



Part 15C

TEST REPORT

Product Name	gogo Sport Music Player
Model	GH-Bxxx(xxx represent Numbers, owing to the different sales areas)
FCC ID	2AEJBGH-B
Applicant	Beijing Guochengwantong Information Technology Co., Ltd
Manufacturer	Tianjing Zhuoda Technology Development Co., Ltd
Date of issue	August 5,2015

TA Technology (Shanghai) Co., Ltd.

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GENERAL SUMMARY

Reference Standard(s)	FCC CFR47 Part 15C (2013) Radio Frequency Devices 15.205 Restricted bands of operation; 15.207 Conducted limits; 15.209 Radiated emission limits; general requirements; 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz. ANSI C63.4 Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz. (2014) DA00-705 Filing and Frequency Measurement Guidelines For Frequency Hopping Spread Spectrum System.(2000)
Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards. General Judgment: Pass
Comment	The test result only responds to the measured sample.

Approved by Kai Xu
Kai Xu
Director

Revised by Lingling Kang
Lingling Kang
RF Manager

Performed by Changxu Wan
Changxu Wan
RF Engineer

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1. General Information

1.1. Notes of the test report

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L2264.

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. The site recognition number is 428261.

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 8510A.

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test. The sample under test was selected by the Client.

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of **TA Technology (Shanghai) Co., Ltd.**

If the electronic report is inconsistent with the printed one, it should be subject to the latter.

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1.2. Testing laboratory

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Xu Kai
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: xukai@ta-shanghai.com

1.3. Applicant Information

Company: Beijing Guochengwantong Information Technology Co., Ltd
16F, Tower B, Ding Hao Building, No.3 Haidian Street, Haidian District
Address: Beijing
PR China

1.4. Manufacturer Information

Company: Tianjing Zhuoda Technology Development Co., Ltd
Xinye Street One, Western Economic and Technology Development
Address: Zone, Tianjin
PR China

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1.5. Information of EUT

General information

Name of EUT:	gogo Sport Music Player		
IMEI:	17000001		
Hardware Version:	V0.5		
Software Version:	V0.7		
Antenna Type:	Internal Antenna		
Device Operating Configurations:			
Test Mode	Basic Rate	Enhanced Data Rate(EDR)	
Modulation Type:	Frequency Hopping Spread Spectrum (FHSS)		
	GFSK	π/4 DQPSK	8DQPSK
Packet Type:(Maximum Payload)	DH5	2DH5	3DH5
Max. Conducted Power	6.9 dBm		
Power Supply:	Lithium Battery and AC Adapter		
Operating Frequency Range(s)	2402 ~ 2480MHz		
Tested Frequency Range(s)	2400 ~ 2483.5 MHz		

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Auxiliary equipment details

Name	Model	Manufacturer	Capacity
Lithium Battery	ICS651317	Zeni Power Co., Ltd	100mAh

1.6. Test Date

The test is performed from July 7, 2015 to August 1, 2015.

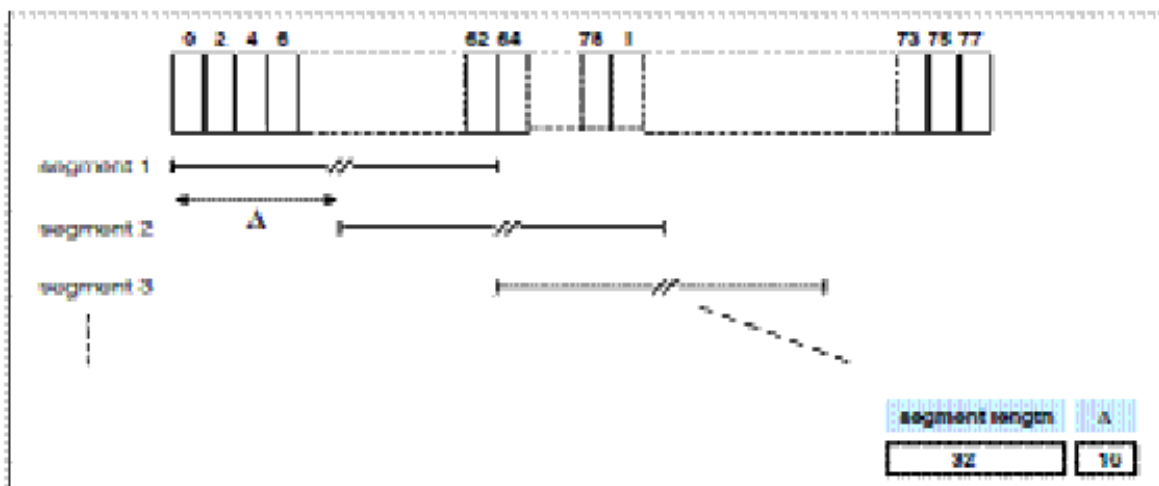
2. Information about the FHSS characteristics

2.1. Pseudorandom Frequency Hopping Sequence

Frequency Hopping Systems. A spread spectrum system in which the carrier is modulated with the coded information in a conventional manner causing a conventional spreading of the RF energy about the frequency carrier. The frequency of the carrier is not fixed but changes at fixed intervals under the direction of a coded sequence. The wide RF bandwidth needed by such a system is not required by spreading of the RF energy about the carrier but rather to accommodate the range of frequencies to which the carrier frequency can hop. The test of a frequency hopping system is that the near term distribution of hops appears random, the long term distribution appears evenly distributed over the hop set, and sequential hops are randomly distributed in both direction and magnitude of change in the hop set.

The selection scheme chooses a segment of 32 hop frequencies spanning about 64 MHz and visits these hops in a pseudo-random order. Next, a different 32-hop segment is chosen, etc. In the page, master page response, slave page response, page scan, inquiry, inquiry response and inquiry scan hopping sequences, the same 32-hop segment is used all the time (the segment is selected by the address; different devices will have different paging segments).

When the basic channel hopping sequence is selected, the output constitutes a pseudo-random sequence that slides through the 79 hops. The principle is depicted in the figure below.



Hop selection scheme in CONNECTION state.

Pseudorandom Frequency Hopping Sequence Table as below:

Channel: 08, 24, 40, 56, 40, 56, 72, 09, 01, 09, 33, 41, 33, 41, 65, 73, 53, 69, 06, 22, 04, 20, 36, 52, 38, 46, 70, 78, 68, 76, 21, 29, 10, 26, 42, 58, 44, 60, 76, 13, 03, 11, 35, 43, 37, 45, 69, 77, 55, 71, 08, 24, 08, 24, 40, 56, 40, 48, 72, 01, 72, 01, 25, 33, 12, 28, 44, 60, 42, 58, 74, 11, 05, 13, 37, 45, etc.

Each frequency used equally on the average by each transmitter.

The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

2.2. Equal Hopping Frequency Use

All Bluetooth units participating in the Pico net are time and hop-synchronized to the channel. Each new transmission event begins on the next channel in the hopping sequence after the final channel used in the previous transmission event.

2.3. System Receiver Input Bandwidth

Each channel bandwidth is 1MHz. The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

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3. Test Information

3.1. Test Mode

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

EUT is stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate.

Test Modes		
Band	Radiated Test Cases	Conducted Test Cases
BT	DH5 GFSK (Channel 0/39/78)	DH5 GFSK(Channel 0/39/78) 2DH5 $\pi/4$ -DQPSK(Channel 0/39/78) 3DH5 8DQPSK(Channel 0/39/78)

Note: The maximum RF output power levels are DH5 for GFSK modulation, For RSE and CSE, only the maximum RF output power is chosen.

3.2. Summary of test results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Peak Power Output -Conducted	15.247(b)(1)	PASS
2	Occupied Bandwidth (20dB)	15.247(a)(1)	PASS
3	Frequency Separation	15.247(a)(1)	PASS
4	Time of Occupancy (Dwell Time)	15.247(a)(1)(iii)	PASS
5	Band Edge Compliance	15.247(d)	PASS
6	Spurious Radiated Emissions in the restricted band	15.247(d),15.205,15.209	PASS
7	Number of Hopping Frequency	15.247(a)(1)(iii)	PASS
8	Spurious RF Conducted Emissions	15.247(d)	PASS
9	Radiates Emission	15.247(d),15.205,15.209	PASS
10	AC Power Line Conducted Emission	15.207	PASS

3.3. Peak Power Output –Conducted

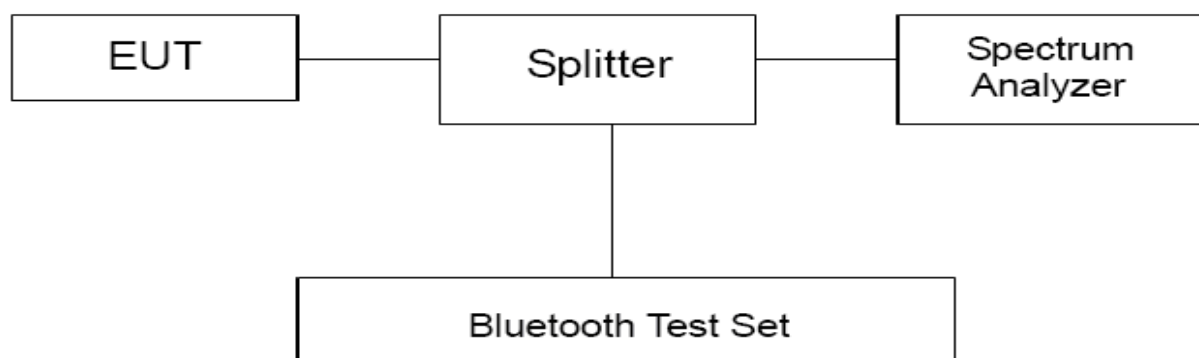
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The EUT is controlled by the Bluetooth test set to ensure max power transmission with proper modulation. The peak detector is used. RBW is set to 2 MHz; VBW is set to 6 MHz. These measurements have been tested at following channels: 0, 39, and 78.

Test Setup



Limits

Rule Part 15.247 (b) (1) specifies that " For 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."

Peak Output Power	$\leq 0.125\text{W}$ (21dBm)
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.44$ dB.

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Test Results

Right Ear

Channel	Frequency (MHz)	Peak Output Power (dBm)			Conclusion
		DH5	2DH5	3DH5	
0	2402	5.3	4.5	4.9	PASS
39	2441	6.9	6.1	6.6	PASS
78	2480	6.4	5.6	6.0	PASS

Left Ear

Channel	Frequency (MHz)	Peak Output Power (dBm)			Conclusion
		DH5	2DH5	3DH5	
0	2402	4.9	3.9	3.8	PASS
39	2441	6.3	5.4	5.2	PASS
78	2480	6.0	5.2	5.2	PASS

Note: The measured power density (dBm) has the offset with cable loss already.

3.4. Occupied Bandwidth (20dB)

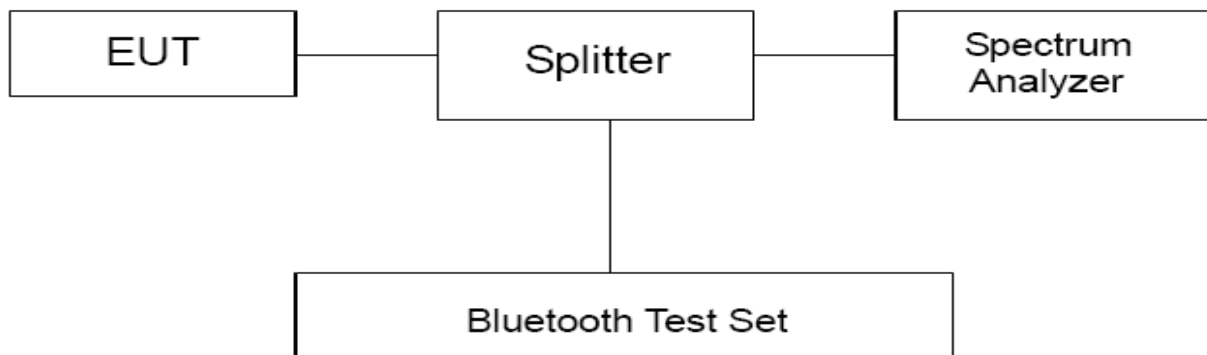
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The occupied bandwidth is measured using spectrum analyzer. RBW is set to 20kHz and VBW is set to 62kHz on spectrum analyzer. -20dB occupied bandwidths are recorded.

Test Setup



Limits

No specific occupied bandwidth requirements in part 15.247(a) (1).

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

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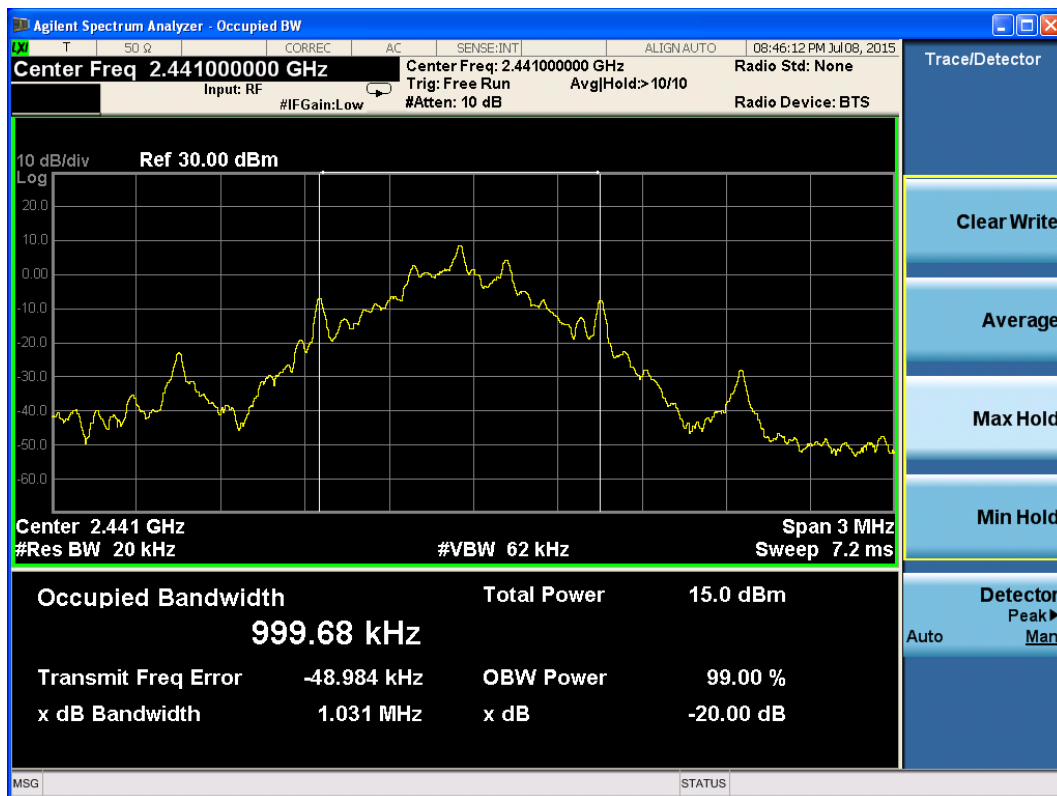
DH5

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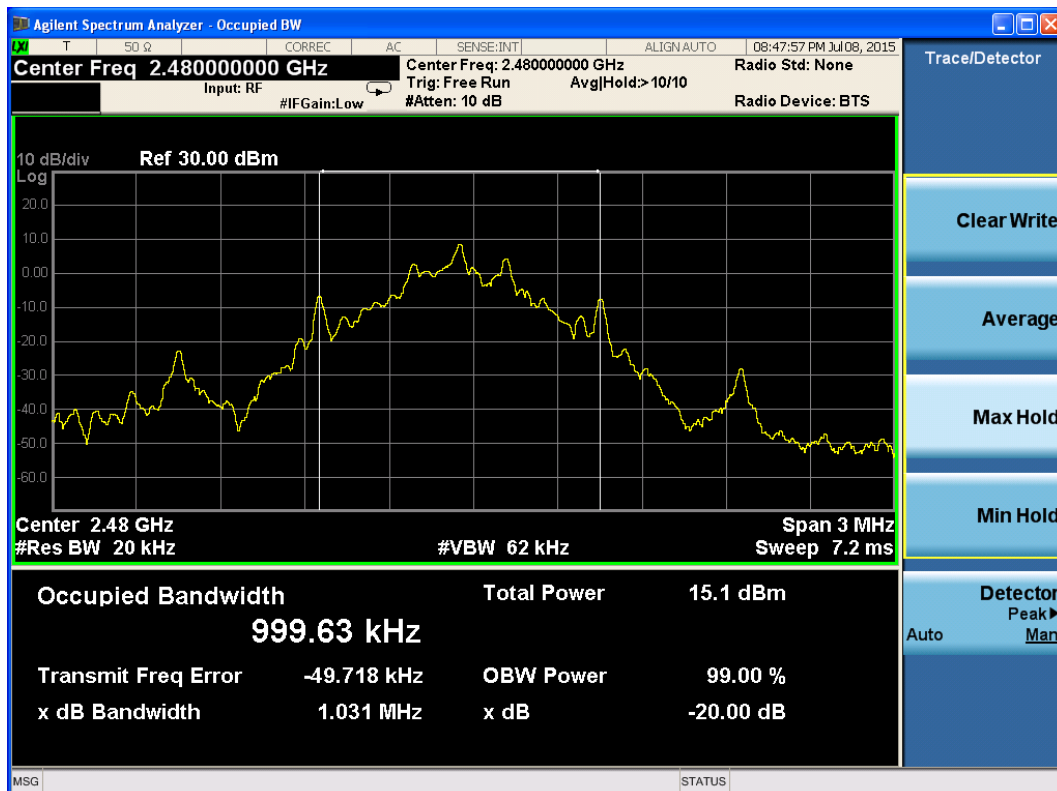
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Carrier frequency (MHz): 2441

Channel No.:39



Carrier frequency (MHz): 2480

Channel No.:78

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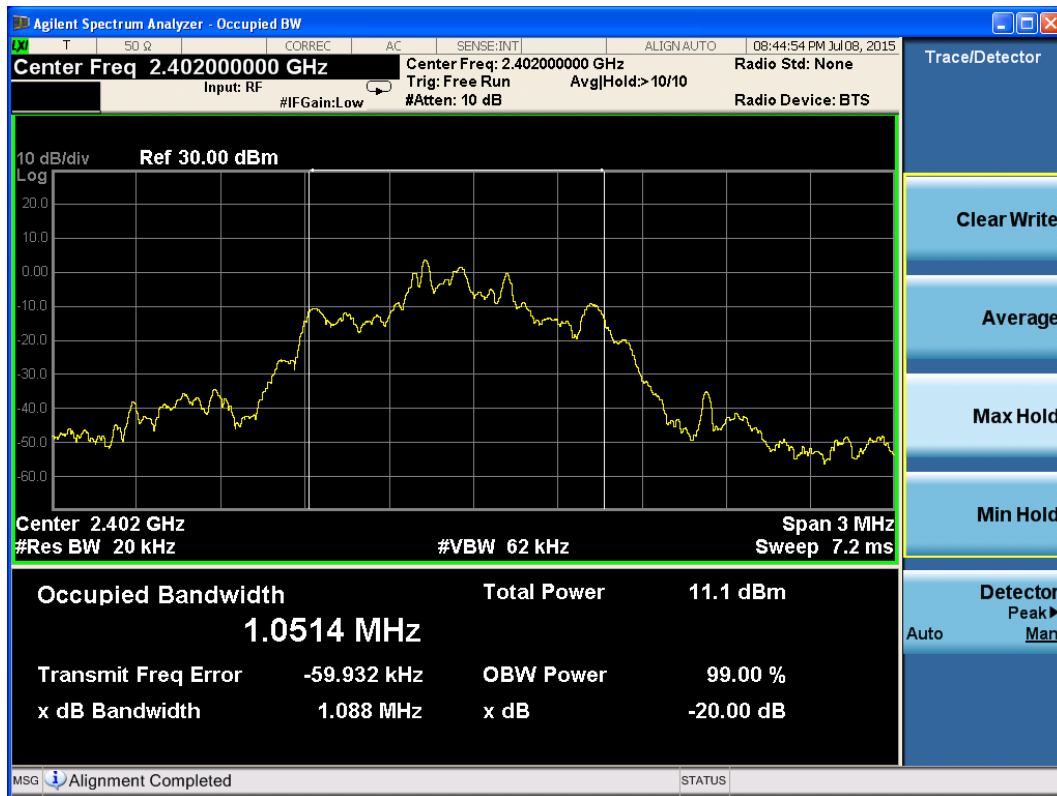
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2DH5

Channel	Frequency (MHz)	20dB Bandwidth (kHz)
0	2402	1088
39	2441	1086
78	2480	1089



Carrier frequency (MHz): 2402

Channel No.:0

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Carrier frequency (MHz): 2441

Channel No.:39



Carrier frequency (MHz): 2480

Channel No.:78

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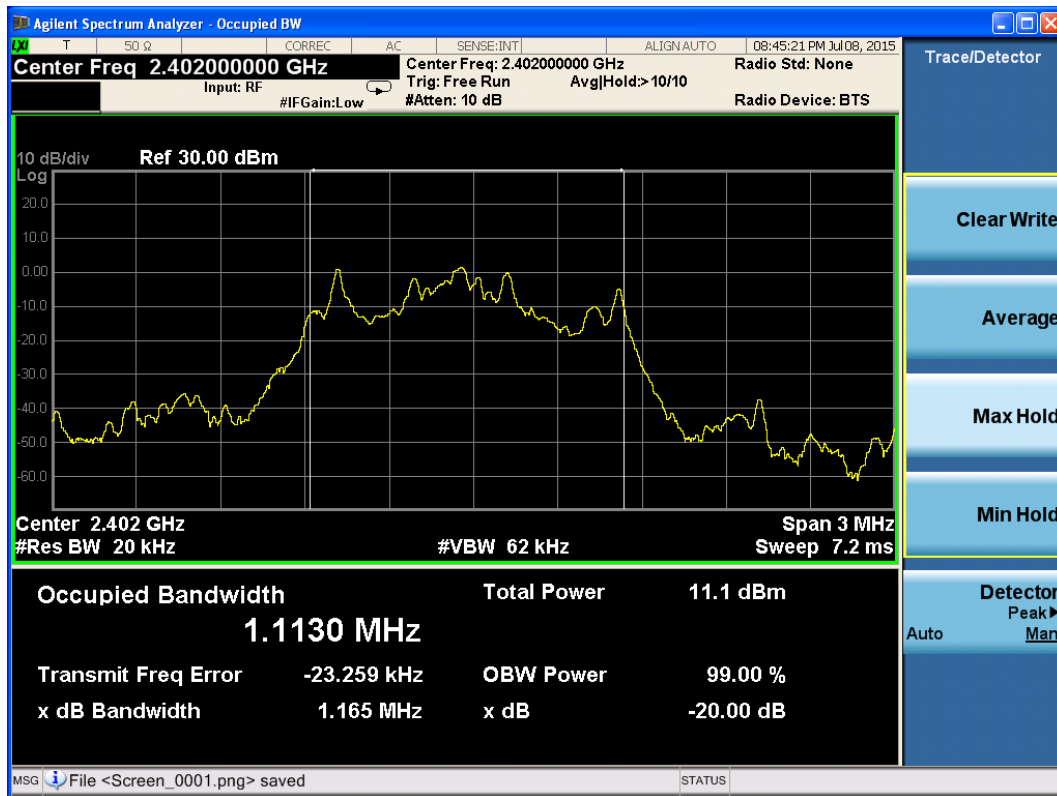
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3DH5

Channel	Frequency (MHz)	20dB Bandwidth (kHz)
0	2402	1165
39	2441	1174
78	2480	1171



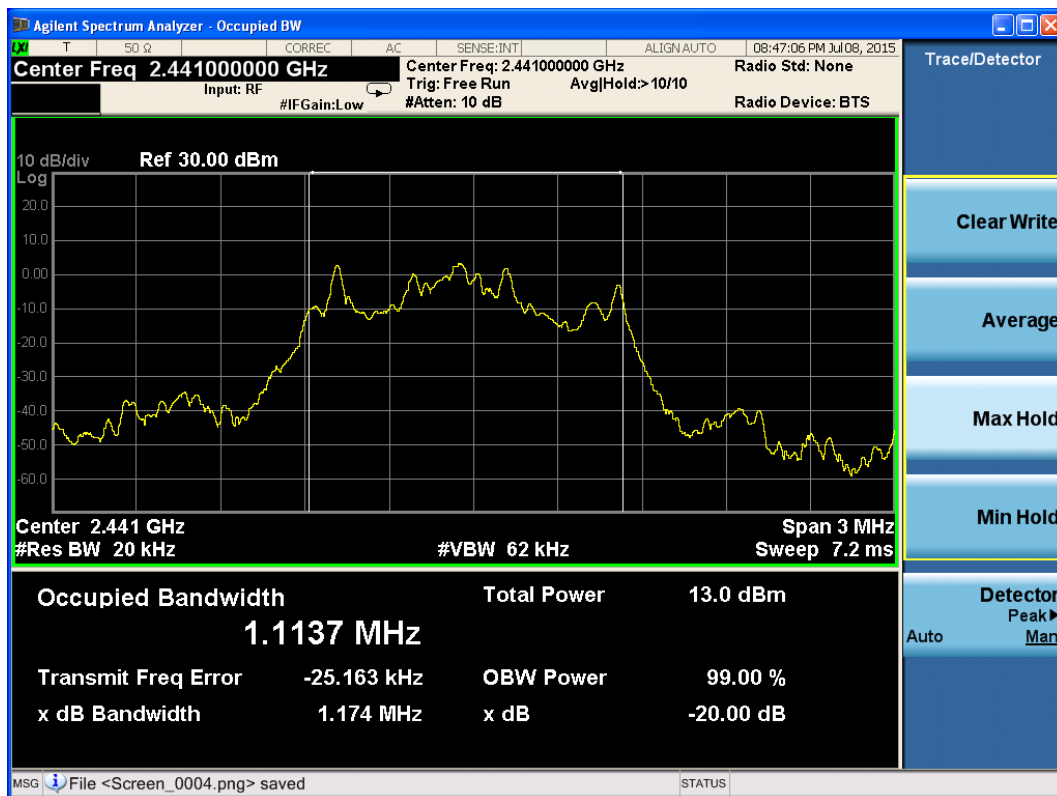
Carrier frequency (MHz): 2402

Channel No.: 0

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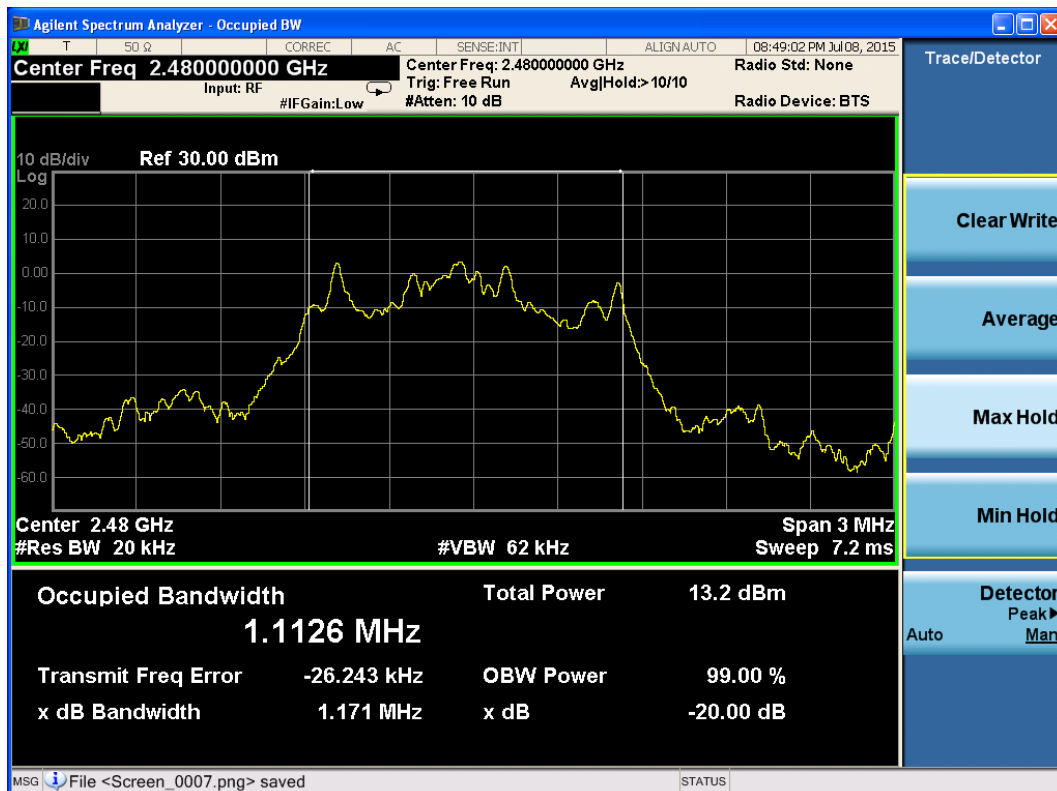
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Carrier frequency (MHz): 2441

Channel No.:39



Carrier frequency (MHz): 2480

Channel No.:78

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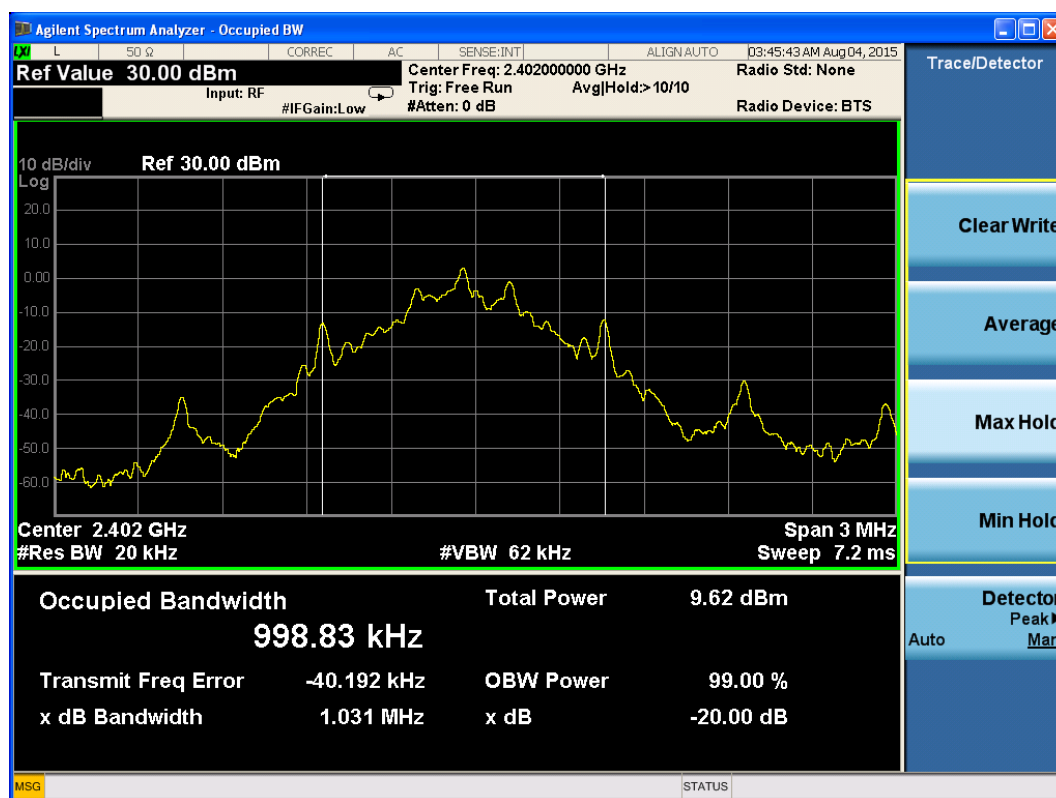
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Left Ear

DH5

Channel	Frequency (MHz)	20dB Bandwidth (kHz)
0	2402	1031
39	2441	1029
78	2480	1030



Carrier frequency (MHz): 2402

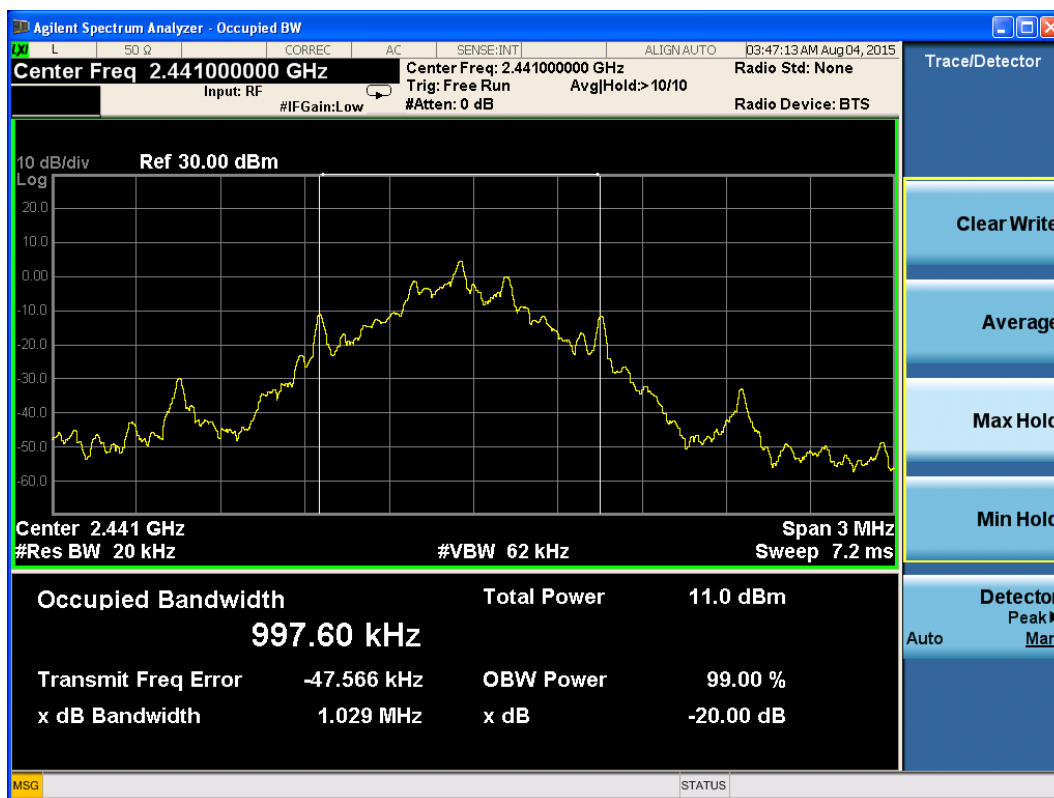
Channel No.: 0

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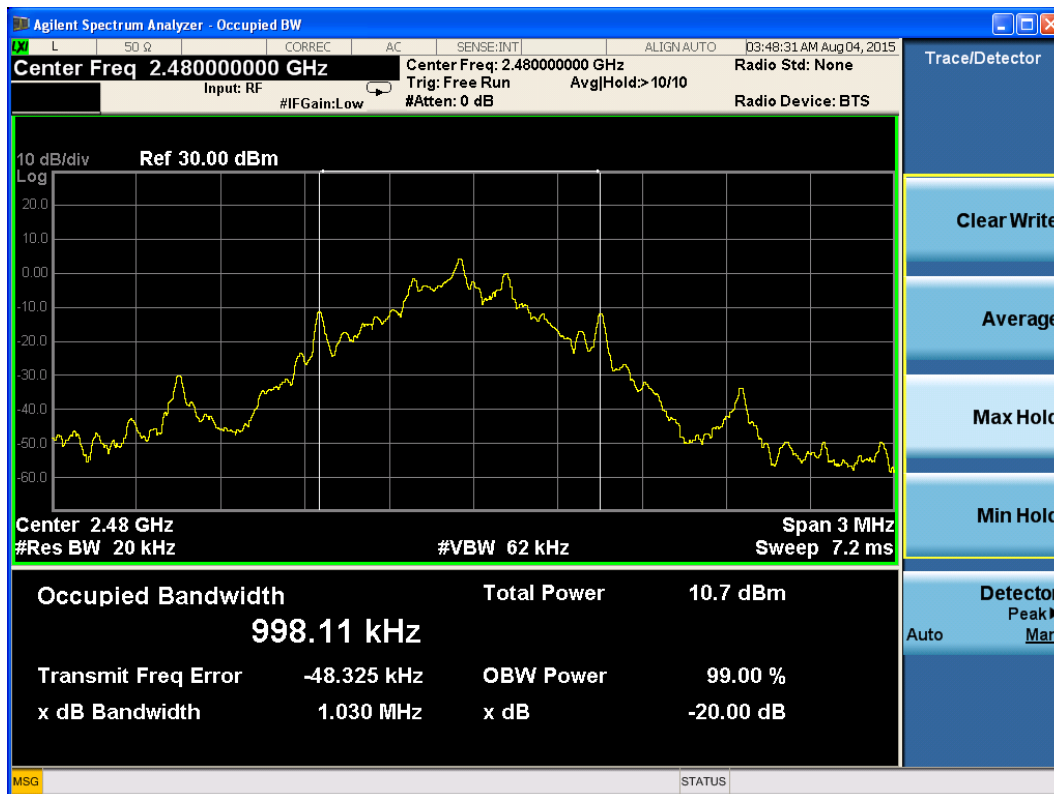
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Carrier frequency (MHz): 2441

Channel No.:39



Carrier frequency (MHz): 2480

Channel No.:78

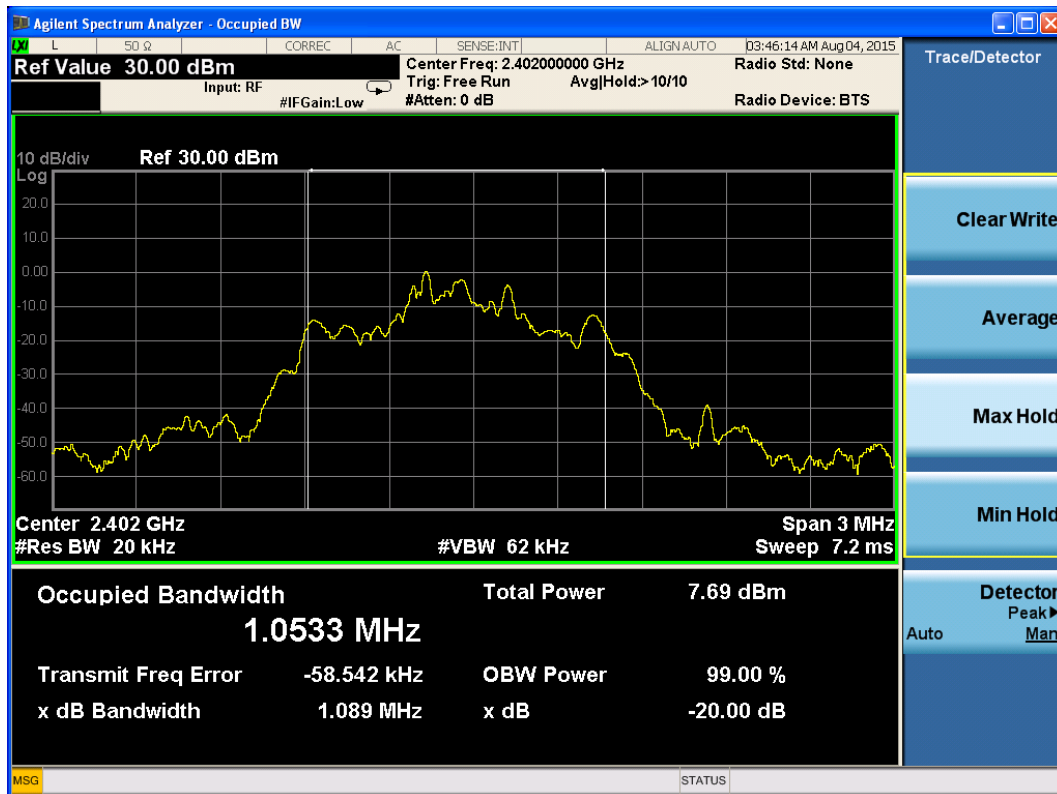
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2DH5

Channel	Frequency (MHz)	20dB Bandwidth (kHz)
0	2402	1089
39	2441	1086
78	2480	1088



Carrier frequency (MHz): 2402

Channel No.: 0

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Carrier frequency (MHz): 2441

Channel No.:39



Carrier frequency (MHz): 2480

Channel No.:78

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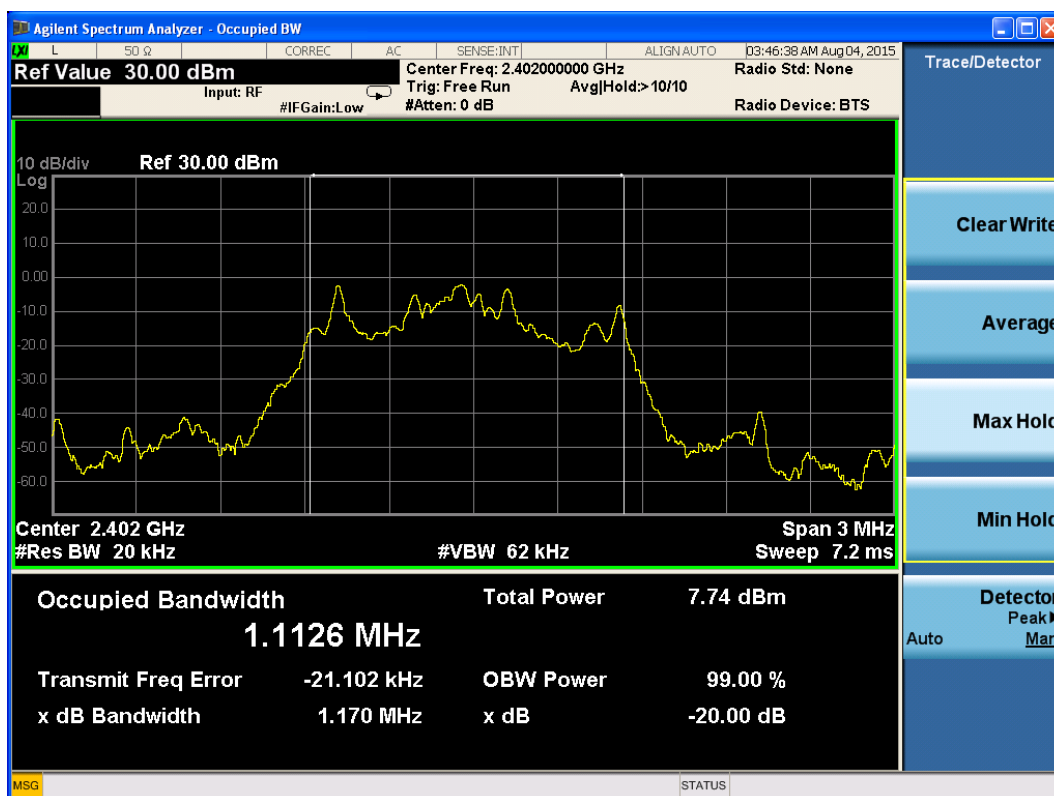
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3DH5

Channel	Frequency (MHz)	20dB Bandwidth (kHz)
0	2402	1170
39	2441	1172
78	2480	1171



Carrier frequency (MHz): 2402

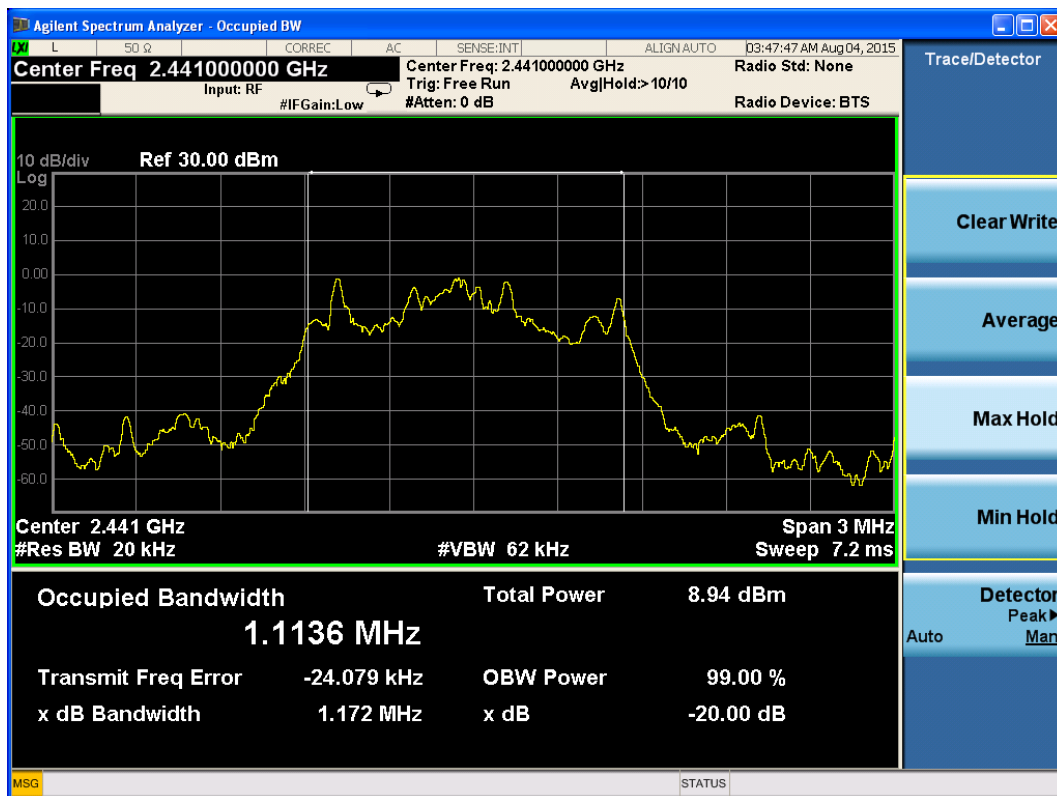
Channel No.: 0

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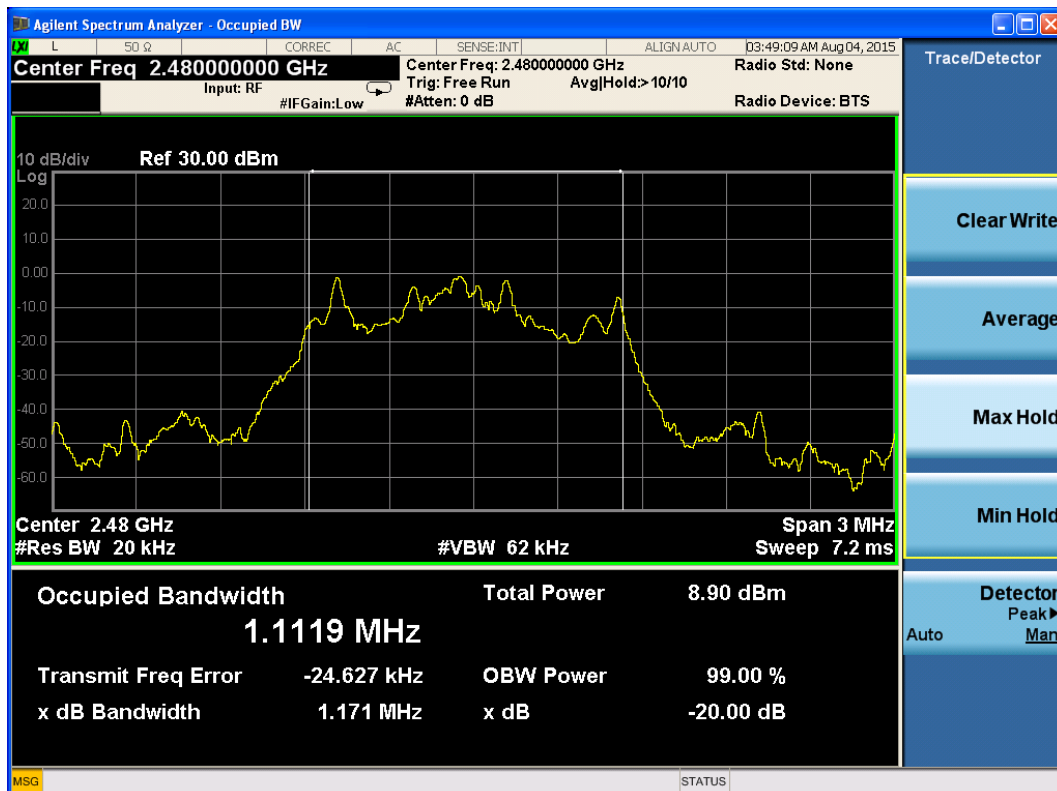
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Carrier frequency (MHz): 2441

Channel No.:39



Carrier frequency (MHz): 2480

Channel No.:78

3.5. Frequency Separation

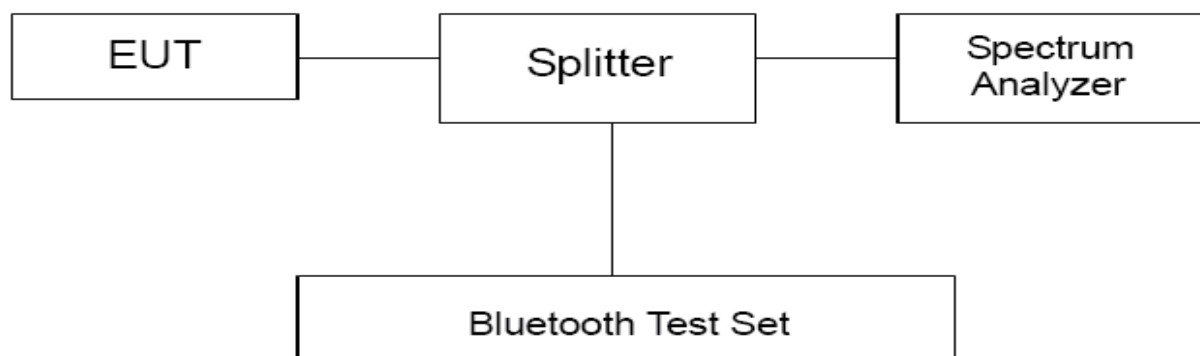
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. RBW is set to 300 kHz and VBW is set to 3MHz on spectrum analyzer. Set EUT on Hopping on mode.

Test setup



Limits

Rule Part 15.247(a)(1) specifies that “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. Alternatively, 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. ”

Note: The value of two-thirds of 20 dB bandwidth is always greater than 25 kHz.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

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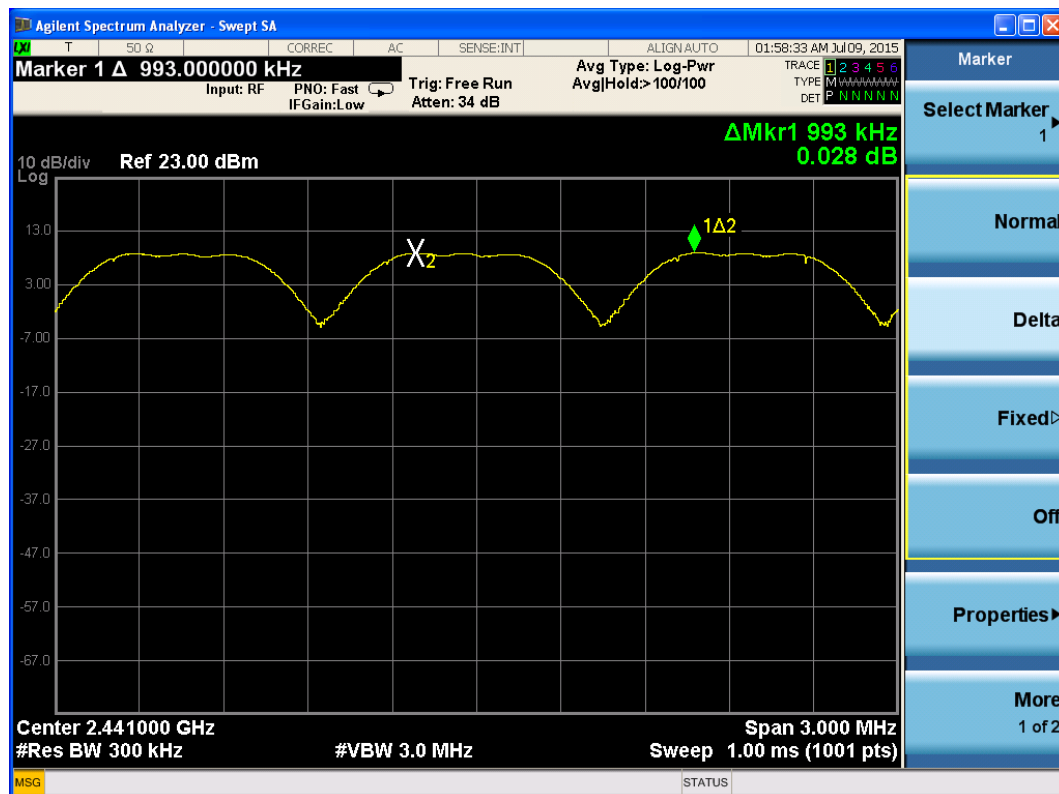
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Test Results:

Right Ear

Packet type	Carrier frequency separation(kHz)	20dB Bandwidth (kHz)	Limit(kHz)	Conclusion
DH5	993	1031	687.3	PASS
2DH5	984	1086	724	PASS
3DH5	978	1174	782.7	PASS

Note: The limit is two-thirds of 20 dB bandwidth.

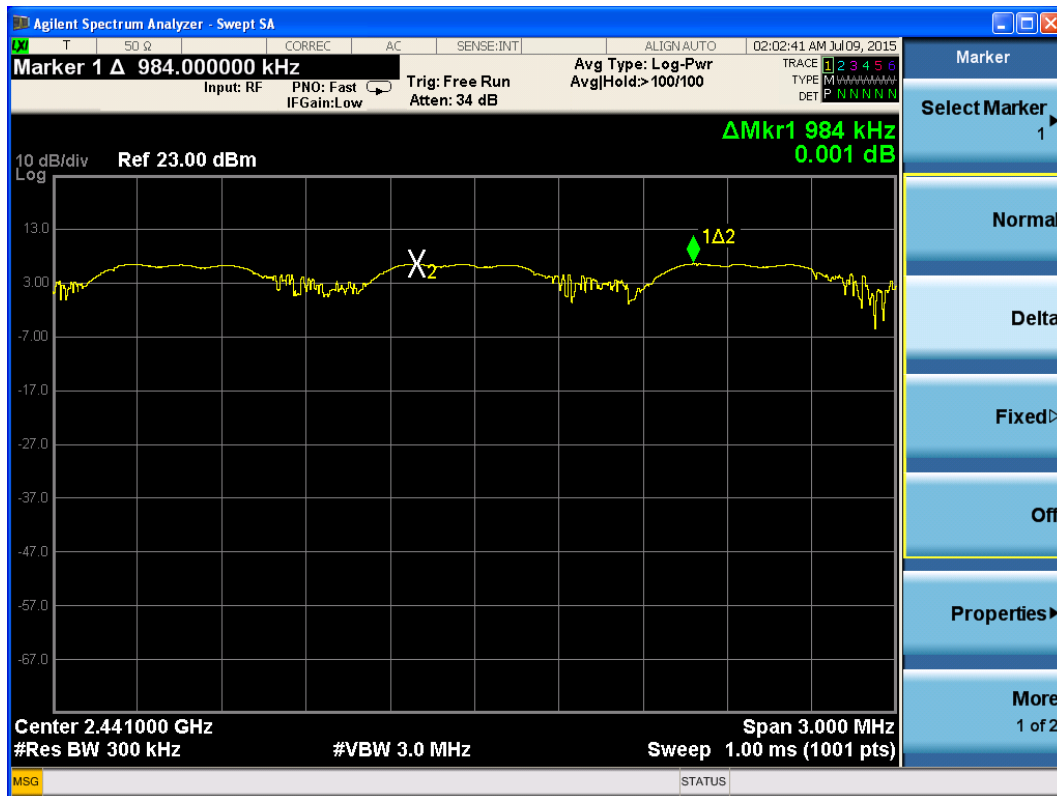


DH5 Carrier frequency (MHz): 2441
Channel No.:39

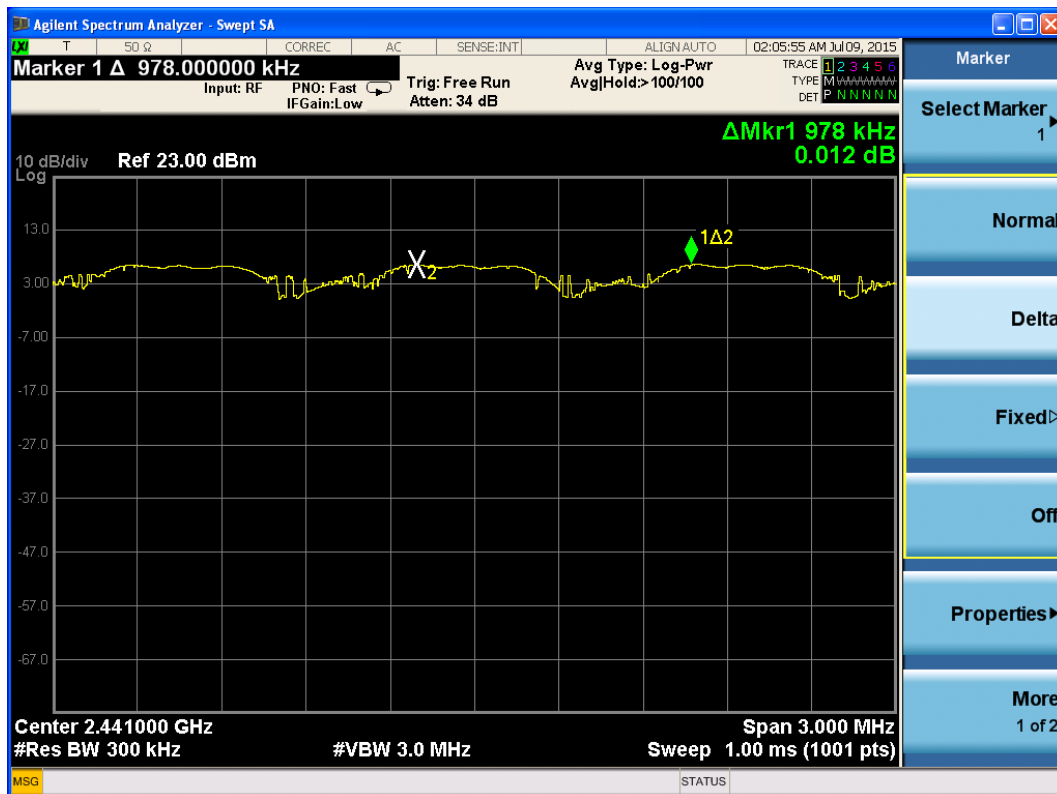
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2DH5 Carrier frequency (MHz): 2441
Channel No.:39



3DH5 Carrier frequency (MHz): 2441
Channel No.:39

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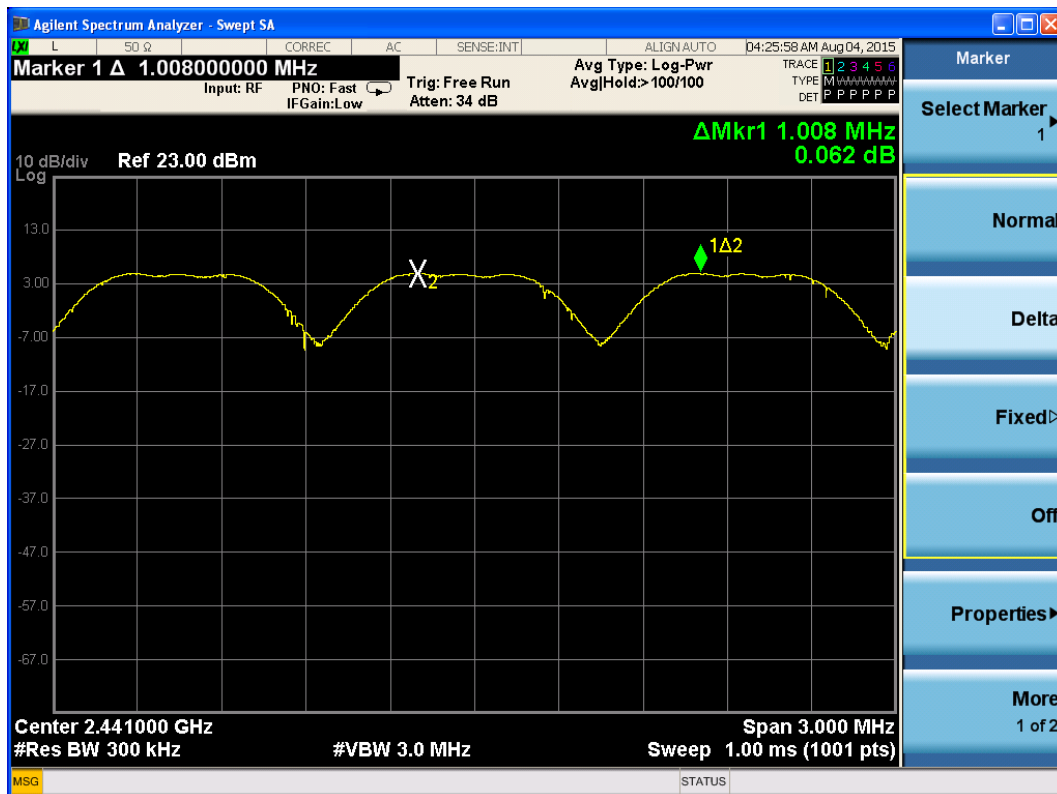
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Left Ear

Packet type	Carrier frequency separation(kHz)	20dB Bandwidth (kHz)	Limit(kHz)	Conclusion
DH5	1008	1029	686	PASS
2DH5	978	1086	724	PASS
3DH5	1002	1172	781	PASS

Note: The limit is two-thirds of 20 dB bandwidth.



DH5 Carrier frequency (MHz): 2441
Channel No.:39

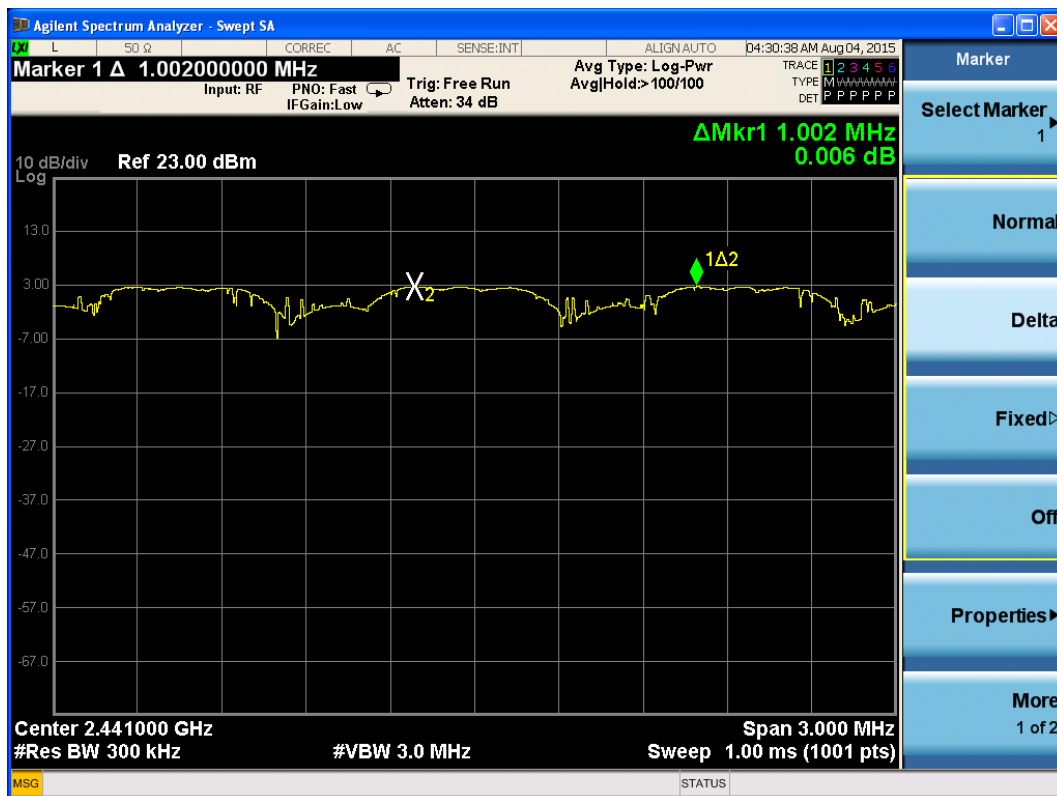
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2DH5 Carrier frequency (MHz): 2441
Channel No.:39



3DH5 Carrier frequency (MHz): 2441
Channel No.:39

3.6. Time of Occupancy (Dwell Time)

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

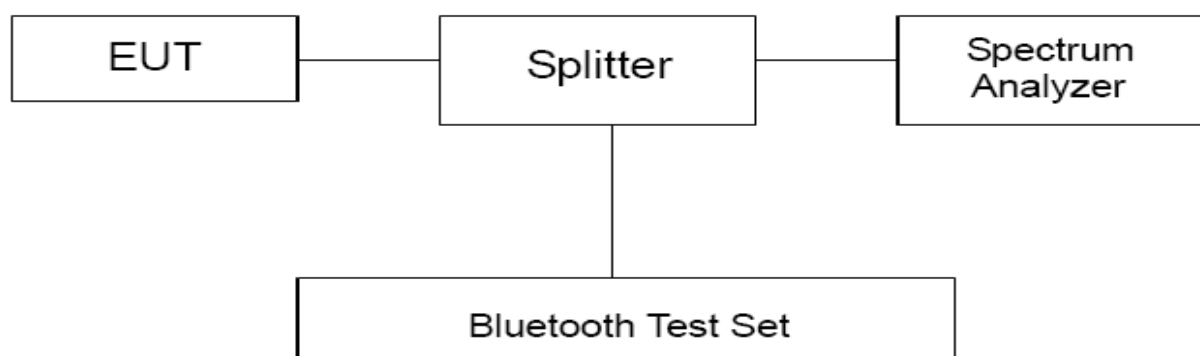
Methods of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. RBW is set to 1MHz and VBW is set to 3MHz on spectrum analyzer .The time slot length is measured of three different packet types, which are available in the Bluetooth technology. Those are DH1, DH3 and DH5 packets. The dwell time is calculated by:

Dwell time = time slot length * hop rate * 0.4s with:

- hop rate=1600 * 1/s for DH1 packet =1600
- hop rate=1600/3 * 1/s for DH3 packet =533.33
- hop rate=1600/5 * 1/s for DH5 packet =320

Test Setup



Limits

Rule Part 22.913(a) specifies that " 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.."

Dwell time	≤ 400ms
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$.

Requirements	Uncertainty	
Dwell Time	DH1	$U = 0.64\text{ms}$
	DH3	$U = 0.80\text{ms}$
	DH5	$U = 0.70\text{ms}$

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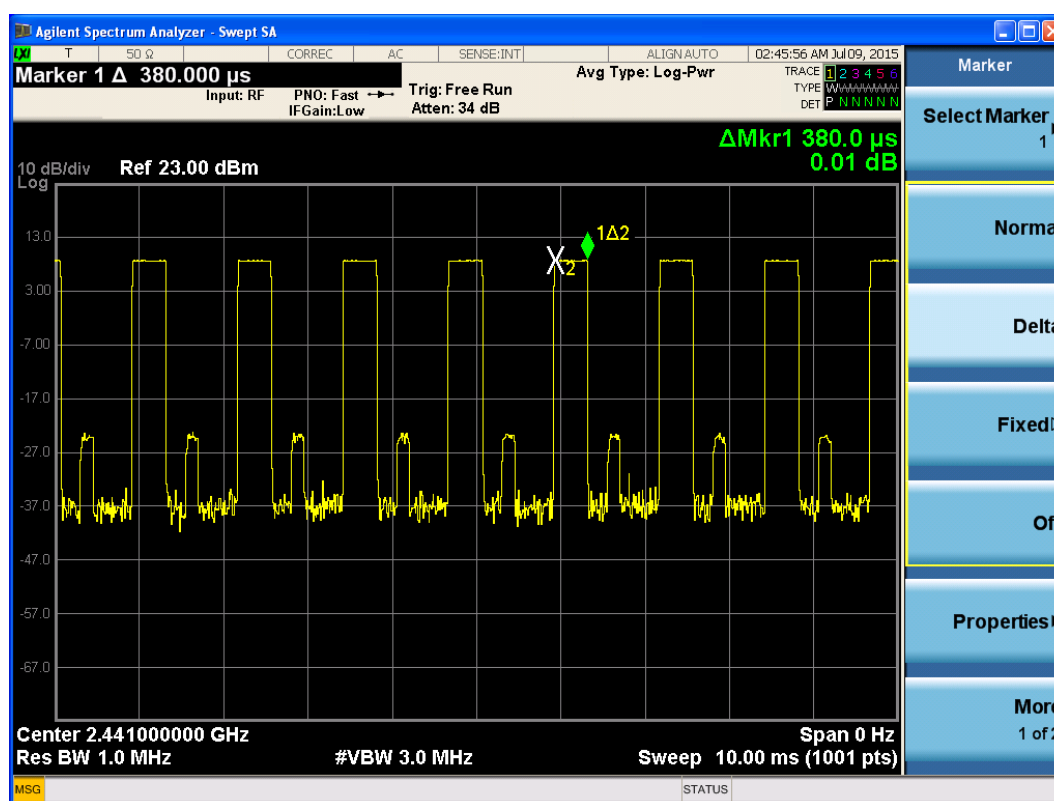
Test Results:

Right Ear

CH 39

Packet type	hop rate (1/s)	Time slot length(ms)	Dwell time (ms)	Limit (ms)	Conclusion
DH1	1600	0.38	243.2	400	PASS
DH3	533.33	1.64	349.86	400	PASS
DH5	320	2.88	368.64	400	PASS

Note: Dwell time = time slot length * hop rate * 0.4s

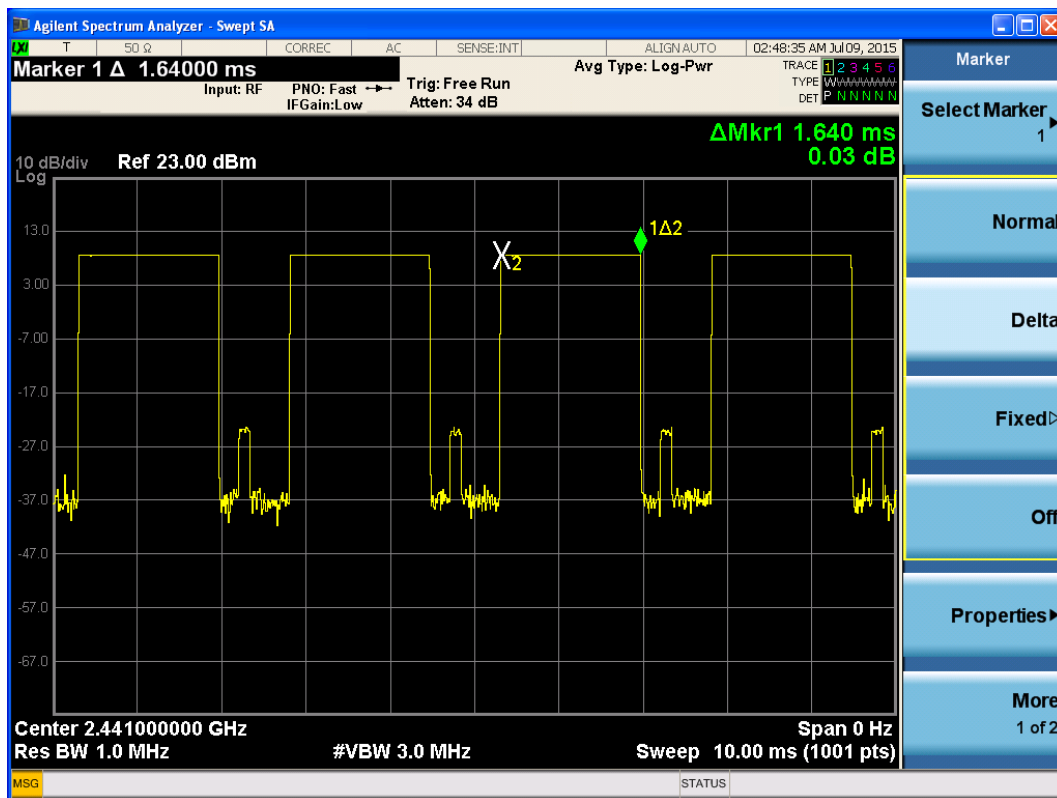


Carrier frequency (MHz): 2441.DH1

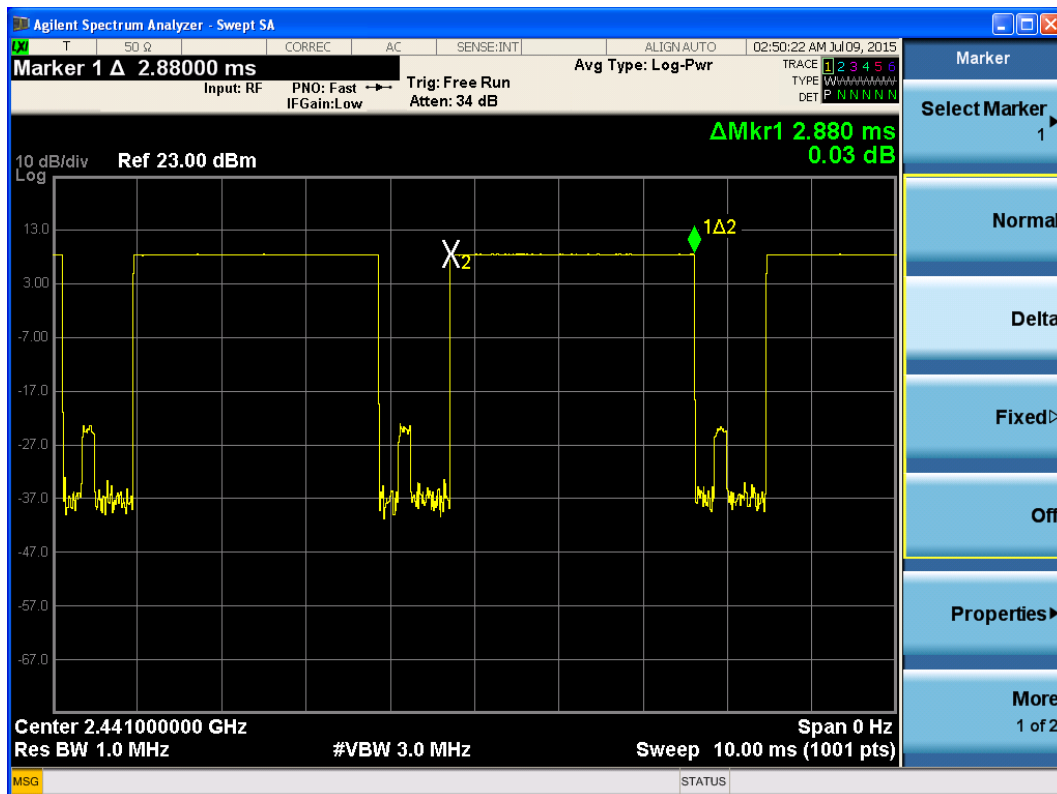
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Carrier frequency (MHz): 2441.DH3



Carrier frequency (MHz): 2441.DH5

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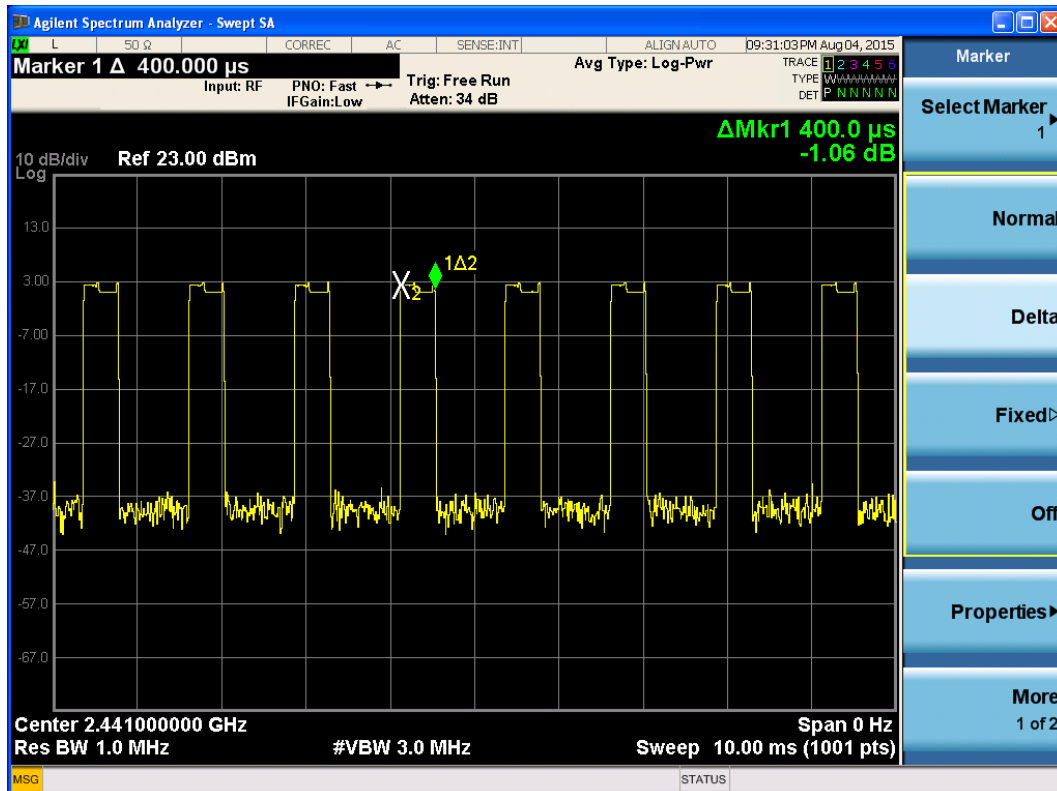
Test Report

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Packet type	hop rate (1/s)	Time slot length(ms)	Dwell time (ms)	Limit (ms)	Conclusion
2DH1	1600	0.40	256	400	PASS
2DH3	533.33	1.65	352	400	PASS
2DH5	320	2.89	369.92	400	PASS

Note: Dwell time = time slot length * hop rate * 0.4s

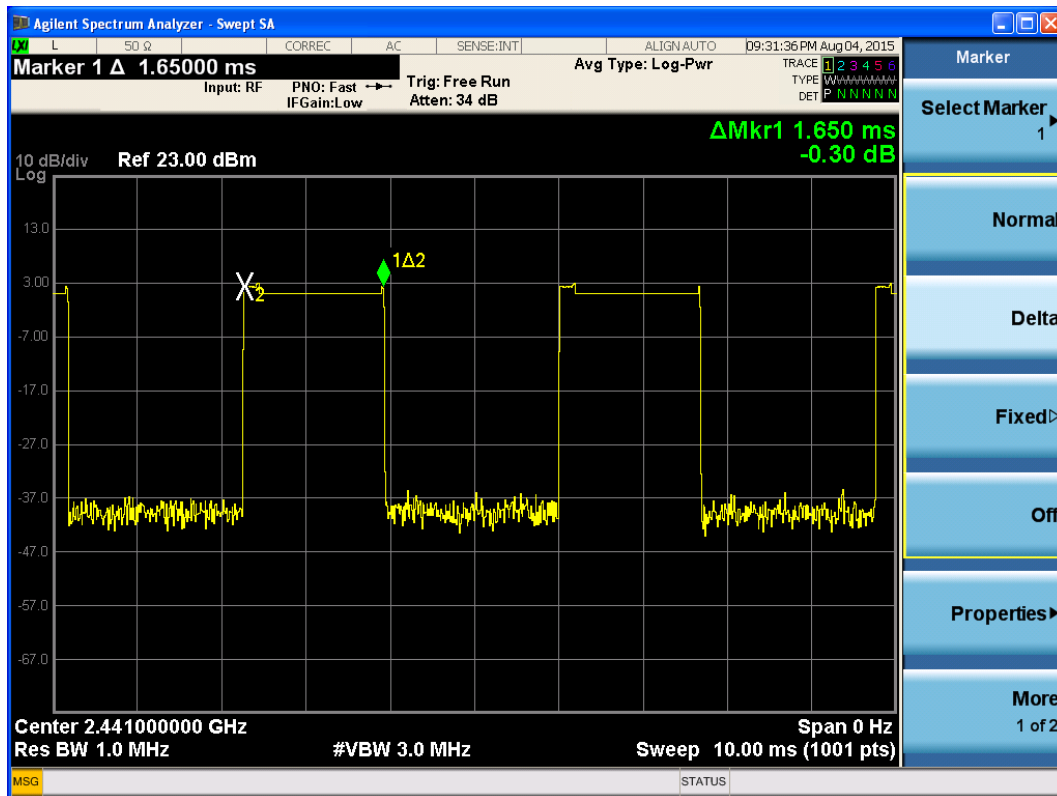


Carrier frequency (MHz): 2441.2DH1

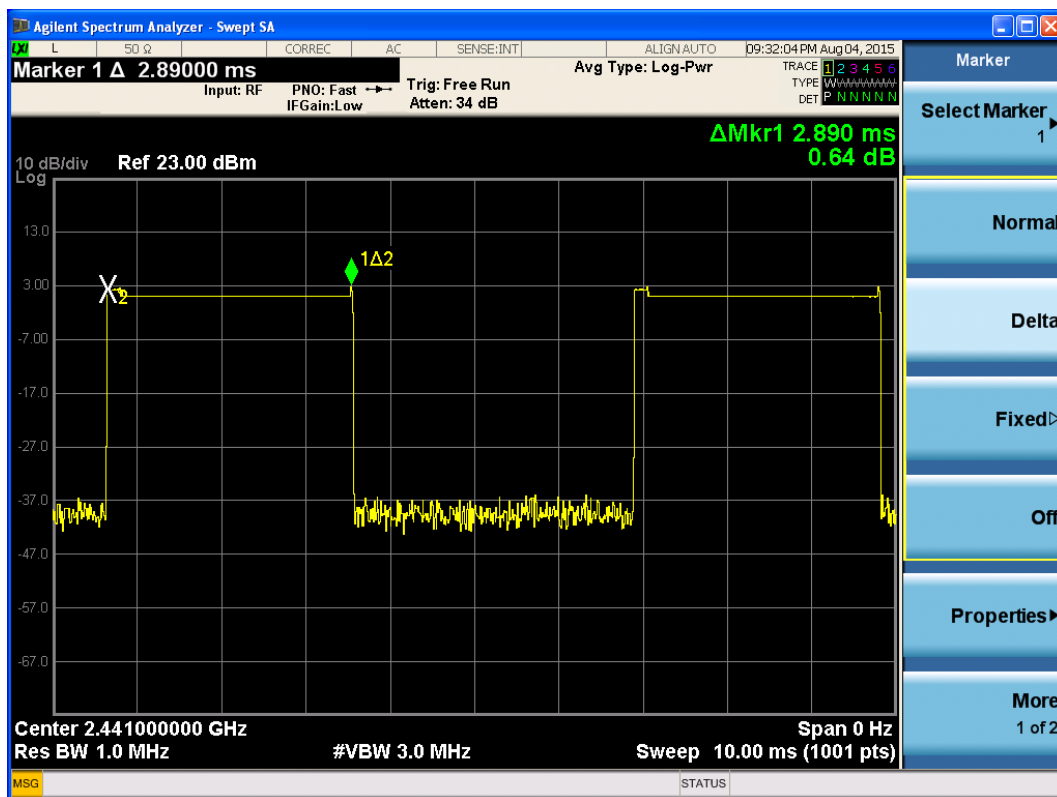
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Carrier frequency (MHz): 2441.2DH3



Carrier frequency (MHz): 2441.2DH5

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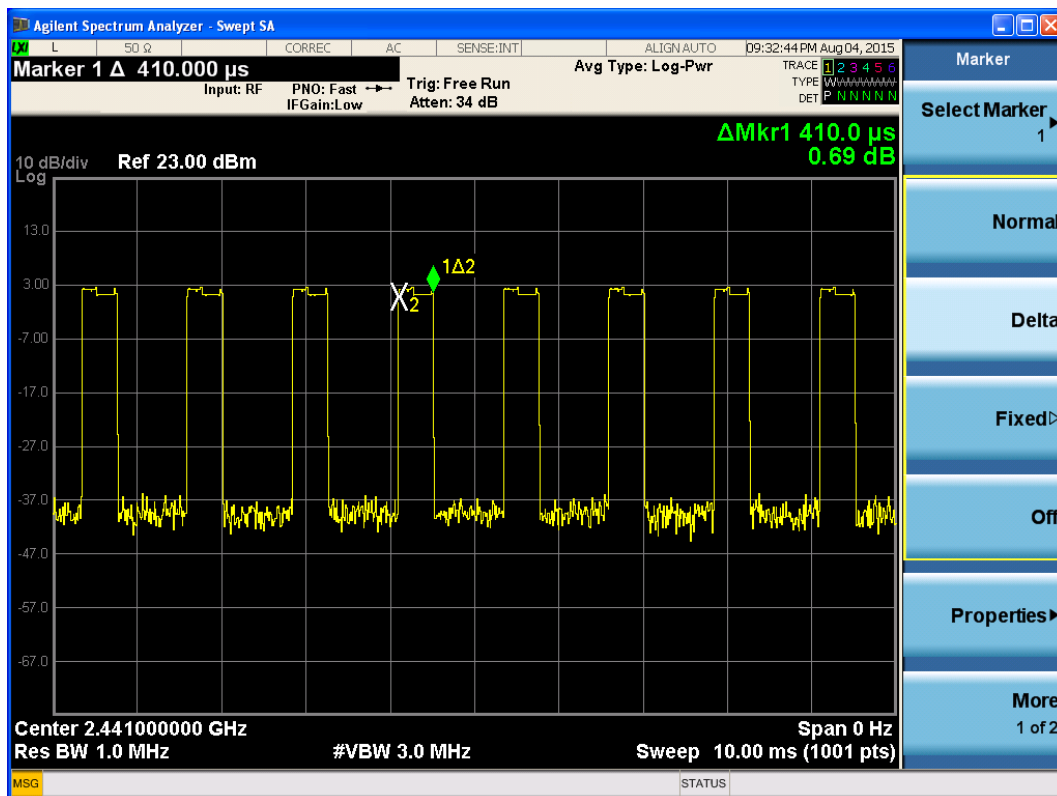
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Packet type	hop rate (1/s)	Time slot length(ms)	Dwell time (ms)	Limit (ms)	Conclusion
3DH1	1600	0.41	262.4	400	PASS
3DH3	533.33	1.65	352	400	PASS
3DH5	320	2.90	371.2	400	PASS

Note: Dwell time = time slot length * hop rate * 0.4s

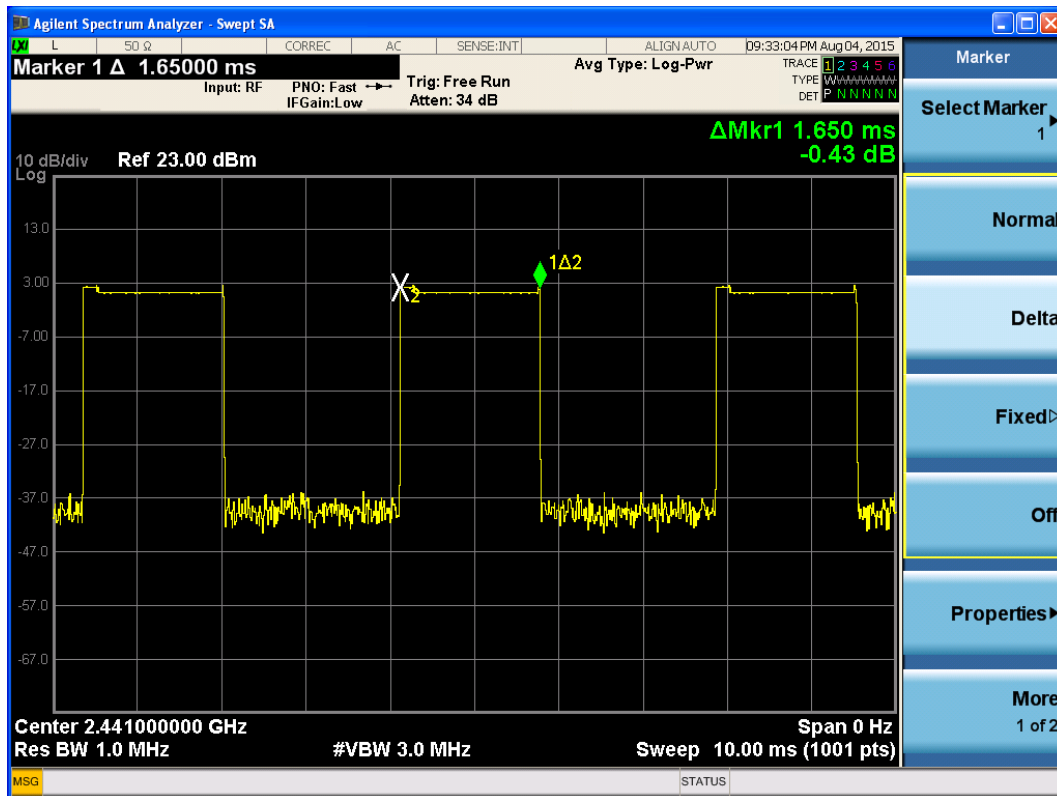


Carrier frequency (MHz): 2441.3DH1

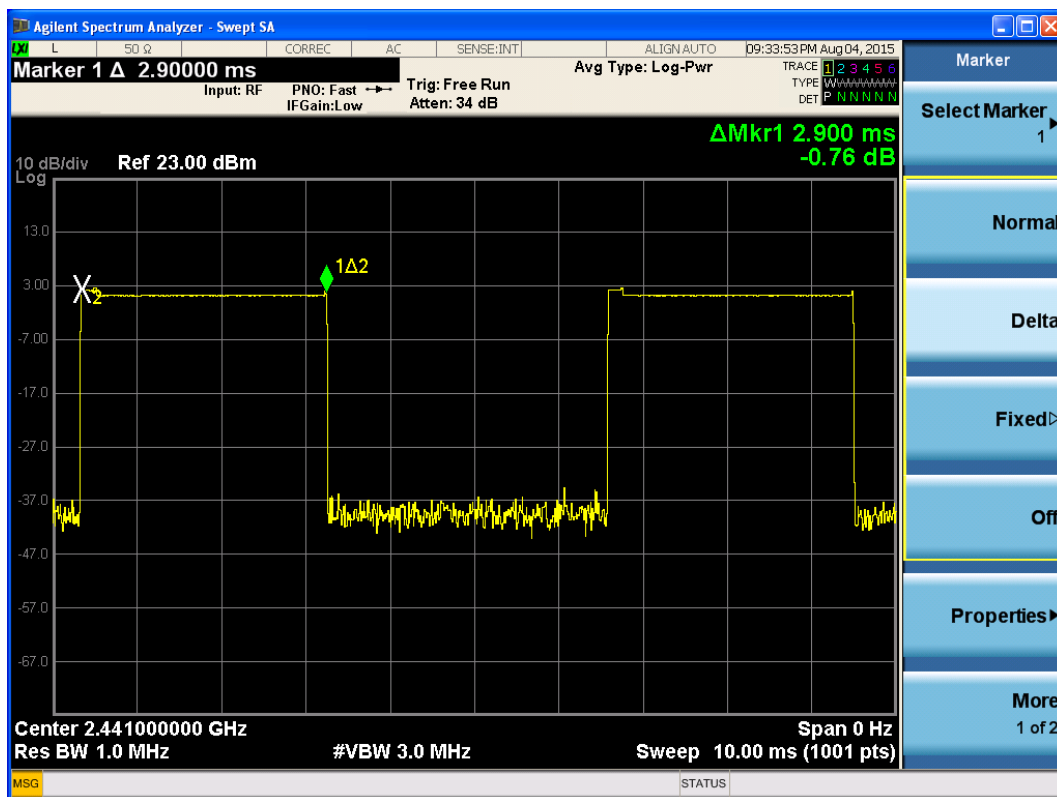
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Carrier frequency (MHz): 2441.3DH3



Carrier frequency (MHz): 2441.3DH5

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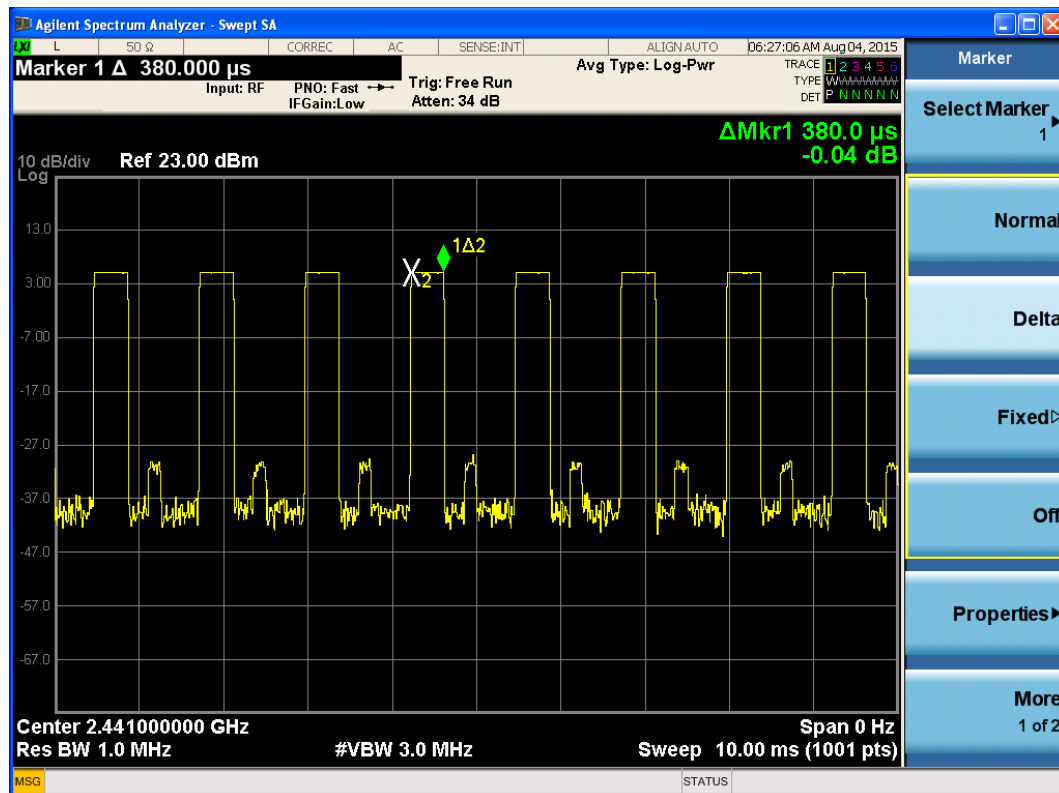
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Left Ear

CH 39

Packet type	hop rate (1/s)	Time slot length(ms)	Dwell time (ms)	Limit (ms)	Conclusion
DH1	1600	0.38	243.2	400	PASS
DH3	533.33	1.64	349.86	400	PASS
DH5	320	2.89	369.92	400	PASS

Note: Dwell time = time slot length * hop rate * 0.4s

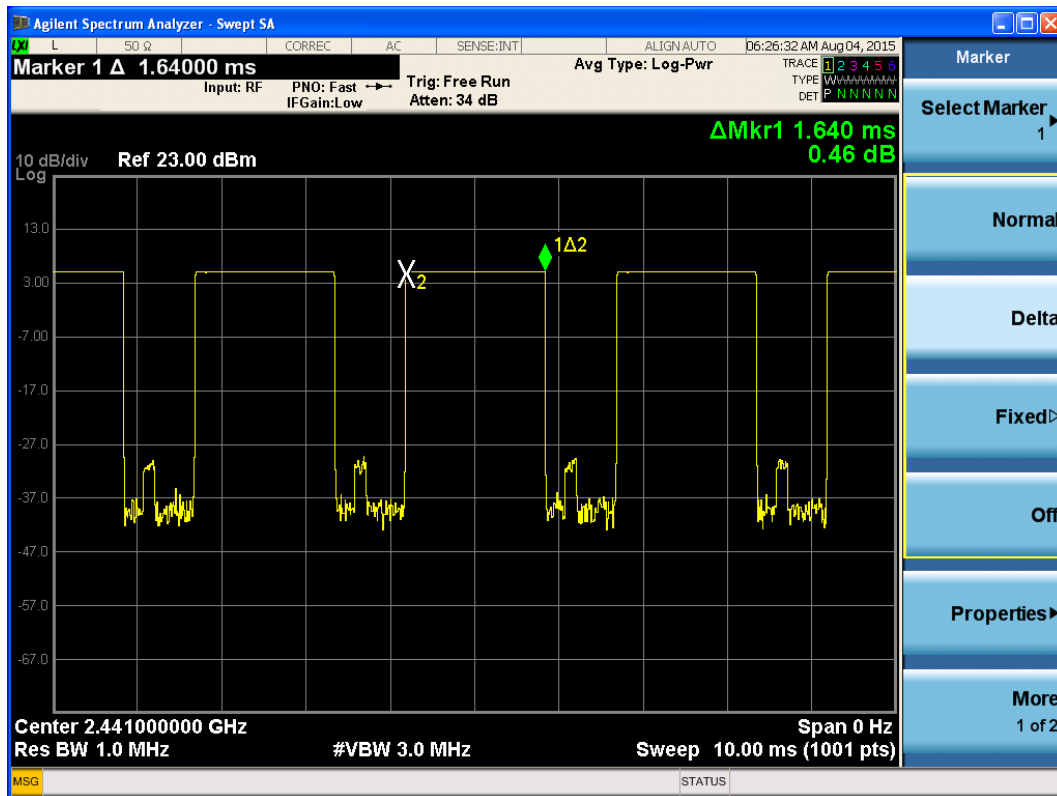


Carrier frequency (MHz): 2441.DH1

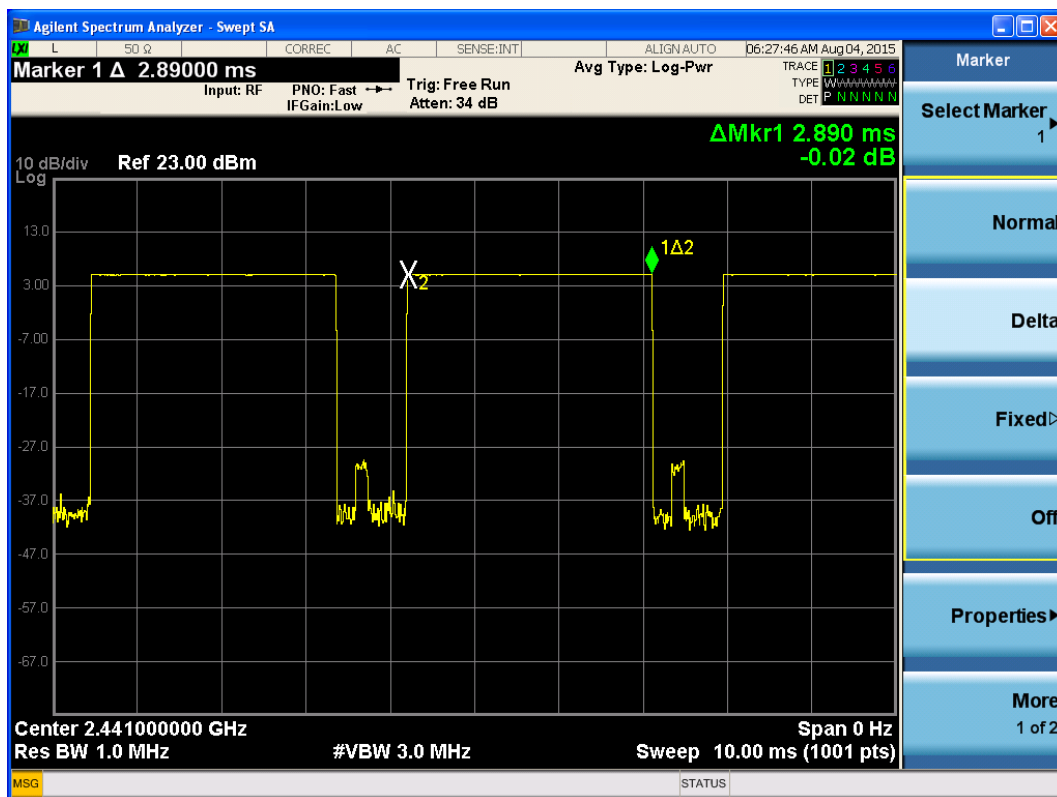
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RXA1504-0052RF

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Carrier frequency (MHz): 2441.DH3



Carrier frequency (MHz): 2441.DH5

TA Technology (Shanghai) Co., Ltd.

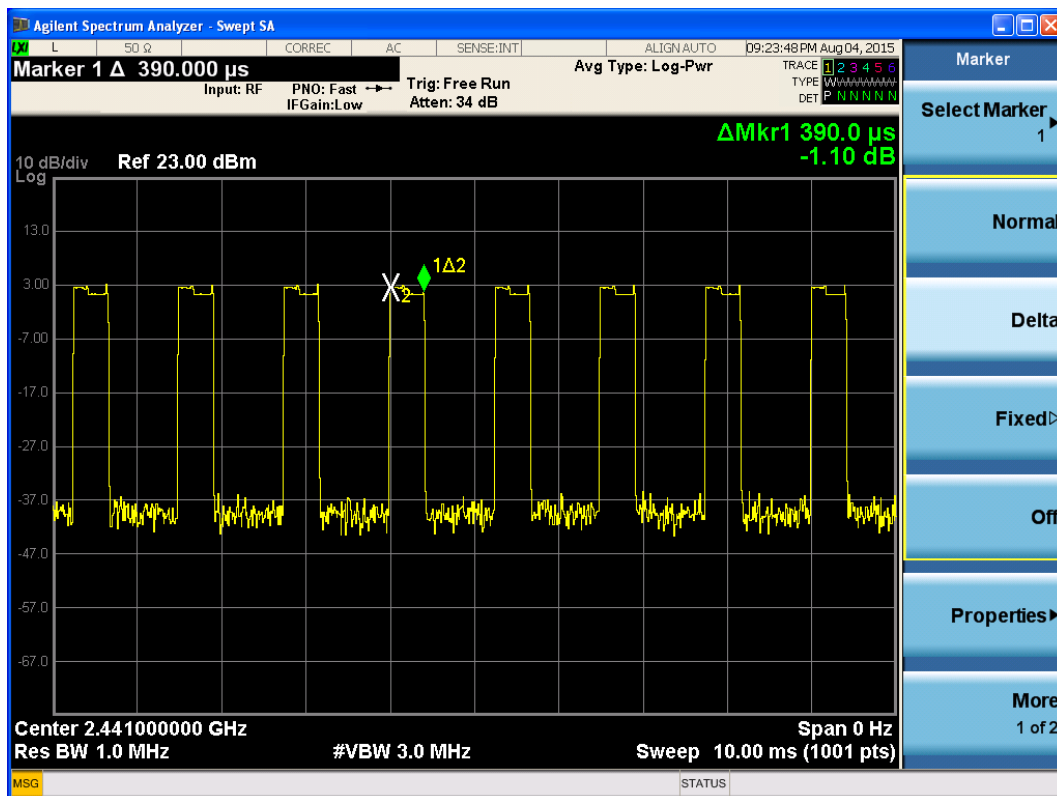
Test Report

Report No.: RXA1504-0052RF

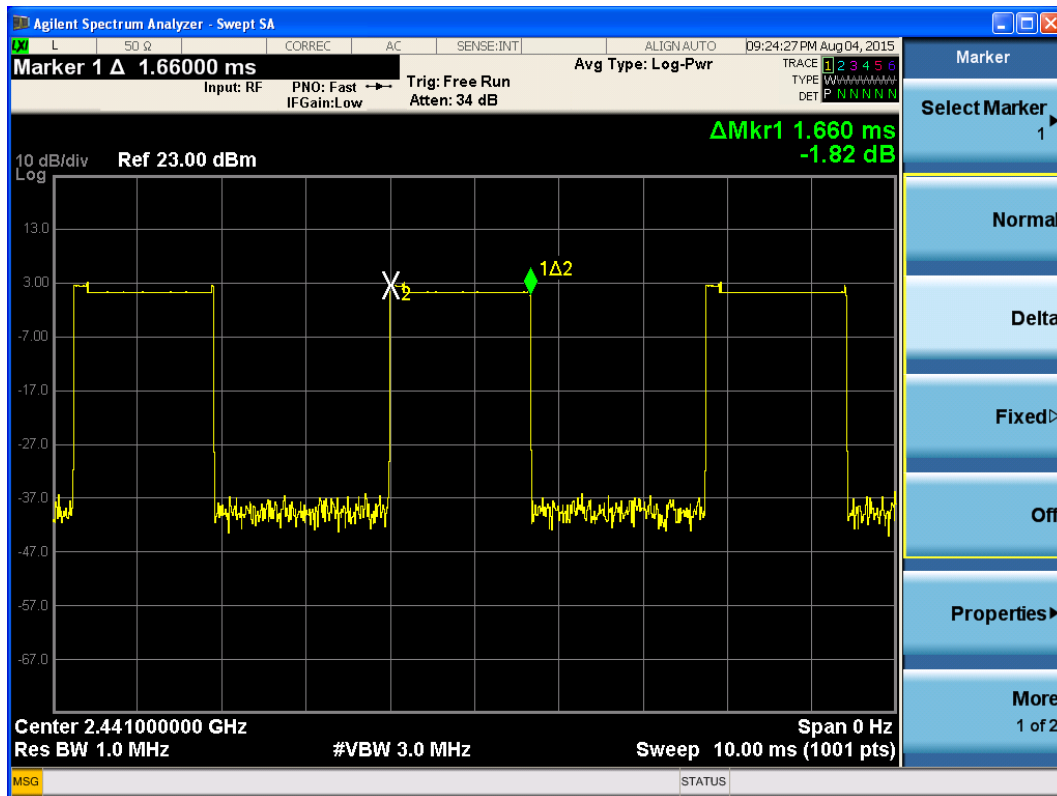
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Packet type	hop rate (1/s)	Time slot length(ms)	Dwell time (ms)	Limit (ms)	Conclusion
2DH1	1600	0.39	249.60	400	PASS
2DH3	533.33	1.66	354.13	400	PASS
2DH5	320	2.91	372.48	400	PASS

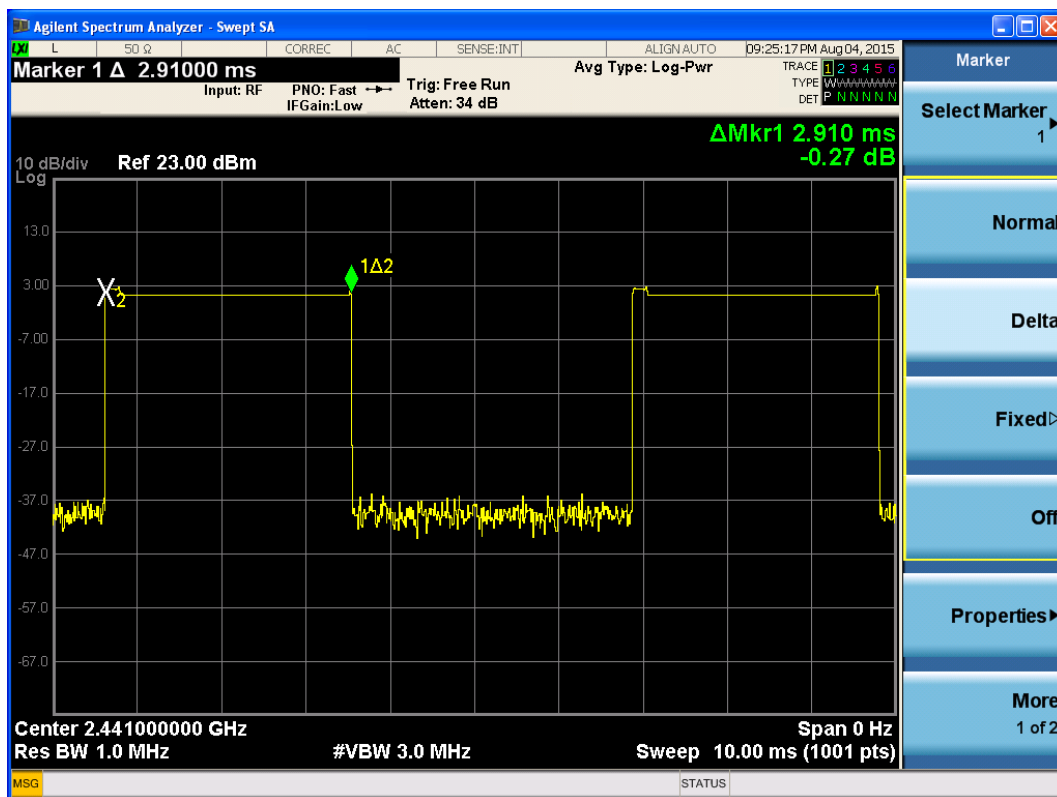
Note: Dwell time = time slot length * hop rate * 0.4s



Carrier frequency (MHz): 2441.2DH1



Carrier frequency (MHz): 2441.2DH3



Carrier frequency (MHz): 2441.2DH5

TA Technology (Shanghai) Co., Ltd.

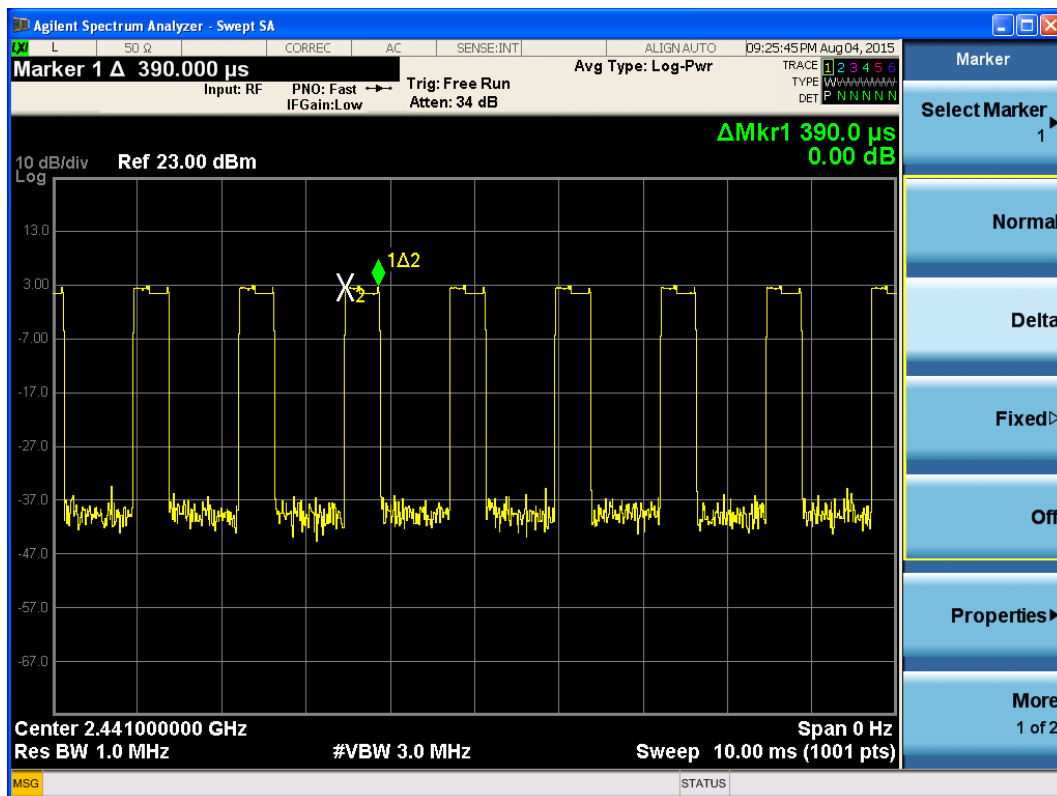
Test Report

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Packet type	hop rate (1/s)	Time slot length(ms)	Dwell time (ms)	Limit (ms)	Conclusion
3DH1	1600	0.39	249.6	400	PASS
3DH3	533.33	1.65	352	400	PASS
3DH5	320	2.9	371.2	400	PASS

Note: Dwell time = time slot length * hop rate * 0.4s

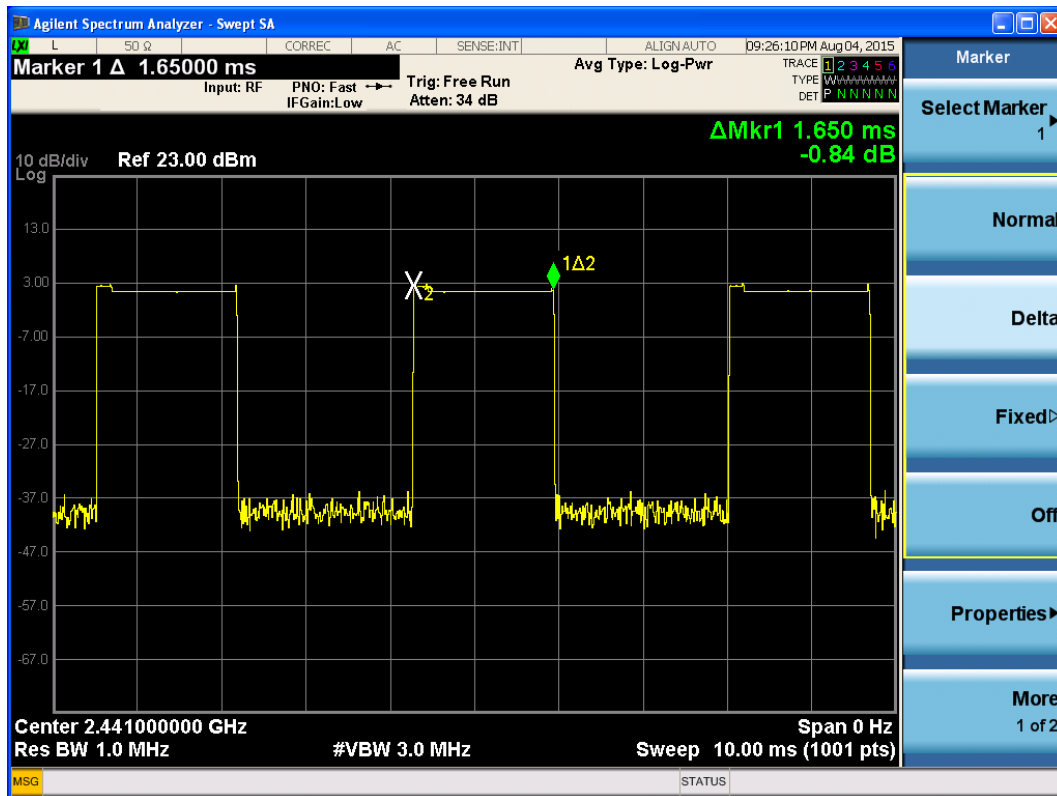


Carrier frequency (MHz): 2441.3DH1

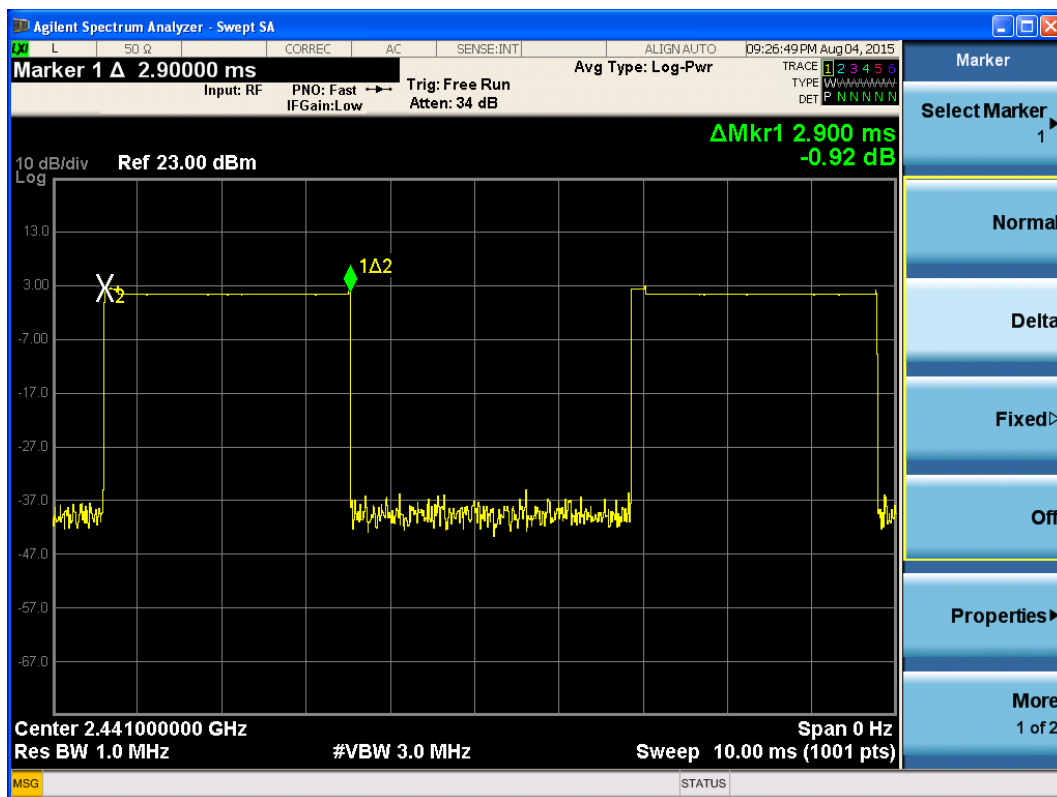
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Carrier frequency (MHz): 2441.3DH3



Carrier frequency (MHz): 2441.3DH5

3.7. Band Edge Compliance

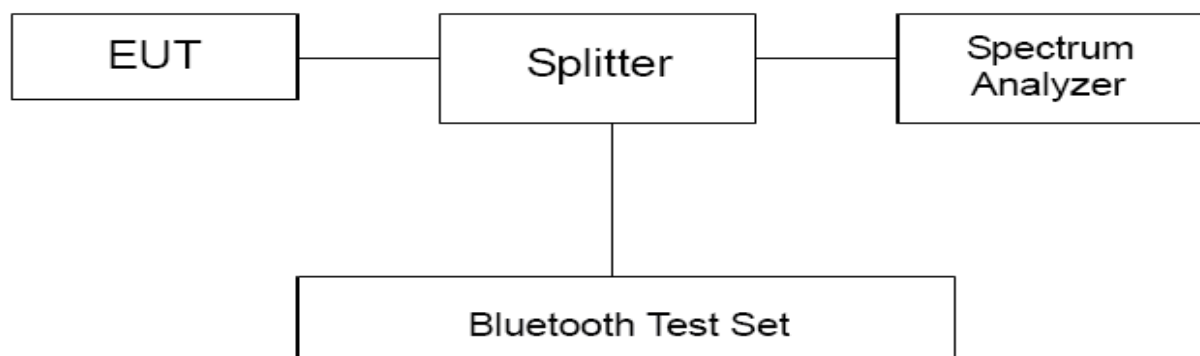
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The lowest and highest channels were measured. The peak detector is used. RBW is set to 100 kHz and VBW is set to 300 kHz on spectrum analyzer. EUT test for Hopping On mode and Hopping Off mode.

Test Setup



Limits

Rule Part 15.247(d) specifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.”

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
2GHz-3GHz	1.407 dB

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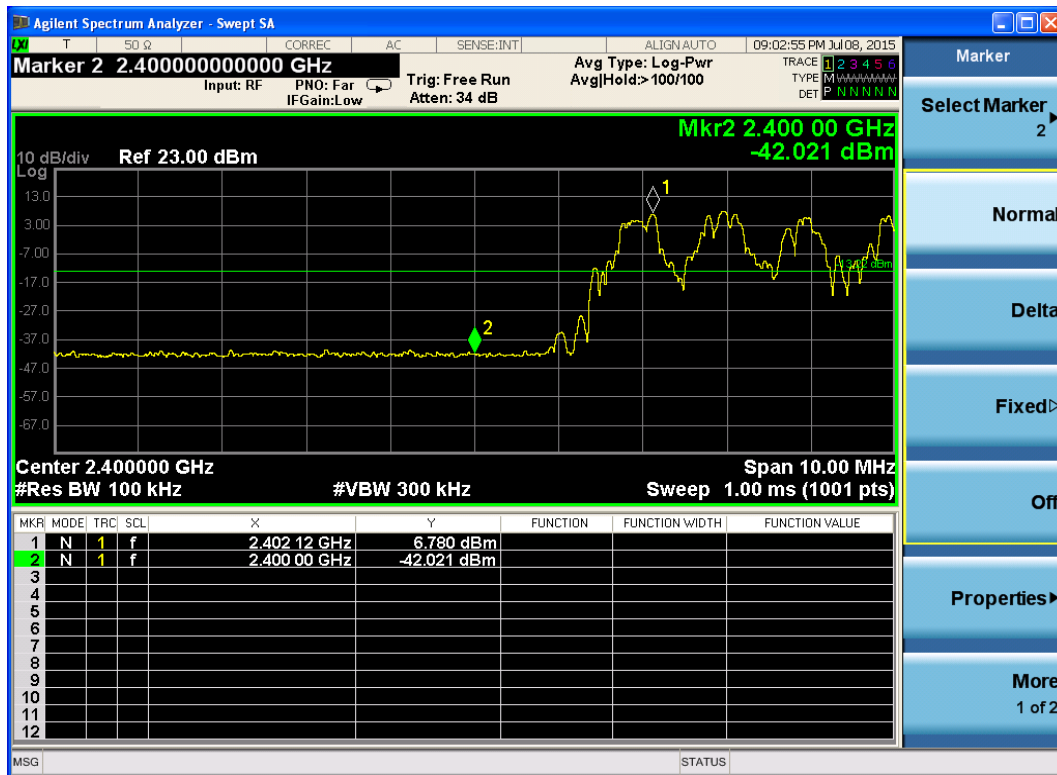
Report No.: RXA1504-0052RF

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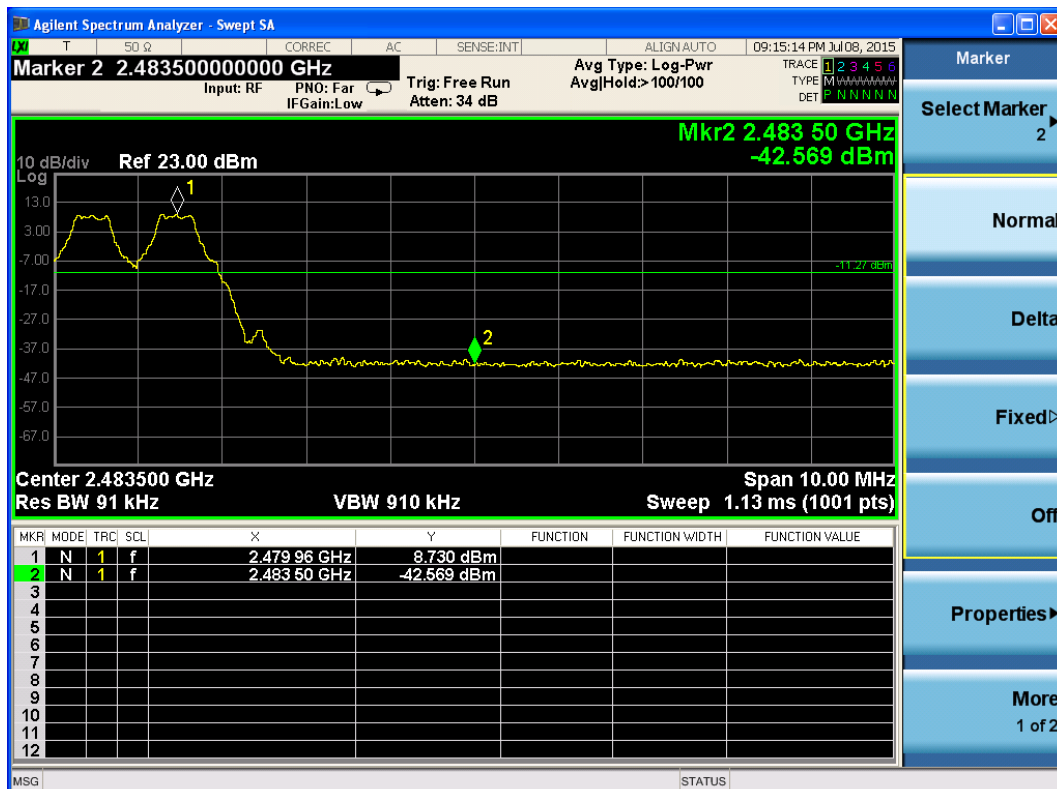
Test Results: PASS

Right Ear

Hopping On-DH5-



Carrier frequency (MHz): 2402 CH0



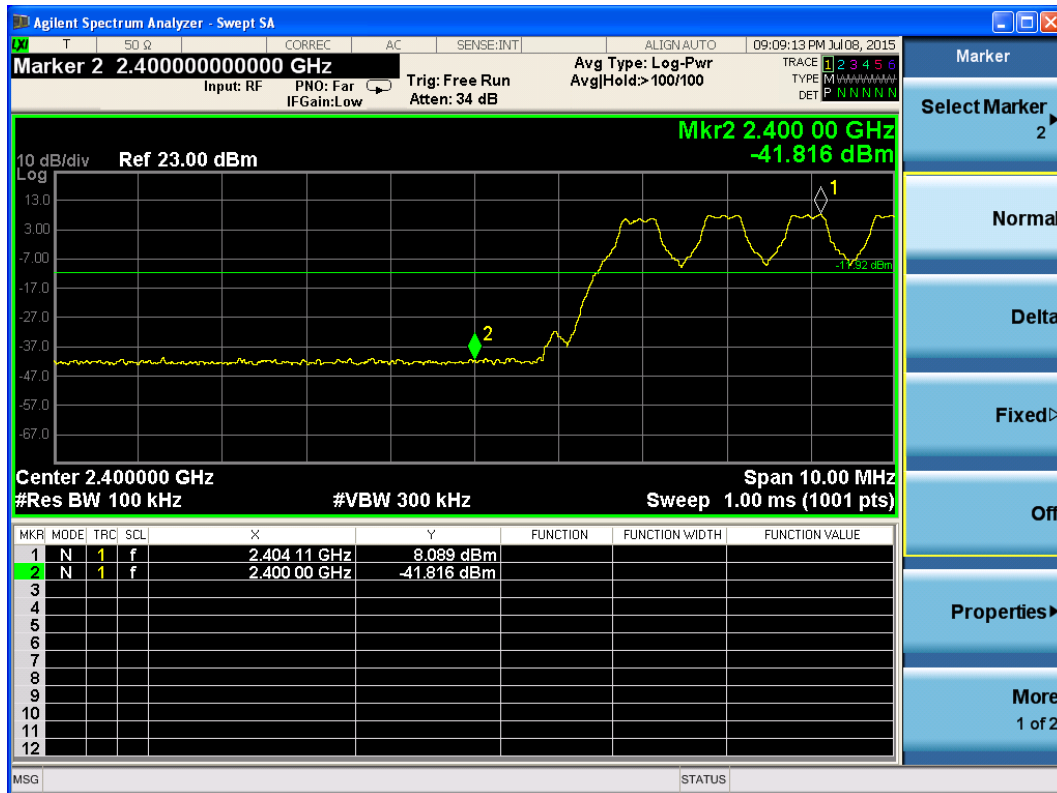
Carrier frequency (MHz): 2480 CH:78

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Report No.: RXA1504-0052RF

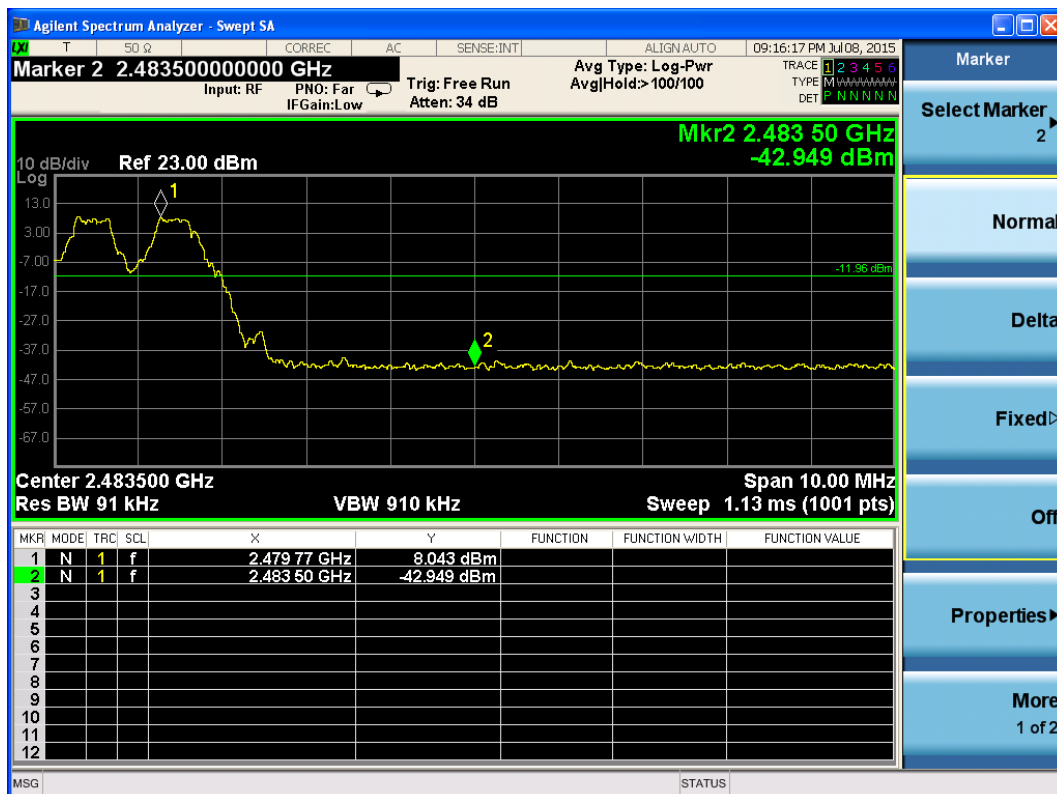
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Hopping On-2DH5



Carrier frequency (MHz): 2402

Channel No.:0



Carrier frequency (MHz): 2480

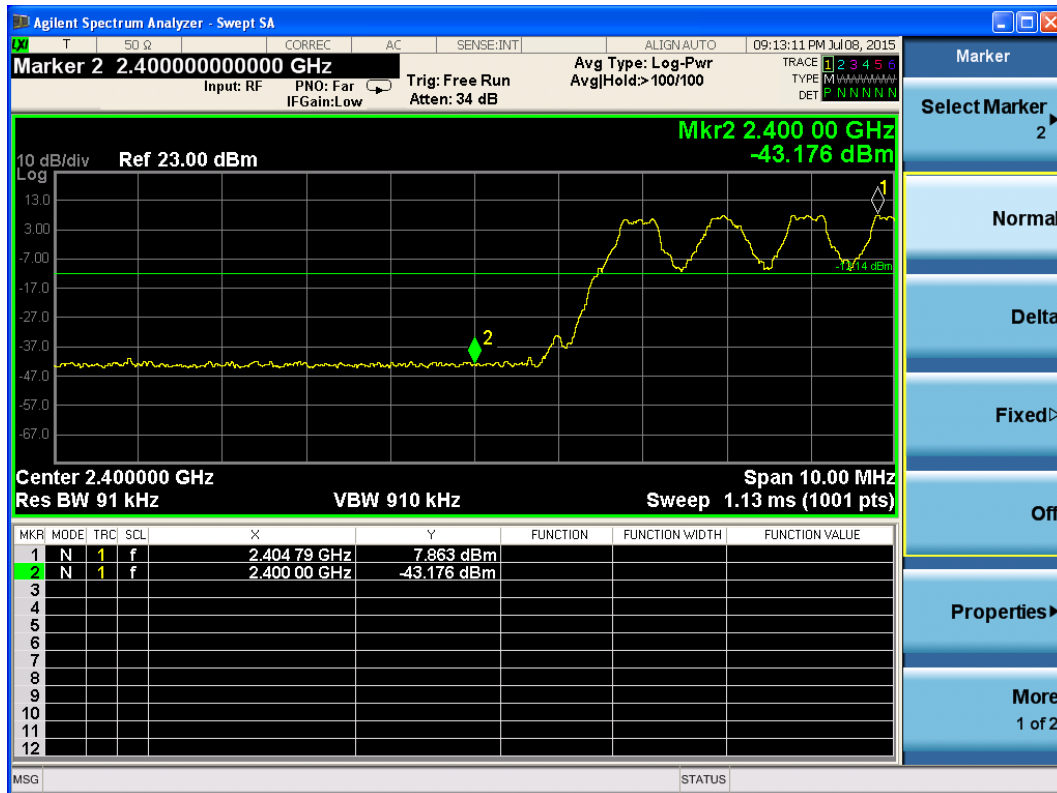
Channel No.:78

TA Technology (Shanghai) Co., Ltd. Test Report

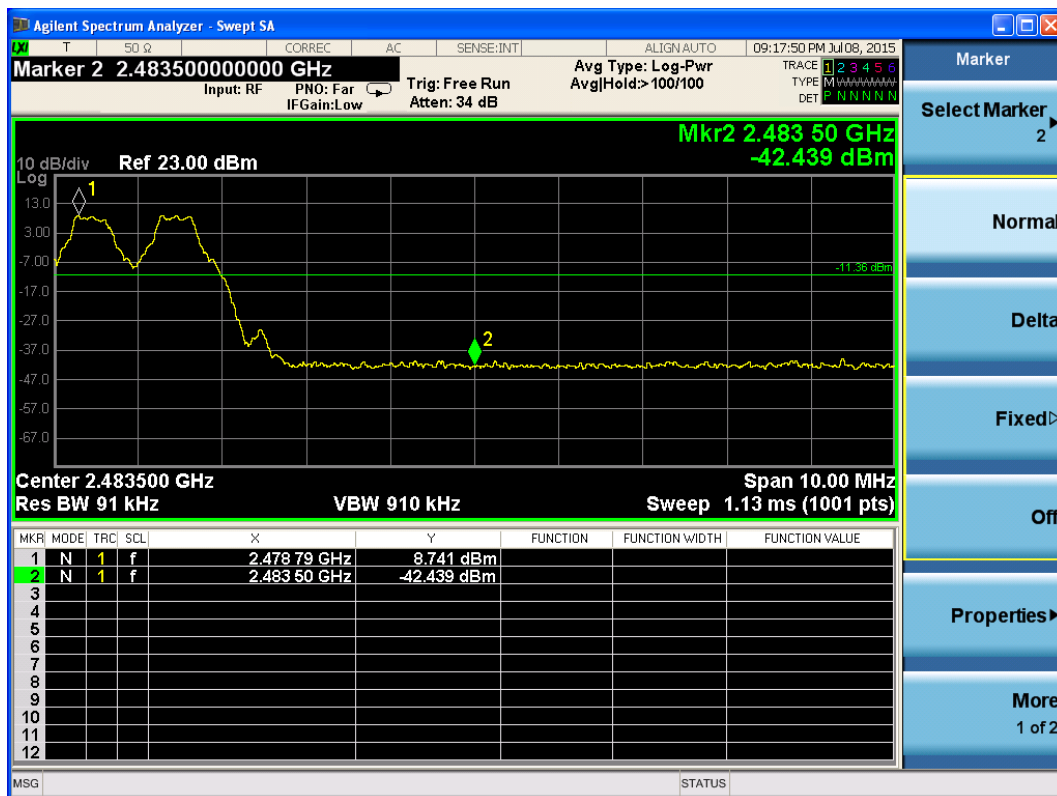
Report No.: RXA1504-0052RF

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Hopping On-3DH5



Carrier frequency (MHz): 2402
Channel No.:0



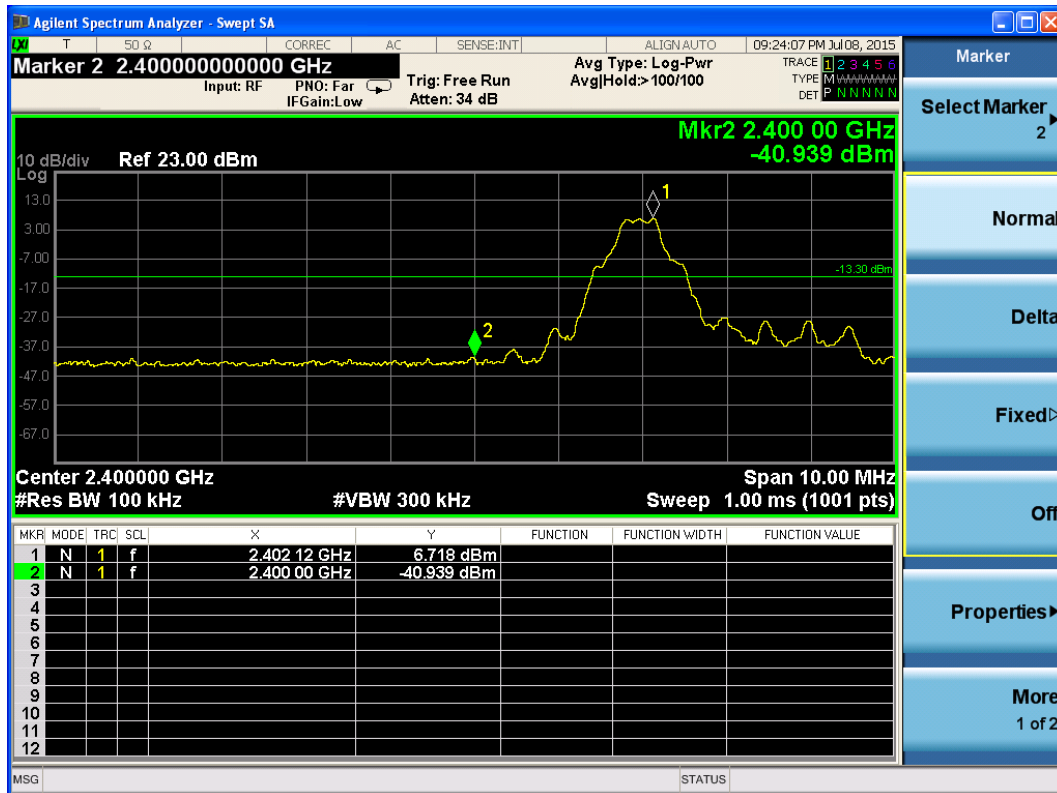
Carrier frequency (MHz): 2480
Channel No.:78

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RXA1504-0052RF

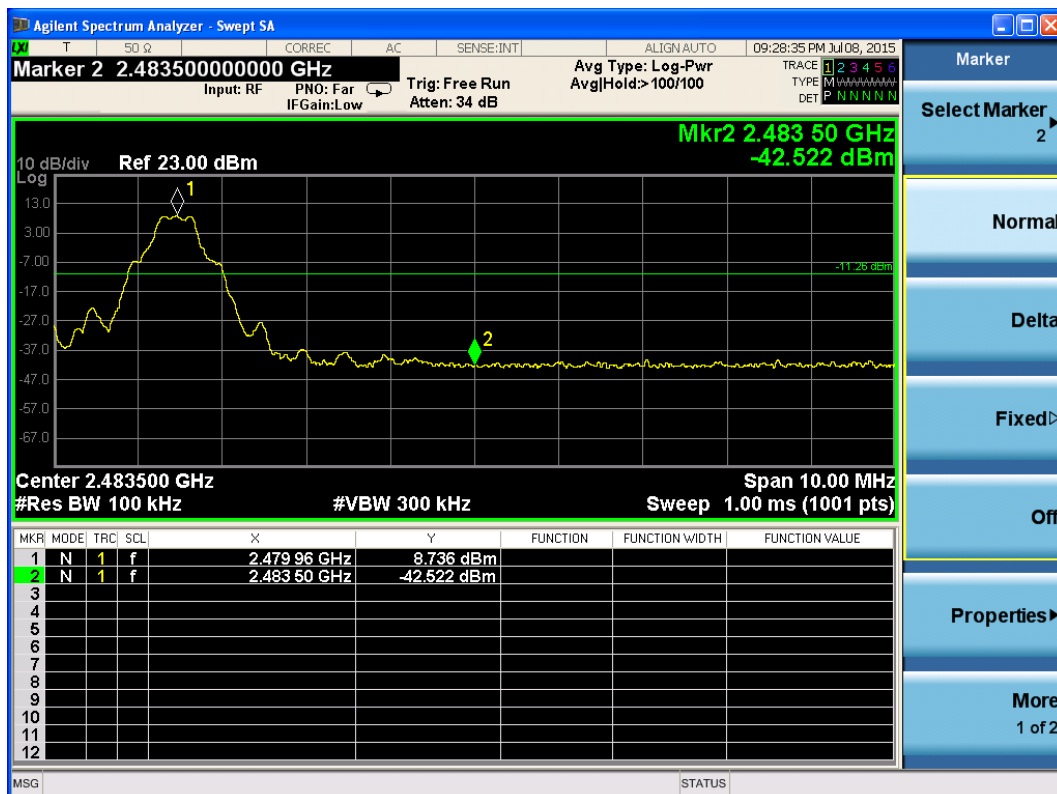
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Hopping Off-DH5-



Carrier frequency (MHz): 2402

Channel No.:0



Carrier frequency (MHz): 2480

Channel No.:78

TA Technology (Shanghai) Co., Ltd. Test Report

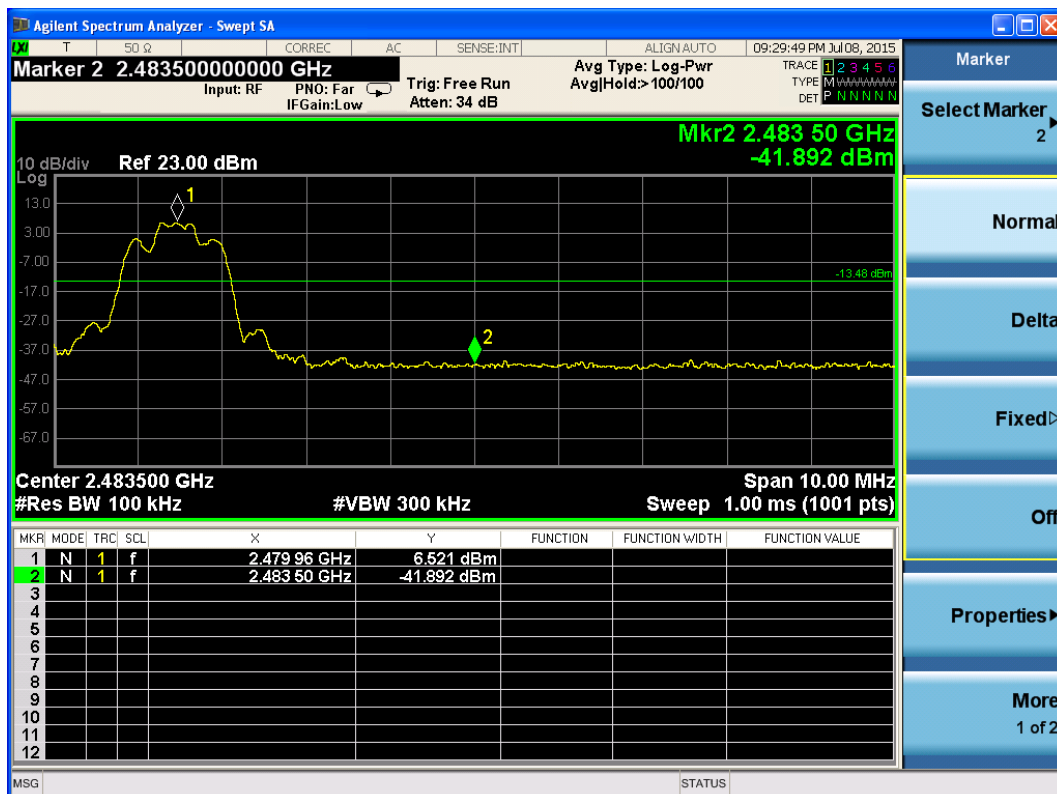
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Hopping Off-2DH5



Carrier frequency (MHz): 2402
Channel No.:0



Carrier frequency (MHz): 2480
Channel No.:78

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Hopping Off-3DH5



Carrier frequency (MHz): 2402

Channel No.:0



Carrier frequency (MHz): 2480

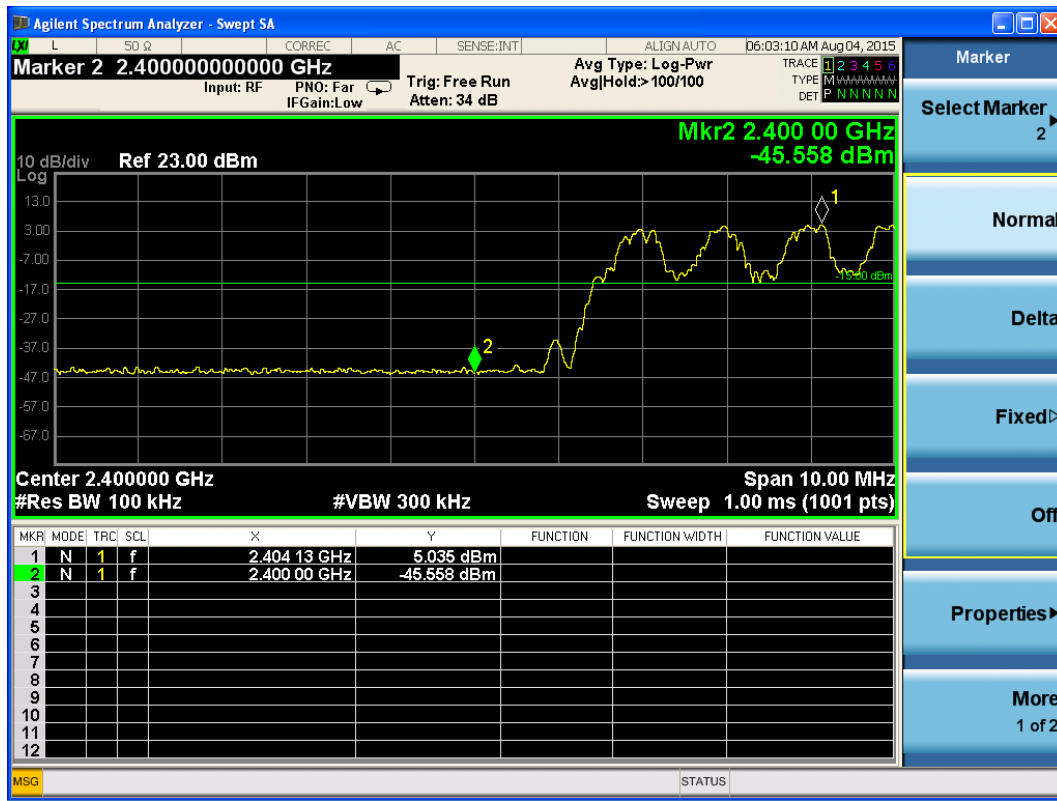
Channel No.:78

TA Technology (Shanghai) Co., Ltd. Test Report

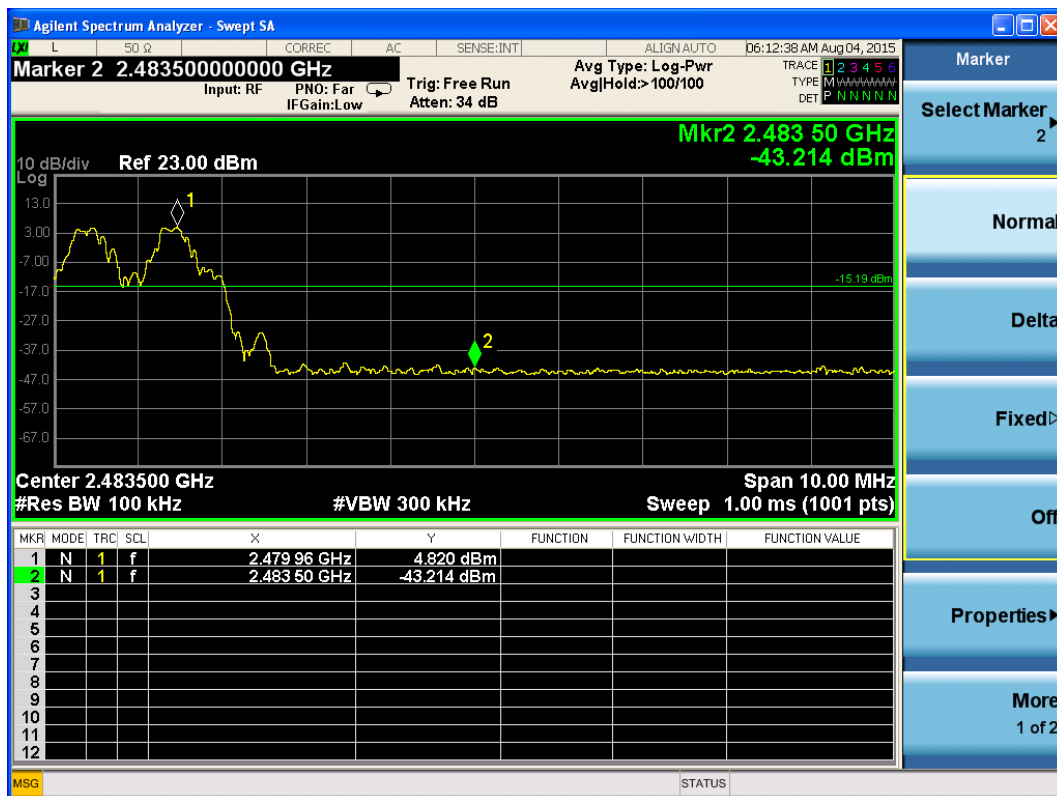
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Left Ear
Hopping On-DH5-



Carrier frequency (MHz): 2402 CH0



Carrier frequency (MHz): 2480 CH78

TA Technology (Shanghai) Co., Ltd. Test Report

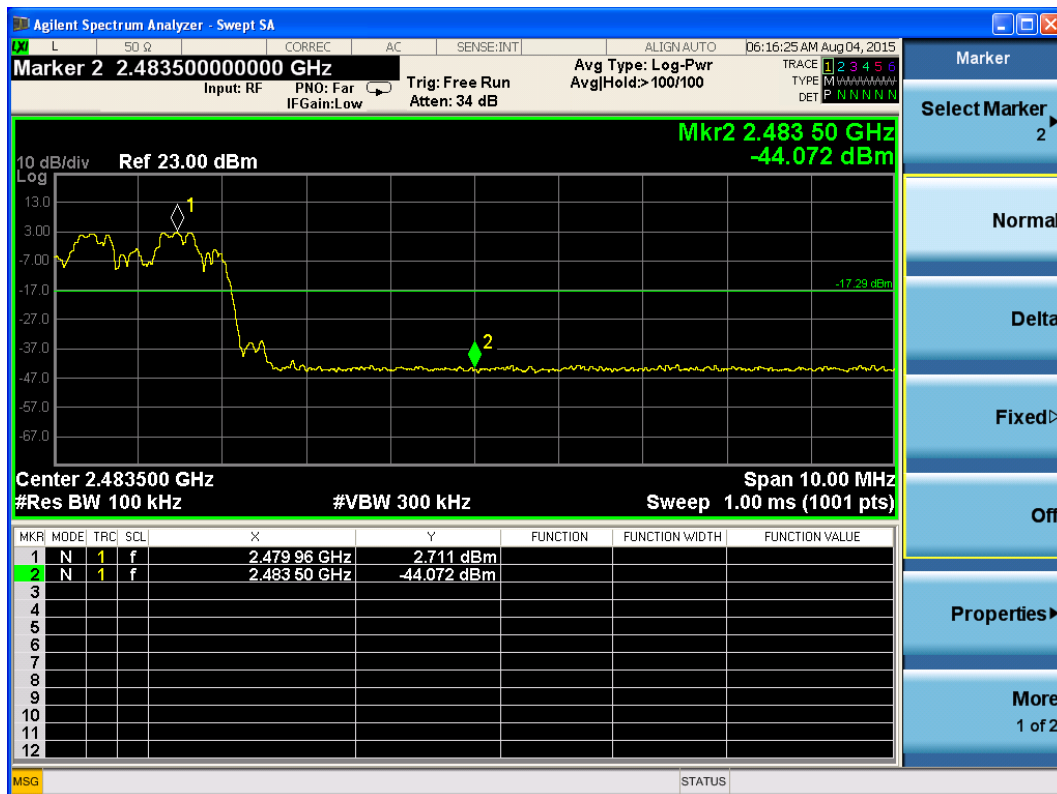
Report No.: RXA1504-0052RF

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Hopping On-2DH5



Carrier frequency (MHz): 2402 CH0



Carrier frequency (MHz): 2480 CH78

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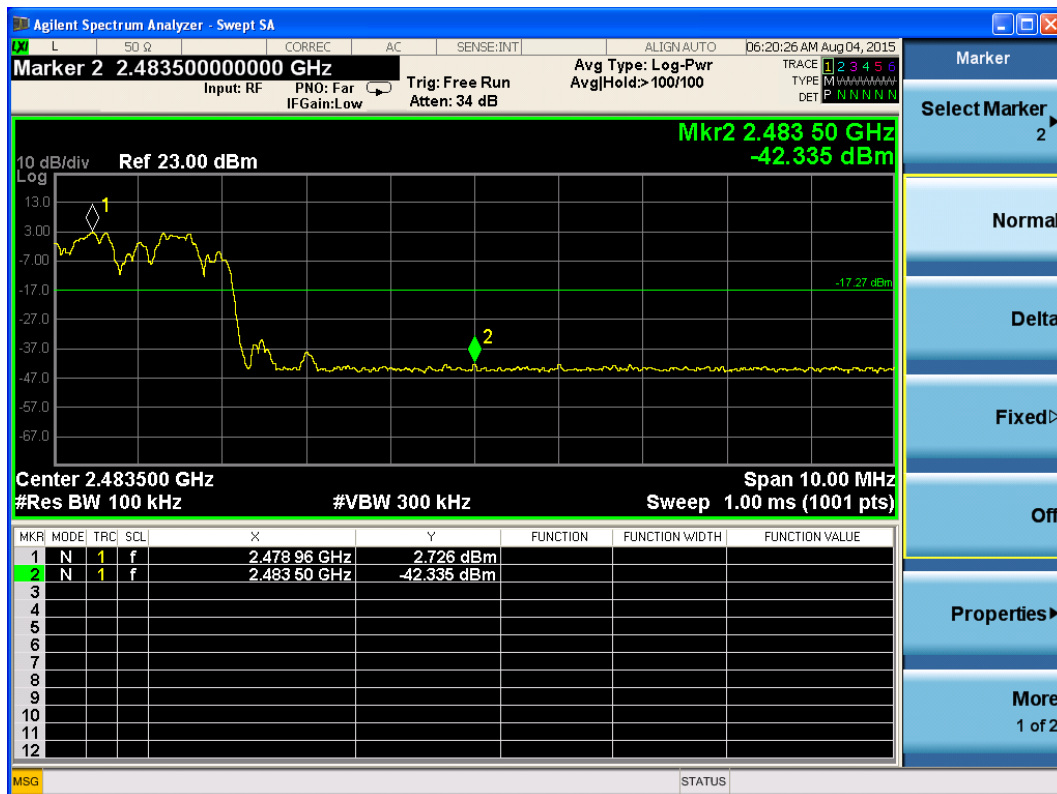
Report No.: RXA1504-0052RF

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Hopping On-3DH5



Carrier frequency (MHz): 2402 CH0



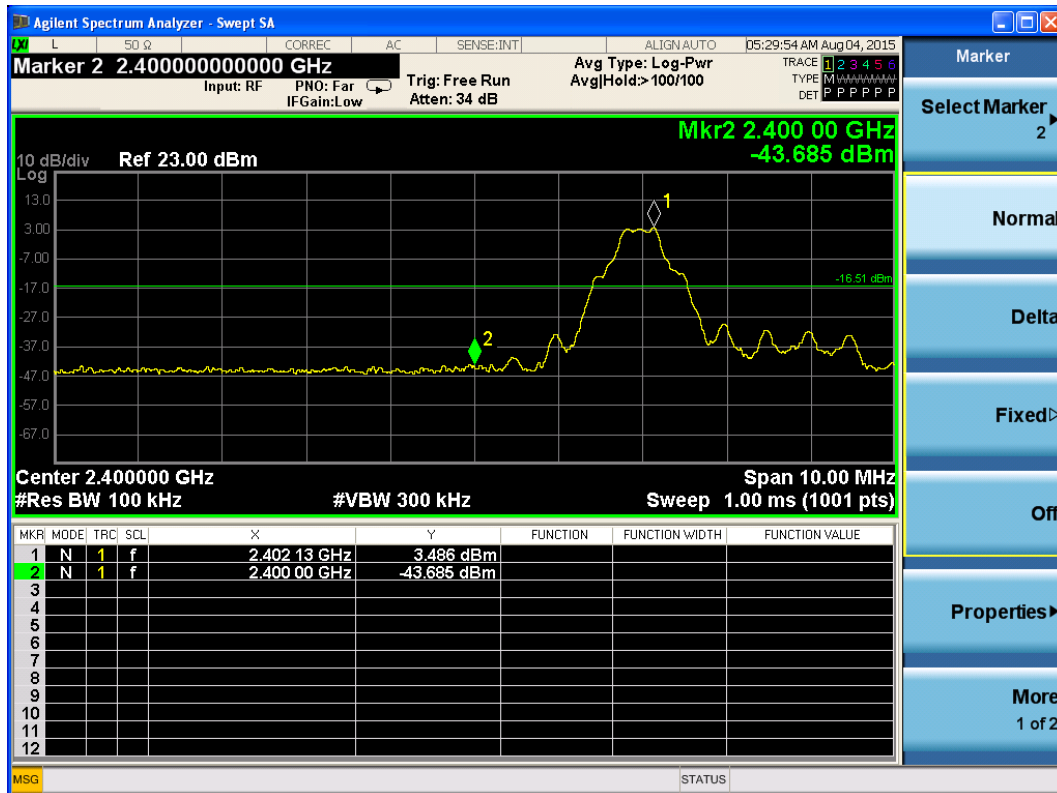
Carrier frequency (MHz): 2480 CH78

TA Technology (Shanghai) Co., Ltd. Test Report

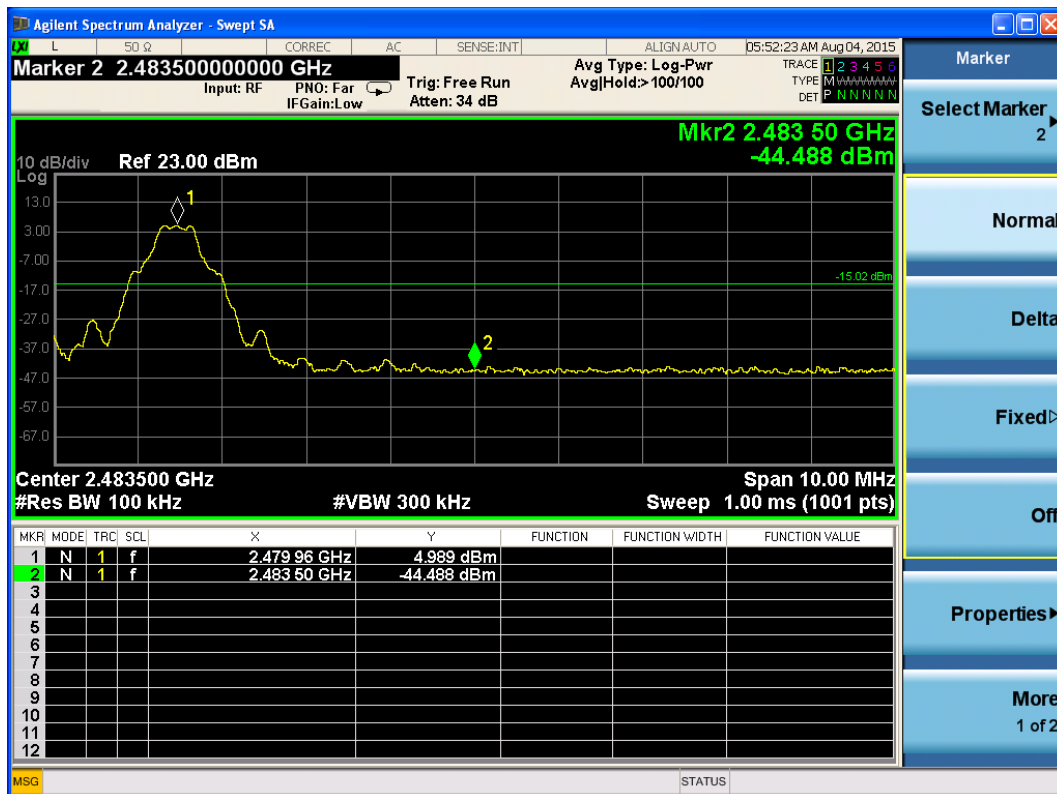
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Hopping Off-DH5-



Carrier frequency (MHz): 2402 CH0



Carrier frequency (MHz): 2480 CH78

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Hopping Off-2DH5



Carrier frequency (MHz): 2402 CH0



Carrier frequency (MHz): 2480 CH78

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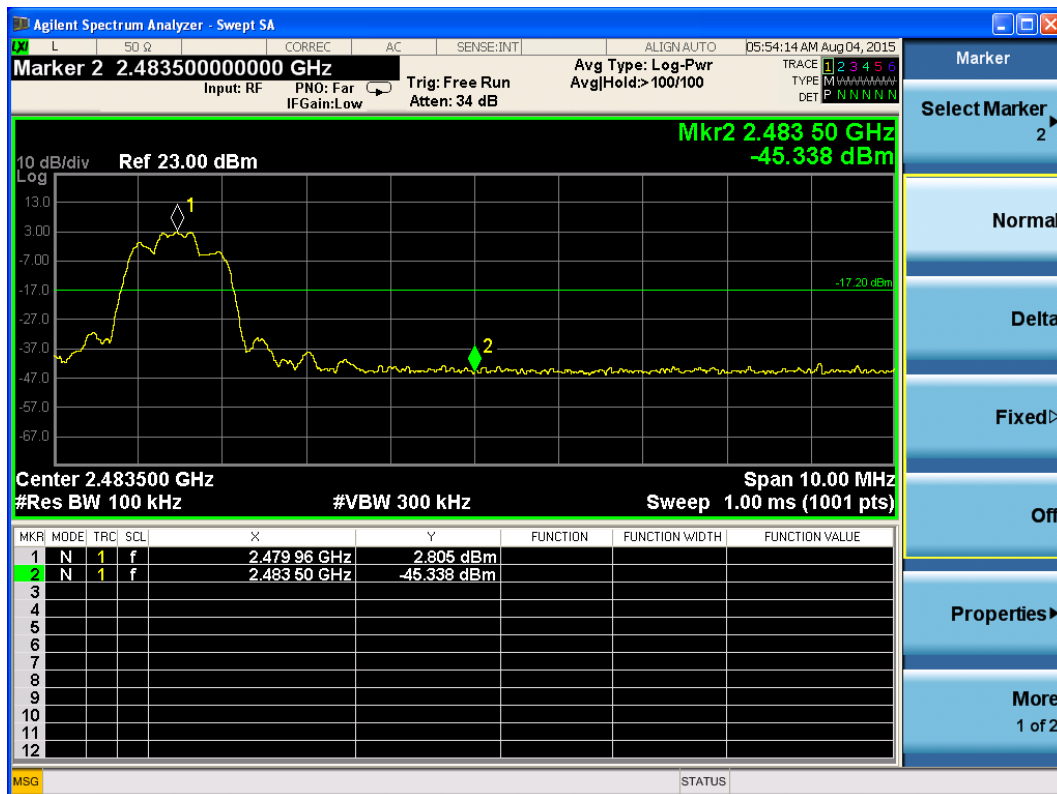
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Hopping Off-3DH5



Carrier frequency (MHz): 2402 CH0



Carrier frequency (MHz): 2480 CH78

3.8. Spurious Radiated Emissions in the Restricted Band

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

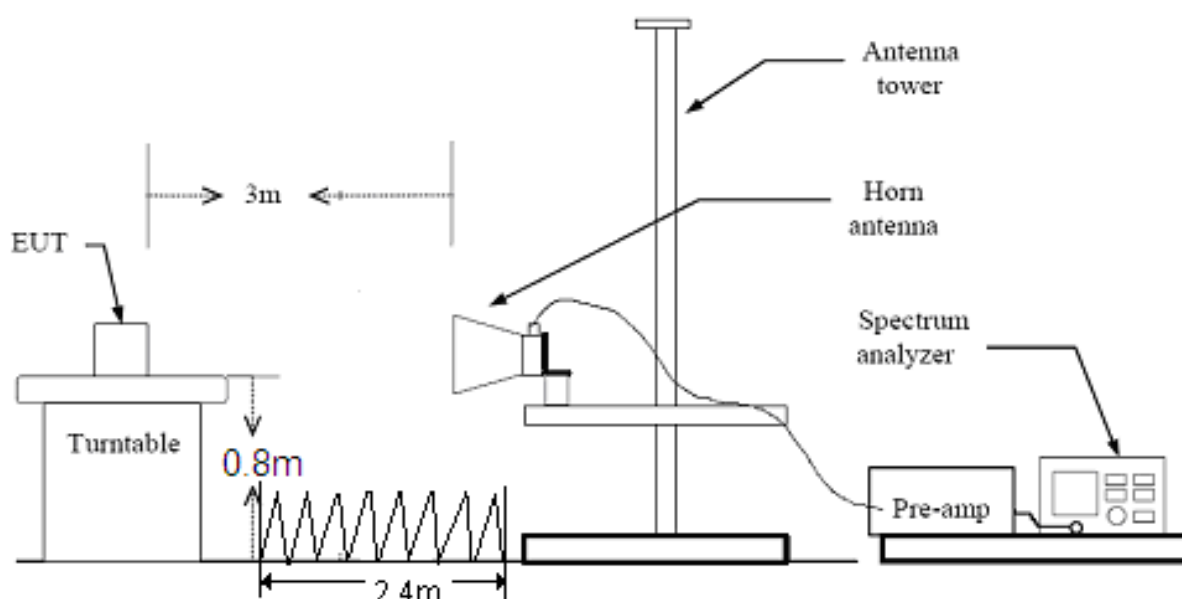
(b) The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from $20\log(\text{dwell time}/100 \text{ ms})$, in an effort to demonstrate compliance with the 15.209 limit.

If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak- average correction factor, derived from the appropriate duty cycle calculation.

This setting method can refer to **DA00-705**.

The test is in transmitting mode. The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis) and docking mode. The worst emission was found in stand-up position (Y axis) and the worst case was recorded.

Test setup



Note: Area side:2.4mX3.6m

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Limits

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 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
8.41425 - 8.41475	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	(²)
13.36 - 13.41			

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Peak Limit=74 dBuV/m

Average Limit=54 dBuV/m

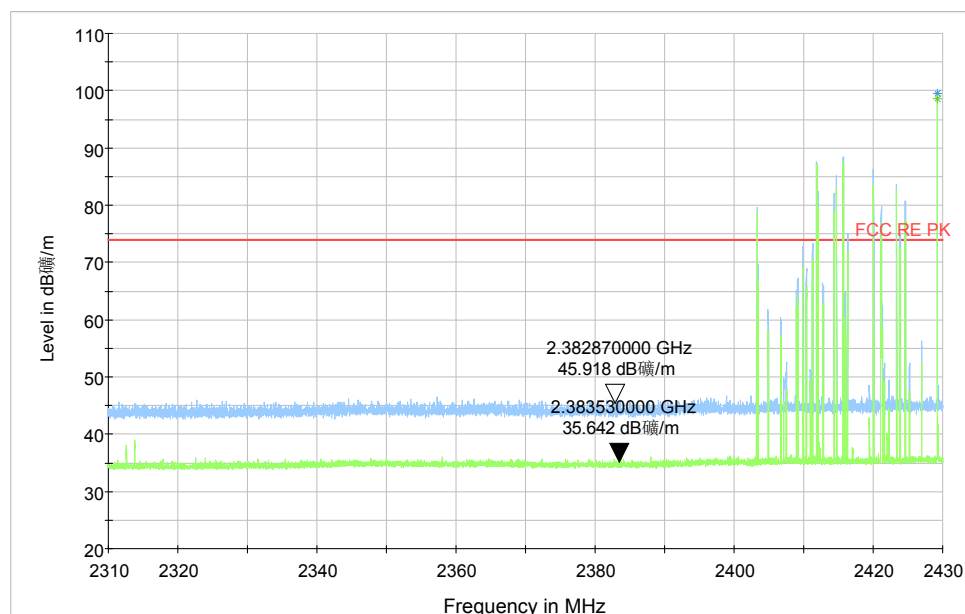
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 3.55$ dB.

Test Results:

Pre-tests are at the presence of the left ear and right ear, the right ear is the worst case condition, only the worst case result is recorded.

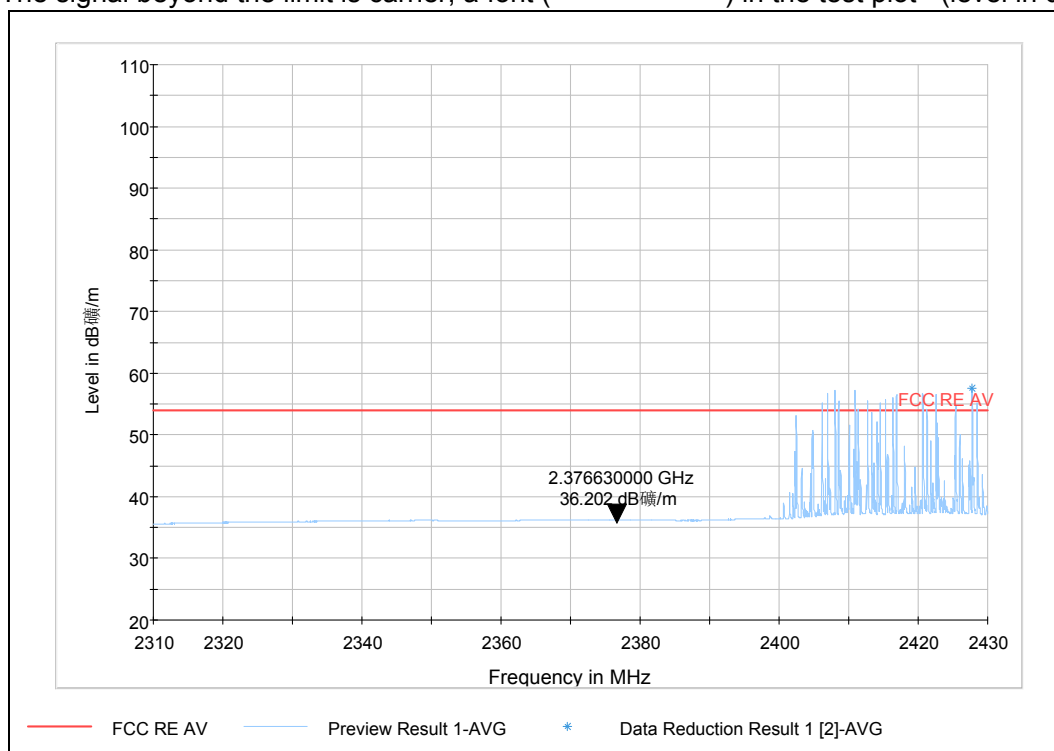
DH5- Channel 0



— FCC RE PK
— Preview Result 2-AVG
* Data Reduction Result 2 [2]-AVG
— Preview Result 1-PK+
* Data Reduction Result 1 [2]-PK+

lower band edge Peak-CH 0

Note: The signal beyond the limit is carrier, a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

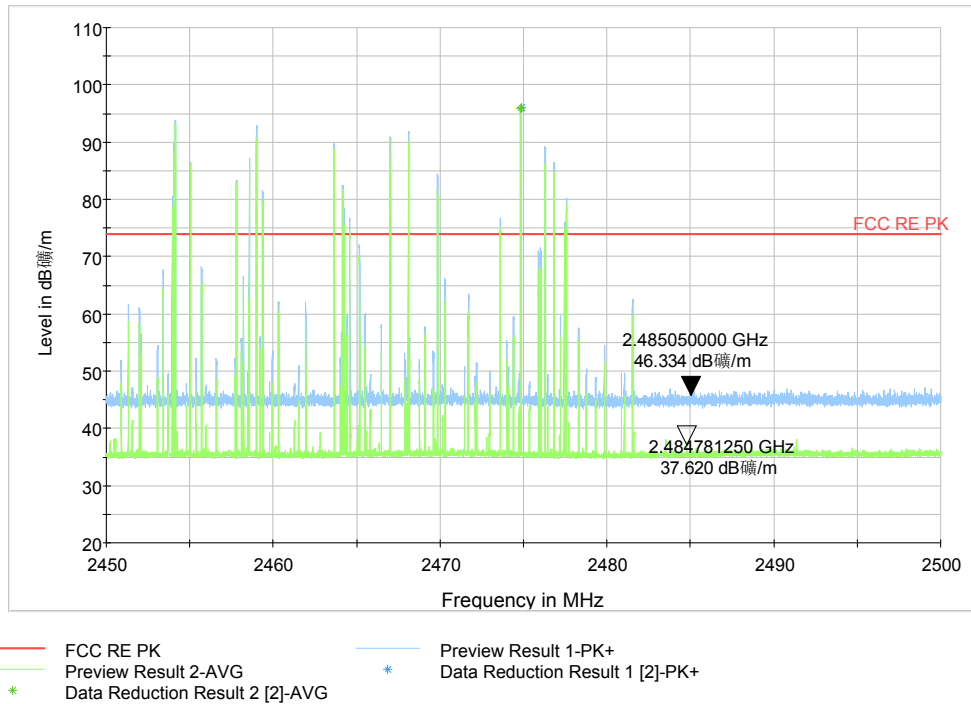


— FCC RE AV — Preview Result 1-AVG * Data Reduction Result 1 [2]-AVG

lower band edge average-CH 0

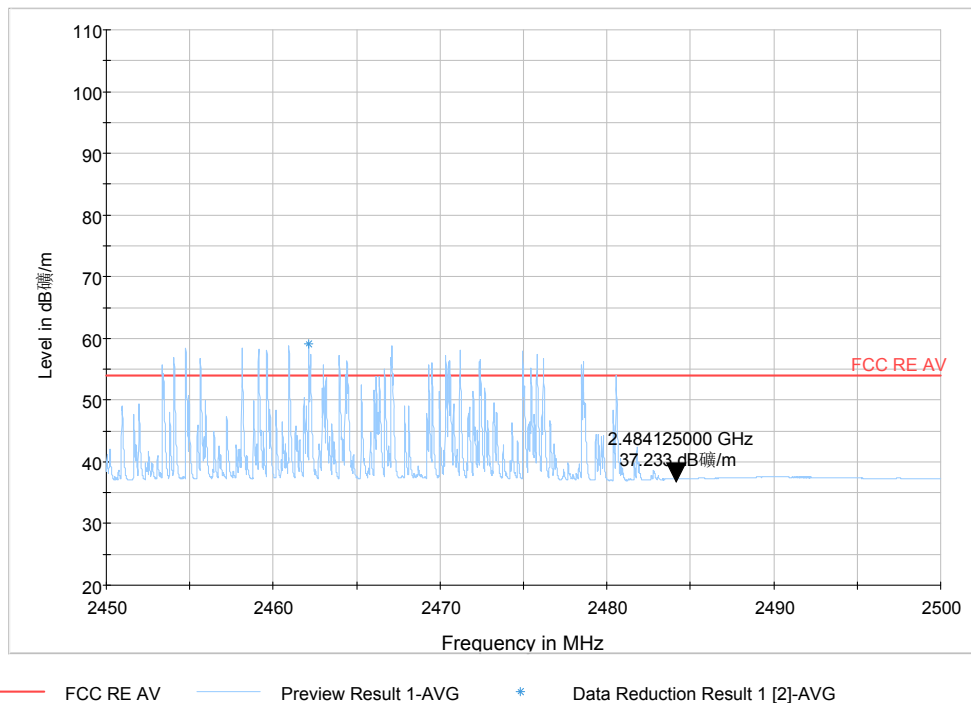
Note: The signal beyond the limit is carrier, a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

DH5- Channel 78



Higher band edge Peak-CH 78

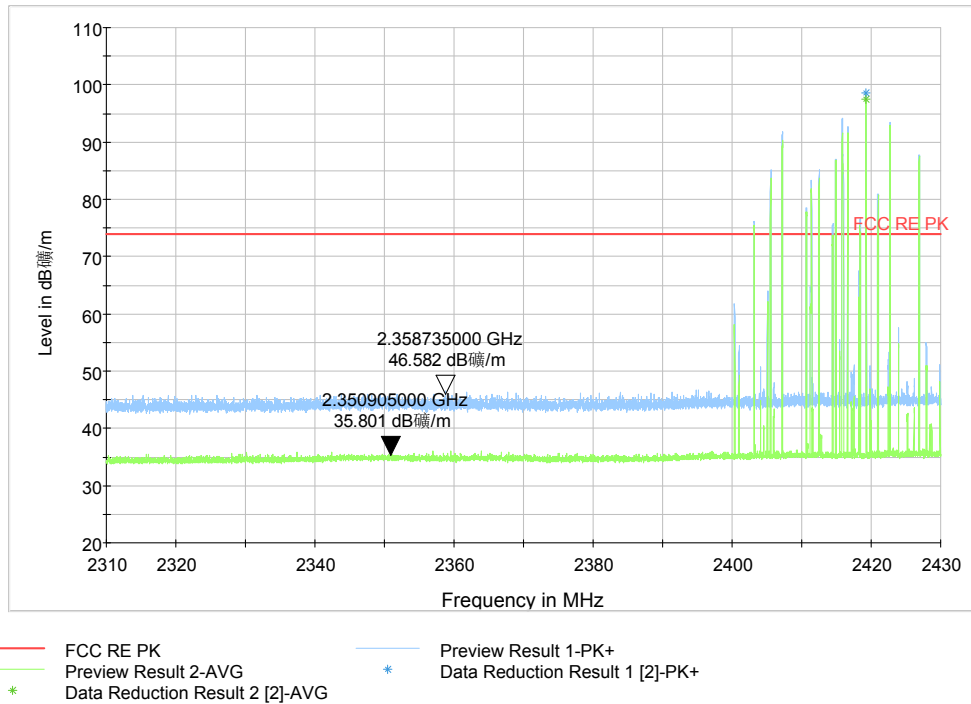
Note: The signal beyond the limit is carrier, a font (Level in dB μ V/m) in the test plot =(level in dBuV/m)



Higher band edge average-CH 78

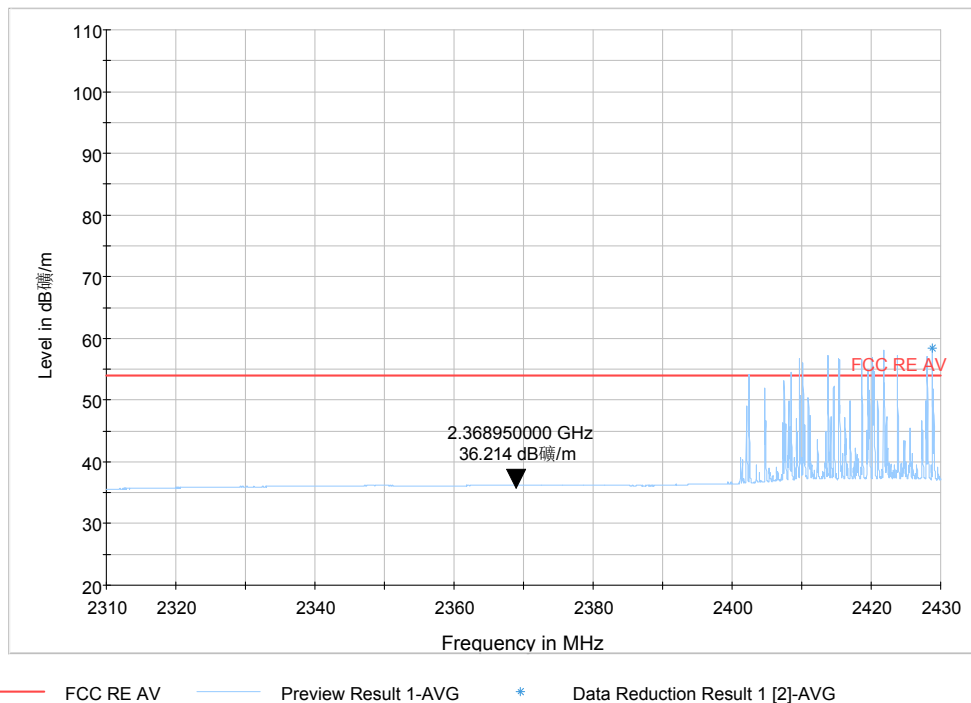
Note: The signal beyond the limit is carrier, a font (Level in dB μ V/m) in the test plot =(level in dBuV/m)

3DH5- Channel 0



lower band edge Peak-CH 0

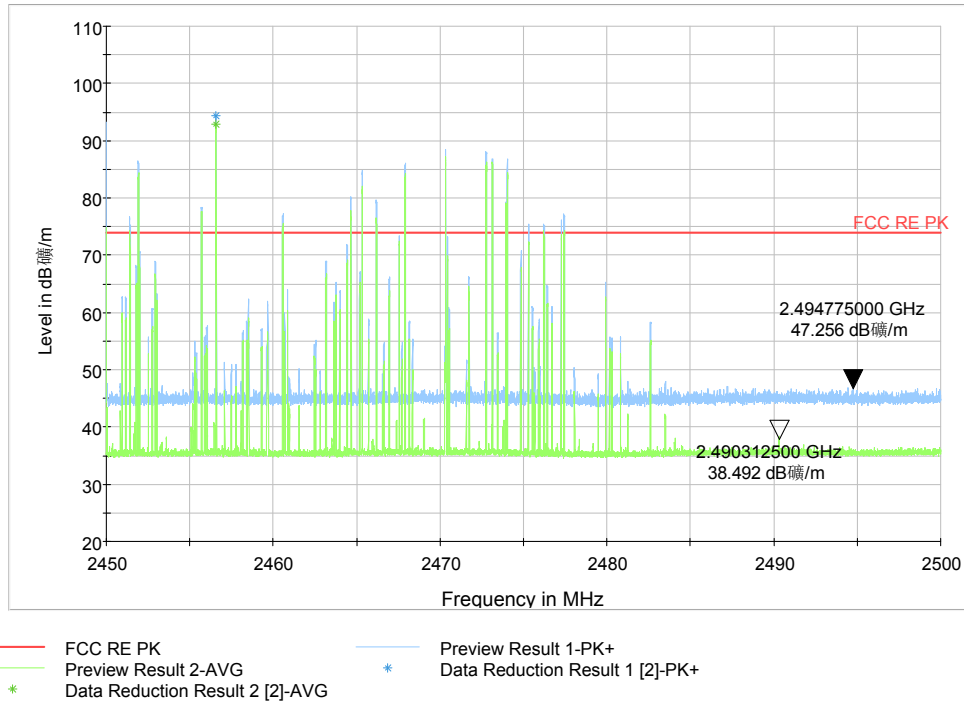
Note: The signal beyond the limit is carrier, a font ($\text{Level in dB}\frac{\mu\text{V}}{\text{m}}$) in the test plot =(level in dB μ V/m)



lower band edge average-CH 0

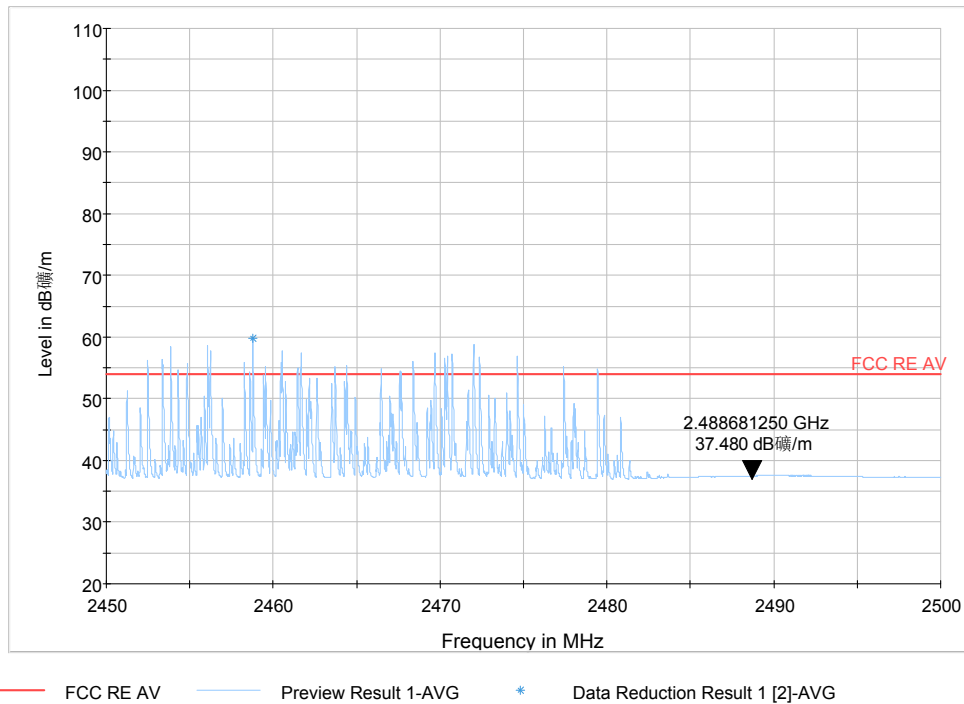
Note: The signal beyond the limit is carrier, a font ($\text{Level in dB}\frac{\mu\text{V}}{\text{m}}$) in the test plot =(level in dB μ V/m)

3DH5- Channel 78



Higher band edge Peak-CH 78

Note: The signal beyond the limit is carrier, a font (Level in dB μ V/m) in the test plot =(level in dBuV/m)



Higher band edge average-CH 78

Note: The signal beyond the limit is carrier, a font (Level in dB μ V/m) in the test plot =(level in dBuV/m)

3.9. Number of hopping Frequency

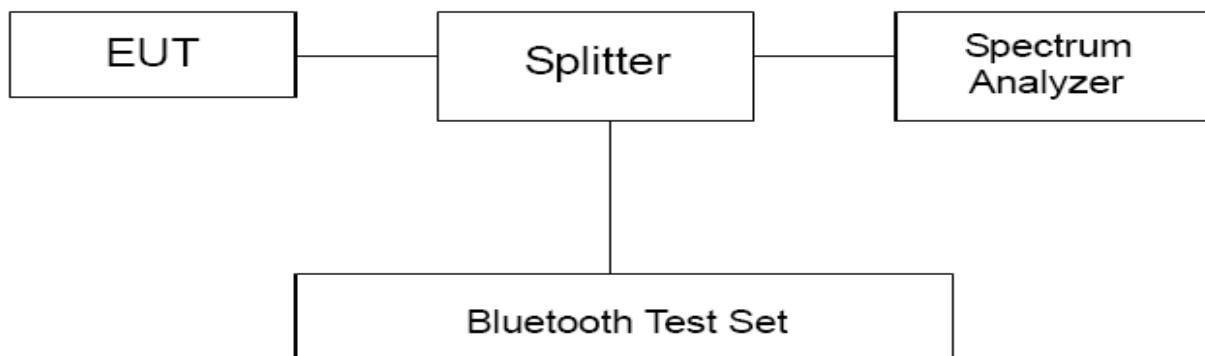
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. RBW is set to 1 MHz and VBW is set to 3 MHz on spectrum analyzer. Set EUT on Hopping on mode.

Test setup



Limits

Rule Part 15.247(a) (1) (iii) specifies that” Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels.”

Limits	$\geq$ 15 channels
--------	--------------------

Test Results:

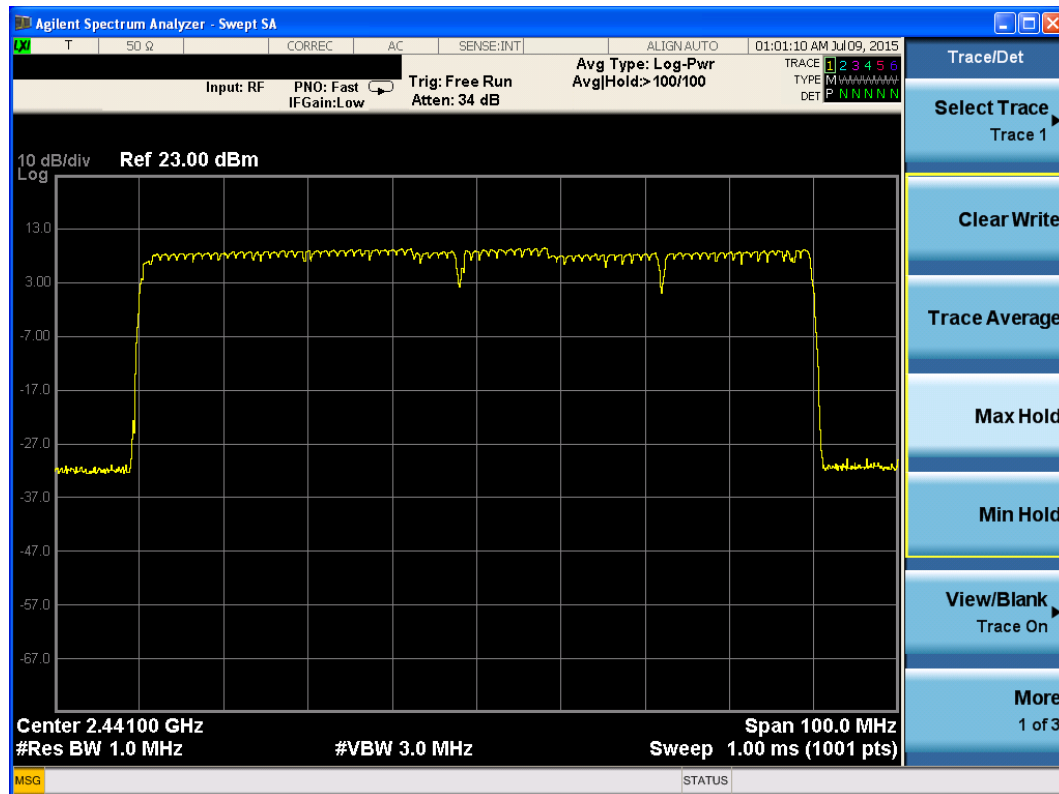
TA Technology (Shanghai) Co., Ltd.
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Right Ear
DH5

Number of hopping channels	conclusion
79	PASS



2400 MHz – 2483.5 MHz

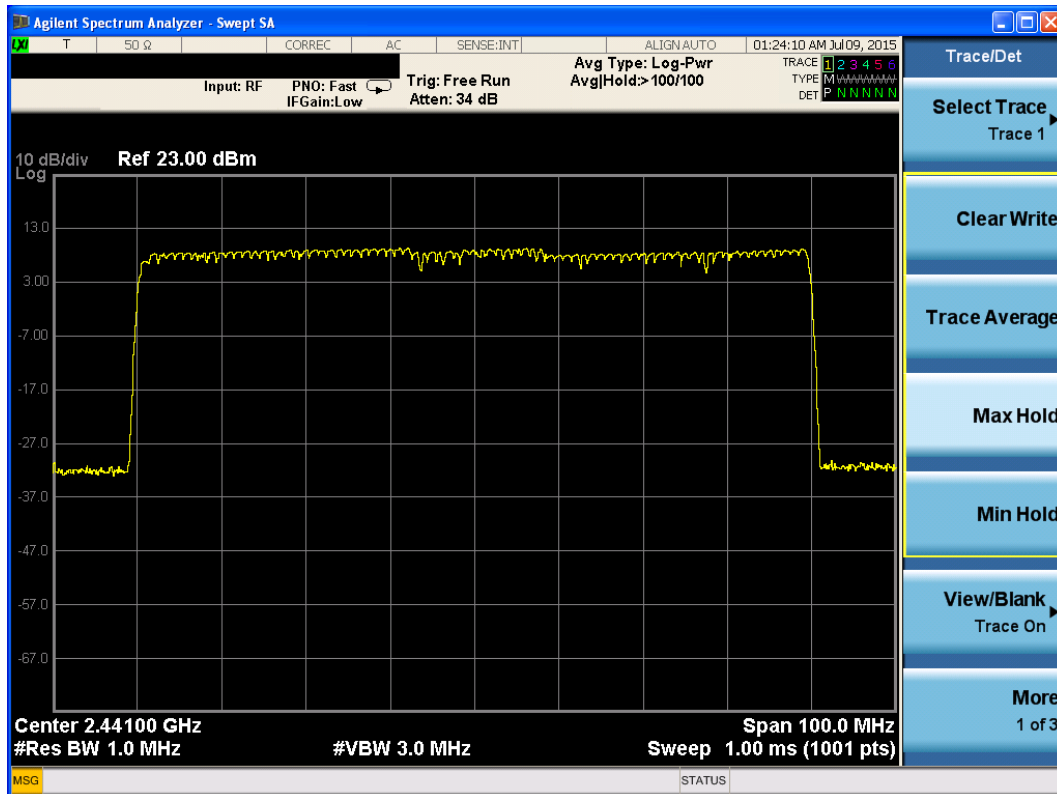
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2DH5

Number of hopping channels	conclusion
79	PASS



2400 MHz – 2483.5 MHz

2400 MHz – 2483.5 MHz

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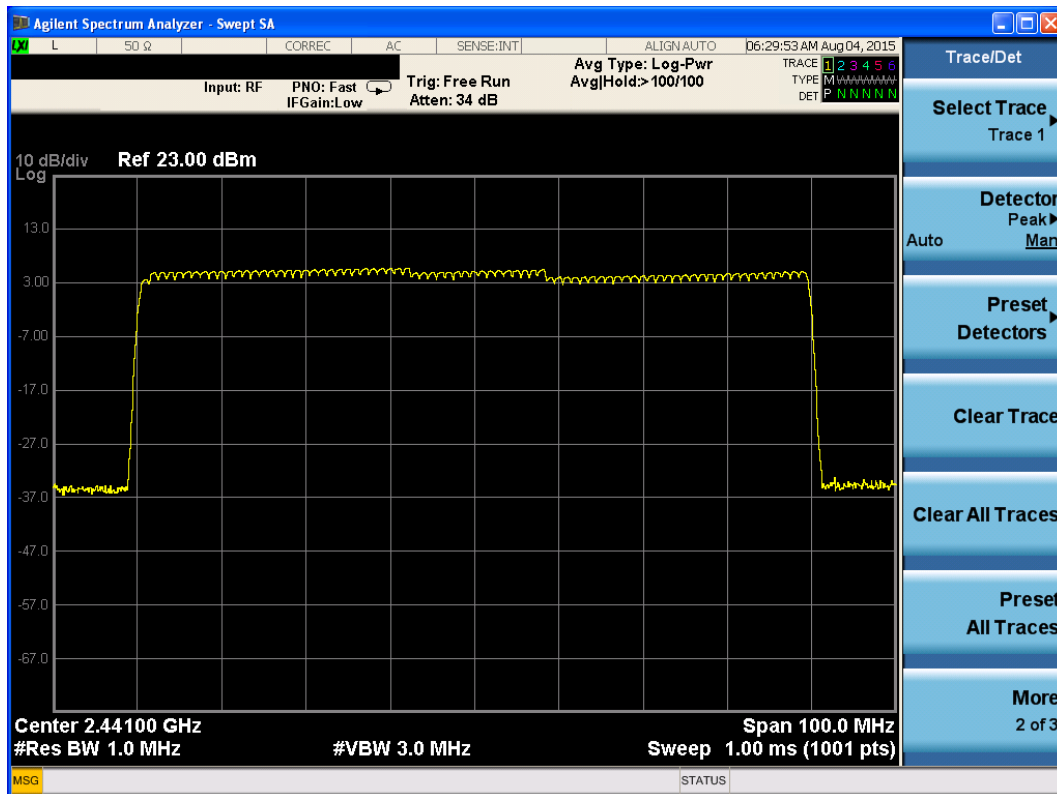
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Left Ear

DH5

Number of hopping channels	conclusion
79	PASS



2400 MHz – 2483.5 MHz

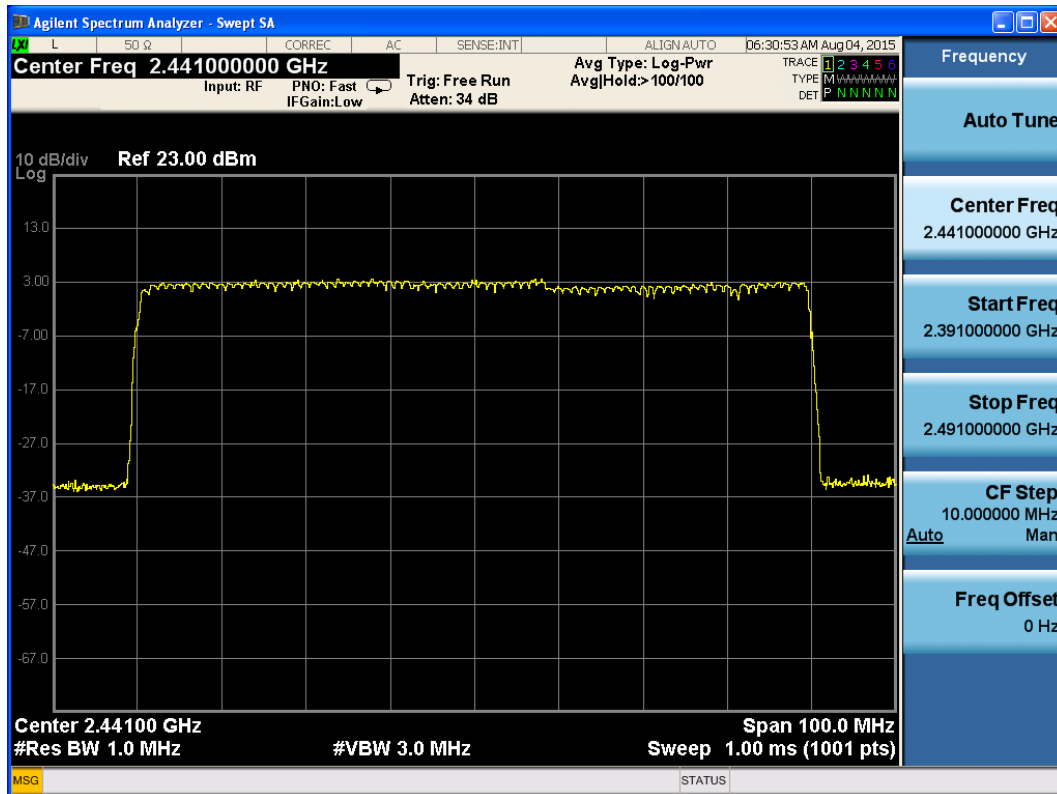
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2DH5

Number of hopping channels	conclusion
79	PASS



2400 MHz – 2483.5 MHz

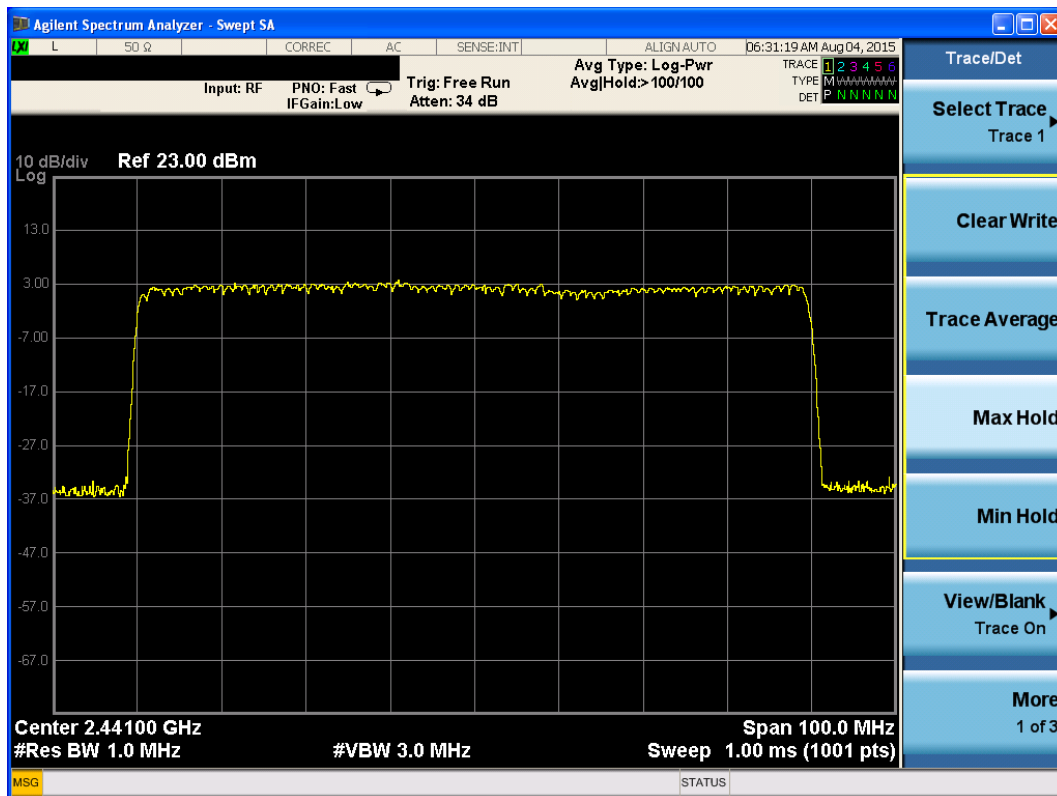
TA Technology (Shanghai) Co., Ltd.
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3DH5

Number of hopping channels	conclusion
79	PASS



2400 MHz – 2483.5 MHz

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3.10. Spurious RF Conducted Emissions

Ambient condition

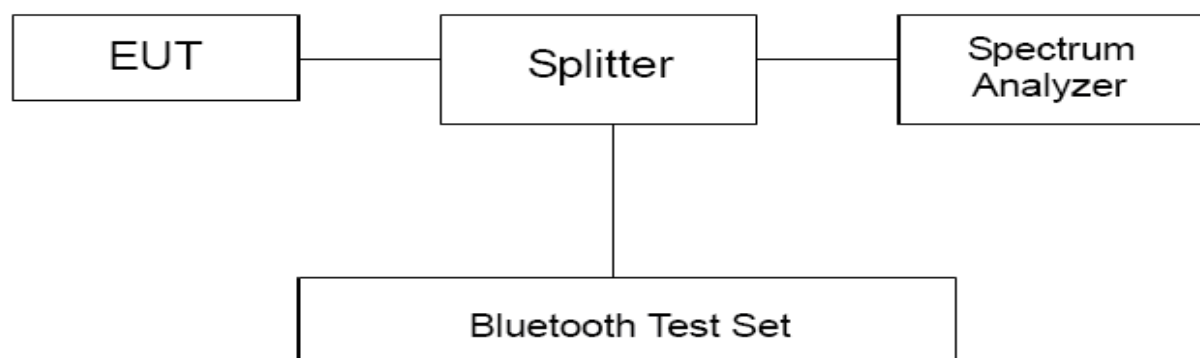
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. RBW and VBW are set to 100 kHz, Sweep is set to ATUO.

The test is in transmitting mode.

Test setup



Limits

Rule Part 15.247(d) pacifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.”

Mode	Carrier frequency (MHz)	Reference value (dBm)	Limit
DH5	2402	5.2	≤ -14.8
	2441	6.8	≤ -13.2
	2480	6.2	≤ -13.8
EDR (3DH5)	2402	4.8	≤ -15.2
	2441	6.6	≤ -13.4
	2480	5.9	≤ -14.1

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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

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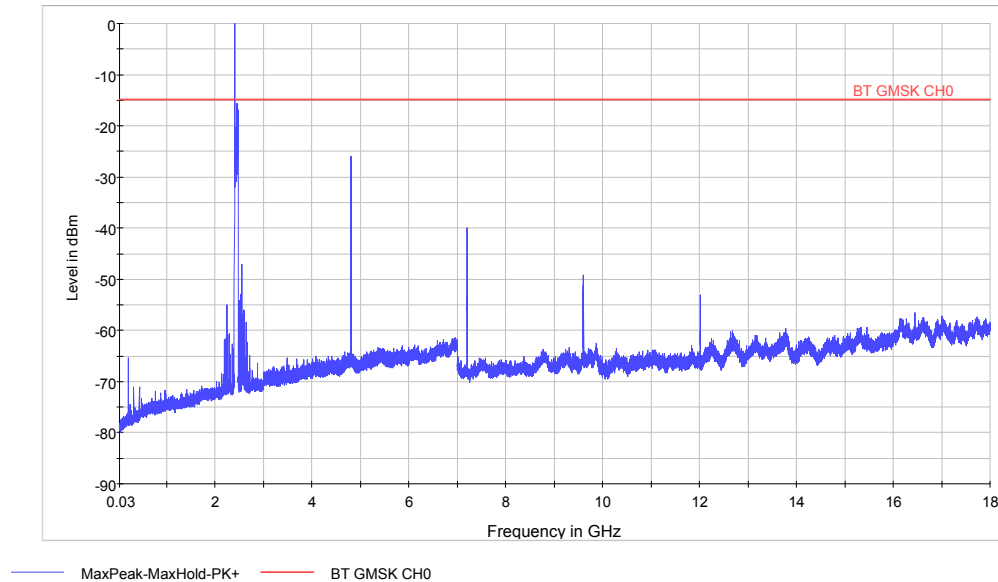
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Test Results:

Right Ear

DH5-CH0:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2402

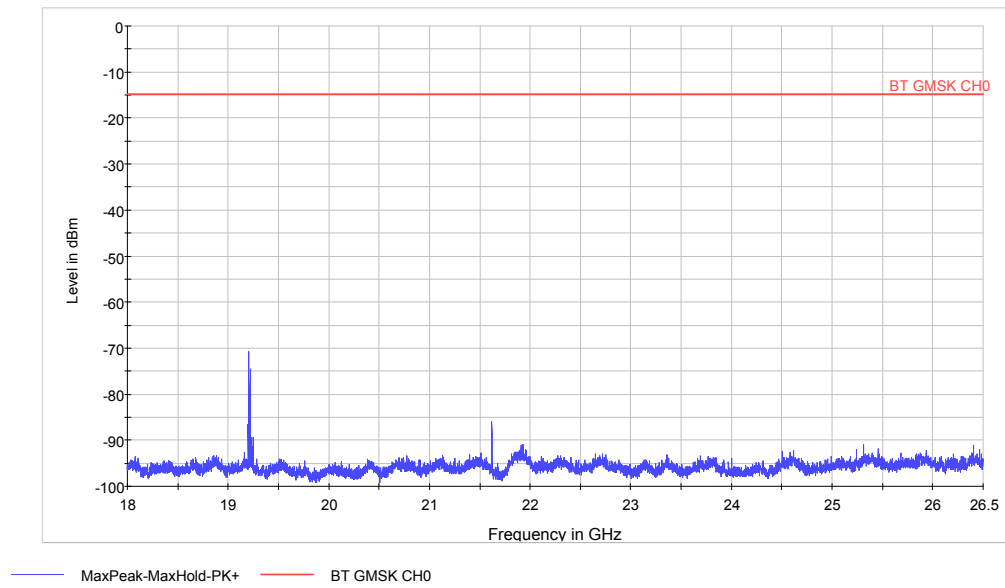
Spurious RF conducted emissions from 30MHz to 18GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4803.8	-26.03	-14.80	11.23
3	7206.0	-39.94	-14.80	25.14
4	9601.5	-49.13	-14.80	34.33
5	12010.0	-53.15	-14.80	38.35

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Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19202.8	-70.84	-14.80	56.04
9	21621.0	-86.02	-14.80	71.22

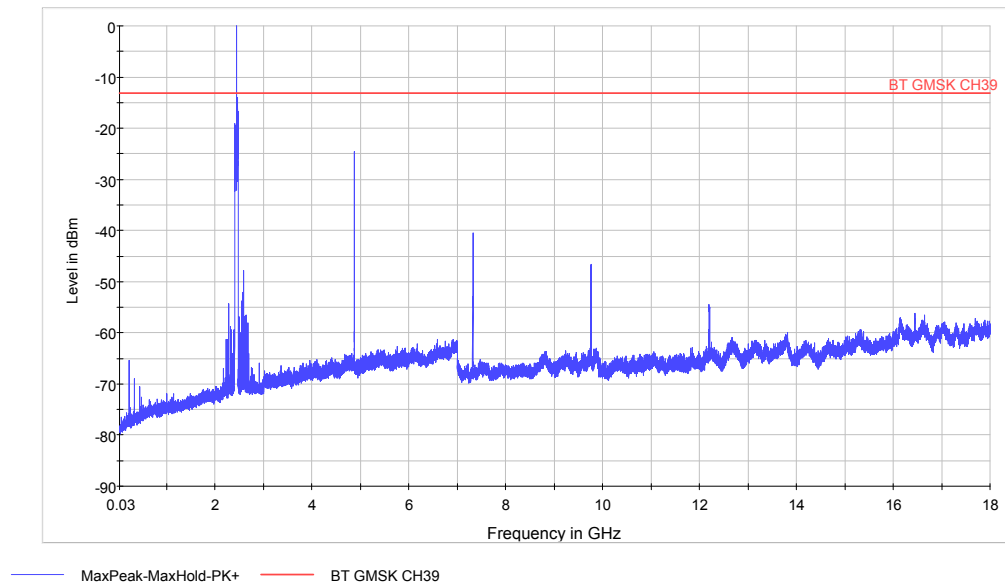
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DH5-CH39:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2441

Spurious RF conducted emissions from 30MHz to 18GHz

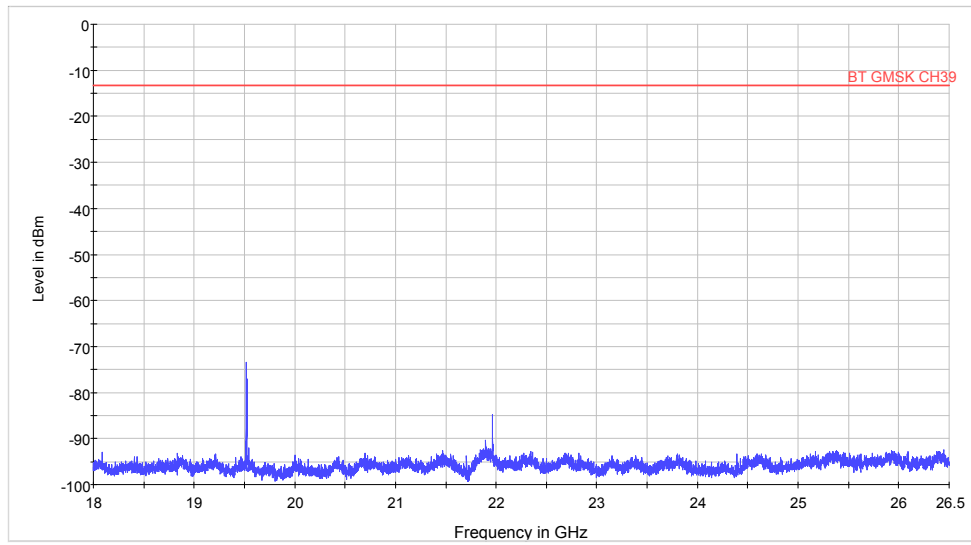
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4882.1	-24.66	-13.20	11.46
3	7323.0	-40.40	-13.20	27.20
4	9763.5	-46.72	-13.20	33.52
5	12204.0	-54.57	-13.20	41.37

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Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19515.1	-74.32	-13.20	61.12
9	21964.2	-84.77	-13.20	71.57

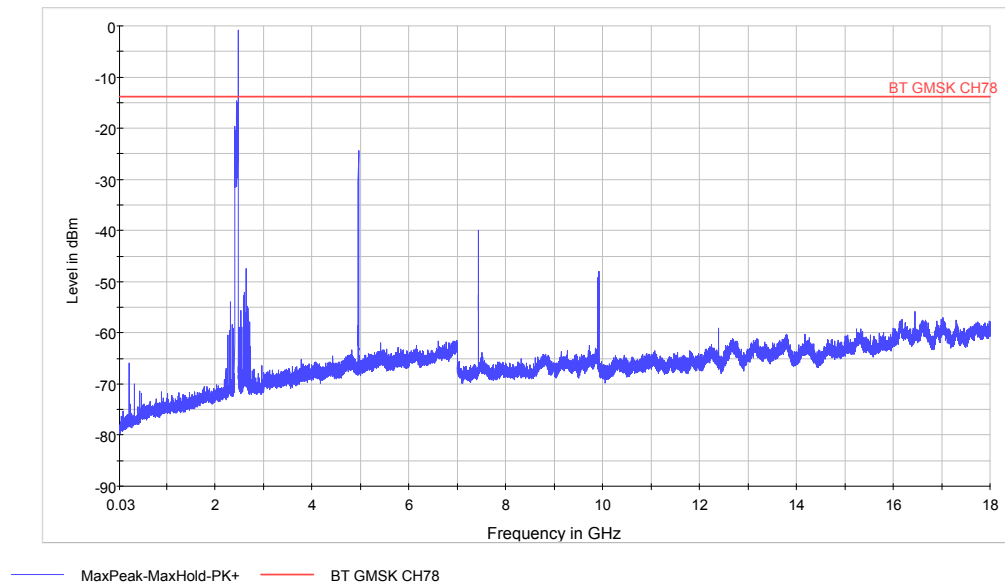
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DH5-CH78:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2480

Spurious RF conducted emissions from 30MHz to 18GHz

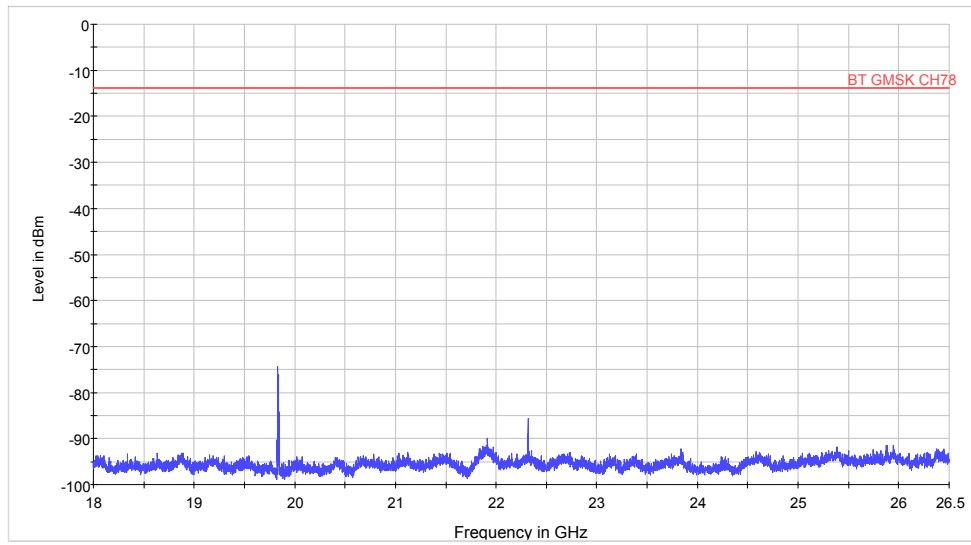
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4960.1	-24.48	-13.80	10.68
3	7440.0	-40.05	-13.80	26.25
4	9919.0	-47.96	-13.80	34.16

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Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19827.5	-77.47	-13.80	63.67
9	22315.9	-85.60	-13.80	71.80

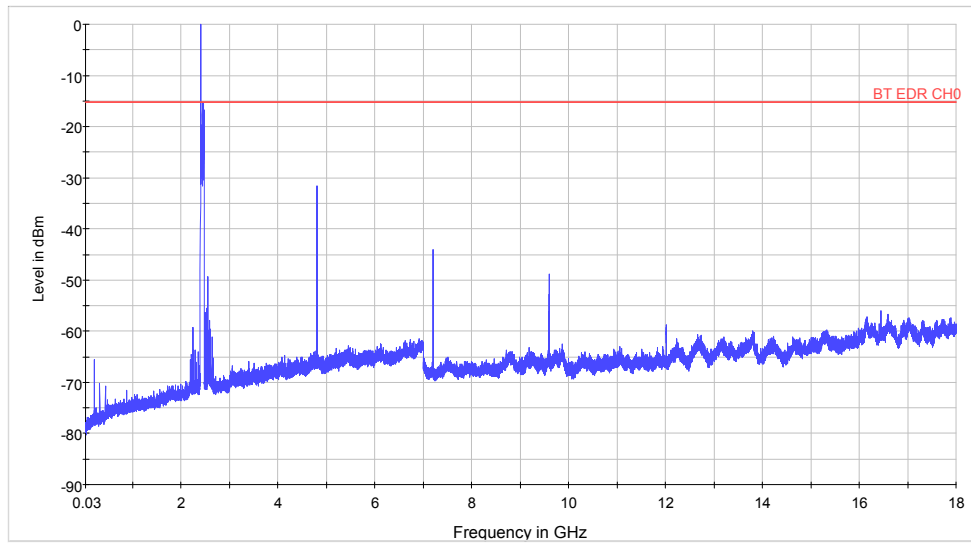
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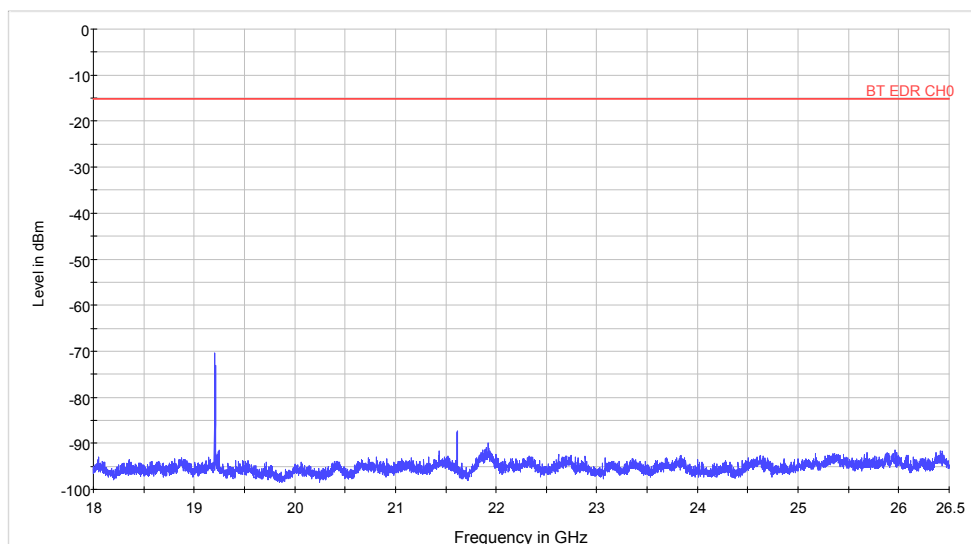
3DH5-CH0:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2402

Spurious RF conducted emissions from 30MHz to 18GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4803.4	-31.67	-15.20	16.47
3	7206.0	-44.10	-15.20	28.90
4	96015.0	-48.91	-15.20	33.71



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19202.8	-70.36	-15.20	55.16
9	21613.6	-87.20	-15.20	72.00

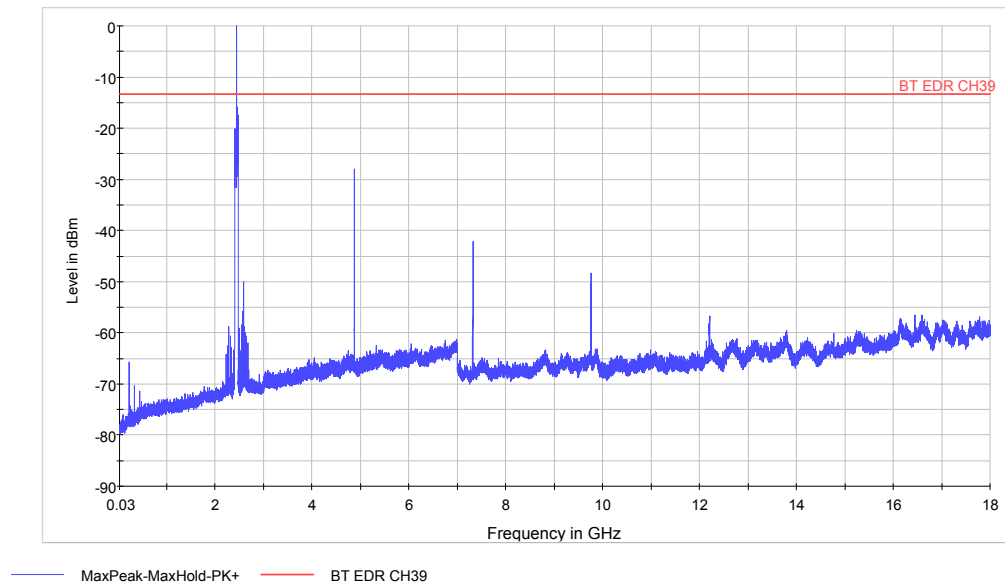
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3DH5 -CH39:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2441

Spurious RF conducted emissions from 30MHz to 18GHz

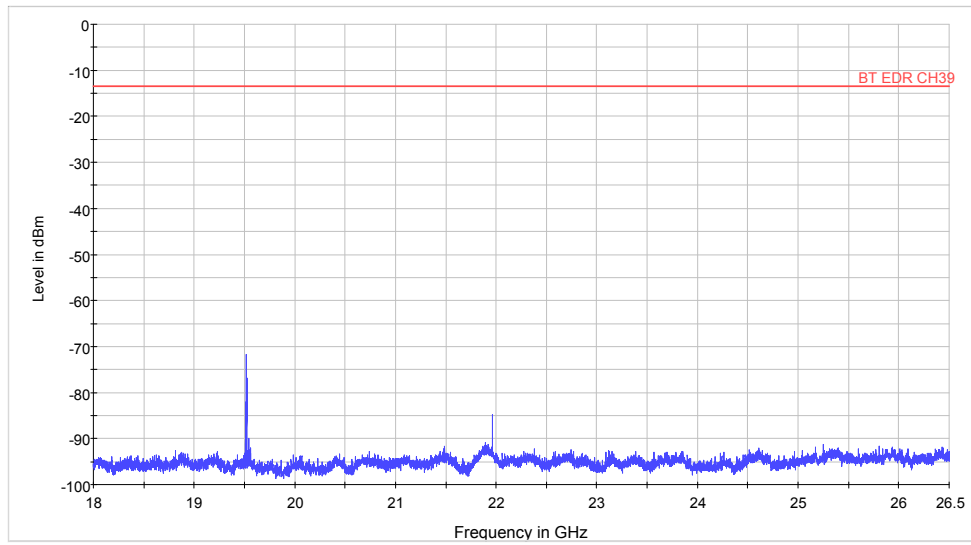
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4882.1	-28.00	-13.40	14.60
3	7323.0	-42.23	-13.40	28.83
4	9757.5	-48.41	-13.40	35.01

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MaxPeak-MaxHold-PK+ BT EDR CH39

Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19515.0	-71.68	-13.40	58.28
9	21964.0	-84.90	-13.40	71.50

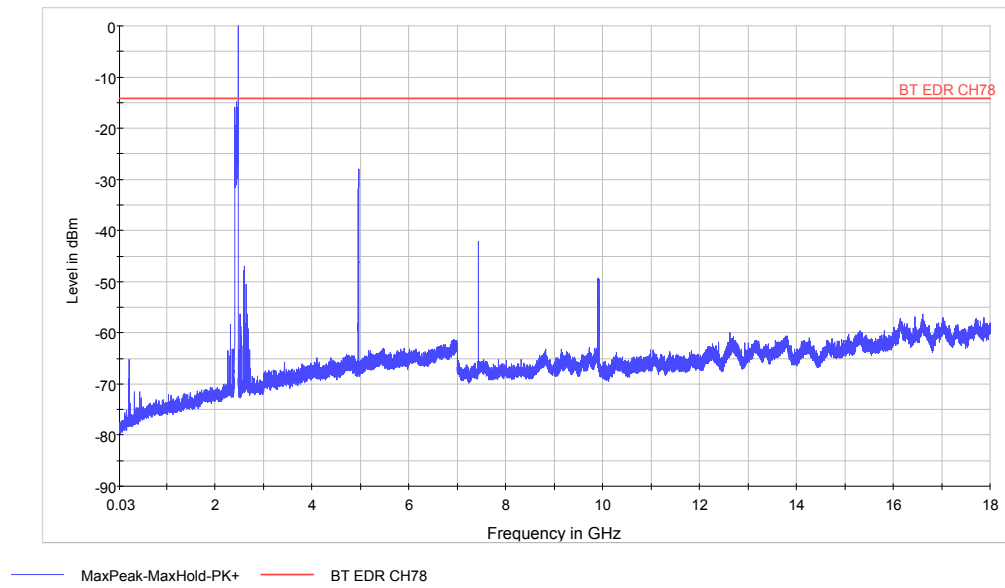
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3DH5 -CH78:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2480

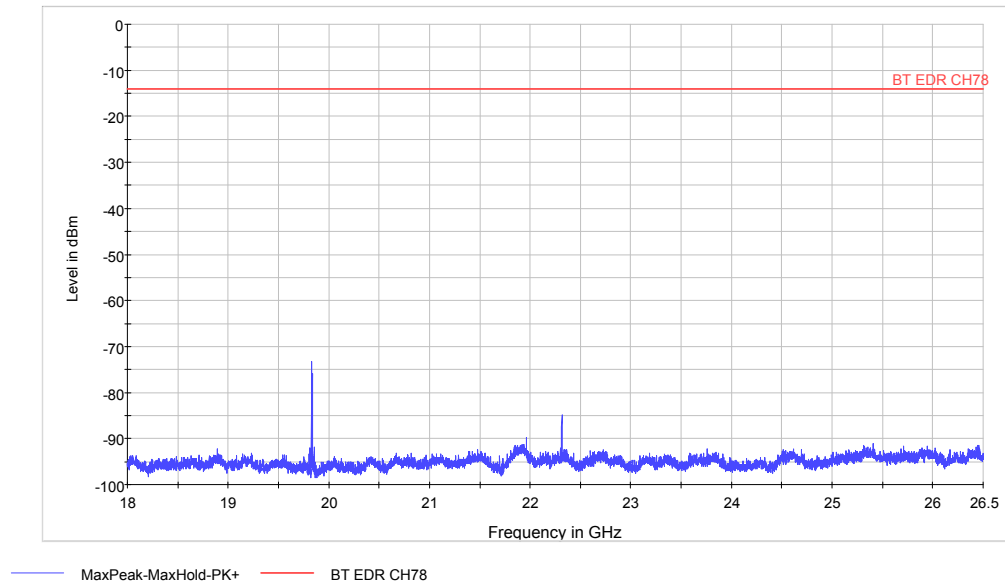
Spurious RF conducted emissions from 30MHz to 18GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4960.1	-27.93	-14.10	13.83
3	7871.3	-67.51	-14.10	53.41
4	9913.5	-49.39	-14.40	35.29

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Spurious RF conducted emissions from 18GHz to 26.5GHz

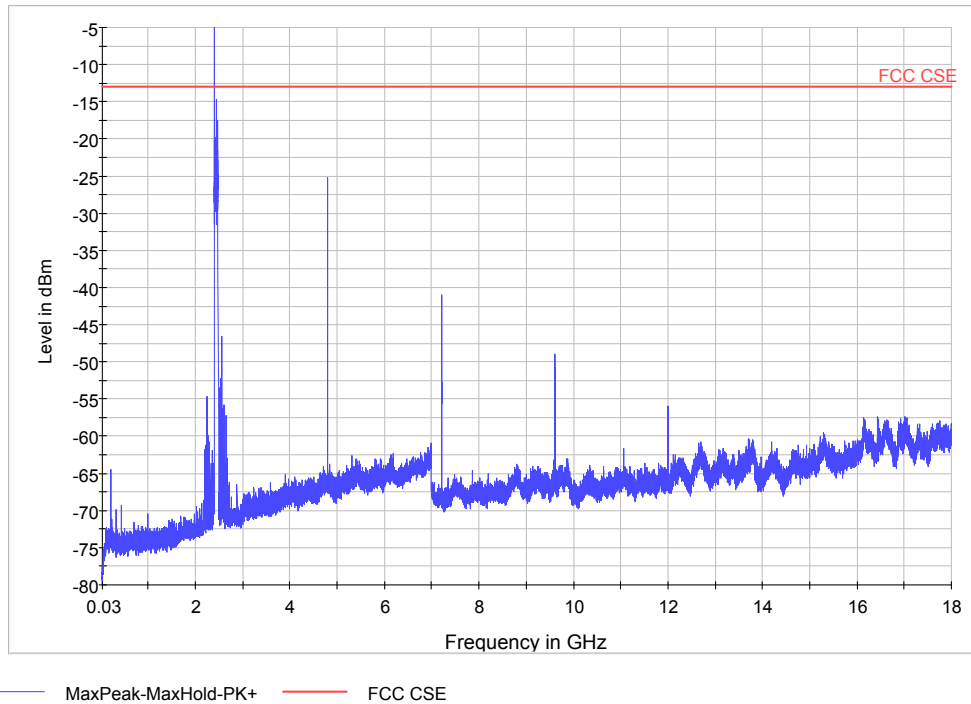
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19827.5	-73.24	-14.10	59.14
9	22315.9	-84.80	-14.10	70.70

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Left Ear
DH5-CH0:



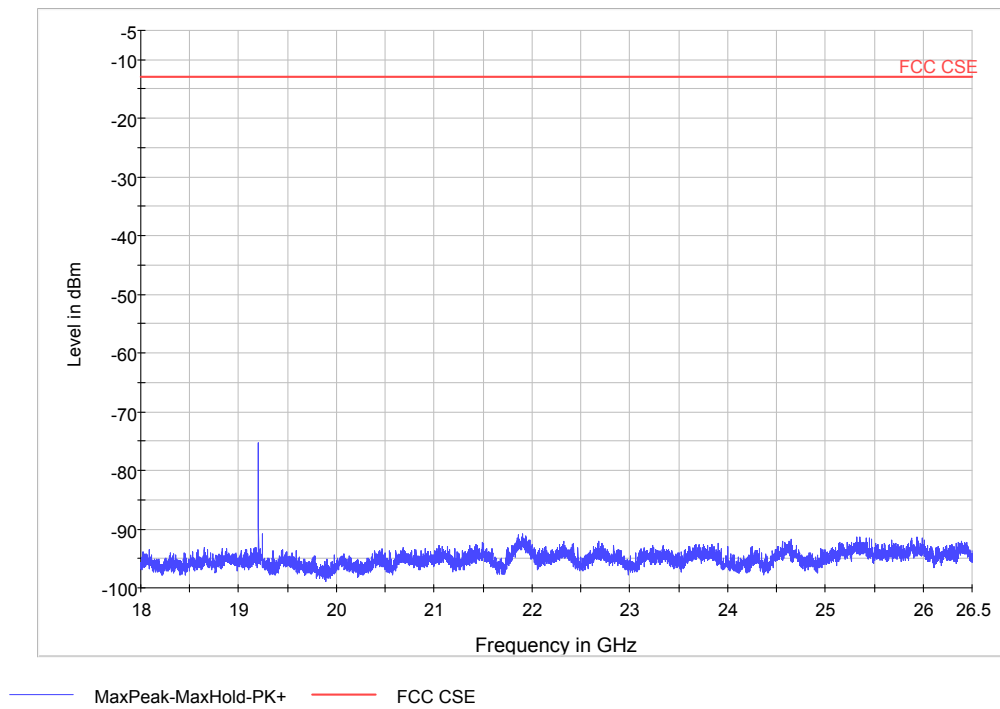
Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2402
Spurious RF conducted emissions from 30MHz to 18GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4804.1	-25.23	-14.80	10.43
3	7206.0	-40.96	-14.80	26.16
4	9601.5	-49.01	-14.80	34.21
5	12009.5	-55.88	-14.80	41.08

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Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19203.8	-75.29	-14.80	60.49

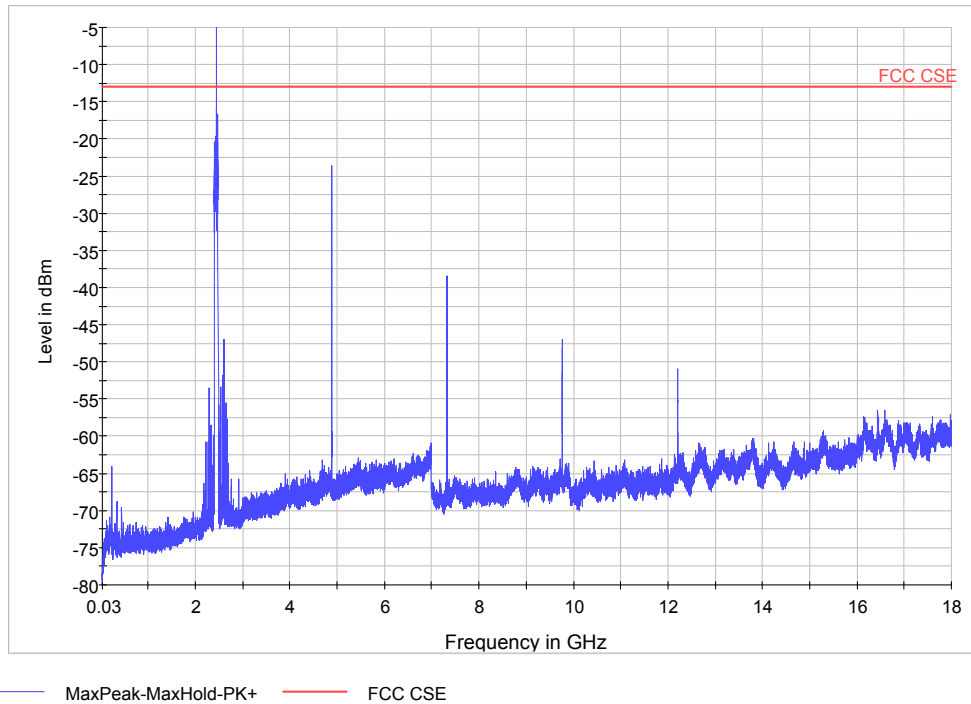
Note: The other Spurious RF conducted emissions level is no more than noise floor.

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DH5-CH39:



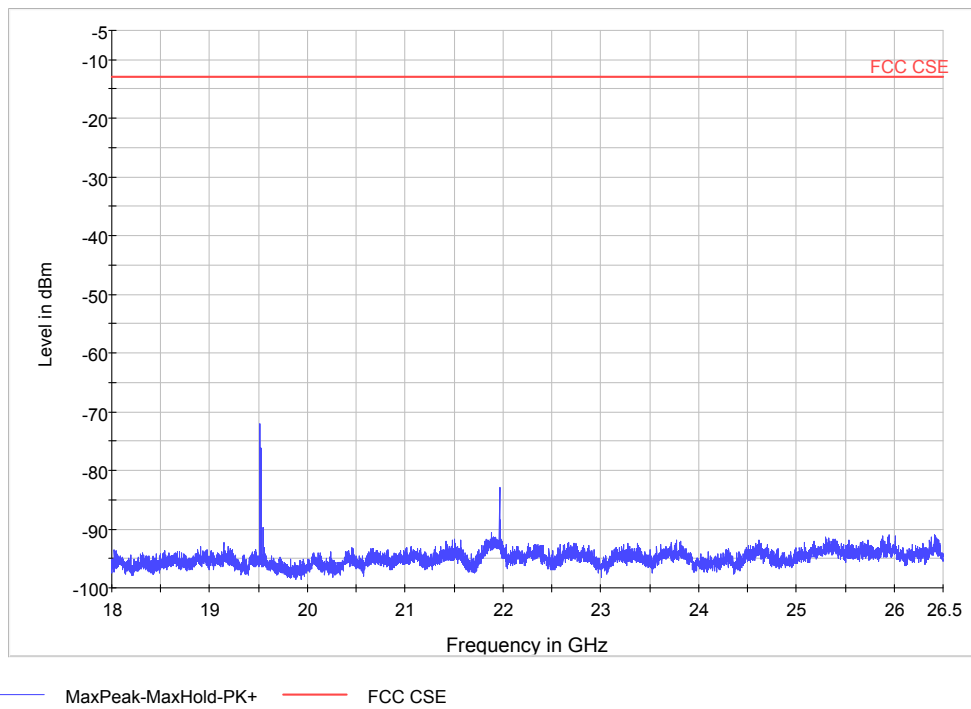
Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2441
Spurious RF conducted emissions from 30MHz to 18GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4882.1	-23.64	-13.20	10.44
3	7322.2	-38.47	-13.20	25.27
4	9763.5	-47.03	-13.20	33.83
5	12205.0	-50.52	-13.20	37.32

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Spurious RF conducted emissions from 18GHz to 26.5GHz

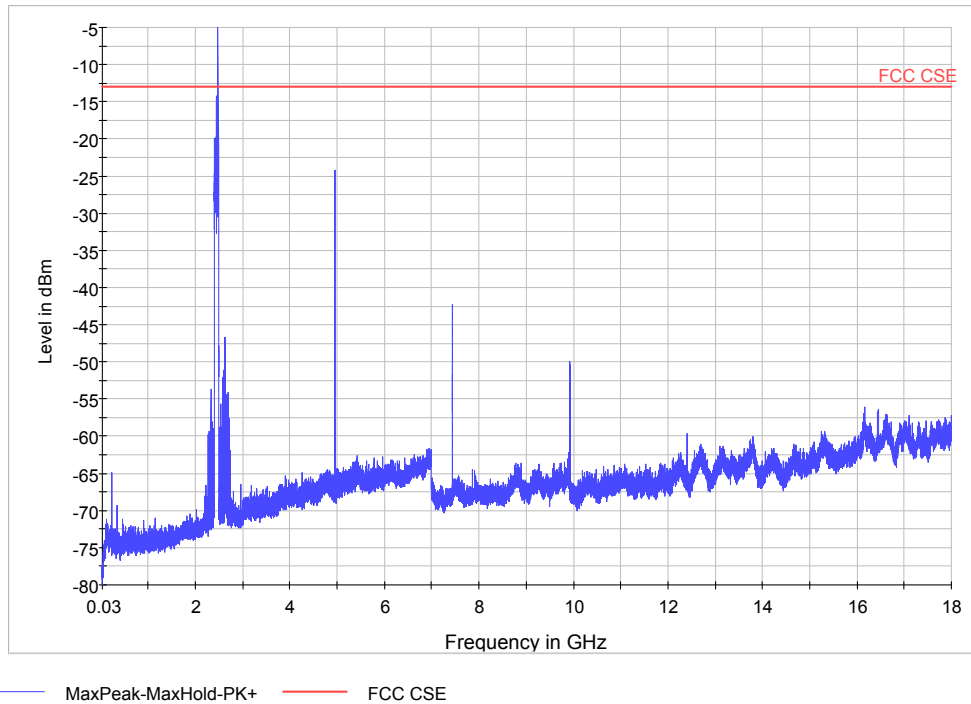
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19515.0	-72.12	-13.20	58.92
9	21964.2	-86.87	-13.20	73.67

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DH5-CH78:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2480

Spurious RF conducted emissions from 30MHz to 18GHz

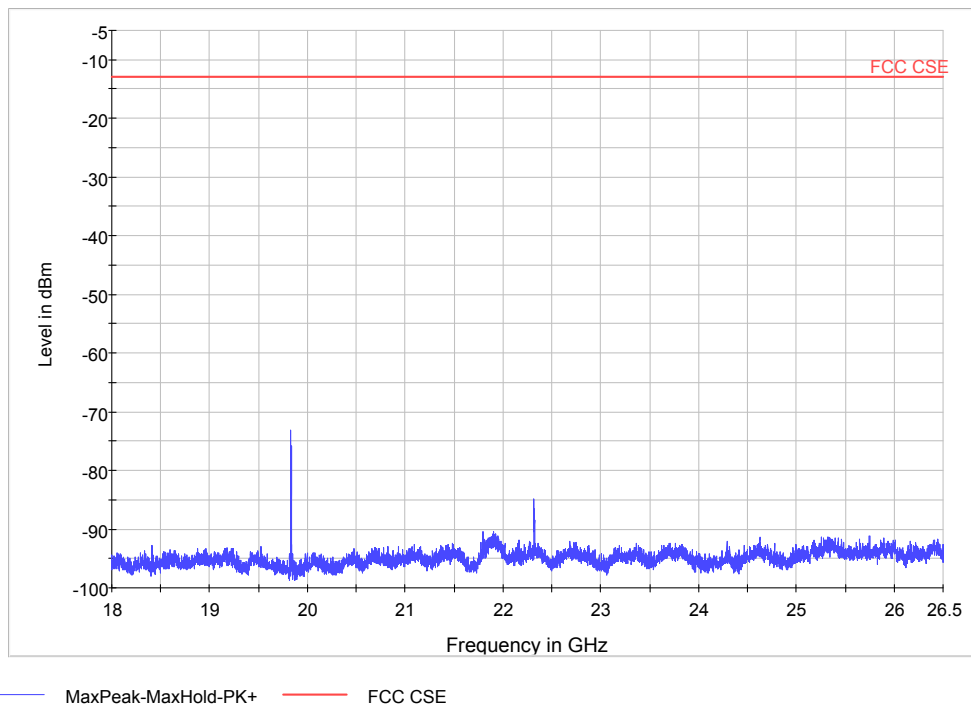
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4960.1	-24.22	-13.80	10.42
3	7440.0	-42.24	-13.80	28.44
4	9919.0	-50.09	-13.80	36.29

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Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19827.5	-73.23	-13.80	59.43
9	22315.9	-84.82	-13.80	71.02

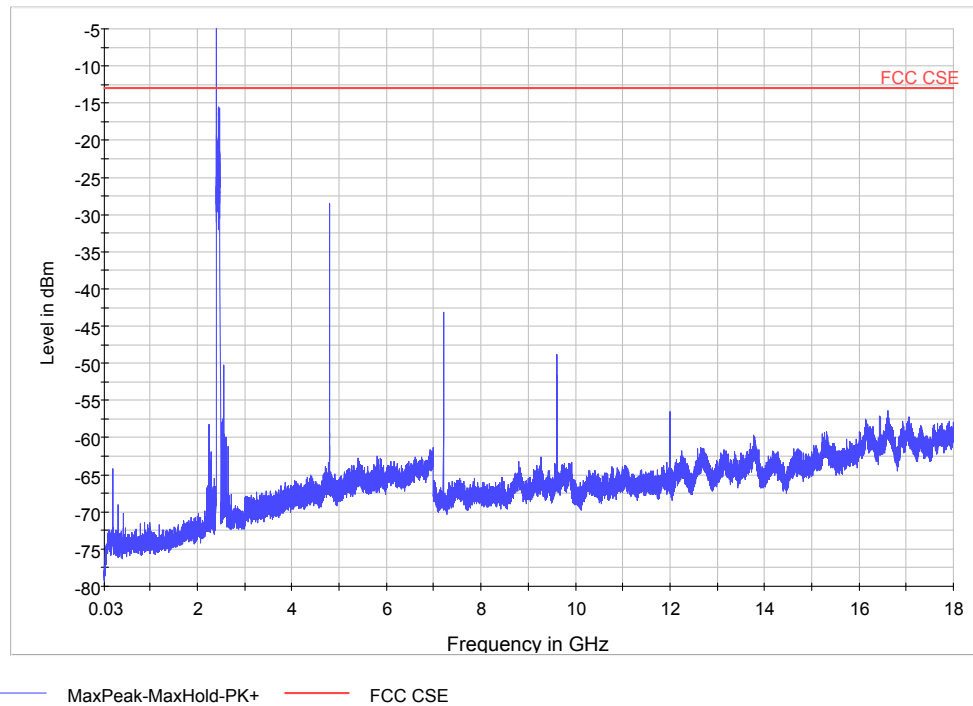
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3DH5-CH0:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2402

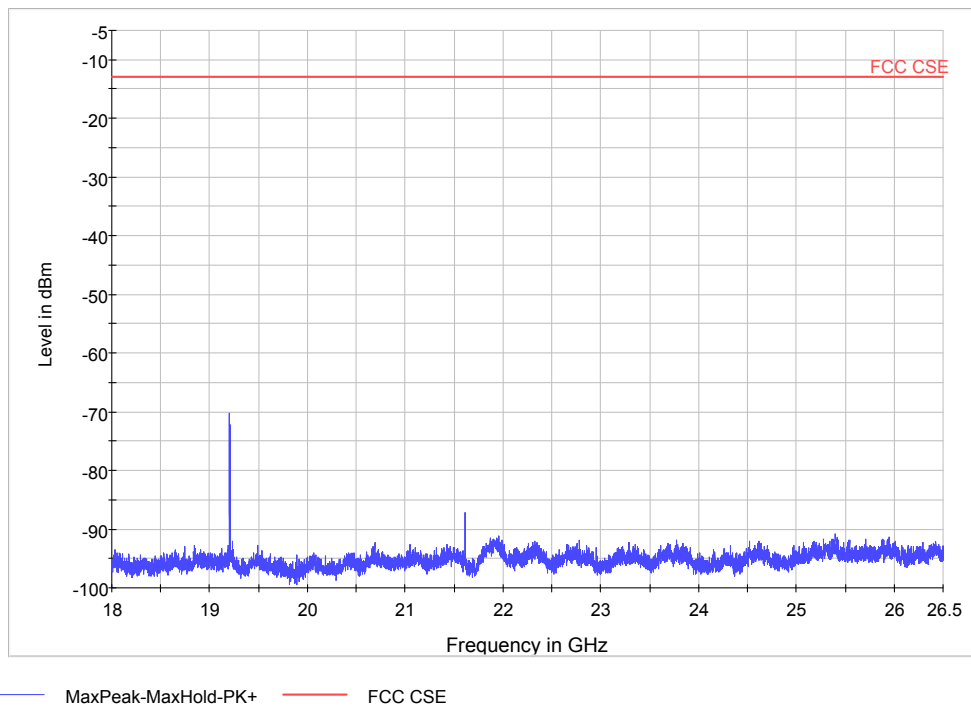
Spurious RF conducted emissions from 30MHz to 18GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4804.1	-28.55	-15.20	13.35
3	7206.0	-43.20	-15.20	28.00
4	96015.0	-48.83	-15.20	33.63

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Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19202.8	-70.18	-15.20	54.98
9	21613.6	-87.23	-15.20	72.03

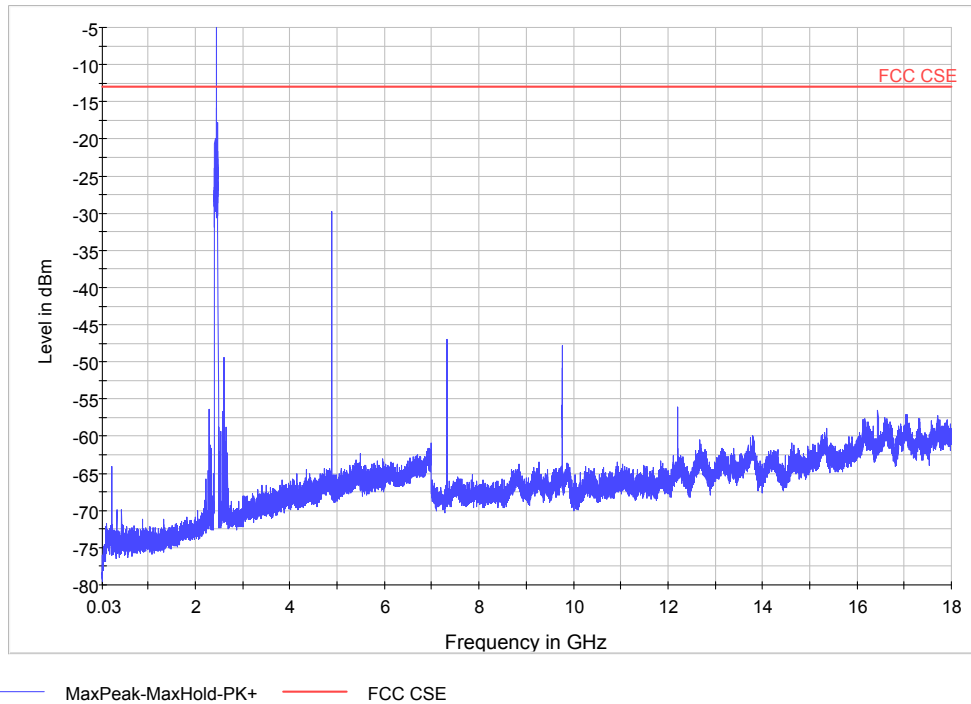
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3DH5 -CH39:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2441

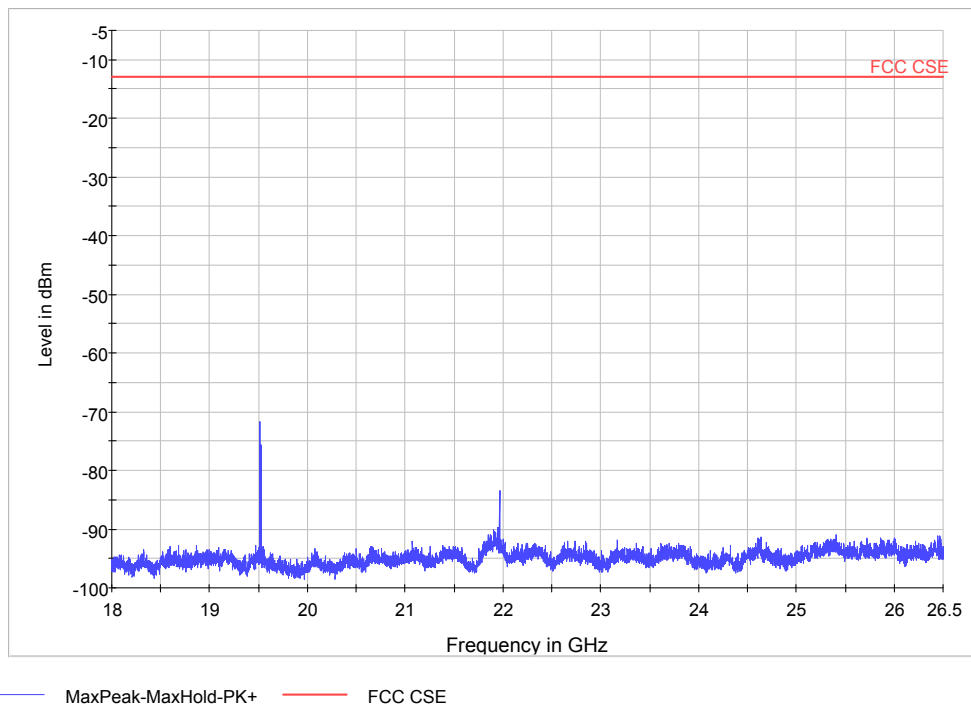
Spurious RF conducted emissions from 30MHz to 18GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4881.8	-29.79	-13.40	16.39
3	7322.0	-47.02	-13.40	33.62
4	9757.5	-47.90	-13.40	34.50
5	12205.0	-56.16	-13.40	42.76

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Spurious RF conducted emissions from 18GHz to 26.5GHz

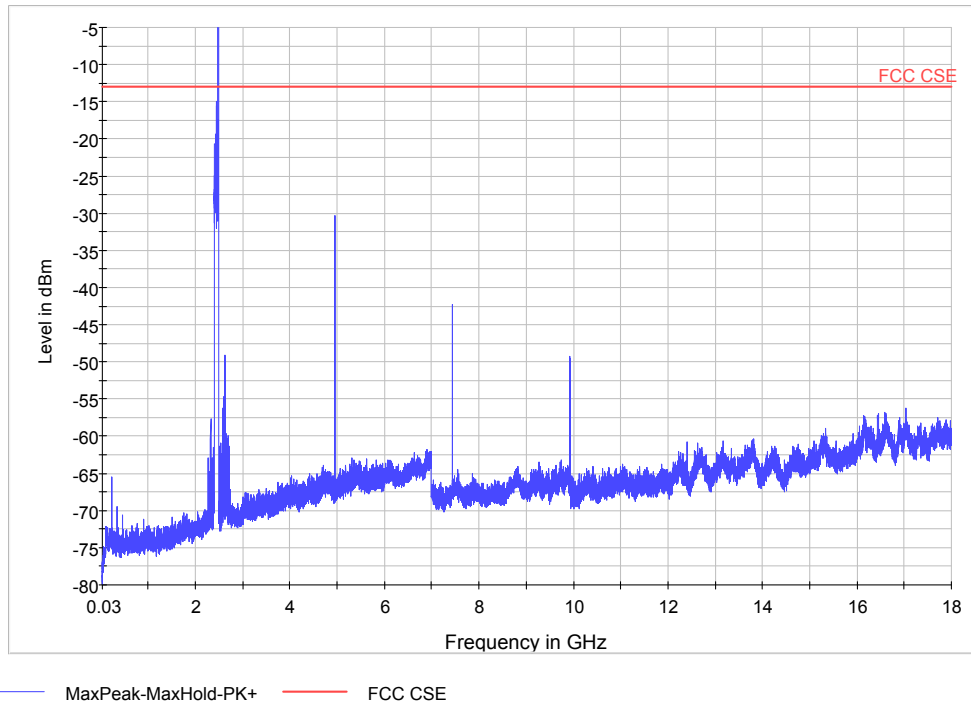
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19515.0	-71.66	-13.40	58.26
9	21964.2	-83.49	-13.40	70.09

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3DH5 -CH78:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2480

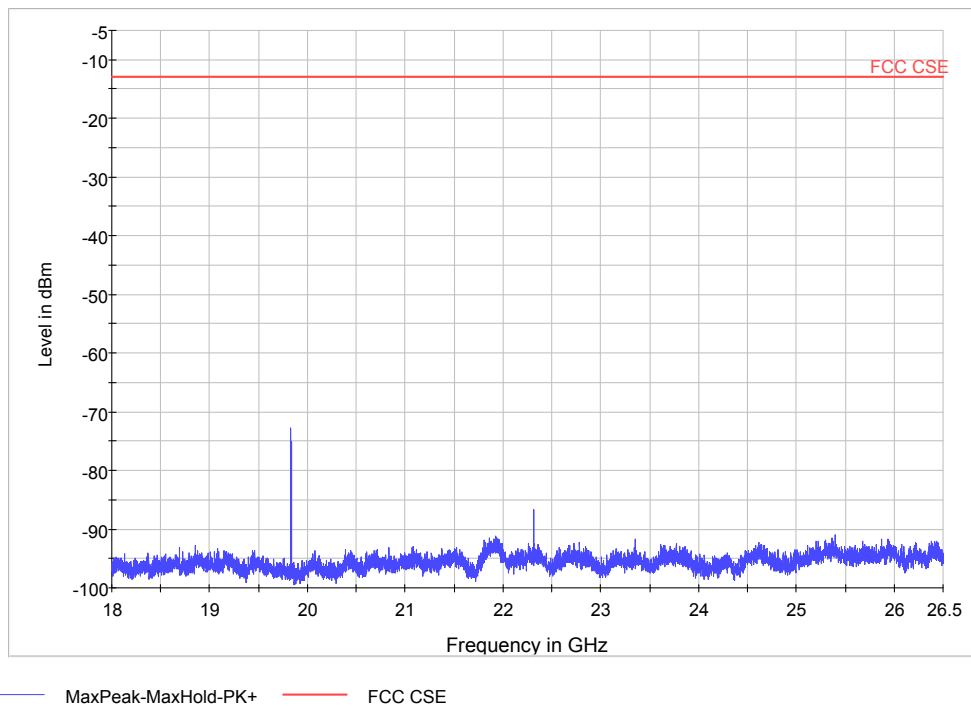
Spurious RF conducted emissions from 30MHz to 18GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4960.1	-30.31	-14.10	16.21
3	7440.0	-42.32	-14.10	28.22
4	9913.5	-49.20	-14.40	35.10

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Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19827.5	-72.77	-14.10	58.67
9	22315.9	-86.75	-14.10	72.65

3.11. Radiates Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	102.5kPa

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.4-2014. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.

Sweep the whole frequency band through the range from 9 kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, below 30MHz, the center of the loop shall be 1 meters; above 30MHz, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz(detector: Peak and Average):

RBW=1MHz VBW=3MHz/ Sweep=AUTO

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded. Then this mode was measured in the following mode: EUT with cradle and EUT without cradle. The worst emission was found in EUT with cradle mode and the worst case was recorded.

The test is in transmitting mode.

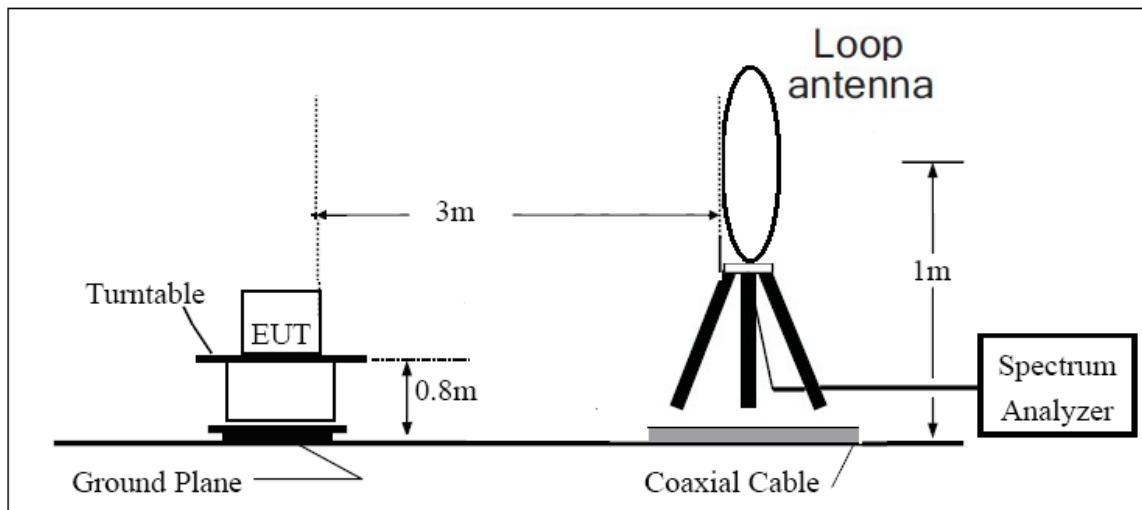
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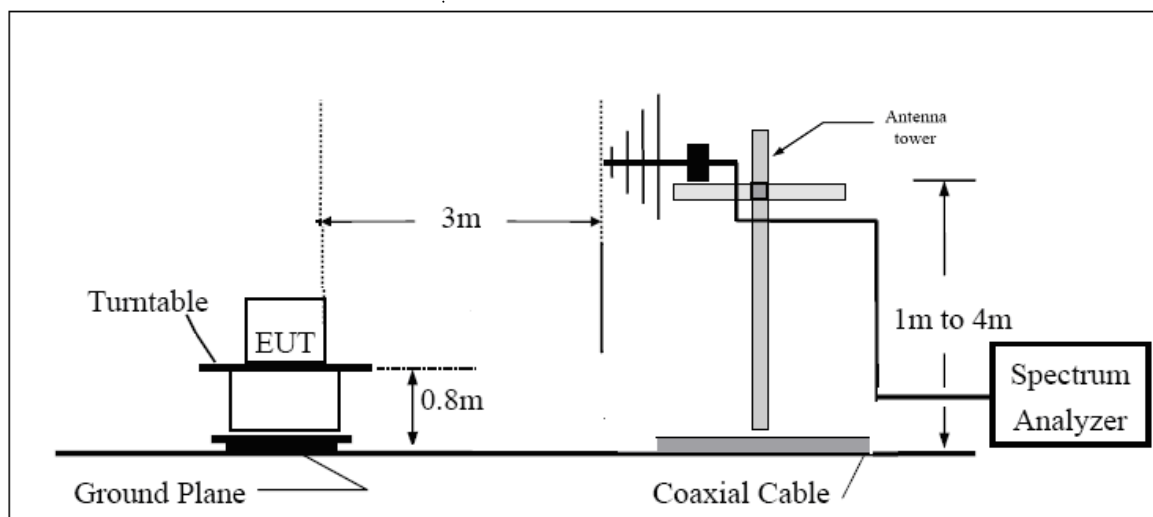
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Test setup

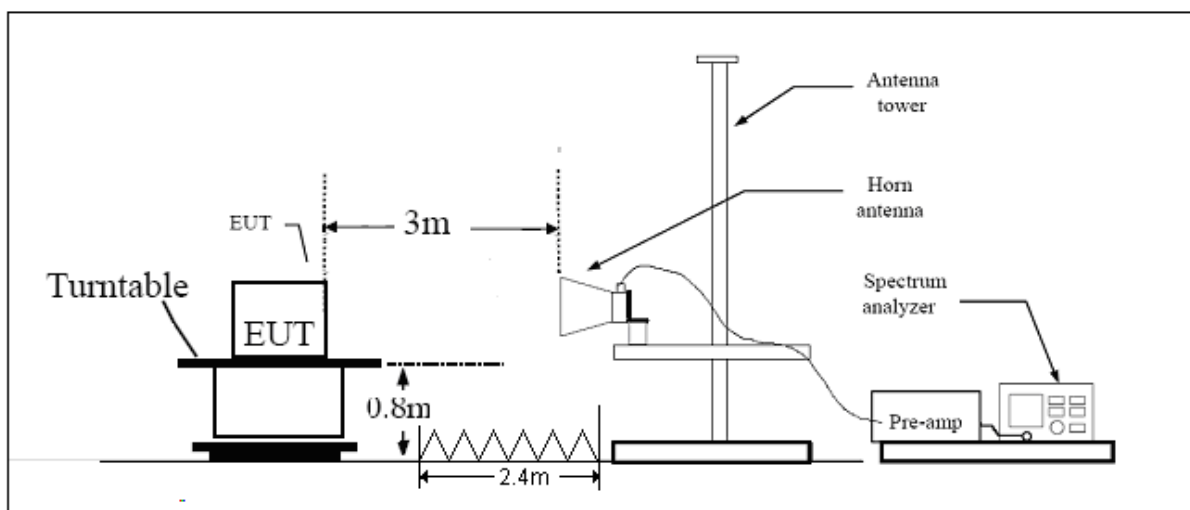
9KHz~~~ 30MHz



30MHz~~~ 1GHz



Above 1GHz



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Limits

Rule Part 15.247(d) specifies that “In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).”

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
Above 1GHz	3.68 dB

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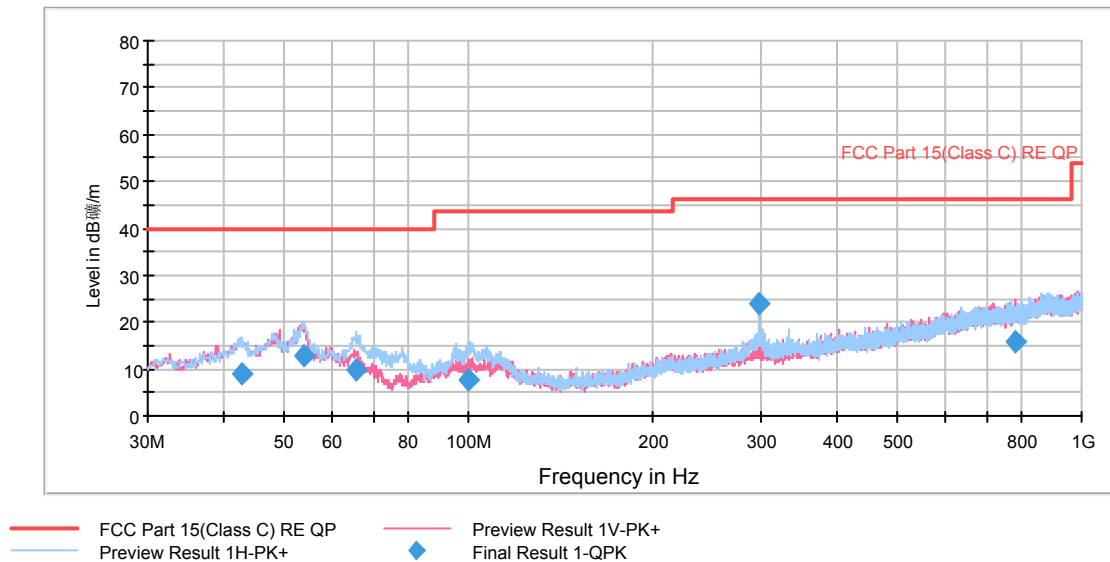
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Test result

DH5-Channel 0

RE 30M-1GHz QP



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
42.624422	9.0	125.0	H	122.0	-11.5	-20.5	31.0	40.0
54.073428	12.9	125.0	H	11.0	-8.0	-20.9	27.1	40.0
65.642434	10.0	125.0	H	340.0	-14.2	-24.2	30.0	40.0
100.070400	7.7	100.0	H	164.0	-17.6	-25.3	35.8	43.5
297.010750	23.8	121.0	H	202.0	0.4	-23.4	22.2	46.0
778.923500	16.0	120.0	V	93.0	1.3	-14.7	30.0	46.0

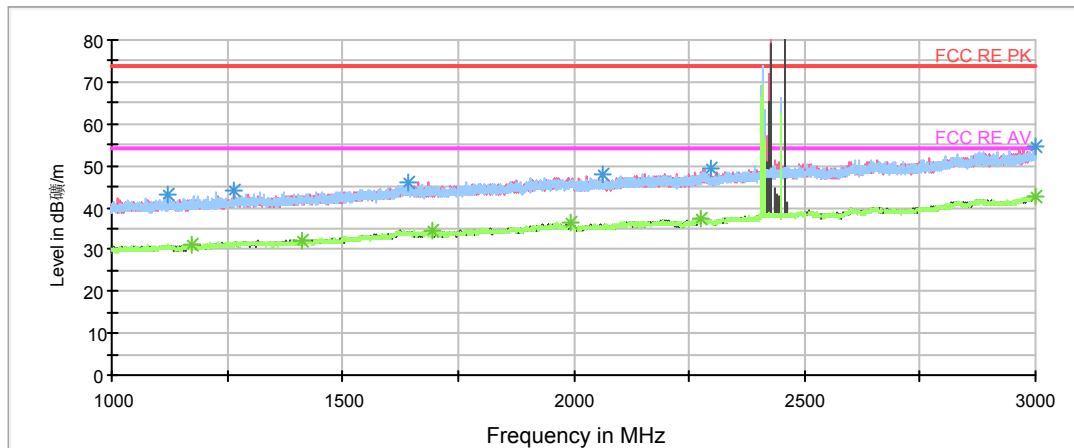
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RE 1G-3GHz PK+AV



— FCC RE PK
 — Preview Result 1V-PK+
 — Preview Result 1H-PK+
 * Data Reduction Result 1 [2]-PK+

— FCC RE AV
 — Preview Result 2V-AVG
 — Preview Result 2H-AVG
 * Data Reduction Result 2 [2]-AVG

Radiates Emission from 1GHz to 3GHz

Note: The signal beyond the limit is carrier. a font (Level in dB μ V/m) in the test plot =(level in dBuV/m)

Note: This graph displays the maximum values of horizontal and vertical by software

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1175.500000	41.6	100.0	V	349.0	33.6	-8.0	32.4	74
1412.000000	41.5	100.0	V	355.0	34.4	-7.1	32.5	74
1692.250000	43.6	100.0	H	3.0	38.6	-5.0	30.4	74
1994.250000	45.0	100.0	V	267.0	41.8	-3.2	29.0	74
2277.500000	46.8	100.0	V	0.0	45.4	-1.4	27.2	74
2998.250000	53.3	100.0	V	349.0	51.0	-2.3	20.7	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1175.500000	31.1	100.0	V	349.0	23.1	-8.0	22.9	54
1412.000000	32.3	100.0	V	355.0	25.2	-7.1	21.7	54
1692.250000	34.4	100.0	H	3.0	29.4	-5.0	19.6	54
1994.250000	36.2	100.0	V	267.0	33.0	-3.2	17.8	54
2277.500000	37.6	100.0	V	0.0	36.2	-1.4	16.4	54
2998.250000	42.8	100.0	V	349.0	40.5	-2.3	11.2	54

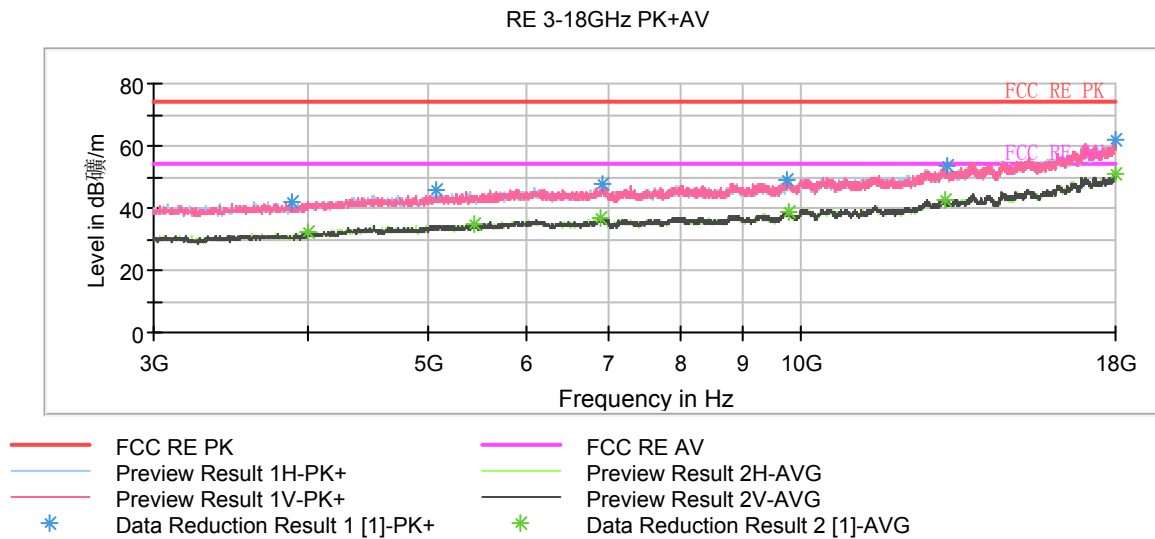
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

TA Technology (Shanghai) Co., Ltd.

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Radiates Emission from 3GHz to 18GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3875.625000	41.9	100.0	H	287.0	41.6	-0.3	32.1	74
5081.250000	45.8	100.0	H	151.0	42.3	-3.5	28.2	74
6911.250000	47.5	100.0	V	121.0	40.6	-6.9	26.5	74
9742.500000	49.0	100.0	V	220.0	37.4	-11.6	25.0	74
13147.500000	53.5	100.0	V	0.0	37.9	-15.6	20.5	74
17988.750000	61.6	100.0	H	91.0	36.3	-25.3	12.4	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3875.625000	30.4	100.0	H	287.0	30.1	-0.3	23.6	54
5081.250000	33.7	100.0	H	151.0	30.2	-3.5	20.3	54
6911.250000	36.6	100.0	V	121.0	29.7	-6.9	17.4	54
9742.500000	38.3	100.0	V	220.0	26.7	-11.6	15.7	54
13147.500000	42.3	100.0	V	0.0	26.7	-15.6	11.7	54
17988.750000	50.0	100.0	H	91.0	24.7	-25.3	4.0	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

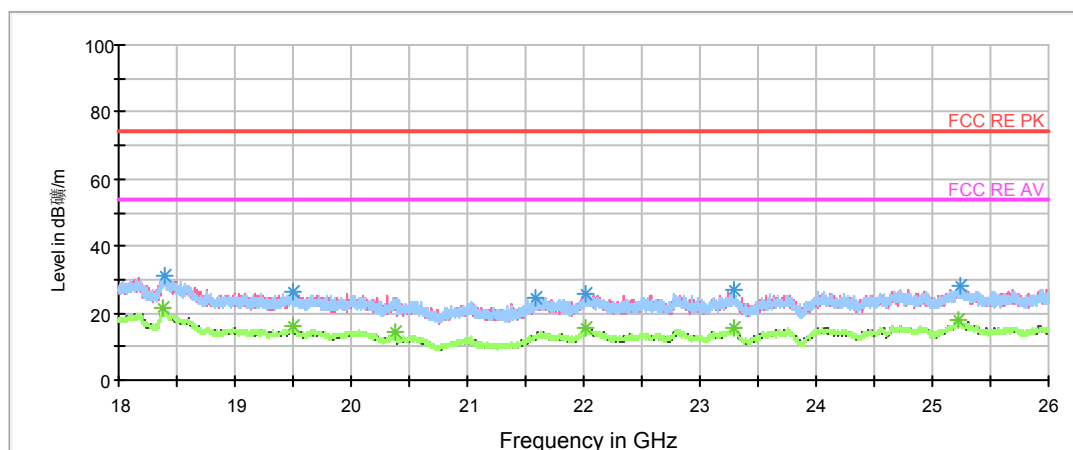
TA Technology (Shanghai) Co., Ltd.

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RE 18-26.5GHz PK+AV



— FCC RE PK
 — Preview Result 1V-PK+
 — Preview Result 1H-PK+
 * Data Reduction Result 1 [1]-PK+
 — FCC RE AV
 — Preview Result 2V-AVG
 — Preview Result 2H-AVG
 * Data Reduction Result 2 [1]-AVG

Radiates Emission from 18GHz to 26.5GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18391.000000	31.2	V	0.0	26.3	-4.9	42.8	74
19502.000000	26.5	H	0.0	19.0	-7.5	47.5	74
21583.000000	24.8	V	0.0	16.1	-8.7	49.2	74
22023.000000	26.0	H	0.0	18.0	-8.0	48.0	74
23299.000000	26.8	H	0.0	19.8	-7.0	47.2	74
25233.000000	28.1	H	0.0	22.2	-5.9	45.9	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18391.000000	19.7	V	0.0	14.8	-4.9	34.3	54
19502.000000	14.7	H	0.0	7.2	-7.5	39.3	54
21583.000000	12.7	V	0.0	4.0	-8.7	41.3	54
22023.000000	14.6	H	0.0	6.6	-8.0	39.4	54
23299.000000	15.3	H	0.0	8.3	-7.0	38.7	54
25233.000000	16.3	H	0.0	10.4	-5.9	37.7	54

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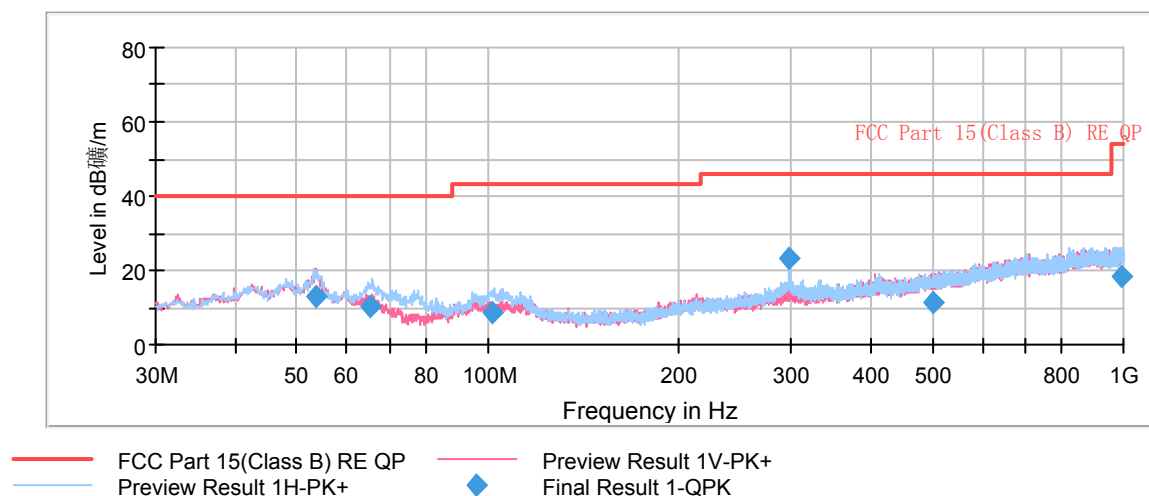
Test Report

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DH5-Channel 39

RE 0.03-1GHz QP Class B



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.758750	13.0	125.0	H	84.0	-7.8	-20.8	27.0	40.0
65.290000	10.1	125.0	H	0.0	-13.8	-23.9	29.9	40.0
101.865000	8.6	100.0	H	50.0	-16.9	-25.5	34.9	43.5
296.992500	23.4	121.0	H	157.0	0.0	-23.4	22.6	46.0
502.638750	11.5	114.0	H	222.0	-7.5	-19.0	34.5	46.0
994.787500	18.5	125.0	V	17.0	-6.5	-12.0	27.5	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

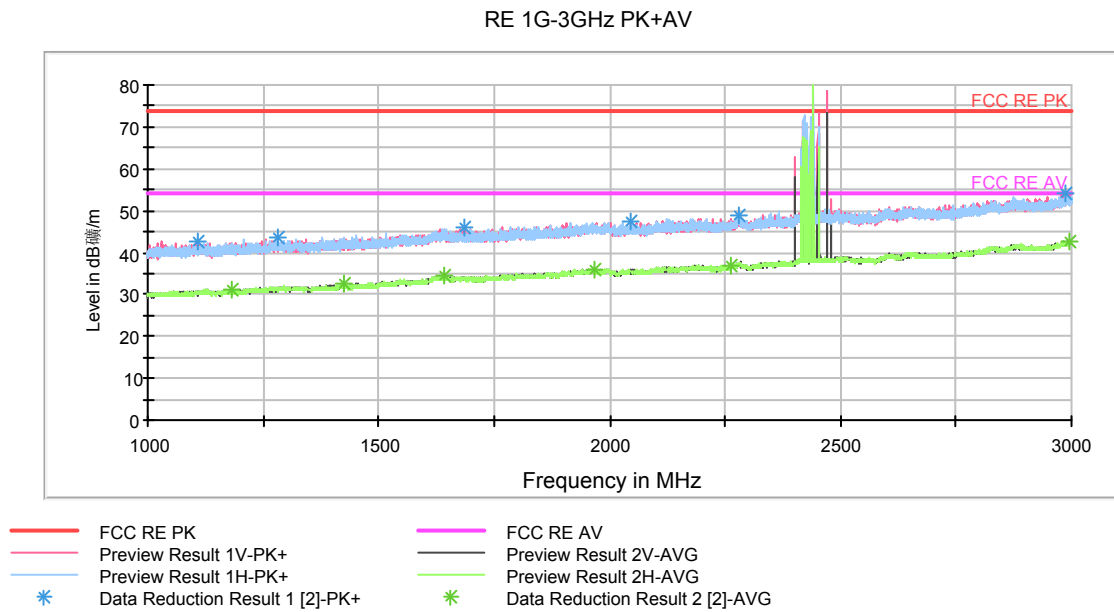
3. Margin = Limit – Quasi-Peak

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Radiates Emission from 1GHz to 3GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: The signal beyond the limit is carrier. a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1182.750000	40.7	100.0	H	183.0	32.7	-8.0	33.3	74
1424.250000	40.8	100.0	V	343.0	33.9	-6.9	33.2	74
1643.000000	44.0	100.0	H	147.0	39.2	-4.8	30.0	74
1966.000000	45.4	100.0	H	354.0	42.0	-3.4	28.6	74
2264.000000	45.7	100.0	V	320.0	43.8	-1.9	28.3	74
2996.500000	52.6	100.0	H	82.0	50.3	-2.3	21.4	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1182.750000	31.2	100.0	H	183.0	23.2	-8.0	22.8	54
1424.250000	32.6	100.0	V	343.0	25.7	-6.9	21.4	54
1643.000000	34.4	100.0	H	147.0	29.6	-4.8	19.6	54
1966.000000	36.1	100.0	H	354.0	32.7	-3.4	17.9	54
2264.000000	37.1	100.0	V	320.0	35.2	-1.9	16.9	54
2996.500000	42.8	100.0	H	82.0	40.5	-2.3	11.2	54

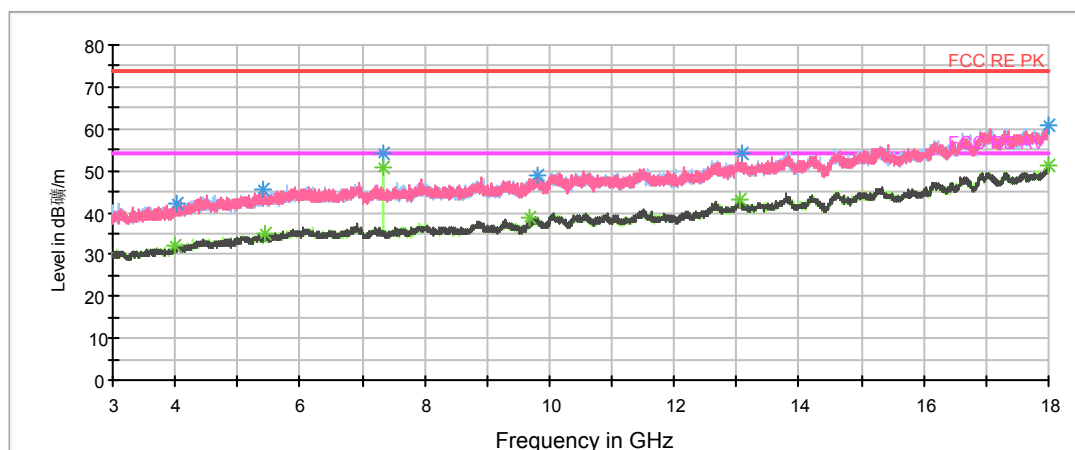
TA Technology (Shanghai) Co., Ltd.

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RE 3-18GHz PK+AV



— FCC RE PK
 — Preview Result 1H-PK+
 — Preview Result 1V-PK+
 * Data Reduction Result 1 [1]-PK+
 — FCC RE AV
 — Preview Result 2H-AVG
 — Preview Result 2V-AVG
 * Data Reduction Result 2 [1]-AVG

Radiates Emission from 3GHz to 18GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4010.625000	40.2	100.0	H	308.0	39.7	-0.5	33.8	74
5450.625000	42.5	100.0	H	262.0	38.6	-3.9	31.5	74
7331.250000	54.1	100.0	H	0.0	45.7	-8.4	19.9	74
9695.625000	46.9	100.0	V	0.0	35.9	-11.0	27.1	74
13040.625000	50.6	100.0	H	133.0	34.4	-16.2	23.4	74
17998.125000	59.5	100.0	V	73.0	34.1	-25.4	14.5	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4010.625000	32.3	100.0	H	308.0	31.8	-0.5	21.7	54
5450.625000	35.1	100.0	H	262.0	31.2	-3.9	18.9	54
7331.250000	50.6	100.0	H	0.0	42.2	-8.4	3.4	54
9695.625000	38.9	100.0	V	0.0	27.9	-11.0	15.1	54
13040.625000	43.0	100.0	H	133.0	26.8	-16.2	11.0	54
17998.125000	51.2	100.0	V	73.0	25.8	-25.4	2.8	54

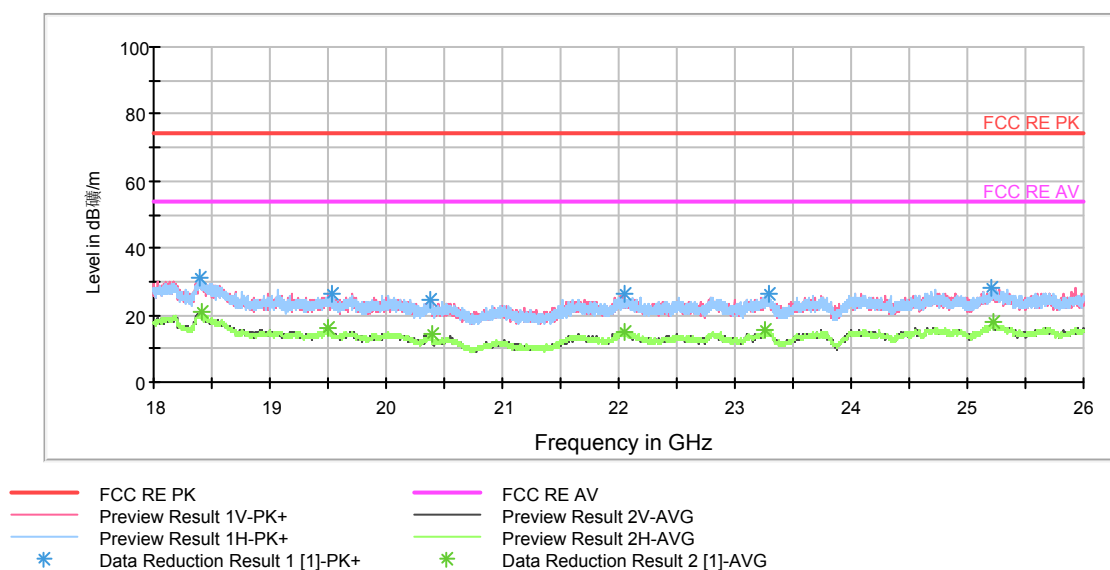
TA Technology (Shanghai) Co., Ltd.

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RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18393.000000	31.0	H	0.0	26.1	-4.9	43.0	74
19526.000000	26.6	V	0.0	19.2	-7.4	47.4	74
20385.000000	24.8	H	0.0	16.7	-8.1	49.2	74
22046.000000	26.4	V	0.0	18.4	-8.0	47.6	74
23288.000000	26.3	V	0.0	19.2	-7.1	47.7	74
25215.000000	28.2	H	0.0	22.1	-6.1	45.8	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18393.000000	20.6	H	0.0	15.7	-4.9	33.4	54
19526.000000	14.3	V	0.0	6.9	-7.4	39.7	54
20385.000000	13.2	H	0.0	5.1	-8.1	40.8	54
22046.000000	14.0	V	0.0	6.0	-8.0	40.0	54
23288.000000	14.9	V	0.0	7.8	-7.1	39.1	54
25215.000000	16.7	H	0.0	10.6	-6.1	37.3	54

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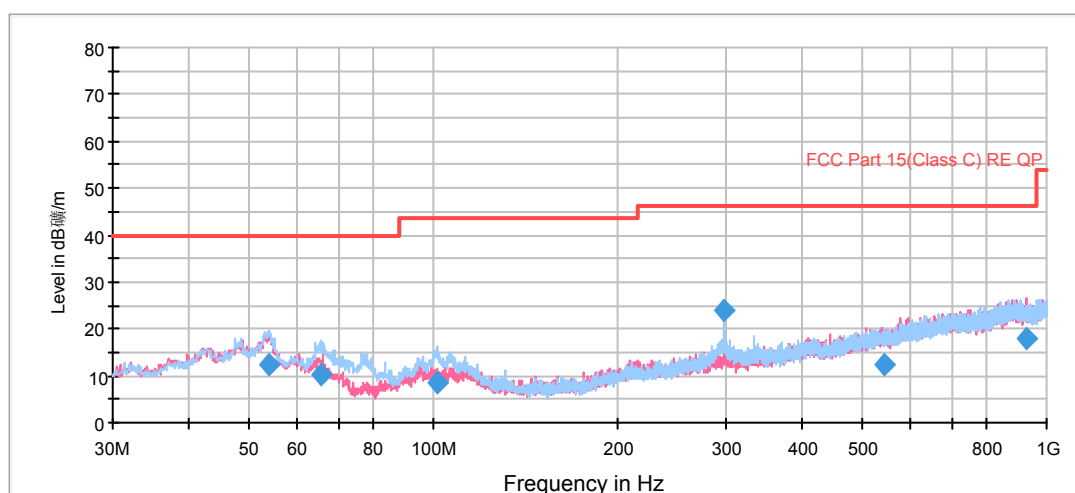
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DH5-Channel 78

RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m)in the test plot =(level in dBuV/m)

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.870588	12.3	98.0	V	19.0	-8.5	-20.8	27.7	40.0
65.401488	10.2	125.0	H	268.0	-13.8	-24.0	29.8	40.0
101.281762	8.6	100.0	H	190.0	-16.8	-25.4	34.9	43.5
297.010000	23.9	120.0	H	198.0	0.5	-23.4	22.1	46.0
542.371250	12.3	100.0	H	22.0	-6.0	-18.3	33.7	46.0
928.695500	18.0	119.0	V	267.0	5.0	-13.0	28.0	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

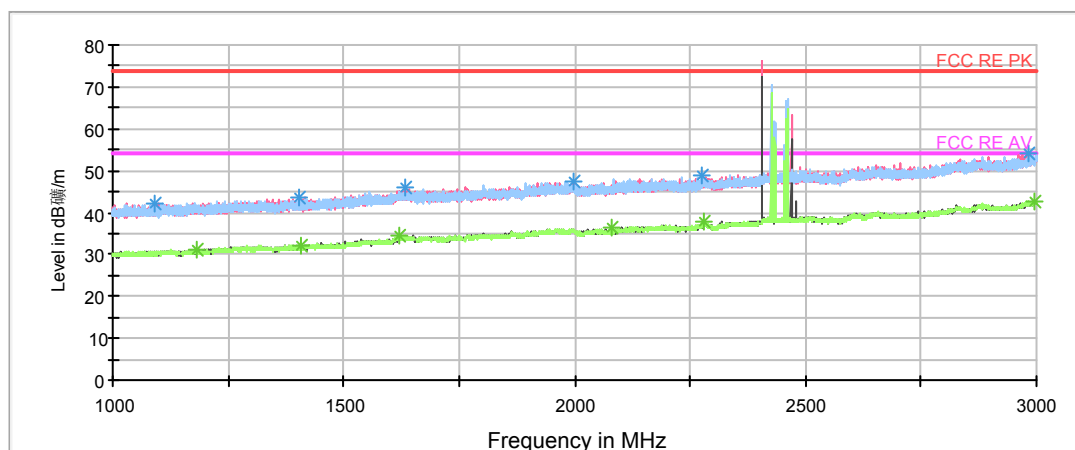
TA Technology (Shanghai) Co., Ltd.

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RE 1G-3GHz PK+AV



FCC RE PK
 Preview Result 1V-PK+
 Preview Result 1H-PK+
 Data Reduction Result 1 [2]-PK+
 FCC RE AV
 Preview Result 2V-AVG
 Preview Result 2H-AVG
 Data Reduction Result 2 [2]-AVG

Radiates Emission from 1GHz to 3GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: The signal beyond the limit is carrier. a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1183.500000	40.8	100.0	V	186.0	32.7	-8.1	33.2	74
1408.000000	41.6	100.0	H	144.0	34.5	-7.1	32.4	74
1619.500000	44.9	100.0	V	310.0	40.0	-4.9	29.1	74
2080.000000	46.1	100.0	V	298.0	43.1	-3.0	27.9	74
2279.750000	46.6	100.0	V	0.0	45.3	-1.3	27.4	74
2997.500000	52.1	100.0	H	197.0	49.8	-2.3	21.9	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

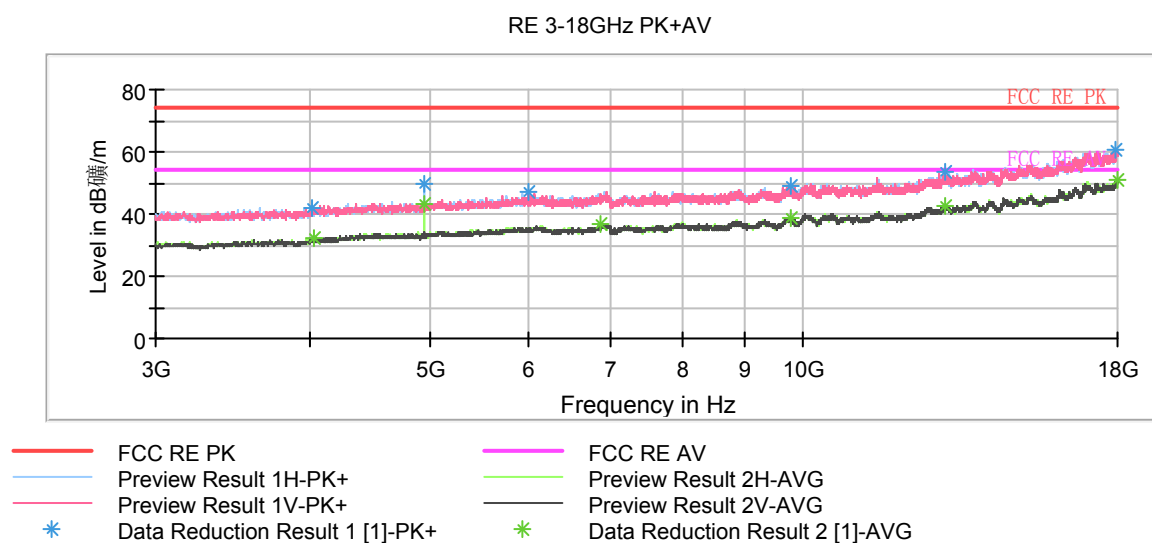
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1183.500000	31.1	100.0	V	186.0	23.0	-8.1	22.9	54
1408.000000	32.3	100.0	H	144.0	25.2	-7.1	21.7	54
1619.500000	34.6	100.0	V	310.0	29.7	-4.9	19.4	54
2080.000000	36.3	100.0	V	298.0	33.3	-3.0	17.7	54
2279.750000	37.7	100.0	V	0.0	36.4	-1.3	16.3	54
2997.500000	42.8	100.0	H	197.0	40.5	-2.3	11.2	54

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Radiates Emission from 3GHz to 18GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBμV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4008.750000	42.0	100.0	H	114.0	41.5	-0.5	32.0	74
4942.500000	49.9	100.0	H	4.0	46.8	-3.1	24.1	74
6001.875000	47.0	100.0	V	0.0	40.9	-6.1	27.0	74
9806.250000	48.8	100.0	H	355.0	36.6	-12.2	25.2	74
13059.375000	53.7	100.0	V	315.0	37.5	-16.2	20.3	74
17917.500000	60.8	100.0	H	145.0	36.4	-24.4	13.2	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

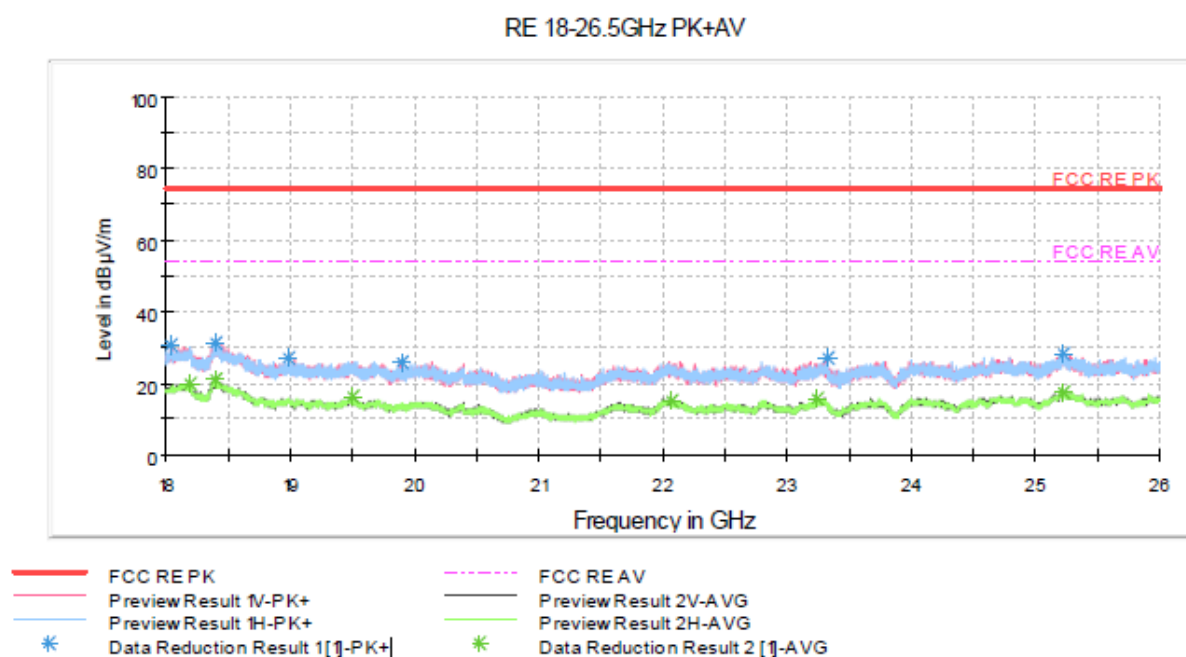
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4008.750000	31.1	100.0	H	114.0	30.6	-0.5	22.9	54
4942.500000	43.3	100.0	H	4.0	40.2	-3.1	10.7	54
6001.875000	34.9	100.0	V	0.0	28.8	-6.1	19.1	54
9806.250000	38.1	100.0	H	355.0	25.9	-12.2	15.9	54
13059.375000	42.3	100.0	V	315.0	26.1	-16.2	11.7	54
17917.500000	49.4	100.0	H	145.0	25.0	-24.4	4.6	54

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Radiates Emission from 18GHz to 26.5GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m)in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18036.000000	30.6	H	0.0	25.5	-5.1	43.4	74
18399.000000	31.3	V	0.0	26.4	-4.9	42.7	74
18989.000000	27.2	H	0.0	20.0	-7.2	46.8	74
19899.000000	26.0	V	0.0	18.0	-8.0	48.0	74
23321.000000	27.0	H	0.0	19.6	-7.4	47.0	74
25227.000000	28.1	V	0.0	22.2	-5.9	45.9	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18036.000000	18.8	H	0.0	13.7	-5.1	35.2	54
18399.000000	20.4	V	0.0	15.5	-4.9	33.6	54
18989.000000	14.7	H	0.0	7.5	-7.2	39.3	54
19899.000000	13.4	V	0.0	5.4	-8.0	40.6	54
23321.000000	14.5	H	0.0	7.1	-7.4	39.5	54
25227.000000	17.3	V	0.0	11.4	-5.9	36.7	54

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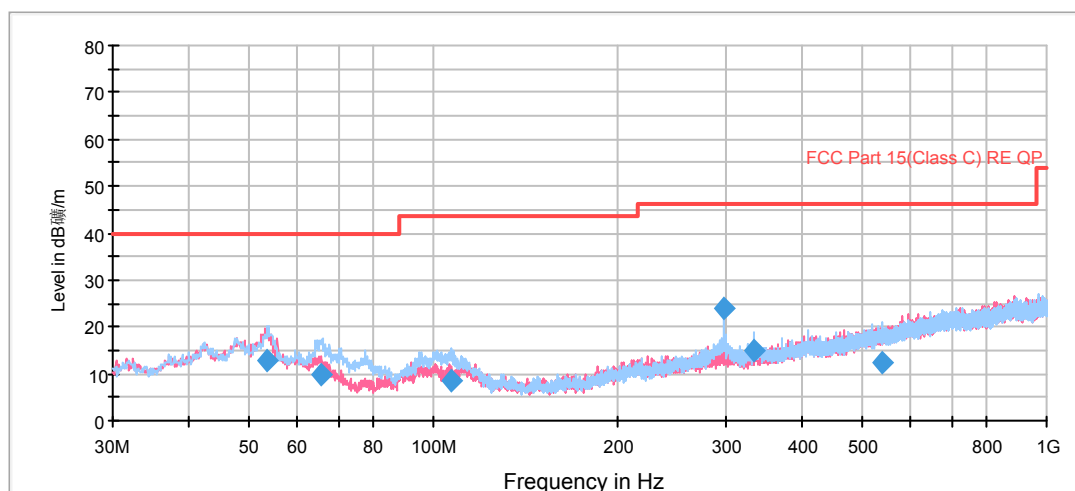
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3DH5-Channel 0

RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m)in the test plot =(level in dBuV/m)

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
53.656306	13.0	125.0	H	320.0	-7.8	-20.8	27.0	40.0
65.725275	10.0	120.0	H	330.0	-14.2	-24.2	30.0	40.0
106.724372	8.4	100.0	H	121.0	-17.5	-25.9	35.1	43.5
297.010750	23.8	120.0	H	155.0	0.4	-23.4	22.2	46.0
334.140000	14.9	100.0	H	141.0	-7.6	-22.5	31.1	46.0
540.079000	12.5	100.0	H	349.0	-5.8	-18.3	33.5	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

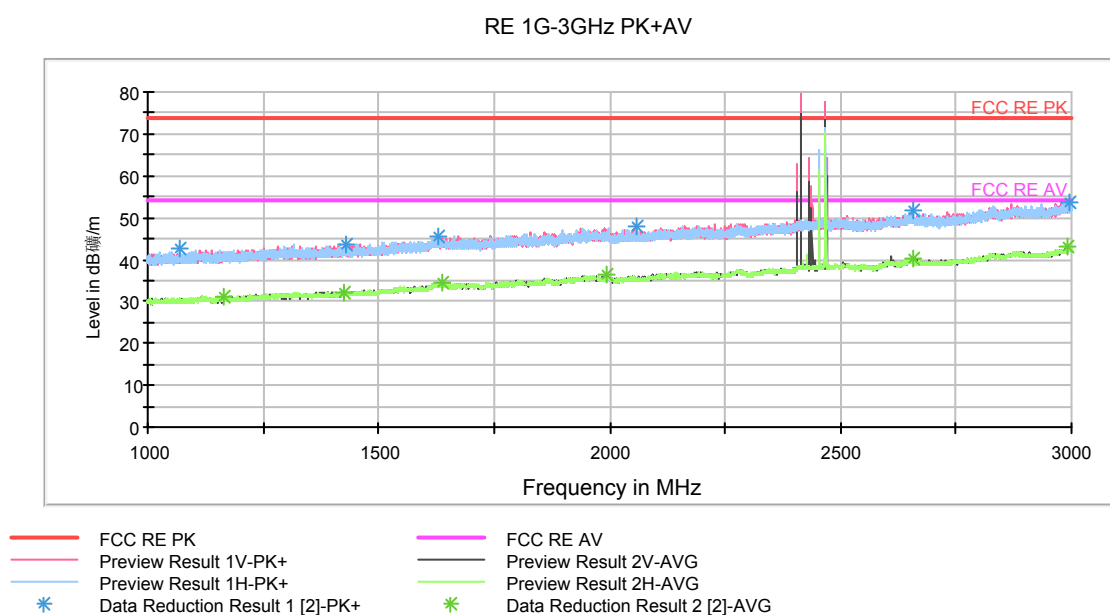
3. Margin = Limit – Quasi-Peak

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Radiates Emission from 1GHz to 3GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: The signal beyond the limit is carrier. a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1164.250000	40.7	100.0	V	0.0	32.5	-8.2	33.3	74
1426.250000	41.7	100.0	V	227.0	34.8	-6.9	32.3	74
1638.000000	43.8	100.0	V	275.0	39.1	-4.7	30.2	74
1992.250000	46.5	100.0	V	67.0	43.2	-3.3	27.5	74
2656.750000	49.2	100.0	V	251.0	48.8	-0.4	24.8	74
2990.750000	53.0	100.0	H	177.0	50.8	-2.2	21.0	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

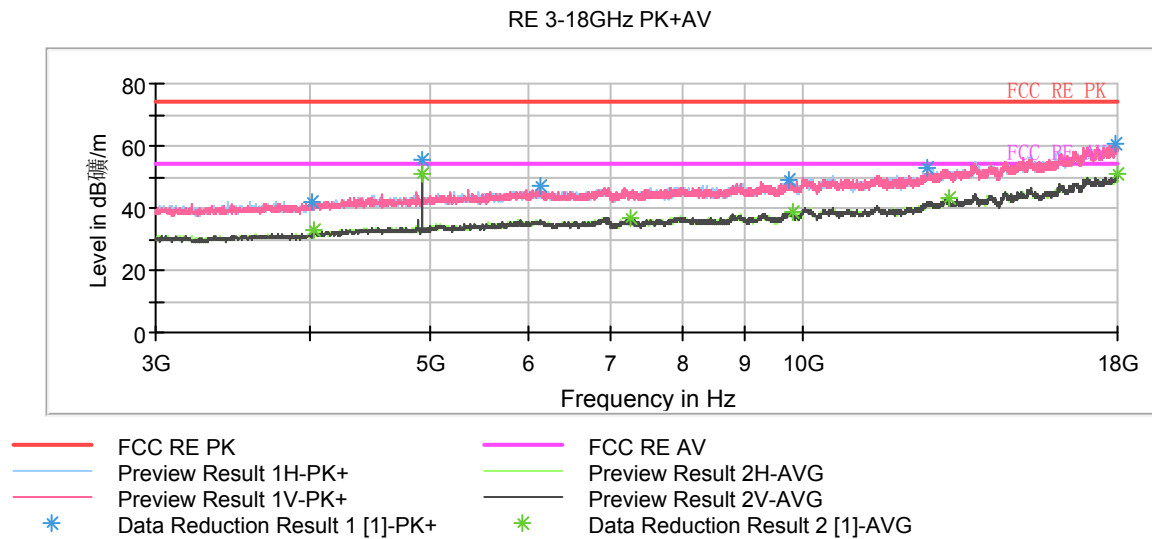
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1164.250000	31.3	100.0	V	0.0	23.1	-8.2	22.7	54
1426.250000	32.2	100.0	V	227.0	25.3	-6.9	21.8	54
1638.000000	34.3	100.0	V	275.0	29.6	-4.7	19.7	54
1992.250000	36.2	100.0	V	67.0	32.9	-3.3	17.8	54
2656.750000	40.3	100.0	V	251.0	39.9	-0.4	13.7	54
2990.750000	43.1	100.0	H	177.0	40.9	-2.2	10.9	54

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Radiates Emission from 3GHz to 18GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4018.125000	42.0	100.0	H	335.0	41.5	-0.5	32.0	74
4927.500000	55.8	100.0	V	246.0	52.7	-3.1	18.2	74
6133.125000	46.9	100.0	V	93.0	40.9	-6.0	27.1	74
9776.250000	48.8	100.0	H	272.0	36.8	-12.0	25.2	74
12622.500000	53.0	100.0	V	0.0	38.3	-14.7	21.0	74
17932.500000	60.5	100.0	V	2.0	35.9	-24.6	13.5	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4018.125000	32.1	100.0	H	335.0	31.6	-0.5	21.9	54
4927.500000	51.0	100.0	V	246.0	47.9	-3.1	3.0	54
6133.125000	35.1	100.0	V	93.0	29.1	-6.0	18.9	54
9776.250000	37.6	100.0	H	272.0	25.6	-12.0	16.4	54
12622.500000	41.2	100.0	V	0.0	26.5	-14.7	12.8	54
17932.500000	48.9	100.0	V	2.0	24.3	-24.6	5.1	54

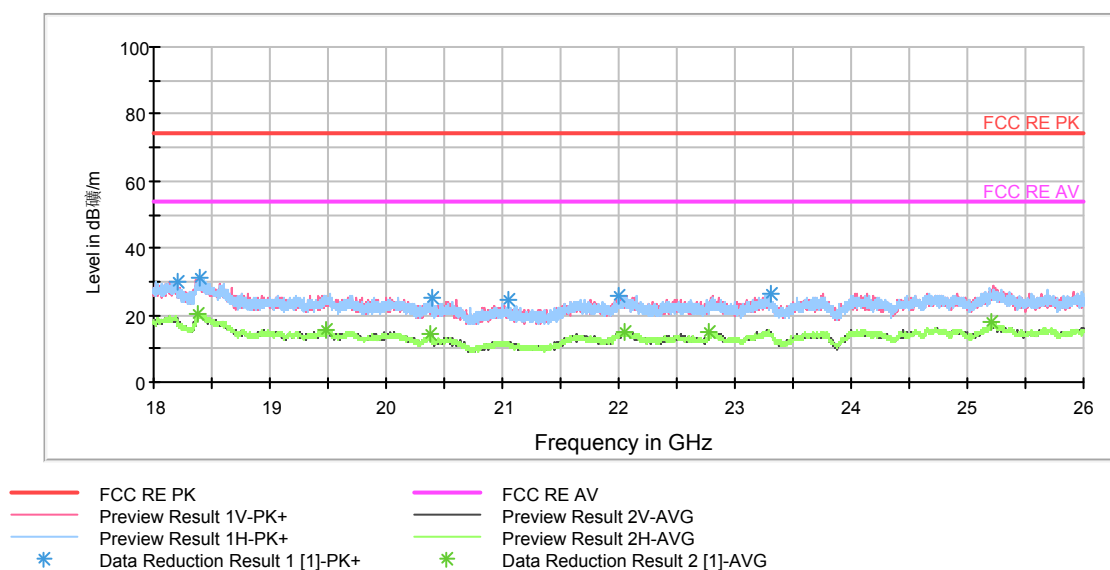
TA Technology (Shanghai) Co., Ltd.

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RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18199.000000	30.1	V	0.0	25.1	-5.0	43.9	74
18398.000000	31.1	H	0.0	26.2	-4.9	42.9	74
20398.000000	25.0	H	0.0	16.9	-8.1	49.0	74
21053.000000	24.3	H	0.0	15.8	-8.5	49.7	74
22004.000000	25.8	H	0.0	17.5	-8.3	48.2	74
23306.000000	26.4	H	0.0	19.3	-7.1	47.6	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18199.000000	19.3	V	0.0	14.3	-5.0	34.7	54
18398.000000	20.3	H	0.0	15.4	-4.9	33.7	54
20398.000000	14.0	H	0.0	5.9	-8.1	40.0	54
21053.000000	11.4	H	0.0	2.9	-8.5	42.6	54
22004.000000	14.5	H	0.0	6.2	-8.3	39.5	54
23306.000000	13.9	H	0.0	6.8	-7.1	40.1	54

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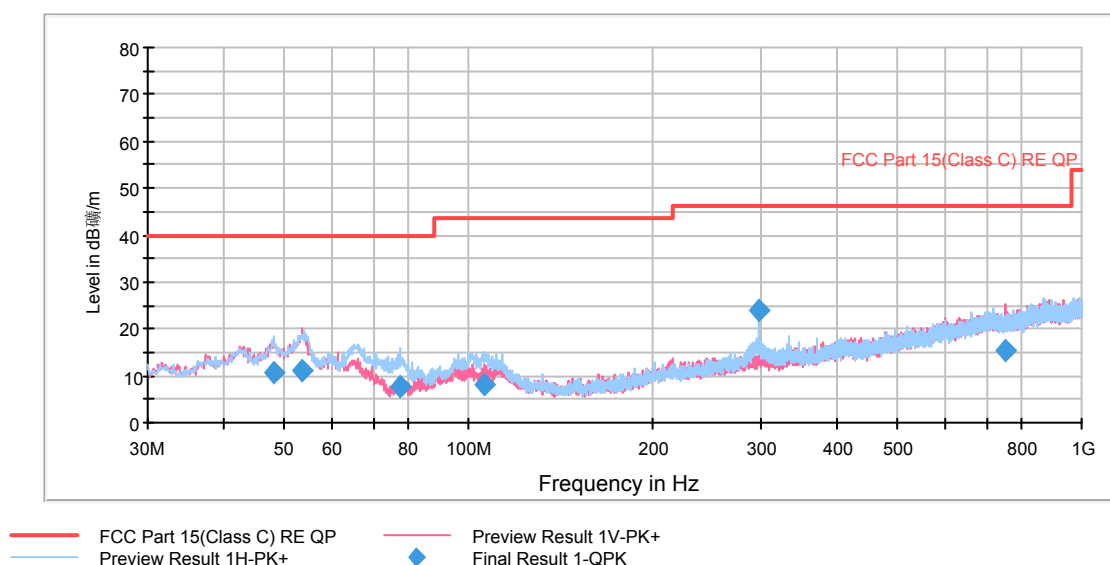
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3DH5-Channel 39

RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dB μ V/m)in the test plot =(level in dBuV/m)

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.147031	10.7	125.0	H	145.0	-9.5	-20.2	29.3	40.0
53.548694	11.2	100.0	V	198.0	-9.6	-20.8	28.8	40.0
77.456175	7.7	100.0	H	122.0	-21.0	-28.7	32.3	40.0
106.078690	8.1	100.0	H	226.0	-17.7	-25.8	35.4	43.5
297.010000	23.9	120.0	H	0.0	0.5	-23.4	22.1	46.0
749.300000	15.6	100.0	V	262.0	0.2	-15.4	30.4	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

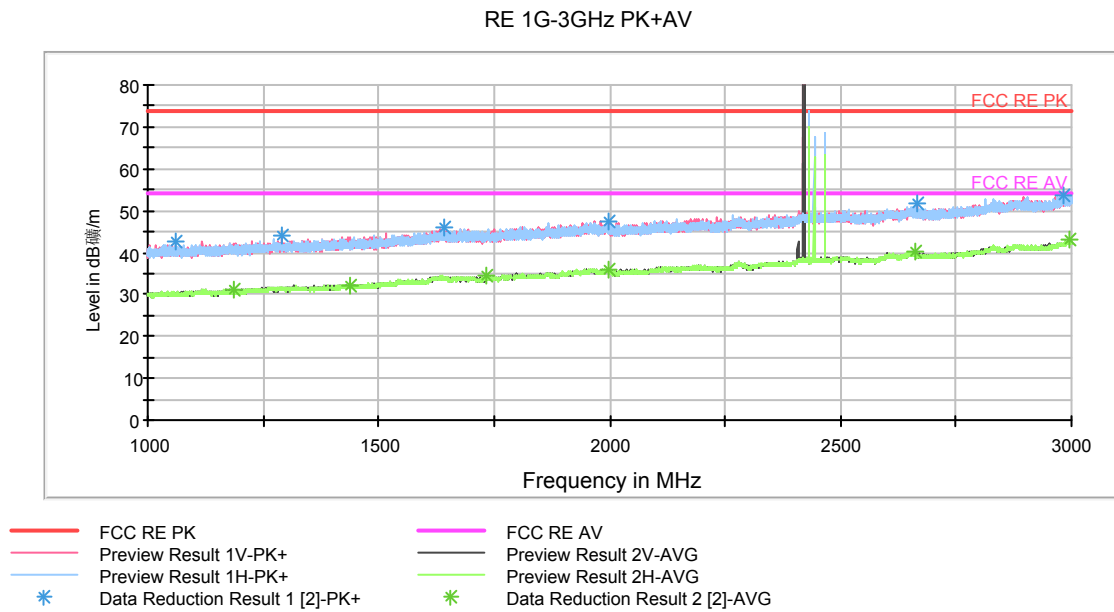
3. Margin = Limit – Quasi-Peak

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Radiates Emission from 1GHz to 3GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: The signal beyond the limit is carrier. a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1184.750000	40.7	100.0	H	57.0	32.6	-8.1	33.3	74
1436.250000	41.6	100.0	H	147.0	34.7	-6.9	32.4	74
1731.500000	42.9	100.0	V	181.0	38.1	-4.8	31.1	74
1999.000000	45.2	100.0	V	276.0	41.8	-3.4	28.8	74
2660.500000	50.3	100.0	V	305.0	50.0	-0.3	23.7	74
2996.250000	51.9	100.0	V	317.0	49.6	-2.3	22.1	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

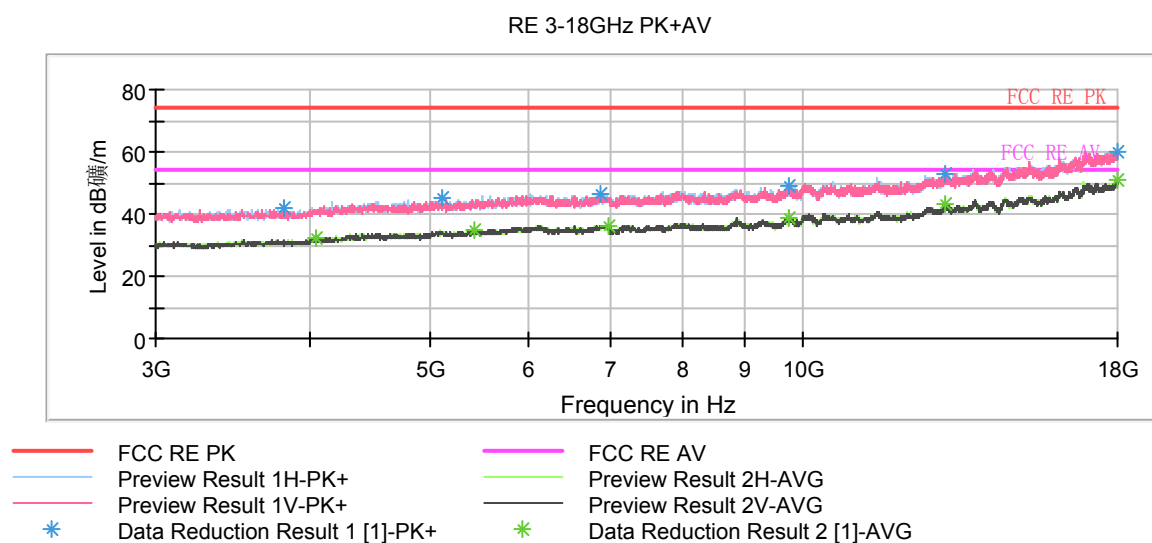
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1184.750000	31.3	100.0	H	57.0	23.2	-8.1	22.7	54
1436.250000	32.2	100.0	H	147.0	25.3	-6.9	21.8	54
1731.500000	34.3	100.0	V	181.0	29.5	-4.8	19.7	54
1999.000000	36.1	100.0	V	276.0	32.7	-3.4	17.9	54
2660.500000	40.0	100.0	V	305.0	39.7	-0.3	14.0	54
2996.250000	43.1	100.0	V	317.0	40.8	-2.3	10.9	54

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Radiates Emission from 3GHz to 18GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3808.125000	41.9	100.0	V	203.0	41.5	-0.4	32.1	74
5118.750000	45.3	100.0	H	260.0	41.7	-3.6	28.7	74
6879.375000	46.6	100.0	H	196.0	39.8	-6.8	27.4	74
9755.625000	49.3	100.0	H	354.0	37.6	-11.7	24.7	74
13080.000000	53.0	100.0	V	233.0	36.8	-16.2	21.0	74
17988.750000	60.2	100.0	H	306.0	34.9	-25.3	13.8	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3808.125000	30.4	100.0	V	203.0	30.0	-0.4	23.6	54
5118.750000	34.0	100.0	H	260.0	30.4	-3.6	20.0	54
6879.375000	36.4	100.0	H	196.0	29.6	-6.8	17.6	54
9755.625000	38.9	100.0	H	354.0	27.2	-11.7	15.1	54
13080.000000	42.3	100.0	V	233.0	26.1	-16.2	11.7	54
17988.750000	50.5	100.0	H	306.0	25.2	-25.3	3.5	54

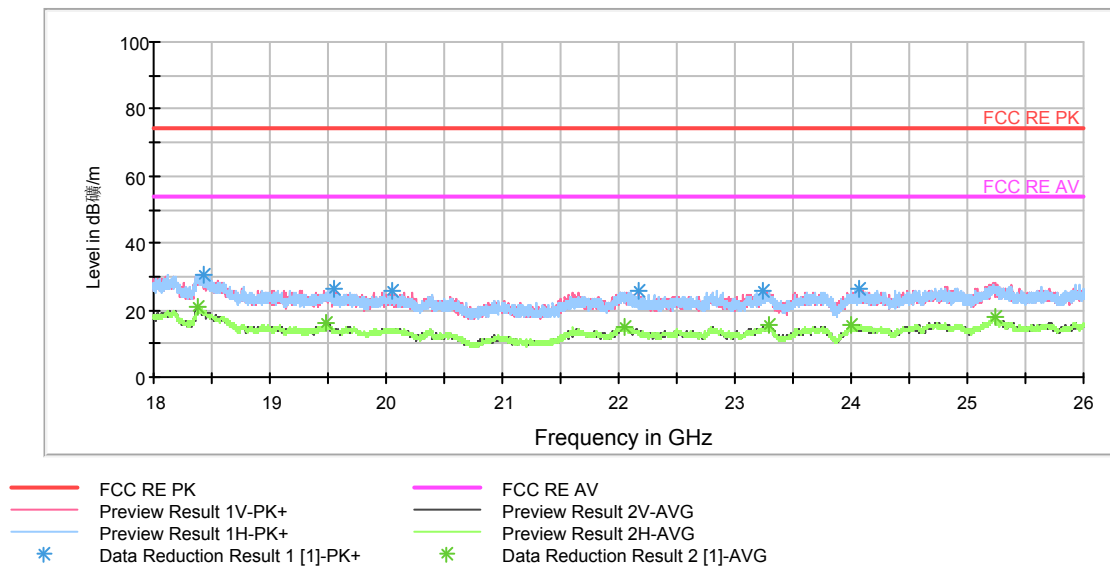
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RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18429.000000	30.7	H	0.0	25.4	-5.3	43.3	74
19544.000000	26.2	V	0.0	18.8	-7.4	47.8	74
20053.000000	26.0	V	0.0	18.0	-8.0	48.0	74
22165.000000	25.6	V	0.0	17.0	-8.6	48.4	74
23238.000000	25.5	V	0.0	17.6	-7.9	48.5	74
24063.000000	26.3	V	0.0	18.5	-7.8	47.7	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18429.000000	19.1	H	0.0	13.8	-5.3	34.9	54
19544.000000	14.5	V	0.0	7.1	-7.4	39.5	54
20053.000000	14.2	V	0.0	6.2	-8.0	39.8	54
22165.000000	13.4	V	0.0	4.8	-8.6	40.6	54
23238.000000	13.9	V	0.0	6.0	-7.9	40.1	54
24063.000000	15.2	V	0.0	7.4	-7.8	38.8	54

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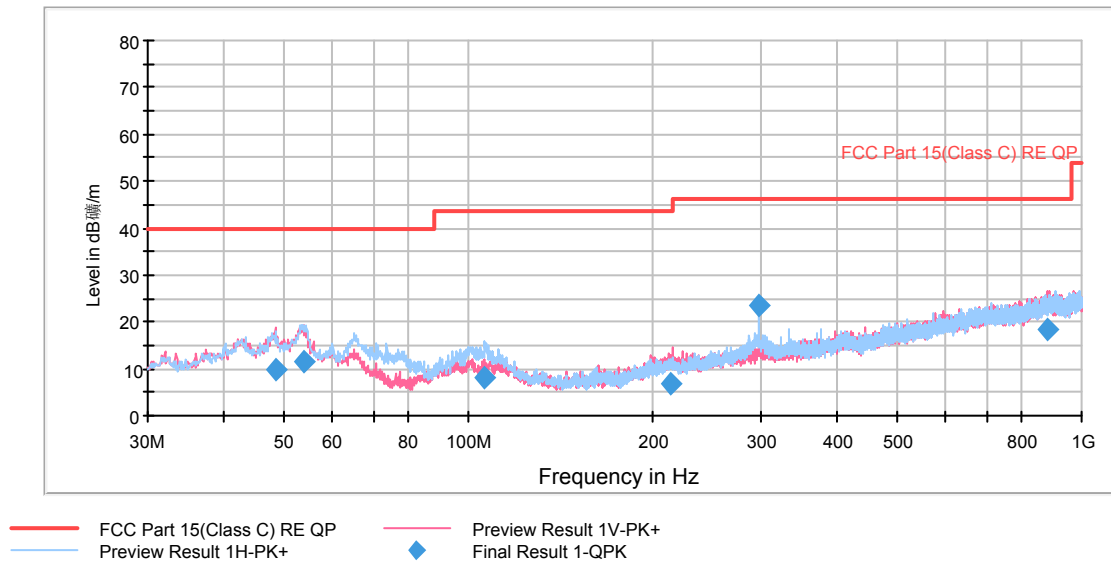
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3DH5-Channel 78

RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m)in the test plot =(level in dBuV/m)

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.388925	9.9	100.0	V	188.0	-10.4	-20.3	30.1	40.0
53.791534	11.5	100.0	V	162.0	-9.3	-20.8	28.5	40.0
106.079638	8.1	100.0	H	25.0	-17.7	-25.8	35.4	43.5
214.368750	6.9	100.0	V	231.0	-18.7	-25.6	36.6	43.5
297.010000	23.6	121.0	H	17.0	0.2	-23.4	22.4	46.0
880.060750	18.2	125.0	V	172.0	5.3	-12.9	27.8	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

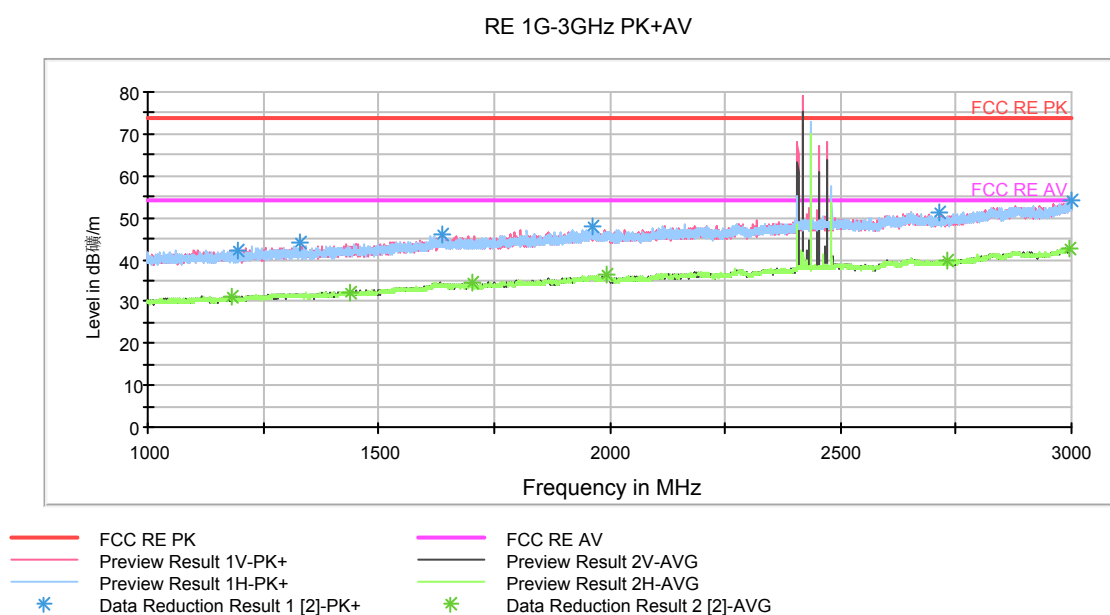
3. Margin = Limit – Quasi-Peak

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Radiates Emission from 1GHz to 3GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: The signal beyond the limit is carrier. a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1183.500000	40.0	100.0	H	18.0	31.9	-8.1	34.0	74
1436.250000	42.4	100.0	H	238.0	35.5	-6.9	31.6	74
1704.750000	44.7	100.0	H	0.0	39.8	-4.9	29.3	74
1992.500000	45.8	100.0	H	124.0	42.5	-3.3	28.2	74
2731.250000	49.2	100.0	H	89.0	48.7	-0.5	24.8	74
2994.250000	52.4	100.0	V	291.0	50.1	-2.3	21.6	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

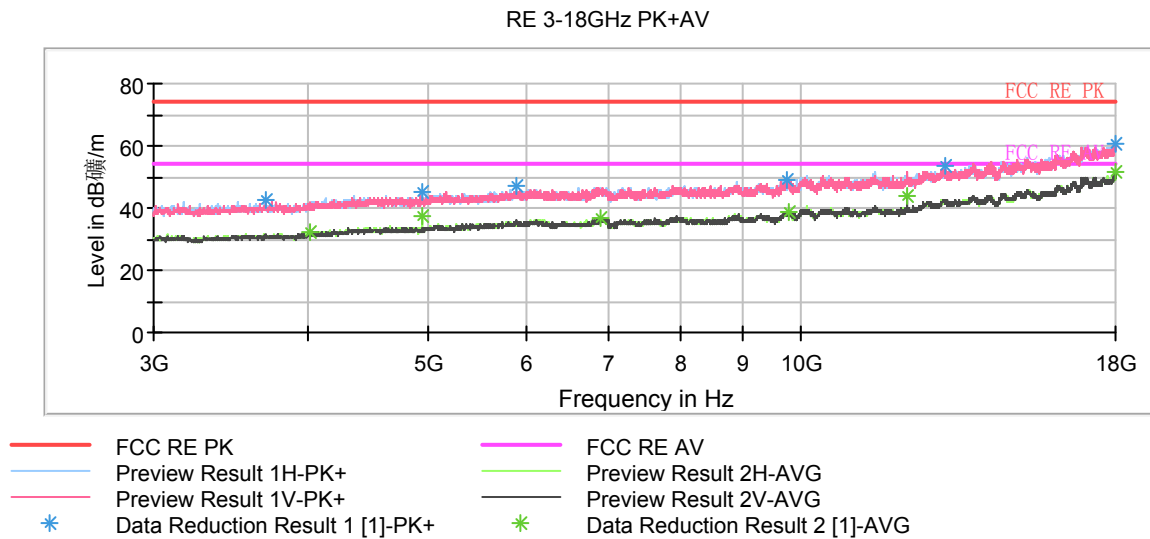
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1183.500000	31.3	100.0	H	18.0	23.2	-8.1	22.7	54
1436.250000	32.2	100.0	H	238.0	25.3	-6.9	21.8	54
1704.750000	34.4	100.0	H	0.0	29.5	-4.9	19.6	54
1992.500000	36.3	100.0	H	124.0	33.0	-3.3	17.7	54
2731.250000	39.5	100.0	H	89.0	39.0	-0.5	14.5	54
2994.250000	42.8	100.0	V	291.0	40.5	-2.3	11.2	54

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Radiates Emission from 3GHz to 18GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBμV/m)

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3701.250000	42.3	100.0	V	137.0	42.0	-0.3	31.7	74
4950.000000	45.5	100.0	H	277.0	42.4	-3.1	28.5	74
5902.500000	47.3	100.0	H	134.0	41.1	-6.2	26.7	74
9776.250000	49.0	100.0	H	167.0	37.0	-12.0	25.0	74
13096.875000	53.3	100.0	H	0.0	37.1	-16.2	20.7	74
17970.000000	60.9	100.0	V	107.0	35.8	-25.1	13.1	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3701.250000	30.6	100.0	V	137.0	30.3	-0.3	23.4	54
4950.000000	37.5	100.0	H	277.0	34.4	-3.1	16.5	54
5902.500000	35.1	100.0	H	134.0	28.9	-6.2	18.9	54
9776.250000	38.0	100.0	H	167.0	26.0	-12.0	16.0	54
13096.875000	41.6	100.0	H	0.0	25.4	-16.2	12.4	54
17970.000000	50.0	100.0	V	107.0	24.9	-25.1	4.0	54

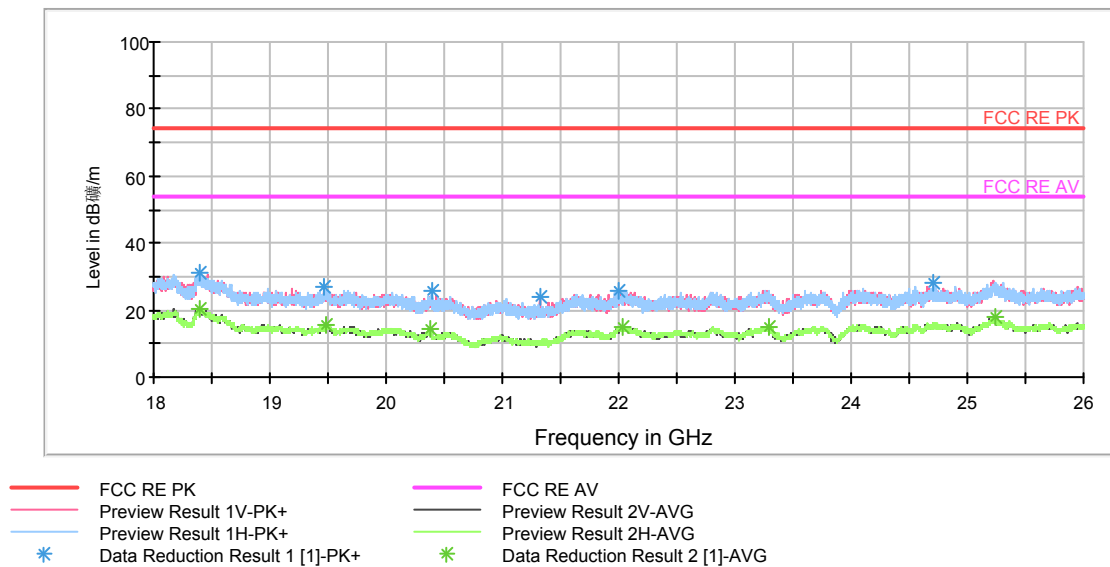
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RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18394.000000	31.2	H	0.0	26.3	-4.9	42.8	74
19463.000000	27.2	V	0.0	19.0	-8.2	46.8	74
20388.000000	25.6	H	0.0	17.5	-8.1	48.4	74
21319.000000	23.8	V	0.0	14.2	-9.6	50.2	74
22004.000000	25.8	H	0.0	17.5	-8.3	48.2	74
24704.000000	28.0	H	0.0	21.3	-6.7	46.0	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18394.000000	20.0	H	0.0	15.1	-4.9	34.0	54
19463.000000	15.0	V	0.0	6.8	-8.2	39.0	54
20388.000000	14.0	H	0.0	5.9	-8.1	40.0	54
21319.000000	10.2	V	0.0	0.6	-9.6	43.8	54
22004.000000	13.8	H	0.0	5.5	-8.3	40.2	54
24704.000000	15.5	H	0.0	8.8	-6.7	38.5	54

3.12. Conducted Emission

The EUT is not application for CE test.

Note: When The EUT is charging, BT is stopped.

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4. Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Expiration Time	Valid Period
01	BT Base Station Simulator	CBT	R&S	100271	2015-04-26	2016-04-25	1 year
02	Loop Antenna	FMZB1516	SCHWARZBECK	237	2014-06-29	2016-06-28	2 years
03	EMI Test Receiver	ESCS30	R&S	100138	2014-12-17	2015-12-16	1 year
04	LISN	ENV216	R&S	101171	2014-12-17	2015-12-16	1 year
05	EMI Test Receiver	ESCI	R&S	100948	2015-04-26	2016-04-25	1 year
06	TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	9163-201	2013-11-25	2016-11-24	3 years
07	Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2015-07-01	2018-06-30	3 years
08	PSG Analog Signal Generator	E8257D	Agilent	MY49281101	2015-04-26	2016-04-25	1 year
09	ESG Vector Signal Generator	E4438C	Agilent	MY49070900	2015-04-26	2016-04-25	1 year
10	Spectrum Analyzer	E4445A	Agilent	MY46181146	2015-04-26	2016-04-25	1 year
11	Power Splitter	SHX-GF2-2-13	Hua Xiang	10120101	NA	NA	NA
12	MOB COMMS DC SUPPLY	66319D	Agilent	MY43004105	2015-04-26	2016-04-25	1 year
13	Power Sensor	E9304A	Agilent	MY50220022	2015-04-26	2016-04-25	1 year
14	Power Meter	E4418B	Agilent	MY50000623	2015-04-26	2016-04-25	1 year
15	Vibration table	ESS-050-120	dongling	D1007126	2013-08-21	2016-08-20	3 years
16	Spectrum Analyzer	FSV30	R&S	100815	2014-12-18	2015-12-17	1 year
17	Standard Gain Horn	3160-09	ETS-Lindgren	00102644	2015-05-19	2018-05-18	3 years
18	RF Cable	SMA 15cm	Agilent	0001	2015-06-07	2015-08-06	2 Months

*****END OF REPORT *****

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance



a: EUT

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b: Adapter



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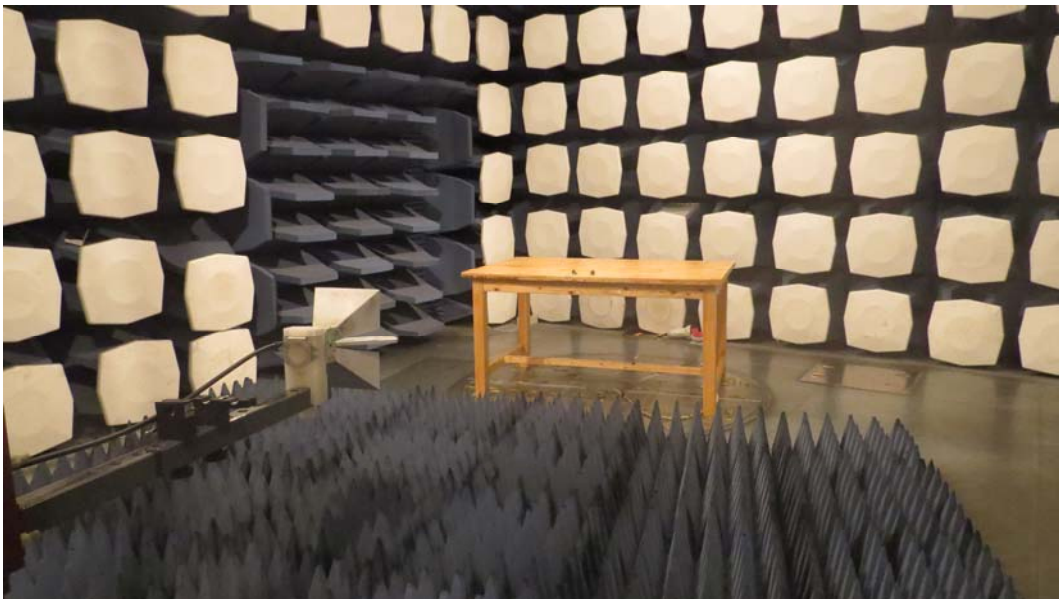
C : Accessory

Picture 1 EUT

A.2 Test Setup



30M Hz-1GHz



Above 1GHz

Picture 2 Radiated Emission Test Setup