

TEST REPORT



Report No.: TW2207053E

File reference No.: 2022-07-25

Applicant: TITAN INC.

Address: 3530 Nw 115 Ave, Miami, Florida 33178, United States

Product: Speaker box / Parlante

Model No.: MS-112DSP

Trademark: 

Test Standards: FCC Part 15.249

Test result: It is herewith confirmed and found to comply with the requirements set up by ANSI C63.10 & FCC Part 15 Subpart C, Paragraph 15.249 regulations for the evaluation of electromagnetic compatibility

Approved By



Terry Tang
Manager

Dated: July 25, 2022

Results appearing herein relate only to the sample tested
The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 744189

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 744189.

Industry Canada (IC) —Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

A2LA (Certification Number:5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

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1.0 General Details

1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TESTING LABORATORIES.
Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China
Telephone: (755) 83448688
Fax: (755) 83442996
Site on File with the Federal Communications Commission – United States
Registration Number: 744189
For 3m Anechoic Chamber

1.2 Applicant Details

Applicant: TITAN INC.
Address: 3530 Nw 115 Ave, Miami, Florida 33178, United States
Telephone: 305-369-6040
Fax: 305-320-3198

1.3 Description of EUT

Product: Speaker box / Parlante
Manufacturer: MAXTRONIX CO., LTD.
Address: NO.12, HEXIANG ROAD, WUJIN ECONOMIC DEVELOPMENT ZONE, CHANGZHOU, JIANGSU, CHINA
Trademark: 
Model Number: MS-112DSP
Additional Model Name: N/A
Rating: 110V ~, 50/60Hz, 350W
Modulation Type: GFSK, π /4DQPSK and 8DPSK for Bluetooth
Operation Frequency: 2402-2480MHz
Channel Number: 79
Channel Separation: 1MHz
Hardware Version: MS001(01A)V1.0-VCM20191226
Software Version: MS001-6A-51-5301A-MS-112DSP-TWS-VCM-001
Serial No.: 20220712112DSP
Antenna Designation: PCB antenna with gain 1.7dBi Max (Get from the antenna specification)

1.4 Submitted Sample: 1 Sample

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1.5 Test Duration

2022-07-05 to 2022-07-25

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions below 1GHz Uncertainty =4.7dB

Radiated Emissions above 1GHz Uncertainty =6.0dB

Conducted Power Uncertainty =6.0dB

Occupied Channel Bandwidth Uncertainty =5%

Conducted Emissions Uncertainty =3.6dB

Note: The measurement uncertainty is for coverage factor of $k=2$ and a level of confidence of 95%.

1.7 Test Engineer

The sample tested by

Andy-xing

Print Name: Andy Xing

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2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2022-06-17	2023-06-16
LISN	R&S	EZH3-Z5	100294	2022-06-17	2023-06-16
LISN	R&S	EZH3-Z5	100253	2022-06-17	2023-06-16
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2022-06-17	2023-06-16
Loop Antenna	EMCO	6507	00078608	2021-06-18	2024-06-17
Spectrum	R&S	FSIQ26	100292	2022-06-17	2023-06-16
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2021-07-02	2024-07-01
Horn Antenna	R&S	BBHA 9120D	9120D-631	2021-07-02	2024-07-01
Power meter	Anritsu	ML2487A	6K00003613	2022-06-17	2023-06-16
Power sensor	Anritsu	MA2491A	32263	2022-06-17	2023-06-16
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2021-07-02	2024-07-01
9*6*6 Anechoic	--	--	N/A	2022-06-17	2023-06-16
EMI Test Receiver	RS	ESVB	826156/011	2022-06-17	2023-06-16
EMI Test Receiver	RS	ESH3	860904/006	2022-06-17	2023-06-16
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2022-06-17	2023-06-16
Spectrum	HP/Agilent	E4407B	MY50441392	2022-06-17	2023-06-16
Spectrum	RS	FSP	1164.4391.38	2022-01-05	2023-01-04
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA	--	2022-06-17	2023-06-16
RF Cable	Zhengdi	7m	--	2022-06-17	2023-06-16
RF Switch	EM	EMSW18	060391	2022-06-17	2023-06-16
Pre-Amplifier	Schwarebeck	BBV9743	#218	2022-06-17	2023-06-16
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2022-06-17	2023-06-16
LISN	SCHAFFNER	NNB42	00012	2022-01-05	2023-01-04

2.2 Automation Test Software

For Conducted Emission Test

Name	Version
EZ-EMC	Ver.EMC-CON 3A1.1

For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

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3.0 Technical Details

3.1 Summary of test results

The EUT has been tested according to the following specifications:			
Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.203	Antenna Requirement	Pass	Complies
FCC Part 15, Paragraph 15.207	Conducted Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(a) & 15.249(b) Limit	Field Strength of Fundamental	Pass	Complies
FCC Part 15, Paragraph 15.209 and RSS-210	Radiated Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(d) Limit	Band Edge Test	Pass	Complies

3.2 Test Standards

FCC Part 15 Subpart C, Paragraph 15.249 , ANSI C63.4 :2014 and ANSI C63.10 :2013

4.0 EUT Modification

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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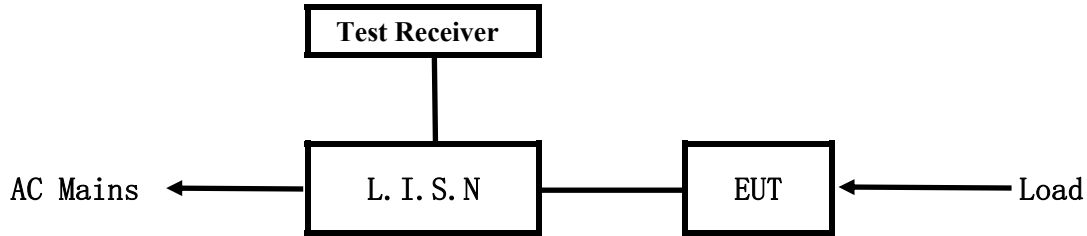
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5. Power Line Conducted Emission Test

5.1 Schematics of the test



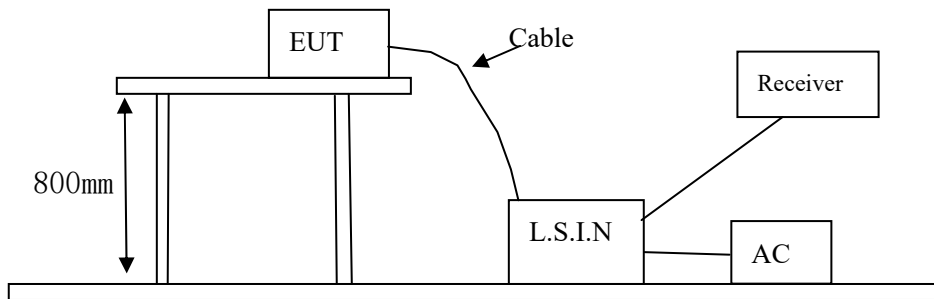
EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2014.

Test Voltage: 110V~, 60Hz

Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2014. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

79 channels are provided to the EUT

A. EUT

Device	Manufacturer	Model	FCC ID
Speaker box / Parlante	MAXTRONIX CO., LTD.	MS-112DSP	2A6R4-MS112D SP

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B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

Device	Manufacturer	Model	Rating
N/A			

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2014

A Setup the EUT and simulators as shown on follow

B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency (MHz)	Limits (dB μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0~56.0*	56.0~46.0*
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

- Notes:
1. *Decreasing linearly with logarithm of frequency.
 2. The tighter limit shall apply at the transition frequencies

5.6 Test Results:

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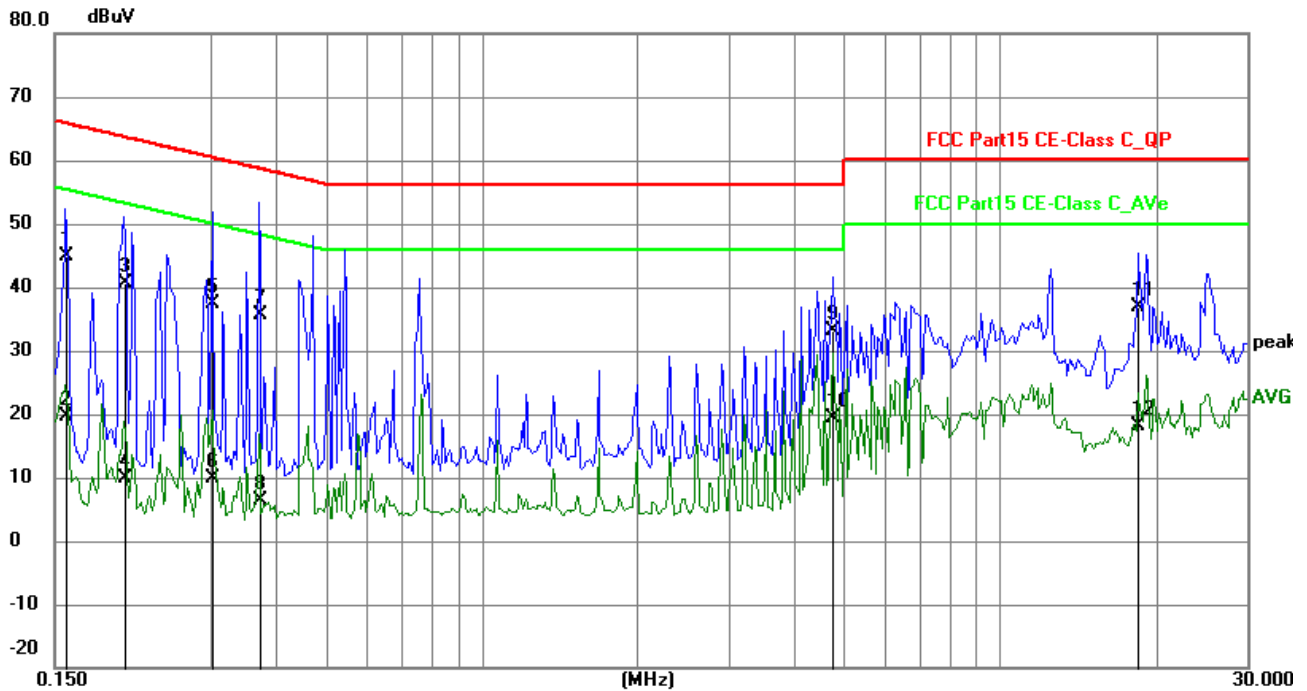
**A: Conducted Emission on Live Terminal (150kHz to 30MHz)
 EUT Operating Environment**

Temperature: 25°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Communication by BT

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1578	35.13	9.78	44.91	65.58	-20.67	QP	P
2	0.1578	9.87	9.78	19.65	55.58	-35.93	AVG	P
3	0.2046	30.77	9.75	40.52	63.42	-22.90	QP	P
4	0.2046	0.24	9.75	9.99	53.42	-43.43	AVG	P
5	0.3021	27.60	9.76	37.36	60.18	-22.82	QP	P
6	0.3021	0.16	9.76	9.92	50.18	-40.26	AVG	P
7	0.3723	25.83	9.76	35.59	58.45	-22.86	QP	P
8	0.3723	-3.43	9.76	6.33	48.45	-42.12	AVG	P
9	4.7628	23.31	9.92	33.23	56.00	-22.77	QP	P
10	4.7628	9.42	9.92	19.34	46.00	-26.66	AVG	P
11	18.4986	26.21	10.59	36.80	60.00	-23.20	QP	P
12	18.4986	7.53	10.59	18.12	50.00	-31.88	AVG	P

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B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

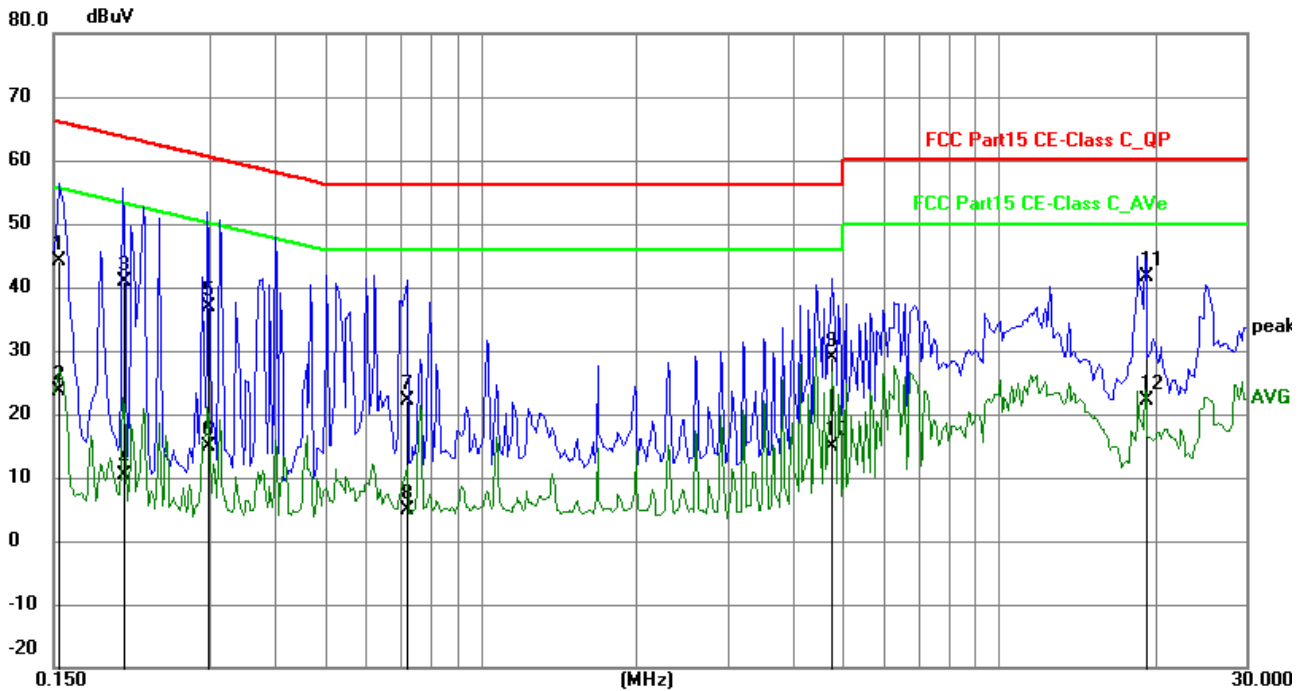
EUT Operating Environment

Temperature: 25°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Communication by BT

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1539	34.36	9.78	44.14	65.79	-21.65	QP	P
2	0.1539	13.96	9.78	23.74	55.79	-32.05	AVG	P
3	0.2046	31.06	9.75	40.81	63.42	-22.61	QP	P
4	0.2046	0.67	9.75	10.42	53.42	-43.00	AVG	P
5	0.2982	27.20	9.76	36.96	60.29	-23.33	QP	P
6	0.2982	5.08	9.76	14.84	50.29	-35.45	AVG	P
7	0.7233	12.25	9.78	22.03	56.00	-33.97	QP	P
8	0.7233	-4.99	9.78	4.79	46.00	-41.21	AVG	P
9	4.7705	18.89	9.92	28.81	56.00	-27.19	QP	P
10	4.7705	5.05	9.92	14.97	46.00	-31.03	AVG	P
11	19.2084	30.96	10.63	41.59	60.00	-18.41	QP	P
12	19.2084	11.61	10.63	22.24	50.00	-27.76	AVG	P

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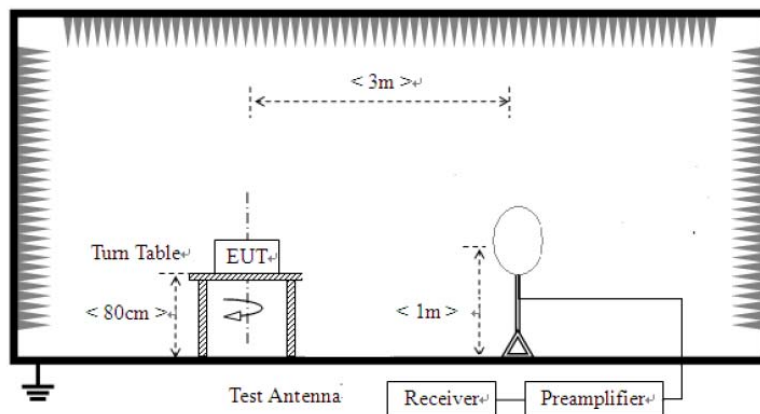
6 Radiated Emission Test

6.1 Test Method and test Procedure:

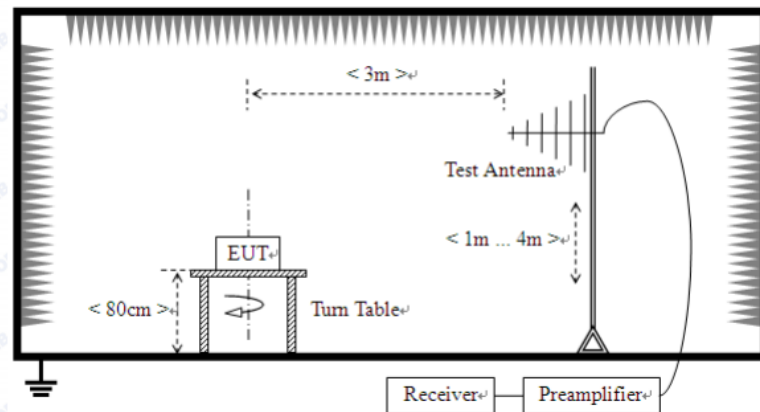
- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz (Note: for Fundamental frequency radiated emission measurement, RBW=3MHz, VBW=10MHz). Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup

For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to 1GHz



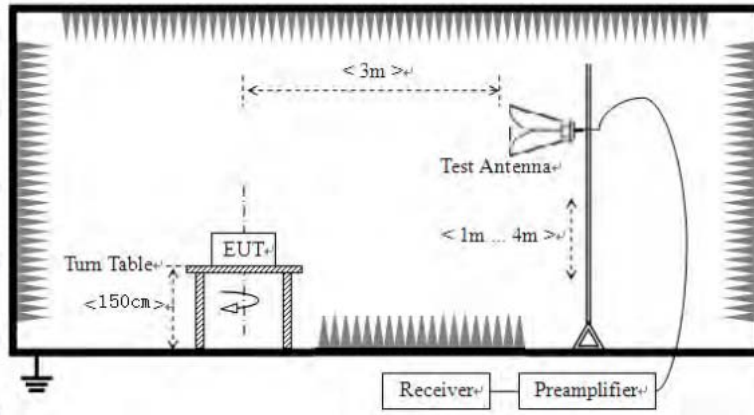
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For radiated emissions above 1GHz



6.2 Configuration of The EUT

Same as section 5.3 of this report

6.3 EUT Operating Condition

Same as section 5.4 of this report.

6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

A FCC Part 15 Subpart C Paragraph 15.249(a) Limit

Fundamental Frequency (MHz)	Field Strength of Fundamental (3m)		Field Strength of Harmonics (3m)		
	mV/m	dBuV/m	uV/m	dBuV/m	
2400-2483.5	50	94 (Average) 114 (Peak)	500	54 (Average)	74 (Peak)

- Note:
1. RF Field Strength (dBuV) = 20 log RF Voltage (uV)
 2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
 3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

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B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
0.009-0.490	3	$20\log(2400/F(\text{kHz})) + 40\log(300/3)$
0.490-1.705	3	$20\log(24000/F(\text{kHz})) + 40\log(30/3)$
1.705-30	3	69.5
30-80	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

- Note:
1. RF Voltage (dBuV) = 20 log RF Voltage (μ V)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
 4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz.As to 1G-25G, the final emission level got using PK. For fundamental measurement, PK detector used.
 5. For radiated emissions from 9kHz to 30MHz, the emission level is much less than the limit for more than 20dB. No necessary to take down the record.
 6. Three modulation types were tested and the worst case was reported and GFSK was the worst case

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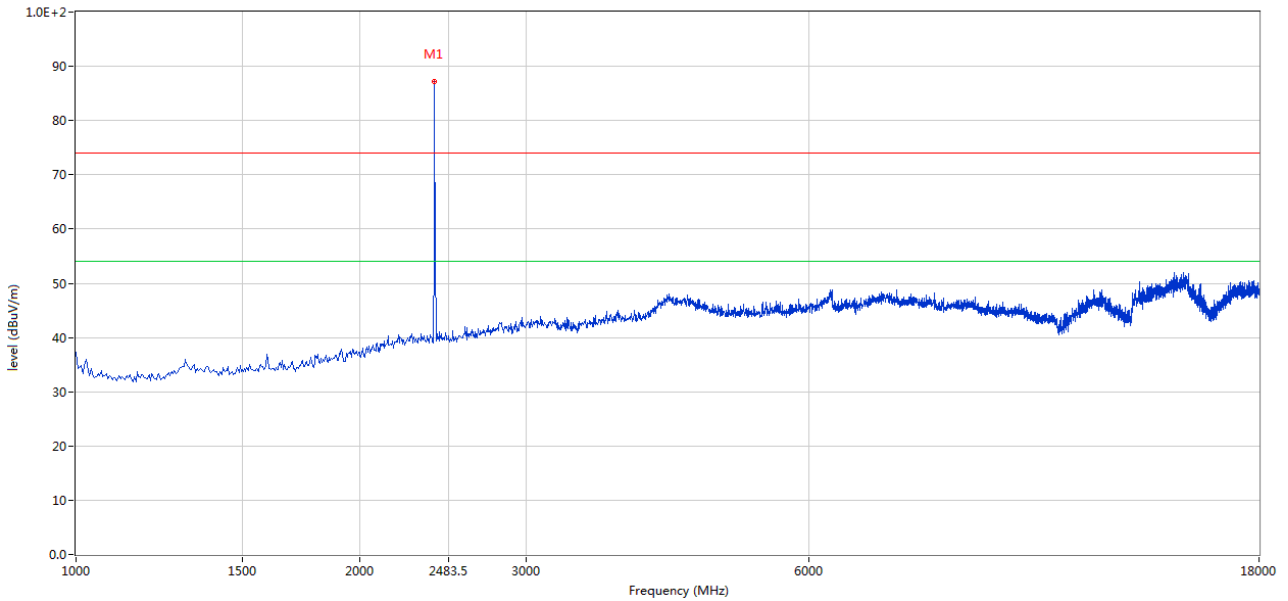
6.5 Test result

A Fundamental & Harmonics Radiated Emission Data

Please refer to the following test plots for details: Low Channel-2402MHz

Horizontal

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402	87.37	-3.57	114.0	-26.63	Peak	227.00	100	Horizontal	Pass

The report refers only to the sample tested and does not apply to the bulk.

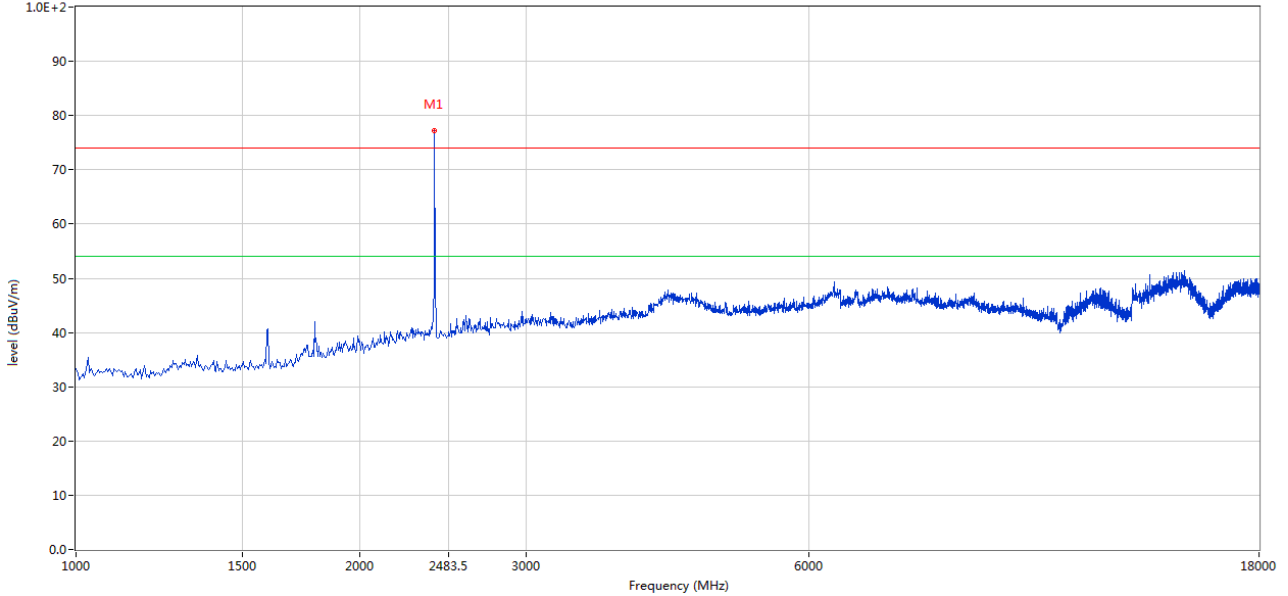
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Vertical

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402	77.23	-3.57	114.0	-36.77	Peak	345.00	100	Vertical	Pass

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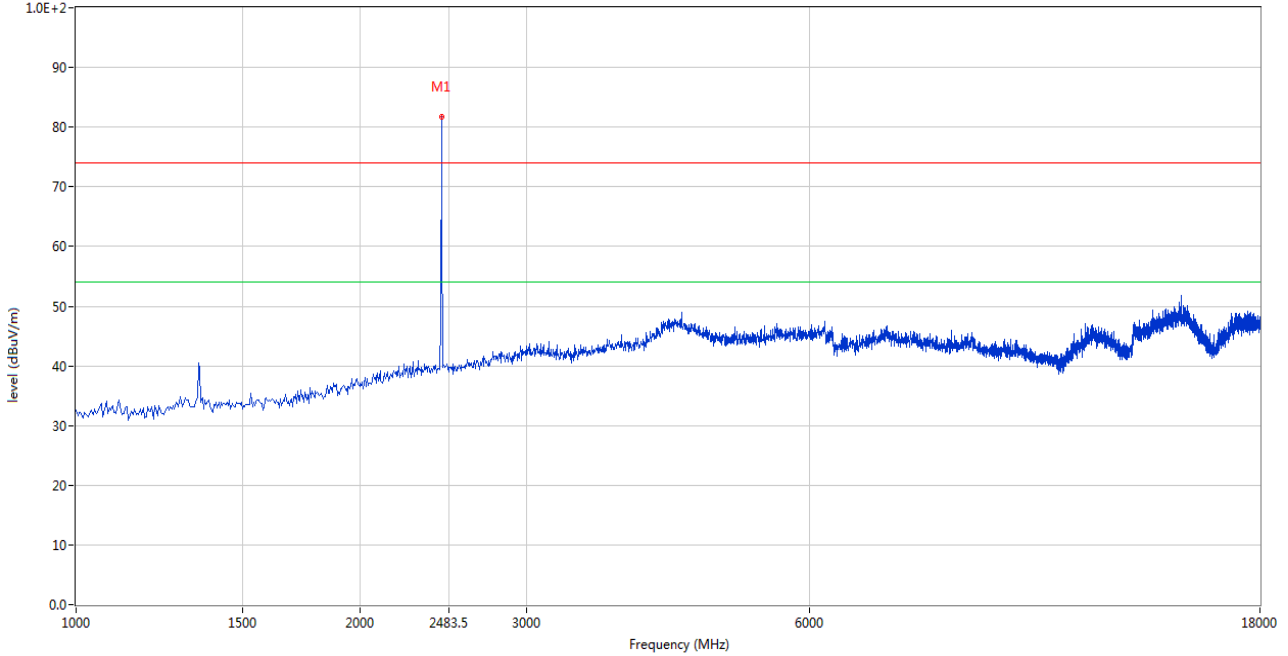
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Please refer to the following test plots for details: Middle Channel-2441MHz

Horizontal

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2441	81.75	-3.57	114.0	-32.25	Peak	76.00	100	Horizontal	Pass

The report refers only to the sample tested and does not apply to the bulk.

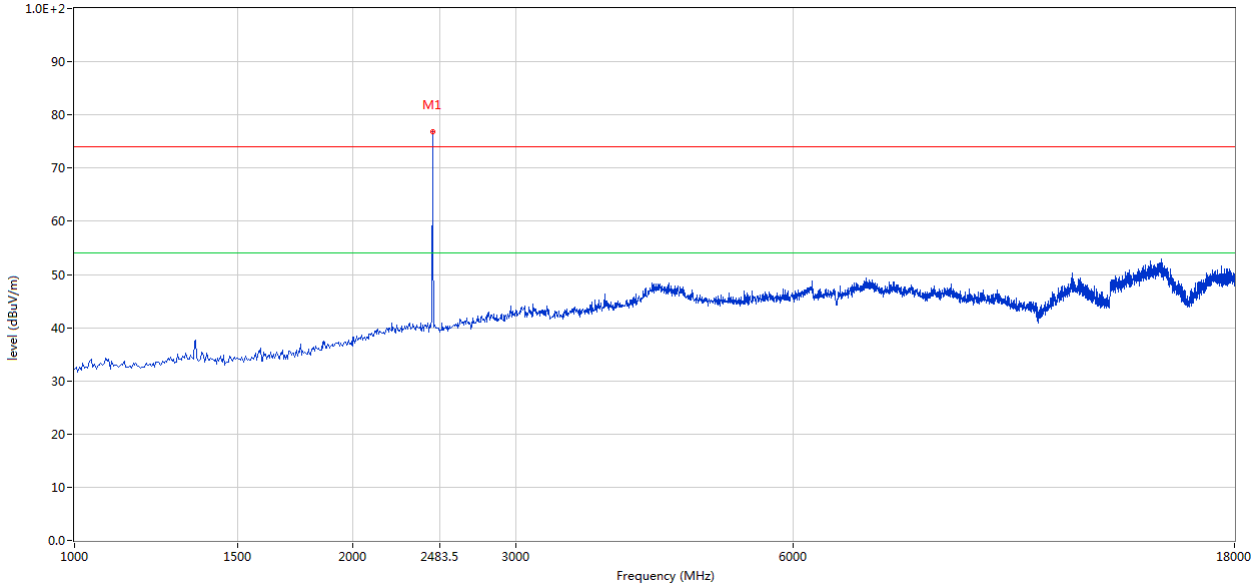
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Vertical

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2441	76.91	-3.57	114.0	-37.09	Peak	163.00	100	Vertical	Pass

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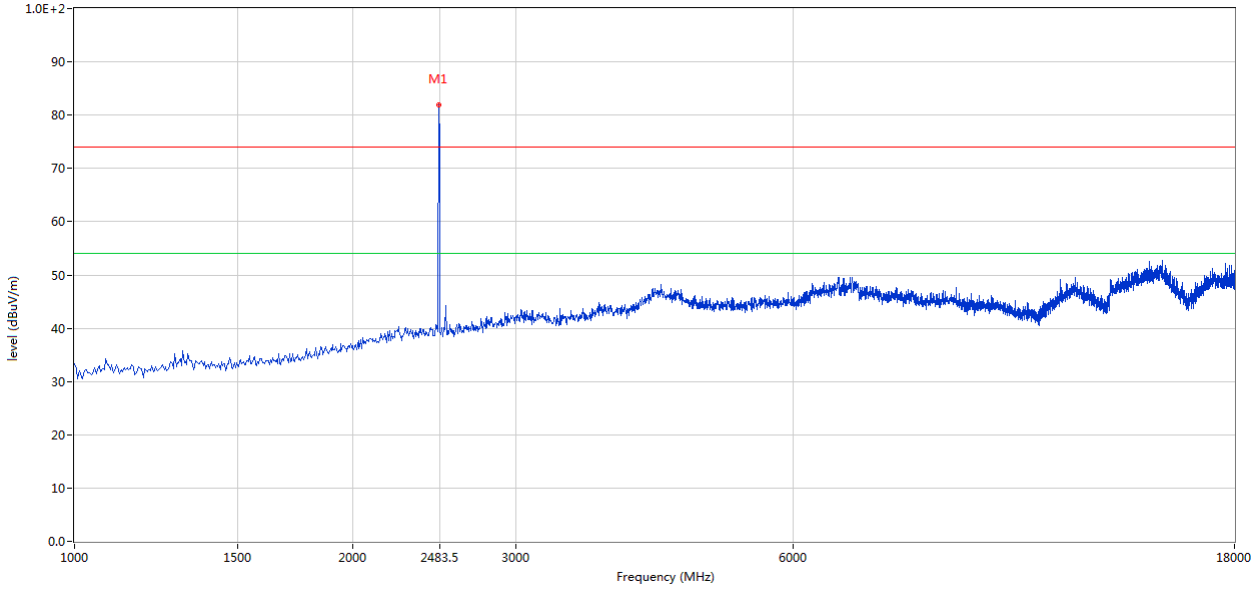
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Please refer to the following test plots for details: High Channel-2480MHz

Horizontal

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480	81.90	-3.57	114.0	-32.10	Peak	6.00	100	Horizontal	Pass

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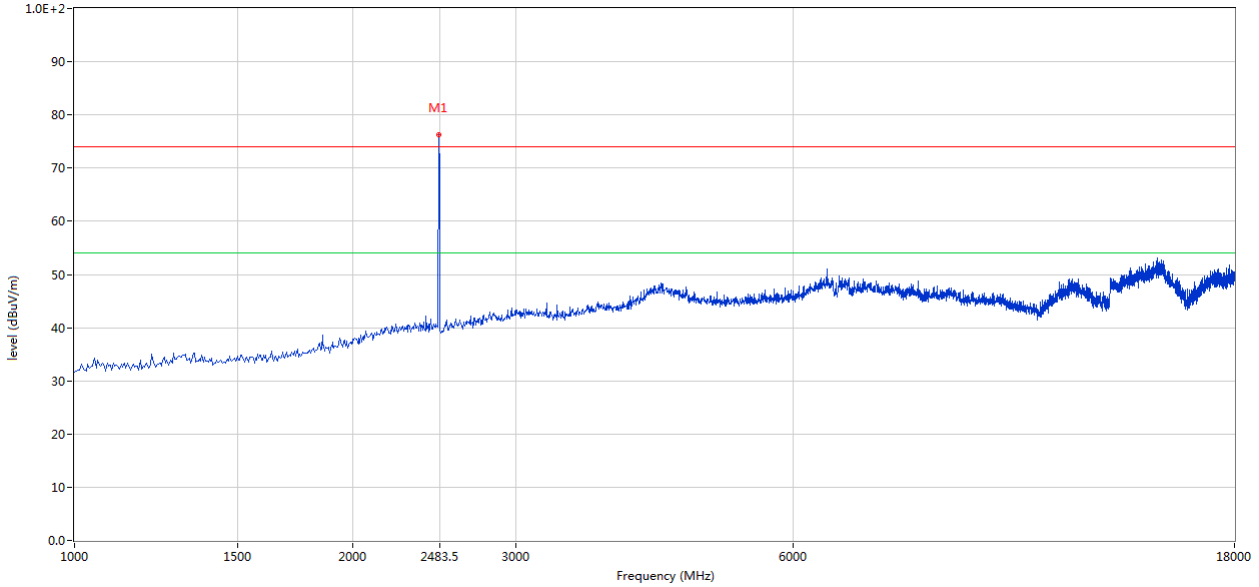
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Vertical

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480	76.50	-3.57	114.0	-37.50	Peak	168.00	100	Vertical	Pass

- Note:
- (2) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier
 - (3) Margin=Emission-Limits
 - (4) According to section 15.35(b), the peak limit is 20dB higher than the average limit
 - (5) For test purpose, keep EUT continuous transmitting
 - (5) For emission above 18GHz and Below 30MHz, It is only the floor noise. No necessary to take down.
 - (6) the measured PK value less than the AV limit.

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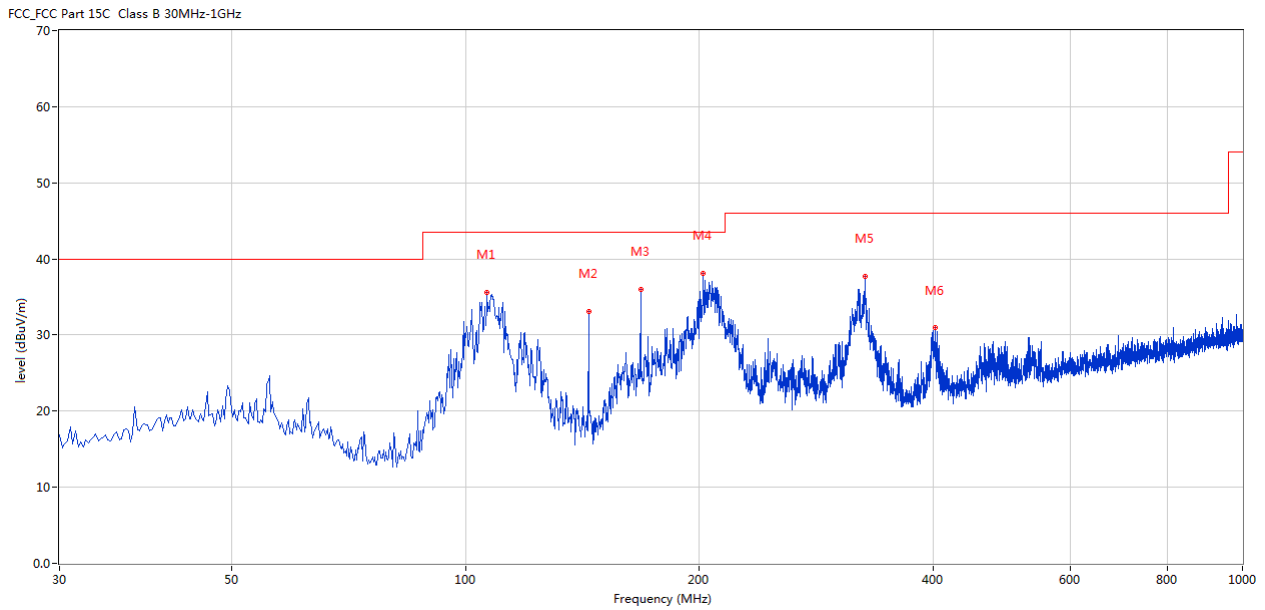


B. General Radiated Emission Data
Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	106.611	35.55	-13.36	43.5	-7.95	Peak	261.00	100	Horizontal	Pass
2	143.947	33.13	-17.10	43.5	-10.37	Peak	280.00	100	Horizontal	Pass
3	167.948	35.94	-16.14	43.5	-7.56	Peak	66.00	100	Horizontal	Pass
4	202.374	38.05	-13.39	43.5	-5.45	Peak	56.00	100	Horizontal	Pass
5	326.988	37.75	-10.31	46.0	-8.25	Peak	302.00	100	Horizontal	Pass
6	401.660	30.92	-8.60	46.0	-15.08	Peak	142.00	100	Horizontal	Pass

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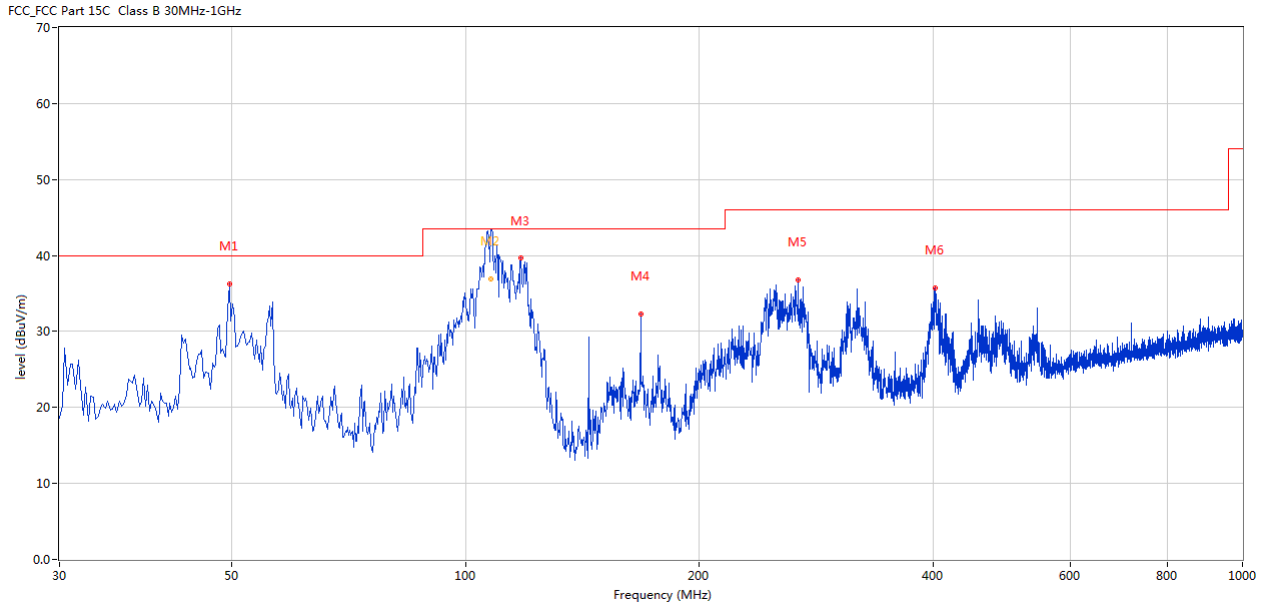


Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	49.638	36.23	-11.32	40.0	-3.77	Peak	338.00	100	Vertical	Pass
2	107.838	43.35	-13.42	43.5	-0.15	Peak	113.00	200	Vertical	Pass
2*	107.838	36.94	-13.42	43.5	-6.56	QP	113.00	200	Vertical	Pass
3	117.763	39.62	-14.92	43.5	-3.88	Peak	73.00	100	Vertical	Pass
4	167.948	32.28	-16.14	43.5	-11.22	Peak	174.00	100	Vertical	Pass
5	267.833	36.84	-11.72	46.0	-9.16	Peak	352.00	100	Vertical	Pass
6	402.387	35.71	-8.61	46.0	-10.29	Peak	346.00	100	Vertical	Pass

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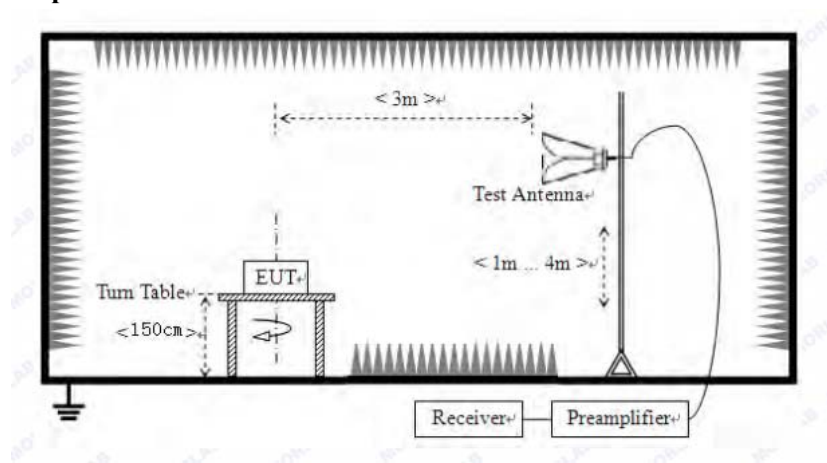
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7. Band Edge

7.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.10–2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) Set Spectrum as RBW=1MHz, VBW=3MHz and Peak detector used for PK value. RBW=1MHz, VBW=10Hz and Peak detector used for AV value.
- (3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (4) The antenna polarization: Vertical polarization and Horizontal polarization.

7.2 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing

7.3 Configuration of The EUT

Same as section 5.3 of this report

7.4 EUT Operating Condition

Same as section 5.4 of this report.

7.5 Band Edge 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 Section 15.209, whichever is the lesser attenuation.

The report refers only to the sample tested and does not apply to the bulk.

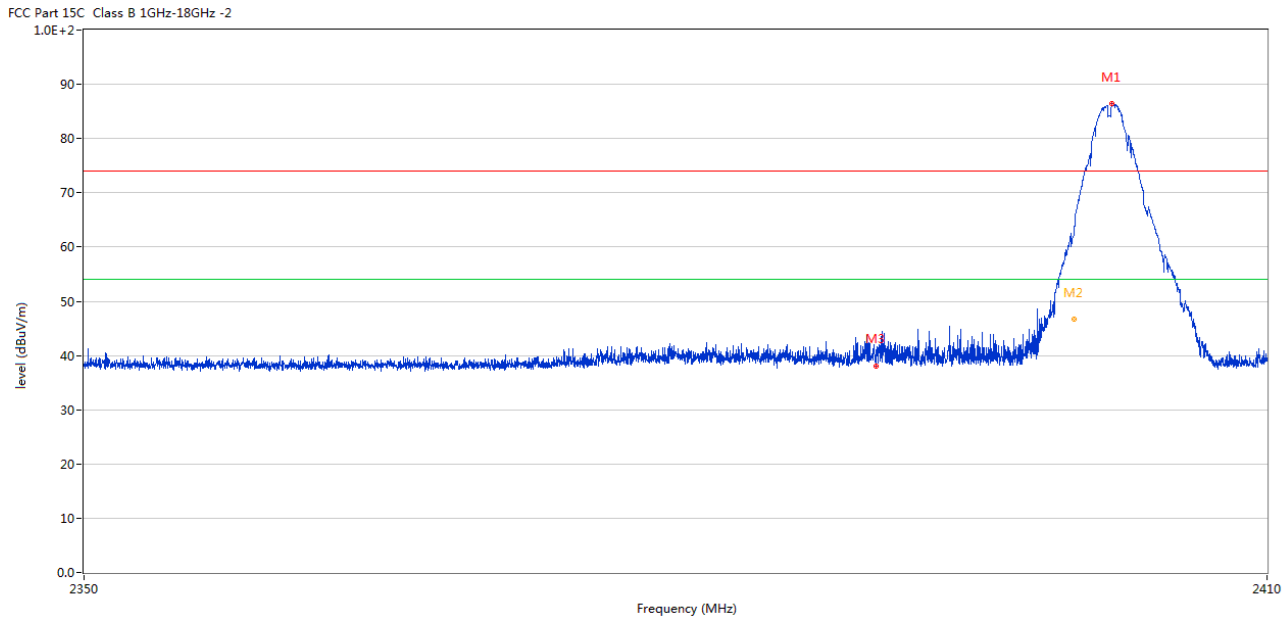
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7.6 Test Result

Product:	Speaker box / Parlante	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	110V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--



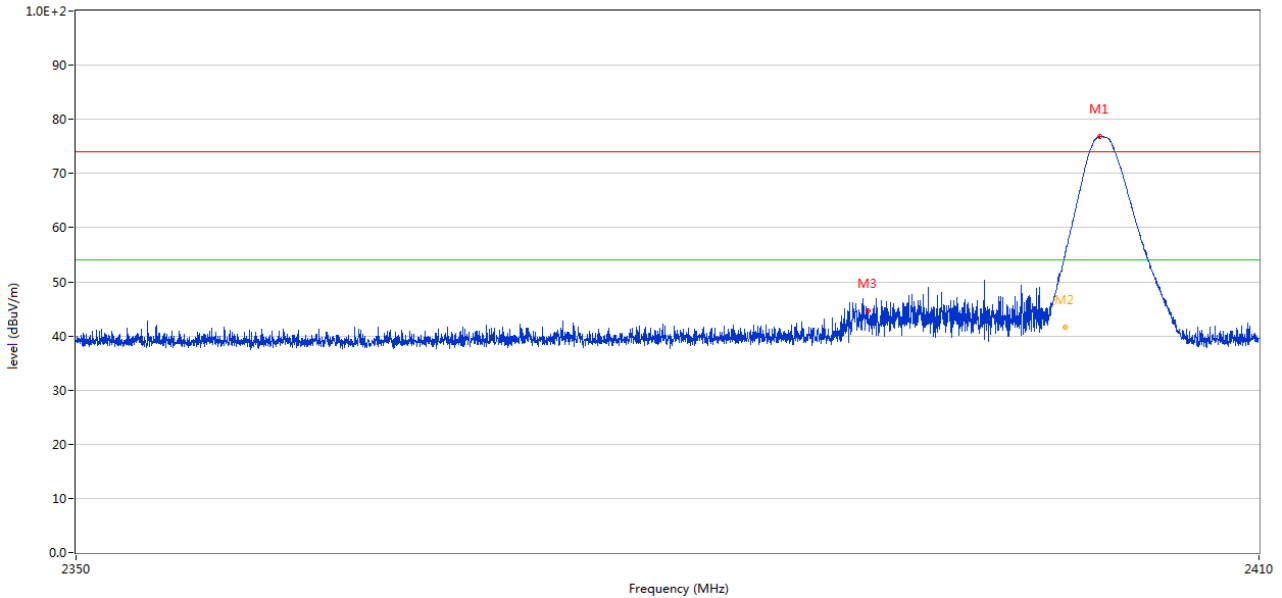
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402.037	86.42	-3.57	74.0	12.42	Peak	210.00	100	Horizontal	N/A
2	2400.042	61.73	-3.57	74.0	-12.27	Peak	220.00	100	Horizontal	Pass
2**	2400.042	46.79	-3.57	54.0	-7.21	AV	220.00	100	Horizontal	Pass
3	2390.025	38.13	-3.53	74.0	-35.87	Peak	245.00	100	Horizontal	Pass

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Product:	Speaker box / Parlante	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	110V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2401.827	76.91	-3.57	74.0	2.91	Peak	162.00	100	Vertical	N/A
2	2400.072	55.58	-3.57	74.0	-18.42	Peak	340.00	100	Vertical	Pass
2**	2400.072	40.78	-3.57	54.0	-13.22	AV	340.00	100	Vertical	Pass
3	2390.010	44.60	-3.53	74.0	-29.40	Peak	131.00	100	Vertical	Pass

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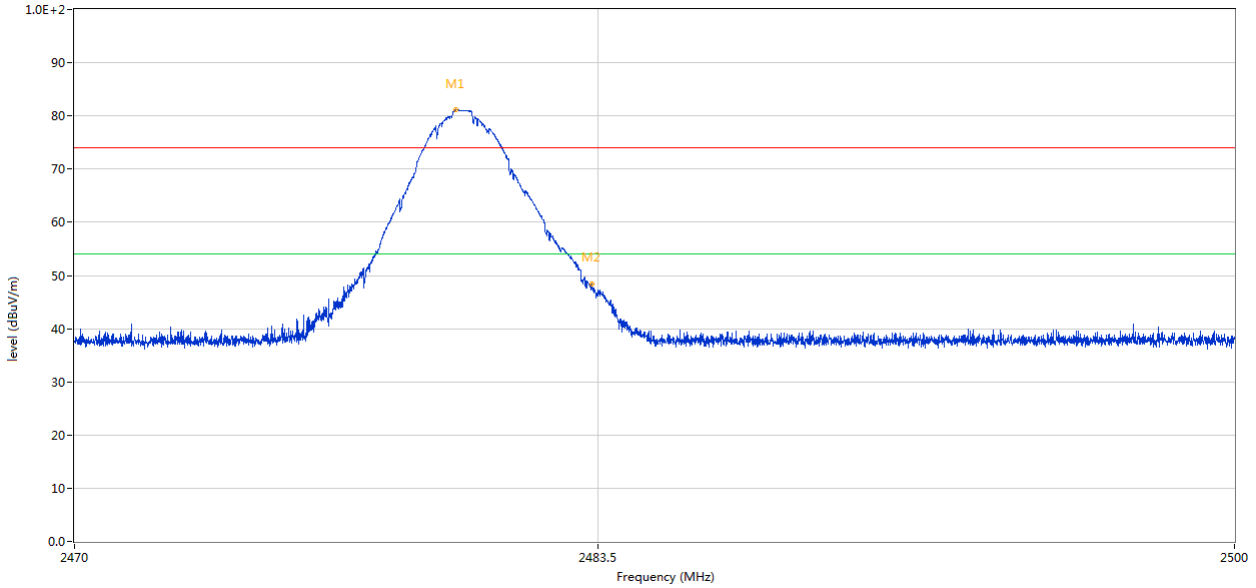
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Product:	Speaker box / Parlante	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	110V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.830	81.12	-3.57	74.0	7.12	Peak	259.00	100	Horizontal	N/A
2	2483.332	48.40	-3.57	74.0	-25.60	Peak	269.00	100	Horizontal	Pass

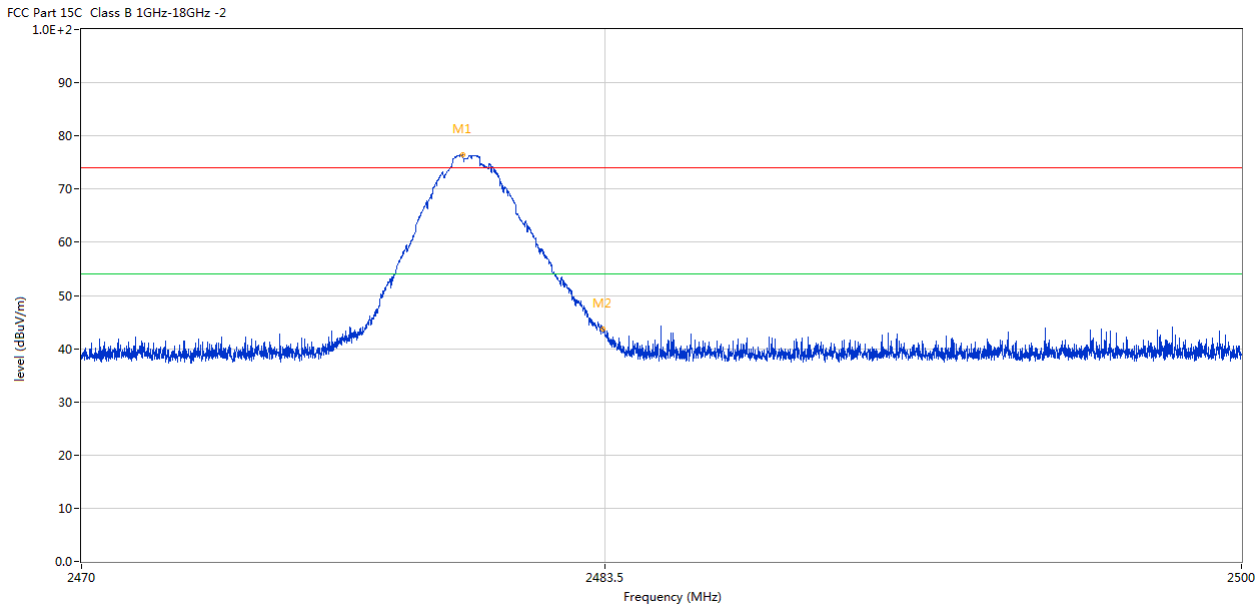
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Product:	Speaker box / Parlante	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	110V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.830	76.45	-3.57	74.0	2.45	Peak	179.00	100	Vertical	N/A
2	2483.452	43.67	-3.57	74.0	-30.33	Peak	179.00	100	Vertical	Pass

Note: 1. The PK emission level less than the AV limit. No necessary to record the AV emission level.
 2. Three modulation Types were tested and only the worst case was recorded in the test report and GFSK modulation was the worst case.

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8.0 Antenna Requirement

Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

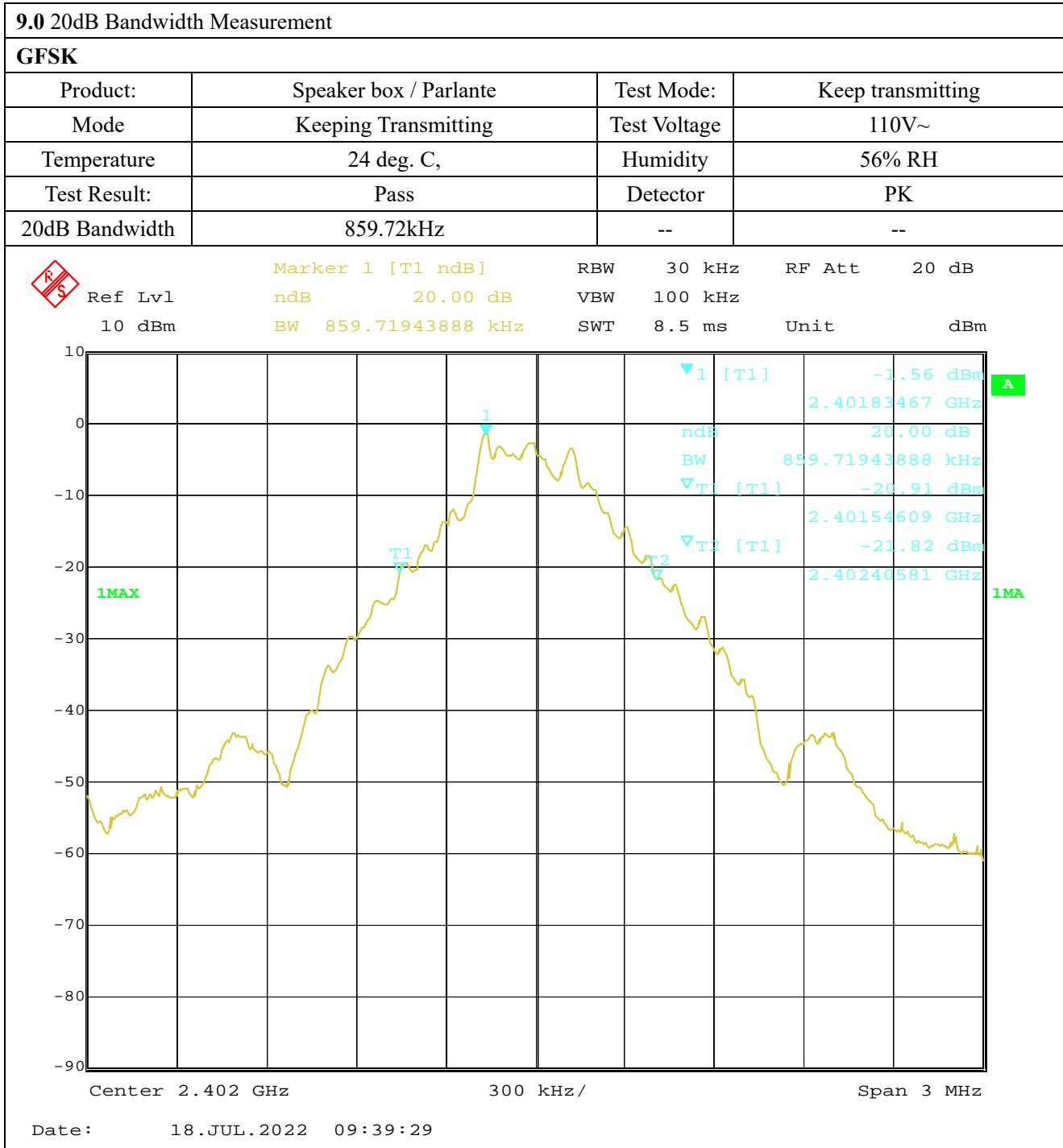
This product has a PCB antenna. The antenna gain is 1.7dBi Max. It fulfills the requirement of this section.

Test Result: Pass

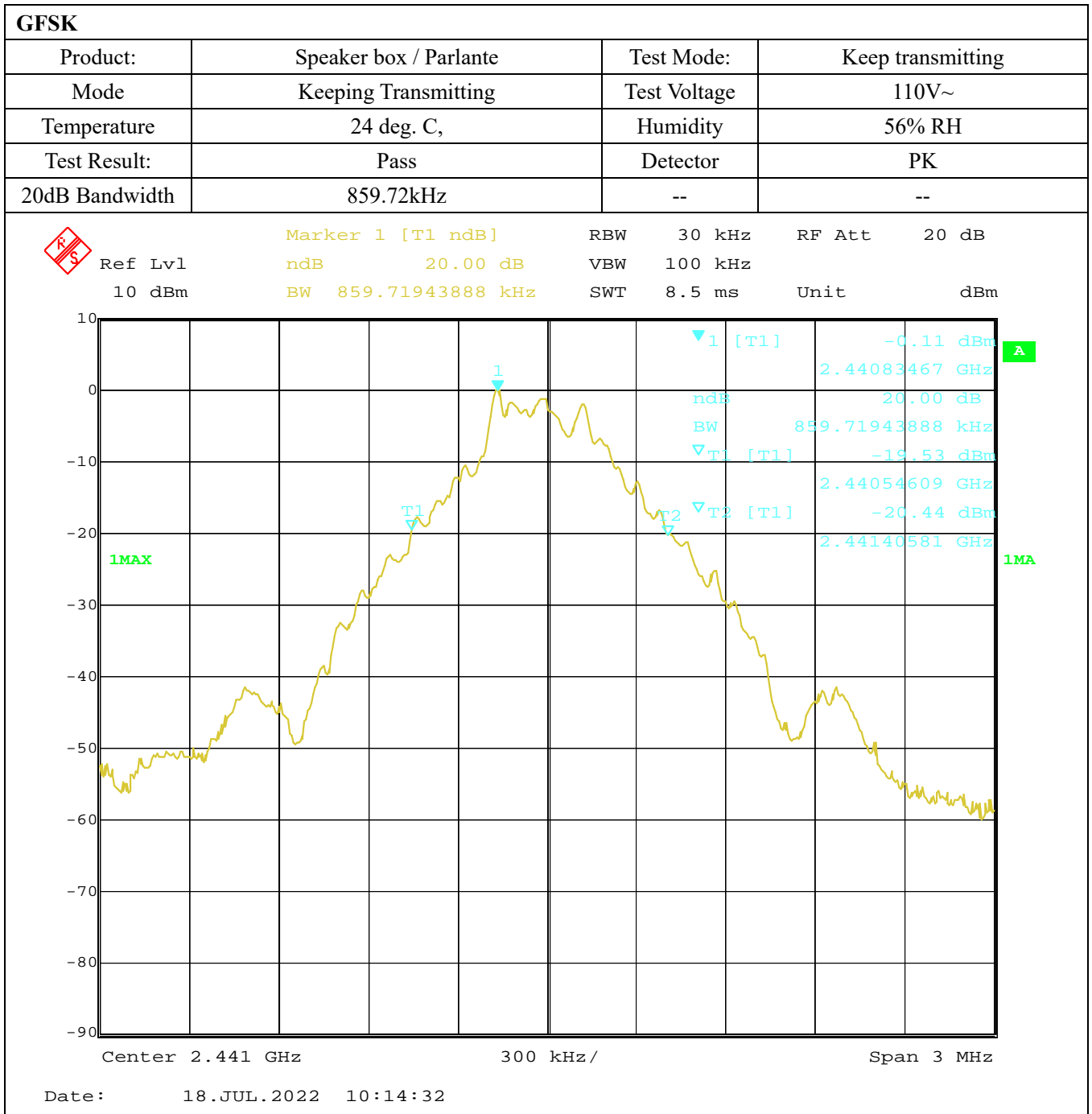
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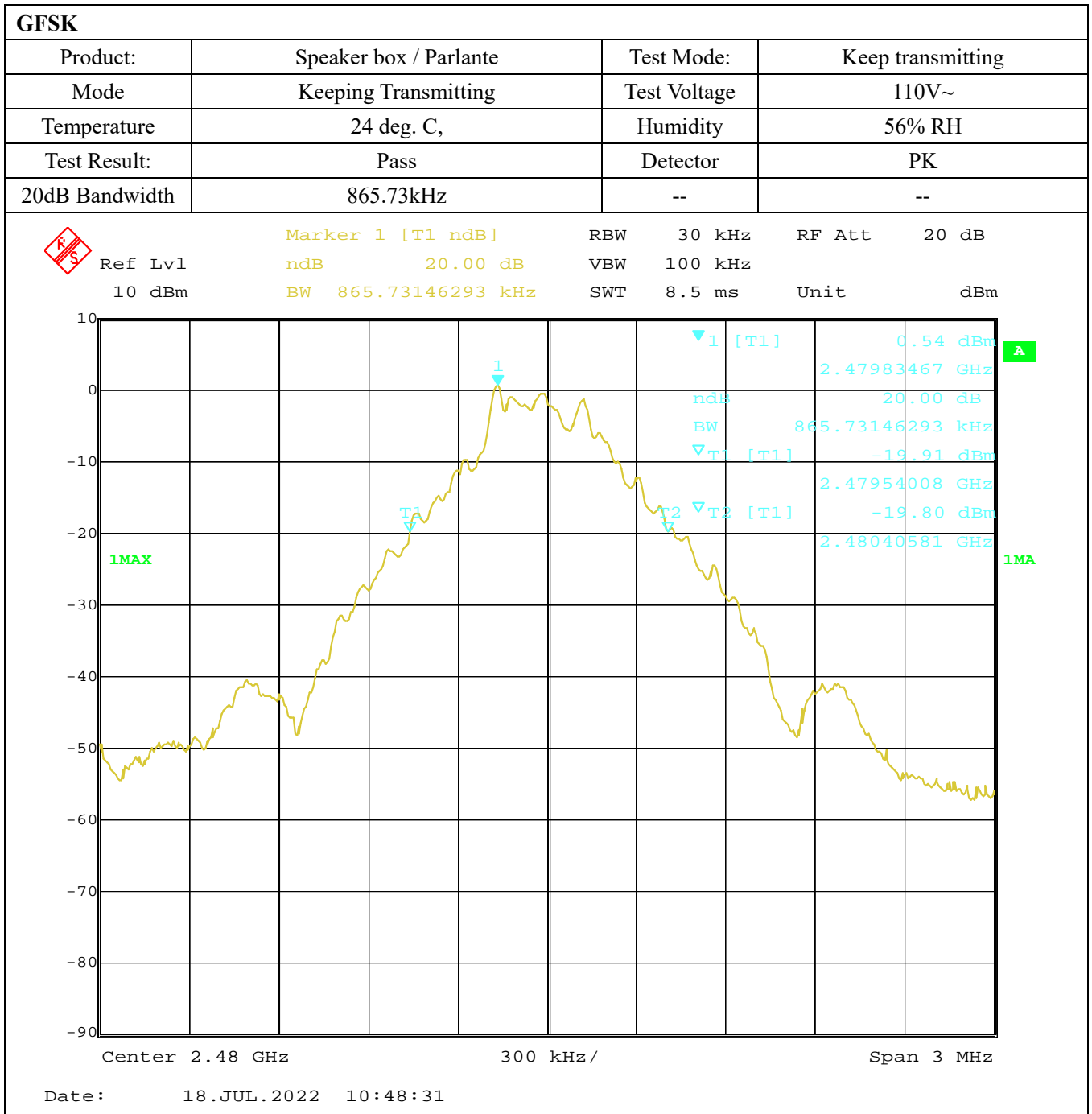
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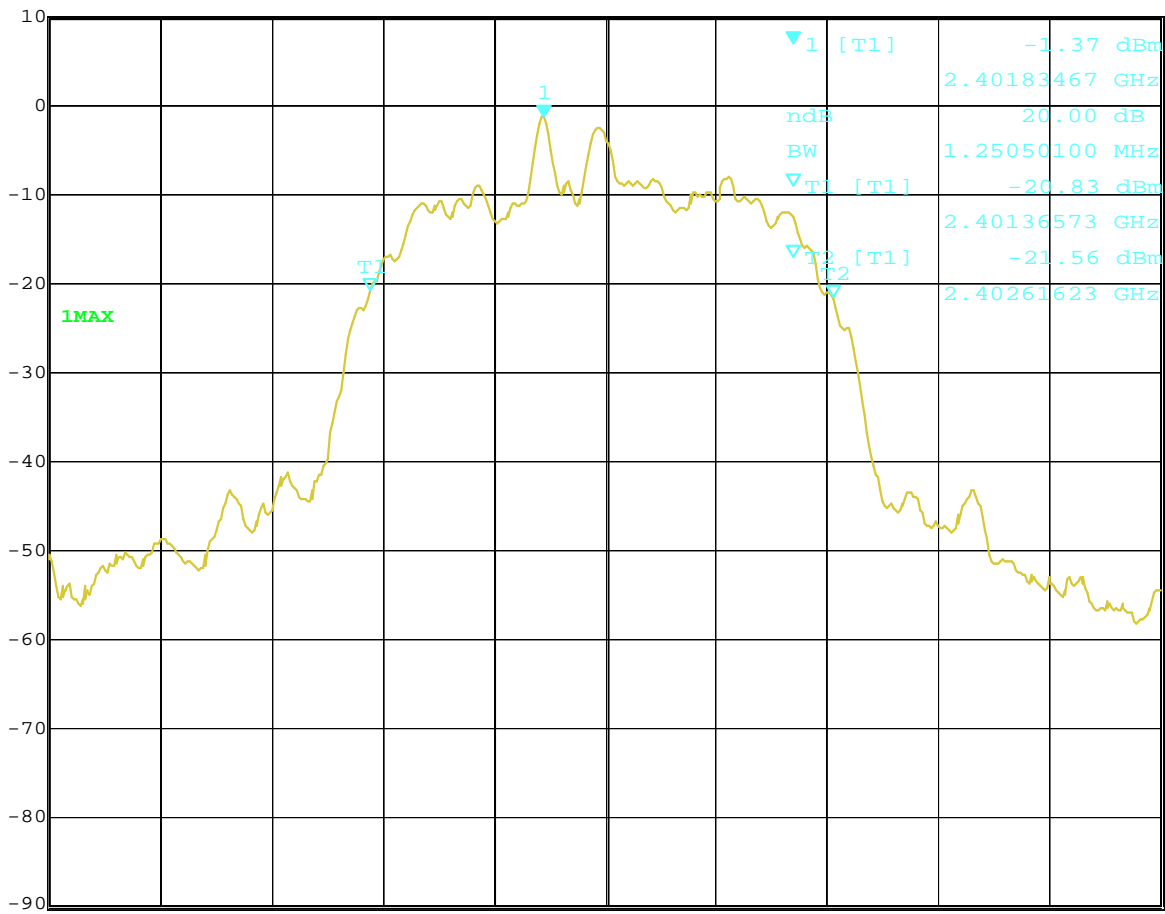
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π/4DQPSK			
Product:	Speaker box / Parlante	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	110V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.251MHz	--	--



Marker 1 [T1 ndB] RBW 30 kHz RF Att 20 dB
 Ref Lvl ndB 20.00 dB VBW 100 kHz
 10 dBm BW 1.25050100 MHz SWT 8.5 ms Unit dBm



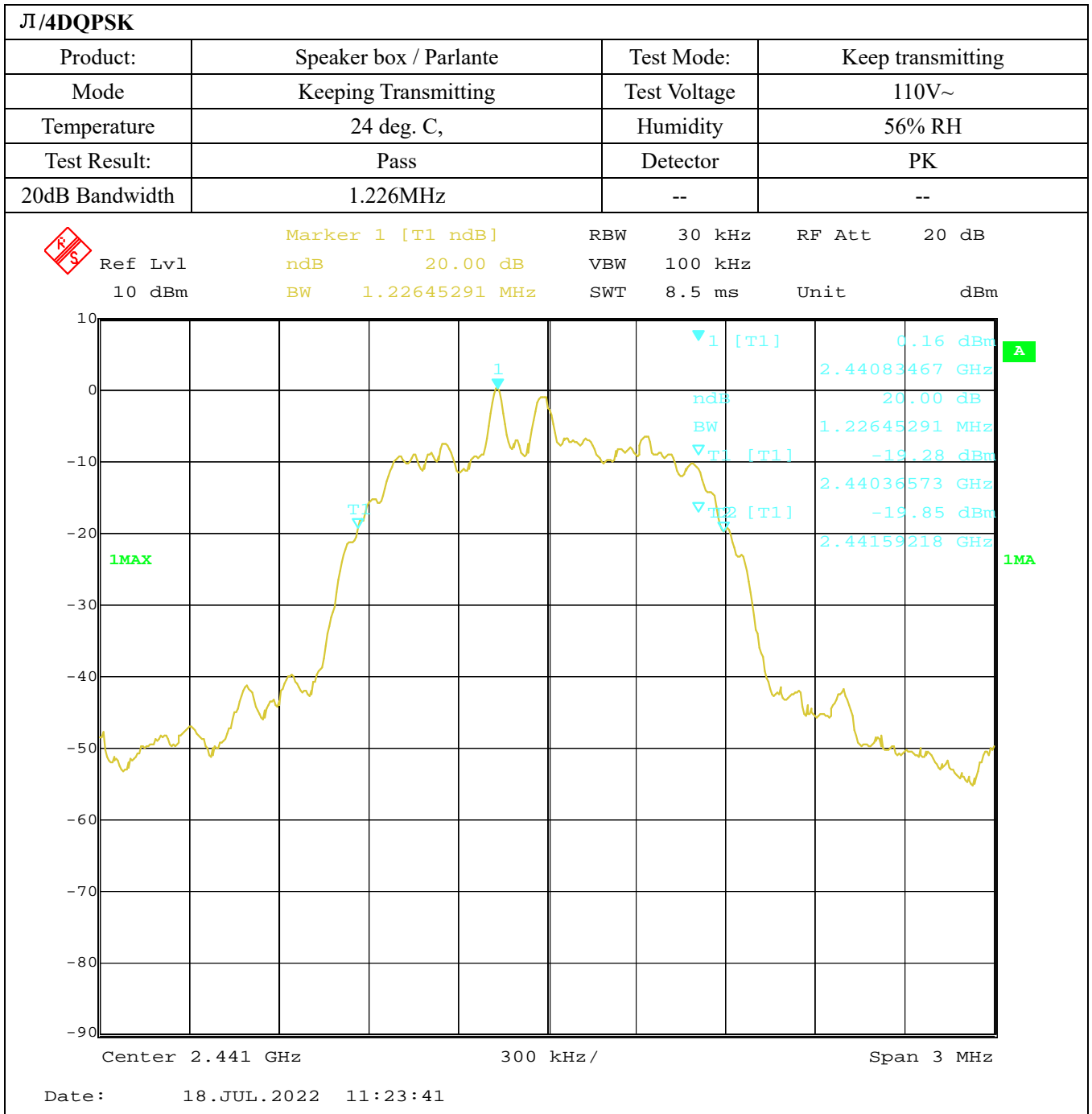
Center 2.402 GHz 300 kHz / Span 3 MHz

Date: 18.JUL.2022 13:49:54

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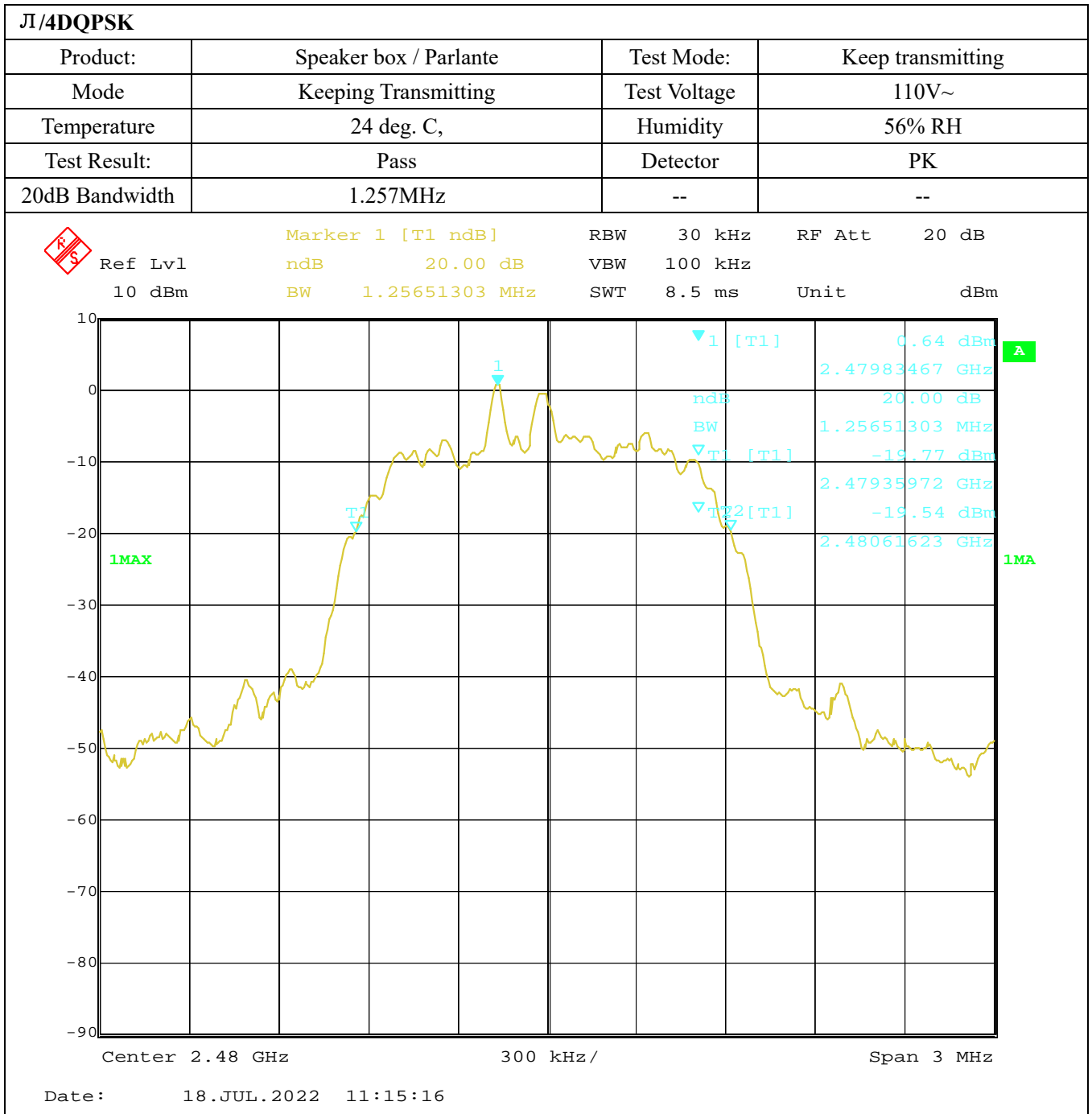
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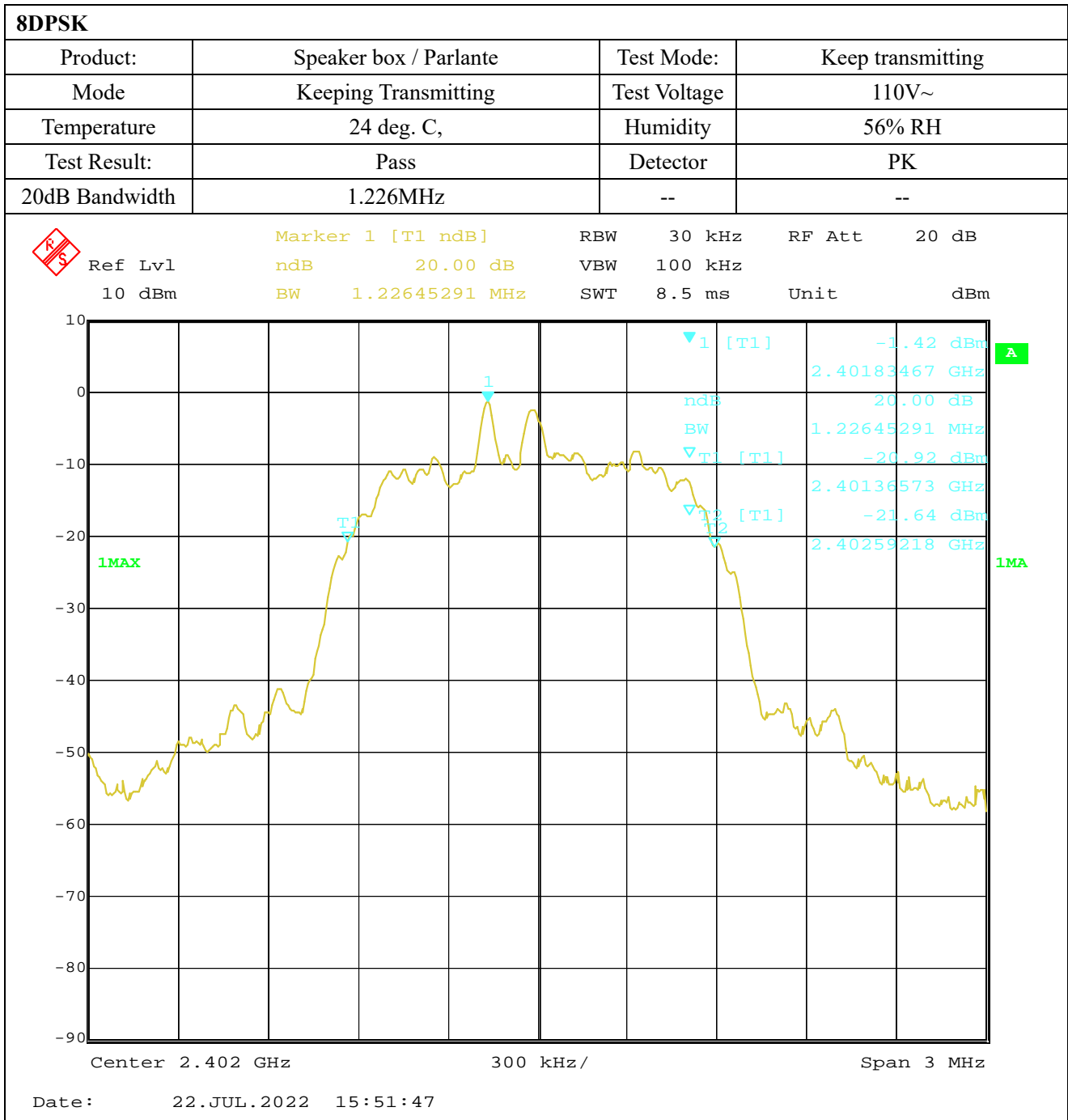
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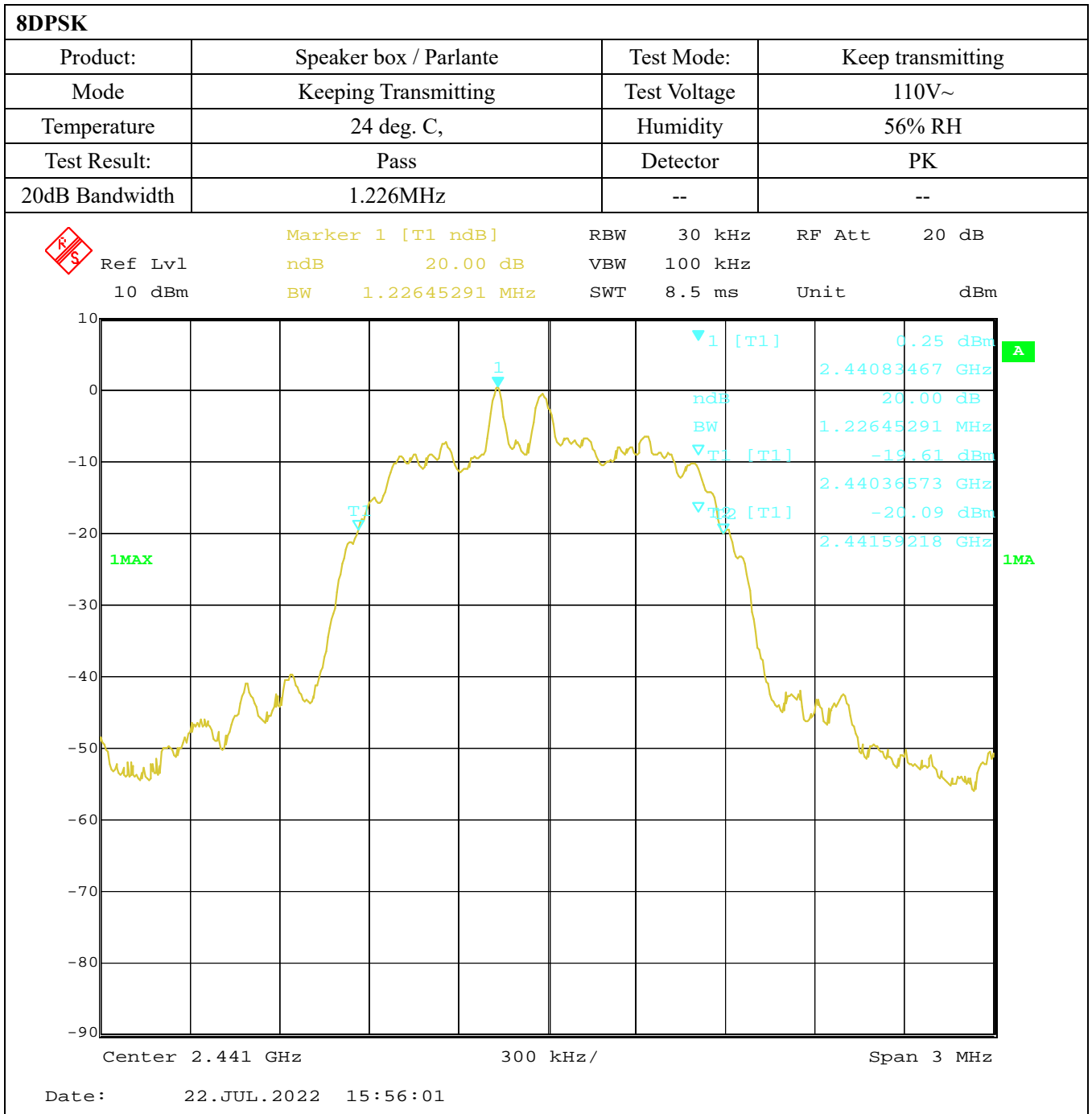
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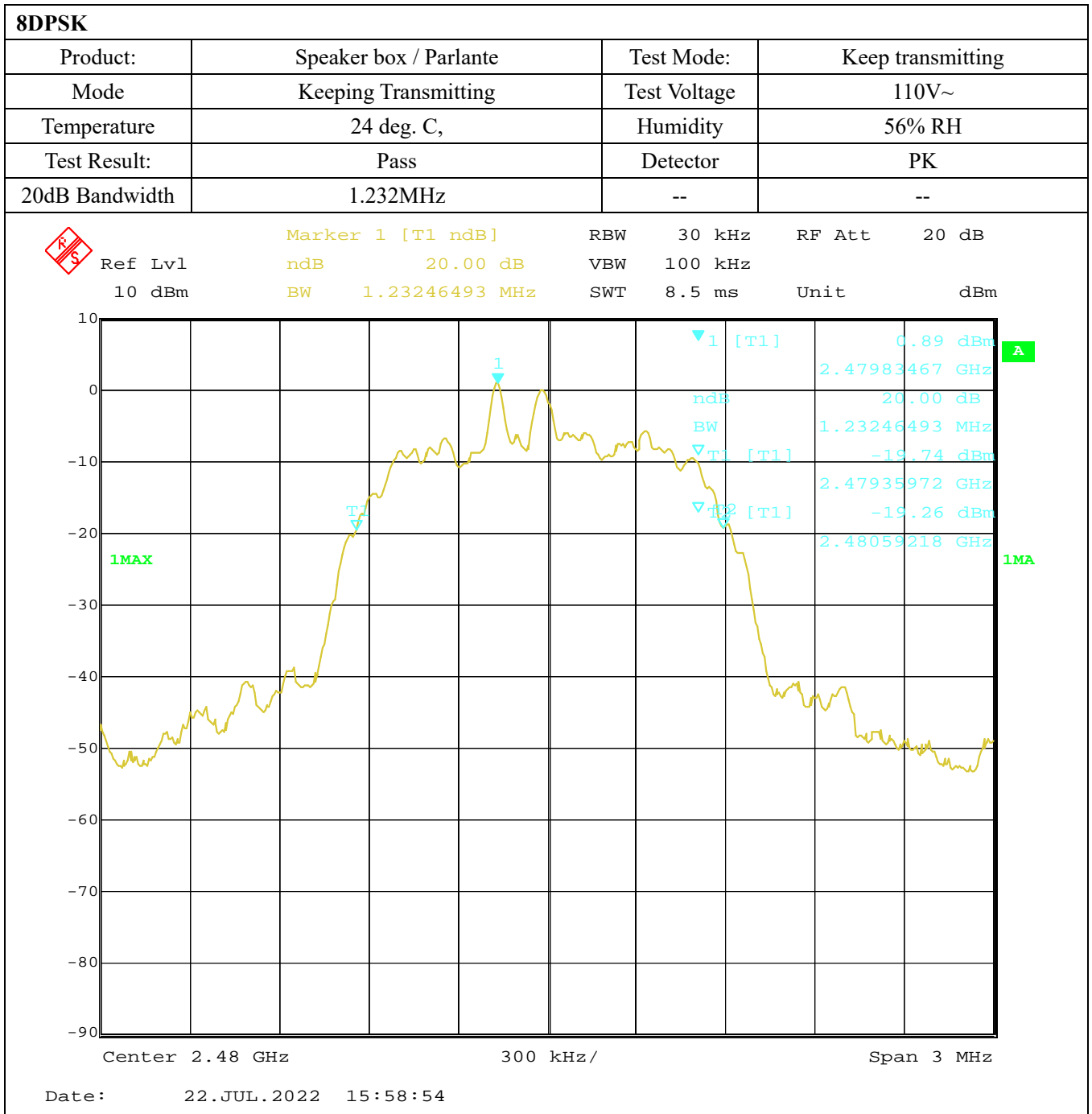
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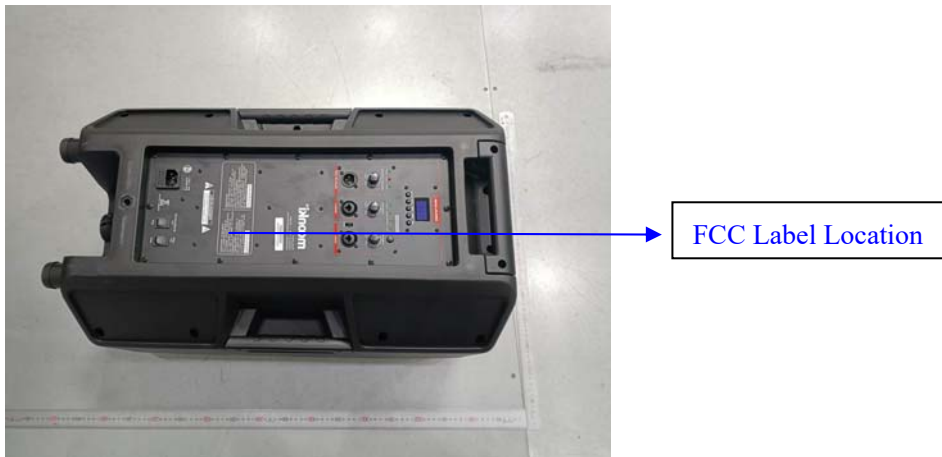
10.0 FCC ID Label

FCC ID: 2A6R4-MS112DSP

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



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- 11.0 Photo of testing
- 11.1 Conducted test View



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Radiated emission test view



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11.2 Photographs – EUT

Outside View



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Outside View



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Outside View



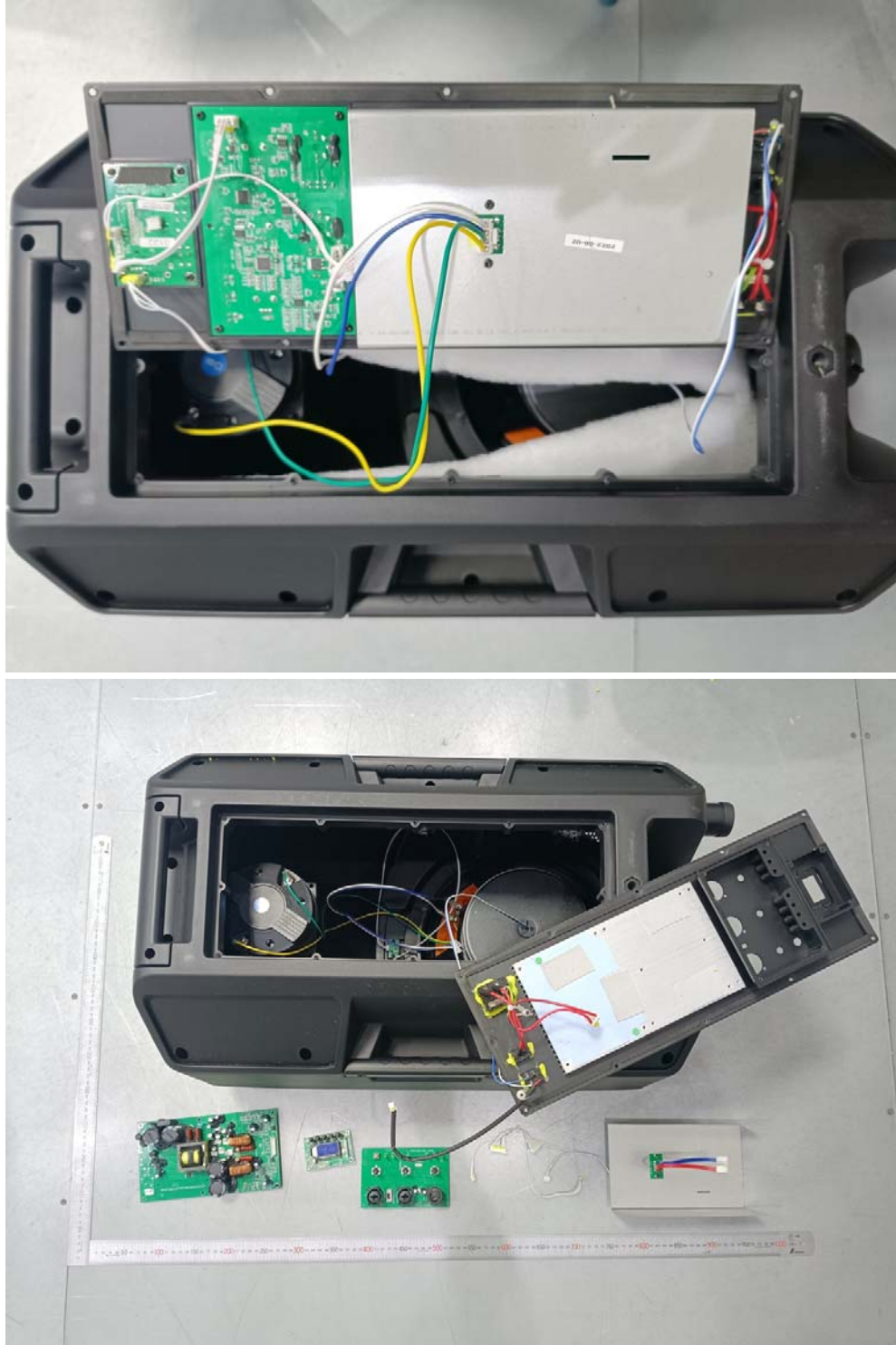
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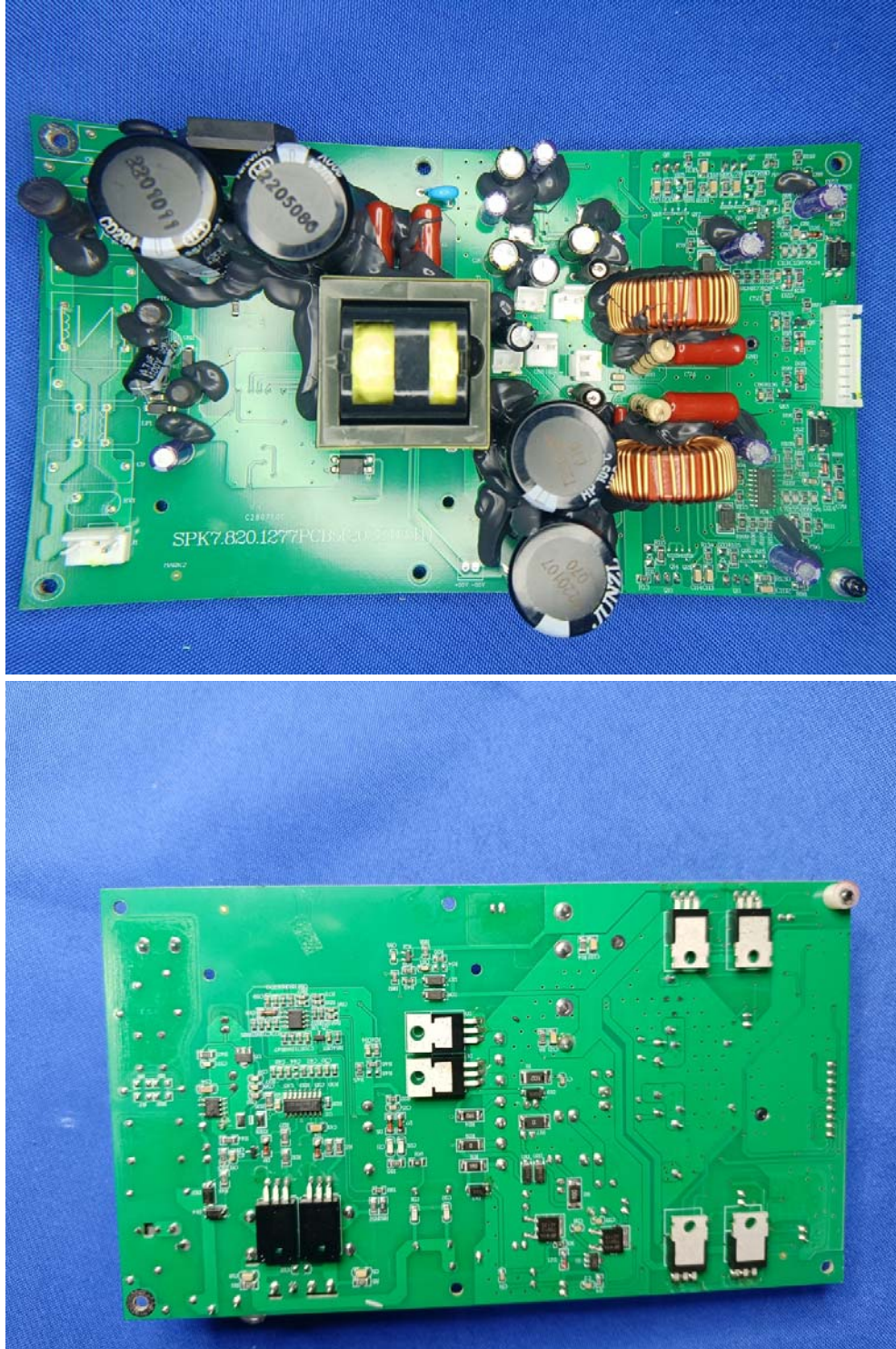
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Inside View

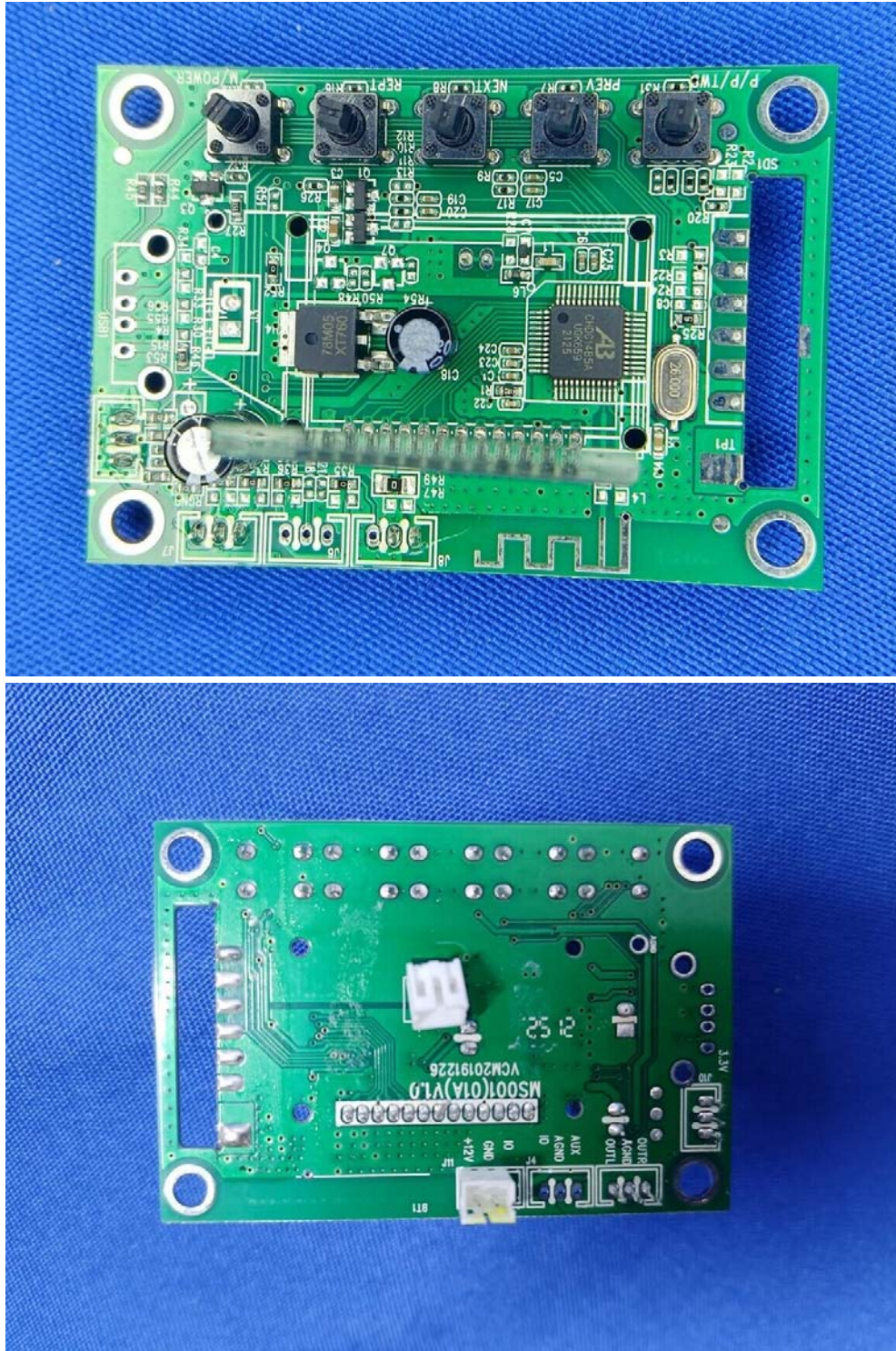


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Inside View

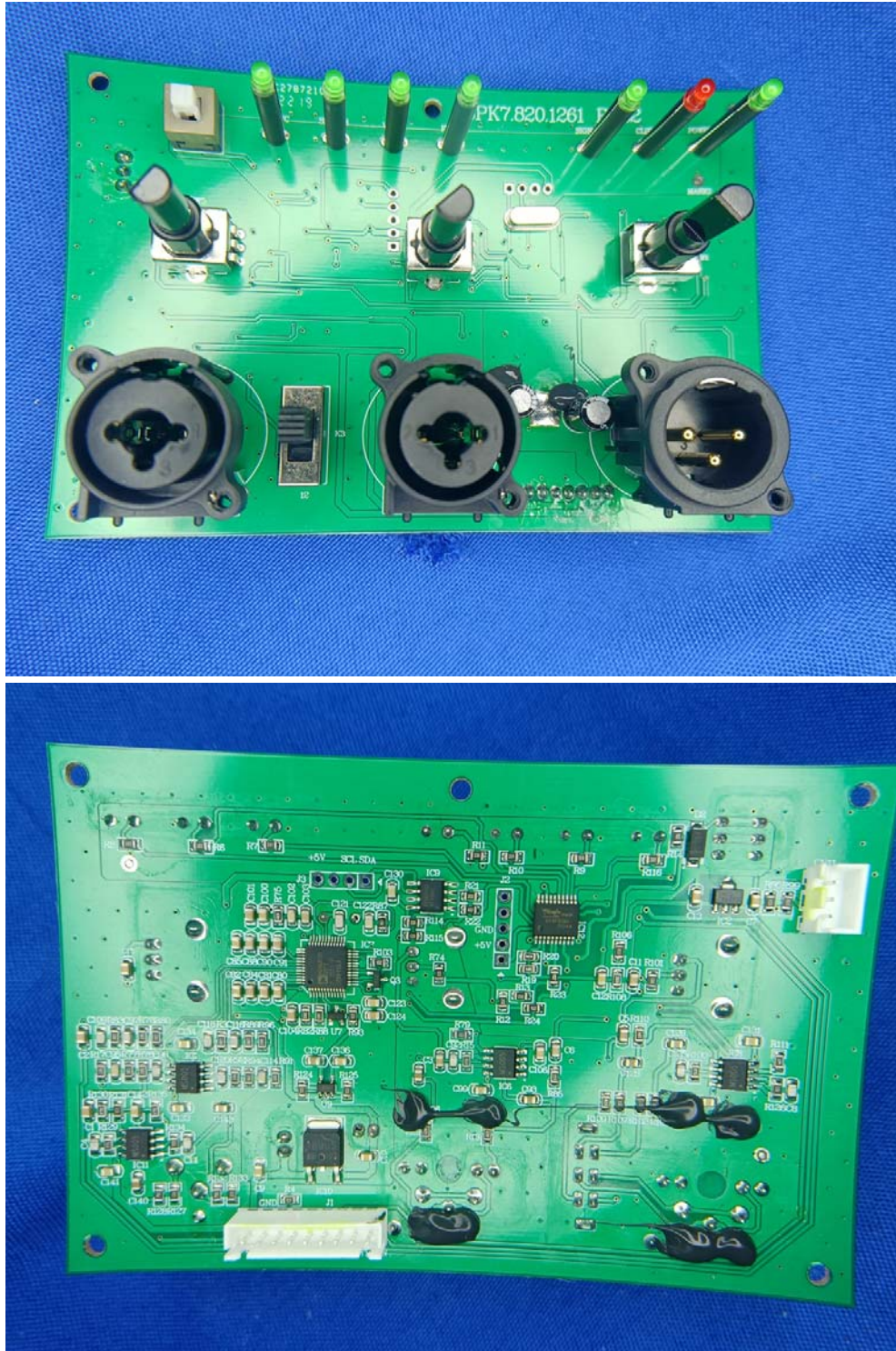


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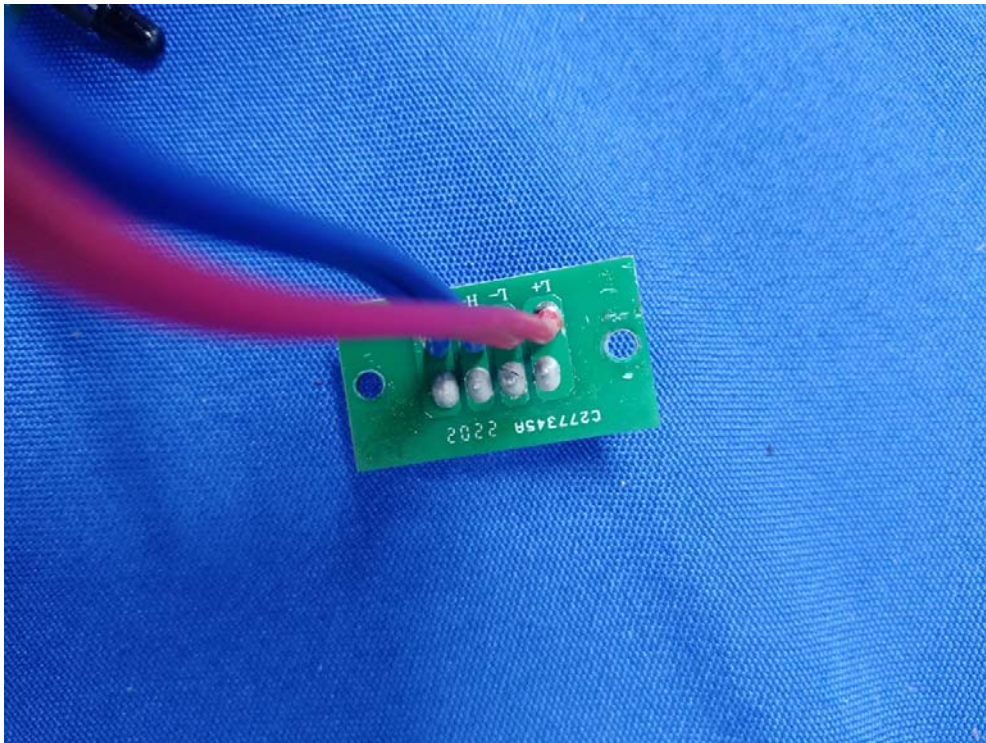
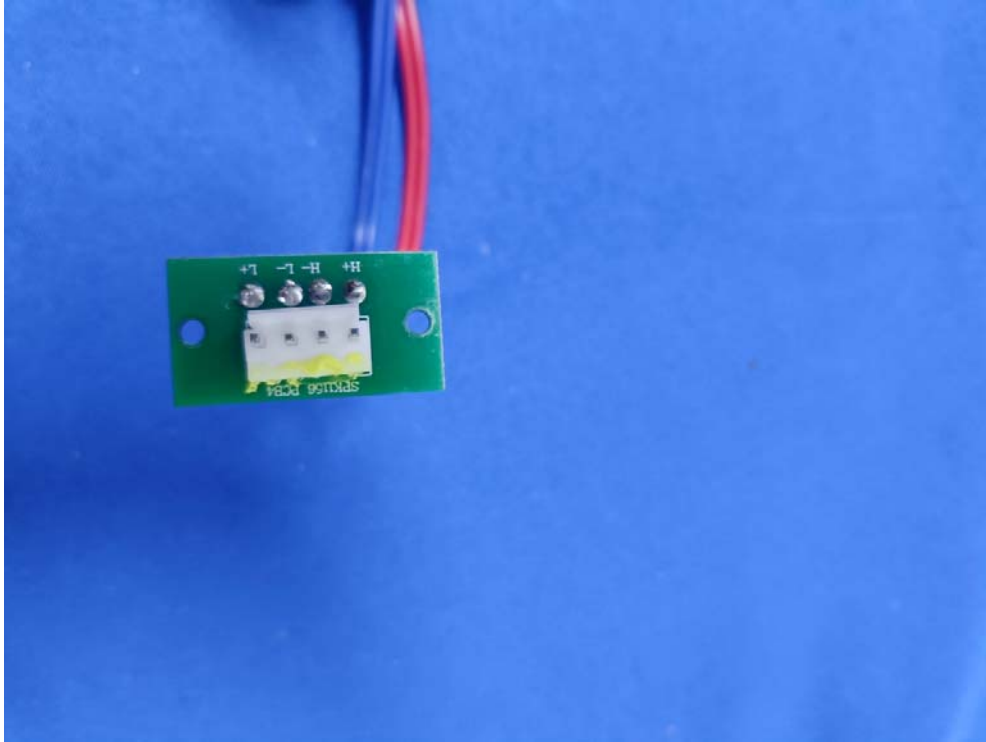
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Inside View



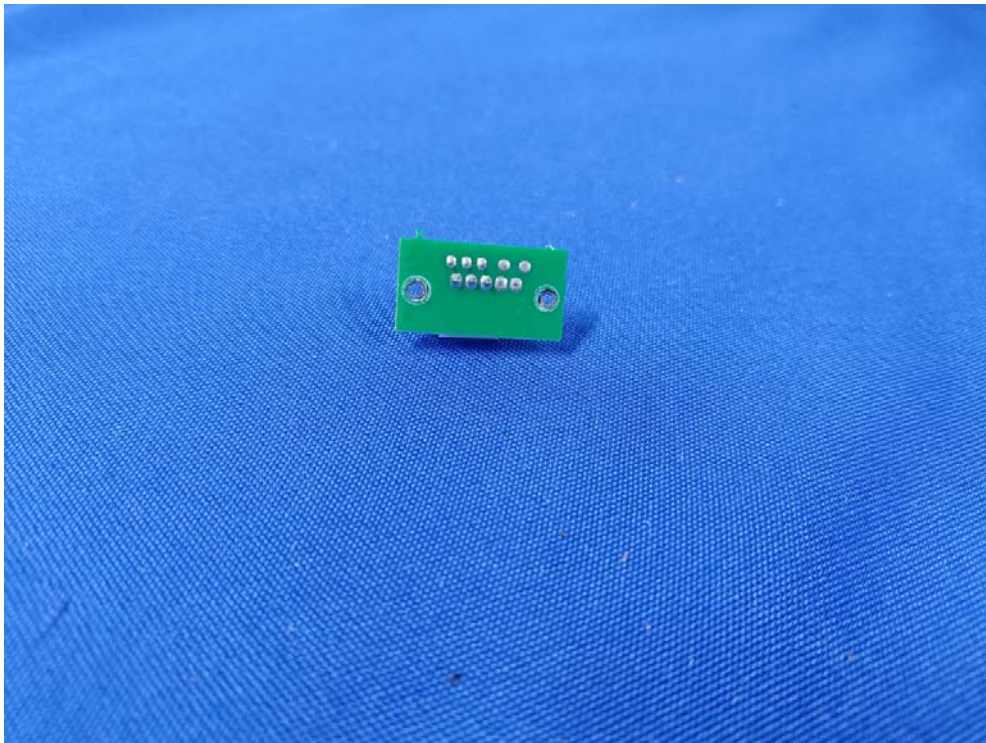
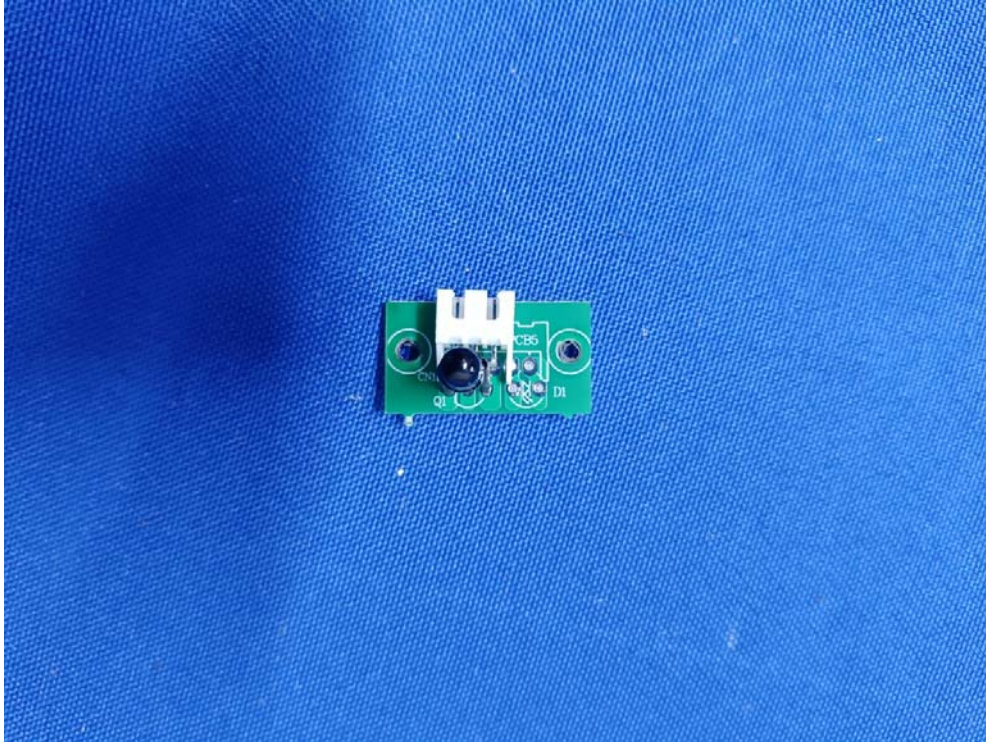
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Inside View



--End of the report--

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