

EMC TEST REPORT

Dates of Tests: July 12 – 16, 2018

Test Report S/N: LR500121807S

Test Site : LTA Co., Ltd.

Model No.

SLA-T4680D

APPLICANT

Hanwha Techwin Co., Ltd

Equipment name : LENS MODULE
Manufacturer : Hanwha Techwin Co., Ltd
Model name : SLA-T4680D
Additional Model name : SLA-T4680DS, SLA-T4680DW
Test Device Serial No.: : Identification
Directive : Electromagnetic Compatibility Directive 2014/30/EU
Rule Part(s) : EN 55032:2012/AC:2013
EN 55035:2017

Date of issue : July 17, 2018

This test report is issued under the authority of:

The test was supervised by:



Young Kyu Shin, Technical Manager



Hyun Il Yoon, Test Engineer

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NVLAP LAB CODE 200723-0

Revision	Date of issue	Test report No.	Description
0	17.07.2018	LR500121807S	Initial

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1. General information's

1-1 Test Performed

Company name : **LTA Co., Ltd.**
 Address : 243 Jubug-ri, Yangji-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do 449-822, Korea
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Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the “General requirements for the competents of calibration and testing laboratory”.

1-2 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	2018-09-30	ECT accredited Lab.
RRA	KOREA	KR0049	-	EMC accredited Lab.
FCC	U.S.A	649054	2019-04-13	FCC CAB
VCCI	JAPAN	C-4948,	2020-09-10	VCCI registration
		T-2416,	2020-09-10	
		R-4483(10 m),	2020-10-15	
		G-847	2018-12-13	
IC	CANADA	5799A-2	2019-03-15	IC filing
KOLAS	KOREA	NO.551	2021-08-20	KOLAS accredited Lab.

2. Information's about test item

2-1 Client / Manufacturer

Company name : Hanwha Techwin Co., Ltd
Address : 6, Pangyo-ro 319beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do
Telephone /Facsimile : +82-70-7147-8753

Factory #1

Company name : Hanwha Techwin(Tianjin) Co., Ltd.
Address : No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China

Factory #2

Company name : *HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.*
Address : *Lot O-2, Que Vo Industrial Zone extended area ,Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam*

Factory #3

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

2-2 Equipment Under Test (EUT)

Class : A
Equipment name : LENS MODULE
Model name : SLA-T4680D
Additional Model name : SLA-T4680DS, SLA-T4680DW
Serial number : Identification
Date of receipt : July 10, 2018
EUT condition : Pre-production, not damaged
Interface Ports : LAN
Power rating : DC 48 V
Modulator : -
Crystal/Oscillator(s) : -
Firmware version : xxxx

2-3 Modification

- NONE.

2-4 Test conditions

Temp. / Humid. / Pressure : (23 - 24) °C / (44 - 52) % R.H. / (100) kPa
Tested Model : SLA-T4680D
Test mode : Operating mode
Tested Voltage : AC 230 V, 50Hz

2-5 EUT

Equipment	Model No.	Serial No.	Manufacturer
LENS MODULE	SLA-T4680D	N/A	Hanwha Techwin Co., Ltd

2-6 Accessory

Equipment	Model No.	Serial No.	Manufacturer
PoE Adapter	XNB-6001P	N/A	Hanwha Techwin Co., Ltd
PoE Adapter Adapter	DZ010LL120100K	N/A	KEERDA ELECTRONICS CO.LTD.
Notebook	TFG13	N/A	HANSUNG
Notebook Adapter	A13-040N3A	N/A	Chicony

2-8 Cable List

From		To		Length (m)	Shielding	
Type	I/O Port	Type	I/O Port		Cable	backshell
EUT	LAN	PoE Adapter	LAN (CAM)	5.0	NO	Plastic
PoE Adapter	DC IN	PoE Adapter Adapter	DC OUT	1.0	NO	Plastic
Notebook	LAN	PoE Adapter	LAN	0.5	NO	Plastic
	DC IN	Notebook Adapter	DC OUT	1.5	NO	Plastic

3. Test Report

3.1 Summary of tests

Parameter	Applied Standard	Status
I. Emission		
Conducted Emission	EN 55032:2012/AC:2013	C
Radiated Emission	EN 55032:2012/AC:2013	C
Harmonic Current Emission	EN 61000-3-2:2014	NA ^{Note 3}
Voltage Fluctuations and Flicker	EN 61000-3-3:2013	NA ^{Note 4}
II. Immunity		
Electrostatic Discharge	EN 61000-4-2:2009	C
RF Electromagnetic field	EN 61000-4-3:2006/A1:2008/A2:2010	C
Fast Transients Common mode	EN 61000-4-4:2012	C
Surges, line to line and line to ground	EN 61000-4-5:2014	NA
Conducted disturbances, induced by radio-frequency fields	EN 61000-4-6:2014/AC:2015	C
Voltage dips and Interruptions	EN 61000-4-11:2004	NA

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

Note 3: We did not test EN61000-3-2 (Harmonic current emissions) for the SLA-T4680D because equipment whose rated power is less or equal 75W don't need to be tested.

Note 4: We did not test EN 61000-3-3 (Flicker) for the SLA-T4680D because of clause 6.1, this standard Predicate as follows: "Devices which produce no significant voltage dips or flicker with a certain probability have not to be tested."

3.2 EMISSION

3.2.1 Conducted emissions

Definition:

The test assesses the ability of the EUT to limit its internal noise from being present on the AC mains Power In/Output/Telecommunication ports.

We were performed the test according to LTA procedure LTA-QI-04.

Test method	: EN 55032:2012/AC:2013
Measurement Frequency range	: 150 kHz - 30 MHz
Measurement RBW	: 9 kHz
Test mode	: Operating mode
Result	: Complies

Measurement Data:

- Refer to the Next page (Maximum emission configuration)

A sample calculation:

COR. F (correction factor)= LISN Insertion loss + Cable loss + Pulse Limiter Factor

Emission Level= meter reading + COR.F

Limits for conducted disturbance at the mains ports of class A ITE

Frequency Range	Quasi-peak	Average
(0.15 - 0.5) MHz	79 dBuV	66 dBuV
(0.5 – 30) MHz	73 dBuV	60 dBuV

Note: The limits will decrease with the frequency logarithmically within 0.15MHz to 0.5MHz

Limits for conducted disturbance at the mains ports of class B ITE

Frequency Range	Quasi-peak	Average
(0.15 – 0.5) MHz	(66 – 56) dBuV	(56 - 46) dBuV
(0.5 – 5) MHz	56 dBuV	46 dBuV
(5 – 30) MHz	60 dBuV	50 dBuV

Note: The limits will decrease with the frequency logarithmically within 0.15 MHz to 0.5 MHz

Limits of conducted common mode (asymmetric mode) disturbance at telecommunication ports in the frequency range 0.15 MHz to 30 MHz for class A equipment

Frequency Range	Voltage limits		Current limits	
	Quasi-peak	Average	Quasi-peak	Average
(0.15 - 0.5) MHz	(97 – 87) dBuV	(84 – 74) dBuV	(53 – 43) dBuV	(40 – 30) dBuV
(0.5 – 30) MHz	87 dBuV	74 dBuV	43 dBuV	30 dBuV

Note 1: The limits decrease linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Note 2: The current and voltage disturbance limits are derived for use with an impedance stabilization network (ISN) which presents a common mode (asymmetric mode) impedance of 150Ω to the telecommunication port under test (conversion factor is $20 \log_{10} 150/I = 44$ dB)

Limits of conducted common mode (asymmetric mode) disturbance at telecommunication ports in the frequency range 0.15 MHz to 30 MHz for class B equipment

Frequency Range	Voltage limits		Current limits	
	Quasi-peak	Average	Quasi-peak	Average
(0.15 - 0.5) MHz	(84 – 74) dBuV	(74 – 64) dBuV	(40 – 30) dBuV	(30 – 20) dBuV
(0.5 – 30) MHz	74 dBuV	64 dBuV	30 dBuV	20 dBuV

Note 1: The limits decrease linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Note 2: The current and voltage disturbance limits are derived for use with an impedance stabilization network (ISN) which presents a common mode (asymmetric mode) impedance of 150Ω to the telecommunication port under test (conversion factor is $20 \log_{10} 150/I = 44$ dB)

Conducted emissions (TEL_10 M)



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EUT / Model No. : SLA-T4680D

Phase : TEL_10M

Test Mode : Operating mode

Test Power : 230 / 50

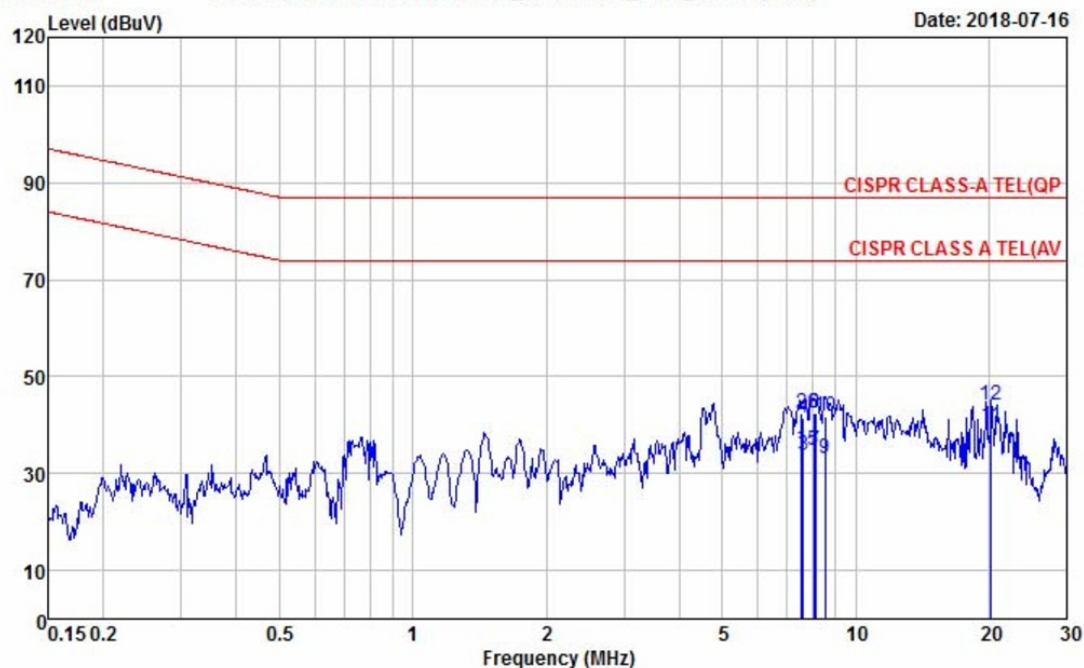
Temp. / Humi. : 24 / 44

Test Engineer : YOON H I

Data: 1210

File: D:\Conducted Data\2018\LTA_Conduction_2018_7.EM6 (1210)

Date: 2018-07-16



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
7.537	22.80	15.63	19.51	42.31	35.14	87.00	74.00	44.69	38.86
7.620	22.05	14.22	19.52	41.57	33.74	87.00	74.00	45.43	40.26
8.056	22.79	15.25	19.53	42.32	34.78	87.00	74.00	44.68	39.22
8.114	22.87	15.16	19.53	42.40	34.69	87.00	74.00	44.60	39.31
8.521	22.10	13.53	19.56	41.66	33.09	87.00	74.00	45.34	40.91
20.258	24.26	20.03	19.88	44.14	39.91	87.00	74.00	42.86	34.09

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

Conducted emissions (TEL_1000 M)



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EUT / Model No. : SLA-T4680D

Phase : TEL_1000M

Test Mode : Operating mode

Test Power : 230 / 50

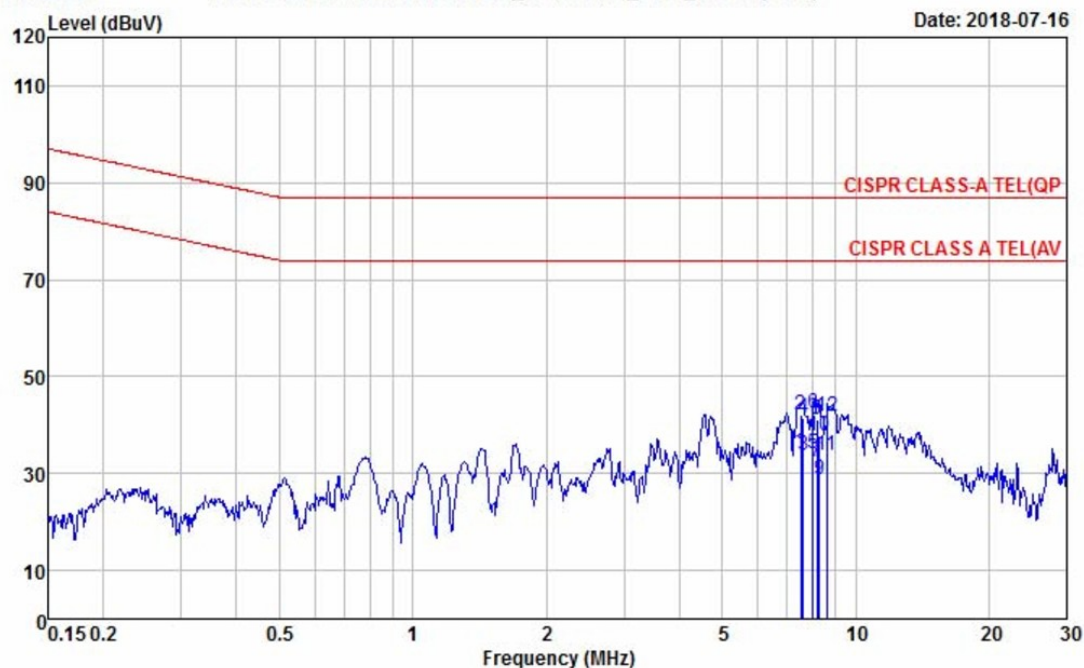
Temp. / Humi. : 24 / 44

Test Engineer : YOON H I

Data: 1207

File: D:\Conducted Data\2018\LTA_Conduction_2018_7.EM6 (1210)

Date: 2018-07-16



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
7.529	22.73	15.16	19.31	42.04	34.47	87.00	74.00	44.96	39.53
7.617	22.17	14.47	19.32	41.49	33.79	87.00	74.00	45.51	40.21
8.024	23.05	14.80	19.33	42.38	34.13	87.00	74.00	44.62	39.87
8.191	21.87	13.24	19.33	41.20	32.57	87.00	74.00	45.80	41.43
8.302	18.54	9.56	19.33	37.87	28.89	87.00	74.00	49.13	45.11
8.617	22.51	14.28	19.36	41.87	33.64	87.00	74.00	45.13	40.36

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

3.2.2 Radiated Emission

Definition:

The test assesses the ability of ancillary equipment to limit their internal noise from being radiated from the enclosure.

We were performed the test according to LTA procedure LTA-QI-04.

Test method	: EN 55032:2012/AC:2013
Measuring Distance	: 10 m for below 1 GHz
Measurement Frequency range	: 30 MHz – 1 000 MHz
Measurement RBW	: 120 kHz @ 10 m
Test mode	: Operating mode
Result	: Complies

Measurement Data:

- Refer to the Next page (Maximum emission configuration)

- The highest internal source of an EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz.

(The highest internal source of an EUT : 37.125 MHz)

A sample calculation:

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

Emission Level= meter reading + COR.F

Limit of 10 m for below 1 GHz

CLASS A

Frequency Range	Quasi-peak
(30 – 230) MHz	40 dBuV/m
(230 – 1 000) MHz	47 dBuV/m

CLASS B

Frequency Range	Quasi-peak
(30 – 230) MHz	30 dBuV/m
(230 – 1 000) MHz	37 dBuV/m

Limit of 3m for above 1 GHz

CLASS A

Frequency Range	Average Limit @ 3m (dBμV/m)	Peak limit @ 3m (dBμV/m)
(1 000 – 3 000) MHz	56	76
(3 000 – 6 000) MHz	60	80
NOTE:	The lower limit applies at the transition frequency.	

CLASS B

Frequency Range	Average Limit @ 3m (dBμV/m)	Peak limit @ 3m (dBμV/m)
(1 000 – 3 000) MHz	50	70
(3 000 – 6 000) MHz	54	74
NOTE:	The lower limit applies at the transition frequency.	

Radiated Emission (Below 1 GHz) / V



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EUT/Model No.: SLA-T4680D

Temp/Humi: 23 / 49

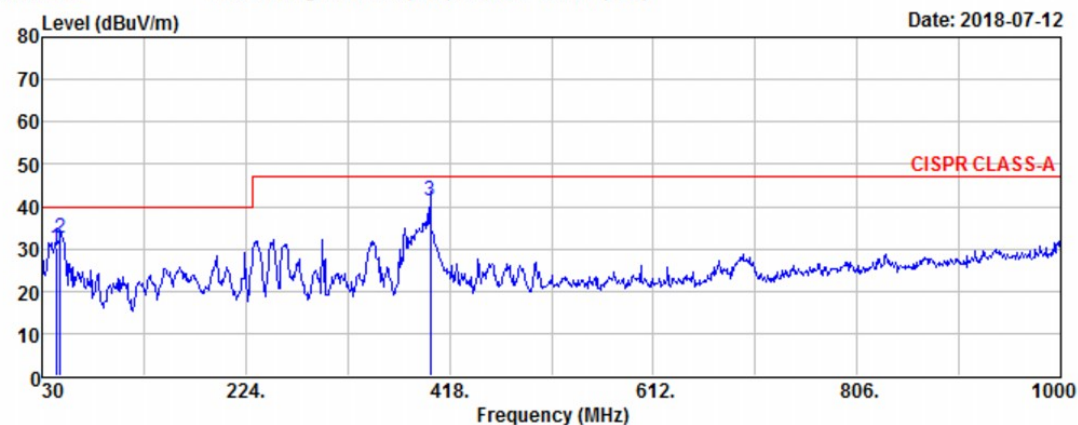
Test Mode : Operating mode

Tested by: YOON H I

Data: 660

File: C:\Program Files (x86)\e3\1807-1.EM6 (662)

Date: 2018-07-12



Freq	Reading	C.F	Result	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	QP dBuV/m	dBuV/m	dB	cm	deg	
43.58	48.77	-18.71	30.06	40.00	9.94	100	162	VERTICAL
47.46	50.94	-18.56	32.38	40.00	7.62	143	222	VERTICAL
399.57	54.73	-13.24	41.49	47.00	5.51	106	181	VERTICAL

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

Radiated Emission (Below 1 GHz) / H



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EUT/Model No.: SLA-T4680D

Temp/Humi: 23 / 49

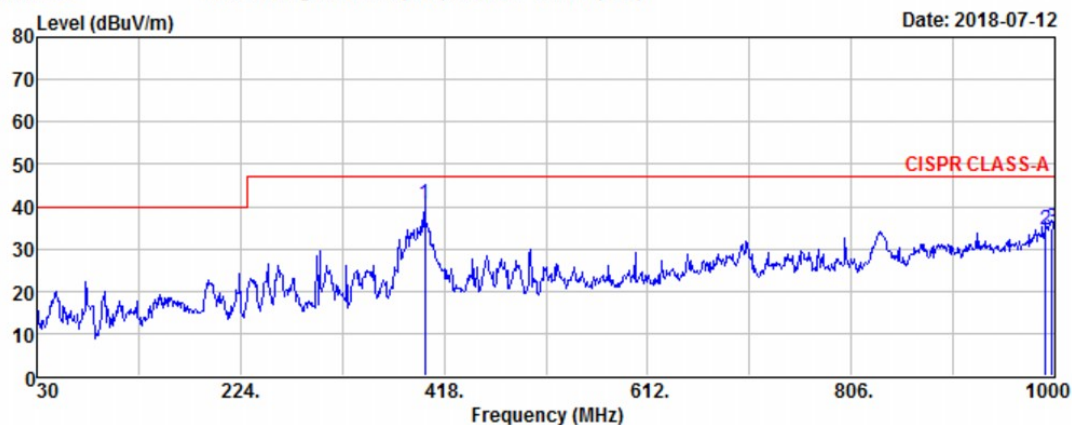
Test Mode : Operating mode

Tested by: YOON H I

Data: 659

File: C:\Program Files (x86)\e3\1807-1.EM6 (662)

Date: 2018-07-12



Freq	Reading	C.F	Result	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	QP dBuV/m	dBuV/m	dB	cm	deg	
399.57	53.70	-13.24	40.46	47.00	6.54	388	286	HORIZONTAL
991.27	35.64	-1.18	34.46	47.00	12.54	376	209	HORIZONTAL
997.09	35.77	-1.07	34.70	47.00	12.30	399	176	HORIZONTAL

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

3.3 IMMUNITY

3.3.1 Electrostatic Discharge

Definition:

The test assesses the ability of the EUT to operate as intended in the event of an electrostatic discharge.

We were performed the test according to LTA procedure LTA-QI-04.

Test date	: 2018.07.12.
Test method	: EN 61000-4-2:2009
Temperature / Humidity / Pressure	: 24 °C / 51 % R.H. / 100 kPa
Discharge Impedance	: (330 ±10 %) Ω / (150 ±10 %) pF
Type of Discharge (air discharge)	: ± 2, 4, 8 kV
Type of Discharge (contact discharge)	: ± 4 kV
Number of discharges at each point	: At least four contact discharge from point ± 100. (at least 50 times at each point of the contact discharge)
Discharge Repetition on Rate	: 1 / sec
Test mode	: Operating mode
Performance Criteria	: B (Refer to the appendix B)
Result	: Complies

Measurement Data:

ESD Test Point and Result

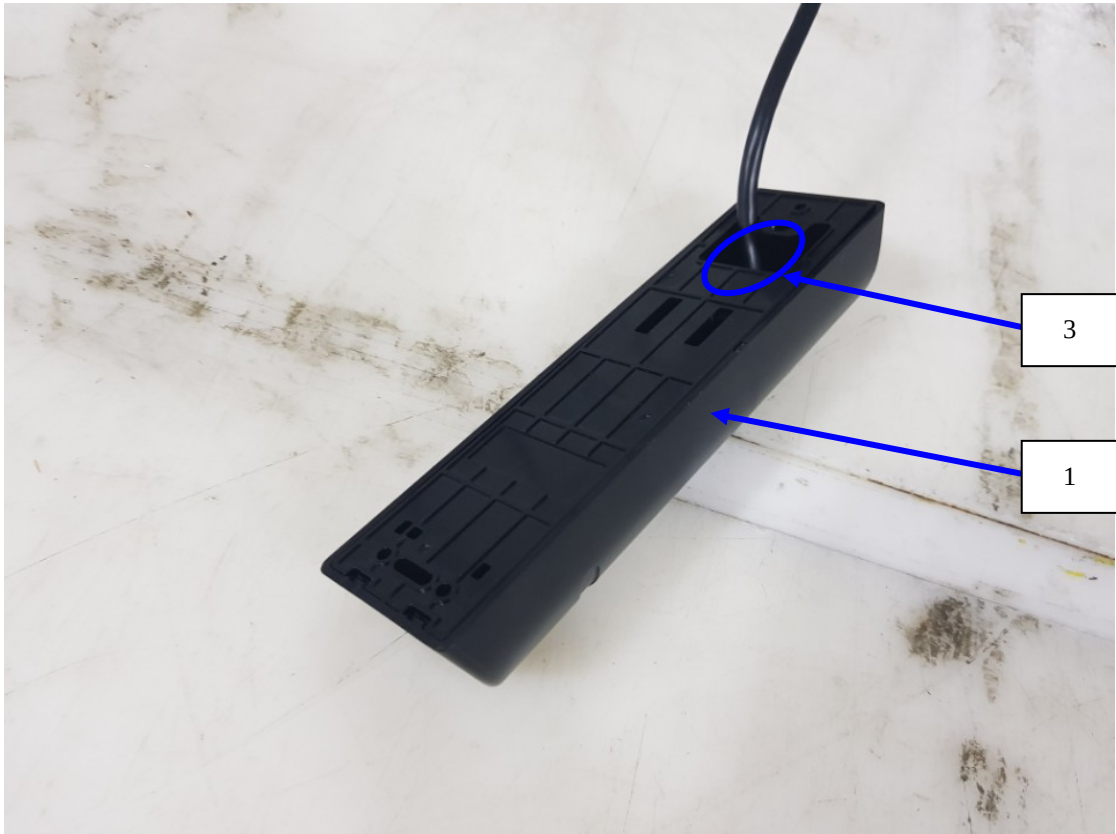
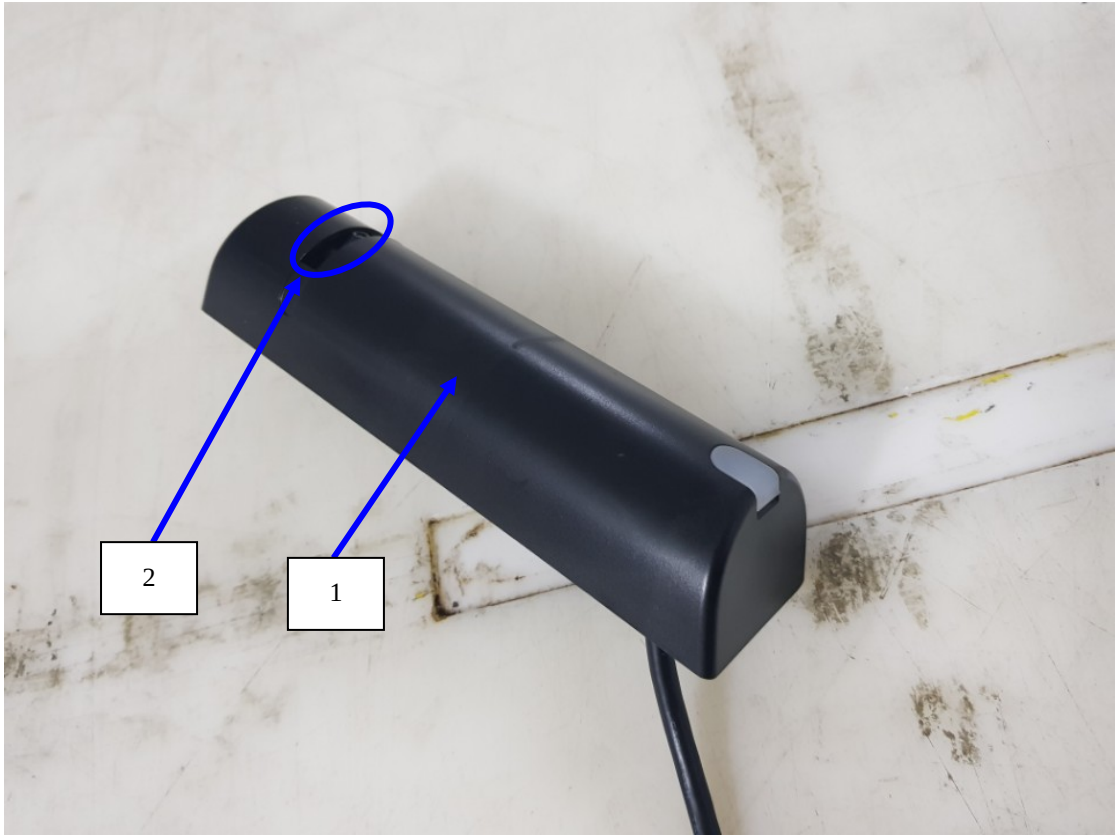
1. Indirect Discharge

No.	Position	Kind of Discharge	Results	Remarks
1	HCP	Contact	Complies (A)	No reaction recognized
2	VCP	Contact	Complies (A)	No reaction recognized

2. Direct Discharge

No.	Position	Kind of Discharge	Result	Remarks
1	Enclosure	Air	Complies (A)	No reaction recognized
2	LENS	Air	Complies (A)	No reaction recognized
3	LAN	Air	Complies (A)	No reaction recognized

← Air discharge **ESD TEST POINT**
← Contact discharge



3.3.2 RF Electromagnetic Field

Definition:

The test assesses the ability of the EUT to operate as intended in the presence of a radio frequency electromagnetic field disturbance.

We were performed the test according to LTA procedure LTA-QI-04.

Test date	: 2018.07.12.
Test method	: EN 61000-4-3:2006/A1:2008/A2:2010
Temperature / Humidity / Pressure	: 24 °C / 52 % R.H. / 100 kPa
Frequency range	: 80 MHz ~ 1 GHz, Spot (1 800, 2 600, 3 500, 5 000) MHz
Test level	: 3 V/m (measured unmodulated)
Amplitude Modulation	: AM, 80 %, 1 ^{kHz} Audio signal
Step size	: 1 % of fundamental
Test mode	: Operating mode
Performance Criteria	: A (Refer to the appendix B)
Result	: Complies

Measurement Data:

Port	Side	Result	Remarks
Horizontal	Front	Complies (A)	No reaction recognized
	Left	Complies (A)	No reaction recognized
	Rear	Complies (A)	No reaction recognized
	Right	Complies (A)	No reaction recognized
Vertical	Front	Complies (A)	No reaction recognized
	Left	Complies (A)	No reaction recognized
	Rear	Complies (A)	No reaction recognized
	Right	Complies (A)	No reaction recognized

3.3.3 Electrical fast transients

Definition:

The test assesses the ability of the EUT to operate as intended in the event of fast transients presence on one of the input/output ports.

We were performed the test according to LTA procedure LTA-QI-04.

Test date : 2018.07.13.
Test method : EN 61000-4-4:2012
Temperature / Humidity / Pressure : 21 °C / 50 % R.H. / 100 kPa
Cable length : > 3 m
Test level : ± 1.0 kV(line to line (AC)), ± 0.5 kV(line to line (Signal))
Repetition frequency : 5 kHz
Test mode : Operating mode
Performance Criteria : B (Refer to the appendix B)
Result : **Complies**

Measurement Data:

Signal Line	Test level	Result	Remarks
LAN	± 0.5 kV	Complies (A)	No reaction recognized

3.3.4 Conducted disturbances, induced by radio-frequency fields

Definition:

The test assesses the ability of the EUT to operate as intended in the presence of a radio frequency electromagnetic disturbance on the input/output ports.

We were performed the test according to LTA procedure LTA-QI-04.

Test date : 2018.07.13.

Test method : EN 61000-4-6:2014/AC:2015

Temperature / Humidity / Pressure : 23 °C / 51 % R.H. / 100 kPa

Frequency range : 0.15 MHz – 80 MHz

Test level : 0.15 MHz to 10 MHz / 3 Vrms unmodulated
10 MHz to 30 MHz / 3 to 1 Vrms unmodulated
30 MHz to 80 MHz / 1 Vrms unmodulated

Amplitude Modulation : AM, 80 %, 1 kHz Audio signal

Step size : 1 % of fundamental.

Test mode : Operating mode

Performance Criteria : A (Refer to the appendix B)

Result : **Complies**

Measurement Data:

Port	Mode	Result	Remarks
LAN	Operating mode	Complies (A)	No reaction recognized

APPENDIX A

TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment are identified by the Test Laboratory.

Conducted emissions

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	EMI TEST Receiver	ESR	Rohde & Schwarz	101499	2019.07.11	1 year
☒	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100710	2019.03.19	1 year
☒	ISN	ISN T800	TESEQ	27109	2019.01.23	1 year
☒	ISN	ENY81-CA6	Rohde & Schwarz	101565	2019.01.23	1 year
☐	CURRENT PROBE	EZ-17	Rohde & Schwarz	100508	2019.01.22	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	100378	2018.09.07	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	101468	2018.12.21	1 year
☒	LISN	ENV216	Rohde & Schwarz	100408	2018.09.07	1 year
☒	LISN	LT32C/10	AFJ	32031518210	2018.11.24	1 year
☒	TEST PROGRAM	e3_Ver: 5.5.201a	AUDIX	-	-	1 year

Radiated Emission – Below 1 GHz

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	EMI TEST Receiver	ESU	Rohde & Schwarz	100092	2018.12.21	1 year
☒	Amplifier (25 dB)	8447D	HP	2944A07684	2018.09.07	1 year
☒	TRILOG Antenna	VULB9160	SCHWARZBECK	9160-3237	2019.05.16	2 year
☒	TEST PROGRAM	e3_Ver: 6.2009-10-12a	AUDIX	-	-	-

Electrostatic Discharge

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	ESD Simulator	ESS-2000	NOISEKEN	8000C03241	2018.12.06	1 year

RF Electromagnetic Field

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	Signal Generator	E4432B	Agilent	MY41310632	2018.05.22	1 year
☒	Power Meter	E4419B	Agilent	GB38410133	2018.06.09	1 year
☒	RF POWER AMPLIFIER	ITA0300KL-300	INFINITECH	0300KL 1507 001	-	-
☒	RF POWER AMPLIFIER	ITA2000KL-120	INFINITECH	200KL 1507 001	-	-
☒	RF POWER AMPLIFIER	ITA4500KL-70	INFINITECH	4500KL 1507 001	-	-
☒	RF POWER AMPLIFIER	ITA0750KL-300	INFINITECH	0750KL 1507 001	-	-
☒	Log.-Per.Antenna (80 MHz ~ 3 GHz)	K9128	RAPA	NONE	-	-
☒	Signal Generator	SMB 100A	R&S	177621	2019.03.19	1 year
☒	HORN ANTENNA	3115	ETS	00055005	2019.04.17	1 year

Electrical fast transients

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	Compact Generator	Compact NX	EMTEST	P1725200196	2018.12.22	1 year
☒	AC Power Source	Variac NX	EMTEST	P1745207276	2018.12.22	1 year
☒	Capacitive Coupling Clamp	CCI	EMTEST	P1703190739	2019.03.19	1 year

Conducted disturbances, induced by radio-frequency fields

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	Signal generator	SML03	R&S	103026/0013	2019.03.19	1 year
☒	POWER METER	NRVD	R&S	101689	2019.03.19	1 year
☒	RF Power Amplifier	FLL75A	FRANKONIA	1033	-	-
☒	EM INJECTION CLAMP	TSIC-23	F.C.C	529	2018.06.12	1 year
☐	CDN (M1)	TSCDN-M1-16A	F.C.C	07004	2018.09.07	1 year
☒	CDN (M2)	TSCDN-M2-16A	F.C.C	07008	2018.09.07	1 year
☒	CDN (M3)	TSCDN-M3-16A	F.C.C	07017	2018.09.07	1 year

APPENDIX B

PERFORMANCE CRITERIA

Performance criterion A:

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion B:

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test. If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as untended.

Performance criterion C:

Loss of function is allowed, provided the function is self-recoverable or can be restored by the operating of the controls by the user In accordance with the manufacturer's instructions. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

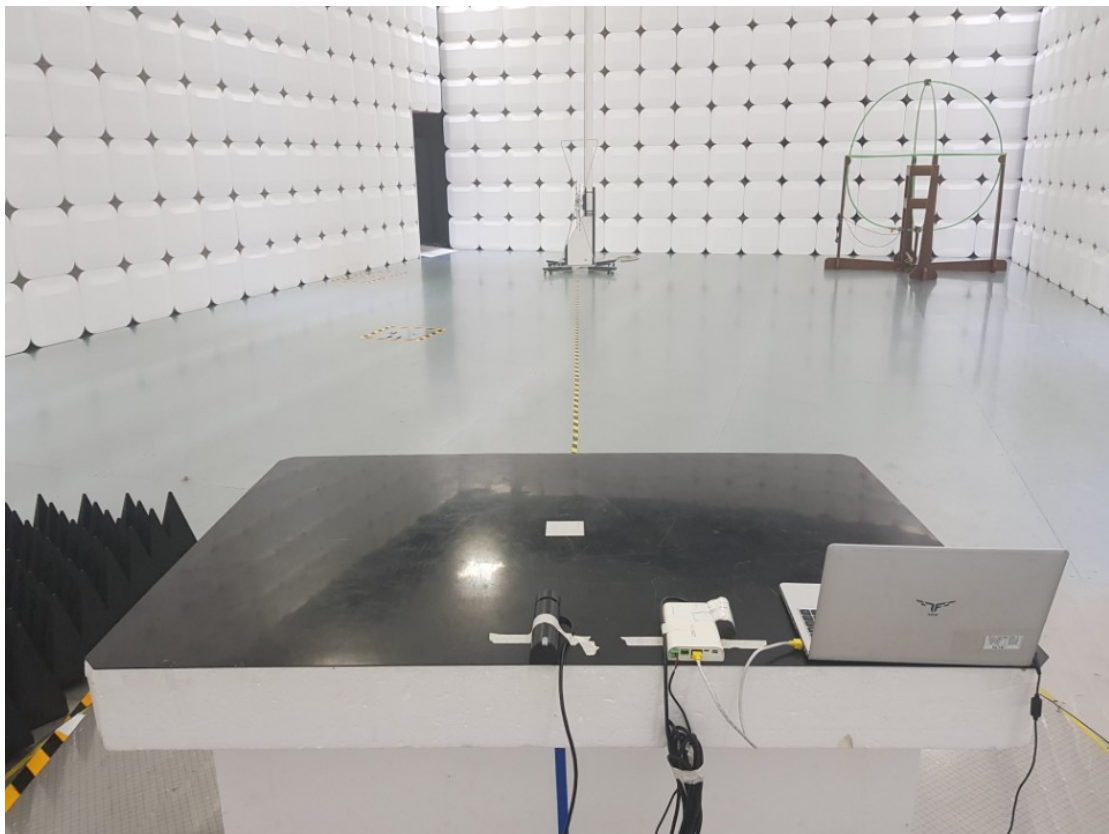
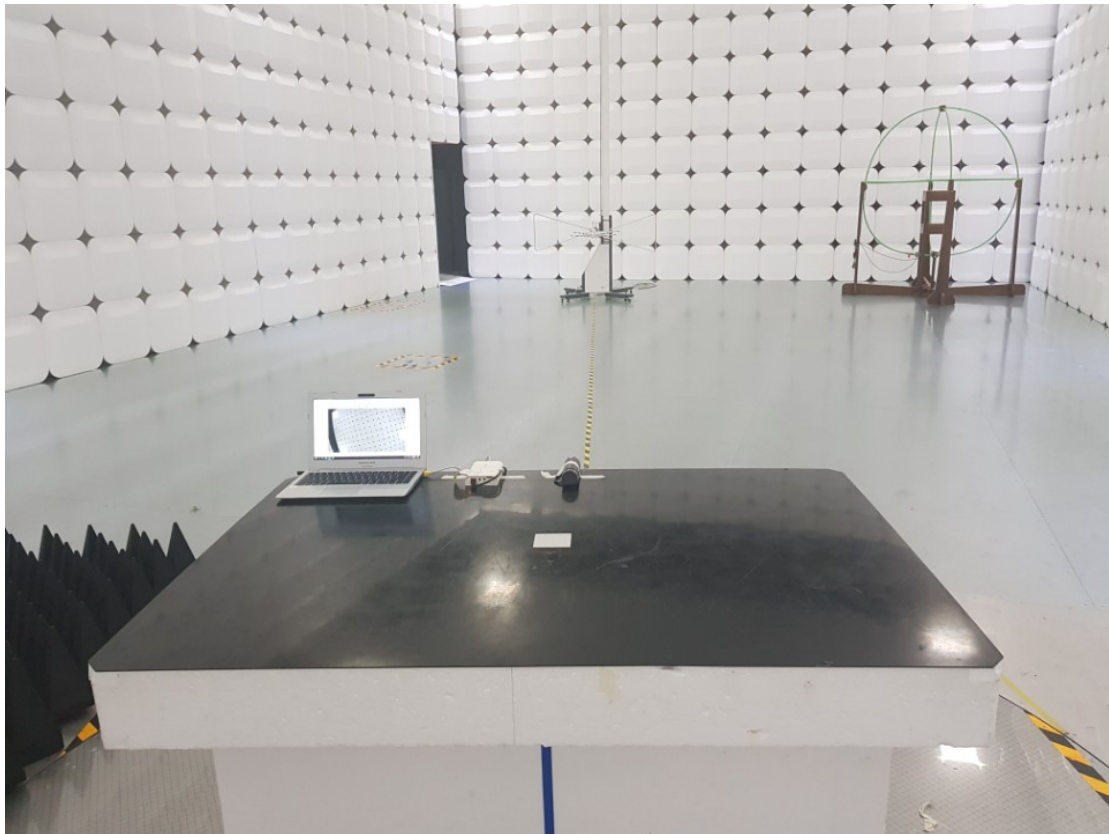
APPENDIX C

PHOTOGRAPHS

Conducted emission (Maximum emission configuration) _ TEL



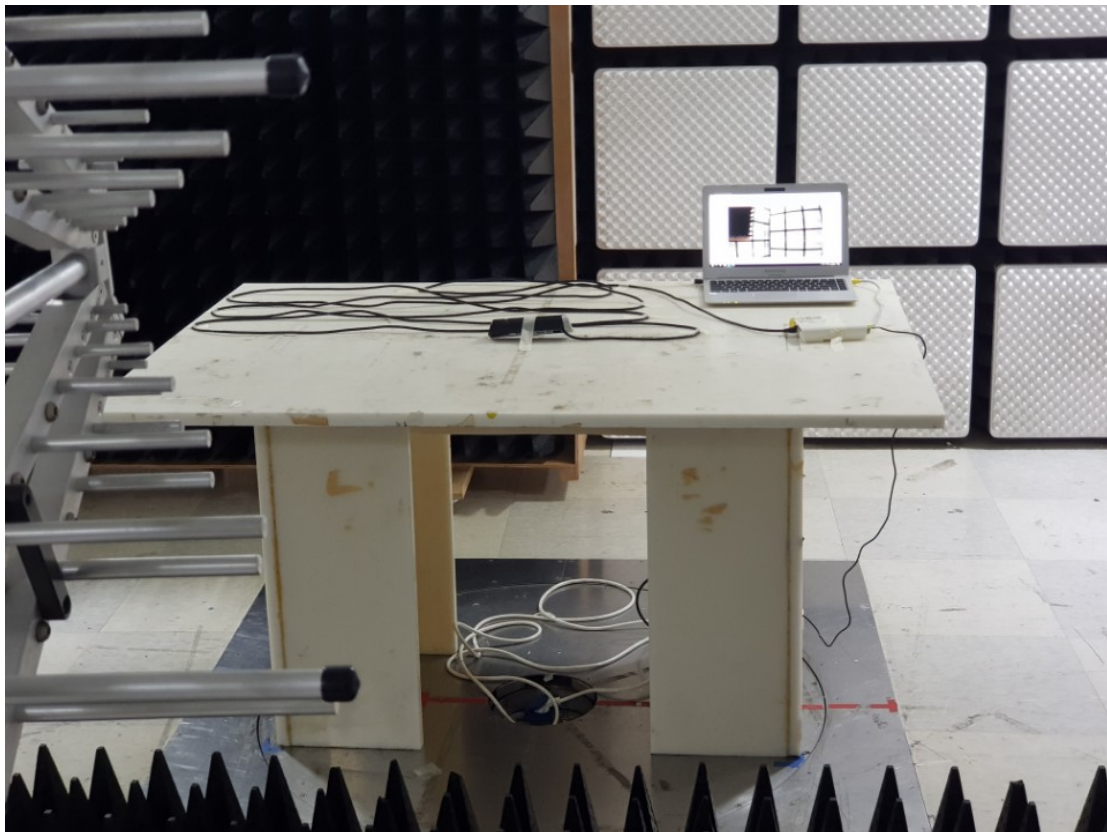
Radiated emission (Maximum emission configuration) / Below 1 GHz



Electrostatic discharge



RF Electromagnetic Field



Electrical fast transients



Conducted Disturbances, Induced by Radio-Frequency Fields



EUT



EUT

