

FCC TEST REPORT

FCC ID:2A737-CW606

Report Number..... : ZKT-220727L5247-02

Date of Test..... : Jul. 08, 2022 -- Jul. 26, 2022

Date of issue : Aug. 04, 2022

Total number of pages : 34

Test Result : PASS

Testing Laboratory..... : Shenzhen ZKT Technology Co., Ltd.

Address : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name : Shenzhen Ruichenhui Electronics Co., LTD

Address : No.262, 404, Fenghuang East District, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen

Manufacturer's name : Shenzhen Ruichenhui Electronics Co., LTD

Address : No.262, 404, Fenghuang East District, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen

Test specification:

Standard..... : FCC CFR Title 47 Part 15 Subpart C Section 15.239
ANSI C63.10:2013

Test procedure..... : /

Non-standard test method : N/A

Test Report Form No. : TRF-EL-111_V0**Test Report Form(s) Originator** : ZKT Testing**Master TRF** : Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Product name..... : CD Player

Trademark : /

Model/Type reference : CW606, CW604, CW604FM, CW605, CD744, CW705, CD766, CD766BF, CD204, CD204FM, CD204BF, CD206, CD206FM, CD206BF, CD244, CD244FM, CD244BF, CD274, CD274FM, CD274BF, CD276, CD276FM, CD276BF

Ratings..... : DC 5.0V from adapter or others
DC 3.7V from battery

Testing procedure and testing location:

Testing Laboratory.....: **Shenzhen ZKT Technology Co., Ltd.**

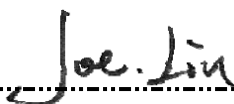
Address

1/F, No. 101, Building B, No. 6, Tangwei Community
Industrial Avenue, Fuhai Street, Bao'an District,
Shenzhen, China

Tested by (name + signature): **Alen He**



Reviewer (name + signature).....: **Joe Liu**



Approved (name + signature): **Lake Xie**



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1.VERSION

Report No.	Version	Description	Approved
ZKT-220727L5247-02	Rev.01	Initial issue of report	Jul. 26, 2022

2.1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.249) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.209&15.239	Fundamental &Radiated Spurious Emission Measurement	PASS	
15.239a	Occupy Bandwidth	PASS	
15.203	Antenna Requirement	PASS	
15.239a	Permitted range of operating frequencies	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.

Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225

Designation Number: CN1299

IC Registered No.: 27033

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 % .

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power conducted	$\pm 0.16\text{dB}$
3	Spurious emissions conducted	$\pm 0.21\text{dB}$
4	All emissions radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	CD Player
Model No.:	CW606
Model Different.:	Their electrical circuit design, layout, components used and internal wiring are identical, Only the name will be different .
Serial No.:	CW604, CW604FM, CW605, CD744, CW705, CD766, CD766BF, CD204, CD204FM, CD204BF, CD206, CD206FM, CD206BF, CD244, CD244FM, CD244BF, CD274, CD274FM, CD274BF, CD276, CD276FM, CD276BF
Hardware Version:	V1.0
Software Version:	/
Sample(s) Status:	Engineer sample
Operation Frequency:	88.1 MHz ~107.9MHz
Modulation Type:	FM
Channel numbers:	199
Antenna Type:	PCB Antenna
Antenna gain:	1.8 dBi Max
Power supply:	DC 5.0V from adapter or others DC 3.7V from battery

Operation Frequency each of channel	
Channel	Frequency
00	88.1
01	88.2
02	88.3
...	...
99	98.0
100	98.1
...	...
197	107.8
198	107.9

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency
The lowest channel	88.1MHz
The middle channel	98.0MHz

The Highest channel	107.9MHz
---------------------	----------

3.2 DESCRIPTION OF TEST MODES

Transmitting mode	Keep the EUT in continuously transmitting mode
Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

Test method	Key combination
Power level setup	<10dBm

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission



Radiated Emission



Conducted Spurious



3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Adapter	HUAWEI	HW-100400C01	/	Provide by lab

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY45109572	Sep. 21, 2021	Sep. 22, 2022
2	Spectrum Analyzer (1GHz-40GHz)	Agilent	E4446A	100363	Sep. 21, 2021	Sep. 22, 2022
3	Test Receiver (9kHz-7GHz)	R&S	ESC17	101169	Sep. 21, 2021	Sep. 22, 2022
4	Bilog Antenna (30MHz-1400MHz)	Schwarzbeck	VULB9168	00877	Sep. 21, 2021	Sep. 22, 2022
5	Horn Antenna (1GHz-18GHz)	SCHWARZBEC K	BBHA9120D	1541	Sep. 21, 2021	Sep. 22, 2022
6	Horn Antenna (18GHz-40GHz)	A.H. System	SAS-574	588	Sep. 21, 2021	Sep. 22, 2022
7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	N/A	Sep. 21, 2021	Sep. 22, 2022
8	Amplifier (1GHz-40GHz)	QUANJUDA	DLE-161	097	Sep. 21, 2021	Sep. 22, 2022
9	Loop Antenna (9KHz-30MHz)	SCHWARZBEC K	FMZB1519B	014	Sep. 21, 2021	Sep. 22, 2022
10	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Sep. 21, 2021	Sep. 22, 2022
11	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Sep. 21, 2021	Sep. 22, 2022
12	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Sep. 21, 2021	Sep. 22, 2022
13	CMW500 Test	R&S	CMW500	106504	Sep. 21, 2021	Sep. 22, 2022
14	ESG Signal Generator	Agilent	E4421B	GB40051203	Sep. 21, 2021	Sep. 22, 2022
15	Signal Generator	Agilent	N5182A	MY47420215	Sep. 21, 2021	Sep. 22, 2022
16	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
17	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Sep. 21, 2021	Sep. 22, 2022
2	LISN	CYBERTEK	EM5040A	E1850400149	Sep. 21, 2021	Sep. 22, 2022
3	Test Cable	N/A	C01	N/A	Sep. 21, 2021	Sep. 22, 2022
4	Test Cable	N/A	C02	N/A	Sep. 21, 2021	Sep. 22, 2022
5	EMI Test Receiver	R&S	ESRP3	101946	Sep. 21, 2021	Sep. 22, 2022
6	Absorbing Clamp	DZ	ZN23201	N/A	Sep. 21, 2021	Sep. 22, 2022

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quas-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) *Decreases with the logarithm of the frequency.

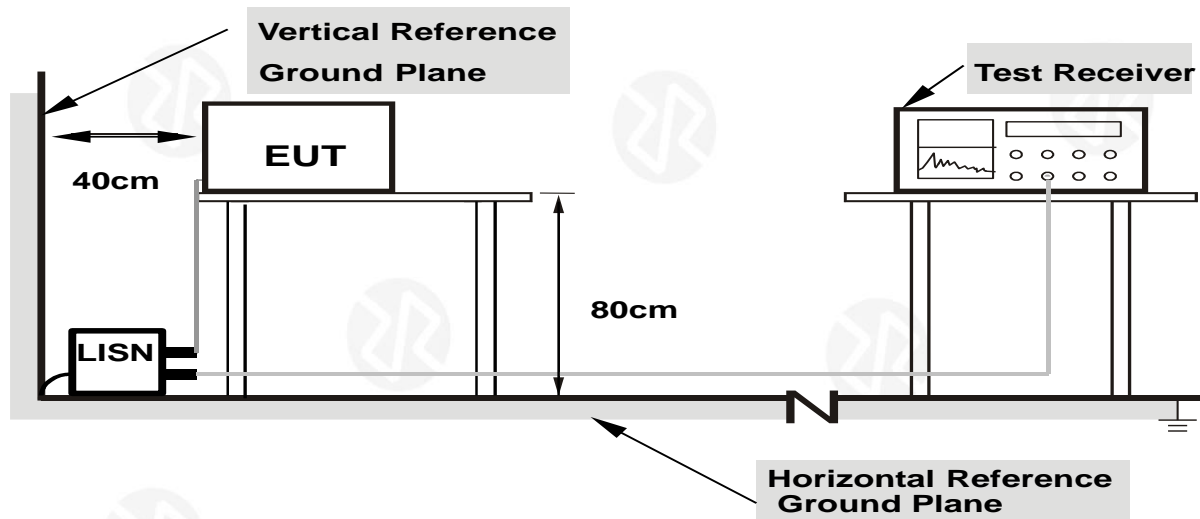
4.1.2 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

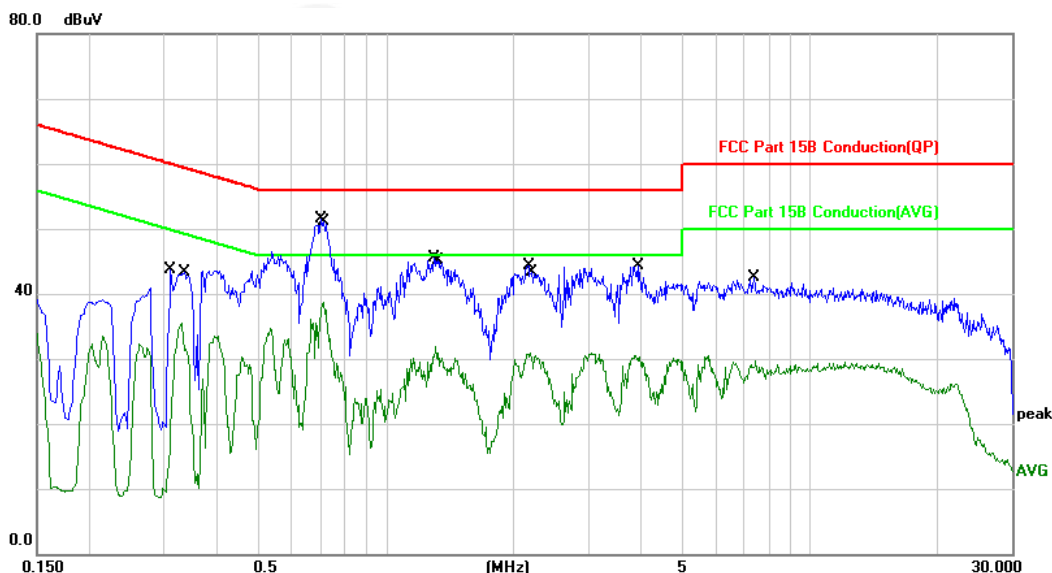
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

4.1.6 Test Result

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz		

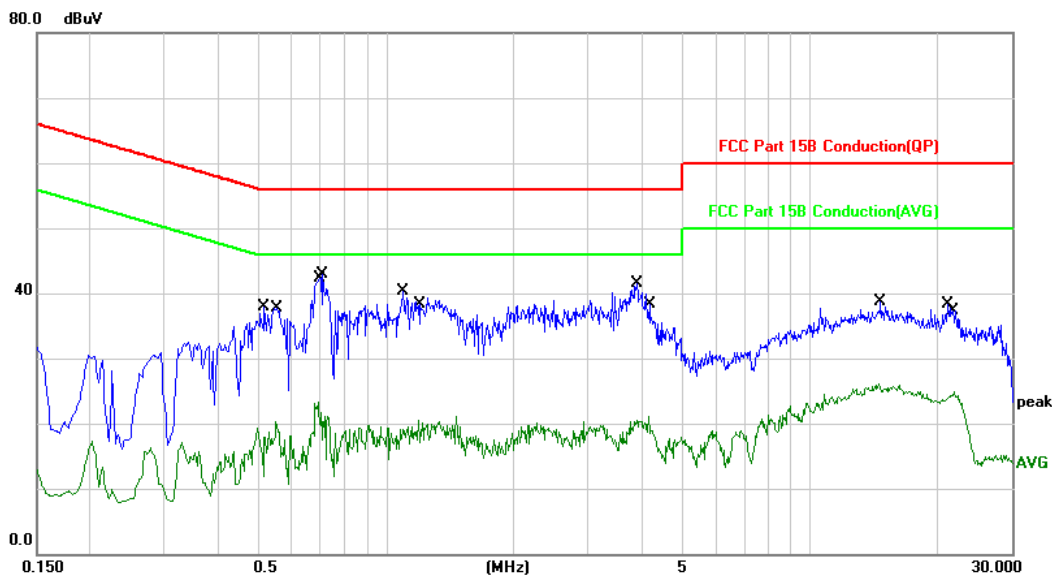


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.3100	33.92	9.87	43.79	59.97	-16.18	QP	
2		0.3300	25.72	9.86	35.58	49.45	-13.87	AVG	
3	*	0.7019	41.62	9.82	51.44	56.00	-4.56	QP	
4		0.7140	28.81	9.82	38.63	46.00	-7.37	AVG	
5		1.3020	35.70	9.72	45.42	56.00	-10.58	QP	
6		1.3140	22.15	9.71	31.86	46.00	-14.14	AVG	
7		2.1780	34.70	9.64	44.34	56.00	-11.66	QP	
8		2.1980	21.34	9.64	30.98	46.00	-15.02	AVG	
9		3.8860	20.77	9.68	30.45	46.00	-15.55	AVG	
10		3.9300	34.55	9.68	44.23	56.00	-11.77	QP	
11		7.3740	32.98	9.61	42.59	60.00	-17.41	QP	
12		7.4620	20.11	9.61	29.72	50.00	-20.28	AVG	

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.5180	28.10	9.85	37.95	56.00	-18.05	QP	
2		0.5500	10.35	9.84	20.19	46.00	-25.81	AVG	
3		0.6900	13.49	9.82	23.31	46.00	-22.69	AVG	
4	*	0.7100	32.99	9.82	42.81	56.00	-13.19	QP	
5		1.0940	30.49	9.75	40.24	56.00	-15.76	QP	
6		1.1940	10.84	9.73	20.57	46.00	-25.43	AVG	
7		3.9180	31.75	9.68	41.43	56.00	-14.57	QP	
8		4.1660	11.33	9.68	21.01	46.00	-24.99	AVG	
9		14.5260	16.41	9.68	26.09	50.00	-23.91	AVG	
10		14.7260	28.95	9.67	38.62	60.00	-21.38	QP	
11		21.2500	28.73	9.51	38.24	60.00	-21.76	QP	
12		21.9380	15.46	9.50	24.96	50.00	-25.04	AVG	

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor
4. when charging, BT can not transmit

4.2 RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	9kHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9KHz-1 0KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average

4.2.1 RADIATED EMISSION LIMITS

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed the general radiated emission limits in § 15.209.

LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
88-108	68	48

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

4.2.2 TEST PROCEDURE

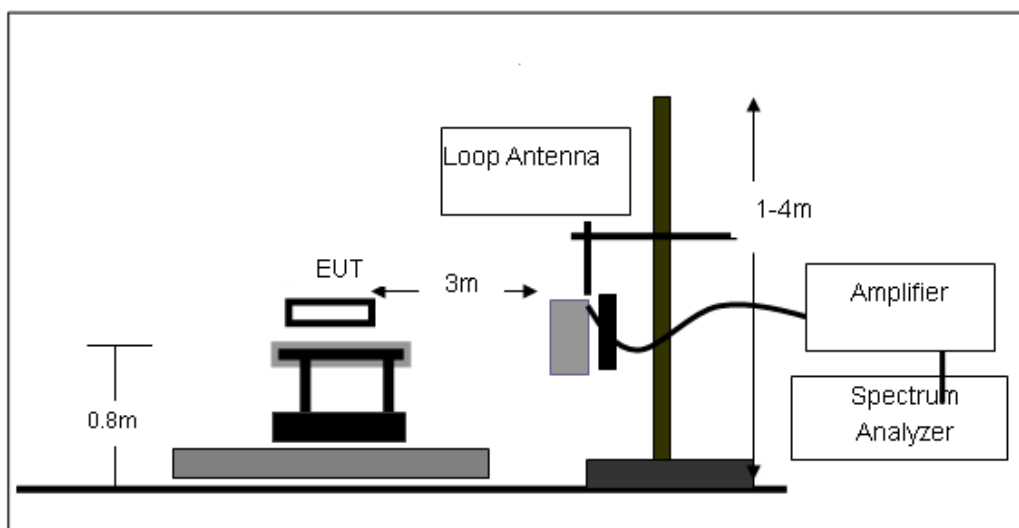
- The measuring distance of at 3 m shall be used for measurements at frequency up to 25GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-chamber test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8m; above 1GHz, the height was 1.5m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.
- For the radiated emission test above 1GHz:
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.
The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
Note:
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

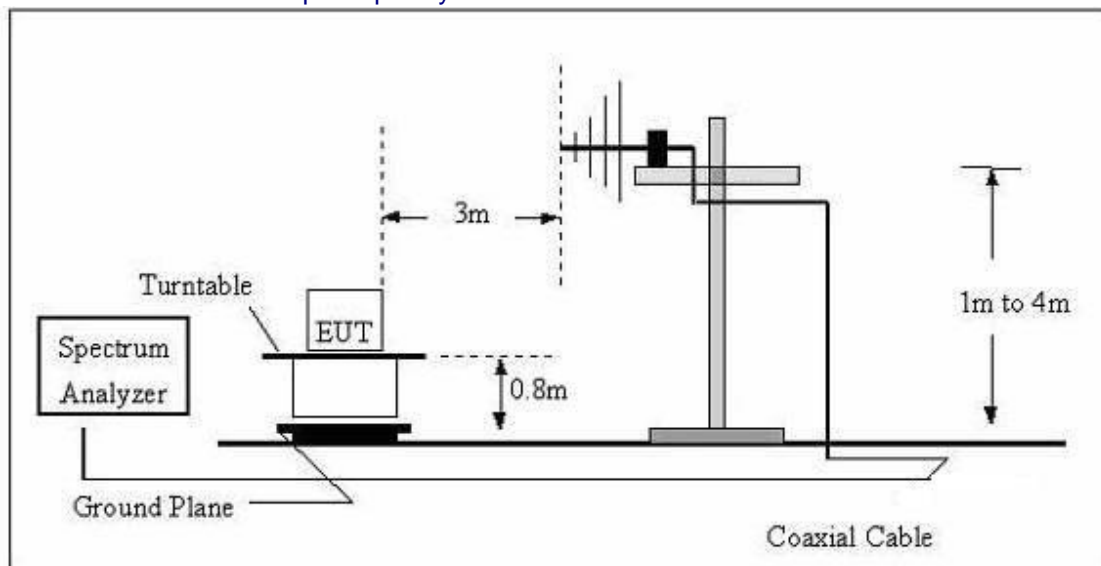
No deviation

4.2.4 TEST SETUP

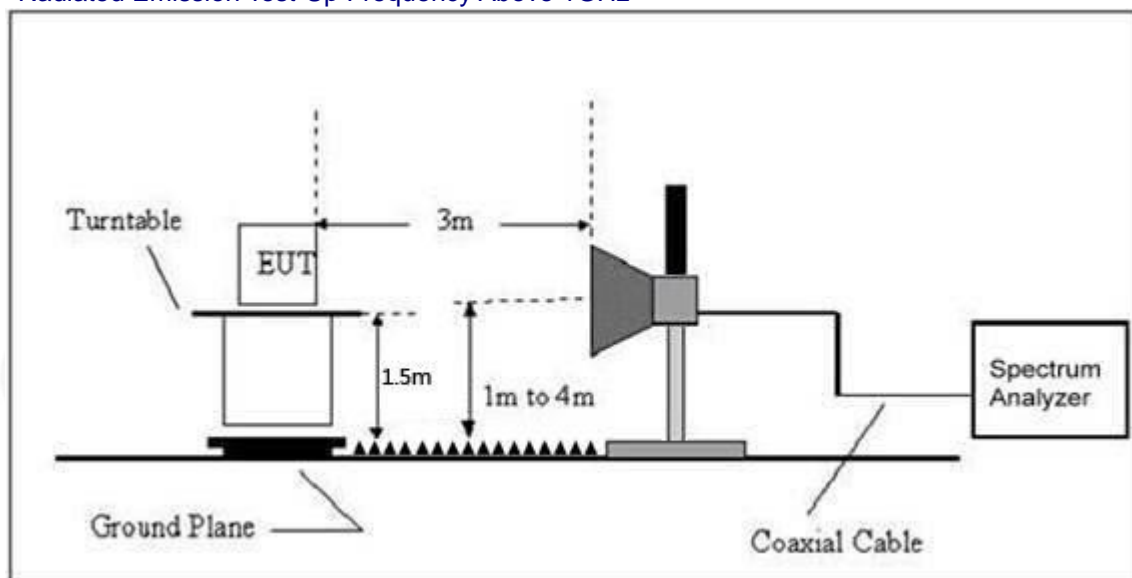
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.6 TEST RESULTS

Radiated Spurious Emission (Below 9KHz – 30MHz)

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	---
Test Voltage :	DC3.7V		
Test Mode :	TX Mode		

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuV) + distance extrapolation factor.

Field Strength

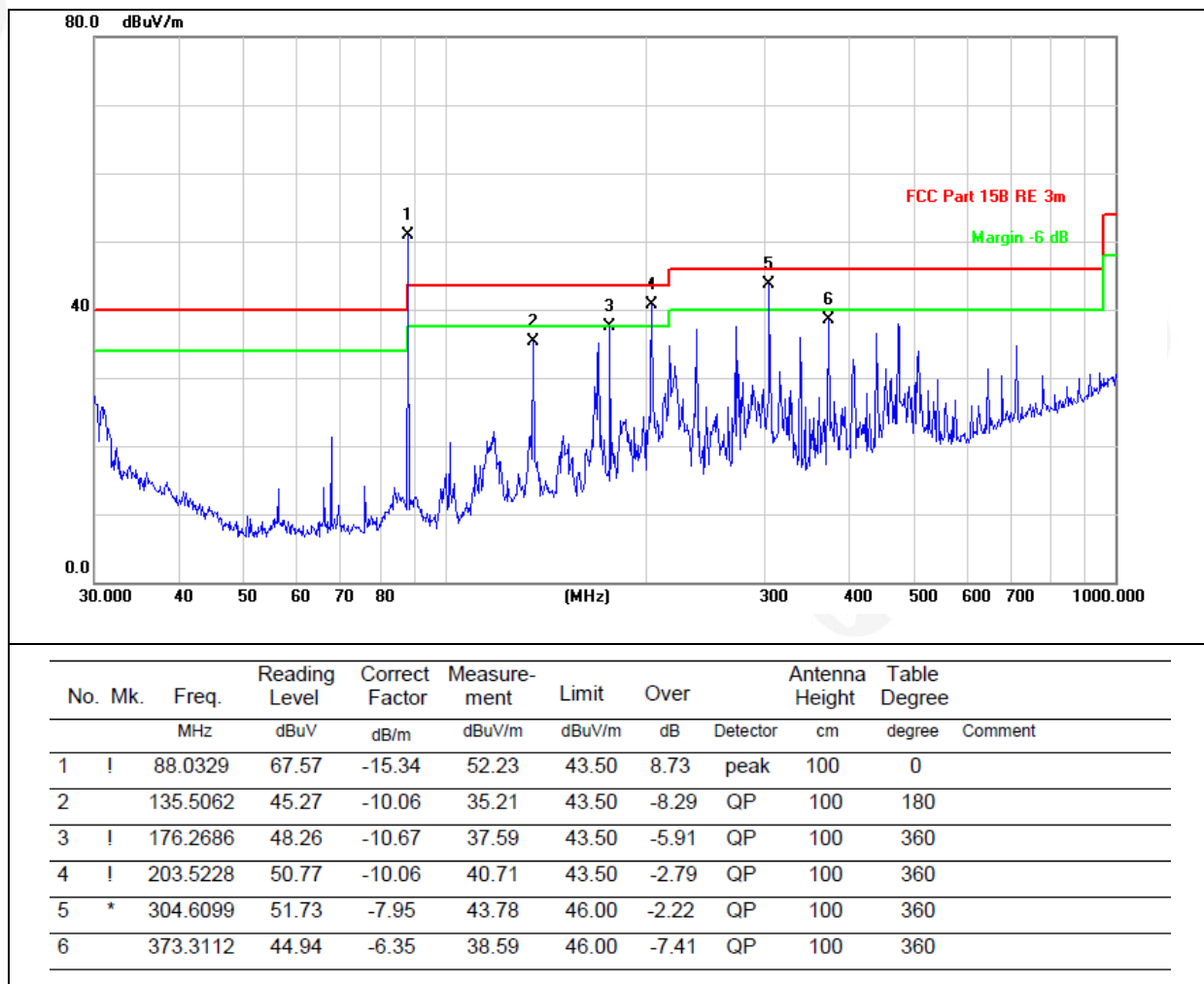
Frequency (MHz)	Emission (dBuV/m)	PK/AV	Ant. Pol.	Limits PK/AV (dBuV/m)	Margin (dB)
88.1	56.69	PK	H	68	-11.31
88.1	42.36	AV	H	48	-5.64
88.1	57.22	PK	V	68	-10.78
88.1	43.19	AV	V	48	-4.81

Frequency (MHz)	Emission (dBuV/m)	PK/AV	Ant. Pol.	Limits PK/AV (dBuV/m)	Margin (dB)
98.0	57.05	PK	H	68	-10.95
98.0	43.42	AV	H	48	-4.58
98.0	58.36	PK	V	68	-9.64
98.0	44.08	AV	V	48	-3.92

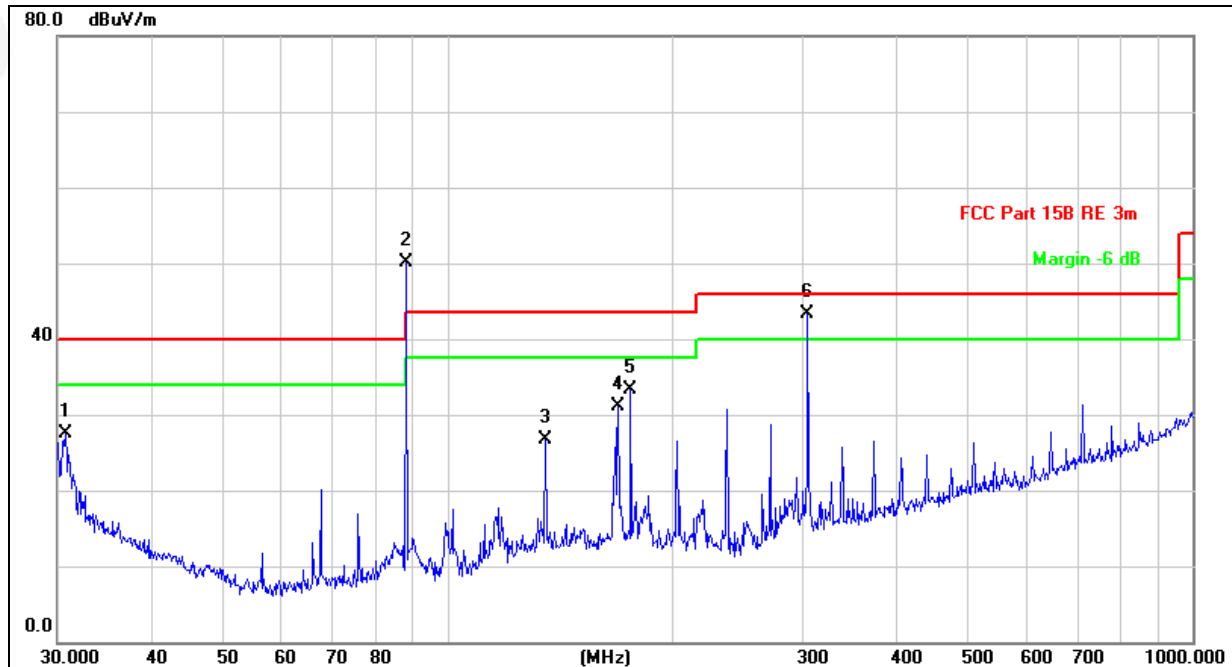
Frequency (MHz)	Emission (dBuV/m)	PK/AV	Ant. Pol.	Limits PK/AV (dBuV/m)	Margin (dB)
107.9	63.84	PK	H	68	-4.16
107.9	45.33	AV	H	48	-2.67
107.9	61.75	PK	V	68	-6.25
107.9	44.27	AV	V	48	-3.73

Between 30MHz – 1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC3.7V	Mode	88.1MHz



Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Vertical
Test Voltage:	DC3.7V	Mode	88.1MHz

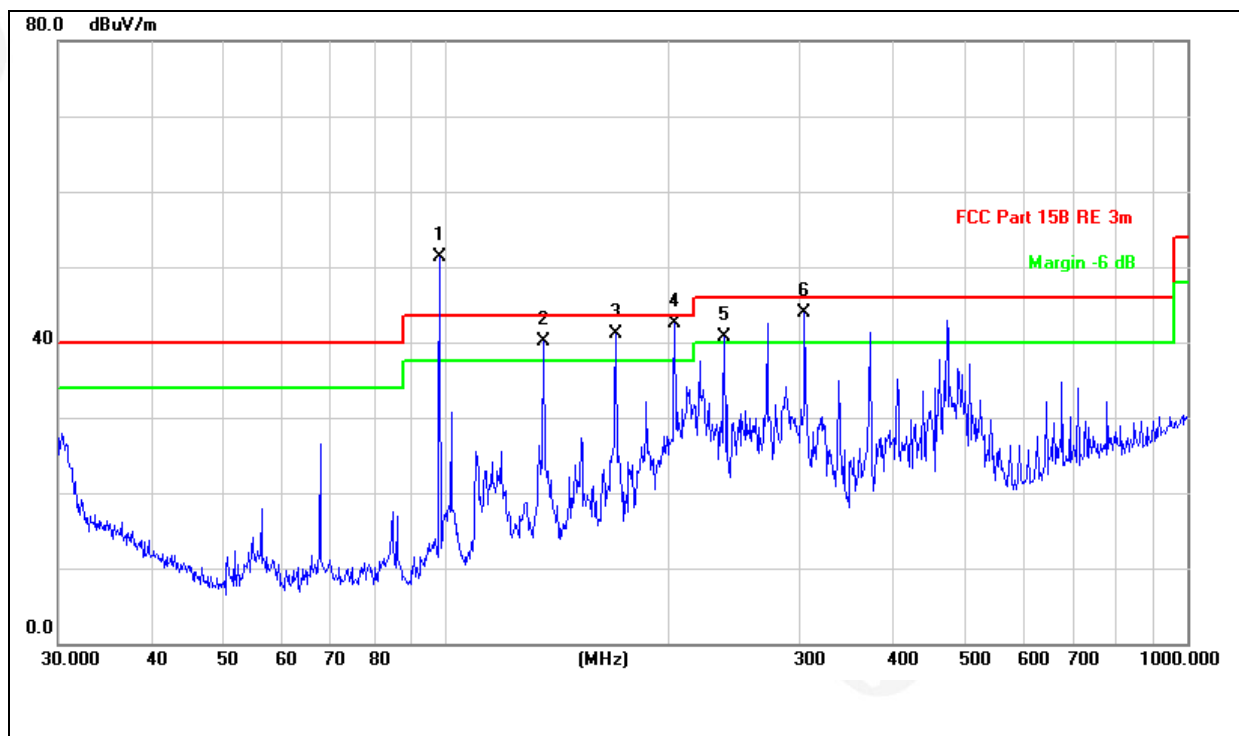


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		30.7455	32.47	-5.01	27.46	40.00	-12.54	QP	100	0
2	!	88.0329	66.17	-15.34	50.83	43.50	7.33	peak	100	0
3		135.5062	36.79	-10.06	26.73	43.50	-16.77	QP	100	0
4		169.5990	41.53	-10.38	31.15	43.50	-12.35	QP	100	0
5		176.2686	43.88	-10.67	33.21	43.50	-10.29	QP	100	0
6	*	304.6099	51.17	-7.95	43.22	46.00	-2.78	QP	100	0

Remarks:

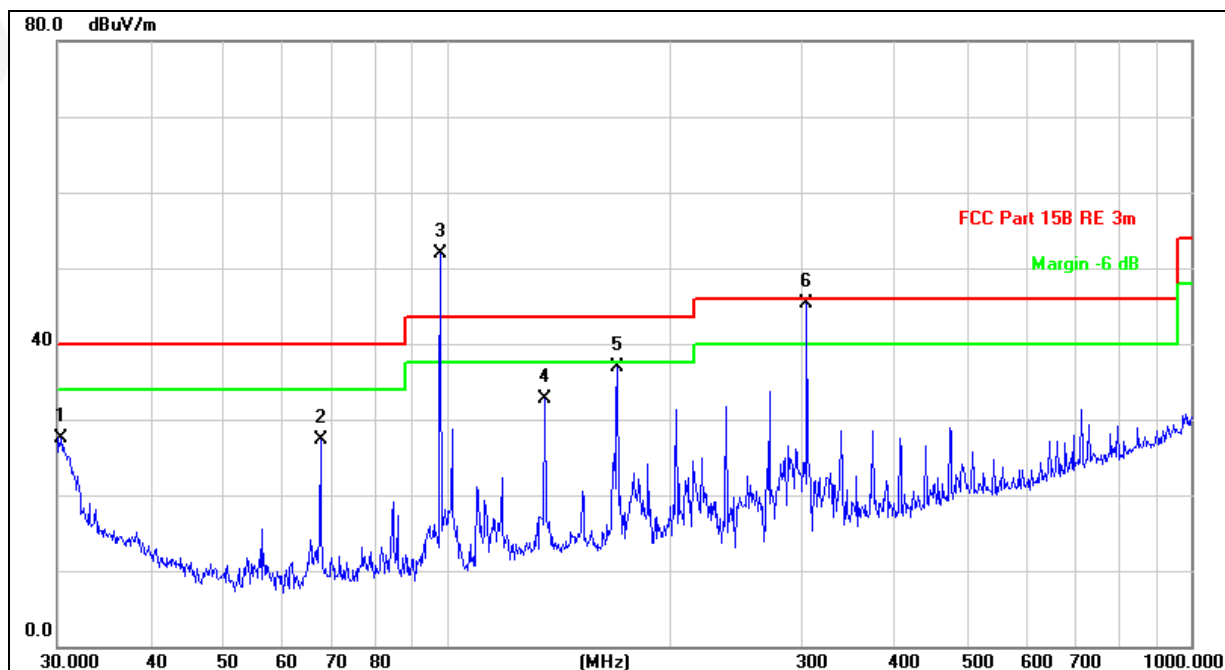
- 1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2.The emission levels of other frequencies are very lower than the limit and not show in test report.

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC3.7V	Mode	98MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	!	97.7983	65.51	-14.20	51.31	43.50	7.81	peak	100	360	
2	!	135.5062	50.10	-10.06	40.04	43.50	-3.46	QP	100	360	
3	X	169.5990	51.84	-10.38	41.46	43.50	-2.04	QP	100	360	
4	!	203.5228	52.41	-10.06	42.35	43.50	-1.15	QP	100	360	
5	!	237.4760	51.31	-10.55	40.76	46.00	-5.24	QP	100	360	
6	*	304.6099	51.74	-7.95	43.79	46.00	-2.21	QP	100	360	

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Vertical
Test Voltage:	DC3.7V	Mode	98MHz

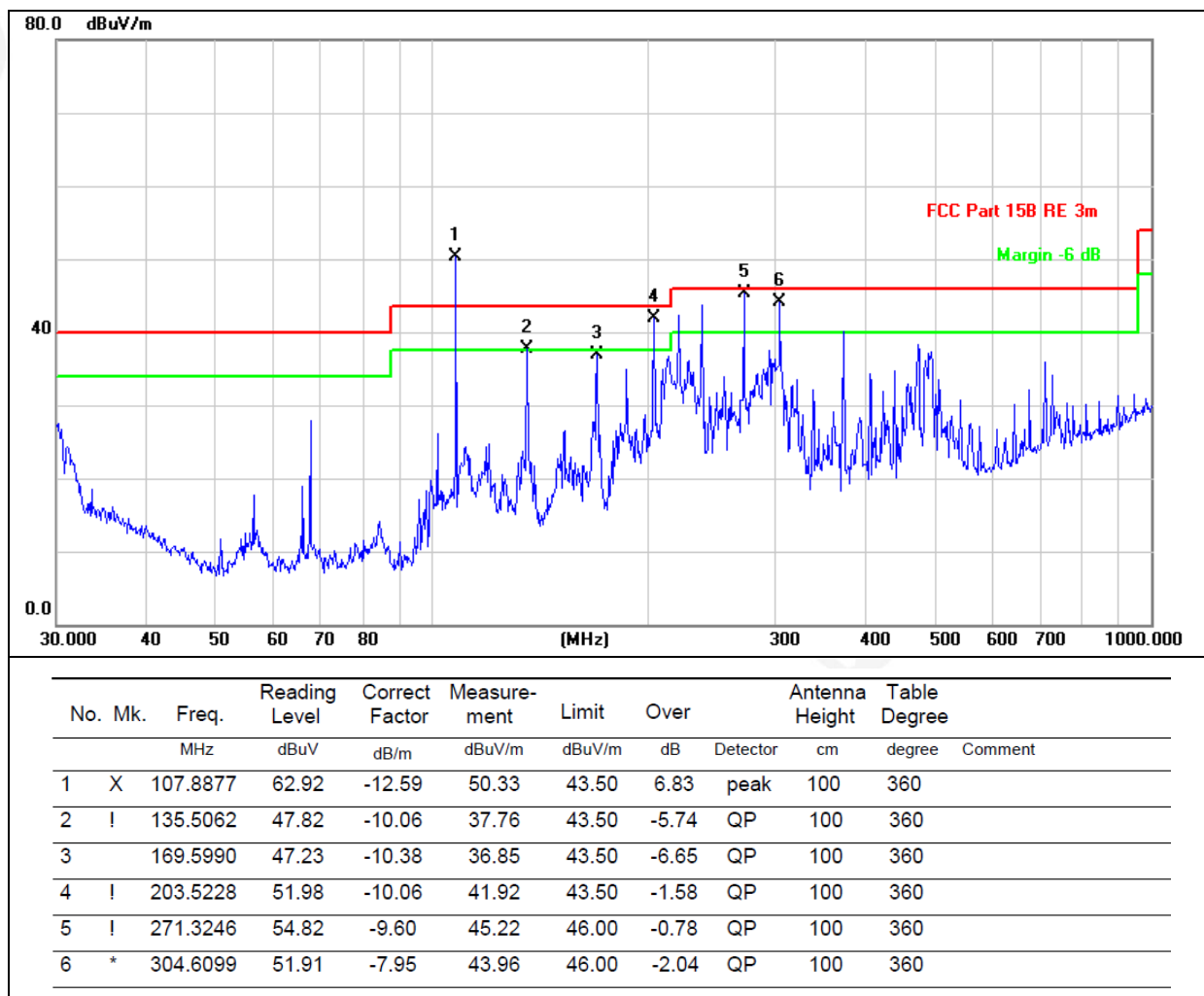


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		30.3173	32.36	-4.77	27.59	40.00	-12.41	QP	100	0	
2		67.6751	42.56	-15.22	27.34	40.00	-12.66	QP	100	0	
3	!	97.7983	66.52	-14.20	52.32	43.50	8.82	peak	100	0	
4		135.5062	42.73	-10.06	32.67	43.50	-10.83	QP	100	0	
5		169.5990	47.26	-10.38	36.88	43.50	-6.62	QP	100	0	
6	*	304.6099	53.18	-7.95	45.23	46.00	-0.77	QP	100	0	

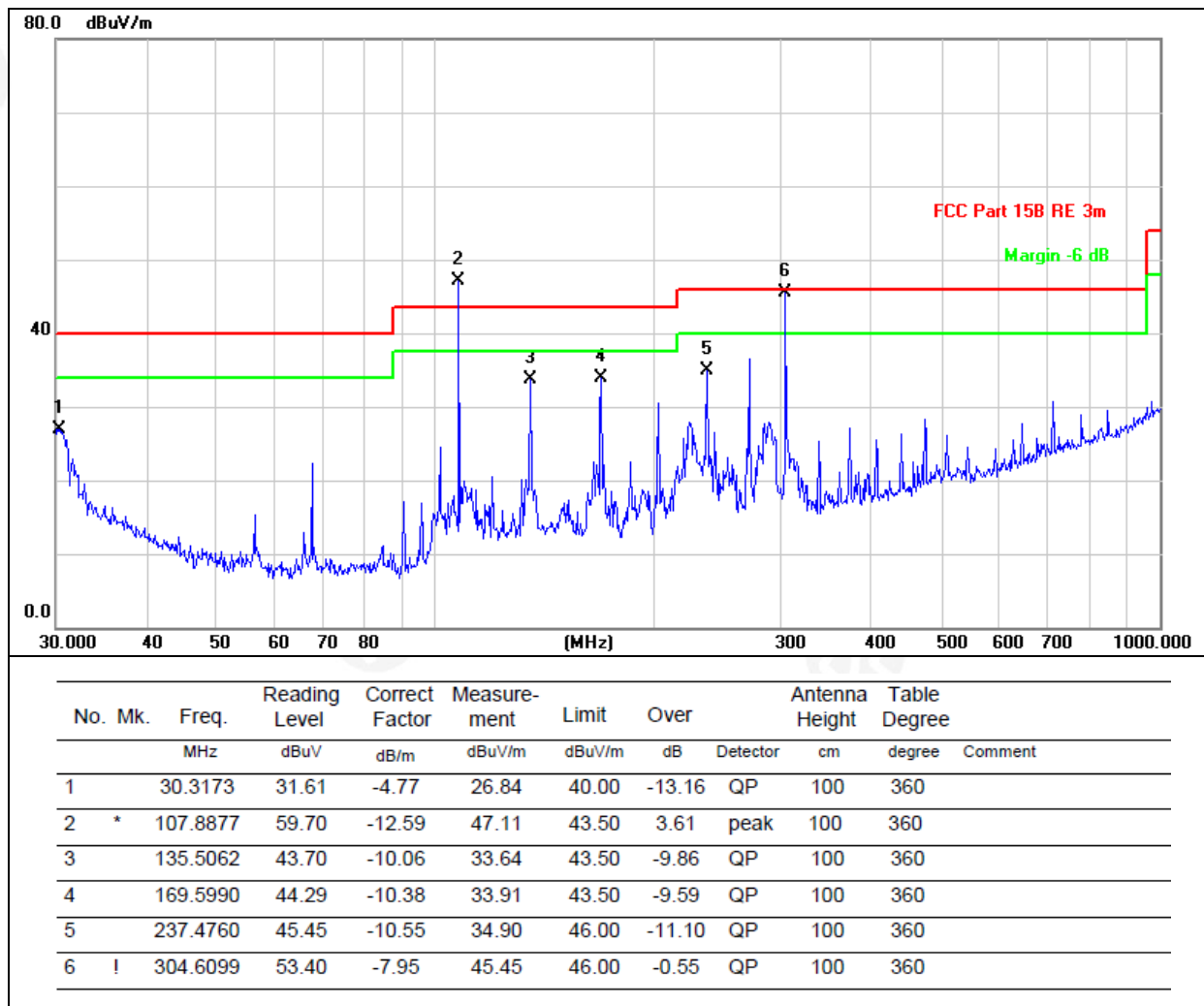
Remarks:

- 1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2.The emission levels of other frequencies are very lower than the limit and not show in test report.

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC3.7V	Mode	107.9MHz



Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Vertical
Test Voltage:	DC3.7V	Mode	107.9MHz



Remarks:

- 1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2.The emission levels of other frequencies are very lower than the limit and not show in test report.

Above 1GHz

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
V	1057.20	51.64	39.55	7.77	25.66	45.52	74.00	-28.48	PK
V	1057.20	45.78	39.55	7.77	25.66	39.66	54.00	-14.34	AV
V	1176.00	55.80	38.33	7.3	24.55	49.32	74.00	-24.68	PK
V	1176.00	44.75	38.33	7.3	24.55	38.27	54.00	-15.73	AV
V	1294.80	45.94	38.33	7.6	24.55	39.76	74.00	-34.24	PK
V	1294.80	44.73	35.23	7.6	26.59	43.69	54.00	-10.31	AV
H	1145.30	53.35	39.55	7.77	25.66	47.23	74.00	-26.77	PK
H	1145.30	44.98	39.55	7.77	25.66	38.86	54.00	-15.14	AV
H	1274.00	55.27	38.33	7.3	23.55	47.79	74.00	-26.21	PK
H	1274.00	44.66	38.33	7.3	23.22	36.85	54.00	-17.15	AV
H	1402.70	46.30	38.33	7.6	24.55	40.12	74.00	-33.88	PK
H	1402.70	41.68	35.45	7.6	27.88	41.71	54.00	-12.29	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

5. CHANNEL BANDWIDTH

Test Requirement:	FCC Part15 C Section 15.209 & 15.239
Test Method:	ANSI C63.10: 2013

5.1 APPLIED PROCEDURES / LIMIT

Section	Test Item	Frequency Range (MHz)	LIMIT	Result
15.239	Bandwidth	88-108	200 kHz	PASS

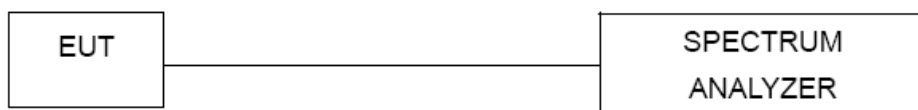
5.2 TEST PROCEDURE

1. Set resolution bandwidth (RBW) =10KHz,
2. Set the video bandwidth (VBW) $\geq 3 \times$ 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.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



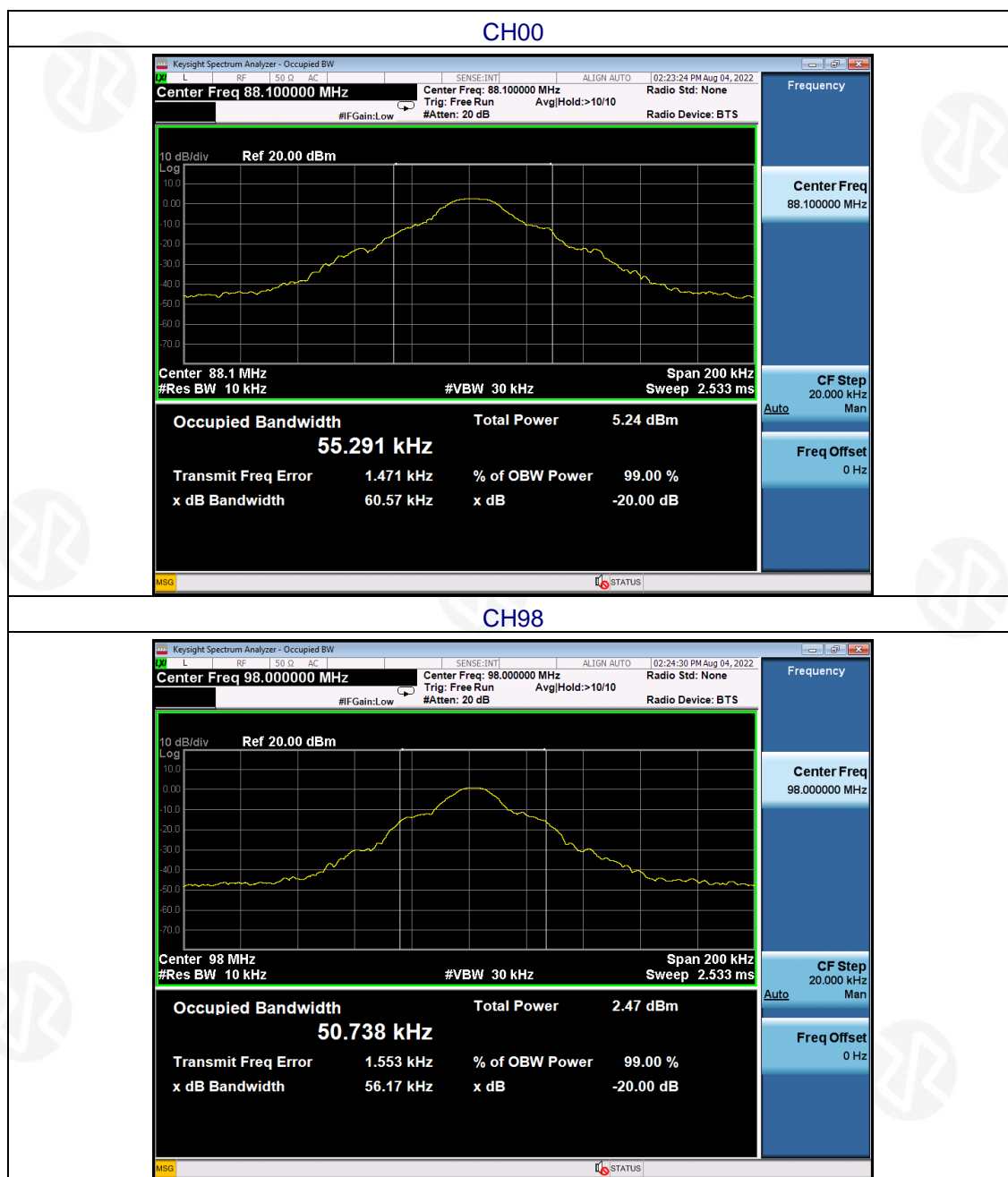
5.5 EUT OPERATION CONDITIONS

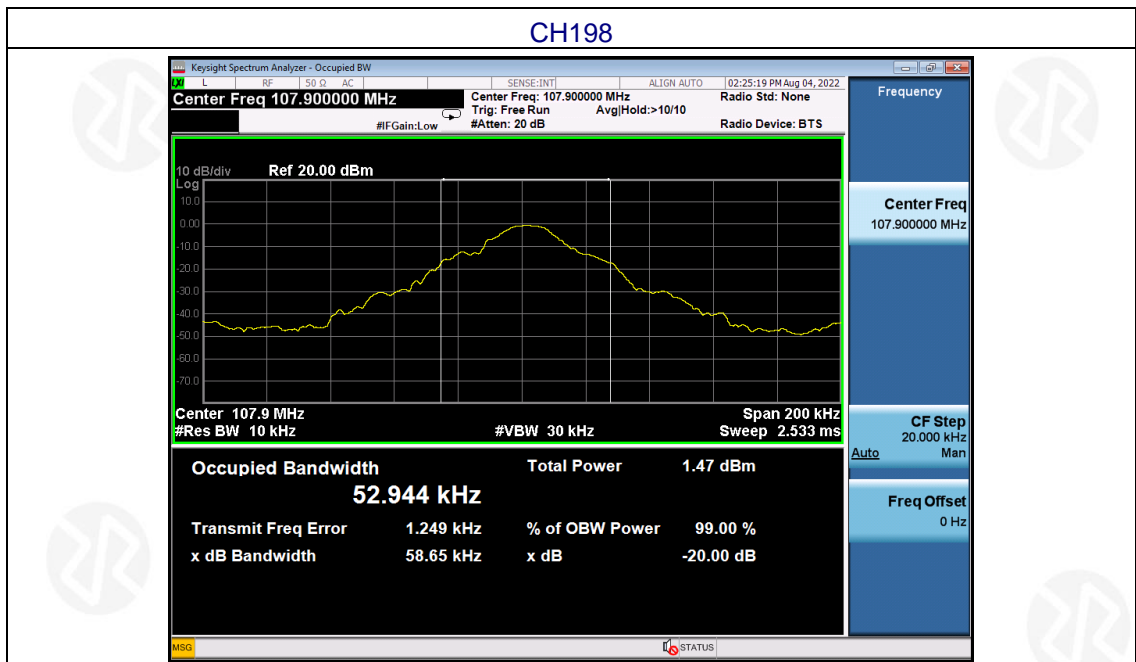
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULTS

Temperature :	26°C	Relative Humidity :	54%
Test Mode :	GFSK	Test Voltage :	DC 3.7V

Test channel	99% bandwidth (KHz)	20db bandwidth (KHz)	Limit	Result
Lowest	55.291	60.57	200 kHz	Pass
Middle	50.738	56.17		
Highest	52.944	58.65		





6. PERMITTED RANGE OF OPERATING FREQUENCIES

Test Requirement:	FCC Part15 C Section 15.209 & 15.239
Test Method:	ANSI C63.10: 2013

6.1 APPLIED PROCEDURES / LIMIT

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

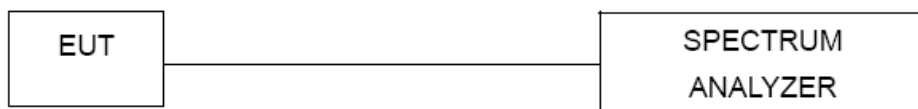
6.2 TEST PROCEDURE

1. Set resolution bandwidth (RBW) =10KHz,
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.

6.3 DEVIATION FROM STANDARD

No deviation.

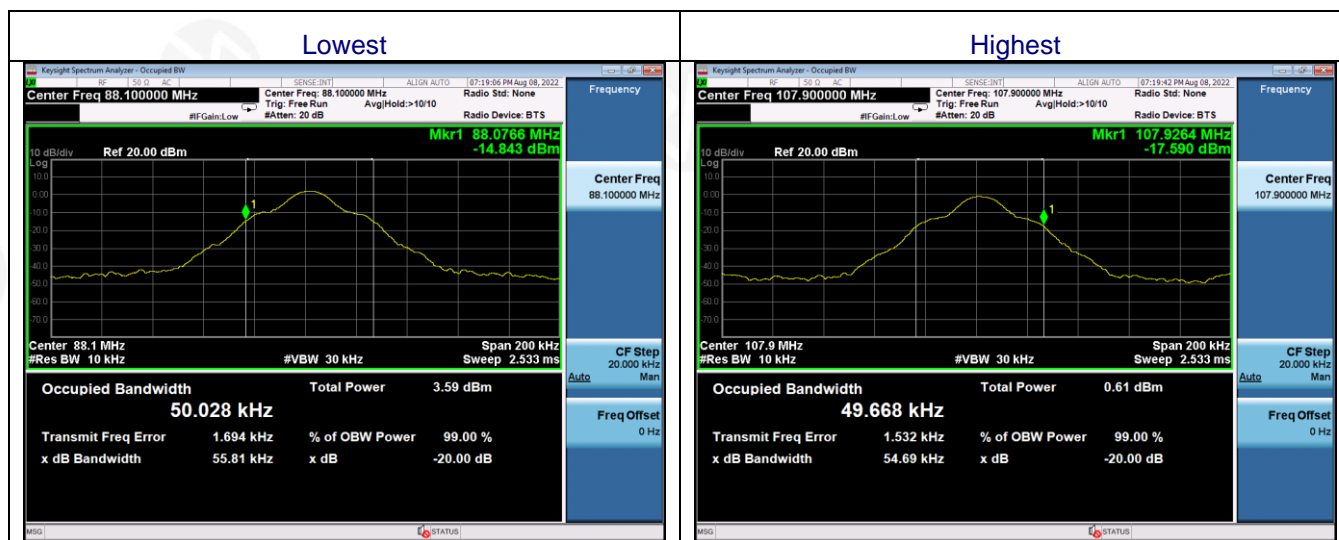
6.4 TEST SETUP



6.5 TEST RESULTS

Temperature :	26°C	Relative Humidity :	54%
Test Mode :	GFSK	Test Voltage :	DC 3.7V

Test channel	Permitted range (MHz)		Limit	Result
	F _{low}	F _{high}	F _{low} - F _{high}	
Lowest	88.0766	/	88-108MHz	Pass
Highest	/	107.9264		



7. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
EUT Antenna:	
The antennas are internal permanent antenna, the best case gain of the antennas are 1.8 dBi Max, reference to the internal photos	
<div>FM ANT</div>	

8. TEST SETUP PHOTO





9. EUT CONSTRUCTIONAL DETAILS

Please refer to the external photos file and internal photos file

***** END OF REPORT *****