TECHNICAL REPORT

Report No.:	TW2012217-03E
File Reference No.:	22021-01-16
Applicant:	Qingdao Hisense Intelligent Commercial System Co., Ltd.
Product:	Tablet POS
Model No.:	HM628N, HM628
Trademark:	N/A
Test Standards:	FCC Part 15.247
Test Result:	It is herewith confirmed and found to comply with the requirements set up by ANSI C63.10, FCC Part 15.247 for the evaluation of electromagnetic compatibility

Approved By:

Jack Chung

Manager

Dated: January 16, 2021

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 CNAL. 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 17025:2005 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

Test Report Conclusion

Content

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

1.2 Applicant Details

Applicant: Qingdao Hisense Intelligent Commercial System Co., Ltd.
Address: 399 Songling Road, Laoshan, Qingdao, China
Telephone: --
Fax: --

1.3 Description of EUT

Product: Tablet POS
Manufacturer: Qingdao Hisense Intelligent Commercial System Co., Ltd.
Address: 399 Songling Road, Laoshan, Qingdao, China
Brand Name: N/A
Additional Brand Name: N/A
Model Number: HM628N
Additional Model Number: HM628
Hardware Version: WTR288C1
Software Version: HX-JX-10-GLKC2R100

Type of Modulation	GFSK (Bluetooth BLE)
Frequency range	2402-2480MHz
Frequency Selection	By software
Channel Number	40
Input Voltage:	DC12V
Battey:	DC7.6V, 55000mAh Li-ion battery
Power Supply: (for simple base)	Model: PG241-12020001; Input: 100-240V~, 50/60Hz, 0.8A; Output: 12.0V 2.0A,24W
Power Supply: (for multi-functional base)	Model: FSP090-AAAN3; Input: 100-240V~, 50-60Hz, 1.2A; Output: DC24.0V, 3.75A,90W

1.4 Submitted Sample: 1 Samples

1.5 Test Duration

2020-12-17 to 2021-01-16

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%

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

Print Name: Terry Tang

2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2020-06-23	2021-06-22
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2020-06-23	2021-06-22
Loop Antenna	EMCO	6507	00078608	2018-06-25	2021-06-24
Spectrum	R&S	FSIQ26	100292	2020-06-23	2021-06-22
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2019-06-21	2021-06-20
Horn Antenna	R&S	BBHA 9120D	9120D-631	2018-07-09	2021-07-08
Power meter	Anritsu	ML2487A	6K00003613	2020-06-23	2021-06-22
Power sensor	Anritsu	MA2491A	32263	2020-06-23	2021-06-22
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2018-07-04	2021-07-03
9*6*6 Anechoic	--	--	N/A	2018-02-07	2021-02-06
EMI Test Receiver	RS	ESVB	826156/011	2020-06-23	2021-06-22
EMI Test Receiver	RS	ESH3	860904/006	2020-06-23	2021-06-22
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2020-06-23	2021-06-22
Spectrum	HP/Agilent	E4407B	MY50441392	2020-06-23	2021-06-22
Spectrum	RS	FSP	1164.4391.38	2020-01-16	2021-01-15
RF Cable	Zhengdi	ZT26-NJ-NJ-8 M/FA	--	2020-06-23	2021-06-22
RF Cable	Zhengdi	7m	--	2020-06-23	2021-06-22
RF Switch	EM	EMSW18	060391	2020-06-23	2021-06-22
Pre-Amplifier	Schwarebeck	BBV9743	#218	2020-06-23	2021-06-22
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2020-06-23	2021-06-22
LISN	SCHAFFNER	NNB42	00012	2021-01-06	2022-01-05

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

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 15.107 & 15.207	Conducted Emission Test	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.247(a)(2) Limit	Spectrum bandwidth of a Orthogonal Frequency Division Multiplex System Limit: 6dB bandwidth>500kHz	PASS	Complies
FCC Part 15, Paragraph 15.247(b)	Maximum peak output power Limit: max. 30dBm	PASS	Complies
FCC Part 15, Paragraph 15.109,15.205 & 15.209	Transmitter Radiated Emission Limit: Table 15.209	PASS	Complies
FCC Part 15, Paragraph 15.247(e)	Power Spectral Density Limit: max. 8dBm/3kHz	PASS	Complies
FCC Part 15, Paragraph 15.247(d)	Out of Band Emission and Restricted Band Radiation Limit: 20dB less than peak value of fundamental frequency Restricted band limit: Table 15.209	PASS	Complies

Note: the multi-functional base and simple base were tested and only the worst case was reported. The multi-functional base was the worst case.

3.2 Test Standards

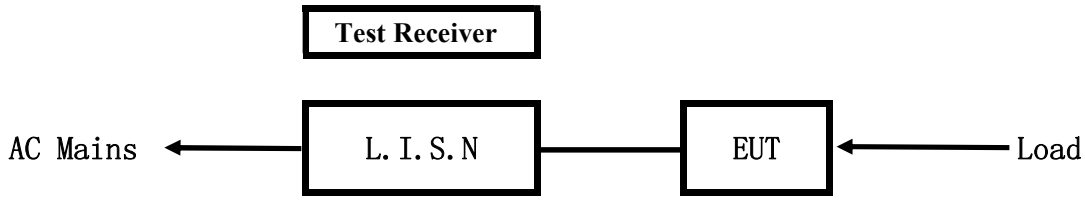
FCC Part 15 Subpart & Subpart C, Paragraph 15.247

4.0 EUT Modification

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES.

5.Power Line Conducted Emission Test

5.1 Schematics of the test



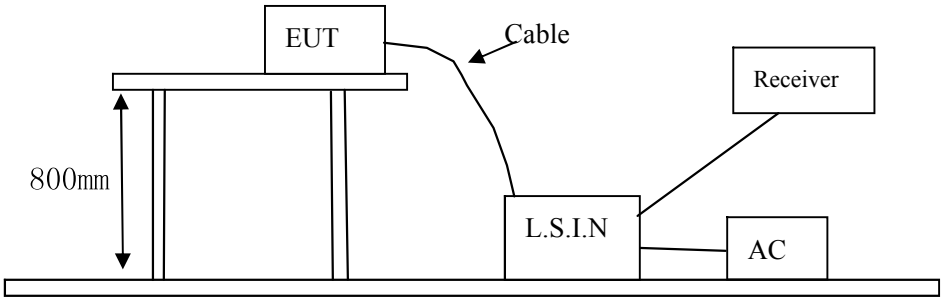
EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013.The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10 –2013.

Test Voltage: AC120V, 60Hz

Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

A. EUT

Device	Manufacturer	Model	FCC ID
Tablet POS	Qingdao Hisense Intelligent Commercial System Co., Ltd.	HM628N, HM628	GQK-HM628N

B. Internal Device

Device	Manufacturer	Model	Rating

C. Peripherals

Device	Manufacturer	Model	Rating
--			

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10-2013.

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)	Class B 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	5 .0

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The tighter limit shall apply at the transition frequencies

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

A: Conducted Emission on Live Terminal (150kHz to 30MHz)

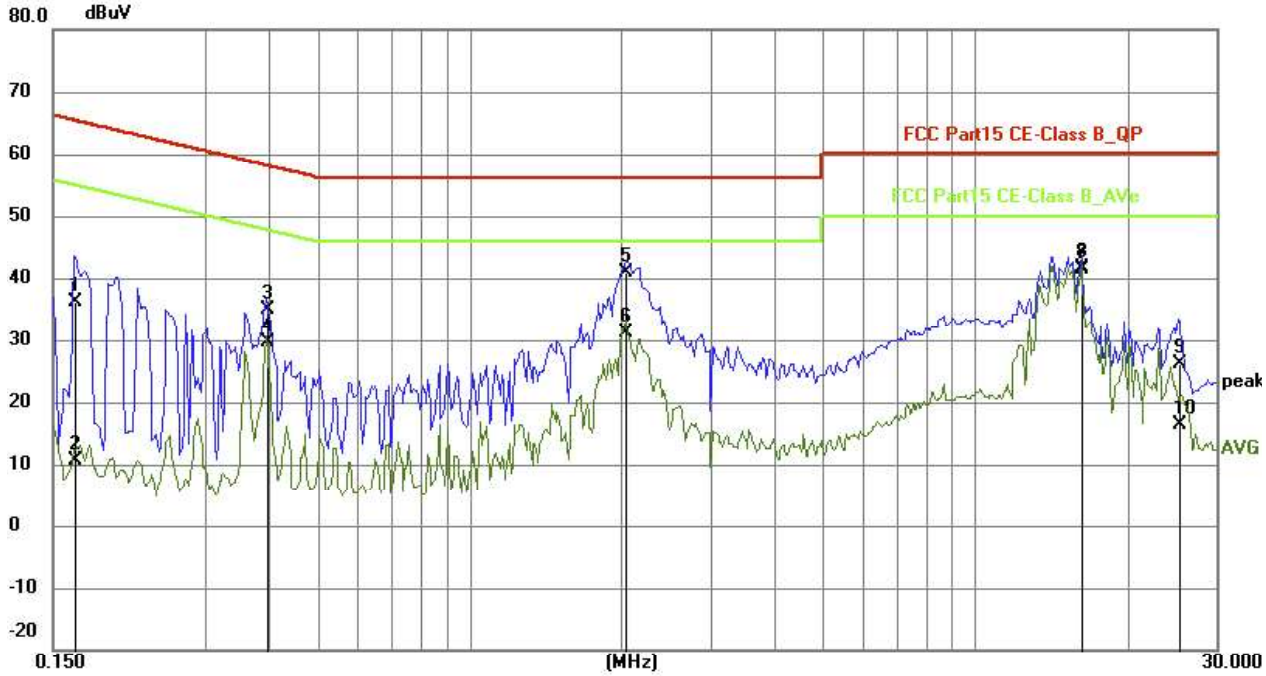
EUT Operating Environment

Temperature: 26℃ Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep Bluetooth Transmitting

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	0.1655	26.38	9.77	36.15	65.18	-29.03	QP	P
2	0.1655	0.93	9.77	10.70	55.18	-44.48	AVG	P
3	0.3957	25.13	9.76	34.89	57.94	-23.05	QP	P
4	0.3957	19.95	9.76	29.71	47.94	-18.23	AVG	P
5	2.0337	31.19	9.80	40.99	56.00	-15.01	QP	P
6	2.0337	21.24	9.80	31.04	46.00	-14.96	AVG	P
7	16.2288	31.03	10.45	41.48	60.00	-18.52	QP	P
8	16.2288	30.94	10.45	41.39	50.00	-8.61	AVG	P
9	25.2807	15.18	11.01	26.19	60.00	-33.81	QP	P
10	25.2807	5.48	11.01	16.49	50.00	-33.51	AVG	P

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

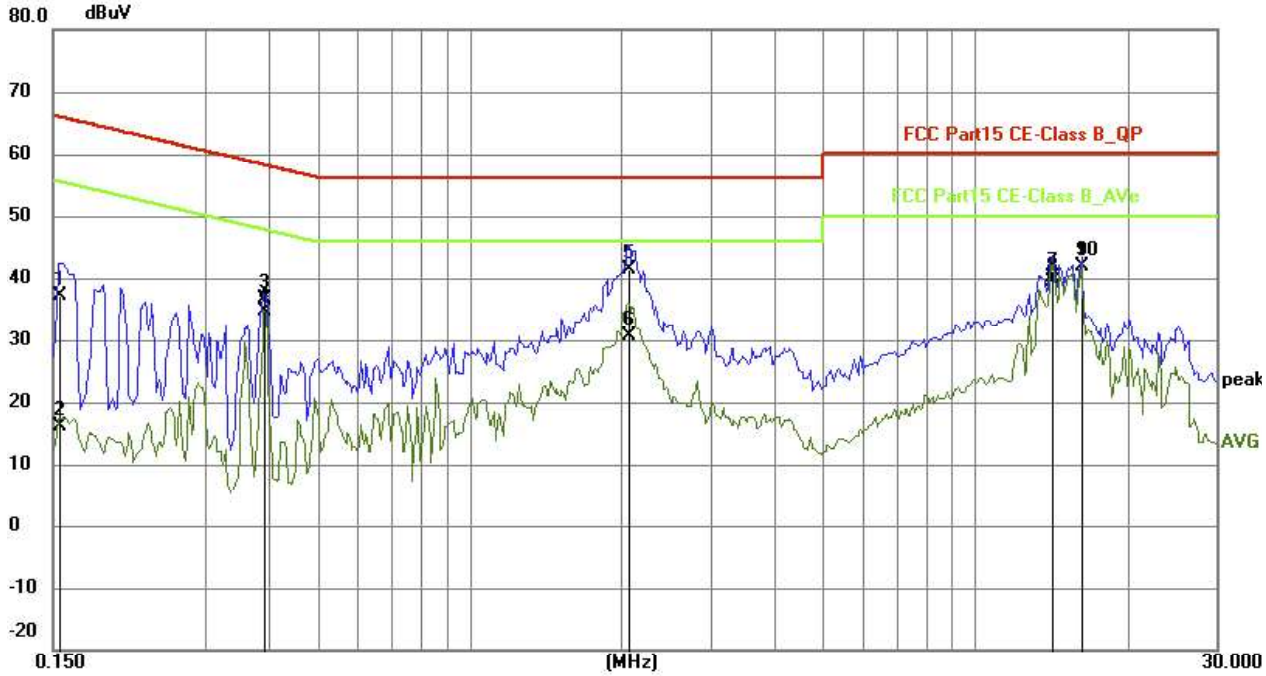
EUT Operating Environment

Temperature: 26℃ Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep Bluetooth Transmitting

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	0.1548	27.35	9.78	37.13	65.74	-28.61	QP	P
2	0.1548	6.46	9.78	16.24	55.74	-39.50	AVG	P
3	0.3918	26.84	9.76	36.60	58.03	-21.43	QP	P
4	0.3918	24.90	9.76	34.66	48.03	-13.37	AVG	P
5	2.0649	31.50	9.80	41.30	56.00	-14.70	QP	P
6	2.0649	20.90	9.80	30.70	46.00	-15.30	AVG	P
7	14.2125	29.81	10.35	40.16	60.00	-19.84	QP	P
8	14.2125	29.09	10.35	39.44	50.00	-10.56	AVG	P
9	16.2288	31.35	10.45	41.80	60.00	-18.20	QP	P
10	16.2288	31.24	10.45	41.69	50.00	-8.31	AVG	P

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. For measurement above 1GHz, peak values with RBW=1MHz VBW=3MHz and PK detector. AV value with RBW=1MHz, VBW=3MHz and RMS detector. Measurements were made at 3 meters.

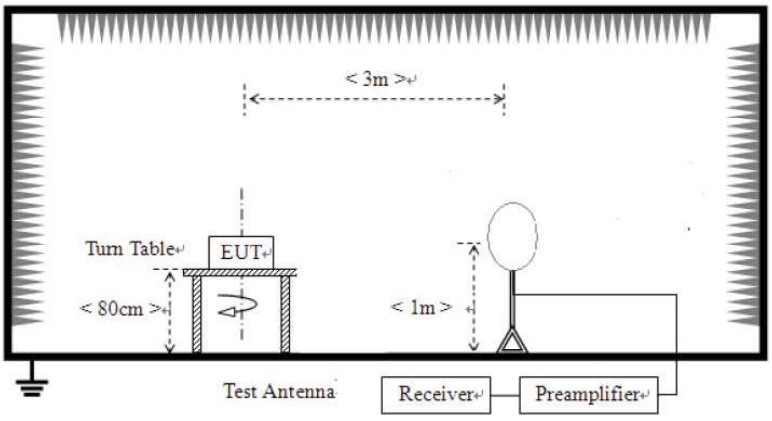
(4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.

(5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**QP**" in the data table.

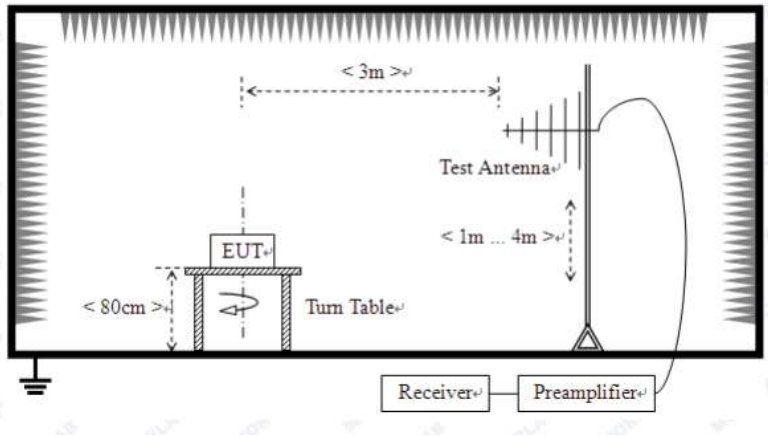
(6) The antenna polarization : Vertical polarization and Horizontal polarization.

Block diagram of Test setup

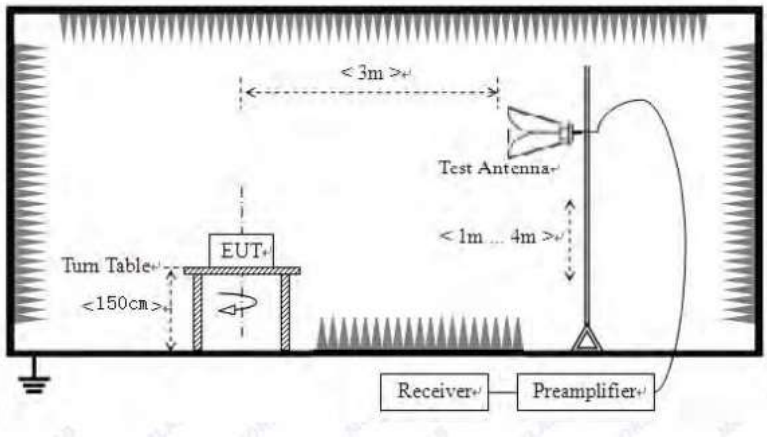
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to1GHz



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:

Frequencies in restricted band are complied to limit on Paragraph 15.209

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	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 (uV)

2. In the Above Table, the higher limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

4. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

Test result

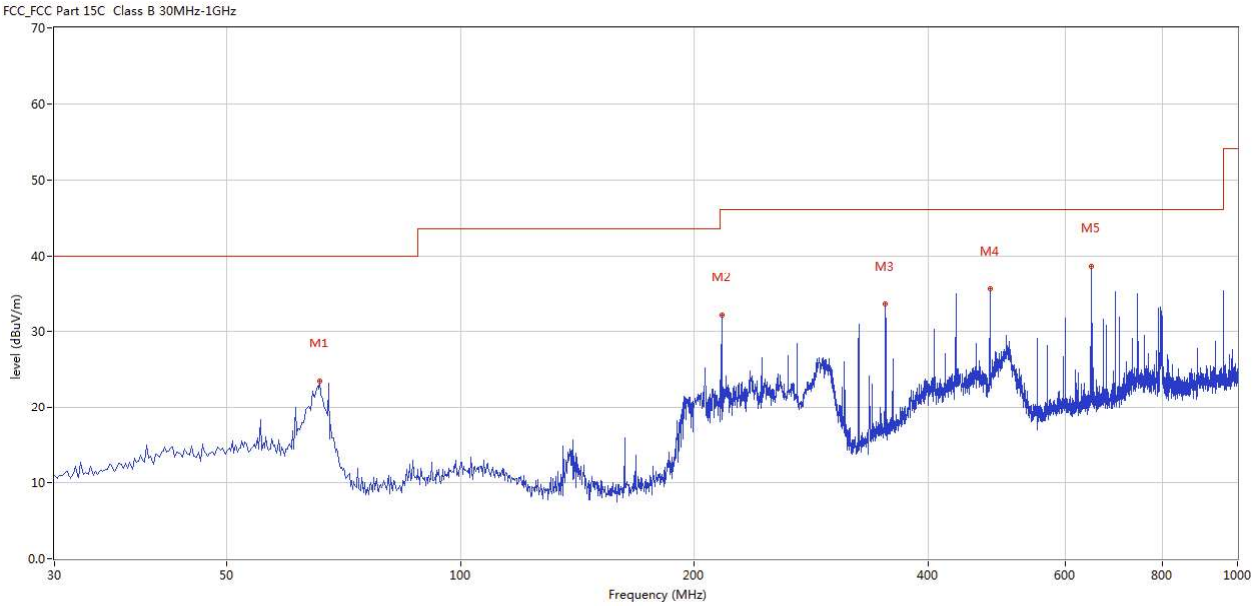
General Radiated Emission Data and Harmonics Radiated Emission Data

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

EUT set Condition: **Keep Bluetooth Transmitting**

Results: **Pass**

Test Figure:



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	65.881	23.48	-13.87	40.0	-16.52	Peak	180.00	100	Horizontal	Pass
2	216.921	32.11	-13.51	46.0	-13.89	Peak	27.00	100	Horizontal	Pass
3	352.444	33.67	-9.46	46.0	-12.33	Peak	196.00	100	Horizontal	Pass
4	479.968	35.65	-7.40	46.0	-10.35	Peak	44.00	100	Horizontal	Pass
5	647.978	38.61	-4.59	46.0	-7.39	Peak	34.00	100	Horizontal	Pass

Test result

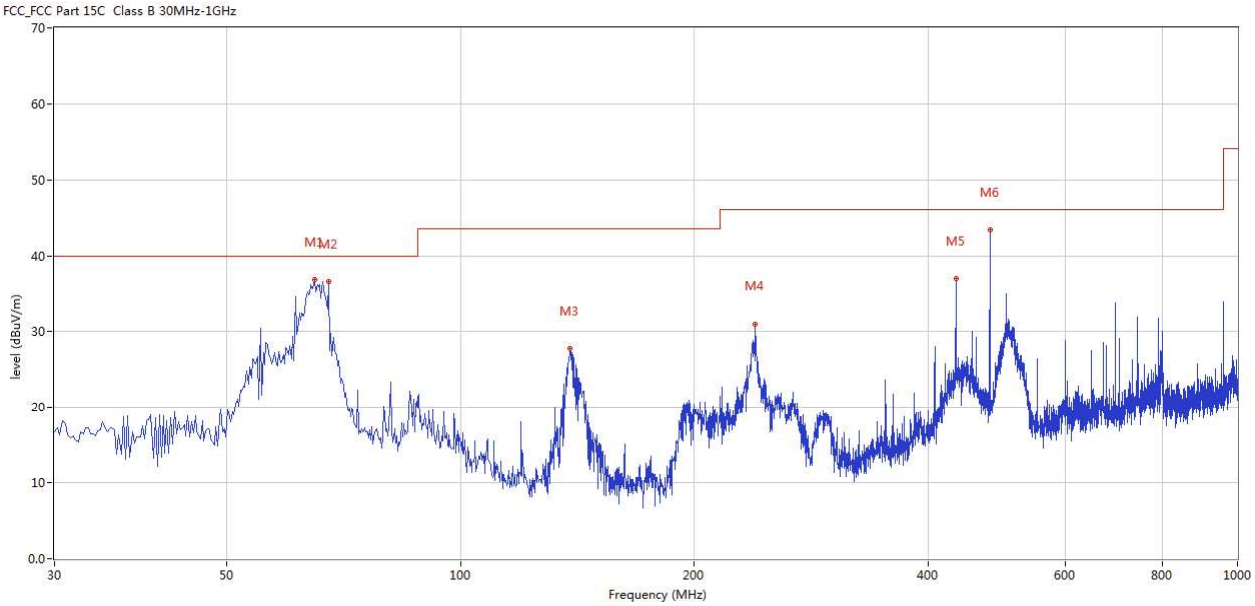
General Radiated Emission Data and Harmonics Radiated Emission Data

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

EUT set Condition: **Keep Transmitting**

Results: **Pass**

Test Figure:

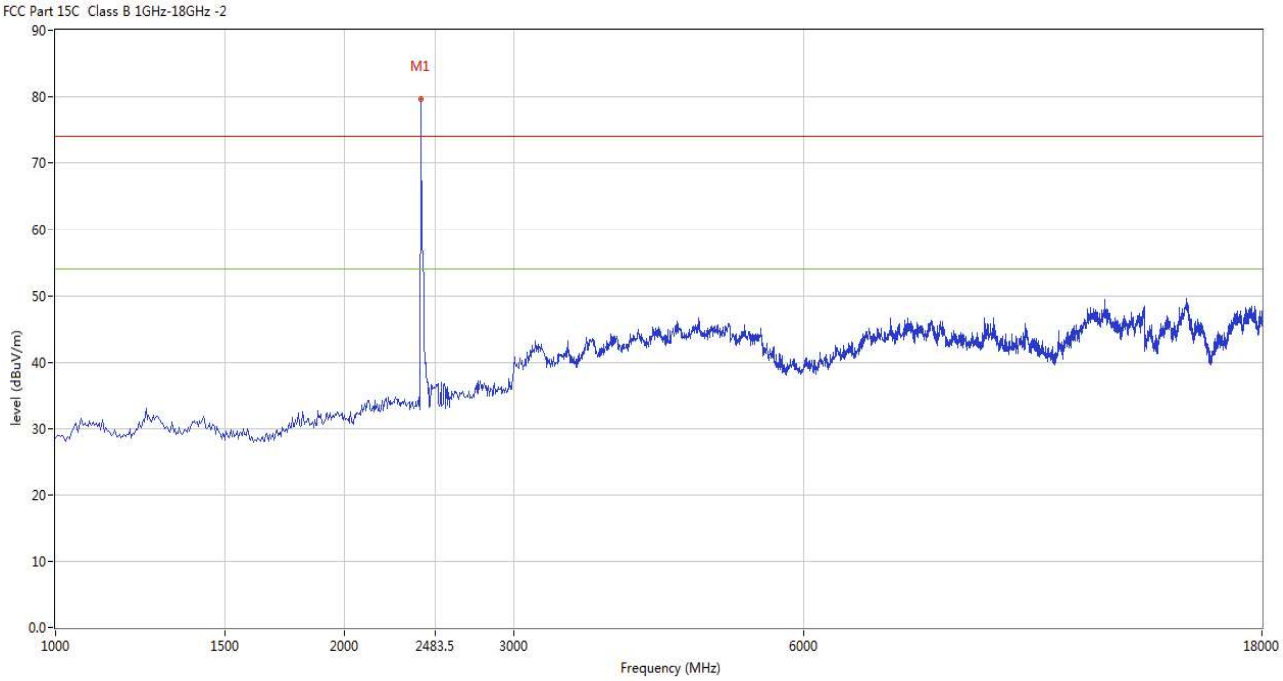


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	64.911	36.75	-13.55	40.0	-3.25	Peak	1.00	100	Vertical	Pass
2	67.578	36.48	-14.47	40.0	-3.52	Peak	1.00	100	Vertical	Pass
3	138.370	27.64	-17.27	43.5	-15.86	Peak	10.00	100	Vertical	Pass
4	239.468	30.98	-12.36	46.0	-15.02	Peak	15.00	100	Vertical	Pass
5	433.904	36.87	-8.03	46.0	-9.13	Peak	8.00	100	Vertical	Pass
6	479.968	43.32	-7.40	46.0	-2.68	Peak	0.00	100	Vertical	Pass

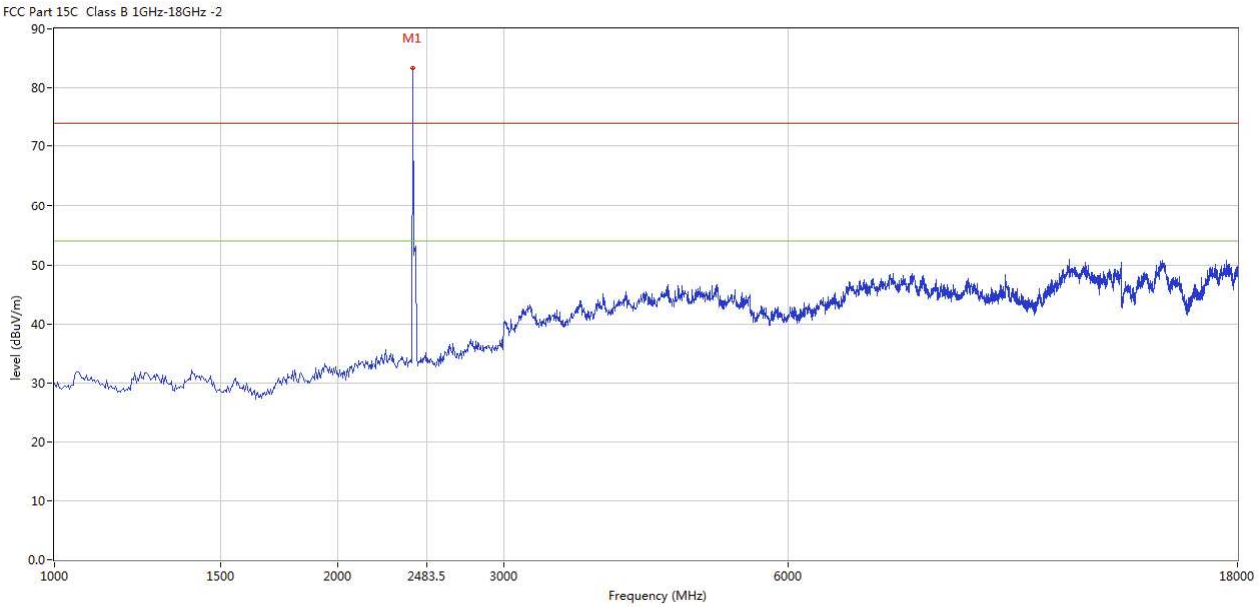
Test Figures above 1GHz:

Please refer to the following test plots for details:

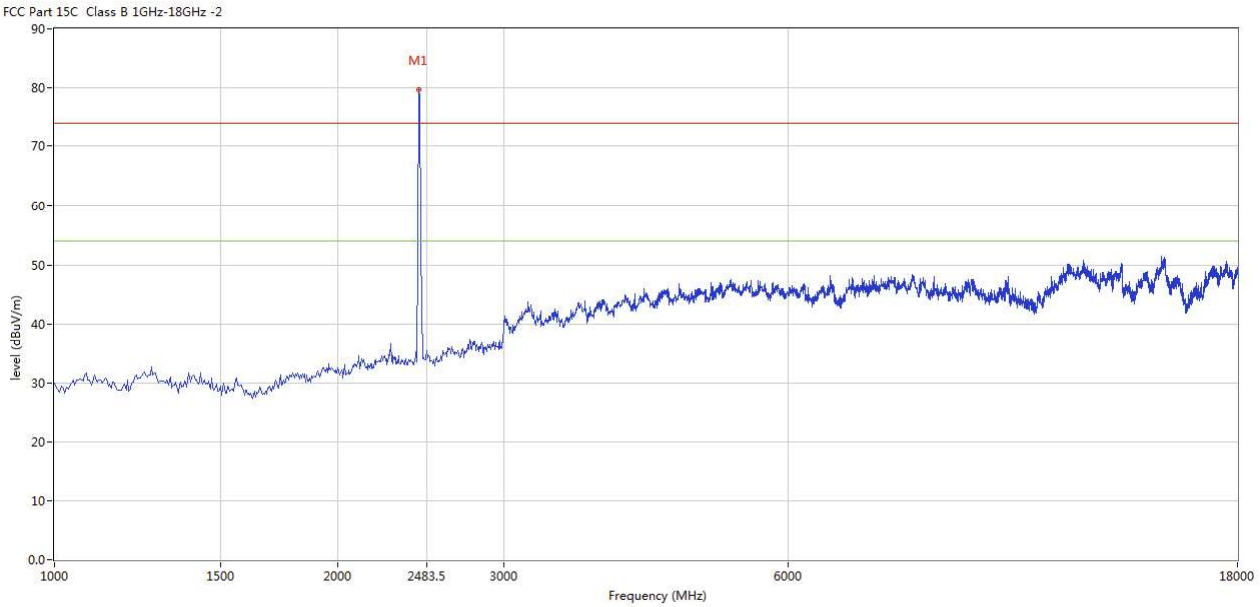
Low Channel: Vertical



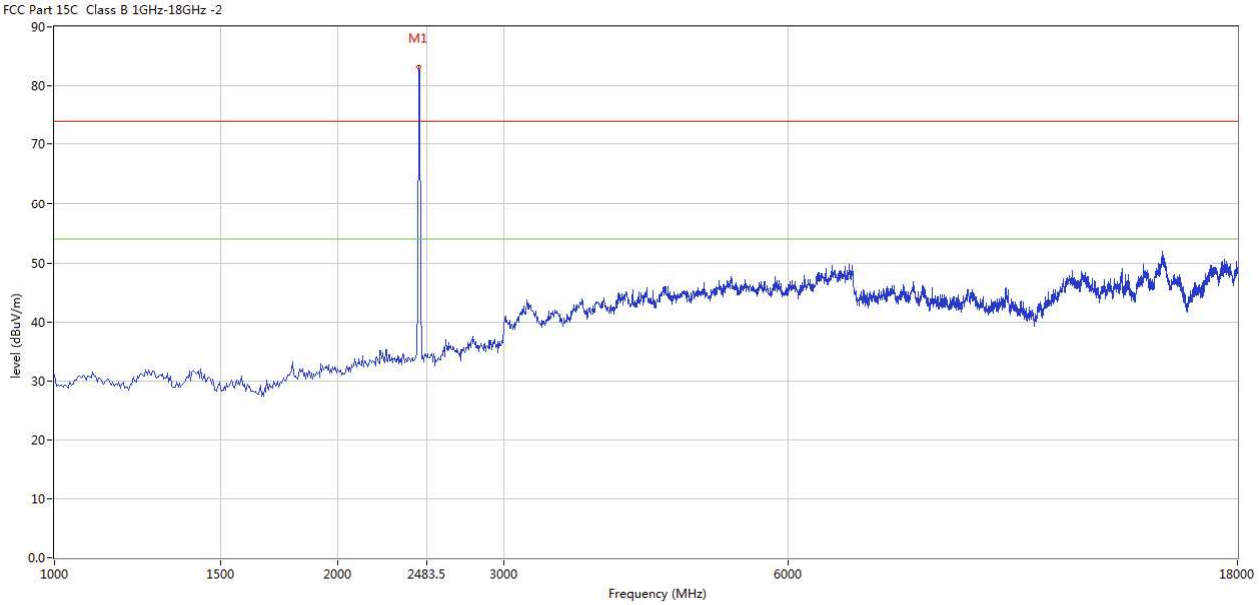
Low Channel : Horizontal



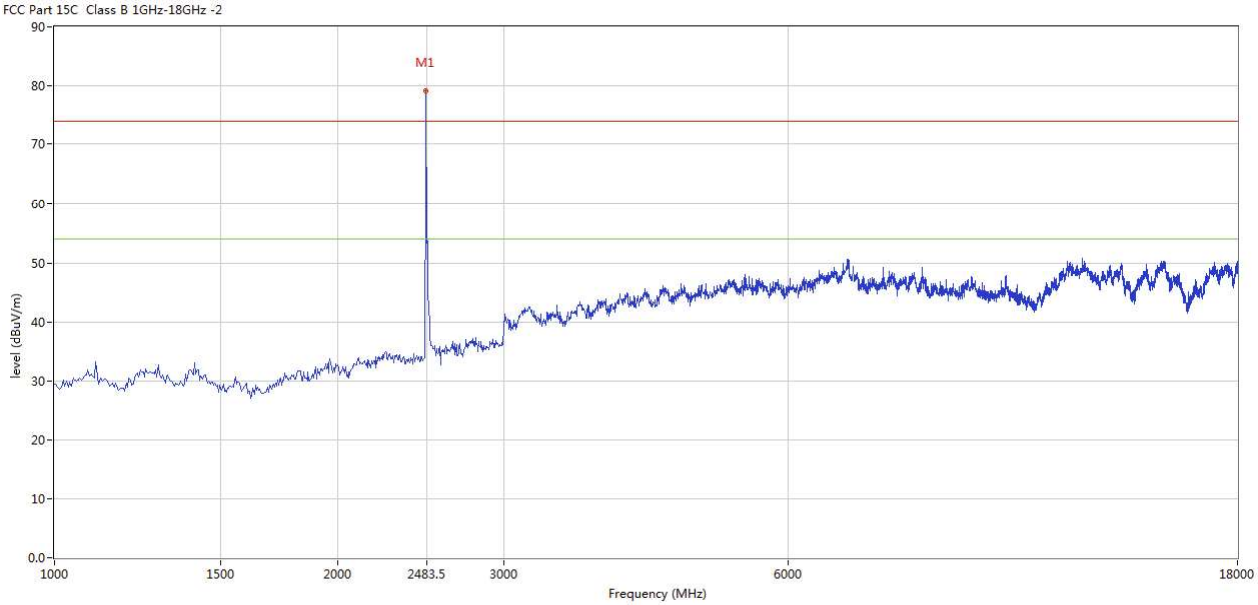
Middle Channel: Vertical



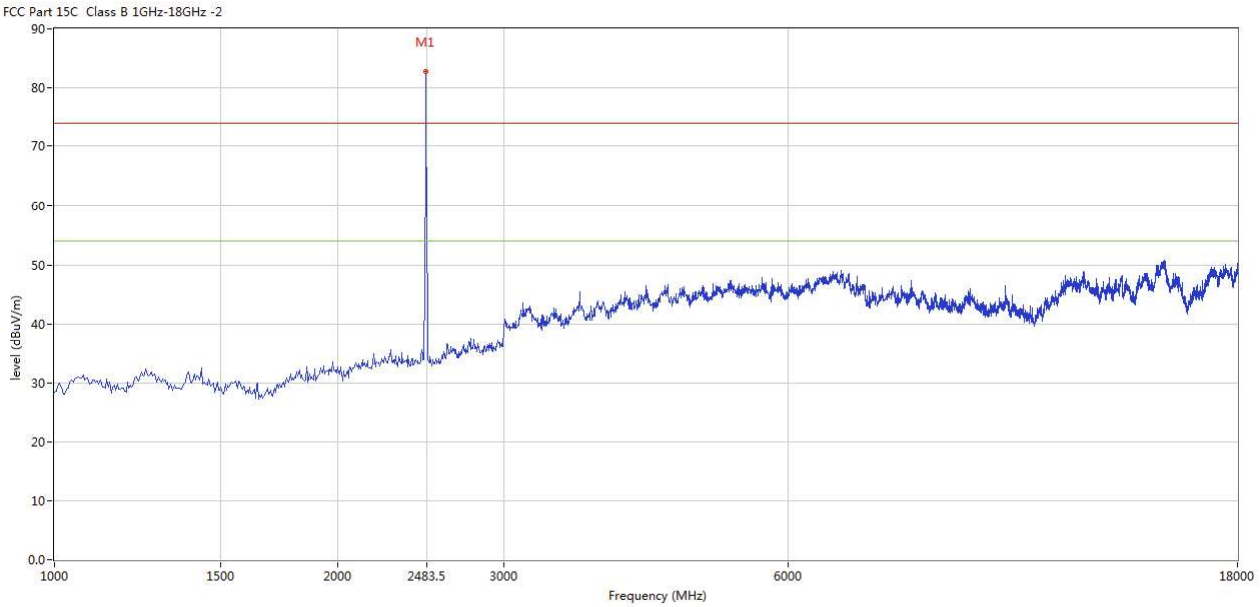
Middle Channel : Horizontal



High Channel : Vertical



High Channel : Horizontal



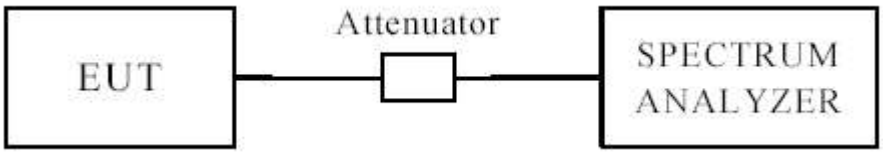
Note: 1. Level = Reading + AF + Cable - Preamp

2. For the radiated emissions above 18G and below 30MHz, it is the floor noise.

3. The measured PK value less than the AV limit, no necessary to take down the AV measurement result.

7.0 6dB Bandwidth Measurement

7.1 Test Setup



7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500 kHz

7.3 Test Procedure

1. Set resolution bandwidth (RBW) = 100 kHz
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.4 Test Result

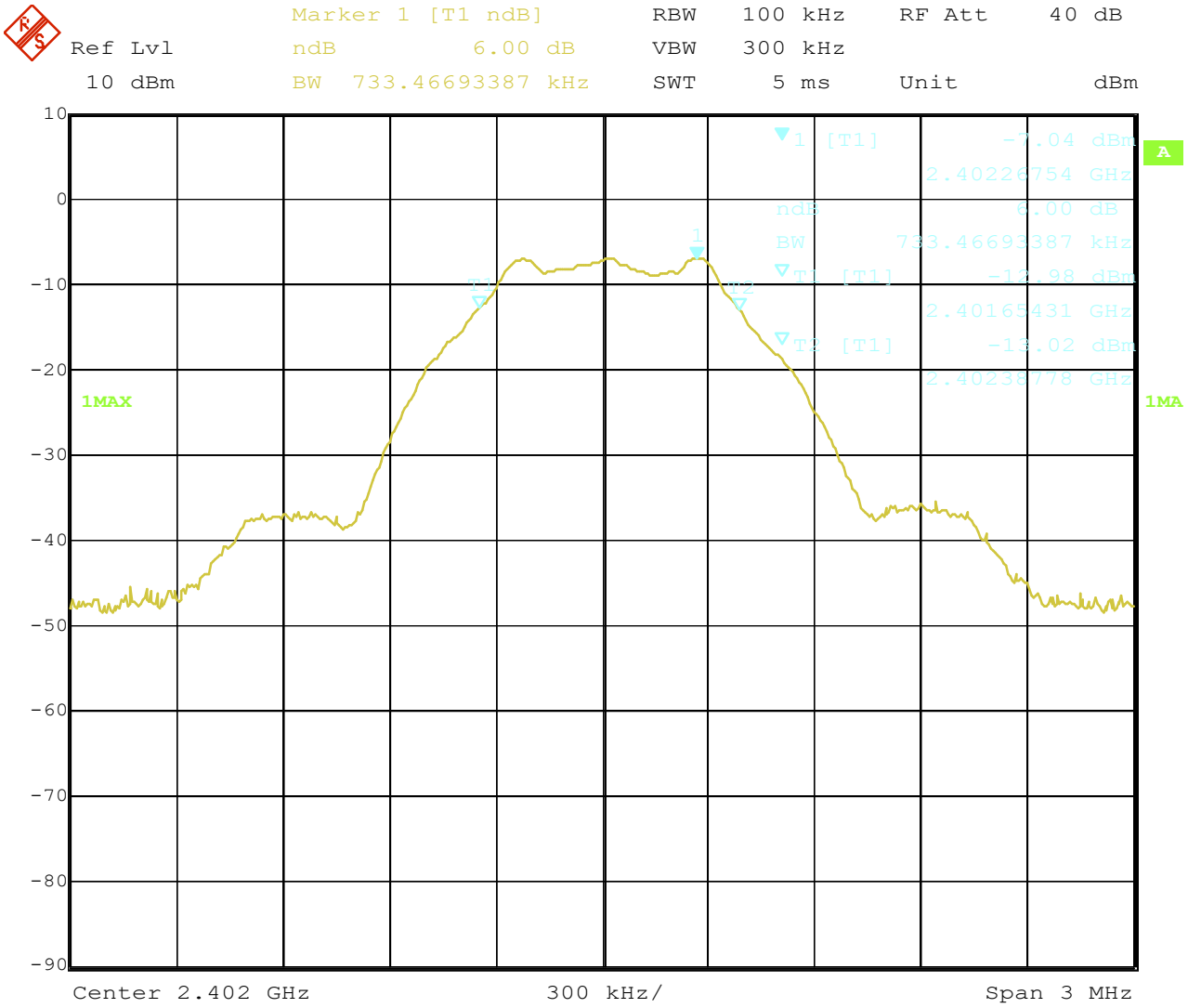
6dB BW

EUT	Tablet POS	Model	HM628N
Mode	Keep Transmitting	Input Voltage	DC7.6V
Temperature	24 deg. C,	Humidity	56% RH

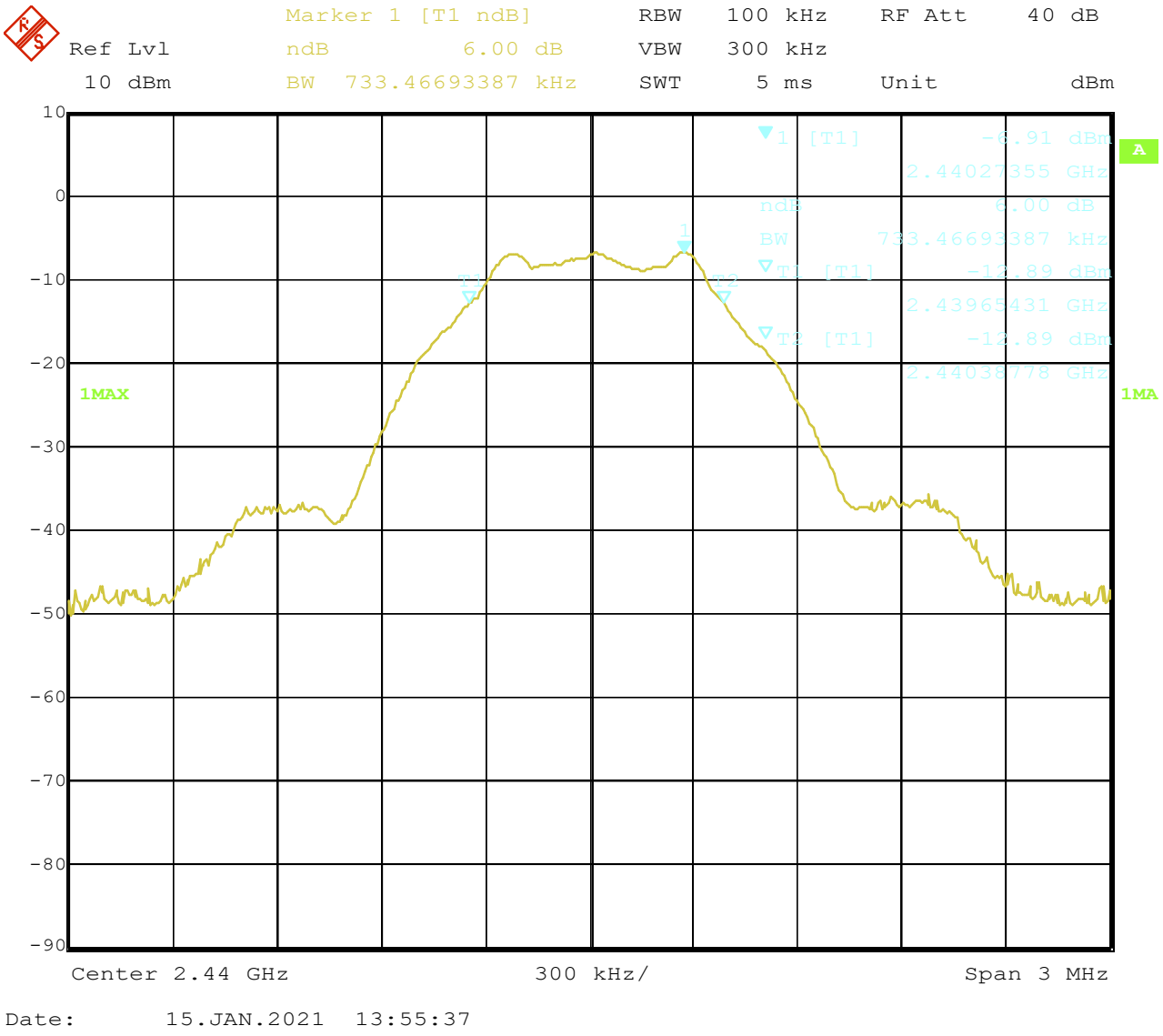
Channel	Channel Frequency (MHz)	6 dB Bandwidth (kHz)	Minimum Limit (MHz)	Pass/ Fail
Low	2402	733	0.5	Pass
Middle	2440	733	0.5	Pass
High	2480	733	0.5	Pass

Test Figure:

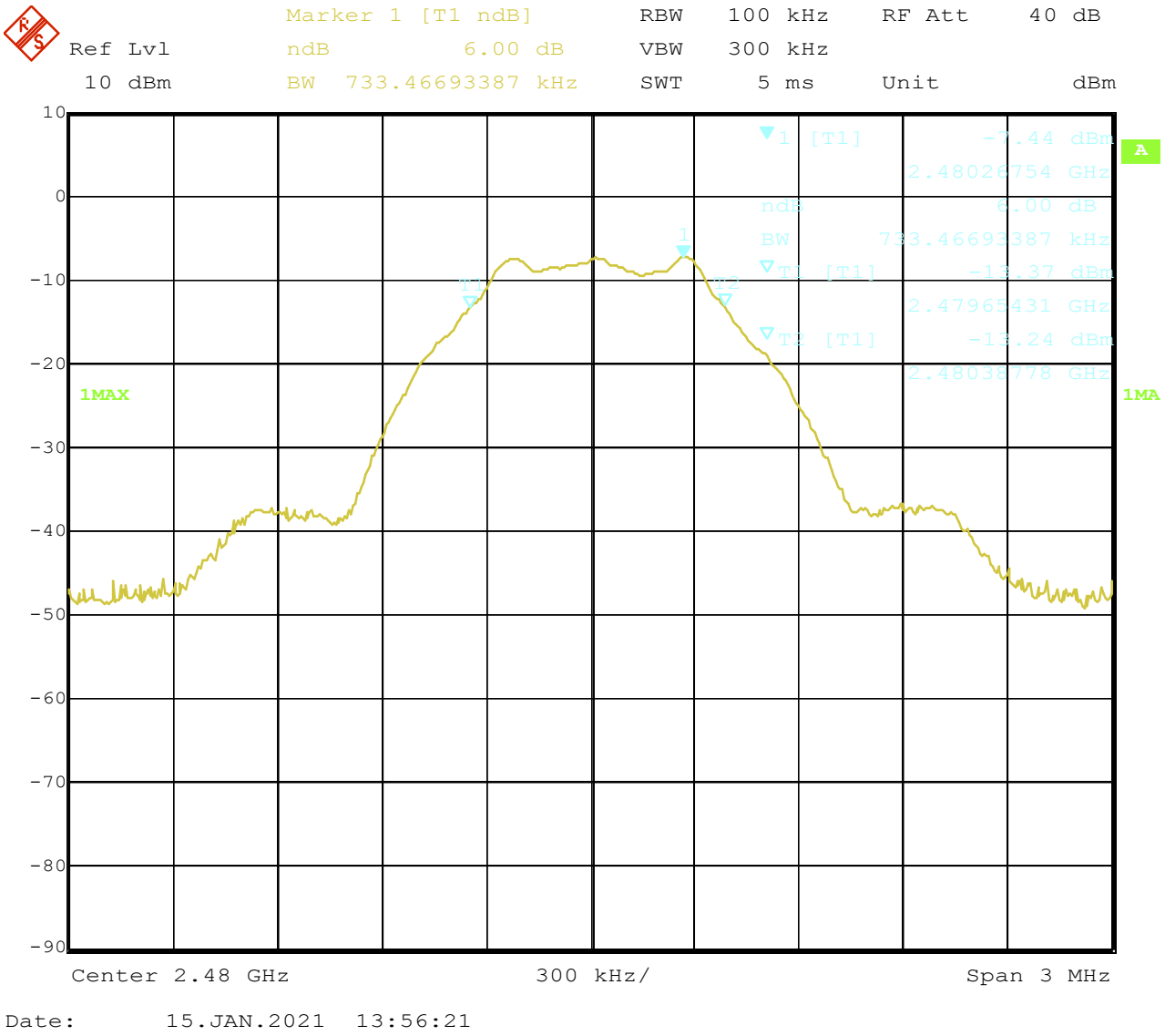
1. Condition: Low Channel



2. Condition: Middle Channel

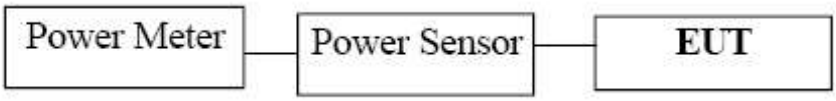


3. High Channel



8. Maximum Output Power

8.1 Test Setup



8.2 Limits of Maximum Output Power

The Maximum Output Power Measurement is 30dBm.

8.3 Test Procedure

The RF power output was measured with a Power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: the Peak power were measured.

8.4Test Results

EUT	Tablet POS	Model	HM628N
Mode	Keep Transmitting	Input Voltage	DC7.6V
Temperature	24 deg. C,	Humidity	56% RH

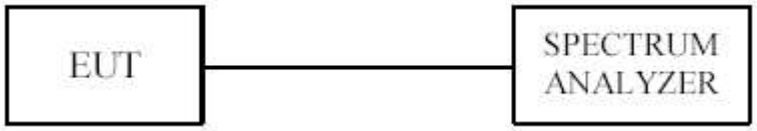
Channel	Channel Frequency (MHz)	Max. Power Output (dBm)	Peak Power Limit (dBm)	Pass/ Fail
		Peak		
Low	2402	-6.50	30	Pass
Middle	2440	-6.27	30	Pass
High	2480	-6.91	30	Pass

Note: 1. the result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

9. Power Spectral Density Measurement

9.1 Test Setup



9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm/3kHz.

9.3 Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW = 10 kHz.
3. Set the VBW ≥ 30 kHz.
4. Set the span to 1.5 times the DTS channel bandwidth.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
11. The resulting peak PSD level must be ≤ 8 dBm/3kHz.

9.4Test Result

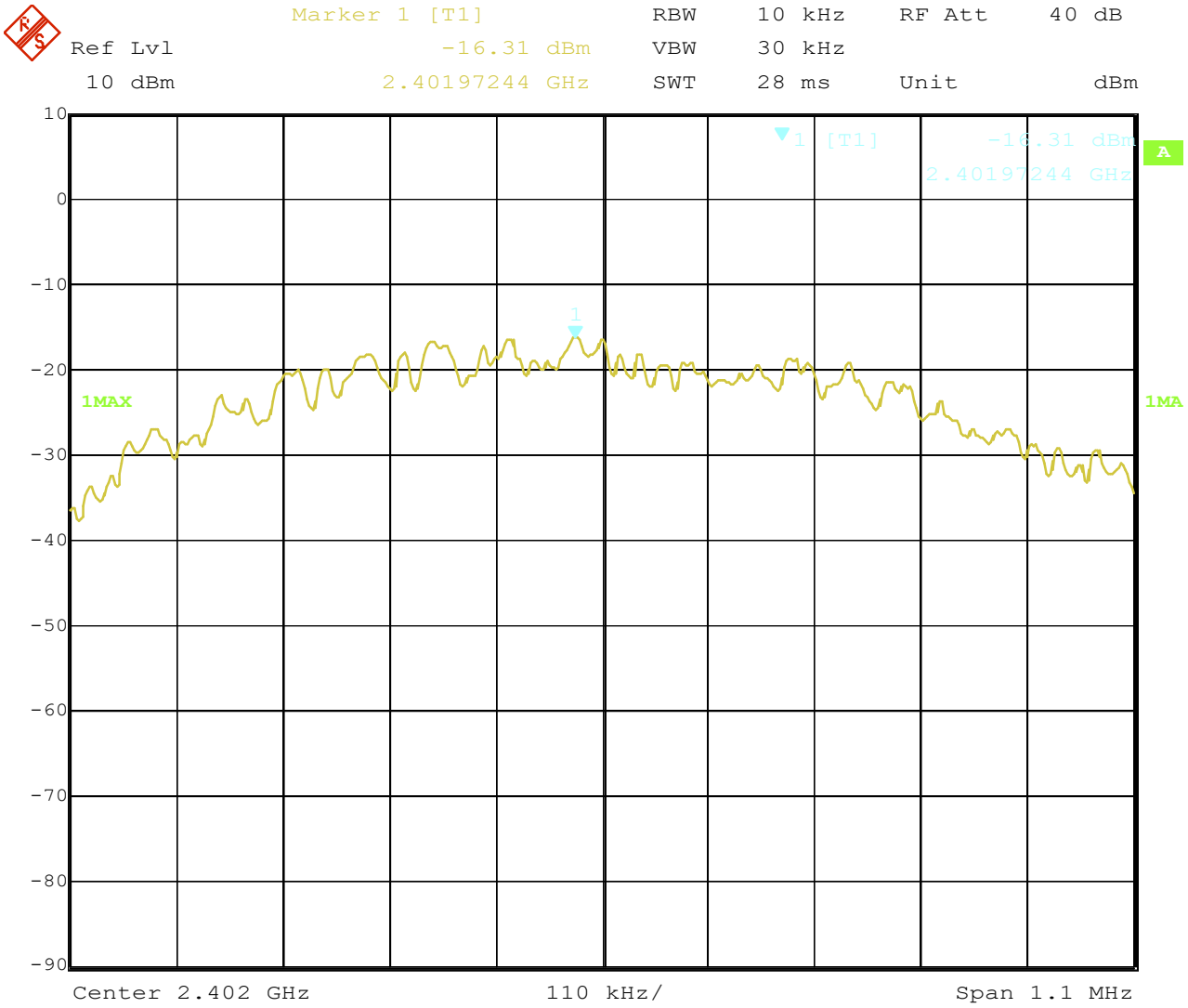
EUT	Tablet POS		Model	HM628N	
Mode	Keep Transmitting		Input Voltage	DC7.6V	
Temperature	24 deg. C,		Humidity	56% RH	
Channel	Peak Power Reading (dBm)	Cable Loss (dB)	Final Power Spectral Density (dBm/10kHz)	Maximum Limit (dBm/3kHz)	Pass/ Fail
Low	-16.31	0.2	-16.11	8	Pass
Middle	-16.19	0.2	-15.99	8	Pass
High	-16.69	0.2	-16.49	8	Pass

Note: The result basic equation calculation as follow:

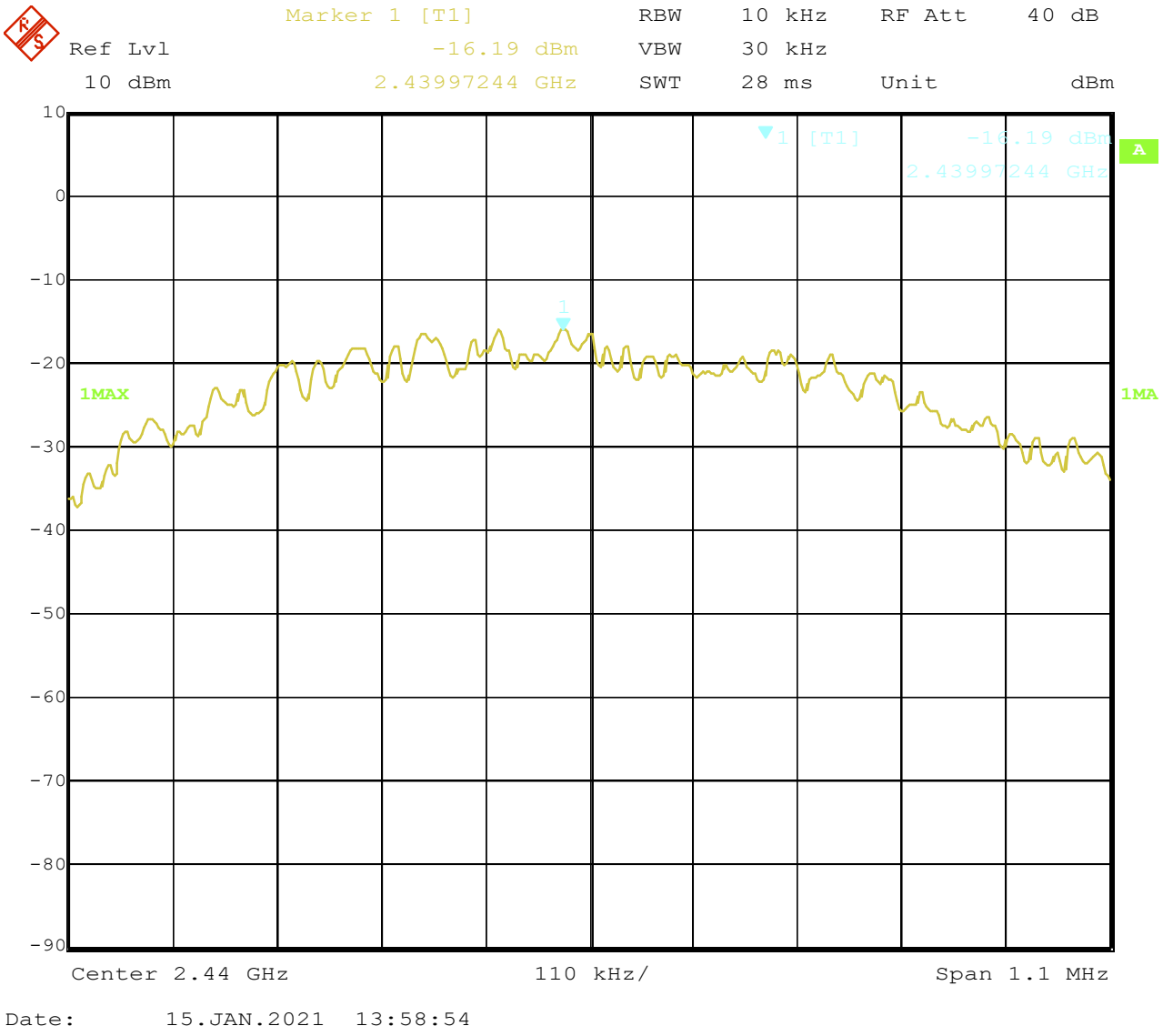
Peak Power Output = Peak Power Reading + Cable loss

Test Figure:

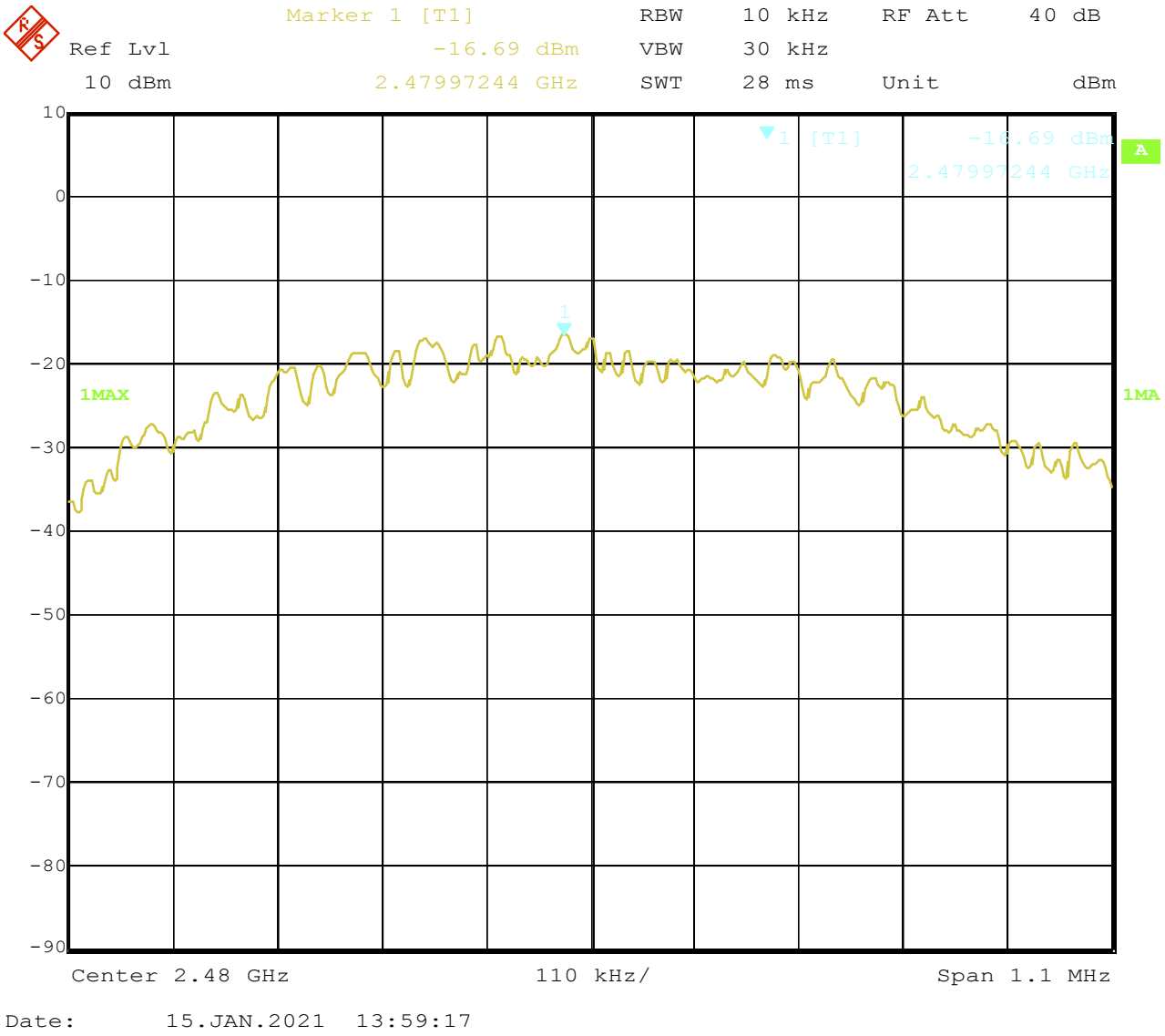
1. Condition: Low Channel



2. Condition: Middle Channel

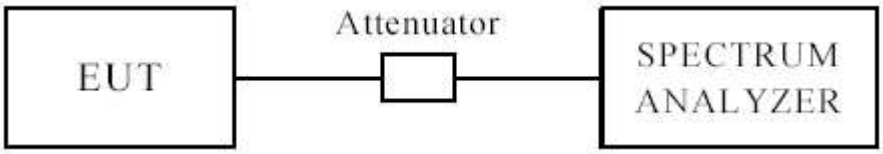


3. High Channel



10 Out of Band Measurement

10.1 Test Setup for band edge



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

10.2 Limits of Out of Band Emissions Measurement

1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

10.3 Test Procedure

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of Radiated emission test. (Peak values with RBW=1MHz, VBW=3MHz and PK detector. AV value with RBW=1MHz, VBW=3MHz and RMS detector)

For bandage test, the spectrum set as follows: RBW=100 kHz, VBW=300 kHz. A conducted measurement used

10.4 Test Result

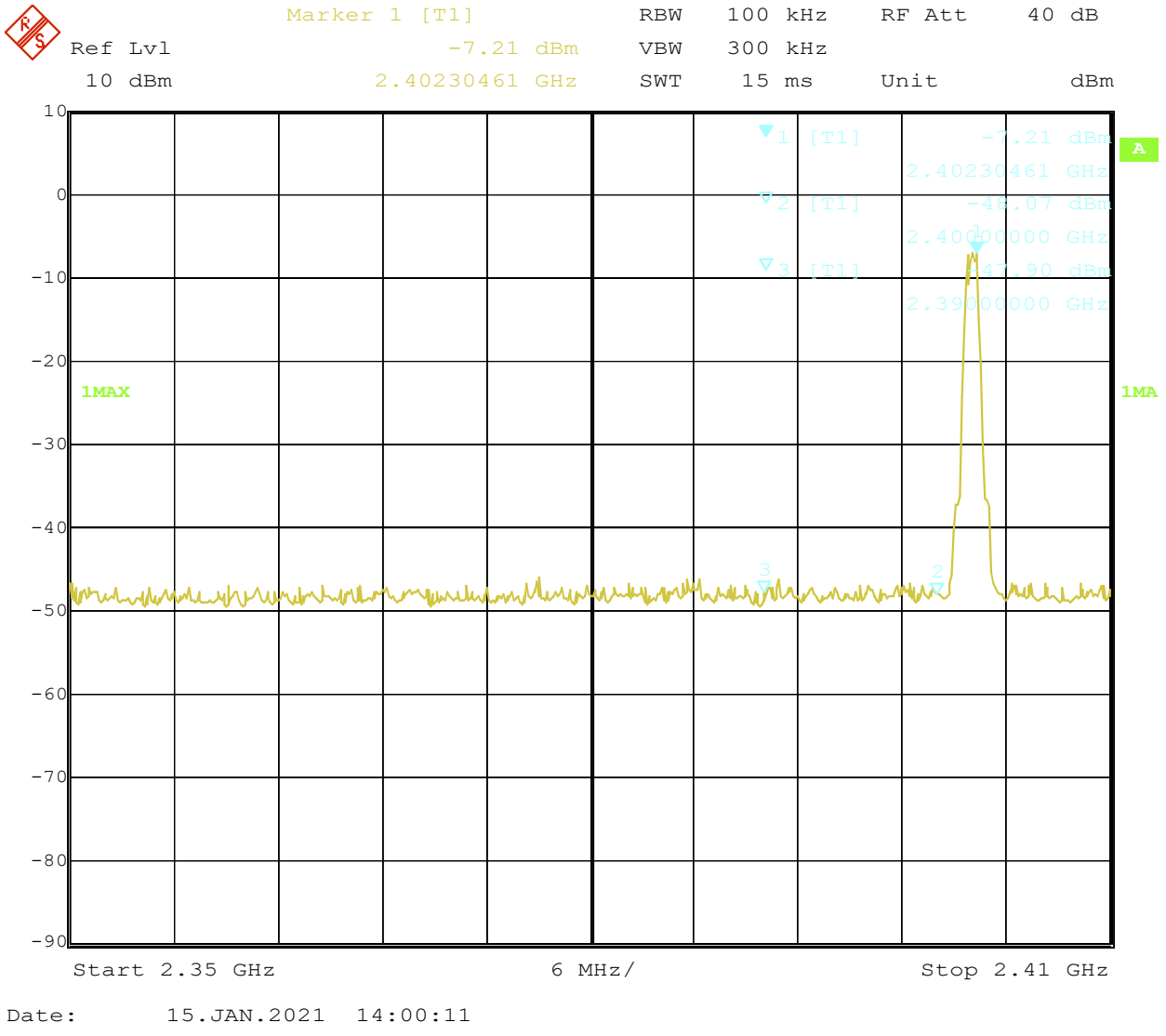
Please see next pages

Note: 1. For band-edge measurement, the frequency from 30MHz-25GHz was tested. And It met the FCC rule.
2.This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

10.4 Band-edge Measurement

EUT	Tablet POS	Model	HM628N
Mode	Keep Transmitting	Input Voltage	DC7.6V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

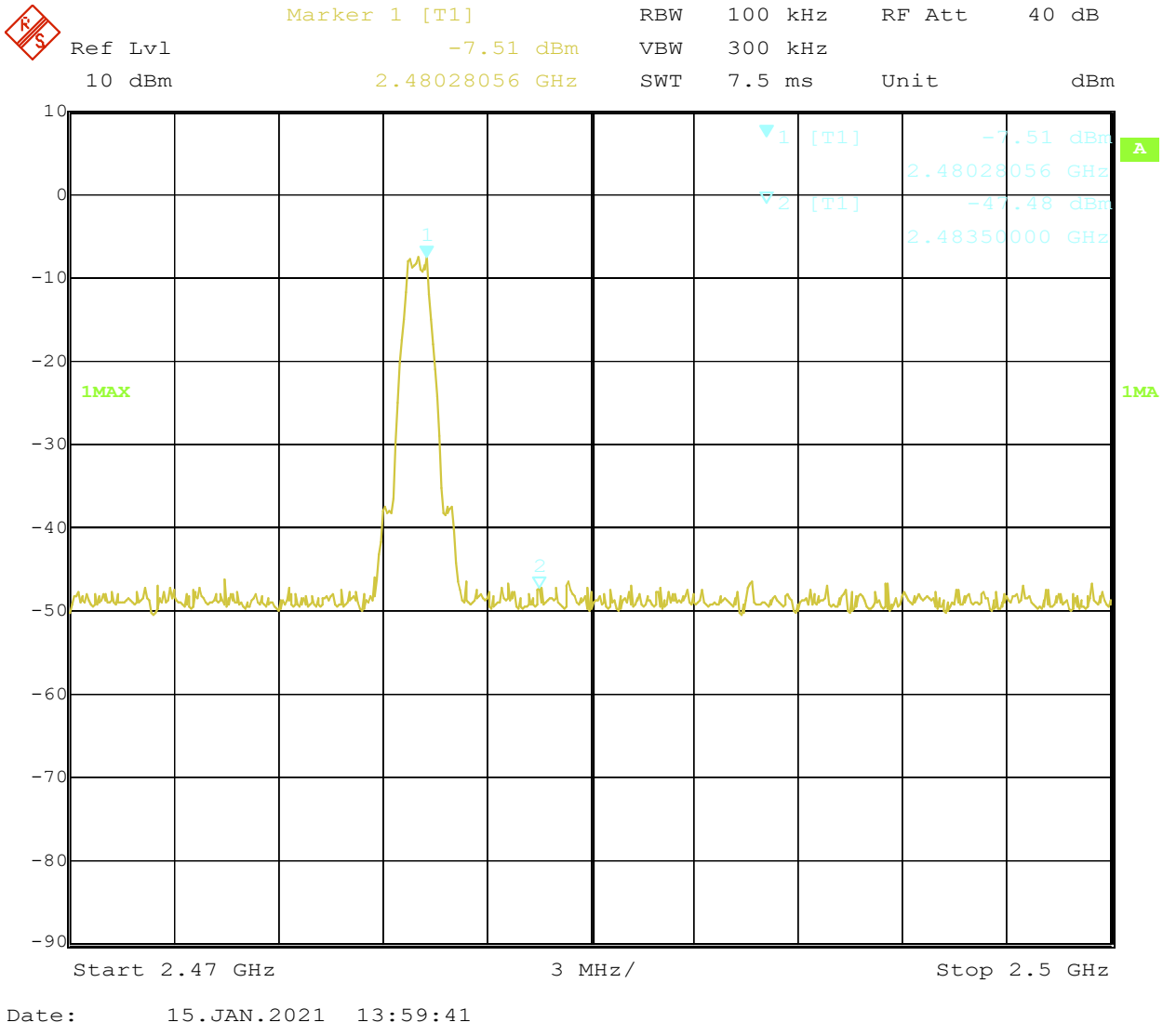
Test Figure:



10.4 Band-edge Measurement

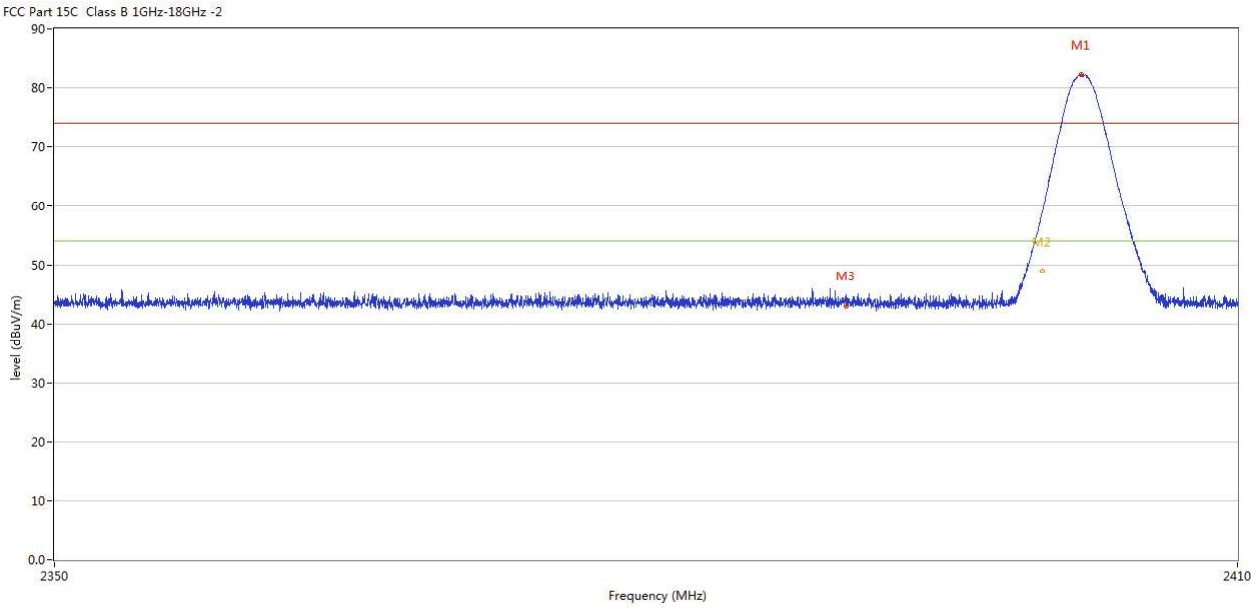
EUT	Tablet POS	Model	HM628N
Mode	Keeping Transmitting	Input Voltage	DC7.6V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



10.4 Restrict Band Measurement

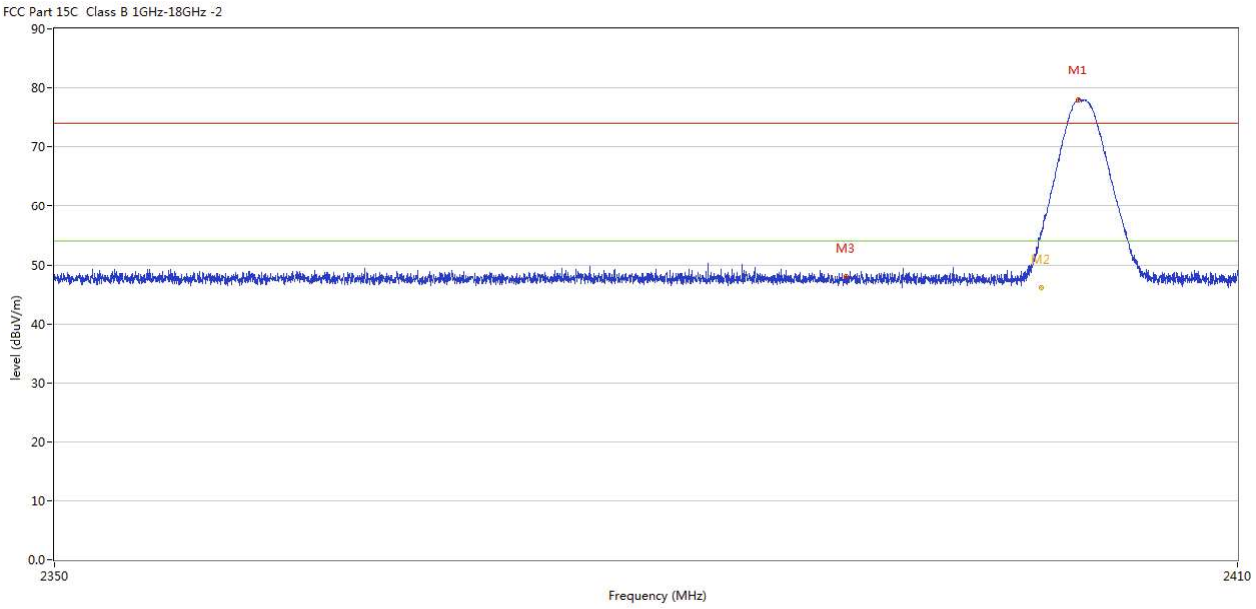
EUT	Tablet POS	Model	HM628N
Mode	Keep Transmitting	Input Voltage	DC7.6V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass		



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
2	2399.980	58.85	-3.57	74.0	-15.15	Peak	9.00	100	Horizontal	Pass
2**	2399.980	49.00	-3.57	54.0	-5.00	AV	9.00	100	Horizontal	Pass
3	2389.960	43.04	-3.53	74.0	-30.96	Peak	122.00	100	Horizontal	Pass

10.4 Restrict Band Measurement

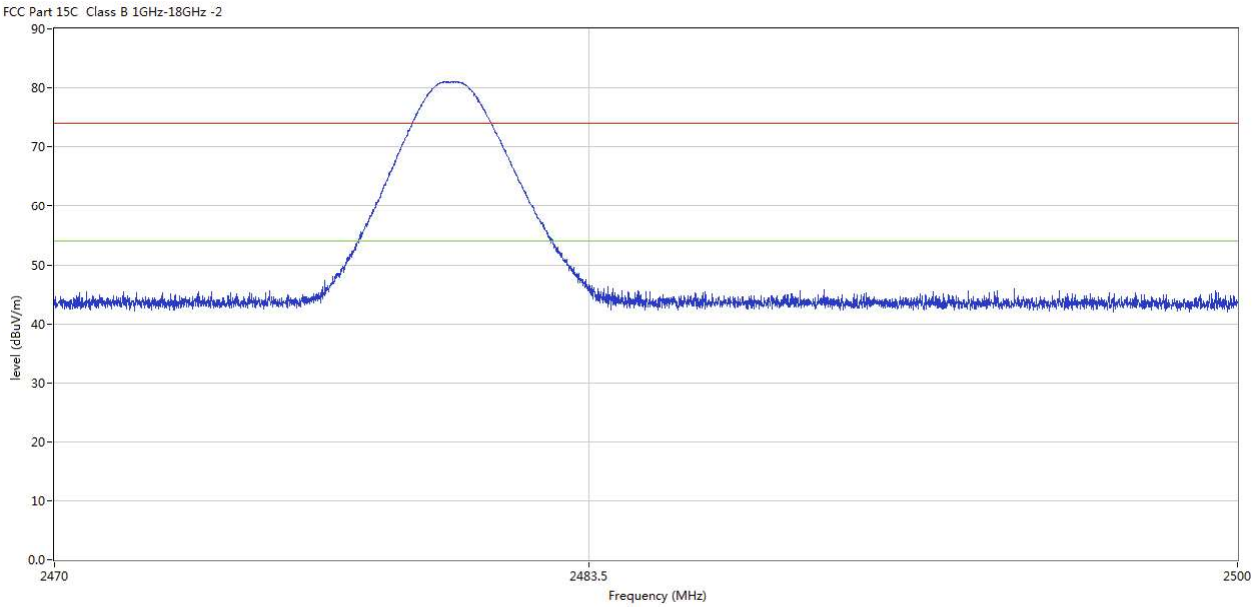
EUT	Tablet POS	Model	HM628N
Mode	Keep Transmitting	Input Voltage	DC7.6V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass		



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
2	2399.965	55.40	-3.57	74.0	-18.60	Peak	218.00	100	Vertical	Pass
2**	2399.965	46.09	-3.57	54.0	-7.91	AV	218.00	100	Vertical	Pass
3	2389.960	47.91	-3.53	74.0	-26.09	Peak	175.00	100	Vertical	Pass

10.4 Restrict Band Measurement

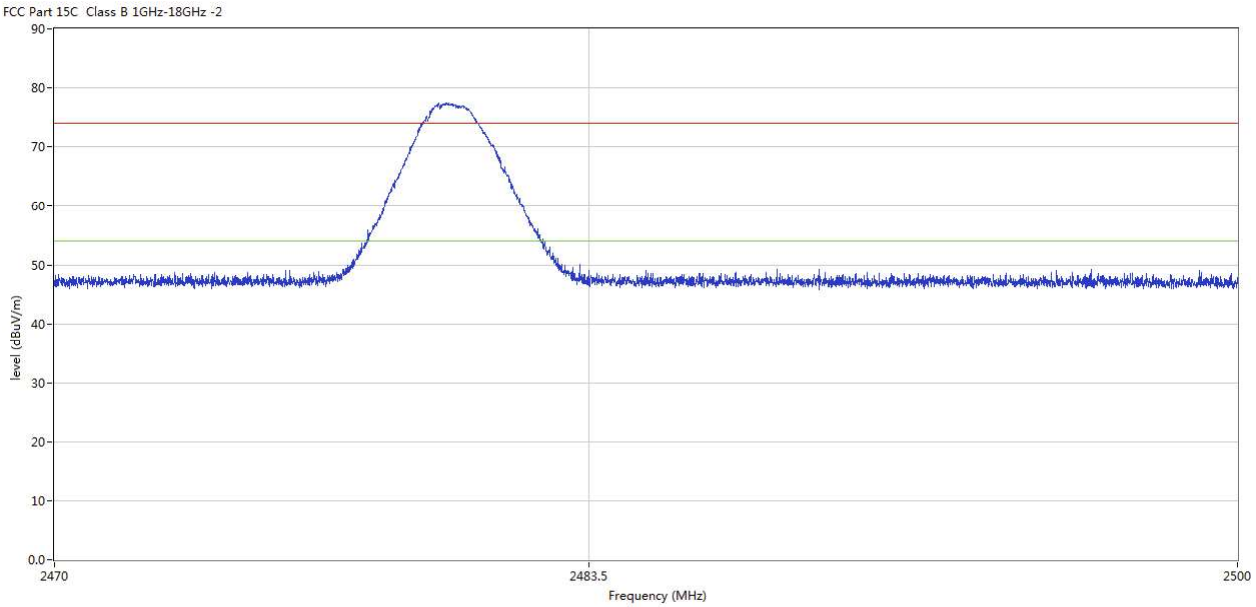
EUT	Tablet POS	Model	HM628N
Mode	Keep Transmitting	Input Voltage	DC7.6V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass		



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
2	2483.500	46.59	-3.57	74.0	-27.41	Peak	6.00	100	Horizontal	Pass

10.4 Restrict Band Measurement

EUT	Tablet POS	Model	HM628N
Mode	Keep Transmitting	Input Voltage	DC7.6V
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
2	2483.500	49.09	-3.57	74.0	-24.91	Peak	162.00	100	Vertical	Pass

Note: The measured PK value less than the AV limit, no necessary to take down the AV measurement result.

11.0 Antenna Requirement

11.1 Standard Applicable

For intentional device, according to FCC 47 CFR 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

11.2 Antenna Connected construction

Integral antenna used. The gain of the antennas is 1.48dBi.

12.0 FCC ID Label

FCC ID: GQK-HM628N

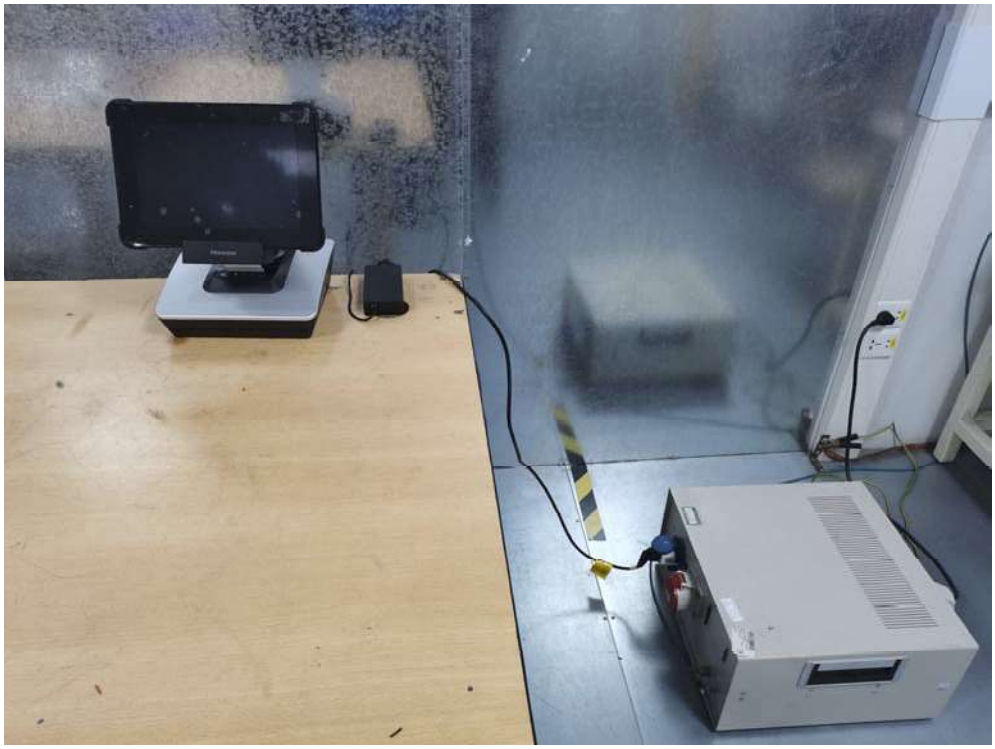
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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.

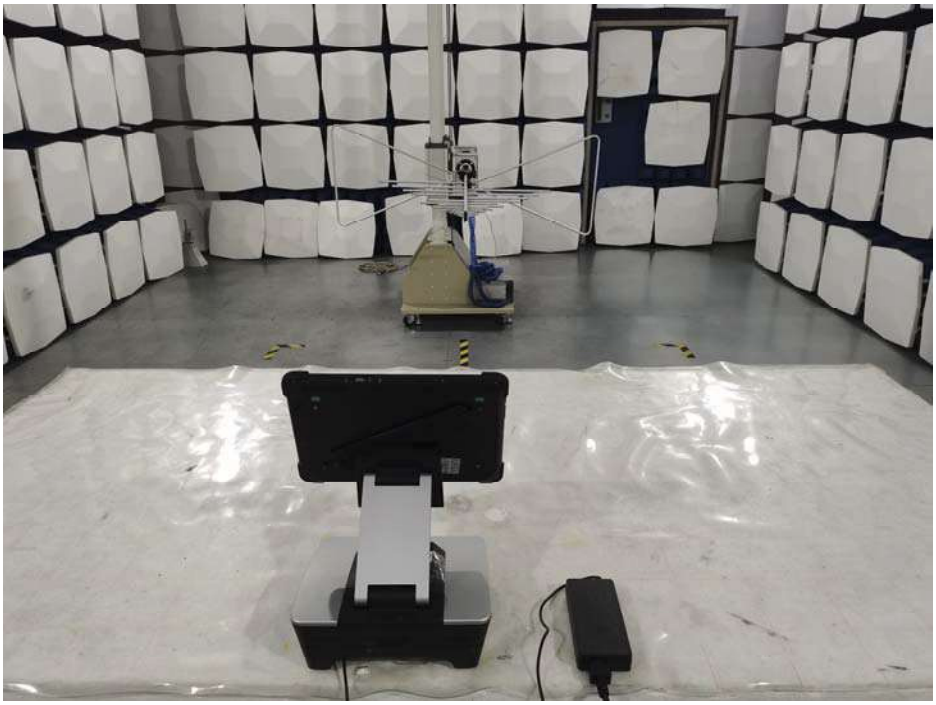
Mark Location:

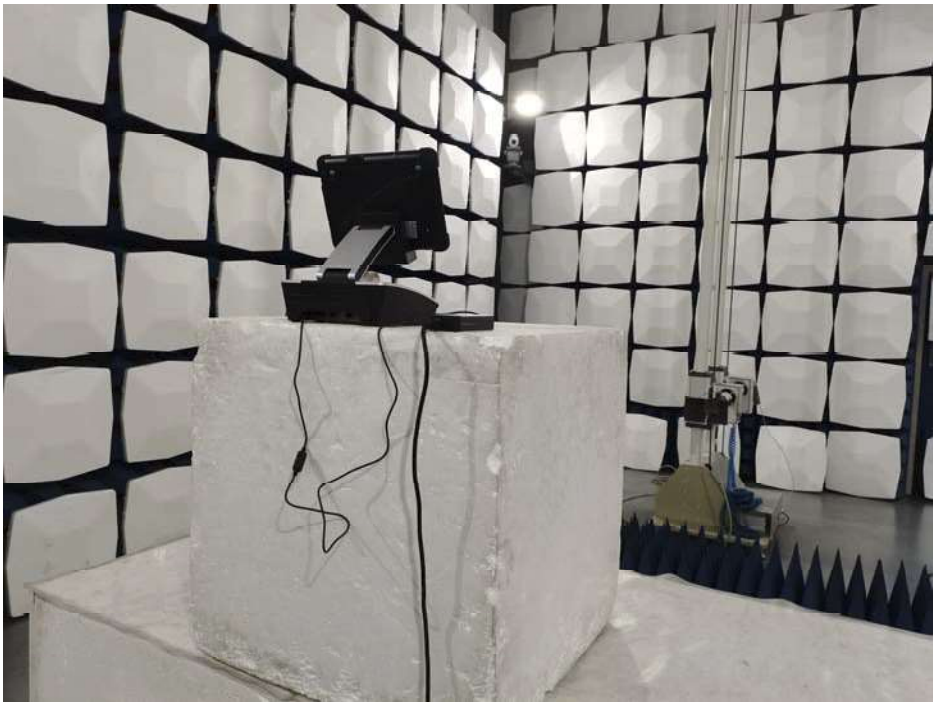
13.0 Photo of testing

Conducted Emission Test Setup:



Radiated Emission Test Setup:





Photographs – EUT

Please refer test report TW2012217-01E

End of the report