

FCC Test Report

Product Name : Watch
Trade Name : Decathlon
Model No. : KALENJI HR500
FCC ID : 2AH2PPHY1-20

Applicant : DECATHLON USA LLC
Address : 2415 Third Street, Ste 231, San Francisco, 94107, USA

Date of Receipt : Nov. 06, 2019
Issued Date : Aug. 13, 2020
Report No. : 19B0079R-RFUSP01V00
Report Version : V1.0



The test results relate only to the samples tested.

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Test Report Certification

Issued Date : Aug. 13, 2020


Report No. : 19B0079R-RFUSP01V00




Product Name : Watch
Applicant : DECATHLON USA LLC
Address : 2415 Third Street, Ste 231, San Francisco, 94107, USA
Manufacturer : DECATHLON SE
Trade Name : Decathlon
Model No. : KALENJI HR500
FCC ID : 2AH2PPHY1-20
EUT Voltage : DC 3.8V
Testing Voltage : AC 120V/60Hz (Power by PC)
DC 3.8V (Power by Battery)
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2018
ANSI C63.10: 2013
Laboratory Name : Hsin Chu Laboratory
Address : No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu
County 310, Taiwan, R.O.C.
TEL: +886-3-582-8001 / FAX: +886-3-582-8958
Test Result : Complied

Documented By : 

(Lyla Yang / Engineering Adm. Specialist)

Tested By : 

(Scott Chang / Senior Engineer)

Approved By : 

(Louis Hsu / Deputy Manager)

Revision History

Report No.	Version	Description	Issued Date
19B0079R-RFUSP01V00	V1.0	Initial issue of report	Aug. 13, 2020

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1. General Information

1.1. EUT Description

Product Name	Watch
Trade Name	Decathlon
Model No.	KALENJI HR500
Frequency Range	2402~2480MHz
Channel Number	40 Channels
Type of Modulation	GFSK

Antenna Information	
MFR. / Model No.	South Star / FD102
Antenna Type	FPC antenna
Antenna Gain	-1.68dBi

Accessories Information	
USB Cable	Non-Shielded, 1m.

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

Note:

1. This device is a Watch supports BT 5.0 transmitting and receiving function.
2. Regards to the frequency band operation; the lowest \ middle and highest frequency of channel were selected to perform the test, and then shown on this report.
3. The EUT description is from the customer declaration.

1.2. Test Mode

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

Test Mode	Mode 1: Transmit Mode (Power by PC) Mode 2: Transmit Mode (Power by Battery)
-----------	---

Test Items	Modulation	Channel	Result
Conducted Emission	GFSK	19	Complies
Maximum peak conducted output power	GFSK	00/19/39	Complies
Radiated Emission	GFSK	00/19/39	Complies
RF antenna conducted test	GFSK	00/19/39	Complies
Radiated Emission Band Edge	GFSK	00/19/39	Complies
Occupied Bandwidth & DTS Bandwidth	GFSK	00/19/39	Complies
Power Density	GFSK	00/19/39	Complies

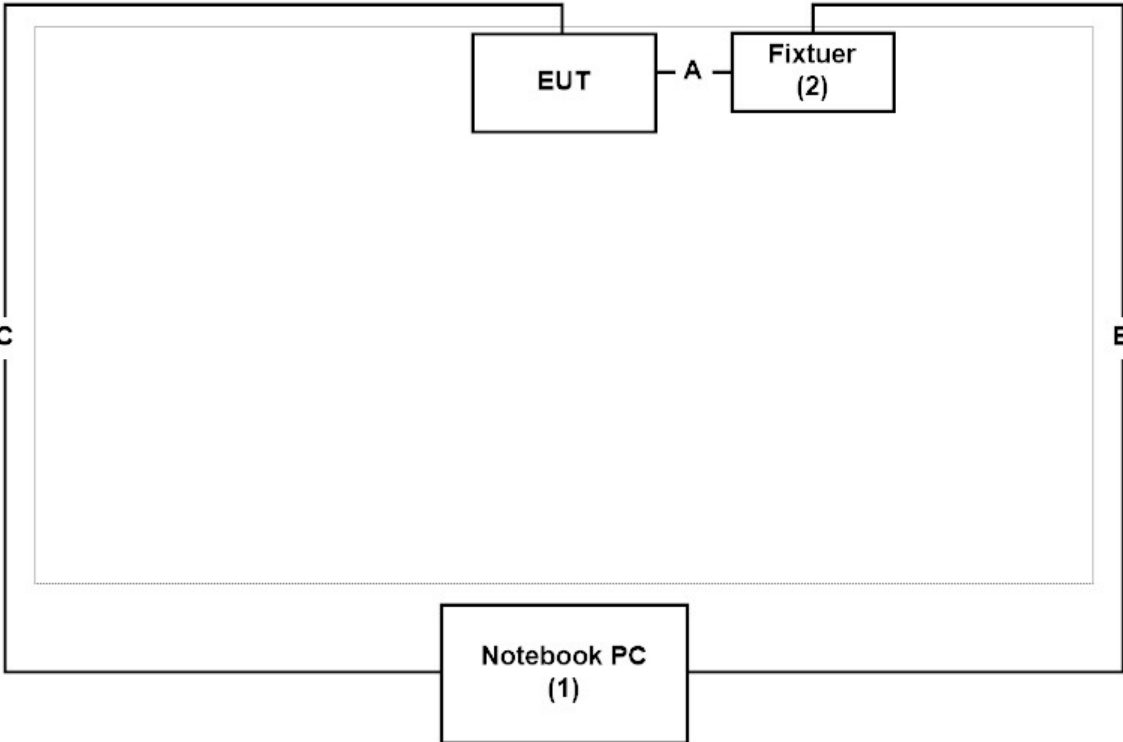
Note: Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

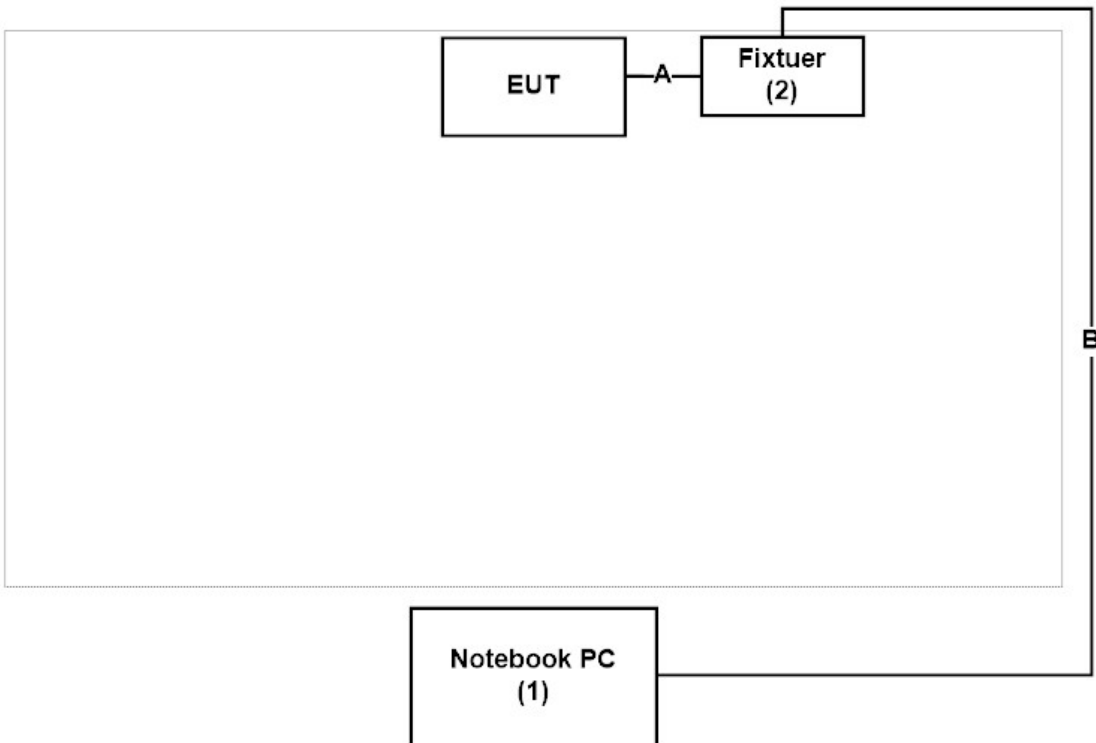
1.3. Tested System Details

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

Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1 Notebook PC	ASUS	E402S	GBN0CV1 81952476	DoC	Non-Shielded, 1.8m, one ferrite core bonded
2 Fixtuer	WAVESHARE	FT232 USB UART Board (type A)	N/A	DoC	--

1.4. Configuration of tested System

Test Mode	Mode 1: Transmit Mode (Power by PC)	
Connection Diagram		
 <p>The diagram shows a central box labeled 'EUT' connected to a box labeled 'Fixtuer (2)' by a line labeled 'A'. Both 'EUT' and 'Fixtuer (2)' are enclosed within a larger rectangular frame. At the bottom center of this frame is a box labeled 'Notebook PC (1)'. A line labeled 'B' connects 'Fixtuer (2)' to 'Notebook PC (1)'. A line labeled 'C' connects 'EUT' to 'Notebook PC (1)'. The lines 'B' and 'C' extend vertically from the bottom of the frame to the 'Notebook PC (1)' box.</p>		
Signal Cable Type		Signal cable Description
A	Signal Cable	Non-Shielded, 0.2m
B	USB Cable	Shielded, 2m
C	USB Cable	Shielded, 1m

Test Mode		Mode 2: Transmit Mode (Power by Battery)	
Connection Diagram			
 <p>The diagram shows a central rectangular area representing a test chamber. Inside the chamber, there is a box labeled 'EUT' on the left and a box labeled 'Fixtuer (2)' on the right. A horizontal line labeled 'A' connects the two boxes. A vertical line labeled 'B' runs along the right side of the chamber, connecting the top and bottom. Below the chamber, there is a box labeled 'Notebook PC (1)'. A horizontal line connects the bottom of the chamber to the top of the 'Notebook PC (1)' box.</p>			
Signal Cable Type		Signal cable Description	
A	Signal Cable	Non-Shielded, 0.2m	
B	USB Cable	Shielded, 2m	

1.5. EUT Exercise Software

1	Connect the perimeter to the EUT as shown above.
2	Execute software "nRFgo" and set the parameters.
3	Check transmission signal and start to test.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required	Test Site
Temperature (°C)	FCC PART 15 C 15.207 Conducted Emission	15 - 35	3
Humidity (%RH)		25 - 75	
Temperature (°C)	FCC PART 15 C 15.247 Maximum peak conducted output power	15 - 35	3
Humidity (%RH)		25 - 75	
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission	15 - 35	2
Humidity (%RH)		25 - 75	
Temperature (°C)	FCC PART 15 C 15.247 RF antenna conducted test	15 - 35	3
Humidity (%RH)		25 - 75	
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission Band Edge	15 - 35	2
Humidity (%RH)		25 - 75	
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth & DTS Bandwidth	15 - 35	3
Humidity (%RH)		25 - 75	
Temperature (°C)	FCC PART 15 C 15.247 Power Density	15 - 35	3
Humidity (%RH)		25 - 75	

Note: Test site information refers to Laboratory Information.

Laboratory Information

USA	: FCC Registration Number: TW3024
Canada	: IC Registration Number: 22397-1 / 22397-2 / 22397-3

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: <http://www.dekra.com.tw>

If you have any comments, please don't hesitate to contact us. Our test sites as below:

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
Address	<ol style="list-style-type: none"> No. 75-2, 3rd Lin, WangYe Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C. No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
Phone number	<ol style="list-style-type: none"> +886-3-592-8858 +886-3-582-8001 +886-3-582-8001
Fax number	<ol style="list-style-type: none"> +886-3-592-8859 +886-3-582-8958 +886-3-582-8958
E mail address	info.tw@dekra.com
Website	http://www.dekra.com.tw

1.7. List of Test Equipment

Conducted Emission / SR2-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Artificial Mains Network	R&S	ENV4200	848411/010	2019/01/11	2020/01/10
Test Receiver	R&S	ESCS 30	836858/022	2019/03/12	2020/03/11
LISN	R&S	ENV216	100092	2018/07/23	2019/07/22

Maximum peak conducted output power / SR12-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
High Speed Peak Power Meter Dual Input	Anritsu	ML2496A	1602004	2019/12/02	2020/12/01
Pulse Power Sensor	Anritsu	MA2411B	1531043	2019/12/02	2020/12/01
Pulse Power Sensor	Anritsu	MA2411B	1531044	2019/12/02	2020/12/01
Power Meter	Keysight	8990B	MY51000248	2019/05/21	2020/05/20
Power Sensor	Keysight	N1923A	MY57240005	2019/05/21	2020/05/20

Radiated Emission / CB2-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2019/10/21	2020/10/20
Signal & Spectrum Analyzer	R&S	FSV40	101049	2019/09/11	2020/09/10
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Bilog Antenna	Teseq	CBL6112D	23191	2019/06/17	2020/06/16
Horn Antenna	Schwarzbeck	BBHA 9120D	639	2019/05/28	2020/05/27
Horn Antenna	Schwarzbeck	BBHA 9170	202	2019/12/27	2020/12/26
Pre-Amplifier	DEKRA	AP-025C	12183122	2019/09/24	2020/09/23
Pre-Amplifier	EMCI	EMC11830I	980366	2019/12/03	2020/12/02
Pre-Amplifier	DEKRA	AP-400C	201801231	2019/12/03	2020/12/02
Horn Antenna	Schwarzbeck	BBHA 9120D	01656	2019/10/25	2020/10/24
Band Reject Filter	Micro-Tronics	BRM50702	G192	2019/03/27	2020/03/26
Signal Analyzer	R&S	FSV40	101435	2019/07/08	2020/07/07
Coaxial Cable(16m)	Huber+Suhner	SF104	CB2-H	2019/07/25	2020/07/24
EMI system	DEKRA	Version 1.0	CB2-H	NA	NA

RF antenna conducted test / SR12-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Spectrum Analyzer	Agilent	N9010A	US47140172	2019/06/28	2020/06/27
Signal & Spectrum Analyzer	R&S	FSV40	101049	2019/09/11	2020/09/10

Radiated Emission Band Edge / CB2-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2019/10/21	2020/10/20
Signal & Spectrum Analyzer	R&S	FSV40	101049	2019/09/11	2020/09/10
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Bilog Antenna	Teseq	CBL6112D	23191	2019/06/17	2020/06/16
Horn Antenna	Schwarzbeck	BBHA 9120D	639	2019/05/28	2020/05/27
Horn Antenna	Schwarzbeck	BBHA 9170	202	2019/12/27	2020/12/26
Pre-Amplifier	DEKRA	AP-025C	12183122	2019/09/24	2020/09/23
Pre-Amplifier	EMCI	EMC11830I	980366	2019/12/03	2020/12/02
Pre-Amplifier	DEKRA	AP-400C	201801231	2019/12/03	2020/12/02
Horn Antenna	Schwarzbeck	BBHA 9120D	01656	2019/10/25	2020/10/24
Band Reject Filter	Micro-Tronics	BRM50702	G192	2019/03/27	2020/03/26
Signal Analyzer	R&S	FSV40	101435	2019/07/08	2020/07/07
Coaxial Cable(16m)	Huber+Suhner	SF104	CB2-H	2019/07/25	2020/07/24
EMI system	DEKRA	Version 1.0	CB2-H	NA	NA

Occupied Bandwidth & DTS Bandwidth / SR12-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Spectrum Analyzer	Agilent	N9010A	US47140172	2019/06/28	2020/06/27
Signal & Spectrum Analyzer	R&S	FSV40	101049	2019/09/11	2020/09/10

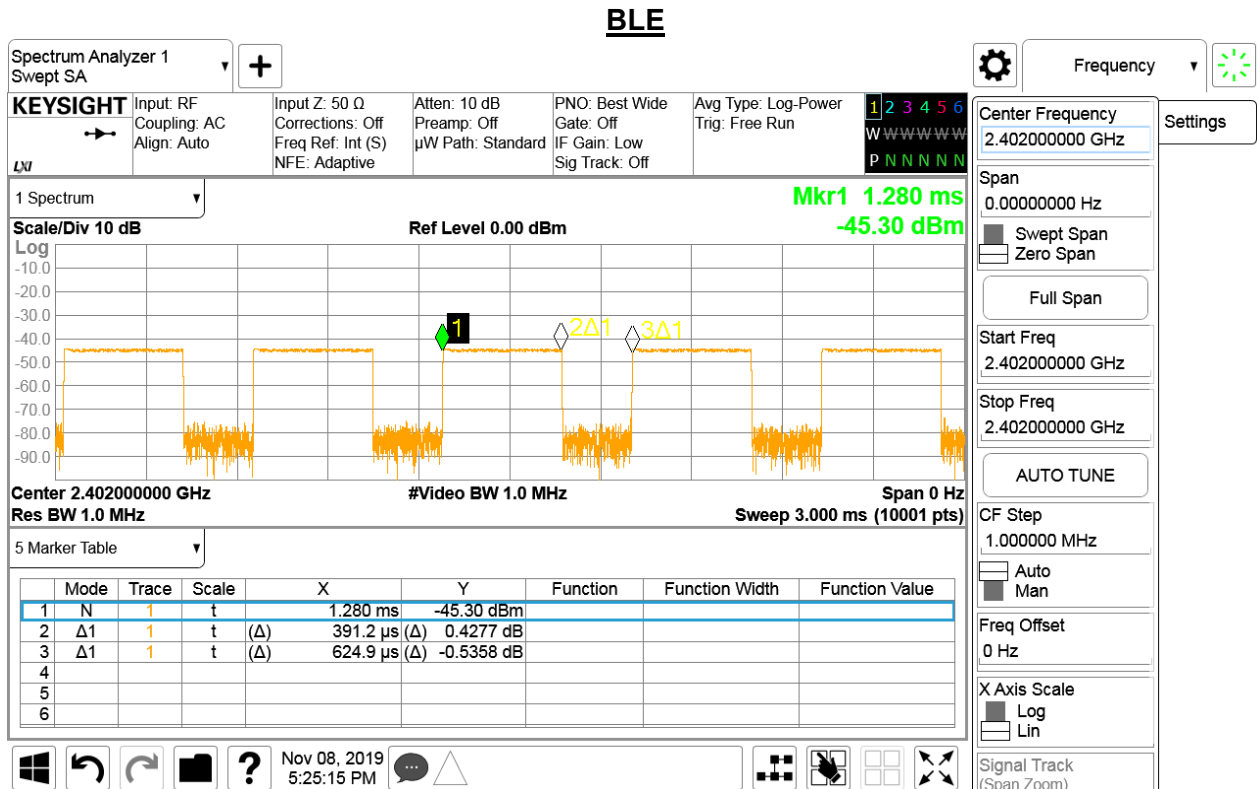
Power Density / SR12-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Spectrum Analyzer	Agilent	N9010A	US47140172	2019/06/28	2020/06/27
Signal & Spectrum Analyzer	R&S	FSV40	101049	2019/09/11	2020/09/10

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

1.8. Duty cycle

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor(dB) linear voltage	Duty Factor(dB) Power	1/T Minimum VBW (kHz)
BLE	0.391	0.625	62.57%	4.072675	2.04	2.558

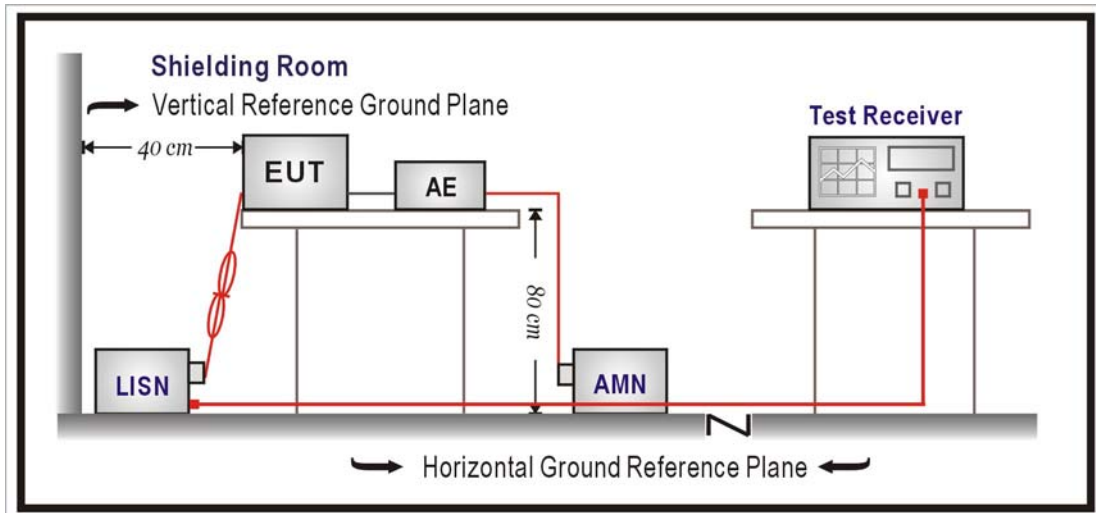


1.9. Uncertainty

Test item	Uncertainty
Conducted Emission	± 2.26 dB
Maximum peak conducted output power	± 1.27 dB
Radiated Emission	30MHz~1GHz as ± 3.43 dB 1GHz~26.5GHz as ± 3.65 dB
RF antenna conducted test	± 1.27 dB
Radiated Emission Band Edge	± 3.9 dB
Occupied Bandwidth	± 150 Hz
DTS Bandwidth	± 150 Hz
Power Density	± 1.27 dB

2. Conducted Emission

2.1. Test Setup



2.2. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency MHz	QP	AV
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the Radiated Emission Band Edges.

2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

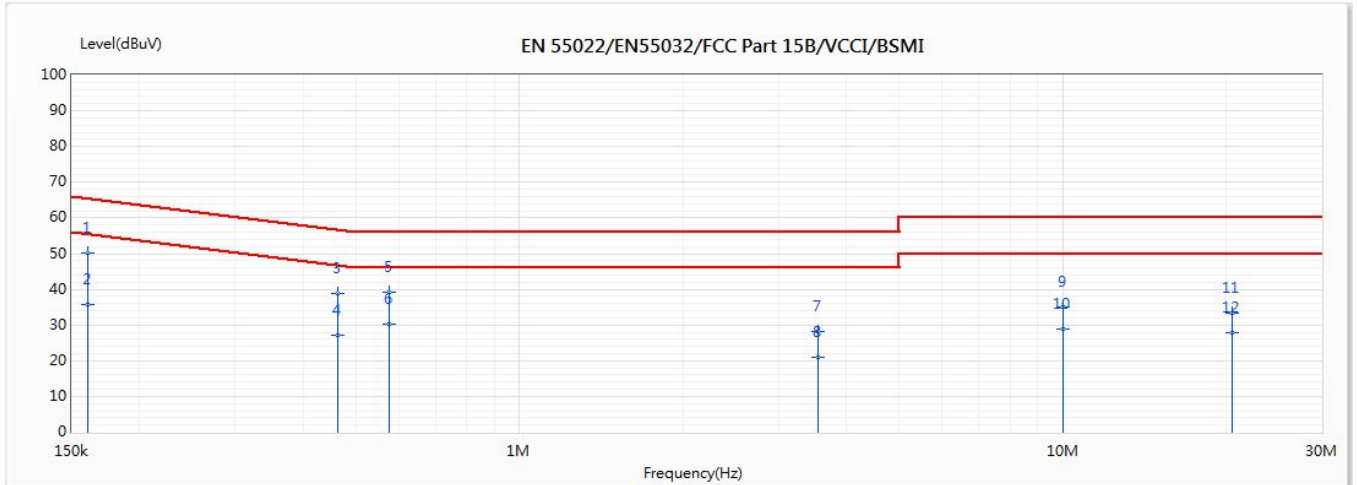
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.4. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207.

2.5. Test Result

Model No	KALENJI HR500	Site	SR2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/17
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Phase	L1	Temperature (°C)	21
Test Condition	CE_TX	Humidity (%RH)	57

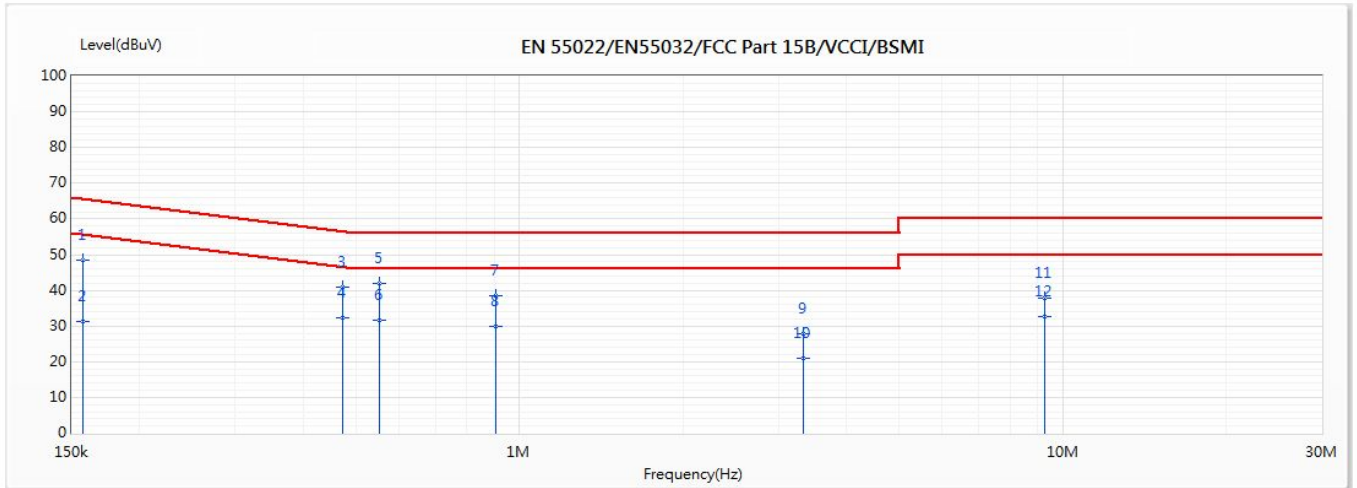


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.16	50.09	65.71	-15.61	40.43	9.66	QP
2	0.16	35.70	55.71	-20.01	26.04	9.66	AV
3	0.463	38.88	57.06	-18.18	29.16	9.72	QP
4	0.463	27.13	47.06	-19.93	17.41	9.72	AV
5	0.577	39.25	56.00	-16.75	29.50	9.75	QP
*6	0.577	30.40	46.00	-15.60	20.65	9.75	AV
7	3.543	28.03	56.00	-27.97	18.15	9.89	QP
8	3.543	20.82	46.00	-25.18	10.94	9.89	AV
9	10.008	34.91	60.00	-25.09	24.81	10.10	QP
10	10.008	28.92	50.00	-21.08	18.82	10.10	AV
11	20.56	33.29	60.00	-26.71	23.01	10.27	QP
12	20.56	27.77	50.00	-22.23	17.50	10.27	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Model No	KALENJI HR500	Site	SR2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/17
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Phase	L2	Temperature (°C)	21
Test Condition	CE_TX	Humidity (%RH)	57



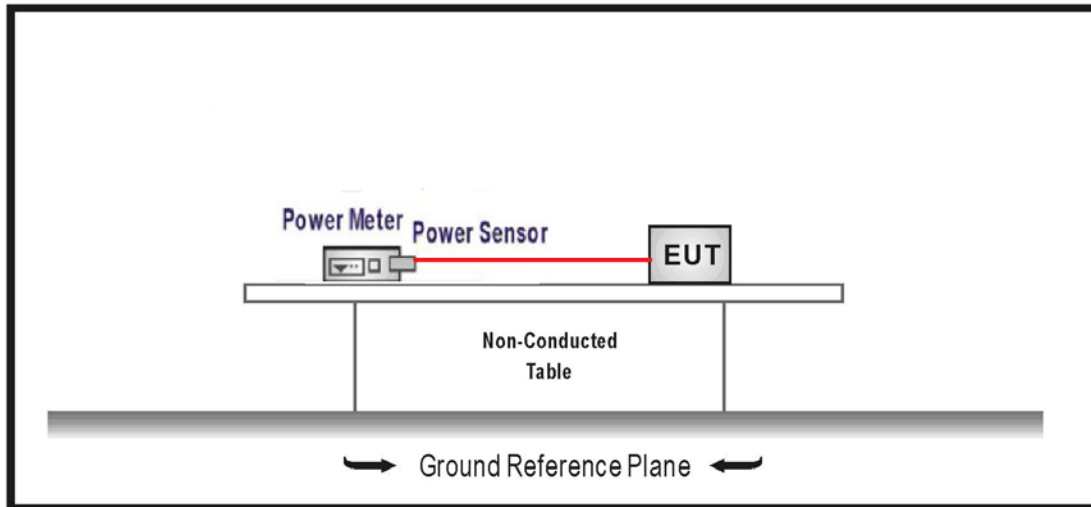
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.157	48.53	65.79	-17.26	38.85	9.68	QP
2	0.157	31.16	55.79	-24.63	21.48	9.68	AV
3	0.472	41.04	56.81	-15.76	31.31	9.73	QP
4	0.472	32.31	46.81	-14.50	22.57	9.73	AV
*5	0.551	41.84	56.00	-14.16	32.09	9.75	QP
6	0.551	31.51	46.00	-14.49	21.77	9.75	AV
7	0.906	38.58	56.00	-17.42	28.78	9.81	QP
8	0.906	29.90	46.00	-16.10	20.09	9.81	AV
9	3.325	27.76	56.00	-28.24	17.88	9.88	QP
10	3.325	21.09	46.00	-24.91	11.21	9.88	AV
11	9.292	37.93	60.00	-22.07	27.81	10.12	QP
12	9.292	32.57	50.00	-17.43	22.45	10.12	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

3. Maximum peak conducted output power

3.1. Test Setup



3.2. Limits

The maximum peak power shall be less 1 Watt.

3.3. Test procedures

The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB558074 D01V05r02 for compliance to FCC 47CFR 15.247 requirements.

3.4. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247.

3.5. Test Result

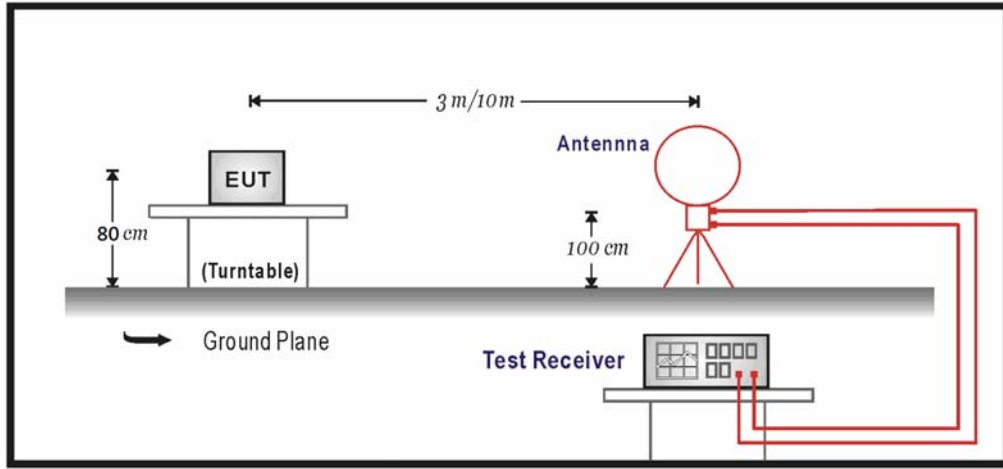
Product	Watch		
Test Item	Maximum peak conducted output power		
Test Mode	Mode 1: Transmit Mode (Power by PC)		
Date of Test	2020/01/13	Test Site	SR12-H
Temperature (°C)	21.0	Humidity (%RH)	58.0

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
00	2402	-5.620	30
19	2440	-6.200	30
39	2480	-6.770	30

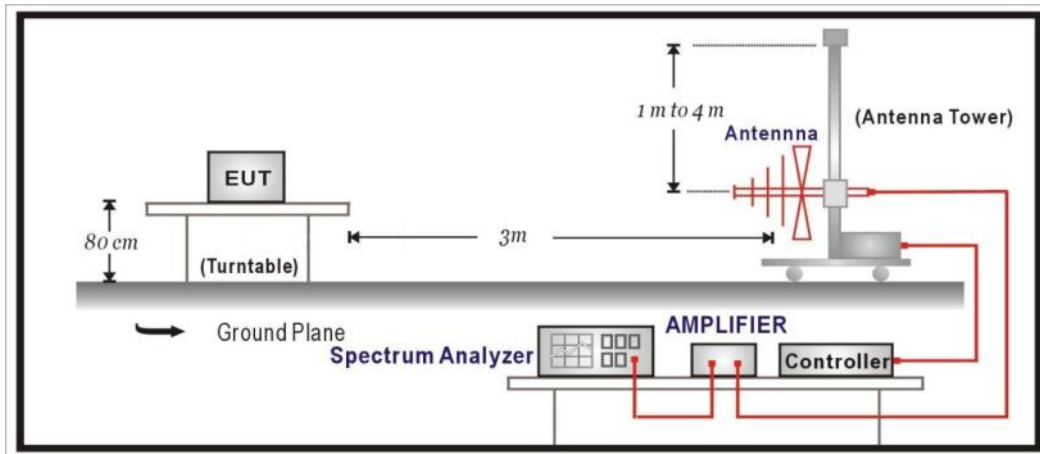
4. Radiated Emission

4.1. Test Setup

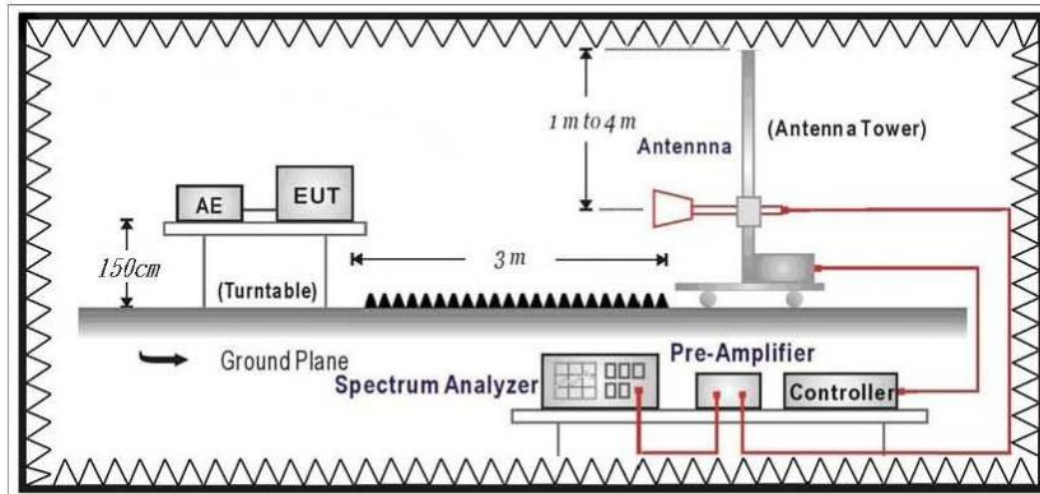
Under 30MHz Test Setup:



Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m	dBuV/m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

Remarks: 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

4.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 D01V05r02 for compliance to FCC 47CFR 15.247 requirements. The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

On any frequency or frequencies from 9kHz(inclde The the lowest oscillator frequency generated within the device up to the 10th harmonic) to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is 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. The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

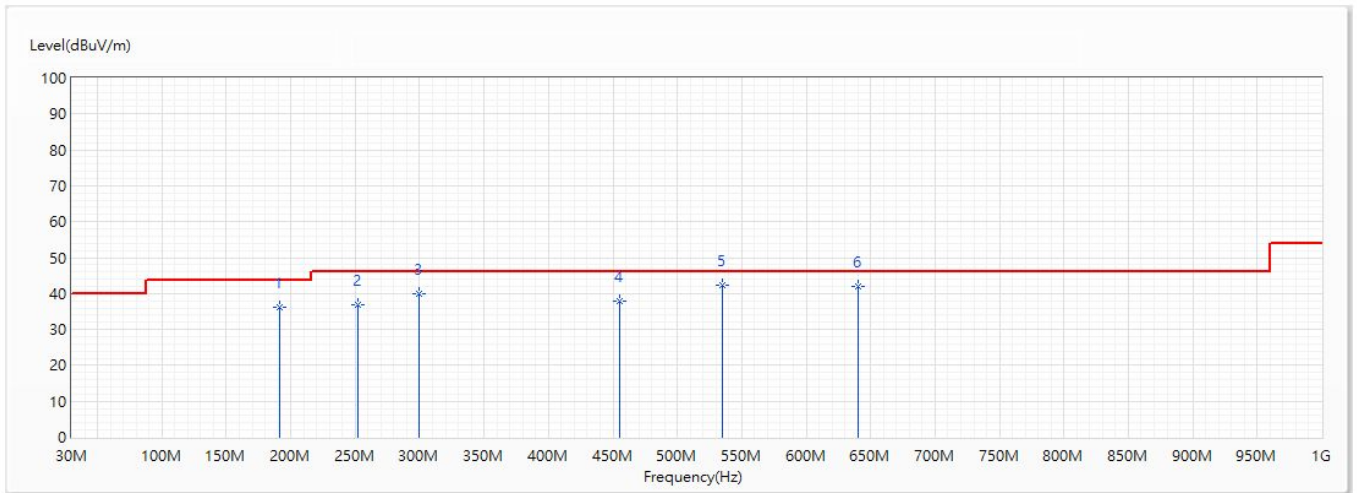
4.4. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247.

4.5. Test Result

30MHz-1GHz Spurious

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/31
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	16.0
Test Condition	802.15.1_BLE_2440MHz	Humidity (%RH)	54.0

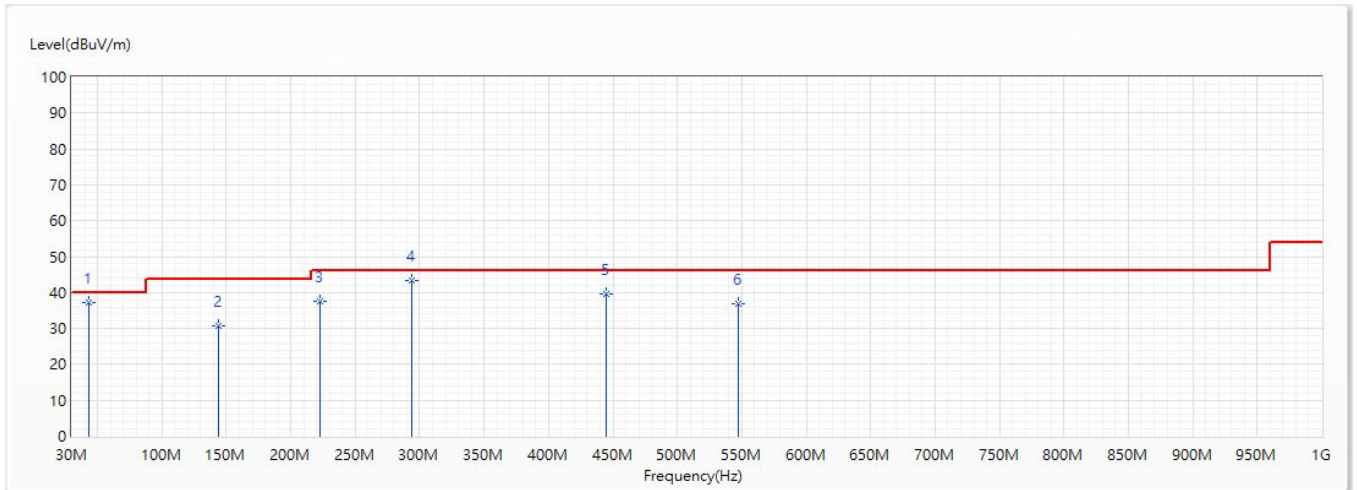


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	191.748	36.18	43.52	-7.34	60.26	-24.08	QP
2	251.645	36.86	46.02	-9.16	57.77	-20.91	QP
3	300.024	39.86	46.02	-6.16	59.84	-19.98	QP
4	455.224	37.72	46.02	-8.30	53.33	-15.61	QP
* 5	535.37	42.36	46.02	-3.66	56.77	-14.41	QP
6	640.009	41.92	46.02	-4.10	55.13	-13.21	QP

Note:

1. All Reading Levels is Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Correct Factor
4. The Emission under 30MHz were not included is because their levels are lower than 20dB away from limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/31
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	16.0
Test Condition	802.15.1_BLE_2440MHz	Humidity (%RH)	54.0

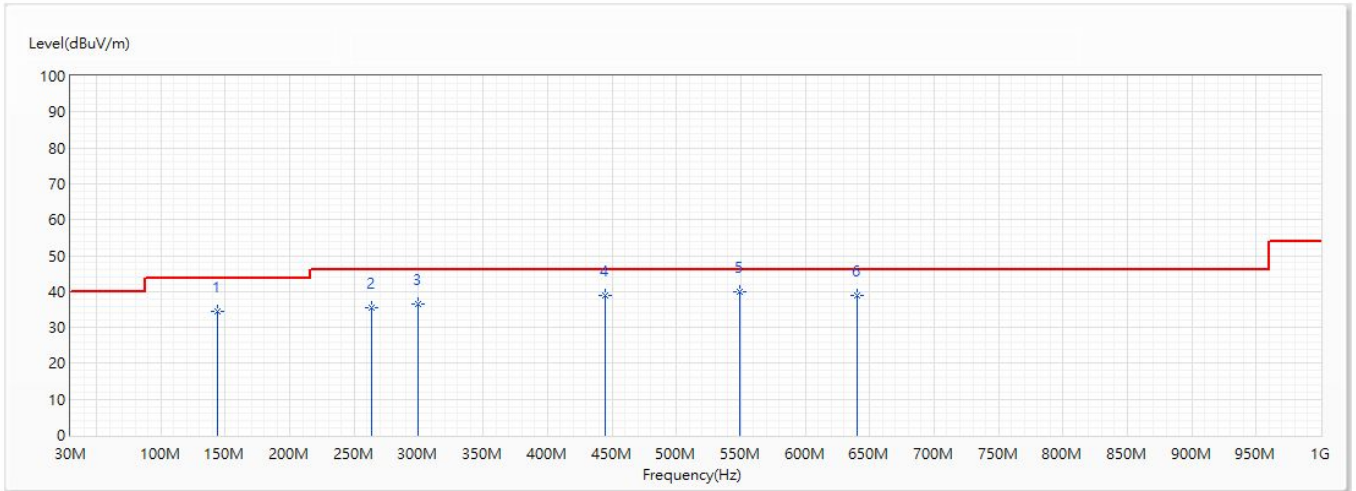


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	43.338	37.05	40.00	-2.95	57.66	-20.61	QP
2	143.975	30.85	43.52	-12.67	53.08	-22.23	QP
3	222.545	37.47	46.02	-8.55	60.00	-22.53	QP
* 4	293.961	43.33	46.02	-2.69	63.43	-20.10	QP
5	445.16	39.43	46.02	-6.59	55.23	-15.80	QP
6	547.374	36.79	46.02	-9.23	51.05	-14.26	QP

Note:

1. All Reading Levels is Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Correct Factor
4. The Emission under 30MHz were not included is because their levels are lower than 20dB away from limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	DC 3.8V	Test Date	2020/1/31
Test Mode	Mode 2: Transmit Mode (Power by Battery)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	16.0
Test Condition	802.15.1_BLE_2440MHz	Humidity (%RH)	54.0

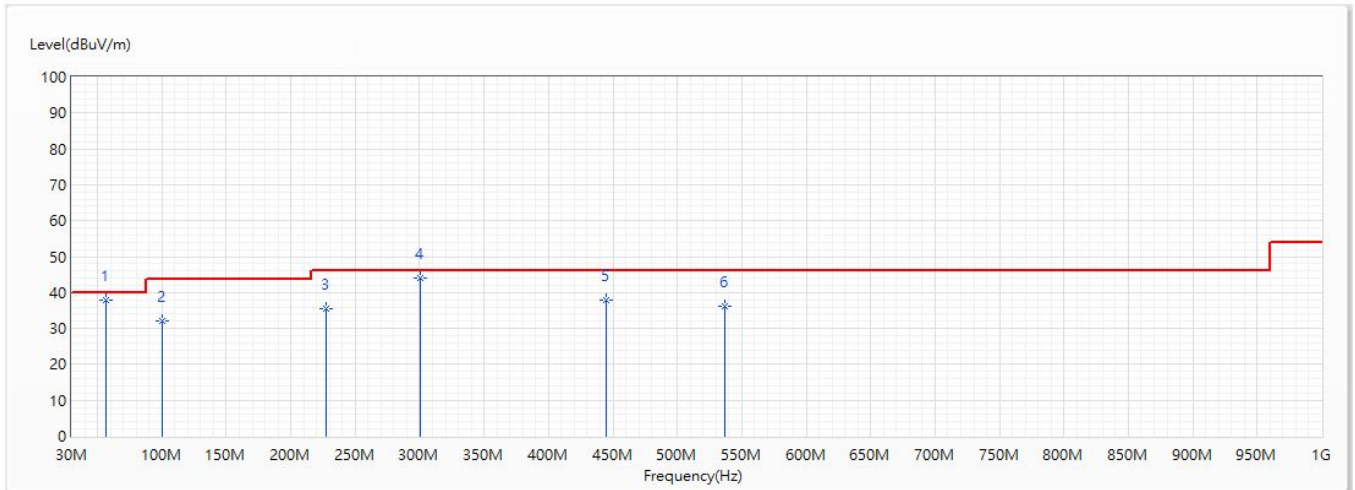


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	143.854	34.42	43.52	-9.10	56.64	-22.22	QP
2	263.77	35.46	46.02	-10.56	56.14	-20.68	QP
3	300.024	36.57	46.02	-9.45	56.55	-19.98	QP
4	445.039	39.04	46.02	-6.98	54.84	-15.80	QP
* 5	549.193	39.88	46.02	-6.14	54.13	-14.25	QP
6	640.009	38.81	46.02	-7.21	52.02	-13.21	QP

Note:

1. All Reading Levels is Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Correct Factor
4. The Emission under 30MHz were not included is because their levels are lower than 20dB away from limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	DC 3.8V	Test Date	2020/1/31
Test Mode	Mode 2: Transmit Mode (Power by Battery)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	16.0
Test Condition	802.15.1_BLE_2440MHz	Humidity (%RH)	54.0



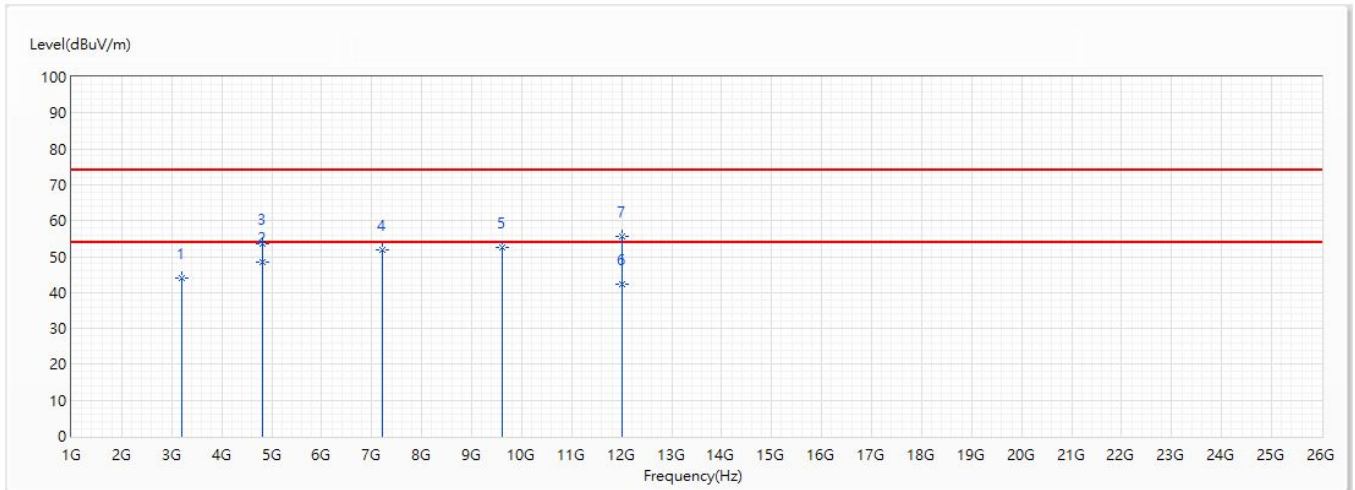
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	56.311	37.87	40.00	-2.13	65.08	-27.21	QP
2	99.961	32.21	43.52	-11.31	55.90	-23.69	QP
3	227.759	35.57	46.02	-10.45	57.80	-22.23	QP
* 4	300.145	44.16	46.02	-1.86	64.14	-19.98	QP
5	445.16	37.82	46.02	-8.20	53.62	-15.80	QP
6	536.946	36.23	46.02	-9.79	50.62	-14.39	QP

Note:

1. All Reading Levels is Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Correct Factor
4. The Emission under 30MHz were not included is because their levels are lower than 20dB away from limit.

Harmonic & Spurious:

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	21.0
Test Condition	BLE_2402MHz	Humidity (%RH)	54.0

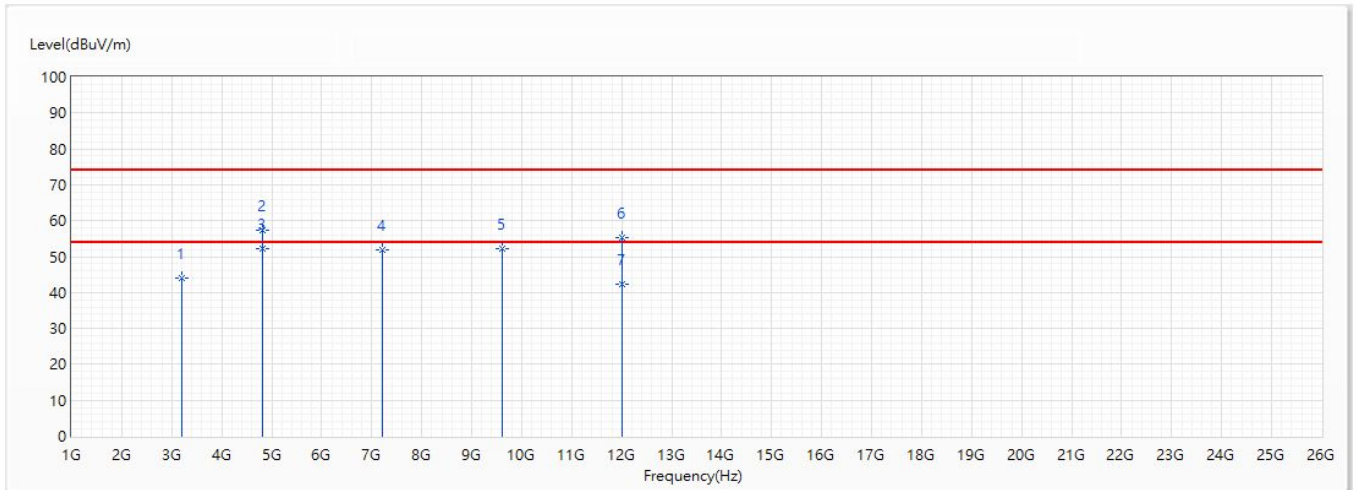


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	3202	44.17	74.00	-29.83	58.54	-14.37	PK
* 2	4804	48.40	54.00	-5.60	56.87	-8.47	AV
3	4804	53.75	74.00	-20.25	62.22	-8.47	PK
4	7206	51.77	74.00	-22.23	51.58	0.19	PK
5	9608	52.59	74.00	-21.41	47.85	4.74	PK
6	12010	42.33	54.00	-11.67	33.20	9.13	AV
7	12010	55.56	74.00	-18.44	46.43	9.13	PK

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst value.
3. Emission Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission above 18GHz were not included is because their levels are lower than 20dB form limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	21.0
Test Condition	BLE_2402MHz	Humidity (%RH)	54.0

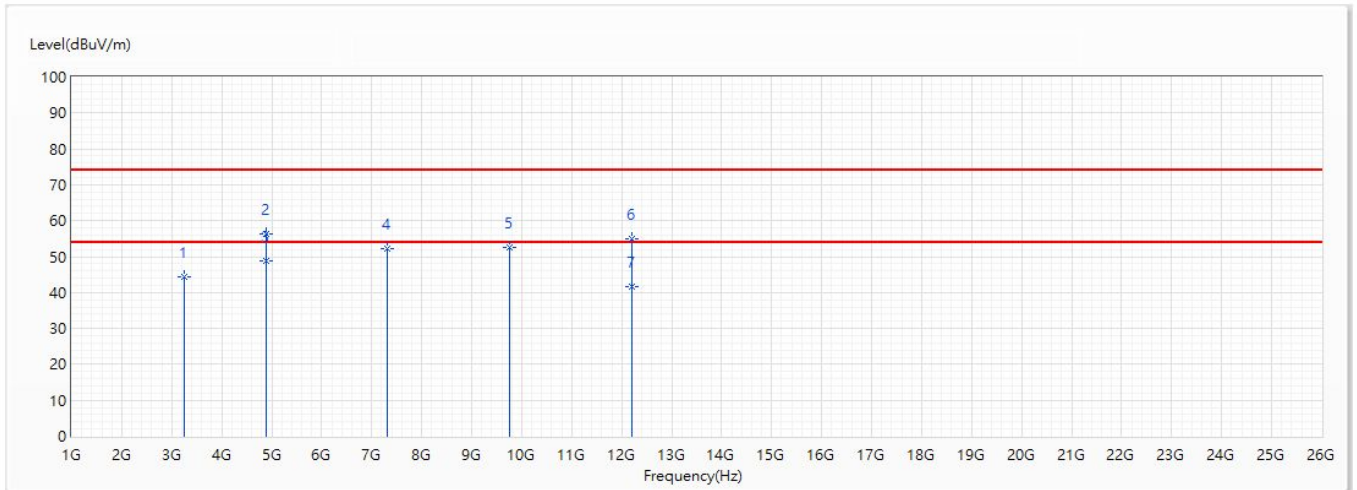


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	3202	44.18	74.00	-29.82	58.55	-14.37	PK
2	4804	57.23	74.00	-16.77	65.70	-8.47	PK
* 3	4804	52.34	54.00	-1.66	60.81	-8.47	AV
4	7206	51.77	74.00	-22.23	51.58	0.19	PK
5	9608	52.31	74.00	-21.69	47.57	4.74	PK
6	12010	55.26	74.00	-18.74	46.13	9.13	PK
7	12010	42.49	54.00	-11.51	33.36	9.13	AV

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst value.
3. Emission Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission above 18GHz were not included is because their levels are lower than 20dB form limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	21.0
Test Condition	BLE_2440MHz	Humidity (%RH)	54.0

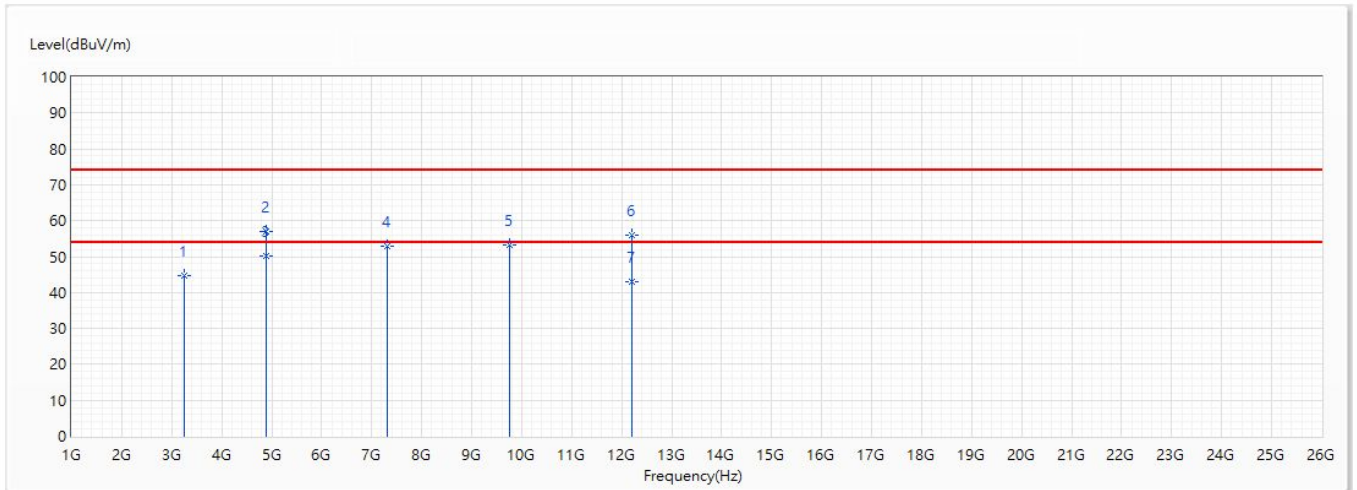


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	3253	44.37	74.00	-29.63	58.63	-14.26	PK
2	4880	56.22	74.00	-17.78	64.45	-8.23	PK
* 3	4880	48.88	54.00	-5.12	57.11	-8.23	AV
4	7320	52.17	74.00	-21.83	51.75	0.42	PK
5	9760	52.71	74.00	-21.29	47.83	4.88	PK
6	12200	54.92	74.00	-19.08	46.33	8.59	PK
7	12200	41.69	54.00	-12.31	33.10	8.59	AV

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst value.
3. Emission Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission above 18GHz were not included is because their levels are lower than 20dB form limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	21.0
Test Condition	BLE_2440MHz	Humidity (%RH)	54.0

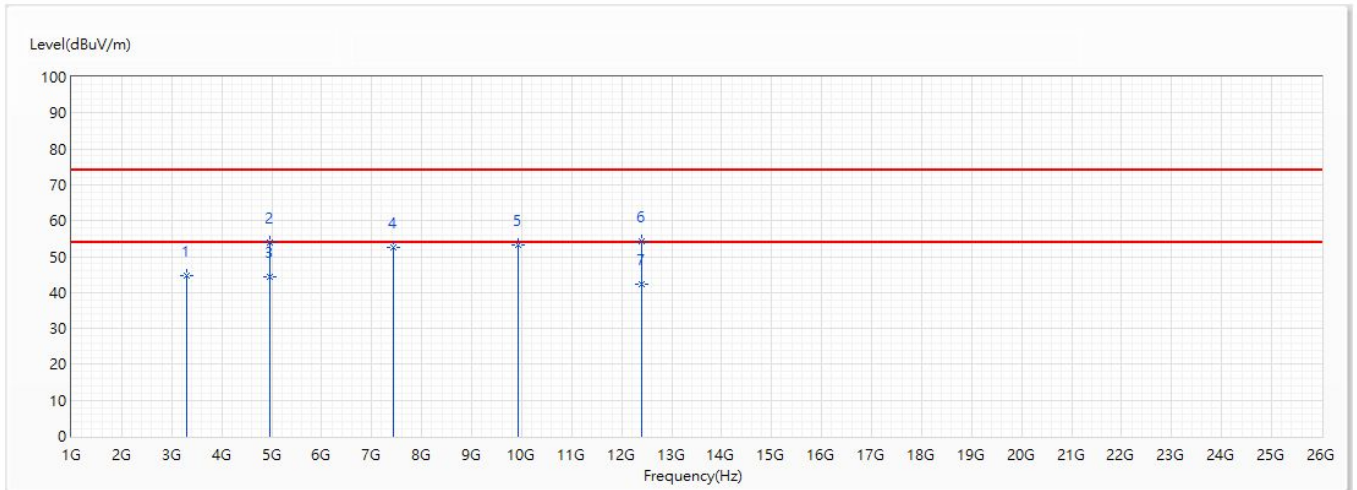


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	3253	44.67	74.00	-29.33	58.93	-14.26	PK
2	4880	56.83	74.00	-17.17	65.06	-8.23	PK
* 3	4880	50.03	54.00	-3.97	58.26	-8.23	AV
4	7320	52.86	74.00	-21.14	52.44	0.42	PK
5	9760	53.38	74.00	-20.62	48.50	4.88	PK
6	12200	55.88	74.00	-18.12	47.29	8.59	PK
7	12200	42.95	54.00	-11.05	34.36	8.59	AV

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst value.
3. Emission Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission above 18GHz were not included is because their levels are lower than 20dB form limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	21.0
Test Condition	BLE_2480MHz	Humidity (%RH)	54.0

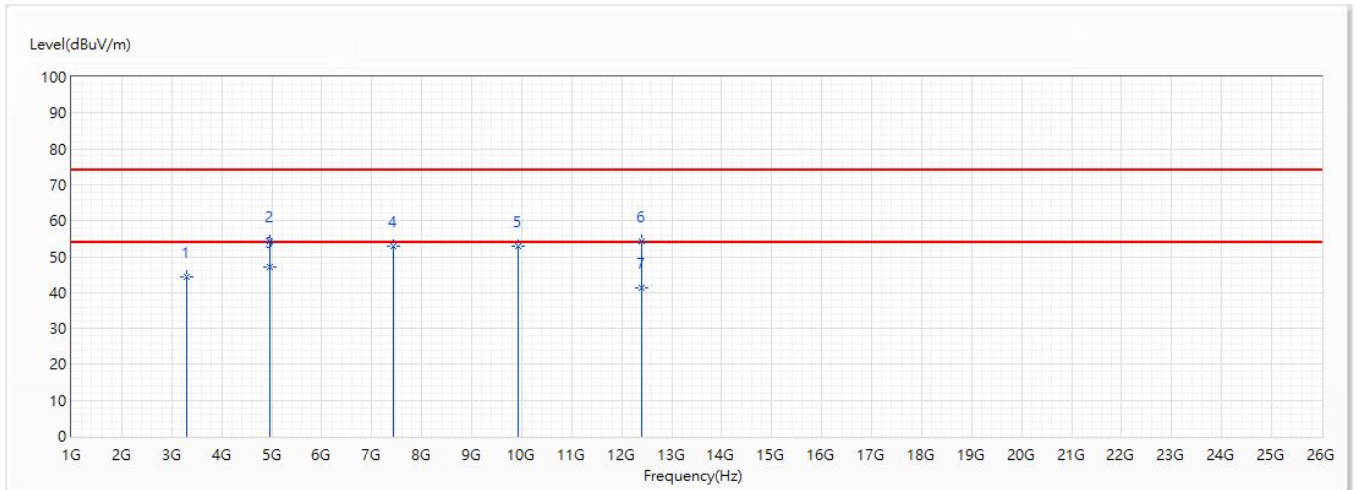


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	3306	44.60	74.00	-29.40	58.74	-14.14	PK
2	4960	53.97	74.00	-20.03	61.93	-7.96	PK
* 3	4960	44.39	54.00	-9.61	52.35	-7.96	AV
4	7440	52.51	74.00	-21.49	51.84	0.67	PK
5	9920	53.30	74.00	-20.70	48.26	5.04	PK
6	12400	54.19	74.00	-19.81	46.16	8.03	PK
7	12400	42.34	54.00	-11.66	34.31	8.03	AV

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst value.
3. Emission Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission above 18GHz were not included is because their levels are lower than 20dB form limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	21.0
Test Condition	BLE_2480MHz	Humidity (%RH)	54.0



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	3306	44.38	74.00	-29.62	58.52	-14.14	PK
2	4960	54.17	74.00	-19.83	62.13	-7.96	PK
* 3	4960	47.26	54.00	-6.74	55.22	-7.96	AV
4	7440	52.81	74.00	-21.19	52.14	0.67	PK
5	9920	53.03	74.00	-20.97	47.99	5.04	PK
6	12400	54.15	74.00	-19.85	46.12	8.03	PK
7	12400	41.41	54.00	-12.59	33.38	8.03	AV

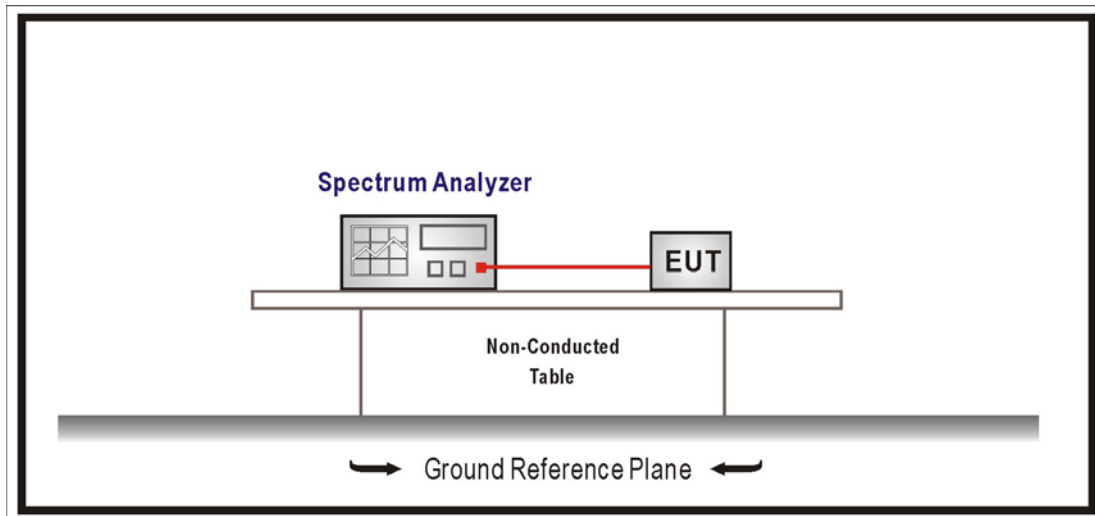
Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst value.
3. Emission Level = Reading Level + Correct Factor
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission above 18GHz were not included is because their levels are lower than 20dB form limit.

5. RF antenna conducted test

5.1. Test Setup

RF Conducted Measurement:



5.2. Limits

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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. 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)).

5.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 D01V05r02 for compliance to FCC 47CFR 15.247 requirements. Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

5.4. Test Specification

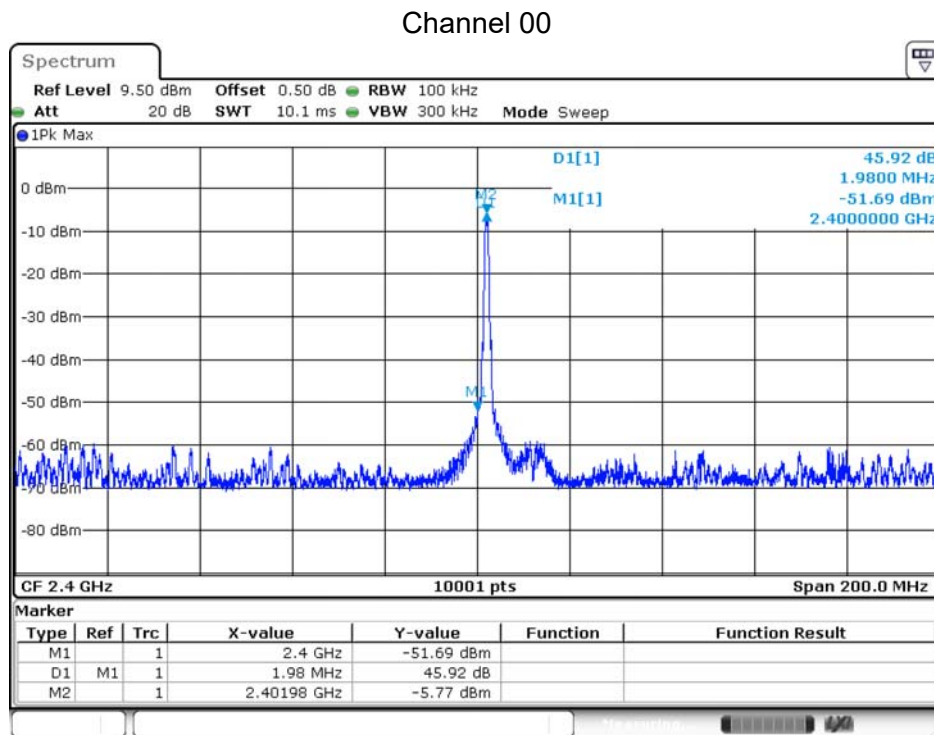
According to FCC Part 15 Subpart C Paragraph 15.247.

5.5. Test Result

Product	Watch		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit Mode (Power by PC)		
Date of Test	2020/01/13	Test Site	SR12-H
Temperature (°C)	21.0	Humidity (%RH)	58.0

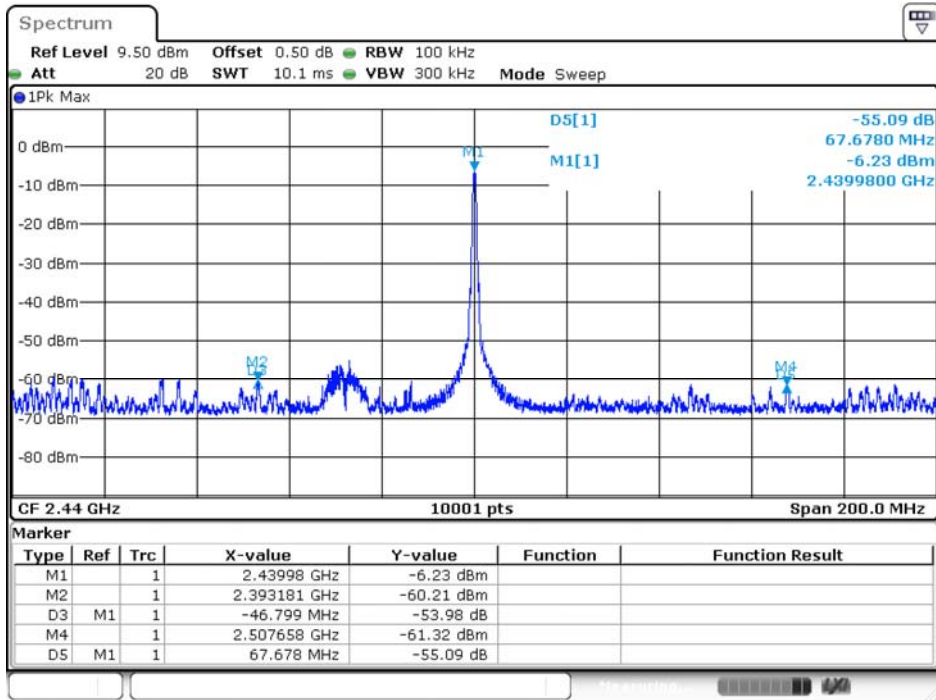
GFSK

Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)
00	2402	45.920	≥20
19	2440	53.090	≥20
39	2480	51.290	≥20



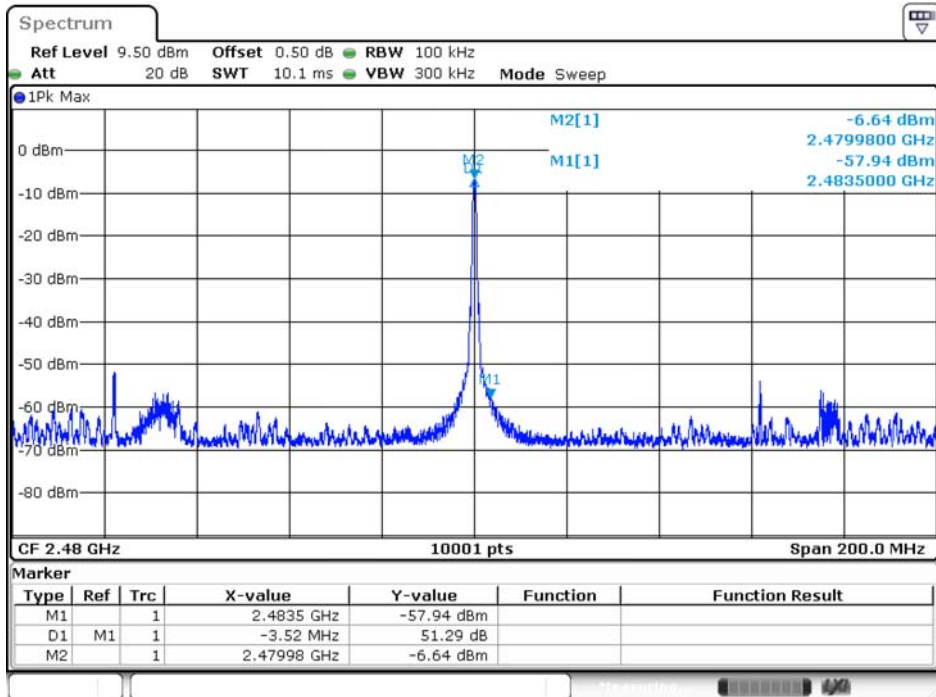
Date: 13.JAN.2020 15:00:00

Channel 19



Date: 13.JAN.2020 15:23:25

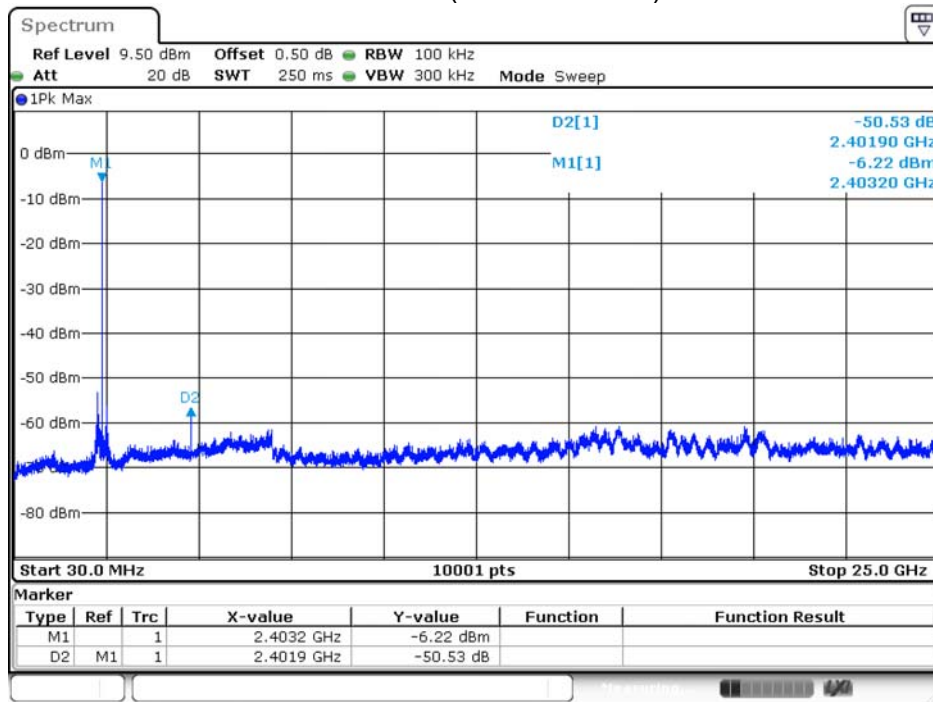
Channel 39



Date: 13.JAN.2020 15:32:32

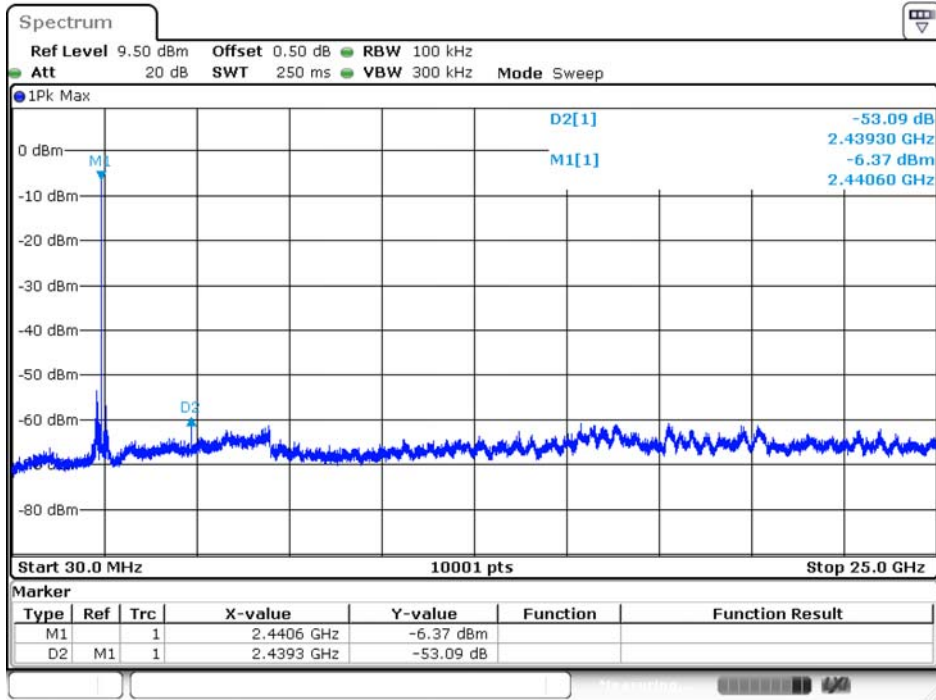
Product	Watch		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit Mode (Power by PC)		
Date of Test	2020/01/13	Test Site	SR12-H
Temperature (°C)	21.0	Humidity (%RH)	58.0

Channel 00 (30MHz-25GHz)



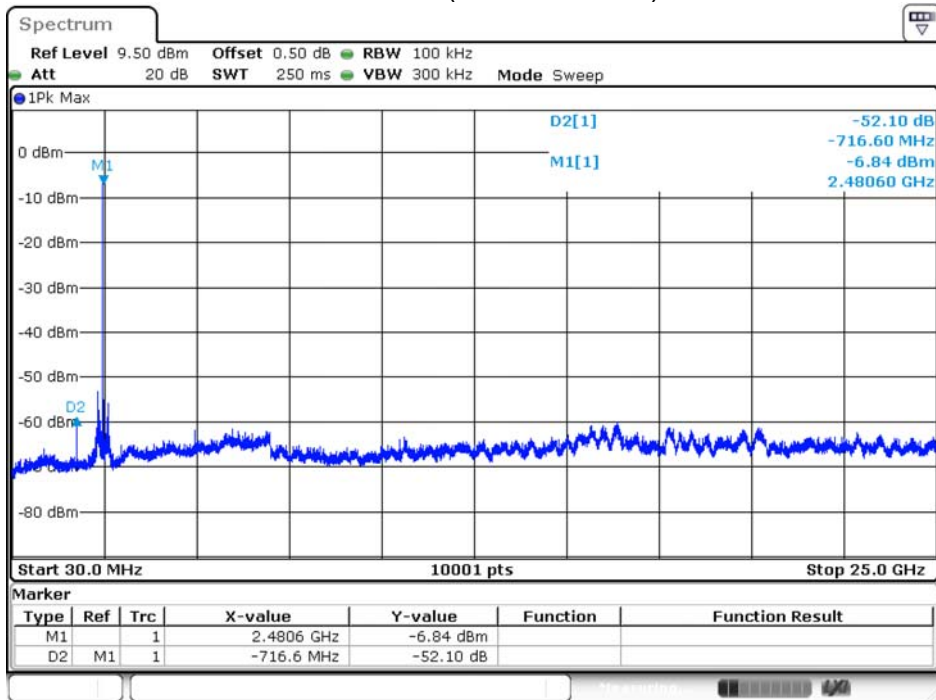
Date: 13.JAN.2020 15:49:49

Channel 19 (30MHz-25GHz)



Date: 13.JAN.2020 15:48:00

Channel 39 (30MHz-25GHz)

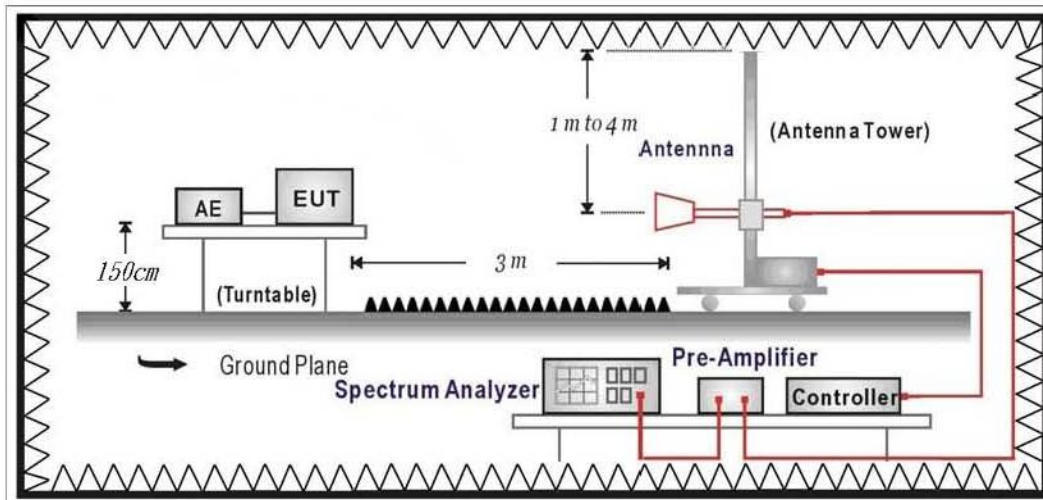


Date: 13.JAN.2020 15:45:24

6. Radiated Emission Band Edge

6.1. Test Setup

RF Radiated Measurement:



6.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 D01V05r02 for compliance to FCC 47CFR 15.247 requirements. The EUT and its simulators are placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

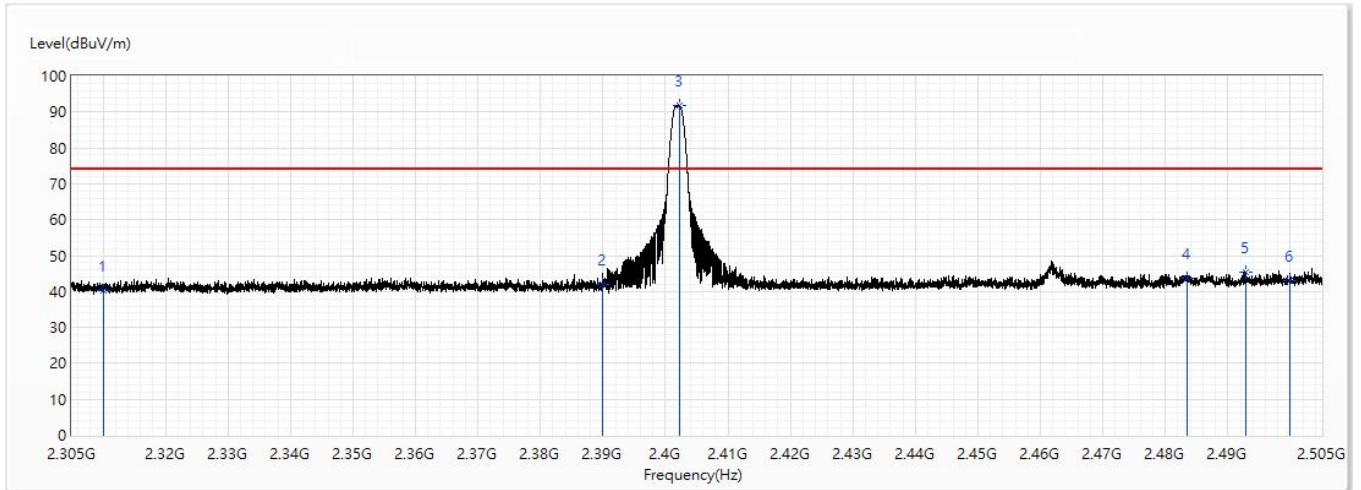
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

6.4. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247.

6.5. Test Result

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/9
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	21.0
Test Condition	BLE_2402MHz	Humidity (%RH)	57.0

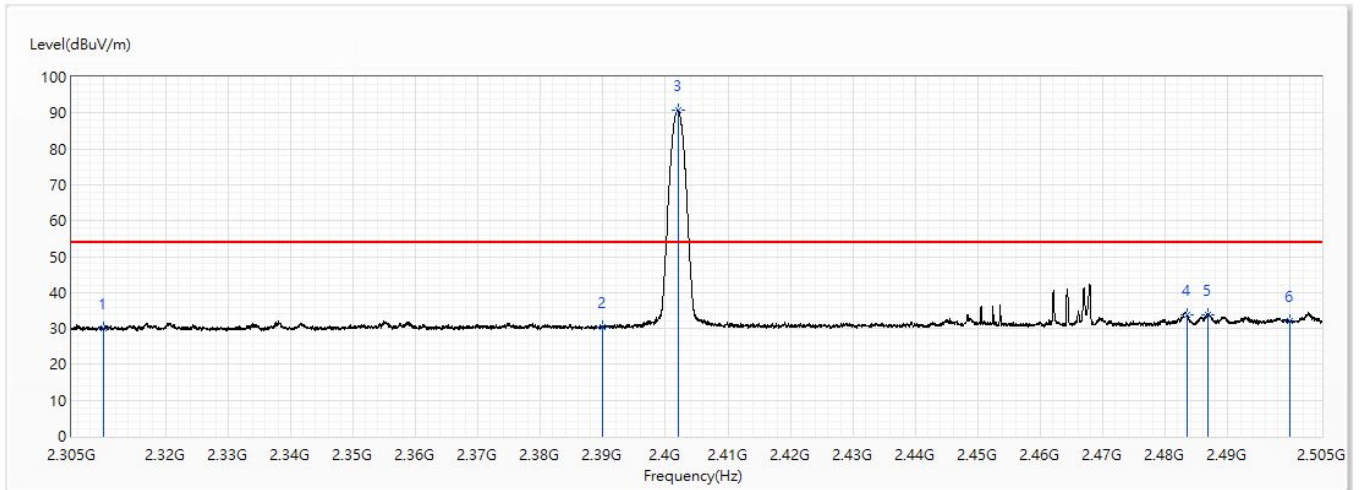


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	40.43	74.00	-33.57	24.86	15.57	PK
2	2390	42.05	74.00	-31.95	25.89	16.16	PK
! 3	2402.225	91.75	74.00	17.75	75.50	16.25	PK
4	2483.5	43.53	74.00	-30.47	26.67	16.86	PK
5	2492.9	45.48	74.00	-28.52	28.55	16.93	PK
6	2500	43.03	74.00	-30.97	26.05	16.98	PK

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/9
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	21.0
Test Condition	BLE_2402MHz	Humidity (%RH)	57.0

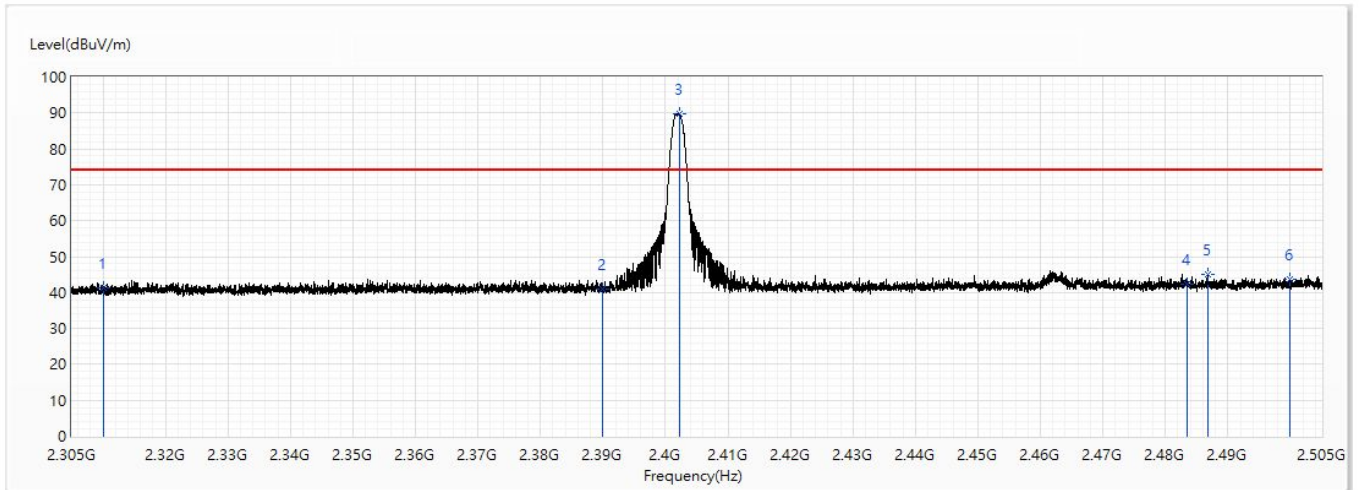


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	30.17	54.00	-23.83	14.60	15.57	AV
2	2390	30.34	54.00	-23.66	14.18	16.16	AV
! 3	2402	90.75	54.00	36.75	74.50	16.25	AV
4	2483.5	33.72	54.00	-20.28	16.86	16.86	AV
5	2486.825	33.81	54.00	-20.19	16.93	16.88	AV
6	2500	31.95	54.00	-22.05	14.97	16.98	AV

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/9
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	21.0
Test Condition	BLE_2402MHz	Humidity (%RH)	57.0

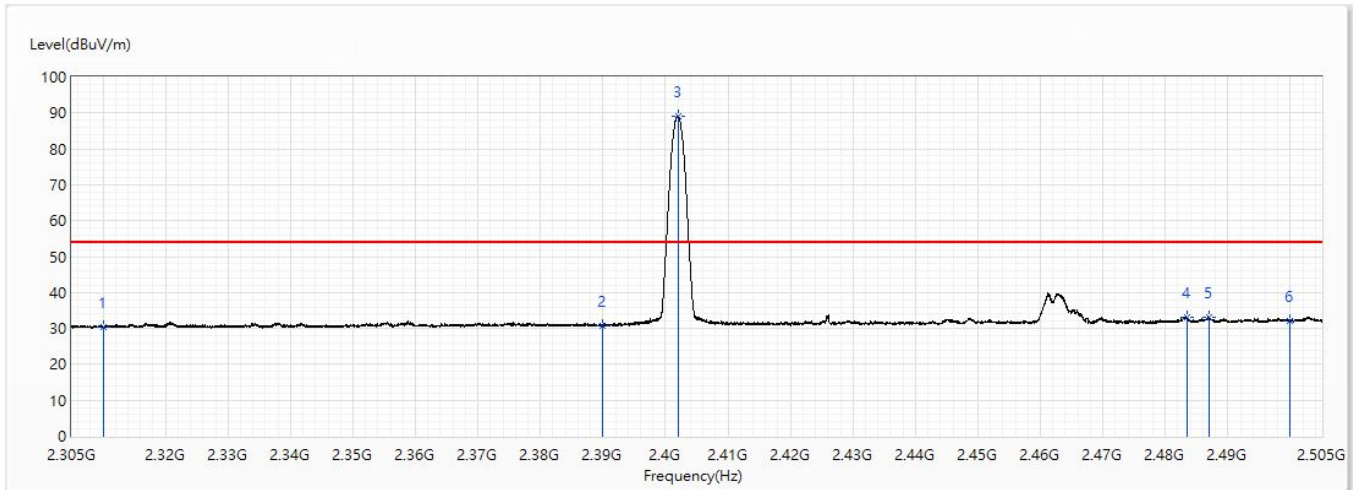


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	41.40	74.00	-32.60	25.83	15.57	PK
2	2390	40.99	74.00	-33.01	24.83	16.16	PK
! 3	2402.2	89.69	74.00	15.69	73.44	16.25	PK
4	2483.5	42.43	74.00	-31.57	25.57	16.86	PK
5	2486.775	44.90	74.00	-29.10	28.02	16.88	PK
6	2500	43.64	74.00	-30.36	26.66	16.98	PK

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/9
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	21.0
Test Condition	BLE_2402MHz	Humidity (%RH)	57.0

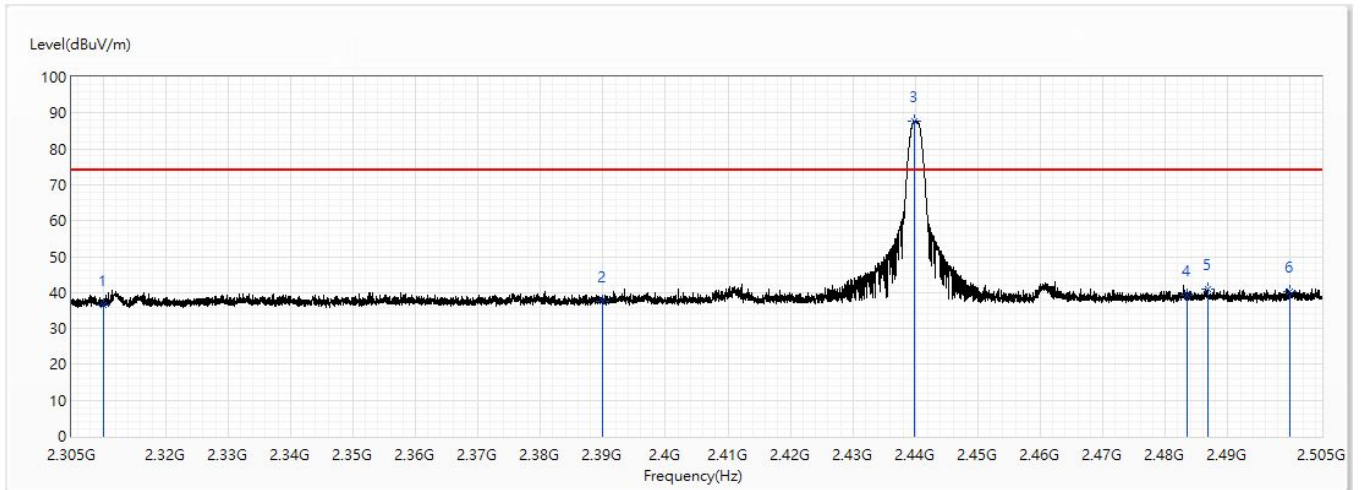


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	30.53	54.00	-23.47	14.96	15.57	AV
2	2390	30.83	54.00	-23.17	14.67	16.16	AV
! 3	2401.975	89.20	54.00	35.20	72.95	16.25	AV
4	2483.5	33.05	54.00	-20.95	16.19	16.86	AV
5	2487.025	32.94	54.00	-21.06	16.06	16.88	AV
6	2500	32.05	54.00	-21.95	15.07	16.98	AV

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/9
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	21.0
Test Condition	BLE_2440MHz	Humidity (%RH)	57.0

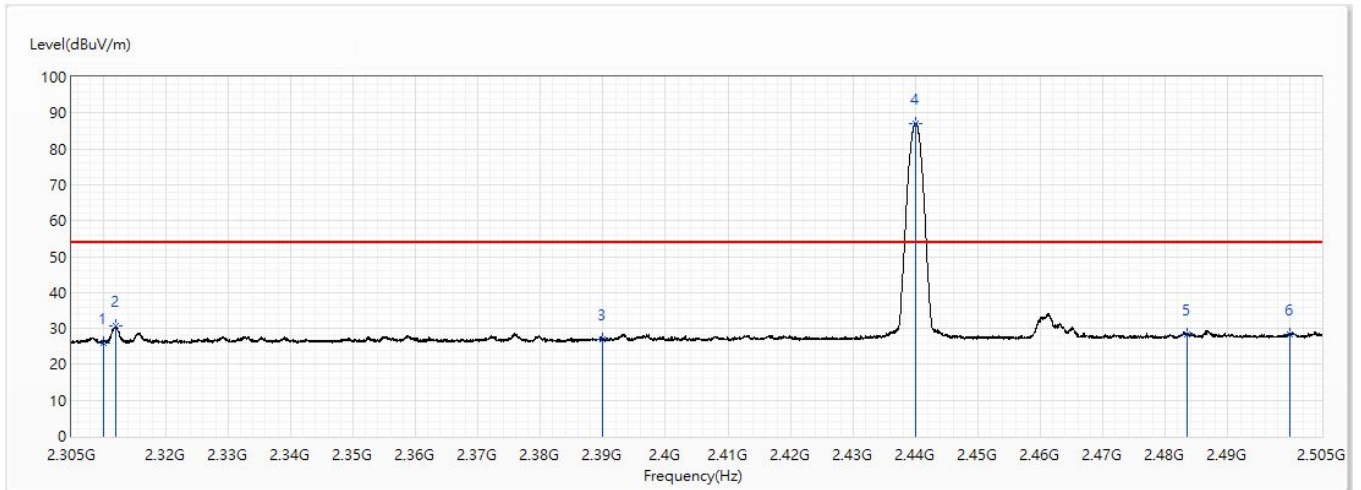


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	36.55	74.00	-37.45	20.98	15.57	PK
2	2390	37.43	74.00	-36.57	21.27	16.16	PK
! 3	2439.8	87.62	74.00	13.62	71.09	16.53	PK
4	2483.5	39.13	74.00	-34.87	22.27	16.86	PK
5	2486.775	40.97	74.00	-33.03	24.09	16.88	PK
6	2500	40.12	74.00	-33.88	23.14	16.98	PK

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	21.0
Test Condition	BLE_2440MHz	Humidity (%RH)	54.0

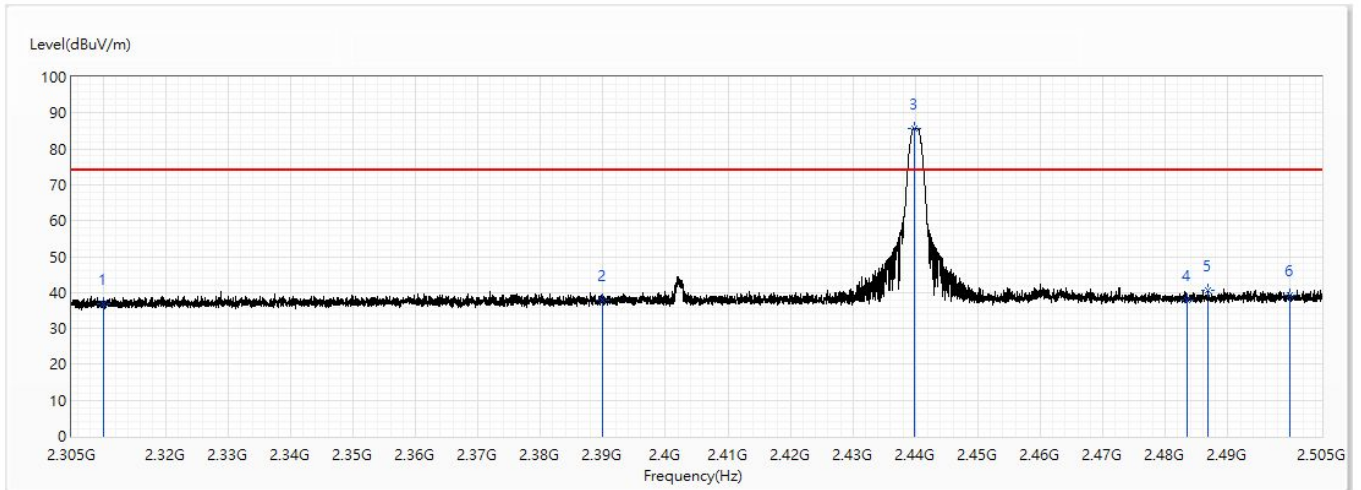


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	26.03	54.00	-27.97	10.46	15.57	AV
2	2311.95	30.77	54.00	-23.23	15.19	15.58	AV
3	2390	26.83	54.00	-27.17	10.67	16.16	AV
! 4	2440.05	87.03	54.00	33.03	70.50	16.53	AV
5	2483.5	28.27	54.00	-25.73	11.41	16.86	AV
6	2500	28.28	54.00	-25.72	11.30	16.98	AV

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	21.0
Test Condition	BLE_2440MHz	Humidity (%RH)	54.0

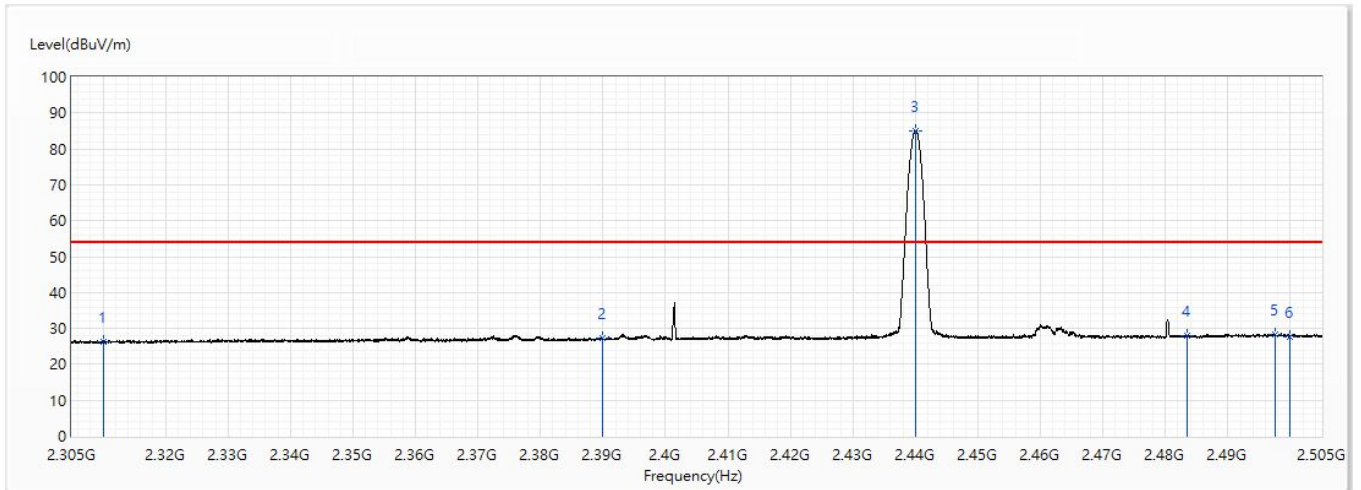


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	36.92	74.00	-37.08	21.35	15.57	PK
2	2390	38.01	74.00	-35.99	21.85	16.16	PK
! 3	2439.8	85.72	74.00	11.72	69.19	16.53	PK
4	2483.5	37.95	74.00	-36.05	21.09	16.86	PK
5	2486.775	40.68	74.00	-33.32	23.80	16.88	PK
6	2500	39.32	74.00	-34.68	22.34	16.98	PK

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	21.0
Test Condition	BLE_2440MHz	Humidity (%RH)	54.0

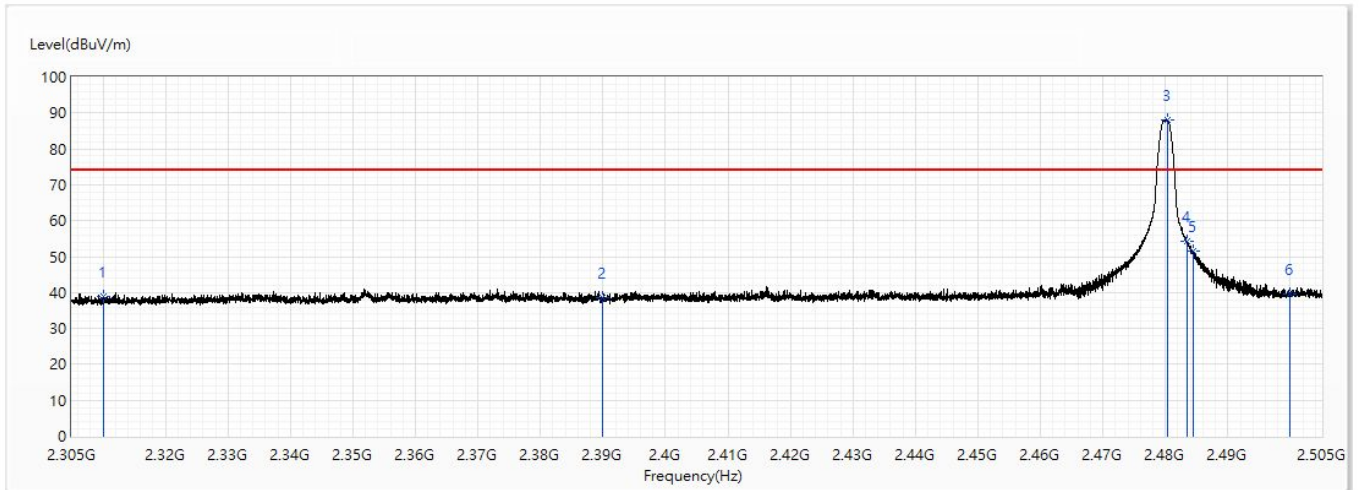


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	26.11	54.00	-27.89	10.54	15.57	AV
2	2390	27.22	54.00	-26.78	11.06	16.16	AV
! 3	2440.025	85.10	54.00	31.10	68.57	16.53	AV
4	2483.5	27.84	54.00	-26.16	10.98	16.86	AV
5	2497.525	28.42	54.00	-25.58	11.46	16.96	AV
6	2500	27.66	54.00	-26.34	10.68	16.98	AV

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	21.0
Test Condition	BLE_2480MHz	Humidity (%RH)	54.0

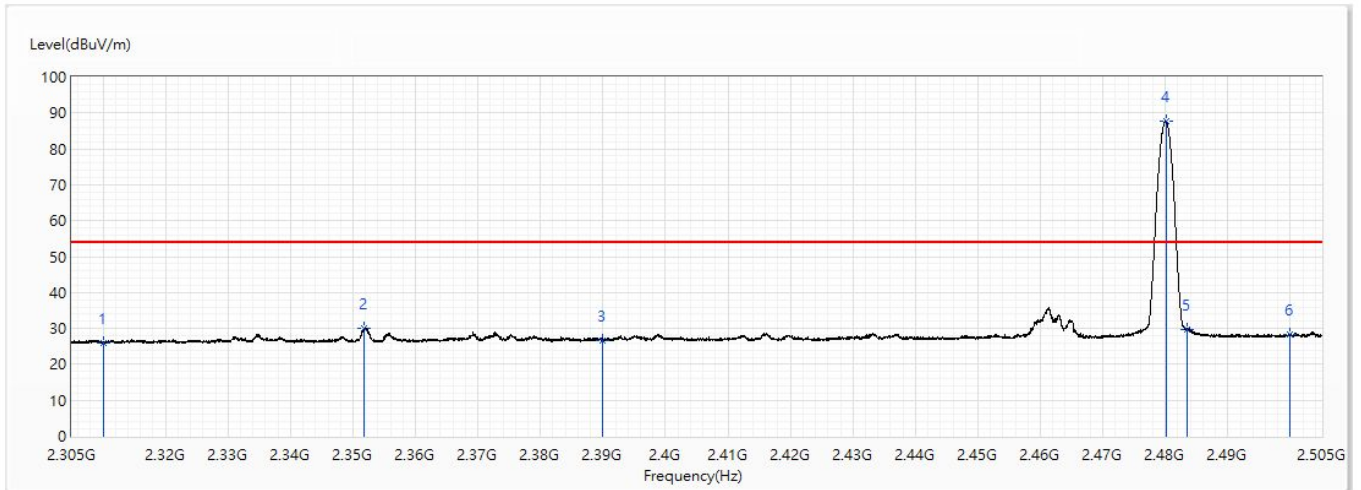


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	38.83	74.00	-35.17	23.26	15.57	PK
2	2390	38.60	74.00	-35.40	22.44	16.16	PK
! 3	2480.3	87.95	74.00	13.95	71.12	16.83	PK
4	2483.5	54.27	74.00	-19.73	37.41	16.86	PK
5	2484.475	51.43	74.00	-22.57	34.57	16.86	PK
6	2500	39.47	74.00	-34.53	22.49	16.98	PK

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Horizontal	Temperature (°C)	21.0
Test Condition	BLE_2480MHz	Humidity (%RH)	54.0

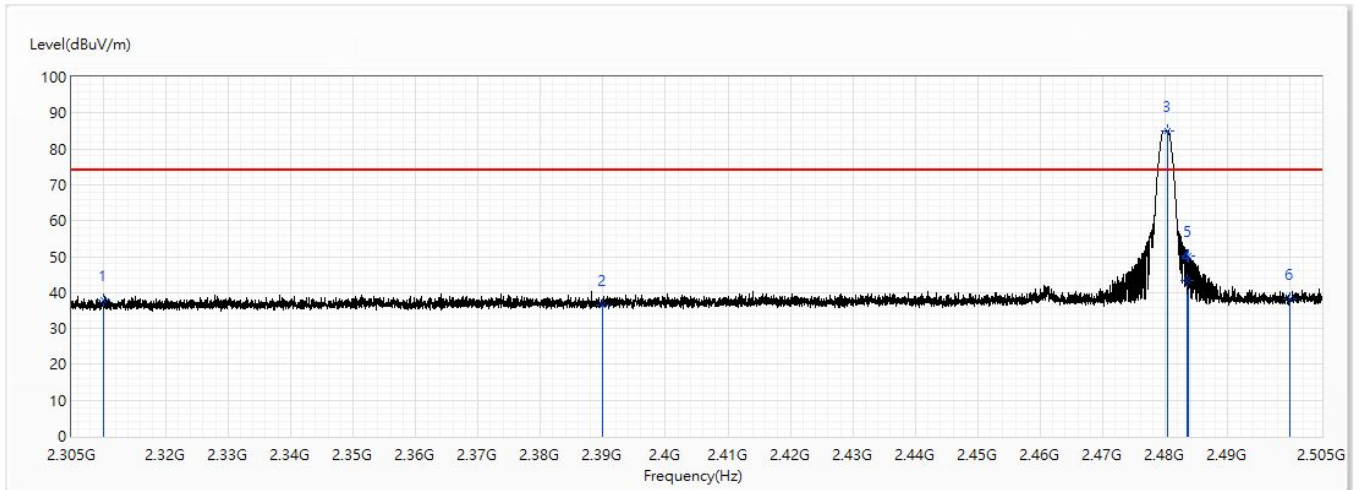


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	25.88	54.00	-28.12	10.31	15.57	AV
2	2351.8	30.20	54.00	-23.80	14.32	15.88	AV
3	2390	26.68	54.00	-27.32	10.52	16.16	AV
! 4	2480.05	87.56	54.00	33.56	70.73	16.83	AV
5	2483.5	29.81	54.00	-24.19	12.95	16.86	AV
6	2500	28.16	54.00	-25.84	11.18	16.98	AV

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	21.0
Test Condition	BLE_2480MHz	Humidity (%RH)	54.0

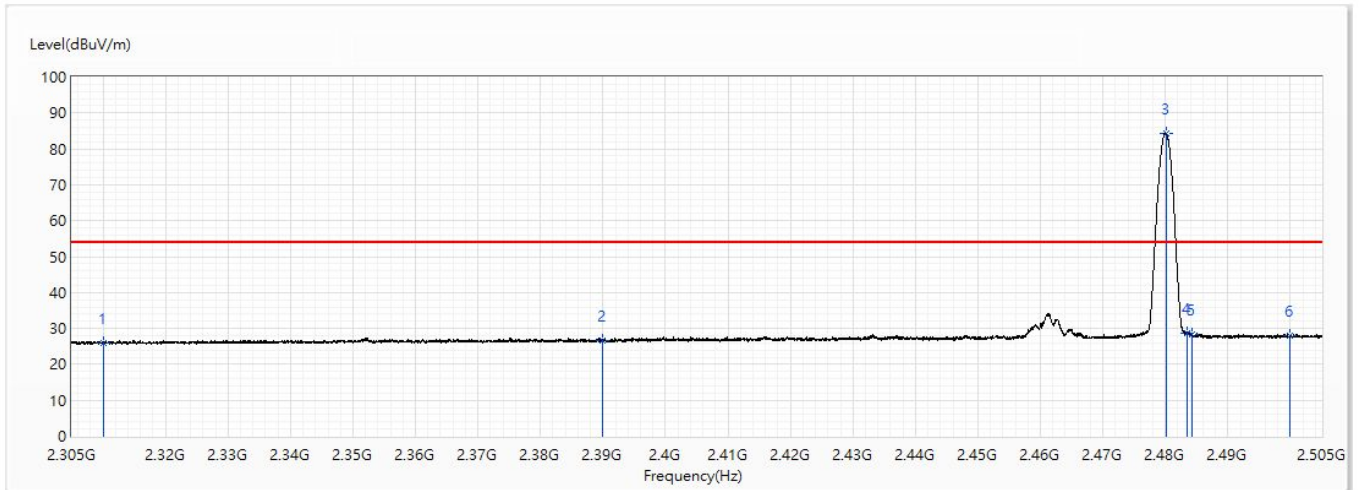


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	37.99	74.00	-36.01	22.42	15.57	PK
2	2390	36.62	74.00	-37.38	20.46	16.16	PK
! 3	2480.325	85.04	74.00	11.04	68.21	16.83	PK
4	2483.5	43.33	74.00	-30.67	26.47	16.86	PK
5	2483.75	50.30	74.00	-23.70	33.44	16.86	PK
6	2500	38.28	74.00	-35.72	21.30	16.98	PK

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

Model No	KALENJI HR500	Site	CB2-H
Test Voltage	AC 120V/60Hz	Test Date	2020/1/10
Test Mode	Mode 1: Transmit Mode (Power by PC)	Engineer	Neil
Polarity	Vertical	Temperature (°C)	21.0
Test Condition	BLE_2480MHz	Humidity (%RH)	54.0



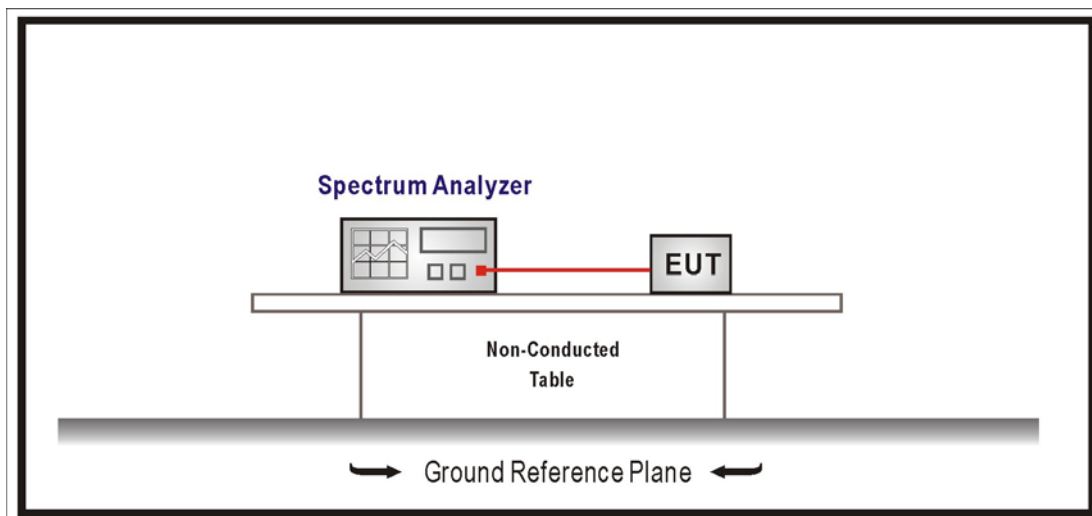
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2310	25.89	54.00	-28.11	10.32	15.57	AV
2	2390	26.72	54.00	-27.28	10.56	16.16	AV
! 3	2480.05	84.44	54.00	30.44	67.61	16.83	AV
4	2483.5	28.64	54.00	-25.36	11.78	16.86	AV
5	2484.25	28.33	54.00	-25.67	11.47	16.86	AV
6	2500	28.04	54.00	-25.96	11.06	16.98	AV

Note:

1. All reading above 1GHz is performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied
4. The fundamental for reference only, it's not restricted by unwanted emission limit.

7. Occupied Bandwidth & DTS Bandwidth

7.1. Test Setup



7.2. Limits

The 6 dB bandwidth: ≥ 500 kHz.

Occupied Bandwidth: NA

7.3. Test Procedures

The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB558074 D01V05r02 for compliance to FCC 47CFR 15.247 requirements.

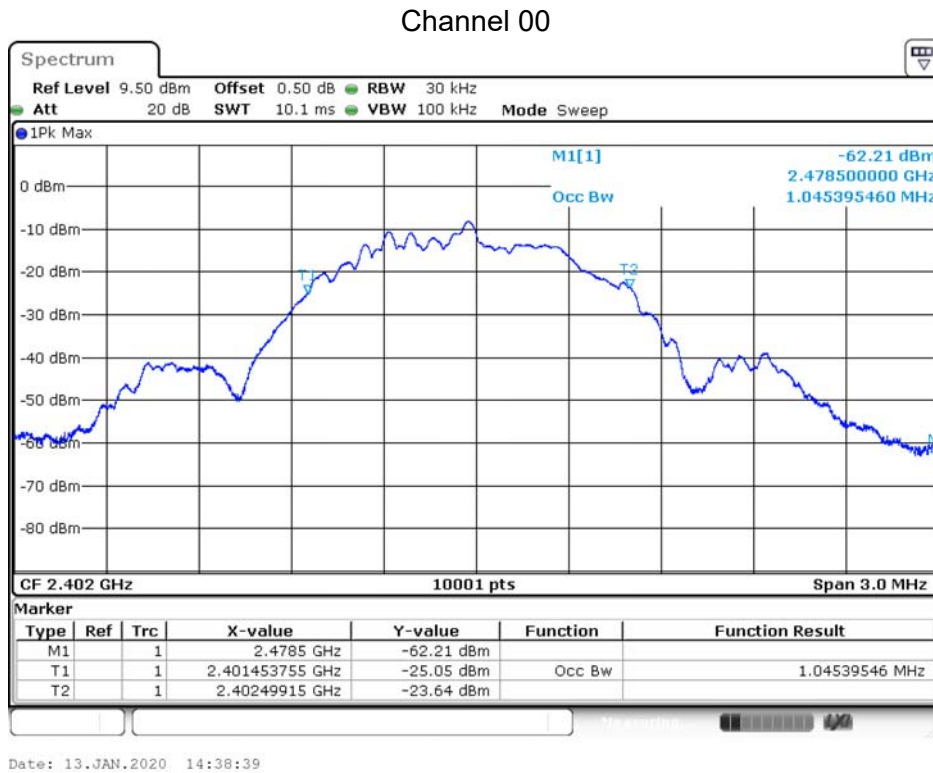
7.4. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247.

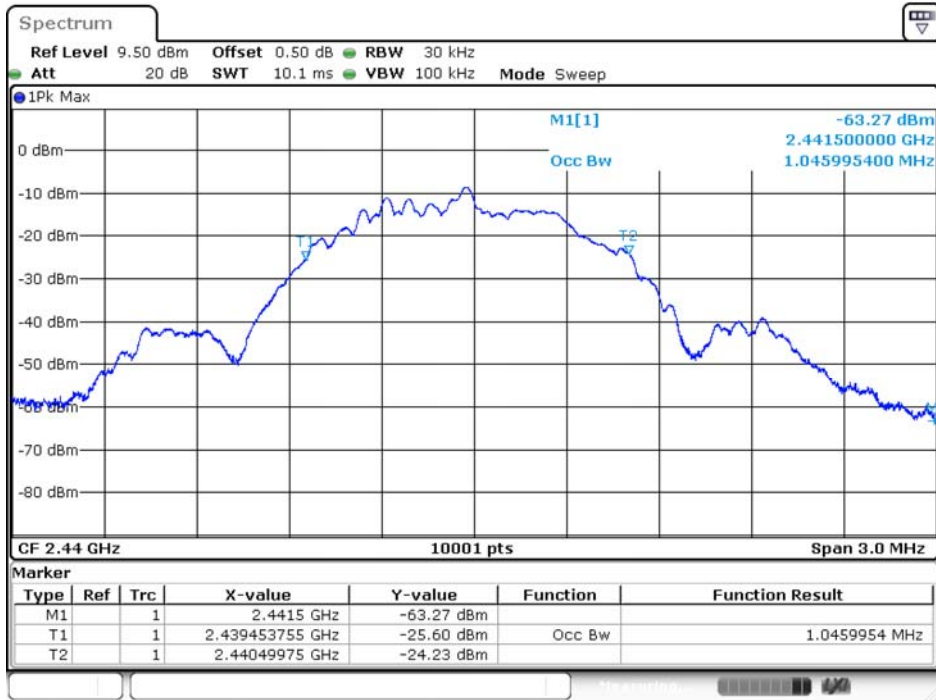
7.5. Test Result

Product	Watch		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit Mode (Power by PC)		
Date of Test	2020/01/13	Test Site	SR12-H
Temperature (°C)	21.0	Humidity (%RH)	58.0

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)
00	2402	1.045	--
19	2440	1.046	--
39	2480	1.047	--

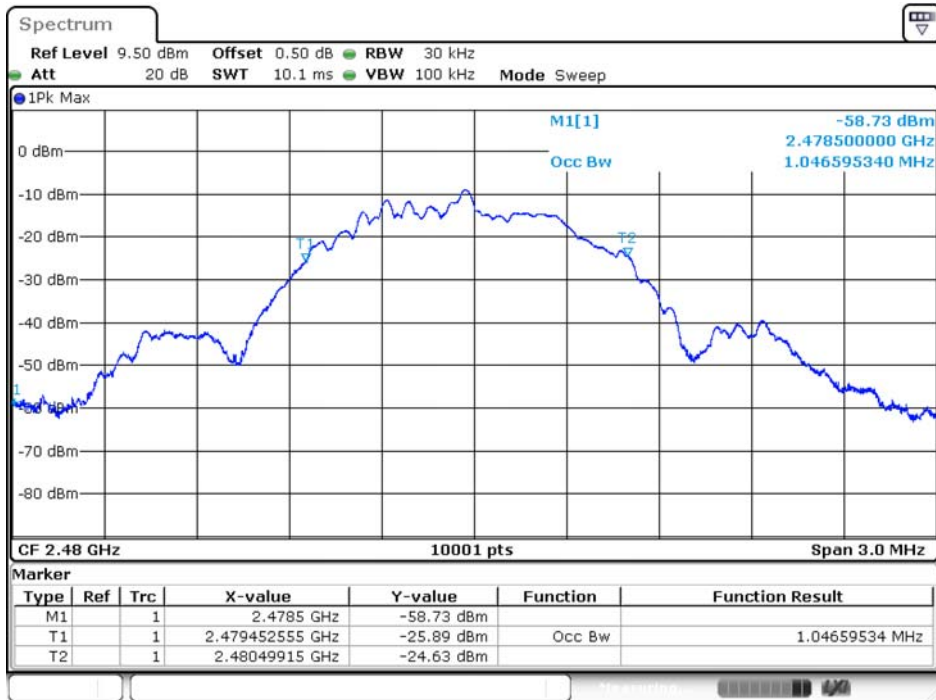


Channel 19



Date: 13.JAN.2020 14:40:13

Channel 39

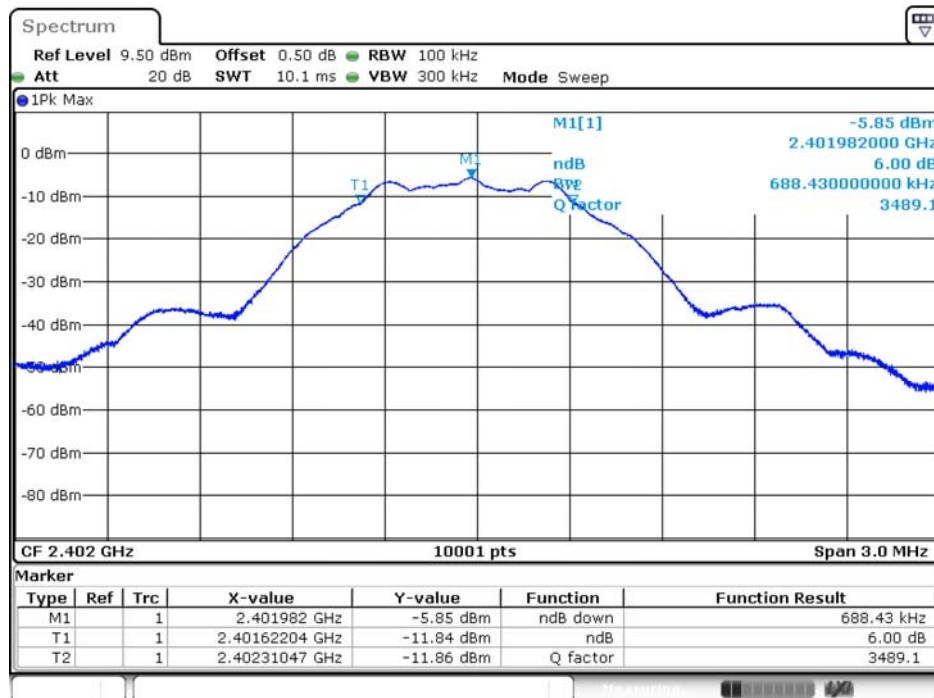


Date: 13.JAN.2020 14:41:59

Product	Watch		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit Mode (Power by PC)		
Date of Test	2020/01/13	Test Site	SR12-H
Temperature (°C)	21.0	Humidity (%RH)	58.0

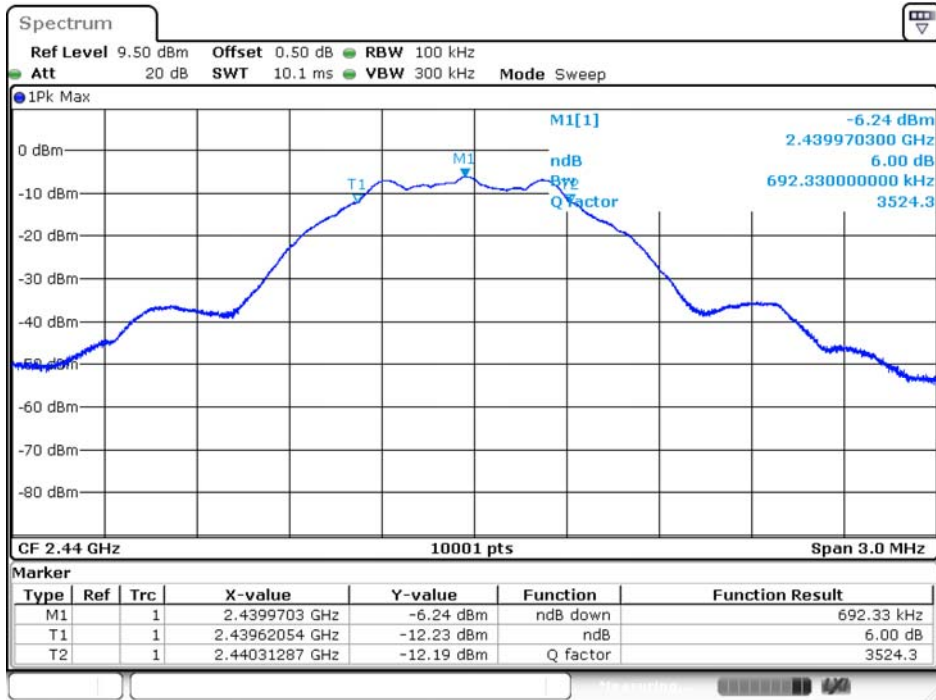
Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)
00	2402	688.430	≥500
19	2440	692.330	≥500
39	2480	689.630	≥500

Channel 00



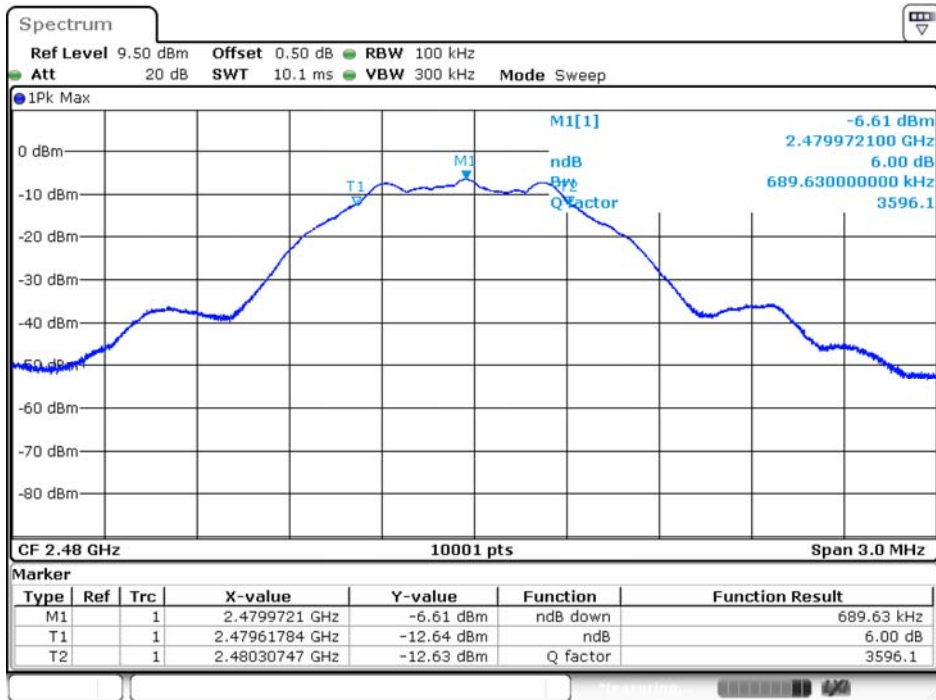
Date: 13.JAN.2020 14:36:39

Channel 19



Date: 13.JAN.2020 14:34:22

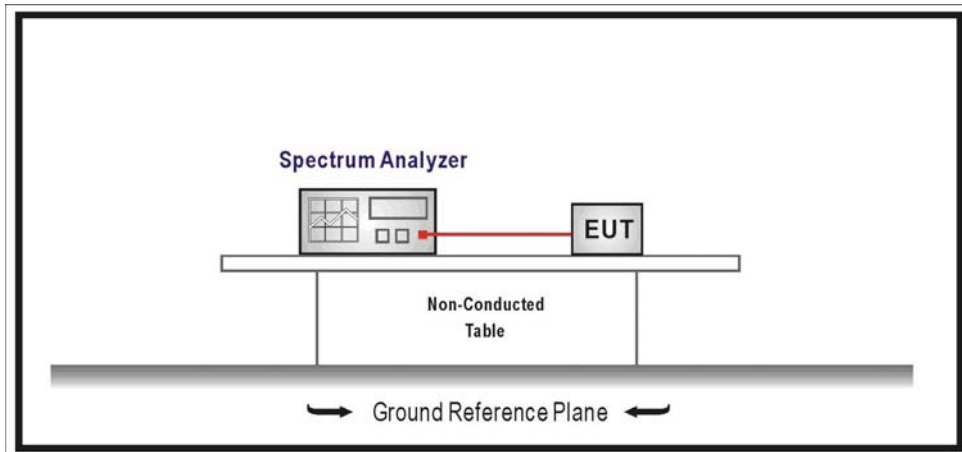
Channel 39



Date: 13.JAN.2020 14:32:29

8. Power Density

8.1. Test Setup



8.2. Limits

The peak power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8dBm in any 3kHz band during any time interval of continuous transmission.

8.3. Test Procedures

The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB558074 D01V05r02 for compliance to FCC 47CFR 15.247 requirements.

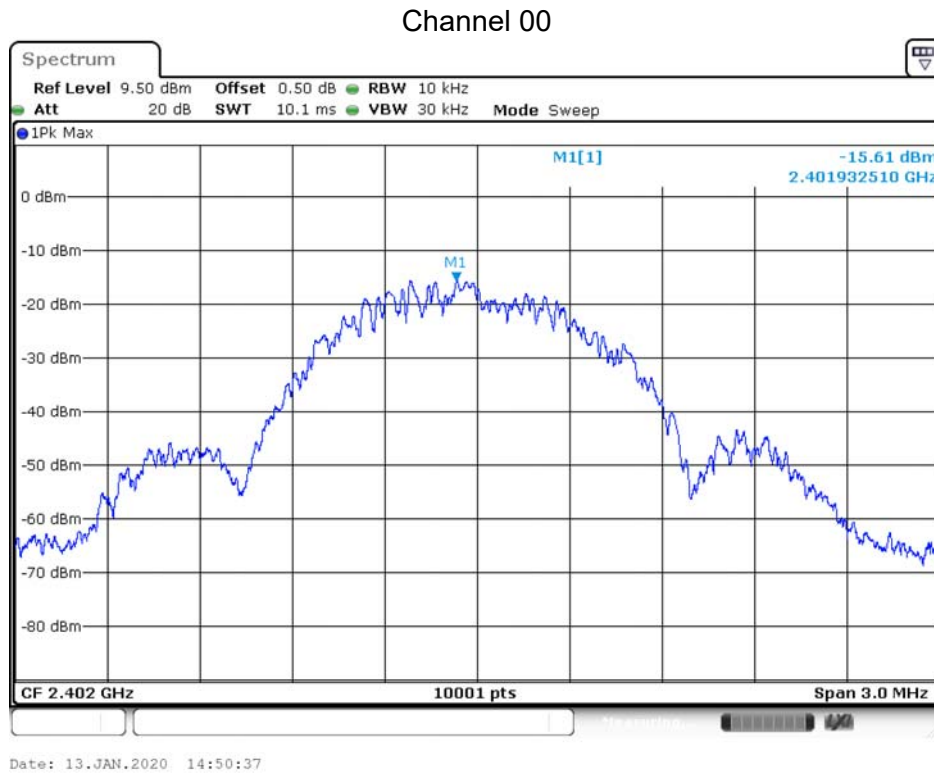
8.4. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247.

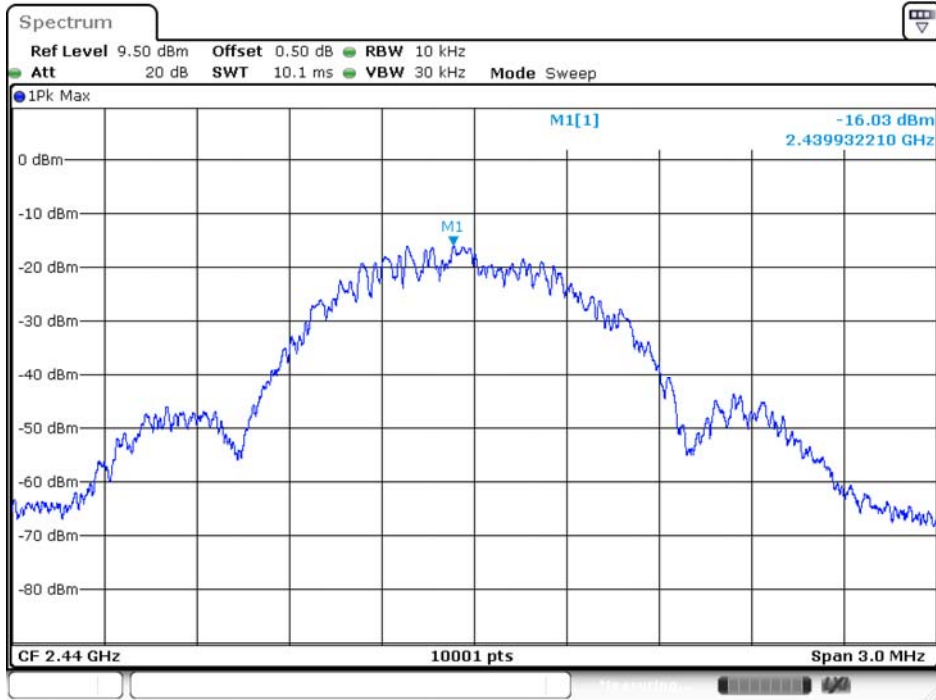
8.5. Test Result

Product	Watch		
Test Item	Power Density		
Test Mode	Mode 1: Transmit Mode (Power by PC)		
Date of Test	2020/01/13	Test Site	SR12-H
Temperature (°C)	21.0	Humidity (%RH)	58.0

Channel No.	Frequency (MHz)	Measure Level (dBm/RBW)	Limit (dBm/3kHz)
00	2402	-15.610	≤8
19	2440	-16.030	≤8
39	2480	-16.400	≤8

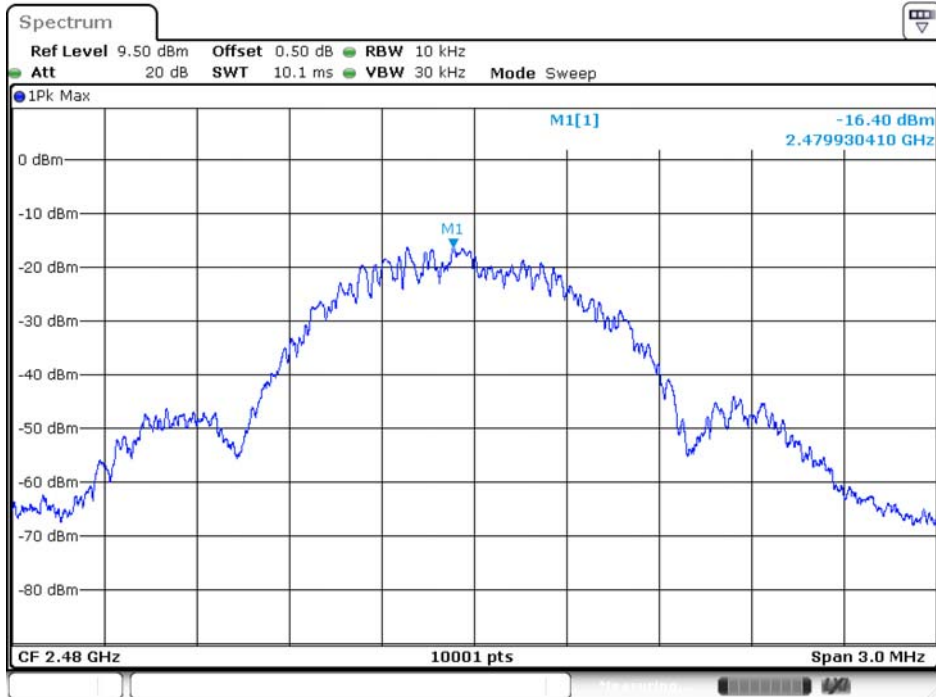


Channel 19



Date: 13.JAN.2020 14:48:14

Channel 39



Date: 13.JAN.2020 14:45:23