

EMC TEST REPORT

FCC ID:2BHQM-T1

Report No. : SSP24060282-1E

Applicant : shenzhenshixindawangluoxinxifazhanyouxiangongsi

Product Name : Hidden Camera Detectors

Model Name : T1

Test Standard : FCC Part 15 Subpart B

Date of Issue : 2024-07-13







Shenzhen CCUT Quality Technology Co., Ltd.

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This test report is limited to the above client company and the product model only. It may not be duplicated
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Test Report Basic Information

Applicant:	shenzhenshixindawangluoxinxifazhanyouxiangongsi		
Address of Applicant:	801 China Resources Building, Shennan East Road, Shenzhen, China		
Manufacturer:	shenzhenshixindawangluoxinxifazhanyouxiangongsi		
Address of Manufacturer:	801 China Resources Building, Shennan East Road, Shenzhen, China		
Product Name:	Hidden Camera Detectors		
Brand Name:	TANHUKEN		
Main Model:	T1		
Series Models:	T3, T13		
Test Standard:	FCC Part 15 Subpart B ANSI C63.4-2014		
Date of Test	2024-07-01to 2024-07-13		
Test Result:	PASS		
Tested By		(Coke Huang)	
Reviewed By:		(Lieber Ouyang)	
Authorized Signatory:		(Lahm Peng)	
Note : This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.. All test data presented in this test report is only applicable to presented test sample.			

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Revision History

Revision	Issue Date	Description	Revised By
V1.0	2024-07-13	Initial Release	Lahm Peng

1. General Information

1.1 Product Information

Product Name:	Hidden Camera Detectors
Trade Name:	TANHUKEN
Main Model:	T1
Series Models:	T3, T13
Class of Equipment:	<input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B
Highest Internal Frequency:	>108MHz
Rated Voltage:	DC 3.7V by battery, USB 5V charging
Battery:	DC 3.7V, 200mAh
<p>Note 1: The test data is gathered from a production sample, provided by the manufacturer.</p> <p>Note 2: The color of appearance and model name of series models listed are different from the main model, but the circuit and the electronic construction are the same, declared by the manufacturer.</p>	

1.2 Test Setup Information

List of Test Modes			
Test Mode	Description	Remark	
TM1	Charging + Woking	AC120V/60Hz	
TM2	-	-	
TM3	-	-	
TM4	-	-	
List and Details of Auxiliary Cable			
Description	Length (cm)	Shielded/Unshielded	With/Without Ferrite
-	-	-	-
-	-	-	-
-	-	-	-
List and Details of Auxiliary Equipment			
Description	Manufacturer	Model	Serial Number
Adapter	Huawei	HW-100225C00	HC78E2N6A23645
-	-	-	-
-	-	-	-
The equipment under test (EUT) was configured to measure its highest possible emission and immunity level. The test modes were adapted according to the operation manual for use.			

1.3 Compliance Standards

Compliance Standards	
FCC Part 15 Subpart B	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES, Unintentional Radiators
All measurements contained in this report were conducted with all above standards	
According to standards for test methodology	
FCC Part 15 Subpart B	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES, Unintentional Radiators
ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.
Maintenance of compliance is the responsibility of the manufacturer or applicant. Any modification of the product, which result is lowering the emission, should be checked to ensure compliance has been maintained.	

1.4 Test Facilities

Laboratory Name:	Shenzhen CCUT Quality Technology Co., Ltd. 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China
CNAS Laboratory No.:	L18863
A2LA Certificate No.:	6893.01
FCC Registration No.:	583813
ISED Registration No.:	CN0164
All measurement facilities used to collect the measurement data are located at 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China.	

1.5 Measurement Uncertainty

Test Item	Conditions	Uncertainty
Conducted Disturbance	9kHz ~30MHz	±1.64 dB
Radiated Disturbance	30MHz ~ 1GHz	±3.32 dB
Radiated Disturbance	1GHz ~ 18GHz	±3.50 dB

1.6 List of Test and Measurement Instruments

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Conducted Emissions					
AMN	ROHDE&SCHWARZ	ENV216	101097	2023-10-21	2024-10-20
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100242	2023-07-31	2024-07-30
EMI Test Software	FARA	EZ-EMC	EMEC-3A1+	N/A	N/A
Radiated Emissions					
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100154	2023-07-31	2024-07-30
Spectrum Analyzer	KEYSIGHT	N9020A	MY48030972	2023-07-31	2024-07-30
Amplifier	SCHWARZBECK	BBV 9743B	00251	2023-07-31	2024-07-30
Amplifier	HUABO	YXL0518-2.5-45	--	2023-07-31	2024-07-30
Loop Antenna	DAZE	ZN30900C	21104	2023-08-07	2024-08-06
Broadband Antenna	SCHWARZBECK	VULB 9168	01320	2023-08-07	2024-08-06
Horn Antenna	SCHWARZBECK	BBHA 9120D	02553	2023-08-07	2024-08-06
EMI Test Software	FARA	EZ-EMC	FA-03A2 RE+	N/A	N/A

2. Summary of Test Results

FCC Rule	Description of Test Item	Result
FCC Part 15.107	Conducted Emissions	Passed
FCC Part 15.109	Radiated Emissions	Passed
Passed: The EUT complies with the essential requirements in the standard Failed: The EUT does not comply with the essential requirements in the standard N/A: Not applicable		

3. Conducted Emissions

3.1 Standard and Limit

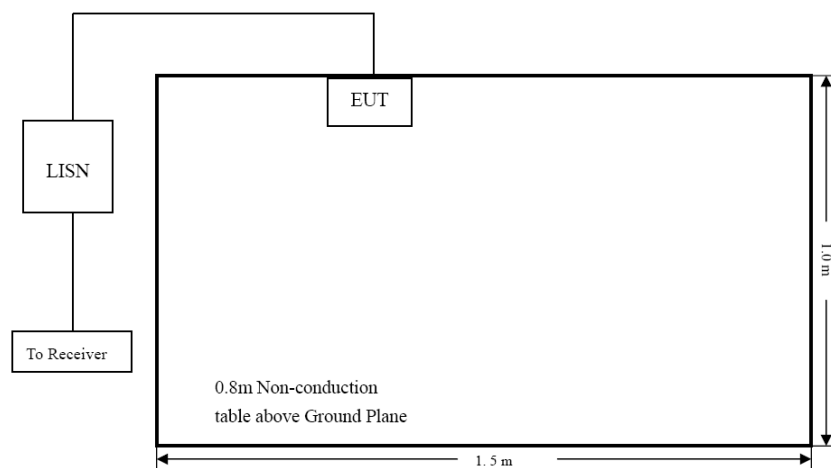
According to the rule FCC Part 15.107, Conducted limit, the limit for a class A and class B device as below:

Frequency of Emission (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15-0.5	79	66	66 to 56	56 to 46
0.5-5	73	60	56	46
5-30	73	60	60	50

Note 1: Decreases with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz
Note 2: The lower limit applies at the band edges

3.2 Test Procedure

Test is conducting under the description of ANSI C63.4-2014 American National Standard for Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.



Test Setup Block Diagram

3.3 Test Data and Results

Based on all tested data, the EUT complied with the FCC Part 15.107 standard limit for a Class B device, and with the worst case as below:

Remark: Level = Reading + Factor, Margin = Level - Limit

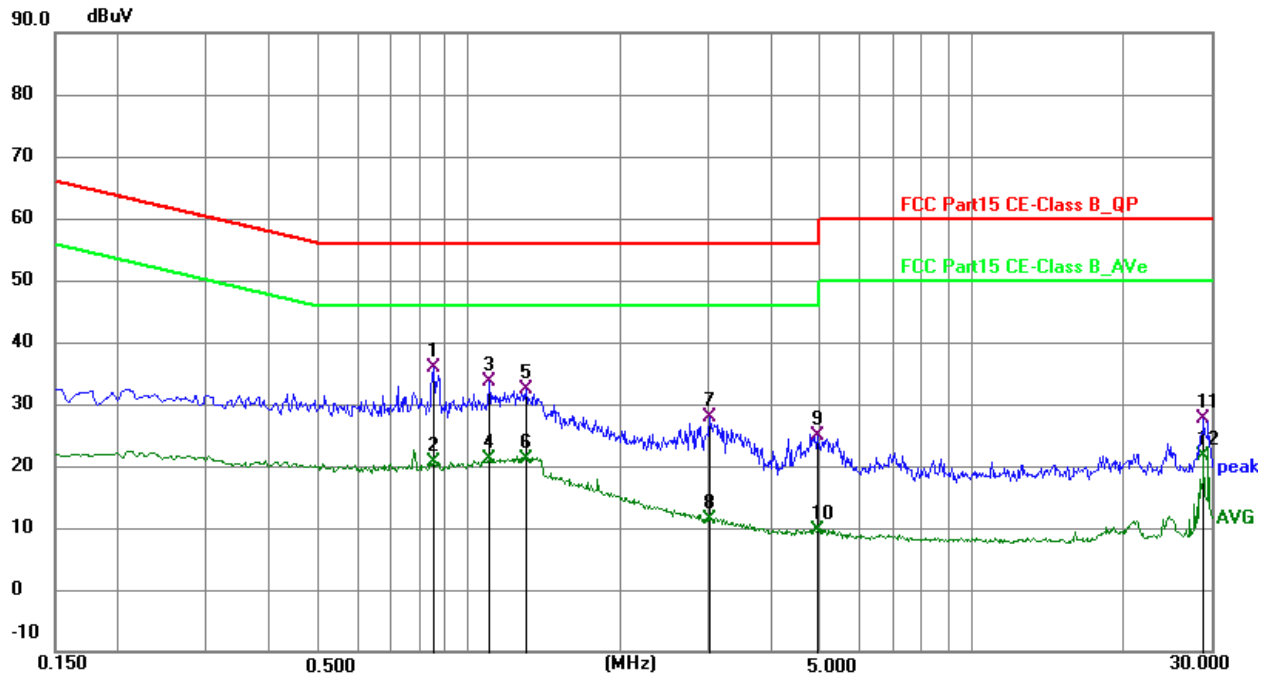
Test Plots and Data of Conducted Emissions

Tested Mode: TM1

Test Voltage: AC 120V/60Hz

Test Power Line: Neutral

Remark:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.8520	26.18	9.60	35.78	56.00	-20.22	QP	P	
2	0.8520	10.93	9.60	20.53	46.00	-25.47	AVG	P	
3	1.0995	23.70	9.84	33.54	56.00	-22.46	QP	P	
4	1.0995	11.38	9.84	21.22	46.00	-24.78	AVG	P	
5	1.2975	22.27	10.02	32.29	56.00	-23.71	QP	P	
6	1.2975	11.07	10.02	21.09	46.00	-24.91	AVG	P	
7	3.0120	17.68	10.09	27.77	56.00	-28.23	QP	P	
8	3.0120	1.41	10.09	11.50	46.00	-34.50	AVG	P	
9	4.9380	14.57	10.22	24.79	56.00	-31.21	QP	P	
10	4.9380	-0.51	10.22	9.71	46.00	-36.29	AVG	P	
11	29.0490	17.39	10.25	27.64	60.00	-32.36	QP	P	
12	29.0490	11.48	10.25	21.73	50.00	-28.27	AVG	P	

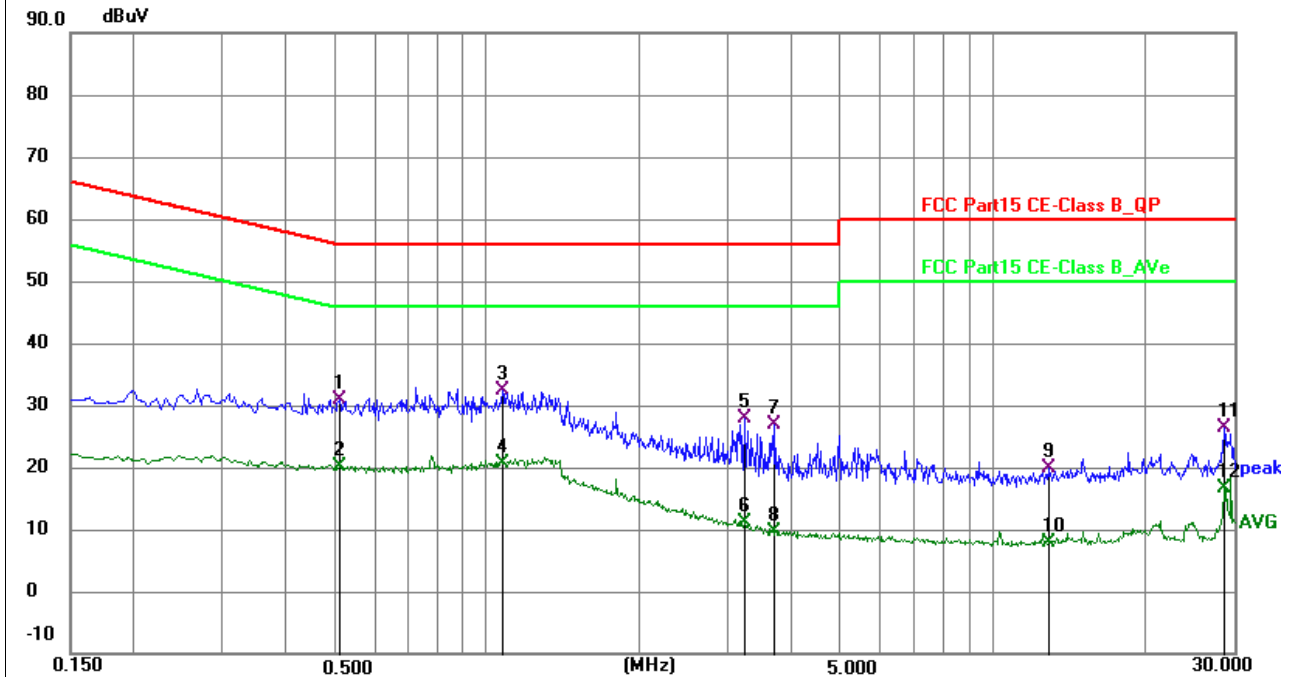
Test Plots and Data of Conducted Emissions

Tested Mode: TM1

Test Voltage: AC 120V/60Hz

Test Power Line: Live

Remark:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.5100	20.98	9.93	30.91	56.00	-25.09	QP	P	
2	0.5100	10.15	9.93	20.08	46.00	-25.92	AVG	P	
3 *	1.0725	22.39	9.99	32.38	56.00	-23.62	QP	P	
4	1.0725	10.56	9.99	20.55	46.00	-25.45	AVG	P	
5	3.2370	17.84	10.12	27.96	56.00	-28.04	QP	P	
6	3.2370	0.95	10.12	11.07	46.00	-34.93	AVG	P	
7	3.7050	16.86	10.13	26.99	56.00	-29.01	QP	P	
8	3.7050	-0.39	10.13	9.74	46.00	-36.26	AVG	P	
9	12.8805	9.66	10.16	19.82	60.00	-40.18	QP	P	
10	12.8805	-2.35	10.16	7.81	50.00	-42.19	AVG	P	
11	28.7475	16.16	10.23	26.39	60.00	-33.61	QP	P	
12	28.7475	6.37	10.23	16.60	50.00	-33.40	AVG	P	

4. Radiated Emissions

4.1 Standard and Limit

According to §15.247(d), 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. 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)).

According to the rule FCC Part 15.209, Radiated emission limit for a wireless device as below:

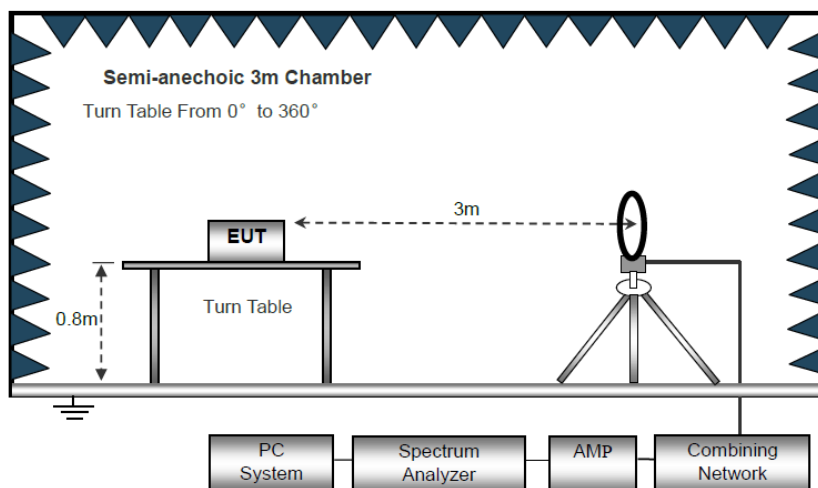
Frequency of Emission (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3
Note: The more stringent limit applies at transition frequencies.		

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. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

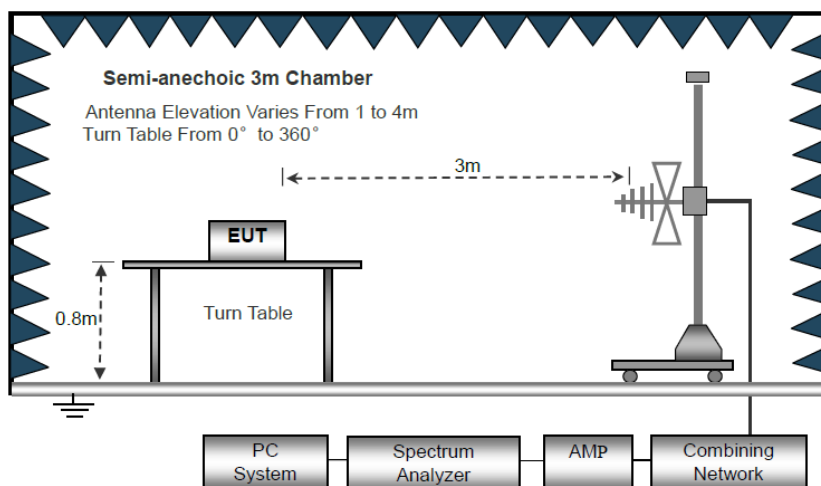
Note: Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

4.2 Test Procedure

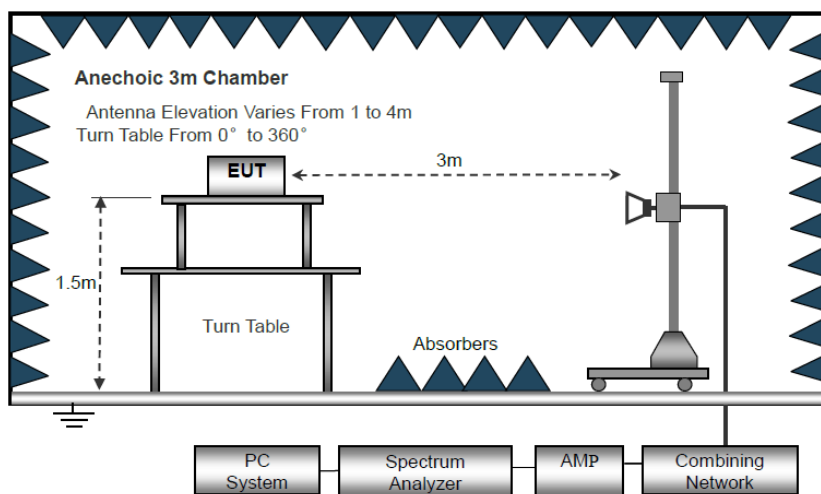
Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.6.



Block Diagram of Radiated Emission Below 30MHz



Block Diagram of Radiated Emission From 30MHz to 1GHz



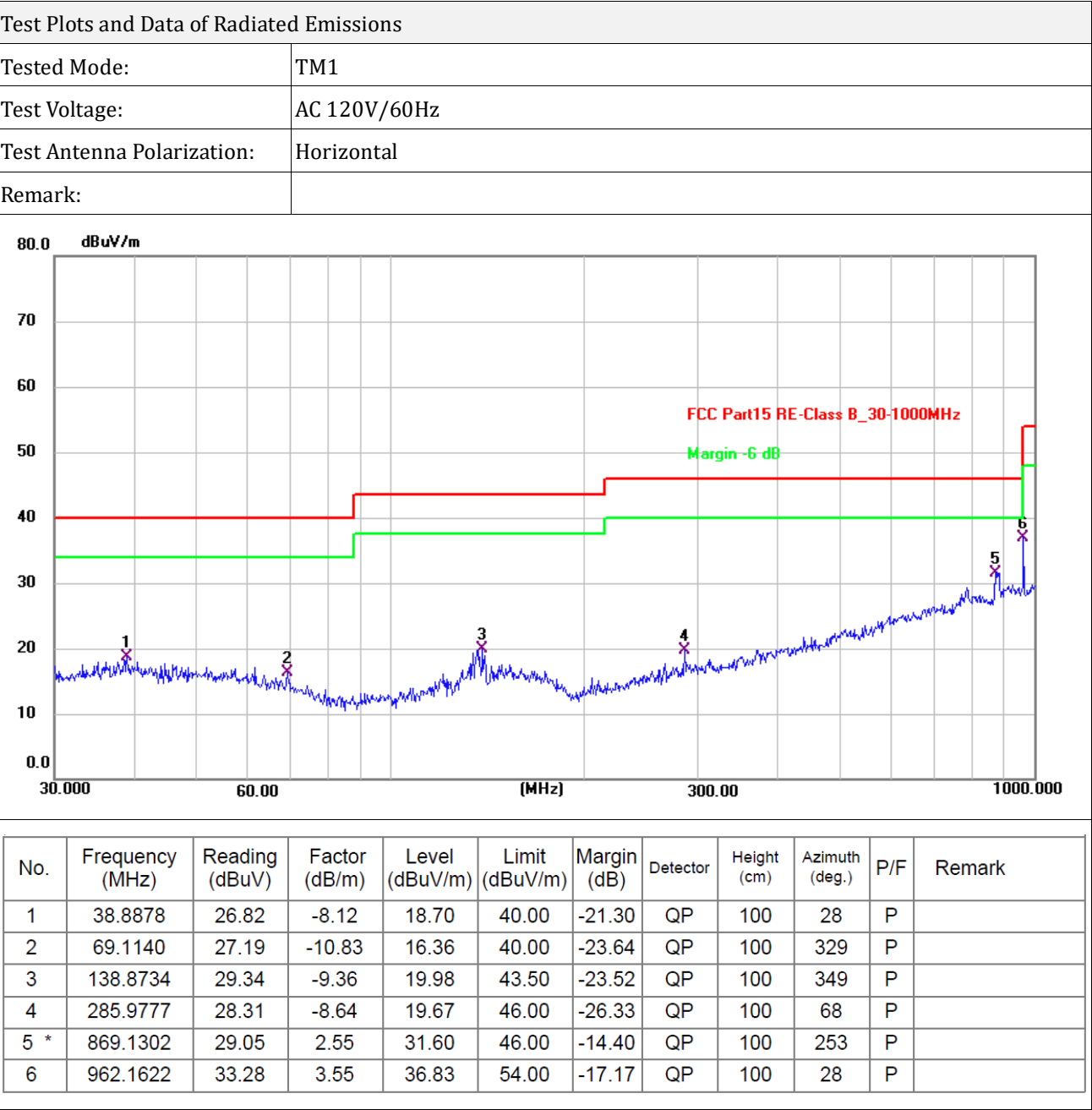
Block Diagram of Radiated Emission Above 1GHz

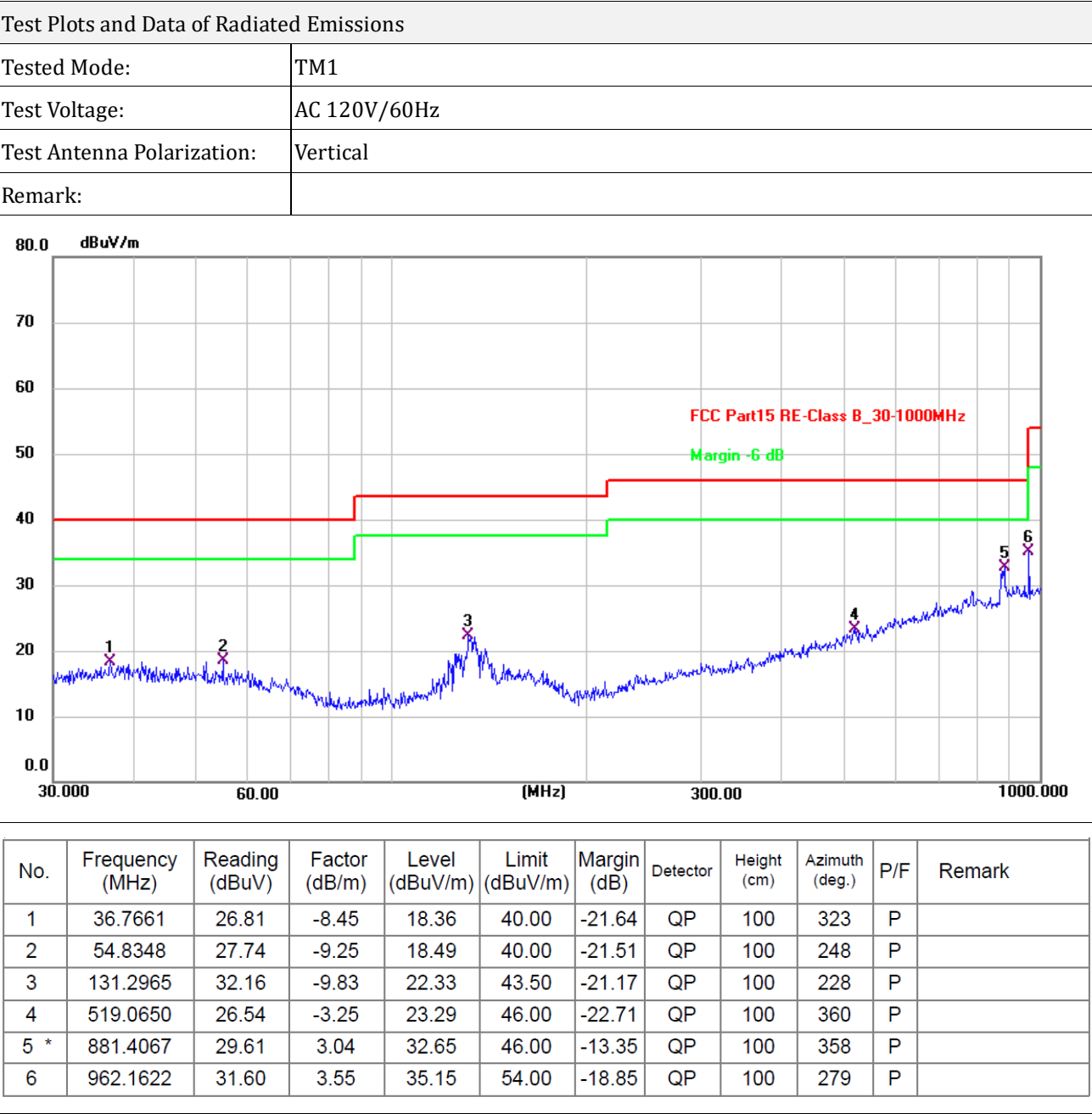
- a) The EUT is placed on a turntable, which is 0.8m above ground plane for test frequency range below 1GHz, and 1.5m above ground plane for test frequency range above 1GHz.
- b) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- c) Use the following spectrum analyzer settings:
Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for $f \geq 1\text{GHz}$, 100 kHz for $f < 1\text{GHz}$, 10kHz for $f < 30\text{MHz}$
VBW \geq RBW, Sweep = auto
Detector function = peak
Trace = max hold
- d) Follow the guidelines in ANSI C63.4-2014 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- e) The peak level, once corrected, must comply with the limit specified in Section 15.209. Set the RBW = 1MHz, VBW = 10Hz, Detector = PK for AV value, while maintaining all of the other instrument settings.
- f) For the actual test configuration, please refer to the related item - EUT test photos.

4.3 Test Data and Results

Based on all tested data, the EUT complied with the FCC Part 15.107 standard limit for a Class B device, and with the worst case as below:

Remark: Level = Reading + Factor, Margin = Level - Limit





Radiation Reception test data (Above 1GHz)							
Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	PK/AV
6882	54.13	-7.86	46.27	74	-27.73	H	PK
10078	55.11	-5.85	49.26	74	-24.74	H	PK
13495	54.61	-4.76	49.85	74	-24.15	H	PK
8956	54.15	-5.38	48.77	74	-25.23	V	PK
10520	54.65	-4.97	49.68	74	-24.32	V	PK
14617	53.87	-4.83	49.04	74	-24.96	V	PK

Note 1: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Note 2: Testing is carried out with frequency rang 1GHz to the tenth harmonics, If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit, so there is no record.

Note 3: Above 18GHz not recorded for no spurious point have a margin of less than 6 dB with respect to the limits.