



TEST REPORT

Report No.: DHQ-18SE1376VTSHPB
Test Model: DHI-ITC215-PW4I-IRLZF27135
Received: Sep.20, 2018
ISSUED: Oct.10, 2018

Applicant: ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD.
Address: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

Issued By: BUREAU VERITAS ADT (Shanghai) Corporation
Lab Location: No. 829, Xinzhuan Road, Shanghai, P.R.China (201612)

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1. TEST PROGRAM

PRODUCT: Access ANPR Camera
TEST MODEL: DHI-ITC215-PW4I-IRLZF27135
SERIES MODEL: DHI-ITC215-PW4I-IRLZF27135;
ITC215-PW4I-IRLZF27135;
DHI-ITC215-PW4I-LZF27135;
ITC215-PW4I-LZF27135;
DHI-IPMECS-2200C-IR;
DHI-IPMECS-2200C;
IPMECS-2200C-IR;
IPMECS-2200C
APPLICANT: ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD.
TESTED: Sep.20 to Oct.10, 2018
STANDARDS: 47 CFR FCC Part15, Subpart B, Class A
ANSI C63.4:2014

We, BUREAU VERITAS ADT (Shanghai) Corporation, declare that the equipment above has been tested and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

PREPARED BY : ROKESH WANG, **DATE:** Oct.10, 2018
Leon Yun
Testing Engineer

APPROVED BY : Joy ZHU, **DATE:** Oct.10, 2018
Joy ZHU
Testing Manager



2. Summary of Test Procedure and Test Results

EMISSION(47 CFR FCC Part15, Subpart B)		
Test Item	Normative References	Test Result
Conducted Emission	47 CFR FCC Part15, Subpart B 15.107	Meets the Class A requirements
Radiated Emission	47 CFR FCC Part15, Subpart B 15.109	Meets the Class A requirements

Special Comment: All tests were performed on 120Vac 60Hz.

3. Test Configuration of Equipment under Test

3.1. Manufacturer information

Manufacturer : ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD.

Address : No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

3.2. Feature of Equipment under Test

Product Name:	IP CAMERA
Test Model:	DHI-ITC215-PW4I-IRLZF27135
Series Model:	DHI-ITC215-PW4I-IRLZF27135; ITC215-PW4I-IRLZF27135; DHI-ITC215-PW4I-LZF27135; ITC215-PW4I-LZF27135; DHI-IPMECS-2200C-IR; DHI-IPMECS-2200C; IPMECS-2200C-IR; IPMECS-2200C
Model Discrepancy:	The first two models of the hood lamp are infrared lights; the second two models of the hood lamp are white lights. The last four models have different holders.
EUT Power Rating:	12VDC/2A

Note: Please refer to user manual.

3.3. Description of support units

NO.	PRODUCT	BRAND	MODEL NO.
1	PC	Lenovo	Thinkpad L470
2	AC adapter	--	ADS-12AM-12 12012EPCU
3	Network Cable	--	--



3.4. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

This listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement		Value
Conducted emissions		2.55 dB
Radiated emissions	30 MHz ~ 1GHz	3.22 dB
	Above 1GHz	2.89 dB

4. Test of Conducted Emission

4.1. Test Limit

TEST STANDARD:

CFR 47 FCC Part 15, Subpart B (Section: 15.107)

FREQUENCY (MHz)	Class A (dB μ V)		Class B (dB μ V)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

- NOTES:**
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 0.15 to 0.50 MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



4.4. Measurement Equipment

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1001	Mar.05, 2019
LISN ROHDE & SCHWARZ	ENV216	E1L1011	Jul.18, 2019
Software ADT	ADT_Cond_V7.3.0	N/A	N/A

4.5. Test Result and Data

4.5.1 Conducted Emission Test Data

For DC12 port test on AC adapter

Phase : LINE

Location: Conduction 1

Date: 9/25/2018

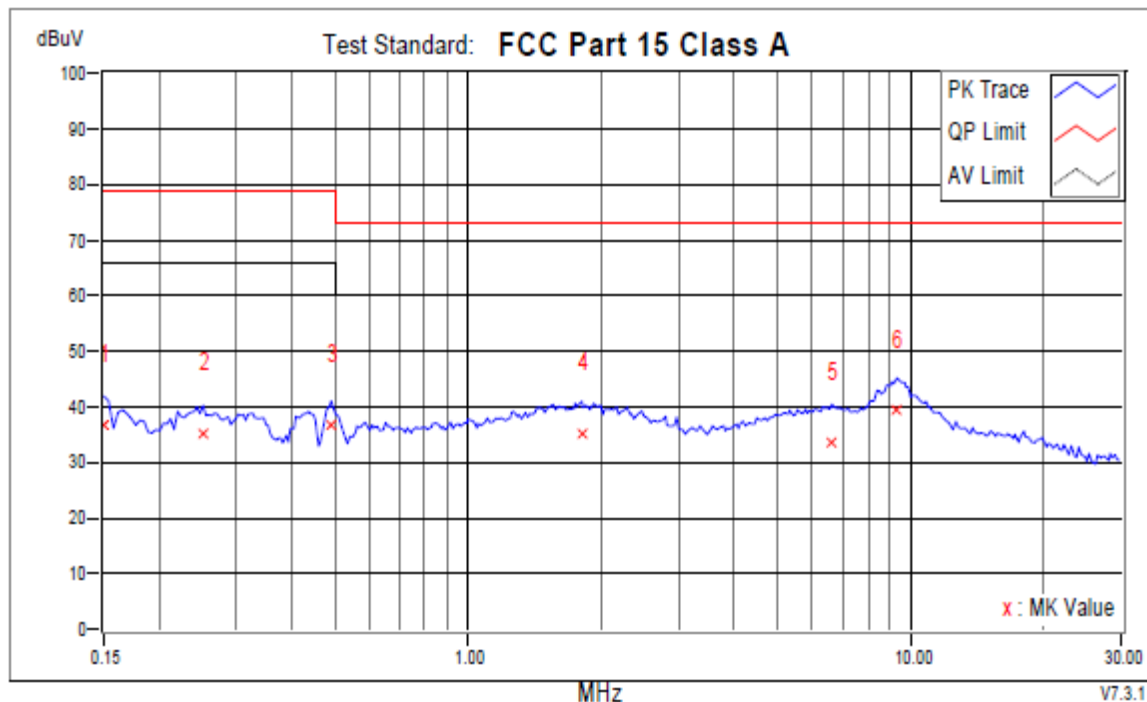
Time: 7:24:45 PM

Phase L1

Temperatuer (C): 23

Humidity (%): 52

Approved by:



No.	Frequency MHz	Corr. Factor dB	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
1	0.15000	9.61	27.14	12.43	36.75	22.04	79.00	66.00	-42.25	-43.96	
2	0.25166	9.61	25.44	13.84	35.05	23.45	79.00	66.00	-43.95	-42.55	
3	0.49017	9.61	27.00	20.01	36.61	29.62	79.00	66.00	-42.39	-36.38	
4	1.80937	9.62	25.36	16.40	34.98	26.02	73.00	60.00	-38.02	-33.98	
5	6.64213	9.97	23.72	12.35	33.69	22.32	73.00	60.00	-39.31	-37.68	
+6	9.31657	9.47	29.80	20.56	39.27	30.03	73.00	60.00	-33.73	-29.97	

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

Phase : NEUTRAL

Location: Conduction 1

Date: 9/25/2018

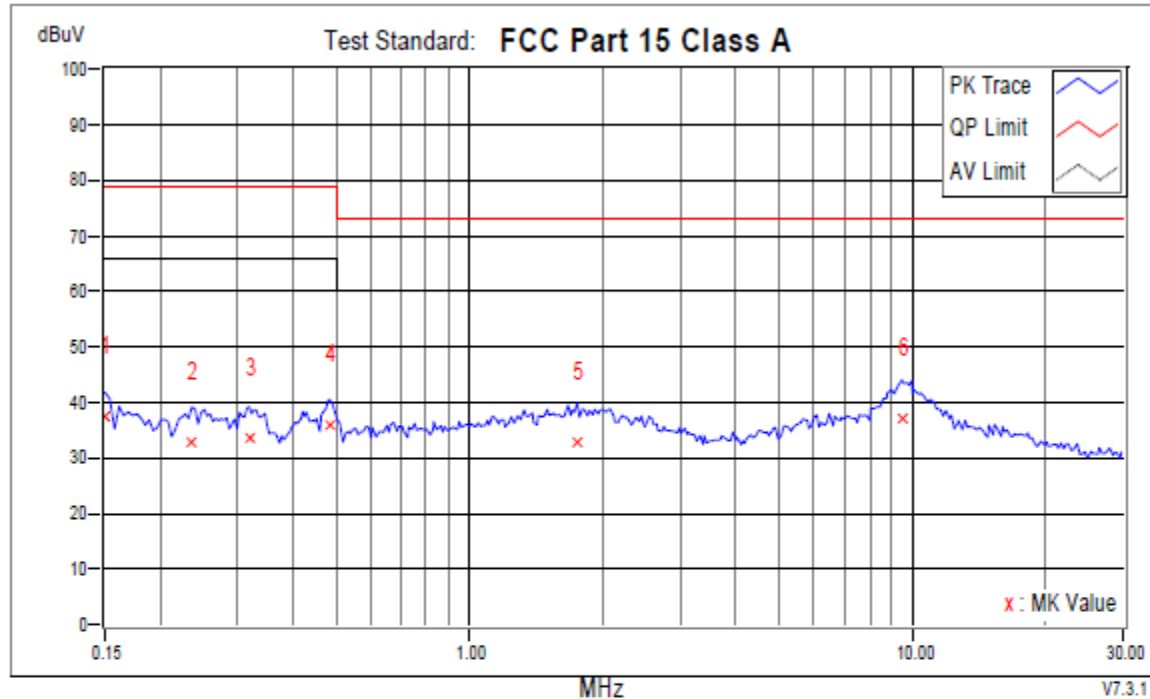
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Phase N

Temperature (C): 23

Humidity (%): 52

Approved by:



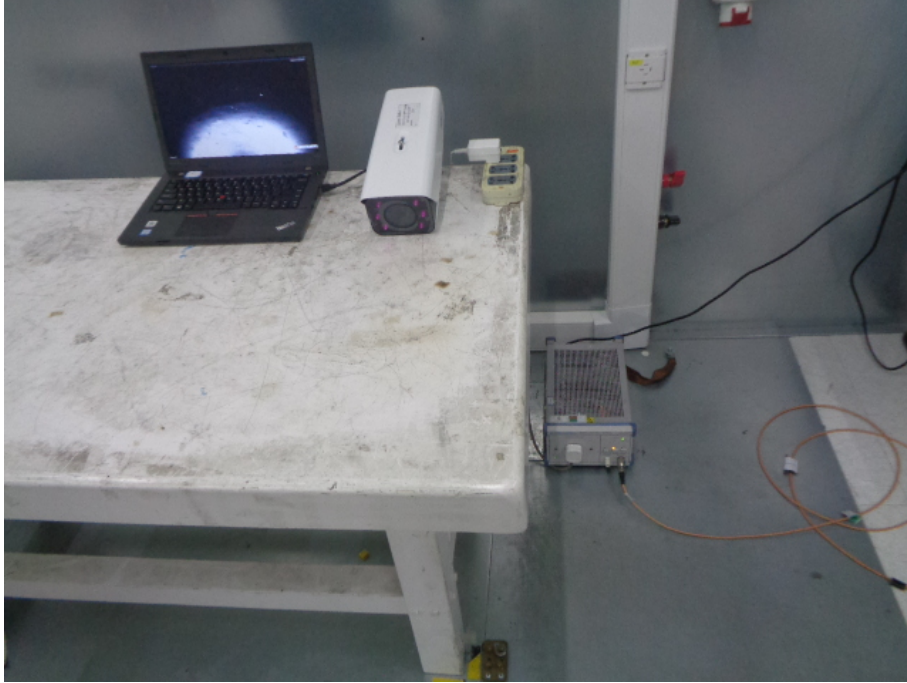
No.	Frequency MHz	Corr. Factor dB	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
1	0.15000	9.61	27.92	11.63	37.53	21.24	79.00	66.00	-41.47	-44.76	
2	0.23602	9.61	23.16	9.79	32.77	19.40	79.00	66.00	-46.23	-46.60	
3	0.31813	9.61	23.92	11.00	33.53	20.61	79.00	66.00	-45.47	-45.39	
4	0.48235	9.61	26.40	19.11	36.01	28.72	79.00	66.00	-42.99	-37.28	
5	1.75072	9.62	23.14	13.24	32.76	22.86	73.00	60.00	-40.24	-37.14	
+6	9.47297	10.01	27.00	18.15	37.01	28.16	73.00	60.00	-35.99	-31.84	

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

4.6. Test Photographs

AC adapter





5. Test of Radiated Emission

5.1. Test Limit

TEST STANDARD:

CFR 47 FCC Part 15, Subpart B (Section: 15.109)

FOR FREQUENCY BELOW 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
30 – 88	90	39.1	100	40.0
88 – 216	150	43.5	150	43.5
216 – 960	210	46.4	200	46.0
960 – 1000	300	49.5	500	54.0

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

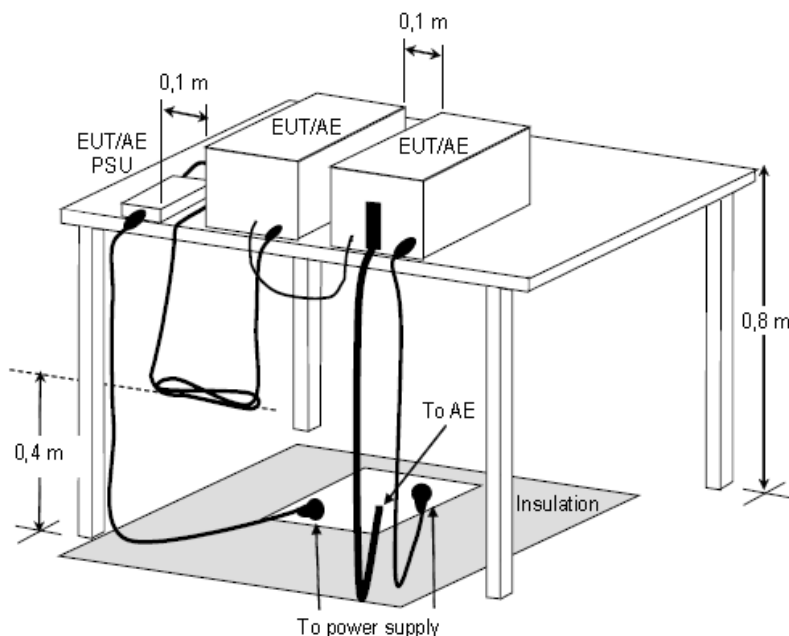
FREQUENCY (MHz)	Class A ($\text{dB}\mu\text{V/m}$) (at 3m)		Class B ($\text{dB}\mu\text{V/m}$) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

- Note:** (1) The lower limit shall apply at the transition frequencies.
 (2) Emission level ($\text{dB}\mu\text{V/m}$) = $20 \log$ Emission level ($\mu\text{V/m}$).
 (3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

5.2. Test Procedures

- The EUT was placed on a rotatable table top 0.8 meter above ground.
- The EUT was set 3/10 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

5.3. Typical Test Setup



**Figure D.8 – Example measurement arrangement for table-top EUT
(Radiated emission measurement)**



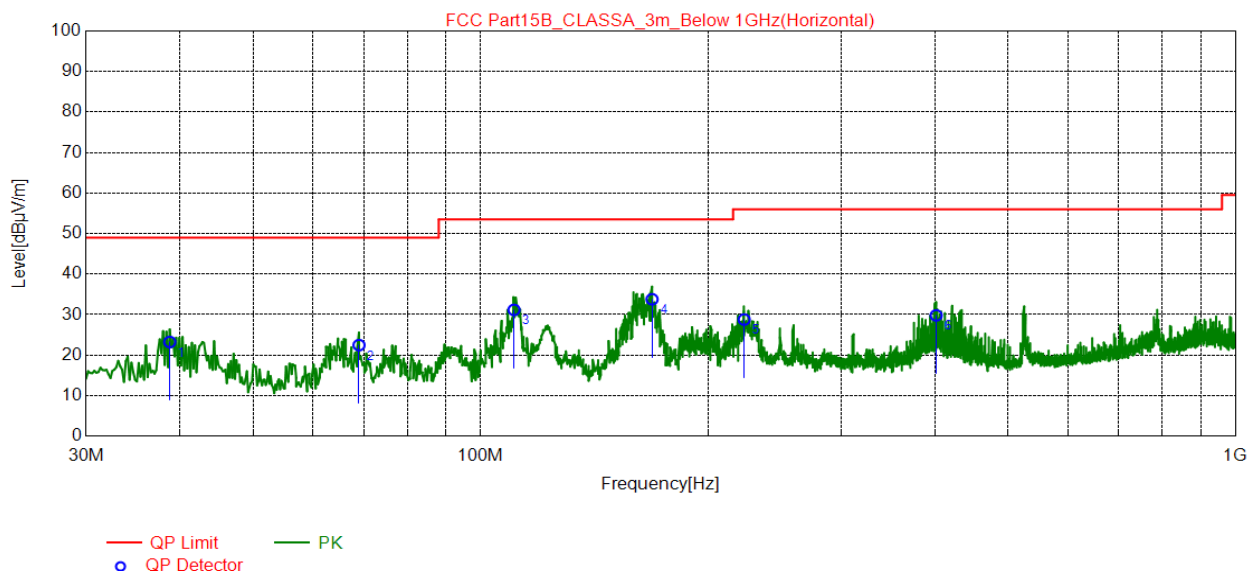
5.4. Measurement Equipment

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
EMI Test Spectrum ROHDE & SCHWARZ	ESR7	E1R1005	Dec.04, 2018
Broad-Band Antenna Schwarzbeck	VULB9168	E1A1001	Feb.27, 2019
Double Riaged Vroadband Horn Antenna Schwarzbeck	BBHA9120D	E1A1017	Aug.26, 2019
Preamplifier Agilent	8447D	E1A2001	Oct.18, 2018
Preamplifier Agilent	8449B	E1A2002	Mar.26, 2019

5.5. Test Result and Data (30MHz ~ 1GHz)

For DC12 port test on AC adapter

Position: Horizontal

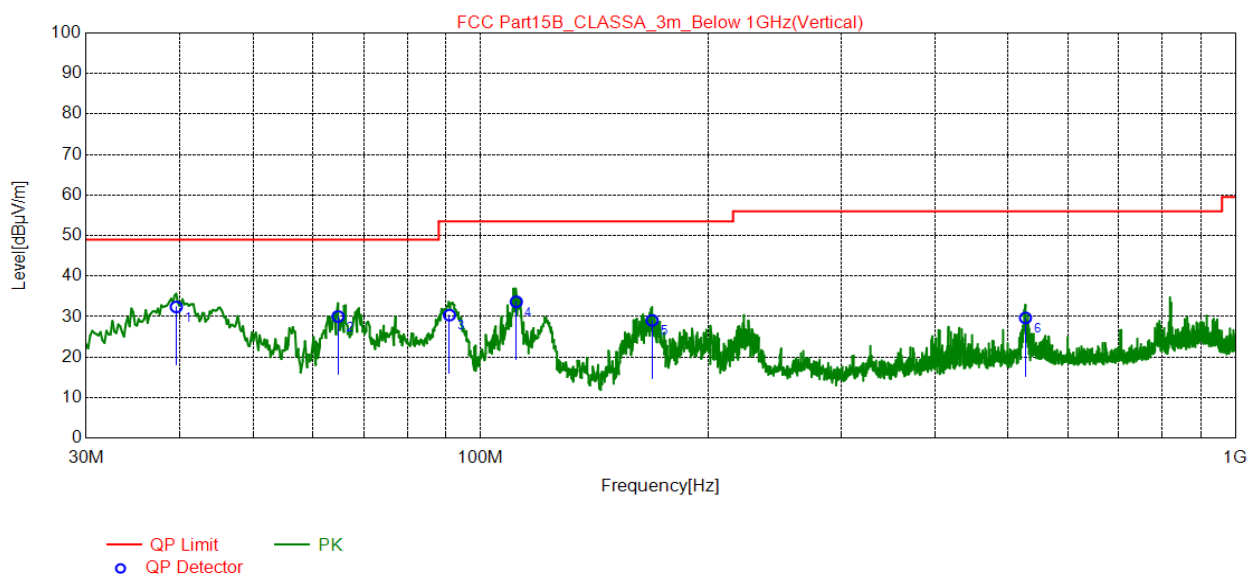


NO.	Freq. [MHz]	QP Reading [dB μ V/m]	Factor [dB]	QP Value [dB μ V/m]	QP Limit [dB μ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	38.73	40.71	-17.47	23.24	49.00	25.76	100	17	Horizontal
2	68.99	40.76	-18.30	22.46	49.00	26.54	100	17	Horizontal
3	110.7	50.4	-19.23	31.17	53.50	22.33	200	116	Horizontal
4	168.7	49.91	-16.13	33.78	53.50	19.72	200	125	Horizontal
5	223.4	47.09	-18.31	28.78	56.00	27.22	100	177	Horizontal
6	401.3	43.03	-13.23	29.80	56.00	26.20	100	117	Horizontal

REMARKS:

1. Q.P. is abbreviation of quasi-peak individually.
2. The emission levels of other frequencies were very low against the limit.
3. QP Margin value = QP Limit value – QP value
4. Factor = Antenna Factor + Amplifier Factor + Cable loss
5. QP value = Factor + Reading Value.

Position: Vertical



NO.	Freq. [MHz]	QP Reading [$\text{dB}\mu\text{V/m}$]	Factor [dB]	QP Value [$\text{dB}\mu\text{V/m}$]	QP Limit [$\text{dB}\mu\text{V/m}$]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	39.50	49.84	-17.47	32.37	49.00	16.63	100	272	Vertical
2	64.72	48.2	-18.18	30.02	49.00	18.98	100	347	Vertical
3	90.91	51.33	-20.97	30.36	53.50	23.14	100	199	Vertical
4	111.4	52.89	-19.23	33.66	53.50	19.84	100	66	Vertical
5	168.7	45.19	-16.13	29.06	53.50	24.44	100	102	Vertical
6	527.0	40.62	-10.95	29.67	56.00	26.33	100	199	Vertical

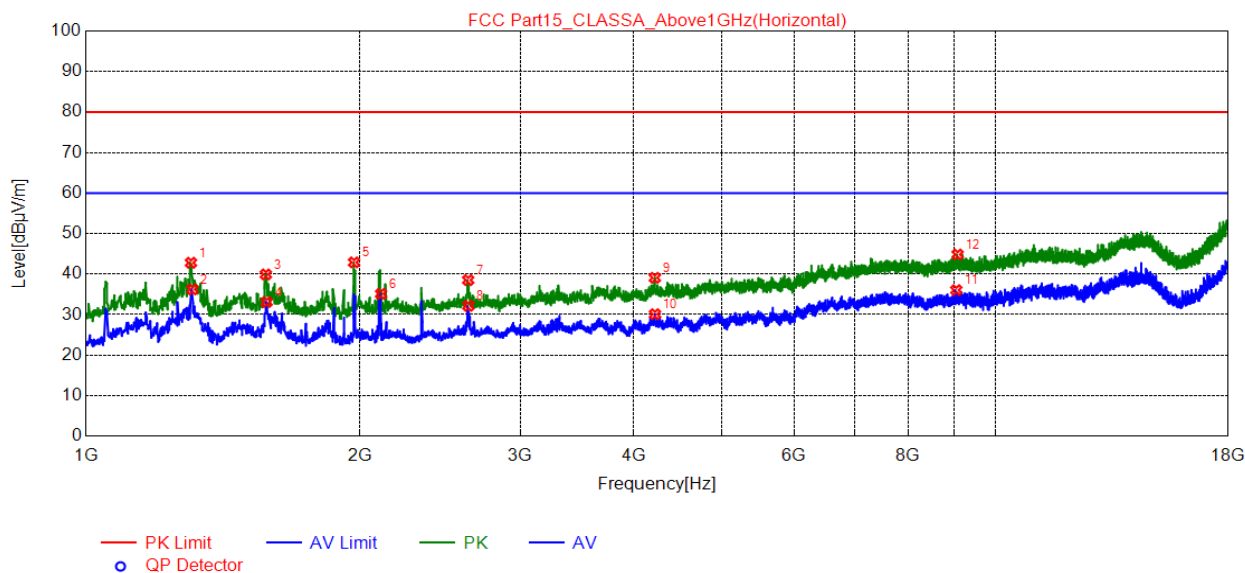
REMARKS:

1. Q.P. is abbreviation of quasi-peak individually.
2. The emission levels of other frequencies were very low against the limit.
3. QP Margin value = QP Limit value – QP value
4. Factor = Antenna Factor + Amplifier Factor + Cable loss
5. QP value = Factor + Reading Value.

5.6. Test Result and Data (1GHz ~ 18GHz)

For DC12 port test on AC adapter

Position: Horizontal

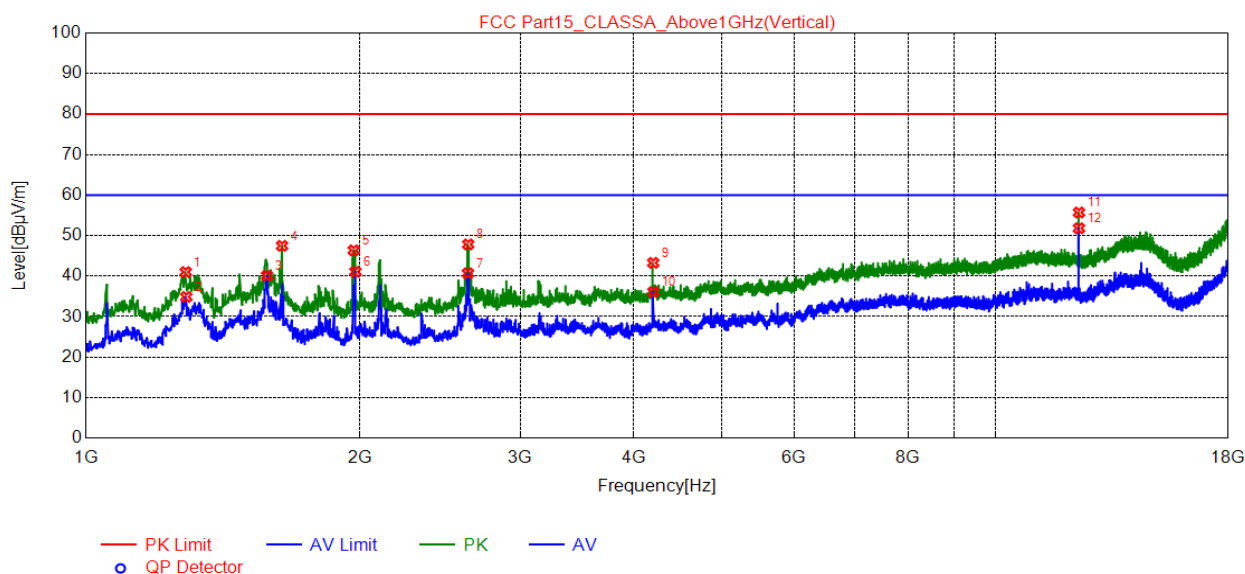


NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	1304.30	62.09	42.79	80.00	37.21	100	228	Horizontal	PK
2	1309.40	55.50	36.22	60.00	23.78	100	195	Horizontal	AV
3	1576.30	58.49	39.91	80.00	40.09	100	162	Horizontal	PK
4	1579.70	51.66	33.09	60.00	26.91	100	129	Horizontal	AV
5	1970.70	60.68	42.89	80.00	37.11	100	96	Horizontal	PK
6	2110.10	52.64	35.12	60.00	24.88	100	96	Horizontal	AV
7	2630.30	54.97	38.51	80.00	41.49	100	228	Horizontal	PK
8	2632.00	48.60	32.15	60.00	27.85	100	228	Horizontal	AV
9	4218.10	51.52	39.08	80.00	40.92	100	129	Horizontal	PK
10	4219.80	42.53	30.10	60.00	29.90	100	96	Horizontal	AV
11	9044.40	39.70	36.04	60.00	23.96	100	162	Horizontal	AV
12	9075.00	48.40	44.83	80.00	35.17	100	294	Horizontal	PK

REMARKS:

1. The emission levels of other frequencies were very low against the limit.
2. Margin = Limit –Level

Position: Vertical

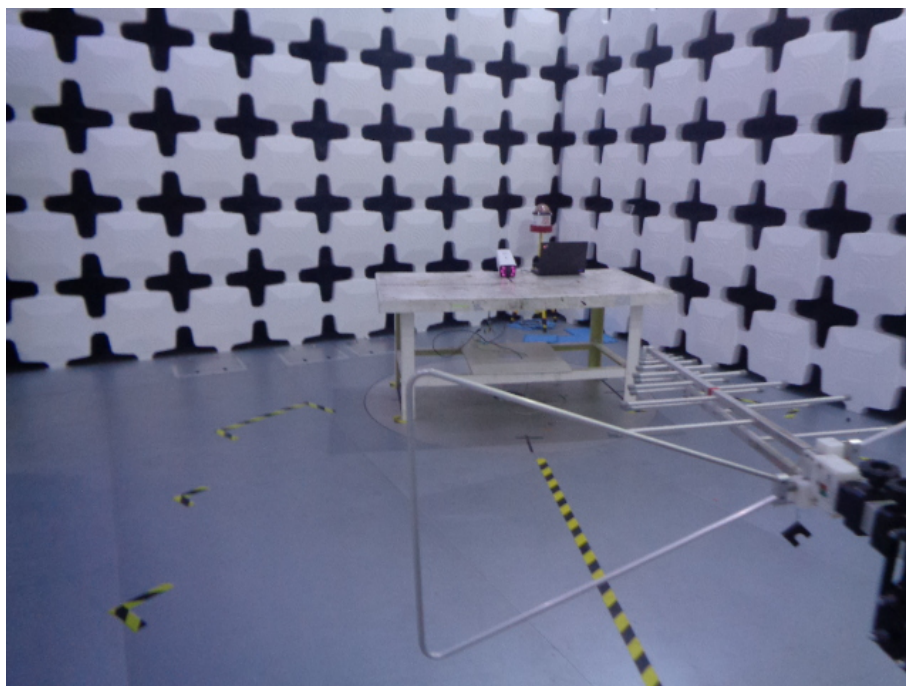
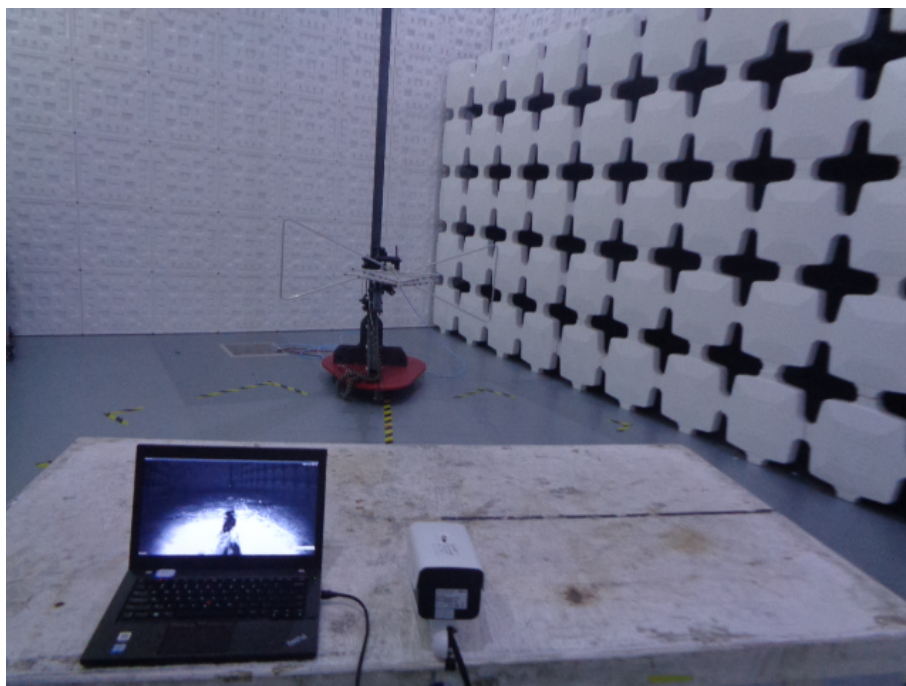


NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Detector
1	1287.30	60.34	40.99	80.00	39.01	100	132	Vertical	PK
2	1289.00	54.19	34.85	60.00	25.15	100	165	Vertical	AV
3	1581.40	58.64	40.07	60.00	19.93	100	330	Vertical	AV
4	1642.60	65.91	47.47	80.00	32.53	100	66	Vertical	PK
5	1969.00	64.14	46.35	80.00	33.65	100	66	Vertical	PK
6	1977.50	58.84	41.07	60.00	18.93	100	99	Vertical	AV
7	2628.60	57.14	40.68	60.00	19.32	100	198	Vertical	AV
8	2630.30	64.28	47.82	80.00	32.18	100	165	Vertical	PK
9	4201.10	55.74	43.26	80.00	36.74	100	230	Vertical	PK
10	4202.80	48.54	36.07	60.00	23.93	100	230	Vertical	AV
11	12337.3	57.55	55.69	80.00	24.31	100	165	Vertical	PK
12	12337.3	53.65	51.79	60.00	8.21	100	165	Vertical	AV

REMARKS:

1. The emission levels of other frequencies were very low against the limit.
2. Margin = Limit –Level

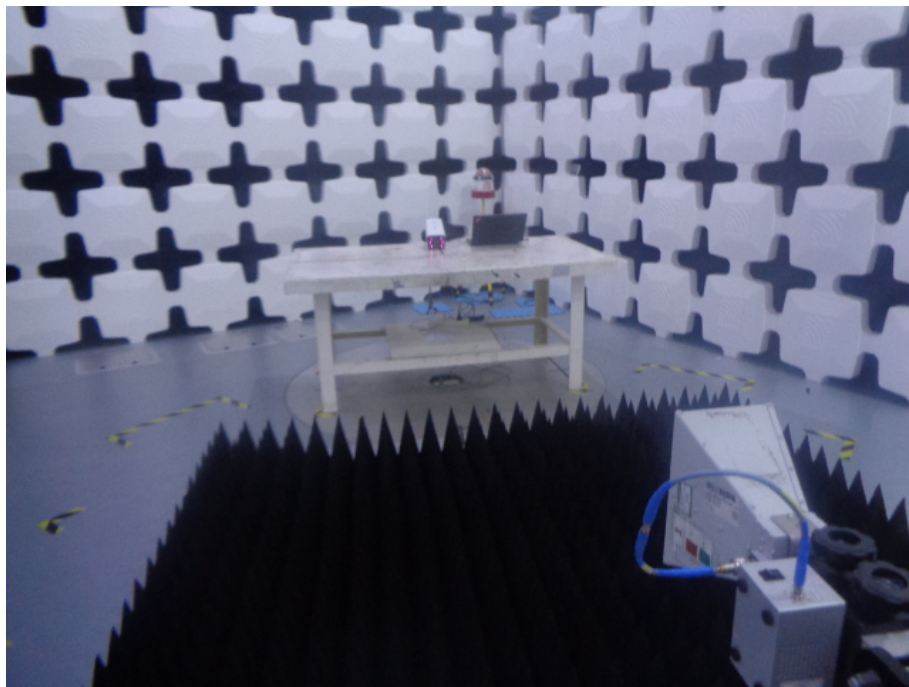
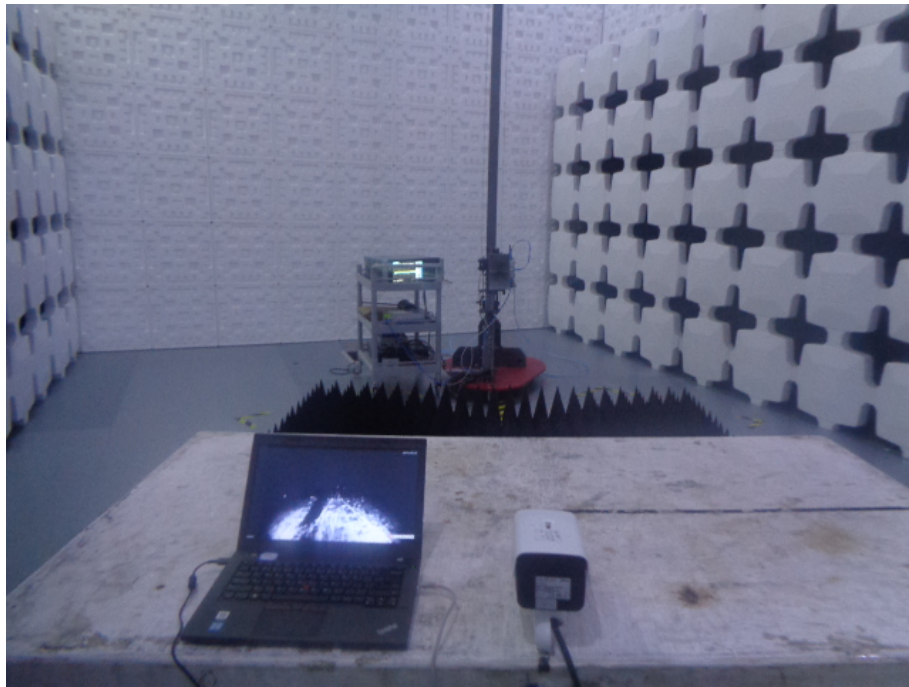
5.7. Test Photographs (30MHz ~ 1000MHz)





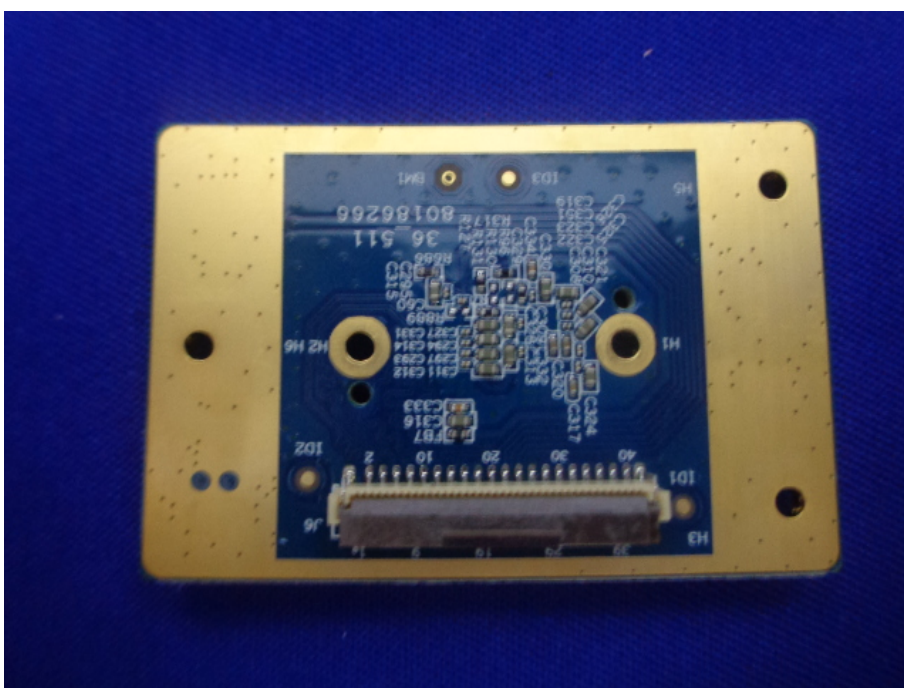
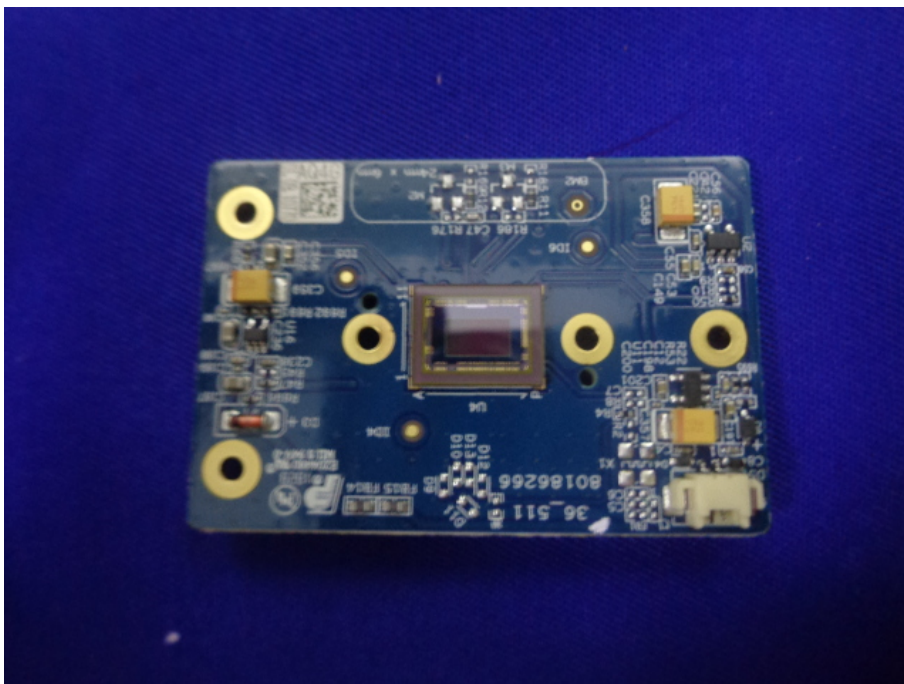
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5.8. Test Photographs (1000MHz ~ 18000MHz)



6. Photographs of EUT

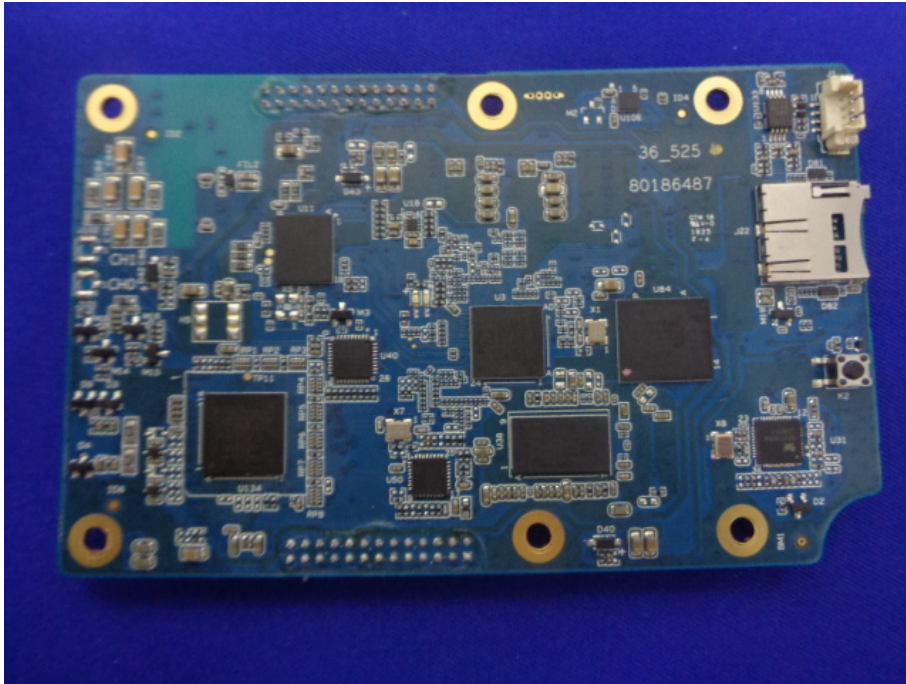


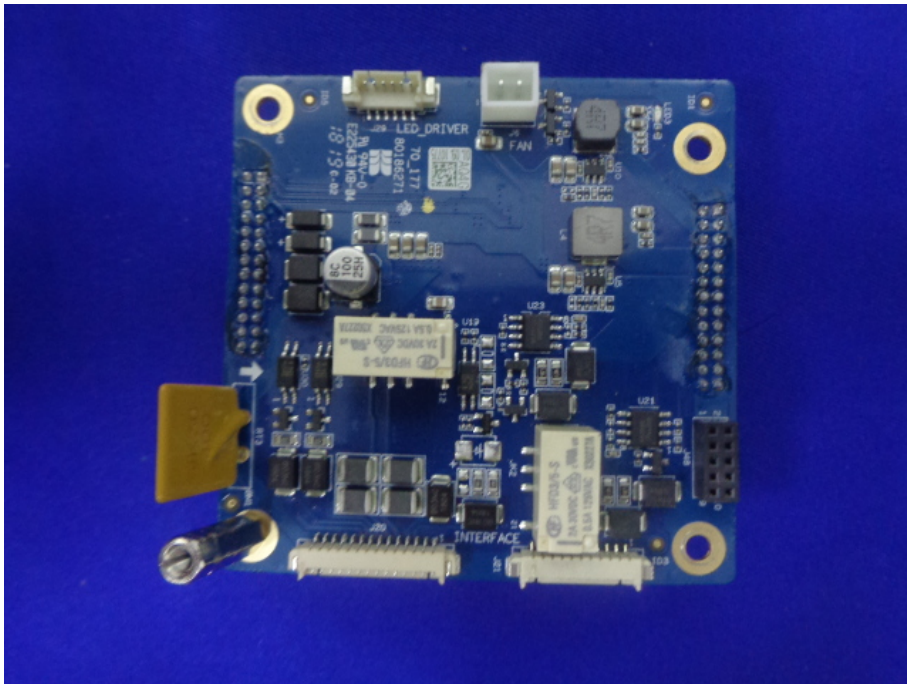
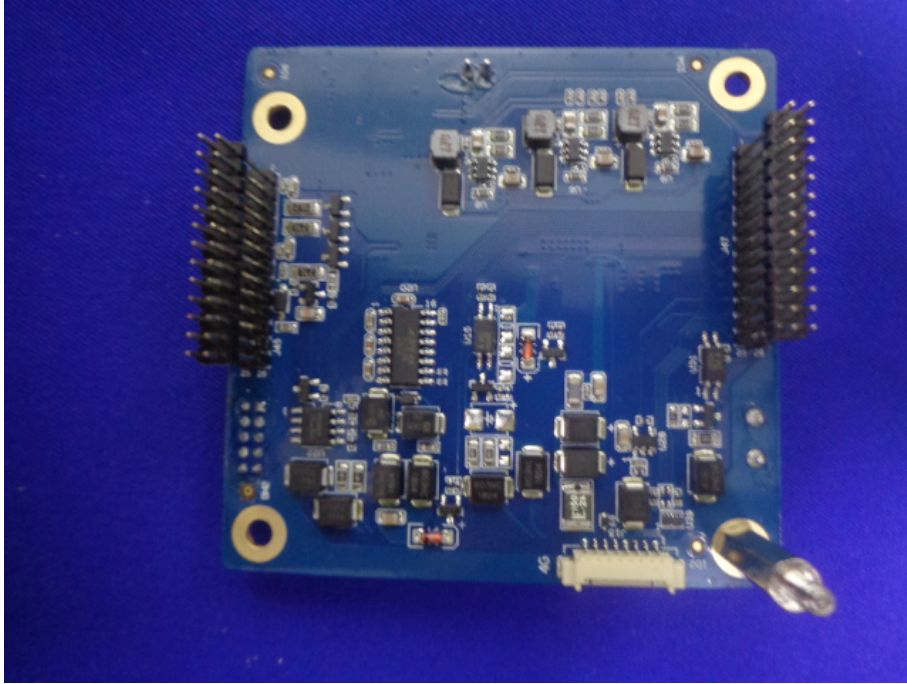


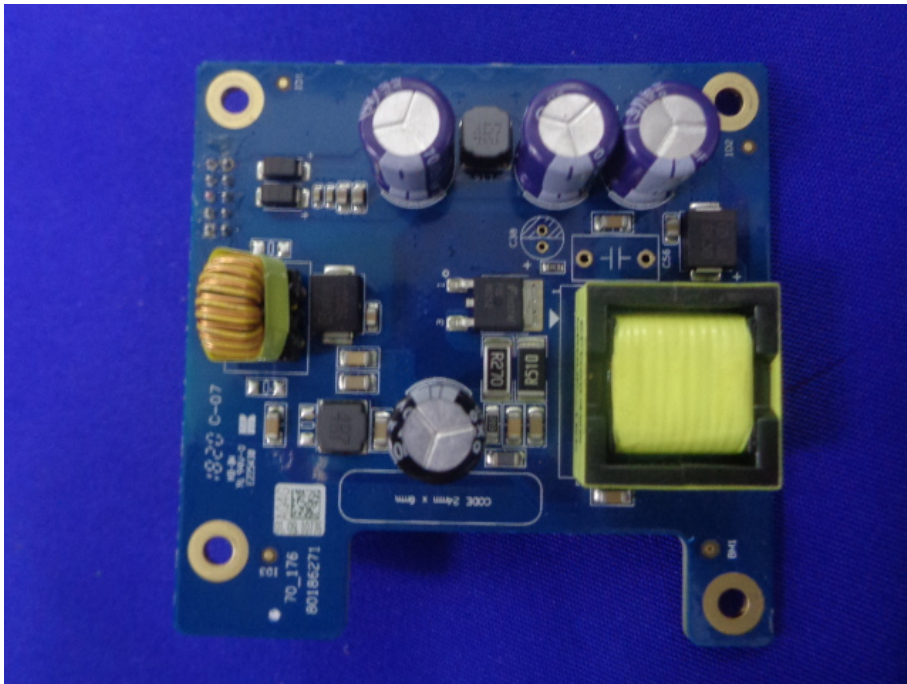
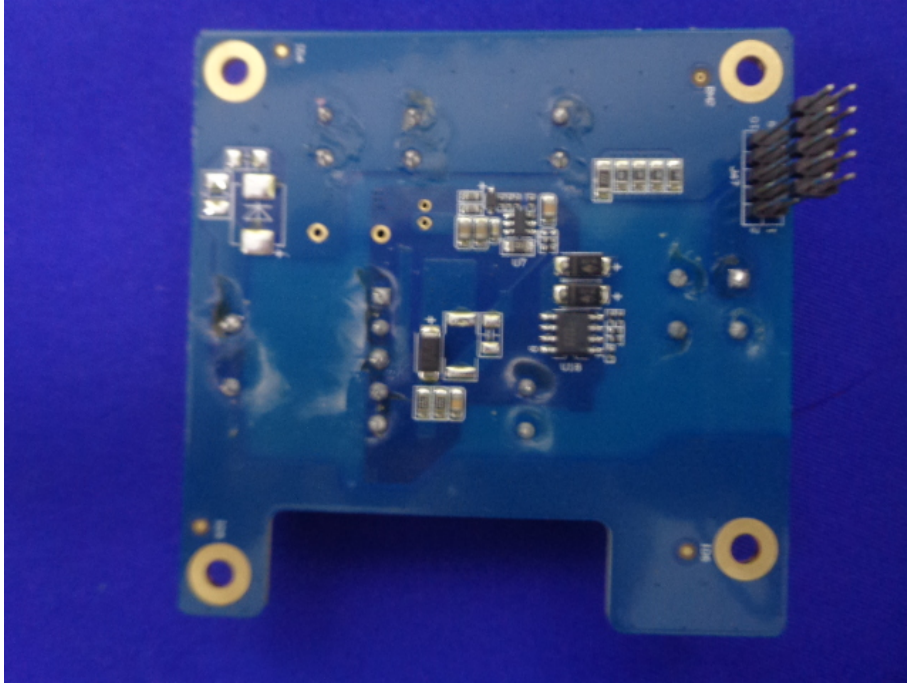




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