



Test Report

FCC Part15 Subpart C& RSS-247 Issue 2

Product Name : Barcode Scanner

Model No. : 8680i

FCC ID : HD5-8680A

Applicant : HONEYWELL INTERNATIONAL INC
Honeywell Safety and Productivity Solutions
Address : 9680 OLD BAILES RD
FORT MILL SC 29707-7539

Date of Receipt : Mar. 09, 2018

Test Date : Mar. 09, 2018~ Apr. 04, 2018

Issued Date : Apr. 08, 2018

Report No. : 1832060R-RF-US-P06V03

Report Version : V 1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by A2LA, TAF or any agency of the government.

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Test Report Certification

Issued Date : Apr. 08, 2018

Report No. : 1832060R-RF-US-P06V03



Product Name : Barcode Scanner
 Applicant : HONEYWELL INTERNATIONAL INC
 Honeywell Safety and Productivity Solutions
 Address : 9680 OLD BAILES RD
 FORT MILL SC 29707-7539
 Manufacturer : 1、 HONEYWELL INTERNATIONAL INC
 Honeywell Safety and Productivity Solutions
 2、 Metro(Suzhou)Technologies Co.,Ltd
 Address : 1、 9680 OLD BAILES RD
 FORT MILL SC 29707-7539
 2、 No.221 Xinghai street China-Singapore Suzhou Industrial Park
 Model No. : 8680i
 FCC ID : HD5-8680A
 EUT Voltage : DC 3.8V
 Test Voltage : AC120V/60Hz
 Applicable Standard : FCC CFR Title 47 Part 15 Subpart C
 KDB DA 00-705 Released March 30, 2000
 ANSI C63.10: 2013
 Test Result : Complied
 Performed Location : DEKRA Testing & Certification (Suzhou) Co., Ltd.
 No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006,
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 FCC Designation Number: CN1199

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1832060R-RF-US-P06V03	V1.0	Initial Issued Report	Apr. 08, 2018

1. General Information

1.1. EUT Description

Product Name	Barcode Scanner
Brand Name	Honeywell
Model No.	8680i
EUT Voltage	DC 3.8V
Bluetooth Specification	V3.0
Frequency Range	2402- 2480 MHz
Channel Number	V3.0: 79
Channel Separation	V3.0: 1MHz
Type of Modulation	V3.0: GFSK, Pi/4 DQPSK, 8DPSK
Data Rate	V3.0: 1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps(8DPSK)
Antenna Type	Reference to Antenna List
Peak Antenna Gain	Reference to Antenna List

Bluetooth Working Frequency of Each Channel: (For V3.0)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2403 MHz	02	2404 MHz	03	2405 MHz
04	2406 MHz	05	2407 MHz	06	2408 MHz	07	2409 MHz
08	2410 MHz	09	2411 MHz	10	2412 MHz	11	2413 MHz
12	2414 MHz	13	2415 MHz	14	2416 MHz	15	2417 MHz
16	2418 MHz	17	2419 MHz	18	2420 MHz	19	2421 MHz
20	2422 MHz	21	2423 MHz	22	2424 MHz	23	2425 MHz
24	2426 MHz	25	2427 MHz	26	2428 MHz	27	2429 MHz
28	2430 MHz	29	2431 MHz	30	2432 MHz	31	2433 MHz
32	2434 MHz	33	2435 MHz	34	2436 MHz	35	2437 MHz
36	2438 MHz	37	2439 MHz	38	2440 MHz	39	2441 MHz
40	2442 MHz	41	2443 MHz	42	2444 MHz	43	2445 MHz
44	2446 MHz	45	2447 MHz	46	2448 MHz	47	2449 MHz
48	2450 MHz	49	2451 MHz	50	2452 MHz	51	2453 MHz
52	2454 MHz	53	2455 MHz	54	2456 MHz	55	2457 MHz
56	2458 MHz	57	2459 MHz	58	2460 MHz	59	2461 MHz
60	2462 MHz	61	2463 MHz	62	2464 MHz	63	2465 MHz
64	2466 MHz	65	2467 MHz	66	2468 MHz	67	2469 MHz
68	2470 MHz	69	2471 MHz	70	2472 MHz	71	2473 MHz
72	2474 MHz	73	2475 MHz	74	2476 MHz	75	2477 MHz
76	2478 MHz	77	2479 MHz	78	2480 MHz	N/A	N/A

1.2 Antenna information

Model No.	N/A					
Antenna manufacturer	N/A					
Antenna Delivery	<input checked="" type="checkbox"/>	1*TX+1*RX	<input type="checkbox"/>	2*TX+2*RX	<input type="checkbox"/>	3*TX+3*RX
Antenna technology	<input checked="" type="checkbox"/>	SISO				
	<input type="checkbox"/>	MIMO	<input type="checkbox"/>	Basic		
			<input type="checkbox"/>	CDD		
			<input type="checkbox"/>	Sectorized		
			<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 type="checkbox"/>	PCB		
			<input type="checkbox"/>	Ceramic Chip Antenna		
			<input checked="" type="checkbox"/>	Type F antenna		
	Antenna Technology	Ant Gain (dBi)				
	<input checked="" type="checkbox"/>	SISO	4.3			

1.3 Mode of Operation

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Transmitter-1Mbps(GFSK_DH5)
Mode 2: Transmitter-2Mbps(Pi/4 DQPSK_DH5)
Mode 3: Transmitter-3Mbps(8DPSK_DH5)
Mode 4: Transmitter-Hopping

Note:

1. For portable device, radiated spurious emission was verified over X, Y, Z Axis, and shown the worst case on this report.
2. Regards to the frequency band operation for systems using FHSS modulation: normal operation (hopping) was selected to test for conducted spurious test.
3. The extreme test condition for voltage and temperature were declared by the manufacturer.
4. The reading values of all the test items contain cable loss.

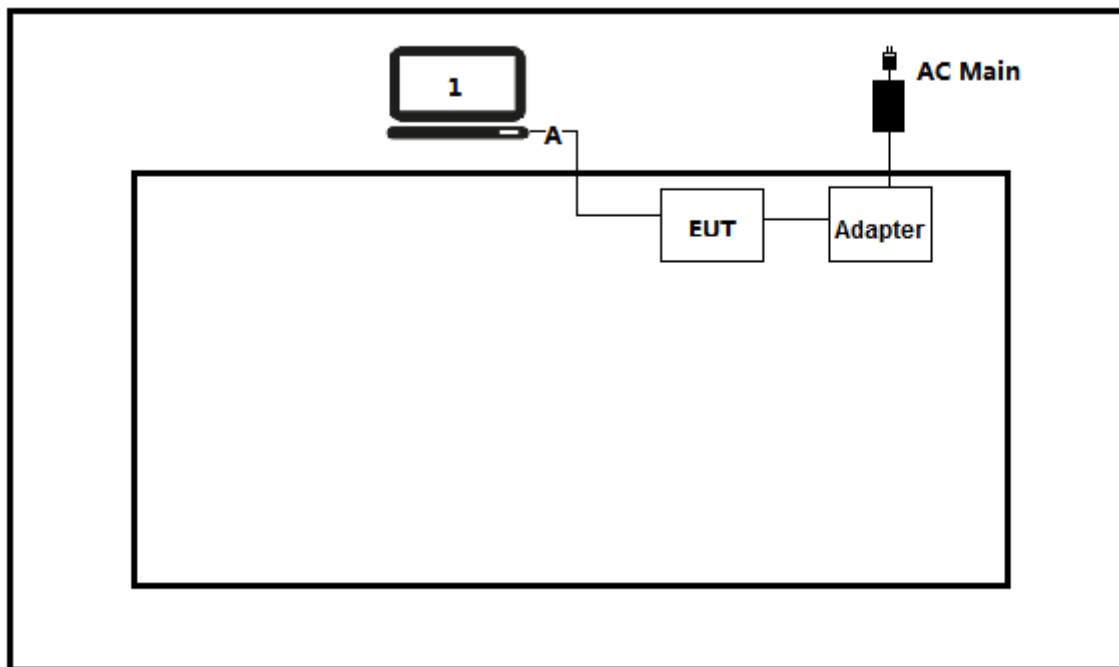
1.4 Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

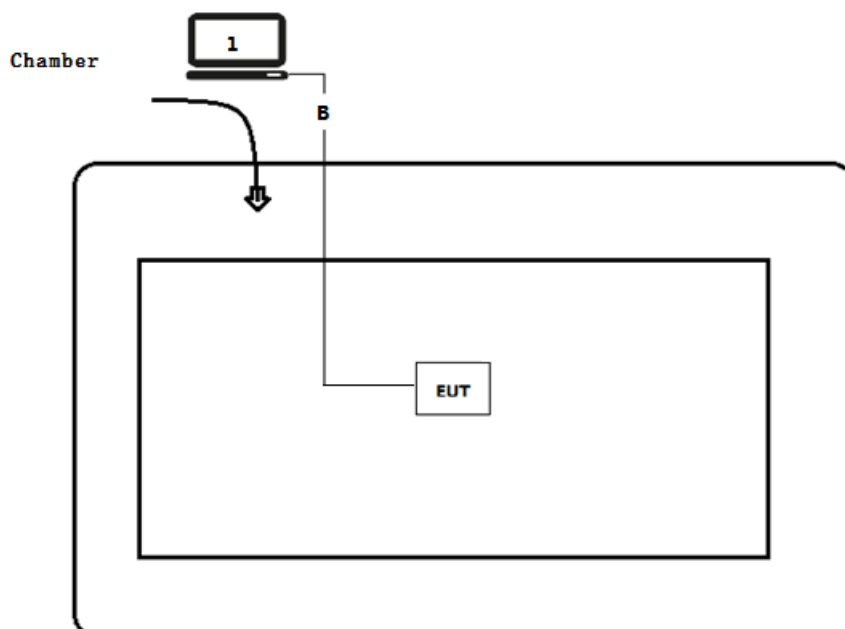
No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Lenovo	Think pad x220	SUA0600195	Non-shielded
A	USB cable	N/A	N/A	N/A	Shielded, 0.5m
B	USB cable	N/A	N/A	N/A	Shielded, 10m

1.5 Configuration of Tested System

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



1.6 EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Input RF commands, and set the test mode and channel, then press OK to start to continue transmit.

2. Technical Test

2.1. Summary of Test Result

- No deviations from the test standards
- Deviations from the test standards as below description:

For FCC

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.207	Yes	No
Emissions in restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.209	Yes	No
20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)	Yes	No
Carrier Frequency Separation	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)	Yes	No
Number of Hopping Frequencies	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)(iii)	Yes	No
Time of Occupancy (Dwell Time)	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)(iii)	Yes	No
Peak Output Power	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(b)(1)	Yes	No
Emissions in non-restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.215(c), 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2015 15.247(d)	Yes	No
Antenna Requirement	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.203	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

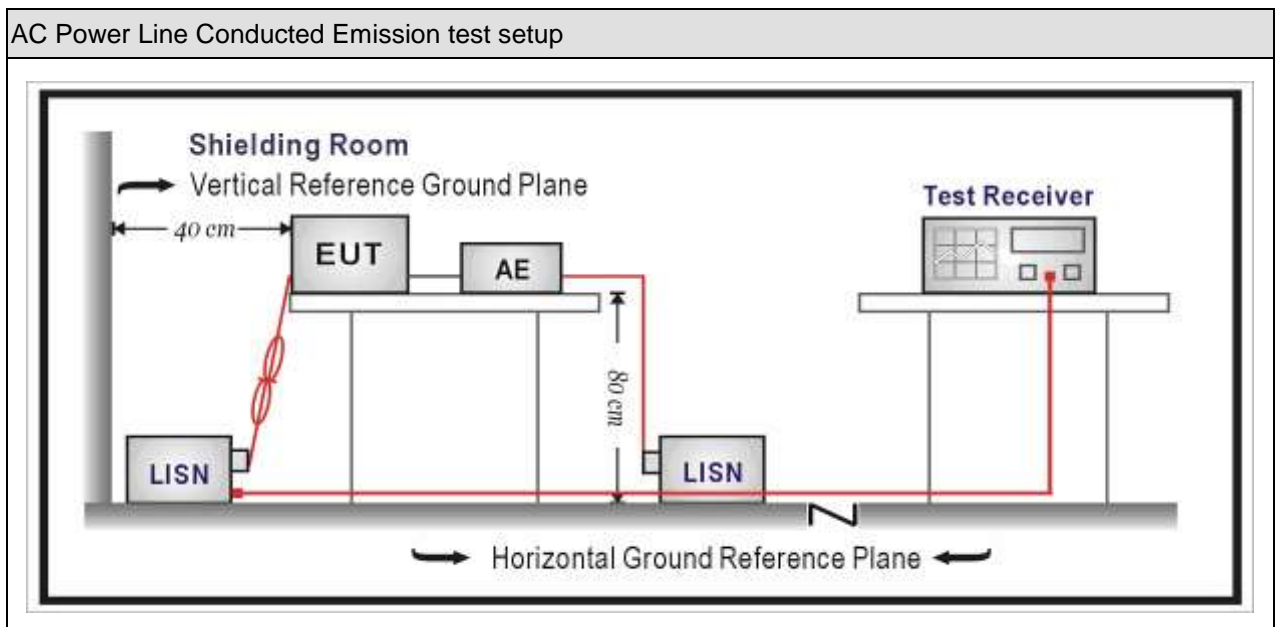
3. Conducted Emission

3.1. Test Equipment

AC Power Line Conducted Emission / TR-1					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100906	2018.03.05	2019.03.04
Two-Line V-Network	R&S	ENV 216	101189	2017.07.16	2018.07.15
Two-Line V-Network	R&S	ENV 216	101044	2017.09.15	2018.09.15
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
50ohm Termination	SHX	TF2	07081402	2017.09.15	2018.09.15
Temperature/Humidity Meter	Zhichen	ZC1-2	TR1-TH	2018.01.05	2019.01.04
Quietek EMI V3(test software)	Quietek	N/A	N/A	N/A	N/A

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup



3.3. Limit

Frequency of Emission (MHz)	Conducted Limit	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Note 1: The lower limit shall apply at the transition frequencies.
 Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

3.4. Test Procedure

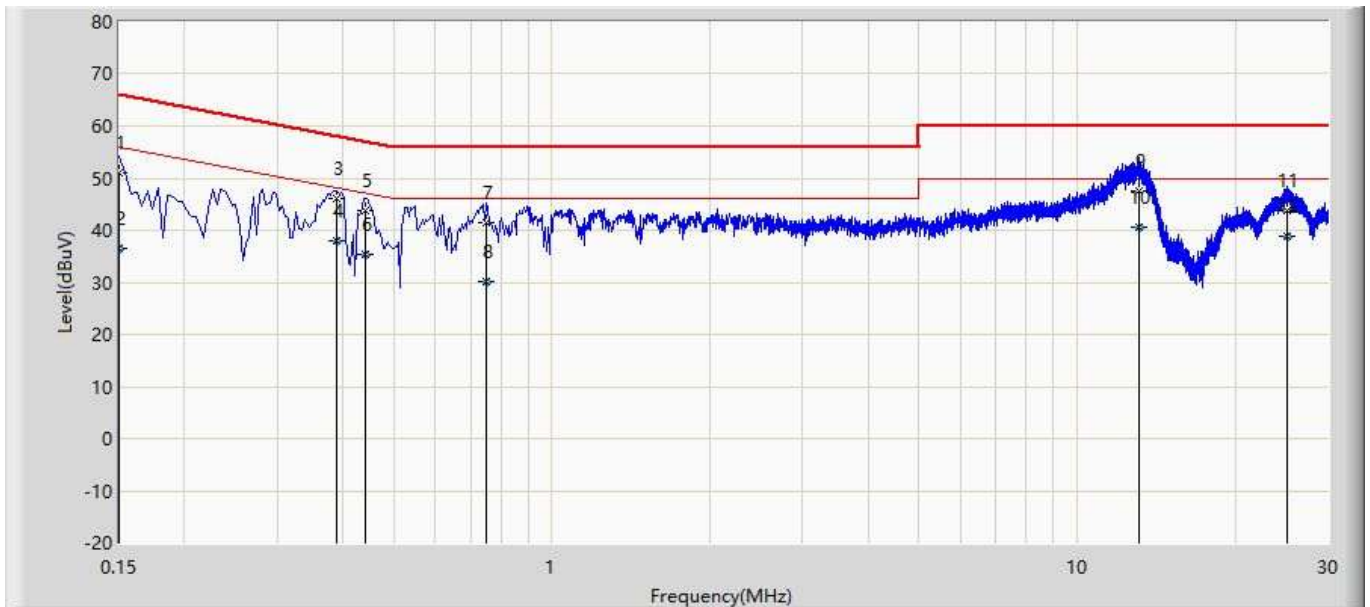
Test Method			
	References Rule	Chapter	Item
<input checked="" type="checkbox"/>	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

3.6. Test Result

Engineer: Pawn	
Site: TR1	Time: 2018/03/25
Limit: FCC_Part15.207_CE_AC Power	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Line
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2402MHz by DH5	

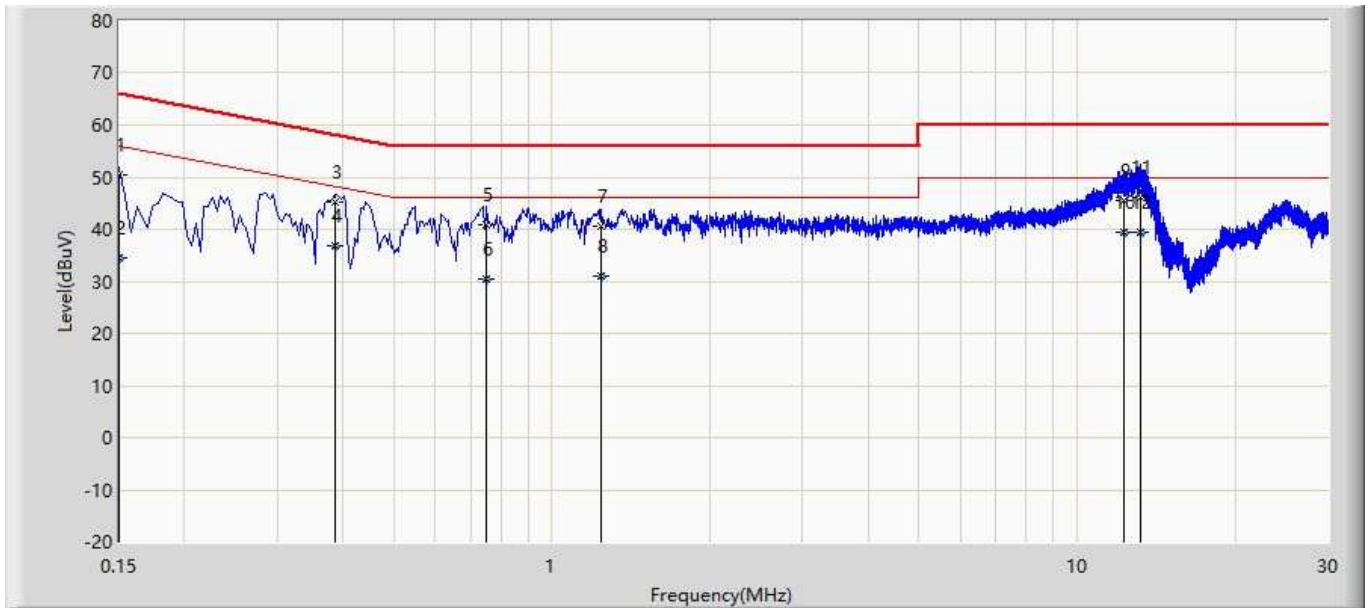


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	51.114	31.614	-14.886	66.000	9.600	9.900	0.000	QP
2		0.150	36.507	17.007	-19.493	56.000	9.600	9.900	0.000	AV
3		0.390	46.000	26.526	-12.064	58.064	9.590	9.884	0.000	QP
4		0.390	38.058	18.584	-10.006	48.064	9.590	9.884	0.000	AV
5		0.442	43.783	24.312	-13.241	57.024	9.590	9.881	0.000	QP
6		0.442	35.317	15.846	-11.707	47.024	9.590	9.881	0.000	AV
7		0.750	41.395	21.904	-14.605	56.000	9.592	9.900	0.000	QP
8		0.750	30.046	10.555	-15.954	46.000	9.592	9.900	0.000	AV
9		13.122	47.510	27.697	-12.490	60.000	9.646	10.167	0.000	QP
10	*	13.122	40.592	20.779	-9.408	50.000	9.646	10.167	0.000	AV
11		25.090	43.686	23.753	-16.314	60.000	9.594	10.339	0.000	QP
12		25.090	38.820	18.887	-11.180	50.000	9.594	10.339	0.000	AV

Note1: " * ", means this data is the worst emission level.

2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Engineer: Pawn	
Site: TR1	Time: 2018/03/25
Limit: FCC_Part15.207_CE_AC Power	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Neutral
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2402MHz by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	50.568	31.088	-15.432	66.000	9.580	9.900	0.000	QP
2		0.150	34.454	14.974	-21.546	56.000	9.580	9.900	0.000	AV
3		0.386	45.220	25.763	-12.930	58.149	9.577	9.880	0.000	QP
4		0.386	36.726	17.269	-11.423	48.149	9.577	9.880	0.000	AV
5		0.750	40.977	21.473	-15.023	56.000	9.605	9.900	0.000	QP
6		0.750	30.290	10.785	-15.710	46.000	9.605	9.900	0.000	AV
7		1.238	40.703	21.177	-15.297	56.000	9.582	9.944	0.000	QP
8		1.238	31.108	11.583	-14.892	46.000	9.582	9.944	0.000	AV
9		12.242	45.478	25.680	-14.522	60.000	9.644	10.154	0.000	QP
10	*	12.242	39.551	19.753	-10.449	50.000	9.644	10.154	0.000	AV
11		13.194	46.206	26.391	-13.794	60.000	9.646	10.169	0.000	QP
12		13.194	39.279	19.464	-10.721	50.000	9.646	10.169	0.000	AV

Note1: " * ", means this data is the worst emission level.

2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

4. Emissions in restricted frequency bands

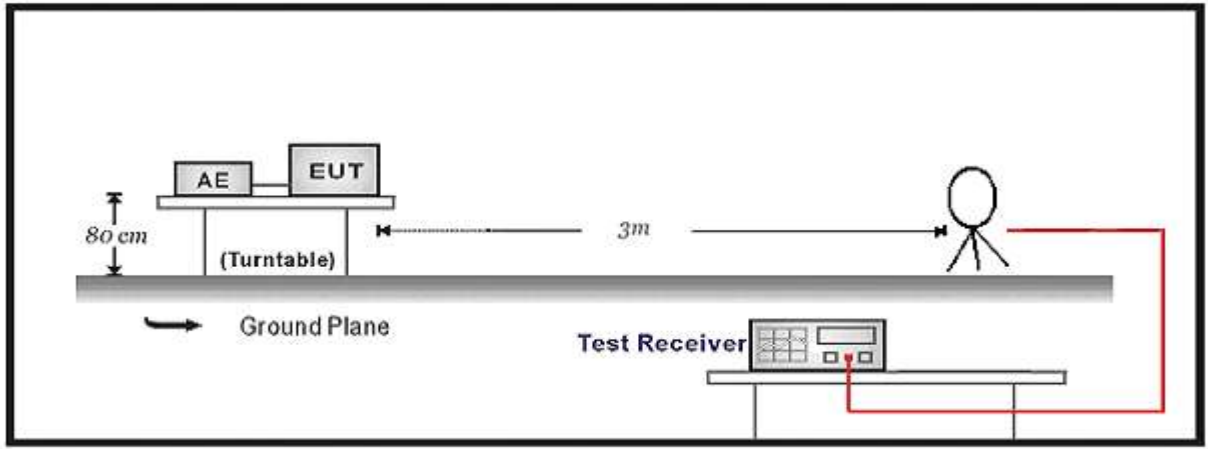
4.1. Test Equipment

Radiated Emission(Below 1GHz) / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2017.03.29	2018.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2017.11.16	2018.11.15
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2017.10.16	2018.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2018.03.02	2019.03.01
Temperature/Humidity Meter	Zhichen	ZC1-2	AC2-TH	2018.01.04	2019.01.03
Quietek EMI V3(test software)	Quietek	N/A	N/A	N/A	N/A
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

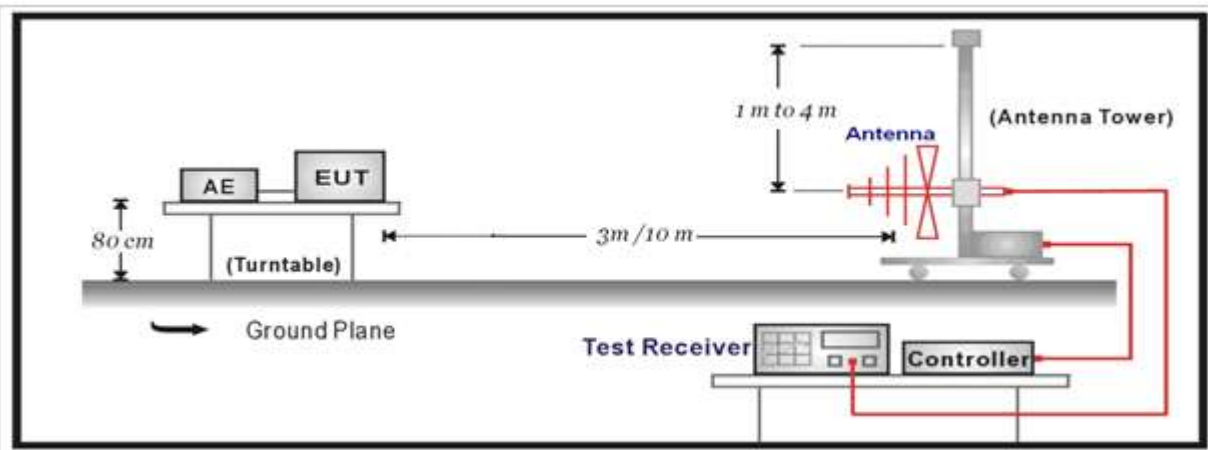
Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2018.01.04	2019.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2017.05.06	2018.05.05
Preamplifier	Quietek	AP-040G	CHM-0906001	2017.05.06	2018.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2018.01.22	2019.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2017.11.25	2018.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2018.03.02	2019.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2018.03.02	2019.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2018.03.02	2019.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2017.06.10	2018.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2018.01.04	2019.01.03
Quietek EMI V3(test software)	Quietek	N/A	N/A	N/A	N/A
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

4.2. Test Setup

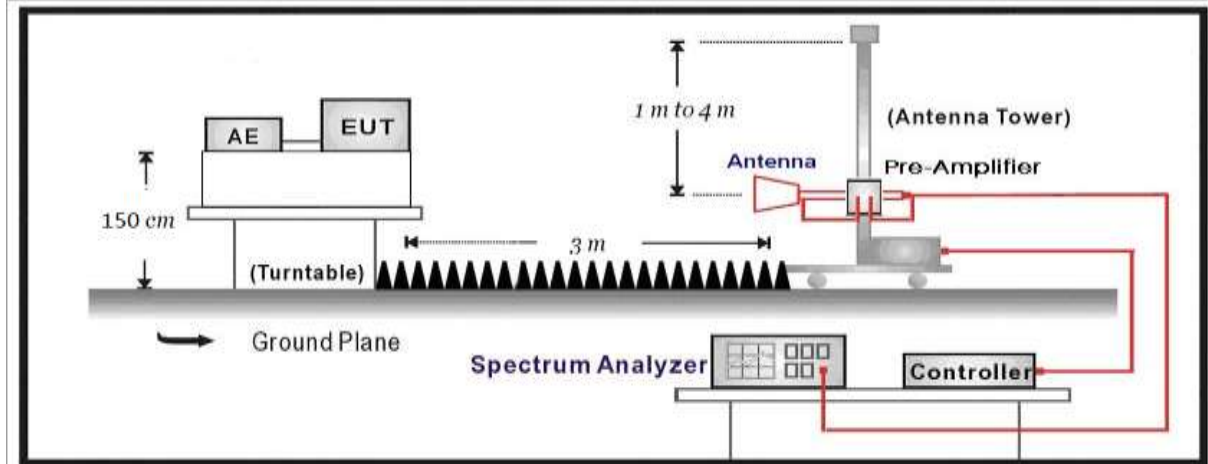
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

For FCC:

Restricted Bands of operation			
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			

Restricted Band Emissions Limit			
Frequency (MHz)	Field strength (μ V/m)	Field strength (dB μ V/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).

4.4. Test Procedure

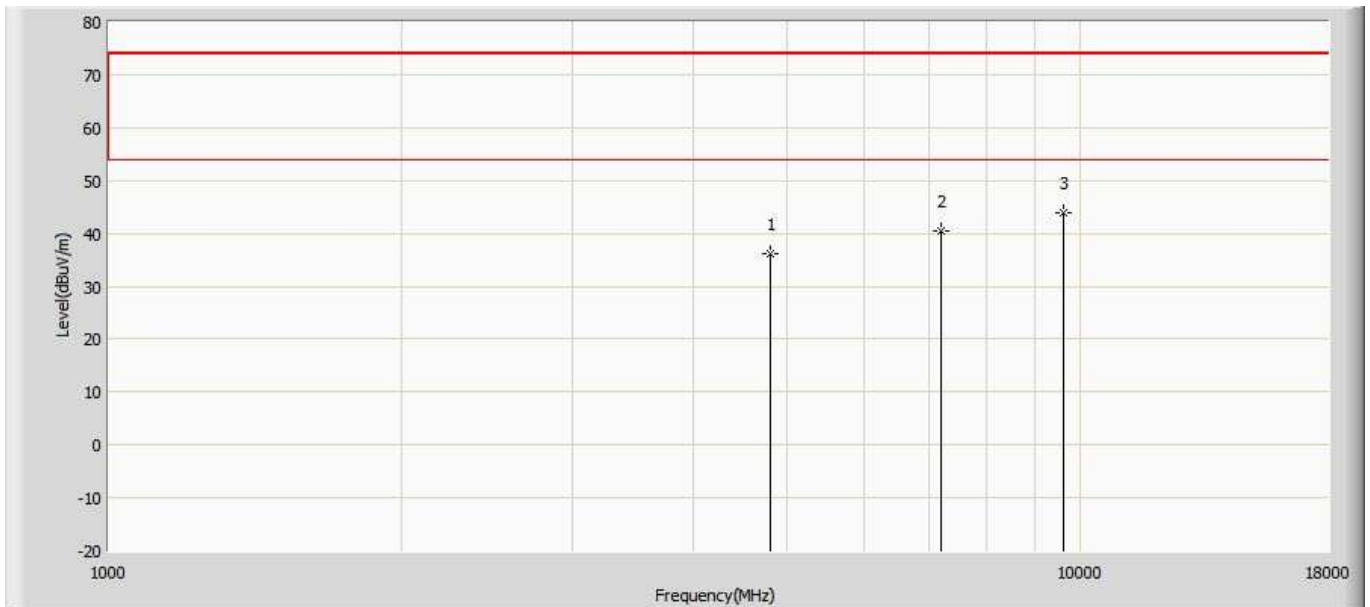
Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
<input checked="" type="checkbox"/>	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
<input checked="" type="checkbox"/>	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

4.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB
below 1G is defined as ± 3.8 dB

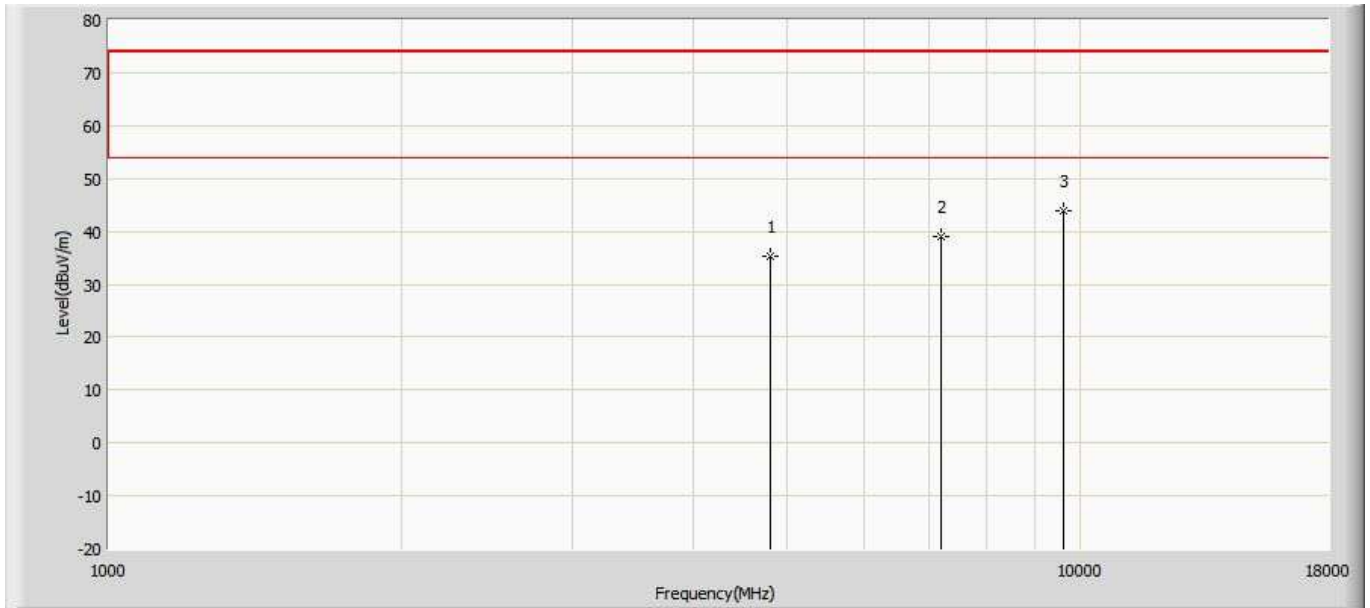
4.6. Test Result

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by DH5	



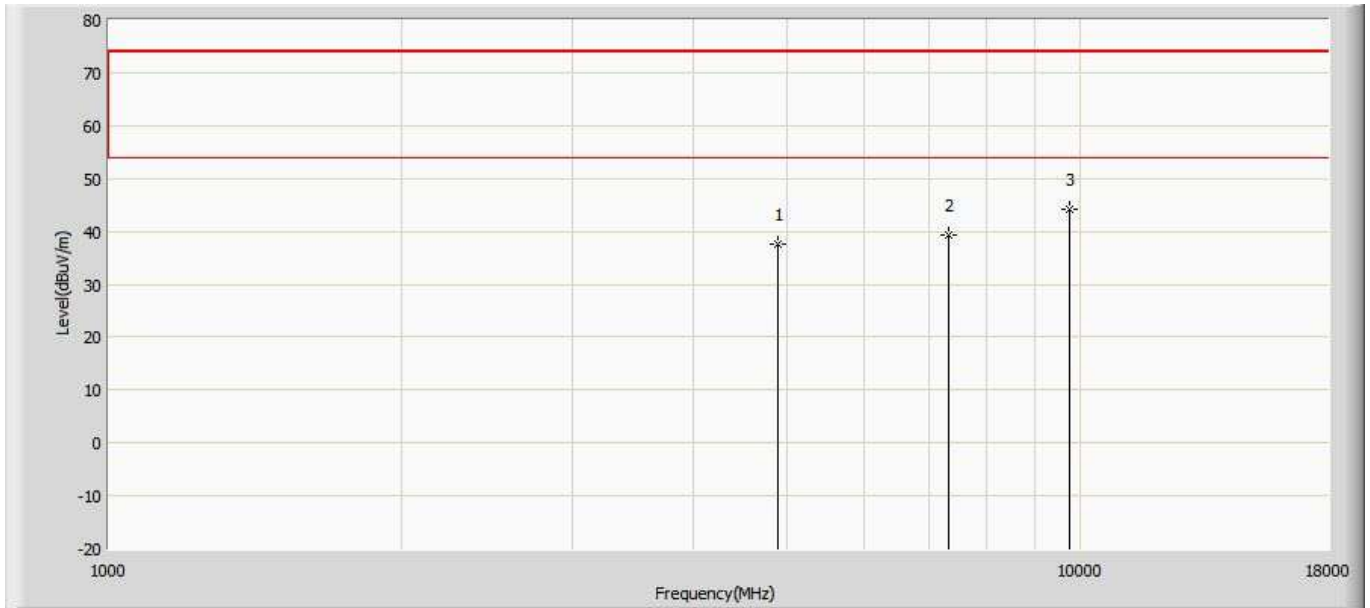
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	36.279	41.890	-37.721	74.000	-5.611	PK
2		7206.000	40.522	40.810	-33.478	74.000	-0.288	PK
3	*	9608.000	43.822	39.691	-30.178	74.000	4.131	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by DH5	



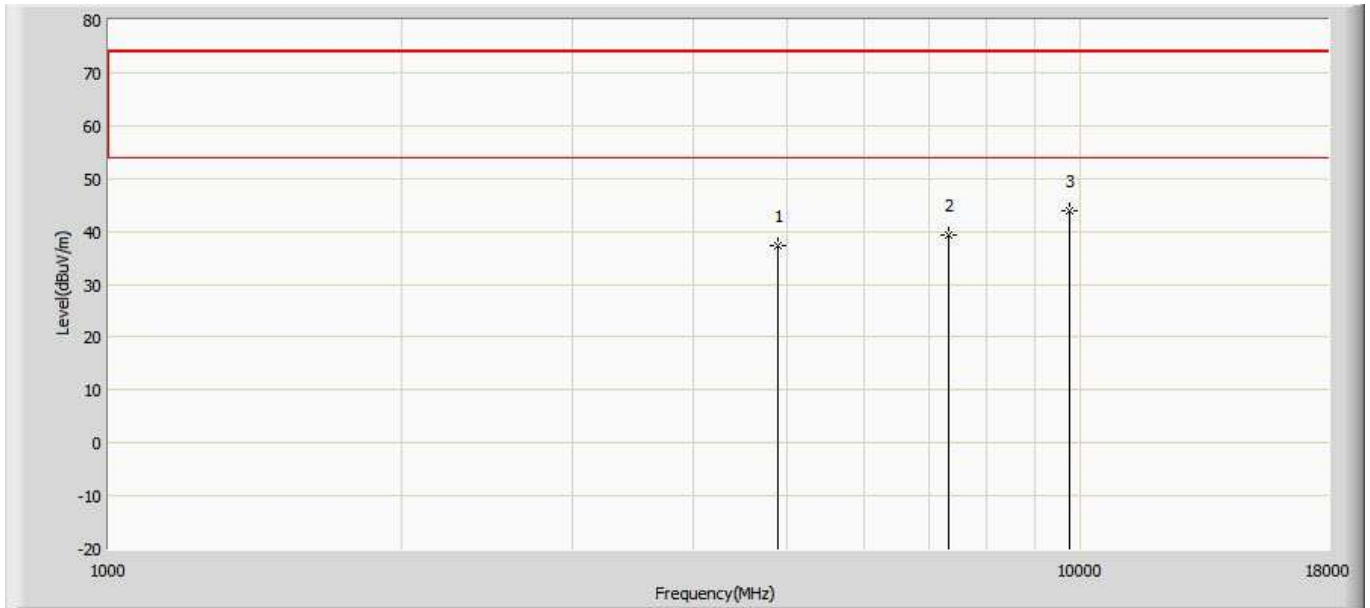
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	35.242	40.853	-38.758	74.000	-5.611	PK
2		7206.000	39.070	39.358	-34.930	74.000	-0.288	PK
3	*	9608.000	43.899	39.768	-30.101	74.000	4.131	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2441MHz by DH5	



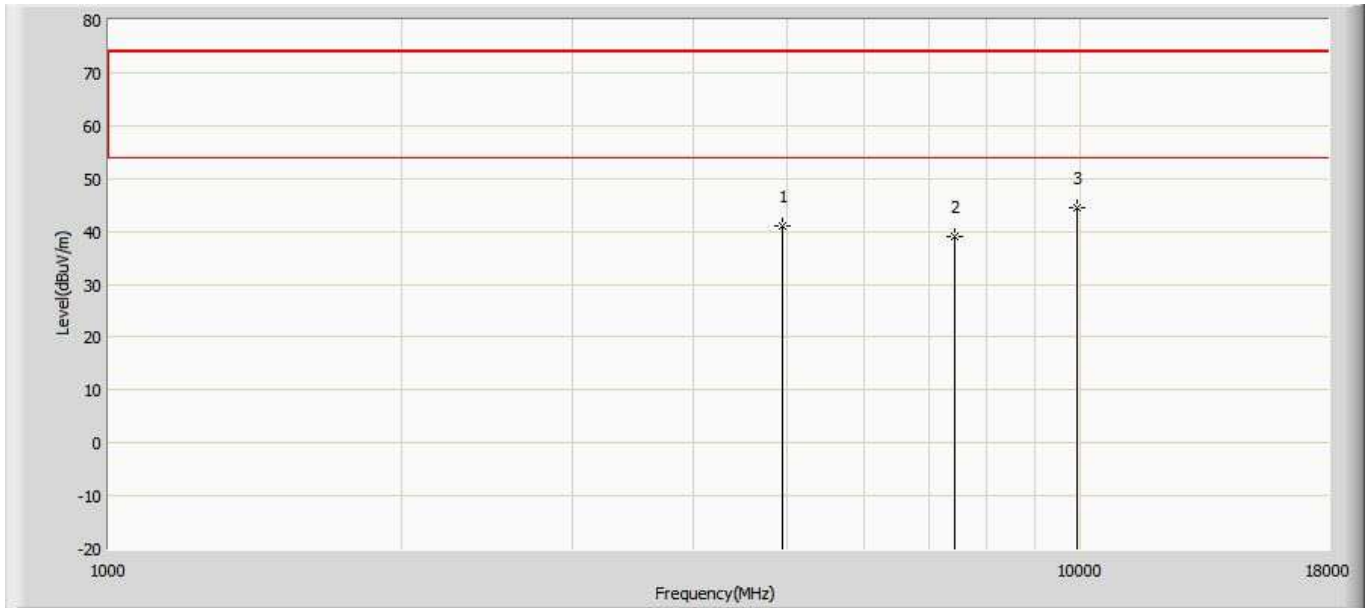
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	37.727	43.284	-36.273	74.000	-5.557	PK
2		7323.000	39.312	39.587	-34.688	74.000	-0.275	PK
3	*	9764.000	44.149	39.845	-29.851	74.000	4.304	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2441MHz by DH5	



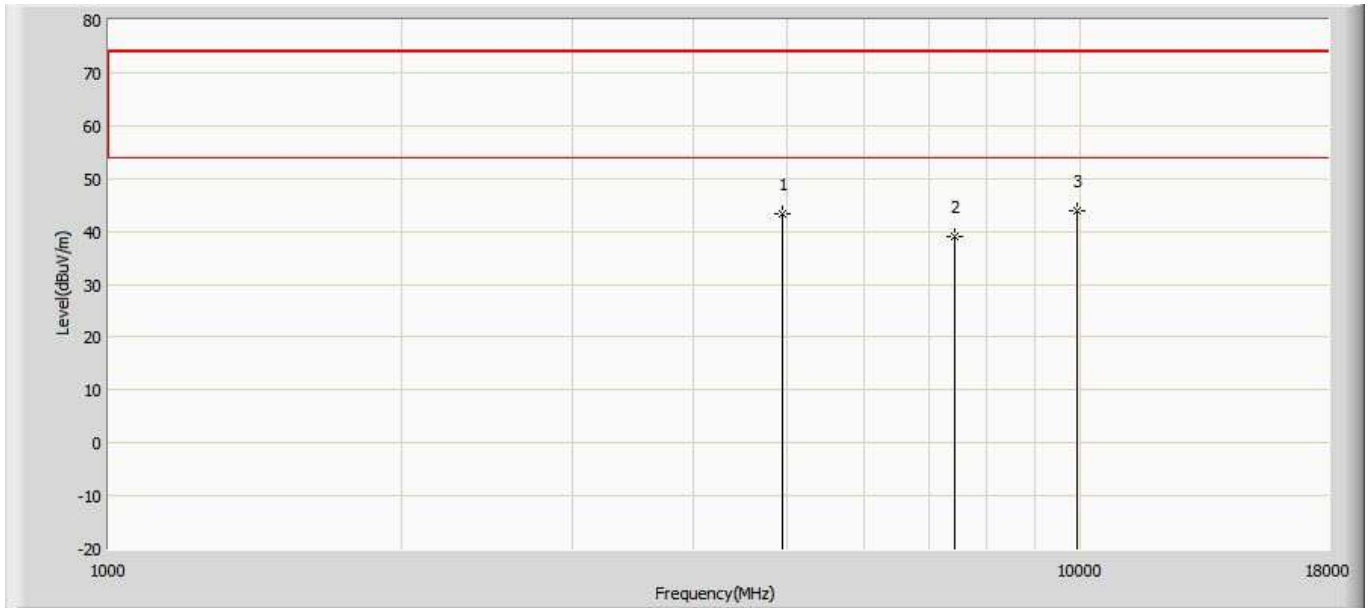
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	37.400	42.957	-36.600	74.000	-5.557	PK
2		7323.000	39.205	39.480	-34.795	74.000	-0.275	PK
3	*	9764.000	43.992	39.688	-30.008	74.000	4.304	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by DH5	



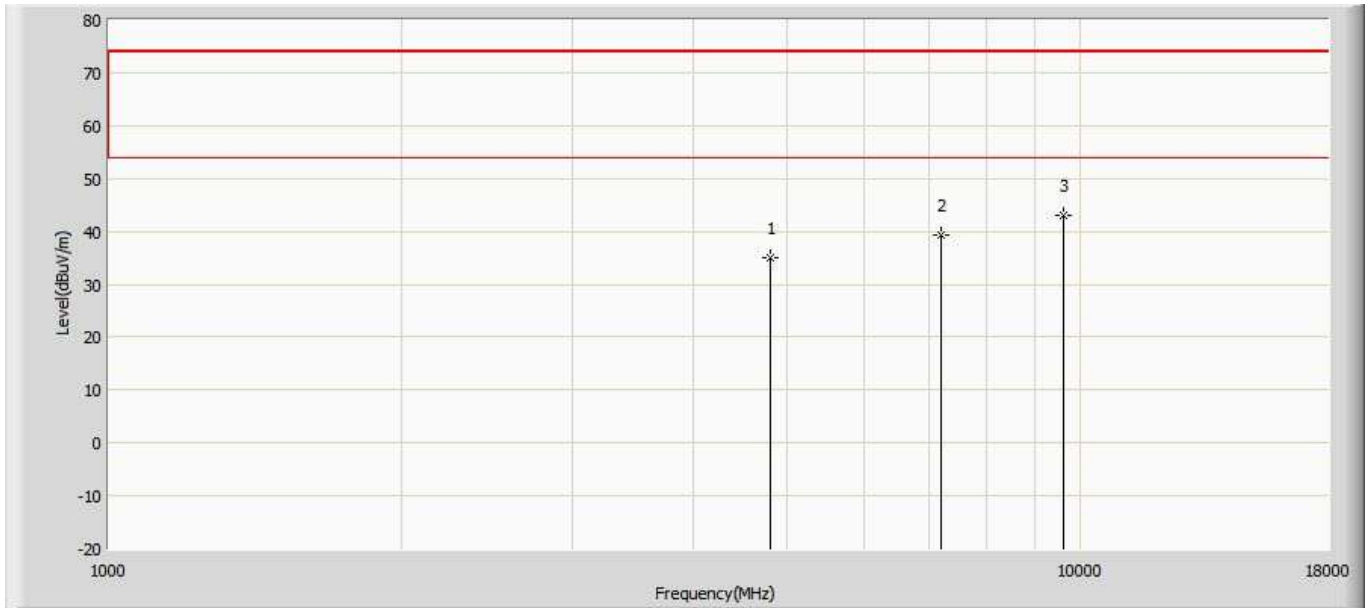
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4944.000	41.054	46.356	-32.946	74.000	-5.302	PK
2		7440.000	39.089	39.268	-34.911	74.000	-0.179	PK
3	*	9920.000	44.339	39.393	-29.661	74.000	4.946	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by DH5	



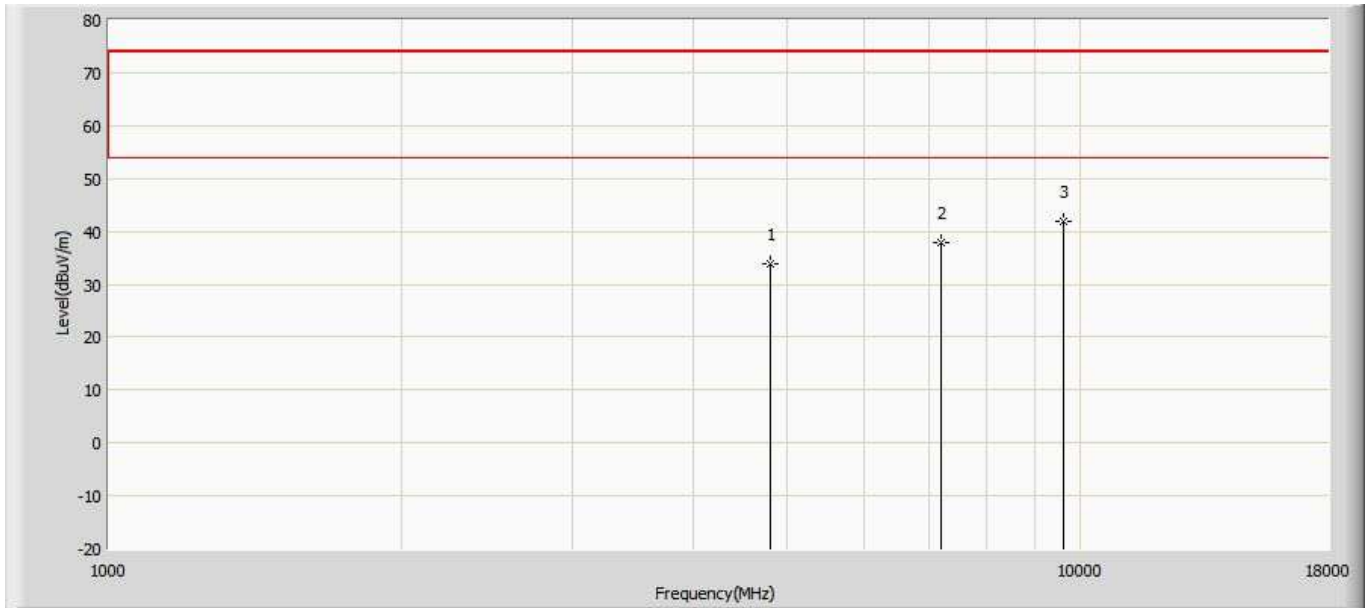
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4944.000	43.256	48.558	-30.744	74.000	-5.302	PK
2		7440.000	39.027	39.206	-34.973	74.000	-0.179	PK
3	*	9920.000	43.851	38.905	-30.149	74.000	4.946	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2402MHz by 2DH5	



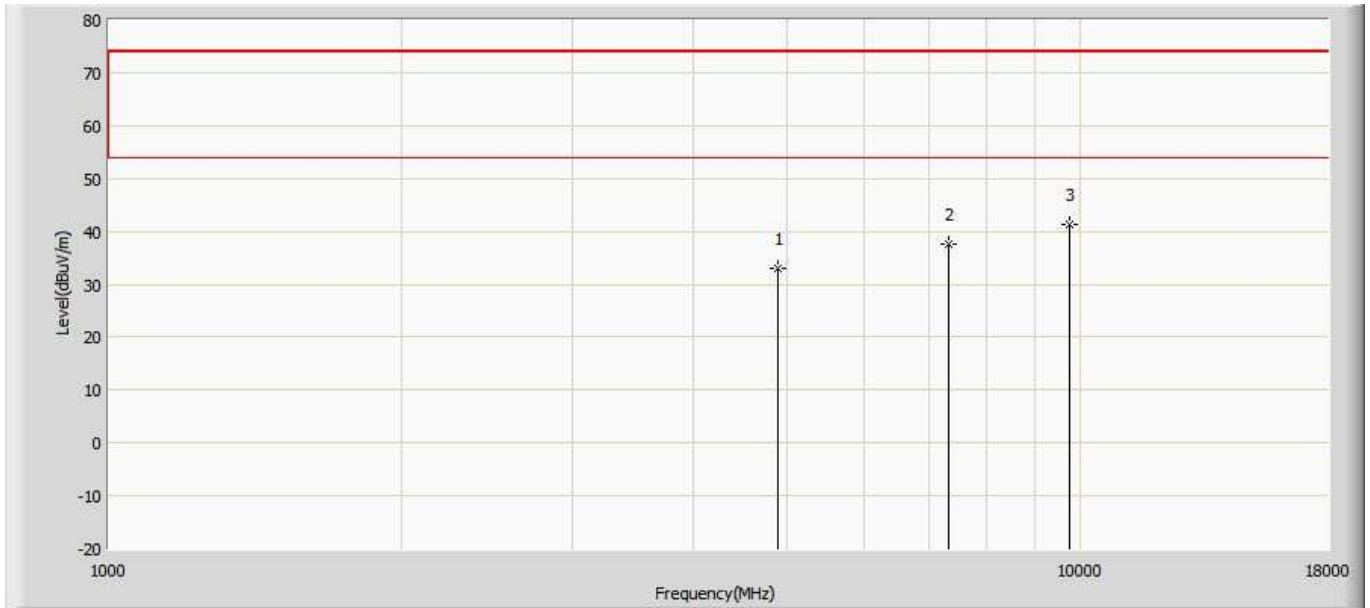
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	35.149	40.760	-38.851	74.000	-5.611	PK
2		7206.000	39.329	39.617	-34.671	74.000	-0.288	PK
3	*	9608.000	43.173	39.042	-30.827	74.000	4.131	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2402MHz by 2DH5	



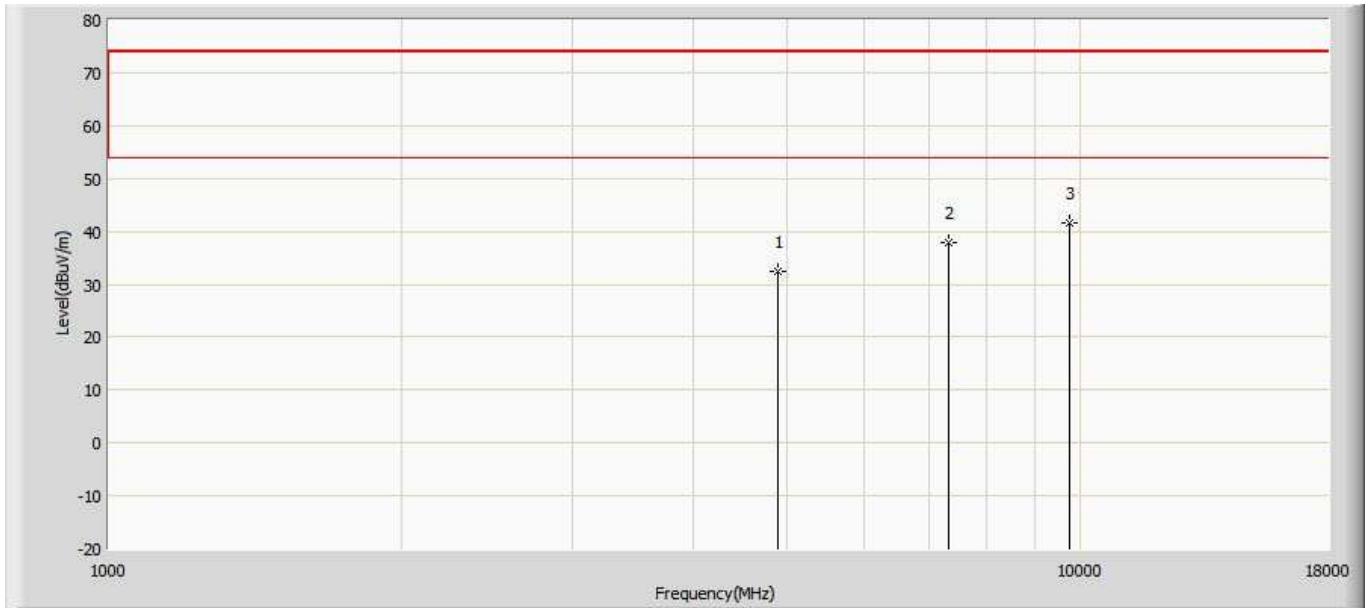
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	33.793	39.404	-40.207	74.000	-5.611	PK
2		7206.000	37.859	38.147	-36.141	74.000	-0.288	PK
3	*	9608.000	41.799	37.668	-32.201	74.000	4.131	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2441MHz by 2DH5	



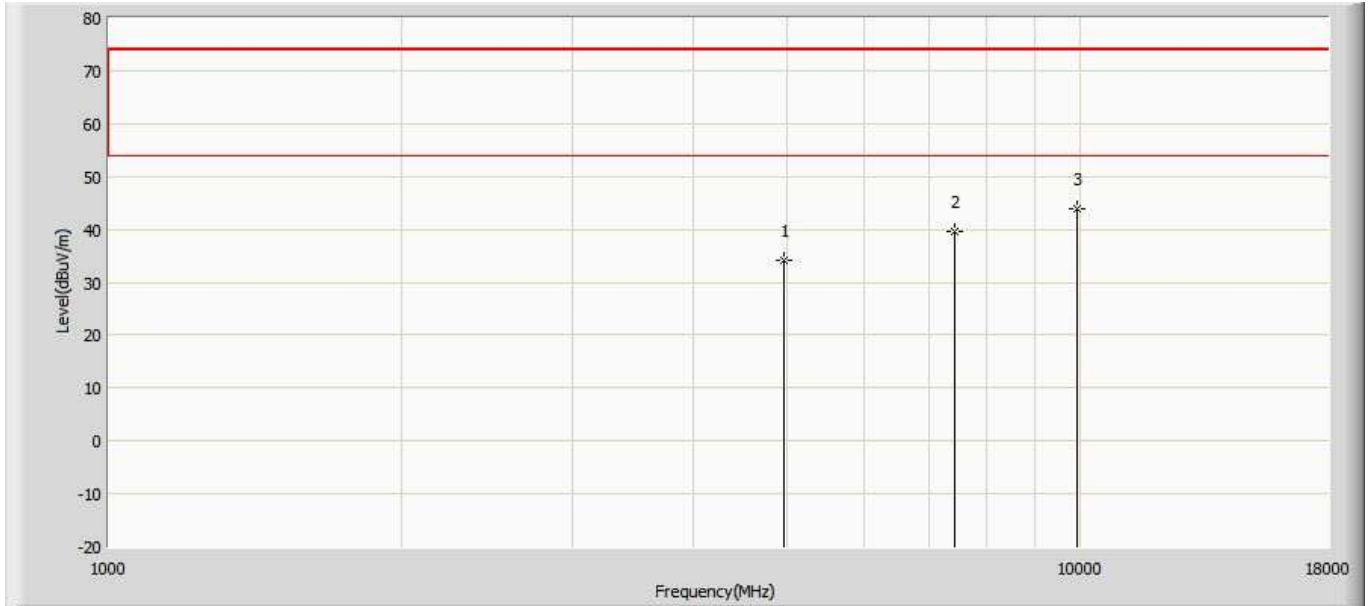
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4884.000	33.096	38.665	-40.904	74.000	-5.569	PK
2		7323.000	37.617	37.892	-36.383	74.000	-0.275	PK
3	*	9764.000	41.278	36.974	-32.722	74.000	4.304	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2441MHz by 2DH5	



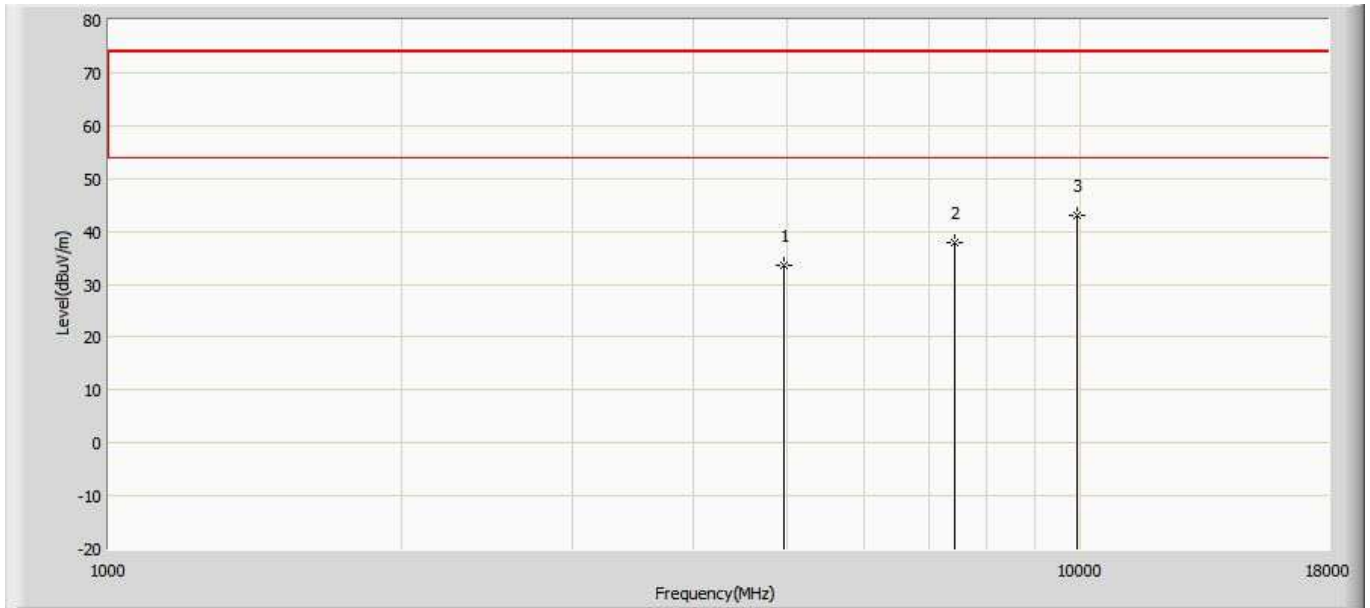
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	32.572	38.129	-41.428	74.000	-5.557	PK
2		7323.000	37.754	38.029	-36.246	74.000	-0.275	PK
3	*	9764.000	41.673	37.369	-32.327	74.000	4.304	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2480MHz by 2DH5	



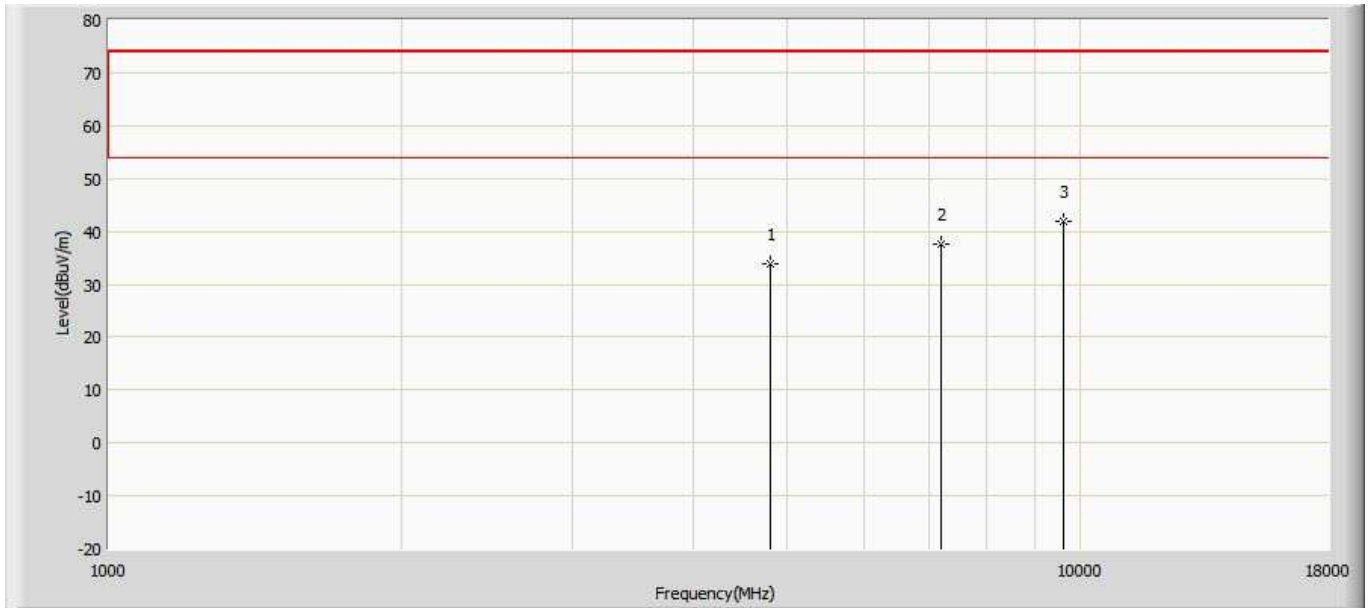
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	34.094	39.326	-39.906	74.000	-5.232	PK
2		7440.000	39.492	39.671	-34.508	74.000	-0.179	PK
3	*	9920.000	43.869	38.923	-30.131	74.000	4.946	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2480MHz by 2DH5	



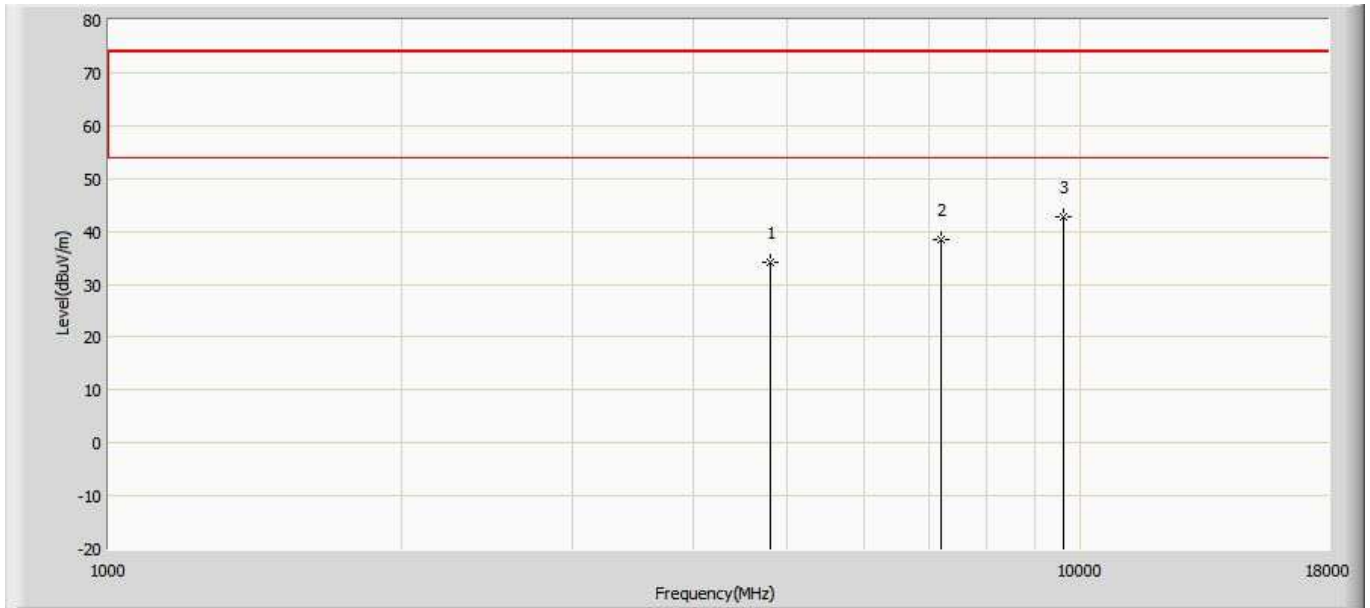
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	33.692	38.924	-40.308	74.000	-5.232	PK
2		7440.000	38.014	38.193	-35.986	74.000	-0.179	PK
3	*	9920.000	42.909	37.963	-31.091	74.000	4.946	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2402MHz by 3DH5	



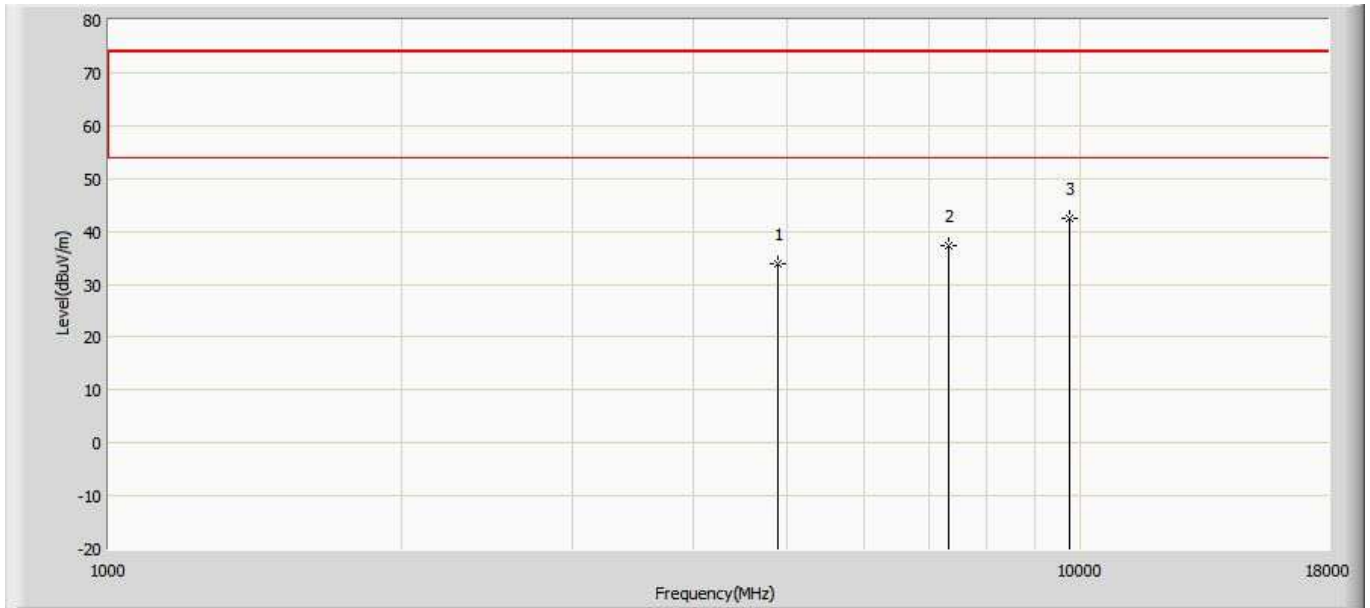
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	33.734	39.345	-40.266	74.000	-5.611	PK
2		7206.000	37.621	37.909	-36.379	74.000	-0.288	PK
3	*	9608.000	41.969	37.838	-32.031	74.000	4.131	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2402MHz by 3DH5	



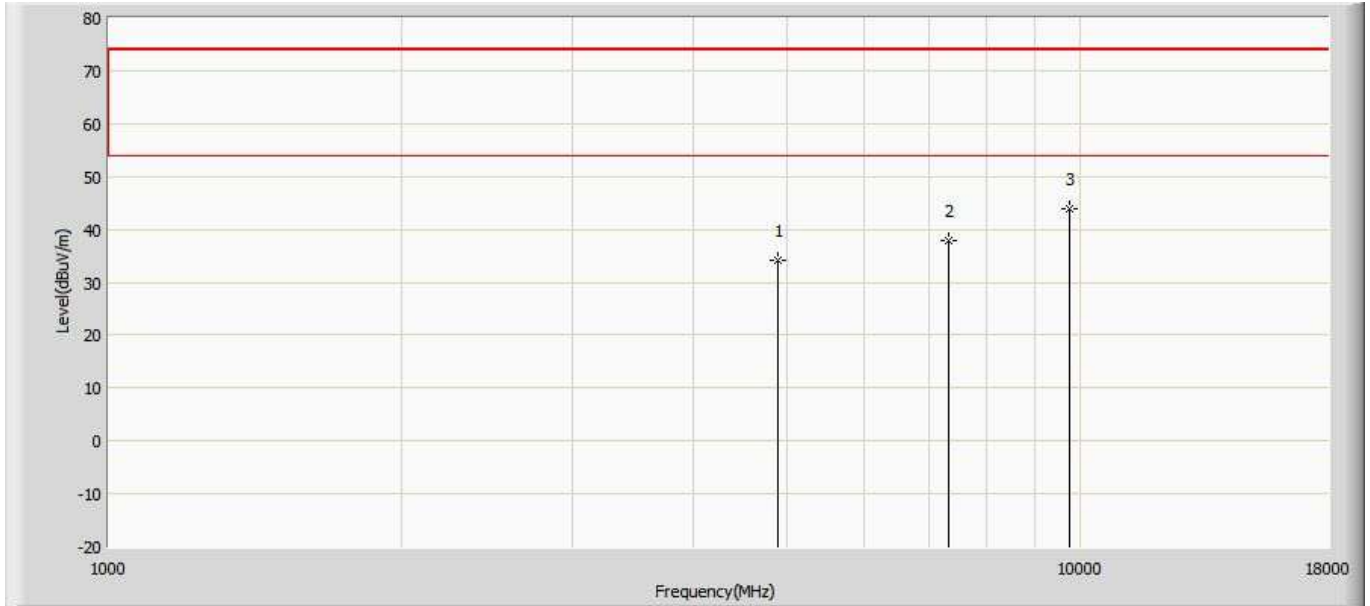
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	34.183	39.794	-39.817	74.000	-5.611	PK
2		7206.000	38.433	38.721	-35.567	74.000	-0.288	PK
3	*	9608.000	42.851	38.720	-31.149	74.000	4.131	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2441MHz by 3DH5	



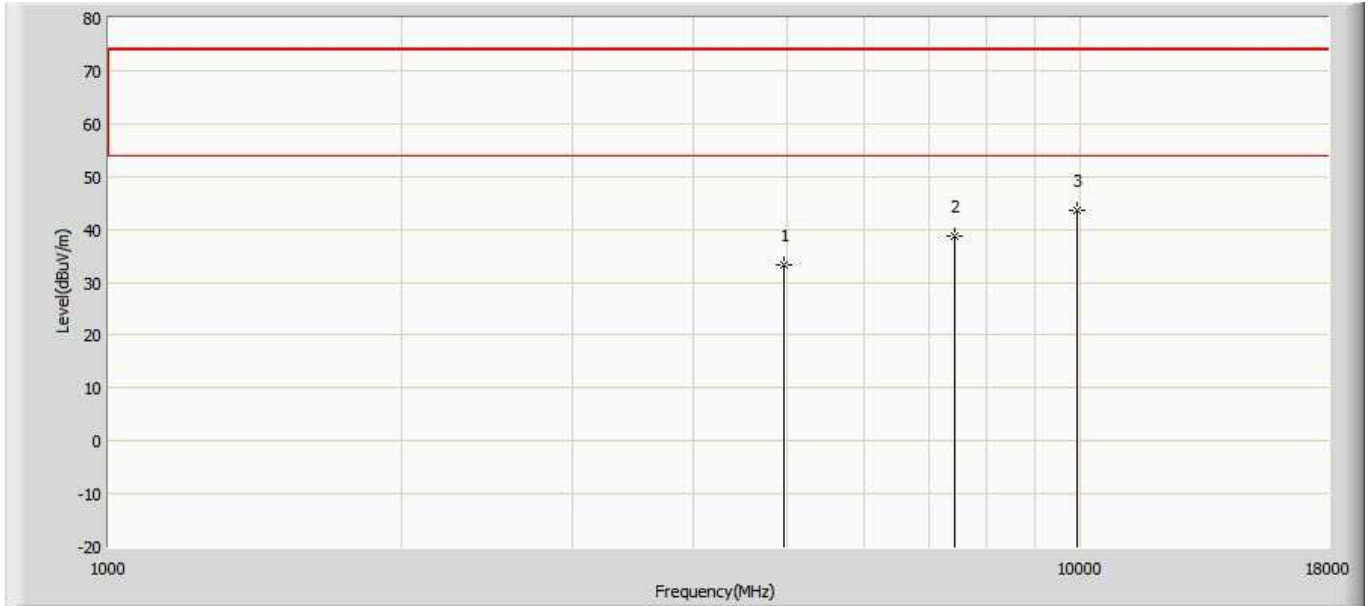
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	33.746	39.303	-40.254	74.000	-5.557	PK
2		7323.000	37.314	37.589	-36.686	74.000	-0.275	PK
3	*	9764.000	42.568	38.264	-31.432	74.000	4.304	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2441MHz by 3DH5	



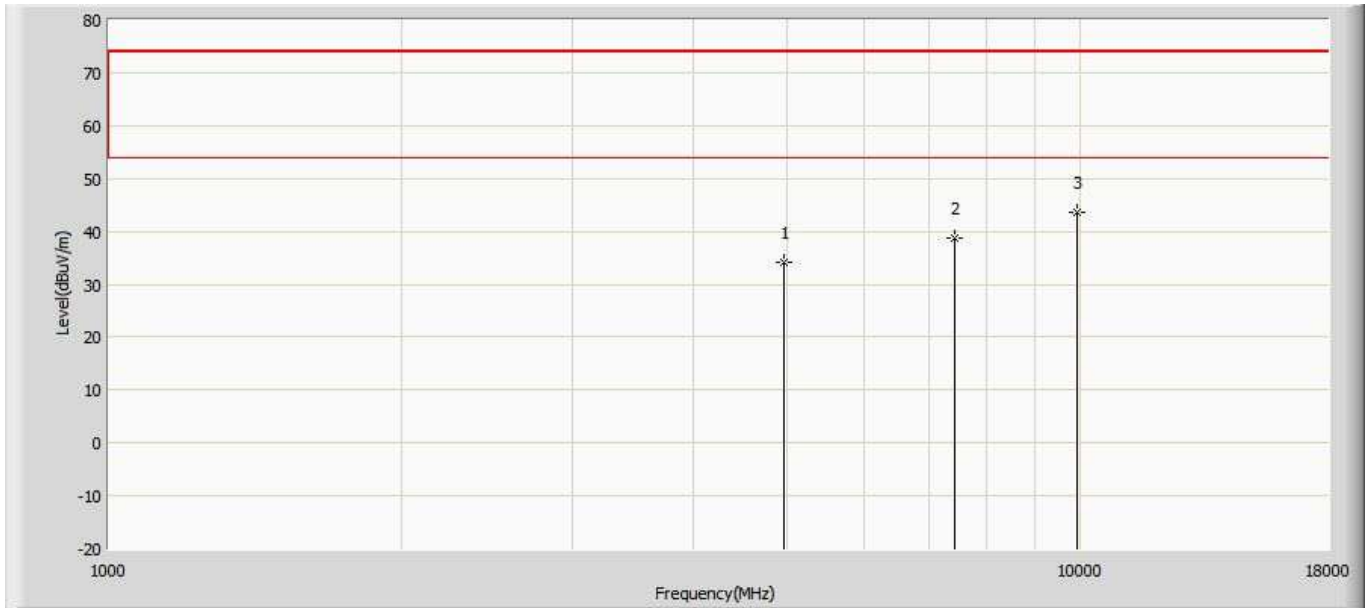
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	34.149	39.706	-39.851	74.000	-5.557	PK
2		7323.000	38.010	38.285	-35.990	74.000	-0.275	PK
3	*	9764.000	43.903	39.599	-30.097	74.000	4.304	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2480MHz by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	33.372	38.604	-40.628	74.000	-5.232	PK
2		7440.000	38.671	38.850	-35.329	74.000	-0.179	PK
3	*	9920.000	43.504	38.558	-30.496	74.000	4.946	PK

Engineer: pawn	
Site: AC5	Time: 2018/04/02 - 11:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2480MHz by 3DH5	



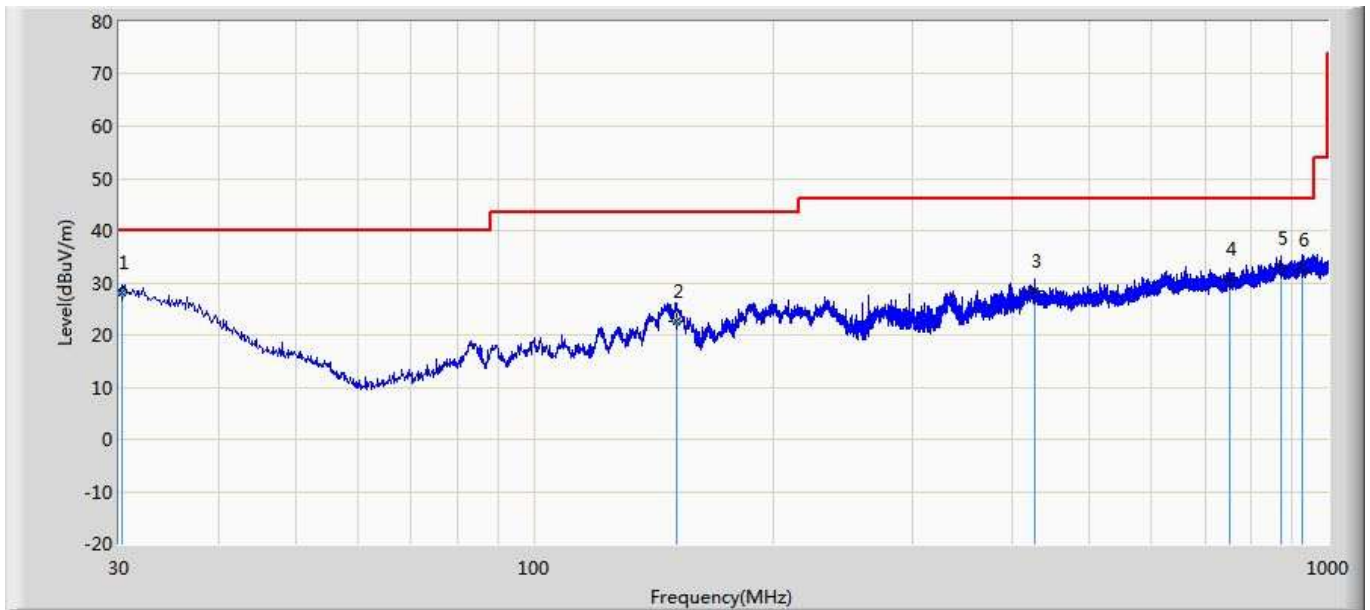
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	34.097	39.329	-39.903	74.000	-5.232	PK
2		7440.000	38.857	39.036	-35.143	74.000	-0.179	PK
3	*	9920.000	43.665	38.719	-30.335	74.000	4.946	PK

Note:

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~26GHz, both of the worst case are at least 20dB below the limits, therefore no data appear in the report.
3. 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.
4. As the radiated emission was performed, so conducted emission was not tested.

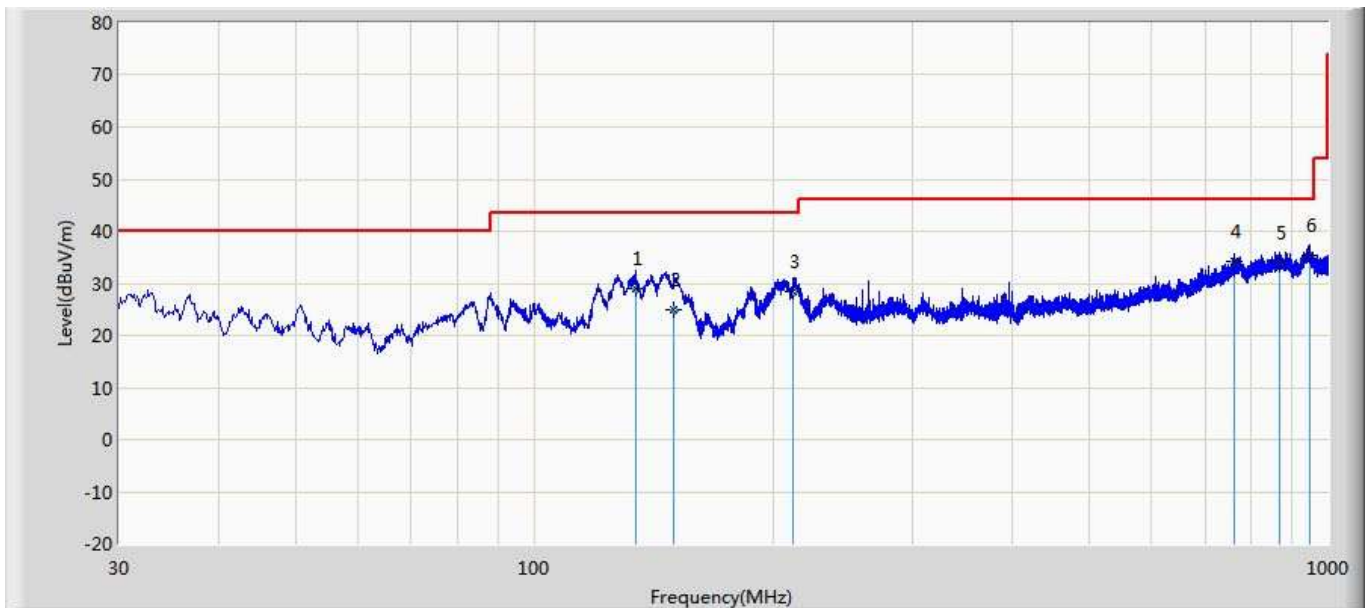
The worst case of Radiated Emission below 1GHz:

Engineer: Pawn	
Site: AC3	Time: 2018/03/14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2402MHz by DH5	



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	*	30.214	28.148	0.300	-11.852	40.000	21.393	6.455	0.000	100	144	QP
2		151.325	22.465	5.200	-21.035	43.500	10.174	7.091	0.000	100	149	QP
3		427.365	28.368	1.300	-17.632	46.000	19.089	7.979	0.000	100	156	QP
4		752.366	30.827	1.300	-15.173	46.000	20.749	8.779	0.000	100	48	QP
5		871.225	32.894	1.200	-13.106	46.000	22.660	9.034	0.000	100	265	QP
6		929.354	32.533	0.300	-13.467	46.000	23.073	9.160	0.000	100	214	QP

Engineer: Pawn	
Site: AC3	Time: 2018/03/14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2402MHz by DH5	



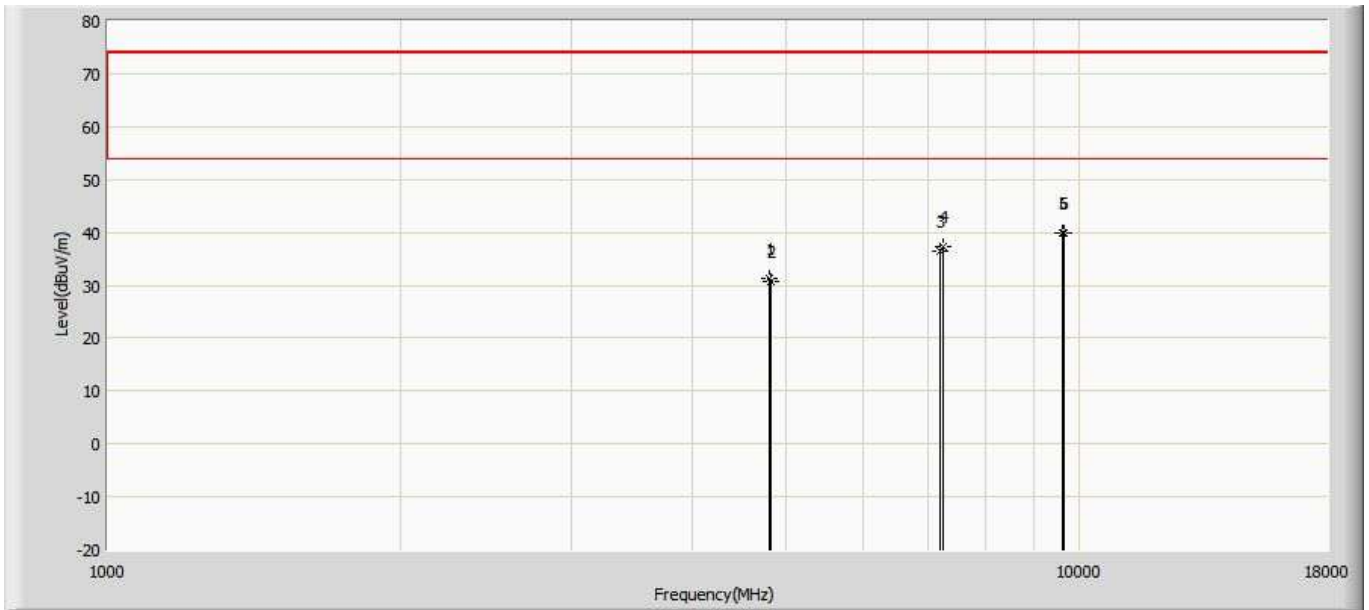
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		134.254	28.937	8.200	-14.563	43.500	13.728	7.009	0.000	100	241	QP
2		150.122	24.974	6.300	-18.526	43.500	11.588	7.086	0.000	100	145	QP
3		211.587	28.427	5.200	-15.073	43.500	15.904	7.323	0.000	100	159	QP
4		761.225	34.260	2.300	-11.740	46.000	23.165	8.795	0.000	100	360	QP
5		867.241	33.986	1.200	-12.014	46.000	23.764	9.022	0.000	100	147	QP
6	*	948.225	35.291	0.300	-10.709	46.000	25.795	9.197	0.000	100	122	QP

Note:

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

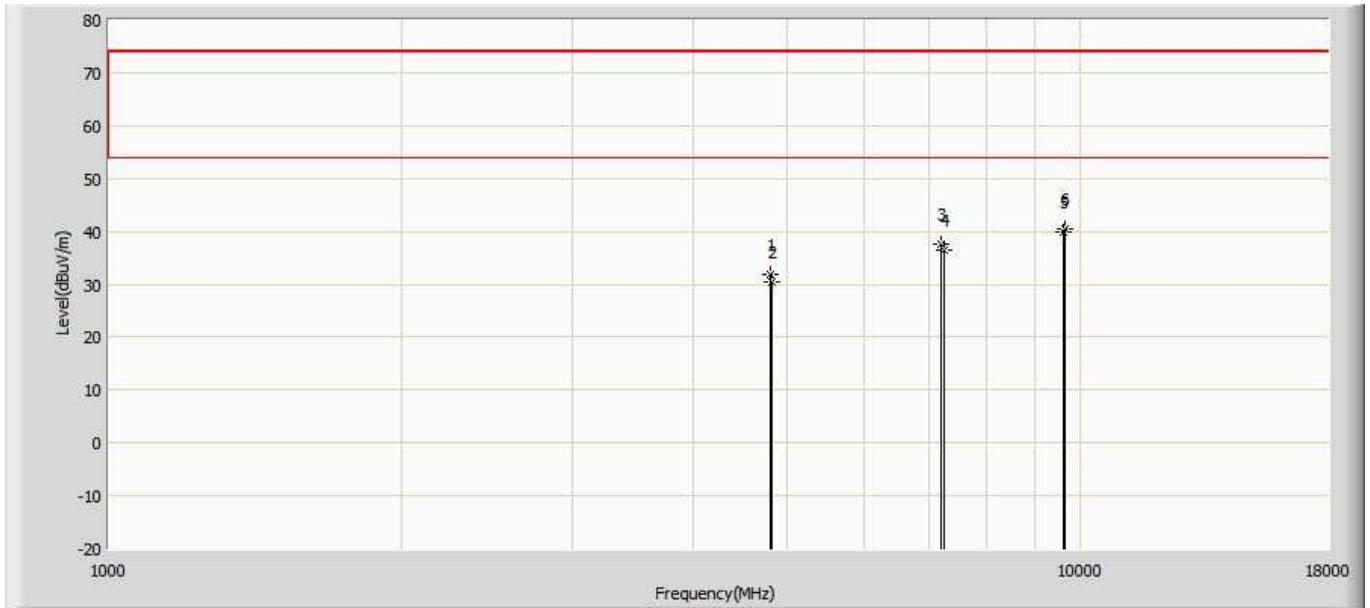
The worst case of Simultaneous Radiated Emission:

Engineer: Pawn	
Site: AC5	Time: 2018/04/04 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Transmit at 2412MHz by 802.11b + BDR	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	31.391	37.002	-42.609	74.000	-5.611	PK
2		4824.000	30.622	36.430	-43.378	74.000	-5.808	PK
3		7206.000	36.589	36.877	-37.411	74.000	-0.288	PK
4		7236.000	37.447	38.172	-36.553	74.000	-0.725	PK
5	*	9608.000	39.988	35.857	-34.012	74.000	4.131	PK
6		9648.000	39.814	35.404	-34.186	74.000	4.410	PK

Engineer: Pawn	
Site: AC5	Time: 2018/04/04 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Transmit at 2412MHz by 802.11b + BDR	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	31.852	37.463	-42.148	74.000	-5.611	PK
2		4824.000	30.379	36.187	-43.621	74.000	-5.808	PK
3		7206.000	37.563	37.851	-36.437	74.000	-0.288	PK
4		7236.000	36.403	37.128	-37.597	74.000	-0.725	PK
5		9608.000	39.753	35.622	-34.247	74.000	4.131	PK
6	*	9648.000	40.471	36.061	-33.529	74.000	4.410	PK

Note:

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~26GHz, both of the worst case are at least 20dB below the limits, therefore no data appear in the report.
3. 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.
4. As the radiated emission was performed, so conducted emission was not tested.

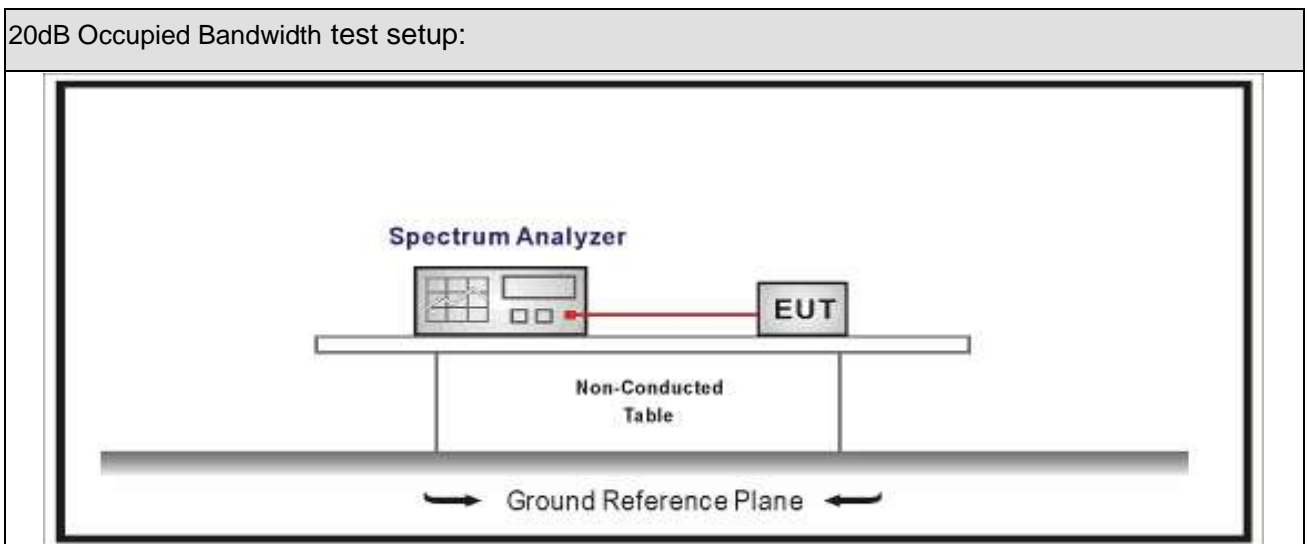
5. 20dB Bandwidth

5.1 Test Equipment

20dB Occupied Bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

5.2 Test Setup



5.3 Limit

Carrier Frequency Separation	
<input checked="" type="checkbox"/>	For frequency hopping systems operating in 2400-2483.5 MHz band, within frequency range.
<input type="checkbox"/>	For frequency hopping systems operating in 902-928 MHz band, the maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
<input type="checkbox"/>	For frequency hopping systems operating in 5725-5850 MHz band, the maximum 20 dB bandwidth of the hopping channel is 1 MHz.

5.4 Test Procedure

Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	DA 00-705	N/A	20 dB Bandwidth

5.5 Uncertainty

The measurement uncertainty is defined as ± 1 kHz

5.6 Test Result

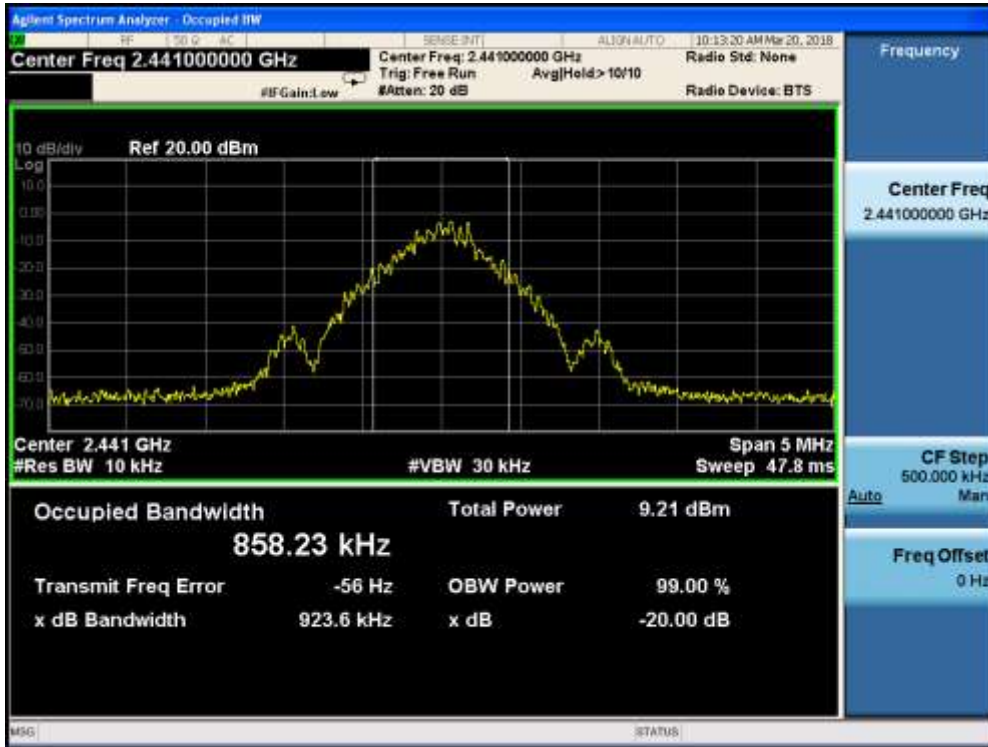
Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 1	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
00	2402	923.8	873.36
39	2441	923.6	858.23
78	2480	925.2	862.73

Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 2	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
00	2402	1345	1188.6
39	2441	1339	1190.8
78	2480	1318	1176.1

Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 3	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
00	2402	1349	1201.0
39	2441	1311	1183.9
78	2480	1269	1172.8

Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



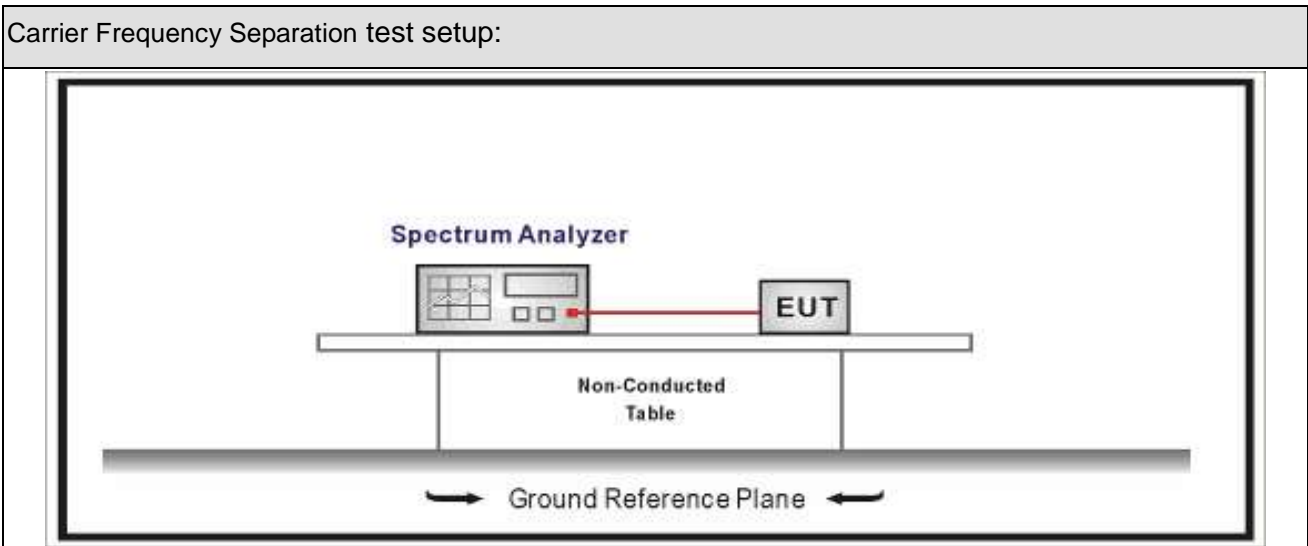
6. Carrier Frequency Separation

6.1. Test Equipment

Carrier Frequency Separation / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

6.2. Test Setup



6.3. Limit

Carrier Frequency Separation	
<input type="checkbox"/>	Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.
<input checked="" type="checkbox"/>	Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel.
<input type="checkbox"/>	The 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period;
<input type="checkbox"/>	The 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
<input type="checkbox"/>	Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz.

6.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	7.8.2	Carrier frequency separation

6.5. Uncertainty

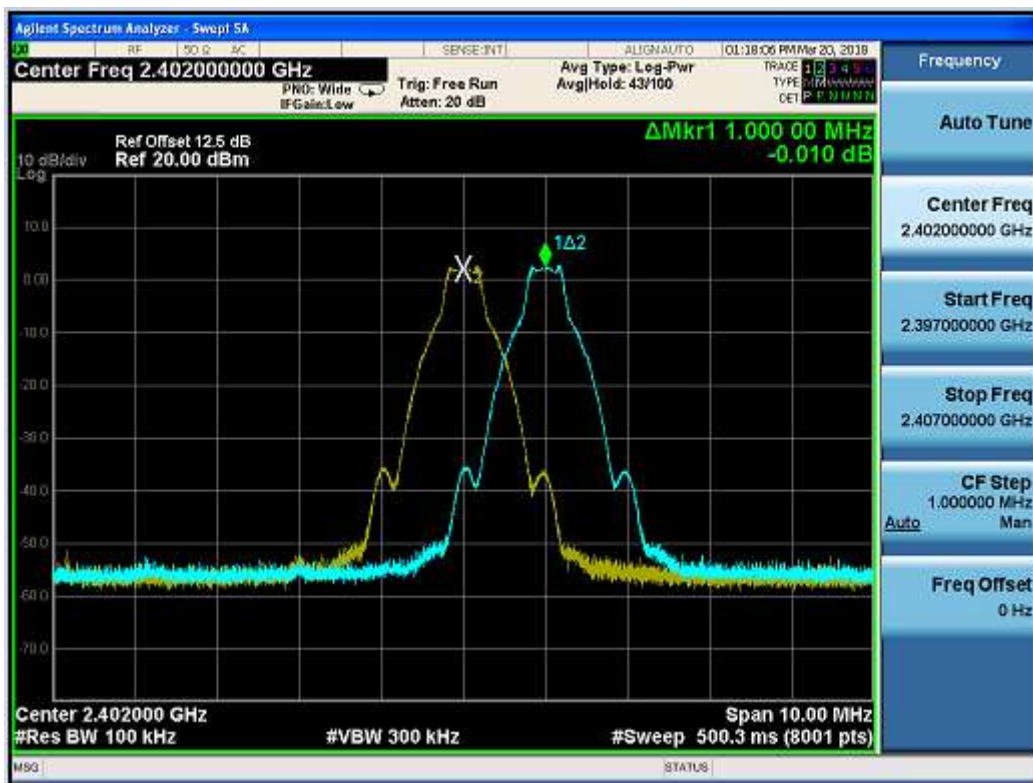
The measurement uncertainty is defined as ± 1 kHz

6.6. Test Result

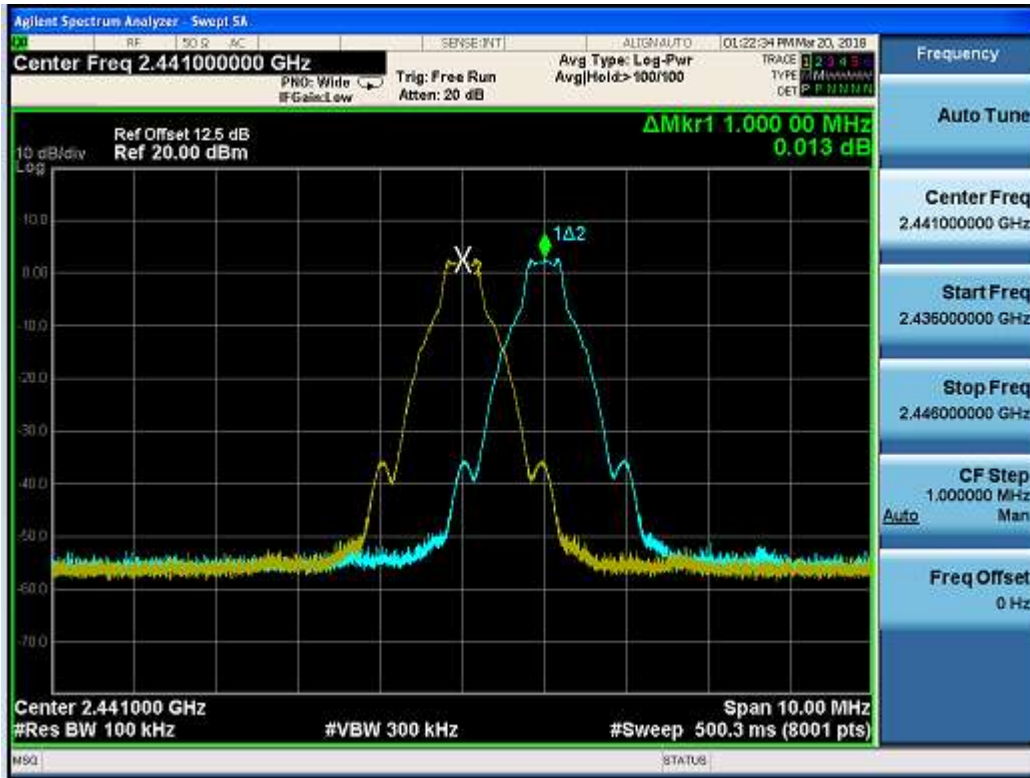
Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 1	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Channel No.	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
00	2402	1000	615.9	Pass
39	2441	1000	615.7	Pass
78	2480	1000	616.8	Pass

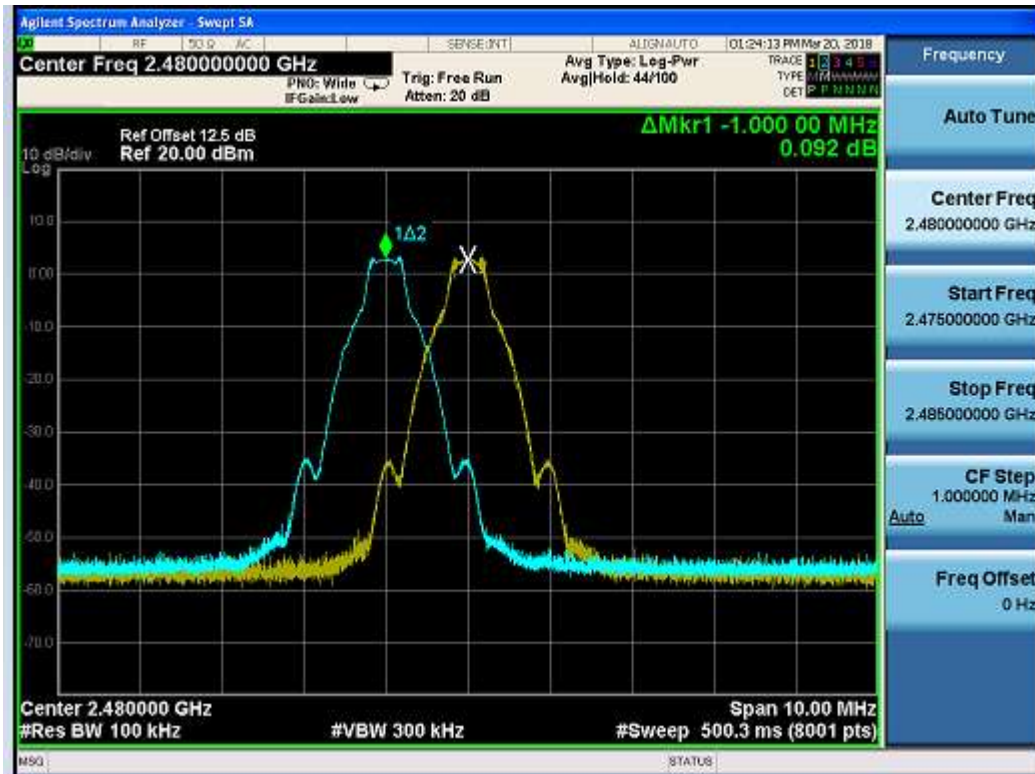
Channel 00 (2402MHz)



Channel 39 (2441MHz)



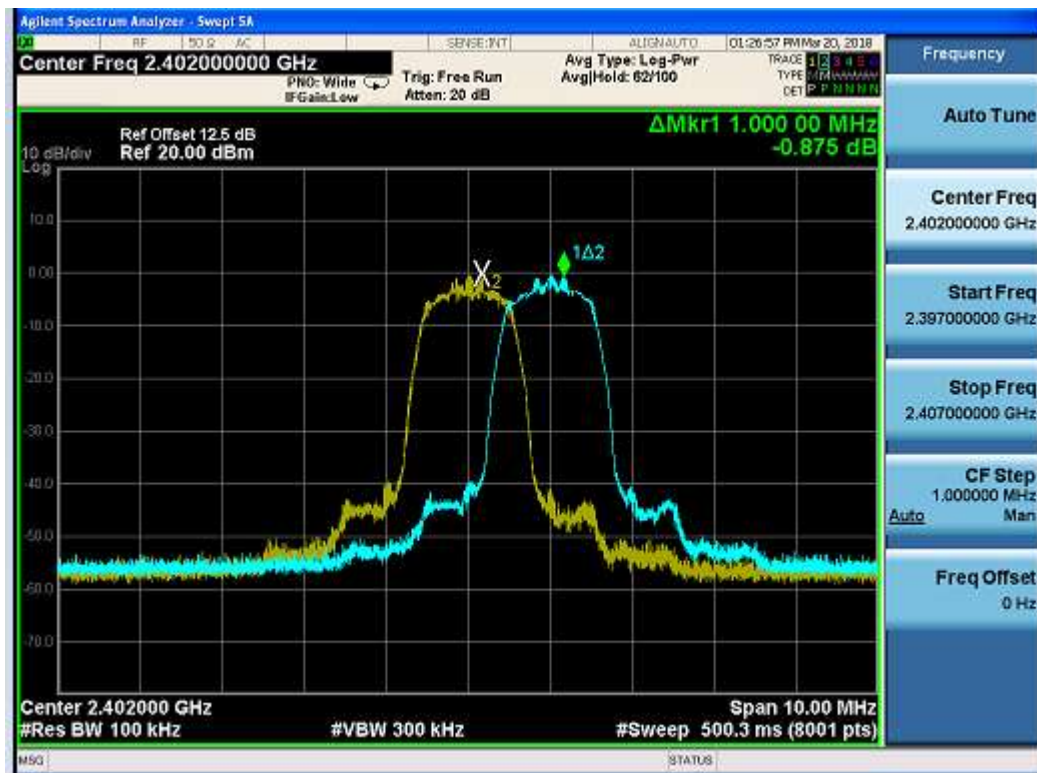
Channel 78 (2480MHz)



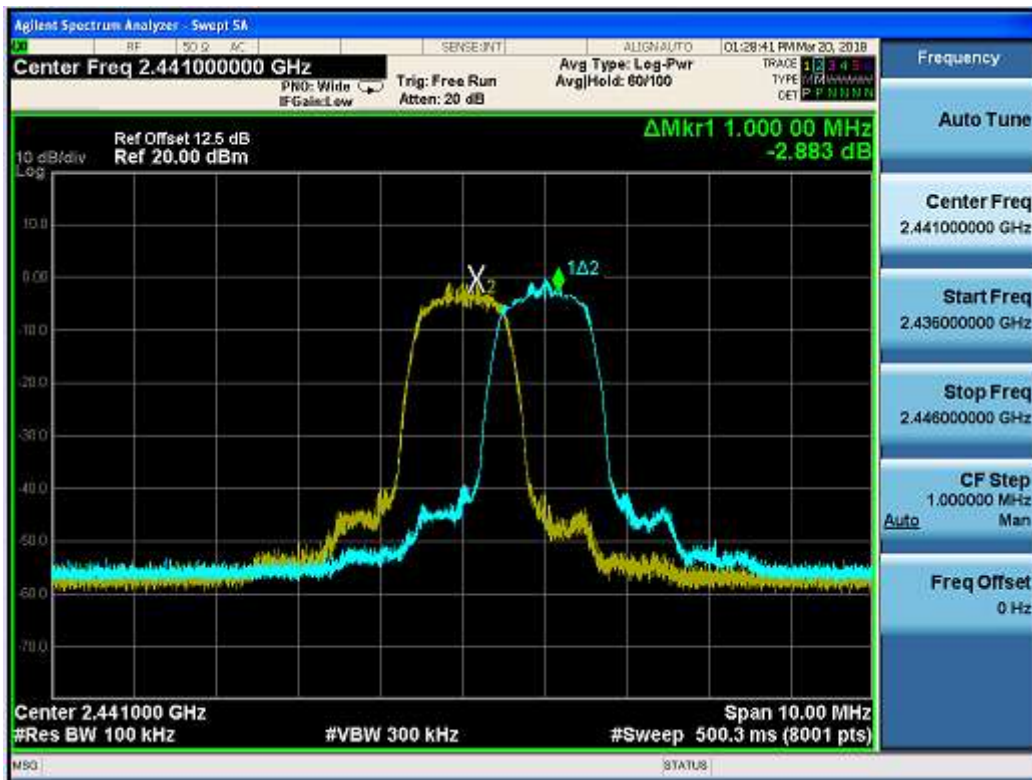
Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 2	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Channel No.	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
00	2402	1000	896.7	Pass
39	2441	1000	892.7	Pass
78	2480	1000	878.7	Pass

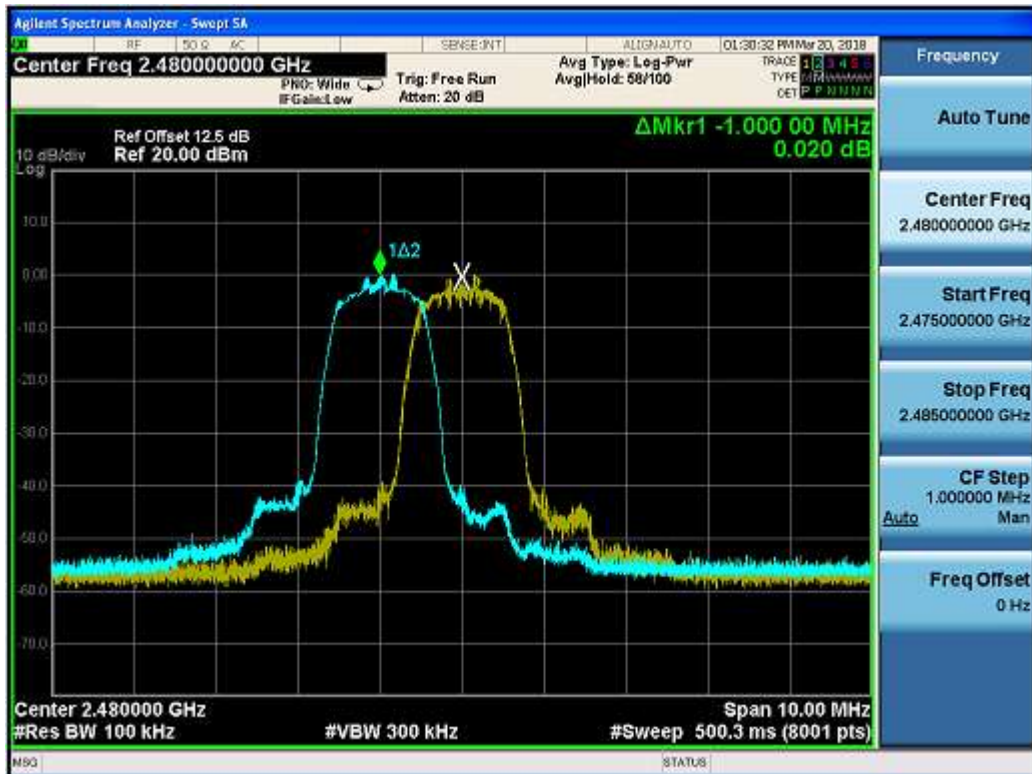
Channel 00 (2402MHz)



Channel 39 (2441MHz)



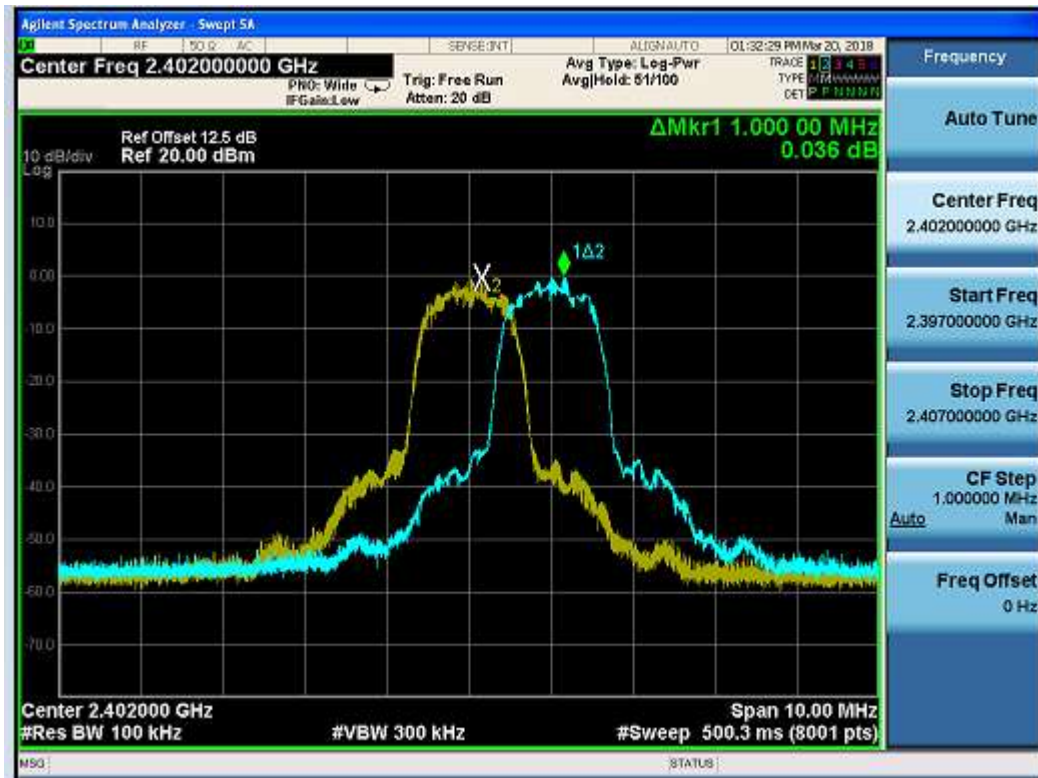
Channel 78 (2480MHz)



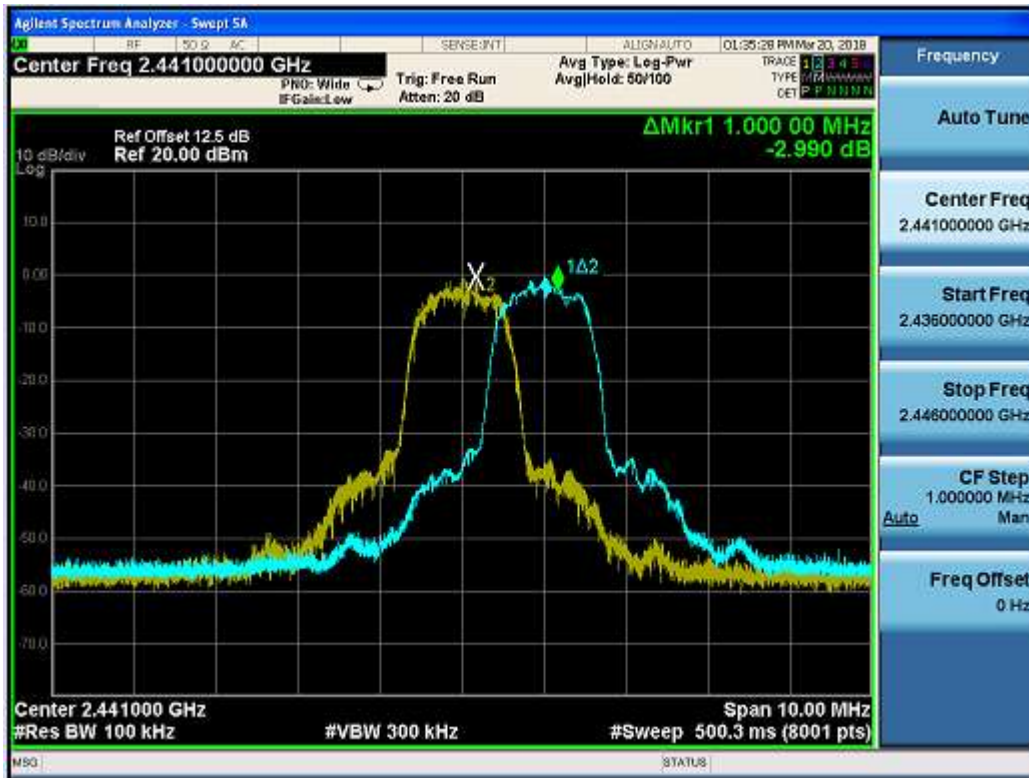
Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 3	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Channel No.	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
00	2402	1000	899.3	Pass
39	2441	1000	874.0	Pass
78	2480	1000	846.0	Pass

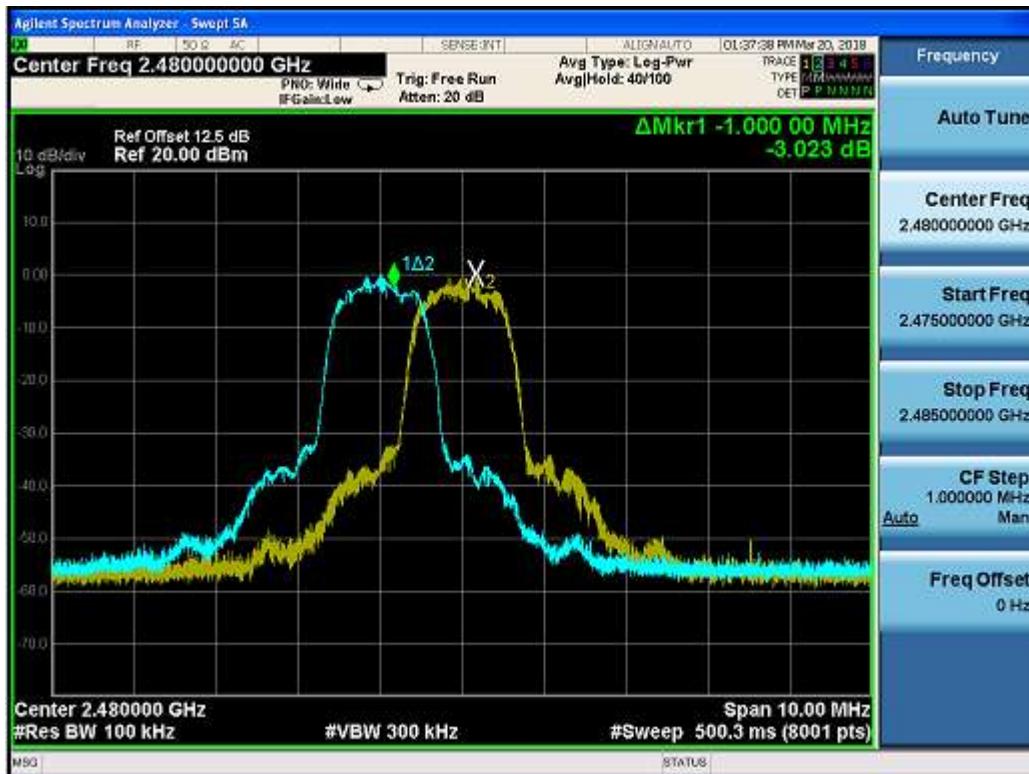
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



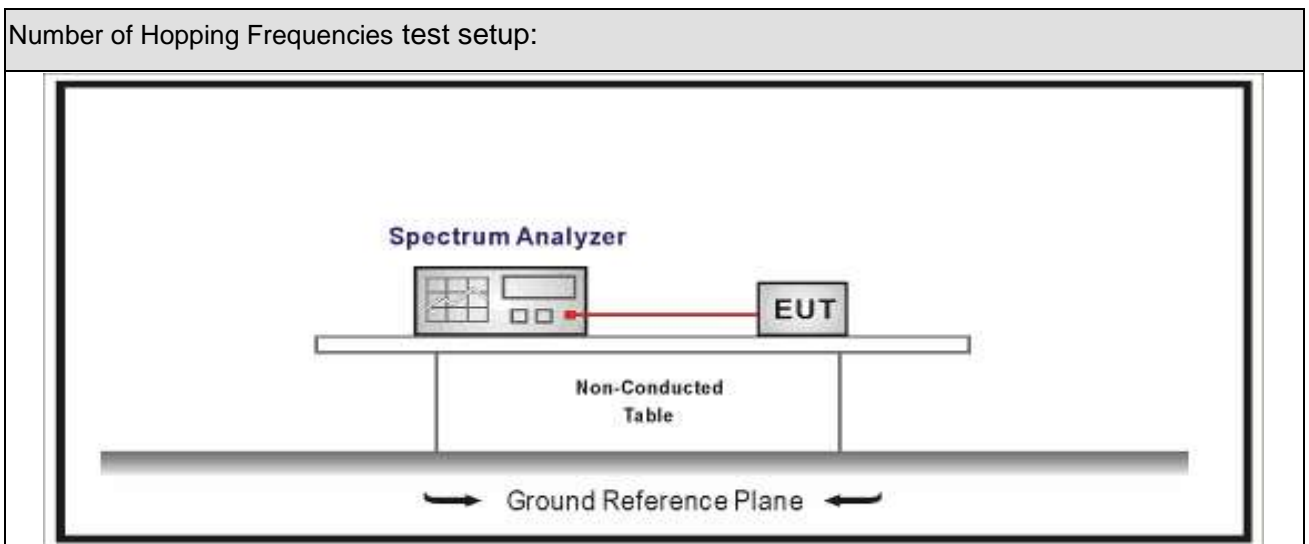
7. Number of Hopping Frequencies

7.1. Test Equipment

Number of Hopping Frequencies / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

7.2. Test Setup



7.3. Limit

Carrier Frequency Separation	
<input checked="" type="checkbox"/>	For frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies.
<input type="checkbox"/>	For frequency hopping systems operating in 902-928 MHz band, if the 20 dB bandwidth of the hopping channel is less than 250 kHz, shall use at least 50 hopping frequencies.
<input type="checkbox"/>	For frequency hopping systems operating in 902-928 MHz band, if the 20 dB bandwidth of the hopping channel is higher than 250 kHz, shall use at least 25 hopping frequencies.
<input type="checkbox"/>	For frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies.

7.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	7.8.3	Number of Hopping Frequencies

7.5. Uncertainty

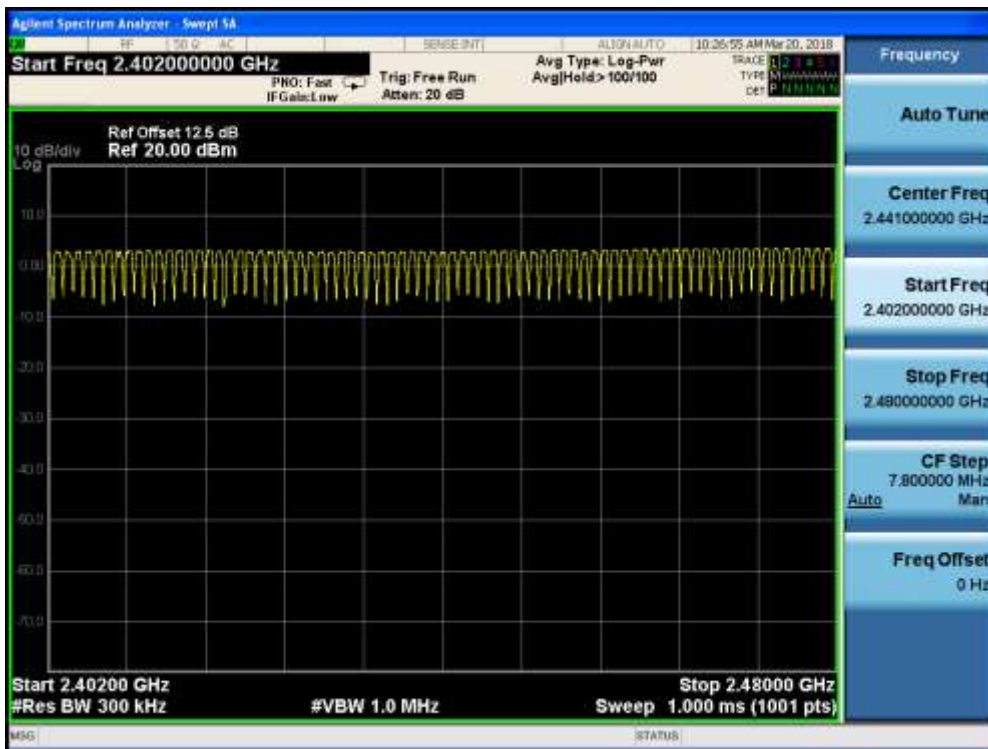
The measurement uncertainty is defined as ± 1 kHz

7.6. Test Result

Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 1	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Frequency Band (MHz)	Number of Hopping Frequencies	Limit	Result
2400 - 2483.5	79	>15	Pass

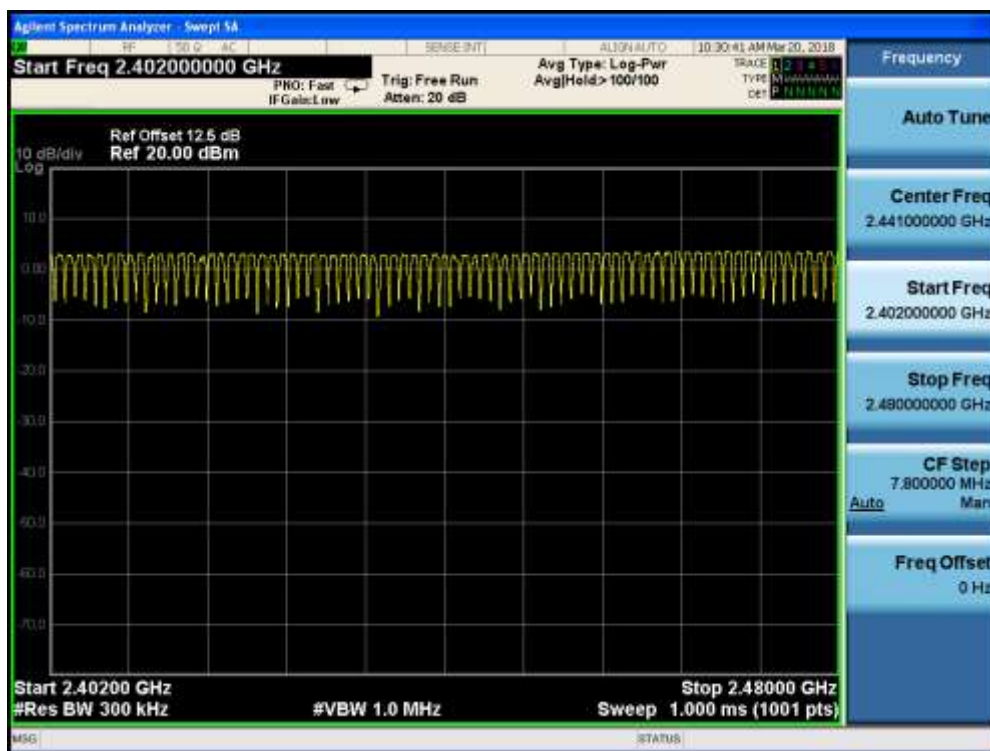
2402 - 2480MHz



Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 2	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Frequency Band (MHz)	Number of Hopping Frequencies	Limit	Result
2400 - 2483.5	79	>15	Pass

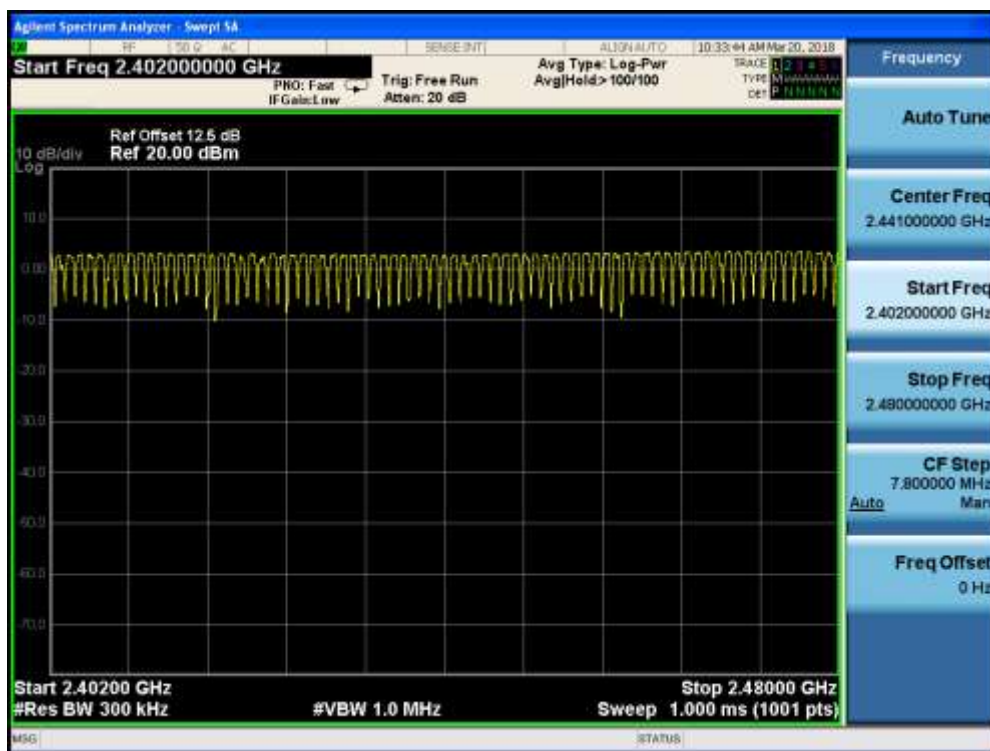
2402 - 2480 MHz



Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 3	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Frequency Band (MHz)	Number of Hopping Frequencies	Limit	Result
2400 - 2483.5	79	>15	Pass

2402 - 2480 MHz



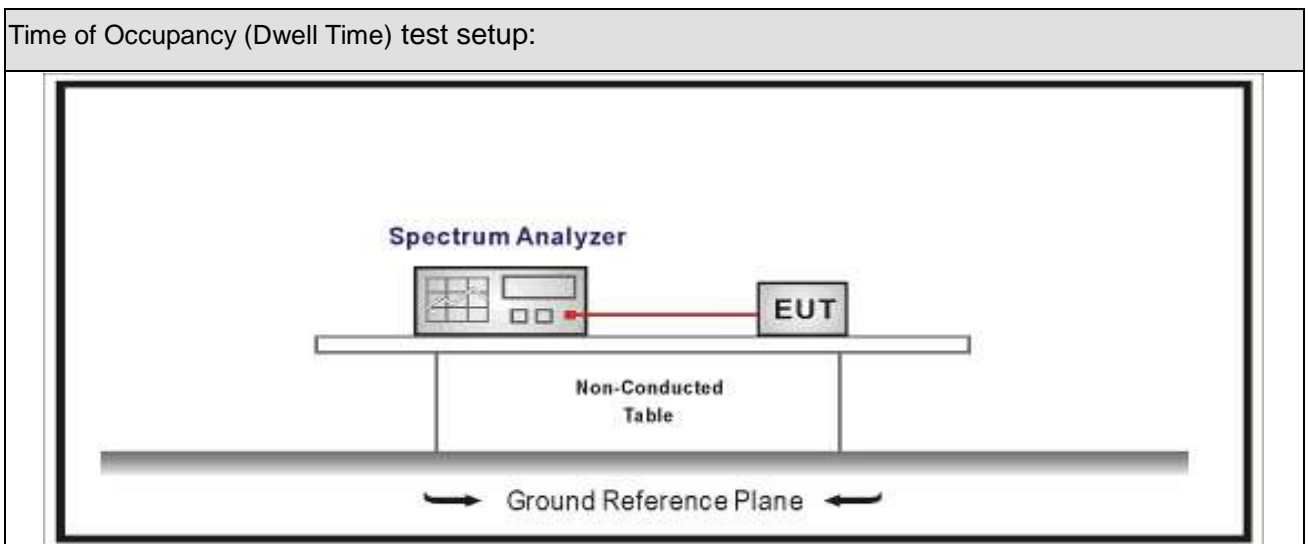
8. Time of Occupancy (Dwell Time)

8.1. Test Equipment

Time of Occupancy (Dwell Time) / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

8.2. Test Setup



8.3. Limit

Time of Occupancy (Dwell Time)	
<input checked="" type="checkbox"/>	Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.
<input type="checkbox"/>	For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period
<input type="checkbox"/>	For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping

	frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.
<input type="checkbox"/>	Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

8.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	7.8.4	Time of Occupancy (Dwell Time)

8.5. Uncertainty

The measurement uncertainty is defined as $\pm 0.1 \text{ us}$

8.6. Test Result

Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 1(GFSK_DH5)	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

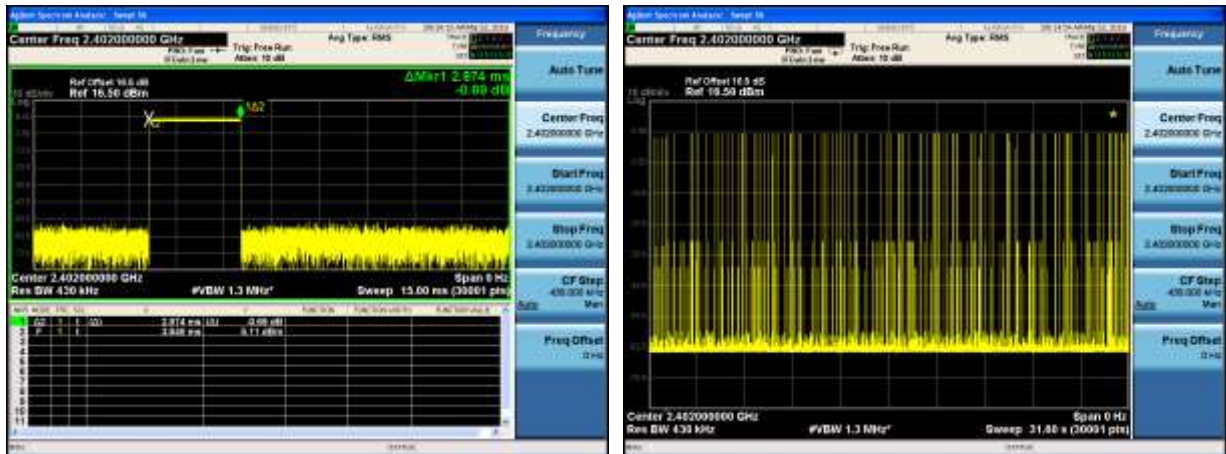
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
00	2402	307.5	< 400	Pass

Note1: Test Time Period: $0.4 \times 79 = 31.6 \text{ sec}$

Note2: Time of Occupancy= pulse time*pulse number

Note3: We have evaluated different packet type, shown in the report is the worst data.

Channel 00 (2402MHz)-(DH5)



Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 2(Pi/4 DQPSK_DH5)	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

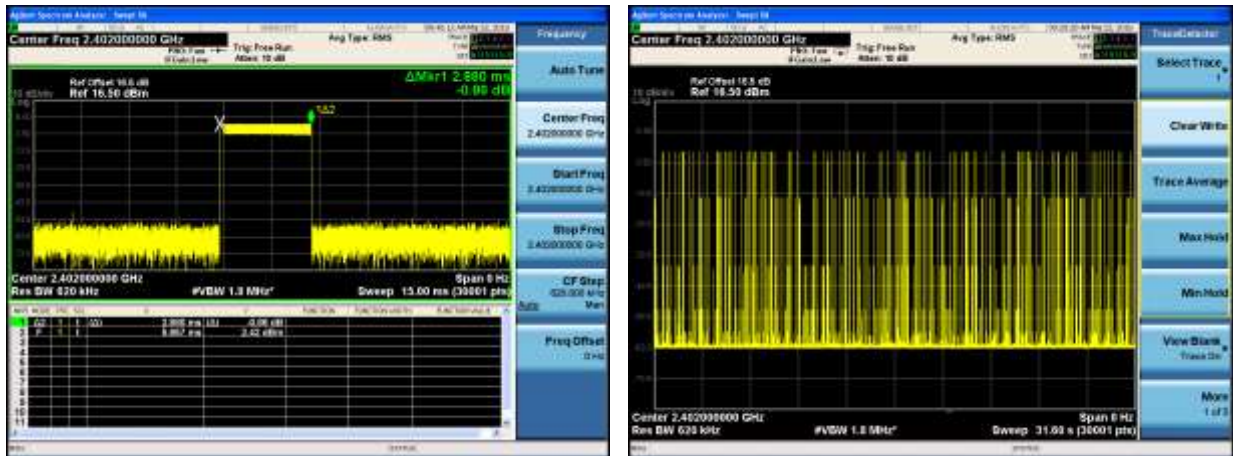
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
00	2402	308.2	< 400	Pass

Note1: Test Time Period: $0.4 \times 79 = 31.6 \text{ sec}$

Note2: Time of Occupancy= pulse time*pulse number

Note3: We have evaluated different packet type, shown in the report is the worst data.

Channel 00 (2402MHz) - (2DH5)



Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 3(8DPSK_DH5)	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

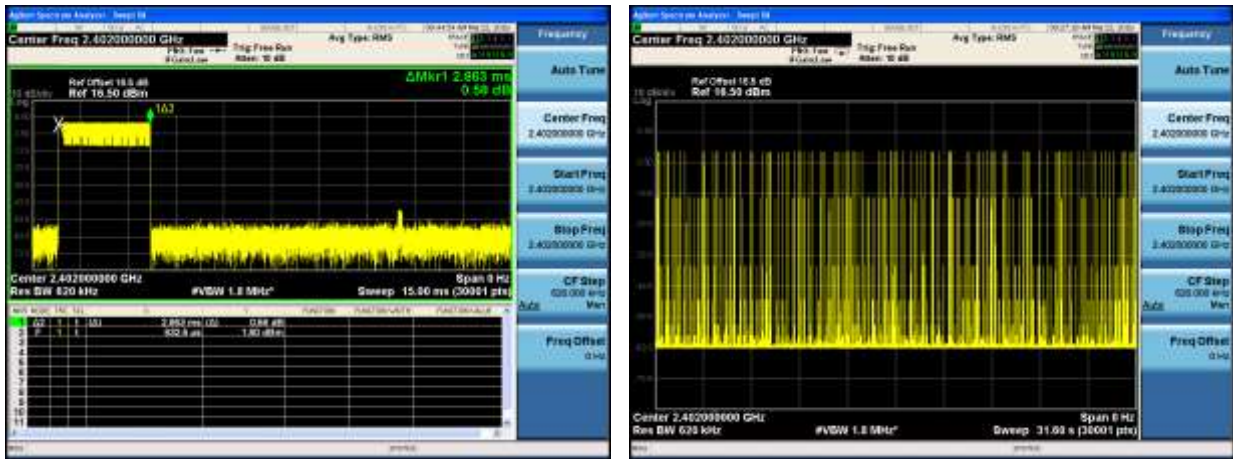
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
00	2402	306.3	< 400	Pass

Note1: Test Time Period: $0.4 \times 79 = 31.6 \text{ sec}$

Note2: Time of Occupancy= pulse time*pulse number

Note3: We have evaluated different packet type, shown in the report is the worst data.

Channel 00 (2402MHz) - (3DH5)



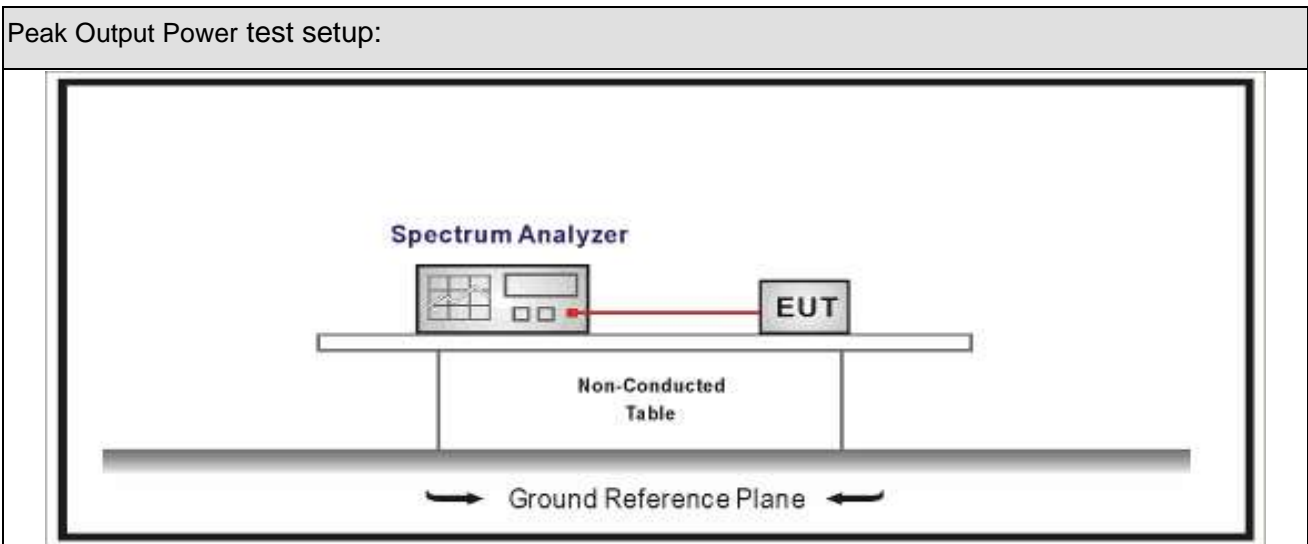
9. Peak Output Power

9.1. Test Equipment

Peak Output Power / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

9.2. Test Setup



9.3. Limit

Peak Output Power	
<input type="checkbox"/>	Frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
<input checked="" type="checkbox"/>	Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
<input type="checkbox"/>	For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels

9.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	7.8.5	Output power test procedure for frequency-hopping spread-spectrum (FHSS) devices

9.5. Uncertainty

The measurement uncertainty is defined as ± 1.0 dB

9.6. Test Result

Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 1	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
00	2402	8.48	21.00	Pass
39	2441	9.17	21.00	Pass
78	2480	9.31	21.00	Pass

Product Name	:	Barcode Scanner	Power	:	AC 120V/60Hz
Test Mode	:	Mode 2	Test Site	:	TR-8
Test Date	:	2018.03.20	Test Engineer	:	Slark

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
00	2402	7.75	21.00	Pass
39	2441	8.43	21.00	Pass
78	2480	8.61	21.00	Pass

Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 3	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
00	2402	8.07	21.00	Pass
39	2441	8.79	21.00	Pass
78	2480	8.88	21.00	Pass

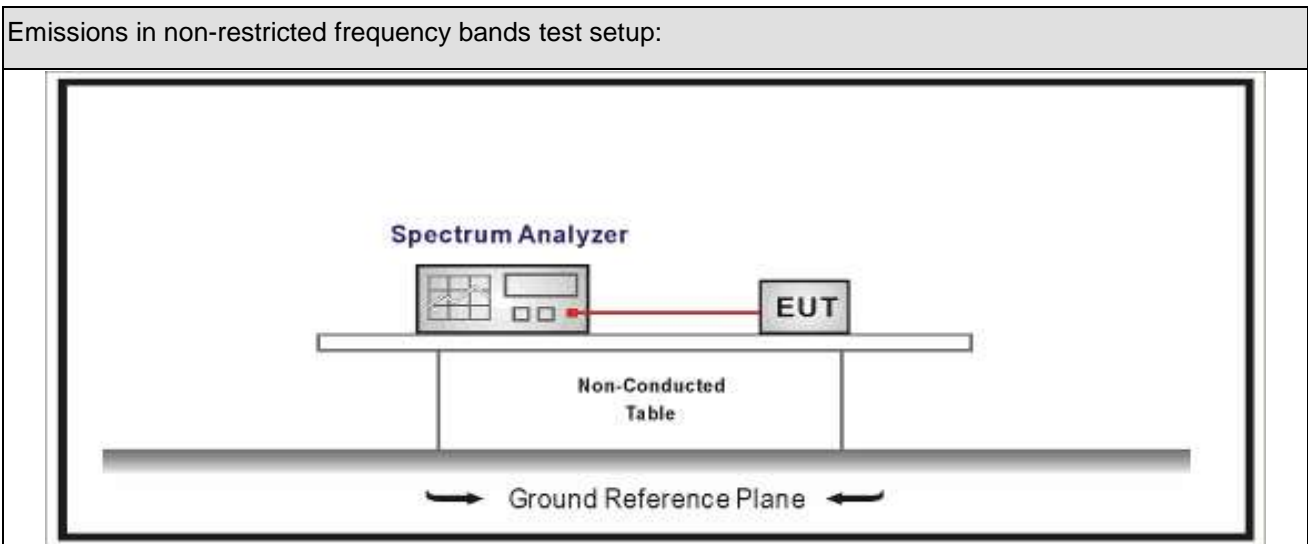
10. Emissions in non-restricted frequency bands

10.1. Test Equipment

Emissions in non-restricted frequency bands / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

10.2. Test Setup



10.3. Limit

Un-Restricted Band Emissions Limit	
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30c(Note1)
RF Output power(PK detector)	20c(Note2)
<p>Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).</p> <p>Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).</p>	

10.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	7.8.6	Band-edge Compliance of RF Conducted Emissions

10.5. Uncertainty

The measurement uncertainty is defined as ± 1.0 dB

10.6. Test Result

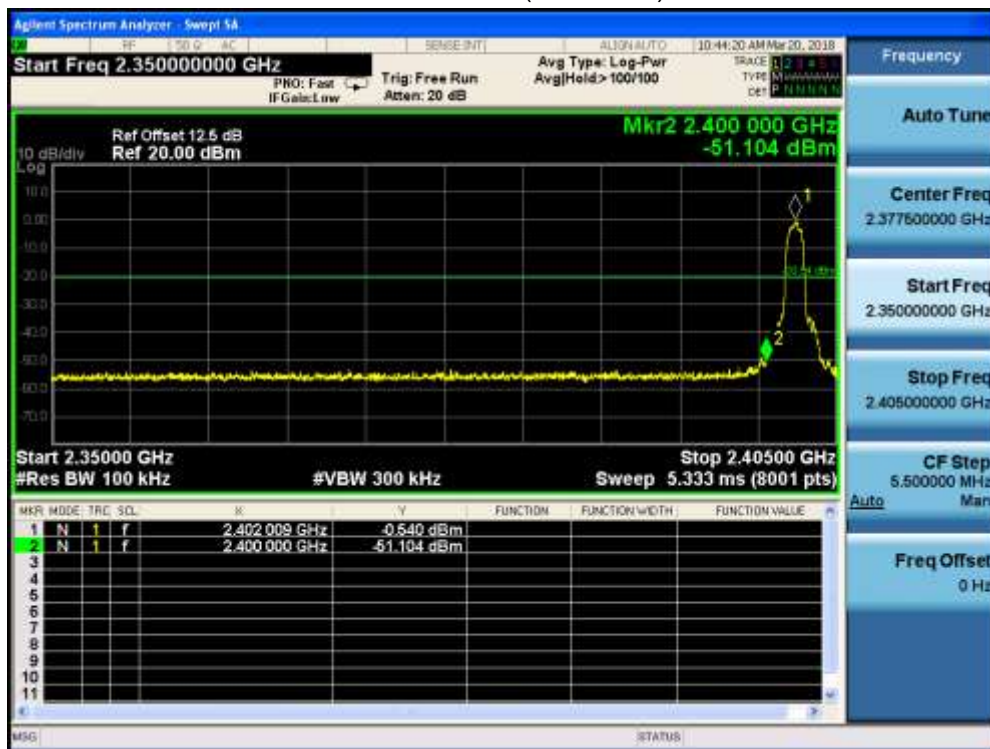
Product Name	: Barcode Scanner	Power	: AC 120V/60Hz
Test Mode	: Mode 1~4	Test Site	: TR-8
Test Date	: 2018.03.20	Test Engineer	: Slark

Mode	Channel	Test Frequency (MHz)	In-Band PSD[a] (dBm/100kHz)	Frequency (MHz)	Out-Band PSD[b] (dBm/100kHz)	[a]-[b] (dB)	Limit (dB)	Result
1	00	2402	2.727	2400.00	-52.633	55.360	>20	Pass
1	78	2480	3.102	2500.00	-55.461	58.563	>20	Pass
2	00	2402	-0.440	2400.00	-54.712	54.272	>20	Pass
2	78	2480	-0.072	2500.00	-55.519	55.447	>20	Pass
3	00	2402	-0.540	2400.00	-51.104	50.564	>20	Pass
3	78	2480	-0.859	2500.00	-56.957	56.098	>20	Pass
4	00~78	00~78	2.797	2400.00	-48.898	51.695	>20	Pass

Note1: The worst case of Emissions in non-restricted frequency bands as below:

2: Mode 1-3, The In-Band PSD is the highest PSD of All channels.

Mode 3 CH00(2402MHz)

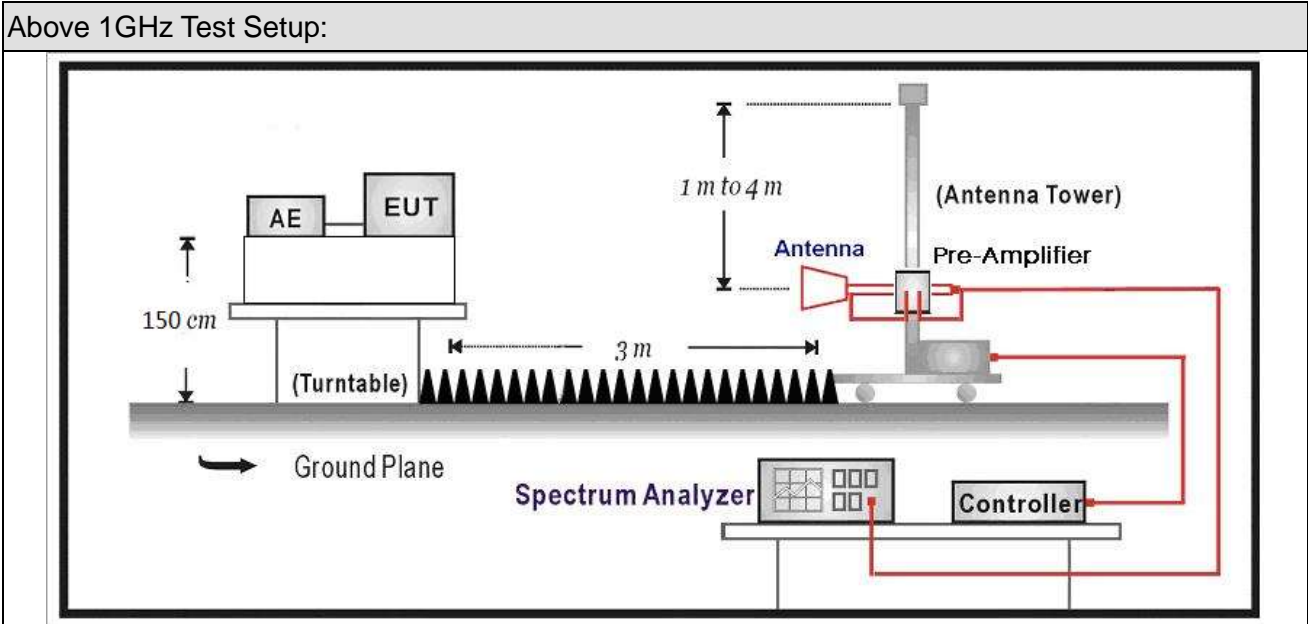


11. Radiated Emission Band Edge

11.1. Test Equipment

Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Receiver	Agilent	N9038A	MY51210196	2017.07.16	2018.07.15
Pre-Amplifier	Miteq	NSP1800-25	1364185	2017.05.03	2018.05.02
DRG Horn Antenna	ETS-Lindgren	3117	00167055	2017.07.12	2018.07.11
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2017.09.18	2018.09.17
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2018.02.28	2019.02.27
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2018.02.28	2019.02.27
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2018.01.05	2019.01.04

11.2. Test Setup



11.3. Limit

Band edge Limit				
Frequency bands (MHz)	Detector	Limit (dB μ V/m)	RBW (MHz)	Distance (m)
2310-2390	PK	74	1	3
2483.5-2500	AV	54	1	3

Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.

11.4. Test Procedure

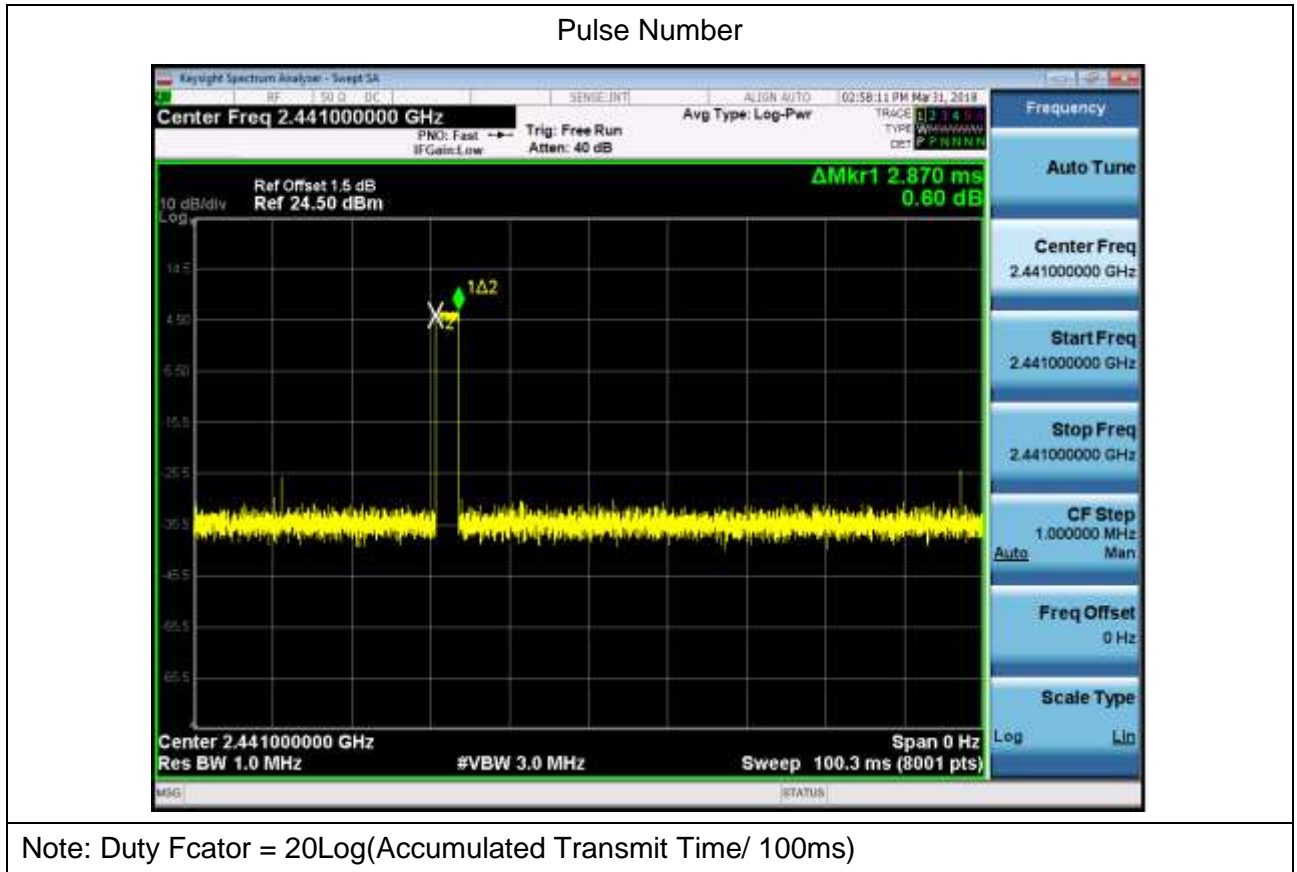
Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	DA 00-705	N/A	duty cycle correction factor
<input checked="" type="checkbox"/>	ANSI C63.10	6.10	Band-edge testing
	<input checked="" type="checkbox"/> ANSI C63.10	6.10.5	Restricted-band band-edge measurements
	<input type="checkbox"/> ANSI C63.10	6.10.6	Marker-delta method
<input type="checkbox"/>	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
<input 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

11.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB
 below 1G is defined as ± 3.8 dB

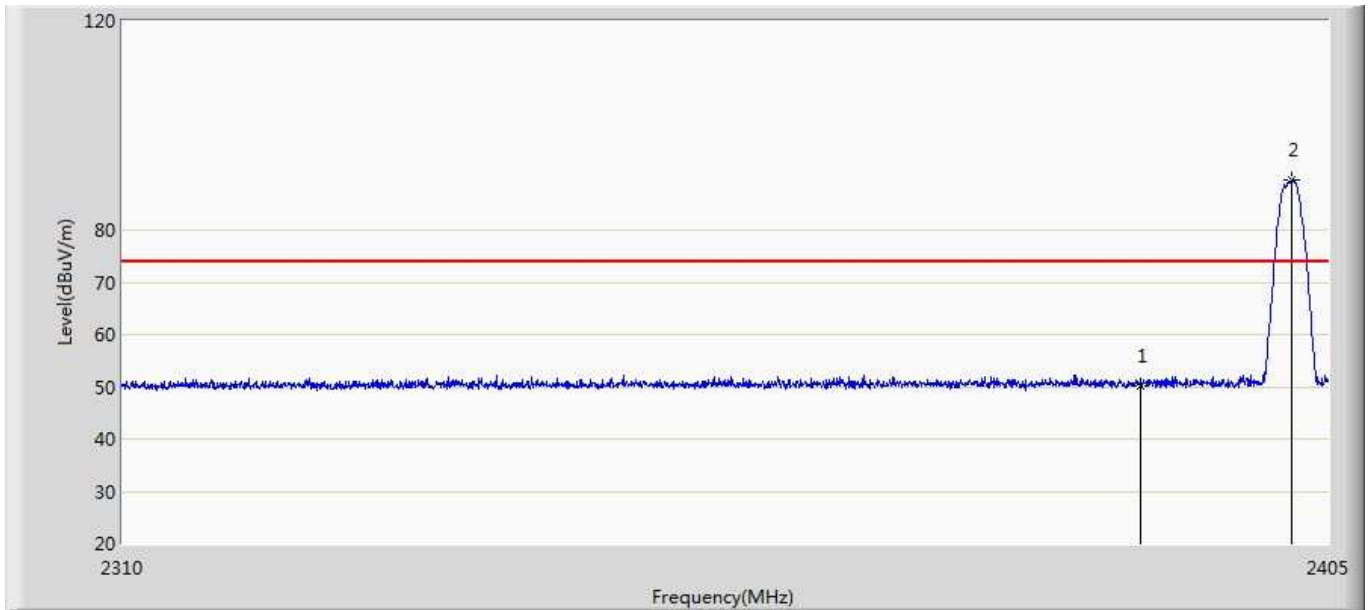
11.6. Duty Factor

Test Mode	Pulse Time (ms)	Pulse Number	Accumulated Transmit Time (ms)	Duty Factor (dB)
Mode 4	2.87	1	2.87	-30.84



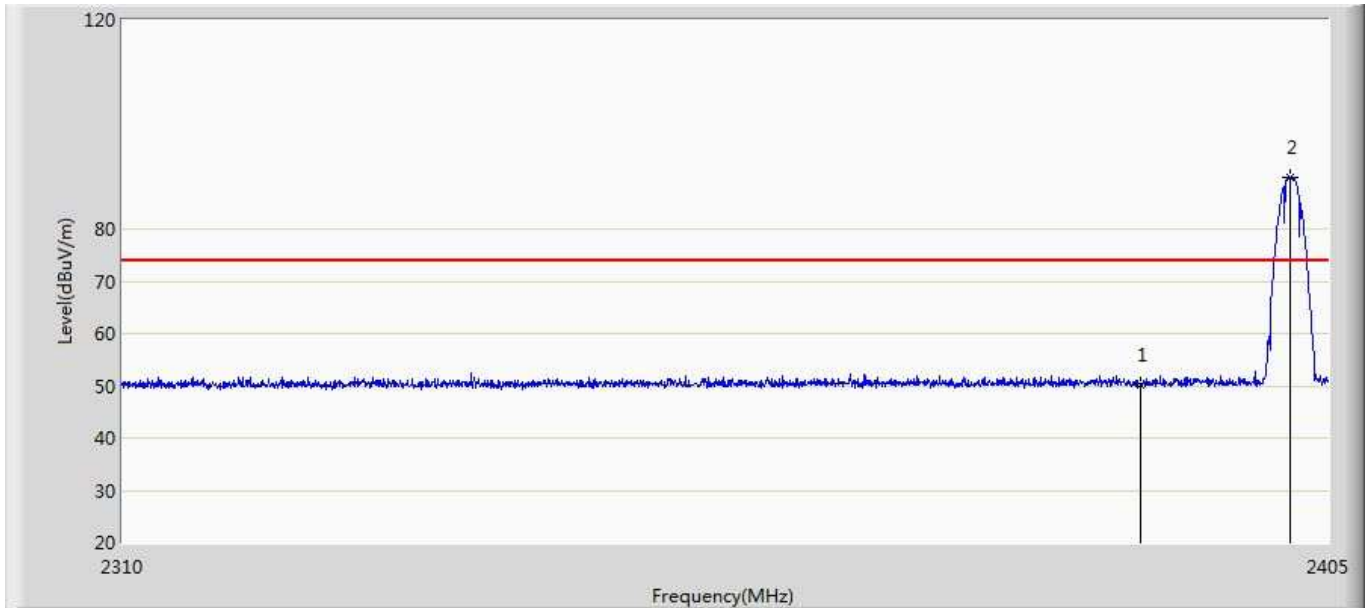
11.7. Test Result

Engineer: Pawn	
Site: AC5	Time: 2018/03/30 - 23:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402 by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.193	14.511	-23.807	74.000	35.682	PK
2	*	2402.055	89.647	53.934	N/A	N/A	35.712	PK
No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1		2390.000	50.193	14.511	-39.489	54.000	-30.812	AV
2	*	2402.055	89.647	53.934	N/A	N/A	-30.812	AV

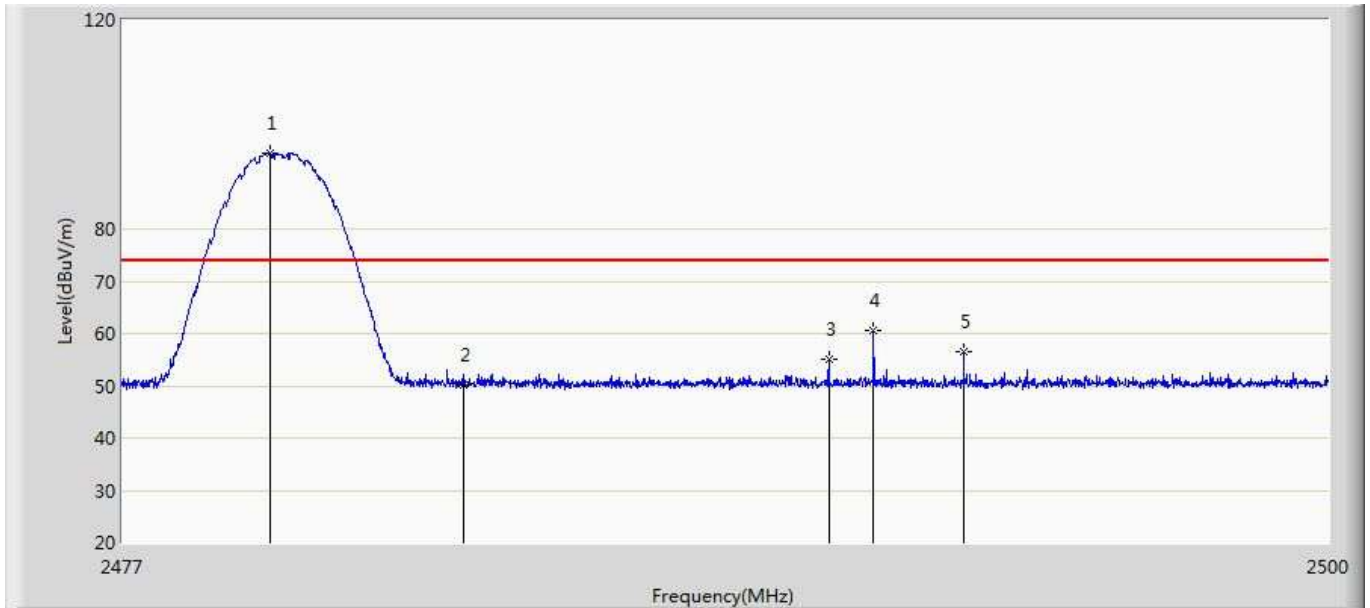
Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 00:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402 by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.194	14.512	-23.806	74.000	35.682	PK
2	*	2401.913	89.726	54.014	N/A	N/A	35.712	PK

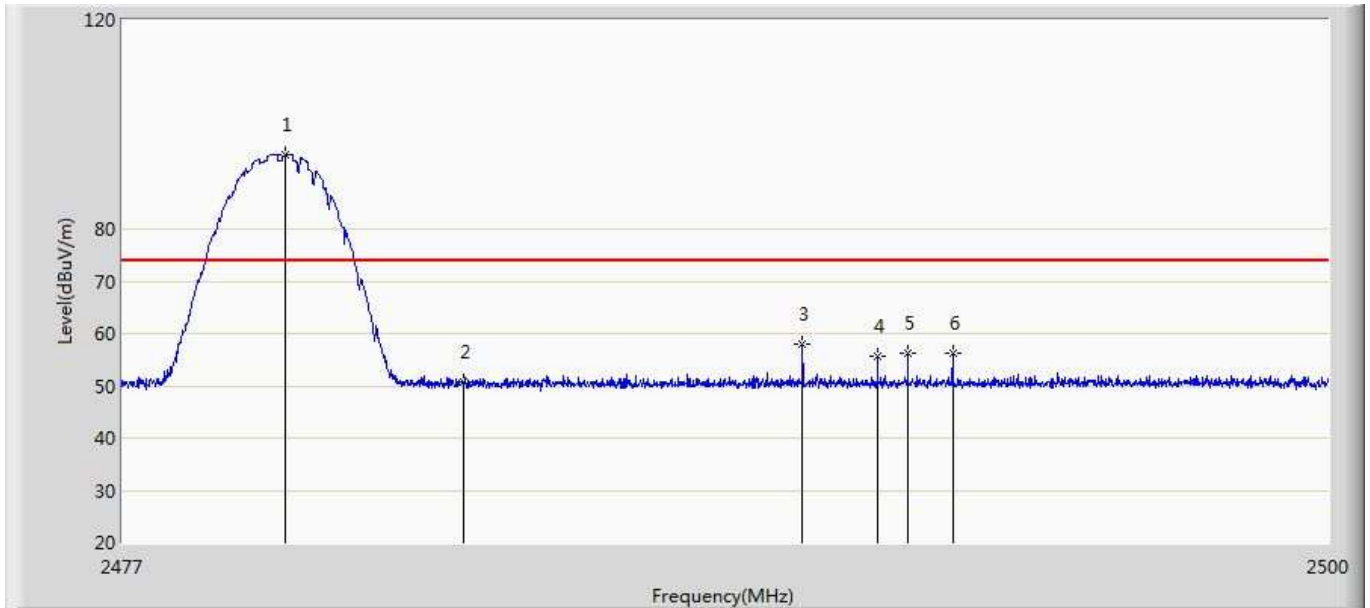
No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1		2390.000	50.194	14.512	-39.488	54.000	-30.812	AV
2	*	2401.913	89.726	54.014	N/A	N/A	-30.812	AV

Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 00:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480 by DH5	



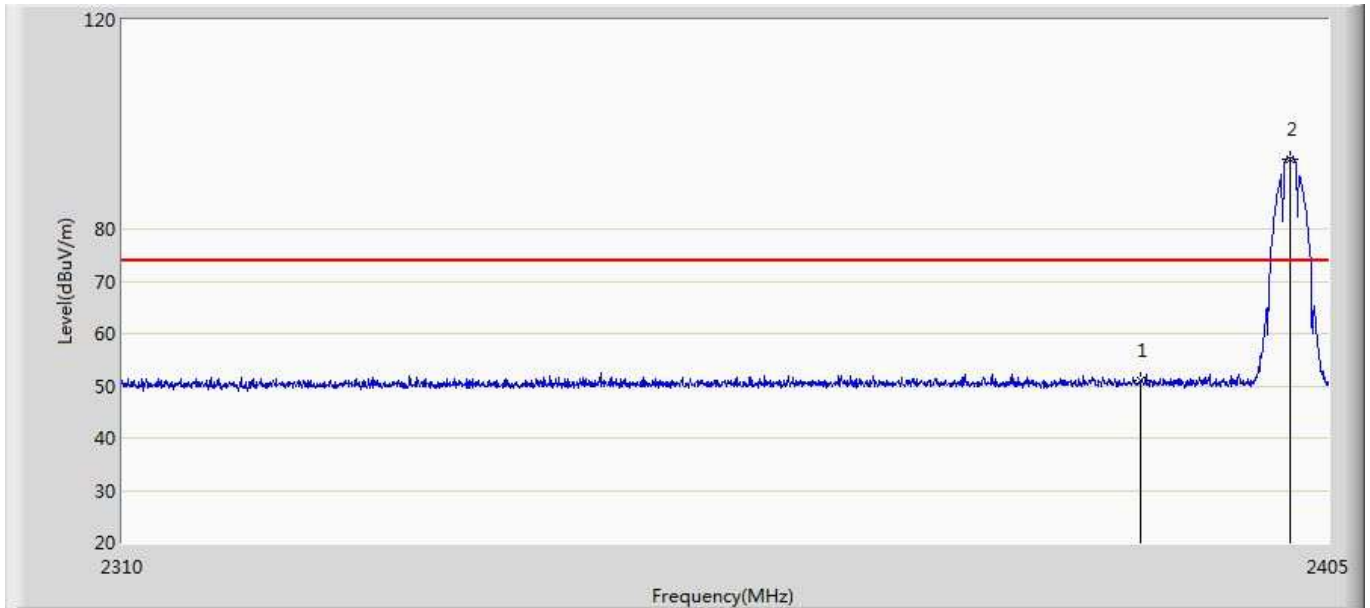
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.817	94.498	58.633	N/A	N/A	35.865	PK
2		2483.500	50.023	14.131	-23.977	74.000	35.891	PK
3		2490.455	55.036	19.094	-18.964	74.000	35.941	PK
4		2491.306	60.479	24.531	-13.521	74.000	35.948	PK
5		2493.031	56.608	20.647	-17.392	74.000	35.961	PK
No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1	*	2479.817	94.498	58.633	N/A	N/A	-30.812	AV
2		2483.500	50.023	14.131	-39.869	54.000	-30.812	AV
3		2490.455	55.036	19.094	-34.906	54.000	-30.812	AV
4		2491.306	60.479	24.531	-29.469	54.000	-30.812	AV
5		2493.031	56.608	20.647	-33.353	54.000	-30.812	AV

Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 00:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480 by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.105	94.210	58.343	N/A	N/A	35.867	PK
2		2483.500	50.587	14.695	-23.413	74.000	35.891	PK
3		2489.949	57.971	22.033	-16.029	74.000	35.938	PK
4		2491.386	55.634	19.685	-18.366	74.000	35.949	PK
5		2491.961	56.101	20.148	-17.899	74.000	35.953	PK
6		2492.824	56.298	20.339	-17.702	74.000	35.959	PK
No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1	*	2480.105	94.21	58.343	N/A	N/A	-30.812	AV
2		2483.500	50.587	14.695	-39.305	54.000	-30.812	AV
3		2489.949	57.971	22.033	-31.967	54.000	-30.812	AV
4		2491.386	55.634	19.685	-34.315	54.000	-30.812	AV
5		2491.961	56.101	20.148	-33.852	54.000	-30.812	AV
6		2492.824	56.298	20.339	-33.661	54.000	-30.812	AV

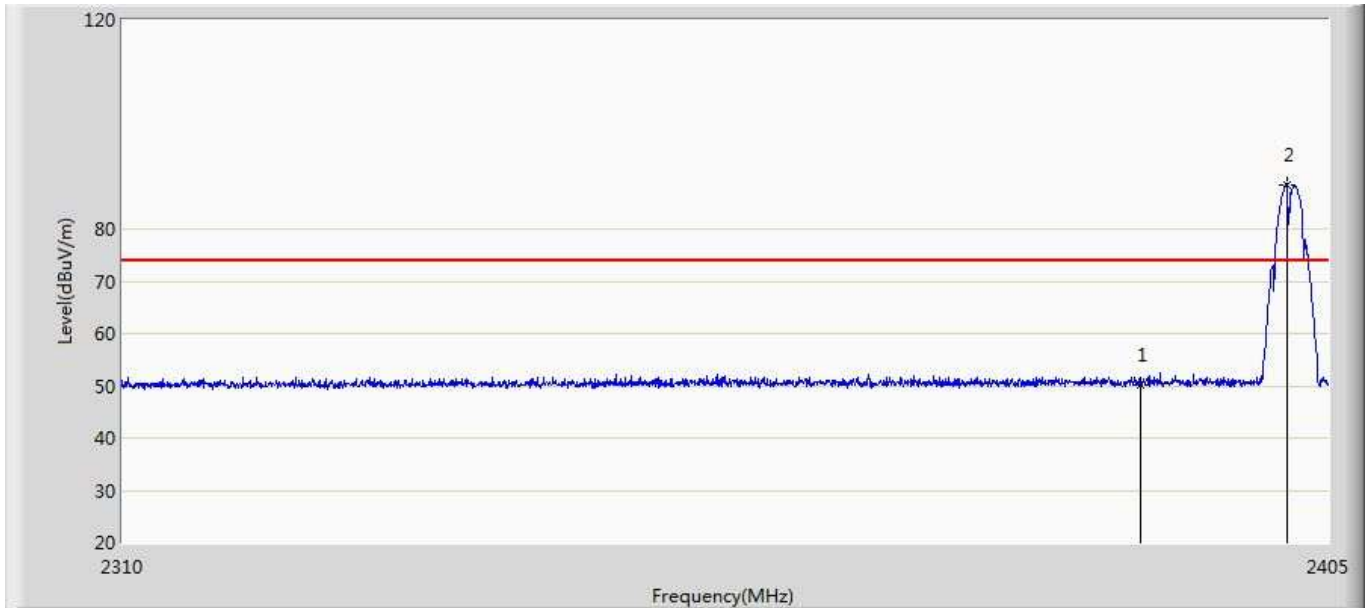
Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 00:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2402 by 2DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.886	15.204	-23.114	74.000	35.682	PK
2	*	2401.913	93.468	57.756	N/A	N/A	35.712	PK

No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1		2390.000	50.886	15.204	-38.796	54.000	-30.812	AV
2	*	2401.913	93.468	57.756	N/A	N/A	-30.812	AV

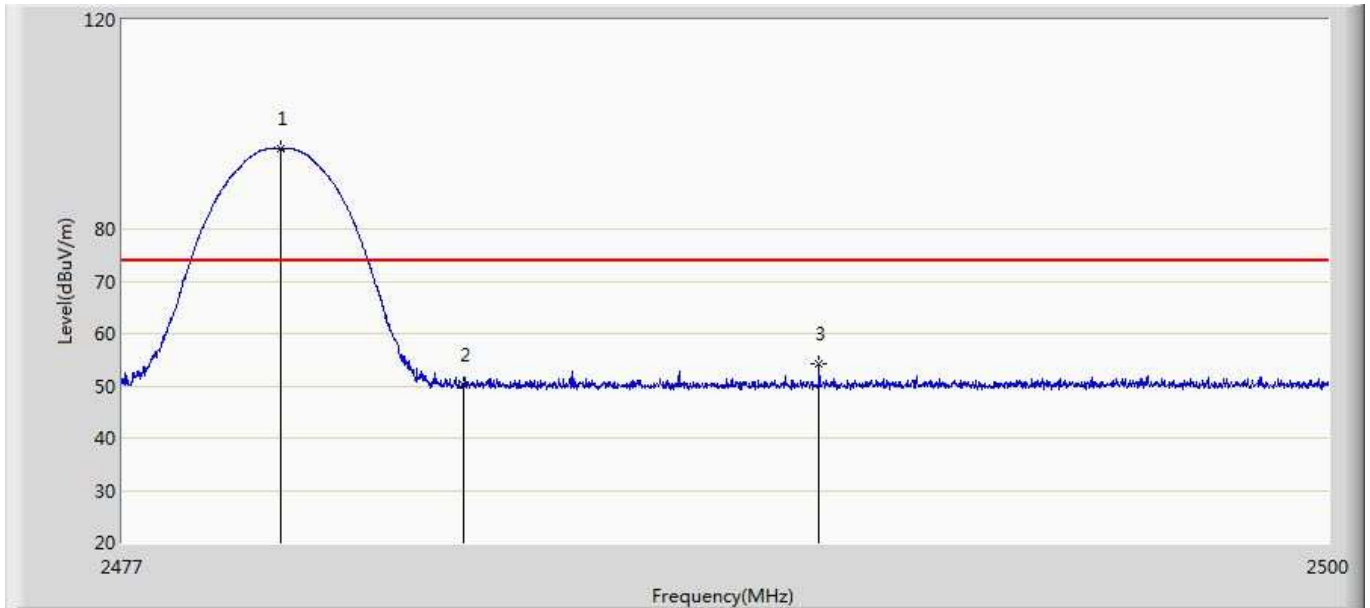
Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 00:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2402 by 2DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.162	14.480	-23.838	74.000	35.682	PK
2	*	2401.675	88.539	52.827	N/A	N/A	35.712	PK

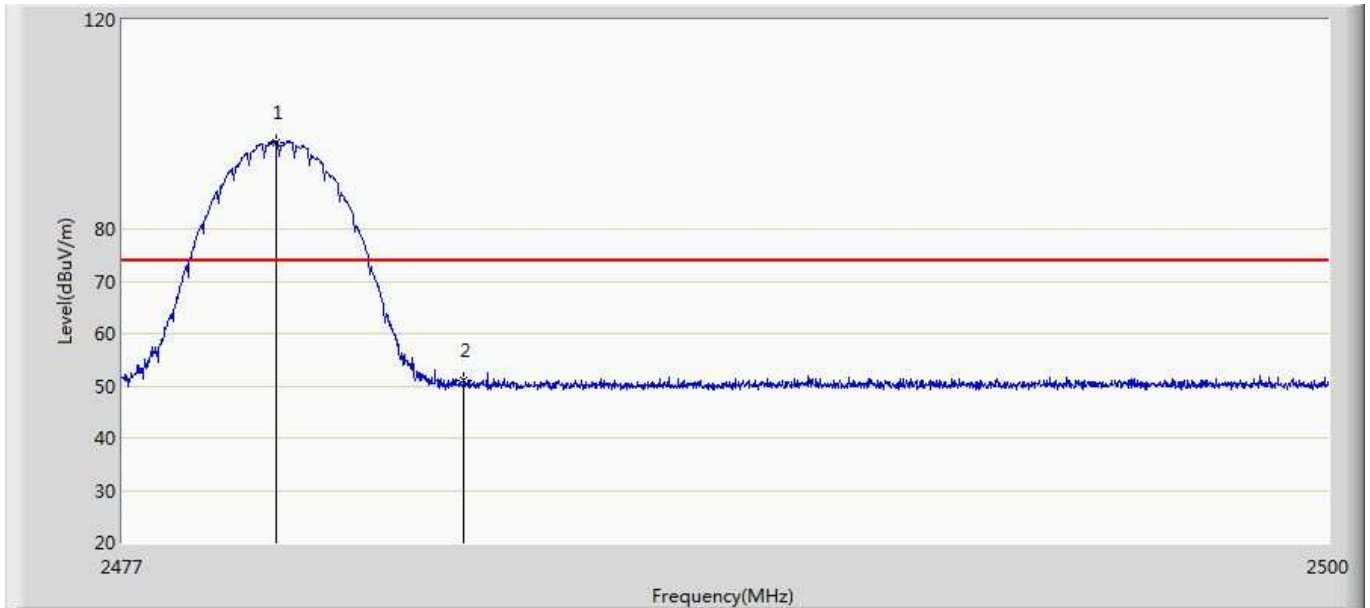
No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1		2390.000	50.162	14.48	-39.520	54.000	-30.812	AV
2	*	2401.675	88.539	52.827	N/A	N/A	-30.812	AV

Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 00:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2480 by 2DH5	



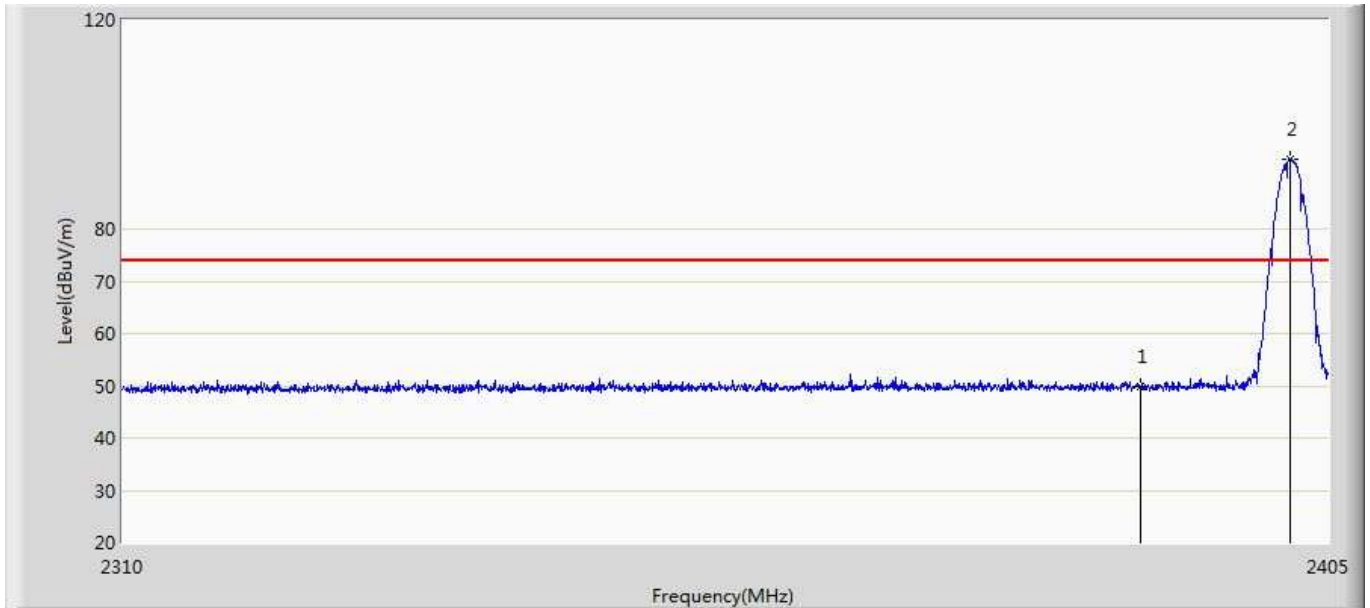
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.001	95.337	59.471	N/A	N/A	35.866	PK
2		2483.500	50.092	14.200	-23.908	74.000	35.891	PK
3		2490.271	54.340	18.399	-19.660	74.000	35.940	PK
No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1	*	2480.001	95.337	59.471	N/A	N/A	-30.812	AV
2		2483.500	50.092	14.2	-39.800	54.000	-30.812	AV
3		2490.271	54.34	18.399	-35.601	54.000	-30.812	AV

Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 12:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2480 by 2DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.933	96.611	60.745	N/A	N/A	35.866	PK
2		2483.500	50.986	15.094	-23.014	74.000	35.891	PK
No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1	*	2479.933	96.611	60.745	N/A	N/A	-30.812	AV
2		2483.500	50.986	15.094	-38.906	54.000	-30.812	AV

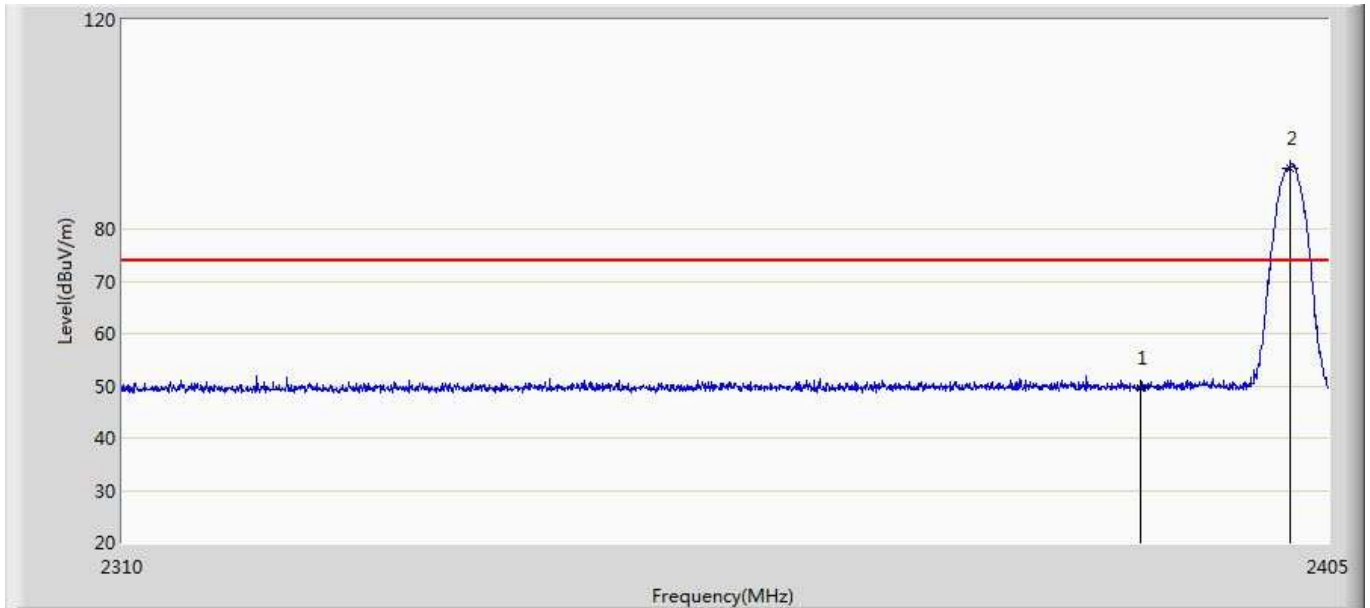
Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 12:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2402 by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	49.737	14.055	-24.263	74.000	35.682	PK
2	*	2401.913	93.231	57.519	N/A	N/A	35.712	PK

No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1		2390.000	49.737	14.055	-39.945	54.000	-30.812	AV
2	*	2401.913	93.231	57.519	N/A	N/A	-30.812	AV

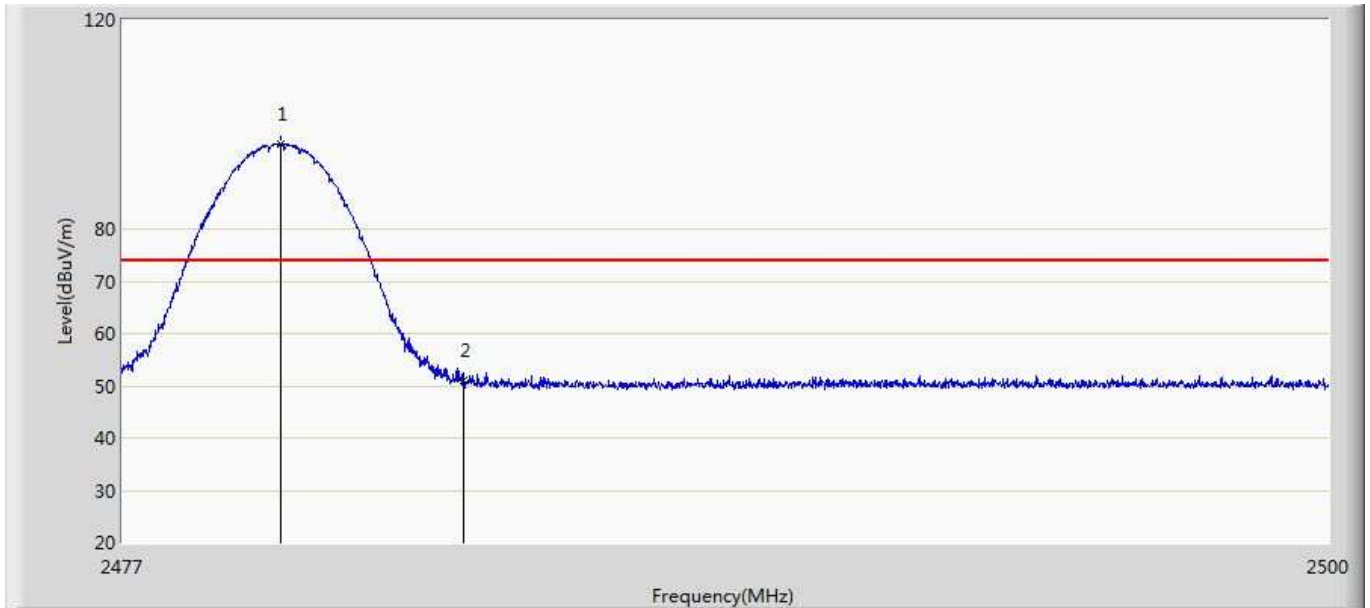
Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 12:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2402 by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	49.709	14.027	-24.291	74.000	35.682	PK
2	*	2401.913	91.654	55.942	N/A	N/A	35.712	PK

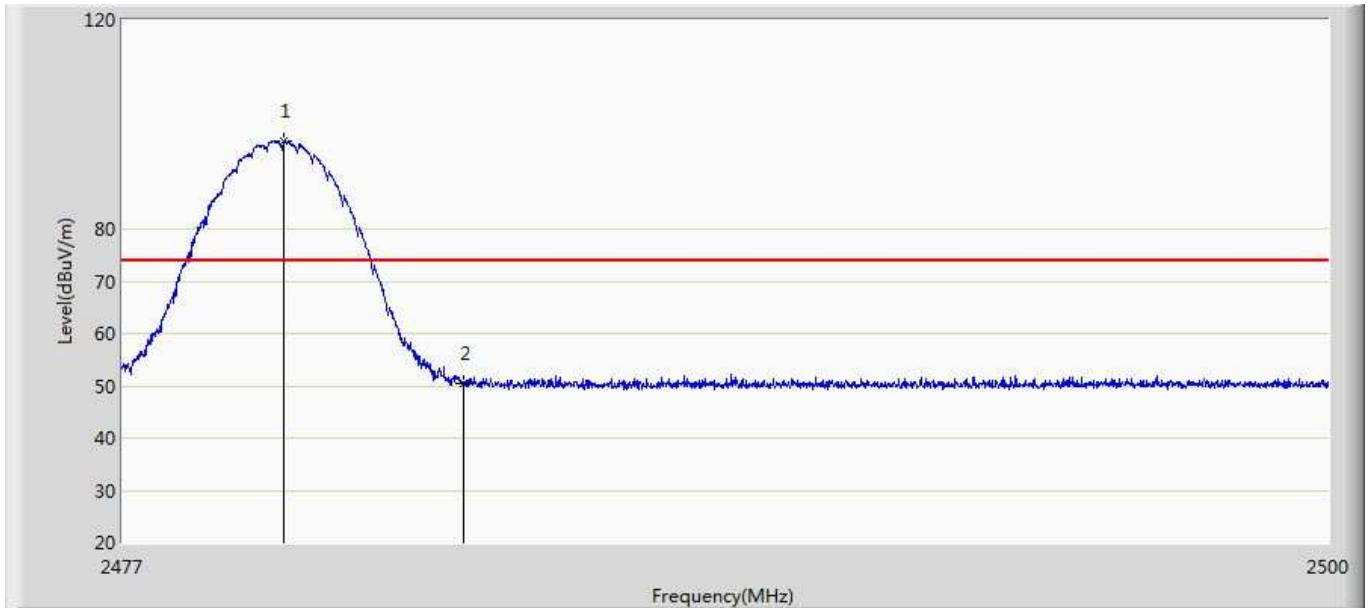
No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1		2390.000	49.709	14.027	-39.973	54.000	-30.812	AV
2	*	2401.913	91.654	55.942	N/A	N/A	-30.812	AV

Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 12:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2480 by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.001	96.289	60.423	N/A	N/A	35.866	PK
2		2483.500	50.877	14.985	-23.123	74.000	35.891	PK
No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1	*	2480.001	96.289	60.423	N/A	N/A	-30.812	AV
2		2483.500	50.877	14.985	-39.015	54.000	-30.812	AV

Engineer: Pawn	
Site: AC5	Time: 2018/03/31 - 12:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2480 by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.059	96.777	60.910	N/A	N/A	35.867	PK
2		2483.500	50.384	14.492	-23.616	74.000	35.891	PK
No	Mark	Frequency (MHz)	PK Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Duty Factor (dB)	Type
1	*	2480.059	96.777	60.91	N/A	N/A	-30.812	AV
2		2483.500	50.384	14.492	-39.508	54.000	-30.812	AV

12. Antenna Requirement

12.1. Limit

Antenna Requirement Limit	
<p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.</p>	

12.2. Antenna Connector Construction

Antenna Connector Construction	
<input checked="" type="checkbox"/>	The use of a permanently attached antenna
<input type="checkbox"/>	The antenna use of a unique coupling to the intentional radiator
<input type="checkbox"/>	The use of a nonstandard antenna jack or electrical connector
Please refer to the attached document "Internal Photograph" to show the antenna connector.	

_____ The End _____