

TEST REPORT

This laboratory is accredited by Voluntary Control Council for Interference and National Voluntary Laboratory Accreditation Program.

The tests reported herein have been performed in accordance with its terms of accreditation.

Test Report No. : LR500172302AQ
Issue Date : February 22, 2023
Applied Standard : VCCI RULES AND REGULATIONS OF CLASS A
(V-3 / 2015.04 Normative ANNEX 1:Technical Requirements)
Applicant Name : Hanwha Vision Co., Ltd
Product Name : NETWORK CAMERA
Model Name : XNB-6005N
Brand : -
Serial Number : -

This test result only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory. 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.



NVLAP LAB CODE 200723-0

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★★★★★★★★★★★★

LTA Certification

Client / Manufacturer

Company name : Hanwha Vision Co., Ltd
Address : 6, Pangyo-ro 319 Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488,
: KOREA
Telephone / Facsimile : +82-70-7147-8361

Factory #1

Company name : HANWHA VISION VIETNAM COMPANY LIMITED
Address : Lot O-2, Que Vo Industrial Zone extended area ,Nam Son commune, Bac Ninh
city,Bac Ninh province, Vietnam

Factory #2

Company name : D-TECH CO.,LTD.
Address : 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea
(Suwon Industrial Complex)

Equipment Under Test (EUT)

Trade name : -
Product name : NETWORK CAMERA
Model name : XNB-6005N
Variant model name : -
Serial number : -
Intended environment : Residential area
Date of receipt : June 21, 2017
EUT condition : Pre-production, not damaged
AC IN, DC IN, Video, Micro USB, Audio IN, Audio OUT, ALARM, GND, RS-
Interface Ports : 485, Micro SD Slot, Network
Power Source : DC 12 V, AC 24 V
Crystal/Oscillator(s) : -
Firmware version : XXXX

Model Description

- None

Test Performed

Test started & completed : June 28-July 03, 2017
Location : LTA Co., Ltd.

*** To be continued next page ***

Test Specification

Purpose of the test : Compliance test to the following standard
VCCI RULES AND REGULATIONS OF CLASS A
Applied standard : (V-3 / 2015.04 Normative ANNEX 1:Technical Requirements)

Test Results

Measurement	Results*	Test method
Radiated disturbance	Complies	V-3/2015.04
Radiated disturbance at above 1 GHz	Complies	V-3/2015.04
Conducted disturbance	Complies	V-3/2015.04
Conducted disturbances at telecommunication ports	Not Applicable	V-3/2015.04

* : The compliance statement is based on nominal value only.

Laboratory's Certificate

Report number : LR500172302AQ
Issue date : February 22, 2023

This test report is issued under the authority of:

The test was supervised by:



Young Kyu Shin, Technical Manager



Jong chae Kim, Test Engineer

General information's

Purpose

This document is based on the Electromagnetic Interference (EMI) tests performed on the “XNB-6005N”.

The measurements were performed according to the measurement procedure described in VCCI RULES AND REGULATIONS OF CLASS A V-3 / 2015.04 Normative ANNEX 1:Technical Requirements)

Test Performed

Company name : LTA Co., Ltd.
 Address : 243, Jubug-ri, Yangji-Myeon, Cheoin-gu, Youngin-Si, Kyunggi-Do, Korea. 449-822
 Telephone / Facsimile : +82-31-323-6008 / +82-31-323-6010

Measurement uncertainty

Radiated disturbance (30 – 1 000 MHz) : +4.52 [dB] , -4.43 [dB] (k=2)
 Radiated disturbance at above 1 GHz (1 GHz – 6 GHz) : +3.0 [dB] , -3.0 [dB] (k=2)
 Conducted disturbance (0.15 – 30 MHz) : +0.11 [dB] , -0.11 [dB] (k=2)
 Conducted disturbances at telecommunication ports (0.15 – 30 MHz) : +0.11 [dB] , -0.11 [dB] (k=2)

The coverage factor k=2 yields approx. a 95% level of confidence for near-normal distribution typical of most measurement results.

Accredited agencies

LTA Co., Ltd. Is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
NVLAP	U.S.A	200723-0	2017-09-30	ECT accredited Lab.
RRA	KOREA	KR0049	-	EMC accredited Lab.
FCC	U.S.A	649054	2019-04-13	FCC CAB
VCCI	JAPAN	R-2133(10 m), C-2307	2017-06-21	VCCI registration
VCCI	JAPAN	T-2009	2017-12-23	VCCI registration
VCCI	JAPAN	G-847	2018-12-13	VCCI registration
IC	CANADA	5799A-1	2019-11-07	IC filing

Brief Information

1-1 Test Summary

Parameter	Applied Standard	Status (note 1)
I. Emission		
Radiated disturbance	V-3/2015.04	C
Radiated disturbance at above 1 GHz	V-3/2015.04	C
Conducted disturbance	V-3/2015.04	C
Conducted disturbances at telecommunication ports	V-3/2015.04	NA
Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable * The data in this test report are traceable to the national or international standards.		

Frequency range to be scanned:

0.15 MHz - 30 MHz as conducted measurement

30 MHz – 1 000 MHz (1 GHz) as radiated measurement

1 000 MHz(1 GHz)-6 000 MHz (6 GHz) as radiated measurement

Bandwidth:

Measured by the CISPR quasi-peak function Bandwidth is 10 kHz in the frequency 0.15 MHz to 30 MHz, 120 kHz in the frequency 30 MHz to 1,000 MHz and 1 MHz in the frequency 1 GHz to 6 GHz.

A sample calculation:

COR. F (correction factor)= Antenna factor + Cable loss- Amp.gain- Distance correction

Emission Level= meter reading + COR.F

1-2 Operating Mode of the EUT

The tests have been conducted with the following operational mode(s) of the EUT.

Name of mode in the report Description

Recording (AC, DC, PoE) mode : -

1-3 Modification

- None

1-4 List of EUT and accessory

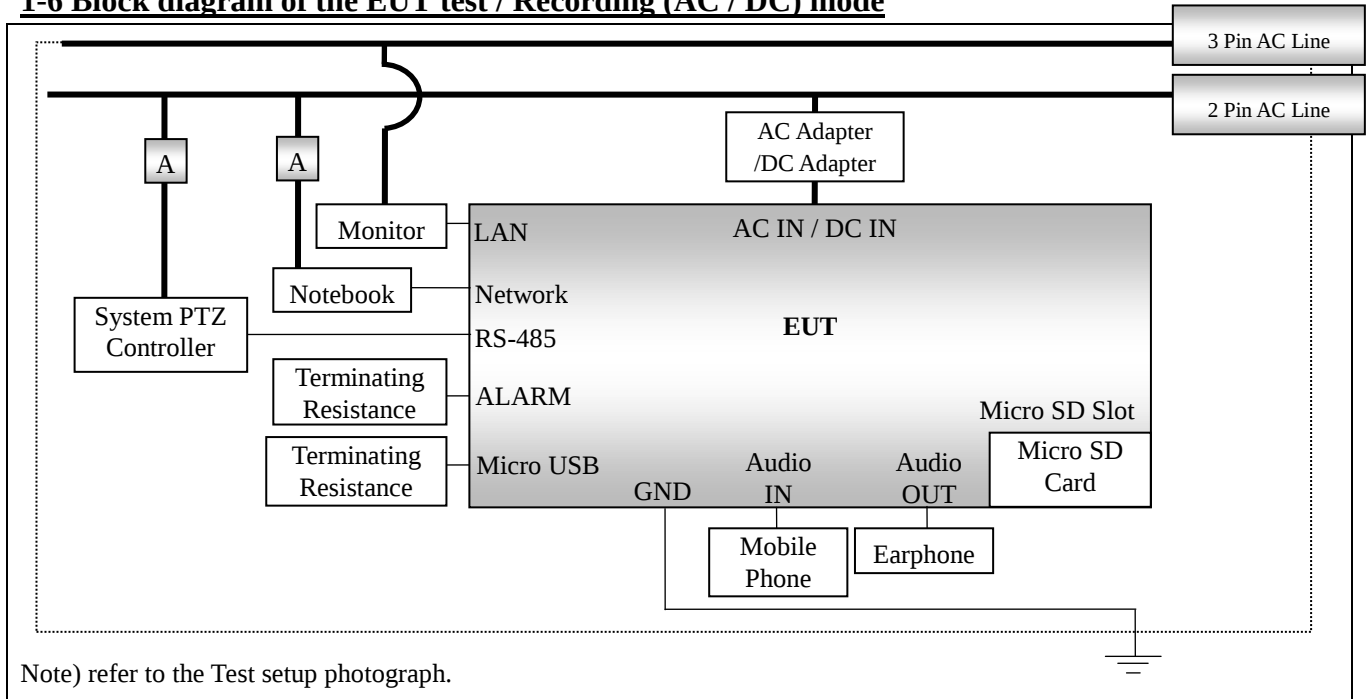
EUT				
Category	Model Name	Serial No.	Manufacturer	Remarks
NETWORK CAMERA	XNB-6005N	N/A	Hanwha Vision Co., Ltd	-
ACCESSORY				
Category	Model Name	Serial No.	Manufacturer	Remarks
Notebook	P2416D	N/A	Dell	-
Monitor	SMC-150F	N/A	Samsung	-
Mobile Phone	SCH-E330S	N/A	Samsung	-
Earphone	N/A	N/A	N/A	-
Micro SD Card	N/A	N/A	N/A	-
System PTZ controller	CNB-SC3100	N/A	N/A	-
AC Adapter	DLA24300SKA	N/A	Samsung	AC mode
DC Adapter	P24120200EK	N/A	N/A	DC mode
PoE Injector	PSE305	N/A	N/A	PoE mode

1-5 Cable List

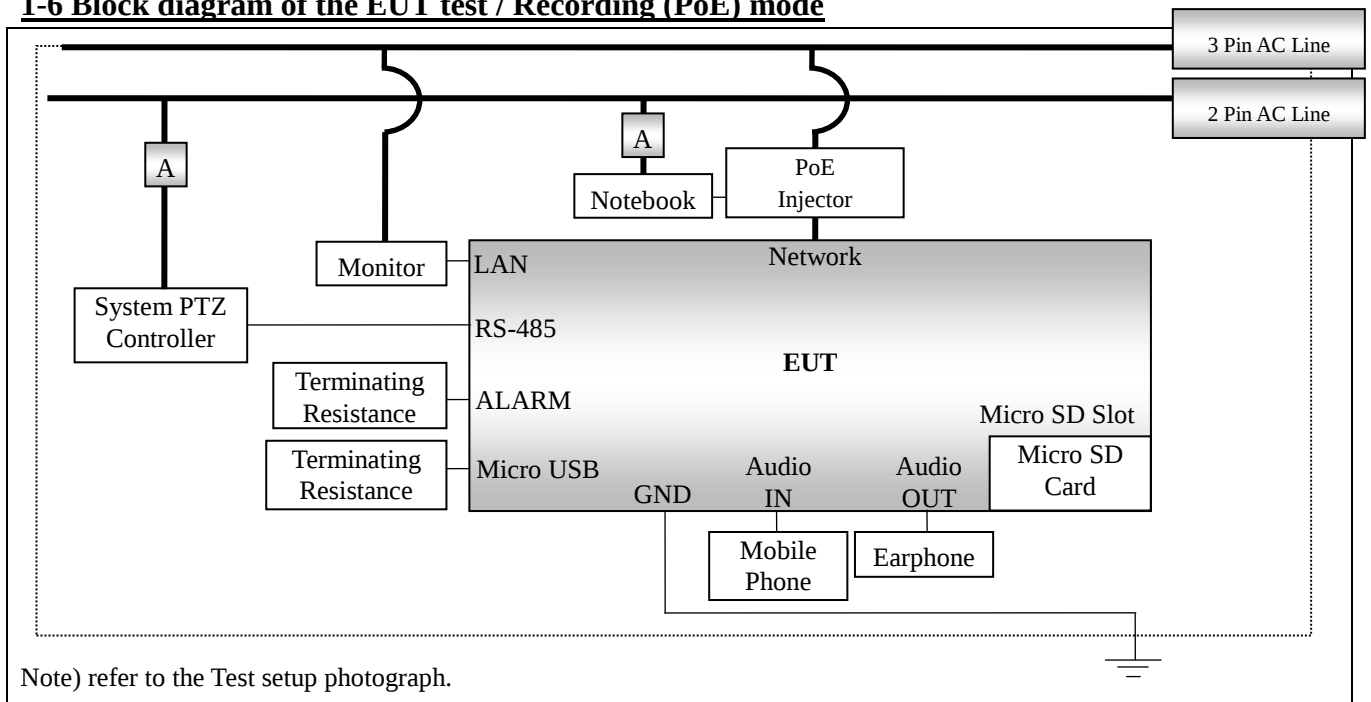
Cable List (Recording (AC) mode)				
Cable Type	Length (m)	Shielding (Cable/backshell)	Remarks	
			From	to
Monitor	1.8	NO/NO	Video	Video IN
Terminating Resistance	-	-	Micro USB	-
Mobile Phone	1.2	NO/NO	Audio IN	AUX
Earphone	1.2	NO/NO	Audio OUT	AUX
Terminating Resistance	-	-	ALARM	-
GROUND	1.0	NO/NO	GND	-
System PTZ Controller	1.0	NO/NO	RS-485	RS-485
Micro SD Card	-	-	Micro SD Slot	-
AC Adapter	1.3	NO/NO	AC IN	AC OUT
Notebook	3.0	NO/NO	Network	LAN

Cable List (Recording (DC) mode)				
Type	Length (m)	Shielding (Cable/backshell)	Remarks	
			From	to
Monitor	1.8	NO/NO	Video	Video IN
Terminating Resistance	-	-	Micro USB	-
Mobile Phone	1.2	NO/NO	Audio IN	AUX
Earphone	1.2	NO/NO	Audio OUT	AUX
Terminating Resistance	-	-	ALARM	-
GROUND	1.0	NO/NO	GND	-
System PTZ Controller	1.0	NO/NO	RS-485	RS-485
Micro SD Card	-	-	Micro SD Slot	-
DC Adapter	1.3	NO/NO	DC IN	DC OUT
Notebook	3.0	NO/NO	Network	LAN
Cable List (Recording (PoE) mode)				
Type	Length (m)	Shielding (Cable/backshell)	Remarks	
			From	to
Monitor	1.8	NO/NO	Video	Video IN
Terminating Resistance	-	-	Micro USB	-
Mobile Phone	1.2	NO/NO	Audio IN	AUX
Earphone	1.2	NO/NO	Audio OUT	AUX
Terminating Resistance	-	-	ALARM	-
GROUND	1.0	NO/NO	GND	-
System PTZ Controller	1.0	NO/NO	RS-485	RS-485
Micro SD Card	-	-	Micro SD Slot	-
PoE Injector	3.0	NO/NO	Network	OUT

1-6 Block diagram of the EUT test / Recording (AC / DC) mode



1-6 Block diagram of the EUT test / Recording (PoE) mode

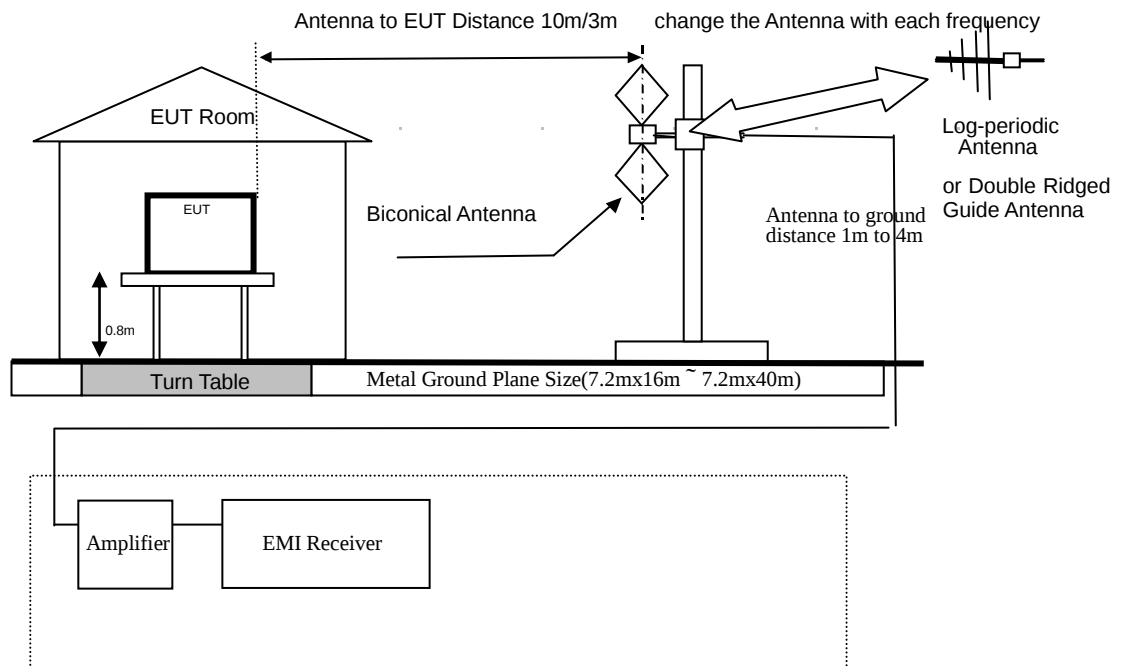


2- Test Site Description

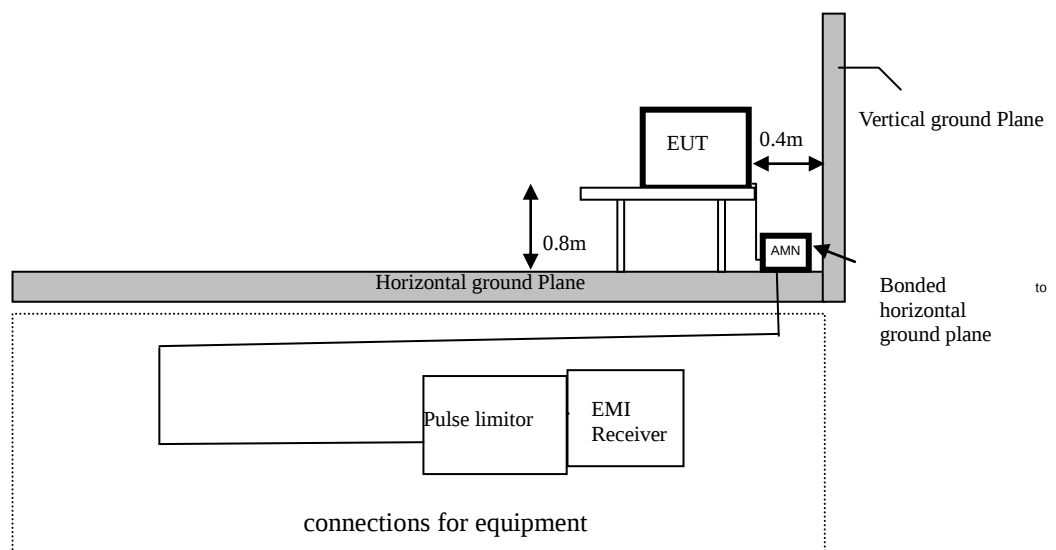
1-Facility

All the testing facilities are periodically serviced as a daily check for equipment and cables systems, an every 6 months facility check for the facilities and a monthly check and annual calibration for testing equipment according to ISO/IEC 17025. All the testing facilities are used as the same specifications shown below. There are descriptions both for radiated disturbance measurement and conducted disturbance measurement conformed by VCCI RULES AND REGULATIONS OF CLASS B (V-3 / 2015.04 Normative ANNEX1:Technical Requirements) telecommunication ports CONDUCTED EMISSIONS TESTING

2-1 Radiated Disturbance Measurement



2-2 Conducted Disturbance Measurement



2-3 Conducted Disturbances at telecommunication ports

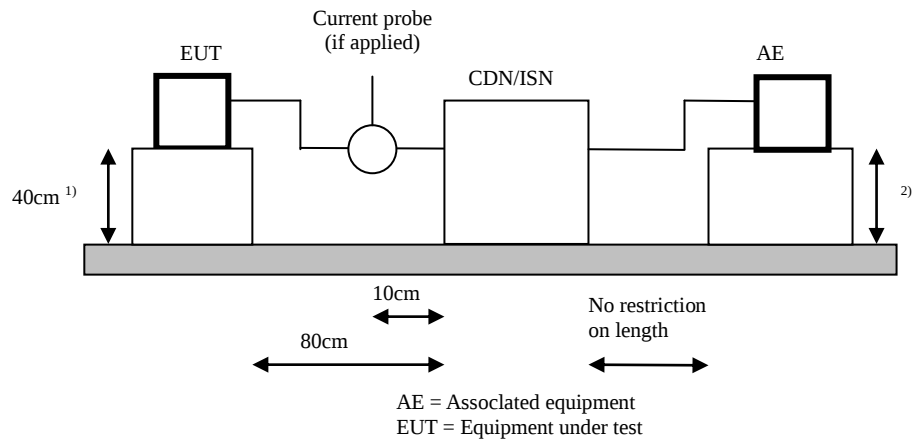
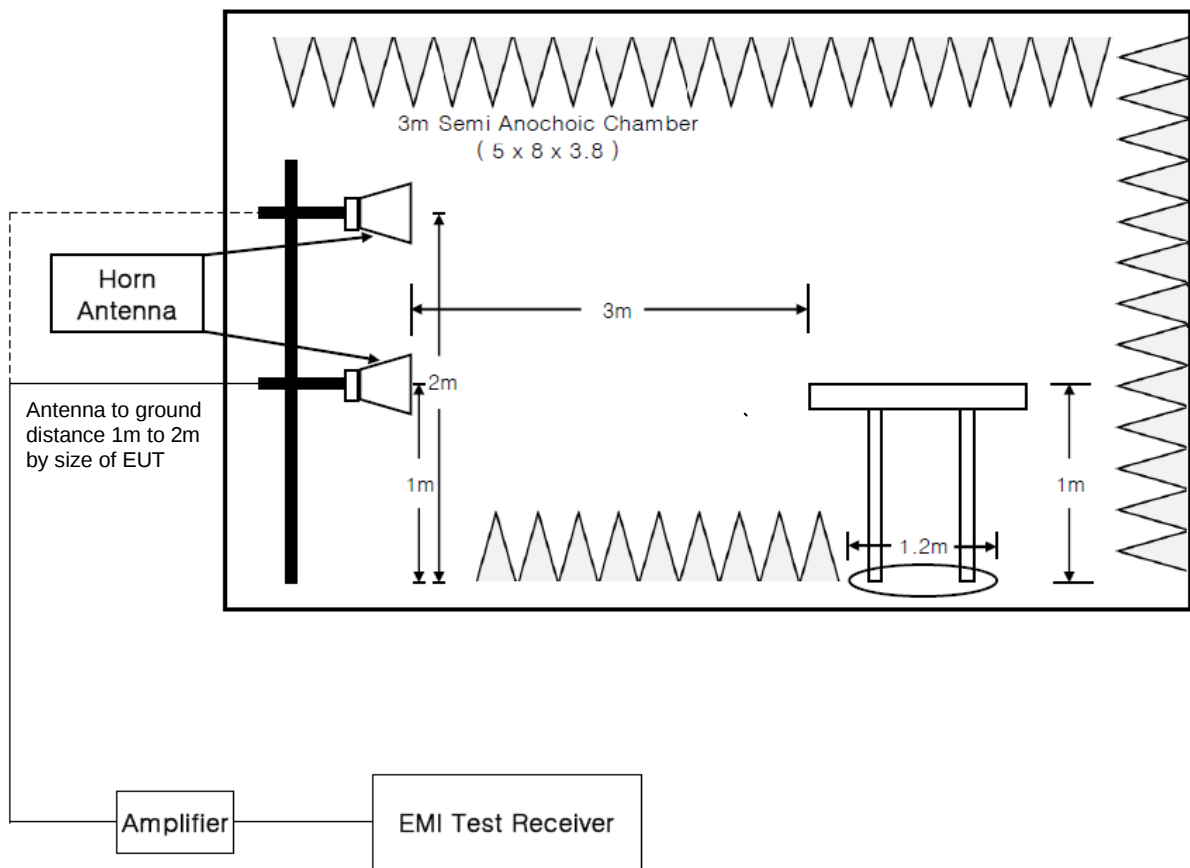


Diagram 3 : Telecom Port Conducted Emissions Test Setup

2-4 Radiated Disturbance at above 1 GHz



3- Test Procedure

3-1 Radiated Disturbance Measurements

- Test site is met the requirements of VCCI RULES AND REGULATIONS OF CLASS A (V-3 / 2015.04 Normative ANNEX1:Technical Requirements) and the distance between the EUT and the antenna is adjusted 3 m or 10m.
- The turntable can be rotated 360 degrees.
- The antenna can be adjusted between 1m and 4m in height above the ground.
- The EUT is placed on the non-conducting table with 0.8m height on the turntable.
- Measurements are carried out using a spectrum analyzer with peak detectors (100kHz bandwidth) and an EMI receiver with quasi-peak detectors(120 kHz bandwidth).
- Refer to the list of test equipment used for the test.
- Biconical antenna and logperiodic antenna are used as wideband antenna.
- The Biconical antenna is used in the frequency range of 30 MHz to 300 MHz and the Logperiodic antenna is used in the frequency range of 300 MHz to 1 GHz.
- A variable attenuator is used for verifying amplifier's linearity.
- Rotating the turntable and adjusting the height of the antenna are carried out by control buttons on the console.
- Refer to "Brief Information"(page 6-9) about details of the EUT and configuration of the cables.

- Measurement is carried out by a LTA operator as manual operation.
 - searching for some of High disturbance frequency points than the other points with the following settings; bandwidth 100 kHz, frequency range 10 MHz between 30 MHz and 300 MHz and frequency range 50 MHz between 300 MHz and 1 GHz.
 - searching the worst direction with the maximum level of the disturbance wave in rotating the turntable 360 degrees at each searched frequency point.
 - setting the height of the antenna with the maximum level of the disturbance wave from 1m to 4 m.
 - reading the disturbance level by the EMI receiver with quasi-peak detectors (120 kHz bandwidth) according to VCCI RULES AND REGULATIONS OF CLASS A (V-3 / 2015.04 Normative ANNEX1:Technical Requirements)
 - measuring to vertical and horizontal polarization.
 - calculating the measurement result with the following formula or equation:
(Measurement result= measured value + antenna factor + antenna cable loss)

3-2 Conducted Disturbance Measurements

- The measurement is carried out on an open site with horizontal and metallic ground plane.
- An AMN(Artificial Mains Network) with a nominal impedance ($50\ \Omega/50\ \mu\text{H}$) as defined in VCCI RULES AND REGULATIONS OF CLASS A (V-3 / 2015.04 Normative ANNEX1:Technical Requirements). shall be utilized.
- The AMN is grounded on a horizontal metal ground plane.
- Measurement is carried out using a spectrum analyzer with peak detectors (10kHz bandwidth) and an EMI receiver with quasi-peak detectors and average detector. (Refer to the List of test equipment used for the test.)
- The shortest distance between the EUT and the AMN is 0.8 m.
- The EUT is placed on the non-conducting table with 0.8 m height.
- A remote switch is used for changing phases between Line (L) and Neutral (N).
- Refer to "Brief Information"(page 6-9) about details of the EUT and configuration of the cables.

- Measurement is carried out as manual operation.
 - detecting the maximized emission level using the maxhold function after setting the spectrum analyzer bandwidth 1MHz and the frequency range from 150 kHz to 1 MHz , 1 MHz to 5 MHz and 5 MHz to 30 MHz.
 - searching the maximum frequency point of the disturbance wave in each frequency range.
 - reading the disturbance level of quasi-peak, average and Line (L) and Neutral (N) in 10 kHz bandwidth by the EMI receiver.
 - calculating the measurement result with the following formula or equation.
(Result = Reading + Cor.F.)
(Margin = Limit- Result)

3-3 Conducted Disturbances at telecommunication ports Measurements

- In the range of 0.15 MHz to 30 MHz, the conducted disturbance was measured and set-up was made accordance with VCCI V-3/2015.04, CLASS A ITE.
- The EUT is placed on a non-conducting table, which is: 0.8 meters above an earth-grounded floor; 0.4 meters away from a vertical ground plane (i.e. the chamber wall); and 0.8 meter away from all other metal objects. For
 - cables where there is no appropriate CDN / ISN available, measurement was done using a combination of current probe and capacitive voltage probe.
- Measure current with a current probe.
- Measure voltage with a capacitive probe
- Compare the measured voltage with the voltage limit.
- Compare the measured current with the current limit.
- The EUT shall meet both the voltage and current limits.

3-4 Radiated Disturbance at above 1 GHz

• Test site is met the requirements of VCCI V-3/2015.04 and the distance between the EUT and the antenna is adjusted 3 m.

- The turntable can be rotated 360 degrees.
- The antenna can be adjusted between 1m in height above the ground.
- The EUT is placed on the non-conducting table with 1m height on the turntable.
- Measurements are carried out using a EMI test receiver with peak detectors (1 MHz bandwidth) and an EMI receiver with peak and average detectors(1 MHz bandwidth).
- Refer to the list of test equipment used for the test.
- HORN antenna are used as wideband antenna.
- The HORN antenna is used in the frequency range of 1 GHz to 18 GHz.
- A variable attenuator is used for verifying amplifier's linearity.
- Rotating the turntable and adjusting the height of the antenna are carried out by control buttons on the console.
- Refer to "Brief Information"(page 6-9) about details of the EUT and configuration of the cables.
- Measurement is carried out by a LTA operator as manual operation.
 - searching the worst direction with the maximum level of the disturbance wave in rotating the turntable 360 degrees at each searched frequency point.
 - setting the height of the antenna with the maximum level of the disturbance wave from 1m
 - reading the disturbance level by the EMI receiver with peak and average detectors (1 MHz bandwidth) according to ANSI C 63.4:2003.
 - measuring to vertical and horizontal polarization.
 - calculating the measurement result with the following formula or equation:
(Measurement result= measured value + antenna factor + antenna cable loss)

4- List of Equipment Used For the Tests

	Description	Model No.	Serial No.	Manufacturer	Interval	LAST Cal.
1	EMI TEST Receiver	ESR	101499	Rohde & Schwarz	1 year	Jul-16
2	Pulse Limiter	ESH3-Z2	100710	Rohde & Schwarz	1 year	Mar-17
3	DIGITAL THERMO HYGROMETER	TH-611	NONE	BODYCOM	1 year	Sep-16
4	DTV Signal Generator	MFG-100	15M2002	MFLO	1 year	Mar-17
5	Color TV Pattern Generator	PM-5518-TX	LO5333	Philips	-	-
6	LISN	ESH3-Z6	100378	Rohde & Schwarz	1 year	Sep-16
7	LISN(main)	ESH3-Z5	893045/017	Rohde & Schwarz	1 year	Mar-17
8	LISN(sub)	ENV216	100408	Rohde & Schwarz	1 year	Sep-16
9	ISN	ISN T800	27109	TESEQ	1 year	Jan-17
10	ISN	ENY81-CA6	101565	Rohde & Schwarz	1 year	Jan-17
11	CURRENT PROBE	EZ-17	100508	Rohde & Schwarz	1 year	Jan-17
12	LISN	ESH3-Z6	100378	Rohde & Schwarz	1 year	Sep-16
13	EMI TEST Receiver	ESCI7	100772	Rohde & Schwarz	1 year	Sep-16
14	Amplifier (25 dB)	8447D	2944A07974	HP	1 year	Sep-16
15	DIGITAL THERMO HYGROMETER	TESTEK-303A	TAEGUANG	-	1 year	Mar-17
16	Log.-Per. Antenna	VULP 9118	9118 A 401	SCHWARZBECK	2 year	Apr-17
17	Biconical Antenna	VHA 9103	VHA 9103-2315	SCHWARZBECK	2 year	Apr-17
18	TRILOG Antenna	VULB9160	9160-3237	SCHWARZBECK	2 year	May-17
19	TRILOG Antenna	VULB9160	9160-3242	SCHWARZBECK	2 year	Jul-16
20	Amplifier (25 dB)	8449B	3008A00337	HP	1 year	Mar-17
21	Spectrum Analyzer (~ 26.5 GHz)	E4407B	MY45108946	Agilent	1 year	Mar-17
22	HORN ANTENNA	3115	114105	ETS	2 year	May-16
23	HORN ANTENNA	3115	114105	ETS	2 year	Jul-16
24	TRILOG Antenna	VULB9268	775	SCHWARZBECK	2 year	Mar-17
25	HORN ANTENNA	3115	000550005	ETS	2 year	May-17

5-1 Radiated Disturbance Measurements (Below 1GHz) / Recording (AC) mode _ V



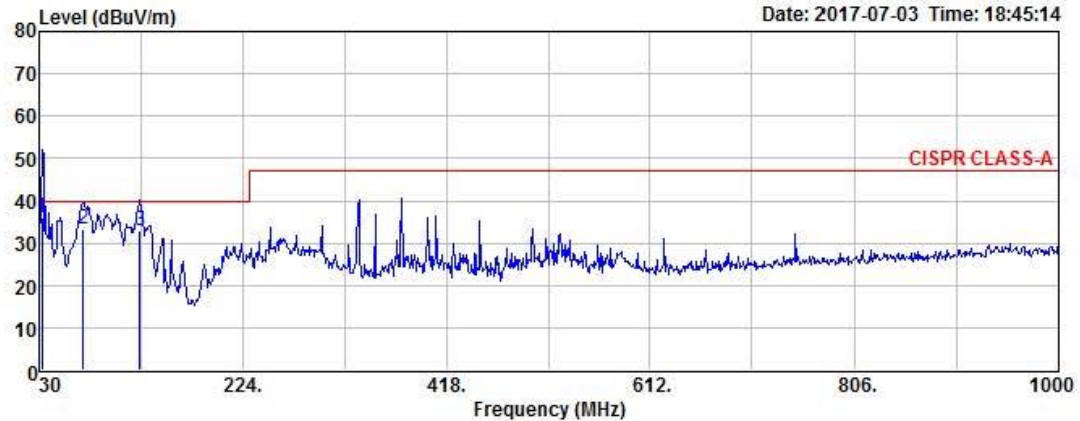
4, Songjuro 236Beon-gil, yanggi-myeon,
Yongin-si, Gyeonggi-do, Korea
Tel : +82-31-3236008,9
Fax : +82-31-3236010
www.ltalab.com

EUT/Model No.: XNB-6005* (*N:NT/P:PAL) Temp/Humi: 21 / 51
Test Mode : Recording mode Tested by: LEE H W

Data: 1136

File: C:\Program Files (x86)\e3\1706-1.EM6 (1138)

Date: 2017-07-03 Time: 18:45:14



Freq	Reading	C.F	Result	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	QP dBuV/m	dBuV/m	dB	cm	deg	
32.91	50.84	-14.90	35.94	40.00	4.06	198	245	VERTICAL
71.71	49.56	-16.14	33.42	40.00	6.58	152	236	VERTICAL
126.03	46.28	-13.20	33.08	40.00	6.92	117	138	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

-Continue

(Below 1GHz) / Recording (AC) mode _ H



4, Songjiuro 236Beon-gil, yanggi-myeon,
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Fax : +82-31-3236010
www.ltalab.com

EUT/Model No.: XNB-6005* (*N:NT/P:PAL)

Temp/Humi: 21 / 51

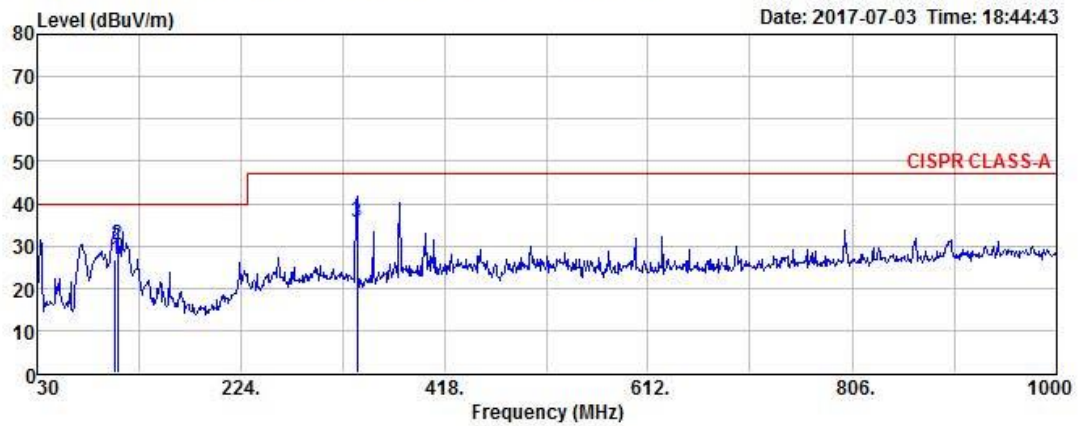
Test Mode : Recording mode

Tested by: LEE H W

Data: 1135

File: C:\Program Files (x86)\e3\1706-1.EM6 (1138)

Date: 2017-07-03 Time: 18:44:43



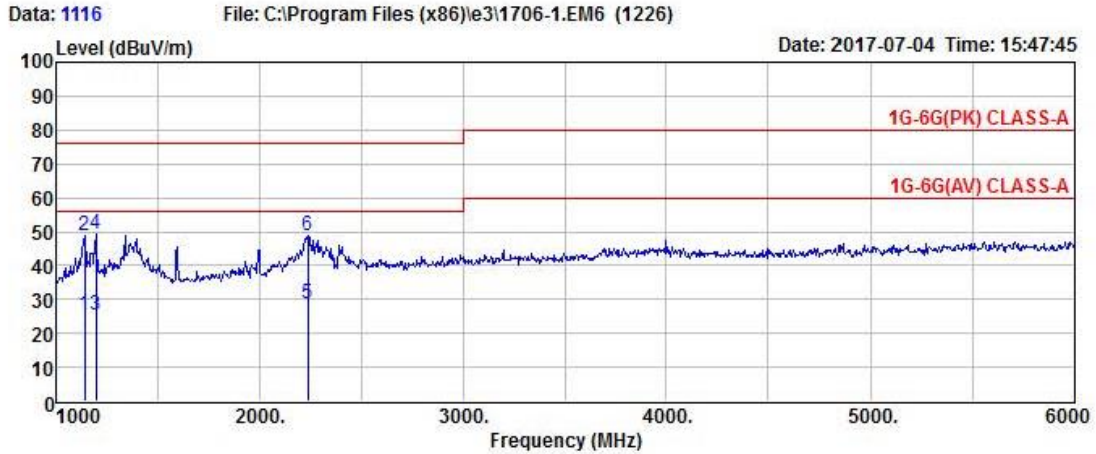
Freq	Reading	C.F	Result	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	QP dBuV/m	dBuV/m	dB	cm	deg	
104.69	42.02	-15.37	26.65	40.00	13.35	178	58	HORIZONTAL
106.63	45.19	-15.06	30.13	40.00	9.87	197	227	HORIZONTAL
334.58	45.50	-9.75	35.75	47.00	11.25	284	50	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

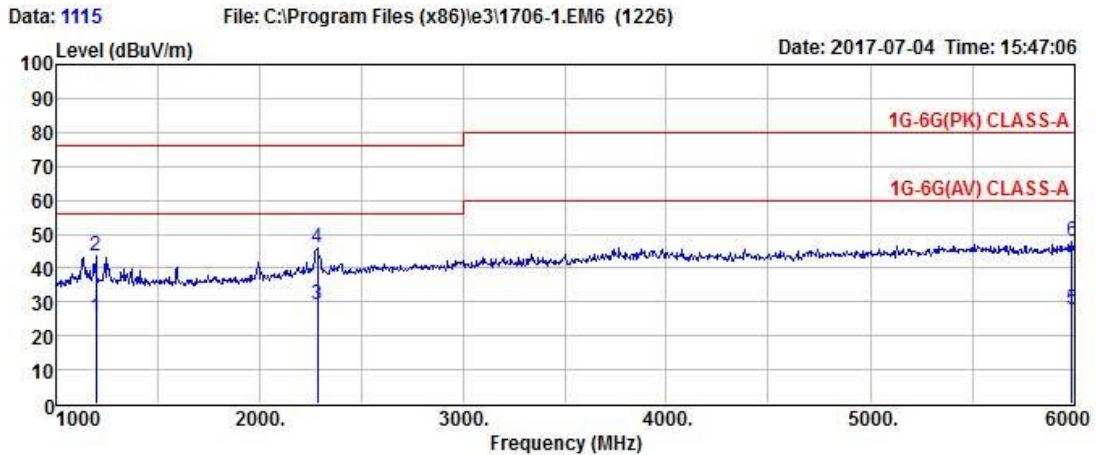
-Continue

(Ablow 1GHz) / Recording (AC) mode

EUT/Model No.: XNB-6005* (*N:NT/P:PAL) Temp/Humi: 21 / 51
Test Mode : Recording mode Tested by: LEE H W



EUT/Model No.: XNB-6005* (*N:NT/P:PAL) Temp/Humi: 21 / 51
Test Mode : Recording mode Tested by: LEE H W



Manufacture : Hanwha techwin Co., Ltd.

Model : XNB-6005

TEST mode : Recording mode

Test Date

2017/7/4

Temp.:
[°C]

Humidity:
[%]

Barometric
[mbar]

21

51

Freq.(MHz)	Reading(PK)	Reading(AV)	C.F	Result(PK)	Result(AV)	Limit(PK)	Limit(AV)	Margin(PK)	Margin(AV)	Height	Angle	Polarity
MHz	dBuV	dBuV	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	cm	deg	Hor/Ver
1195.0	53.4	35.0	-6.05	47.30	28.94	76.0	56.0	28.70	27.06	163	207	H
2285.0	48.7	32.1	0.65	49.32	32.72	76.0	56.0	26.68	23.28	182	55	H
5985.0	35.9	16.0	15.44	51.36	31.42	80.0	60.0	24.64	24.58	138	45	H
1140.0	58.4	35.1	-5.99	52.41	29.11	76.0	56.0	23.59	26.89	188	50	V
1195.0	58.8	34.7	-6.05	52.75	28.69	76.0	56.0	23.25	27.31	167	285	V
2240.0	52.0	32.0	0.29	52.24	32.26	76.0	56.0	23.76	23.74	241	155	V

TEST EQUIPMENT USED: 13, 20, 25

5-1 Radiated Disturbance Measurements (Below 1GHz) / Recording (DC) mode _ V



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www.ltalab.com

EUT/Model No. : XNB-6005* (*N:NT/P:PAL)

Temp/Humi: 21 / 51

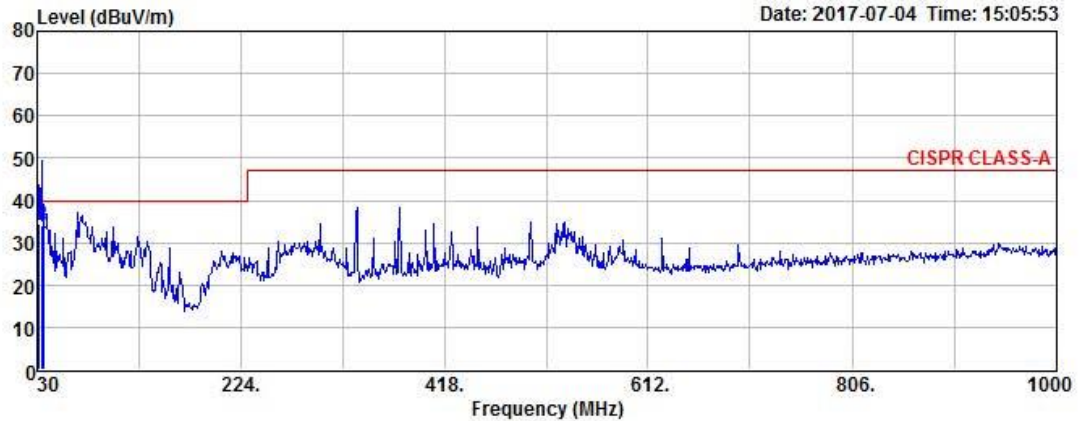
Test Mode : Recording mode

Tested by: LEE H W

Data: 1208

File: C:\Program Files (x86)\e3\1706-1.EM6 (1220)

Date: 2017-07-04 Time: 15:05:53



Freq	Reading	C.F	Result	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
31.94	49.62	-15.01	34.61	40.00	5.39	166	203	VERTICAL
33.88	49.03	-14.81	34.22	40.00	5.78	121	155	VERTICAL
35.82	48.54	-14.62	33.92	40.00	6.08	201	27	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

TEST EQUIPMENT USED: 13, 14, 15, 18

-Continue

(Below 1GHz) / Recording (DC) mode _ H



4, Songjuro 236Beon-gil, yanggi-myeon,
Yongin-si, Gyeonggi-do, Korea
Tel : +82-31-3236008,9
Fax : +82-31-3236010
www.ltalab.com

EUT/Model No. : XNB-6005* (*N:NT/P:PAL)

Temp/Humi: 21 / 51

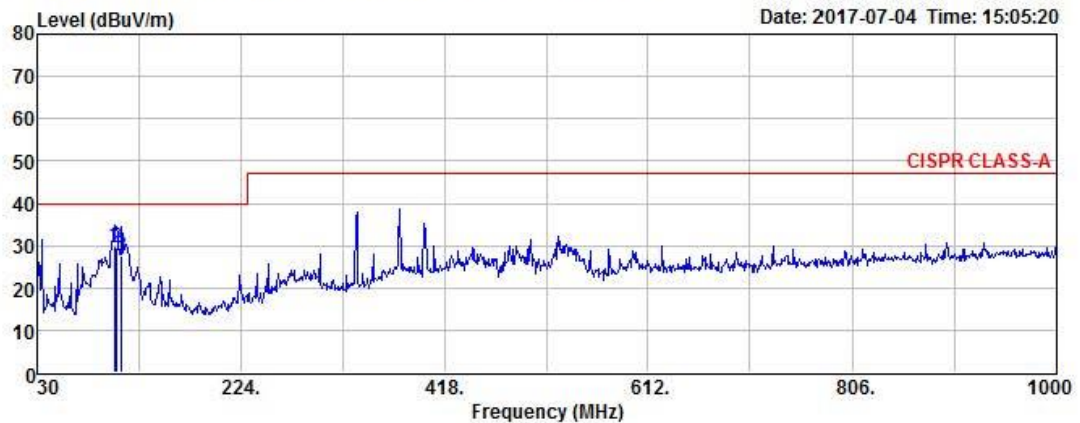
Test Mode : Recording mode

Tested by: LEE H W

Data: 1207

File: C:\Program Files (x86)\e3\1706-1.EM6 (1220)

Date: 2017-07-04 Time: 15:05:20



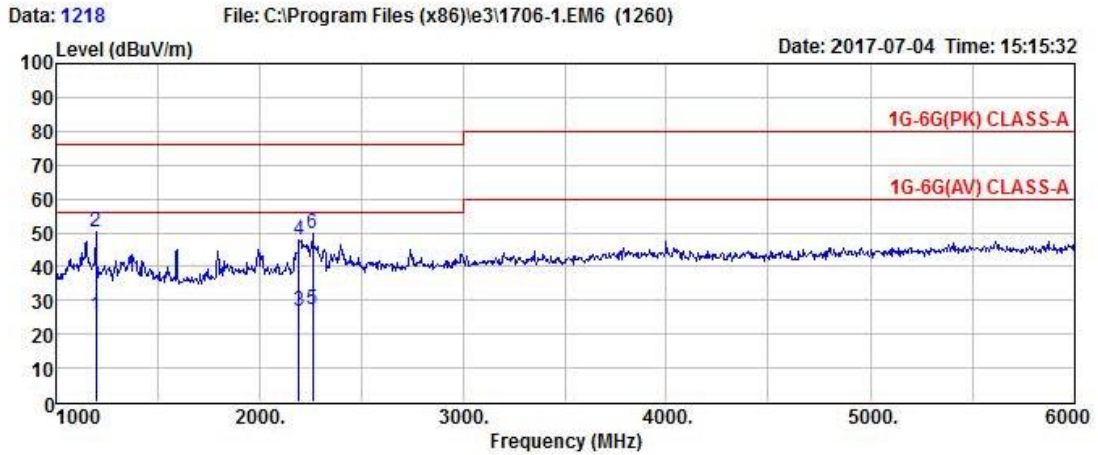
Freq	Reading	C.F	Result	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	QP dBuV/m	dBuV/m	dB	cm	deg	
103.72	45.45	-15.57	29.88	40.00	10.12	148	250	HORIZONTAL
105.66	44.57	-15.21	29.36	40.00	10.64	250	166	HORIZONTAL
110.51	42.12	-14.49	27.63	40.00	12.37	311	185	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

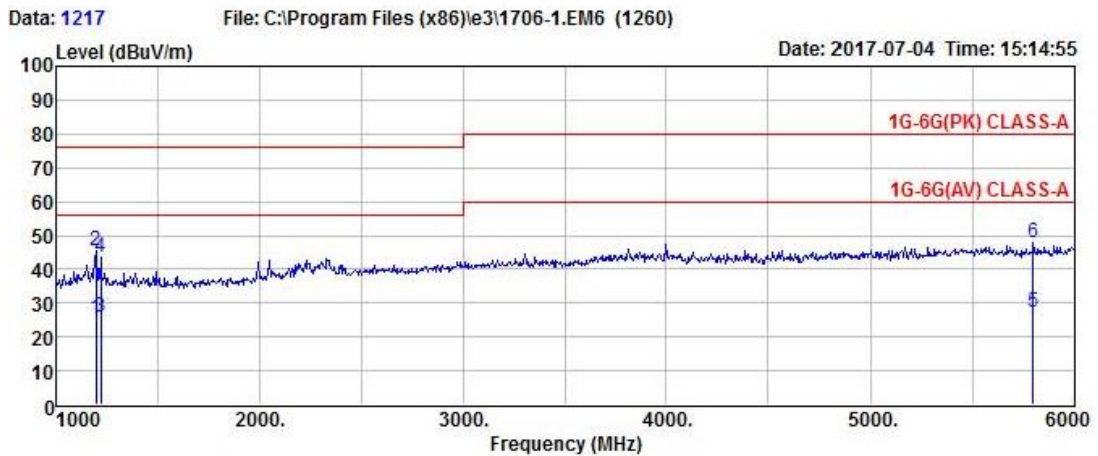
-Continue

(Ablow 1GHz) / Recording (DC) mode

EUT/Model No.: XNB-6005* (*N:NT/P:PAL) Temp/Humi: 21 / 51
Test Mode : Recording mode Tested by: LEE H W



EUT/Model No.: XNB-6005* (*N:NT/P:PAL) Temp/Humi: 21 / 51
Test Mode : Recording mode Tested by: LEE H W



Manufacture : Hanwha techwin Co., Ltd.

Model : XNB-6005* (*N:NT/P:PAL)

TEST mode : Recording mode

Test Date

2017/7/4

Temp.:
[°C]

Humidity:
[%]

Barometric
[mbar]

21

51

Freq.(MHz)	Reading(PK)	Reading(AV)	C.F	Result(PK)	Result(AV)	Limit(PK)	Limit(AV)	Margin(PK)	Margin(AV)	Height	Angle	Polarity
MHz	dBuV	dBuV	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	cm	deg	Hor/Ver
1195.0	54.8	35.1	-6.05	48.76	29.05	76.0	56.0	27.24	26.95	163	207	H
1220.0	53.1	35.0	-5.87	47.19	29.13	76.0	56.0	28.81	26.87	152	274	H
5795.0	36.9	16.2	14.67	51.56	30.82	80.0	60.0	24.44	25.18	214	56	H
1195.0	53.9	34.7	-6.05	53.89	28.69	76.0	56.0	22.11	27.31	196	60	V
2195.0	51.2	30.2	0.17	51.36	30.35	76.0	56.0	24.64	25.65	155	156	V
2260.0	52.7	30.4	0.42	53.09	30.78	76.0	56.0	22.91	25.22	217	180	V

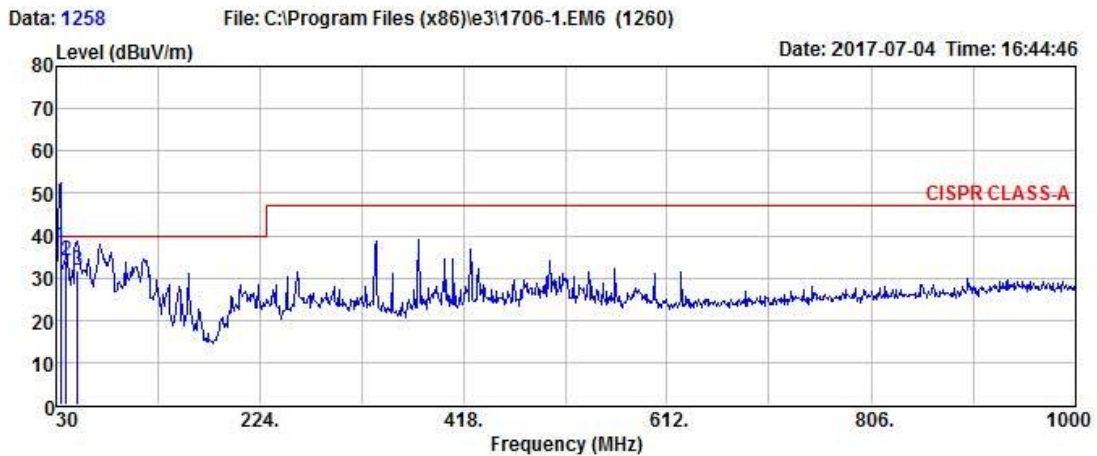
TEST EQUIPMENT USED: 13, 20, 25

5-1 Radiated Disturbance Measurements (Below 1GHz) / Recording (PoE) mode _ V



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EUT/Model No.: XNB-6005* (*N:NT/P:PAL) Temp/Humi: 21 / 51
Test Mode : Recording mode Tested by: LEE H W



Freq	Reading	C.F	Result	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	QP dBuV/m	dBuV/m	dB	cm	deg	
33.88	52.18	-14.81	37.37	40.00	2.63	293	34	VERTICAL
39.70	48.38	-14.24	34.14	40.00	5.86	117	245	VERTICAL
50.37	45.61	-13.81	31.80	40.00	8.20	116	307	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

-Continue

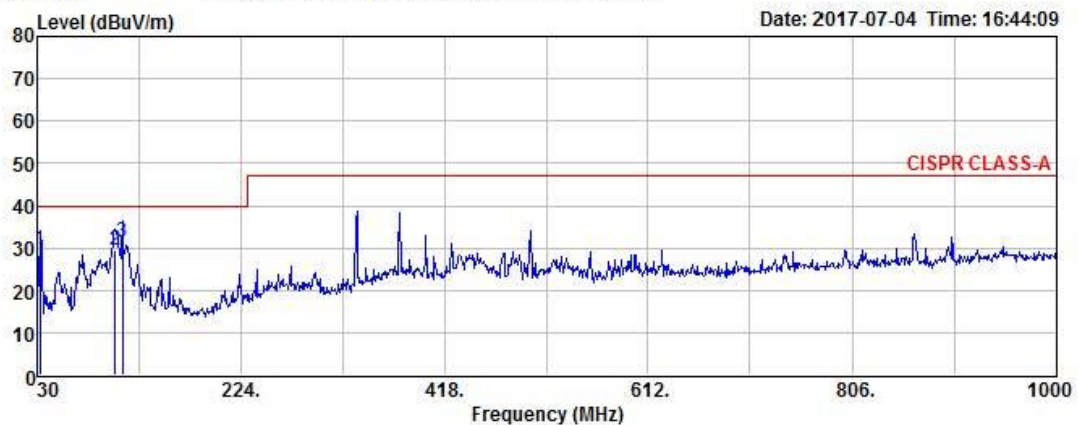
(Below 1GHz) / Recording (PoE) mode _ H



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EUT/Model No.: XNB-6005* (*N:NT/P:PAL) Temp/Humi: 21 / 51
Test Mode : Recording mode Tested by: LEE H W

Data: 1257 File: C:\Program Files (x86)\e3\1706-1.EM6 (1260)



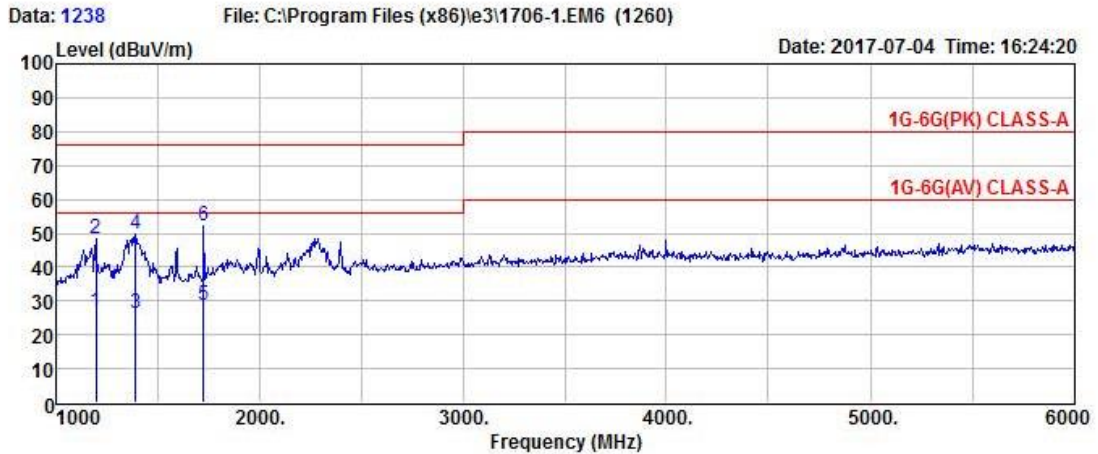
Freq	Reading	C.F	Result	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
32.91	44.38	-14.90	29.48	40.00	10.52	115	170	HORIZONTAL
104.69	44.83	-15.37	29.46	40.00	10.54	158	44	HORIZONTAL
111.48	45.71	-14.38	31.33	40.00	8.67	137	265	HORIZONTAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

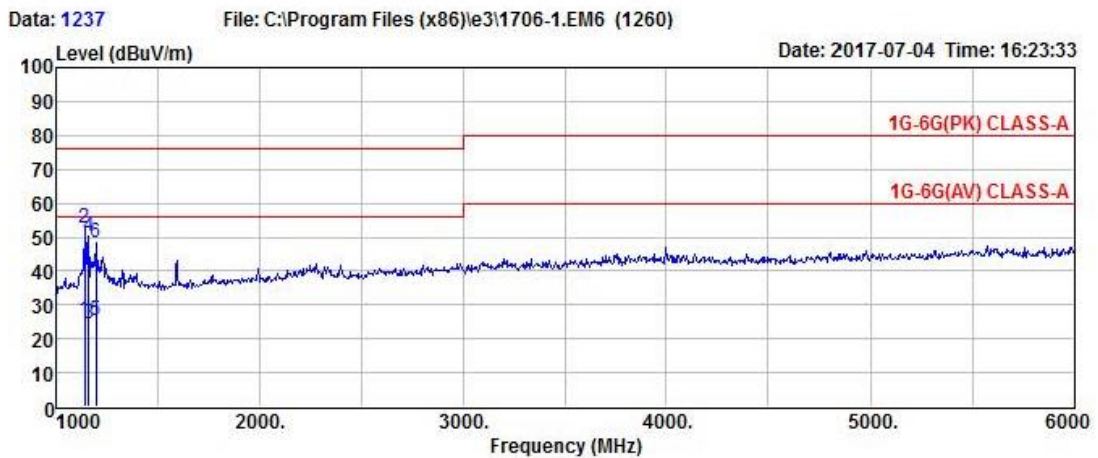
-Continue

(Ablow 1GHz) / Recording (PoE) mode

EUT/Model No.: XNB-6005* (*N:NT/P:PAL) Temp/Humi: 21 / 51
Test Mode : Recording mode Tested by: LEE H W



EUT/Model No.: XNB-6005* (*N:NT/P:PAL) Temp/Humi: 21 / 51
Test Mode : Recording mode Tested by: LEE H W



Manufacture : Hanwha techwin Co., Ltd.

Test Date 2017/7/4 Temp.: [°C] 21 Humidity: [%] 51 Barometric [mbar]

Model : XNB-6005* (*N:NT/P:PAL)

TEST mode : Recording mode

Freq.(MHz)	Reading(PK)	Reading(AV)	C.F	Result(PK)	Result(AV)	Limit(PK)	Limit(AV)	Margin(PK)	Margin(AV)	Height	Angle	Polarity
MHz	dBuV	dBuV	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	cm	deg	Hor/Ver
1140.0	62.2	35.1	-5.99	56.18	29.11	76.0	56.0	19.82	26.89	195	56	H
1160.0	59.7	33.7	-5.91	53.79	27.80			22.21	28.20	185	33	H
1195.0	58.1	35.0	-6.05	52.02	28.91			23.98	27.09	246	163	H
1195.0	58.1	36.4	-6.05	52.03	30.31			23.97	25.69	283	166	V
1390.0	58.2	35.2	-5.1	53.13	30.05			22.87	25.95	155	27	V
1725.0	58.2	34.8	-2.56	55.64	32.26			20.36	23.74	293	170	V

TEST EQUIPMENT USED: 13, 20, 25

5-2 Conducted disturbance Measurements (LINE) / Recording (AC) mode _ 50



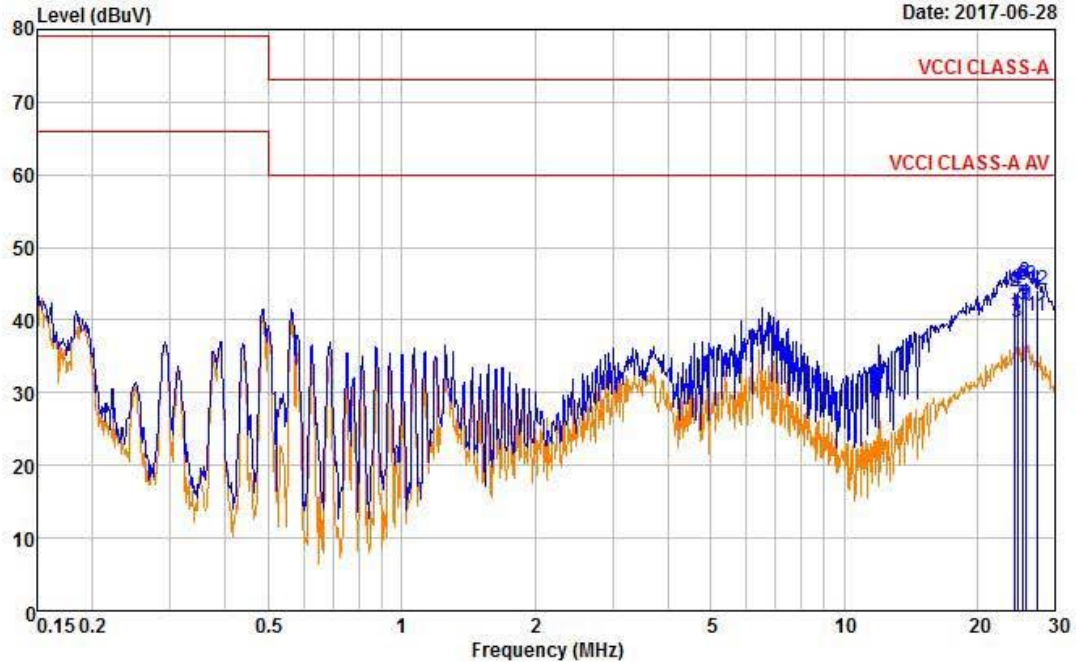
4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel: +82-31-3236008,9
Fax: +82-31-3236010

EUT / Model No. : XNB-6005* (*N:NT/P:PAL)	Phase : LINE
Test Mode : Recording mode	Test Power : 110 / 50
Temp. / Humi. : 21 / 45	Test Engineer : LEE H W

Data: 2674

File: D:\Conducted Data\2017\LTA_Conduction_2017_06.EM6 (2783)

Date: 2017-06-28



Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV		QP	AV	QP	AV	QP	AV
	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
24.325	32.54	29.39	11.38	43.92	40.77	73.00	60.00	29.08	19.23
24.714	32.46	28.25	11.39	43.85	39.64	73.00	60.00	29.15	20.36
25.397	33.44	30.62	11.42	44.86	42.04	73.00	60.00	28.14	17.96
25.690	33.76	30.31	11.42	45.18	41.73	73.00	60.00	27.82	18.27
25.882	33.34	30.58	11.44	44.78	42.02	73.00	60.00	28.22	17.98
27.344	32.56	29.08	11.48	44.04	40.56	73.00	60.00	28.96	19.44

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

-Continue

(NEUTRAL) / Recording (AC) mode _ 50



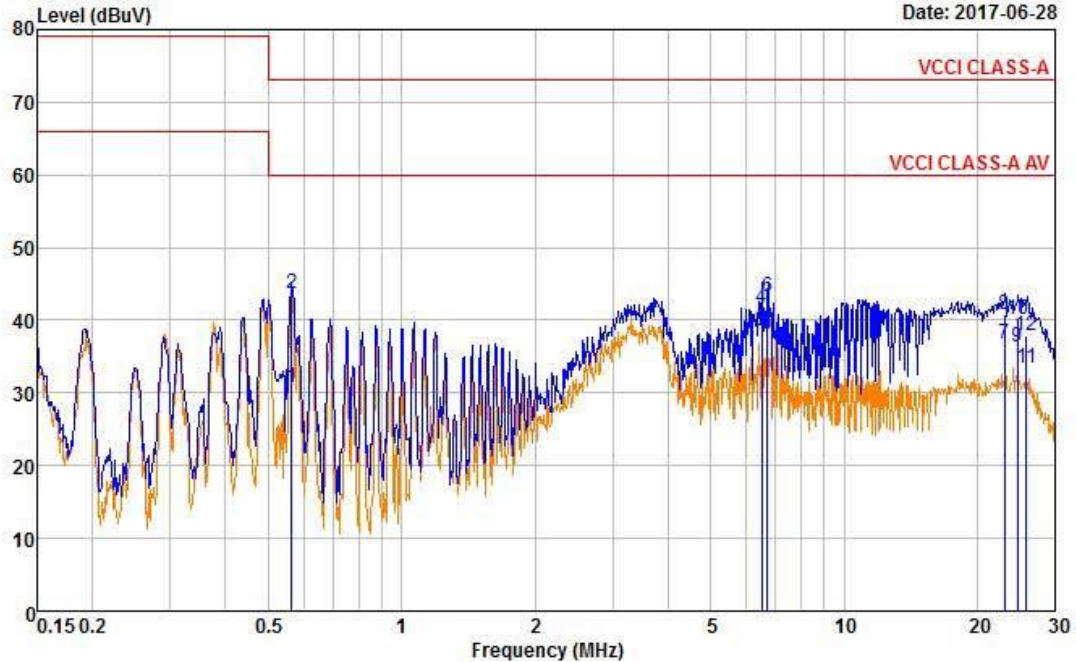
4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel: +82-31-3236008,9
Fax: +82-31-3236010

EUT / Model No. : XNB-6005* (*N:NT/P:PAL)	Phase : NEUTRAL
Test Mode : Recording mode	Test Power : 110 / 50
Temp. / Humi. : 21 / 45	Test Engineer : LEE H W

Data: 2678

File: D:\Conducted Data\2017\LTA_Conduction_2017_06.EM6 (2783)

Date: 2017-06-28



Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV		QP	AV	QP	AV	QP	AV
	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.565	33.46	20.47	10.20	43.66	30.67	73.00	60.00	29.34	29.33
6.521	31.15	28.21	10.43	41.58	38.64	73.00	60.00	31.42	21.36
6.713	32.72	27.66	10.44	43.16	38.10	73.00	60.00	29.84	21.90
23.064	29.42	25.55	11.27	40.69	36.82	73.00	60.00	32.31	23.18
24.713	28.76	24.98	11.34	40.10	36.32	73.00	60.00	32.90	23.68
25.880	26.57	21.93	11.40	37.97	33.33	73.00	60.00	35.03	26.67

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

5-2 Conducted disturbance Measurements

(LINE) / Recording (AC) mode _ 60



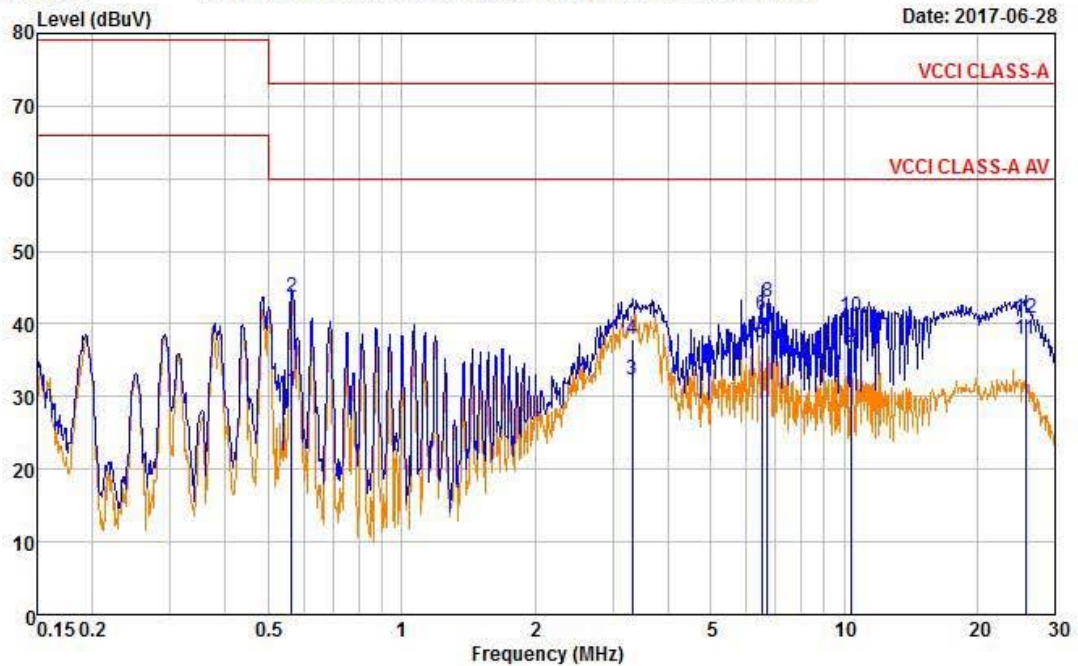
4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
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Fax: +82-31-3236010

EUT / Model No. : XNB-6005* (*N:NT/P:PAL)	Phase : LINE
Test Mode : Recording mode	Test Power : 110 / 60
Temp. / Humi. : 21 / 45	Test Engineer : LEE H W

Data: 2686

File: D:\Conducted Data\2017\LTA_Conduction_2017_06.EM6 (2783)

Date: 2017-06-28



Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV	dB	QP	AV	QP	AV	QP	AV
	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dB	dB
0.565	33.52	20.62	10.13	43.65	30.75	73.00	60.00	29.35	29.25
3.329	27.75	22.04	10.24	37.99	32.28	73.00	60.00	35.01	27.72
6.522	30.77	26.95	10.39	41.16	37.34	73.00	60.00	31.84	22.66
6.714	32.63	27.78	10.40	43.03	38.18	73.00	60.00	29.97	21.82
10.413	30.42	26.10	10.61	41.03	36.71	73.00	60.00	29.97	23.29
25.690	29.45	26.48	11.42	40.87	37.90	73.00	60.00	32.13	22.10

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

TEST EQUIPMENT USED: 01, 02, 03, 07, 08

-Continue

(NEUTRAL) / Recording (AC) mode _ 60



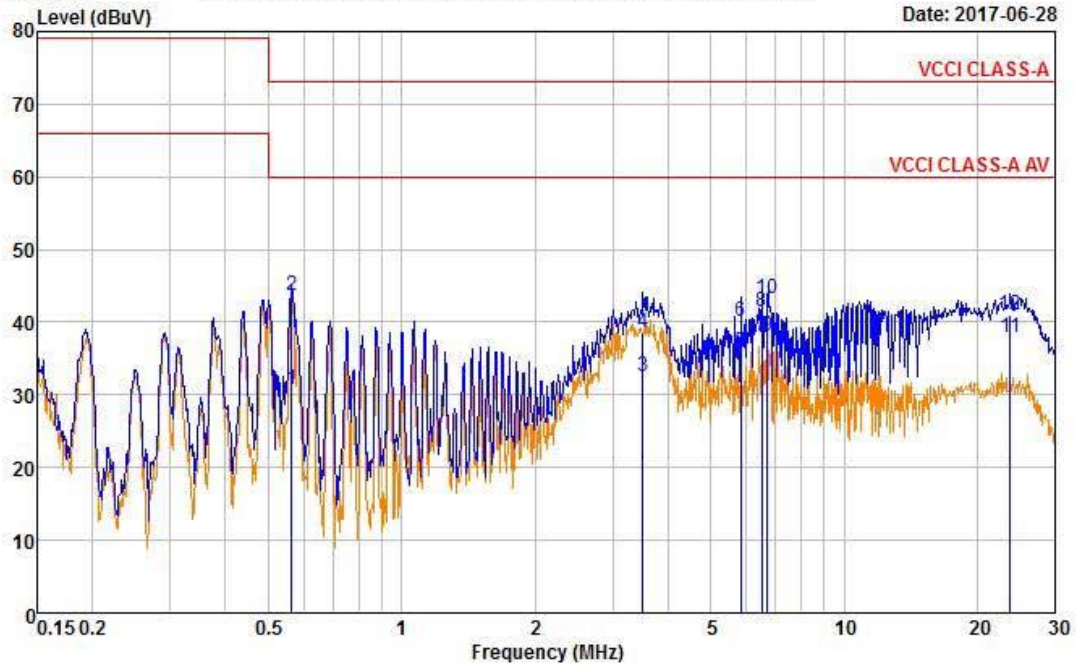
4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT / Model No. : XNB-6005* (*N:NT/P:PAL)	Phase : NEUTRAL
Test Mode : Recording mode	Test Power : 110 / 60
Temp. / Humi. : 21 / 45	Test Engineer : LEE H W

Data: 2682

File: D:\Conducted Data\2017\LTA_Conduction_2017_06.EM6 (2783)

Date: 2017-06-28



Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV	dB	QP	AV	QP	AV	QP	AV
	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dB	dB
0.565	33.53	20.63	10.20	43.73	30.83	73.00	60.00	29.27	29.17
3.514	28.31	22.32	10.30	38.61	32.62	73.00	60.00	34.39	27.38
5.837	29.82	25.52	10.39	40.21	35.91	73.00	60.00	32.79	24.09
6.522	30.95	27.60	10.43	41.38	38.03	73.00	60.00	31.62	21.97
6.714	32.73	27.69	10.44	43.17	38.13	73.00	60.00	29.83	21.87
23.742	29.65	26.53	11.29	40.94	37.82	73.00	60.00	32.06	22.18

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

5-2 Conducted disturbance Measurements

(LINE) / Recording (DC) mode _ 50



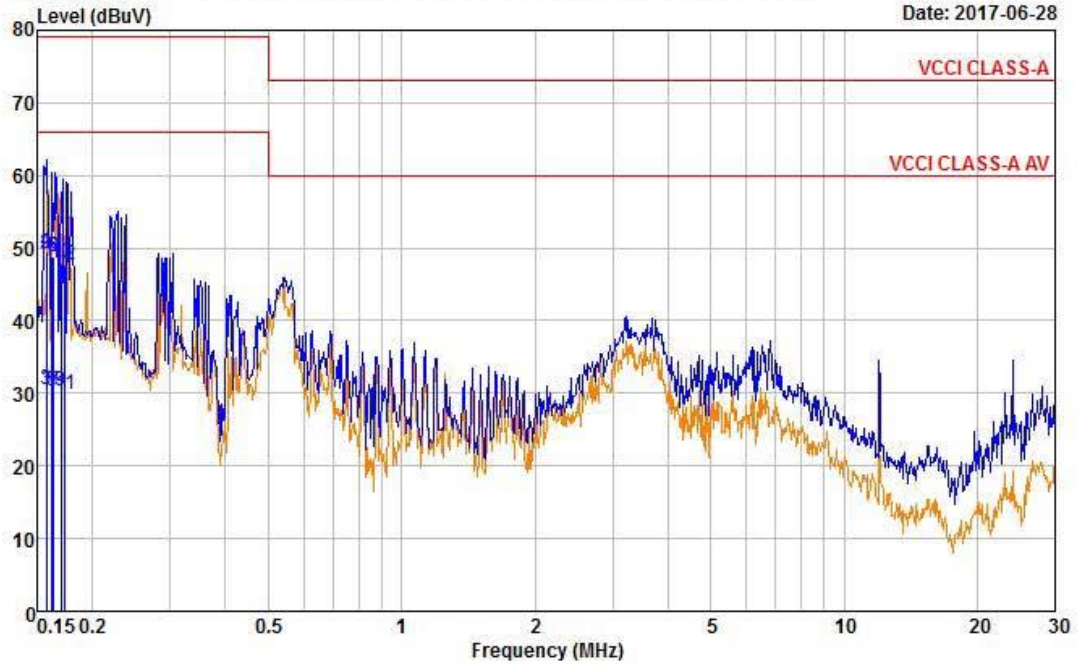
4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel: +82-31-3236008, 9
Fax: +82-31-3236010

EUT / Model No. : XNB-6005* (*N:NT/P:PAL)	Phase : LINE
Test Mode : Recording mode	Test Power : 110 / 50
Temp. / Humi. : 21 / 45	Test Engineer : LEE H W

Data: 2771

File: D:\Conducted Data\2017\LTA_Conduction_2017_06.EM6 (2783)

Date: 2017-06-28



Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV	dB	QP	AV	QP	AV	QP	AV
	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dB	dB
0.157	39.21	20.38	10.10	49.31	30.48	79.00	66.00	29.69	35.52
0.158	39.36	20.44	10.10	49.46	30.54	79.00	66.00	29.54	35.46
0.162	38.80	20.24	10.09	48.89	30.33	79.00	66.00	30.11	35.67
0.163	38.79	20.28	10.09	48.88	30.37	79.00	66.00	30.12	35.63
0.170	37.89	20.12	10.10	47.99	30.22	79.00	66.00	31.01	35.78
0.173	37.51	19.79	10.10	47.61	29.89	79.00	66.00	31.39	36.11

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

-Continue

(NEUTRAL) / Recording (DC) mode _ 50



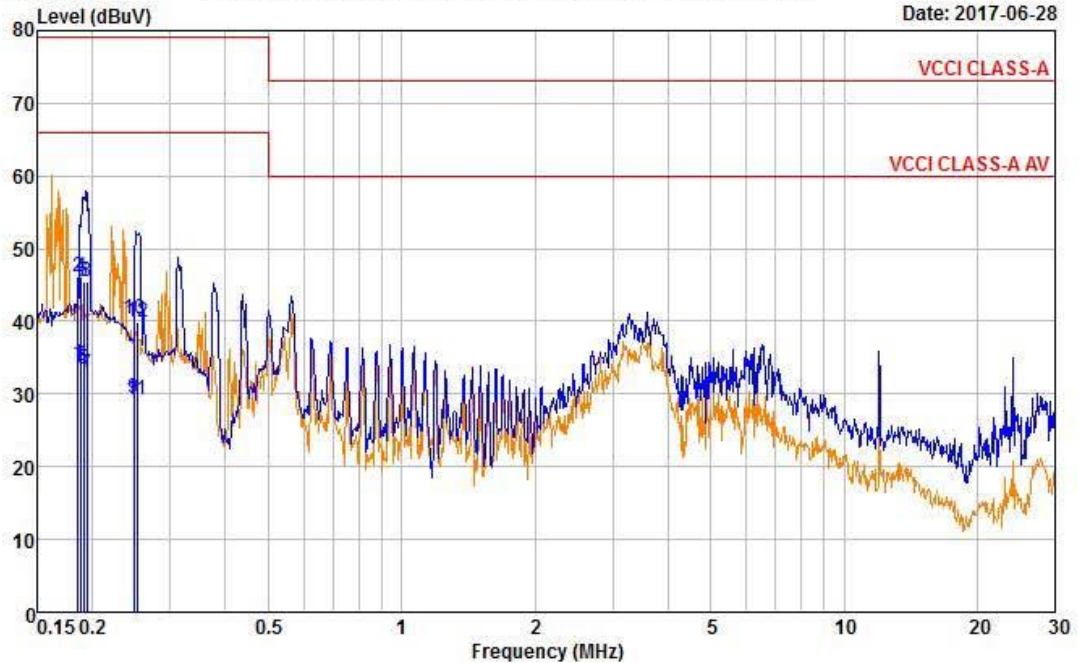
4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel: +82-31-3236008, 9
Fax: +82-31-3236010

EUT / Model No. : XNB-6005* (*N:NT/P:PAL)	Phase : NEUTRAL
Test Mode : Recording mode	Test Power : 110 / 50
Temp. / Humi. : 21 / 45	Test Engineer : LEE H W

Data: 2775

File: D:\Conducted Data\2017\LTA_Conduction_2017_06.EM6 (2783)

Date: 2017-06-28



Freq MHz	RD QP dBuV	RD AV dBuV	C.F dB	Result QP dBuV	Result AV dBuV	Limit QP dBuV	Limit AV dBuV	Margin QP dB	Margin AV dB
0.186	35.98	23.88	10.16	46.14	34.04	79.00	66.00	32.86	31.96
0.188	36.03	23.71	10.16	46.19	33.87	79.00	66.00	32.81	32.13
0.192	35.32	23.19	10.16	45.48	33.35	79.00	66.00	33.52	32.65
0.195	35.34	22.62	10.16	45.50	32.78	79.00	66.00	33.50	33.22
0.248	30.20	19.32	10.17	40.37	29.49	79.00	66.00	38.63	36.51
0.253	29.75	18.92	10.17	39.92	29.09	79.00	66.00	39.08	36.91

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

5-2 Conducted disturbance Measurements

(LINE) / Recording (DC) mode _ 60



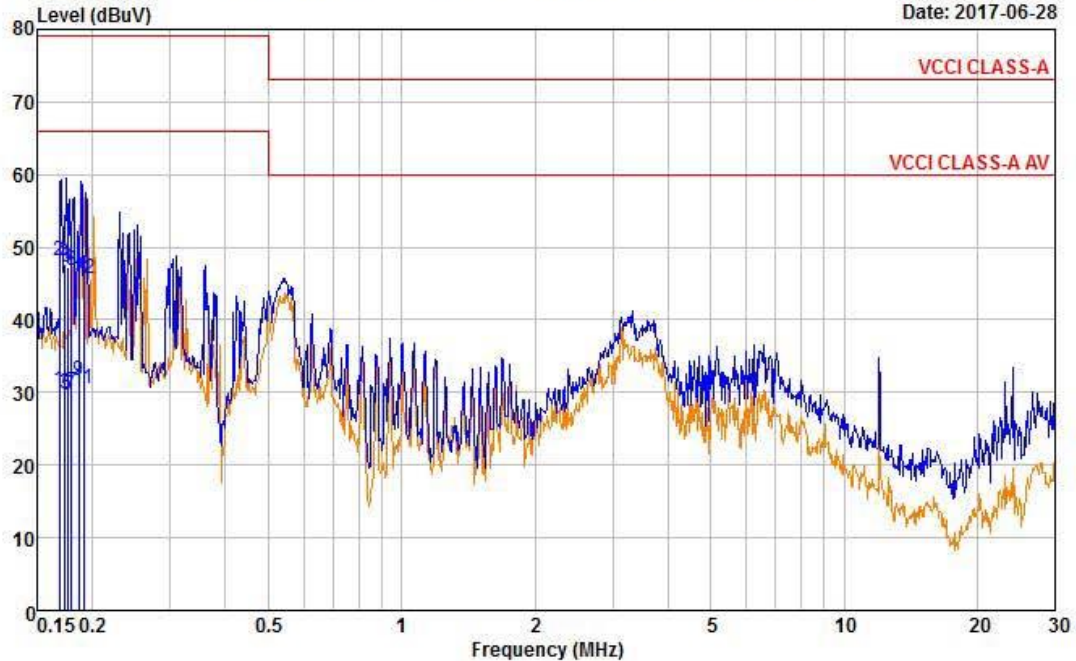
4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
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Fax: +82-31-3236010

EUT / Model No. : XNB-6005* (*N:NT/P:PAL)	Phase : LINE
Test Mode : Recording mode	Test Power : 110 / 60
Temp. / Humi. : 21 / 45	Test Engineer : LEE H W

Data: 2783

File: D:\Conducted Data\2017\LTA_Conduction_2017_06.EM6 (2783)

Date: 2017-06-28



Freq MHz	RD QP dBuV	RD AV dBuV	C.F dB	Result QP dBuV	Result AV dBuV	Limit QP dBuV	Limit AV dBuV	Margin QP dB	Margin AV dB
0.169	38.02	20.16	10.10	48.12	30.26	79.00	66.00	30.88	35.74
0.173	37.59	19.73	10.10	47.69	29.83	79.00	66.00	31.31	36.17
0.176	37.17	19.58	10.10	47.27	29.68	79.00	66.00	31.73	36.32
0.180	36.68	20.01	10.10	46.78	30.11	79.00	66.00	32.22	35.89
0.186	36.12	21.66	10.09	46.21	31.75	79.00	66.00	32.79	34.25
0.192	35.69	20.38	10.09	45.78	30.47	79.00	66.00	33.22	35.53

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

-Continue

(NEUTRAL) / Recording (DC) mode _ 60



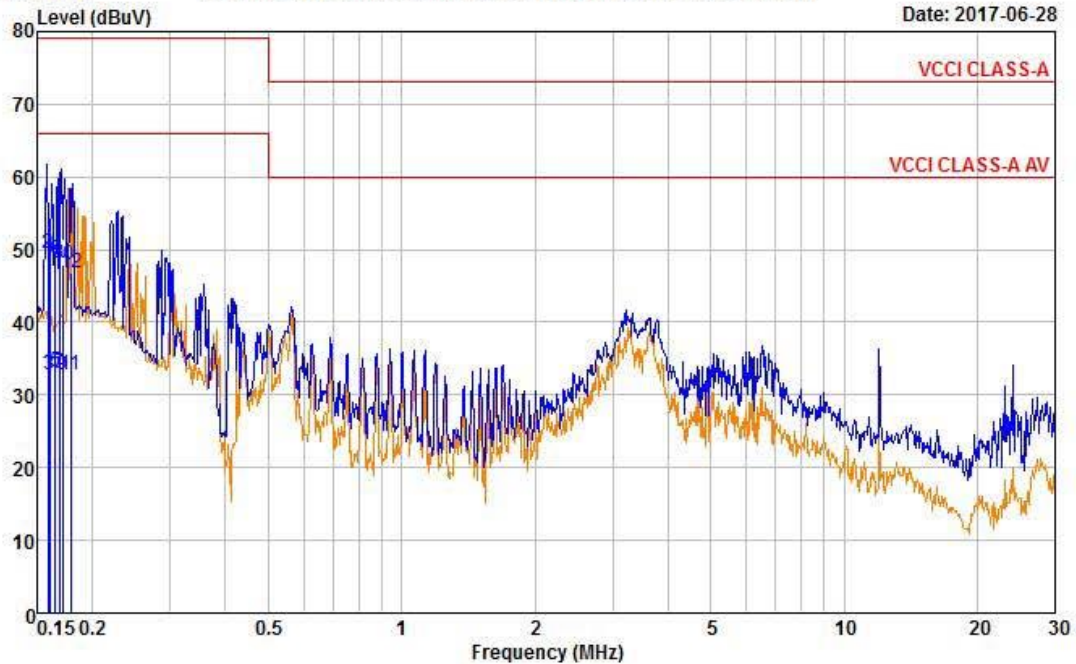
4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel: +82-31-3236008,9
Fax: +82-31-3236010

EUT / Model No. : XNB-6005* (*N:NT/P:PAL)	Phase : NEUTRAL
Test Mode : Recording mode	Test Power : 110 / 60
Temp. / Humi. : 21 / 45	Test Engineer : LEE H W

Data: 2779

File: D:\Conducted Data\2017\LTA_Conduction_2017_06.EM6 (2783)

Date: 2017-06-28



Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV		QP	AV	QP	AV	QP	AV
	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.159	39.24	22.86	10.15	49.39	33.01	79.00	66.00	29.61	32.99
0.160	38.78	22.50	10.15	48.93	32.65	79.00	66.00	30.07	33.35
0.165	38.43	22.94	10.16	48.59	33.10	79.00	66.00	30.41	32.90
0.169	37.97	22.85	10.16	48.13	33.01	79.00	66.00	30.87	32.99
0.171	37.69	22.71	10.16	47.85	32.87	79.00	66.00	31.15	33.13
0.179	36.66	22.54	10.16	46.82	32.70	79.00	66.00	32.18	33.30

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

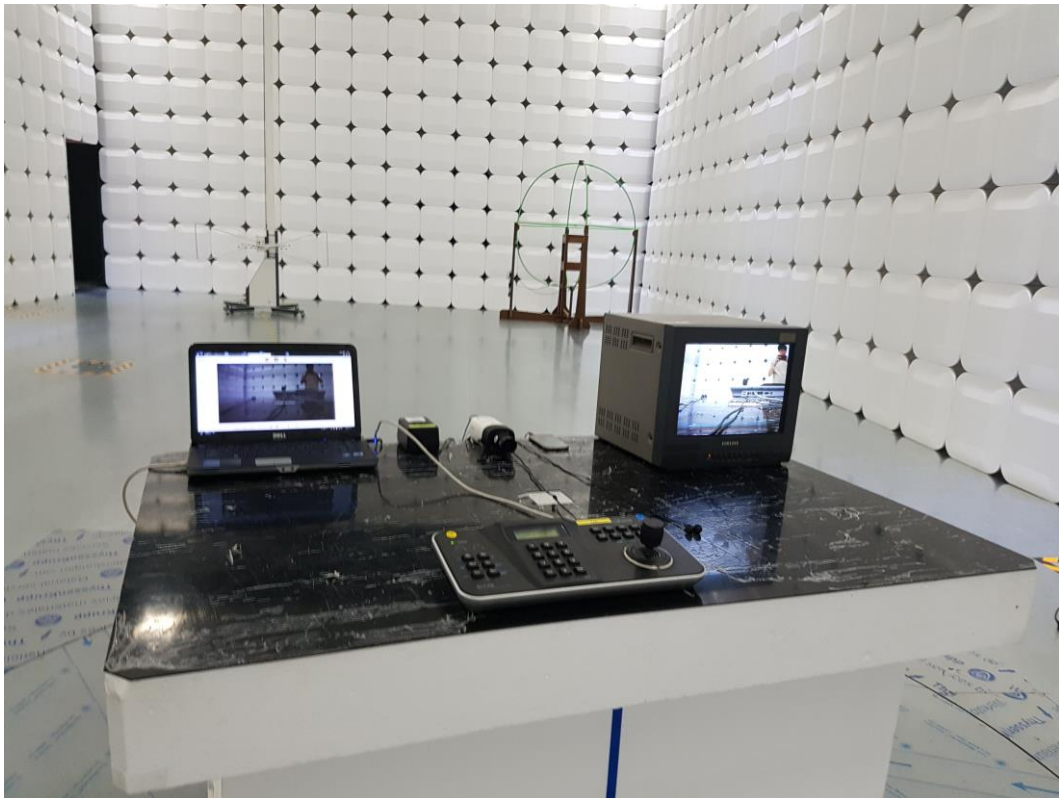
Conclusions

Product models " **XNB-6005N** " meets all of the CLASS A requirements of the VCCI RULES AND REGULATIONS OF CLASS A (V-3 / 2015.04 Normative ANNEX1:Technical Requirements)

(Limits of radio disturbance characteristics of ITE).

(Refer to Test Specification and Test Results in the "LTA certification", page 4 and 5.)

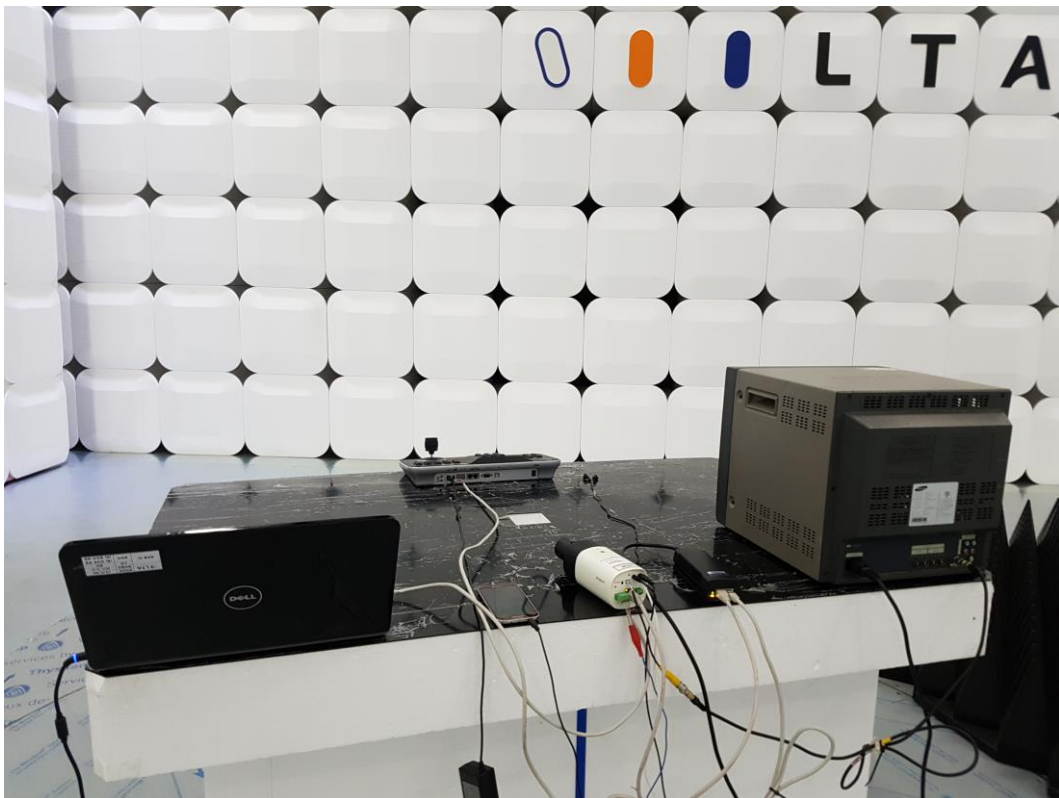
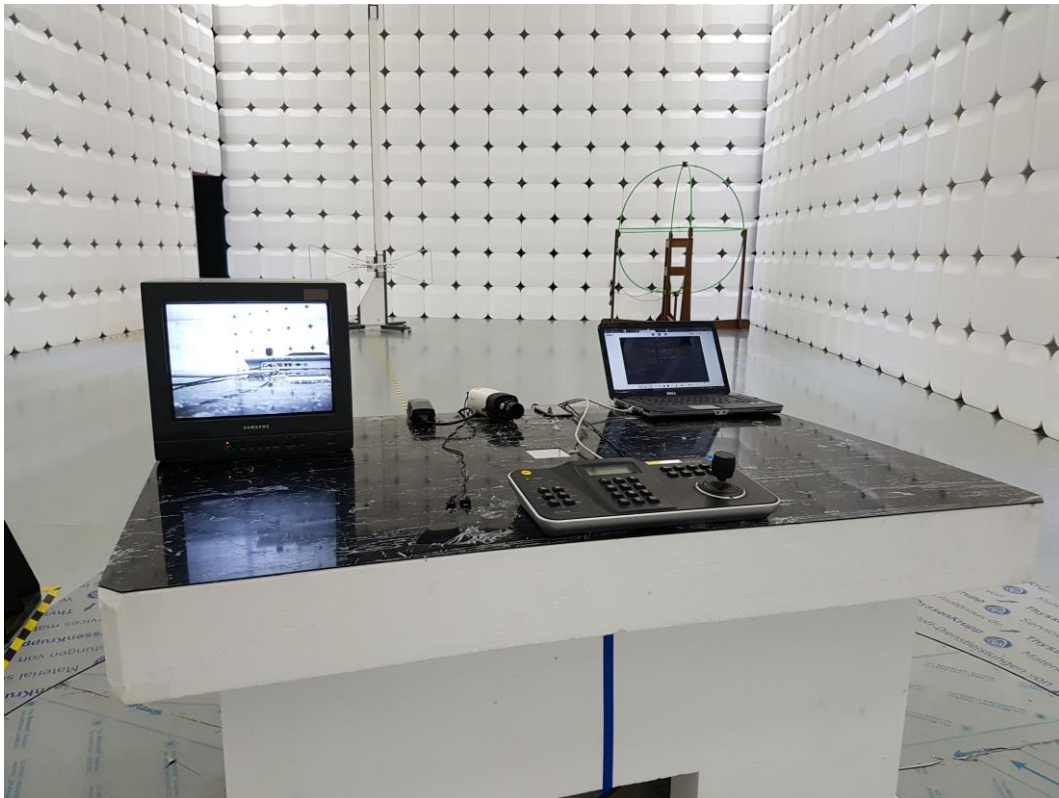
Photograph of the Radiated Disturbance Measurements (Below 1GHz) / Recording (AC) mode



Photograph of the Radiated Disturbance Measurements (Below 1GHz) / Recording (DC) mode



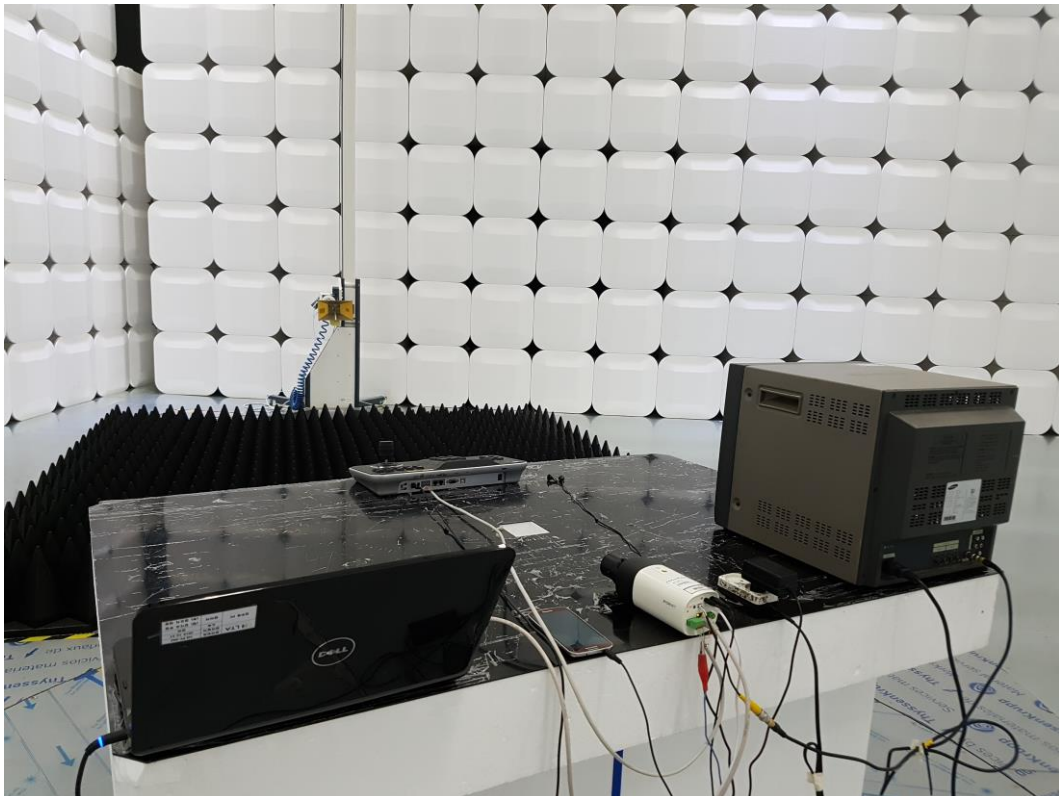
Photograph of the Radiated Disturbance Measurements (Below 1GHz) / Recording (PoE) mode



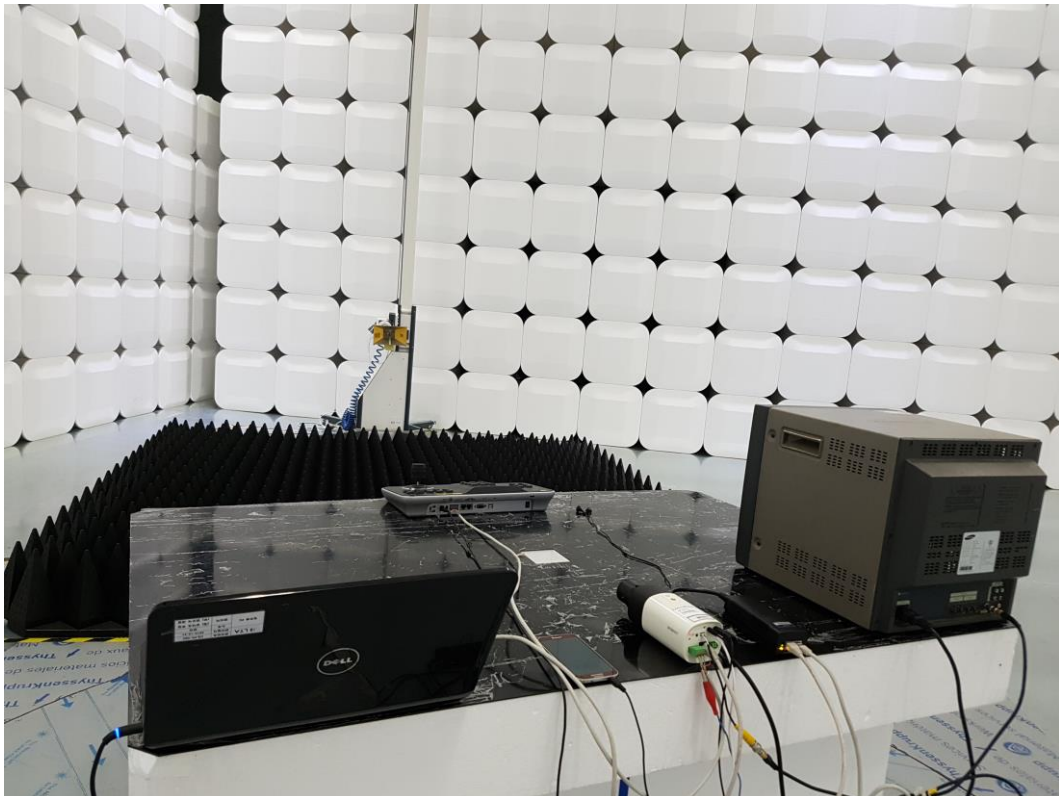
Photograph of the Radiated Disturbance Measurements (Ablow 1GHz) / Recording (AC) mode



Photograph of the Radiated Disturbance Measurements (Ablow 1GHz) / Recording (DC) mode



Photograph of the Radiated Disturbance Measurements (Ablow 1GHz) / Recording (PoE) mode



**Photograph of the Conducted disturbance Measurements (Maximum emission configuration)
/ Recording (AC) mode**



**Photograph of the Conducted disturbance Measurements (Maximum emission configuration)
/ Recording (DC) mode**



Photograph of the Equipment Under Test



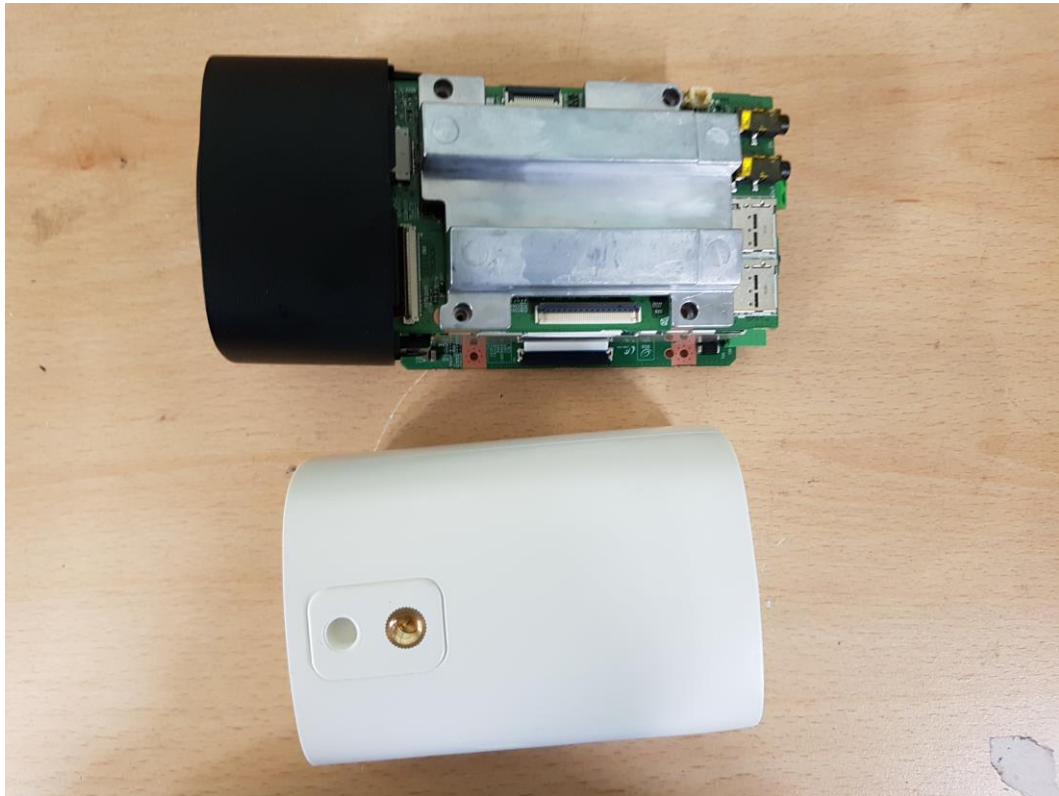
Photograph of the Equipment Under Test



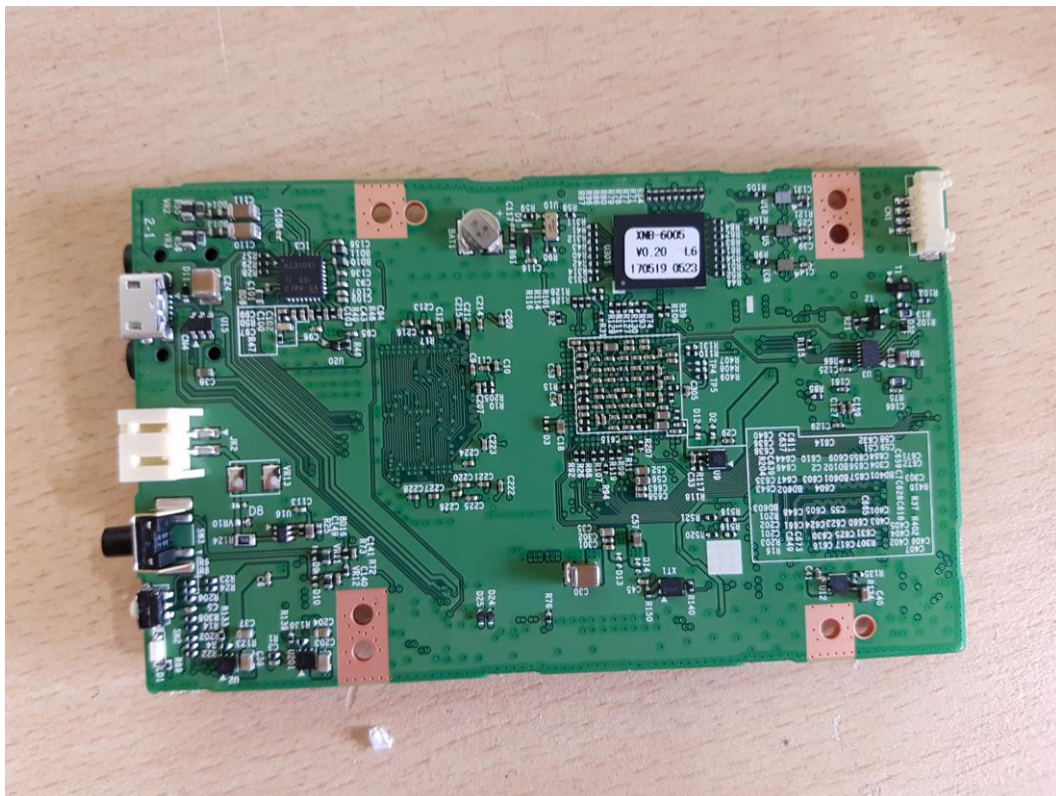
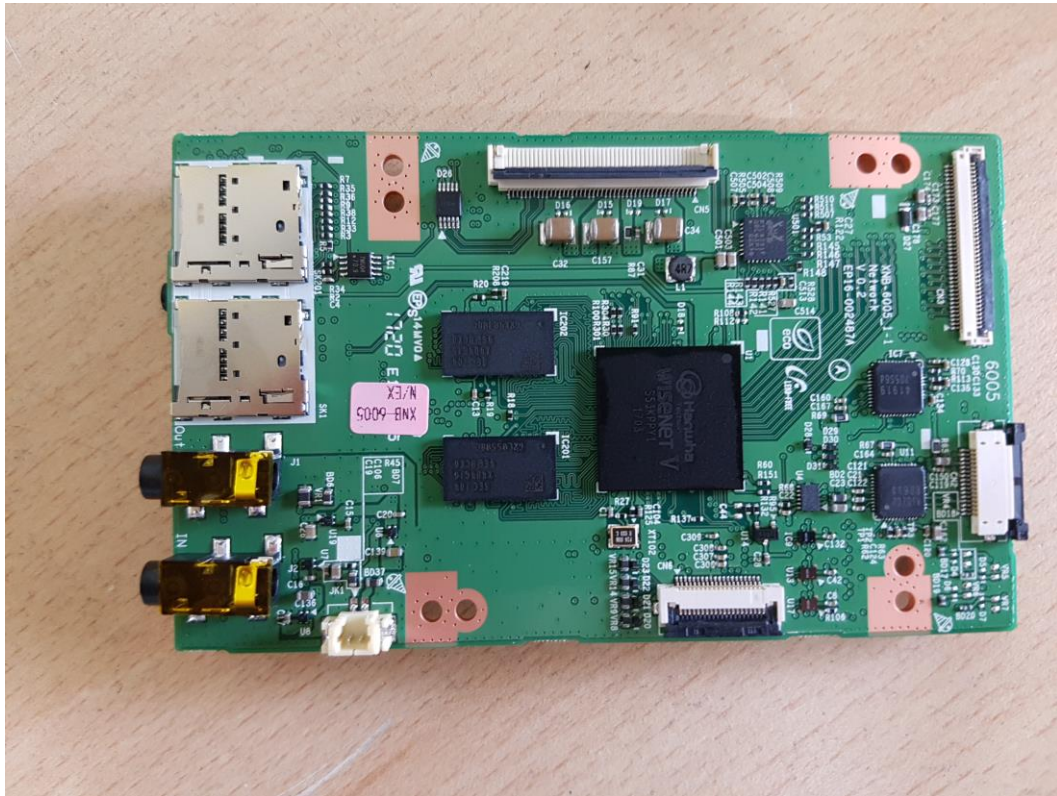
Photograph of the Equipment Under Test



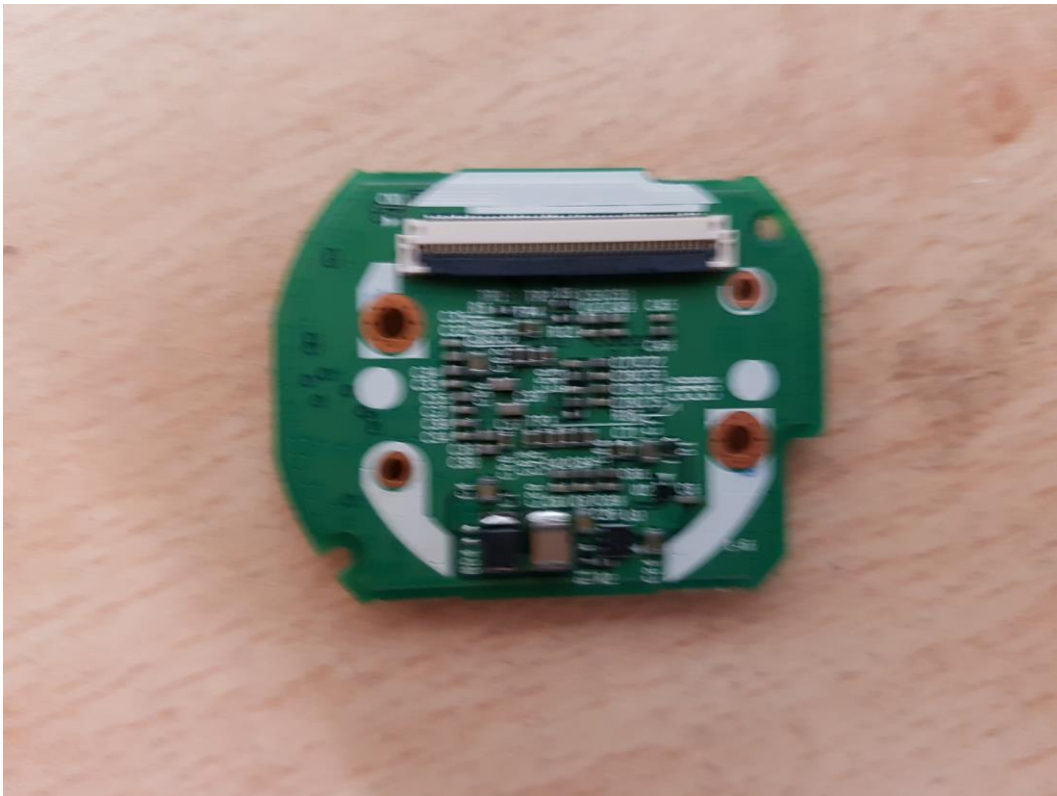
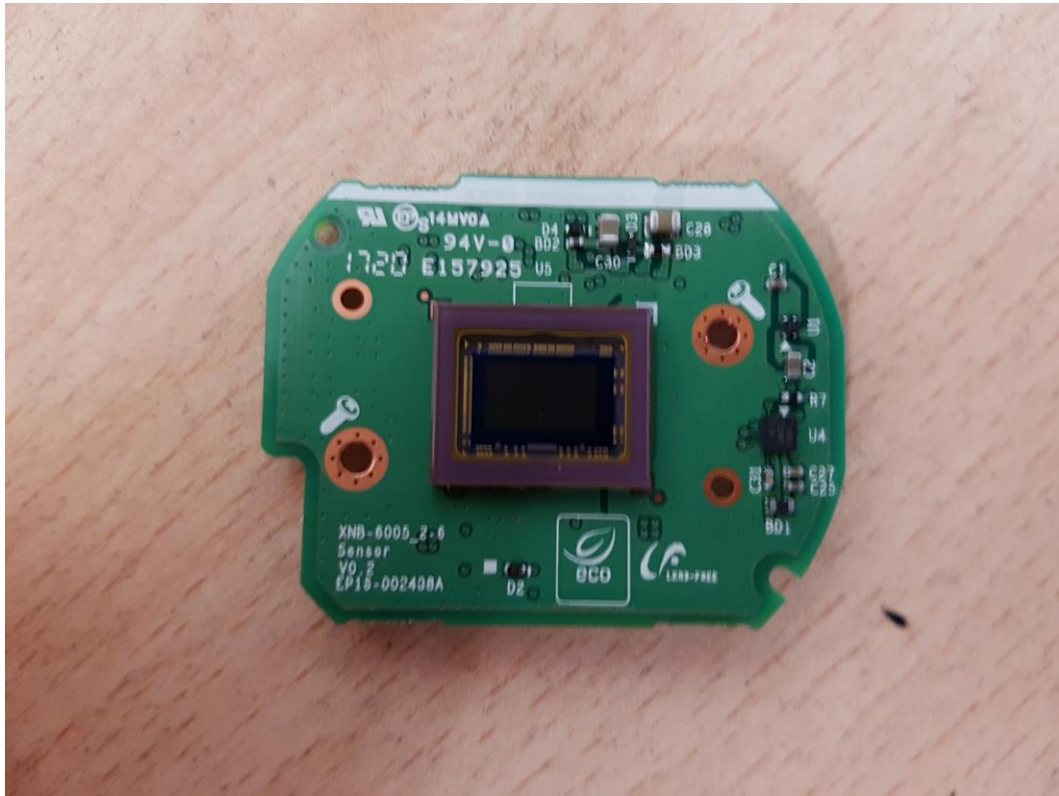
Photograph of the Equipment Under Test



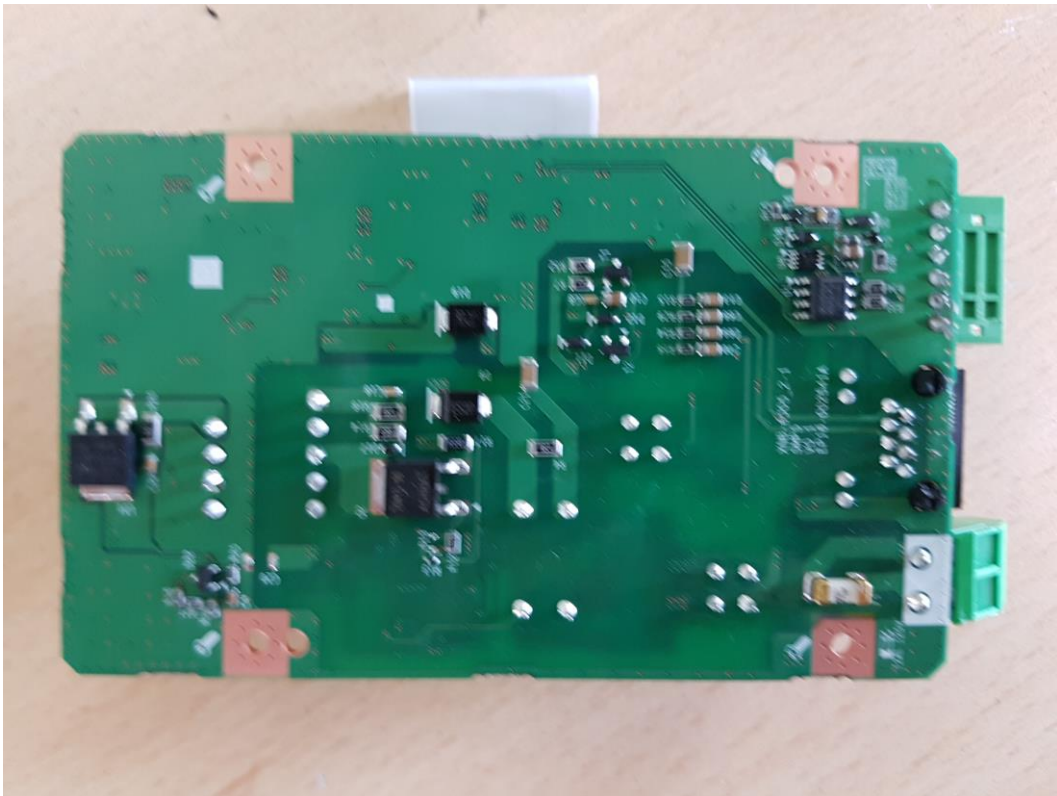
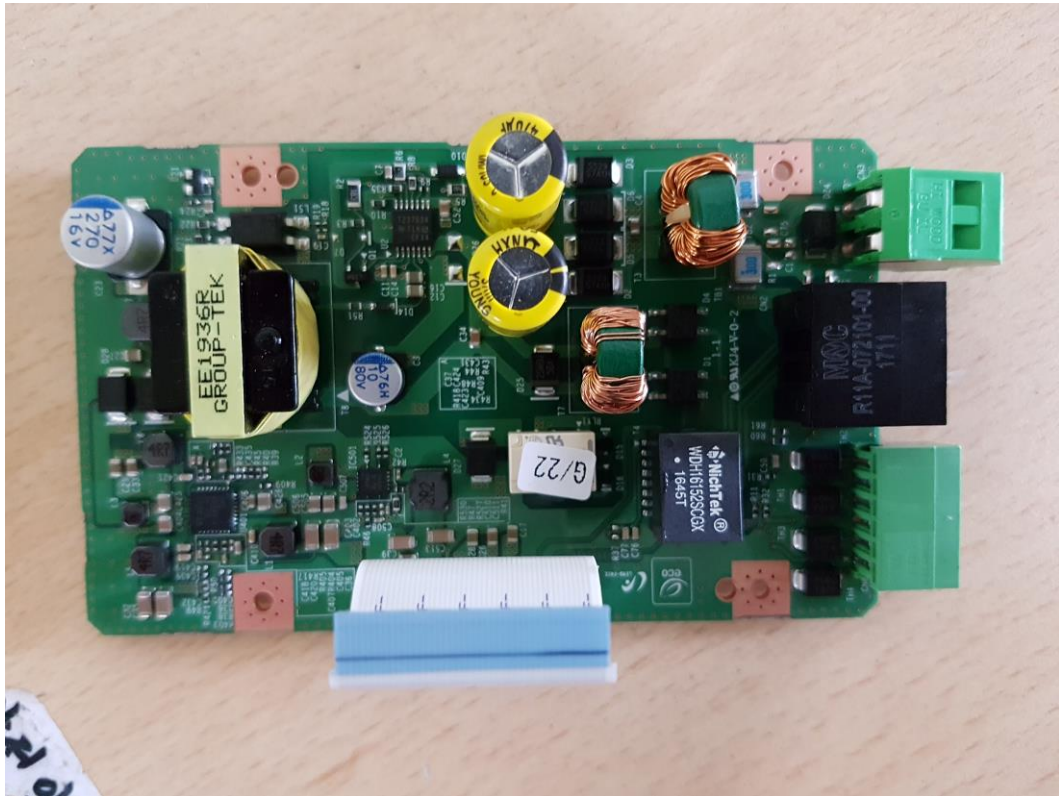
Photograph of the Equipment Under Test



Photograph of the Equipment Under Test



Photograph of the Equipment Under Test



Photograph of the Equipment Under Test

