Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

FCC 15.247 & RSS-247
2.4GHz Test Report

for

AAEON Technology Inc.

5F, No. 135, Lane 235, Pao Chiao Rd., Hsin-Tien Dist, New Taipei City, 231, Taiwan, R.O.C.

Product Name	**:**	**IOTAS Connect 3**
Model Name	**:**	**(1)ITS-GW01-A10-C001** **(2)ITS-GW01-A10-C002**
Brand		**IOTAS**
FCC ID	**:**	**OHB-A010001**
IC	**:**	**23644-A010001**

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

Testing Laboratory
1724

TESTING
NVLAP LAB CODE 200077-0

The test report is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

TABLE OF CONTENTS

Description Page

TEST REPORT 4
1. REVISION RECORD OF TEST REPORT 5
2. SUMMARY OF TEST RESULTS 6
3. GENERAL INFORMATION 7
3.1. Description of Application 7
3.2. Description of EUT 8
3.3. Reference Test Guidance 8
3.4. Antenna Information 9
3.5. EUT Specifications Assessed in Current Report 9
3.6. Descriptions of Key Components 11
3.7. Test Configuration 12
3.8. Output Power Setting 15
3.9. Tested Supporting System List 16
3.10. Setup Configuration 16
3.11. Operating Condition of EUT 16
3.12. Description of Test Facility 17
3.13. Measurement Uncertainty 18
4. MEASUREMENT EQUIPMENTLIST 19
4.1. Conducted Emission Measurement 19
4.2. Radiated Emission Measurement 20
4.3. RF Conducted Measurement 20
5. CONDUCTED EMISSION 21
5.1. Block Diagram of Test Setup 21
5.2. Conducted Emission Limit 21
5.3. Test Procedure 21
5.4. Test Results 21
6. RADIATED EMISSION 22
6.1. Block Diagram of Test Setup 22
6.2. Radiated Emission Limits 24
6.3. Test Procedure 25
6.4. Measurement Result Explanation 26
6.5. Test Results 26
7. 6dB/OCCUPIED BANDWIDTH 27
7.1. Block Diagram of Test Setup 27
7.2. Specification Limits 27
7.3. Test Procedure 27
7.4. Test Results 27
8. MAXIMUM PEAK OUTPUT POWER 28
8.1. Block Diagram of Test Setup 28
8.2. Specification Limits 28
8.3. Test Procedure 29
8.4. Test Results 29
9. EMISSION LIMITATIONS 30

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

9.1. Block Diagram of Test Setup 30
9.2. Specification Limits 30
9.3. Test Procedure 30
9.4. Test Results 31
10. POWER SPECTRAL DENSITY 32
10.1. Block Diagram of Test Setup 32
10.2. Specification Limits 32
10.3. Test Procedure 32
10.4. Test Results 32
11. DEVIATION TO TEST SPECIFICATIONS 33

APPENDIX A TEST DATA AND PLOTS
APPENDIX B TESTPHOTOGRAPHS

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

TEST REPORT

Applicant	:	AAEON Technology Inc.
Manufacturer	:	AAEON Technology Inc.
EUT Description		
(1) Product	:	IOTAS Connect 3
(2) Model	:	(1)ITS-GW01-A10-C001 (2)ITS-GW01-A10-C002
(3) Brand	:	IOTAS
(4) Power Supply	:	DC 5V, 3A

Applicable Standards:

Title 47 CFR FCC Part 15 Subpart C
RSS-Gen (Issue 5), April 2018
RSS-247 (Issue 2), February 2017
ANSI C63.10:2013

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 Report: 2021. 04. 09

Reviewed by: Annie Yu (Annie Yu/Administrator)

Approved by: Johnny Hsueh (Johnny Hsueh/Section Manager)

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

1. REVISION RECORD OF TEST REPORT

Edition No	Issued Data	Revision Summary	Report Number
0	2021. 04. 09	Original Report	EM-F210205

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

2. SUMMARY OF TEST RESULTS

Rule		Description	Results
FCC	IC		
15.207	RSS-Gen §8.8	Conducted Emission	**PASS**
15.247(d)/ 15.205	RSS-Gen §8.9 RSS-247 §5.5	Radiated Band Edge and Radiated Spurious Emission	**PASS**
15.247(a)(2)	RSS-247 §5.2(1)	6dB/Occupied Bandwidth	**PASS**
15.247(b)(3)	RSS-247 §5.4(4)	Maximum Peak Output Power	**PASS**
15.247(d)	RSS-247 §5.5	Conducted Band Edges and Conducted Spurious Emission	**PASS**
15.247 (e)	RSS-247 §5.2(2)	Peak Power Spectral Density	**PASS**
15.203	---	Antenna Requirement	**Compliance**
Note: The uncertainties value is not used in determining the result.			

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

3. GENERAL INFORMATION

3.1. Description of Application

<table>
<tr><td>Applicant</td><td>AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Rd., Hsin-Tien Dist, New Taipei City, 231, Taiwan, R.O.C.</td></tr>
<tr><td>Manufacturer</td><td>AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Rd., Hsin-Tien Dist, New Taipei City, 231, Taiwan, R.O.C.</td></tr>
<tr><td>Product</td><td>IOTAS Connect 3</td></tr>
<tr><td>Brand</td><td>IOTAS</td></tr>
<tr><td>Model</td><td>(1)ITS-GW01-A10-C001 (2)ITS-GW01-A10-C002
The difference between models is as following, and the difference has no influence on RF function. The model ITS-GW01-A10-C002 was tested in this report.
<table>
<tr><td>Model / Difference</td><td>ITS-GW01-A10-C001</td><td>ITS-GW01-A10-C002</td></tr>
<tr><td>LTE Module</td><td>Without</td><td>With</td></tr>
</table></td></tr>
</table>

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.2. Description of EUT

Test Model	ITS-GW01-A10-C002
Serial Number	N/A
Power Rating	DC 5V, 3A
RF Features	WLAN:802.11 a/b/g/n/ac Bluetooth: BT and BLE ZigBee Z-Wave
Transmit Type	WLAN: 1T1R Bluetooth: 1T1R ZigBee: 1T1R Z-Wave: 1T1R
Test Sample	Sample No. / Test Item / Firmware 02 / AC Conduction, RSE, Conducted / N/A
Sample Status	Mass production
Date of Receipt	2021. 03. 09
Date of Test	2021. 03. 22 ~ 30
Interface Ports of EUT	• One LAN Port • One USB Port • One DC Input Port
Accessories Supplied	• AC Adapter

3.3. Reference Test Guidance

None

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.4. Antenna Information

WLAN/ZigBee/BT Antenna				
Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)
RFA-DB1-AP609-70-100	Aristotle	PIFA	2400-2500	2.39
			5150-5875	4.06

Z-Wave Antenna				
Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)
RFA-ZW-AP856-100-R2	Aristotle	PIFA	868-928	0.3

3.5. EUT Specifications Assessed in Current Report

Mode	Fundamental Range (MHz)	Channel Number	Modulation	Data Rate (Mbps)
802.11b	2412-2462	11	DSSS (DBPSK/DQPSK/CCK)	Up to 11
802.11g		11	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 54
802.11n-HT20				Up to 72
BLE	2402-2480	40	GFSK	1
ZigBee (IEEE 802.15.4)	2405-2480	46	DSSS (O-QPSK)	0.25

Channel List			
802.11 b/g/n-HT20			
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	---	
6	2437		
7	2442		

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Channel List							
BLE							
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
37	2402	09	2422	18	2442	28	2462
00	2404	10	2424	19	2444	29	2464
01	2406	38	2426	20	2446	30	2466
02	2408	11	2428	21	2448	31	2468
03	2410	12	2430	22	2450	32	2470
04	2412	13	2432	23	2452	33	2472
05	2414	14	2434	24	2454	34	2474
06	2416	15	2436	25	2456	35	2476
07	2418	16	2438	26	2458	36	2478
08	2420	17	2440	27	2460	39	2480

Channel List			
ZigBee (IEEE 802.15.4)			
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
11	2405	19	2445
12	2410	20	2450
13	2415	21	2455
14	2420	22	2460
15	2425	23	2465
16	2430	24	2470
17	2435	25	2475
18	2440	26	2480

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.6. Descriptions of Key Components

Item	Supplier	Model / Type	Character
CPU (Socket: BGA1170)	Intel	N2807	1.58GHz
Storage (SSD)	Kingston	EMMC16G-TB28	eMMC flash 16GB
Memory (RAM)	NANYA	NT5CC256M16EP-EK	4GB DDR3
WLAN/BT Combo Card	AMPAK	AP6255	---
Antenna	Aristotle	RFA-DB1-AP609-70-100	Wi-Fi/BT/ZigBee/antenna
Z-Wave Chip	Silicon Labs	ZGM130S	---
Antenna	Aristotle	RFA-ZW-AP856-100-R2	Z-Wave antenna
ZigBee Chip	Silicon Labs	EFR32MG1B232	---
Antenna	Aristotle	RFA-DB1-AP609-70-100	Wi-Fi/BT/ZigBee/antenna
LTE Module (Option)	Quectel	EC25-AFX	FCC ID: XMR201909EC25AFX IC: 10224A-2019EC25AFX
Antenna	Aristotle	RFA-LTE-T42-U-M62-1	LTE antenna
AC Adapter (Wall-mount, 2C)	SUNNY COMPUTER TECHNOLOGY CO., LTD	SYS1639-1505-W2 (P/N: G401163915009)	I/P: 100-240Vac, 50-60Hz, 1.0A O/P: 5Vdc, 3A 15W MAX
	DC Cable: Unshielded, Detachable, 1.4m		

Remark: For more detailed features description, please refer to the manufacturer's specifications or the user manual.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

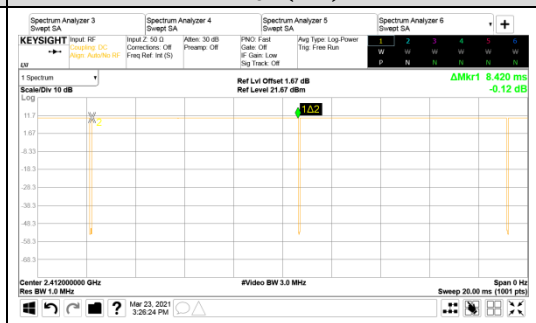
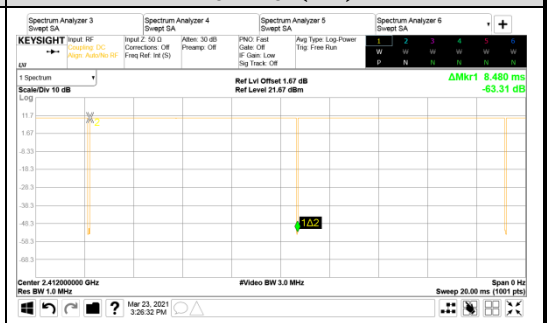
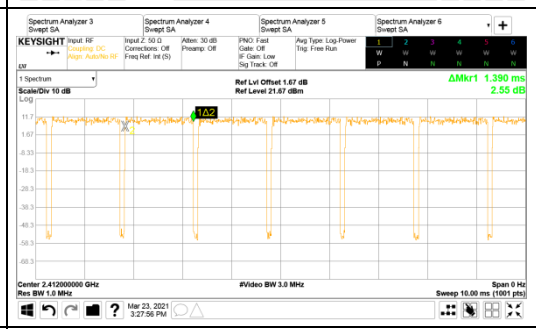
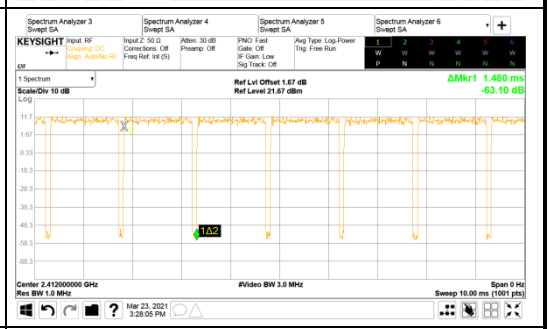
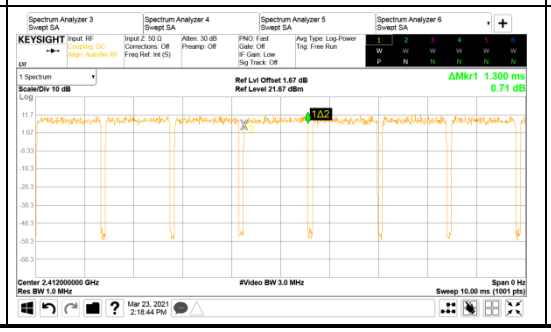
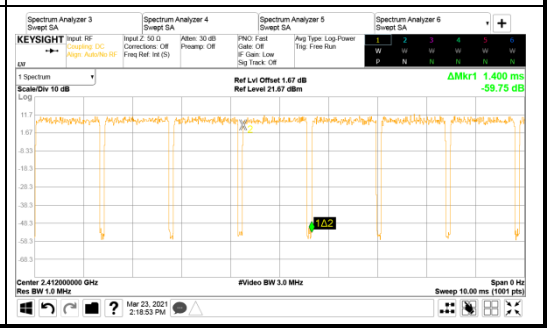
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

3.7. Test Configuration

Mode	TX_{on} (ms)	1/ TX_{on} (kHz)	Duty Cycle (x)	Duty Cycle Factor [10log(1/x)] (dB)
802.11b	8.420	0.119	0.993	N/A
802.11g	1.390	0.719	0.939	0.27
802.11n-HT20	1.300	0.769	0.929	0.32

Note: When duty cycle is less than 98% (0.98) that duty cycle factor 10log(1/x) is needed to add in conducted test items measured in average detector.

Mode	TX_{on} (ms)	$T_{on}+T_{off}$(ms)
802.11b		
802.11g		
802.11n-HT20		

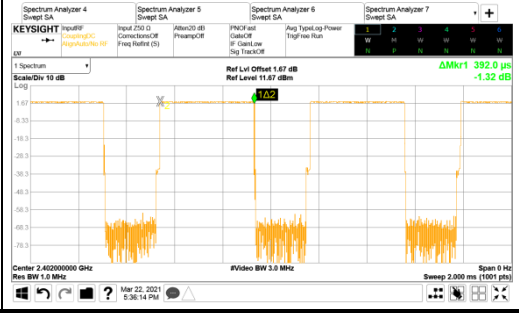
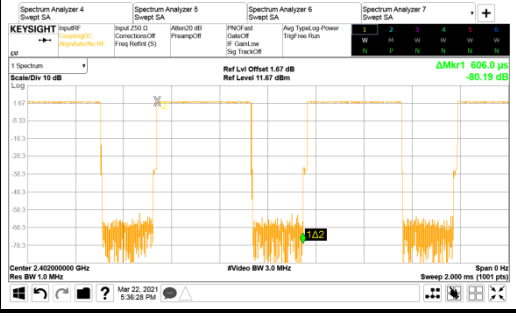
This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

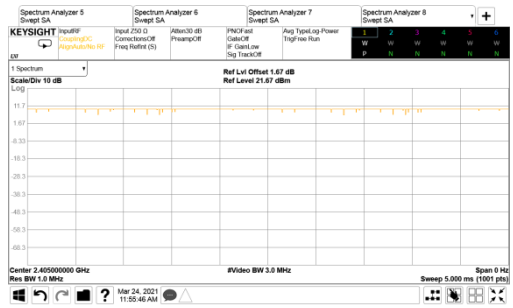
Mode	TX_{on} (ms)	1/ TX_{on} (kHz)	Duty Cycle (x)	Duty Cycle Factor [10log(1/x)] (dB)
BLE	0.392	2.551	0.647	1.89

Note: When duty cycle is less than 98% (0.98) that duty cycle factor 10log(1/x) is needed to add in conducted test items measured in average detector.

Mode	TX_{on} (ms)	$T_{on}+T_{off}$(ms)
BLE		

Mode	TX_{on} (ms)	1/ TX_{on} (kHz)	Duty Cycle (x)	Duty Cycle Factor [10log(1/x)] (dB)
ZigBee	---	---	---	---

Note: When duty cycle is less than 98% (0.98) that duty cycle factor 10log(1/x) is needed to add in conducted test items measured in average detector.

Mode	TX_{on} (ms)	$T_{on}+T_{off}$(ms)
ZigBee		---

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

AC Conduction	
Test Case	Normal operation

Item		Mode	Data Rate	Test Channel
Radiated Test Case	Radiated Band Edge Note1	802.11b	1Mbps	1/11
		802.11g	6Mbps	1/11
		802.11n-HT20	MCS0	1/11
		BLE	1Mbps	37/39
		ZigBee	---	11/26
	Radiated Spurious Emission Note1& 2	802.11b	1Mbps	6
		802.11g	6Mbps	6
		802.11n-HT20	MCS0	6
		BLE	1Mbps	17
		ZigBee	---	11/18/26
		ZigBee+802.11b	---	11+1
Conducted Test Case	6dB/Occupied Bandwidth	802.11b	1Mbps	1/6/11
		802.11g	6Mbps	1/6/11
		802.11n-HT20	MCS0	1/6/11
		BLE	1Mbps	37/17/39
		ZigBee	---	11/18/26
	Peak Output Power	802.11b	1Mbps	1/6/11
		802.11g	6Mbps	1/6/11
		802.11n-HT20	MCS0	1/6/11
		BLE	1Mbps	37/17/39
		ZigBee	---	11/18/26
	Band Edge	802.11b	1Mbps	1/11
		802.11g	6Mbps	1/11
		802.11n-HT20	MCS0	1/11
		BLE	1Mbps	37/39
		ZigBee	---	11/26
	Spurious Emission	802.11b	1Mbps	1/6/11
		802.11g	6Mbps	1/6/11
		802.11n-HT20	MCS0	1/6/11
		BLE	1Mbps	37/17/39
		ZigBee	---	11/18/26
	Peak Power Spectral Density	802.11b	1Mbps	1/6/11
		802.11g	6Mbps	1/6/11
		802.11n-HT20	MCS0	1/6/11
		BLE	1Mbps	37/17/39
		ZigBee	---	11/18/26

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.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.8. Output Power Setting

Mode	Centre Frequency (MHz)	Power Setting	Mode	Centre Frequency (MHz)	Power Setting
802.11b	2412	12	802.11g	2412	14
	2437	12		2437	14
	2462	12		2462	14

Mode	Centre Frequency (MHz)	Power Setting
802.11n-HT20	2412	14
	2437	14
	2462	14

Mode	Centre Frequency (MHz)	Power Setting
BLE	2402	8
	2440	8
	2480	8

Mode	Centre Frequency (MHz)	Power Setting
ZigBee	2405	75
	2440	75
	2480	75

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

3.9. Tested Supporting System List

3.9.1. Support Peripheral Unit

No.	Product	Brand	Model No.	Serial No.	Approval
1.	Notebook Computer	hp	TPN-Q189	5CD8175992	Contains FCC ID: PD93168NG Contains IC: 1000M-3168NG

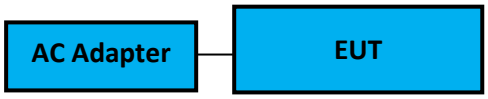
3.9.2. Cable Lists

No.	Cable Description Of The Above Support Units
1.	LAN Cable: Unshielded, Detachable, 1.0m Adapter: hp, M/N PPP-012C-S DC Cord：Shielded, Undetachable, 1.8m, Bonded a ferrite core AC Power Cord：Unshielded, Detachable, 1.0m

3.10. Setup Configuration

3.10.1. EUT Configuration for Power Line & Radiated Emission

3.10.2. EUT Configuration for RF Conducted Test Items



3.11. Operating Condition of EUT

Test program “putty” is used for enabling EUT BT/WLAN/ZigBee function under continues transmitting and choosing data rate/ channel.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

3.12.Description of Test Facility

Name of Test Firm	Audix Technology Corporation / EMC Department No. 491, Zhongfu Rd., Linkou Dist., New Taipei City 244, Taiwan Tel: +886-2-26092133 Fax: +886-2-26099303 Website : www.audixtech.com Contact e-mail: attemc_report@audixtech.com
Accreditations	The laboratory is accredited by following organizations under ISO/IEC 17025:2017 (1) NVLAP(USA) NVLAP Lab Code 200077-0 (2) TAF(Taiwan) No. 1724
Test Facilities	FCC OET Designation Number under APEC MRA by NCC is : TW1724 ISED CAB Identifier Number under APEC TEL MRA by NCC is TW1724 (1) No.8 Shielded Room (2) No.1 3m Semi Anechoic Chamber (3) Fully Anechoic Chamber

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

3.13.Measurement Uncertainty

Test Items/Facilities			Frequency Range	Uncertainty
Conduction Test			9kHz-150kHz	±3.7dB
			150kHz-30MHz	±3.4dB
Radiation Test	☒	No.1 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±3.8dB
			200MHz-1000MHz, 3m, Horizontal	±4.1dB
			30MHz-200MHz, 3m, Vertical	±4.5dB
			200MHz-1000MHz, 3m, Vertical	±4.5dB
			1GHz-6GHz, 3m	±4.7dB
			6GHz-18GHz, 3m	±4.1dB
	☐	No.3 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±3.9dB
			200MHz-1000MHz, 3m, Horizontal	±4.2dB
			30MHz-200MHz, 3m, Vertical	±4.3dB
			200MHz-1000MHz, 3m, Vertical	±4.5dB
	☐	No.4 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.1dB
			200MHz-1000MHz, 3m, Horizontal	±4.5dB
			30MHz-200MHz, 3m, Vertical	±4.4dB
			200MHz-1000MHz, 3m, Vertical	±4.8dB
			1GHz-6GHz, 3m	±5.0dB
			6GHz-18GHz, 3m	±4.7dB
	☐	No.5 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.2dB
			200MHz-1000MHz, 3m, Horizontal	±4.3dB
			30MHz-200MHz, 3m, Vertical	±4.3dB
			200MHz-1000MHz, 3m, Vertical	±4.7dB
			1GHz-6GHz, 3m	±4.8dB
			6GHz-18GHz, 3m	±4.5dB
	☒	Fully Anechoic Chamber	30MHz~1000MHz	±4.6dB
			1GHz~18GHz	±5.4dB
			18GHz~40GHz	±3.52dB
			40GHz~260GHz	±3.56dB

Remark：Uncertainty = $ku_c(y)$

Test Item	Uncertainty
6dB Bandwidth	± 0.05kHz
Maximum peak output power	± 0.33dB
Power spectral density	± 0.13dB
Conducted Emission Limitations	± 0.13dB

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

4. MEASUREMENT EQUIPMENTLIST

4.1. Conducted Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESR3	101774	2021. 02. 02	1 Year
2.	A.M.N.	R&S	ENV432	101567	2020. 04. 20	1 Year
3.	L.I.S.N.	Kyoritsu	KNW-407	8-855-9	2020. 12. 10	1 Year
4.	Pulse Limiter	R&S	ESH3-Z2	100354	2021. 01. 04	1 Year
5.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.8 S/R	2020. 04. 17	1 Year
6.	Coaxial Cable	Yeida	RG/58AU	CE-08	2020. 09. 19	1 Year
7.	Test Software	Audix	e3	V6.120619c	N.C.R.	N.C.R.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

4.2. Radiated Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Keysight	N9010B-544	MY55460198	2020. 04. 29	1 Year
2.	Spectrum Analyzer	Agilent	N9030A-526	MY53310269	2021. 01. 14	1 Year
3.	Test Receiver	R&S	ESCS30	100039	2020. 06. 05	1 Year
4.	Amplifier	HP	8447D	2944A07178	2020. 04. 29	1 Year
5.	Microwave Amplifier	Keysight	83051A	MY53010042	2020. 08. 05	1 Year
6.	Microwave Amplifier	Agilent	8449B	3008A02678	2021. 02. 27	1 Year
7.	Loop Antenna	R&S	HFH2-Z2	891847/27	2019. 12. 26	2 Years
8.	Bilog Antenna	TESEQ	CBL6112D	33821	2021. 01. 15	1 Year
9.	Horn Antenna	ETS-Lindgren	3117	00135902	2021. 03. 19	1 Year
10.	Horn Antenna	COM-POWER	AH-840	101092	2020 .05. 08	1 Year
11.	2.4GHz Notch Filter	K&L Microwave	7NSL10-2441.5/E130.5-O/O	1	2020 .07. 24	1 Year
12.	3GHz Notch Filter	Microwave	H3G018G1	484796	2020. 08. 20	1 Year
13	Coaxial Cable	MIYAZAKI	5D2W	CLAMP-01	2020.09.19	1 Year
14	Coaxial Cable	MIYAZAKI	5D2W	RE-11	2021. 01. 29	1 Year
15	Coaxial Cable	HUBER+SUHNER	SUCOFLEX 104	RE-29	2020. 09. 19	1 Year
16	Coaxial Cable	HUBER+SUHNER	SUCOFLEX 102	RE-30	2020. 09. 19	1 Year
17	Digital Thermo-Hygro Meter	iMax	HTC-1	No.1 3m A/C	2020. 04. 17	1 Year
18	Digital Thermo-Hygro Meter	EVERY DAY	E-512	RF-02	2020. 04. 17	1 Year
19	Test Software	Audix	e3	V6.120619c	N.C.R.	N.C.R.
20	Test Software	Audix	e3	V6.110601	N.C.R.	N.C.R.

4.3. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Keysight	N9020B-544	MY57120357	2021. 01. 06	1 Year
2.	Power Meter	Anritsu	ML2487A	6K00005406	2020. 04. 29	1 Year
3.	Power Sensor	Anritsu	MA2491A	030873	2020. 04. 29	1 Year
4.	Digital Thermo-Hygro Meter	Shenzhen Datronn Electronics	KT-905	RF	2020. 04. 17	1 Year

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

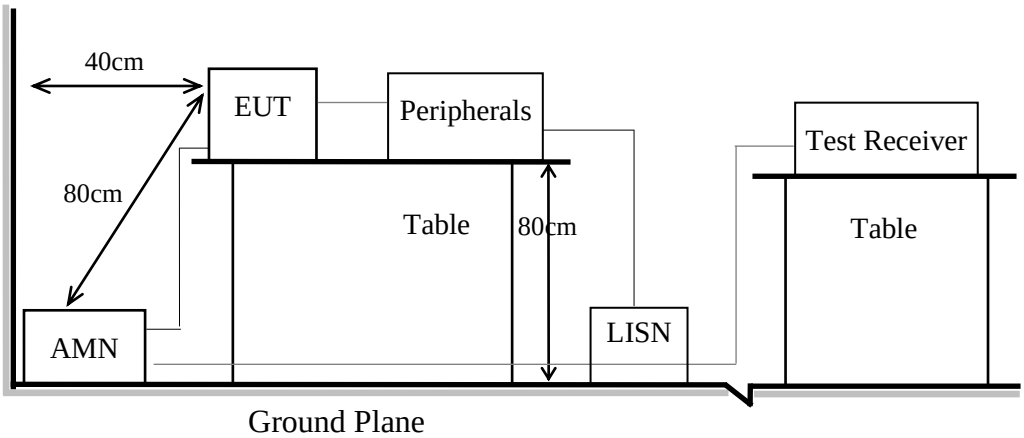
5. CONDUCTED EMISSION

5.1. Block Diagram of Test Setup

5.1.1. Block Diagram of EUT

Indicated as section 3.10

5.1.2. Shielded Room Setup Diagram



5.2. Conducted Emission Limit

Frequency	Conducted Limit	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark1.: If the average limit is met when using a Quasi-Peak detector, the measurement using the average detector is not required.
2.: The lower limit applies to the band edges.

5.3. Test Procedure

5.3.1. To set up the EUT as indicated in ANSI C63.10. The EUT was placed on the table which has 80 cm height to the ground and 40 cm distance to the conducting wall.
5.3.2. Power supplier of the EUT was connected to the AC mains through an Artificial Mains Network (A.M.N.).
5.3.3. The AC power supplies to all peripheral devices must be provided through line impedance stabilization network (L.I.S.N.)
5.3.4. Checking frequency range from 150kHz to 30 MHz and record the emission which does not have 20 dB below limit.

5.4. Test Results

Please refer to Appendix A.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

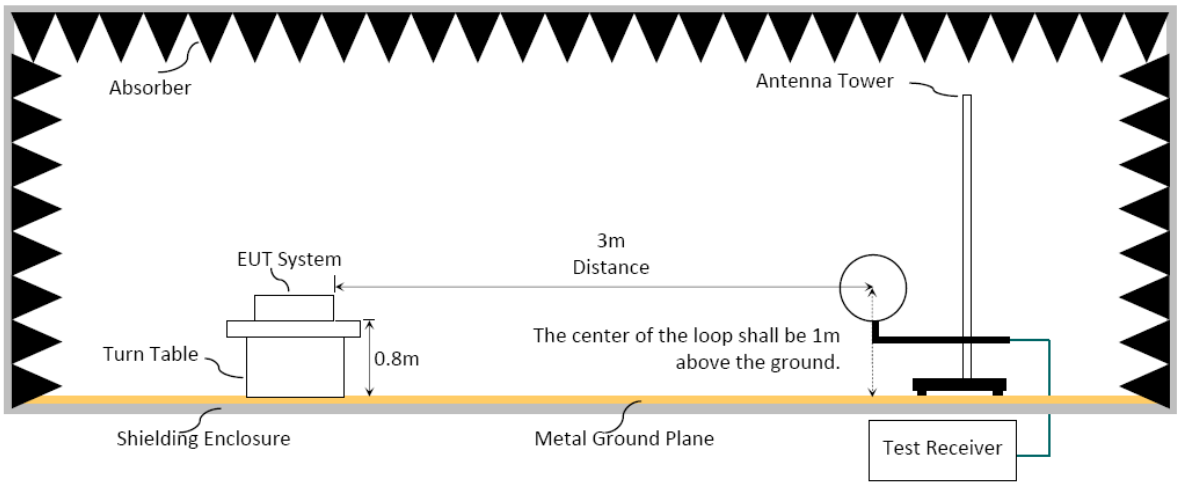
6. RADIATED EMISSION

6.1. Block Diagram of Test Setup

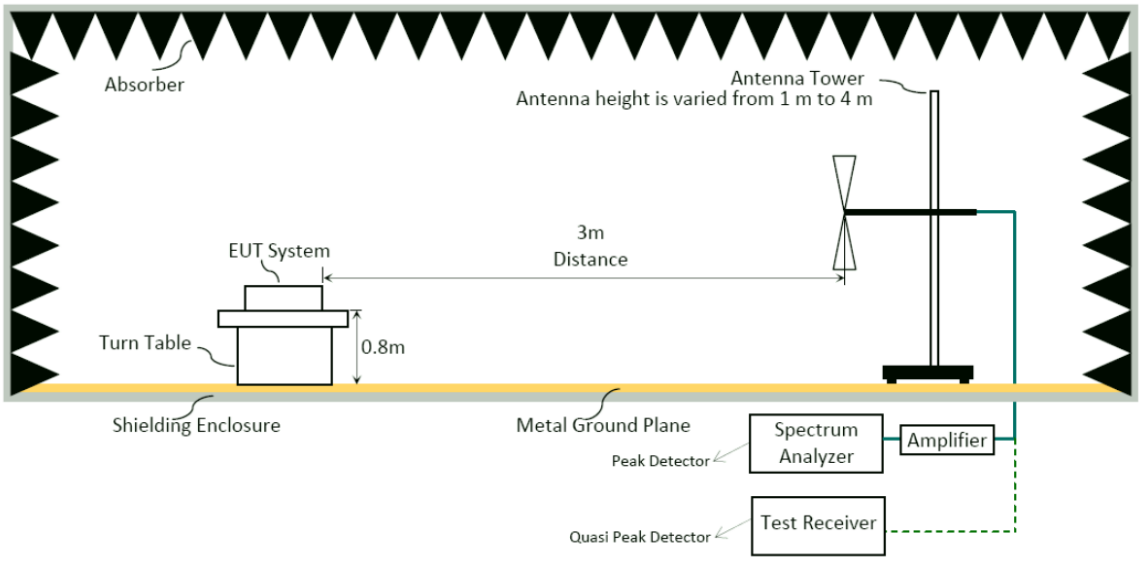
6.1.1. Block Diagram of EUT

Indicated as section 3.10

6.1.2. Setup Diagram for 9kHz-30MHz



6.1.3. Setup Diagram for 30-1000MHz



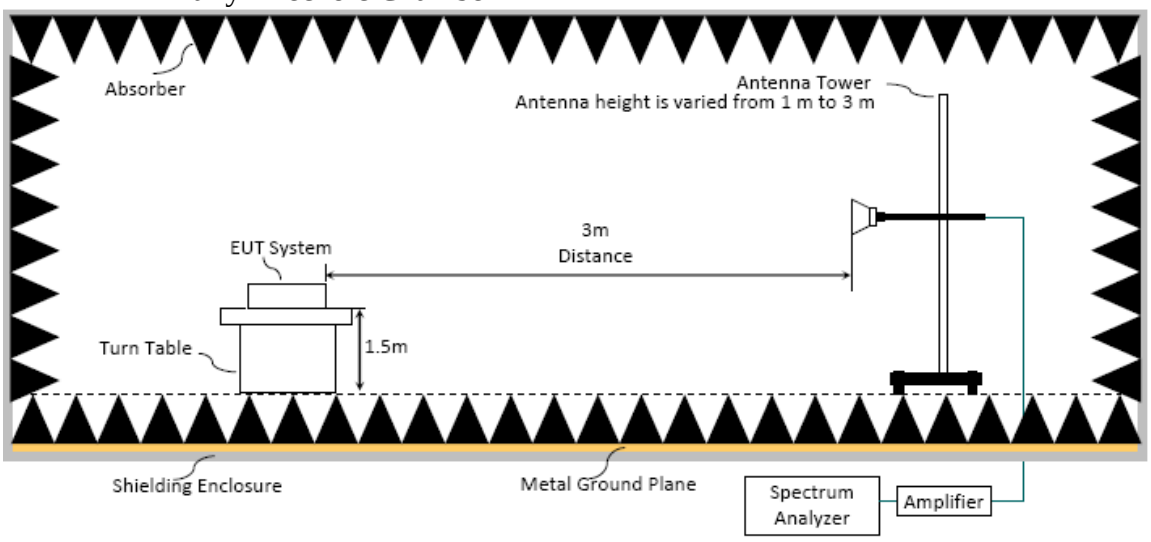
This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

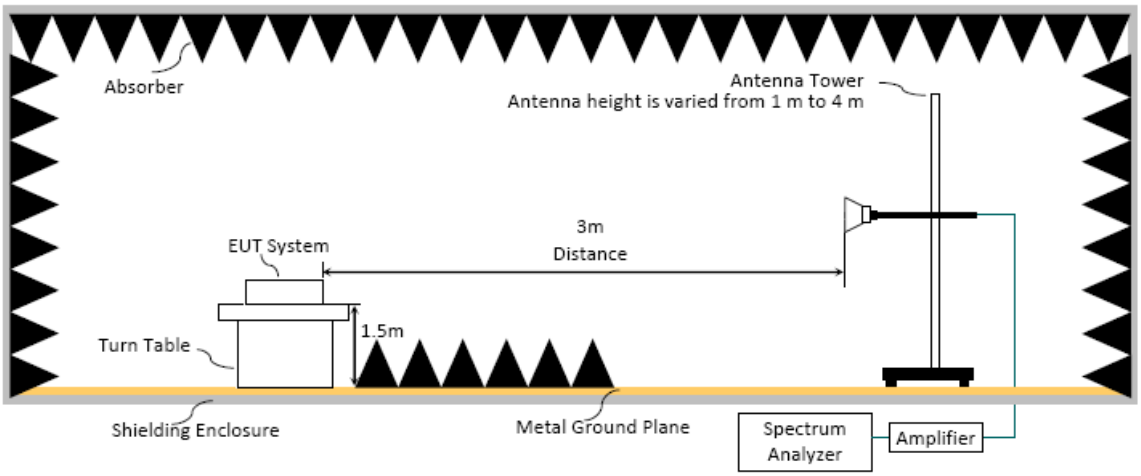
Tel: +886 2 26099301
Fax: +886 2 26099303

6.1.4. Setup Diagram for above 1GHz

Fully Anechoic Chamber



Semi Anechoic Chamber



This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6.2. 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/RSS-Gen Section 8.10 table 6, must also comply with the radiated emission limits specified as below.

Frequency (MHz)	Distance(m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6-20 log f(kHz)	2400/f kHz
0.490 - 1.705	30	87.6-20 log f(kHz)	24000/f 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 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark：(1) dBμV/m = 20 log (μV/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.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6.3. Test Procedure

Frequency Range 9kHz~30MHz:
The EUT setup on the turntable 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 ~ 25GHz:
The EUT setup on the turn table which has 80cm (for 30-1000MHz) 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 (for 30-1000MHz) and from 1m to 3m (for above 1GHz at fully Anechoic Chamber)or from 1 m to 4 m (for above 1GHz at Semi Anechoic Chamber) 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 1GHz:
Spectrum Analyzer is used for pre-testing with following setting:
(1)RBW = 120KHz
(2)VBW ≥ 3 x RBW.
(3)Detector = Peak.
(4)Sweep time = auto.
(5)Trace mode = max hold.
(6)Allow sweeps to continue until the trace stabilizes.
Note 1: When peak-detected value is lower than limit that the measurement using theQ.P. detector is not required, otherwise using Q.P. for final measurement.
Note 2: When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds.

Frequency above 1GHz to 10th harmonic (up to 25 GHz):
Peak Detector:
(1)RBW = 1MHz
(2)VBW ≥ 3 x RBW.
(3)Detector = Peak.
(4)Sweep time = auto.
(5)Trace mode = max hold.
(6)Allow sweeps to continue until the trace stabilizes.
Note: When peak-detected value is lower than limit that the measurement using the average detector is not required, otherwise using average detector for final measurement.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Average Detector:

■**Option 1:**

(1)RBW = 1MHz

(2)VBW ≥ 1/ T.

Modulation Type	T (ms)	1/ T (kHz)	VBW Setting(Hz)
802.11b	8.420	0.119	10Hz
802.11g	1.390	0.719	750Hz
802.11n-HT20	1.380	0.725	820Hz
BLE	0.392	2.551	2.7kHz
ZigBee	---	---	220Hz

N/A: 1/ T is not implemented when duty cycle presented in section 3.7 is ≥98%.

(1)Detector = Peak.

(2)Sweep time = auto.

(3)Trace mode = max hold.

(4)Allow sweeps to continue until the trace stabilizes.

□**Option 2:**

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

6.4. Measurement Result Explanation

■Peak Emission Level=Antenna Factor + Cable Loss +Meter Reading (including Preamp factor if test used)

■Average Emission Level l=Antenna Factor + Cable Loss + Meter Reading (including Preamp factor if test used)

□Average Emission Level= Peak Emission Level+ DCCF

Duty Cycle Correction Factor (DCCF)= 20log(TX_{on}/TX_{on+off}) presented in section 3.6

□ERP= Peak Emission Level-95.2dB-2.14dB

6.5. Test Results

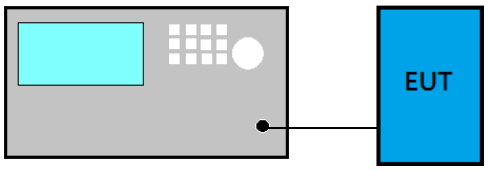
Please refer to Appendix A.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

7. 6dB/OCCUPIED BANDWIDTH

7.1. Block Diagram of Test Setup



7.2. Specification Limits

The minimum 6dB bandwidth shall be at least 500kHz.

7.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

For 6dB Bandwidth

(1) Set RBW = 100 kHz.
(2) Set the video bandwidth (VBW) ≥ 3 × RBW.
(3) Detector = Peak.
(4) Trace mode = max hold.
(5) Sweep = auto couple.
(6) Allow the trace to stabilize.
(7) Setting channel bandwidth function x to -6dB power to record the final bandwidth..

For 99% Occupied Bandwidth

(1) Set Span range 1.5~5 times the OBW
(2) Set RBW close to1% to 5% of OBW.
(3) Set VBW≥3xRBW.
(4) Detector = Peak.
(5) Trace mode = Max hold
(6) Sweep = Auto couple.
(7) Allow the trace to stabilize.

7.4. Test Results

Please refer to Appendix A

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

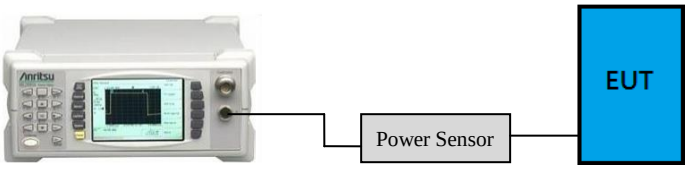
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

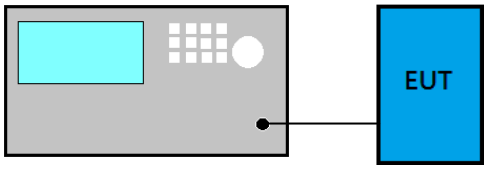
8. MAXIMUM PEAK OUTPUT POWER

8.1. Block Diagram of Test Setup

- For WLAN Function



- For BLE/ZigBee Function



8.2. Specification Limits

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5MHz is : 1Watt. (30dBm), and E.I.R.P.: 4Watt (36dBm)

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

8.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

■PKPM1 Peak power meter method:

EUT is connected to power sensor and record the maximum output power.

■Maximum peak conducted output power method:

(1) Set the RBW ≥ DTS bandwidth
(2) Set VBW ≥ 3 × RBW
(3) Set span ≥ 3 × RBW.
(4) Sweep time = auto couple
(5) Detector = peak.
(6) Trace mode = max hold.
(7) Allow trace to fully stabilize.
(8) Use peak marker function to determine the peak amplitude level.

■Method AVGPM (Measurement using an RF average power meter):

EUT is connected to power sensor and record the maximum average output power and duty cycle factor is added when duty cycle presented in section 3.7 is< 98%.

□Method AVGSA-2 (Spectrum channel power)

(1) Set span to at least 1.5 times the OBW
(2) Set RBW = 1 -5%of OBW
(3) Set the video bandwidth (VBW) ≥ 3 × RBW.
(4) Detector = RMS.
(5) Trace mode = trace average at least 100 traces
(6) Sweep = auto couple.
(7) Compute power by integrating the spectrum across the OBW of the signalusing the instrument's band power measurement function with band limits set equal to the OBW band edges.
(8) Duty cycle factor is added when duty cycle presented in section 3.7 is < 98%.

8.4. Test Results

Please refer to Appendix A

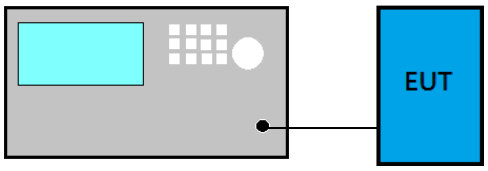
This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

9. EMISSION LIMITATIONS

9.1. Block Diagram of Test Setup



9.2. Specification Limits

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 the100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, that the required attenuation shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in Section 15.209(a)/RSS-Gen Section 8.9 table 4is not required. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205(a)/RSS-Gen Section 8.10 table 6, must also comply with the radiated emission limits specified in Section 15.209(a)/RSS-Gen Section 8.9 table 4 (See Section 15.205(c)).

9.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

■Reference Level

(1) Set analyzer center frequency to DTS channel center frequency.
(2) Set the span to 1.5 times the DTS bandwidth.
(3) Set the RBW to: 100 kHz.
(4) Set the VBW ≥ 3 × RBW.
(5) Detector = peak.
(6) Sweep time = auto couple.
(7) Trace mode = max hold.
(8) Allow trace to fully stabilize to find the max PSD as reference level.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

■Emission Level Measurement

(1) Set analyzer center frequency to DTS channel center frequency.
(2) Set the span to 1.5 times the DTS bandwidth.
(3) Set the RBW to: 100 kHz.
(4) Set the VBW ≥ 3 × RBW.
(5) Detector = peak.
(6) Sweep time = auto couple.
(7) Trace mode = max hold.
(8) Allow trace to fully stabilize to find the max level.

9.4. Test Results

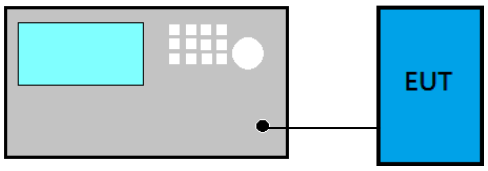
Please refer to Appendix A

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

10. POWER SPECTRAL DENSITY

10.1. Block Diagram of Test Setup



10.2. Specification Limits

The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band.

10.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

■Method PKPSD (peak PSD)

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

□Method AVGPSD-2

(1) Using peak PSD procedure step 1 to step 4.
(2) Detector= RMS detector
(3) Sweep time = auto couple
(4) Trace mode = trace averaging over a minimum of 100 traces
(5) Use the peak marker function to determine the maximum amplitude level.
(6) Duty cycle factor is added when duty cycle presented in section 3.7< 98%.
(7) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

10.4. Test Results

Please refer to Appendix A

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

11. DEVIATION TO TEST SPECIFICATIONS

【NONE】

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

APPDNDIX A

TEST DATA AND PLOTS

(Model: (1)ITS-GW01-A10-C001 (2)ITS-GW01-A10-C002)

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

6TABLE OF CONTENTS

A.1 CONDUCTED EMISSION 2
A.2 RADIATED EMISSION 4
A.2.1 Emissions within Restricted Frequency Bands 4
A.2.2 Emissions outside the frequency band: 28
A.2.3 Emissions in Non-restricted Frequency Bands: 31
A.3 6dB/OCCUPIED BANDWIDTH 32
A.3.1 Emission Bandwidth Result 32
A.3.2 Measurement Plots 33
A.4 MAXIMUM PEAK OUTPUT POWER 36
A.4.1 Peak Output Power 36
A.4.2 Average Output Power (Reporting only) 38
A.4.3 Measurement Plots 39
A.5 EMISSION LIMITATIONS 40
A.6 POWER SPECTRAL DENSITY 55
A.6.1 Power Spectral Density Result 55
A.6.2 Measurement Plots 56

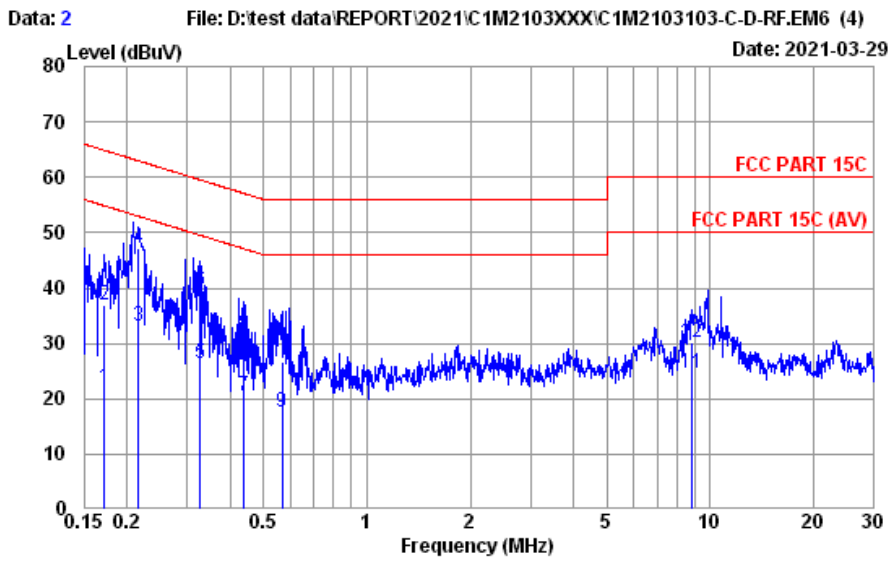
This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

A.1 CONDUCTED EMISSION

Test Date	2021/03/29	Temp./Hum.	24°C/74%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Chucky Chiu



Site No. : No.8 Shielded Room
Instrument 1 : Receiver ESR3(774)
Instrument 2 : ENV432 (567)(A)|CE-08|ESH3-Z2 (354)
Limit : FCC PART 15C
Environment : 24°C / 74%
EUT Model : ITS-GW01-A10-C002
Test Mode : Operating

Data No. : 2
Phase : NEUTRAL
Engineer : Chucky Chiu
Test Rating : 120Vac/60Hz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.172	10.20	0.03	9.85	1.81	21.89	54.86	32.97	Average
2	0.172	10.20	0.03	9.85	16.84	36.92	64.86	27.94	QP
3	0.216	10.20	0.03	9.85	13.11	33.19	52.96	19.77	Average
4	0.216	10.20	0.03	9.85	27.20	47.28	62.96	15.68	QP
5	0.327	10.20	0.03	9.85	6.28	26.36	49.53	23.17	Average
6	0.327	10.20	0.03	9.85	19.56	39.64	59.53	19.89	QP
7	0.440	10.20	0.03	9.85	0.43	20.51	47.07	26.56	Average
8	0.440	10.20	0.03	9.85	11.70	31.78	57.07	25.29	QP
9	0.567	10.20	0.03	9.85	-2.48	17.60	46.00	28.40	Average
10	0.567	10.20	0.03	9.85	6.68	26.76	56.00	29.24	QP
11	8.822	10.46	0.13	9.88	4.15	24.62	50.00	25.38	Average
12	8.822	10.46	0.13	9.88	9.84	30.31	60.00	29.69	QP

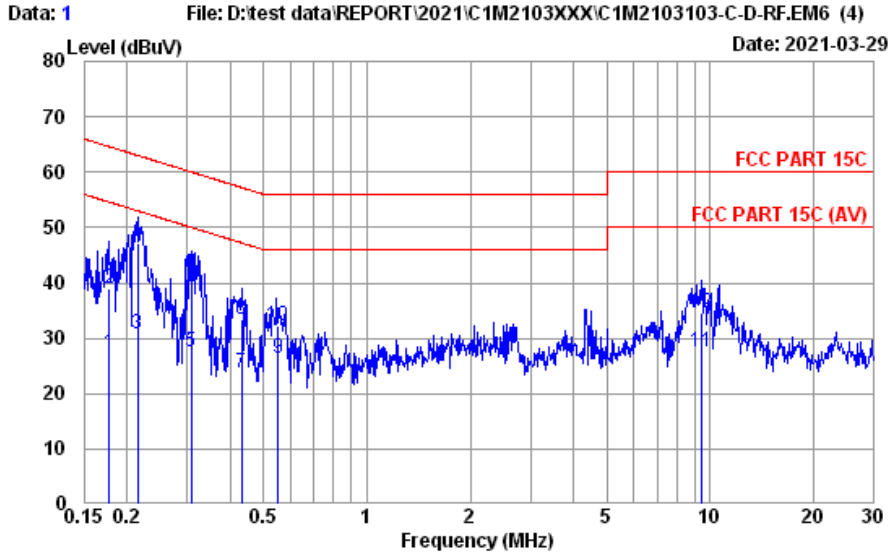
Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Test Date	2021/03/29	Temp./Hum.	24°C/74%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Chucky Chiu



Site No. : No.8 Shielded Room
Instrument 1 : Receiver ESR3(774)
Instrument 2 : ENV432 (567)(A)|CE-08|ESH3-Z2 (354)
Limit : FCC PART 15C
Environment : 24°C / 74%
EUT Model : ITS-GW01-A10-C002
Test Mode : Operating
Data No. : 1
Phase : LINE
Engineer : Chucky Chiu
Test Rating : 120Vac/60Hz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.178	10.20	0.03	9.85	7.19	27.27	54.59	27.32	Average
2	0.178	10.20	0.03	9.85	18.78	38.86	64.59	25.73	QP
3	0.215	10.20	0.03	9.85	10.73	30.81	53.01	22.20	Average
4	0.215	10.20	0.03	9.85	27.23	47.31	63.01	15.70	QP
5	0.308	10.20	0.03	9.85	7.35	27.43	50.02	22.59	Average
6	0.308	10.20	0.03	9.85	21.44	41.52	60.02	18.50	QP
7	0.431	10.20	0.03	9.85	3.70	23.78	47.24	23.46	Average
8	0.431	10.20	0.03	9.85	13.19	33.27	57.24	23.97	QP
9	0.552	10.20	0.03	9.85	6.36	26.44	46.00	19.56	Average
10	0.552	10.20	0.03	9.85	12.11	32.19	56.00	23.81	QP
11	9.451	10.38	0.14	9.88	7.12	27.52	50.00	22.48	Average
12	9.451	10.38	0.14	9.88	14.29	34.69	60.00	25.31	QP

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

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

A.2 RADIATED EMISSION

Test Date	2021/03/26 ~ 29	Temp./Hum.	21 ~ 25℃/69 ~ 70%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Sean Wang

A.2.1 Emissions within Restricted Frequency Bands

A.2.1.1 Frequency 9kHz~30MHz

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

A.2.1.2 Frequency Below 1GHz

Mode	802.11g	Frequency	TX 2437MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
31.940	18.03	1.26	28.14	33.96	25.11	40.00	14.89	Peak
153.190	10.38	3.09	27.82	43.90	29.55	43.50	13.95	Peak
431.580	16.08	6.31	28.72	39.83	33.50	46.00	12.50	Peak
700.270	18.84	7.62	29.33	42.54	39.67	46.00	6.33	Peak
900.090	20.39	8.72	28.86	40.26	40.51	46.00	5.49	Peak
974.780	21.10	9.05	28.64	35.84	37.35	54.00	16.65	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
37.760	14.73	1.43	28.13	47.18	35.21	40.00	4.79	Peak
153.190	10.38	3.09	27.82	45.29	30.94	43.50	12.56	Peak
500.450	17.28	6.93	29.21	43.03	38.03	46.00	7.97	Peak
700.270	18.84	7.62	29.33	38.39	35.52	46.00	10.48	Peak
949.560	20.85	8.94	28.71	34.91	35.99	46.00	10.01	Peak
990.300	21.23	9.12	28.61	35.31	37.05	54.00	16.95	Peak

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	BLE	Frequency	TX 2402MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
37.760	14.73	1.43	28.13	36.65	24.68	40.00	15.32	Peak
153.190	10.38	3.09	27.82	45.00	30.65	43.50	12.85	Peak
500.450	17.28	6.93	29.21	40.50	35.50	46.00	10.50	Peak
700.270	18.84	7.62	29.33	41.66	38.79	46.00	7.21	Peak
900.090	20.39	8.72	28.86	40.54	40.79	46.00	5.21	Peak
987.390	21.20	9.10	28.61	34.92	36.61	54.00	17.39	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
37.760	14.73	1.43	28.13	47.48	35.51	40.00	4.49	Peak
157.070	10.12	3.14	27.81	44.57	30.02	43.50	13.48	Peak
500.450	17.28	6.93	29.21	43.08	38.08	46.00	7.92	Peak
700.270	18.84	7.62	29.33	39.53	36.66	46.00	9.34	Peak
897.180	20.38	8.70	28.86	35.76	35.98	46.00	10.02	Peak
981.570	21.16	9.08	28.64	34.98	36.58	54.00	17.42	Peak

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	ZigBee	Frequency	TX 2440MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
41.640	12.32	1.52	28.13	34.85	20.56	40.00	19.44	Peak
153.190	10.38	3.09	27.82	43.76	29.41	43.50	14.09	Peak
500.450	17.28	6.93	29.21	40.70	35.70	46.00	10.30	Peak
700.270	18.84	7.62	29.33	42.22	39.35	46.00	6.65	Peak
900.090	20.39	8.72	28.86	40.13	40.38	46.00	5.62	Peak
993.210	21.26	9.13	28.59	35.06	36.86	54.00	17.14	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
37.760	14.73	1.43	28.13	47.19	35.22	40.00	4.78	Peak
150.280	10.56	3.06	27.83	45.39	31.18	43.50	12.32	Peak
408.300	15.66	6.10	28.53	37.35	30.58	46.00	15.42	Peak
500.450	17.28	6.93	29.21	42.80	37.80	46.00	8.20	Peak
700.270	18.84	7.62	29.33	39.11	36.24	46.00	9.76	Peak
973.810	21.07	9.04	28.64	35.24	36.71	54.00	17.29	Peak

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	ZigBee+802.11b	Frequency	TX 2405MHz/ TX 2412MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
37.760	14.73	1.43	28.13	48.48	36.51	40.00	3.49	Peak
150.280	10.56	3.06	27.83	42.34	28.13	43.50	15.37	Peak
240.490	11.69	3.93	27.62	37.86	25.86	46.00	20.14	Peak
700.270	18.84	7.62	29.33	43.58	40.71	46.00	5.29	Peak
900.090	20.39	8.72	28.86	38.41	38.66	46.00	7.34	Peak
985.450	21.20	9.10	28.61	35.30	36.99	54.00	17.01	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
37.760	14.73	1.43	28.13	47.99	36.02	40.00	3.98	Peak
120.210	11.90	2.68	27.95	45.96	32.59	43.50	10.91	Peak
500.450	17.28	6.93	29.21	40.48	35.48	46.00	10.52	Peak
700.270	18.84	7.62	29.33	39.90	37.03	46.00	8.97	Peak
957.320	20.95	8.97	28.69	34.73	35.96	46.00	10.04	Peak
999.030	21.32	9.16	28.59	35.75	37.64	54.00	16.36	Peak

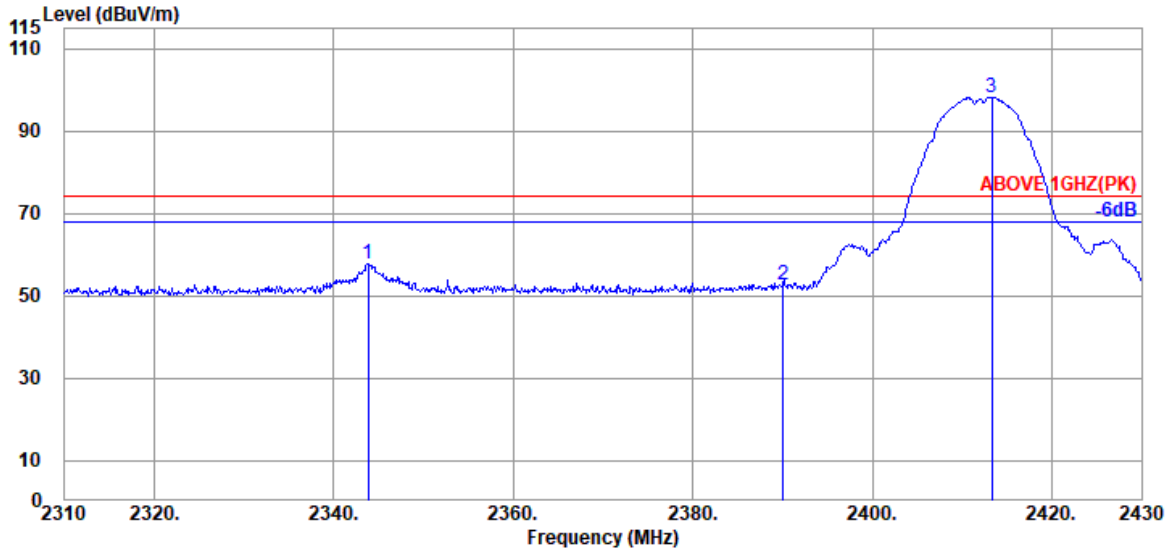
This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

A.2.1.3 Frequency Above 1 GHz to 10th harmonics

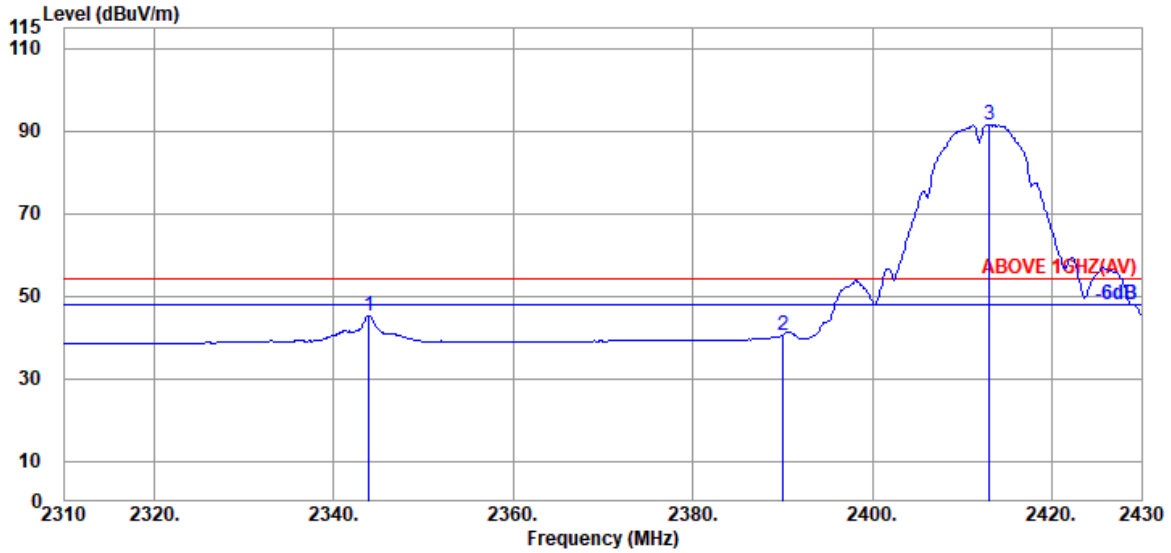
Band Edge:

Mode	802.11b	Frequency	TX 2412MHz



Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2343.840	32.24	7.92	34.53	51.92	57.55	74.00	16.45	Peak
	2390.040	32.44	7.95	34.54	46.87	52.72	74.00	21.28	Peak
@	2413.320	32.36	7.96	34.54	92.52	98.30	---	---	Peak



Antenna at Horizontal Polarization

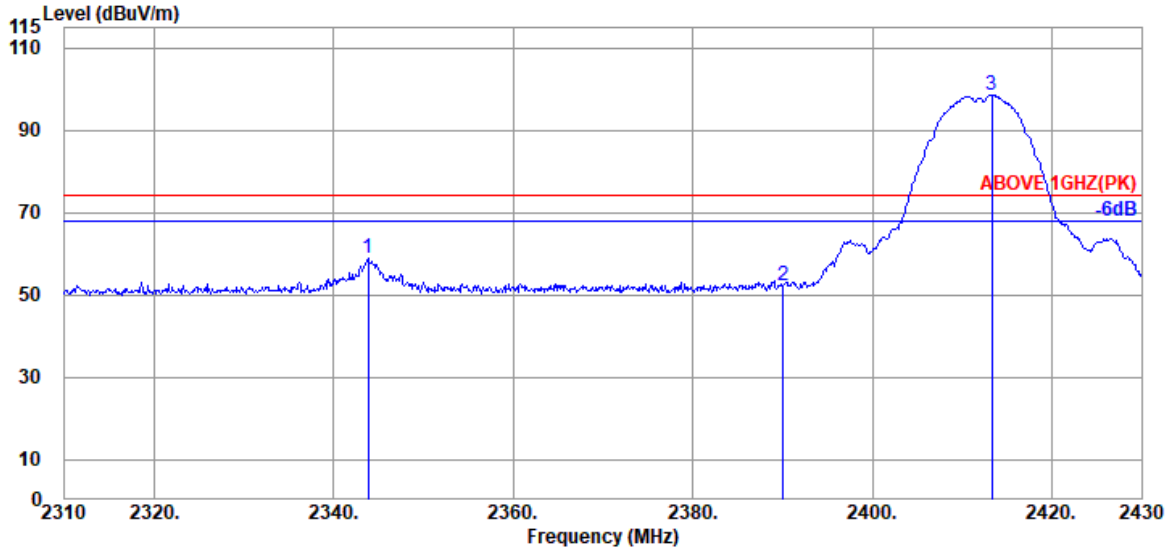
	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2343.960	32.24	7.92	34.53	39.57	45.20	54.00	8.80	Average
	2390.040	32.44	7.95	34.54	34.77	40.62	54.00	13.38	Average
@	2413.080	32.36	7.96	34.54	85.71	91.49	---	---	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

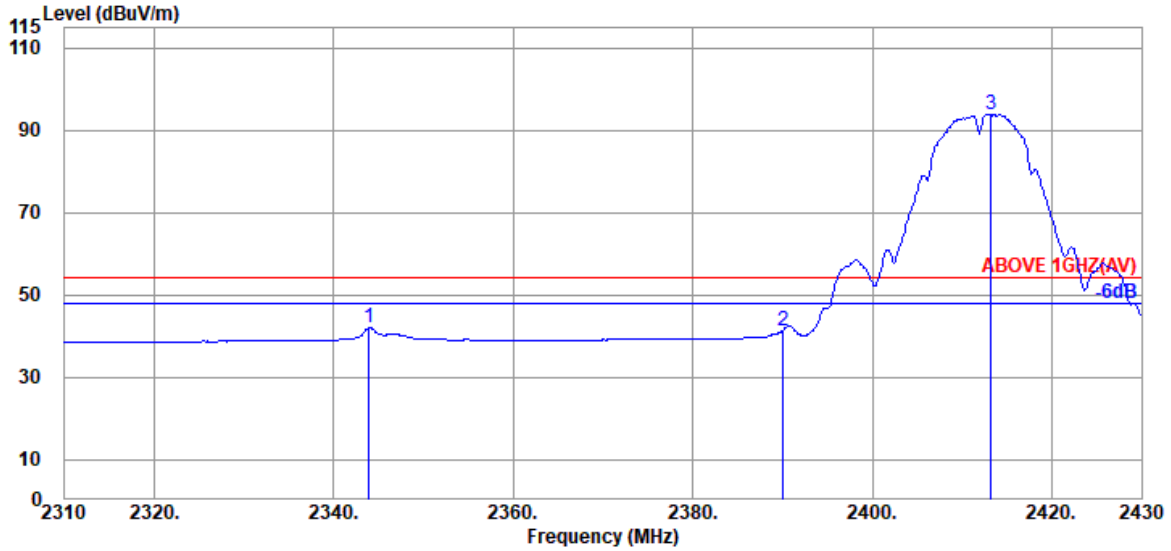
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11b	Frequency	TX 2412MHz



Antenna at Vertical Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2343.840	32.24	7.92	34.53	53.22	58.85	74.00	15.15	Peak
	2390.040	32.44	7.95	34.54	46.43	52.28	74.00	21.72	Peak
@	2413.320	32.36	7.96	34.54	92.77	98.55	---	---	Peak



Antenna at Vertical Polarization

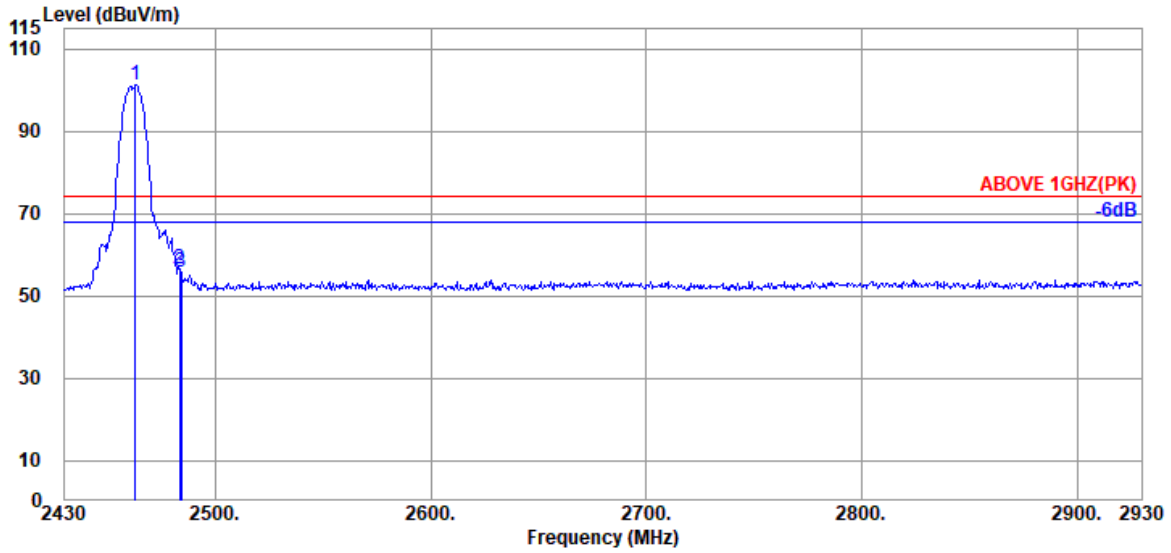
	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2343.960	32.24	7.92	34.53	36.38	42.01	54.00	11.99	Average
	2390.040	32.44	7.95	34.54	35.48	41.33	54.00	12.67	Average
@	2413.200	32.36	7.96	34.54	88.04	93.82	---	---	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

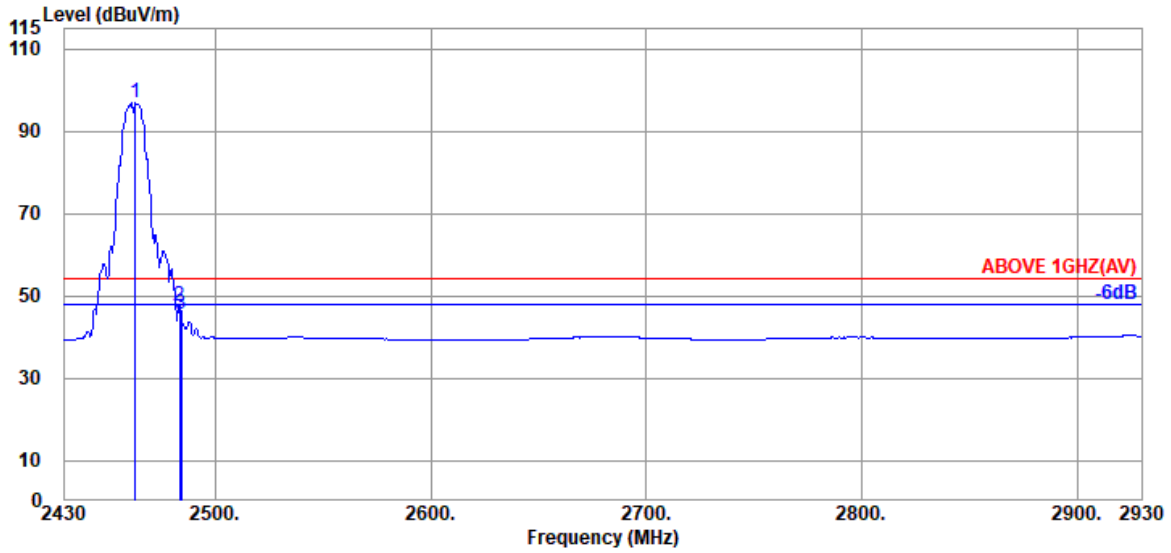
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11b	Frequency	TX 2462MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2463.000	32.06	7.98	34.55	95.62	101.11	---	---	Peak
2483.500	32.14	7.99	34.55	51.03	56.61	74.00	17.39	Peak
2484.000	32.14	7.99	34.55	50.23	55.81	74.00	18.19	Peak



Antenna at Horizontal Polarization

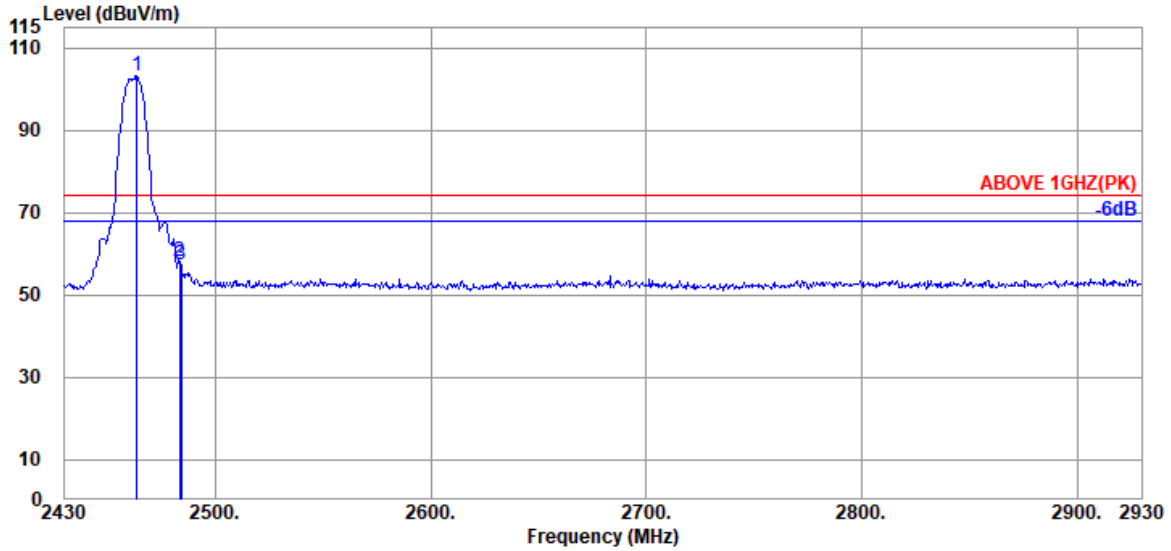
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2463.000	32.06	7.98	34.55	91.29	96.78	---	---	Average
2483.500	32.14	7.99	34.55	41.98	47.56	54.00	6.44	Average
2484.000	32.14	7.99	34.55	39.92	45.50	54.00	8.50	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

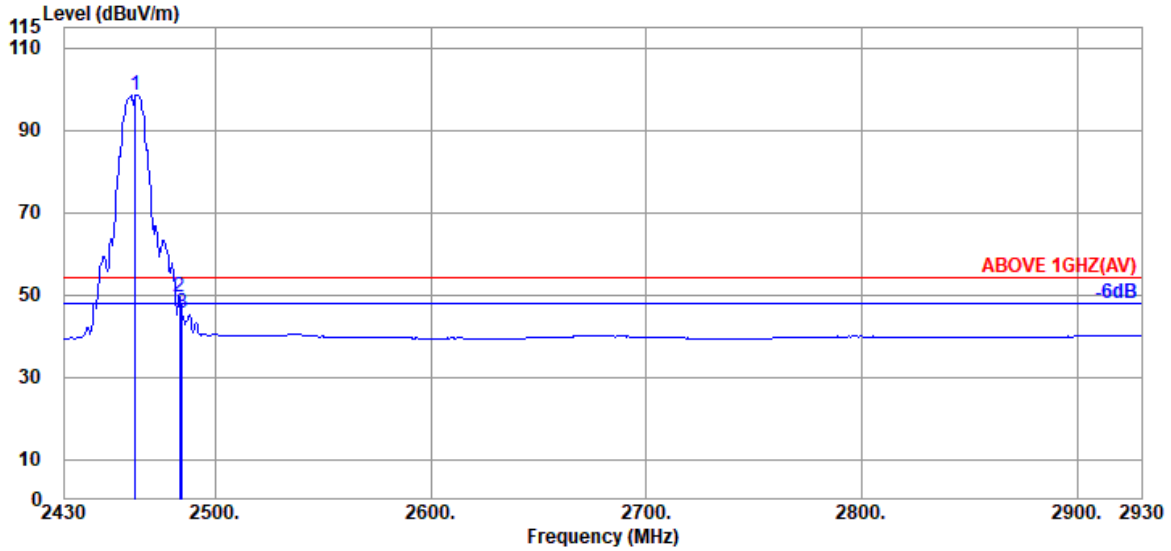
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11b	Frequency	TX 2462MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2463.500	32.06	7.98	34.55	97.61	103.10	---	---	Peak
2483.500	32.14	7.99	34.55	52.53	58.11	74.00	15.89	Peak
2484.000	32.14	7.99	34.55	51.79	57.37	74.00	16.63	Peak



Antenna at Vertical Polarization

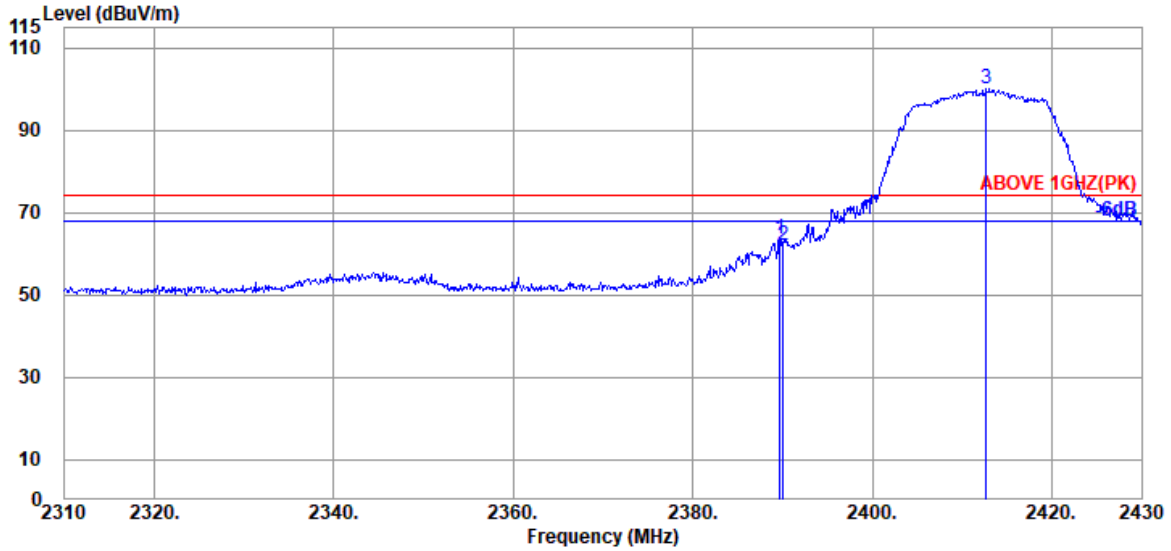
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2463.000	32.06	7.98	34.55	93.20	98.69	---	---	Average
2483.500	32.14	7.99	34.55	43.86	49.44	54.00	4.56	Average
2484.500	32.14	7.99	34.55	39.84	45.42	54.00	8.58	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

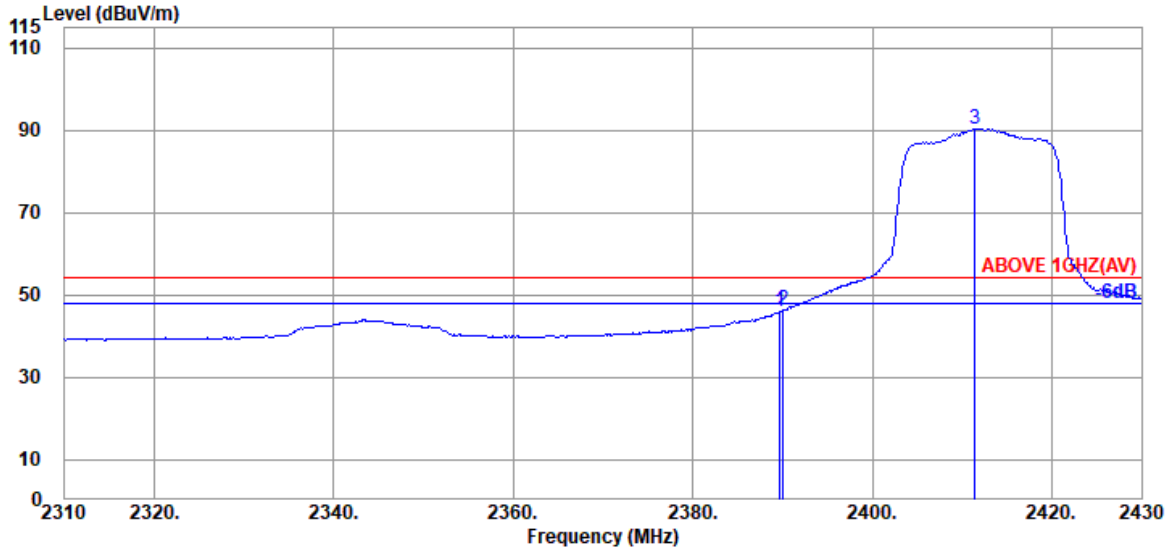
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11g	Frequency	TX 2412MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.680	32.44	7.95	34.53	57.61	63.47	74.00	10.53	Peak
2390.040	32.44	7.95	34.54	56.35	62.20	74.00	11.80	Peak
@ 2412.720	32.36	7.96	34.54	94.24	100.02	---	---	Peak



Antenna at Horizontal Polarization

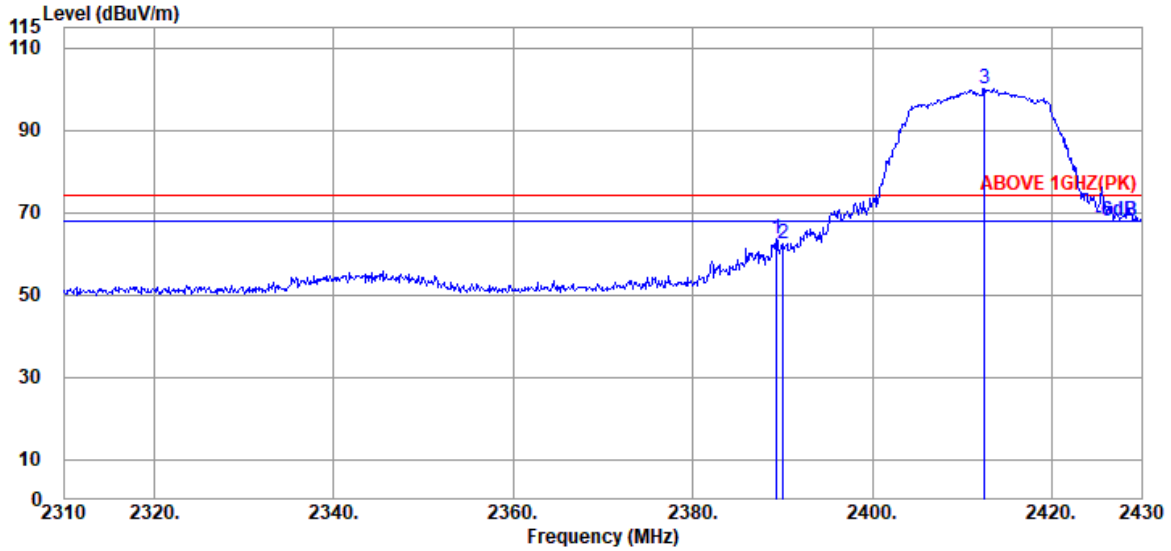
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.680	32.44	7.95	34.53	40.18	46.04	54.00	7.96	Average
2390.040	32.44	7.95	34.54	40.41	46.26	54.00	7.74	Average
@ 2411.400	32.36	7.96	34.54	84.62	90.40	---	---	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

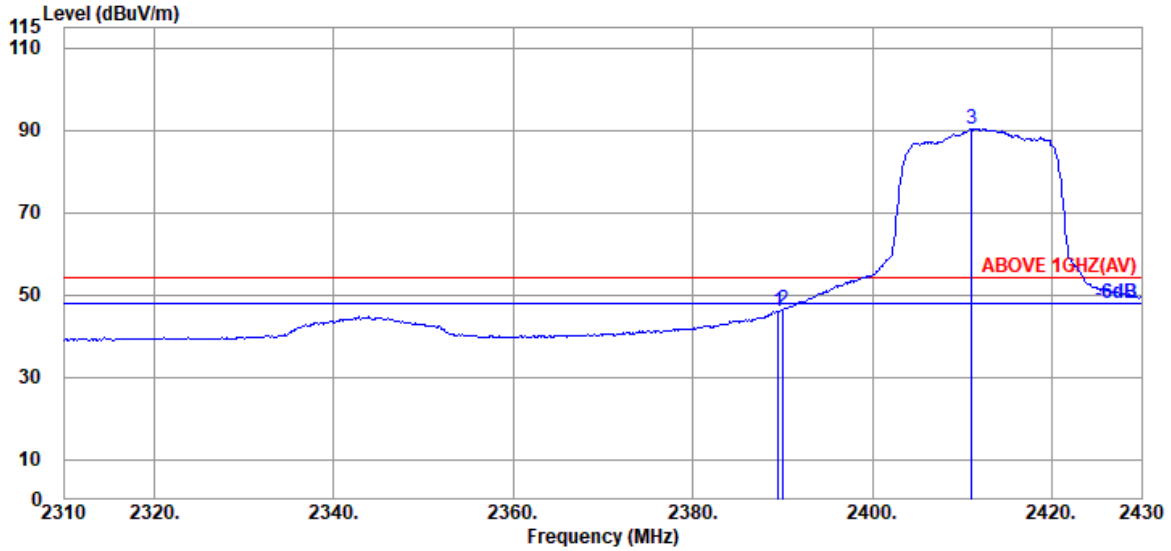
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11g	Frequency	TX 2412MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.320	32.44	7.95	34.53	57.58	63.44	74.00	10.56	Peak
2390.040	32.44	7.95	34.54	56.73	62.58	74.00	11.42	Peak
@ 2412.480	32.36	7.96	34.54	94.18	99.96	---	---	Peak



Antenna at Vertical Polarization

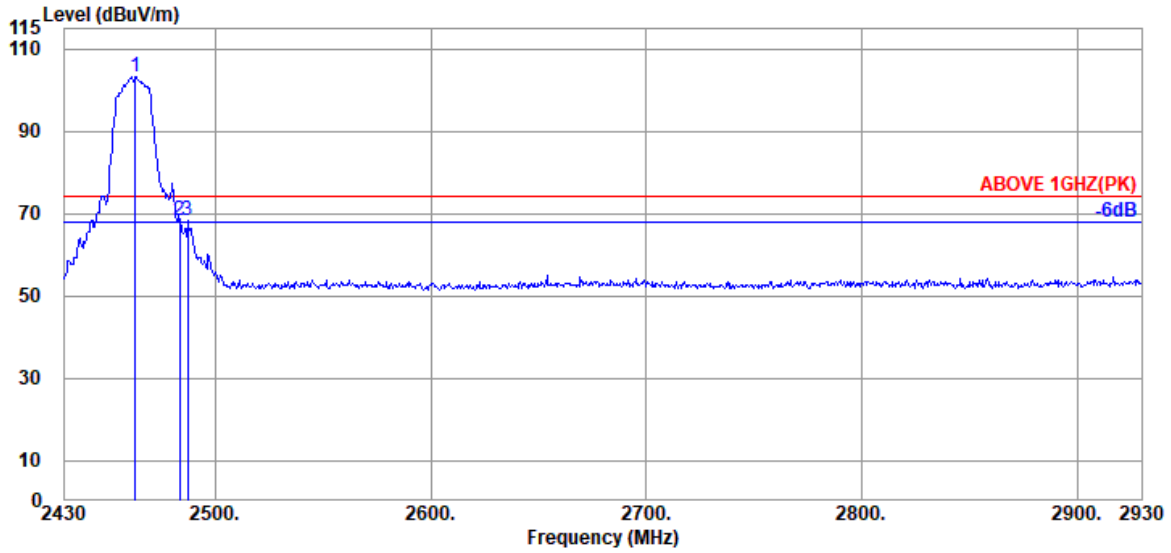
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.560	32.44	7.95	34.53	40.08	45.94	54.00	8.06	Average
2390.040	32.44	7.95	34.54	40.36	46.21	54.00	7.79	Average
@ 2411.040	32.43	7.96	34.54	84.60	90.45	---	---	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

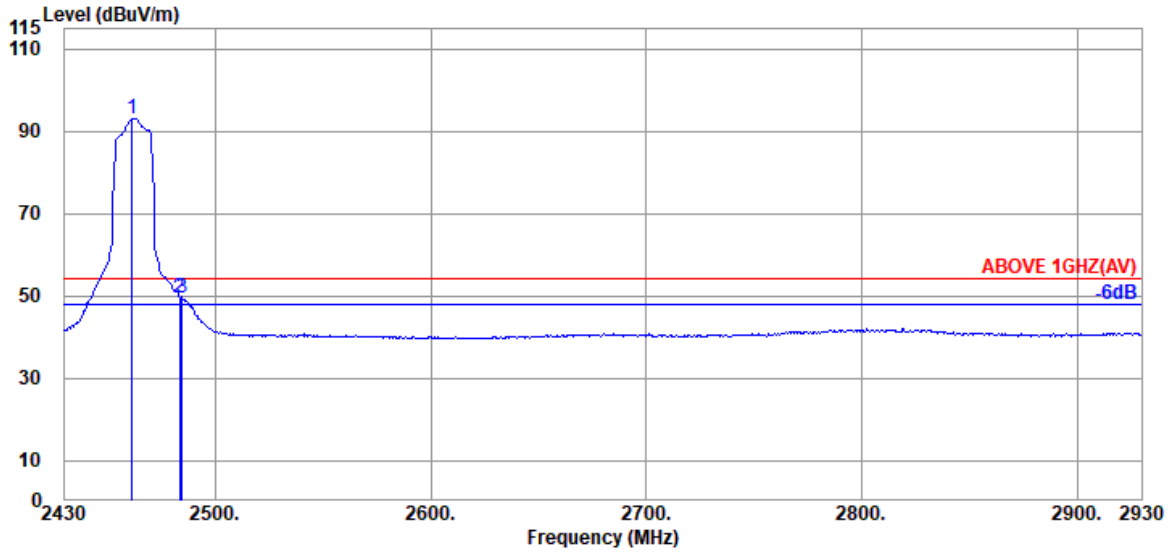
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11g	Frequency	TX 2462MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2463.000	32.06	7.98	34.55	97.76	103.25	---	---	Peak
2483.500	32.14	7.99	34.55	62.84	68.42	74.00	5.58	Peak
2487.000	32.14	8.00	34.55	62.66	68.25	74.00	5.75	Peak



Antenna at Horizontal Polarization

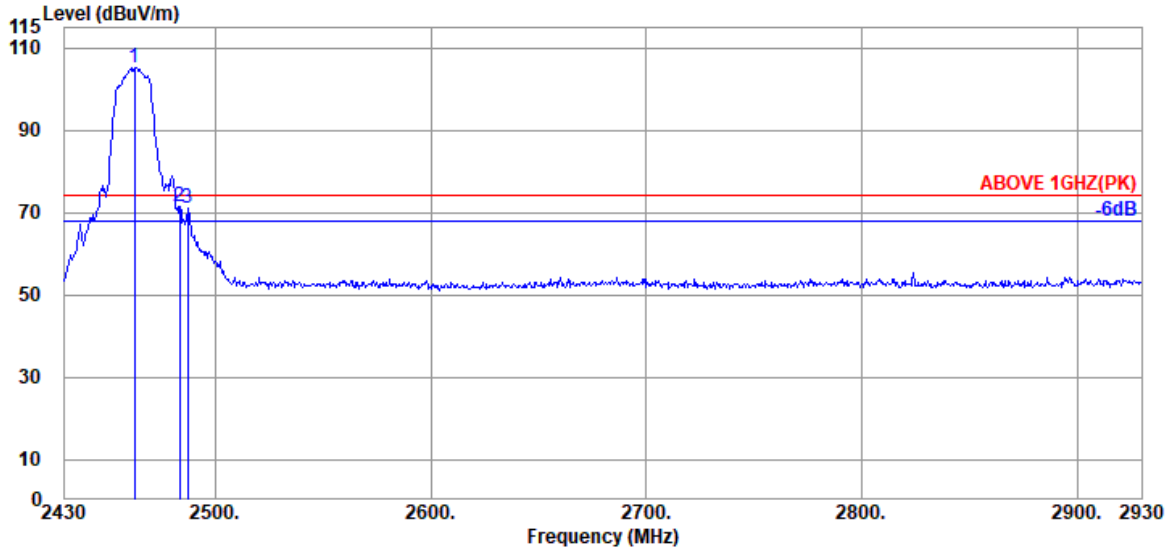
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2461.500	32.06	7.98	34.55	87.70	93.19	---	---	Average
2483.500	32.14	7.99	34.55	44.01	49.59	54.00	4.41	Average
2484.500	32.14	7.99	34.55	43.80	49.38	54.00	4.62	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

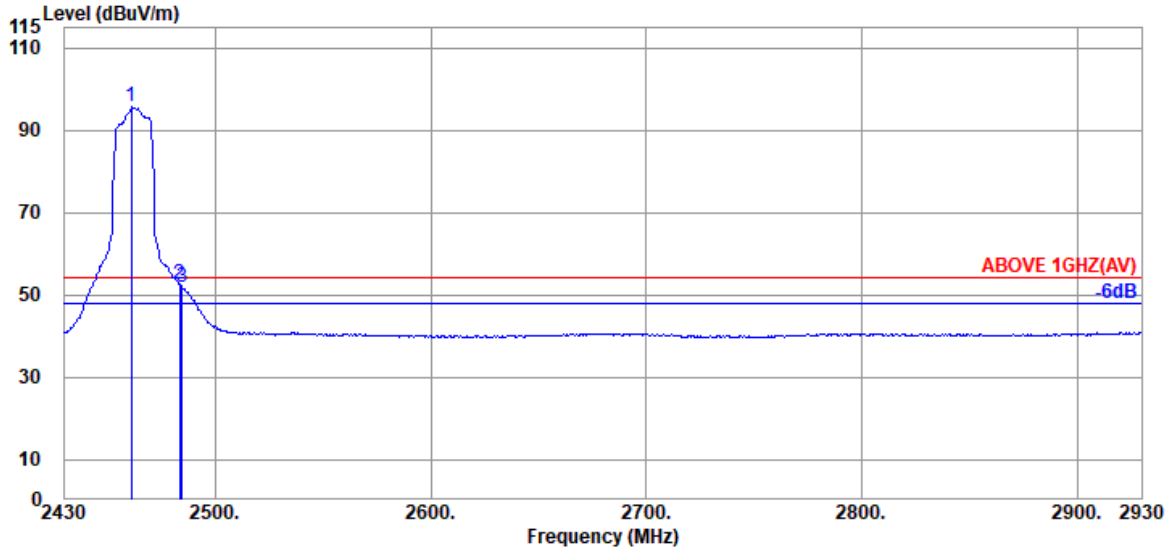
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11g	Frequency	TX 2462MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2462.500	32.06	7.98	34.55	99.83	105.32	---	---	Peak
2483.500	32.14	7.99	34.55	65.82	71.40	74.00	2.60	Peak
2487.000	32.14	8.00	34.55	65.33	70.92	74.00	3.08	Peak



Antenna at Vertical Polarization

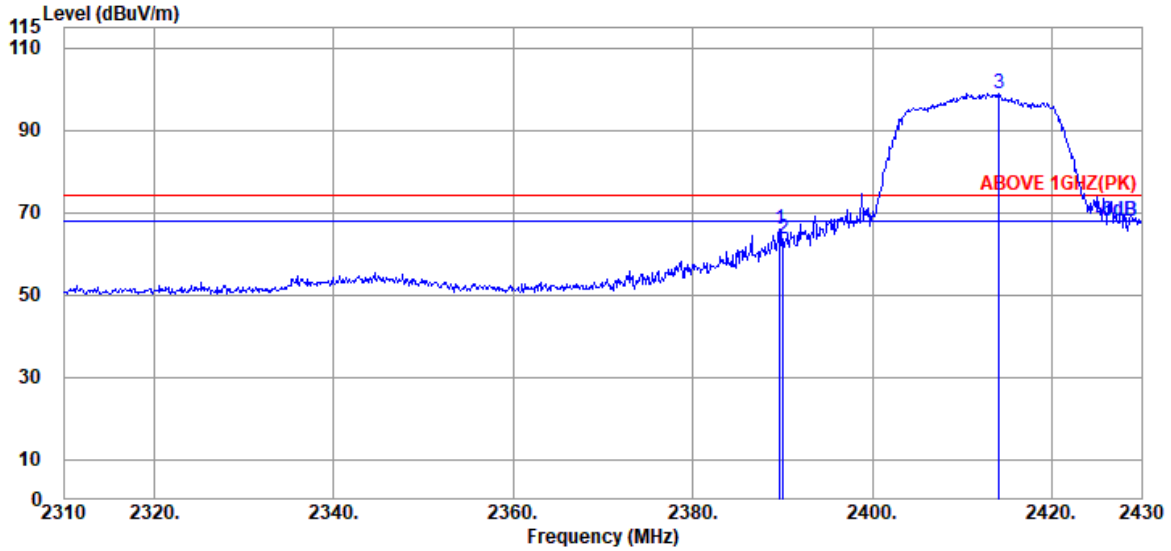
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2461.000	32.06	7.98	34.55	90.11	95.60	---	---	Average
2483.500	32.14	7.99	34.55	46.90	52.48	54.00	1.52	Average
2484.500	32.14	7.99	34.55	46.21	51.79	54.00	2.21	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

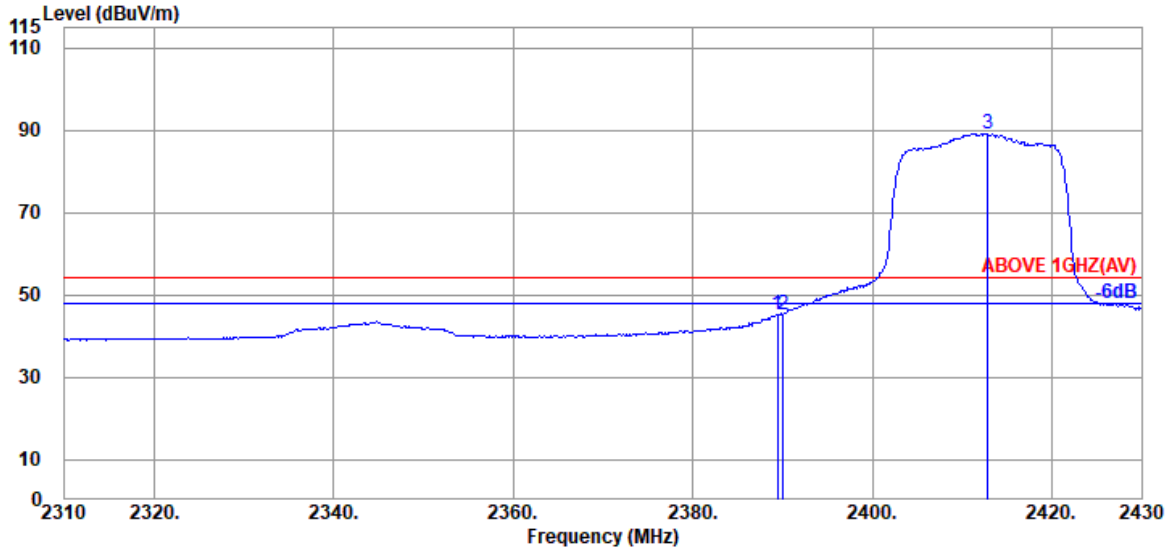
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11n-HT20	Frequency	TX 2412MHz



Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2389.680	32.44	7.95	34.53	60.17	66.03	74.00	7.97	Peak
	2390.040	32.44	7.95	34.54	57.82	63.67	74.00	10.33	Peak
@	2414.160	32.36	7.96	34.54	93.16	98.94	---	---	Peak



Antenna at Horizontal Polarization

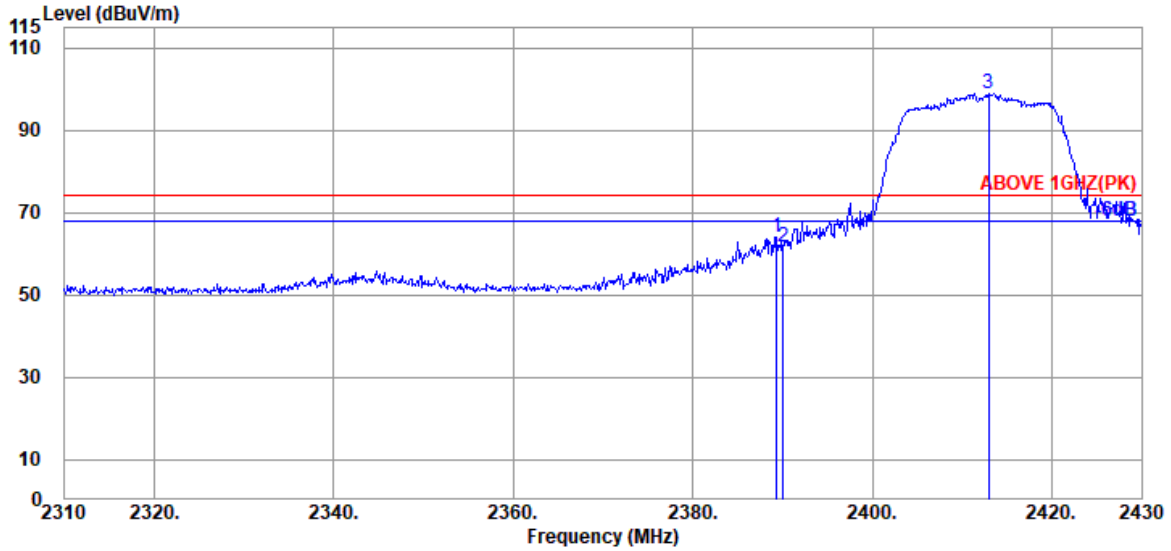
	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2389.440	32.44	7.95	34.53	39.35	45.21	54.00	8.79	Average
	2390.040	32.44	7.95	34.54	39.34	45.19	54.00	8.81	Average
@	2412.840	32.36	7.96	34.54	83.49	89.27	---	---	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

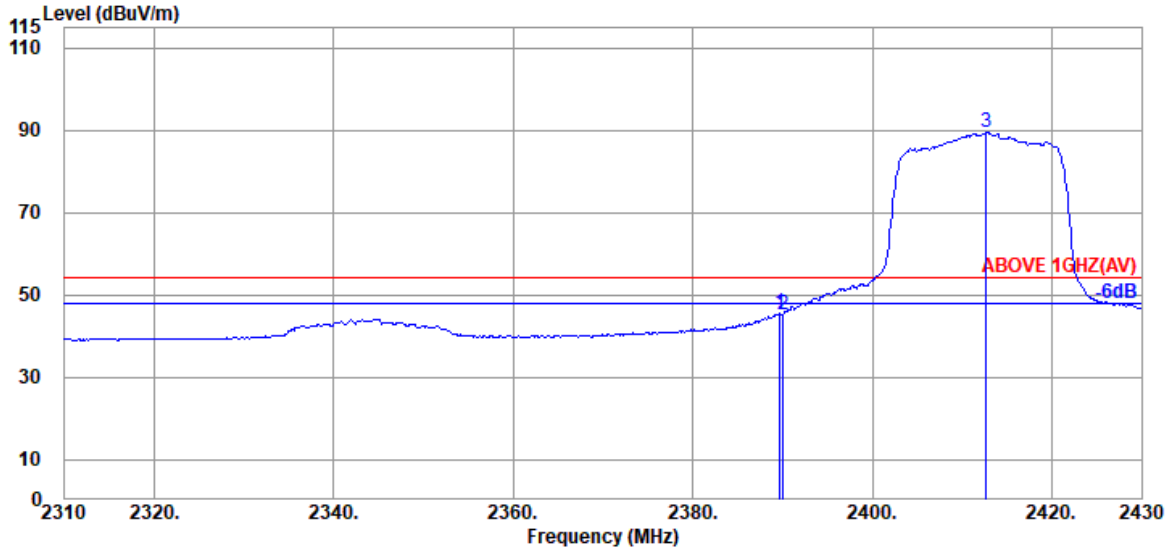
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11n-HT20	Frequency	TX 2412MHz



Antenna at Vertical Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2389.320	32.44	7.95	34.53	58.25	64.11	74.00	9.89	Peak
	2390.040	32.44	7.95	34.54	55.87	61.72	74.00	12.28	Peak
@	2412.960	32.36	7.96	34.54	93.17	98.95	---	---	Peak



Antenna at Vertical Polarization

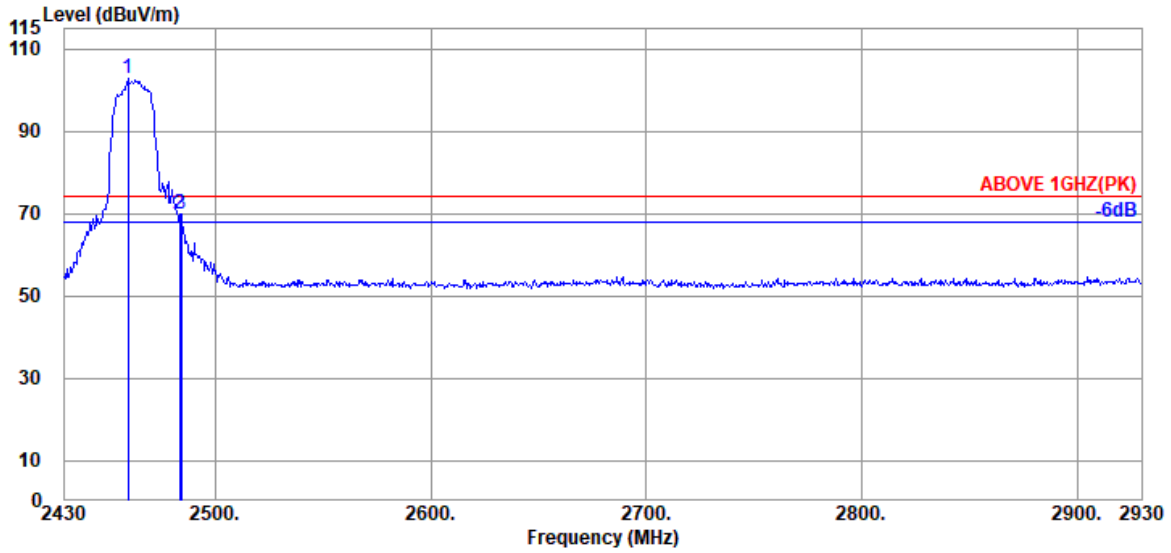
	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2389.680	32.44	7.95	34.53	39.55	45.41	54.00	8.59	Average
	2390.040	32.44	7.95	34.54	39.40	45.25	54.00	8.75	Average
@	2412.720	32.36	7.96	34.54	83.59	89.37	---	---	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

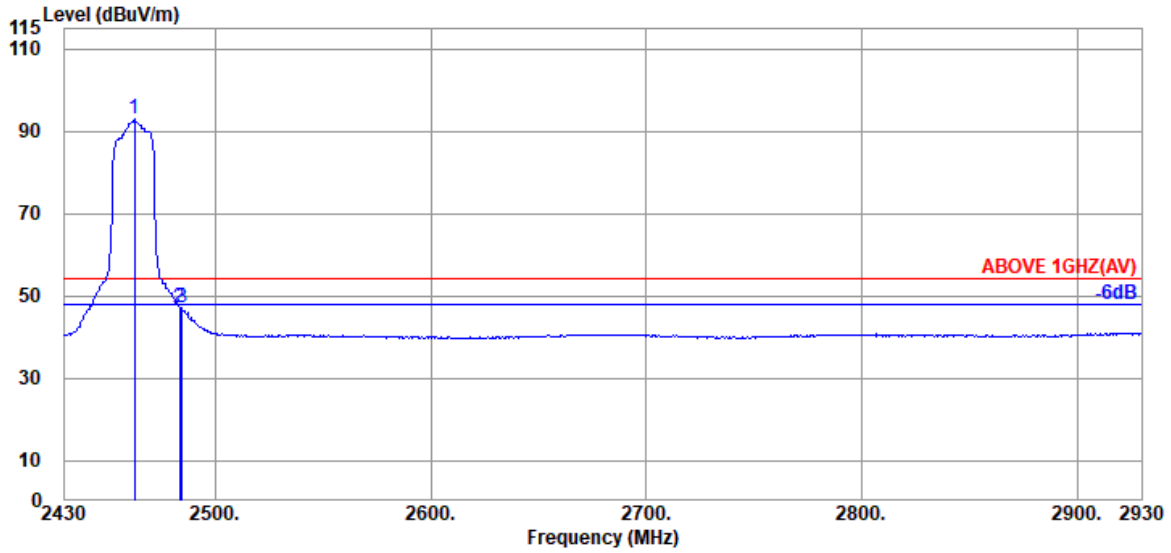
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11n-HT20	Frequency	TX 2462MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2459.500	32.03	7.98	34.55	97.45	102.91	---	---	Peak
2483.500	32.14	7.99	34.55	64.29	69.87	74.00	4.13	Peak
2484.000	32.14	7.99	34.55	64.25	69.83	74.00	4.17	Peak



Antenna at Horizontal Polarization

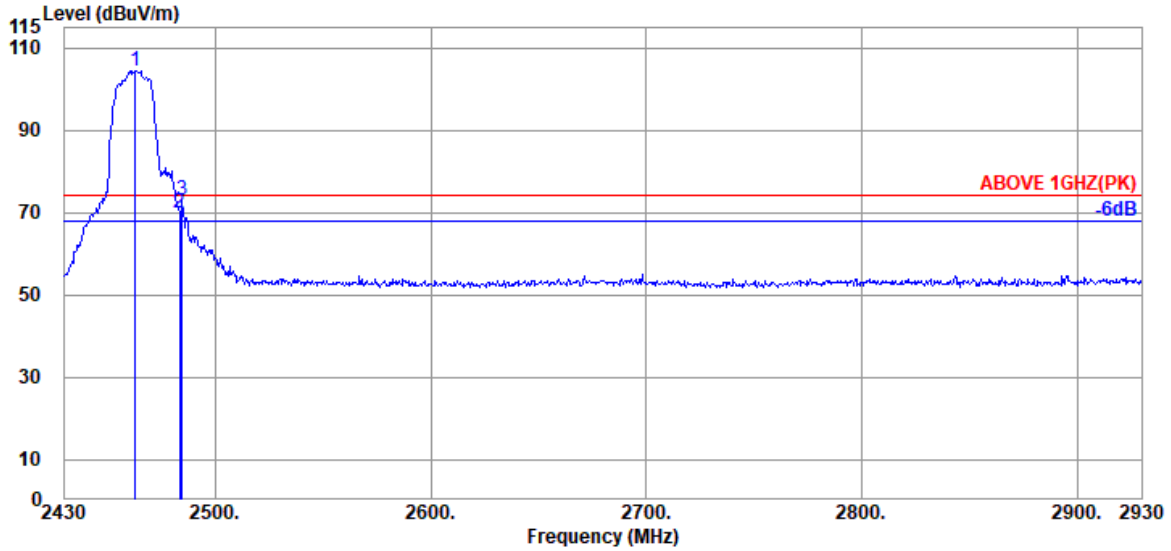
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2462.500	32.06	7.98	34.55	87.44	92.93	---	---	Average
2483.500	32.14	7.99	34.55	41.63	47.21	54.00	6.79	Average
2484.500	32.14	7.99	34.55	41.44	47.02	54.00	6.98	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

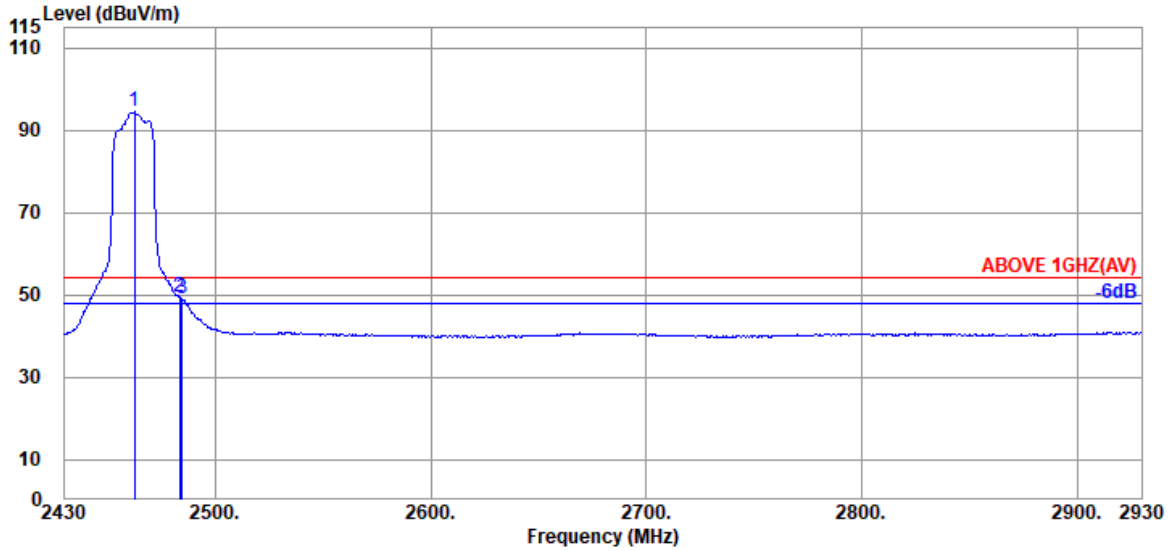
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	802.11n-HT20	Frequency	TX 2462MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2463.000	32.06	7.98	34.55	99.04	104.53	---	---	Peak
2483.500	32.14	7.99	34.55	64.34	69.92	74.00	4.08	Peak
2484.500	32.14	7.99	34.55	67.29	72.87	74.00	1.13	Peak



Antenna at Vertical Polarization

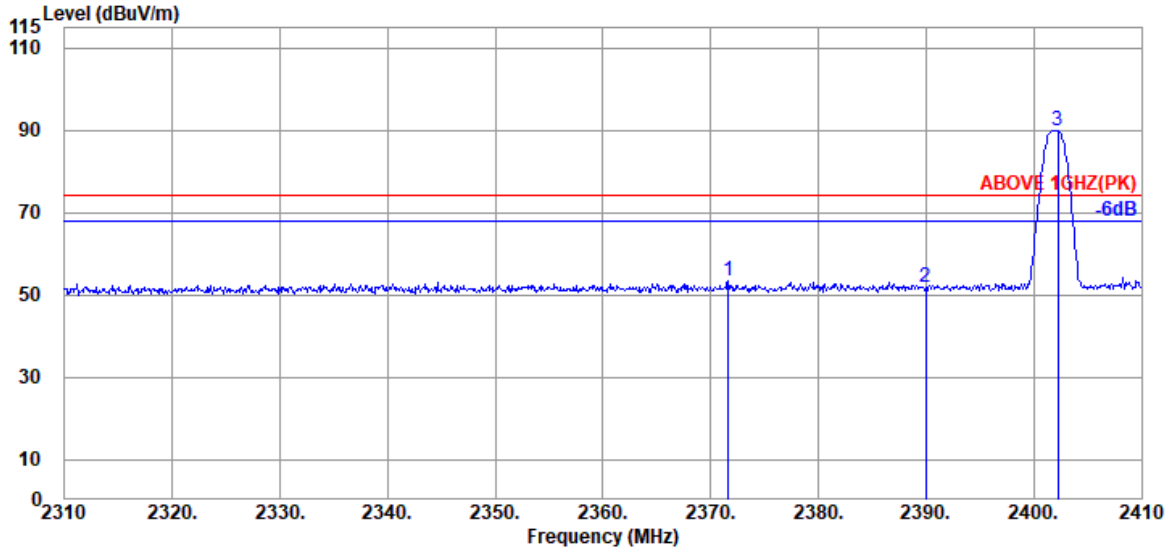
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2462.500	32.06	7.98	34.55	88.99	94.48	---	---	Average
2483.500	32.14	7.99	34.55	43.85	49.43	54.00	4.57	Average
2484.500	32.14	7.99	34.55	43.29	48.87	54.00	5.13	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

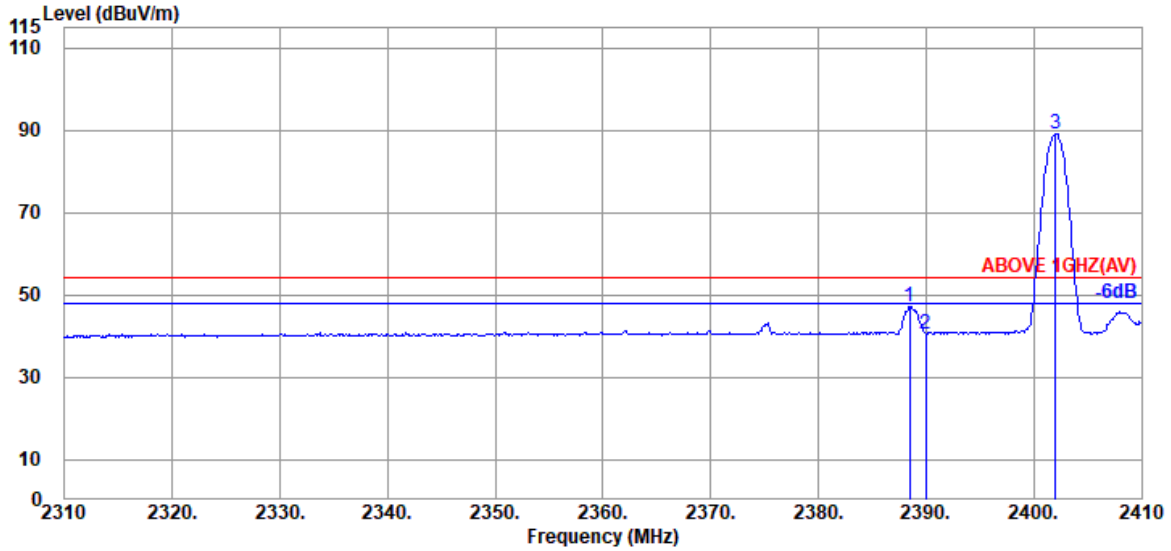
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	BLE	Frequency	TX 2402MHz



Antenna at Horizontal Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2371.600	32.39	7.94	34.53	47.38	53.18	74.00	20.82	Peak
	2390.000	32.44	7.95	34.54	45.95	51.80	74.00	22.20	Peak
@	2402.200	32.50	7.95	34.54	83.94	89.85	---	---	Peak



Antenna at Horizontal Polarization

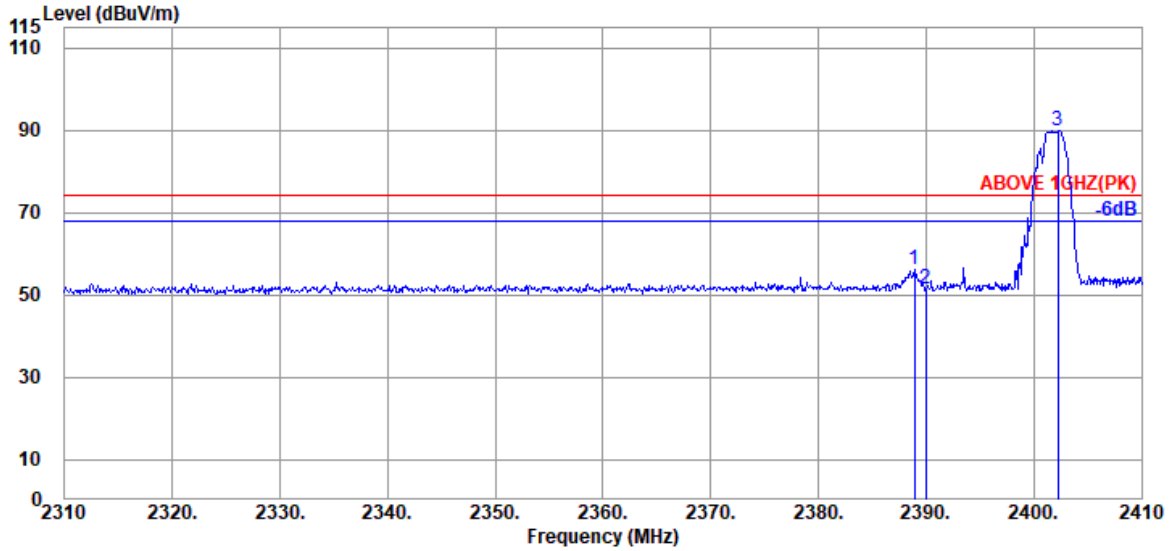
	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2388.500	32.44	7.95	34.53	41.17	47.03	54.00	6.97	Average
	2390.000	32.44	7.95	34.54	34.76	40.61	54.00	13.39	Average
@	2402.000	32.50	7.95	34.54	83.29	89.20	---	---	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

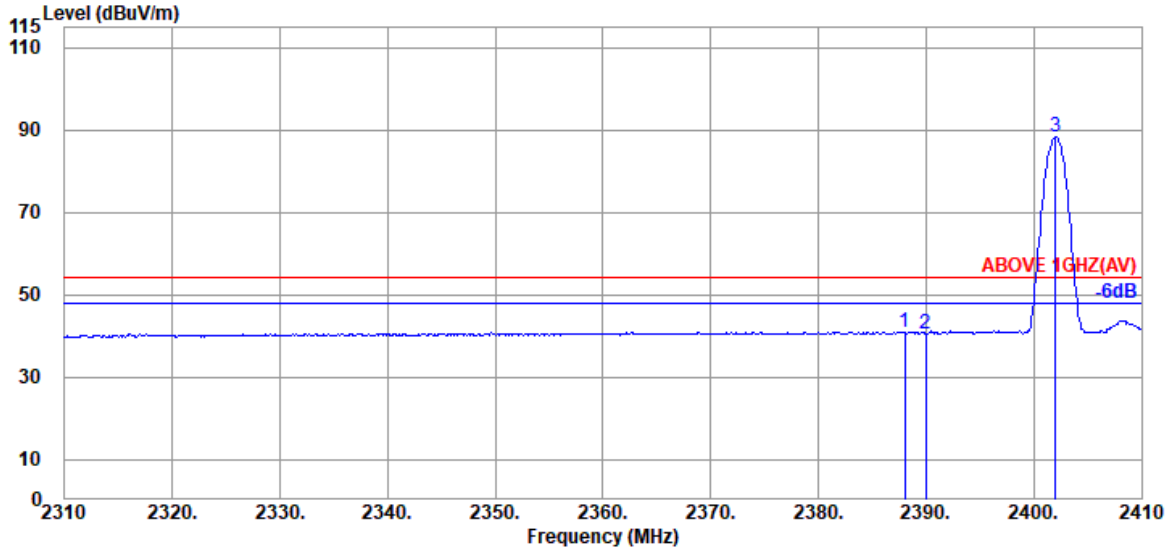
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	BLE	Frequency	TX 2402MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2388.900	32.44	7.95	34.53	50.39	56.25	74.00	17.75	Peak
2390.000	32.44	7.95	34.54	45.54	51.39	74.00	22.61	Peak
@ 2402.200	32.50	7.95	34.54	83.85	89.76	---	---	Peak



Antenna at Vertical Polarization

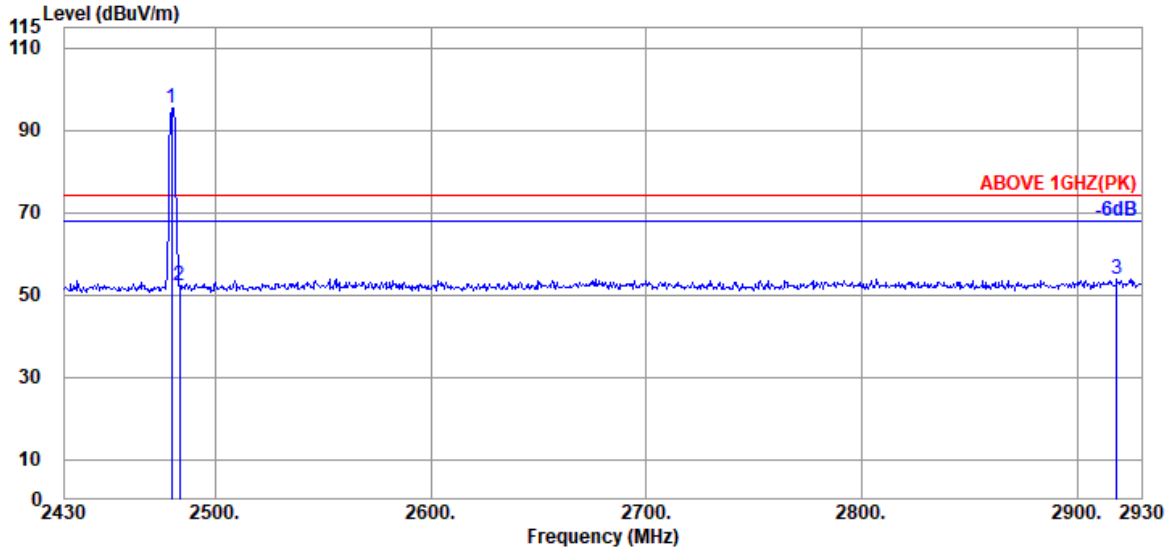
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2388.000	32.44	7.95	34.53	35.13	40.99	54.00	13.01	Average
2390.000	32.44	7.95	34.54	34.74	40.59	54.00	13.41	Average
@ 2402.000	32.50	7.95	34.54	82.40	88.31	---	---	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

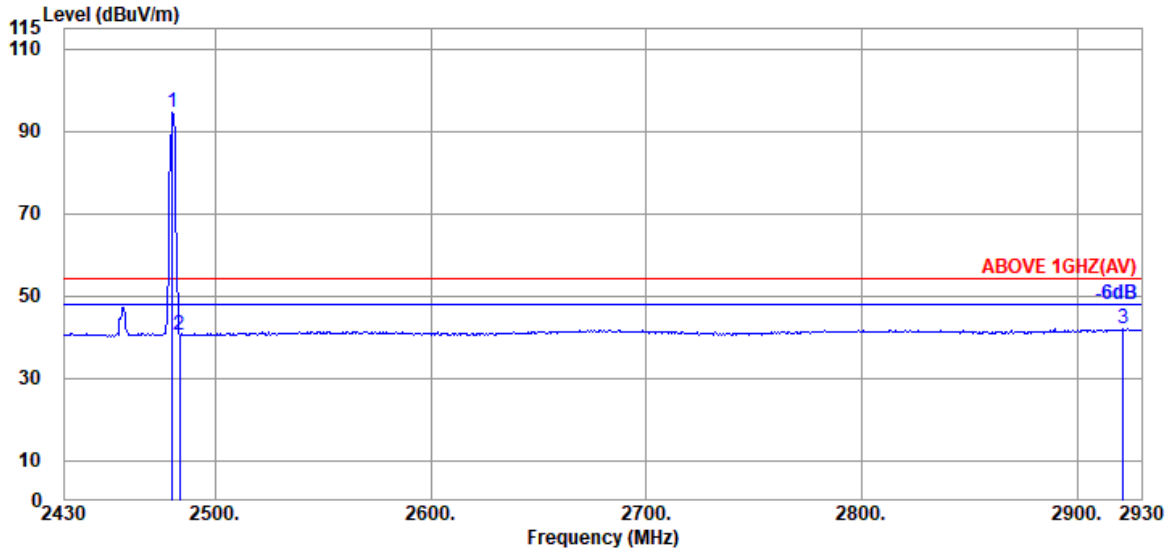
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	BLE	Frequency	TX 2480MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2479.500	32.11	7.99	34.55	89.95	95.50	---	---	Peak
2483.500	32.14	7.99	34.55	46.55	52.13	74.00	21.87	Peak
2918.500	32.90	8.19	34.64	47.26	53.71	74.00	20.29	Peak



Antenna at Horizontal Polarization

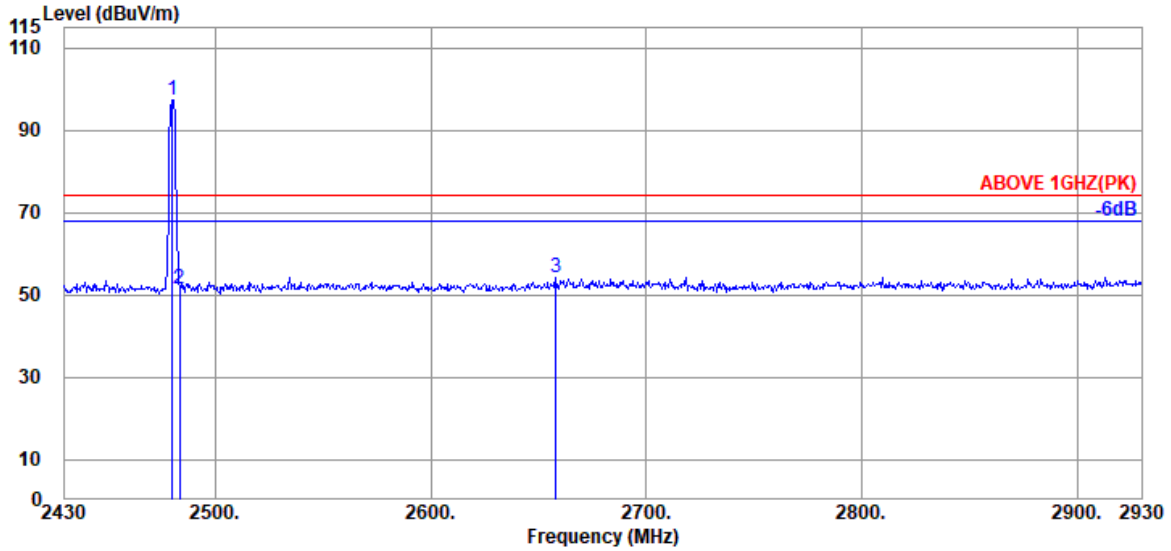
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2480.000	32.11	7.99	34.55	89.15	94.70	---	---	Average
2483.500	32.14	7.99	34.55	34.95	40.53	54.00	13.47	Average
2921.500	32.90	8.19	34.64	35.38	41.83	54.00	12.17	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

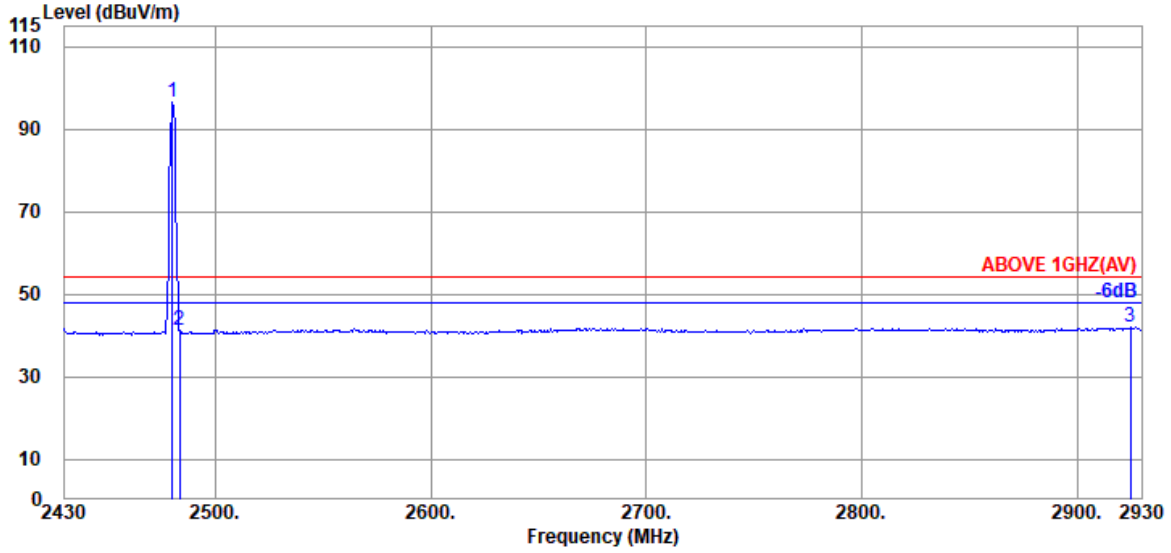
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	BLE	Frequency	TX 2480MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2480.000	32.11	7.99	34.55	91.73	97.28	---	---	Peak
2483.500	32.14	7.99	34.55	45.71	51.29	74.00	22.71	Peak
2658.000	32.23	8.08	34.59	48.41	54.13	74.00	19.87	Peak



Antenna at Vertical Polarization

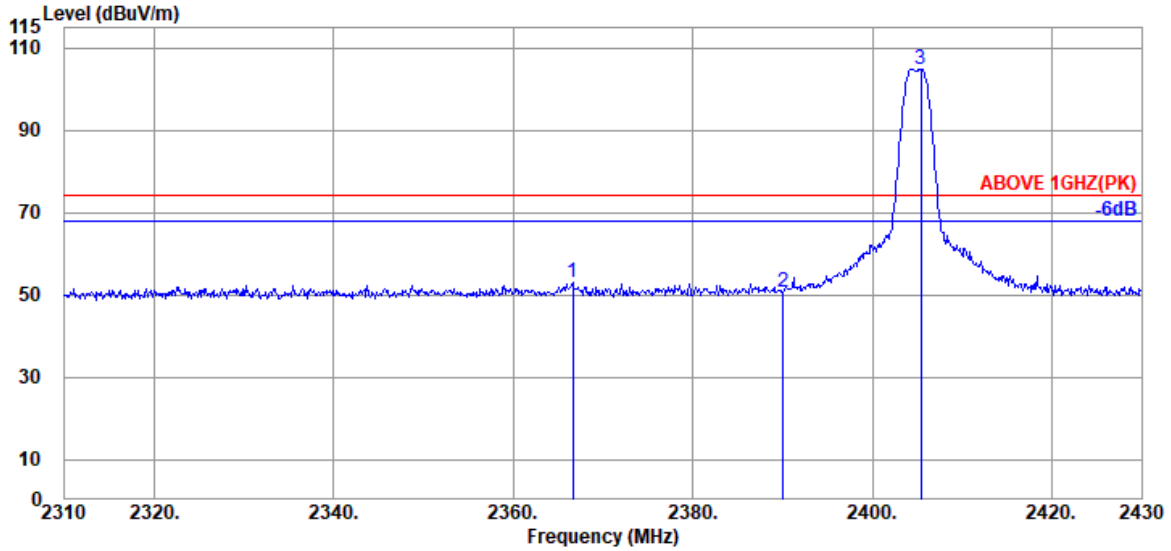
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2480.000	32.11	7.99	34.55	91.08	96.63	---	---	Average
2483.500	32.14	7.99	34.55	35.58	41.16	54.00	12.84	Average
2925.000	32.90	8.19	34.64	35.56	42.01	54.00	11.99	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

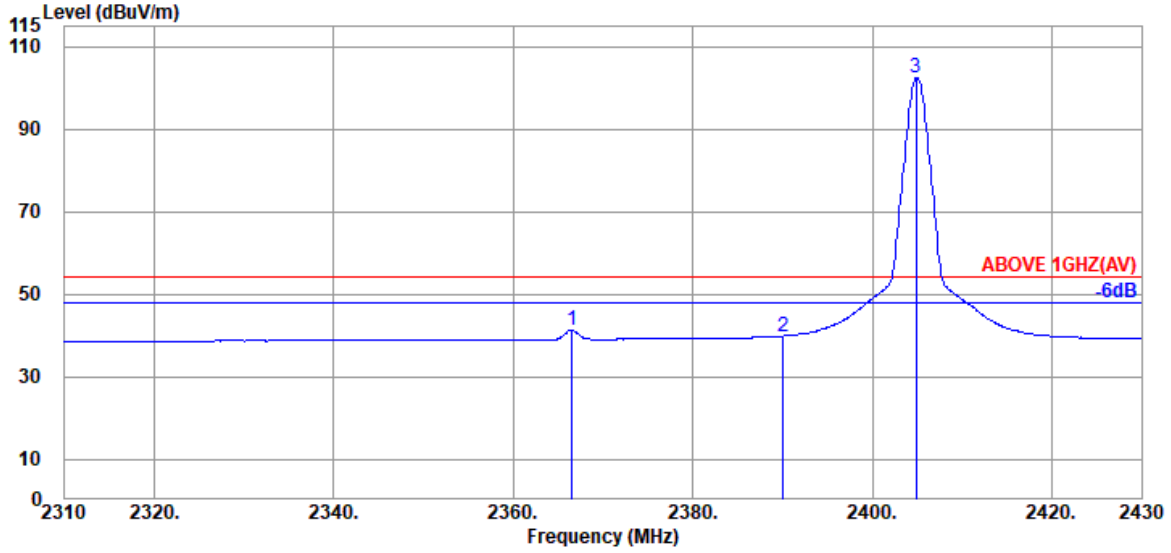
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	ZigBee	Frequency	TX 2405MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2366.640	32.36	7.94	34.53	47.10	52.87	74.00	21.13	Peak
2390.040	32.44	7.95	34.54	44.80	50.65	74.00	23.35	Peak
@ 2405.400	32.43	7.95	34.54	98.96	104.80	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2366.520	32.36	7.94	34.53	35.44	41.21	54.00	12.79	Average
2390.040	32.44	7.95	34.54	33.98	39.83	54.00	14.17	Average
@ 2404.920	32.43	7.95	34.54	96.66	102.50	---	---	Average

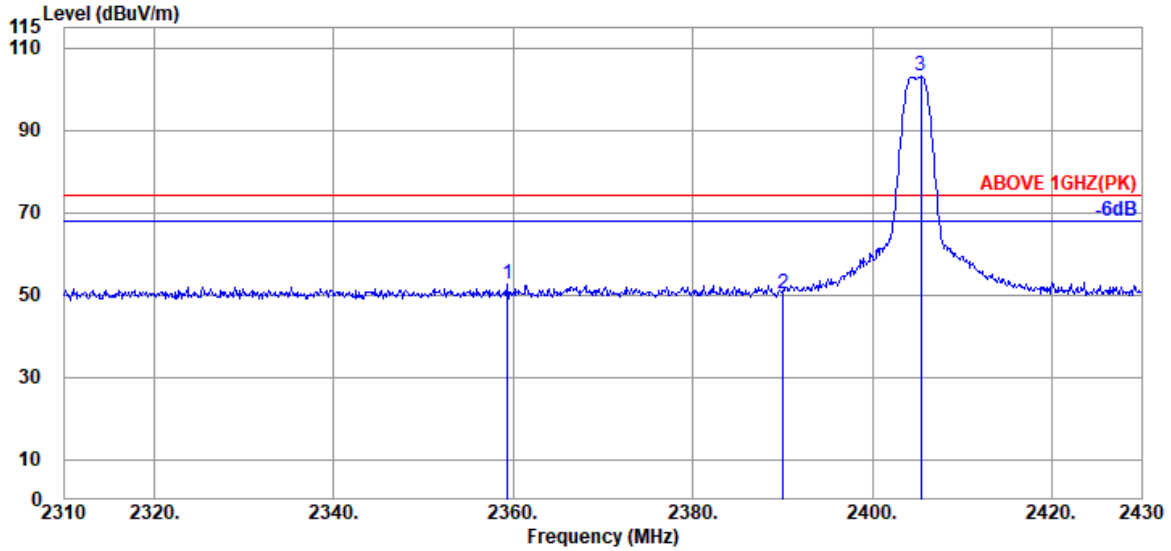
Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

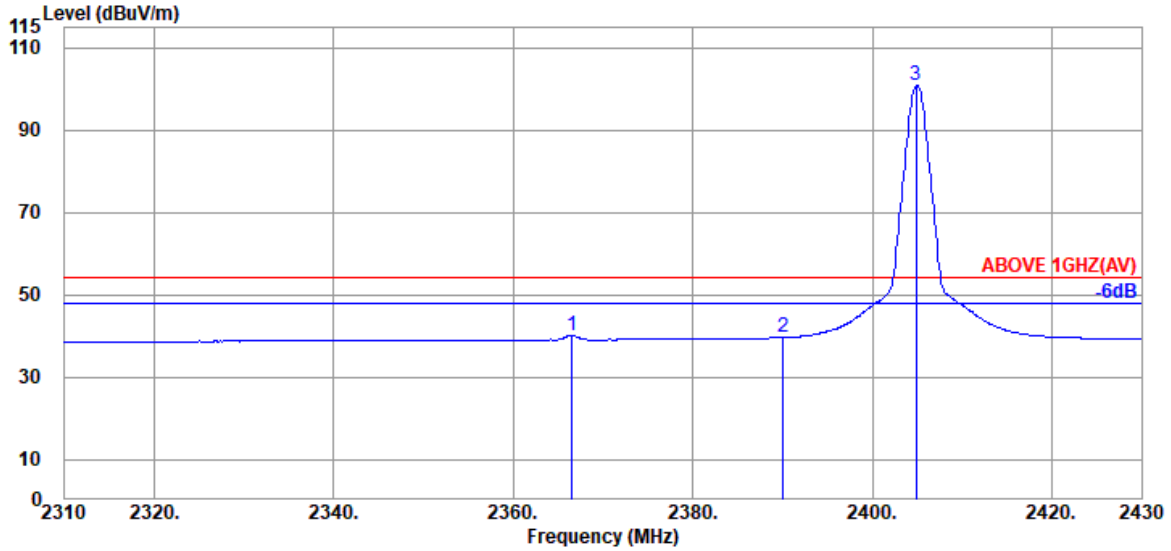
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	ZigBee	Frequency	TX 2405MHz



Antenna at Vertical Polarization

	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2359.320	32.33	7.93	34.53	46.93	52.66	74.00	21.34	Peak
	2390.040	32.44	7.95	34.54	44.22	50.07	74.00	23.93	Peak
@	2405.400	32.43	7.95	34.54	97.23	103.07	---	---	Peak



Antenna at Vertical Polarization

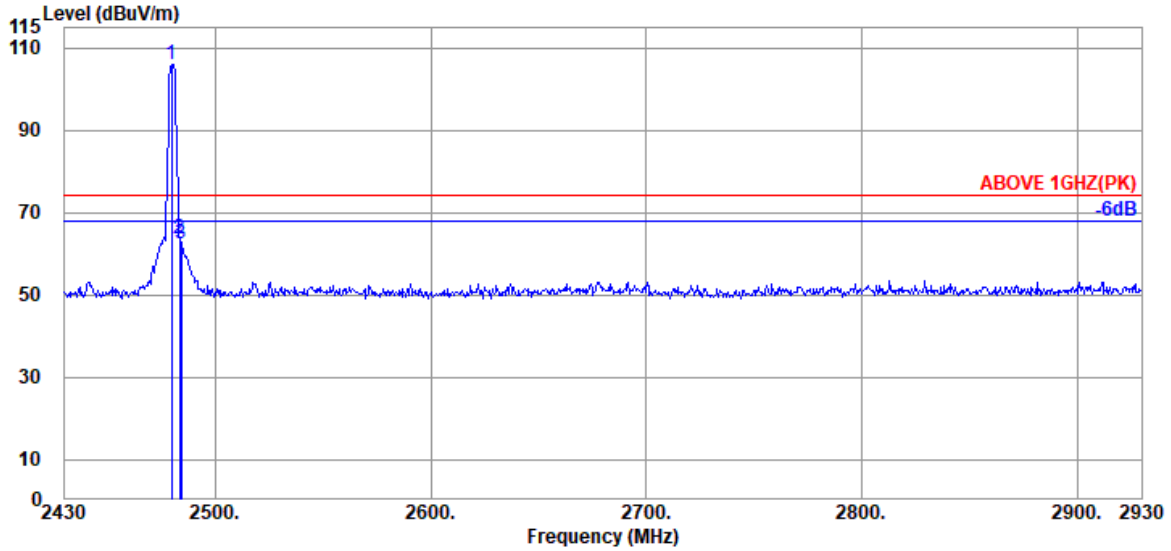
	Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
	2366.520	32.36	7.94	34.53	34.27	40.04	54.00	13.96	Average
	2390.040	32.44	7.95	34.54	33.70	39.55	54.00	14.45	Average
@	2404.920	32.43	7.95	34.54	94.91	100.75	---	---	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

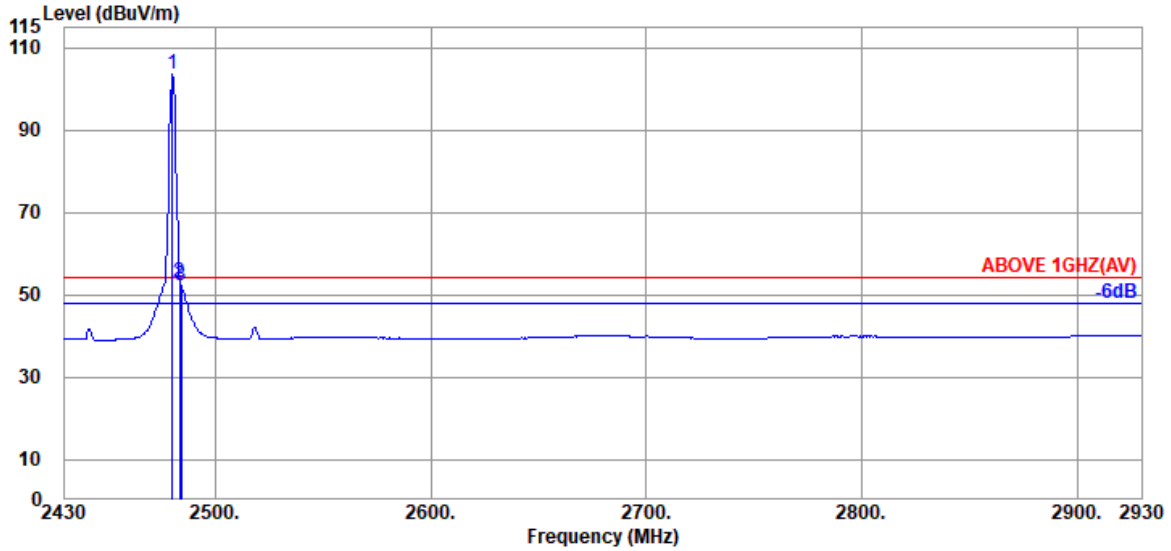
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	ZigBee	Frequency	TX 2480MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2479.500	32.11	7.99	34.55	100.24	105.79	---	---	Peak
2483.500	32.14	7.99	34.55	57.92	63.50	74.00	10.50	Peak
2484.000	32.14	7.99	34.55	56.99	62.57	74.00	11.43	Peak



Antenna at Horizontal Polarization

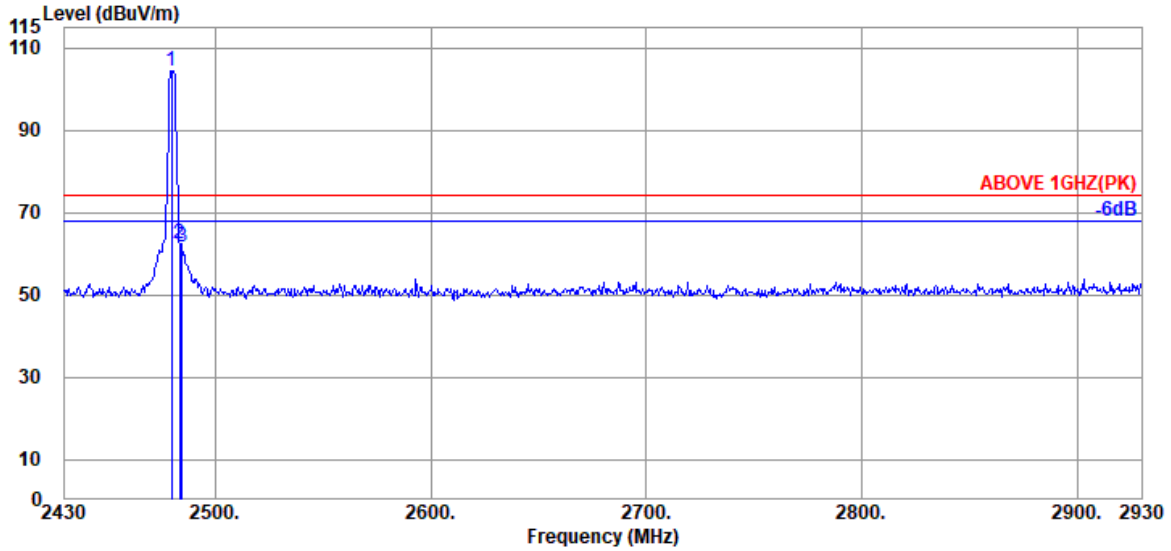
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2480.000	32.11	7.99	34.55	97.93	103.48	---	---	Average
2483.500	32.14	7.99	34.55	47.27	52.85	54.00	1.15	Average
2484.000	32.14	7.99	34.55	46.50	52.08	54.00	1.92	Average

Remark: The "@" means fundamental frequency, it is ignored in this section.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

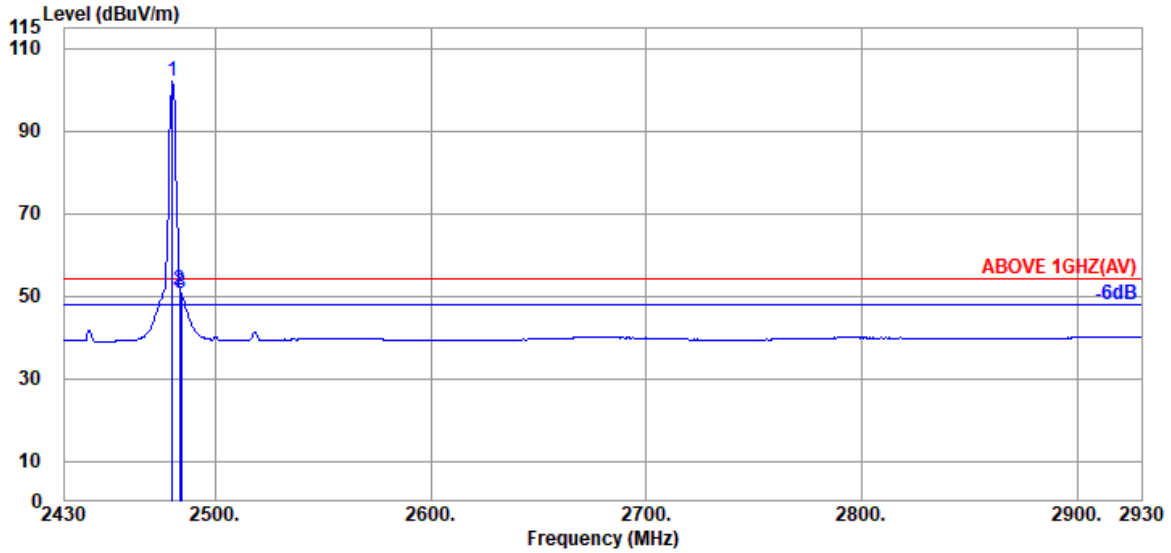
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	ZigBee	Frequency	TX 2480MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2479.500	32.11	7.99	34.55	98.96	104.51	---	---	Peak
2483.500	32.14	7.99	34.55	56.94	62.52	74.00	11.48	Peak
2484.500	32.14	7.99	34.55	56.12	61.70	74.00	12.30	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
@ 2480.000	32.11	7.99	34.55	96.63	102.18	---	---	Average
2483.500	32.14	7.99	34.55	45.88	51.46	54.00	2.54	Average
2484.000	32.14	7.99	34.55	45.06	50.64	54.00	3.36	Average

Remark: The "@" means fundamental frequency, it is ignored in this section..

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

A.2.2 Emissions outside the frequency band:

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

Mode	802.11b	Frequency	TX 2437MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4874.000	34.05	10.54	34.43	32.62	42.78	54.00	11.22	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4874.000	34.05	10.54	34.43	32.30	42.46	54.00	11.54	Peak

Mode	802.11g	Frequency	TX 2437MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4874.000	34.05	10.54	34.43	30.17	40.33	54.00	13.67	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4874.000	34.05	10.54	34.43	30.15	40.31	54.00	13.69	Peak

Mode	802.11n-HT20	Frequency	TX 2437MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4874.000	34.05	10.54	34.43	30.22	40.38	54.00	13.62	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4874.000	34.05	10.54	34.43	31.48	41.64	54.00	12.36	Peak

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	BLE	Frequency	TX 2402MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4804.000	34.10	10.49	34.44	30.41	40.56	54.00	13.44	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4804.000	34.10	10.49	34.44	31.58	41.73	54.00	12.27	Peak

Mode	BLE	Frequency	TX 2440MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.000	34.05	10.54	34.43	30.79	40.95	54.00	13.05	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.000	34.05	10.54	34.43	31.15	41.31	54.00	12.69	Peak

Mode	BLE	Frequency	TX 2480MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.000	34.10	10.60	34.41	30.80	41.09	54.00	12.91	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.000	34.10	10.60	34.41	30.38	40.67	54.00	13.33	Peak

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	ZigBee	Frequency	TX 2405MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4810.000	34.10	10.49	34.44	37.23	47.38	54.00	6.62	Average
4810.000	34.10	10.49	34.44	46.21	56.36	74.00	17.64	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4810.000	34.10	10.49	34.44	40.01	50.16	54.00	3.84	Average
4810.000	34.10	10.49	34.44	49.64	59.79	74.00	14.21	Peak

Mode	ZigBee	Frequency	TX 2440MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.000	34.05	10.54	34.43	39.10	49.26	54.00	4.74	Average
4880.000	34.05	10.54	34.43	48.79	58.95	74.00	15.05	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.000	34.05	10.54	34.43	38.98	49.14	54.00	4.86	Average
4880.000	34.05	10.54	34.43	48.64	58.80	74.00	15.20	Peak
7319.000	35.60	12.29	34.71	33.09	46.27	54.00	7.73	Average
7319.000	35.60	12.29	34.71	41.07	54.25	74.00	19.75	Peak

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	ZigBee	Frequency	TX 2480MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4958.000	34.10	10.58	34.41	41.13	51.40	54.00	2.60	Average
4958.000	34.10	10.58	34.44	50.47	60.71	74.00	13.29	Peak
7445.000	35.60	12.36	34.80	35.23	48.39	54.00	5.61	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4958.000	34.10	10.58	34.41	40.32	50.59	54.00	3.41	Average
4958.000	34.10	10.58	34.41	49.75	60.02	74.00	13.98	Peak
7445.000	35.60	12.36	34.80	39.44	52.60	54.00	1.40	Peak

Mode	ZigBee+802.11b	Frequency	TX 2405MHz/ TX 2412MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4808.000	34.10	10.49	34.44	39.59	49.74	54.00	4.26	Average
4808.000	34.10	10.49	34.44	49.00	59.15	74.00	14.85	Peak
7214.000	35.60	12.25	34.60	35.29	48.54	54.00	5.46	Peak
7238.000	35.60	12.27	34.62	37.99	51.24	54.00	2.76	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4810.000	34.10	10.49	34.44	41.84	51.99	54.00	2.01	Average
4810.000	34.10	10.49	34.44	51.52	61.67	74.00	12.33	Peak
7217.000	35.60	12.25	34.65	31.83	45.03	54.00	8.97	Average
7217.000	35.60	12.25	34.65	41.98	55.18	74.00	18.82	Peak
7238.000	35.60	12.27	34.66	35.88	49.09	54.00	4.91	Average
7238.000	35.60	12.27	34.66	41.46	54.67	74.00	19.33	Peak

A.2.3 Emissions in Non-restricted Frequency Bands:

Pursuant to ANSI C63.10:2013 that emission levels below the FCC 15.209(a)/RSS-Gen Section 8.9table 4 general radiated emissions limits is not required.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

A.3 6dB/OCCUPIED BANDWIDTH

Test Date	2021/03/22 ~ 24	Temp./Hum.	17~20°C/59~63%
Cable Loss	1.67dB	Tested By	Sean Wang
Test Voltage	AC 120V, 60Hz (via AC Adapter)		

A.3.1 Emission Bandwidth Result

Mode	Centre Frequency (MHz)	6 dB Bandwidth (MHz)	Occupied (99%) Bandwidth (MHz)	Limit
802.11b	2412	8.087	11.990	>500kHz
	2442	8.072	11.981	
	2462	8.567	12.029	
802.11g	2412	16.33	16.432	
	2442	16.33	16.434	
	2462	16.28	16.380	
802.11n-HT20	2412	17.53	17.634	
	2442	17.53	17.656	
	2462	16.27	17.586	

Mode	Centre Frequency (MHz)	6 dB Bandwidth (MHz)	Occupied (99%) Bandwidth (MHz)	Limit
BLE	2402	0.7036	1.0836	>500kHz
	2440	0.7226	1.0842	
	2480	0.6887	1.0821	

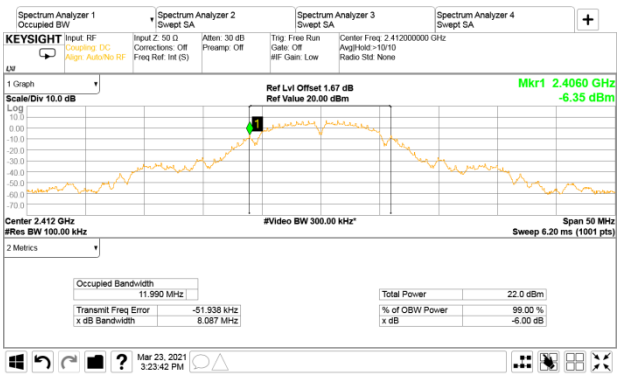
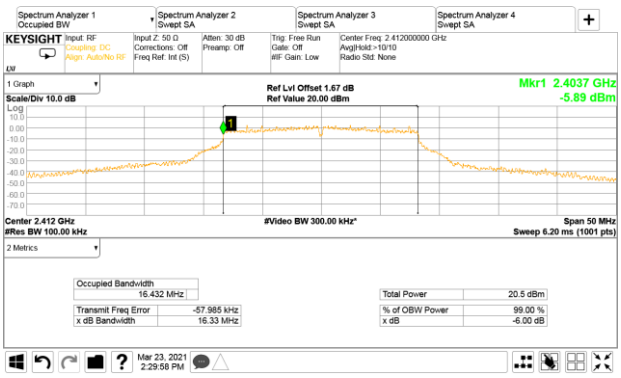
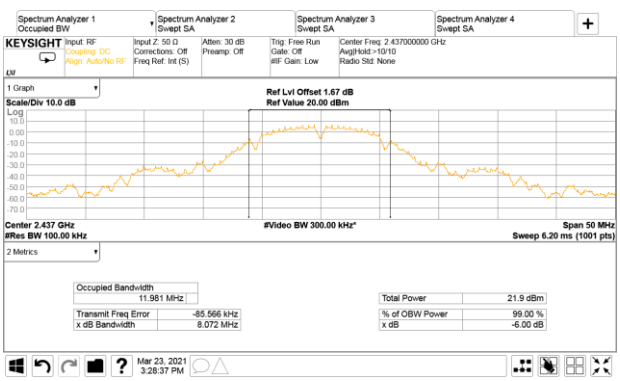
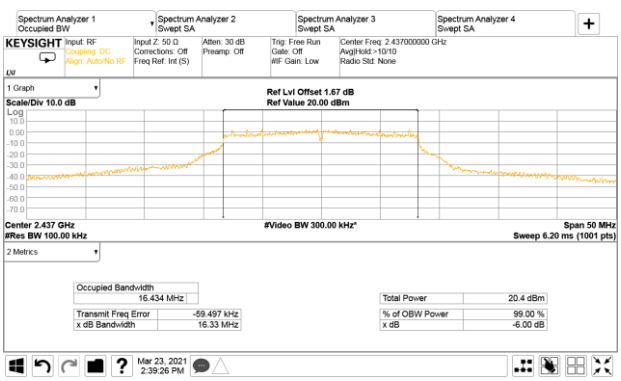
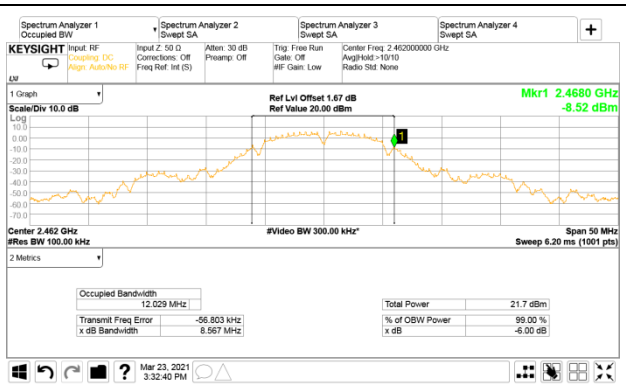
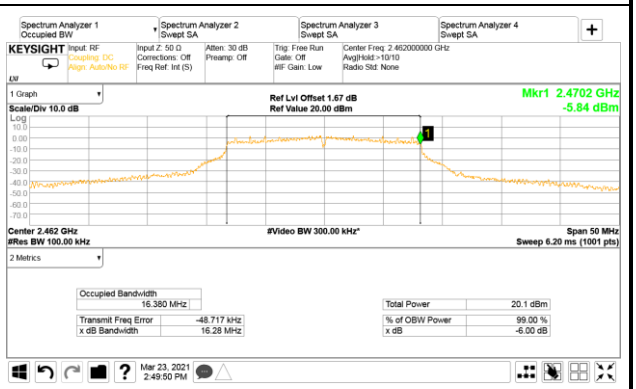
Mode	Centre Frequency (MHz)	6 dB Bandwidth (MHz)	Occupied (99%) Bandwidth (MHz)	Limit
ZigBee	2405	1.185	1.9046	>500kHz
	2440	1.186	1.8992	
	2480	1.187	1.9059	

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

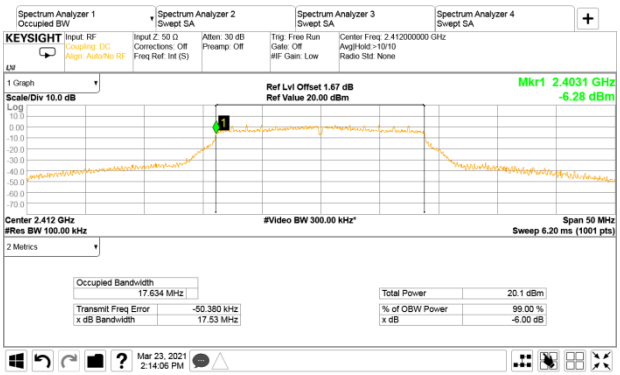
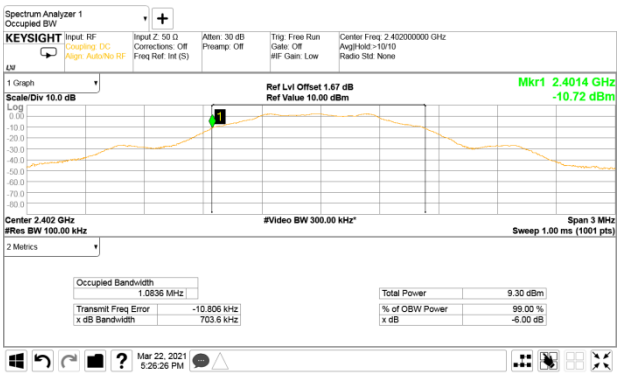
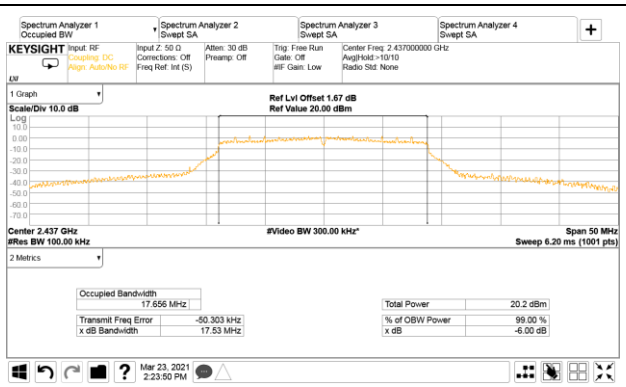
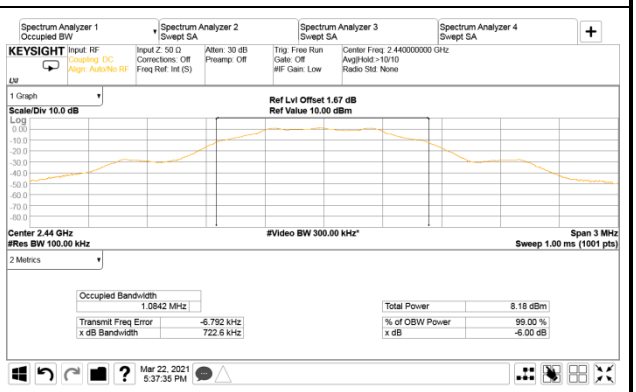
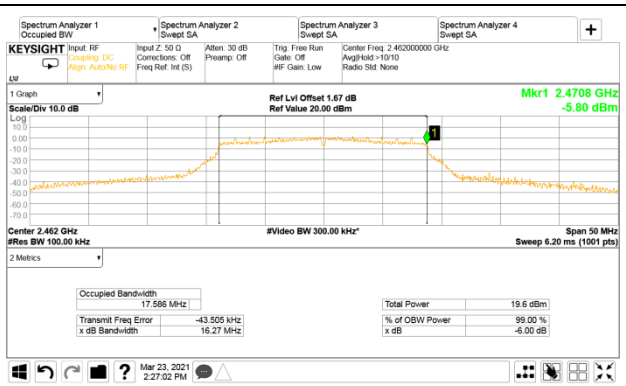
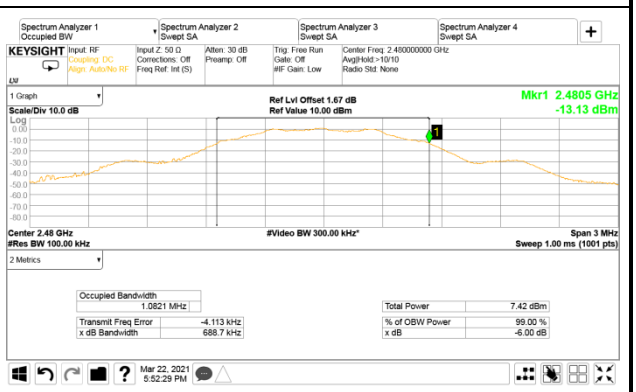
A.3.2 Measurement Plots

802.11b	802.11g
	
	
	

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

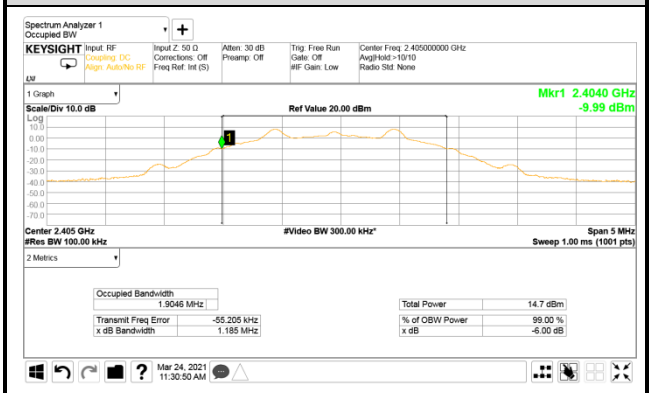
802.11n-HT20	BLE
	
	
	

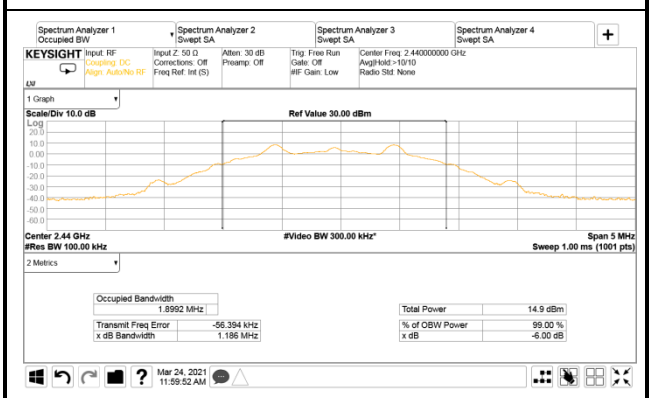
This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

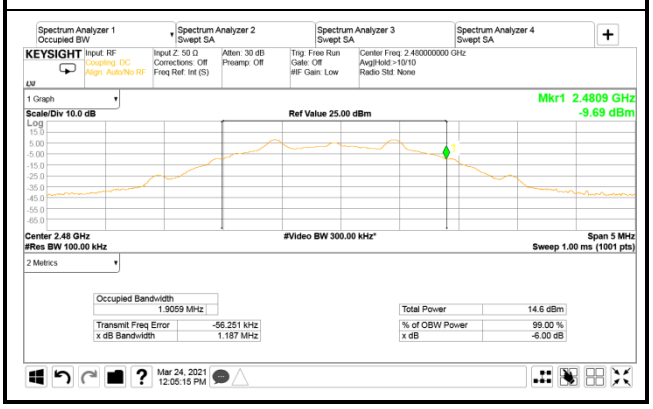
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

ZigBee







This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

A.4 MAXIMUM PEAK OUTPUT POWER

Test Date	2021/03/22 ~ 24	Temp./Hum.	17~20°C/59~63%
Cable Loss	1.67dB	Tested By	Sean Wang
Test Voltage	AC 120V, 60Hz (via AC Adapter)		

A.4.1 Peak Output Power

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		(dBm)	(W)		(dBm)	(W)	
802.11b	2412	19.42	0.087	2.39	21.81	0.152	<30dBm (1W) (Peak Output Power) <36dBm (4W) (E.I.R.P)
	2437	19.49	0.089		21.88	0.154	
	2462	19.17	0.083		21.56	0.143	

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		(dBm)	(W)		(dBm)	(W)	
802.11g	2412	23.62	0.230	2.39	26.01	0.399	<30dBm (1W) (Peak Output Power) <36dBm (4W) (E.I.R.P)
	2437	23.64	0.231		26.03	0.401	
	2462	23.19	0.208		25.58	0.361	

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		(dBm)	(W)		(dBm)	(W)	
802.11n-HT20	2412	23.22	0.210	2.39	25.61	0.364	<30dBm (1W) (Peak Output Power) <36dBm (4W) (E.I.R.P)
	2437	23.34	0.216		25.73	0.374	
	2462	23.14	0.206		25.53	0.357	

Note: The results have been included cable loss.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		(dBm)	(W)		(dBm)	(W)	
BLE	2402	2.92	0.002	2.39	5.31	0.003	<30dBm (1W) (Peak Output Power) <36dBm (4W) (E.I.R.P)
	2441	1.74	0.001		4.13	0.003	
	2480	0.69	0.001		3.08	0.002	

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		(dBm)	(W)		(dBm)	(W)	
ZigBee	2405	10.55	0.011	0.3	10.85	0.012	<30dBm (1W) (Peak Output Power) <36dBm (4W) (E.I.R.P)
	2440	10.82	0.012		11.12	0.013	
	2480	10.50	0.011		10.80	0.012	

Note: The results have been included cable loss.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

A.4.2 Average Output Power (Reporting only)

Mode	Centre Frequency (MHz)	Average Output Power (dBm)	10log (1/X)	Max. Average Output Power		Antenna Gain (dBi)	Total Average Output Power (E.I.R.P.)		Limit
				(dBm)	(W)		(dBm)	(W)	
802.11b	2412	16.44	N/A	16.44	0.044	2.39	18.83	0.076	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2437	16.52		16.52	0.045		18.91	0.078	
	2462	16.08		16.08	0.041		18.47	0.070	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)	10log (1/X)	Max. Average Output Power		Antenna Gain (dBi)	Total Average Output Power (E.I.R.P.)		Limit
				(dBm)	(W)		(dBm)	(W)	
802.11g	2412	15.31	0.27	15.58	0.036	2.39	17.97	0.063	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2437	15.22		15.49	0.035		17.88	0.061	
	2462	15.02		15.29	0.034		17.68	0.059	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)	10log (1/X)	Max. Average Output Power		Antenna Gain (dBi)	Total Average Output Power (E.I.R.P.)		Limit
				(dBm)	(W)		(dBm)	(W)	
802.11n-HT20	2412	14.37	0.32	14.69	0.029	2.39	17.08	0.051	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2437	14.41		14.73	0.030		17.12	0.052	
	2462	14.15		14.47	0.028		16.86	0.049	

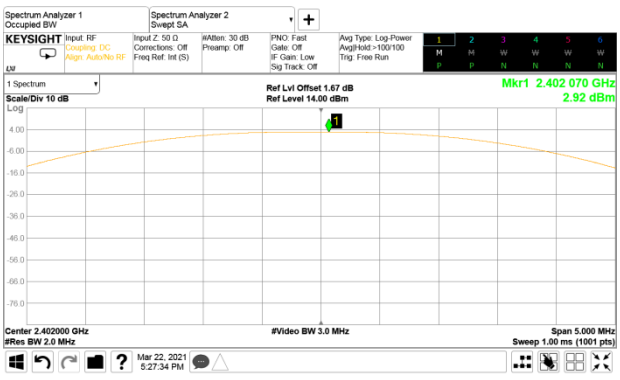
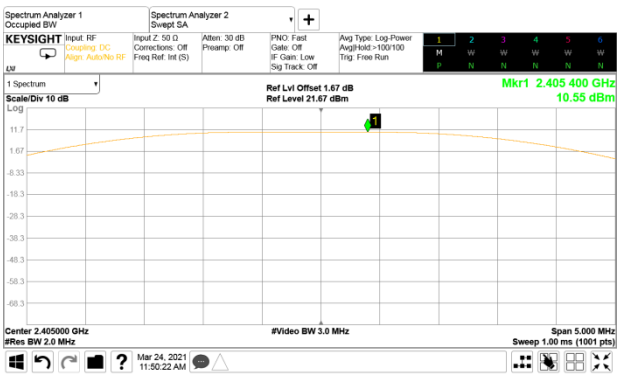
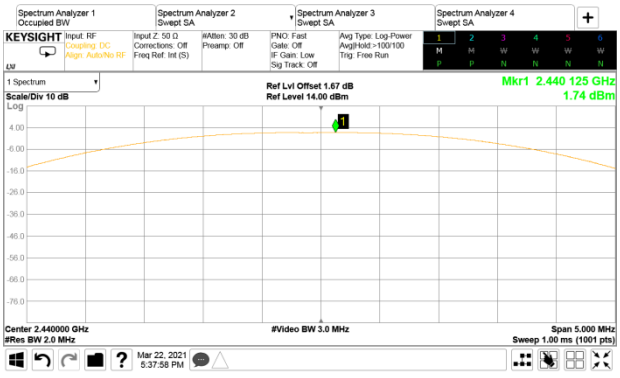
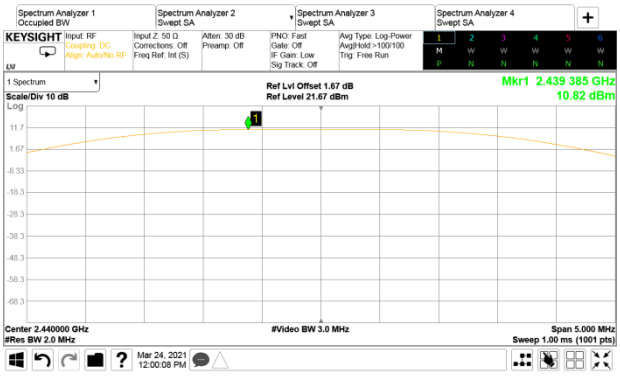
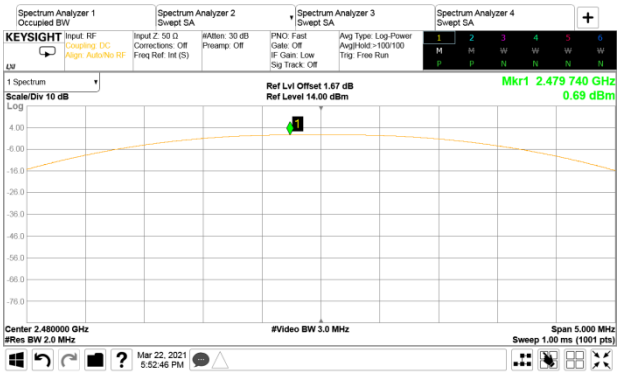
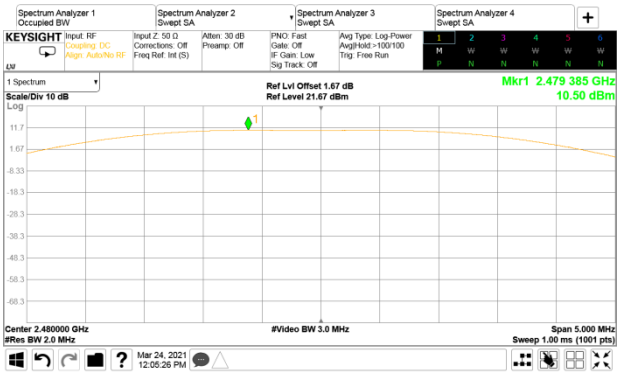
Note: The results have been included cable loss.

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

A.4.3 Measurement Plots

BLE	ZigBee
	
	
	

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244,Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

APPDNDIX B

TEST PHOTOGRAPHS

(Model: (1)ITS-GW01-A10-C001 (2)ITS-GW01-A10-C002)

This test report may be reproduced in full only. The document may only be updated by Audix Technology Corp. personnel. Any changes will be noted in the Document History section of the report.