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Report No.: SHEM160900629801  
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# TEST REPORT

**Application No.:** SHEM1609006298IT  
**Applicant:** Hangzhou Hikvision Digital Technology Co., Ltd.  
**Address of Applicant:** No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China  
**Manufacturer:** Hangzhou Hikvision Digital Technology Co., Ltd.  
**Address of Manufacturer:** No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China  
**Factory:** Hangzhou Hikvision Technology Co., Ltd.  
**Address of Factory:** No. 700 Dongliu Road, Binjiang District, Hangzhou 310052, Zhejiang, China  
**Equipment Under Test (EUT):**  
**Product Description:** Mobile Forensics system  
**Model No.:** DS-MI7504-GA, DS-MI7502-GA, DS-MI7AXX-YY/ZZ/UU☐  
 ☐ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.  
**Trade mark:** Hikvision  
**Standards:** EN 50130-4:2011+A1:2014, EN 55032:2015  
 EN 61000-3-2:2014, EN 61000-3-3:2013  
**Date of Receipt:** 2016-10-13  
**Date of Test:** 2016-10-17 to 2016-10-18  
**Date of Issue:** 2016-10-27

<b>Test Result :</b>	<b>Pass*</b>
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\* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EU Directives.



**Parlam Zhan**  
**E&E Section 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. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Test Summary

Item	Standard	Method	Class	Result
ESD	EN 50130-4:2011+A1:2014	EN 61000-4-2:2009	6kV Contact Discharge 2,4,8kV Air Discharge	Pass
EFT(Mains)	EN 50130-4:2011+A1:2014	EN 61000-4-4:2012	2kV 5/50ns Tr/Th 100kHz Repetition Frequency	Pass
EFT(Signal)	EN 50130-4:2011+A1:2014	EN 61000-4-4:2012	1kV 5/50ns Tr/Th 100kHz Repetition Frequency	Pass
Surge(Mains)	EN 50130-4:2011+A1:2014	EN 61000-4-5:2014	1.2/50µs Tr/Th 0.5,1kV Line to Line 0.5,1,2kV Line to Ground	Pass
V-Dips	EN 50130-4:2011+A1:2014	EN 61000-4-11:2004	80 % UT for 250per 70 % UT for 25per 40 % UT for 10per 0 % UT for 250per UT is Supply Voltage	Pass
Mains Supply Voltage Variations- Conditioning	EN 50130-4:2011+A1:2014	EN 50130-4:2011+A1:2014	Unom+10% Unom-15%	Pass
RI(80M-2.7G)	EN 50130-4:2011+A1:2014	EN 61000-4-3:2006+A1:2008+A2:2010	10V/m, 80%, 1kHz sinusoidal Amp. Mod.	Pass
CI M(150K-100M)	EN 50130-4:2011+A1:2014	EN 61000-4-6:2014	10Vrms (emf),80%,1kHz sinusoidal Amp. Mod.	Pass
CI S(150K-100M)	EN 50130-4:2011+A1:2014	EN 61000-4-6:2014	10Vrms (emf),80%,1kHz sinusoidal Amp. Mod.	Pass
CE M(150k-30M)	EN 55032:2015	EN 55032:2015	Class B	Pass
CE T(150K-30M)	EN 55032:2015	EN 55032:2015	Class B	Pass
RE(30M-1G)	EN 55032:2015	EN 55032:2015	Class B	Pass
RE(above1G)	EN 55032:2015	EN 55032:2015	Class B	Pass
Harmonic	EN 61000-3-2:2014	EN 61000-3-2:2014	Class A	N/A
Flicker	EN 61000-3-3:2013	EN 61000-3-3:2013	Clause 5 of EN 61000-3-3	Pass

N/A: Please refer to Section 6.5 of this report for details.

### 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 DS-MI7504-GA was tested since their differences are Software version, their naming and color, silk



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## 4 General Information

### 4.1 Details of E.U.T.

Product Name:	Mobile Forensics system
Power supply:	DC9-32V 5.5A-1.6A
Cable:	Contol cable : about 7m AV out cable : about 7m CH1 cable : about 7m
Power	50W

### 4.2 Description of Support Units

The EUT has been tested as an independent unit.

### 4.3 Standards Applicable for Testing

**Table 1 : Tests Carried Out Under EN 50130-4:2011+A1:2014**

Method	Item	Status
EN 61000-4-2:2009	Electrostatic Discharge	√
EN 61000-4-4:2012	Electrical Fast Transients/Burst at Power Port	√
EN 61000-4-4:2012	Electrical Fast Transients/Burst at Signal Port	√
EN 61000-4-5:2014	Surge at Power Port	√
EN 61000-4-5:2014	Surge at Signal Port	×
EN 61000-4-11:2004	Voltage Dips and Interruptions	√
EN 50130-4:2011+A1:2014	Mains Supply Voltage Variations-Conditioning	√
EN 61000-4-3:2006+A1:2008+A2:2010	Radiated Immunity(80MHz-2.7GHz)	√
EN 61000-4-6:2014	Conducted Immunity at Power Port(150kHz-100MHz)	√
EN 61000-4-4:2012	Electrical Fast Transients/Burst at DC port	×
EN 61000-4-5:2014	Surge at DC Port	×
EN 61000-4-6:2014	Conducted Immunity at Signal Port(150kHz-100MHz)	√
EN 61000-4-6:2014	Conducted Immunity at DC Port(150kHz-100MHz)	×



**Table 2 : Tests Carried Out Under EN 55032:2015**

<b>Method</b>	<b>Item</b>	<b>Status</b>
EN 55032:2015	Conducted Disturbance at Mains Terminals(150KHz-30MHz)	√
EN 55032:2015	Conducted Disturbance at Telecommunication Port(150KHz-30MHz)	√
EN 55032:2015	Conducted Disturbance at Antenna Terminals(30MHz-1GHz)	×
EN 55032:2015	Radiated Disturbance(30MHz-1GHz)	√
EN 55032:2015	Radiated Disturbance(above 1GHz)	√
EN 55032:2015	Conducted Disturbance at Antenna Terminals(30MHz-2.15GHz)	×

**Table 3 : Tests Carried Out Under EN 61000-3-2:2014**

<b>Method</b>	<b>Item</b>	<b>Status</b>
EN 61000-3-2:2014	Harmonic Current Emission	×

**Table 4 : Tests Carried Out Under EN 61000-3-3:2013**

<b>Method</b>	<b>Item</b>	<b>Status</b>
EN 61000-3-3:2013	Voltage Fluctuations and Flicker	√

- ×
  - √
- Indicates that the test is not applicable  
Indicates that the test is applicable

#### **4.4 Test Location**

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

#### **4.5 Test Facility**

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. 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.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868,C-4336,T-2221,G-830 respectively.

#### **4.6 Deviation from Standards**

None

#### **4.7 Abnormalities from Standard Conditions**

None

#### **4.8 Monitoring of EUT for All Immunity Test**

Visual: work status & image quality



#### 4.9 Measurement Uncertainty

According to CISPR 16-4-2.

Test Item	Frequency Range	Measurement Uncertainty	U <sub>cispr</sub>
Conducted Emission at mains port using AMN	9kHz-150kHz	3.2 dB	3.8 dB
Conducted Emission at mains port using AMN	150kHz-30MHz	3.0 dB	3.4 dB
Conducted Emission at mains port using VP	9kHz-30MHz	1.9 dB	3.9 dB
Conducted Emission at telecommunication port using AAN	150kHz-30MHz	2.4 dB	5.0 dB
Radiated Emission	30MHz-1000MHz	4.4 dB	6.3 dB
Radiated Emission	1GHz-6GHz	4.6 dB	5.2 dB (1GHz-6GHz)
Radiated Emission	6GHz-18GHz	4.6 dB	5.5 dB (6GHz-18GHz)
Disturbance Power	30MHz-300MHz	3.5 dB	4.5 dB
Remark: AMN – Artificial Mains Network VP – Voltage Probe ANN – Asymmetric Artificial Network			

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



## 5 Equipment List

ESD						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	ELECTROSTATIC DISCHARGE SIMULATOR	TESEQ	NSG 437	SHEM041-1	2016-08-15	2017-08-14

EFT(Mains)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	IMMUNITY TEST SYSTEM	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2016-01-14	2017-01-13
2	MATCHING RESISTORS FOR EFT/BURST GENERATORS	EM TEST	KW50	SHEM026-4	2016-01-14	2017-01-13
3	MATCHING RESISTORS FOR EFT/BURST GENERATORS	EM TEST	KW1000	SHEM026-5	2016-01-14	2017-01-13

EFT(Signal)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	IMMUNITY TEST SYSTEM	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2016-01-14	2017-01-13
2	CAPACITIVE COUPLING CLAMP	EM TEST	HFK	SHEM026-2	2016-08-12	2017-08-11
3	DATA COUPLING NETWORK 4 LINE	EM TEST	CNV 504	SHEM026-3	2016-08-12	2017-08-11
4	MATCHING RESISTORS FOR EFT/BURST GENERATORS	EM TEST	KW50	SHEM026-4	2016-01-14	2017-01-13
5	MATCHING RESISTORS FOR EFT/BURST GENERATORS	EM TEST	KW1000	SHEM026-5	2016-01-14	2017-01-13

Surge(Mains)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	IMMUNITY TEST SYSTEM	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2016-01-14	2017-01-13

V-Dips						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	IMMUNITY TEST SYSTEM	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2016-01-14	2017-01-13

<b>Mains Supply Voltage Variations-Conditioning</b>						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	IMMUNITY TEST SYSTEM	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2016-01-14	2017-01-13

<b>RI(80M-2.7G)</b>						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	SIGNAL GENERATOR	ROHDE & SCHWARZ	SMJ100A	SHEM141-1	2016-01-13	2017-01-12
2	POWER METER	ROHDE & SCHWARZ	NRP	SHEM057-1	2016-01-14	2017-01-13
3	POWER METER SENSOR	ROHDE & SCHWARZ	NRP-Z91	SHEM057-2	2016-01-14	2017-01-13
4	ANTENNA	SCHWARZBECK	STLP9128D	SHEM130-1	N/A	N/A
5	ANTENNA	SCHWARZBECK	STLP9149	SHEM131-1	N/A	N/A
6	AMPLIFIER	MILMEGA	80RF1000-250	SHEM132-1	N/A	N/A
7	AMPLIFIER	MILMEGA	AS0840-55-55	SHEM133-1	N/A	N/A
8	POWER METER SENSOR	ROHDE & SCHWARZ	NRP-Z22	SHEM136-1	2016-08-12	2017-08-11
9	ELECTROMAGNETIC FIELD PROBE	ETS-LINDGREN	HI-6113	SHEM134-1	2016-08-12	2017-08-11
10	SEMI/FULLY ANECHOIC	ST	11*6*6M	SHEM078-2	2016-08-17	2017-08-16

<b>CI M(150K-100M)</b>						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	SIGNAL GENERATOR	ROHDE & SCHWARZ	SMJ100A	SHEM141-1	2016-01-13	2017-01-12
2	PAMP CONDUCTED RF TEST SYSTEM	HAEFFLY	PAMP250	SHEM023-1	2016-01-14	2017-01-13
3	6DB ATTENUATOR	HUAXIANG	TST-150-761	SHEM151-1	N/A	N/A
4	CDN IMPEDANCE AND K-FACTOR	LUTHI	L-801 M1	SHEM023-5	2016-01-14	2017-01-13
5	CDN IMPEDANCE AND K-FACTOR	LUTHI	L-801 M2/M3	SHEM023-6	2016-03-07	2017-03-06
6	SHIELDING ROOM	ZHONGYU	5*5*3M	SHEM079-6	2016-08-17	2017-08-16



CI S(150K-100M)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	SIGNAL GENERATOR	ROHDE & SCHWARZ	SMJ100A	101394	2016-01-14	2017-01-13
2	PAMP CONDUCTED RF TEST SYSTEM	HAEFFLY	PAMP250	151708	2016-01-14	2017-01-13
3	CDN IMPEDANCE AND K-FACTOR	LUTHI	L-801 M1	2116	2016-01-14	2017-01-13
4	CDN IMPEDANCE AND K-FACTOR	LUTHI	L-801 M2/M3	2117	2016-01-14	2017-01-13

CE M(150k-30M)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESR7	SHEM162-1	2016-01-13	2017-01-12
2	LINE IMPEDANCE STABILIZATION NETWORK	SCHWARZBECK	NSLK8127	SHEM061-1	2016-01-14	2017-01-13
3	LINE IMPEDANCE STABILIZATION NETWORK	EMCO	3816/2	SHEM019-1	2016-01-14	2017-01-13
4	PULSE LIMITER	ROHDE & SCHWARZ	ESH3-Z2	SHEM029-1	2016-08-12	2017-08-11
5	SHIELDING ROOM	ZHONGYU	8*4*3M	SHEM079-2	2016-08-17	2017-08-16

CE T(150K-30M)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESR7	SHEM162-1	2016-01-13	2017-01-12
2	LINE IMPEDANCE STABILIZATION NETWORK	SCHWARZBECK	NSLK8127	SHEM061-1	2016-01-14	2017-01-13
3	LINE IMPEDANCE STABILIZATION NETWORK	EMCO	3816/2	SHEM019-1	2016-01-14	2017-01-13
4	8-WIRE ISN CAT 5	SCHWARZBECK	CAT5 8158	SHEM137-1	2016-01-14	2017-01-13
5	8-WIRE ISN CAT 3	SCHWARZBECK	CAT3 8158	SHEM137-2	2016-01-14	2017-01-13
6	8-WIRE ISNCAT 6	SCHWARZBECK	NTFM8158	SHEM137-3	2016-01-14	2017-01-13
7	2-DRAHT ISN	SCHWARZBECK - MESS-ELEKTRONIK	NTFM 8131	SHEM139-1	2016-01-14	2017-01-13
8	PULSE LIMITER	ROHDE & SCHWARZ	ESH3-Z2	SHEM029-1	2016-08-12	2017-08-11
9	SHIELDING ROOM	ZHONGYU	8*4*3M	SHEM079-2	2016-08-17	2017-08-16

<b>RE(30M-1G)</b>						
<b>Item</b>	<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Inventory No</b>	<b>Cal Date</b>	<b>Cal Due Date</b>
1	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESU40	SHEM051-1	2016-08-12	2017-08-11
2	CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
3	ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
4	TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
5	BROADBAND UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM048-1	2016-01-16	2017-01-15
6	LOW FREQUENCY AMPLIFIER	CLAVIIO	BDLNA-0001-412010	SHEM164-1	2016-08-12	2017-08-11
7	SEMI/FULLY ANECHOIC	ST	11*6*6M	SHEM078-2	2016-08-17	2017-08-16

<b>RE(above1G)</b>						
<b>Item</b>	<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Inventory No</b>	<b>Cal Date</b>	<b>Cal Due Date</b>
1	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESU40	SHEM051-1	2016-08-12	2017-08-11
2	CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
3	ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
4	TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
5	DOUBLE RIDGED BROADBAND HORN ANTENNA	SCHWARZBECK	BBHA9120D	SHEM050-1	2016-01-16	2017-01-15
6	HIGH-AMPLIFIER	SCHWARZBECK	SCU-F0118-G40-BZ4-CS	SHEM050-2	2016-01-14	2017-01-13
7	SEMI/FULLY ANECHOIC	ST	11*6*6M	SHEM078-2	2016-08-17	2017-08-16

<b>Flicker</b>						
<b>Item</b>	<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Inventory No</b>	<b>Cal Date</b>	<b>Cal Due Date</b>
1	HARMONIC&FLICKER ANALYZER	AMETEK	PACS-1	SHEM024-2	2016-09-06	2017-09-05
2	AC POWER SOURCE 5KVA	AMETEK	5001IX	SHEM025-2	2016-09-06	2017-09-05



General used equipment						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal.Due date
1	Digital pressure meter	YONGZHI	DYM3-01	101012	2016-03-03	2017-03-02
2	Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	84320600 803136, F304020153,20 101201FS100A 6K,201106117	2016-08-03	2017-08-02
3	Digital Multimeter	FLUKE	17B	19720439	2016-01-14	2017-01-13
4	Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	N/A	N/A	N/A
5	CLAMP METER	FLUKE	316	2503030971	2016-01-14	2017-01-13

## 6 Emission Test Results

### 6.1 CE M(150k-30M)

Test Requirement:	EN 55032:2015
Test Method:	EN 55032:2015
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

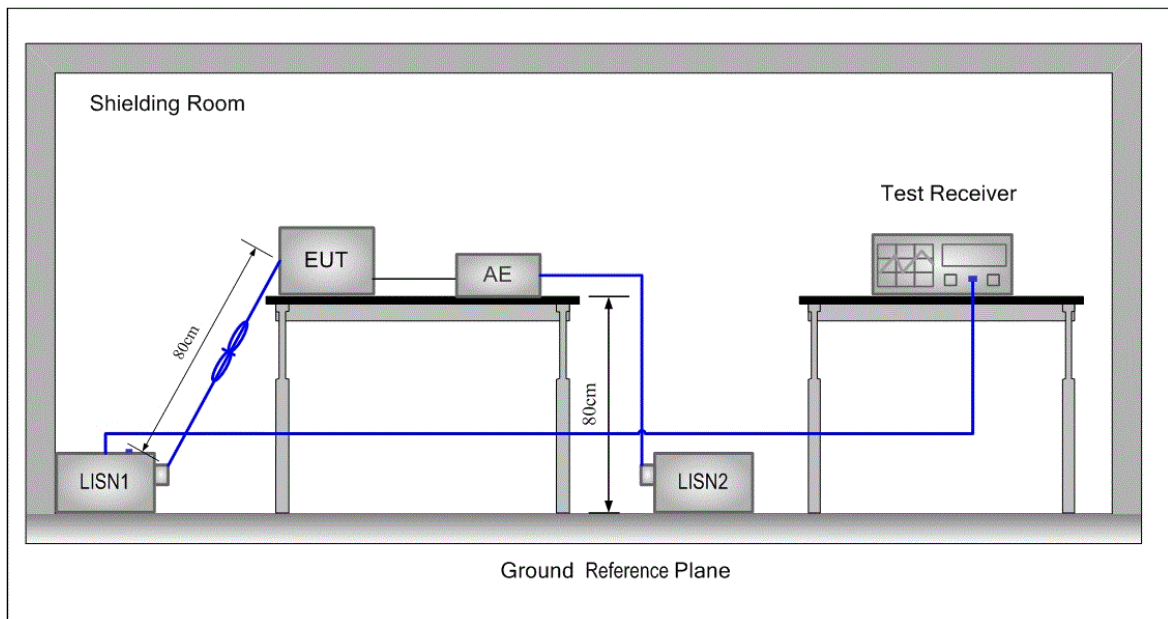
#### 6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity:50 % RH Atmospheric Pressure: 1001 mbar

Test mode a:working mode : keep EUT working and monitoring continual .

#### 6.1.2 Test Setup

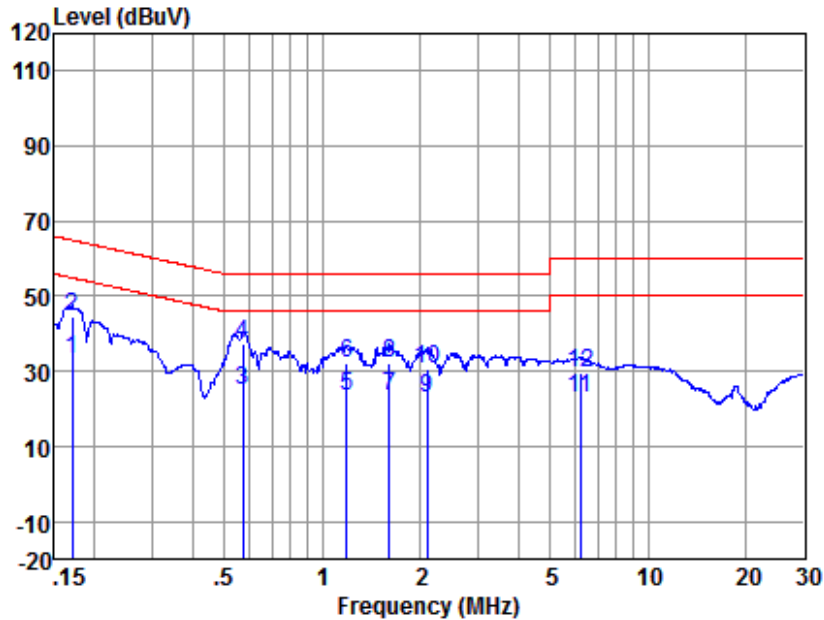


#### 6.1.3 Measurement Data

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

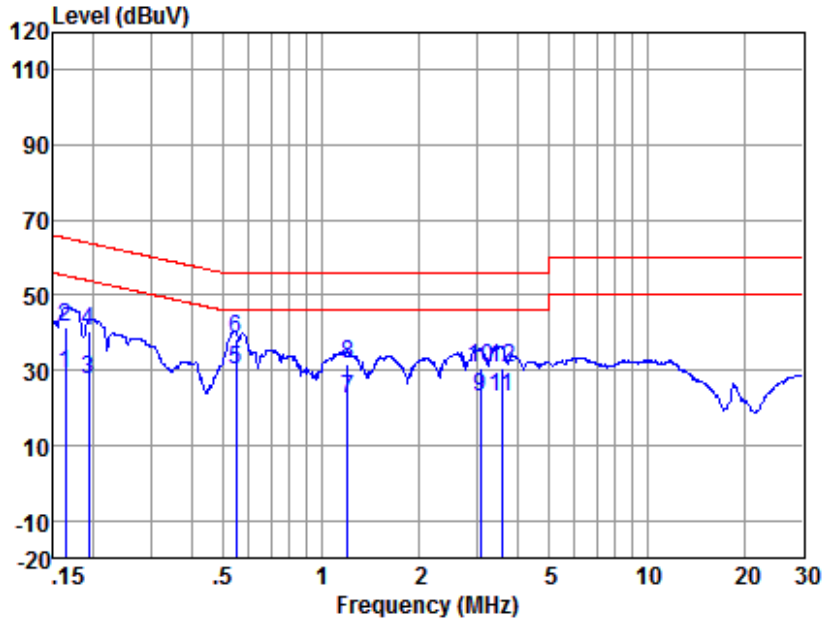


Site : chamber  
Condition : LISN-L-2016  
EUT/Project No: 6298IT  
Test mode : a

	Read Freq	Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.170	23.09	0.07	10.15	33.31	54.94	-21.63	Average
2	0.170	34.42	0.07	10.15	44.64	64.94	-20.30	QP
3	0.570	14.61	0.10	10.17	24.88	46.00	-21.12	Average
4	0.570	27.02	0.10	10.17	37.29	56.00	-18.71	QP
5	1.184	12.95	0.08	10.18	23.21	46.00	-22.79	Average
6	1.184	22.06	0.08	10.18	32.32	56.00	-23.68	QP
7	1.610	13.23	0.08	10.19	23.50	46.00	-22.50	Average
8	1.610	22.02	0.08	10.19	32.29	56.00	-23.71	QP
9	2.099	12.51	0.08	10.19	22.78	46.00	-23.22	Average
10	2.099	20.57	0.08	10.19	30.84	56.00	-25.16	QP
11	6.219	12.45	0.16	10.27	22.88	50.00	-27.12	Average
12	6.219	19.30	0.16	10.27	29.73	60.00	-30.27	QP



Mode:a;Line:Neutral Line



Site : chamber  
Condition : LISN-N-2016  
EUT/Project No: 6298IT  
Test mode : a

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.163	19.11	0.05	10.15	29.31	55.30	-25.99	Average
2	0.163	31.23	0.05	10.15	41.43	65.30	-23.87	QP
3	0.192	17.19	0.05	10.15	27.39	53.93	-26.54	Average
4	0.192	30.37	0.05	10.15	40.57	63.93	-23.36	QP
5	0.546	19.84	0.04	10.17	30.05	46.00	-15.95	Average
6	0.546	28.27	0.04	10.17	38.48	56.00	-17.52	QP
7	1.203	11.94	0.05	10.18	22.17	46.00	-23.83	Average
8	1.203	21.46	0.05	10.18	31.69	56.00	-24.31	QP
9	3.074	12.50	0.12	10.20	22.82	46.00	-23.18	Average
10	3.074	20.05	0.12	10.20	30.37	56.00	-25.63	QP
11	3.584	12.50	0.14	10.21	22.85	46.00	-23.15	Average
12	3.584	20.37	0.14	10.21	30.72	56.00	-25.28	QP



## 6.2 CE T(150K-30M)

Test Requirement:	EN 55032:2015
Test Method:	EN 55032:2015
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	84dB(μV)-74dB(μV) quasi-peak, 74dB(μV)-64dB(μV) average
0.5M-30MHz	74dB(μV) quasi-peak, 64dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

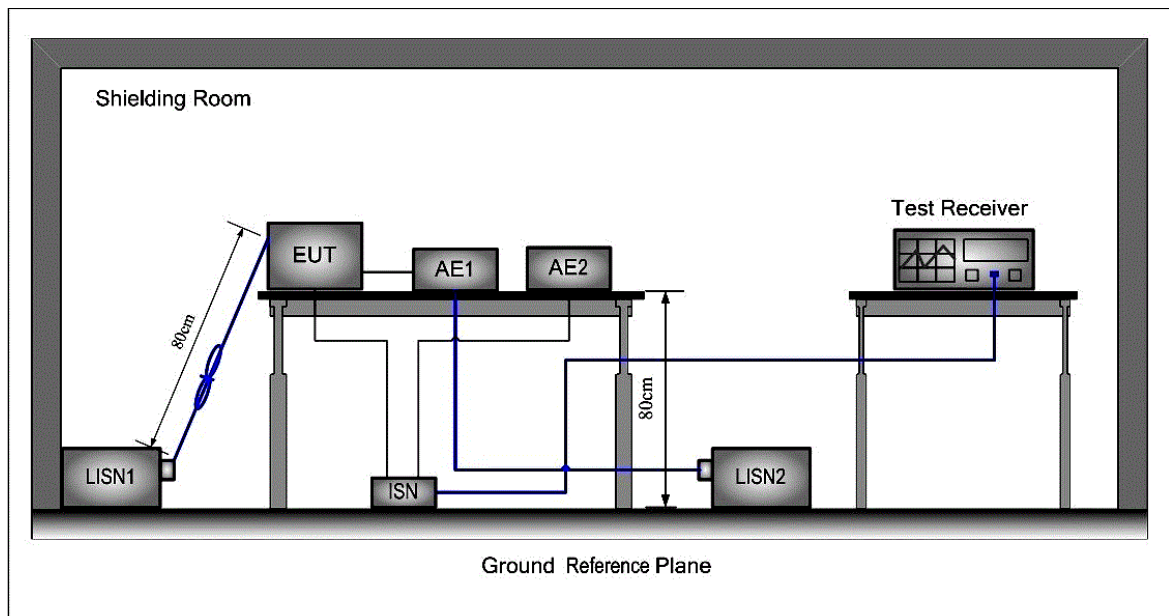
### 6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity:50 % RH Atmospheric Pressure: 1001 mbar

Test mode a:working mode : keep EUT working and monitoring continual .

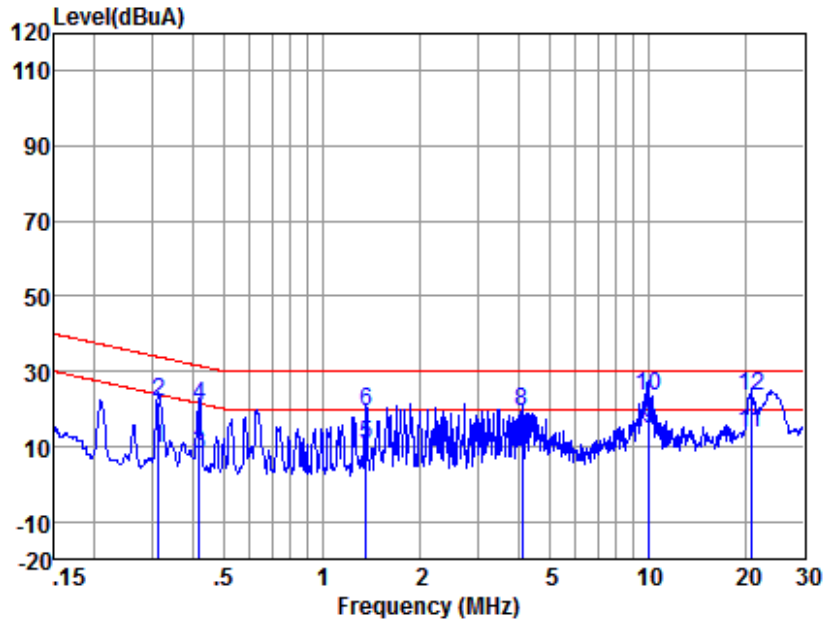
### 6.2.2 Test Setup



### 6.2.3 Measurement Data

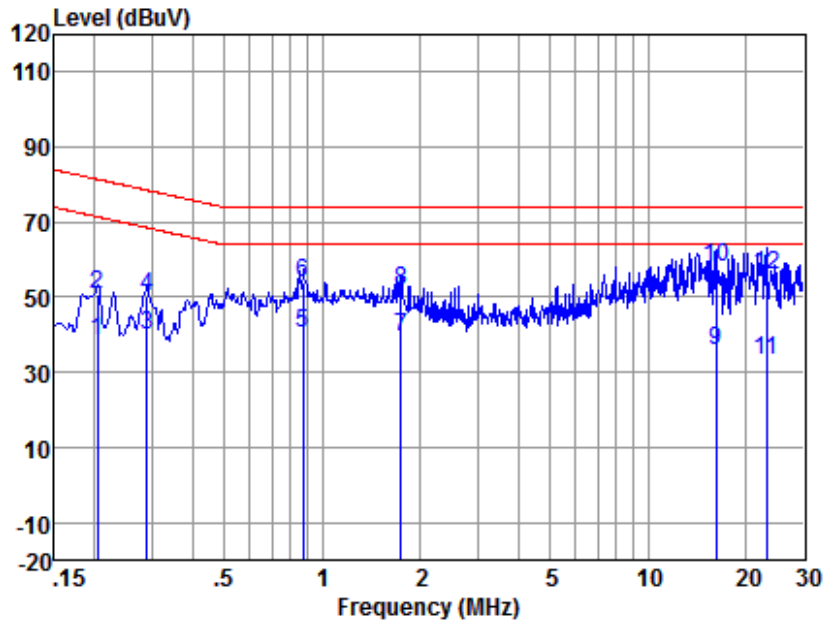
An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

Mode:a



Site : chamber  
 Condition :  
 EUT/Project No: 6298IT  
 Test mode : a

	Read	Aux	Cable	Limit	Over		
Freq	Level	Factor	Loss	Line	Limit	Remark	
MHz	dBuA	dB	dB	dBuA	dB		
1	0.315	-35.63	35.08	10.16	9.61	23.84	-14.23 Average
2	0.315	-23.63	35.08	10.16	21.61	33.84	-12.23 QP
3	0.419	-39.38	36.96	10.17	7.75	21.46	-13.71 Average
4	0.419	-26.38	36.96	10.17	20.75	31.46	-10.71 QP
5	1.367	-42.10	42.37	10.19	10.46	20.00	-9.54 Average
6	1.367	-33.10	42.37	10.19	19.46	30.00	-10.54 QP
7	4.114	-43.38	43.61	10.22	10.45	20.00	-9.55 Average
8	4.114	-34.38	43.61	10.22	19.45	30.00	-10.55 QP
9	10.072	-39.35	43.70	10.11	14.46	20.00	-5.54 Average
10	10.072	-30.35	43.70	10.11	23.46	30.00	-6.54 QP
11	20.814	-40.53	43.59	10.37	13.43	20.00	-6.57 Average
12	20.814	-30.53	43.59	10.37	23.43	30.00	-6.57 QP



Site : chamber  
 Condition :  
 EUT/Project No: 6298IT  
 Test mode : a

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.204	4.34	23.90	10.15	38.39	71.45	-33.06	Average
2	0.204	16.77	23.90	10.15	50.82	81.45	-30.63	QP
3	0.289	6.61	23.41	10.16	40.18	68.54	-28.36	Average
4	0.289	16.51	23.41	10.16	50.08	78.54	-28.46	QP
5	0.876	7.19	23.30	10.18	40.67	64.00	-23.33	Average
6	0.876	20.25	23.30	10.18	53.73	74.00	-20.27	QP
7	1.744	6.02	23.30	10.19	39.51	64.00	-24.49	Average
8	1.744	18.27	23.30	10.19	51.76	74.00	-22.24	QP
9	16.226	4.16	21.15	10.30	35.61	64.00	-28.39	Average
10	16.226	26.54	21.15	10.30	57.99	74.00	-16.01	QP
11	23.140	-10.32	33.15	10.40	33.23	64.00	-30.77	Average
12	23.140	12.62	33.15	10.40	56.17	74.00	-17.83	QP

### 6.3 RE(30M-1G)

Test Requirement:	EN 55032:2015
Test Method:	EN 55032:2015
Frequency Range:	30MHz to 1GHz
Limit:	
30MHz-230MHz	40 dB(μV/m) quasi-peak
230MHz-1GHz	47 dB(μV/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

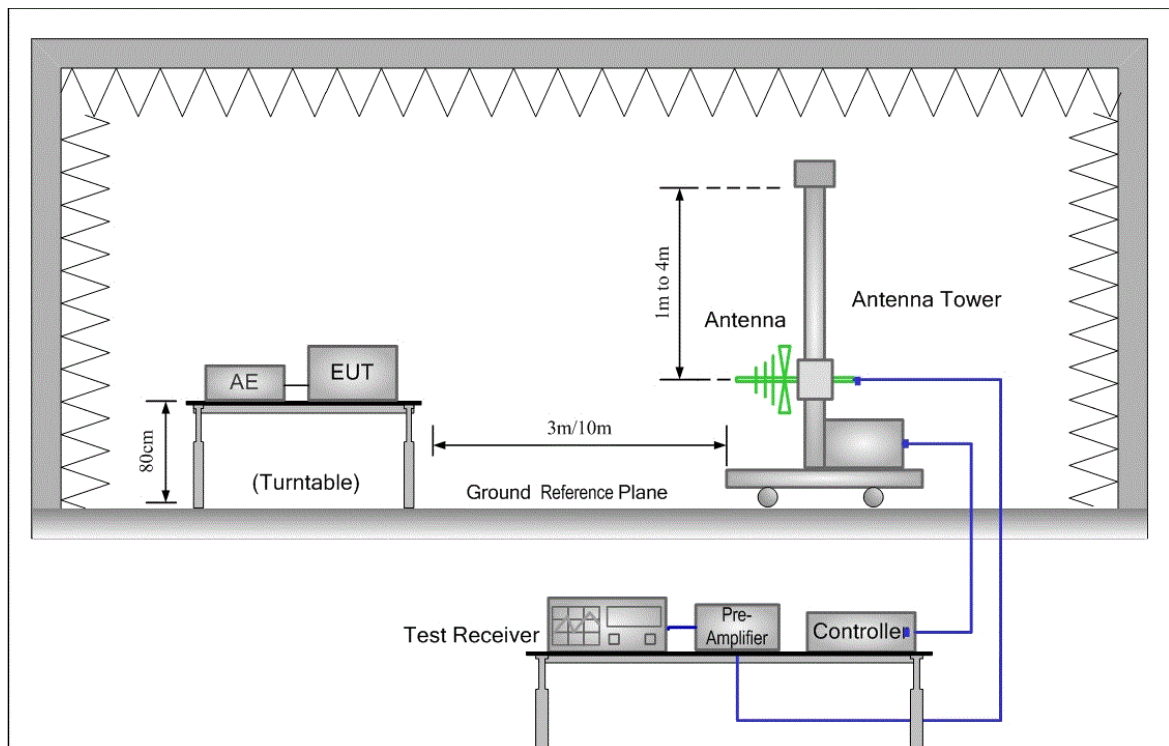
#### 6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity:50 % RH Atmospheric Pressure: 1005 mbar

Test mode a:working mode : keep EUT working and monitoring continual .

#### 6.3.2 Test Setup

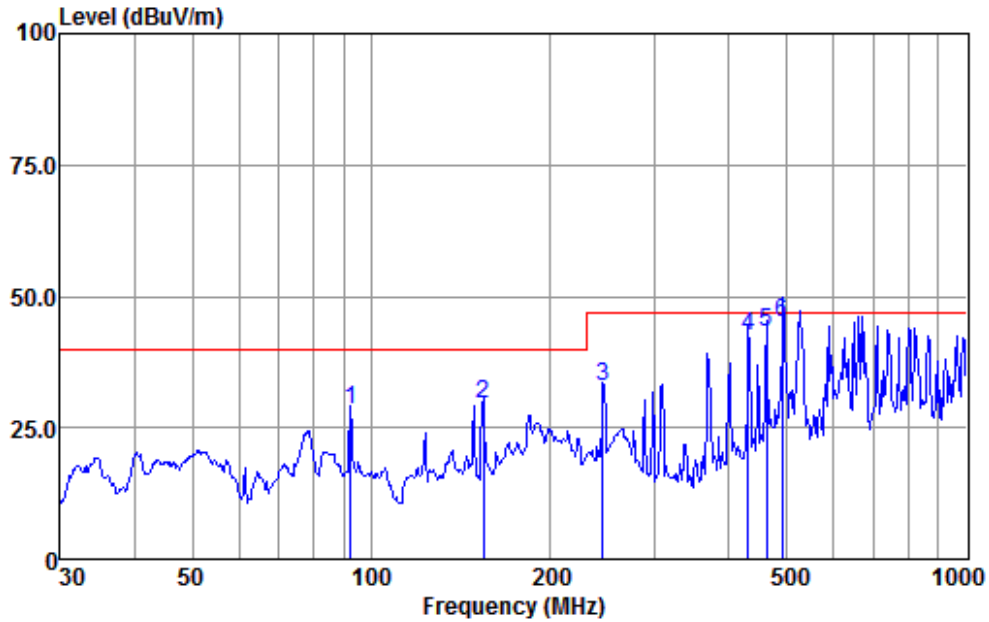


#### 6.3.3 Measurement Data

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

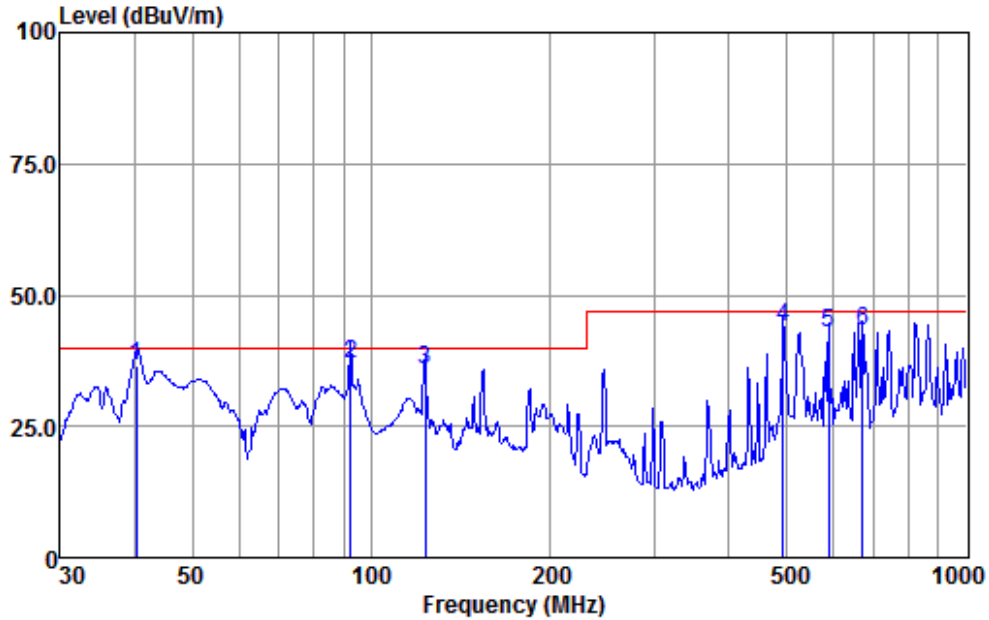


Condition : HORIZONTAL  
EUT/Project: 6298IT  
Test mode : a

	Freq	ReadAntenna	Cable	Preamp	Level	Limit	Over	Remark
	MHz	Level	Factor	Loss	Factor	Line	Limit	
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dB	
1	92.46	61.90	8.91	1.07	43.61	28.27	40.00	-11.73 QP
2	154.28	59.19	12.49	1.39	43.48	29.59	40.00	-10.41 QP
3	245.09	62.70	11.60	1.80	43.36	32.74	47.00	-14.26 QP
4	431.03	67.18	16.05	2.53	43.22	42.54	47.00	-4.46 QP
5	462.35	67.36	16.45	2.61	43.20	43.22	47.00	-3.78 QP
6 q	491.00	68.45	17.10	2.73	43.18	45.10	47.00	-1.90 QP



Mode:a;Polarization:Vertical



Condition : VERTICAL  
EUT/Project: 6298IT  
Test mode : a

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	40.28	66.17	13.56	0.60	43.82	36.51	40.00	-3.49	QP
2	92.46	70.56	8.91	1.07	43.61	36.93	40.00	-3.07	QP
3	123.27	66.40	11.83	1.23	43.54	35.92	40.00	-4.08	QP
4 q	492.47	67.27	17.13	2.74	43.18	43.96	47.00	-3.04	QP
5	586.84	62.66	20.28	3.00	43.14	42.80	47.00	-4.20	QP
6	670.49	62.96	19.92	3.27	43.10	43.05	47.00	-3.95	QP

## 6.4 RE(above1G)

Test Requirement:	EN 55032:2015
Test Method:	EN 55032:2015
Frequency Range:	Above 1GHz
Limit:	
1GHz-3GHz	70 dB( $\mu$ V/m) peak, 50 dB( $\mu$ V/m) average
3GHz-6GHz	74 dB( $\mu$ V/m) peak, 54dB( $\mu$ V/m) average
Detector:	Peak for pre-scan (1000kHz resolution bandwidth) 1000M to 6000MHz

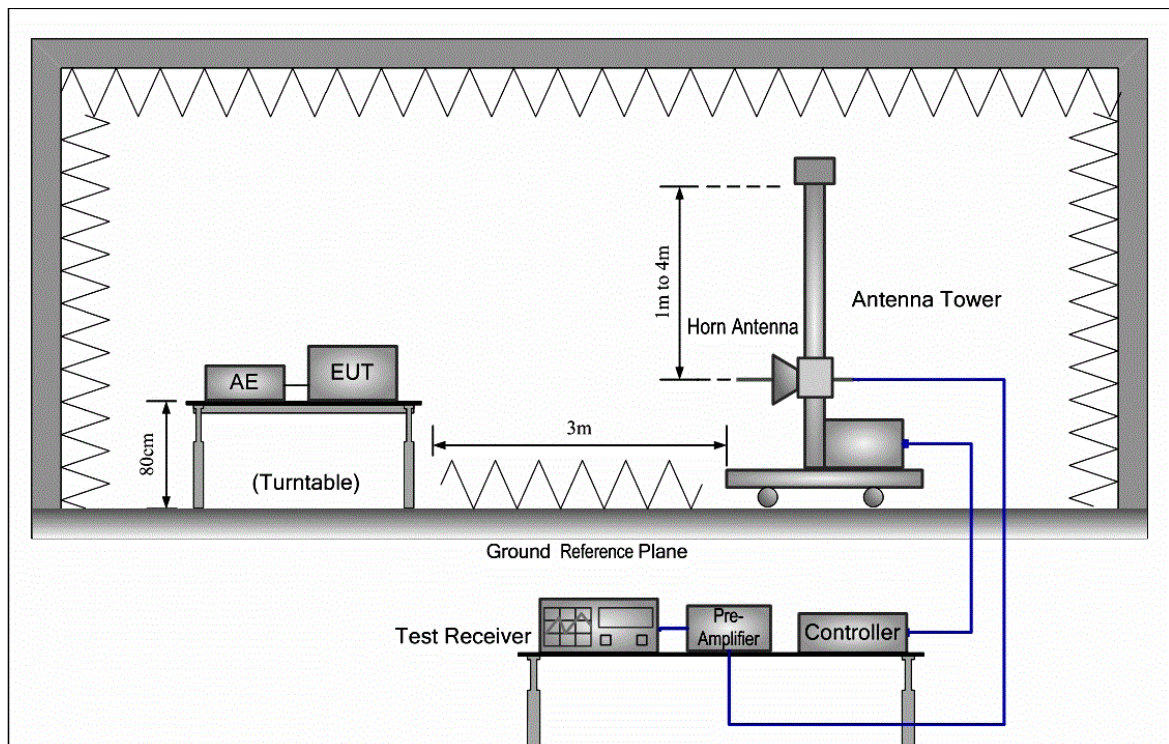
### 6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity:50 % RH Atmospheric Pressure: 1005 mbar

Test mode a:working mode : keep EUT working and monitoring continual .

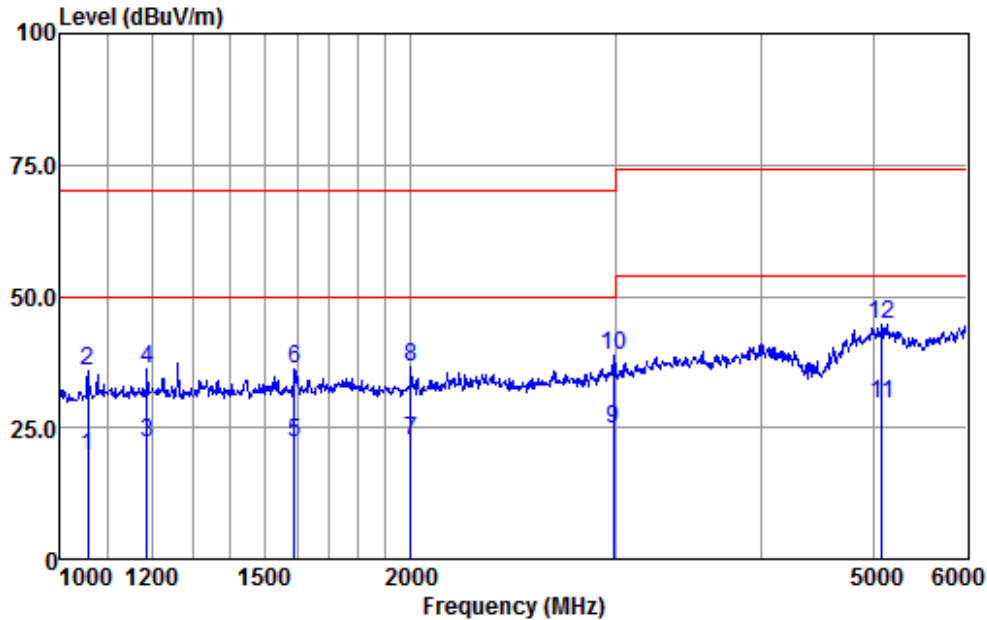
### 6.4.2 Test Setup



### 6.4.3 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

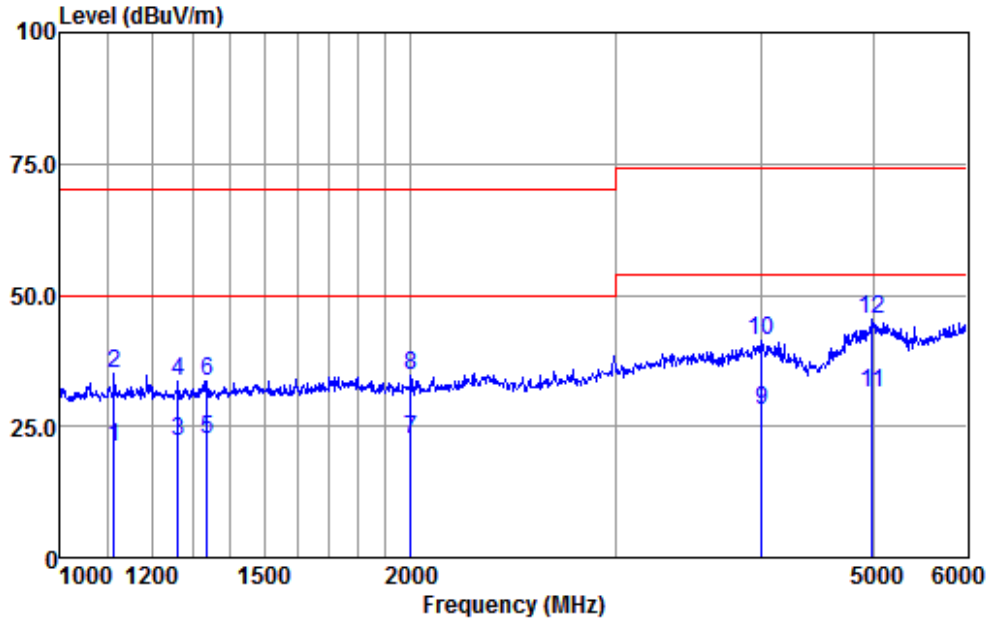


Condition : HORIZONTAL  
EUT/Project: 6298IT  
Test Mode : a

	Freq	ReadAntenna	Cable	Preamp	Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1057.12	32.67	24.57	3.20	40.76	19.68	50.00	-30.32	Average
2	1057.12	48.72	24.57	3.20	40.76	35.73	70.00	-34.27	Peak
3	1187.69	34.59	24.71	3.39	40.68	22.01	50.00	-27.99	Average
4	1187.69	48.80	24.71	3.39	40.68	36.22	70.00	-33.78	Peak
5	1590.53	33.36	25.44	3.94	40.67	22.07	50.00	-27.93	Average
6	1590.53	47.53	25.44	3.94	40.67	36.24	70.00	-33.76	Peak
7	2000.53	32.25	27.10	4.45	41.23	22.57	50.00	-27.43	Average
8	2000.53	46.19	27.10	4.45	41.23	36.51	70.00	-33.49	Peak
9	2988.48	30.76	29.26	5.35	40.82	24.55	50.00	-25.45	Average
10	2988.48	44.86	29.26	5.35	40.82	38.65	70.00	-31.35	Peak
11	5079.06	26.54	37.68	7.02	41.68	29.56	54.00	-24.44	Average
12 p	5079.06	41.63	37.68	7.02	41.68	44.65	74.00	-29.35	Peak



Mode:a;Polarization:Vertical



Condition : VERTICAL  
EUT/Project: 6298IT  
Test Mode : a

	Freq	ReadAntenna	Cable	Preamp	Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1113.50	34.06	24.63	3.09	40.73	21.05	50.00	-28.95	Average
2	1113.50	48.21	24.63	3.09	40.73	35.20	70.00	-34.80	Peak
3	1262.29	34.56	24.79	3.57	40.64	22.28	50.00	-27.72	Average
4	1262.29	45.76	24.79	3.57	40.64	33.48	70.00	-36.52	Peak
5	1336.78	34.36	24.86	3.76	40.60	22.38	50.00	-27.62	Average
6	1336.78	45.57	24.86	3.76	40.60	33.59	70.00	-36.41	Peak
7	2000.53	32.15	27.10	4.45	41.23	22.47	50.00	-27.53	Average
8	2000.53	44.28	27.10	4.45	41.23	34.60	70.00	-35.40	Peak
9	4009.29	28.45	32.70	6.96	40.05	28.06	54.00	-25.94	Average
10	4009.29	41.54	32.70	6.96	40.05	41.15	74.00	-32.85	Peak
11	4988.86	28.11	38.08	7.04	41.71	31.52	54.00	-22.48	Average
12 p	4988.86	42.08	38.08	7.04	41.71	45.49	74.00	-28.51	Peak



## **6.5 Harmonic**

Test Requirement: EN 61000-3-2:2014

Test Method: EN 61000-3-2:2014

Frequency Range: 100Hz to 2kHz

There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN 61000-3-2.

For further details, please refer to Clause 7 of EN 61000-3-2 which states:

"For the following categories of equipment, limits are not specified in this standard.- equipment with a rated power of 75W or less, other than lighting equipment."

## 6.6 Flicker

Test Requirement: EN 61000-3-3:2013

Test Method: EN 61000-3-3:2013

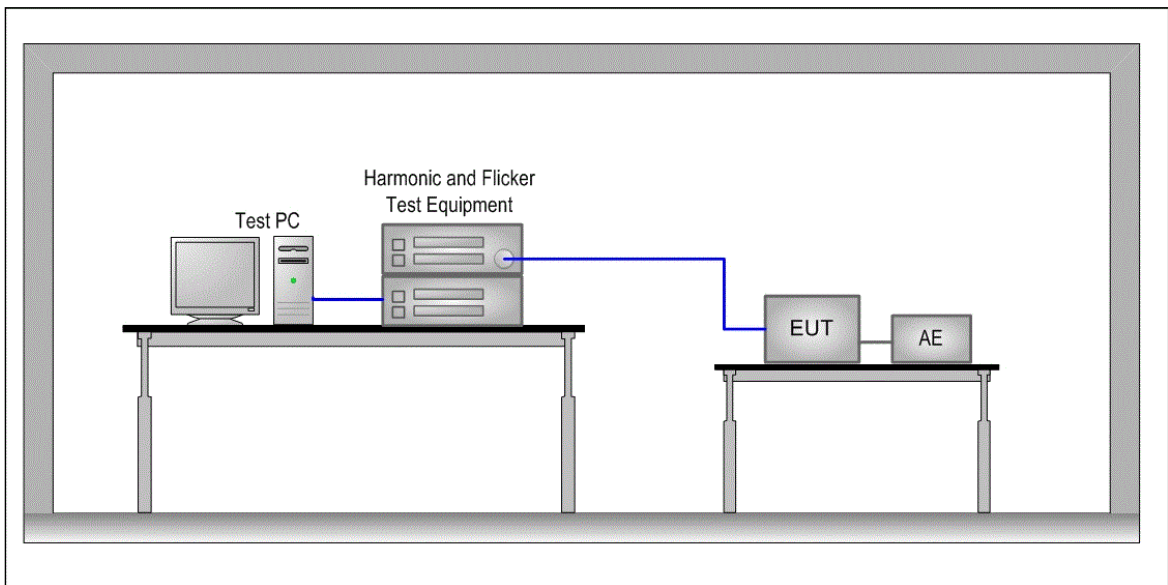
### 6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity:50 % RH Atmospheric Pressure: 1010 mbar

Test mode a:working mode : keep EUT working and monitoring continual .

### 6.6.2 Test Setup



### 6.6.3 Measurement Data

Mode:a

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.90		
T-max (mS):	0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.00	Test limit (%):	3.30 Pass
Highest dmax (%):	0.23	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.207	Test limit:	1.000 Pass
Highest Plt (2 hr. period):	0.090	Test limit:	0.650 Pass



## **7 Immunity Test Results**

### **7.1 Performance Criteria Description in EN 50130-4:2011+A1:2014**

There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the application of the discharges is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.

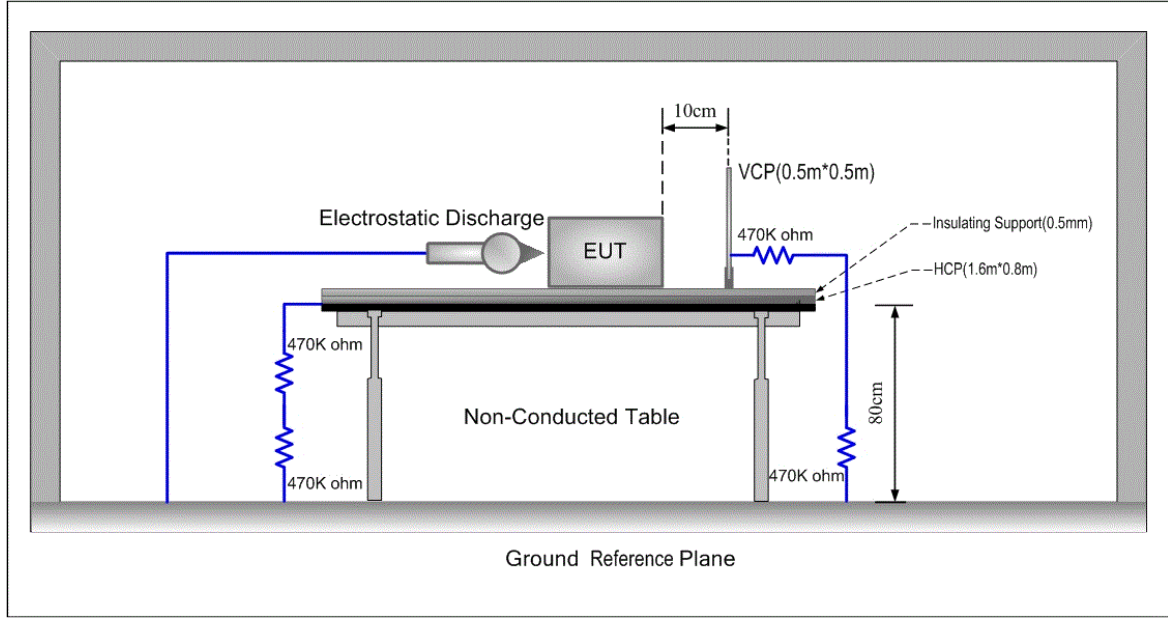
For further details, please refer to Clause 7.4, 8.4, 9.4, 10.4, 11.4, 12.4 and 13.4, of EN 50130-4.

## 7.2 ESD

Test Requirement: EN 50130-4:2011+A1:2014

Test Method: EN 61000-4-2:2009

### 7.2.1 Test Setup:



### 7.2.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1004 mbar

Test mode: a:working mode : keep EUT working and monitoring continual .

### 7.2.3 Test Results:

Observations: Test Point:

1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	6	+	2	A
Contact Discharge	6	-	2	A
Horizontal Coupling	6	+	3	A
Horizontal Coupling	6	-	3	A
Vertical Coupling	6	+	3	A
Vertical Coupling	6	-	3	A

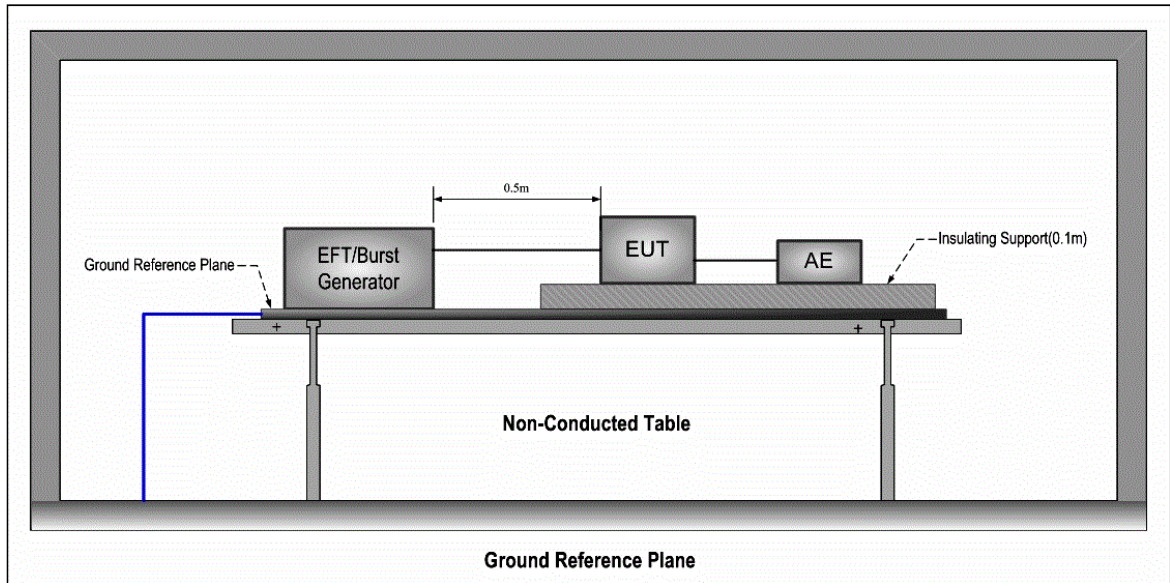
### Results:

A: No degradation in the performance of the EUT was observed.

### 7.3 EFT(Mains)

Test Requirement: EN 50130-4:2011+A1:2014  
 Test Method: EN 61000-4-4:2012  
 Repetition Frequency: 100kHz  
 Test Duration: 1 minute per level & polarity

#### 7.3.1 Test Setup:



#### 7.3.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1004 mbar

Test mode: a:working mode : keep EUT working and monitoring continual .

#### 7.3.3 Test Results:

Test Line	Level (kV)	Polarity	Direct/Coupling	Result / Observations
AC power port	2	+	Direct	A
AC power port	2	-	Direct	A

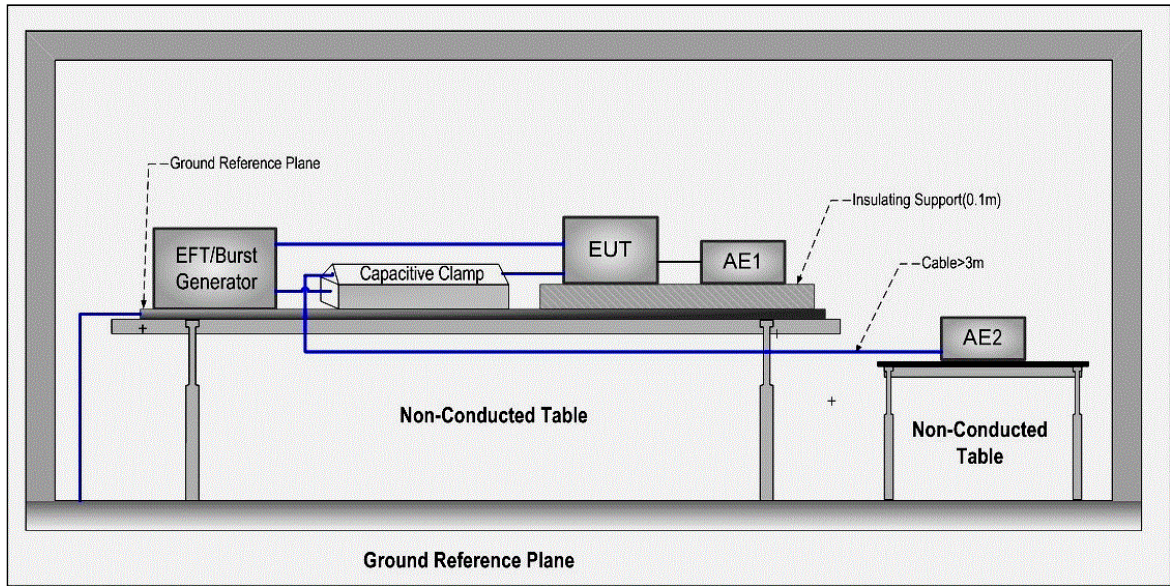
#### Results:

A: No degradation in the performance of the EUT was observed.

**7.4 EFT(Signal)**

Test Requirement: EN 50130-4:2011+A1:2014  
 Test Method: EN 61000-4-4:2012  
 Repetition Frequency: 100kHz  
 Test Duration: 1 minute per level & polarity

**7.4.1 Test Setup:**



**7.4.2 E.U.T. Operation**

Operating Environment:  
 Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1004 mbar  
 Test mode: a: working mode : keep EUT working and monitoring continual .

**7.4.3 Test Results:**

Cable port	Level (kV)	Polarity	Direct/Coupling	Result / Observations
Signal port	1	+	Coupling clamp	A
Signal port	1	-	Coupling clamp	A

**Results:**

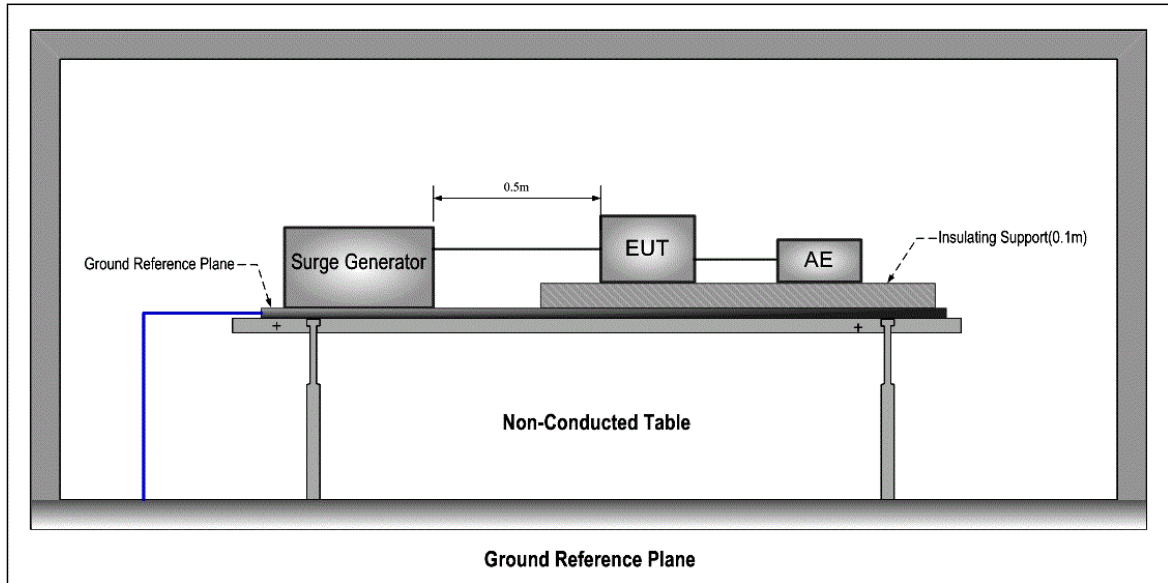
A: No degradation in the performance of the EUT was observed.

## 7.5 Surge(Mains)

Test Requirement: EN 50130-4:2011+A1:2014

Test Method: EN 61000-4-5:2014

### 7.5.1 Test Setup:



### 7.5.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity:52 % RH Atmospheric Pressure: 1004 mbar

Test mode: a:working mode : keep EUT working and monitoring continual .

### 7.5.3 Test Results:

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	0.5,1	+	0°	A
L-N	0.5,1	-	0°	A
L-N	0.5,1	+	90°	A
L-N	0.5,1	-	90°	A
L-N	0.5,1	+	180°	A
L-N	0.5,1	-	180°	A
L-N	0.5,1	+	270°	A
L-N	0.5,1	-	270°	A
L-PE	0.5,1,2	+	0°	A
L-PE	0.5,1,2	-	0°	A
L-PE	0.5,1,2	+	90°	A
L-PE	0.5,1,2	-	90°	A
L-PE	0.5,1,2	+	180°	A



L-PE	0.5,1,2	-	180°	A
L-PE	0.5,1,2	+	270°	A
L-PE	0.5,1,2	-	270°	A
N-PE	0.5,1,2	+	0°	A
N-PE	0.5,1,2	-	0°	A
N-PE	0.5,1,2	+	90°	A
N-PE	0.5,1,2	-	90°	A
N-PE	0.5,1,2	+	180°	A
N-PE	0.5,1,2	-	180°	A
N-PE	0.5,1,2	+	270°	A
N-PE	0.5,1,2	-	270°	A

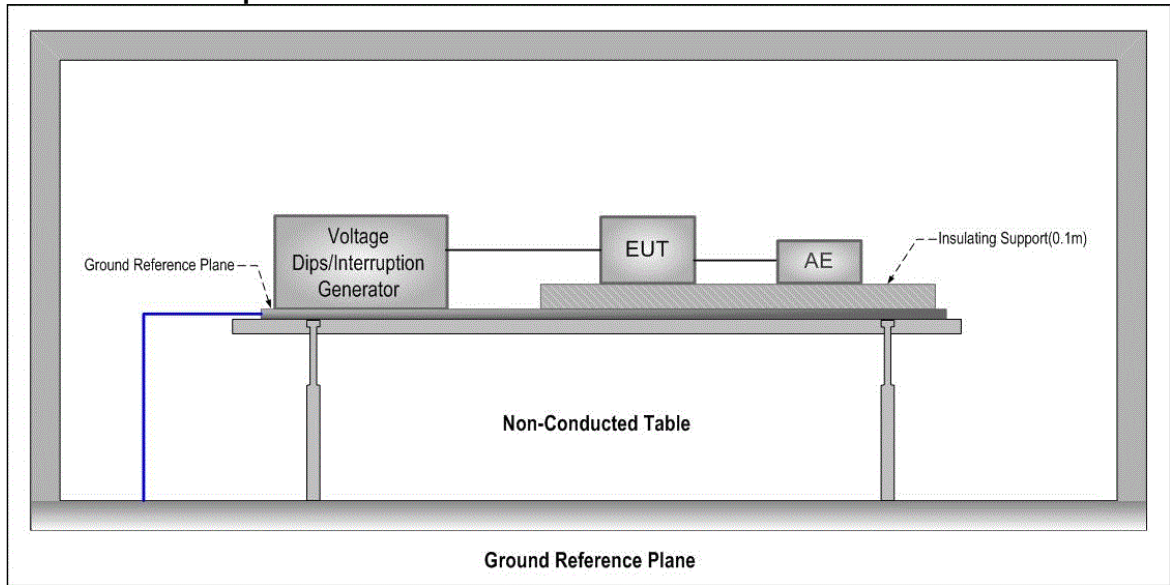
**Results:**

A: No degradation in the performance of the EUT was observed.

**7.6 V-Dips**

Test Requirement: EN 50130-4:2011+A1:2014  
 Test Method: EN 61000-4-11:2004  
 Performance Criterion: 0% of UT (Supply Voltage) for 250 Periods; 40% of UT for 10 Periods; 70% of UT for 25 Periods; 80% of UT for 250 Periods;  
 No. of Dips / Interruptions: 3 per Level  
 Time between dropout: 10s

**7.6.1 Test Setup:**



**7.6.2 E.U.T. Operation**

Operating Environment:  
 Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1004 mbar  
 Test mode: a: working mode : keep EUT working and monitoring continual .

**7.6.3 Test Results:**

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
80	0°	250 Periods	3	A
80	180°	250 Periods	3	A
70	0°	25 Periods	3	A
70	180°	25 Periods	3	A
40	0°	10 Periods	3	A
40	180°	10 Periods	3	A
0	0°	250 Periods	3	B
0	180°	250 Periods	3	B

**Results:**

A: No degradation in the performance of the EUT was observed.  
 B: During test, EUT stop work, After test, which the equipment under test recovers its normal Performance.

## 7.7 Mains Supply Voltage Variations-Conditioning

Test Requirement:	EN 50130-4:2011+A1:2014
Test Method:	EN 50130-4:2011+A1:2014
Voltage max.	AC 253V ( $U_{max}$ : $U_{nom} + 10\%$ )
Voltage min.	AC 195.5V ( $U_{min}$ : $U_{nom} - 15\%$ )
$U_{nom}$ Voltage:	AC 230V
Criteria:	There shall be no damage, malfunction or change of status due to the different supply voltage conditions. The EUT shall meet the acceptance criteria for the functional test (see Clause 6 of EN 50130-4), during the conditioning.

### 7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity:55 % RH Atmospheric Pressure: 1010 mbar

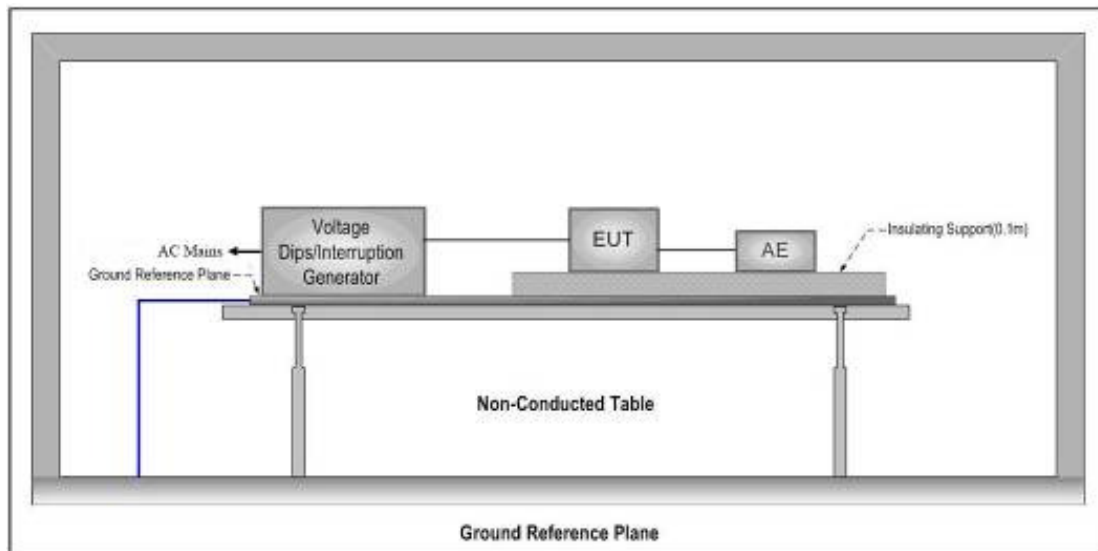
Test mode: a:working mode : keep EUT working and monitoring continual .

### 7.7.2 Test Results:

#### Test phenomenon description for the EUT:

1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period and detected no any changes in states, during the conditioning.
3. No degradation in the performance of the EUT was observed, after the conditioning.

#### Test Setup:

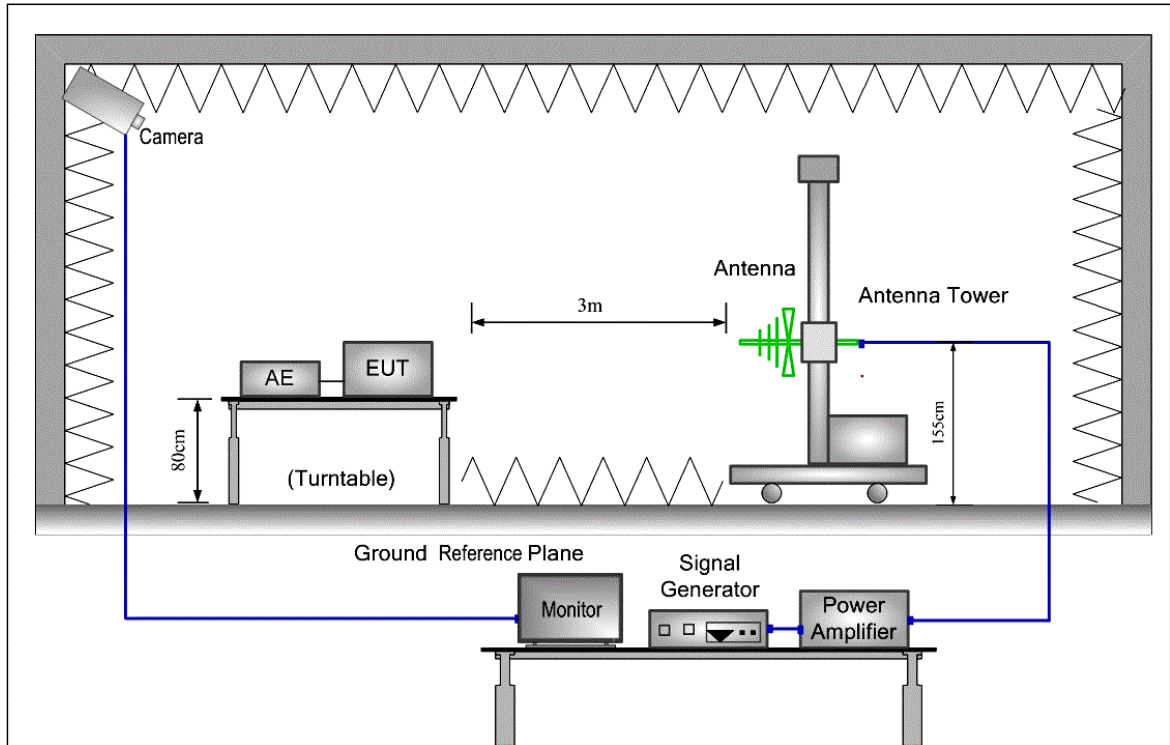


### 7.8 RI(80M-2.7G)

Test Requirement: EN 50130-4:2011+A1:2014

Test Method: EN 61000-4-3:2006+A1:2008+A2:2010

#### 7.8.1 Test Setup:



#### 7.8.2 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity:50 % RH Atmospheric Pressure: 1003 mbar

Test mode: a:working mode : keep EUT working and monitoring continual .

#### 7.8.3 Test Results:

Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-2.7GHz	10	Front	3s	A
80MHz-2.7GHz	10	Back	3s	A
80MHz-2.7GHz	10	Left	3s	A
80MHz-2.7GHz	10	Right	3s	A
80MHz-2.7GHz	10	Top	3s	A
80MHz-2.7GHz	10	Underside	3s	A

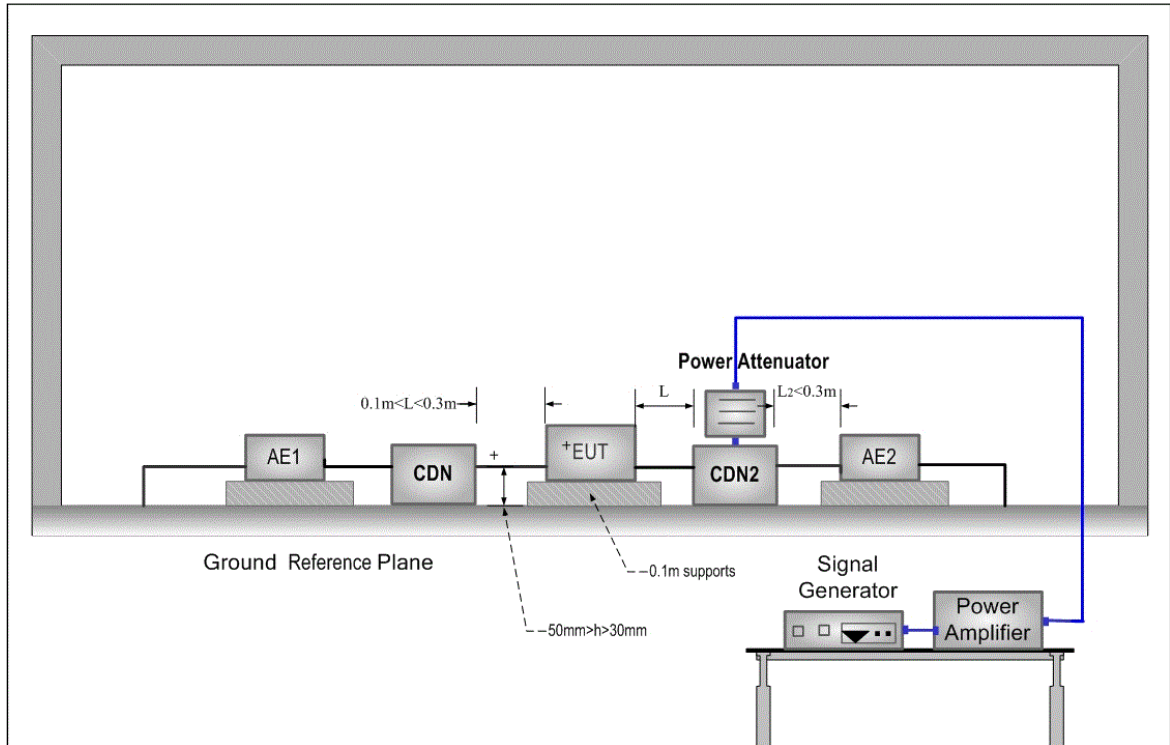
#### Results:

A: No degradation in the performance of the EUT was observed.

**7.9 CI M(150K-100M)**

Test Requirement: EN 50130-4:2011+A1:2014  
Test Method: EN 61000-4-6:2014

**7.9.1 Test Setup:**



**7.9.2 E.U.T. Operation**

Operating Environment:  
Temperature: 21 °C Humidity: 51 % RH Atmospheric Pressure: 1001 mbar  
Test mode: a: working mode : keep EUT working and monitoring continual .

**7.9.3 Test Results:**

Cable port	Level (Vrms)	Direct/Coupling	Dwell time	Result / Observations
AC power port	10	Direct	3s	A

**Results:**

A: No degradation in the performance of the EUT was observed.



**7.10 CI S(150K-100M)**

Test Requirement: EN 50130-4:2011+A1:2014  
Test Method: EN 61000-4-6:2014

**7.10.1 E.U.T. Operation**

Operating Environment:

Temperature: 21 °C Humidity:51 % RH Atmospheric Pressure: 1001 mbar

Test mode: a:working mode : keep EUT working and monitoring continual .

**7.10.2 Test Results:**

Cable port	Level (Vrms)	Direct/Coupling	Dwell time	Result / Observations
Signal port	10	Coupling	3s	A

**Results:**

A: No degradation in the performance of the EUT was observed.

## 8 Photographs

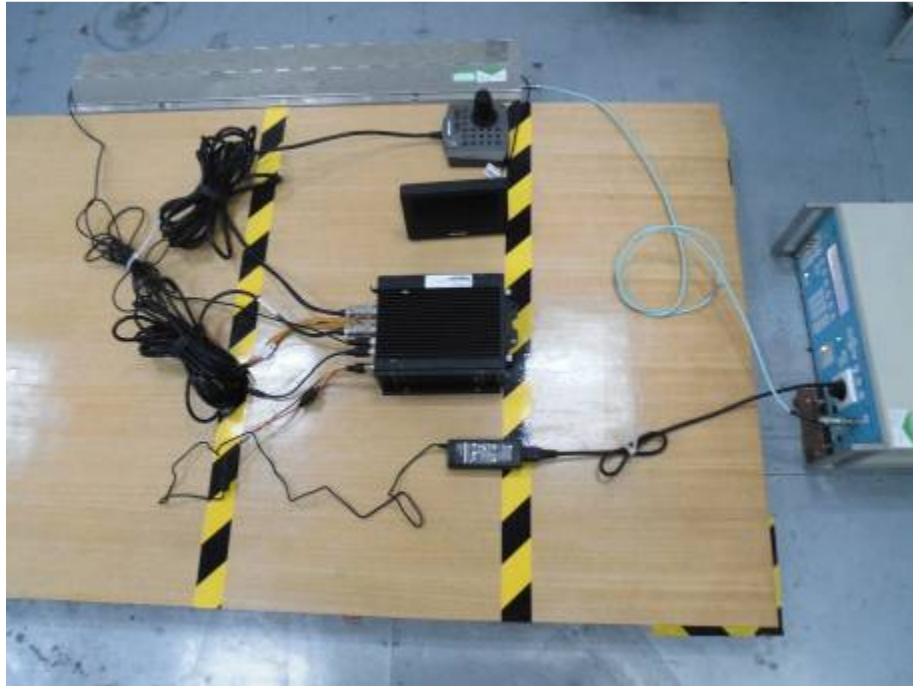
### 8.1 ESD Test Setup



### 8.2 EFT(Mains) Test Setup



### 8.3 EFT(Signal) Test Setup



### 8.4 Surge(Mains) Test Setup





### 8.5 V-Dips Test Setup



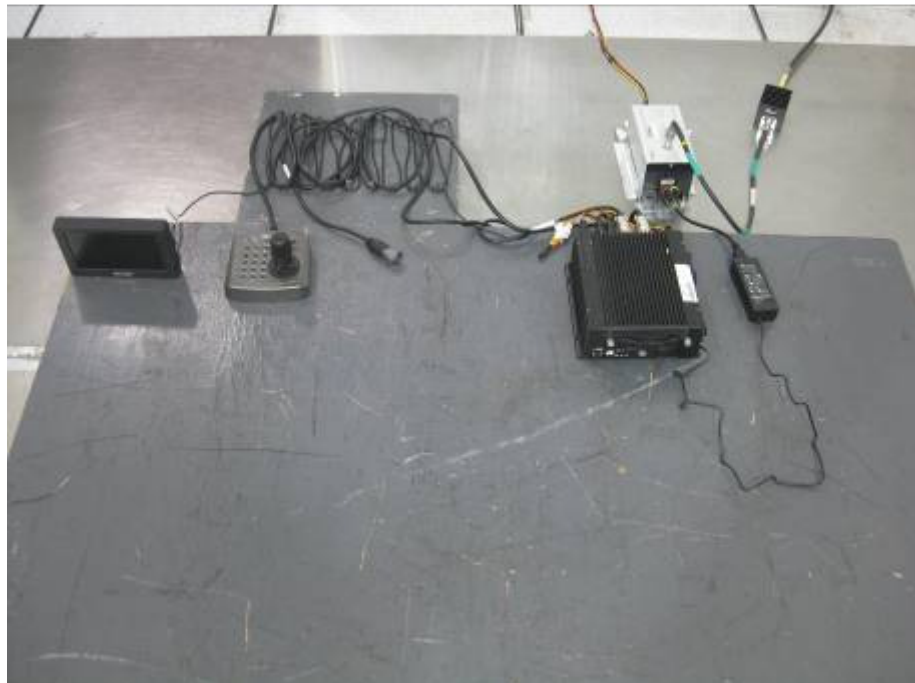
### 8.6 Mains Supply Voltage Variations-Conditioning Test Setup



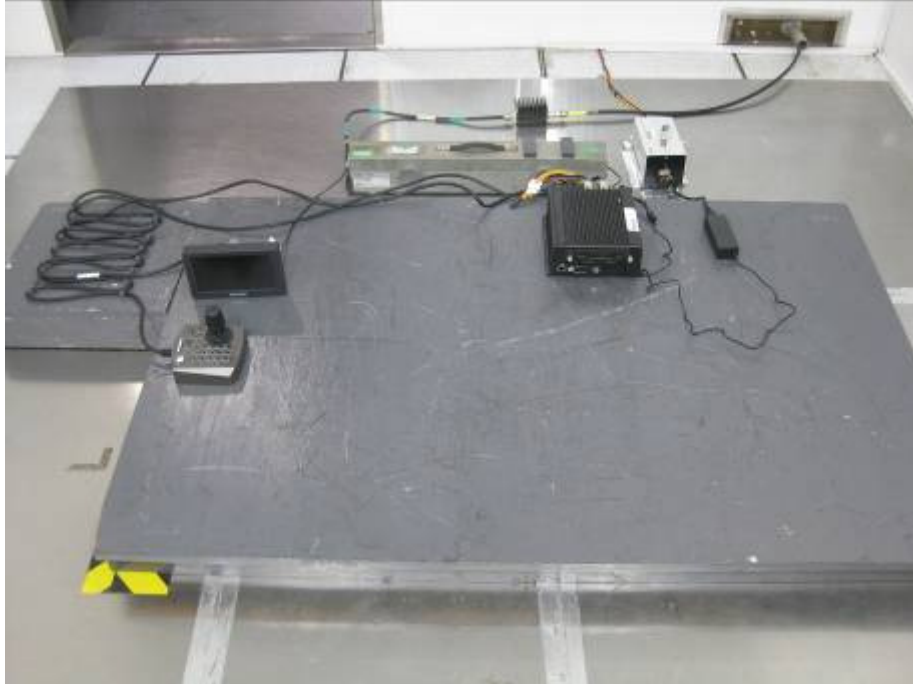
### 8.7 RI(80M-2.7G) Test Setup



### 8.8 CI M(150K-100M) Test Setup



### 8.9 CI S(150K-100M) Test Setup



### 8.10 CE M(150k-30M) Test Setup



### 8.11 CE T(150K-30M) Test Setup



### 8.12 RE(30M-1G) Test Setup



### 8.13 RE(above1G) Test Setup



### 8.14 Flicker Test Setup



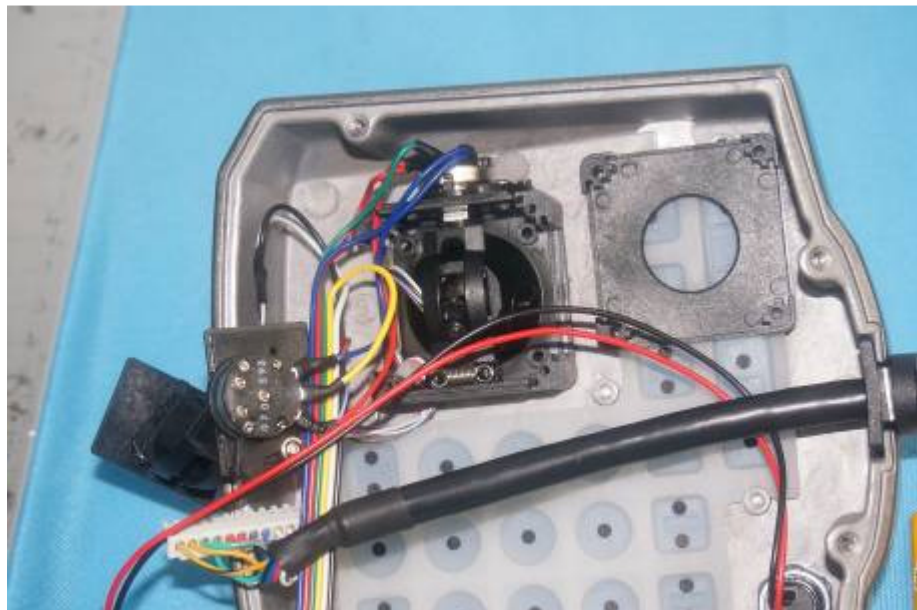
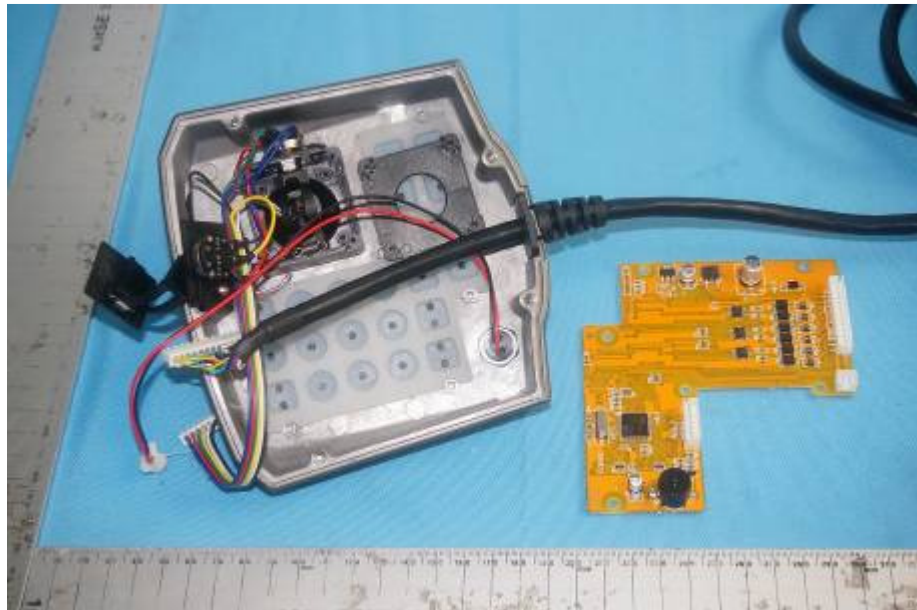
### 8.15 EUT Constructional Details

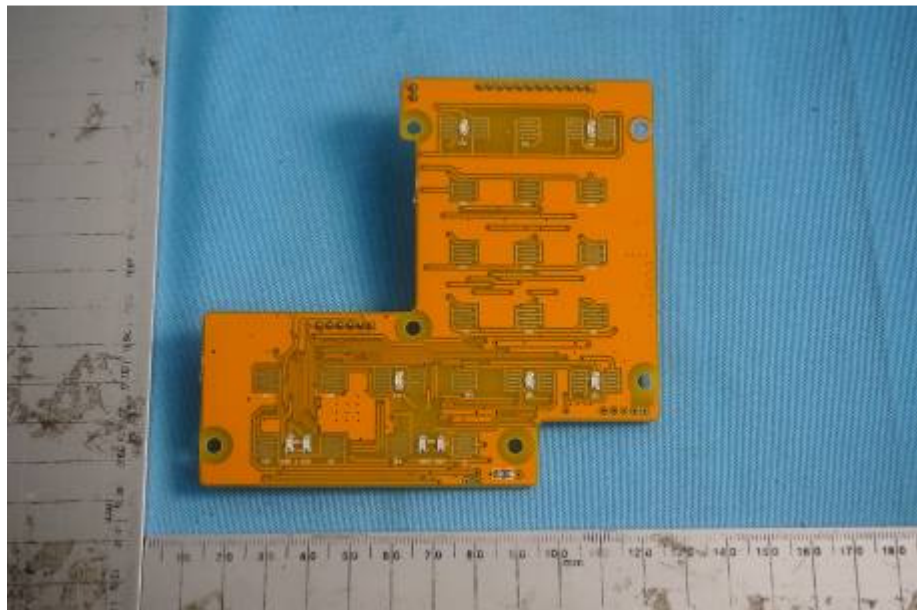
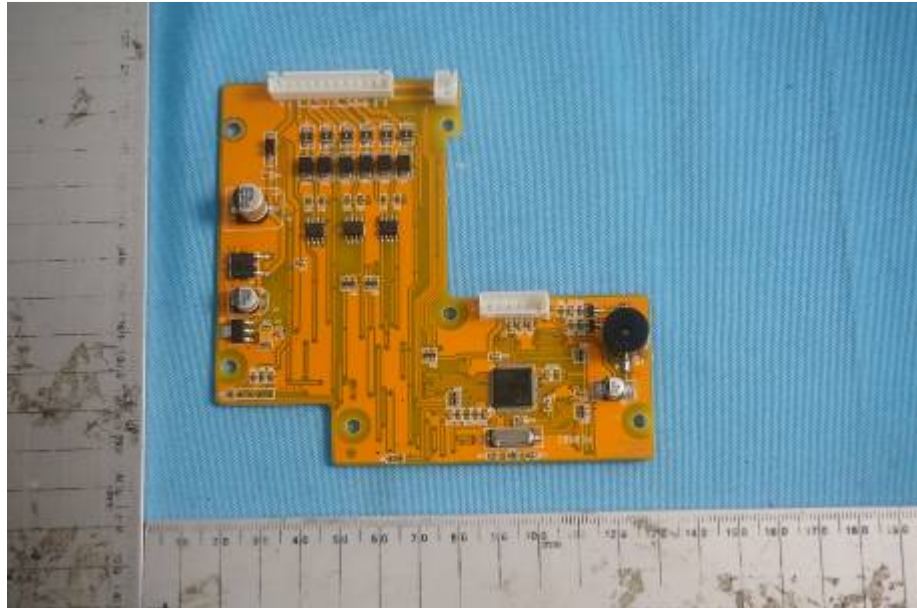




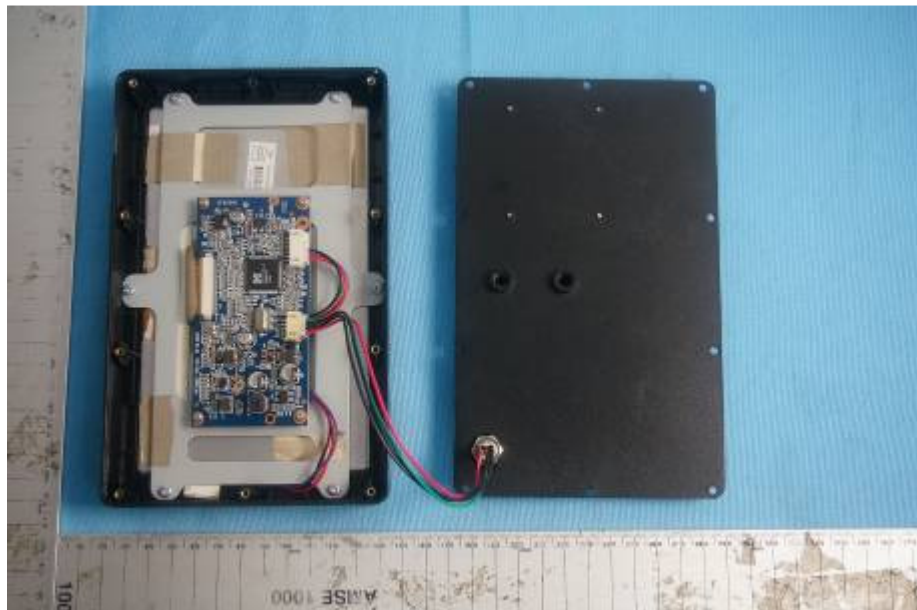


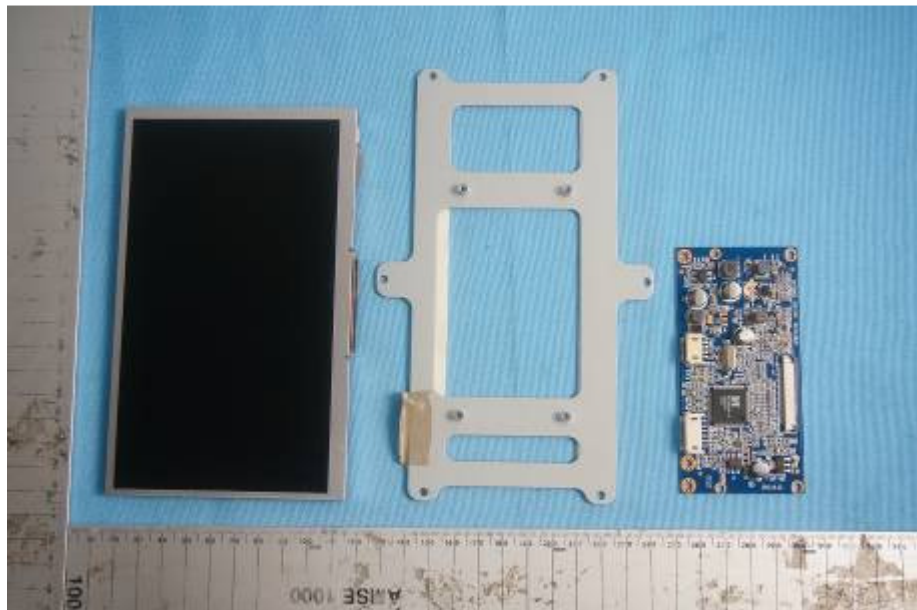


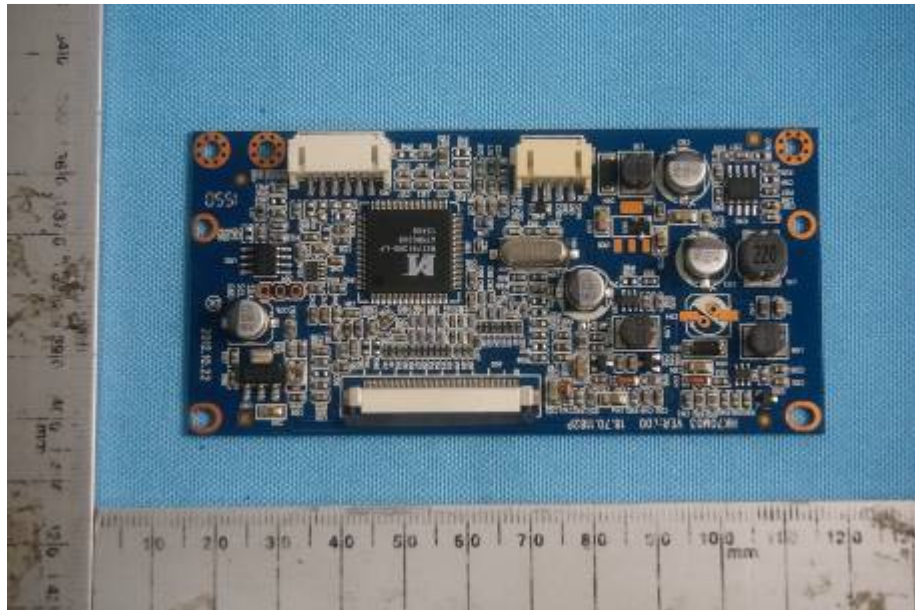




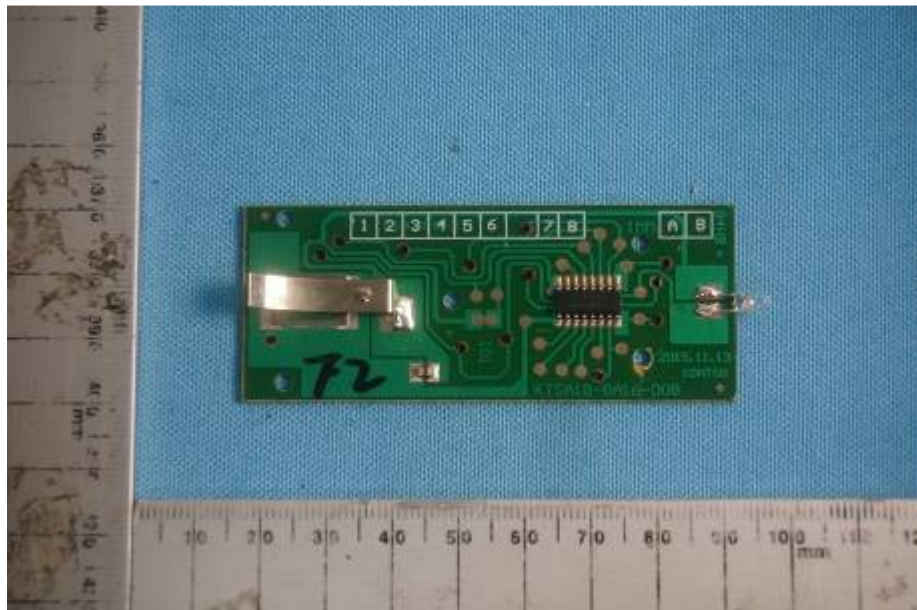




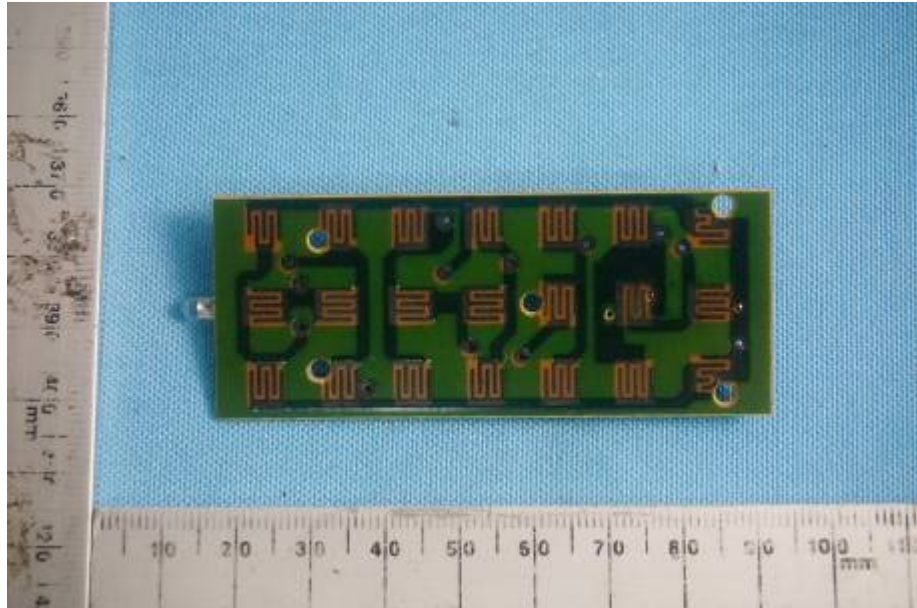


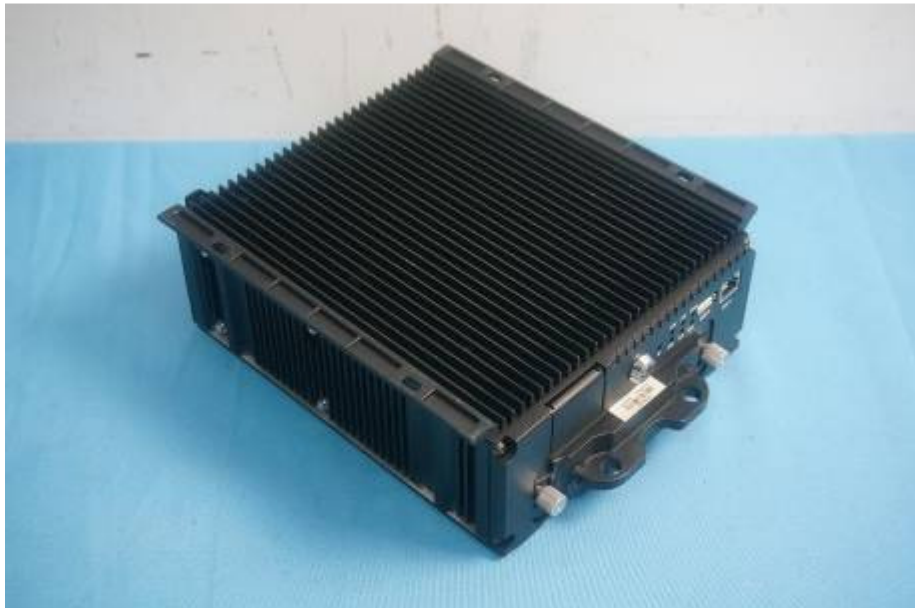








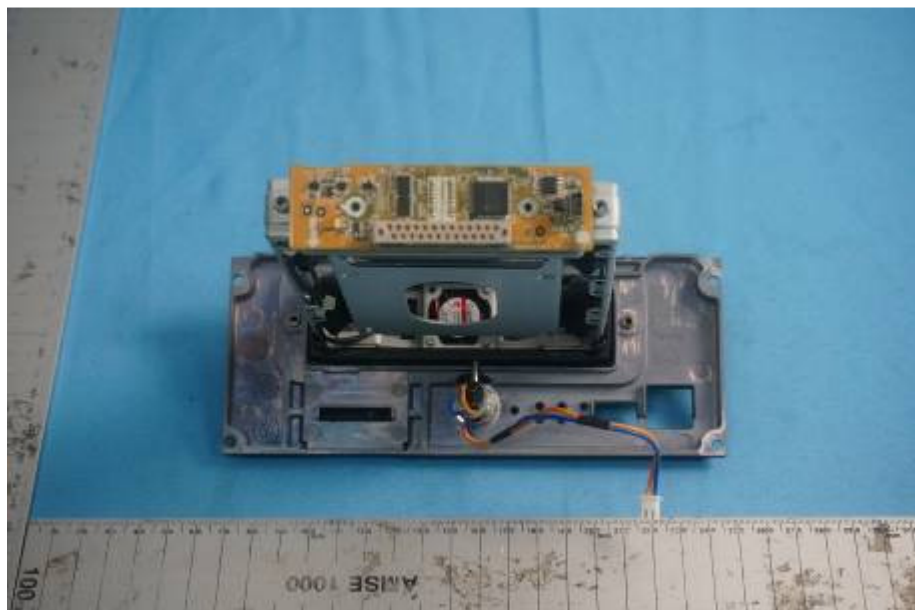
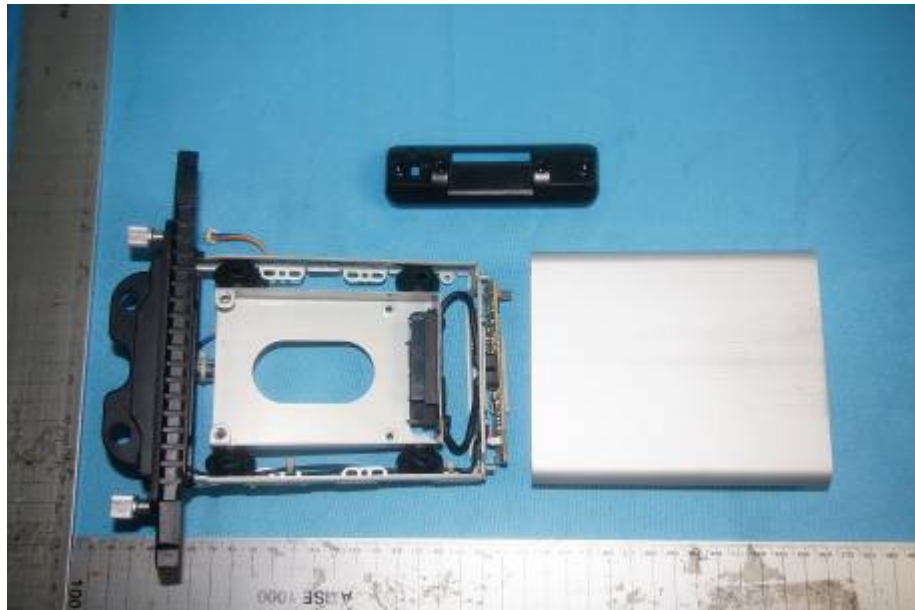


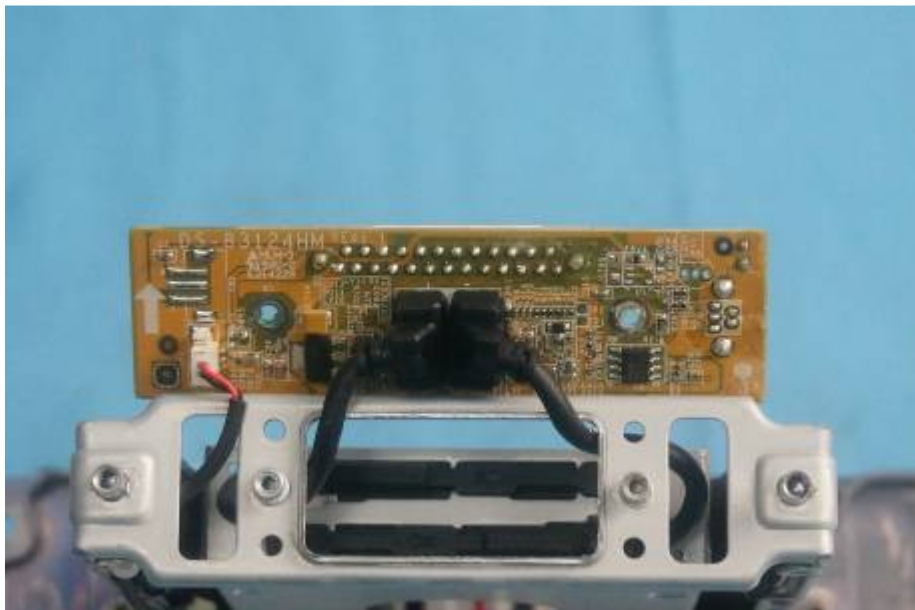
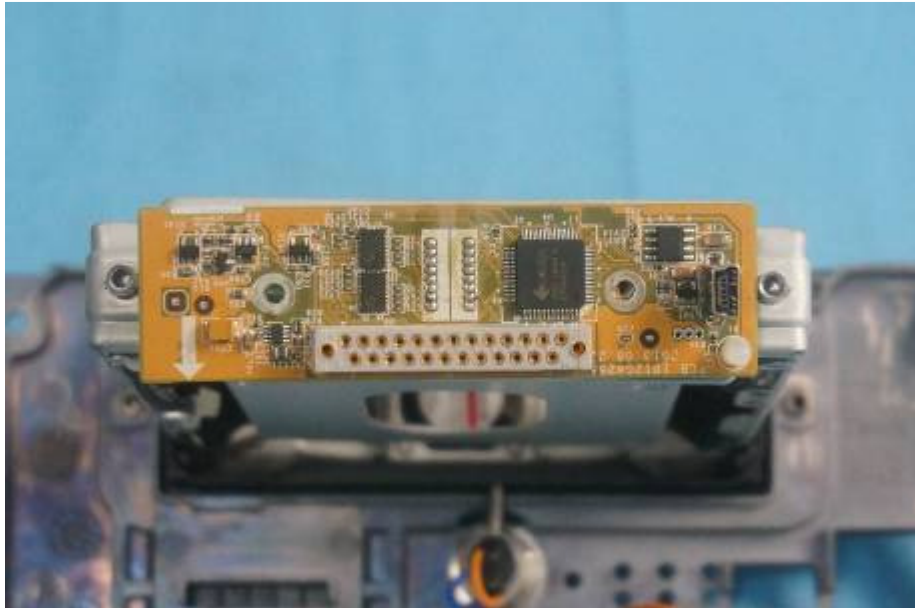


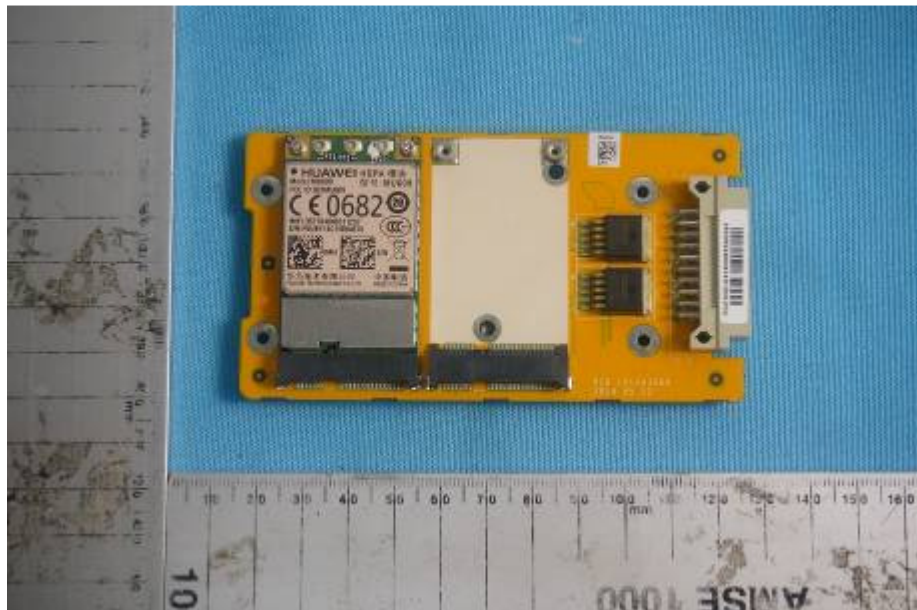




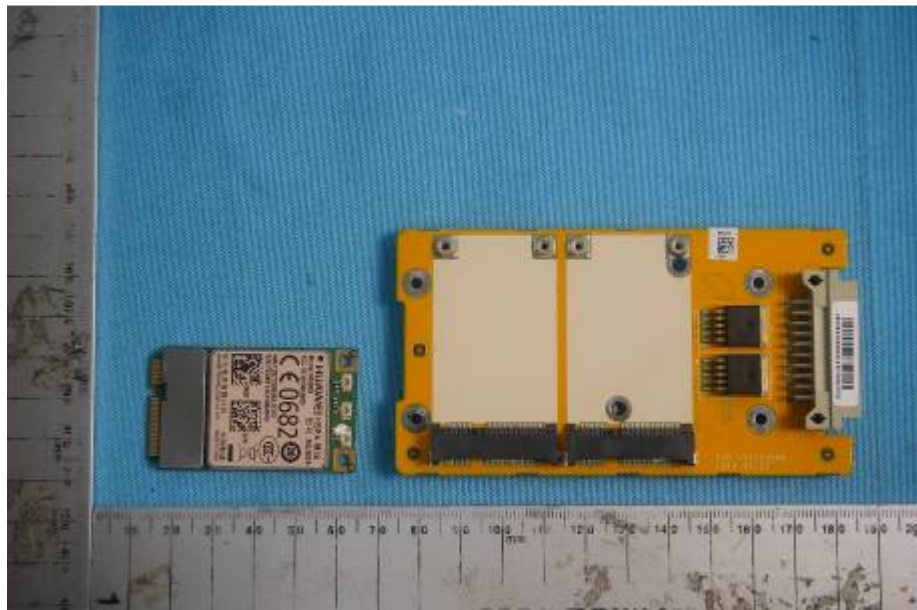
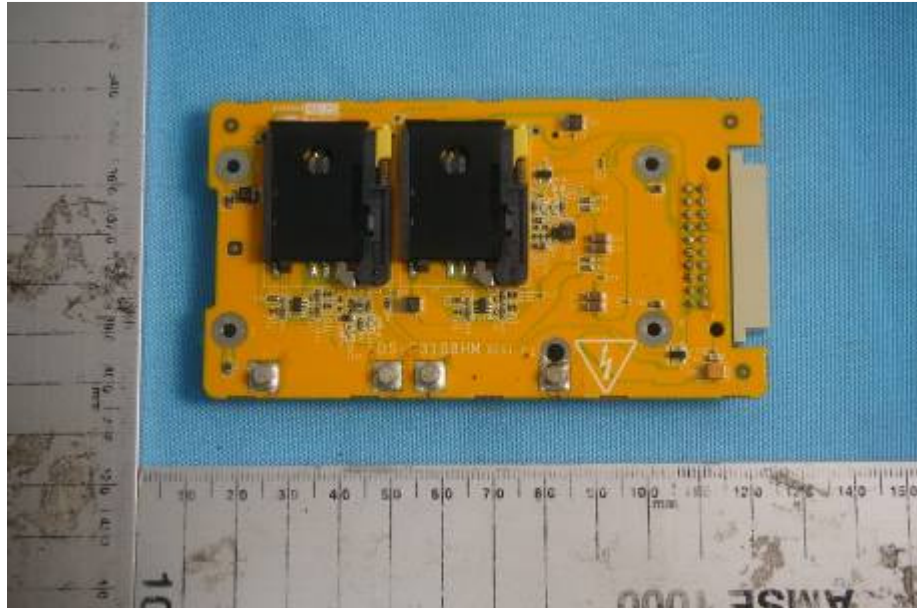


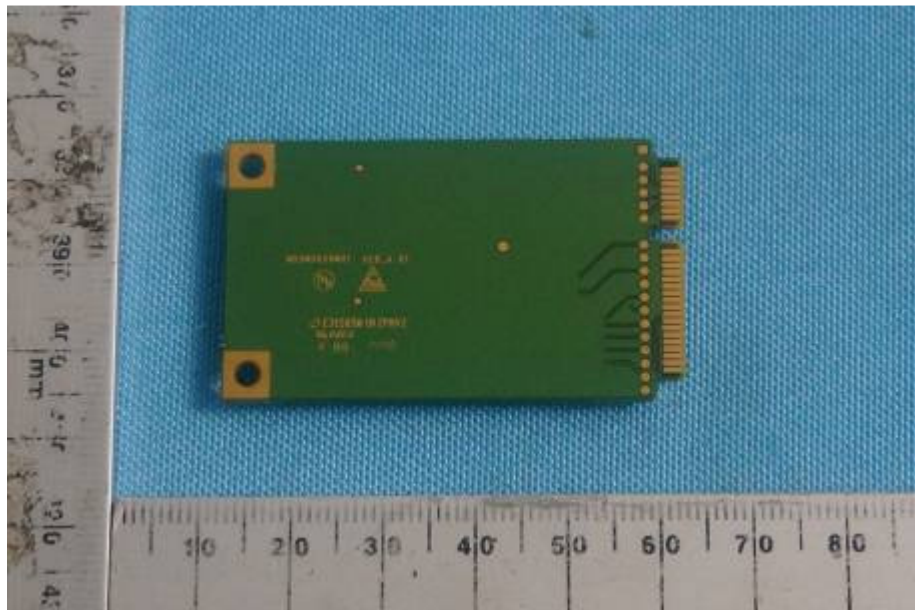
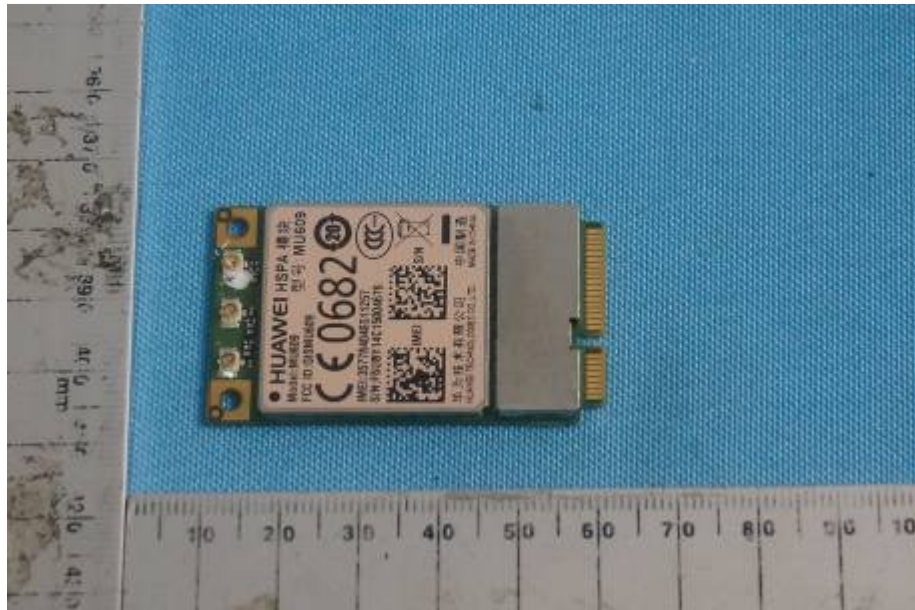


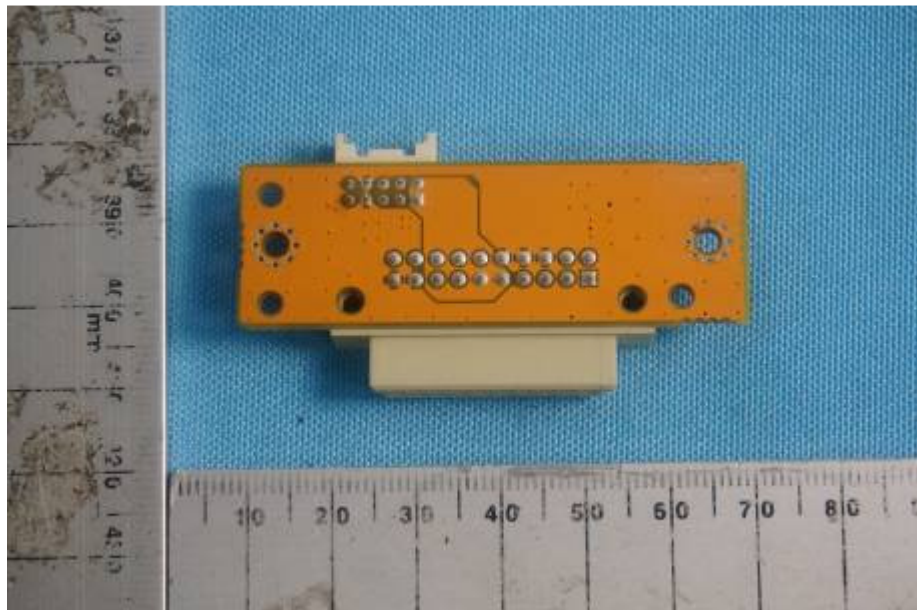
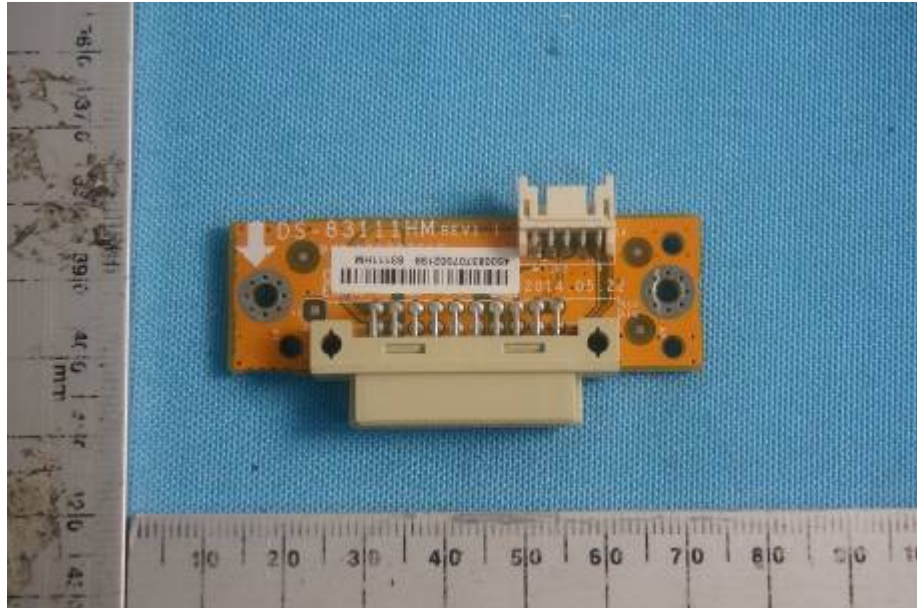










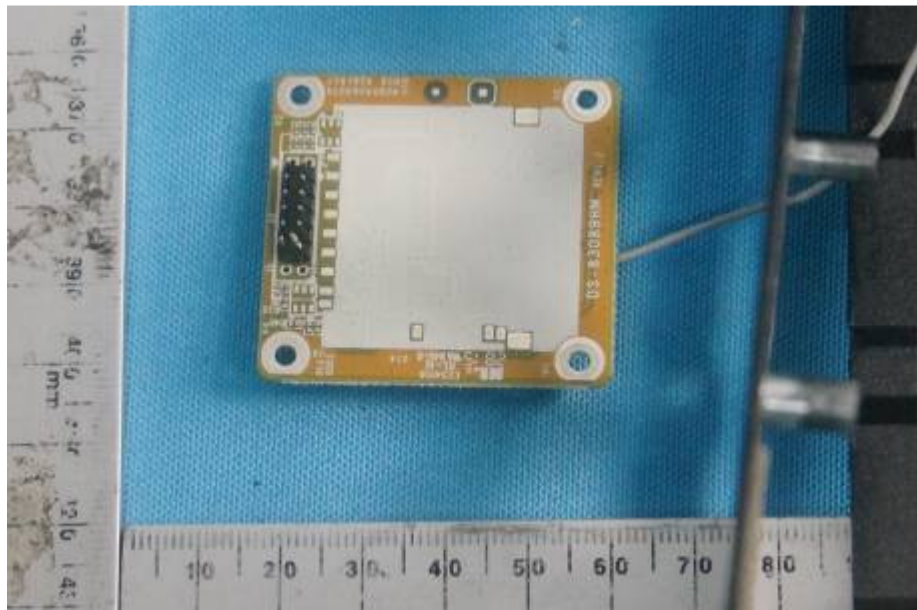
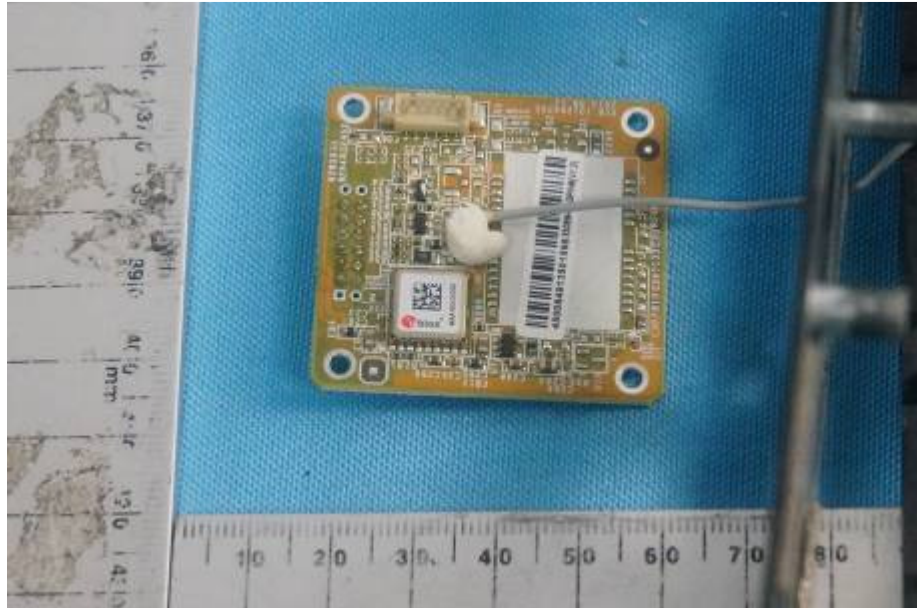












--End of the Report--