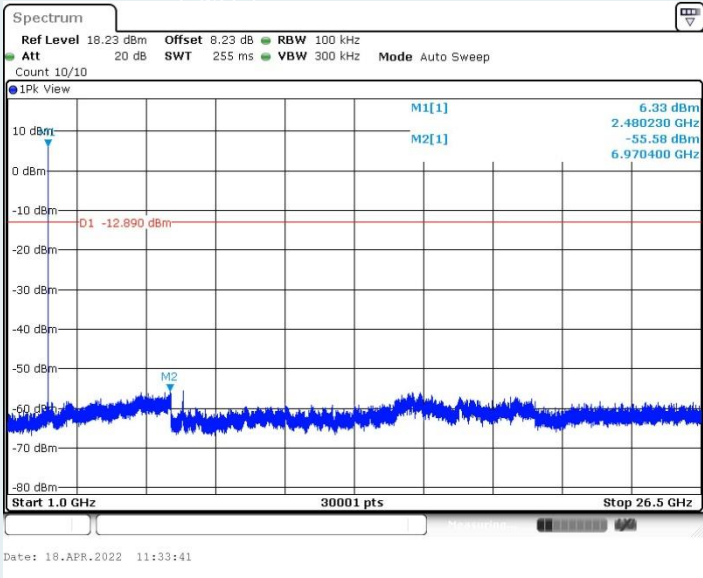
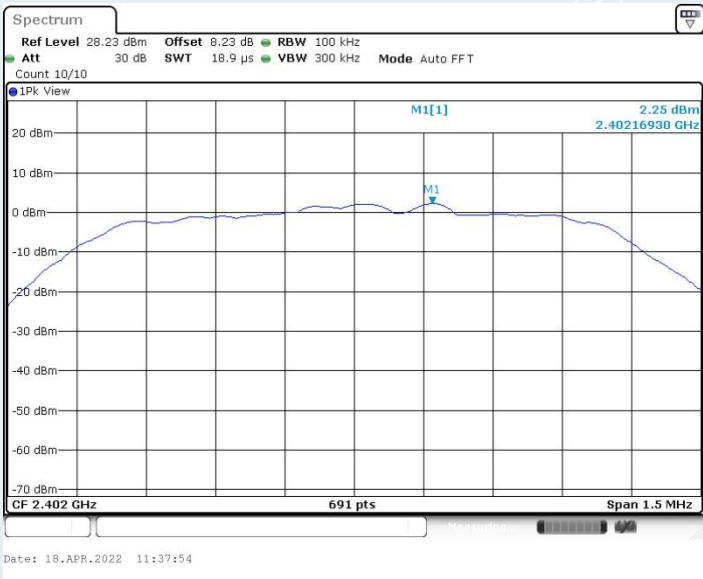
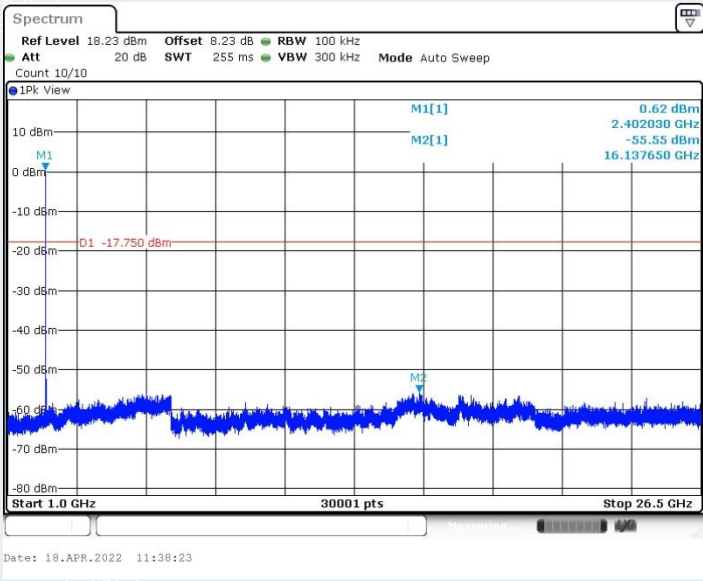
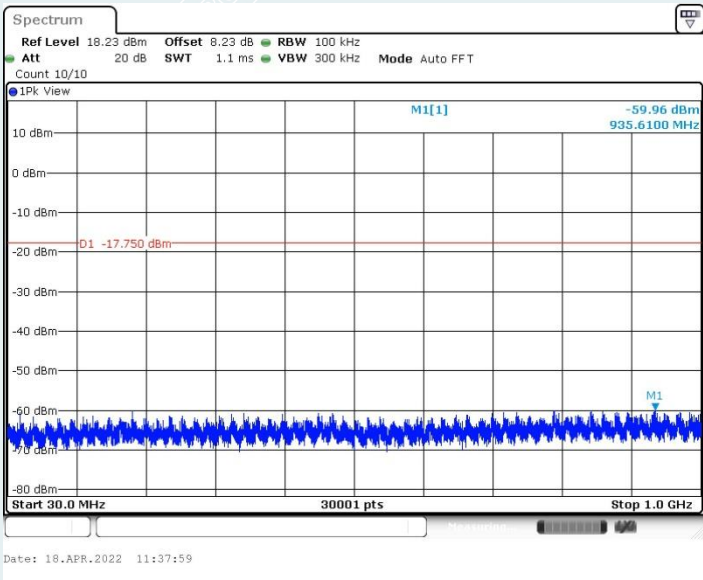


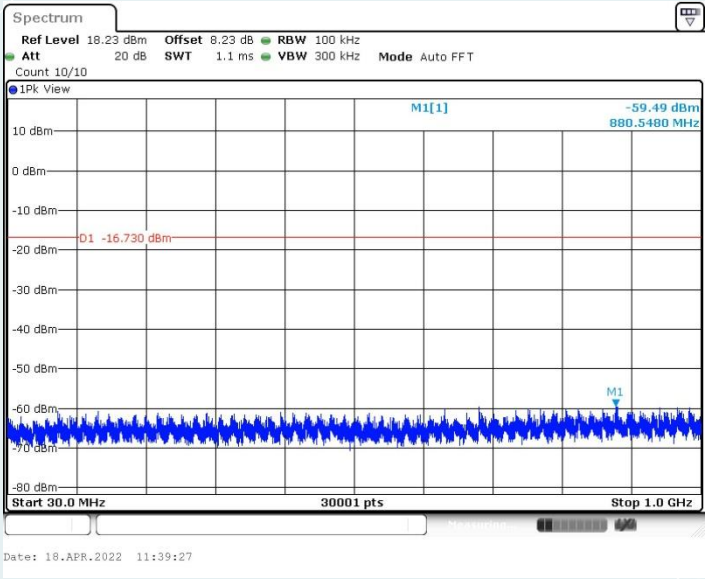
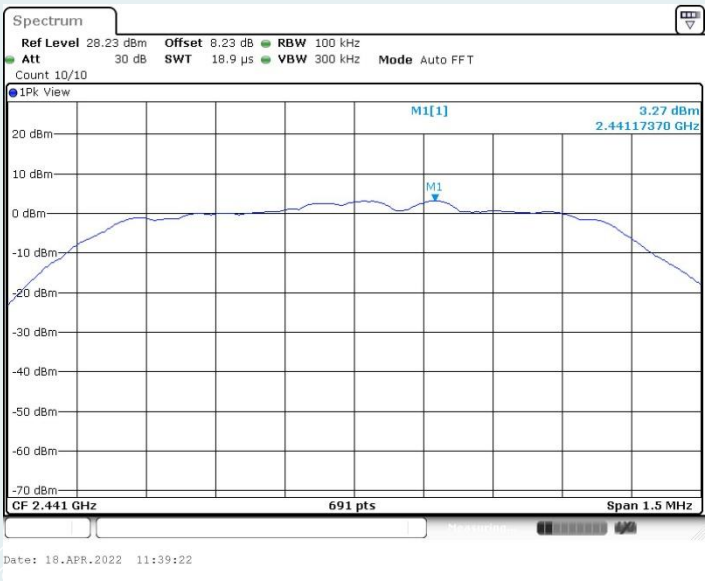


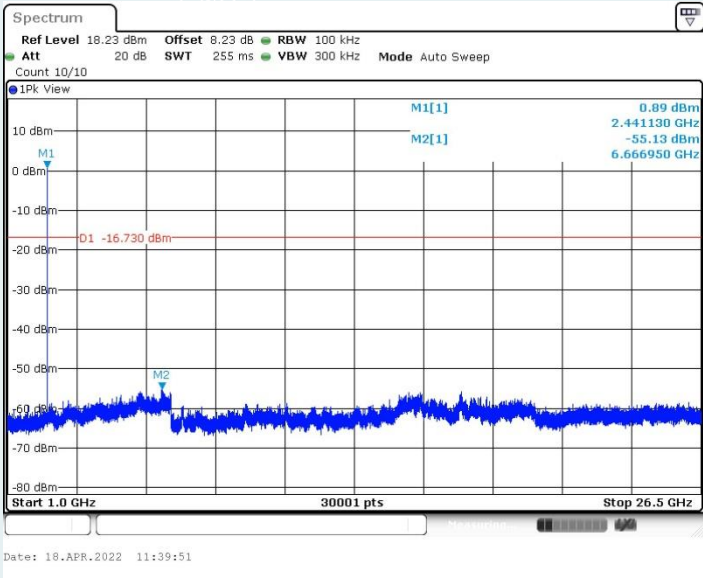
2DH5
CH Low



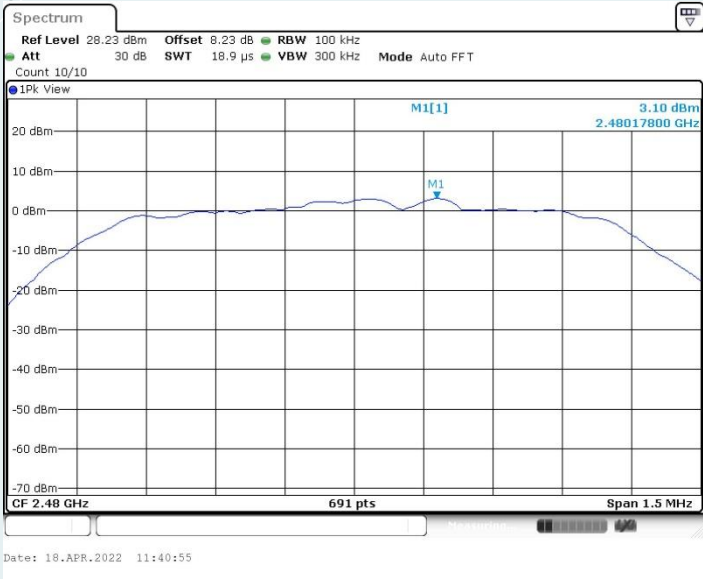


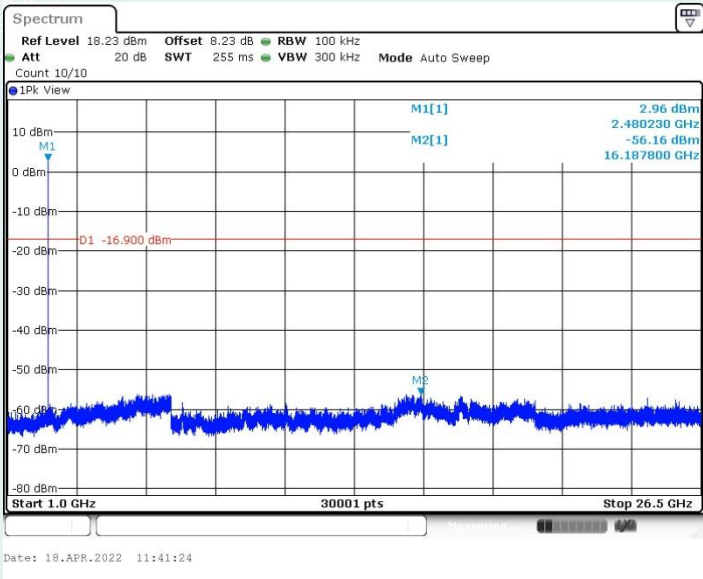
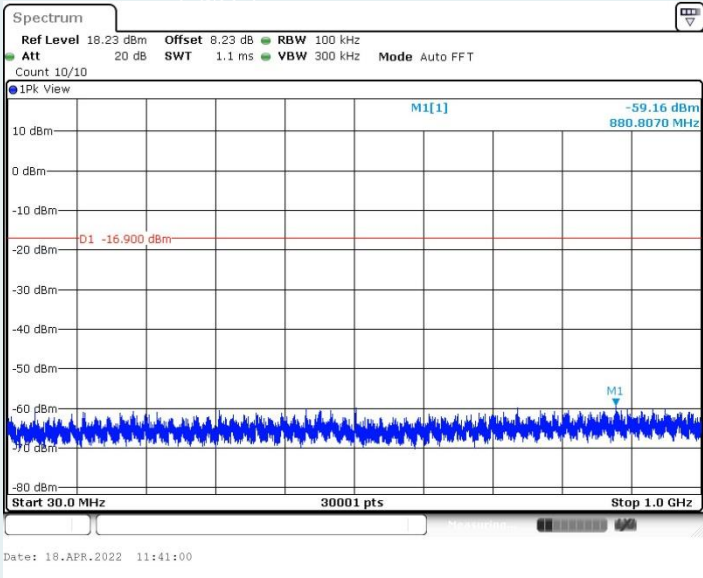
CH Mid



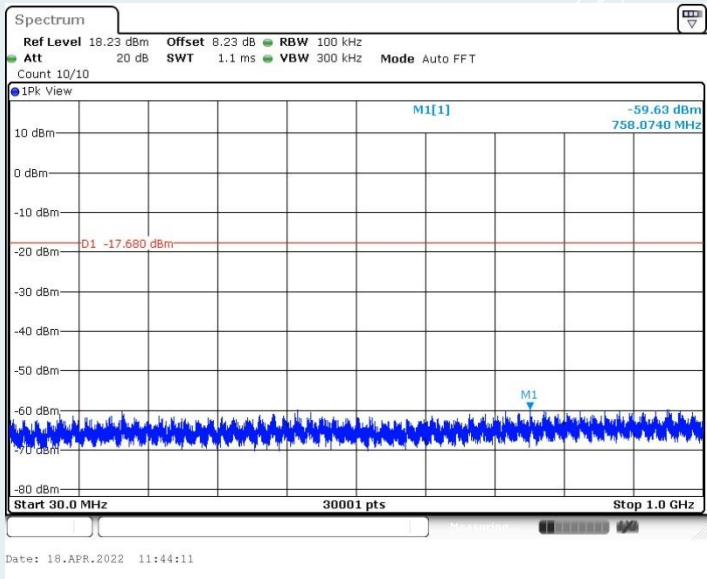
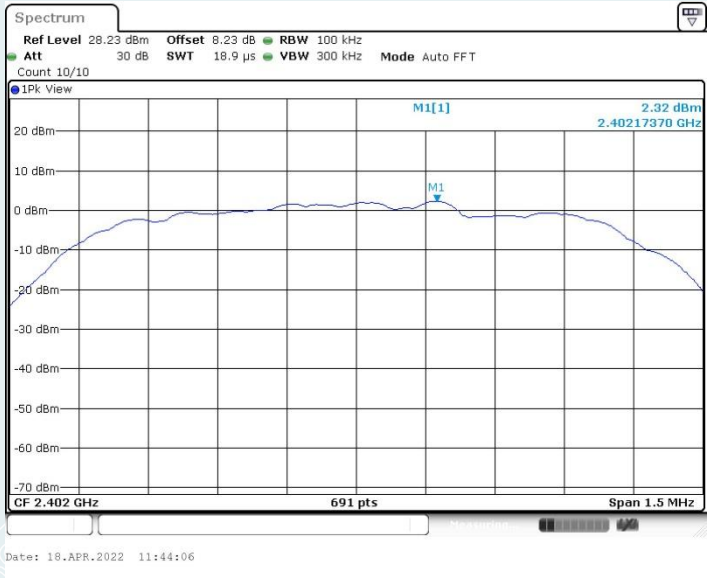


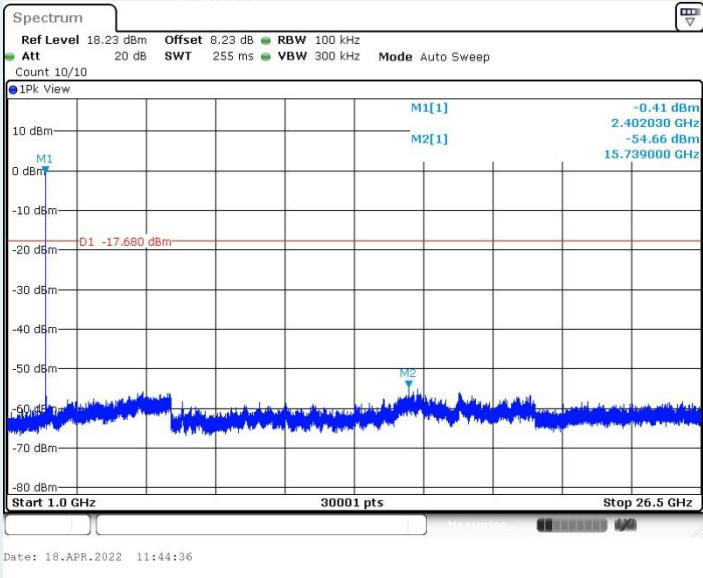
CH High



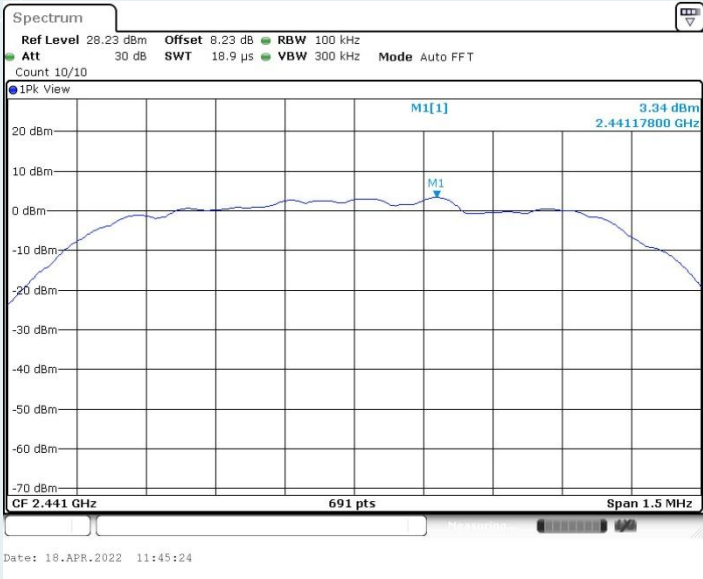


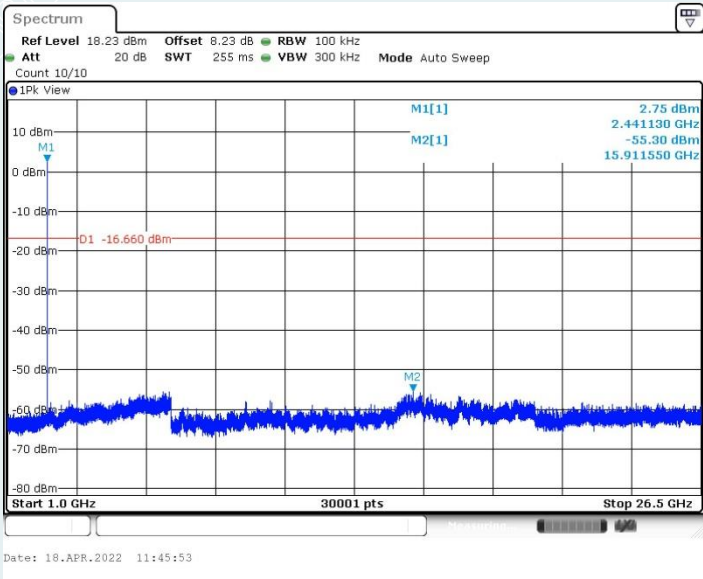
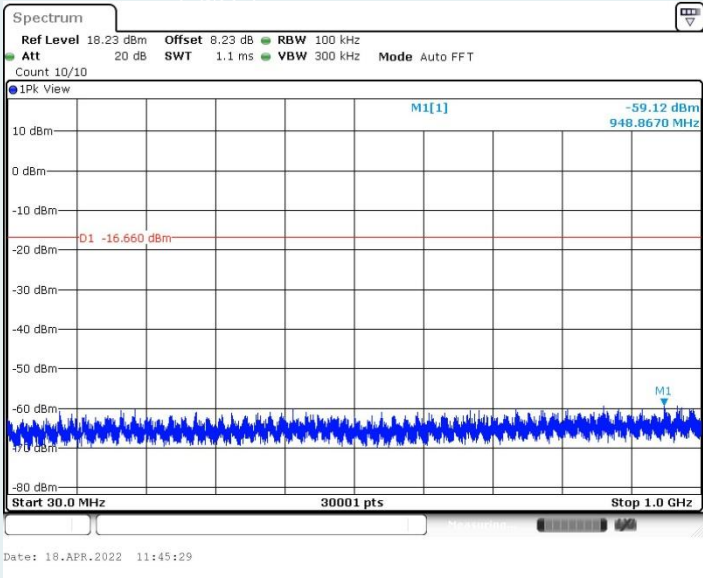
3DH5
CH Low



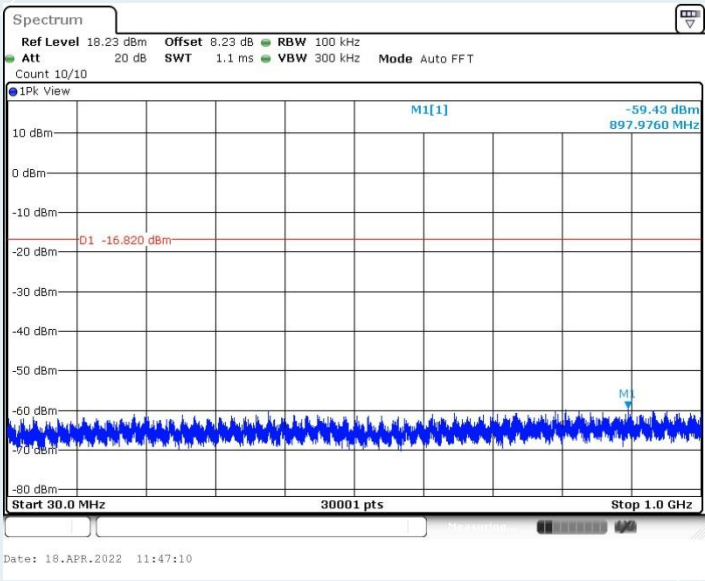
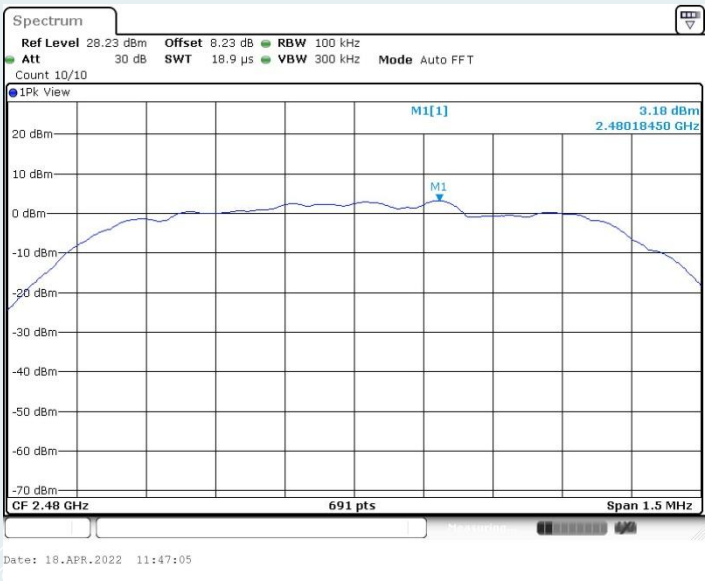


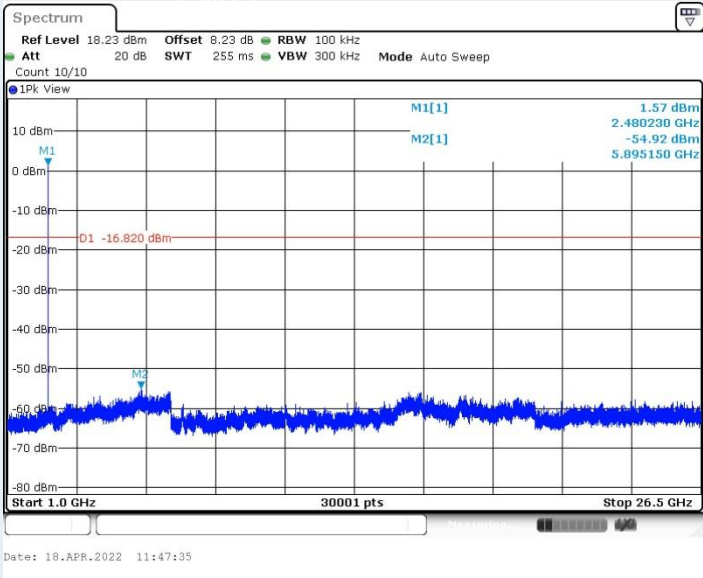
CH Mid





CH High





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13. RADIATED SPURIOUS EMISSIONS

13.1 LIMITS

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

Frequency (MHz)	Quasi-peak($\mu\text{V/m}$)	Measurement distance(m)	Quasi-peak(dB $\mu\text{V/m}$)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

NOTE:

- (1) The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.
- (2) The lower limit shall apply at the transition frequencies.
- (3) Above 18GHz test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.5 (dB $\mu\text{V/m}$).
The Avg Limit=54+20*log(3/1)=63.5 (dB $\mu\text{V/m}$).

13.2 TEST PROCEDURES

1) Sequence of testing 9 kHz to 30 MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 °to 360 °.
- The antenna height is 1.0 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

--- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0 °to 360 °) and by rotating the elevation axes (0 °to 360 °).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QP detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30 MHz to 1 GHz**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0 °to 360 °.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 4 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0 °to 360 °and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1 GHz to 18 GHz**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 °to 360 °.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 4 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0 °to 360 °and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18 GHz**Setup:**

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 1 meter.
- The EUT was set into operation.

Pre measurement:

- The antenna is moved spherical over the EUT in different polarisations of the antenna.

Final measurement:

- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

NOTE:

- (a).The frequency from 9kHz to 150kHz, Set RBW=300Hz(for Peak & AVG), VBW=300Hz(for Peak & AVG). The frequency from 150kHz to 30MHz, Set RBW=9kHz, VBW=9kHz, (for QP Detector).
- (b).The frequency from 30MHz to 1GHz, Set RBW=120kHz, VBW=300kHz, (for QP Detector).
- (c).The frequency above 1GHz, for Peak detector: Set RBW=1MHz, VBW=3MHz.

(d). The frequency above 1GHz, for Avg detector: Set RBW=1MHz, if the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW $\leq$ RBW/100 (i.e., 10kHz) but not less than 10Hz. Where duty cycle is defined in section 2.8. If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$, Where T is defined in section 2.8.

----- The following blanks -----

13.3 TEST SETUP

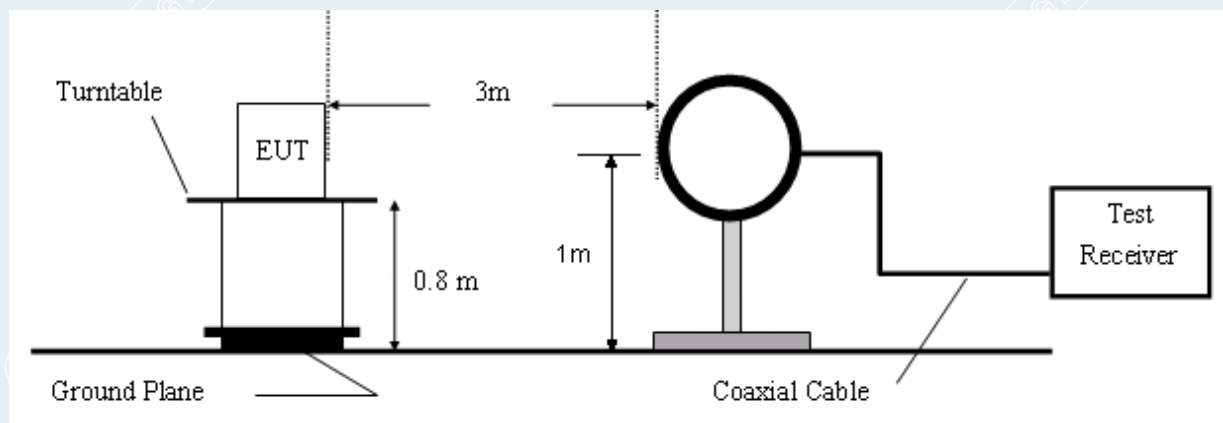


Figure 1. 9 kHz to 30MHz radiated emissions test configuration

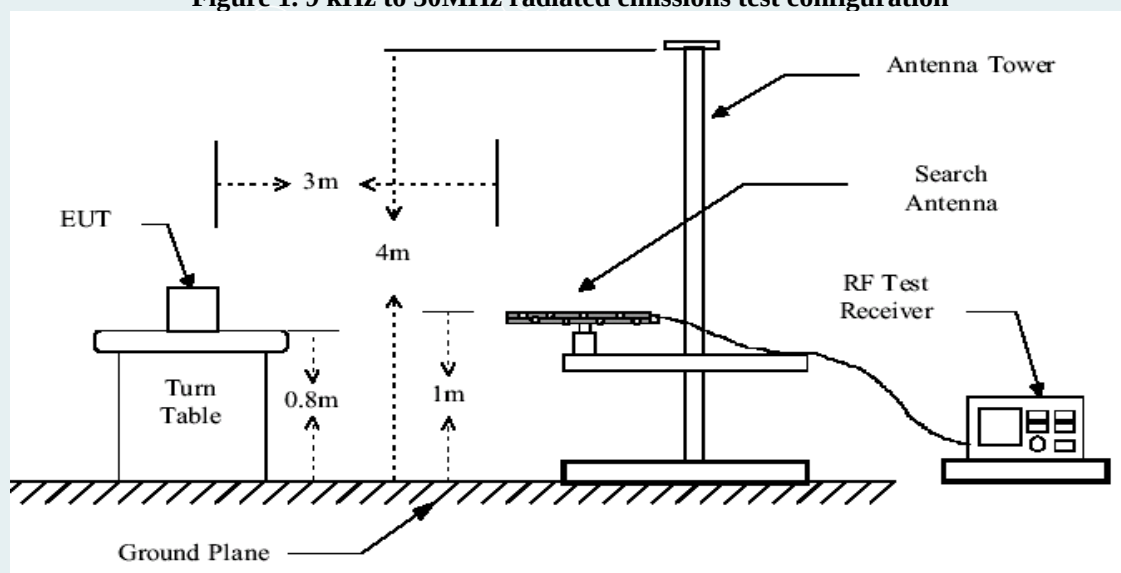


Figure 2. 30MHz to 1GHz radiated emissions test configuration

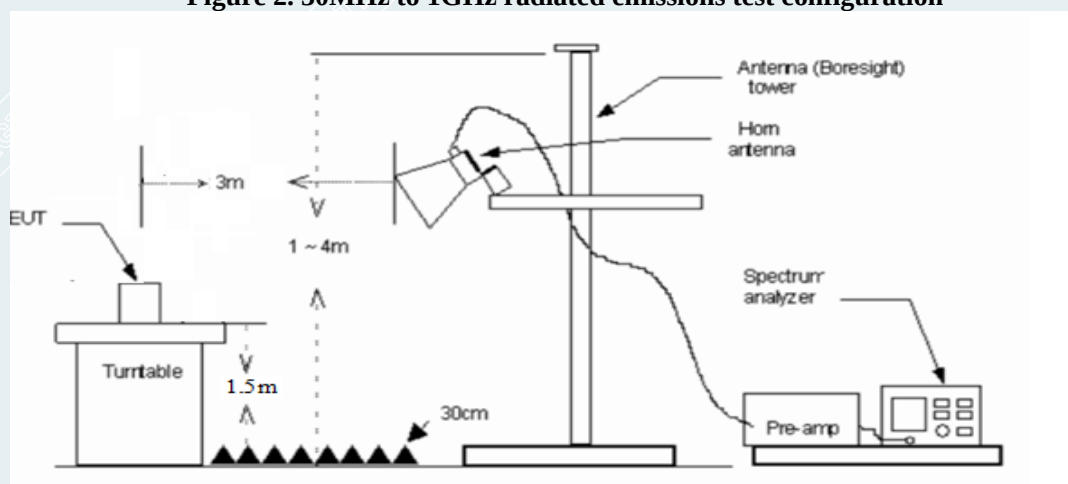


Figure 3. 1GHz to 18GHz radiated emissions test configuration

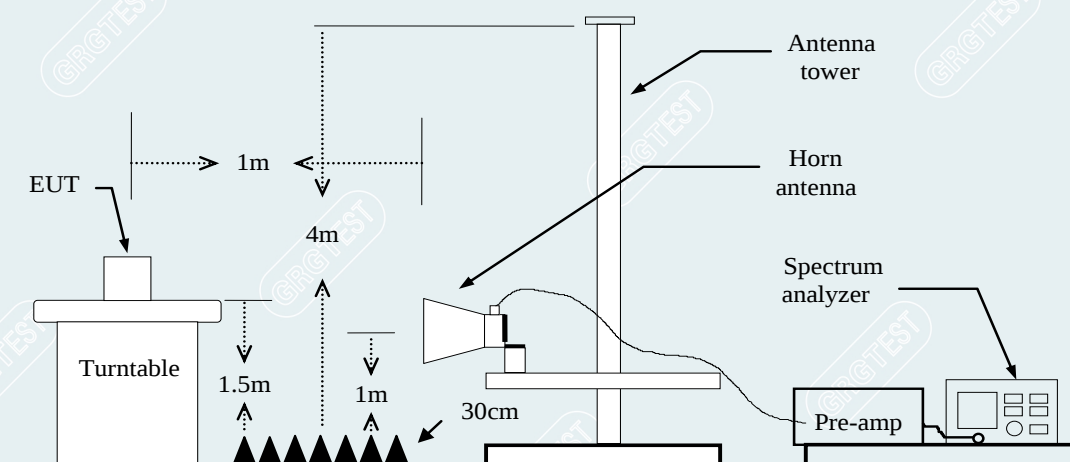


Figure 4. 18GHz to 26.5GHz radiated emissions test configuration

13.4 DATA SAMPLE

30MHz to 1GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	37.06	-15.48	21.58	40.00	-18.42	QP	Vertical

1GHz to 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	65.45	-11.12	54.33	74.00	-19.67	peak	Vertical
xxx	xxx	63.00	-11.12	51.88	54.00	-2.12	AVG	Vertical

Above 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	68.86	57.66	-11.20	83.54	25.88	peak	Vertical
xxx	xxx	68.89	-11.20	57.69	63.54	5.85	AVG	Vertical

Frequency (MHz)

= Emission frequency in MHz

Ant.Pol. (H/V)

= Antenna polarization

Reading (dBuV)

= Uncorrected Analyzer / Receiver reading

Correction Factor (dB/m)

= Antenna factor + Cable loss – Amplifier gain

Result (dBuV/m)

= Reading (dBuV) + Correction Factor (dB/m)

Limit (dBuV/m)

= Limit stated in standard

Margin (dB)

= Remark Result (dBuV/m) – Limit (dBuV/m)

Peak

= Peak Reading

QP

= Quasi-peak Reading

AVG

= Average Reading

13.5 TEST RESULTS

Below 1GHz:

Mode: DH5

Lowest Frequency (2402MHz)

Environment:

Test Engineer:

Test Voltage:

Polarity:

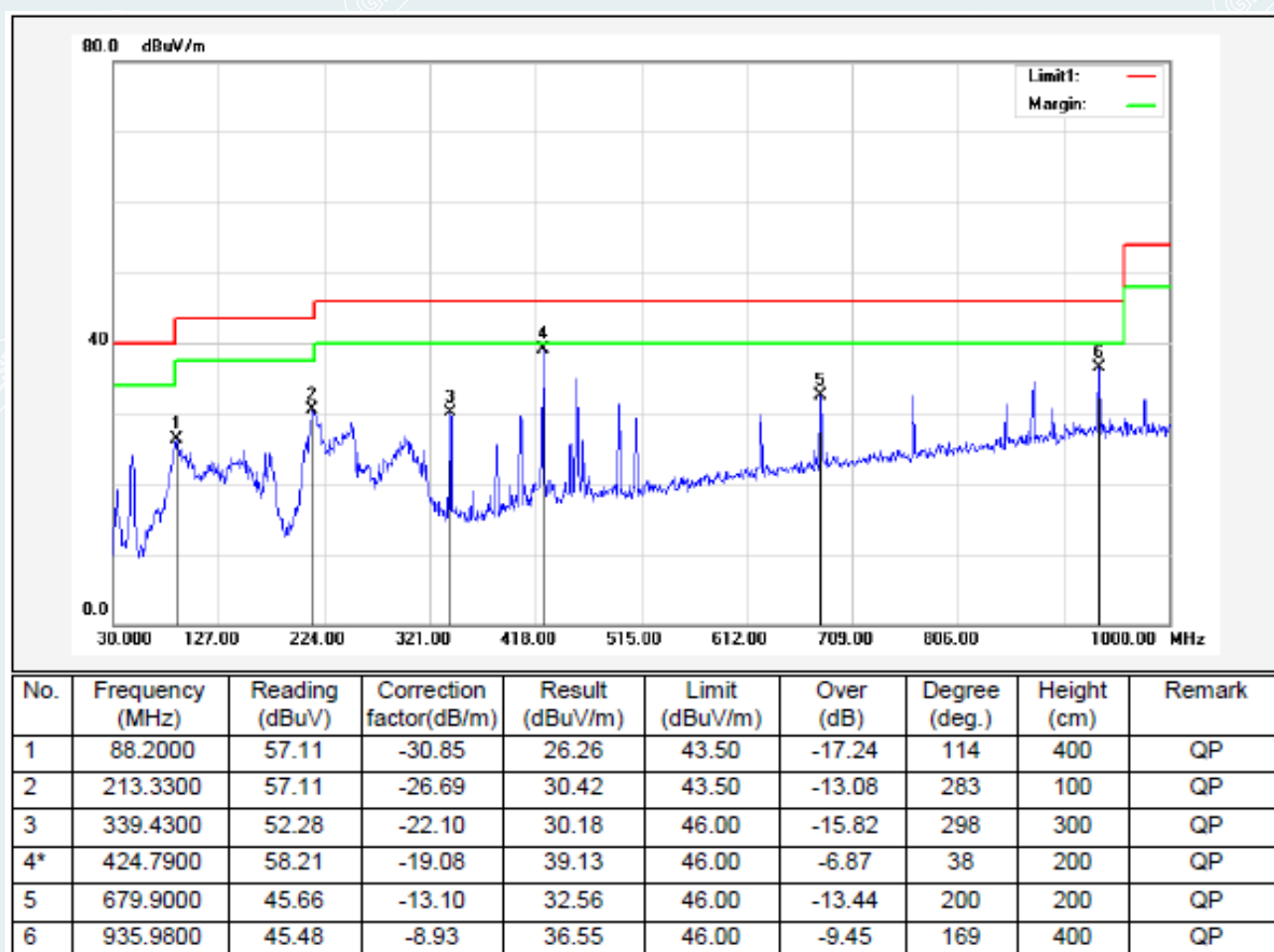
Date: 2022-01-15

25°C/60%RH

Tang Shenghui

AC 120V/60Hz

Horizontal



Mode: DH5

Lowest Frequency (2402MHz)

Environment:

Test Engineer:

Test Voltage:

Polarity:

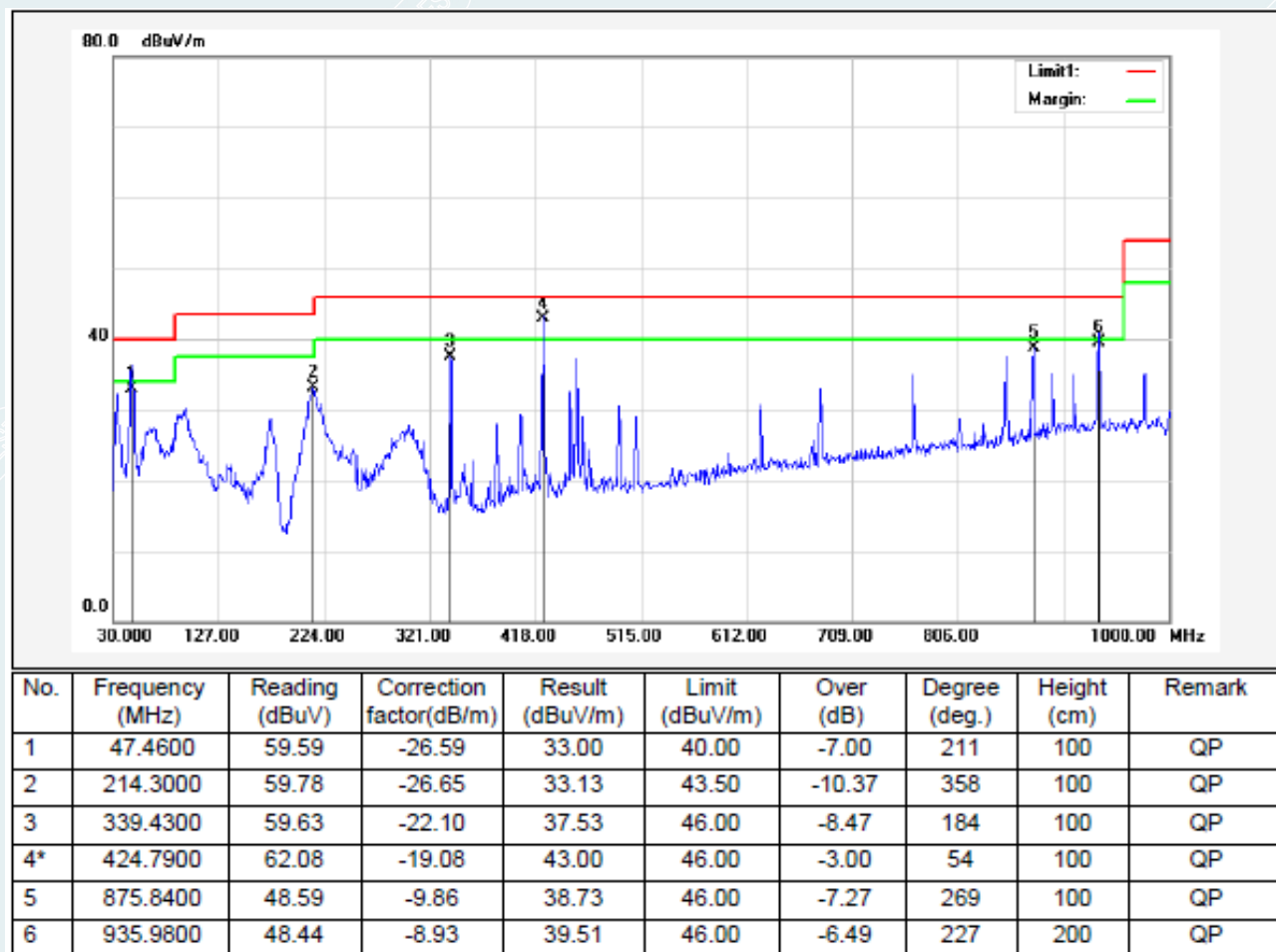
Date: 2022-01-15

25°C/60%RH

Tang Shenghui

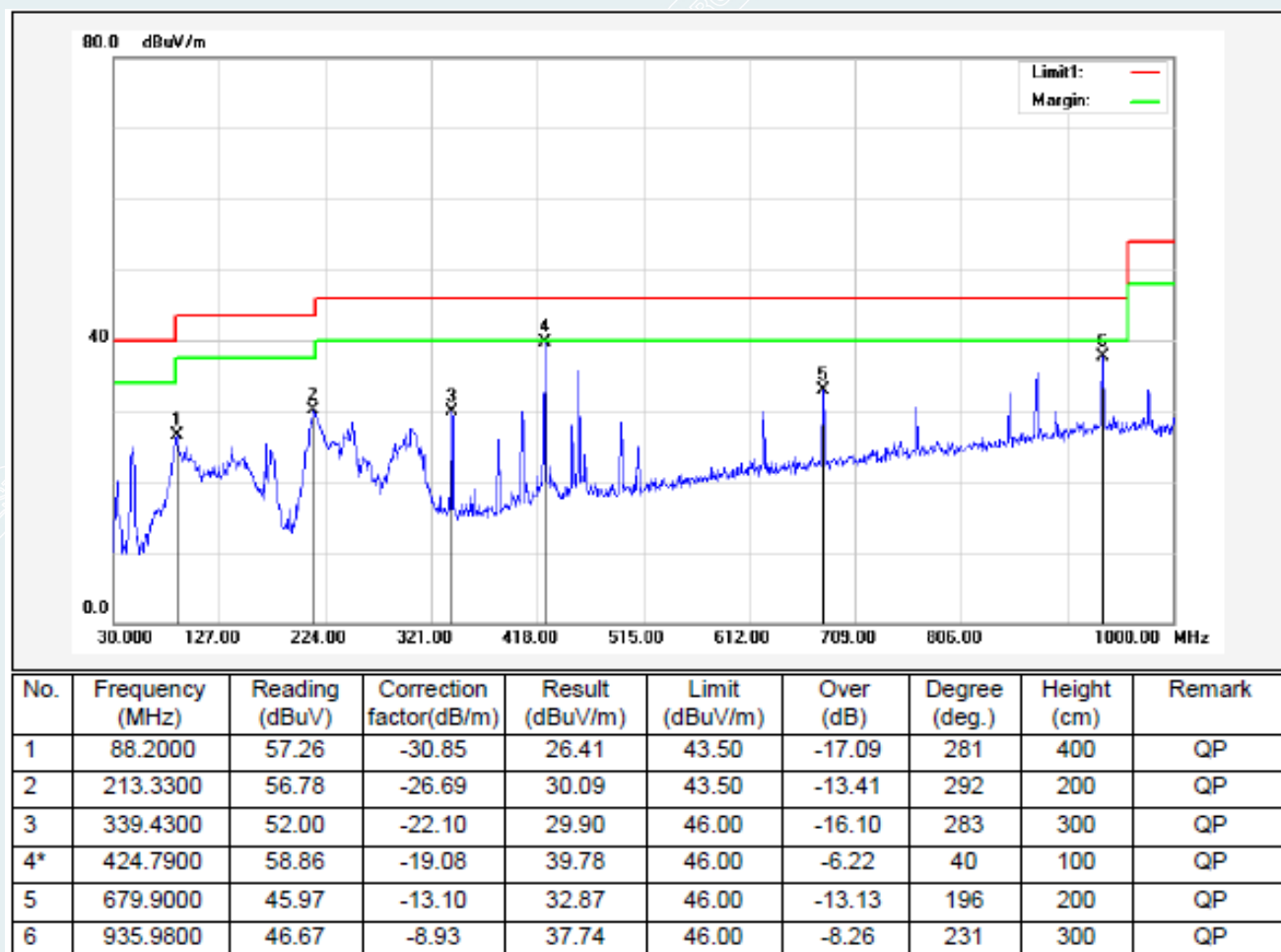
AC 120V/60Hz

Vertical



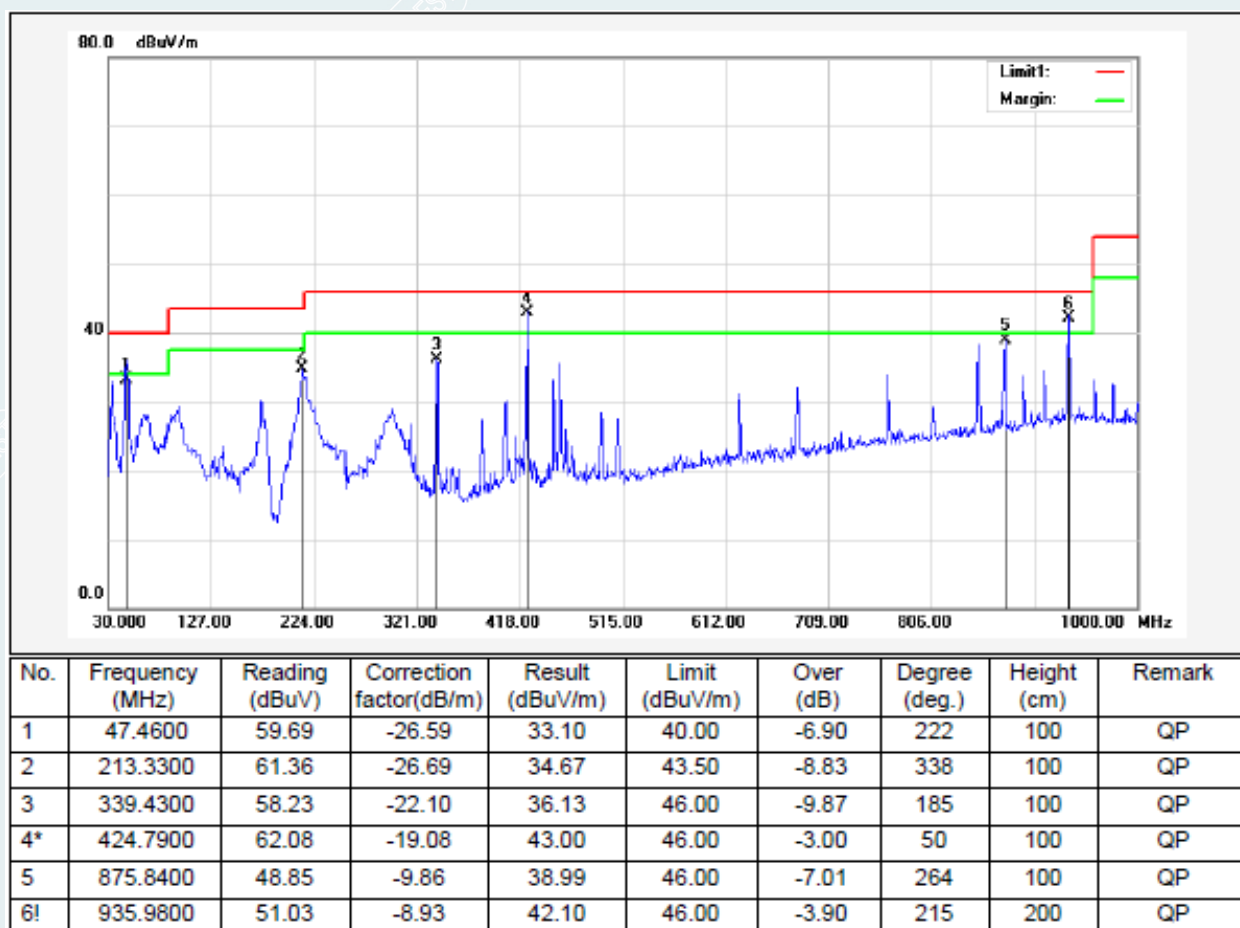
Mode: DH5
 Middle Frequency (2441MHz)
 Environment:
 Test Engineer:
 Test Voltage:
 Polarity:

Date: 2022-01-15
 25°C/60%RH
 Tang Shenghui
 AC 120V/60Hz
 Horizontal



Mode: DH5
Middle Frequency (2441MHz)
Environment:
Test Engineer:
Test Voltage:
Polarity:

Date: 2022-01-15
25°C/60%RH
Tang Shenghui
AC 120V/60Hz
Vertical



Mode: DH5

Highest Frequency (2480MHz)

Environment:

Test Engineer:

Test Voltage:

Polarity:

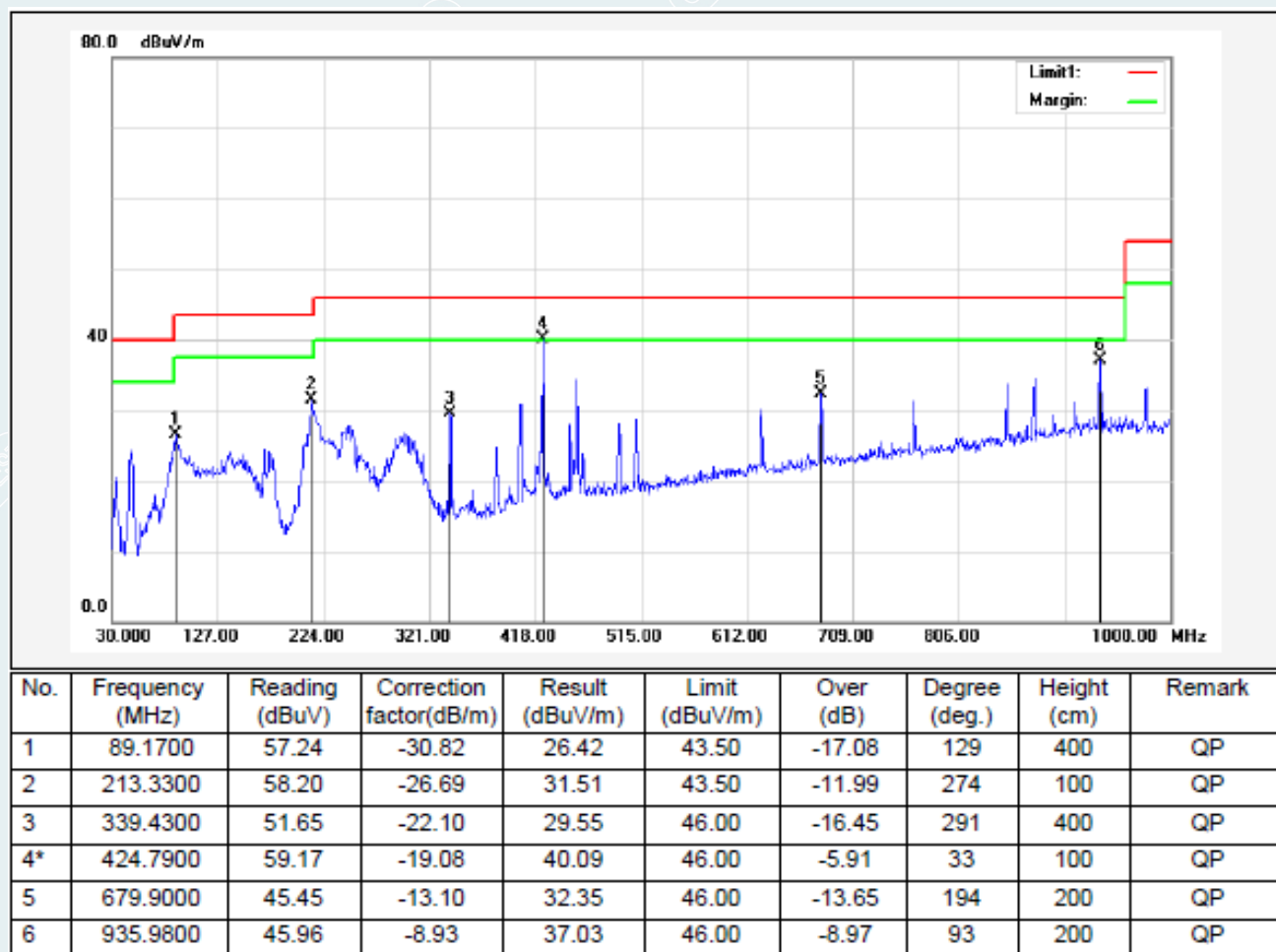
Date: 2022-01-15

25°C/60%RH

Tang Shenghui

AC 120V/60Hz

Horizontal



Mode: DH5

Highest Frequency (2480MHz)

Environment:

Test Engineer:

Test Voltage:

Polarity:

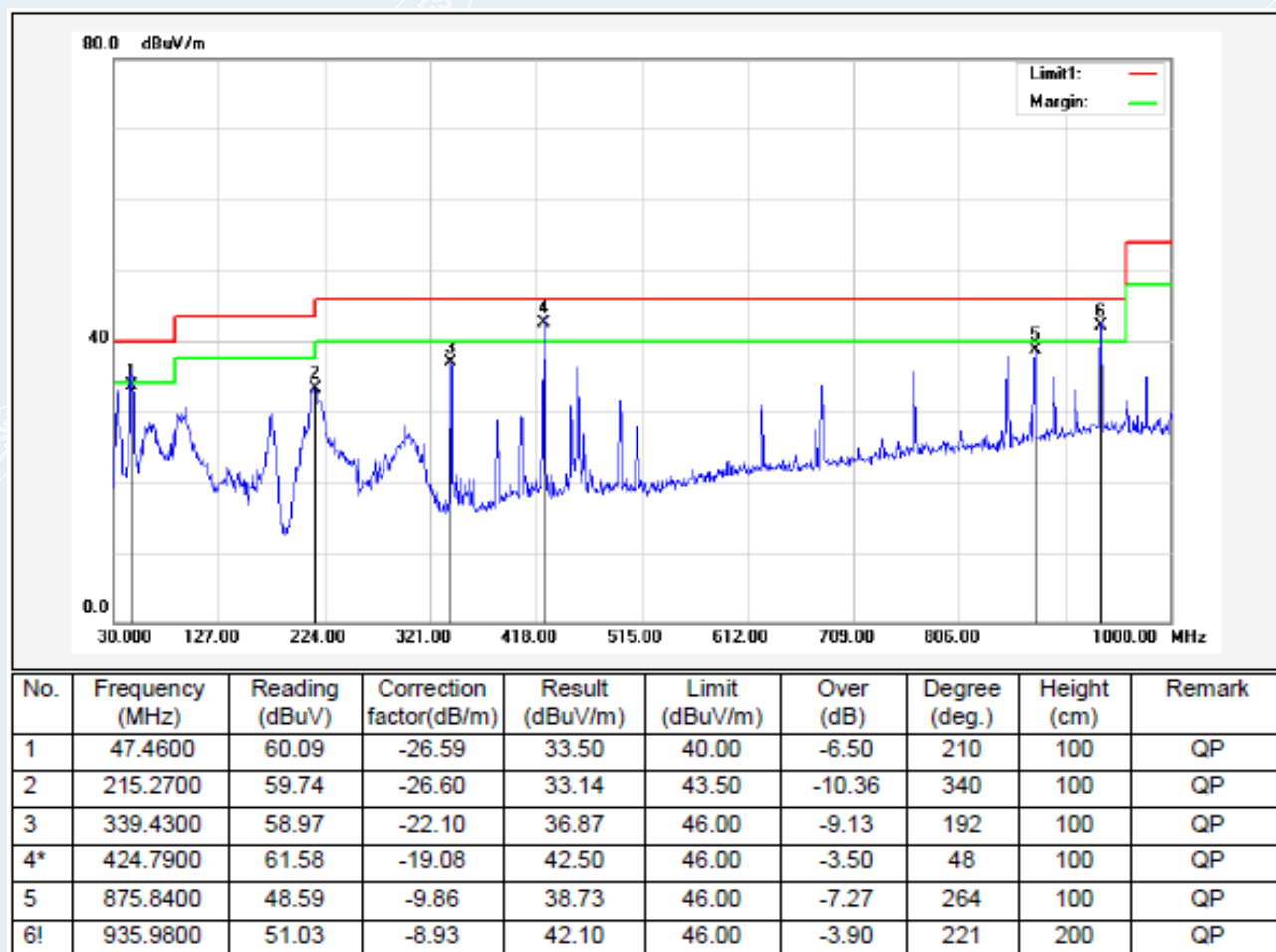
Date: 2022-01-15

25°C/60%RH

Tang Shenghui

AC 120V/60Hz

Vertical

**Remark:**

- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Pre-scan all mode and recorded the worst case results in this report (DH5).
- 3 Measuring frequencies from 9kHz to the 1GHz.
- 4 Radiated emissions measured in frequency range from 30MHz to 1GHz were made with an instrument using Peak/Quasi-peak detector mode.
- 5 Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 6 The IF bandwidth of SPA between 30MHz to 1GHz was 120kHz.

Above 1GHz:

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.

Mode: DH5

Lowest Frequency (2402MHz)

Environment:

Test Engineer:

Test Voltage:

Date: 2022-04-12

25°C/60%RH

Chen Xiaocong

AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.4000	64.10	40.45	-23.65	74.00	33.55	200	236	Horizontal
2	1761.0000	58.30	35.94	-22.36	74.00	38.06	200	271	Horizontal
3	3594.0000	53.74	39.26	-14.48	74.00	34.74	100	110	Horizontal
4	4762.5000	50.39	40.85	-9.54	74.00	33.15	200	150	Horizontal
5	6420.0000	50.17	43.88	-6.29	74.00	30.12	200	199	Horizontal
6	7219.5000	49.68	46.34	-3.34	74.00	27.66	100	4	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1367.8000	72.79	49.14	-23.65	74.00	24.86	200	352	Vertical
2	1759.0000	62.73	40.36	-22.37	74.00	33.64	100	44	Vertical
3	2040.8000	60.26	38.78	-21.48	74.00	35.22	200	79	Vertical
4	2276.4000	60.06	39.78	-20.28	74.00	34.22	200	182	Vertical
5	3231.0000	56.50	40.18	-16.32	74.00	33.82	200	302	Vertical
6	6799.5000	49.84	45.66	-4.18	74.00	28.34	100	179	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.2924	-23.65	66.72	43.07	54.00	10.93	200	358	Vertical

Mode: DH5
Middle Frequency (2441MHz)
Environment:
Test Engineer:
Test Voltage:

Date: 2022-04-12
25°C/60%RH
Chen Xiacong
AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.4000	63.36	39.71	-23.65	74.00	34.29	200	237	Horizontal
2	1754.8000	60.71	38.31	-22.40	74.00	35.69	200	113	Horizontal
3	3192.0000	53.99	37.98	-16.01	74.00	36.02	200	158	Horizontal
4	3771.0000	53.73	39.28	-14.45	74.00	34.72	100	253	Horizontal
5	4758.0000	49.79	40.28	-9.51	74.00	33.72	100	267	Horizontal
6	7156.5000	48.67	45.45	-3.22	74.00	28.55	100	82	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1020.4000	63.18	38.06	-25.12	74.00	35.94	200	39	Vertical
2	1367.6000	74.64	50.99	-23.65	74.00	23.01	200	2	Vertical
3	1615.4000	63.16	40.36	-22.80	74.00	33.64	200	127	Vertical
4	2040.0000	60.67	39.18	-21.49	74.00	34.82	200	311	Vertical
5	4653.0000	50.88	40.59	-10.29	74.00	33.41	100	186	Vertical
6	7227.0000	50.07	46.64	-3.43	74.00	27.36	100	262	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.5710	-23.65	65.93	42.28	54.00	11.72	200	358	Vertical

Mode: DH5
Highest Frequency (2480MHz)
Environment:
Test Engineer:
Test Voltage:

Date: 2022-04-12
25°C/60%RH
Chen Xiacong
AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.4000	63.83	40.18	-23.65	74.00	33.82	200	236	Horizontal
2	1759.4000	60.05	37.68	-22.37	74.00	36.32	200	160	Horizontal
3	3876.0000	53.64	39.07	-14.57	74.00	34.93	100	336	Horizontal
4	4642.5000	51.23	40.80	-10.43	74.00	33.20	100	179	Horizontal
5	5698.5000	50.63	42.58	-8.05	74.00	31.42	100	226	Horizontal
6	7236.0000	49.09	45.56	-3.53	74.00	28.44	100	96	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1020.0000	62.66	37.54	-25.12	74.00	36.46	200	37	Vertical
2	1368.4000	70.18	46.53	-23.65	74.00	27.47	200	0	Vertical
3	1615.6000	63.24	40.44	-22.80	74.00	33.56	200	10	Vertical
4	3192.0000	59.22	43.21	-16.01	74.00	30.79	200	350	Vertical
5	4657.5000	50.97	40.75	-10.22	74.00	33.25	200	90	Vertical
6	7204.5000	49.35	46.18	-3.17	74.00	27.82	100	185	Vertical

----- The following blanks -----

Mode: 2DH5
Lowest Frequency (2402MHz)
Environment:
Test Engineer:
Test Voltage:

Date: 2022-04-12
25°C/60%RH
Chen Xiacong
AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.2000	63.30	39.65	-23.65	74.00	34.35	200	242	Horizontal
2	1762.0000	57.73	35.38	-22.35	74.00	38.62	200	222	Horizontal
3	3468.0000	53.26	37.79	-15.47	74.00	36.21	100	76	Horizontal
4	4758.0000	49.77	40.26	-9.51	74.00	33.74	200	173	Horizontal
5	6846.0000	50.37	45.53	-4.84	74.00	28.47	100	263	Horizontal
6	9141.0000	46.37	46.82	0.45	74.00	27.18	200	242	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1369.0000	70.19	46.54	-23.65	74.00	27.46	200	148	Vertical
2	1754.0000	66.36	43.95	-22.41	74.00	30.05	100	106	Vertical
3	2277.6000	61.77	41.50	-20.27	74.00	32.50	200	182	Vertical
4	3286.5000	54.10	38.06	-16.04	74.00	35.94	200	219	Vertical
5	4642.5000	51.40	40.97	-10.43	74.00	33.03	200	281	Vertical
6	6168.0000	50.21	43.52	-6.69	74.00	30.48	200	62	Vertical

----- The following blanks -----

Mode: 2DH5
Middle Frequency (2441MHz)
Environment:
Test Engineer:
Test Voltage:

Date: 2022-04-12
25°C/60%RH
Chen Xiacong
AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1369.2000	63.39	39.75	-23.64	74.00	34.25	200	263	Horizontal
2	1754.0000	59.19	36.78	-22.41	74.00	37.22	100	87	Horizontal
3	3786.0000	53.26	38.91	-14.35	74.00	35.09	100	281	Horizontal
4	4633.5000	51.54	40.99	-10.55	74.00	33.01	100	34	Horizontal
5	7156.5000	48.95	45.73	-3.22	74.00	28.27	100	89	Horizontal
6	9346.5000	46.24	47.18	0.94	74.00	26.82	200	55	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1367.0000	71.36	47.70	-23.66	74.00	26.30	200	147	Vertical
2	1755.6000	62.81	40.41	-22.40	74.00	33.59	100	333	Vertical
3	2275.6000	59.97	39.69	-20.28	74.00	34.31	200	154	Vertical
4	4638.0000	51.00	40.51	-10.49	74.00	33.49	200	329	Vertical
5	6525.0000	50.63	44.32	-6.31	74.00	29.68	200	1	Vertical
6	7987.5000	48.64	47.09	-1.55	74.00	26.91	200	226	Vertical

----- The following blanks -----

Mode: 2DH5
Highest Frequency (2480MHz)
Environment:
Test Engineer:
Test Voltage:

Date: 2022-04-12
25°C/60%RH
Chen Xiacong
AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.2000	67.06	43.41	-23.65	74.00	30.59	200	216	Horizontal
2	1755.2000	62.14	39.74	-22.40	74.00	34.26	200	319	Horizontal
3	3475.5000	54.42	38.97	-15.45	74.00	35.03	100	69	Horizontal
4	4656.0000	52.19	41.95	-10.24	74.00	32.05	200	329	Horizontal
5	6175.5000	51.15	44.40	-6.75	74.00	29.60	100	266	Horizontal
6	7237.5000	49.48	45.93	-3.55	74.00	28.07	200	41	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.6000	70.11	46.46	-23.65	74.00	27.54	200	359	Vertical
2	1753.2000	64.63	42.21	-22.42	74.00	31.79	100	133	Vertical
3	2275.0000	60.42	40.13	-20.29	74.00	33.87	200	36	Vertical
4	3676.5000	54.09	39.31	-14.78	74.00	34.69	100	316	Vertical
5	6154.5000	50.37	43.78	-6.59	74.00	30.22	200	69	Vertical
6	7992.0000	48.45	46.94	-1.51	74.00	27.06	100	145	Vertical

----- The following blanks -----

Mode: 3DH5
 Lowest Frequency (2402MHz)
 Environment:
 Test Engineer:
 Test Voltage:

Date: 2022-04-12
 25°C/60%RH
 Chen Xiacong
 AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1020.2000	63.65	38.53	-25.12	74.00	35.47	200	5	Horizontal
2	1369.8000	71.70	48.06	-23.64	74.00	25.94	200	236	Horizontal
3	2275.2000	56.77	36.48	-20.29	74.00	37.52	200	30	Horizontal
4	3612.0000	52.52	38.14	-14.38	74.00	35.86	100	360	Horizontal
5	4353.0000	51.65	39.31	-12.34	74.00	34.69	200	34	Horizontal
6	7182.0000	48.11	44.95	-3.16	74.00	29.05	100	253	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1368.3984	-23.65	64.03	40.38	54.00	13.62	200	211	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1020.4000	69.53	44.41	-25.12	74.00	29.59	200	52	Vertical
2	1367.8000	70.49	46.84	-23.65	74.00	27.16	200	257	Vertical
3	1615.8000	66.54	43.74	-22.80	74.00	30.26	200	11	Vertical
4	2274.8000	64.77	44.48	-20.29	74.00	29.52	200	182	Vertical
5	2635.8000	64.61	45.85	-18.76	74.00	28.15	200	270	Vertical
6	3231.0000	58.08	41.76	-16.32	74.00	32.24	100	302	Vertical

Mode: 3DH5
Middle Frequency (2441MHz)
Environment:
Test Engineer:
Test Voltage:

Date: 2022-04-12
25°C/60%RH
Chen Xiacong
AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1020.2000	62.33	37.21	-25.12	74.00	36.79	200	352	Horizontal
2	1368.0000	74.83	51.18	-23.65	74.00	22.82	200	236	Horizontal
3	1759.4000	62.00	39.63	-22.37	74.00	34.37	200	352	Horizontal
4	2635.4000	56.02	37.26	-18.76	74.00	36.74	200	141	Horizontal
5	4348.5000	51.29	38.95	-12.34	74.00	35.05	200	178	Horizontal
6	7200.0000	47.20	44.08	-3.12	74.00	29.92	100	192	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1367.9179	-23.65	61.44	37.79	54.00	16.21	200	211	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1020.4000	72.13	47.01	-25.12	74.00	26.99	200	37	Vertical
2	1373.2000	72.31	48.69	-23.62	74.00	25.31	200	352	Vertical
3	1530.2000	66.73	43.86	-22.87	74.00	30.14	200	10	Vertical
4	1615.2000	67.23	44.43	-22.80	74.00	29.57	200	16	Vertical
5	2635.4000	64.19	45.43	-18.76	74.00	28.57	200	270	Vertical
6	3229.5000	60.15	43.85	-16.30	74.00	30.15	200	301	Vertical

Mode: 3DH5
 Highest Frequency (2480MHz)
 Environment:
 Test Engineer:
 Test Voltage:

Date: 2022-04-12
 25°C/60%RH
 Chen Xiacong
 AC 120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1020.0000	62.33	37.21	-25.12	74.00	36.79	200	175	Horizontal
2	1367.8000	75.38	51.73	-23.65	74.00	22.27	200	107	Horizontal
3	1530.6000	60.12	37.25	-22.87	74.00	36.75	200	65	Horizontal
4	3301.5000	52.75	36.91	-15.84	74.00	37.09	100	123	Horizontal
5	4351.5000	51.47	39.15	-12.32	74.00	34.85	200	323	Horizontal
6	7696.5000	47.38	44.55	-2.83	74.00	29.45	100	354	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1367.9847	-23.65	58.25	34.60	54.00	19.40	200	209	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1020.2000	71.37	46.25	-25.12	74.00	27.75	200	39	Vertical
2	1378.0000	71.78	48.18	-23.60	74.00	25.82	200	0	Vertical
3	1615.6000	67.00	44.20	-22.80	74.00	29.80	200	18	Vertical
4	2280.6000	63.61	43.37	-20.24	74.00	30.63	200	3	Vertical
5	2635.0000	62.54	43.77	-18.77	74.00	30.23	200	271	Vertical
6	3231.0000	60.09	43.77	-16.32	74.00	30.23	200	296	Vertical

Remark:

- 1 Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2 The amplitude of 18GHz to 26.5GHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
- 3 Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 4 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.

14. RESTRICTED BANDS OF OPERATION

14.1 LIMITS

Section 15.247(d) In addition, Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

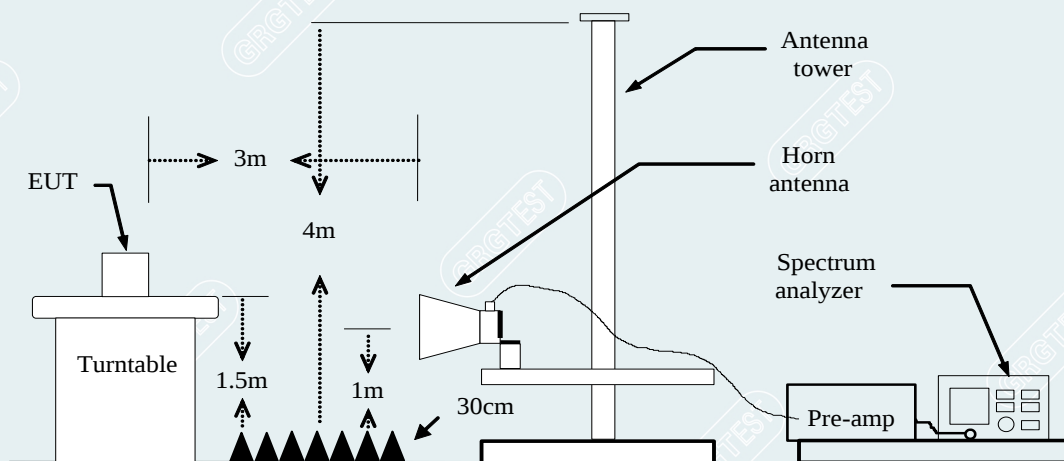
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	
13.36 - 13.41			

Frequency (MHz)	Quasi-peak($\mu\text{V/m}$)	Measurement distance(m)	Quasi-peak(dB $\mu\text{V/m}$)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

14.2 TEST PROCEDURES

- 1) The EUT is placed on a turntable, which is 1.5m above the ground plane.
- 2) The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4) Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - a) The frequency above 1GHz, for Peak detector: Set RBW=1MHz, RBW=3MHz.
 - b) The frequency above 1GHz, for Avg detector: Set RBW=1MHz, if the EUT is configured to transmit with duty cycle $\geq 98\%$, set $VBW \leq RBW/100$ (i.e., 10kHz) but not less than 10Hz, Where duty cycle is defined in section 2.8. If the EUT duty cycle is $< 98\%$, set $VBW \geq 1/T$, Where T is defined in section 2.8.
- 5) Repeat the procedures until all the PEAK and AVERAGE versus polarization are measured.

14.3 TEST SETUP



----- The following blanks -----

14.4 TEST RESULTS

Equipment:	Table top touch screen	Test Date	2022-01-12
Model No.:	UCTTA-42	Test Engineer:	Chen Xiacong
Test Voltage:	AC 120V/60Hz	Environment:	25°C/60%RH

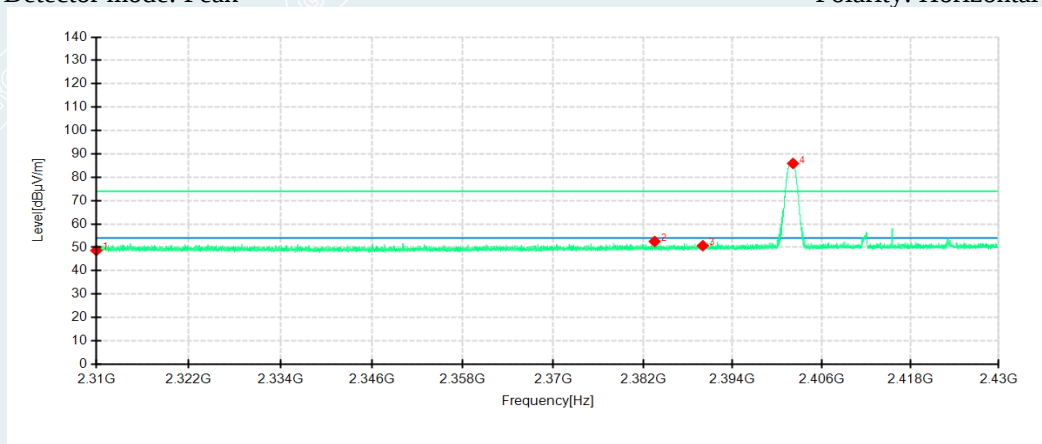
DH5

Lowest Channel

Frequency 2402MHz

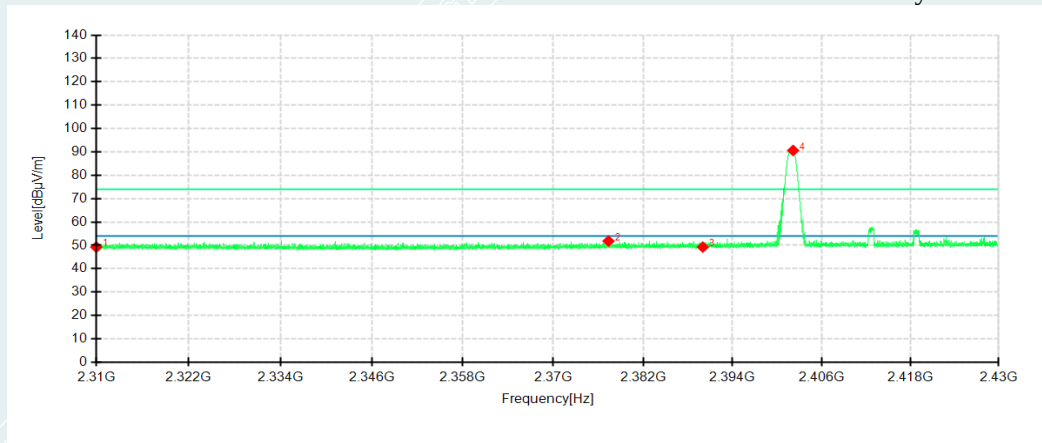
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



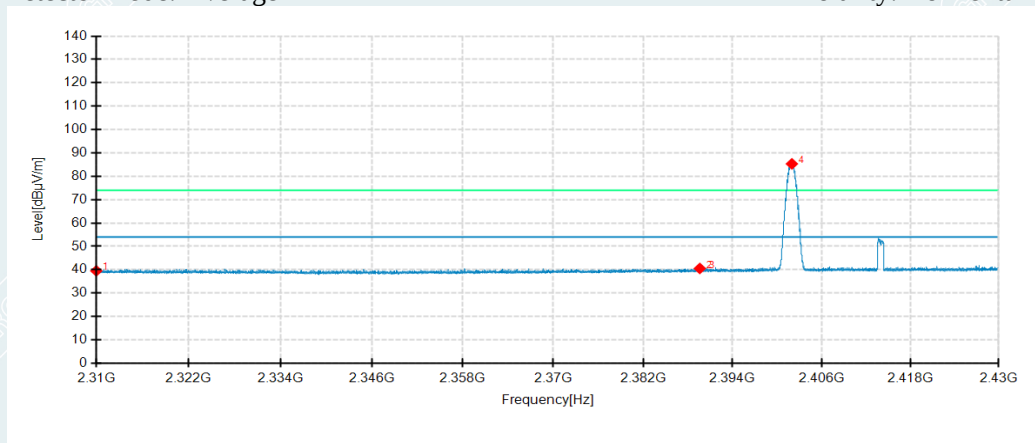
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	45.19	48.67	3.48	74.00	25.33	200	231	Horizontal	/
2	2383.5480	48.83	52.53	3.70	74.00	21.47	200	142	Horizontal	/
3	2390.0000	46.89	50.70	3.81	74.00	23.30	200	142	Horizontal	/
4	2402.1360	81.91	85.90	3.99	74.00	-11.90	200	299	Horizontal	No limit
1	2310.0000	45.76	49.24	3.48	74.00	24.76	100	218	Vertical	/
2	2377.3800	48.25	51.85	3.60	74.00	22.15	200	7	Vertical	/
3	2390.0000	45.48	49.29	3.81	74.00	24.71	100	294	Vertical	/
4	2402.1480	86.63	90.62	3.99	74.00	-16.62	200	218	Vertical	No limit

Lowest Channel

Frequency 2402MHz

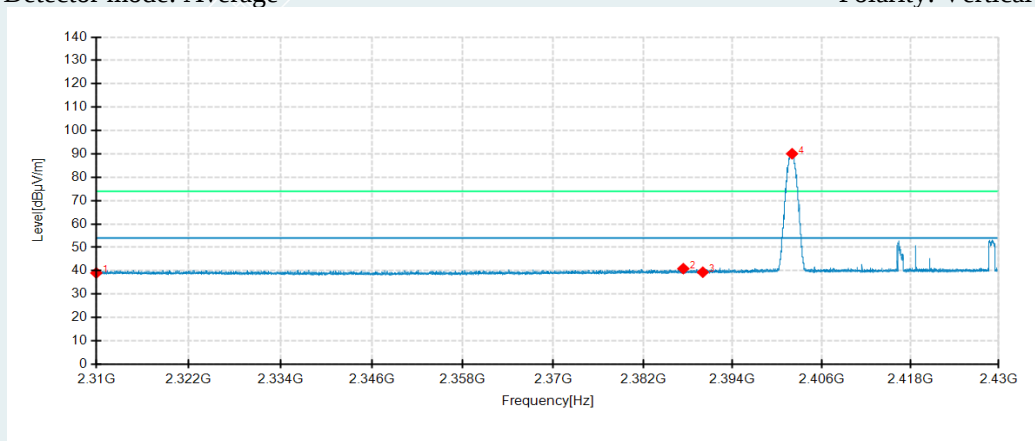
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



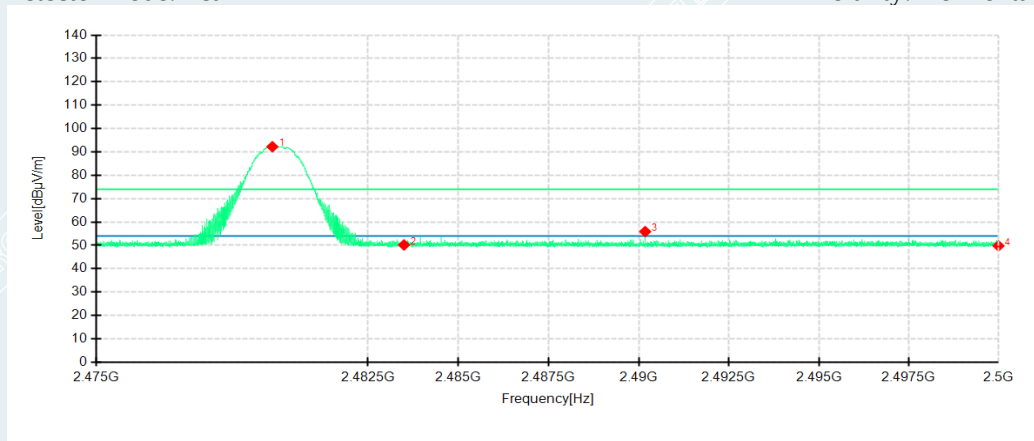
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	36.05	39.53	3.48	54.00	14.47	200	238	Horizontal	/
2	2389.5960	36.75	40.55	3.80	54.00	13.45	200	142	Horizontal	/
3	2390.0000	36.60	40.41	3.81	54.00	13.59	200	359	Horizontal	/
4	2401.9800	81.33	85.32	3.99	54.00	-31.32	200	299	Horizontal	No limit
1	2310.0000	35.58	39.06	3.48	54.00	14.94	100	142	Vertical	/
2	2387.3880	37.12	40.89	3.77	54.00	13.11	200	184	Vertical	/
3	2390.0000	35.55	39.36	3.81	54.00	14.64	100	238	Vertical	/
4	2402.0040	86.08	90.07	3.99	54.00	-36.07	200	218	Vertical	No limit

Highest Channel

Frequency 2480MHz

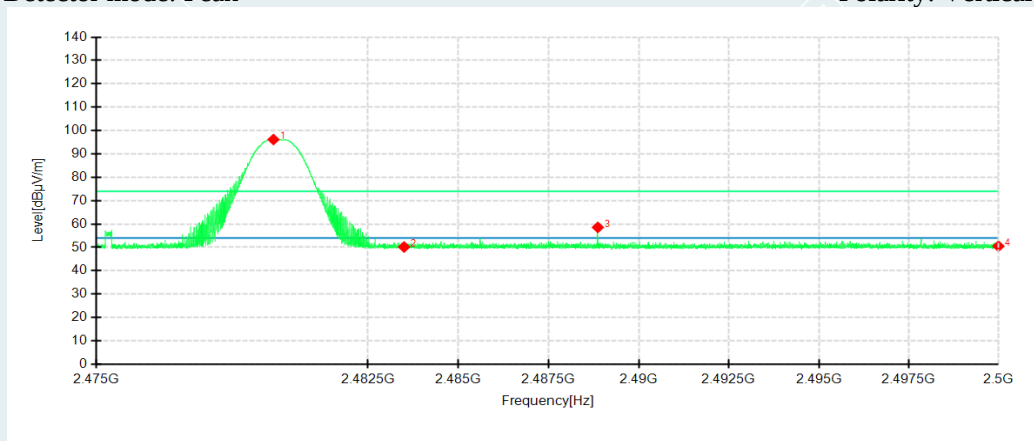
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



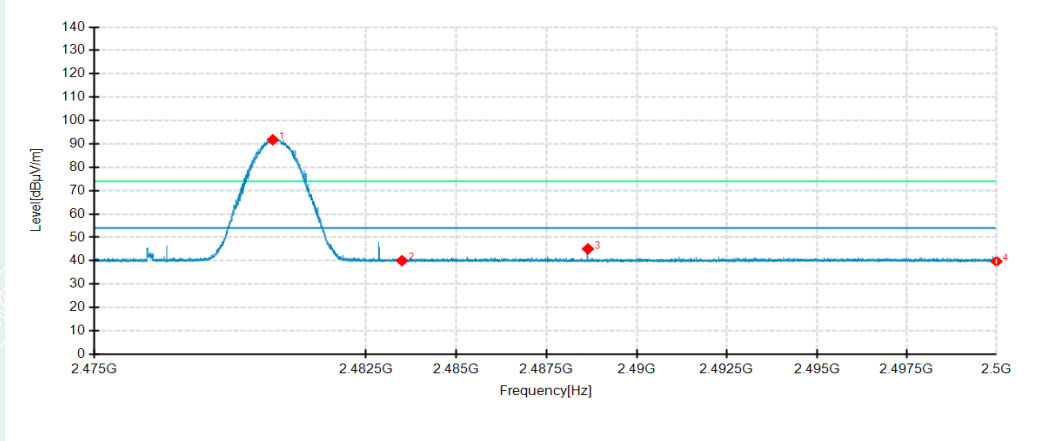
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.8600	87.89	92.21	4.32	74.00	-18.21	200	211	Horizontal	No limit
2	2483.5000	45.86	50.19	4.33	74.00	23.81	200	142	Horizontal	/
3	2490.1800	51.55	55.90	4.35	74.00	18.10	100	143	Horizontal	/
4	2500.0000	45.41	49.79	4.38	74.00	24.21	200	142	Horizontal	/
1	2479.8900	91.82	96.14	4.32	74.00	-22.14	200	218	Vertical	No limit
2	2483.5000	45.84	50.17	4.33	74.00	23.83	100	211	Vertical	/
3	2488.8675	54.20	58.55	4.35	74.00	15.45	100	252	Vertical	/
4	2500.0000	46.11	50.49	4.38	74.00	23.51	200	204	Vertical	/

Highest Channel

Frequency 2480MHz

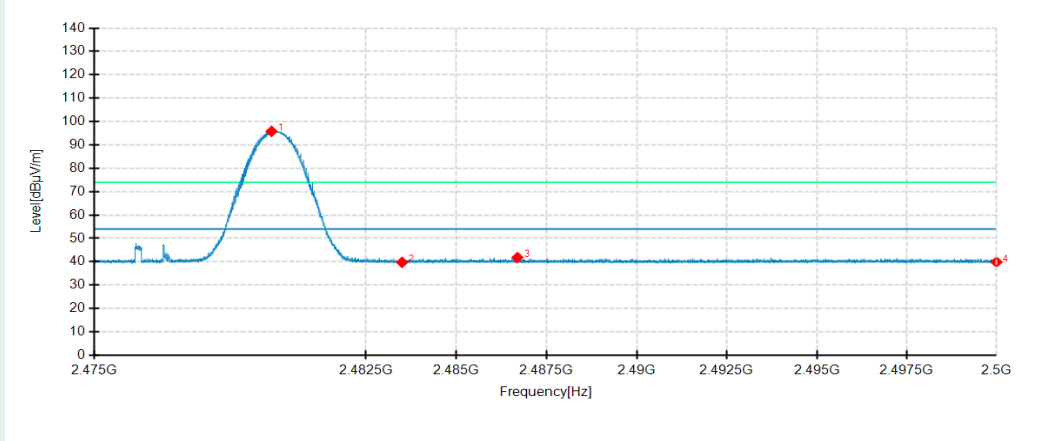
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.9275	87.45	91.77	4.32	54.00	-37.77	200	211	Horizontal	No limit
2	2483.5000	35.69	40.02	4.33	54.00	13.98	100	218	Horizontal	/
3	2488.6475	40.71	45.06	4.35	54.00	8.94	100	116	Horizontal	/
4	2500.0000	35.33	39.71	4.38	54.00	14.29	200	142	Horizontal	/
1	2479.8925	91.48	95.80	4.32	54.00	-41.80	200	218	Vertical	No limit
2	2483.5000	35.42	39.75	4.33	54.00	14.25	100	142	Vertical	/
3	2486.6950	37.45	41.79	4.34	54.00	12.21	100	142	Vertical	/
4	2500.0000	35.48	39.86	4.38	54.00	14.14	200	218	Vertical	/

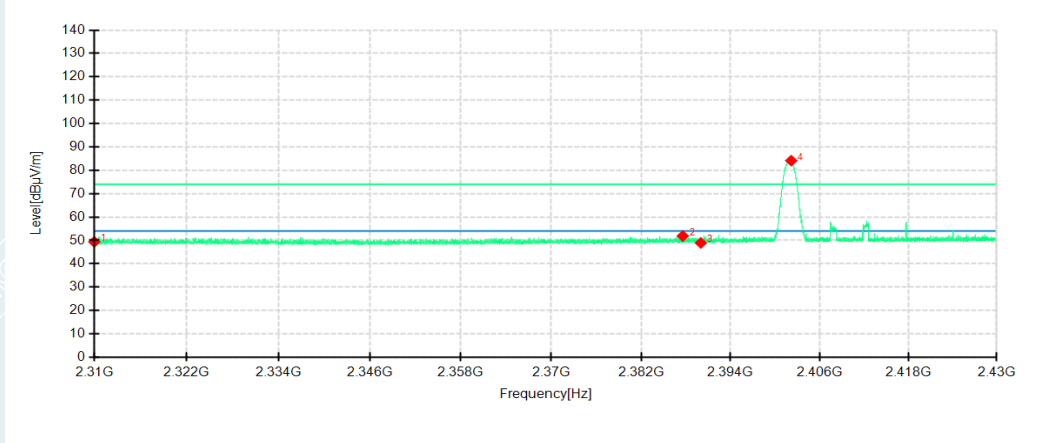
2DH5

Lowest Channel

Frequency 2402MHz

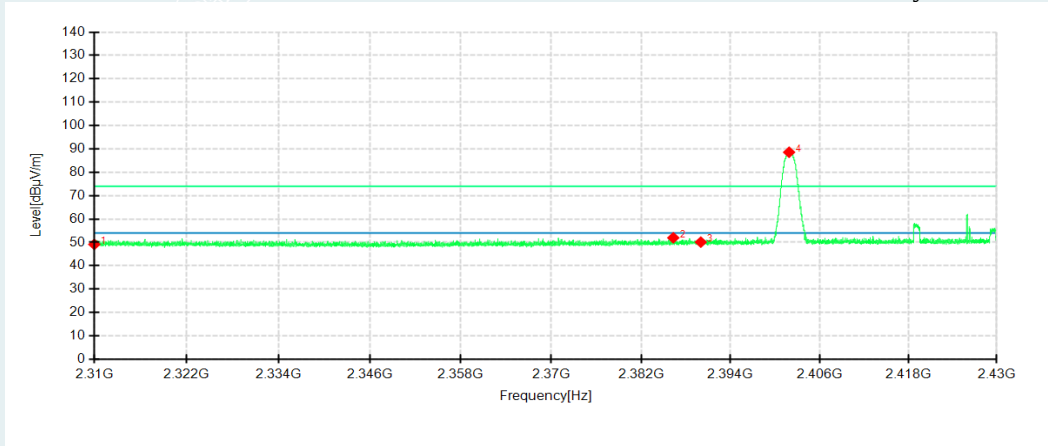
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



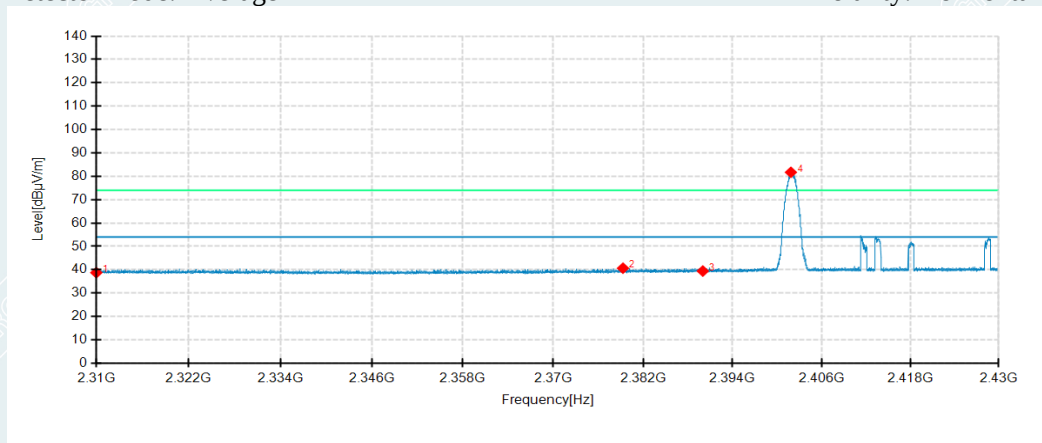
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	45.87	49.35	3.48	74.00	24.65	100	95	Horizontal	/
2	2387.5800	48.08	51.85	3.77	74.00	22.15	200	142	Horizontal	/
3	2390.0000	45.11	48.92	3.81	74.00	25.08	200	142	Horizontal	/
4	2402.1600	80.12	84.11	3.99	74.00	-10.11	200	299	Horizontal	No limit
1	2310.0000	45.66	49.14	3.48	74.00	24.86	100	279	Vertical	/
2	2386.3080	48.20	51.95	3.75	74.00	22.05	200	115	Vertical	/
3	2390.0000	46.29	50.10	3.81	74.00	23.90	200	218	Vertical	/
4	2401.8720	84.57	88.56	3.99	74.00	-14.56	200	218	Vertical	No limit

Lowest Channel

Frequency 2402MHz

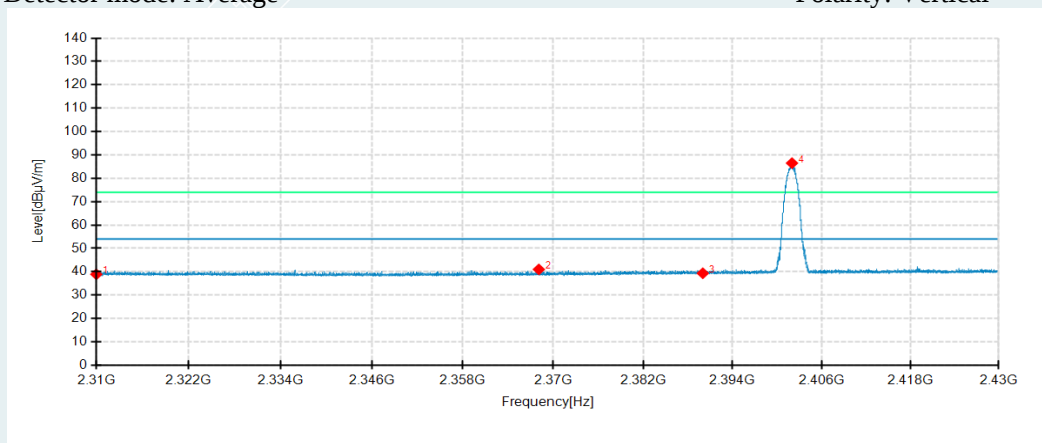
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



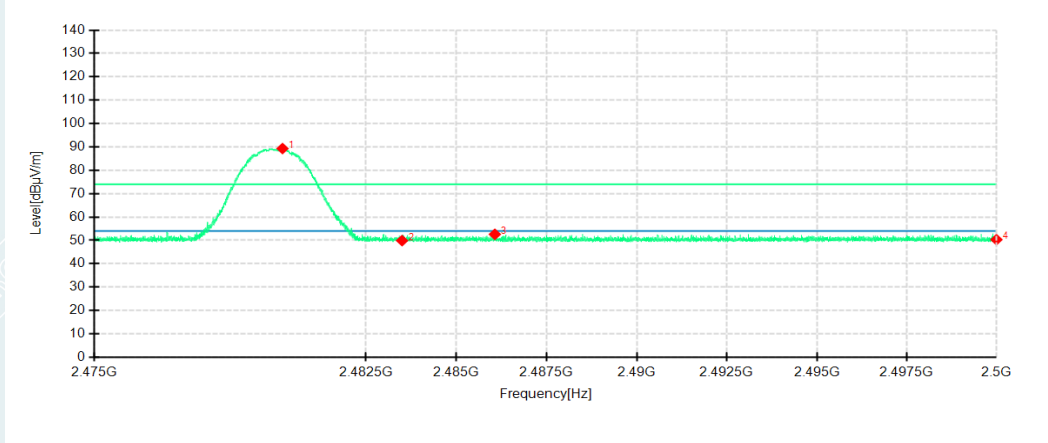
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	35.26	38.74	3.48	54.00	15.26	100	150	Horizontal	/
2	2379.3120	37.02	40.65	3.63	54.00	13.35	200	142	Horizontal	/
3	2390.0000	35.63	39.44	3.81	54.00	14.56	100	129	Horizontal	/
4	2401.8480	77.71	81.70	3.99	54.00	-27.70	200	251	Horizontal	No limit
1	2310.0000	35.43	38.91	3.48	54.00	15.09	200	218	Vertical	/
2	2368.1040	37.56	41.00	3.44	54.00	13.00	100	359	Vertical	/
3	2390.0000	35.53	39.34	3.81	54.00	14.66	100	265	Vertical	/
4	2401.9920	82.48	86.47	3.99	54.00	-32.47	200	218	Vertical	No limit

Highest Channel

Frequency 2480MHz

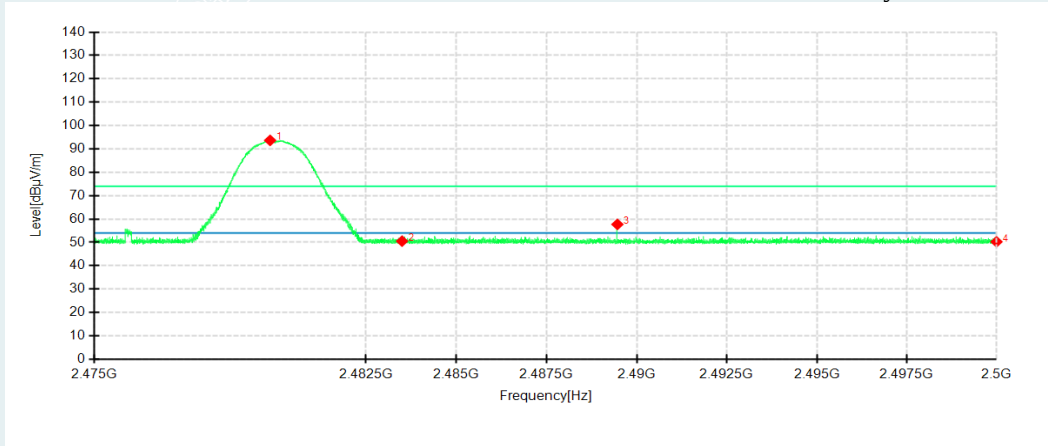
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



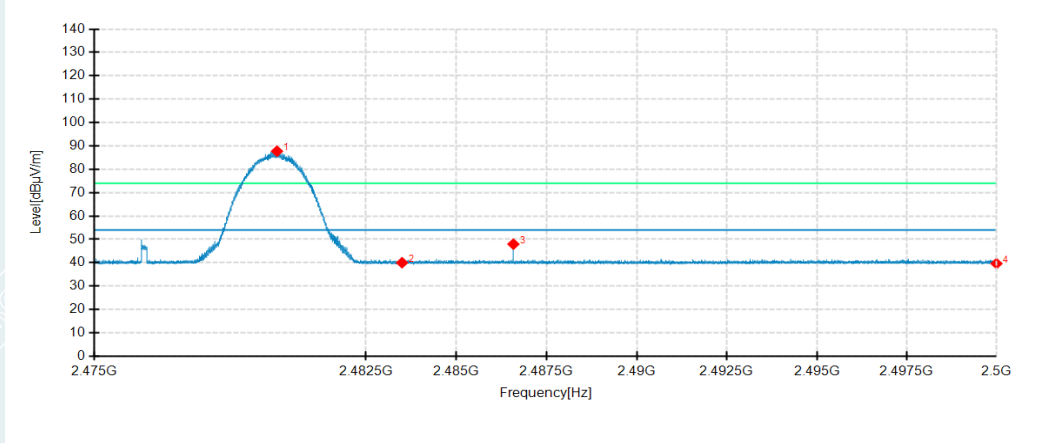
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2480.1950	84.97	89.29	4.32	74.00	-15.29	200	211	Horizontal	No limit
2	2483.5000	45.57	49.90	4.33	74.00	24.10	100	218	Horizontal	/
3	2486.0675	48.25	52.59	4.34	74.00	21.41	200	142	Horizontal	/
4	2500.0000	45.94	50.32	4.38	74.00	23.68	100	68	Horizontal	/
1	2479.8525	89.32	93.64	4.32	74.00	-19.64	200	218	Vertical	No limit
2	2483.5000	46.19	50.52	4.33	74.00	23.48	200	33	Vertical	/
3	2489.4650	53.34	57.69	4.35	74.00	16.31	200	108	Vertical	/
4	2500.0000	45.88	50.26	4.38	74.00	23.74	200	218	Vertical	/

Highest Channel

Frequency 2480MHz

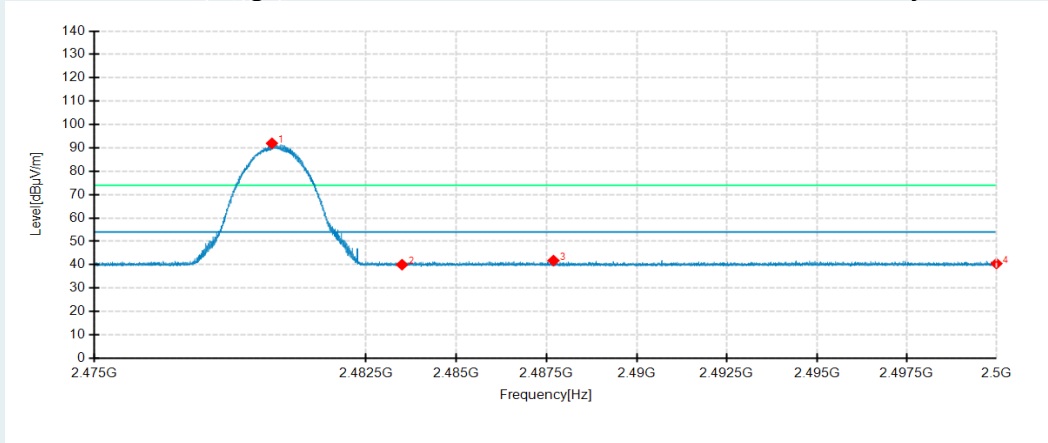
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



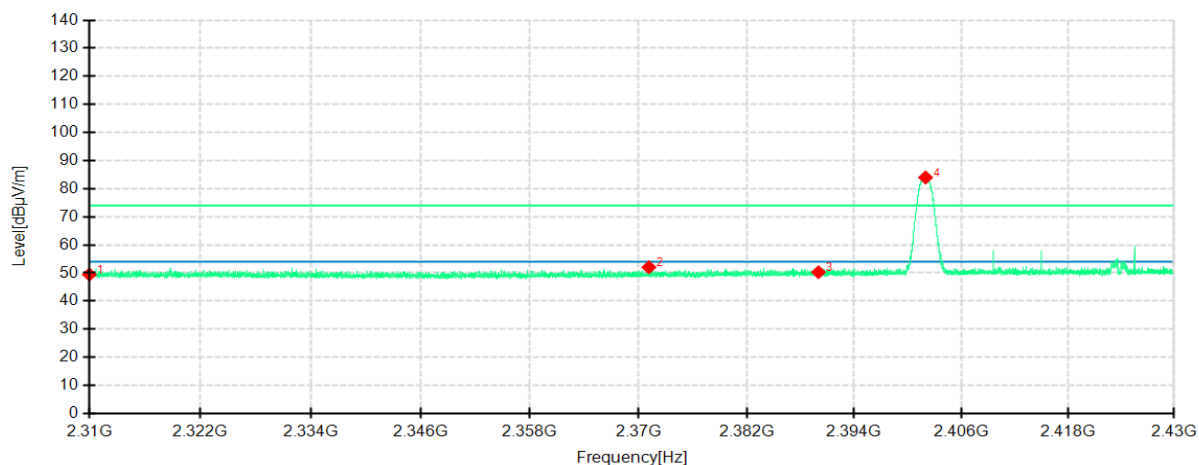
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2480.0425	83.41	87.73	4.32	54.00	-33.73	200	211	Horizontal	No limit
2	2483.5000	35.68	40.01	4.33	54.00	13.99	200	211	Horizontal	/
3	2486.5825	43.61	47.95	4.34	54.00	6.05	200	142	Horizontal	/
4	2500.0000	35.26	39.64	4.38	54.00	14.36	100	157	Horizontal	/
1	2479.9025	87.65	91.97	4.32	54.00	-37.97	200	218	Vertical	No limit
2	2483.5000	35.69	40.02	4.33	54.00	13.98	100	321	Vertical	/
3	2487.6925	37.44	41.78	4.34	54.00	12.22	200	0	Vertical	/
4	2500.0000	36.11	40.49	4.38	54.00	13.51	200	136	Vertical	/

3DH5**Lowest Channel**

Frequency 2402MHz

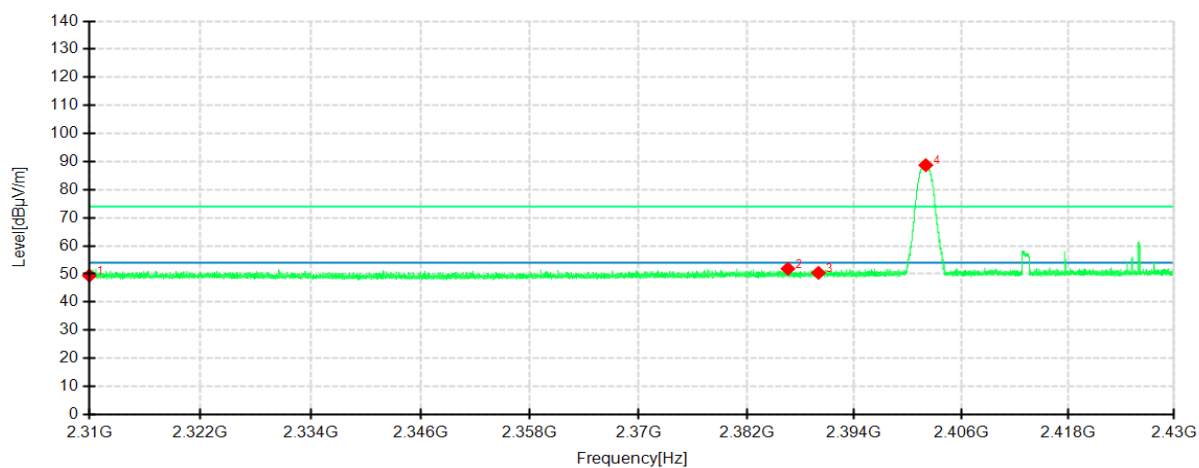
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



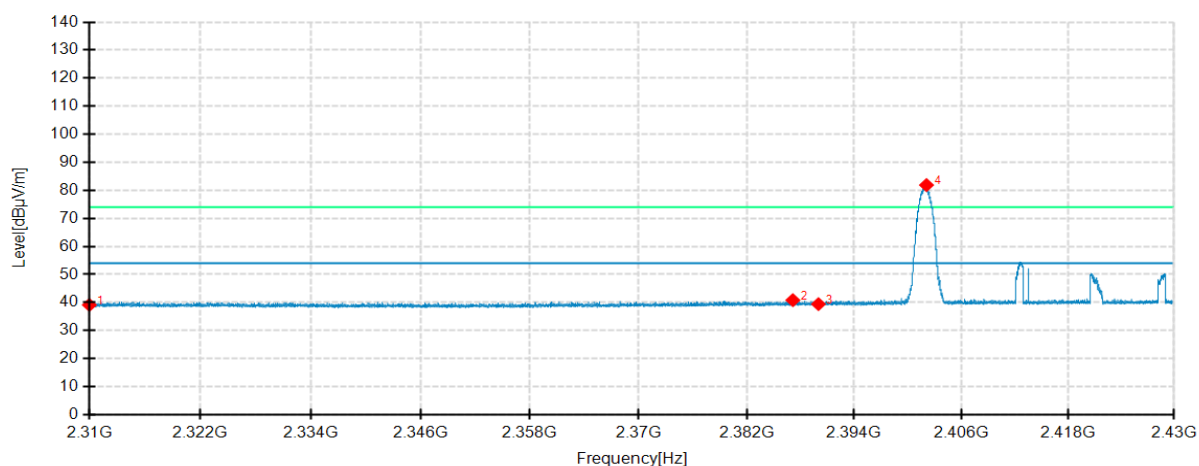
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	45.99	49.47	3.48	74.00	24.53	100	218	Horizontal	/
2	2371.1520	48.53	52.02	3.49	74.00	21.98	100	80	Horizontal	/
3	2390.0000	46.47	50.28	3.81	74.00	23.72	200	142	Horizontal	/
4	2401.9920	80.00	83.99	3.99	74.00	-9.99	200	299	Horizontal	No limit
1	2310.0000	45.94	49.42	3.48	74.00	24.58	200	218	Vertical	/
2	2386.5960	48.11	51.86	3.75	74.00	22.14	100	142	Vertical	/
3	2390.0000	46.59	50.40	3.81	74.00	23.60	200	218	Vertical	/
4	2402.0040	84.74	88.73	3.99	74.00	-14.73	200	218	Vertical	No limit

Lowest Channel

Frequency 2402MHz

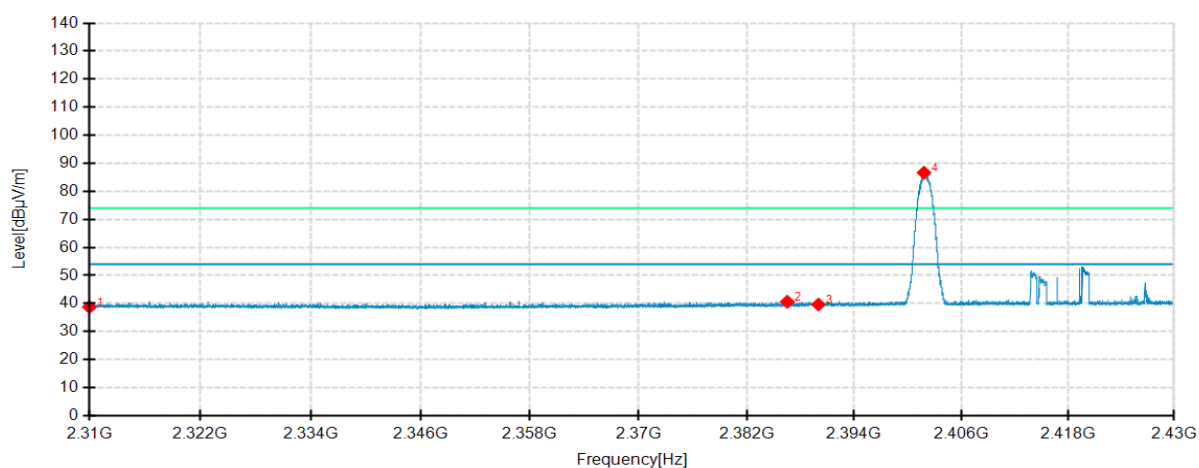
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



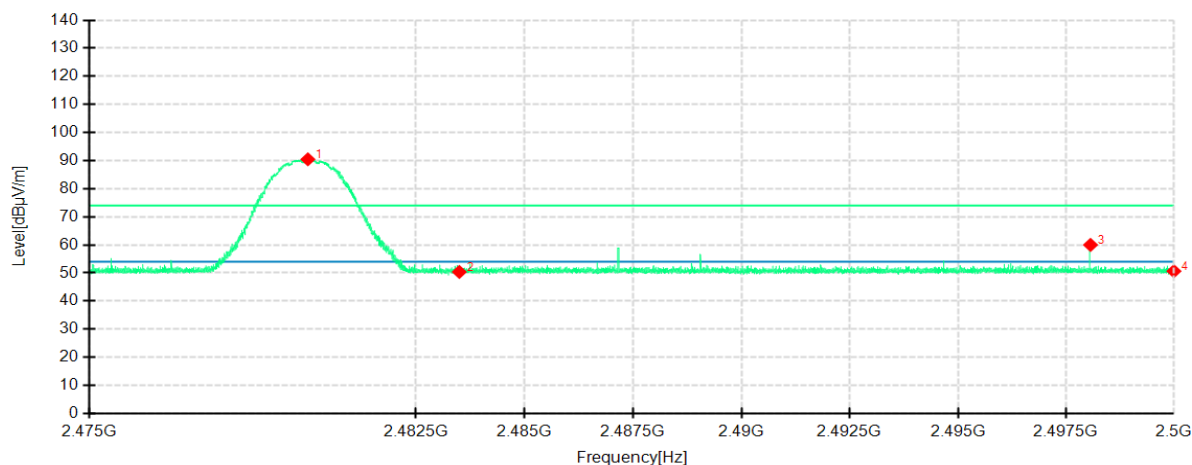
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	35.64	39.12	3.48	54.00	14.88	200	347	Horizontal	/
2	2387.1480	37.07	40.83	3.76	54.00	13.17	100	218	Horizontal	/
3	2390.0000	35.61	39.42	3.81	54.00	14.58	100	54	Horizontal	/
4	2402.0880	77.88	81.87	3.99	54.00	-27.87	200	245	Horizontal	No limit
1	2310.0000	35.26	38.74	3.48	54.00	15.26	200	211	Vertical	/
2	2386.5240	36.88	40.63	3.75	54.00	13.37	200	115	Vertical	/
3	2390.0000	35.83	39.64	3.81	54.00	14.36	200	74	Vertical	/
4	2401.8120	82.66	86.65	3.99	54.00	-32.65	200	218	Vertical	No limit

Highest Channel

Frequency 2480MHz

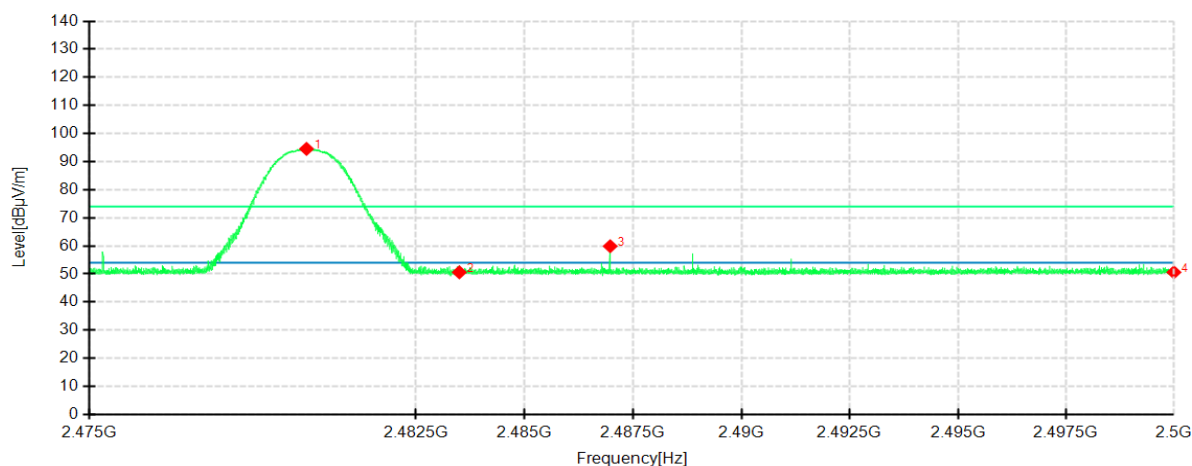
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



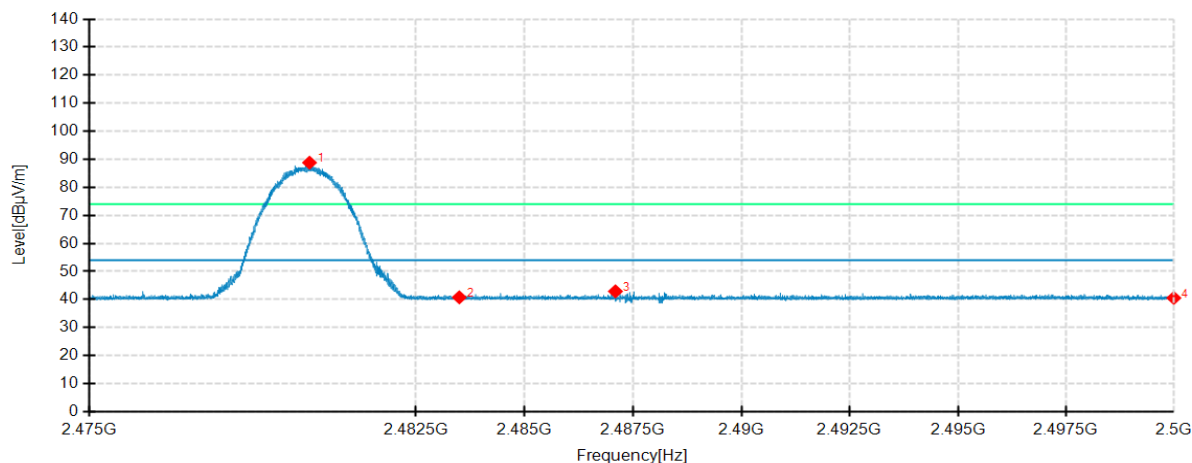
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2480.0175	86.13	90.45	4.32	74.00	-16.45	200	211	Horizontal	No limit
2	2483.5000	46.04	50.37	4.33	74.00	23.63	100	82	Horizontal	/
3	2498.0700	55.62	59.99	4.37	74.00	14.01	200	307	Horizontal	
4	2500.0000	46.27	50.65	4.38	74.00	23.35	100	19	Horizontal	/
1	2479.9850	90.21	94.53	4.32	74.00	-20.53	200	218	Vertical	No limit
2	2483.5000	46.27	50.60	4.33	74.00	23.40	100	313	Vertical	/
3	2486.9750	55.55	59.89	4.34	74.00	14.11	100	156	Vertical	/
4	2500.0000	46.21	50.59	4.38	74.00	23.41	200	143	Vertical	/

Highest Channel

Frequency 2480MHz

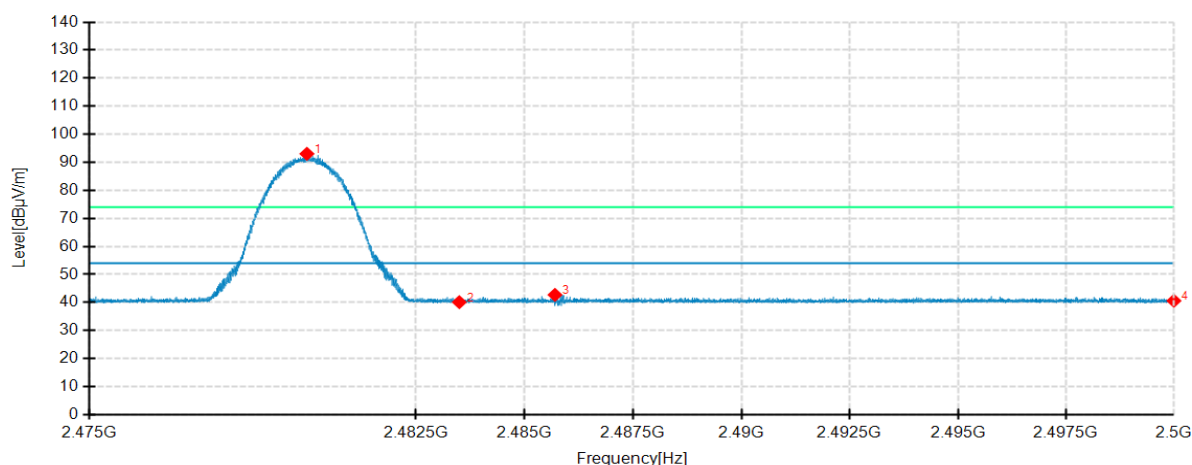
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2480.0550	84.47	88.79	4.32	54.00	-34.79	200	210	Horizontal	No limit
2	2483.5000	36.43	40.76	4.33	54.00	13.24	100	218	Horizontal	/
3	2487.0950	38.55	42.89	4.34	54.00	11.11	100	123	Horizontal	/
4	2500.0000	36.16	40.54	4.38	54.00	13.46	100	150	Horizontal	/
1	2479.9950	88.69	93.01	4.32	54.00	-39.01	200	218	Vertical	No limit
2	2483.5000	35.79	40.12	4.33	54.00	13.88	100	142	Vertical	/
3	2485.7025	38.38	42.72	4.34	54.00	11.28	100	169	Vertical	/
4	2500.0000	36.22	40.60	4.38	54.00	13.40	100	360	Vertical	/

Remark: Max field strength in 3m distance. No any other emission which falls in restricted bands can be detected and be reported.

APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E202112276794-19-Test photo.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E202112276794-20-EUT photo.

----- End of Report -----