TEST REPORT

Applicant:	Dragino Technology Co., Limited.
Address of Applicant:	Room 202,BaoChengTai industrial park,No.8 CaiYun LongCheng Street,LongGang District, Shenzhen 518116, China
Manufacturer/Factory:	Dragino Technology Co., Limited.
Address of Manufacturer/Factory:	Room 202,BaoChengTai industrial park,No.8 CaiYun LongCheng Street,LongGang District, Shenzhen 518116, China

Equipment Under Test (EUT)

Product Name:	LoRaWAN Gateway
Model No.:	DLOS8
Trade Mark:	Dragino
Applicable standards:	EN 55032:2015/AC:2016-07 EN 55035:2017 EN IEC 61000-3-2:2019 EN 61000-3-3:2013/A1:2019
Date of sample receipt:	Oct. 12, 2020
Date of Test:	Oct. 12 – Nov. 03, 2020
Date of report issued:	Nov. 04, 2020
Test Result :	PASS *

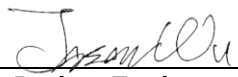
* In the configuration tested, the EUT complied with the standards specified above.

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 EC Directives. The protection requirements with respect to electromagnetic compatibility contained in Directive 2014/30/EU are considered.

Robinson Luo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*Nov. 04, 2020*	*Original*

Prepared By:  ***Date:*** *Nov. 04, 2020*

Project Engineer

Check By:  ***Date:*** *Nov. 04, 2020*

Reviewer

3 Contents

4 Test Summary

Test item	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (up to 1G)	EN 55032	EN 55032	Class B	Pass
Radiated Emission (above 1G）	EN 55032	EN 55032	Class B	Pass
Conducted Emission	EN 55032	EN 55032	Class B	Pass
Asymmetric mode conducted emissions	EN 55032	EN 55032	Class B	Pass
Disturbance voltage at antenna terminal	EN 55032	EN 55032	Class B	Pass
Harmonic Emission	EN 61000-3-2	EN 61000-3-2	Class A	N/A
Flicker Emission	EN 61000-3-3	EN 61000-3-3	Clause 5	Pass
Electrostatic discharge	EN 55035	EN 55035	Contact ±4 kV Air ±2,±4,±8 kV	Pass
Radio-frequency electromagnetic field Amplitude modulated	EN 55035	EN 55035	3V/m 80%, 1kHz, AM	Pass
Electrical fast transients	EN 55035	EN 55035	± 1.0kV for AC port; ± 0.5kV for signal ports	Pass
Surges	EN 55035	EN 55035	±1kV D.M,for AC port; ±1kV for signal port	Pass
Radio-frequency continuous conducted	EN 55035	EN 55035	3Vrms (emf), 80%, 1kHz Amp. Mod.	Pass
Voltage dips and Voltage interruptions	EN 55035	EN 55035	0 % U_T* for 0.5per 0 % U_T* for 250per 70 % U_T* for 25per	Pass

Remark:

1. *Pass: Comply with the essential requirements in the standard.*
2. *N/A；not applicable*
3. *U_T: the nominal supply voltage; D.M: Differential Mode; C.M: Common Mode.*
4. *# Refer to EN55032 clause 8 conditional testing procedure :*

Highest internal frequency (Fx)	*Highest measured frequency*
Fx ≤ 108 MHz	*1GHz*
108 MHz < Fx ≤ 500 MHz	*2GHz*
500 MHz < Fx ≤ 1 GHz	*5GHz*
Fx > 1 GHz	*5 x Fx up to a maximum of 6 GHz*
NOTE 1 For FM and TV broadcast receivers, Fx is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies. *NOTE 2 Fx is highest fundamental frequency generated or used within the EUT or highest frequency at which it operates.* *NOTE 3 For outdoor units of home satellite receiving systems highest measured frequency shall be 18 GHz.*	

Where Fx is unknown, the radiated emission measurements shall be performed up to 6 GHz.

5 General Information

5.1 General Description of EUT

Product Name:	LoRaWAN Gateway
Model No.:	DLOS8
Power Supply:	AC/DC Adapter Model: TP02-120100E Input:AC100-240V, 50/60Hz Output: DC 12V, 1A

5.2 Test mode and Test voltage

Test mode:	
LAN mode	Keep the EUT in LAN mode
Test voltage:	
AC 230V/50Hz	

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
DELL	PC Host	OPTIPLEX745	GTS312
DELL	MONITOR	N/A	N/A
DELL	KEYBOARD	SK-8115	N/A
DELL	MOUSE	N/A	N/A

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Monitoring of EUT for All Immunity Test

Visual:	Monitored the light and work status of the EUT
Audio:	N/A

5.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

● **IC —Registration No.: 9079A**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

5.8 Test Location

RS & Surges(Signal ports and Telecommunication ports) test were performed at:
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.
All other tests were performed at:
Global United Technology Services Co., Ltd. Address: No. 123- 128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Tel: 0755-27798480 Fax: 0755-27798960

6 Test Instruments List

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 25 2020	June. 24 2021
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 25 2020	June. 24 2021
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 25 2020	June. 24 2021
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 25 2020	June. 24 2021
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 25 2020	June. 24 2021
9	Coaxial Cable	GTS	N/A	GTS211	June. 25 2020	June. 24 2021
10	Coaxial cable	GTS	N/A	GTS210	June. 25 2020	June. 24 2021
11	Coaxial Cable	GTS	N/A	GTS212	June. 25 2020	June. 24 2021
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 25 2020	June. 24 2021
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 25 2020	June. 24 2021
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 25 2020	June. 24 2021
15	Band filter	Amindeon	82346	GTS219	June. 25 2020	June. 24 2021
16	Power Meter	Anritsu	ML2495A	GTS540	June. 25 2020	June. 24 2021
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 25 2020	June. 24 2021
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 25 2020	June. 24 2021
19	Splitter	Agilent	11636B	GTS237	June. 25 2020	June. 24 2021
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 25 2020	June. 24 2021
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 18 2020	Oct. 17 2021
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 18 2020	Oct. 17 2021
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 18 2020	Oct. 17 2021
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 25 2020	June. 24 2021

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 25 2020	June. 24 2021
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	June. 25 2020	June. 24 2021
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 25 2020	June. 24 2021
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 25 2020	June. 24 2021
9	ISN	SCHWARZBECK	NTFM 8158	GTD565	June. 25 2020	June. 24 2021

Disturbance power						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 25 2020	June. 24 2021
4	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 25 2020	June. 24 2021
5	Coaxial Cable	GTS	N/A	GTS213	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 25 2020	June. 24 2021

Loop						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	TPIPLE-LOOP ANTENNA	EVERFINE	LLA-2	GTS539	June. 25 2020	June. 24 2021

ESD						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	ESD Simulator	KIKUSUI	KES4021A	GTS242	June. 25 2020	June. 24 2021
2	Thermo meter	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021

Conducted Immunity						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Signal Generator	ROHDE & SCHWARZ	SMB 100A	GTS553	June. 25 2020	June. 24 2021
2	CDN	LionCEL	CDN-M3-16	GTS554	June. 25 2020	June. 24 2021
3	CDN	CYBERTEK	EM 5070	GTS559	June. 25 2020	June. 24 2021
4	Power amplifier	rflight	NTWPA-00010475	GTS555	June. 25 2020	June. 24 2021
5	ATT	SUNWAVE	SJ-50-06DB	GTS556	June. 25 2020	June. 24 2021
6	Clamp	SCHAFFNER	KEMZ 801	GTS558	June. 25 2020	June. 24 2021

Harmonic/ Flicker						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Power Analyzer H/F	EMTEST	DPA500	GTS235	June. 25 2020	June. 24 2021
2	AC POWER SUPPLY	EMTEST	ACS500	GTS236	June. 25 2020	June. 24 2021
3	Thermo meter	KTJ	TA328	GTS256	June. 25 2020	June. 24 2021

EFT, Surge, Voltage dips and Interruption						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	EMTEST system	EMTEST	UCS500N	GTS239	June. 25 2020	June. 24 2021
2	Clamp	EMTEST	HFK	GTS557	June. 25 2020	June. 24 2021
3	Thermo meter	KTJ	TA328	GTS238	June. 25 2020	June. 24 2021

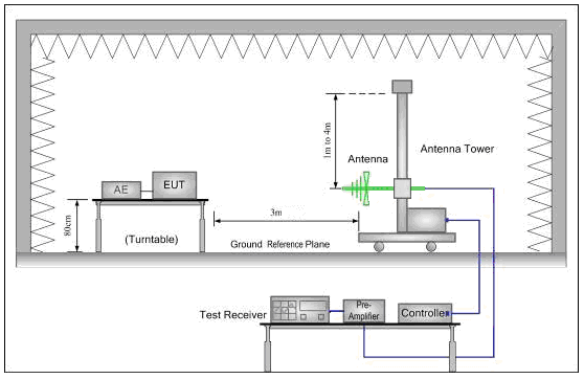
Surge (Signal ports and Telecommunication ports)						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Ultra Compact Simulator	EM Test	UCS 500N7	SEM018-02	2020-04-11	2021-04-10
2	High Speed Coupling/Decoupling Network	EM Test	CNI 508N2	SEM018-05	2020-04-11	2021-04-10
3	Measurement Software	EM Test	IEC CONTROL V6.0.1	N/A	N/A	N/A

Radiated Immunity						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Fully-Anechoic Chamber 2	Chang Zhou Zhong Shuo	854	SEM001-05	2020-05-09	2023-05-08
2	Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-09	2020-04-01	2021-03-31
3	Stacked Log.-Per.-Broadband Antenna (70MHz-10GHz)	Schwarzbeck	STLP 9129	SEM003-25	N/A	N/A
4	Signal Generator (9kHz-6GHz)	Rohde & Schwarz	SMB100A	SEM006-11	2020-04-01	2021-03-31
5	Broadband Amplifier (80MHz-1GHz)	Rohde & Schwarz	BBA150-BC250	SEM005-12	2020-09-23	2021-09-22
6	Broadband Amplifier(800MHz-3GHz)	Rohde & Schwarz	BBA150-D110	SEM005-13	2020-04-01	2021-03-31
7	Broadband Amplifier(2.5GHz-6GHz)	Rohde & Schwarz	BBA150-E60	SEM005-16	2020-04-11	2021-04-10
8	Measurement Software	Rohde & Schwarz	EMC32 V9.25.00	N/A	N/A	N/A

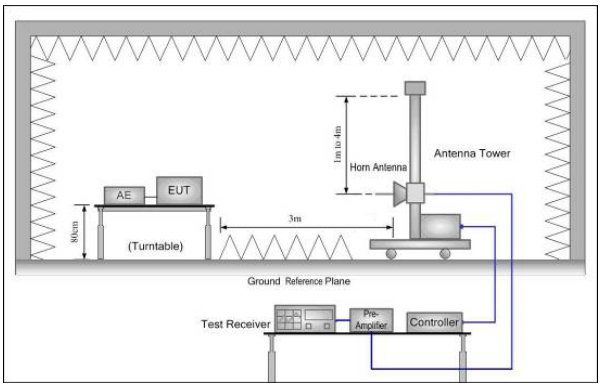
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021
2	Barometer	ChangChun	DYM3	GTS255	June. 25 2020	June. 24 2021

7 Emission Test Results

7.1 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>EN 55032</td></tr>
<tr><td>Test Method:</td><td>EN 55032</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 6GHz</td></tr>
<tr><td>Class / Severity:</td><td>Class B</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m, 10m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Value</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>AV</td><td>1MHz</td><td>3MHz</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBµV/m @3m)</th><th>Value</th></tr>
<tr><td>30MHz-230MHz</td><td>40.00</td><td>Quasi-peak</td></tr>
<tr><td>230MHz-1GHz</td><td>47.00</td><td>Quasi-peak</td></tr>
<tr><td>1GHz-3GHz</td><td>70.00</td><td>Peak</td></tr>
<tr><td>1GHz-3GHz</td><td>50.00</td><td>Average</td></tr>
<tr><td>3GHz-6GHz</td><td>74.00</td><td>Peak</td></tr>
<tr><td>3GHz-6GHz</td><td>54.00</td><td>Average</td></tr>
</table>
<table>
<tr><th>Frequency</th><th>Limit (dBµV/m @10m)</th><th>Value</th></tr>
<tr><td>30MHz-230MHz</td><td>30.00</td><td>Quasi-peak</td></tr>
<tr><td>230MHz-1GHz</td><td>37.00</td><td>Quasi-peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz:
 

Above 1GHz:</td></tr>
</table>

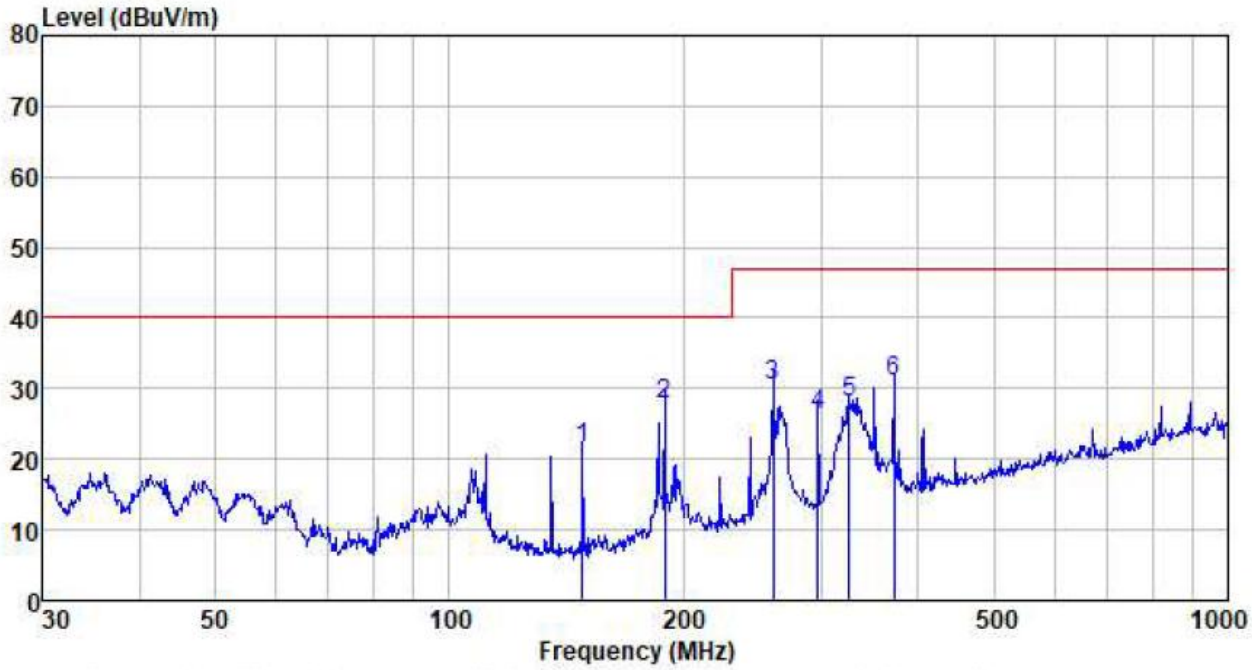
<table>
<tr><td></td><td> 
</td></tr>
<tr><td>Test Procedure:</td><td>From 30MHz to 1GHz:
1. The radiated emissions test was conducted in a semi-anechoic chamber.
2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
3. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT.
4. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.
Above 1GHz:
1. The radiated emissions test was conducted in a fully-anechoic chamber.
2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
3. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emission spectrum plots of the EUT.
4. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.</td></tr>
<tr><td>Test environment:</td><td>Temp.: 25 °C | Humid.: 52% | Press.: 1 012mbar</td></tr>
<tr><td>Measurement Record:</td><td>Uncertainty: 3.8039dB （30MHz-200MHz）
3.9679dB （200MHz-1GHz）
4.29dB（1GHz-18GHz）</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6 for details</td></tr>
</table>

Test mode:	Refer to section 5.2 for details and only show the worst case
Test results:	Pass

Measurement Data

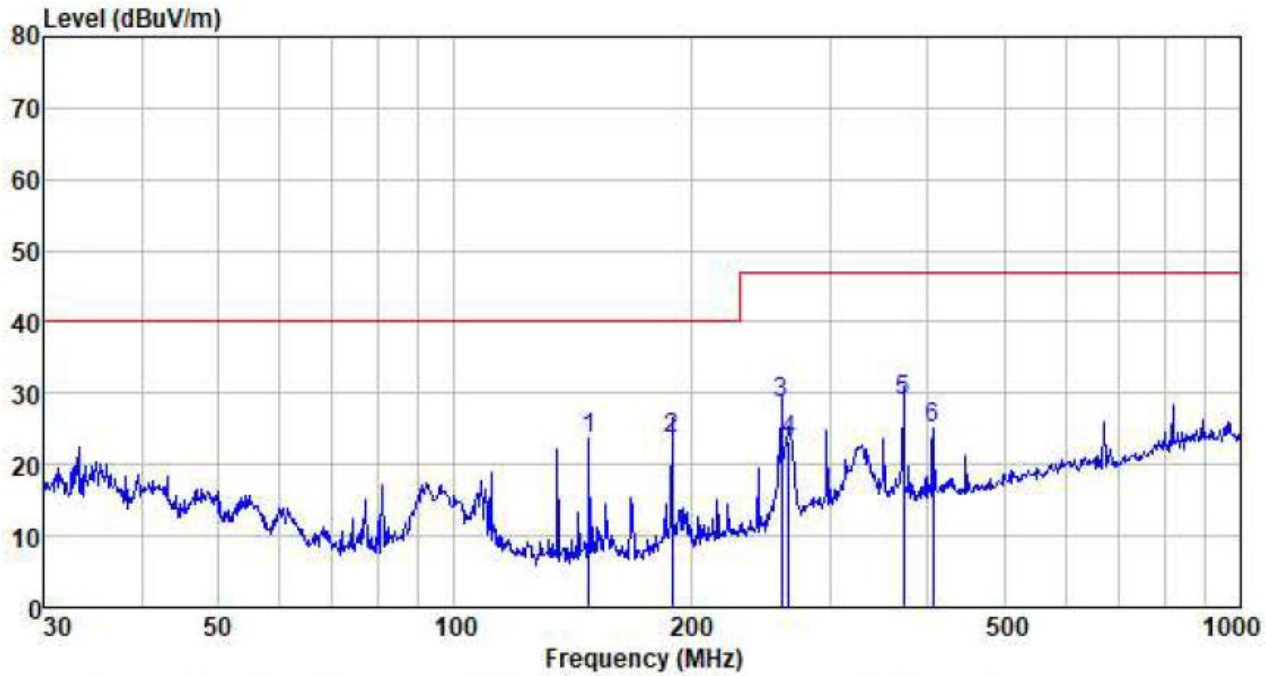
Below 1GHz

Test mode:	LAN mode	Antenna Polarity:	Horizontal



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
148.441	49.47	7.57	1.56	37.07	21.53	40.00	-18.47	QP
189.074	53.42	9.82	1.78	37.28	27.74	40.00	-12.26	QP
260.144	53.10	12.47	2.18	37.39	30.36	47.00	-16.64	QP
297.224	47.88	13.53	2.35	37.42	26.34	47.00	-20.66	QP
326.740	48.86	14.12	2.50	37.45	28.03	47.00	-18.97	QP
372.005	50.98	14.89	2.72	37.49	31.10	47.00	-15.90	QP

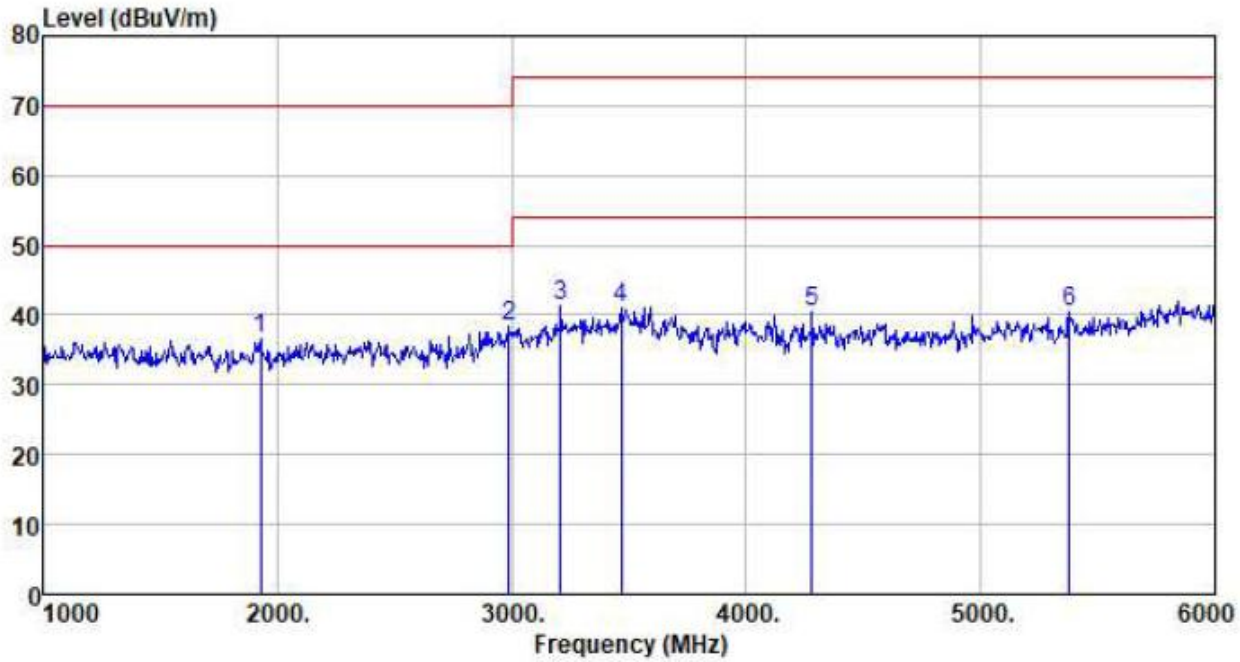
Test mode:	LAN mode	Antenna Polarity:	Vertical



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
148.441	51.56	7.57	1.56	37.07	23.62	40.00	-16.38	QP
189.074	49.28	9.82	1.78	37.28	23.60	40.00	-16.40	QP
260.144	51.45	12.47	2.18	37.39	28.71	47.00	-18.29	QP
266.609	45.82	12.65	2.21	37.39	23.29	47.00	-23.71	QP
372.005	48.84	14.89	2.72	37.49	28.96	47.00	-18.04	QP
406.088	44.16	15.46	2.88	37.52	24.98	47.00	-22.02	QP

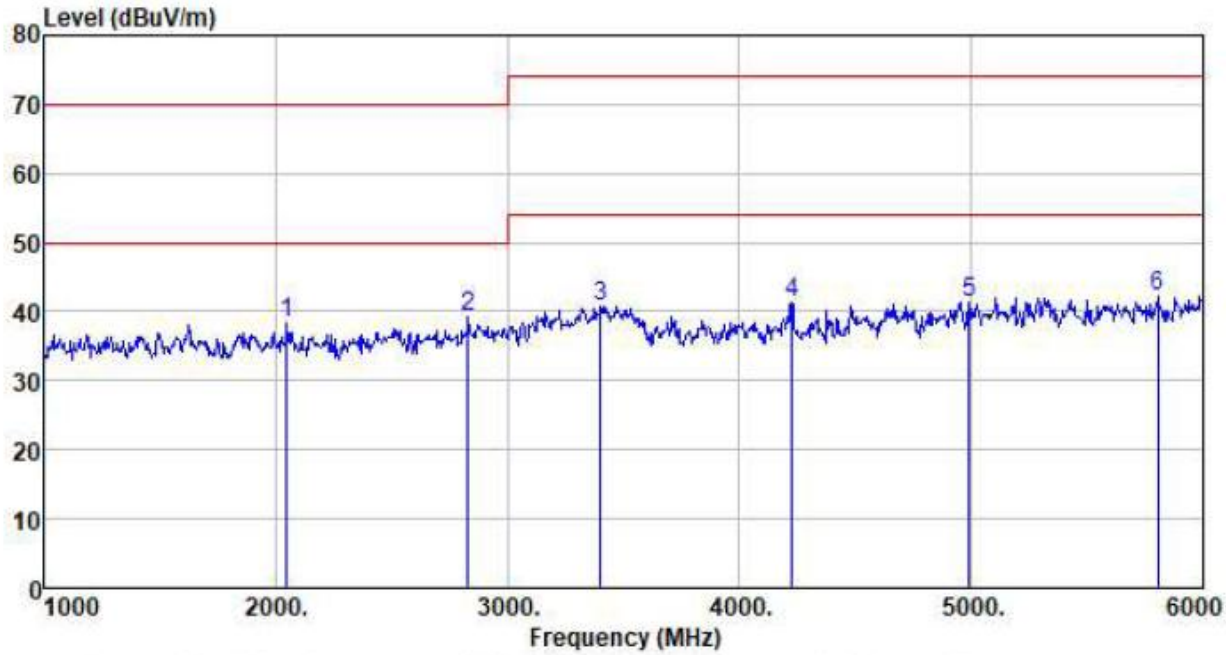
Above 1GHz

Test mode:	LAN mode	Antenna Polarity:	Horizontal



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
1930.000	40.24	25.86	4.92	34.34	36.68	70.00	-33.32	Peak
2990.000	37.23	28.46	5.91	33.33	38.27	70.00	-31.73	Peak
3210.000	39.22	28.68	6.39	33.08	41.21	74.00	-32.79	Peak
3465.000	38.13	28.87	6.89	32.79	41.10	74.00	-32.90	Peak
4280.000	33.60	30.58	8.14	31.86	40.46	74.00	-33.54	Peak
5380.000	31.57	31.79	9.33	32.37	40.32	74.00	-33.68	Peak

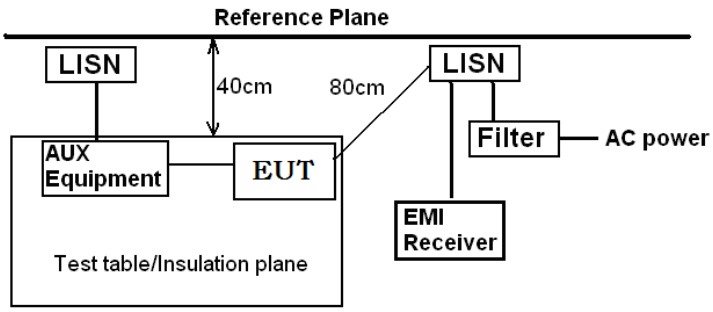
Test mode:	LAN mode	Antenna Polarity:	Vertical



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
2050.000	41.37	26.45	5.01	34.40	38.43	70.00	-31.57	Peak
2830.000	38.55	28.39	5.78	33.51	39.21	70.00	-30.79	Peak
3400.000	38.38	28.60	6.76	32.87	40.87	74.00	-33.13	Peak
4225.000	34.74	30.32	8.09	31.92	41.23	74.00	-32.77	Peak
4990.000	32.93	31.95	8.75	32.18	41.45	74.00	-32.55	Peak
5805.000	31.78	32.66	9.93	32.24	42.13	74.00	-31.87	Peak

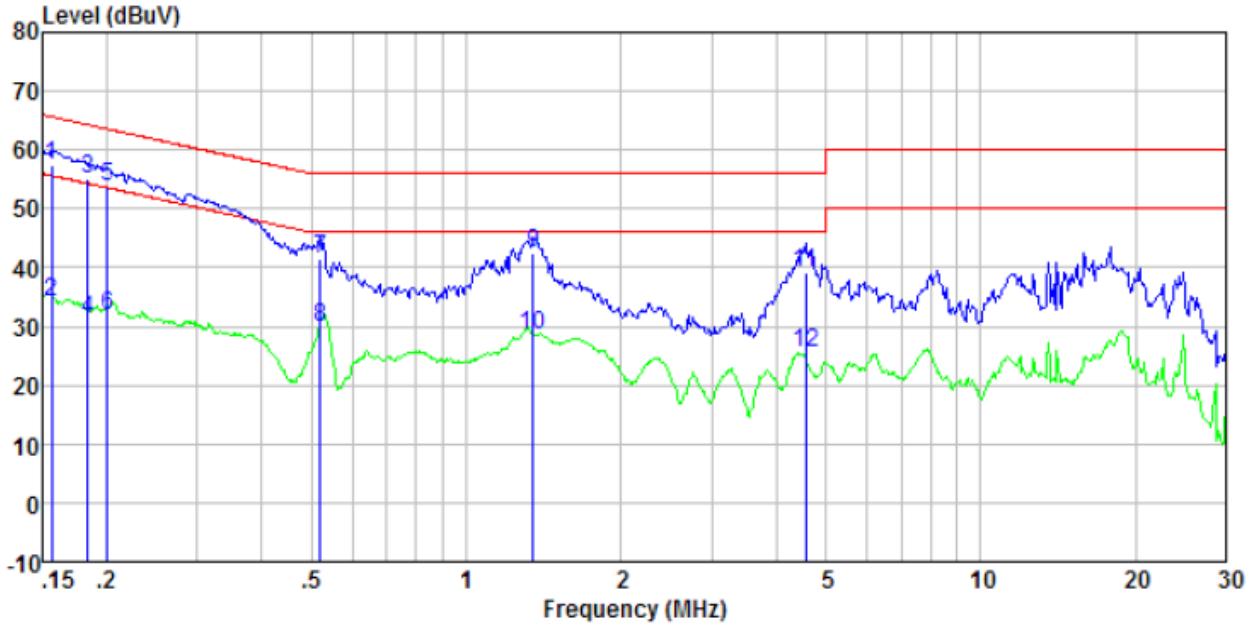
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

7.2 Conducted Emission

Test Requirement:	EN 55032
Test Method:	EN 55032
Test Frequency Range:	150kHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9kHz, VBW=30kHz
Limit:	Frequency range (MHz) / Limit (dBµV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(LISN). The provide a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to EN55032 Class B on conducted measurement.
Test environment:	Temp.: 24 °C | Humid.: 51% | Press.: 1012mbar
Measurement Record:	Uncertainty: 3.44dB
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details and only show the worst case
Test results:	Pass

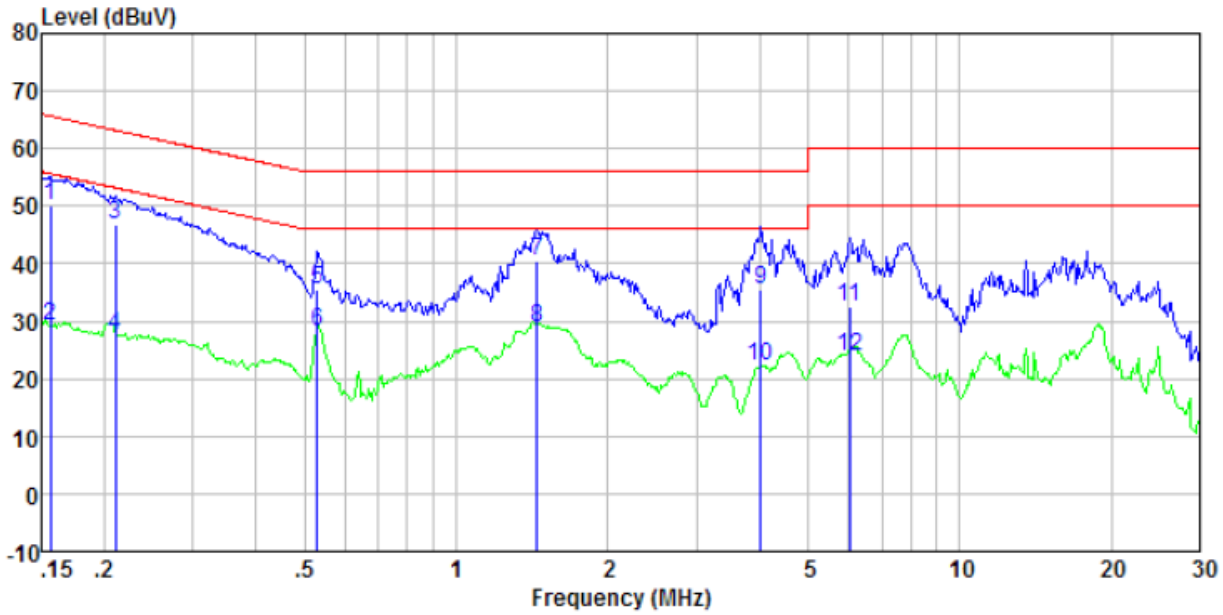
Measurement Data

Test mode:	LAN mode	Phase Polarity:	Line



Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.156	57.10	0.40	0.08	57.58	65.65	-8.07	QP
0.156	33.78	0.40	0.08	34.26	55.65	-21.39	Average
0.183	54.63	0.40	0.10	55.13	64.33	-9.20	QP
0.183	30.84	0.40	0.10	31.34	54.33	-22.99	Average
0.201	53.41	0.40	0.11	53.92	63.58	-9.66	QP
0.201	31.48	0.40	0.11	31.99	53.58	-21.59	Average
0.521	41.02	0.31	0.11	41.44	56.00	-14.56	QP
0.521	29.32	0.31	0.11	29.74	46.00	-16.26	Average
1.352	42.26	0.20	0.16	42.62	56.00	-13.38	QP
1.352	28.26	0.20	0.16	28.62	46.00	-17.38	Average
4.574	38.90	0.20	0.17	39.27	56.00	-16.73	QP
4.574	25.00	0.20	0.17	25.37	46.00	-20.63	Average

Test mode:	LAN mode	Phase Polarity:	Neutral

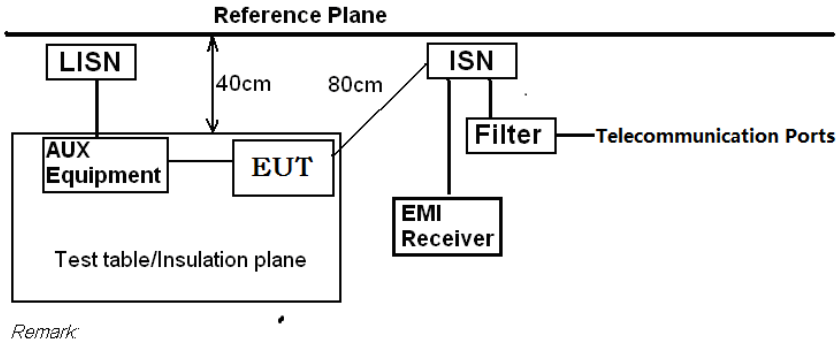


Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.156	49.69	0.40	0.08	50.17	65.65	-15.48	QP
0.156	28.59	0.40	0.08	29.07	55.65	-26.58	Average
0.211	46.14	0.40	0.11	46.65	63.18	-16.53	QP
0.211	26.87	0.40	0.11	27.38	53.18	-25.80	Average
0.529	35.08	0.31	0.11	35.50	56.00	-20.50	QP
0.529	27.90	0.31	0.11	28.32	46.00	-17.68	Average
1.449	40.17	0.20	0.16	40.53	56.00	-15.47	QP
1.449	28.64	0.20	0.16	29.00	46.00	-17.00	Average
4.027	35.16	0.20	0.18	35.54	56.00	-20.46	QP
4.027	21.84	0.20	0.18	22.22	46.00	-23.78	Average
6.056	32.04	0.20	0.18	32.42	60.00	-27.58	QP
6.056	23.62	0.20	0.18	24.00	50.00	-26.00	Average

Notes:

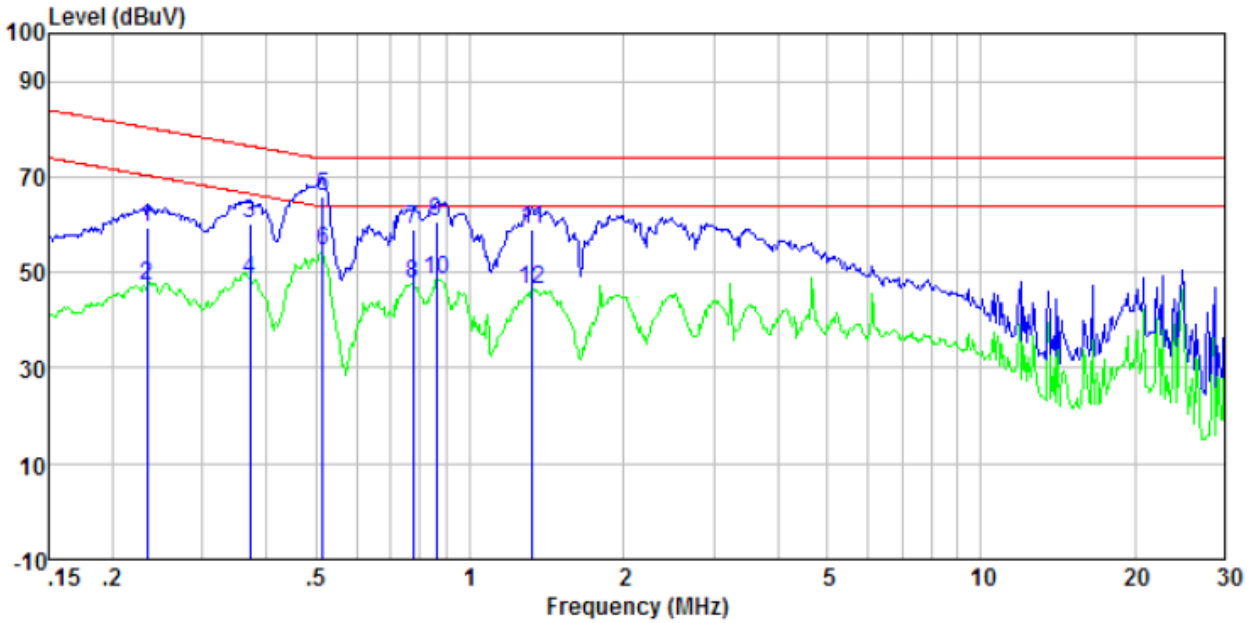
1. *An initial pre-scan was performed on the live and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss*

7.3 Asymmetric mode conducted emissions

Test Requirement:	EN 55032
Test Method:	EN 55032
Test Frequency Range:	150kHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9kHz, VBW=30kHz
Limit:	Frequency range (MHz) / Voltage Limits (dBµV) Quasi-peak / Voltage Limits (dBµV) Average / Current Limit (dBµA) Quasi-peak / Current Limit (dBµA) Average 0.15-0.5: 84 to74* / 74 to64* / 40 to 30* / 30 to 20* 0.5-30: 74 / 64 / 30 / 20 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *ISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	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 150 Ω to the telecommunication port under test (conversion factor is 20 log 10 150 / I = 44 dB
Test environment:	Temp.: 24 °C / Humid.: 51% / Press.: 1012mbar
Measurement Record:	Uncertainty: 3.44dB
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details and only show the worst case
Test results:	Pass

Measurement Data

Test mode:	LAN mode



Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.234	49.41	9.82	0.11	59.34	80.30	-20.96	QP
0.234	37.28	9.82	0.11	47.21	70.30	-23.09	Average
0.371	50.38	9.89	0.10	60.37	76.47	-16.10	QP
0.371	38.56	9.89	0.10	48.55	66.47	-17.92	Average
0.516	56.01	9.88	0.11	66.00	74.00	-8.00	QP
0.516	44.35	9.88	0.11	54.34	64.00	-9.66	Average
0.775	49.03	9.86	0.14	59.03	74.00	-14.97	QP
0.775	37.56	9.86	0.14	47.56	64.00	-16.44	Average
0.862	50.75	9.86	0.14	60.75	74.00	-13.25	QP
0.862	38.29	9.86	0.14	48.29	64.00	-15.71	Average
1.324	48.87	9.82	0.16	58.85	74.00	-15.15	QP
1.324	36.42	9.82	0.16	46.40	64.00	-17.60	Average

Notes:Final Level =Receiver Read level + LISN Factor + Cable Loss

7.4 Harmonic Emission

Test Requirement:	EN 61000-3-2					
Test Method:	EN 61000-3-2					
Frequency range:	100Hz to 2kHz					
Measurement Time:	2.5 min					
Class/Severity:	Class A					
Detector:	As per EN 61000-3-2					
Test environment:	Temp.:	24 °C	Humid.:	51%	Press.:	1 010mbar
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	N/A					

7.5 Flicker Emission

Test Requirement:	EN 61000-3-3					
Test Method:	EN 61000-3-3					
Class/Severity:	Clause 5 of EN 61000-3-3					
Measurement Time:	10 min					
Detector:	As per EN 61000-3-3					
Test environment:	Temp.:	24 °C	Humid.:	51%	Press.:	1 010mbar
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

Measurement Data

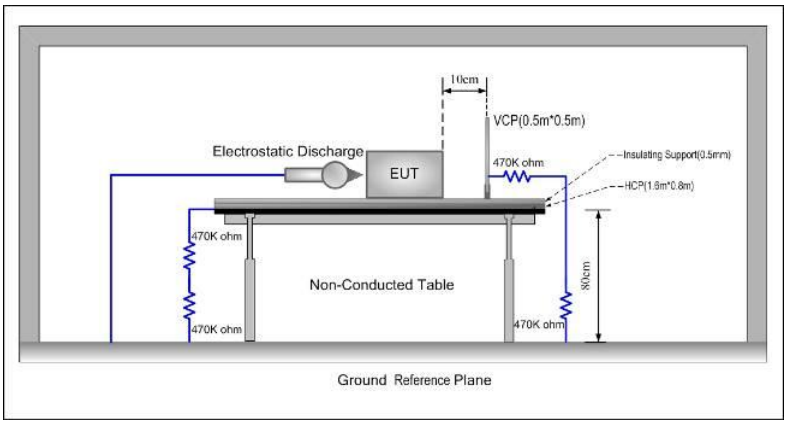
	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.007	3.30	PASS
dmax [%]	0.067	4.00	PASS
dt [s]	0.000	0.50	PASS

8 Immunity Test Results

8.1 Performance Criteria Description in Clause 8 of EN 55035

Criterion A:	During and after the test the EUT shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a minimum performance level specified by the manufacturer when the EUT 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 EUT if used as intended.
Criterion B:	After the test, the EUT 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 EUT 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 EUT if used as intended.
Criterion C:	During and after testing, a temporary loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls or cycling of the power to the EUT 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.

8.2 Electrostatic discharge

Test Requirement:	EN 55035
Test Method:	EN 61000-4-2
Discharge Voltage:	Contact Discharge:±4kV Air Discharge: ±2kV, ±4kV, ±8kV HCP/VCP:±4kV
Polarity:	Positive & Negative
Number of Discharge:	Contact Discharge: Minimum 10 times at each test point, Air Discharge: Minimum 10 times at each test point.
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum
Performance Criterion:	Criterion B
Test setup:	
Test Procedure:	**1. Air discharge:** The test was applied on non-conductive surfaces of EUT. The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. After each discharge, the discharge electrode was removed from the EUT. The generator was re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure was repeated until all the air discharge completed **2. Contact Discharge:** The test was applied on conductive surfaces of EUT. the generator was re-triggered for a new single discharge and repeated 25 times for each pre-selected test point. the tip of the discharge electrode was touch the EUT before the discharge switch was operated. **3. Indirect discharge for horizontal coupling plane** At least 10 single discharges shall be applied at the front edge of each HCP opposite the centre point of each unit of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge. Consideration should be given to exposing all sides of the EUT. **4. Indirect discharge for vertical coupling plane** At least 10 single discharges were applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X

	0.5m, was placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges were applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.					
Test environment:	Temp.:	24 °C	Humid.:	51%	Press.:	1 012mbar
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

Measurement Record:

Test points:	I: Metal ring, LAN port, USB port,
	II: All plastic seam, DC port, Reset key

Direct discharge

Discharge Voltage (KV)	Type of discharge	Test points	Observations Performance	Result
± 4	Contact	I	A	Pass
± 2, ± 4,± 8	Air	II	A	Pass

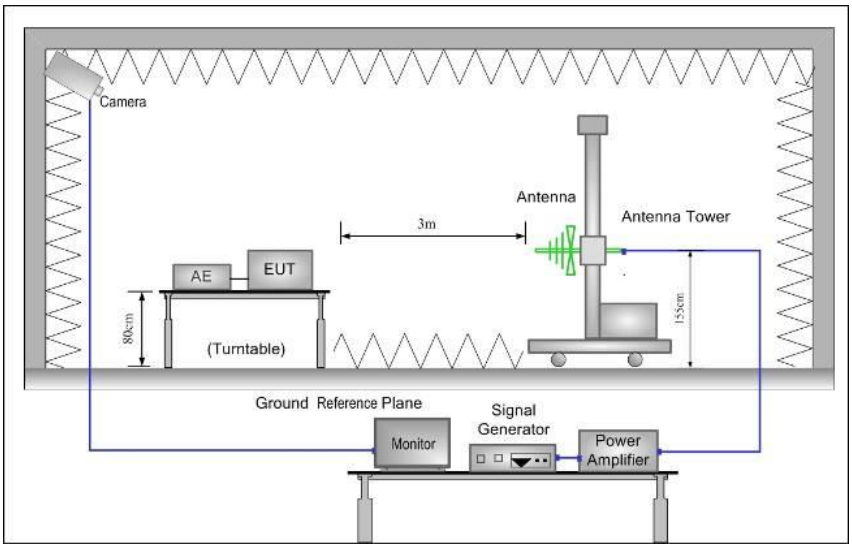
Indirect discharge

Discharge Voltage (KV)	Type of discharge	Test points	Observation Performance	Result
± 4	HCP-Bottom/Top/ Front/Back/Left/Right	Edge of the HCP	A	Pass
± 4	VCP-Bottom/Top/ Front/Back/Left/Right	Center of the VCP	A	Pass

Remark:

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

8.3 Radio-frequency electromagnetic field Amplitude modulated

Test Requirement:	EN 55035
Test Method:	EN 61000-4-3
Frequency range:	80MHz to 1GHz
Test Level:	3V/m
Modulation:	80%, 1kHz Amplitude Modulation
Performance Criterion:	Criterion A
Test setup:	
Test Procedure:	1. For table-top equipment, the EUT was placed in the chamber on a non-conductive table 0.8m high. For arrangement of floor-standing equipment, the EUT was mounted on a non-conductive support 0.1m above the supporting plane. For human body-mounted equipment, the EUT may be tested in the same manner as table top items. 2. If possible, a minimum of 1 m of cable is exposed to the electromagnetic field. Excess length of cables interconnecting units of the EUT shall be bundled low-inductively in the approximate center of the cable to form a bundle 30 cm to 40 cm in length. 3. The EUT was initially placed with one face coincident with the calibration plane. The EUT face being illuminated was contained within the UFA (Uniform Field Area). 4. The frequency ranges to be considered were swept with the signal modulated and pausing to adjust the RF signal level or to switch oscillators and antennas as necessary.Where the frequency range was swept incrementally, the step size was not exceed 1 % of the preceding frequency value. 5. The dwell time of the amplitude modulated carrier at each frequency was not be less than the time necessary for the EUT to be exercised and to respond, and was not less than 0,5 s. 6. The test normally was performed with the generating antenna facing each side of the EUT. 7. The polarization of the field generated by each antenna necessitates testing each selected side twice, once with the antenna positioned

	vertically and again with the antenna positioned horizontally. 8. The EUT was performed in a configuration to actual installation conditions, a video camera and/or a audio monitor were used to monitor the performance of the EUT.					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

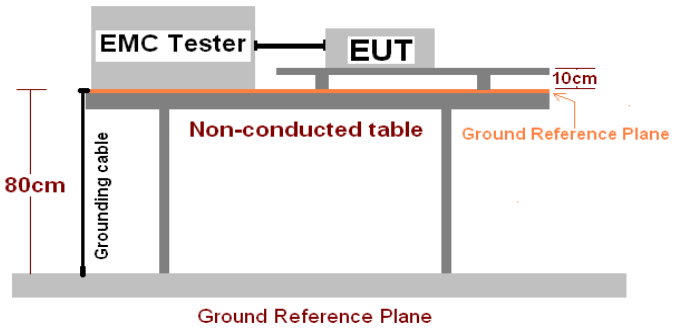
Measurement Record:

Frequency	Level	Modulation	Antenna Polarization	EUT Face	Observations (Performance Criterion)	Result
80 MHz-1 GHz	3 V/m	1 kHz, 80 % Amp. Mod, 1 % increment, dwell time=3seconds	V	Front	A	Pass
			H		A	Pass
			V	Rear	A	Pass
			H		A	Pass
			V	Left	A	Pass
			H		A	Pass
			V	Right	A	Pass
			H		A	Pass
			V	Top	A	Pass
			H		A	Pass
			V	Bottom	A	Pass
			H		A	Pass
1800MHz, 2600MHz 3500MHz 5000MHz	3 V/m	1 kHz, 80 % Amp. Mod, 1 % increment, dwell time=2seconds	V	Front	A	Pass
			H		A	Pass
			V	Rear	A	Pass
			H		A	Pass
			V	Left	A	Pass
			H		A	Pass
			V	Right	A	Pass
			H		A	Pass
			V	Top	A	Pass
			H		A	Pass
			V	Bottom	A	Pass
			H		A	Pass

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

8.4 Electrical fast transients

8.4.1 AC Port

Test Requirement:	EN 55035
Test Method:	EN 61000-4-4
Test Level:	1.0kV
Polarity:	Positive & Negative
Test signal specification:	Rise time=5ns, Duration time=50ns; Burst Duration=15ms, Burst Period=300ms; Repetition Frequency=5KHz
Test Duration:	2 minute per level & polarity
Performance Criterion:	Criterion B
Test setup:	
Test Procedure:	1. The EUT and its simulators were placed on the ground reference plane and were insulated from it by a wood support 0.1m + 0.01m thick. The ground reference plane was 1m*1m metallic sheet with 0.65mm minimum thickness. 2. This reference ground plane was project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane was more than 0.5m. 3. All cables to the EUT was placed on the wood support, cables not subject to EFT/B was routed as far as possible from the cable under test to minimize the coupling between the cables. 4. The length of power lines between the coupling device and the EUT is 0.5m 5. The EUT is connected to the power mains through a coupling device that directly couples the EFT/B interference signal. 6. Each of the Line and Neutral conductors is impressed with burst noise for 2 minutes.
Test environment:	Temp.: 26 °C | Humid.: 54% | Press.: 1 012mbar
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

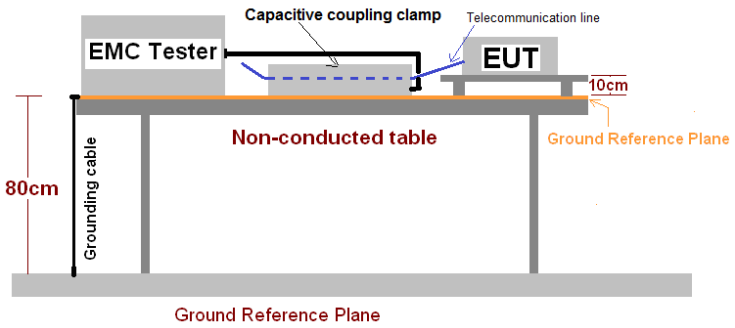
Measurement Record:

Lead for test	Level (±kV)	Coupling Direct/Clamp	Observations (Performance Criterion)	Result
AC mains power input ports	± 1.0	Direct	A	Pass

Remark:

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

8.4.2 Analogue/digital data ports

Test Requirement:	EN 55035
Test Method:	EN 61000-4-4
Test Level:	0.5KV
Polarity:	Positive & Negative
Test signal specification:	Rise time=5ns, Duration time=50ns; Burst Duration=15ms, Burst Period=300ms; Repetition Frequency=5KHz
Test Duration:	2 minute per level & polarity
Performance Criterion:	Criterion B
Test setup:	
Test Procedure:	1. The EUT and its simulators were placed on the ground reference plane and were insulated from it by a wood support 0.1m + 0.01m thick. The ground reference plane was 1m*1m metallic sheet with 0.65mm minimum thickness. 2. The capacitive coupling clamp were placed on the ground reference plane. 3. This reference ground plane was project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane was more than 0.5m. 4. The length of the signal lines between the coupling device and the EUT is 0.5m 5. The signal line were place in the campacitive coupling clamp, and the clamp itself shall be closed as much as possible to provide maximum coupling 6. The EFT interference signal is through a coupling clamp device couples to the signal and control lines of the EUT with burst noise for 2 minutes.
Test environment:	Temp.: 26 °C | Humid.: 54% | Press.: 1 012mbar
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Record:

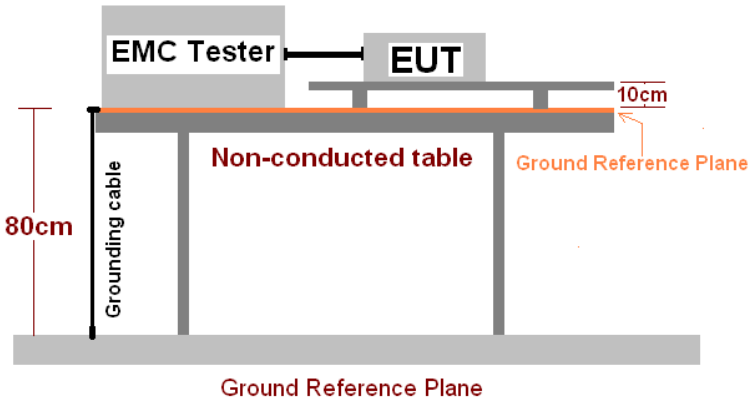
Test port	Level (kV)	Coupling Direct/Clamp	Observations (Performance Criterion)	Result
analogue/digital data ports	± 0.5	Clamp	A	Pass

Remark:

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

8.5 Surges

8.5.1 AC ports

Test Requirement:	EN 55035
Test Method:	EN 61000-4-5
Test Level:	1kV line to line: Differential mode 2kV line to earth: Common mode
Polarity:	Positive & Negative
Generator source impedance:	2Ω (line-line coupling) 12Ω (line-earth coupling)
Test signal specification:	Rise time=1.2us, Duration time=50us; Test Interval: 60s between each surge;
No. of surges:	5 positive, 5 negative at 0°, 90°, 180°, 270°.
Performance Criterion:	Criterion B
Test setup:	
Test Procedure:	1. For line-to-line coupling mode, provide a 1kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points, and for active line / neutral lines to ground are same except test level is 2kV. 2. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are applied during test. 3. Different phase angles are done individually. 4. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

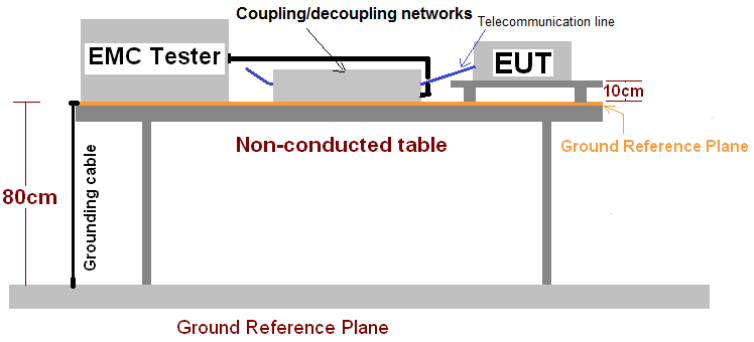
Test environment:	Temp.:	26 °C	Humid.:	53%	Press.:	1 012mbar
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

Measurement Record:

Line for test	Level(kV)	Pulse No	Surge Interval	Phase(deg)	Observations (Performance Criterion)	Result
line to line	± 1	5	60s	0°	A	Pass
				90°	A	Pass
				180°	A	Pass
				270°	A	Pass
line to earth	± 2	5	60s	0°	A	Pass
				90°	A	Pass
				180°	A	Pass
				270°	A	Pass

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

8.5.2 Analogue/digital data ports

Test Requirement:	EN 55035
Test Method:	EN 61000-4-5
Test Level:	1kV
Polarity:	Positive & Negative
Generator source impedance:	42Ω (line-earth coupling)
Test signal specification:	Rise time=10us, Duration time=700us; Test Interval: 60s between each surge;
No. of surges:	5 positive, 5 negative
Performance Criterion:	Criterion C
Test setup:	
Test Procedure:	1. For Coupling/decoupling networks mode, provide a 1kV 10/700us voltage surge 2. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are applied during test. 3. Different phase angles are done individually. 4. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.
Test environment:	Temp.: 26 °C | Humid.: 53% | Press.: 1 012mbar
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Record:

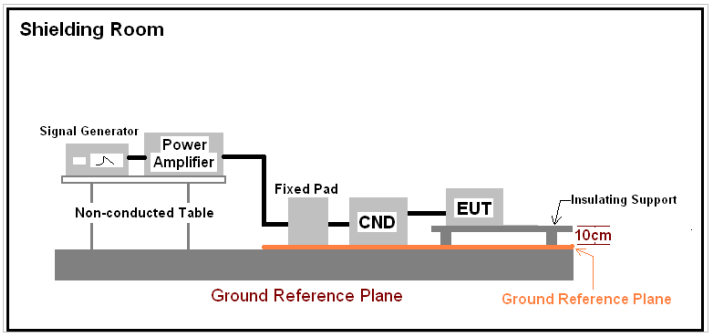
Test port	Level (kV)	Pulse No	Surge Interval	Observations (Performance Criterion)	Result
analogue/digital data ports	± 1	5	60s	A	Pass

Remark:

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

8.6 Radio-frequency continuous conducted

8.6.1 AC ports

Test Requirement:	EN 55035					
Test Method:	EN 61000-4-6					
Frequency range:	0.15MHz to 80MHz					
Test Level:	3V rms on AC Ports (unmodulated emf into 150 Ω)					
Performance Criterion:	Criterion A					
Test setup:						
Test Procedure:	1. The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible). 2. The disturbance signal described below is injected to EUT through CDN. 3. The EUT operates within its operational mode(s) under intended climatic conditions after power on. 4. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.					
Test environment:	Temp.:	24 °C	Humid.:	51%	Press.:	1 012mbar
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

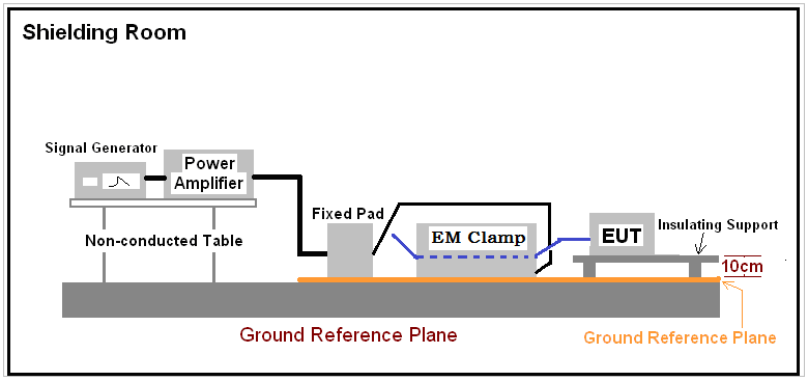
Measurement Record:

Level	Injected Position	Modulation	Observations (Performance Criterion)	Result
3 V rms (0.15MHz-10MHz)	CDN	1 kHz, 80 % Amp. Mod, 1 % increment, dwell time=2seconds	A	Pass
3 to 1 V rms (10MHz-30MHz, Lines)				
1 V rms (30MHz-80MHz)				

Remark:

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

8.6.2 Analogue/digital data ports

Test Requirement:	EN 55035
Test Method:	EN 61000-4-6
Frequency range:	0.15MHz to 80MHz
Test Level:	3V rms
Performance Criterion:	Criterion A
Test setup:	
Test Procedure:	1. The EUT are placed on an insulating support 0.1m high above a ground reference plane. EM Clamp is placed on the ground plane about 0.3m from EUT. Cables between EM clamp and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible). 2. The signal line were place in the EM clamp. 3. The disturbance signal described below is injected to EUT through EM clamp. 4. The EUT operates within its operational mode(s) under intended climatic conditions after power on. 5. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.
Test environment:	Temp.: 24 °C | Humid.: 51% | Press.: 1 012mbar
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

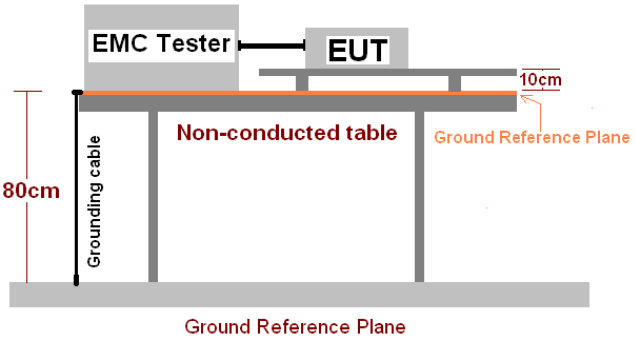
Measurement Record:

Level	Injected Position	Modulation	Observations (Performance Criterion)	Result
3 V rms (0.15MHz-10MHz)	Clamp	1 kHz, 80 % Amp. Mod, 1 % increment, dwell time=2seconds	A	Pass
3 to 1 V rms (10MHz-30MHz, Lines)				
1 V rms (30MHz-80MHz)				

Remark:

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

8.7 Voltage dips and Voltage interruptions

Test Requirement:	EN 55035
Test Method:	EN 61000-4-11
Test Level:	0% of VT(Supply Voltage) for 0.5 period 70% of VT(Supply Voltage) for 25 period 0% of VT(Supply Voltage) for 250 period
Number of Dips / Interruptions:	3 per Level
Performance Criterion:	>95% VD, 0.5 period----Performance criterion: B 30% VD, 25 period----Performance criterion: C >95% VI, 250 period----Performance criterion: C
Test setup:	
Test Procedure:	1. The EUT and test generator were setup as shown on above setup photo. 2. The interruptions are introduced at selected phase angles with specified duration. 3. Record any degradation of performance.
Test environment:	Temp.: 26 °C Humid.: 53% Press.: 1 012mbar
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Record:

Test Level % U_T	Duration (Periods)	Phase angle	No. of drop out	Time between dropout	Observations (Performance Criterion)	Result
0	0.5	0°, 90°, 180°, 270°	3	10s	A	Pass
70	25	0°, 90°, 180°, 270°	3	10s	A	Pass
0	250	0°, 90°, 180°, 270°	3	10s	C	Pass

Remark:

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

C: During the test, the EUT stops work, but after the test, it can be recovered by user.

9 Test Setup Photo

Reference to the **appendix I** for details.

10 EUT Constructional Details

Reference to the **appendix II** for details

------End------