FCC ID: 2ALBPET1030



RADIO TEST REPORT

The device described below is tested by Dongguan Nore Testing Center Co., Ltd. to determine the maximum emission levels emanating from the device, the severe levels which the device can endure and E.U.T.'s performance criterion. The test results, data evaluation, test procedures, and equipment of configurations shown in this report were made in accordance with the procedures in ANSI C63.10(2013).

Applicant/ Manufacturer: BESTOM TECHNOLOGY(HK) CO., LIMITED

Address R718 BuildingB1, Huayuan S&TP, No.168 BY Road Xixiang Street,

Shenzhen City, China

Factory : Guangzhou Jinghua Precision Optics Co., Ltd.

Address : 12 Kangda Rd., Dongcheng Zone, Yunpu Industrial District, Huangpu,

Guangzhou, China

E.U.T. : Bestable

Brand Name : N/A

Model No. : ET1030

FCC ID : 2ALBPET1030

Measurement Standard : FCC PART 15.249

Date of Receiver : November 08, 2019

Date of Test : November 08, 2019 to December 09, 2019

Date of Report : December 09, 2019

This Test Report is Issued Under the Authority of :

Prepared by Approved & Authorized Signe

Rose Hu / Engineer Iori Fa

This test report is for the customer shown above and their specific product only. This report applies to above tested sample only and shall not be reproduced in part without written approval of Dongguan Nore Testing Center Co., Ltd.



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Nore Testing Center

Revision History of This Test Report

Report Number	Description	Issued Date
NTC1912109FV00	Initial Issue	2019-12-09

Report No.: NTC1912109FV00 FCC ID: 2ALBPET1030



1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test

E.U.T. : Bestable

Main model number : ET1030

Brand Name : N/A

Rating : DC 5V From Type-C USB Port

Test Voltage : AC 120V 60Hz Adapter Input,

AC 240V 60Hz Adapter Input

Only the worst case was recorded in the test report.

Cable : N/A

Adapter : N/A

Hardware version : V1.0

Software version : V1.0

Note : This report only applies to BLE function.

Technical parameters

Bluetooth Version : BLE

Frequency Range : 2402-2480MHz

Modulation : GFSK
Number of Channel : 40
Channel space : 2MHz
Date Rate : 2Mbps

Antenna Type : Integral antenna

Antenna Gain : 2 dBi

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BLE Channel List

Channel	Frequency MHz	Channel	Frequency MHz	Channel	Frequency MHz	Channel	Frequency MHz
1	2402	11	2422	21	2442	31	2462
2	2404	12	2424	22	2444	32	2464
3	2406	13	2426	23	2446	33	2466
4	2408	14	2428	24	2448	34	2468
5	2410	15	2430	25	2450	35	2470
6	2412	16	2432	26	2452	36	2472
7	2414	17	2434	27	2454	37	2474
8	2416	18	2436	28	2456	38	2476
9	2418	19	2438	29	2458	39	2478
10	2420	20	2440	30	2460	40	2480

Note: According to section 15.31(m), regards to the operating frequency range over 10MHz, the Lowest, middle, and the Highest frequency of channel were selected to perform the test. The selected frequency and test software see below:

Channel	Frequency MHz
1	2402
20	2440
40	2480

Test SW version EngineerMode.apk

Report No.: NTC1912109FV00 FCC ID: 2ALBPET1030



1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **2ALBPET1030** filing to comply with Section 15.249 of the FCC Part 15 (2017), Subpart C Rule.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013). Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters.

1.4 Equipment Modifications

Not available for this EUT intended for grant.

1.5 Support Device

Adapter : Manufacturer: HUWEI

Model No.: HW-050200C01

Input: AC100-240V 50/60Hz, 0.5A

Output: DC5V 2A

Notebook : Manufacturer: Lenovo

Model: TP00067A P/N: SL10G10768

S/N: PF-0DS3YC 15/12

Adapter : Manufacturer: Lenovo (For Notebook) : Model: ADLX65NLC3A

I/P: AC 100-240V 50-60Hz, 1.8A

O/P: DC 20V 3.25A

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1.6 Test Facility and Location

Site Description

Lab : Listed by CNAS, August 13, 2018 **EMC**

The certificate is valid until August 13, 2024

The Laboratory has been assessed and proved to

be in compliance with CNAS/CL01

The Certificate Registration Number is L5795.

Listed by A2LA, November 01, 2017

The certificate is valid until December 31, 2021 The Laboratory has been assessed and proved to

be in compliance with ISO17025

The Certificate Registration Number is 4429.01

Listed by FCC, November 06, 2017 The Designation Number is CN1214 Test Firm Registration Number: 907417

Listed by Industry Canada, June 08, 2017

The Certificate Registration Number. Is 46405-9743

Name of Firm : Dongguan Nore Testing Center Co., Ltd.

(Dongguan NTC Co., Ltd.)

Site Location : Building D, Gaosheng Science and Technology

park, Hongtu road, Nancheng district, Dongguan

city, Guangdong province, China

1.7 Deviations and Abnormalities from Standard Conditions

No additions, deviations and exclusions from the standard.

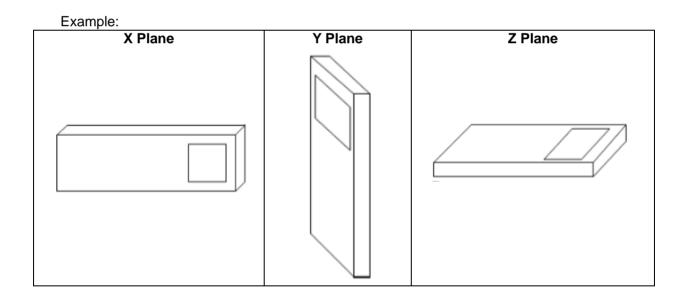
FCC ID: 2ALBPET1030



1.8 Summary of Test Results

FCC Rules	Description Of Test	Uncertainty	Result
§15.207(a)	AC Power Conducted Emission	±1.06dB	PASS
§15.249(a)/ 15.209	Radiated Emissions	±3.70dB	PASS
§15.249(d)/ 15.205	Band Edge	±1.70dB	PASS
§15.215(c)	20dB Bandwidth	±1.42 x10 ⁻⁴ %	PASS
§15.203	Antenna Requirement		PASS

Note: The EUT operating multiple positions, therefore the EUT shall be performed three orthogonal planes. The worst plane is X.



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2. System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 Special Accessories

Not available for this EUT intended for grant.

2.3 Description of test modes

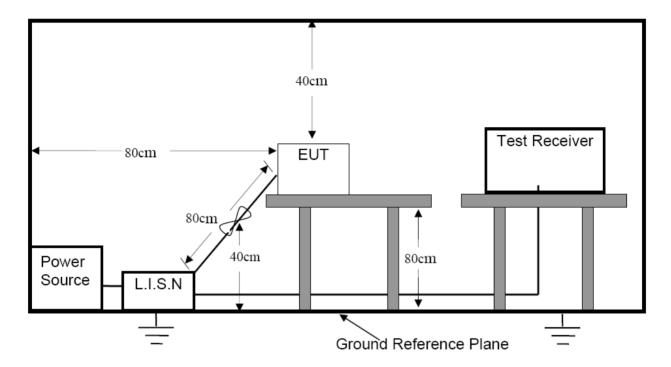
The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and normal mode is programmed. The Lowest, middle and highest channel were chosen for testing.

2.4 EUT Exercise

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

3. Conducted Emissions Test

3.1 Test SET-UP (Block Diagram of Configuration)



3.2 Test Condition

Test Requirement: FCC Part 15.207

Frequency Range: 150KHz ~ 30MHz

Detector: RBW 9KHz, VBW 30KHz

Operation Mode: TX

3.3 Measurement Results

Please refer to following plots of the worst case: GFSK Low channel.

The worst test voltage: AC 120V 60Hz

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26

Temperature:

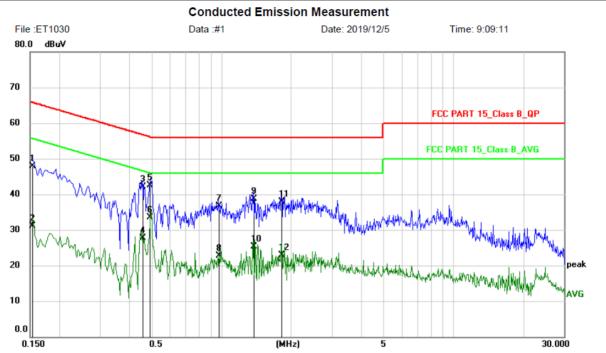
Humidity:



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Web: Http://www.ntc-c.com



Phase:

Power:

L1

AC120V/60Hz

Site
Limit: FCC PART 15_Class B_QP

EUT: Bestable M/N: ET1030 Mode: TX-BLE

Note:

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1539	37.30	10.60	47.90	65.79	-17.89	QP	
2	0.1539	20.50	10.60	31.10	55.79	-24.69	AVG	
3	0.4580	31.48	10.62	42.10	56.73	-14.63	QP	
4	0.4580	17.08	10.62	27.70	46.73	-19.03	AVG	
5	0.4940	31.87	10.63	42.50	56.10	-13.60	QP	
6 *	0.4940	22.97	10.63	33.60	46.10	-12.50	AVG	
7	0.9740	26.00	10.70	36.70	56.00	-19.30	QP	
8	0.9740	12.10	10.70	22.80	46.00	-23.20	AVG	
9	1.3740	28.10	10.70	38.80	56.00	-17.20	QP	
10	1.3740	14.70	10.70	25.40	46.00	-20.60	AVG	
11	1.8100	27.20	10.70	37.90	56.00	-18.10	QP	
12	1.8100	12.20	10.70	22.90	46.00	-23.10	AVG	

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Temperature:

Humidity:

26

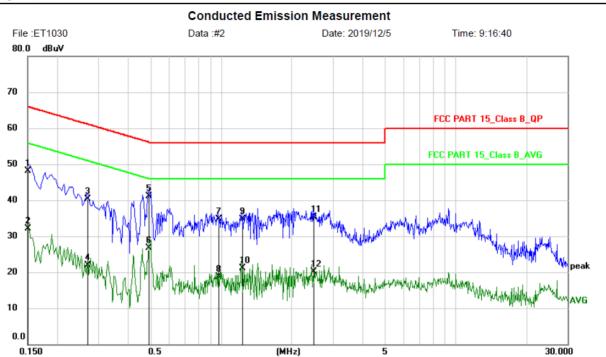
50 %



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Limit: FCC PART 15_Class B_QP

EUT: Bestable M/N: ET1030 Mode: TX-BLE

Note:

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1500	37.60	10.60	48.20	66.00	-17.80	QP	
2	0.1500	21.50	10.60	32.10	56.00	-23.90	AVG	
3	0.2700	29.70	10.60	40.30	61.12	-20.82	QP	
4	0.2700	11.30	10.60	21.90	51.12	-29.22	AVG	
5 *	0.4940	30.57	10.63	41.20	56.10	-14.90	QP	
6	0.4940	16.07	10.63	26.70	46.10	-19.40	AVG	
7	0.9780	24.10	10.70	34.80	56.00	-21.20	QP	
8	0.9780	8.00	10.70	18.70	46.00	-27.30	AVG	
9	1.2300	24.10	10.70	34.80	56.00	-21.20	QP	
10	1.2300	10.50	10.70	21.20	46.00	-24.80	AVG	
11	2.4780	24.70	10.70	35.40	56.00	-20.60	QP	
12	2.4780	9.40	10.70	20.10	46.00	-25.90	AVG	

Phase:

Power:

N

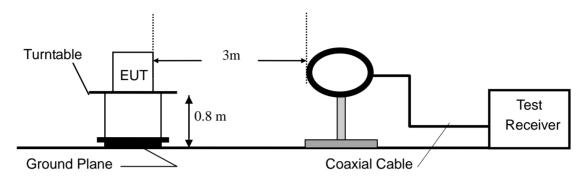
AC120V/60Hz

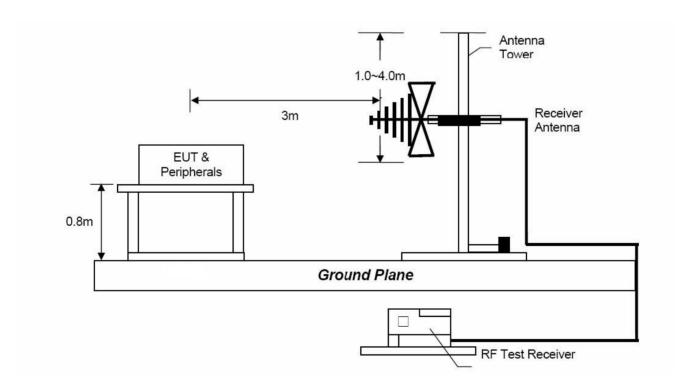


4. Radiated Emission Test

4.1 Test SET-UP (Block Diagram of Configuration)

4.1.1 Radiated Emission Test Set-Up, Frequency Below 30MHz



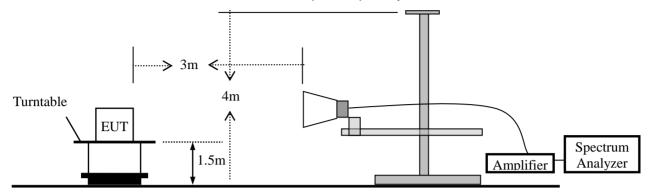


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4.1.2 Radiated Emission Test Set-Up, Frequency above 1GHz



4.2 Measurement Procedure

- a. Blow 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic chamber room.
- b. For the radiated emission test above 1GHz:
 - The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter full anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- c. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to peak detect function and specified bandwidth with maximum hold mode.
- f. A Quasi-peak measurement was then made for that frequency point for below 1GHz test. PK and AV for above 1GHz emission test.
 - During the radiated emission test, the spectrum analyzer was set with the following configurations:

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Frequency Band (MHz)	Level	Resolution Bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	3 MHz
Above 1000	Average	1 MHz	10 Hz

4.3 Limit

Frequency range	Distance Meters	Field Strengths Limit (15.209)			
MHz		μV/m			
0.009 ~ 0.490	300	2400/F	(kHz)		
0.490 ~ 1.705	30	24000/	F(kHz)		
1.705 ~ 30	30	30			
30 ~ 88	3	100			
88 ~ 216	3	150			
216 ~ 960	3	200			
Above 960	3	500			
Frequency range	Distance Meters	Field Strengths	Limit (15.249)		
MHz		mV/m	μV/m		
		(Field strength of	(Field strength of		
		fundamental)	Harmonics)		
902 ~ 928	3	50	500		
2400 ~ 2483.5	3	50	500		
5725 ~ 5875	3	50	500		
24000 ~ 2425000	3	250	2500		

Remark: (1) Emission level (dB) μ V = 20 log Emission level μ V/m

- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
- (4) The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.
- (5) Sample of data calculate:

Level=Reading + Factor; Margin= Level-Limit

Factor=CF+AF+AG

Where CF=Cable attenuation factor in dB

> AF= Antenna factor in dB AG=Amplifier Gain in dB

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4.4 Measurement Results

Please refer to following the test plots of the worst case: GFSK Low channel. The worst test voltage: AC 120V 60Hz

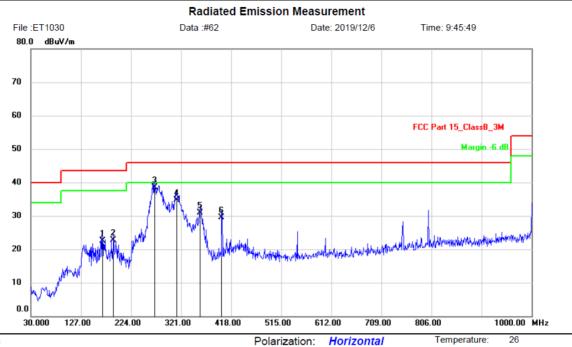
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AC120V/60Hz

Humidity:

47 %

Site

Limit: FCC Part 15_ClassB_3M

EUT: Bestable M/N: ET1030

Mode: TX-BLE

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		168.7100	37.45	-14.85	22.60	43.50	-20.90	QP			
2		190.0500	36.27	-13.57	22.70	43.50	-20.80	QP			
3	*	269.5900	49.70	-11.20	38.50	46.00	-7.50	QP			
4		312.2700	44.93	-10.13	34.80	46.00	-11.20	QP			
5		357.8599	40.03	-9.13	30.90	46.00	-15.10	QP			
6		399.5700	38.71	-9.11	29.60	46.00	-16.40	QP			

Power:

Distance: 3m

Note: Below 30MHz, the emissions are lower than 20dB below the allowable limit.

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Web: Http://www.ntc-c.com

Radiated Emission Measurement File:ET1030 Data :#61 Date: 2019/12/6 Time: 9:39:32 80.0 dBuV/m 70 60 FCC Part 15_ClassB_3M Margin -6 dB 50 40 30 20 10 0.0 515.00 709.00 1000.00 MHz 30.000 127.00 224.00 321.00 418.00 612.00 806.00

Site

Limit: FCC Part 15_ClassB_3M

EUT: Bestable M/N: ET1030 Mode: TX-BLE

Note:

Polarization: Vertical Temperature: 26
Power: AC120V/60Hz Humidity: 47 %

Distance: 3m

No. I	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		129.9100	41.35	-18.15	23.20	43.50	-20.30	QP			
2		149.3100	43.32	-18.52	24.80	43.50	-18.70	QP			
3		168.7100	36.95	-17.85	19.10	43.50	-24.40	QP			
4		186.1700	35.47	-16.77	18.70	43.50	-24.80	QP			
5	*	270.5600	45.48	-13.18	32.30	46.00	-13.70	QP			
6		312.2700	37.73	-12.13	25.60	46.00	-20.40	QP			

Report No.: NTC1912109FV00 FCC ID: 2ALBPET1030

NTC Nore Testing Center

The worst case: GFSK

Frequency Range: 1-25GHz Test Date: December 07, 2019

Test Result: PASS Temperature : 21 $^{\circ}$ C Measured Distance: 3m Humidity : 55 $^{\circ}$

Test By: Sance

Freq. Ant.Pol.			Reading Level(dBuV)		Emission Level (dBuV)		Limit 3m (dBuV/m)		Margin (dB)	
(MHz) (H/	(H/V)	PK	AV	(dB/m)	PK	ÁV	PK	ÁV	PK `	ÁV
Operation Mode: TX Mode (Low)										l .
2402	V	92.25	70.5	0.13	92.38	70.63	114.00	94.00	-21.62	-23.37
4804	V	46.56	32.09	6.30	52.86	38.39	74.00	54.00	-21.14	-15.61
7206	V	45.93	31.08	10.44	56.37	41.52	74.00	54.00	-17.63	-12.48
2402	Н	101.68	76.39	0.13	101.81	76.52	114.00	94.00	-12.19	-17.48
4804	Н	49.28	37.84	6.30	55.58	44.14	74.00	54.00	-18.42	-9.86
7206	Н	45.85	30.89	10.44	56.29	41.33	74.00	54.00	-17.71	-12.67
Operation Mode: TX Mode (Mid)										
2440	V	90.19	67.61	0.23	90.42	67.84	114.00	94.00	-23.58	-26.16
4880	V	46.51	31.54	6.60	53.11	38.14	74.00	54.00	-20.89	-15.86
7320	V	46.07	31.37	10.55	56.62	41.92	74.00	54.00	-17.38	-12.08
2440	Н	99.34	73.68	0.23	99.57	73.91	114.00	94.00	-14.43	-20.09
4880	Н	47.72	35.57	6.60	54.32	42.17	74.00	54.00	-19.68	-11.83
7320	Н	46.35	31.43	10.55	56.90	41.98	74.00	54.00	-17.1	-12.02
Operation Mode: TX Mode (High)										
2480	V	90.13	69.13	0.34	90.47	69.47	114.00	94.00	-23.53	-24.53
4960	V	46.56	31.07	6.89	53.45	37.96	74.00	54.00	-20.55	-16.04
7440	V	45.76	30.6	10.60	56.36	41.20	74.00	54.00	-17.64	-12.8
2480	Н	97.07	73.4	0.34	97.41	73.74	114.00	94.00	-16.59	-20.26
4960	Н	46.51	31.86	6.89	53.40	38.75	74.00	54.00	-20.6	-15.25
7440	Н	45.62	30.94	10.60	56.22	41.54	74.00	54.00	-17.78	-12.46

Note: (1) All Readings are Peak Value and AV.

- (2) Emission Level= Reading Level + Factor
- (3) Factor= Antenna Gain + Cable Loss Amplifier Gain
- (4) Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 10dB below the permissible limits.
- (5) Measurement uncertainty: ±3.7dB.
- (6) Horn antenna used for the emission over 1000MHz.

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5. 20dB Bandwidth

5.1 Measurement Procedure

The 20dB bandwidth of the emission was contained within the frequency band designated which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over excepted variations in temperature and supply voltage were considered, FCC Rule 15.215(c):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RBW was chosen so that the display was a result of the hopping channel modulation. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. Use the spectrum 20dB down delta function to measure the bandwidth.

5.2 Test SET-UP (Block Diagram of Configuration)

FUT	Spectrum Analyzer			
	opectium Analyzei			

5.3 Measurement Results

Refer to attached data chart.

RBW: 30KHz VBW: 100KHz Spectrum Detector: PK Temperature: 22 $^{\circ}$ C Test By: Sance Humidity: 54 $^{\circ}$

Test Result: PASS Test Date: December 03, 2019

Channel frequency (MHz)	20dB Down BW(kHz)
GF	FSK
2402	1125
2440	1121
2480	1120

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GFSK Lowest Channel



GFSK Middle Channel



FCC ID: 2ALBPET1030



GFSK Highest Channel



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6. Band Edge

6.1 Measurement Procedure

Same as Radiated Emission Test.

6.2 Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

6.3 Measurement Results

Operation Mode: GFSK Test Date: December 07, 2019

Temperature : 21 $^{\circ}$ Humidity : 55 $^{\circ}$ Test Result: PASS Test By: Sance

Measured Distance: 3m

Freq. (MHz)	Ant.Pol. (H/V)	Reading Level(dBuV)		Factor	Emission Level (dBuV)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV	(dB/m)	PK	AV	PK	AV	PK	AV
2390.000	Н	51.41	41.27	0.09	51.50	41.36	74.00	54.00	-22.5	-12.64
2390.000	V	48.74	36.73	0.09	48.83	36.82	74.00	54.00	-25.17	-17.18
2483.500	Н	55.88	45.56	0.35	56.23	45.91	74.00	54.00	-17.77	-8.09
2483.500	V	50.84	41.18	0.35	51.19	41.53	74.00	54.00	-22.81	-12.47

Note: (1) Emission Level= Reading Level + Factor

(2) Factor= Antenna Gain + Cable Loss – Amplifier Gain

(3) Horn antenna used for the emission over 1000MHz.

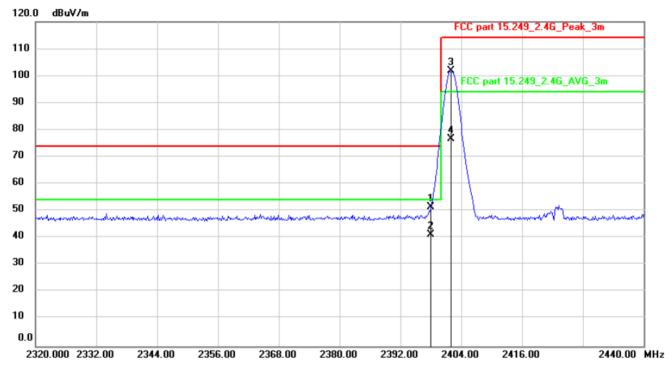
Report No.: NTC1912109FV00

FCC ID: 2ALBPET1030

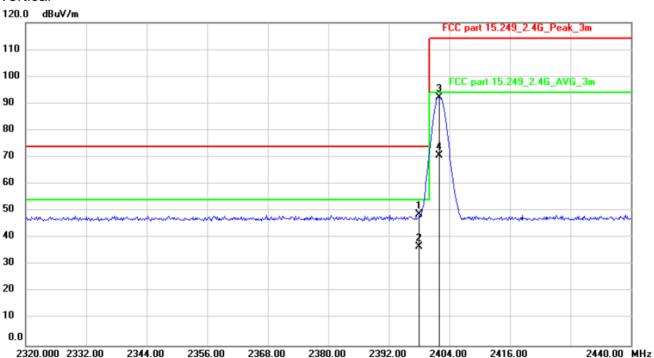


Low channel





Vertical



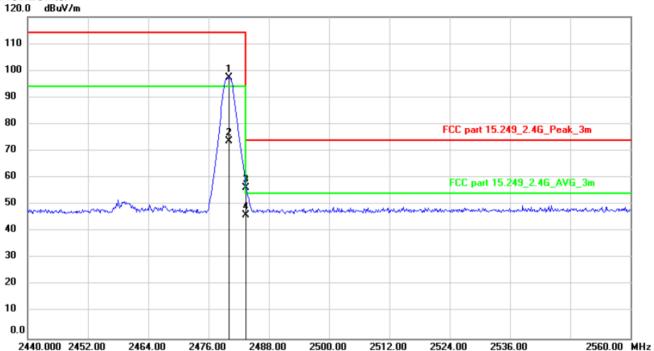
Report No.: NTC1912109FV00

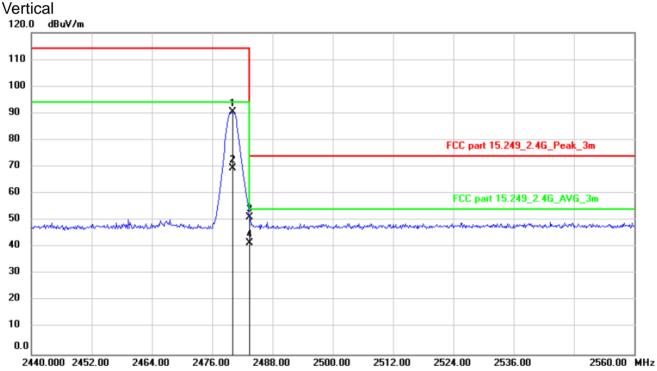
FCC ID: 2ALBPET1030



High channel







Report No.: NTC1912109FV00 FCC ID: 2ALBPET1030



7. Antenna requirement

7.1 Measurement Procedure

According to of FCC part 15C section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Systems operating in the 2400-2483.5MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

7.2 Measurement Results

The antenna is Integral antenna and no consideration of replacement, and the best case gain of the antenna is 2 dBi. So, the antenna is consider meet the requirement.

FCC ID: 2ALBPET1030

NTC Nore Testing Center

8. Test Equipment List

Antenna Schwarzbeck VULB9162 9162-010 30MHz-7GHz Mar. 22, 2019 1 Ye Spectrum Analyzer Rohde & Schwarz FSU26 200409/026 20Hz~26.5GHz Mar. 13, 2019 1 Ye Spectrum Analyzer Keysight N9020A MY54200831 20Hz~26.5GHz Apr. 23, 2019 1 Ye Spectrum Analyzer Rohde & Schwarz FSV40 101003 10Hz~40GHz Apr. 23, 2019 1 Ye Horn Antenna Schwarzbeck BBHA9170 9170-372 15GHz~40GHz Mar. 22, 2019 1 Ye Power Sensor DARE RPR3006W 151000415N 064 100MHz~6GHz Mar. 13, 2019 1 Ye Power Sensor DARE RPR3006W 149004 70MHz~6GHz Mar. 13, 2019 1 Ye Horn Antenna COM-Power AH-118 071078 500MHz~18GHz Mar. 13, 2019 1 Ye Pre-Amplifier HP HP 8449B 3008A00964 1GHz~26.5GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272 9KHz~30MHz	Description	Manufacturer	Model Number	Serial Number	Characteristics	Calibration Date	Calibration Due Date
Spectrum Analyzer Rohde & Schwarz FSU26 200409/026 20Hz~26.5GHz Mar. 13, 2019 1 Ye Spectrum Analyzer Keysight N9020A MY54200831 20Hz~26.5GHz Apr. 23, 2019 1 Ye Spectrum Analyzer Rohde & Schwarz FSV40 101003 10Hz~40GHz Apr. 23, 2019 1 Ye Horn Antenna Schwarzbeck BBHA9170 9170-372 15GHz~40GHz Mar. 22, 2019 1 Ye Pre-Amplifier EMCI EMC 184045 980102 18GHz~40GHz Apr. 23, 2019 1 Ye Power Sensor DARE RPR3006W 15100041SN O64 100MHz~6GHz Mar. 13, 2019 1 Ye Communication Tester Rohde & Schwarz CMW500 149004 70MHz~6GHz Mar. 13, 2019 1 Ye Horn Antenna COM-Power AH-118 071078 500MHz~18GHz Mar. 22, 2019 1 Ye Pre-Amplifier HP HP 8449B 3008A00964 1GHz~26.5GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272 <t< td=""><td>Test Receiver</td><td>Rohde & Schwarz</td><td>ESCI7</td><td>100837</td><td>9KHz~7GHz</td><td>Mar. 13, 2019</td><td>1 Year</td></t<>	Test Receiver	Rohde & Schwarz	ESCI7	100837	9KHz~7GHz	Mar. 13, 2019	1 Year
Analyzer Spectrum Analyzer Keysight N9020A MY54200831 20Hz~26.5GHz Apr. 23, 2019 1 Ye Spectrum Analyzer Rohde & Schwarz FSV40 101003 10Hz~40GHz Apr. 23, 2019 1 Ye Spectrum Analyzer Rohde & Schwarz FSV40 101003 10Hz~40GHz Apr. 23, 2019 1 Ye Horn Antenna Schwarzbeck BBHA9170 9170-372 15GHz~40GHz Mar. 22, 2019 1 Ye Pre-Amplifier EMCI EMC 184045 980102 18GHz~40GHz Apr. 23, 2019 1 Ye Power Sensor DARE RPR3006W 15100041SN 064 100MHz~6GHz Mar. 13, 2019 1 Ye Communication Tester Rohde & Schwarz CMW500 149004 70MHz~6GHz Mar. 13, 2019 1 Ye Horn Antenna COM-Power AH-118 071078 500MHz~18GHz Mar. 22, 2019 1 Ye Pre-Amplifier HP HP 8449B 3008A00964 1GHz~2-6.5GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272	Antenna	Schwarzbeck	VULB9162	9162-010	30MHz~7GHz	Mar. 22, 2019	1 Year
Analyzer Reysignt N9020A MY54200831 20H2~26.5GHZ Apr. 23, 2019 1 Ye Spectrum Analyzer Rohde & Schwarz FSV40 101003 10Hz~40GHz Apr. 23, 2019 1 Ye Horn Antenna Schwarzbeck BBHA9170 9170-372 15GHz~40GHz Mar. 22, 2019 1 Ye Pre-Amplifier EMCI EMC 184045 980102 18GHz~40GHz Apr. 23, 2019 1 Ye Power Sensor DARE RPR3006W 15I00041SN 064 100MHz~6GHz Mar. 13, 2019 1 Ye Communication Tester Rohde & Schwarz CMW500 149004 70MHz~6GHz Mar. 13, 2019 1 Ye Horn Antenna COM-Power AH-118 071078 500MHz~18GHz Mar. 22, 2019 1 Ye Pre-Amplifier HP HP 8449B 3008A00964 1GHz~26.5GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272 9KHz~30MHz Apr. 23, 2019 1 Ye Temperature & Humidity Chamber REMAFEE SYHR225L N/A -40~150		Rohde & Schwarz	FSU26	200409/026	20Hz~26.5GHz	Mar. 13, 2019	1 Year
Analyzer Ronde & Schwarz FSV40 101003 10H2-40GHZ Apr. 23, 2019 1 Ye Horn Antenna Schwarzbeck BBHA9170 9170-372 15GHz~40GHz Mar. 22, 2019 1 Ye Pre-Amplifier EMCI EMC 184045 980102 18GHz~40GHz Apr. 23, 2019 1 Ye Power Sensor DARE RPR3006W 15100041SN O64 100MHz~6GHz Mar. 13, 2019 1 Ye Communication Tester Rohde & Schwarz CMW500 149004 70MHz~6GHz Mar. 13, 2019 1 Ye Horn Antenna COM-Power AH-118 071078 500MHz~18GHz Mar. 22, 2019 1 Ye Pre-Amplifier HP HP 8449B 3008A00964 1GHz~26.5GHz Mar. 13, 2019 1 Ye Pre-Amplifier HP HP 8447D 1145A00203 100KHz~1.3GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272 9KHz~30MHz Apr. 23, 2019 1 Ye Temperature & Humidity Chamber REMAFEE SYHR225L N/A -40~150°C		Keysight	N9020A	MY54200831	20Hz~26.5GHz	Apr. 23, 2019	1 Year
Pre-Amplifier EMCI EMC 184045 980102 18GHz-40GHz Apr. 23, 2019 1 Ye Power Sensor DARE RPR3006W 15100041SN O64 100MHz~6GHz Mar. 13, 2019 1 Ye Communication Tester Rohde & Schwarz CMW500 149004 70MHz~6GHz Mar. 13, 2019 1 Ye Horn Antenna COM-Power AH-118 071078 500MHz~18GHz Mar. 22, 2019 1 Ye Pre-Amplifier HP HP 8449B 3008A00964 1GHz~26.5GHz Mar. 13, 2019 1 Ye Pre-Amplifier HP HP 8447D 1145A00203 100KHz~1.3GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272 9KHz~30MHz Apr. 23, 2019 1 Ye Temperature & Humidity Chamber REMAFEE SYHR225L N/A -40~150°C Apr. 23, 2019 1 Ye DC Source MY MY8811 N/A 0~30V N/A N/A DC Source MY MY8811 N/A 9KHz~25GHz N/A N/A <td>•</td> <td>Rohde & Schwarz</td> <td>FSV40</td> <td>101003</td> <td>10Hz~40GHz</td> <td>Apr. 23, 2019</td> <td>1 Year</td>	•	Rohde & Schwarz	FSV40	101003	10Hz~40GHz	Apr. 23, 2019	1 Year
Power Sensor DARE RPR3006W 15I00041SN O64 100MHz~6GHz Mar. 13, 2019 1 Ye Communication Tester Rohde & Schwarz CMW500 149004 70MHz~6GHz Mar. 13, 2019 1 Ye Horn Antenna COM-Power AH-118 071078 500MHz~18GHz Mar. 22, 2019 1 Ye Pre-Amplifier HP HP 8449B 3008A00964 1GHz~26.5GHz Mar. 13, 2019 1 Ye Pre-Amplifier HP HP 8447D 1145A00203 100KHz~1.3GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272 9KHz~30MHz Apr. 23, 2019 1 Ye Temperature & Humidity Chamber REMAFEE SYHR225L N/A -40~150°C Apr. 23, 2019 1 Ye DC Source MY MY8811 N/A 0~30V N/A N/A Temporary antenna connector TESCOM SS402 N/A 9KHz~25GHz N/A N/A Power Meter Anritsu ML2495A 1139001 100k-65GHz Apr. 23, 2019 <td< td=""><td>Horn Antenna</td><td>Schwarzbeck</td><td>BBHA9170</td><td>9170-372</td><td>15GHz~40GHz</td><td>Mar. 22, 2019</td><td>1 Year</td></td<>	Horn Antenna	Schwarzbeck	BBHA9170	9170-372	15GHz~40GHz	Mar. 22, 2019	1 Year
Power Sensor DARE RPR3006W 064 100MHZ~6GHz Mar. 13, 2019 1 Ye Communication Tester Rohde & Schwarz CMW500 149004 70MHz~6GHz Mar. 13, 2019 1 Ye Horn Antenna COM-Power AH-118 071078 500MHz~18GHz Mar. 22, 2019 1 Ye Pre-Amplifier HP HP 8449B 3008A00964 1GHz~26.5GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272 9KHz~30MHz Apr. 23, 2019 1 Ye Temperature & Humidity Chamber REMAFEE SYHR225L N/A -40~150°C Apr. 23, 2019 1 Ye DC Source MY MY8811 N/A 0~30V N/A N/A Temporary antenna connector TESCOM SS402 N/A 9KHz~25GHz N/A N/A Power Meter Anritsu ML2495A 1139001 100k-65GHz Apr. 23, 2019 1 Ye Test Software EZ EZ_EMC N/A N/A N/A N/A	Pre-Amplifier	EMCI	EMC 184045	980102	18GHz~40GHz	Apr. 23, 2019	1 Year
Tester Ronde & Schwarz CMW500 149004 70MHz~6GHz Mar. 13, 2019 1 Ye Horn Antenna COM-Power AH-118 071078 500MHz~18GHz Mar. 22, 2019 1 Ye Pre-Amplifier HP HP 8449B 3008A00964 1GHz~26.5GHz Mar. 13, 2019 1 Ye Pre-Amplifier HP HP 8447D 1145A00203 100KHz~1.3GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272 9KHz~30MHz Apr. 23, 2019 1 Ye Temperature & Humidity Chamber REMAFEE SYHR225L N/A -40~150°C Apr. 23, 2019 1 Ye DC Source MY MY8811 N/A 0~30V N/A N/A Temporary antenna connector TESCOM SS402 N/A 9KHz~25GHz N/A N/A Power Meter Anritsu ML2495A 1139001 100k-65GHz Apr. 23, 2019 1 Ye Power Sensor Anritsu MA2411B 100345 300M-40GHz Apr. 23, 2019 1 Ye	Power Sensor	DARE	RPR3006W		100MHz~6GHz	Mar. 13, 2019	1 Year
Pre-Amplifier HP HP 8449B 3008A00964 1GHz~26.5GHz Mar. 13, 2019 1 Ye Pre-Amplifier HP HP 8447D 1145A00203 100KHz~1.3GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272 9KHz~30MHz Apr. 23, 2019 1 Ye Temperature & Humidity Chamber REMAFEE SYHR225L N/A -40~150°C Apr. 23, 2019 1 Ye DC Source MY MY8811 N/A 0~30V N/A N/A Temporary antenna connector TESCOM SS402 N/A 9KHz~25GHz N/A N/A Power Meter Anritsu ML2495A 1139001 100k-65GHz Apr. 23, 2019 1 Ye Power Sensor Anritsu MA2411B 100345 300M-40GHz Apr. 23, 2019 1 Ye Test Software EZ EZ_EMC N/A N/A N/A N/A		Rohde & Schwarz	CMW500	149004	70MHz~6GHz	Mar. 13, 2019	1 Year
Pre-Amplifier HP HP 8447D 1145A00203 100KHz~1.3GHz Mar. 13, 2019 1 Ye Loop Antenna Schwarzbeck FMZB 1513 1513-272 9KHz~30MHz Apr. 23, 2019 1 Ye Temperature & Humidity Chamber REMAFEE SYHR225L N/A -40~150℃ Apr. 23, 2019 1 Ye DC Source MY MY8811 N/A 0~30V N/A N/A Temporary antenna connector TESCOM SS402 N/A 9KHz~25GHz N/A N/A Power Meter Anritsu ML2495A 1139001 100k-65GHz Apr. 23, 2019 1 Ye Power Sensor Anritsu MA2411B 100345 300M-40GHz Apr. 23, 2019 1 Ye Test Software EZ EZ_EMC N/A N/A N/A N/A	Horn Antenna	COM-Power	AH-118	071078	500MHz~18GHz	Mar. 22, 2019	1 Year
Loop Antenna Schwarzbeck FMZB 1513 1513-272 9KHz~30MHz Apr. 23, 2019 1 Ye Temperature & Humidity Chamber REMAFEE SYHR225L N/A -40~150℃ Apr. 23, 2019 1 Ye DC Source MY MY8811 N/A 0~30V N/A N/A Temporary antenna connector TESCOM SS402 N/A 9KHz~25GHz N/A N/A Power Meter Anritsu ML2495A 1139001 100k-65GHz Apr. 23, 2019 1 Ye Power Sensor Anritsu MA2411B 100345 300M-40GHz Apr. 23, 2019 1 Ye Test Software EZ EZ_EMC N/A N/A N/A N/A	Pre-Amplifier	HP	HP 8449B	3008A00964	1GHz~26.5GHz	Mar. 13, 2019	1 Year
Temperature & Humidity Chamber REMAFEE SYHR225L N/A -40~150 ℃ Apr. 23, 2019 1 Ye DC Source MY MY8811 N/A 0~30V N/A N/A Temporary antenna connector TESCOM SS402 N/A 9KHz~25GHz N/A N/A Power Meter Anritsu ML2495A 1139001 100k-65GHz Apr. 23, 2019 1 Ye Power Sensor Anritsu MA2411B 100345 300M-40GHz Apr. 23, 2019 1 Ye Test Software EZ EZ_EMC N/A N/A N/A N/A	Pre-Amplifier	HP	HP 8447D	1145A00203	100KHz~1.3GHz	Mar. 13, 2019	1 Year
Humidity Chamber REMAFEE SYHR225L N/A -40~150℃ Apr. 23, 2019 1 Yest Software DC Source MY MY8811 N/A 0~30V N/A N/A Temporary antenna connector TESCOM SS402 N/A 9KHz~25GHz N/A N/A Power Meter Anritsu ML2495A 1139001 100k-65GHz Apr. 23, 2019 1 Yest Software Test Software EZ EZ_EMC N/A N/A N/A N/A	Loop Antenna	Schwarzbeck	FMZB 1513	1513-272	9KHz~30MHz	Apr. 23, 2019	1 Year
Temporary antenna connector TESCOM SS402 N/A 9KHz~25GHz N/A N/A Power Meter Anritsu ML2495A 1139001 100k-65GHz Apr. 23, 2019 1 Ye Power Sensor Anritsu MA2411B 100345 300M-40GHz Apr. 23, 2019 1 Ye Test Software EZ EZ_EMC N/A N/A N/A N/A	Humidity	REMAFEE	SYHR225L	N/A	-40~150°C	Apr. 23, 2019	1 Year
antenna connector TESCOM SS402 N/A 9KHz~25GHz N/A N/A Power Meter Anritsu ML2495A 1139001 100k-65GHz Apr. 23, 2019 1 Ye Power Sensor Anritsu MA2411B 100345 300M-40GHz Apr. 23, 2019 1 Ye Test Software EZ EZ_EMC N/A N/A N/A N/A	DC Source	MY	MY8811	N/A	0~30V	N/A	N/A
Power Sensor Anritsu MA2411B 100345 300M-40GHz Apr. 23, 2019 1 Ye Test Software EZ EZ_EMC N/A N/A N/A N/A	antenna	TESCOM	SS402	N/A	9KHz~25GHz	N/A	N/A
Test Software EZ EZ_EMC N/A N/A N/A N/A	Power Meter	Anritsu	ML2495A	1139001	100k-65GHz	Apr. 23, 2019	1 Year
_	Power Sensor	Anritsu	MA2411B	100345	300M-40GHz	Apr. 23, 2019	1 Year
Test Receiver Robde & Schwarz FSCI 101152 0KHz 2CHz Mar 14 2010 1 Vo	Test Software	EZ	EZ_EMC	N/A	N/A	N/A	N/A
165t Necesives Notice & Scriwarz LSC1 101132 SNE2-SGEZ Ividi. 14, 2019 116	Test Receiver	Receiver Rohde & Schwarz		101152	9KHz-3GHz	Mar. 14, 2019	1 Year
L.I.S.N Rohde & Schwarz ENV 216 101317 9KHz-30MHz Mar. 14, 2019 1 Ye	L.I.S.N	Rohde & Schwarz	ENV 216	101317	9KHz-30MHz	Mar. 14, 2019	1 Year
RF Switching Unit Compliance Direction Systems Inc. RSU-M2 38311 9KHz-3GHz Mar.14, 2019 1 Ye	•	Direction Systems	RSU-M2	38311	9KHz-3GHz	Mar.14, 2019	1 Year

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.