



### FCC - TEST REPORT

Report Number : **68.930.20.0021.01** Date of Issue: August 16, 2020

Model : **GBF-1717-W**

Product Type : **Body Fat Analyzer**

Applicant : **Zhongshan Transtek Electronics Co., Ltd**

Address : **No.23 Jin'an Road, Minzhong, 528441 Zhongshan, Guangdong,  
PEOPLE'S REPUBLIC OF CHINA**

Manufacturer & Factory : **Zhongshan Transtek Electronics Co., Ltd**

Address : **No.23 Jin'an Road, Minzhong, 528441 Zhongshan, Guangdong,  
PEOPLE'S REPUBLIC OF CHINA**

Test Result :  **Positive**       **Negative**

Total pages including Appendices : **33**

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## 2 Details about the Test Laboratory

### Details about the Test Laboratory

#### Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch  
Building 12 & 13, Zhiheng Wisdomland Business Park, Nantou Checkpoint  
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Shenzhen 518052  
P.R. China

Telephone: 86 755 8828 6998

Fax: 86 755 828 5299

FCC Registration No.: 502708



### 3 Description of the Equipment Under Test

Product: Body Fat Analyzer  
Model no.: GBF-1717-W  
FCC ID: 2AOJNGBF-1717-W  
Rating: DC 6V ( 4\*1.5 AAA battery )

RF Transmission Frequency: 2402MHz-2480MHz

No. of Operated Channel: 40

Modulation: GFSK

Antenna Type: Internal Antenna

Antenna Gain: 1.5dBi

Description of the EUT: The Equipment Under Test (EUT) is a Body Fat Analyzer which support 2.4G Wi-Fi, 5G Wi-Fi and BLE function. The 2.4G Wi-Fi, BLE operated at 2402MHz to 2480MHz, The 5G Wi-Fi operation 5150MHz to 5250MHz, 5250MHz to 5350MHz and 5725MHz to 5825MHz.

Only BLE test data include in this report.



## 4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2019 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to 558074 D01v05r02 DTS Measurement Guidance and ANSI C63.10 (2013).



## 5 Summary of Test Results

Test Condition		Test Site	Test Result		
			Pass	Fail	N/A
§15.207	Conducted emission AC power port	---	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
§15.247 (b) (1)	Conducted peak output power	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247(a)(1)	20dB bandwidth	---	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
§15.247(a)(1)	Carrier frequency separation	---	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
§15.247(a)(1)(iii)	Number of hopping frequencies	---	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
§15.247(a)(1)(iii)	Dwell Time	---	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
§15.247(a)(2)	6dB bandwidth and 99% Occupied Bandwidth	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247(e)	Power spectral density	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247(d)	Spurious RF conducted emissions	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247(d)	Band edge	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247(d) & §15.209	Spurious radiated emissions for transmitter	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.203	Antenna requirement	Note 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note 1: N/A=Not Applicable.

Note 2: The EUT uses a Integrated antenna, which gain is 1.5dBi. In accordance to §15.203, it is considered sufficiently to comply with the provisions of this section.



## 6 General Remarks

### Remarks

This submittal(s) (test report) is intended for FCC ID: 22AOJNGBF-1717-W complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C rules.

The Equipment Under Test (EUT) is a Body Fat Analyzer which support 2.4G Wi-Fi, 5G Wi-Fi and BLE function. The 2.4G Wi-Fi and BLE operated at 2402MHz to 2480MHz, The 5G Wi-Fi operation 5150MHz to 5250MHz, 5250MHz to 5350MHz and 5725MHz to 5825MHz.

This report is for the BLE.

### SUMMARY:

All tests according to the regulations cited on page 5 were

n - Performed

o - **Not** Performed

The Equipment under Test

n - **Fulfills** the general approval requirements.

o - **Does not** fulfill the general approval requirements.

Sample Received Date: June 30, 2020

Testing Start Date: July 26, 2020

Testing End Date: July 30, 2020

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

Reviewed by:

Prepared by:

Tested by:

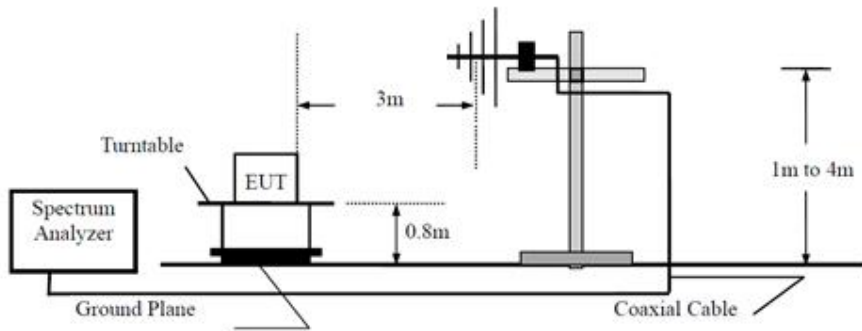
Zhi John  
EMC Section Manager

Grace Gao  
EMC Project Engineer

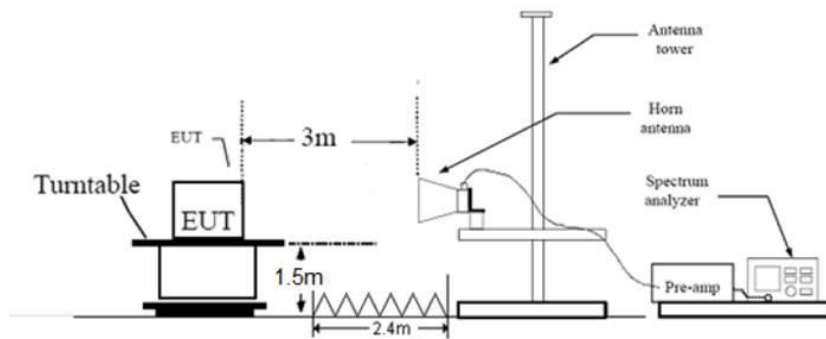
Louise Liu  
EMC Test Engineer

## 7 Test Setups

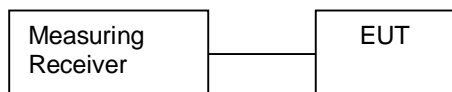
Below 1GHz



Above 1GHz



Conducted RF test setups







## 8 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Notebook	Lenovo	E470c	---

The system was configured to channel 0, 19, and 39 for the test.



## 9 Technical Requirement

### 9.1 Conducted peak output power

#### Test Method

1. Use the following spectrum analyzer settings:  
 RBW > the 6 dB bandwidth of the emission being measured, VBW ≥ 3RBW, Span ≥ 3RBW  
 Sweep = auto, Detector function = peak, Trace = max hold.
2. Add a correction factor to the display.
3. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power.

#### Limits

According to §15.247 (b) (1), conducted peak output power limit as below:

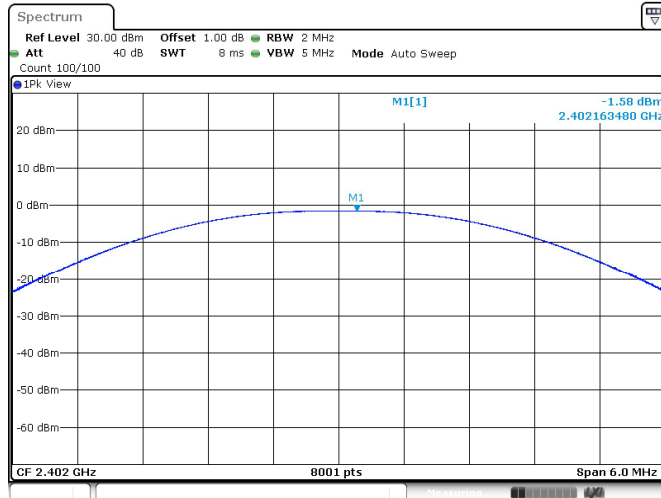
Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1	≤30

Test result as below table

Frequency MHz	Conducted Peak Output Power dBm	Result
Bottom channel 2402MHz	-1.58	Pass
Middle channel 2440MHz	-1.04	Pass
Top channel 2480MHz	-0.87	Pass

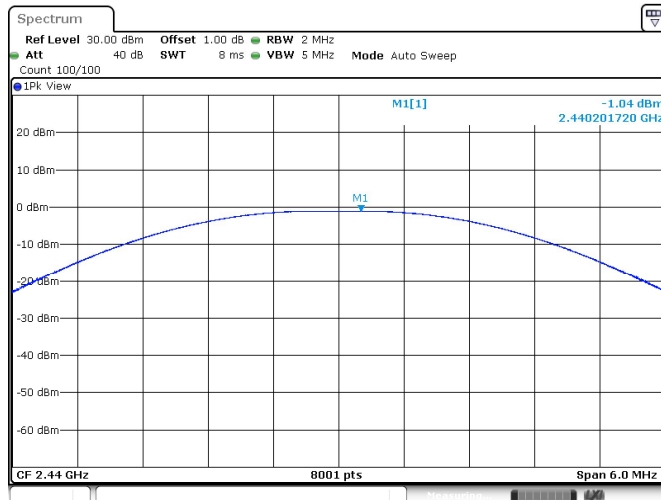


### Low channel 2402MHz



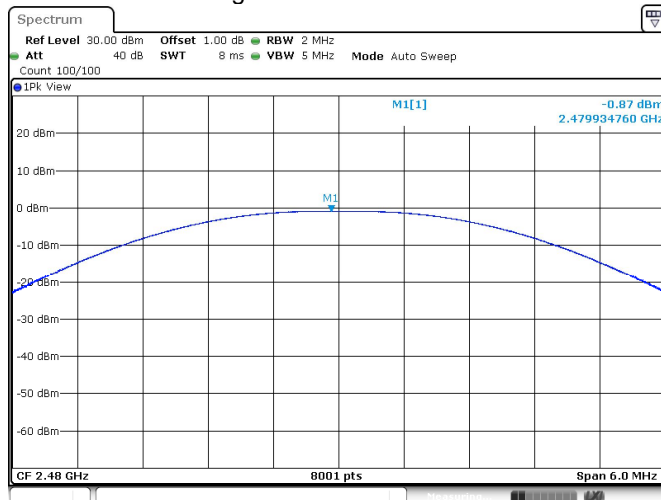
Date: 8 JUL 2020 16:54:05

### Middle channel 2440MHz



Date: 8 JUL 2020 16:56:40

### High channel 2480MHz



Date: 8 JUL 2020 16:58:22



## 9.2 Power spectral density

### Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

1. Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW≥3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
2. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
3. Repeat above procedures until other frequencies measured were completed.
4.  $PSD(RBW2)=PSD(RBW1)Value-10lg(RBW1/RBW2)$

### Limit

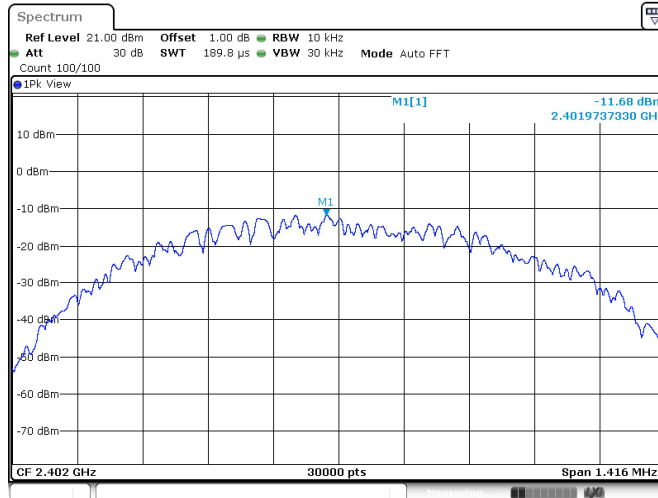
Limit [dBm/3KHz]  
≤8

### Test result

Frequency MHz	Power spectral density dBm/10KHz	Power spectral density dBm/3KHz	Result
Top channel 2402MHz	-11.68	-16.91	Pass
Middle channel 2440MHz	-11.25	-16.48	Pass
Bottom channel 2480MHz	-11.11	-16.34	Pass

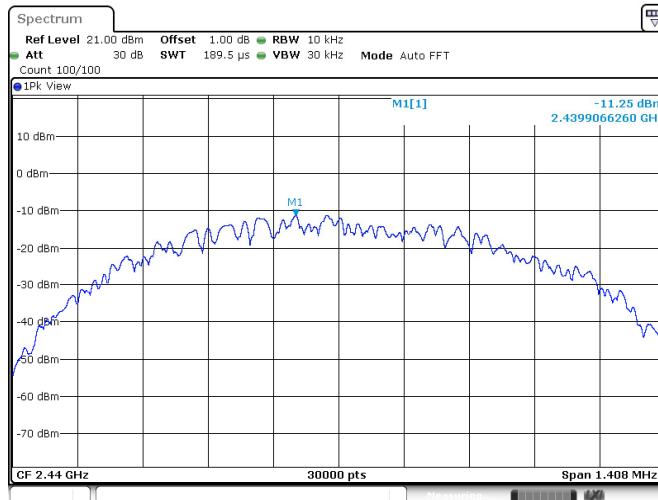


### Low channel 2402MHz



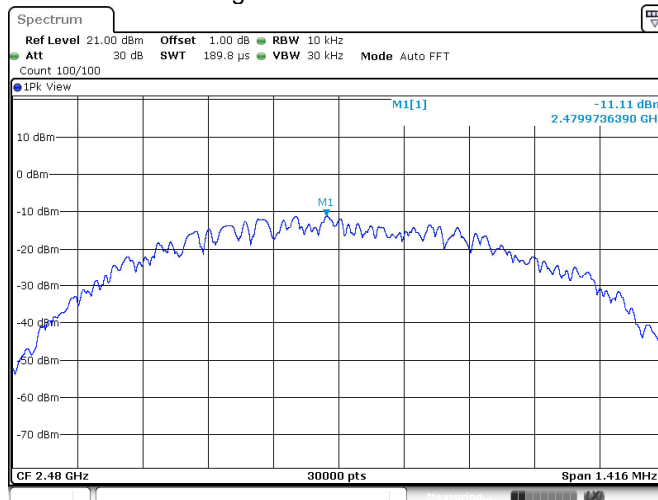
Date: 8 JUL 2020 16:54:11

### Middle channel 2440MHz



Date: 8 JUL 2020 16:56:46

### High channel 2480MHz



Date: 8 JUL 2020 16:58:28



### 9.3 6 dB Bandwidth and 99% Occupied Bandwidth

**Test Method**

1. Use the following spectrum analyzer settings:  
RBW=100K, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 6 dB, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.
3. Allow the trace to stabilize, record the X dB Bandwidth value.

**Limit**

Limit [kHz]

---

≥500

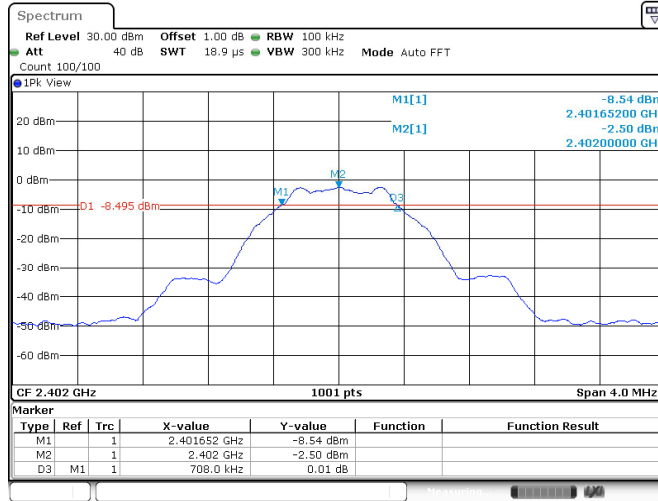
**Test result**

Frequency MHz	6dB bandwidth kHz	99 bandwidth kHz	Result
Bottom channel 2402MHz	708.0	1015	Pass
Middle channel 2440MHz	704.0	1015	Pass
Top channel 2480MHz	708.0	1015	Pass



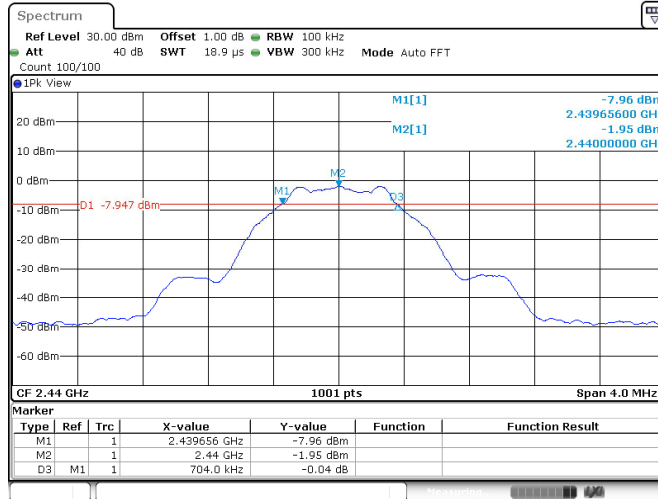
6 dB Bandwidth

Low channel 2402MHz



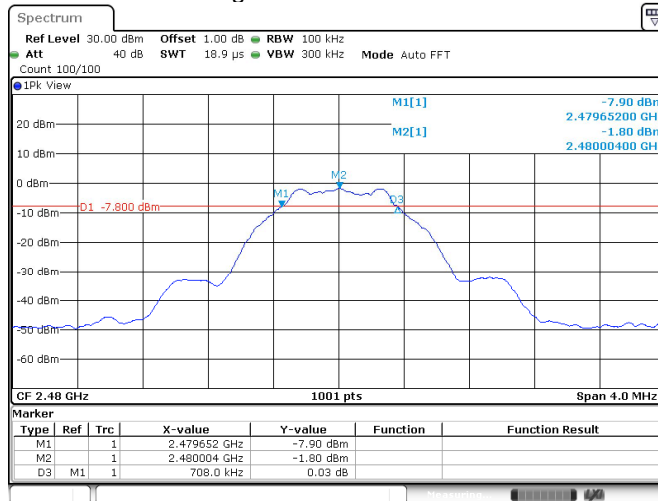
Date: 8 JUL 2020 16:53:48

Middle channel 2440MHz



Date: 8 JUL 2020 16:56:23

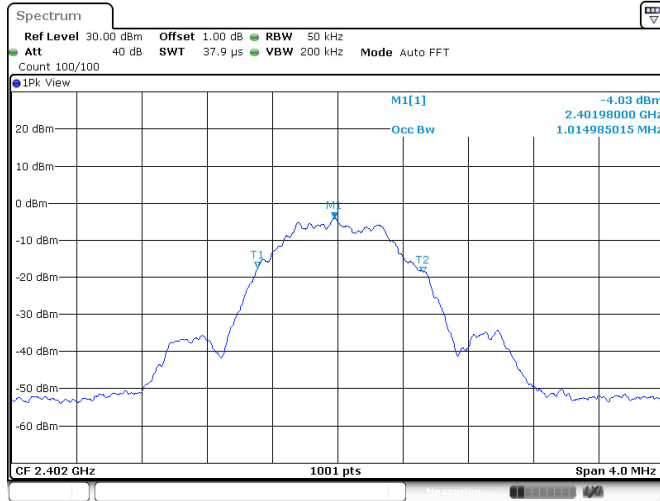
High channel 2480MHz



Date: 8 JUL 2020 16:58:05

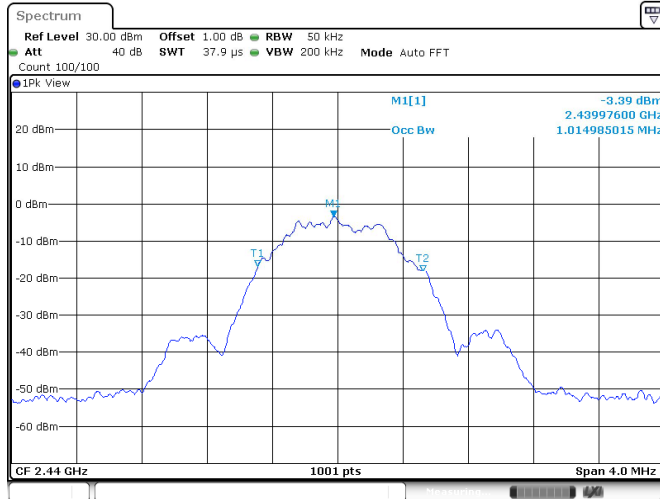
### 99% Occupied Bandwidth

Low channel 2402MHz



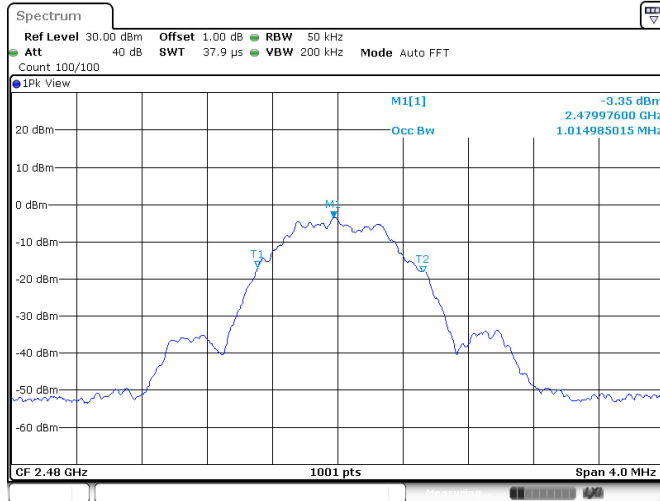
Date: 8 JUL 2020 16:53:59

Middle channel 2440MHz



Date: 8 JUL 2020 16:56:34

High channel 2480MHz



Date: 8 JUL 2020 16:58:16





## 9.4 Spurious RF conducted emissions

### Test Method

1. Establish a reference level by using the following procedure:
  - a. Set RBW=100 kHz. VBW≥3RBW. Detector =peak, Sweep time = auto couple, Trace mode = max hold.
  - b. Allow trace to fully stabilize, use the peak marker function to determine the maximum PSD level.
2. Use the maximum PSD level to establish the reference level.
  - a. Set the center frequency and span to encompass frequency range to be measured.
  - b. Use the peak marker function to determine the maximum amplitude level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements, report the three highest emissions relative to the limit.
3. Repeat above procedures until other frequencies measured were completed.

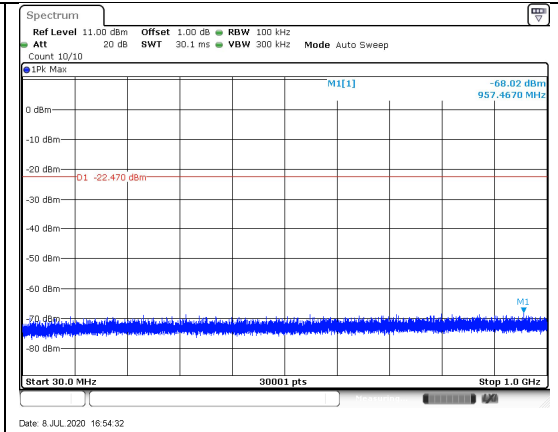
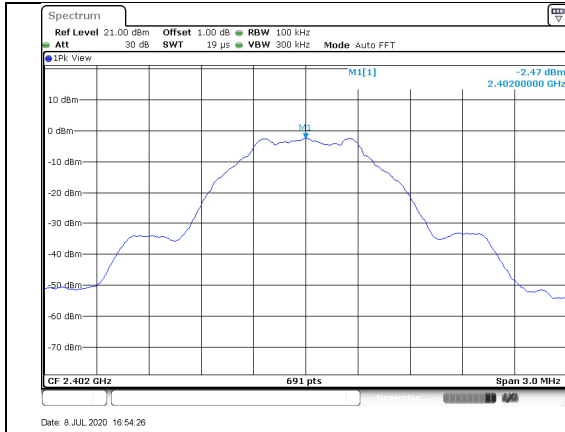
### Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20

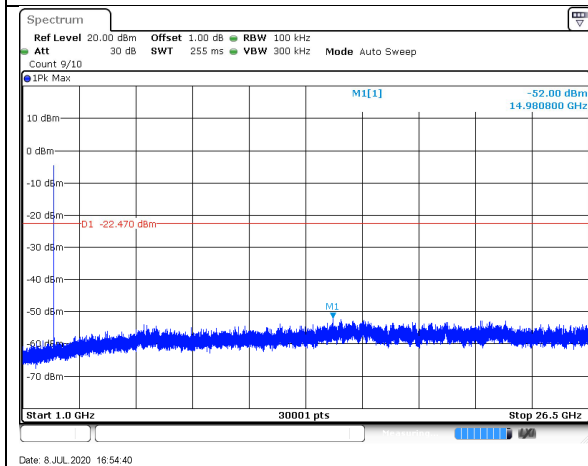


### Spurious RF conducted emissions

2402MHz



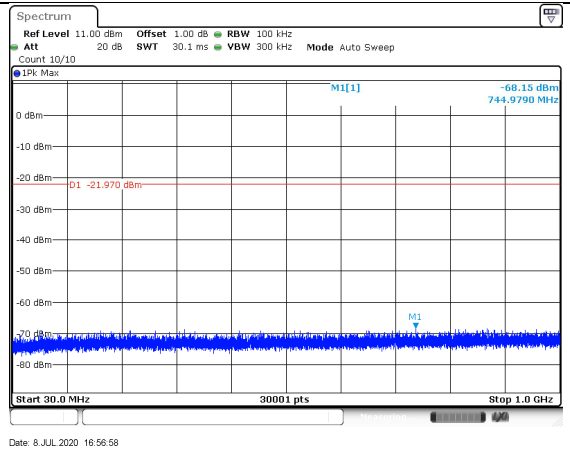
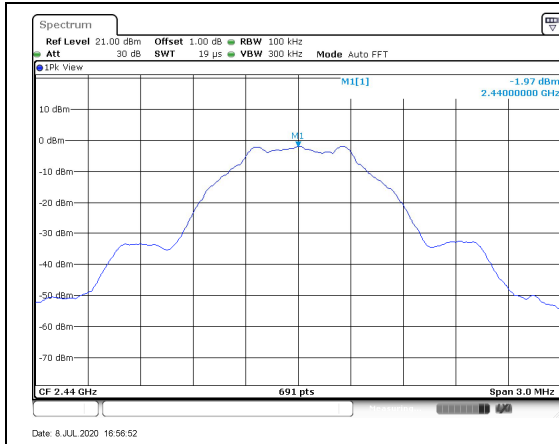
30MHz-1000MHz



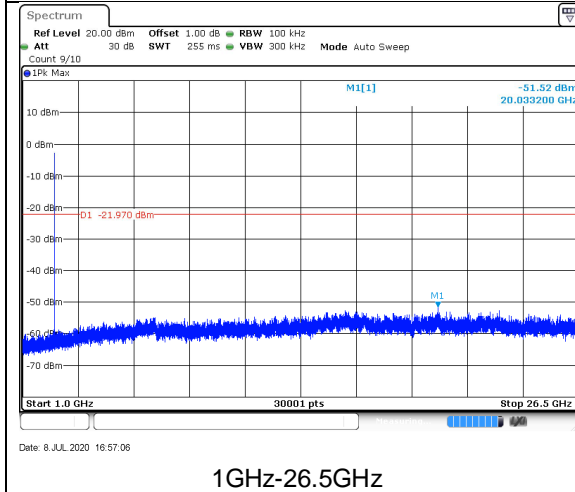
1GHz-26.5GHz



### 2440MHz



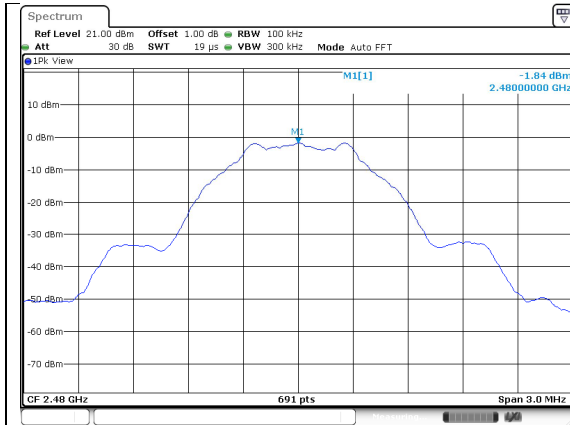
### 30MHz-100MHz



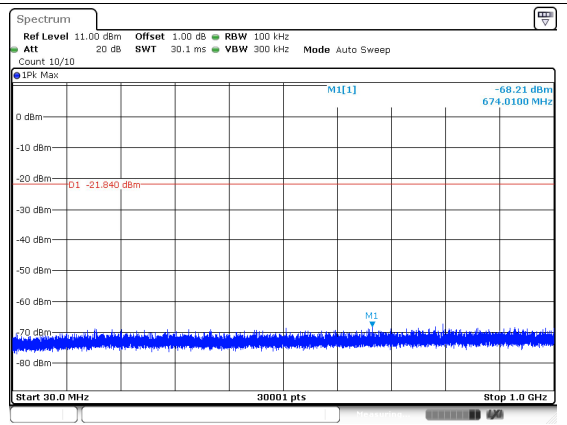
### 1GHz-26.5GHz



### 2480MHz

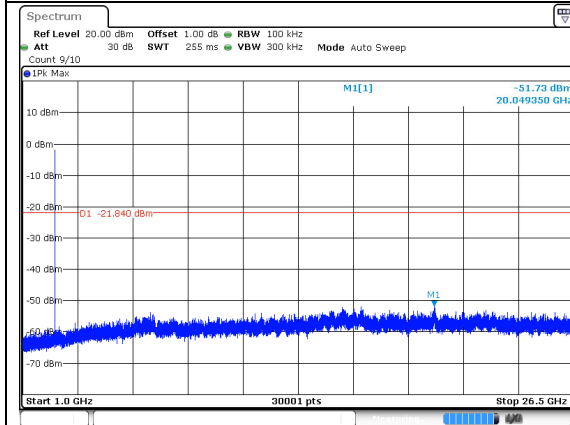


Date: 8 JUL 2020 16:58:43



Date: 8 JUL 2020 16:58:49

### 30MHz-1000MHz



Date: 8 JUL 2020 16:58:57

### 1GHz-26.5GHz



## 9.5 Band edge

### Test Method

- 1 Use the following spectrum analyzer settings:  
 Span = wide enough to capture the peak level of the in-band emission and all spurious  
 RBW = 100 kHz, VBW  $\geq$  RBW, Sweep = auto, Detector function = peak, Trace = max hold.
- 2 Allow the trace to stabilize, use the peak and delta measurement to record the result.
- 3 The level displayed must comply with the limit specified in this Section.

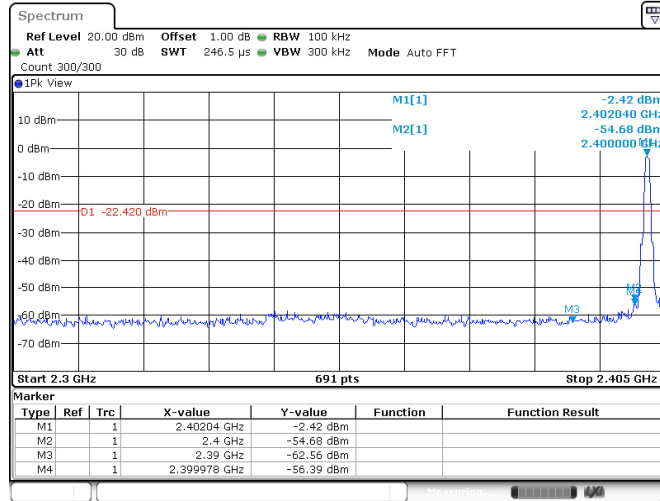
### Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20



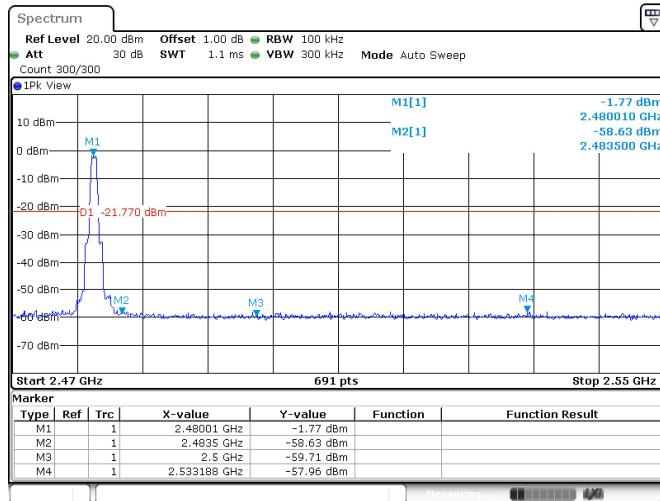
**Band edge testing**

**2402MH**



Date: 8.JUL.2020 16:54:20

**2480MHz**



Date: 8.JUL.2020 16:58:37

## 9.6 Spurious radiated emissions for transmitter

### Test Method

- 1: The EUT was placed on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2: The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
- 3: 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.
- 4: 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.
- 5: Use the following spectrum analyzer settings According to C63.10:

#### For Below 1GHz

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious  
 RBW = 100 KHz to 120KHz, VBW ≥ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

#### For Peak unwanted emissions Above 1GHz:

Span = wide enough to capture the peak level of the in-band emission and all spurious  
 RBW = 1MHz, VBW ≥ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

#### Procedures for average unwanted emissions measurements above 1000 MHz

- a) RBW = 1 MHz.
- b) VBW ≥ [3 × RBW].
- c) Detector = RMS (power averaging), if [span / (# of points in sweep)] \ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.
- d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)
- e) Sweep time = auto.
- f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)
- g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:
  - 1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is  $[10 \log (1 / D)]$ , where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.
  - 2) If linear voltage averaging mode was used in the preceding step e), then the correction

factor is  $[20 \log (1 / D)]$ , where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.

3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

## Limit

The radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section 15.205, must comply with the radiated emission limits specified in section 15.209.

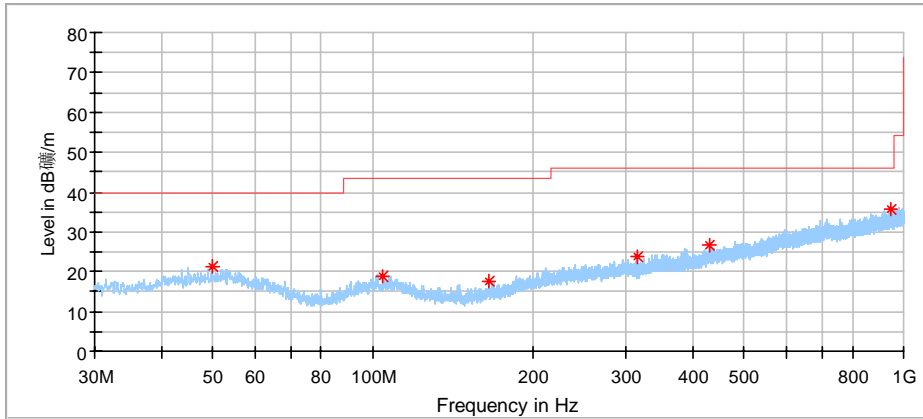
Frequency MHz	Field Strength uV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK



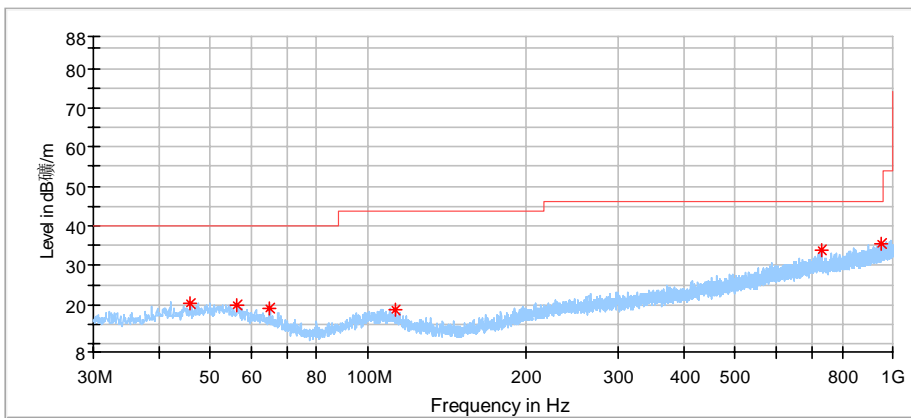
### Spurious radiated emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

#### Transmitting spurious emission test result as below: Below 1G:



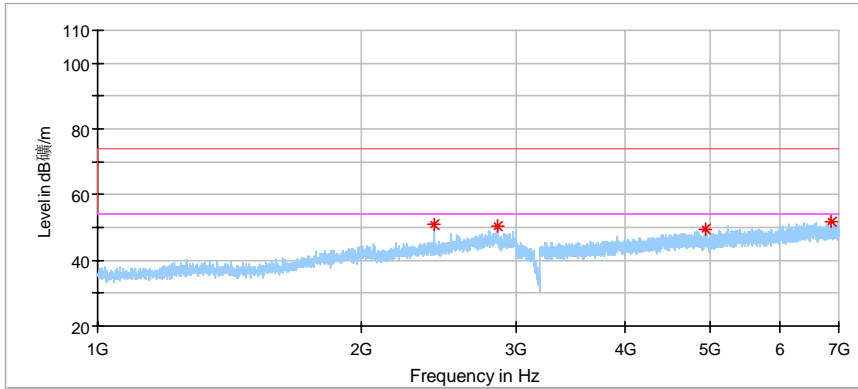
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.831111	21.24	40.00	18.76	100.0	H	357.0	14.7
104.582222	18.86	43.50	24.64	100.0	H	260.0	12.4
165.746111	17.57	43.50	25.93	100.0	H	0.0	9.7
315.934444	23.63	46.00	22.37	100.0	H	134.0	15.5
430.663889	26.79	46.00	19.21	100.0	H	50.0	18.1
943.686111	35.61	46.00	10.39	100.0	H	4.0	26.4



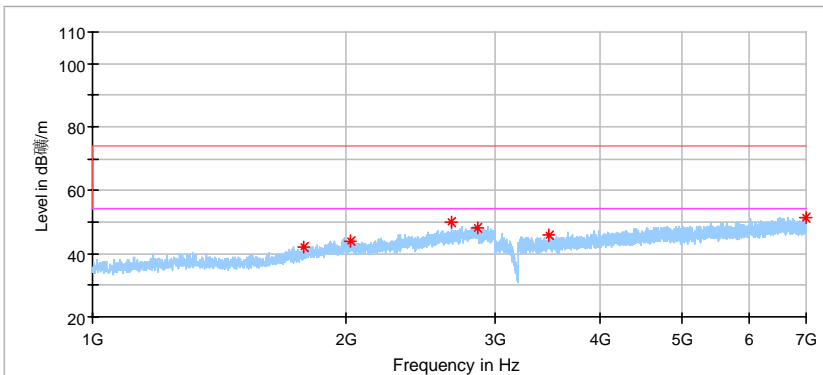
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
45.789444	20.38	40.00	19.62	100.0	V	202.0	14.2
56.513333	19.78	40.00	20.22	100.0	V	1.0	13.7
65.135556	19.12	40.00	20.88	100.0	V	239.0	11.9
113.204444	18.74	43.50	24.76	100.0	V	356.0	11.7
730.286111	33.81	46.00	12.19	100.0	V	1.0	23.3
954.571667	35.45	46.00	10.55	100.0	V	0.0	26.6



Low channel 2402MHz Test Result

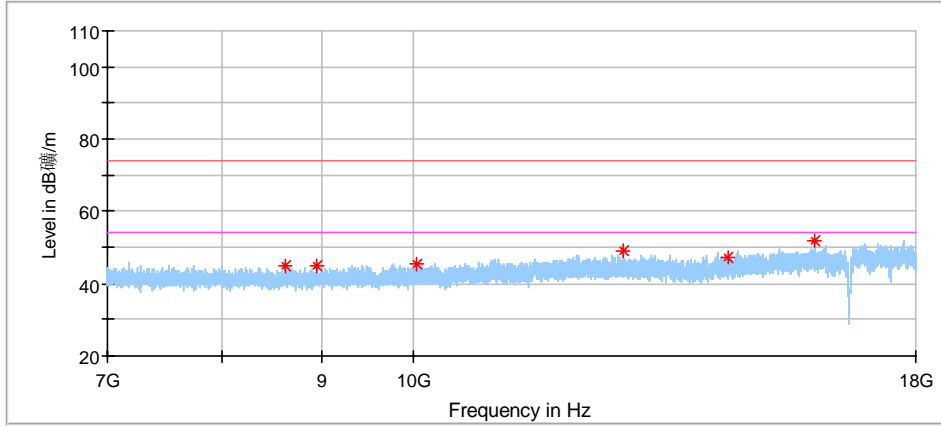


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2417.000000	50.74	74.00	23.26	150.0	H	48.0	-3.0
2863.500000	50.30	74.00	23.70	150.0	H	10.0	-1.2
4926.500000	49.51	74.00	24.49	150.0	H	87.0	2.6
6849.500000	51.72	74.00	22.28	150.0	H	80.0	7.4

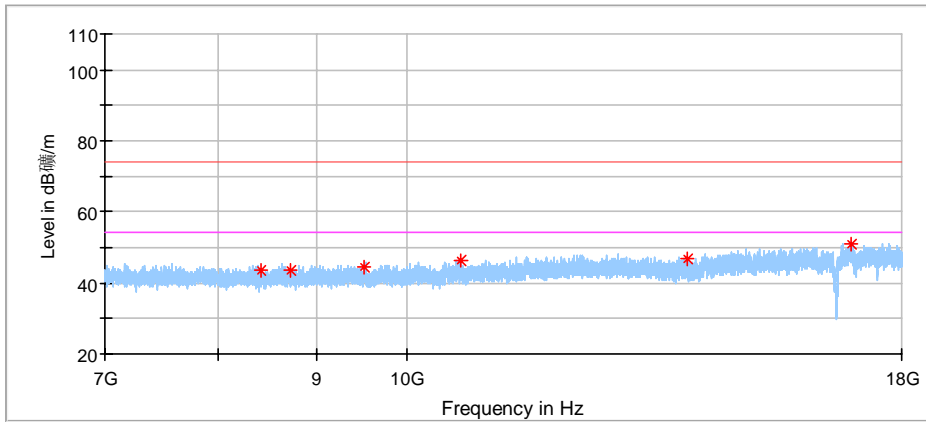


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1779.500000	42.06	74.00	31.94	150.0	V	15.0	-5.9
2023.500000	44.06	74.00	29.94	150.0	V	4.0	-4.5
2663.500000	50.09	74.00	23.91	150.0	V	1.0	-1.7
2862.500000	48.24	74.00	25.76	150.0	V	78.0	-1.2
3478.500000	45.64	74.00	28.36	150.0	V	106.0	-0.9
6995.000000	51.28	74.00	22.72	150.0	V	202.0	7.5

Low channel 2402MHz Test Result

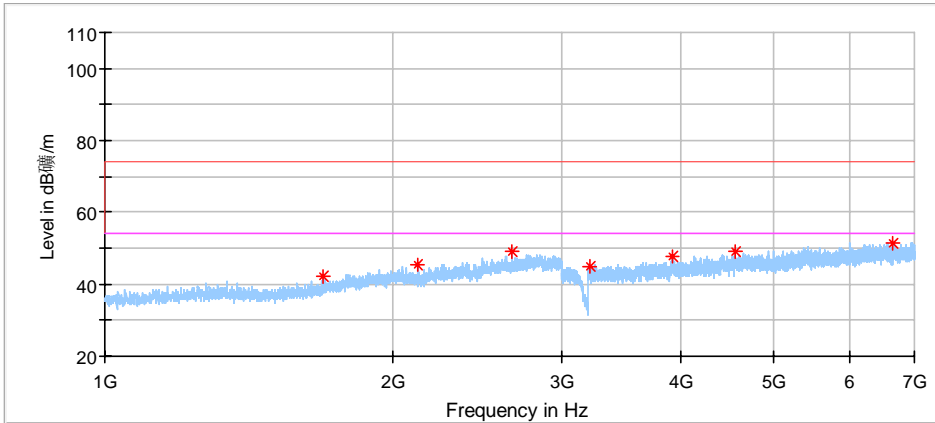


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8616.000000	44.70	74.00	29.30	150.0	H	221.0	6.5
8935.500000	45.15	74.00	28.85	150.0	H	86.0	6.9
10040.000000	45.59	74.00	28.41	150.0	H	336.0	7.9
12791.500000	49.07	74.00	24.93	150.0	H	0.0	10.2
14464.500000	47.43	74.00	26.57	150.0	H	64.0	10.9
15976.500000	52.06	74.00	21.94	150.0	H	267.0	14.0

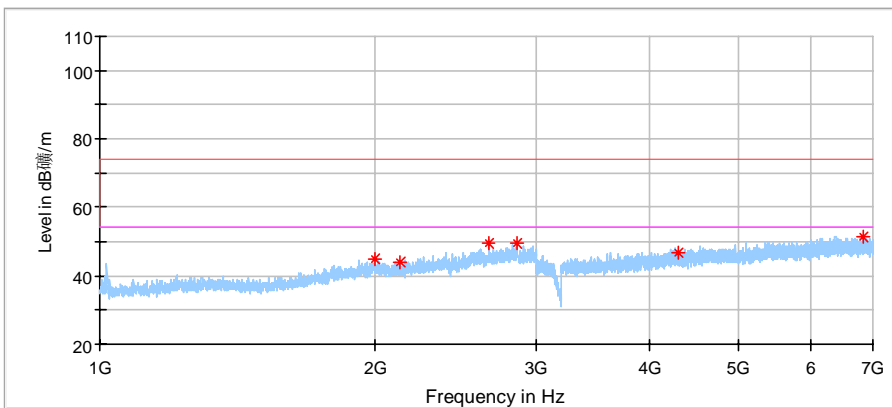


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8413.500000	43.44	74.00	30.56	150.0	V	302.0	6.5
8721.000000	43.66	74.00	30.34	150.0	V	47.0	6.6
9512.000000	44.51	74.00	29.49	150.0	V	142.0	7.3
10679.000000	46.37	74.00	27.63	150.0	V	302.0	8.3
13949.000000	46.96	74.00	27.04	150.0	V	257.0	10.1
16954.000000	50.87	74.00	23.13	150.0	V	280.0	16.6

Middle channel 2440MHz Test Result

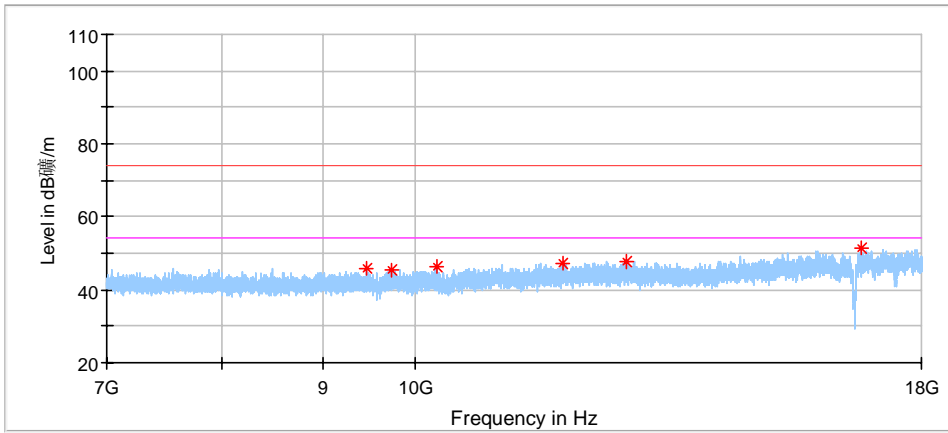


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1692.000000	42.11	74.00	31.89	150.0	H	123.0	-6.9
2125.500000	45.21	74.00	28.79	150.0	H	189.0	-4.3
2663.500000	48.88	74.00	25.12	150.0	H	144.0	-1.7
3204.000000	45.12	74.00	28.88	150.0	H	18.0	-1.6
3911.000000	47.82	74.00	26.18	150.0	H	172.0	1.3
4547.500000	48.95	74.00	25.05	150.0	H	4.0	3.1
6653.000000	51.60	74.00	22.40	150.0	H	11.0	7.2

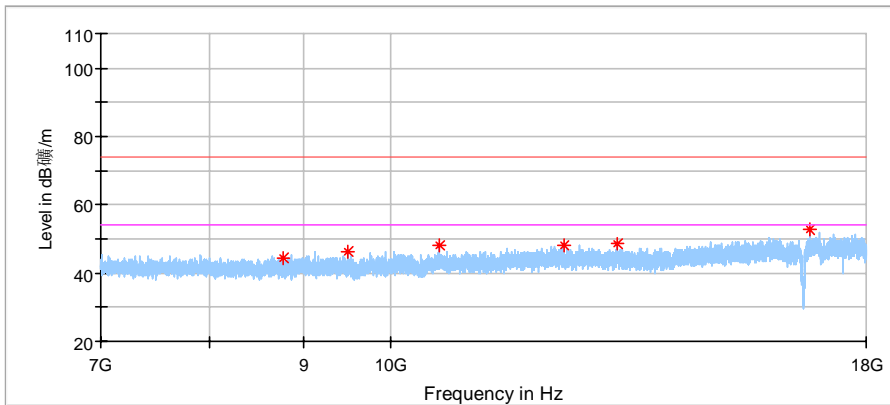


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1996.000000	44.95	74.00	29.05	150.0	V	21.0	-4.3
2126.500000	44.21	74.00	29.79	150.0	V	236.0	-4.3
2659.500000	49.53	74.00	24.47	150.0	V	47.0	-1.7
2855.000000	49.43	74.00	24.57	150.0	V	100.0	-0.9
4293.000000	46.91	74.00	27.09	150.0	V	205.0	2.1
6837.000000	51.43	74.00	22.57	150.0	V	231.0	7.4

Middle channel 2440MHz Test Result

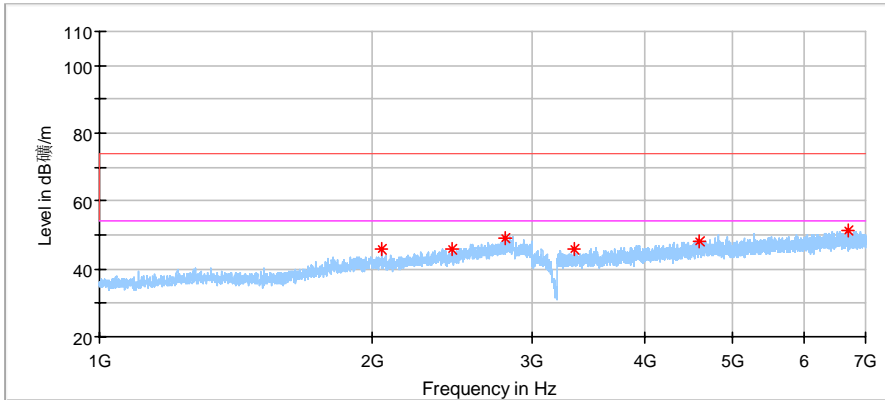


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9468.500000	45.79	74.00	28.21	150.0	H	244.0	7.2
9738.500000	45.54	74.00	28.46	150.0	H	356.0	7.6
10262.500000	46.37	74.00	27.63	150.0	H	3.0	7.9
11864.500000	47.20	74.00	26.80	150.0	H	356.0	9.4
12795.000000	47.49	74.00	26.51	150.0	H	290.0	10.2
16776.500000	51.20	74.00	22.80	150.0	H	175.0	16.9

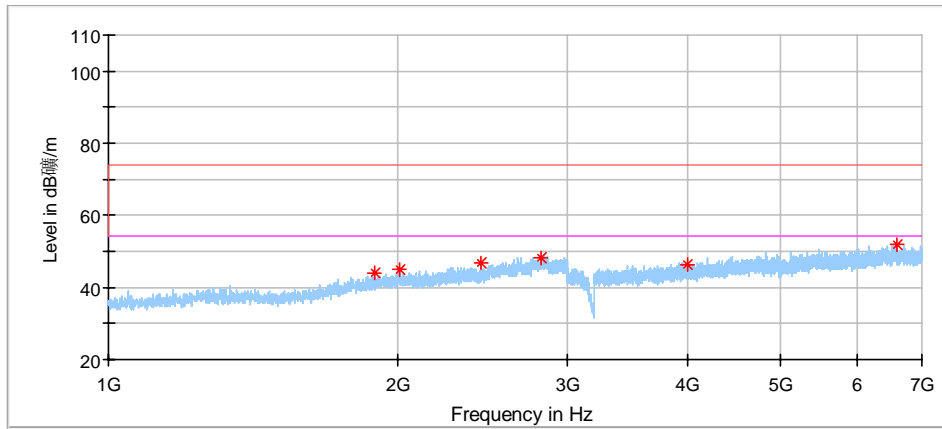


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8765.000000	44.38	74.00	29.62	150.0	V	234.0	6.7
9492.000000	46.11	74.00	27.89	150.0	V	26.0	7.3
10621.000000	48.35	74.00	25.65	150.0	V	188.0	8.1
12393.500000	47.95	74.00	26.05	150.0	V	0.0	10.2
13237.500000	48.73	74.00	25.27	150.0	V	346.0	10.1
16774.000000	52.60	74.00	21.40	150.0	V	325.0	16.8

### High channel 2480MHz Test Result



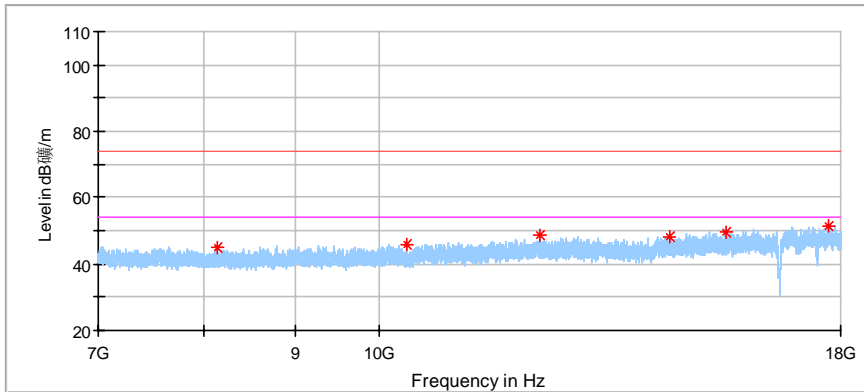
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2046.500000	45.87	74.00	28.13	150.0	H	186.0	-4.4
2448.000000	45.87	74.00	28.13	150.0	H	347.0	-2.7
2805.000000	48.98	74.00	25.02	150.0	H	30.0	-1.2
3343.500000	46.00	74.00	28.00	150.0	H	312.0	-1.1
4592.000000	48.29	74.00	25.71	150.0	H	164.0	3.2
6709.500000	51.53	74.00	22.47	150.0	H	299.0	7.0



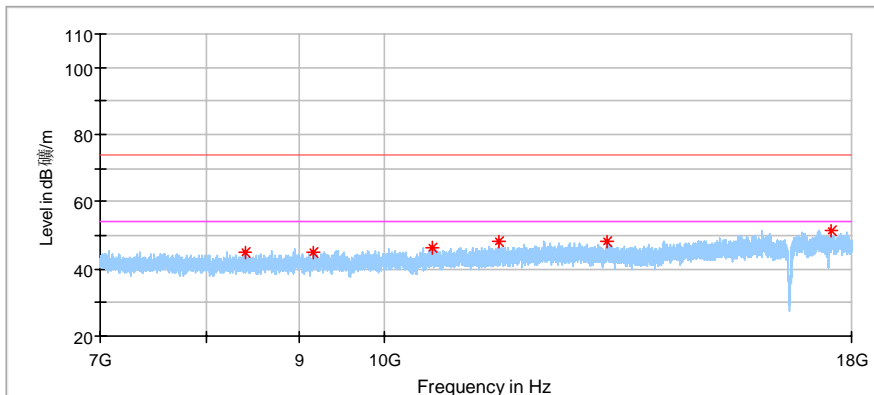
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1893.500000	44.05	74.00	29.95	150.0	V	15.0	-5.0
2009.000000	45.13	74.00	28.87	150.0	V	8.0	-4.5
2439.500000	46.69	74.00	27.31	150.0	V	85.0	-2.7
2818.500000	48.20	74.00	25.80	150.0	V	338.0	-0.9
3989.500000	46.44	74.00	27.56	150.0	V	351.0	1.2
6594.500000	51.71	74.00	22.29	150.0	V	257.0	7.3



### High channel 2480MHz Test Result



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8146.000000	44.79	74.00	29.21	150.0	H	0.0	6.3
10359.500000	45.70	74.00	28.30	150.0	H	14.0	8.2
12266.000000	48.61	74.00	25.39	150.0	H	172.0	9.6
14492.500000	48.35	74.00	25.65	150.0	H	198.0	10.9
15544.000000	49.44	74.00	24.56	150.0	H	336.0	12.8
17739.000000	51.35	74.00	22.65	150.0	H	149.0	17.9



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
8409.000000	44.70	74.00	29.30	150.0	V	24.0	6.5
9158.500000	44.94	74.00	29.06	150.0	V	185.0	7.1
10621.500000	46.37	74.00	27.63	150.0	V	47.0	8.2
11559.500000	48.22	74.00	25.78	150.0	V	342.0	8.9
13232.000000	48.05	74.00	25.95	150.0	V	93.0	9.9
17563.000000	51.56	74.00	22.44	150.0	V	253.0	17.3

**Remark:**

- (1) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are the noise floor or attenuated more than 10dB below the permissible limits or the field strength is too small to be measured.
- (2) Level=Reading Level + Correction Factor  
 Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain  
 Below 1GHz: Corrector factor = Antenna Factor + Cable Loss  
 (The Reading Level is recorded by software which is not shown in the sheet)

## 10 Test Equipment List

### List of Test Instruments

#### Radiated Emission Test

Description	Manufacturer	Model no.	Equipment ID	Serial no.	cal interval (year)	cal. due date
EMI Test Receiver	Rohde & Schwarz	ESR 26	68-4-74-14-002	101269	1	2021-6-29
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9162	68-4-80-19-003	284	1	2021-2-24
Wave Guide Antenna	ETS	3117	68-4-80-19-001	00218954	1	2021-6-15
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-001	100745	1	2020-12-14
Pre-amplifier	Rohde & Schwarz	SCU 08F2	68-4-29-19-004	08400018	1	2020-12-14
Sideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	68-4-80-14-008	12827	1	2021-8-5
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2021-7-30
3m Semi-anechoic chamber	TDK	9X6X6	68-4-90-19-006	----	3	2022-12-29
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.35.0 2	N/A	N/A

#### TS8997 Test System

Description	Manufacturer	Model no.	Equipment ID	Serial no.	cal interval (year)	cal. due date
Signal Generator	Rohde & Schwarz	SMB100A	68-4-48-14-001	108272	1	2021-6-21
Vector Signal Generator	Rohde & Schwarz	SMBV100A	68-4-48-18-001	262825	1	2021-6-21
Communication Synthetical Test Instrument	Rohde & Schwarz	CMW 270	68-4-48-18-003	101251	1	2021-6-21
Signal Analyzer	Rohde & Schwarz	FSV40	68-4-74-14-004	101030	1	2021-6-21
Vector Signal Generator	Rohde & Schwarz	SMU 200A	68-4-48-14-003	105324	1	2021-6-22
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	68-4-93-14-003	101226/100851	1	2021-6-21
Power Splitter	Weinschel	1580	68-4-85-14-001	SC319	1	2021-7-16
10dB Attenuator	Weinschel	4M-10	68-4-81-14-003	43152	1	2021-6-21
10dB Attenuator	R&S	DNF	68-4-81-14-004	DNF-001	1	2021-6-21
10dB Attenuator	R&S	DNF	68-4-81-14-005	DNF-002	1	2021-6-21
10dB Attenuator	R&S	DNF	68-4-81-14-006	DNF-003	1	2021-6-21
10dB Attenuator	R&S	DNF	68-4-81-14-007	DNF-004	1	2021-6-21
Test software	Rohde & Schwarz	EMC32	68-4-48-14-003-A10	Version 10.60.10	N/A	N/A
Test software	Tonscend	System for BT/WIFI	68-4-74-14-006-A13	Version 2.6.77.0518	N/A	N/A
Shielding Room	TDK	TS8997	68-4-90-19-003	----	1	2020-11-07





## 11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 30MHz-1000MHz	Horizontal: 4.70dB; Vertical: 4.67dB;
Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 1000MHz-18000MHz	Horizontal: 4.65dB; Vertical: 4.63dB;
Uncertainty for Radiated Spurious Emission 18000MHz-40000MHz	Horizontal: 5.05dB; Vertical: 5.04dB;
Uncertainty for Conducted RF test with TS 8997	RF Power Conducted: 1.16dB Frequency test involved: 0.6x10 <sup>-7</sup> or 1%