

Test Report

Verified code: 892276

Report No.: E202303101204-4

Customer: Anhui Ronds Science & Technology Incorporated Company

Address: #59, branch road of biomedical park, high-tech district, Hefei, Anhui, China

Sample Name: Wireless Data Collector

Sample Model: RH570

Receive Sample Date: 2023-03-25

Test Date: 2023-03-25 to 2023-04-13

Reference Document: CFR 47, FCC Part 15 Subpart C
RADIO FREQUENCY DEVICES: Subpart C—Intentional Radiators

Test Result: Pass

Prepared by: Wen Wenwen


Reviewed by: Wu Haoting


Approved by: Xiao Liang




GRG METROLOGY & TEST GROUP CO., LTD.

Issued Date: 2023-06-25

GRG METROLOGY & TEST GROUP CO., LTD.

Address: No.163, Pingyun Road, West of Huangpu Avenue, Guangzhou, Guangdong, China
Tel: (+86) 400-602-0999 FAX: (+86) 020-38698685 Web: <http://www.grgtest.com>



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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202303101204-4	Original Issue	2023-04-22

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1. TEST RESULT SUMMARY

CFR 47, FCC Part 15 Subpart C, ANSI C63.10:2013		
Standard / Requirement	Test Item	Result
15.207	Conducted emission AC power port	Pass
§15.205(a), §15.209(a), §15.249(a), §15.249(c)	Field strength of emissions and Restricted bands	Pass
§15.215(c)	20dB bandwidth	Pass
§15.249(d)	Out of band emissions	Pass
§15.203	Antenna Requirement	Pass, Note ¹

Note ¹: The EUT LoRa antenna is external fixed antenna, the max gain is 6dBi which accordance 15.203 is considered sufficient to comply with the provisions of this section.

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2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: Anhui Ronds Science & Technology Incorporated Company
Address: #59, branch road of biomedical park, high-tech district, Hefei, Anhui, China

2.2 MANUFACTURER

Name: Anhui Ronds Science & Technology Incorporated Company
Address: #59, branch road of biomedical park, high-tech district, Hefei, Anhui, China

2.3 FACTORY

Name: Anhui Ronds Science & Technology Incorporated Company
Address: #59, branch road of biomedical park, high-tech district, Hefei, Anhui, China

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

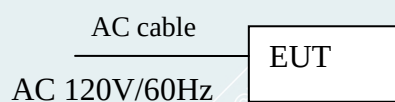
Product Name: Wireless Data Collector
Product Model: RH570
Adding Model: /
Trade Name: Ronds
FCC ID: 2AKW5-RH570
Power Supply: 100~240VAC (50/60Hz)
Frequency Range: 915MHz
Max Antenna gain: External fixed antenna, 6dBi(Max)
Sample submitting way: ☒ Provided by customer ☐ Sampling
Sample No: E202303101204-0001
Type of Modulation: FSK
Temperature Range: -40℃~+70℃
Hardware Version: RH570_FCC_HW_V1_01
Software Version: RH570_FCC_SW_V1_01
Note: /

2.5 TEST MODE

Mode No.	Description of the modes
Mode 1	LoRa Transmitting

2.6 LOCAL SUPPORTIVE

Name of Equipment	Manufacturer	Model	Serial Number	Note
Cable				
AC cable	/	/	/	UnShielded, 1.6m

2.7 CONFIGURATION OF SYSTEM UNDER TEST**2.8 TEST SOFTWARE:**

Software version	Test level
N/A	Default

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3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of GRG METROLOGY & TEST GROUP CO., LTD.

Add.: No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District
Shenzhen, 518110, People's Republic of China.
P.C.: 518110
Tel : 0755-61180008
Fax: 0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA A2LA(Certificate#:2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada ISED (Company Number: 24897, CAB identifier:CN0069)

USA FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site,
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4. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Conduction Emission		9kHz~150kHz	2.8dB
		150kHz~10MHz	2.8dB
		10MHz~30MHz	2.2dB
Radiated Emission	Horizontal	9kHz~30MHz	4.46dB
		30MHz~1000MHz	4.3dB
		1GHz~18GHz	5.6dB
	Vertical	9kHz~30MHz	4.46dB
		30MHz~1000MHz	4.3dB
		1GHz~18GHz	5.6dB

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
RF power conducted	0.78 dB
Occupied channel bandwidth	0.4 dB
Unwanted emission, conducted	0.68 dB
Humidity	6 %
Temperature	2°C

This uncertainty represents an expanded uncertainty expressed at approximately the 95%. This uncertainty represents an expanded uncertainty factor of $k=2$.

5. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Conducted Emissions				
EZ-EMC	EZ	CCS-3A1-CE	/	/
EMI Receiver	R&S	ESCI	100783	2023-08-28
LISN	R&S	ENV216	101543	2023-09-13
Field strength of emissions and Restricted bands & Out of band emissions				
Test S/W	EZ	CCS-03A1		
Loop Antenna	TESEQ	HLA6121	52599	2024-02-03
Test Receiver	R&S	ESR7	102444	2023-09-02
Preamplifier	EMEC	EM330	/	2024-02-06
Bi-log Antenna	Schwarzbeck	CBL6143A	26039	2024-10-23
Spectrum Analyzer	Agilent	N9010A	MY52221469	2023-06-29
Horn Antenna	Schwarzbeck	BBHA9120D	02143	2023-10-15
Amplifier	Tonscend	TAP037030	AP20E8060081	2023-05-08
Amplifier	Tonscend	TAP01018048	AP20E8060075	2023-05-05
Test S/W	Tonscend	JS32-RE/2.5.1.5		
20 dB Bandwidth & Duty cycle				
Spectrum Analyzer	R&S	FSV30	1321.3008K30-10 4381-rH	2023-11-17

Note: The calibration interval of the test instruments is 12 months except Bi-log Antenna, the calibration interval of the Bi-log Antenna is 24 months.

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6. CONDUCTED EMISSIONS

6.1 LIMITS

Frequency range	Limits (dB μ V)	
	Quasi-peak	Average
150kHz~0.5MHz	66~56	56~46
0.5MHz~5MHz	56	46
5MHz~30MHz	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 150 kHz to 0.5MHz.

6.2 TEST PROCEDURES

Procedure of Preliminary Test

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

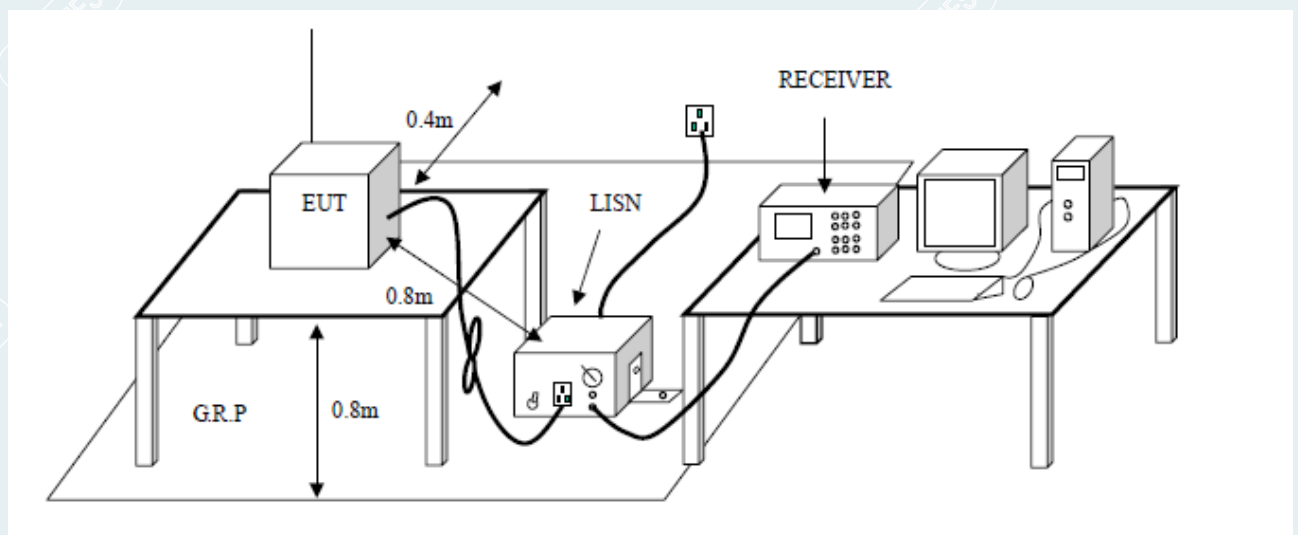
- Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:
 - 1) place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;
- All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;
- The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.
- I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.

The test mode(s) described in Item 2.5 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.5 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of Final Test

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

6.3 TEST SETUP



6.4 DATA SAMPLE

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss

Result = Quasi-peak Reading/ Average Reading + Factor

Limit = Limit stated in standard

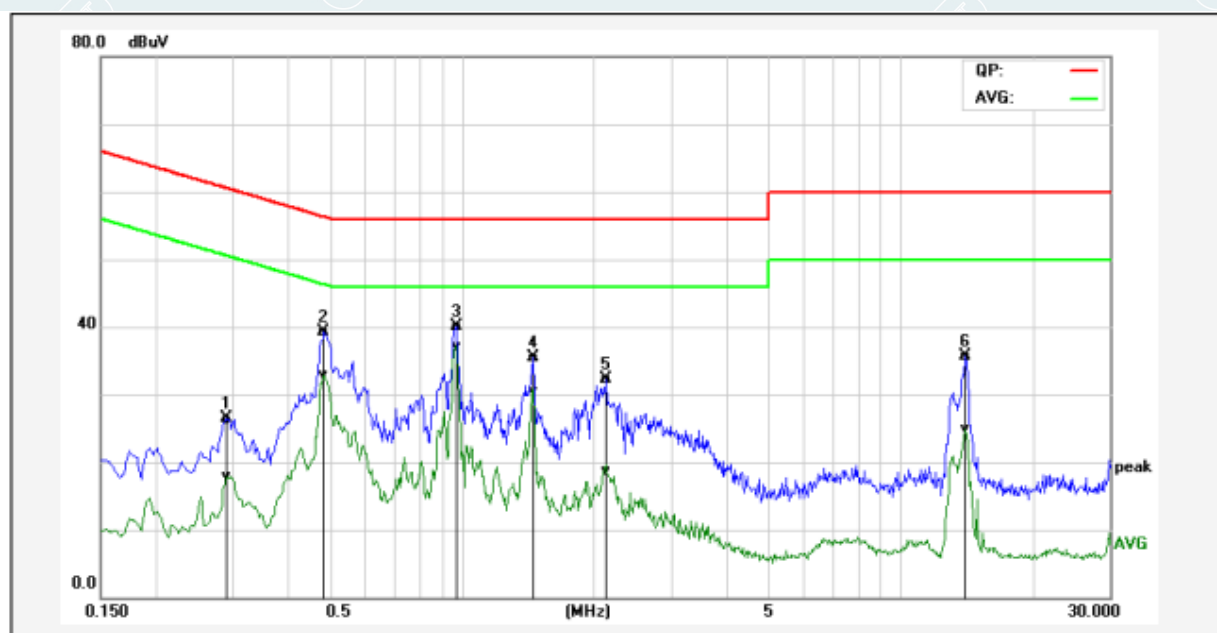
Margin = Result (dBuV) – Limit (dBuV)

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6.5 TEST RESULTS

EUT Name	Wireless Data Collector	Model	RH570
Environmental Conditions	22.1°C/55%RH/101.0kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	Huang xinlong
Test Date	2023-04-12	Sample No.	E202303101204-0001

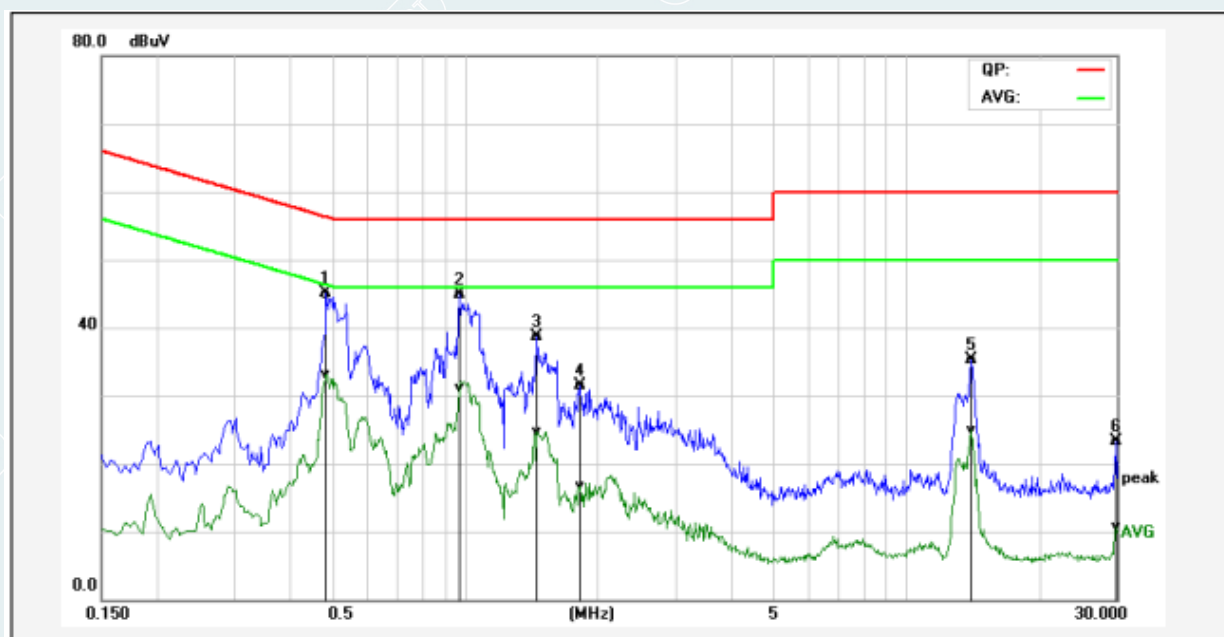
Line: L1



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.2900	16.79	8.39	9.61	26.40	18.00	60.52	50.52	-34.12	-32.52	Pass
2	0.4860	29.76	23.23	9.61	39.37	32.84	56.24	46.24	-16.87	-13.40	Pass
3*	0.9700	30.54	27.38	9.63	40.17	37.01	56.00	46.00	-15.83	-8.99	Pass
4	1.4580	25.87	20.84	9.63	35.50	30.47	56.00	46.00	-20.50	-15.53	Pass
5	2.1340	22.60	9.01	9.65	32.25	18.66	56.00	46.00	-23.75	-27.34	Pass
6	14.0780	25.86	15.12	9.80	35.66	24.92	60.00	50.00	-24.34	-25.08	Pass

EUT Name	Wireless Data Collector	Model	RH570
Environmental Conditions	22.1°C/55%RH/101.0kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	Huang xinlong
Test Date	2023-04-12	Sample No.	E202303101204-0001

Line: N



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.4860	35.40	23.55	9.60	45.00	33.15	56.24	46.24	-11.24	-13.09	Pass
2*	0.9700	35.28	21.45	9.63	44.91	31.08	56.00	46.00	-11.09	-14.92	Pass
3	1.4580	28.98	15.13	9.63	38.61	24.76	56.00	46.00	-17.39	-21.24	Pass
4	1.8260	21.90	7.10	9.64	31.54	16.74	56.00	46.00	-24.46	-29.26	Pass
5	14.0180	25.43	15.08	9.86	35.29	24.94	60.00	50.00	-24.71	-25.06	Pass
6	29.9780	13.19	0.75	10.04	23.23	10.79	60.00	50.00	-36.77	-39.21	Pass

7. RADIATED SPURIOUS EMISSIONS

7.1 LIMITS

In any 100kHz 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 100kHz 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 30dB instead of 20dB. 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 9-90kHz and 110-490kHz are based on measurements employing a linear average detector.
- (2) The lower limit shall apply at the transition frequencies.

The field strength of fundamental and harmonic emissions, measured at 3 m, shall not exceed 50 mV/m and 0.5 mV/m respectively.

Fundamental Frequency(MHz)	Field Strength of Fundamental Field Strength (mV/m)	Field Strength of Harmonics ($\mu\text{V/m}$)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

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Restricted band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	1435 - 1626.5	9.0 - 9.2
0.495 - 0.505	16.69475 - 16.69525	1645.5 - 1646.5	9.3 - 9.5
2.1735 - 2.1905	16.80425 - 16.80475	1660 - 1710	10.6 - 12.7
3.020 - 3.026	25.5 - 25.67	1718.8 - 1722.2	13.25 - 13.4
4.125 - 4.128	37.5 - 38.25	2200 - 2300	14.47 - 14.5
4.17725 - 4.17775	73 - 74.6	2310 - 2390	15.35 - 16.2
4.20725 - 4.20775	74.8 - 75.2	2483.5 - 2500	17.7 - 21.4
5.677 - 5.683	108 - 138	2655 - 2900	22.01 - 23.12
6.215 - 6.218	149.9 - 150.05	3260 - 3267	23.6 - 24.0
6.26775 - 6.26825	156.52475 - 156.52525	3332 - 3339	31.2 - 31.8
6.31175 - 6.31225	156.7 - 156.9	3345.8 - 3358	36.43 - 36.5
8.291 - 8.294	162.0125 - 167.17	3500 - 4400	Above 38.6
8.362 - 8.366	167.72 - 173.2	4500 - 5150	
8.37625 - 8.38675	240 - 285	5350 - 5460	
8.41425 - 8.41475	322 - 335.4	7250 - 7750	
12.29 - 12.293	399.9 - 410	8025 - 8500	
12.51975 - 12.52025	608 - 614	--	
12.57675 - 12.57725	960 - 1427		
13.36 - 13.41			

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7.2 TEST PROCEDURES

1) Sequence of testing 9kHz to 30MHz

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 0.8 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 QPK 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 30MHz to 1GHz

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 3 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 position ($\pm 45^\circ$) 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 1GHz to 18GHz**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 2.5 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 position ($\pm 45^\circ$) 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.

7.3 TEST SETUP

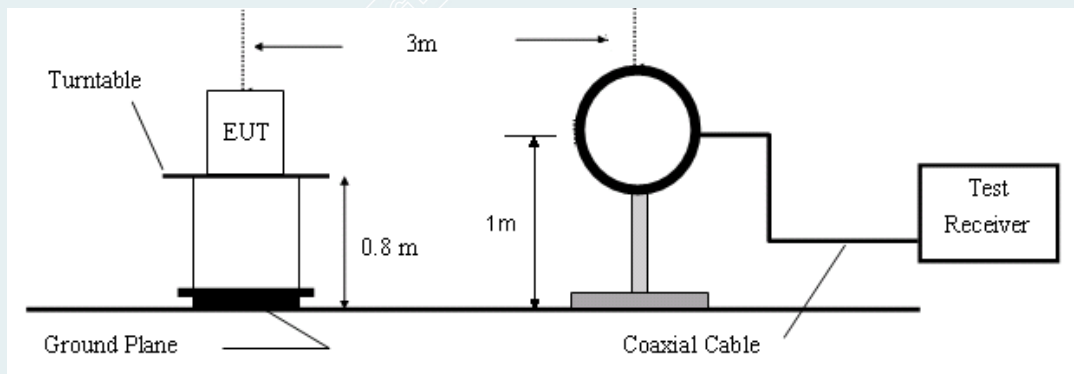


Figure 1. 9kHz to 30MHz radiated emissions test configuration

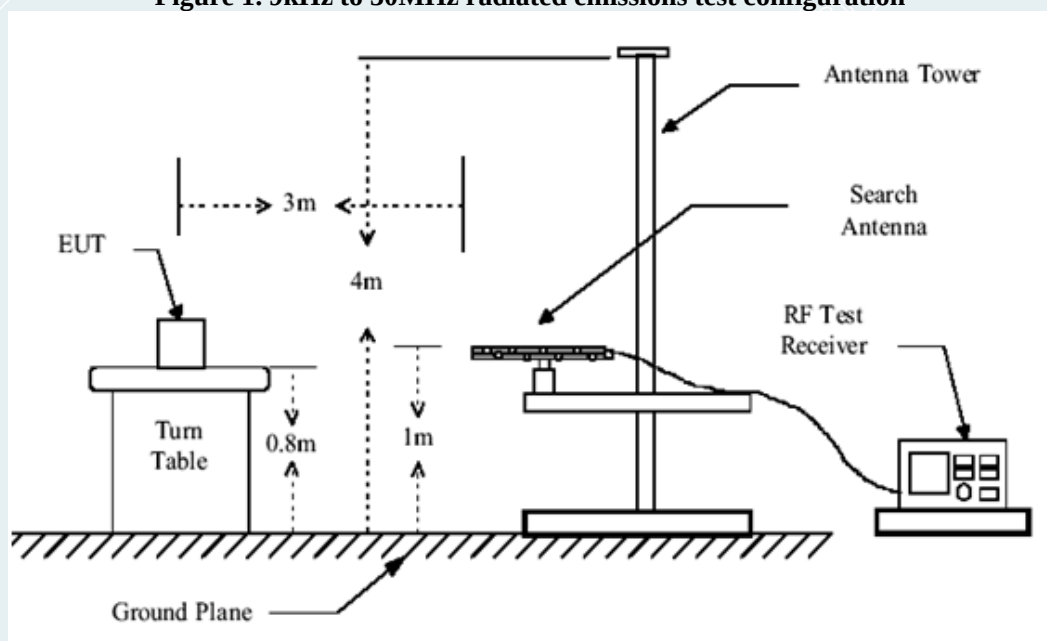


Figure 2. 30MHz to 1GHz radiated emissions test configuration

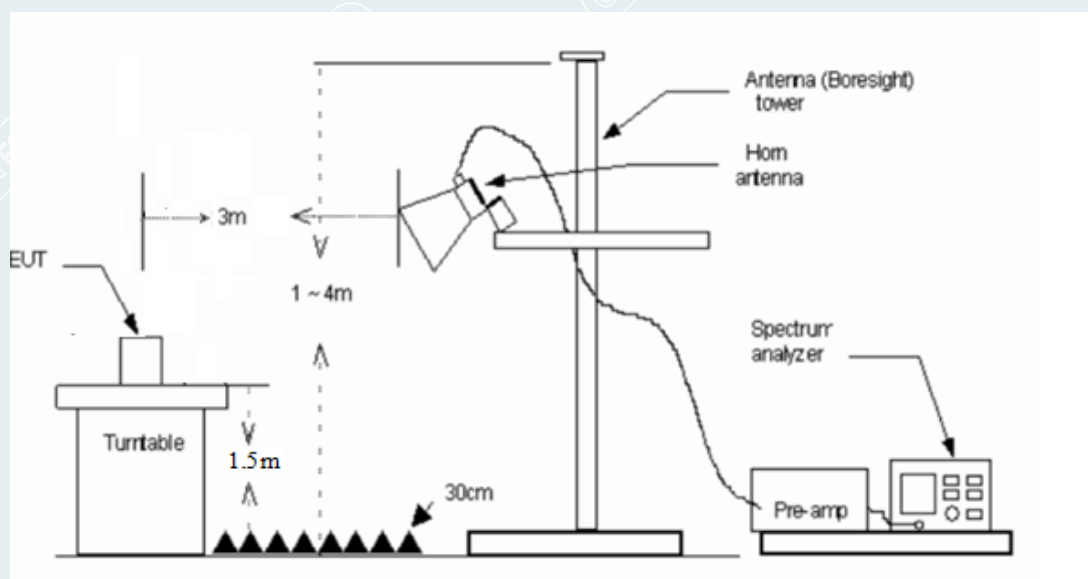


Figure 3. Above 1GHz radiated emissions test configuration

7.4 TEST RESULT

The field strength of fundamental

Environmental Conditions	20.5°C/70%RH/101.0kPa
Power Source:	AC120V/60Hz
Test Date:	2023-04-11 to 2023-04-13
Test By :	Zhang zishan

TX / 915MHz

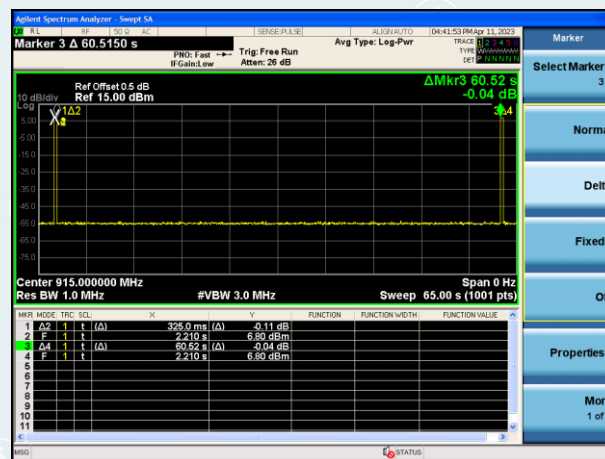
Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Remark
915	113.52	95.14	-18.38	114	-18.86	100	171	Horizontal	Peak
915	124.87	106.50	-18.37	114	-7.50	100	102	Vertical	Peak

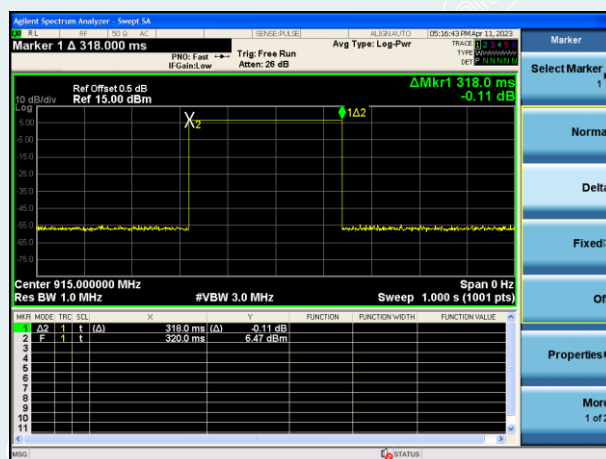
Freq. [MHz]	Reading [dBμV/m]	Peak Level [dBμV/m]	Duty Cycle Correction Factor [dB]	AVG Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Remark
915	113.52	95.14	-45.51	49.63	94.00	-44.37	100	171	Horizontal	AVG
915	124.87	106.50	-45.51	60.99	94.00	-33.01	100	102	Vertical	AVG

Remark:

1. $AVG = Peak + 20\log(Duty\ Cycle)$
2. $Duty\ Cycle = On\ time / Total\ time = 0.318s / 60.52s = 0.53\%$
3. $Duty\ Cycle\ Correction\ Factor: 20\log(0.0053) = -45.51dB$

Duty Cycle:915MHz





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Out of band emissions:

915MHz

Environmental Conditions

20.5°C/70%RH/101.0kPa

Power Source:

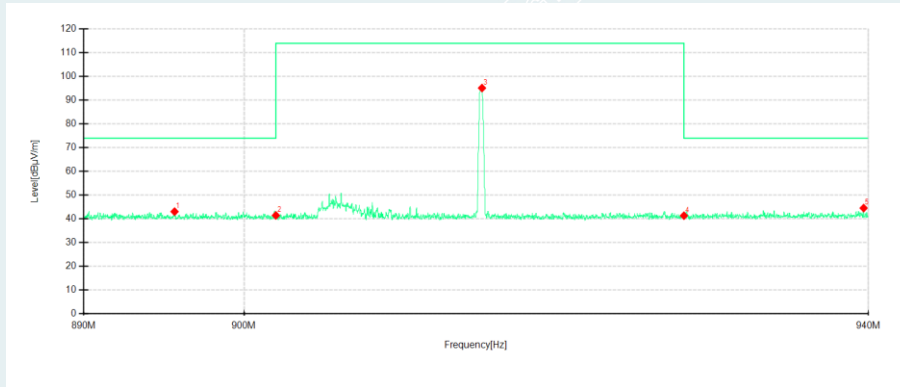
AC120V/60Hz

Test Date:

2023-04-13

Test By :

Zhang zishan



Suspected Data List

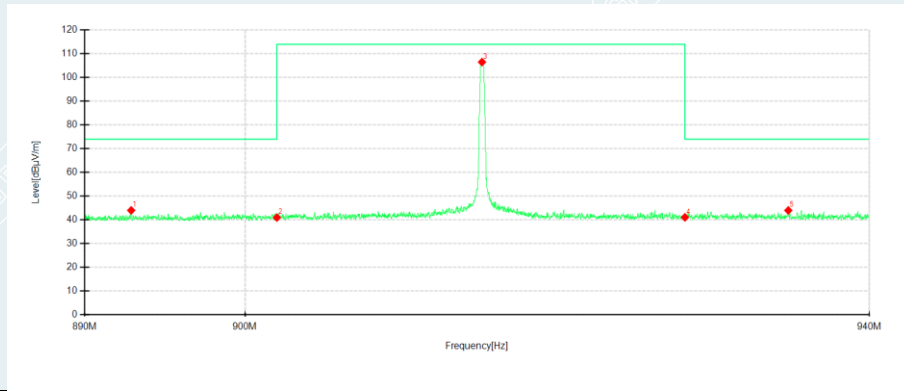
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	895.657	61.60	43.03	-18.57	74	-30.97	100	258	Horizontal
2	902	59.93	41.43	-18.50	114	-72.57	100	210	Horizontal
3	915.0406	113.52	95.14	-18.38	114	-18.86	100	171	Horizontal
4	928	59.49	41.31	-18.18	114	-72.69	100	63	Horizontal
5	939.6875	61.51	43.52	-17.99	74	-30.48	200	229	Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Peak Level [dBμV/m]	Duty Cycle Correction Factor [dB]	AVG Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	895.657	61.60	43.03	-45.51	-2.48	54	-56.48	100	258	Horizontal
2	902	59.93	41.43	-45.51	-4.08	94	-98.08	100	210	Horizontal
3	915.040	113.52	95.14	-45.51	49.63	94	-44.37	100	171	Horizontal
4	928	59.49	41.31	-45.51	-4.2	94	-98.20	100	63	Horizontal
5	939.687	61.51	43.52	-45.51	-1.99	54	-55.99	200	229	Horizontal

Remark:

1. $AVG = Peak + 20\log(Duty\ Cycle)$
2. $Duty\ Cycle = On\ time / Total\ time = 0.318s / 60.52s = 0.53\%$
3. $Duty\ Cycle\ Correction\ Factor: 20\log(0.0053) = -45.51dB$

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



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	892.8941	62.57	43.97	-18.60	74	-30.03	100	247	Vertical
2	902	59.44	40.94	-18.50	114	-73.06	100	74	Vertical
3	914.9781	124.87	106.50	-18.37	114	-7.50	100	102	Vertical
4	928	59.22	41.04	-18.18	114	-72.96	100	190	Vertical
5	934.7056	62.04	43.97	-18.07	74	-30.03	200	53	Vertical

NO.	Freq. [MHz]	Reading [dBμV/m]	Peak Level [dBμV/m]	Duty Cycle Correction Factor [dB]	AVG Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	892.8941	62.57	43.97	-45.51	-1.54	54	-55.54	100	247	Vertical
2	902	59.44	40.94	-45.51	-4.57	94	-98.57	100	74	Vertical
3	914.9781	124.87	106.50	-45.51	60.99	94	-33.01	100	102	Vertical
4	928	59.22	41.04	-45.51	-4.47	94	-98.47	100	190	Vertical
5	934.7056	62.04	43.97	-45.51	-1.54	54	-55.54	200	53	Vertical

Remark:

1. $AVG = Peak + 20 \log(Duty\ Cycle)$
2. $Duty\ Cycle = On\ time / Total\ time = 0.318s / 60.52s = 0.53\%$
3. $Duty\ Cycle\ Correction\ Factor: 20 \log(0.0053) = -45.51dB$

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

Radiated Spurious Emission**Test Frequency Below 1GHz:**

Environment:

22.6°C / 51%RH/101.0kPa

Power Source:

AC120V/60Hz

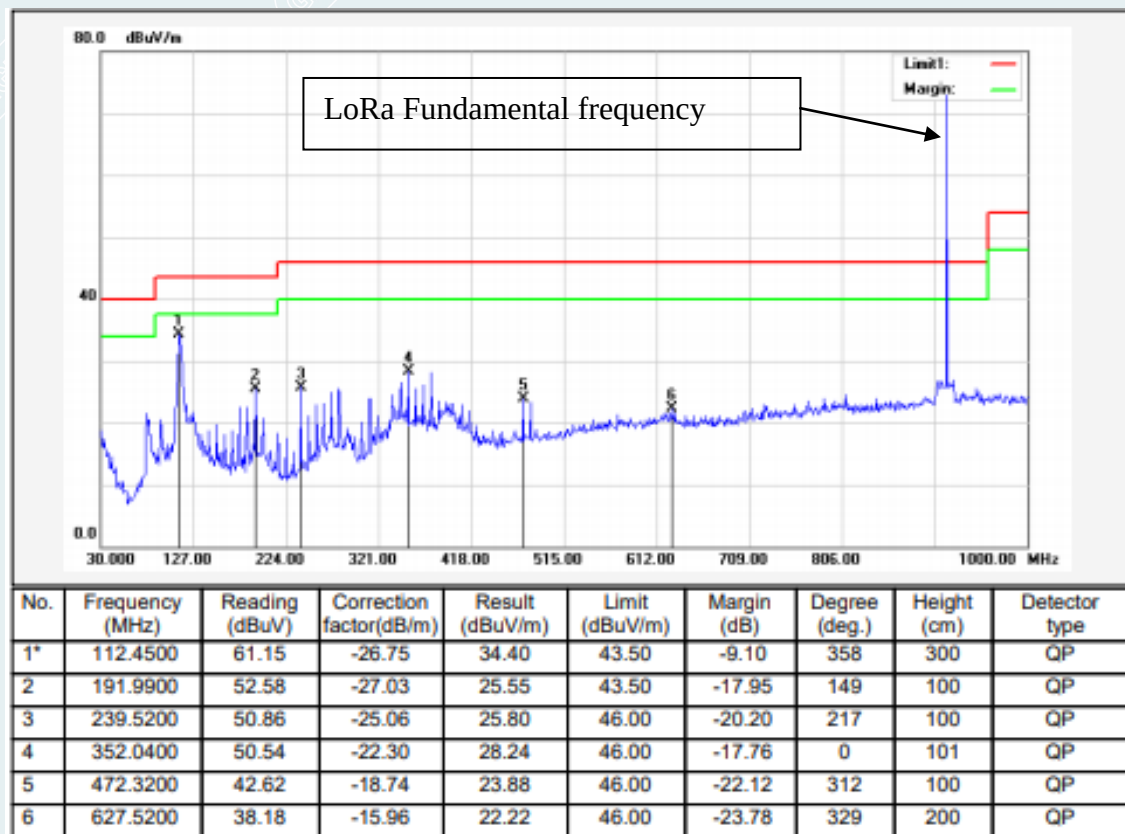
Test Date:

2023-04-13

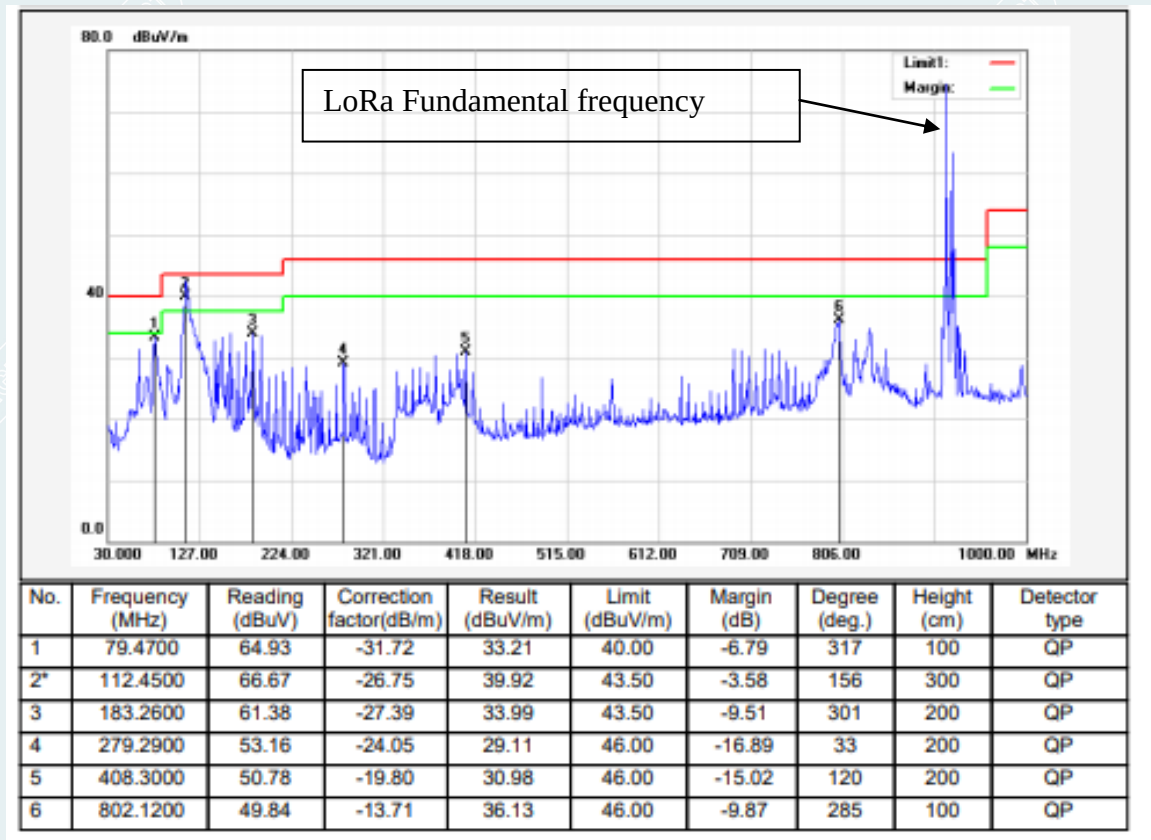
Test By :

Wang xinyuan

Polarity: Horizontal



Polarity: Vertical



Remark:

- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Radiated emissions measured in frequency range from 30MHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- 3 The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.

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

1GHz – 10GHz:

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.

Environment: 24.2℃/53%RH//101.0kPa
 Power Source: AC120V/60Hz
 Test Date: 2023-04-11
 Test By : Zhang Zishan

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1250.2813	59.33	35.94	-23.39	74.00	38.06	200	129	Horizontal
2	1898.3623	58.96	36.36	-22.60	74.00	37.64	200	109	Horizontal
3	2418.1773	62.11	41.25	-20.86	74.00	32.75	100	276	Horizontal
4	3623.0779	57.20	41.07	-16.13	74.00	32.93	200	291	Horizontal
5	4919.1149	54.86	43.67	-11.19	74.00	30.33	200	238	Horizontal
6	9792.5991	48.77	52.95	4.18	74.00	21.05	200	152	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	9792.5991	4.18	40.12	44.30	54.00	9.70	200	152	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	1125.2657	59.40	35.17	-24.23	74.00	38.83	100	118	Vertical
2	1402.5503	58.34	35.49	-22.85	74.00	38.51	100	126	Vertical
3	2419.6775	63.95	43.68	-20.27	74.00	30.32	100	16	Vertical
4	3064.7581	56.60	40.59	-16.01	74.00	33.41	200	332	Vertical
5	4940.9926	55.29	44.13	-11.16	74.00	29.87	100	42	Vertical
6	9795.2244	48.34	52.78	4.44	74.00	21.22	100	147	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	9795.2244	4.44	40.35	44.79	54.00	9.21	100	147	Vertical

8. 20dB BANDWIDTH

8.1 LIMITS

The test of the item was performed in accordance with the standards §15.215(c).

8.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Set the spectrum analyzer as RBW=1%to 3% OBW, VBW=3RBW, Span>Declare bandwidth, Sweep = auto.
- 3) Record 20dB of the bandwidth value.
- 4) Repeat above procedures until all frequencies measured were complete.

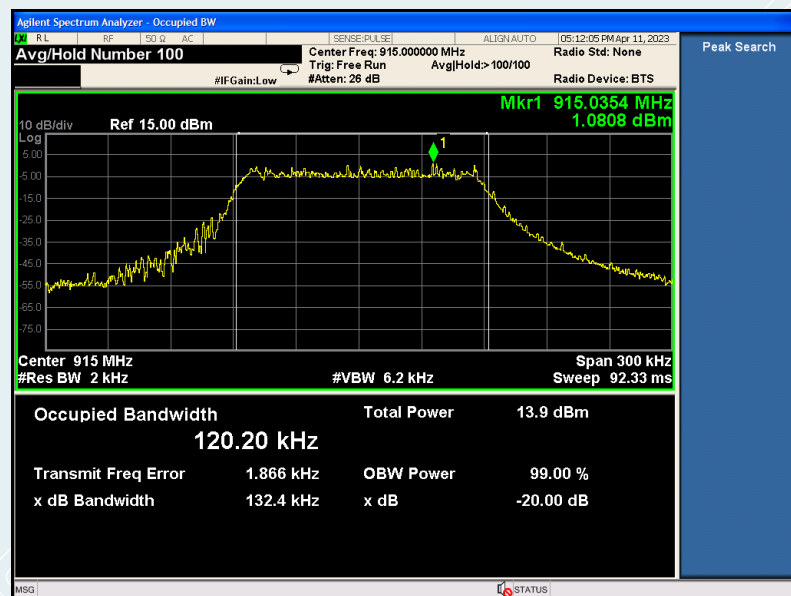
8.3 TEST SETUP



8.4 TEST RESULTS

Environmental Conditions	22.3°C/65%RH/101.0kPa
Power Source:	AC120V/60Hz
Test Date:	2023-04-11
Test By :	Qin tingting

Frequency (MHz)	20dB Bandwidth (kHz)	Test Result
915	132.40	PASS



APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E202303101204-7-Test photo.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E202303101204-8-EUT photo.

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