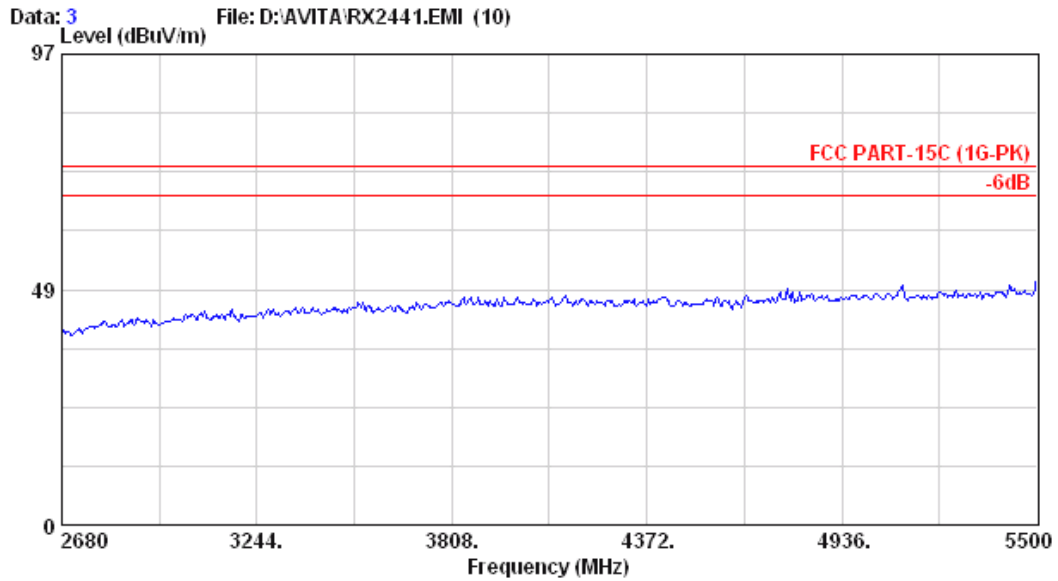
Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : RX2441

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1628.320	26.23	6.36	10.05	42.64	74.00	31.36	Peak
2	2443.120	28.15	6.40	11.74	46.29	74.00	27.71	Peak

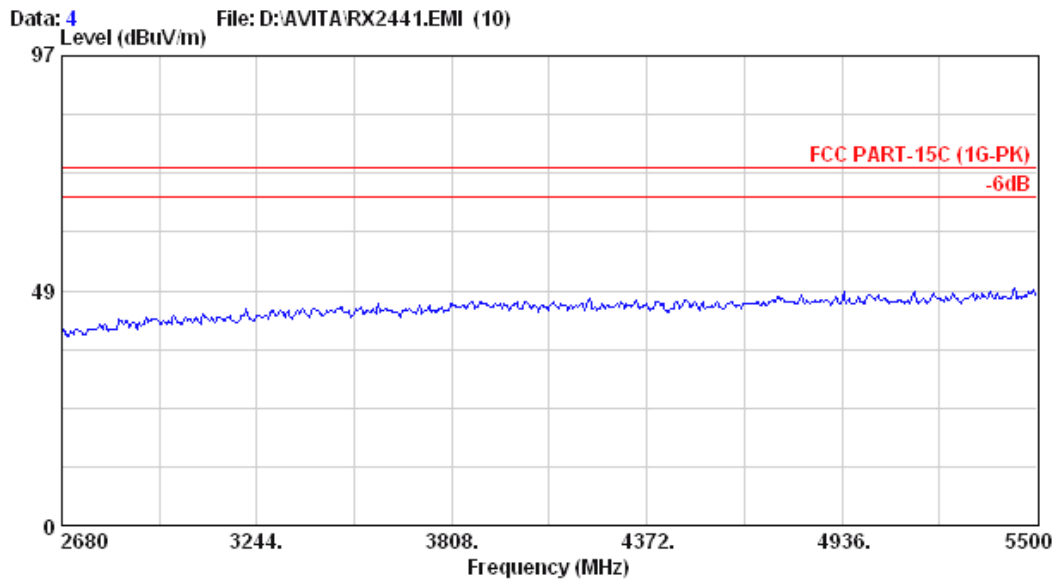
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



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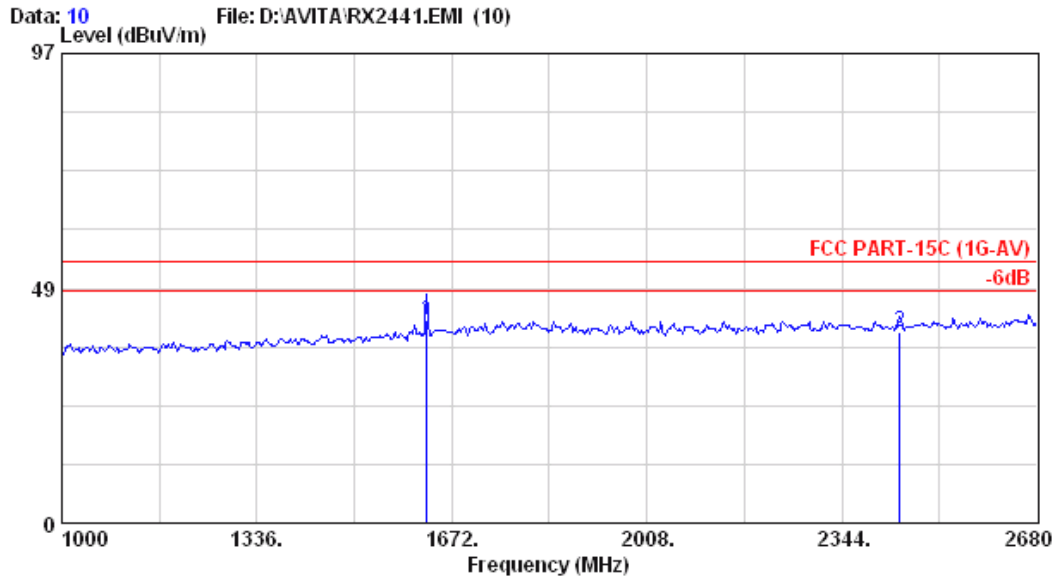
Site no.	: A/C Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115(3775)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 28°C /59%	Engineer	: Jarwei Wang
EUT	: IR Thermometer M/N:TS28B		
Power Rating	: DC 3V		
Test Mode	: RX2441		



Site no.	: A/C Chamber	Data no.	: 4
Dis. / Ant.	: 3m 3115(3775)	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-PK)		
Env. / Ins.	: 8564EC 28°C /59%	Engineer	: Jarwei Wang
EUT	: IR Thermometer M/N:TS28B		
Power Rating	: DC 3V		
Test Mode	: RX2441		



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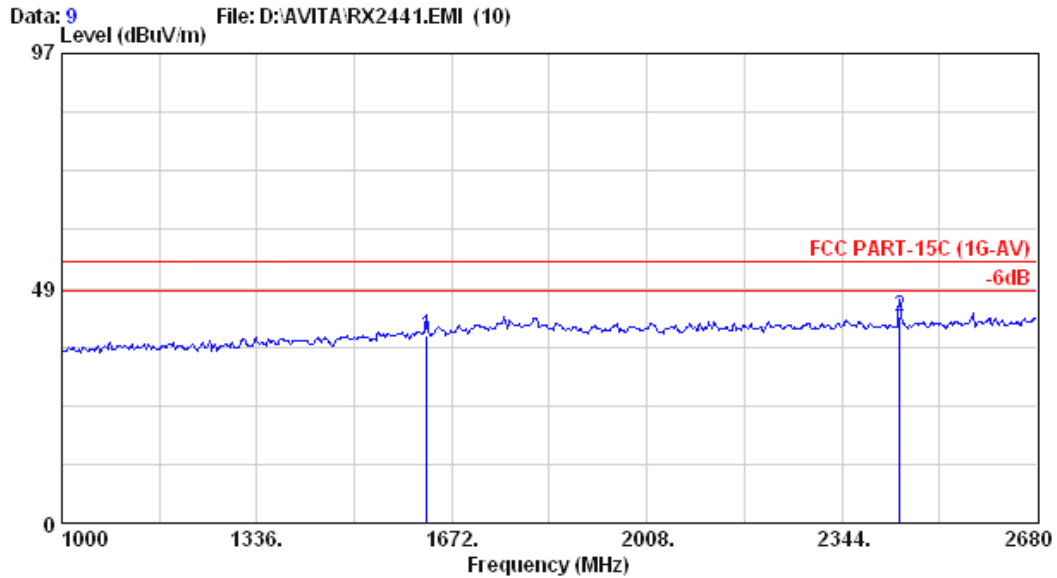
Site no. : A/C Chamber Data no. : 10
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C /59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : RX2441

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1628.320	26.23	6.36	9.46	42.06	54.00	11.94	Average
2	2443.120	28.15	6.40	4.81	39.36	54.00	14.64	Average

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. : 9
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C / 59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : RX2441

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1628.320	26.23	6.36	6.10	38.69	54.00	15.31	Average
2	2443.120	28.15	6.40	8.09	42.64	54.00	11.36	Average

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

3.6.3. Restricted Bands Measurement Results

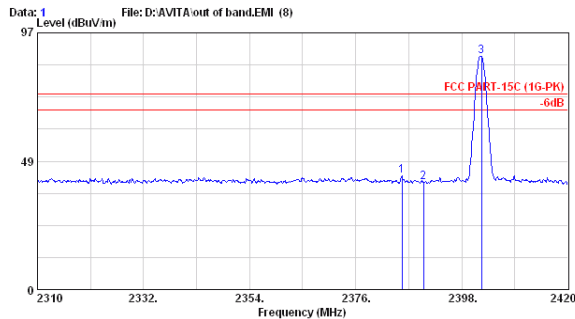
Date of Test : Jul. 28, 2010 Temperature : 28°C
 EUT : IR Thermometer Humidity : 59%
 Test Mode : Transmitting Mode, Frequency: 2402MHz (CH0) Test Voltage : DC 3V

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Horizontal dBμV/m	Emission Level Horizontal dBμV/m	Limits dB	Margin
Peak *	2385.570	28.10	6.33	8.53	42.96	74.00	31.04
Average *	2375.120	28.08	6.32	-2.88	31.52	54.00	22.48

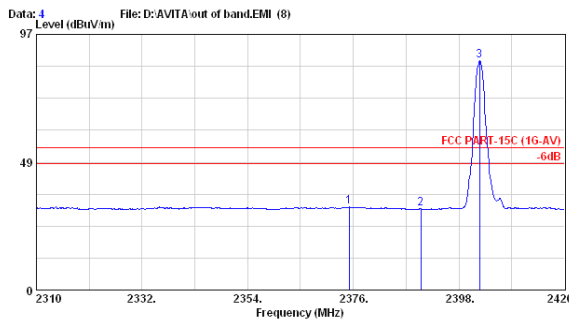
- Remark :
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2390MHz).
 3. ‘*’ The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



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Site no. : A/C Chamber Data no. : 1
 Dis. / Ant. : 3m 3115 (3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (16-PK)
 Env. / Ins. : 8564EC 28°C / 59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402



Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m 3115 (3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (16-AV)
 Env. / Ins. : 8564EC 28°C / 59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402

Date of Test : Jul. 28, 2010 Temperature : 28°C
 EUT : IR Thermometer Humidity : 59%
 Test Mode : Transmitting Mode, Frequency: 2402MHz (CH0) Test Voltage : DC 3V

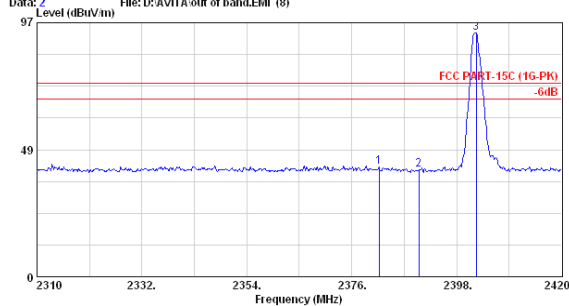
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Vertical dBμV/m	Emission Level Vertical dBμV/m	Limits dB	Margin
Peak *	2381.720	28.08	6.33	7.39	41.80	74.00	32.20
Average *	2377.540	28.08	6.32	-3.10	31.30	54.00	22.70

- Remark : 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2310-2390MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



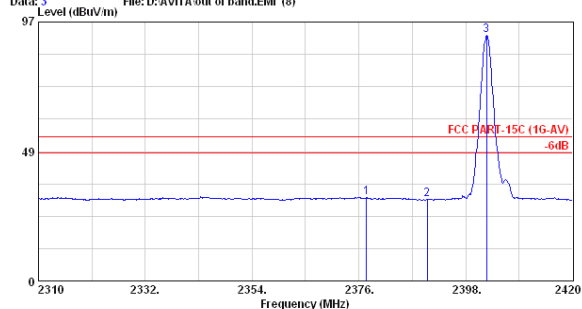
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Data: 2 File: D:\AVITA\out of band\EMI (8)



Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C / 59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402

Data: 3 File: D:\AVITA\out of band\EMI (8)



Site no. : A/C Chamber Data no. : 3
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C / 59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:TS28B
 Power Rating : DC 3V
 Test Mode : TX2402

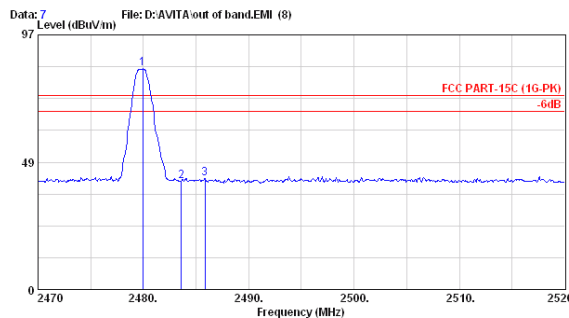
Date of Test : Jul. 28, 2010 Temperature : 28°C
 EUT : IR Thermometer Humidity : 59%
 Test Mode : Transmitting Mode, Frequency: 2480MHz (CH78) Test Voltage : DC 3V

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Horizontal dBμV/m	Emission Level Horizontal dBμV/m	Limits dB	Margin
Peak *	2483.850	28.18	6.45	7.79	42.42	74.00	31.58
Average *	2483.700	28.18	6.45	-2.73	31.90	54.00	22.10

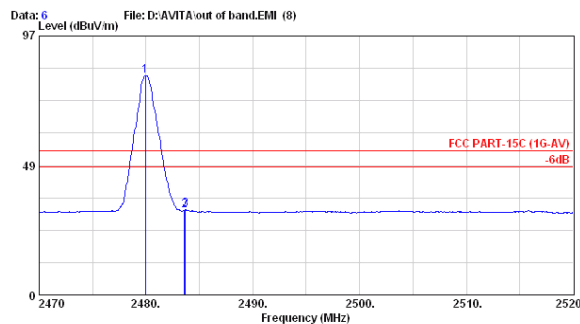
- Remark :
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2483.5-2500MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



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Site no. : A/C Chamber Data no. : 7
 Dis. / Ant. : 3m 3115 (3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C / 59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:T828B
 Power Rating : DC 3V
 Test Mode : TX2480



Site no. : A/C Chamber Data no. : 6
 Dis. / Ant. : 3m 3115 (3775) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C / 59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:T828B
 Power Rating : DC 3V
 Test Mode : TX2480

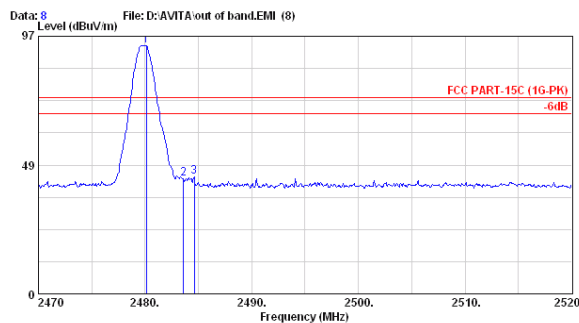
Date of Test : Jul. 28, 2010 Temperature : 28°C
 EUT : IR Thermometer Humidity : 59%
 Test Mode : Transmitting Mode, Frequency: 2480MHz (CH78) Test Voltage : DC 3V

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dBμV	Meter Reading Vertical dBμV/m	Emission Level Vertical dBμV/m	Limits dB	Margin
Peak *	24834.600	28.18	6.45	9.42	44.05	74.00	29.95
Average *	2483.600	28.18	6.45	1.86	36.49	54.00	17.51

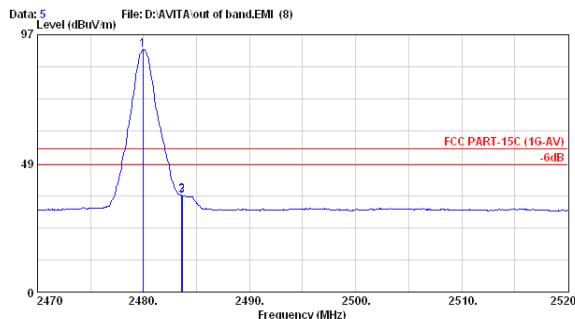
- Remark :
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
 2. Low frequency section (spurious in the restricted band 2483.5-2500MHz).
 3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.



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Site no. : A/C Chamber Data no. : 8
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : 8564EC 28°C / 59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:T828B
 Power Rating : DC 3V
 Test Mode : TX2480



Site no. : A/C Chamber Data no. : 5
 Dis. / Ant. : 3m 3115(3775) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : 8564EC 28°C / 59% Engineer : Jarwei Wang
 EUT : IR Thermometer M/N:T828B
 Power Rating : DC 3V
 Test Mode : TX2480

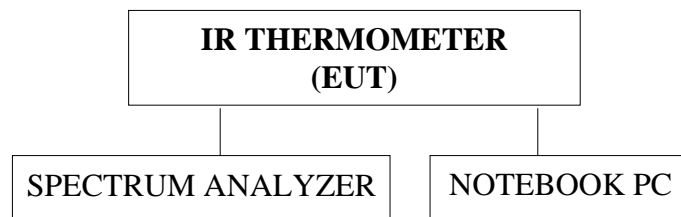
4. 20dB BANDWIDTH MEASUREMENT

4.1. Test Equipment

The following test equipment was used during the 20dB bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 09'	Aug. 03, 10'

4.2. Block Diagram of Test Setup



4.3. Specification Limits (§15.247(a)(1))

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

4.4. Operating Condition of EUT

- 4.4.1. Set up the EUT and simulator as shown on 4.2.
- 4.4.2. To turn on the power of all equipment.
- 4.4.3. The EUT (IR Thermometer) was on transmitting frequency function during the testing.

4.5. Test Procedure follow DA00-705

The transmitter output was connected to the spectrum analyzer. The RBW of the fundamental frequency was measure by spectrum analyzer 1% of the 20dB bandwidth and the setting equal to RBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.6. Test Results

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

EUT : IR Thermometer

M/N : TS28B

Test Date : Jul. 28, 2010 Temperature : 27 °C Humidity : 51 %

No.	Channel	Test Frequency	20dB Bandwidth	2/3 (20dB Bandwidth)
1.	0	2402MHz	0.930MHz	0.620MHz
2.	39	2441MHz	0.935MHz	0.623MHz
3.	78	2480MHz	0.945MHz	0.630MHz

The maximum two-thirds of the 20dB bandwidth shall be at maximum 0.482MHz.

Figure 1: GFSK, Channel 0, Frequency: 2402MHz



Figure 2: GFSK, Channel 39, Frequency: 2441MHz



Figure 3: GFSK, Channel 78, Frequency: 2480MHz



5. CARRIER FREQUENCY SEPARATION MEASUREMENT

5.1. Test Equipment

The following test equipment was used during the carrier frequency separation measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 09'	Aug. 03, 10'

5.2. Block Diagram of Test Setup

The same as section.4.2.

5.3. Specification Limits (§15.247(a)(1))

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output no greater than 125mW.

5.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

5.5. Test Procedure follow DA00-705

The transmitter output was connected to the spectrum analyzer. The channel separation was measure by spectrum analyzer with RBW equal to 1% of the span. The video bandwidth not to be smaller than resolution bandwidth, the peak was mark on adjacent bandwidth, the between of peak is carrier frequency separation.

5.6. Test Results

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

EUT : IR Thermometer

M/N : TS28B

Test Date : Jul. 28, 2010 Temperature : 27 °C Humidity : 51 %

1. 2402MHz adjacent channel of carrier frequency separation: 1.015MHz ◦
2. 2441MHz adjacent channel of right carrier frequency separation: 1.000MHz ◦
3. 2441MHz adjacent channel of left carrier frequency separation: 1.000MHz ◦
4. 2480MHz adjacent channel of carrier frequency separation: 1.010MHz ◦

[Above values have met the requirement as specified in section 4.3: frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.]

Figure 1: 2402MHz adjacent channel of carrier frequency separation(GFSK)



Figure 2: 2441MHz adjacent channel of right carrier frequency separation(GFSK)

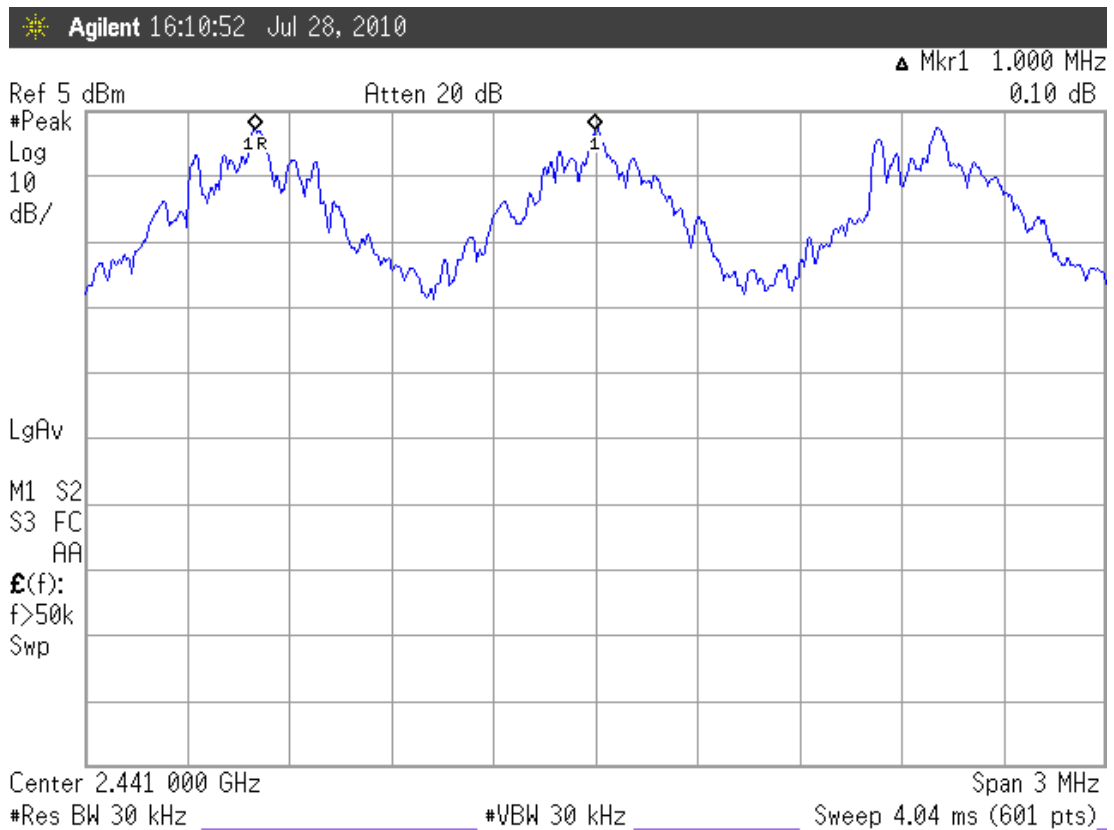


Figure 3: 2441MHz adjacent channel of left carrier frequency separation (GFSK)

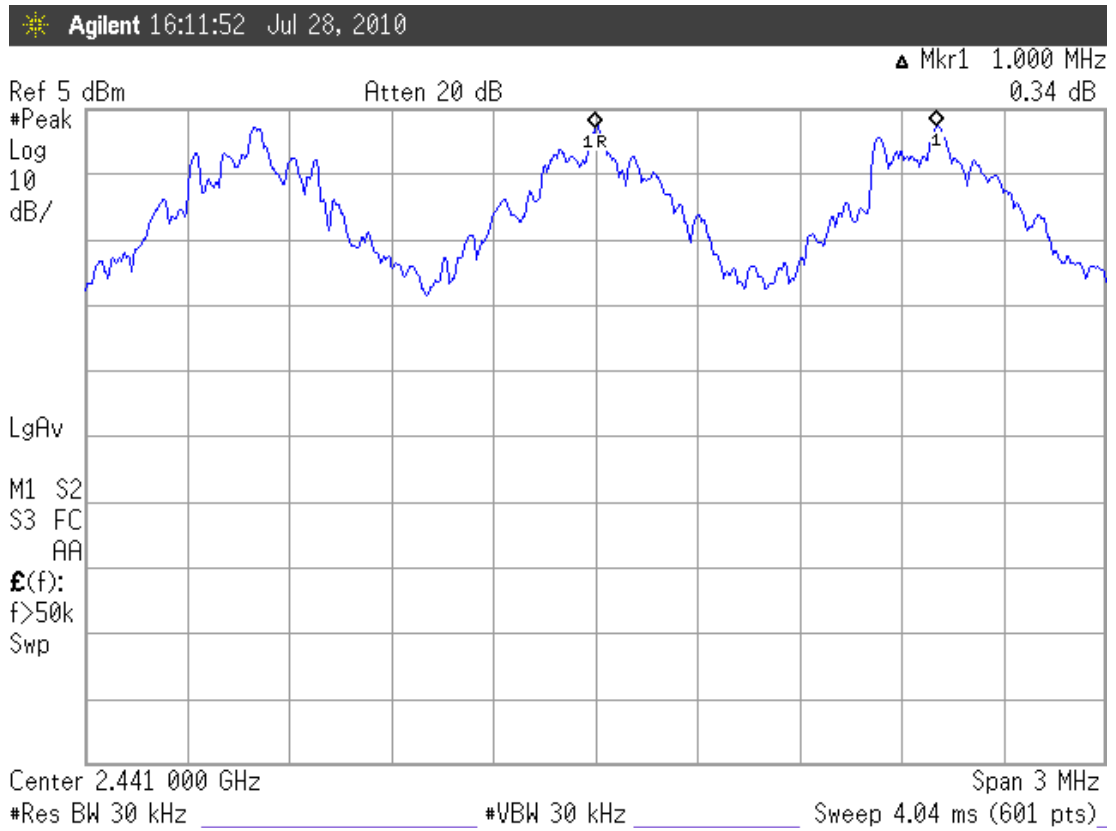
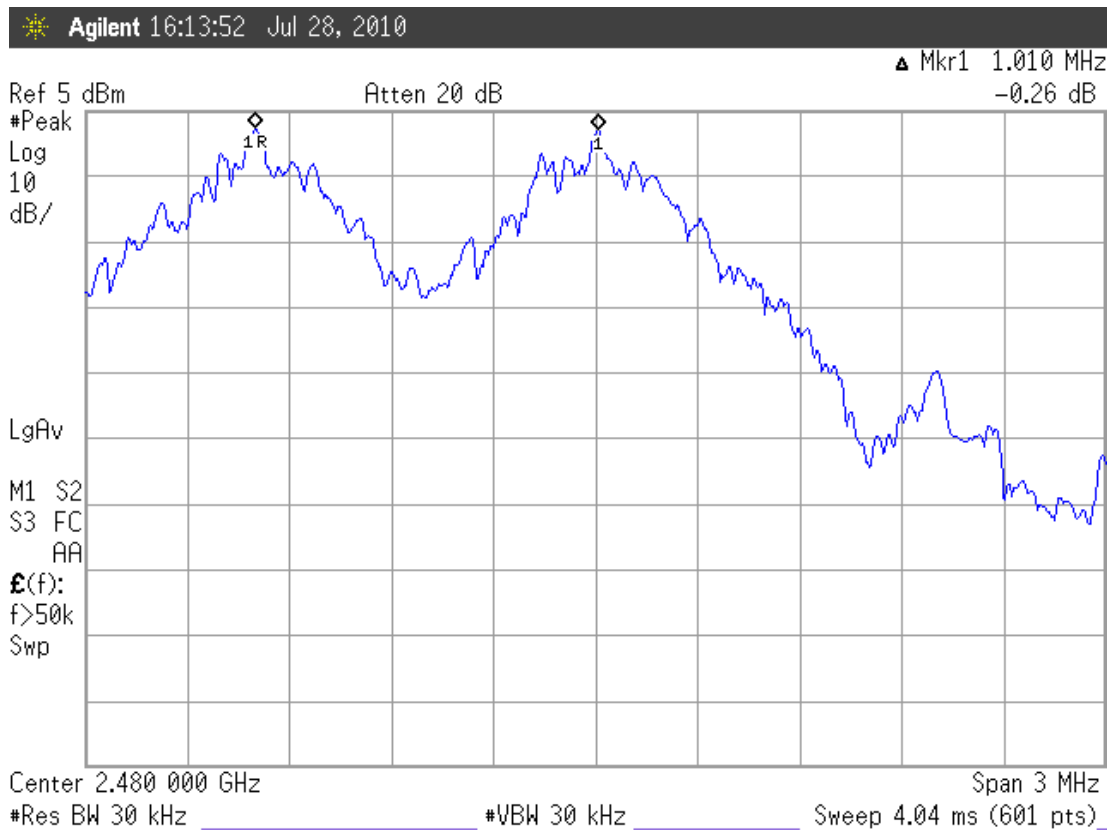


Figure 4: 2480MHz adjacent channel of carrier frequency separation (GFSK)



6. TIME OF OCCUPANCY MEASUREMENT

6.1. Test Equipment

The following test equipment was used during the time of occupancy measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 09'	Aug. 03, 10'

6.2. Block Diagram of Test Setup

The same as section.4.2.

6.3. Specification Limits (§15.247(a)(1)(iii))

Frequency hopping systems in the 2400-2483.5MHz shall use at least 15 non-overlapping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by number of hopping channels employed.

6.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

6.5. Test Procedure follow DA00-705

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 1MHz RBW and 1MHz VBW. $VBW \geq RBW$; Span=zero span.

Centered on a hopping channel sweep=as necessary to capture the entire dwell time per hopping channel ; Detector function=peak ; Trace=Max hold

6.6. Test Results

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

EUT : IR Thermometer

M/N : TS28B

Test Date : Jul. 27, 2010 Temperature : 27 °C Humidity : 51 %

Test Frequency: 2441MHz (CH39)

Duty cycle: 79channels*0.4 seconds = 31.6 seconds

- DH1 : A The system makes worst case 1600 hops per second or 1 time slot has a length of 625us with 79 channels. A DH1 packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 800 hops per second with 79 channels. So you have each channel 10.13 time per second and so for 31.6 seconds you have 320 time of appearance. Each Tx-time per appearance is 391.7us.
 $10.13 \text{ time} * 31.6 \text{ seconds} * 0.3917 \text{ms} = 125.386 \text{ms} (<400 \text{ms})$
- B. For each 5 seconds of 50 channels appearance, the longest time of occupancy for each of 31.6 seconds is:
 $50 \text{ channels} * 31.6 \text{ seconds} / 5 * 0.3917 \text{ms} = 126.252 \text{ms} (<400 \text{ms})$
- DH3 : A The system makes worst case 1600 hops per second or 1 time slot has a length of 625us with 79 channels. A DH3 packet need 3 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 400 hops per second with 79 channels. So you have each channel 5.1 time per second and so for 31.6 seconds you have 161 time of appearance. Each Tx-time per appearance is 1650us.
 $5.1 \text{ time} * 31.6 \text{ seconds} * 1.650 \text{ms} = 265.914 \text{ms} (<400 \text{ms})$
- B. For each 5 seconds of 25 channels appearance, the longest time of occupancy for each of 31.6 seconds is:
 $25 \text{ channels} * 31.6 \text{ seconds} / 5 * 1.650 \text{ms} = 260.7 \text{ms} (<400 \text{ms})$
- DH5 : A The system makes worst case 1600 hops per second or 1 time slot has a length of 625us with 79 channels. A DH5 packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 266.7 hops per second with 79 channels. So you have each channel 3.37 time per second and so for 31.6 seconds you have 106 time of appearance. Each Tx-time per appearance is 2900us.
 $3.37 \text{ time} * 31.6 \text{ seconds} * 2.900 \text{ms} = 308.826 \text{ms} (<400 \text{ms})$
- B. For each 5 seconds of 17 channels appearance, the longest time of occupancy for each of 31.6 seconds is:
 $17 \text{ channels} * 31.6 \text{ seconds} / 5 * 2.900 \text{ms} = 311.576 \text{ms} (<400 \text{ms})$

Figure 1: GFSK, Channel 39, Frequency: 2441MHz (DH1)

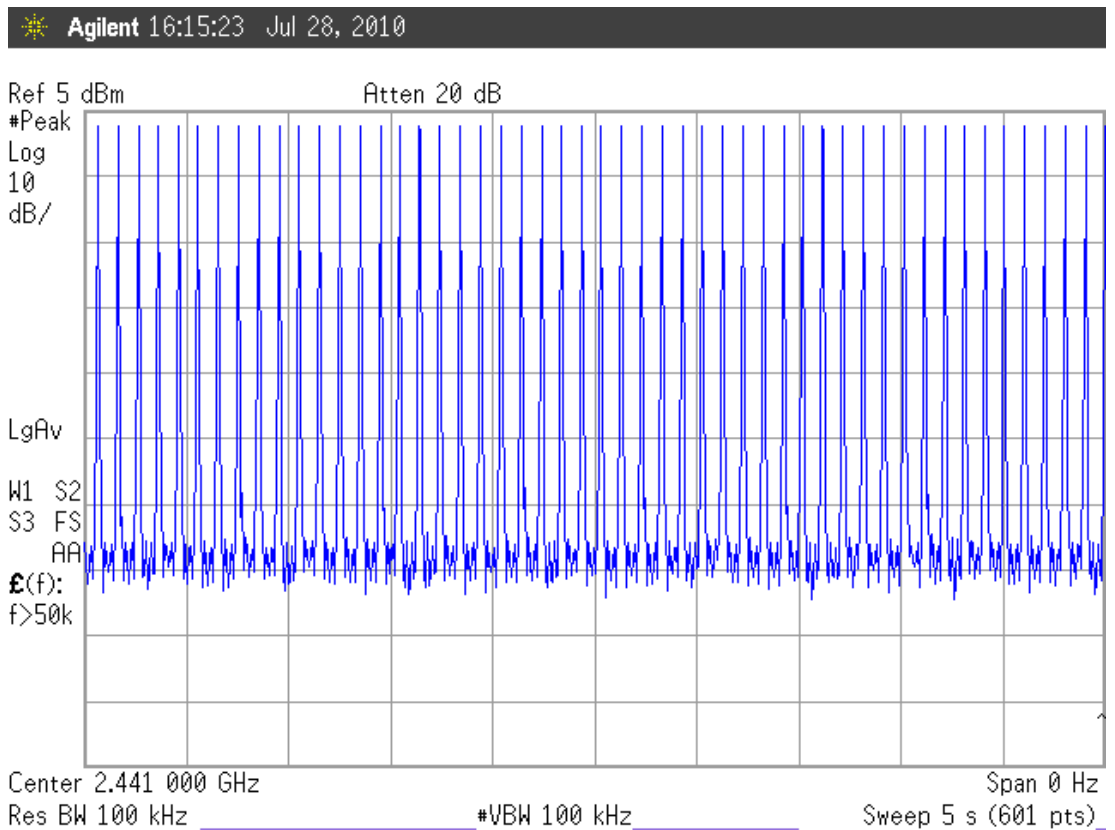
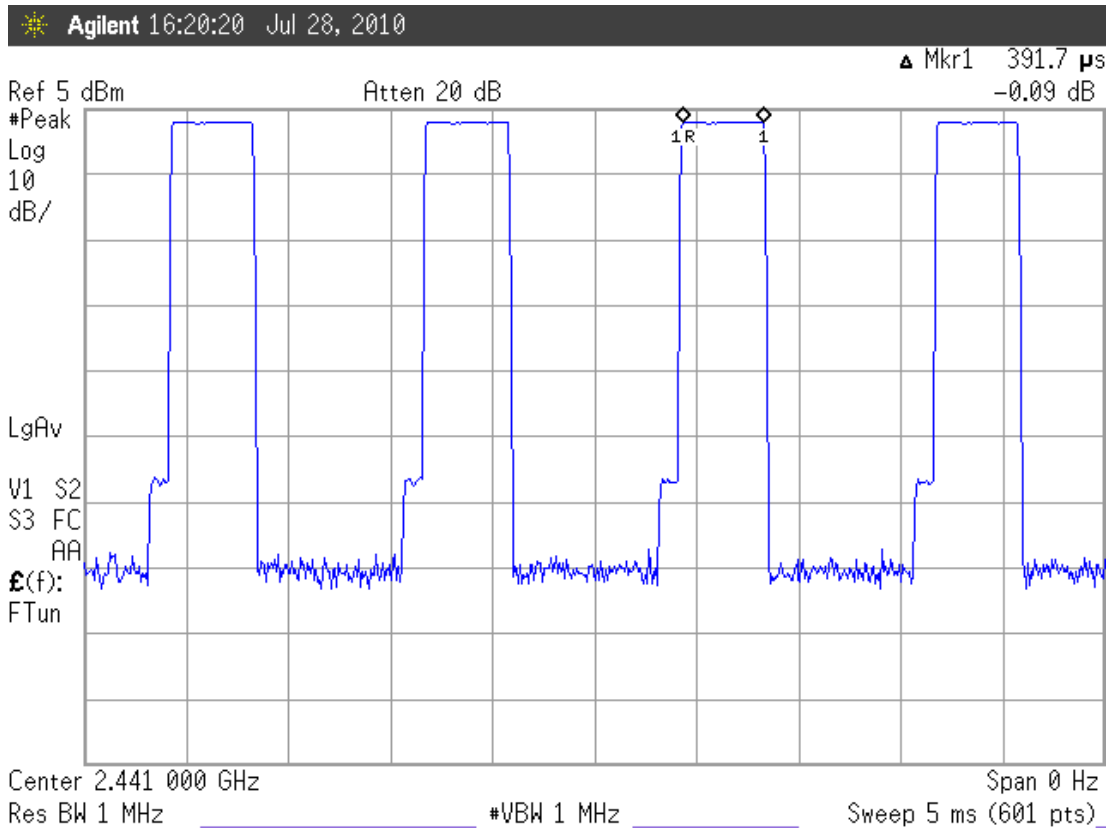


Figure 1: GFSK, Channel 39, Frequency: 2441MHz (DH3)

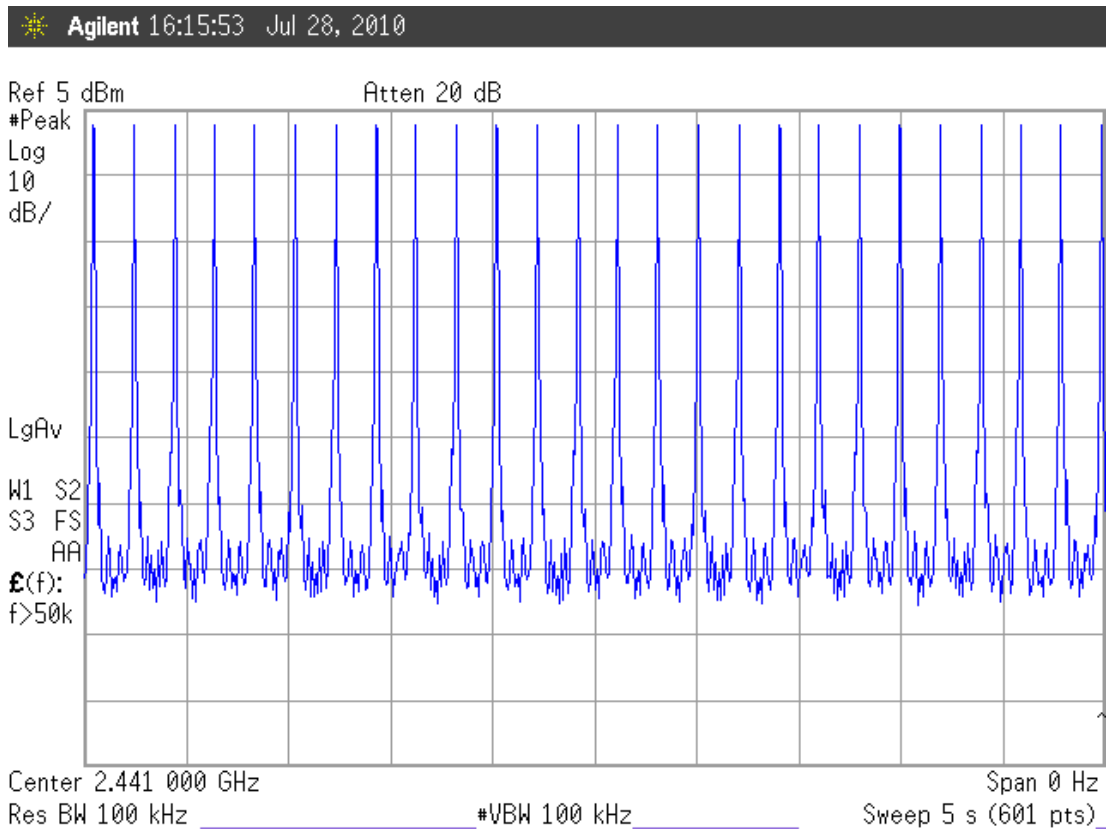
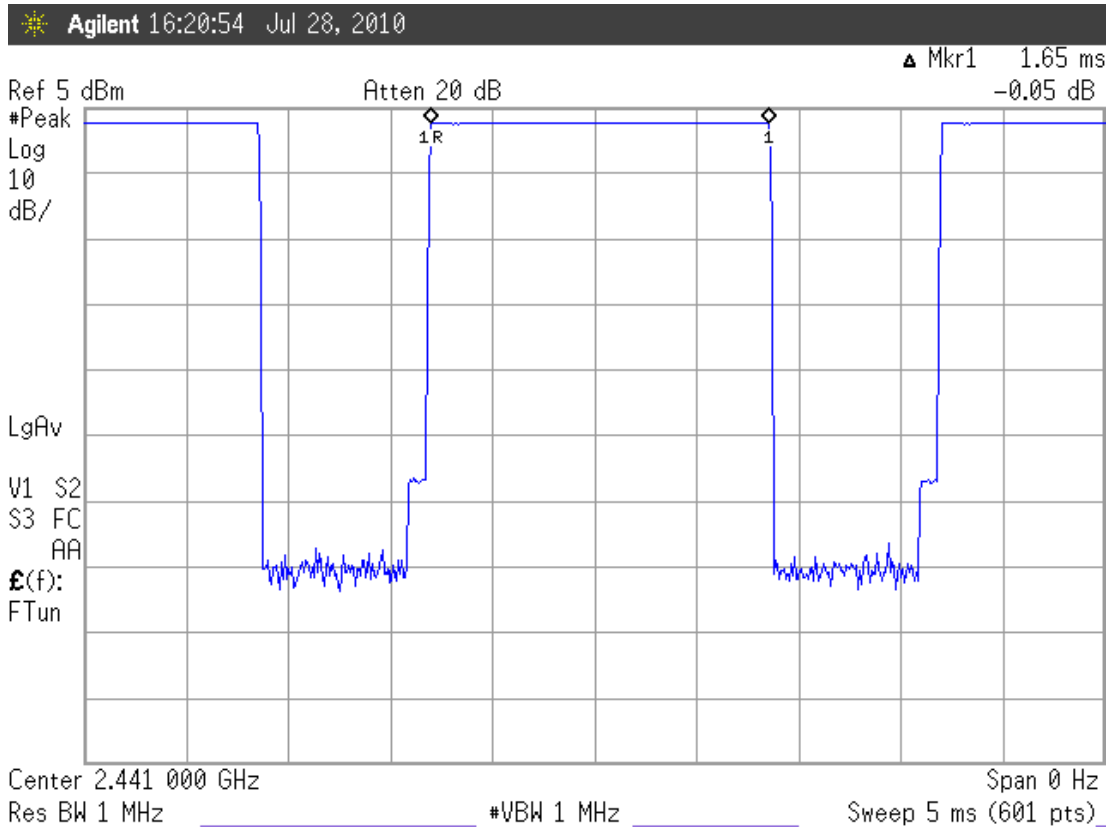
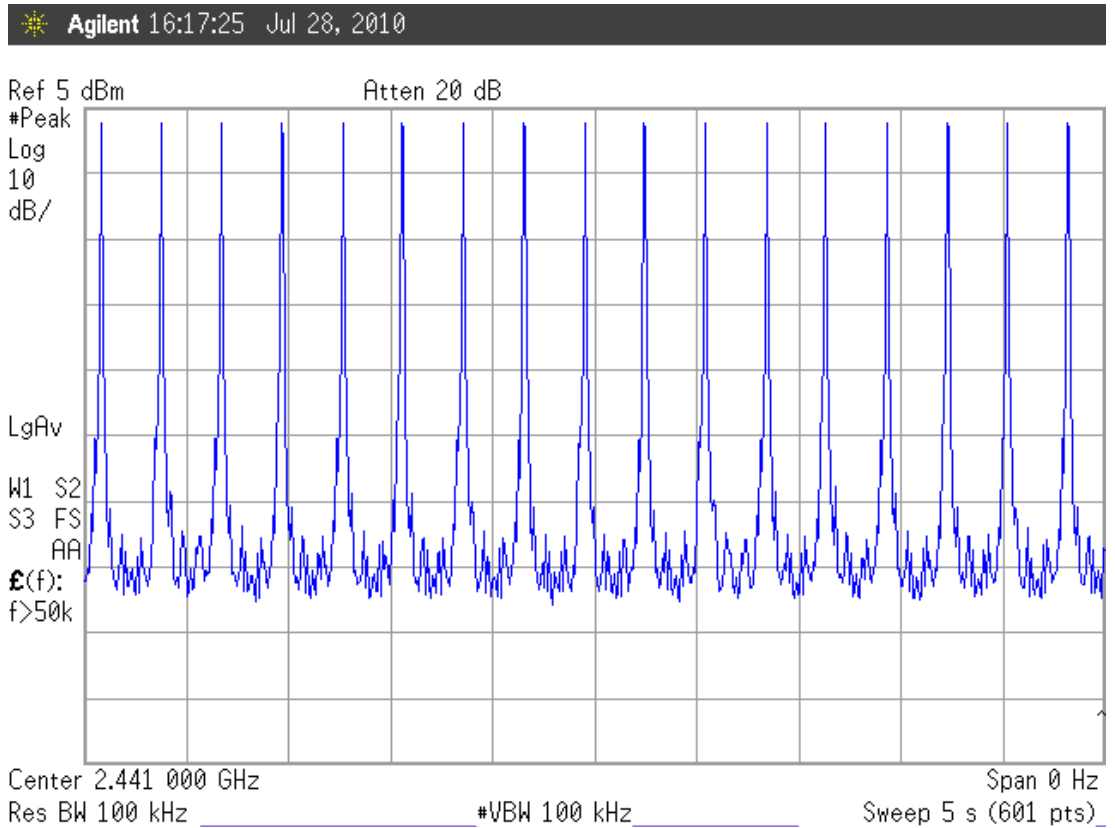
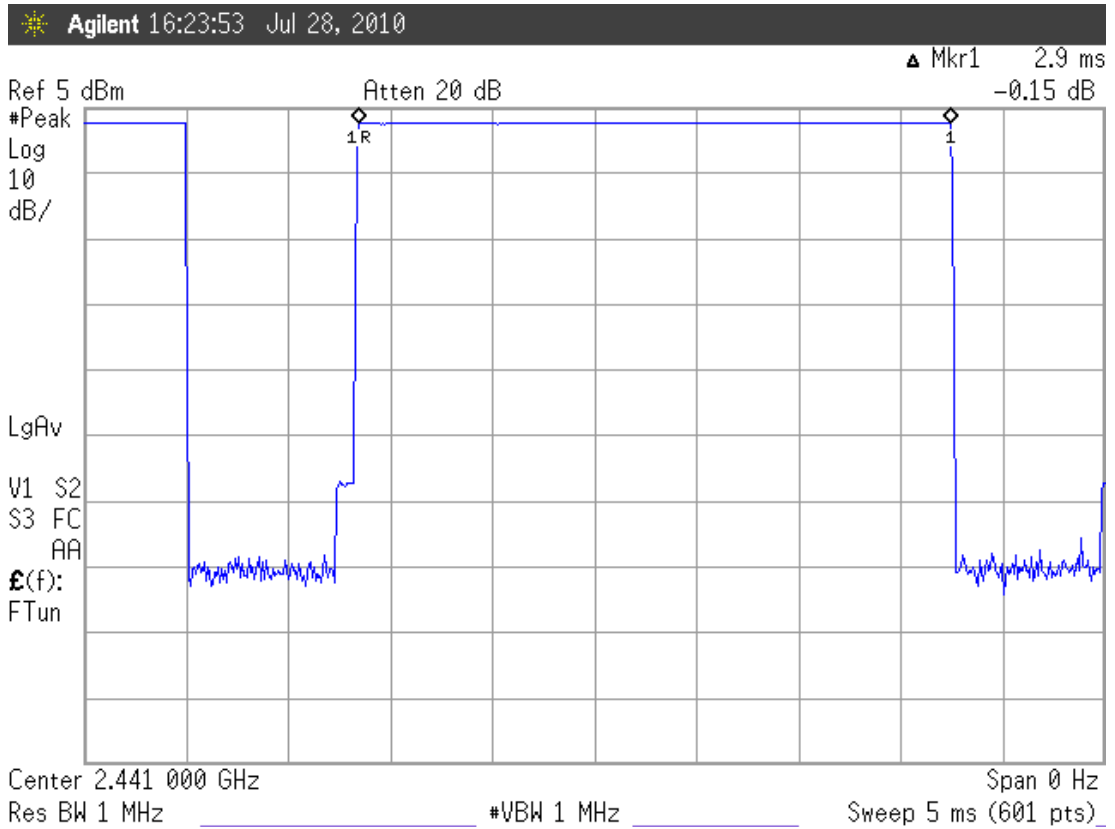


Figure 1: GFSK, Channel 39, Frequency: 2441MHz (DH5)



7. NUMBER OF HOPPING CHANNELS MEASUREMENT

7.1. Test Equipment

The following test equipment was used during the number of hopping channels measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 09'	Aug. 03, 10'

7.2. Block Diagram of Test Setup

The same as section.4.2.

7.3. Specification Limits (§15.247(a)(1)(iii))

Frequency hopping systems which use fewer than 20 hopping frequencies may employ intelligent hopping techniques to avoid interference to other transmissions. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 non-overlapping channels.

7.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

7.5. Test Procedure follow DA00-705

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 100kHz RBW and 100kHz VBW. Sweep=Auto ; Detector function=peak ; Trace=Max hold

7.6. Test Results

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

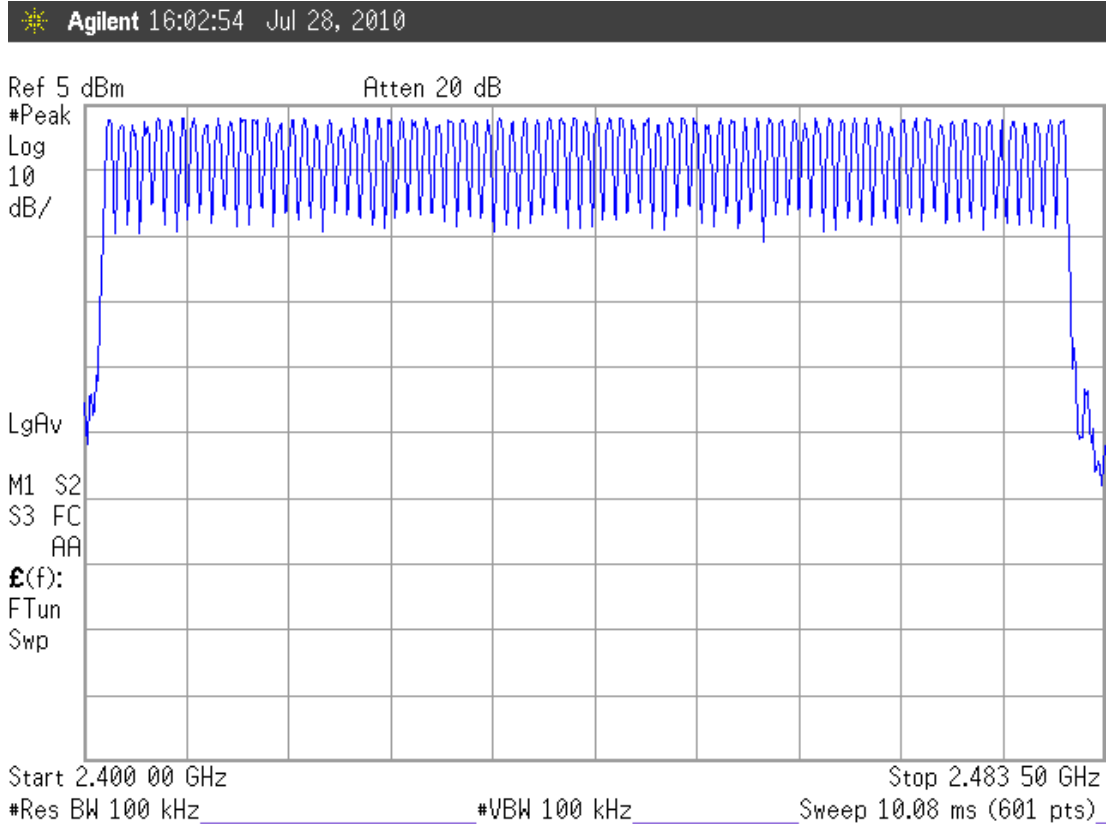
EUT : IR Thermometer

M/N : TS28B

Test Date : Jul. 28, 2010 Temperature : 27 °C Humidity : 51 %

The number hopping channel is 79.

Figure 1: Type of Modulation: GFSK



8. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

8.1. Test Equipment

The following test equipment was used during the maximum peak output power measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 09'	Aug. 03, 10'

8.2. Block Diagram of Test Setup

The same as section.4.2.

8.3. Specification Limits (§15.247(b)-(1))

The Limits of maximum Peak Output Power for frequency hopping systems in 2400-2483.5MHz is: 0.125Watt. (21dBm)

8.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in 4.4 except the test set up replaced by section 8.2.

8.5. Test Procedure follow DA00-705

The transmitter output was connected to the spectrum analyzer.
 Span can encompass the waveform
 RBW=1MHz, VBW=3MHz
 Sweep=Auto

8.6. Test Results

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

EUT : IR Thermometer

M/N : TS28B

Test Date : Jul. 28, 2010 Temperature : 27 °C Humidity : 51 %

No.	Channel	Test Frequency	Peak Output Power	Limit
1.	0	2402MHz	2.79dBm	21dBm
2.	39	2441MHz	2.95dBm	21dBm
3.	78	2480MHz	2.74dBm	21dBm

Figure 1: GFSK, Channel 0, Frequency: 2402MHz

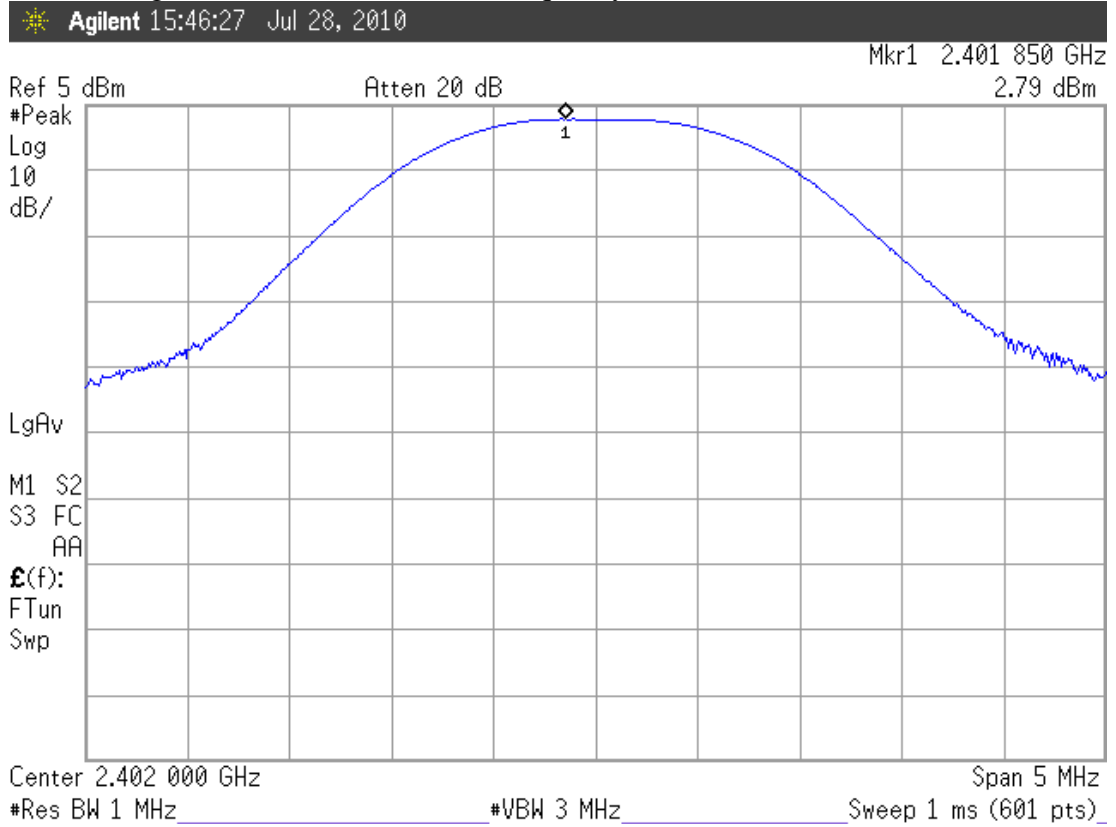


Figure 2: GFSK, Channel 39, Frequency: 2441MHz

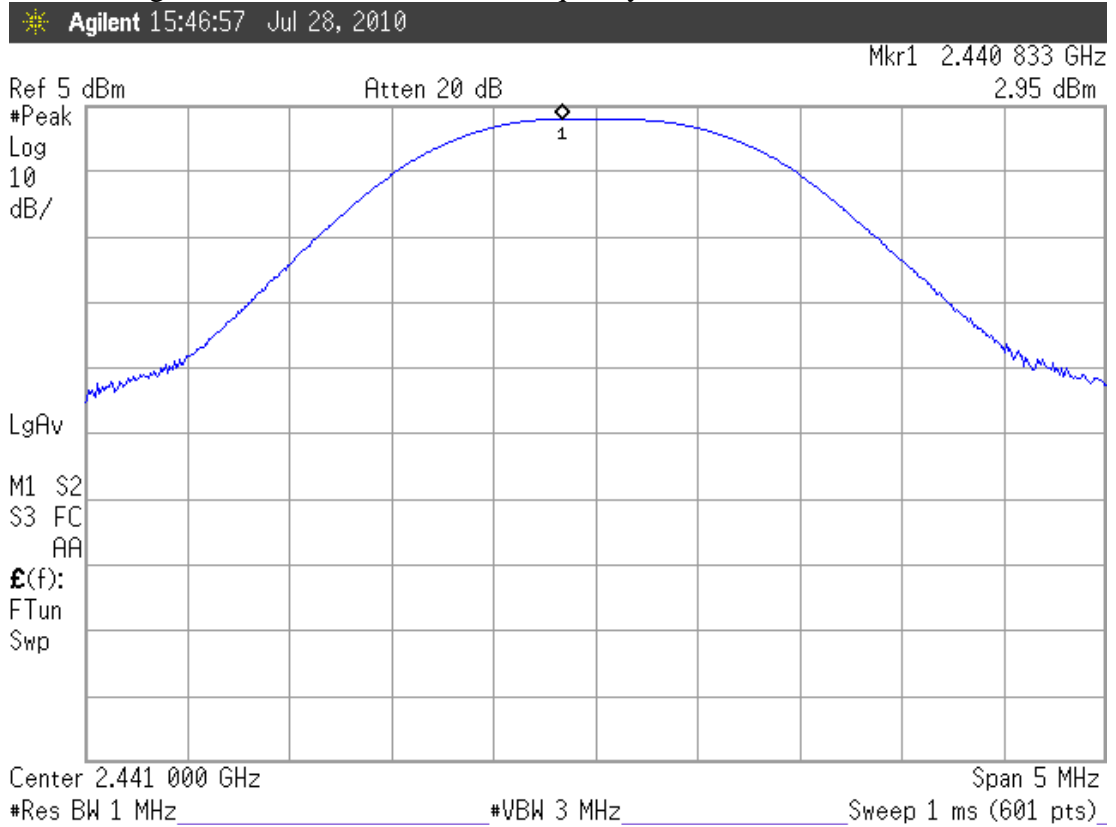
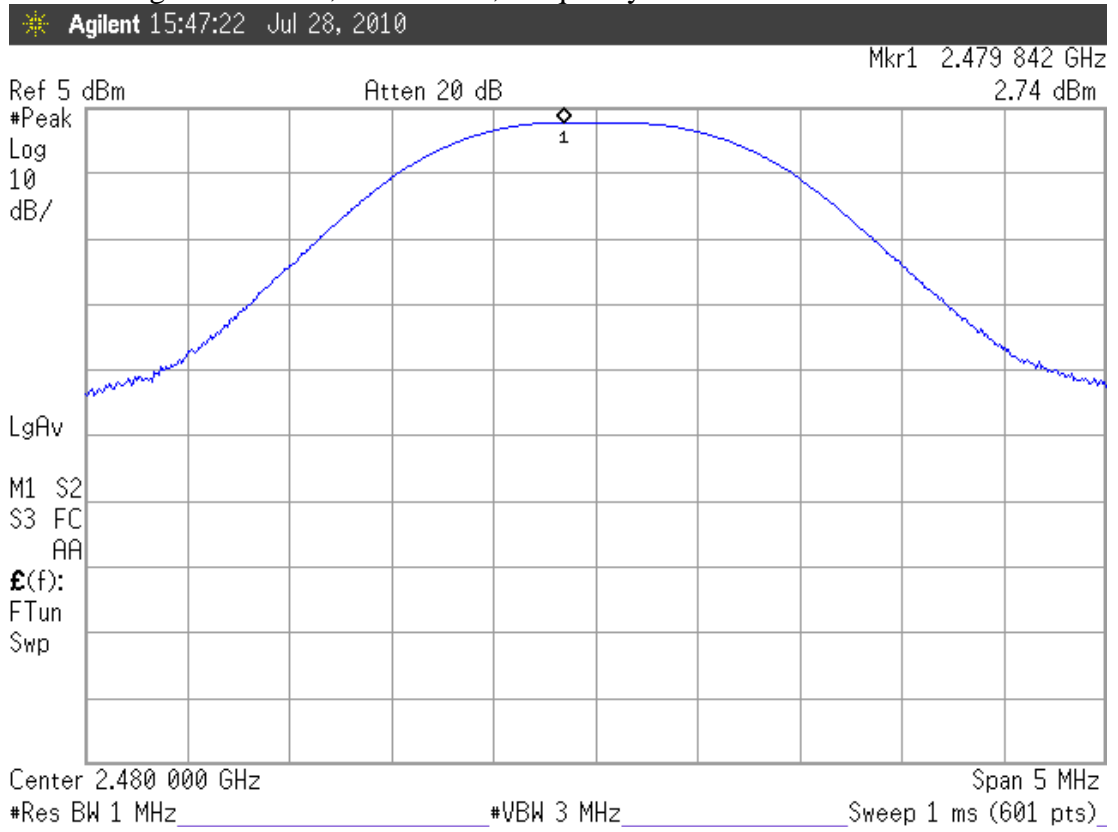


Figure 3: GFSK, Channel 78, Frequency: 2480MHz



9. EMISSION LIMITATIONS MEASUREMENT

9.1. Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 09'	Aug. 03, 10'

9.2. Block Diagram of Test Setup

The same as section.4.2.

9.3. Specification Limits (§15.247(c))

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (See Section 15.205(c)).(※ This test result attaching to §3.6.3)

9.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

9.5. Test Procedure follow DA00-705

The transmitter output was connected to the spectrum analyzer. Set both RBW and VBW of spectrum analyzer to 100kHz with frequency range from 30MHz to 25GHz.

9.6. Test Results

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

EUT : IR Thermometer

M/N : TS28B

Test Date : Jul. 28, 2010 Temperature : 27 °C Humidity : 51 %

1. 2402MHz: During 30MHz~25GHz bandwidth. In the 4.82GHz, the -48.95dBm is max value that is lower than 20dB of primary channel.
2. 2441MHz: During 30MHz~25GHz bandwidth. In the 4.90GHz, the -37.23dBm is max value that is lower than 20dB of primary channel.
3. 2480MHz: During 30MHz~25GHz bandwidth. In the 4.94GHz, the -47.18dBm is max value that is lower than 20dB of primary channel.

Note: The peak above the limit line is the carrier frequency.

Figure 1: GFSK, Channel 0, Frequency: 2402MHz

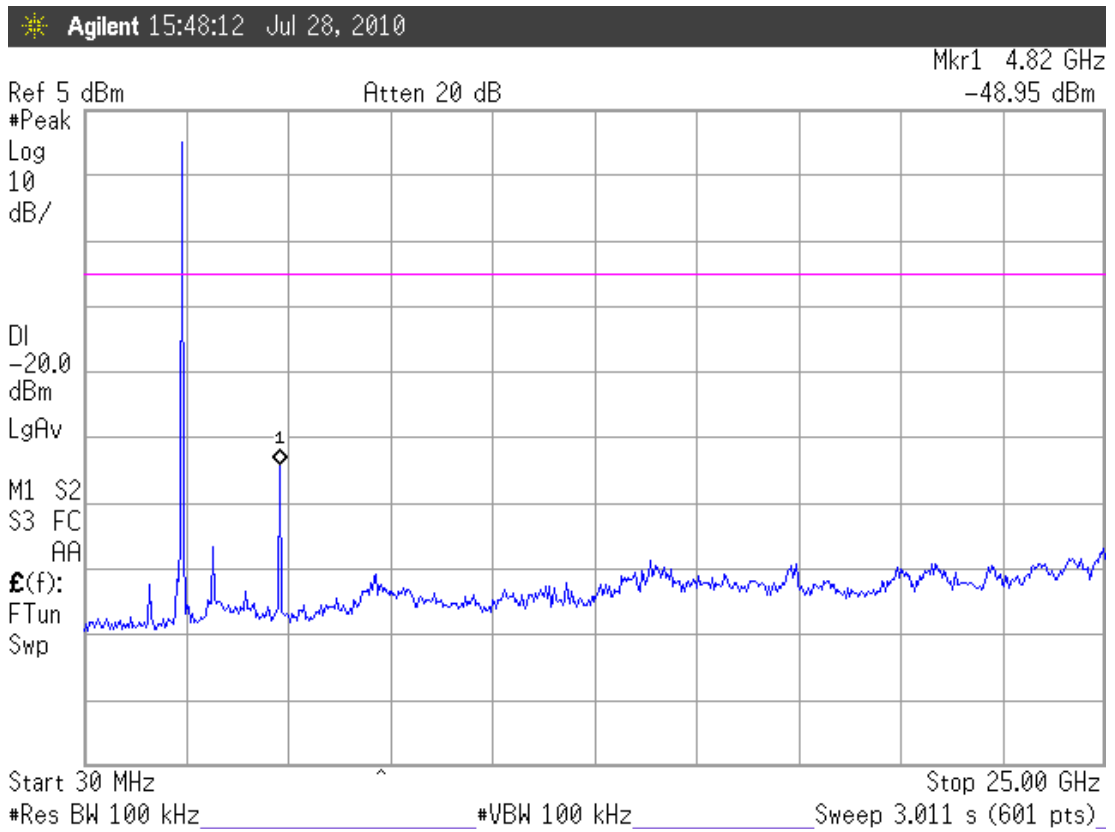


Figure 2: GFSK, Channel 39, Frequency: 2441MHz

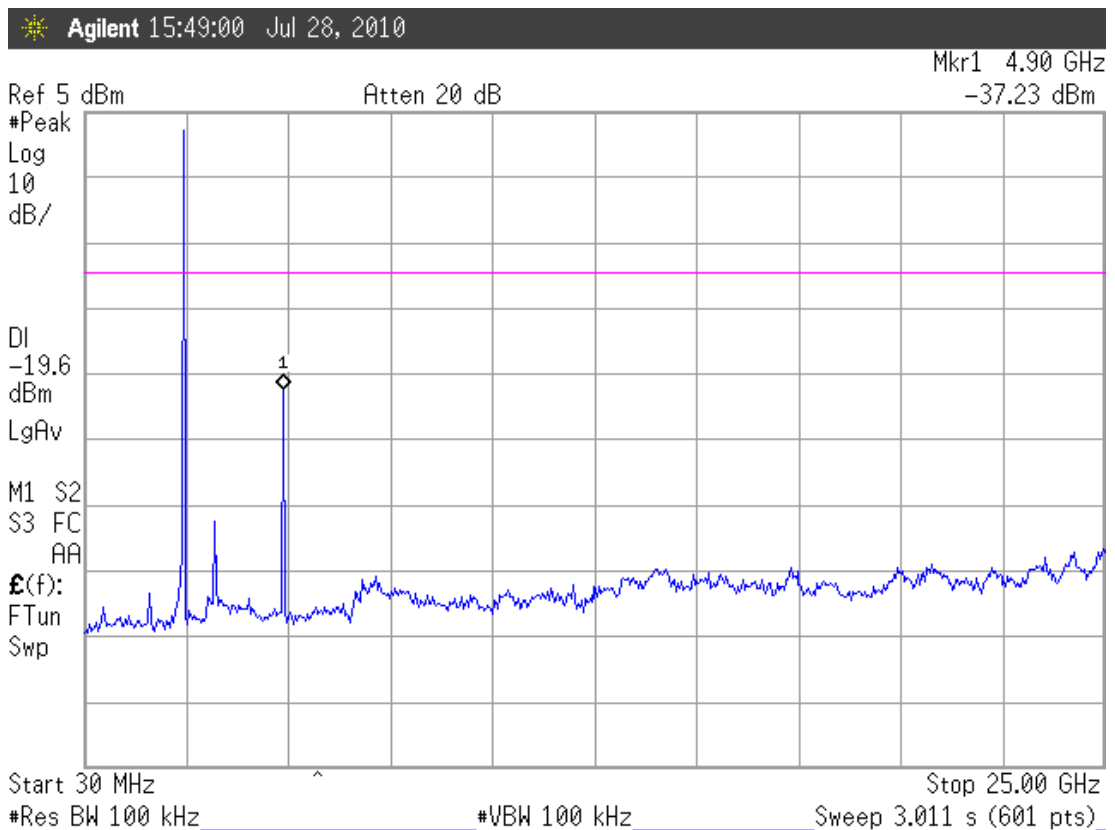
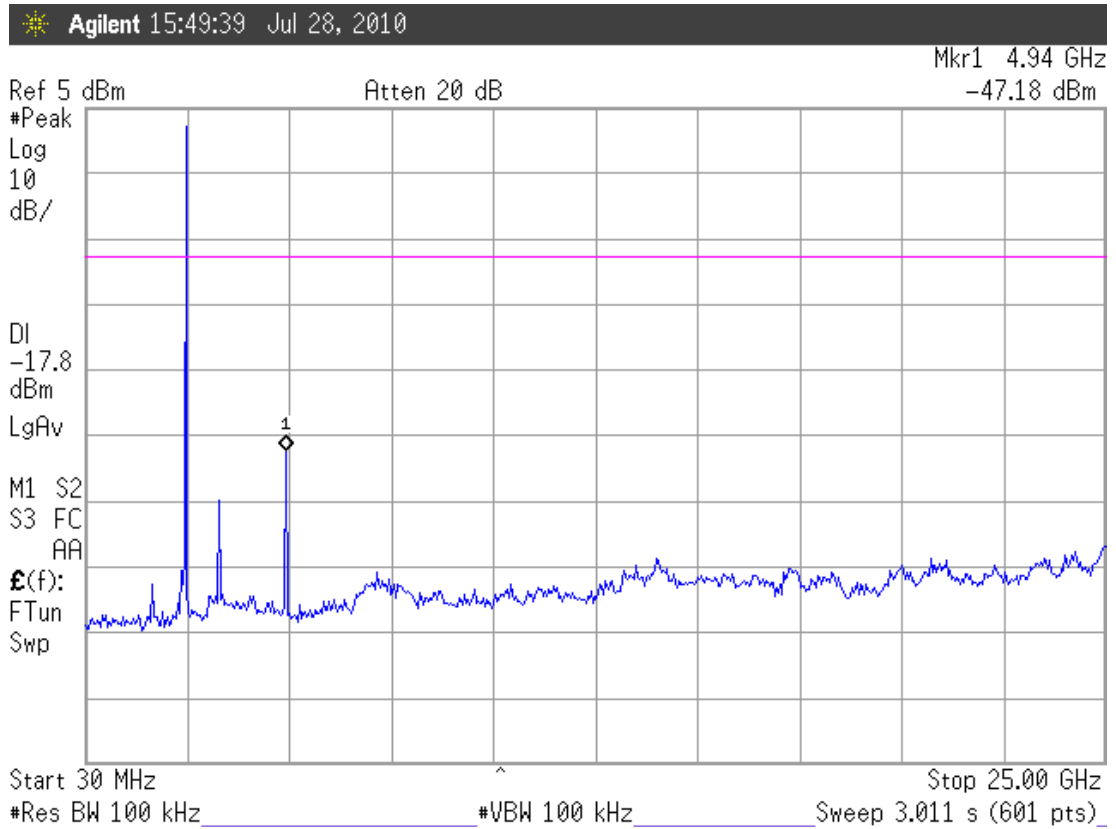


Figure 3: GFSK, Channel 78, Frequency: 2480MHz



10.BAND EDGES MEASUREMENT

10.1.Test Equipment

The following test equipment was used during the band edges measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 09'	Aug. 03, 10'

10.2.Block Diagram of Test Setup

The same as section.4.2.

10.3.Specification Limits (§15.247(c))

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (See Section 15.205(c)). (※ This test result attaching to §3.6.3)

10.4.Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

10.5.Test Procedure follow DA00-705

The transmitter output was connected to the spectrum analyzer. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100kHz bandwidth from band edge.

10.6. Test Results

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

EUT : IR Thermometer

M/N : TS28B

Test Date : Jul. 28, 2009 Temperature : 27 °C Humidity : 51 %

1. Upper Band edge: The highest emission level is – 38.13dBm on 2.39992GHz °
2. Below Band edge : The highest emission level is – 46.53dBm on 2.48358GHz °

Figure 1: Upper Band edge (GFSK)

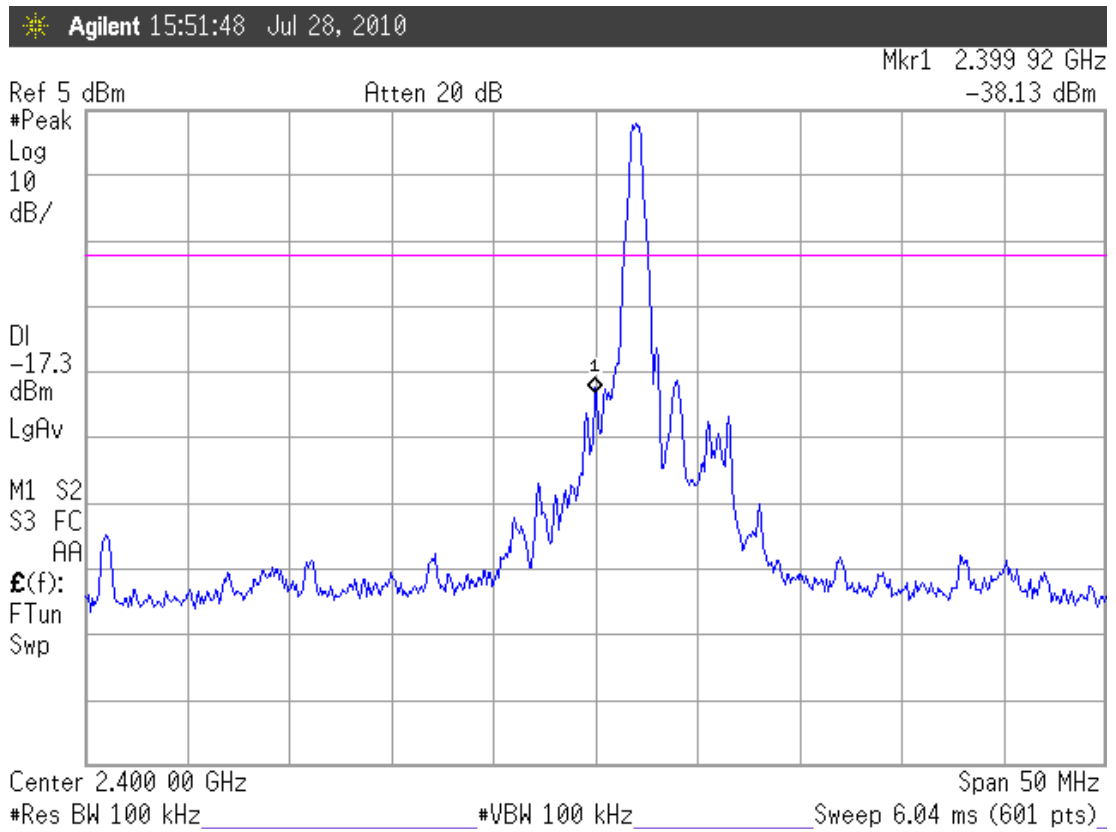
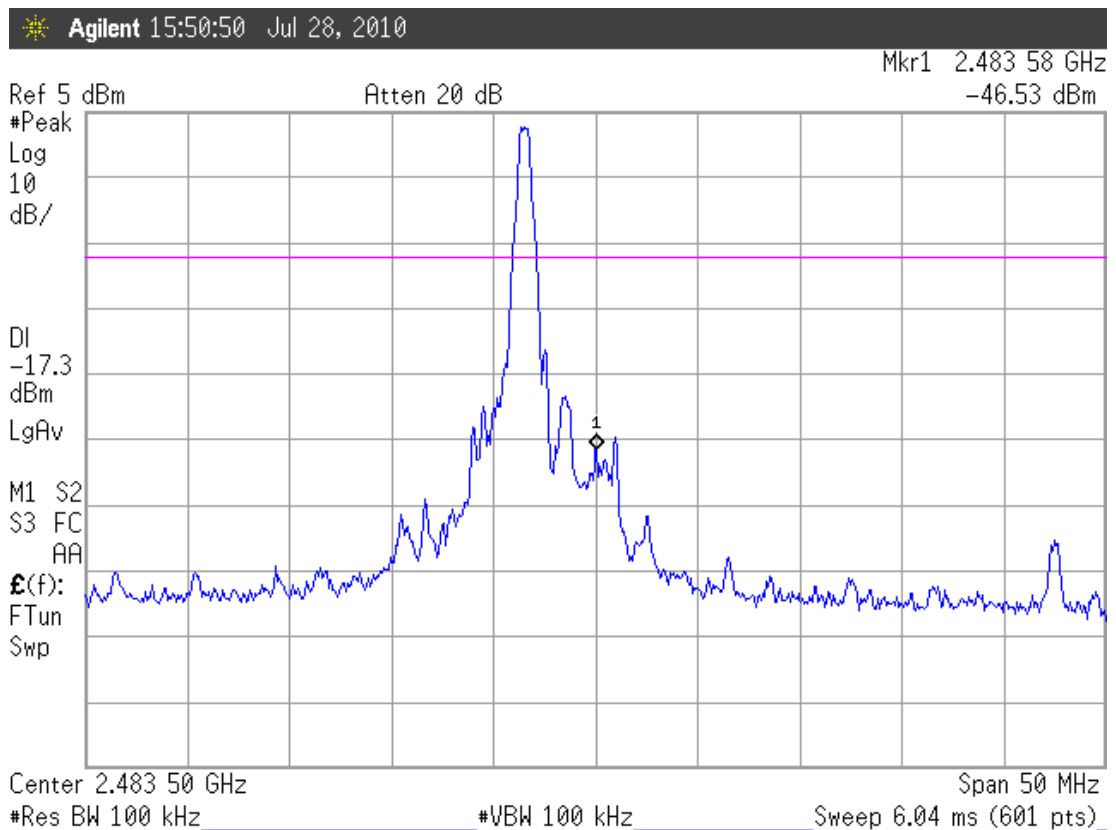


Figure 2: Below Band edge (GFSK)



11.DEVIATION TO TEST SPECIFICATIONS

【NONE】