

NCC RADIO TEST REPORT

Product name	Bluetooth LE Module
Applicant	GT-tronics HK Limited
Manufacture	GT-tronics HK Limited
Rating(s)	DC3.3V
Trademark	GT-tronics
Model and/or type reference	CC264BPA-S, CC264BPB-S, CC265BPB-S
Standard	LP0002:2018
Test Result	Pass

Date of receipt : 11-12-2020

Date of Issue : 11-28-2020

Signature :



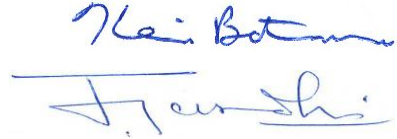
NCC RADIO TEST REPORT

Report Reference No...... M201201N2

Compiled by (+ signature) Kevin Bothmann

Approved by (+ signature) Jay Gandhi

Date of issue..... 11-28-2020



Applicant's name GT-tronics HK Limited

Address B210, Tonic Industrial Center, 19 Lam Hing Street, Kowloon Bay, Hong Kong

Manufacture's Name GT-tronics HK Limited

Address B210, Tonic Industrial Center, 19 Lam Hing Street, Kowloon Bay, Hong Kong

Test specification:

Standard LP0002: 2018

Test procedure EIA 603、ANSI、FCC/47 CFR/2.1046、2.1047、2.1049、2.1051、2.1053 and 2.1055

Non-standard test method..... N/A

Test item description

Product name : Bluetooth LE Module

Brand name : GT-tronics

Model and/or type reference : CC264BPA-S, CC264BPB-S, CC265BPB-S

Rating(s) : DC3.3V

Testing Laboratory information

Testing Laboratory Name : Electro Magnetic Test, Inc.

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Testing

Date of receipt of test item..... Npv. 12, 2020

Date (s) of performance of tests..... Nov. 12~ Nov. 27, 2020

Date of Issue Nov. 28, 2020

Test Result **Pass**

GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Electro Magnetic Test, Inc., which is an independent testing and consulting firm. The test report is based on testing performed Electro Magnetic Test, Inc. personnel according to the measurement procedure described in the test specification given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full.

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Federal Government.

Electro Magnetic Test, Inc. is recognized by the following agencies for performing EMI/EMC testing:

COUNTRY	AGENCY	IDENTIFYING #
USA	Federal Communications Commission (FCC) (EMT's test site is recognized by the FCC)	Registration Number: 90576
USA, Canada, Taiwan, Australia/New Zealand, European Community	National Voluntary Lab Accreditation Program (NVLAP) (EMT is accredited by NVLAP. A copy of the NVLAP Scope Of Accreditation is available upon request.)	Lab Code: 200147-0
Canada	Industry Canada	File No.: IC 2804
Japan	Voluntary Control Council For Interference (VCCI)	A-0118
	Open Field Test Site "A"	-
	Mains Conducted Emissions Test Site "A"	-
	Telecom Conducted Emissions Test Site "A"	-
	3 Meter Semi-Anechoic Chamber Site "E"	-
	3 Meter Semi-Anechoic Chamber Site "E" (1GHz – 6GHz)	-
	Mains Conducted Emissions Test Site "E"	-
	Telecom Conducted Emissions Test Site "E"	-
Korea	Ministry of Information and Communication's Radio Research Laboratory (RRL) under the Asia Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (A copy of the Scope Of Accreditation is available upon request)	US0036
Taiwan	Bureau Of Standards, Metrology and Inspection (BSMI)	Reference Number: SL2-IN-E-1024
Australia / New Zealand	Australian Communications Authority (AUSTEL)	*

***THESE AGENCIES DO NOT ISSUE AN IDENTIFYING NUMBER TO TEST LABS.**

Table of Contents	Page
GENERAL REPORT SUMMARY	3
1 . SUMMARY OF TEST RESULTS	6
1.1 MEASUREMENT UNCERTAINTY	7
2 . GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF EUT	8
2.2 DESCRIPTION OF TEST MODES	10
2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING	10
2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	11
2.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)	12
3 . TRANSMITTER EMISSION TEST	15
3.1 CONDUCTED EMISSION MEASUREMENT	15
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	15
3.1.2 TEST PROCEDURE	16
3.1.3 DEVIATION FROM TEST STANDARD	16
3.1.4 TEST SETUP	16
3.1.5 TEST RESULTS	17
3.2 RADIATED EMISSION MEASUREMENT	19
3.2.1 RADIATED EMISSION LIMITS	19
3.2.2 TEST PROCEDURE	20
3.2.3 TEST SETUP	21
3.2.4 EUT OPERATING CONDITIONS	22
3.2.5 TEST RESULTS (BLOW 30MHZ)	23
3.2.6 TEST RESULTS (BETWEEN30 – 1000 MHZ)	23
2M PHY:	25
3.2.7 TEST RESULTS (ABOVE 1000 MHZ)	31
3.2.8 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)	63
4 . OCCUPIED BANDWIDTH TEST	66
4.1 APPLIED PROCEDURES / LIMIT	66
4.1.1 TEST PROCEDURE	66
4.1.2 TEST SETUP	66
4.1.3 EUT OPERATION CONDITIONS	66
4.1.4 TEST RESULTS	67
5 . POWER DENSITY	72
5.1 APPLIED PROCEDURES / LIMIT	72
5.1.1 TEST PROCEDURE	72
5.1.2 TEST SETUP	72

Table of Contents	Page
5.1.3 EUT OPERATION CONDITIONS	72
5.1.4 TEST RESULTS	73
6 . OUTPUT POWER TEST	78
6.1 APPLIED PROCEDURES / LIMIT	78
6.1.1 TEST PROCEDURE	78
6.1.2 DEVIATION FROM STANDARD	78
6.1.3 TEST SETUP	78
6.1.4 EUT OPERATION CONDITIONS	78
6.1.5 TEST RESULTS	79
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	80
7.1 APPLIED PROCEDURES / LIMIT	80
7.1.1 TEST PROCEDURE	80
7.1.2 TEST SETUP	80
7.1.3 EUT OPERATION CONDITIONS	80
7.1.4 TEST RESULTS	81
8. ANTENNA REQUIREMENT	88
8.1 STANDARD REQUIREMENT	88
8.2 EUT ANTENNA	88
9. EUT TEST PHOTO	89
10. APPENDIX-Photographs of EUT Constructional Details	

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

LP0002 : 2018			
Standard Section	Test Item	Judgment	Remark
2.3	Conducted Emission	PASS	None
3.10.1.5/2.8	Radiated Spurious Emission	PASS	None
3.10.1.2	Peak Output Power	PASS	None
3.10.1.6	6dB Occupied Bandwidth	PASS	None
3.10.1.6)	Power Density	PASS	None
3.10.1.5/2.8	Restricted Bands	PASS	None
3.10.1.3	Antenna Requirement	PASS	None

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

1.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	1.38dB
2	Radiated Emission Test	3.17dB
3	RF power,conducted	0.16dB
4	Spurious emissions,conducted	0.21dB
5	All emissions,radiated(<1G)	4.68dB
6	All emissions,radiated(>1G)	4.89dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Bluetooth LE Module	
Brand Name	GT-tronics	
Model Name	CC264BPA-S	
Serial Model Name	CC264BPB-S, CC265BPB-S	
OEM Brand/Model Name	N/A	
Product Description	The EUT is a Bluetooth LE Module.	
	Operation Frequency:	2402~2480 MHz
	Modulation Type:	GFSK
	Bit Rate of Transmitter	1Mbps, 2Mbps
	Number Of Channel	40
	Antenna Designation:	Please see Note 3.
	Antenna Gain(Peak)	-0.30 dBi
	Output Power:	1M: 1.22dBm (Max.) 2M: 0.78dBm(Max.)
Channel List	Please refer to the Note 2.	
Power Rating	DC3.3V	
Connecting I/O Port(s)	Please refer to the User's Manual	
Products Covered	N/A	
EUT Modification(s)	N/A	
Model difference	The model of CC264BPA-S, CC264BPB-S, CC265BPB-S are all the same, only model name different for market segmentation.	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.

Description of Channel:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2402	21	2442
02	2404	22	2444
03	2406	23	2446
04	2408	24	2448
05	2410	25	2450
06	2412	26	2452
07	2414	27	2454
08	2416	28	2456
09	2418	29	2458
10	2420	30	2460
11	2422	31	2462
12	2424	32	2464
13	2426	33	2466
14	2428	34	2468
15	2430	35	2470
16	2432	36	2472
17	2434	37	2474
18	2436	38	2476
19	2438	39	2478
20	2440	40	2480

- 3.

Table for Filed Antenna

	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
	GT-tronics	CC264BPA	PCB Antenna	N/A	-0.30 dBi	Antenna

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	GFSK
Mode 2	RX
Mode 3	Working

For Conducted Emission	
Final Test Mode	Description
Mode 1	GFSK

For Radiated Emission	
Final Test Mode	Description
Mode 1	GFSK
Mode 2	RX
Mode 3	Working

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) For all tests the worst-case was selected as the table above, the data of the worst-case is shown in the report.

2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters.

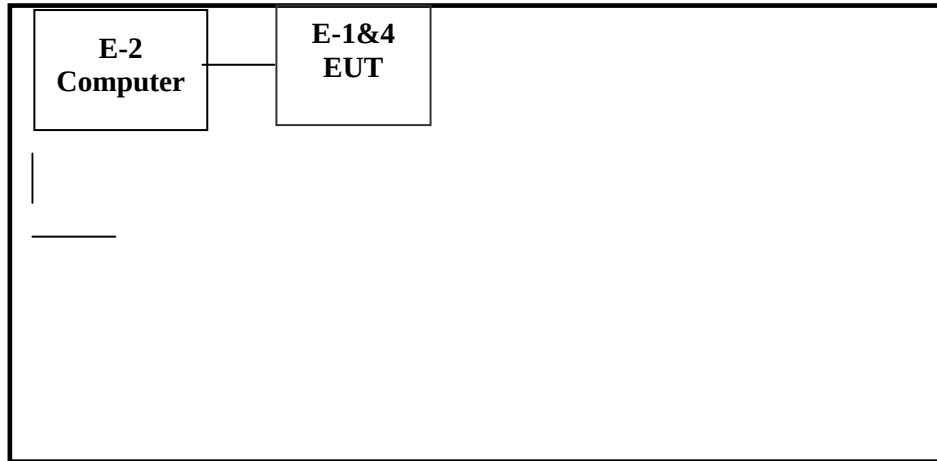
Test software Version	Test program: sscom32		
Frequency	2402 MHz	2440 MHz	2480 MHz
Parameters(1Mbps)	Default	Default	Default
Parameters(2Mbps)	Default	Default	Default

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission Block diagram of EUT configuration

Non-Conductive Table

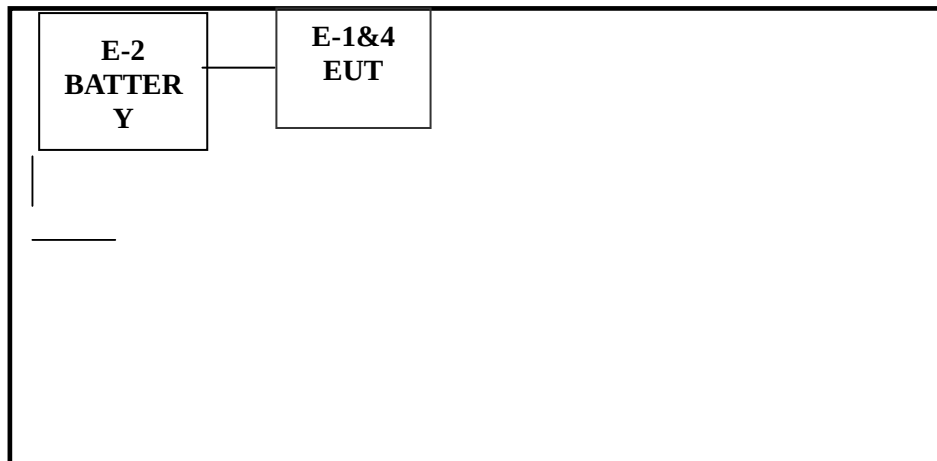
80 cm above Ground Plane



Radiated Emission Block diagram of EUT configuration

Non-Conductive Table

80 cm above Ground Plane



2.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Bluetooth LE Module	GT-tronics	CC264BPA-S	N/A	N/A	EUT
E-2	Battery	N/A	CR2032	N/A	N/A	Test Accessory*
E-3	Computer	ASUS	X401	N/A	N/A	Test Accessory*
E-4	CC26XBPA-TIEM Board	GT-tronics	CC264BPA-S	N/A	N/A	Test Accessory*

Item	Equipment	Mfr/Brand	Model/Type No.	Note
1	FT232-USB to TTL	FDTI	USB-STC-ISP	Test Accessory*

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” or “with ferrite core”,”NO” means “unshielded” or”without ferrite core”
- (4) “*”: In this report, the applicant did not provide the accompanying accessories with the equipment. The accessories were provided by the laboratory (or the applicant) and inspected simultaneously.

2.5.1 EQUIPMENTS LIST FOR ALL TEST ITEMS

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
Spectrum Analyzer	Hewlett Packard	8566B	3013A07296	April 29, 2020	1 Year
RF Preselector	Hewlett Packard	85685A	3010A01157	April 29, 2020	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650	2521A00584	April 29, 2020	1 Year
Preamplifier	Com Power	PA-102	1482	April 29, 2020	1 Year
RF Attenuator	Mini-Circuits	CAT-10	Asset #1000	December 8, 2019	1 Year
LISN	Com Power	LI-200	12012	September 10, 2020	1 Year
LISN	Com Power	LI-200	12214	September 10, 2020	1 Year
LISN	Com Power	LI-200	1767	September 10, 2020	1 Year
LISN	Com Power	LI-200	1768	September 10, 2020	1 Year
Biconical Antenna	Com Power	AB-100	01557	December 29, 2019	1 Year
Log Periodic Antenna	Com Power	AL-100	16037	December 22, 2019	1 Year
Horn Antenna	Com Power	AHA-118	711054	December 22, 2019	1 Year
Antenna Mast	Com Power	AM-400	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Dell, Inc.	DHS	DNSV641	N/A	N/A
Printer	Hewlett Packard	C8124A	CN39B2234T	N/A	N/A
Plotter	Hewlett Packard	7470A	2308A96499	N/A	N/A

EMI Test Equipment (Continued)

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
EMI Receiver	Rohde & Schwarz	ESU40	100127	June 12, 2020	1 Year
BiConiLog Antenna	ETS-Lindgren	3142D	00102183	August 14, 2020	1 Year
Horn Antenna	ETS-Lindgren	3117	00109294	May 6, 2020	1 Year
Preamplifier	Rohde & Schwarz	TS-PR18	100056	June 12, 2020	1 Year
Antenna Mast	ETS-Lindgren	2175	00095727	N/A	N/A
Turntable	ETS-Lindgren	2187-3.0	00118231	N/A	N/A
Computer	Acer	Aspire 8930	85100050123	N/A	N/A
Multi-Function Controller	ETS-Lindgren	2090	00102270	N/A	N/A
Loop Antenna	ARA	PLA-1030/B	1029	May 19, 2020	1 Year

3. TRANSMITTER EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150kHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5			66 - 56 *	56 - 46 *	CISPR
0.50 -5.0			56.00	46.00	CISPR
5.0 -30.0			60.00	50.00	CISPR

0.15 -0.5			66 - 56 *	56 - 46 *	LP0002
0.50 -5.0			56.00	46.00	LP0002
5.0 -30.0			60.00	50.00	LP0002

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

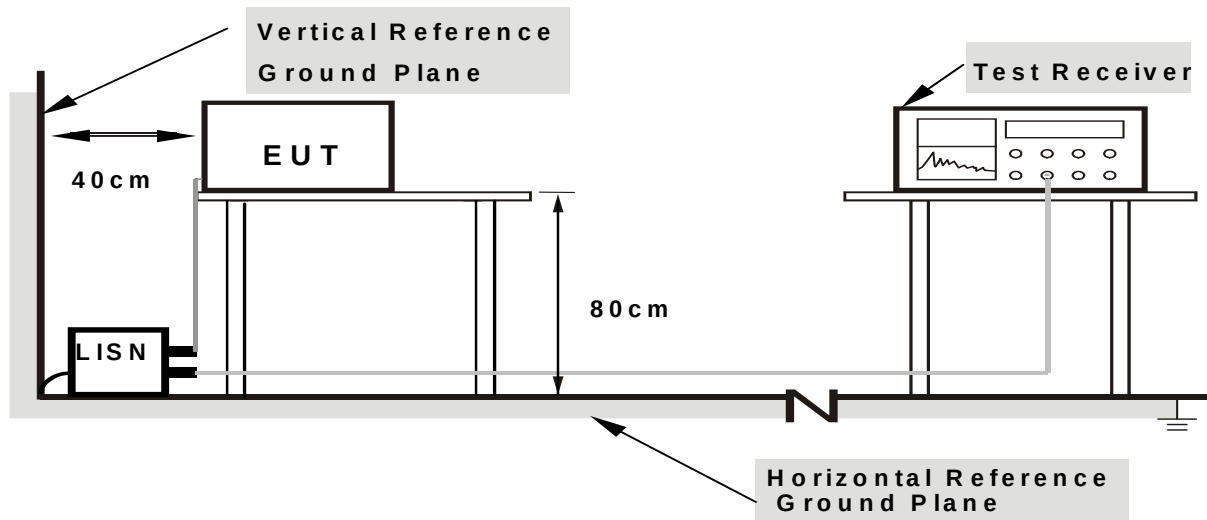
3.1.2 TEST PROCEDURE

- The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP

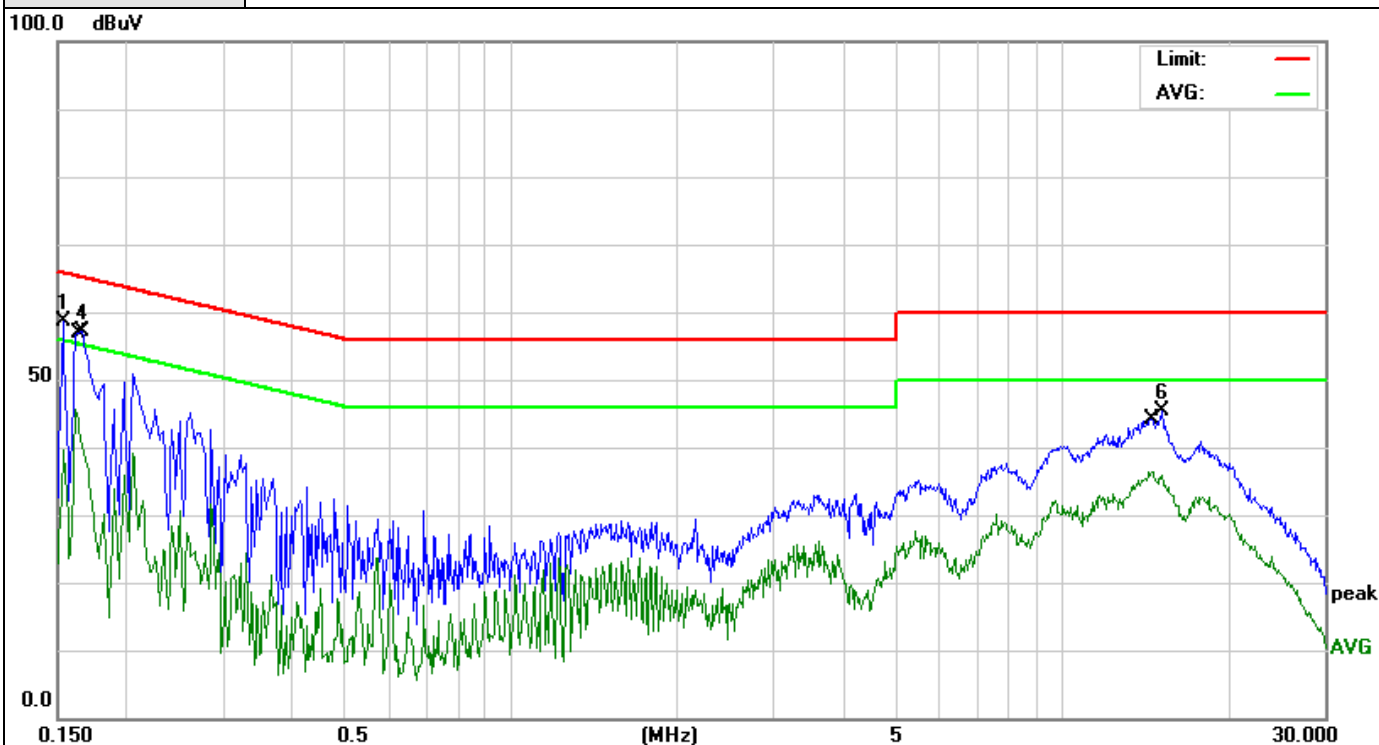


Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 TEST RESULTS

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	Mode 1(2402MHz)	Phase :	Line
Test Power :	AC 110V for Notebook		



Remark: Factor = LISN factor + Cable Loss + Pulse limiter factor.

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1 *	0.1539	46.69	11.84	58.53	65.78	-7.25	peak
2	0.1539	27.70	11.84	39.54	55.78	-16.24	AVG
3	0.1620	33.96	11.68	45.64	55.36	-9.72	AVG
4	0.1660	45.59	11.61	57.20	65.15	-7.95	peak
5	14.6500	35.02	1.39	36.41	50.00	-13.59	AVG
6	15.1460	44.00	1.42	45.42	60.00	-14.58	peak

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 2.7, then the 2.8 limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Notes:

- (1) The limit for radiated test was performed according to LP0002.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

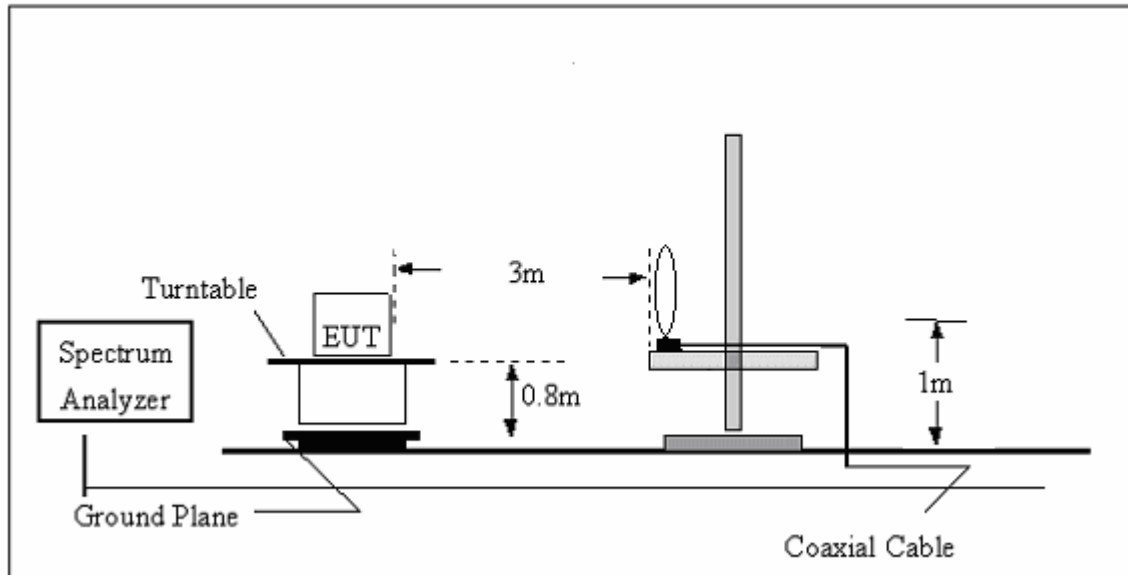
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

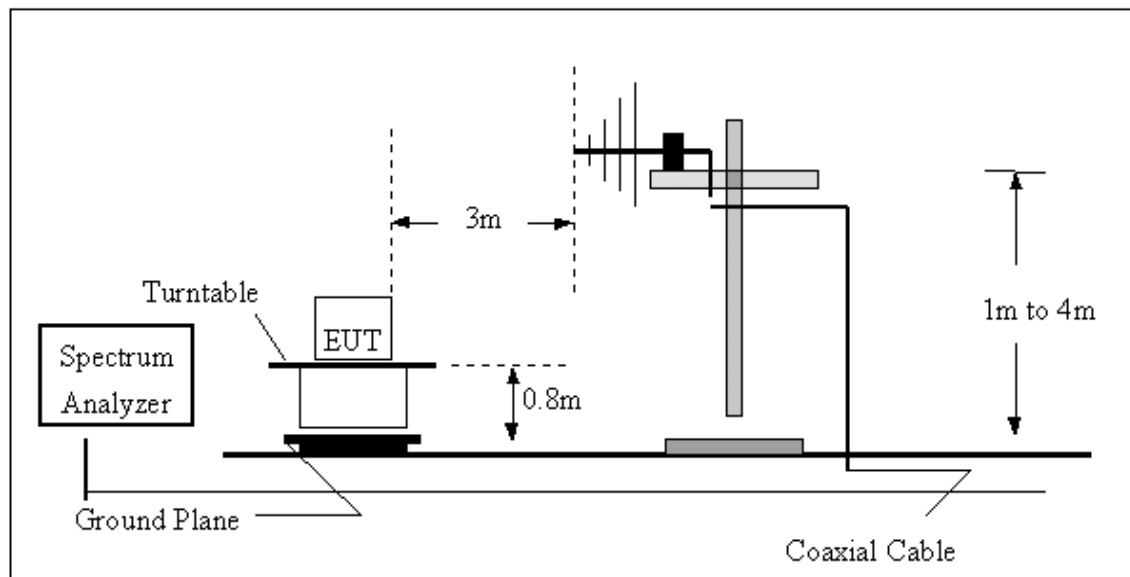
- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters (For frequencies above 1GHz, table 1.5 meters) above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 TEST SETUP

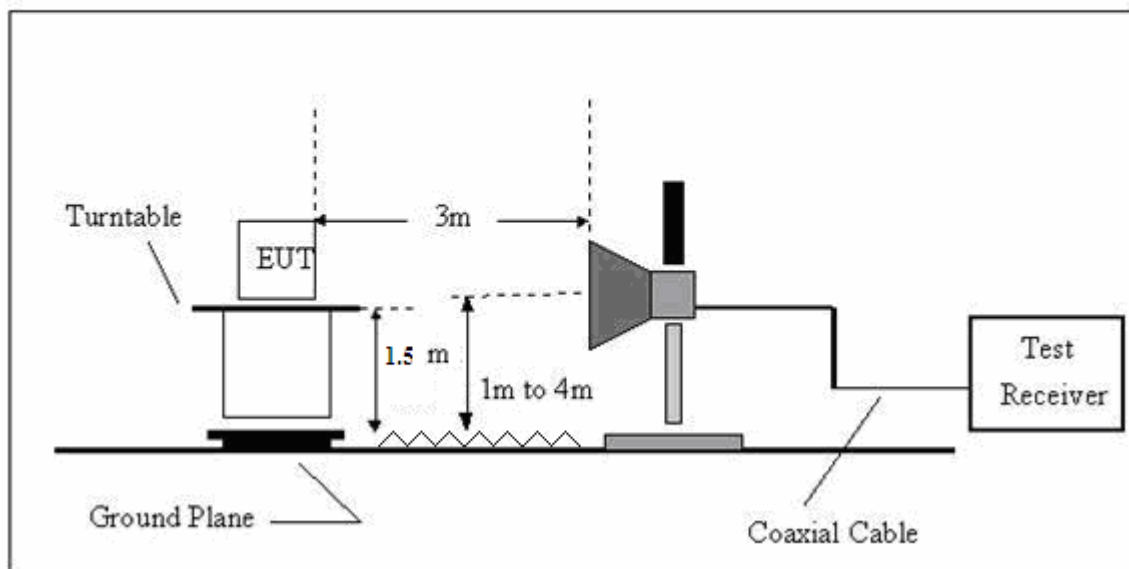
(A) Radiated Emission Test Set-Up, Frequency 9kHz-30 MHz



(B) Radiated Emission Test Set-Up Frequency 30MHz-1 GHz



(C) Radiated Emission Test Set-Up Frequency Above 1 GHz



3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

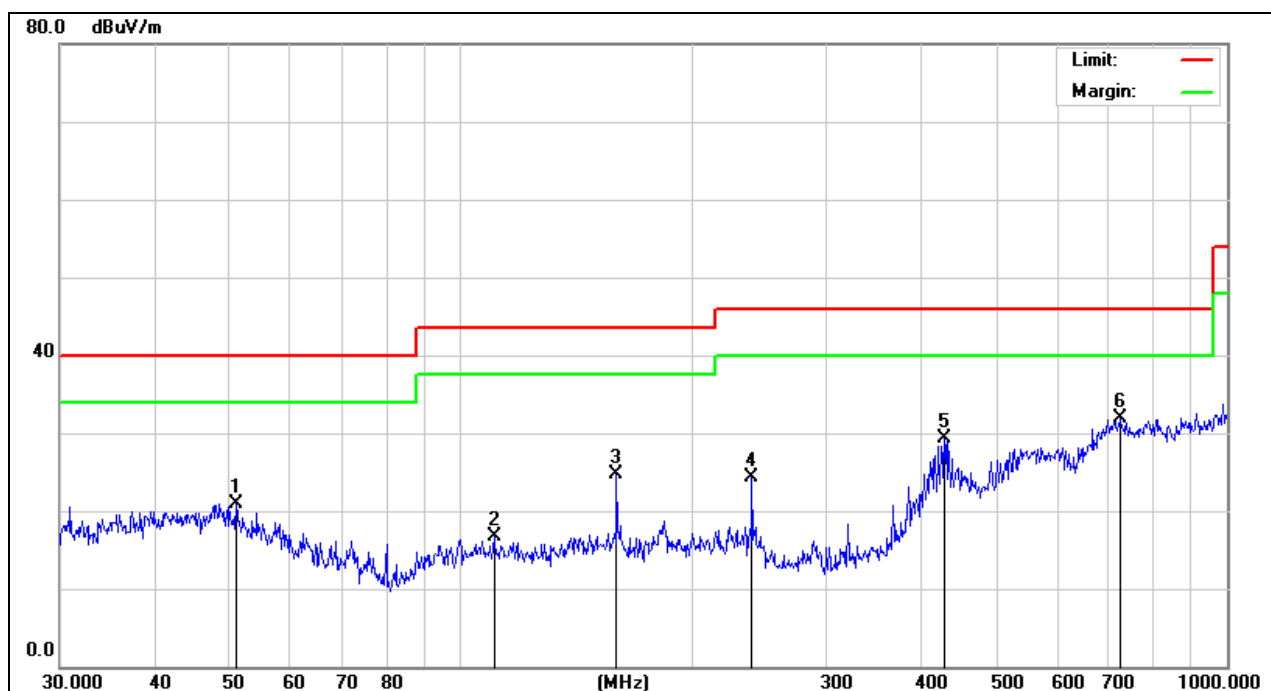
3.2.5 TEST RESULTS (BLOW 30MHZ)

There is not detected blow 30MHz.

3.2.6 TEST RESULTS (BETWEEN30 – 1000 MHZ)

1M PHY:

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	Mode 1(2402MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

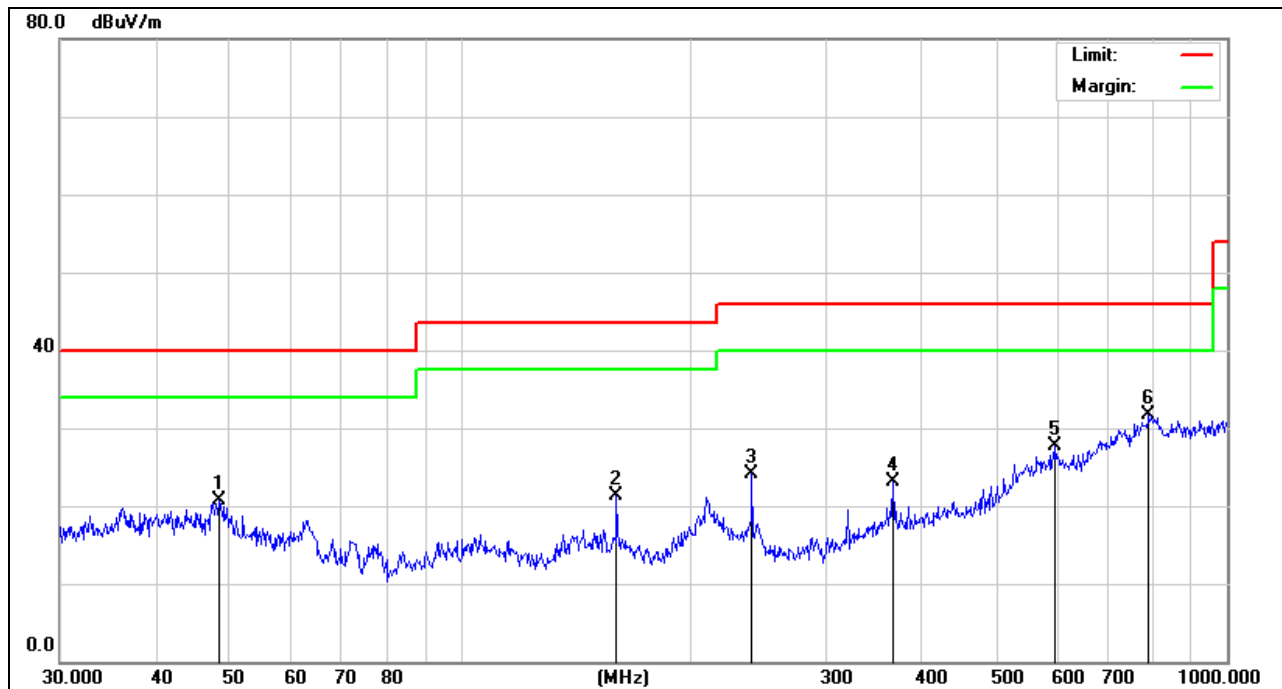


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	50.9420	24.44	-3.45	20.99	40.00	-19.01	peak
2	110.5687	23.72	-7.08	16.64	43.50	-26.86	peak
3	159.7844	31.17	-6.54	24.63	43.50	-18.87	peak
4	239.9874	30.78	-6.52	24.26	46.00	-21.74	peak
5	428.0192	30.55	-1.24	29.31	46.00	-16.69	peak
6 *	726.8052	24.71	7.22	31.93	46.00	-14.07	peak

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	Mode 1(2402MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		



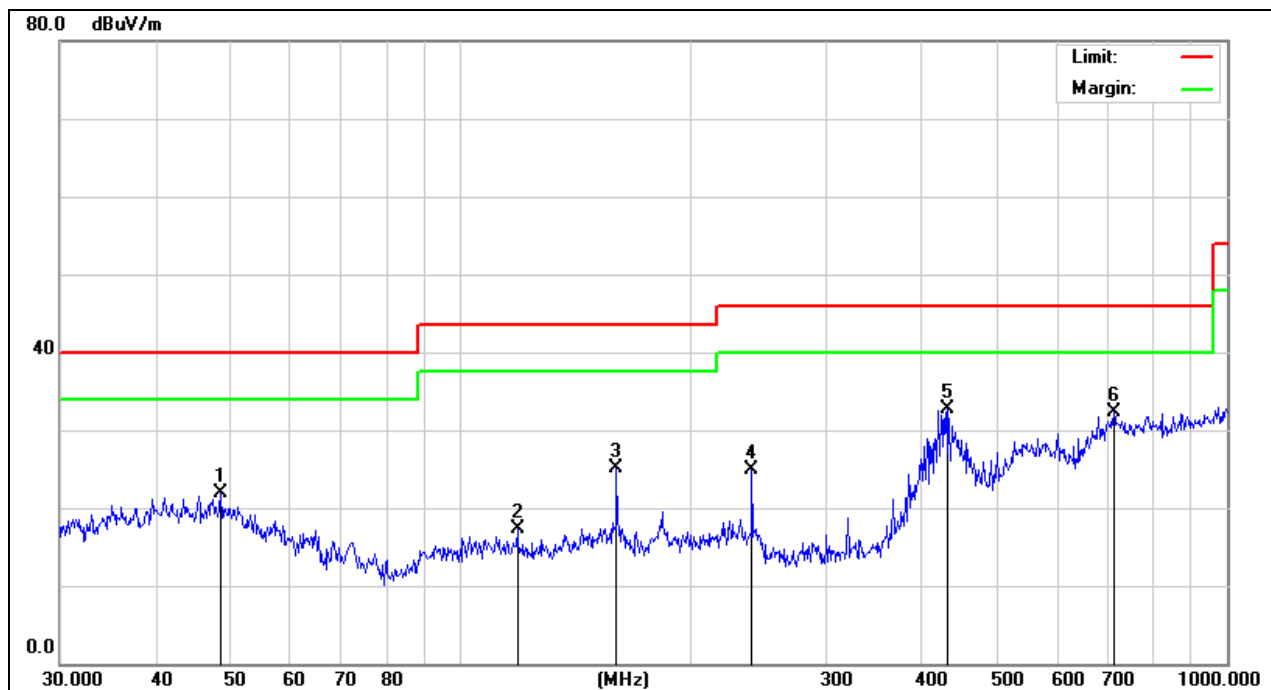
Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB Detector
1		48.5016	26.28	-5.59	20.69	40.00	-19.31 peak
2		159.7844	30.00	-8.61	21.39	43.50	-22.11 peak
3		239.9874	30.64	-6.52	24.12	46.00	-21.88 peak
4		366.8231	27.39	-4.25	23.14	46.00	-22.86 peak
5		597.2232	24.63	3.03	27.66	46.00	-18.34 peak
6	*	790.6186	24.02	7.69	31.71	46.00	-14.29 peak

2M PHY:

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	Mode 1(2402MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

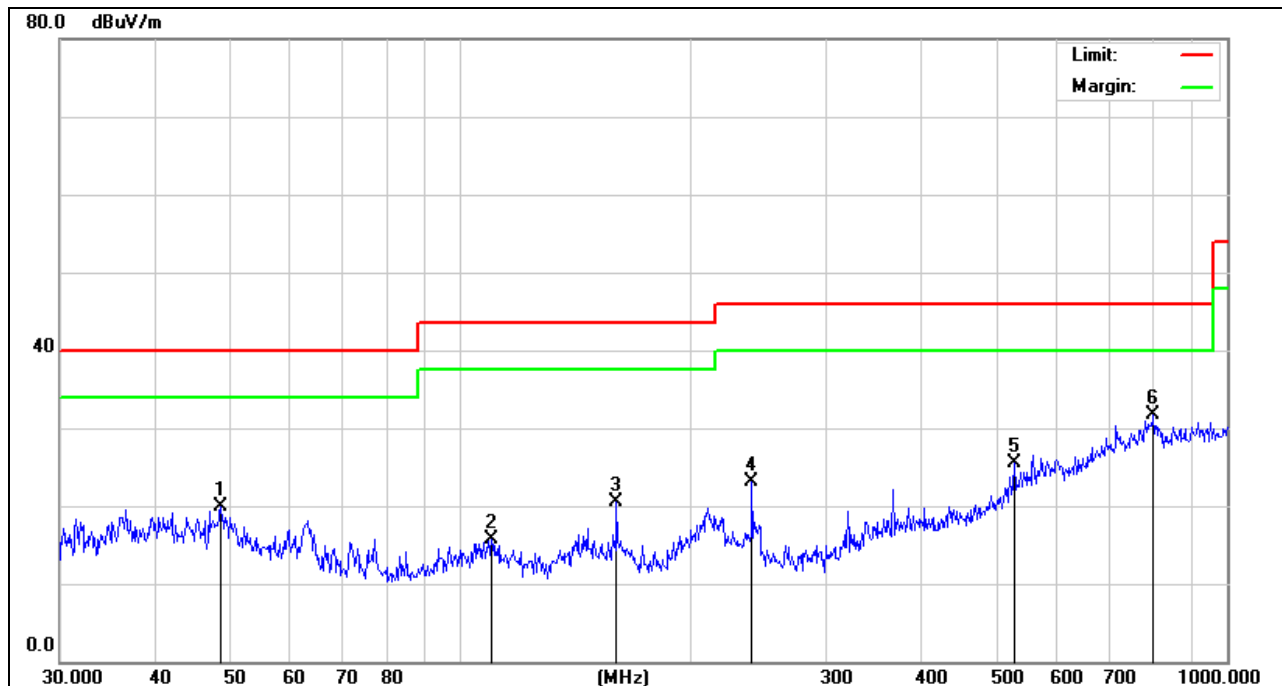


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		48.6719	24.91	-3.07	21.84	40.00	-18.16	peak
2		118.6013	25.03	-7.64	17.39	43.50	-26.11	peak
3		159.7844	31.60	-6.54	25.06	43.50	-18.44	peak
4		239.9874	31.42	-6.52	24.90	46.00	-21.10	peak
5	*	432.5457	33.74	-1.02	32.72	46.00	-13.28	peak
6		711.6734	25.01	7.20	32.21	46.00	-13.79	peak

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	Mode 1(2402MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		



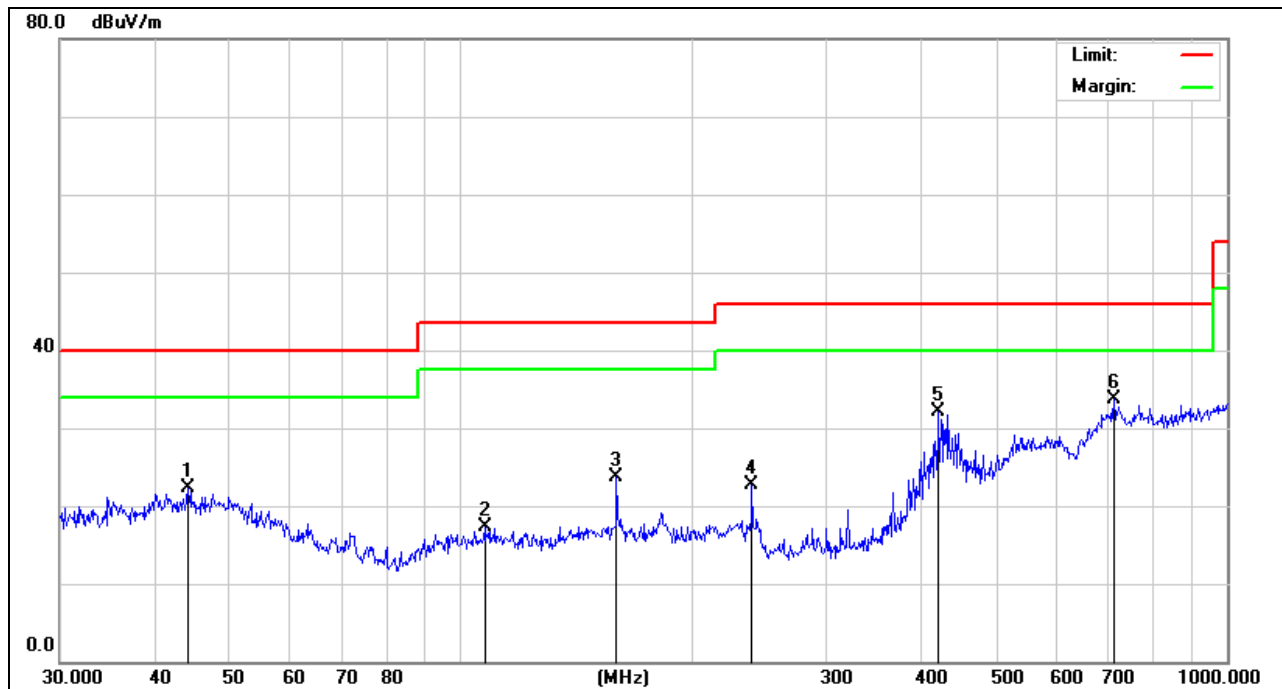
Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		48.6719	25.47	-5.65	19.82	40.00	-20.18	peak
2		109.7960	23.27	-7.64	15.63	43.50	-27.87	peak
3		159.7844	29.11	-8.61	20.50	43.50	-23.00	peak
4		239.9874	29.70	-6.52	23.18	46.00	-22.82	peak
5		528.2458	25.09	0.32	25.41	46.00	-20.59	peak
6	*	801.7862	23.95	7.67	31.62	46.00	-14.38	peak

Test result: The unit does meet the NCC requirements.

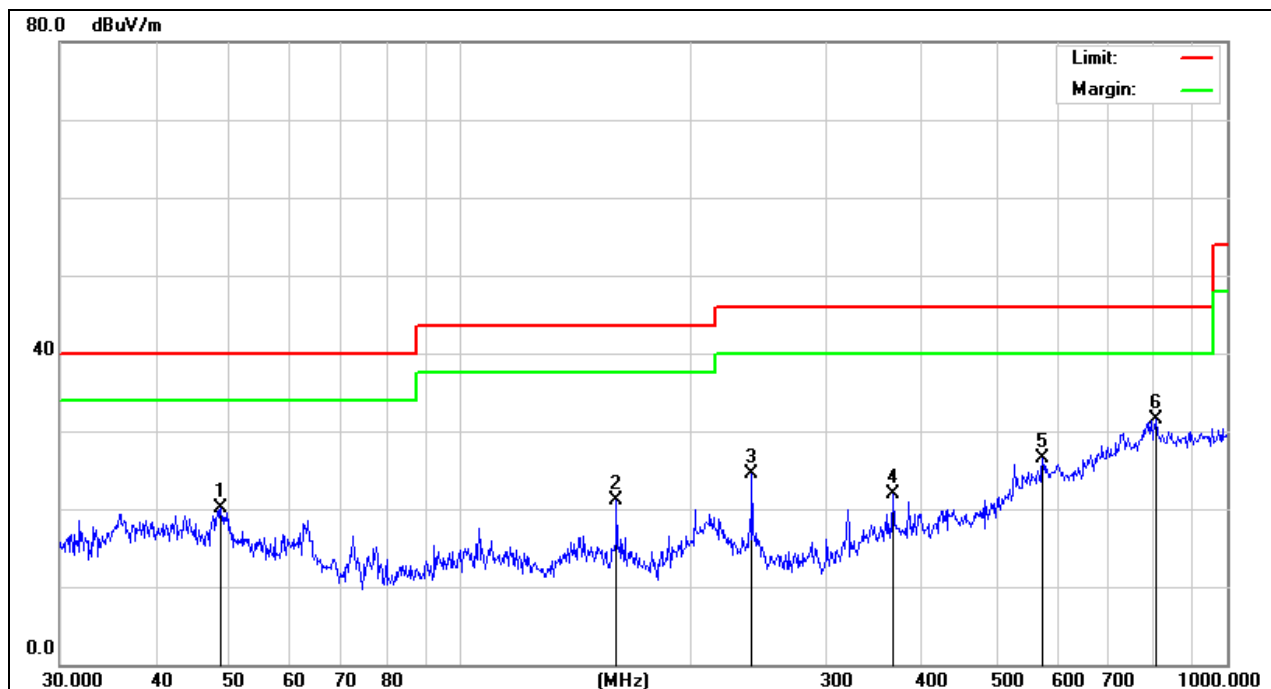
EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	RX	Polarization :	Horizontal
Test Power :	DC3.3V from battery		



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		44.1200	24.47	-2.17	22.30	40.00	-17.70	peak
2		107.5100	24.36	-7.13	17.23	43.50	-26.27	peak
3		159.7844	30.31	-6.54	23.77	43.50	-19.73	peak
4		239.9874	29.22	-6.52	22.70	46.00	-23.30	peak
5		420.5803	33.80	-1.62	32.18	46.00	-13.82	peak
6	*	711.6734	26.54	7.20	33.74	46.00	-12.26	peak

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	RX	Polarization :	Vertical
Test Power :	DC3.3V from battery		

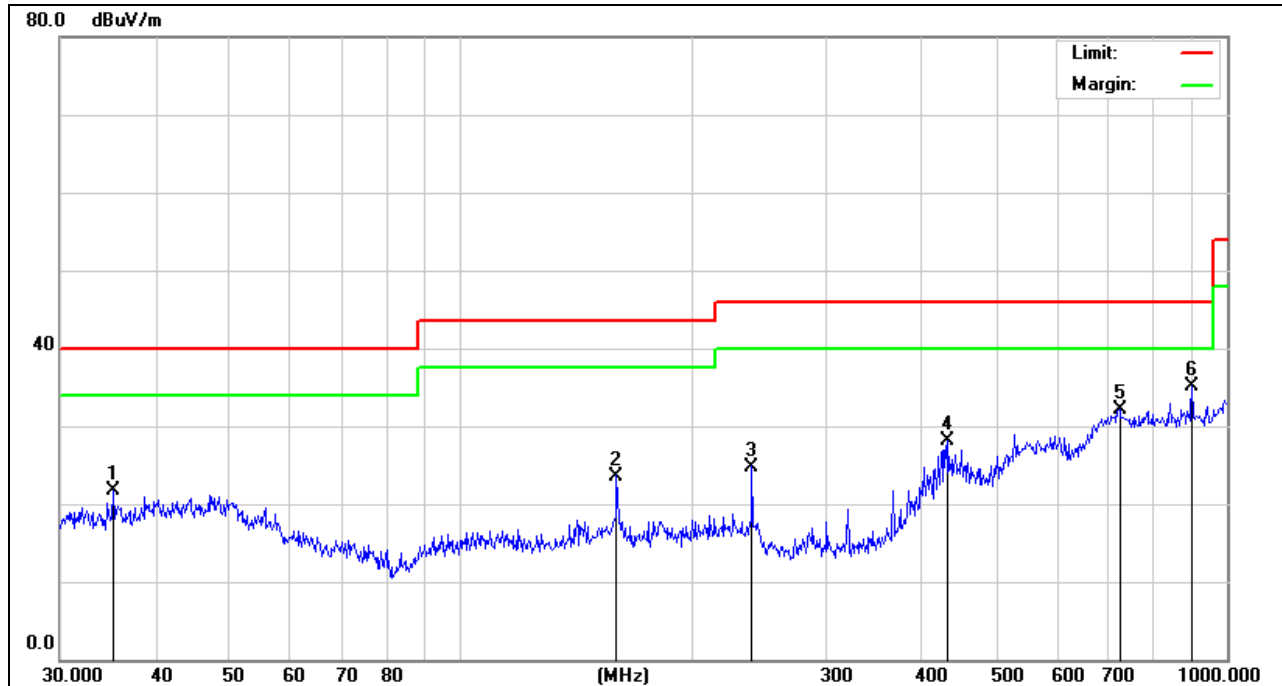


Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	48.6719	25.77	-5.65	20.12	40.00	-19.88	peak
2	159.7844	29.80	-8.61	21.19	43.50	-22.31	peak
3	239.9874	31.02	-6.52	24.50	46.00	-21.50	peak
4	366.8231	26.21	-4.25	21.96	46.00	-24.04	peak
5	574.6258	24.49	1.97	26.46	46.00	-19.54	peak
6 *	807.4290	23.90	7.54	31.44	46.00	-14.56	peak

Test result: The unit does meet the NCC requirements.

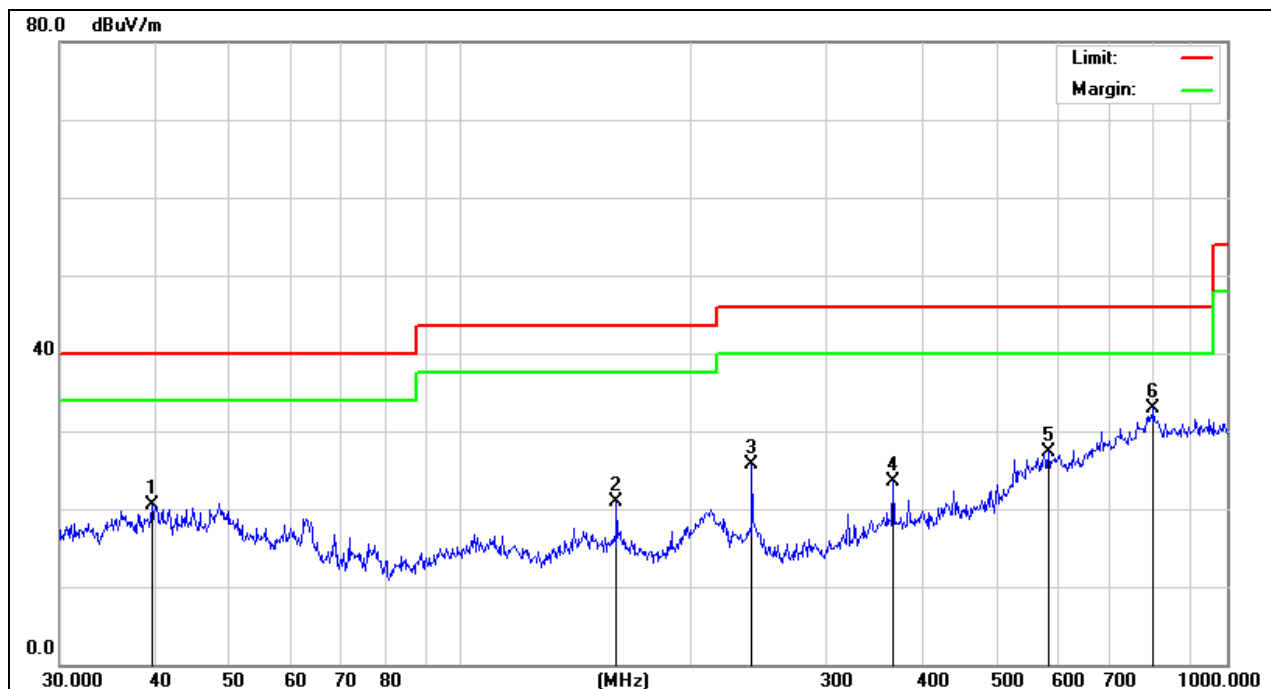
EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	Mode 3	Polarization :	Horizontal
Test Power :	DC3.3V from battery		



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		35.2512	25.35	-3.56	21.79	40.00	-18.21	peak
2		159.7844	30.14	-6.54	23.60	43.50	-19.90	peak
3		239.9874	31.32	-6.52	24.80	46.00	-21.20	peak
4		432.5457	29.20	-1.02	28.18	46.00	-17.82	peak
5		724.2611	24.85	7.29	32.14	46.00	-13.86	peak
6	*	900.1474	27.55	7.57	35.12	46.00	-10.88	peak

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	Mode 3	Polarization :	Vertical
Test Power :	DC3.3V from battery		



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		39.5757	24.82	-4.24	20.58	40.00	-19.42	peak
2		159.7844	29.54	-8.61	20.93	43.50	-22.57	peak
3		239.9874	32.13	-6.52	25.61	46.00	-20.39	peak
4		366.8231	27.72	-4.25	23.47	46.00	-22.53	peak
5		584.7895	25.10	2.11	27.21	46.00	-18.79	peak
6	*	801.7863	25.32	7.67	32.99	46.00	-13.01	peak

Test result: The unit does meet the NCC requirements.

3.2.7 TEST RESULTS (ABOVE 1000 MHZ)

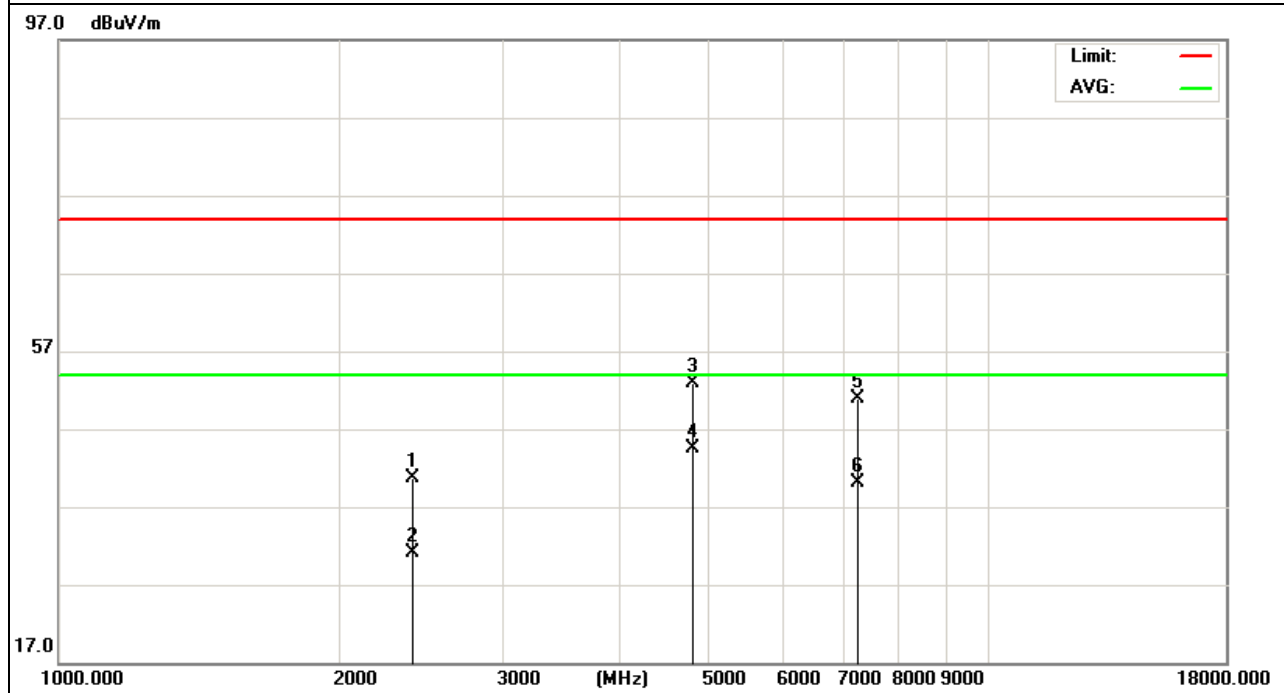
1M PHY:

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2402MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2400.000	46.32	-5.70	40.62	74.00	-33.38	peak
2400.000	36.77	-5.70	31.07	54.00	-22.93	AVG
4804.000	47.85	5.06	52.91	74.00	-21.09	peak
4804.000	39.35	5.06	44.41	54.00	-9.59	AVG
7206.000	43.84	7.03	50.87	74.00	-23.13	peak
7206.000	32.99	7.03	40.02	54.00	-13.98	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

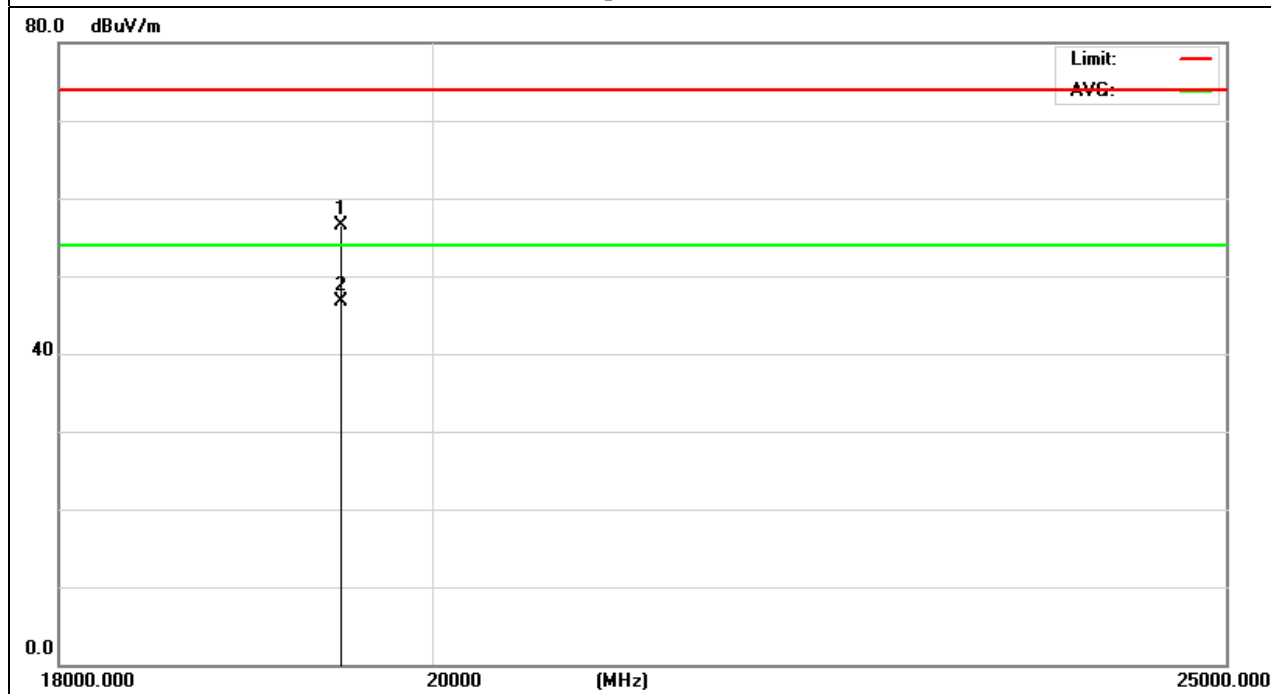


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2402MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
19486.000	39.94	16.50	56.44	74.00	-17.56	peak
19486.000	30.24	16.50	46.74	54.00	-7.26	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

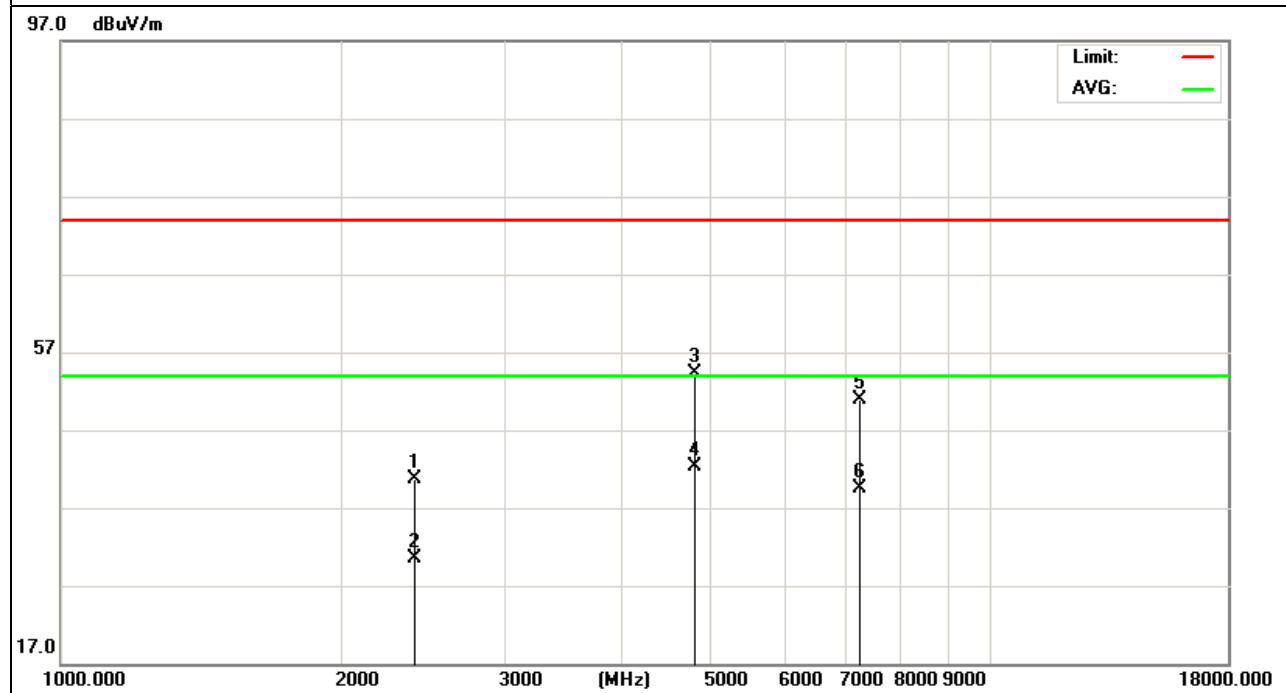


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2402MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2400.000	46.35	-5.70	40.65	74.00	-33.35	peak
2400.000	36.22	-5.70	30.52	54.00	-23.48	AVG
4804.000	49.33	5.06	54.39	74.00	-19.61	peak
4804.000	37.24	5.06	42.30	54.00	-11.70	AVG
7206.000	43.84	7.03	50.87	74.00	-23.13	peak
7206.000	32.40	7.03	39.43	54.00	-14.57	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

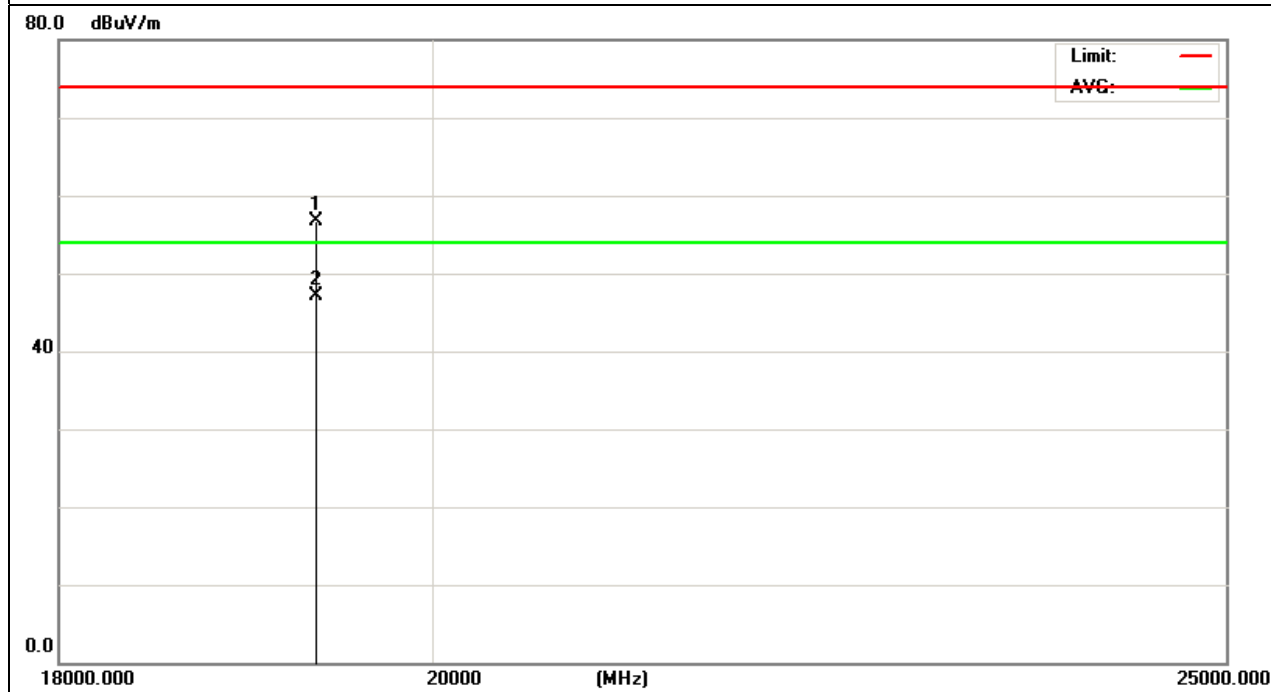


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2402MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
19357.000	40.25	16.47	56.72	74.00	-17.28	peak
19357.000	30.55	16.47	47.02	54.00	-6.98	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

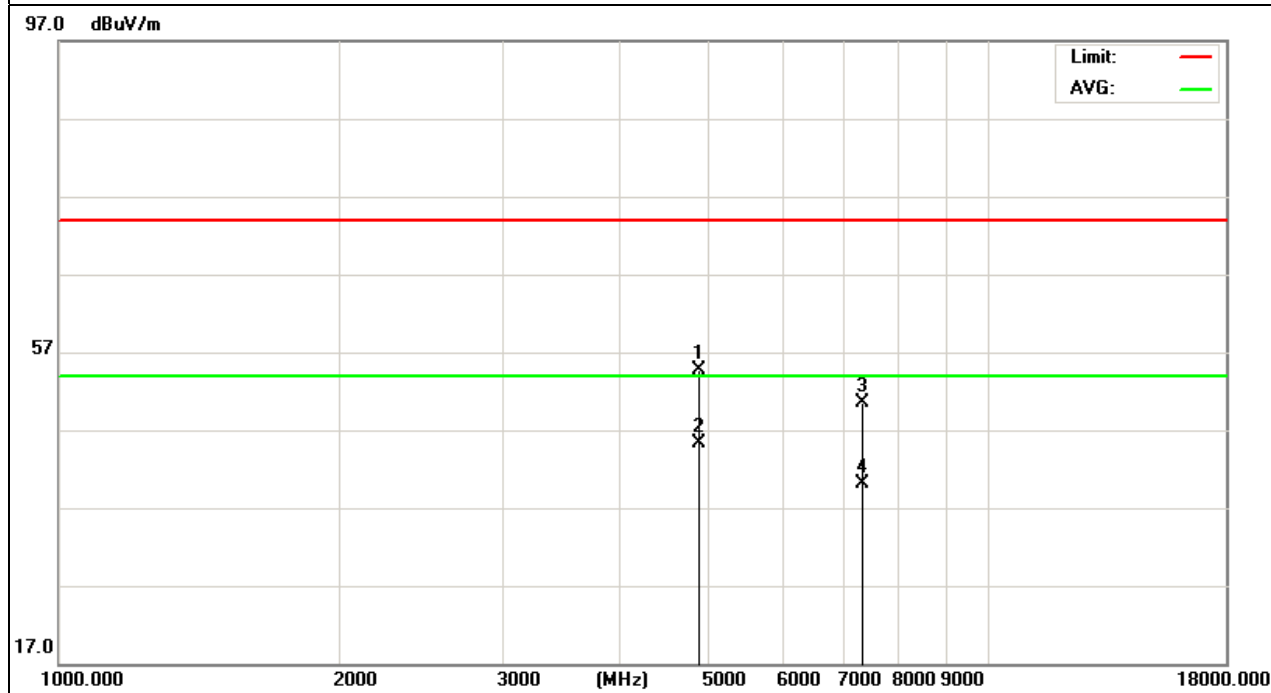


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2440MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4880.000	49.65	5.14	54.79	74.00	-19.21	peak
4880.000	40.21	5.14	45.35	54.00	-8.65	AVG
7320.000	42.97	7.52	50.49	74.00	-23.51	peak
7320.000	32.64	7.52	40.16	54.00	-13.84	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

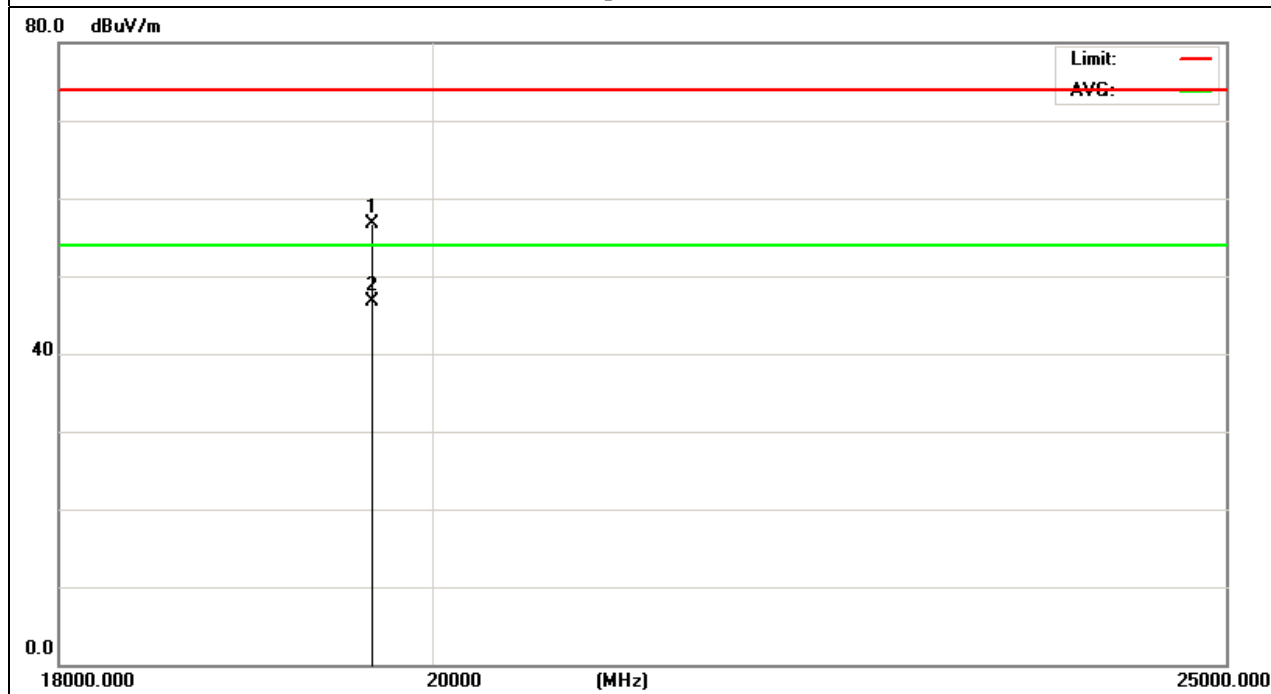


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2440MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
19662.000	40.22	16.53	56.75	74.00	-17.25	
19662.000	30.11	16.53	46.64	54.00	-7.36	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

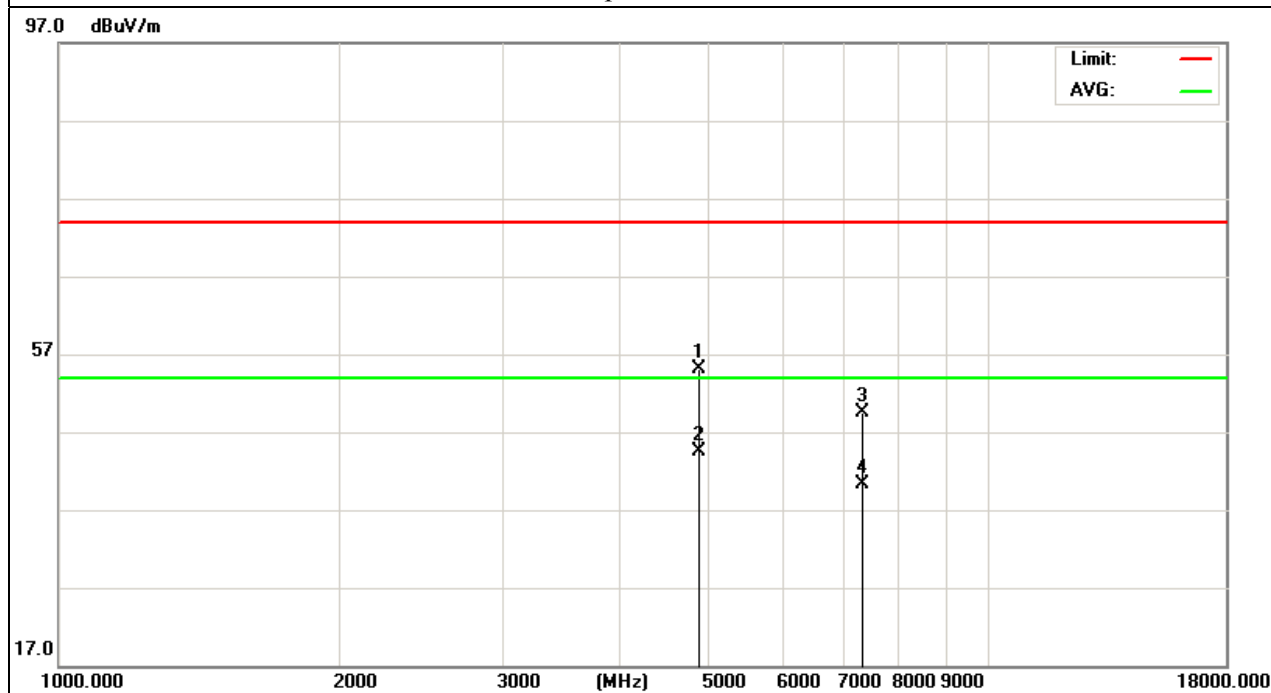


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2440MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4880.000	49.87	5.14	55.01	74.00	-18.99	peak
4880.000	39.33	5.14	44.47	54.00	-9.53	AVG
7320.000	41.90	7.52	49.42	74.00	-24.58	peak
7320.000	32.85	7.52	40.37	54.00	-13.63	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

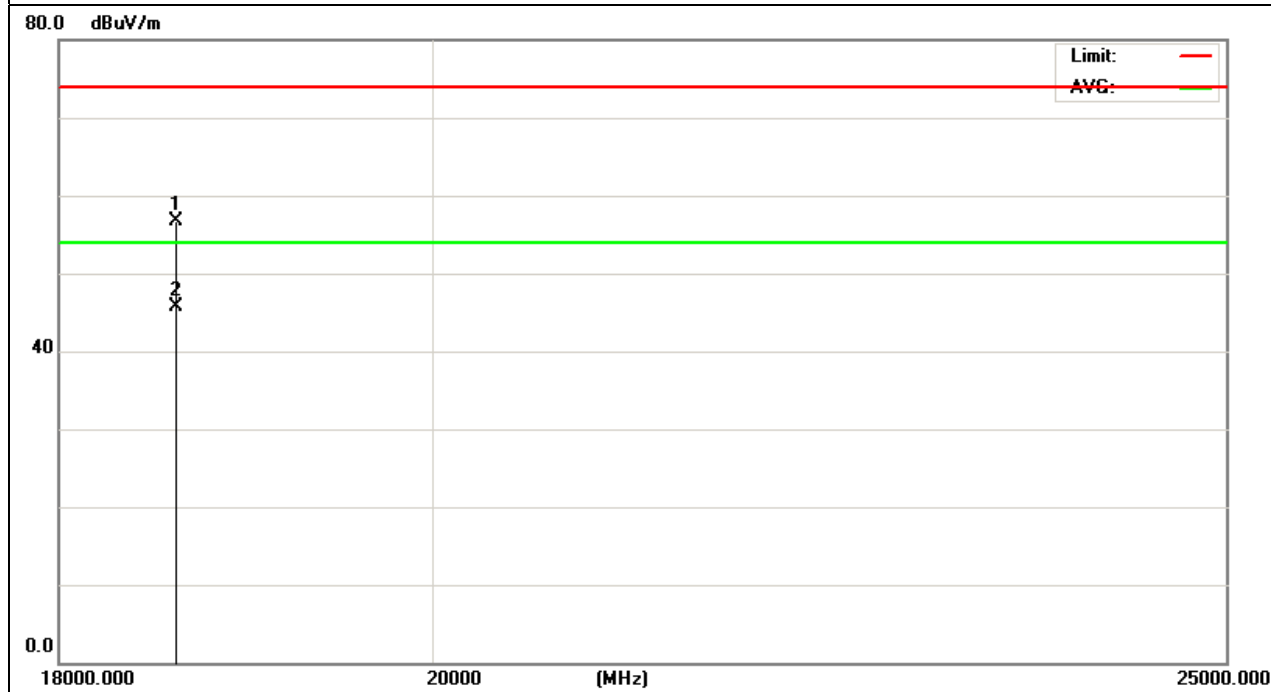


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2440MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
18597.000	40.69	16.00	56.69	74.00	-17.31	peak
18597.000	29.78	16.00	45.78	54.00	-8.22	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

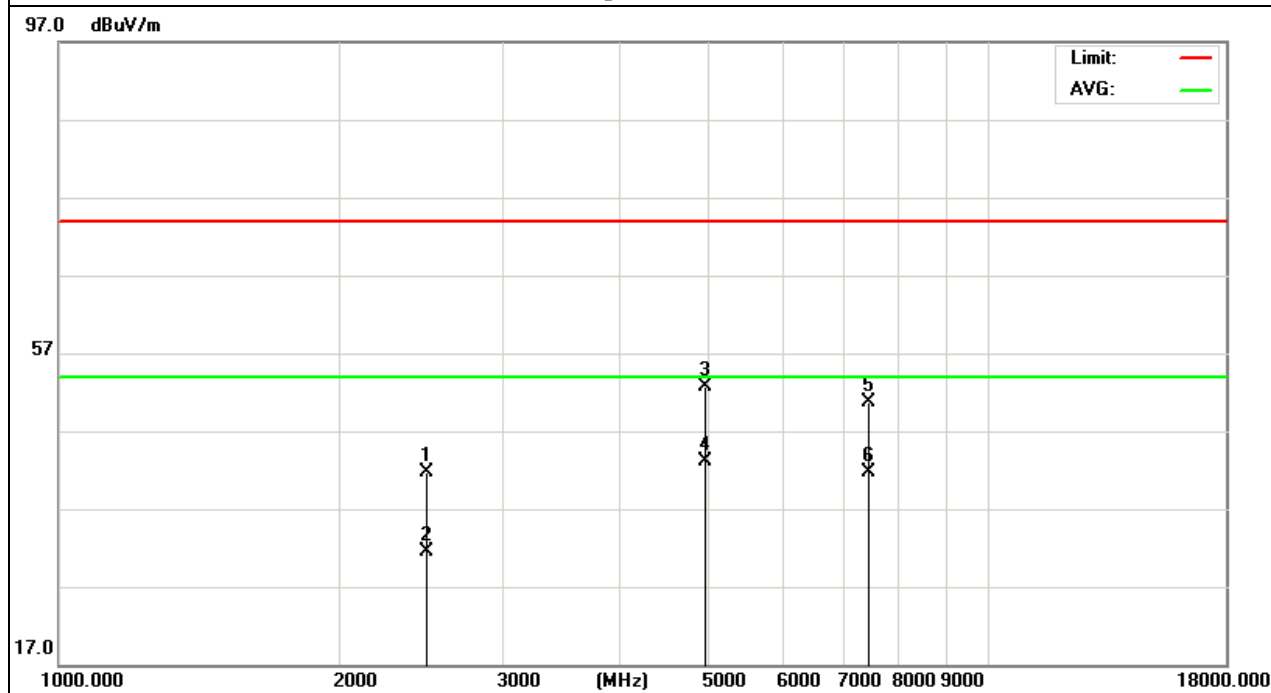


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2480MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.500	46.66	-4.98	41.68	74.00	-32.32	peak
2483.500	36.58	-4.98	31.60	54.00	-22.40	AVG
4960.000	47.52	5.22	52.74	74.00	-21.26	peak
4960.000	37.89	5.22	43.11	54.00	-10.89	AVG
7440.000	42.67	8.06	50.73	74.00	-23.27	peak
7440.000	33.58	8.06	41.64	54.00	-12.36	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2480MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
20322.000	39.82	16.67	56.49	74.00	-17.51	peak
20322.000	29.60	16.67	46.27	54.00	-7.73	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

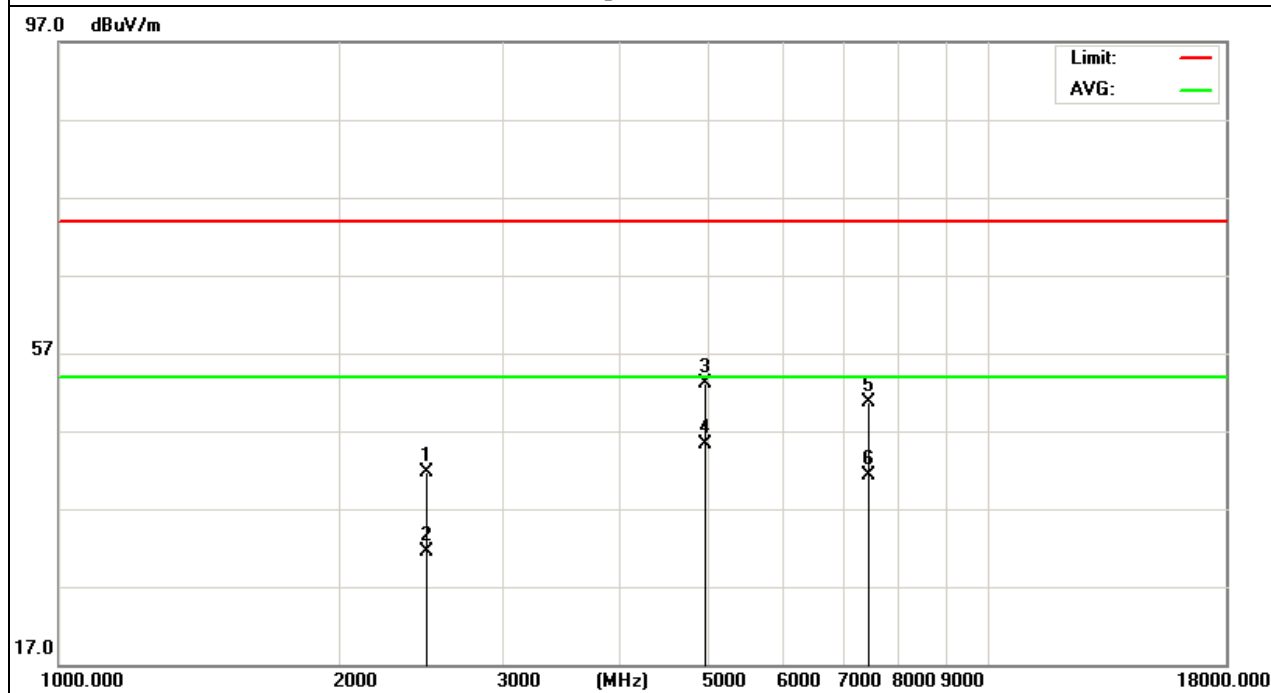


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2480MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.500	46.62	-4.98	41.64	74.00	-32.36	peak
2483.500	36.53	-4.98	31.55	54.00	-22.45	AVG
4960.000	47.98	5.22	53.20	74.00	-20.80	peak
4960.000	40.01	5.22	45.23	54.00	-8.77	AVG
7440.000	42.62	8.06	50.68	74.00	-23.32	peak
7440.000	33.23	8.06	41.29	54.00	-12.71	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

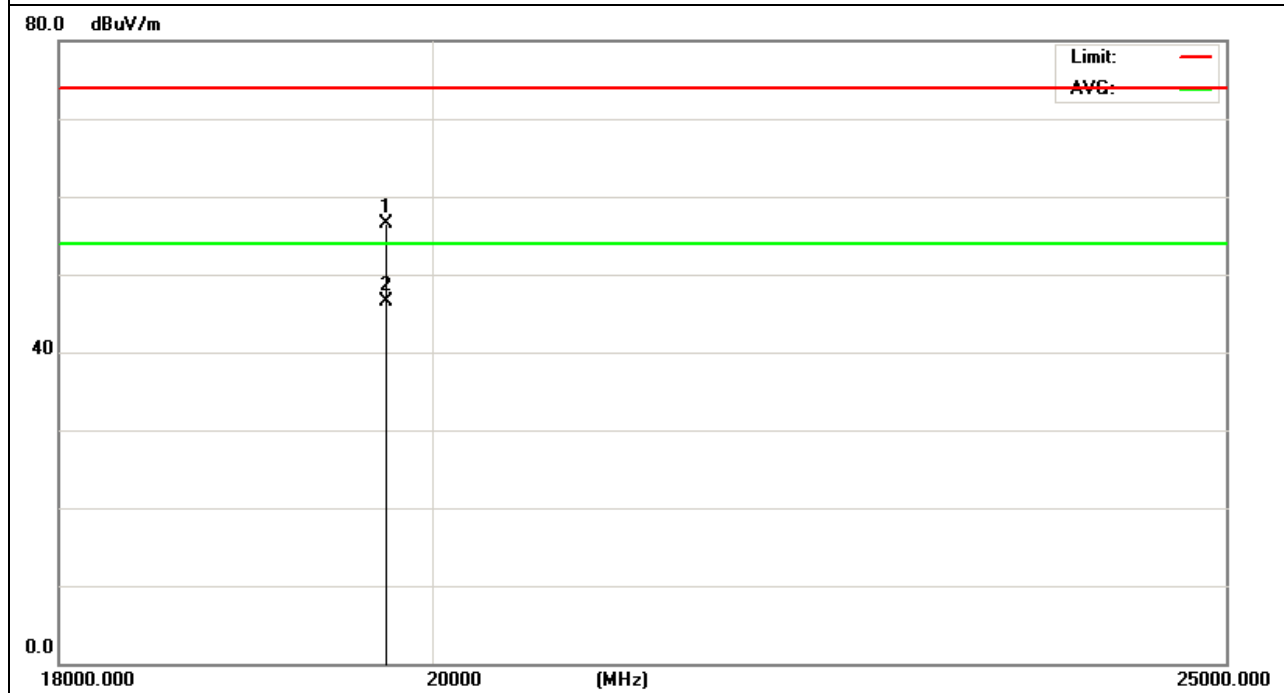


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2480MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
19743.000	40.02	16.55	56.57	74.00	-17.43	peak
19743.000	29.88	16.55	46.43	54.00	-7.57	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Remark:

All the modes had been tested, but only the worst data recorded in the report.

No any other emissions detected which are tested to compliance with the limit. No recording in the test report.

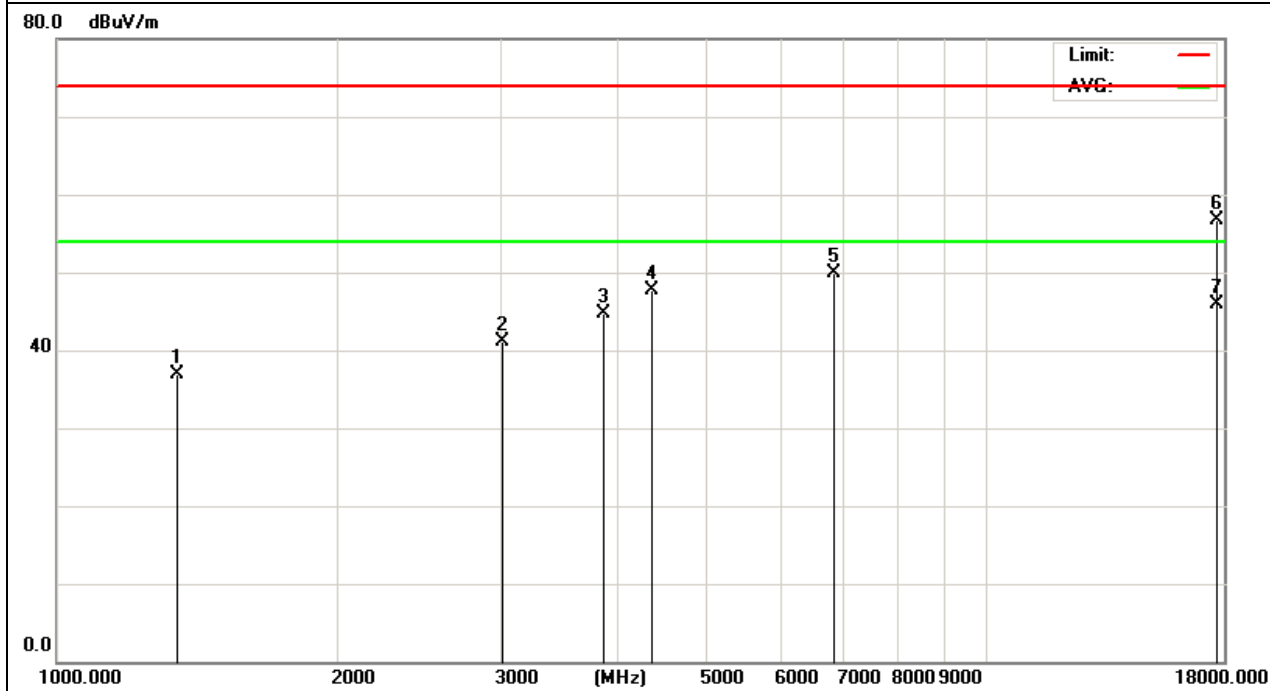
Test result: The unit does meet the NCC requirements.

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	RX (worst case)	Polarization :	Vertical
Measurement Distance	3 m	Frenqucy Range	1GHz to 18GHz
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1345.323	47.25	-10.30	36.95	74.00	-37.05	peak
3015.219	42.69	-1.65	41.04	74.00	-32.96	peak
3866.641	41.88	2.86	44.74	74.00	-29.26	peak
4366.978	43.21	4.46	47.67	74.00	-26.33	peak
6842.311	43.76	6.08	49.84	74.00	-24.16	peak
17690.208	31.88	24.89	56.77	74.00	-17.23	peak
17690.208	21.00	24.89	45.89	54.00	-8.11	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

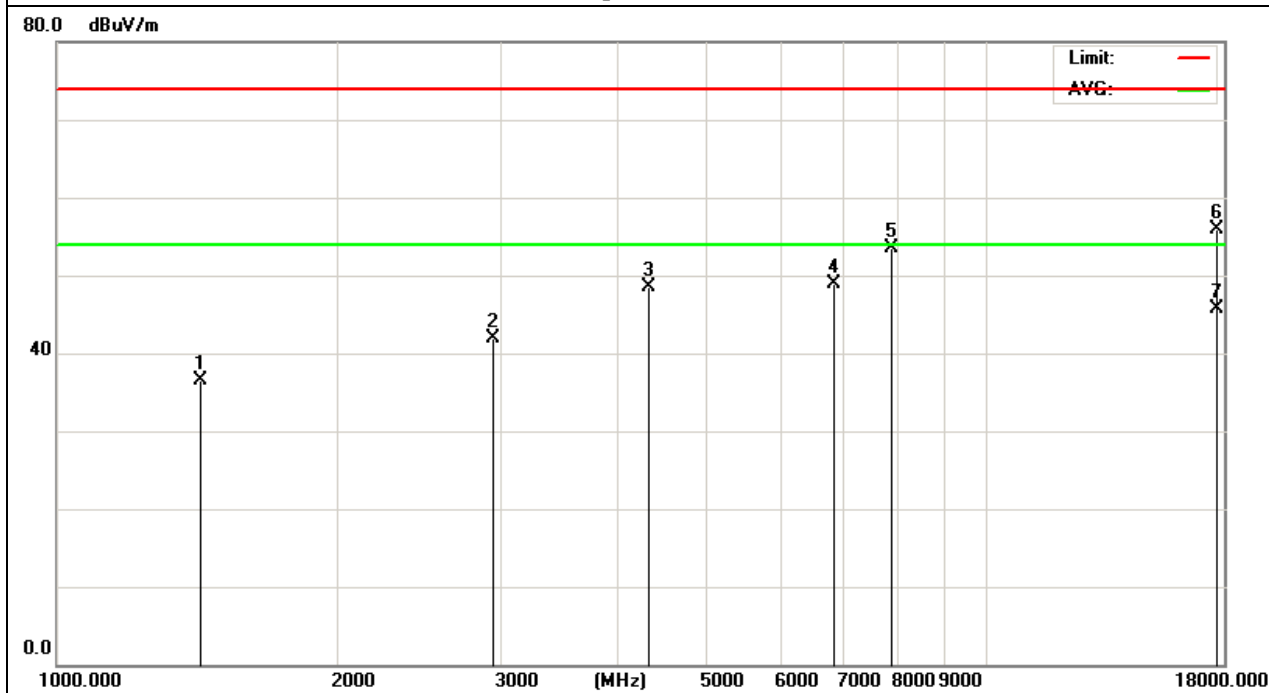


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	RX (worst case)	Polarization :	Horizontal
Measurement Distance	3 m	Frenquency Range	1GHz to 18GHz
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1423.394	46.74	-10.21	36.53	74.00	-37.47	peak
2946.384	43.89	-2.05	41.84	74.00	-32.16	peak
4320.119	44.22	4.38	48.60	74.00	-25.40	peak
6842.489	42.87	6.08	48.95	74.00	-25.05	peak
7890.224	43.68	9.92	53.60	74.00	-20.40	peak
17660.951	30.95	24.92	55.87	74.00	-18.13	peak
17660.951	20.87	24.92	45.79	54.00	-8.21	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

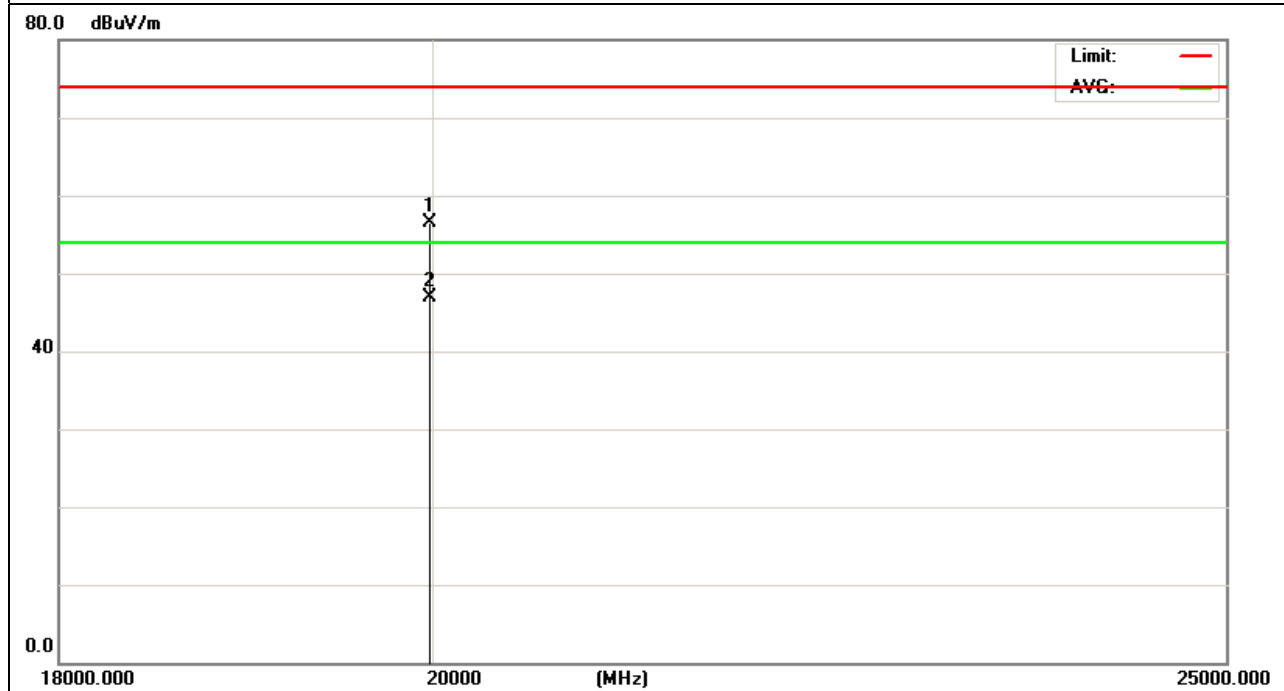


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	RX (worst case)	Polarization :	Vertical
Measurement Distance	3 m	Frenqucy Range	18GHz to 25GHz
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
19988.000	39.89	16.59	56.48	74.00	-17.52	peak
19988.000	30.22	16.59	46.81	54.00	-7.19	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

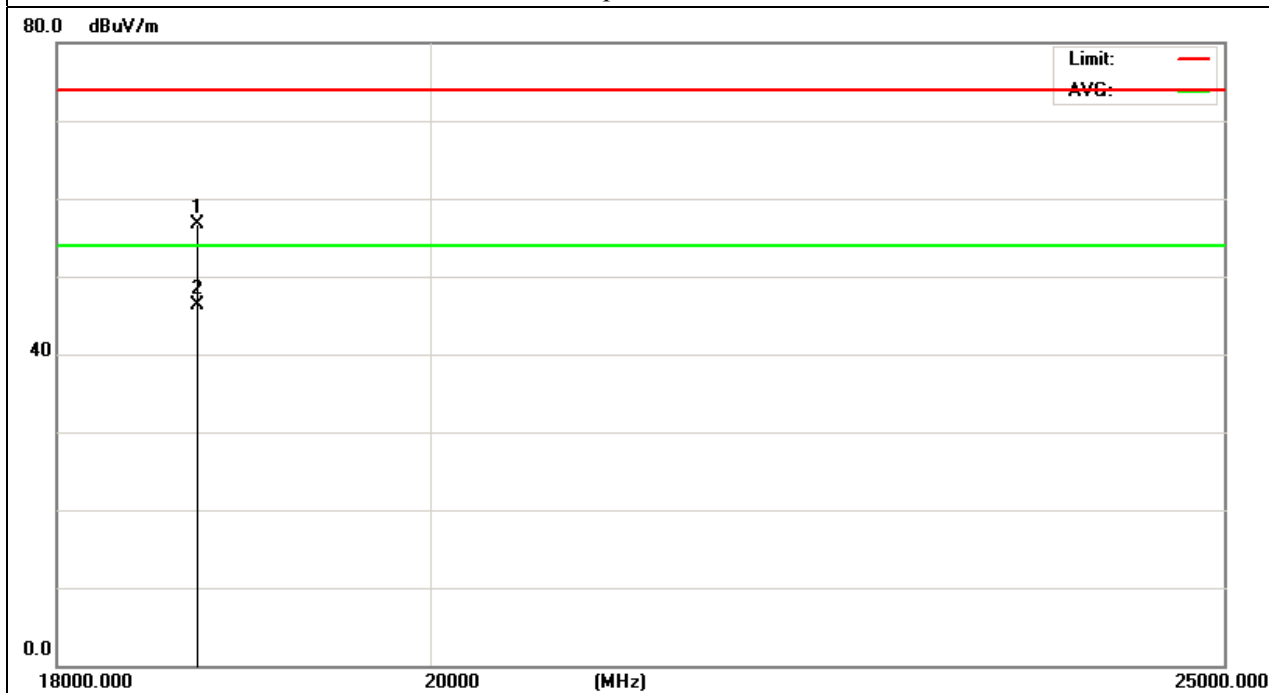


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	RX (worst case)	Polarization :	Horizontal
Measurement Distance	3 m	Frenqucy Range	18GHz to 25GHz
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
18733.000	40.58	16.13	56.71	74.00	-17.29	peak
18733.000	30.23	16.13	46.36	54.00	-7.64	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



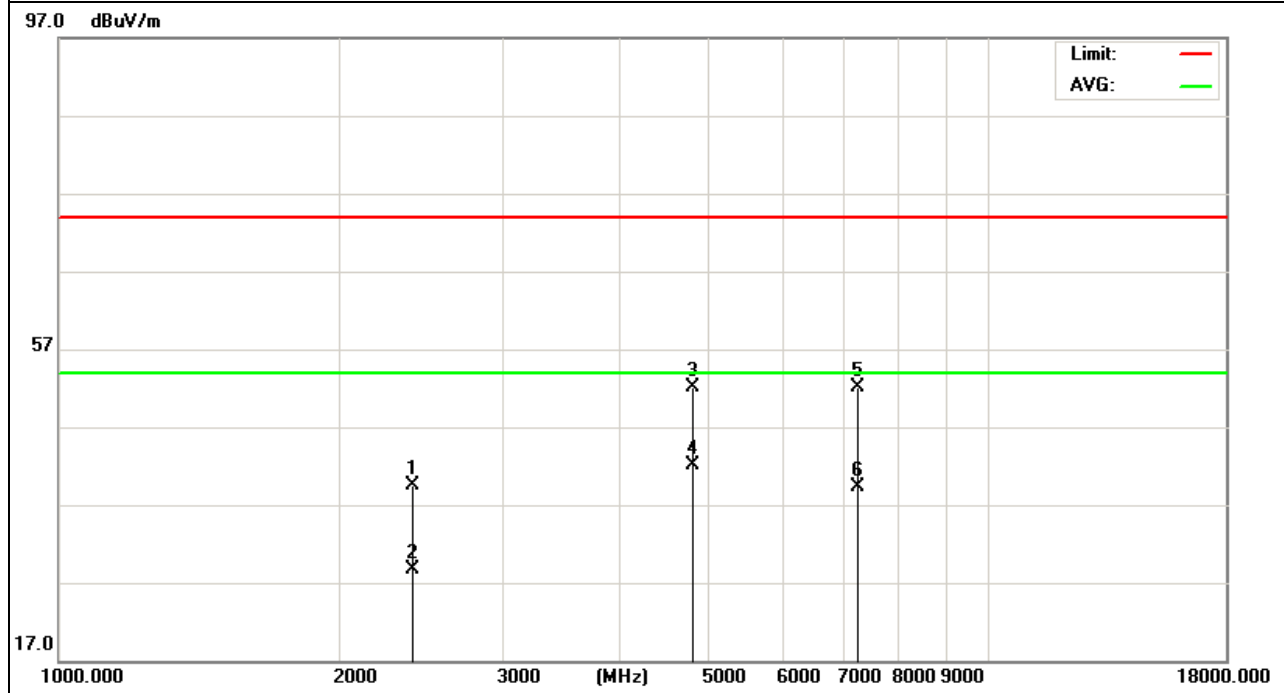
2MPHY:

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2402MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2400.000	45.12	-5.70	39.42	74.00	-34.58	peak
2400.000	34.50	-5.70	28.80	54.00	-25.20	AVG
4804.000	46.96	5.06	52.02	74.00	-21.98	peak
4804.000	37.02	5.06	42.08	54.00	-11.92	AVG
7206.000	45.05	7.03	52.08	74.00	-21.92	peak
7206.000	32.33	7.03	39.36	54.00	-14.64	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

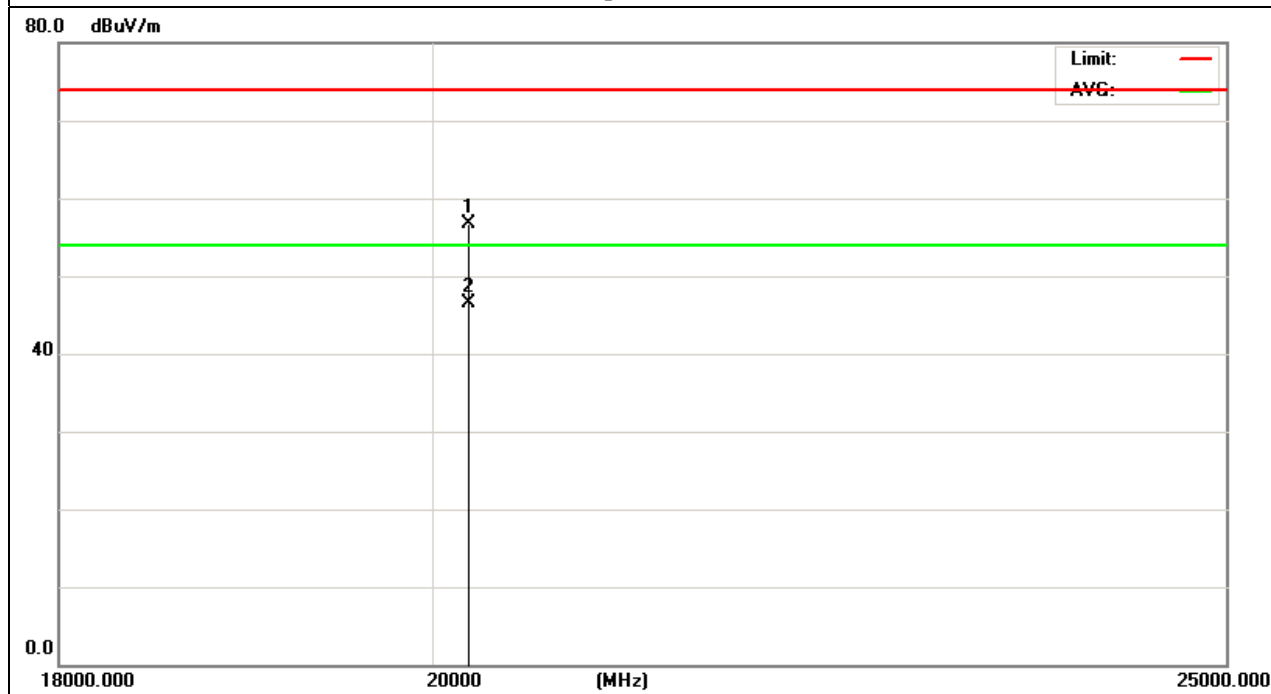


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2402MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
20202.000	40.02	16.64	56.66	74.00	-17.34	
20202.000	29.88	16.64	46.52	54.00	-7.48	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

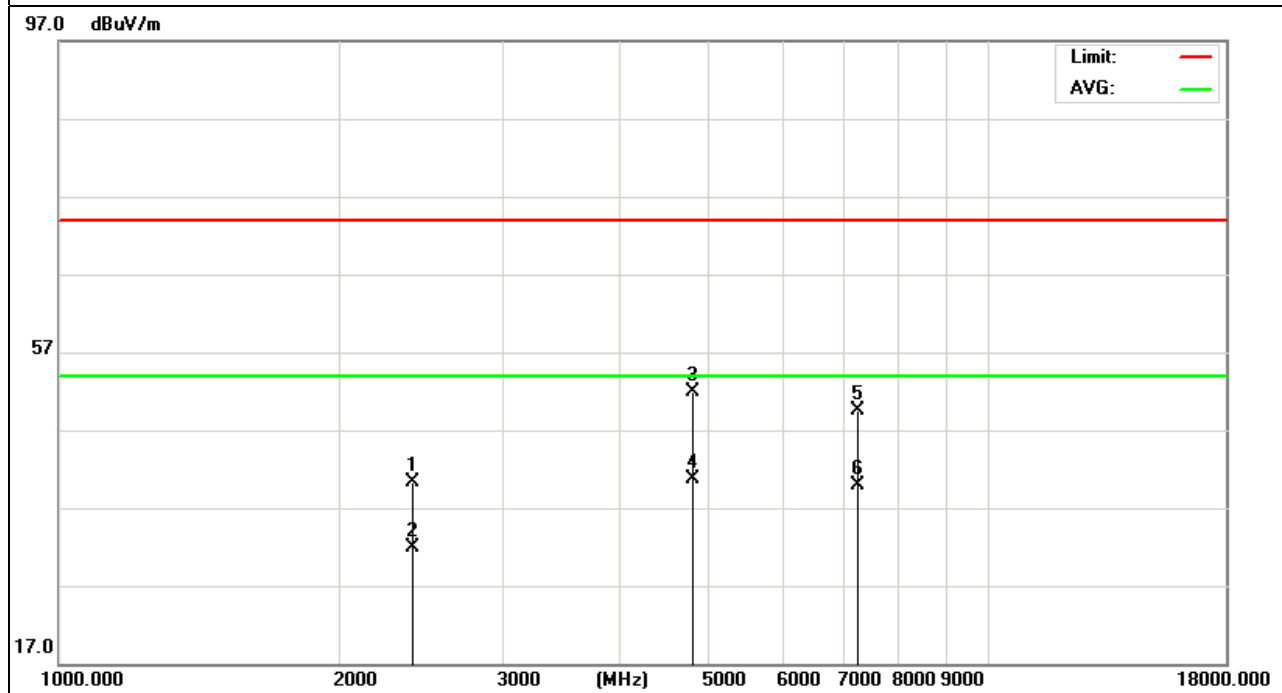


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2402MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2400.000	46.02	-5.70	40.32	74.00	-33.68	peak
2400.000	37.55	-5.70	31.85	54.00	-22.15	AVG
4804.000	46.86	5.06	51.92	74.00	-22.08	peak
4804.000	35.67	5.06	40.73	54.00	-13.27	AVG
7206.000	42.55	7.03	49.58	74.00	-24.42	peak
7206.000	32.88	7.03	39.91	54.00	-14.09	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

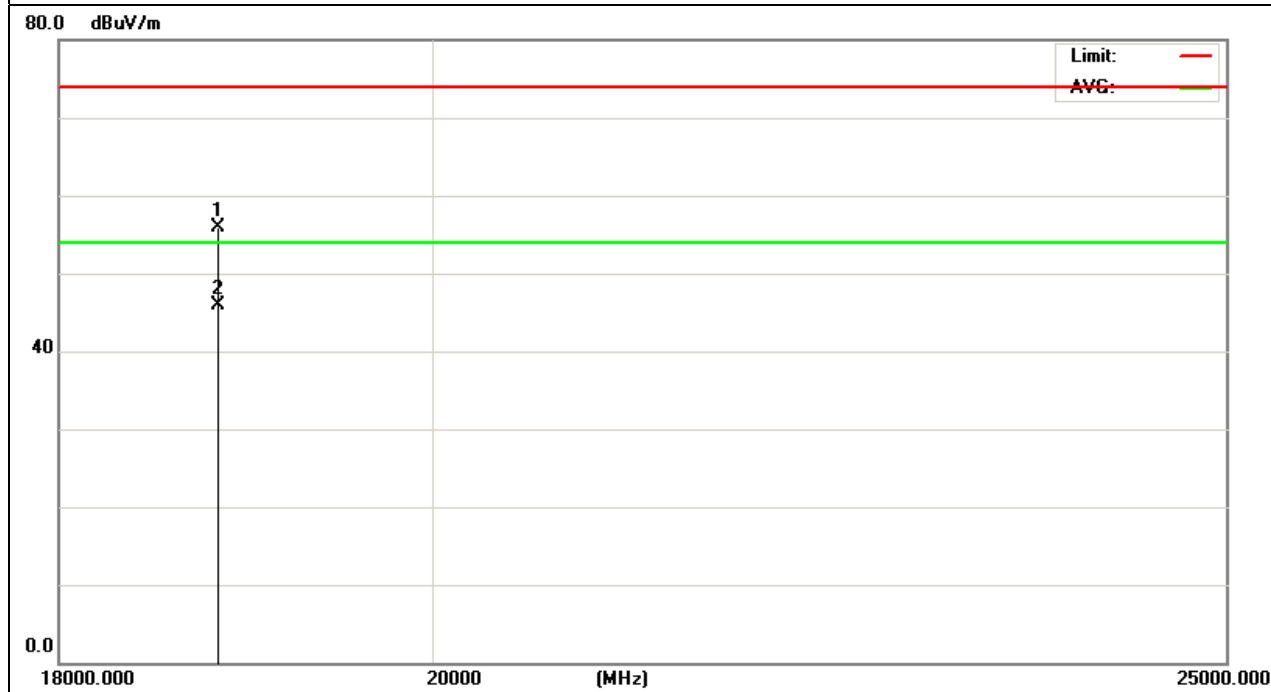


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2402MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
18833.000	39.69	16.24	55.93	74.00	-18.07	peak
18833.000	29.68	16.24	45.92	54.00	-8.08	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

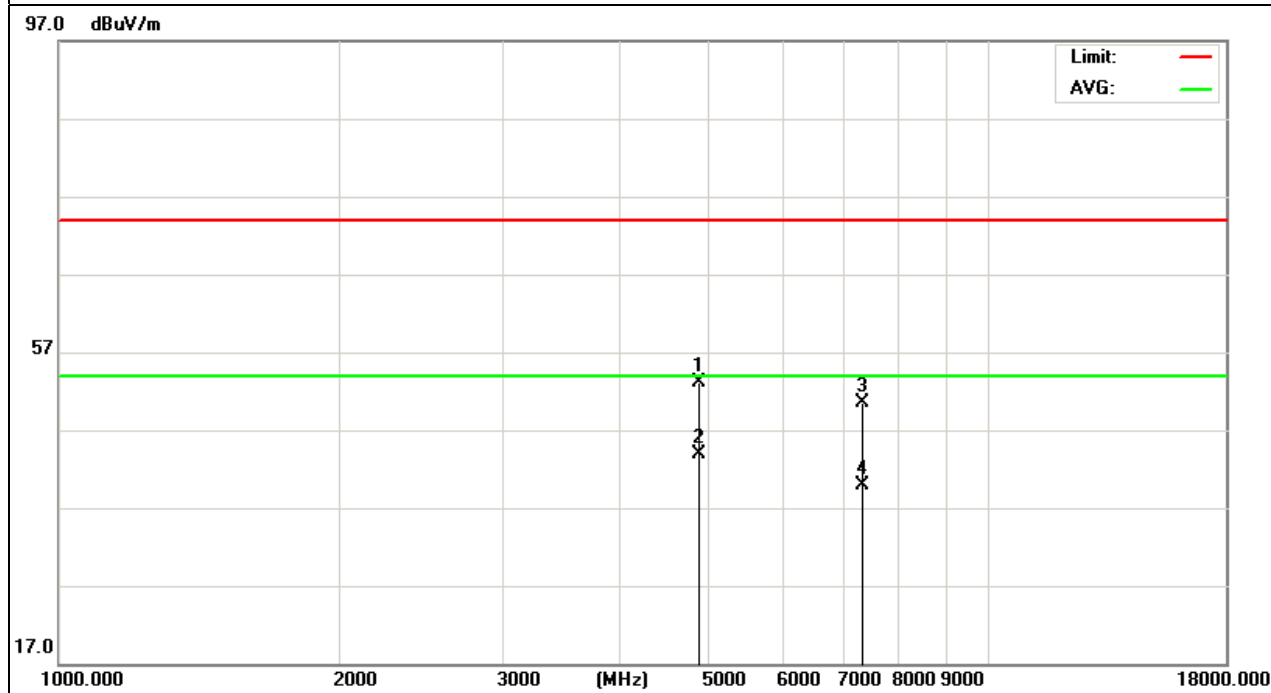


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2440MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4880.000	47.89	5.14	53.03	74.00	-20.97	peak
4880.000	38.69	5.14	43.83	54.00	-10.17	AVG
7320.000	43.02	7.52	50.54	74.00	-23.46	peak
7320.000	32.41	7.52	39.93	54.00	-14.07	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

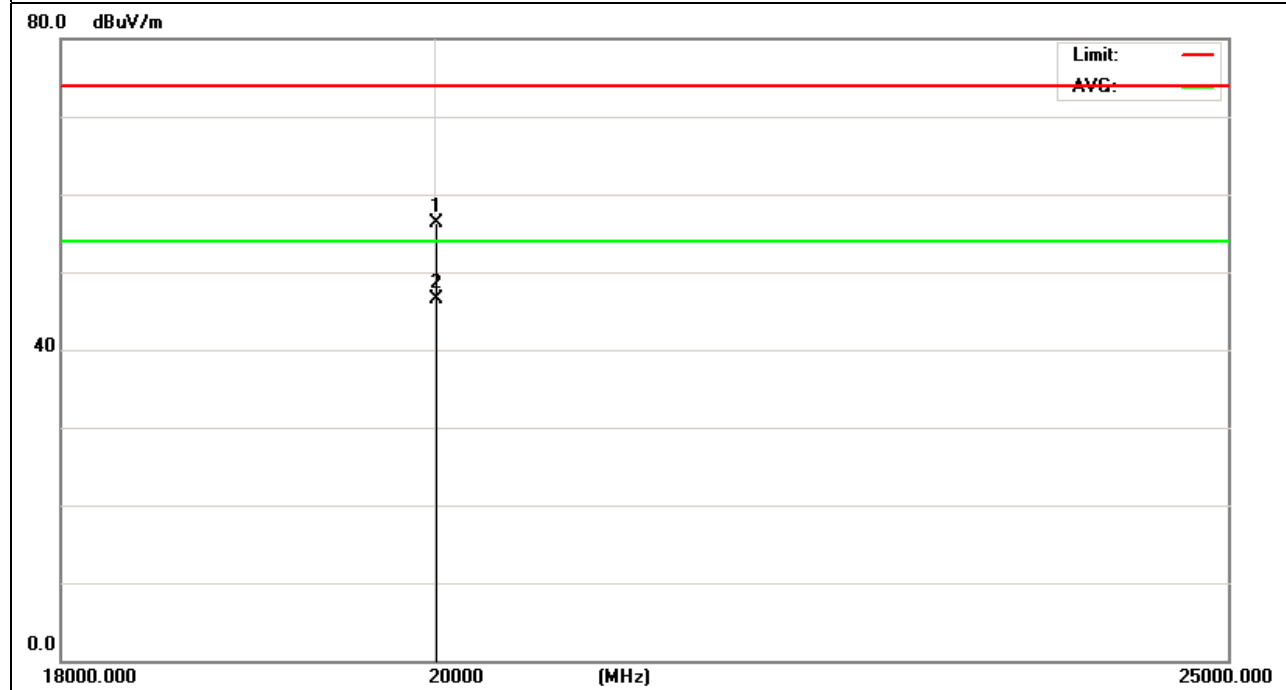


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2440MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
20008.000	39.78	16.61	56.39	74.00	-17.61	peak
20008.000	29.94	16.61	46.55	54.00	-7.45	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

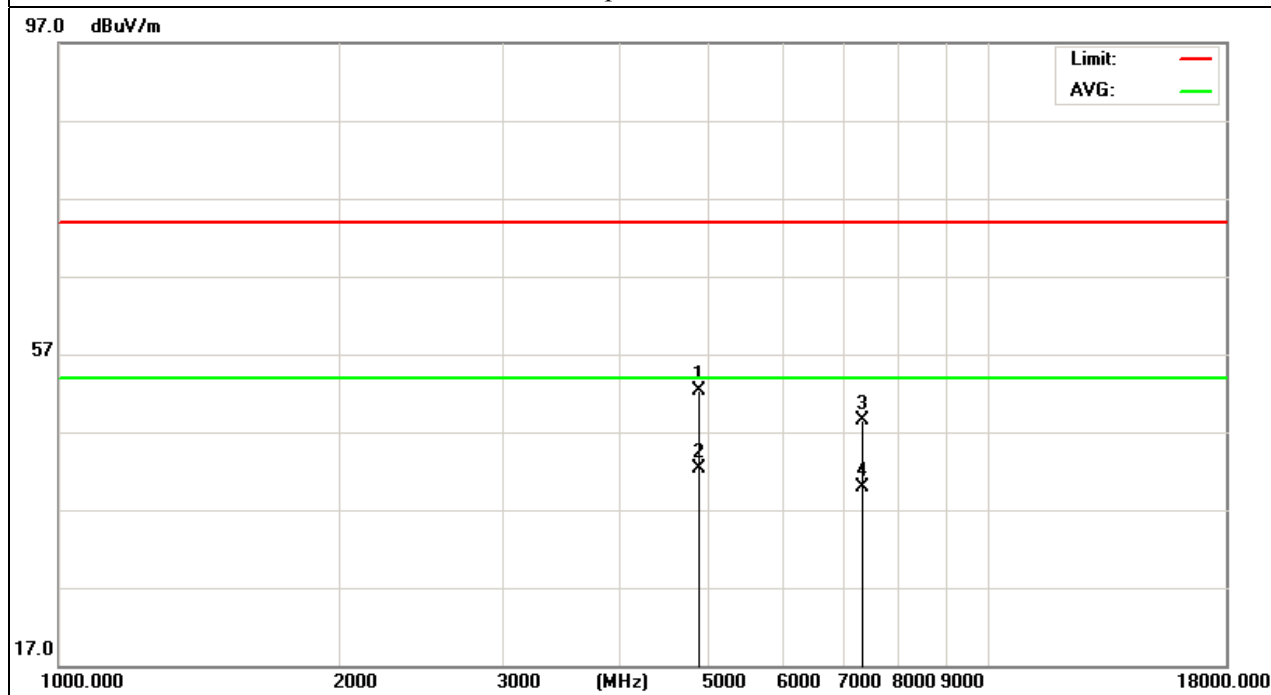


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2440MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4880.000	47.22	5.14	52.36	74.00	-21.64	peak
4880.000	37.23	5.14	42.37	54.00	-11.63	AVG
7320.000	41.02	7.52	48.54	74.00	-25.46	peak
7320.000	32.48	7.52	40.00	54.00	-14.00	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

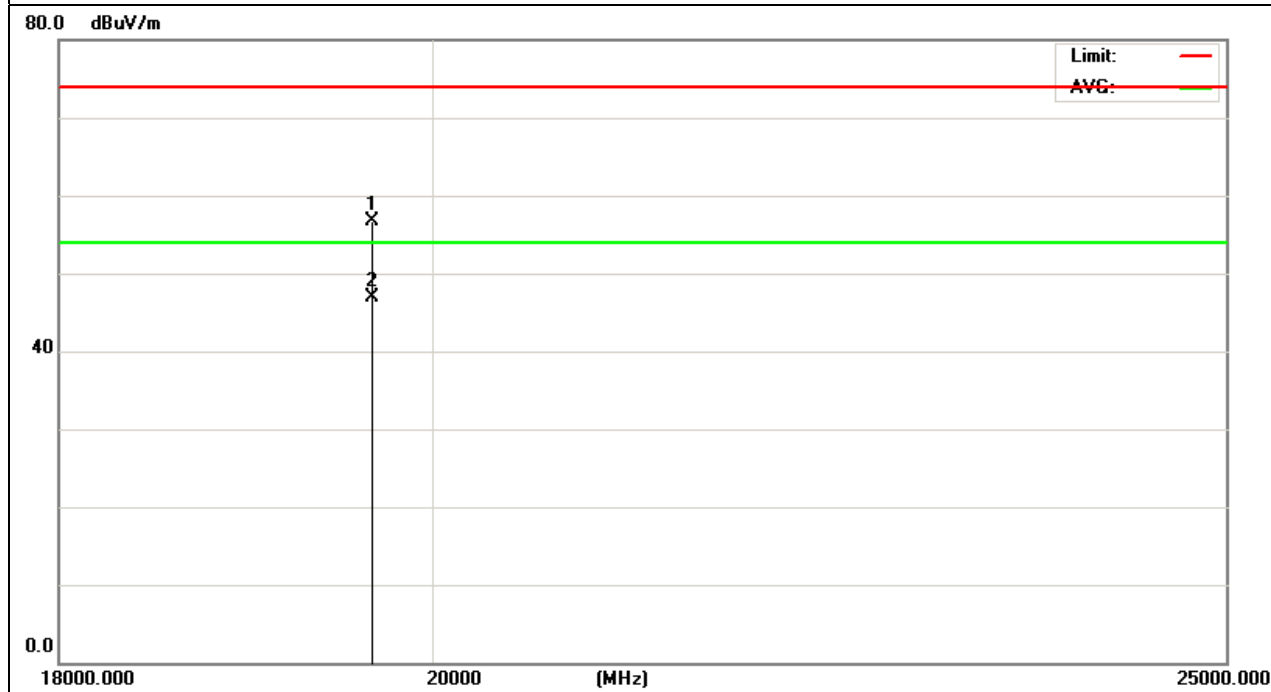


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2440MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
19662.000	40.15	16.53	56.68	74.00	-17.32	peak
19662.000	30.37	16.53	46.90	54.00	-7.10	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

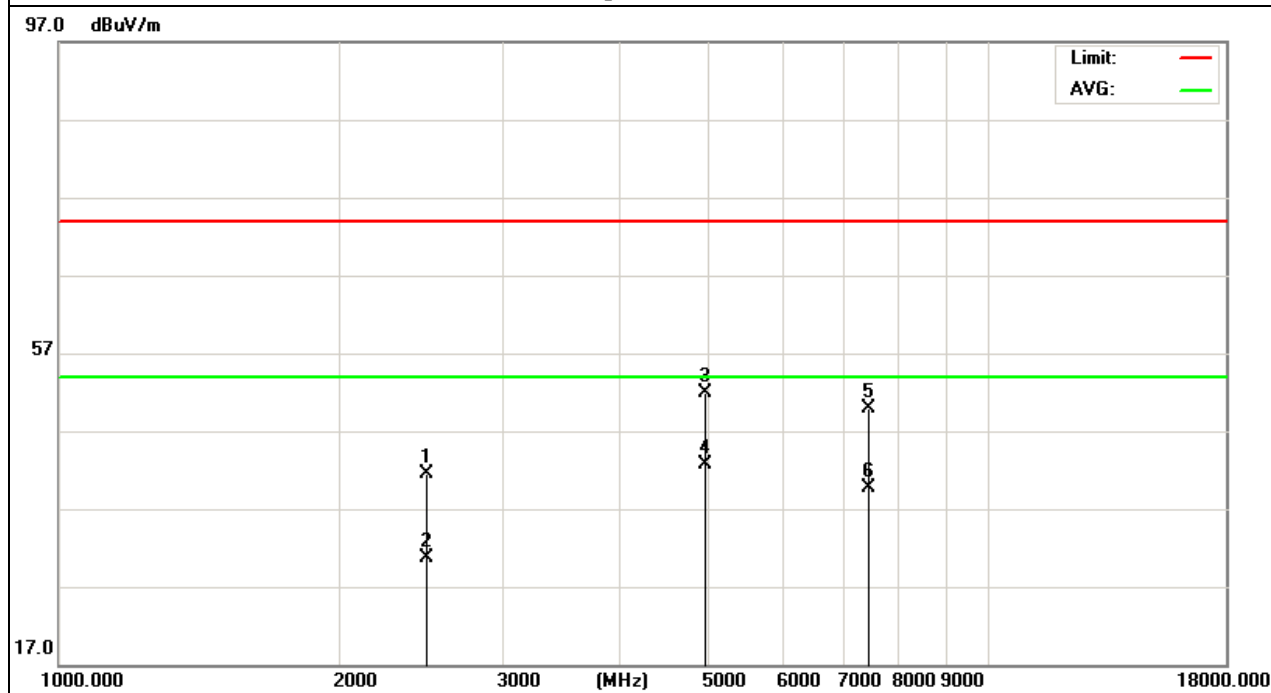


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2480MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.500	46.48	-4.98	41.50	74.00	-32.50	peak
2483.500	35.74	-4.98	30.76	54.00	-23.24	AVG
4960.000	46.66	5.22	51.88	74.00	-22.12	peak
4960.000	37.51	5.22	42.73	54.00	-11.27	AVG
7440.000	41.80	8.06	49.86	74.00	-24.14	peak
7440.000	31.66	8.06	39.72	54.00	-14.28	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

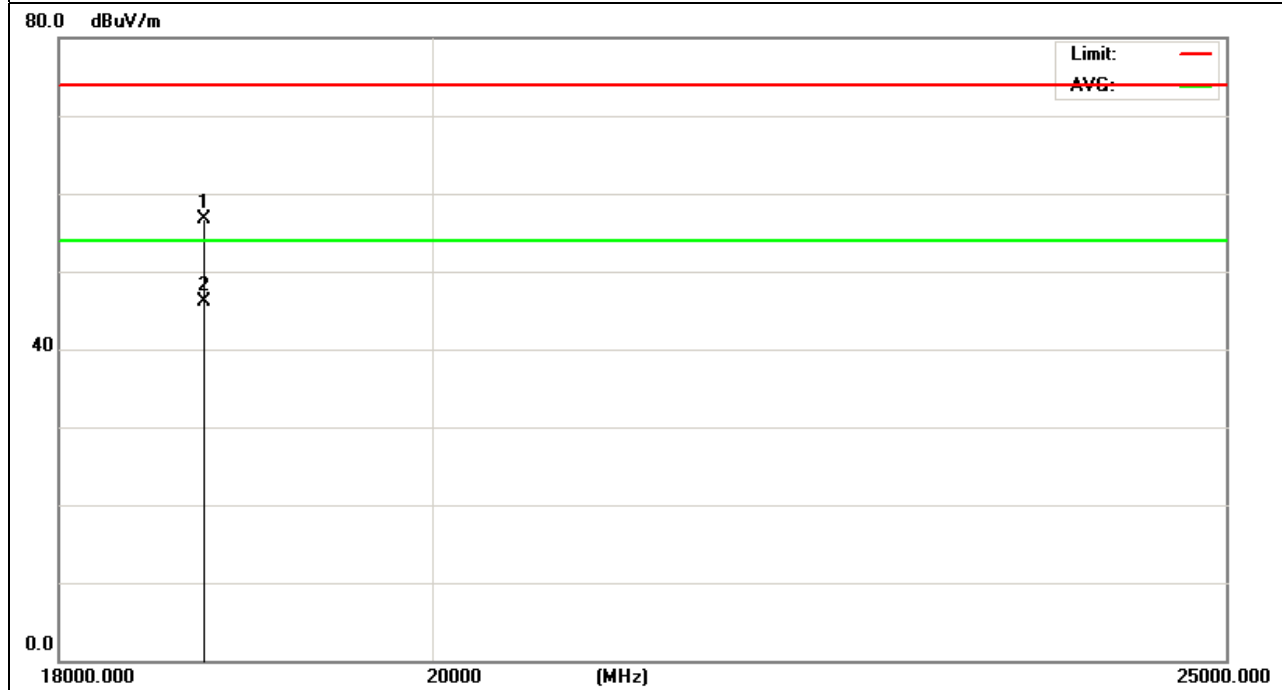


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2480MHz)	Polarization :	Vertical
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
18749.000	40.56	16.15	56.71	74.00	-17.29	peak
18749.000	29.91	16.15	46.06	54.00	-7.94	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

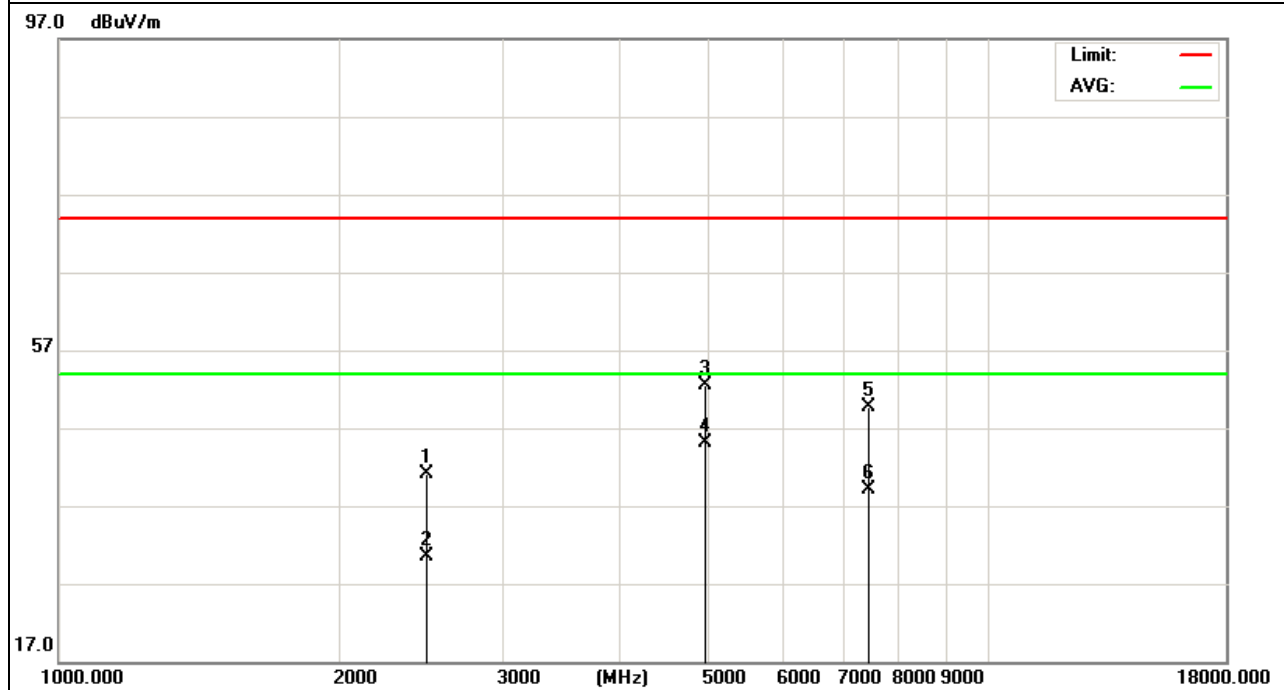


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2480MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.500	46.12	-4.98	41.14	74.00	-32.86	peak
2483.500	35.57	-4.98	30.59	54.00	-23.41	AVG
4960.000	47.34	5.22	52.56	74.00	-21.44	peak
4960.000	39.82	5.22	45.04	54.00	-8.96	AVG
7440.000	41.62	8.06	49.68	74.00	-24.32	peak
7440.000	30.99	8.06	39.05	54.00	-14.95	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

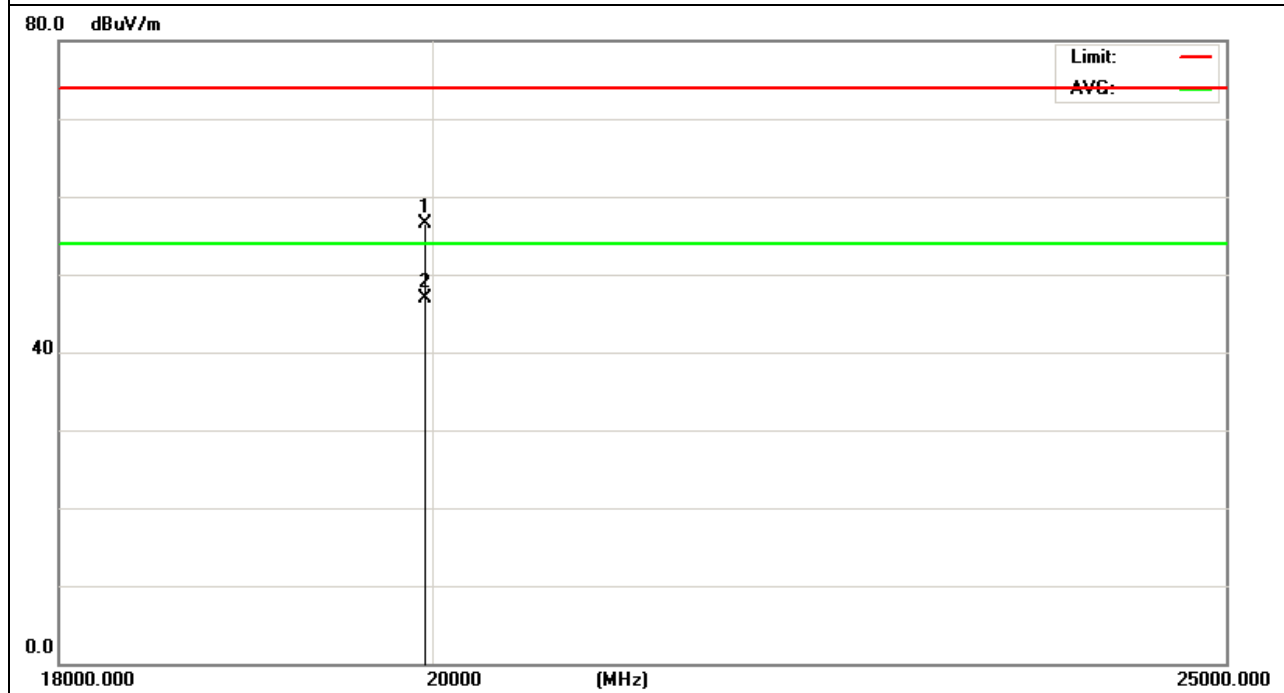


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	TX Mode1(2480MHz)	Polarization :	Horizontal
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
19958.000	39.89	16.59	56.48	74.00	-17.52	peak
19958.000	30.32	16.59	46.91	54.00	-7.09	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Remark:

All the modes had been tested, but only the worst data recorded in the report.

No any other emissions detected which are tested to compliance with the limit. No recording in the test report.

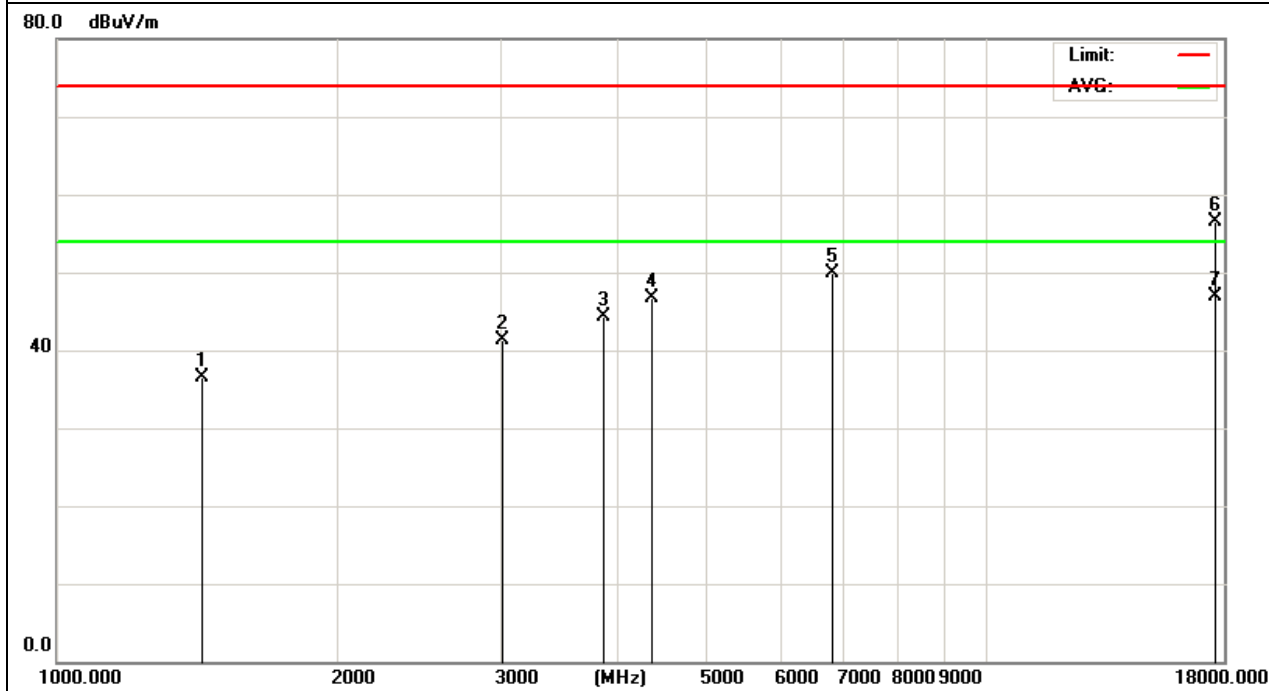
Test result: The unit does meet the NCC requirements.

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	RX (worst case)	Polarization :	Vertical
Measurement Distance	3 m	Frenqucy Range	1GHz to 18GHz
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1434.258	46.56	-10.15	36.41	74.00	-37.59	peak
3010.884	43.02	-1.65	41.37	74.00	-32.63	peak
3865.648	41.54	2.85	44.39	74.00	-29.61	peak
4357.611	42.26	4.45	46.71	74.00	-27.29	peak
6833.254	43.84	6.08	49.92	74.00	-24.08	peak
17593.331	31.45	24.97	56.42	74.00	-17.58	peak
17593.331	21.84	24.97	46.81	54.00	-7.19	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

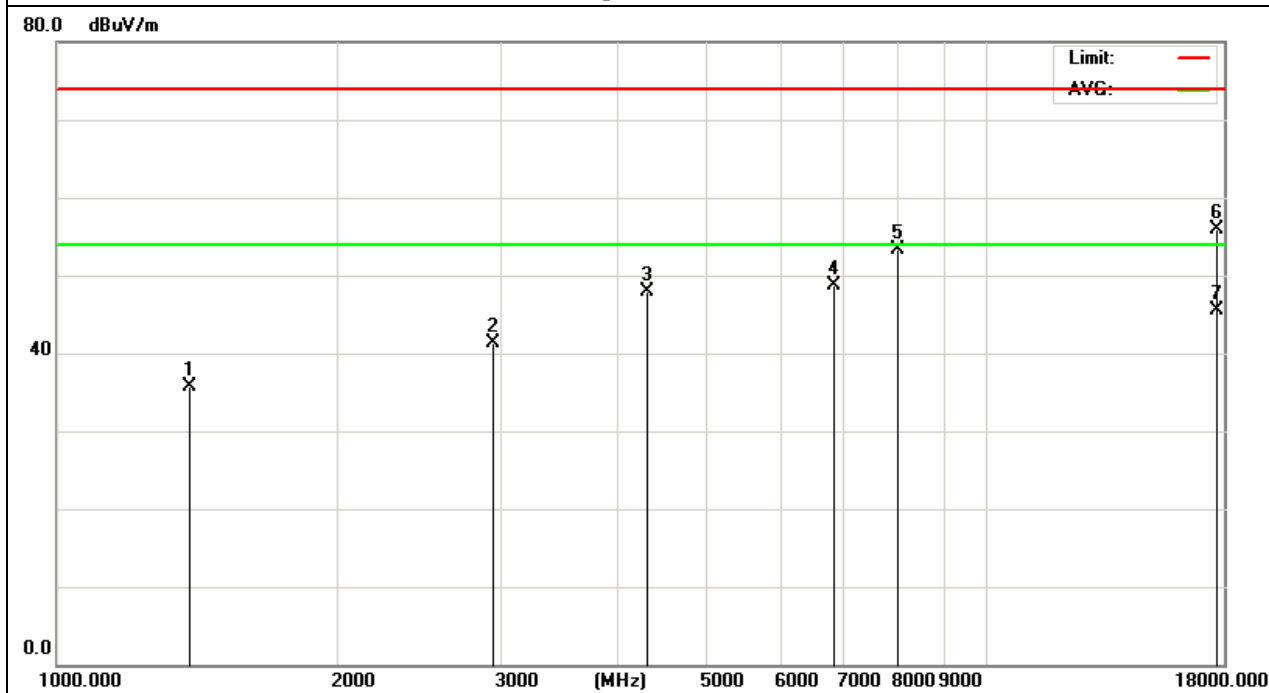


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	RX (worst case)	Polarization :	Horizontal
Measurement Distance	3 m	Frenquency Range	1GHz to 18GHz
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1388.669	45.99	-10.31	35.68	74.00	-38.32	peak
2945.621	43.34	-2.06	41.28	74.00	-32.72	peak
4311.320	43.51	4.36	47.87	74.00	-26.13	peak
6842.501	42.69	6.08	48.77	74.00	-25.23	peak
7993.394	42.87	10.35	53.22	74.00	-20.78	peak
17686.159	31.01	24.90	55.91	74.00	-18.09	peak
17686.159	20.64	24.90	45.54	54.00	-8.46	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

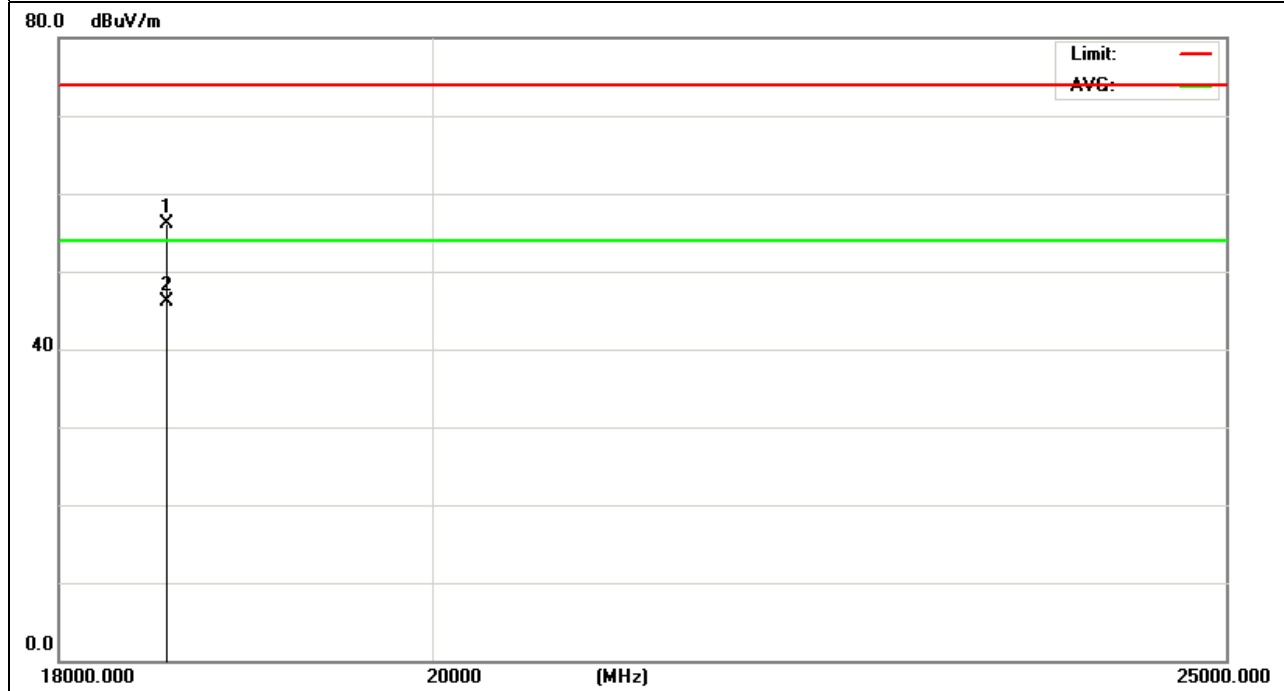


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	RX (worst case)	Polarization :	Vertical
Measurement Distance	3 m	Frenqucy Range	18GHz to 25GHz
Test Power :	DC3.3V from battery		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
18548.000	40.25	15.95	56.20	74.00	-17.80	
18548.000	30.12	15.95	46.07	54.00	-7.93	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

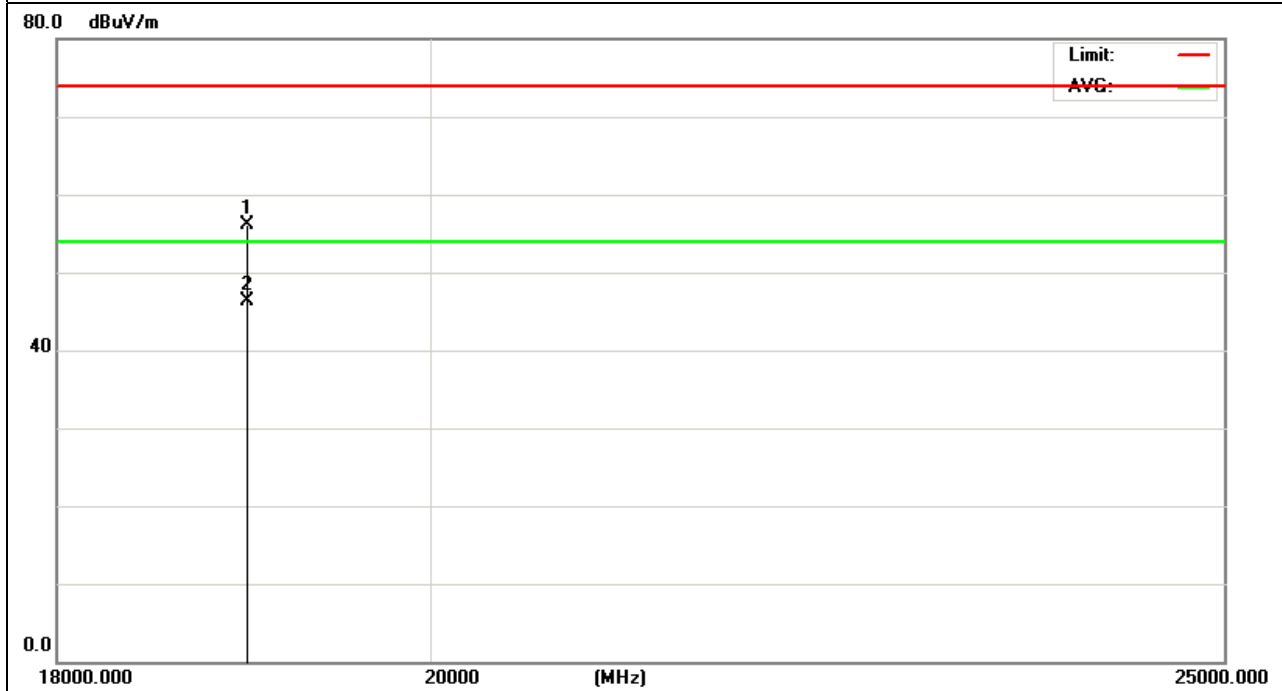


EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2020-11-24
Test Mode :	RX (worst case)	Polarization :	Horizontal
Measurement Distance	3 m	Frenqucy Range	18GHz to 25GHz
Test Power :	DC3.3V from battery		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
18994.000	39.78	16.40	56.18	74.00	-17.82	peak
18994.000	29.87	16.40	46.27	54.00	-7.73	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Remark:

All the modes had been tested, but only the worst data recorded in the report.

No any other emissions detected which are tested to compliance with the limit. No recording in the test report.

Test result: The unit does meet the NCC requirements.

3.2.8 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Test Data	2020-11-24
Pressure :	1010 hPa	Relative Humidity :	54%
Test Mode :	Mode 1	Test Voltage :	DC3.3V from battery
Note :	1. The transmitter was setup to transmit at the lowest channel. Then the field strength was measured at 2310-2390 MHz. 2. The transmitter was setup to transmit at the highest channel. Then the field strength was measured at 2483.5-2500 MHz. 3. The data of 2390MHz and 2483.5MHz was the worst.		

1M PHY:

Test Mode	Ant.Pol. H/V	Freq. (MHz)	Reading		Ant/CF CF(dB)	Act		Limit	
			Peak (dBuv)	AV (dBuv)		Peak (dBuv/m)	AV (dBuv/m)	Peak (dBuv/m)	AV (dBuv/m)
Mode 1	V	2390.00	47.52	--	-5.79	41.73	--	74.00	54.00
	H	2390.00	47.96	--	-5.79	42.17	--	74.00	54.00
	V	2483.50	51.85	--	-4.98	46.87	--	74.00	54.00
	H	2483.50	52.43	--	-4.98	47.45	--	74.00	54.00

2M PHY:

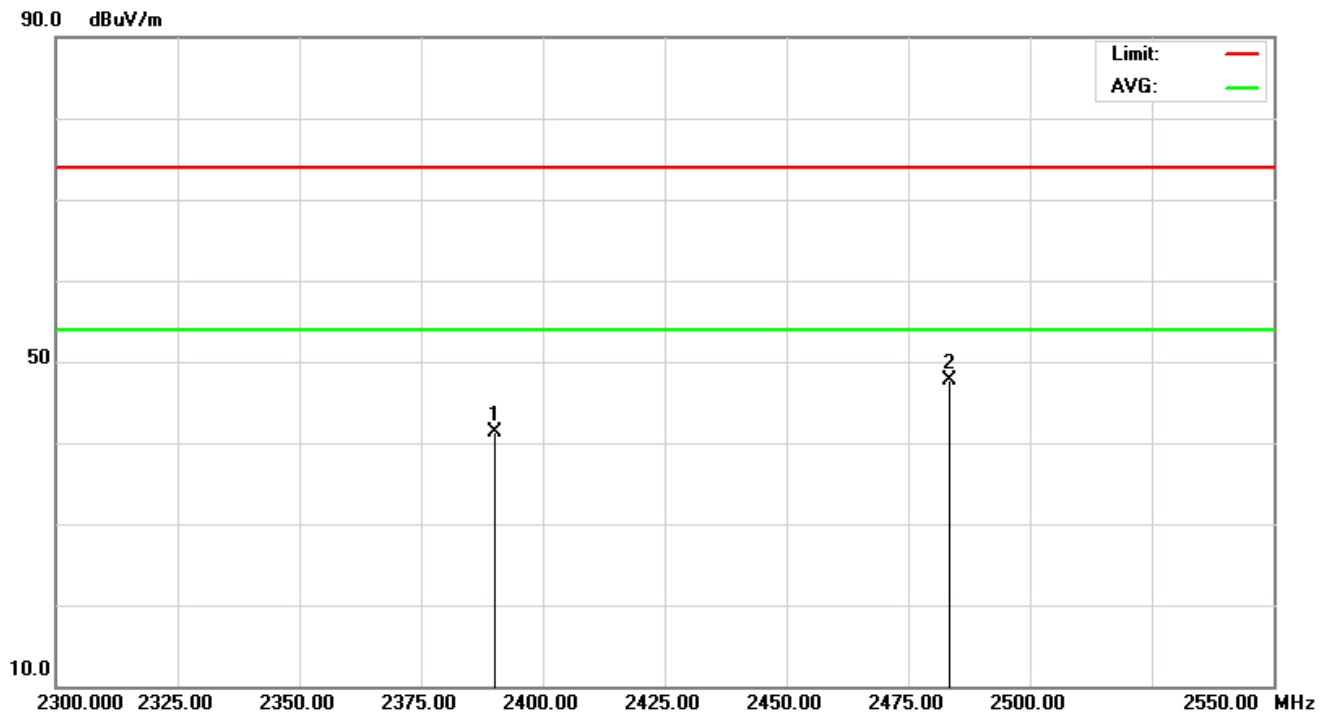
Test Mode	Ant.Pol. H/V	Freq. (MHz)	Reading		Ant/CF CF(dB)	Act		Limit	
			Peak (dBuv)	AV (dBuv)		Peak (dBuv/m)	AV (dBuv/m)	Peak (dBuv/m)	AV (dBuv/m)
Mode 1	V	2390.00	47.41	--	-5.79	41.62	--	74.00	54.00
	H	2390.00	47.85	--	-5.79	42.06	--	74.00	54.00
	V	2483.50	51.74	--	-4.98	46.76	--	74.00	54.00
	H	2483.50	52.32	--	-4.98	47.34	--	74.00	54.00

Remark :

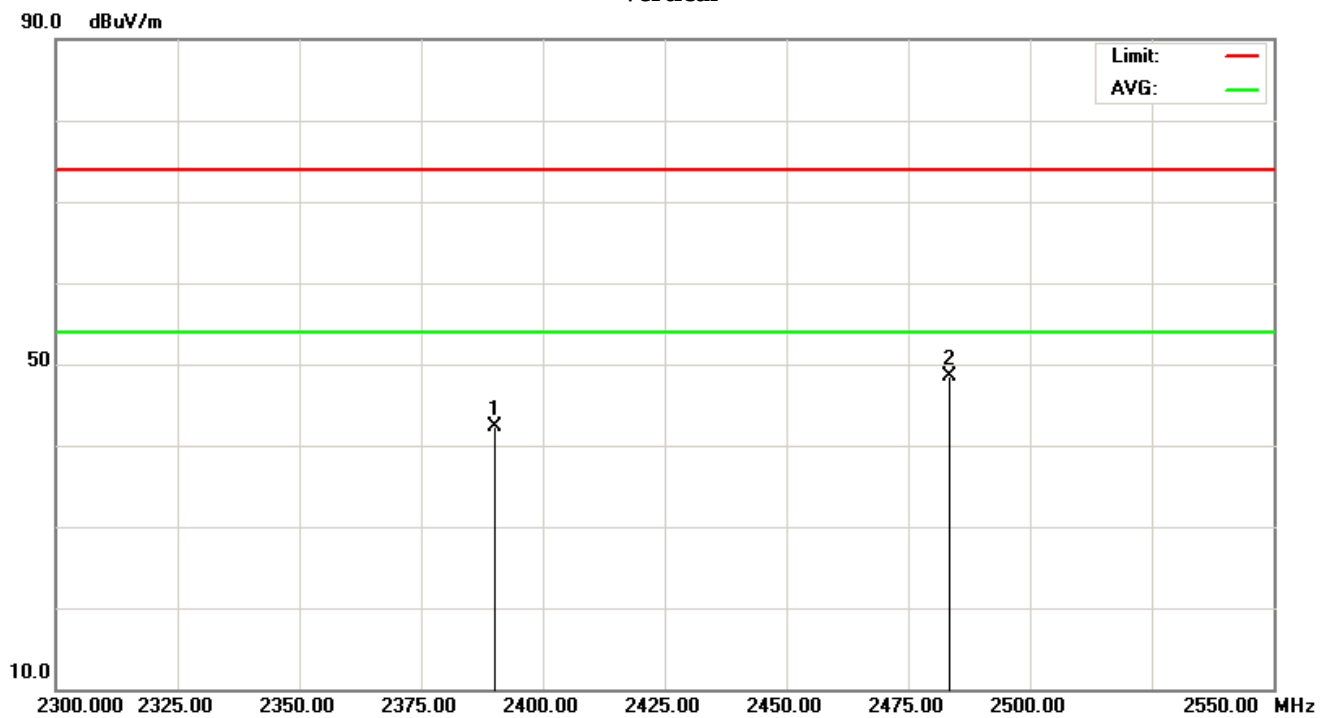
- (1) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode
- (2) EUT Orthogonal Axis :
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (3) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (4) Corr.Factor = Antenna Factor + Cable Loss – Pre-amplifier.

1M PHY:

Horizontal

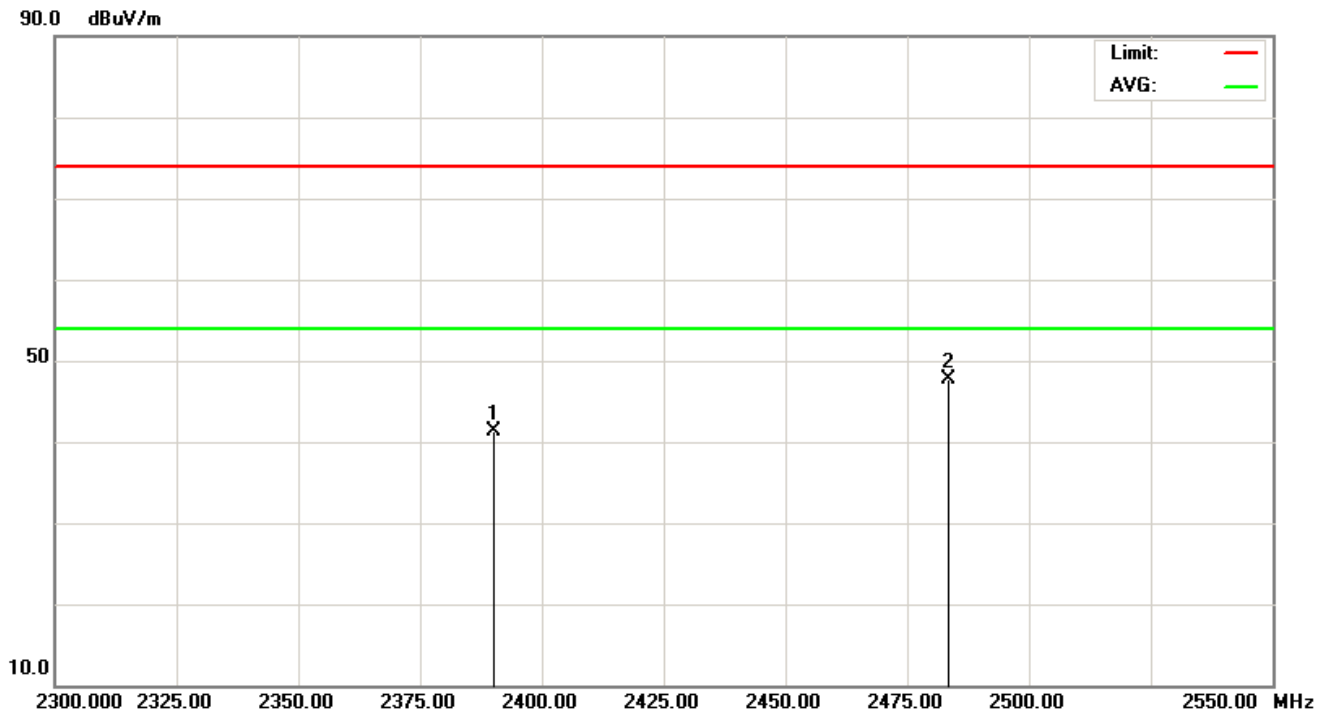


Vertical

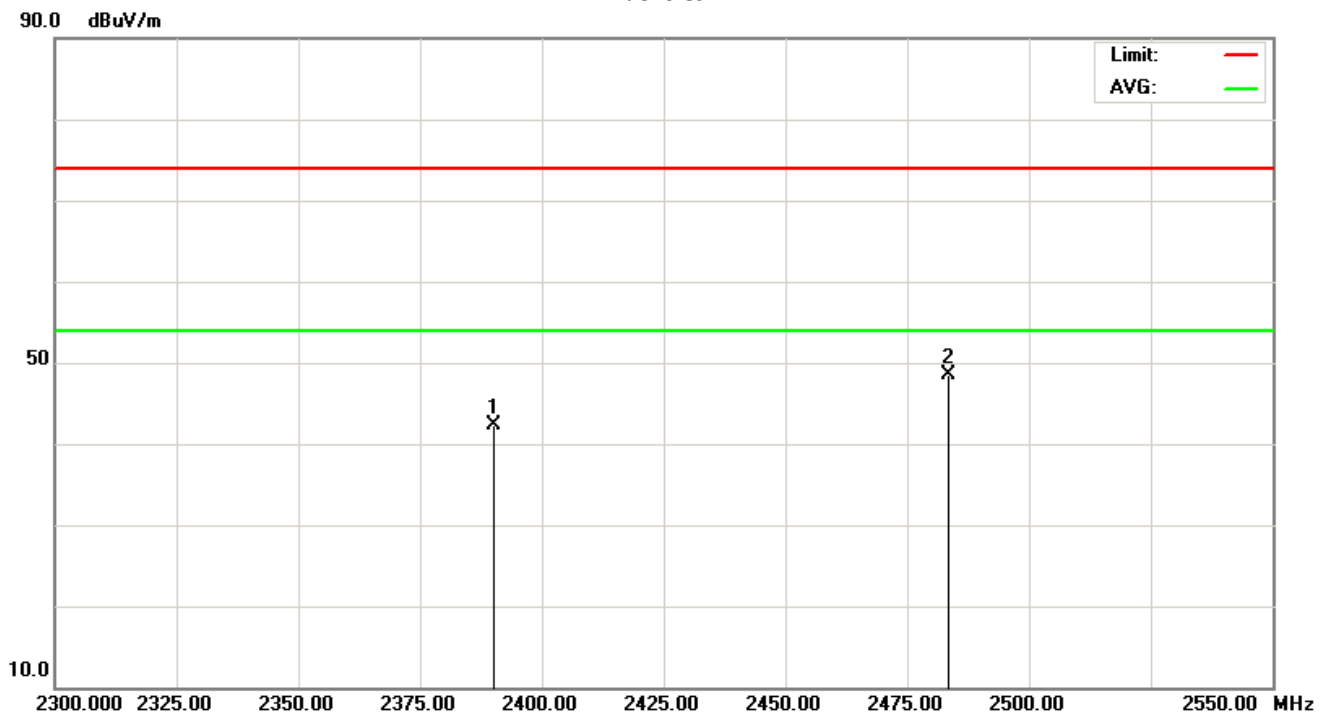


2M PHY:

Horizontal



Vertical



Test result: The unit does meet the NCC requirements.

4. OCCUPIED BANDWIDTH TEST

4.1 APPLIED PROCEDURES / LIMIT

LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
3.10.1(6.2.1)	Bandwidth	$\geq 500\text{kHz}$ (6dB bandwidth)	2400-2483.5	PASS

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	$>$ Measurement Bandwidth or Channel Separation
RB	100 kHz (6dB Bandwidth) / 100 kHz (Channel Separation)
VB	300 kHz (6dB Bandwidth) / 300 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW= 100kHz, VBW=100kHz, Sweep time = Auto.

4.1.2 TEST SETUP



4.1.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.4 TEST RESULTS

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	53%
Pressure :	1010 hPa	Test Power :	DC3.3V from battery
Test Mode :	Mode 1		
Test Date :	2020-11-24		

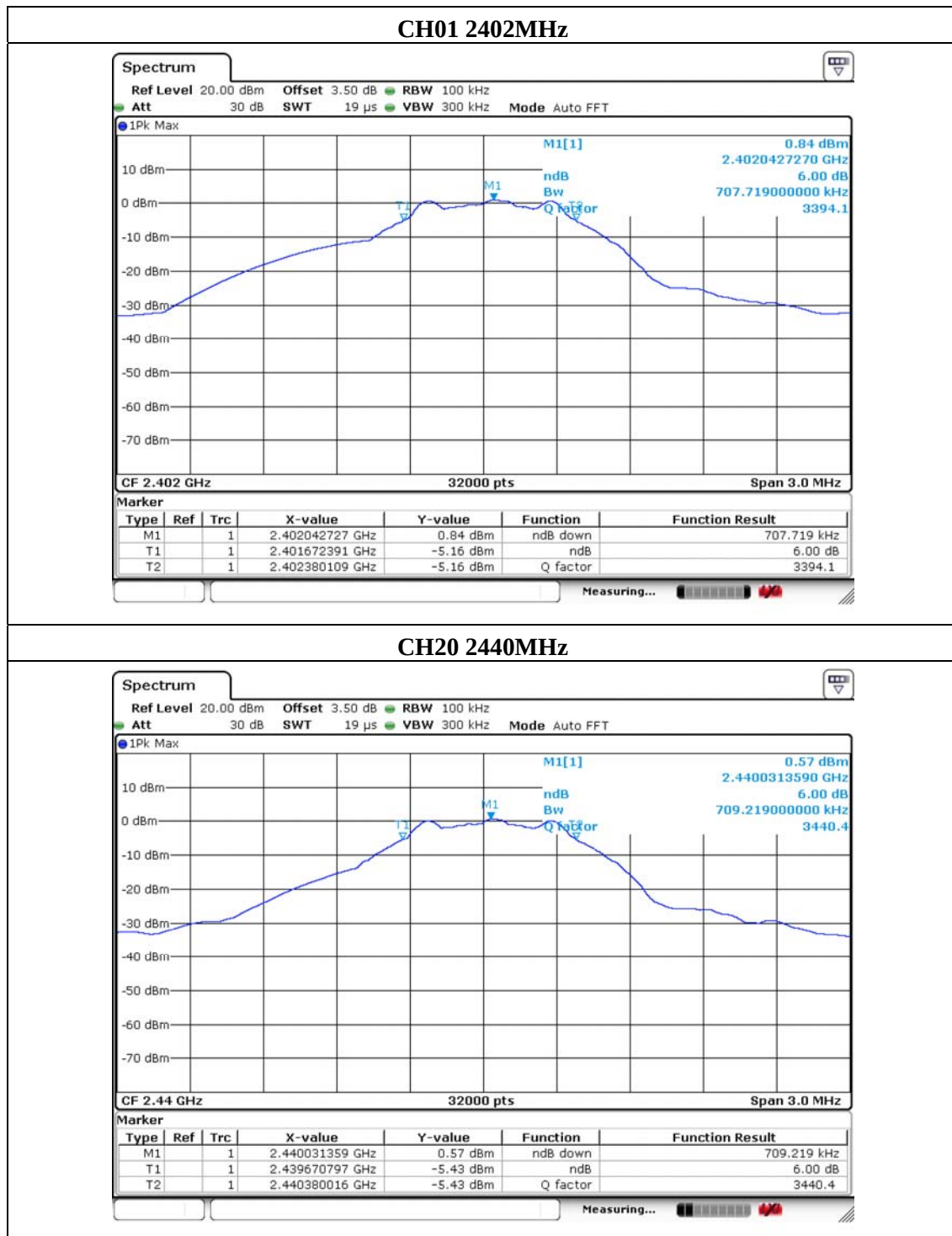
1M PHY:

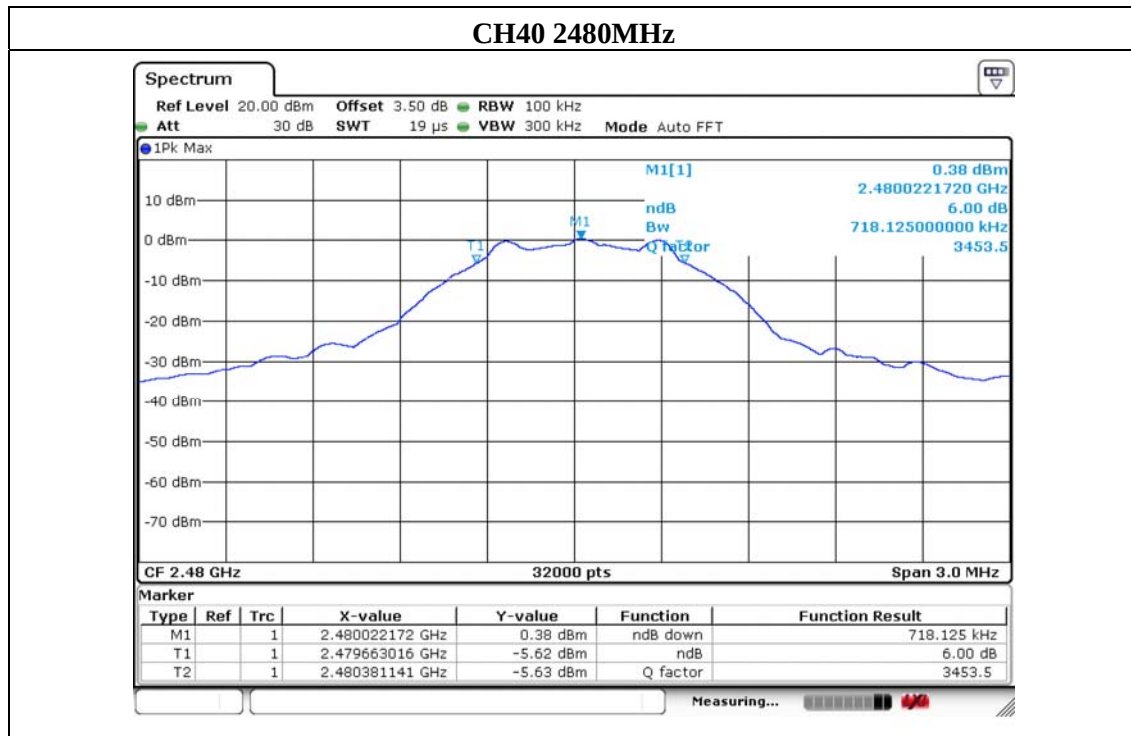
Test Mode	Test Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Limit (kHz)
Mode 1	CH01	2402	707.7	≥ 500
	CH20	2440	709.2	≥ 500
	CH40	2480	718.1	≥ 500

2M PHY:

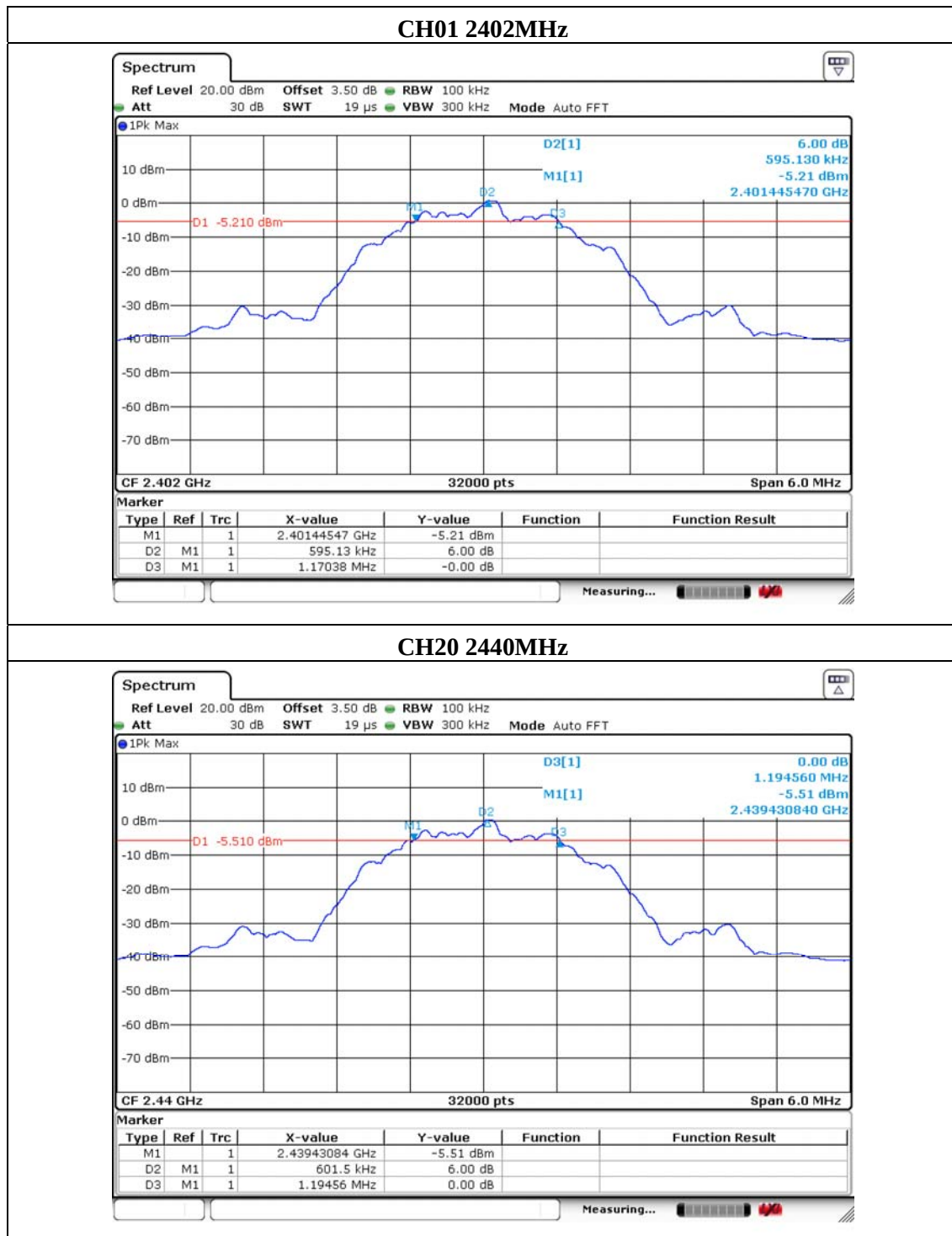
Test Mode	Test Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Limit (kHz)
Mode 1	CH01	2402	1170.4	≥ 500
	CH20	2440	1194.6	≥ 500
	CH40	2480	1212.6	≥ 500

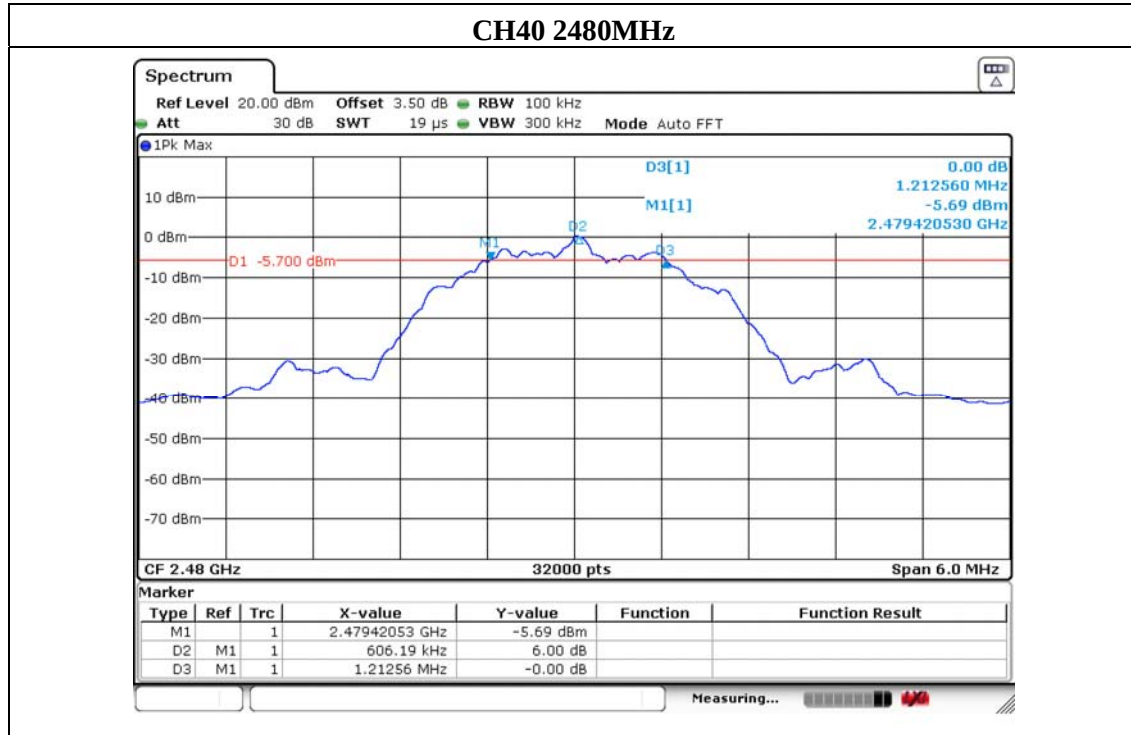
1M PHY:





2M PHY:





5. POWER DENSITY

5.1 APPLIED PROCEDURES / LIMIT

LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
3.10.1(6.2.2)	Power density	8dBm	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RB	3 kHz
VB	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 3kHz, VBW=10kHz.

5.1.2 TEST SETUP



5.1.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.4 TEST RESULTS

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	53%
Pressure :	1010 hPa	Test Voltage :	DC3.3V from battery
Test Mode :	Mode 1		
Test Date :	2020-11-24		

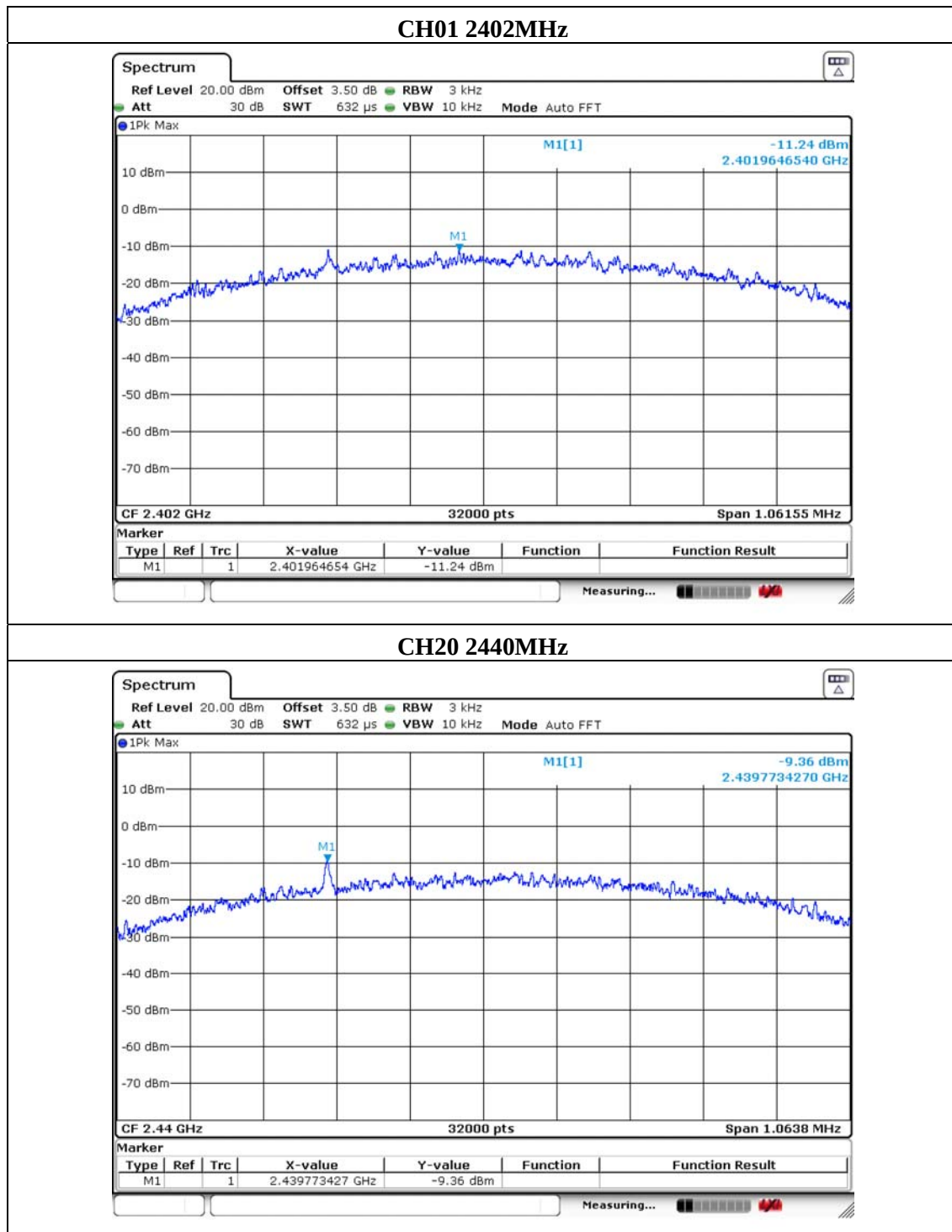
1M PHY:

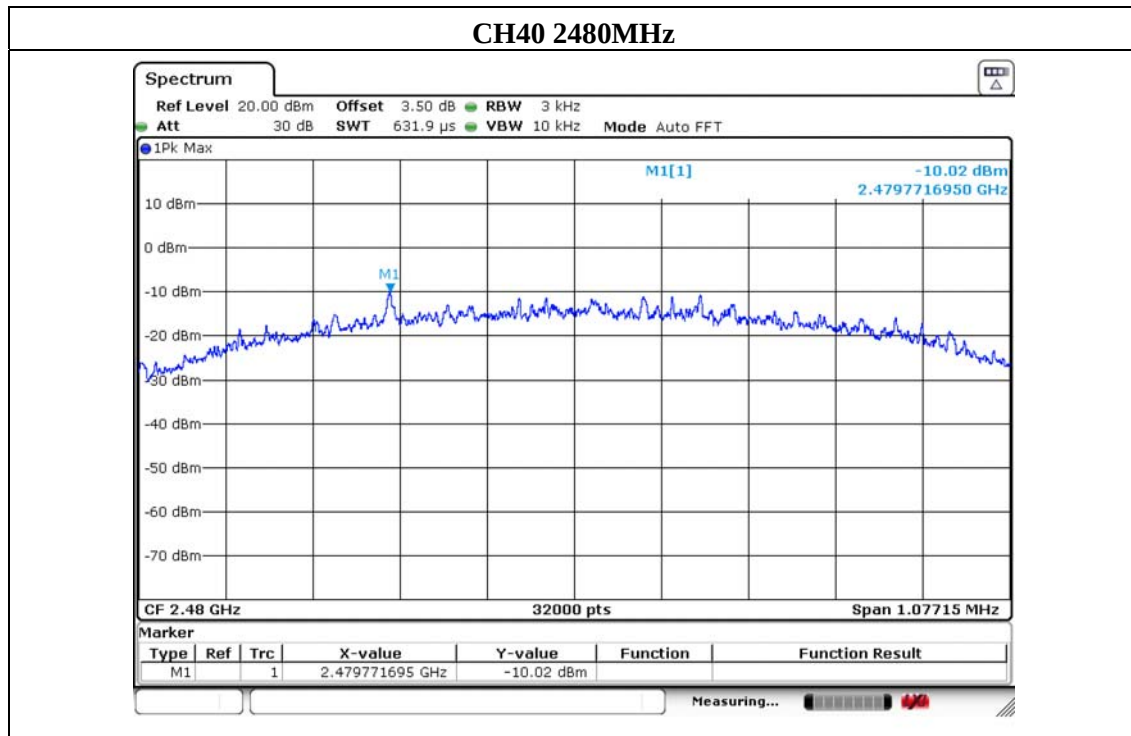
Test Channel	Frequency(MHz)	Power Density(dBm)	LIMIT(dBm)
CH01	2402 MHz	-11.24	8.00
CH20	2440 MHz	-9.36	8.00
CH40	2480 MHz	-10.02	8.00

2M PHY:

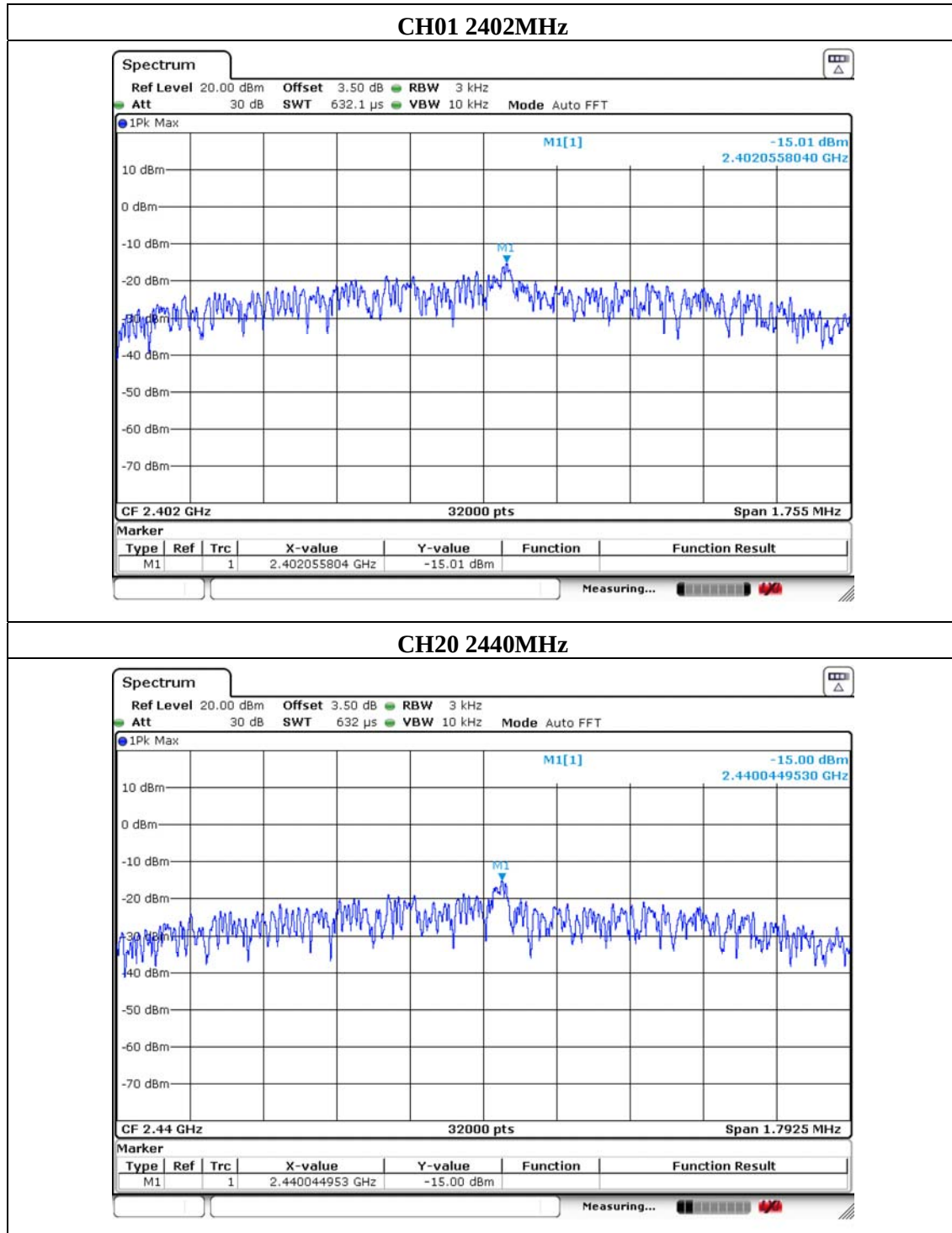
Test Channel	Frequency(MHz)	Power Density(dBm)	LIMIT(dBm)
CH01	2402 MHz	-15.01	8.00
CH20	2440 MHz	-15.00	8.00
CH40	2480 MHz	-15.05	8.00

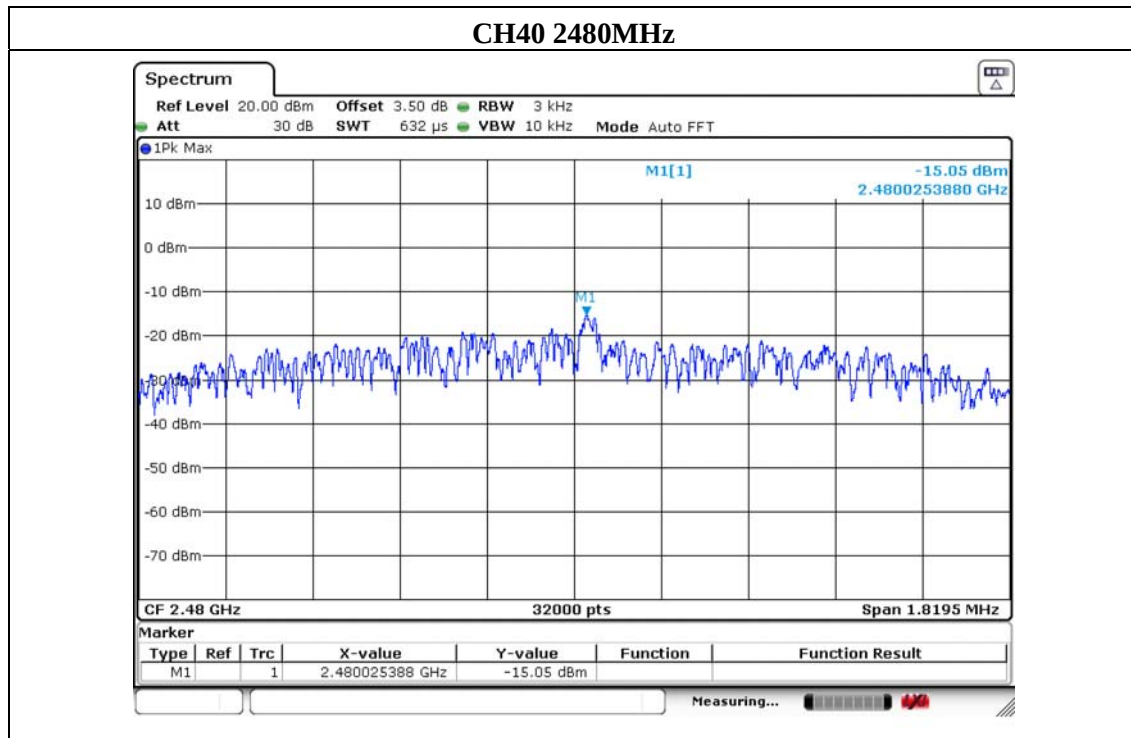
1M PHY:





2M PHY:





6. OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
3.10.1(2)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

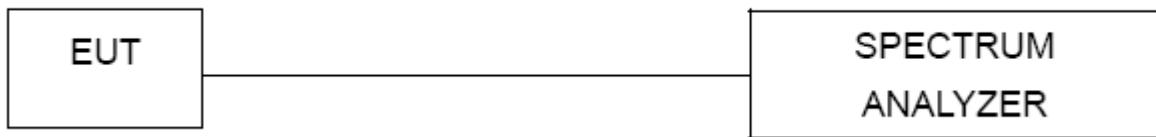
6.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 1 MHz, VBW= 3 MHz, Sweep time = Auto.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	24 °C	Relative Humidity :	53%
Pressure :	1010 hPa	Test Voltage :	DC3.3V from battery
Test Mode :	Mode 1		
Test Date :	2020-11-24		

1M PHY:

Test Channel	Frequency (MHz)	Output Power (dBm)	Limit(dBm)	Result
CH01	2402 MHz	1.22	30	PASS
CH20	2440MHz	0.91	30	PASS
CH40	2480 MHz	0.75	30	PASS

2M PHY:

Test Channel	Frequency (MHz)	Output Power (dBm)	Limit(dBm)	Result
CH01	2402 MHz	0.78	30	PASS
CH20	2440MHz	0.54	30	PASS
CH40	2480 MHz	0.36	30	PASS

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified in Section 2.8.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

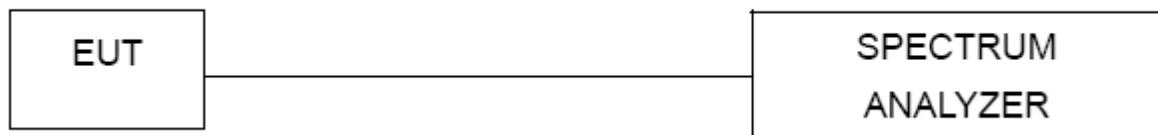
The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (other emission)	100 kHz /300 kHz for Peak

7.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100kHz, VBW=300kHz, Sweep time = Auto.

7.1.2 TEST SETUP



7.1.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

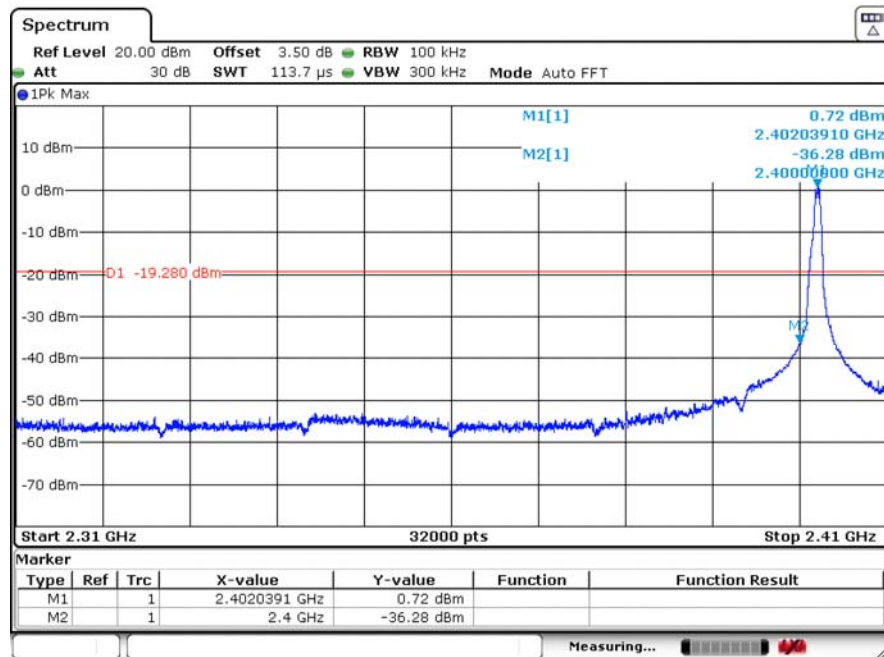
7.1.4 TEST RESULTS

EUT :	Bluetooth LE Module	Model Name :	CC264BPA-S
Temperature :	25 °C	Relative Humidity :	53%
Pressure :	1010 hPa	Test Voltage :	DC3.3V from battery
Test Mode:	Mode 1		
Test Date :	2020-11-24		

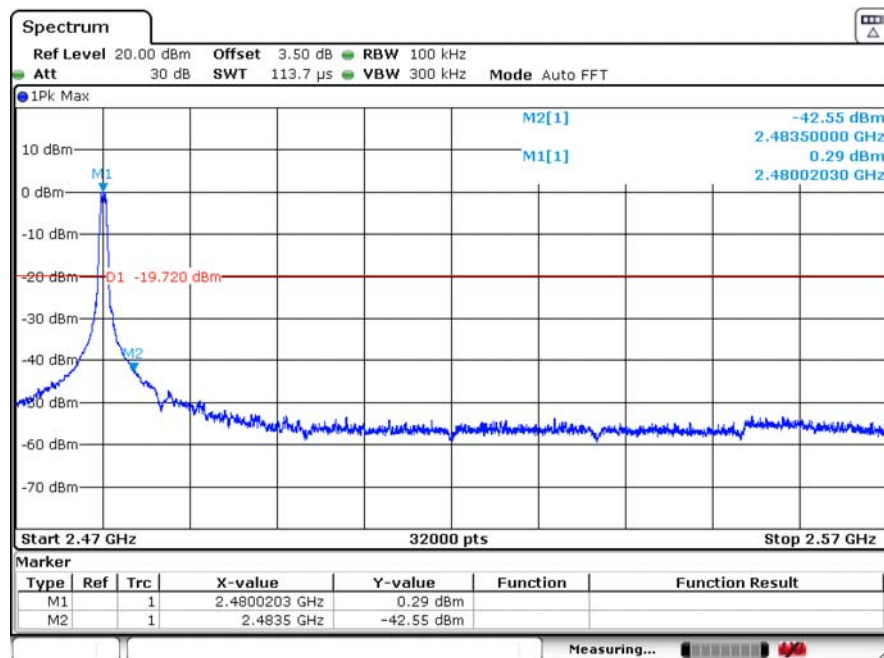
in any 100kHz bandwidth outside the low frequency band	in any 100 kHz bandwidth outside the high frequency band
Pass	Pass
Result	
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.	

1M PHY:

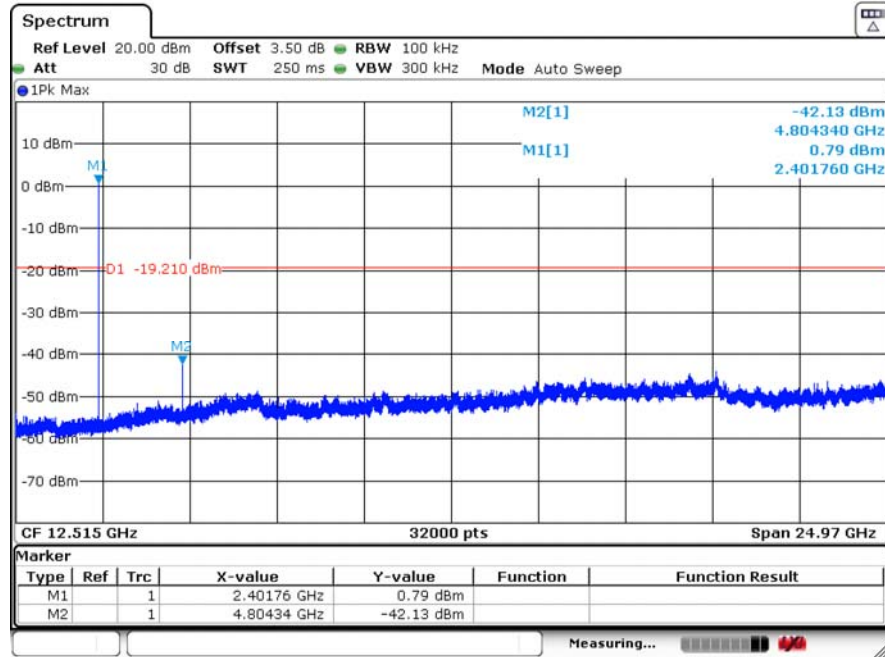
CH01 (Lower)



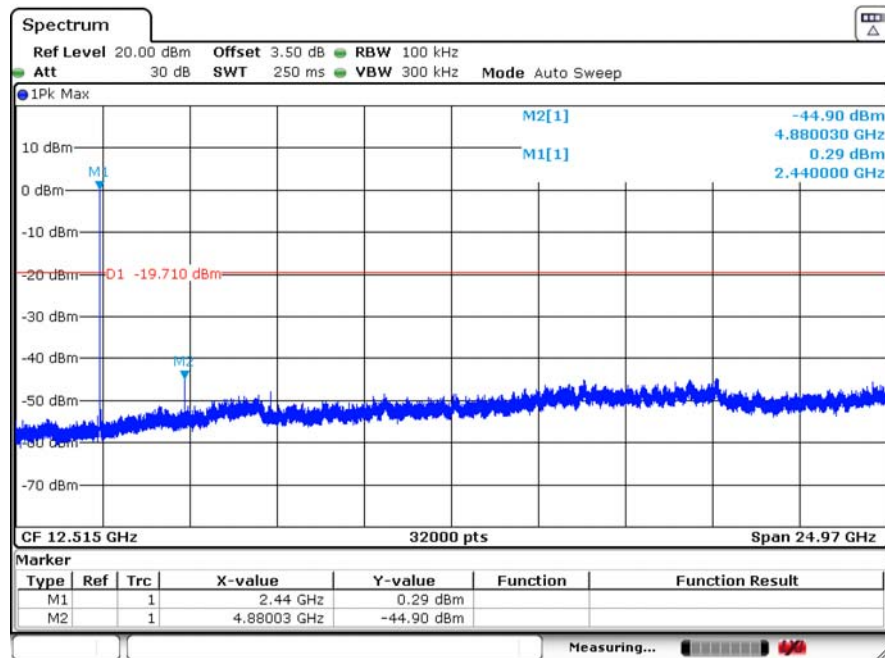
CH40 (Upper)



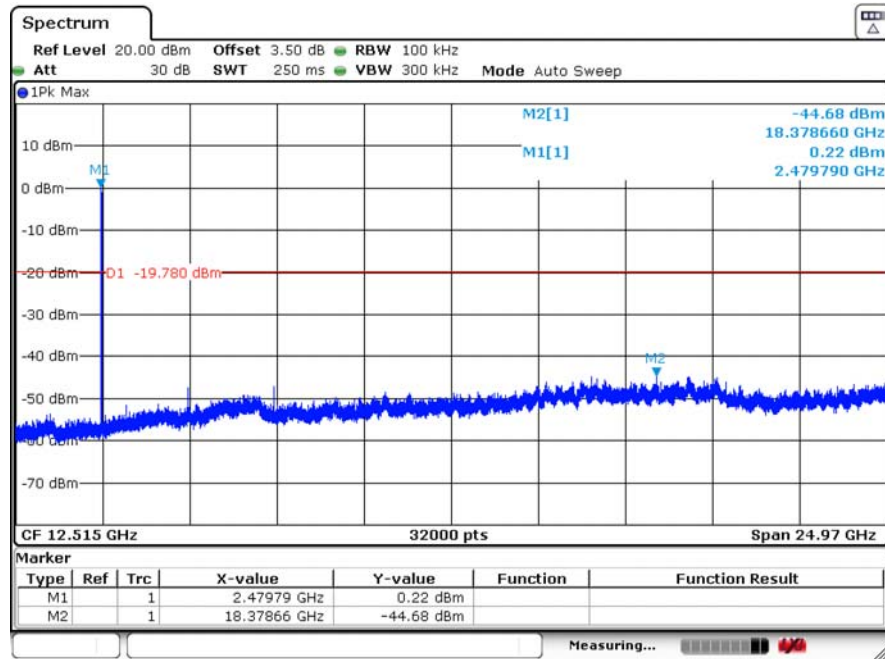
CH01



CH20

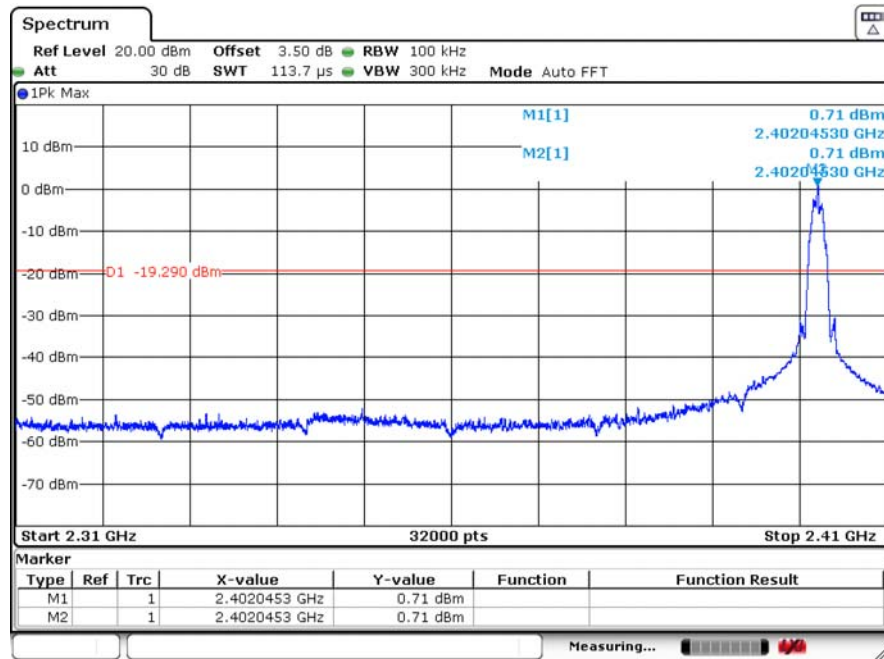


CH40

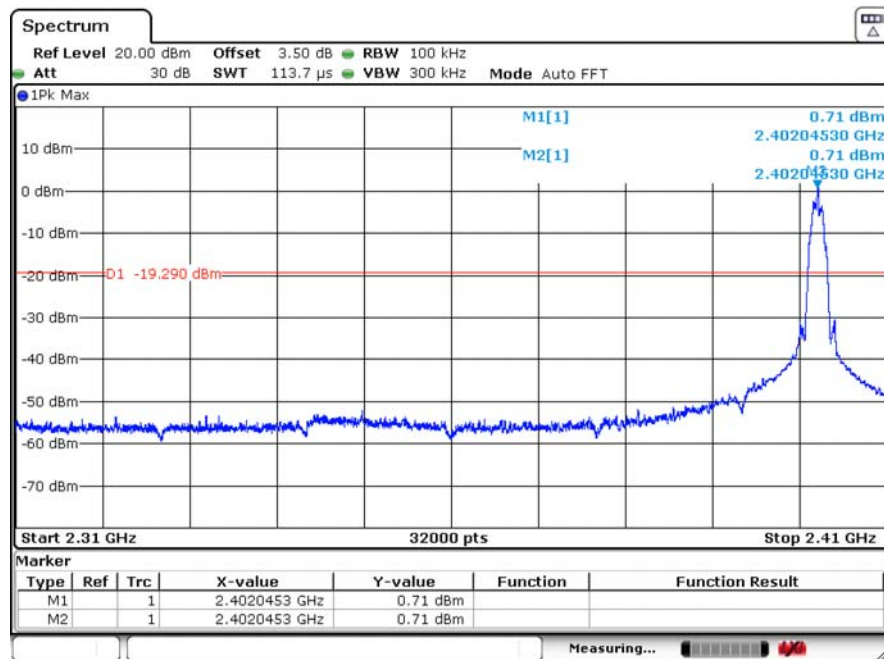


2M PHY:

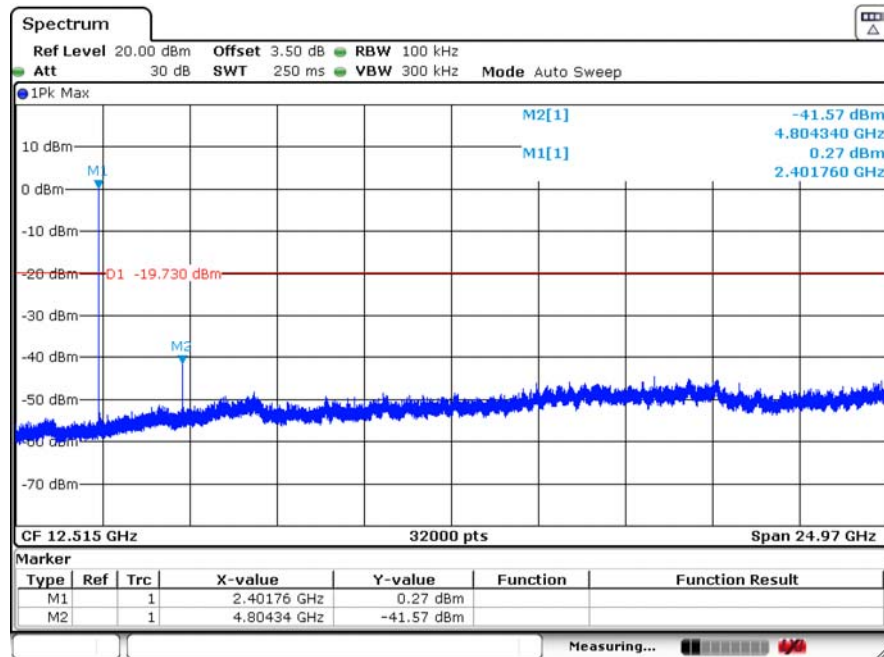
CH01 (Lower)



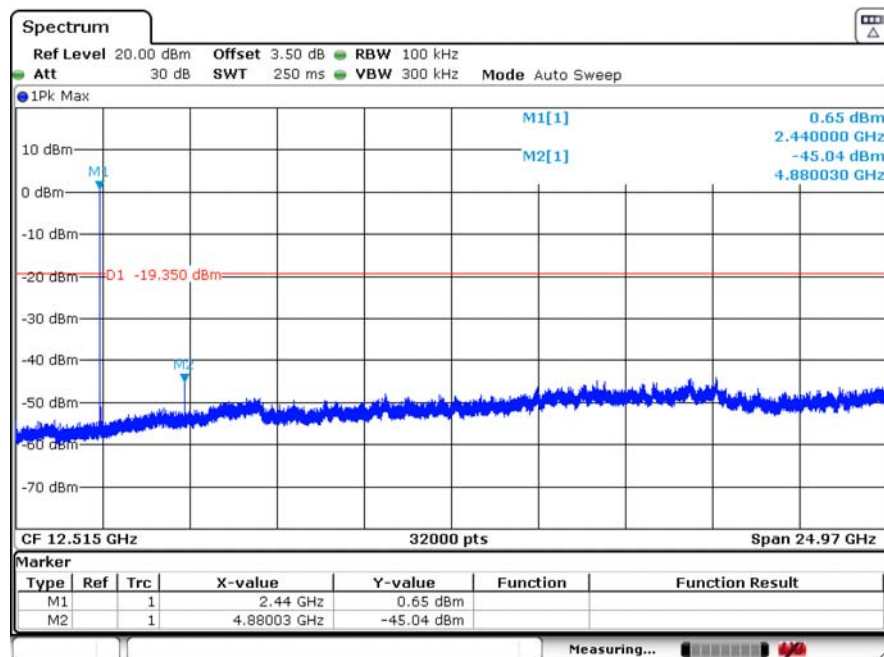
CH40 (Upper)



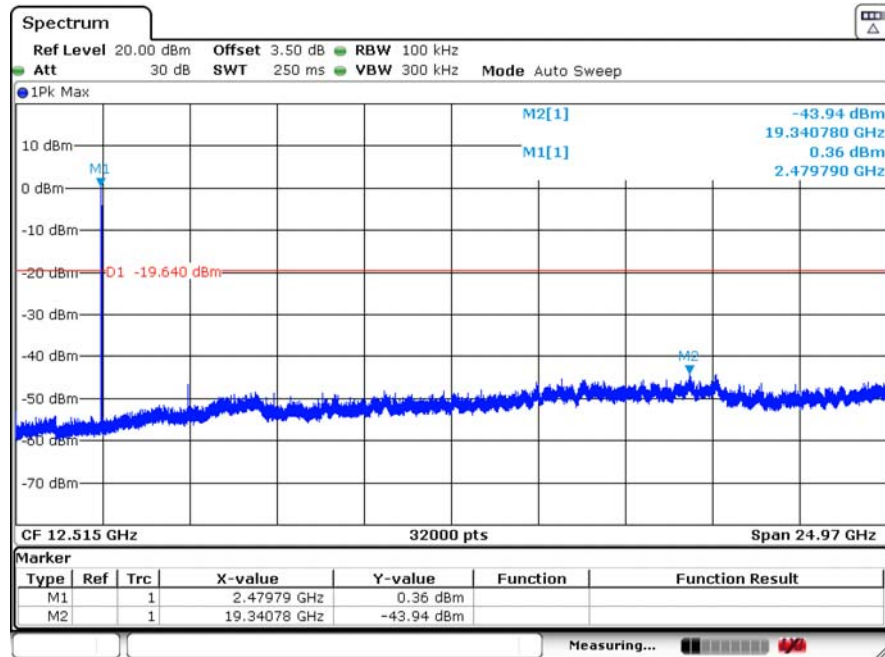
CH01



CH20



CH40



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

3.10.3.1.1 requirement: Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

8.2 EUT ANTENNA

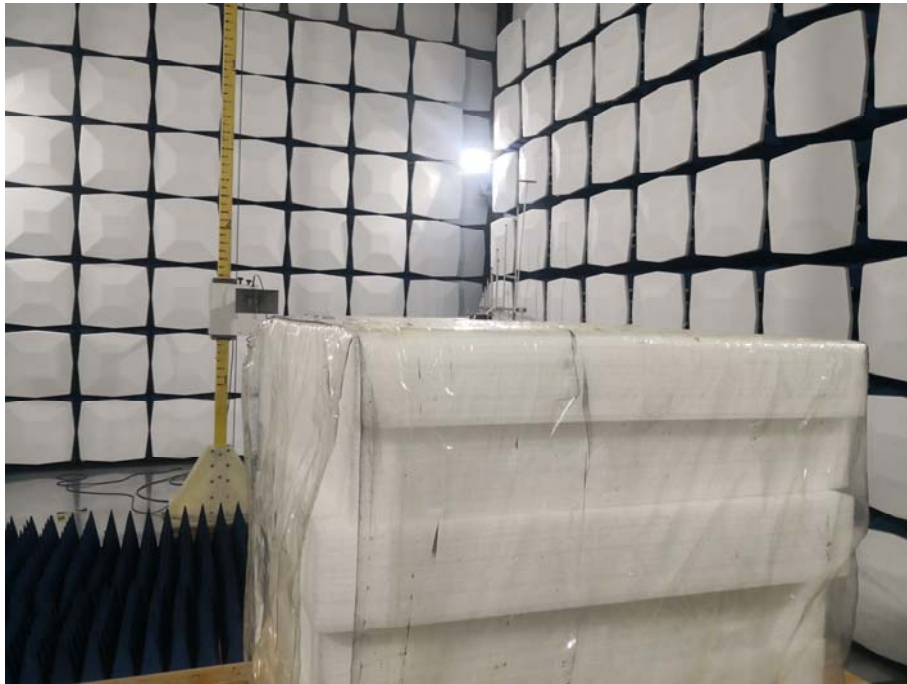
The antenna is a chip antenna and no consideration of replacement. Antenna max gain is -0.30 dBi from 2.4GHz to 2.5GHz.

9. EUT TEST PHOTO

Radiated Measurement Photos 30MHz-1GHz



Radiated Measurement Photos Above 1GHz



Conducted Measurement Photos



10. APPENDIX-Photographs of EUT Constructional Details

Please refer to **APPENDIX**.