



Test report No:
2180545R-RF-US-P09V01

FCC TEST REPORT

Product Name	LPS Module
Trademark	Murata
Model and /or type reference	LBES0ZZ1VG
FCC ID	VPYLB1VG
Applicant's name / address	Murata Manufacturing Co., Ltd. 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555, Japan
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart E Section 15.407 ANSI C63.10: 2013 789033 D02 General UNII Test Procedures New Rules v02r01 KDB 662911 D01 Multiple Transmitter Output v02r01
Verdict Summary	IN COMPLIANCE
Documented by (name / position & signature)	Adma Lu/Project Engineer <i>Adma Lu</i>
Approved by (name / position & signature)	Jack Zhang/ Supervisor <i>Jack Zhang</i>
Date of issue	2021-01-14
Report template No	Template_FCC Part15E-RF-V1.0

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Oct. 14, 2021
Date (start test)	Oct. 16, 2021
Date (finish test)	Dec. 12, 2021

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
U_N	: Nominal voltage
Tx	: Transmitter
Rx	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2180545R-RF-US-P09V01	V1.0	Initial issue of report.	2022-01-14

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with Part 15 Subpart E Paragraph 15.407.
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:
 - Chapter 1.1 General Description of the Item(s);
 - Chapter 1.2 Antenna Informaion;
 - Chapter 1.3 Channel List;
 - Chapter 1.4 Test Data Rate;
8. EUT is matched with Dipole Antenna and PCB Antenna respectively. We have done all the tests on Dipole Antenna with larger antenna gain, and tested Radiated Emission Band Edge and Radiated Emissions on PCB Antenna.

USED EQUIPMENT

Emissions in non-restricted frequency bands/ Occupied Bandwidth/ Fundamental emission output power Power Spectral Density / TR8

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2021.07.11	2022.07.10
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2021.03.20	2022.03.19
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2021.07.11	2022.07.10
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2021.07.09	2022.07.08
Dekra test software	Dekra	-	-	-	-

Radiated Emission(30MHz-1GHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2021.10.30	2022.10.29
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2021.12.03	2022.12.02
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2021.11.08	2022.11.07
Coaxial Cable	Huber+Suhner	RG 214	AC2-C	2021.03.31	2022.03.30
Dekra test software	Dekra	-	-	-	-

Radiated Emission / AC5(1GHz-40GHz)(Chamber details)

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
MAX Signal Analyzer	Agilent	N9020B	MY59050482	2021.11.18	2022.11.17
Preamplifier	CHENGYI	EMC184045SE	980263	2021.05.22	2022.05.21
DRG Horn	ETS-Lindgren	3117	00123988	2021.10.22	2022.10.21
Temperature/Humidity Meter	RTS	RTS-8S	AC5-TH	2021.07.09	2022.07.08
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2021.03.31	2022.03.30
High-Pass Filter	Wainwright	WHKX7.0/18G- 8SS	AC5&AC6	2021.06.08	2022.06.07
Dekra test software	Dekra	-	-	-	-

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Test item	Uncertainty
AC Power Line Conducted Emission	± 2.92 dB
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~200MHz: 4.60 dB 200MHz~1GHz: 4.10 dB Vertical: 30MHz~200MHz: 4.80 dB 200MHz~1GHz: 4.10 dB
Radiated Emission(1GHz~40GHz)	Horizontal: 1GHz~18GHz: 5.00 dB Vertical: 1GHz~18GHz: 4.80 dB Horizontal: 18GHz~40GHz: 4.70 dB Vertical: 18GHz~40GHz: 4.60 dB
RF Antenna Port Conducted Emission	± 1.13 dB
Radiated Emission Band Edge	± 5.00 dB
Occupied Bandwidth	± 279 Hz
Power Spectral Density	± 1.13 dB
Frequency Stability	± 100 Hz
AC Power Line Conducted Emission	± 2.02 dB

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Product Name	LPS Module
Model No.	LBES0ZZ1VG
Hardware Version.....	1.0
Software Version.	N/A
Firmware Version.	1.0.0
Trademark	Murata
Manufacturer	Murata Manufacturing Co., Ltd.
Manufacturer address	10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555, Japan

Wireless specification	WLAN		
Type of Modulation	OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM		
Frequency Range	<input checked="" type="checkbox"/>	5150MHz~5250MHz	<input type="checkbox"/> Outdoor AP
			<input checked="" type="checkbox"/> RF Module
			<input type="checkbox"/> Fixed point-to-point AP
	<input checked="" type="checkbox"/>	5725MHz~5850MHz	<input type="checkbox"/> Mobile and Portable Client
Date Rate	802.11ac: up to 866.6Mbps		

Rated power supply..... :	Voltage and Frequency		
	<input type="checkbox"/>	AC: 220 – 240 V, 50/60 Hz	
	<input type="checkbox"/>	AC: 100 – 240 V, 50/60 Hz	
	<input checked="" type="checkbox"/>	DC: 3.0-3.6V	
	<input type="checkbox"/>	PoE: -48Vdc	
Mounting position	<input type="checkbox"/>	Table top equipment	
	<input type="checkbox"/>	Wall/Ceiling mounted equipment	
	<input type="checkbox"/>	Floor standing equipment	
	<input type="checkbox"/>	Hand-held equipment	
	<input checked="" type="checkbox"/>	Other: RF Module	

1.2 Antenna Information

LPS5G-Antenna:

Antenna model / type number	Monopole PCB antenna			
Antenna serial number	LPS5G-Antenna			
Antenna Delivery	<input checked="" type="checkbox"/>	1TX + 1RX		
	<input type="checkbox"/>	2TX + 2RX		
Antenna technology.....	<input checked="" type="checkbox"/>	SISO		
	<input type="checkbox"/>	MIMO	<input type="checkbox"/>	CDD
			<input type="checkbox"/>	Beam-forming
Antenna Type	<input type="checkbox"/>	External	<input type="checkbox"/>	Dipole
			<input type="checkbox"/>	Sectorized
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/>	PIFA
			<input checked="" type="checkbox"/>	PCB
			<input type="checkbox"/>	Others.....
Antenna Gain	4.5 dBi			

Note: SISO on ANT2 only.

ANT-DB1-RAF-RPS:

Antenna model / type number	Dipole antenna			
Antenna serial number	ANT-DB1-RAF-RPS			
Antenna Delivery	<input checked="" type="checkbox"/>	1TX + 1RX		
	<input checked="" type="checkbox"/>	2TX + 2RX		
Antenna technology.....	<input checked="" type="checkbox"/>	SISO		
	<input checked="" type="checkbox"/>	MIMO	<input checked="" type="checkbox"/>	CDD
			<input type="checkbox"/>	Beam-forming
Antenna Type	<input checked="" type="checkbox"/>	External	<input checked="" type="checkbox"/>	Dipole
			<input type="checkbox"/>	Sectorized
	<input type="checkbox"/>	Internal	<input type="checkbox"/>	PIFA
			<input type="checkbox"/>	PCB
			<input type="checkbox"/>	Others.....
SISO Antenna Gain.....	5.1 dBi			
CDD-MIMO(2TX) Antenna Gain.....	5.1 dBi for Power ,8.02 dBi for PSD			

Note: SISO on ANT2 only, MIMO on ANT1+ANT2.

1.3 Channel List

802.11ac (20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz	48	5240 MHz
149	5745 MHz	153	5765 MHz	157	5785 MHz	161	5805 MHz
802.11ac(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	151	5755 MHz	159	5795 MHz
802.11ac(80MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210 MHz	155	5775 MHz	N/A	N/A	N/A	N/A

1.4 Test Data Rate

Note : WLAN test rate is MCS0

Note: The General Description of the Item, antenna information, Test Data Rate and Channel List in clause 1 are provided and confirmed by the client.

2 DESCRIPTION OF TEST SETUP

2.1 Operating mode(s) used for tests

During the tests the following operating mode(s) has(have) been used.

Test Mode	Mode 1: Transmit by 802.11ac (20MHz)
	Mode 2: Transmit by 802.11ac (40MHz)
	Mode 3: Transmit by 802.11ac (80MHz)

2.2 Accessories Information

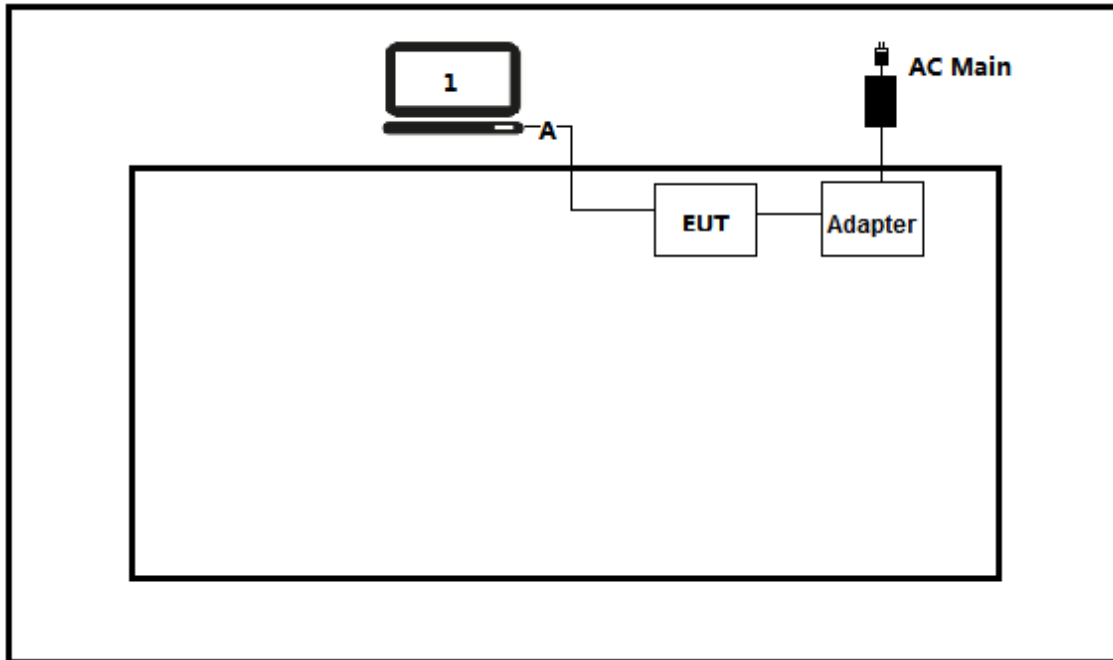
Accessories Information	Brand/model name	Cable		
		Length used during test [m]	Attached during test	Shielded
USB control Cable	N/A	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
USB control Cable	N/A	0.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

2.3 Auxiliary equipment / Test software for the EUT

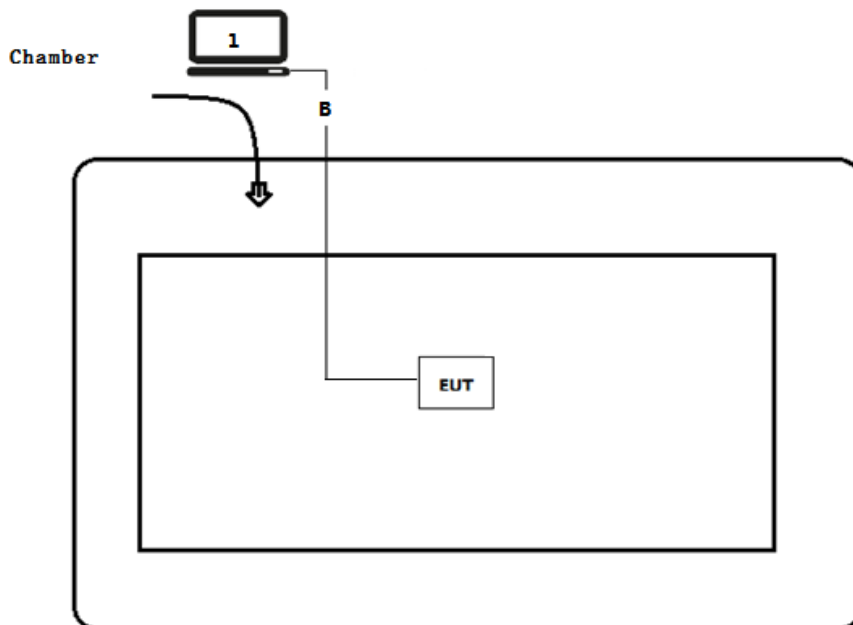
Auxiliary equipment	Type / Version	Manufacturer	Supplied by
Notebook	Think pad x220	Lenovo	Adapter
software	Type / Version	Manufacturer	Supplied by
SSCOM	N/A	N/A	---

2.4 Test Configuration / Block diagram used for tests

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



2.5 Testing process

1	Setup the EUT as shown in Section 2.4.
2	Execute the SSCOM on the notebook.
3	Configure the test mode, the test channel, and the data rate.
4	Verify that the EUT works properly.

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
FCC CFR Title 47 Part 15 Subpart E Section 15.407	2017	General technical requirements for 5.15-5.25 GHz;5.25-5.35 GHz; 5.47-5.725 GHz;5.725-5.85 GHz.
ANSI C63.10	2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB 789033 D02 General UNII Test Procedures New Rules v02r01	2017	This document provides guidance for determining emissions compliance of U-NII devices under Part 15, Subpart E of the FCC rules.

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards: N/A.

(Please define the deviations from the standard(s) if applicable)

3.3 Overview of results

Requirement – Test case	Basic standard(s)	Verdict	Remark
Conducted Emission	FCC CFR Title 47 Part 15 Subpart E: Section 15.207	N/A	---
Radiated Emission	FCC CFR Title 47 Part 15 Subpart E: Section 15.209	PASS	---
Emission bandwidth and occupied bandwidth	FCC CFR Title 47 Part 15 Subpart E: Section 15.407(e)	PASS	---
6dB Emission Bandwidth	FCC CFR Title 47 Part 15 Subpart E: Section 15.407(e)	PASS	---
Power Output	FCC CFR Title 47 Part 15 Subpart E: Section 15.407(a)	PASS	---
Maximum Power Spectral Density	FCC CFR Title 47 Part 15 Subpart E: Section 15.407(a)	PASS	---
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart E: Section 15.205, 15.407(b)	PASS	---
Frequency Stability	FCC CFR Title 47 Part 15 Subpart E: Section 15.407(g)	PASS	---

4 TEST RESULTS

4.1 AC Power Line Conducted Emission	VERDICT: N/A
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4.1.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207	
Frequency range [MHz]	Limit: QP [dB(μV) ¹⁾	Limit: AV [dB(μV) ¹⁾
0,15 - 0,50	66 - 56 ²⁾	56 - 46 ²⁾
0,50 - 5,0	56	46
5,0 - 30	60	50

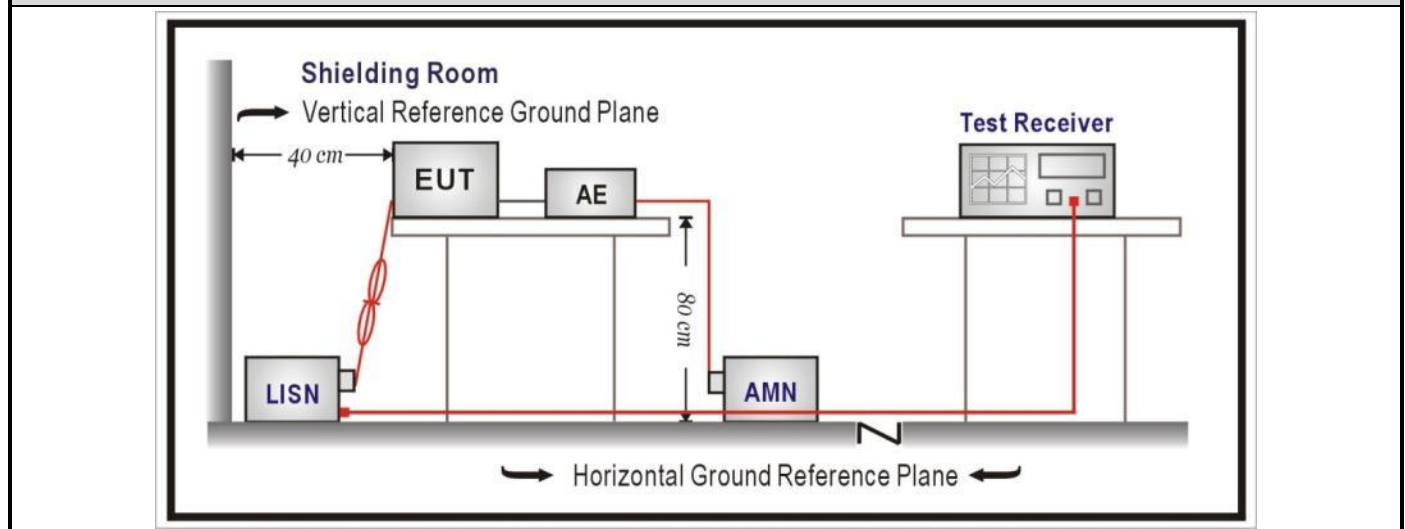
¹⁾ At the transition frequency, the lower limit applies.

²⁾ The limit decreases linearly with the logarithm of the frequency.

NOTE 1: The exclusion band for transmitters shall be considered for transmitters operating at frequencies below 30 MHz.

NOTE 2: Where the AC output port is directly connected (or via a circuit breaker) to the AC power input port of the EUT the AC power output port need not to be tested.

4.1.2 Test Setup



4.1.3 Test Procedure

	References Rule	Chapter	Item
<input checked="" type="checkbox"/>	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

4.1.4 Test Data

Note: EUT is DC powered

4.2 Radiated Emissions**VERDICT: PASS****4.2.1 Limit**

Standard		FCC Part 15 Subpart C Paragraph 15.205 (Restricted Band)	
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4	3600 – 4400	
13.36 – 13.41			

FCC Part 15 Subpart C Paragraph 15.209 (Restricted Band Emissions Limit)

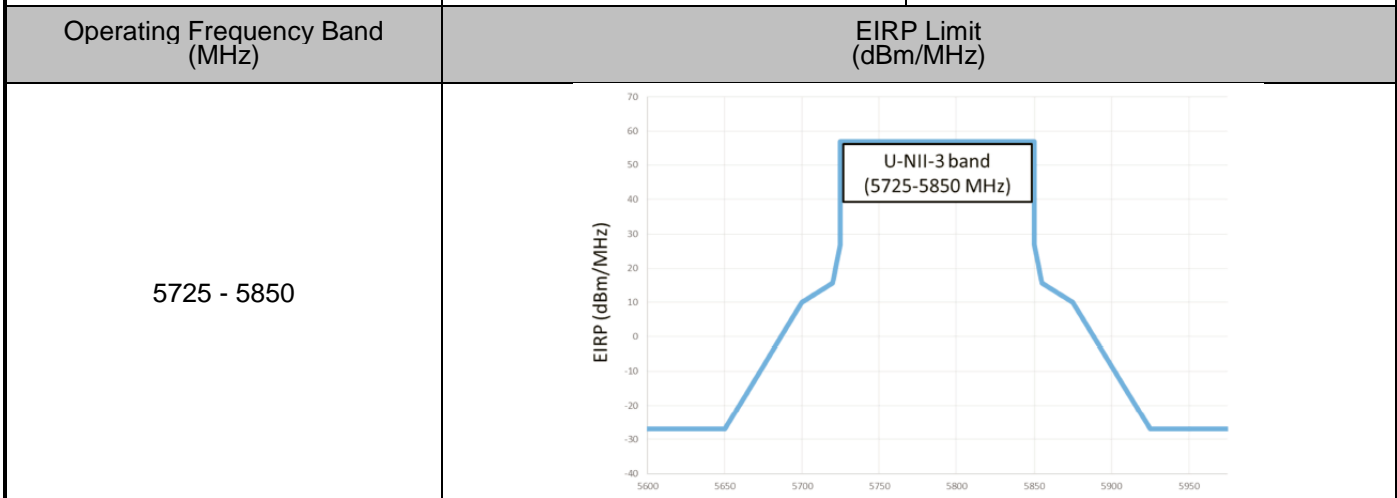
Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 ^(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 ^(Note 1)
1.705 - 30	30	29.5	30 ^(Note 1)
30 - 88	100	40	3 ^(Note 2)
88 - 216	150	43.5	3 ^(Note 2)
216 - 960	200	46	3 ^(Note 2)
Above 960	500	54	3 ^(Note 2)

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

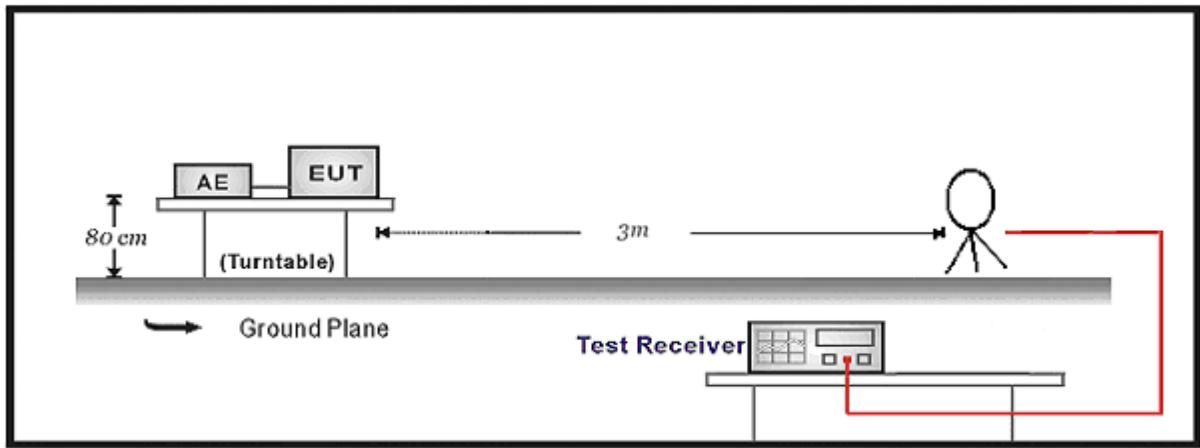
FCC Part 15 Subpart C Paragraph 15.407(5)(b) (Unrestricted Band Emissions Limit)

Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dBμV/m)
5150 - 5250	-27	68.3
5250 - 5350	-27	68.3
5470 - 5725	-27	68.3

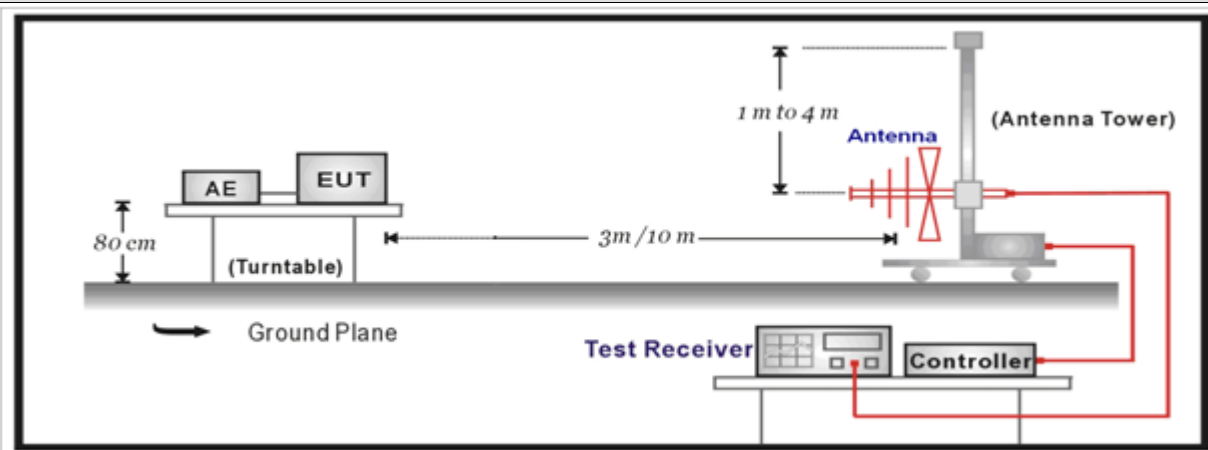


4.2.2 Test Setup

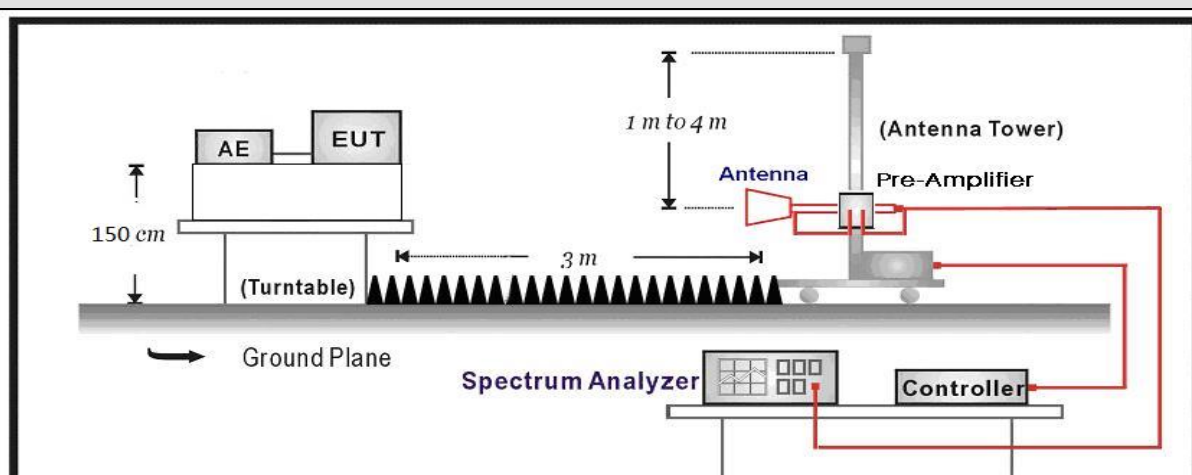
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



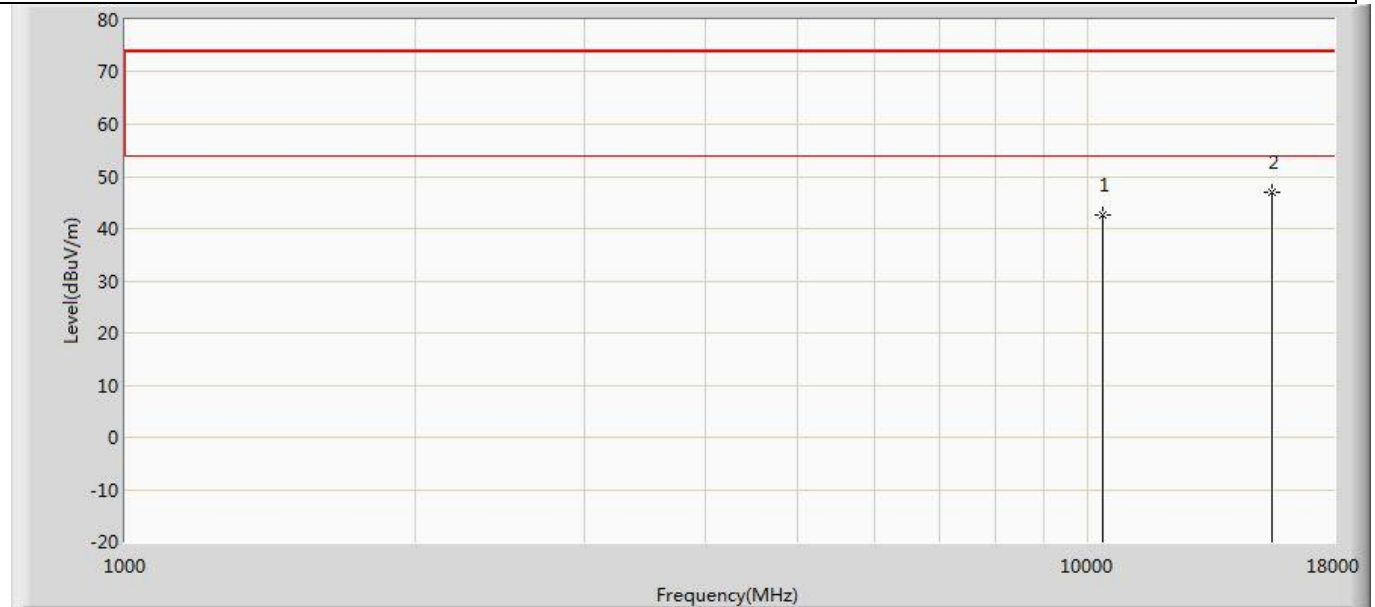
4.2.3 Test Procedure

	References Rule	Chapter	Description	
<input checked="" type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands	
	<input checked="" type="checkbox"/>	ANSI C63.10	11.12.1	Radiated emission measurements
	<input checked="" type="checkbox"/>	ANSI C63.10	11.12.2.7	Radiated spurious emission test
	<input checked="" type="checkbox"/>	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	<input checked="" type="checkbox"/>	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	<input checked="" type="checkbox"/>	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

4.2.4 Test Data

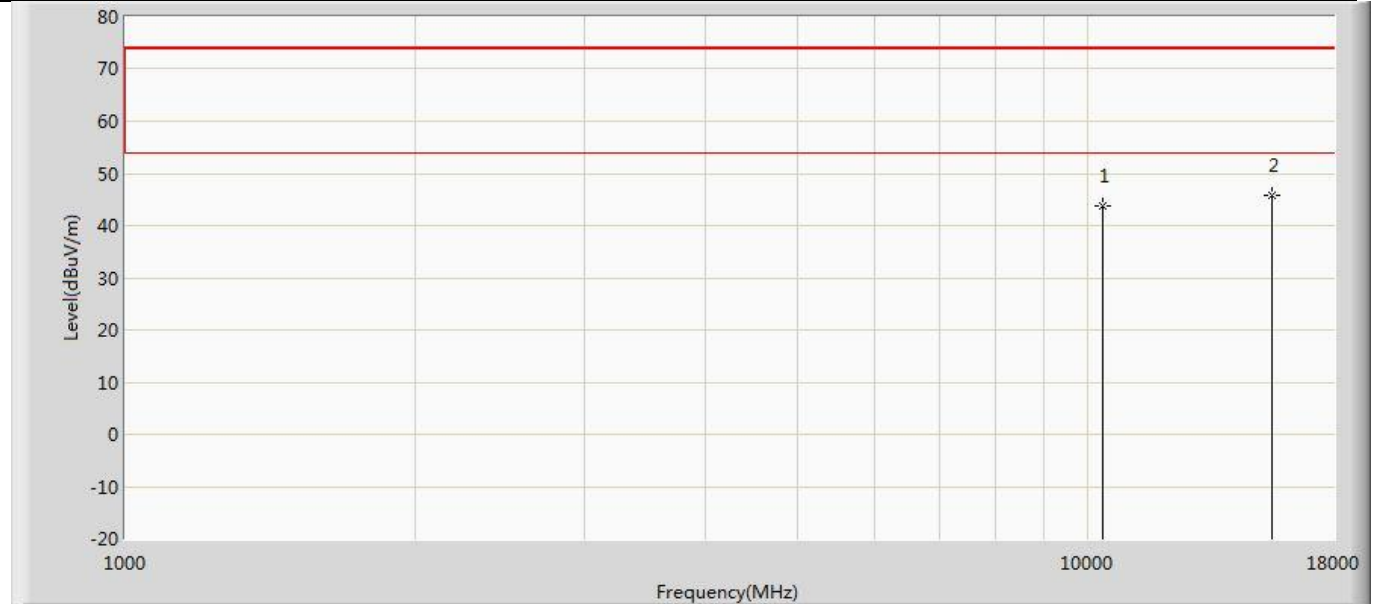
LPS5G-Antenna: SISO-Ant2

Profile: 2180545R	Page No.: 55
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5180MHz 11ac20M	



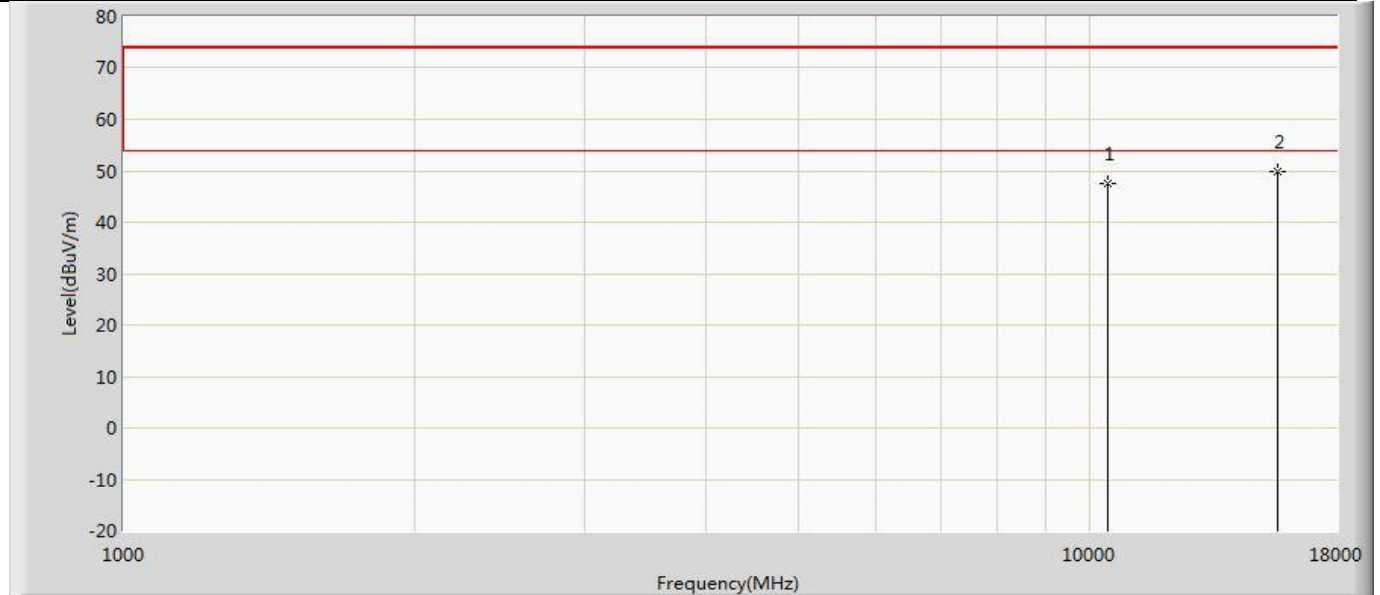
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10360.000	42.589	38.868	-31.411	74.000	3.722	PK
2	*	15540.000	46.918	39.565	-27.082	74.000	7.352	PK

Profile: 2180545R	Page No.: 56
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5180MHz 11ac20M	



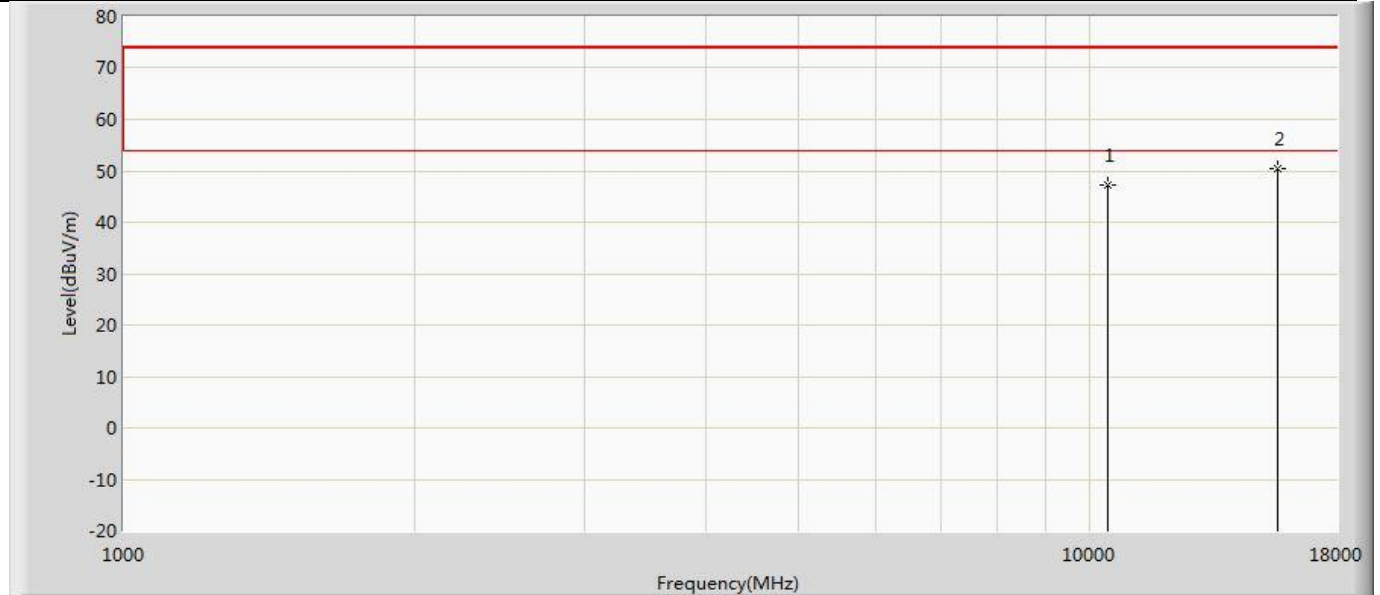
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10360.000	43.655	39.934	-30.345	74.000	3.722	PK
2	*	15540.000	45.926	38.573	-28.074	74.000	7.352	PK

Profile: 2180545R	Page No.: 7
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5220MHz 11ac20	



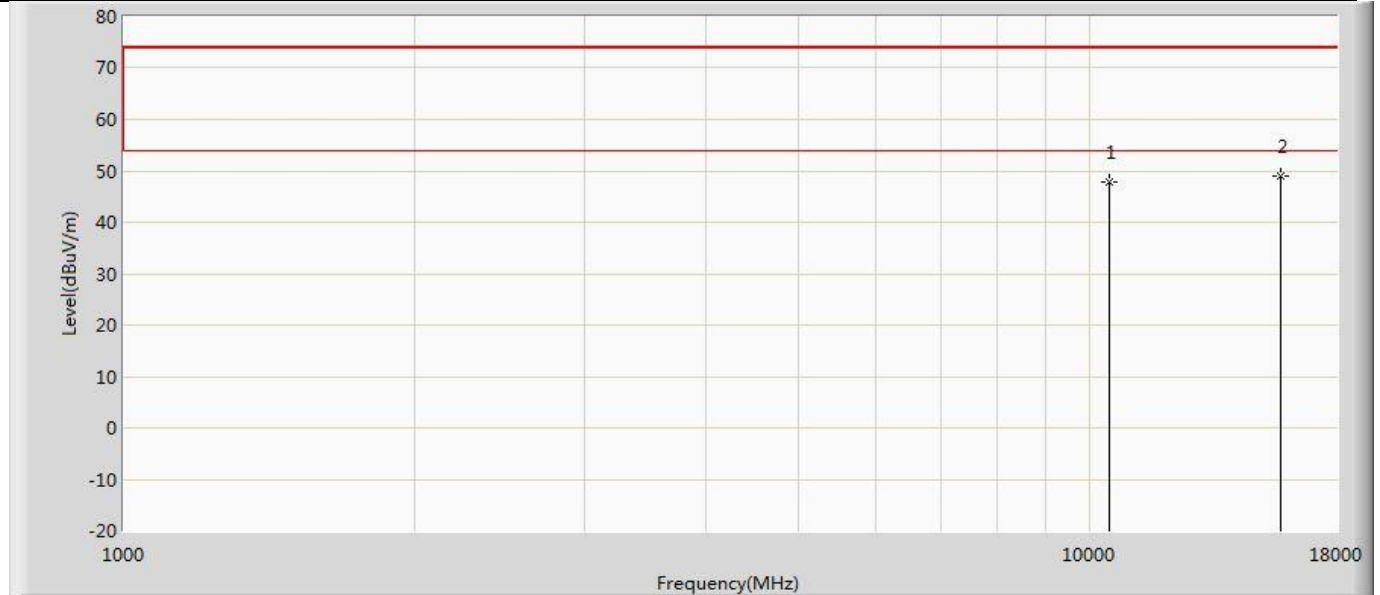
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10440.000	47.439	50.751	-26.561	74.000	-3.312	PK
2	*	15660.000	49.905	48.033	-24.095	74.000	1.872	PK

Profile: 2180545R	Page No.: 8
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5220MHz 11ac20	



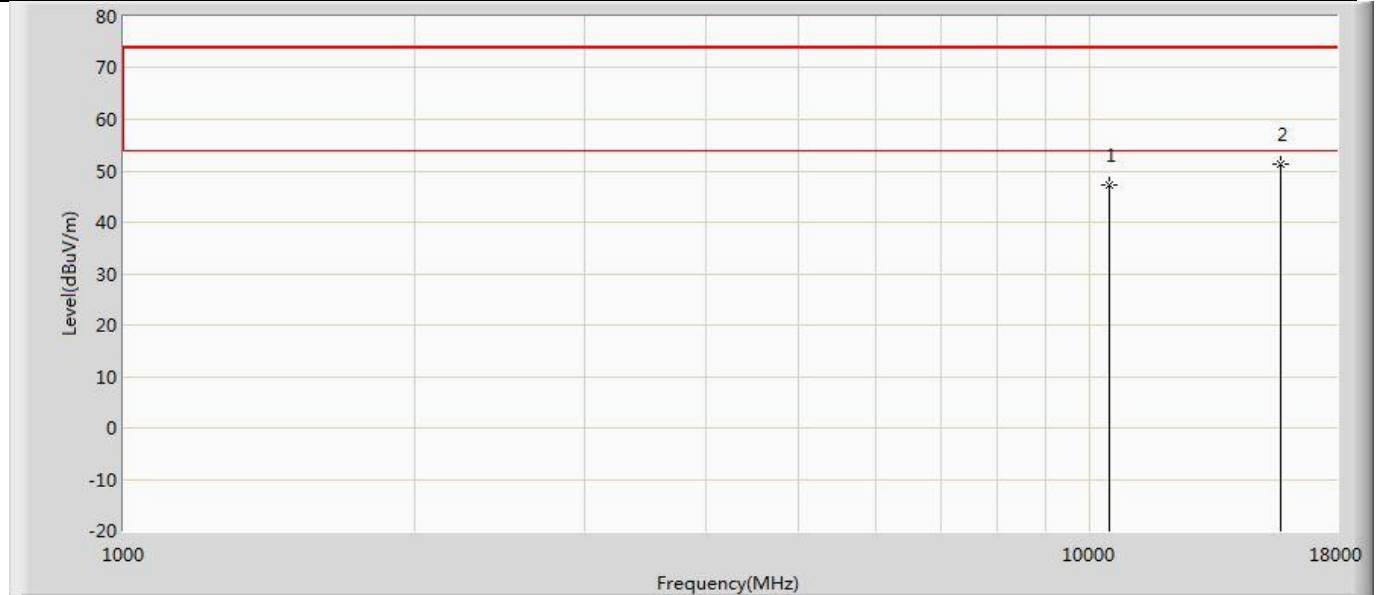
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10440.000	47.377	50.689	-26.623	74.000	-3.312	PK
2	*	15660.000	50.382	48.510	-23.618	74.000	1.872	PK

Profile: 2180545R	Page No.: 9
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5240MHz 11ac20	



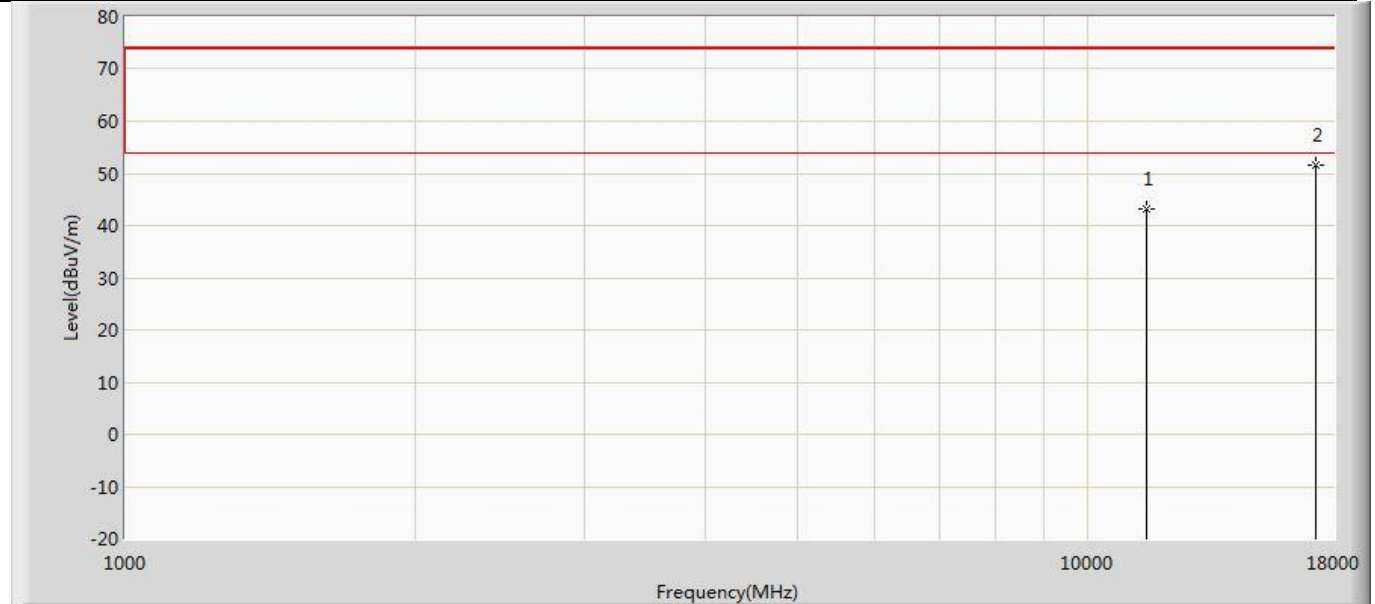
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10480.000	47.692	50.832	-26.308	74.000	-3.139	PK
2	*	15720.000	48.845	46.906	-25.155	74.000	1.939	PK

Profile: 2180545R	Page No.: 10
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5240MHz 11ac20	



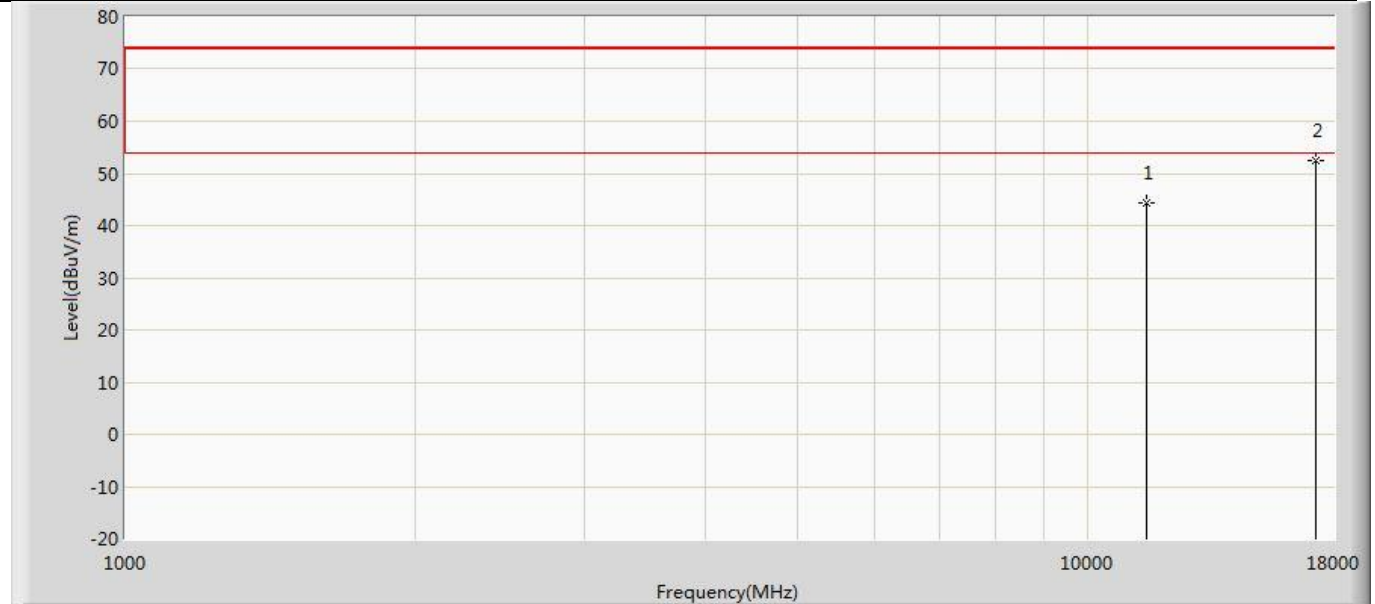
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10480.000	47.204	50.344	-26.796	74.000	-3.139	PK
2	*	15720.000	51.191	49.252	-22.809	74.000	1.939	PK

Profile: 2180545R	Page No.: 57
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5745MHz 11ac20M	



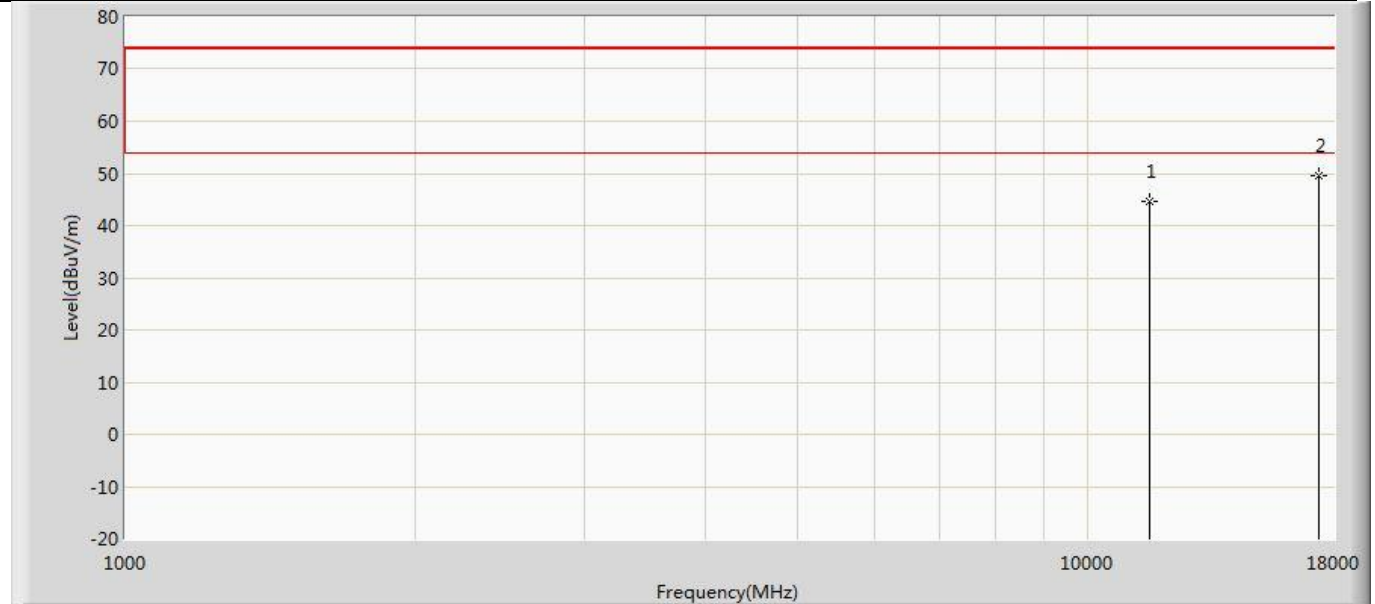
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11490.000	43.211	38.582	-30.789	74.000	4.629	PK
2	*	17235.000	51.739	38.291	-22.261	74.000	13.448	PK

Profile: 2180545R	Page No.: 58
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5745MHz 11ac20M	



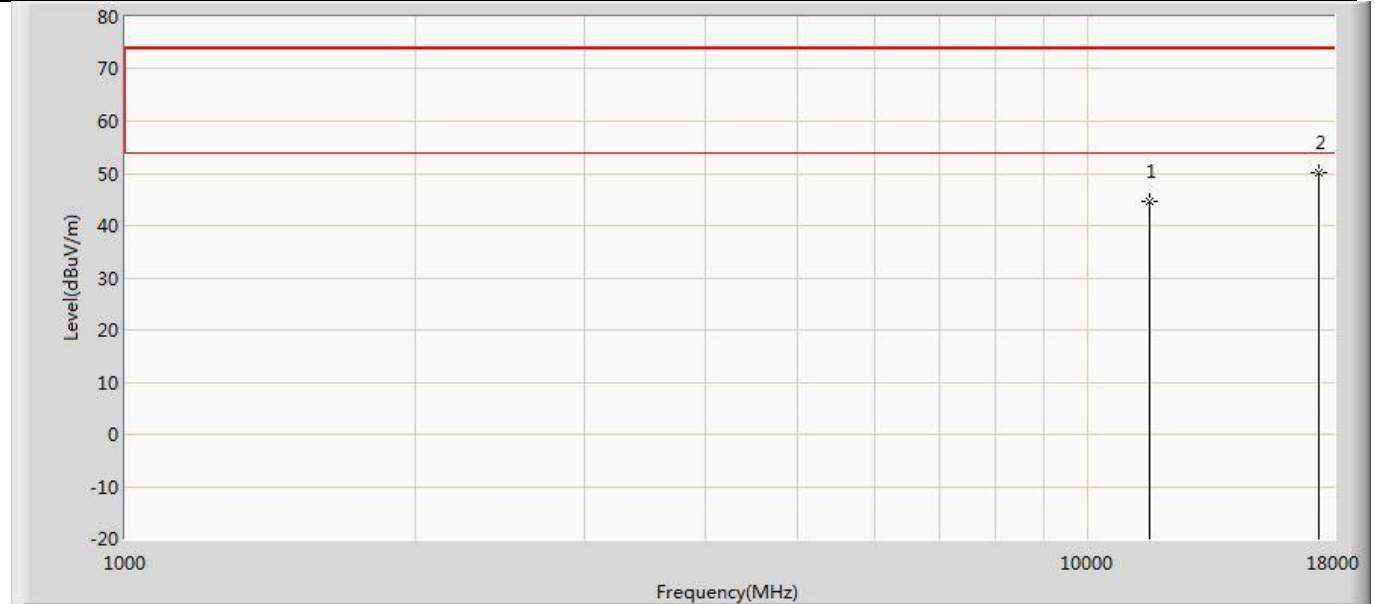
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11490.000	44.316	39.687	-29.684	74.000	4.629	PK
2	*	17235.000	52.360	38.912	-21.640	74.000	13.448	PK

Profile: 2180545R	Page No.: 59
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5785MHz 11ac20M	



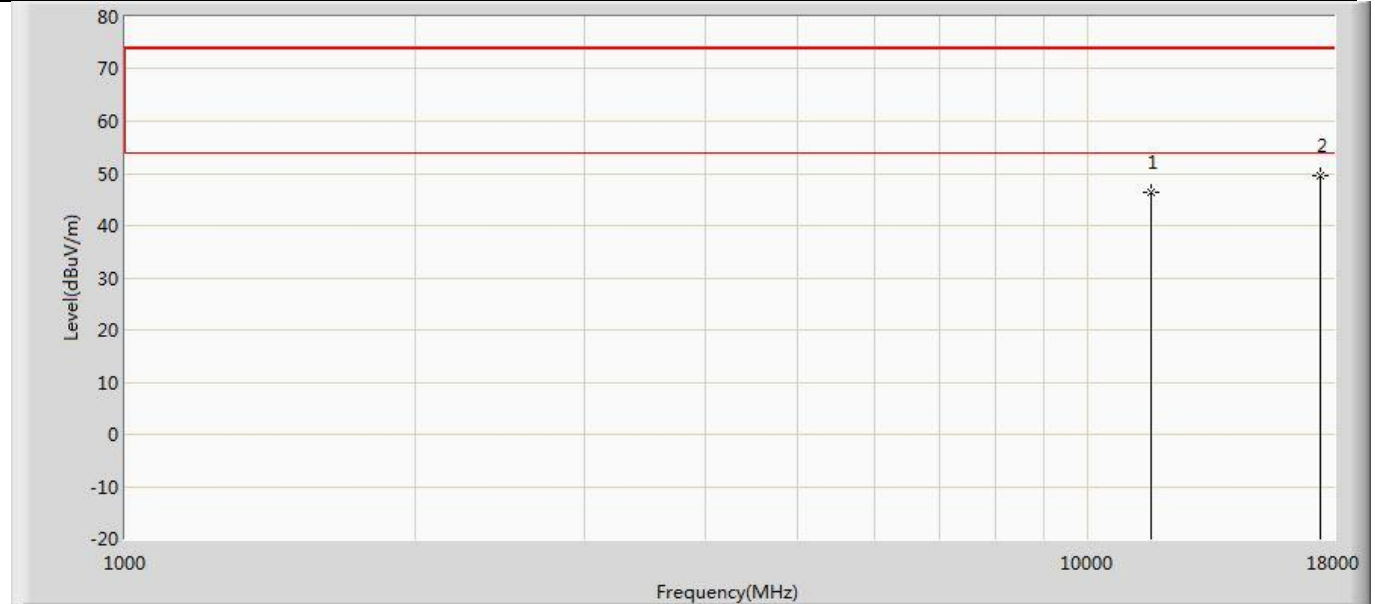
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11570.000	44.615	38.702	-29.385	74.000	5.913	PK
2	*	17355.000	49.432	38.212	-24.568	74.000	11.221	PK

Profile: 2180545R	Page No.: 60
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5785MHz 11ac20M	



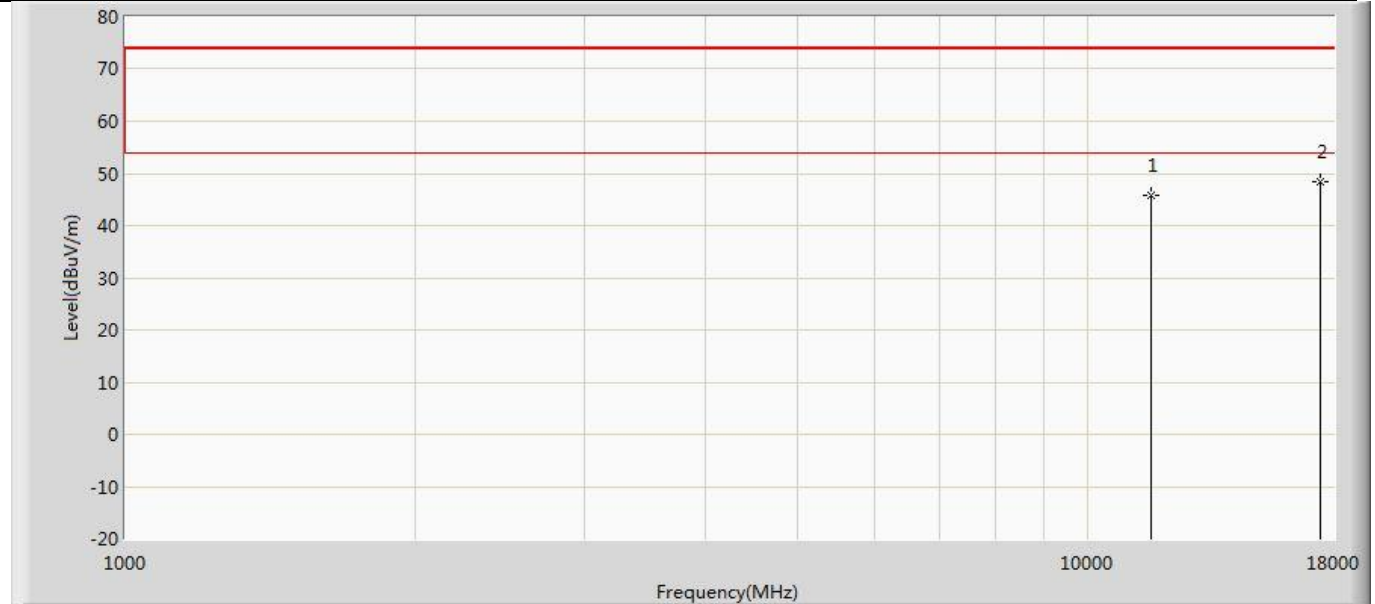
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11570.000	44.738	38.825	-29.262	74.000	5.913	PK
2	*	17355.000	50.238	39.018	-23.762	74.000	11.221	PK

Profile: 2180545R	Page No.: 61
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5805MHz 11ac20M	



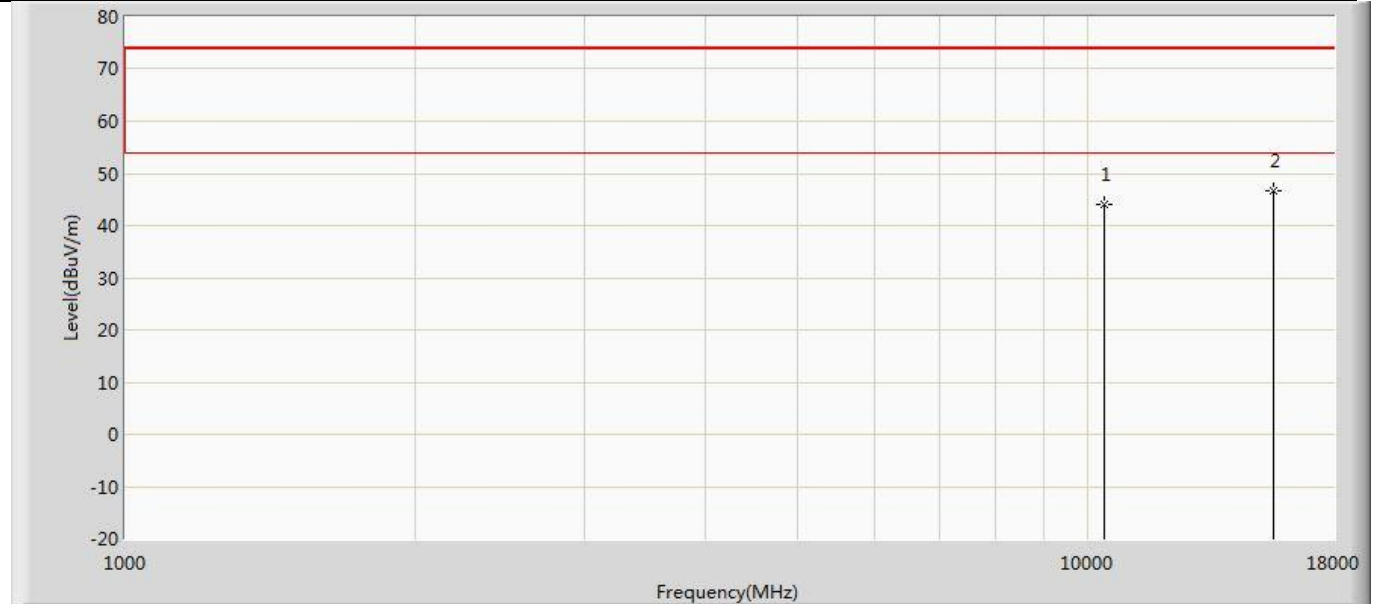
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11610.000	46.258	40.176	-27.742	74.000	6.082	PK
2	*	17415.000	49.692	38.657	-24.308	74.000	11.035	PK

Profile: 2180545R	Page No.: 62
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5805MHz 11ac20M	



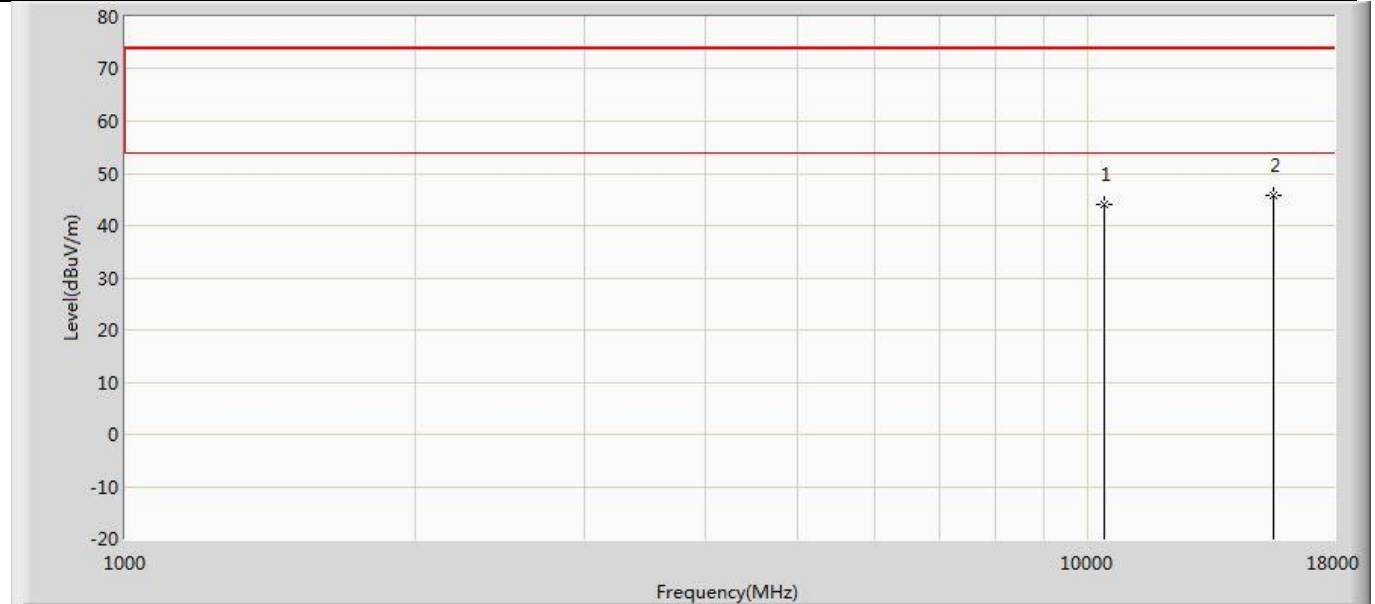
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11610.000	45.697	39.615	-28.303	74.000	6.082	PK
2	*	17415.000	48.411	37.376	-25.589	74.000	11.035	PK

Profile: 2180545R	Page No.: 63
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5190MHz 11ac40M	



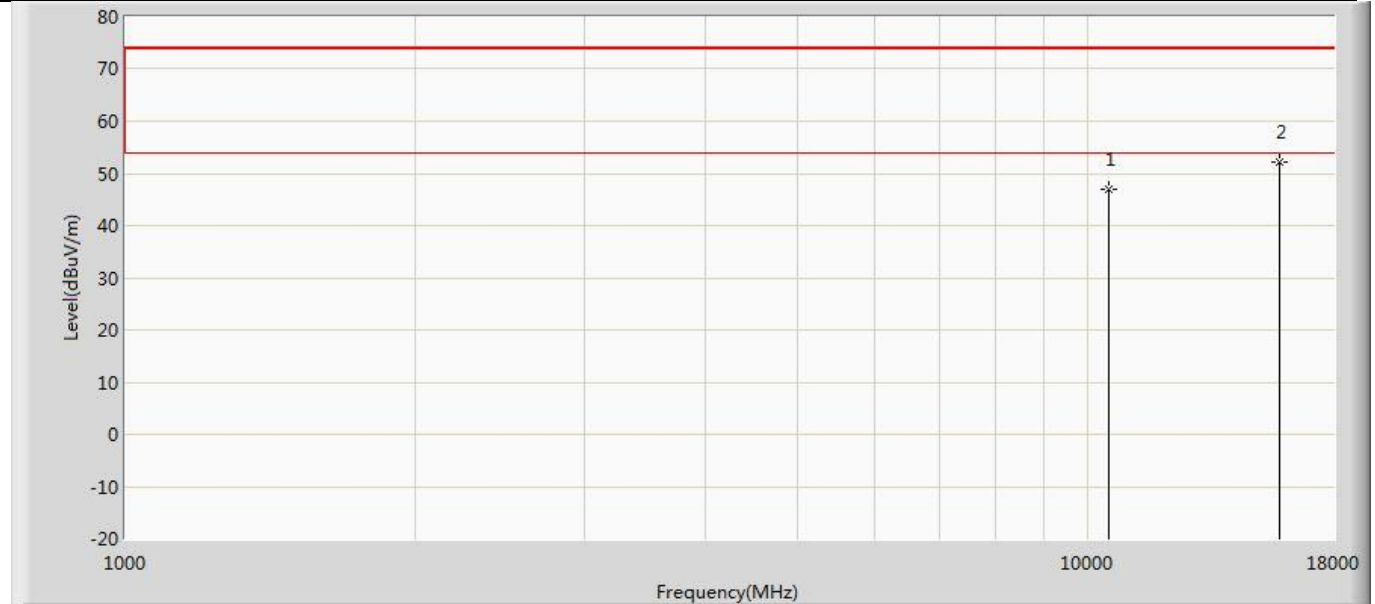
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10380.000	44.001	39.560	-29.999	74.000	4.442	PK
2	*	15570.000	46.525	38.006	-27.475	74.000	8.520	PK

Profile: 2180545R	Page No.: 64
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5190MHz 11ac40M	



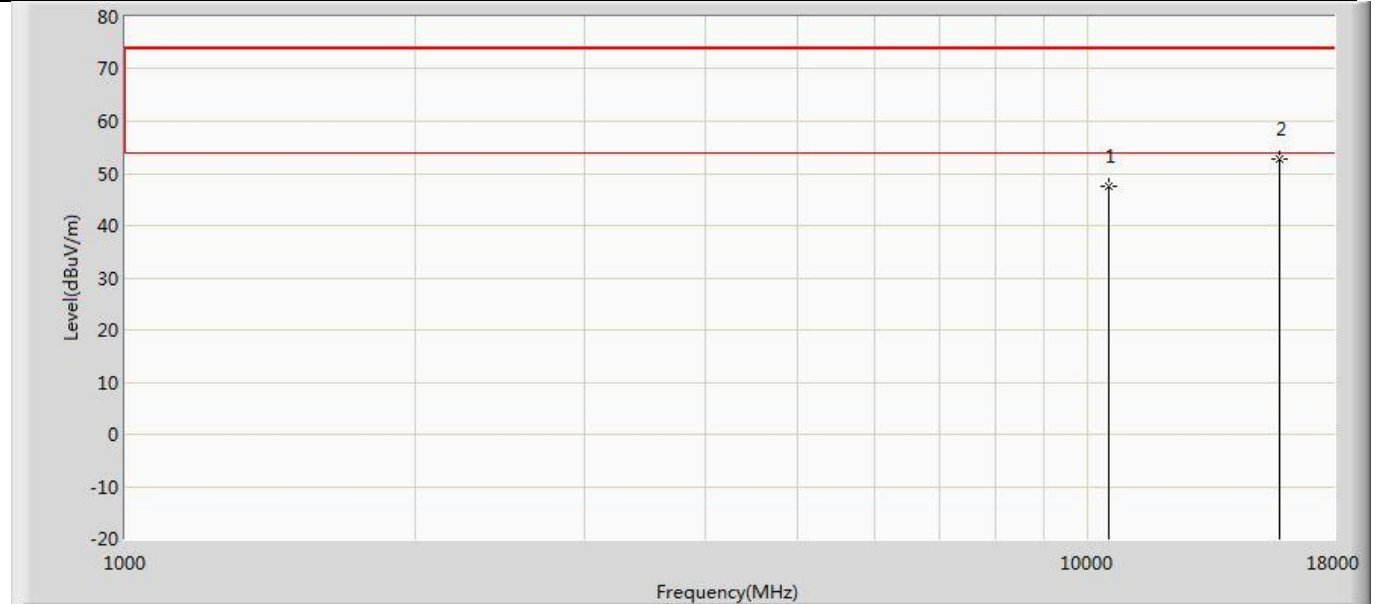
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10380.000	44.137	39.696	-29.863	74.000	4.442	PK
2	*	15570.000	45.710	37.191	-28.290	74.000	8.520	PK

Profile: 2180545R	Page No.: 11
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5230MHz 11ac40	



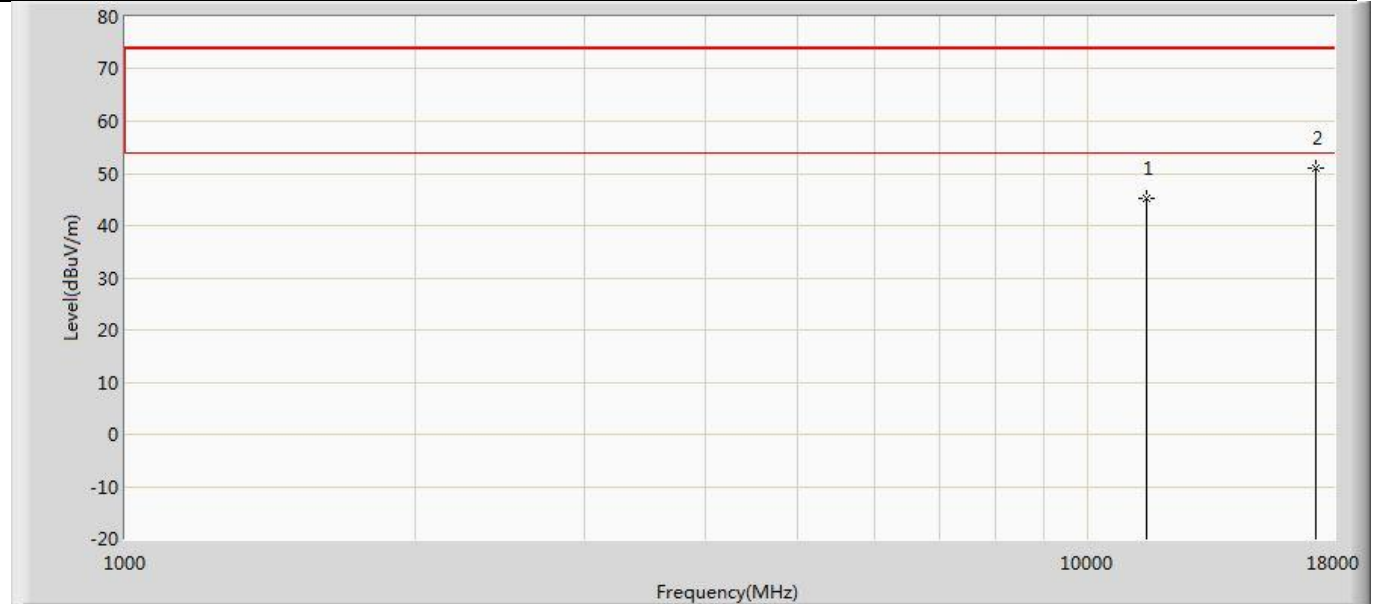
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10460.000	46.867	50.051	-27.133	74.000	-3.184	PK
2	*	15690.000	52.226	49.451	-21.774	74.000	2.775	PK

Profile: 2180545R	Page No.: 12
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5230MHz 11ac40	



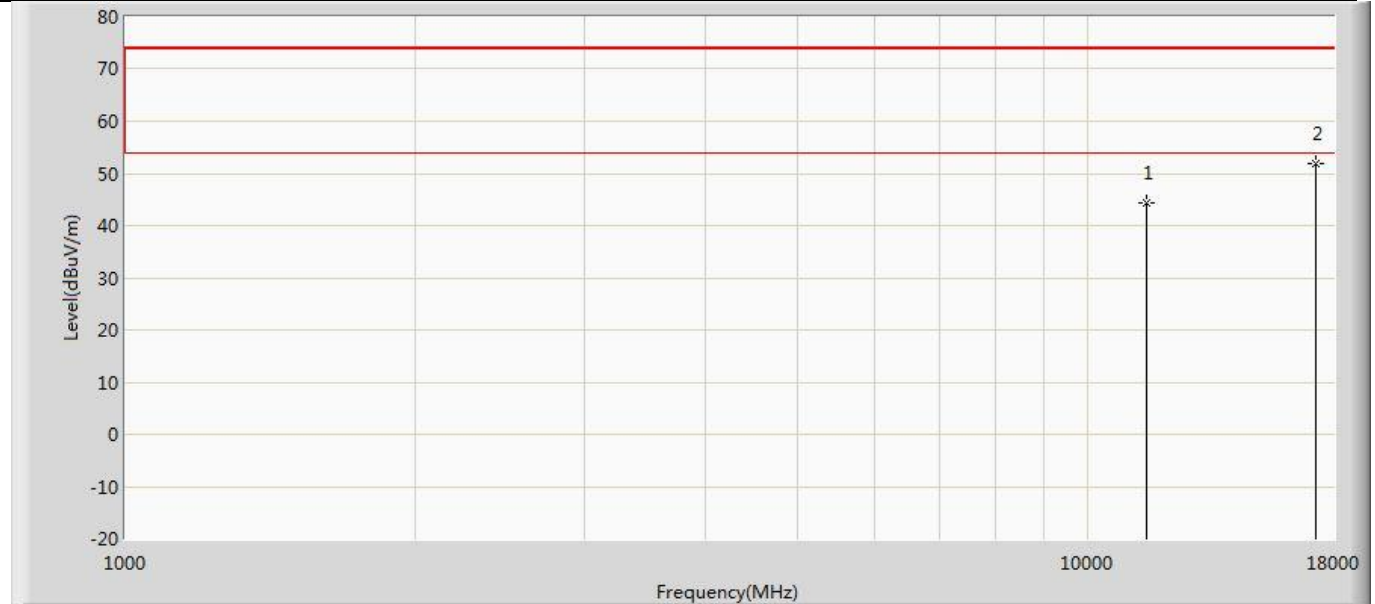
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10460.000	47.538	50.722	-26.462	74.000	-3.184	PK
2	*	15690.000	52.699	49.924	-21.301	74.000	2.775	PK

Profile: 2180545R	Page No.: 65
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5755MHz 11ac40M	



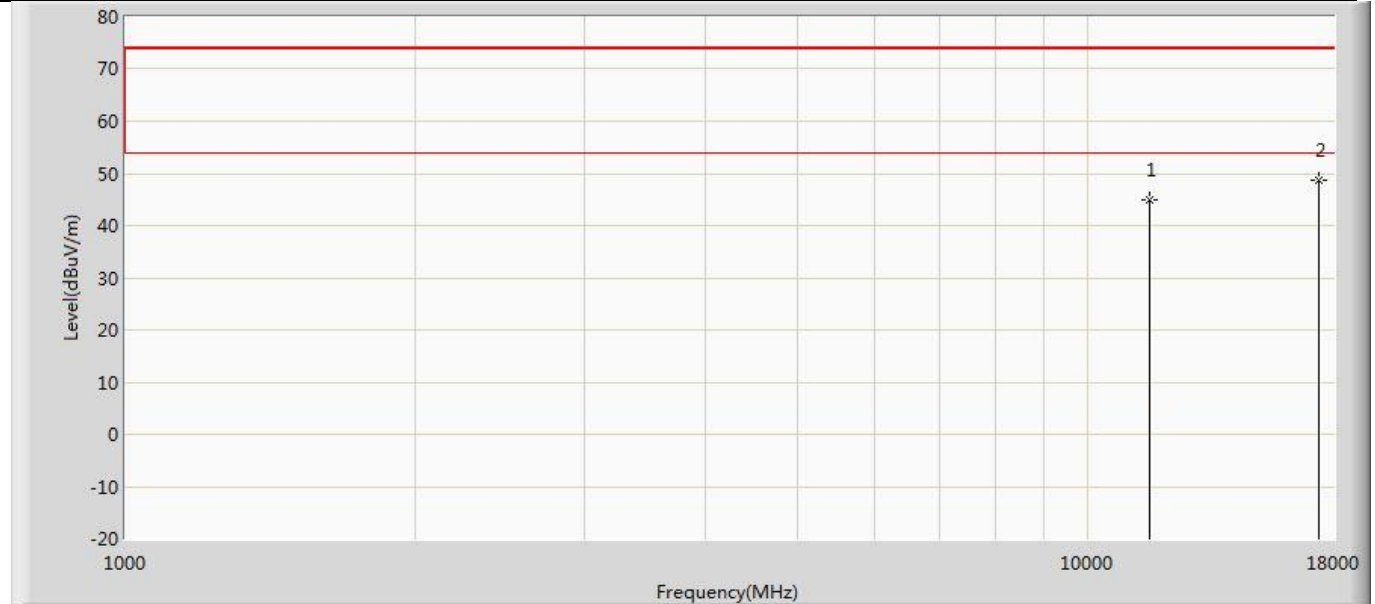
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11510.000	45.080	40.367	-28.920	74.000	4.713	PK
2	*	17265.000	51.115	38.639	-22.885	74.000	12.476	PK

Profile: 2180545R	Page No.: 66
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5755MHz 11ac40M	



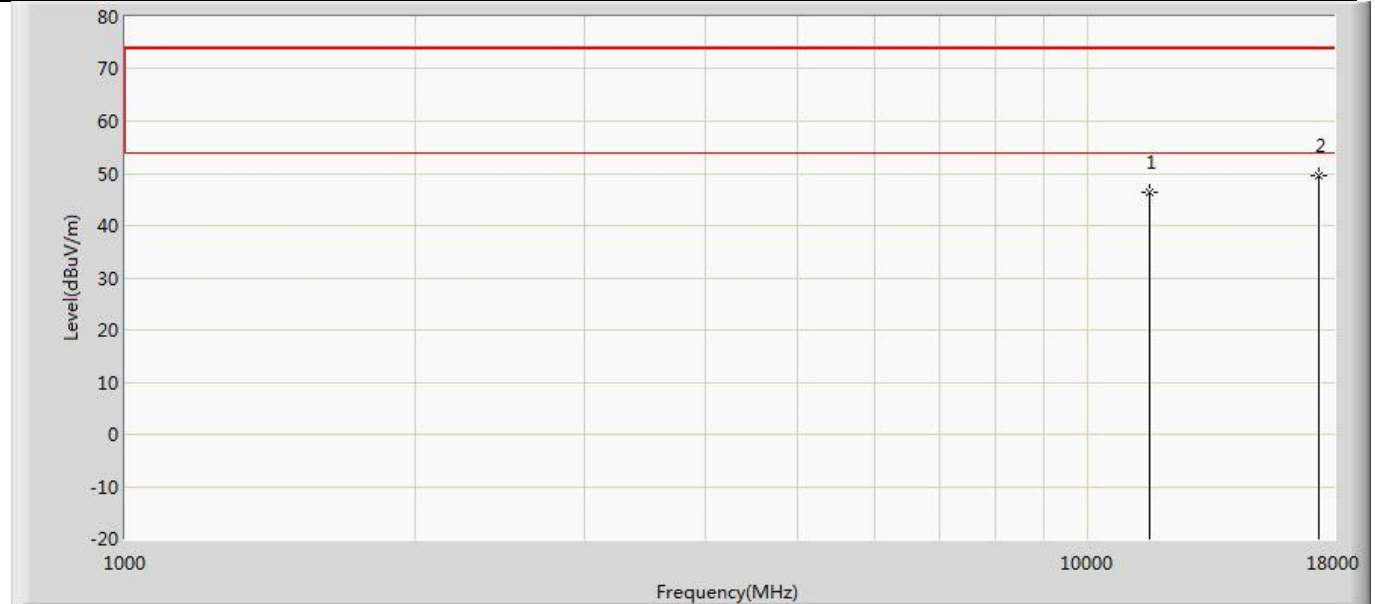
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11510.000	44.310	39.597	-29.690	74.000	4.713	PK
2	*	17265.000	51.882	39.406	-22.118	74.000	12.476	PK

Profile: 2180545R	Page No.: 67
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5795MHz 11ac40M	



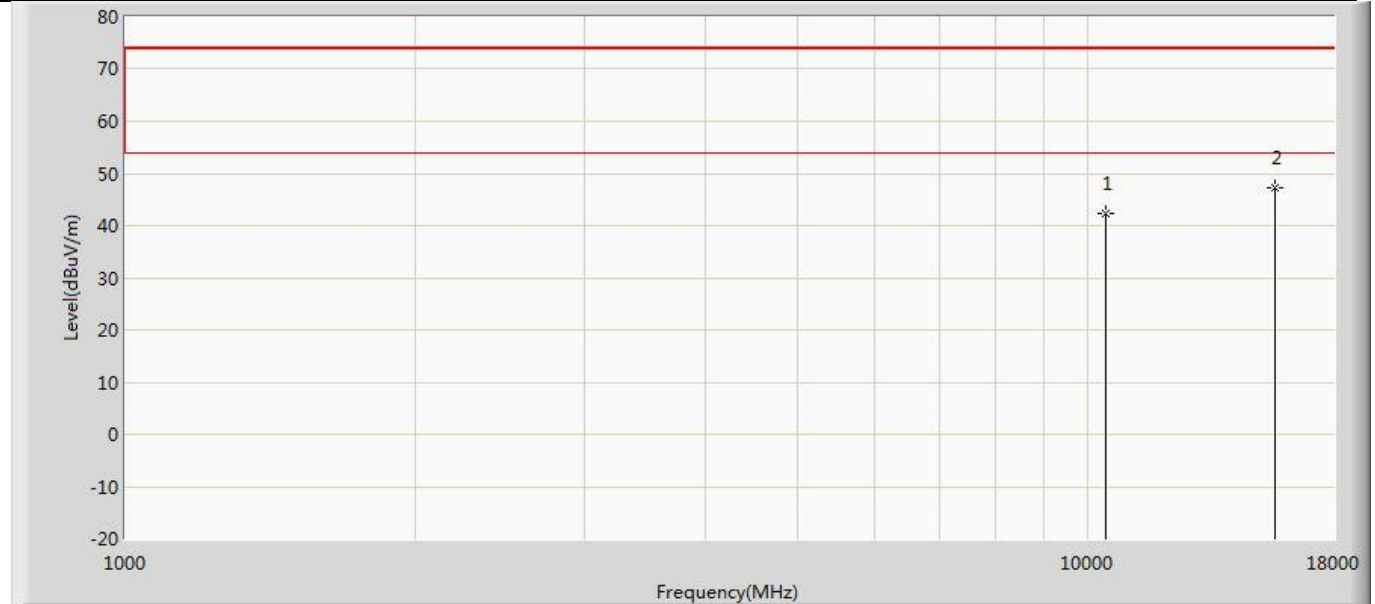
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11590.000	44.912	38.766	-29.088	74.000	6.146	PK
2	*	17385.000	48.765	37.393	-25.235	74.000	11.373	PK

Profile: 2180545R	Page No.: 68
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5795MHz 11ac40M	



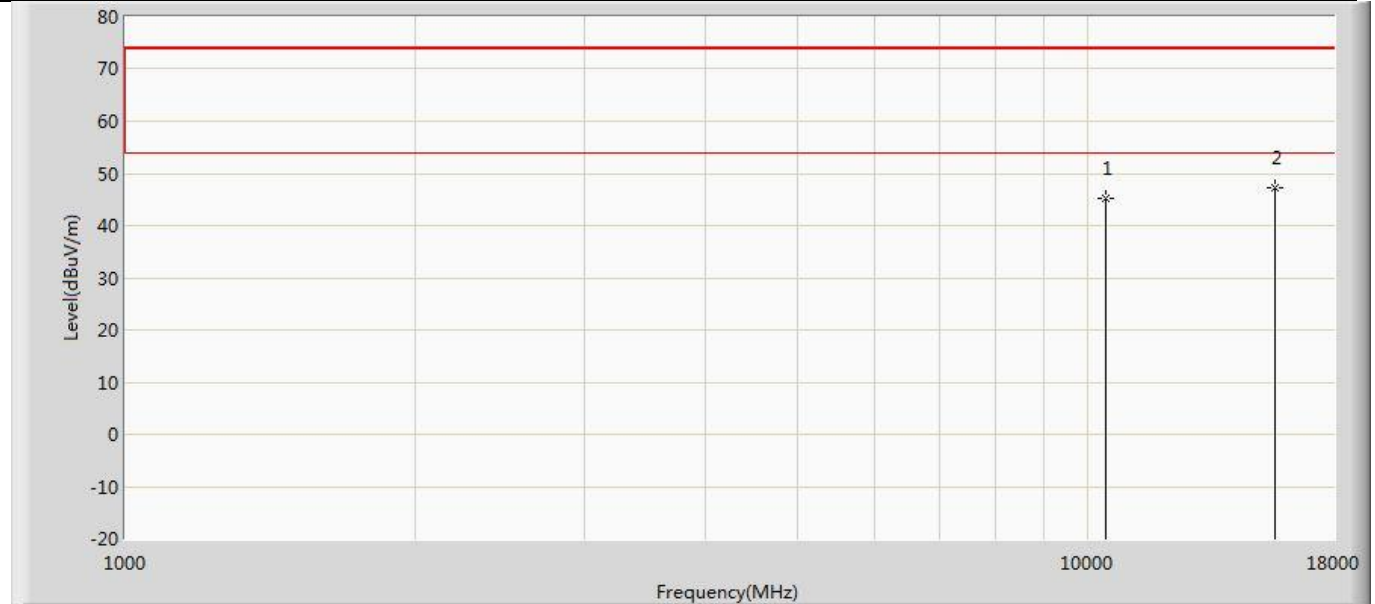
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11590.000	46.506	40.360	-27.494	74.000	6.146	PK
2	*	17385.000	49.474	38.102	-24.526	74.000	11.373	PK

Profile: 2180545R	Page No.: 69
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 3:Transmit at 5210MHz 11ac80M	



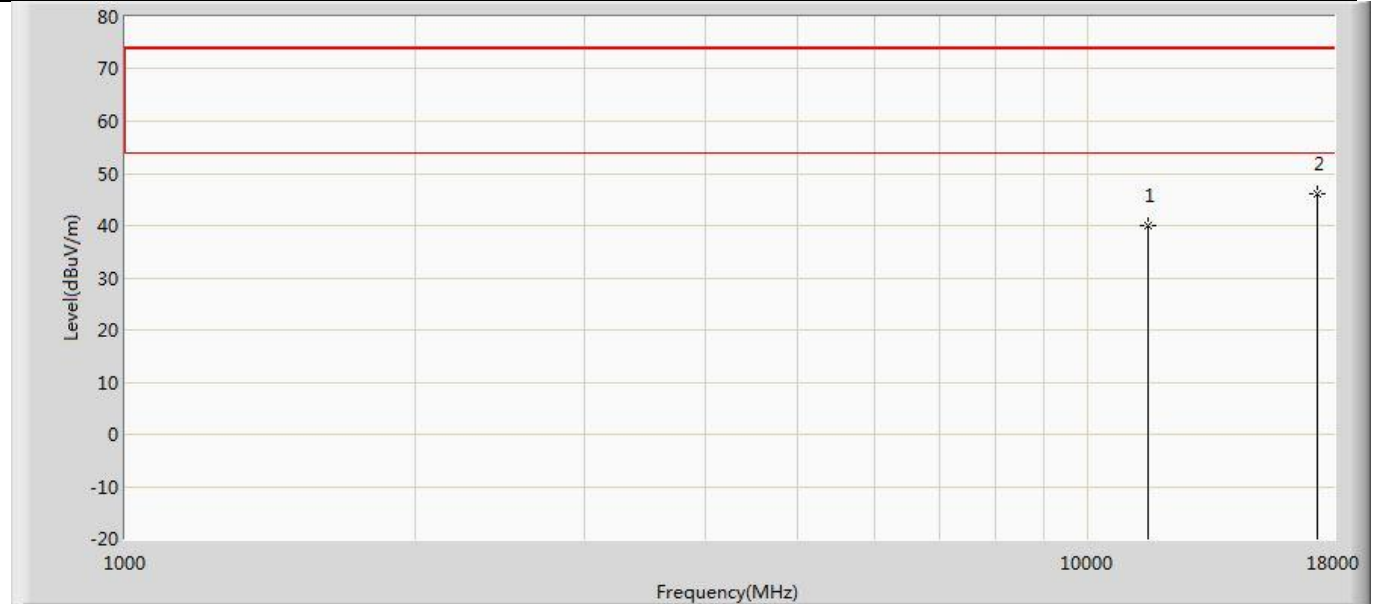
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10420.000	42.456	38.091	-31.544	74.000	4.365	PK
2	*	15630.000	47.309	38.756	-26.691	74.000	8.553	PK

Profile: 2180545R	Page No.: 70
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 3:Transmit at 5210MHz 11ac80M	



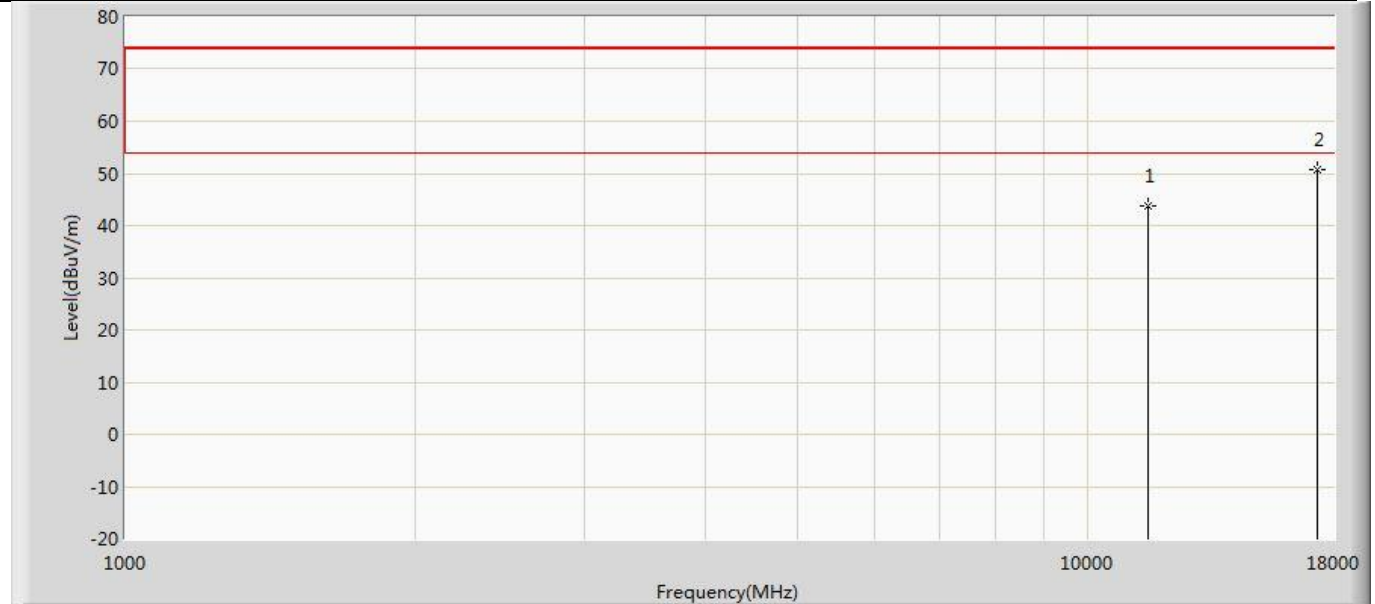
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10420.000	45.346	40.981	-28.654	74.000	4.365	PK
2	*	15630.000	47.381	38.828	-26.619	74.000	8.553	PK

Profile: 2180545R	Page No.: 71
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 3:Transmit at 5775MHz 11ac80M	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11550.000	40.106	34.457	-33.894	74.000	5.649	PK
2	*	17325.000	46.051	34.108	-27.949	74.000	11.943	PK

Profile: 2180545R	Page No.: 72
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/12 - 00:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 3:Transmit at 5775MHz 11ac80M	



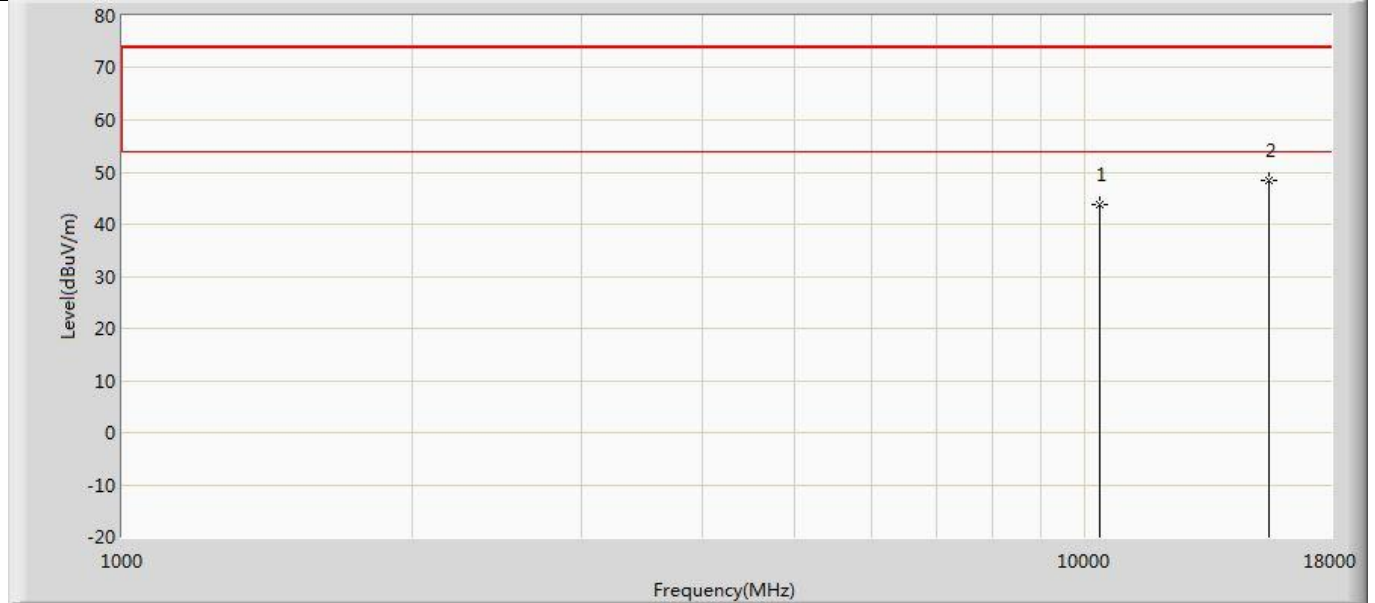
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11550.000	43.788	38.139	-30.212	74.000	5.649	PK
2	*	17325.000	50.634	38.691	-23.366	74.000	11.943	PK

Note:

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, worst case are at least 20dB below the limits, therefore no data appear in the report.
3. The test frequency range, 18GHz~40GHz test result on peak is lower than average limit, all is the noise base, therefore no data appear in the report.
4. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
5. As the radiated emission was performed, so conducted emission was not tested.

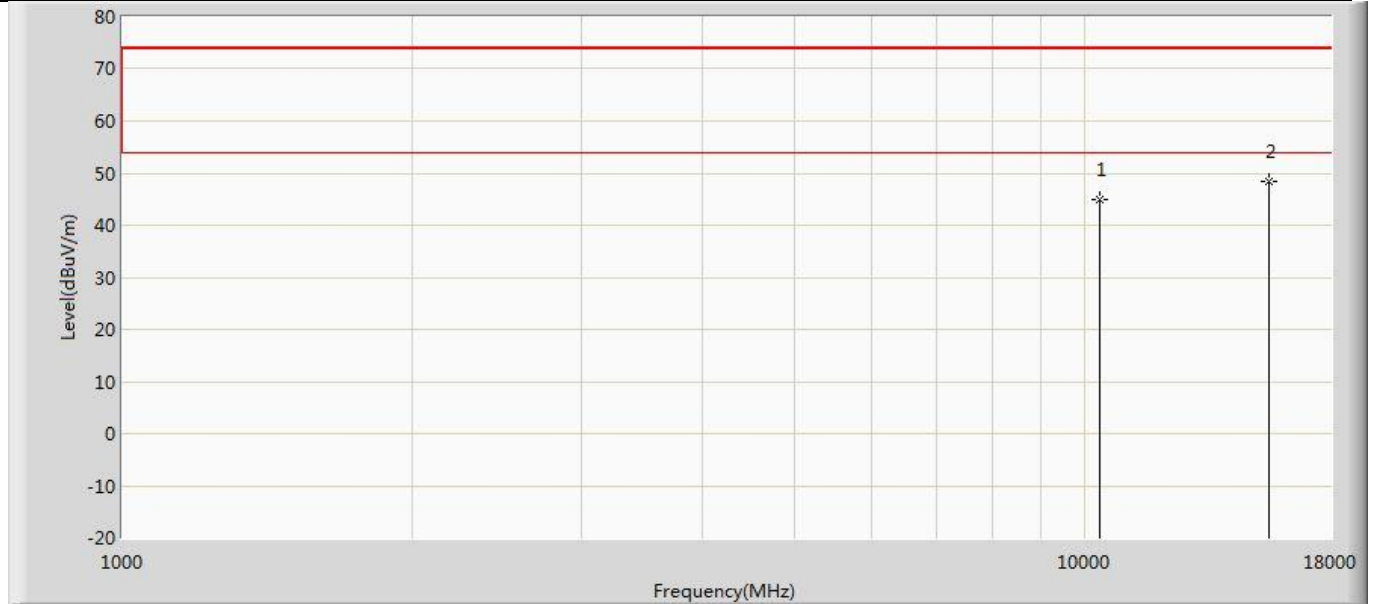
ANT-DB1-RAF-RPS:MIMO-Ant1+2

Profile: 2180545R	Page No.: 19
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5180MHz 11ac20M	



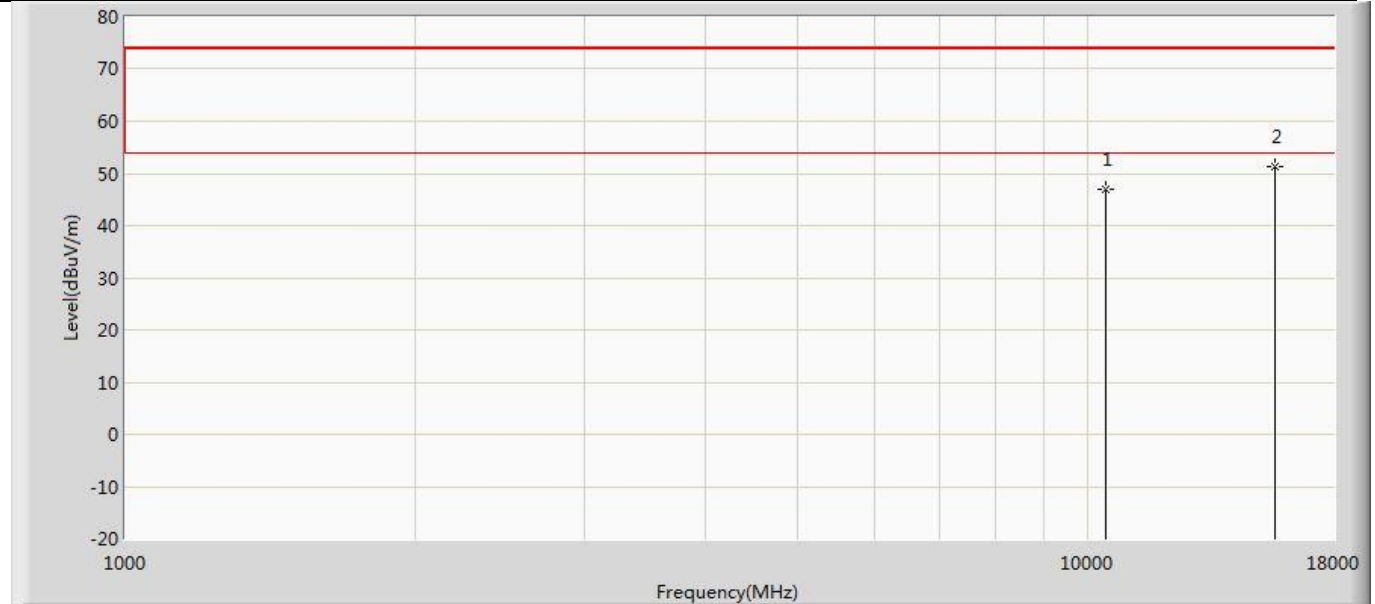
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10360.000	43.795	40.074	-30.205	74.000	3.722	PK
2	*	15540.000	48.458	41.105	-25.542	74.000	7.352	PK

Profile: 2180545R	Page No.: 20
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5180MHz 11ac20M	



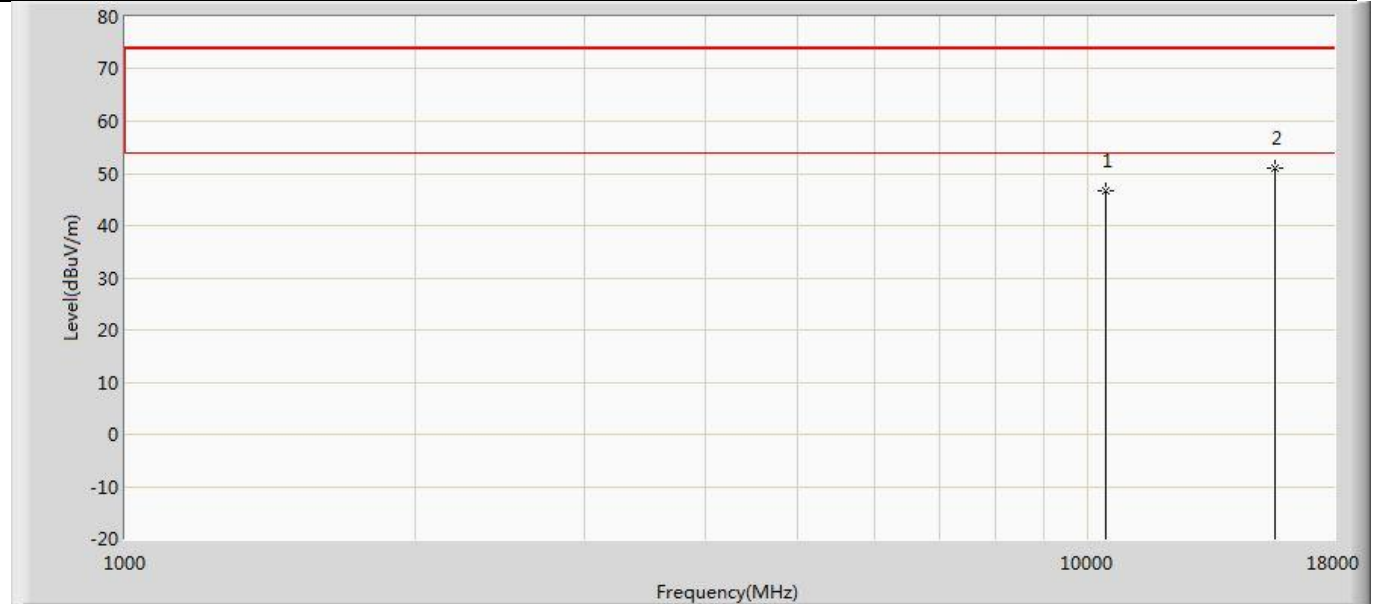
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10360.000	45.054	41.333	-28.946	74.000	3.722	PK
2	*	15540.000	48.516	41.163	-25.484	74.000	7.352	PK

Profile: 2180545R	Page No.: 1
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5220MHz 11ac20	



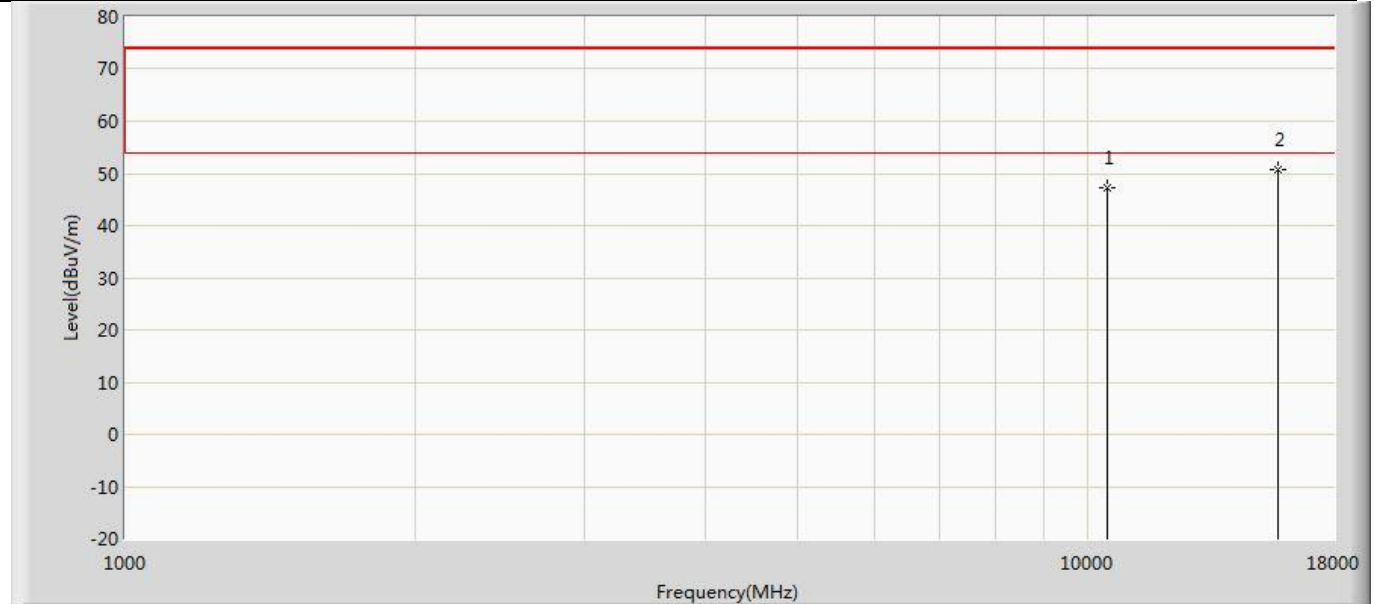
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10440.000	46.978	50.290	-27.022	74.000	-3.312	PK
2	*	15660.000	51.209	49.337	-22.791	74.000	1.872	PK

Profile: 2180545R	Page No.: 2
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5220MHz 11ac20	



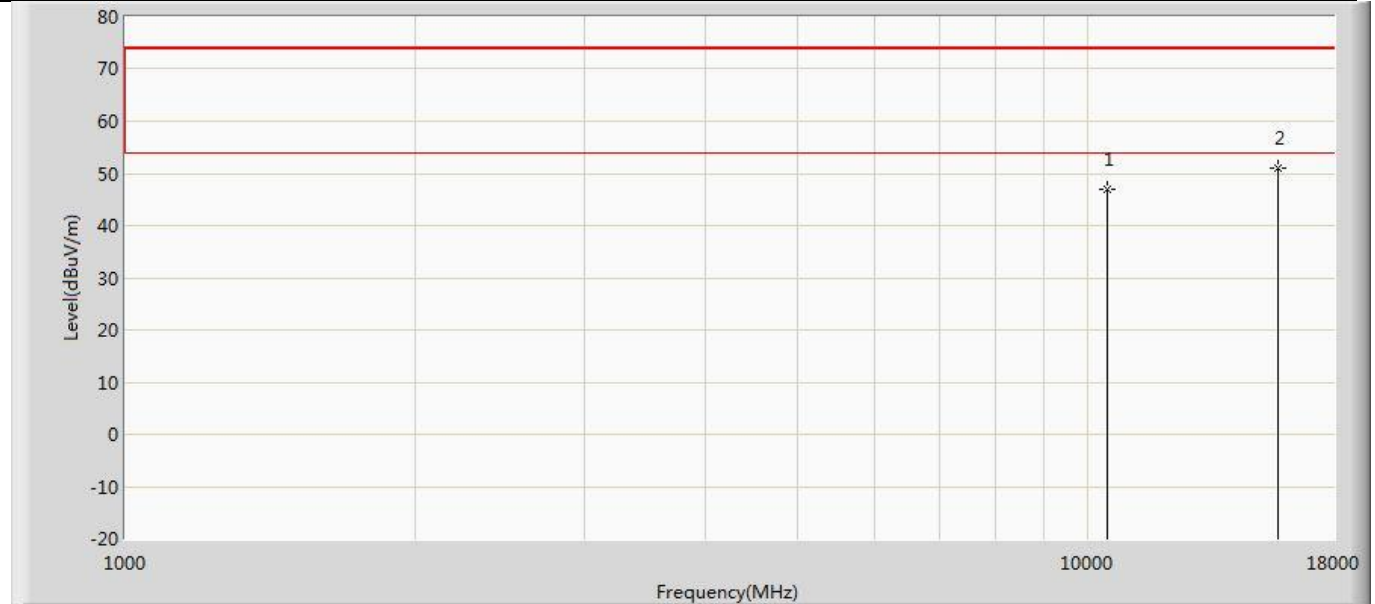
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10440.000	46.759	50.071	-27.241	74.000	-3.312	PK
2	*	15660.000	51.044	49.172	-22.956	74.000	1.872	PK

Profile: 2180545R	Page No.: 3
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5240MHz 11ac20	



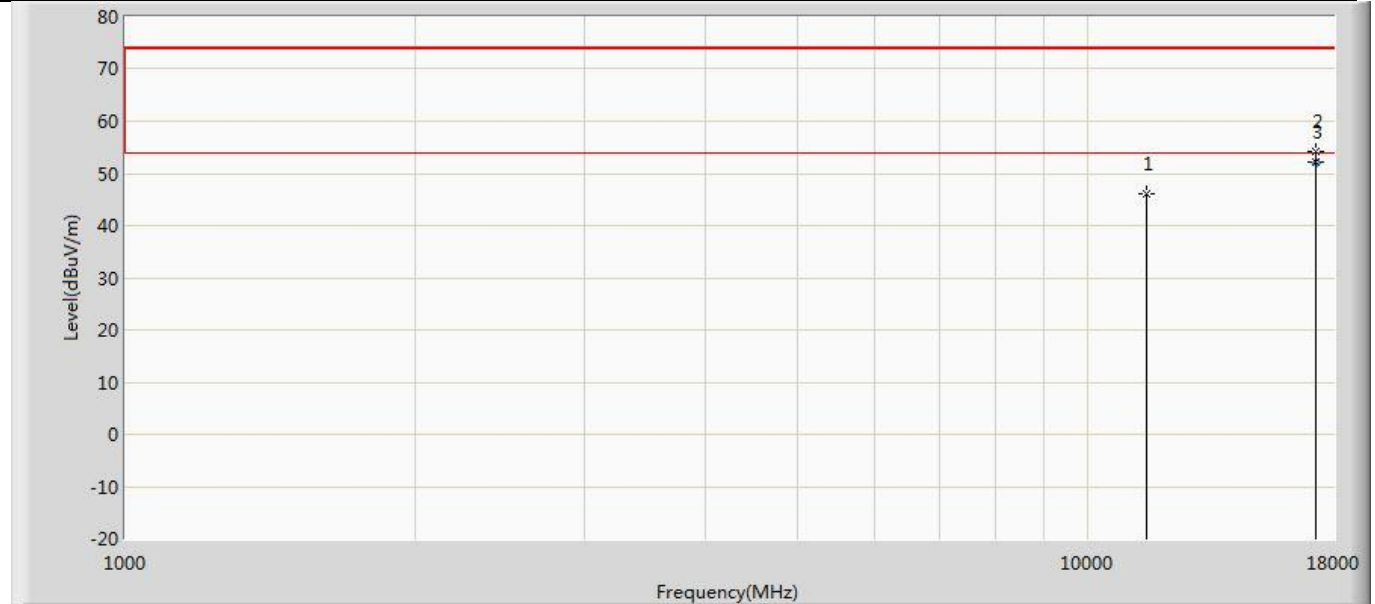
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10480.000	47.181	50.321	-26.819	74.000	-3.139	PK
2	*	15720.000	50.812	48.873	-23.188	74.000	1.939	PK

Profile: 2180545R	Page No.: 4
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5240MHz 11ac20	



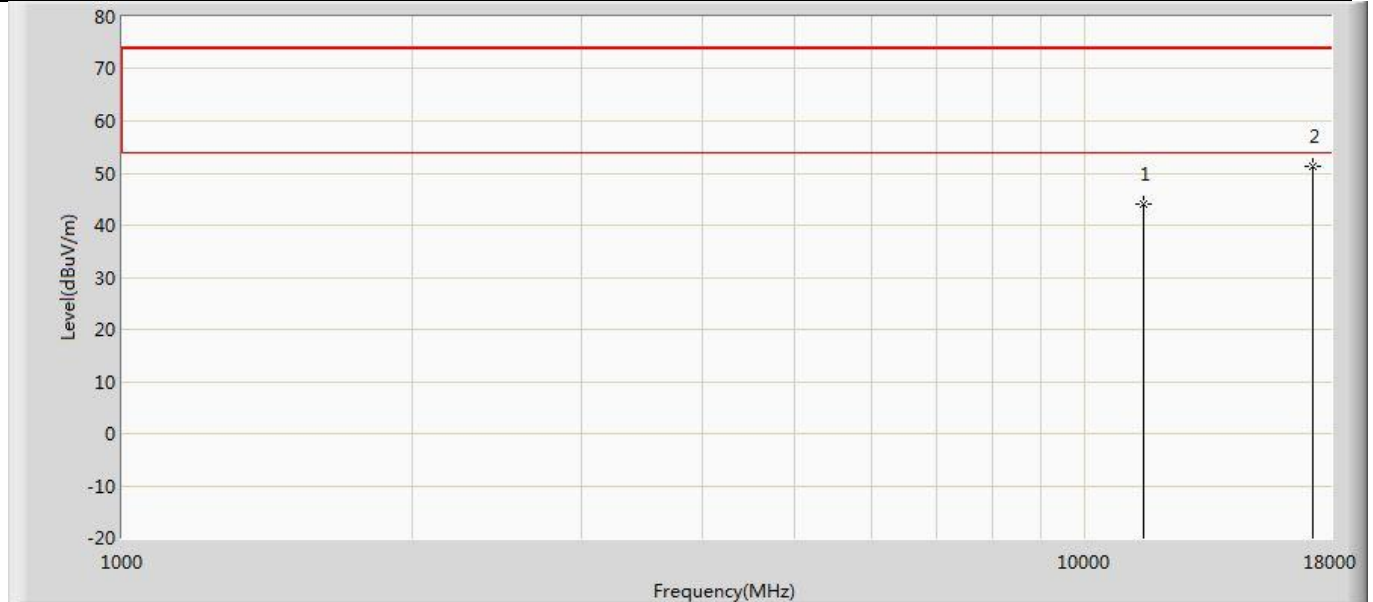
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10480.000	46.825	49.965	-27.175	74.000	-3.139	PK
2	*	15720.000	50.892	48.953	-23.108	74.000	1.939	PK

Profile: 2180545R	Page No.: 21
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/28 - 20:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5745MHz 11ac20M	



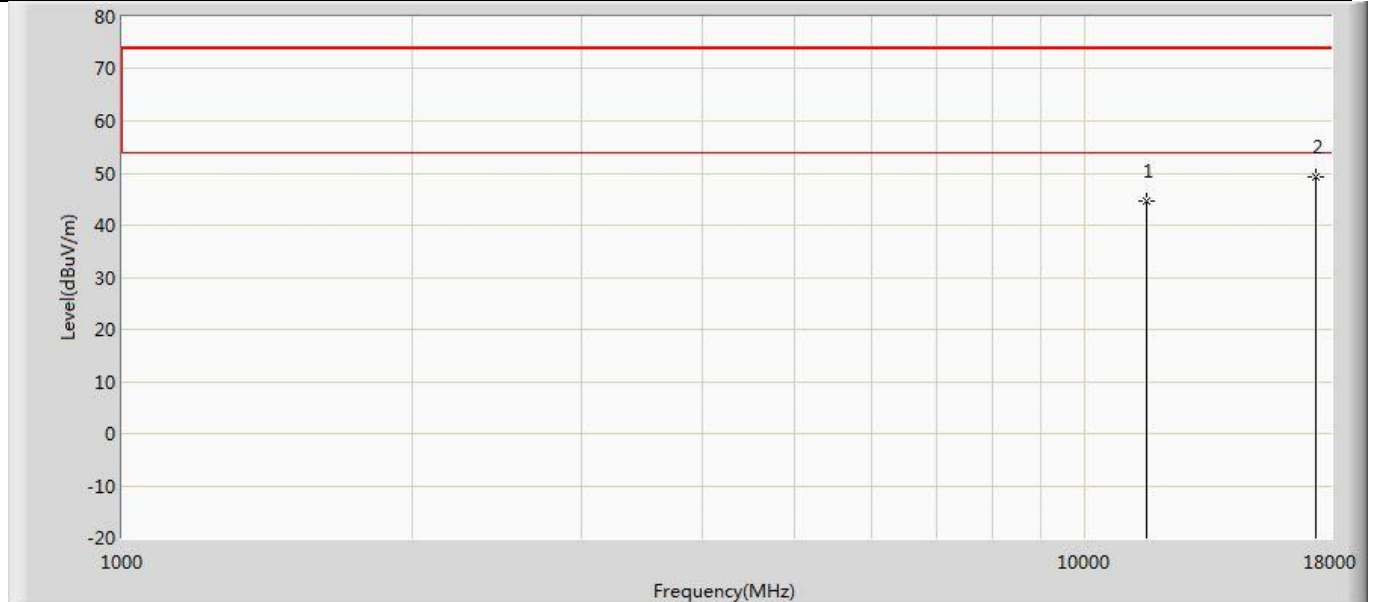
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11490.000	45.955	41.326	-28.045	74.000	4.629	PK
2		17235.000	54.119	40.671	-19.881	74.000	13.448	PK
3	*	17235.000	52.157	38.709	-1.843	54.000	13.448	AV

Profile: 2180545R	Page No.: 22
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5745MHz 11ac20M	



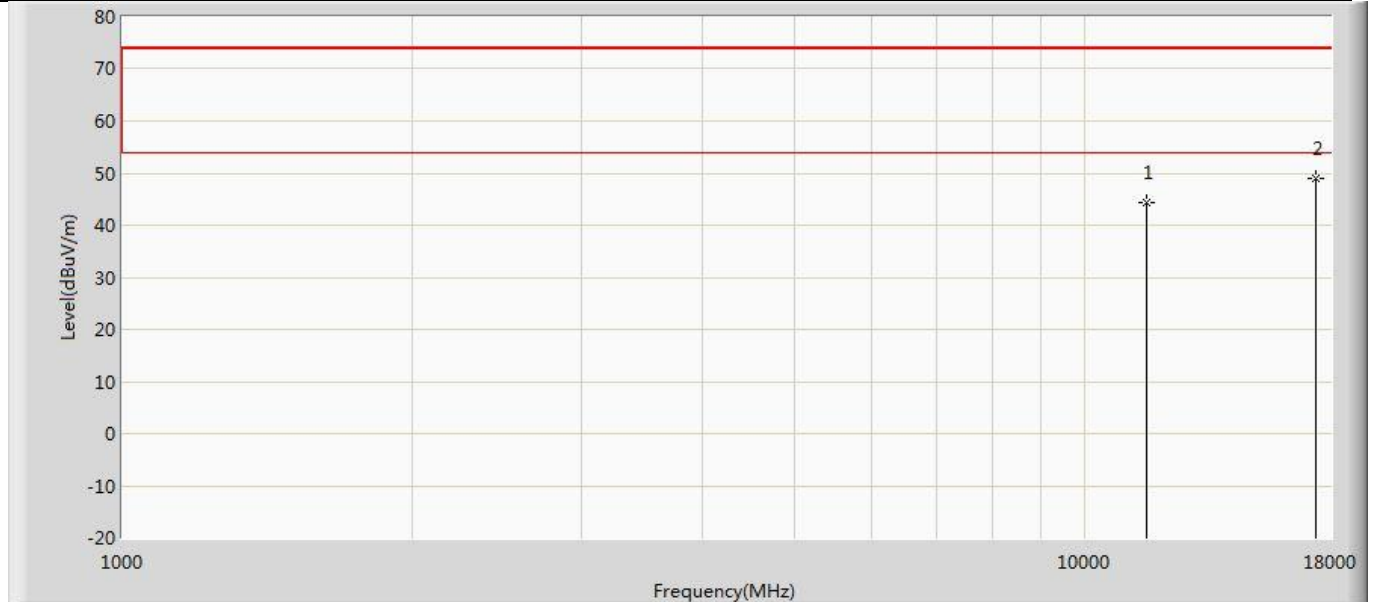
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11490.000	43.942	39.313	-30.058	74.000	4.629	PK
2	*	17235.000	51.434	37.986	-22.566	74.000	13.448	PK

Profile: 2180545R	Page No.: 23
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5785MHz 11ac20M	



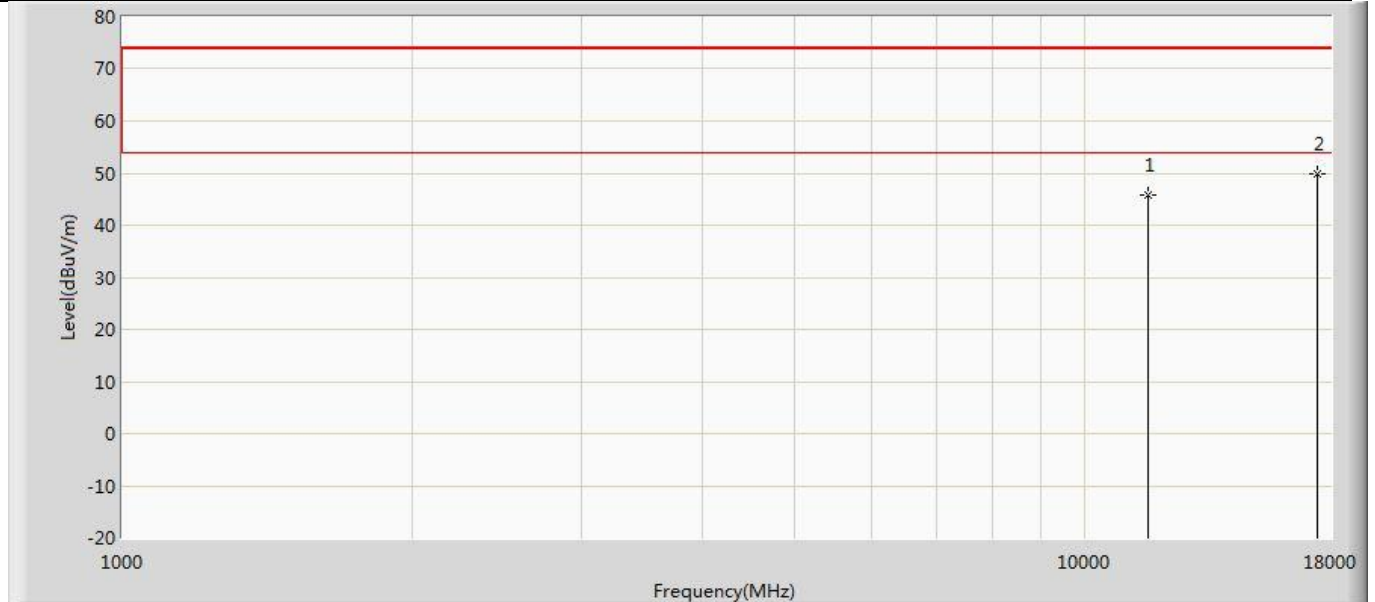
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11570.000	44.646	38.733	-29.354	74.000	5.913	PK
2	*	17355.000	49.193	37.973	-24.807	74.000	11.221	PK

Profile: 2180545R	Page No.: 24
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5785MHz 11ac20M	



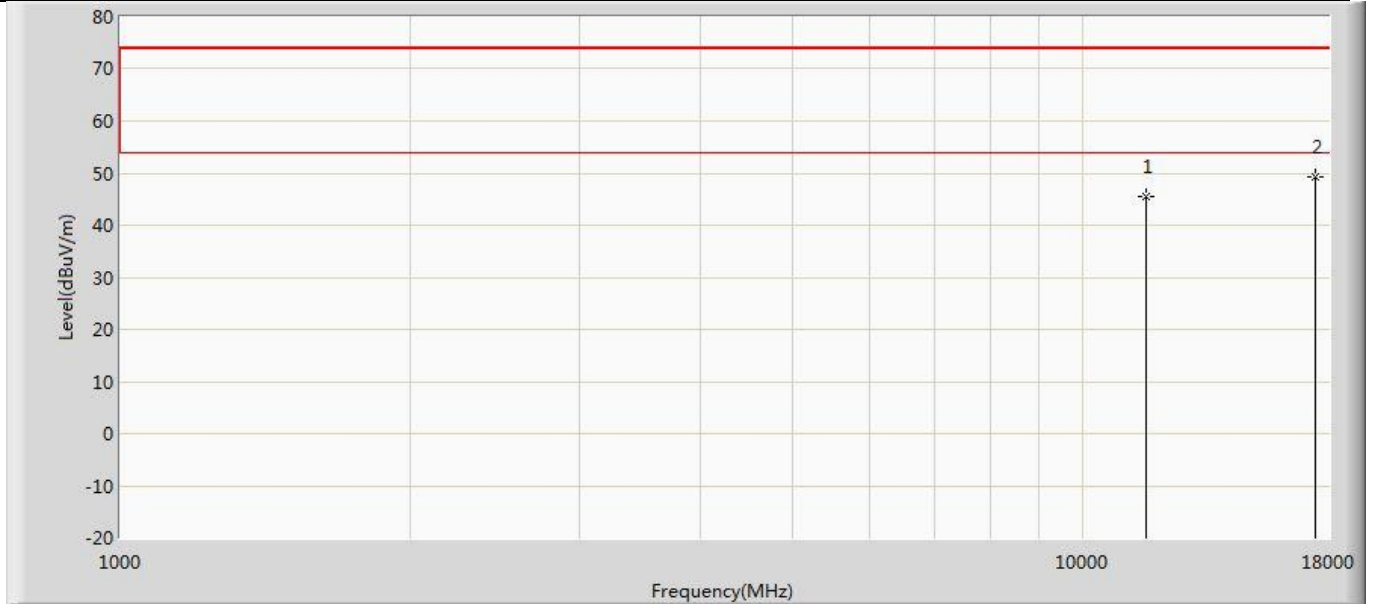
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11570.000	44.423	38.510	-29.577	74.000	5.913	PK
2	*	17355.000	49.102	37.882	-24.898	74.000	11.221	PK

Profile: 2180545R	Page No.: 25
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5805MHz 11ac20M	



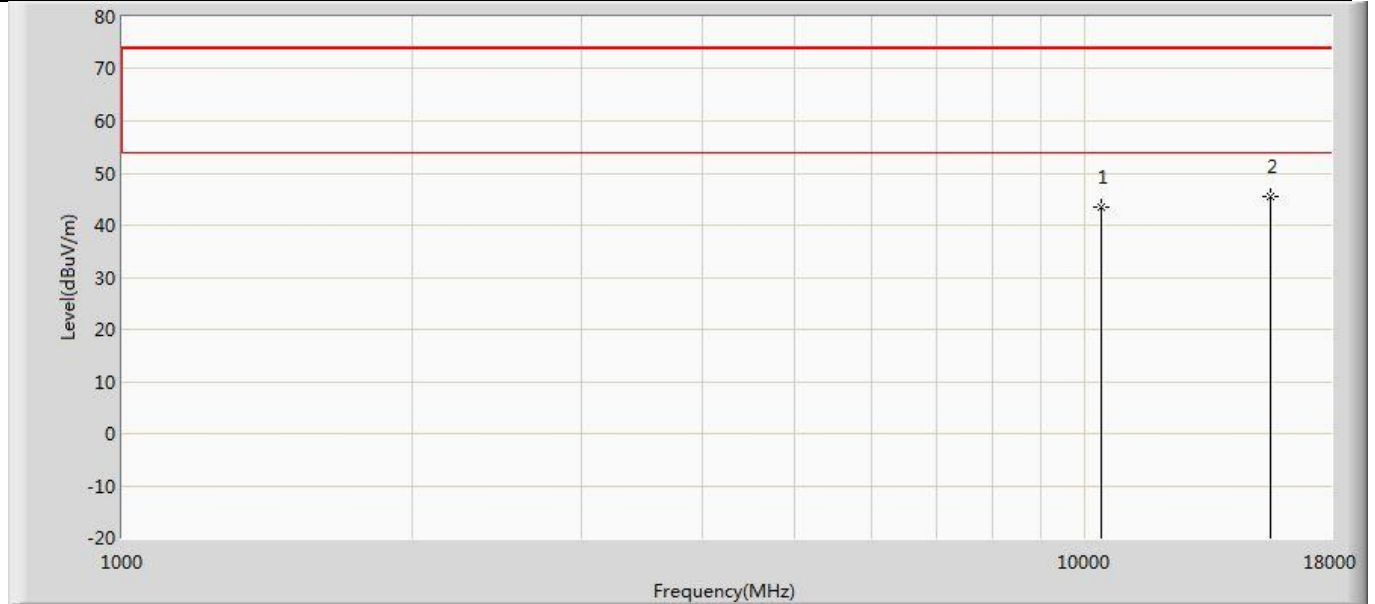
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11610.000	45.909	39.827	-28.091	74.000	6.082	PK
2	*	17415.000	49.751	38.716	-24.249	74.000	11.035	PK

Profile: 2180545R	Page No.: 26
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 1:Transmit at 5805MHz 11ac20M	



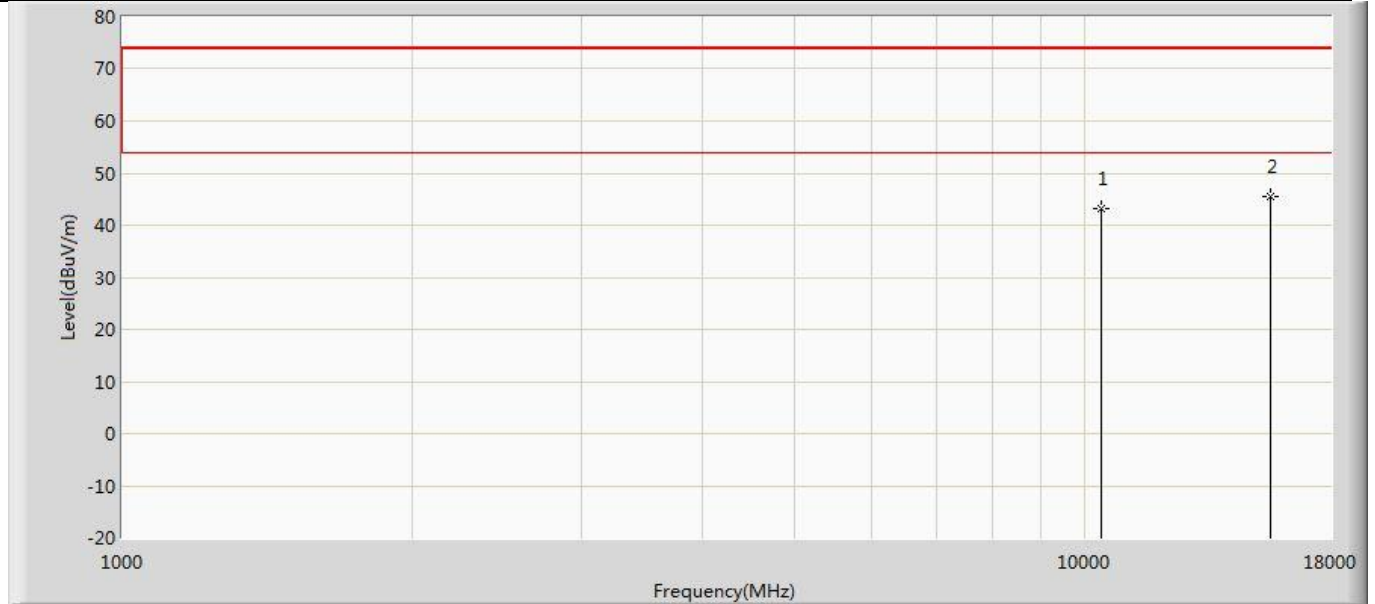
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11610.000	45.523	39.441	-28.477	74.000	6.082	PK
2	*	17415.000	49.157	38.122	-24.843	74.000	11.035	PK

Profile: 2180545R	Page No.: 27
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5190MHz 11ac40M	



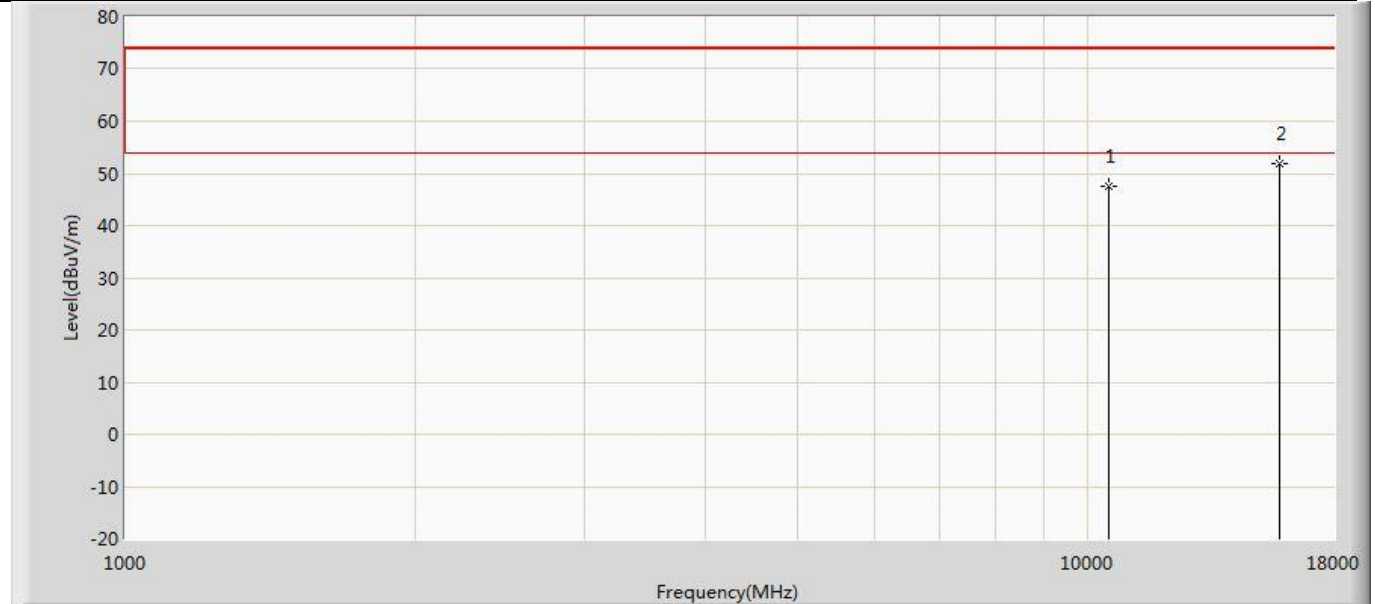
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10380.000	43.368	38.927	-30.632	74.000	4.442	PK
2	*	15570.000	45.366	36.847	-28.634	74.000	8.520	PK

Profile: 2180545R	Page No.: 28
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5190MHz 11ac40M	



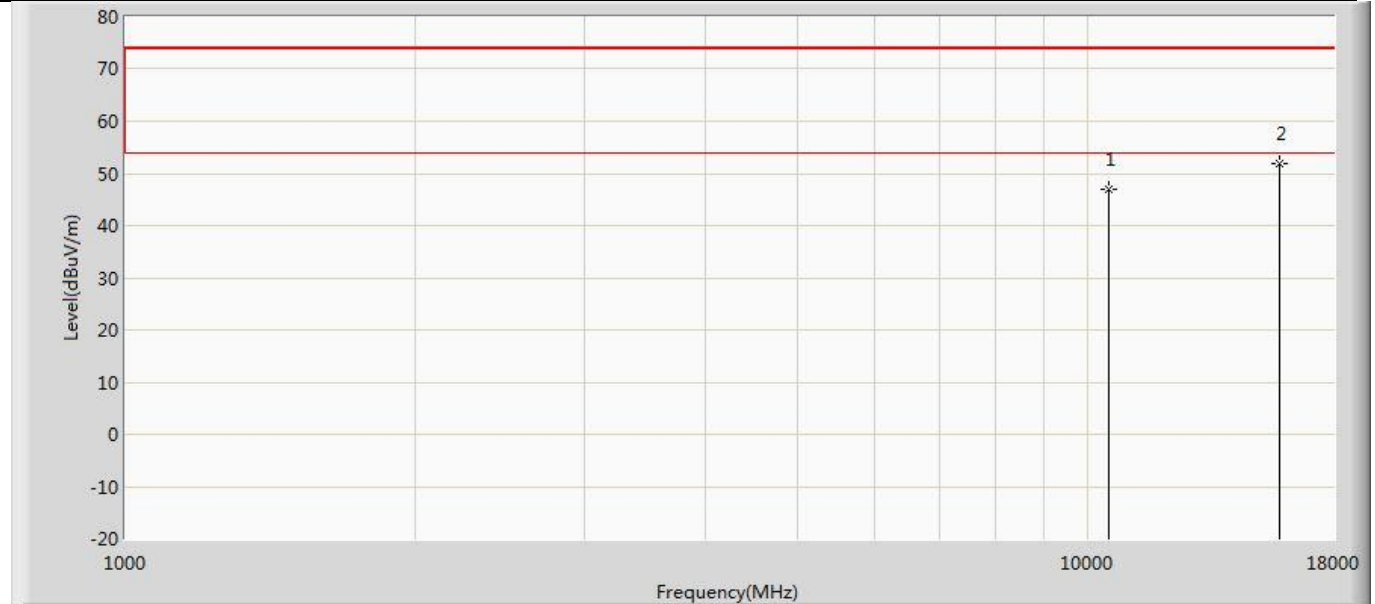
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10380.000	43.255	38.814	-30.745	74.000	4.442	PK
2	*	15570.000	45.544	37.025	-28.456	74.000	8.520	PK

Profile: 2180545R	Page No.: 5
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5230MHz 11ac40	



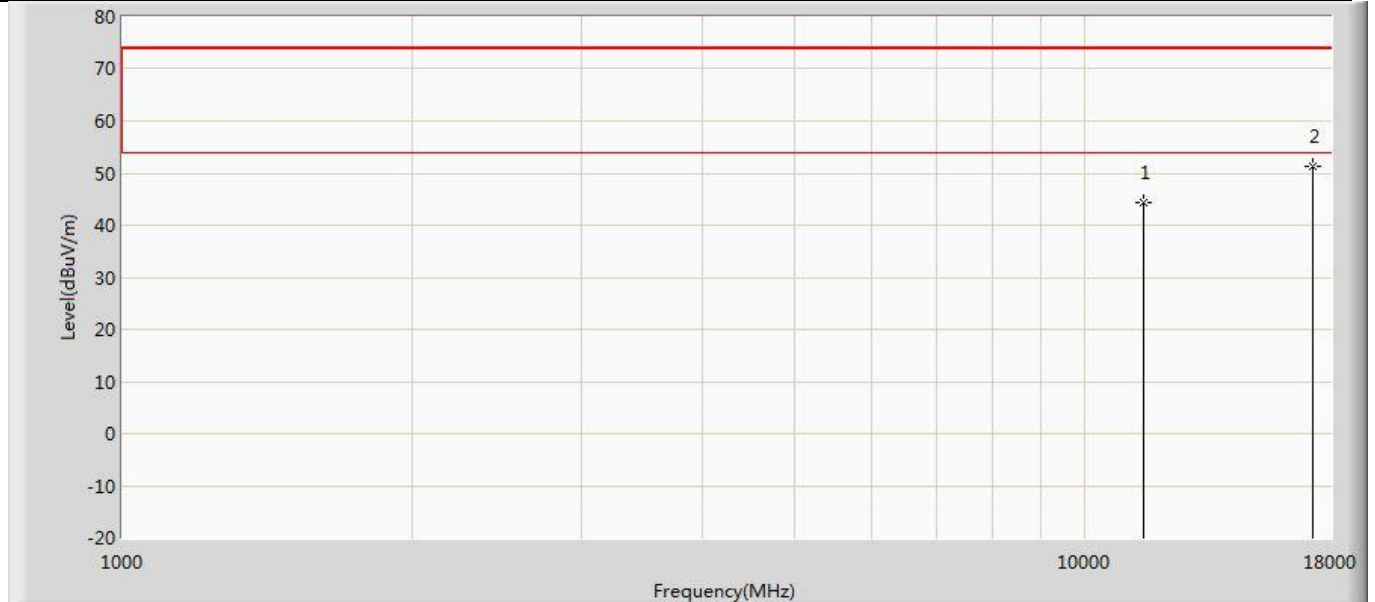
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10460.000	47.464	50.648	-26.536	74.000	-3.184	PK
2	*	15690.000	51.993	49.218	-22.007	74.000	2.775	PK

Profile: 2180545R	Page No.: 6
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/16 - 20:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5230MHz 11ac40	



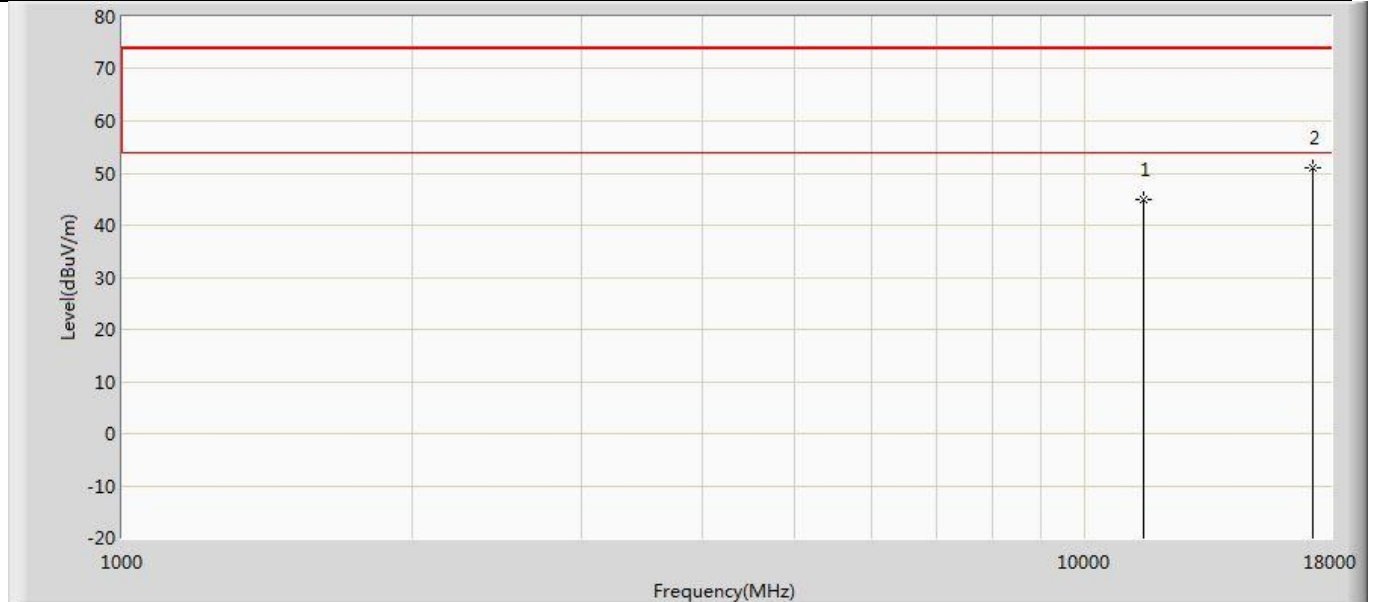
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10460.000	47.032	50.216	-26.968	74.000	-3.184	PK
2	*	15690.000	51.799	49.024	-22.201	74.000	2.775	PK

Profile: 2180545R	Page No.: 29
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5755MHz 11ac40M	



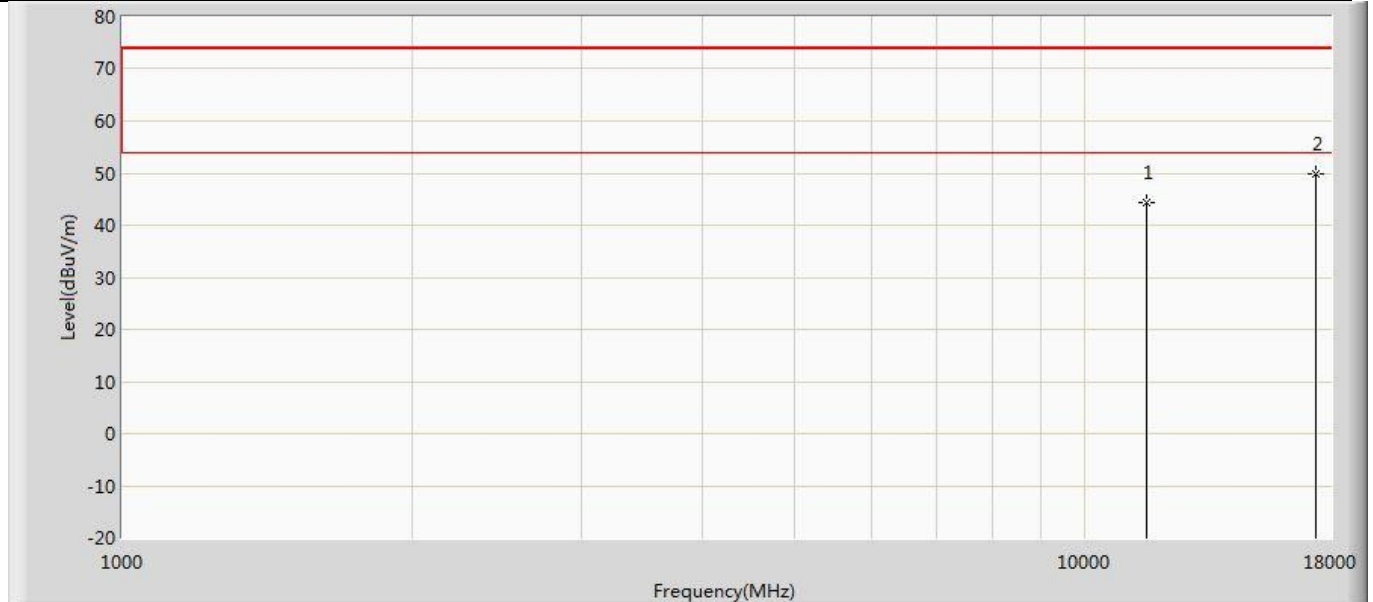
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11510.000	44.227	39.514	-29.773	74.000	4.713	PK
2	*	17265.000	51.208	38.732	-22.792	74.000	12.476	PK

Profile: 2180545R	Page No.: 30
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5755MHz 11ac40M	



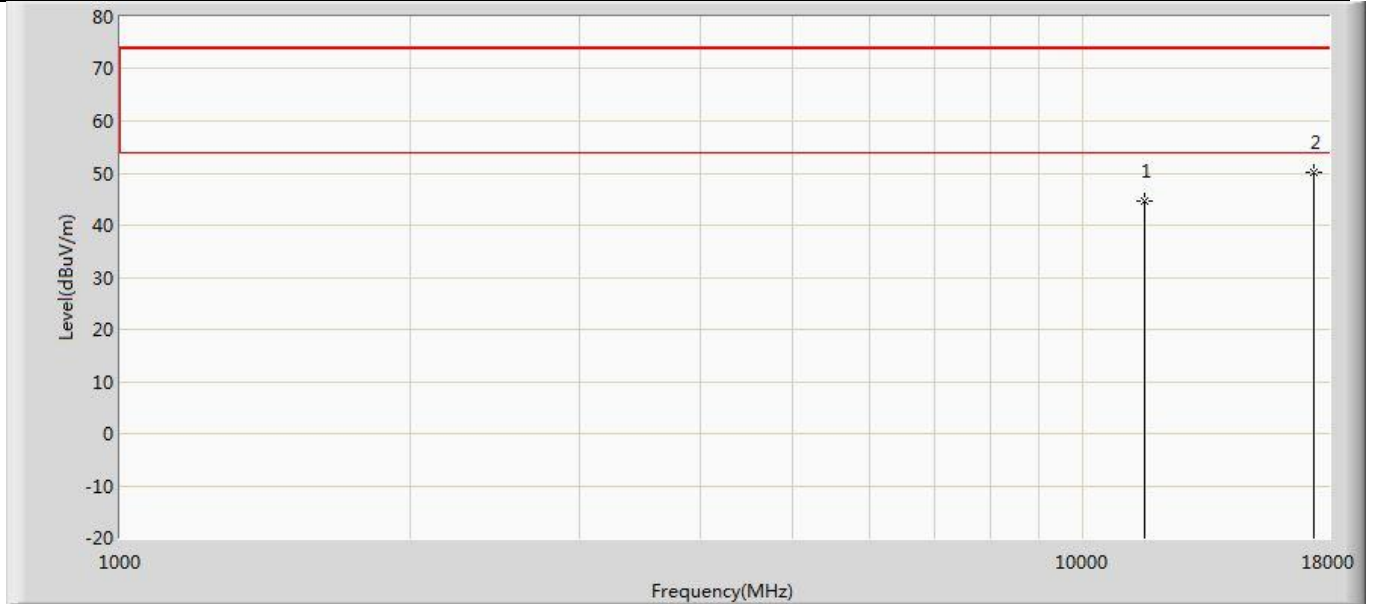
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11510.000	44.965	40.252	-29.035	74.000	4.713	PK
2	*	17265.000	51.144	38.668	-22.856	74.000	12.476	PK

Profile: 2180545R	Page No.: 31
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5795MHz 11ac40M	



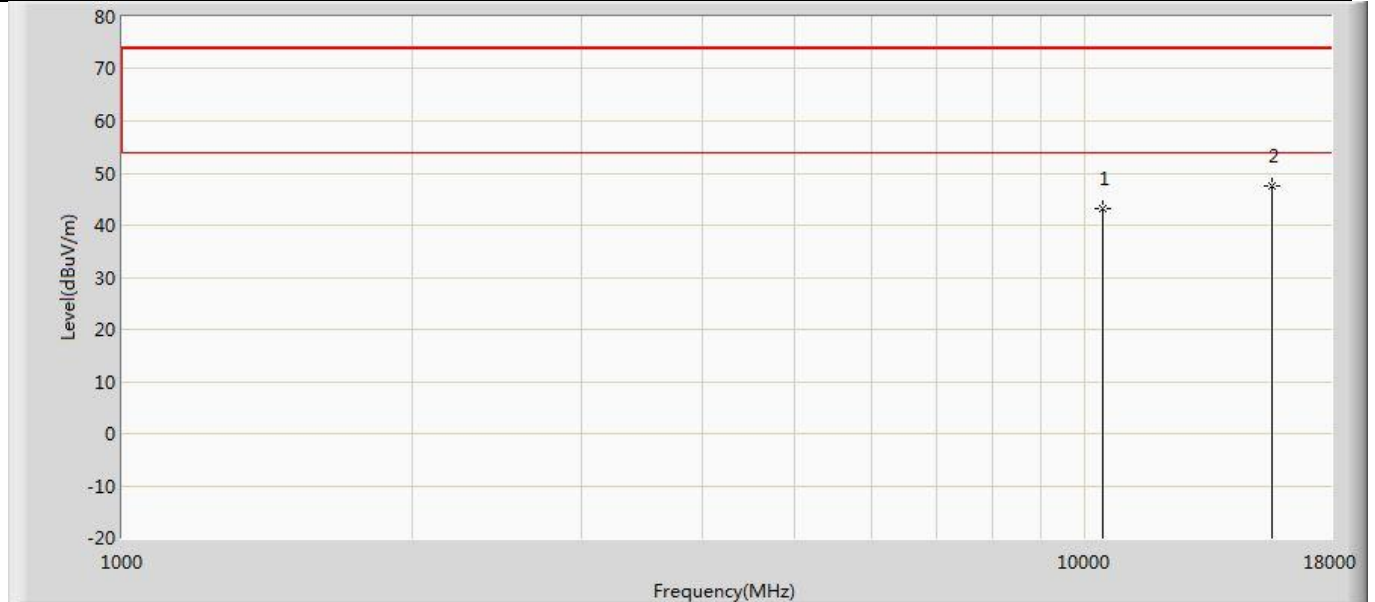
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11590.000	44.392	38.246	-29.608	74.000	6.146	PK
2	*	17385.000	49.878	38.506	-24.122	74.000	11.373	PK

Profile: 2180545R	Page No.: 32
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 2:Transmit at 5795MHz 11ac40M	



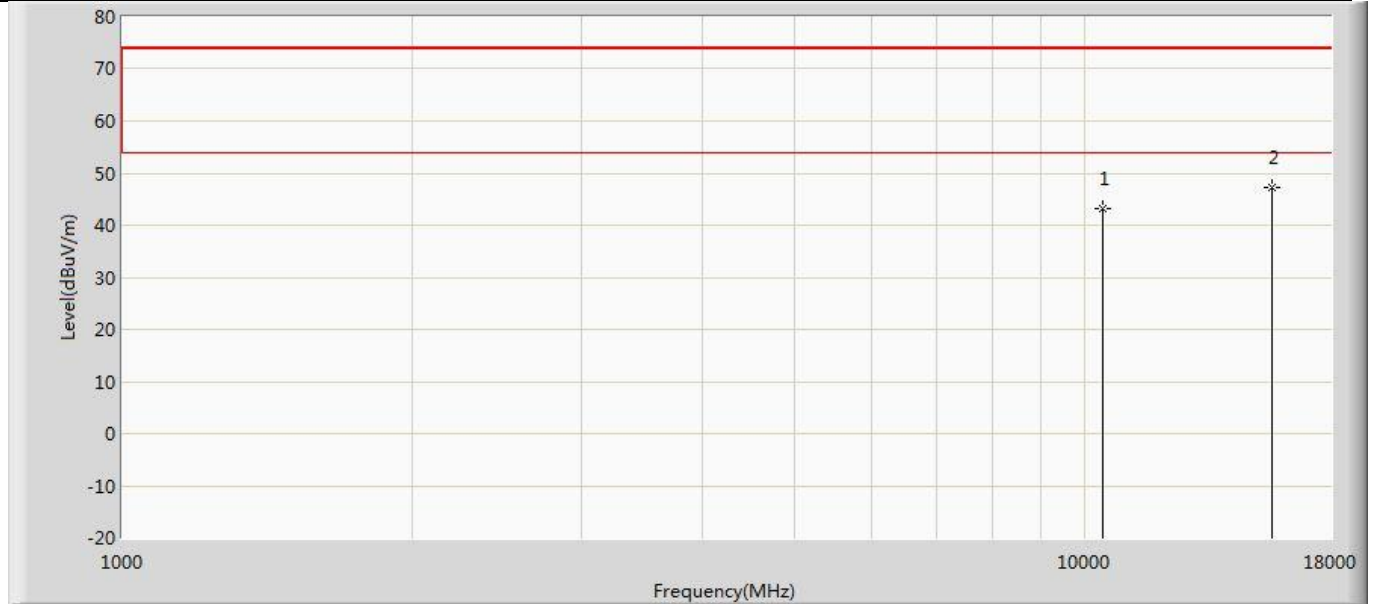
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11590.000	44.682	38.536	-29.318	74.000	6.146	PK
2	*	17385.000	50.213	38.841	-23.787	74.000	11.373	PK

Profile: 2180545R	Page No.: 33
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 3:Transmit at 5210MHz 11ac80M	



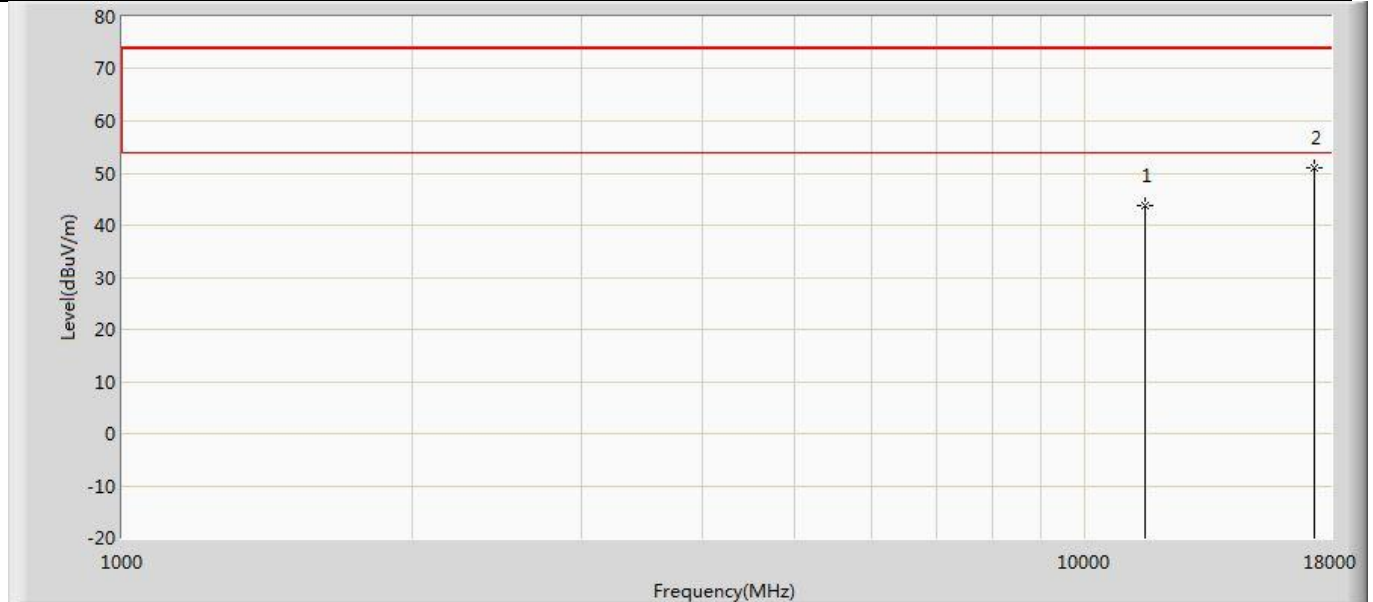
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10420.000	43.114	38.749	-30.886	74.000	4.365	PK
2	*	15630.000	47.402	38.849	-26.598	74.000	8.553	PK

Profile: 2180545R	Page No.: 34
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 3:Transmit at 5210MHz 11ac80M	



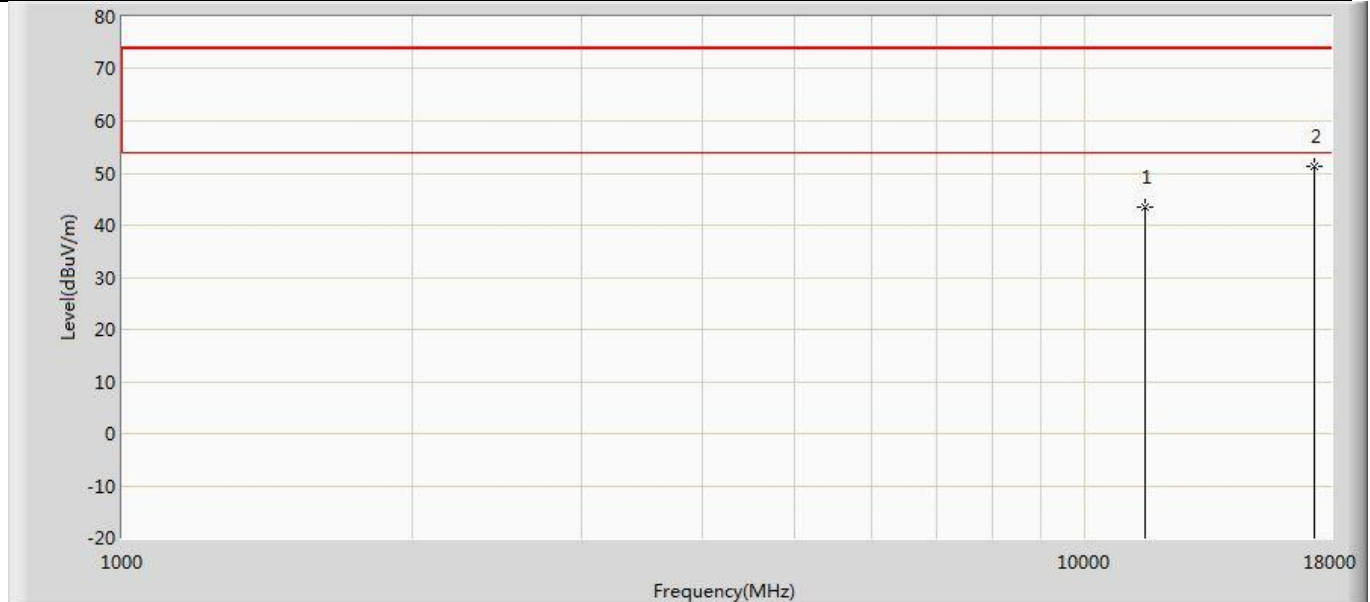
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		10420.000	43.194	38.829	-30.806	74.000	4.365	PK
2	*	15630.000	47.353	38.800	-26.647	74.000	8.553	PK

Profile: 2180545R	Page No.: 35
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Vertical
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 3:Transmit at 5775MHz 11ac80M	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11550.000	43.684	38.035	-30.316	74.000	5.649	PK
2	*	17325.000	51.151	39.208	-22.849	74.000	11.943	PK

Profile: 2180545R	Page No.: 36
Engineer: Juliuszhou	
Site: AC5	Time: 2021/12/22 - 00:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00123988_(1-18GHz)	Polarity: Horizontal
EUT: LPS (LOCAL POSITIONING SYSTEM)	Power: DC3.3V
Note: Mode 3:Transmit at 5775MHz 11ac80M	



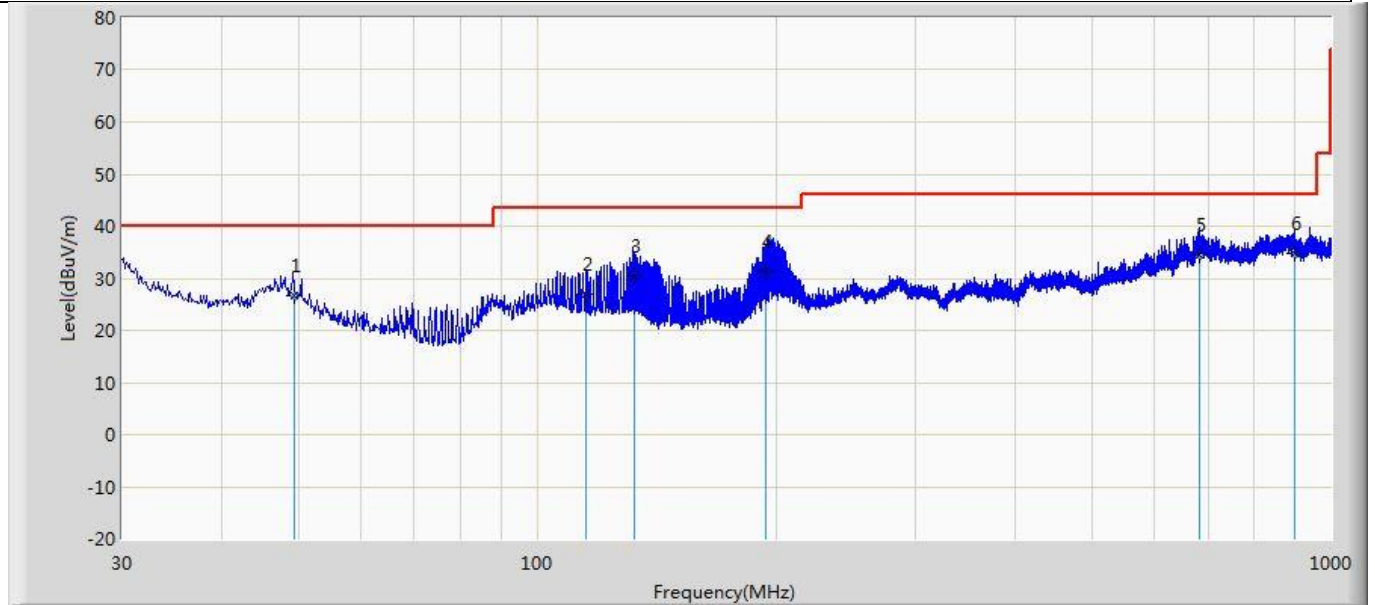
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		11550.000	43.456	37.807	-30.544	74.000	5.649	PK
2	*	17325.000	51.240	39.297	-22.760	74.000	11.943	PK

Note:

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, worst case are at least 20dB below the limits, therefore no data appear in the report.
3. The test frequency range, 18GHz~40GHz test result on peak is lower than average limit, all is the noise base, therefore no data appear in the report.
4. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
5. As the radiated emission was performed, so conducted emission was not tested.
6. We evaluated SISO MIMO mode, shown in the report is the worst data (MIMO mode 2TX)

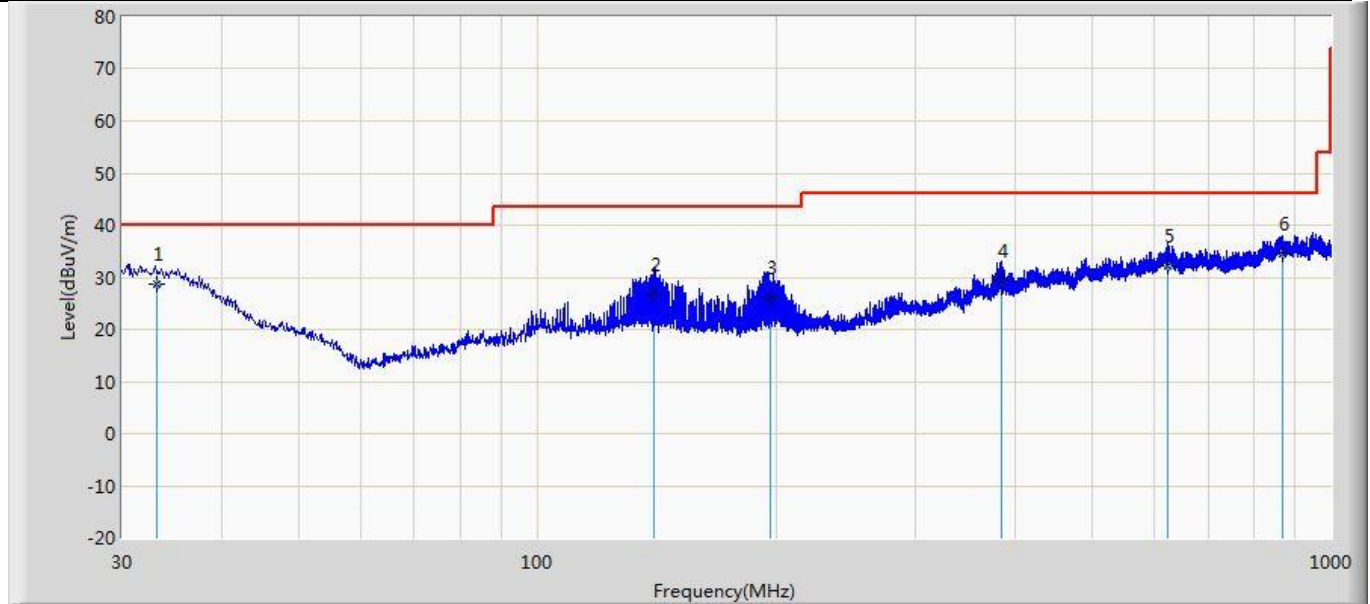
The worst case of Radiated Emission below 1GHz:

Profile: 2180545R	Page No.: 3
Engineer: Julius zhou	
Site: AC3	Time: 2021/12/12 - 01:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Horizontal
EUT: LPS (Local Positioning System)	Power: DC3.3V
Note: Mode 1:Transmit at 5180MHz 11ac20M SISO	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		49.534	26.549	7.164	-13.451	40.000	12.933	6.452	0.000	100	125	QP
2		115.341	27.053	6.854	-16.447	43.500	13.380	6.819	0.000	100	320	QP
3		132.534	30.295	10.311	-13.205	43.500	13.090	6.894	0.000	200	100	QP
4		194.523	31.285	9.251	-12.215	43.500	14.877	7.157	0.000	100	118	QP
5		682.534	34.388	4.534	-11.612	46.000	21.251	8.603	0.000	145	225	QP
6	*	898.366	34.718	1.534	-11.282	46.000	24.097	9.086	0.000	100	174	QP

Profile: 2180545R	Page No.: 4
Engineer: Julius zhou	
Site: AC3	Time: 2021/12/12 - 01:17
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Vertical
EUT: LPS (Local Positioning System)	Power: DC3.3V
Note: Mode 1: Transmit at 5180MHz 11ac20M SISO	



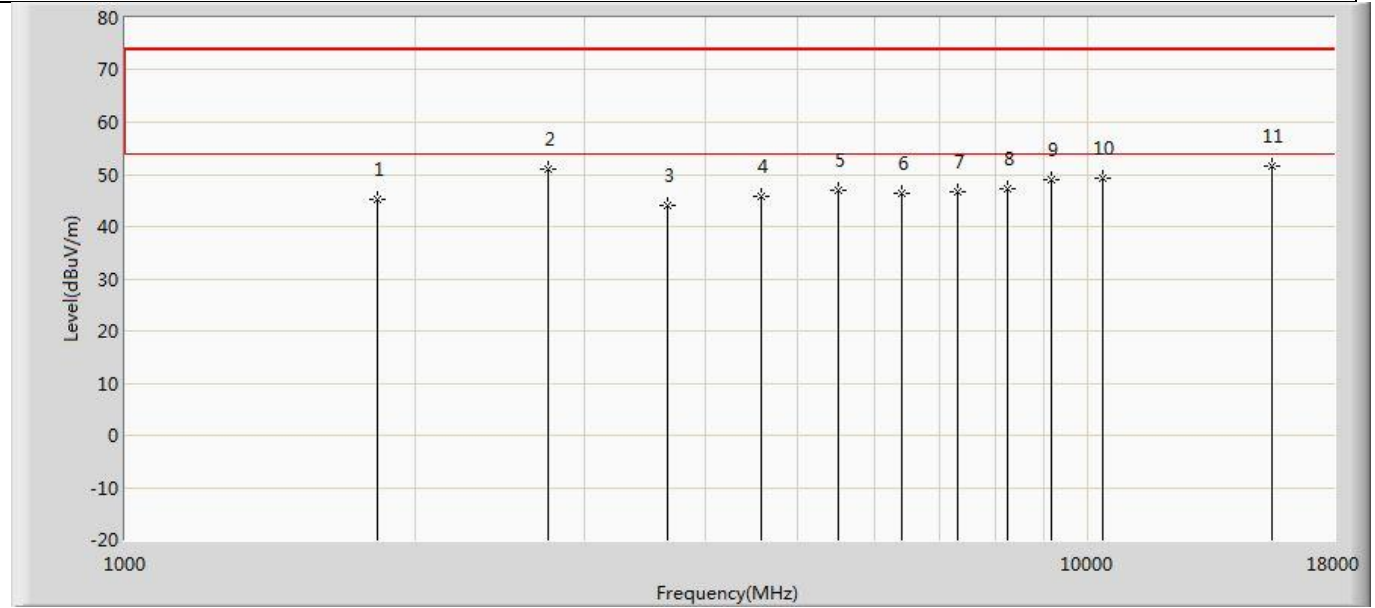
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1	*	33.154	28.571	1.534	-11.429	40.000	20.714	6.323	0.000	200	166	QP
2		140.534	26.787	9.534	-16.713	43.500	10.317	6.936	0.000	100	104	QP
3		196.534	26.077	8.524	-17.423	43.500	10.389	7.164	0.000	200	197	QP
4		384.554	29.261	4.521	-16.739	46.000	16.943	7.797	0.000	136	221	QP
5		622.534	32.188	1.534	-13.812	46.000	22.221	8.433	0.000	100	187	QP
6		869.554	34.405	1.524	-11.595	46.000	23.864	9.018	0.000	100	116	QP

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).
3. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.

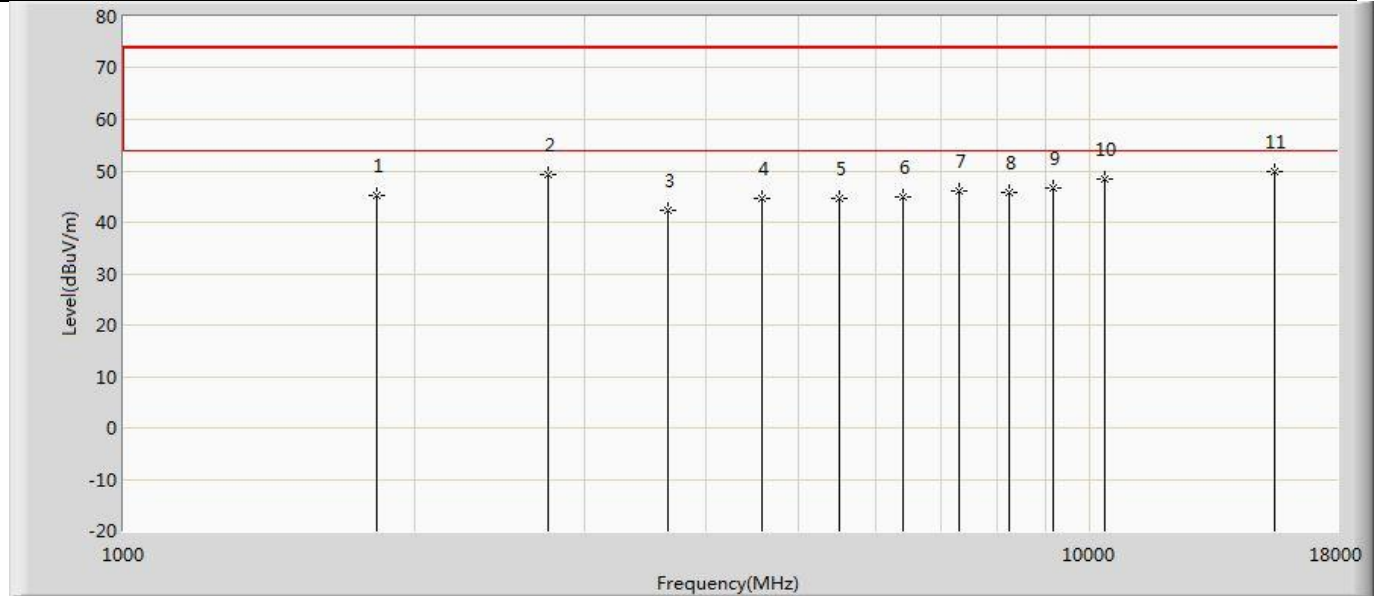
The worst case of Simultaneous Radiated Emission:

Profile: 2180545R	Page No.: 7
Engineer: Julius zhou	
Site: AC5	Time: 2021/12/17 - 13:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00165315_(1-18GHz)	Polarity: Vertical
EUT: LPS (Local Positioning System)	Power: DC3.3V
Note: Simultaneous transmission with Sub-G (915.6MHz) +5G WLAN 11ac20(5180MHz) MIMO	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		1831.200	45.261	44.661	-28.739	74.000	0.600	PK
2		2746.000	51.152	47.410	-22.848	74.000	3.742	PK
3		3662.400	44.102	38.164	-29.898	74.000	5.937	PK
4		4578.000	45.758	37.329	-28.242	74.000	8.430	PK
5		5493.600	47.024	35.172	-26.976	74.000	11.852	PK
6		6409.200	46.363	34.354	-27.637	74.000	12.009	PK
7		7324.800	46.685	33.950	-27.315	74.000	12.735	PK
8		8240.400	47.185	33.426	-26.815	74.000	13.759	PK
9		9156.000	48.851	32.234	-25.149	74.000	16.617	PK
10		10360.000	49.231	33.576	-24.769	74.000	15.655	PK
11	*	15540.000	51.536	29.429	-22.464	74.000	22.107	PK

Profile: 2180545R	Page No.: 8
Engineer: Julius zhou	
Site: AC5	Time: 2021/12/17 - 13:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00165315_(1-18GHz)	Polarity: Horizontal
EUT: LPS (Local Positioning System)	Power: DC3.3V
Note: Simultaneous transmission with Sub-G (915.6MHz) +5G WLAN 11ac20(5180MHz) MIMO	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		1831.200	45.165	44.565	-28.835	74.000	0.600	PK
2		2746.000	49.359	45.617	-24.641	74.000	3.742	PK
3		3662.400	42.269	36.331	-31.731	74.000	5.937	PK
4		4578.000	44.699	36.270	-29.301	74.000	8.430	PK
5		5493.600	44.501	32.649	-29.499	74.000	11.852	PK
6		6409.200	44.801	32.792	-29.199	74.000	12.009	PK
7		7324.800	46.006	33.271	-27.994	74.000	12.735	PK
8		8240.400	45.728	31.969	-28.272	74.000	13.759	PK
9		9156.000	46.678	30.061	-27.322	74.000	16.617	PK
10		10360.000	48.411	32.756	-25.589	74.000	15.655	PK
11	*	15540.000	49.738	27.631	-24.262	74.000	22.107	PK

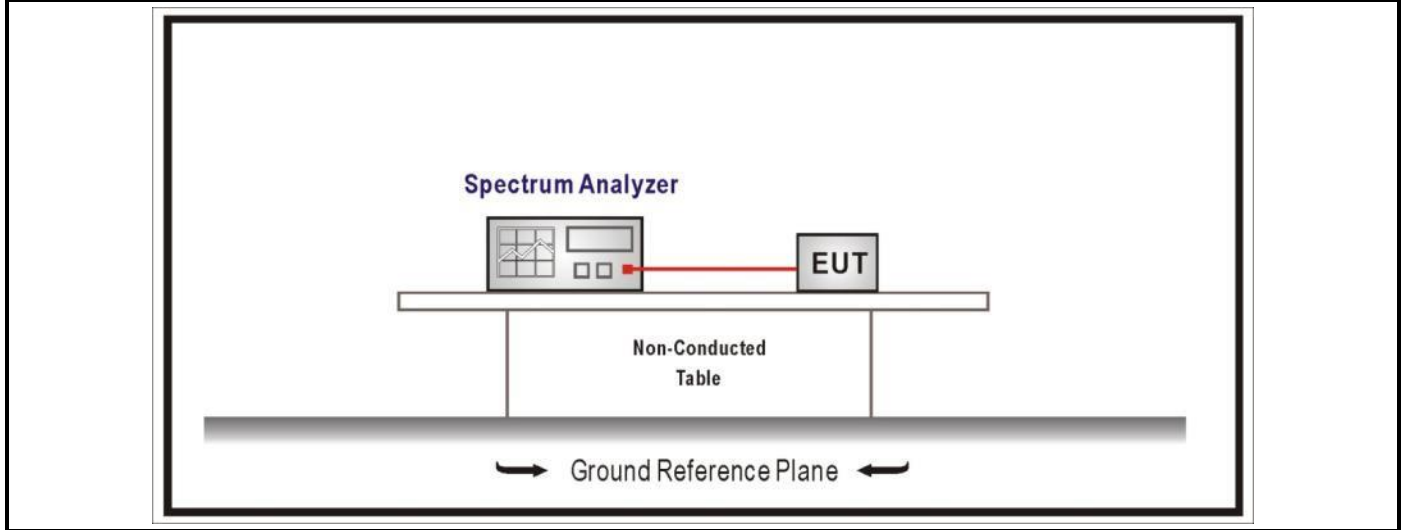
4.3 Emission bandwidth

VERDICT: PASS

4.3.1 Limit

Standard	FCC CFR Title 47 Part 15 Subpart E: Section 15.407
N/A	

4.3.2 Test Setup



4.3.3 Test Procedure

References Rule	Chapter	Description
<input checked="" type="checkbox"/> FCC KDB 789033 D02v02r01	C	Bandwidth Measurement
<input checked="" type="checkbox"/> FCC KDB 789033 D02v02r01	C.1	Emission Bandwidth (26dB)
<input type="checkbox"/> FCC KDB 789033 D02v02r01	C.2	Minimum Emission Bandwidth for the band 5.725-5.85 GHz (6dB)
<input type="checkbox"/> FCC KDB 789033 D02v02r01	D	99 Percent Occupied Bandwidth