

**FCC 15.247 DSS  
(Class II Permissive Change)  
2.4 GHz Report**

**for**

**VoxMicro LTD.**

**20955 Pathfinder Rd., STE100, Diamond Bar,  
CA 91765 United States**

**Brand : AIRETOS**  
**Product Name : PCIE 802.11a/b/g/n 2.4GHz/5GHz  
+ USB BT 4.0 card**  
**Model Name : AEH-AR9462**  
**FCC ID : 2AE3B-AEH-AR9462**

**Prepared by: : AUDIX Technology Corporation,  
EMC Department**



## TABLE OF CONTENTS

Description	Page
TEST REPORT CERTIFICATION .....	4
<b>1. REPORT HISTORY.....</b>	<b>4</b>
<b>2. SUMMARY OF TEST RESULTS .....</b>	<b>5</b>
<b>3. GENERAL INFORMATION .....</b>	<b>6</b>
3.1. Description of EUT .....	6
3.2. Antenna Information.....	6
3.3. EUT Specifications Assessed in Current Report.....	7
3.4. Test Configuration .....	8
3.5. Tested Supporting System List.....	9
3.6. Setup Configuration .....	9
3.7. Operating Condition of EUT .....	9
3.8. Description of Test Facility .....	10
3.9. Measurement Uncertainty .....	10
<b>4. MEASUREMENT EQUIPMENT LIST.....</b>	<b>11</b>
4.1. Radiated Emission Measurement.....	11
4.2. RF Conducted Measurement.....	11
<b>5. RADIATED EMISSION MEASUREMENT .....</b>	<b>12</b>
5.1. Block Diagram of Test Setup .....	12
5.2. Radiated Emission Limits .....	13
5.3. Test Procedure .....	14
5.4. Measurement Result Explanation .....	15
5.5. Test Results.....	15
<b>6. MAXIMUM PEAK OUTPUT POWER MEASUREMENT .....</b>	<b>24</b>
6.1. Block Diagram of Test Setup .....	24
6.2. Specification Limits .....	24
6.3. Test Procedure .....	24
6.4. Test Results.....	25
<b>7. DEVIATION TO TEST SPECIFICATIONS.....</b>	<b>26</b>
 APPENDIX A TEST PLOTS	
APPENDIX B EUT PHOTOGRAPHS	

## TEST REPORT CERTIFICATION (Class II Permissive Change)

Applicant : VoxMicro LTD.  
Product Name : PCIE 802.11a/b/g/n 2.4GHz/5GHz + USB BT 4.0 card  
Model No. : AEH-AR9462  
Serial No. : N/A  
Brand : AIRETOS

Applicable Standards:

47 CFR FCC Rules and Regulations Part 15 Subpart C, Oct. 2015  
ANSI C63.10:2013  
FCC Public Notice DA 00-705

**AUDIX Technology Corp.** tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report. **AUDIX Technology Corp.** does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Test: 2016. 06. 06 ~ 08

Date of Report: 2016. 06. 23

Producer: Sabrina Wang  
(Sabrina Wang/Administrator)

Signatory: Ben Cheng  
(Ben Cheng/Manager)

## 1. REPORT HISTORY

Edition No.	Date of Rev.	Revision Summary	Report No.
0	2016. 06. 23	Original Report.	EM-F160363

## 2. SUMMARY OF TEST RESULTS

<b>Rule</b>	<b>Description</b>	<b>Results</b>
15.207	Conducted Emission	<b>PASS</b>
15.247(d)/ 15.205	Radiated Band Edge and Radiated Spurious Emission	<b>PASS</b>
15.247(b)(1)	Maximum Peak Output Power	<b>PASS</b>
15.203	Antenna Requirement	<b>PASS</b>
The Conducted Emission has been assessed in report EM-F160362 as representative.		

### 3. GENERAL INFORMATION

#### 3.1. Description of EUT

Product	PCIE 802.11a/b/g/n 2.4GHz/5GHz + USB BT 4.0 card																							
Model Number	AEH-AR9462																							
Serial Number	N/A																							
Brand Name	AIRETOS																							
Applicant	VoxMicro LTD. 20955 Pathfinder Rd., STE100, Diamond Bar, CA 91765 United States																							
RF Features	WLAN: 802.11a/b/g/n Bluetooth: BT and BLE																							
Transmit Type	<table border="1"> <thead> <tr> <th colspan="2">2.4 GHz</th> </tr> </thead> <tbody> <tr> <td>802.11b</td> <td>2T2R</td> </tr> <tr> <td>802.11g</td> <td>2T2R</td> </tr> <tr> <td>802.11n-HT20</td> <td>2T2R</td> </tr> <tr> <td>802.11n-HT40</td> <td>2T2R</td> </tr> <tr> <td>BT</td> <td>1T1R</td> </tr> <tr> <td>BLE</td> <td>1T1R</td> </tr> </tbody> </table>	2.4 GHz		802.11b	2T2R	802.11g	2T2R	802.11n-HT20	2T2R	802.11n-HT40	2T2R	BT	1T1R	BLE	1T1R	<table border="1"> <thead> <tr> <th colspan="2">UNII Bands</th> </tr> </thead> <tbody> <tr> <td>802.11a</td> <td>2T2R</td> </tr> <tr> <td>802.11n-HT20</td> <td>2T2R</td> </tr> <tr> <td>802.11n-HT40</td> <td>2T2R</td> </tr> </tbody> </table>	UNII Bands		802.11a	2T2R	802.11n-HT20	2T2R	802.11n-HT40	2T2R
2.4 GHz																								
802.11b	2T2R																							
802.11g	2T2R																							
802.11n-HT20	2T2R																							
802.11n-HT40	2T2R																							
BT	1T1R																							
BLE	1T1R																							
UNII Bands																								
802.11a	2T2R																							
802.11n-HT20	2T2R																							
802.11n-HT40	2T2R																							
Date of Receipt of Sample	2016. 06. 06																							
<b>Information for Class II Change Permissive:</b>	The difference with original FCC ID: 2AE3B-AEH-AR9462 is to add antenna type.																							

#### 3.2. Antenna Information

No.	Antenna Part Number	Brand	Antenna Type	Frequency (MHz)	Max Gain (dBi)	Directional Gain (2T2R)(dBi)
1	WAND2DBI-SMA	OxfordTec	Omni	2.4GHz	2.0	<b>5.01</b>
				5GHz	3.0	<b>6.01</b>
Note 1. Directional gain = $10 \log[(10^{2.0/20} + 10^{2.0/20})^2 / 2] = 5.01 \text{dBi}$ Note 2. Directional gain = $10 \log[(10^{3.0/20} + 10^{3.0/20})^2 / 2] = 6.01 \text{dBi}$						

### 3.3. EUT Specifications Assessed in Current Report

Mode	Fundamental Range (MHz)	Channel Number	Modulation	Data Rate (Mbps)
Bluetooth	2402-2480	79	FHSS (GFSK, $\pi/4$ DQPSK, 8-DPSK)	1/2/3

Channel List					
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

### 3.4. Test Configuration

	Item	Mode	Data Rate	Test Channel
Radiated Test Case	Radiated Band Edge <small>Note1</small>	8DPSK	3Mbps	00/39/78
	Radiated Spurious Emission <small>Note1 &amp; 2</small>	8DPSK	3Mbps	00/39/78
Conducted Test Case	Peak Output Power	GFSK	1Mbps	00/39/78
		8-DPSK	3Mbps	00/39/78

Note 1:

Mobile Device

Portable Device, and 3 axis were assessed. The worst scenario for Radiated Spurious Emission as follow:

Lie

Side

Stand

Note 2: Low, mid, and high channels were measured, only the worst channel of each modulation was presented in this report.



### 3.5. Tested Supporting System List

#### 3.5.1. Support Peripheral Unit

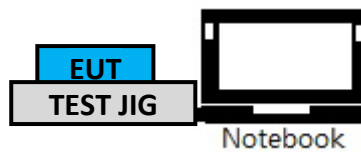
No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Notebook PC	IBM	2652	99NXMML	ANOVNCBDC80211B
2.	Test Jig	N/A	N/A	N/A	N/A

#### 3.5.2. Cable Lists

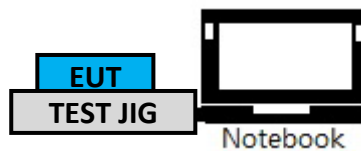
No.	Cable Description Of The Above Support Units
1.	AC Adapter: IBM, M/N 02K6747 AC Power Cord: Unshielded, Detachable, 1.8m DC Power Cord: Unshielded, Undetachable, 1.8m

### 3.6. Setup Configuration

#### 3.6.1. EUT Configuration for Radiated Emission



#### 3.6.2. EUT Configuration for Conducted Test Items



### 3.7. Operating Condition of EUT

EUT was set into test mode by Notebook to set channels / hopping / modulations.

### 3.8. Description of Test Facility

Test Firm Name	:	<b>AUDIX Technology Corporation EMC Department</b> No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
Test Location & Facility	:	<b>Semi Anechoic Chamber &amp; Fully Anechoic Chamber</b> No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724
FCC OET Designation	:	TW1004 & TW1090

### 3.9. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Radiation Test (Distance: 3m)	30MHz~1000MHz	± 3.68dB
	Above 1GHz	± 5.82dB

Remark : Uncertainty =  $ku_c(y)$

Test Item	Uncertainty
Maximum peak Output power	± 0.52dB

## 4. MEASUREMENT EQUIPMENT LIST

### 4.1. Radiated Emission Measurement

#### 4.1.1. Frequency Range 9kHz~1000MHz

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2015. 09. 14	1 Year
2.	Test Receiver	R & S	ESCS30	100338	2015. 06. 24	1 Year
3.	Amplifier	HP	8447D	2944A06305	2016. 02. 23	1 Year
4.	Bilog Antenna	CHASE	CBL6112D	33821	2016. 01. 30	1 Year
5.	Loop Antenna	R&S	HFH2-Z2	891847/27	2015. 12. 24	1 Year
6.	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.

#### 4.1.2. Frequency Range Above 1GHz

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	2015. 08. 20	1 Year
2.	Amplifier	Sonoma	310N	187161	2015. 06. 17	1 Year
3.	Microwave Amplifier	Keysight	83051A	MY53010042	2015. 08. 13	1 Year
4.	2.4GHz Notch Filter	K&L	7NSL10-244 1.5E130.5-00	1	2015. 07. 28	1 Year
5.	Horn Antenna	ETS-Lindgren	3117	00135902	2016. 03. 05	1 Year
6.	Horn Antenna	EMCO	3116	2653	2015. 10. 20	1 Year
7.	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.

### 4.2. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Power Meter	Anritsu	ML2495A	1145008	2015. 10. 23	1 Year
2.	Power Sensor	Anritsu	MA2411B	1126096	2015. 10. 23	1 Year

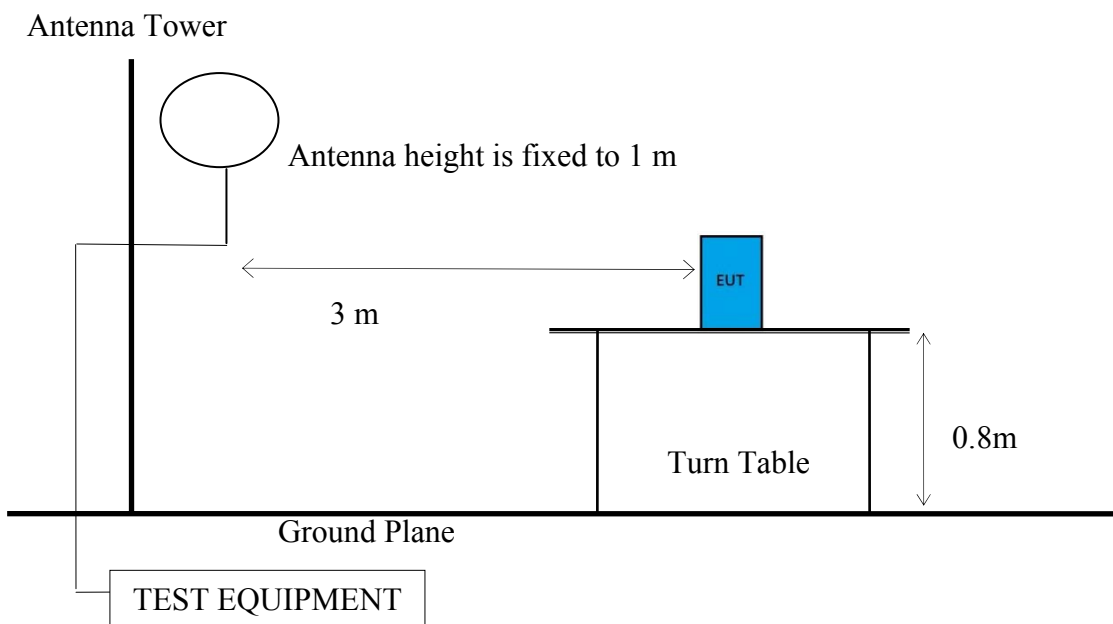
## 5. RADIATED EMISSION MEASUREMENT

### 5.1. Block Diagram of Test Setup

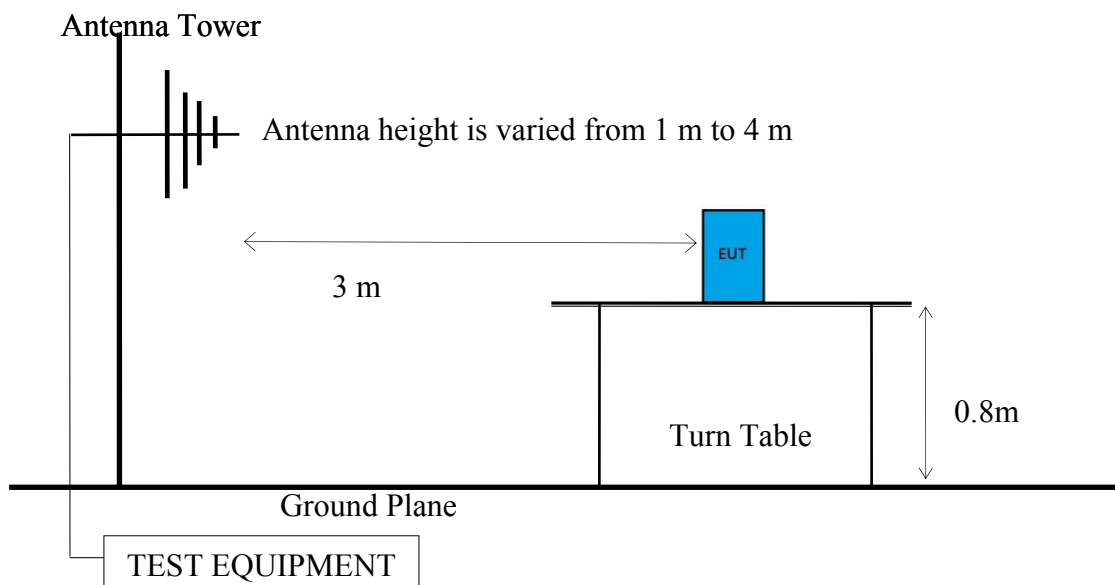
5.1.1. Block Diagram of connection between EUT and simulators

Indicated as section 3.6

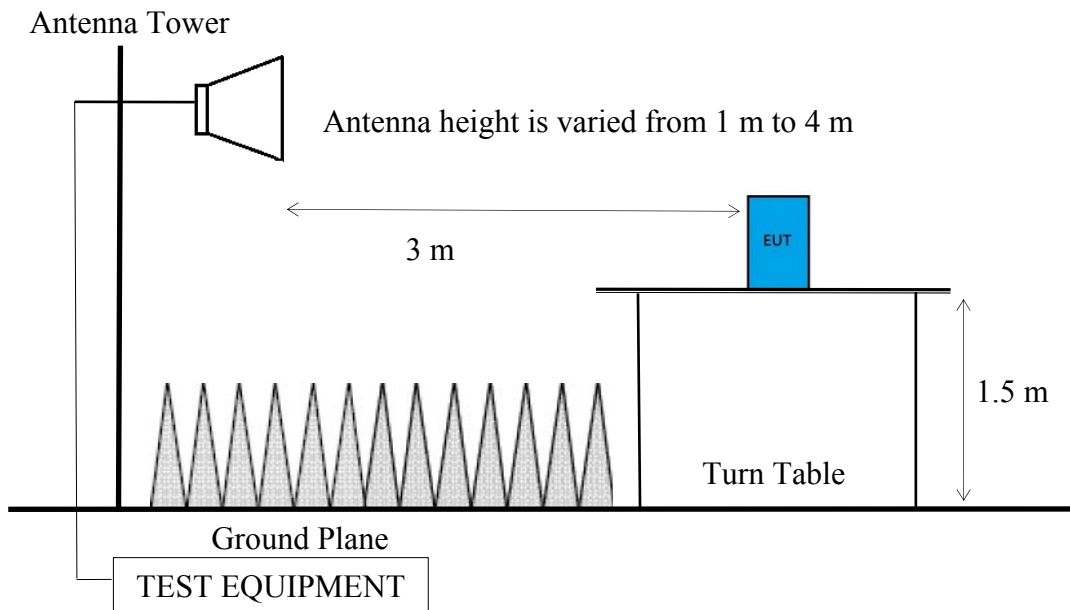
5.1.2. Semi Anechoic Chamber (3m) Setup Diagram for 9kHz-30MHz



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



### 5.1.4. Fully Anechoic Chamber (3m) Setup Diagram for above 1GHz



## 5.2. Radiated Emission Limits

In any 100kHz bandwidth outside the frequency band, the radio frequency power produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified as below.

Frequency (MHz)	Distance (m)	Limits	
		dB $\mu$ V/m	$\mu$ V/m
0.009 - 0.490	300	67.6	2400/kHz
0.490 - 1.705	30	87.6	24000/kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500
Above 1000	3	74.0 dB $\mu$ V/m (Peak) 54.0 dB $\mu$ V/m (Average)	

Remark : (1) dB $\mu$ V/m = 20 log ( $\mu$ V/m)

- (2) The tighter limit applies to 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) Fundamental and emission fall within operation band are exempted from this section.
- (5) Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

### 5.3. Test Procedure

#### Frequency Range 9kHz~30MHz:

The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

- (1) RBW = 9kHz with peak and average detector.
- (2) Detector: average and peak (9kHz-490kHz)  
Q.P. (490kHz-30MHz)

#### Frequency Range 30MHz ~ 40GHz:

The EUT setup on the turn find table which has 80 cm (for 30-1000 MHz) and 1.5m (for above 1GHz) height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

#### Frequency below 1 GHz:

Spectrum Analyzer is used for pre-testing with following setting:

- (1) RBW = 120KHz
- (2) VBW  $\geq$  3 x RBW.
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.
- (7) When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required. Otherwise using Q.P. for finally measurement.

**Frequency above 1GHz to 10th harmonic:****Peak Detector:**

- (1) RBW = 1MHz
- (2) VBW  $\geq 3 \times$  RBW.
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.
- (7) When peak-detected value is lower than limit that the measurement using the average detector is not required. Otherwise using average for finally measurement.

**Average Detector:****■Option 1:**

- (1) RBW = 1 MHz
- (2) VBW = 1/T
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.

**□Option 2:**

Average Emission Level= Peak Emission Level+ D.C.C.F.

**5.4. Measurement Result Explanation**

- Peak Emission Level=Antenna Factor + Cable Loss + Meter Reading
- Average Emission Level=Antenna Factor + Cable Loss + Meter Reading
- Average Emission Level= Peak Emission Level+ DCCF  
 Duty Cycle Correction Factor (DCCF)=  $20\log(TX_{on}/TX_{on+off})$  presented in section 3.5
- EPR= Peak Emission Level-95.2dB-2.14dB

**5.5. Test Results**

**PASSED.**

Test Date	2016/06/08	Temp./Hum.	26°C/43%
Test Voltage	DC 3.3V		

5.5.1. Emissions within Restricted Frequency Bands

5.5.1.1. Frequency 9kHz~30MHz

**The emissions (9kHz~30MHz) not reported for there is no emission be found.**

5.5.1.2. Frequency Below 1 GHz

Modulation	8-DPSK	Frequency	TX 2480MHz
------------	--------	-----------	------------

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
99.84	10.90	3.22	20.32	34.44	43.50	9.06	Peak
224.97	10.93	4.17	19.51	34.61	46.00	11.39	Peak
298.69	13.10	4.65	25.49	43.24	46.00	2.76	Peak
459.71	16.42	6.14	5.40	27.96	46.00	18.04	Peak
830.25	20.20	7.28	5.45	32.93	46.00	13.07	Peak

**Antenna at Vertical Polarization**

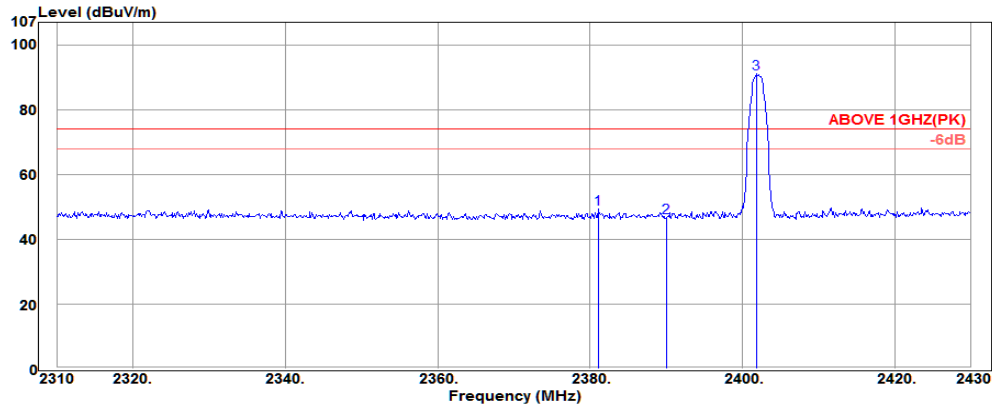
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
99.84	10.90	3.22	18.38	32.50	43.50	11.00	Peak
211.39	10.05	4.07	19.80	33.92	43.50	9.58	Peak
299.66	13.12	4.65	22.31	40.08	46.00	5.92	Peak
450.01	16.29	6.07	4.19	26.55	46.00	19.45	Peak
849.65	20.32	7.36	4.11	31.79	46.00	14.21	Peak



5.5.1.3. Frequency Above 1 GHz to 10th harmonics

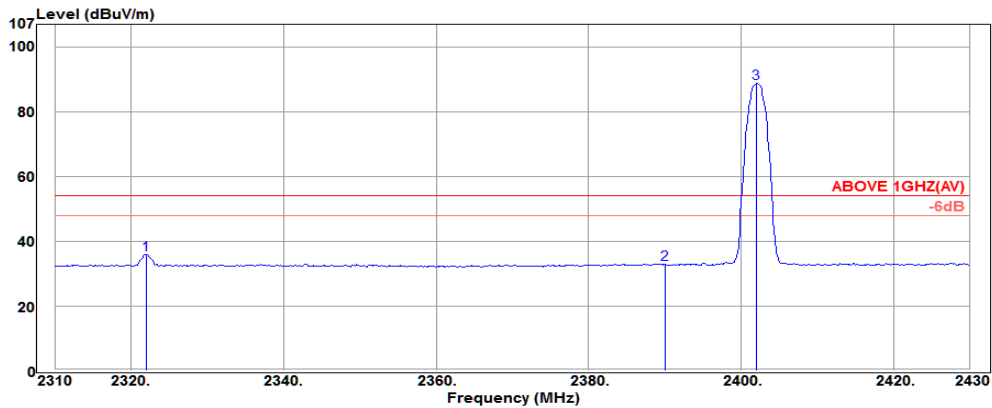
**Band Edge:**

Mode	8-DPSK	Frequency	TX 2402MHz
------	--------	-----------	------------



**Antenna at Horizontal Polarization**

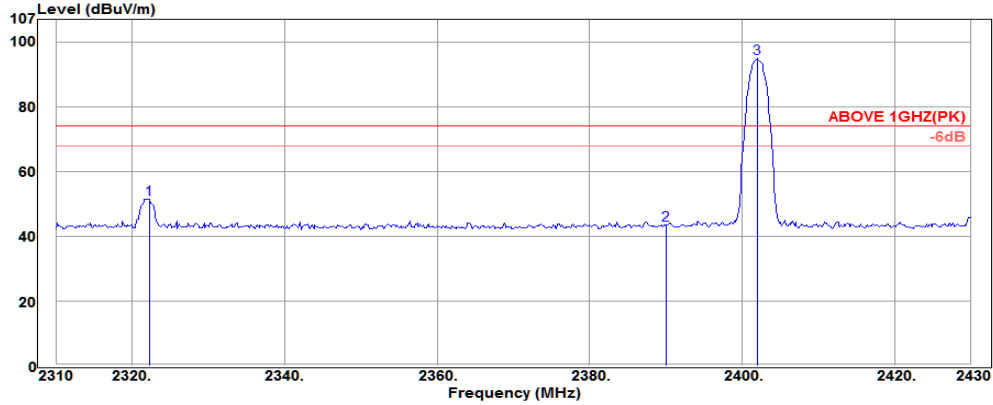
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2381.04	32.13	5.71	11.53	49.37	74.00	24.63	Peak
2390.04	32.16	5.72	8.77	46.65	74.00	27.35	Peak
2401.80	32.16	5.72	53.14	91.02	---	---	Peak



**Antenna at Horizontal Polarization**

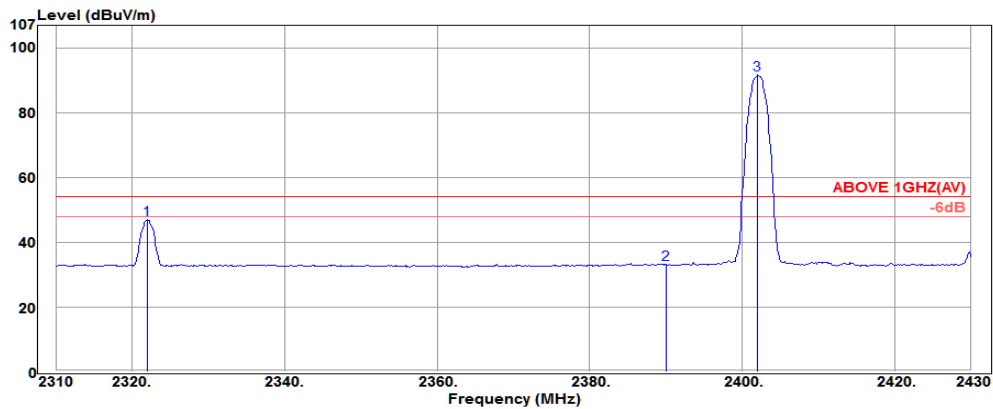
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2322.00	32.06	5.67	-1.75	35.98	54.00	18.02	Average
2390.04	32.16	5.72	-4.86	33.02	54.00	20.98	Average
2402.04	32.16	5.72	50.90	88.78	---	---	Average

Mode	8-DPSK	Frequency	TX 2402MHz
------	--------	-----------	------------



**Antenna at Vertical Polarization**

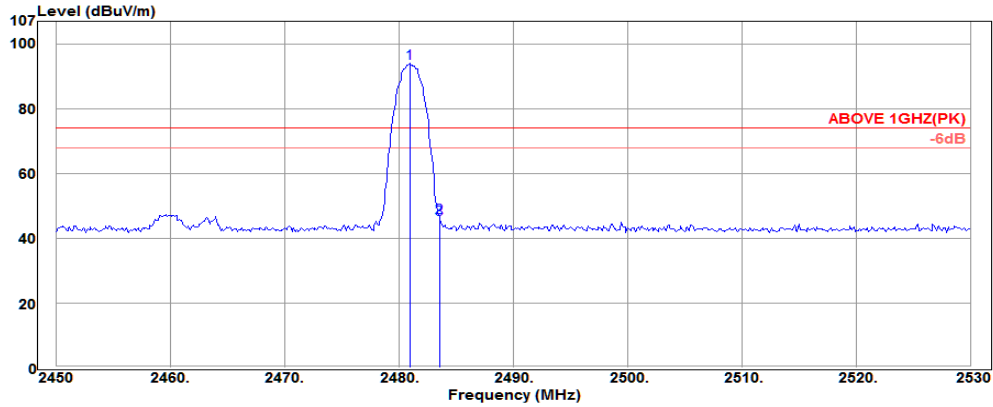
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2322.24	32.06	5.67	13.75	51.48	74.00	22.52	Peak
2390.04	32.16	5.72	5.60	43.48	74.00	30.52	Peak
2402.04	32.16	5.72	56.98	94.86	---	---	Peak



**Antenna at Vertical Polarization**

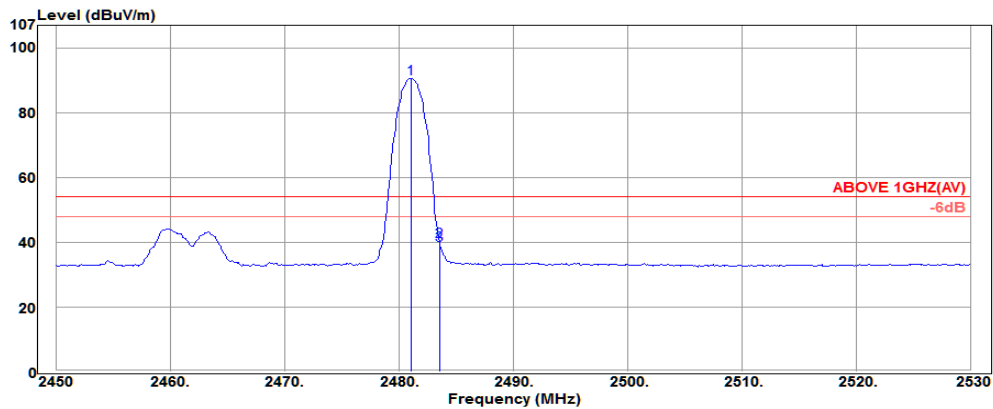
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2322.00	32.06	5.67	9.24	46.97	54.00	7.03	Average
2390.04	32.16	5.72	-4.54	33.34	54.00	20.66	Average
2402.04	32.16	5.72	53.72	91.60	---	---	Average

Mode	8-DPSK	Frequency	TX 2480MHz
------	--------	-----------	------------



**Antenna at Vertical Polarization**

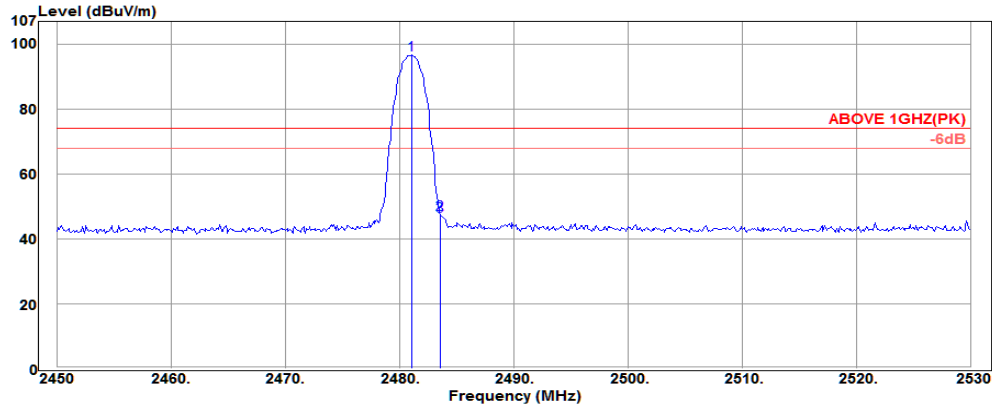
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2480.96	32.28	5.82	55.84	93.94	---	---	Peak
2483.52	32.28	5.82	8.45	46.55	74.00	27.45	Peak
2483.60	32.28	5.82	7.65	45.75	74.00	28.25	Peak



**Antenna at Vertical Polarization**

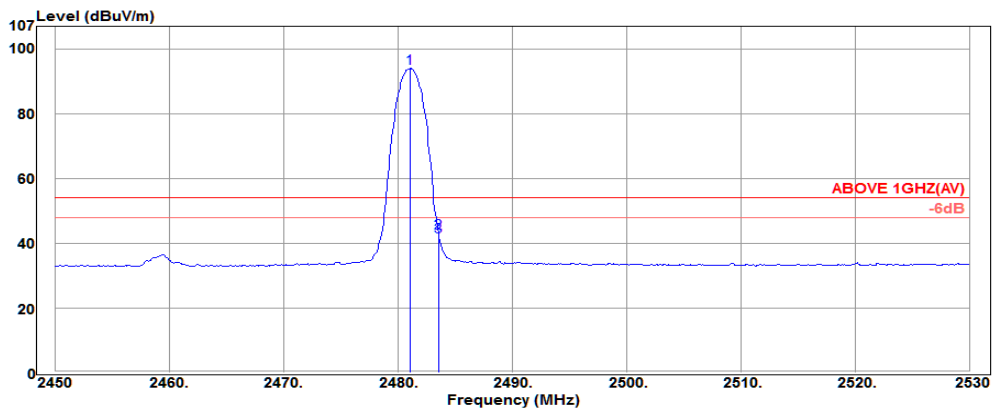
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2481.04	32.28	5.82	52.53	90.63	---	---	Average
2483.52	32.28	5.82	2.10	40.20	54.00	13.80	Average
2483.60	32.28	5.82	1.03	39.13	54.00	14.87	Average

Mode	8-DPSK	Frequency	TX 2480MHz
------	--------	-----------	------------



**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2481.04	32.28	5.82	58.71	96.81	---	---	Peak
2483.52	32.28	5.82	9.50	47.60	74.00	26.40	Peak
2483.60	32.28	5.82	8.90	47.00	74.00	27.00	Peak



**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2481.04	32.28	5.82	55.85	93.95	---	---	Average
2483.52	32.28	5.82	5.22	43.32	54.00	10.68	Average
2483.60	32.28	5.82	3.95	42.05	54.00	11.95	Average

### 5.5.2. Emissions outside the frequency band:

The emissions (up to 25GHz) not reported for there is no emission be found.

Modulation	8-DPSK	Frequency	TX 2402MHz
------------	--------	-----------	------------

#### Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector
4805.00	34.22	7.86	-0.90	41.18	54.00	12.82	Peak
7205.00	35.80	9.22	-1.78	43.24	54.00	10.76	Peak

#### Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector
4805.00	34.22	7.86	-0.47	41.61	54.00	12.39	Peak
7205.00	35.80	9.22	-1.90	43.12	54.00	10.88	Peak

Modulation	8-DPSK	Frequency	TX 2441MHz
------------	--------	-----------	------------

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector
4880.00	34.25	8.35	-0.55	42.05	54.00	11.95	Peak
7325.00	35.80	9.89	-0.91	44.78	54.00	9.22	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector
4880.00	34.25	8.35	0.18	42.78	54.00	11.22	Peak
7325.00	35.80	9.89	-1.01	44.68	54.00	9.32	Peak

Modulation	8-DPSK	Frequency	TX 2480MHz
------------	--------	-----------	------------

#### Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector
4960.00	34.29	8.68	0.61	43.58	54.00	10.42	Peak
7440.00	35.80	10.40	-1.55	44.65	54.00	9.35	Peak

#### Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector
4960.00	34.29	8.68	-0.64	42.33	54.00	11.67	Peak
7440.00	35.80	10.40	-0.96	45.24	54.00	8.76	Peak

#### 5.5.3. Emissions in Non-restricted Frequency Bands

All emission levels below the 15.209 general radiated emissions limits is not required.

## 6. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

### 6.1. Block Diagram of Test Setup



### 6.2. Specification Limits

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

### 6.3. Test Procedure

Following measurement procedure is reference to DA00-705:

- (1) Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel
- (2) RBW  $\geq$  1% of the span
- (3) VBW  $\geq$  RBW
- (4) Sweep = auto
- (5) Detector function = peak
- (6) Trace = max hold



## 6.4. Test Results

Test Date	2016/06/06	Temp./Hum.	25°C/58%
Cable Loss	---	Test Voltage	DC 3.3V

### 6.4.1. Output Power

Modulation	Centre Frequency (MHz)	Peak Output Power		Limit
		dBm	W	
GFSK	2402	4.44	0.002780	21dBm (0.125W)
	2441	4.81	0.003027	
	2480	5.16	0.003281	
8-DPSK	2402	6.11	0.004083	21dBm (0.125W)
	2441	6.60	0.004571	
	2480	6.70	0.004677	

Note: All results have been included cable loss.

## **7. DEVIATION TO TEST SPECIFICATIONS**

**【NONE】**