CE EMC Test Report

Project No.	:	2007C123
Equipment	:	LCD Monitor
Brand Name	:	N/A
Test Model	:	**32P2********(*=0-9,A-Z,a-z,+,-,/,\ or blank)
Series Model	:	N/A
Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Date of Receipt	:	Jul. 24, 2020
Date of Test	:	Jul. 30, 2020 ~ Sep. 23, 2020
Issued Date	:	Oct. 13, 2020
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG202007278,DG202008123
Standard(s)	:	EN 55032:2012+AC:2013 EN 55032:2015 EN 55032:2015+AC:2016 EN 55035:2017 IEC 61000-3-2:2014 / EN 61000-3-2:2014 IEC 61000-3-3:2013+A1:2017 / EN 61000-3-3:2013+A1:2019

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

Prepared by : Kang Zhang

Approved by : Kevin Li

Certificate #5123.02

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, A2LA, or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.
Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

Table of Contents Page

Table of Contents Page

Table of Contents Page

Table of Contents Page

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Oct. 12, 2020

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

Emission			
Standard(s)	Test Item		Result
EN 55032:2012+AC:2013 EN 55032:2015 EN 55032:2015+AC:2016	Radiated emissions up to 1 GHz		PASS
	Radiated emissions above 1 GHz		PASS
	Radiated emissions from FM receivers		N/A
	Conducted emissions AC mains power port		PASS
	Asymmetric mode conducted emissions	AAN	N/A
		Current Probe	N/A
		CP+CVP	N/A
	Conducted differential voltage emissions		N/A

Standard(s)	Test Item	Result
IEC 61000-3-2:2014 EN 61000-3-2:2014	Harmonic current	PASS
IEC 61000-3-3:2013+A1:2017 EN 61000-3-3:2013+A1:2019	Voltage fluctuations (Flicker)	PASS

Immunity			
Standard(s)	Ref Standard(s)	Test Item	Result
EN 55035: 2017	IEC 61000-4-2:2008 / EN 61000-4-2:2009	ESD	PASS
	IEC 61000-4-3:2006+A1:2007+A2:2010 EN 61000-4-3:2006+A1:2008+A2:2010	RS	PASS
	IEC 61000-4-4:2012 / EN 61000-4-4:2012	EFT	PASS
	IEC 61000-4-5: 2014+A1:2017 EN 61000-4-5:2014+A1:2017	Surge	PASS
	IEC 61000-4-6:2013 EN 61000-4-6:2014+AC:2015	CS	PASS
	IEC 61000-4-8:2009 / EN 61000-4-8:2010	PFMF	PASS
	IEC 61000-4-11:2004+A1:2017 EN 61000-4-11:2004+A1:2017	Dips	PASS
	4.2.7	Broadband impulse noise disturbances,repetitive	N/A
	4.2.7	Broadband impulse noise disturbances,isolated	N/A

NOTE:
(1) “N/A” denotes test is not applicable to this device.

1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

1.2 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, The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

The reported uncertainty of measurement **y** ± **U**, where expanded uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95**%.

A. Radiated emissions up to 1 GHz measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB08 (10m)	CISPR	30MHz ~ 200MHz	V	4.44
		30MHz ~ 200MHz	H	3.44
		200MHz ~ 1,000MHz	V	4.28
		200MHz ~ 1,000MHz	H	3.52

B. Radiated emissions above 1 GHz measurement:

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB08 (3m)	CISPR	1GHz ~ 6GHz	4.36

C. Conducted emissions AC mains power port measurement:

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-C01	CISPR	150kHz ~ 30MHz	3.18

D. Harmonic/ Flicker Measurement:

Test Site	Method	Item	U (%)
DG-C01	EN 61000-3-2	Current	0.593
	EN 61000-3-3	Voltage	0.595

E. Immunity Measurement:

Test Site	Method	Item	U
DG-SR02	IEC 61000-4-2	Rise time tr	6.80%
		Peak current Ip	6.30%
		Current at 30 ns	6.50%
		Current at 60 ns	6.90%
DG-CB05	IEC 61000-4-3 (80MHz~6GHz)	Electromagnetic field immunity test	2.38dB
		On-ear acoustic & Acoustic measurements on loudspeakers	2.40dB
		Electrical measurements	2.40dB
DG-SR05	IEC 61000-4-4	Peak voltage (V_P)	3.7%
		Rise time (tr)	4.4%
		Pulse width(tw)	4.1%
		Pulse Freq.(kHz)	0.8%
		Burst Duration(ms)	1.4%
		Burst Period(ms)	1.4%
DG-SR05	IEC 61000-4-5	Open-Circuit Output Voltage (1.2/50us)	3.8%
		Open circuit front time (1.2/50us)	6.3%
		Open circuit time of half value (1.2/50us)	4.6%
DG-CB06	IEC 61000-4-6 (150kHz-80MHz)	CDN	1.32dB
		EM clamp	3.16dB
		On-ear acoustic & Acoustic measurements on loudspeakers	1.36dB
		Electrical measurements	1.34dB
DG-SR05	IEC 61000-4-8	Magnetic Field Strength	2.38%
DG-SR05	IEC 61000-4-11	DIP Amplitude	0.5%
		DIP Time Event	3%

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Tested By
Radiated emissions up to 1 GHz	25°C	60%	Promise Yin
Radiated emissions above 1 GHz	25°C	60%	Promise Yin
Conducted emissions AC mains power port	25°C	53%	Heng Lao
Harmonic current	25°C	55%	Heng Lao
Voltage fluctuations (Flicker)	25°C	55%	Heng Lao

Test Item	Temperature	Humidity	Pressure	Tested By
ESD	22°C	45%	1010hPa	Rich Ye
RS	22°C	50%	/	Hunter Xu
EFT	22°C	50%	/	Celina Lai
Surge	22°C	50%	/	Celina Lai
CS	22°C	50%	/	Daniel Li
PFMF	22°C	50%	/	Daniel Li
Dips	22°C	50%	/	Daniel Li

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	LCD Monitor
Brand Name	N/A
Test Model	**32P2********(*=0-9,A-Z,a-z,+,-,/,\ or blank)
Series Model	N/A
Model Difference(s)	The Mainboard 、Panel and market distribution is different only.
Power Source	AC Mains.
Power Rating	100-240V ~ 50/60Hz
Connecting I/O Port(s)	1* AC port 2* HDMI port 1* DP port 1* TYPE-C port 5* USB port 1* Earphone port
Classification Of EUT	Class B
Highest Internal Frequency(Fx)	600MHz

Cable Type	Shielded Type	Ferrite Core	Length(m)	Note
AC Power Cord	Non-shielded	NO	1.8/1.5	1.8m is worst case Detachable
DP	Shielded	NO	1.8/1.5	-
HDMI	Shielded	NO	1.8/1.5	-
TYPE-C	Shielded	NO	1.8/1.5	-
USB	Shielded	NO	1.8/1.5	-

Note:
1. For a more detailed features description, please refer to the manufacturer’s specifications or the user's manual.
2. Power cable 1.8m, 1.5m length, worst case is Power cable 1.8m with HDMI + DP + TYPE-C+USB length testing and recording in test report.

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

U32P2C:

Pretest Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H
Mode 2	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)
Mode 3	HDMI2 3840*2160/60Hz 1.8m H(TYPE-C R/W)
Mode 4	DP 3840*2160/60Hz 1.8m H(TYPE-C R/W)
Mode 5	HDMI1 2160P 1.8m H(TYPE-C R/W)
Mode 6	HDMI2 2160P 1.8m H(TYPE-C R/W)
Mode 7	TYPE-C 1280*1024/75Hz 1.8m H
Mode 8	TYPE-C 640*480/75Hz 1.8m H
Mode 9	TYPE-C 3840*2160/60Hz 1.8m V

Radiated emissions up to 1 GHz test	
Final Test Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H
Mode 2	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)
Mode 5	HDMI1 2160P 1.8m H(TYPE-C R/W)

Radiated emissions Above 1 GHz test	
Final Test Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H
Mode 2	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)
Mode 5	HDMI1 2160P 1.8m H(TYPE-C R/W)

Conducted emissions AC mains power port test	
Final Test Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H
Mode 2	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)
Mode 5	HDMI1 2160P 1.8m H(TYPE-C R/W)

Harmonic current & Voltage fluctuations (Flicker) Test	
Final Test Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H

Immunity Test	
Final Test Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H
Mode 2	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)
Mode 3	HDMI2 3840*2160/60Hz 1.8m H(TYPE-C R/W)
Mode 4	DP 3840*2160/60Hz 1.8m H(TYPE-C R/W)
Mode 5	HDMI1 2160P 1.8m H(TYPE-C R/W)
Mode 6	HDMI2 2160P 1.8m H(TYPE-C R/W)
Mode 9	TYPE-C 3840*2160/60Hz 1.8m V

Q32P2C:

Pretest Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H
Mode 2	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)
Mode 3	HDMI2 2560*1440/75Hz 1.8m H(TYPE-C R/W)
Mode 4	DP 2560*1440/75Hz1.8m H(TYPE-C R/W)
Mode 5	HDMI1 1080P 1.8m H(TYPE-C R/W)
Mode 6	HDMI2 1080P 1.8m H(TYPE-C R/W)
Mode 7	TYPE-C 1280*1024/75Hz 1.8m H
Mode 8	TYPE-C 640*480/75Hz 1.8m H
Mode 9	TYPE-C 2560*1440/75Hz 1.8m V

Radiated emissions up to 1 GHz test	
Final Test Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H
Mode 2	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)
Mode 5	HDMI1 1080P 1.8m H(TYPE-C R/W)

Radiated emissions Above 1 GHz test	
Final Test Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H
Mode 2	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)
Mode 5	HDMI1 1080P 1.8m H(TYPE-C R/W)

Conducted emissions AC mains power port test	
Final Test Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H
Mode 2	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)
Mode 5	HDMI1 1080P 1.8m H(TYPE-C R/W)

Harmonic current & Voltage fluctuations (Flicker) Test	
Final Test Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H

Immunity Test	
Final Test Mode	Description
Mode 1	TYPE-C 2560*1440/75Hz 1.8m H
Mode 2	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)
Mode 3	HDMI2 2560*1440/75Hz 1.8m H(TYPE-C R/W)
Mode 4	DP 2560*1440/75Hz1.8m H(TYPE-C R/W)
Mode 5	HDMI1 1080P 1.8m H(TYPE-C R/W)
Mode 6	HDMI2 1080P 1.8m H(TYPE-C R/W)
Mode 9	TYPE-C 2560*1440/75Hz 1.8m V

Evaluation description:

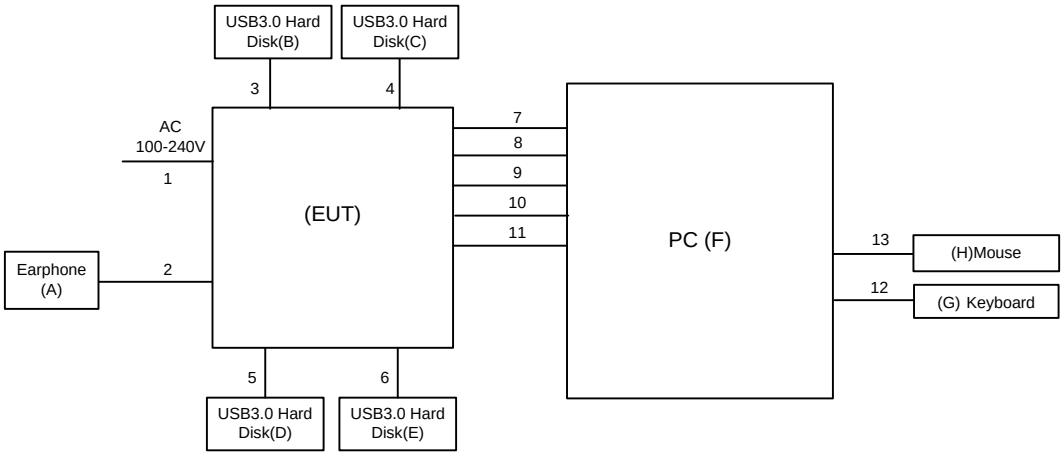
1. The maximum resolution is evaluated Mode 1-6. The worst case is Mode 1 and evaluated the middle and low resolution Mode 7 and Mode 8.
2. According to the client's requirement, choose Mode 1, Mode 2, Mode 5 and recorded in test report.
3. RS Acoudtic: The Front, Rear, Left and Right were evaluated. The worst placement direction is Front and recorded in this report.

2.3 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use. The standard test signals and output signal as following:

1. EUT connected to PC via HDMI & DP & USB & TYPE-C cable.
2. EUT connected to Earphone via Earphone cable.
3. Mouse and Keyboard connected to PC via USB cable.
4. EUT connected to USB3.0 Hard Disks via USB cable.

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
A	Earphone	APPLE	N/A	N/A
B	USB3.0 Hard Disk	LACIE	Lacie S.A	NL34BFER
C	USB3.0 Hard Disk	LACIE	Lacie S.A	NL34BJSM
D	USB3.0 Hard Disk	LACIE	Lacie S.A	NL33PVLS
E	USB3.0 Hard Disk	LACIE	Lacie S.A	NL34BJRF
F	PC	DELL	Vostro 470	24454162837
G	Keyboard	DELL	KB212-B	CN0HTXH97158125004DXA01
H	Mouse	DELL	MS111-P	CN011D3V71581279OLOT

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	AC Cable	NO	NO	1.8/1.5m
2	Earphone Cable	NO	NO	1.2m
3	USB Cable	YES	NO	1m
4	USB Cable	YES	NO	1m
5	USB Cable	YES	NO	1m
6	USB Cable	YES	NO	1m
7	USB Cable	YES	NO	1.8/1.5m
8	HDMI Cable	YES	NO	1.8/1.5m
9	HDMI Cable	YES	NO	1.8/1.5m
10	DP Cable	YES	NO	1.8/1.5m
11	TYPE-C Cable	YES	NO	1.8/1.5m
12	USB Cable	YES	NO	1.8m
13	USB Cable	YES	NO	1.8m

3. EMC EMISSION TEST- EN55032:2012+AC:2013 & 2015

3.1 RADIATED EMISSION UP TO 1 GHZ

3.1.1 LIMITS

Class B equipment up to 1000MHz

Frequency MHz	Measurement		Class B limit dB(uV/m)
	Distance m	Detector type/bandwidth	SAC
30-230	10	Quasi peak / 120 kHz	30
230-1000			37

Notes:

(1) The limit for radiated test was performed according to as following: EN 55032

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

3.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Receiver	Keysight	N9038A	MY54450004	Jul. 25, 2021
2	MXE EMI Receiver	Agilent	N9038A	MY53220133	Feb. 28, 2021
3	Pre-Amplifier	EMC INSTRUMENT	EMC 9135	980284	Mar. 01, 2021
4	Pre-Amplifier	EMC INSTRUMENT	EMC 9135	980283	Mar. 01, 2021
5	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	946	Oct. 26, 2020
6	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	947	Dec. 02, 2020
7	Cable	emci	LMR-400(5m+11m+15m)	N/A	Nov. 22, 2020
8	Cable	emci	LMR-400(5m+8m+8m)	N/A	Nov. 22, 2020
9	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A
10	Multi-Device Controller	ETS-Lindgren	2090	N/A	N/A
11	Attenuator	EMCI	EMCI-N-6-06	N0670	Dec. 02, 2020
12	Attenuator	EMCI	EMCI-N-6-06	N0671	Oct. 26, 2020

Remark: “N/A” denotes no model no., no serial no. or no calibration specified.
All calibration period of equipment list is one year.

3.1.3 TEST PROCEDURE

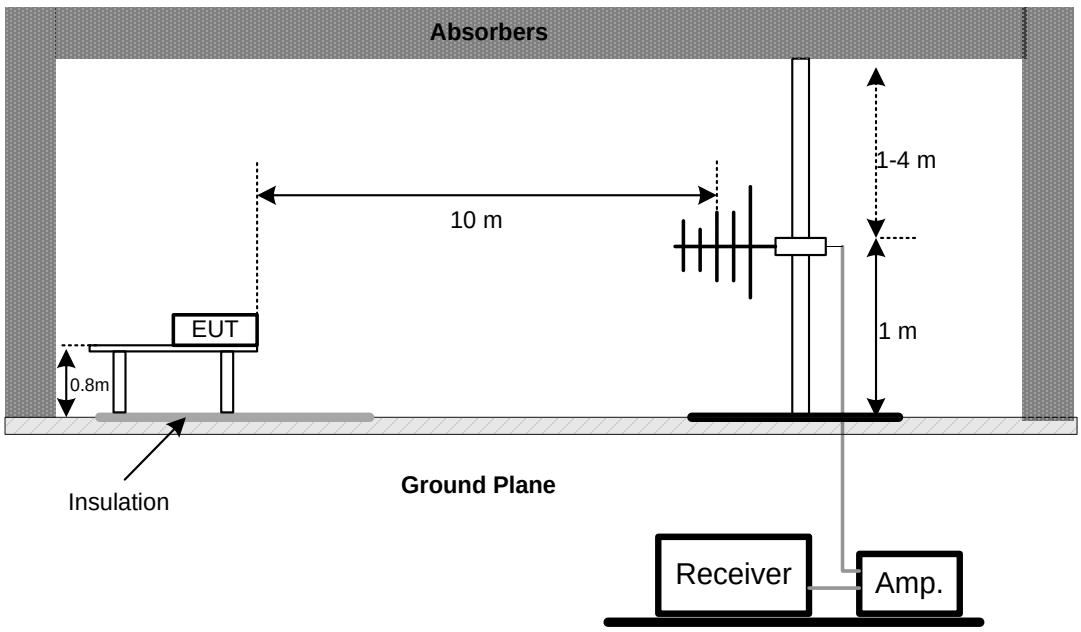
a. The measuring distance of 10 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz).
c. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
g. For the actual test configuration, please refer to the related Item - Block Diagram of system tested.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation

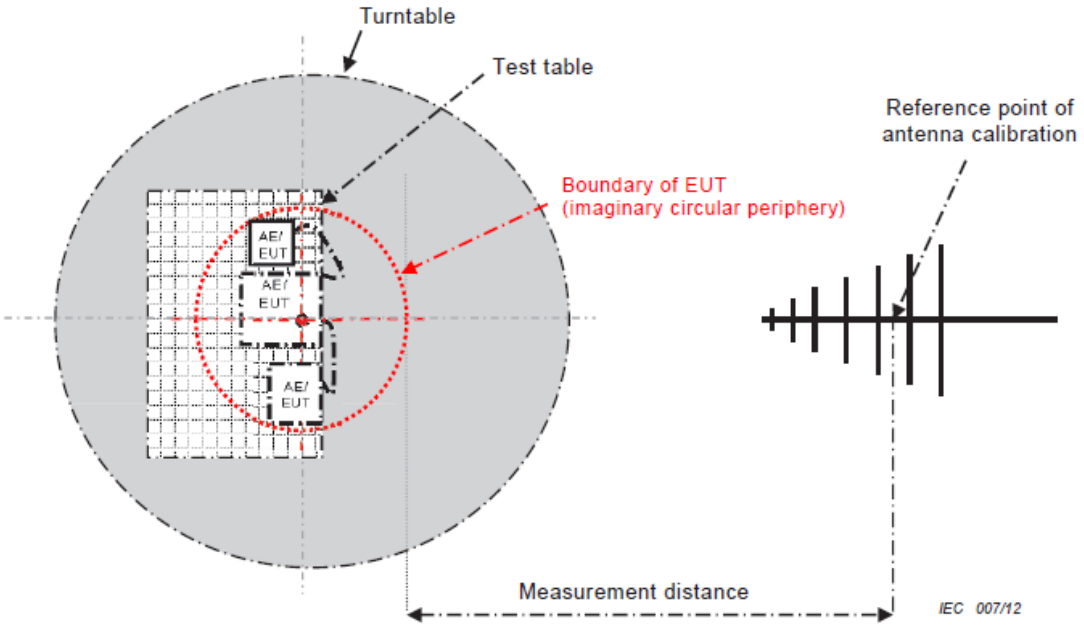
3.1.5 TEST SETUP

UP TO 1 GHZ



Note: The antenna can be moved between 1 to 4 meters above the ground**.**

3.1.6 MEASUREMENT DISTANCE



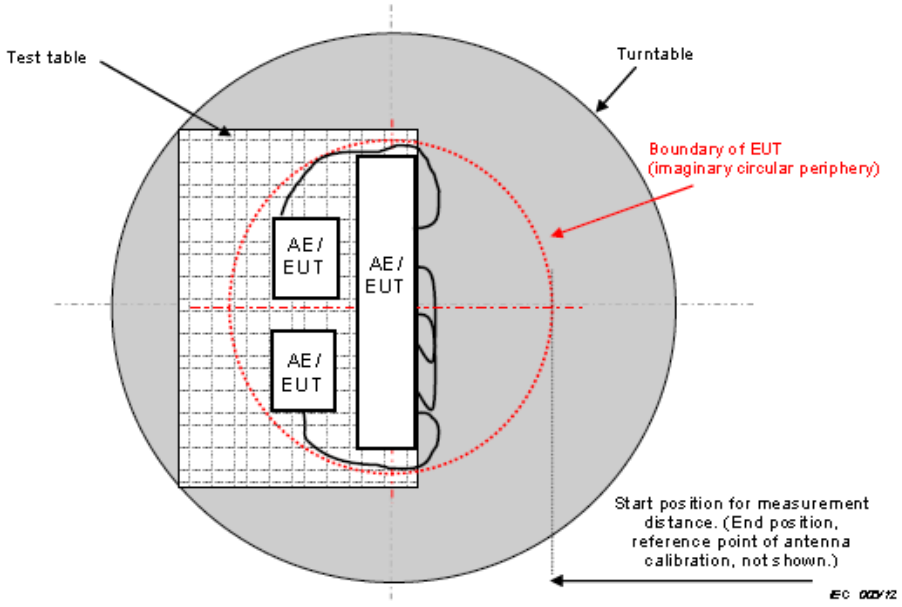
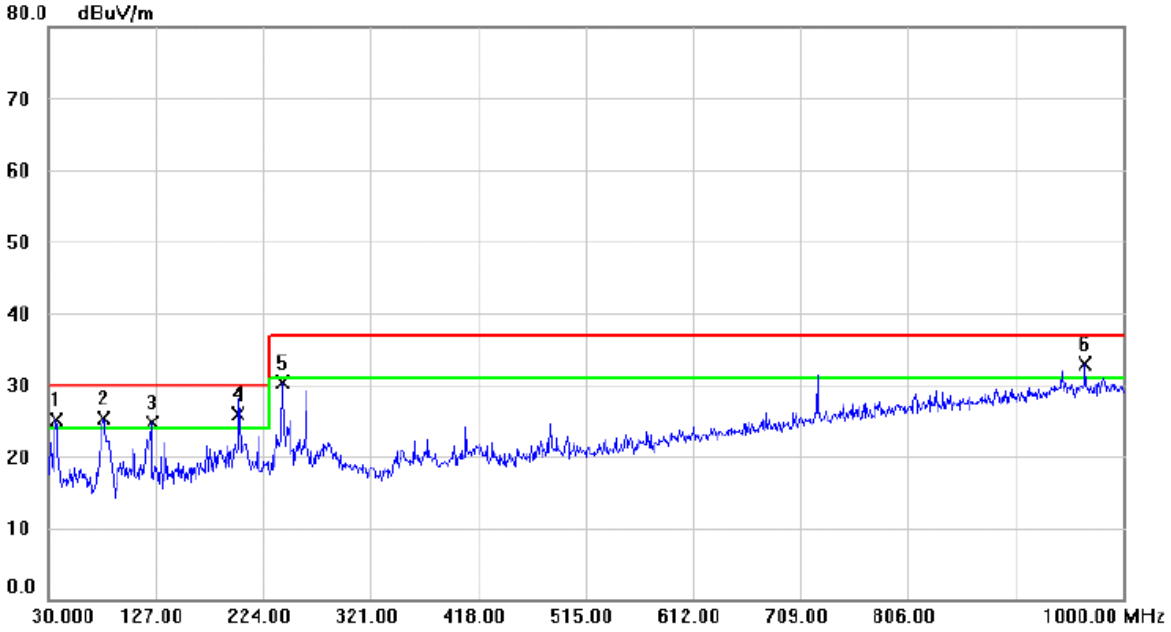


Figure C.2 – Boundary of EUT, Local AE and associated cabling

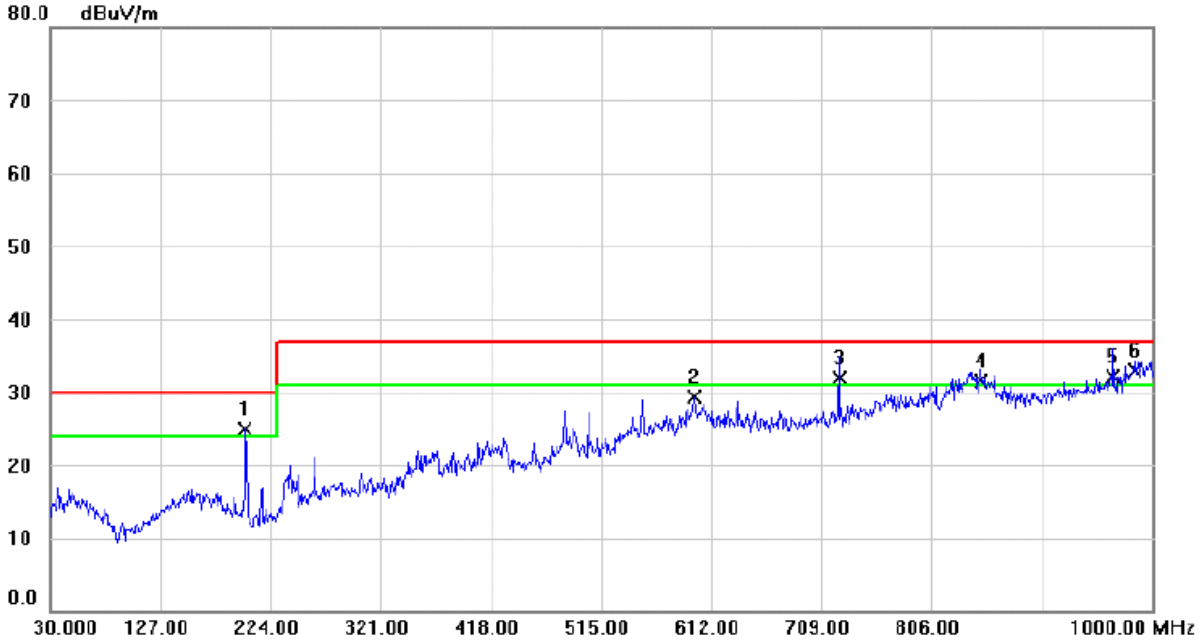
3.1.7 TEST RESULTS (UP TO 1 GHZ)

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



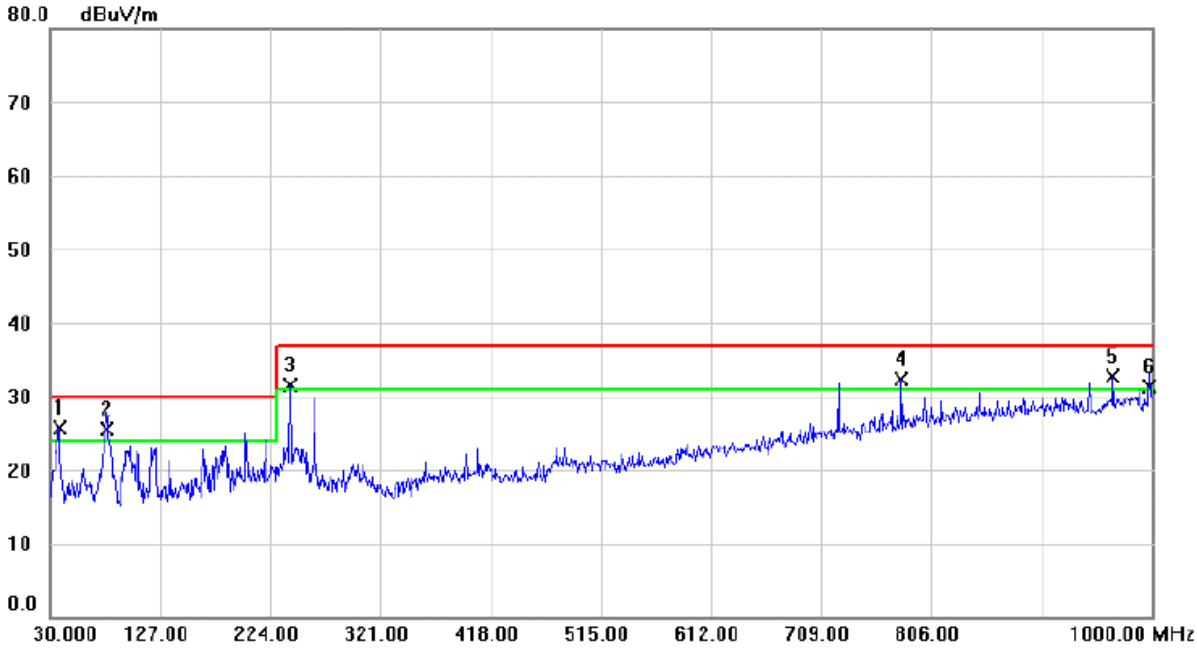
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	36.7900	43.25	-18.10	25.15	30.00	-4.85	QP	
2	!	79.4700	43.85	-18.47	25.38	30.00	-4.62	QP	
3	!	123.1200	42.88	-18.26	24.62	30.00	-5.38	QP	
4	!	201.6900	44.40	-18.50	25.90	30.00	-4.10	QP	
5		241.4600	46.81	-16.54	30.27	37.00	-6.73	QP	
6	*	966.0500	35.57	-2.61	32.96	37.00	-4.04	QP	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



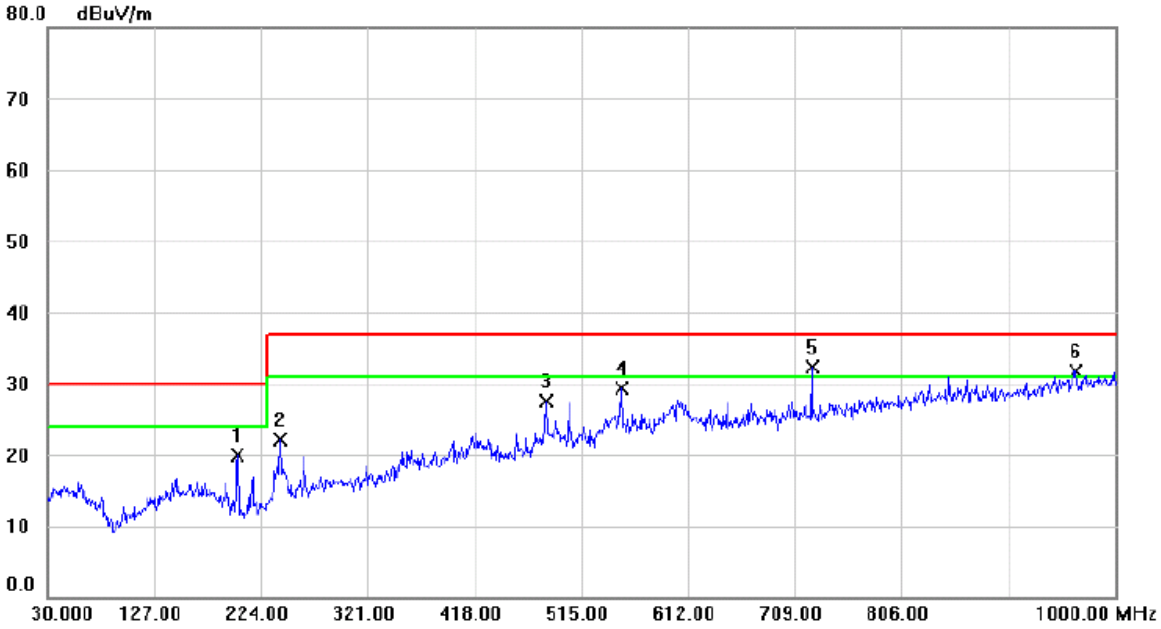
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	201.6900	43.53	-18.65	24.88	30.00	-5.12	QP	
2		597.4500	36.26	-7.04	29.22	37.00	-7.78	QP	
3	!	724.5200	37.00	-5.07	31.93	37.00	-5.07	QP	
4	!	849.6500	35.00	-3.54	31.46	37.00	-5.54	QP	
5	!	966.0500	33.62	-1.44	32.18	37.00	-4.82	QP	
6	*	984.4800	34.00	-1.12	32.88	37.00	-4.12	QP	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



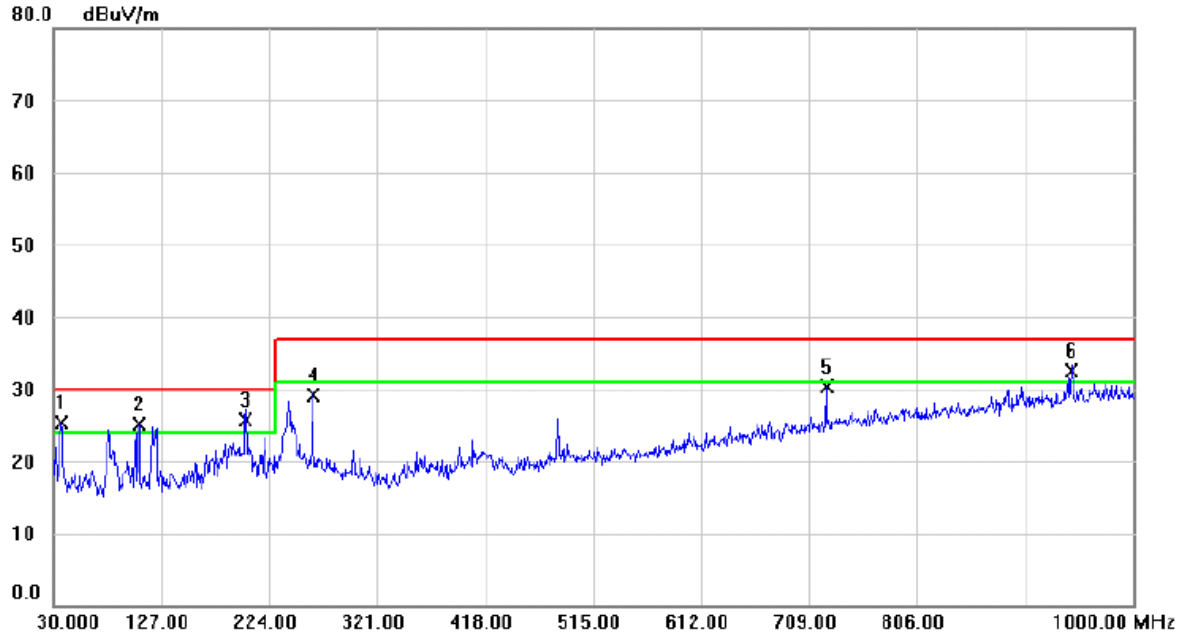
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	37.7600	43.69	-17.93	25.76	30.00	-4.24	QP	
2	!	79.4700	44.00	-18.47	25.53	30.00	-4.47	QP	
3	!	241.4600	48.14	-16.54	31.60	37.00	-5.40	QP	
4	!	779.8100	37.24	-4.94	32.30	37.00	-4.70	QP	
5	*	966.0500	35.41	-2.61	32.80	37.00	-4.20	QP	
6	!	998.0600	33.62	-2.28	31.34	37.00	-5.66	QP	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



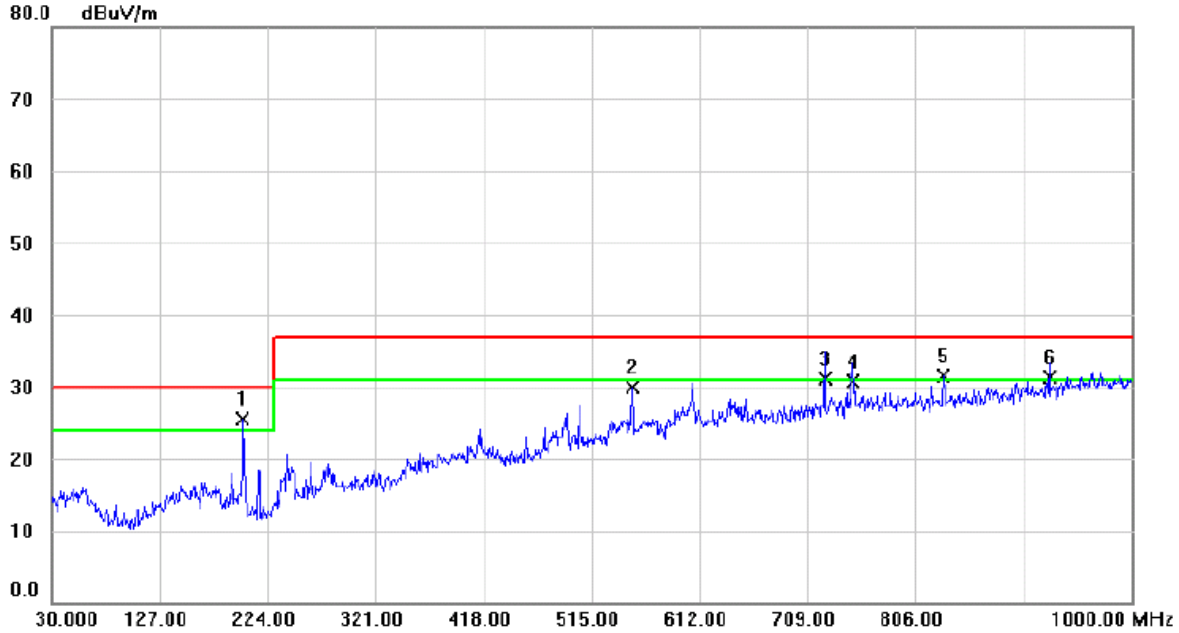
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		202.6600	38.52	-18.66	19.86	30.00	-10.14	QP	
2		241.4600	38.77	-16.69	22.08	37.00	-14.92	QP	
3		482.9900	37.09	-9.64	27.45	37.00	-9.55	QP	
4		551.8600	37.57	-8.25	29.32	37.00	-7.68	QP	
5	*	724.5200	37.35	-5.07	32.28	37.00	-4.72	QP	
6	!	964.1100	33.10	-1.48	31.62	37.00	-5.38	QP	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	HDMI1 1080P 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



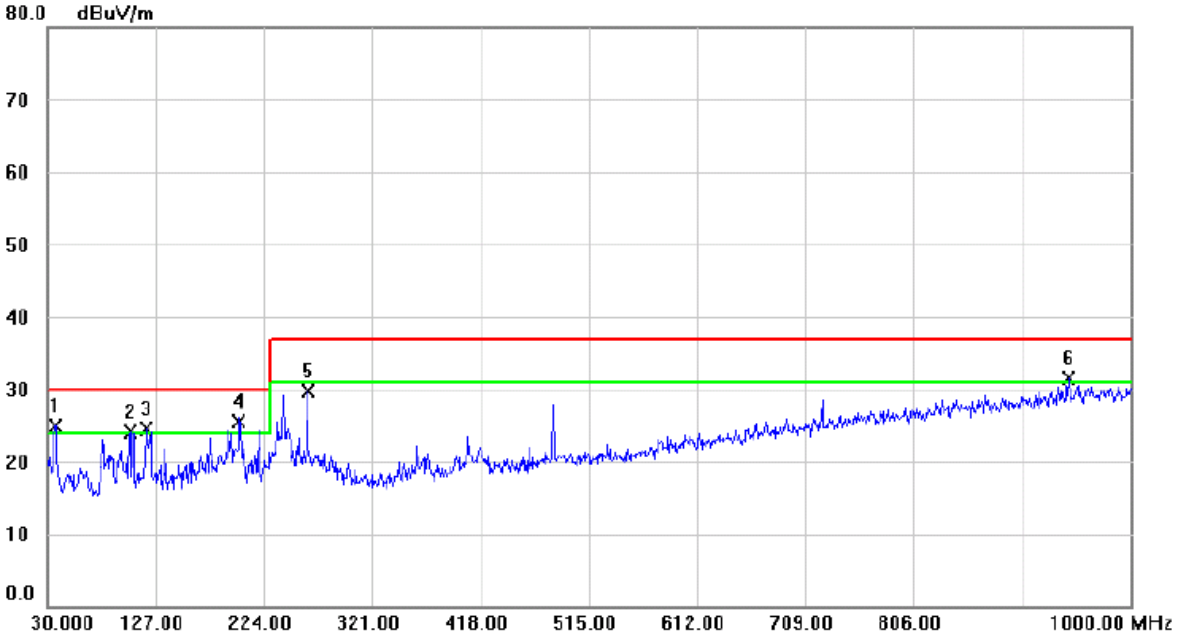
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	36.7900	43.44	-18.10	25.34	30.00	-4.66	QP	
2	!	106.6300	44.85	-19.82	25.03	30.00	-4.97	QP	
3	*	202.6600	44.32	-18.52	25.80	30.00	-4.20	QP	
4		262.8000	45.20	-16.00	29.20	37.00	-7.80	QP	
5		724.5200	36.13	-5.78	30.35	37.00	-6.65	QP	
6	!	944.7100	35.32	-2.86	32.46	37.00	-4.54	QP	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	HDMI1 1080P 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



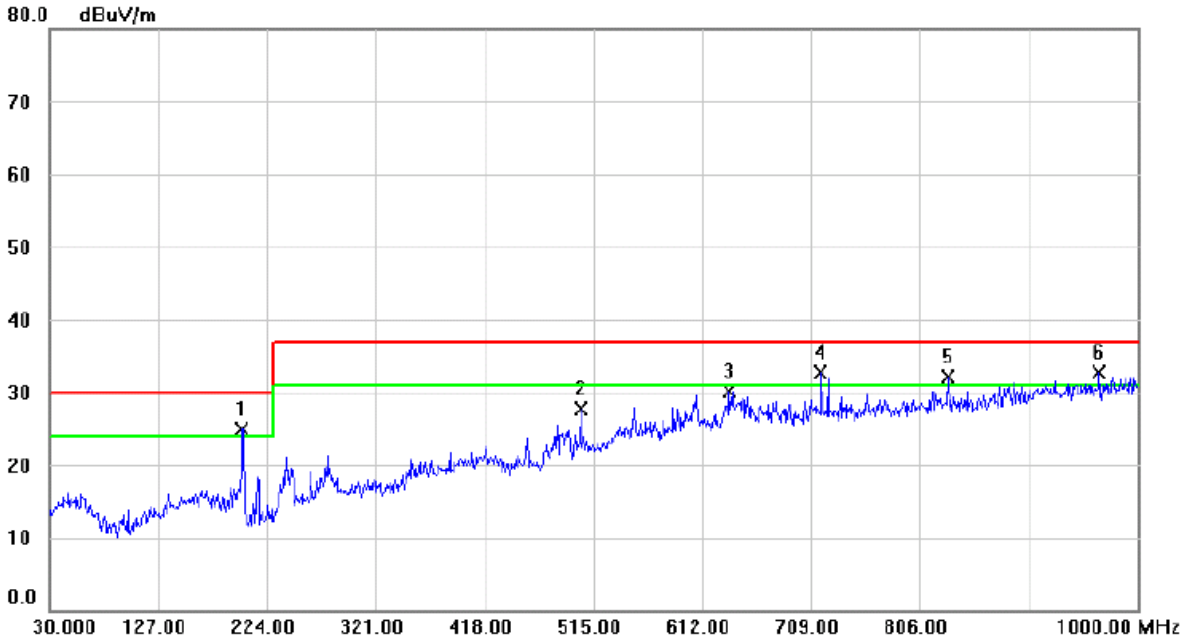
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	201.6900	44.16	-18.65	25.51	30.00	-4.49	QP	
2		551.8600	38.19	-8.25	29.94	37.00	-7.06	QP	
3	!	724.5200	36.25	-5.07	31.18	37.00	-5.82	QP	
4		749.7400	35.33	-4.60	30.73	37.00	-6.27	QP	
5	!	831.2200	35.17	-3.75	31.42	37.00	-5.58	QP	
6	!	926.2800	33.60	-2.29	31.31	37.00	-5.69	QP	

Test Voltage	AC 110V/60Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



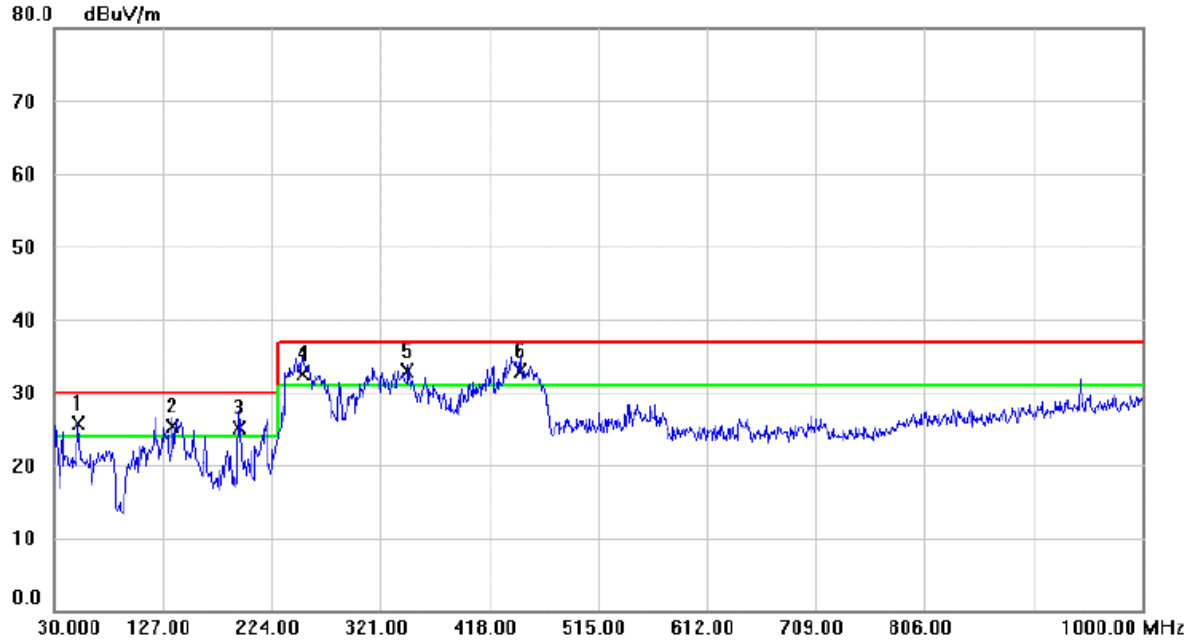
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	36.7900	42.98	-18.10	24.88	30.00	-5.12	QP	
2	!	103.7200	44.23	-20.18	24.05	30.00	-5.95	QP	
3	!	118.2700	43.26	-18.77	24.49	30.00	-5.51	QP	
4	*	201.6900	44.00	-18.50	25.50	30.00	-4.50	QP	
5		262.8000	45.79	-16.00	29.79	37.00	-7.21	QP	
6	!	944.7100	34.45	-2.86	31.59	37.00	-5.41	QP	

Test Voltage	AC 110V/60Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



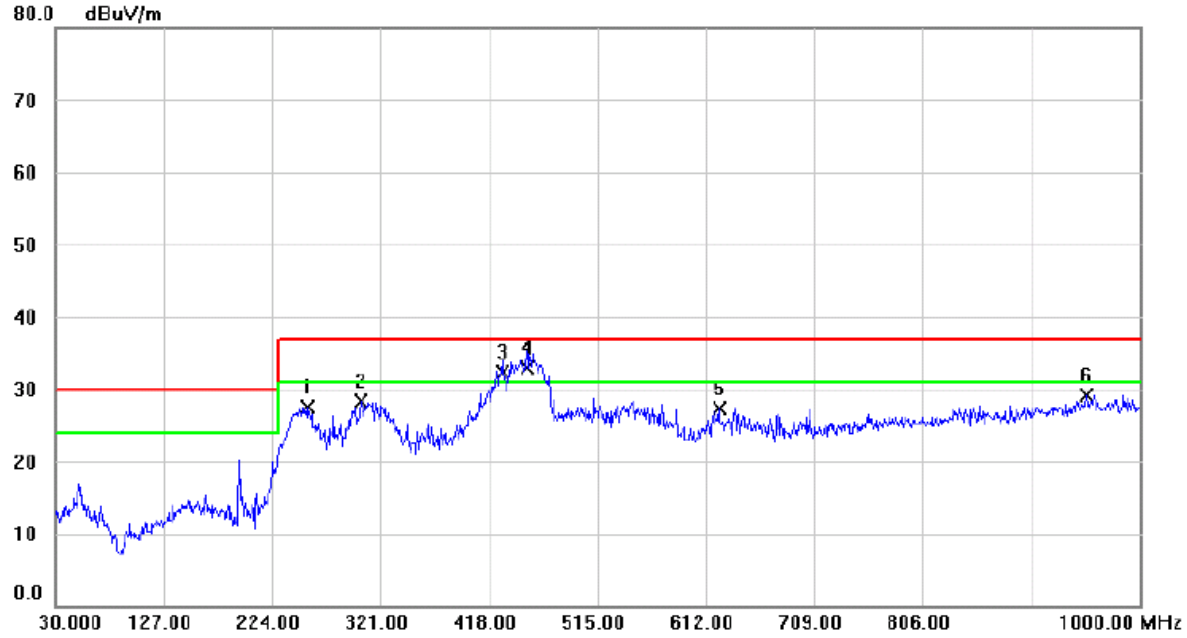
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	201.6900	43.63	-18.65	24.98	30.00	-5.02	QP	
2		503.3600	36.99	-9.24	27.75	37.00	-9.25	QP	
3		636.2500	36.69	-6.52	30.17	37.00	-6.83	QP	
4	!	717.7300	37.94	-5.20	32.74	37.00	-4.26	QP	
5	!	831.2200	35.85	-3.75	32.10	37.00	-4.90	QP	
6	*	966.0500	34.23	-1.44	32.79	37.00	-4.21	QP	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



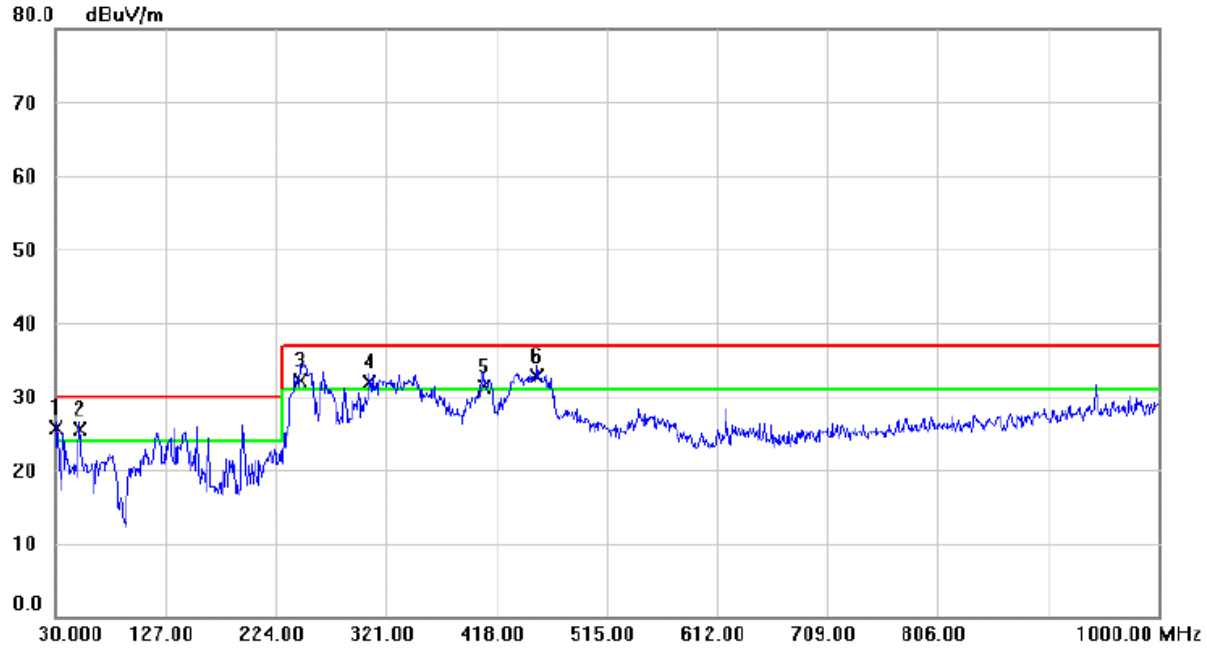
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	51.3400	42.47	-16.83	25.64	30.00	-4.36	QP	
2	!	135.7300	42.30	-16.97	25.33	30.00	-4.67	QP	
3	!	194.9000	43.26	-18.20	25.06	30.00	-4.94	QP	
4	!	251.1600	48.90	-16.36	32.54	37.00	-4.46	QP	
5	!	345.2500	46.20	-13.35	32.85	37.00	-4.15	QP	
6	*	445.1600	43.70	-10.71	32.99	37.00	-4.01	QP	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



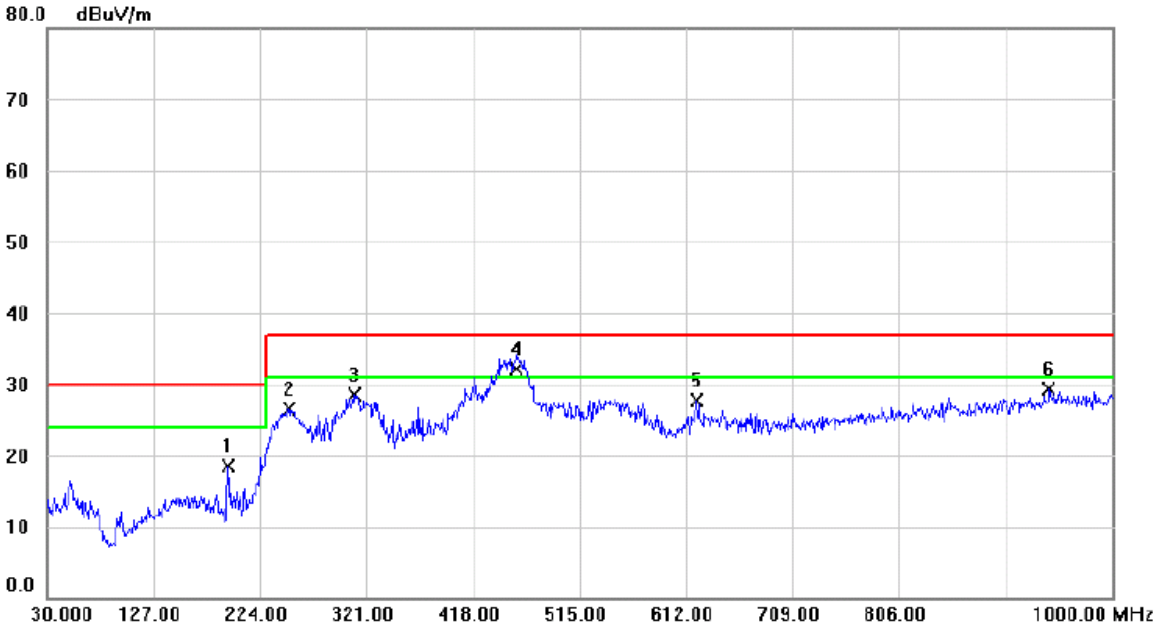
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		255.0400	43.64	-16.20	27.44	37.00	-9.56	QP	
2		303.5400	42.51	-14.22	28.29	37.00	-8.71	QP	
3	!	429.6400	43.26	-11.02	32.24	37.00	-4.76	QP	
4	*	451.9500	43.20	-10.37	32.83	37.00	-4.17	QP	
5		623.6400	34.27	-6.92	27.35	37.00	-9.65	QP	
6		952.4700	31.04	-1.92	29.12	37.00	-7.88	QP	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



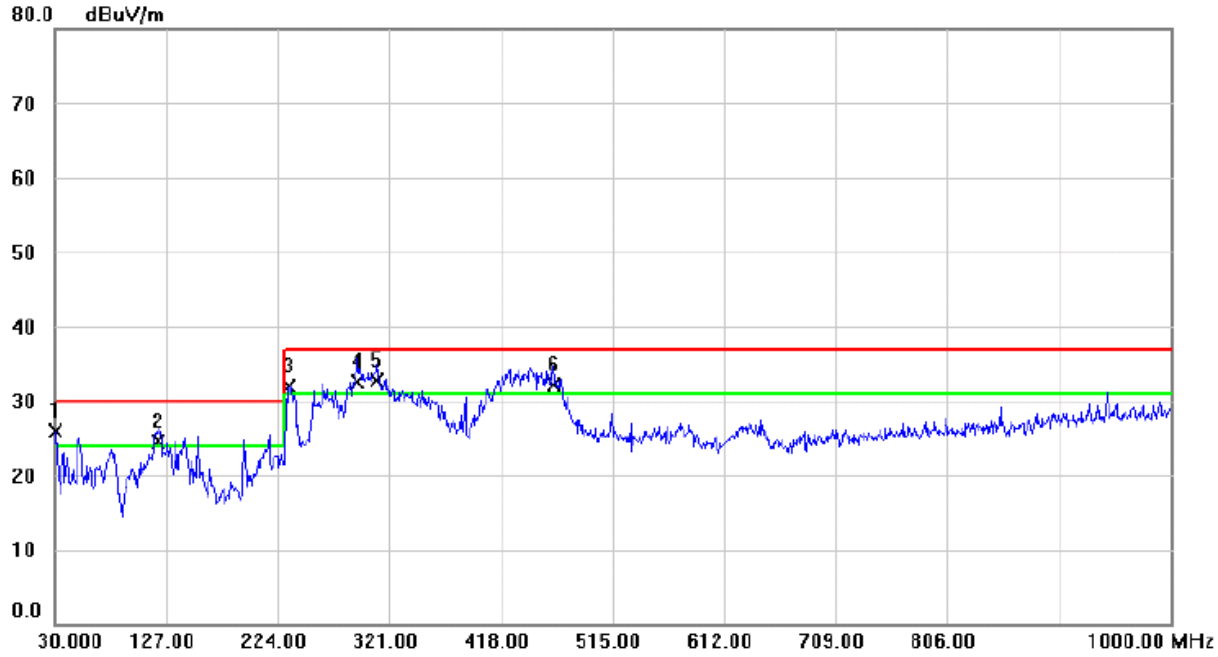
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	30.9700	44.60	-18.92	25.68	30.00	-4.32	QP	
2	!	51.3400	42.33	-16.83	25.50	30.00	-4.50	QP	
3	!	245.3400	48.50	-16.48	32.02	37.00	-4.98	QP	
4	!	306.4500	46.20	-14.29	31.91	37.00	-5.09	QP	
5	!	406.3600	43.20	-11.94	31.26	37.00	-5.74	QP	
6	*	453.8900	43.26	-10.48	32.78	37.00	-4.22	QP	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



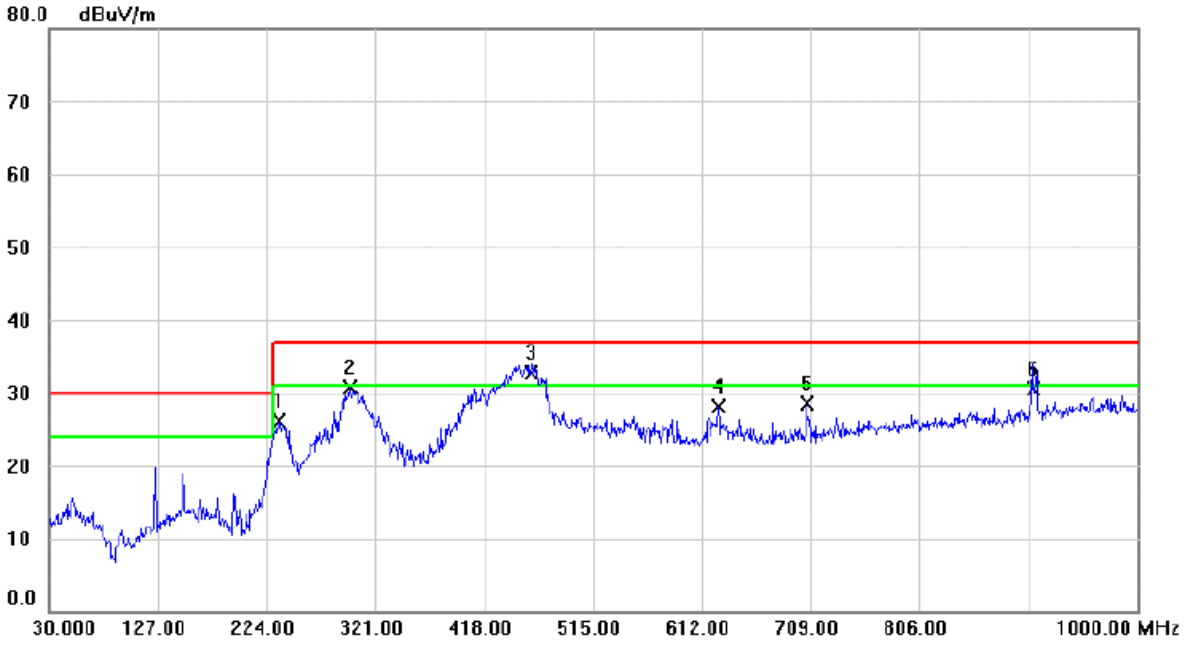
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		194.9000	36.78	-18.31	18.47	30.00	-11.53	QP	
2		250.1900	42.97	-16.38	26.59	37.00	-10.41	QP	
3		309.3600	42.58	-14.01	28.57	37.00	-8.43	QP	
4	*	457.7700	42.33	-10.25	32.08	37.00	-4.92	QP	
5		621.7000	34.72	-6.95	27.77	37.00	-9.23	QP	
6		942.7700	31.37	-2.12	29.25	37.00	-7.75	QP	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	HDMI1 2160P 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



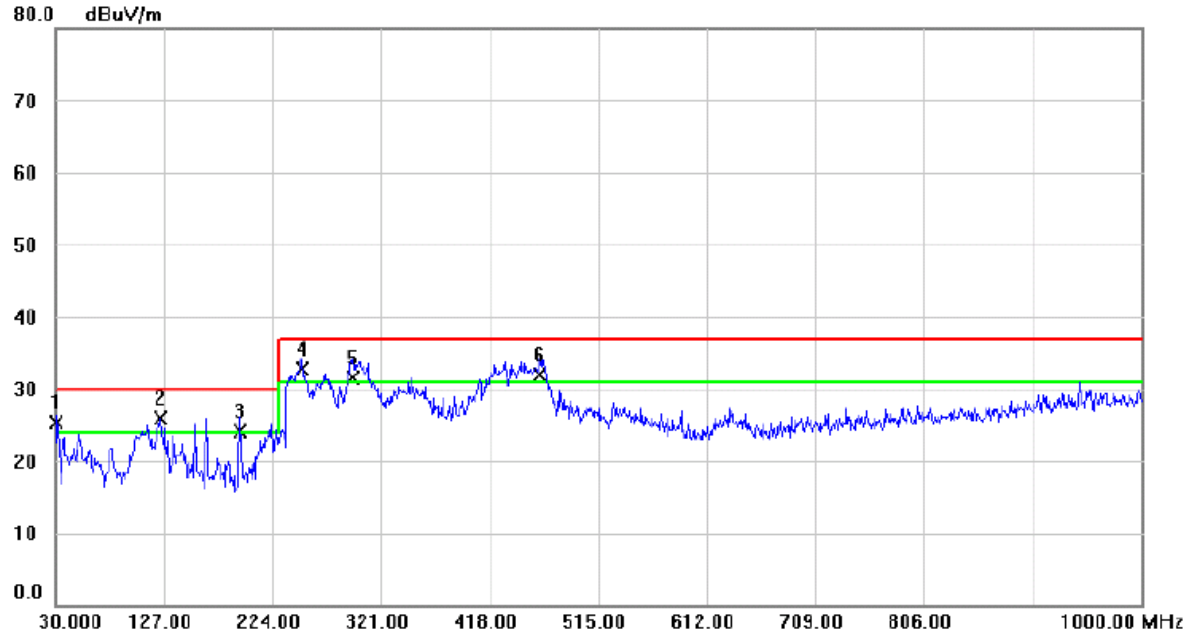
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	30.9700	44.87	-18.92	25.95	30.00	-4.05	QP	
2	!	119.2400	43.26	-18.80	24.46	30.00	-5.54	QP	
3	!	233.7000	49.19	-17.30	31.89	37.00	-5.11	QP	
4	!	293.8400	47.20	-14.66	32.54	37.00	-4.46	QP	
5	!	310.3300	46.90	-14.15	32.75	37.00	-4.25	QP	
6	!	463.5900	42.32	-10.30	32.02	37.00	-4.98	QP	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	HDMI1 2160P 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



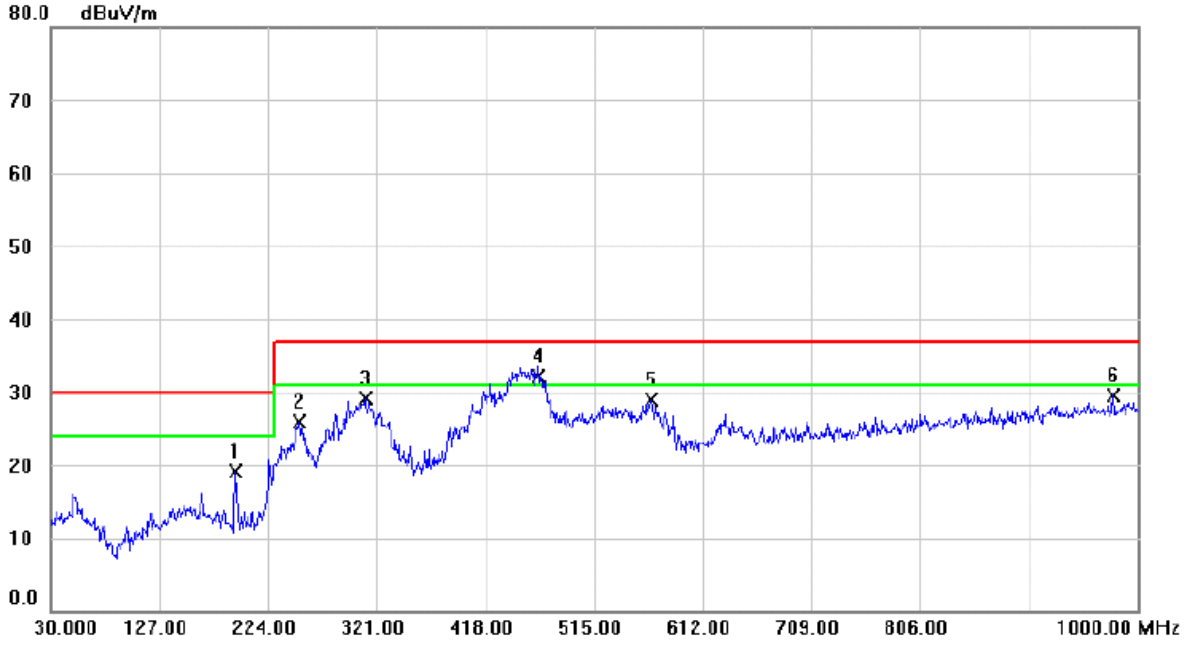
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		234.6700	43.32	-17.25	26.07	37.00	-10.93	QP	
2		297.7200	45.13	-14.41	30.72	37.00	-6.28	QP	
3	*	459.7100	43.00	-10.23	32.77	37.00	-4.23	QP	
4		626.5500	35.01	-6.89	28.12	37.00	-8.88	QP	
5		705.1200	34.00	-5.53	28.47	37.00	-8.53	QP	
6		906.8800	33.50	-2.90	30.60	37.00	-6.40	QP	

Test Voltage	AC 110V/60Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	30.9700	44.30	-18.92	25.38	30.00	-4.62	QP	
2	*	123.1200	44.28	-18.37	25.91	30.00	-4.09	QP	
3	!	194.9000	42.30	-18.20	24.10	30.00	-5.90	QP	
4	!	250.1900	49.00	-16.38	32.62	37.00	-4.38	QP	
5	!	295.7800	46.20	-14.61	31.59	37.00	-5.41	QP	
6	!	462.6200	42.30	-10.33	31.97	37.00	-5.03	QP	

Test Voltage	AC 110V/60Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		194.9000	37.40	-18.31	19.09	30.00	-10.91	QP	
2		252.1300	42.21	-16.32	25.89	37.00	-11.11	QP	
3		310.8150	43.07	-13.95	29.12	37.00	-7.88	QP	
4	*	465.5300	42.32	-10.13	32.19	37.00	-4.81	QP	
5		566.4100	37.00	-8.14	28.86	37.00	-8.14	QP	
6		978.6600	31.12	-1.56	29.56	37.00	-7.44	QP	

3.2 RADIATED EMISSION ABOVE 1 GHZ

3.2.1 LIMITS

Class B equipment above 1000MHz

Frequency MHz	Measurement		Class B limit dB(uV/m)
	Distance m	Detector type/bandwidth	FSOATS
1000-3000	3	Average / 1 MHz	50
3000-6000			54
1000-3000		Peak / 1 MHz	70
3000-6000			74

Notes:

(1) The limit for radiated test was performed according to as following: EN 55032

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

Required highest frequency for radiated measurement

Highest internal frequency (F_x) MHz	Highest measured frequency MHz
F_x ≦108	1000
108＜F_x ≦500	2000
500＜ F_x ≦1000	5000
F_x ＞1000	5^{th} up to a maximum 6 GHz,

Note for FM and TV broadcast receiver, F_x is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.

3.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Horn Antenna	EMCO	3115	9605-4803	May 12, 2021
2	Amplifier	Agilent	8449B	3008A02333	Mar. 01, 2021
3	MXE EMI Receiver	Agilent	N9038A	MY53220133	Feb. 28, 2021
4	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A
5	Multi-Device Controller	ETS-Lindgren	2090	N/A	N/A
6	Controller	MF	MF-7802	MF780208159	N/A
7	Cable	MIcable Inc.	B10-01-01-5M	18047123	Feb. 28, 2021
8	Cable	MIcable Inc.	B10-01-01-12M	18072743	Feb. 28, 2021
9	Cable	RegalWay	RWLPS50-7.9A-SMSM-1M	20200102 001	Feb. 28, 2021

Remark: “N/A” denotes no model no., no serial no. or no calibration specified.
All calibration period of equipment list is one year.

3.2.3 TEST PROCEDURE

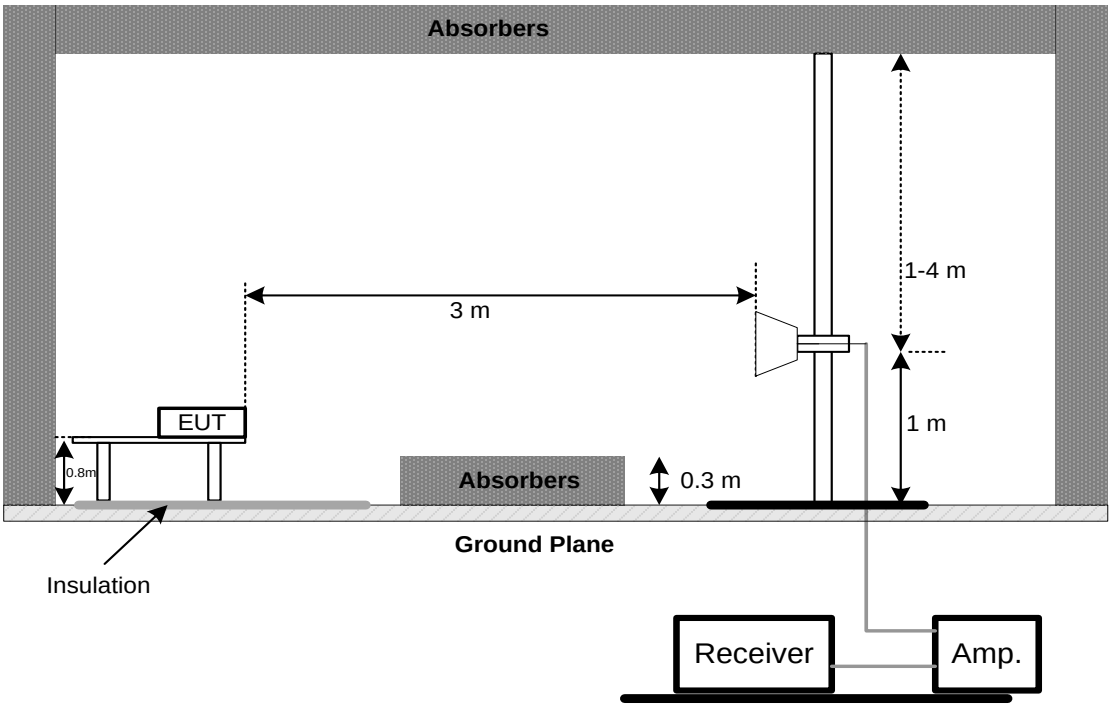
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
b. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
c. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
d. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
f. For the actual test configuration, please refer to the related Item - Block Diagram of system tested.

3.2.4 DEVIATION FROM TEST STANDARD

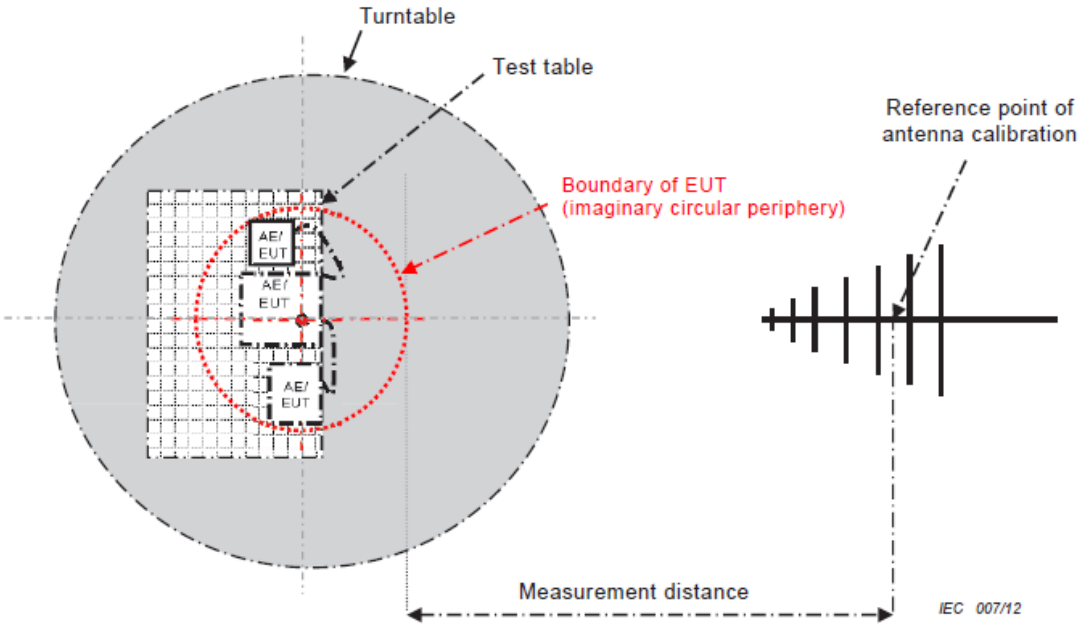
No deviation

3.2.5 TEST SETUP

ABOVE 1 GHZ



3.2.6 MEASUREMENT DISTANCE



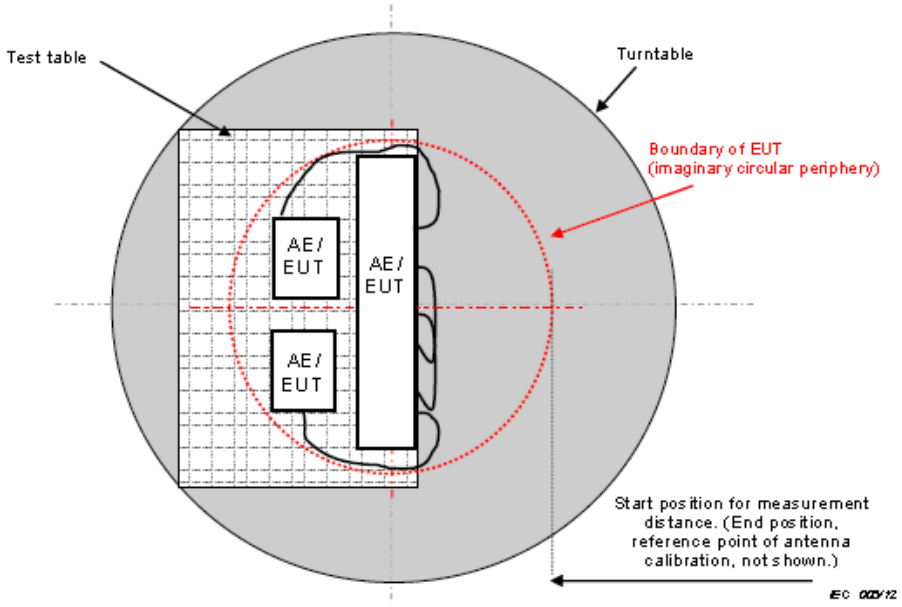
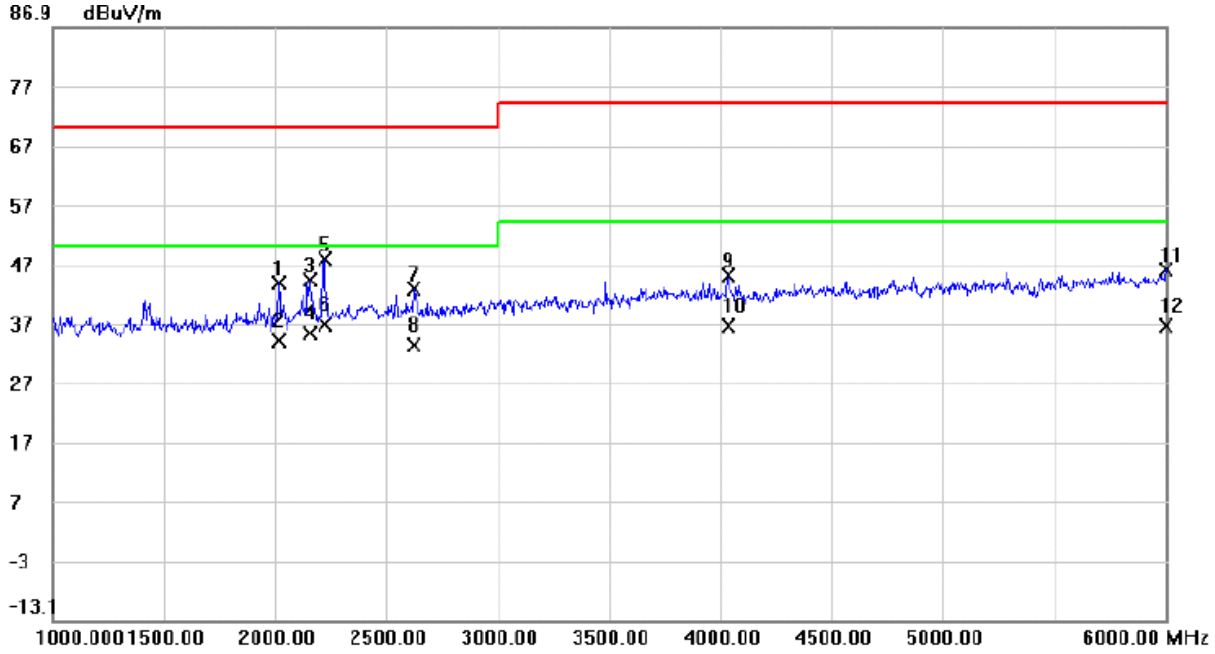


Figure C.2 – Boundary of EUT, Local AE and associated cabling

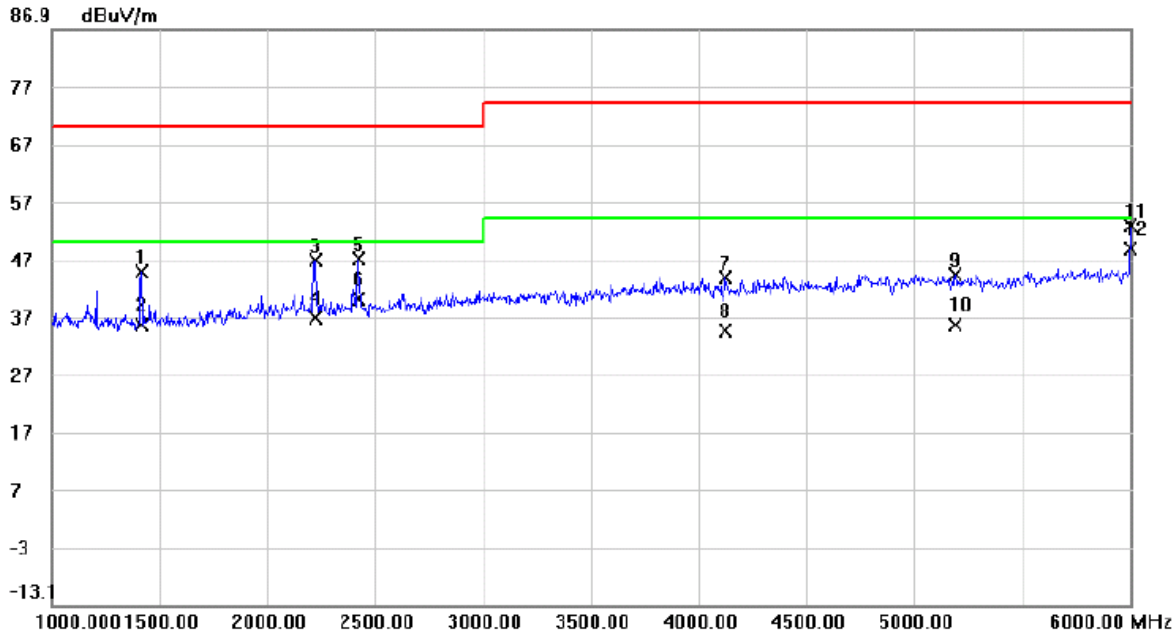
3.2.7 TEST RESULTS (ABOVE 1 GHZ)

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



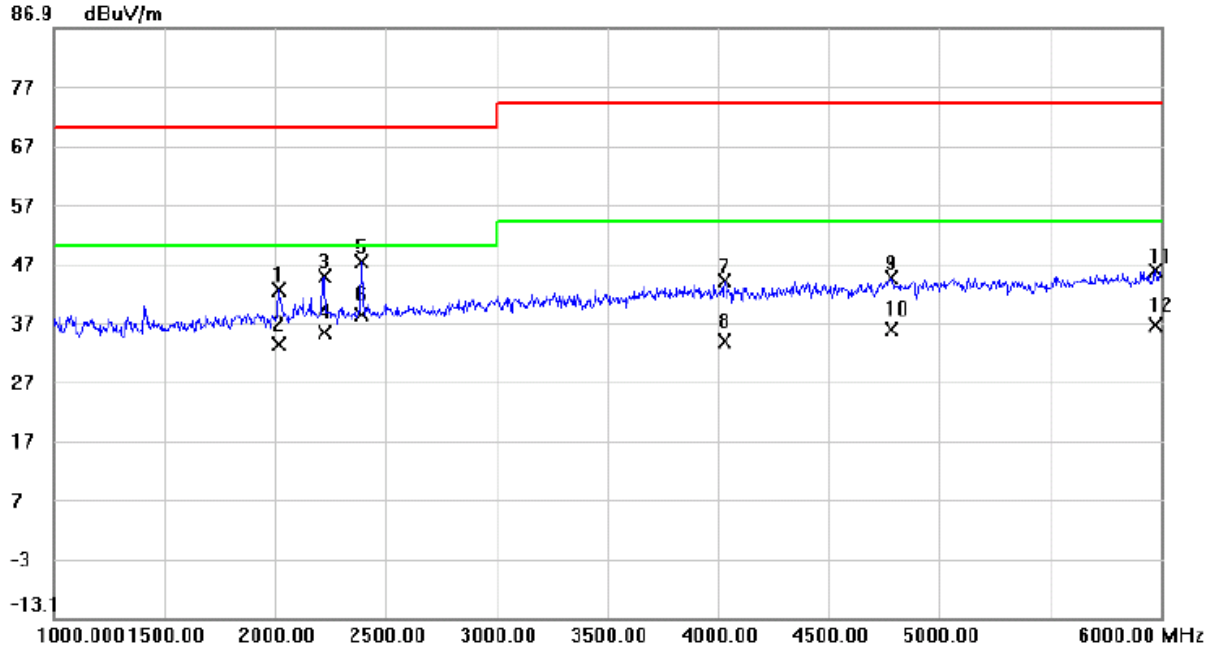
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2017.500	43.51	0.29	43.80	70.00	-26.20	peak	
2		2017.500	33.63	0.29	33.92	50.00	-16.08	AVG	
3		2157.500	43.54	0.80	44.34	70.00	-25.66	peak	
4		2157.500	34.57	0.80	35.37	50.00	-14.63	AVG	
5		2222.500	46.71	1.03	47.74	70.00	-22.26	peak	
6	*	2222.500	35.86	1.03	36.89	50.00	-13.11	AVG	
7		2620.000	40.27	2.58	42.85	70.00	-27.15	peak	
8		2620.000	30.58	2.58	33.16	50.00	-16.84	AVG	
9		4037.500	36.76	8.32	45.08	74.00	-28.92	peak	
10		4037.500	28.25	8.32	36.57	54.00	-17.43	AVG	
11		6000.000	32.99	13.16	46.15	74.00	-27.85	peak	
12		6000.000	23.48	13.16	36.64	54.00	-17.36	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



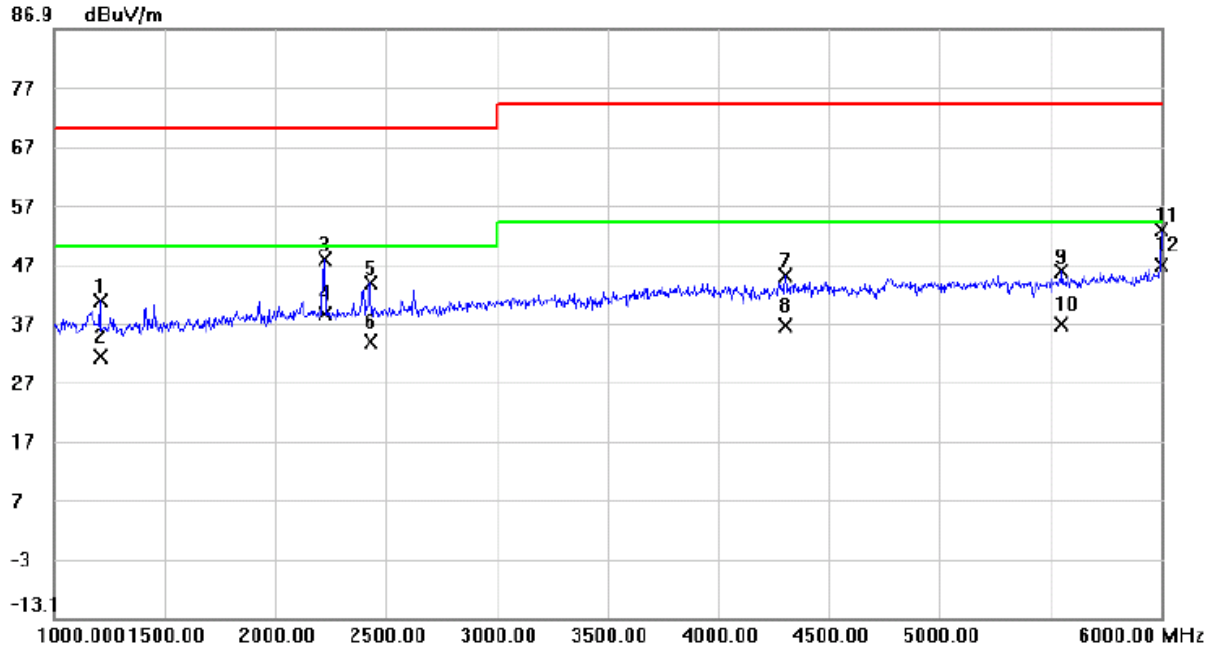
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1415.000	48.02	-3.35	44.67	70.00	-25.33	peak	
2		1415.000	38.92	-3.35	35.57	50.00	-14.43	AVG	
3		2220.000	45.85	1.01	46.86	70.00	-23.14	peak	
4		2220.000	35.85	1.01	36.86	50.00	-13.14	AVG	
5		2420.000	45.37	1.73	47.10	70.00	-22.90	peak	
6		2420.000	38.20	1.73	39.93	50.00	-10.07	AVG	
7		4125.000	35.32	8.47	43.79	74.00	-30.21	peak	
8		4125.000	26.00	8.47	34.47	54.00	-19.53	AVG	
9		5192.500	33.69	10.65	44.34	74.00	-29.66	peak	
10		5192.500	24.96	10.65	35.61	54.00	-18.39	AVG	
11		6000.000	39.54	13.16	52.70	74.00	-21.30	peak	
12	*	6000.000	35.66	13.16	48.82	54.00	-5.18	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



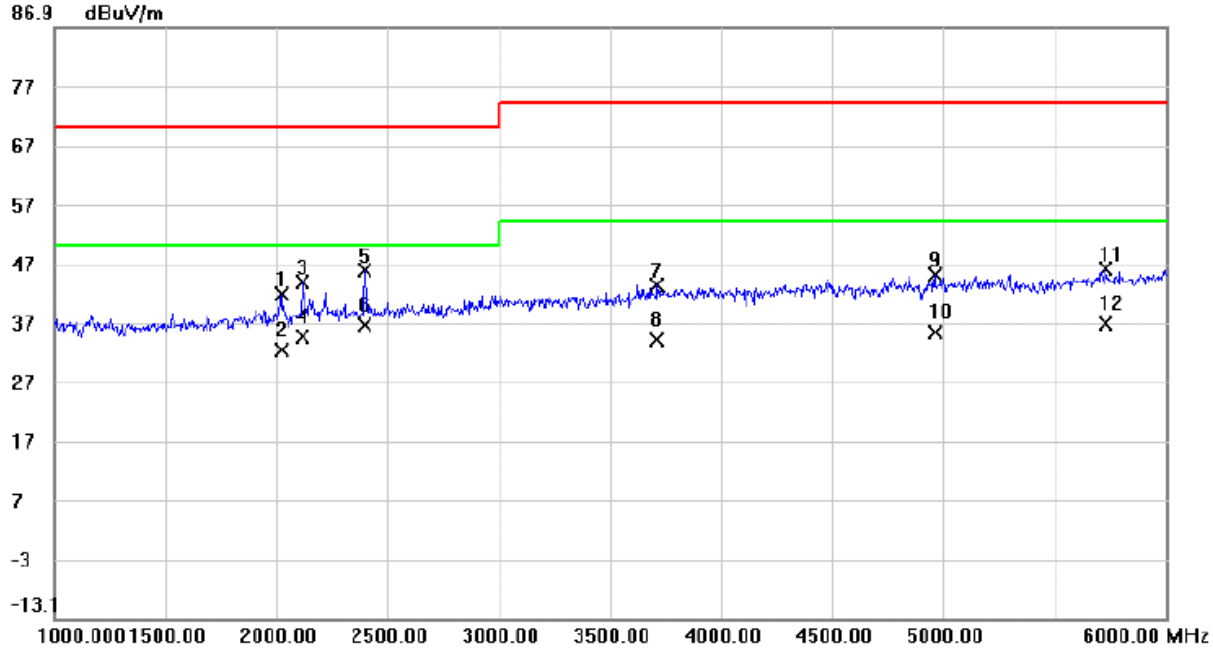
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2017.500	42.26	0.29	42.55	70.00	-27.45	peak	
2		2017.500	33.05	0.29	33.34	50.00	-16.66	AVG	
3		2222.500	43.77	1.03	44.80	70.00	-25.20	peak	
4		2222.500	34.26	1.03	35.29	50.00	-14.71	AVG	
5		2390.000	45.54	1.63	47.17	70.00	-22.83	peak	
6	*	2390.000	36.68	1.63	38.31	50.00	-11.69	AVG	
7		4030.000	35.62	8.31	43.93	74.00	-30.07	peak	
8		4030.000	25.52	8.31	33.83	54.00	-20.17	AVG	
9		4785.000	34.83	9.71	44.54	74.00	-29.46	peak	
10		4785.000	26.04	9.71	35.75	54.00	-18.25	AVG	
11		5975.000	32.66	13.08	45.74	74.00	-28.26	peak	
12		5975.000	23.48	13.08	36.56	54.00	-17.44	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



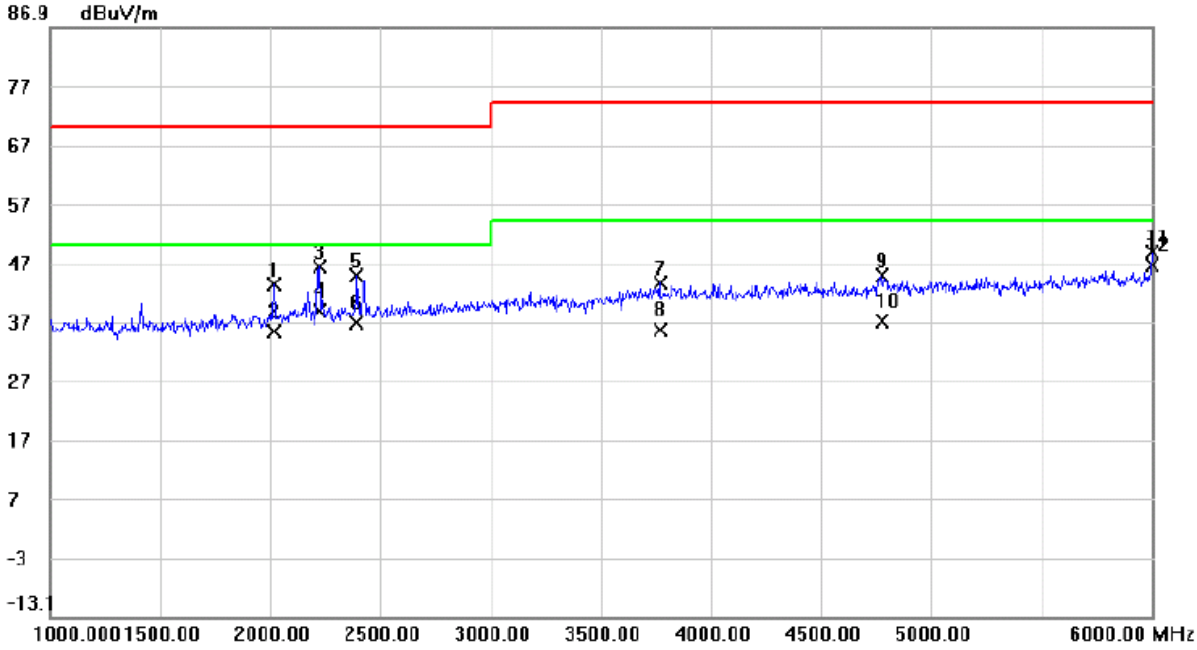
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1207.500	45.02	-4.25	40.77	70.00	-29.23	peak	
2		1207.500	35.44	-4.25	31.19	50.00	-18.81	AVG	
3		2225.000	46.68	1.04	47.72	70.00	-22.28	peak	
4		2225.000	37.43	1.04	38.47	50.00	-11.53	AVG	
5		2427.500	42.08	1.76	43.84	70.00	-26.16	peak	
6		2427.500	31.99	1.76	33.75	50.00	-16.25	AVG	
7		4302.500	36.23	8.77	45.00	74.00	-29.00	peak	
8		4302.500	27.69	8.77	36.46	54.00	-17.54	AVG	
9		5552.500	34.21	11.62	45.83	74.00	-28.17	peak	
10		5552.500	25.20	11.62	36.82	54.00	-17.18	AVG	
11		6000.000	39.50	13.16	52.66	74.00	-21.34	peak	
12	*	6000.000	33.53	13.16	46.69	54.00	-7.31	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	HDMI1 1080P 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



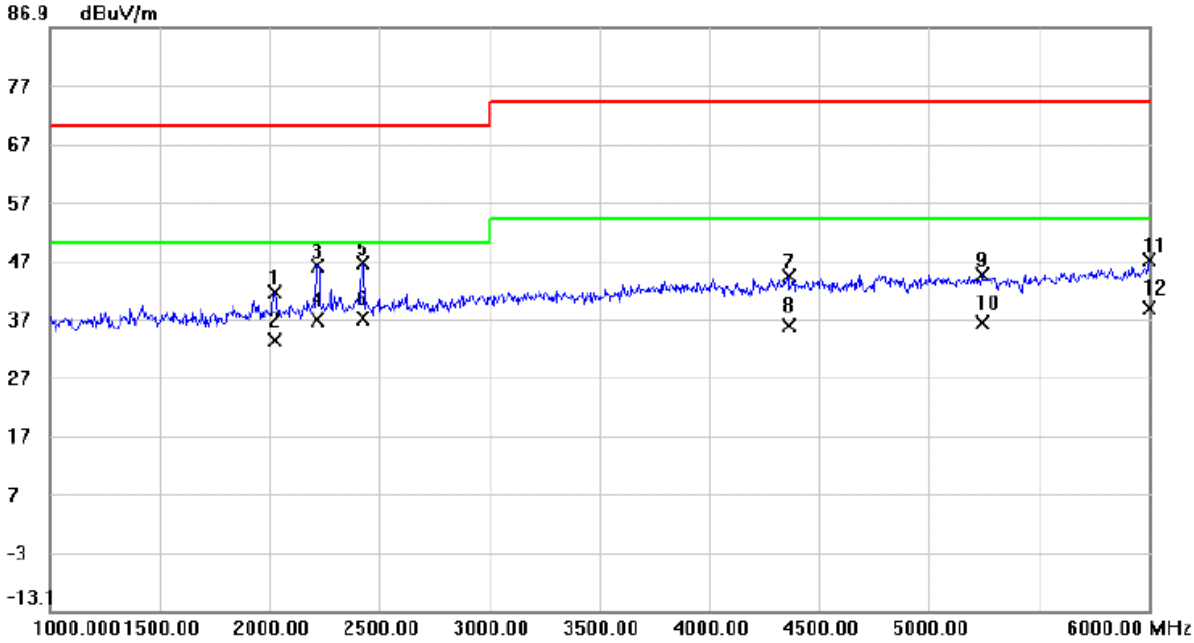
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2020.000	41.51	0.30	41.81	70.00	-28.19	peak	
2		2020.000	31.98	0.30	32.28	50.00	-17.72	AVG	
3		2117.500	43.02	0.65	43.67	70.00	-26.33	peak	
4		2117.500	33.78	0.65	34.43	50.00	-15.57	AVG	
5		2395.000	44.02	1.65	45.67	70.00	-24.33	peak	
6	*	2395.000	34.86	1.65	36.51	50.00	-13.49	AVG	
7		3710.000	36.35	6.89	43.24	74.00	-30.76	peak	
8		3710.000	27.08	6.89	33.97	54.00	-20.03	AVG	
9		4960.000	34.87	10.09	44.96	74.00	-29.04	peak	
10		4960.000	25.26	10.09	35.35	54.00	-18.65	AVG	
11		5730.000	33.85	12.22	46.07	74.00	-27.93	peak	
12		5730.000	24.49	12.22	36.71	54.00	-17.29	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	HDMI1 1080P 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



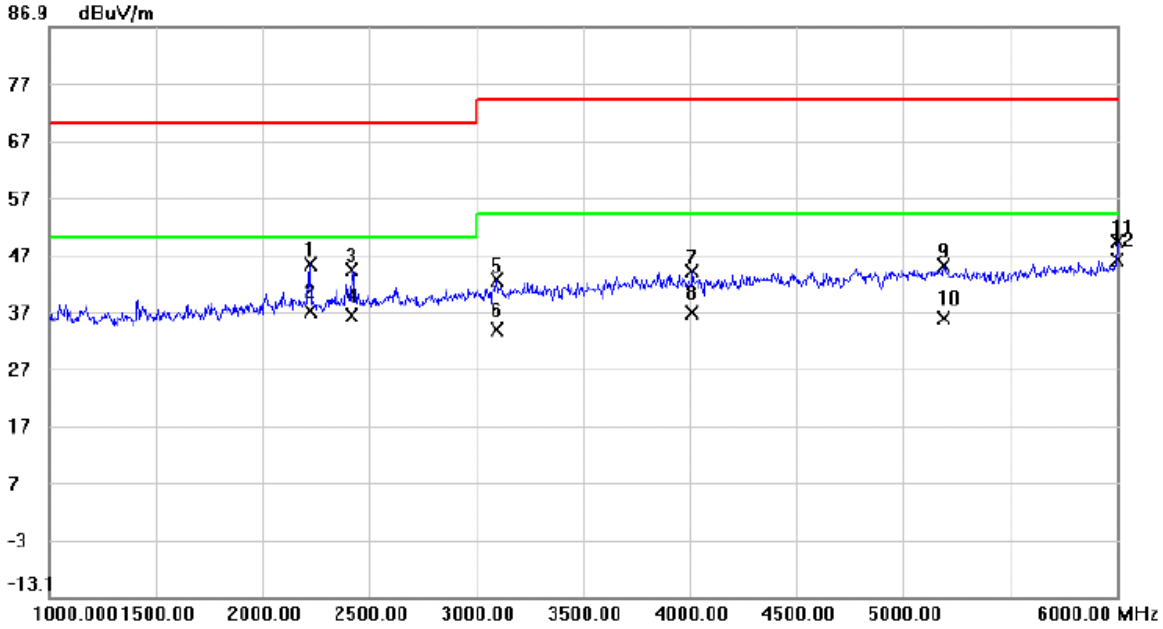
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2015.000	43.01	0.28	43.29	70.00	-26.71	peak	
2		2015.000	34.93	0.28	35.21	50.00	-14.79	AVG	
3		2220.000	45.24	1.01	46.25	70.00	-23.75	peak	
4		2220.000	37.88	1.01	38.89	50.00	-11.11	AVG	
5		2390.000	43.14	1.63	44.77	70.00	-25.23	peak	
6		2390.000	35.12	1.63	36.75	50.00	-13.25	AVG	
7		3767.500	36.28	7.17	43.45	74.00	-30.55	peak	
8		3767.500	28.34	7.17	35.51	54.00	-18.49	AVG	
9		4775.000	35.17	9.69	44.86	74.00	-29.14	peak	
10		4775.000	27.23	9.69	36.92	54.00	-17.08	AVG	
11		6000.000	35.66	13.16	48.82	74.00	-25.18	peak	
12	*	6000.000	33.40	13.16	46.56	54.00	-7.44	AVG	

Test Voltage	AC 110V/60Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



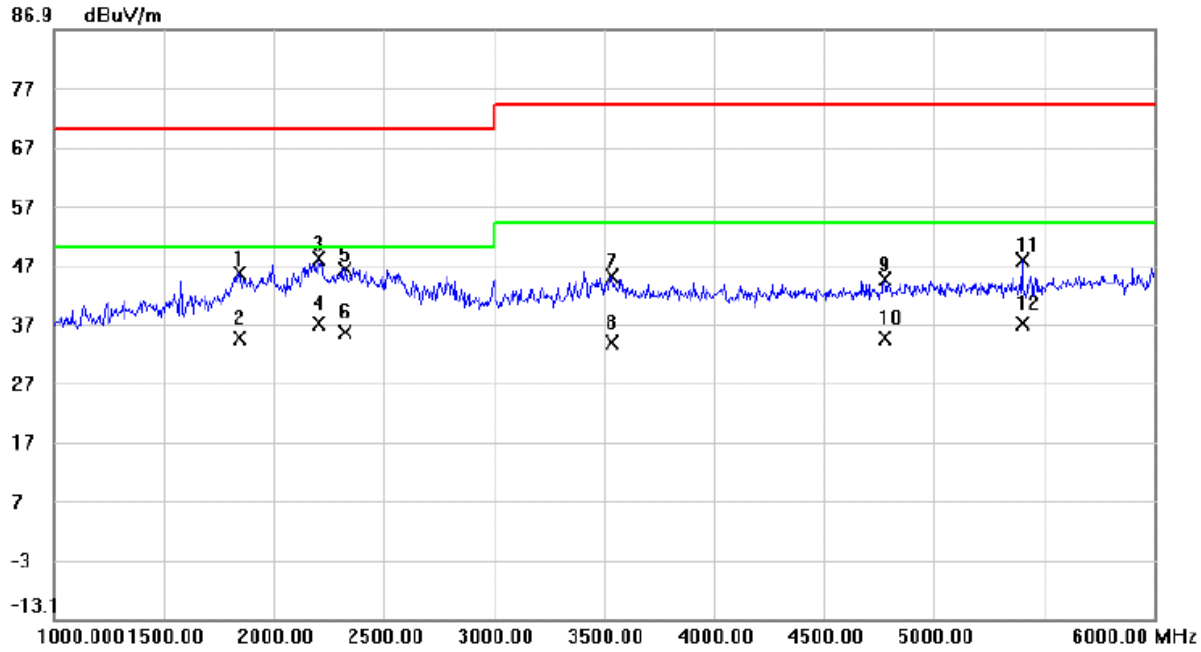
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2020.000	41.16	0.30	41.46	70.00	-28.54	peak	
2		2020.000	33.09	0.30	33.39	50.00	-16.61	AVG	
3		2217.500	45.00	1.01	46.01	70.00	-23.99	peak	
4		2217.500	35.67	1.01	36.68	50.00	-13.32	AVG	
5		2425.000	44.67	1.76	46.43	70.00	-23.57	peak	
6	*	2425.000	35.19	1.76	36.95	50.00	-13.05	AVG	
7		4360.000	35.30	8.87	44.17	74.00	-29.83	peak	
8		4360.000	26.87	8.87	35.74	54.00	-18.26	AVG	
9		5245.000	33.87	10.78	44.65	74.00	-29.35	peak	
10		5245.000	25.42	10.78	36.20	54.00	-17.80	AVG	
11		6000.000	33.92	13.16	47.08	74.00	-26.92	peak	
12		6000.000	25.69	13.16	38.85	54.00	-15.15	AVG	

Test Voltage	AC 110V/60Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



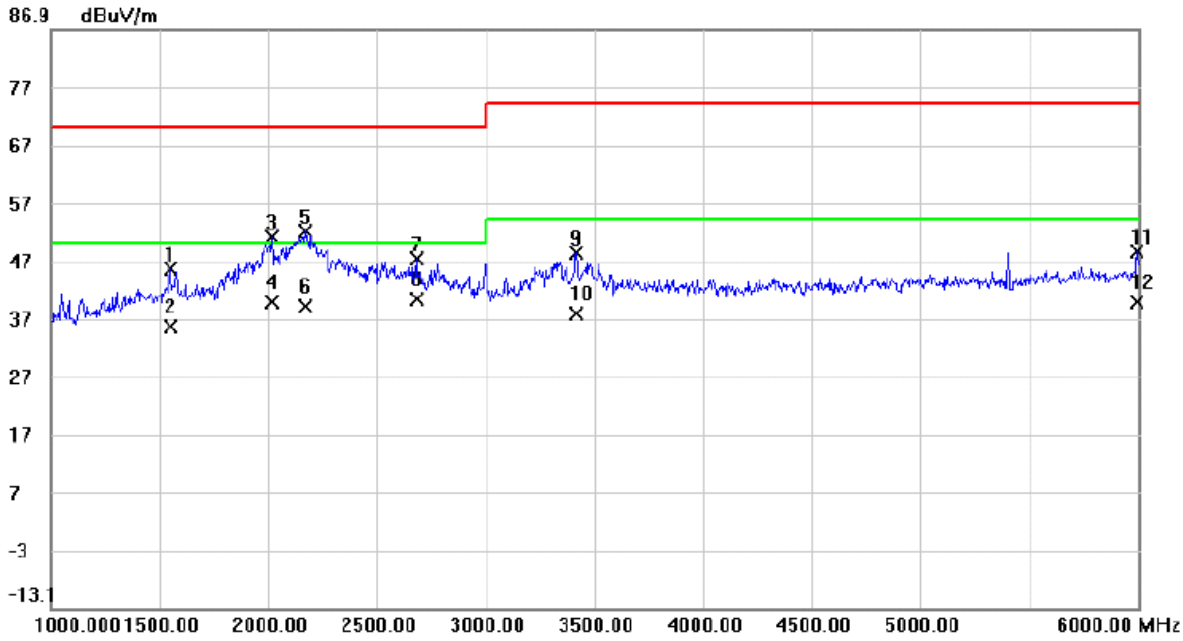
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2220.000	44.22	1.01	45.23	70.00	-24.77	peak	
2		2220.000	35.94	1.01	36.95	50.00	-13.05	AVG	
3		2417.500	42.58	1.73	44.31	70.00	-25.69	peak	
4		2417.500	34.50	1.73	36.23	50.00	-13.77	AVG	
5		3097.500	37.81	4.67	42.48	74.00	-31.52	peak	
6		3097.500	29.18	4.67	33.85	54.00	-20.15	AVG	
7		4010.000	35.87	8.28	44.15	74.00	-29.85	peak	
8		4010.000	28.39	8.28	36.67	54.00	-17.33	AVG	
9		5192.500	34.31	10.65	44.96	74.00	-29.04	peak	
10		5192.500	25.11	10.65	35.76	54.00	-18.24	AVG	
11		6000.000	36.21	13.16	49.37	74.00	-24.63	peak	
12	*	6000.000	32.99	13.16	46.15	54.00	-7.85	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



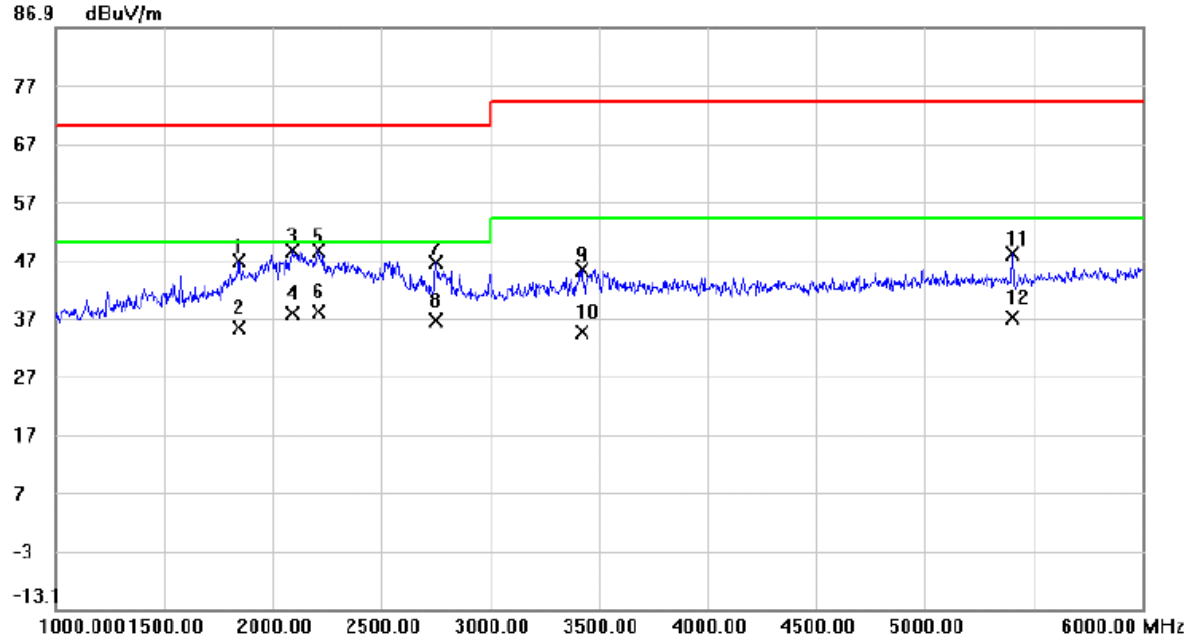
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1842.500	46.37	-0.78	45.59	70.00	-24.41	peak	
2		1842.500	35.29	-0.78	34.51	50.00	-15.49	AVG	
3		2200.000	46.96	0.95	47.91	70.00	-22.09	peak	
4	*	2200.000	36.01	0.95	36.96	50.00	-13.04	AVG	
5		2325.000	44.88	1.39	46.27	70.00	-23.73	peak	
6		2325.000	34.23	1.39	35.62	50.00	-14.38	AVG	
7		3537.500	38.91	6.08	44.99	74.00	-29.01	peak	
8		3537.500	27.60	6.08	33.68	54.00	-20.32	AVG	
9		4777.500	34.77	9.70	44.47	74.00	-29.53	peak	
10		4777.500	24.82	9.70	34.52	54.00	-19.48	AVG	
11		5400.000	36.51	11.18	47.69	74.00	-26.31	peak	
12		5400.000	25.77	11.18	36.95	54.00	-17.05	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



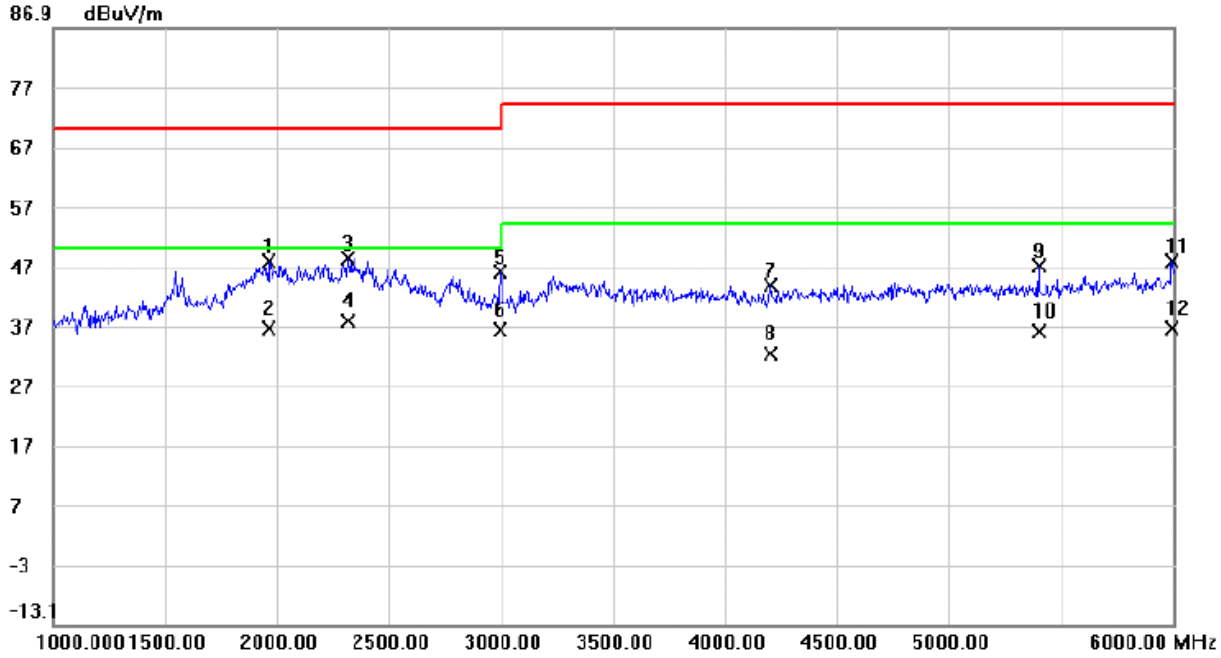
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1547.500	48.10	-2.68	45.42	70.00	-24.58	peak	
2		1547.500	38.30	-2.68	35.62	50.00	-14.38	AVG	
3		2015.000	50.71	0.28	50.99	70.00	-19.01	peak	
4		2015.000	39.40	0.28	39.68	50.00	-10.32	AVG	
5		2167.500	51.29	0.83	52.12	70.00	-17.88	peak	
6		2167.500	38.14	0.83	38.97	50.00	-11.03	AVG	
7		2682.500	44.40	2.88	47.28	70.00	-22.72	peak	
8	*	2682.500	37.33	2.88	40.21	50.00	-9.79	AVG	
9		3415.000	42.58	5.64	48.22	74.00	-25.78	peak	
10		3415.000	32.21	5.64	37.85	54.00	-16.15	AVG	
11		5995.000	35.33	13.15	48.48	74.00	-25.52	peak	
12		5995.000	26.53	13.15	39.68	54.00	-14.32	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



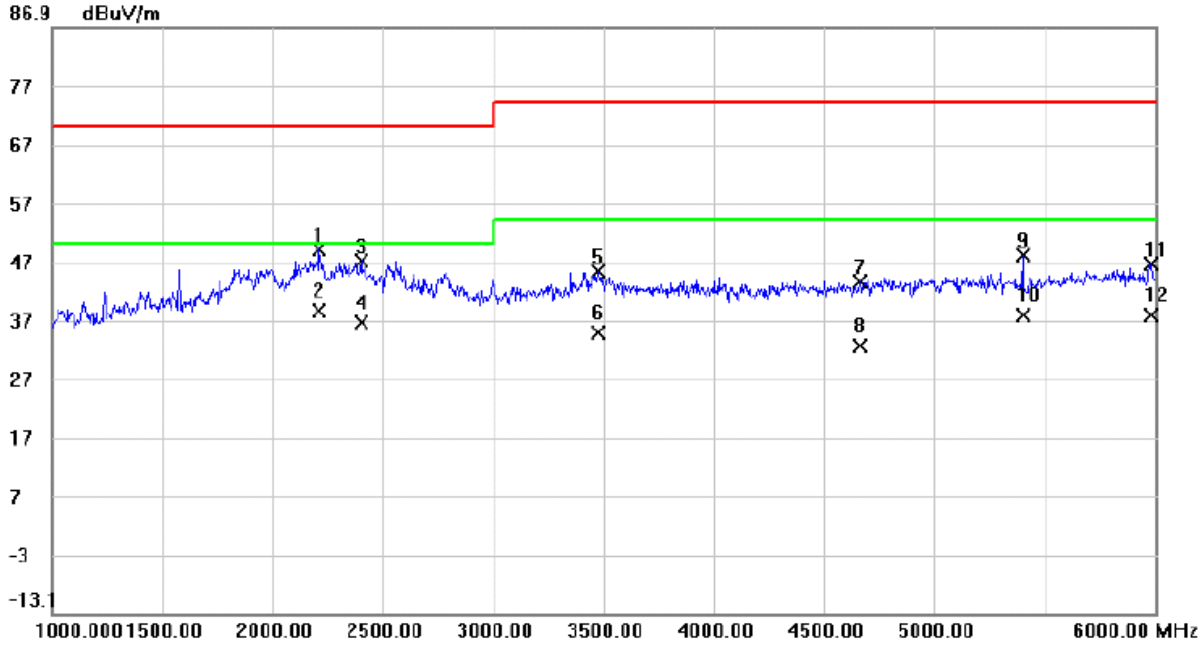
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1845.000	47.49	-0.77	46.72	70.00	-23.28	peak	
2		1845.000	36.03	-0.77	35.26	50.00	-14.74	AVG	
3		2092.500	47.94	0.56	48.50	70.00	-21.50	peak	
4		2092.500	37.29	0.56	37.85	50.00	-12.15	AVG	
5		2212.500	47.45	0.99	48.44	70.00	-21.56	peak	
6	*	2212.500	36.97	0.99	37.96	50.00	-12.04	AVG	
7		2752.500	43.21	3.21	46.42	70.00	-23.58	peak	
8		2752.500	33.37	3.21	36.58	50.00	-13.42	AVG	
9		3420.000	39.67	5.66	45.33	74.00	-28.67	peak	
10		3420.000	28.86	5.66	34.52	54.00	-19.48	AVG	
11		5400.000	36.80	11.18	47.98	74.00	-26.02	peak	
12		5400.000	25.78	11.18	36.96	54.00	-17.04	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



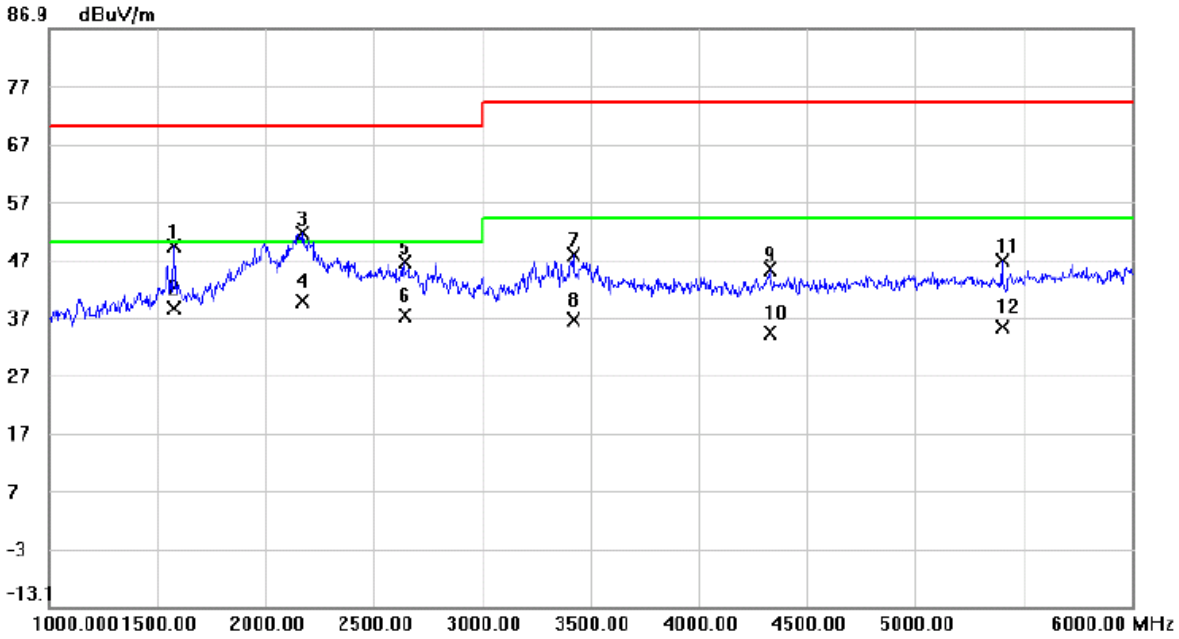
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1965.000	47.69	0.01	47.70	70.00	-22.30	peak	
2		1965.000	36.58	0.01	36.59	50.00	-13.41	AVG	
3		2317.500	46.93	1.37	48.30	70.00	-21.70	peak	
4	*	2317.500	36.48	1.37	37.85	50.00	-12.15	AVG	
5		2997.500	41.60	4.36	45.96	70.00	-24.04	peak	
6		2997.500	31.88	4.36	36.24	50.00	-13.76	AVG	
7		4205.000	35.27	8.60	43.87	74.00	-30.13	peak	
8		4205.000	23.56	8.60	32.16	54.00	-21.84	AVG	
9		5400.000	35.78	11.18	46.96	74.00	-27.04	peak	
10		5400.000	24.78	11.18	35.96	54.00	-18.04	AVG	
11		5995.000	34.68	13.15	47.83	74.00	-26.17	peak	
12		5995.000	23.43	13.15	36.58	54.00	-17.42	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	HDMI1 2160P 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



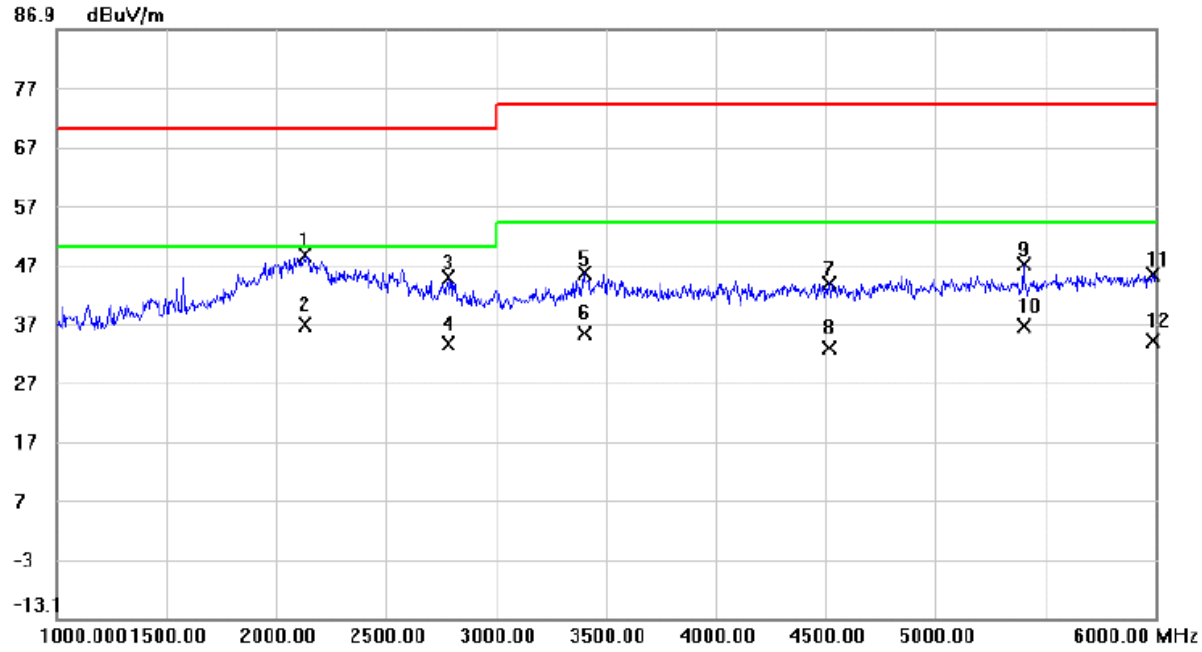
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2210.000	48.08	0.98	49.06	70.00	-20.94	peak	
2	*	2210.000	37.61	0.98	38.59	50.00	-11.41	AVG	
3		2402.500	45.47	1.68	47.15	70.00	-22.85	peak	
4		2402.500	34.84	1.68	36.52	50.00	-13.48	AVG	
5		3477.500	39.51	5.83	45.34	74.00	-28.66	peak	
6		3477.500	28.92	5.83	34.75	54.00	-19.25	AVG	
7		4665.000	34.06	9.46	43.52	74.00	-30.48	peak	
8		4665.000	23.19	9.46	32.65	54.00	-21.35	AVG	
9		5400.000	36.96	11.18	48.14	74.00	-25.86	peak	
10		5400.000	26.67	11.18	37.85	54.00	-16.15	AVG	
11		5980.000	33.33	13.09	46.42	74.00	-27.58	peak	
12		5980.000	24.60	13.09	37.69	54.00	-16.31	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	HDMI1 2160P 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



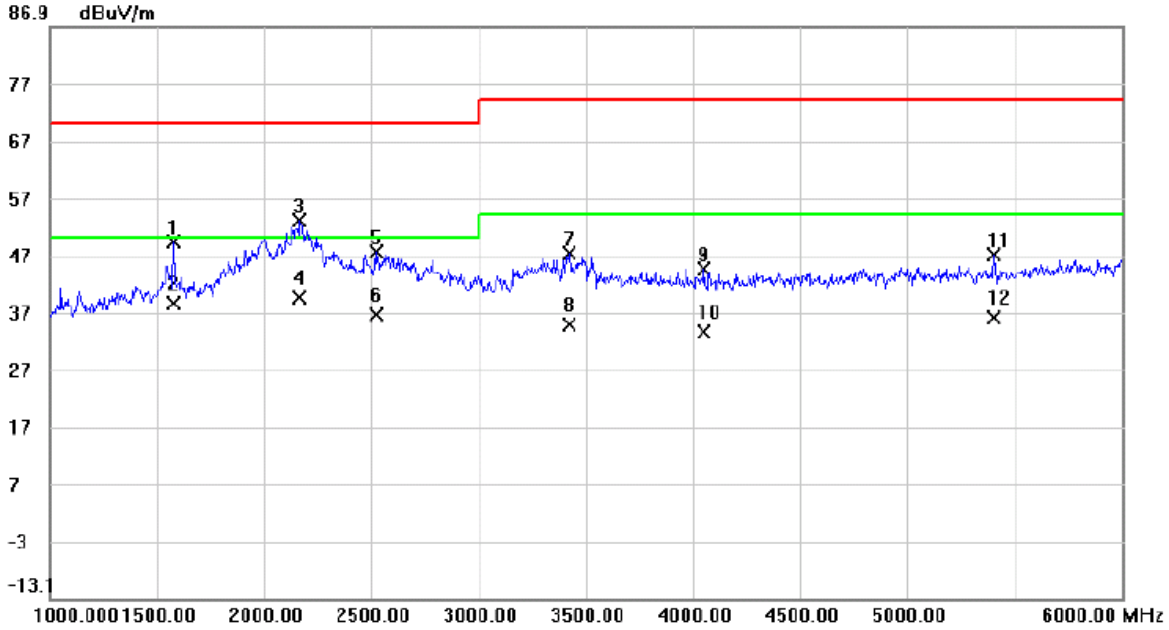
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1577.500	51.77	-2.49	49.28	70.00	-20.72	peak	
2		1577.500	41.01	-2.49	38.52	50.00	-11.48	AVG	
3		2170.000	50.78	0.83	51.61	70.00	-18.39	peak	
4	*	2170.000	39.01	0.83	39.84	50.00	-10.16	AVG	
5		2640.000	43.81	2.68	46.49	70.00	-23.51	peak	
6		2640.000	34.58	2.68	37.26	50.00	-12.74	AVG	
7		3420.000	42.10	5.66	47.76	74.00	-26.24	peak	
8		3420.000	30.86	5.66	36.52	54.00	-17.48	AVG	
9		4327.500	36.43	8.81	45.24	74.00	-28.76	peak	
10		4327.500	25.40	8.81	34.21	54.00	-19.79	AVG	
11		5400.000	35.67	11.18	46.85	74.00	-27.15	peak	
12		5400.000	24.11	11.18	35.29	54.00	-18.71	AVG	

Test Voltage	AC 110V/60Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2130.000	47.73	0.70	48.43	70.00	-21.57	peak	
2	*	2130.000	36.15	0.70	36.85	50.00	-13.15	AVG	
3		2782.500	41.44	3.35	44.79	70.00	-25.21	peak	
4		2782.500	30.28	3.35	33.63	50.00	-16.37	AVG	
5		3400.000	39.82	5.59	45.41	74.00	-28.59	peak	
6		3400.000	29.65	5.59	35.24	54.00	-18.76	AVG	
7		4515.000	34.67	9.13	43.80	74.00	-30.20	peak	
8		4515.000	23.56	9.13	32.69	54.00	-21.31	AVG	
9		5400.000	35.88	11.18	47.06	74.00	-26.94	peak	
10		5400.000	25.40	11.18	36.58	54.00	-17.42	AVG	
11		5987.500	32.29	13.11	45.40	74.00	-28.60	peak	
12		5987.500	21.04	13.11	34.15	54.00	-19.85	AVG	

Test Voltage	AC 110V/60Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1577.500	51.69	-2.49	49.20	70.00	-20.80	peak	
2		1577.500	41.01	-2.49	38.52	50.00	-11.48	AVG	
3		2165.000	52.23	0.82	53.05	70.00	-16.95	peak	
4	*	2165.000	38.74	0.82	39.56	50.00	-10.44	AVG	
5		2520.000	45.39	2.11	47.50	70.00	-22.50	peak	
6		2520.000	34.47	2.11	36.58	50.00	-13.42	AVG	
7		3425.000	41.68	5.67	47.35	74.00	-26.65	peak	
8		3425.000	29.09	5.67	34.76	54.00	-19.24	AVG	
9		4050.000	36.28	8.35	44.63	74.00	-29.37	peak	
10		4050.000	25.27	8.35	33.62	54.00	-20.38	AVG	
11		5400.000	35.90	11.18	47.08	74.00	-26.92	peak	
12		5400.000	24.78	11.18	35.96	54.00	-18.04	AVG	

3.3 CONDUCTED EMISSION MEASUREMENT AT AC MAINS POWER PORTS

3.3.1 LIMITS

Requirements for conducted emissions from AC mains power ports of Class B equipment

Frequency Range MHz	Coupling Device	Detector Type / bandwidth	Class B Limits (dB(μV))
0.15 - 0.5	AMN	Quasi Peak / 9 kHz	66-56
0.5 - 5			56
5 - 30			60
0.15 - 0.5	AMN	Average / 9 kHz	56-46
0.5 - 5			46
5 - 30			50

NOTE:

(1) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
Margin Level = Measurement Value – Limit Value

3.3.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	50Ω Terminator	SHX	TF2-3G-A	8122901	Feb. 28, 2021
2	TWO-LINE V-NETWORK	R&S	ENV216	100526	Mar. 01, 2021
3	EMI Test Receiver	R&S	ESR3	101862	Jul. 25, 2021
4	Artificial-Mains Network	SCHWARZBECK	NSLK 8127	8127685	Mar. 01, 2021
5	TRANSIENT LIMITER	EM	EM-7600	772	Mar. 01, 2021
6	Cable	N/A	RG400	N/A(12m)	Mar. 10, 2021
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

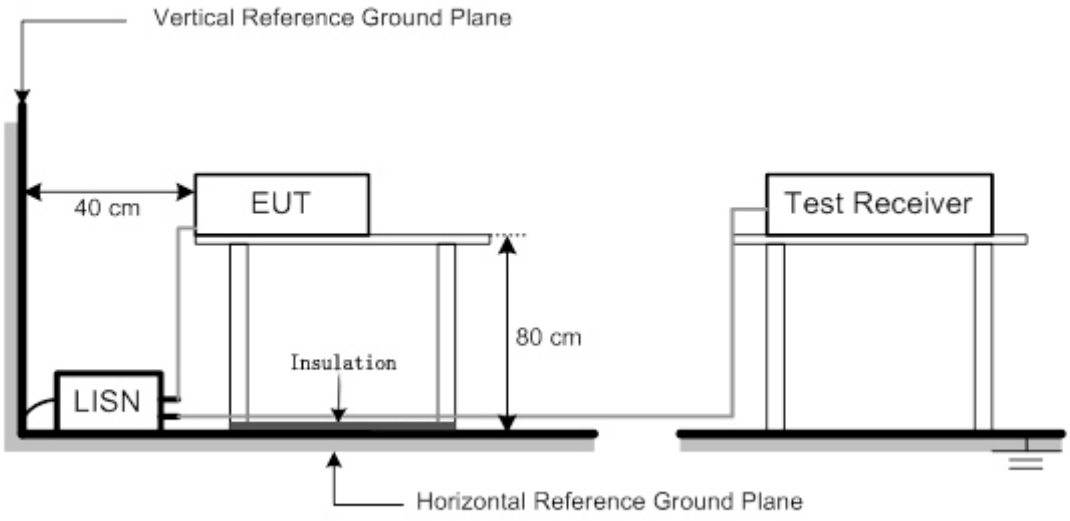
3.3.3 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.3.4 DEVIATION FROM TEST STANDARD

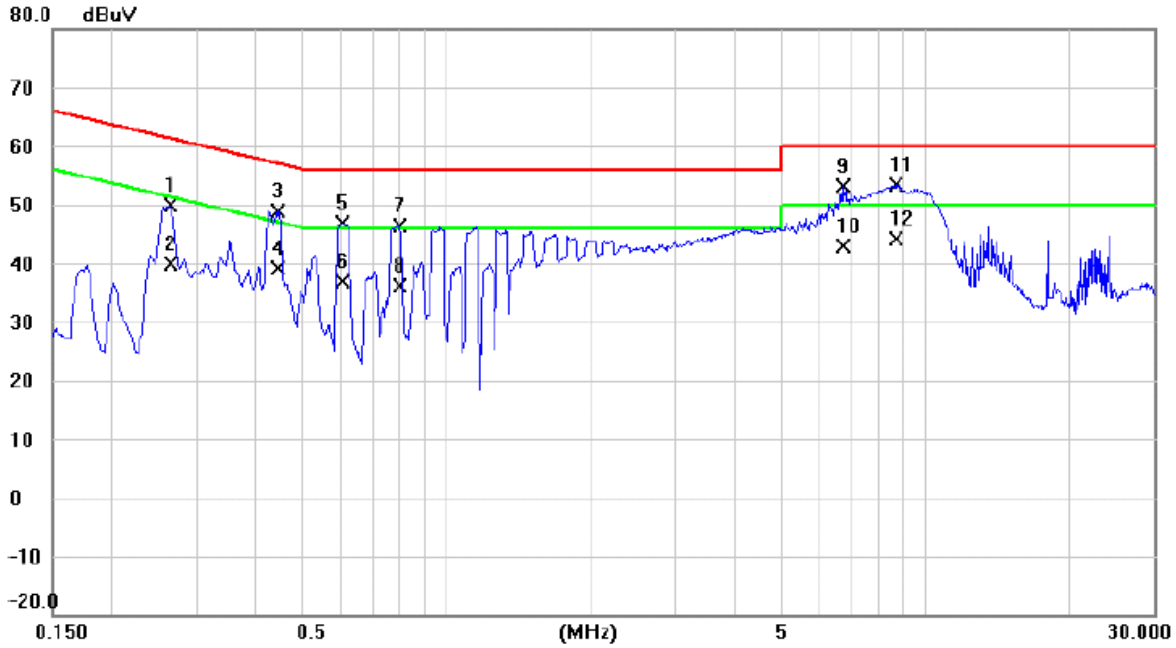
No deviation

3.3.5 TEST SETUP



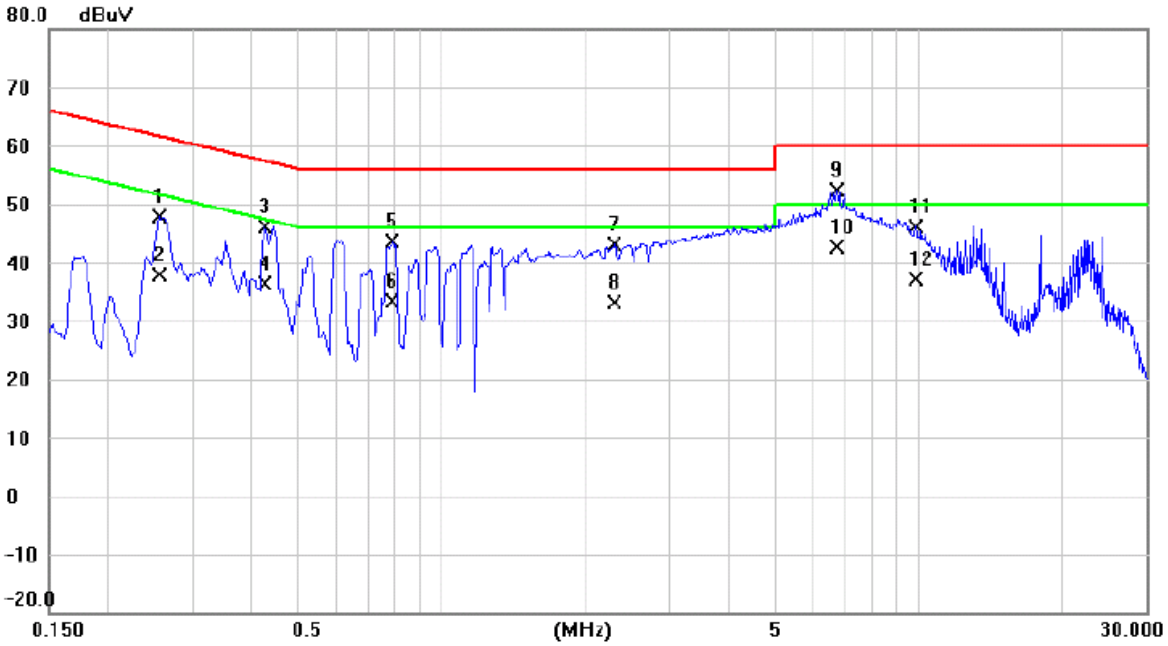
3.3.6 TEST RESULTS

Test Voltage	AC 230V/50Hz	Phase	Line
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



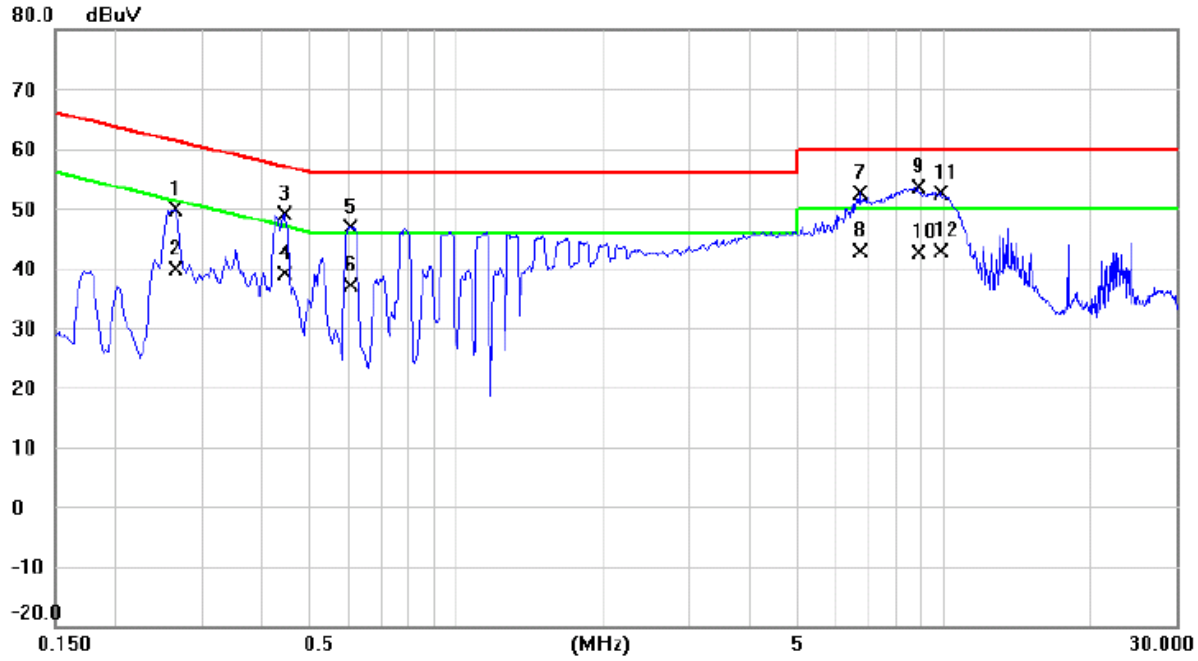
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2647	40.22	9.59	49.81	61.28	-11.47	QP	
2		0.2647	30.40	9.59	39.99	51.28	-11.29	AVG	
3		0.4425	39.32	9.61	48.93	57.01	-8.08	QP	
4		0.4425	29.40	9.61	39.01	47.01	-8.00	AVG	
5		0.6045	37.18	9.62	46.80	56.00	-9.20	QP	
6		0.6045	27.20	9.62	36.82	46.00	-9.18	AVG	
7		0.7957	36.74	9.65	46.39	56.00	-9.61	QP	
8		0.7957	26.40	9.65	36.05	46.00	-9.95	AVG	
9		6.7223	42.96	10.06	53.02	60.00	-6.98	QP	
10		6.7223	32.80	10.06	42.86	50.00	-7.14	AVG	
11		8.6573	43.20	10.15	53.35	60.00	-6.65	QP	
12	*	8.6573	34.00	10.15	44.15	50.00	-5.85	AVG	

Test Voltage	AC 230V/50Hz	Phase	Neutral
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



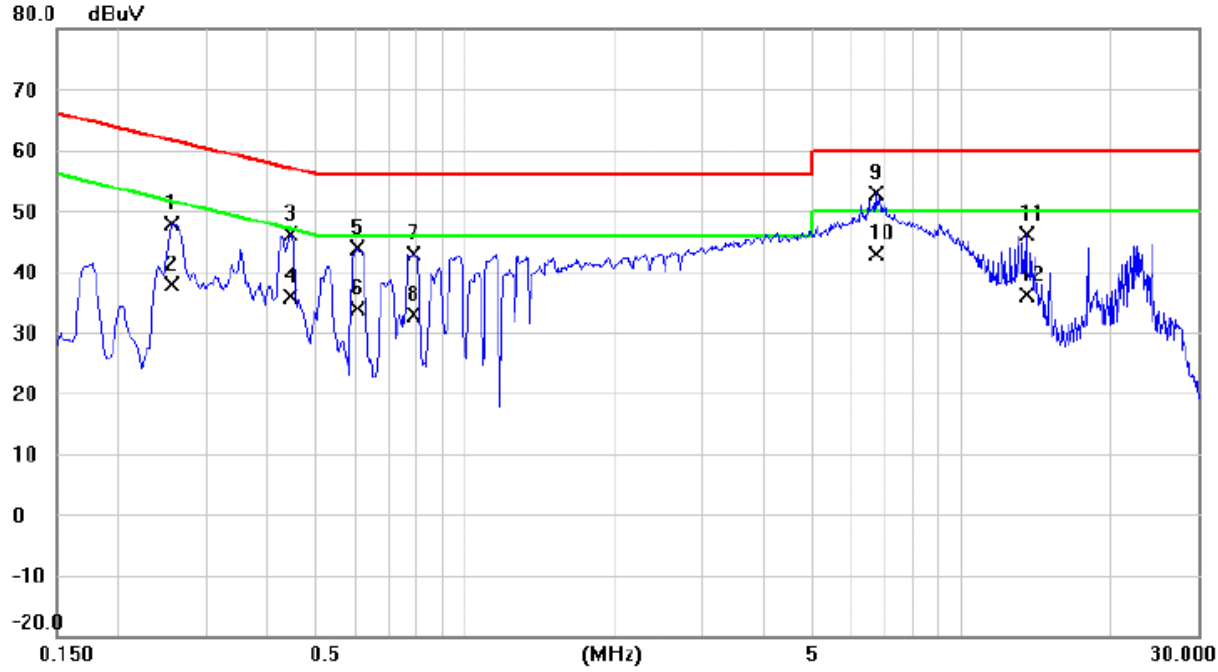
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2558	38.29	9.58	47.87	61.57	-13.70	QP	
2		0.2558	28.30	9.58	37.88	51.57	-13.69	AVG	
3		0.4245	36.62	9.60	46.22	57.36	-11.14	QP	
4		0.4245	26.70	9.60	36.30	47.36	-11.06	AVG	
5		0.7890	33.96	9.63	43.59	56.00	-12.41	QP	
6		0.7890	23.80	9.63	33.43	46.00	-12.57	AVG	
7		2.3033	33.26	9.77	43.03	56.00	-12.97	QP	
8		2.3033	23.40	9.77	33.17	46.00	-12.83	AVG	
9		6.7178	42.42	10.06	52.48	60.00	-7.52	QP	
10	*	6.7178	32.50	10.06	42.56	50.00	-7.44	AVG	
11		9.8430	36.00	10.22	46.22	60.00	-13.78	QP	
12		9.8430	27.00	10.22	37.22	50.00	-12.78	AVG	

Test Voltage	AC 230V/50Hz	Phase	Line
Test Mode	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



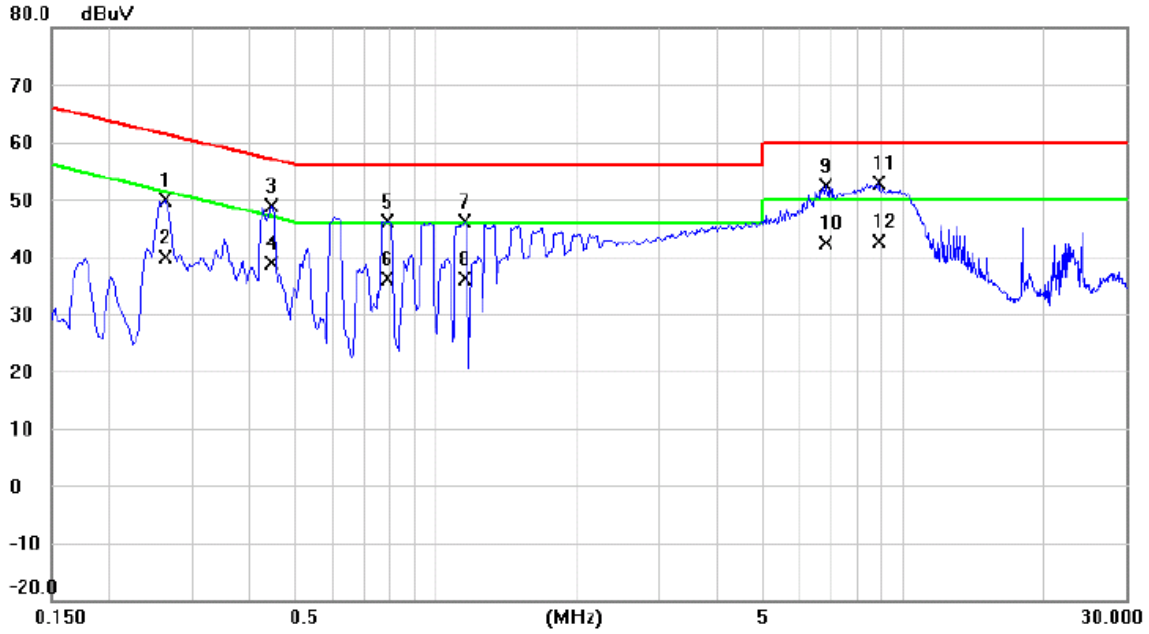
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2647	40.32	9.59	49.91	61.28	-11.37	QP	
2		0.2647	30.40	9.59	39.99	51.28	-11.29	AVG	
3		0.4425	39.52	9.61	49.13	57.01	-7.88	QP	
4		0.4425	29.60	9.61	39.21	47.01	-7.80	AVG	
5		0.6045	37.31	9.62	46.93	56.00	-9.07	QP	
6		0.6045	27.40	9.62	37.02	46.00	-8.98	AVG	
7		6.7200	42.64	10.06	52.70	60.00	-7.30	QP	
8		6.7200	32.70	10.06	42.76	50.00	-7.24	AVG	
9	*	8.8575	43.43	10.16	53.59	60.00	-6.41	QP	
10		8.8575	32.40	10.16	42.56	50.00	-7.44	AVG	
11		9.8407	42.52	10.21	52.73	60.00	-7.27	QP	
12		9.8407	32.60	10.21	42.81	50.00	-7.19	AVG	

Test Voltage	AC 230V/50Hz	Phase	Neutral
Test Mode	HDMI1 2560*1440/75Hz 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



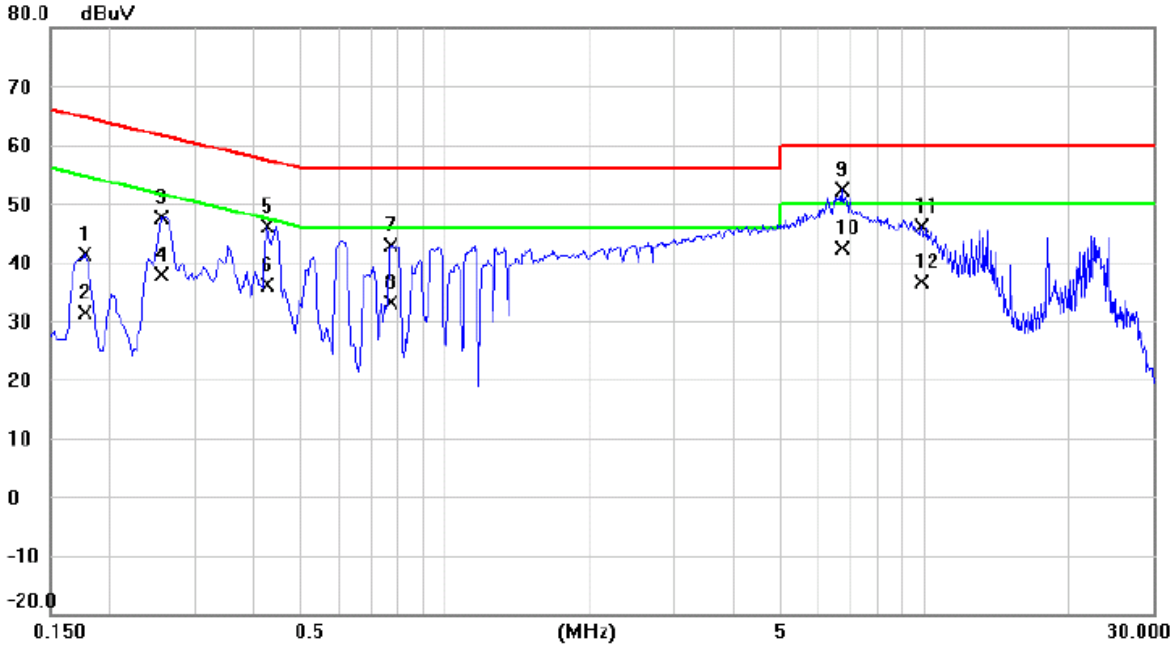
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2558	38.23	9.58	47.81	61.57	-13.76	QP	
2		0.2558	28.40	9.58	37.98	51.57	-13.59	AVG	
3		0.4425	36.59	9.60	46.19	57.01	-10.82	QP	
4		0.4425	26.40	9.60	36.00	47.01	-11.01	AVG	
5		0.6045	34.20	9.61	43.81	56.00	-12.19	QP	
6		0.6045	24.20	9.61	33.81	46.00	-12.19	AVG	
7		0.7845	33.29	9.63	42.92	56.00	-13.08	QP	
8		0.7845	23.30	9.63	32.93	46.00	-13.07	AVG	
9	*	6.7245	42.83	10.06	52.89	60.00	-7.11	QP	
10		6.7245	32.80	10.06	42.86	50.00	-7.14	AVG	
11		13.5375	35.76	10.42	46.18	60.00	-13.82	QP	
12		13.5375	25.80	10.42	36.22	50.00	-13.78	AVG	

Test Voltage	AC 230V/50Hz	Phase	Line
Test Mode	HDMI1 1080P 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



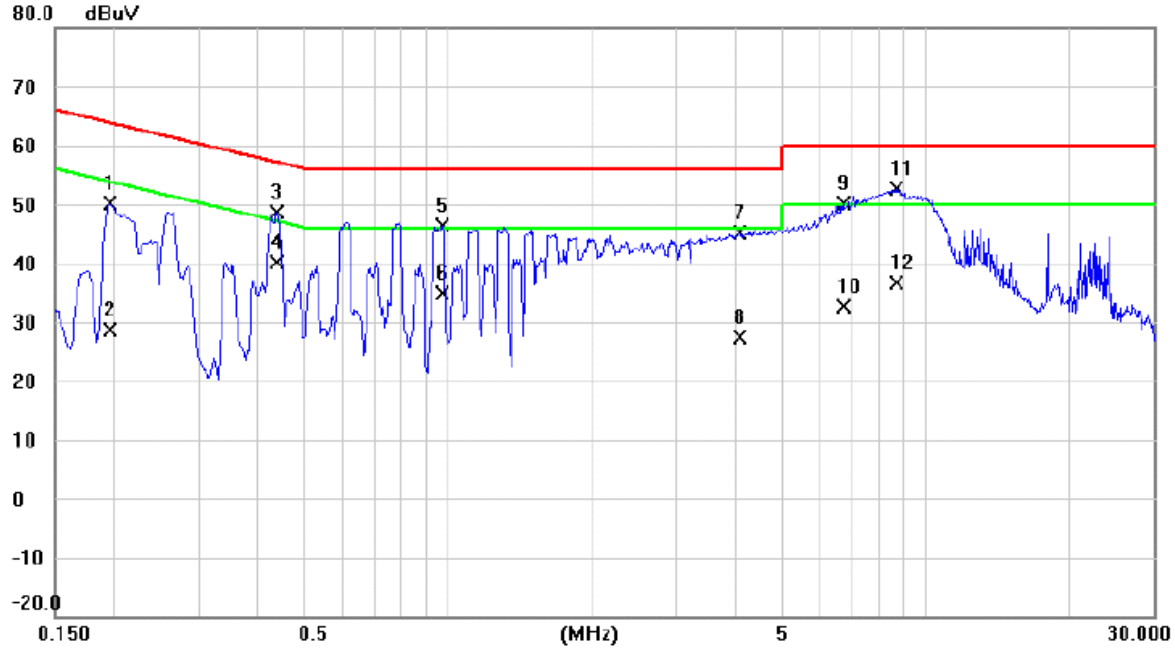
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2624	40.17	9.59	49.76	61.36	-11.60	QP	
2		0.2624	30.20	9.59	39.79	51.36	-11.57	AVG	
3		0.4424	39.26	9.61	48.87	57.02	-8.15	QP	
4		0.4424	29.30	9.61	38.91	47.02	-8.11	AVG	
5		0.7844	36.53	9.65	46.18	56.00	-9.82	QP	
6		0.7844	26.60	9.65	36.25	46.00	-9.75	AVG	
7		1.1512	36.34	9.68	46.02	56.00	-9.98	QP	
8		1.1512	26.40	9.68	36.08	46.00	-9.92	AVG	
9		6.8212	42.37	10.06	52.43	60.00	-7.57	QP	
10		6.8212	32.40	10.06	42.46	50.00	-7.54	AVG	
11	*	8.8597	42.63	10.16	52.79	60.00	-7.21	QP	
12		8.8597	32.50	10.16	42.66	50.00	-7.34	AVG	

Test Voltage	AC 230V/50Hz	Phase	Neutral
Test Mode	HDMI1 1080P 1.8m H(TYPE-C R/W)		
Sale Name	Q32P2C		



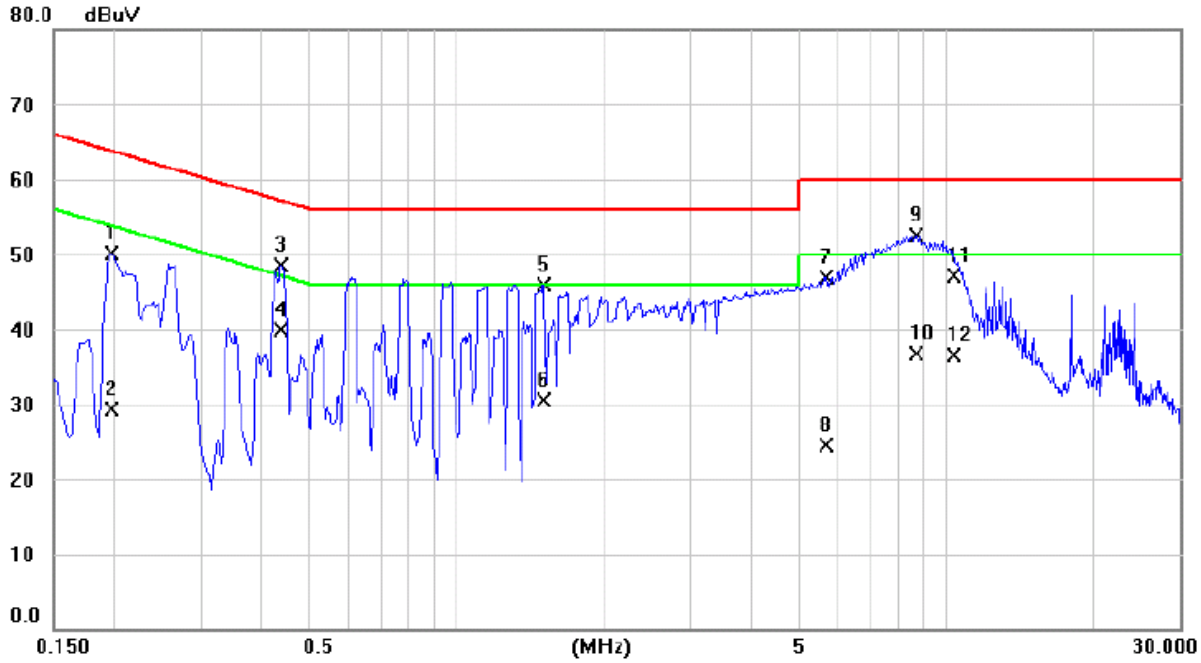
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1770	31.72	9.56	41.28	64.63	-23.35	QP	
2		0.1770	21.80	9.56	31.36	54.63	-23.27	AVG	
3		0.2558	38.06	9.58	47.64	61.57	-13.93	QP	
4		0.2558	28.40	9.58	37.98	51.57	-13.59	AVG	
5		0.4245	36.49	9.60	46.09	57.36	-11.27	QP	
6		0.4245	26.50	9.60	36.10	47.36	-11.26	AVG	
7		0.7710	33.30	9.63	42.93	56.00	-13.07	QP	
8		0.7710	23.40	9.63	33.03	46.00	-12.97	AVG	
9		6.7178	42.21	10.06	52.27	60.00	-7.73	QP	
10	*	6.7178	32.40	10.06	42.46	50.00	-7.54	AVG	
11		9.8453	35.95	10.22	46.17	60.00	-13.83	QP	
12		9.8453	26.32	10.22	36.54	50.00	-13.46	AVG	

Test Voltage	AC 110V/60Hz	Phase	Line
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



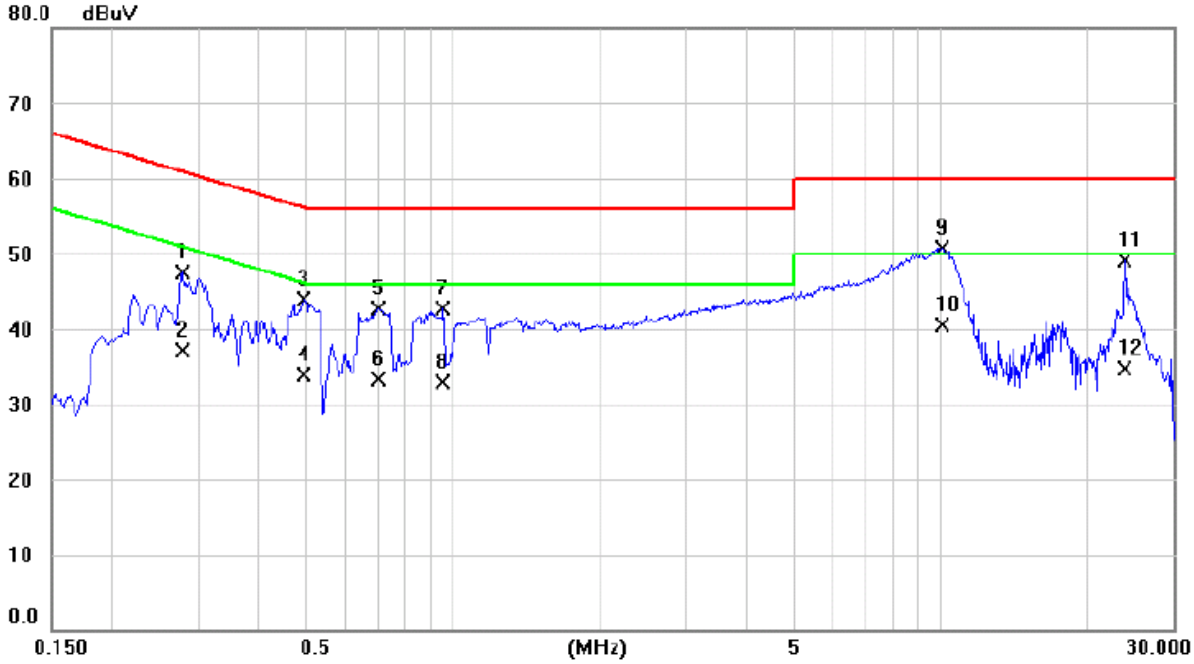
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1950	40.65	9.59	50.24	63.82	-13.58	QP	
2		0.1950	19.10	9.59	28.69	53.82	-25.13	AVG	
3		0.4380	38.95	9.61	48.56	57.10	-8.54	QP	
4	*	0.4380	30.40	9.61	40.01	47.10	-7.09	AVG	
5		0.9711	36.78	9.67	46.45	56.00	-9.55	QP	
6		0.9711	25.20	9.67	34.87	46.00	-11.13	AVG	
7		4.0875	35.18	9.90	45.08	56.00	-10.92	QP	
8		4.0875	17.50	9.90	27.40	46.00	-18.60	AVG	
9		6.7176	39.98	10.06	50.04	60.00	-9.96	QP	
10		6.7176	22.60	10.06	32.66	50.00	-17.34	AVG	
11		8.6594	42.40	10.15	52.55	60.00	-7.45	QP	
12		8.6594	26.40	10.15	36.55	50.00	-13.45	AVG	

Test Voltage	AC 110V/60Hz	Phase	Neutral
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



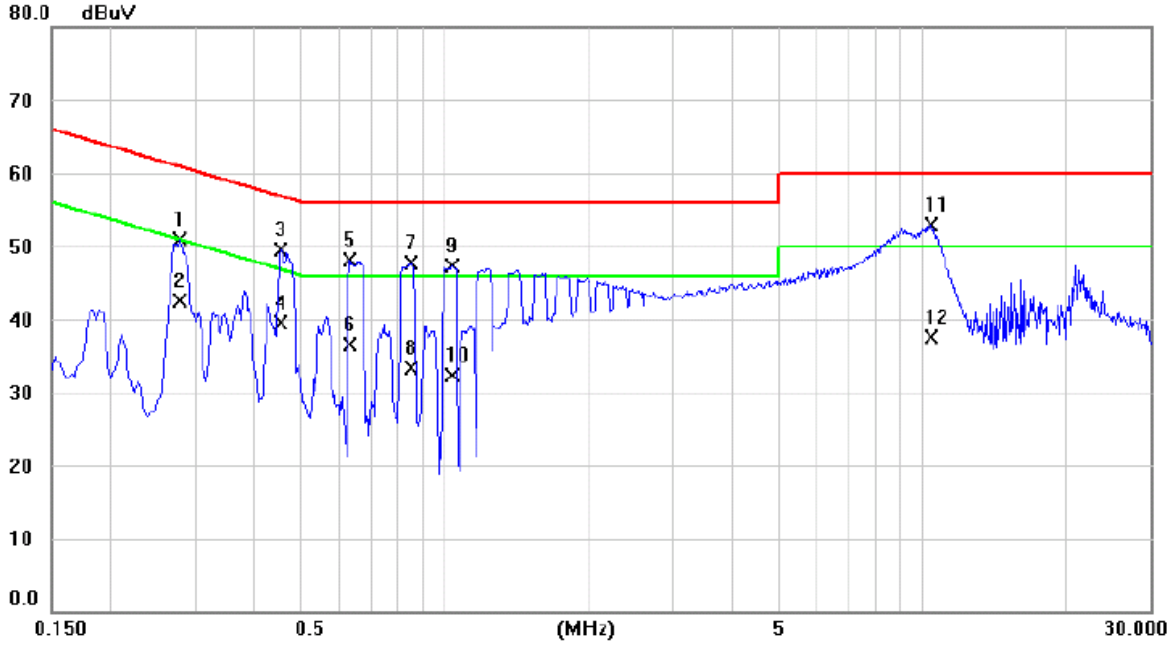
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1973	40.48	9.59	50.07	63.72	-13.65	QP	
2		0.1973	19.70	9.59	29.29	53.72	-24.43	AVG	
3		0.4380	38.82	9.61	48.43	57.10	-8.67	QP	
4	*	0.4380	30.30	9.61	39.91	47.10	-7.19	AVG	
5		1.5045	36.13	9.72	45.85	56.00	-10.15	QP	
6		1.5045	20.80	9.72	30.52	46.00	-15.48	AVG	
7		5.6918	36.96	10.00	46.96	60.00	-13.04	QP	
8		5.6918	14.60	10.00	24.60	50.00	-25.40	AVG	
9		8.6663	42.33	10.15	52.48	60.00	-7.52	QP	
10		8.6663	26.60	10.15	36.75	50.00	-13.25	AVG	
11		10.3290	36.90	10.23	47.13	60.00	-12.87	QP	
12		10.3290	26.20	10.23	36.43	50.00	-13.57	AVG	

Test Voltage	AC 230V/50Hz	Phase	Line
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



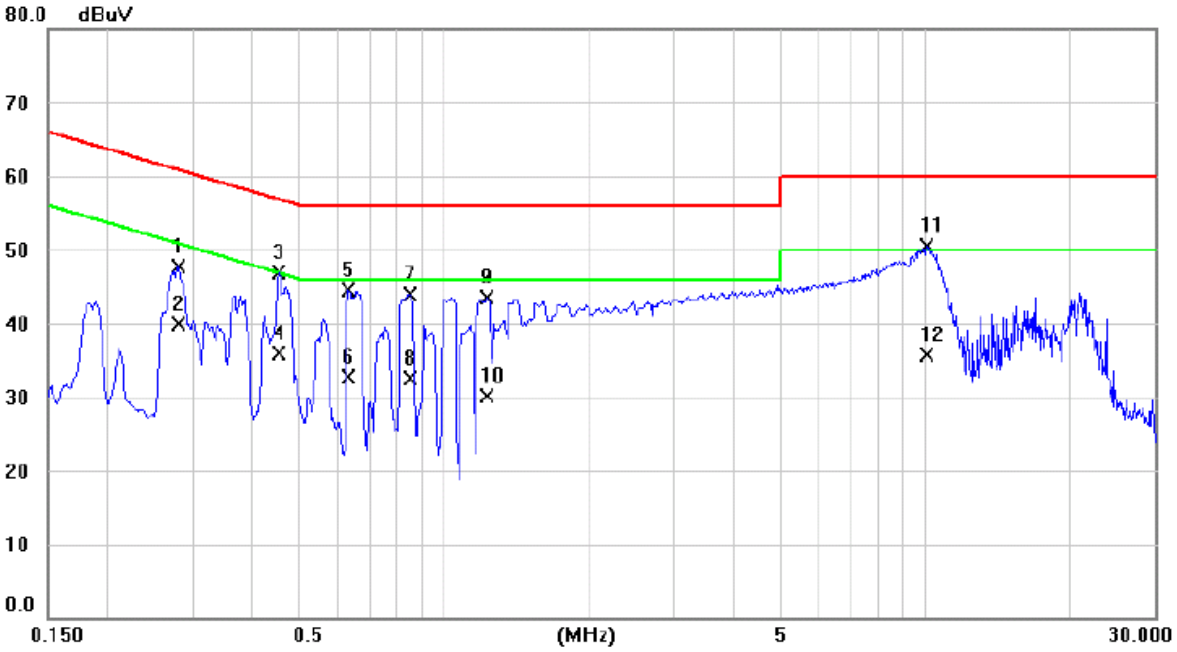
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2782	37.99	9.59	47.58	60.87	-13.29	QP	
2		0.2782	27.50	9.59	37.09	50.87	-13.78	AVG	
3		0.4942	34.28	9.61	43.89	56.10	-12.21	QP	
4		0.4942	24.30	9.61	33.91	46.10	-12.19	AVG	
5		0.7012	33.09	9.63	42.72	56.00	-13.28	QP	
6		0.7012	23.60	9.63	33.23	46.00	-12.77	AVG	
7		0.9532	33.08	9.67	42.75	56.00	-13.25	QP	
8		0.9532	23.30	9.67	32.97	46.00	-13.03	AVG	
9	*	10.0883	40.58	10.21	50.79	60.00	-9.21	QP	
10		10.0883	30.20	10.21	40.41	50.00	-9.59	AVG	
11		23.8088	38.20	10.98	49.18	60.00	-10.82	QP	
12		23.8088	23.70	10.98	34.68	50.00	-15.32	AVG	

Test Voltage	AC 230V/50Hz	Phase	Neutral
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



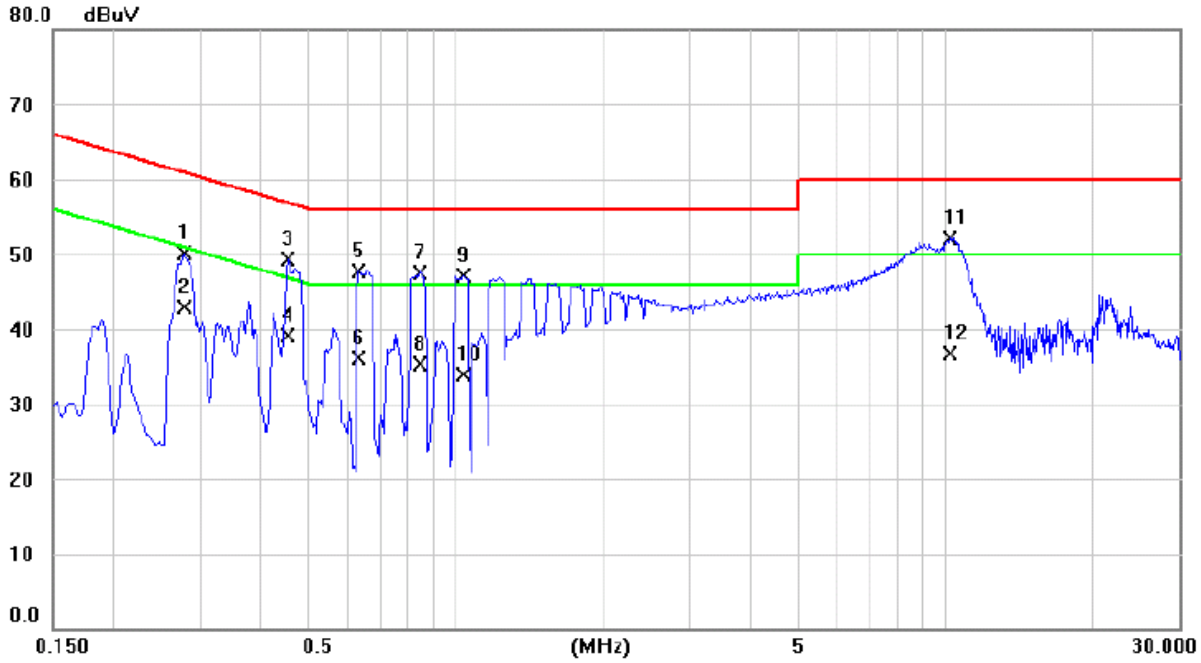
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2782	41.31	9.57	50.88	60.87	-9.99	QP	
2		0.2782	33.00	9.57	42.57	50.87	-8.30	AVG	
3		0.4537	39.85	9.60	49.45	56.81	-7.36	QP	
4		0.4537	30.00	9.60	39.60	46.81	-7.21	AVG	
5		0.6337	38.47	9.61	48.08	56.00	-7.92	QP	
6		0.6337	26.80	9.61	36.41	46.00	-9.59	AVG	
7		0.8520	37.96	9.65	47.61	56.00	-8.39	QP	
8		0.8520	23.60	9.65	33.25	46.00	-12.75	AVG	
9		1.0342	37.68	9.66	47.34	56.00	-8.66	QP	
10		1.0342	22.70	9.66	32.36	46.00	-13.64	AVG	
11	*	10.4010	42.70	10.24	52.94	60.00	-7.06	QP	
12		10.4010	27.20	10.24	37.44	50.00	-12.56	AVG	

Test Voltage	AC 230V/50Hz	Phase	Line
Test Mode	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



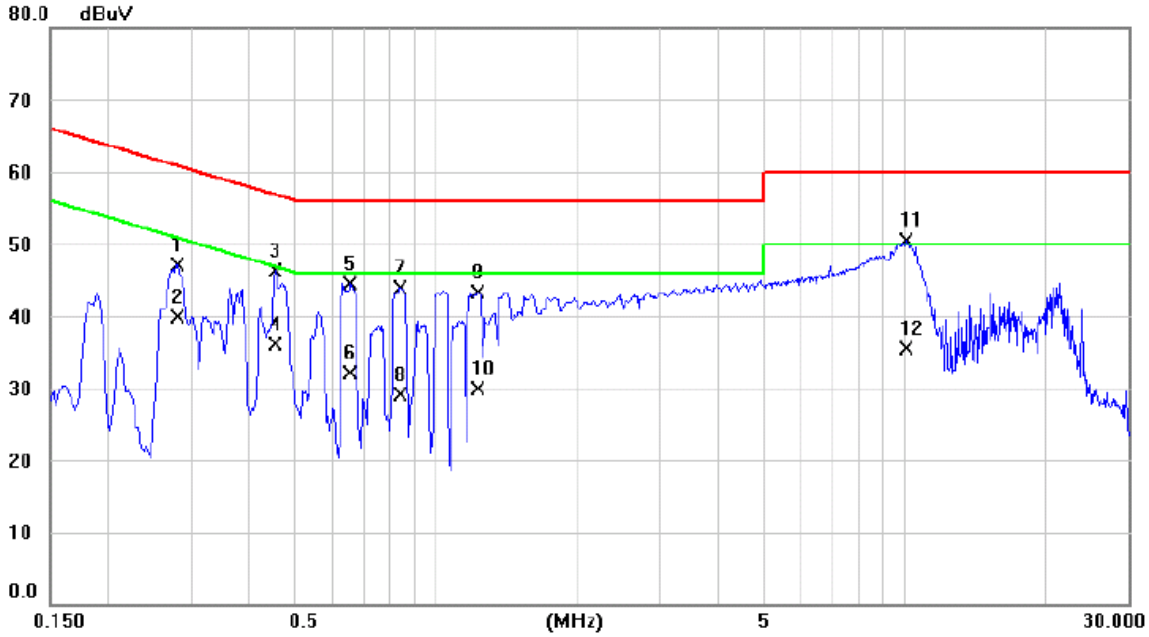
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2805	38.18	9.59	47.77	60.80	-13.03	QP	
2		0.2805	30.40	9.59	39.99	50.80	-10.81	AVG	
3		0.4537	37.20	9.61	46.81	56.81	-10.00	QP	
4		0.4537	26.30	9.61	35.91	46.81	-10.90	AVG	
5		0.6337	34.89	9.62	44.51	56.00	-11.49	QP	
6		0.6337	23.00	9.62	32.62	46.00	-13.38	AVG	
7		0.8497	34.34	9.65	43.99	56.00	-12.01	QP	
8		0.8497	22.80	9.65	32.45	46.00	-13.55	AVG	
9		1.2300	33.83	9.69	43.52	56.00	-12.48	QP	
10		1.2300	20.50	9.69	30.19	46.00	-15.81	AVG	
11	*	10.0928	40.27	10.21	50.48	60.00	-9.52	QP	
12		10.0928	25.40	10.21	35.61	50.00	-14.39	AVG	

Test Voltage	AC 230V/50Hz	Phase	Neutral
Test Mode	HDMI1 3840*2160/60Hz 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



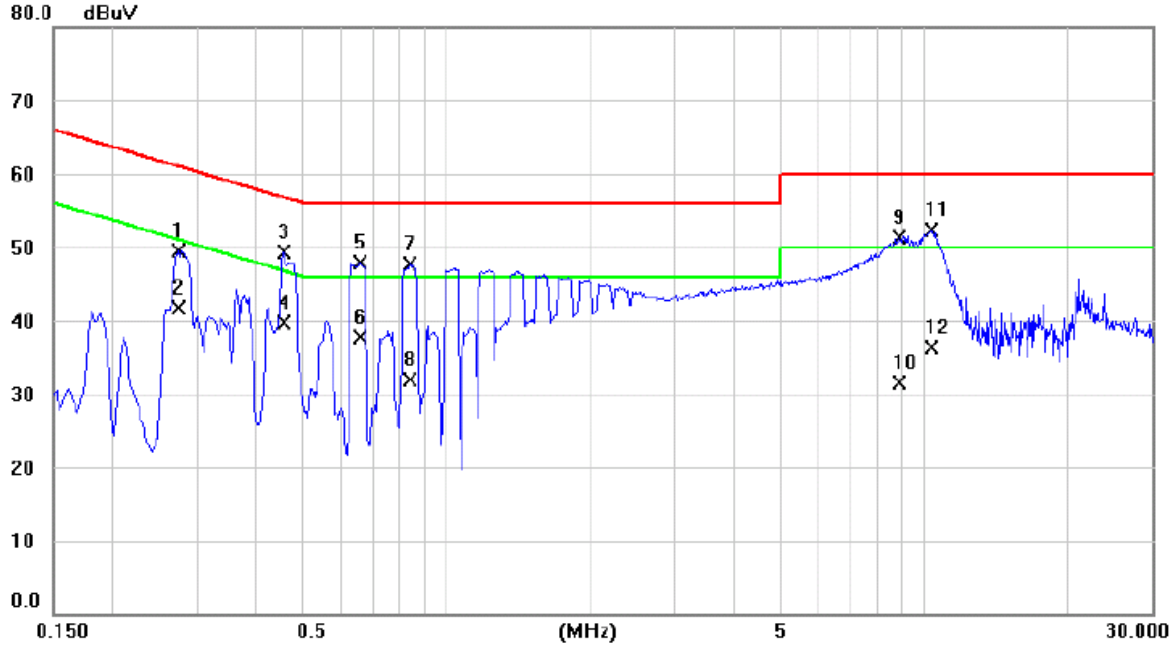
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2782	40.48	9.57	50.05	60.87	-10.82	QP	
2		0.2782	33.40	9.57	42.97	50.87	-7.90	AVG	
3	*	0.4537	39.78	9.60	49.38	56.81	-7.43	QP	
4		0.4537	29.50	9.60	39.10	46.81	-7.71	AVG	
5		0.6337	38.17	9.61	47.78	56.00	-8.22	QP	
6		0.6337	26.50	9.61	36.11	46.00	-9.89	AVG	
7		0.8452	37.97	9.63	47.60	56.00	-8.40	QP	
8		0.8452	25.60	9.63	35.23	46.00	-10.77	AVG	
9		1.0342	37.53	9.66	47.19	56.00	-8.81	QP	
10		1.0342	24.20	9.66	33.86	46.00	-12.14	AVG	
11		10.2255	41.92	10.23	52.15	60.00	-7.85	QP	
12		10.2255	26.50	10.23	36.73	50.00	-13.27	AVG	

Test Voltage	AC 230V/50Hz	Phase	Line
Test Mode	HDMI1 2160P 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



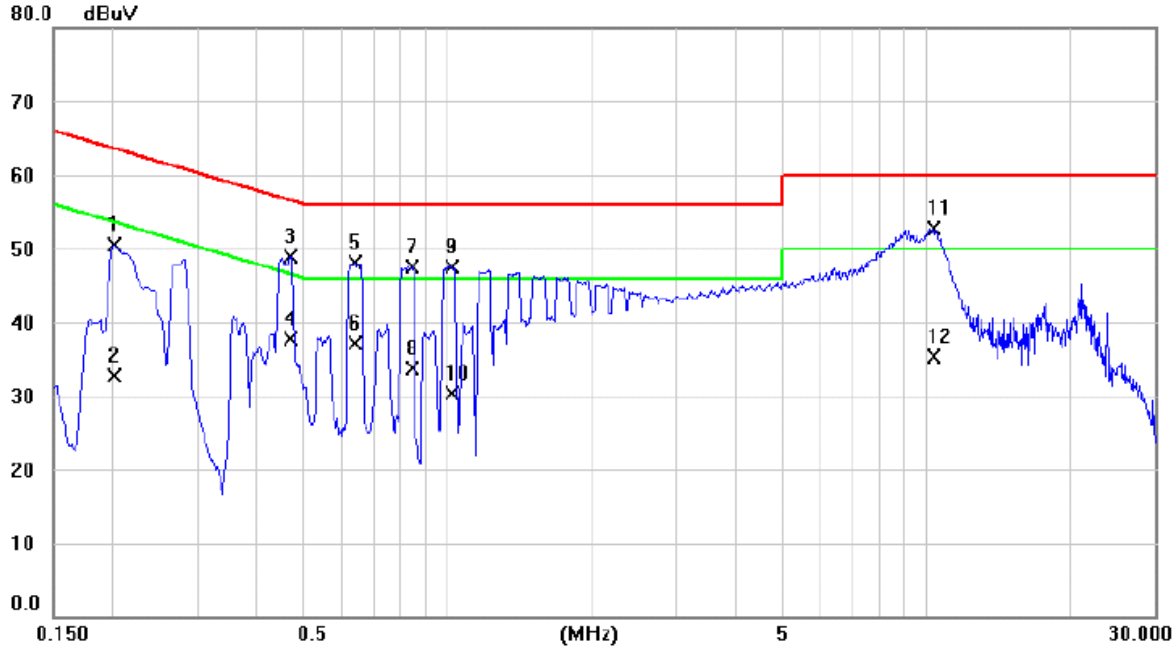
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2805	37.59	9.59	47.18	60.80	-13.62	QP	
2		0.2805	30.30	9.59	39.89	50.80	-10.91	AVG	
3		0.4537	36.71	9.61	46.32	56.81	-10.49	QP	
4		0.4537	26.40	9.61	36.01	46.81	-10.80	AVG	
5		0.6561	34.91	9.63	44.54	56.00	-11.46	QP	
6		0.6561	22.50	9.63	32.13	46.00	-13.87	AVG	
7		0.8407	34.30	9.65	43.95	56.00	-12.05	QP	
8		0.8407	19.40	9.65	29.05	46.00	-16.95	AVG	
9		1.2300	33.55	9.69	43.24	56.00	-12.76	QP	
10		1.2300	20.20	9.69	29.89	46.00	-16.11	AVG	
11	*	10.0860	40.24	10.21	50.45	60.00	-9.55	QP	
12		10.0860	25.20	10.21	35.41	50.00	-14.59	AVG	

Test Voltage	AC 230V/50Hz	Phase	Neutral
Test Mode	HDMI1 2160P 1.8m H(TYPE-C R/W)		
Sale Name	U32P2C		



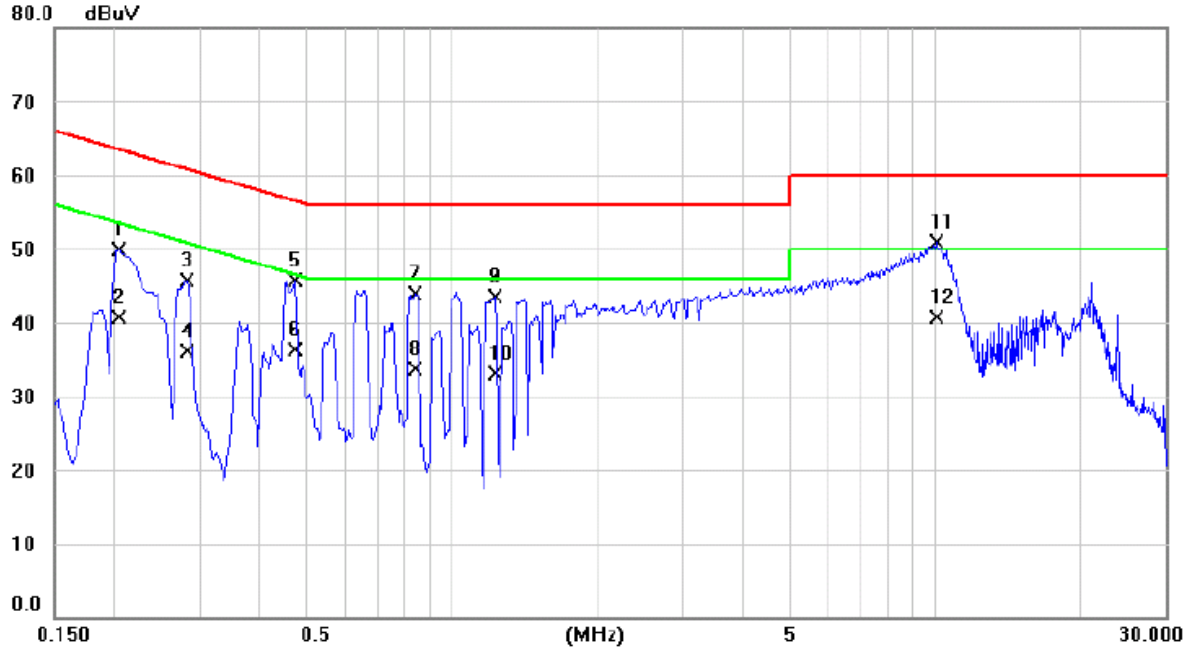
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2737	39.94	9.58	49.52	61.00	-11.48	QP	
2		0.2737	32.10	9.58	41.68	51.00	-9.32	AVG	
3		0.4560	39.78	9.60	49.38	56.77	-7.39	QP	
4	*	0.4560	30.10	9.60	39.70	46.77	-7.07	AVG	
5		0.6585	38.35	9.62	47.97	56.00	-8.03	QP	
6		0.6585	28.00	9.62	37.62	46.00	-8.38	AVG	
7		0.8385	37.98	9.63	47.61	56.00	-8.39	QP	
8		0.8385	22.30	9.63	31.93	46.00	-14.07	AVG	
9		8.8440	41.17	10.17	51.34	60.00	-8.66	QP	
10		8.8440	21.40	10.17	31.57	50.00	-18.43	AVG	
11		10.3268	42.11	10.24	52.35	60.00	-7.65	QP	
12		10.3268	26.00	10.24	36.24	50.00	-13.76	AVG	

Test Voltage	AC 110V/60Hz	Phase	Line
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2017	40.89	9.57	50.46	63.54	-13.08	QP	
2		0.2017	23.10	9.57	32.67	53.54	-20.87	AVG	
3		0.4695	39.34	9.60	48.94	56.52	-7.58	QP	
4		0.4695	28.20	9.60	37.80	46.52	-8.72	AVG	
5		0.6427	38.57	9.61	48.18	56.00	-7.82	QP	
6		0.6427	27.50	9.61	37.11	46.00	-8.89	AVG	
7		0.8452	37.87	9.63	47.50	56.00	-8.50	QP	
8		0.8452	24.00	9.63	33.63	46.00	-12.37	AVG	
9		1.0207	37.89	9.66	47.55	56.00	-8.45	QP	
10		1.0207	20.70	9.66	30.36	46.00	-15.64	AVG	
11	*	10.3313	42.53	10.24	52.77	60.00	-7.23	QP	
12		10.3313	25.10	10.24	35.34	50.00	-14.66	AVG	

Test Voltage	AC 110V/60Hz	Phase	Neutral
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2040	40.36	9.59	49.95	63.45	-13.50	QP	
2		0.2040	31.20	9.59	40.79	53.45	-12.66	AVG	
3		0.2827	36.07	9.59	45.66	60.74	-15.08	QP	
4		0.2827	26.50	9.59	36.09	50.74	-14.65	AVG	
5		0.4717	36.15	9.61	45.76	56.48	-10.72	QP	
6		0.4717	26.60	9.61	36.21	46.48	-10.27	AVG	
7		0.8407	34.21	9.65	43.86	56.00	-12.14	QP	
8		0.8407	24.10	9.65	33.75	46.00	-12.25	AVG	
9		1.2276	33.90	9.69	43.59	56.00	-12.41	QP	
10		1.2276	23.50	9.69	33.19	46.00	-12.81	AVG	
11	*	10.0657	40.66	10.21	50.87	60.00	-9.13	QP	
12		10.0657	30.50	10.21	40.71	50.00	-9.29	AVG	

4. EMC EMISSION TEST- EN 55032:2015+AC:2016

4.1 RADIATED EMISSIONS UP TO 1 GHZ

4.1.1 LIMITS

Class B equipment up to 1000MHz

Frequency Range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type/ bandwidth	
30 - 230	SAC	10	Quasi peak / 120 kH	30
230 - 1000				37

Notes:

(1) The limit for radiated test was performed according to as following: EN 55032

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

4.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Receiver	Keysight	N9038A	MY54450004	Jul. 25, 2021
2	MXE EMI Receiver	Agilent	N9038A	MY53220133	Feb. 28, 2021
3	Pre-Amplifier	EMC INSTRUMENT	EMC 9135	980284	Mar. 01, 2021
4	Pre-Amplifier	EMC INSTRUMENT	EMC 9135	980283	Mar. 01, 2021
5	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	946	Oct. 26, 2020
6	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	947	Dec. 02, 2020
7	Cable	emci	LMR-400(5m+11 m+15m)	N/A	Nov. 22, 2020
8	Cable	emci	LMR-400(5m+8m +8m)	N/A	Nov. 22, 2020
9	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A
10	Multi-Device Controller	ETS-Lindgren	2090	N/A	N/A
11	Attenuator	EMCI	EMCI-N-6-06	N0670	Dec. 02, 2020
12	Attenuator	EMCI	EMCI-N-6-06	N0671	Oct. 26, 2020

Remark: “N/A” denotes no model no., no serial no. or no calibration specified.
All calibration period of equipment list is one year.

4.1.3 TEST PROCEDURE

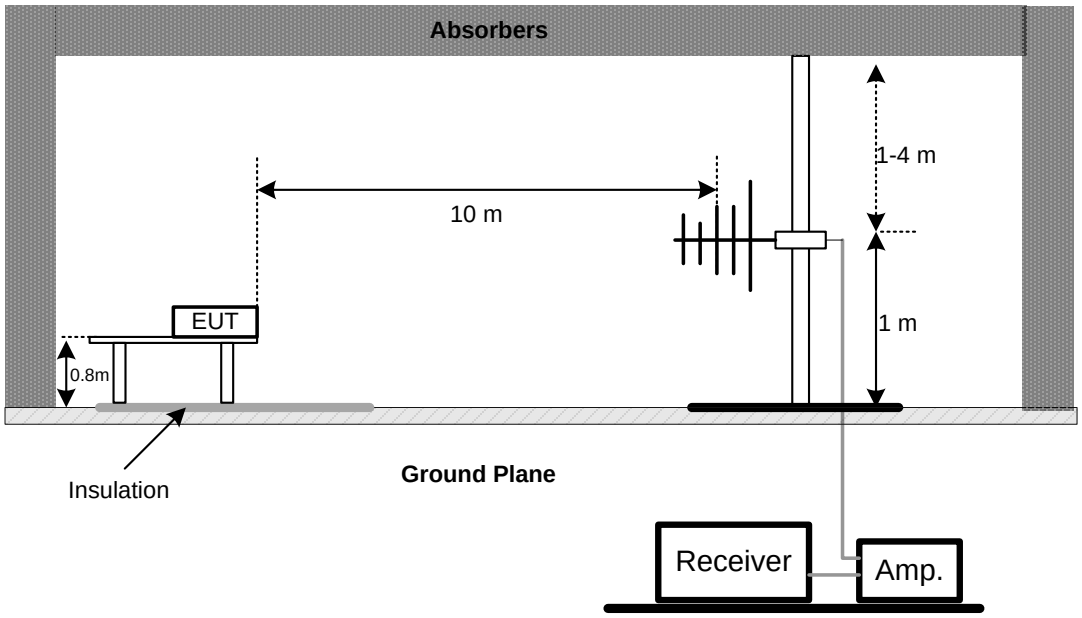
a. The measuring distance of 10 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz).
b. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
c. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
d. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
e. For the actual test configuration, please refer to the related Item - Block Diagram of system tested.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP

UP TO 1 GHZ



Note: The antenna can be moved between 1 to 4 meters above the ground**.**

4.1.6 MEASUREMENT DISTANCE

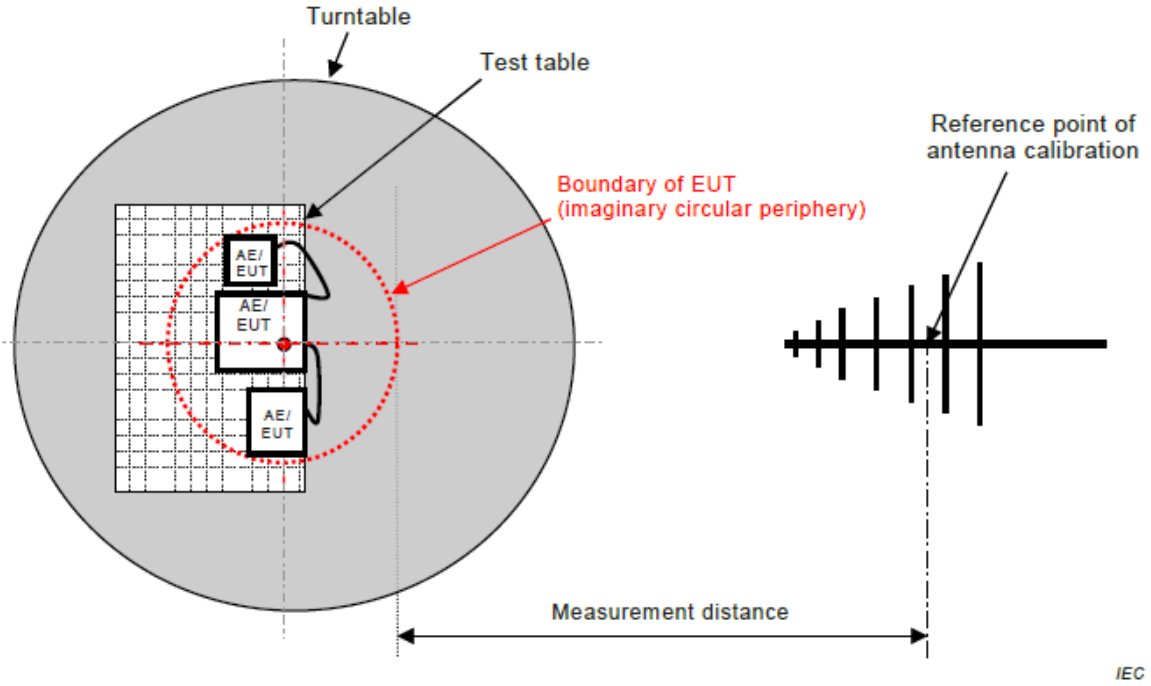


Figure C.1 – Measurement distance

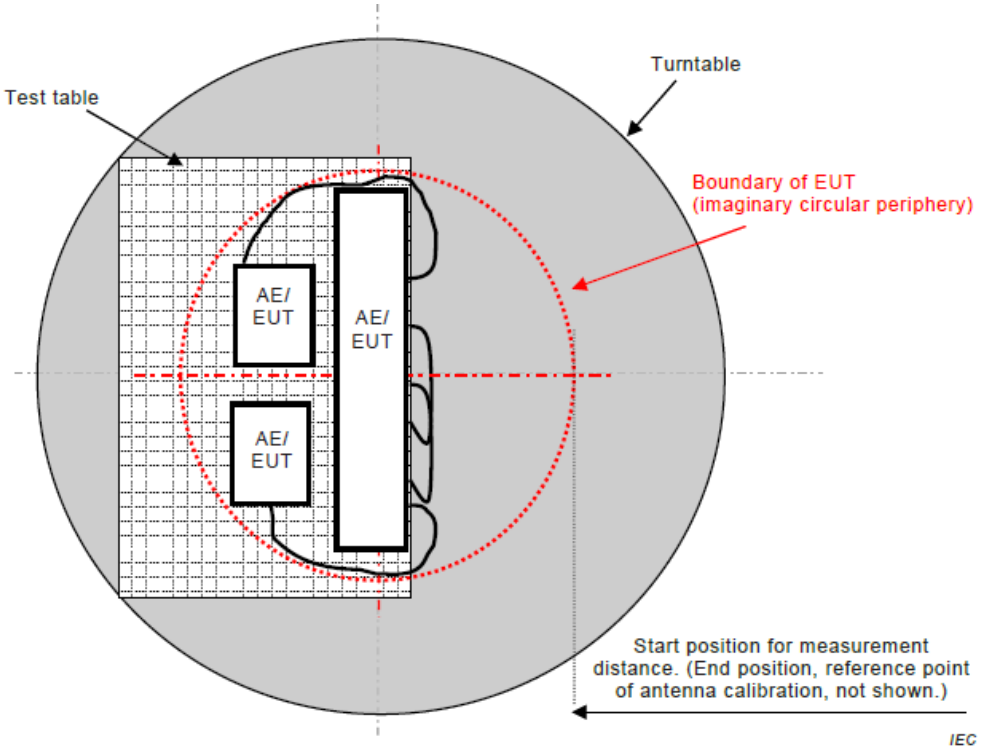
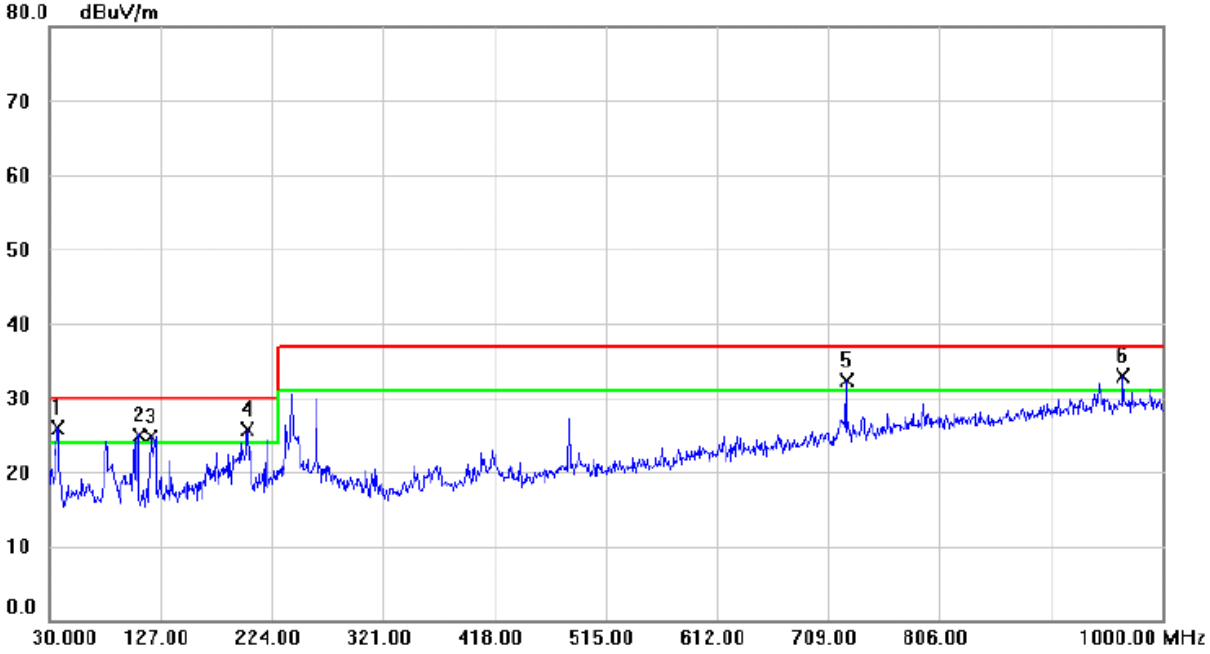


Figure C.2 – Boundary of EUT, Local AE and associated cabling

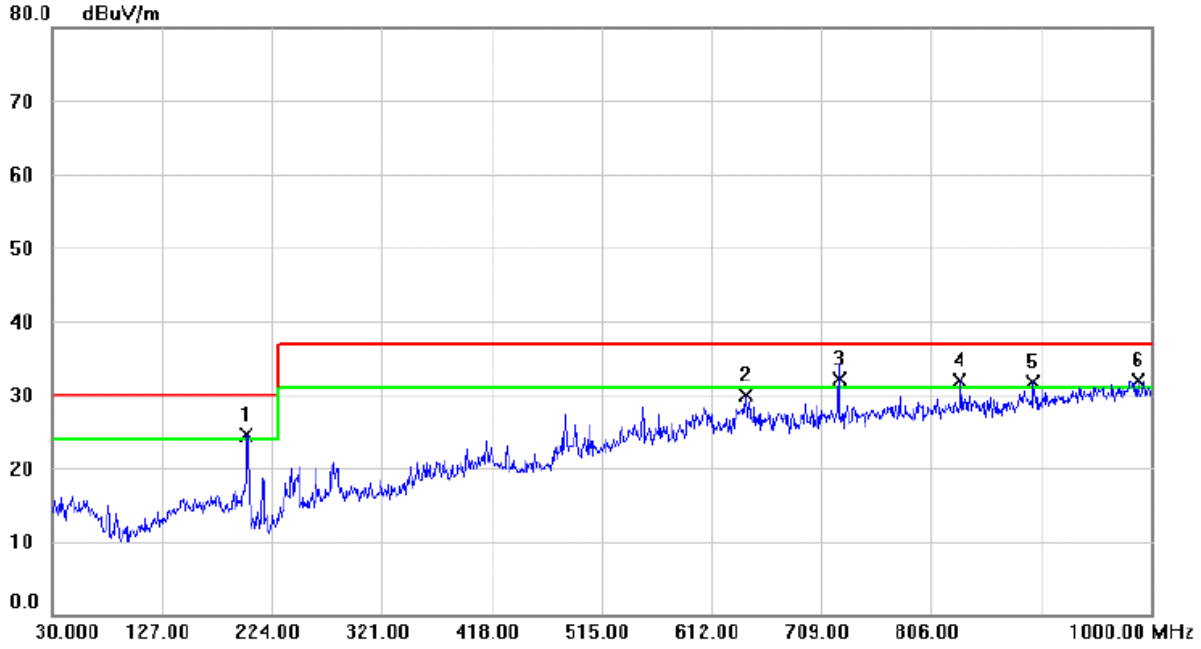
4.1.7 TEST RESULTS (UP TO 1 GHZ)

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



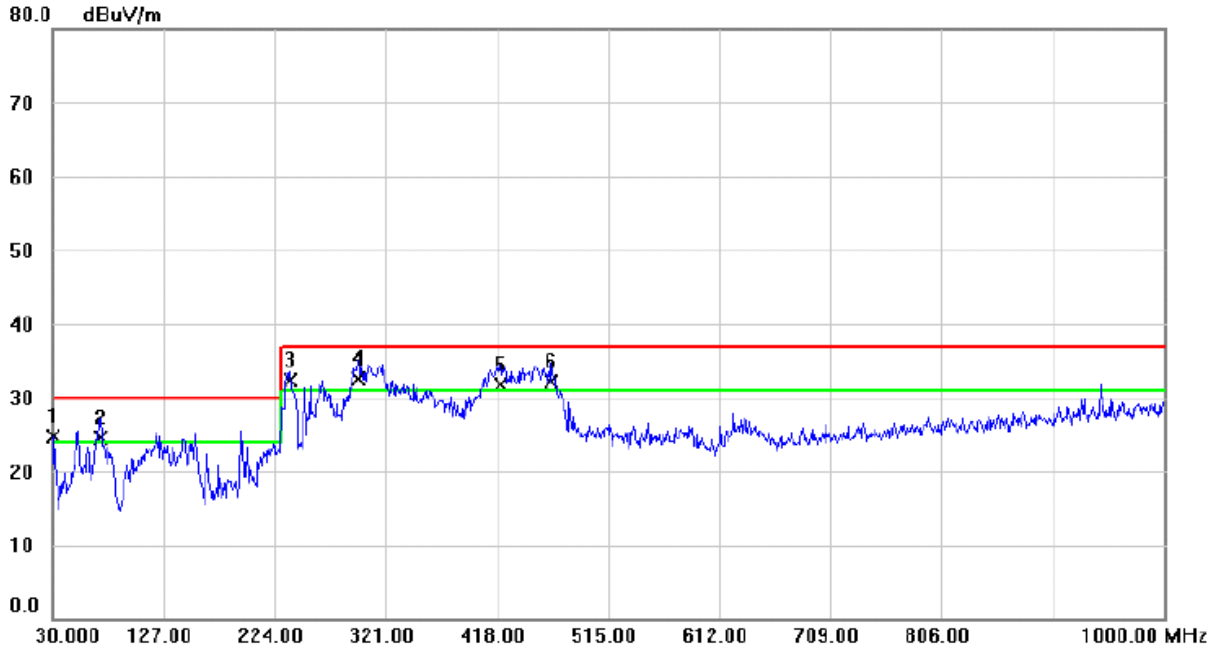
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	36.7900	44.00	-18.10	25.90	30.00	-4.10	QP	
2	!	107.6000	44.70	-19.70	25.00	30.00	-5.00	QP	
3	!	118.2700	43.51	-18.77	24.74	30.00	-5.26	QP	
4	!	202.6600	44.19	-18.52	25.67	30.00	-4.33	QP	
5	!	724.5200	38.05	-5.78	32.27	37.00	-4.73	QP	
6	!	966.0500	35.47	-2.61	32.86	37.00	-4.14	QP	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



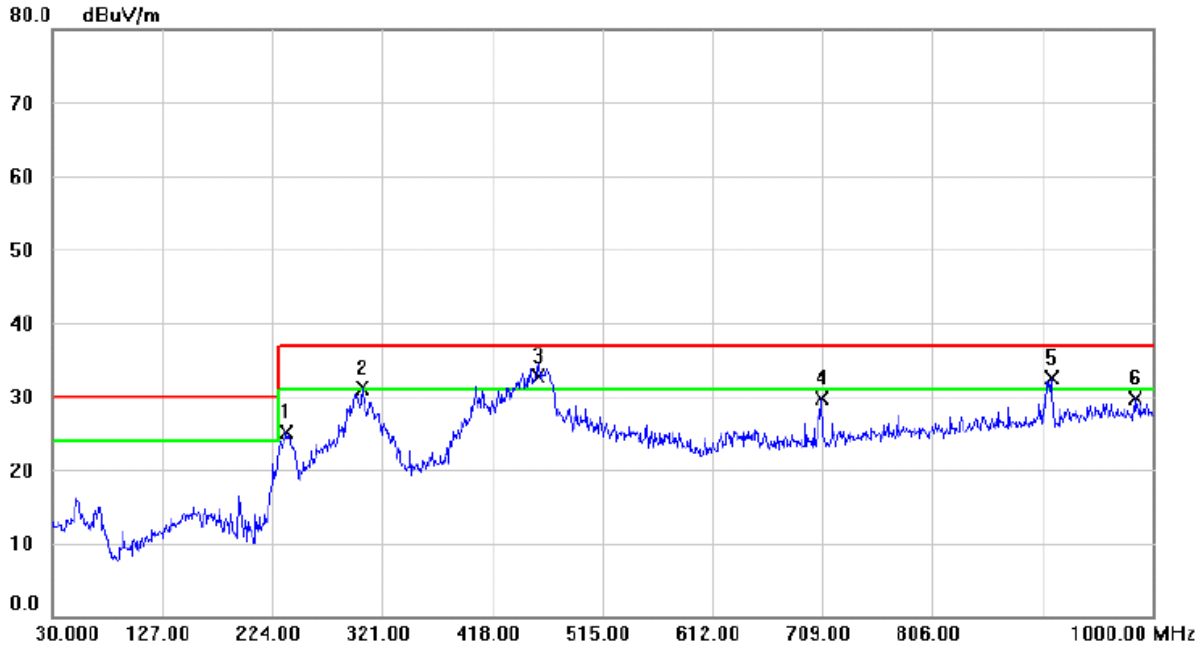
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	201.6900	43.19	-18.65	24.54	30.00	-5.46	QP	
2		642.0700	36.28	-6.44	29.84	37.00	-7.16	QP	
3	*	724.5200	37.20	-5.07	32.13	37.00	-4.87	QP	
4	!	831.2200	35.56	-3.75	31.81	37.00	-5.19	QP	
5	!	896.2100	34.62	-3.00	31.62	37.00	-5.38	QP	
6	!	988.3600	33.06	-1.07	31.99	37.00	-5.01	QP	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	30.9700	43.53	-18.92	24.61	30.00	-5.39	QP	
2	!	71.7100	43.50	-18.99	24.51	30.00	-5.49	QP	
3	!	237.5800	49.20	-16.86	32.34	37.00	-4.66	QP	
4	*	296.7500	47.20	-14.60	32.60	37.00	-4.40	QP	
5	!	420.9100	43.26	-11.48	31.78	37.00	-5.22	QP	
6	!	465.5300	42.30	-10.26	32.04	37.00	-4.96	QP	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		236.6100	42.19	-17.03	25.16	37.00	-11.84	QP	
2	!	303.5400	45.27	-14.22	31.05	37.00	-5.95	QP	
3	*	458.7400	43.00	-10.25	32.75	37.00	-4.25	QP	
4		708.0300	35.17	-5.48	29.69	37.00	-7.31	QP	
5	!	910.7600	35.27	-2.82	32.45	37.00	-4.55	QP	
6		985.4500	31.11	-1.47	29.64	37.00	-7.36	QP	

4.2 RADIATED EMISSIONS ABOVE 1 GHZ

4.2.1 LIMITS

Class B equipment above 1000MHz

Frequency Range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type/bandwidth	
1000 - 3000	FSOATS	3	Average / 1 MHz	50
3000 - 6000				54
1000 - 3000			Peak / 1 MHz	70
3000 - 6000				74

Notes:

(1) The limit for radiated test was performed according to as following: EN 55032

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

Required highest frequency for radiated measurement

Highest internal frequency (F_x) MHz	Highest measured frequency MHz
F_x ≦108	1000
108＜F_x ≦500	2000
500＜ F_x ≦1000	5000
F_x ＞1000	5^{th} up to a maximum 6 GHz,

Note for FM and TV broadcast receiver, F_x is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.

4.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Horn Antenna	EMCO	3115	9605-4803	May 12, 2021
2	Amplifier	Agilent	8449B	3008A02333	Mar. 01, 2021
3	MXE EMI Receiver	Agilent	N9038A	MY53220133	Feb. 28, 2021
4	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A
5	Multi-Device Controller	ETS-Lindgren	2090	N/A	N/A
6	Controller	MF	MF-7802	MF780208159	N/A
7	Cable	MIcable Inc.	B10-01-01-5M	18047123	Feb. 28, 2021
8	Cable	MIcable Inc.	B10-01-01-12M	18072743	Feb. 28, 2021
9	Cable	RegalWay	RWLPS50-7.9A-SMSM-1M	20200102 001	Feb. 28, 2021

Remark: “N/A” denotes no model no., no serial no. or no calibration specified.
All calibration period of equipment list is one year.

4.2.3 TEST PROCEDURE

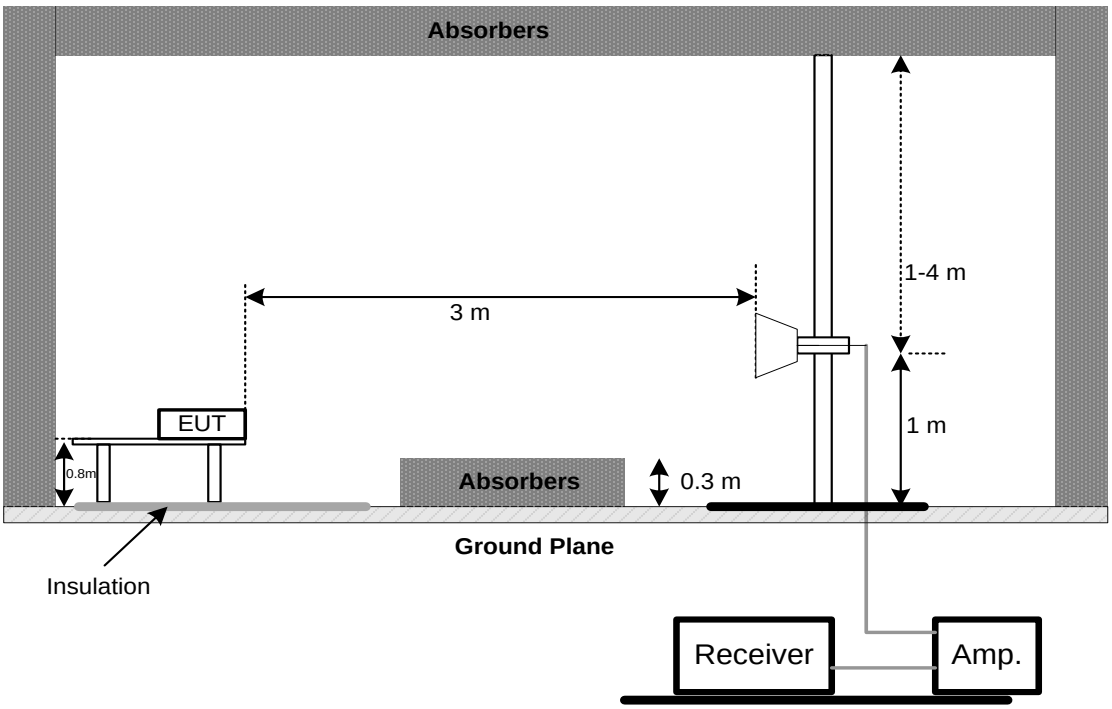
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
c. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
d. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
e. For the actual test configuration, please refer to the related Item - Block Diagram of system tested.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP

ABOVE 1 GHZ



4.2.6 MEASUREMENT DISTANCE

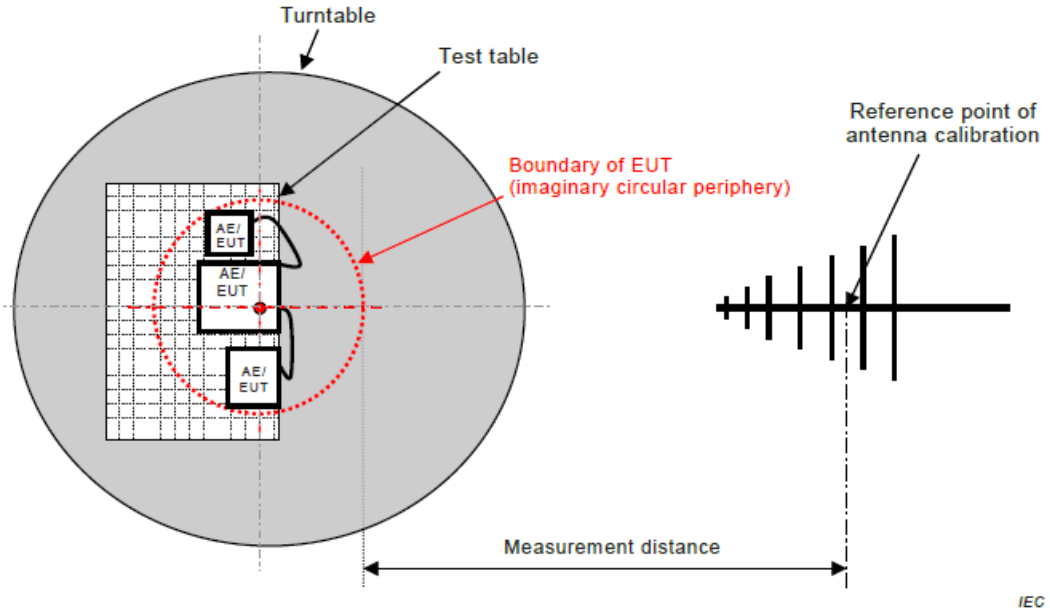


Figure C.1 – Measurement distance

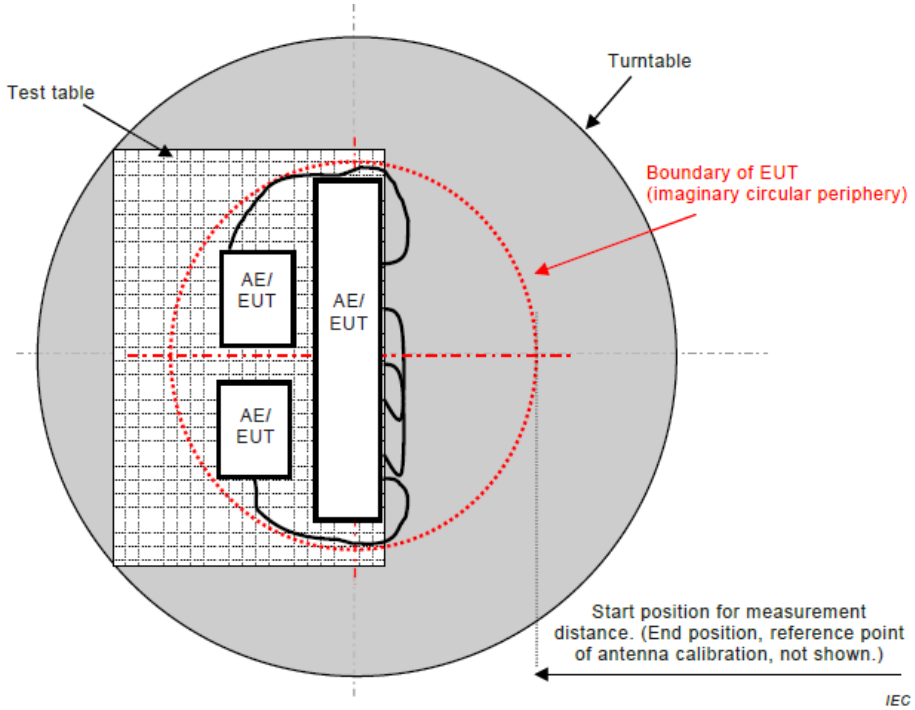
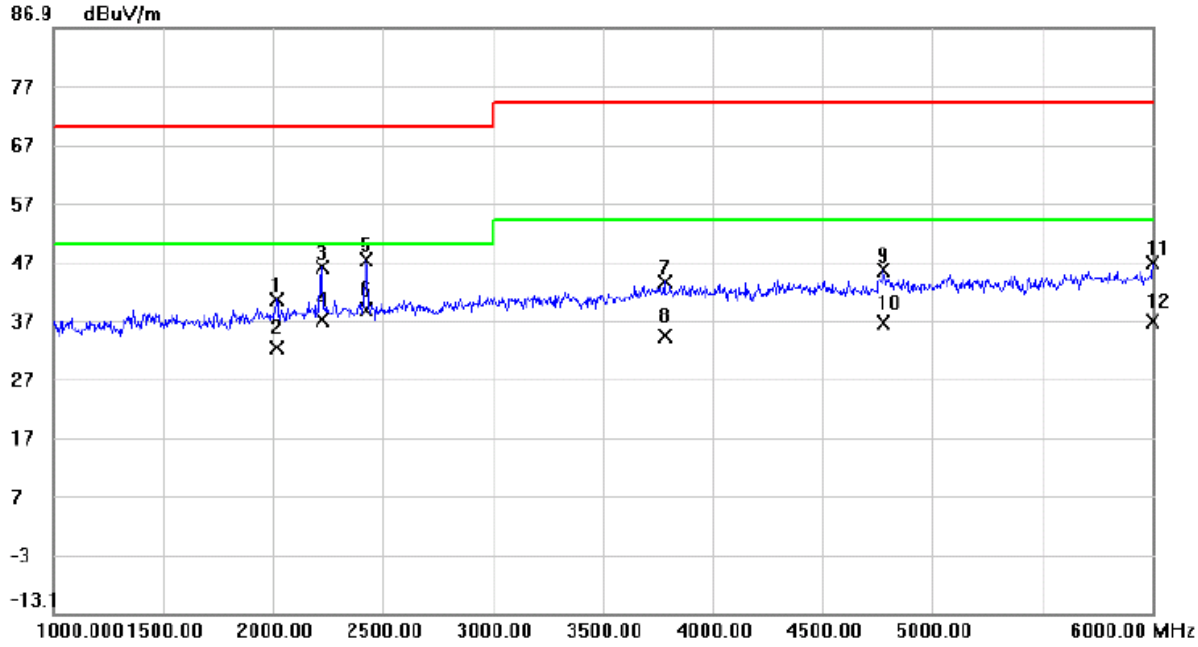


Figure C.2 – Boundary of EUT, Local AE and associated cabling

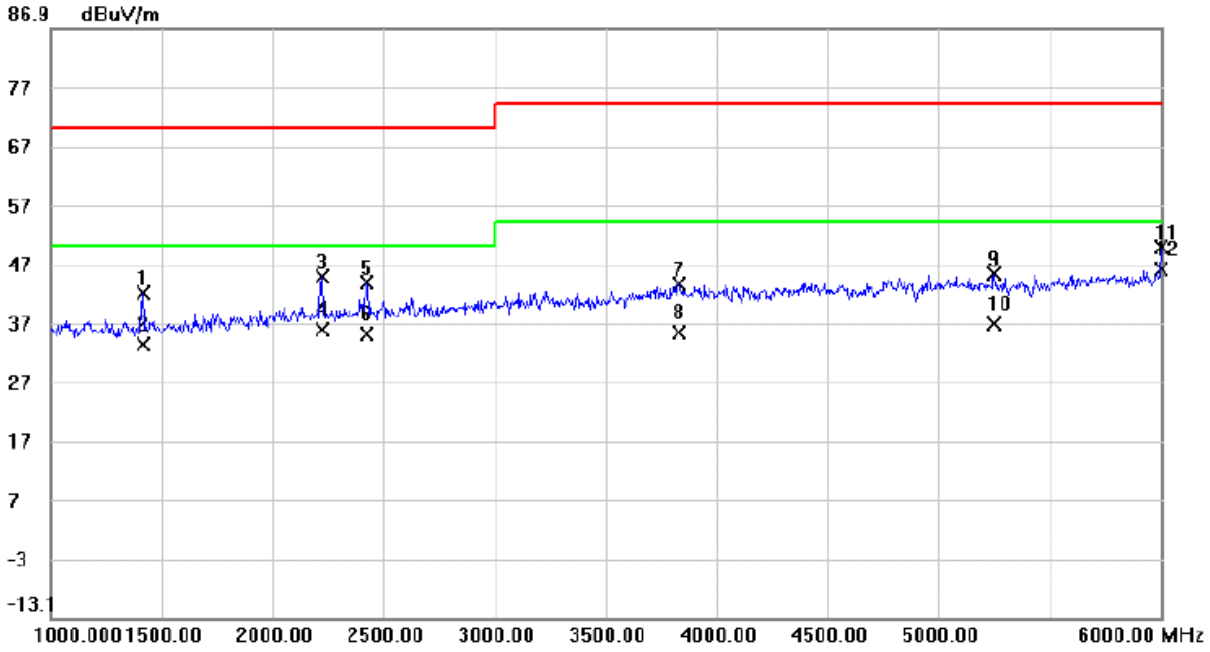
4.2.7 TEST RESULTS (ABOVE 1 GHZ)

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



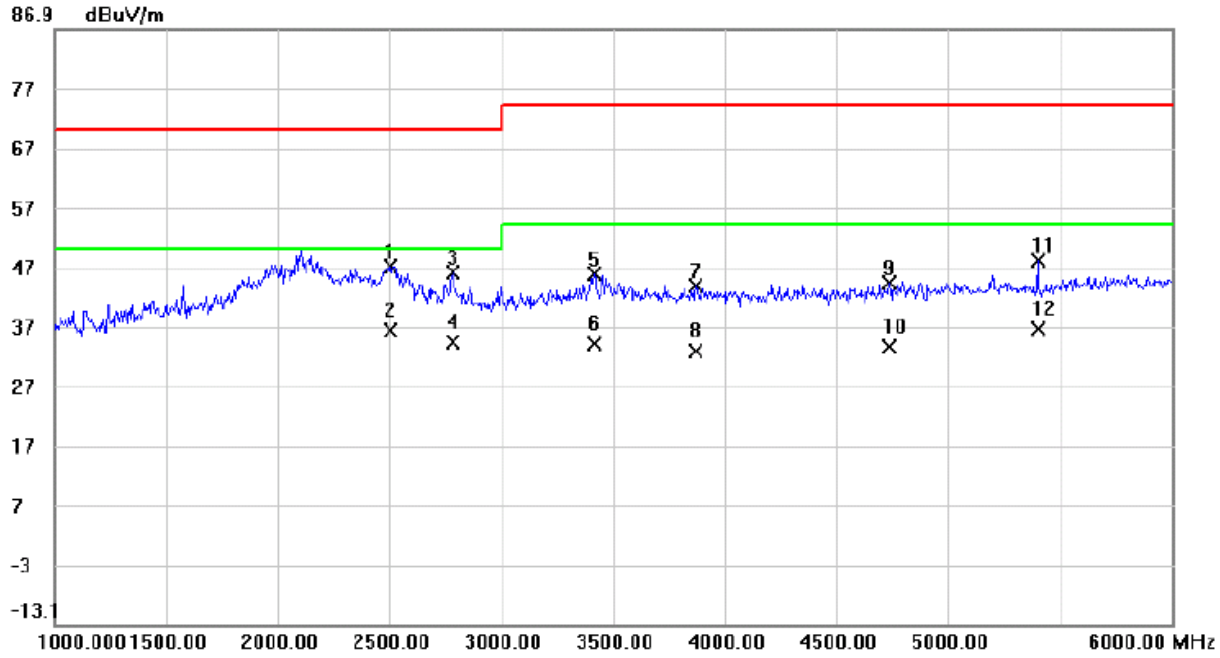
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2017.500	40.12	0.29	40.41	70.00	-29.59	peak	
2		2017.500	31.98	0.29	32.27	50.00	-17.73	AVG	
3		2222.500	45.06	1.03	46.09	70.00	-23.91	peak	
4		2222.500	35.88	1.03	36.91	50.00	-13.09	AVG	
5		2422.500	45.51	1.74	47.25	70.00	-22.75	peak	
6	*	2422.500	37.15	1.74	38.89	50.00	-11.11	AVG	
7		3780.000	36.29	7.23	43.52	74.00	-30.48	peak	
8		3780.000	27.09	7.23	34.32	54.00	-19.68	AVG	
9		4777.500	35.77	9.70	45.47	74.00	-28.53	peak	
10		4777.500	26.92	9.70	36.62	54.00	-17.38	AVG	
11		6000.000	33.67	13.16	46.83	74.00	-27.17	peak	
12		6000.000	23.59	13.16	36.75	54.00	-17.25	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



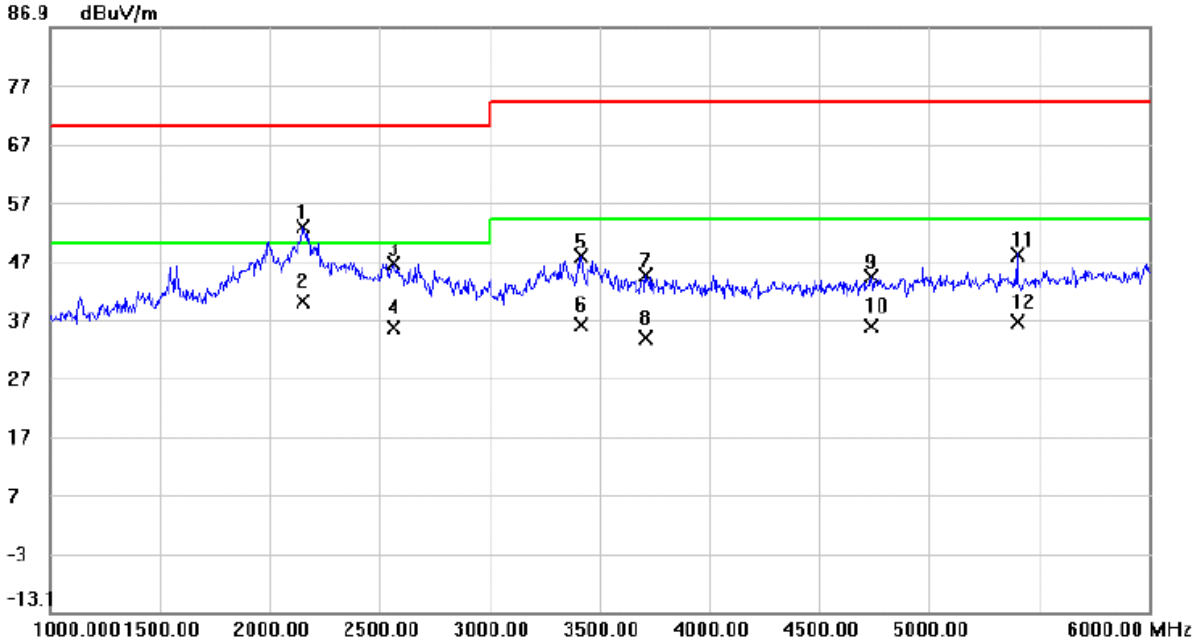
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1417.500	45.49	-3.34	42.15	70.00	-27.85	peak	
2		1417.500	36.59	-3.34	33.25	50.00	-16.75	AVG	
3		2225.000	43.79	1.04	44.83	70.00	-25.17	peak	
4		2225.000	34.77	1.04	35.81	50.00	-14.19	AVG	
5		2425.000	42.12	1.76	43.88	70.00	-26.12	peak	
6		2425.000	33.28	1.76	35.04	50.00	-14.96	AVG	
7		3832.500	35.97	7.47	43.44	74.00	-30.56	peak	
8		3832.500	27.86	7.47	35.33	54.00	-18.67	AVG	
9		5252.500	34.50	10.81	45.31	74.00	-28.69	peak	
10		5252.500	26.06	10.81	36.87	54.00	-17.13	AVG	
11		6000.000	36.59	13.16	49.75	74.00	-24.25	peak	
12	*	6000.000	32.84	13.16	46.00	54.00	-8.00	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Vertical
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2500.000	45.11	2.02	47.13	70.00	-22.87	peak	
2	*	2500.000	34.23	2.02	36.25	50.00	-13.75	AVG	
3		2782.500	42.61	3.35	45.96	70.00	-24.04	peak	
4		2782.500	30.90	3.35	34.25	50.00	-15.75	AVG	
5		3417.500	40.22	5.65	45.87	74.00	-28.13	peak	
6		3417.500	28.50	5.65	34.15	54.00	-19.85	AVG	
7		3872.500	36.07	7.66	43.73	74.00	-30.27	peak	
8		3872.500	25.03	7.66	32.69	54.00	-21.31	AVG	
9		4737.500	34.74	9.61	44.35	74.00	-29.65	peak	
10		4737.500	24.02	9.61	33.63	54.00	-20.37	AVG	
11		5400.000	36.78	11.18	47.96	74.00	-26.04	peak	
12		5400.000	25.40	11.18	36.58	54.00	-17.42	AVG	

Test Voltage	AC 230V/50Hz	Polarization	Horizontal
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2152.500	52.05	0.78	52.83	70.00	-17.17	peak	
2	*	2152.500	39.25	0.78	40.03	50.00	-9.97	AVG	
3		2562.500	44.17	2.32	46.49	70.00	-23.51	peak	
4		2562.500	33.30	2.32	35.62	50.00	-14.38	AVG	
5		3415.000	42.26	5.64	47.90	74.00	-26.10	peak	
6		3415.000	30.32	5.64	35.96	54.00	-18.04	AVG	
7		3712.500	37.75	6.90	44.65	74.00	-29.35	peak	
8		3712.500	26.78	6.90	33.68	54.00	-20.32	AVG	
9		4737.500	34.76	9.61	44.37	74.00	-29.63	peak	
10		4737.500	26.06	9.61	35.67	54.00	-18.33	AVG	
11		5400.000	36.97	11.18	48.15	74.00	-25.85	peak	
12		5400.000	25.34	11.18	36.52	54.00	-17.48	AVG	

4.3 CONDUCTED EMISSION MEASUREMENT AT AC MAINS POWER PORTS

4.3.1 LIMITS

Requirements for conducted emissions from AC mains power ports of Class B equipment

Frequency Range MHz	Coupling Device	Detector Type / bandwidth	Class B Limits (dB(μV))
0.15 - 0.5	AMN	Quasi Peak / 9 kHz	66-56
0.5 - 5			56
5 - 30			60
0.15 - 0.5	AMN	Average / 9 kHz	56-46
0.5 - 5			46
5 - 30			50

NOTE:

(1) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
Margin Level = Measurement Value – Limit Value

4.3.2 MEASUREMENT INSTRUMENTS LIST

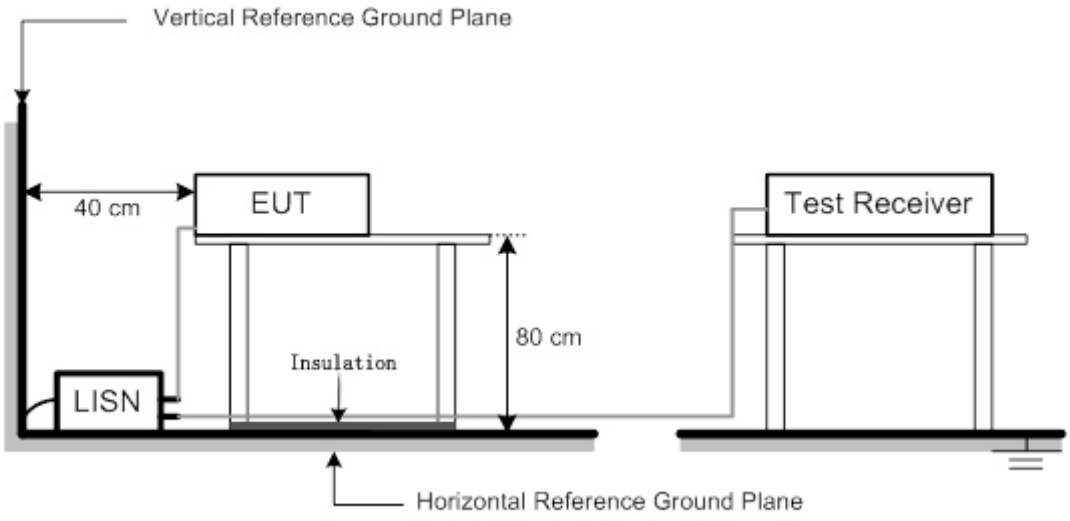
Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	50Ω Terminator	SHX	TF2-3G-A	8122901	Feb. 28, 2021
2	TWO-LINE V-NETWORK	R&S	ENV216	100526	Mar. 01, 2021
3	EMI Test Receiver	R&S	ESR3	101862	Jul. 25, 2021
4	Artificial-Mains Network	SCHWARZBECK	NSLK 8127	8127685	Mar. 01, 2021
5	TRANSIENT LIMITER	EM	EM-7600	772	Mar. 01, 2021
6	Cable	N/A	RG400	N/A(12m)	Mar. 10, 2021
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

4.3.3 TEST PROCEDURE

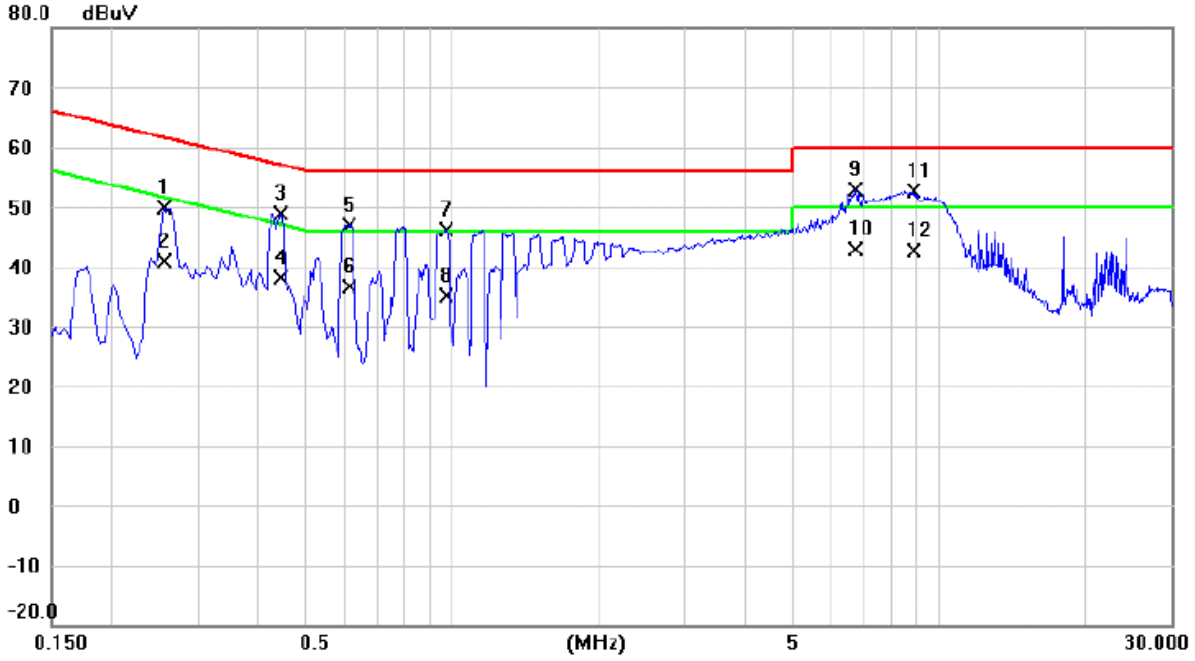
a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.3.4 TEST SETUP



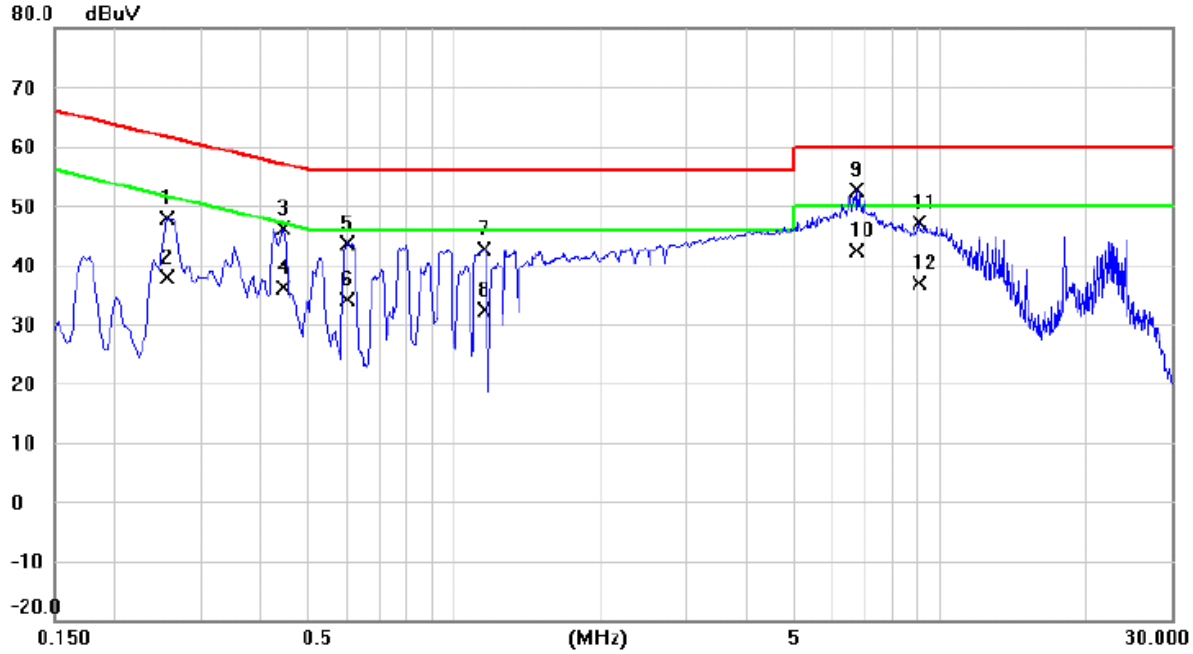
4.3.5 TEST RESULTS

Test Voltage	AC 230V/50Hz	Phase	Line
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



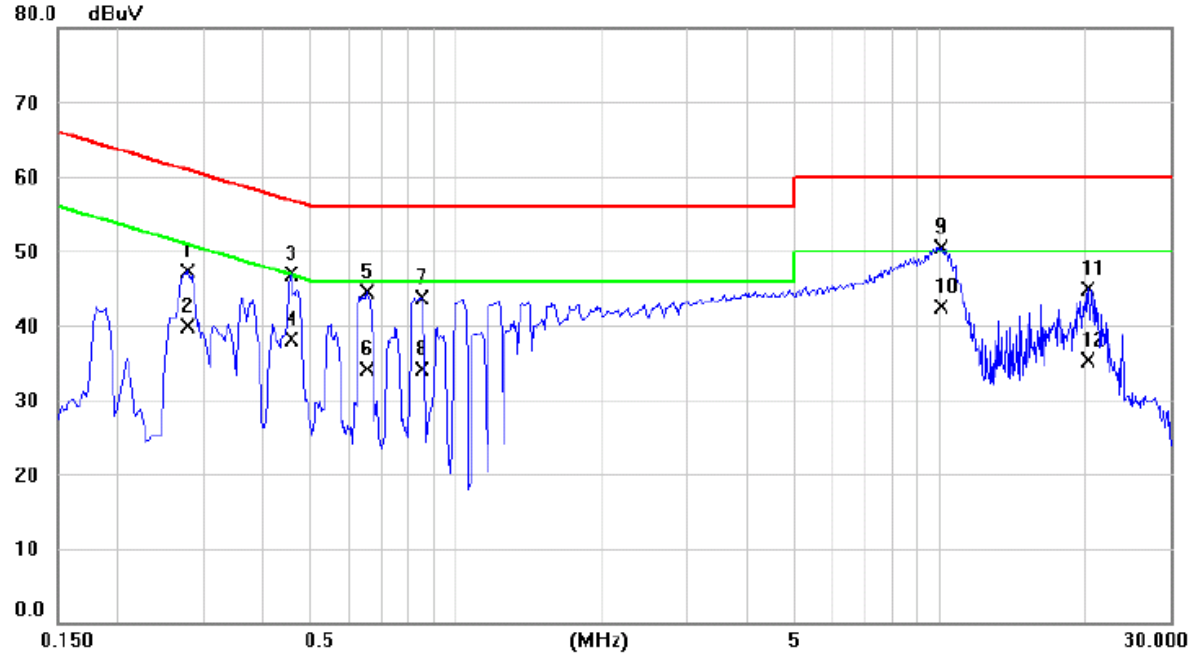
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2556	40.18	9.59	49.77	61.57	-11.80	QP	
2		0.2556	31.40	9.59	40.99	51.57	-10.58	AVG	
3		0.4424	39.36	9.61	48.97	57.02	-8.05	QP	
4		0.4424	28.40	9.61	38.01	47.02	-9.01	AVG	
5		0.6134	37.27	9.62	46.89	56.00	-9.11	QP	
6		0.6134	27.10	9.62	36.72	46.00	-9.28	AVG	
7		0.9712	36.39	9.67	46.06	56.00	-9.94	QP	
8		0.9712	25.40	9.67	35.07	46.00	-10.93	AVG	
9		6.7335	42.79	10.06	52.85	60.00	-7.15	QP	
10	*	6.7335	32.80	10.06	42.86	50.00	-7.14	AVG	
11		8.8552	42.49	10.16	52.65	60.00	-7.35	QP	
12		8.8552	32.50	10.16	42.66	50.00	-7.34	AVG	

Test Voltage	AC 230V/50Hz	Phase	Neutral
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	Q32P2C		



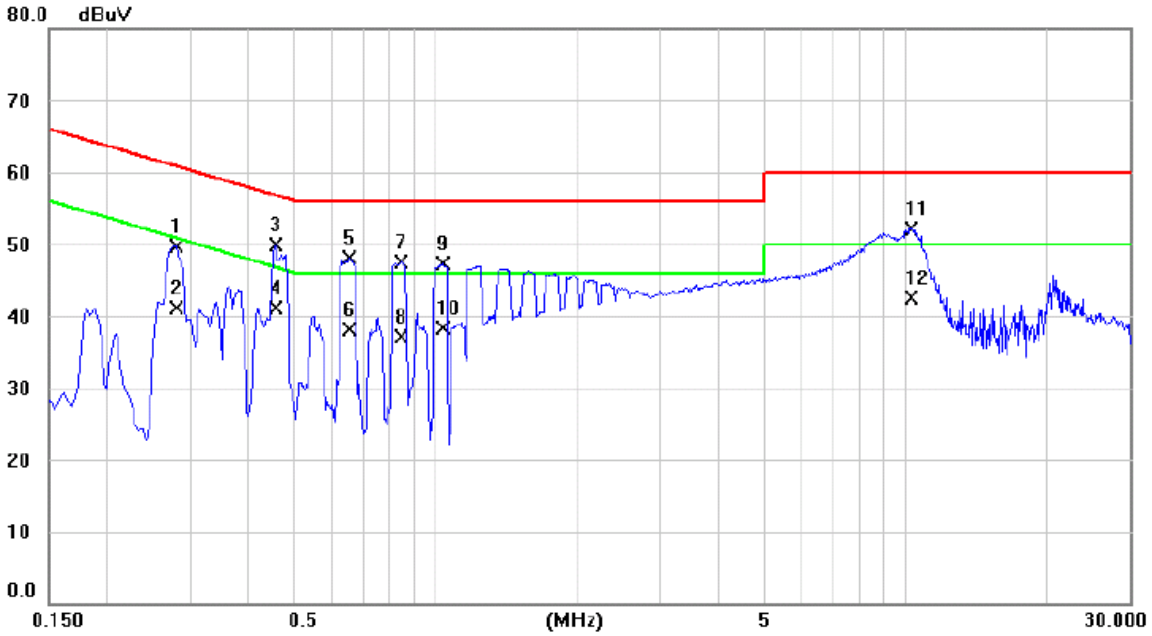
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2558	38.25	9.58	47.83	61.57	-13.74	QP	
2		0.2558	28.40	9.58	37.98	51.57	-13.59	AVG	
3		0.4425	36.59	9.60	46.19	57.01	-10.82	QP	
4		0.4425	26.60	9.60	36.20	47.01	-10.81	AVG	
5		0.6022	34.14	9.61	43.75	56.00	-12.25	QP	
6		0.6022	24.50	9.61	34.11	46.00	-11.89	AVG	
7		1.1512	32.99	9.67	42.66	56.00	-13.34	QP	
8		1.1512	22.80	9.67	32.47	46.00	-13.53	AVG	
9	*	6.7155	42.45	10.06	52.51	60.00	-7.49	QP	
10		6.7155	32.30	10.06	42.36	50.00	-7.64	AVG	
11		9.0555	36.98	10.17	47.15	60.00	-12.85	QP	
12		9.0555	26.70	10.17	36.87	50.00	-13.13	AVG	

Test Voltage	AC 230V/50Hz	Phase	Line
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2782	37.64	9.59	47.23	60.87	-13.64	QP	
2		0.2782	30.30	9.59	39.89	50.87	-10.98	AVG	
3		0.4560	37.25	9.61	46.86	56.77	-9.91	QP	
4		0.4560	28.50	9.61	38.11	46.77	-8.66	AVG	
5		0.6540	34.84	9.63	44.47	56.00	-11.53	QP	
6		0.6540	24.40	9.63	34.03	46.00	-11.97	AVG	
7		0.8475	34.05	9.65	43.70	56.00	-12.30	QP	
8		0.8475	24.50	9.65	34.15	46.00	-11.85	AVG	
9		10.0410	40.27	10.21	50.48	60.00	-9.52	QP	
10	*	10.0410	32.20	10.21	42.41	50.00	-7.59	AVG	
11		20.3213	34.14	10.81	44.95	60.00	-15.05	QP	
12		20.3213	24.40	10.81	35.21	50.00	-14.79	AVG	

Test Voltage	AC 230V/50Hz	Phase	Neutral
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H		
Sale Name	U32P2C		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2805	40.22	9.57	49.79	60.80	-11.01	QP	
2		0.2805	31.60	9.57	41.17	50.80	-9.63	AVG	
3		0.4560	40.26	9.60	49.86	56.77	-6.91	QP	
4	*	0.4560	31.50	9.60	41.10	46.77	-5.67	AVG	
5		0.6540	38.44	9.62	48.06	56.00	-7.94	QP	
6		0.6540	28.50	9.62	38.12	46.00	-7.88	AVG	
7		0.8452	37.78	9.63	47.41	56.00	-8.59	QP	
8		0.8452	27.40	9.63	37.03	46.00	-8.97	AVG	
9		1.0320	37.57	9.66	47.23	56.00	-8.77	QP	
10		1.0320	28.60	9.66	38.26	46.00	-7.74	AVG	
11		10.2840	41.91	10.24	52.15	60.00	-7.85	QP	
12		10.2840	32.20	10.24	42.44	50.00	-7.56	AVG	

5. HARMONIC AND FLICKER TEST

5.1 HARMONIC CURRENT EMISSIONS

5.1.1 LIMITS

The power consumption is less than 75W, there is no limit applied.

5.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Harmonics and Flicker Analyzer	California Instruments	PACS-1	72344	Jul. 25, 2021
2	3KVA AC Power source	California Instruments	3001ix	56309	Jul. 25, 2021
3	Measurement Software	California	CTS4.0 Version 4.23	N/A	N/A

Remark: “N/A” denotes no model no., no serial No. or no calibration specified.
All calibration period of equipment list is one year.

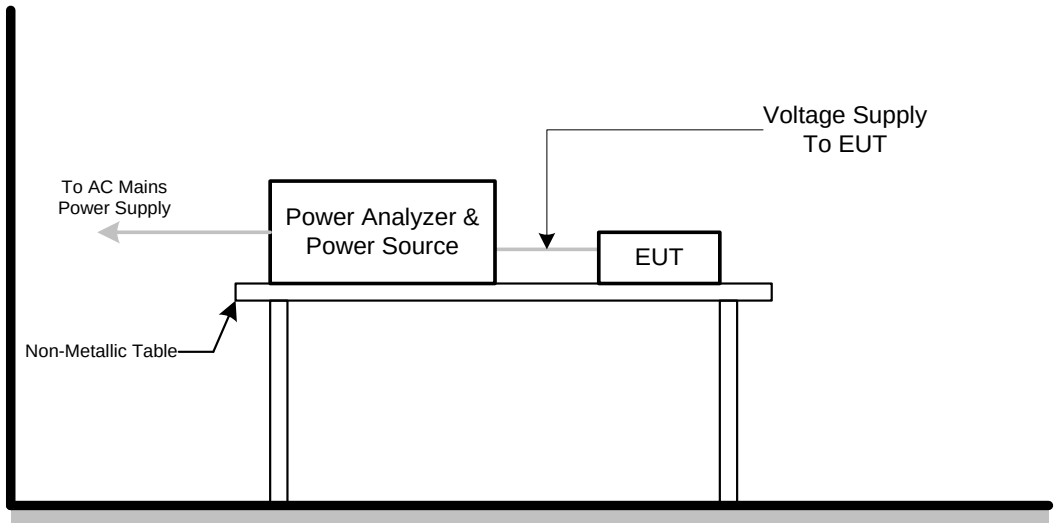
5.1.3 TEST PROCEDURE

a. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions.
b. The correspondent test program of test instrument to measure the current harmonics emanated from EUT is chosen. The measure time shall be not less than the time necessary for the EUT to be exercised.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

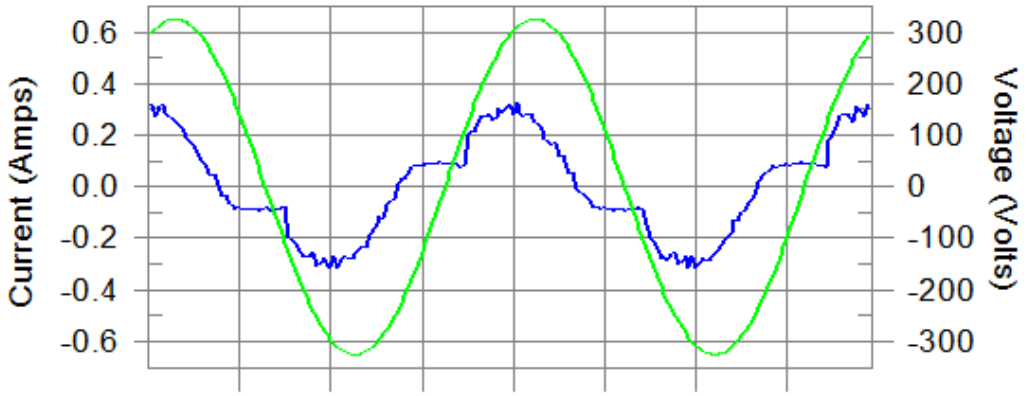
5.1.5 TEST SETUP



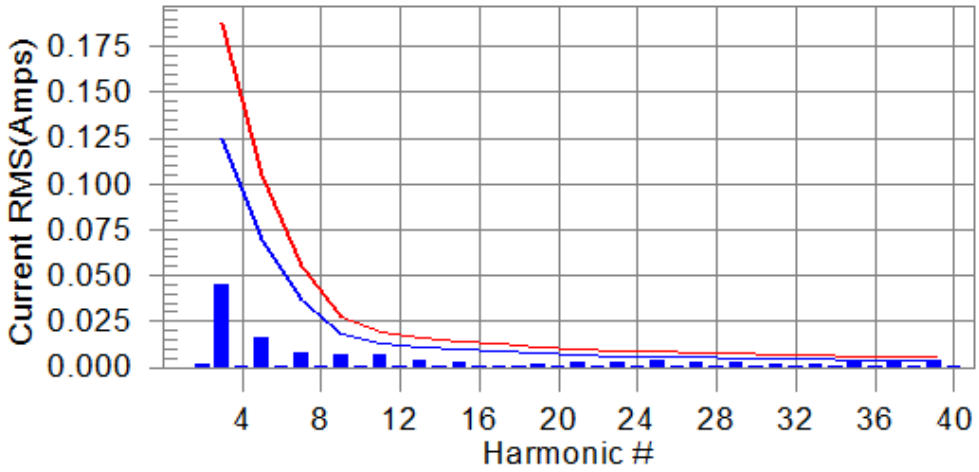
5.1.6 TEST RESULTS

Harmonic - Class D	
Test Voltage	AC 230V/50Hz
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H
Sale Name	Q32P2C

Current & voltage waveforms



Harmonics and Class D limit line **European Limits**



Test result: N/L Worst harmonics H0-0.0% of 150% limit, H0-0% of 100% limit

Current Test Result Summary (Run time)	
Test Voltage	AC 230V/50Hz
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H
Sale Name	Q32P2C

Highest parameter values during test:

V_RMS (Volts):	229.97	Frequency(Hz):	50.00
I_Peak (Amps):	0.354	I_RMS (Amps):	0.197
I_Fund (Amps):	0.189	Crest Factor:	1.840
Power (Watts):	36.8	Power Factor:	0.816

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	0.000	N/A	0.002	0.000	N/A	N/L
3	0.045	0.125	N/A	0.046	0.188	N/A	N/L
4	0.001	0.000	N/A	0.001	0.000	N/A	N/L
5	0.016	0.070	N/A	0.016	0.105	N/A	N/L
6	0.000	0.000	N/A	0.001	0.000	N/A	N/L
7	0.007	0.037	N/A	0.008	0.055	N/A	N/L
8	0.000	0.000	N/A	0.000	0.000	N/A	N/L
9	0.007	0.018	N/A	0.007	0.028	N/A	N/L
10	0.000	0.000	N/A	0.001	0.000	N/A	N/L
11	0.007	0.013	N/A	0.007	0.019	N/A	N/L
12	0.000	0.000	N/A	0.001	0.000	N/A	N/L
13	0.004	0.011	N/A	0.004	0.017	N/A	N/L
14	0.000	0.000	N/A	0.000	0.000	N/A	N/L
15	0.003	0.010	N/A	0.003	0.014	N/A	N/L
16	0.000	0.000	N/A	0.000	0.000	N/A	N/L
17	0.001	0.008	N/A	0.001	0.013	N/A	N/L
18	0.000	0.000	N/A	0.000	0.000	N/A	N/L
19	0.001	0.007	N/A	0.001	0.011	N/A	N/L
20	0.000	0.000	N/A	0.000	0.000	N/A	N/L
21	0.003	0.007	N/A	0.003	0.010	N/A	N/L
22	0.000	0.000	N/A	0.000	0.000	N/A	N/L
23	0.002	0.006	N/A	0.003	0.009	N/A	N/L
24	0.000	0.000	N/A	0.000	0.000	N/A	N/L
25	0.004	0.006	N/A	0.004	0.008	N/A	N/L
26	0.000	0.000	N/A	0.000	0.000	N/A	N/L
27	0.003	0.005	N/A	0.003	0.008	N/A	N/L
28	0.000	0.000	N/A	0.001	0.000	N/A	N/L
29	0.002	0.005	N/A	0.002	0.007	N/A	N/L
30	0.000	0.000	N/A	0.000	0.000	N/A	N/L
31	0.002	0.005	N/A	0.003	0.007	N/A	N/L
32	0.000	0.000	N/A	0.001	0.000	N/A	N/L
33	0.002	0.004	N/A	0.002	0.006	N/A	N/L
34	0.000	0.000	N/A	0.000	0.000	N/A	N/L
35	0.003	0.004	N/A	0.003	0.006	N/A	N/L
36	0.000	0.000	N/A	0.000	0.000	N/A	N/L
37	0.004	0.004	N/A	0.005	0.006	N/A	N/L
38	0.000	0.000	N/A	0.000	0.000	N/A	N/L
39	0.003	0.004	N/A	0.004	0.005	N/A	N/L
40	0.000	0.000	N/A	0.001	0.000	N/A	N/L

Voltage Source Verification Data (Run time)	
Test Voltage	AC 230V/50Hz
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H
Sale Name	Q32P2C

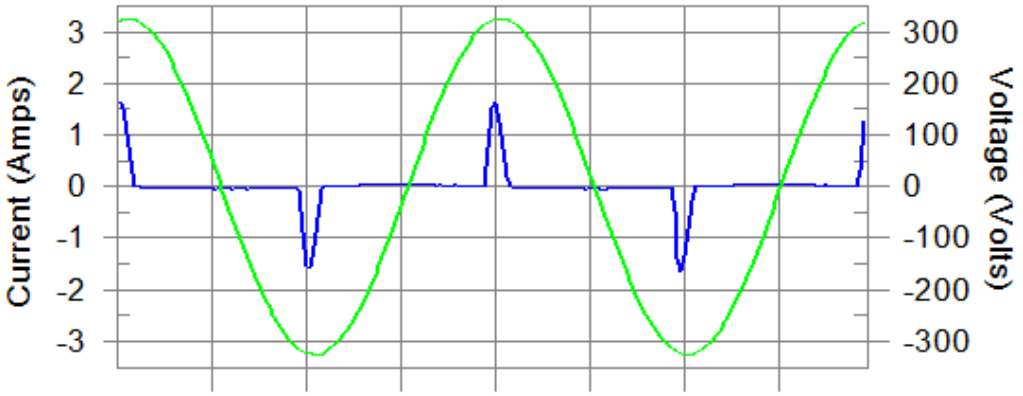
Highest parameter values during test:

Voltage (Vrms):	229.97	Frequency(Hz):	50.00
I_Peak (Amps):	0.354	I_RMS (Amps):	0.197
I_Fund (Amps):	0.189	Crest Factor:	1.840
Power (Watts):	36.8	Power Factor:	0.816

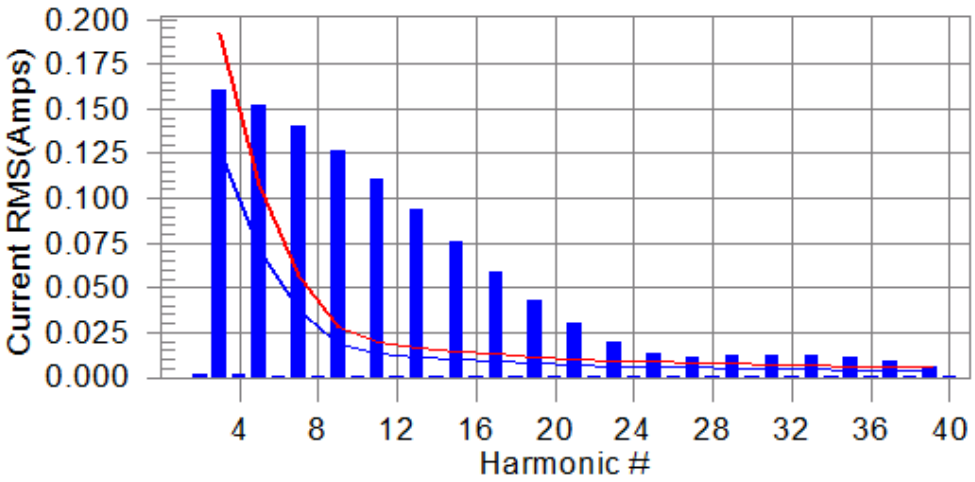
Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.123	0.460	26.85	OK
3	0.516	2.069	24.93	OK
4	0.064	0.460	13.99	OK
5	0.056	0.920	6.13	OK
6	0.033	0.460	7.22	OK
7	0.033	0.690	4.82	OK
8	0.022	0.460	4.80	OK
9	0.043	0.460	9.41	OK
10	0.024	0.460	5.12	OK
11	0.015	0.230	6.71	OK
12	0.017	0.230	7.58	OK
13	0.017	0.230	7.36	OK
14	0.016	0.230	7.02	OK
15	0.015	0.230	6.46	OK
16	0.018	0.230	8.01	OK
17	0.011	0.230	4.60	OK
18	0.016	0.230	6.75	OK
19	0.008	0.230	3.34	OK
20	0.019	0.230	8.25	OK
21	0.011	0.230	4.57	OK
22	0.014	0.230	6.06	OK
23	0.008	0.230	3.65	OK
24	0.005	0.230	2.17	OK
25	0.007	0.230	2.86	OK
26	0.008	0.230	3.44	OK
27	0.005	0.230	2.14	OK
28	0.007	0.230	3.14	OK
29	0.006	0.230	2.48	OK
30	0.006	0.230	2.46	OK
31	0.005	0.230	1.99	OK
32	0.005	0.230	2.04	OK
33	0.004	0.230	1.80	OK
34	0.003	0.230	1.46	OK
35	0.007	0.230	2.97	OK
36	0.003	0.230	1.26	OK
37	0.010	0.230	4.26	OK
38	0.003	0.230	1.14	OK
39	0.005	0.230	2.01	OK
40	0.007	0.230	3.14	OK

Harmonic - Class D	
Test Voltage	AC 230V/50Hz
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H
Sale Name	U32P2C

Current & voltage waveforms



Harmonics and Class D limit line **European Limits**



Test result: N/L Worst harmonics H0-0.0% of 150% limit, H0-0% of 100% limit

Current Test Result Summary (Run time)	
Test Voltage	AC 230V/50Hz
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H
Sale Name	U32P2C

Highest parameter values during test:

V_RMS (Volts):	229.96	Frequency(Hz):	50.00
I_Peak (Amps):	1.669	I_RMS (Amps):	0.385
I_Fund (Amps):	0.170	Crest Factor:	4.337
Power (Watts):	37.7	Power Factor:	0.427

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.002	0.000	N/A	0.002	0.000	N/A	N/L
3	0.160	0.128	N/A	0.162	0.192	N/A	N/L
4	0.001	0.000	N/A	0.002	0.000	N/A	N/L
5	0.152	0.072	N/A	0.153	0.107	N/A	N/L
6	0.001	0.000	N/A	0.002	0.000	N/A	N/L
7	0.141	0.038	N/A	0.141	0.057	N/A	N/L
8	0.001	0.000	N/A	0.001	0.000	N/A	N/L
9	0.127	0.019	N/A	0.127	0.028	N/A	N/L
10	0.001	0.000	N/A	0.001	0.000	N/A	N/L
11	0.111	0.013	N/A	0.111	0.020	N/A	N/L
12	0.001	0.000	N/A	0.001	0.000	N/A	N/L
13	0.093	0.011	N/A	0.093	0.017	N/A	N/L
14	0.000	0.000	N/A	0.001	0.000	N/A	N/L
15	0.076	0.010	N/A	0.076	0.015	N/A	N/L
16	0.001	0.000	N/A	0.001	0.000	N/A	N/L
17	0.059	0.009	N/A	0.059	0.013	N/A	N/L
18	0.001	0.000	N/A	0.001	0.000	N/A	N/L
19	0.043	0.008	N/A	0.043	0.011	N/A	N/L
20	0.001	0.000	N/A	0.001	0.000	N/A	N/L
21	0.030	0.007	N/A	0.030	0.010	N/A	N/L
22	0.001	0.000	N/A	0.001	0.000	N/A	N/L
23	0.020	0.006	N/A	0.020	0.009	N/A	N/L
24	0.001	0.000	N/A	0.001	0.000	N/A	N/L
25	0.013	0.006	N/A	0.013	0.009	N/A	N/L
26	0.000	0.000	N/A	0.001	0.000	N/A	N/L
27	0.011	0.005	N/A	0.012	0.008	N/A	N/L
28	0.000	0.000	N/A	0.001	0.000	N/A	N/L
29	0.012	0.005	N/A	0.012	0.008	N/A	N/L
30	0.000	0.000	N/A	0.000	0.000	N/A	N/L
31	0.013	0.005	N/A	0.013	0.007	N/A	N/L
32	0.000	0.000	N/A	0.000	0.000	N/A	N/L
33	0.012	0.004	N/A	0.012	0.007	N/A	N/L
34	0.000	0.000	N/A	0.000	0.000	N/A	N/L
35	0.011	0.004	N/A	0.011	0.006	N/A	N/L
36	0.000	0.000	N/A	0.000	0.000	N/A	N/L
37	0.009	0.004	N/A	0.009	0.006	N/A	N/L
38	0.000	0.000	N/A	0.000	0.000	N/A	N/L
39	0.006	0.004	N/A	0.006	0.006	N/A	N/L
40	0.000	0.000	N/A	0.000	0.000	N/A	N/L

Voltage Source Verification Data (Run time)	
Test Voltage	AC 230V/50Hz
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H
Sale Name	U32P2C

Highest parameter values during test:

Voltage (Vrms):	229.96	Frequency(Hz):	50.00
I_Peak (Amps):	1.669	I_RMS (Amps):	0.385
I_Fund (Amps):	0.170	Crest Factor:	4.337
Power (Watts):	37.7	Power Factor:	0.427

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.130	0.460	28.28	OK
3	0.534	2.069	25.79	OK
4	0.064	0.460	13.98	OK
5	0.030	0.920	3.24	OK
6	0.033	0.460	7.09	OK
7	0.081	0.690	11.74	OK
8	0.019	0.460	4.17	OK
9	0.053	0.460	11.48	OK
10	0.024	0.460	5.13	OK
11	0.074	0.230	32.29	OK
12	0.019	0.230	8.09	OK
13	0.054	0.230	23.36	OK
14	0.017	0.230	7.39	OK
15	0.063	0.230	27.39	OK
16	0.018	0.230	7.89	OK
17	0.045	0.230	19.74	OK
18	0.018	0.230	7.77	OK
19	0.045	0.230	19.48	OK
20	0.020	0.230	8.57	OK
21	0.025	0.230	10.86	OK
22	0.014	0.230	6.18	OK
23	0.025	0.230	10.95	OK
24	0.006	0.230	2.73	OK
25	0.016	0.230	6.83	OK
26	0.008	0.230	3.38	OK
27	0.015	0.230	6.39	OK
28	0.008	0.230	3.31	OK
29	0.020	0.230	8.83	OK
30	0.005	0.230	2.29	OK
31	0.017	0.230	7.22	OK
32	0.006	0.230	2.47	OK
33	0.023	0.230	10.10	OK
34	0.003	0.230	1.47	OK
35	0.017	0.230	7.28	OK
36	0.003	0.230	1.40	OK
37	0.015	0.230	6.64	OK
38	0.003	0.230	1.52	OK
39	0.010	0.230	4.15	OK
40	0.006	0.230	2.51	OK

5.2 VOLTAGE CHANGES, VOLTAGE FLUCTUATIONS AND FLICKER TEST

5.2.1 LIMITS

Tests	Limits EN 61000-3-3	Descriptions
Pst	≤ 1.0, Tp= 10 min.	Short Term Flicker Indicator
Plt	≤ 0.65, Tp=2 hr.	Long Term Flicker Indicator
dc	≤ 3.3%	Relative Steady-State V-Chang
dmax	≤ 4%	Maximum Relative V-change
d (t)	≤ 500 ms	Relative V-change characteristic

5.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Harmonics and Flicker Analyzer	California Instruments	PACS-1	72344	Jul. 25, 2021
2	3KVA AC Power source	California Instruments	3001ix	56309	Jul. 25, 2021
3	Measurement Software	California	CTS4.0 Version 4.23	N/A	N/A

Remark: “N/A” denotes no model no., no serial No. or no calibration specified.
All calibration period of equipment list is one year.

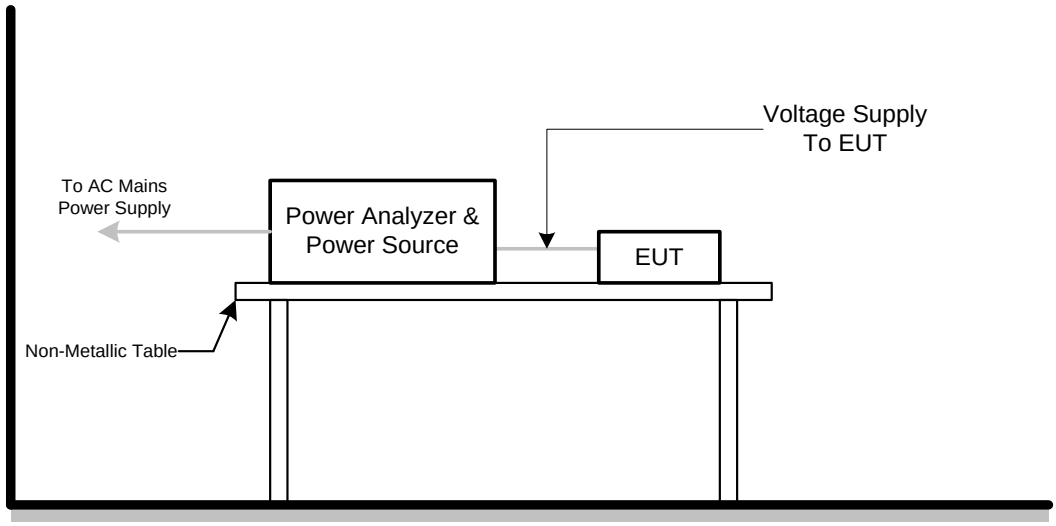
5.2.3 TEST PROCEDURE

a. Tests was performed according to the Test Conditions/Assessment of Voltage Fluctuations specified in EN 61000-3-3 depend on which standard adopted for compliance measurement.
b. All types of harmonic current and/or voltage fluctuation in this report are assessed by direct measurement using flicker-meter.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

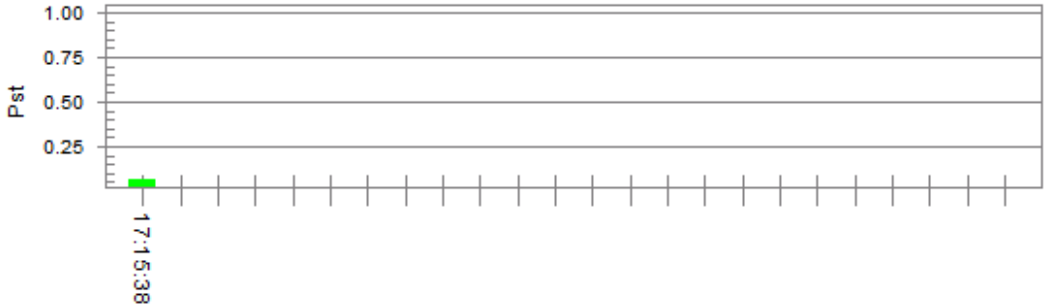
5.2.5 TEST SETUP



5.2.6 TEST RESULTS

Test Voltage	AC 230V/50Hz
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H
Sale Name	Q32P2C

Pst_1 and limit line **European Limits**



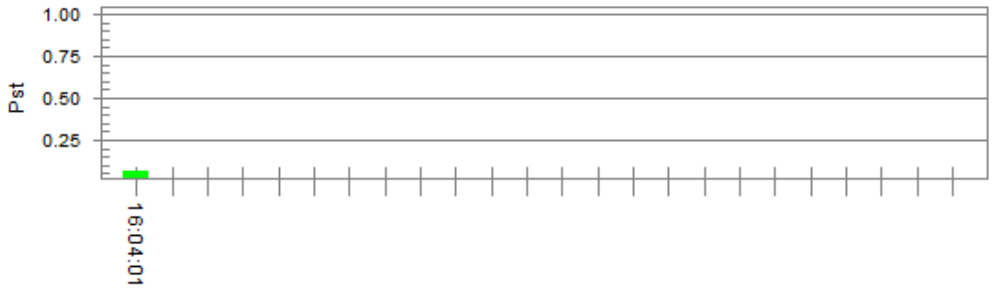
Plt and limit line

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.88			
T-max (mS):	0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.064	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.028	Test limit:	0.650	Pass

Test Voltage	AC 230V/50Hz
Test Mode	TYPE-C 2560*1440/75Hz 1.8m H
Sale Name	U32P2C

Pst and limit line **European Limits**



Plt and limit line

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.98			
T-max (mS):	0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.064	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.028	Test limit:	0.650	Pass

6. EMC IMMUNITY TEST

6.1 STANDARD COMPLIANCE/SEVERITY LEVEL/CRITERIA

Tests Standard No.	Test Specification Level / Test Mode	Test Ports	Criteria
Electrostatic discharge IEC 61000-4-2 (ESD)	±8kV air discharge ±4kV contact discharge (Direct Mode)	Enclosure	B
	±4kV HCP discharge ±4kV VCP discharge (Indirect Mode)	Enclosure	B
Continuous RF electromagnetic field disturbances,swept test IEC 61000-4-3 (RS)	80 MHz to 1000 MHz 3V/m(unmodulated, r.m.s), 1 kHz, 80%, AM modulated	Enclosure	A
Continuous RF electromagnetic field disturbances,spot test IEC 61000-4-3 (RS)	1800 MHz, 2600MHz, 3500 MHz, 5000MHz(±1 %) 3V/m(unmodulated, r.m.s), 1 kHz, 80%, AM modulated	Enclosure	A
Electrical fast transient/burst immunity IEC 61000-4-4 (EFT)	±0.5kV(peak) 5/50ns Tr/Th 5kHz Repetition Frequency (100kHz Repetition Frequency for xDSL port)	Analogue/digital data ports **(NOTE 2)**	B
	±0.5kV(peak) 5/50ns Tr/Th 5kHz Repetition Frequency	DC network power ports **(NOTE 2)**	B
	±1 kV(peak) 5/50ns Tr/Th 5kHz Repetition Frequency	AC mains power ports	B

Surge immunity IEC 61000-4-5 (Surge)	**Port Type: unshielded symmetrical** **Apply: lines to ground**		
	Primary protection is Intended ±1 kV 10/700(5/320)Tr/Th μs	Analogue/digital data ports **(NOTE 1) & (NOTE 2)**	C
	Primary protection is not Intended ±1 kV 10/700(5/320) Tr/Th μs		C
	Port type: coaxial or shielded **Apply: shield to ground**		
	±0.5 kV 1.2/50(8/20) Tr/Th μs	Analogue/digital data ports **(NOTE 1) & (NOTE 2)**	B
	line to reference ground for each individual line: ±0.5 kV(peak) 1.2/50(8/20) Tr/Th μs	DC network power ports **(NOTE 2)**	B
	±1 kV(peak) 1.2/50(8/20) Tr/Th μs (line to line) ±2 kV(peak) 1.2/50(8/20) Tr/Th μs (line to earth or ground)	AC mains power ports	B
Continuous induced RF disturbances IEC 61000-4-6 (CS)	0.15 MHz to 10 MHz 3V(unmodulated, r.m.s), 10 MHz to 30 MHz 3V to 1V(unmodulated, r.m.s), 30 MHz to 80 MHz 1V(unmodulated, r.m.s), 1kHz 80%, AM 150Ω source impedance	Analogue/digital data ports **(NOTE 2)**	A
	0.15 MHz to 10 MHz 3V(unmodulated, r.m.s), 10 MHz to 30 MHz 3V to 1V(unmodulated, r.m.s), 30 MHz to 80 MHz 1V(unmodulated, r.m.s), 1kHz 80%, AM 150Ω source impedance	DC network power ports **(NOTE 2)**	A
	0.15 MHz to 10 MHz 3V(unmodulated, r.m.s), 10 MHz to 30 MHz 3V to 1V(unmodulated, r.m.s), 30 MHz to 80 MHz 1V(unmodulated, r.m.s), 1kHz 80%, AM 150Ω source impedance	AC mains power ports	A

Power frequency magnetic field immunity IEC 61000-4-8 (PFMF)	50 Hz or 60Hz, 1A/m(r.m.s)	Enclosure	A
Voltage dips, short interruptions and voltage variations immunity IEC 61000-4-11 (Dips)	Voltage dips: Residual voltage＜5% 0.5 cycle Residual voltage＜70% 25 cycle(50Hz), 30 cycle (60Hz) Voltage interruptions: Residual voltage＜5% 250 cycle (50Hz), 300 cycle (60Hz)	AC Power Ports	B C C
Broadband impulse noise disturbances,repetitive (BIN-R)	0.15MHz to 0.5 MHz 107dBuV 0.5 MHz to 10 MHz 107dBuV to 36dBuV 10 MHz to 30 MHz 36dBuV to 30 dBuV	Analogue/digital data ports **(Applicable only to CPE xDSL ports)**	A
	0.70 ms 8.3 ms(for 60Hz) 10 ms(for 50Hz)	Analogue/digital data ports **(Apply period based on the AC mains frequency)**	A
Broadband impulse noise disturbances,isolated (BIN-I)	0.15MHz to 30 MHz 110dBuV	Analogue/digital data ports **(Applicable only to CPE xDSL ports)**	B
	0.24 ms 10 ms 300 ms	Analogue/digital data ports **(Apply all burst durations)**	B

Note.
1) Applicable only to ports which, according to the manufacturer's specification, may connect directly to outdoor cables.
2) Applicable only to ports which, according to the manufacturer's specification, support cable lengths greater than 3 m.

6.2 GENERAL PERFORMANCE CRITERIA

According to **EN55035** standard, the general performance criteria as following:

Criterion 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.
Criterion B	During the application of the disturbance, degradation of performance is allowed. However, nounintended 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.
Criterion 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. Areboot or re-start operation is allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

6.3 ANNEX D (NORMATIVE) - DISPLAY AND DISPLAY OUTPUT FUNCTION

6.3.1 PERFORMANCE CRITERIA

Performance criterion A

for continuous radiated and conducted disturbances tests:

Apply criterion A as defined in GENERAL PERFORMANCE CRITERIA. Additionally, an increase in any degradation greater than
just perceptible by observation of the image shall not occur as a consequence of the
application of the test. Examples of such degradations are:

- superimposed patterning;
- positional disturbances due to synchronisation errors;
- geometric distortion;
- change of contrast or brightness;
- picture artefacts;
- freezing or disturbance of motion;
- image loss;
- video data or decoding errors.

Performance criterion A

for the power frequency magnetic field tests:

Alternative 1: A continuous magnetic field of 1 A/m:

The jitter (in mm) shall not exceed the value $\frac{(\text{character height in mm} + 0{,}3) \times 2{,}5}{33{,}3}$

Performance criterion B:

Apply criterion B as defined in GENERAL PERFORMANCE CRITERIA.

Performance criterion C:

Apply criterion C as defined in GENERAL PERFORMANCE CRITERIA.

6.4 ANNEX G (NORMATIVE) - AUDIO OUTPUT FUNCTION

6.4.1 PERFORMANCE CRITERIA

Performance criterion A:

For devices that support telephony functions the limits of Table G.3 shall apply.
With respect to Table G.3:

- the interference ratio (electrical or acoustic) shall meet the limits in column 3; or,
- the acoustic level of the demodulated audio shall be less than the limits in column 4; or,
- the digitally coded level of demodulated audio shall be less than limits in column 5; or,
- the analogue level of the demodulated audio shall be less than the limits in column 6.

Table G.3 – Performance criterion A – Limits for devices supporting telephony

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	-20 dB	55	-50	-50
	30 to 80	-10 dB	65	-40	-40
Radiated	80 to 1000	0 dB	75	-30	-30
For terminals connected to digital wired network ports (such as Ethernet, ISDN), measurements of the demodulated 1 kHz may be performed on a remote AE, ideally of the same design.					

For all other devices:
The measured acoustic interference ratio and/or the measured electrical interference ratio during the test shall be –20 dB or better.

Performance criterion B:

Use the general performance criterion B. See GENERAL PERFORMANCE CRITERIA.

Performance criterion C:

Use the general performance criterion C. See GENERAL PERFORMANCE CRITERIA.

6.5 ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)

6.5.1 TEST SPECIFICATION

Basic Standard	IEC 61000-4-2
Discharge Impedance	330 ohm / 150 pF
Required Performance	B
Discharge Voltage	Air Discharge: ±2kV, ±4kV, ±8kV Contact Discharge: ±2kV, ±4kV
Polarity	Positive & Negative
Number of Discharge	20 times at each test point
Discharge Mode	Single Discharge
Discharge Period	1 second

6.5.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	ESD Generator	TESEQ AG	NSG 437	450	Jul. 15, 2021

Remark: “N/A” denotes no model no., no serial No. or no calibration specified.
All calibration period of equipment list is one year.

6.5.3 TEST PROCEDURE

The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manner:

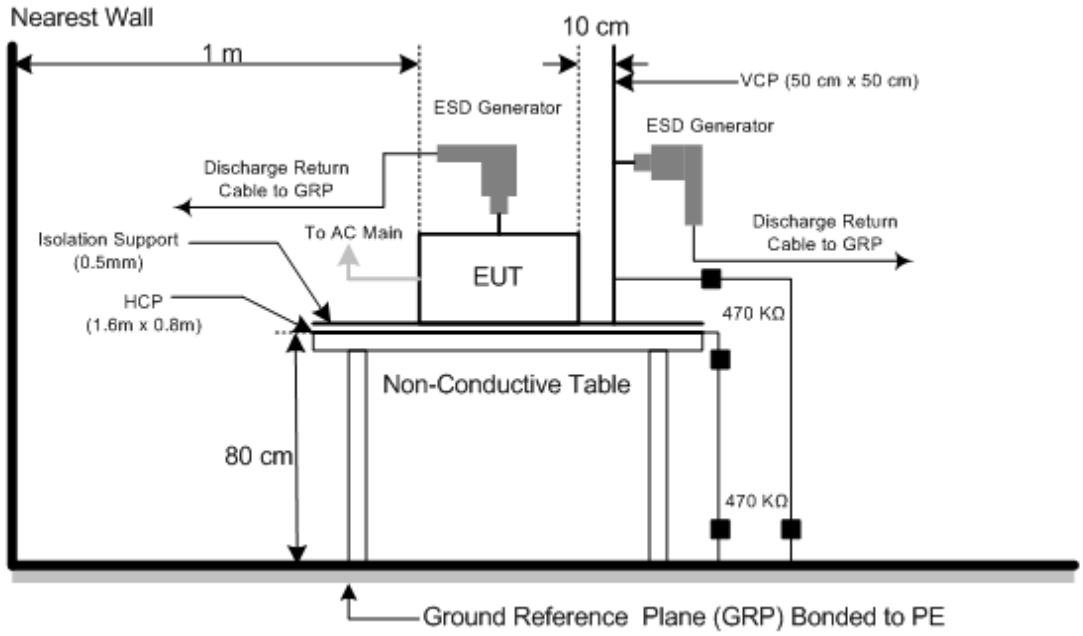
a. The test shall be performed with single discharges. On each pre-selected point at least 10single discharges (in the most sensitive polarity) shall be applied.
NOTE 1 The minimum number of discharges applied is depending on the EUT; for products with synchronized circuits the number of discharges should be larger.
For the time interval between successive single discharges an initial value of 1 s is recommended. Longer intervals may be necessary to determine whether a system failure has occurred.
NOTE 2 The points to which the discharges should be applied may be selected by means of an explor ation carried out at a repetition rate of 20 discharges per second, or more.
Vertical Coupling Plane (VCP):
The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.
The four faces of the EUT will be performed with electrostatic discharge.
Horizontal Coupling Plane (HCP):
The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.
The four faces of the EUT will be performed with electrostatic discharge.

b. For TABLE-TOP equipment:
The configuration consisted of a wooden table 0.8 meters high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP by means of a cable with 940k total impedance. The equipment under test was installed in a representative system as described in IEC 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of1-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

6.5.4 DEVIATION FROM TEST STANDARD

No deviation

6.5.5 TEST SETUP



6.5.6 TEST RESULTS

Test Voltage	AC 230V/50Hz
Test Mode	Mode 1 ~ Mode 7, Mode 10
Sale Name	Q32P2C, U32P2C

Mode	Air Discharge								Contact Discharge					
Test Level	2kV		4kV		8kV		- kV		2kV		4kV		- kV	
Location	P	N	P	N	P	N	P	N	P	N	P	N	P	N
1	A	A	A	A	A	A	-	-	A	A	A	A	-	-
2	A	A	A	A	A	A	-	-	A	A	A	A	-	-
3	A	A	A	A	A	A	-	-	A	A	A	A	-	-
4	A	A	A	A	A	A	-	-	-	-	-	-	-	-
Criteria	B						-		B				-	
Result	A						-		A				-	

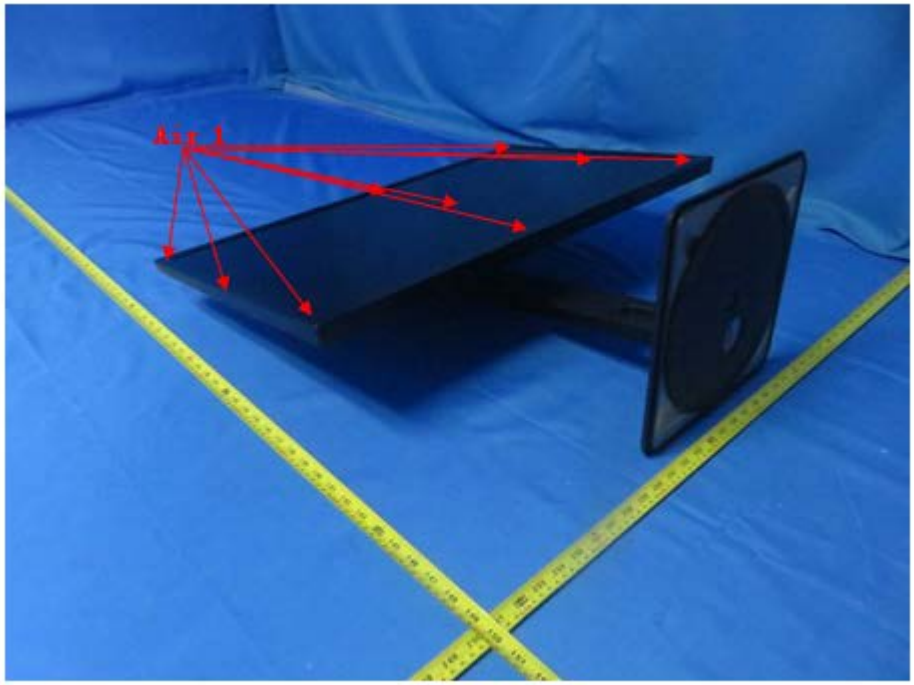
Mode	HCP Contact Discharge						VCP Contact Discharge					
Test Level	2kV		4kV		- kV		2kV		4kV		- kV	
Location	P	N	P	N	P	N	P	N	P	N	P	N
Left side	A	A	A	A	-	-	A	A	A	A	-	-
Right side	A	A	A	A	-	-	A	A	A	A	-	-
Front side	A	A	A	A	-	-	A	A	A	A	-	-
Rear side	A	A	A	A	-	-	A	A	A	A	-	-
Criteria	B				-		B				-	
Result	A				-		A				-	

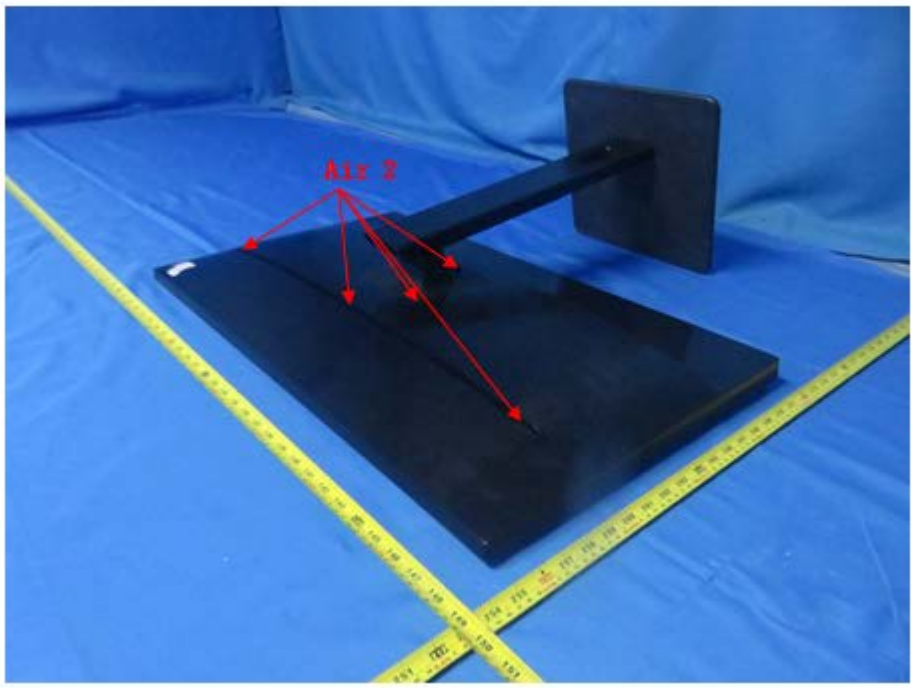
Note:

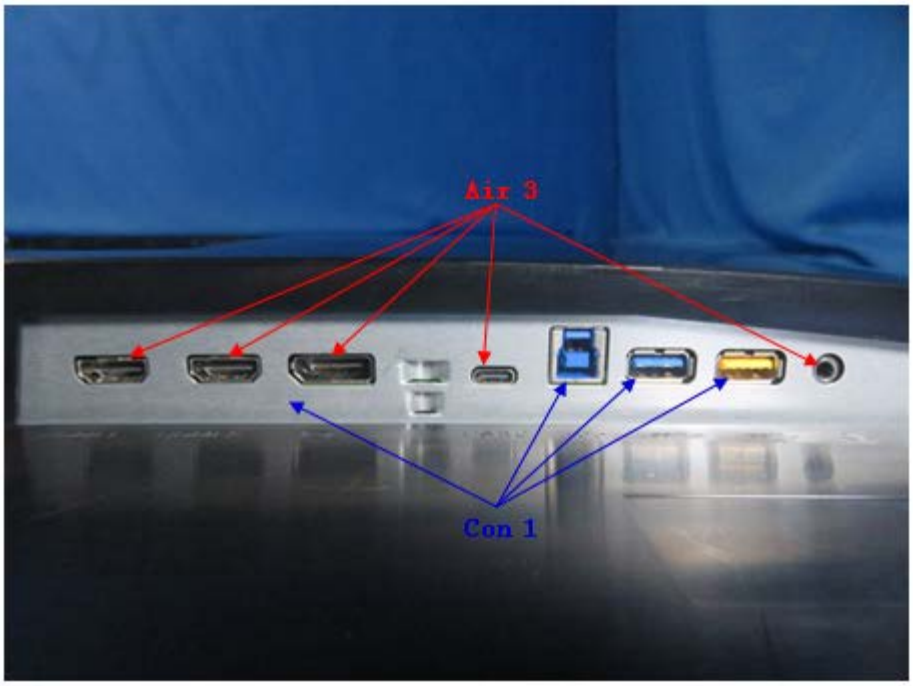
1) P/N denotes the Positive/Negative polarity of the output voltage.

2) N/A - denotes test is not applicable in this test report

PHOTO(S) SHOWN THE LOCATION(S) OF ESD EVALUATED



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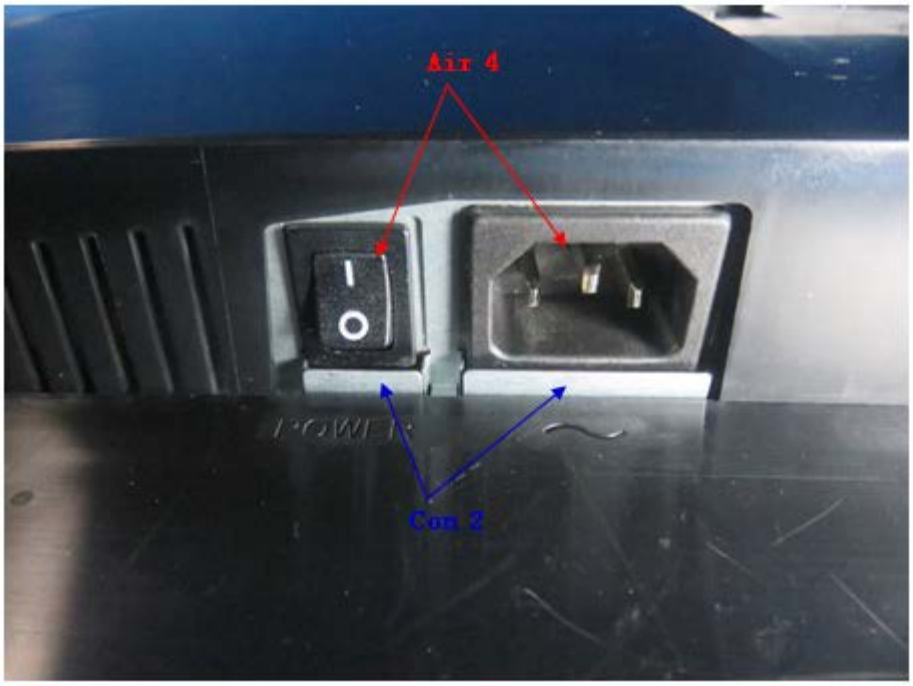
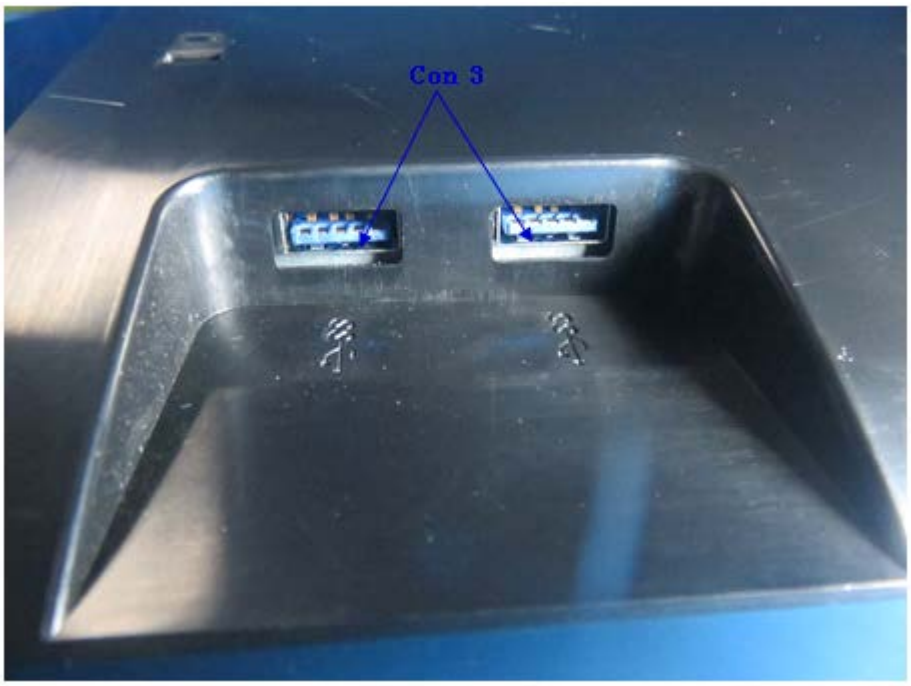
Con 1


Air 4
Con 2


Con 3

6.6 RADIATED, RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY TEST (RS)

6.6.1 TEST SPECIFICATION

Basic Standard	IEC 61000-4-3
Required Performance	A
Frequency Range	80 MHz - 1000 MHz, 1800 MHz, 2600 MHz, 3500 MHz, 5000MHz
Field Strength	3 V/m(unmodulated, r.m.s)
Modulation	1 kHz Sine Wave, 80%, AM Modulation
Frequency Step	1% of fundamental
Polarity of Antenna	Horizontal and Vertical
Test Distance	3 m
Antenna Height	1.55 m
Dwell Time	3 seconds

6.6.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Antenna	ETS	3142C	66462	Mar. 23, 2021
2*	Amplifier	AR	50S1G4A	326720	Apr. 08, 2021
3	MXG Analog Signal Generator	Agilent	N5181A	MY49060710	Jul. 25, 2021
4	Conditioning Amplifier	B&K	_2690__0F2_	2723746	Jun. 18, 2021
5*	Power amplifier	MILMEGA	AS1860-50	1064834	Mar. 01, 2021
6	Microwave Log.-Per. Antenna	TESEQ	STLP 9149	9149-277	Apr. 14, 2021
7*	Power amplifier	MILMEGA	80RF1000-250	1064833	Mar. 01, 2021
8	Measurement Software	TOYO	IM5/RS Ver 3.8.050	N/A	N/A
9	Free-field 1/2``Microphone	B&K	4190-L-001	2878077	Jun. 17, 2021

Remark: “N/A” denotes no model no., no serial No. or no calibration specified.

“*” calibration period of equipment list is three year.

Except * item, all calibration period of equipment list is one year.

6.6.3 TEST PROCEDURE

The EUT and support equipment are in a fully-anechoic chamber.
The testing distance from antenna to the EUT was 3 meters.
For TABLE-TOP equipment:
The EUT installed in a representative system as described in IEC 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.
The other condition as following manner:

a. The field strength level was 3 V/m(unmodulated, r.m.s).
b. The frequency range is swept from 80 MHz to 1000 MHz, with the signal 80%amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed 1.5x 10-3 decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
c. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
d. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

For Display and display output functions:

a. The display quality evaluated by direct observation.
b. For display output function evaluation, a suitable display device shall be connected. This device shall meet the immunity requirements for displays specified in this document. The screen size shall be typical for the display output.the diagonal screen size shall be at least 0,50 m.
c. The display shall be observed under normal viewing conditions including viewing distance using a reduced ambient light level preferably in the range 15 lx to 20 lx. The viewing distance or settings of the video camera monitoring system shall be sufficient to provide visibility of the whole display. In the case of direct observation the selected viewing distance shall be recorded in the test report.

For Acoustic measurements:

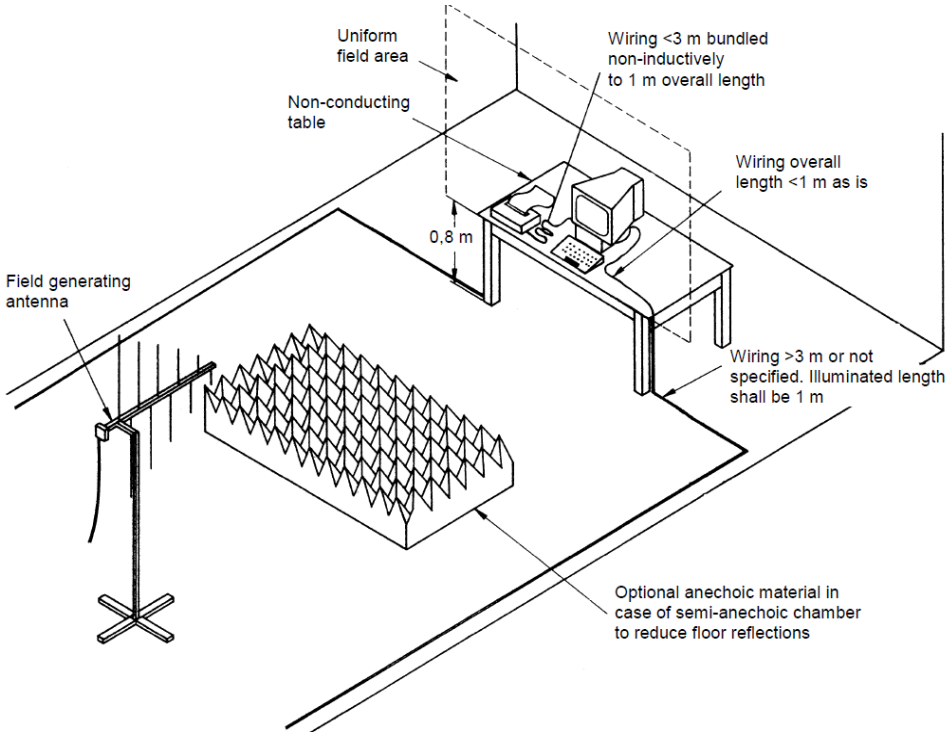
a. Apply an appropriate input signal to the EUT so that a sine wave (tone) at the frequency that will be used to modulate the applied disturbance (typically 1 kHz) is generated from the port under test at a level equal to the acoustic reference level.
b. Record the resulting dB (SPL) level (or other appropriate dB unit) as the value of L_0. (BTL lab uses the software to take Lo as the referecne value and make it return to zero.)
c. Change the input to the EUT so that the port under test is silent, or represents silence.This change shall not alter the terminating impedance at the EUT's input.
d. Apply the RF disturbance to the applicable port of the EUT and record the resulting demodulated audio level in dB (SPL) (or other dB unit used in step d)) as the value of L_1.
e. Ensure that non-linear processing does not impact the measurements.
f. Calculate the acoustic interference ratio using the following formula:
Acoustic interference ratio = $L_1 – L_0$.
(For step e-g, BTL lab proceeds the test with software and calculate Acoustic interference ratio = $L_1 – L_0$).

6.6.4 DEVIATION FROM TEST STANDARD

No deviation

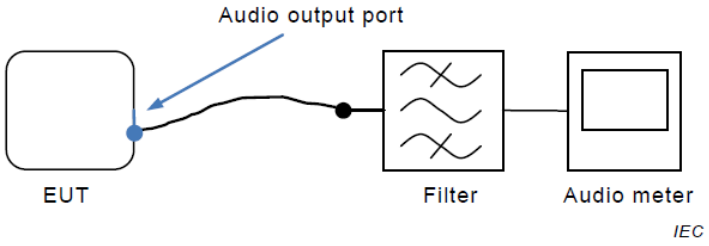
6.6.5 TEST SETUP

a) For Continuous induced RF disturbances



For Audio output function

(1) Audio output port



The filter is the audio filter specified in G.6.1 and is typically incorporated into the audio meter. Additional filtering might be necessary to ensure that the RF disturbance signal does not interfere with the measurement.

6.6.6 TEST RESULTS

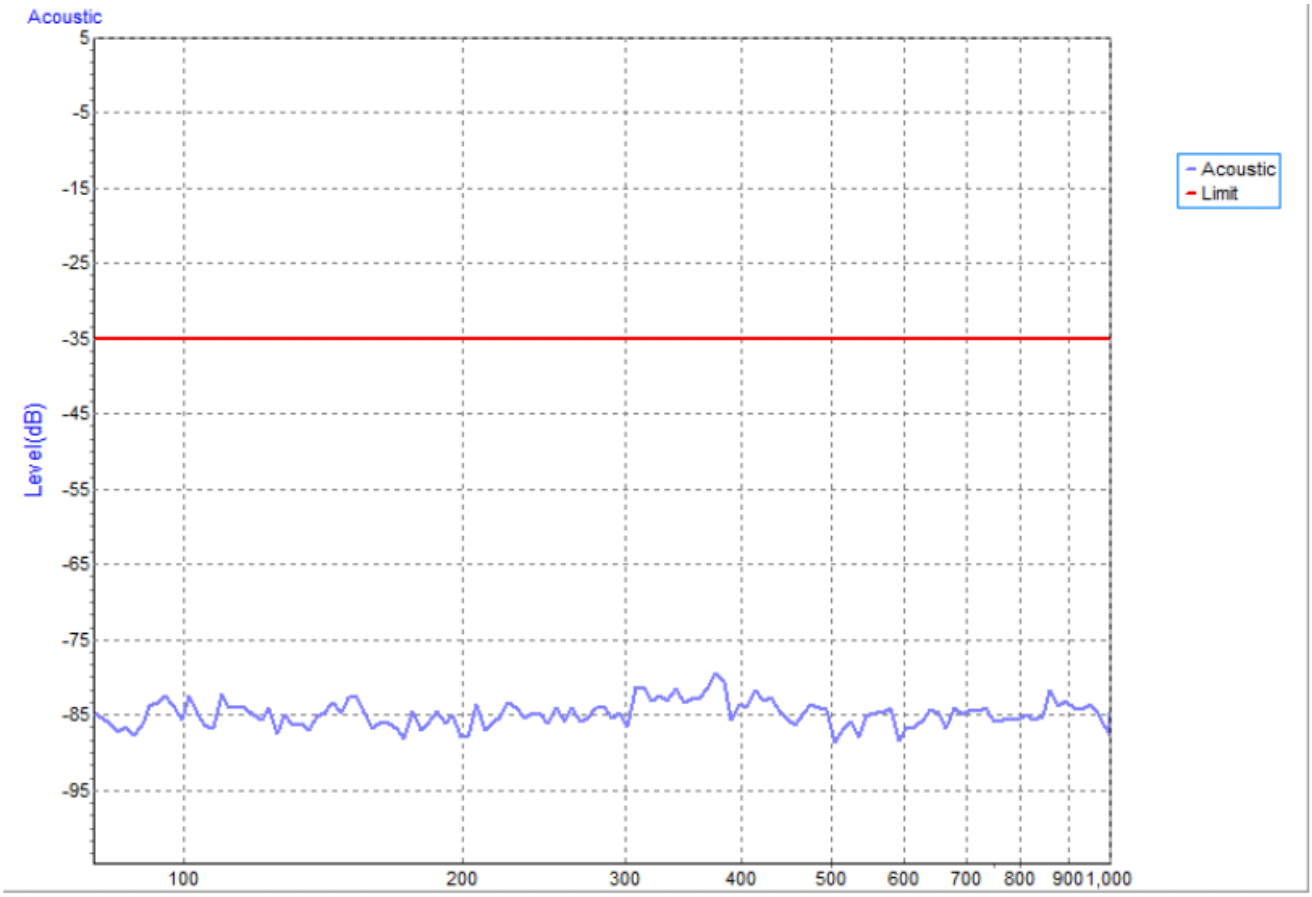
Test Voltage	AC 230V/50Hz
Test Mode	Mode 1 ~ Mode 7, Mode 10
Sale Name	Q32P2C, U32P2C

Frequency Range (MHz)	RF Field Position	R.F. Field Strength	Modulation	Azimuth	Criterion	Result
80 - 1000	H / V	3V/m	AM Modulated 1000Hz, 80%	0	A	A
				90		
				180		
				270		
1800, 2600, 3500, 5000 (±1%)	H / V	3V/m	AM Modulated 1000Hz, 80%	0	A	A
				90		
				180		
				270		

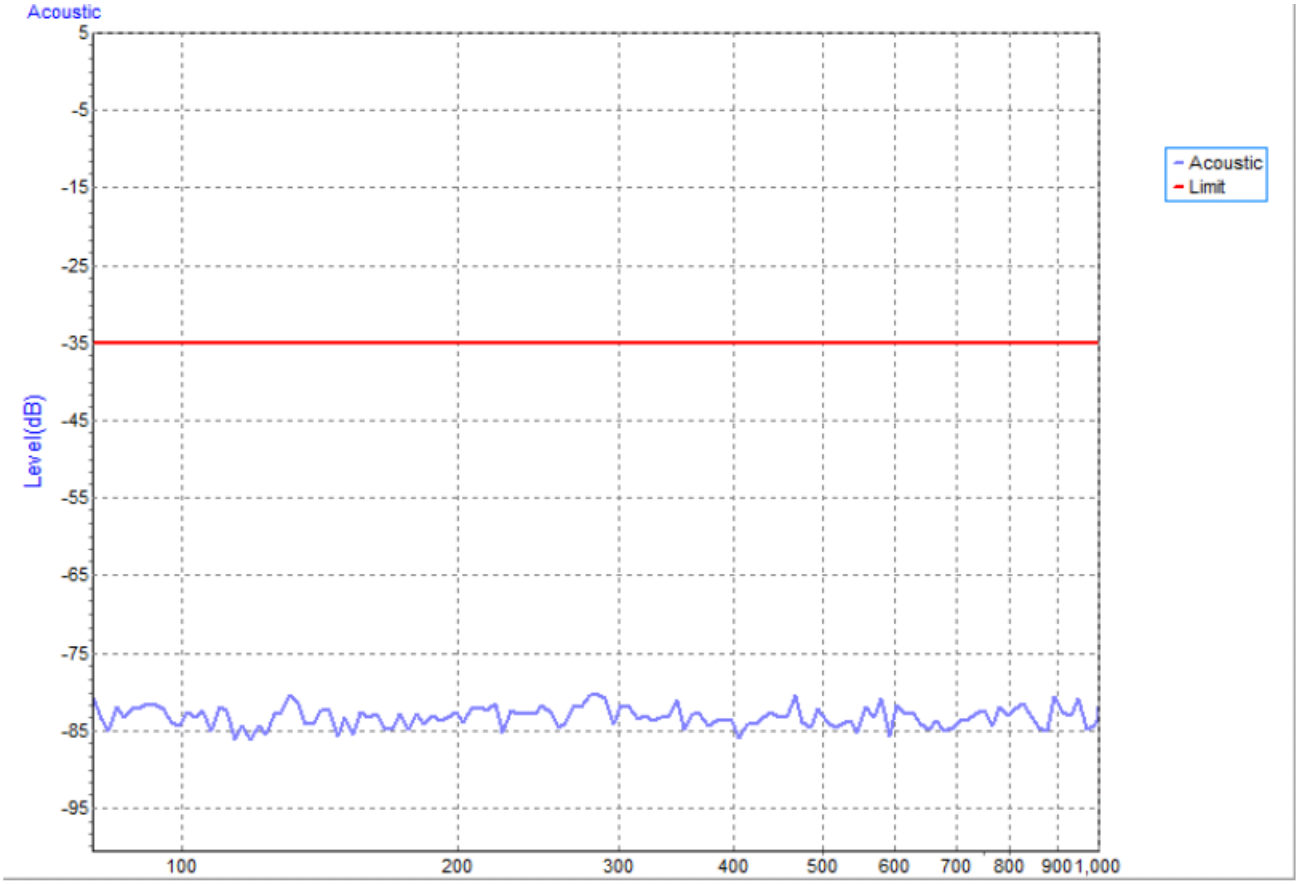
For Audio output function

(1) Audio output port:

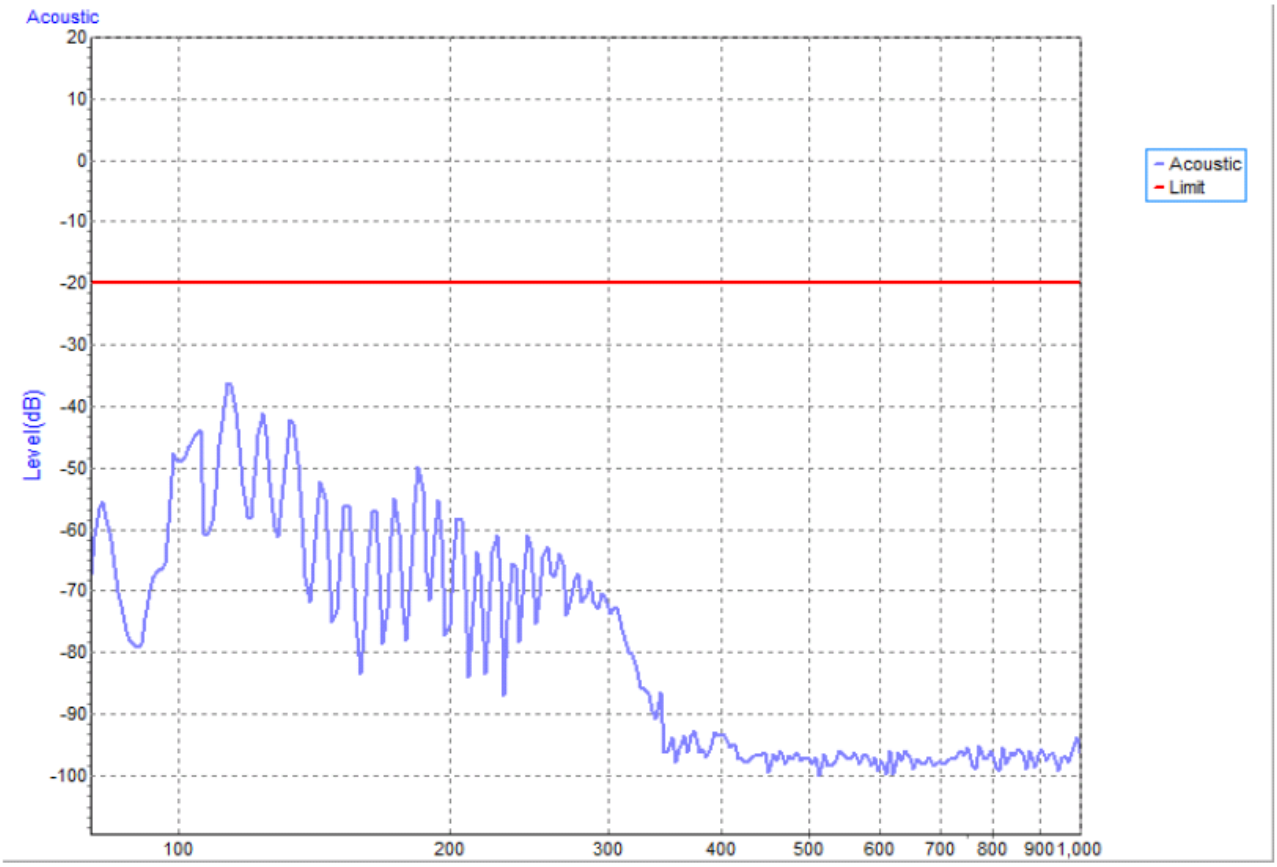
Test Voltage	AC 230V/50Hz
Test Mode	Mode 1_Vertical_Front
Sale Name	Q32P2C



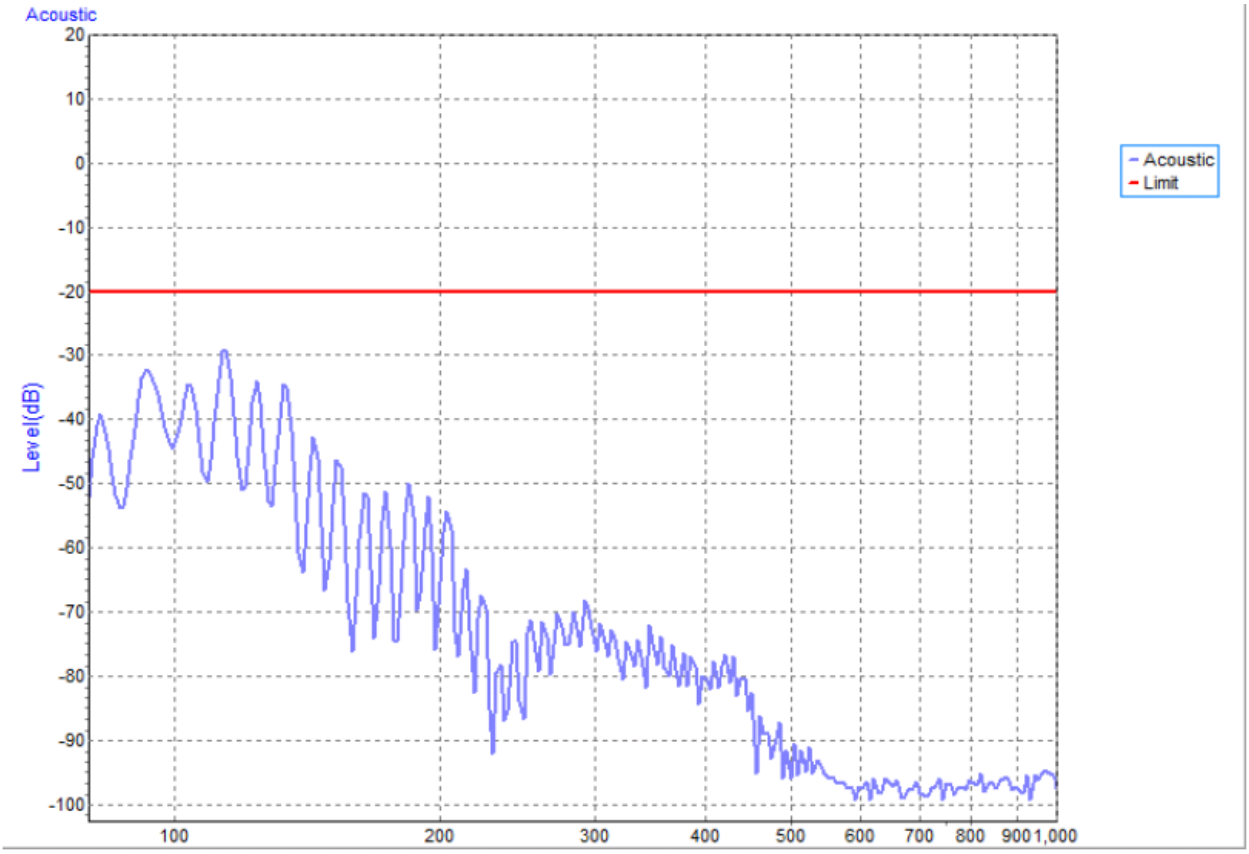
Test Voltage	AC 230V/50Hz
Test Mode	Mode 1_Horiztontal_ Front
Sale Name	Q32P2C



Test Voltage	AC 230V/50Hz
Test Mode	Mode 1_Vertical_Front
Sale Name	U32P2C



Test Voltage	AC 230V/50Hz
Test Mode	Mode 1_Horiztontal_ Front
Sale Name	U32P2C



6.7 ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST (EFT/BURST)

6.7.1 TEST SPECIFICATION

Basic Standard	IEC 61000-4-4
Required Performance	B
Test Voltage	AC Power Ports:±1 kV
Polarity	Positive & Negative
Impulse Frequency	5 kHz: except for xDSL ports.
Impulse Wave shape	5/50 ns
Burst Duration	15 ms
Burst Period	300 ms
Test Duration	1 min.

6.7.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Fast Transient Burst Simulator	Prima	EFT61004TA	PR190741004	Jul. 25, 2021

Remark: “N/A” denotes no model no., no serial No. or no calibration specified.

All calibration period of equipment list is one year.

6.7.3 TEST PROCEDURE

For TABLE-TOP equipment:
The configuration consisted of a wooden table (0.8m high) standing on the Ground Reference Plane and should be located 0.1 m+/- 0.01m above the Ground Reference Plane. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system. A minimum distance of 0.5m was provided between the EUT and the walls of the laboratory or any other metallic structure.
The other condition as following manner:

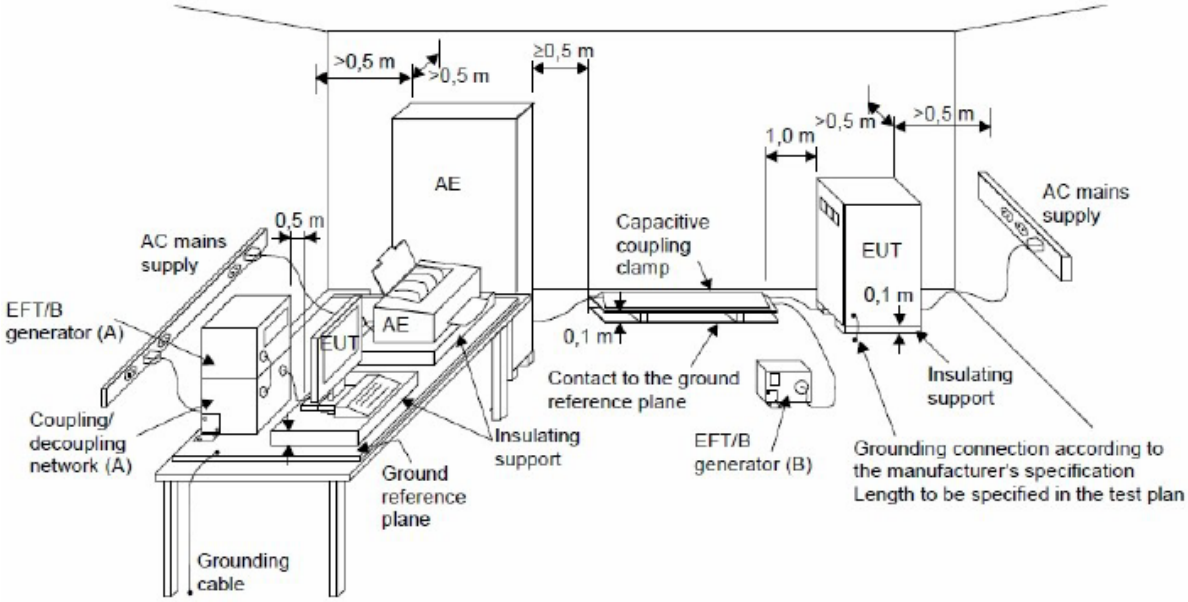
a. Both positive and negative polarity discharges were applied.

b. The duration time of each test sequential was 1 minute.

6.7.4 DEVIATION FROM TEST STANDARD

No deviation

6.7.5 TEST SETUP



6.7.6 TEST RESULTS

Test Voltage	AC 230V/50Hz
Test Mode	Mode 1 ~ Mode 7, Mode 10
Sale Name	Q32P2C, U32P2C

EUT Ports Tested		Polarity	Repetition Frequency	Test Level 1kV	Criterion	Result
AC Power Port	Line (L)	+	5 kHz	A	B	A
		-	5 kHz	A		
	Neutral (N)	+	5 kHz	A	B	A
		-	5 kHz	A		
	Ground (PE)	+	5 kHz	A	B	A
		-	5 kHz	A		
	L+N	+	5 kHz	A	B	A
		-	5 kHz	A		
	L+PE	+	5 kHz	A	B	A
		-	5 kHz	A		
	N+PE	+	5 kHz	A	B	A
		-	5 kHz	A		
	L+N+PE	+	5 kHz	A	B	A
		-	5 kHz	A		

6.8 SURGE IMMUNITY TEST

6.8.1 TEST SPECIFICATION

Basic Standard	IEC 61000-4-5
Required Performance	B
Wave-Shape	1.2/50(8/20) Tr/Th μs combination wave
Test Voltage	AC Power Port: ±0.5 kV, ±1 kV, ±2 kV
Generator Source Impedance	2 Ω of the low-voltage power supply network. 12 Ω (10Ω+2Ω) of the low-voltage power supply network and ground.
Phase Angle, Polarity and Number of Tests	Five positive pulses line-to-neutral at 90°phase Five negative pulses line-to-neutral at 270°phase Five positive pulses line-to-earth at 90°phase Five negative pulses line-to-earth at 270°phase Five negative pulses neutral-to-earth at 90°phase Five positive pulses neutral-to-earth at 270°phase
Pulse Repetition Rate	1 time / min.

6.8.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Lightning Surge Generator	Prima	SUG61005TB	PR190854067	Jul. 25, 2021

Remark: “N/A” denotes no model no., no serial No. or no calibration specified.

All calibration period of equipment list is one year.

6.8.3 TEST PROCEDURE

a. For EUT power supply:

The surge is to be applied to the EUT power supply terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave. The power cord between the EUT and the coupling/decoupling networks shall be 2meters in length (or shorter).

b. For test applied to unshielded unsymmetrically operated interconnection lines of EUT :

The surge is applied to the lines via the capacitive coupling. The coupling /decoupling networks shall not influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

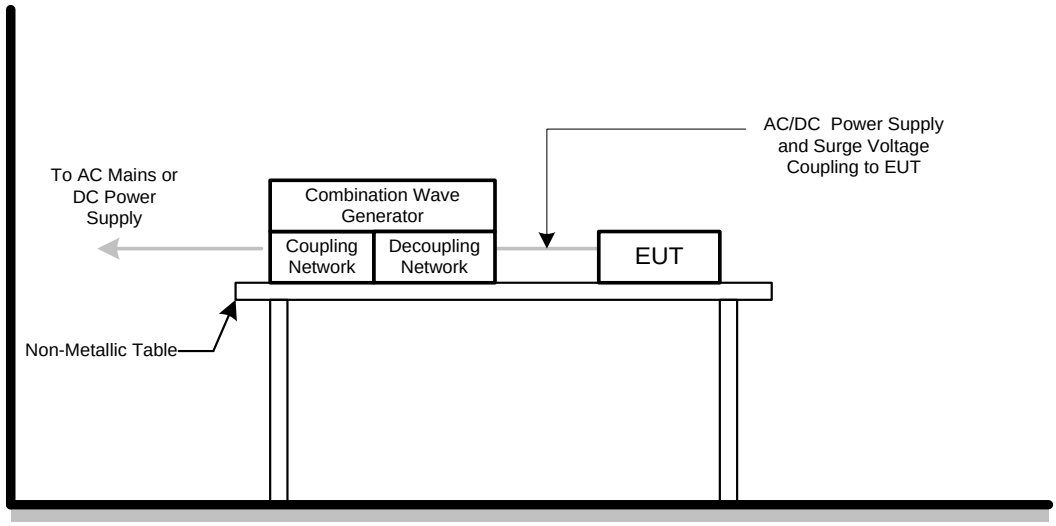
c. For test applied to unshielded symmetrically operated interconnection /telecommunication lines of EUT :

The surge is applied to the lines via gas arrestors coupling. Test levels below the ignition point of the coupling arrestor cannot be specified. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

6.8.4 DEVIATION FROM TEST STANDARD

No deviation

6.8.5 TEST SETUP



6.8.6 TEST RESULTS

Test Voltage	AC 230V/50Hz
Test Mode	Mode 1 ~ Mode 7, Mode 10
Sale Name	Q32P2C, U32P2C

Wave Form EUT Ports Tested		1.2/50(8/20)Tr/Thμs						Criterion	Result
		Polarity	Phase	Voltage					
				0.5kV	1kV	-- kV	-- kV		
AC	L – N	+	90°	A	A	-	-	B	A
		-	270°	A	A	-	-		

Wave Form EUT Ports Tested		1.2/50(8/20)Tr/Thμs						Criterion	Result
		Polarity	Phase	Voltage					
				0.5kV	1kV	2kV	-- kV		
AC	L – PE	+	90°	A	A	A	-	B	A
		-	270°	A	A	A	-		
	N – PE	-	90°	A	A	A	-	B	A
		+	270°	A	A	A	-		

6.9 IMMUNITY TO CONDUCTED DISTURBANCES, INDUCED BY RADIO-FREQUENCY FIELDS TEST (CS)

6.9.1 TEST SPECIFICATION

Basic Standard	IEC 61000-4-6
Required Performance	A
Frequency Range&Field Strength	0.15 MHz - 10 MHz: 3V (unmodulated, r.m.s.) 10 MHz - 30 MHz: 3V to 1V (unmodulated, r.m.s.) 30 MHz - 80 MHz: 1V (unmodulated, r.m.s.)
Modulation	1 kHz Sine Wave, 80%, AM Modulation
Frequency Step	1% of fundamental
Dwell Time	3 seconds

6.9.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Power CDN	FCC	FCC-801-M2/M3 -16A	100270	Feb. 28, 2021
2	TEST SYSTEM FOR CONDUCTED AND RADIATED IMMUNITY	TESEQ	NSG 4070B	37513	Jul. 25, 2021
3	Measurement Software	Farad	EZ-CS(V2.0.1.2)	N/A	N/A
4	Conditioning Amplifier	B&K	_2690__0F2_	2723746	Jun. 18, 2021
5	Free-field 1/2``Microphone	B&K	4190-L-001	2878077	Jun. 17, 2021

Remark: “N/A” denotes no model no., no serial No. or no calibration specified.
All calibration period of equipment list is one year.

6.9.3 TEST PROCEDURE

The equipment to be tested is placed on an insulating support of 0.1m height above a reference ground plane. All cables exiting the EUT shall be supported at a height of at least 30 mm above the reference ground plane. All relevant cables shall be provided with the appropriate coupling and decoupling devices at a distance between 0.1 meters and 0.3 meters from the projected geometry of the EUT on the ground reference plane.
The other condition as following manner:

a. The field strength level was 3 V (unmodulated, r.m.s.)
b. The frequency range is swept from 150 kHz to 80 MHz, with the signal 80%amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed 1.5x 10-3 decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
c. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.

For Display and display output functions:

a. The display quality evaluated by direct observation.
b. For display output function evaluation, a suitable display device shall be connected. This device shall meet the immunity requirements for displays specified in this document. The screen size shall be typical for the display output.the diagonal screen size shall be at least 0,50 m.
c. The display shall be observed under normal viewing conditions including viewing distance using a reduced ambient light level preferably in the range 15 lx to 20 lx. The viewing distance or settings of the video camera monitoring system shall be sufficient to provide visibility of the whole display. In the case of direct observation the selected viewing distance shall be recorded in the test report.

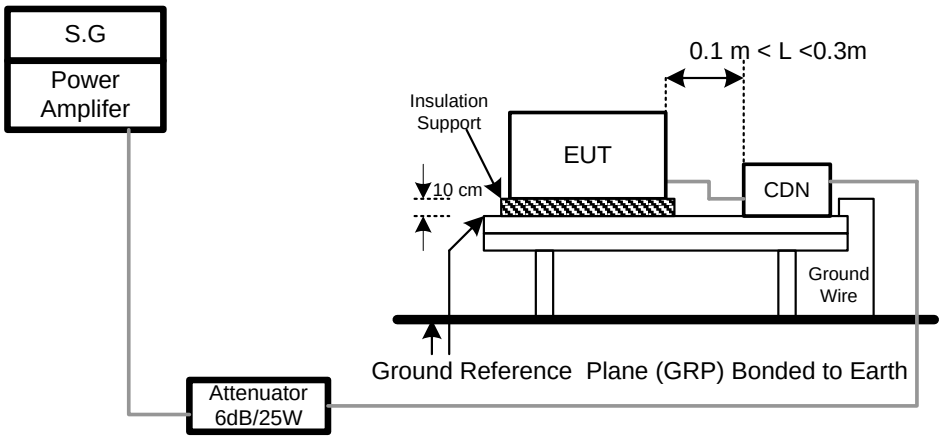
For Acoustic measurements:

a. Apply an appropriate input signal to the EUT so that a sine wave (tone) at the frequency that will be used to modulate the applied disturbance (typically 1 kHz) is generated from the port under test at a level equal to the acoustic reference level.
b. Record the resulting dB (SPL) level (or other appropriate dB unit) as the value of L_0. (BTL lab uses the software to take Lo as the referecne value and make it return to zero.)
c. Change the input to the EUT so that the port under test is silent, or represents silence.This change shall not alter the terminating impedance at the EUT's input.
d. Apply the RF disturbance to the applicable port of the EUT and record the resulting demodulated audio level in dB (SPL) (or other dB unit used in step d)) as the value of L_1.
e. Ensure that non-linear processing does not impact the measurements.
f. Calculate the acoustic interference ratio using the following formula:
Acoustic interference ratio = $L_1 – L_0$.
(For step e-g, BTL lab proceeds the test with software and calculate Acoustic interference ratio = $L_1 – L_0$).

6.9.4 DEVIATION FROM TEST STANDARD

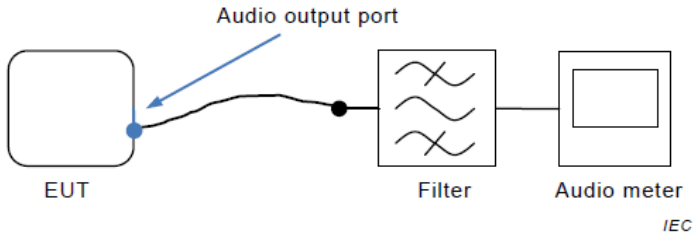
No deviation

6.9.5 TEST SETUP



For Audio output function

(1) Audio output port



The filter is the audio filter specified in G.6.1 and is typically incorporated into the audio meter. Additional filtering might be necessary to ensure that the RF disturbance signal does not interfere with the measurement.

6.9.6 TEST RESULTS

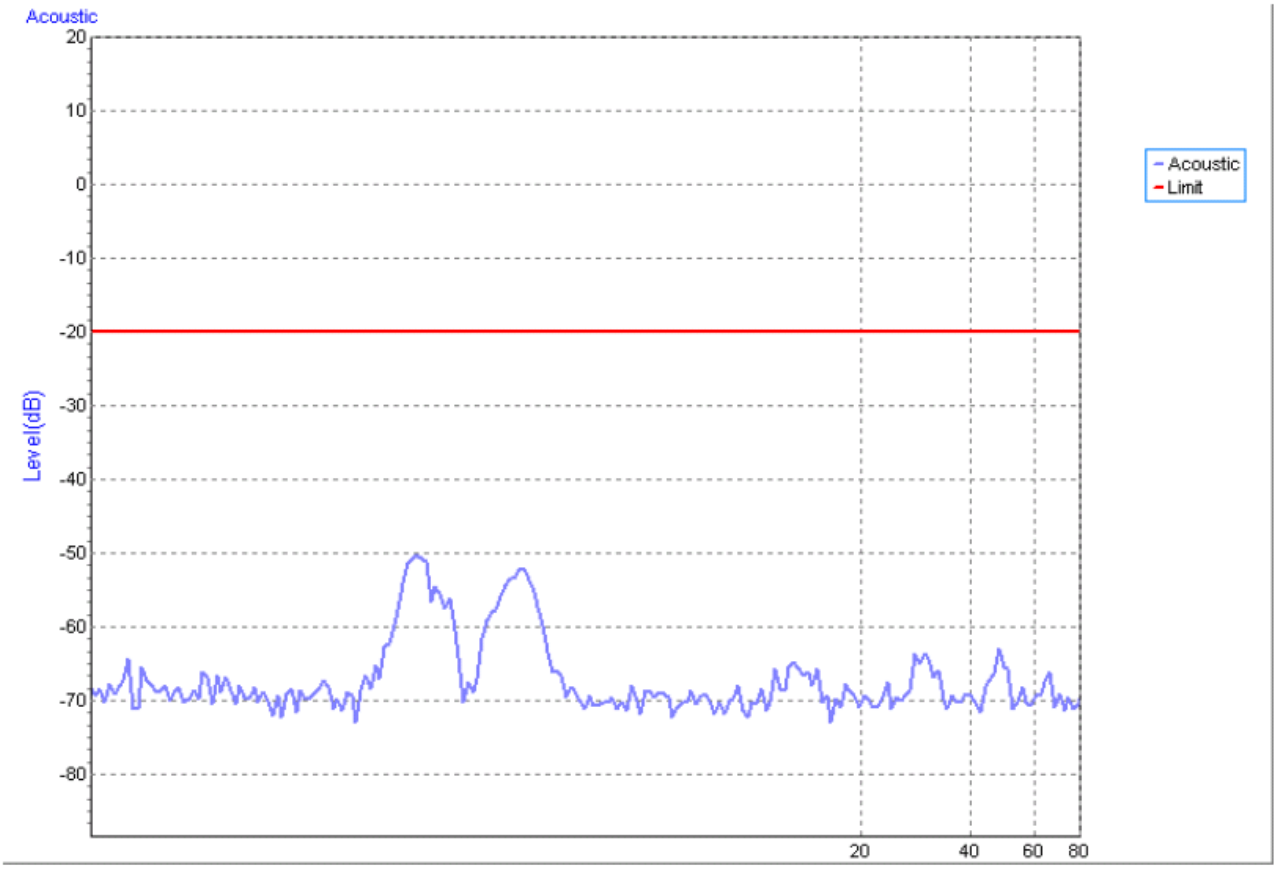
Test Voltage	AC 230V/50Hz
Test Mode	Mode 1 ~ Mode 7, Mode 10
Sale Name	Q32P2C, U32P2C

Test Ports (Mode)	Freq.Range (MHz)	Field Strength	Modulation	Criteria	Results
AC mains power ports	0.15 - 10	3V	AM Modulated 1000Hz, 80%	A	A
	10 - 30	3V to 1V			
	30 - 80	1V			

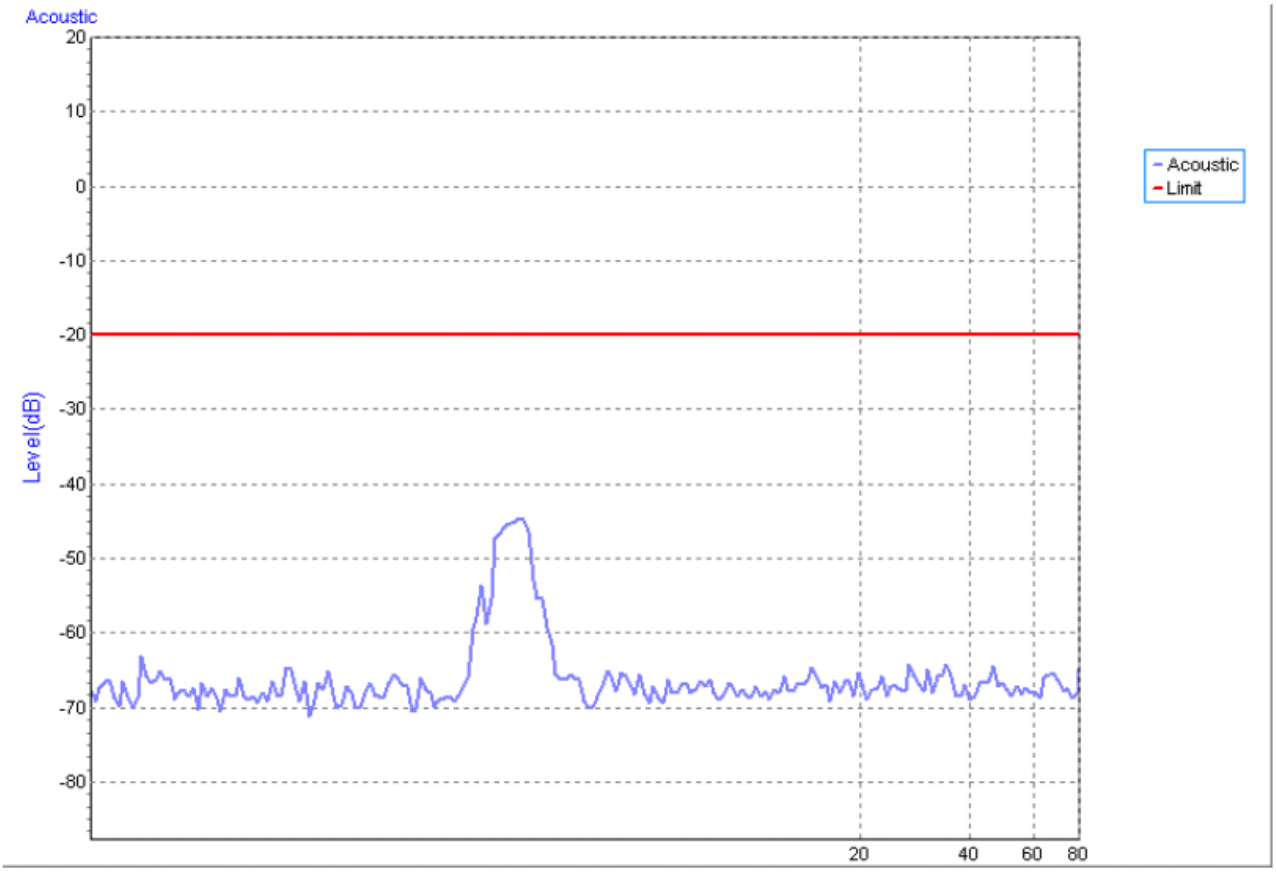
For Audio output function

(1) Audio output port:

Test Voltage	AC 230V/50Hz
Test Mode	Mode 1_CDN M3
Sale Name	Q32P2C



Test Voltage	AC 230V/50Hz
Test Mode	Mode 1_CDN M3
Sale Name	U32P2C



6.10 POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST (PFMF)

6.10.1 TEST SPECIFICATION

Basic Standard	IEC 61000-4-8
Required Performance	A
Frequency Range	50/60 Hz
Field Strength	1 A/m
Observation Time	1 minute
Inductance Coil	Rectangular type, 1mx1m

6.10.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Magnetic Field test Generator	FCC	F-1000-4-8-G-125A	4032	Mar. 01, 2021
2	Magnetic Field immunity loop	Thermo KeyTek	F-1000-4-8/9/10-L-1M	4024	Mar. 01, 2021

Remark: “N/A” denotes no model no., no serial No. or no calibration specified.
All calibration period of equipment list is one year.

6.10.3 TEST PROCEDURE

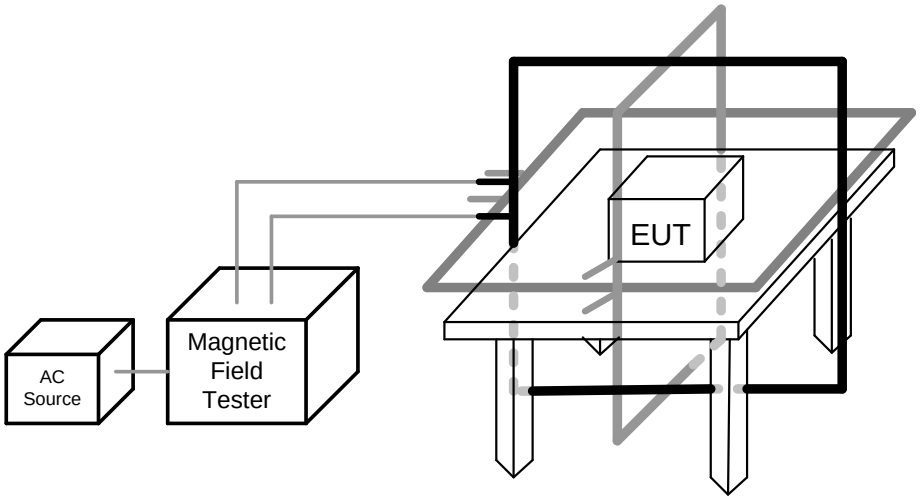
For TABLE-TOP equipment:
The equipment shall be subjected to the test magnetic field by using the induction coil of standard dimension (1 m x 1 m). The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.
The other condition as following manner:

a. The equipment cabinets shall be connected to the safety earth directly on the GRP via the earth terminal of the EUT.
b. The cables supplied or recommended by the equipment manufacturer shall be used. 1 meter of all cables used shall be exposed to the magnetic field.

6.10.4 DEVIATION FROM TEST STANDARD

No deviation

6.10.5 TEST SETUP



6.10.6 TEST RESULTS

Test Voltage	AC 230V/50Hz
Test Mode	Mode 1 ~ Mode 7, Mode 10
Sale Name	Q32P2C, U32P2C

50Hz

Test Mode	Test Level	Antenna aspect	Duration (s)	Criteria	Results
Enclosure	1 A/m	X	60	A	A
Enclosure	1 A/m	Y	60	A	A
Enclosure	1 A/m	Z	60	A	A

60Hz

Test Mode	Test Level	Antenna aspect	Duration (s)	Criteria	Results
Enclosure	1 A/m	X	60	A	A
Enclosure	1 A/m	Y	60	A	A
Enclosure	1 A/m	Z	60	A	A

6.11 VOLTAGE DIPS, SHORT INTERRUPTIONS AND VOLTAGE VARIATIONS IMMUNITY TEST (DIPS)

6.11.1 TEST SPECIFICATION

Basic Standard	IEC 61000-4-11
Required Performance	Voltage dips: B (For ＜5% residual voltage, dips) C (For 70% residual voltage, dips) C (For ＜5% residual voltage, Interruptions)
Interval between Event	Ten seconds
Phase Angle	0°/180°
Test Cycle	3 times

6.11.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Series Model	Calibrated until
1	Cycle Sag Simulator	Prima	DRP61011TA	PR19076452	Dec. 03, 2020

Remark: “N/A” denotes no model no., no serial No. or no calibration specified.
All calibration period of equipment list is one year.

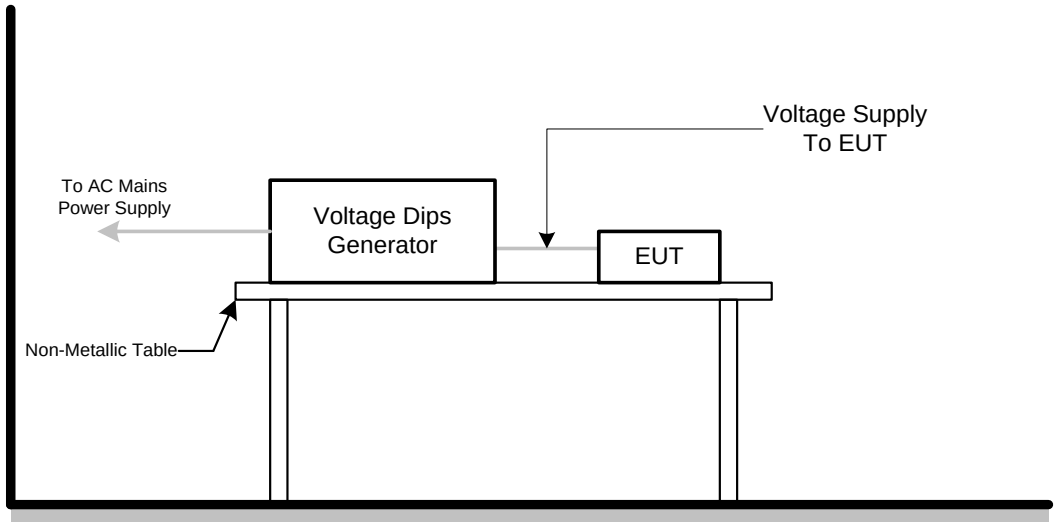
6.11.3 TEST PROCEDURE

The EUT shall be tested for each selected combination of test levels and duration with a sequence of three dips/interruptions with intervals of 10 s minimum (between each test event). Each representative mode of operation shall be tested. Abrupt changes in supply voltage shall occur at zero crossings of the voltage waveform.

6.11.4 DEVIATION FROM TEST STANDARD

No deviation

6.11.5 TEST SETUP



6.11.6 TEST RESULTS

Test Voltage	AC 100V/50Hz, AC 230V/50Hz, AC 240V/50Hz
Test Mode	Mode 1 ~ Mode 7, Mode 10
Sale Name	Q32P2C, U32P2C

AC 100V/50Hz				
Item	Residual Voltage	Cycle	Criteria	Results
Voltage dips	＜5%	0.5	B	A
Voltage dips	70%	25	C	A
Voltage Interruption	＜5%	250	C	C

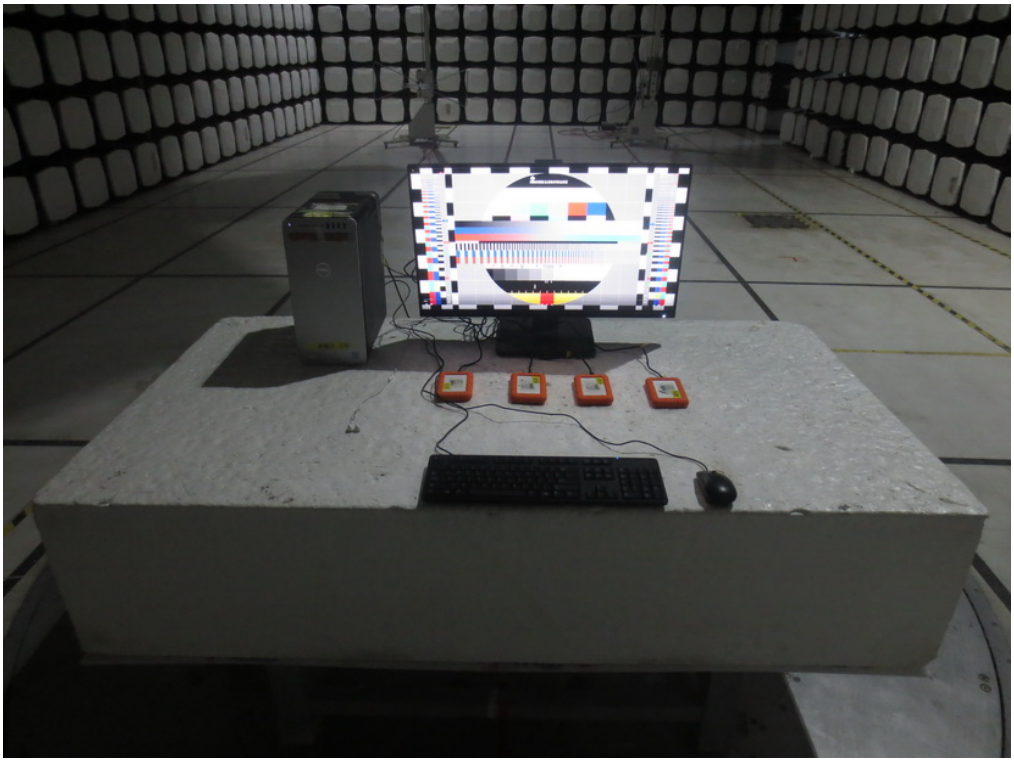
AC 230V/50Hz				
Item	Residual Voltage	Cycle	Criteria	Results
Voltage dips	＜5%	0.5	B	A
Voltage dips	70%	25	C	A
Voltage Interruption	＜5%	250	C	C

AC 240V/50Hz				
Item	Residual Voltage	Cycle	Criteria	Results
Voltage dips	＜5%	0.5	B	A
Voltage dips	70%	25	C	A
Voltage Interruption	＜5%	250	C	C

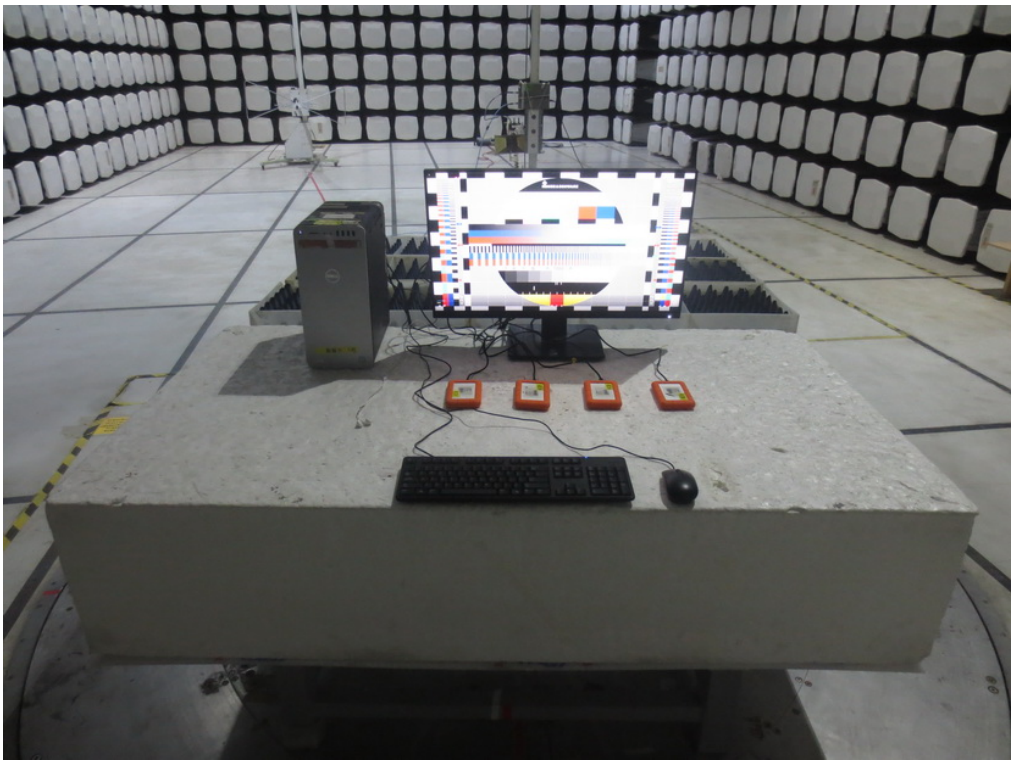
7. EUT TEST PHOTO

EN 55032:2012+AC:2013&2015

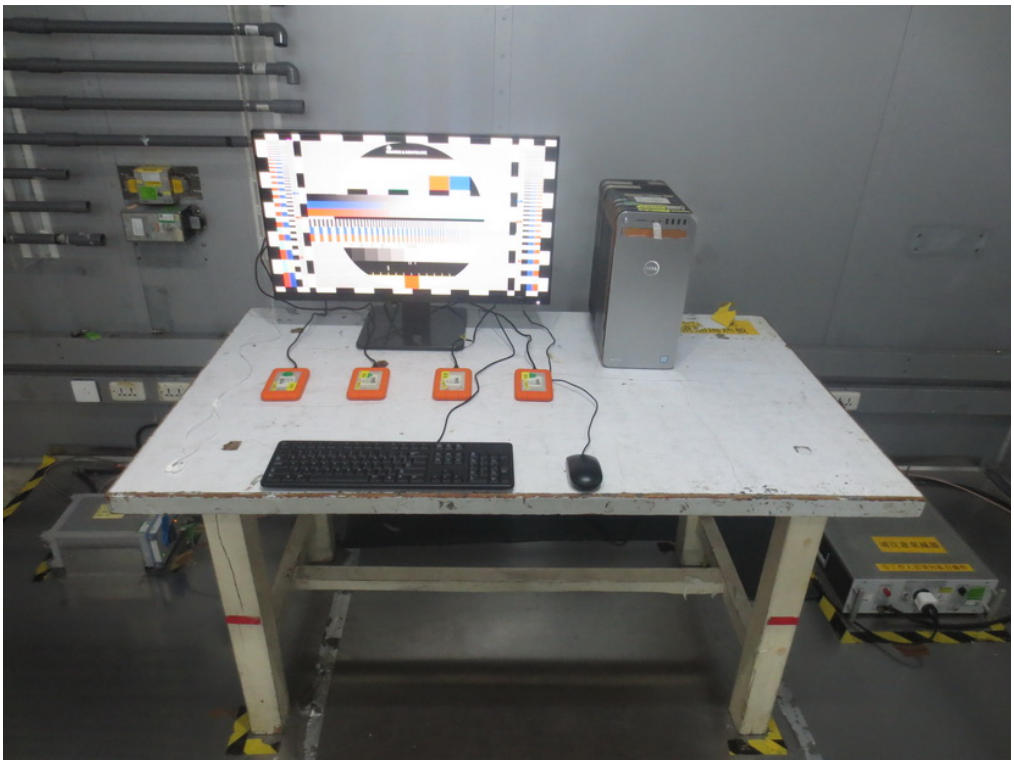
Radiated emissions up to 1 GHz



Radiated emissions above 1 GHz



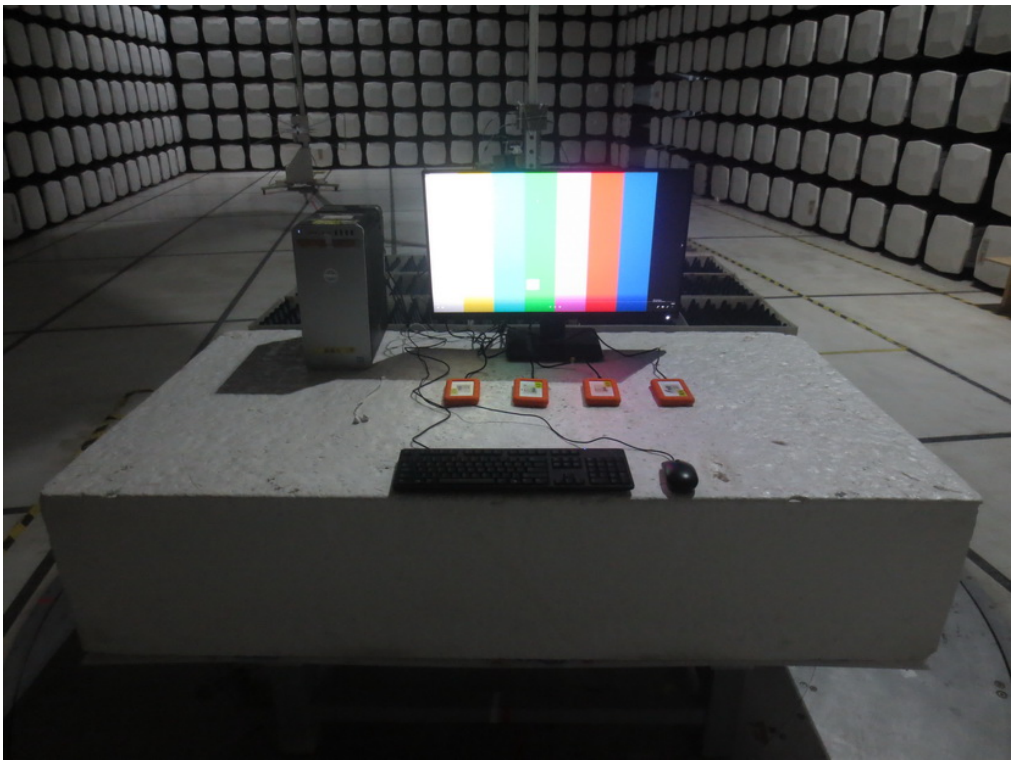
Conducted emissions AC mains power port



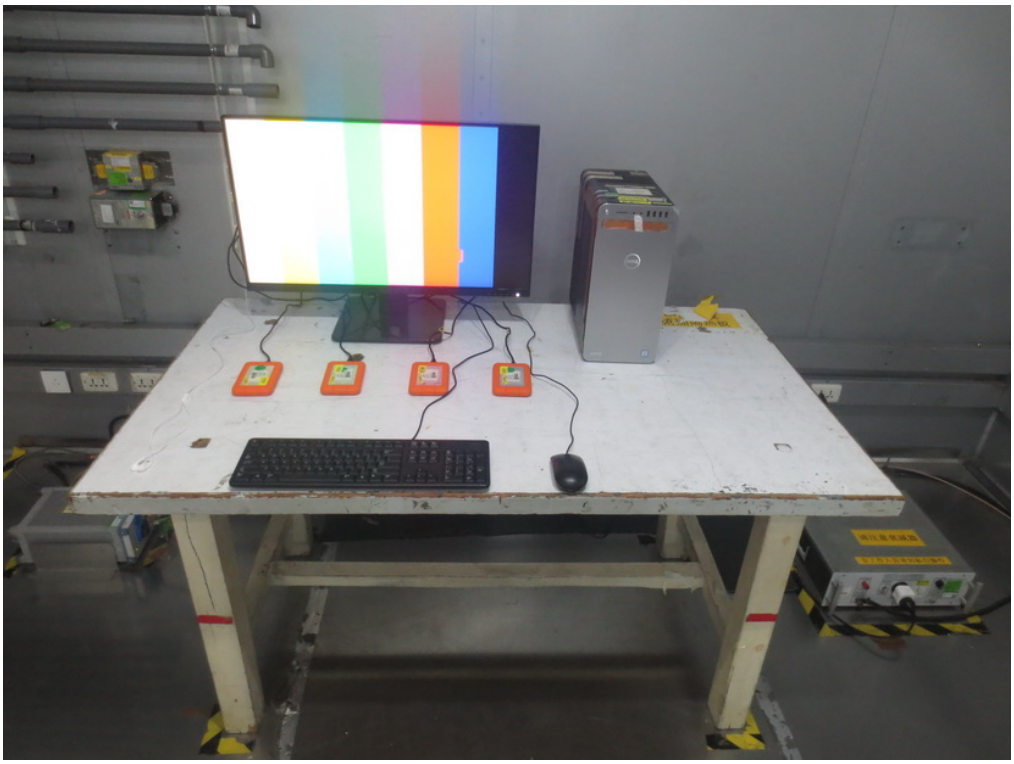
EN 55032:2015+AC:2016

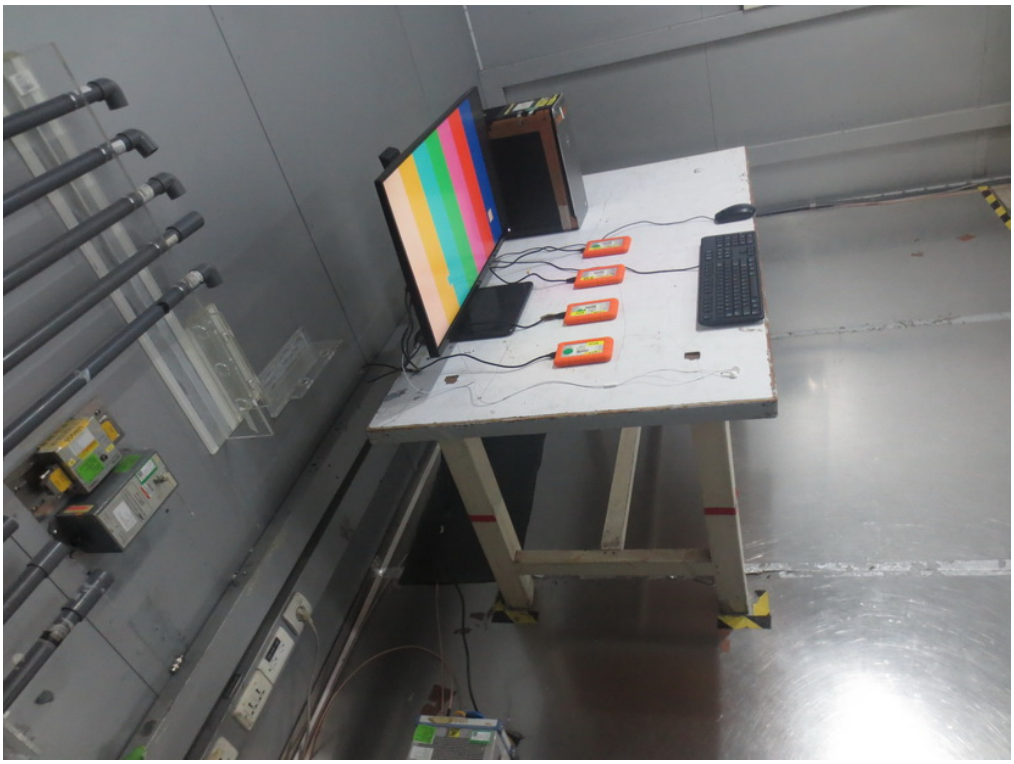
Radiated emissions up to 1 GHz

Radiated emissions above 1 GHz



Conducted emissions AC mains power port





Harmonic current emissions

Voltage fluctuations (Flicker)

Electrostatic discharge immunity

Radiated, radio-frequency, electromagnetic field immunity – up to 1GHz

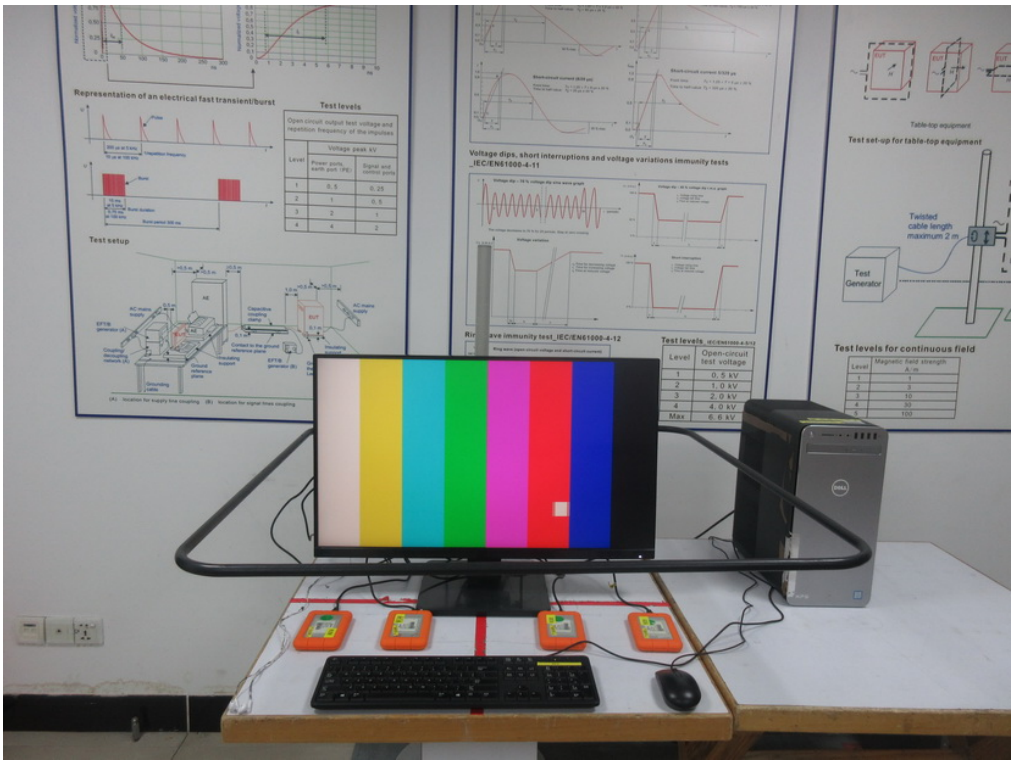
Radiated, radio-frequency, electromagnetic field immunity – above 1GHz

Electrical fast transient/burst immunity

Surge immunity

Immunity to conducted disturbances, induced by radio-frequency fields

Power frequency magnetic field immunity



Voltage dips, short interruptions and voltage variations immunity

End of Test Report