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Shenzhen Branch**

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Report No.: SZEM171101138301
Page: 1 of 27

TEST REPORT

Application No.: SZEM1711011383IT (SHEM1710007285IT)
Applicant: Zhejiang Dahua Vision Technology Co., Ltd.
Address of Applicant: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
Manufacturer: Zhejiang Dahua Vision Technology Co., Ltd.
Address of Manufacturer: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
Factory: 1, ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD.
2, ZHEJIANG DAHUA ZHILIAN CO., LTD.
Address of Factory: 1, No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
2, No.28, Dongqiao Road, Dongzhou Street, Fuyang District, Hangzhou, P.R.China.

Equipment Under Test (EUT):

EUT Name: 10 inch IR PTZ camera

Model No.: DH-SD10A248V-HNI, DH-SD10A248VN-HNI, DH-SD10Axyzutv-Hab, SD10Axyzutv-Hab,

("x" can be 1-9 or blank or missing; "y" can be 0-9 or blank or missing; "z" can be 0- 9 or blank or missing; "u" can be A-Z or blank or missing; "t" can be A-Z or blank or missing; "v" can be N or blank or missing; "a" can be C,N,S or blank or missing, "b" can be A-Z or blank or missing);[□]

□

Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Trade mark:



Standards: 47 CFR Part 15, Subpart B:2016

Date of Receipt: 2017-10-30

Date of Test: 2017-10-31

Date of Issue: 2017-11-27

Test Result :	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.



Jack Zhang
EMC Laboratory Manager



The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	2017-11-27	/	Original

Authorized for issue by:				
				
		Foray Chen /Project Engineer		
				
		Eric Fu /Reviewer		



2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart B:2016	ANSI C63.4	Class B	Pass
Radiated Emissions (30MHz-1GHz)	47 CFR Part 15, Subpart B:2016	ANSI C63.4	Class B	Pass
Radiated Emissions (above 1GHz)	47 CFR Part 15, Subpart B:2016	ANSI C63.4	Class B	Pass

InternalSource	UpperFrequency
Below 1.705MHz	30MHz
1.705MHz to 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5th harmonic of the highest frequency or 40GHz, whichever is lower

Declaration of EUT Family Grouping:

There are series models mentioned in this report and they are the similar in electrical and electronic characters. Only the model DH-SD10A248V-HNI was tested since their differences are model number and appearance.



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4 General Information

4.1 Details of E.U.T.

Power supply:

AC24V

Transformer: A24-5A-950

input : AC120V 60Hz , output : AC24V 5000mA

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop 1	LENOVO	R400	--
Headset	HYUNDAI	HY-R362	--
7"LCD HD DVR	/	DS-8104AHQLI-E4	--

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conduction emission	3.0dB (150kHz to 30MHz)
2	Radiated emission	4.5dB (30MHz-1GHz)
3	Temperature test	1 °C
4	Humidity test	3%



4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



5 Equipment List

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)
1	Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2017-05-10	2018-05-10
2	LISN	Rohde & Schwarz	ENV216	SEM007-01	2017-10-09	2018-10-09
3	EMI Test Receiver(9kHz-3GHz)	Rohde & Schwarz	ESCI	SEM004-02	2017-04-14	2018-04-13
4	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-05-10	2018-05-10
5	MXE EMI Receiver (20Hz-8.4GHz)	Agilent Technologies	N9038A	SEM004-05	2017-10-09	2018-10-09
6	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-02	2017-03-05	2020-03-05
7	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2017-04-14	2018-04-13
8	Spectrum Analyzer (20Hz-43GHz)	Rohde & Schwarz	FSU43	SEM004-08	2017-04-14	2018-04-13
9	Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2015-06-14	2018-06-13
10	Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-14	2017-06-16	2020-06-15
11	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEM004-10	2017-10-17	2018-10-17
12	Pre-amplifier (26-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2017-04-14	2018-04-13
13	Measurement Software	AUDIX	e3 V5.4.1221d	N/A	N/A	N/A

6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

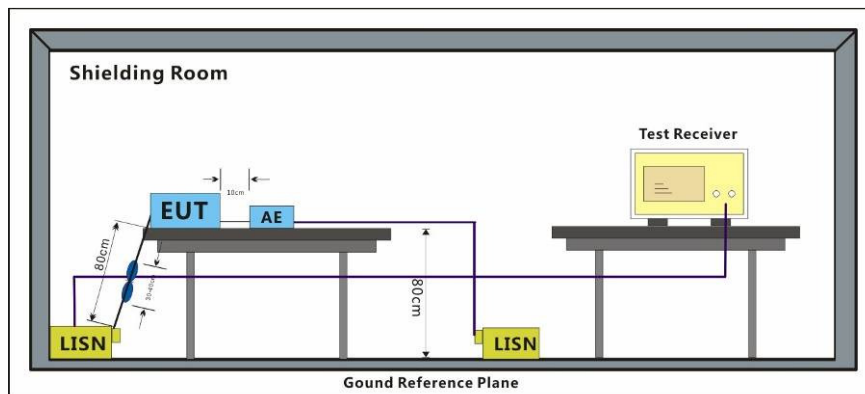
Test Requirement:	47 CFR Part 15, Subpart B:2016
Test Method:	ANSI C63.4
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.1.1 E.U.T. Operation

Operating Environment:

Temperature:	22 °C	Humidity:	48 % RH	Atmospheric Pressure:	1010 mbar
Test mode	a: monitoring : keep EUT monitoring with LED infrared emitter and holder scanning .				

6.1.2 Test Setup Diagram

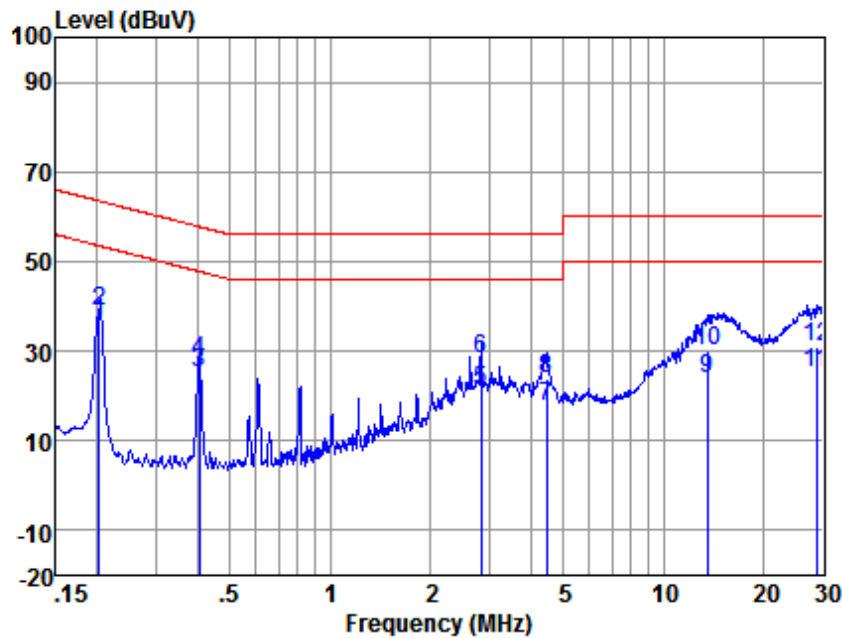


6.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.



Mode:a; Line:Live Line

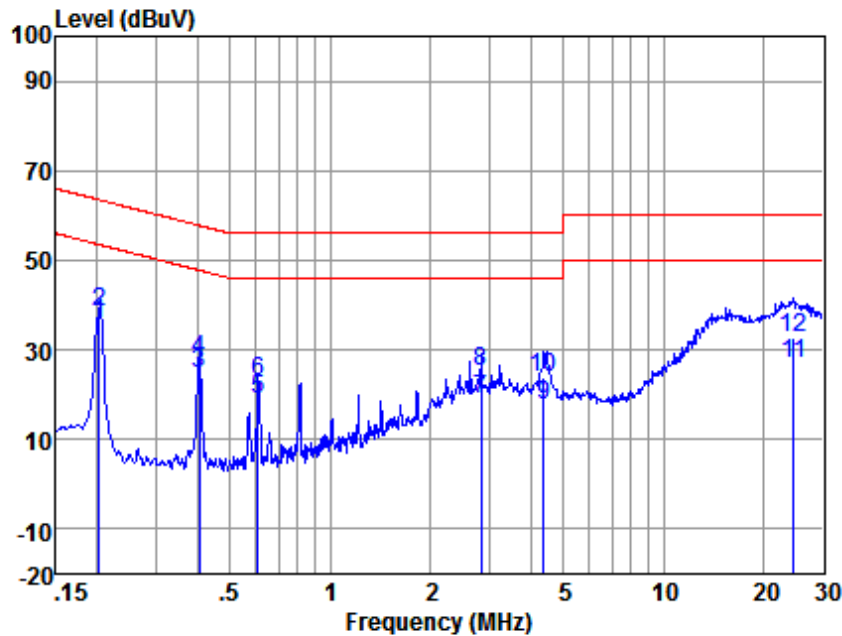


Site : chamber
Condition : LISN-L-2017
Project No: 7285IT
Test mode : a

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.202	26.51	0.11	9.81	36.43	53.54	-17.11	Average
2	0.202	28.87	0.11	9.81	38.79	63.54	-24.75	QP
3	0.404	15.23	0.11	9.82	25.16	47.77	-22.61	Average
4	0.404	18.08	0.11	9.82	28.01	57.77	-29.76	QP
5	2.839	11.26	0.12	9.85	21.23	46.00	-24.77	Average
6	2.839	18.27	0.12	9.85	28.24	56.00	-27.76	QP
7	4.478	7.50	0.11	9.86	17.47	46.00	-28.53	Average
8	4.478	13.88	0.11	9.86	23.85	56.00	-32.15	QP
9	13.551	13.83	0.14	9.98	23.95	50.00	-26.05	Average
10	13.551	19.73	0.14	9.98	29.85	60.00	-30.15	QP
11	28.908	15.02	0.23	10.09	25.34	50.00	-24.66	Average
12	28.908	20.78	0.23	10.09	31.10	60.00	-28.90	QP



Mode:a; Line:Neutral Line



Site : chamber
Condition : LISN-N-2017
Project No: 7285IT
Test mode : a

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.202	26.07	0.12	9.81	36.00	53.54	-17.54	Average
2	0.202	28.54	0.12	9.81	38.47	63.54	-25.07	QP
3	0.404	14.67	0.11	9.82	24.60	47.77	-23.17	Average
4	0.404	18.10	0.11	9.82	28.03	57.77	-29.74	QP
5	0.608	9.19	0.11	9.82	19.12	46.00	-26.88	Average
6	0.608	13.19	0.11	9.82	23.12	56.00	-32.88	QP
7	2.839	9.16	0.13	9.85	19.14	46.00	-26.86	Average
8	2.839	15.38	0.13	9.85	25.36	56.00	-30.64	QP
9	4.384	7.71	0.13	9.86	17.70	46.00	-28.30	Average
10	4.384	13.63	0.13	9.86	23.62	56.00	-32.38	QP
11	24.659	16.85	0.22	10.04	27.11	50.00	-22.89	Average
12	24.659	22.55	0.22	10.04	32.81	60.00	-27.19	QP

6.2 Radiated Emissions (30MHz-1GHz)

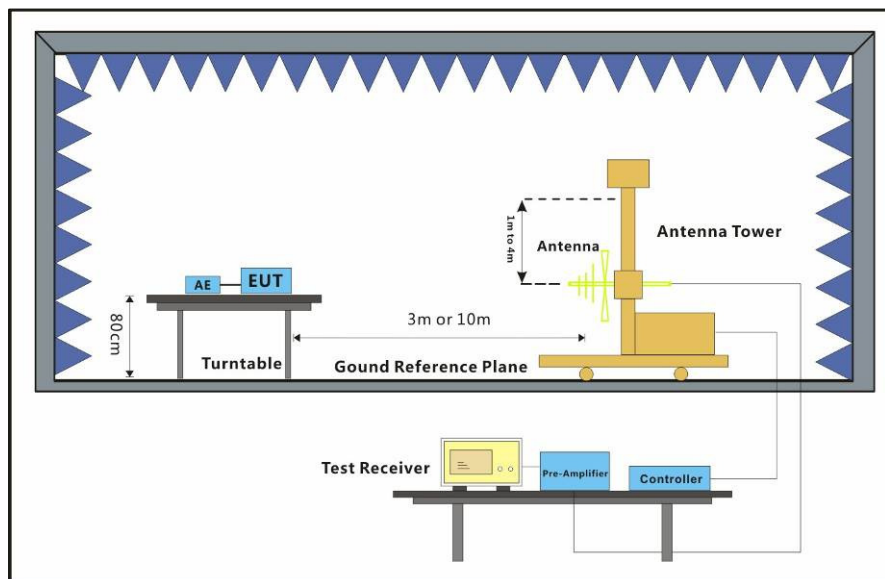
Test Requirement:	47 CFR Part 15, Subpart B:2016
Test Method:	ANSI C63.4
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Limit:	
30MHz -88MHz	40.0(dBμV/m) quasi-peak
88MHz-216MHz	43.5(dBμV/m) quasi-peak
216MHz-960MHz	46.0(dBμV/m) quasi-peak
960MHz-1000MHz	54.0(dBμV/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz

6.2.1 E.U.T. Operation

Operating Environment:

Temperature:	22 °C	Humidity:	50 % RH	Atmospheric Pressure:	1002 mbar
Test mode	a: monitoring : keep EUT monitoring with LED infrared emitter and holder scanning .				

6.2.2 Test Setup Diagram

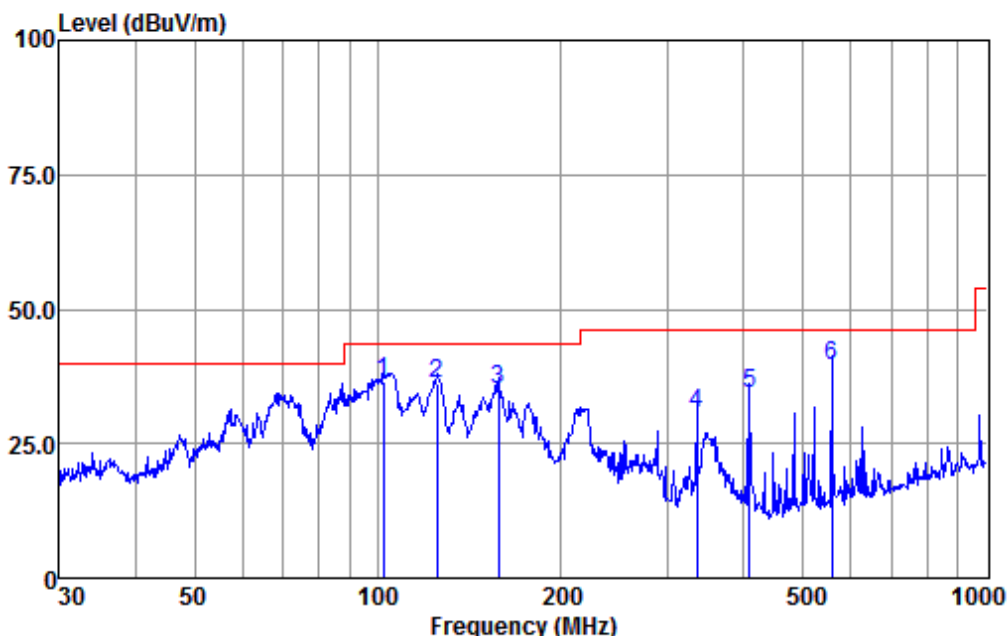


6.2.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.



Mode:a; Polarization:Horizontal

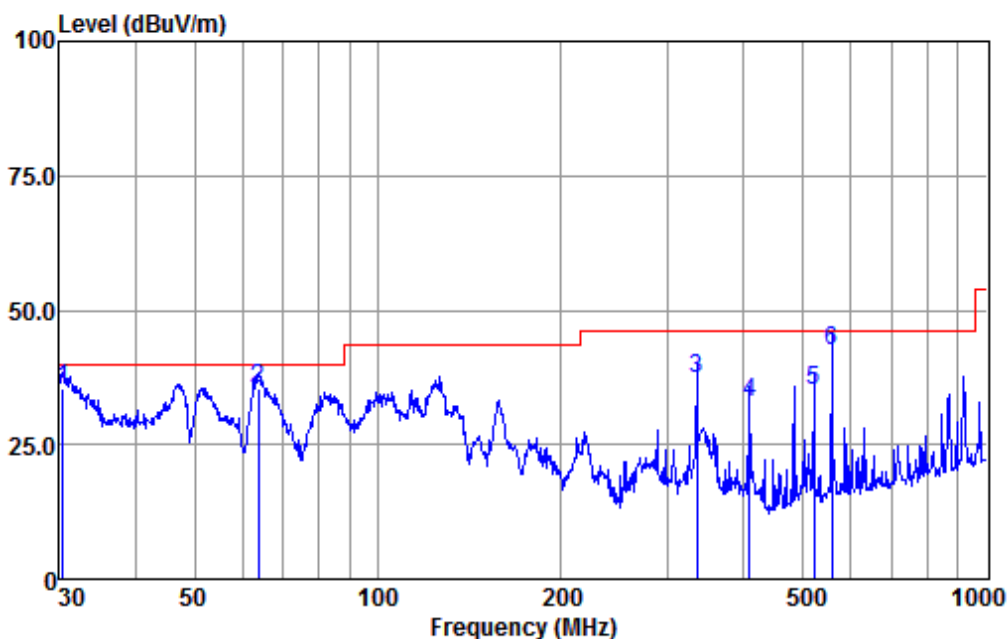


Condition : HORIZONTAL
EUT/Project: 7285IT
Test Mode : a

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
		Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	102.36	69.23	9.52	0.47	42.69	36.53	43.50	-6.97 QP
2	125.01	66.82	11.46	0.55	42.67	36.16	43.50	-7.34 QP
3	158.11	64.22	12.90	0.63	42.60	35.15	43.50	-8.35 QP
4	334.86	58.03	13.92	0.90	42.29	30.56	46.00	-15.44 QP
5	408.95	60.13	15.30	1.01	42.10	34.34	46.00	-11.66 QP
6 q	556.77	61.79	18.51	1.28	42.17	39.41	46.00	-6.59 QP



Mode:a; Polarization:Vertical



Condition : VERTICAL
EUT/Project: 7285IT
Test Mode : a

		ReadAntenna		Cable Preamp			Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	30.42	62.45	15.35	0.18	42.60	35.38	40.00	-4.62	QP
2	63.76	65.49	12.14	0.31	42.66	35.28	40.00	-4.72	QP
3	334.86	64.81	13.92	0.90	42.29	37.34	46.00	-8.66	QP
4	408.95	58.57	15.30	1.01	42.10	32.78	46.00	-13.22	QP
5	520.89	58.26	17.71	1.22	42.15	35.04	46.00	-10.96	QP
6 q	556.77	64.77	18.51	1.28	42.17	42.39	46.00	-3.61	QP

6.3 Radiated Emissions (above 1GHz)

Test Requirement:	47 CFR Part 15, Subpart B:2016
Test Method:	ANSI C63.4
Frequency Range:	Above 1GHz
Measurement Distance:	3m
Limit:	
Above 1GHz	74(dBμV/m) peak, 54(dBμV/m) average
Detector:	Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz

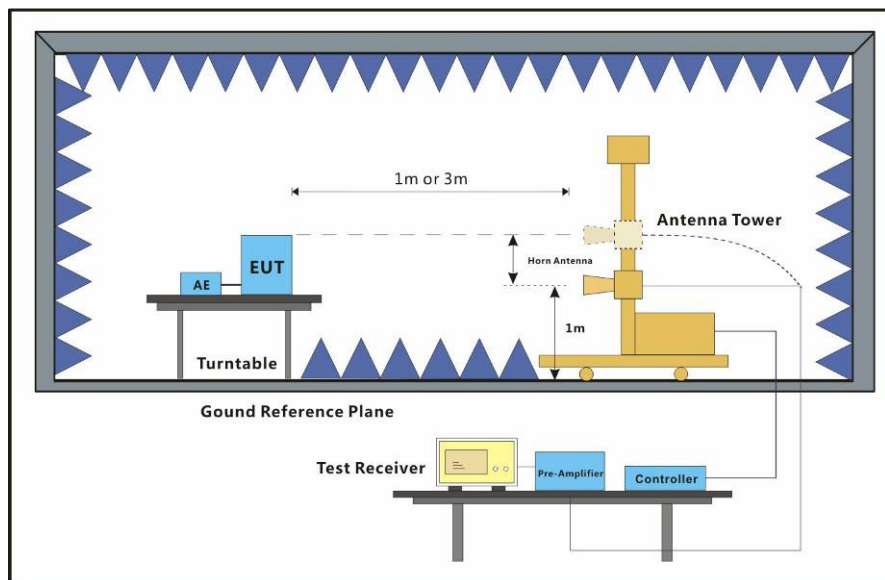
6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1002 mbar

Test mode a: monitoring : keep EUT monitoring with LED infrared emitter and holder scanning .

6.3.2 Test Setup Diagram

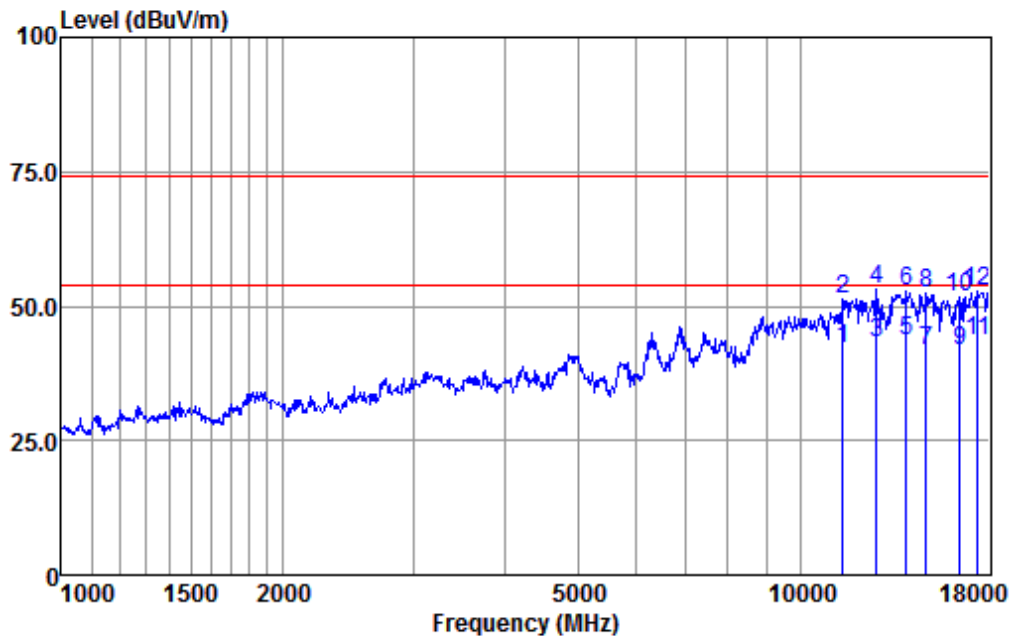


6.3.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.



Mode:a; Polarization:Horizontal

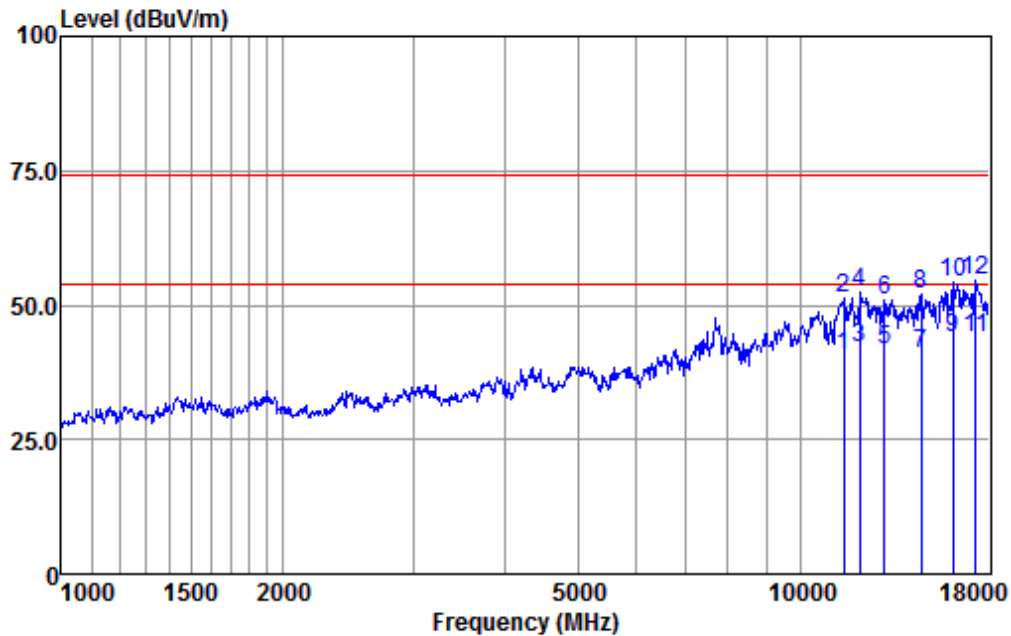


Condition : HORIZONTAL
EUT/Project: 7285IT
Test mode : a

		ReadAntenna		Cable Preamp			Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	11433.91	33.73	40.24	9.76	41.76	41.97	54.00	-12.03	Average
2	11433.91	43.08	40.24	9.76	41.76	51.32	74.00	-22.68	Peak
3	12724.47	36.30	38.87	10.05	41.89	43.33	54.00	-10.67	Average
4 p	12724.47	46.08	38.87	10.05	41.89	53.11	74.00	-20.89	Peak
5	13957.53	33.86	41.02	10.32	41.73	43.47	54.00	-10.53	Average
6	13957.53	43.01	41.02	10.32	41.73	52.62	74.00	-21.38	Peak
7	14830.96	31.27	41.50	10.21	41.36	41.62	54.00	-12.38	Average
8	14830.96	41.94	41.50	10.21	41.36	52.29	74.00	-21.71	Peak
9	16457.32	33.28	38.44	11.17	41.33	41.56	54.00	-12.44	Average
10	16457.32	43.41	38.44	11.17	41.33	51.69	74.00	-22.31	Peak
11	17436.71	29.95	42.76	11.93	41.26	43.38	54.00	-10.62	Average
12	17436.71	39.17	42.76	11.93	41.26	52.60	74.00	-21.40	Peak



Mode:a; Polarization:Vertical



Condition : VERTICAL
EUT/Project: 7285IT
Test mode : a

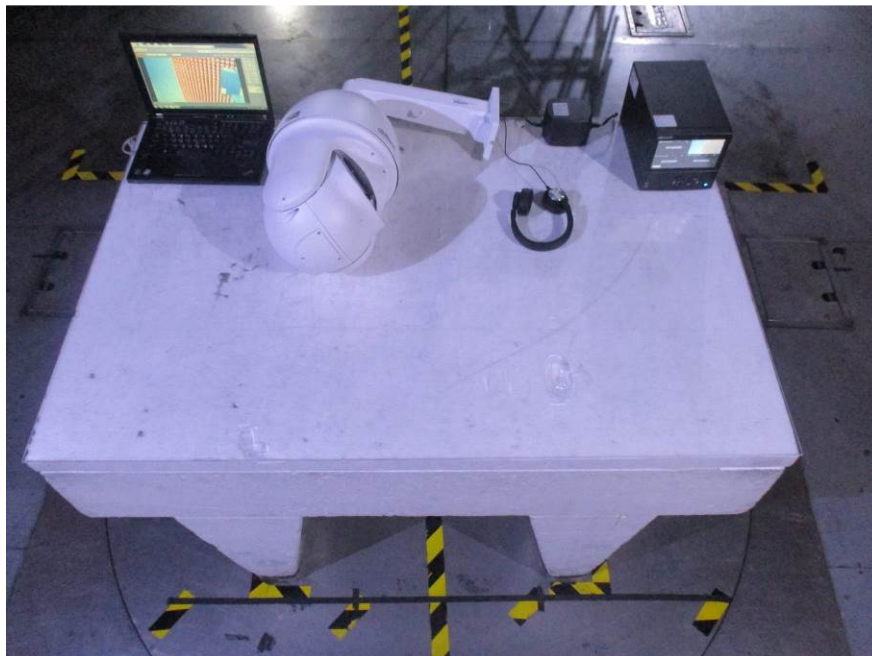
		ReadAntenna		Cable Preamp			Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	11467.00	32.36	40.22	9.76	41.77	40.57	54.00	-13.43	Average
2	11467.00	42.93	40.22	9.76	41.77	51.14	74.00	-22.86	Peak
3	12044.52	35.19	39.06	9.88	41.99	42.14	54.00	-11.86	Average
4	12044.52	45.44	39.06	9.88	41.99	52.39	74.00	-21.61	Peak
5	13022.13	33.93	39.36	10.14	41.85	41.58	54.00	-12.42	Average
6	13022.13	43.41	39.36	10.14	41.85	51.06	74.00	-22.94	Peak
7	14618.17	30.42	41.75	10.24	41.35	41.06	54.00	-12.94	Average
8	14618.17	41.31	41.75	10.24	41.35	51.95	74.00	-22.05	Peak
9	16127.69	36.71	37.99	10.79	41.51	43.98	54.00	-10.02	Average
10	16127.69	47.10	37.99	10.79	41.51	54.37	74.00	-19.63	Peak
11	17336.20	31.17	42.28	11.74	41.27	43.92	54.00	-10.08	Average
12 p	17336.20	41.83	42.28	11.74	41.27	54.58	74.00	-19.42	Peak

7 Photographs

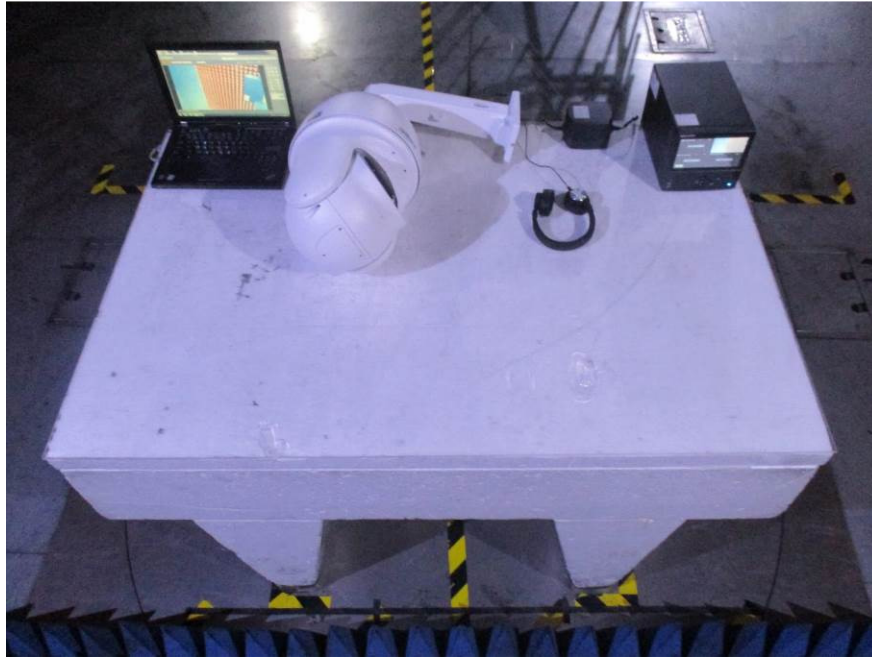
7.1 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup



7.2 Radiated Emissions (30MHz-1GHz) Test Setup



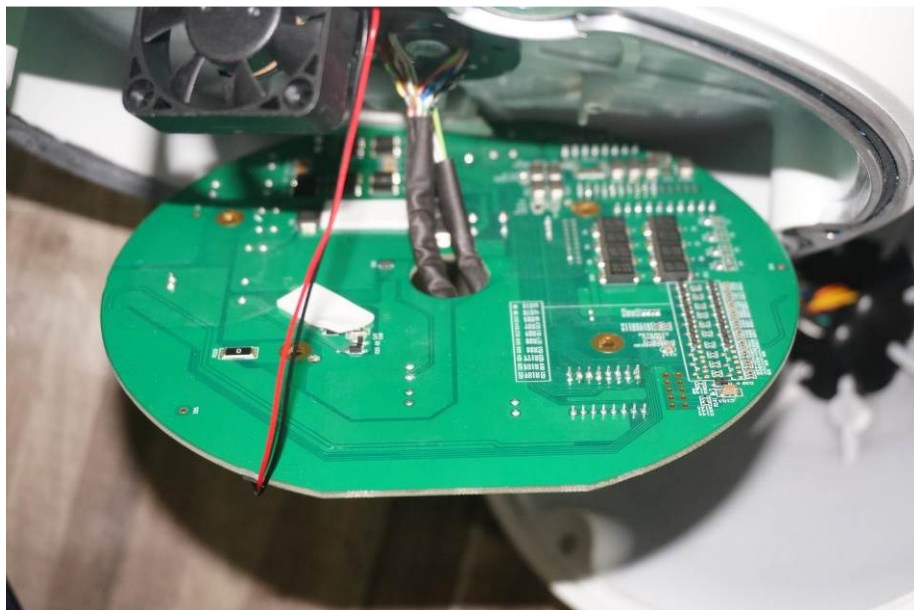
7.3 Radiated Emissions (above 1GHz) Test Setup



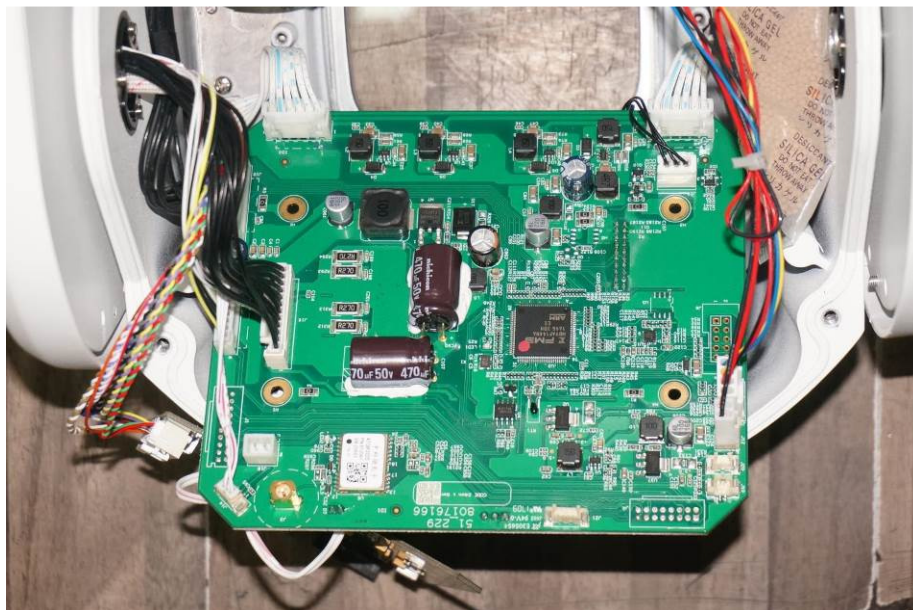
7.4 EUT Constructional Details

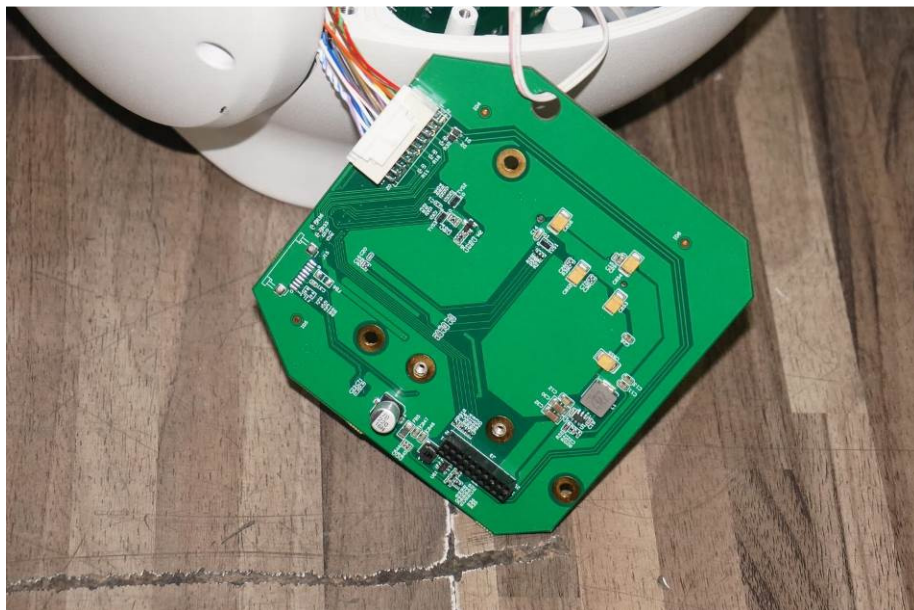
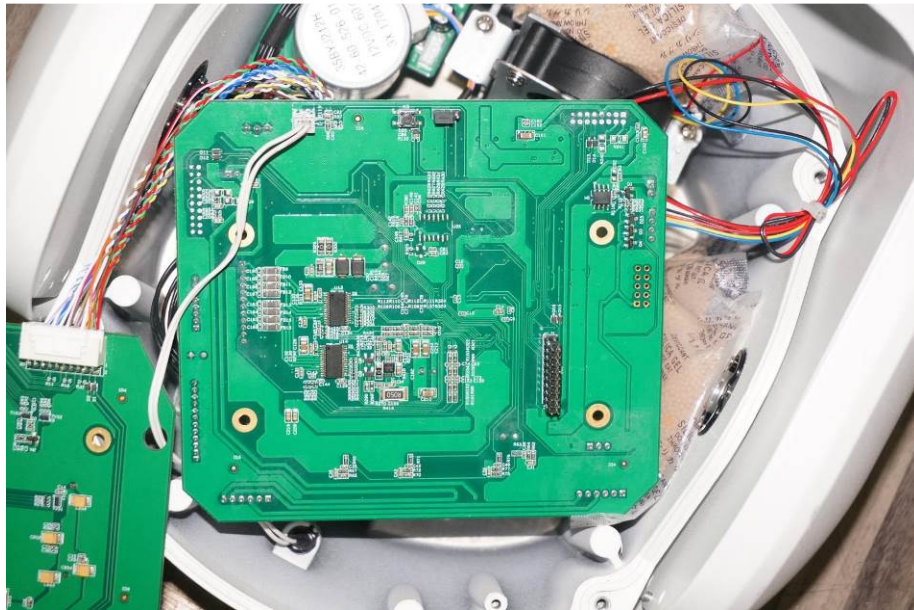


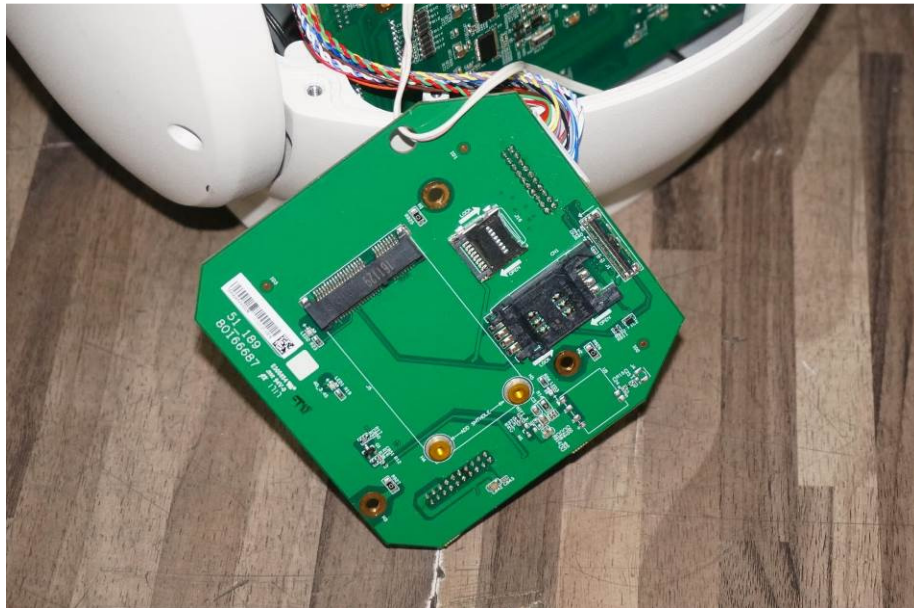


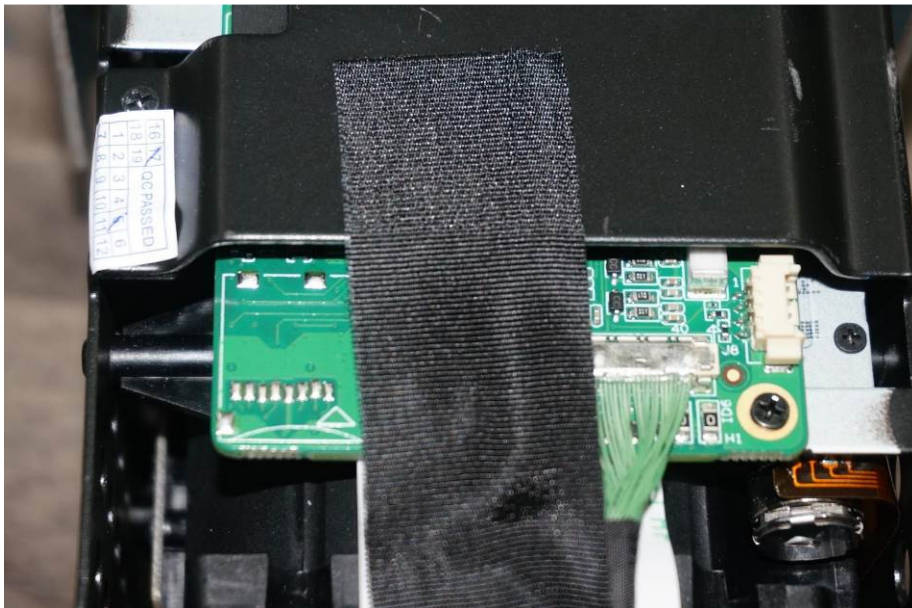














--End of the Report--