

RADIATED EMISSION ABOVE 1GHZ

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.044	45.36	3.72	49.08	74.00	-24.92	peak
4824.044	42.12	3.72	45.84	54.00	-8.16	AVG
7236.066	37.87	8.15	46.02	74.00	-27.98	peak
7236.066	34.18	8.15	42.33	54.00	-11.67	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Wireless NVR	Model Name	ZR08DP
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Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.044	47.14	3.72	51.86	74	-23.14	peak
4824.044	44.66	3.72	48.38	54	-5.62	AVG
7236.066	38.08	8.15	46.23	74	-27.77	peak
7236.066	33.42	8.15	41.57	54	-12.43	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874.044	46.63	3.75	50.38	74	-23.62	peak
4874.044	42.84	3.75	46.59	54	-7.71	AVG
7311.066	39.29	8.16	47.45	74	-26.55	peak
7311.066	37.18	8.16	45.34	54	-8.66	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874.044	47.15	3.75	50.90	74	-23.10	peak
4874.044	45.22	3.75	48.97	54	-5.03	AVG
7311.066	42.71	8.16	50.87	74	-23.13	peak
7311.066	39.52	8.16	47.68	54	-6.32	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924.044	47.89	3.81	51.70	74	-22.30	peak
4924.044	44.20	3.81	48.01	54	-5.99	AVG
7386.066	40.53	8.19	48.72	74	-25.28	peak
7386.066	38.90	8.19	47.09	54	-6.91	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924.044	48.14	3.81	51.95	74	-22.05	peak
4924.044	44.37	3.81	48.18	54	-5.82	AVG
7386.066	39.88	8.19	48.07	74	-25.93	peak
7386.066	35.35	8.19	43.54	54	-10.46	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

RESULT: PASS

Note: Other emissions from 1G to 25 GHz are considered as ambient noise. No recording in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

All test modes had been pre-tested. The 802.11b mode is the worst case and recorded in the report.

12. BAND EDGE EMISSION

12.1. MEASUREMENT PROCEDURE

Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

12.2. TEST SET-UP

same as 11.2

Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μ V) to represent the Amplitude. Use the F dB(μ V/m) to represent the Field Strength. So A=F.



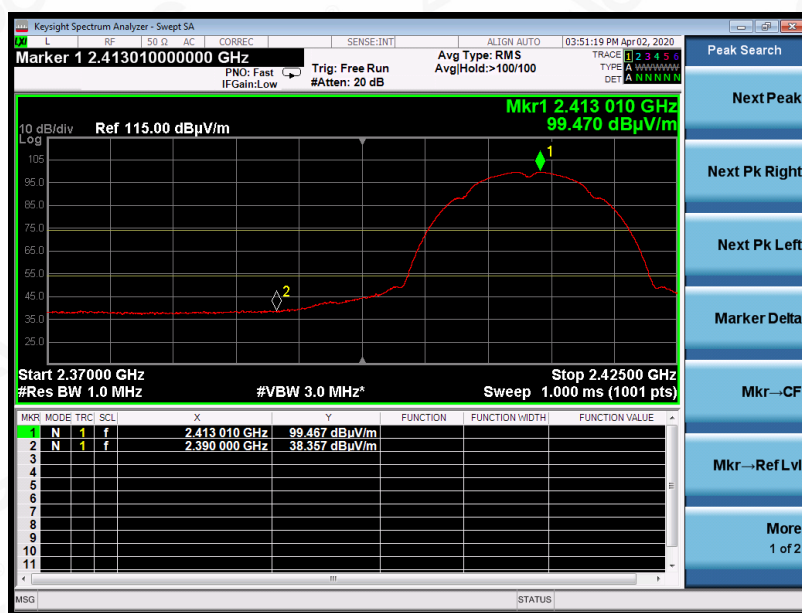
12.3. TEST RESULT

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Horizontal

PK



AV



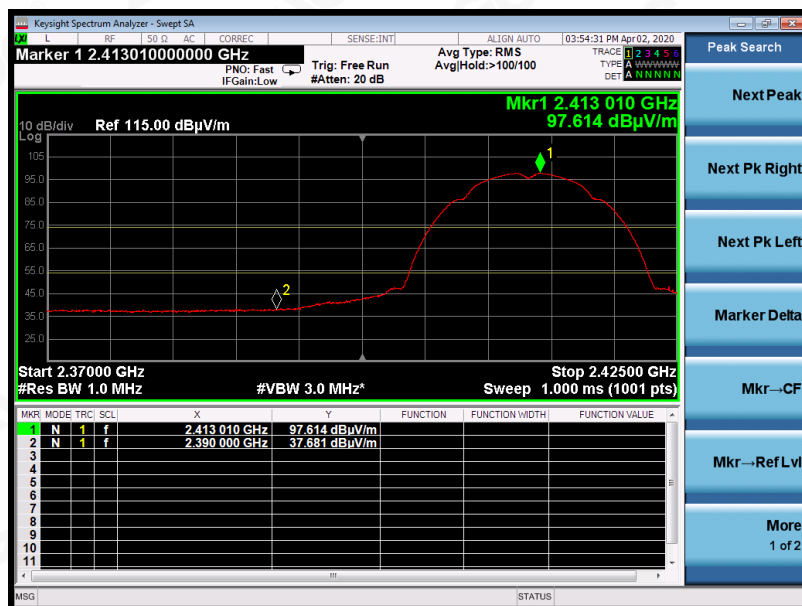
RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Vertical

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Horizontal

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Vertical

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Horizontal

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Vertical

PK



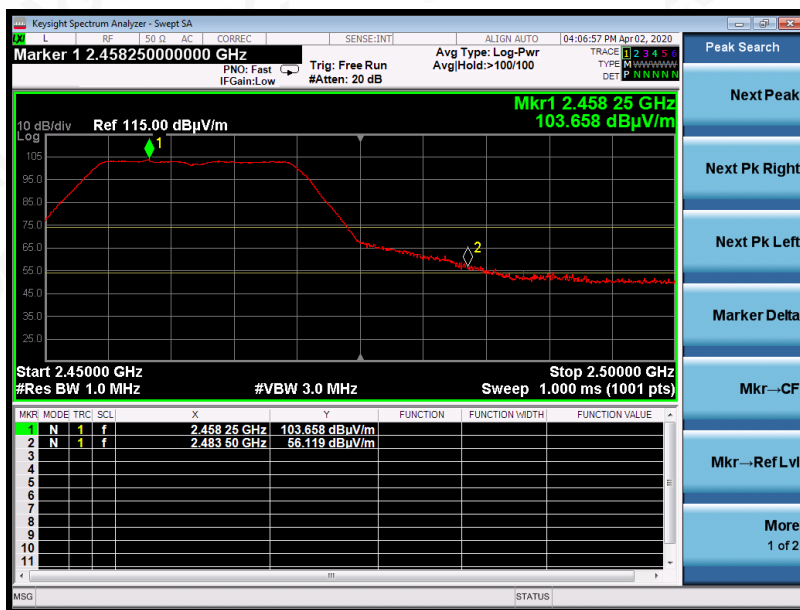
AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Horizontal

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Vertical

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Horizontal

PK



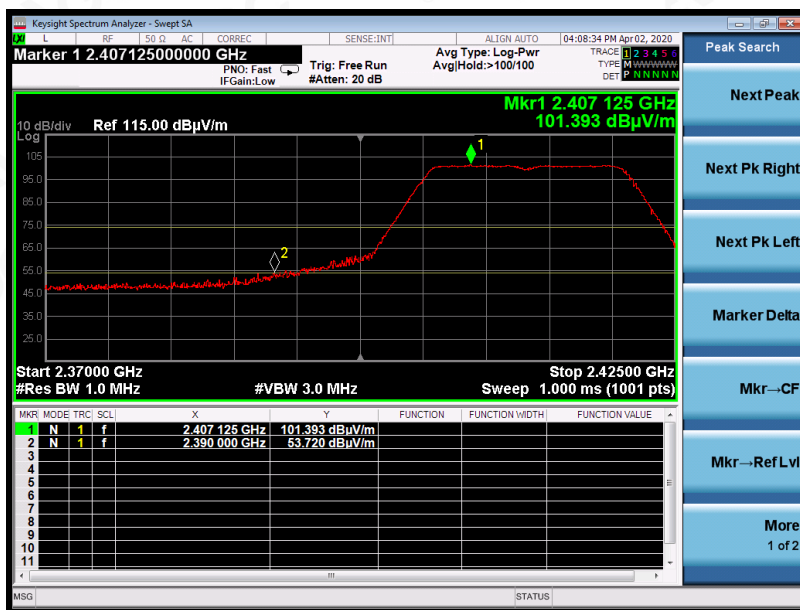
AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Vertical

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Horizontal

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Vertical

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2412MHZ	Antenna	Horizontal

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 13.5 2412MHZ	Antenna	Vertical

PK



AV



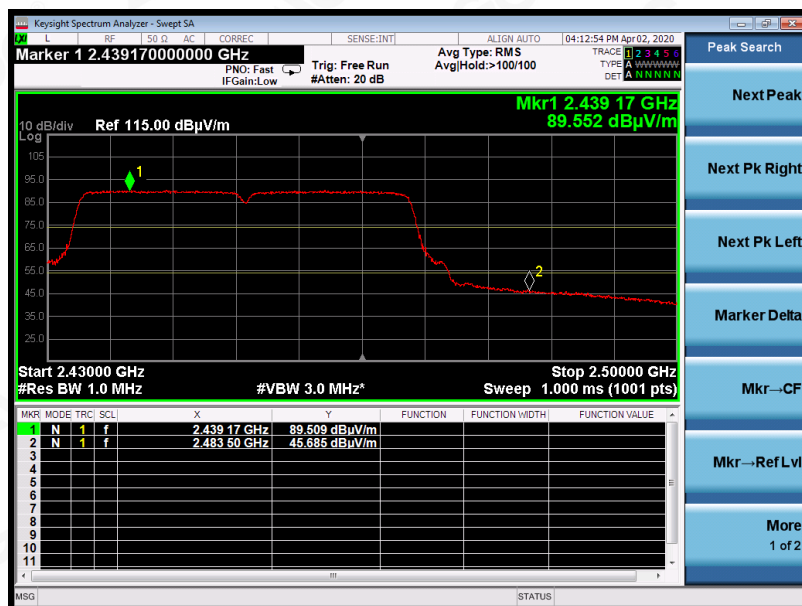
RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2462MHZ	Antenna	Horizontal

PK



AV



RESULT: PASS

EUT	Wireless NVR	Model Name	ZR08DP
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2462MHZ	Antenna	Vertical

PK



AV



RESULT: PASS

13. FCC LINE CONDUCTED EMISSION TEST

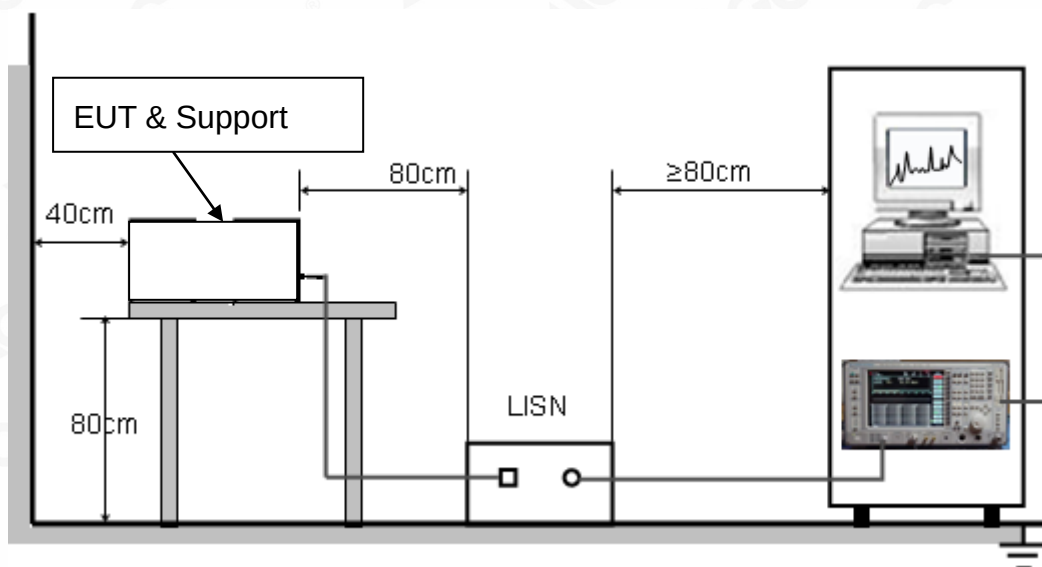
13.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note: 1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

13.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



13.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received charging voltage by adapter which received 120V/60Hz power by a LISN..
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

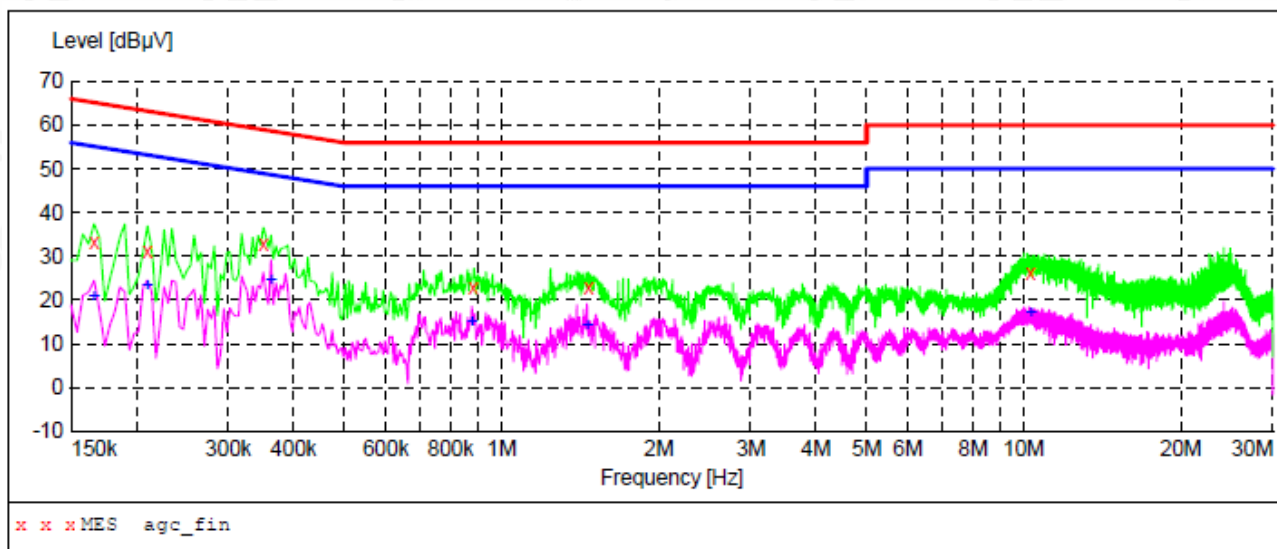
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

13.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, 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. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

13.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST LINE 1-L



MEASUREMENT RESULT: "agc_fin"

2020/3/16 10:41

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.166000	33.10	11.3	65	32.1	QP	L1	FLO
0.210000	31.00	11.3	63	32.2	QP	L1	FLO
0.350000	32.70	11.3	59	26.3	QP	L1	FLO
0.882000	22.80	11.3	56	33.2	QP	L1	FLO
1.470000	22.90	11.3	56	33.1	QP	L1	FLO
10.294000	26.00	11.6	60	34.0	QP	L1	FLO

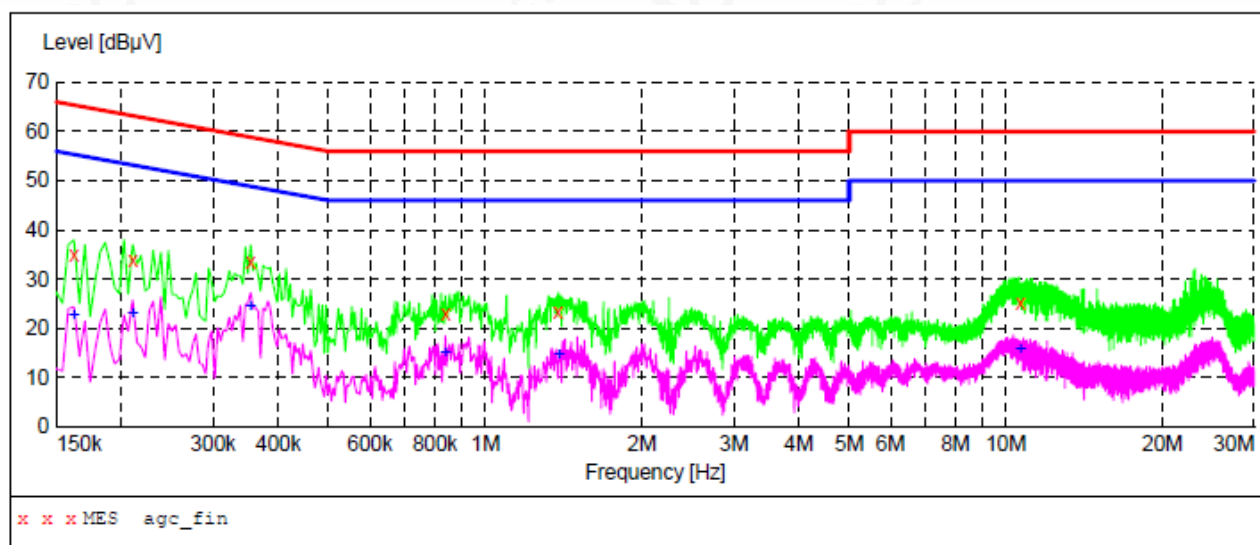
MEASUREMENT RESULT: "agc_fin2"

2020/3/16 10:41

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.166000	21.00	11.3	55	34.2	AV	L1	FLO
0.210000	23.10	11.3	53	30.1	AV	L1	FLO
0.362000	24.70	11.3	49	24.0	AV	L1	FLO
0.878000	14.90	11.3	46	31.1	AV	L1	FLO
1.458000	14.30	11.3	46	31.7	AV	L1	FLO
10.294000	17.00	11.6	50	33.0	AV	L1	FLO

RESULT: PASS

Line Conducted Emission Test Line 2-N


MEASUREMENT RESULT: "agc_fin"

2020/3/16 10:34

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.162000	35.10	11.3	65	30.3	QP	N	FLO
0.210000	33.80	11.3	63	29.4	QP	N	FLO
0.354000	33.40	11.3	59	25.5	QP	N	FLO
0.838000	22.80	11.3	56	33.2	QP	N	FLO
1.378000	23.30	11.3	56	32.7	QP	N	FLO
10.654000	25.10	11.7	60	34.9	QP	N	FLO

MEASUREMENT RESULT: "agc_fin2"

2020/3/16 10:34

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.162000	22.70	11.3	55	32.7	AV	N	FLO
0.210000	23.10	11.3	53	30.1	AV	N	FLO
0.354000	24.30	11.3	49	24.6	AV	N	FLO
0.838000	15.10	11.3	46	30.9	AV	N	FLO
1.386000	14.70	11.3	46	31.3	AV	N	FLO
10.658000	15.70	11.7	50	34.3	AV	N	FLO

RESULT: PASS


Attestation of Global Compliance

Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community,
Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China

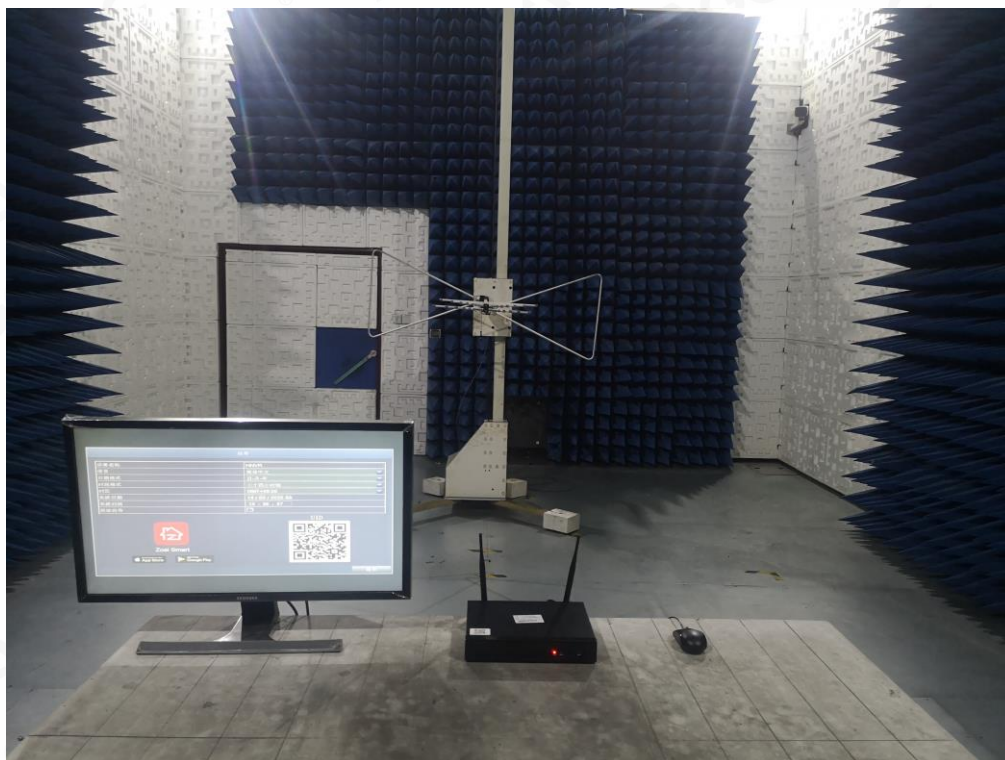
Tel: +86-755 2523 4088

E-mail: agc@agc-cert.com

Service Hotline: 400 089 2118

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ



FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ



FCC LINE CONDUCTED EMISSION TEST SETUP



APPENDIX B: PHOTOGRAPHS OF EUT

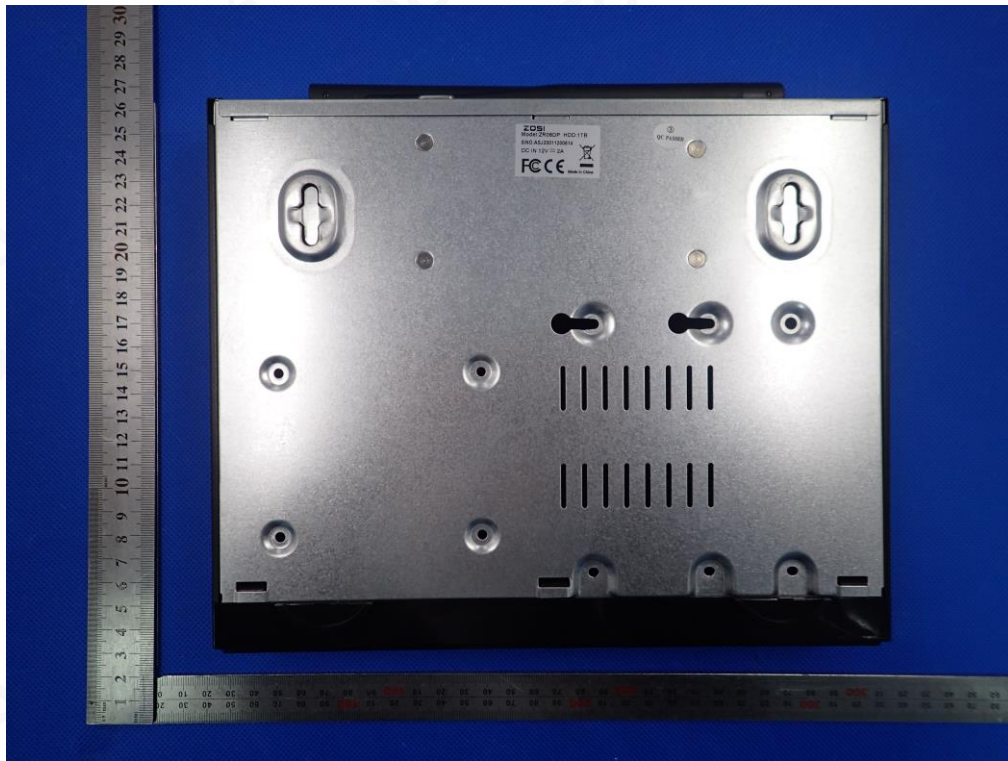
ALL VIEW OF EUT



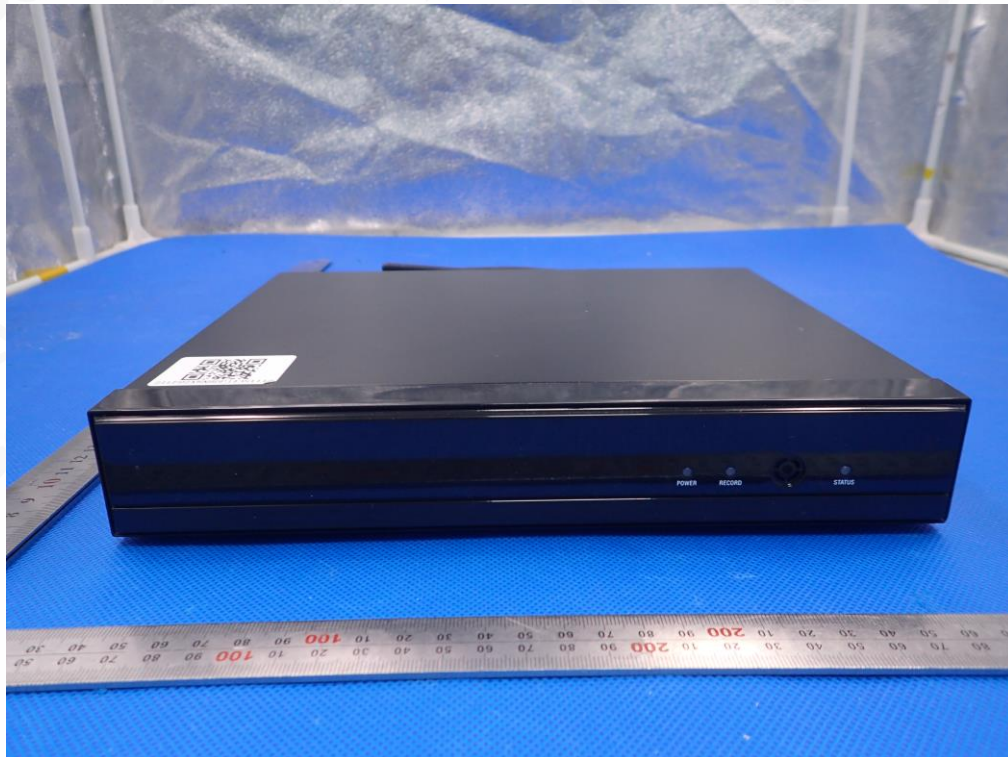
TOP VIEW OF EUT



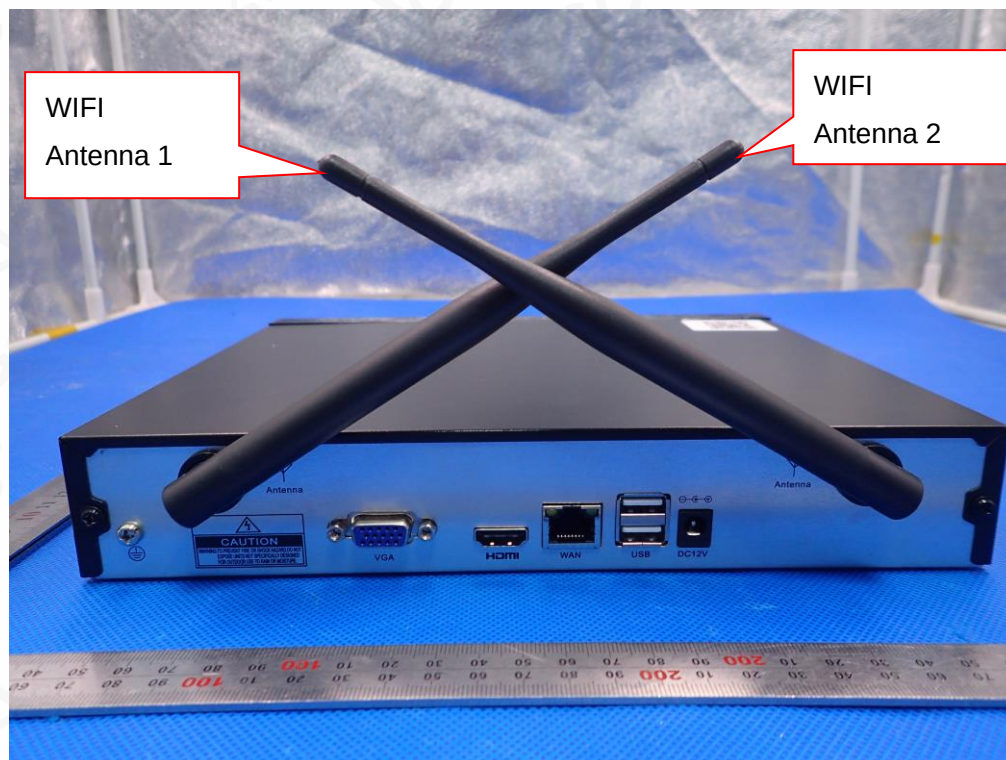
BOTTOM VIEW OF EUT



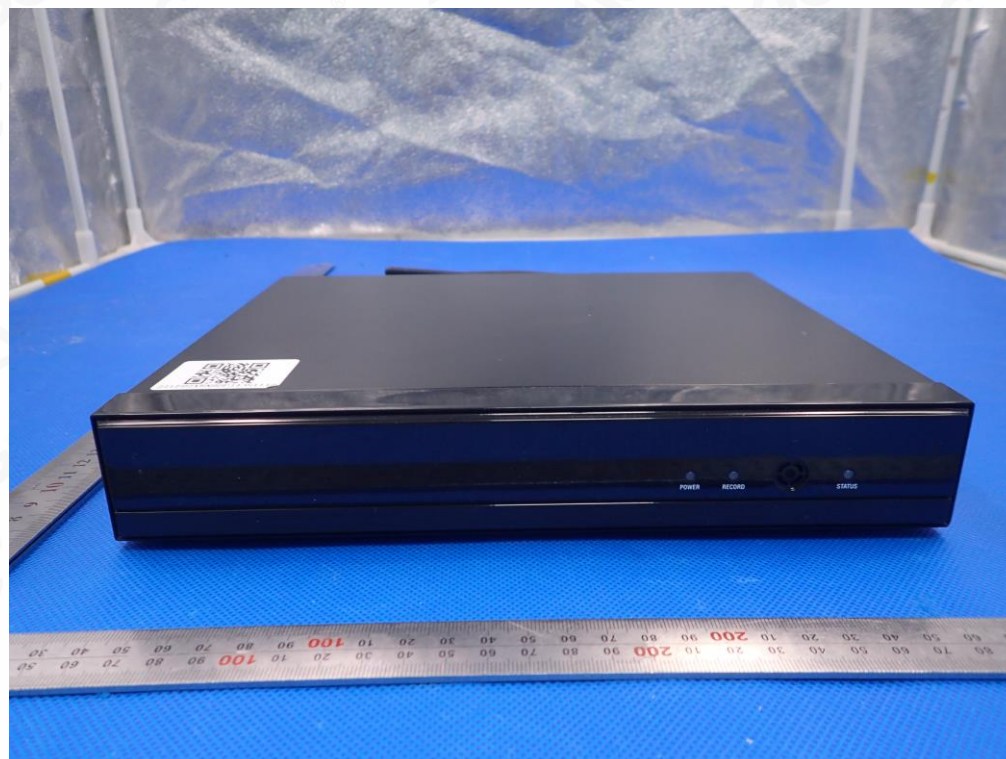
FRONT VIEW OF EUT



BACK VIEW OF EUT



LEFT VIEW OF EUT



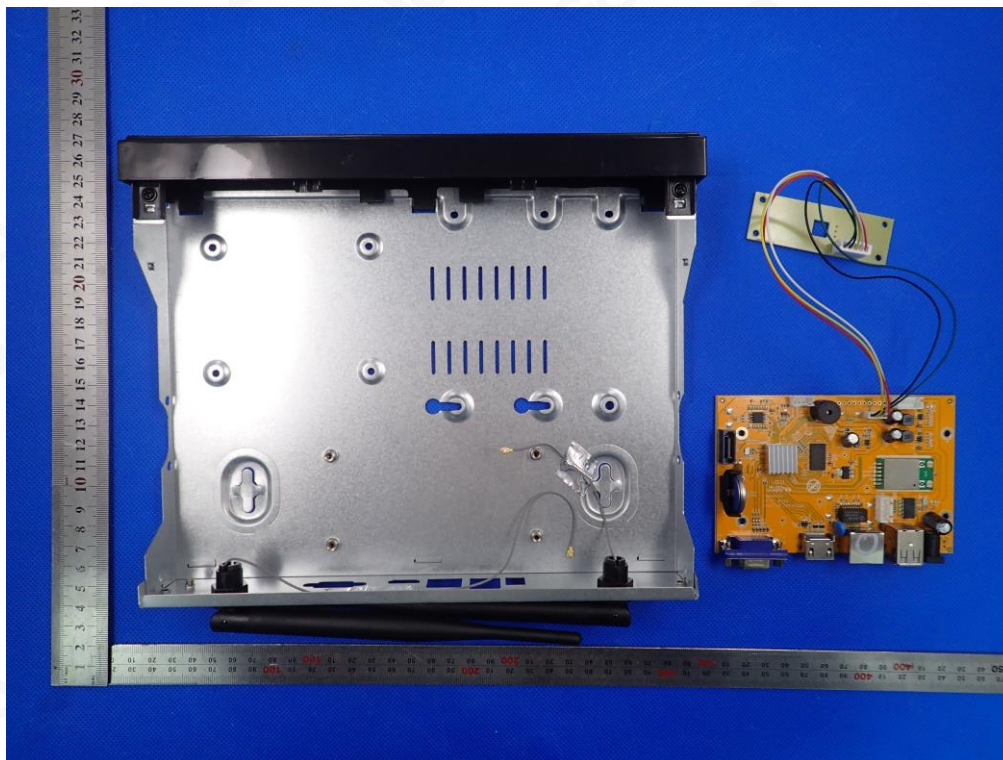
RIGHT VIEW OF EUT



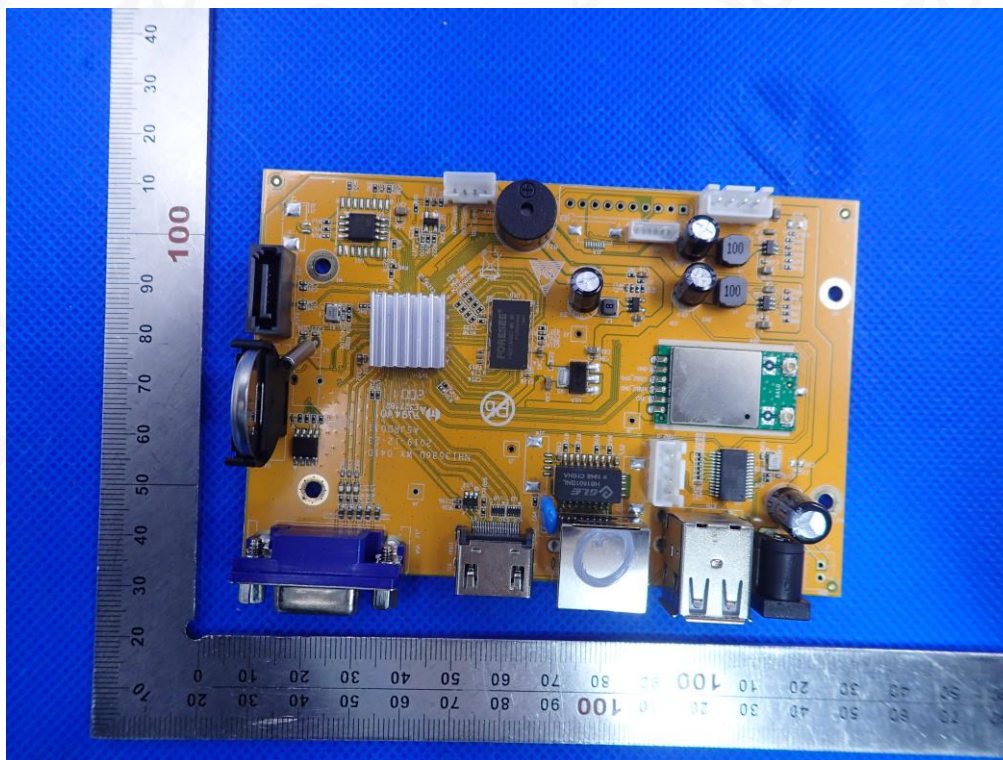
OPEN VIEW OF EUT-1



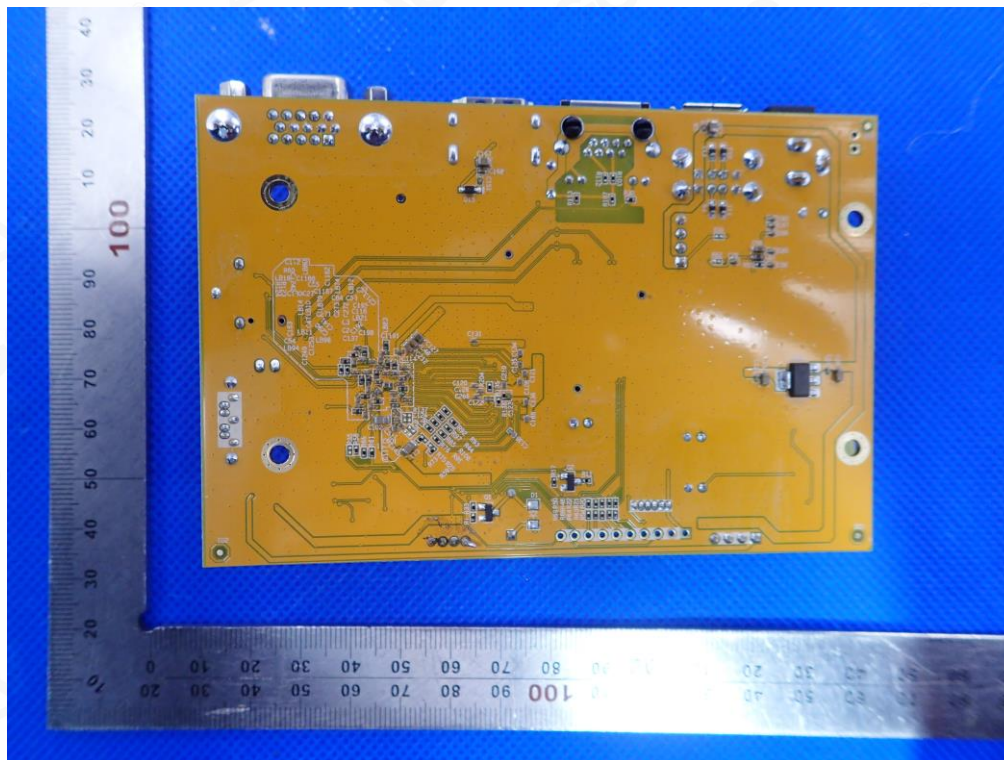
OPEN VIEW OF EUT-2



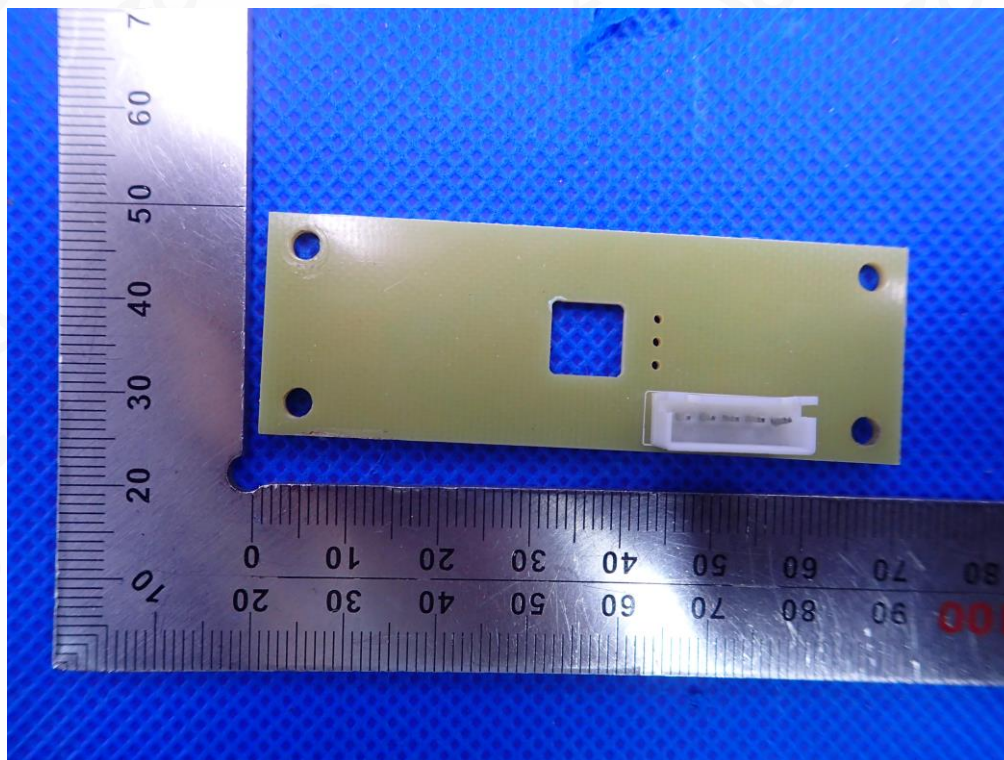
INTERNAL VIEW-1 OF EUT



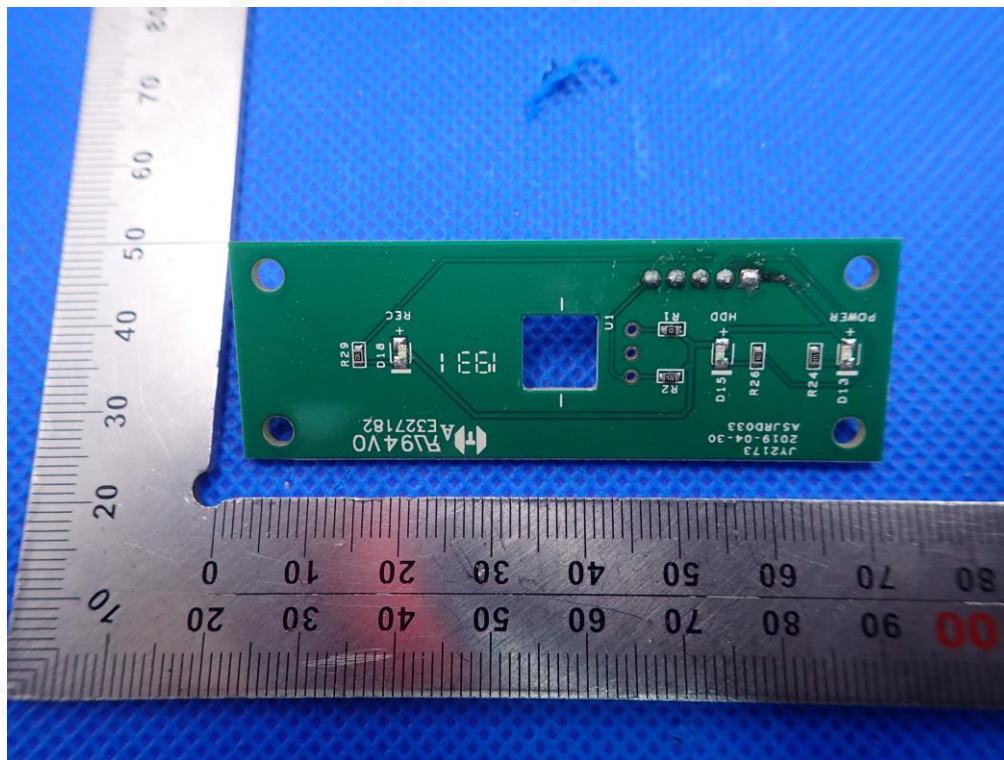
INTERNAL VIEW-2 OF EUT



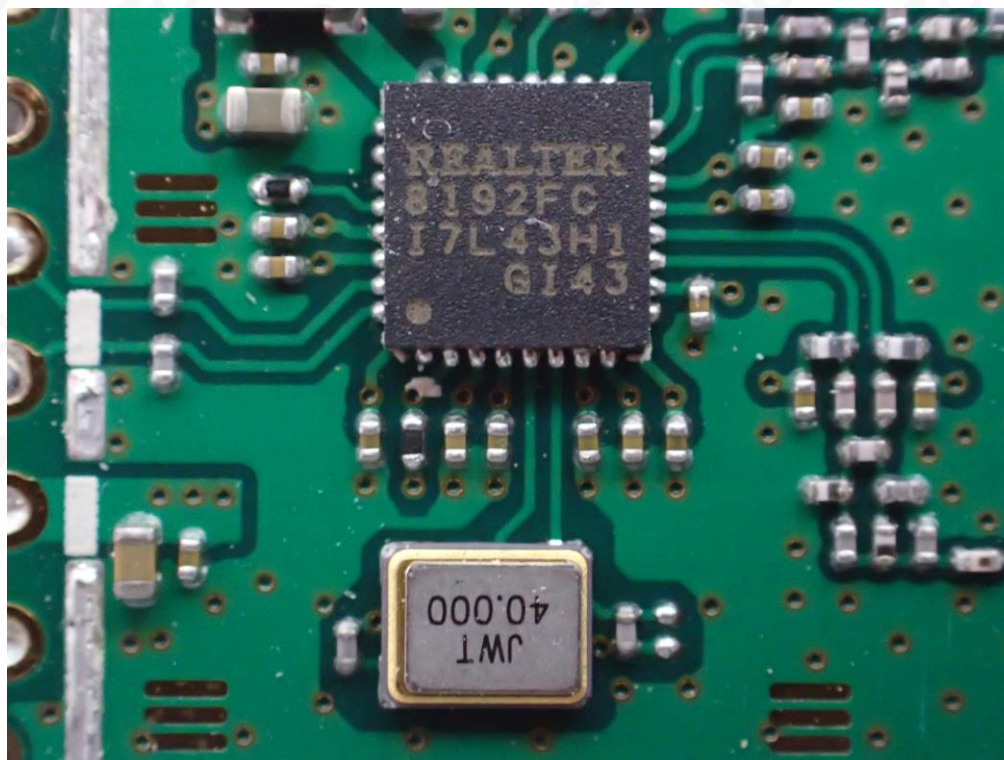
INTERNAL VIEW-3 OF EUT



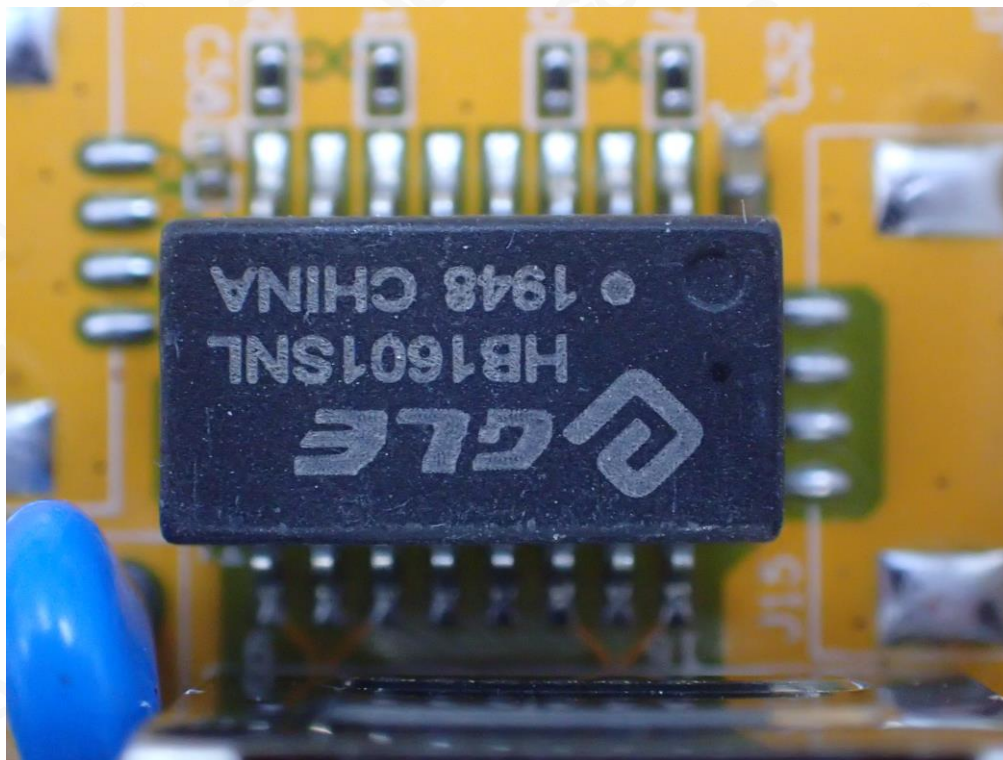
INTERNAL VIEW-4 OF EUT



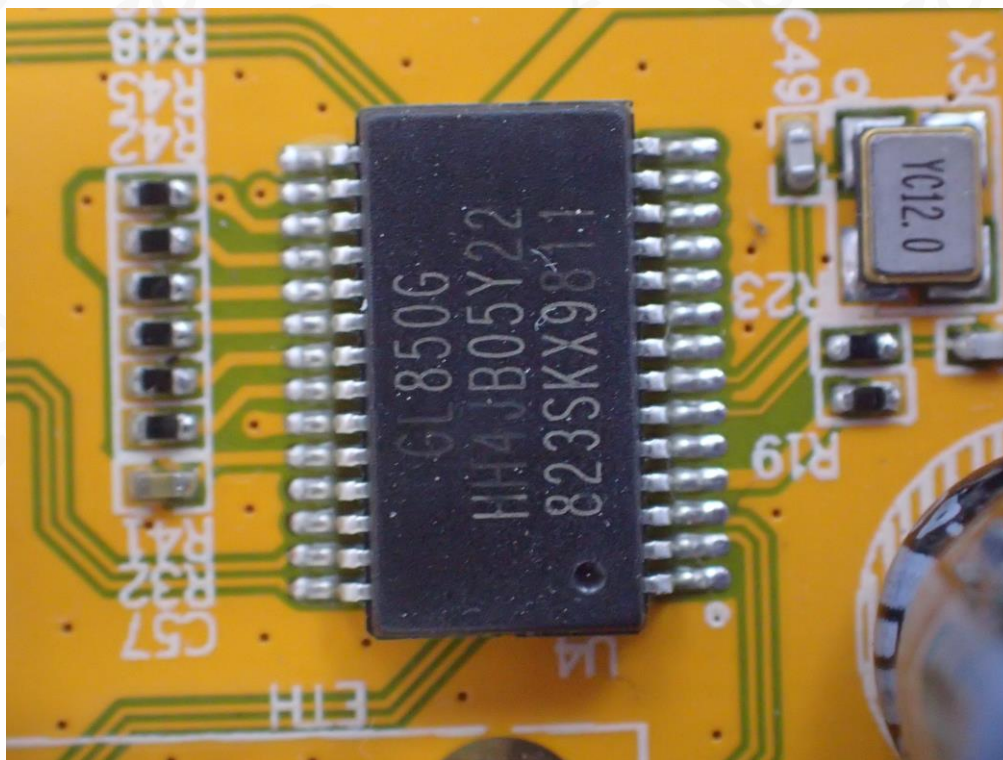
INTERNAL VIEW-5 OF EUT



INTERNAL VIEW-6 OF EUT



INTERNAL VIEW-7 OF EUT



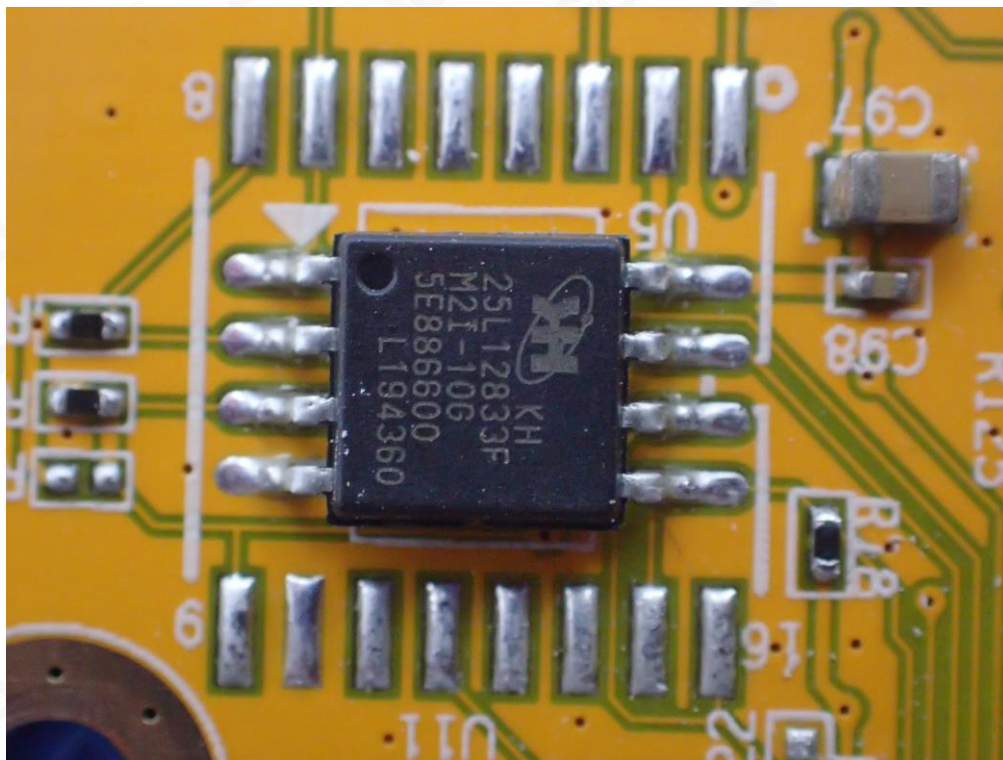
INTERNAL VIEW-8 OF EUT



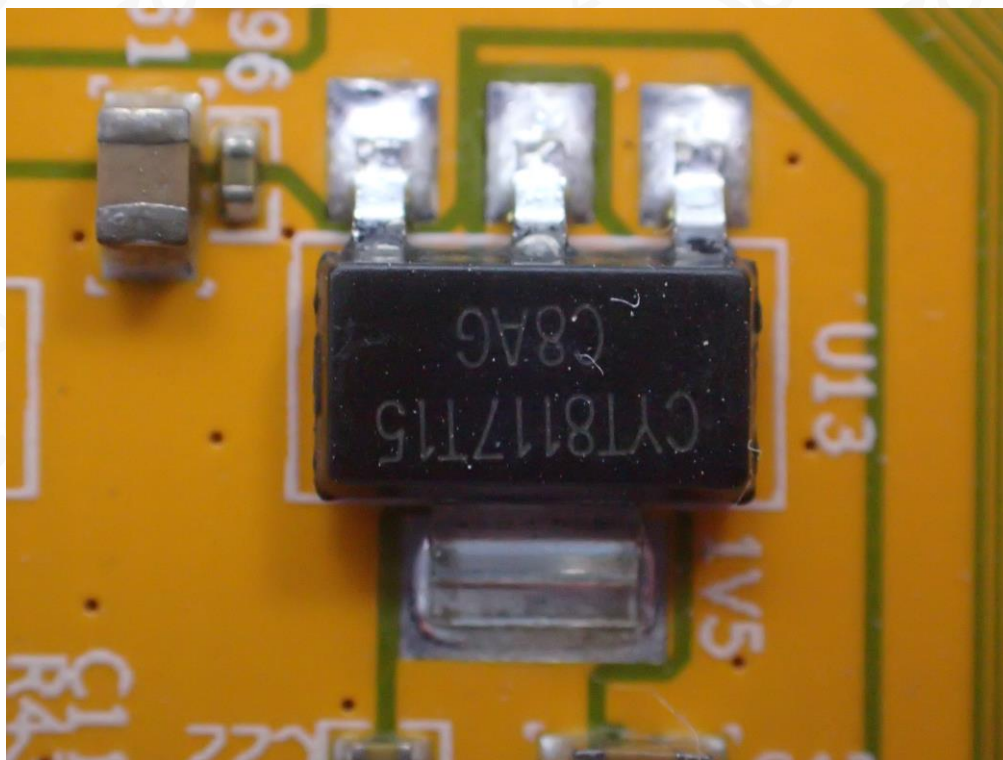
INTERNAL VIEW-9 OF EUT



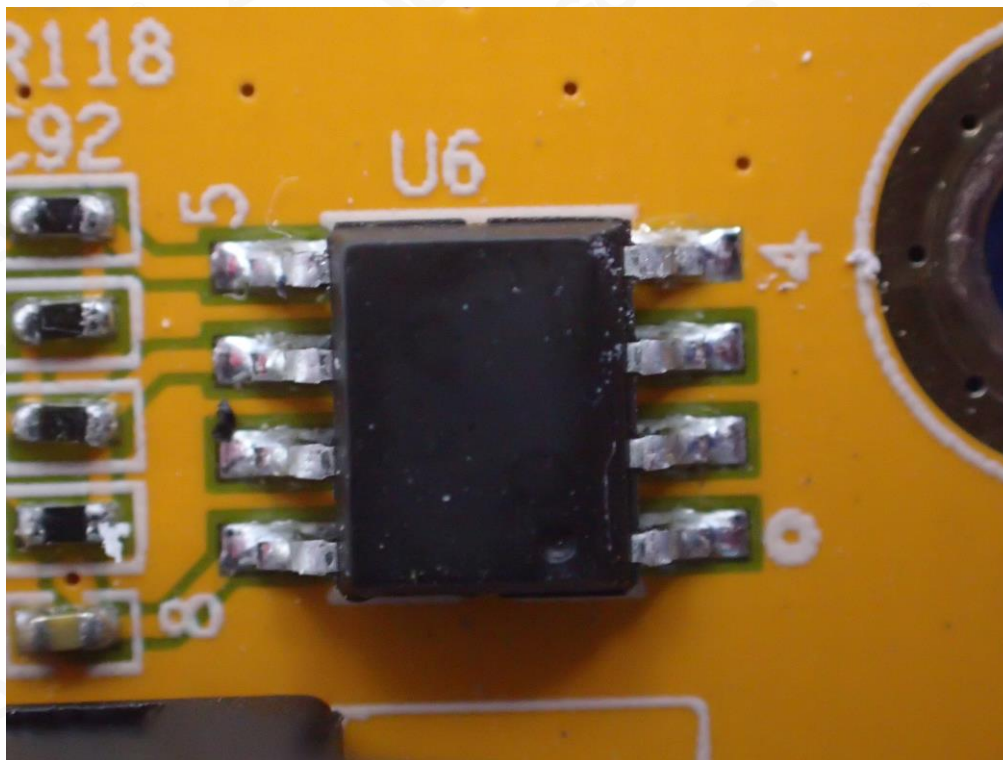
INTERNAL VIEW-10 OF EUT



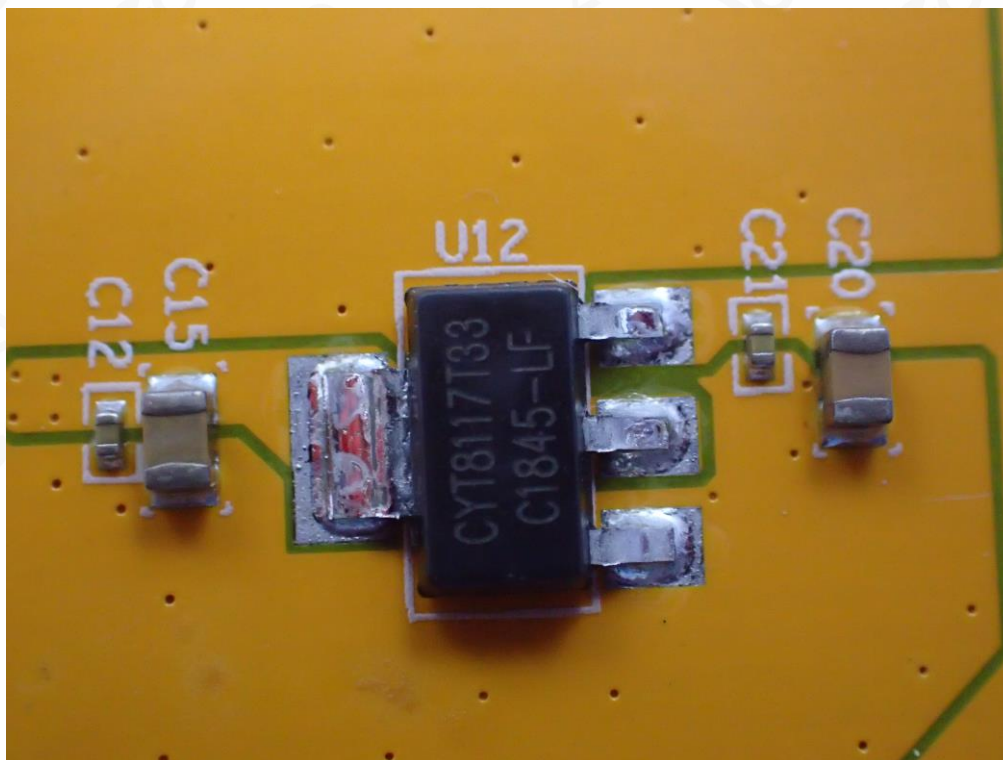
INTERNAL VIEW-11 OF EUT



INTERNAL VIEW-12 OF EUT



INTERNAL VIEW-13 OF EUT



----END OF REPORT----