TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Application No. : LY002912(3)

Applicant : KODA ELECTRONICS (HK) CO., LTD.
2/F MANDARIN COMMERCIAL HOUSE,
38 MORRISON HILL ROAD, WANCHAI, HONG KONG

Buyer / Brand name : NONSTOP

Sample Description : One(1) item of submitted sample stated to be

Sample description	Model No
Bluetooth Wireless Speaker QI Fast Charging Pad	Station A-Jetway
Bluetooth Wireless Speaker QI Fast Charging Pad	Station A-Wood/Fabric

Sample registration No. : RY047334-001, RY047334-002
Radio Frequency : 149kHz wireless charging
Radio Frequency : 2402 – 2480MHz Bluetooth
Supply voltage : AC100-240 to DC9V adaptor (Model: OBL-0904000U)
No. of submitted sample : (Two) set(s)

Date Received : 24 Jan 2019.

Test Period : 24 Jan 2019 to 04 Feb 2019.

Test Requested : FCC Part 15 Certification

Test Method : 47 CFR Part 15 (02 Nov 2017)
ANSI C63.10 – 2013

Test Engineer : Mr. Leung Shu Kan, Ken

Test Result : See attached sheet(s) from page 2 to 92.

Conclusion : The submitted sample was found to complied with requirement of FCC Part 15 Subpart C.

Remark : All two models are the same in circuitry and components and construction, and therefore model **Station A-Wood/Fabric** was chosen to be the representative of the test sample. The difference(s) between the tested model and the declared model(s) is/are: Model no., Color and Decoration material.

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____

Mr. WONG Lap-pong, Andrew
Manager

FCC ID: 2ADLI-NSA-BK-WF

CMA Industrial Development Foundation Limited
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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

1 Table of Contents

CMA Industrial Development Foundation Limited
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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

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2 General Information

2.1 General Description

The Station A is a digital clock with Bluetooth, AUX-In, alarm clock, Wireless and USB charging functions. It was powered by AC100-240V to DC9V adaptor with maximum 4A output current.

Once the Time, Date and Alarm set correctly, the current time and setting will be showing on the LED display. The end user can access all functions by pressing SNOOZE/DIMMER, Alarm and Backlight switch.

Two USB charging ports are located on the front panel and one wireless charging pad located on the top of Station W.

The symbol "+" provides 1A charging current and symbol "++" provides 2.4A. The maximum power of wireless charging pad is maximum 10W. No data communication for both USB ports and wireless charging pad for portable devices.

The Bluetooth and Aux-In feature is responsible to play Music or Audio signal through wireless communication or 3.5mm Aux-in terminal.

The brief circuit description is listed as follows:

- LCD and its associated circuit act as Display.
- IC5 and its associated circuit act as MCU control.
- X1 (32.768KHz) crystal and its associated circuit act as oscillator for MCU M835.
- BAT,EC12 and its associated circuit act as backup battery for alarm clock.
- U5 and its associated circuit act as audio power amplifier.
- U1 (BK3266) and its associated circuit act as Bluetooth chip.
- X2 (26MHz) crystal and its associated circuit act as oscillator for Bluetooth chip BK3266.
- IC (7133), (SY8113), (FD2105), (BEE301), (LM324), Q2 – Q5 (AON7410), Coil and its associated circuit act as voltage controller for wireless charging pad.

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

2.2 Location of the test site

FCC Accredited Lab (Designation Number: HK0004)
Room 1302, Yan Hing Centre, 9 - 13 Wong Chuk Yeung Street, Fo Tan Shatin, New Territories, Hong Kong

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2014 and ANSI C63.10 – 2013. A Semi-Anechoic Chamber Testing Site is set up for investigation and located at:

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2014 and ANSI C63.10 – 2013. A shielded room is located at :

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

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2.3 List of measuring equipment

Measurement equipment:

Equipment	Manufacturer	Model No.	Serial No.	Calibration Due Date	Calibration Period
EMI Test Receiver	Rohde & Schwarz	ESCI	100152	07 Dec 2019	1Year
Spectrum Analyzer	R&S	FSV40	100964	08 Feb 2019	1Year
Spectrum Analyzer	Rohde & Schwarz	FSP30	100628	27 Mar 2019	1Year
Broadband Antenna	Schaffner	CBL6112B	2692	28 Mar 2019	2Years
Loop Antenna	EMCO	6502	00056620	25 Jan 2020	2Years
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-531	21 Dec 2020	2Years
Broadband Pre-Amplifier	Schwarzbeck	BBV 9718	9718-119	21 Dec 2020	2Years
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170442	01 Aug 2020	2Years
Broadband Pre-Amplifier	Schwarzbeck	BBV 9719	9719-010	01 Aug 2020	2Years
Coaxial Cable	Schaffner	RG 213/U	N/A	17 May 2019	1Year
Coaxial Cable	Suhner	RG 214/U	N/A	17 May 2019	1Year
Coaxial Cable	Suhner	Sucoflex_104	N/A	21 Dec 2019	1Year
LISN	Rohde & Schwarz	ENV216	101323	22 Jan 2020	1Year
Coaxial Cable	Tyco Electronics	RG 58C/U	N/A	23 Oct 2019	1Year
Rohde & Schwarz TS8997 Testing System					
Spectrum Analyzer	Rohde & Schwarz	FSV 40	101190	08 Aug 2019	1Year
Vector Generator	Rohde & Schwarz	SMBV100A	262024	08 Aug 2019	1Year
Generator	Rohde & Schwarz	SMB100A	103230	08 Aug 2019	1Year
OSP	Rohde & Schwarz	OSP	OSP120 V02	08 Aug 2019	1Year

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Supporting equipment (submitted by applicant):

1) USB dummy loading 1A
2) USB dummy loading 2.4A
3) Wirelss dummy loading 10W
4) USB-UART serial adaptor
5) Software FCC Assist version 2.4 for engineering mode configuration

Supporting equipment (provided by CMA):

6) Ipod
   3.5mm AUX IN cable length 1m

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2.4 Measurement Uncertainty

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%.

Radiated emissions

Frequency	Uncertainty (U_{lab})
30MHz ~ 200MHz (Horizontal)	4.59dB
30MHz ~ 200MHz (Vertical)	4.49dB
200MHz ~1000MHz (Horizontal)	4.94dB
200MHz ~1000MHz (Vertical)	4.97dB
1GHz ~6GHz	4.52dB
6GHz ~18GHz	4.58dB

Line-conducted emissions

Frequency	Uncertainty (U_{lab})
150kHz~30MHz	2.80dB

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Tel : (852) 2698 8198 Fax : (852) 2695 4177 E-mail : info@cmatesting.org Web Site : http://www.cmatesting.org

TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

RESULT SUMMARY

Test Item	FCC Requirement	Test Method	Result
Number of hopping frequency	§15.247(a)(1)(iii)	ANSI C63.10 §7.8.3	PASS
Band-edge	§15.247(d)	ANSI C63.10 §7.8.6 and 6.10	PASS
Carrier frequency separation	§15.247(a)	ANSI C63.10 §7.8.2	PASS
Time of occupancy (dwell time)	§15.247(a)	ANSI C63.10 §7.8.4	PASS
Output power	§15.247(b)(1)	ANSI C63.10 §7.8.5	PASS
Occupied bandwidth	§15.247(a)	ANSI C63.10 §7.8.7 and 6.9.2	PASS
Conducted spurious emission (Transmitter)	§15.247(d)	ANSI C63.10 §5.5, 5.6, 7.8.8, and 11.12.2.1	PASS
Radiated spurious emission (Transmitter)	§15.247(d)	ANSI C63.10 §6.4 – 6.6	PASS
Radiated spurious emission (Receiver)	§15.109(a)	ANSI C63.4 §8.3	PASS
Conducted emission on AC mains	§15.207(a)	ANSI C63.4 §7.3	PASS
Frequency Stability	N/A	ANSI C63.10 §6.8	PASS
Frequency Hopping System Requirement	§15.247(a)(1), (g), (h)	N/A	PASS

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3 Description of the emission test

3.1 Test Procedure

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 – 2013.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 0.4m and 0.8m high above the ground for below 1GHz measurement and 1.5m high above the ground for above 1GHz measurement. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is placed 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1 m above the ground.

For 30MHz to 200MHz, biconical antenna with its vertical and horizontal plane is placed 3m from the EUT and rotated about its vertical and horizontal axis for maximum response at each azimuth about the EUT. And the reference point of antenna shall be 1 m above the ground. Same procedure for frequency 200MHz to 1000MHz but Log-periodic antenna is used for final measurements.

For above 1GHz, horn antenna with its vertical and horizontal plane is placed 3m from the EUT and rotated about its vertical and horizontal axis for maximum response at each azimuth about the EUT.

Conducted emission measurement method was used for Bluetooth measurments

The device was rotated through three orthogonal axes to determine which attitude and configuration produce the highest emission during measurement.

The Raio Frequencies from fundamental up to the tenth harmonics were investigated, and emissions more 20dB below limit were not reported.

A dummy wireless and USB loading were used for measurements.

Test Result:
It was found that the EUT meet the FCC requirement.

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

3.2 Radiated Emission Measurement results

Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 section 15.209

Mode: Wireless and USB charging

Environmental conditions
Ambient temperature : 26.2
Relative humidity : 63.4%
Frequency range : Below 30MHz

Frequency (MHz)	Antenna Polarity (H/V)	Reading at 3m (dBµV)	Antenna Factor and Cable Loss (dB/m)	Peak Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)	Detector
0.149	V	43.4	11.9	55.3	104.1	-48.8	PK
0.153	V	27.8	11.8	39.6	103.9	-64.3	PK
0.300	V	23.2	11.8	35.0	98.1	-63.1	PK
0.320	V	21.0	11.8	32.8	97.5	-64.7	PK
0.450	V	28.1	11.8	39.9	94.5	-54.6	PK
0.749	H	20.6	11.8	32.4	70.1	-37.7	PK
5.539	H	2.1	11.3	13.4	69.5	-56.1	PK
19.710	H	6.0	10.7	16.7	69.5	-52.8	PK
21.650	H	3.7	10.3	14.0	69.5	-55.5	PK
28.625	H	10.2	9.2	19.4	69.5	-50.1	PK

Remark:
1) Peak Detector data was measured unless otherwise stated
2) Other emissions more than 20dB margin are not reported in this report.
3) The limit at specified distance
For 300m measurement distance = Limit + 80dB below 0.49 MHz
For 30m measurement distance = Limit + 40 dB between 0.49 MHz - 30 MHz

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 section 15.209

Mode: Wireless and USB charging

Environmental conditions
Ambient temperature : 26.2
Relative humidity : 63.4%
Frequency range : 30MHz – 1000MHz

Frequency (MHz)	Antenna Polarity (H/V)	Reading at 3m (dBμV)	Antenna Factor and Cable Loss (dB/m)	Peak Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)	Detector
33.452	V	12.6	14.5	27.1	40.0	-12.9	QP
45.960	V	25.0	11.5	36.5	40.0	-3.5	QP
66.890	H	25.5	10.4	35.9	40.0	-4.1	QP
*113.456	V	13.5	11.4	24.9	43.5	-18.6	QP
*133.971	H	13.7	11.4	25.1	43.5	-18.4	QP
145.860	V	11.2	13.8	25.0	43.5	-18.5	QP
159.961	V	9.8	13.8	23.6	43.5	-19.9	QP
*165.035	V	27.3	14.7	42.0	43.5	-1..5	QP
*165.945	V	27.4	14.7	42.1	43.5	-1.4	QP
235.486	H	10.8	14.5	25.3	46.0	-20.7	QP
290.170	H	10.6	14.5	25.1	46.0	-20.9	QP

Remark:
1) * means emissions appearing within the restricted bands shall follow the requirement of section 15.205.
2) Other emissions more than 20dB margin are not reported in this report.

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 section 15.209

Mode: AUX In with Clock and Alarm

Environmental conditions
Ambient temperature : 26.2
Relative humidity : 63.4%
Frequency range : 30MHz – 1000MHz

Frequency (MHz)	Antenna Polarity (H/V)	Reading at 3m (dBμV)	Antenna Factor and Cable Loss (dB/m)	Peak Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)	Detector
62.004	V	15.9	10.4	26.3	40.0	-13.7	QP
63.025	V	14.7	10.4	25.1	40.0	-14.9	QP
70.005	V	14.0	10.1	24.1	40.0	-15.9	QP
*135.690	H	11.0	12.9	23.0	43.5	-20.5	QP
*165.035	V	27.8	14.7	42.5	43.5	-1.0	QP
*165.945	V	27.7	14.7	42.4	43.5	-1.1	QP
174.770	V	9.2	14.7	23.9	43.5	-19.6	QP
*247.840	V	6.4	14.5	20.9	46.0	-22.6	QP
530.147	H	4.5	23.3	27.9	46.0	-18.1	QP
665.940	H	4.3	24.5	28.8	46.0	-17.2	QP

Remark:
1) * means emissions appearing within the restricted bands shall follow the requirement of section 15.205.
2) Other emissions more than 20dB margin are not reported in this report.

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3.3 Average Factor

Not applicable

3.4 Transmission time

Not applicable

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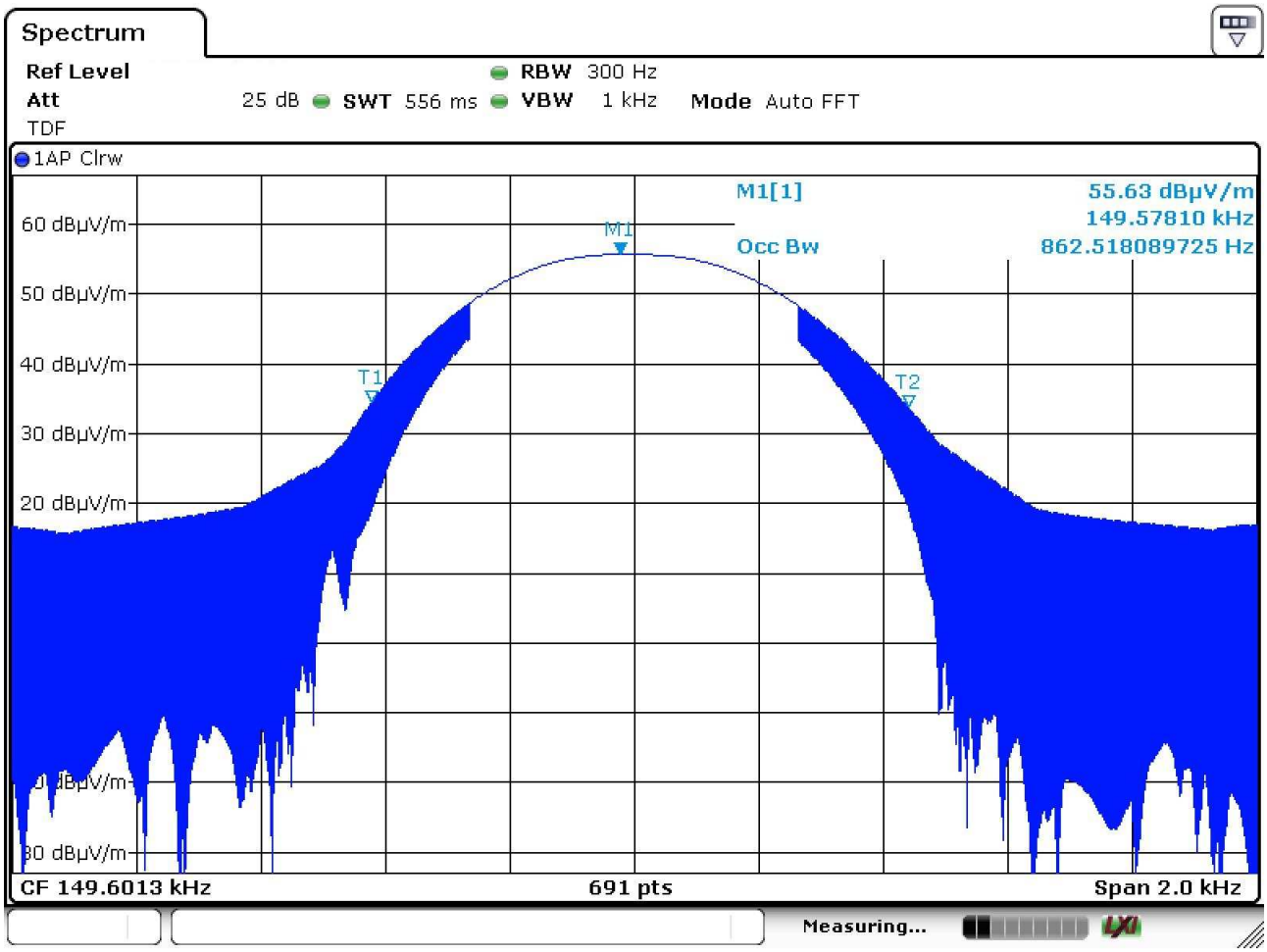
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

3.5 Occupied bandwidth—power bandwidth (99%)

Operation mode: Wireless charging with loading



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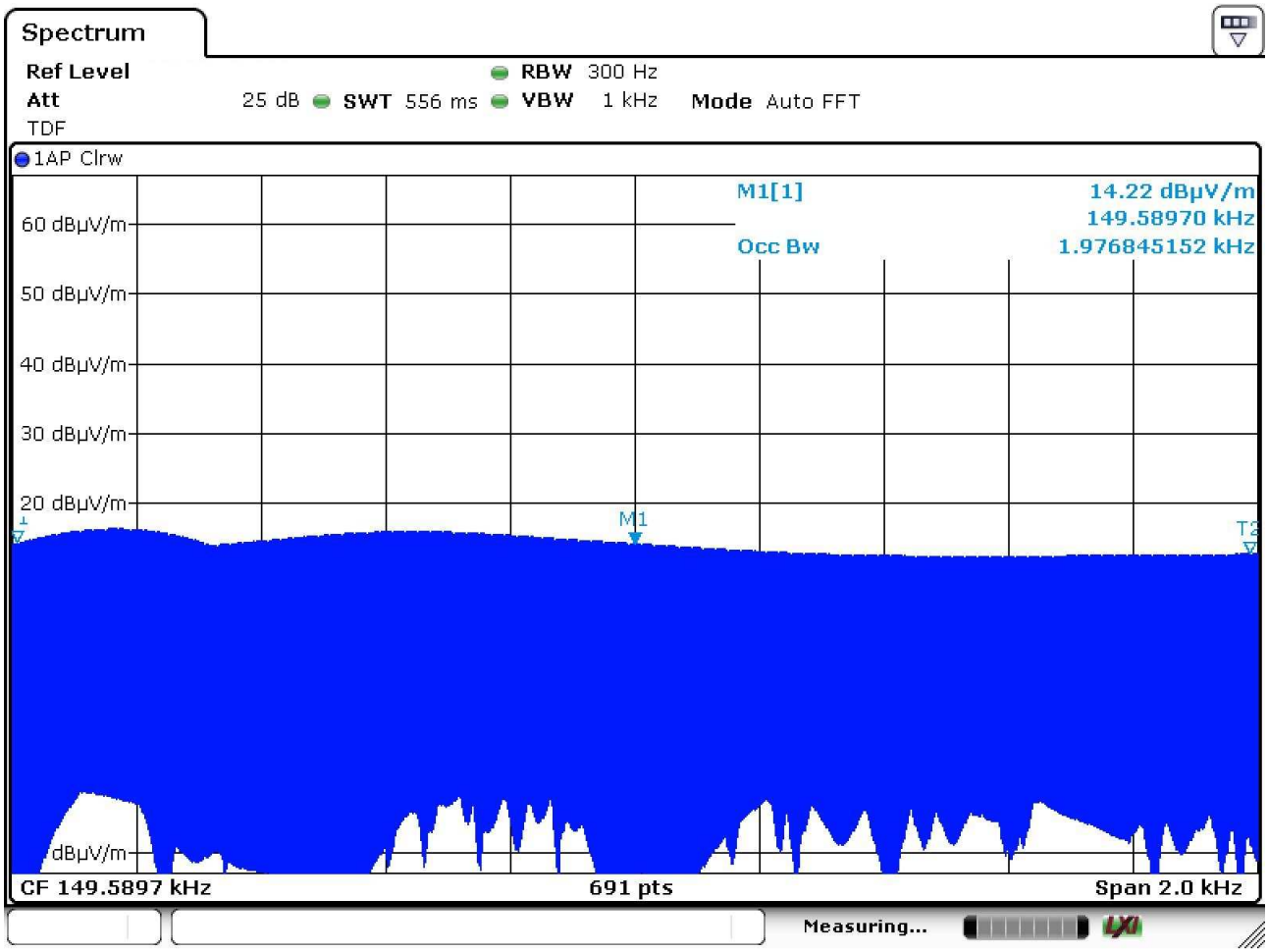
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Operation mode: Wireless charging without loading



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3.6 Bluetooth Measurement Data

Temperature	:	26.9 ºC
Test Voltage	:	AC 120V
Humidity	:	56.5%
Atmosphere Pressure	:	101.3kPa

3.7 Number of hopping frequency

Measurement

Requirement	:	FCC Part 15 § 15.247(a)(1)(iii)
Measuring procedure	:	ANSI C63.10:2013, clause 7.8.3
Span	:	83.5MHz
RBW	:	200kHz
VBW	:	200kHz
Frequency range	:	2.4000 – 2.4835GHz
Modulation tested	:	GFSK
Packet Type tested	:	DH5
Additional measuring procedure	:	Nil

Final Result

No. of hopping channels measured	Limit	Result	Worst case mode
79	≥ 15	PASS	GFSK and DH5

Remark: Detail test result and equipment setting refer to to Appendix.

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3.8 Band-edge measurement

Requirement	:	FCC Part 15 §15.247(d)
Measuring procedure	:	ANSI C63.10:2013, section 7.8.6 and 6.10
Hopping mode	:	Enabled and Disable
RBW	:	100kHz
VBW	:	300kHz
Frequency range	:	2310 – 2400MHz and 2483.5 – 2500MHz
Modulation tested	:	GFSK, π/4DQPSK
Packet Type tested	:	DH5
Channel tested for non-hopping mode	:	2402MHz for lowed band edge and 2480MHz for higher band edge
Additional measuring procedure	:	For lower band edge (2400MHz) 1. Using the "Measurement 1" setting shown below the scan plot within the frequency span from 2310 – 2483.5MHz to measure the maximum peak value of fundamental 2. Using the "Measurement 2" setting shown below the scan plot within the freqeuncy span from 2400 – 2400MHz to measure the bandedge reading 3. Compare that reading in procedure with the limit which equal to the measured maximum peak in procedure 1minus 20dB For Upper bandedge (2483.5MHz) 1. Using the "Measurement 1" setting shown below the scan plot within the frequency span from 2400 – 2483.5MHz to measure the maximum peak value of fundamental 2. Using the "Measurement 2" setting shown below the scan plot within the freqeunc y span from 2483.5 – 2500MHz to measure the bandedge reading 3. Compare that reading in procedure with the limit which equal to the measured maximum peak in procedure 1minus 20dB

CMA Industrial Development Foundation Limited
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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Final Result

Bandedge frequency for lower bandedge (Worst Case)	Worst case (dBc)[2]	Detector	Limit[1] (dBc)	Result	Worst case
2399.825000MHz	42.4	Peak	≥20.0	PASS	GFSK and DH5
2399.875000MHz	42.4	Peak	≥20.0	PASS	GFSK and DH5
Bandedge frequency for higher bandedge (Worst Case)	Worst case in (dBc)[2]	Detector	Limit[1]	Result	Worst case
2497.675000MHz	43.1	Peak	≥20.0	PASS	GFSK and DH5
2497.675000MHz	43.1	Peak	≥20.0	PASS	GFSK and DH5

Remark: 1) The limit is based on the transmitter demonstrated compliance with peak conducted power limit on section 6.4.2 of this report.
2) The Worst case dBc is the peak values measured in procedure 1 minus the worst case bandedge emission
3) Detail test result and equipment setting refer t to Appendix.

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3.9 Carrier Frequency Separation

Measurement

Requirement	:	FCC Part 15 §15.247(a)
Measuring procedure	:	ANSI C63.10:2013, section 7.8.2
Hopping mode	:	Enabled
RBW	:	300kHz
VBW	:	300kHz
Frequency range	:	2401 – 2404MHz, 2440 – 2443MHz, 2478 – 2481MHz[1]
Modulation tested	:	GFSK[2]
Packet Type tested	:	DH5
Additional measuring procedure	:	Nil
Remark	:	1) Since the measured value is more than 1.5 times of limit, only middle channel is measured. 2) Since the modulation and packet type does not affect the channel separation, GFSK and DH5 are selected as represented modulation and data type

Final Result

Carrier Frequency Separation	Limit[1]	Result	Worst case mode
0.980198MHz	≥0.963696MHz	PASS	GFSK and DH5

Remark: 1) Limit is 2/3 of the 20dB bandwidth in section 6.7 and conducted peak power is less than 0.125W in section 6.6 of this report.
2) Detail test result and equipment setting refer to Appendix.

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3.10 Time of occupancy (dwell time)

Measurement

Requirement	:	FCC Part 15 §15.247(a)
Measuring procedure	:	ANSI C63.10:2013, section 7.8.4
Hopping mode	:	Disable
RBW	:	500kHz
VBW	:	1MHz
Modulation tested	:	GFSK[1]
Packet Type tested	:	DH1, DH3, DH5
Channel tested for non-hopping mode	:	2441MHz[2]
Additional measuring procedure	:	1) Setup engineering sample to channel 2441MHz and DH1, DH3 and DH5 packet size to perform the measurement according to ANSI C63.10, section 7.8.4 2) Find the worst case packet size 3) Repeat procedure1 with the worst case packet size for channel 2441MHz
Remark	:	1) Since the modulation does not affect the dwell time, GFSK is selected as represented modulation. 2) Since the frequency channel does not affect the dwell time, channel 2441MHz is selected as represented measurment.

Final Result

Dwell time (worst case)	Limit	Result	Worst case mode
320.210ms	≤400ms	PASS	GFSK and DH5

Remark: 1) Detail test result and equipment setting refer to Appendix.

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3.11 Output Power

Measurement

Requirement	:	FCC Part 15 §15.247(b) (1)
Measuring procedure	:	ANSI C63.10:2013, section 7.8.5
Hopping mode	:	Disable
Modulation tested	:	GFSK, π/4DQPSK
Packet Type tested	:	DH5[1]
Channel tested for non-hopping mode	:	2402MHz, 2441MHz, 2480MHz
Additional measuring procedure	:	Nil
Remark	:	1) Since the packet size does not affect the output power, DH5 is selected as represented packet size.

Final Result

(a) Maximum peak conducted outputpwer

Maximum peak conducted output power	Limit(s)[1]	Result	Modulation
-14.7dBm	≤21.0dBm	PASS	GFSK
-14.7dBm	≤21.0dBm	PASS	π/4QPSK

Remark: 1) 0.125W (21.0dBm) limit is used for 2/3 20dB bandwidth requirement for channel separation.
2) Detail test result and equipment setting refer to Appendix.

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3.12 Occupied Bandwidth

Measurement

Requirement	:	FCC Part 15 §15.247(a)
Measuring procedure	:	ANSI C63.10:2013, section 7.8.7 and 6.9.2
Hopping mode	:	Disable
Modulation tested	:	GFSK, π/4DQPSK
Packet Type tested	:	DH5[1]
Channel tested for non-hopping mode	:	2402MHz, 2441MHz, 2480MHz
Additional measuring procedure	:	Nil
Remark	:	1) Since the packet size does not affect the bandwidth, DH5 is selected as represented packet size.

Final Result

20dB bandwidth	99% OBW	Modulation
0.8509MHz	08394MHz	GFSK
1.2330MHz	1.1679MHz	π/4DQPSK

Remark: 1) Detail test result and equipment setting refer to Appendix.

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

3.13 Conducted Spurious emission (Transmitter)

Measurement

Requirement	:	FCC Part 15 §15.247(d)
Measuring procedure	:	ANSI C63.10:2013, section 5.5, 5.6, 7.8.8 and 11.12.2.1
Hopping mode	:	Disable
RBW	:	Refer to pre-measurement and final measurement setting
Detector	:	Refer to pre-measurement and final measurement setting
Modulation tested	:	GFSK[1]
Packet Type tested	:	DH5[2]
Channel tested for non-hopping mode	:	2402MHz, 2441MHz, 2480MHz
Additional measuring procedure	:	1) Setup engineering sample to channel 2402MHz to perform the measurement according to ANSI C63.10, section 7.8.8 with pre-measurement setting 2) If the pre-measurement is over the limit, the final measurement is performed for the specific frequency according to fina measurement setting or restricted band frequency 3) For non-restricted band frequency, peak detector and 100kHz RBW will be used for final measurement. 4) Repeat the procedure 1 to 3 for channel frequency of 2441MHz and 2480MHz
Remark	:	1) Since the GFSK generates a higher SPD with power level, GFSK is selected as represented modulation for testing. 2) Since DH5 generates a higher dwell time, DH5 is selected as respresentative packet size for testing

Final Result

Worst case spurious emission frequency	Worst case spurious emission power[1]	Limit[2]	Margin	Result	Worst case mode
833.625MHz	-47.8dBm	-43.8dBm	-4.0dB	PASS	GFSK and DH5

Remark: 1) Spurious emission power = measured conducted power + antnenna gain(dBi) +ground reflection factor according to ANSI C63.10 section 11.12.2.2 for restricted band emission.
2) For restricted band emission, limit = restricted band field strength limit (dBuV/m) + 4,7dB – 104.8dB according to ANSI C63.10 section 11.12.2.2 For non-restricted band , limit = SPD/100kHz – 20dB.
3) Detail test result and equipment setting refer to Appendix.

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

3.14 Conducted Emission

Measurement

Requirement	:	FCC Part 15 §15.207(a)
Measuring procedure	:	ANSI C63.4:2014, section 7.3
Test mode	:	Bluetooth Hopping
RBW	:	9kHz
VBW	:	30kHz
Modulation tested	:	GFSK[1]
Packet Type tested	:	DH5
Additional measuring procedure	:	Nil
Remark	:	Nil

Final Result

Worst case conducted emission frequency	Worst case conducted emission	Limit	Margin	Detector	Lines	Worst case mode	Result
0.1635MHz	57.76dBµV	65.27dBµV	-7.51dB	QP	N	Bluetooth	PASS

Remark: 1) Detail test result and equipment setting refer to section 4 Line-conducted Test.

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3.15 Frequency Hopping System Requirement

Test Requirement: Section 15.247(a)(1), (g), (h)

The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom order list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

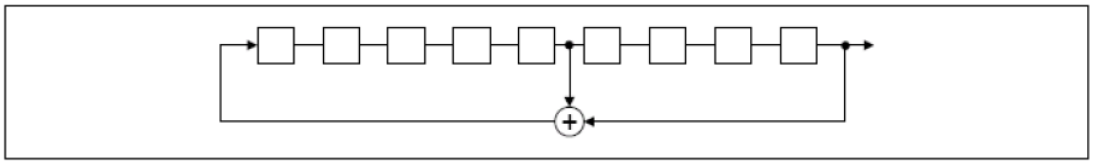
Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmssions bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hop sets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

Compliance for section 15.247(a)(1)

According to Bluetooth Core Specification, the pseudorandom sequence may be generated in a nine-stage shift register whose 5^{th} and 9^{th} stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.

- Number of shift register stage: 9
- Length of pseudorandom sequence: 2^9-1=511 bits
- Longest sequence of zero: 8 (non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence

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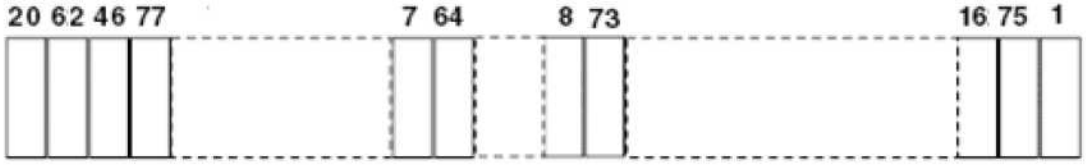
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

An example of Pseudorandom Frequency Hopping Sequence as following:



Each frequency used equally on the average by each transmitter.
According to Bluetooth Core Specification, Bluetooth receivers are designed to have input and IF bandwidths that match the hopping channel bandwidths of any Bluetooth transmitters and shift frequencies in synchronization with the transmitted signals.

Compliance for section 15.247(g)
According to Bluetooth Core Specification, the Bluetooth system transmits the packet with the pseudorandom hopping frequency with a continuous data and the short brust transmission from the Bluetooth system is also transmitted under the frequency hopping system with the pseudorandom hopping frequency system.

Compliance for section 15.247(h)
According to Bluetooth Core specification, the Bluetooth system incorporates with an adaptive system to detect other user within the spectrum band so that it individually and independently to avoid hopping on the occupied channels.

According to the Bluetooth Core specification, the Bluetooth system is designed not have the ability to coordinate with other FHSS System in effort to avoid the simultaneous occupancy of the individual hopping frequencies by multiple transmitter.

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4 Description of the Line-conducted Test

4.1 Test Procedure

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2014 and ANSI C63.10 – 2013. The EUT was setup as described in the procedures, and both lines were measured.

4.2 Test Result

Pass.

4.3 Graph and Table of Conducted Emission Measurement Data

Refer to next pages.

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Graph and table

of

Conducted emission measurement data

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

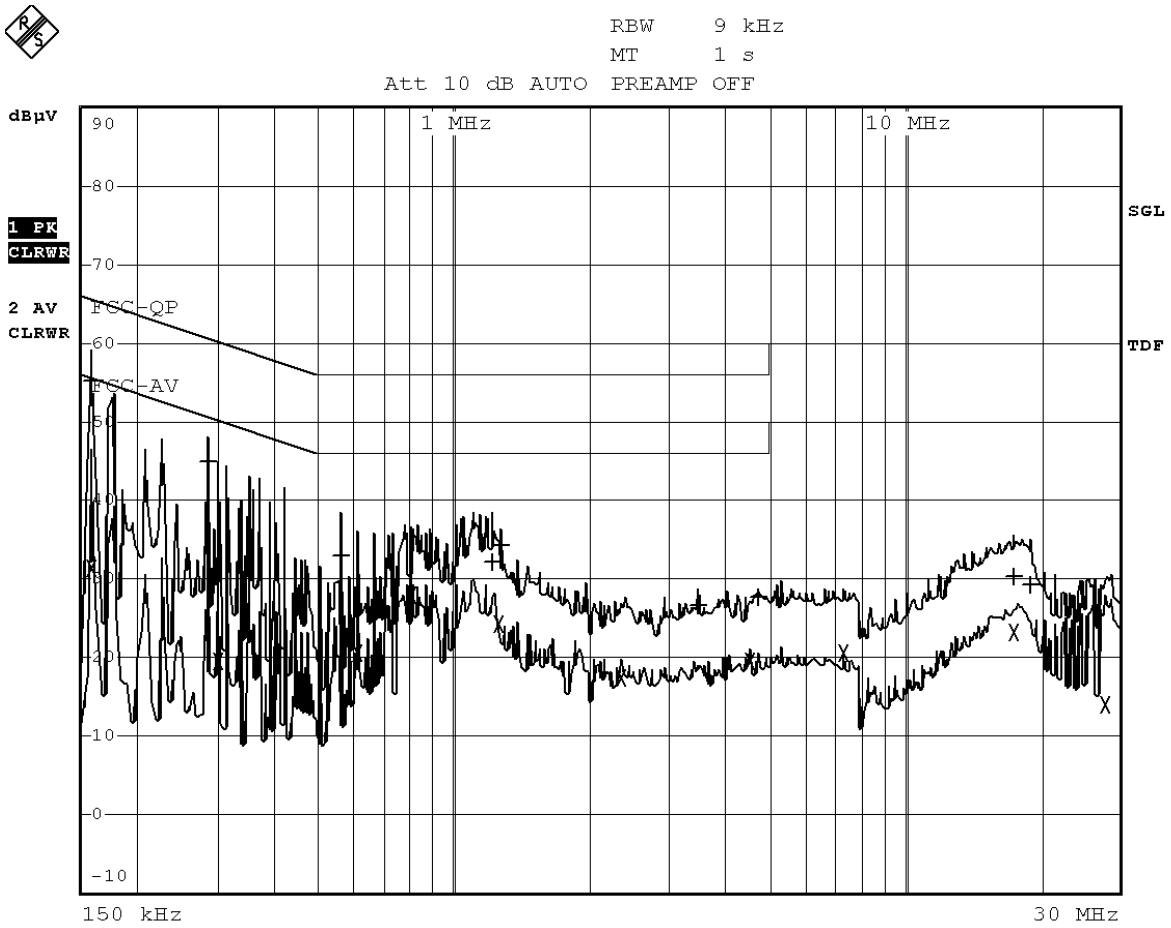
Measurement Data (Graph)

Conducted emission

pursuant to

the requirement of FCC Part 15

Mode: Wireless and USB charging



FCC ID: 2ADLI-NSA-BK-WF

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement Data (Data)

Conducted emission

pursuant to

the requirement of FCC Part 15

Mode: Wireless and USB charging

EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC-QP		
Trace2:	FCC-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	159 kHz	55.14 L1 gnd	-10.37
2 Average	159 kHz	31.36 N gnd	-24.15
1 Quasi Peak	285 kHz	44.90 L1 gnd	-15.76
2 Average	303 kHz	19.65 L1 gnd	-30.51
1 Quasi Peak	558.5 kHz	32.99 N gnd	-23.01
2 Average	612.5 kHz	20.59 L1 gnd	-25.40
2 Average	806 kHz	27.82 L1 gnd	-18.17
1 Quasi Peak	1.2155 MHz	32.01 L1 gnd	-23.98
2 Average	1.256 MHz	24.31 L1 gnd	-21.68
1 Quasi Peak	1.265 MHz	34.12 N gnd	-21.87
2 Average	2.345 MHz	17.36 N gnd	-28.63
1 Quasi Peak	3.488 MHz	26.69 N gnd	-29.30
2 Average	4.5455 MHz	19.47 N gnd	-26.52
1 Quasi Peak	4.7345 MHz	27.77 N gnd	-28.22
2 Average	7.295 MHz	20.54 N gnd	-29.45
2 Average	17.42 MHz	23.14 L1 gnd	-26.85
1 Quasi Peak	17.537 MHz	30.35 L1 gnd	-29.64
1 Quasi Peak	18.941 MHz	29.13 L1 gnd	-30.86
2 Average	27.851 MHz	14.02 N gnd	-35.97

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

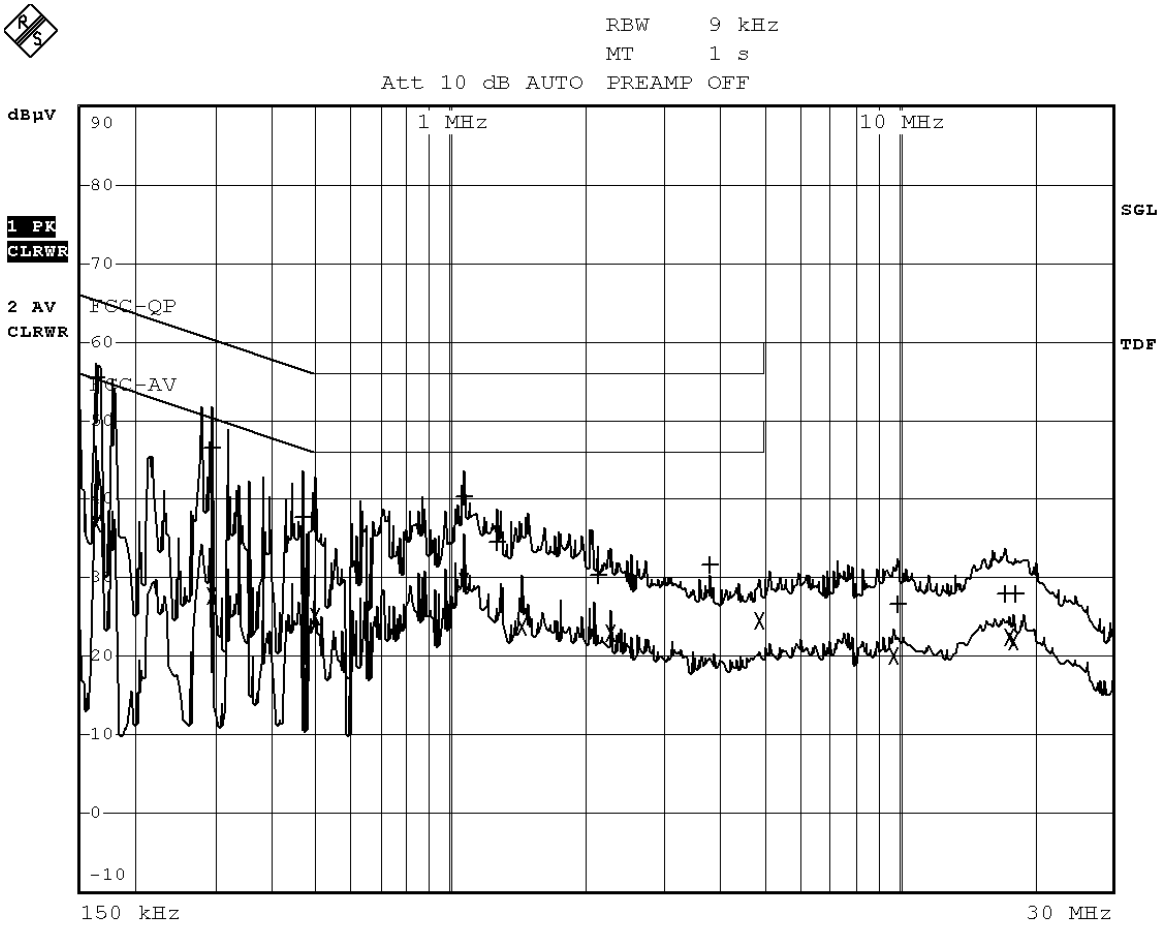
Measurement Data (Graph)

Conducted emission

pursuant to

the requirement of FCC Part 15

Mode: AUX In



FCC ID: 2ADLI-NSA-BK-WF

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement Data (Data)

Conducted emission

pursuant to

the requirement of FCC Part 15

Mode: AUX In

EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC-QP		
Trace2:	FCC-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	163.5 kHz	55.51 N gnd	-9.77
2 Average	163.5 kHz	36.95 N gnd	-18.33
1 Quasi Peak	294 kHz	46.64 L1 gnd	-13.76
2 Average	294 kHz	27.73 L1 gnd	-22.67
1 Quasi Peak	474 kHz	37.59 L1 gnd	-18.84
2 Average	500 kHz	25.04 L1 gnd	-20.96
1 Quasi Peak	1.067 MHz	40.20 L1 gnd	-15.79
2 Average	1.067 MHz	29.54 L1 gnd	-16.45
1 Quasi Peak	1.265 MHz	34.57 L1 gnd	-21.42
2 Average	1.4405 MHz	23.70 L1 gnd	-22.29
1 Quasi Peak	2.1335 MHz	30.29 N gnd	-25.70
2 Average	2.2775 MHz	22.81 N gnd	-23.18
1 Quasi Peak	3.7985 MHz	31.54 N gnd	-24.45
2 Average	4.892 MHz	24.59 N gnd	-21.40
2 Average	9.7655 MHz	19.99 L1 gnd	-30.00
1 Quasi Peak	9.9725 MHz	26.70 L1 gnd	-33.29
1 Quasi Peak	17.231 MHz	28.00 L1 gnd	-31.99
2 Average	17.618 MHz	22.39 L1 gnd	-27.60
2 Average	18.077 MHz	21.91 L1 gnd	-28.08
1 Quasi Peak	18.194 MHz	27.83 L1 gnd	-32.17

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

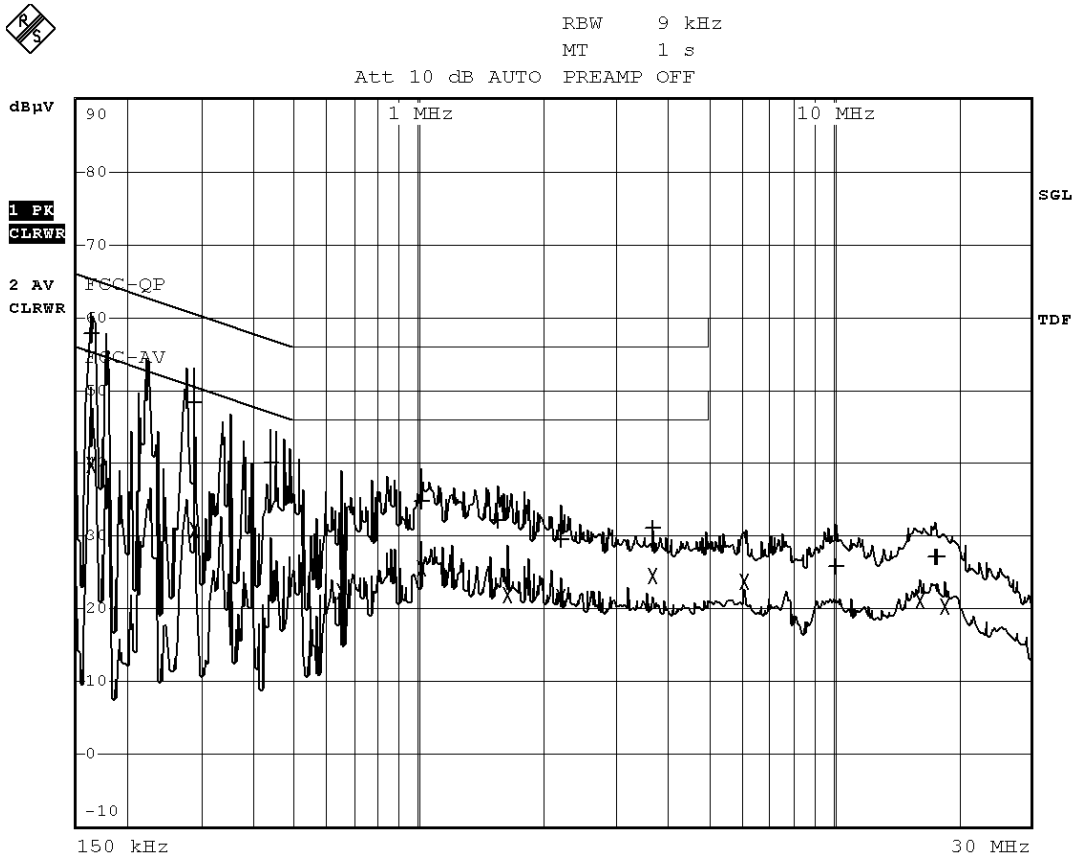
Measurement Data (Graph)

Conducted emission

pursuant to

the requirement of FCC Part 15

Mode: Bluetooth



FCC ID: 2ADLI-NSA-BK-WF

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement Data (Data)

Conducted emission

pursuant to

the requirement of FCC Part 15

Mode: Bluetooth

EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC-QP		
Trace2:	FCC-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	163.5 kHz	57.76 N gnd	-7.51
2 Average	163.5 kHz	39.83 N gnd	-15.44
1 Quasi Peak	289.5 kHz	48.28 L1 gnd	-12.25
2 Average	289.5 kHz	30.93 L1 gnd	-19.60
1 Quasi Peak	442.5 kHz	40.03 L1 gnd	-16.98
2 Average	648.5 kHz	22.42 L1 gnd	-23.57
1 Quasi Peak	1.013 MHz	34.86 L1 gnd	-21.14
2 Average	1.013 MHz	25.64 L1 gnd	-20.35
1 Quasi Peak	1.5575 MHz	32.03 L1 gnd	-23.96
2 Average	1.6385 MHz	21.98 L1 gnd	-24.02
1 Quasi Peak	2.2055 MHz	29.56 N gnd	-26.44
2 Average	2.2055 MHz	21.52 N gnd	-24.47
1 Quasi Peak	3.695 MHz	31.14 N gnd	-24.85
2 Average	3.695 MHz	24.60 N gnd	-21.39
2 Average	6.143 MHz	23.72 N gnd	-26.27
1 Quasi Peak	10.121 MHz	25.84 L1 gnd	-34.15
2 Average	16.304 MHz	21.04 L1 gnd	-28.95
1 Quasi Peak	17.5865 MHz	27.11 L1 gnd	-32.88
1 Quasi Peak	17.771 MHz	27.14 L1 gnd	-32.85
2 Average	18.671 MHz	20.44 L1 gnd	-29.55

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5 Photograph

5.1 Photographs of the Test Setup for Radiated Emission and Conducted Emission

For electronic filing, the photos are saved with filename 2ADLI-NSA-BK-WF TestPho.pdf.

5.2 Photographs of the External and Internal Configurations of the EUT

For electronic filing, the photos are saved with filename 2ADLI-NSA-BK-WF ExPho.pdf and 2ADLI-NSA-BK-WF InPho.pdf.

5.3 Antenna requirement

The Internal Photo shows a coupling coil is permanently attached inside of EUT for wireless charging, and PCB antenna for Bluetooth operation. Both antenna cannot be changed and without antenna terminal. Therefore it fulfils the section 15.203 requirement.

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

APPENDIX A Test Result

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

FCC Part 47 §15.247 2400-2483.5 MHz 2016

DUT Information

Frequencies

BT CH 0 (2402 MHz)	BT CH 1 (2403 MHz)	BT CH 2 (2404 MHz)
BT CH 3 (2405 MHz)	BT CH 4 (2406 MHz)	BT CH 5 (2407 MHz)
BT CH 6 (2408 MHz)	BT CH 7 (2409 MHz)	BT CH 8 (2410 MHz)
BT CH 9 (2411 MHz)	BT CH 10 (2412 MHz)	BT CH 11 (2413 MHz)
BT CH 12 (2414 MHz)	BT CH 13 (2415 MHz)	BT CH 14 (2416 MHz)
BT CH 15 (2417 MHz)	BT CH 16 (2418 MHz)	BT CH 17 (2419 MHz)
BT CH 18 (2420 MHz)	BT CH 19 (2421 MHz)	BT CH 20 (2422 MHz)
BT CH 21 (2423 MHz)	BT CH 22 (2424 MHz)	BT CH 23 (2425 MHz)
BT CH 24 (2426 MHz)	BT CH 25 (2427 MHz)	BT CH 26 (2428 MHz)
BT CH 27 (2429 MHz)	BT CH 28 (2430 MHz)	BT CH 29 (2431 MHz)
BT CH 30 (2432 MHz)	BT CH 31 (2433 MHz)	BT CH 32 (2434 MHz)
BT CH 33 (2435 MHz)	BT CH 34 (2436 MHz)	BT CH 35 (2437 MHz)
BT CH 36 (2438 MHz)	BT CH 37 (2439 MHz)	BT CH 38 (2440 MHz)
BT CH 39 (2441 MHz)	BT CH 40 (2442 MHz)	BT CH 41 (2443 MHz)
BT CH 42 (2444 MHz)	BT CH 43 (2445 MHz)	BT CH 44 (2446 MHz)
BT CH 45 (2447 MHz)	BT CH 46 (2448 MHz)	BT CH 47 (2449 MHz)
BT CH 48 (2450 MHz)	BT CH 49 (2451 MHz)	BT CH 50 (2452 MHz)
BT CH 51 (2453 MHz)	BT CH 52 (2454 MHz)	BT CH 53 (2455 MHz)
BT CH 54 (2456 MHz)	BT CH 55 (2457 MHz)	BT CH 56 (2458 MHz)
BT CH 57 (2459 MHz)	BT CH 58 (2460 MHz)	BT CH 59 (2461 MHz)
BT CH 60 (2462 MHz)	BT CH 61 (2463 MHz)	BT CH 62 (2464 MHz)
BT CH 63 (2465 MHz)	BT CH 64 (2466 MHz)	BT CH 65 (2467 MHz)
BT CH 66 (2468 MHz)	BT CH 67 (2469 MHz)	BT CH 68 (2470 MHz)
BT CH 69 (2471 MHz)	BT CH 70 (2472 MHz)	BT CH 71 (2473 MHz)
BT CH 72 (2474 MHz)	BT CH 73 (2475 MHz)	BT CH 74 (2476 MHz)
BT CH 75 (2477 MHz)	BT CH 76 (2478 MHz)	BT CH 77 (2479 MHz)
BT CH 78 (2480 MHz)		

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Bandwidths
1 MHz (1 MHz)

Power
-13.000 dBm (-13 dBm)

Beamforming Gain
-13.000 dBm (-13 dBm) 0 dB

Gain Tables
-13.000 dBm (-13 dBm) Port 1: ---;

DUT Settings

No. of transmission chains	1
Equipment Type	Other
Digital Modulation	No
Frequency Hopping	Yes
Carrier Frequency Separation	1 MHz
Dwell Time	0.625 ms

Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer:	SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.148::inst0::instr), SN 1321.3008K39/101190, FW 2.30 SP4
Vector Generator:	VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.149::inst0::instr), SN 262024, FW 3.1.19.8-3.20.281.28.7
Generator:	SMB100A (SMB100A) @ VISA (ADR TCPIP::192.168.48.152::inst0::instr), SN 103230, FW 3.20.390.24 / Drv:Rev 2.21.0, 07/2016, CVI 2015
OSP:	OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::inst0::instr), SN 1527.1144.03 / 101057, FW 1.23.0.2

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Hopping Frequencies	--- (hopping)	-13.0	1.000000	PASS
Band Edge low	--- (hopping)	-13.0	1.000000	PASS
Band Edge high	--- (hopping)	-13.0	1.000000	PASS
Time of Channel Occupancy	2441.000 (hopping)	-13.0	1.000000	PASS
Time of Channel Occupancy(2)	2441.000 (hopping)	-13.0	1.000000	PASS
Time of Channel Occupancy(3)	2441.000 (hopping)	-13.0	1.000000	PASS
Emission Bandwidth 20 dB	2402.000 (single)	-13.0	1.000000	PASS
Emission Bandwidth 20 dB(2)	2402.000 (single)	-13.0	1.000000	PASS
Emission Bandwidth 20 dB(3)	2402.000 (single)	-13.0	1.000000	PASS
RF output power	2402.000 (single)	-13.0	1.000000	PASS
Band Edge low	2402.000 (single)	-13.0	1.000000	PASS
Emission Bandwidth 20 dB	2441.000 (single)	-13.0	1.000000	PASS
Emission Bandwidth 20 dB(2)	2441.000 (single)	-13.0	1.000000	PASS
Emission Bandwidth 20 dB(3)	2441.000 (single)	-13.0	1.000000	PASS
RF output power	2441.000 (single)	-13.0	1.000000	PASS
Emission Bandwidth 20 dB	2480.000 (single)	-13.0	1.000000	PASS
Emission Bandwidth 20 dB(2)	2480.000 (single)	-13.0	1.000000	PASS
Emission Bandwidth 20 dB(3)	2480.000 (single)	-13.0	1.000000	PASS
RF output power	2480.000 (single)	-13.0	1.000000	PASS
Band Edge high	2480.000 (single)	-13.0	1.000000	PASS
Carrier Frequency Separation	2402.000 (hopping)	-13.0	1.000000	PASS
Carrier Frequency Separation	2441.000 (hopping)	-13.0	1.000000	PASS
Carrier Frequency Separation	2479.000 (hopping)	-13.0	1.000000	PASS

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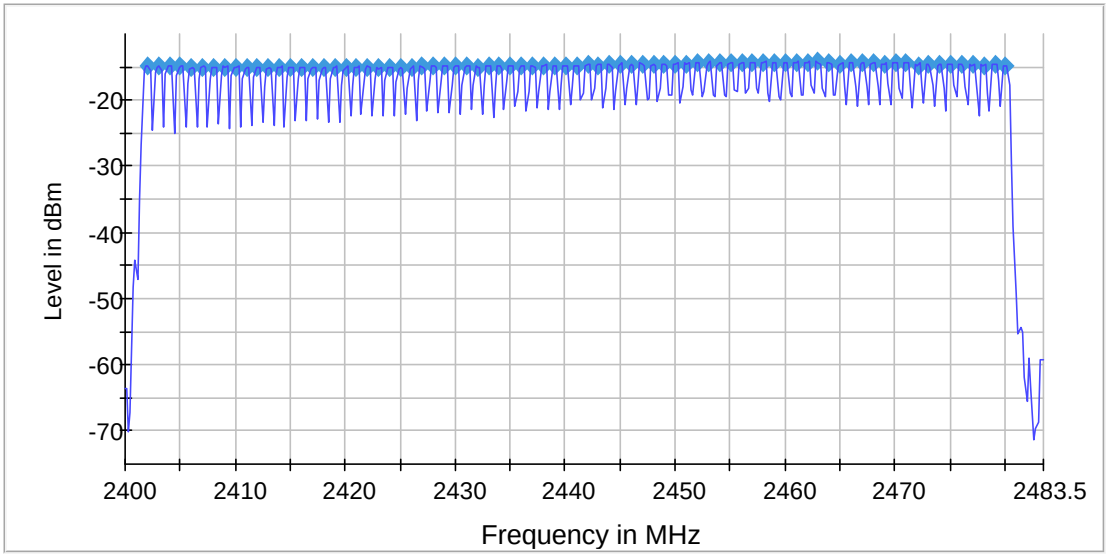
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Hopping Frequencies (Hopping; GFSK; DH5)

Channels

Channels	Limit Min	Limit Max	Result
79	15	---	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	200.000 kHz	<= 299.000 kHz
VBW	200.000 kHz	>= 200.000 kHz
SweepPoints	418	~ 418
Sweeptime	1.060 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	61 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.41 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Band Edge low (frequency independent; -13.000 dBm; 1 MHz)

Result

DUT Frequency (MHz)	Result
hopping	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
2455.075000	-15.6

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.825000	-58.0	12.4	-45.6	PASS
2399.875000	-58.0	12.4	-45.6	PASS
2399.775000	-58.7	13.0	-45.6	PASS
2399.925000	-58.8	13.1	-45.6	PASS
2399.975000	-60.5	14.8	-45.6	PASS
2399.725000	-60.7	15.1	-45.6	PASS
2367.275000	-61.9	16.3	-45.6	PASS
2381.425000	-62.0	16.4	-45.6	PASS
2367.325000	-62.1	16.4	-45.6	PASS
2371.425000	-62.1	16.4	-45.6	PASS
2365.475000	-62.1	16.4	-45.6	PASS
2373.375000	-62.1	16.5	-45.6	PASS
2366.425000	-62.1	16.5	-45.6	PASS
2362.375000	-62.2	16.6	-45.6	PASS
2367.425000	-62.3	16.7	-45.6	PASS

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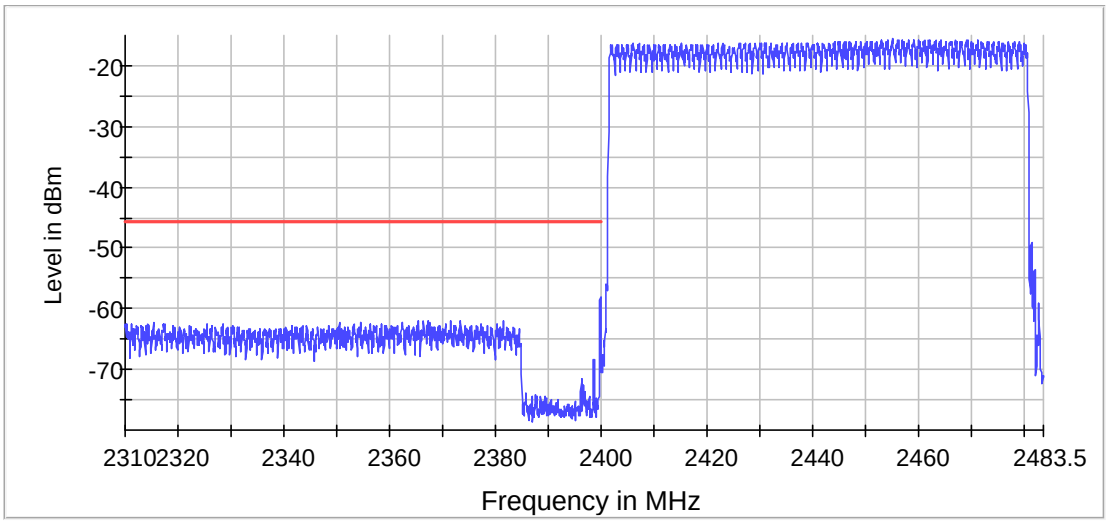
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	1.800 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	54 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Measurement 2

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	150 / max. 150	max. 150
Stable	0 / 3	3
Max Stable Difference	1.35 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Band Edge high (frequency independent; -13.000 dBm; 1 MHz)

Result

DUT Frequency (MHz)	Result
hopping	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
2463.125000	-15.6

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2497.675000	-58.7	13.1	-45.6	PASS
2497.625000	-58.7	13.1	-45.6	PASS
2498.775000	-58.9	13.3	-45.6	PASS
2498.725000	-59.0	13.4	-45.6	PASS
2498.475000	-59.0	13.5	-45.6	PASS
2498.825000	-59.3	13.7	-45.6	PASS
2499.825000	-59.3	13.7	-45.6	PASS
2498.525000	-59.3	13.8	-45.6	PASS
2499.775000	-59.4	13.8	-45.6	PASS
2497.475000	-59.5	13.9	-45.6	PASS
2498.125000	-59.6	14.0	-45.6	PASS
2497.725000	-59.7	14.1	-45.6	PASS
2497.525000	-59.7	14.1	-45.6	PASS
2499.625000	-59.8	14.2	-45.6	PASS
2499.375000	-59.8	14.2	-45.6	PASS

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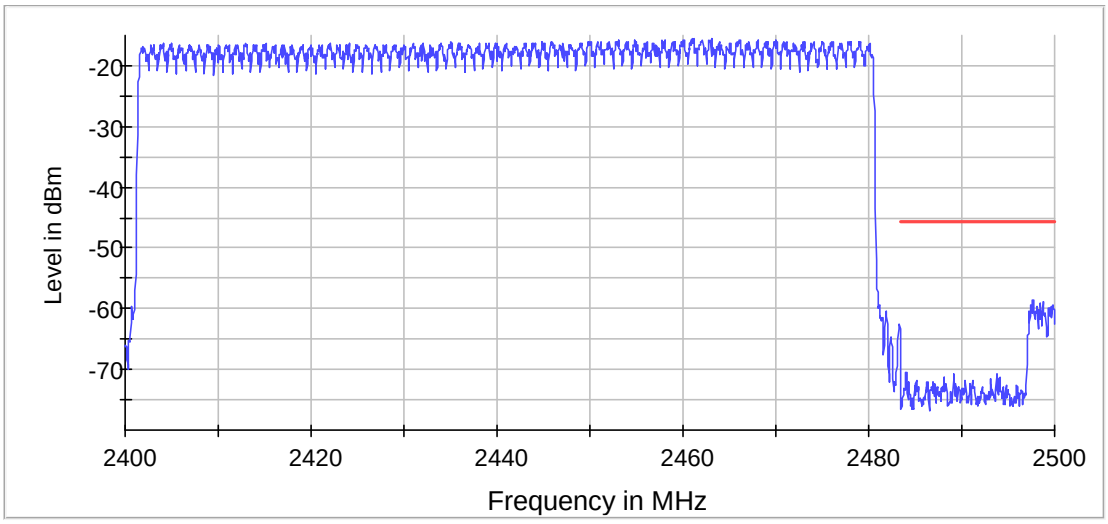
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	150 / max. 150	max. 150
Stable	0 / 3	3
Max Stable Difference	1.95 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.48350 GHz	2.48350 GHz

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Stop Frequency	**2.50000 GHz**	**2.50000 GHz**
Span	**16.500 MHz**	**16.500 MHz**
RBW	**100.000 kHz**	**<= 100.000 kHz**
VBW	**300.000 kHz**	**>= 300.000 kHz**
SweepPoints	**330**	**~ 330**
Sweeptime	**37.969 µs**	**AUTO**
Reference Level	**-20.000 dBm**	**-20.000 dBm**
Attenuation	**0.000 dB**	**AUTO**
Detector	**MaxPeak**	**MaxPeak**
SweepCount	**100**	**100**
Filter	**3 dB**	**3 dB**
Trace Mode	**Max Hold**	**Max Hold**
Sweeptype	**FFT**	**AUTO**
Preamp	**off**	**off**
Stablemode	**Trace**	**Trace**
Stablevalue	**0.50 dB**	**0.50 dB**
Run	**27 / max. 150**	**max. 150**
Stable	**3 / 3**	**3**
Max Stable Difference	**0.00 dB**	**0.50 dB**

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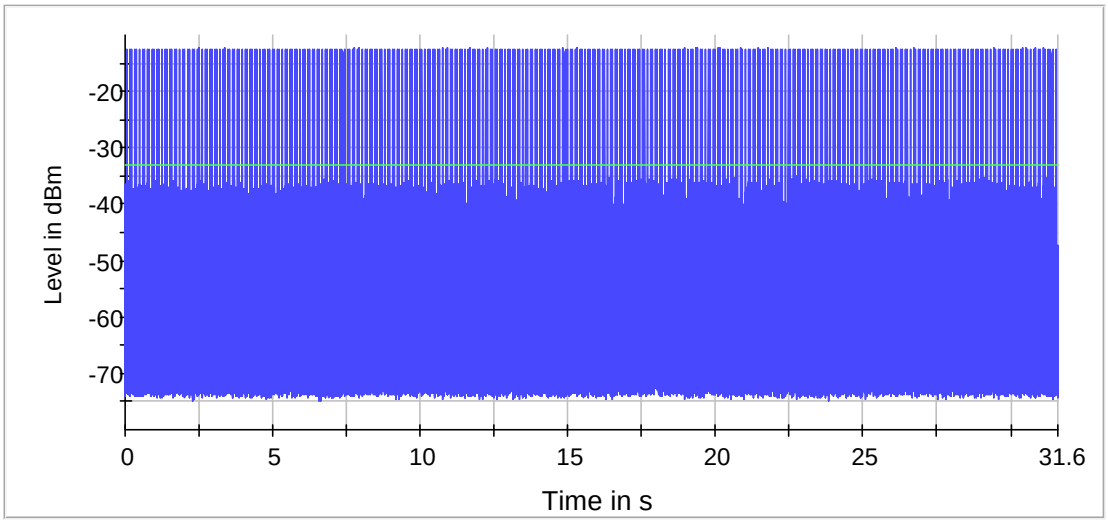
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Time of Channel Occupancy (2441 MHz; -13.000 dBm; 1 MHz)

Result

DUT Frequency (MHz)	Time (ms)	Limit Max (ms)	Limit Min (ms)	Threshold (dBm)	Result
2441.000000	146.430	400.000	0.000	-33.0	PASS



Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 ms	0.000 ms

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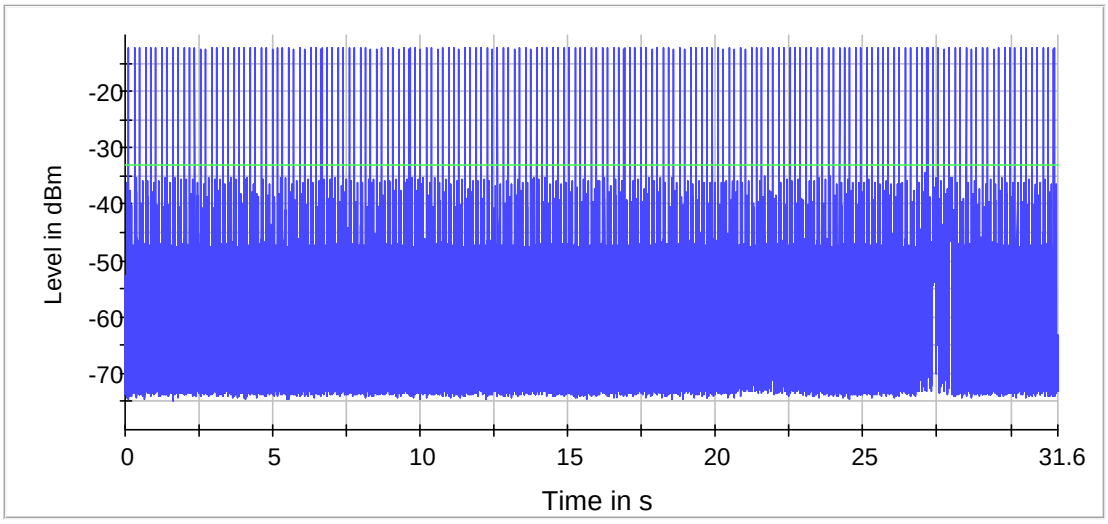
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Time of Channel Occupancy (2441 MHz; -13.000 dBm; 1 MHz)

Result

DUT Frequency (MHz)	Time (ms)	Limit Max (ms)	Limit Min (ms)	Threshold (dBm)	Result
2441.000000	281.480	400.000	0.000	-33.0	PASS



Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 ms	0.000 ms

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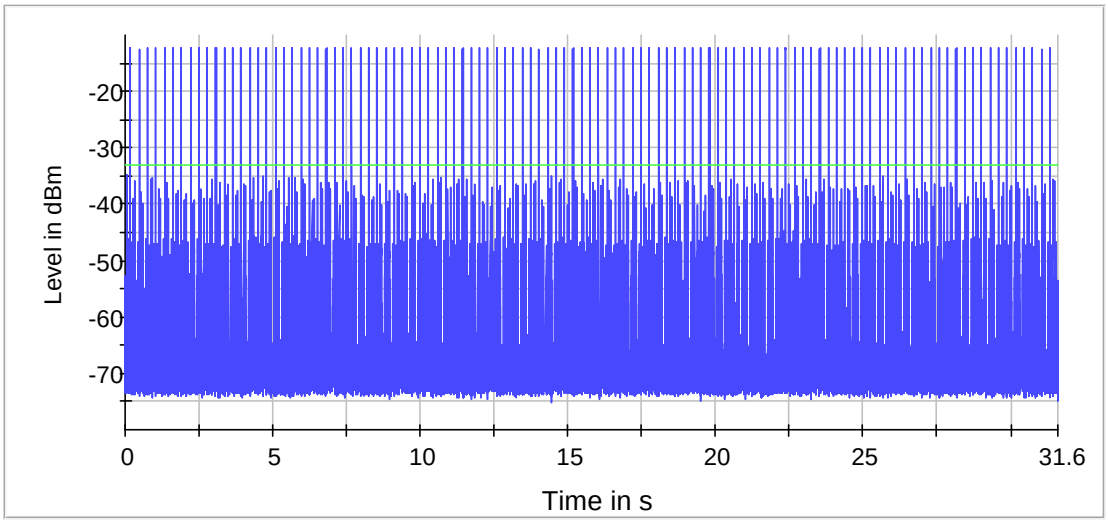
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Time of Channel Occupancy (2441 MHz; -13.000 dBm; 1 MHz)

Result

DUT Frequency (MHz)	Time (ms)	Limit Max (ms)	Limit Min (ms)	Threshold (dBm)	Result
2441.000000	320.210	400.000	0.000	-33.0	PASS



Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 ms	0.000 ms

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

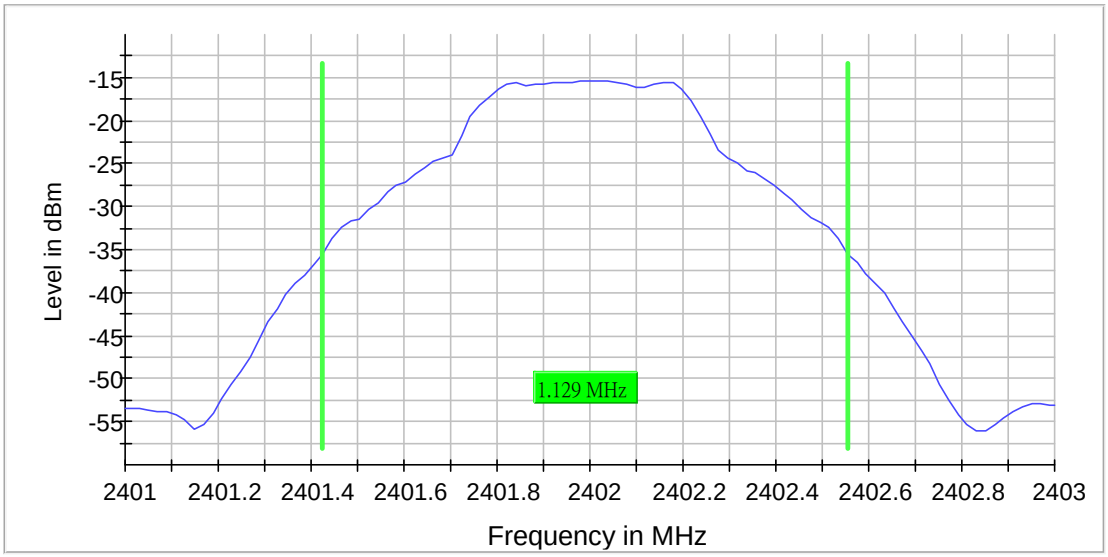
Emission Bandwidth 20 dB (2402 MHz; -13.000 dBm; 1 MHz; Test Mode)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.128712	---	---	2401.425743	2402.554455

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-15.4	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.25 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

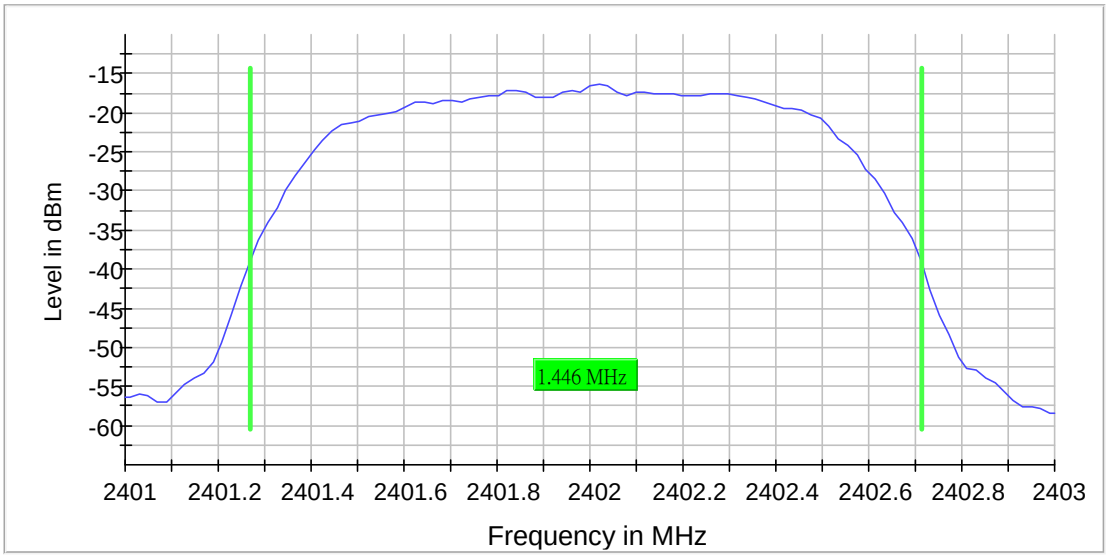
Emission Bandwidth 20 dB(2) (2402 MHz; -13.000 dBm; 1 MHz; Test Mode)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.445544	---	---	2401.267327	2402.712871

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-16.4	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.15 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

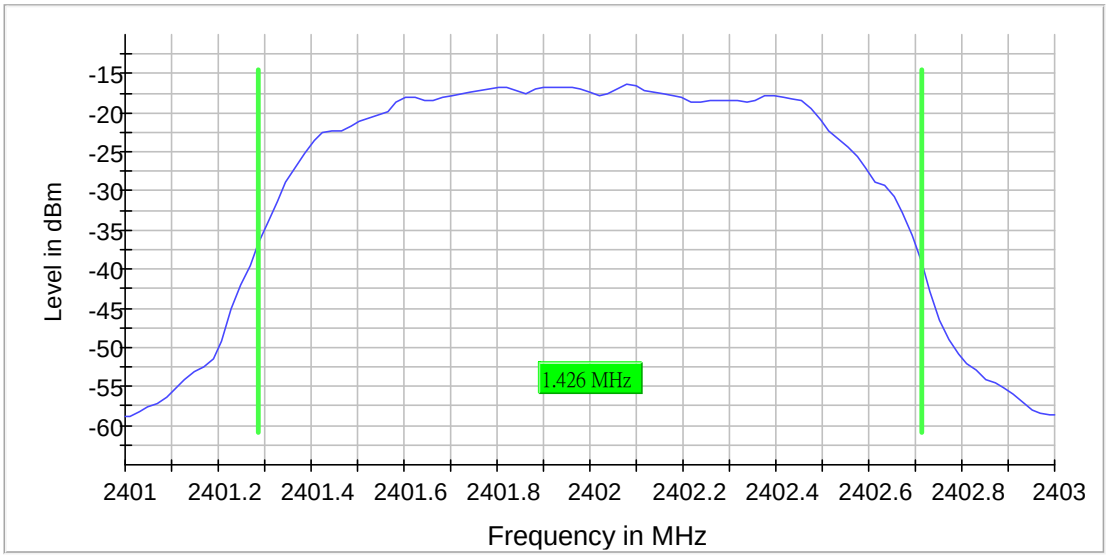
Emission Bandwidth 20 dB(3) (2402 MHz; -13.000 dBm; 1 MHz; Test Mode)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.425742	---	---	2401.287129	2402.712871

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-16.4	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.16 dB	0.50 dB

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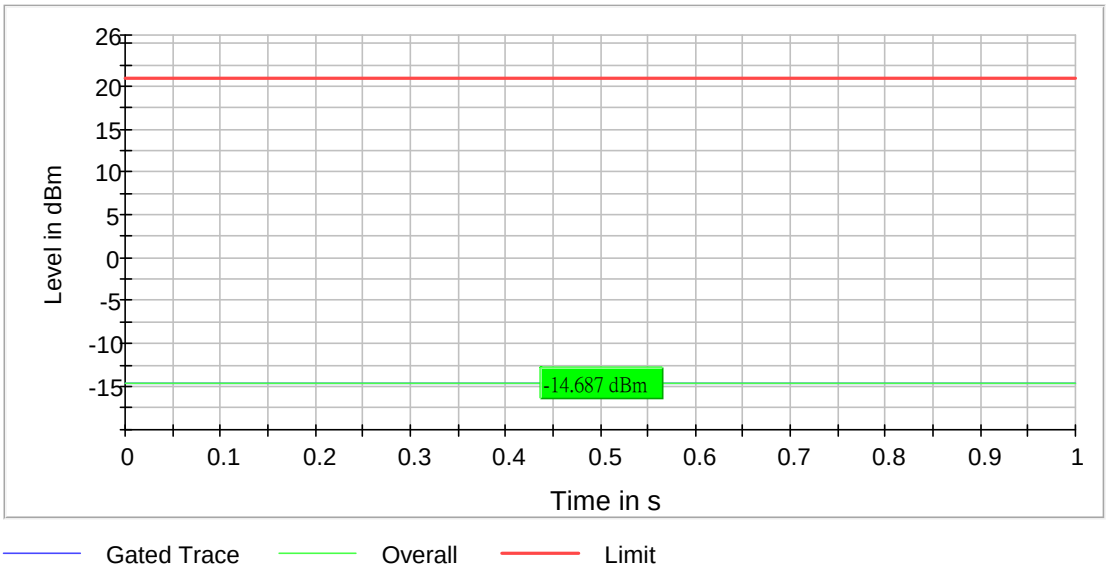
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

RF output power (2402 MHz; -13.000 dBm; 1 MHz; Test Mode)

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2402.000000	-14.7	21.0	-14.7	100.000	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Band Edge low (2402 MHz; -13.000 dBm; 1 MHz; Test Mode)

Result

DUT Frequency (MHz)	Result
2402.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
2401.975000	-16.4

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.975000	-71.0	24.6	-46.4	PASS
2399.925000	-71.2	24.8	-46.4	PASS
2399.875000	-71.6	25.2	-46.4	PASS
2399.475000	-72.0	25.6	-46.4	PASS
2399.775000	-72.1	25.7	-46.4	PASS
2399.675000	-72.3	25.9	-46.4	PASS
2399.825000	-72.5	26.1	-46.4	PASS
2399.625000	-72.5	26.1	-46.4	PASS
2399.575000	-72.5	26.1	-46.4	PASS
2399.725000	-72.6	26.2	-46.4	PASS
2375.725000	-72.9	26.5	-46.4	PASS
2375.675000	-73.0	26.6	-46.4	PASS
2399.525000	-73.1	26.7	-46.4	PASS
2375.525000	-73.3	26.9	-46.4	PASS
2399.425000	-74.0	27.7	-46.4	PASS

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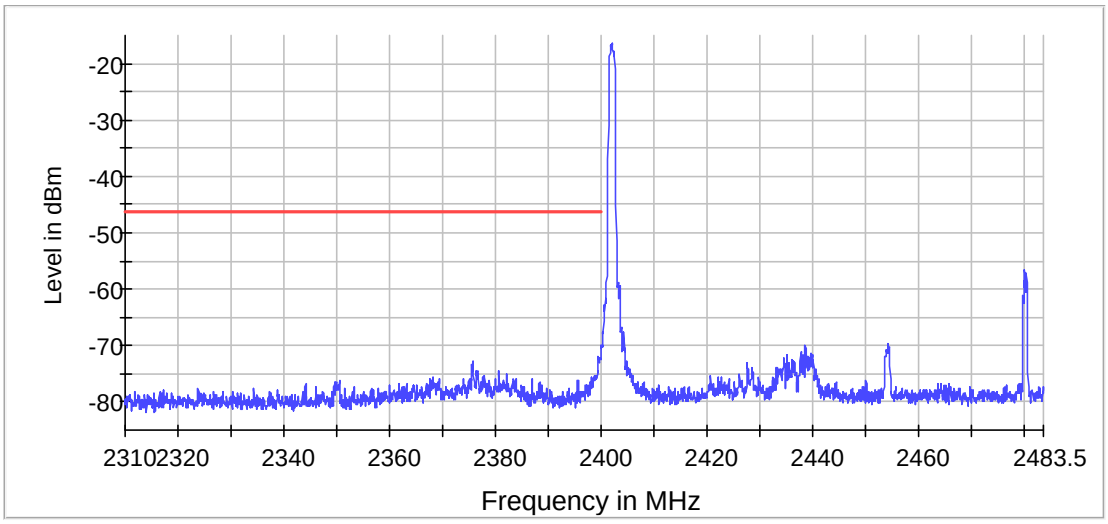
Report No. : AY0006310(0) Date : 18 Feb 2019



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	1.800 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.25 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

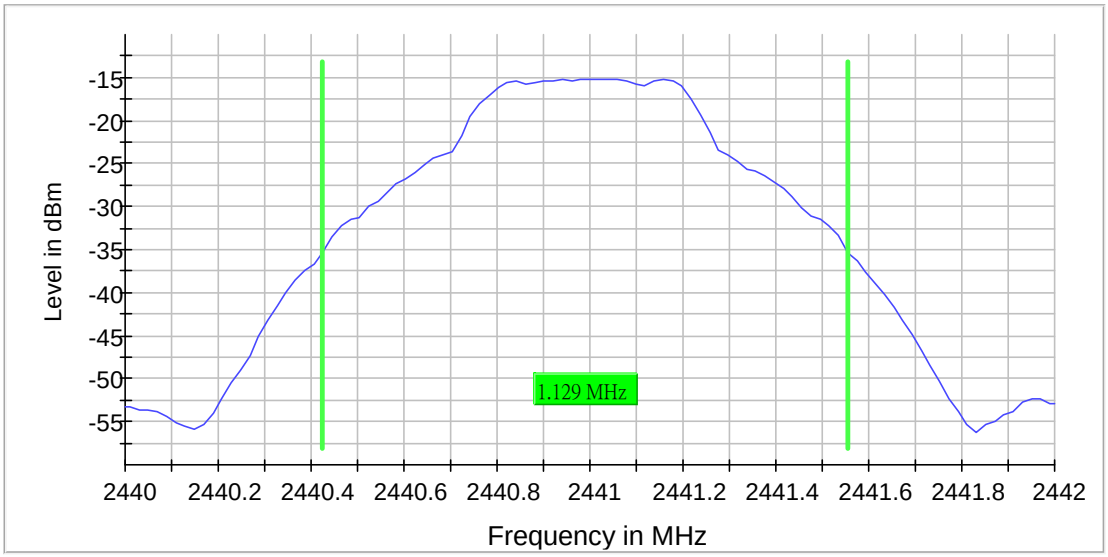
Emission Bandwidth 20 dB (2441 MHz; -13.000 dBm; 1 MHz; Test Mode)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.128712	---	---	2440.425743	2441.554455

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-15.2	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.23 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

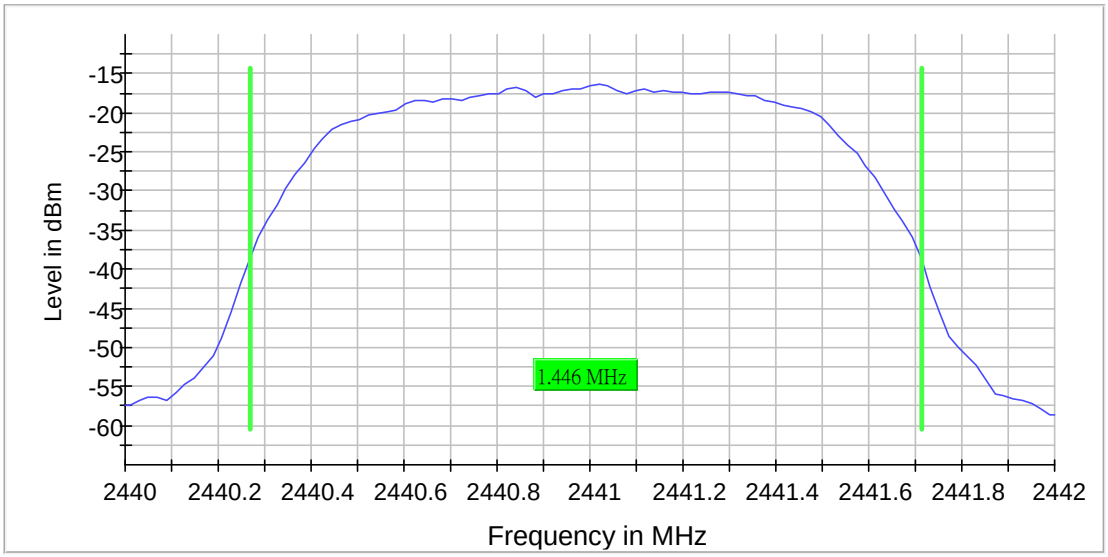
Emission Bandwidth 20 dB(2) (2441 MHz; -13.000 dBm; 1 MHz; Test Mode)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.445544	---	---	2440.267327	2441.712871

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-16.3	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.04 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

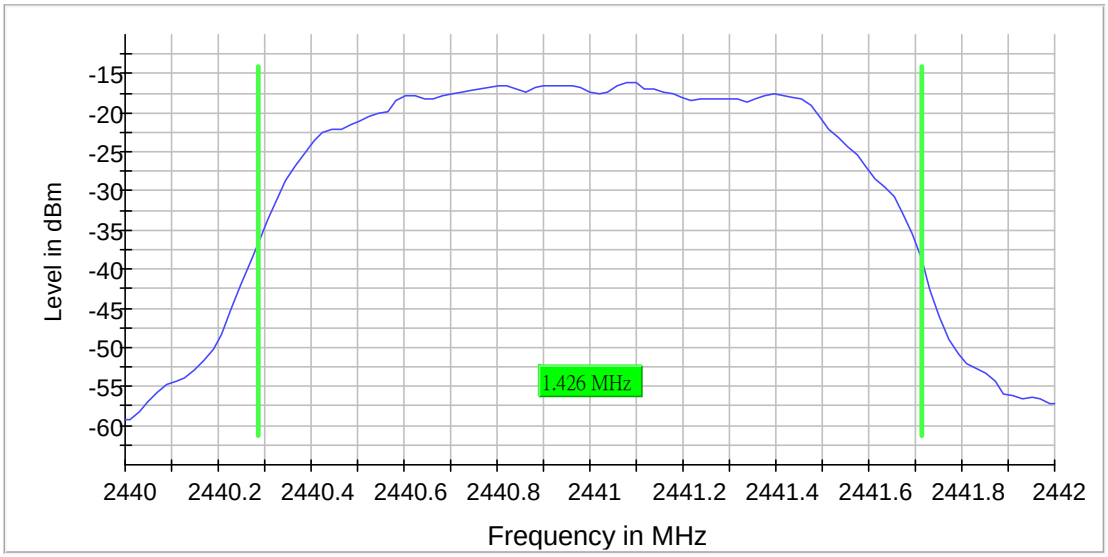
Emission Bandwidth 20 dB(3) (2441 MHz; -13.000 dBm; 1 MHz; Test Mode)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.425742	---	---	2440.287129	2441.712871

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-16.1	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.29 dB	0.50 dB

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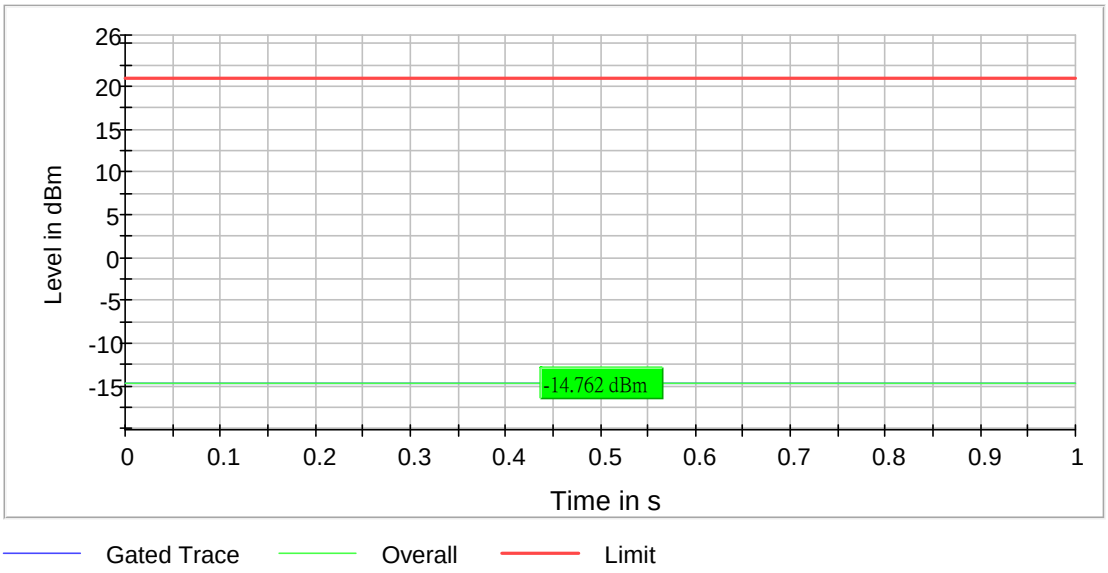
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

RF output power (2441 MHz; -13.000 dBm; 1 MHz; Test Mode)

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2441.000000	-14.8	21.0	-14.8	100.000	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

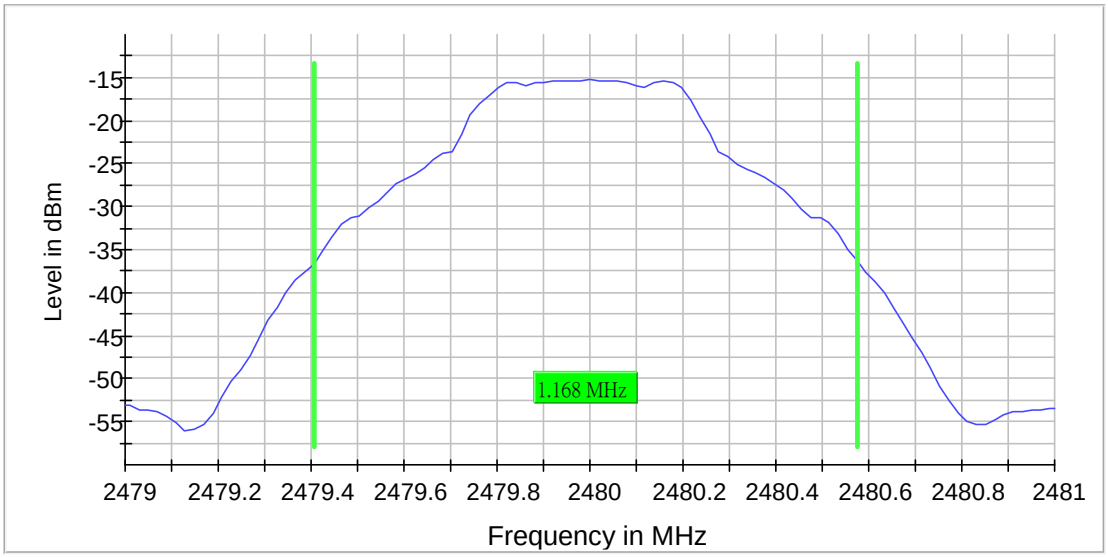
Emission Bandwidth 20 dB (2480 MHz; -13.000 dBm; 1 MHz; Test Mode)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.168316	---	---	2479.405941	2480.574257

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-15.3	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.11 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

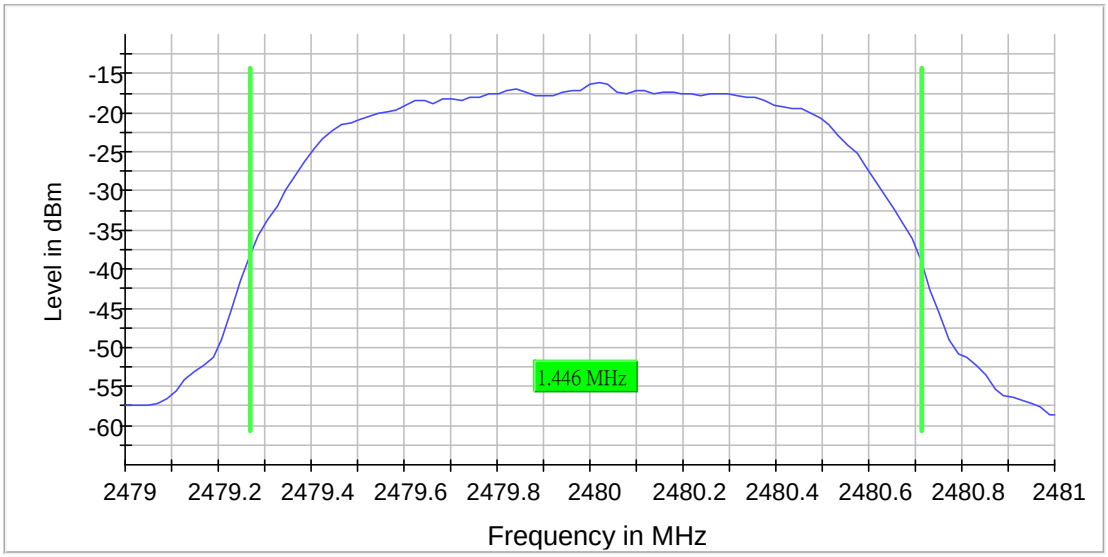
Emission Bandwidth 20 dB(2) (2480 MHz; -13.000 dBm; 1 MHz; Test Mode)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.445544	---	---	2479.267327	2480.712871

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-16.2	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	9 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.10 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

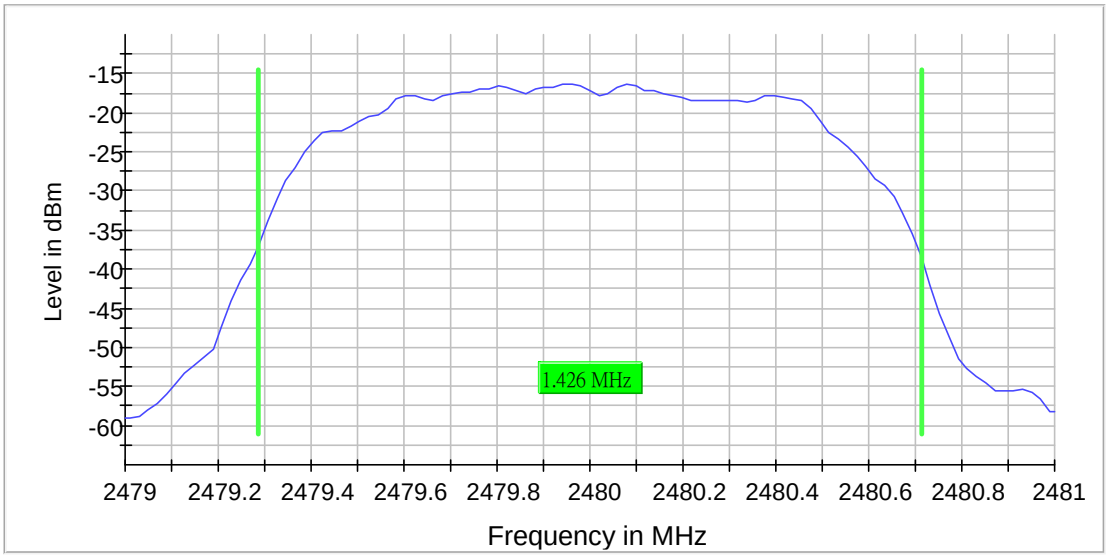
Emission Bandwidth 20 dB(3) (2480 MHz; -13.000 dBm; 1 MHz; Test Mode)

20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.425742	---	---	2479.287129	2480.712871

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-16.4	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 40
Sweeptime	18.938 µs	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.07 dB	0.50 dB

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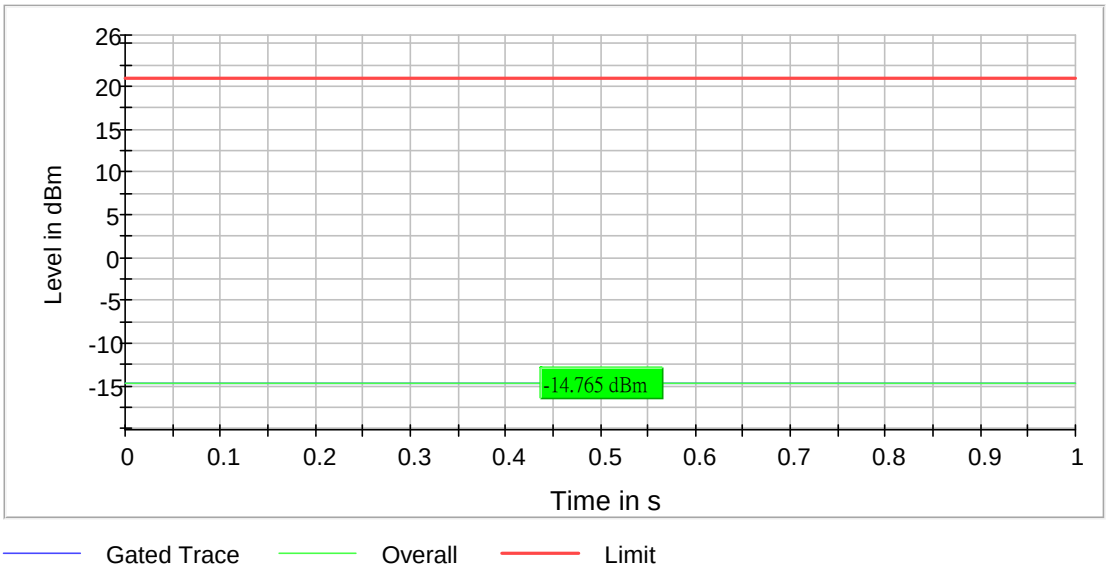
TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

RF output power (2480 MHz; -13.000 dBm; 1 MHz; Test Mode)

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
2480.000000	-14.8	21.0	-14.8	100.000	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Band Edge high (2480 MHz; -13.000 dBm; 1 MHz; Test Mode)

Result

DUT Frequency (MHz)	Result
2480.000000	PASS

Inband Peak

Frequency (MHz)	Level (dBm)
2479.975000	-16.3

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2483.525000	-75.3	29.0	-46.3	PASS
2483.675000	-75.7	29.4	-46.3	PASS
2483.725000	-75.7	29.4	-46.3	PASS
2483.625000	-76.1	29.8	-46.3	PASS
2485.825000	-76.4	30.1	-46.3	PASS
2483.575000	-76.4	30.1	-46.3	PASS
2484.175000	-76.5	30.1	-46.3	PASS
2483.925000	-76.5	30.2	-46.3	PASS
2484.225000	-76.8	30.5	-46.3	PASS
2483.875000	-76.9	30.6	-46.3	PASS
2483.775000	-76.9	30.6	-46.3	PASS
2485.775000	-77.0	30.7	-46.3	PASS
2483.975000	-77.1	30.8	-46.3	PASS
2484.425000	-77.1	30.8	-46.3	PASS
2483.825000	-77.1	30.8	-46.3	PASS

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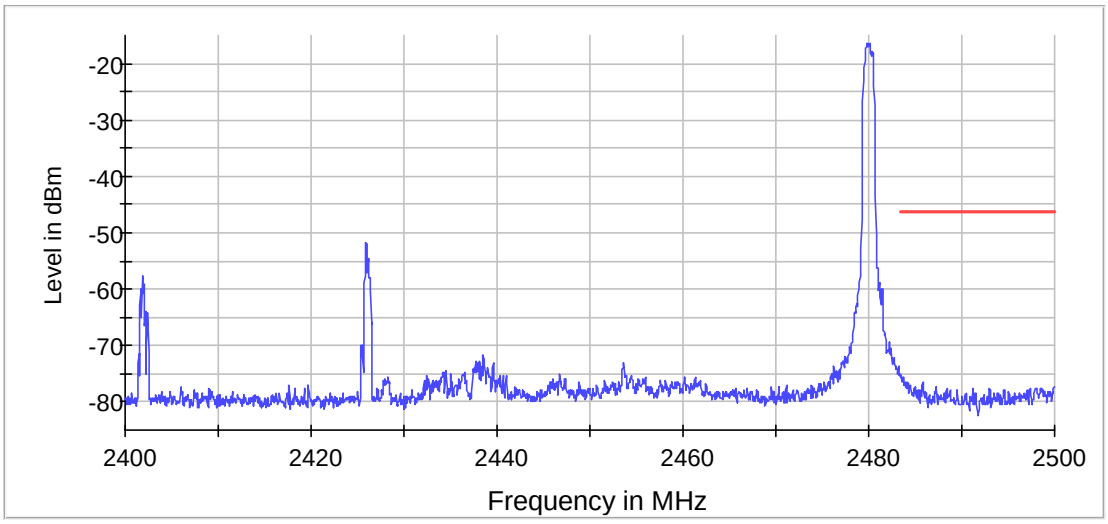

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.48350 GHz	2.48350 GHz
Stop Frequency	2.50000 GHz	2.50000 GHz
Span	16.500 MHz	16.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	330	~ 330
Sweeptime	37.969 µs	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

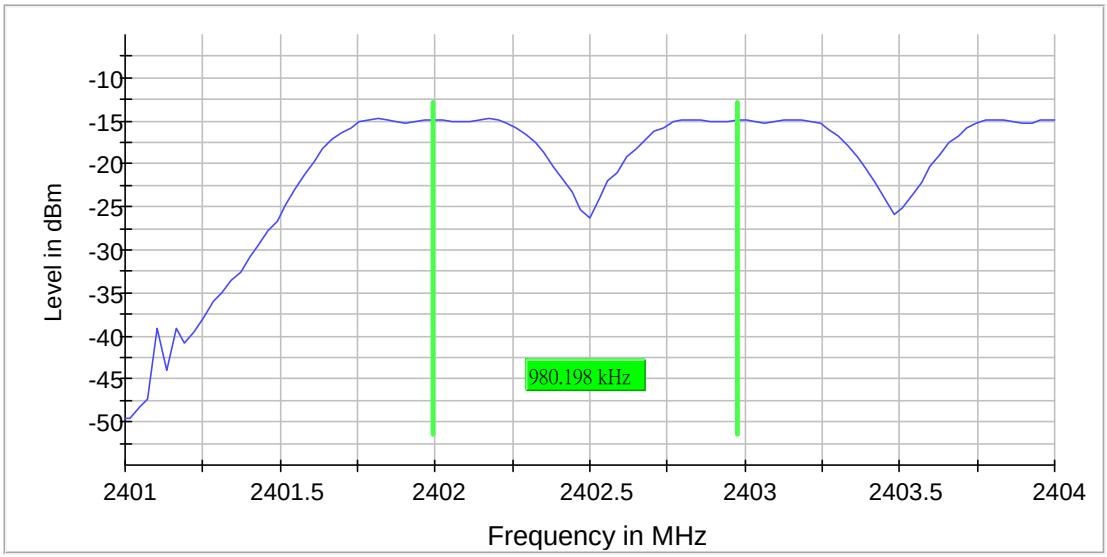
Carrier Frequency Separation (2402 MHz; -13.000 dBm; 1 MHz)

Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2402.000000	0.980198	0.963696	---	2401.995050	2402.975248

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	22 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.06 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

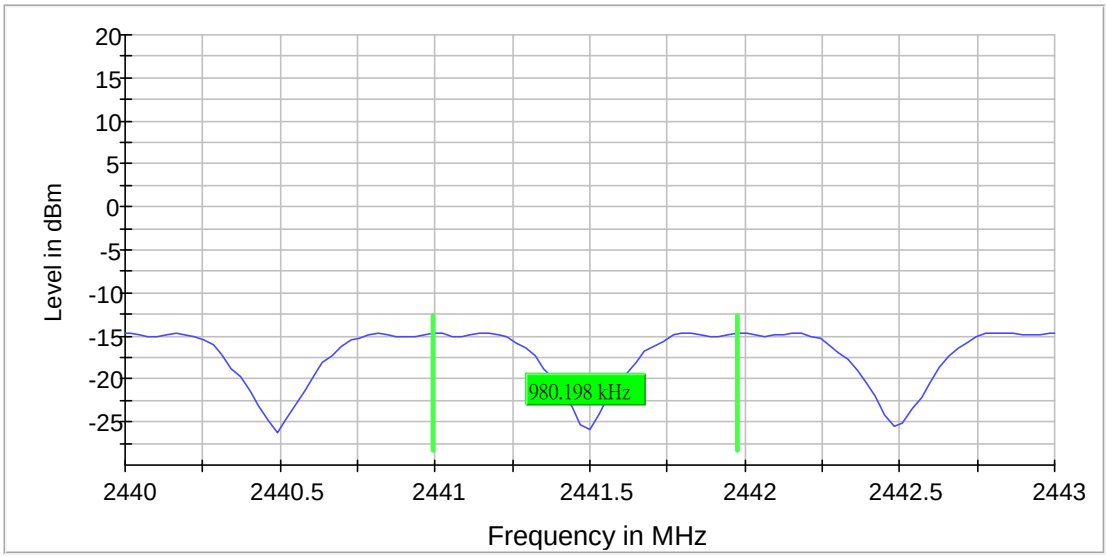
Carrier Frequency Separation (2441 MHz; -13.000 dBm; 1 MHz)

Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2441.000000	0.980198	0.963696	---	2440.995050	2441.975248

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.00 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

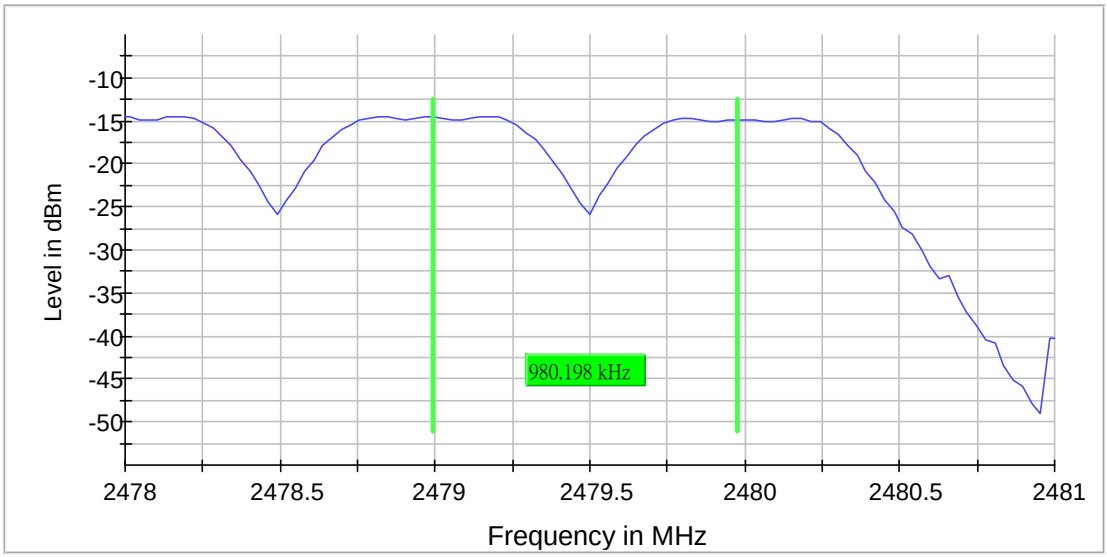
Carrier Frequency Separation (2479 MHz; -13.000 dBm; 1 MHz)

Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2479.000000	0.980198	0.963696	---	2478.995050	2479.975248

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2479.000000	PASS



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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	22 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.32 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Tx Spurious Emission (2402 MHz; -13.000 dBm; 1 MHz; Test Mode)

Result

DUT Frequency (MHz)	Result
2402.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
833.625000	-47.8	-90.0	-43.8	46.2	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
833.625000	-47.8	4.0	-43.8
834.275000	-47.8	4.0	-43.8
834.325000	-48.2	4.4	-43.8
833.575000	-48.3	4.5	-43.8
834.975000	-49.2	5.4	-43.8
833.675000	-49.4	5.6	-43.8
834.925000	-49.6	5.8	-43.8
835.025000	-49.9	6.1	-43.8
833.425000	-50.0	6.2	-43.8
834.025000	-50.1	6.3	-43.8
835.075000	-50.2	6.4	-43.8
836.725000	-50.2	6.4	-43.8
836.675000	-50.3	6.5	-43.8
836.425000	-50.3	6.5	-43.8
833.725000	-50.3	6.5	-43.8

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2400.000000	2483.500000	2	2
2483.500000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2

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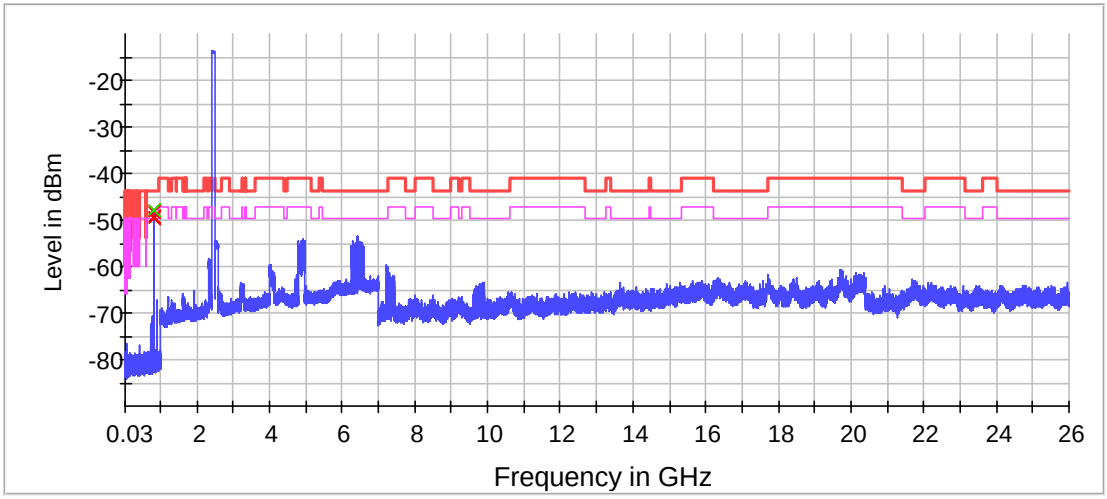
Report No. : AY0006310(0) Date : 18 Feb 2019



Limit Sum Level Threshold Critical
Final Critical Fail Pass

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	19400	~ 19400
Sweeptime	19.400 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	27 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	2800	~ 2800
Sweeptime	2.800 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	52 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 1

Setting	Instrument Value	Target Value
Span	ZeroSpan	ZeroSpan
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	10001	~ 10001
Sweeptime	1.000 s	1.000 s
Reference Level	-40.000 dBm	-40.000 dBm
Attenuation	0.000 dB	AUTO
Detector	RMS	RMS
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Tx Spurious Emission (2441 MHz; -13.000 dBm; 1 MHz; Test Mode)

Result

DUT Frequency (MHz)	Result
2441.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
6405.750000	-53.8	9.9	-44.0
6416.250000	-53.9	9.9	-44.0
6421.750000	-53.9	9.9	-44.0
2505.750000	-53.9	9.9	-44.0
6437.750000	-53.9	9.9	-44.0
6405.250000	-54.0	10.0	-44.0
6429.750000	-54.0	10.0	-44.0
6424.250000	-54.1	10.1	-44.0
6419.250000	-54.1	10.1	-44.0
6426.750000	-54.1	10.1	-44.0
6410.750000	-54.1	10.1	-44.0
6418.750000	-54.1	10.1	-44.0
6408.250000	-54.1	10.1	-44.0
6411.250000	-54.2	10.2	-44.0
6432.250000	-54.2	10.2	-44.0

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2400.000000	2483.500000	2	2
2483.500000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2

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TEST REPORT

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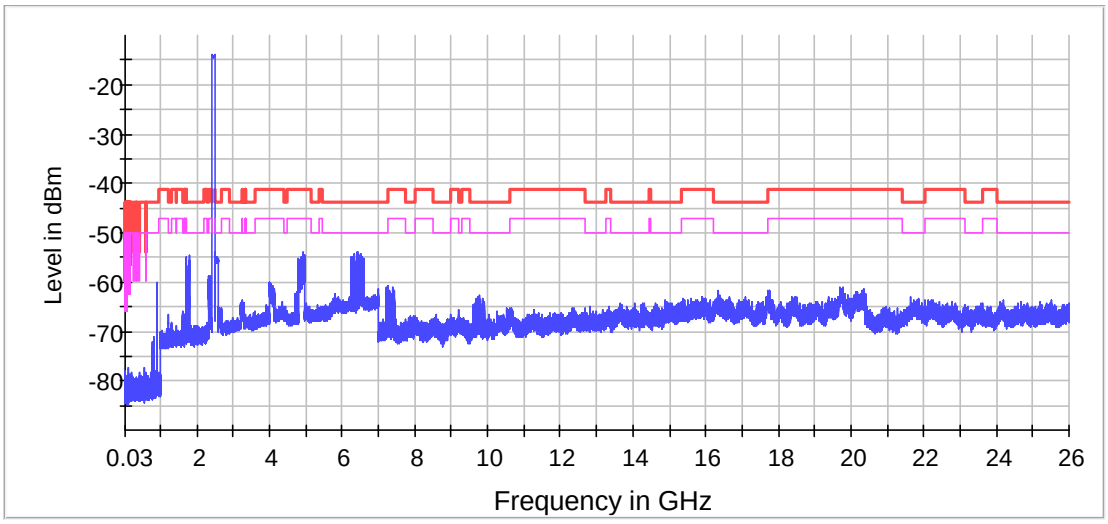

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	19400	~ 19400
Sweeptime	19.400 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	2800	~ 2800
Sweeptime	2.800 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Tx Spurious Emission (2480 MHz; -13.000 dBm; 1 MHz; Test Mode)

Result

DUT Frequency (MHz)	Result
2480.000000	PASS

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
6413.250000	-53.9	10.0	-43.9
6405.750000	-53.9	10.0	-43.9
6413.750000	-53.9	10.0	-43.9
6429.750000	-54.0	10.1	-43.9
6421.750000	-54.0	10.1	-43.9
6424.250000	-54.0	10.1	-43.9
6410.750000	-54.1	10.2	-43.9
6408.250000	-54.2	10.3	-43.9
6437.750000	-54.2	10.3	-43.9
6429.250000	-54.3	10.4	-43.9
6426.750000	-54.3	10.4	-43.9
6267.750000	-54.3	10.4	-43.9
6267.250000	-54.3	10.4	-43.9
2501.750000	-54.3	10.4	-43.9
2502.250000	-54.3	10.4	-43.9

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	1000.000000	1	1
1000.000000	2400.000000	2	2
2400.000000	2483.500000	2	2
2483.500000	7000.000000	2	2
7000.000000	18000.000000	2	2
18000.000000	26000.000000	2	2

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TEST REPORT

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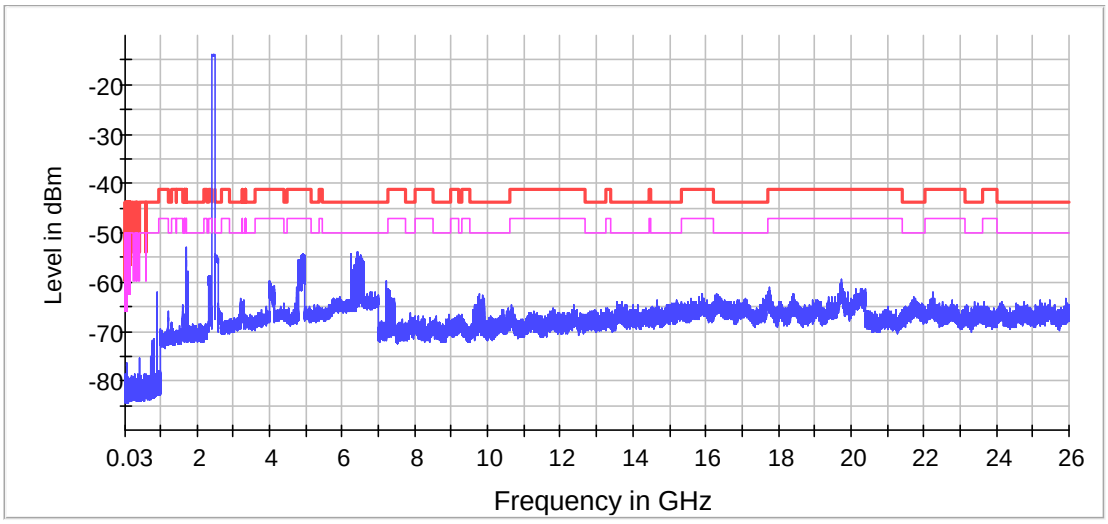

Limit Sum Level Threshold Critical Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	19400	~ 19400
Sweeptime	19.400 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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TEST REPORT

Report No. : AY0006310(0) Date : 18 Feb 2019

Pre Measurement 2

Setting	Instrument Value	Target Value
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	2800	~ 2800
Sweeptime	2.800 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	30	30
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	26 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

***** End of Report *****

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