EMC TEST REPORT

Authorized under **D**eclaration **o**f **C**onformity

According to

EN 55032: 2015+AC 2016 (Class B)	**EN 55035:2017**
EN 61000-3-2: 2014	**EN 61000-4-2 : 2009**
EN 61000-3-3: 2013	**EN 61000-4-3 : 2006+A2:2010**
CISPR 32: 2015+COR1:2016	**EN 61000-4-4 : 2012**
AS/NZS CISPR 32: 2015	**EN 61000-4-5 : 2014+A1:2017**
EN 55032: 2012+AC 2013	**EN 61000-4-6 : 2014**
EN 55032: 2015	**EN 61000-4-8 : 2010**
CISPR 32: 2015	**EN 61000-4-11 : 2004+A1:2017**

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Shangzheng,Yuanhong Road, Fuqing City, Fujian Province, China
Equipment	:	LCD Monitor
Model No.	:	**273********(*= 0-9, A-Z, a-z, +, -, /, \ or blank)

I HEREBY CERTIFY THAT :

The sample was received on Dec. 02, 2019 and the testing was carried out on Mar.30, 2020 at Cerpass Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.

EMC TEST REPORT

Issued by:

Cerpass Technology (Suzhou) Co.,Ltd

No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China

Tel:86-512-6917-5888

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The test record, data evaluation & Equipment Under Test configurations represented herein are true and accurate accounts of the measurements of the samples EMC characteristics under the conditions specified in this report.

The above equipment was tested by Cerpass Technology Corp. for compliance with the requirements of technical standards specified above under the EMC Directive. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties

Approved by:

Miro Chueh
EMC/RF B.U. Manager

Laboratory Accreditation:

☐ Cerpass Technology Corporation

TAF LAB Code:	1439

☒ Cerpass Technology(SuZhou) Co., Ltd.

CNAS LAB Code:	L5515

Contents

History of this test report

■ ORIGINAL.

☐ Additional attachment as following record:

Report No	Version	Date	Description
SEEU1911163	Rev 01	Mar. 31, 2020	Initial Issue

1. Summary of Test Procedure and Test Results

Test Item	Normative References	Test Result
Conducted Emission	EN55032: 2015+AC 2016 CISPR 32: 2015+COR1: 2016 AS/NZS CISPR 32: 2015 EN 55032: 2012+AC 2013 EN 55032: 2015 CISPR 32: 2015	PASS
Radiated Emission		PASS
Harmonics	EN 61000-3-2:2014	PASS
Voltage Fluctuations	EN 61000-3-3:2013	PASS
EN 55035:2017		
Electrostatic Discharge Immunity Test (ESD)	EN 61000-4-2 : 2009	PASS
Radio Frequency electromagnetic field immunity test (RS)	EN 61000-4-3 : 2006+A2:2010	PASS
Electrical Fast Transient/ Burst Immunity Test (EFT)	EN 61000-4-4 : 2012	PASS
Surge Immunity Test	EN 61000-4-5 : 2014+A1:2017	PASS
Conduction Disturbances induced by Radio-Frequency Fields	EN 61000-4-6 : 2014	PASS
Power Frequency Magnetic Field Immunity Test	EN 61000-4-8 : 2010	N/A
Voltage Dips and Voltage Interruptions Immunity Test	EN 61000-4-11 : 2004+A1:2017	PASS

Note: Deviations YES ☐ NO ■

2. Immunity Testing Performance Criteria Definition

Criteria A:	The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state 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.
Criteria B:	During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test. After the test, 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), or recovery time, 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.
Criteria C:	Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

3. Test Configuration of Equipment under Test

3.1. Feature of Equipment under Test

Product Name:	LCD Monitor
Model Name:	**273********(*= 0-9, A-Z, a-z, +, -, /, \ or blank)
Housing material:	Plastic case
EUT Highest Frequency:	600MHz
EUT Power Rating:	Input:100-240V, 50-60Hz 3 Pin Power Port
AC Power Cord Type:	No-Shielded, 1.5m&1.8m

Note: Please refer to user manual.

I/O PORT:

I/O PORT TYPE	Quantity
1). DP Port	2
2). HDMI Port	2
3). Audio Port	2
4). AV Port	1
5). USB Port	6
6). Power Port	1

3.2. Test Mode and Test Manner

a During testing, the interface cables and equipment positions were varied according to Europe Standard.

b During the test, setup up the EUT and all system, turn on the power all Equipments, run the Colour bars, send "Colour bars" patterns to the screen and monitor.

c The personal computer driven the Windows media player to play the Colour bars with moving picture element with comply with requirement of ITU-RBT 1729 Colour bars and ITU-RBT 471-1 Colour bars, and display under HDMI, DP.

d During the test, connect the Computer, USB Keyboard, USB Mouse, Earphone, HDD and EUT, make the EUT at the test mode.

e Adjust the EUT, then test.

The pre-test for CE/ RE modes

Remark: Assess high, middle and low resolution of each video port (HDMI,Display) under 230V/ 50Hz, 110V/60Hz test voltage with ITU-RBT 1729 Colour bars.

Test Mode 1	Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)
Test Mode 2	Full system (Display 2 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)
Test Mode 3	Full system (HDMI 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)
Test Mode 4	Full system (HDMI 2 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)
Test Mode 5	Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Vertical (230V/50Hz)
Test Mode 6	Full system (Display 1 mode 2560*1440@240Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)
Test Mode 7	Full system (Display 1 mode 640*480@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)
Test Mode 8	Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars USB3.2 GEN1 with R/W + Horizontal(230V/50Hz)
Test Mode 9	Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars USB3.2 GEN1 with Load(5V/2.1A) + Horizontal(230V/50Hz)
Test Mode 10	Full system (HDMI 1mode 1080P) Signal from DVD for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)
Test Mode 11	Full system (HDMI 2mode 1080P) Signal from DVD for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)
Test Mode 12	Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(110V/60Hz)

Test Mode 13	Full system (Display 2 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(110V/60Hz)
Test Mode 14	Full system (HDMI 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(110V/60Hz)
Test Mode 15	Full system (HDMI 2 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(110V/60Hz)

Remark: In the all of above test modes, 3840*2160@60Hz resolution and Display port test data is the worst, so the following test modes are assessed with the ITU-RBT 471-1 Color bars.

Test Mode 16	Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (230V/50Hz)
Test Mode 17	Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (110V/60Hz)

Remark: In the all of above test modes, 3840*2160@60Hz resolution and Display port test data is the worst, so the following test modes are reported as the basis.

“Test mode 1,12,16,17” were reported as final data.

Harmonics/ Voltage Fluctuations/EMS

Test Manner

a. During testing, the interface cables and equipment positions were varied according to Europe Standard.
b. The EUT driven the Windows media player to play the Colour bars with moving picture element with comply with requirement of ITU-RBT 471-1.
c. During the test, connect the Computer, USB Keyboard, USB Mouse, Earphone, HDD and EUT.
d. Make the EUT at the test mode and it is normal operation, and then test.

Test Mode 1	Full system (Display 1 mode 3840*2160@60Hz) Signal from PC
Test Mode 2	Full system (Display 2 mode 3840*2160@60Hz) Signal from PC
Test Mode 3	Full system (HDMI 1 mode 3840*2160@60Hz) Signal from PC
Test Mode 4	Full system (HDMI 2 mode 3840*2160@60Hz) Signal from PC

“Test mode 1” was reported as final data.

The maximum operating frequency is above 108MHz, the test frequency range is from 1GHz to 6GHz.

3.3. Description of Support Unit

No.	Device	Manufacturer	Model No.	Description
1	Computer	Computer	HP Compaq Elite 8200 MTPC	N/A
2	USB Keyboard	USB Keyboard	SK-8115	N/A
3	USB Mouse	USB Mouse	G0K02*YK	N/A
4	Earphone	Earphone	SALAR	V18
5	HDD	WD	WDBPCK5000ABK-01	N/A
6	HDD	WD	WDBPCK5000ABK-01	N/A
7	HDD	WD	WDBPCK5000ABK-01	N/A
8	HDD	WD	WDBPCK5000ABK-01	N/A
9	DVD	Pionner	DV-600AV-S	N/A

No.	Cable	Quantity	Description
A	HDMI Cable	1	Shielded, 1.5m&1.8m, with one ferrite core bonded
B	Display Cable	1	Shielded, 1.5m&1.8m
C	Audio in Cable	1	Shielded, 1.5m
D	Audio out Cable	1	Non-Shielded, 1.5m
E	USB Cable	1	Non-Shielded, 1.8m
F	USB Cable	1	Non-Shielded, 1.5m
G	Display Cable	1	Shielded, 1.5m&1.8m
H	USB Cable	4	Shielded, 0.8m
I	HDMI Cable	1	Shielded, 1.5m&1.8m, with one ferrite core bonded
J	USB Cable	1	Shielded, 1.8m
K	USB Cable	1	Shielded, 1.5

3.4. General Information of Test

☐	Test Site	**Cerpass Technology Corporation Test Laboratory** Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel:+886-3-3226-888 Fax:+886-3-3226-881 Address: No.68-1, Shihbachongsi, Shihding Township, New Taipei City 223, Taiwan, R.O.C. Tel: +886-2-2663-8582
	FCC	TW1079, TW1061, TW1439
	IC	4934E-1, 4934E-2
	VCCI	T-2205 for Telecommunication Test C-4663 for Conducted emission test R-4218 for Radiated emission test G-10812 for radiated disturbance above 1GHz
☒	Test Site	**Cerpass Technology (Suzhou) Co.,Ltd** Address: No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China Tel: +86-512-6917-5888 Fax: +86-512-6917-5666
	CNAS	L5515
	FCC	CN1243
	A2LA	4981.01
	IC	7290A-1, 7290A-2
	VCCI	T-11945 for Telecommunication Test C-12919 for Conducted emission test R-12670 for Radiated emission test G-10227 for radiated disturbance above 1GHz
Frequency Range Investigated:		Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 6000MHz
Test Distance :		The test distance of radiated emission below 1GHz from antenna to EUT is 10 M. The test distance of radiated emission above 1GHz from antenna to EUT is 3 M.

3.5. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Conducted emissions(LINE)	9KHz-30MHz	+/- 0.6847dB
Conducted emissions(NEUTRAL)	9KHz-30MHz	+/- 0.6763dB

Measurement	Polarity	Frequency	Uncertainty
Radiated emissions (below 1GHz)	H	30MHz ~ 200MHz	+/- 4.0702dB
		200MHz ~1000MHz	+/- 3.9158dB
	V	30MHz ~ 200MHz	+/- 4.0704dB
		200MHz ~1000MHz	+/- 3.9167dB
Radiated emissions (above 1GHz)	H	1000MHz ~18000MHz	+/- 3.8864dB
		18000MHz ~40000MHz	+/-3.9314dB
	V	1000MHz ~18000MHz	+/- 3.8896dB
		18000MHz ~40000MHz	+/- 3.8766dB

Measurement	Uncertainty
ESD—Rise time tr	6.4%
ESD—Peak current Ip	6%
ESD—Current at 30 ns	6%
ESD—Current at 60 ns	6%
ESD- Charging voltage	1%
RS above 1GHz	±3.81dB
RS under 1GHz	±3.63dB
EFT—Rise time tr	4%
EFT—Peak current Ip	4%
EFT—Current	4%
Surge—Rise time tr	4%
Surge—Peak current Ip	4%

Surge—Current	4%
CS-CND	±0.66dB
CS-Clamp	±1.04dB

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

Consistent with industry standard (e.g. CISPR 32: 2015, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

4. Test of Conducted Emission

4.1. Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz and return leads of the EUT according to the methods defined in European Standard EN 55032.

Table A.9 – Requirements for conducted emissions from the AC mains power ports of Class A equipment

Applicable to 1. AC mains power ports (3.1.1)				
Table clause	**Frequency range** MHz	**Coupling device** (see Table A.8)	**Detector type / bandwidth**	**Class A limits dB(µV)**
A9.1	0,15 to 0,5	AMN	Quasi Peak / 9 kHz	79
	0,5 to 30			73
A9.2	0,15 to 0,5	AMN	Average / 9 kHz	66
	0,5 to 30			60
Apply A9.1 and A9.2 across the entire frequency range.				

Table A.10 – Requirements for conducted emissions from the AC mains power ports of Class B equipment

Applicable to 1. AC mains power ports (3.1.1)				
Table clause	**Frequency range** MHz	**Coupling device** (see Table A.8)	**Detector type / bandwidth**	**Class B limits dB(µV)**
A10.1	0,15 to 0,5	AMN	Quasi Peak / 9 kHz	66 to 56
	0,5 to 5			56
	5 to 30			60
A10.2	0,15 to 0,5	AMN	Average / 9 kHz	56 to 46
	0,5 to 5			46
	5 to 30			50
Apply A10.1 and A10.2 across the entire frequency range.				

Table A.11 – Requirements for asymmetric mode conducted emissions from Class A equipment

Applicable to

1. wired network ports (3.1.32)
2. optical fibre ports (3.1.25) with metallic shield or tension members
3. antenna ports (3.1.3)

Table clause	Frequency range MHz	Coupling device (see Table A.8)	Detector type / bandwidth	Class A voltage limits dB(µV)	Class A current limits dB(µA)
A11.1	0,15 to 0,5	AAN	Quasi Peak / 9 kHz	97 to 87	n/a
	0,5 to 30			87	
	0,15 to 0,5	AAN	Average / 9 kHz	84 to 74	
	0,5 to 30			74	
A11.2	0,15 to 0,5	CVP and current probe	Quasi Peak / 9 kHz	97 to 87	53 to 43
	0,5 to 30			87	43
	0,15 to 0,5	CVP and current probe	Average / 9 kHz	84 to 74	40 to 30
	0,5 to 30			74	30
A11.3	0,15 to 0,5	Current Probe	Quasi Peak / 9 kHz	n/a	53 to 43
	0,5 to 30				43
	0,15 to 0,5	Current Probe	Average / 9 kHz		40 to 30
	0,5 to 30				30

The choice of coupling device and measurement procedure is defined in Annex C.

AC mains ports that also have the function of a wired network port shall meet the limits given in Table A.9.

The measurement shall cover the entire frequency range.

The application of the voltage and/or current limits is dependent on the measurement procedure used. Refer to Table C.1 for applicability.

Testing is required at only one EUT supply voltage and frequency.

Applicable to ports listed above and intended to connect to cables longer than 3 m.

Table A.12 – Requirements for asymmetric mode conducted emissions from Class B equipment

Applicable to

1. wired network ports (3.1.32)
2. optical fibre ports (3.1.25) with metallic shield or tension members
3. broadcast receiver tuner ports (3.1.8)
4. antenna ports (3.1.3)

Table clause	Frequency range MHz	Coupling device (see Table A.8)	Detector type / bandwidth	Class B voltage limits dB(µV)	Class B current limits dB(µA)
A12.1	0,15 to 0,5	AAN	Quasi Peak / 9 kHz	84 to 74	n/a
	0,5 to 30			74	
	0,15 to 0,5	AAN	Average / 9 kHz	74 to 64	
	0,5 to 30			64	
A12.2	0,15 to 0,5	CVP and current probe	Quasi Peak / 9 kHz	84 to 74	40 to 30
	0,5 to 30			74	30
	0,15 to 0,5	CVP and current probe	Average / 9 kHz	74 to 64	30 to 20
	0,5 to 30			64	20
A12.3	0,15 to 0,5	Current Probe	Quasi Peak / 9 kHz	n/a	40 to 30
	0,5 to 30				30
	0,15 to 0,5	Current Probe	Average / 9 kHz		30 to 20
	0,5 to 30				20

The choice of coupling device and measurement procedure is defined in Annex C.

Screened ports including TV broadcast receiver tuner ports are measured with a common-mode impedance of 150 Ω. This is typically accomplished with the screen terminated by 150 Ω to earth.

AC mains ports that also have the function of a wired network port shall meet the limits given in Table A.10.

The measurement shall cover the entire frequency range.

The application of the voltage and/or current limits is dependent on the measurement procedure used. Refer to Table C.1 for applicability.

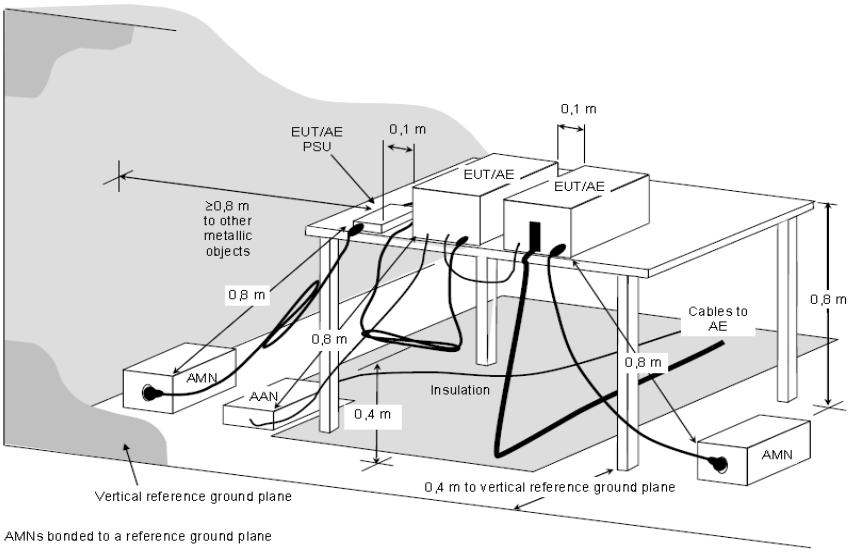
Measurement is required at only one EUT supply voltage and frequency.

Applicable to ports listed above and intended to connect to cables longer than 3 m.

4.2. Test Procedures

a. The EUT was placed on a desk 0.8 meters height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (AMN).
c. All the support units are connecting to the other AMN.
d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
e. The CISPR states that a 50 ohm, 50 micro-Henry LISN should be used.
f. Both sides of AC line were checked for maximum conducted interference.
g. The frequency range from 150 kHz to 30 MHz was searched
h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

4.3. Typical Test Setup



NOTE The 0,8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be ≥0,8 m.

Figure D.2 – Example measurement arrangement for table-top EUT (Conducted emission measurement – alternative 1)

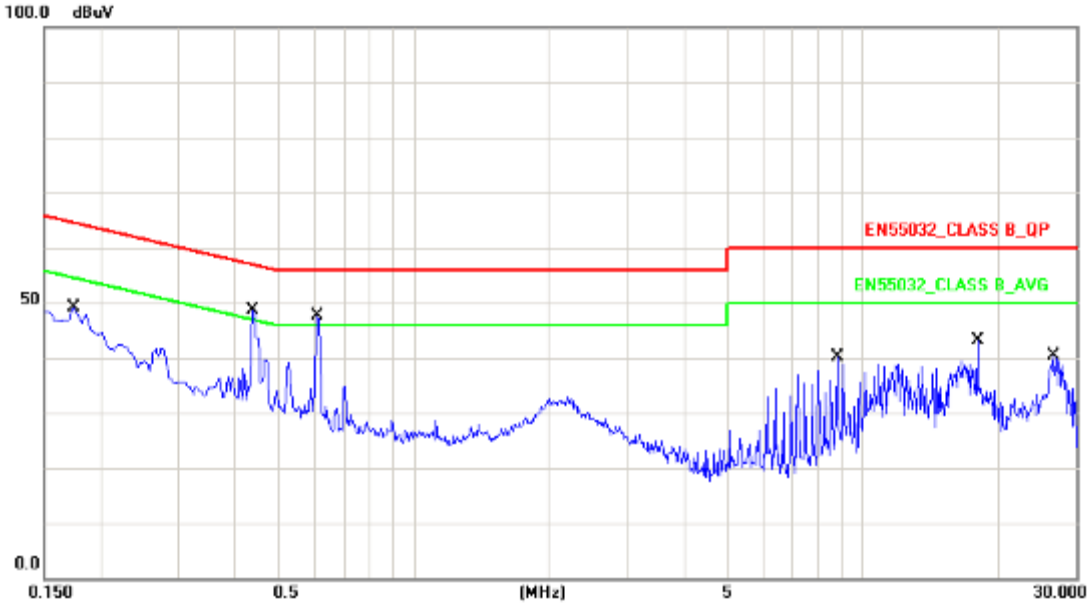
4.4. Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
Test Receiver	R&S	ESCI	100565	2019.07.13	2020.07.12
AMN	R&S	ESH2-Z5	100182	2019.08.22	2020.08.21
ISN	FCC	FCC-TLISN-T2-02	20379	2020.03.11	2021.03.10
ISN	FCC	FCC-TLISN-T4-02	20380	2020.03.23	2021.03.22
ISN	SCHWARZBECK	T8 CAT6	173	2020.03.23	2021.03.22
ISN	TESEQ	ISN ST08	30175	2019.08.22	2020.08.21
ISN	TESEQ	ISN S751	31531	2019.08.22	2020.08.21
LISN	FCC	FCC-LISN-50-200-2-02	112087	2019.08.22	2020.08.21
LISN	SCHWARZBECK	NSLK 8127	8127-920	2019.08.22	2020.08.21
LISN	R&S	ENV216	100325	2019.08.22	2020.08.21
Current Probe	R&S	EZ-17	100303	2020.03.17	2021.03.16
Passive Voltage Probe	R&S	ESH2-Z3	100026	2020.03.17	2021.03.16
Pulse Limiter	R&S	ESH3-Z2	100529	2020.03.11	2021.03.10
Temperature/ Humidity Meter	GEMIlead	STH200A	N/A	2019.04.15	2020.04.14
EZ-EMC	Fala	Ver CT3A1	N/A	N/A	N/A

4.5. Test Data and Result

4.5.1 Conducted Emission for Power Port Test Data

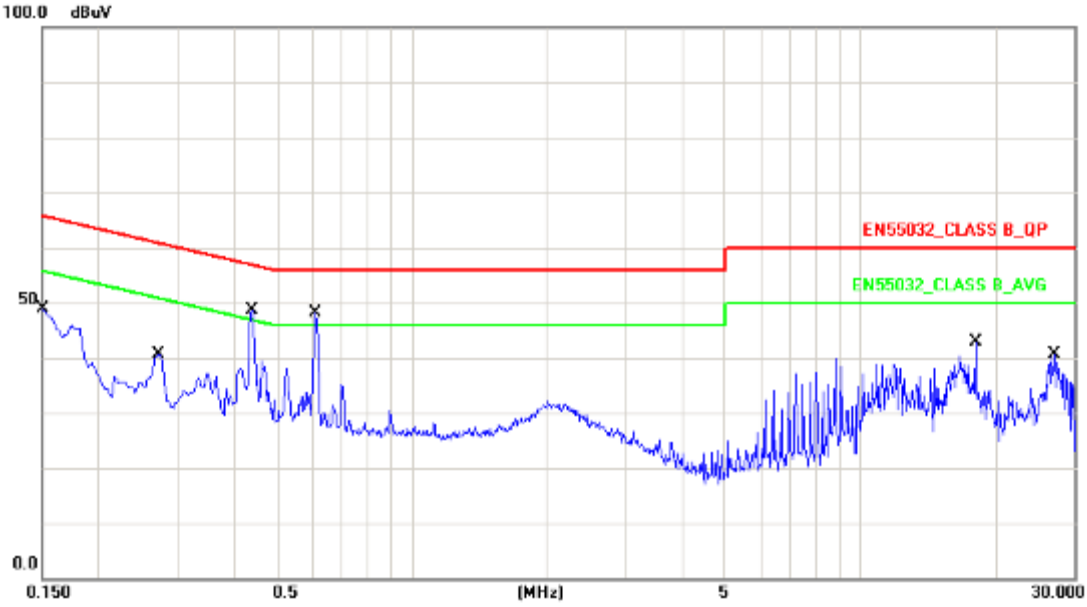
Test Mode:	Mode 1: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)		
AC Power :	AC 230V/50Hz	Phase :	LINE
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	58%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1740	9.97	35.14	45.11	64.76	-19.65	QP
2	0.1740	9.97	30.19	40.16	54.76	-14.60	AVG
3	0.4380	9.97	35.25	45.22	57.10	-11.88	QP
4	0.4380	9.97	17.16	27.13	47.10	-19.97	AVG
5	0.6100	9.98	35.72	45.70	56.00	-10.30	QP
6	0.6100	9.98	21.17	31.15	46.00	-14.85	AVG
7	8.8060	10.26	28.60	38.86	60.00	-21.14	QP
8	8.8060	10.26	19.23	29.49	50.00	-20.51	AVG
9	18.1060	10.45	30.23	40.68	60.00	-19.32	QP
10	18.1060	10.45	25.31	35.76	50.00	-14.24	AVG
11	26.8140	10.66	26.30	36.96	60.00	-23.04	QP
12	26.8140	10.66	22.44	33.10	50.00	-16.90	AVG

Note: Measurement Level = Reading Level + Correct Factor

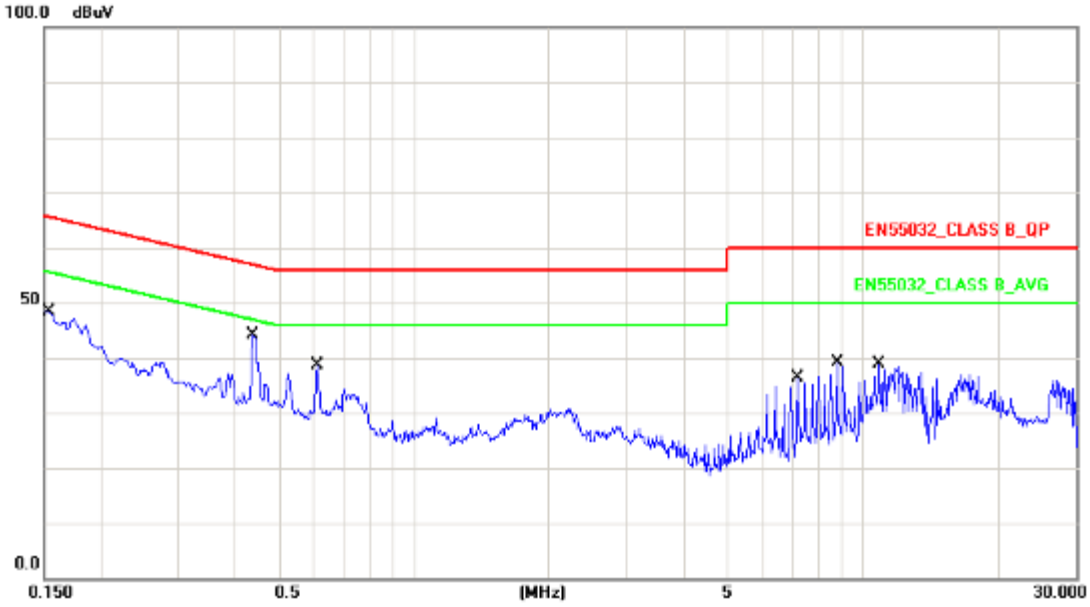
Test Mode:	Mode 1: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)		
AC Power :	AC 230V/50Hz	Phase :	NEUTRAL
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	58%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	9.97	37.44	47.41	65.99	-18.58	QP
2	0.1500	9.97	32.78	42.75	55.99	-13.24	AVG
3	0.2740	9.97	28.04	38.01	60.99	-22.98	QP
4	0.2740	9.97	20.27	30.24	50.99	-20.75	AVG
5	0.4420	9.97	35.75	45.72	57.02	-11.30	QP
6	0.4420	9.97	16.59	26.56	47.02	-20.46	AVG
7	0.6100	9.98	35.46	45.44	56.00	-10.56	QP
8	0.6100	9.98	20.83	30.81	46.00	-15.19	AVG
9	18.1100	10.45	29.56	40.01	60.00	-19.99	QP
10	18.1100	10.45	24.60	35.05	50.00	-14.95	AVG
11	27.2460	10.67	23.23	33.90	60.00	-26.10	QP
12	27.2460	10.67	20.86	31.53	50.00	-18.47	AVG

Note: Measurement Level = Reading Level + Correct Factor

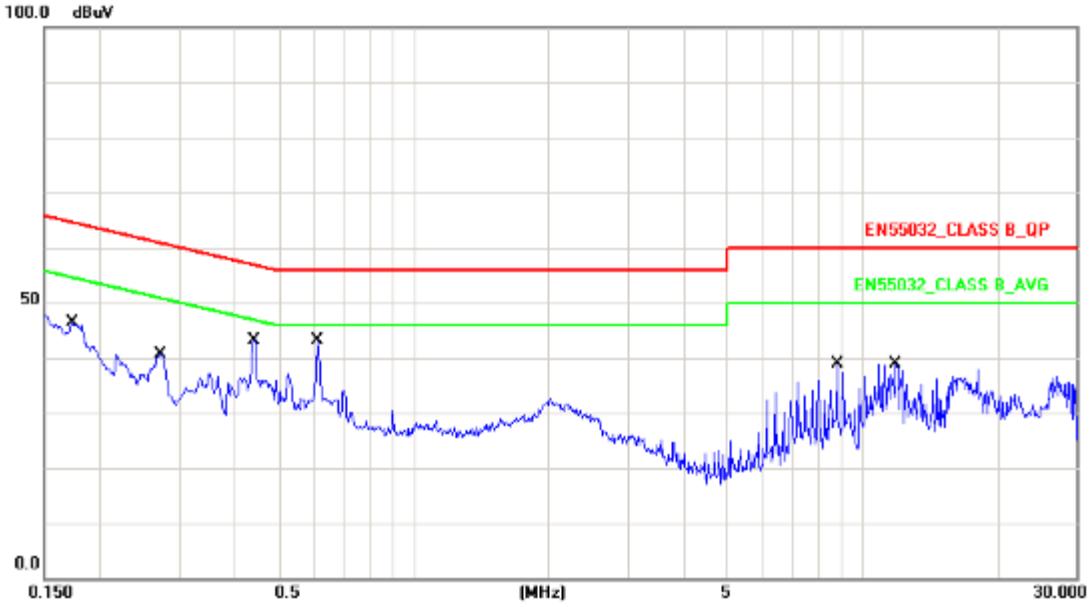
Test Mode :	Mode 12: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(110V/60Hz)		
AC Power :	AC 110V/60Hz	Phase :	LINE
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	58%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1539	9.97	36.31	46.28	65.78	-19.50	QP
2	0.1539	9.97	30.39	40.36	55.78	-15.42	AVG
3	0.4380	9.97	34.32	44.29	57.10	-12.81	QP
4	0.4380	9.97	17.15	27.12	47.10	-19.98	AVG
5	0.6099	9.98	35.05	45.03	56.00	-10.97	QP
6	0.6099	9.98	20.51	30.49	46.00	-15.51	AVG
7	7.2058	10.21	25.46	35.67	60.00	-24.33	QP
8	7.2058	10.21	16.29	26.50	50.00	-23.50	AVG
9	8.8058	10.26	28.48	38.74	60.00	-21.26	QP
10	8.8058	10.26	19.11	29.37	50.00	-20.63	AVG
11	10.9419	10.31	27.17	37.48	60.00	-22.52	QP
12	10.9419	10.31	18.78	29.09	50.00	-20.91	AVG

Note: Measurement Level = Reading Level + Correct Factor

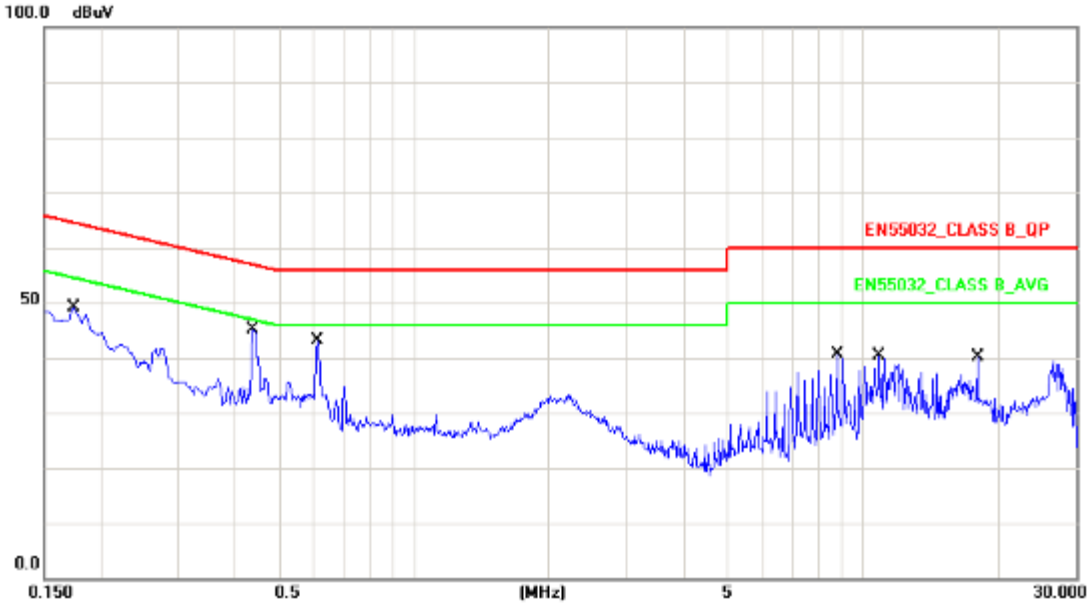
Test Mode :	Mode 12: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(110V/60Hz)		
AC Power :	AC 110V/60Hz	Phase :	NEUTRAL
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	58%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1729	9.97	35.10	45.07	64.82	-19.75	QP
2	0.1729	9.97	29.93	39.90	54.82	-14.92	AVG
3	0.2740	9.97	29.73	39.70	60.99	-21.29	QP
4	0.2740	9.97	23.15	33.12	50.99	-17.87	AVG
5	0.4420	9.97	35.81	45.78	57.02	-11.24	QP
6	0.4420	9.97	18.54	28.51	47.02	-18.51	AVG
7	0.6099	9.98	35.03	45.01	56.00	-10.99	QP
8	0.6099	9.98	20.40	30.38	46.00	-15.62	AVG
9	8.8058	10.26	28.48	38.74	60.00	-21.26	QP
10	8.8058	10.26	19.12	29.38	50.00	-20.62	AVG
11	11.8939	10.33	26.00	36.33	60.00	-23.67	QP
12	11.8939	10.33	23.32	33.65	50.00	-16.35	AVG

Note: Measurement Level = Reading Level + Correct Factor

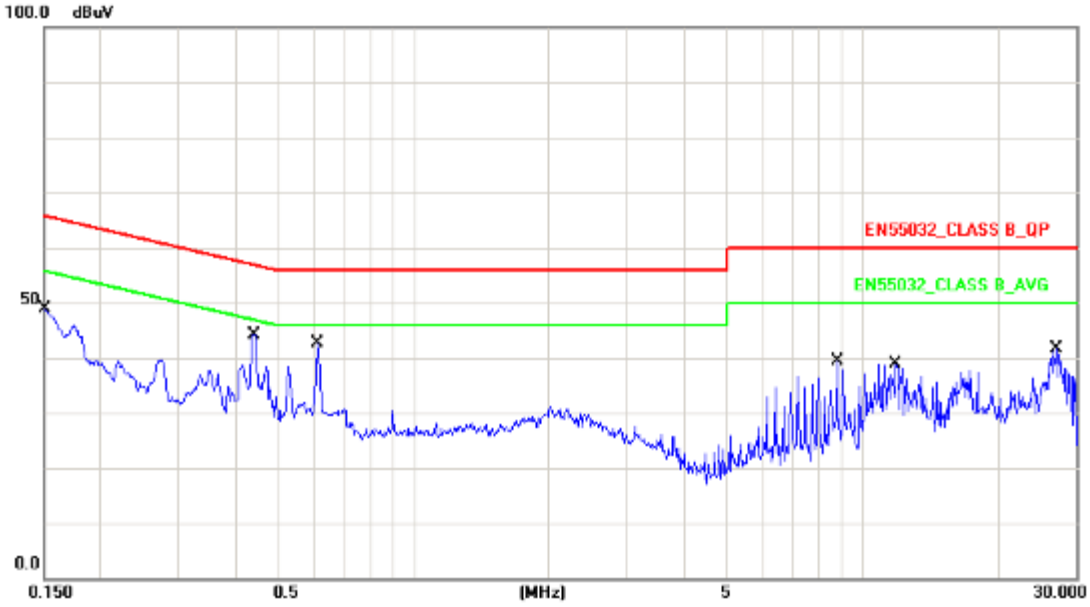
Test Mode :	Mode 16: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (230V/50Hz)		
AC Power :	AC 230V/50Hz	Phase :	LINE
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	58%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1739	9.97	35.07	45.04	64.77	-19.73	QP
2	0.1739	9.97	30.13	40.10	54.77	-14.67	AVG
3	0.4380	9.97	32.95	42.92	57.10	-14.18	QP
4	0.4380	9.97	16.76	26.73	47.10	-20.37	AVG
5	0.6099	9.98	34.54	44.52	56.00	-11.48	QP
6	0.6099	9.98	19.71	29.69	46.00	-16.31	AVG
7	8.8058	10.26	28.46	38.72	60.00	-21.28	QP
8	8.8058	10.26	19.11	29.37	50.00	-20.63	AVG
9	10.9419	10.31	27.16	37.47	60.00	-22.53	QP
10	10.9419	10.31	18.78	29.09	50.00	-20.91	AVG
11	18.1058	10.45	30.87	41.32	60.00	-18.68	QP
12	18.1058	10.45	27.58	38.03	50.00	-11.97	AVG

Note: Measurement Level = Reading Level + Correct Factor

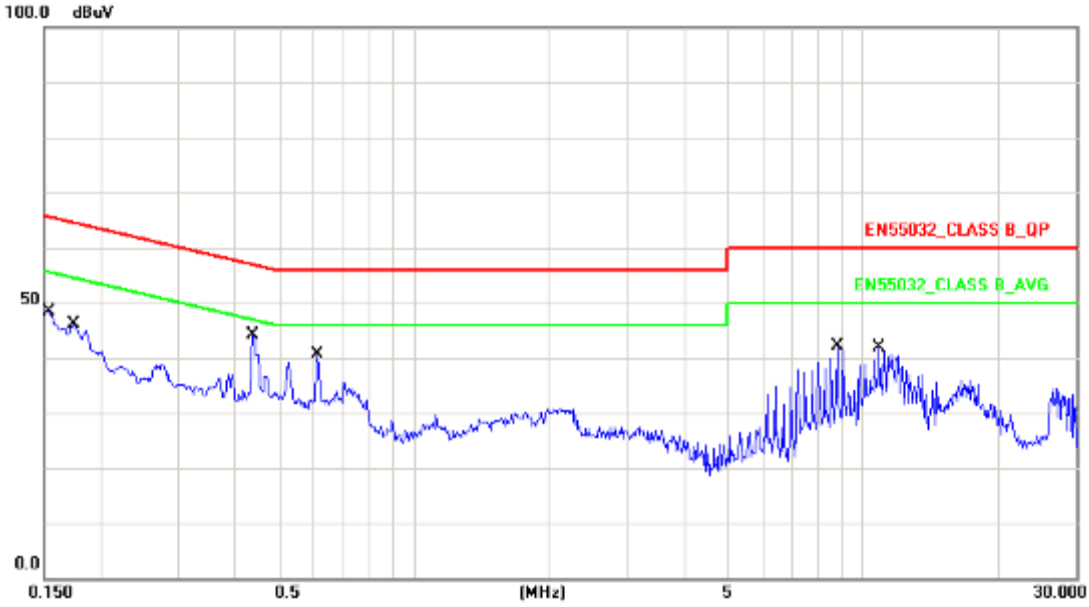
Test Mode :	Mode 16: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (230V/50Hz)		
AC Power :	AC 230V/50Hz	Phase :	NEUTRAL
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	58%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	9.97	37.03	47.00	65.99	-18.99	QP
2	0.1500	9.97	32.43	42.40	55.99	-13.59	AVG
3	0.4420	9.97	35.77	45.74	57.02	-11.28	QP
4	0.4420	9.97	18.56	28.53	47.02	-18.49	AVG
5	0.6099	9.98	34.73	44.71	56.00	-11.29	QP
6	0.6099	9.98	19.95	29.93	46.00	-16.07	AVG
7	8.8058	10.26	28.53	38.79	60.00	-21.21	QP
8	8.8058	10.26	19.15	29.41	50.00	-20.59	AVG
9	11.8939	10.33	26.21	36.54	60.00	-23.46	QP
10	11.8939	10.33	23.44	33.77	50.00	-16.23	AVG
11	27.2459	10.67	19.33	30.00	60.00	-30.00	QP
12	27.2459	10.67	14.19	24.86	50.00	-25.14	AVG

Note: Measurement Level = Reading Level + Correct Factor

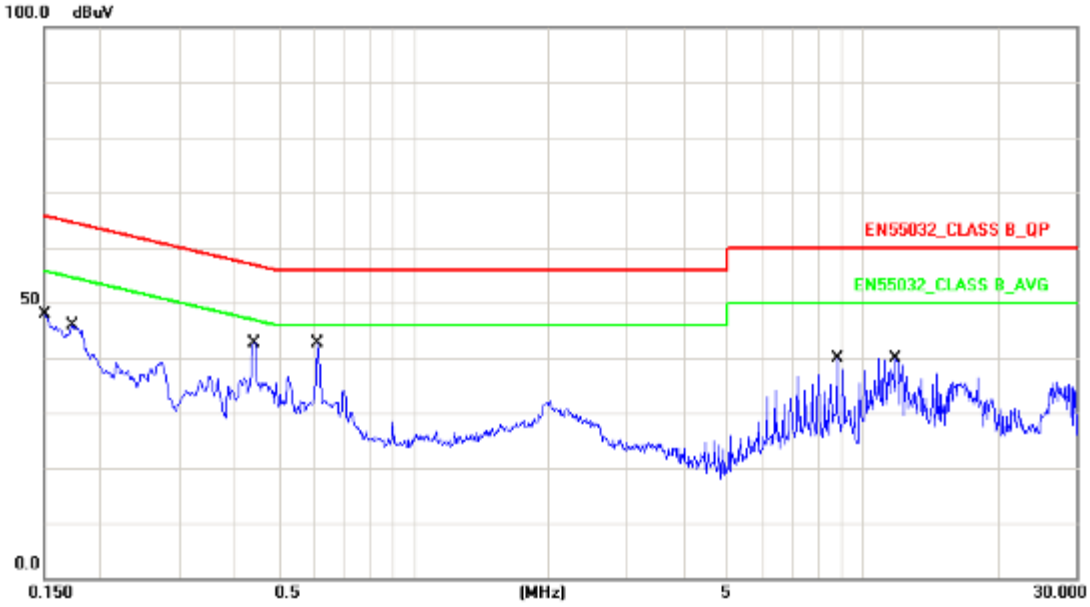
Test Mode :	Mode 17: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (110V/60Hz)		
AC Power :	AC 110V/60Hz	Phase :	LINE
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	58%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1539	9.97	36.25	46.22	65.78	-19.56	QP
2	0.1539	9.97	30.44	40.41	55.78	-15.37	AVG
3	0.1737	9.97	35.47	45.44	64.78	-19.34	QP
4	0.1737	9.97	30.20	40.17	54.78	-14.61	AVG
5	0.4380	9.97	33.64	43.61	57.10	-13.49	QP
6	0.4380	9.97	16.97	26.94	47.10	-20.16	AVG
7	0.6097	9.98	34.59	44.57	56.00	-11.43	QP
8	0.6097	9.98	19.83	29.81	46.00	-16.19	AVG
9	8.8056	10.26	28.42	38.68	60.00	-21.32	QP
10	8.8056	10.26	19.03	29.29	50.00	-20.71	AVG
11	10.9419	10.31	27.18	37.49	60.00	-22.51	QP
12	10.9419	10.31	18.74	29.05	50.00	-20.95	AVG

Note: Measurement Level = Reading Level + Correct Factor

Test Mode :	Mode 17: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (110V/60Hz)		
AC Power :	AC 110V/60Hz	Phase :	NEUTRAL
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	58%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	9.97	37.08	47.05	65.99	-18.94	QP
2	0.1500	9.97	32.49	42.46	55.99	-13.53	AVG
3	0.1728	9.97	34.75	44.72	64.82	-20.10	QP
4	0.1728	9.97	30.08	40.05	54.82	-14.77	AVG
5	0.4420	9.97	35.78	45.75	57.02	-11.27	QP
6	0.4420	9.97	18.64	28.61	47.02	-18.41	AVG
7	0.6097	9.98	34.52	44.50	56.00	-11.50	QP
8	0.6097	9.98	19.90	29.88	46.00	-16.12	AVG
9	8.8056	10.26	28.34	38.60	60.00	-21.40	QP
10	8.8056	10.26	18.98	29.24	50.00	-20.76	AVG
11	11.8939	10.33	26.42	36.75	60.00	-23.25	QP
12	11.8939	10.33	23.60	33.93	50.00	-16.07	AVG

Note: Measurement Level = Reading Level + Correct Factor

Test engineer: Vane Xia

4.5.2 Conducted Emission for Telecommunication Port Test Data

Note: The EUT doesn't have the telecommunication port.

4.6. Test Photographs for Power Port

For ITU-RBT 1729 Colour bars

Front View

Rear View

For ITU-RBT 471-1 Colour bars

Front View

Rear View

5. Test of Radiated Emission

5.1. Test Limit

The EUT shall meet the limits of below Table when measured at the measuring distance R in accordance with the methods described in European Standard EN 55032. If the reading on the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the highest reading shall be recorded, with the exception of any brief isolated high reading, which shall be ignored.

Table 1 – Required highest frequency for radiated measurement

Highest internal frequency (F_x)	Highest measured frequency
$F_x \leq 108$ MHz	1 GHz
108 MHz $< F_x \leq 500$ MHz	2 GHz
500 MHz $< F_x \leq 1$ GHz	5 GHz
$F_x > 1$ GHz	$5 \times F_x$ up to a maximum of 6 GHz
NOTE 1 For FM and TV broadcast receivers, F_x is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies. NOTE 2 F_x is defined in 3.1.18. NOTE 3 For outdoor units of home satellite receiving systems highest measured frequency shall be 18 GHz.	

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

Table A.2 – Requirements for radiated emissions at frequencies up to 1 GHz for class A equipment

Table clause	Frequency range MHz	Measurement			Class A limits dB(μV/m)
		Facility (see Table A.1)	Distance m	Detector type / bandwidth	
A2.1	30 to 230	OATS/SAC	10	Quasi Peak / 120 kHz	40
	230 to 1 000				47
A2.2	30 to 230	OATS/SAC	3		50
	230 to 1 000				57
Apply only A2.1 or A2.2 across the entire frequency range.					

Table A.3 – Requirements for radiated emissions at frequencies above 1 GHz for class A equipment

Table clause	Frequency range MHz	Measurement			Class A limits dB(μV/m)
		Facility (see Table A.1)	Distance m	Detector type / bandwidth	
A3.1	1 000 to 3 000	FSOATS	3	Average / 1 MHz	56
	3 000 to 6 000				60
A3.2	1 000 to 3 000			Peak / 1 MHz	76
	3 000 to 6 000				80
Apply A3.1 and A3.2 across the frequency range from 1 000 MHz to the highest required frequency of measurement derived from Table 1.					

Table A.4 – Requirements for radiated emissions at frequencies up to 1 GHz for class B equipment

Table clause	Frequency range MHz	Measurement			Class B limits dB(μV/m)
		Facility (see Table A.1)	Distance m	Detector type / bandwidth	
A4.1	30 to 230	OATS/SAC	10	Quasi Peak / 120 kHz	30
	230 to 1 000				37
A4.2	30 to 230	OATS/SAC	3		40
	230 to 1 000				47
Apply only table clause A4.1 or A4.2 across the entire frequency range. These requirements are not applicable to the local oscillator and harmonics frequencies of equipment covered by Table A.6.					

Table A.5 – Requirements for radiated emissions at frequencies above 1 GHz for class B equipment

Table clause	Frequency range MHz	Measurement			Class B limits dB(μV/m)
		Facility (see Table A.1)	Distance m	Detector type/ bandwidth	
A5.1	1 000 to 3 000	FSOATS	3	Average/ 1 MHz	50
	3 000 to 6 000				54
A5.2	1 000 to 3 000			Peak/ 1 MHz	70
	3 000 to 6 000				74
Apply A5.1 and A5.2 across the frequency range from 1 000 MHz to the highest required frequency of measurement derived from Table 1.					

Table A.6 – Requirements for radiated emissions from FM receivers

Table Clause	Frequency Range MHz	Measurement			Class B Limit dB(μV/m)	
		Facility (see Table A.1)	Distance m	Detector type / Bandwidth	Fundamental	Harmonics
A6.1	30 to 230	OATS/SAC	10	Quasi Peak / 120 kHz	50	42
	230 to 300					42
	300 to 1 000					46
A6.2	30 to 230	OATS/SAC	3		60	52
	230 to 300					52
	300 to 1 000					56

Apply only A6.1 or A6.2 across the entire frequency range.

These relaxed limits apply only to emissions at the fundamental and harmonic frequencies of the LO. Signals at all other frequencies shall be compliant with the limits given in Table A.4.

Table A.13 – Requirements for conducted differential voltage emissions from Class B equipment

Applicable to
1. TV broadcast receiver tuner ports (3.1.8) with an accessible connector
2. RF modulator output ports (3.1.29)
3. FM broadcast receiver tuner ports (3.1.8) with an accessible connector

Table clause	Frequency range MHz	Detector type/ bandwidth	Class B limits dB(μV) 75 Ω			Applicability
			Other	Local Oscillator Fundamental	Local Oscillator Harmonics	
A13.1	30 to 950	For frequencies ≤1 GHz Quasi Peak/ 120 kHz	46	46	46	See [a]
	950 to 2 150		46	54	54	
A13.2	950 to 2 150		46	54	54	See [b]
A13.3	30 to 300		46	54	50	See [c]
	300 to 1 000				52	
A13.4	30 to 300	For frequencies ≥1 GHz Peak/ 1 MHz	46	66	59	See [d]
	300 to 1 000				52	
A13.5	30 to 950		46	76	46	See [e]
	950 to 2 150			n/a	54	

[a] Television receivers (analogue or digital), video recorders and PC TV broadcast receiver tuner cards working in channels between 30 MHz and 1 GHz, and digital audio receivers.

[b] Tuner units (not the LNB) for satellite signal reception.

[c] Frequency modulation audio receivers and PC tuner cards.

[d] Frequency modulation car radios.

[e] Applicable to EUTs with RF modulator output ports (for example DVD equipment, video recorders, camcorders and decoders etc.) designed to connect to TV broadcast receiver tuner ports. Limits specified for the LO are for the RF modulator carrier signal and harmonics.

The term 'other' refers to all emissions other than the fundamental and the harmonics of the LO.

The measurement shall cover the entire frequency range.

The EUT shall be tuned in accordance with Table B.3 and clause C.4.2.1.

5.2. Test Procedures

a. The EUT was placed on a rotatable table top 0.8 meter above ground.
b. The EUT was set 3/10 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiation.
d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
g. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 6 dB margin will be repeated one by one using the quasi-peak method and reported.

5.3. Typical Test Setup

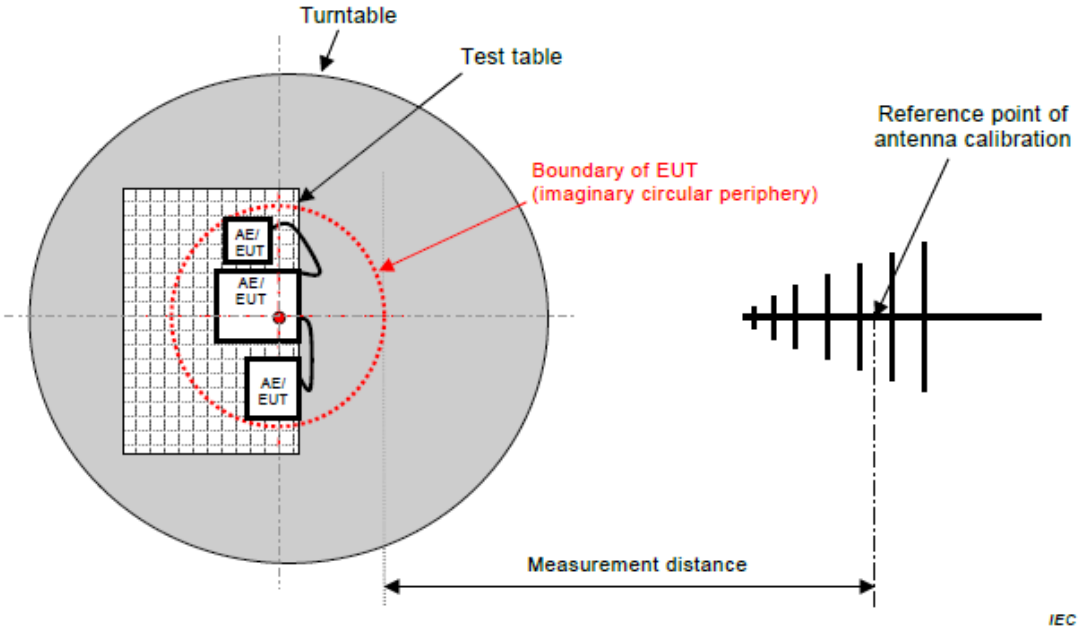


Figure C.1 – Measurement distance

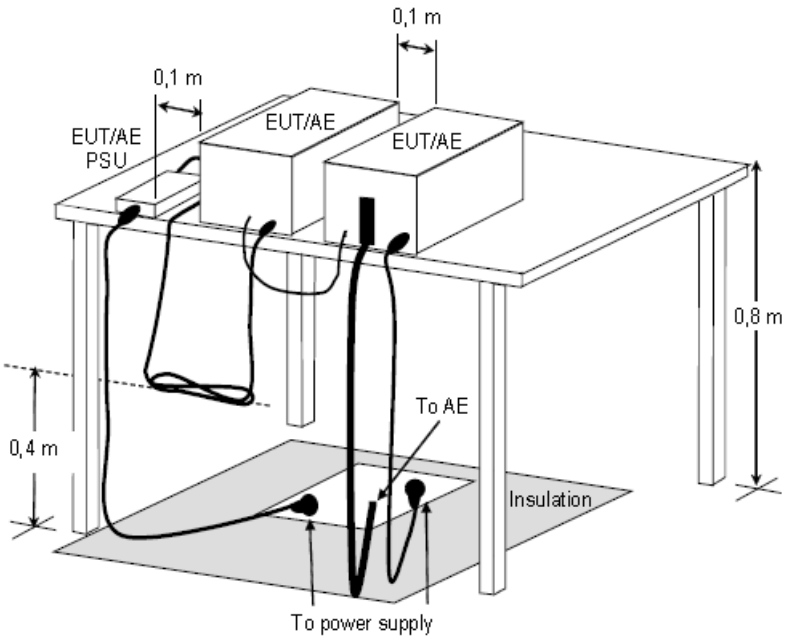


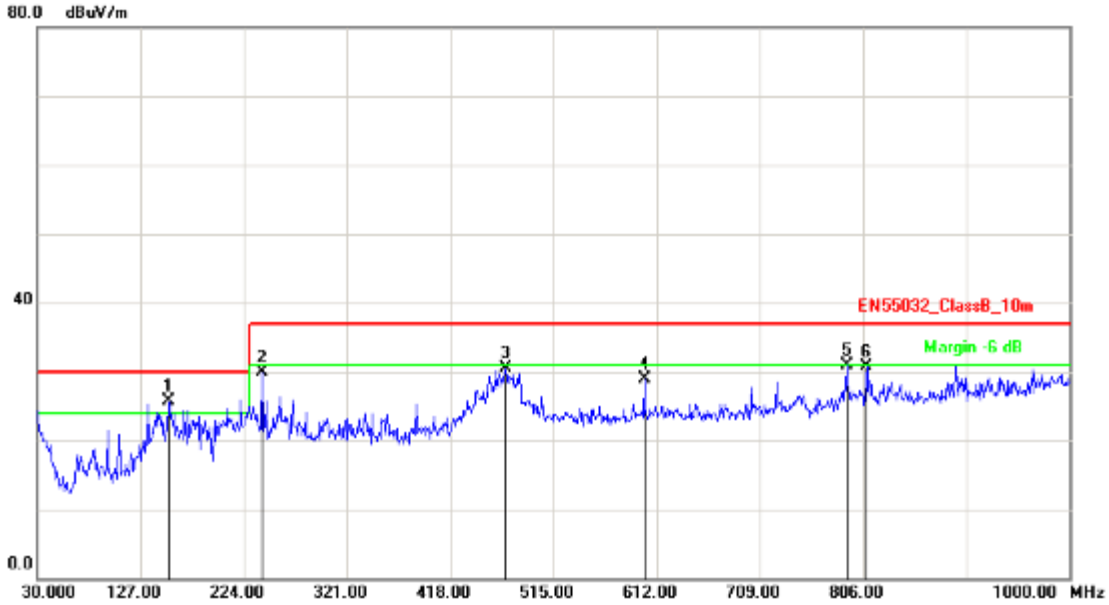
Figure D.8 – Example measurement arrangement for table-top EUT (Radiated emission measurement)

5.4. Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
EMI Test Receiver	R&S	ESCI7	100968	2019.07.28	2020.07.27
Preamplifier	EMCI	EMCI030-00-3230	SN016723	2020.03.11	2021.03.10
Preamplifier	Agilent	8449B	3008A02342	2020.03.11	2021.03.10
Bilog Antenna	Sunol Science	JB1	A072414-2	2019.07.13	2020.07.12
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-618	2019.04.16	2020.04.15
Spectrum Analyzer	R&S	FSP40	100324	2019.07.13	2020.07.12
Temperature/ Humidity Meter	GEMIlead	STH200A	N/A	2019.04.15	2020.04.14
EZ-EMC	Fala	Ver CT3A1	N/A	N/A	N/A

5.5. Test Result and Data (30MHz ~ 1000MHz)

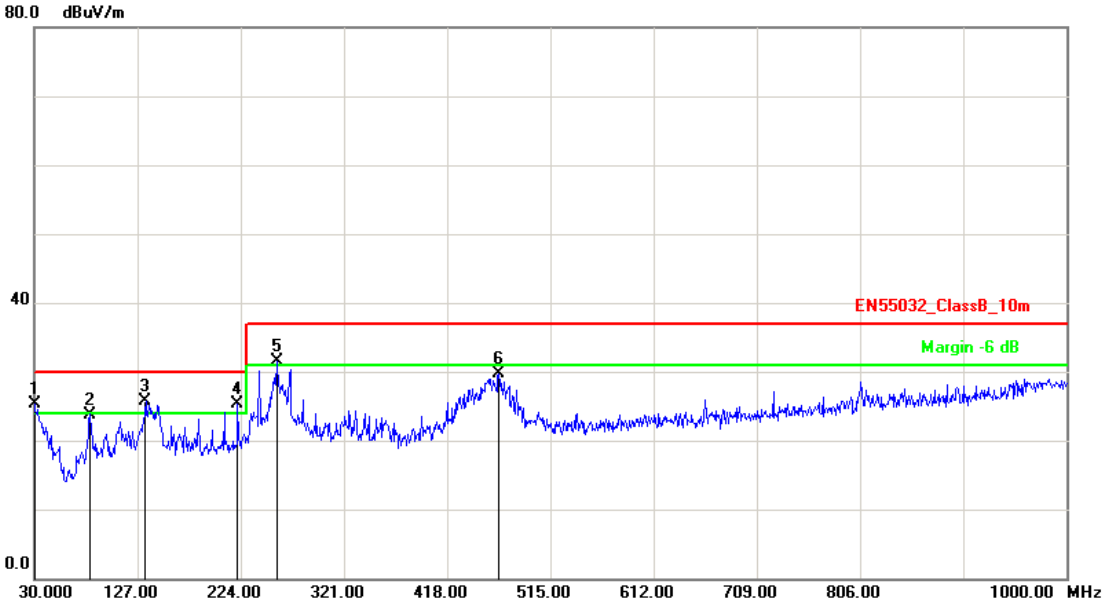
Test Mode:	Mode 1: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)		
AC Power :	AC 230V/50Hz	Ant. Polarization:	Horizontal
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	154.1597	-9.96	35.62	25.66	30.00	-4.34	peak	100	114
2	241.4600	-9.76	39.66	29.90	37.00	-7.10	peak	100	152
3	470.3799	-3.71	34.30	30.59	37.00	-6.41	peak	300	28
4	600.3600	-1.53	30.50	28.97	37.00	-8.03	peak	400	55
5	790.4800	1.21	29.77	30.98	37.00	-6.02	peak	400	341
6	809.8799	1.55	29.11	30.66	37.00	-6.34	peak	300	52

Note: Measurement Level = Reading Level + Correct Factor

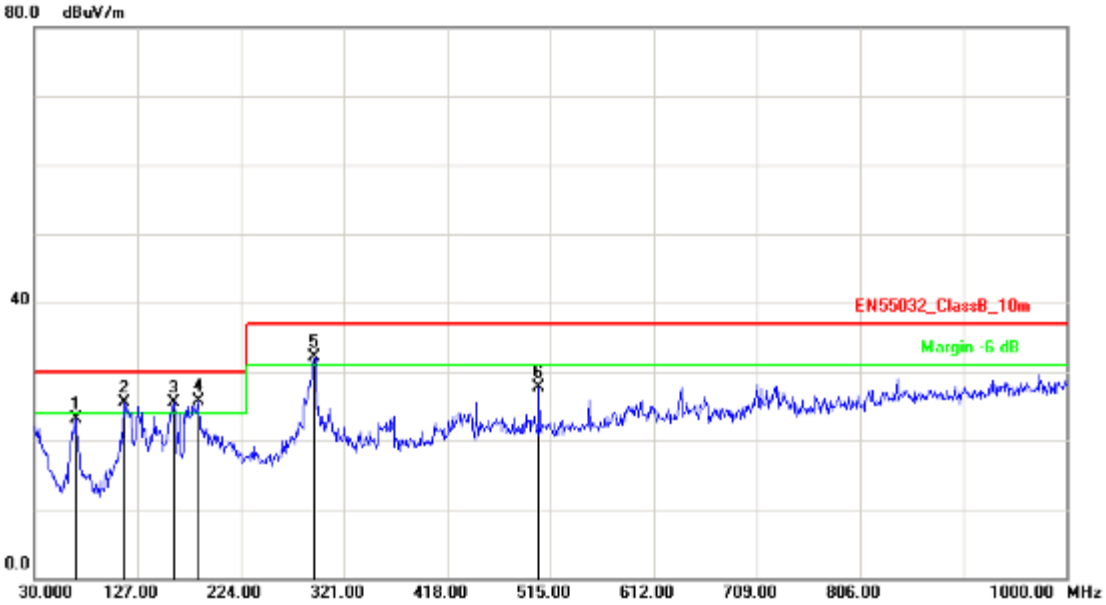
Test Mode:	Mode 1: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)		
AC Power :	AC 230V/50Hz	Ant. Polarization:	Vertical
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	30.0000	-6.50	31.71	25.21	30.00	-4.79	peak	100	54
2	82.3799	-15.06	38.86	23.80	30.00	-6.20	peak	100	114
3	134.7598	-10.04	35.73	25.69	30.00	-4.31	peak	200	45
4	221.0900	-10.57	35.78	25.21	30.00	-4.79	peak	400	226
5	257.9499	-9.10	40.51	31.41	37.00	-5.59	peak	400	356
6	466.5000	-3.80	33.48	29.68	37.00	-7.32	peak	400	157

Note: Measurement Level = Reading Level + Correct Factor

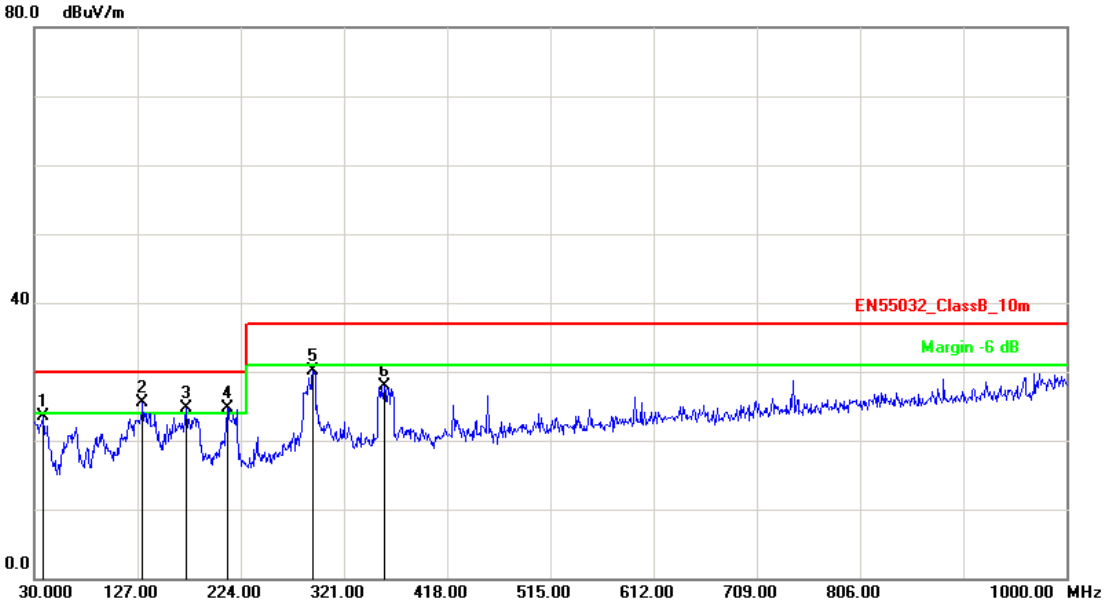
Test Mode:	Mode 12: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(110V/60Hz)		
AC Power :	AC 110V/60Hz	Ant. Polarization:	Horizontal
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	69.7699	-15.02	38.07	23.05	30.00	-6.95	peak	100	125
2	114.3900	-12.25	37.66	25.41	30.00	-4.59	peak	100	321
3	160.9499	-10.14	35.69	25.55	30.00	-4.45	peak	100	58
4	184.2298	-10.49	36.28	25.79	30.00	-4.21	peak	100	144
5	293.8399	-7.67	39.80	32.13	37.00	-4.87	peak	400	256
6	504.3299	-2.95	30.56	27.61	37.00	-9.39	peak	400	25

Note: Measurement Level = Reading Level + Correct Factor

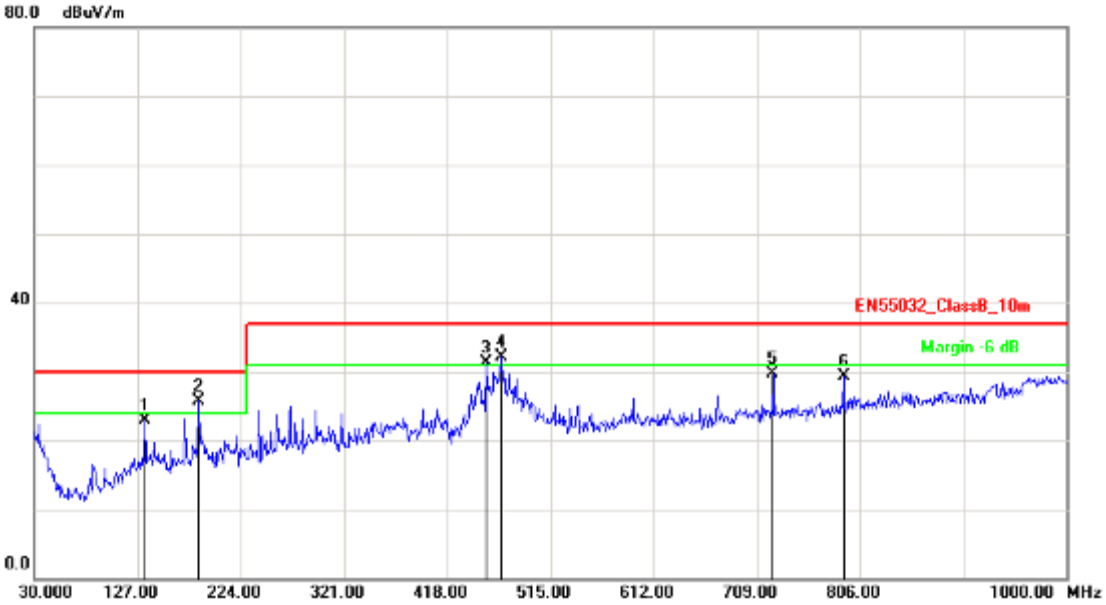
Test Mode:	Mode 12: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(110V/60Hz)		
AC Power :	AC 110V/60Hz	Ant. Polarization:	Vertical
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	38.7299	-9.48	33.00	23.52	30.00	-6.48	peak	100	326
2	131.8497	-10.34	35.89	25.55	30.00	-4.45	peak	100	25
3	172.5900	-10.20	34.90	24.70	30.00	-5.30	peak	100	48
4	211.3899	-10.96	35.65	24.69	30.00	-5.31	peak	400	258
5	291.8999	-7.74	37.75	30.01	37.00	-6.99	peak	400	360
6	358.8299	-6.20	34.20	28.00	37.00	-9.00	peak	400	15

Note: Measurement Level = Reading Level + Correct Factor

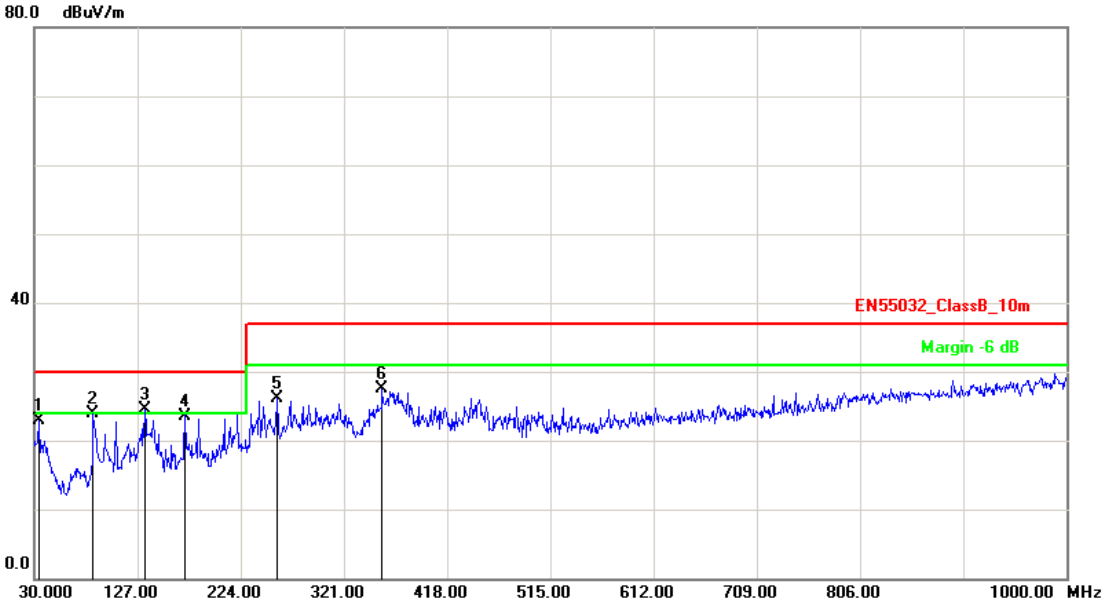
Test Mode:	Mode 16: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (230V/50Hz)		
AC Power :	AC 230V/50Hz	Ant. Polarization:	Horizontal
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	133.7899	-10.14	33.12	22.98	30.00	-7.02	peak	100	51
2	184.2298	-10.49	36.10	25.61	30.00	-4.39	peak	100	226
3	454.8600	-4.08	35.33	31.25	37.00	-5.75	peak	300	341
4	469.4100	-3.73	35.83	32.10	37.00	-4.90	peak	400	187
5	724.5198	0.18	29.43	29.61	37.00	-7.39	peak	400	45
6	790.4800	1.21	28.05	29.26	37.00	-7.74	peak	400	336

Note: Measurement Level = Reading Level + Correct Factor

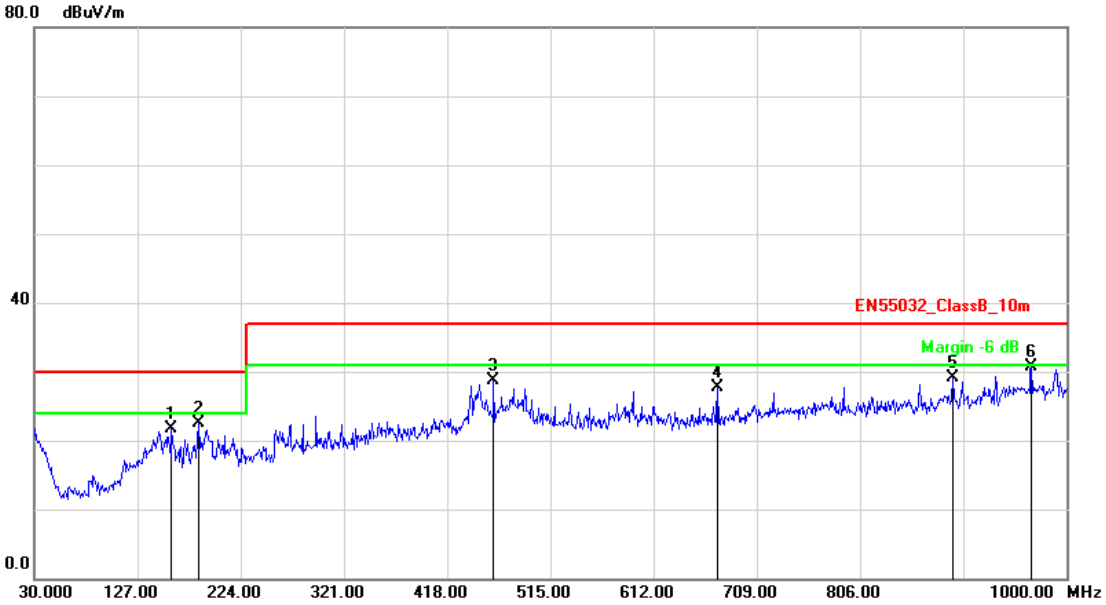
Test Mode:	Mode 16: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (230V/50Hz)		
AC Power :	AC 230V/50Hz	Ant. Polarization:	Vertical
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	33.8800	-7.82	30.76	22.94	30.00	-7.06	peak	100	54
2	85.2900	-15.01	38.96	23.95	30.00	-6.05	peak	100	225
3	133.7898	-10.14	34.56	24.42	30.00	-5.58	peak	200	187
4	171.6200	-10.20	33.80	23.60	30.00	-6.40	peak	300	48
5	257.9499	-9.10	35.11	26.01	37.00	-10.99	peak	400	9
6	356.8899	-6.23	33.72	27.49	37.00	-9.51	peak	400	334

Note: Measurement Level = Reading Level + Correct Factor

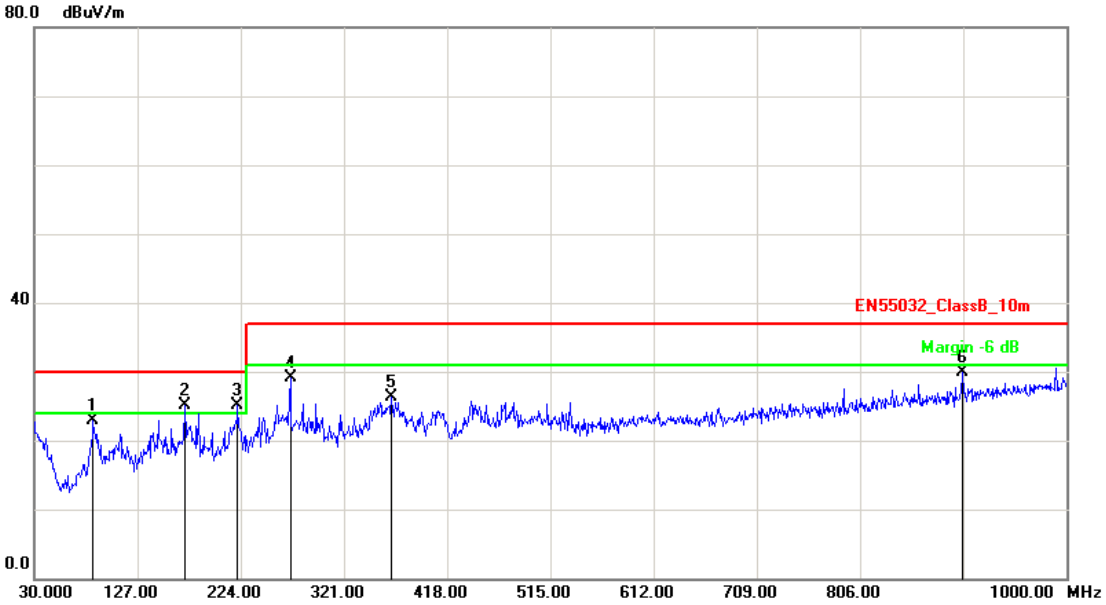
Test Mode:	Mode 17: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (110V/60Hz)		
AC Power :	AC 110V/60Hz	Ant. Polarization:	Horizontal
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	159.0098	-10.11	31.90	21.79	30.00	-8.21	peak	100	63
2	184.2298	-10.49	32.90	22.41	30.00	-7.59	peak	100	225
3	461.6499	-3.92	32.55	28.63	37.00	-8.37	peak	300	147
4	672.1399	-0.57	28.31	27.74	37.00	-9.26	peak	300	78
5	893.2998	3.15	26.02	29.17	37.00	-7.83	peak	400	226
6	967.0199	4.37	26.33	30.70	37.00	-6.30	peak	400	360

Note: Measurement Level = Reading Level + Correct Factor

Test Mode:	Mode 17: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (110V/60Hz)		
AC Power :	AC 110V/60Hz	Ant. Polarization:	Vertical
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29

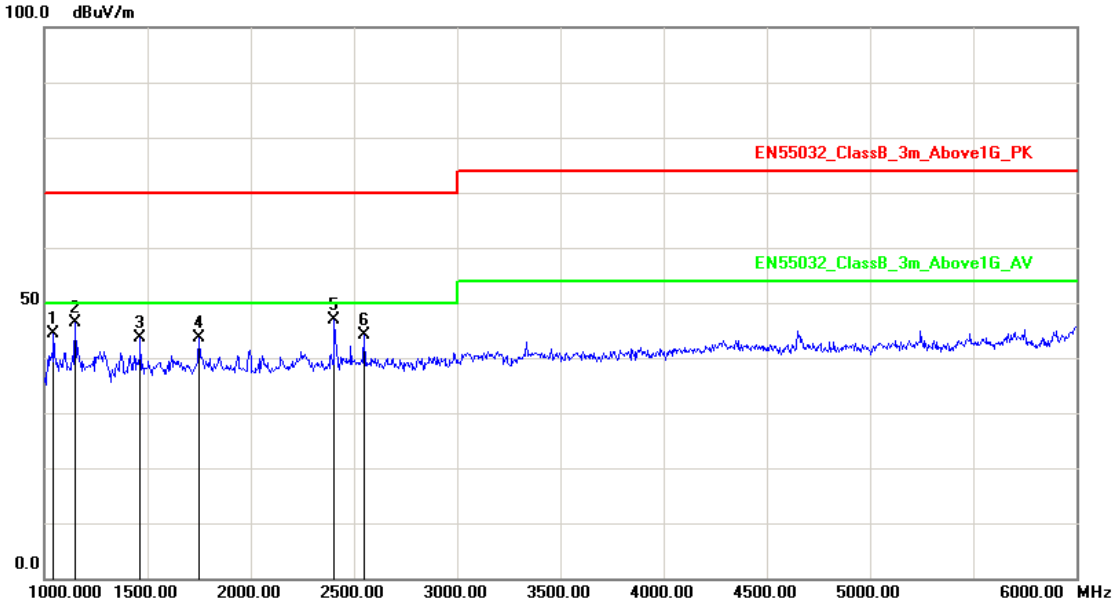


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	85.2900	-15.01	37.91	22.90	30.00	-7.10	peak	100	162
2	171.6200	-10.20	35.40	25.20	30.00	-4.80	peak	100	334
3	221.0900	-10.57	35.68	25.11	30.00	-4.89	peak	200	157
4	270.5600	-8.60	37.63	29.03	37.00	-7.97	peak	400	48
5	365.6200	-6.06	32.38	26.32	37.00	-10.68	peak	400	55
6	902.0298	3.31	26.65	29.96	37.00	-7.04	peak	400	263

Note: Measurement Level = Reading Level + Correct Factor

5.6. Test Result and Data (1GHz~6GHz)

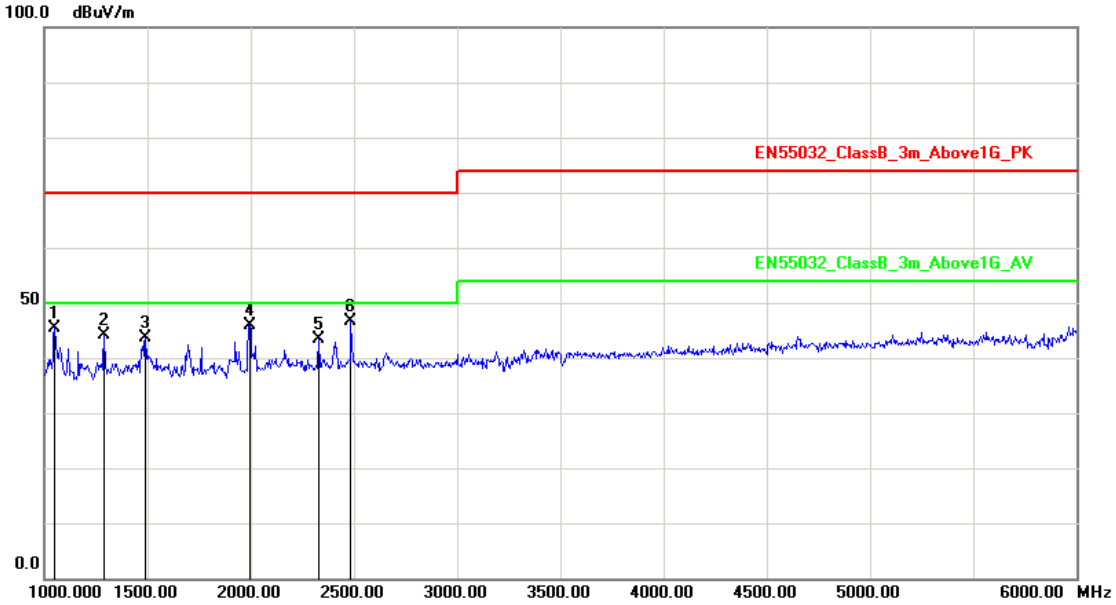
Test Mode:	Mode 1: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)		
AC Power :	AC 230V/50Hz	Ant. Polarization:	Horizontal
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	1045.000	-5.68	49.96	44.28	70.00	-25.72	peak	100	52
2	1150.000	-4.97	51.29	46.32	70.00	-23.68	peak	100	341
3	1465.000	-3.00	46.72	43.72	70.00	-26.28	peak	100	187
4	1750.000	-1.92	45.52	43.60	70.00	-26.40	peak	100	89
5	2405.000	0.87	45.93	46.80	70.00	-23.20	peak	200	166
6	2550.000	1.63	42.41	44.04	70.00	-25.96	peak	200	256

Note: Measurement Level = Reading Level + Correct Factor

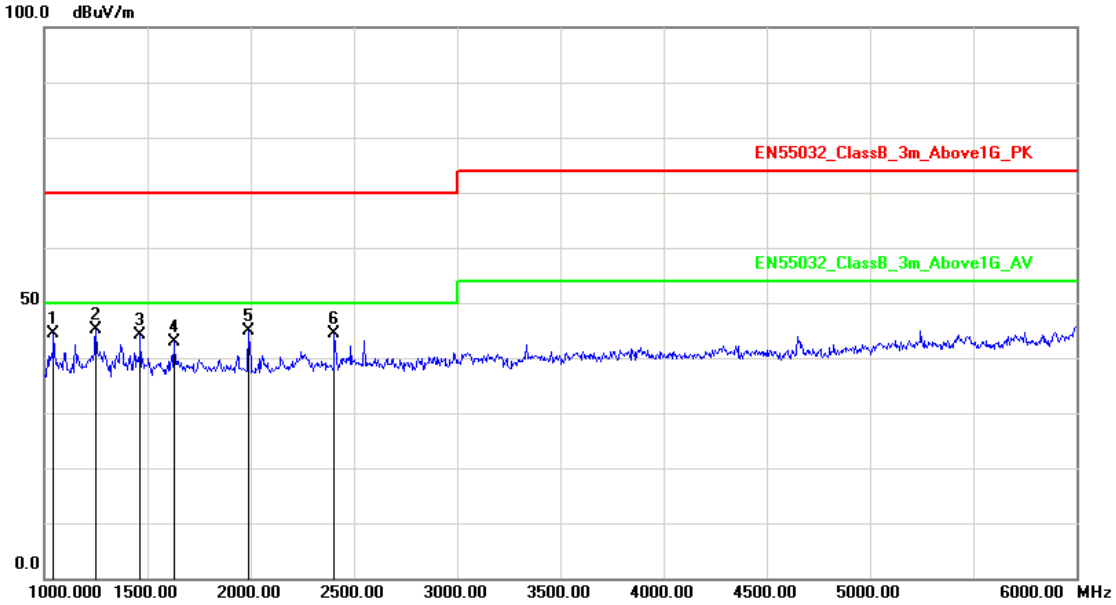
Test Mode:	Mode 1: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(230V/50Hz)		
AC Power :	AC 230V/50Hz	Ant. Polarization:	Vertical
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	1050.000	-5.64	50.96	45.32	70.00	-24.68	peak	200	58
2	1290.000	-4.04	48.12	44.08	70.00	-25.92	peak	200	224
3	1490.000	-2.88	46.41	43.53	70.00	-26.47	peak	100	163
4	1995.000	-1.21	47.15	45.94	70.00	-24.06	peak	100	45
5	2330.000	0.48	42.87	43.35	70.00	-26.65	peak	200	225
6	2485.000	1.27	45.38	46.65	70.00	-23.35	peak	100	187

Note: Measurement Level = Reading Level + Correct Factor

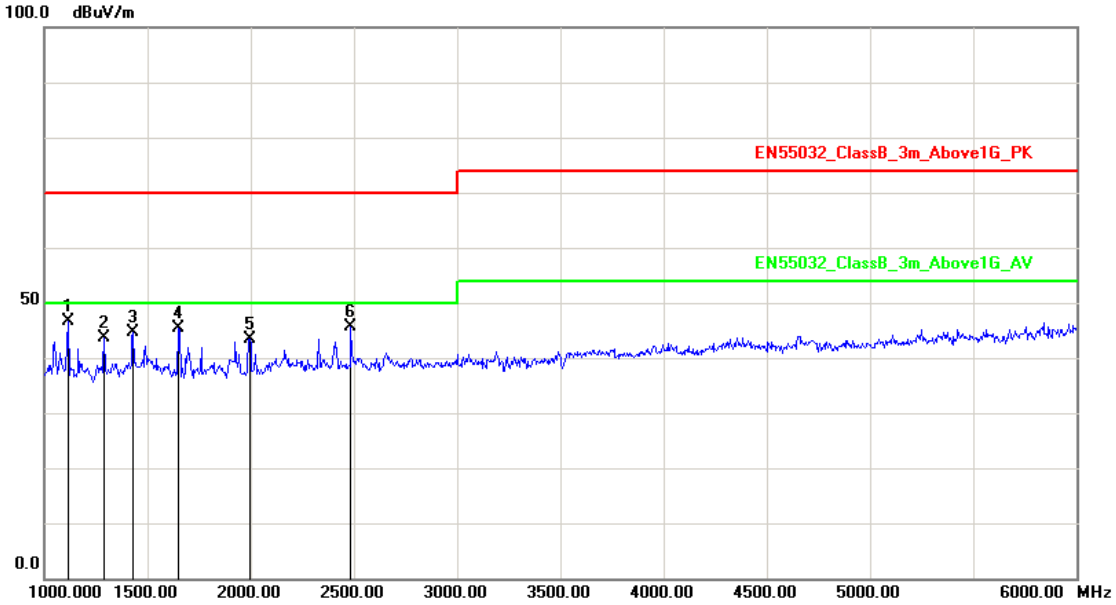
Test Mode:	Mode 12: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(110V/60Hz)		
AC Power :	AC 110V/60Hz	Ant. Polarization:	Horizontal
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	1045.000	-5.68	49.96	44.28	70.00	-25.72	peak	100	52
2	1250.000	-4.31	49.36	45.05	70.00	-24.95	peak	100	114
3	1465.000	-3.00	47.22	44.22	70.00	-25.78	peak	100	163
4	1630.000	-2.26	45.04	42.78	70.00	-27.22	peak	100	48
5	1990.000	-1.23	46.21	44.98	70.00	-25.02	peak	200	257
6	2405.000	0.87	43.43	44.30	70.00	-25.70	peak	200	96

Note: Measurement Level = Reading Level + Correct Factor

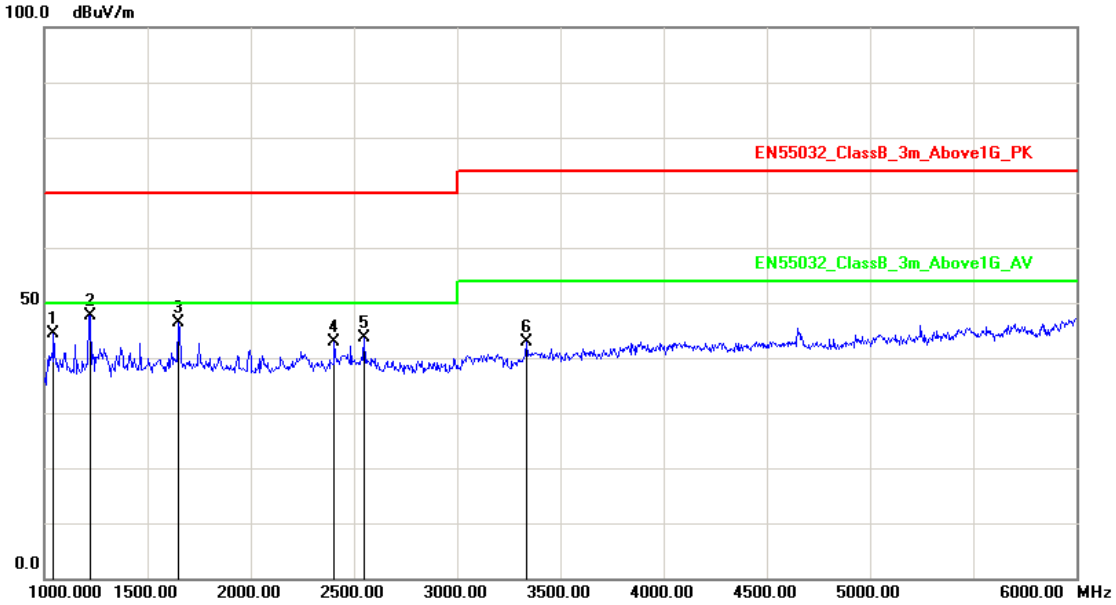
Test Mode:	Mode 12: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 1729 Colour bars + Horizontal(110V/60Hz)		
AC Power :	AC 110V/60Hz	Ant. Polarization:	Vertical
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	1115.000	-5.21	51.78	46.57	70.00	-23.43	peak	100	52
2	1290.000	-4.04	47.62	43.58	70.00	-26.42	peak	200	163
3	1430.000	-3.17	47.92	44.75	70.00	-25.25	peak	200	142
4	1650.000	-2.21	47.69	45.48	70.00	-24.52	peak	100	226
5	1995.000	-1.21	44.65	43.44	70.00	-26.56	peak	100	341
6	2485.000	1.27	44.38	45.65	70.00	-24.35	peak	200	187

Note: Measurement Level = Reading Level + Correct Factor

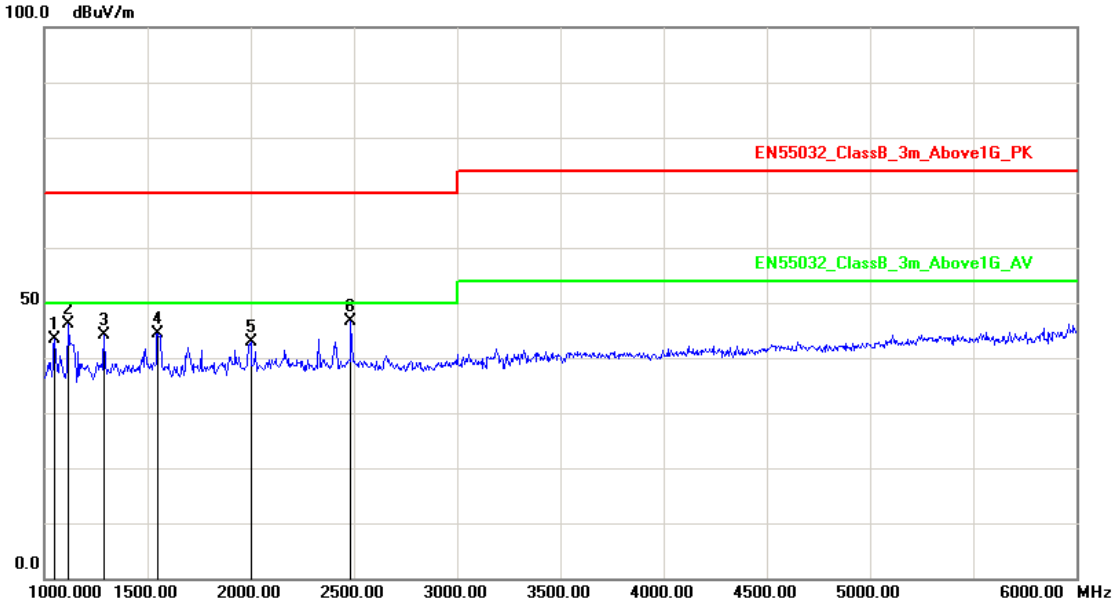
Test Mode:	Mode 16: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (230V/50Hz)		
AC Power :	AC 230V/50Hz	Ant. Polarization:	Horizontal
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	1045.000	-5.68	49.96	44.28	70.00	-25.72	peak	100	148
2	1220.000	-4.51	52.12	47.61	70.00	-22.39	peak	100	56
3	1650.000	-2.21	48.69	46.48	70.00	-23.52	peak	200	324
4	2405.000	0.87	41.93	42.80	70.00	-27.20	peak	200	152
5	2550.000	1.63	41.91	43.54	70.00	-26.46	peak	200	257
6	3335.000	5.15	37.84	42.99	74.00	-31.01	peak	200	14

Note: Measurement Level = Reading Level + Correct Factor

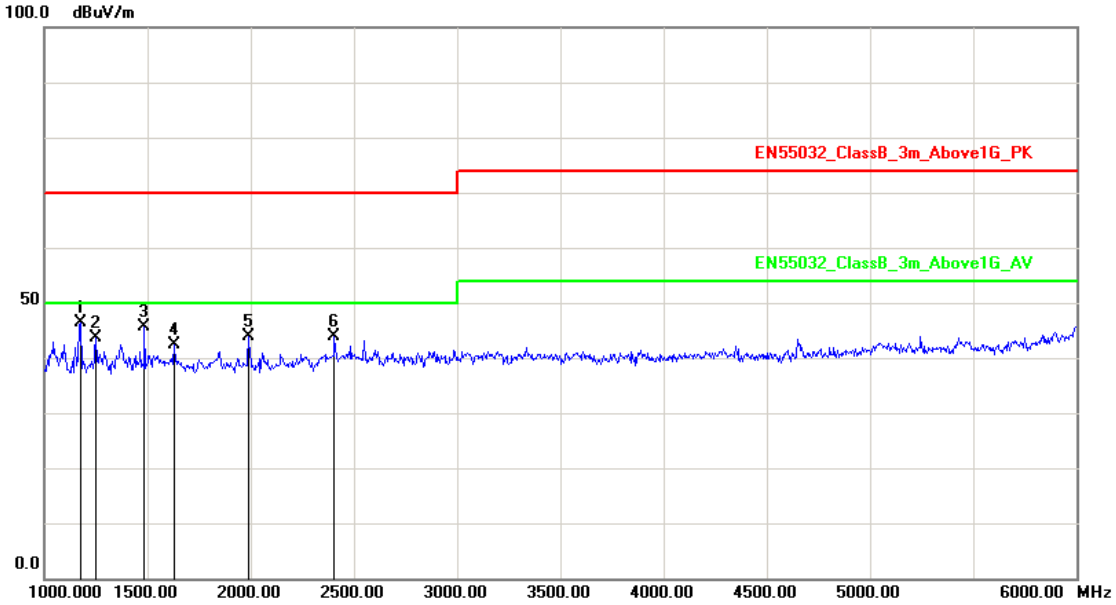
Test Mode:	Mode 16: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (230V/50Hz)		
AC Power :	AC 230V/50Hz	Ant. Polarization:	Vertical
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	1050.000	-5.64	48.96	43.32	70.00	-26.68	peak	100	115
2	1115.000	-5.21	51.28	46.07	70.00	-23.93	peak	100	25
3	1290.000	-4.04	48.12	44.08	70.00	-25.92	peak	200	149
4	1550.000	-2.59	46.94	44.35	70.00	-25.65	peak	200	85
5	2000.000	-1.20	44.13	42.93	70.00	-27.07	peak	200	244
6	2485.000	1.27	45.38	46.65	70.00	-23.35	peak	200	309

Note: Measurement Level = Reading Level + Correct Factor

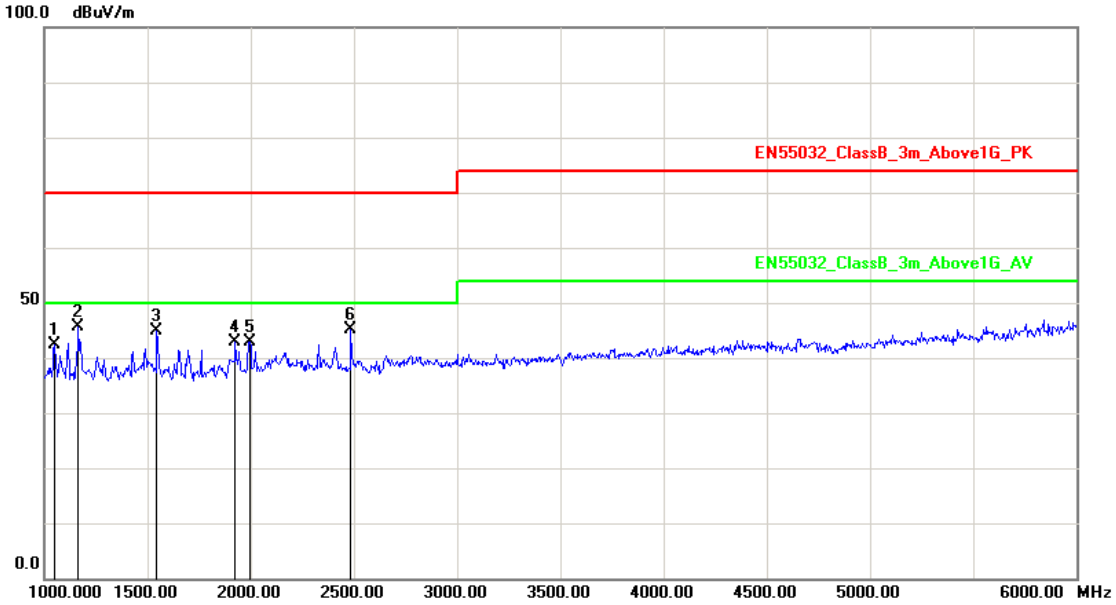
Test Mode:	Mode 17: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (110V/60Hz)		
AC Power :	AC 110V/60Hz	Ant. Polarization:	Horizontal
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	1175.000	-4.81	51.23	46.42	70.00	-23.58	peak	100	64
2	1250.000	-4.31	47.86	43.55	70.00	-26.45	peak	100	11
3	1485.000	-2.90	48.53	45.63	70.00	-24.37	peak	200	115
4	1630.000	-2.26	44.54	42.28	70.00	-27.72	peak	200	352
5	1990.000	-1.23	45.21	43.98	70.00	-26.02	peak	200	174
6	2405.000	0.87	42.93	43.80	70.00	-26.20	peak	200	89

Note: Measurement Level = Reading Level + Correct Factor

Test Mode:	Mode 17: Full system (Display 1 mode 3840*2160@60Hz) Signal from PC for ITU-RBT 471-1 Colour bars + Horizontal (110V/60Hz)		
AC Power :	AC 110V/60Hz	Ant. Polarization:	Vertical
Equipment :	LCD Monitor	Model No :	**273********
Temperature :	26°C	Humidity :	55%
Pressure(mbar) :	1001	Date:	2020/03/29



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	1050.000	-5.64	47.96	42.32	70.00	-27.68	peak	100	54
2	1165.000	-4.87	50.54	45.67	70.00	-24.33	peak	100	111
3	1545.000	-2.61	47.45	44.84	70.00	-25.16	peak	100	263
4	1925.000	-1.42	44.30	42.88	70.00	-27.12	peak	100	341
5	1995.000	-1.21	44.15	42.94	70.00	-27.06	peak	200	157
6	2485.000	1.27	43.88	45.15	70.00	-24.85	peak	200	89

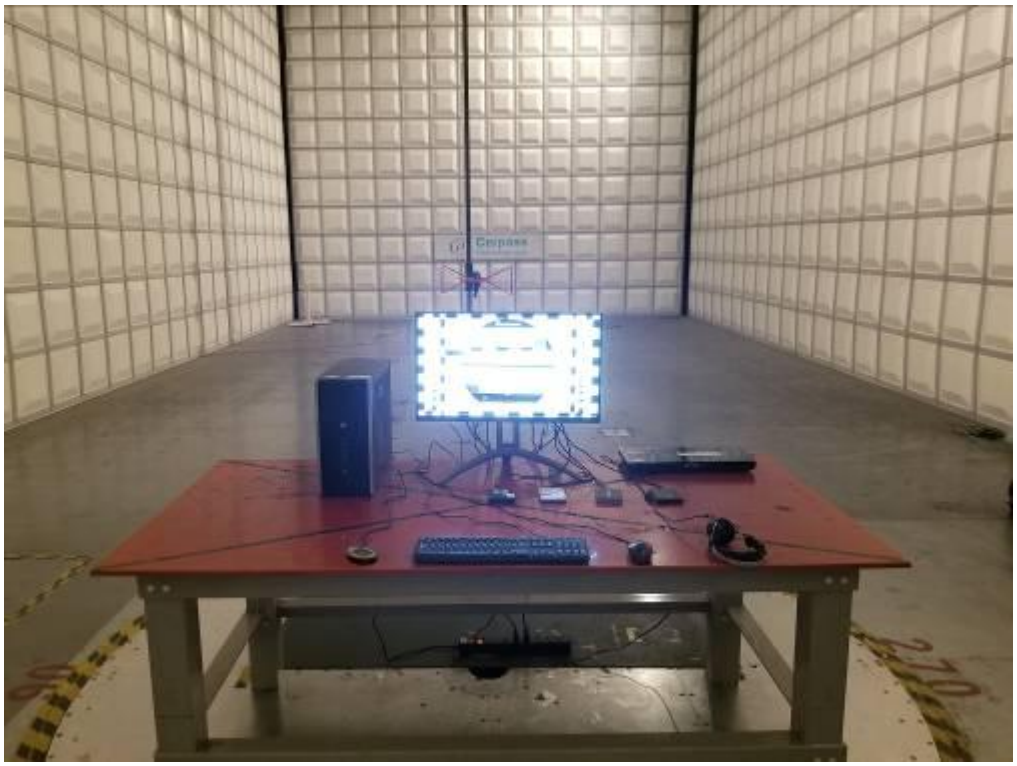
Note: Measurement Level = Reading Level + Correct Factor

Test engineer: Vane Xia

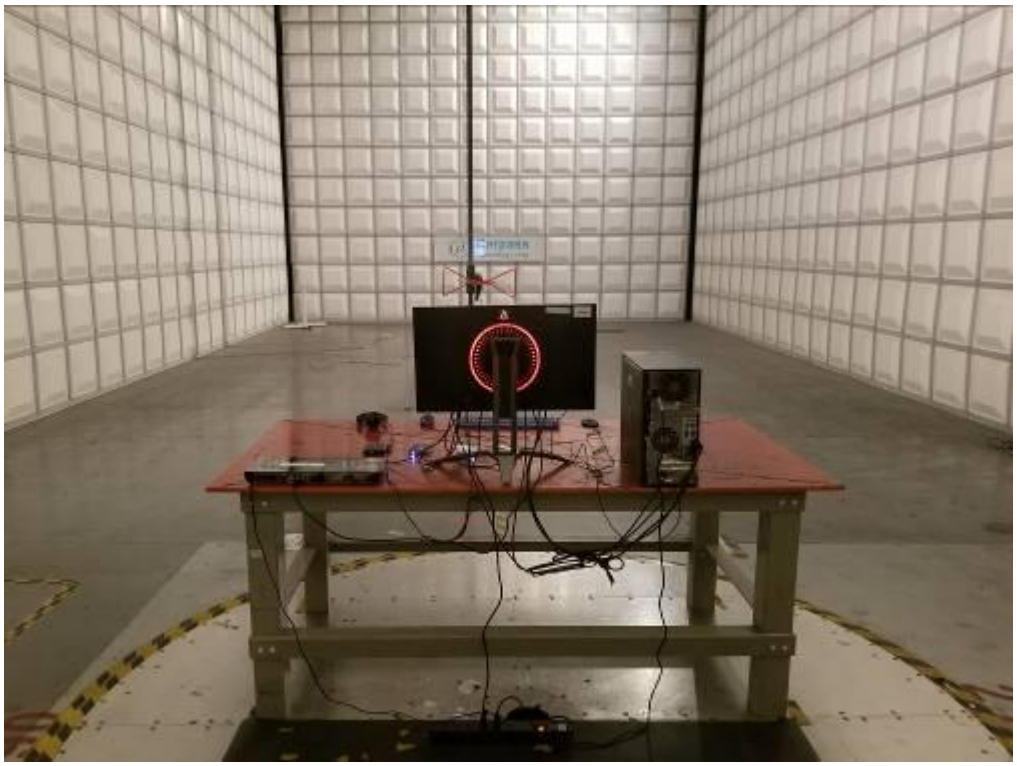
5.7. Test Photographs (30MHz ~ 1000MHz)

For ITU-RBT 1729 Colour bars

Front View

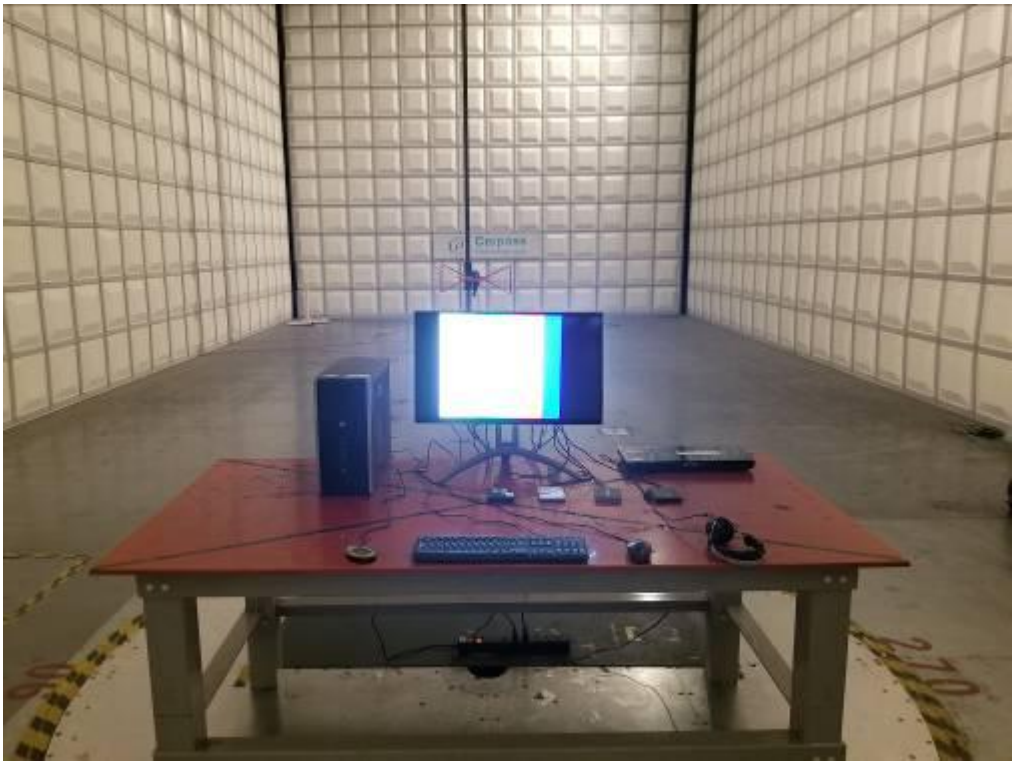


Rear View

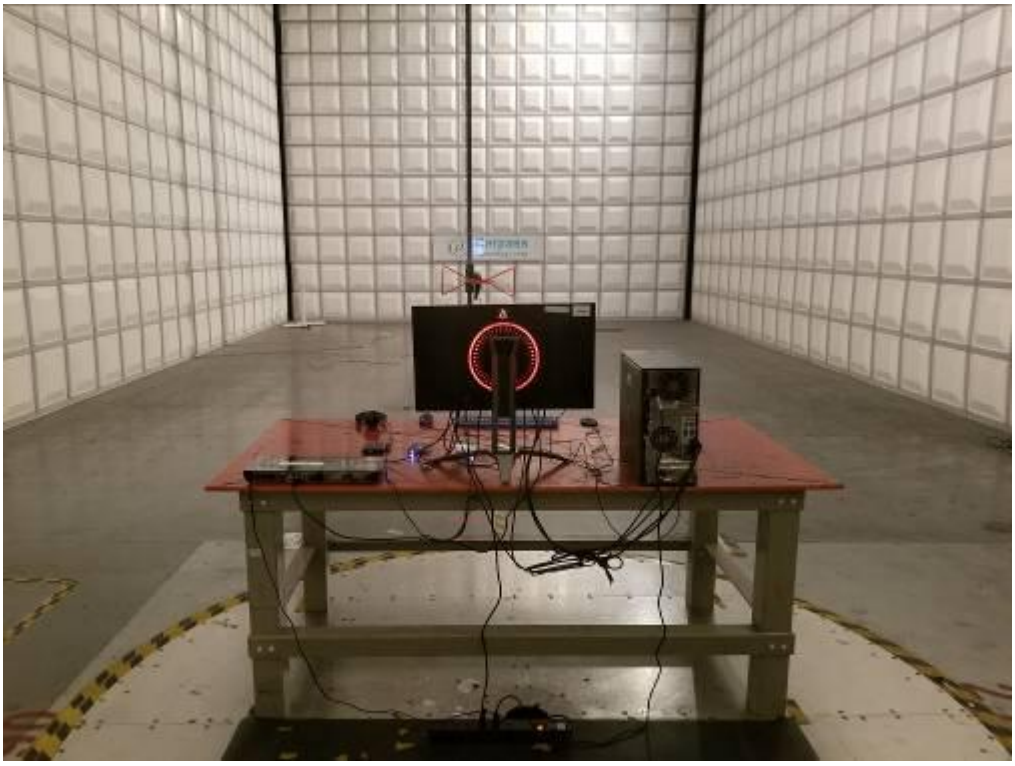


For ITU-RBT 471-1 Colour bars

Front View



Rear View

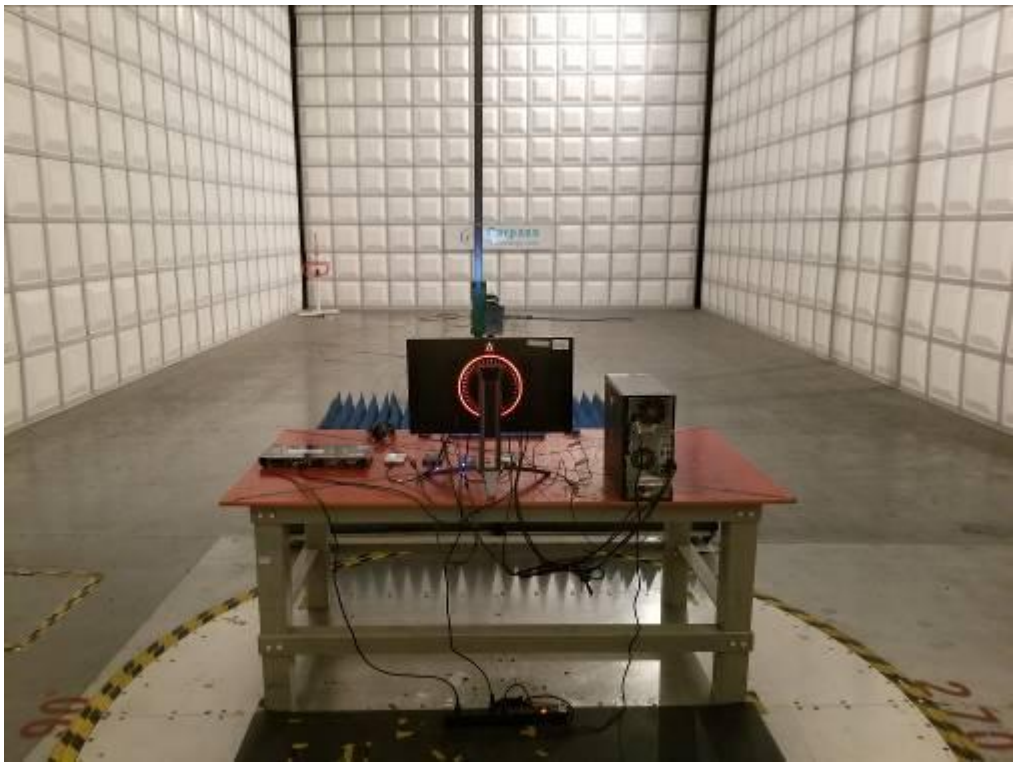


5.8. Test Photographs (1GHz~6GHz)

For ITU-RBT 1729 Colour bars

Front View

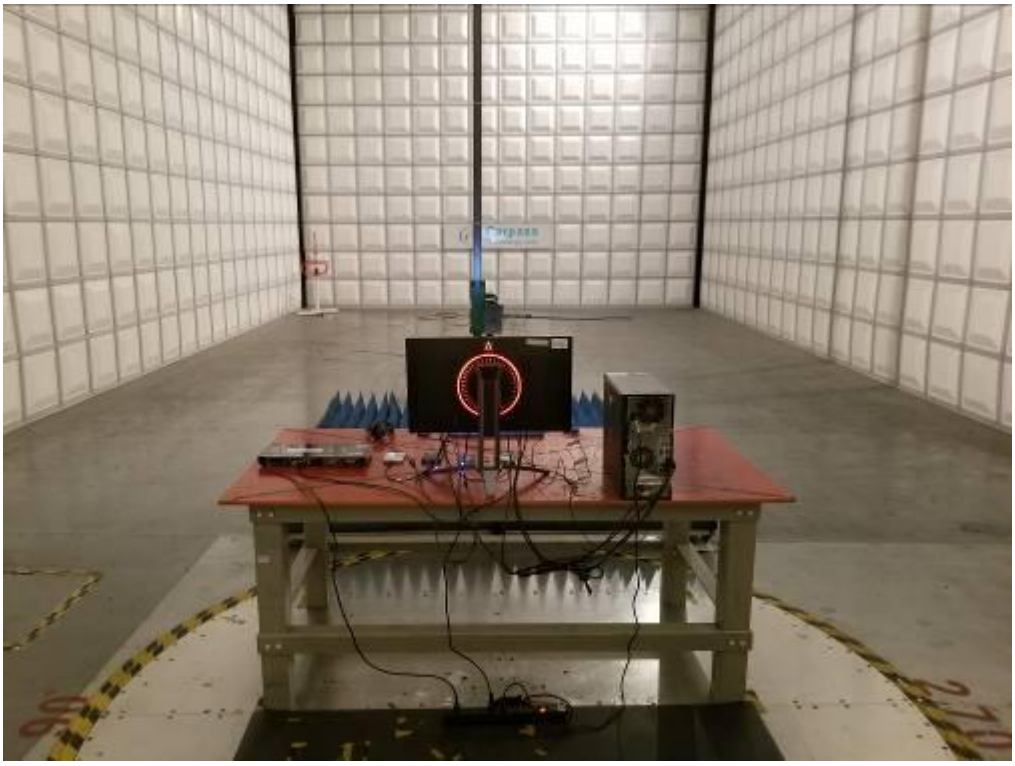
Rear View



For ITU-RBT 471-1 Colour bars

Front View

Rear View



6. Harmonics Test

6.1. Limits of Harmonics Current Measurement

Limits for Class A equipment

Harmonics Order n	Max. permissible harmonics current A	Harmonics Order n	Max. permissible harmonics current A
Odd harmonics		Even harmonics	
3	2.30	2	1.08
5	1.14	4	0.43
7	0.77	6	0.30
9	0.40	8<=n<=40	0.23x8/n
11	0.33		
13	0.21		
15<=n<=39	0.15x15/n		

(b) Limits for Class B equipment

For Class B equipment, the harmonics of the input current shall not exceed the values given in Table that is the limit of Class A multiplied by a factor of 1,5.

(c) Limits for Class C equipment

Harmonics Order n	Maximum permissible harmonic current expressed as a percentage of the input current at the fundamental frequency %
2	2
3	30 . λ*
5	10
7	7
9	5
11<n<39 (odd harmonics only)	3
* λ is the circuit power factor	

(d) Limits for Class D equipment

Harmonics Order n	Maximum permissible harmonic current per watt mA/W	Maximum permissible harmonic current A
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
11 < n < 39 (odd harmonics only)	3.85/n	See limit of Class A

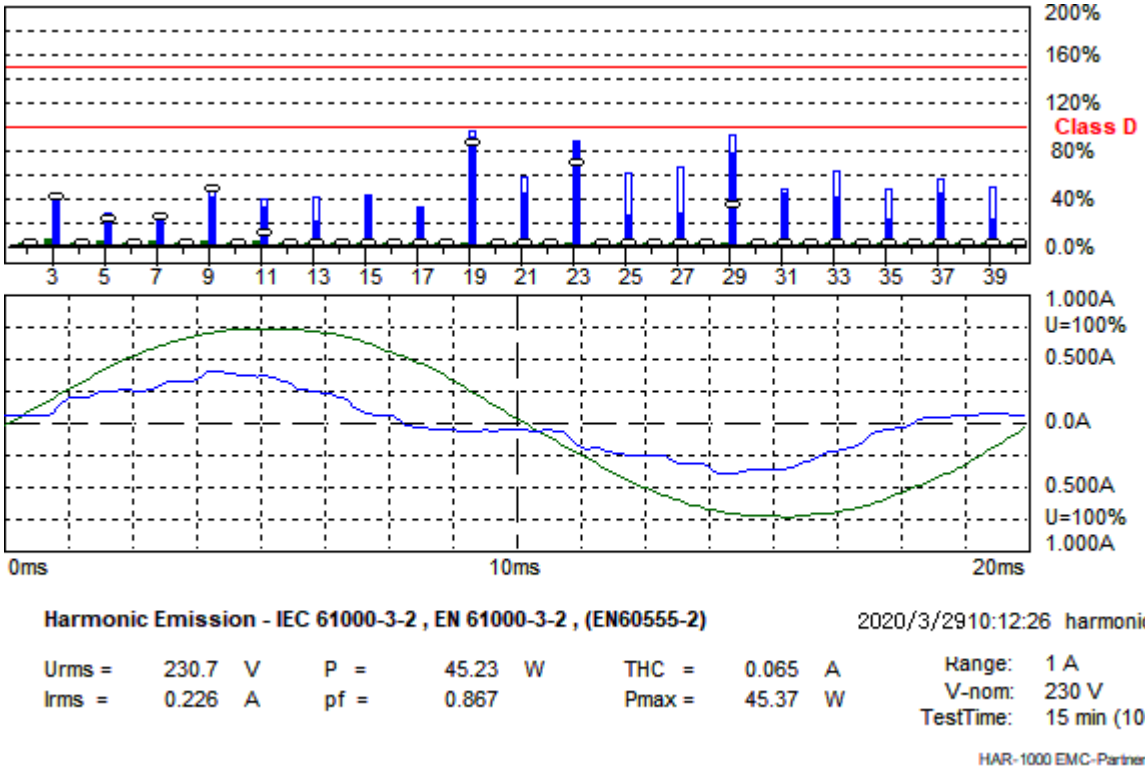
NOTE: According to section 7 of EN 61000-3-2, the above limits for all equipment except for lighting equipment having an active input power > 75 W and no limits apply for equipment with anctive input power up to and including 75 W.

6.2. Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
EMC Emission Tester	EMCPARTNER	Harmonics-1000	159	2020.03.23	2021.03.22
Temperature/ Humidity Meter	GEMIlead	STH200A	N/A	2019.04.15	2020.04.14
HARCS	EMC Partner AG	Ver 4.18	N/A	N/A	N/A
Harmonics&Flicker Power Line Test	APS	ECTS2-140M	55054	2020.03.11	2021.03.10
HFA(16A) Program	APS	V1.0.0.29	N/A	N/A	N/A

6.3. Test Result and Data

Basic Standard	:	EN 61000-3-2
Final Test Result	:	PASS
Test Mode	:	Mode 1
Model No.	:	**273********
Temperature	:	24℃
Humidity	:	52 %
Atmospheric Pressure	:	100 kPa
Test Date	:	Mar. 29, 2020



Full Bar : Actual Values

Empty Bar : Maximum Values

Blue : Current , Green : Voltage , Red : Failed

Urms =	230.7V	Freq =	49.987	Range:	1 A
Irms =	0.226A	Ipk =	0.404A	cf =	1.788
P =	45.23W	S =	52.15VA	pf =	0.867
THDi =	30.0 %	THDu =	1.40 %	Class D	
Test - Time :		15min	(100 %)		
Limit Reference:		Pmax = 45.371W			

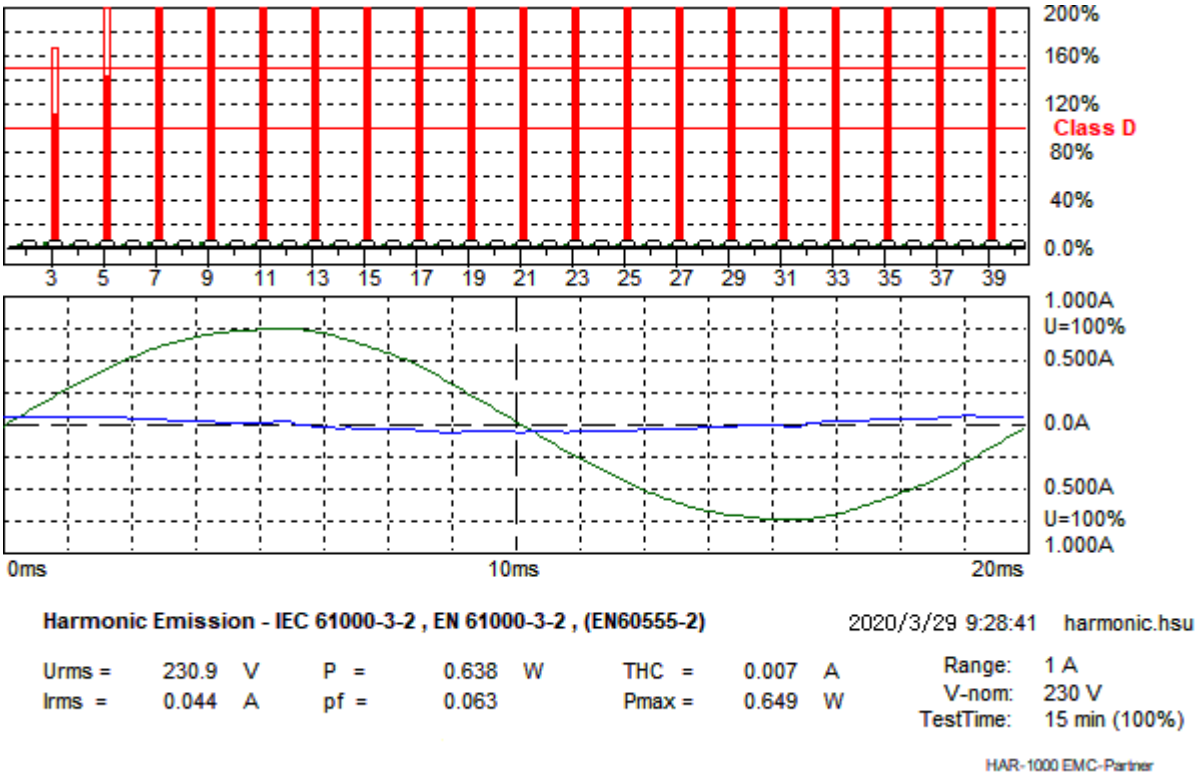
Test completed

Order	Freq. [Hz]	Irms [A]	Irms%L [%]	Imax [A]	Imax%L [%]	Limit [A]
1	50	0.2169		0.2176		
2	100	0.0016		0.0032		
3	150	0.0596	38.616	0.0618	40.040	0.1543
4	200	0.0012		0.0028		
5	250	0.0151	17.559	0.0219	25.418	0.0862
6	300	0.0012		0.0033		
7	350	0.0111	24.483	0.0117	25.828	0.0454
8	400	0.0016		0.0030		
9	450	0.0089	39.012	0.0111	48.966	0.0227
10	500	0.0016		0.0021		
11	550	0.0049	30.748	0.0059	36.898	0.0159
12	600	0.0013		0.0016		
13	650	0.0024	18.169	0.0051	37.701	0.0134
14	700	0.0010		0.0019		
15	750	0.0045	38.260	0.0047	40.357	0.0116
16	800	0.0008		0.0020		
17	850	0.0031	29.700	0.0031	30.294	0.0103
18	900	0.0009		0.0016		
19	950	0.0082	89.624	0.0086	93.607	0.0092
20	1000	0.0011		0.0017		
21	1050	0.0035	41.824	0.0046	55.032	0.0083
22	1100	0.0012		0.0020		
23	1150	0.0063	83.579	0.0064	84.383	0.0076
24	1200	0.0009		0.0018		
25	1250	0.0016	23.585	0.0041	58.526	0.0070
26	1300	0.0009		0.0016		
27	1350	0.0016	24.529	0.0042	64.152	0.0065
28	1400	0.0008		0.0015		
29	1450	0.0045	74.984	0.0055	91.196	0.0060
30	1500	0.0009		0.0013		
31	1550	0.0023	41.161	0.0026	45.493	0.0056
32	1600	0.0009		0.0014		
33	1650	0.0020	38.051	0.0032	61.112	0.0053
34	1700	0.0007		0.0015		
35	1750	0.0010	20.790	0.0023	45.249	0.0050
36	1800	0.0009		0.0012		
37	1850	0.0020	41.370	0.0025	53.006	0.0047
38	1900	0.0006		0.0012		
39	1950	0.0009	20.441	0.0021	46.332	0.0045
40	2000	0.0007		0.0010		

The power of EUT is less than 75W after the testing. According the standard, the equipment with a rated power of 75W or less, other than lighting equipment, limits are not specified in this standard. So the test data needn’t list.

Default mode:

Basic Standard	:	EN 61000-3-2
Final Test Result	:	PASS
Test Mode	:	Mode 1
Model No.	:	**273********
Temperature	:	24℃
Humidity	:	52 %
Atmospheric Pressure	:	100 kPa
Test Date	:	Mar. 29, 2020



Full Bar : Actual Values

Empty Bar : Maximum Values

Blue : Current , Green : Voltage , Red : Failed

Urms =	230.9V	Freq =	50.000	Range:	1 A
Irms =	0.044A	Ipk =	0.066A	cf =	1.500
P =	0.638W	S =	10.15VA	pf =	0.063
THDi =	15.8 %	THDu =	1.30 %	Class D	
Test - Time :		15min	(100 %)		
Limit Reference:		Pmax = 0.6487W			

Test completed

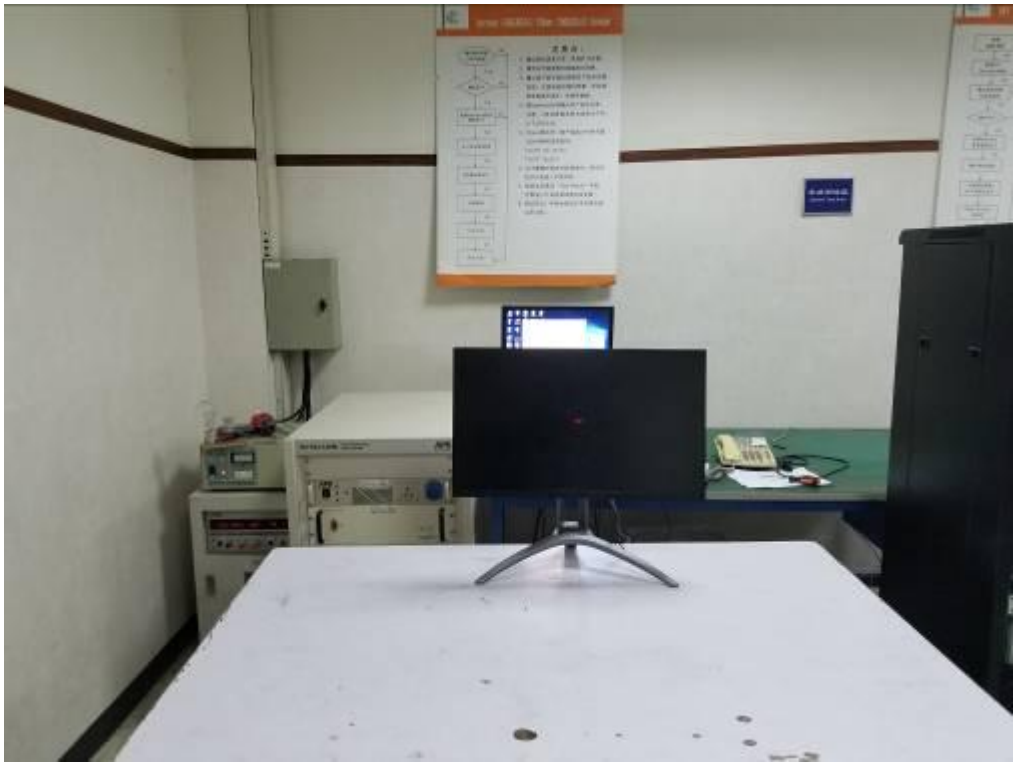
Order	Freq. [Hz]	Irms [A]	Irms%L [%]	Imax [A]	Imax%L [%]	Limit [A]	Status
1	50	0.0436		0.0645			
2	100	0.0002		0.0006			
3	150	0.0024	107.92	0.0036	163.26	0.00	N/L
4	200	0.0002		0.0004			
5	250	0.0017	138.65	0.0026	212.92	0.00	N/L
6	300	0.0004		0.0004			
7	350	0.0024		0.0037		0.00	N/L
8	400	0.0003		0.0005			
9	450	0.0033		0.0049		0.00	N/L
10	500	0.0004		0.0005			
11	550	0.0024		0.0036		0.00	N/L
12	600	0.0004		0.0006			
13	650	0.0010		0.0016		0.00	N/L
14	700	0.0003		0.0004			
15	750	0.0017		0.0025		0.00	N/L
16	800	0.0002		0.0002			
17	850	0.0013		0.0021		0.00	N/L
18	900	0.0002		0.0003			
19	950	0.0010		0.0015		0.00	N/L
20	1000	0.0002		0.0003			
21	1050	0.0009		0.0013		0.00	N/L
22	1100	0.0002		0.0003			
23	1150	0.0010		0.0016		0.00	N/L
24	1200	0.0002		0.0003			
25	1250	0.0009		0.0013		0.00	N/L
26	1300	0.0002		0.0003			
27	1350	0.0008		0.0012		0.00	N/L
28	1400	0.0003		0.0004			
29	1450	0.0009		0.0012		0.00	N/L
30	1500	0.0003		0.0004			
31	1550	0.0008		0.0012		0.00	N/L
32	1600	0.0003		0.0004			
33	1650	0.0008		0.0011		0.00	N/L
34	1700	0.0002		0.0004			
35	1750	0.0006		0.0009		0.00	N/L
36	1800	0.0002		0.0004			
37	1850	0.0007		0.0010		0.00	N/L
38	1900	0.0002		0.0004			
39	1950	0.0007		0.0009		0.00	N/L
40	2000	0.0002		0.0004			

The power of EUT is less than 75W after the testing. According the standard, the equipment with a rated power of 75W or less, other than lighting equipment, limits are not specified in this standard. So the test data needn't list.

Test engineer: Vane Xia

6.4. Test Photographs

Default Mode



7. Voltage Fluctuations Test

7.1. Test Procedure

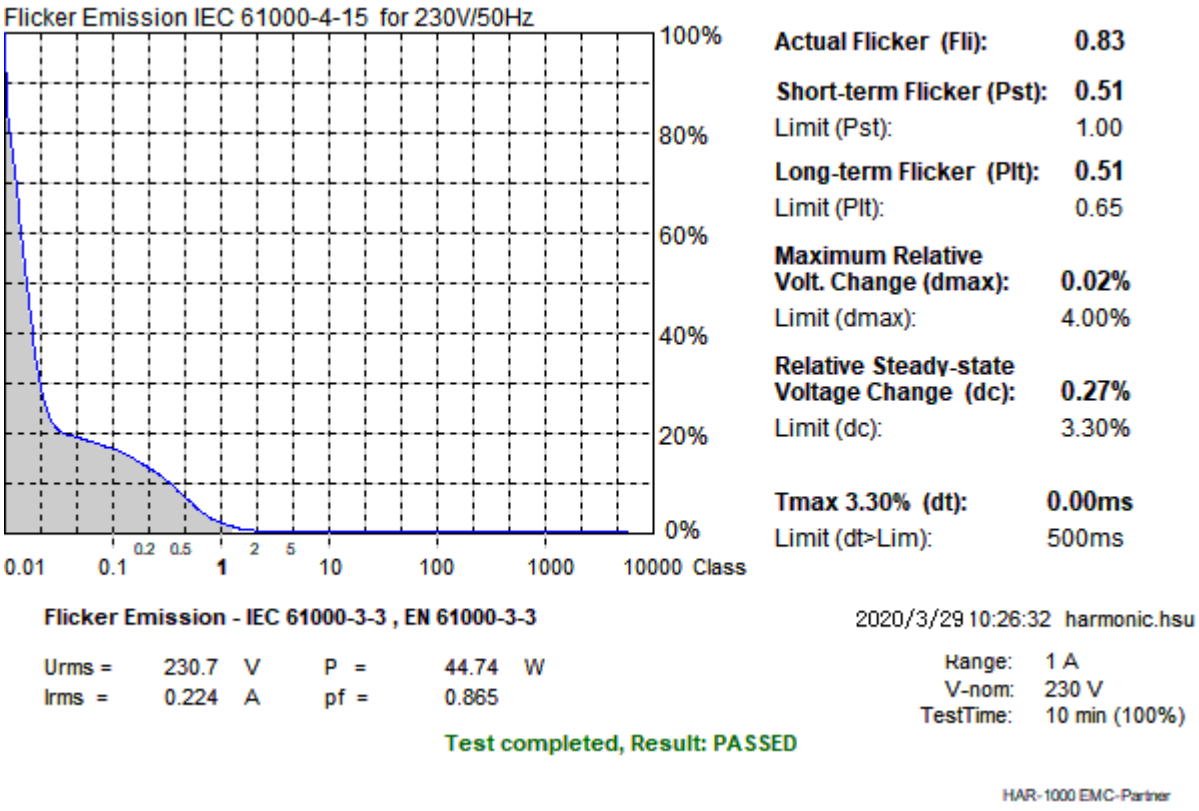
The equipment shall be tested under the conditions of **Clause 5.**
The total impedance of the test circuit, excluding the appliance under test, but including the internal impedance of the supply source, shall be equal to the reference impedance.
The stability and tolerance of the reference impedance shall be adequate to ensure that the overall accuracy of ±8% is achieved during the whole assessment procedure.

7.2. Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
EMC Emission Tester	EMCPARTNER	Harmonics-1000	159	2020.03.23	2021.03.22
Temperature/ Humidity Meter	GEMIlead	STH200A	N/A	2019.04.15	2020.04.14
HARCS	EMC Partner AG	Ver 4.18	N/A	N/A	N/A
Harmonics&Flicker Power Line Test	APS	ECTS2-140M	55054	2020.03.11	2021.03.10
HFA(16A) Program	APS	V1.0.0.29	N/A	N/A	N/A

7.3. Test Result and Data

Basic Standard	:	EN 61000-3-3
Final Test Result	:	PASS
Test Mode	:	Mode 1
Model No.	:	**273********
Temperature	:	24℃
Humidity	:	52 %
Atmospheric Pressure	:	100 kPa
Test Date	:	Mar. 29, 2020



Full Bar : Actual Values

Empty Bar : Maximum Values

Circles : Average Values

Blue : Current , Green : Voltage , Red : Failed

Urms = 230.7V Freq = 50.000 Range: 1 A
Irms = 0.224A Ipk = 0.402A cf = 1.795
P = 44.74W S = 51.70VA pf = 0.865

Test - Time : 1 x 10min = 10min (100 %)

LIN (Line Impedance Network) : No LIN

Limits : Plt : 0.65 Pst : 1.00
dmax : 4.00 % dc : 3.30 %
dtLim: 3.30 % dt>Lim: 500ms

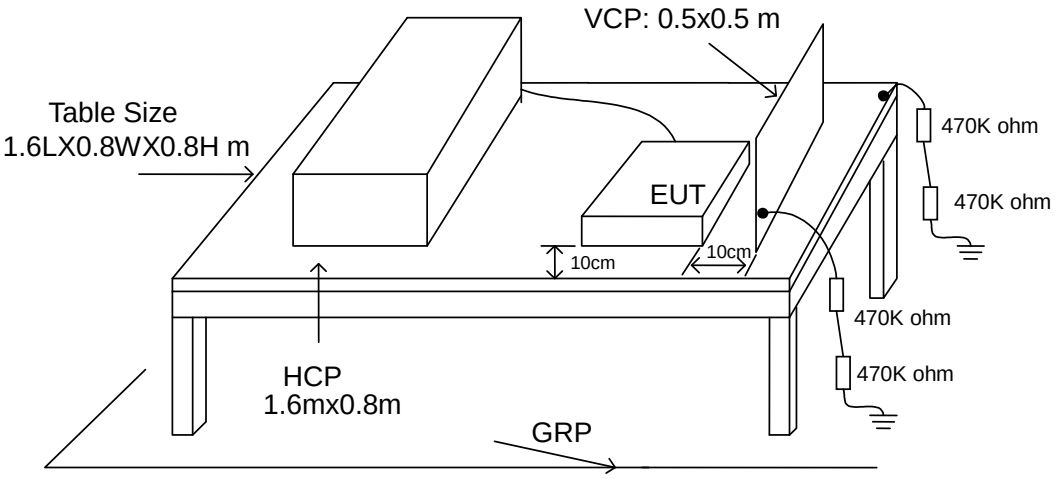
Test completed, Result: PASSED

Test engineer: Vane Xia

7.4. Test Photographs

8. Electrostatic Discharge Immunity Test

8.1. Test Setup for Tests Performed in Laboratory



The test setup consists of the test generator, EUT and auxiliary instrumentation necessary to perform DIRECT and INDIRECT application of discharges to the EUT as applicable, in the follow manner:

Contact Discharge to the conductive surfaces and to coupling plane;

Air Discharge at insulating surfaces.

The preferred test method is that of type tests performed in laboratories and the only accepted method of demonstrating conformance with this standard. The EUT was arranged as closely as possible to arrangement in final installed conditions.

A ground reference plane was provided on the floor of the test site. It was a metallic sheet (copper or aluminum) of 0.25 mm, minimum thickness; other metallic may be used but they shall have at least 0.65 mm thickness. In the Cerpass Technology Corp., we provided 1 mm thickness stainless steel ground reference plane. The minimum size of the ground reference plane is 2.5 m x 2.5 m, the exact size depending on the dimensions of the EUT. It was connected to the protective grounding system.

The EUT was arranged and connected according to its functional requirements. A distance of 1m minimum was provided between the EUT and the wall of the lab. And any other metallic structure. In cases where this length exceeds the length necessary to apply the discharges to the selected points, the excess length shall, where possible, be placed non-inductively off the ground reference plane and shall not come closer than 0.2m to other conductive parts in the test setup.

Where the EUT is installed on a metal table, the table was connected to the reference plane via a cable with a 470k ohm resister located at each end, to prevent a build-up of charge. The test setup was consisting a wooden table, 0.8m high, standing on the ground reference plane. A HCP, 1.6 m x 0.8 m, was placed on the table. The EUT and cables was isolated from the HCP by an insulating support 0.5 mm thick. The VCP size, 0.5 m x 0.5 m.

8.2. Test Severity Levels

Contact Discharge		Air Discharge	
Level	Test Voltage (KV) of Contact discharge	Level	Test Voltage (KV) of Air Discharge
1	±2	1	±2
2	±4	2	±4
3	±6	3	±8
4	±8	4	±15
X	Specified	X	Specified
Remark: “X” is an open level.			

8.3. Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
ESD Simulator	EM Test	Dito	P1645186902	2019.08.25	2020.08.24
Tonometer	shanghaifengyun	DYM3	3251	2019.12.03	2020.12.02
Dehumidifier	ZEDO	ZD-220LB	CEP-TH-01	N/A	N/A
Humidifier	YADU	YZ-DS251C	CEP-TH-02	N/A	N/A
Temperature/ Humidity Meter	feiyan	N/A	102	2019.08.25	2020.08.24
ESD Simulator	NoiseKen	ESS-B3011A	AEC00315-00C-0A	2019.12.03	2020.12.02

8.4. Test Result and Data

Final Test Result	:	**PASS**
Pass performance criteria	:	A
Required performance criteria	:	B
Model No.	:	**273********
Basic Standard	:	EN 61000-4-2
Product Standard	:	EN 55035
Test Voltage	:	±2 / ±4 / ±8 kV for air discharge, ±2 / ±4 kV for contact discharge
Temperature	:	25°C
Relative Humidity	:	49 %
Atmospheric Pressure	:	100 kPa
Test Date	:	Mar. 30,2020

Mode 1

	Contact Discharge								Air Discharge							
	25 times / each								10 times / each							
Voltage	2 kV		4 kV		6 kV		8 kV		2 kV		4 kV		8 kV		10 kV	
Point\Polarity	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
HCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
VCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
Screw	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
Case	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
Panel	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---
HDMI Port	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
USB Port	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
DP Port	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
Audio Port	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---

Test engineer: Vane Xia

8.5. Test Photographs

9. Radio Frequency electromagnetic field immunity test

9.1. Test Procedure

The equipment to be tested is placed in the center of the enclosure on a wooden table. The equipment is then connected to power and signal leads according to pertinent installation instructions
The antenna which is enabling the complete frequency range of 80-5000 MHz is placed 3m away from the equipment. The required field strength is determined by placing the field strength meter(s) on top of or directly alongside the equipment under test and monitoring the field strength meter via a remote field strength indicator outside the enclosure while adjusting the continuous-wave to the applicable antennae. The test is normally performed with the antenna facing the most sensitive side of the EUT. The polarization of the field generated by the bucolical antenna necessitates testing each position twice, once with the antenna positioned vertically and again with the antenna positioned horizontally. The circular polarization of the field from the log-spiral antenna makes a change of position of the antenna unnecessary.
At each of the above conditions, the frequency range is swept 80-5000 MHz, pausing to adjust the R.F. signal level or to switch oscillators and antenna. The rate of sweep is in the order of 1.5*10-3 decades/s. The sensitive frequencies or frequencies of dominant interest may be discretely analyzed.

Audio port test Procedure
The performance of the EUT shall be evaluated by measuring the level of the demodulated audio relative to the selected reference level.

For devices supporting the telephony function, direct (absolute) measurement of the level of demodulated audio is permitted, providing there is lossless coupling to the wireline or the earpiece. Any losses within the measurement systems (for example the plastic tubing shown in Figure G.5) shall be taken into account.

For other devices, the levels of both the demodulated audio and a reference output from the EUT shall be measured so as to obtain a relative measurement.

The noise floor of the measurement system or ambient sounds shall not influence results.

The level of the demodulated audio signal shall be measured via a bandpass filter centred on the modulation frequency of the applied disturbance (typically 1 kHz). The 3 dB bandwidth of the filter (typically 100 Hz) should be selected with regard to the noise floor of the test system and the rejection of the harmonics of the disturbance modulating frequency. See Figure G.1 to Figure G.7 for examples of the audio measurement setups.

Note: Record the resulting level with units in dB (V) (or other appropriate dB unit) as the value of $L0$.
Apply the RF disturbance to the applicable port of the EUT and record the resulting demodulated audio level in dB (V) (or other appropriate dB unit used in step d) above) as the value of $L1$.
Calculate the electrical interference ratio using the following formula:
Electrical interference ratio = $L1 - L0$

9.2. Test Severity Levels

Frequency Band : 80-5000 MHz	
Level	Test field strength (V/m)
1	1
2	3
3	10
X	Specified
Remark: “X” is an open class.	

Audio port Reference level					
Type of immunity test	Frequency Range MHZ	Acoustic or electrical Interference ratio	Equivalent direct measurement		
			dB(SPL)	Digital dBm0	Analogue dBm
Radiated	80 to 1000	0/-20dB	75	-30	-30

The measured acoustic interference ratio and/or the measured electrical interference ratio during the test shall be –20 dB or better.

L0	Input the appropriate signal to the EUT, adjust the EUT output to achieve "Reference level", and record the set value.
L1	When the L0 is set, the EUT output is closed to ensure that the impedance of its input is kept unchanged and the RF test is started. At this time the value of the record is L1, and the corresponding L1 changes are recorded according to the test frequency.

9.3. Measurement Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Signal Generator	R&S	SML03	103287	2020.03.11	2021.03.10
Signal Generator	R&S	SMR30	100049	2020.03.11	2021.03.10
Power Sensor	R&S	NR P-Z91	100383	2020.03.11	2021.03.10
Power Meter	R&S	NRP	101206	2020.03.11	2021.03.10
Power Amplifer	BONN	BLWA0830-160/ 100/40D	076659	2020.03.11	2021.03.10
Power Amplifer	MILMEGA	AS1860-30	10040456	2020.03.11	2021.03.10
Istropic Electric Field Probe	EST.LINDGREN	HI-6105	137445	2019.12.03	2020.12.02
EMS Antenna	R&S	HL046E	100028	N/A	N/A
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120 E	475	2019.08.25	2020.08.24
Laser Data Interface	ETS.LINDGREN	HI-6113	130208	2019.08.25	2020.08.24
AUDIO ANALYZER	R&S	UPV	103339	2019.12.03	2020.12.02
Low Noise Microphone	Bruel&Kj	4955	3094785	2019.08.25	2020.08.24
Microphone Conditioning Amplifier	Bruel&Kj	2690-0F2	3008833	2019.08.25	2020.08.24
Sound Calibrator	Bruel&Kj	4231	3020682	2019.12.03	2020.12.02
Mouth Simulator	Bruel&Kj	4227	3131288	2019.08.25	2020.08.24
Temperature/ Humidity Meter	feiyan	N/A	101	2019.08.25	2020.08.24
EMC-32	Rohde&Schwarz	Ver 6.10.0	N/A	N/A	N/A

9.4. Test Result and Data

Final Test Result : PASS

Pass performance criteria : A

Required performance criteria : A

Model No. : **273********

Basic Standard : EN 61000-4-3

Product Standard : EN 55035

Frequency Range : 80~5000MHz

Temperature : 25°C

Relative Humidity : 50 %

Atmospheric Pressure : 100 kPa

Test Date : Mar. 30,2020

Mode 1

Modulation : AM 80% , 1KHz sine wave , Dwell time: 3.0 S
Frequency Step Size : 1 % of preceding frequency value

Frequency (MHz)	Antenna Polarization	face	Field strength (V/m)	Result
80~1000	Vertical	Front	3 V/m	A
80~1000	Vertical	Rear	3 V/m	A
80~1000	Vertical	Left	3 V/m	A
80~1000	Vertical	Right	3 V/m	A
80~1000	Horizontal	Front	3 V/m	A
80~1000	Horizontal	Rear	3 V/m	A
80~1000	Horizontal	Left	3 V/m	A
80~1000	Horizontal	Right	3 V/m	A

Modulation : AM 80% , 1KHz sine wave , Dwell time: 3.0 S
Frequency Step Size : 1 % of preceding frequency value

Frequency (MHz)	Antenna Polarization	face	Field strength (V/m)	Result
1800MHz ,2600MHz, 3500MHz, 5000MHz	Vertical	Front	3 V/m	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Vertical	Rear	3 V/m	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Vertical	Left	3 V/m	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Vertical	Right	3 V/m	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Horizontal	Front	3 V/m	A

1800MHz ,2600MHz, 3500MHz, 5000MHz	Horizontal	Rear	3 V/m	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Horizontal	Left	3 V/m	A
1800MHz ,2600MHz, 3500MHz, 5000MHz	Horizontal	Right	3 V/m	A

Audio port test Result and Data

Modulation : AM 80% , 1KHz sine wave, Dwell time: 3 S Frequency Step Size : 1 % of preceding frequency value					
Reference level：-20 （SPL） Base Noise：75（SPL）					
Frequency (MHz)	Antenna Polarization	Face	L1- L0 （SPL）	Reference level （SPL）	Result
122	Vertical	Front	-45	-20	A
489	Vertical	Rear	-38	-20	A
311	Vertical	Left	-45	-20	A
177	Vertical	Right	-47	-20	A
659	Horizontal	Front	-36	-20	A
789	Horizontal	Rear	-31	-20	A
344	Horizontal	Left	-27	-20	A
297	Horizontal	Right	-41	-20	A

Speaker test Result and Data

Modulation : AM 80% , 1KHz sine wave, Dwell time: 3 S Frequency Step Size : 1 % of preceding frequency value					
Reference level：-20 （SPL） Base Noise：75（SPL）					
Frequency (MHz)	Antenna Polarization	Face	L1- L0 （SPL）	Reference level （SPL）	Result
255	Vertical	Front	-33	-20	A
210	Vertical	Rear	-46	-20	A
552	Vertical	Left	-48	-20	A
399	Vertical	Right	-46	-20	A
179	Horizontal	Front	-55	-20	A
188	Horizontal	Rear	-38	-20	A
508	Horizontal	Left	-39	-20	A
364	Horizontal	Right	-47	-20	A

Test engineer: Vane Xia

9.5. Photographs

10. Electrical Fast Transient/ Burst Immunity Test

10.1. Test Procedure

a. In order to minimize the effect of environmental parameters on test results, the climatic conditions when test is carrying out shall comply with the following requirements:
- ambient temperature: 15℃ to 35℃;
- relative humidity : 45% to 75%;
- Atmospheric pressure: 86 Kpa (860 mbar) to 106 Kpa (1060 mbar).

b. In order to minimize the effect of environmental parameters on test results, the electromagnetic environment of the laboratory shall not influence the test results.

c. The variety and diversity of equipment and systems to be tested make it difficult to establish general criteria for the evaluation of the effects of fast transients/bursts on equipment and systems.

d. Test on Power Line:
- The EFT/B-generator was located on the GRP.
  For floor standing equipment 1,0 m
  For table top equipment 0,5 m
- The EFT/B-generator provides the ability to apply the test voltage in a non-symmetrical condition to the power supply input terminals of the EUT.

e. Test on Communication Lines
- The coupling clamp is composed of a clamp unit for housing the cable (length more than 3 m), and was placed on the GRP.
- The coupling clamp provides the ability of coupling the fast transient/bursts to the cable under test.

f. The test results may be classified on the basic of the operating conditions and the functional specification of the equipment under test, according to the following performance criteria :
- Normal performance within the specification limits.
- Temporary degradation or loss of function or performance which is self-recoverable.
- Temporary degradation or loss of function or performance which requires operator intervention or system reset.
- Degradation or loss of function which is not recoverable due to damage of equipment (components).

10.2. Test Severity Levels

The following test severity levels are recommended for the fast transient/burst test :

Open circuit output test voltage 10%		
Level	On Power Supply	On I/O signal, data and control line
1	0.5 KV	0.25 KV
2	1.0 KV	0.50 KV
3	2.0 KV	1.00 KV
4	4.0 KV	2.00 KV
X	Specified	Specified

Remark : “ X ” is an open level. The level is subject to negotiation between the user and manufacturer or is specified by the manufacturer.

10.3. Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
TRANSIENT	EMCPARTNER	TRA2000IN6	901	2019.08.22	2020.08.21
CDN	EMCPARTNER	CDN2000-06-32	121	2020.03.11	2021.03.10
Coupling clamp	EMCPARTNER	CN-EFT1000	547	2020.03.11	2021.03.10
Temperature/ Humidity Meter	GEMIlead	STH200A	N/A	2019.04.15	2020.04.14

10.4. Test Result and Data

Final Test Result	**:**	**PASS**
Pass performance criteria	:	A
Required performance criteria	:	B
Model No.	:	**273********
Basic Standard	:	EN 61000-4-4
Product Standard	:	EN 55035
Test Voltage	:	On Power Supply -- ±1.0 kV On I/O signal, data and control line -- ±0.5 kV
Temperature	:	23°C
Relative Humidity	:	51 %
Atmospheric Pressure	:	100 kPa
Test Date	:	Mar. 30,2020

Mode 1

Pulse : 5/50 ns		Repetition Rate: 5 kHz			
Burst : 15m/300ms					
Test time : 1 min/each condition					
Voltage/ Mode/ Polarity/ Result/ Phase		0.5 kV		1.0 kV	
		+	-	+	-
Power Line	L	---	---	A	A
	N	---	---	A	A
	L-N	---	---	A	A
	PE	---	---	A	A
	L-PE	---	---	A	A
	N-PE	---	---	A	A
	L-N-PE	---	---	A	A

Test engineer: Vane Xia

10.5. Photographs

11. Surge Immunity Test

11.1. Test Procedure

a. Climatic conditions
The climatic conditions shall comply with the following requirements :
- ambient temperature : 15 ℃ to 35 ℃
- relative humidity : 10 % to 75 %
- atmospheric pressure : 86 kPa to 106 kPa (860 mbar to 1060 mbar)

Electromagnetic conditions
The electromagnetic environment of the laboratory shall not influence the test results.

b. The test shall be performed according the test plan that shall specify the test set-up with
- generator and other equipment utilized;
- test level (voltage/current);
- generator source impedance;
- internal or external generator trigger;
- number of tests : at least five positive and five negative at the selected points;
- repetition rate : maximum 1/min.
- inputs and outputs to be tested;
- representative operating conditions of the EUT;
- sequence of application of the surge to the circuit;
- phase angle in the case of AC. power supply;
- actual installation conditions, for example :
  AC : neutral earthed,
  DC: (+) or (-) earthed to simulated the actual earthing conditions.

c. If not otherwise specified the surges have to be applied synchronized to the voltage phase at the zero-crossing and the peak value of the AC. voltage wave (positive and negative).

d. The surges have to be applied line to line and line(s) and earth. When testing line to earth, the test voltage has to be applied successively between each of the lines and earth, if there is no other specification.

e. The test procedure shall also consider the non-linear current-voltage characteristics of the equipment under test. Therefore the test voltage has to be increased by steps up to the test level specified in the product standard or test plan.

f. All lower levels including the selected test level shall be satisfied. For testing the secondary protection, the output voltage of the generator shall be increased up to the worst-case voltage breakdown level (let-through level) of the primary protection.

g. If the actual operating signal sources are not available, that may be simulated. Under no circumstances may the test level exceed the product specification. The test shall be carried out according to a test plan.

h. To find all critical points of the duty cycle of the equipment, a sufficient number of positive and negative test pulses shall be applied. For acceptance test previously unstressed equipment shall be used to the protection devices shall be replaced

11.2. Test Severity Level

Level	Open-circuit test voltage (kV)	
	Line-to-line	Line-to-ground [b]
1	---	0.5
2	0.5	1.0
3	1.0	2.0
4	2.0	4.0
X [a]	Special	Special

[a] "X" and be any level, above, below or in between the others. The level shall be specified in the dedicated equipment specification.
[b] For symmetrical interconnection lines the test can be applied to multiple lines simultaneously with respect to ground, i.e. "lines to ground".

11.3. Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
TRANSIENT	EMCPARTNER	TRA2000IN6	901	2019.08.22	2020.08.21
CDN	EMCPARTNER	CDN-UTP8	021	2020.03.11	2021.03.10
CDN	EMCPARTNER	CDN2000-06-32	121	2020.03.11	2021.03.10
TRANSIENT	TESEQ	NSG 3060	1830	2019.12.03	2020.12.02
CDN	TESEQ	CDN 3061	1575	2019.12.03	2020.12.02
CDN	TESEQ	CNV508T5	P 1546167499	2019.12.03	2020.12.02
CDN	TESEQ	CDN HSS-2	41020	2019.12.03	2020.12.02
Temperature/ Humidity Meter	GEMIlead	STH200A	N/A	2019.04.15	2020.04.14

11.4. Test Result and Data

Final Test Result	**:**	**PASS**
Pass performance criteria	:	A for Power Port
Required performance criteria	:	B for Power Port; B/C for Telecommunication Port
Model No.	:	**273********
Basic Standard	:	EN 61000-4-5
Product Standard	:	EN 55035
Test Voltage	:	Input Power Port -- ±0.5/1.0 kV for Line to Line ±0.5/1.0/2.0 kV for Line to Ground
Temperature	:	23°C
Relative Humidity	:	51 %
Atmospheric Pressure	:	100 kPa
Test Date	:	Mar. 30,2020

Mode 1

Power Port

Waveform : 1.2/50μs(8/20μs) Repetition rate : 60 sec Time : 20 time/each condition						
/Phase Voltage / Mode / Polarity / Result			0°	90°	180°	270°
0.5/1.0 kV	L-N	+	A	A	A	A
		−	A	A	A	A
0.5/1.0/2.0kV	L-PE	+	A	A	A	A
		−	A	A	A	A
	N-PE	+	A	A	A	A
		−	A	A	A	A

Test engineer: Vane Xia

11.5. Photographs

12. Conduction Disturbances induced by Radio-Frequency Fields

12.1. Test Procedure

a. The EUT shall be operated within its intended climatic conditions. The temperature and relative humidity should be recorded.
b. This test method test can be performed without using a sell shielded enclosure. This is because the disturbance levels applied and the geometry of the setups are not likely to radiated a high amount of energy, especially at the lower frequencies. If under certain circumstances the radiated energy is too high, a shielded enclosure has to be used.
c. The test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn while the other non-excited RF-input ports of the coupling devices are terminated by a 50 ohm load resistor.
d. The frequency range is swept from 150 KHz to 80 MHz, using the signal levels established during the setting process, and with the disturbance signal 80% amplitude modulated with a 1 KHz sign wave, pausing to adjust the RF-signal level or to switch coupling devices as necessary. The rate of sweep shall no exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall no exceed 1% of the start and thereafter 1% of the preceding frequency value.
e. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised, and able to respond. Sensitive frequencies e.g. clock frequency (ies) and harmonics or frequencies of dominant interest shall be analyzed separately.
f. An alternative test procedure may be adopted, wherein the frequency range is swept incrementally, with a step size not exceeding 4% of the start ad thereafter 4% of the preceding frequency value. The test level should be at least twice the value of the specified test level.
g. In cases of dispute, the test procedure using a step size not exceeding 1% of the start and thereafter 1% of preceding frequency value shall take precedence.
h. Attempts should be made to fully exercise the EUT during testing, and to fully interrogate all exercise modes selected for susceptibility.
i. The use of special exercising programs is recommended.
j. Testing shall be performed according to a Test Plan, which shall be included in the test report.
k. It may be necessary to carry out some investigatory testing in order to establish some aspects of the test plan.

Audio port test Procedure

The performance of the EUT shall be evaluated by measuring the level of the demodulated audio relative to the selected reference level.

For devices supporting the telephony function, direct (absolute) measurement of the level of demodulated audio is permitted, providing there is lossless coupling to the wireline or the earpiece. Any losses within the measurement systems (for example the plastic tubing shown in Figure G.5) shall be taken into account.

For other devices, the levels of both the demodulated audio and a reference output from the EUT shall be measured so as to obtain a relative measurement.

The noise floor of the measurement system or ambient sounds shall not influence results.

The level of the demodulated audio signal shall be measured via a bandpass filter centred on the modulation frequency of the applied disturbance (typically 1 kHz). The 3 dB bandwidth of the filter (typically 100 Hz) should be selected with regard to the noise floor of the test system and the rejection of the harmonics of the disturbance modulating frequency. See Figure G.1

Note: Record the resulting level with units in dB (V) (or other appropriate dB unit) as the value of *L*0.
Apply the RF disturbance to the applicable port of the EUT and record the resulting demodulated audio level in dB (V) (or other appropriate dB unit used in step d) above) as the value of *L*1.
Calculate the electrical interference ratio using the following formula:
Electrical interference ratio = *L*1 – *L*0

12.2. Test Severity Levels

Level	Voltage Level (e.m.f.)
1	1 V
2	3 V
3	10 V
x	Specified
NOTE - x is an open class. This level can be specified in the product specification.	

Audio port Reference level					
Type of immunity test	Frequency Range MHz	Acoustic or electrical Interference ratio	Equivalent direct measurement		
			dB (SPL)	Digital dBm0	Analogue dBm
Conducted	0.15 to 30	-20dB	55	-50	-50
	30 to 80	-10/-20dB	65	-40	-40

L0	Input the appropriate signal to the EUT, adjust the EUT output to achieve "Reference level", and record the set value.
L1	When the L0 is set, the EUT output is closed to ensure that the impedance of its input is kept unchanged and the RF test is started. At this time the value of the record is L1, and the corresponding L1 changes are recorded according to the test frequency.

12.3. Measurement Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Conducted immunity test system	FRANKONIA	CIT-10/75	102D1294	2020.03.23	2021.03.22
EM Injection clamp	FCC	F-203I-23MM	536	2020.03.11	2021.03.10
CDN	FCC	CDN-M5/32	A3013024	2020.03.11	2021.03.10
CDN	TESEQ	CDN T8-10	43767	2019.08.22	2020.08.21
CDN	TESEQ	CDN T2-10	43762	2019.08.22	2020.08.21
CDN	TESEQ	CDN T4-10	43754	2019.08.22	2020.08.21
CDN	TESEQ	CDN M016	44025	2019.08.22	2020.08.21
6 dB Attenuator	FRANKONIA	N/A	N/A	2020.03.11	2021.03.10
RF POWER METER	FRANKONIA	PMS-1084	132A1099	2019.08.22	2020.08.21
Dual Directional Coupler	FRANKONIA	C5091-12	108207	2019.08.22	2020.08.21
AUDIO ANALYZER	R&S	UPV	103339	2019.12.03	2020.12.02
Low Noise Microphone	Bruel&Kj	4955	3094785	2019.08.25	2020.08.24
Microphone Conditioning Amplifier	Bruel&Kj	2690-0F2	3008833	2019.08.25	2020.08.24
Sound Calibrator	Bruel&Kj	4231	3020682	2019.12.03	2020.12.02
Mouth Simulator	Bruel&Kj	4227	3131288	2019.08.25	2020.08.24
Temperature/ Humidity Meter	GEMIlead	STH200A	N/A	2019.04.15	2020.04.14
EN61000-4-6	Hubert GmbH	Ver 2.21	N/A	N/A	N/A

12.4. Test Result and Data

Final Test Result	:	**PASS**
Pass performance criteria	:	A
Required performance criteria	:	A
Model No.	:	**273********
Basic Standard	:	EN 61000-4-6
Product Standard	:	EN 55035
Coupling mode	:	CDN-M016/CDN- M5/32 for power ports CDN-T8/T4/T2 for Telecommunication Ports
Temperature	:	23°C
Relative Humidity	:	51 %
Atmospheric Pressure	:	100 kPa
Test Date	:	Mar. 30,2020

Mode 1

Frequency : 0.15~80MHz, Modulation : AM 80%,1KHz sine wave, Dwell time:3.0s Frequency Step Size : 1 % of preceding frequency value			
Frequency	Test mode	Voltage(V)	Result
0.15 ~ 10 10 ~ 30 30 ~ 80	AC means Power port	3 3 to 1 1	A A A

Audio port test Result and Data

Frequency : 0.15~80MHz, Modulation : AM 80%,1KHz sine wave, Dwell time: 3S Frequency Step Size : 1 % of preceding frequency value				
Reference level：-20 （SPL） Base noise：55/65（SPL）				
frequency range (MHz)	Test Mode	Frequency (MHz)	L1-L0 （SPL）	Result
0.15 ~ 10	AC means Power port	7.88	-33	A
10 ~ 30		16.54	-47	A
30 ~ 80		49.25	-39	A

.

Speaker test Result and Data

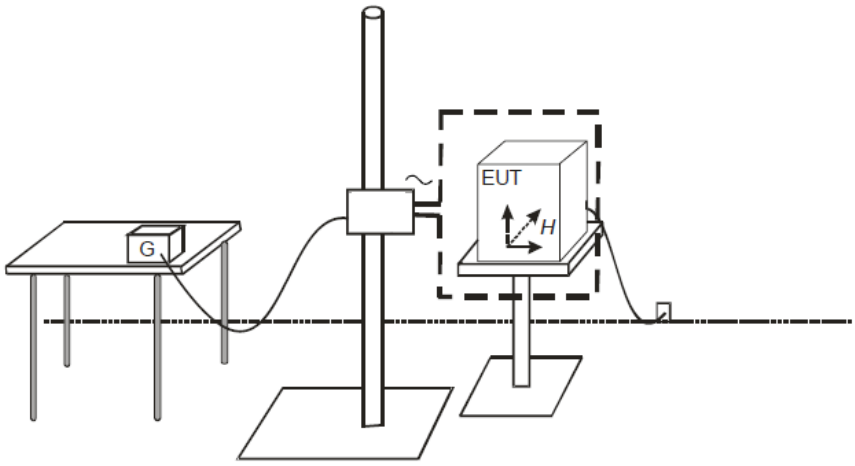
Frequency : 0.15~80MHz, Modulation : AM 80%,1KHz sine wave, Dwell time: 3S Frequency Step Size : 1 % of preceding frequency value				
Reference level：-20 （SPL） Base noise：55/65（SPL）				
frequency range (MHz)	Test Mode	Frequency (MHz)	L1-L0 （SPL）	Result
0.15 ~ 10	AC means Power port	9.14	-41	A
10 ~ 30		14.22	-36	A
30 ~ 80		69.34	-34	A

Test engineer: Vane Xia

12.5. Photographs

13. Power Frequency Magnetic Field Immunity Test

13.1. Test Setup



13.2. Test Severity Levels

Level	Magnetic field strength (A/m)
1	1
2	3
3	10
4	30
5	100
X[1)]	special
NOTE 1 “X” is an open level. This level can be given in the product specification.	

13.3. Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
TRANSIENT	EMCPARTNER	TRA2000IN6	901	2019.08.22	2020.08.21
H-Filed-Loop	EMCPARTNER	MF1000-1	144	2020.03.23	2021.03.22
Temperature/ Humidity Meter	GEMIlead	STH200A	N/A	2019.04.15	2020.04.14

13.4.Test Result and Data

Not required.

14. Voltage Dips and Voltage Interruptions Immunity Test Setup

14.1. Test Conditions

1. Source voltage and frequency: AC 100/230/240V, 50Hz/60Hz, Single phase.
2. Test of interval: 10 sec.
3. Level and duration: Sequence of 3 dips/interrupts.
4. Voltage rise (and fall) time: 1 ~ 5 μs.
5. Test severity:

Test mode	Test level UT %	Durations (period)	Durations (period)
Voltage interruptions	＜5%	250	300
Voltage dips	70%	25	30
	＜5%	0.5	0.5

14.2. Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
TRANSIENT	EMCPARTNER	TRA2000IN6	901	2019.08.22	2020.08.21
Temperature/ Humidity Meter	GEMIlead	STH200A	N/A	2019.04.15	2020.04.14

14.3. Test Result and Data

Final Test Result	:	PASS
Basic Standard	:	EN 61000-4-11
Product Standard	:	EN 55035
Model No.	:	**273********
Pass performance Criteria	:	C for voltage interruption, B for voltage dips Voltage dips: (B)Residual voltage<5% 0.5period
Required performance criteria	:	(C) Residual voltage 70% 25period(50Hz),30period(60Hz) Voltage interruptions: (C) Residual voltage <5% 250 period(50Hz),300period(60Hz)
Temperature	:	23°C
Relative Humidity	:	51 %
Atmospheric Pressure	:	100 kPa
Test Date	:	Mar. 30,2020

Mode 1

Voltage(UT): AC 100/230/240 V 50 Hz Interval(s) : 10s Times : 3				
Test mode	Test level UT %	Durations (period)	Phase / Result	
			0°	180°
Voltage interruptions	＜5%	250	C	C
Voltage dips	70%	25	B	B
	< 5%	0.5	B	B

Voltage(UT): AC 100/230/240 V 60 Hz Interval(s) : 10s Times : 3				
Test mode	Test level UT %	Durations (period)	Phase / Result	
			0°	180°
Voltage interruptions	＜5%	300	C	C
Voltage dips	70%	30	B	B
	＜5%	0.5	B	B

Test engineer: Vane Xia

14.4.Photographs