CE EMC Test Report

Report No.:	CE160711D05
Test Model:	N240BU, N250BU, N251BU, N252BU
Series Model:	N24XBU, N25XBU (X can be 0~9, A~Z or blank for marketing purpose)
Received Date:	Jul. 11, 2016
Test Date:	Jul. 21 ~ 26, 2016
Issued Date:	Aug. 3, 2016
Applicant:	CLEVO CO.
Address:	No.129, Xingde Rd., Sanchong Dist., New Taipei City 241, Taiwan (R.O.C.)
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

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Release Control Record

Issue No.	Description	Date Issued
CE160711D05	Original release.	Aug. 3, 2016

1 Certificate of Conformity

Product:	NOTEBOOK PC
Brand:	CLEVO, C.C.L., Qu@liquic
Test Model:	N240BU, N250BU, N251BU, N252BU
Series Model:	N24XBU, N25XBU
	(X can be 0~9, A~Z or blank for marketing purpose)
Sample Status:	Engineering sample
Applicant:	CLEVO CO.
Test Date:	Jul. 21 ~ 26, 2016
Standards:	**EN 55032:2012 +AC:2013, Class B**
	EN 61000-3-2:2014
	EN 61000-3-3:2013
	EN 55024:2010
	EN 61000-4-2:2009 / IEC 61000-4-2:2008 ED. 2.0
	EN 61000-4-3:2006 +A1:2008 +A2:2010 / IEC 61000-4-3:2010 ED. 3.2
	EN 61000-4-4:2012 / IEC 61000-4-4:2012 ED. 3.0
	EN 61000-4-5:2014 / IEC 61000-4-5:2014 ED. 3.0
	EN 61000-4-6:2014 / IEC 61000-4-6:2013 ED. 4.0
	EN 61000-4-8:2010 / IEC 61000-4-8:2009 ED. 2.0
	EN 61000-4-11:2004 / IEC 61000-4-11:2004 ED. 2.0

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Aug. 3, 2016

Vivian Chen / Specialist

Approved by : _____ , **Date:** Aug. 3, 2016

Henry Lai / Director

2 Summary of Test Results

Emission				
Standard	Clause	Test Item	Result/Remarks	Verdict
EN 55032:2012 +AC:2013	A.3	Conducted emission from the AC mains power port	Minimum passing Class B margin is -6.67 dB at 0.18125 MHz	Pass
	A.3	Asymmetric mode conducted emission at telecommunication ports	Minimum passing Class B margin is -6.14 dB at 0.83750 MHz	Pass
	A.2	Radiated emission 30-1000 MHz	Minimum passing Class B margin is -3.04 dB at 159.79 MH & 770.01 MH	Pass
	A.2	Radiated emission above 1GHz	Minimum passing Class B margin is -9.96 dB at 2999.99 MHz	Pass
EN 61000-3-2:2014	-	Harmonic current emissions	The power consumption of EUT is less than 75W and no limits apply.	Pass
EN 61000-3-3:2013	-	Voltage fluctuations and flicker	$P_{st} \leqq 1.0$ $d_{max} \leqq 4\%$ $P_{lt} \leqq 0.65$ $d_c \leqq 3.3\%$ $T_{max} \leqq 500ms$	Pass

Immunity				
EN 55024 Clause	Basic standard	Test Item	Result/Remarks	Verdict
4.2.1	EN 61000-4-2:2009 / IEC 61000-4-2:2008 ED. 2.0	Electrostatic discharges (ESD)	Performance Criterion B	Pass
4.2.3.2	EN 61000-4-3:2006 +A1:2008 +A2:2010 / IEC 61000-4-3:2010 ED. 3.2	Continuous radiated disturbances (RS)	Performance Criterion A	Pass
4.2.2	EN 61000-4-4:2012 / IEC 61000-4-4:2012 ED. 3.0	Electrical fast transients (EFT)	Performance Criterion A	Pass
4.2.5	EN 61000-4-5:2014 / IEC 61000-4-5:2014 ED. 3.0	Surges	Performance Criterion A	Pass
4.2.3.3	EN 61000-4-6:2014 / IEC 61000-4-6:2013 ED. 4.0	Continuous conducted disturbances (CS)	Performance Criterion A	Pass
4.2.4	EN 61000-4-8:2010 / IEC 61000-4-8:2009 ED. 2.0	Power-frequency magnetic fields (PFMF)	Performance Criterion A	Pass
4.2.6	EN 61000-4-11:2004 / IEC 61000-4-11:2004 ED. 2.0	Voltage dips and interruptions	Voltage Dips: >95% reduction – 0.5 period, Performance Criterion A 30% reduction – 25 periods, Performance Criterion A Voltage Interruptions: >95% reduction – 250 periods, Performance Criterion B	Pass

Note:

1. There is no deviation to the applied test methods and requirements covered by the scope of this report.
2. The above EN/IEC basic standards are applied with latest version if customer has no special requirement.

2.1 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 listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Expended Uncertainty (k=2) (±)	Maximum allowable uncertainty (±)
Conducted emission from AC mains power port using AMN, 150kHz ~ 30MHz	2.78 dB	3.4 dB (U_{cispr})
Asymmetric mode conducted emission using AAN, 150kHz ~ 30MHz	3.94 dB	5.0 dB (U_{cispr})
Radiated emission, 30MHz ~ 1GHz	5.18 dB	6.3 dB (U_{cispr})
Radiated emission, 1GHz ~ 6GHz	3.36 dB	5.2 dB (U_{cispr})

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 Features of EUT

The tests reported herein were performed according to the method specified by CLEVO CO., for detailed feature description, please refer to the manufacturer's specifications or user's manual.

3.2 General Description of EUT

Product	NOTEBOOK PC
Brand	CLEVO, C.C.L., Qu@liquic
Test Model	N240BU, N250BU, N251BU, N252BU
Series Model	N24XBU, N25XBU (X can be 0~9, A~Z or blank for marketing purpose)
Model Difference	Marketing differentiation
Sample Status	Engineering sample
Operating Software	Windows 10
Power Supply Rating	Refer to table as below
Accessory Device	Adapter
Data Cable Supplied	N/A

Note:

1. The EUT is a NOTEBOOK PC, which has several models with the differences as below:

Model No.	Representative Test Model	Panel	Interface
N24XBU	N240BU	14"	² HDMI ² D-Sub ² **USB *2** ² Type-C ² Card reader ² Audio in ² Audio out ² LAN (10/100/1000Mbps)
N25XBU	N250BU	15"	² HDMI ² D-Sub ² **USB *3** ² Type-C ² Card reader ² Audio in ² Audio out ² LAN (10/100/1000Mbps)
	N251BU		
	N252BU		
Note: X can be 0~9, A~Z or blank for marketing purpose			

2. The EUT was configured with the following key components:

Module	Brand/ Model/ Specification
LCD	LG LP156WF6
	CHIMEI N156HGE-LA1
	SAMSUNG LTN156AT39-H01
	SAMSUNG LTN156AT35-301
	LG LP140WF6
	INNOLUX N140HGE-EAA
	AU B140XTN03.4
	INNOLUX N140BGE-EA3
CPU	INTEL I7-7500U 2.7GHZ
	INTEL I5-7200U 2.5GHZ
	INTEL I3-7100U 2.4GHZ
SATA HDD	SEAGATE 500GB ST500LT012
	WD 500GB WD5000LPCX
DDRIII SO-DIMM	DDR4-2133 8GB CRUCIAL MTA16ATF1G64HZ-2G1A2
	DDR4-2133 8GB SAMSUNG M471A1K43BB0-CPB
	DDR4-2133 4GB SAMSUNG M471A5143EB0-CPB
	DDR3-2133 4GB TEAM TI9CFSD2H61169
Keyboard	CHICONY CVM15F23USJ430
	CHICONY CVM15F28PAJ4306
	CHICONY CVM14C23US-4301
Battery	GETAC BAT.P S LI 14.8V/3.0AH/44WH 4S1P N240BAT-4
	GETAC BAT.P S LI 14.8V/2.2AH/32WH 4S1P N240BAT-4
	GETAC BAT.P S LI 11.1V/2.2AH/24WH 3S1P N240BAT-3
	SIMPLO BAT.P S LI 11.1V/2.2AH/24WH 3S1P N240BAT-3
	SIMPLO BAT.P S LI 15.12V/2.95AH/44WH 4S1P N240BAT-4
	SIMPLO BAT.P S LI 14.8V/2.2AH/32WH 4S1P N240BAT-4
WLAN	INTEL SNOWFIELD PEAK 8260.NGW.NV NON-VPRO 2X2 WLAN+AC+BT 4.1
	Intel WIRELESS-AC 3165 1X1 AC + BT 3165.NGWGQ
	Intel Wireless-BGN 7265 , 2x2 BGN+ BT 7265.NGWBNG
	Intel 8265 (Windstorm peak) 2x2 AC+BT 8265.NGWMG.Q QS PCI-E M.2 2230
	Intel Dual Band Wireless-AC 3168, 1x1 AC + BT
LTE Module	HUAWEI ME936
PC Camera	BISON BN8V16YTK-350
	BISON BN8V16YTK-340
	CHICONY CNFFH5921003920LH
	CHICONY CNFFH5921003921LH
Touch PAD	SYNAPTICS TM-03189-002
	SYNAPTICS TM-03175-002

3. The EUT consumes power from a switching power adapter, which has several models could be chosen, as the following:

Adapter	Brand	Model No.	Specification
1	CHICONY	A13-040N3A	AC I/P: 100-240Vac, 1.0A, 50-60Hz DC O/P: 19V, 2.1A, 40W Non-shielded **AC 3 Pin** cable (1.8m). Non-shielded DC cable (1.8m) with one ferrite core.
2	CHICONY	A12-040N2A	AC I/P: 100-240Vac, 1.0A, 50-60Hz DC O/P: 19V, 2.1A, 40W Non-shielded **AC 2 Pin** cable (1.8m). Non-shielded DC cable (1.8m) with one ferrite core.
3	DELTA	ADP-40KD BB	AC I/P: 100-240Vac, 1.2A, 50-60Hz DC O/P: 19V, 2.1A, 40W Non-shielded AC 3 Pin cable (1.8m). Non-shielded DC cable (1.8m) with one ferrite core.
4	LITEON	PA-1400-76	AC I/P: 100-240Vac, 1.2A, 50-60Hz DC O/P: 19V, 2.1A, 40W Non-shielded AC 3 Pin cable (1.8m). Non-shielded DC cable (1.8m) with one ferrite core

3.3 Operating Modes of EUT and Determination of Worst Case Operating Mode

1. The EUT was pre-tested under operating and standby condition and the worst emission level was found under **operating condition**.
2. The EUT is designed with AC power supply of 100-240Vac, 50/60Hz.
   For radiated emission evaluation, 230Vac/50Hz & 110Vac/60Hz had been covered during the pre-test.
   The worst radiated emission data was founded at **230Vac/50Hz** and recorded in the applied test report.
3. The EUT was configured with above components for testing and the configurations were as the following:

Ø For N25XBU

Representative Test Model	N250BU	N250BU	N251BU	N252BU
SKU	**1**	**2**	**3**	**4**
Components	**Brand/ Model/ Spec.**			
LCD	LG LP156WF6	CHIMEI N156HGE-LA1	SAMSUNG LTN156AT39-H01	SAMSUNG LTN156AT35-301
CPU	INTEL I7-7500U 2.7GHZ	INTEL I5-7200U 2.5GHZ	INTEL I3-7100U 2.4GHZ	INTEL I5-7200U 2.5GHZ
SATA HDD	SEAGATE 500GB ST500LT012	WD 500GB WD5000LPCX	WD 500GB WD5000LPCX	WD 500GB WD5000LPCX
DDR4 SO-DIMM	DDR4-2133 8GB CRUCIAL MTA16ATF1G64HZ-2G 1A2	DDR4-2133 8GB SAMSUNG M471A1K43BB0-CPB	DDR4-2133 4GB SAMSUNG M471A5143EB0-CPB	DDR3-2133 4GB TEAM TI9CFSD2H61169
Keyboard	CHICONY CVM15F23USJ430	CHICONY CVM15F23USJ430	CHICONY CVM15F33US-430	CHICONY CVM15F28PAJ4306
Adapter	CHICONY A13-040N3A	LITEON PA-1400-76	DELTA ADP-40KD BB	DELTA ADP-40KD BB
Battery	GETAC BAT.P S LI 14.8V/3.0AH/44WH 4S1P N240BAT-4	SIMPLO BAT.P S LI 11.1V/2.2AH/24WH 3S1P N240BAT-3	SIMPLO BAT.P S LI 15.12V/2.95AH/44WH 4S1P N240BAT-4	GETAC BAT.P S LI 14.8V/2.2AH/32WH 4S1P N240BAT-4
WLAN	INTEL SNOWFIELD PEAK 8260.NGW.NV NON-VPRO 2X2 WLAN+AC+BT 4.1	Intel WIRELESS-AC 3165 1X1 AC + BT 3165.NGWGQ	Intel Wireless-BGN 7265, 2x2 BGN+ BT 7265.NGWBNG	Intel 8265 (Windstorm peak) 2x2 AC+BT 8265.NGWMG.Q QS PCI-E M.2 2230
PC Camera	BISON BN8V16YTK-350	BISON BN8V16YTK-340	CHICONY CNFFH5921003920LH	CHICONY CNFFH5921003921LH
Touch PAD	SYNAPTICS TM-03189-002	SYNAPTICS TM-03189-002	SYNAPTICS TM-03189-002	SYNAPTICS TM-03189-002

For radiated test, the above SKU 1~4 were pre-tested and the worse cases were **SKU 3**.

Ø **For N24XBU**

Representative Test Model	N240BU	N240BU	N240BU	N240BU
SKU	**5**	**6**	**7**	**8**
Components	**Brand/ Model/ Spec.**			
LCD	LG LP140WF6	INNOLUX N140HGE-EAA	AU B140XTN03.4	INNOLUX N140BGE-EA3
CPU	INTEL I7-7500U 2.7GHZ	INTEL I5-7200U 2.5GHZ	INTEL I3-7100U 2.4GHZ	INTEL I5-7200U 2.5GHZ
SATA HDD	WD 500GB WD5000LPCX	WD 500GB WD5000LPCX	WD 500GB WD5000LPCX	WD 500GB WD5000LPCX
DDR4 SO-DIMM	DDR4-2133 4GB TEAM TI9CFSD2H61169	DDR4-2133 4GB SAMSUNG M471A5143EB0-CPB	DDR4-2133 8GB SAMSUNG M471A1K43BB0-CPB	DDR4-2133 4G SAMSUNG M471A5143EB0-CPB
Keyboard	CHICONY CVM14C23US-4301	CHICONY CVM14C23US-4301	CHICONY CVM14C23US-4301	CHICONY CVM14C23US-4301
Adapter	CHICONY A13-040N3A	CHICONY A12-040N2A	DELTA ADP-40KD BB	DELTA ADP-40KD BB
Battery	SIMPLO BAT.P S LI 15.12V/2.95AH/44WH 4S1P N240BAT-4	GETAC BAT.P S LI 14.8V/2.2AH/32WH 4S1P N240BAT-4	SIMPLO BAT.P S LI 14.8V/2.2AH/32WH 4S1P N240BAT-4	GETAC BAT.P S LI 11.1V/2.2AH/24WH 3S1P N240BAT-3
WLAN	INTEL SNOWFIELD PEAK 8260.NGW.NV NON-VPRO 2X2 WLAN+AC+BT 4.1	Intel Dual Band Wireless-AC 3168, 1x1 AC + BT	Intel Wireless-BGN 7265 , 2x2 BGN+ BT 7265.NGWBNG	Intel 8265 (Windstorm peak) 2x2 AC+BT 8265.NGWMG.Q QS PCI-E M.2 2230
PC Camera	CHICONY CNFFH5921003921LH 1M	BISON BN8V16YTK-350 1M	CHICONY CNFFH5921003920LH 1M	BISON BN8V16YTK-340 1M
Touch PAD	SYNAPTICS TM-03175-002	SYNAPTICS TM-03175-002	SYNAPTICS TM-03175-002	SYNAPTICS TM-03175-002
LTE	HUAWEI ME936	N/A	N/A	N/A

For radiated test, the above SKU 5~8 were pre-tested and the worse cases were **SKU 8**.

4. According to pre-test result and client's request, test modes are presented in the report as below.

Mode	Test Condition			
	Test Model	SKU	Adapter	Voltage
Conducted Emission Test				
Mode 1	N250BU	1	CHICONY / A13-040N3A	230Vac/ 50Hz & 110Vac/ 60Hz
Mode 2		2	LITEON / PA-1400-76	
Mode 3	N251BU	3	DELTA / ADP-40KD BB	
Mode 4	N252BU	4	DELTA / ADP-40KD BB	
Mode 5	N240BU	5	CHICONY / A13-040N3A	
Mode 6		6	CHICONY / A12-040N2A	
Mode 7		7	DELTA / ADP-40KD BB	
Mode 8		8	DELTA / ADP-40KD BB	
Conducted at telecommunication port				
Mode 1	N250BU	1	CHICONY / A13-040N3A	230Vac/ 50Hz
Mode 2		2	LITEON / PA-1400-76	
Mode 3	N251BU	3	DELTA / ADP-40KD BB	
Mode 4	N252BU	4	DELTA / ADP-40KD BB	
Mode 5	N240BU	5	CHICONY / A13-040N3A	
Mode 6		6	CHICONY / A12-040N2A	
Mode 7		7	DELTA / ADP-40KD BB	
Mode 8		8	DELTA / ADP-40KD BB	
The idle mode of conducted emissions test at telecom port was pre-tested based on the worst case of link mode. Due to emissions of idle mode being lower compared to link mode, only the link mode data were presented in the test report.				
Radiated Emission Test				
Mode 1	N250BU	1	CHICONY / A13-040N3A	230V/ 50Hz
Mode 2		2	LITEON / PA-1400-76	
Mode 3	N251BU	3	DELTA / ADP-40KD BB	
Mode 4	N252BU	4	DELTA / ADP-40KD BB	
Mode 5	N240BU	5	CHICONY / A13-040N3A	
Mode 6		6	CHICONY / A12-040N2A	
Mode 7		7	DELTA / ADP-40KD BB	
Mode 8		8	DELTA / ADP-40KD BB	
Harmonic/ Flicker & Immunity Tests				
Mode 3	N251BU	3	DELTA / ADP-40KD BB	230V/ 50Hz
Mode 8	N240BU	8	DELTA / ADP-40KD BB	

3.4 Test Program Used and Operation Descriptions

Emission Tests (Harmonic & Flicker Test Excluded):

a. Turned on the power of all equipments.
b. EUT ran a test program (BurnIn Test) to enable all functions.
c. EUT read and wrote messages to/ from HDD, card reader and ext. HDDs.
d. EUT sent and received messages to/ from Server PC (kept in a remote area) via an UTP LAN cable (10m).
e. EUT sent and received messages to/from Wireless Broadband Router (kept in a remote area) via wireless transmission.
f. EUT sent and received messages to/ from Server PC (kept in a remote area) via a Bluetooth Transmission.
g. The EUT communicated messages with the Universal Radio Communication Tester, which acted as a communication partners. ***<Mode 5 only>***
h. Run 4G link. ***<Mode 5 only>***
i. EUT sent color bar patterns to panel and ext. LCD monitors. Then they displayed color bar patterns on their screens simultaneously.
j. EUT sent “1kHz audio” signal to earphone.
k. EUT sent messages to printer and printed them out.
l. Video camera of EUT captured video image, then EUT displayed it on its screen.
m. Steps c-l were repeated.

Harmonics, Flicker & Immunity Tests:

a. Turned on the power of all equipments.
b. Notebook PC (EUT) ran a test program (BurnIn Test) to enable all functions.
c. EUT read and wrote messages to/ from HDD, USB Flash Drives and card reader.
d. EUT sent and received messages to/ from Server PC (kept in a remote area) via an UTP LAN cable (10m).
e. EUT sent and received messages to/from Wireless Broadband Router (kept in a remote area) via wireless transmission.
f. Set EUT and the bluetooth mouse under transmitting condition at specific channel continuously.
g. EUT sent "H" messages to LCD panel and ext. monitors. Then they displayed "H" patterns on their screens simultaneously.
h. Video camera of EUT captured video image, then EUT displayed it on its screen.
i. Steps c-h were repeated.

3.5 Primary Clock Frequencies of Internal Source

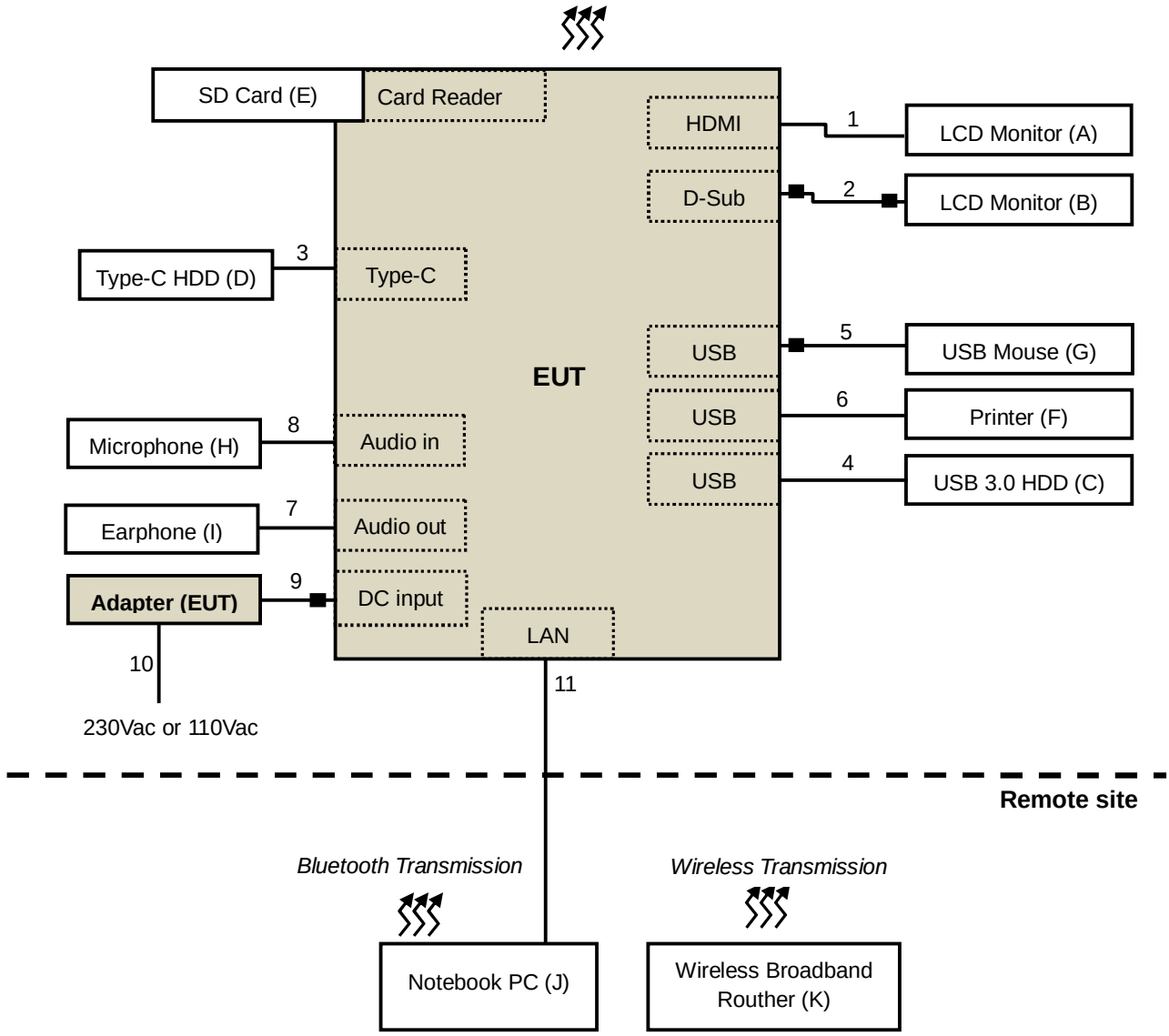
The highest frequency generated or used within the EUT or on which the EUT operates or tunes is 6GHz, provided by CLEVO CO., for detailed internal source, please refer to the manufacturer's specifications.

4 Configuration and Connections with EUT

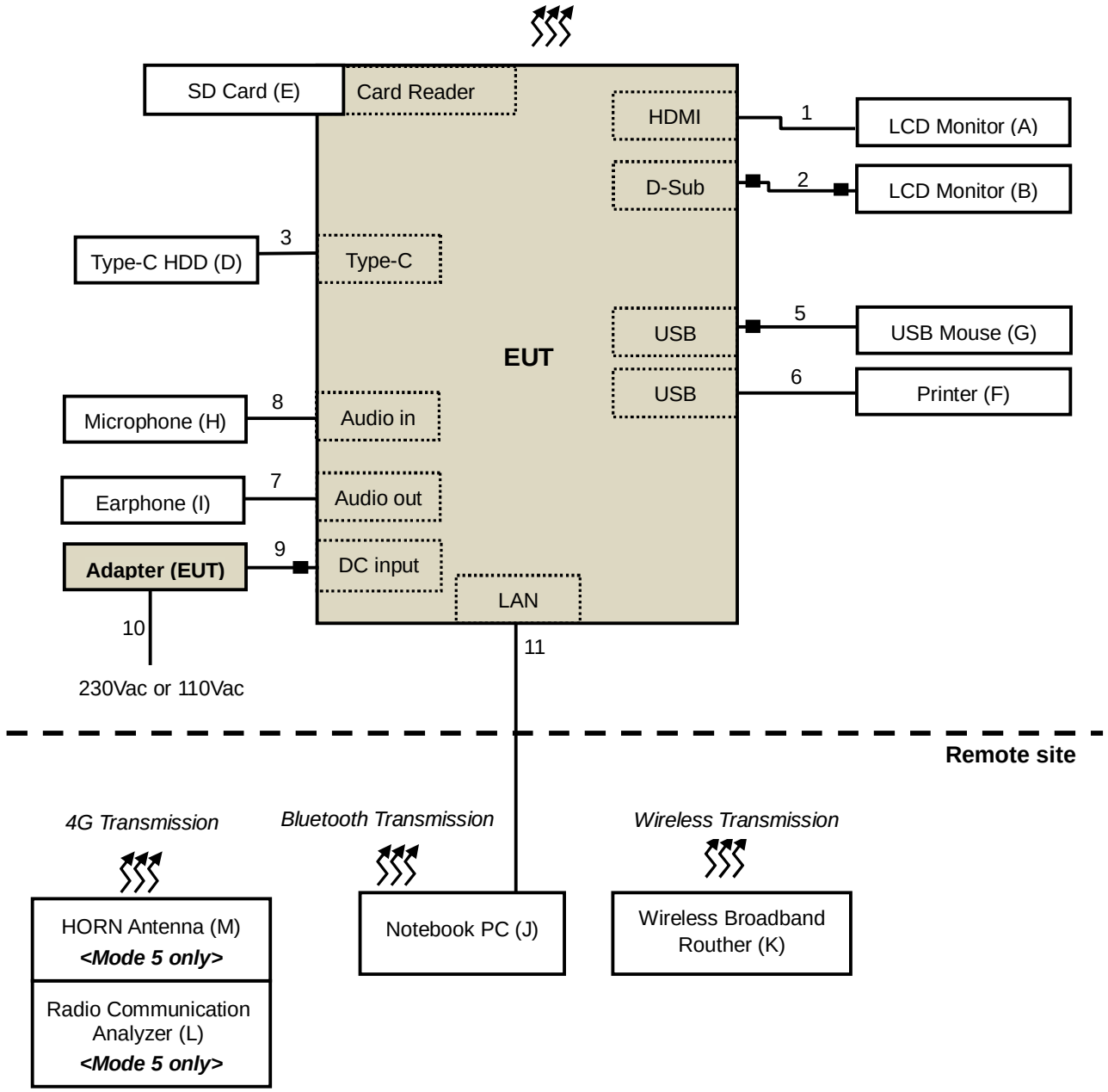
4.1 Connection Diagram of EUT and Peripheral Devices

Emission tests (Harmonics & Flicker excluded):

Ø For Mode 1 ~ 4

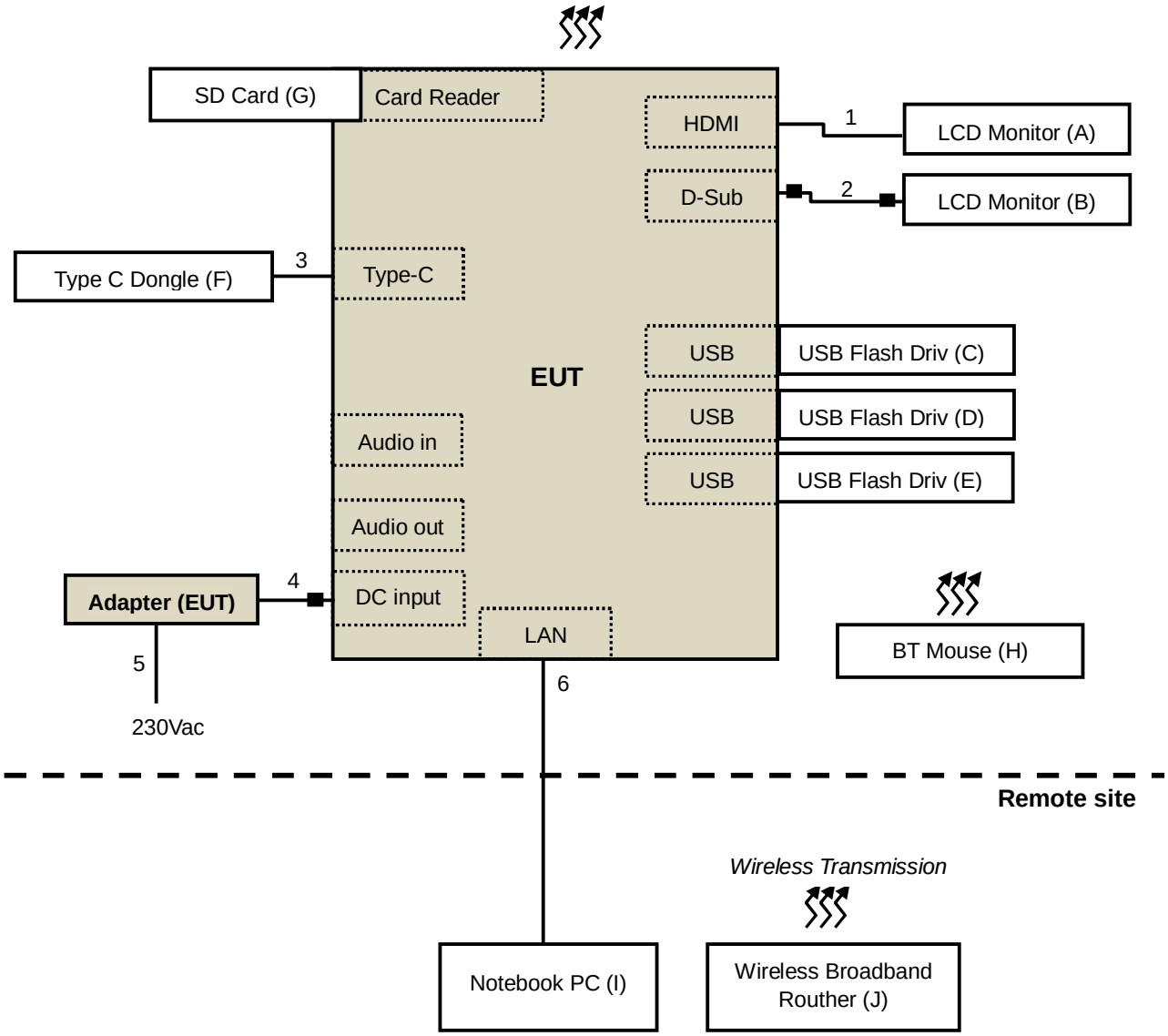


Ø **For Mode 5 ~ 8**

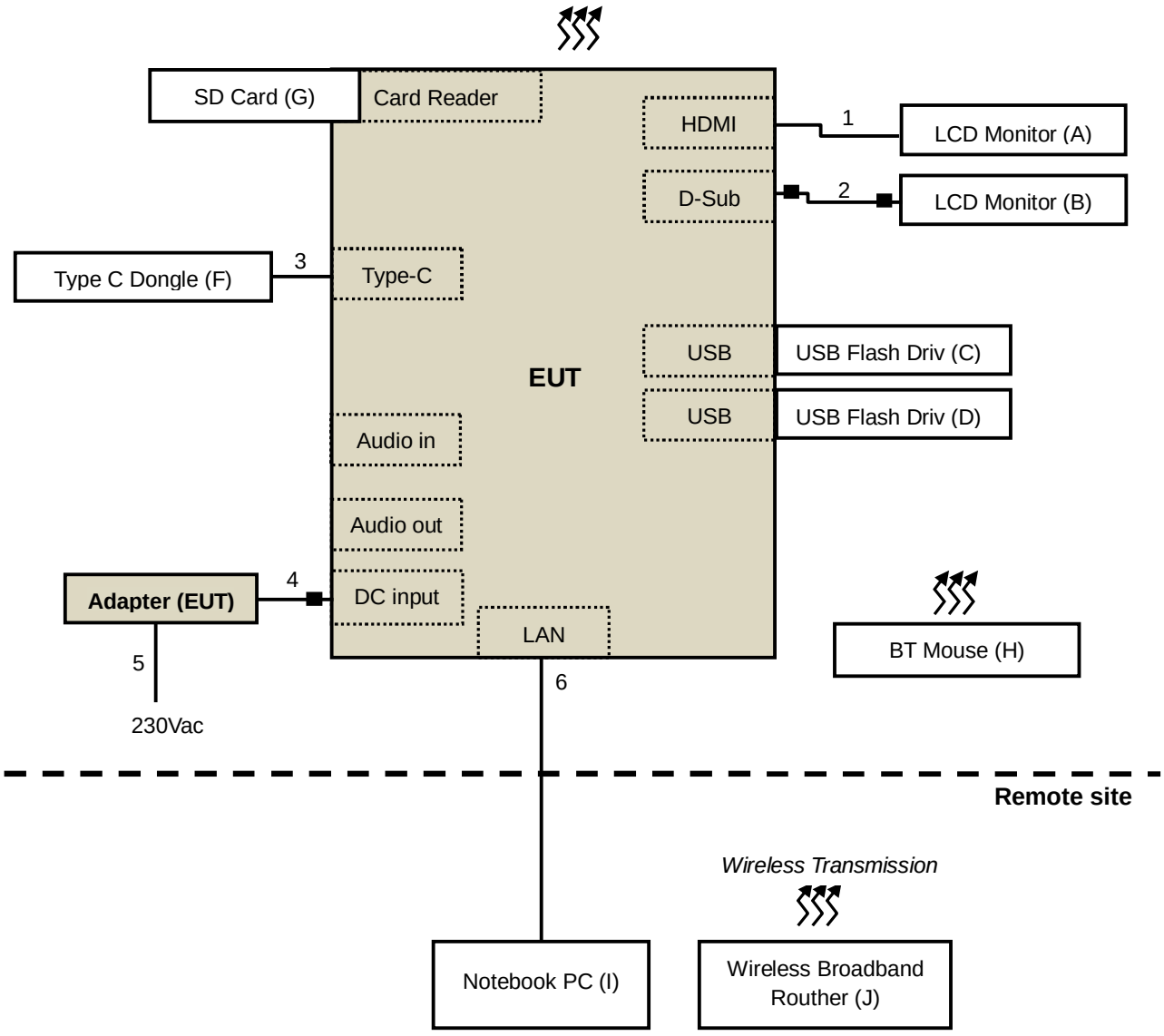

SD Card (E)
Card Reader
HDMI
1
LCD Monitor (A)
D-Sub
2
LCD Monitor (B)
3
Type-C HDD (D)
Type-C
USB
5
USB Mouse (G)
EUT
USB
6
Printer (F)
8
Microphone (H)
Audio in
7
Earphone (I)
Audio out
9
Adapter (EUT)
DC input
LAN
10
11
230Vac or 110Vac
Remote site
4G Transmission
Bluetooth Transmission
Wireless Transmission
HORN Antenna (M)
<Mode 5 only>
Notebook PC (J)
Wireless Broadband Routher (K)
Radio Communication Analyzer (L)
<Mode 5 only>

Harmonics, Flicker, Immunity tests:

Ø For Mode 3



Ø For Mode 8


SD Card (G)
Card Reader
HDMI
1
LCD Monitor (A)
D-Sub
2
LCD Monitor (B)
Type C Dongle (F)
3
Type-C
USB
USB Flash Driv (C)
EUT
USB
USB Flash Driv (D)
Audio in
Audio out
Adapter (EUT)
4
DC input
LAN
BT Mouse (H)
5
230Vac
6
Remote site
Wireless Transmission
Notebook PC (I)
Wireless Broadband Routher (J)

4.2 Configuration of Peripheral Devices and Cable Connections

Emission tests (Harmonics & Flicker excluded):

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	24" LCD MONITOR	DELL	U2410	CN082WXD728720CC0L2L	FCC DoC Approved	Provided by Lab
B.	24" LCD MONITOR	DELL	U2410	CN082WXD728720CC0KVL	FCC DoC Approved	Provided by Lab
C.	USB 3.0 Hard Disk	WD	WDBUZG0010BBK-PESN	WXM1E1504NEE	FCC DoC Approved	Provided by Lab
D.	Type C HDD	G-technology	G-DRIVE mobile USB-C	N/A	FCC DoC Approved	Provided by Lab
E.	SD Card	Trandscend	2GB	N/A	N/A	Provided by Lab
F.	PRINTER	LEXMARK	Z33	03331652893	FCC DoC Approved	Provided by Lab
G.	USB Mouse	Microsoft	1113	9170514914095	FCC DOC Approved	Provided by Lab
H.	MICROPHONE	Labtec	mic-333	N/A	N/A	Provided by Lab
I.	EARPHONE	PHILIPS	SBC HL145	N/A	N/A	Provided by Lab
J.	Notebook PC	ASUS	PU401L	ECNXBC012528528	FCC DOC Approved	Provided by Lab
K.	Wireless Broandband Router	D-LINK	DIR-815	PVK21B1000238	KA2IR815A1	Provided by Lab
L.	Radio Communication Analyzer	Anritsu	MT8820C	6201300640	N/A	Provided by Lab
M.	HORN Antenna	ETS	3117	00034127	N/A	Provided by Lab

Note:
1. All power cords of the above support units are non-shielded (1.8m).
2. Items J~M acted as communication partners to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	HDMI cable	1	1.8	Y	0	Provided by Lab
2.	D-Sub cable	1	1.8	Y	2	Provided by Lab
3.	Type-C cable	1	0.5	Y	0	Provided by Lab
4.	USB cable	1	0.5	Y	0	Provided by Lab
5.	USB cable	1	1.2	Y	1	Provided by Lab
6.	USB cable	1	1.2	Y	0	Provided by Lab
7.	Audio cable	1	2.4	N	0	Provided by Lab
8.	Audio cable	1	1.2	N	0	Provided by Lab
9.	DC power cable	1	1.8	N	1	Supplied by client
10.	AC power cord	1	1.8	N	0	Provided by Lab
11.	LAN cable	1	10	N	0	Provided by Lab

Note: The core(s) is(are) originally attached to the cable(s).

Harmonics, Flicker, Immunity tests:

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	24" LCD MONITOR	DELL	U2410	CN082WXD728720CC0YAL	FCC DoC Approved	Provided by Lab
B.	24" LCD MONITOR	DELL	P2415Qb	CN-OGTTPW-74261-662-OAAL	FCC DoC Approved	Provided by Lab
C.	USB Flash Drive	PNY	PFGHK016	N/A	N/A	Provided by Lab
D.	USB Flash Drive	PNY	PFGHK016	N/A	N/A	Provided by Lab
E.	USB Flash Drive	HP	V250w	N/A	N/A	Provided by Lab
F.	Type C Dongle	Verbatim	Storen'nGo UAB 3.1 Type-C	N/A	N/A	Provided by Lab
G.	SD Card	Transcend	TS16GSDHC6	N/A	N/A	Provided by Lab
H.	BT Mouse	Ibuffalo	BSMBB10N	N/A	N/A	Provided by Lab
I.	Notebook PC	Lenovo	L440	R90FCKH8	FCC DoC Approved	Provided by Lab
J.	Wireless Broadband Router	BUFFALO	WBR-G54S	34074254910566	FCC DoC Approve	Provided by Lab

Note:
1. All power cords of the above support units are non-shielded (1.8m).
2. Items I~J acted as communication partners to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	HDMI cable	1	1.8	Y	0	Provided by Lab
2.	D-Sub cable	1	1.8	Y	2	Provided by Lab
3.	Type C cable	1	0.3	Y	0	Provided by Lab
4.	DC power cable	1	1.8	N	1	Supplied by client
5.	AC power cord	1	1.8	N	0	Provided by Lab
6.	LAN cable	2	10	N	0	Provided by Lab

Note: The core(s) is(are) originally attached to the cable(s).

5 Conducted Emission from the AC Mains Power Port

5.1 Limits

EN 55032 Table clause	Frequency range (MHz)	Coupling device	Detector type / bandwidth	Class A limits (dBuV)
A8.1	0.15 - 0.5	AMN	Quasi-peak / 9kHz	79
	0.5 - 30.0			73
A8.2	0.15 - 0.5		Average / 9kHz	66
	0.5 - 30.0			60

EN 55032 Table clause	Frequency range (MHz)	Coupling device	Detector type / bandwidth	Class B limits (dBuV)
A9.1	0.15 - 0.5	AMN	Quasi-peak / 9kHz	66 - 56
	0.5 - 5			56
	5 - 30.0			60
A9.2	0.15 - 0.5		Average / 9kHz	56 - 46
	0.5 - 5			46
	5 - 30.0			50

5.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	100276	Apr. 12, 2016	Apr. 11, 2017
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ENV216	101197	May 04, 2016	May 03, 2017
LISN With Adapter (for EUT)	AD10	C10Ada-002	May 04, 2016	May 03, 2017
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100218	Nov. 25, 2015	Nov. 24, 2016
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK8129	8129229	May 04, 2016	May 03, 2017
Software	Cond_V7.3.7	NA	NA	NA
RF cable (JYEBAO) With 10dB PAD	5D-FB	Cable-C10.01	Feb. 15, 2016	Feb. 14, 2017
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-011484	May 12, 2016	May 11, 2017
ROHDE & SCHWARZ Artificial Mains Network (For TV EUT)	ESH3-Z5	100220	Nov. 13, 2015	Nov. 12, 2016
LISN With Adapter (for TV EUT)	100220	N/A	Nov. 13, 2015	Nov. 12, 2016

Notes:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. 10.
3. The VCCI Site Registration No. C-1852.
4. Tested Date: Jul. 21 ~ 22, 2016

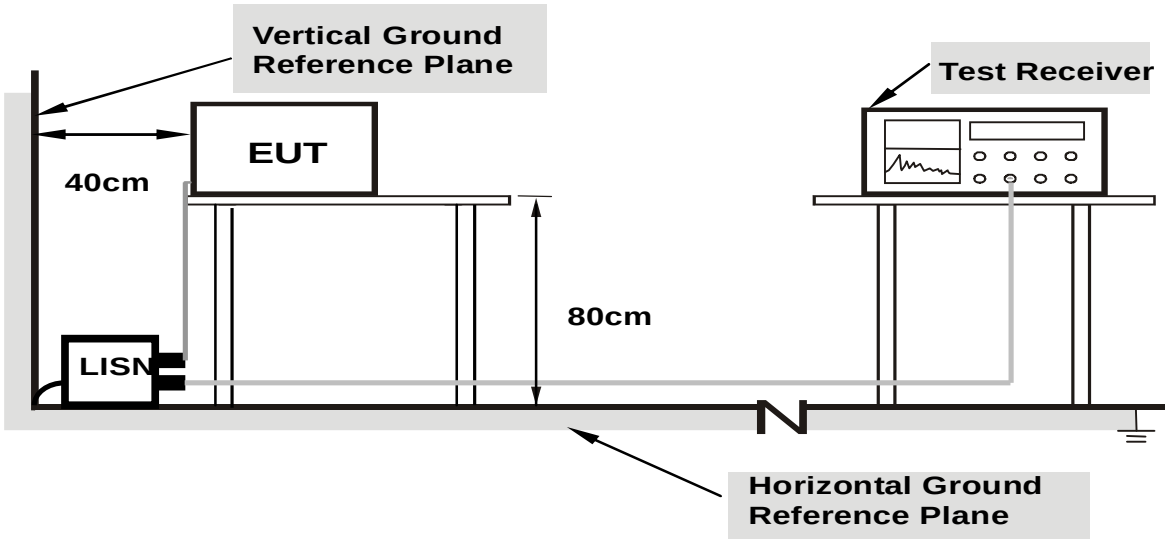
5.3 Test Arrangement

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The test results of conducted emissions at mains ports are recorded of six worst margins for quasi-peak (mandatory) [and average (if necessary)] values against the limits at frequencies of interest unless the margin is 20 dB or greater.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.



Note: 1. Support units were connected to second LISN.
2. The distance specified between EUT/AE and other metallic objects is ≥ 0.8 m in the measurement arrangement for table-top EUT.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

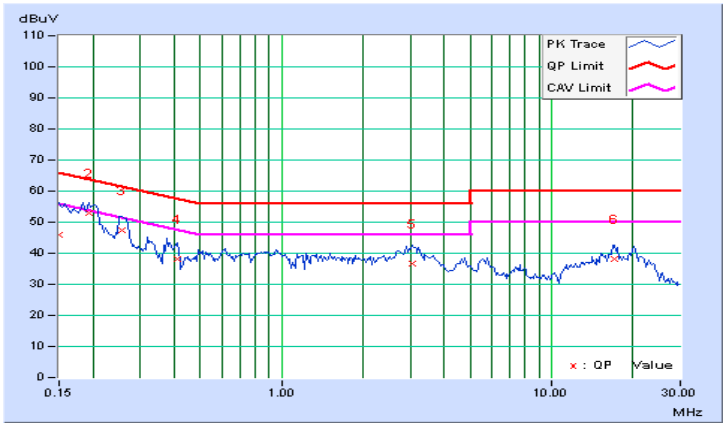
5.4 Test Results of Input Power: 110Vac, 60Hz

Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 1		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15000	9.70	36.27	11.91	45.97	21.61	66.00	56.00	-20.03	-34.39
2	0.19297	9.70	43.22	31.92	52.92	41.62	63.91	53.91	-10.99	-12.29
3	0.25547	9.70	37.88	23.93	47.58	33.63	61.58	51.58	-14.00	-17.95
4	0.41172	9.69	28.50	13.40	38.19	23.09	57.61	47.61	-19.42	-24.52
5	3.06641	9.83	26.78	16.25	36.61	26.08	56.00	46.00	-19.39	-19.92
6	17.11719	9.94	28.11	21.51	38.05	31.45	60.00	50.00	-21.95	-18.55

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

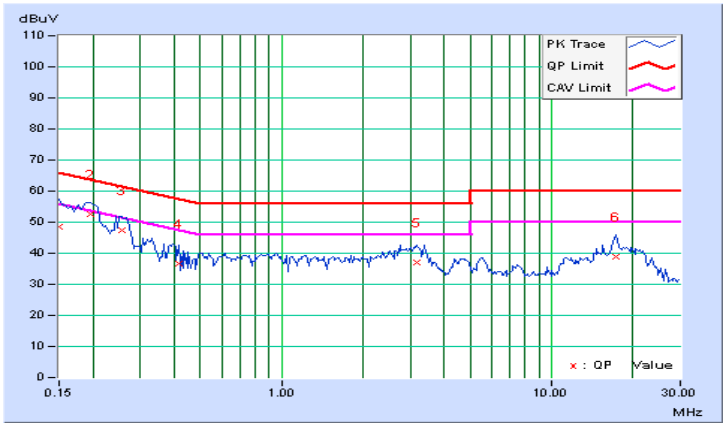


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 1		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15000	9.70	38.83	13.06	48.53	22.76	66.00	56.00	-17.47	-33.24
2	0.19687	9.69	42.77	31.21	52.46	40.90	63.74	53.74	-11.28	-12.84
3	0.25547	9.69	37.86	23.92	47.55	33.61	61.58	51.58	-14.03	-17.97
4	0.41563	9.69	26.89	8.63	36.58	18.32	57.54	47.54	-20.95	-29.21
5	3.16797	9.82	27.38	17.23	37.20	27.05	56.00	46.00	-18.80	-18.95
6	17.38672	9.94	29.07	21.81	39.01	31.75	60.00	50.00	-20.99	-18.25

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

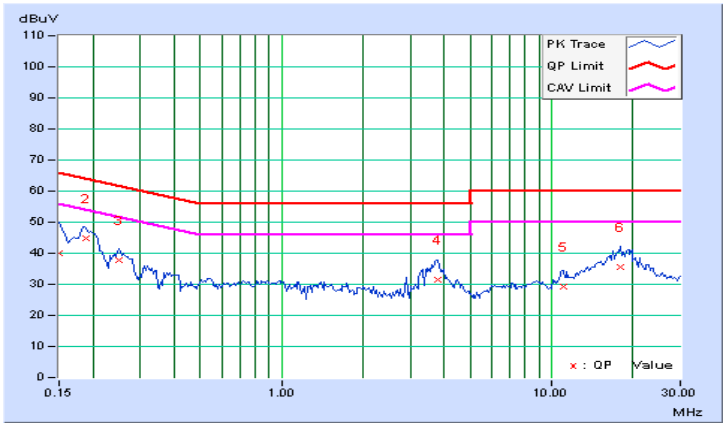


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 2		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15000	9.70	30.33	12.19	40.03	21.89	66.00	56.00	-25.97	-34.11
2	0.18906	9.70	35.26	23.20	44.96	32.90	64.08	54.08	-19.12	-21.18
3	0.25156	9.70	28.18	15.40	37.88	25.10	61.71	51.71	-23.83	-26.61
4	3.78906	9.86	21.44	7.89	31.30	17.75	56.00	46.00	-24.70	-28.25
5	11.06641	9.92	19.24	12.82	29.16	22.74	60.00	50.00	-30.84	-27.26
6	18.07031	9.94	25.49	19.04	35.43	28.98	60.00	50.00	-24.57	-21.02

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

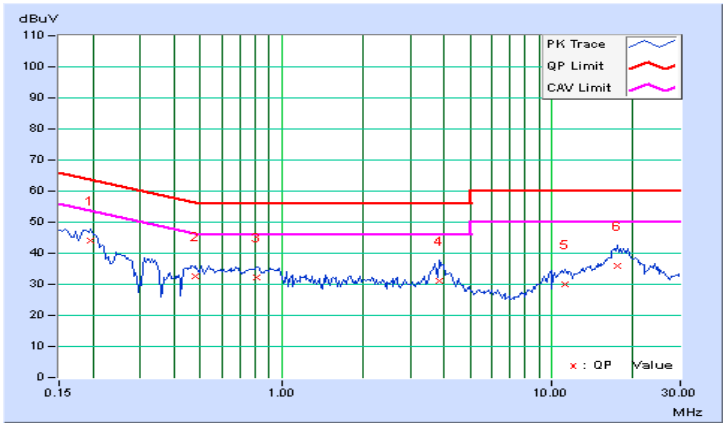


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 2		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.19687	9.69	34.37	24.65	44.06	34.34	63.74	53.74	-19.68	-19.40
2	0.48203	9.70	22.97	8.51	32.67	18.21	56.30	46.30	-23.64	-28.10
3	0.81016	9.72	22.38	9.21	32.10	18.93	56.00	46.00	-23.90	-27.07
4	3.83203	9.85	21.14	9.91	30.99	19.76	56.00	46.00	-25.01	-26.24
5	11.21484	9.91	19.93	13.57	29.84	23.48	60.00	50.00	-30.16	-26.52
6	17.58984	9.94	25.81	19.51	35.75	29.45	60.00	50.00	-24.25	-20.55

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

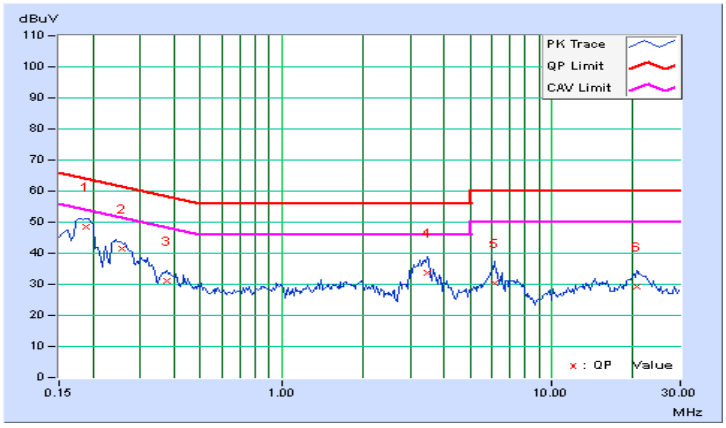


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 3		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18906	9.70	38.66	26.73	48.36	36.43	64.08	54.08	-15.72	-17.65
2	0.25547	9.70	31.86	19.35	41.56	29.05	61.58	51.58	-20.02	-22.53
3	0.37656	9.69	21.25	9.51	30.94	19.20	58.35	48.35	-27.41	-29.15
4	3.47266	9.85	23.86	12.01	33.71	21.86	56.00	46.00	-22.29	-24.14
5	6.12109	9.88	20.57	13.53	30.45	23.41	60.00	50.00	-29.55	-26.59
6	20.69531	9.94	19.44	13.03	29.38	22.97	60.00	50.00	-30.62	-27.03

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

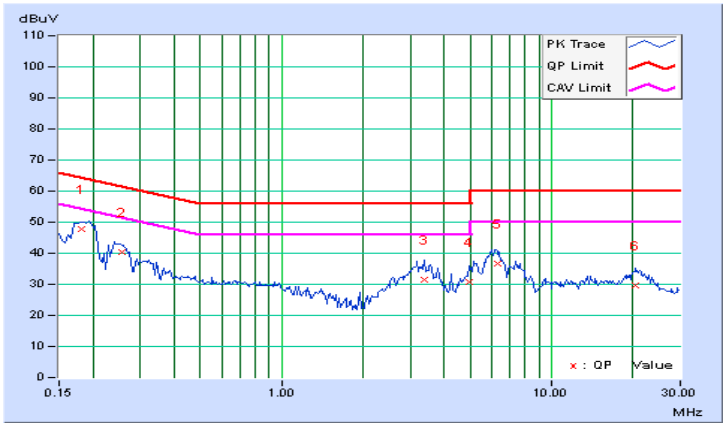


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 3		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18125	9.69	37.91	24.09	47.60	33.78	64.43	54.43	-16.82	-20.64
2	0.25547	9.69	30.83	18.63	40.52	28.32	61.58	51.58	-21.06	-23.26
3	3.39844	9.83	21.60	13.91	31.43	23.74	56.00	46.00	-24.57	-22.26
4	4.98438	9.87	20.69	14.56	30.56	24.43	56.00	46.00	-25.44	-21.57
5	6.28125	9.88	26.82	19.78	36.70	29.66	60.00	50.00	-23.30	-20.34
6	20.46875	9.95	19.75	13.43	29.70	23.38	60.00	50.00	-30.30	-26.62

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

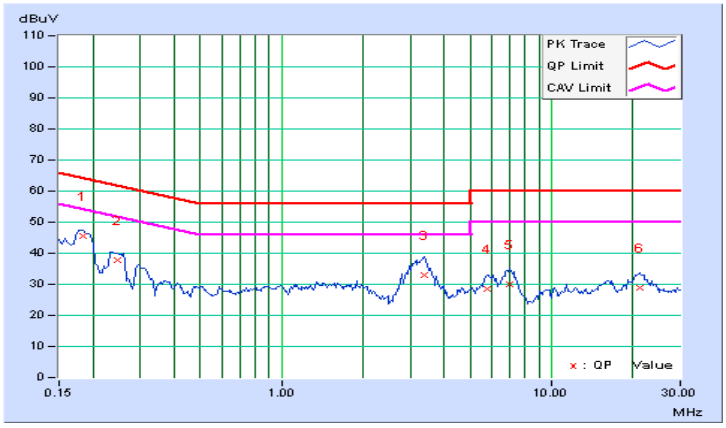


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 4		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18516	9.70	35.78	24.83	45.48	34.53	64.25	54.25	-18.77	-19.72
2	0.24766	9.70	28.20	17.92	37.90	27.62	61.84	51.84	-23.94	-24.22
3	3.37500	9.84	22.94	11.21	32.78	21.05	56.00	46.00	-23.22	-24.95
4	5.80469	9.88	18.58	11.64	28.46	21.52	60.00	50.00	-31.54	-28.48
5	7.03125	9.89	20.04	13.90	29.93	23.79	60.00	50.00	-30.07	-26.21
6	21.21875	9.95	18.95	13.05	28.90	23.00	60.00	50.00	-31.10	-27.00

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

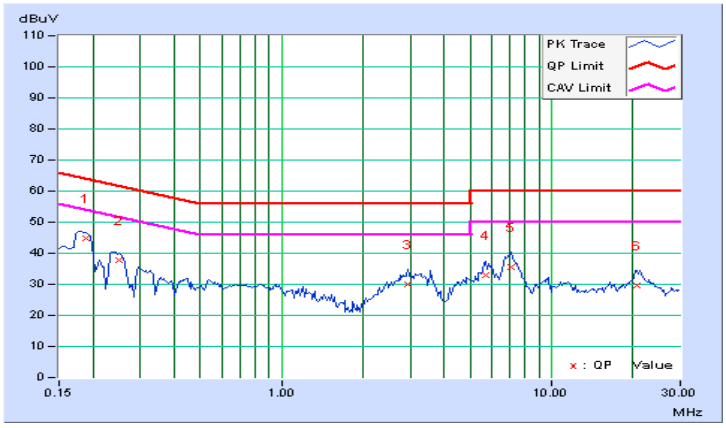


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 4		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18906	9.69	35.03	23.22	44.72	32.91	64.08	54.08	-19.36	-21.17
2	0.25156	9.69	28.13	16.49	37.82	26.18	61.71	51.71	-23.89	-25.53
3	2.94141	9.81	20.21	14.17	30.02	23.98	56.00	46.00	-25.98	-22.02
4	5.69922	9.87	22.95	17.41	32.82	27.28	60.00	50.00	-27.18	-22.72
5	7.08594	9.88	25.55	19.94	35.43	29.82	60.00	50.00	-24.57	-20.18
6	20.76172	9.95	19.58	13.68	29.53	23.63	60.00	50.00	-30.47	-26.37

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

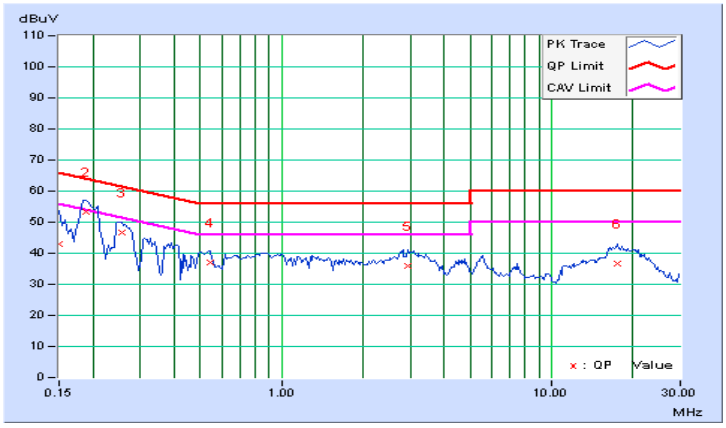


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 5		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15000	9.70	33.40	10.60	43.10	20.30	66.00	56.00	-22.90	-35.70
2	0.18906	9.70	43.81	32.64	53.51	42.34	64.08	54.08	-10.57	-11.74
3	0.25547	9.70	37.13	23.75	46.83	33.45	61.58	51.58	-14.75	-18.13
4	0.54453	9.70	27.44	13.51	37.14	23.21	56.00	46.00	-18.86	-22.79
5	2.92188	9.82	26.15	15.15	35.97	24.97	56.00	46.00	-20.03	-21.03
6	17.53125	9.94	26.69	20.22	36.63	30.16	60.00	50.00	-23.37	-19.84

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

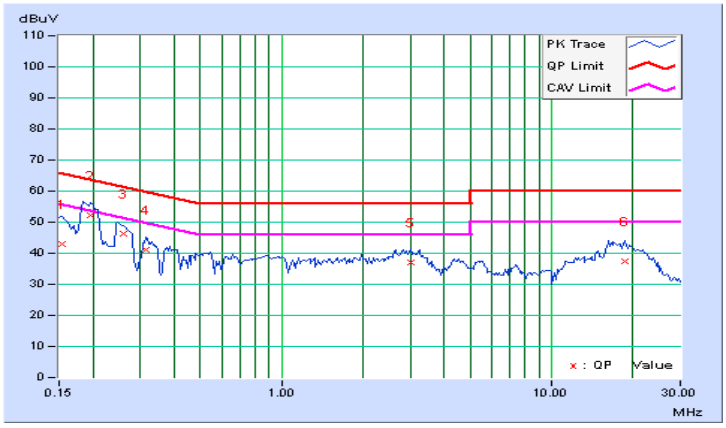


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 5		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15391	9.70	33.17	10.06	42.87	19.76	65.79	55.79	-22.92	-36.03
2	0.19687	9.69	42.71	31.45	52.40	41.14	63.74	53.74	-11.34	-12.60
3	0.25938	9.69	36.53	22.79	46.22	32.48	61.45	51.45	-15.23	-18.97
4	0.31406	9.69	31.27	17.02	40.96	26.71	59.86	49.86	-18.90	-23.15
5	3.01172	9.82	27.21	16.69	37.03	26.51	56.00	46.00	-18.97	-19.49
6	18.67578	9.95	27.56	19.64	37.51	29.59	60.00	50.00	-22.49	-20.41

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

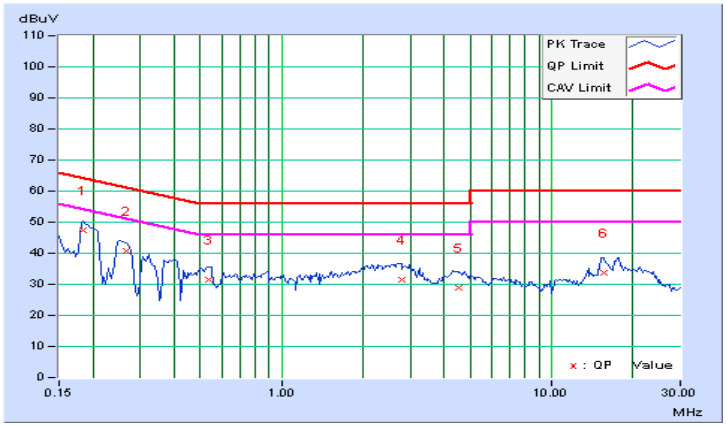


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 6		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18516	9.70	37.73	25.12	47.43	34.82	64.25	54.25	-16.82	-19.43
2	0.26719	9.70	30.92	16.06	40.62	25.76	61.20	51.20	-20.59	-25.45
3	0.53672	9.70	21.76	8.05	31.46	17.75	56.00	46.00	-24.54	-28.25
4	2.78516	9.82	21.51	11.44	31.33	21.26	56.00	46.00	-24.67	-24.74
5	4.51172	9.87	19.19	12.02	29.06	21.89	56.00	46.00	-26.94	-24.11
6	15.66016	9.94	23.72	16.46	33.66	26.40	60.00	50.00	-26.34	-23.60

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

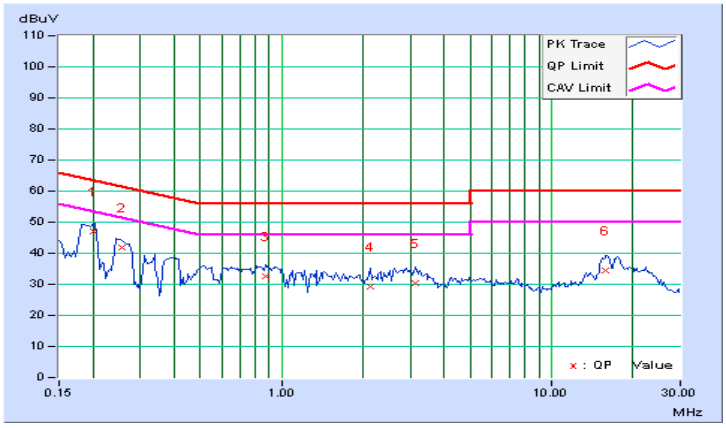


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 6		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.20078	9.69	37.35	24.83	47.04	34.52	63.58	53.58	-16.54	-19.06
2	0.25547	9.69	32.12	18.79	41.81	28.48	61.58	51.58	-19.77	-23.10
3	0.87266	9.72	23.05	8.60	32.77	18.32	56.00	46.00	-23.23	-27.68
4	2.14453	9.78	19.42	6.49	29.20	16.27	56.00	46.00	-26.80	-29.73
5	3.12891	9.82	20.71	10.64	30.53	20.46	56.00	46.00	-25.47	-25.54
6	15.90625	9.94	24.68	18.42	34.62	28.36	60.00	50.00	-25.38	-21.64

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

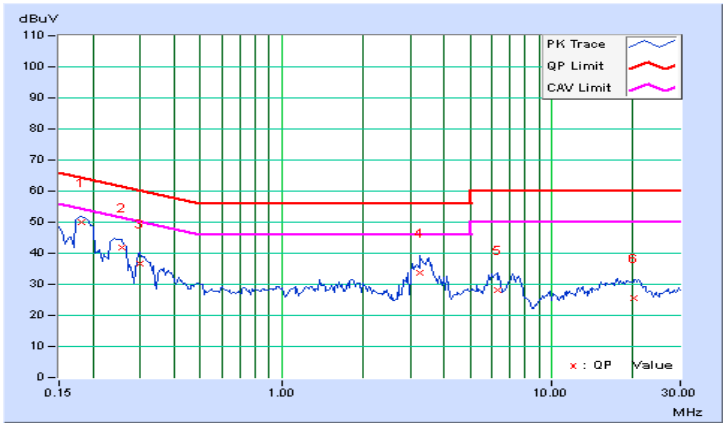


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 7		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18125	9.70	40.22	28.04	49.92	37.74	64.43	54.43	-14.51	-16.69
2	0.25547	9.70	32.22	17.40	41.92	27.10	61.58	51.58	-19.66	-24.48
3	0.29844	9.70	27.08	10.94	36.78	20.64	60.29	50.29	-23.51	-29.65
4	3.26172	9.84	23.72	11.75	33.56	21.59	56.00	46.00	-22.44	-24.41
5	6.28516	9.89	18.43	11.61	28.32	21.50	60.00	50.00	-31.68	-28.50
6	20.16797	9.94	15.51	7.94	25.45	17.88	60.00	50.00	-34.55	-32.12

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

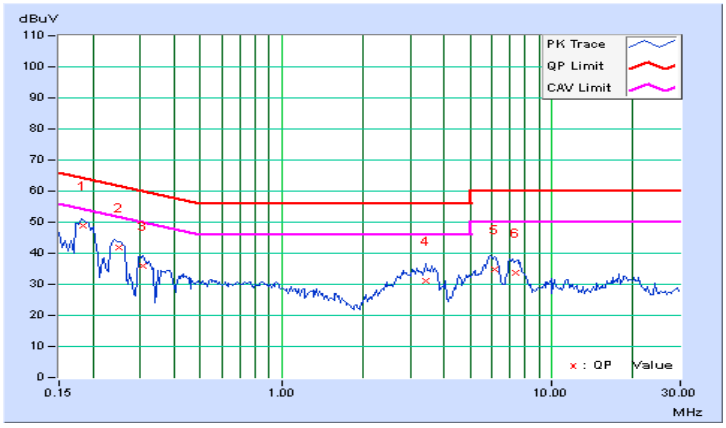


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 7		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18516	9.69	39.31	28.61	49.00	38.30	64.25	54.25	-15.25	-15.95
2	0.25156	9.69	32.18	19.88	41.87	29.57	61.71	51.71	-19.84	-22.14
3	0.30625	9.69	26.36	15.36	36.05	25.05	60.07	50.07	-24.02	-25.02
4	3.43359	9.83	21.23	13.14	31.06	22.97	56.00	46.00	-24.94	-23.03
5	6.16016	9.87	24.84	19.03	34.71	28.90	60.00	50.00	-25.29	-21.10
6	7.37109	9.88	23.84	18.21	33.72	28.09	60.00	50.00	-26.28	-21.91

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

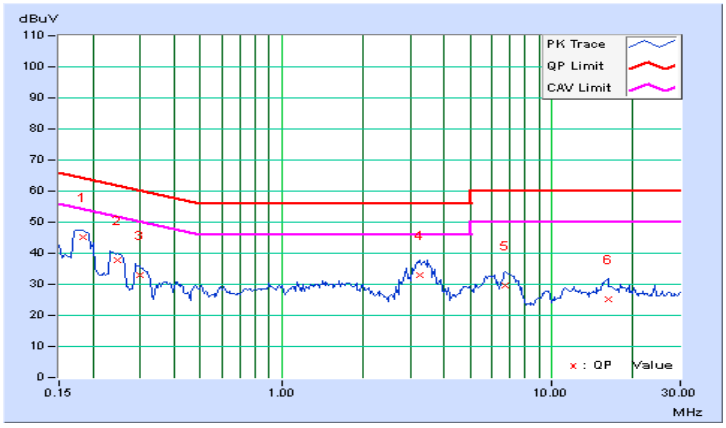


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 8		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18516	9.70	35.62	24.26	45.32	33.96	64.25	54.25	-18.93	-20.29
2	0.24766	9.70	28.15	17.52	37.85	27.22	61.84	51.84	-23.99	-24.62
3	0.29844	9.70	23.15	9.96	32.85	19.66	60.29	50.29	-27.44	-30.63
4	3.27344	9.84	23.05	12.05	32.89	21.89	56.00	46.00	-23.11	-24.11
5	6.76953	9.89	19.78	13.80	29.67	23.69	60.00	50.00	-30.33	-26.31
6	16.19922	9.94	15.41	8.75	25.35	18.69	60.00	50.00	-34.65	-31.31

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

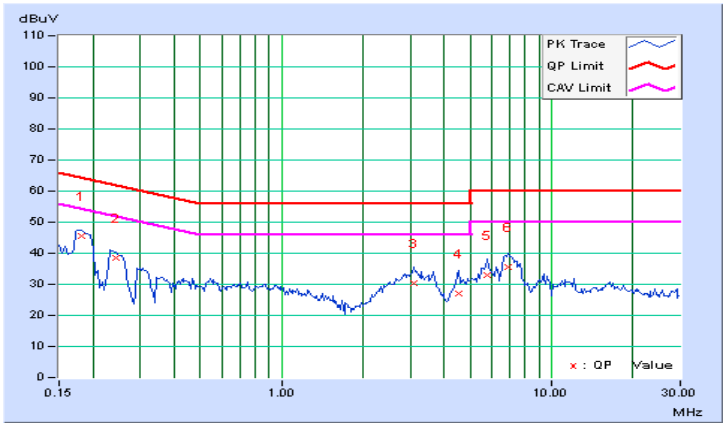


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	110Vac, 60Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 8		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18125	9.69	35.76	24.30	45.45	33.99	64.43	54.43	-18.97	-20.43
2	0.24375	9.69	28.76	17.80	38.45	27.49	61.97	51.97	-23.52	-24.48
3	3.07422	9.82	20.40	14.47	30.22	24.29	56.00	46.00	-25.78	-21.71
4	4.54297	9.86	17.26	10.51	27.12	20.37	56.00	46.00	-28.88	-25.63
5	5.80078	9.87	22.92	16.97	32.79	26.84	60.00	50.00	-27.21	-23.16
6	6.91016	9.88	25.76	20.05	35.64	29.93	60.00	50.00	-24.36	-20.07

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



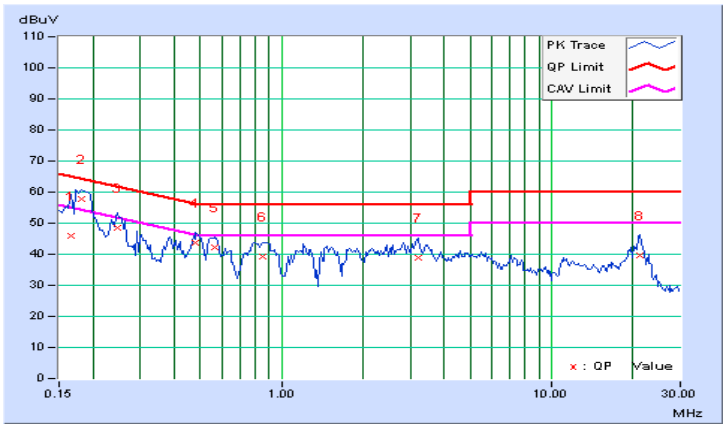
5.5 Test Results of Input Power: 230Vac, 50Hz

Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 1		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.16562	9.70	36.37	15.29	46.07	24.99	65.18	55.18	-19.11	-30.19
2	**0.18125**	**9.70**	**48.06**	**36.13**	**57.76**	**45.83**	**64.43**	**54.43**	**-6.67**	**-8.60**
3	0.24766	9.70	38.82	29.64	48.52	39.34	61.84	51.84	-13.32	-12.50
4	0.48203	9.70	33.84	26.61	43.54	36.31	56.30	46.30	-12.77	-10.00
5	0.56797	9.70	32.41	23.54	42.11	33.24	56.00	46.00	-13.89	-12.76
6	0.84922	9.73	29.70	21.30	39.43	31.03	56.00	46.00	-16.57	-14.97
7	3.21094	9.83	29.02	22.48	38.85	32.31	56.00	46.00	-17.15	-13.69
8	21.34375	9.95	29.73	23.31	39.68	33.26	60.00	50.00	-20.32	-16.74

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

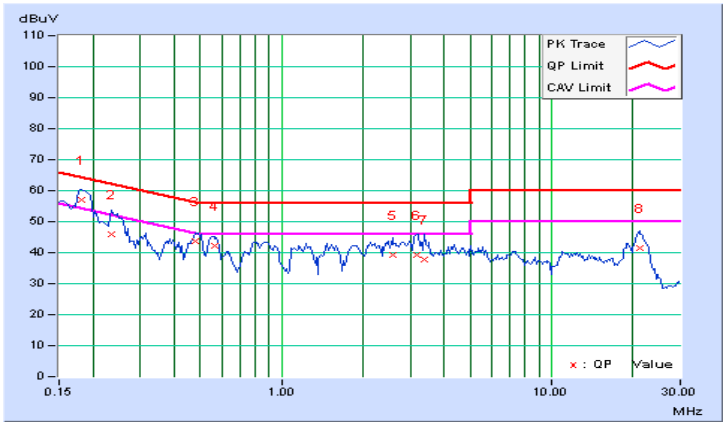


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 1		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18125	9.69	47.47	36.49	57.16	46.18	64.43	54.43	-7.26	-8.24
2	0.23594	9.69	36.33	23.29	46.02	32.98	62.24	52.24	-16.22	-19.26
3	0.47813	9.70	33.86	23.89	43.56	33.59	56.37	46.37	-12.82	-12.79
4	0.56406	9.70	32.53	24.37	42.23	34.07	56.00	46.00	-13.77	-11.93
5	2.57813	9.80	29.47	22.83	39.27	32.63	56.00	46.00	-16.73	-13.37
6	3.16016	9.82	29.55	21.55	39.37	31.37	56.00	46.00	-16.63	-14.63
7	3.39063	9.83	27.86	18.66	37.69	28.49	56.00	46.00	-18.31	-17.51
8	21.23438	9.95	31.64	24.72	41.59	34.67	60.00	50.00	-18.41	-15.33

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

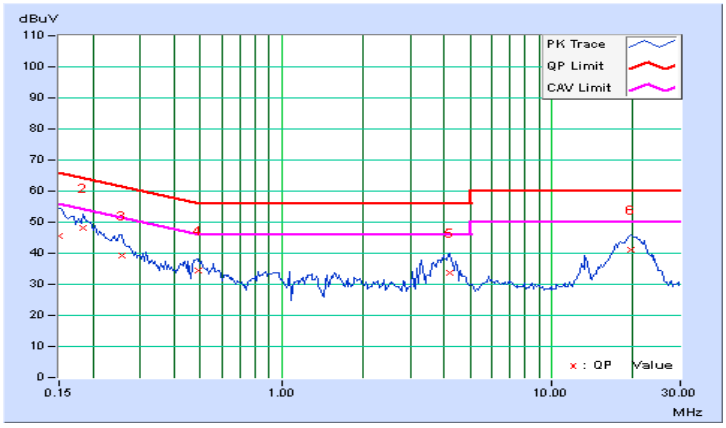


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 2		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15000	9.70	35.73	13.40	45.43	23.10	66.00	56.00	-20.57	-32.90
2	0.18516	9.70	38.41	24.09	48.11	33.79	64.25	54.25	-16.14	-20.46
3	0.25547	9.70	29.47	17.44	39.17	27.14	61.58	51.58	-22.41	-24.44
4	0.49375	9.70	24.71	13.34	34.41	23.04	56.10	46.10	-21.70	-23.07
5	4.18750	9.87	23.98	13.27	33.85	23.14	56.00	46.00	-22.15	-22.86
6	19.62891	9.94	31.23	25.85	41.17	35.79	60.00	50.00	-18.83	-14.21

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

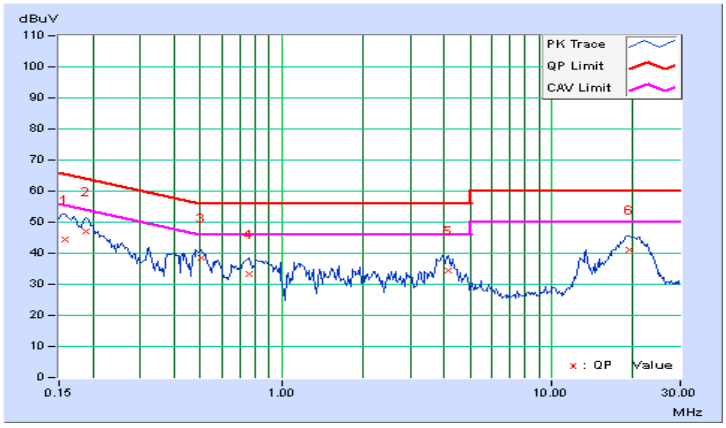


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 2		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15781	9.70	34.78	14.77	44.48	24.47	65.58	55.58	-21.10	-31.11
2	0.18906	9.69	37.44	27.13	47.13	36.82	64.08	54.08	-16.95	-17.26
3	0.50156	9.70	28.71	19.86	38.41	29.56	56.00	46.00	-17.59	-16.44
4	0.76328	9.71	23.69	12.38	33.40	22.09	56.00	46.00	-22.60	-23.91
5	4.16016	9.86	24.47	13.60	34.33	23.46	56.00	46.00	-21.67	-22.54
6	19.42188	9.95	31.28	25.84	41.23	35.79	60.00	50.00	-18.77	-14.21

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

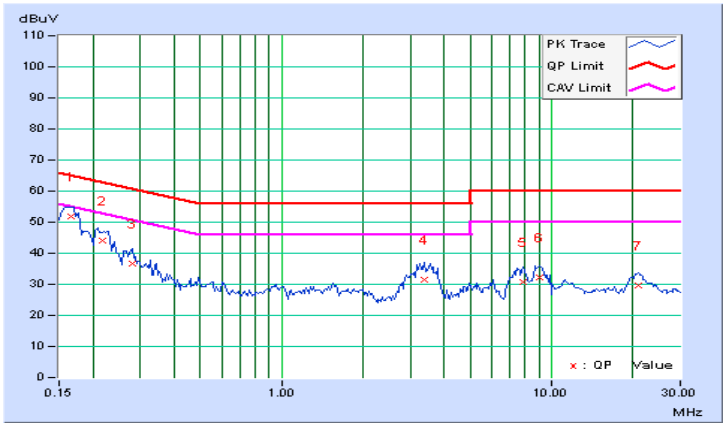


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 3		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.16562	9.70	42.29	25.47	51.99	35.17	65.18	55.18	-13.19	-20.01
2	0.21641	9.70	34.45	18.13	44.15	27.83	62.96	52.96	-18.81	-25.13
3	0.27891	9.70	26.82	11.71	36.52	21.41	60.85	50.85	-24.33	-29.44
4	3.39063	9.84	21.68	12.07	31.52	21.91	56.00	46.00	-24.48	-24.09
5	7.84375	9.90	20.74	14.16	30.64	24.06	60.00	50.00	-29.36	-25.94
6	8.99219	9.90	22.43	16.44	32.33	26.34	60.00	50.00	-27.67	-23.66
7	20.86328	9.95	19.65	13.49	29.60	23.44	60.00	50.00	-30.40	-26.56

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

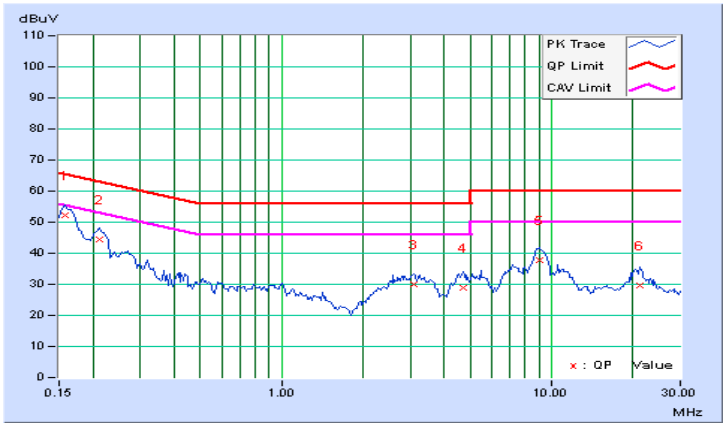


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 3		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15781	9.70	42.45	25.99	52.15	35.69	65.58	55.58	-13.43	-19.89
2	0.21250	9.69	34.81	19.73	44.50	29.42	63.11	53.11	-18.61	-23.69
3	3.10156	9.82	20.08	14.28	29.90	24.10	56.00	46.00	-26.10	-21.90
4	4.73047	9.86	18.92	12.29	28.78	22.15	56.00	46.00	-27.22	-23.85
5	8.99609	9.89	27.74	22.37	37.63	32.26	60.00	50.00	-22.37	-17.74
6	21.27344	9.95	19.78	13.76	29.73	23.71	60.00	50.00	-30.27	-26.29

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

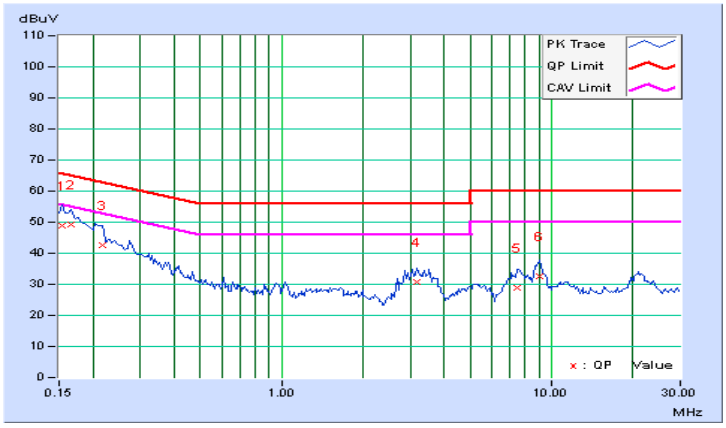


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 4		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15391	9.70	39.19	18.66	48.89	28.36	65.79	55.79	-16.90	-27.43
2	0.16562	9.70	39.74	22.09	49.44	31.79	65.18	55.18	-15.74	-23.39
3	0.21641	9.70	32.75	17.75	42.45	27.45	62.96	52.96	-20.51	-25.51
4	3.16797	9.83	20.93	11.51	30.76	21.34	56.00	46.00	-25.24	-24.66
5	7.47656	9.89	18.91	12.79	28.80	22.68	60.00	50.00	-31.20	-27.32
6	9.01563	9.90	22.77	16.78	32.67	26.68	60.00	50.00	-27.33	-23.32

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

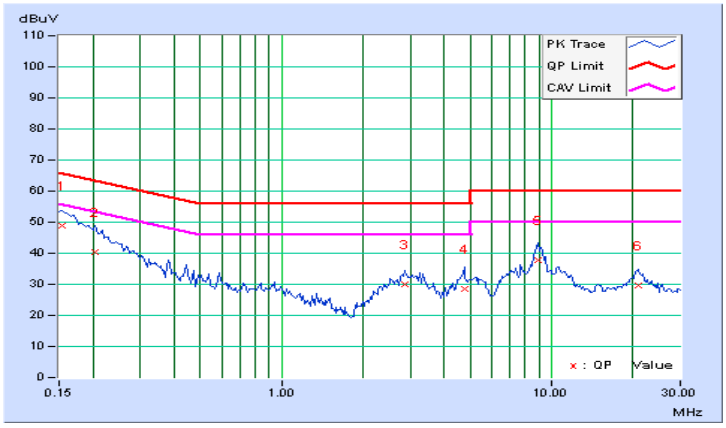


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 4		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15391	9.70	39.24	19.08	48.94	28.78	65.79	55.79	-16.85	-27.01
2	0.20469	9.69	30.76	10.90	40.45	20.59	63.42	53.42	-22.97	-32.83
3	2.84766	9.81	20.31	14.52	30.12	24.33	56.00	46.00	-25.88	-21.67
4	4.74609	9.86	18.63	12.03	28.49	21.89	56.00	46.00	-27.51	-24.11
5	8.90234	9.89	27.94	22.70	37.83	32.59	60.00	50.00	-22.17	-17.41
6	20.92969	9.95	19.73	13.61	29.68	23.56	60.00	50.00	-30.32	-26.44

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

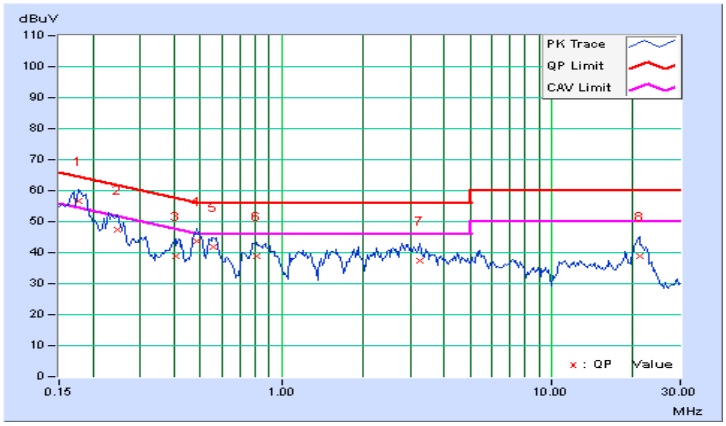


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 5		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.17734	9.70	47.01	35.34	56.71	45.04	64.61	54.61	-7.90	-9.57
2	0.24766	9.70	37.56	28.36	47.26	38.06	61.84	51.84	-14.58	-13.78
3	0.40391	9.69	29.24	17.26	38.93	26.95	57.77	47.77	-18.84	-20.82
4	0.48594	9.70	34.18	27.39	43.88	37.09	56.24	46.24	-12.36	-9.15
5	0.56016	9.70	32.02	23.29	41.72	32.99	56.00	46.00	-14.28	-13.01
6	0.81016	9.72	29.27	20.85	38.99	30.57	56.00	46.00	-17.01	-15.43
7	3.27344	9.84	27.59	20.99	37.43	30.83	56.00	46.00	-18.57	-15.17
8	21.17188	9.95	29.08	22.05	39.03	32.00	60.00	50.00	-20.97	-18.00

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

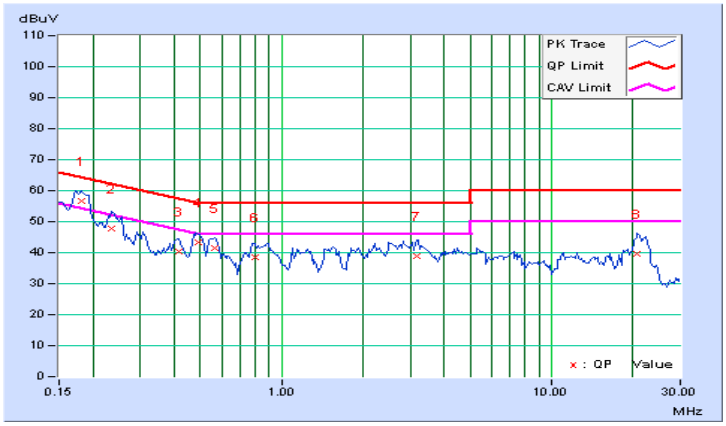


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 5		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18125	9.69	46.87	36.31	56.56	46.00	64.43	54.43	-7.86	-8.42
2	0.23594	9.69	37.99	26.70	47.68	36.39	62.24	52.24	-14.56	-15.85
3	0.41563	9.69	30.53	22.86	40.22	32.55	57.54	47.54	-17.31	-14.98
4	0.48984	9.70	33.74	26.19	43.44	35.89	56.17	46.17	-12.73	-10.28
5	0.56406	9.70	31.74	22.15	41.44	31.85	56.00	46.00	-14.56	-14.15
6	0.80234	9.72	28.91	20.95	38.63	30.67	56.00	46.00	-17.37	-15.33
7	3.17969	9.82	28.92	21.33	38.74	31.15	56.00	46.00	-17.26	-14.85
8	20.73828	9.95	29.79	22.80	39.74	32.75	60.00	50.00	-20.26	-17.25

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

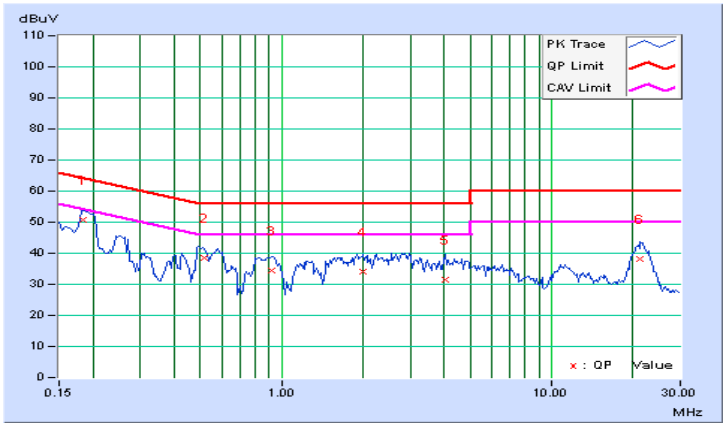


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 6		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.18516	9.70	40.99	31.09	50.69	40.79	64.25	54.25	-13.56	-13.46
2	0.51719	9.70	28.71	18.38	38.41	28.08	56.00	46.00	-17.59	-17.92
3	0.91953	9.73	24.82	15.89	34.55	25.62	56.00	46.00	-21.45	-20.38
4	2.01563	9.78	24.44	17.19	34.22	26.97	56.00	46.00	-21.78	-19.03
5	4.03906	9.87	21.77	14.06	31.64	23.93	56.00	46.00	-24.36	-22.07
6	21.26563	9.95	28.24	21.13	38.19	31.08	60.00	50.00	-21.81	-18.92

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

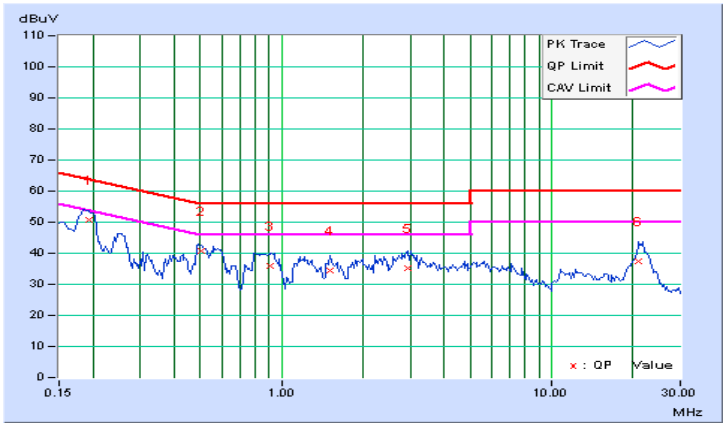


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 6		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.19297	9.69	40.93	31.90	50.62	41.59	63.91	53.91	-13.29	-12.32
2	0.50156	9.70	30.91	20.51	40.61	30.21	56.00	46.00	-15.39	-15.79
3	0.91172	9.72	26.19	16.12	35.91	25.84	56.00	46.00	-20.09	-20.16
4	1.51953	9.75	24.86	13.59	34.61	23.34	56.00	46.00	-21.39	-22.66
5	2.92969	9.81	25.48	15.85	35.29	25.66	56.00	46.00	-20.71	-20.34
6	20.99219	9.95	27.44	20.28	37.39	30.23	60.00	50.00	-22.61	-19.77

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

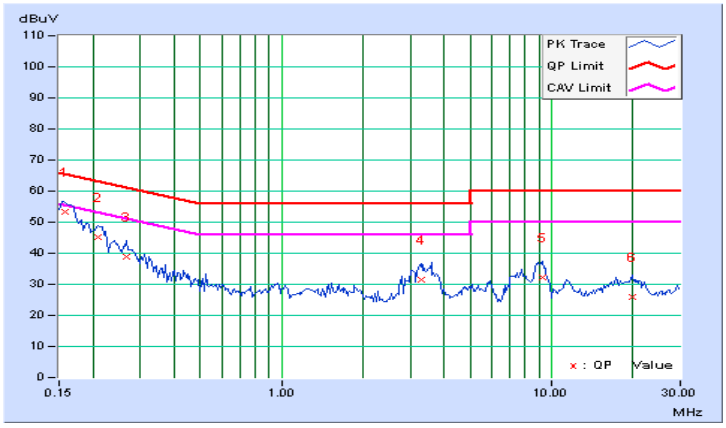


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 7		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15781	9.70	43.61	25.35	53.31	35.05	65.58	55.58	-12.27	-20.53
2	0.20859	9.70	35.60	16.14	45.30	25.84	63.26	53.26	-17.96	-27.42
3	0.26719	9.70	29.22	13.71	38.92	23.41	61.20	51.20	-22.29	-27.80
4	3.27734	9.84	21.49	11.98	31.33	21.82	56.00	46.00	-24.67	-24.18
5	9.22266	9.90	22.37	16.39	32.27	26.29	60.00	50.00	-27.73	-23.71
6	19.82031	9.94	16.12	8.56	26.06	18.50	60.00	50.00	-33.94	-31.50

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

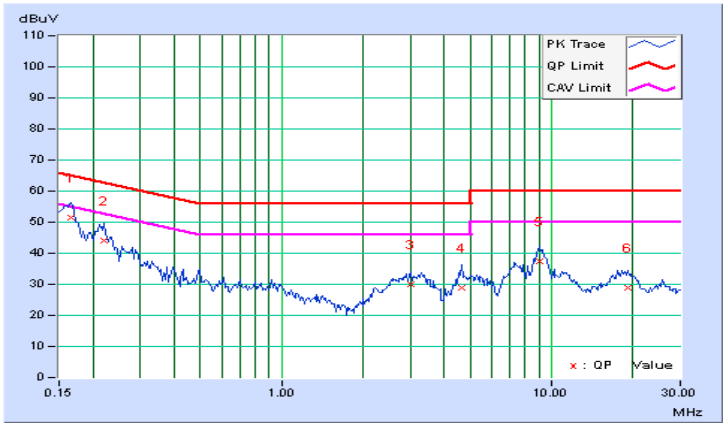


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 7		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.16562	9.70	41.91	25.75	51.61	35.45	65.18	55.18	-13.57	-19.73
2	0.22031	9.69	34.43	18.50	44.12	28.19	62.81	52.81	-18.69	-24.62
3	3.02734	9.82	20.11	14.56	29.93	24.38	56.00	46.00	-26.07	-21.62
4	4.64844	9.86	18.91	12.00	28.77	21.86	56.00	46.00	-27.23	-24.14
5	9.03125	9.89	27.48	22.37	37.37	32.26	60.00	50.00	-22.63	-17.74
6	19.24609	9.95	18.94	11.97	28.89	21.92	60.00	50.00	-31.11	-28.08

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

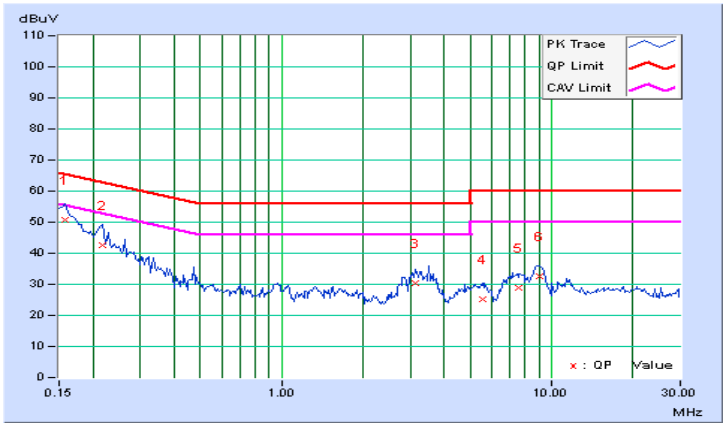


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 8		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15781	9.70	40.98	23.77	50.68	33.47	65.58	55.58	-14.90	-22.11
2	0.21641	9.70	32.84	17.63	42.54	27.33	62.96	52.96	-20.42	-25.63
3	3.12891	9.83	20.51	12.23	30.34	22.06	56.00	46.00	-25.66	-23.94
4	5.55859	9.88	15.47	8.31	25.35	18.19	60.00	50.00	-34.65	-31.81
5	7.58203	9.89	18.87	12.65	28.76	22.54	60.00	50.00	-31.24	-27.46
6	9.01563	9.90	22.67	16.64	32.57	26.54	60.00	50.00	-27.43	-23.46

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

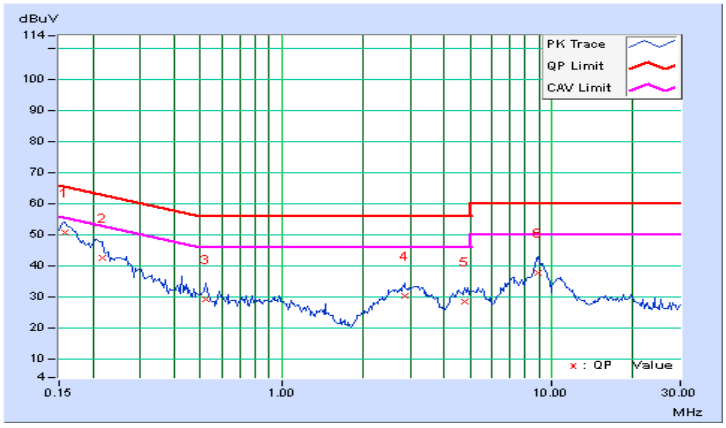


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 8		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15781	9.70	40.96	24.37	50.66	34.07	65.58	55.58	-14.92	-21.51
2	0.21641	9.69	32.78	18.25	42.47	27.94	62.96	52.96	-20.49	-25.02
3	0.52500	9.70	19.59	10.80	29.29	20.50	56.00	46.00	-26.71	-25.50
4	2.85938	9.81	20.62	14.83	30.43	24.64	56.00	46.00	-25.57	-21.36
5	4.75000	9.87	18.47	11.89	28.34	21.76	56.00	46.00	-27.66	-24.24
6	8.97266	9.89	27.98	22.84	37.87	32.73	60.00	50.00	-22.13	-17.27

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



6 Asymmetric Mode Conducted Emission at Telecommunication Ports

6.1 Limits

For Class A Equipment

EN 55032 Table clause	Frequency range (MHz)	Coupling device	Detector type / bandwidth	Voltage limits (dBuV)	Current limits (dBuA)
A10.1	0.15 - 0.5	AAN	Quasi-peak / 9kHz	97 – 87	N/A
	0.5 - 30.0			87	
	0.15 - 0.5	AAN	Average / 9kHz	84-74	
	0.5 - 30.0			74	
A10.2	0.5 - 30.0	CVP and current probe	Quasi-peak / 9kHz	97 – 87	53 – 43
	0.15 - 0.5			87	43
	0.5 - 30.0	CVP and current probe	Average / 9kHz	84-74	40 – 30
	0.5 - 30.0			74	30
A10.3	0.5 - 30.0	Current Probe	Quasi-peak / 9kHz	N/A	53 – 43
	0.15 - 0.5				43
	0.5 - 30.0	Current Probe	Average / 9kHz		40 – 30
	0.5 - 30.0				30

For Class B Equipment

EN 55032 Table clause	Frequency range (MHz)	Coupling device	Detector type / bandwidth	Voltage limits (dBuV)	Current limits (dBuA)
A11.1	0.15 - 0.5	AAN	Quasi-peak / 9kHz	84 – 74	N/A
	0.5 - 30.0			74	
	0.15 - 0.5	AAN	Average / 9kHz	74-64	
	0.5 - 30.0			64	
A11.2	0.5 - 30.0	CVP and current probe	Quasi-peak / 9kHz	84 – 74	40 – 30
	0.15 - 0.5			74	30
	0.5 - 30.0	CVP and current probe	Average / 9kHz	74-64	30 – 20
	0.5 - 30.0			64	20
A11.3	0.5 - 30.0	Current Probe	Quasi-peak / 9kHz	N/A	40 – 30
	0.15 - 0.5				30
	0.5 - 30.0	Current Probe	Average / 9kHz		30 – 20
	0.5 - 30.0				20

6.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	100276	Apr. 12, 2016	Apr. 11, 2017
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ENV216	101197	May 04, 2016	May 03, 2017
LISN With Adapter (for EUT)	AD10	C10Ada-002	May 04, 2016	May 03, 2017
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100218	Nov. 25, 2015	Nov. 24, 2016
Software	Cond_V7.3.7	NA	NA	NA
Software	ISN_V7.3.7	NA	NA	NA
RF cable (JYEBAO) With 10dB PAD	5D-FB	Cable-C10.01	Feb. 15, 2016	Feb. 14, 2017
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010773	Feb. 15, 2016	Feb. 14, 2017
FCC ISN	F-071115-1057-1	20652	Jan. 12, 2016	Jan. 11, 2017

Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. 10.
3. The VCCI Site Registration No. T-1611.
4. Tested Date: Jul. 21 ~ 22, 2016

6.3 Test Arrangement

Method of Annex C.1.1, Using ISNs:

a. The EUT is placed 0.4 meters from the conducting wall of the shielded room and connected to ISN directly to reference ground plane.

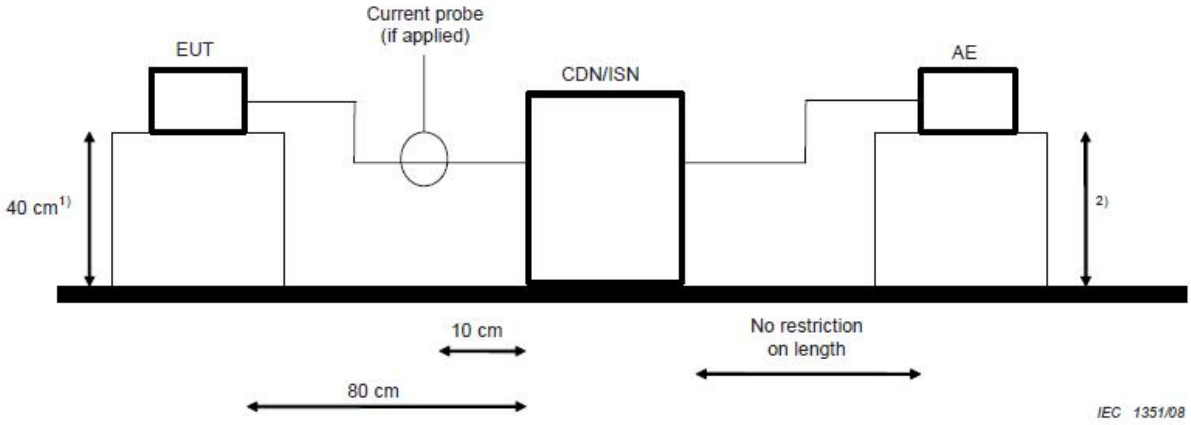
b. If voltage measurement is used, measure voltage at the measurement port of the ISN, correct the reading by adding the ISN voltage division factor, and compare to the voltage limit.

c. If current measurement is used, measure current with the current probe and compare to the current limit. A 50 Ω load has to be connected to the measurement port of the ISN during the current measurement.

d. It is not necessary to apply the voltage and the current limit if a ISN is used.

e. The test results of disturbance at telecommunication ports are recorded of six worst margins for quasi-peak (mandatory) [and average (if necessary)] values against the limits at frequencies of interest unless the margin is 20 dB or greater.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.



AE = Associated equipment
EUT = Equipment under test

1) Distance to the reference groundplane (vertical or horizontal).
2) Distance to the reference groundplane is not critical.

6.4 Supplementary Information

The condition of LAN utilization in excess of 10 % and sustaining that level for a minimum of 250 ms is created by command TFGEN + PING.

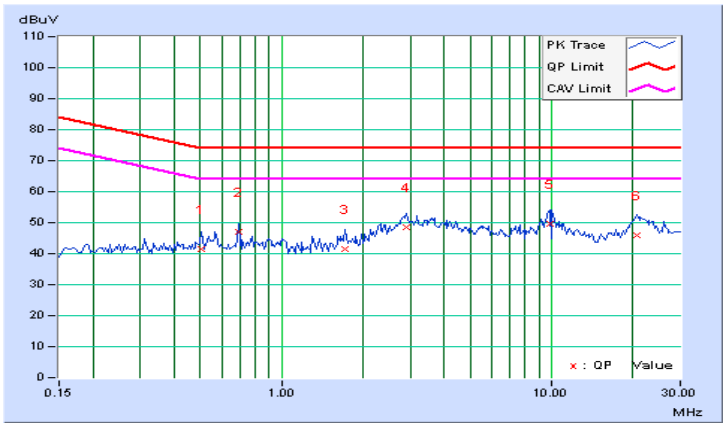
6.5 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	Environmental Conditions	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 1 RJ45 TELECOM PORT (1Gbps)		

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.50547	9.34	32.20	28.62	41.54	37.96	74.00	64.00	-32.46	-26.04
2	0.69297	9.29	37.93	36.97	47.22	46.26	74.00	64.00	-26.78	-17.74
3	1.72656	9.21	32.23	25.82	41.44	35.03	74.00	64.00	-32.56	-28.97
4	2.89844	9.20	39.23	33.54	48.43	42.74	74.00	64.00	-25.57	-21.26
5	9.83594	9.23	40.37	30.22	49.60	39.45	74.00	64.00	-24.40	-24.55
6	20.69922	9.43	36.65	30.32	46.08	39.75	74.00	64.00	-27.92	-24.25

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

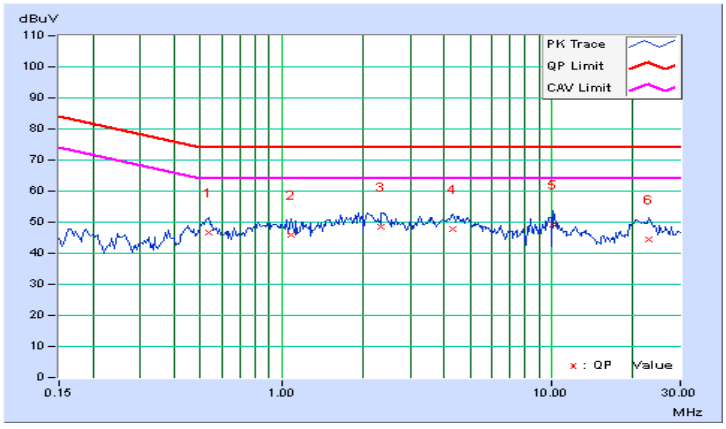


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 2 RJ45 TELECOM PORT (1Gbps)		

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.53672	9.33	37.18	30.90	46.51	40.23	74.00	64.00	-27.49	-23.77
2	1.08594	9.25	36.52	29.73	45.77	38.98	74.00	64.00	-28.23	-25.02
3	2.34766	9.20	39.17	32.53	48.37	41.73	74.00	64.00	-25.63	-22.27
4	4.28516	9.22	38.42	32.73	47.64	41.95	74.00	64.00	-26.36	-22.05
5	10.14063	9.23	39.85	31.12	49.08	40.35	74.00	64.00	-24.92	-23.65
6	22.88672	9.51	35.04	27.19	44.55	36.70	74.00	64.00	-29.45	-27.30

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

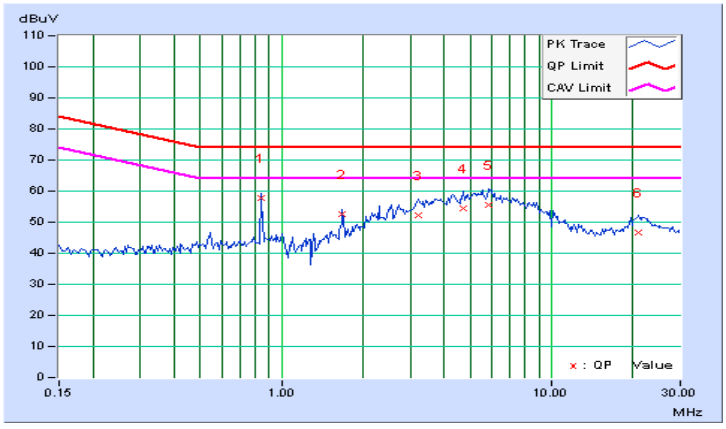


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 3 RJ45 TELECOM PORT (1Gbps)		

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.83750**	**9.27**	**48.62**	**48.59**	**57.89**	**57.86**	**74.00**	**64.00**	**-16.11**	**-6.14**
2	1.67578	9.22	43.47	42.08	52.69	51.30	74.00	64.00	-21.31	-12.70
3	3.20703	9.20	42.96	37.03	52.16	46.23	74.00	64.00	-21.84	-17.77
4	4.73828	9.22	45.16	38.72	54.38	47.94	74.00	64.00	-19.62	-16.06
5	5.82031	9.23	46.49	40.18	55.72	49.41	74.00	64.00	-18.28	-14.59
6	20.98828	9.44	37.08	30.80	46.52	40.24	74.00	64.00	-27.48	-23.76

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

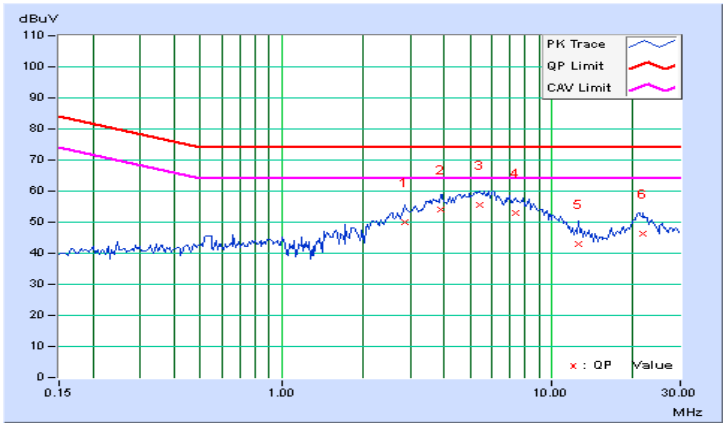


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 4 RJ45 TELECOM PORT (1Gbps)		

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	2.84766	9.20	40.83	35.14	50.03	44.34	74.00	64.00	-23.97	-19.66
2	3.86719	9.22	44.97	39.09	54.19	48.31	74.00	64.00	-19.81	-15.69
3	5.42578	9.23	46.15	39.69	55.38	48.92	74.00	64.00	-18.62	-15.08
4	7.33594	9.22	43.77	38.13	52.99	47.35	74.00	64.00	-21.01	-16.65
5	12.65234	9.28	33.51	26.68	42.79	35.96	74.00	64.00	-31.21	-28.04
6	21.88281	9.47	36.87	30.21	46.34	39.68	74.00	64.00	-27.66	-24.32

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

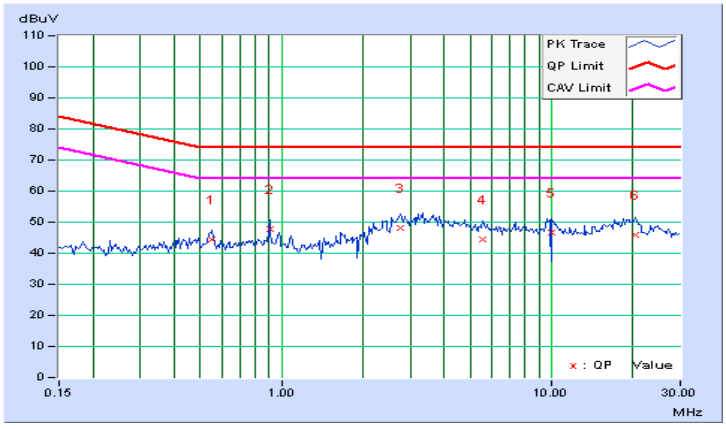


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 5 RJ45 TELECOM PORT (1Gbps)		

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.55234	9.33	34.94	30.22	44.27	39.55	74.00	64.00	-29.73	-24.45
2	0.90781	9.26	38.57	37.99	47.83	47.25	74.00	64.00	-26.17	-16.75
3	2.77344	9.20	38.91	33.22	48.11	42.42	74.00	64.00	-25.89	-21.58
4	5.53516	9.23	35.16	28.74	44.39	37.97	74.00	64.00	-29.61	-26.03
5	10.00391	9.23	37.57	28.96	46.80	38.19	74.00	64.00	-27.20	-25.81
6	20.51953	9.43	36.38	30.05	45.81	39.48	74.00	64.00	-28.19	-24.52

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

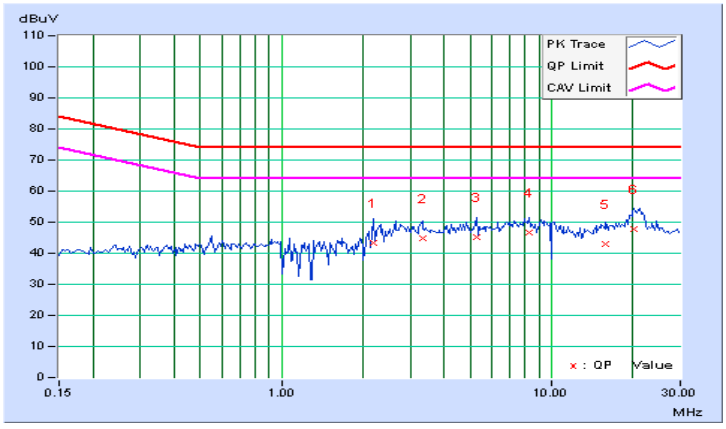


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 6 RJ45 TELECOM PORT (1Gbps)		

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	2.20313	9.20	34.24	29.05	43.44	38.25	74.00	64.00	-30.56	-25.75
2	3.32031	9.21	35.53	29.32	44.74	38.53	74.00	64.00	-29.26	-25.47
3	5.28906	9.23	35.97	29.01	45.20	38.24	74.00	64.00	-28.80	-25.76
4	8.21094	9.22	37.58	31.89	46.80	41.11	74.00	64.00	-27.20	-22.89
5	15.93750	9.34	33.61	26.98	42.95	36.32	74.00	64.00	-31.05	-27.68
6	20.21484	9.42	38.19	32.39	47.61	41.81	74.00	64.00	-26.39	-22.19

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

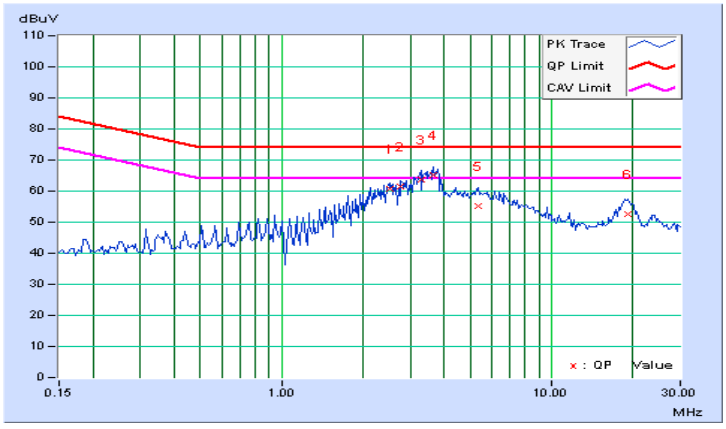


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 7 RJ45 TELECOM PORT (1Gbps)		

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	2.51953	9.20	51.47	45.36	60.67	54.56	74.00	64.00	-13.33	-9.44
2	2.77344	9.20	52.23	46.18	61.43	55.38	74.00	64.00	-12.57	-8.62
3	3.27734	9.21	54.65	48.32	63.86	57.53	74.00	64.00	-10.14	-6.47
4	3.65234	9.21	56.16	48.22	65.37	57.43	74.00	64.00	-8.63	-6.57
5	5.35938	9.23	45.83	39.35	55.06	48.58	74.00	64.00	-18.94	-15.42
6	19.21875	9.40	43.18	35.84	52.58	45.24	74.00	64.00	-21.42	-18.76

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

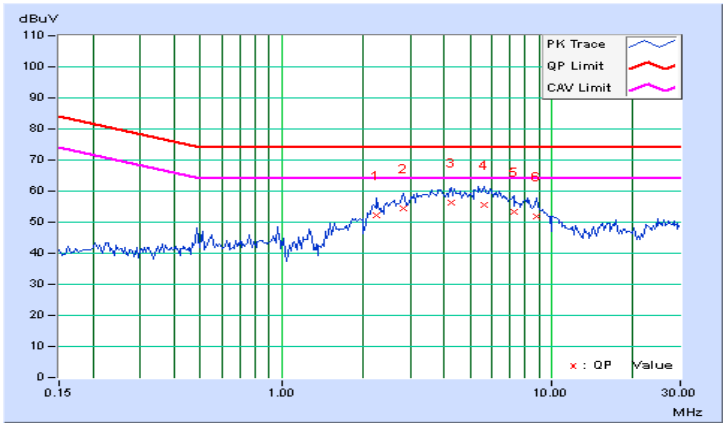


Frequency Range	150kHz ~ 30MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	230Vac, 50Hz	**Environmental Conditions**	23℃, 71%RH, 1001mbar
Tested by	Lander Chang		
Test Mode	Mode 8 RJ45 TELECOM PORT (1Gbps)		

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	2.25391	9.20	42.95	37.56	52.15	46.76	74.00	64.00	-21.85	-17.24
2	2.83203	9.20	45.15	39.96	54.35	49.16	74.00	64.00	-19.65	-14.84
3	4.24219	9.22	46.90	40.73	56.12	49.95	74.00	64.00	-17.88	-14.05
4	5.63281	9.23	46.40	39.80	55.63	49.03	74.00	64.00	-18.37	-14.97
5	7.23828	9.22	44.01	38.05	53.23	47.27	74.00	64.00	-20.77	-16.73
6	8.76563	9.23	42.75	36.96	51.98	46.19	74.00	64.00	-22.02	-17.81

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



7 Radiated Emission at Frequencies up to 1GHz

7.1 Limits

For Class A Equipment

EN 55032 Table clause	Frequency range (MHz)	Distance (m)	Limits (dBuV/m)
A2.1	30 - 230	10	40
	230 - 1000		47
A2.2	30 - 230	3	50
	230 - 1000		57

For Class B Equipment

EN 55032 Table clause	Frequency range (MHz)	Distance (m)	Limits (dBuV/m)
A4.1	30 - 230	10	30
	230 - 1000		37
A4.2	30 - 230	3	40
	230 - 1000		47

7.2 Test Instruments

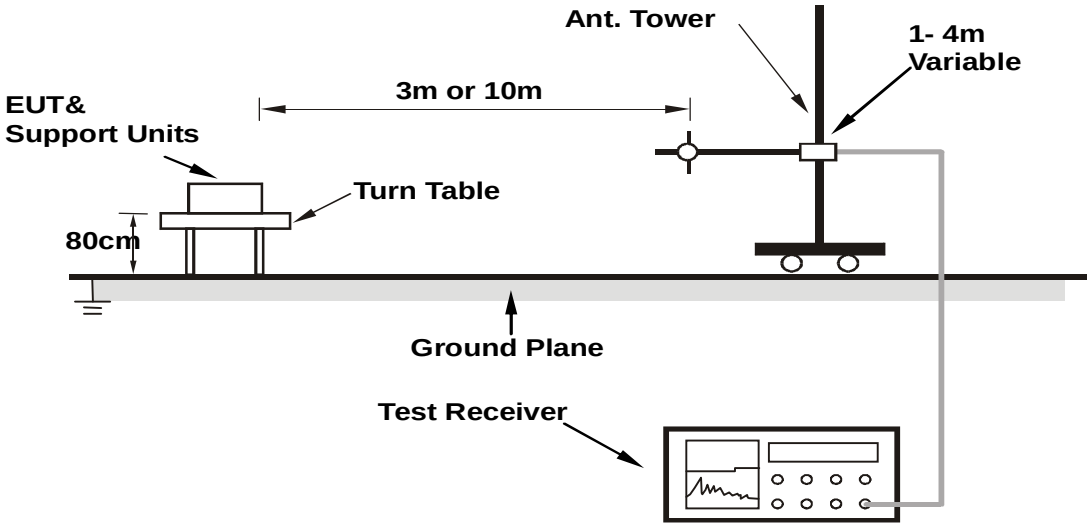
Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Sonoma Preamplifier	310N	352922	Feb. 27, 2016	Feb. 26, 2017
Sonoma Preamplifier	310N	352921	Feb. 27, 2016	Feb. 26, 2017
Agilent Test Receiver	N9038A	MY50010158	Jul. 24, 2015	Jul. 23, 2016
Agilent Test Receiver	N9038A	MY51210114	Jul. 31, 2015	Jul. 30, 2016
Schwarzbeck Antenna	VULB9168	9168-316	Jan. 20, 2016	Jan. 19, 2017
Schwarzbeck Antenna	VULB9168	9168-317	Jan. 21, 2016	Jan. 20, 2017
Max Full. Turn Table & Tower	MF7802	MF7802121	NA	NA
Max Full. Tower	MF7802	MF780208105	NA	NA
Software	Radiated_V8.7.07	NA	NA	NA
JYEBAO RF cable With 5dB PAD	LMR-600	CABLE-CH8-01.V	Jun. 27, 2016	Jun. 26, 2017
JYEBAO RF cable With 5dB PAD	LMR-600	CABLE-CH8-02.H	Jun. 27, 2016	Jun. 26, 2017
WOKEN RF cable With 5dB PAD	8D	CABLE-CH8-03.3M	Jun. 27, 2016	Jun. 26, 2017

Notes:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Chamber No. 8.
3. The Industry Canada Reference No. IC 7450E-8.
4. The VCCI Site Registration No. R-2946.
5. The FCC Site Registration No. 493821.
6. Tested Date: Jul. 23, 2016

7.3 Test Arrangement

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is up to 1 GHz.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency up to 1GHz.



Note: Cable on the RGP must to be insulated.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

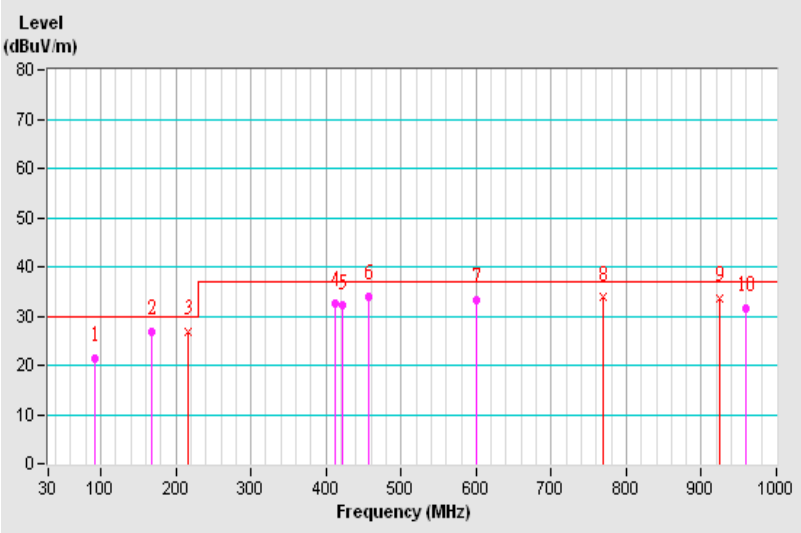
7.4 Test Results

Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 1		

Antenna Polarity & Test Distance : Horizontal at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	92.18	21.43 QP	30.00	-8.57	4.00 H	330	39.96	-18.53
2	167.98	26.81 QP	30.00	-3.19	4.00 H	30	39.98	-13.17
3	215.99	26.82 QP	30.00	-3.18	2.91 H	17	42.50	-15.68
4	412.57	32.49 QP	37.00	-4.51	2.18 H	127	41.49	-9.00
5	421.25	32.10 QP	37.00	-4.90	2.23 H	61	40.69	-8.59
6	456.02	33.87 QP	37.00	-3.13	1.89 H	136	41.32	-7.45
7	600.00	33.21 QP	37.00	-3.79	1.44 H	74	37.64	-4.43
8	770.02	33.79 QP	37.00	-3.21	1.71 H	212	35.06	-1.27
9	924.02	33.71 QP	37.00	-3.29	1.00 H	234	32.01	1.70
10	960.04	31.48 QP	37.00	-5.52	1.00 H	130	29.30	2.18

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

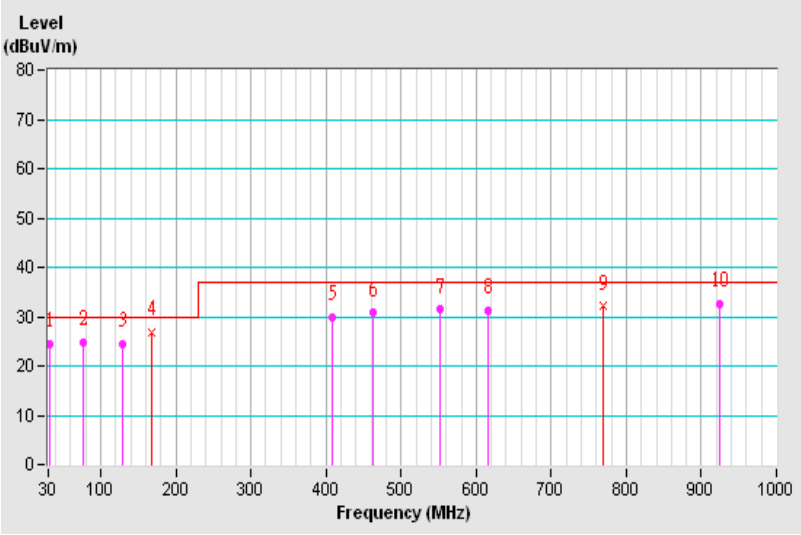


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 1		

Antenna Polarity & Test Distance : Vertical at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.33	24.56 QP	30.00	-5.44	1.37 V	332	39.30	-14.74
2	76.41	24.86 QP	30.00	-5.14	2.02 V	179	41.24	-16.38
3	129.01	24.43 QP	30.00	-5.57	1.00 V	205	38.66	-14.23
4	168.00	26.89 QP	30.00	-3.11	1.00 V	81	39.94	-13.05
5	407.98	29.79 QP	37.00	-7.21	3.38 V	128	38.85	-9.06
6	462.04	30.71 QP	37.00	-6.29	3.12 V	332	38.29	-7.58
7	552.01	31.36 QP	37.00	-5.64	2.97 V	276	37.38	-6.02
8	615.98	31.12 QP	37.00	-5.88	2.66 V	324	35.13	-4.01
9	770.01	32.09 QP	37.00	-4.91	2.41 V	123	33.42	-1.33
10	924.02	32.67 QP	37.00	-4.33	1.57 V	323	31.14	1.53

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

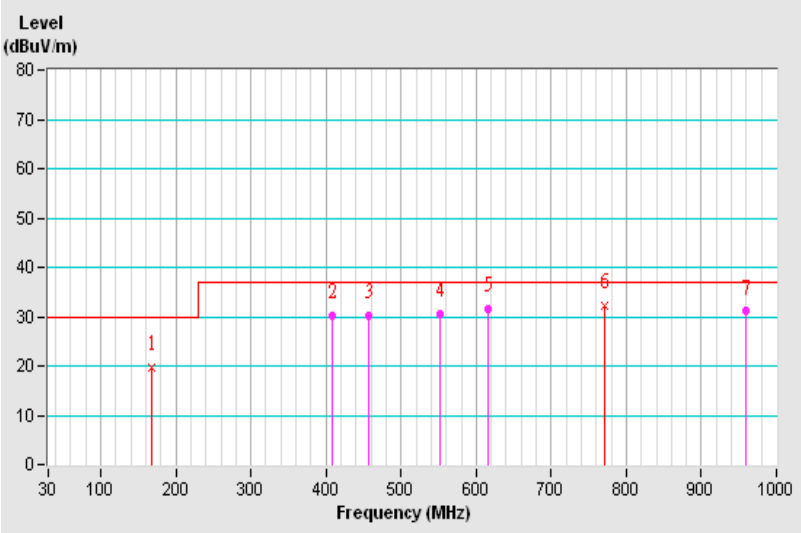


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 2		

Antenna Polarity & Test Distance : Horizontal at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	168.00	19.64 QP	30.00	-10.36	3.79 H	319	32.81	-13.17
2	408.03	30.25 QP	37.00	-6.75	2.00 H	290	39.37	-9.12
3	456.02	30.31 QP	37.00	-6.69	2.80 H	292	37.76	-7.45
4	552.01	30.47 QP	37.00	-6.53	2.19 H	117	36.47	-6.00
5	616.63	31.63 QP	37.00	-5.37	2.00 H	155	35.59	-3.96
6	770.78	32.15 QP	37.00	-4.85	1.84 H	202	33.43	-1.28
7	960.01	31.07 QP	37.00	-5.93	3.10 H	74	28.89	2.18

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

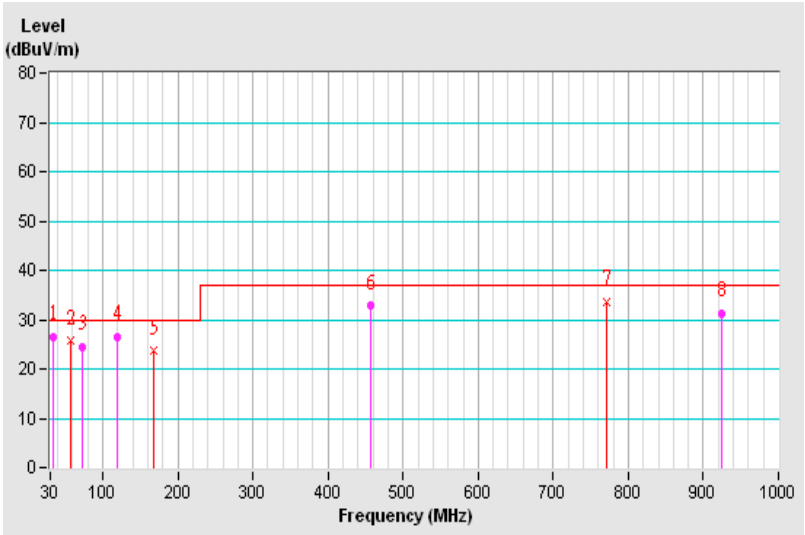


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 2		

Antenna Polarity & Test Distance : Vertical at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.93	26.46 QP	30.00	-3.54	1.90 V	249	40.66	-14.20
2	56.98	25.60 QP	30.00	-4.40	2.10 V	47	38.75	-13.15
3	72.95	24.47 QP	30.00	-5.53	2.13 V	144	40.07	-15.60
4	119.87	26.51 QP	30.00	-3.49	1.00 V	299	41.44	-14.93
5	168.00	23.57 QP	30.00	-6.43	1.24 V	300	36.62	-13.05
6	456.02	32.73 QP	37.00	-4.27	1.00 V	303	40.50	-7.77
7	770.79	33.67 QP	37.00	-3.33	2.00 V	147	34.98	-1.31
8	924.95	31.26 QP	37.00	-5.74	3.79 V	145	29.72	1.54

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
   – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

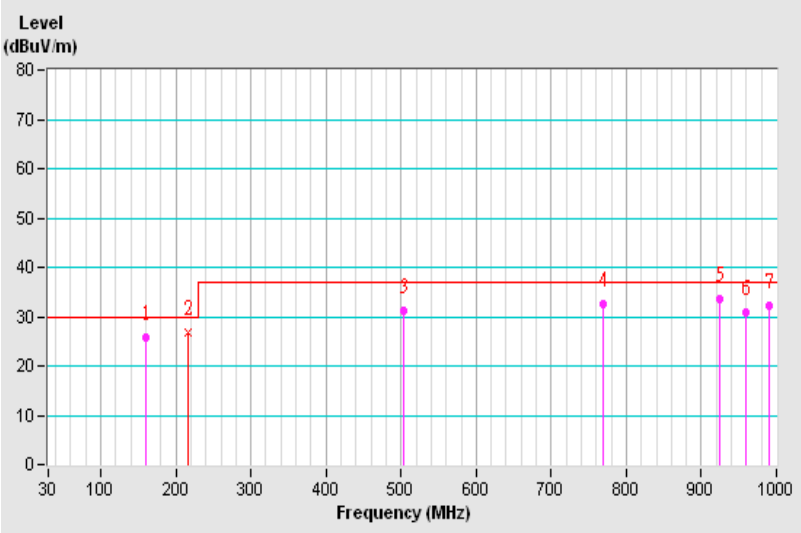


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 3		

Antenna Polarity & Test Distance : Horizontal at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	159.76	25.79 QP	30.00	-4.21	3.40 H	290	38.57	-12.78
2	216.00	26.80 QP	30.00	-3.20	3.92 H	38	42.48	-15.68
3	504.01	31.34 QP	37.00	-5.66	1.85 H	161	38.05	-6.71
4	770.01	32.49 QP	37.00	-4.51	3.00 H	160	33.76	-1.27
5	924.02	33.58 QP	37.00	-3.42	2.79 H	128	31.88	1.70
6	960.01	31.01 QP	37.00	-5.99	1.00 H	70	28.83	2.18
7	989.72	32.17 QP	37.00	-4.83	1.11 H	260	29.45	2.72

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

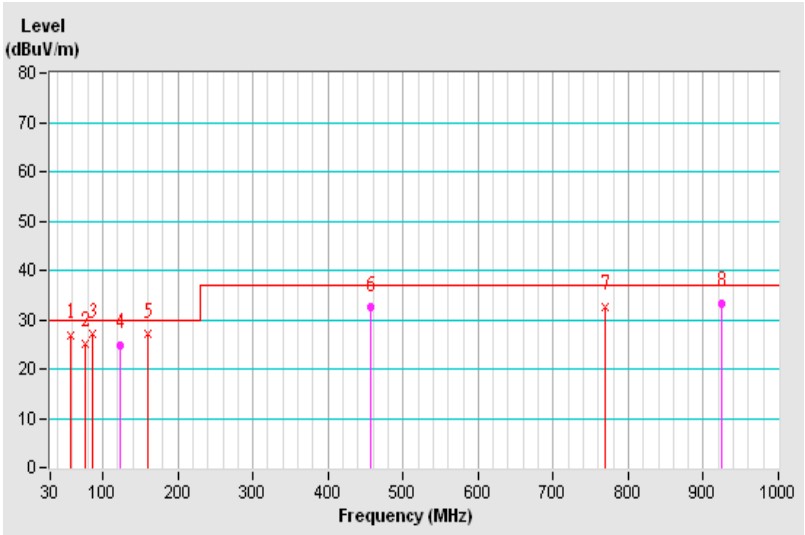


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 3		

Antenna Polarity & Test Distance : Vertical at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	56.62	26.84 QP	30.00	-3.16	1.13 V	10	40.00	-13.16
2	76.44	25.21 QP	30.00	-4.79	1.82 V	268	41.60	-16.39
3	86.02	26.95 QP	30.00	-3.05	1.12 V	111	45.02	-18.07
4	122.90	24.80 QP	30.00	-5.20	1.00 V	153	39.47	-14.67
5	**159.79**	**26.96 QP**	**30.00**	**-3.04**	**1.00 V**	**318**	**39.79**	**-12.83**
6	456.02	32.41 QP	37.00	-4.59	3.75 V	122	40.18	-7.77
7	770.01	32.46 QP	37.00	-4.54	1.90 V	329	33.79	-1.33
8	924.00	33.31 QP	37.00	-3.69	3.98 V	281	31.78	1.53

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

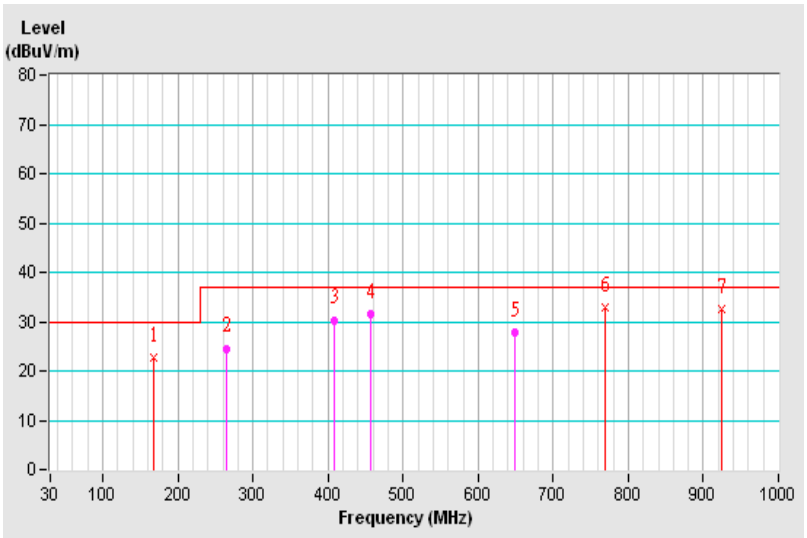


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 4		

Antenna Polarity & Test Distance : Horizontal at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	168.01	22.55 QP	30.00	-7.45	3.21 H	264	35.72	-13.17
2	264.01	24.47 QP	37.00	-12.53	3.00 H	47	37.68	-13.21
3	408.01	30.12 QP	37.00	-6.88	2.11 H	91	39.24	-9.12
4	456.00	31.37 QP	37.00	-5.63	2.00 H	77	38.82	-7.45
5	648.01	27.66 QP	37.00	-9.34	1.87 H	80	31.42	-3.76
6	770.02	32.76 QP	37.00	-4.24	3.88 H	183	34.03	-1.27
7	924.01	32.41 QP	37.00	-4.59	1.68 H	186	30.71	1.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

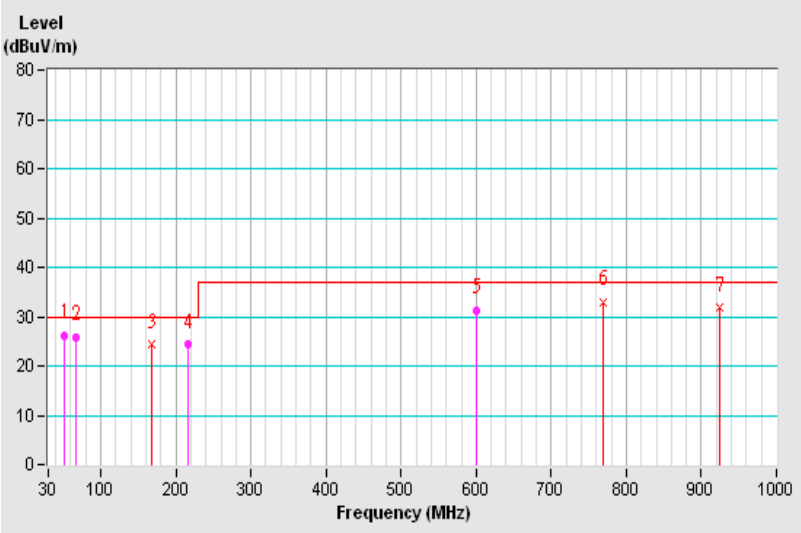


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 4		

Antenna Polarity & Test Distance : Vertical at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	51.97	26.07 QP	30.00	-3.93	1.16 V	49	39.25	-13.18
2	65.91	25.79 QP	30.00	-4.21	3.00 V	69	40.07	-14.28
3	168.01	24.30 QP	30.00	-5.70	1.01 V	353	37.35	-13.05
4	216.00	24.32 QP	30.00	-5.68	1.20 V	112	39.87	-15.55
5	600.02	31.24 QP	37.00	-5.76	3.00 V	317	35.91	-4.67
6	770.01	32.94 QP	37.00	-4.06	2.30 V	183	34.27	-1.33
7	924.01	31.74 QP	37.00	-5.26	1.20 V	137	30.21	1.53

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

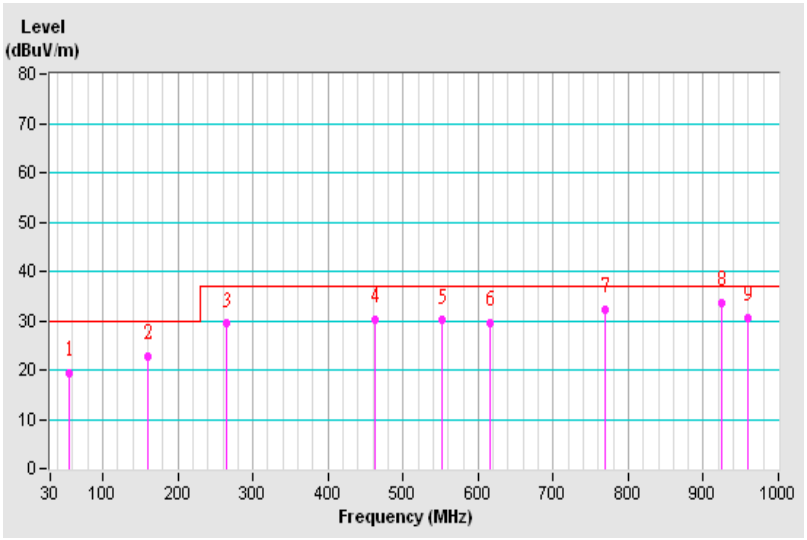


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 5		

Antenna Polarity & Test Distance : Horizontal at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	55.29	19.31 QP	30.00	-10.69	4.00 H	127	32.23	-12.92
2	159.79	22.86 QP	30.00	-7.14	4.00 H	38	35.64	-12.78
3	264.01	29.40 QP	37.00	-7.60	3.11 H	185	42.61	-13.21
4	461.99	30.10 QP	37.00	-6.90	2.04 H	300	37.50	-7.40
5	552.03	30.08 QP	37.00	-6.92	1.83 H	348	36.08	-6.00
6	616.03	29.49 QP	37.00	-7.51	1.55 H	18	33.45	-3.96
7	770.01	32.37 QP	37.00	-4.63	1.12 H	295	33.64	-1.27
8	924.00	33.49 QP	37.00	-3.51	1.00 H	204	31.79	1.70
9	960.01	30.60 QP	37.00	-6.40	1.00 H	98	28.42	2.18

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
   – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

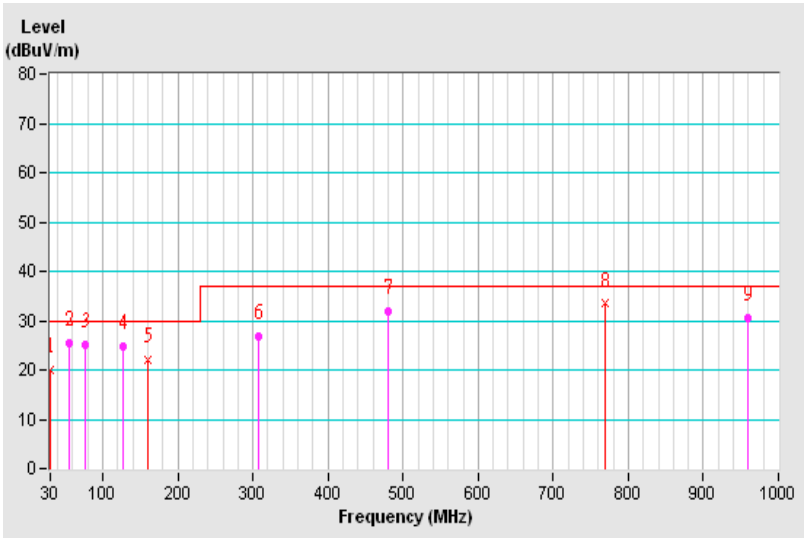


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 5		

Antenna Polarity & Test Distance : Vertical at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.74	20.10 QP	30.00	-9.90	1.79 V	147	34.75	-14.65
2	55.29	25.51 QP	30.00	-4.49	1.56 V	64	38.56	-13.05
3	76.05	25.10 QP	30.00	-4.90	1.14 V	356	41.35	-16.25
4	126.49	24.70 QP	30.00	-5.30	1.00 V	273	39.20	-14.50
5	160.93	22.17 QP	30.00	-7.83	1.00 V	347	35.08	-12.91
6	308.00	26.80 QP	37.00	-10.20	1.00 V	282	38.51	-11.71
7	479.81	31.90 QP	37.00	-5.10	3.31 V	314	39.09	-7.19
8	770.00	33.42 QP	37.00	-3.58	3.03 V	170	34.75	-1.33
9	960.06	30.57 QP	37.00	-6.43	1.96 V	311	28.61	1.96

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
   – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

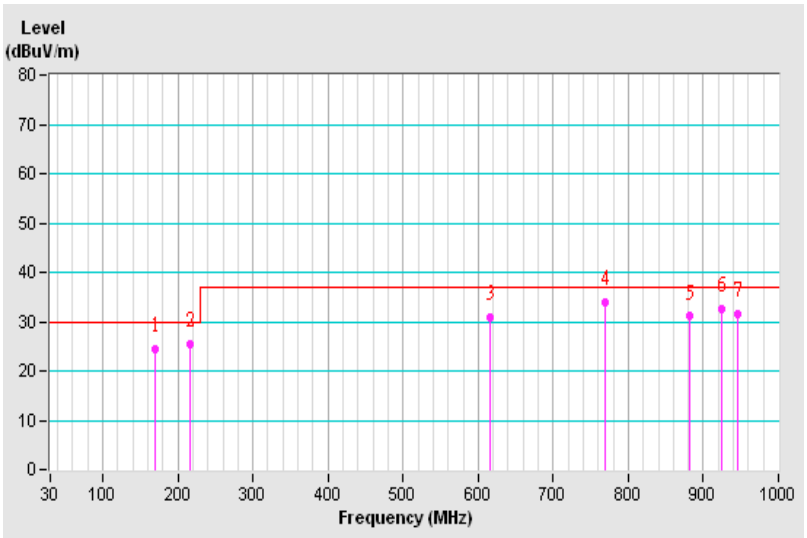


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 6		

Antenna Polarity & Test Distance : Horizontal at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	169.95	24.56 QP	30.00	-5.44	3.28 H	198	37.78	-13.22
2	216.02	25.42 QP	30.00	-4.58	4.00 H	169	41.10	-15.68
3	616.00	30.77 QP	37.00	-6.23	2.22 H	204	34.73	-3.96
4	770.04	33.82 QP	37.00	-3.18	1.17 H	243	35.09	-1.27
5	881.10	31.08 QP	37.00	-5.92	1.69 H	93	30.76	0.32
6	924.85	32.50 QP	37.00	-4.50	1.00 H	207	30.78	1.72
7	945.12	31.69 QP	37.00	-5.31	1.47 H	246	29.61	2.08

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

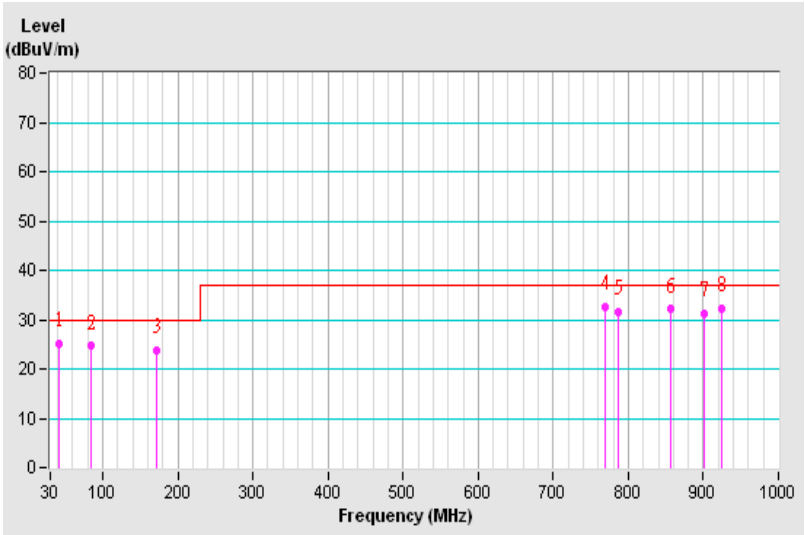


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 6		

Antenna Polarity & Test Distance : Vertical at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	42.39	25.17 QP	30.00	-4.83	1.30 V	36	38.77	-13.60
2	83.98	24.60 QP	30.00	-5.40	1.00 V	114	42.54	-17.94
3	172.06	23.80 QP	30.00	-6.20	1.39 V	100	37.02	-13.22
4	769.99	32.65 QP	37.00	-4.35	1.00 V	95	33.98	-1.33
5	785.65	31.53 QP	37.00	-5.47	2.18 V	280	32.83	-1.30
6	855.59	32.07 QP	37.00	-4.93	2.00 V	296	32.23	-0.16
7	901.01	31.17 QP	37.00	-5.83	2.22 V	294	30.28	0.89
8	924.00	32.13 QP	37.00	-4.87	2.00 V	141	30.60	1.53

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
   – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

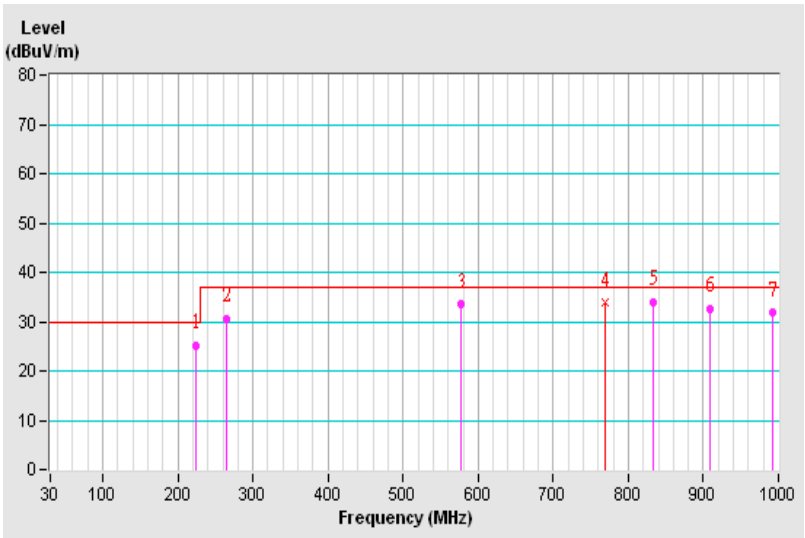


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 7		

Antenna Polarity & Test Distance : Horizontal at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	223.27	25.13 QP	30.00	-4.87	3.18 H	275	40.73	-15.60
2	264.01	30.60 QP	37.00	-6.40	4.00 H	299	43.81	-13.21
3	576.50	33.42 QP	37.00	-3.58	3.81 H	35	38.71	-5.29
4	770.01	33.74 QP	37.00	-3.26	3.38 H	245	35.01	-1.27
5	833.45	33.92 QP	37.00	-3.08	1.11 H	120	34.39	-0.47
6	909.50	32.71 QP	37.00	-4.29	1.00 H	244	31.57	1.14
7	991.56	31.76 QP	37.00	-5.24	1.30 H	274	29.00	2.76

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

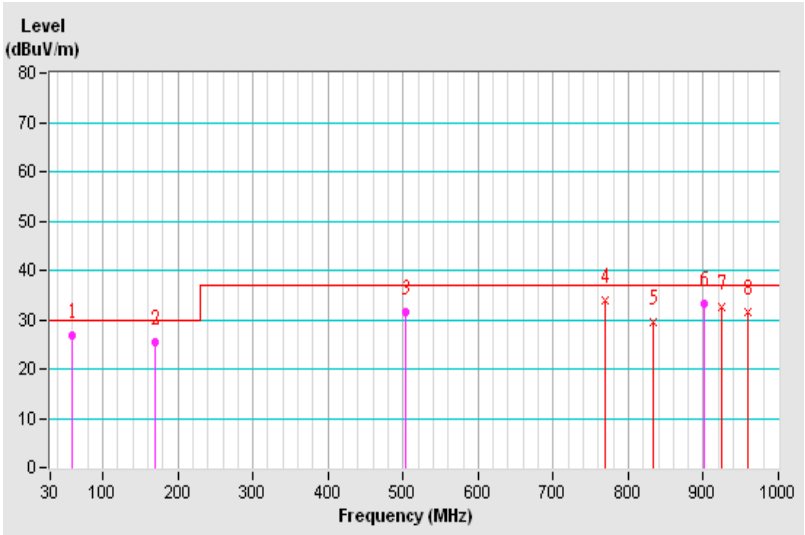


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 7		

Antenna Polarity & Test Distance : Vertical at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	59.39	26.90 QP	30.00	-3.10	1.12 V	222	40.01	-13.11
2	170.02	25.52 QP	30.00	-4.48	1.00 V	121	38.47	-12.95
3	504.01	31.68 QP	37.00	-5.32	1.22 V	345	38.30	-6.62
4	770.01	33.95 QP	37.00	-3.05	3.00 V	116	35.28	-1.33
5	832.29	29.51 QP	37.00	-7.49	1.95 V	312	30.04	-0.53
6	901.50	33.18 QP	37.00	-3.82	2.15 V	277	32.27	0.91
7	924.01	32.56 QP	37.00	-4.44	2.18 V	276	31.03	1.53
8	959.99	31.55 QP	37.00	-5.45	1.88 V	209	29.59	1.96

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
   – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

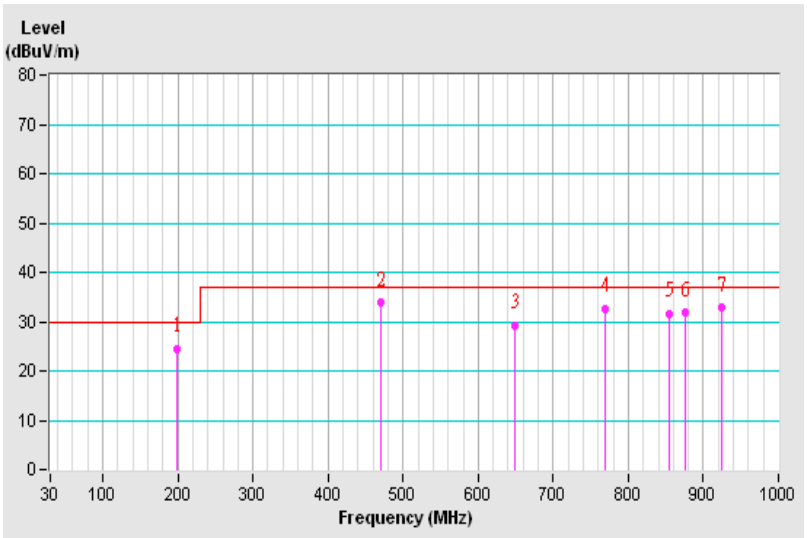


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 8		

Antenna Polarity & Test Distance : Horizontal at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	199.14	24.53 QP	30.00	-5.47	3.83 H	277	40.39	-15.86
2	471.06	33.80 QP	37.00	-3.20	2.00 H	328	41.13	-7.33
3	648.01	29.18 QP	37.00	-7.82	1.90 H	43	32.94	-3.76
4	770.01	32.67 QP	37.00	-4.33	2.00 H	43	33.94	-1.27
5	855.20	31.45 QP	37.00	-5.55	3.85 H	78	31.52	-0.07
6	876.79	31.71 QP	37.00	-5.29	3.00 H	38	31.46	0.25
7	924.00	32.78 QP	37.00	-4.22	2.86 H	195	31.08	1.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

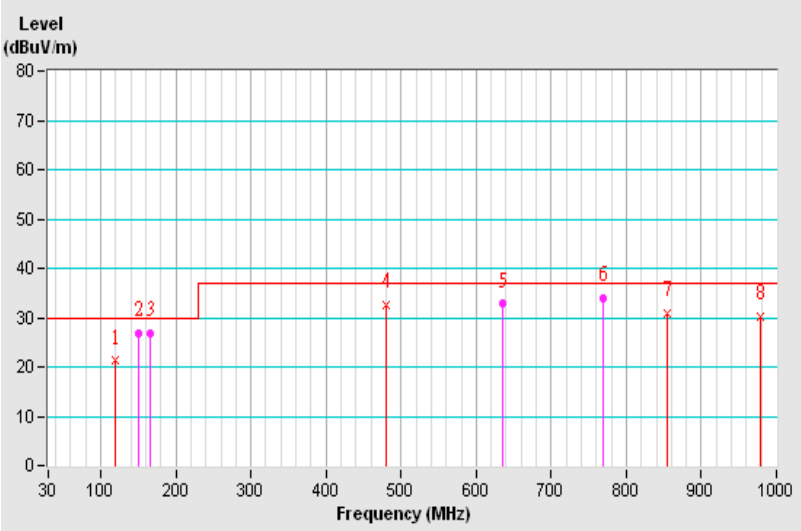


Frequency Range	30MHz ~ 1GHz	Detector Function & Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Tim Chen	Environmental Conditions	26℃, 63%RH, 1000mbar
Test Mode	Mode 8		

Antenna Polarity & Test Distance : Vertical at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	118.91	21.25 QP	30.00	-8.75	1.09 V	305	36.22	-14.97
2	150.13	26.93 QP	30.00	-3.07	1.00 V	279	39.84	-12.91
3	165.90	26.75 QP	30.00	-3.25	1.20 V	98	39.76	-13.01
4	479.15	32.63 QP	37.00	-4.37	3.00 V	144	39.84	-7.21
5	634.79	32.79 QP	37.00	-4.21	2.82 V	312	36.35	-3.56
6	**770.01**	**33.96 QP**	**37.00**	**-3.04**	**1.00 V**	**25**	**35.29**	**-1.33**
7	855.00	30.78 QP	37.00	-6.22	1.90 V	275	30.96	-0.18
8	978.12	30.11 QP	37.00	-6.89	1.82 V	279	27.82	2.29

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
   – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value



8 Radiated Emission at Frequencies above 1GHz

8.1 Limits

For Class A Equipment

EN 55032 Table clause	Frequency range (MHz)	Distance (m)	Detector type	Limits (dBuV/m)
A3.1	1000 - 3000	3	Average	56
	3000 - 6000			60
A3.2	1000 - 3000		Peak	76
	3000 - 6000			80

For Class B Equipment

EN 55032 Table clause	Frequency range (MHz)	Distance (m)	Detector type	Limits (dBuV/m)
A5.1	1000 - 3000	3	Average	50
	3000 - 6000			54
A5.2	1000 - 3000		Peak	70
	3000 - 6000			74

Required highest frequency for radiated measurement

EN 55032 Table clause	Highest internal frequency (F_x)	Highest measured frequency
1	$F_x \leqq$ 108 MHz	1 GHz
	108 MHz $< F_x \leqq$ 500 MHz	2 GHz
	500 MHz $< F_x \leqq$ 1 GHz	5 GHz
	$F_x >$ 1 GHz	5 x F_x up to a maximum of 6 GHz

NOTE 1 For FM and TV broadcast receivers, F_x is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.

NOTE 2 F_x is highest fundamental frequency generated or used within the EUT or highest frequency at which it operates.

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

8.2 Test Instruments

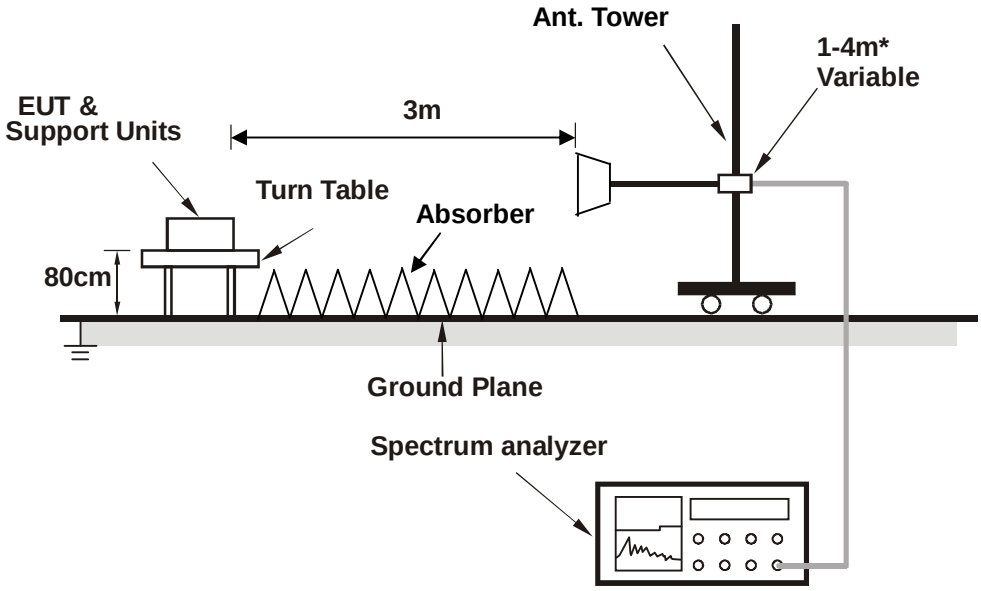
Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Agilent Spectrum	E4446A	MY51100009	May 30, 2016	May 29, 2017
Agilent Test Receiver	N9038A	MY51210129	Feb. 02, 2016	Feb. 01, 2017
Agilent Preamplifier	8449B	3008A01292	Feb. 26, 2016	Feb. 25, 2017
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Mar. 01, 2016	Feb. 28, 2017
EMCI Preamplifier	EMC184045B	980235	Mar. 01,2016	Feb. 28, 2017
Schwarzbeck Horn Antenna	BBHA-9170	212	Jan. 08, 2016	Jan. 07, 2017
EMCO Horn Antenna	3115	6714	Jan. 19, 2016	Jan. 18, 2017
Max Full. Turn Table	MF7802	MF780208216	NA	NA
Software	Radiated_V8.7.07	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF106-18	Cable-CH10	Aug. 15, 2015	Aug. 14, 2016
SUHNER RF cable With 3dB PAD	SF102	Cable-CH8-3.6m	Aug. 15, 2015	Aug. 14, 2016

Notes:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The 3dB beamwidth of the horn antenna is minimum 30 degree (or w = 1.6m at 3m distance) for 1~6 GHz.
3. The test was performed in Chamber No. 10.
4. The Industry Canada Reference No. IC 7450E-11.
5. The VCCI Site Registration No. G-427
6. The FCC Site Registration No. 367016
7. Tested Date: Jul. 22, 2016

8.3 Test Arrangement

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The spectrum analyzer system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

Note: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection (PK) at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.



Note: Cable on the RGP must to be insulated.

* :depends on the EUT height and the antenna 3dB beamwidth both.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

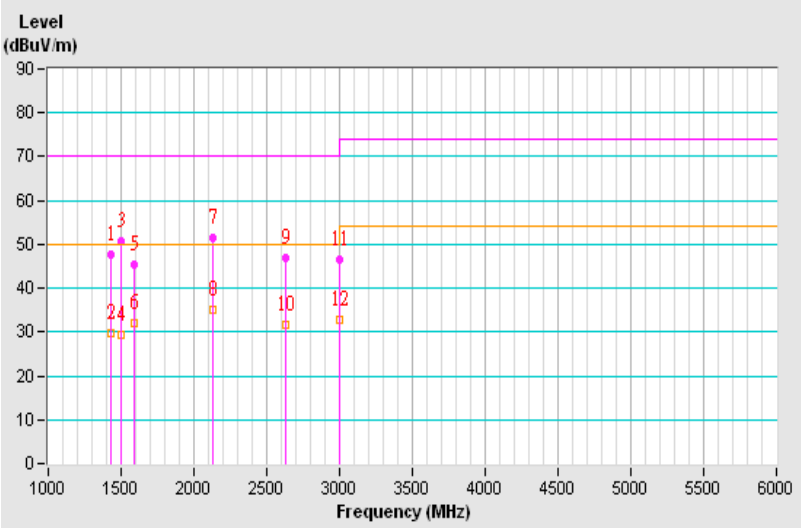
8.4 Test Results

Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 1		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1425.00	47.51 PK	70.00	-22.49	1.20 H	76	51.52	-4.01
2	1425.00	29.75 AV	50.00	-20.25	1.20 H	76	33.76	-4.01
3	1499.75	50.65 PK	70.00	-19.35	1.14 H	357	54.61	-3.96
4	1499.75	29.28 AV	50.00	-20.72	1.14 H	357	33.24	-3.96
5	1593.75	45.22 PK	70.00	-24.78	1.07 H	347	48.67	-3.45
6	1593.75	32.05 AV	50.00	-17.95	1.07 H	347	35.50	-3.45
7	2128.00	51.59 PK	70.00	-18.41	2.24 H	277	52.80	-1.21
8	2128.00	35.11 AV	50.00	-14.89	2.24 H	277	36.32	-1.21
9	2626.00	46.91 PK	70.00	-23.09	1.21 H	261	46.48	0.43
10	2626.00	31.71 AV	50.00	-18.29	1.21 H	261	31.28	0.43
11	2999.50	46.56 PK	70.00	-23.44	2.00 H	331	44.77	1.79
12	2999.50	32.88 AV	50.00	-17.12	2.00 H	331	31.09	1.79

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

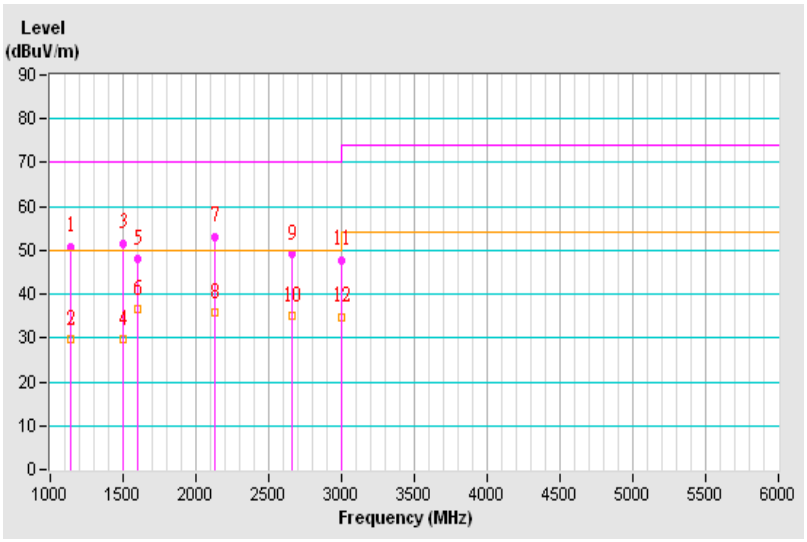


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 1		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1139.94	50.91 PK	70.00	-19.09	2.35 V	334	55.68	-4.77
2	1139.94	29.65 AV	50.00	-20.35	2.35 V	334	34.42	-4.77
3	1499.20	51.65 PK	70.00	-18.35	2.86 V	325	55.61	-3.96
4	1499.20	29.63 AV	50.00	-20.37	2.86 V	325	33.59	-3.96
5	1597.00	48.09 PK	70.00	-21.91	1.96 V	337	51.52	-3.43
6	1597.00	36.49 AV	50.00	-13.51	1.96 V	337	39.92	-3.43
7	2130.25	53.18 PK	70.00	-16.82	1.75 V	30	54.38	-1.20
8	2130.25	35.86 AV	50.00	-14.14	1.75 V	30	37.06	-1.20
9	2662.25	49.12 PK	70.00	-20.88	1.95 V	351	48.53	0.59
10	2662.25	35.23 AV	50.00	-14.77	1.95 V	351	34.64	0.59
11	2996.25	47.85 PK	70.00	-22.15	2.44 V	33	46.07	1.78
12	2996.25	34.88 AV	50.00	-15.12	2.44 V	33	33.10	1.78

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

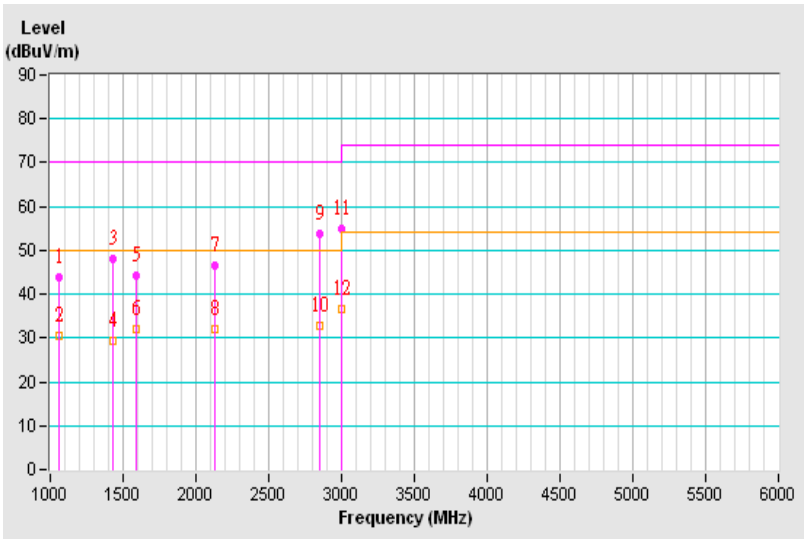


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 2		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1063.50	43.77 PK	70.00	-26.23	1.41 H	187	48.79	-5.02
2	1063.50	30.45 AV	50.00	-19.55	1.41 H	187	35.47	-5.02
3	1431.75	48.08 PK	70.00	-21.92	1.32 H	80	52.08	-4.00
4	1431.75	29.49 AV	50.00	-20.51	1.32 H	80	33.49	-4.00
5	1593.50	44.35 PK	70.00	-25.65	1.95 H	76	47.81	-3.46
6	1593.50	32.01 AV	50.00	-17.99	1.95 H	76	35.47	-3.46
7	2130.25	46.47 PK	70.00	-23.53	1.80 H	272	47.67	-1.20
8	2130.25	32.00 AV	50.00	-18.00	1.80 H	272	33.20	-1.20
9	2849.96	53.86 PK	70.00	-16.14	2.15 H	311	52.58	1.28
10	2849.96	32.92 AV	50.00	-17.08	2.15 H	311	31.64	1.28
11	2999.94	54.99 PK	70.00	-15.01	2.06 H	82	53.20	1.79
12	2999.94	36.62 AV	50.00	-13.38	2.06 H	82	34.83	1.79

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

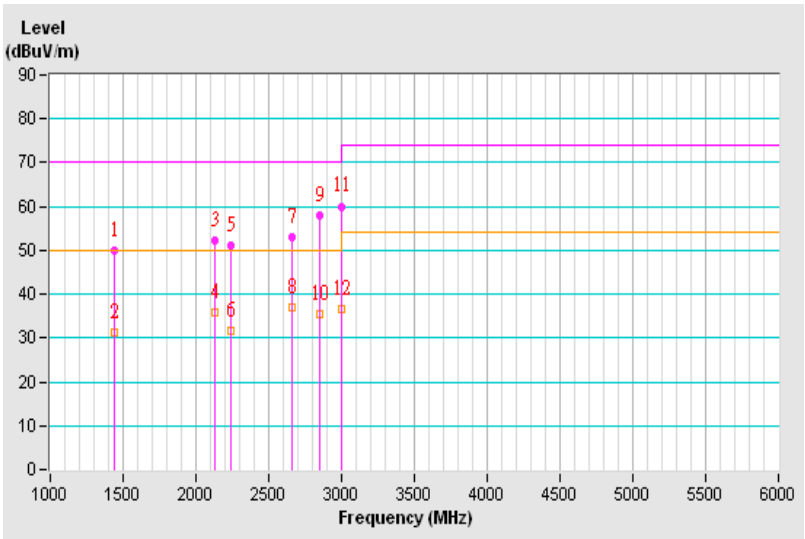


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 2		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1437.75	49.77 PK	70.00	-20.23	2.34 V	360	53.77	-4.00
2	1437.75	31.21 AV	50.00	-18.79	2.34 V	360	35.21	-4.00
3	2131.00	52.13 PK	70.00	-17.87	2.25 V	332	53.33	-1.20
4	2131.00	35.76 AV	50.00	-14.24	2.25 V	332	36.96	-1.20
5	2240.75	50.96 PK	70.00	-19.04	1.56 V	140	51.91	-0.95
6	2240.75	31.61 AV	50.00	-18.39	1.56 V	140	32.56	-0.95
7	2664.25	52.94 PK	70.00	-17.06	2.47 V	360	52.35	0.59
8	2664.25	36.88 AV	50.00	-13.12	2.47 V	360	36.29	0.59
9	2850.01	57.99 PK	70.00	-12.01	2.64 V	23	56.71	1.28
10	2850.01	35.52 AV	50.00	-14.48	2.64 V	23	34.24	1.28
11	**2999.99**	**60.04 PK**	**70.00**	**-9.96**	**2.03 V**	**133**	**58.25**	**1.79**
12	2999.99	36.44 AV	50.00	-13.56	2.03 V	133	34.65	1.79

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

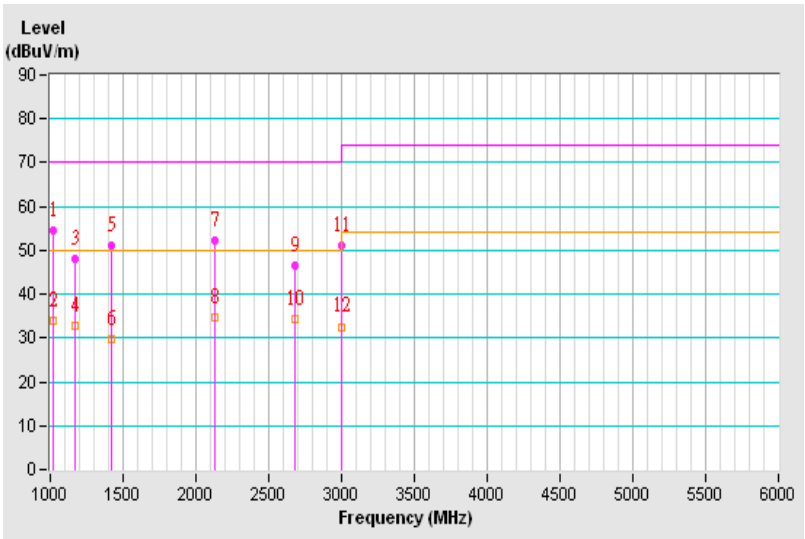


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 3		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1023.17	54.40 PK	70.00	-15.60	1.76 H	242	59.58	-5.18
2	1023.17	33.83 AV	50.00	-16.17	1.76 H	242	39.01	-5.18
3	1169.25	48.13 PK	70.00	-21.87	2.19 H	147	52.81	-4.68
4	1169.25	32.62 AV	50.00	-17.38	2.19 H	147	37.30	-4.68
5	1416.75	50.92 PK	70.00	-19.08	1.13 H	342	54.94	-4.02
6	1416.75	29.84 AV	50.00	-20.16	1.13 H	342	33.86	-4.02
7	2130.83	52.21 PK	70.00	-17.79	2.30 H	275	53.41	-1.20
8	2130.83	34.82 AV	50.00	-15.18	2.30 H	275	36.02	-1.20
9	2684.00	46.63 PK	70.00	-23.37	1.22 H	0	45.96	0.67
10	2684.00	34.42 AV	50.00	-15.58	1.22 H	0	33.75	0.67
11	2997.75	51.17 PK	70.00	-18.83	2.46 H	177	49.39	1.78
12	2997.75	32.58 AV	50.00	-17.42	2.46 H	177	30.80	1.78

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

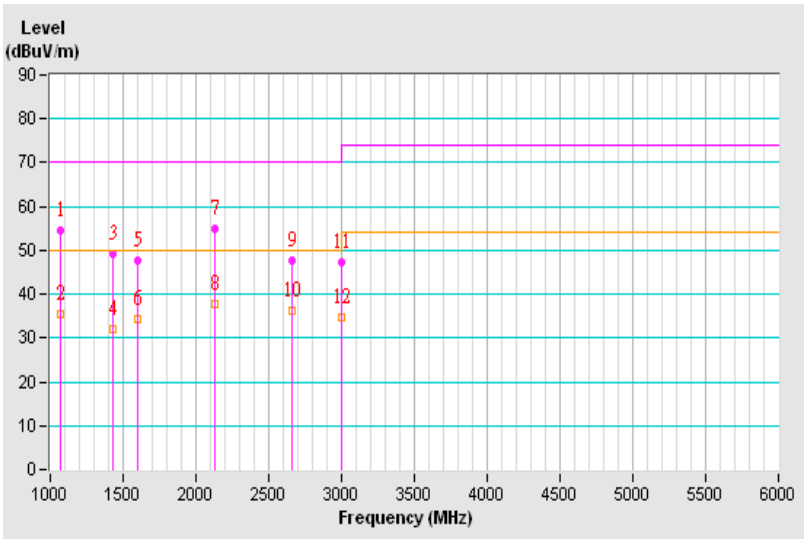


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 3		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1065.24	54.65 PK	70.00	-15.35	1.73 V	188	59.66	-5.01
2	1065.24	35.41 AV	50.00	-14.59	1.73 V	188	40.42	-5.01
3	1434.00	49.34 PK	70.00	-20.66	1.83 V	0	53.34	-4.00
4	1434.00	31.91 AV	50.00	-18.09	1.83 V	0	35.91	-4.00
5	1598.75	47.72 PK	70.00	-22.28	1.57 V	347	51.15	-3.43
6	1598.75	34.19 AV	50.00	-15.81	1.57 V	347	37.62	-3.43
7	2126.75	54.76 PK	70.00	-15.24	2.19 V	32	55.97	-1.21
8	2126.75	37.82 AV	50.00	-12.18	2.19 V	32	39.03	-1.21
9	2662.25	47.78 PK	70.00	-22.22	2.39 V	8	47.19	0.59
10	2662.25	36.28 AV	50.00	-13.72	2.39 V	8	35.69	0.59
11	2999.97	47.22 PK	70.00	-22.78	2.45 V	343	45.43	1.79
12	2999.97	34.64 AV	50.00	-15.36	2.45 V	343	32.85	1.79

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

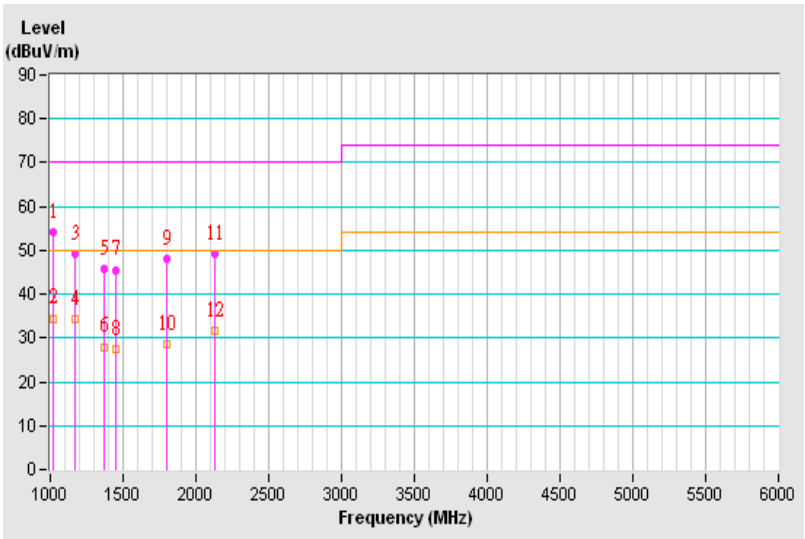


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 4		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1023.12	54.08 PK	70.00	-15.92	1.17 H	241	59.26	-5.18
2	1023.12	34.48 AV	50.00	-15.52	1.17 H	241	39.66	-5.18
3	1169.25	49.22 PK	70.00	-20.78	1.25 H	138	53.90	-4.68
4	1169.25	34.19 AV	50.00	-15.81	1.25 H	138	38.87	-4.68
5	1373.25	45.78 PK	70.00	-24.22	2.19 H	15	49.88	-4.10
6	1373.25	28.01 AV	50.00	-21.99	2.19 H	15	32.11	-4.10
7	1450.00	45.56 PK	70.00	-24.44	1.99 H	11	49.55	-3.99
8	1450.00	27.57 AV	50.00	-22.43	1.99 H	11	31.56	-3.99
9	1800.00	48.10 PK	70.00	-21.90	2.41 H	296	50.42	-2.32
10	1800.00	28.73 AV	50.00	-21.27	2.41 H	296	31.05	-2.32
11	2130.00	49.10 PK	70.00	-20.90	1.20 H	0	50.30	-1.20
12	2130.00	31.71 AV	50.00	-18.29	1.20 H	0	32.91	-1.20

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

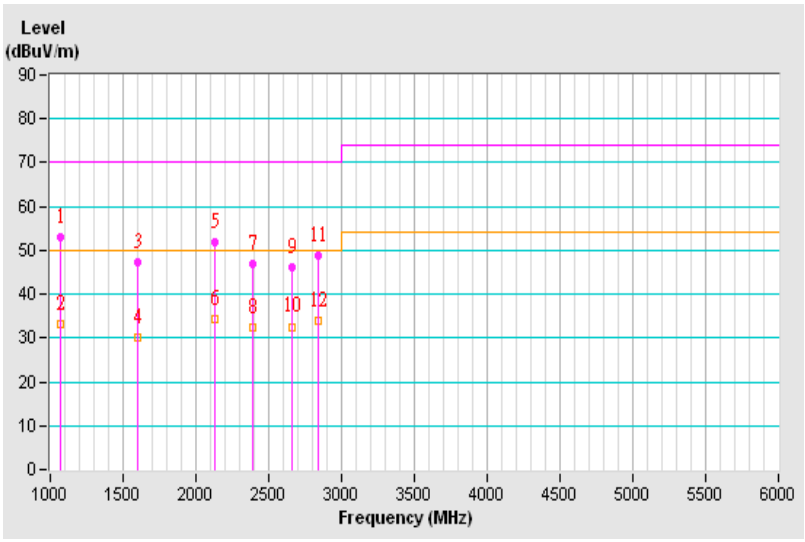


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 4		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1065.33	53.02 PK	70.00	-16.98	1.26 V	230	58.03	-5.01
2	1065.33	33.27 AV	50.00	-16.73	1.26 V	230	38.28	-5.01
3	1598.25	47.27 PK	70.00	-22.73	1.70 V	170	50.70	-3.43
4	1598.25	30.00 AV	50.00	-20.00	1.70 V	170	33.43	-3.43
5	2126.00	51.87 PK	70.00	-18.13	2.11 V	57	53.08	-1.21
6	2126.00	34.35 AV	50.00	-15.65	2.11 V	57	35.56	-1.21
7	2390.75	46.84 PK	70.00	-23.16	2.39 V	30	47.33	-0.49
8	2390.75	32.48 AV	50.00	-17.52	2.39 V	30	32.97	-0.49
9	2663.25	46.27 PK	70.00	-23.73	2.57 V	49	45.68	0.59
10	2663.25	32.60 AV	50.00	-17.40	2.57 V	49	32.01	0.59
11	2844.50	48.93 PK	70.00	-21.07	2.22 V	360	47.67	1.26
12	2844.50	33.95 AV	50.00	-16.05	2.22 V	360	32.69	1.26

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

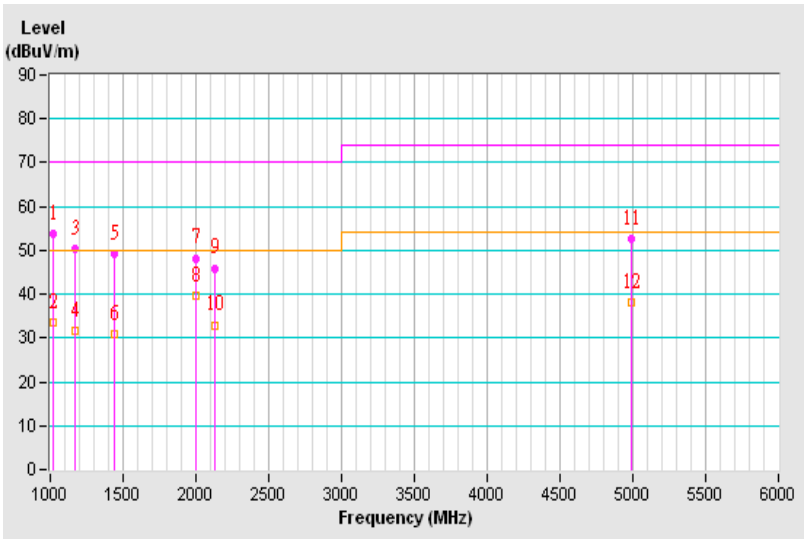


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 5		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1023.00	53.85 PK	70.00	-16.15	1.20 H	245	59.03	-5.18
2	1023.00	33.47 AV	50.00	-16.53	1.20 H	245	38.65	-5.18
3	1168.99	50.23 PK	70.00	-19.77	2.29 H	143	54.91	-4.68
4	1168.99	31.55 AV	50.00	-18.45	2.29 H	143	36.23	-4.68
5	1439.00	49.27 PK	70.00	-20.73	1.75 H	324	53.27	-4.00
6	1439.00	30.93 AV	50.00	-19.07	1.75 H	324	34.93	-4.00
7	2001.99	48.21 PK	70.00	-21.79	1.35 H	201	49.92	-1.71
8	2001.99	39.72 AV	50.00	-10.28	1.35 H	201	41.43	-1.71
9	2130.50	45.93 PK	70.00	-24.07	2.02 H	140	47.13	-1.20
10	2130.50	32.95 AV	50.00	-17.05	2.02 H	140	34.15	-1.20
11	4990.75	52.44 PK	74.00	-21.56	1.94 H	295	46.00	6.44
12	4990.75	38.07 AV	54.00	-15.93	1.94 H	295	31.63	6.44

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

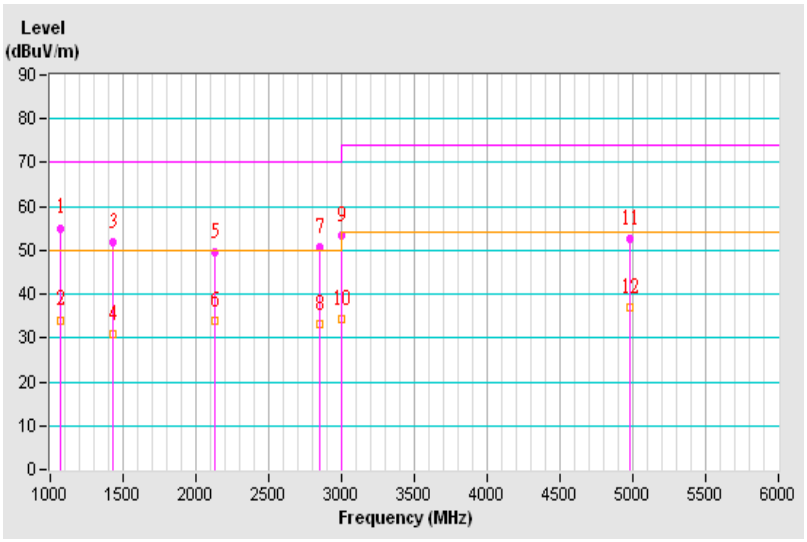


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 5		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1065.11	55.09 PK	70.00	-14.91	1.20 V	205	60.10	-5.01
2	1065.11	34.11 AV	50.00	-15.89	1.20 V	205	39.12	-5.01
3	1430.75	51.96 PK	70.00	-18.04	2.36 V	4	55.96	-4.00
4	1430.75	31.00 AV	50.00	-19.00	2.36 V	4	35.00	-4.00
5	2127.25	49.55 PK	70.00	-20.45	2.11 V	38	50.76	-1.21
6	2127.25	33.95 AV	50.00	-16.05	2.11 V	38	35.16	-1.21
7	2849.97	50.72 PK	70.00	-19.28	2.39 V	360	49.44	1.28
8	2849.97	33.30 AV	50.00	-16.70	2.39 V	360	32.02	1.28
9	2999.95	53.35 PK	70.00	-16.65	2.77 V	21	51.56	1.79
10	2999.95	34.15 AV	50.00	-15.85	2.77 V	21	32.36	1.79
11	4982.50	52.77 PK	74.00	-21.23	2.40 V	122	46.36	6.41
12	4982.50	36.99 AV	54.00	-17.01	2.40 V	122	30.58	6.41

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

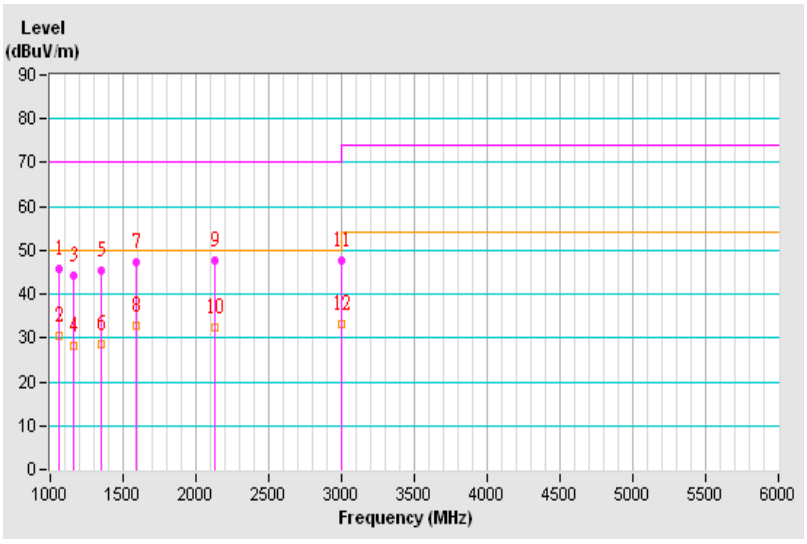


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 6		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1060.00	45.76 PK	70.00	-24.24	1.49 H	186	50.79	-5.03
2	1060.00	30.34 AV	50.00	-19.66	1.49 H	186	35.37	-5.03
3	1162.00	44.37 PK	70.00	-25.63	1.35 H	225	49.07	-4.70
4	1162.00	28.20 AV	50.00	-21.80	1.35 H	225	32.90	-4.70
5	1353.50	45.49 PK	70.00	-24.51	1.32 H	179	49.65	-4.16
6	1353.50	28.75 AV	50.00	-21.25	1.32 H	179	32.91	-4.16
7	1594.50	47.40 PK	70.00	-22.60	2.46 H	80	50.85	-3.45
8	1594.50	32.62 AV	50.00	-17.38	2.46 H	80	36.07	-3.45
9	2132.25	47.57 PK	70.00	-22.43	2.05 H	48	48.77	-1.20
10	2132.25	32.52 AV	50.00	-17.48	2.05 H	48	33.72	-1.20
11	2999.97	47.64 PK	70.00	-22.36	2.57 H	89	45.85	1.79
12	2999.97	33.17 AV	50.00	-16.83	2.57 H	89	31.38	1.79

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

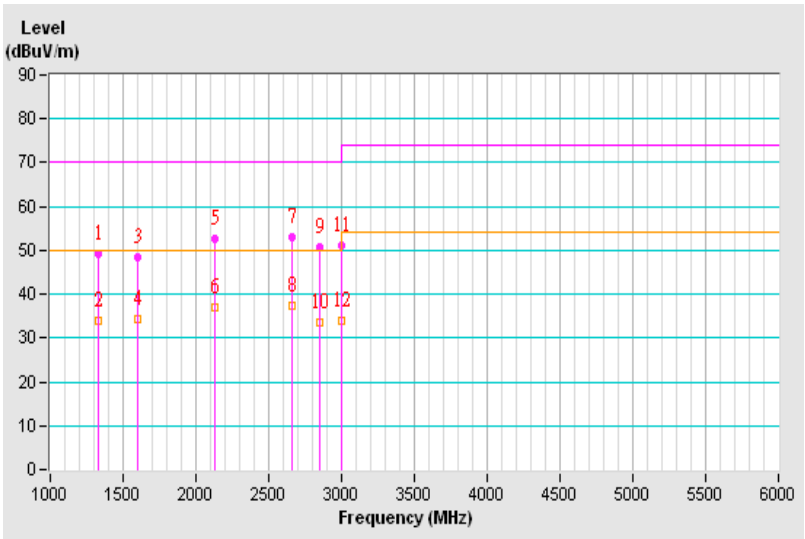


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 6		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1328.00	49.27 PK	70.00	-20.73	1.71 V	3	53.50	-4.23
2	1328.00	34.05 AV	50.00	-15.95	1.71 V	3	38.28	-4.23
3	1596.25	48.55 PK	70.00	-21.45	2.18 V	8	52.00	-3.45
4	1596.25	34.32 AV	50.00	-15.68	2.18 V	8	37.77	-3.45
5	2125.25	52.51 PK	70.00	-17.49	2.30 V	338	53.72	-1.21
6	2125.25	37.01 AV	50.00	-12.99	2.30 V	338	38.22	-1.21
7	2656.75	53.07 PK	70.00	-16.93	2.12 V	0	52.51	0.56
8	2656.75	37.45 AV	50.00	-12.55	2.12 V	0	36.89	0.56
9	2850.00	50.56 PK	70.00	-19.44	2.33 V	357	49.28	1.28
10	2850.00	33.39 AV	50.00	-16.61	2.33 V	357	32.11	1.28
11	2999.96	51.21 PK	70.00	-18.79	2.01 V	360	49.42	1.79
12	2999.96	33.88 AV	50.00	-16.12	2.01 V	360	32.09	1.79

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

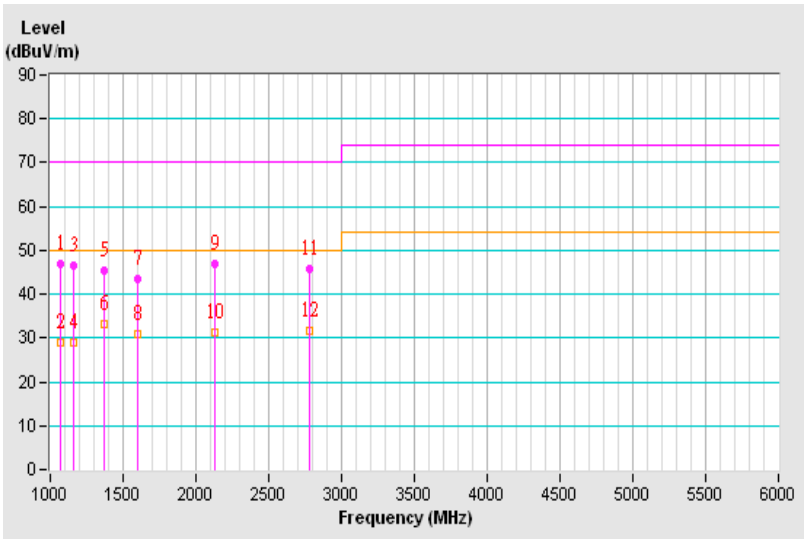


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 7		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1074.75	46.97 PK	70.00	-23.03	1.52 H	215	51.95	-4.98
2	1074.75	29.07 AV	50.00	-20.93	1.52 H	215	34.05	-4.98
3	1161.25	46.52 PK	70.00	-23.48	1.30 H	205	51.22	-4.70
4	1161.25	29.10 AV	50.00	-20.90	1.30 H	205	33.80	-4.70
5	1366.50	45.25 PK	70.00	-24.75	1.94 H	132	49.37	-4.12
6	1366.50	33.23 AV	50.00	-16.77	1.94 H	132	37.35	-4.12
7	1596.75	43.61 PK	70.00	-26.39	1.44 H	250	47.04	-3.43
8	1596.75	31.00 AV	50.00	-19.00	1.44 H	250	34.43	-3.43
9	2130.50	46.88 PK	70.00	-23.12	2.17 H	148	48.08	-1.20
10	2130.50	31.28 AV	50.00	-18.72	2.17 H	148	32.48	-1.20
11	2778.00	45.64 PK	70.00	-24.36	1.37 H	94	44.63	1.01
12	2778.00	31.71 AV	50.00	-18.29	1.37 H	94	30.70	1.01

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

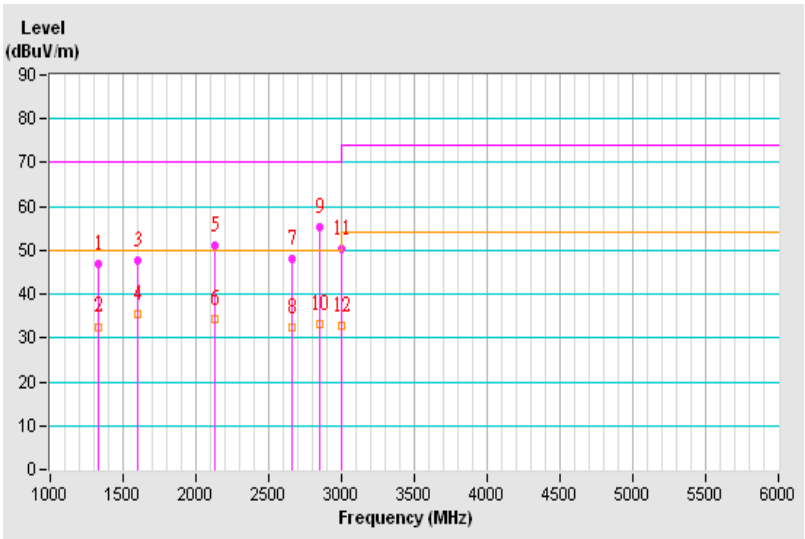


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 7		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1328.25	46.79 PK	70.00	-23.21	1.84 V	4	51.02	-4.23
2	1328.25	32.59 AV	50.00	-17.41	1.84 V	4	36.82	-4.23
3	1595.75	47.73 PK	70.00	-22.27	2.09 V	38	51.18	-3.45
4	1595.75	35.54 AV	50.00	-14.46	2.09 V	38	38.99	-3.45
5	2126.75	51.22 PK	70.00	-18.78	2.29 V	354	52.43	-1.21
6	2126.75	34.33 AV	50.00	-15.67	2.29 V	354	35.54	-1.21
7	2656.00	48.11 PK	70.00	-21.89	2.06 V	360	47.56	0.55
8	2656.00	32.52 AV	50.00	-17.48	2.06 V	360	31.97	0.55
9	2850.05	55.31 PK	70.00	-14.69	2.40 V	17	54.03	1.28
10	2850.05	33.02 AV	50.00	-16.98	2.40 V	17	31.74	1.28
11	2999.96	50.24 PK	70.00	-19.76	2.73 V	349	48.45	1.79
12	2999.96	32.73 AV	50.00	-17.27	2.73 V	349	30.94	1.79

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

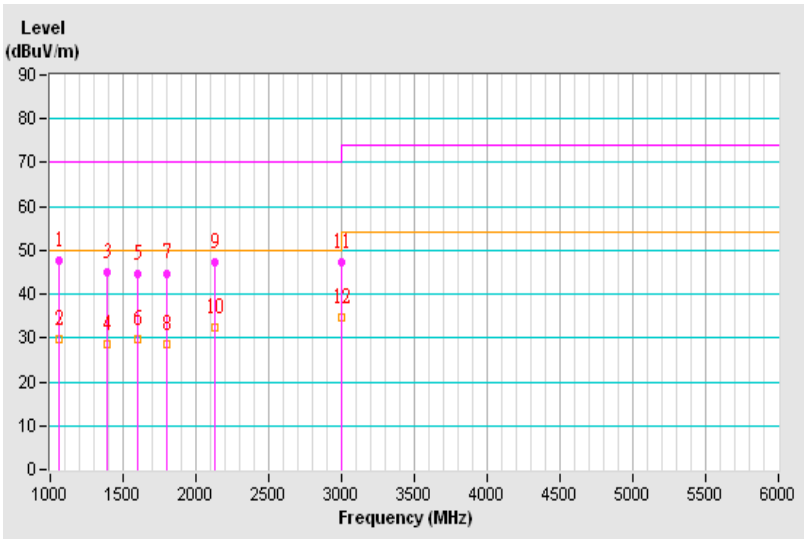


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 8		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1063.25	47.63 PK	70.00	-22.37	1.47 H	150	52.65	-5.02
2	1063.25	29.75 AV	50.00	-20.25	1.47 H	150	34.77	-5.02
3	1387.50	45.10 PK	70.00	-24.90	1.43 H	237	49.15	-4.05
4	1387.50	28.63 AV	50.00	-21.37	1.43 H	237	32.68	-4.05
5	1600.00	44.63 PK	70.00	-25.37	1.09 H	26	48.05	-3.42
6	1600.00	29.88 AV	50.00	-20.12	1.09 H	26	33.30	-3.42
7	1797.75	44.80 PK	70.00	-25.20	1.26 H	299	47.13	-2.33
8	1797.75	28.56 AV	50.00	-21.44	1.26 H	299	30.89	-2.33
9	2130.25	47.34 PK	70.00	-22.66	2.16 H	51	48.54	-1.20
10	2130.25	32.33 AV	50.00	-17.67	2.16 H	51	33.53	-1.20
11	2999.97	47.18 PK	70.00	-22.82	2.72 H	69	45.39	1.79
12	2999.97	34.58 AV	50.00	-15.42	2.72 H	69	32.79	1.79

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

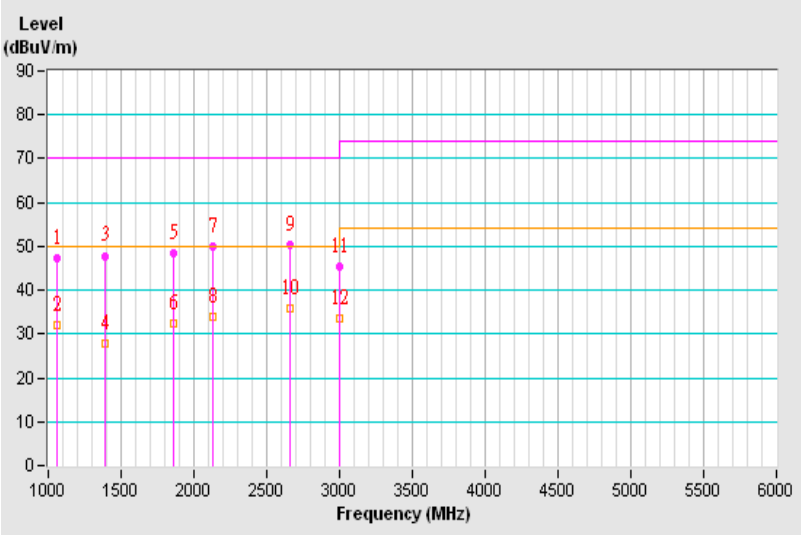


Frequency Range	1GHz ~ 6GHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested by	Chiawei Lin	Environmental Conditions	26℃, 61%RH, 1001mbar
Test Mode	Mode 8		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1063.00	47.10 PK	70.00	-22.90	2.36 V	343	52.12	-5.02
2	1063.00	32.09 AV	50.00	-17.91	2.36 V	343	37.11	-5.02
3	1389.50	47.86 PK	70.00	-22.14	2.01 V	196	51.91	-4.05
4	1389.50	27.91 AV	50.00	-22.09	2.01 V	196	31.96	-4.05
5	1863.25	48.34 PK	70.00	-21.66	2.16 V	353	50.45	-2.11
6	1863.25	32.35 AV	50.00	-17.65	2.16 V	353	34.46	-2.11
7	2125.00	50.04 PK	70.00	-19.96	2.25 V	30	51.26	-1.22
8	2125.00	33.77 AV	50.00	-16.23	2.25 V	30	34.99	-1.22
9	2655.75	50.29 PK	70.00	-19.71	2.40 V	360	49.74	0.55
10	2655.75	35.76 AV	50.00	-14.24	2.40 V	360	35.21	0.55
11	2999.98	45.51 PK	70.00	-24.49	2.10 V	220	43.72	1.79
12	2999.98	33.62 AV	50.00	-16.38	2.10 V	220	31.83	1.79

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value



9 Harmonics Current Measurement

9.1 Limits

Limits for Class A equipment	
Harmonic Order n	Max. permissible harmonics current A
Odd harmonics	
3	2.30
5	1.14
7	0.77
9	0.40
11	0.33
13	0.21
15≦n≦39	0.15 x 15/n
Even harmonics	
2	1.08
4	0.43
6	0.30
8≦n≦40	0.23 x 8/n

Limits for Class D equipment		
Harmonic Order n	Max. permissible harmonics current per watt mA/W	Max. permissible harmonics current A
Odd Harmonics only		
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
13	0.30	0.21
15≦n≦39	3.85/n	0.15 x 15/n

Notes: 1. Class A and Class D are classified according to section 5 of EN 61000-3-2.
2. According to section 7 of EN 61000-3-2, the above limits for all equipment except for lighting equipment having an active input power > 75 W and no limits apply for equipment with an active input power up to and including 75 W.

9.2 Classification of Equipment

Class A	Class B	Class C	Class D
Balanced three-phase equipment; Household appliances excluding equipment as Class D; Tools excluding portable tools; Dimmers for incandescent lamps; Audio equipment; Equipment not specified in one of the three other classes.	Portable tools; Arc welding equipment which is not professional equipment.	Lighting equipment.	Equipment having a specified power less than or equal to 600 W of the following types: Personal computers and personal computer monitors; Television receivers; Refrigerators and freezers having one or more variable-speed drives to control compressor motor(s).

9.3 Test Instruments

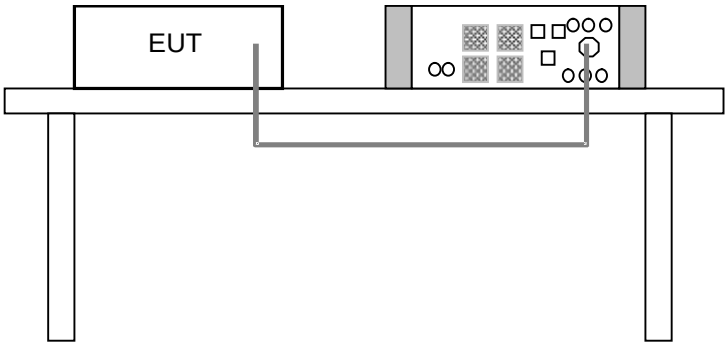
Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
EMC PARTNER EMC Emission Tester	HAR1000-1P	084	Apr. 20, 2016	Apr. 19, 2017
Software	HARCS	NA	NA	NA

Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in EMS Room No. 1.
3. According to IEC 61000-4-7: 2002, the time window shall be synchronized with each group of 10 or 12 cycles (200 ms)for power frequency of 50 or 60Hz.
4. Tested Date: Jul. 26, 2016

9.4 Test Arrangement

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 for each successive harmonic component in turn.

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.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

9.5 Test Results

Fundamental Voltage/Ampere	230.1Vrms/ 0.382Arms	Power Frequency	49.987Hz
Power Consumption	37.55W	Power Factor	0.427
Environmental Conditions	28 °C, 63%RH	Tested by	Michael Cheng
Test Mode	Mode 3		

Note: 1. Limits are not specified for equipment with a rated power of 75W or less (other than lighting equipment).
2. According to EN 61000-3-2 the manufacturer shall specify the power of the apparatus. This value shall be used for establishing limits. The specified power shall be within +/-10% of the measured power.

Fundamental Voltage/Ampere	230.1Vrms/ 0.377Arms	Power Frequency	49.987Hz
Power Consumption	36.91W	Power Factor	0.426
Environmental Conditions	28 °C, 63%RH	Tested by	Michael Cheng
Test Mode	Mode 8		

Note: 1. Limits are not specified for equipment with a rated power of 75W or less (other than lighting equipment).
2. According to EN 61000-3-2 the manufacturer shall specify the power of the apparatus. This value shall be used for establishing limits. The specified power shall be within +/-10% of the measured power.

10 Voltage Fluctuations and Flicker Measurement

10.1 Limits

Test item	Limit	Note
P_{st}	1.0	P_{st}: short-term flicker severity.
P_{lt}	0.65	P_{lt}: long-term flicker severity.
T_{max} (ms)	500	T_{max}: maximum time duration during the observation period that the voltage deviation d(t) exceeds the limit for d_c .
d_{max} (%)	4	d_{max}: maximum absolute voltage change during an observation period.
d_c (%)	3.3	d_c: maximum steady state voltage change during an observation period.

10.2 Test Instruments

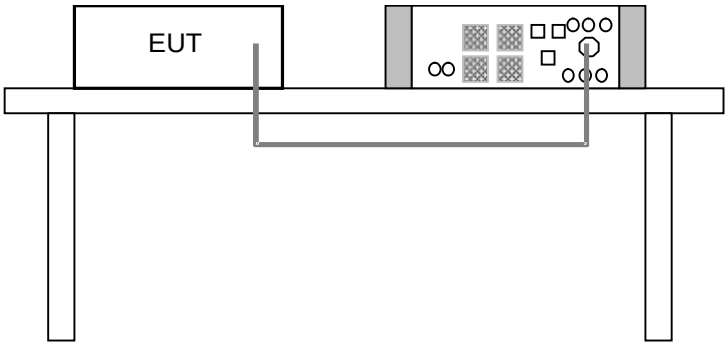
Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
EMC PARTNER EMC Emission Tester	HAR1000-1P	084	Apr. 20, 2016	Apr. 19, 2017
Software	HARCS	NA	NA	NA

Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in EMS Room No. 1.
3. Tested Date: Jul. 26, 2016

10.3 Test Arrangement

a. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the most unfavorable sequence of voltage changes under normal operating conditions.

b. During the flick measurement, the measure time shall include that part of whole operation cycle in which the EUT produce the most unfavorable sequence of voltage changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

10.4 Test Results

Fundamental Voltage/Ampere	230.1 Vrms / 0.382 Arms	Power Frequency	49.987Hz
Observation (T_p)	10 min.	Power Factor	0.427
Enviromental Conditions	28 °C, 63 % RH	Tested by	Michael Cheng
Test Mode	Mode 3		

Test Parameter	Measurement Value	Limit	Remarks
P_{st}	0.072	1.00	Pass
P_{lt}	0.072	0.65	Pass
T_{max} (ms)	0	500	Pass
d_{max} (%)	0	4	Pass
d_c (%)	0.020	3.3	Pass

Note: (1) P_{st} means short-term flicker indicator.
(2) P_{lt} means long-term flicker indicator.
(3) T_{max} means accumulated time value of d(t) with a deviation exceeding 3.3 %.
(4) d_{max} means maximum relative voltage change.
(5) d_c means maximum relative steady-state voltage change.

Fundamental Voltage/Ampere	230.1 Vrms / 0.377 Arms	Power Frequency	49.987Hz
Observation (T_p)	10 min.	Power Factor	0.426
Enviromental Conditions	28 °C, 63 % RH	Tested by	Michael Cheng
Test Mode	Mode 8		

Test Parameter	Measurement Value	Limit	Remarks
P_{st}	0.072	1.00	Pass
P_{lt}	0.072	0.65	Pass
T_{max} (ms)	0	500	Pass
d_{max} (%)	0	4	Pass
d_c (%)	0.010	3.3	Pass

Note: (1) P_{st} means short-term flicker indicator.
(2) P_{lt} means long-term flicker indicator.
(3) T_{max} means accumulated time value of d(t) with a deviation exceeding 3.3 %.
(4) d_{max} means maximum relative voltage change.
(5) d_c means maximum relative steady-state voltage change.

11 General Immunity Requirements

EN 55024:2010, Immunity requirements				
Clause	Reference standard	Table	Test specification	Performance Criterion
4.2.1	EN/IEC 61000-4-2 ESD	1.3	Enclosure port: ±8kV Air discharge, ±4kV Contact discharge	B
4.2.3.2	EN/IEC 61000-4-3 RS	1.2	Enclosure port: 80-1000 MHz, 3V/m, 80% AM (1kHz)	A
4.2.2	EN/IEC 61000-4-4 EFT	2.3	Signal ports and telecommunication ports: xDSL equipment: ±0.5kV, 5/50 (T_r/T_h) ns, 100kHz others: ±0.5kV, 5/50 (T_r/T_h) ns, 5kHz	B
		3.3	Input DC power port: ±0.5kV, 5/50 (T_r/T_h) ns, 5kHz	
		4.5	Input AC Power ports: ±1kV, 5/50 (T_r/T_h) ns, 5kHz	
4.2.5	EN/IEC 61000-4-5 Surge	2.2	Signal and telecommunication ports (direct to outdoor cables): 10/700 (5/320) (T_r/T_h) µs w/o primary protectors: ±1kV, or with primary protectors fitted: ±4kV	C
		3.2	Input DC power port (direct to outdoor cables): 1.2/50 (8/20) (T_r/T_h) µs Line to earth: ±0.5kV	B
		4.4	Input AC Power ports: 1.2/50 (8/20) (T_r/T_h) µs, Line to line: ±1kV Line to earth: ±2kV	
4.2.3.3	EN/IEC 61000-4-6 CS	2.1	Signal and telecommunication ports(cable length > 3m): 0.15-80 MHz, 3V, 80% AM (1kHz)	A
		3.1	Input DC power port: 0.15-80 MHz, 3V, 80% AM (1kHz)	
		4.1	Input AC Power ports: 0.15-80 MHz, 3V, 80% AM (1kHz)	
4.2.4	EN/IEC 61000-4-8 PFMF	1.1	Enclosure port: 50 or 60 Hz, 1A/m	A
4.2.6	EN/IEC 61000-4-11 Dips & Interruptions	4.2	Input AC Power ports: Voltage Dips: >95% reduction – 0.5 period 30% reduction – 25 periods	B C
		4.3	Input AC Power ports: Voltage Interruptions: >95% reduction – 250 periods	C

11.1 Performance Criteria

General Performance Criteria

Performance criterion A

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

Performance criterion B

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

Performance 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. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

Particular performance criteria

The particular performance criteria which are specified in the normative annexes of EN 55024 take precedence over the corresponding parts of the general performance criteria. Where particular performance criteria for specific functions are not given, then the general performance criteria shall apply.

12 Electrostatic Discharge Immunity Test (ESD)

12.1 Test Specification

Basic Standard:	EN/IEC 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Discharge Voltage:	Air Discharge: ±2kV, ±4kV, ±8kV (Direct) Contact Discharge: ±2kV, ±4kV (Indirect)
Number of Discharge:	Air – Direct: 10 discharges per location (each polarity) Contact – Direct & Indirect: 25 discharges per location (each polarity) and min. 200 times in total
Discharge Mode:	Single Discharge
Discharge Period:	1-second minimum

12.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
KeyTek, ESD Simulator	MZ-15/EC	1411213	Nov. 16, 2015	Nov. 15, 2016

Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in ESD Room No. 2.
3. Tested Date: Jul. 26, 2016

12.3 Test Arrangement

The discharges shall be applied in two ways:

a. Contact discharges to the conductive surfaces and coupling planes:

The EUT shall be exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points. One of the test points shall be subjected to at least 50 indirect discharges to the center of the front edge of the horizontal coupling plane. The remaining three test points shall each receive at least 50 direct contact discharges. If no direct contact test points are available, then at least 200 indirect discharges shall be applied in the indirect mode. Test shall be performed at a maximum repetition rate of one discharge per second.

b. Air discharges at slots and apertures and insulating surfaces:

On those parts of the EUT where it is not possible to perform contact discharge testing, the equipment should be investigated to identify user accessible points where breakdown may occur. Such points are tested using the air discharge method. This investigation should be restricted to those area normally handled by the user. A minimum of 10 single air discharges shall be applied to the selected test point for each such area.

The basic test procedure was in accordance with EN/IEC 61000-4-2:

a. Electrostatic discharges were applied only to those points and surfaces of the EUT that are accessible to users during normal operation.

b. The test was performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.

c. The time interval between two successive single discharges was at least 1 second.

d. The ESD generator was held perpendicularly to the surface to which the discharge was applied and the return cable was at least 0.2 meters from the EUT.

e. Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.

f. Air discharges were applied with the round discharge tip of the discharge electrode approaching the EUT as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator was removed from the EUT and re-triggered for a new single discharge. The test was repeated until all discharges were complete.

g. At least ten single discharges (in the most sensitive polarity) were applied to the **H**orizontal **C**oupling **P**lane at points on each side of the EUT. The ESD generator was positioned at a distance of 0.1 meters from the EUT with the discharge electrode touching the **HCP.**

h. At least ten single discharges (in the most sensitive polarity) were applied to the center of one vertical edge of the **V**ertical **C**oupling **P**lane in sufficiently different positions that the four faces of the EUT were completely illuminated. The **VCP** (dimensions 0.5m x 0.5m) was placed vertically to and 0.1 meters from the EUT.

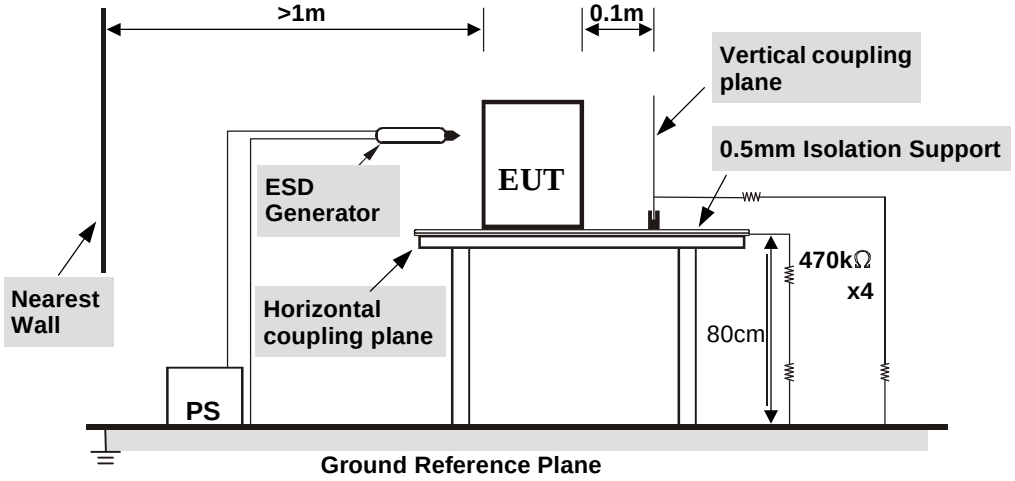


TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meters high standing on the **G**round **R**eference **P**lane. 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 **H**orizontal **C**oupling **P**lane (1.6m x 0.8m) was placed on the table and attached to the **GRP** by means of a cable with 940kΩ total impedance. The equipment under test, was installed in a representative system as described in section 7 of EN/IEC 61000-4-2, and its cables were placed on the **HCP** and isolated by an insulating support of 0.5mm thickness. A distance of 1-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

12.4 Test Results

Test mode	Mode 3	Input Power	230 Vac, 50 Hz
Enviromental conditions	25 °C, 52% RH 1008 mbar	Tested by	Michael Cheng

Test Results of Direct Application					
Discharge Level (kV)	Polarity (+/-)	Test Point	Contact Discharge	Air Discharge	Performance Criterion
2, 4, 8	+/-	1 ~ 10	NA	Note	A

Description of test points of direct application: Please refer to following page for representative mark only.

Test Results of Indirect Application					
Discharge Level (kV)	Polarity (+/-)	Test Point	Horizontal Coupling Plane	Vertical Coupling Plane	Performance Criterion
2, 4	+/-	Four Sides	Note	Note	A

Description of test points of indirect application:

1. Front side 2. Rear side 3. Right side 4. Left side

Note: The EUT function was correct during the test.

Test mode	Mode 8	Input Power	230 Vac, 50 Hz
Enviromental conditions	25 °C, 52% RH 1008 mbar	Tested by	Michael Cheng

Test Results of Direct Application					
Discharge Level (Kv)	Polarity (+/-)	Test Point	Contact Discharge	Air Discharge	Performance Criterion
2, 4, 8	+/-	1, 3 ~ 10	NA	Note 1	A
2, 4	+/-	2	NA	Note 1	A
8	+/-	2	NA	Note 2	B

Description of test points of direct application: Please refer to following page for representative mark only.

Test Results of Indirect Application					
Discharge Level (Kv)	Polarity (+/-)	Test Point	Horizontal Coupling Plane	Vertical Coupling Plane	Performance Criterion
2, 4	+/-	Four Sides	Note 1	Note 1	A

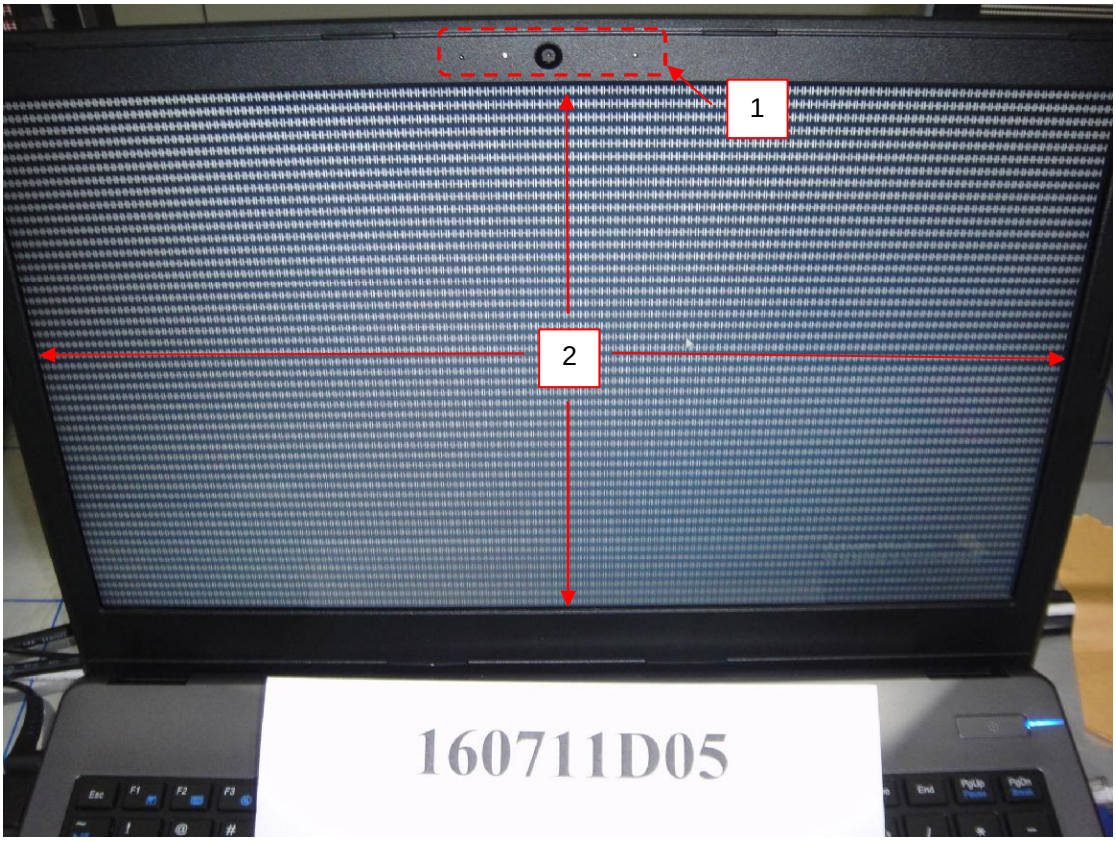
Description of test points of indirect application:

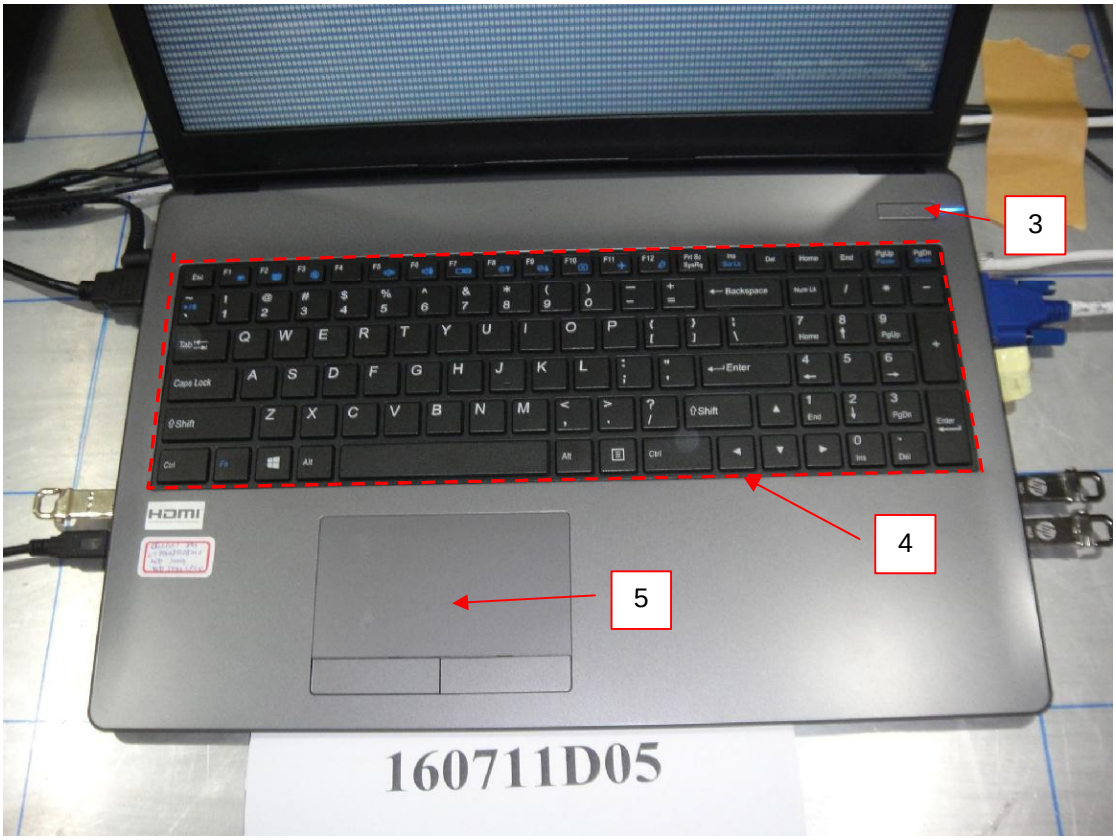
1. Front side 2. Rear side 3. Right side 4. Left side

Note: 1. The EUT function was correct during the test.
2. There was flicker disturbance on screen during the test, but self-recoverable after the test.

Description of Test Points

For Mode 3





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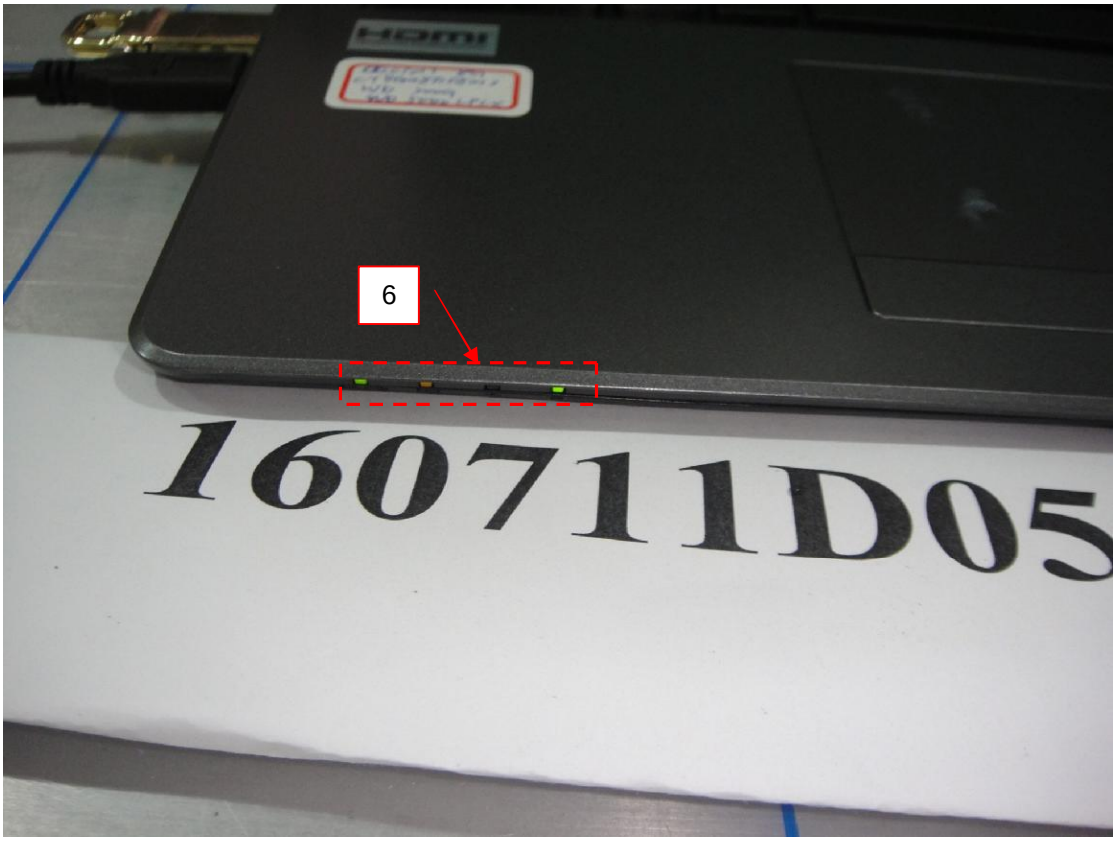

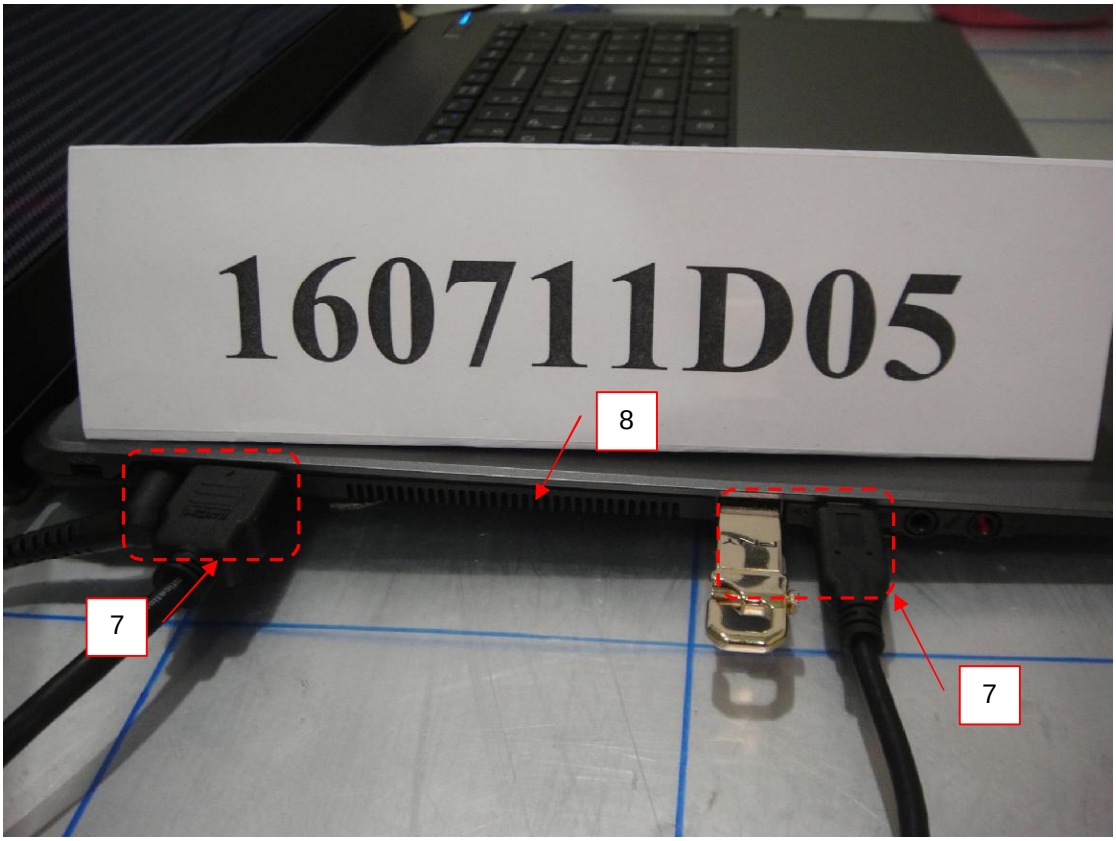

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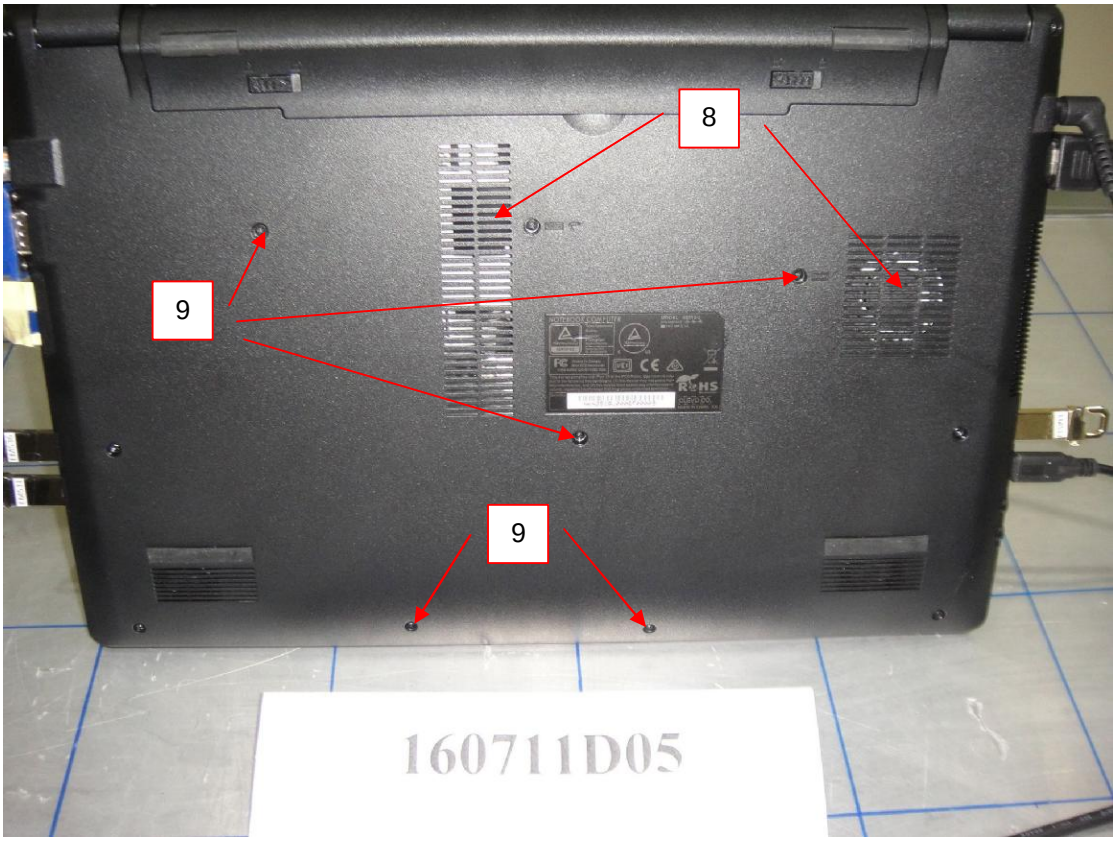
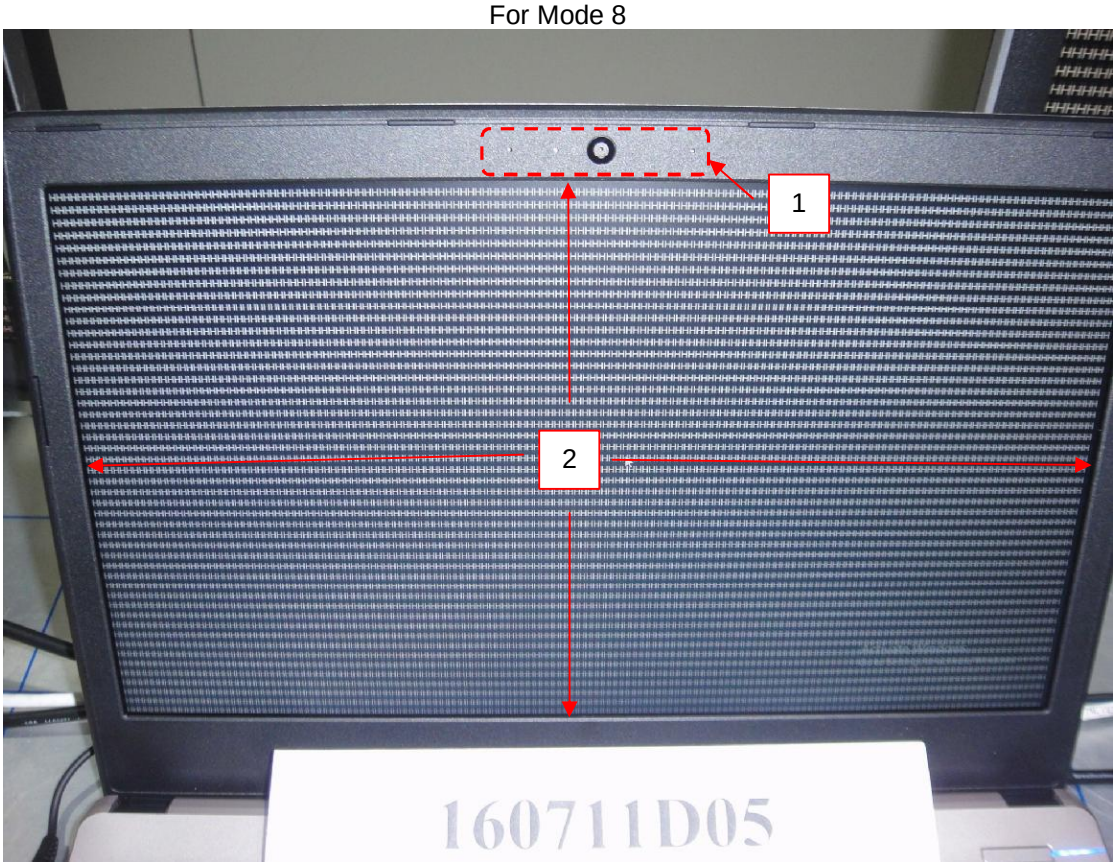
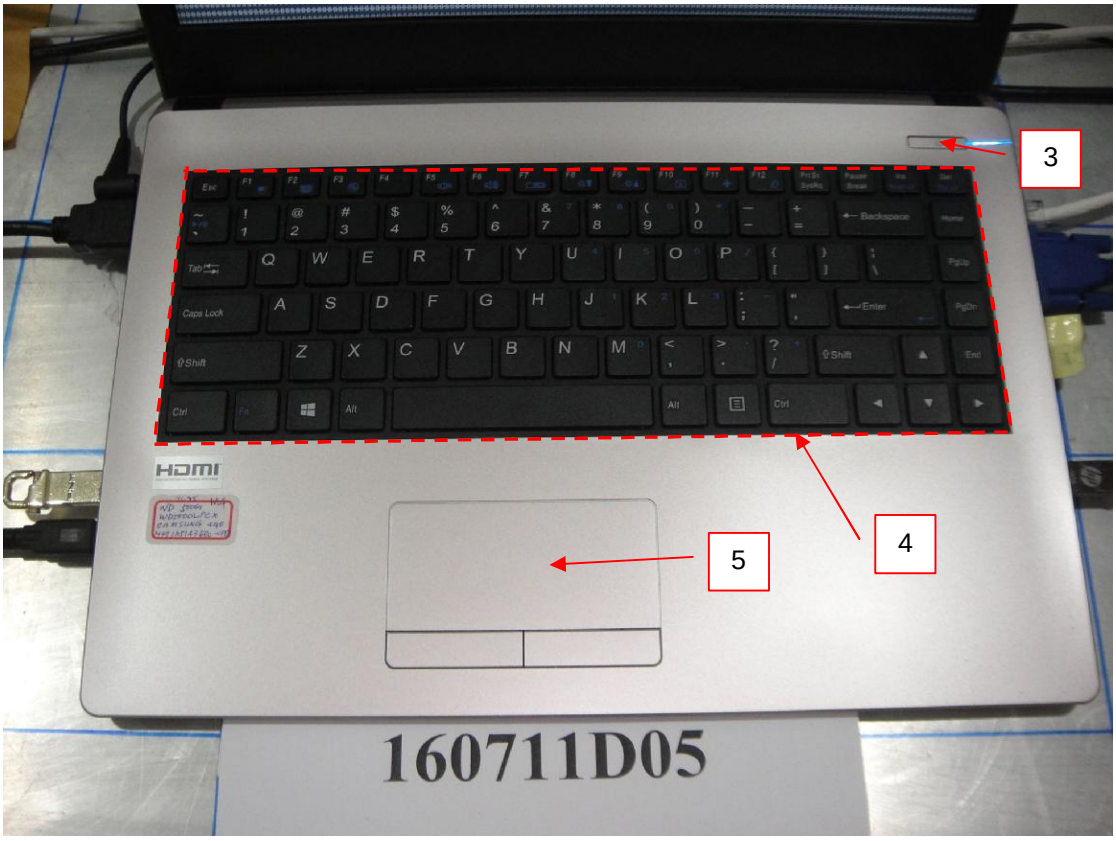


For Mode 3

For Mode 8





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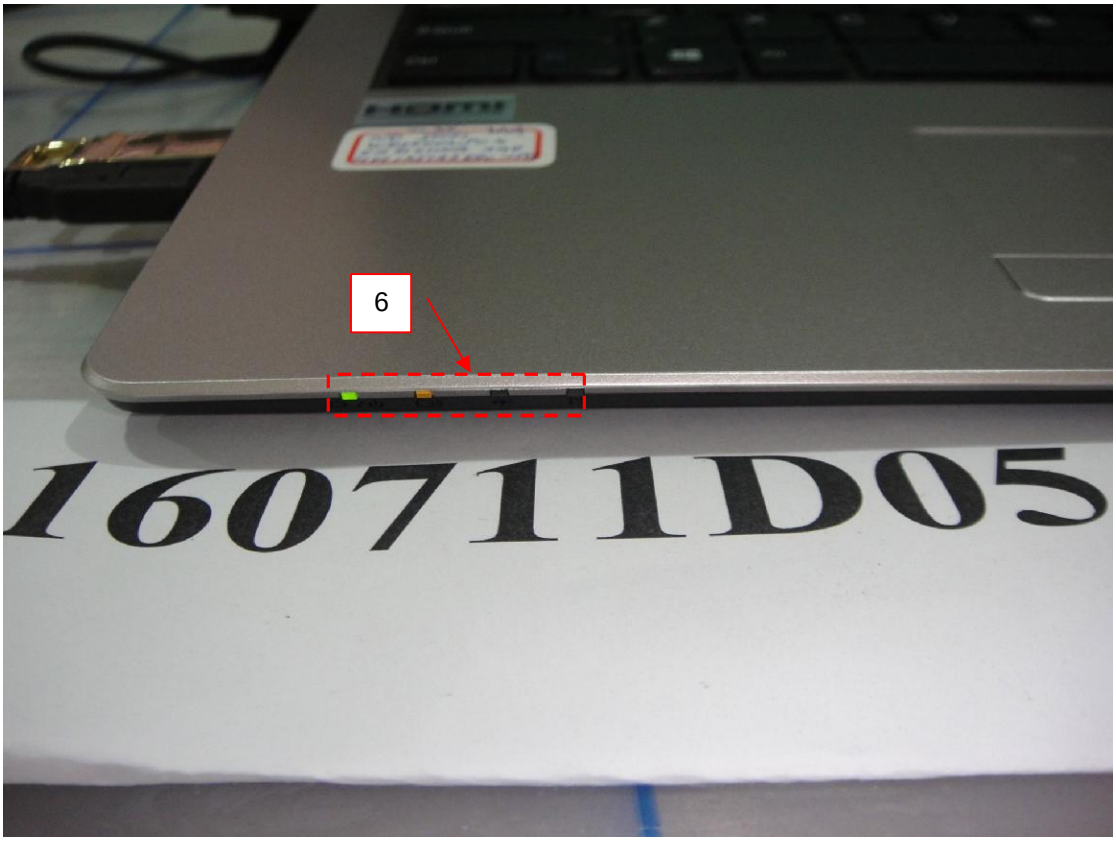
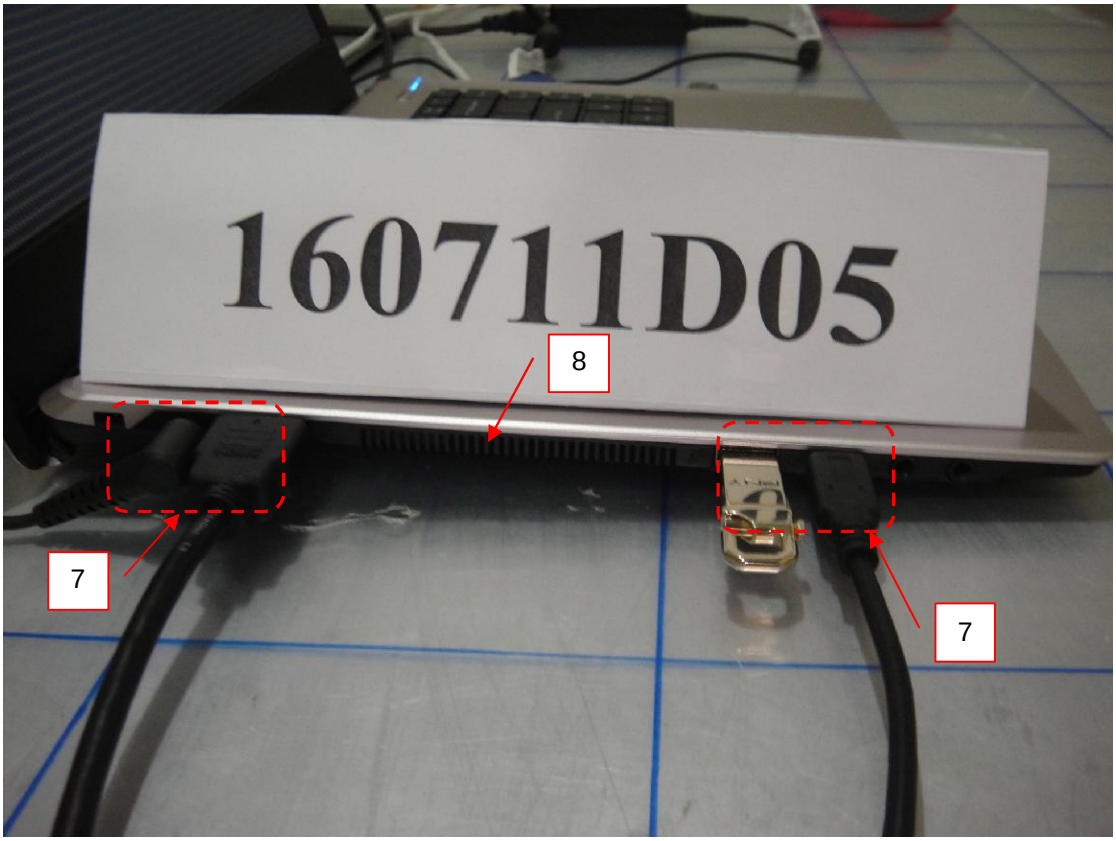
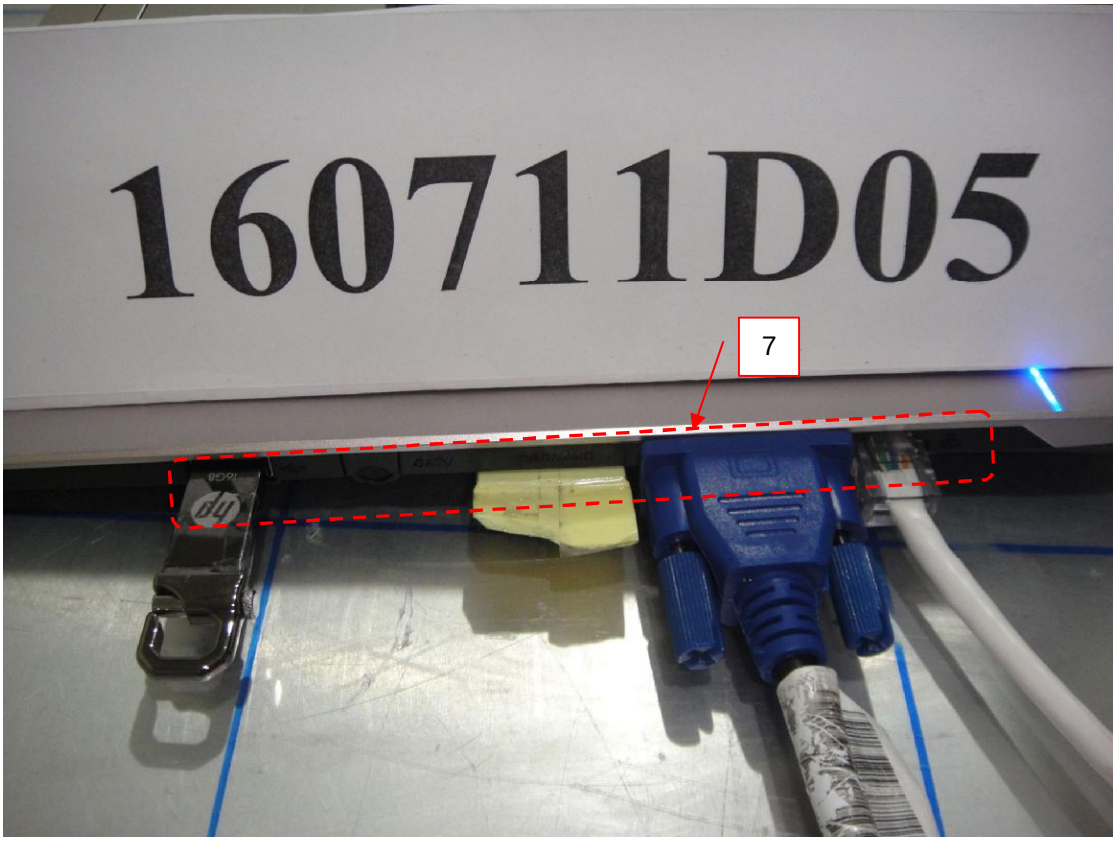
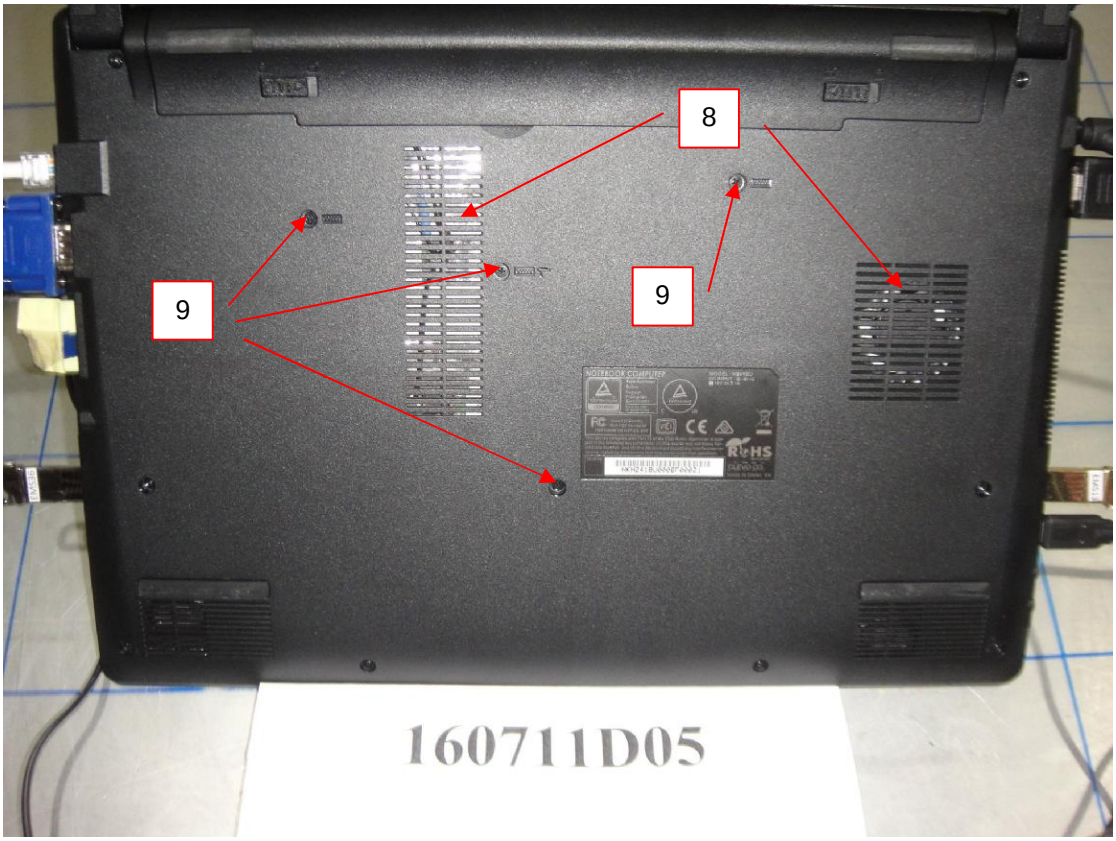




For Mode 8





For Mode 8

13 Radiated, Radio-frequency, Electromagnetic Field Immunity Test (RS)

13.1 Test Specification

Basic Standard:	EN/IEC 61000-4-3
Frequency Range:	80 MHz - 1000 MHz
Field Strength:	3 V/m
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of preceding frequency value
Polarity of Antenna:	Horizontal and Vertical
Antenna Height:	1.5m
Dwell Time:	3 seconds

13.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Agilent Signal Generator	E8257D	MY48050465	Jul. 20, 2016	Jul. 19, 2017
PRANA RF Amplifier	AP32DP280	0811-894	NA	NA
TESEQ RF Amplifier	CBA1G-150	T44220	NA	NA
AR RF Amplifier	35S4G8AM4	0326094	NA	NA
AR RF Amplifier	100S1G4M3	0329249	NA	NA
AR Controller	SC1000M3	305910	NA	NA
Narda Broadband Field Meter	NBM-550	B-0872	Feb. 09, 2016	Feb. 08, 2018
BOONTON RF Voltage Meter	4232A	10180	Jun. 01, 2016	May 31, 2017
BOONTON Power Sensor	51013-4E	34870	Jun. 01, 2016	May 31, 2017
BOONTON Power Sensor	51013-4E	34873	Jun. 01, 2016	May 31, 2017
AR Log-Periodic Antenna	AT6080	0329465	NA	NA
EMCO BiconiLog Antenna	3141	1001	NA	NA
AR High Gain Antenna	AT4002A	306533	NA	NA
AR High Gain Horn Antenna	AT4010	0329800	NA	NA
CHANCE MOST Full Anechoic Chamber (9x5x3m)	Chance Most	RS-002	Feb. 05, 2016	Feb. 04, 2017
Software	RS_V7.6	NA	NA	NA

Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in RS Room No.2.
3. Tested Date: Jul. 25, 2016

13.3 Test Arrangement

The test procedure was in accordance with EN/IEC 61000-4-3.

a. The testing was performed in a modified semi-anechoic chamber.

b. The frequency range is swept from 80 MHz to 1000 MHz, with the signal 80% amplitude modulated with a 1kHz sine wave.

c. The field strength level was 3 V/m.

d. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

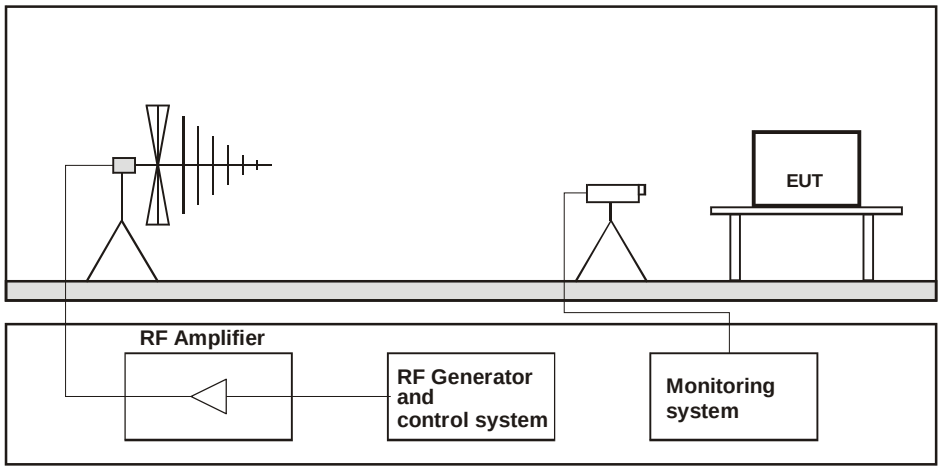


Table-top Equipment

The EUT installed in a representative system as described in section 7 of EN/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.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

13.4 Test Results

Test mode	Mode 3 & Mode 8	Input Power	230 Vac, 50 Hz
Enviromental conditions	24 °C, 53% RH	Tested by	Joey Liu

Frequency (MHz)	Polarity	Azimuth(°)	Applied Field Strength		Observation	Performance Criterion
			(V/m)	Modulation		
80 -1000	V&H	0	3	80% AM (1kHz)	Note	A
80 -1000	V&H	90	3	80% AM (1kHz)	Note	A
80 -1000	V&H	180	3	80% AM (1kHz)	Note	A
80 -1000	V&H	270	3	80% AM (1kHz)	Note	A

Note: The EUT function was correct during the test.

14 Electrical Fast Transient/Burst Immunity Test (EFT)

14.1 Test Specification

Basic Standard:	EN/IEC 61000-4-4
Test Voltage:	Signal / telecommunication port:±0.5kV Input DC power port: N/A Input AC power port: ±1kV
Impulse Repetition Frequency:	xDSL telecommunication port: 100kHz others: 5kHz
Impulse Wave Shape:	5/50 ns
Burst Duration:	0.75 ms for 100kHz Repetition Frequency 15 ms for 5kHz Repetition Frequency
Burst Period:	300 ms
Test Duration:	1 min.

14.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Haefely, EFT Generator	PEFT 4010	154954	Apr. 20, 2016	Apr. 19, 2017
Haefely,Capacitive Clamp	IP4A	155173	Apr. 20, 2016	Apr. 19, 2017

Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in EFT Room.
3. Tested Date: Jul. 26, 2016

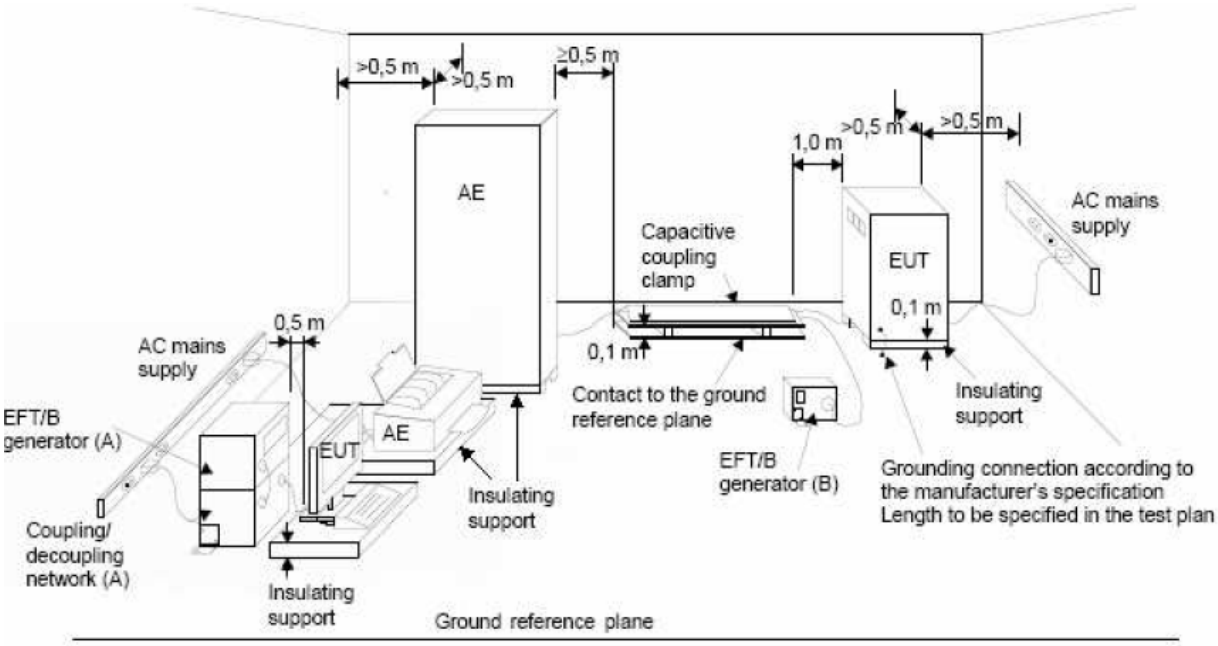
14.3 Test Arrangement

a. Both positive and negative polarity discharges were applied.

b. The distance between any coupling devices and the EUT should be 0.5 m for table-top equipment testing, and 1.0 m for floor standing equipment.

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

d. The transient/burst waveform was in accordance with EN/IEC 61000-4-4, 5/50 ns.



NOTE:
(A) location for supply line coupling
(B) location for signal lines coupling

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

14.4 Test Results

Test mode	Mode 3 & Mode 8	Input Power	230 Vac, 50 Hz
Enviromental conditions	27 °C, 60% RH	Tested by	Michael Cheng

Input AC power port

Voltage (kV)	Test Point	Polarity (+/-)	Observation	Performance Criterion
1	L1	+/-	Note	A
1	L2	+/-	Note	A
1	PE	+/-	Note	A
1	L1-L2-PE	+/-	Note	A

Telecommunication port

Voltage (kV)	Test Point	Polarity (+/-)	Observation	Performance Criterion
0.5	LAN	+/-	Note	A

Note: The EUT function was correct during the test.

15 Surge Immunity Test

15.1 Test Specification

Basic Standard:	EN/IEC 61000-4-5
Wave-Shape:	Signal / telecommunication port (direct to outdoor cables*): 10/700 µs Open Circuit Voltage 5/320 µs Short Circuit Current
	Input DC power port (direct to outdoor cables*): 1.2/50 µs Open Circuit Voltage 8/20 µs Short Circuit Current
	Input AC power port: 1.2/50 µs Open Circuit Voltage 8/20 µs Short Circuit Current
Test Voltage:	Signal and telecommunication ports**: w/o primary protectors: N/A with primary protectors fitted: N/A
	Input DC power port: Line to earth or ground: N/A
	Input AC power ports: Line to line: ±0.5kV, ±1kV Line to earth or ground: ±0.5kV, ±1kV, ±2kV
AC Phase Angle (degree):	0°, 90°, 180°, 270°
Pulse Repetition Rate:	1 time / 20 sec.
Number of Tests:	5 positive and 5 negative at selected points

* This test is only applicable only to ports, which according to the manufacturer's specification, may connect directly to outdoor cables.

** For ports where primary protection is intended, surges are applied at voltages up to 4 kV with the primary protectors fitted. Otherwise the 1 kV test level is applied without primary protection in place.

15.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
TESEQ, Surge Simulator	NSG 3060	1572	May 19, 2016	May 18, 2017
Coupling Decoupling Network	CDN-UTP8	028	Aug. 20, 2015	Aug. 19, 2016
TESEQ Coupling Decoupling Network	CDN HSS-2	41009	May 21, 2016	May 20, 2017
TESEQ Coupling Decoupling Networ	CDN 118-T8	40386	Aug. 31, 2015	Aug. 30, 2016

Notes:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in EMS Room No. 2.
3. Tested Date: Jul. 26, 2016

15.3 Test Arrangement

a. Input AC/DC Power ports:

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 2 meters in length (or shorter).

For double-insulated products without PE or external earth connections, the test shall be done in a similar way as for grounded products but without adding any additional external grounded connections. If there are no other possible connections to earth, line-to-ground tests may be omitted.

b. Signal and telecommunication ports,

I Unshielded unsymmetrical interconnection lines:

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.

I Unshielded symmetrical interconnections communication lines:

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.

I High speed communications lines

Prior to the test, the correct operation of the port shall be verified; the external connection shall then be removed and the surge applied directly to the port's terminals with no coupling /decoupling network. After the surge, the correct operation of the port shall again be verified.

I Shielded lines:

- Direct application,

The EUT is isolated from ground and the surge is applied to its metallic enclosure; the termination (or auxiliary equipment) at the port(s) under test is grounded. This test applies to equipment with single or multiple shielded cables.

Rules for application of the surge to shielded lines:

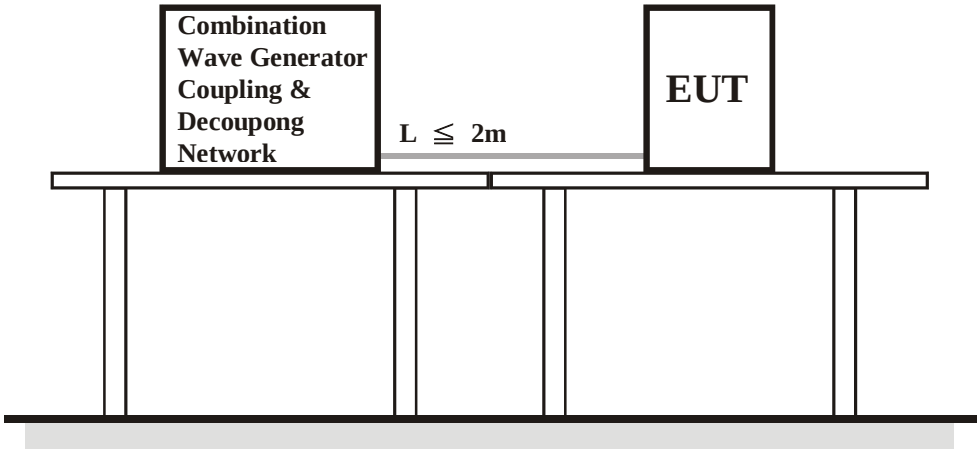
a) Shields grounded at both ends
   - The surge injection on the shield.

b) Shields grounded at one end
   - If in the installation the shield is connected only at the auxiliary equipment, test shall be done in that configuration but with the generator still connected to the EUT side. If cable lengths allow, the cables shall be on insulated supports 0,1 m above the ground plane or cable tray.

For products which do not have metallic enclosures, the surge is applied directly to the shielded cable.

- Alternative coupling method for testing single cables in a multi-shield configuration,

Surges are applied in close proximity to the interconnection cable under test by a wire. The length of the cable between the port(s) under test and the device attached to the other end of the cable shall be the lesser of: the maximum length permitted by the EUT's specification, or 20 m. Where the length exceeds 1 m, excess lengths of cables shall be bundled at the approximate centre of the cables with the bundles 30 cm to 40 cm in length.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

15.4 Test Results

Test mode	Mode 3 & Mode 8	Input Power	230 Vac, 50 Hz
Enviromental conditions	27 °C, 60% RH	Tested by	Michael Cheng

Input AC power port

Voltage (kV)	Test Point	Polarity (+/-)	Observation	Performance Criterion
0.5, 1	L1-L2	+/-	Note	A
0.5, 1, 2	L1-PE	+/-	Note	A
0.5, 1, 2	L2-PE	+/-	Note	A

Note: The EUT function was correct during the test.

16 Immunity to Conducted Disturbances Induced by RF Fields (CS)

16.1 Test Specification

Basic Standard:	EN/IEC 61000-4-6
Frequency Range:	0.15 MHz - 80 MHz
Voltage Level:	3 V
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of preceding frequency value
Dwell Time	3 seconds

16.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ Signal Generator	SML03	101801	Jan. 07, 2016	Jan. 06, 2017
Digital Sweep Function Generator	8120	984801	NA	NA
AR Power Amplifier	75A250AM1	306331	NA	NA
FCC Coupling Decoupling Network	FCC-801-M3-25A	48	Jun. 23, 2016	Jun. 22, 2017
FCC Coupling Decoupling Network	FCC-801-M2-16A	01047	Jun. 23, 2016	Jun. 22, 2017
FISCHER CUSTOM COMMUNICATIONS EM Injection Clamp	F-203I-23mm	455	NA	NA
FISCHER CUSTOM COMMUNICATIONS Current Injection Clamp	F-120-9A	361	NA	NA
B&K Ear Simulator	4185	2553594	NA	NA
EM TEST Coupling Decoupling Network	CDN M1/32A	306508	Jun. 23, 2016	Jun. 22, 2017
TESEQ Coupling Decoupling Network	CDN T800	34428	Jun. 23, 2016	Jun. 22, 2017
FCC Coupling Decoupling Network	FCC-801-T4	02031	Jun. 23, 2016	Jun. 22, 2017
EM TEST Coupling Decoupling Network	CDN T2	306509	Jun. 23, 2016	Jun. 22, 2017
R&S Power Sensor	NRV-Z5	837878/039	Oct. 26, 2015	Oct. 25, 2016
R&S Power Meter	NRVD	837794/040	Oct. 27, 2015	Oct. 26, 2016
TESEQ Coupling Decoupling Network	CDN M232	37702	Aug. 18, 2015	Aug. 17, 2016
TESEQ Coupling Decoupling Network	CDN M332	41258	Sep. 22, 2015	Sep. 21, 2016
TESEQ Coupling Decoupling Network	CDN M332	41256	Aug. 20, 2015	Aug. 19, 2016
TESEQ Coupling Decoupling Network	CDN T400A	28569	Aug. 17, 2015	Aug. 16, 2016
TESEQ Coupling Decoupling Network	CDN T8-10	40376	Aug. 17, 2015	Aug. 16, 2016
Software	CS_V7.4.2	NA	NA	NA

Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in CS Room No. 1.
3. Tested Date: Jul. 25, 2016

16.3 Test Arrangement

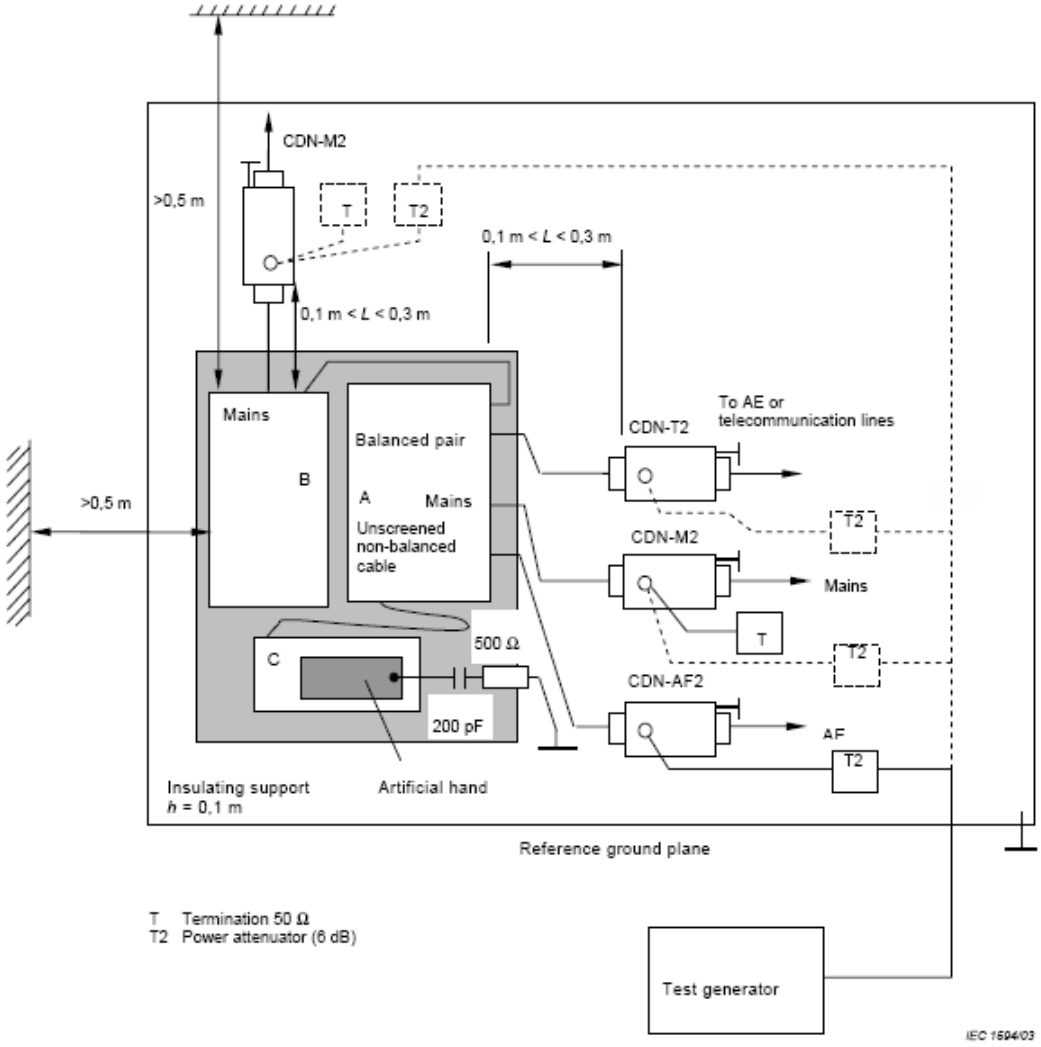
a. The EUT shall be tested within its intended operating and climatic conditions.

b. An artificial hand was placed on the hand-held accessory and connected to the ground reference plane.

c. One of the CDNs not used for injection was terminated with 50 ohm, providing only one return path. All other CDNs were coupled as decoupling networks.

d. The frequency range is swept from 150 kHz to 80 MHz, using the signal level established during the setting process and with a disturbance signal of 80 % amplitude. The signal is modulated with a 1 kHz sine wave, pausing to adjust the RF signal level or the switch coupling devices as necessary. Where the frequency is swept incrementally, the step size shall not exceed 1 % of the preceding frequency value.

e. Attempts should be made to fully exercise the EUT during testing, and to fully interrogate all exercise modes selected for susceptibility.



Note: 1.The EUT clearance from any metallic obstacles shall be at least 0,5 m.
2. Interconnecting cables (≦1 m) belonging to the EUT shall remain on the insulating support.
3. The equipment to be tested is placed on an insulating support of 0.1 meters height above a ground reference 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.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

16.4 Test Results

Test mode	Mode 3 & Mode 8	Input Power	230 Vac, 50 Hz
Enviromental conditions	25 °C, 55% RH	Tested by	Joey Liu

Frequency (MHz)	Level (Vrms)	Tested Line	Injection Method	Return Path	Observation	Performance Criterion
0.15 – 80	3	AC Power	CDN-M3	CDN-T8	Note	A
0.15 – 80	3	LAN	CDN-T8	CDN-M3	Note	A

Note: The EUT function was correct during the test.

17 Power Frequency Magnetic Field Immunity Test

17.1 Test Specification

Basic Standard:	EN/IEC 61000-4-8
Frequency Range:	50Hz
Field Strength:	1 A/m
Observation Time:	1 minute
Inductance Coil:	Rectangular type,1 m x 1 m

17.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
HAEFELY Magnetic Field Tester	MAG 100	083794-06	NA	NA
COMBINOVA Magnetic Field Meter	MFM10	224	Apr. 21, 2016	Apr. 20, 2017

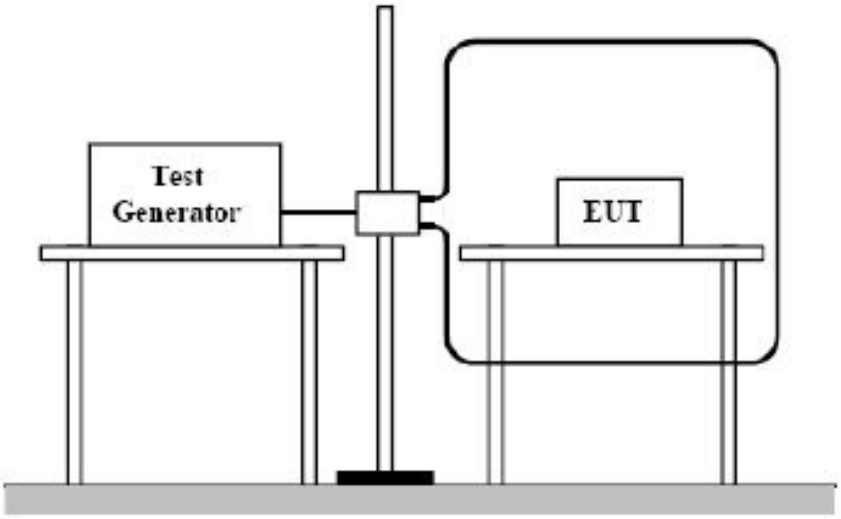
Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in EMS Room No. 1
3. Tested Date: Jul. 26, 2016

17.3 Test Arrangement

a. The equipment is configured and connected to satisfy its functional requirements.

b. The power supply, input and output circuits shall be connected to the sources of power supply, control and signal.

c. 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.



TABLETOP 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.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

17.4 Test Results

Test mode	Mode 3 & Mode 8	Input Power	230 Vac, 50 Hz
Enviromental conditions	27 °C, 60% RH	Tested by	Michael Cheng

Application	Frequency (Hz)	Field Strength (A/m)	Observation	Performance Criterion
X - Axis	50	1	Note	A
Y - Axis	50	1	Note	A
Z - Axis	50	1	Note	A

Note: The EUT function was correct during the test.

18 Voltage Dips and Interruptions

18.1 Test Specification

Basic Standard:	EN/IEC 61000-4-11
Test levels:	Voltage Dips: >95% reduction – 0.5 period 30% reduction – 25 periods Voltage Interruptions: >95% reduction – 250 periods
Interval between Event:	Minimum ten seconds
Sync Angle (degrees):	0° / 180°
Test Cycle:	3 times

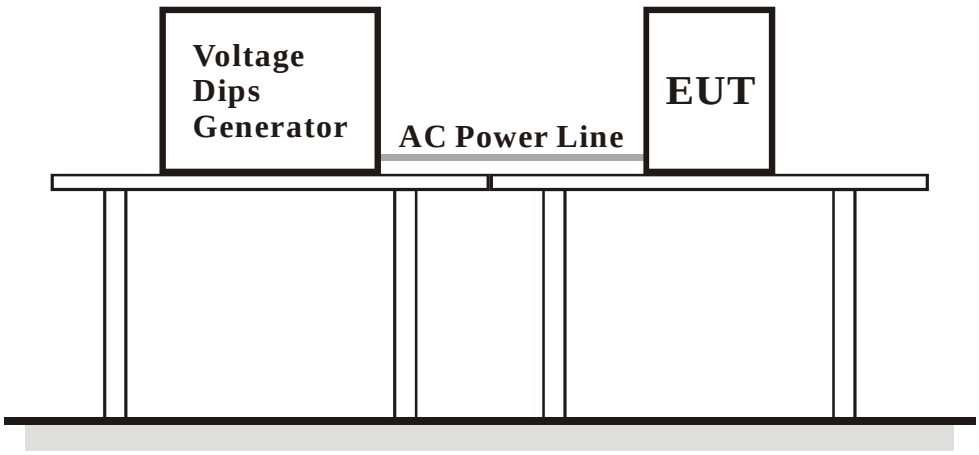
18.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
KeyTek, PQF Generator	EMC Pro	9902207	May 12, 2016	May 11, 2017

Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in EMS Room No. 1.
3. Tested Date: Jul. 26, 2016

18.3 Test Arrangement

The EUT shall be tested for each selected combination of test levels and duration with a sequence of 3 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 0 dregee crossover point of the voltage waveform.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

18.4 Test Results

Test mode	Mode 3 & Mode 8	Input Power	230 Vac, 50 Hz/ 240 Vac, 50 Hz/ 100 Vac, 50 Hz
Enviromental conditions	27°C, 60% RH	Tested by	Michael Cheng

Input Power for testing: 230 Vac, 50 Hz (Nominal input Voltage)					
Voltage Reduction (%)	Duration (period)	Interval (sec)	Times	Observation	Performance Criterion
>95	0.5	10	3	Note 1	A
30	25	10	3	Note 1	A
>95	250	10	3	Note 2	B

Input Power for testing: 240 Vac, 50 Hz (Maximum rated input voltage)					
Voltage Reduction (%)	Duration (period)	Interval (sec)	Times	Observation	Performance Criterion
>95	0.5	10	3	Note 1	A
30	25	10	3	Note 1	A
>95	250	10	3	Note 2	B

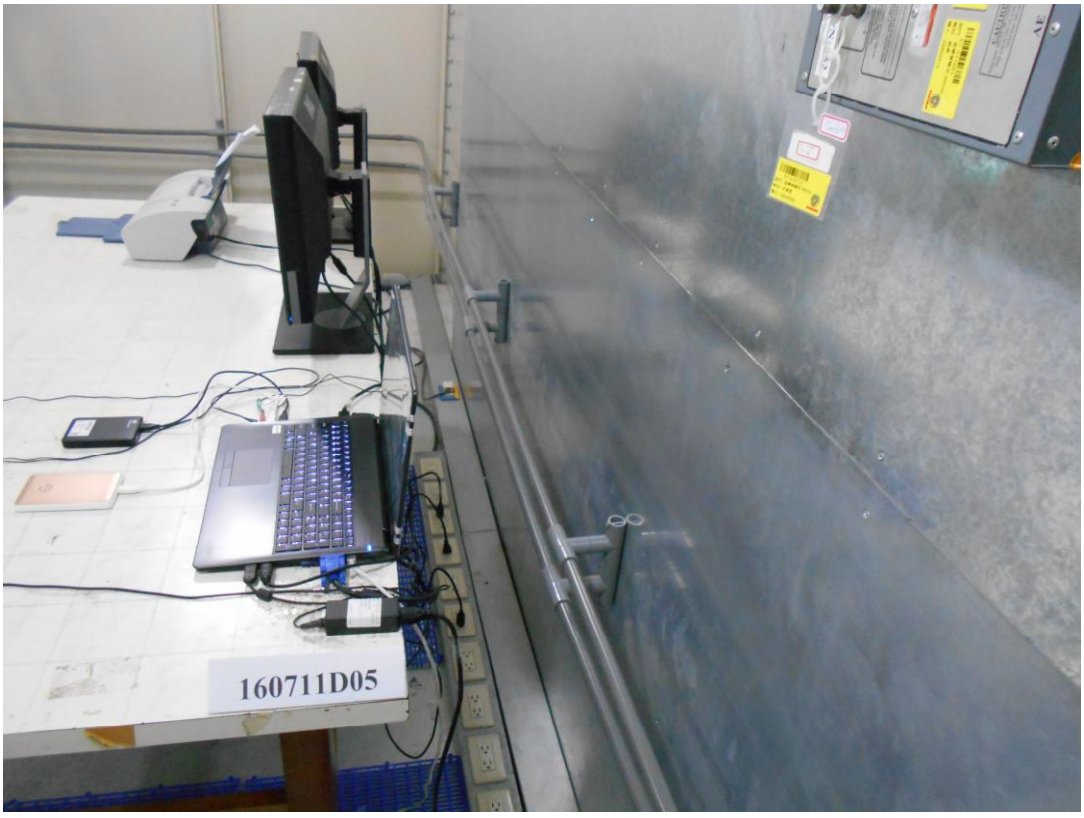
Input Power for testing: 100 Vac, 50 Hz (Minimum rated input voltage)					
Voltage Reduction (%)	Duration (period)	Interval (sec)	Times	Observation	Performance Criterion
>95	0.5	10	3	Note 1	A
30	25	10	3	Note 1	A
>95	250	10	3	Note 2	B

Note: 1. The EUT function was correct during the test.
2. The power consumption of EUT has changed from adapter to battery during the test, but self-recoverable after the test.

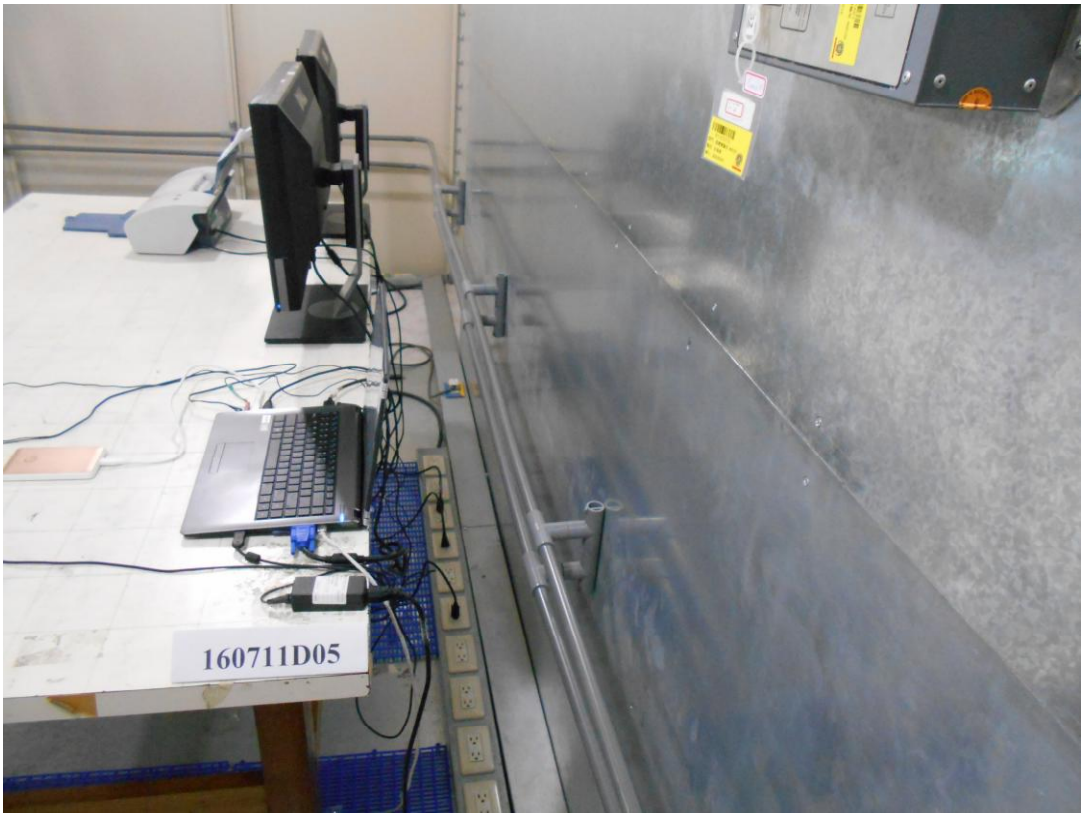
19 Pictures of Test Arrangements

19.1 Conducted Emission from the AC Mains Power Port

For Mode 1 ~ 4

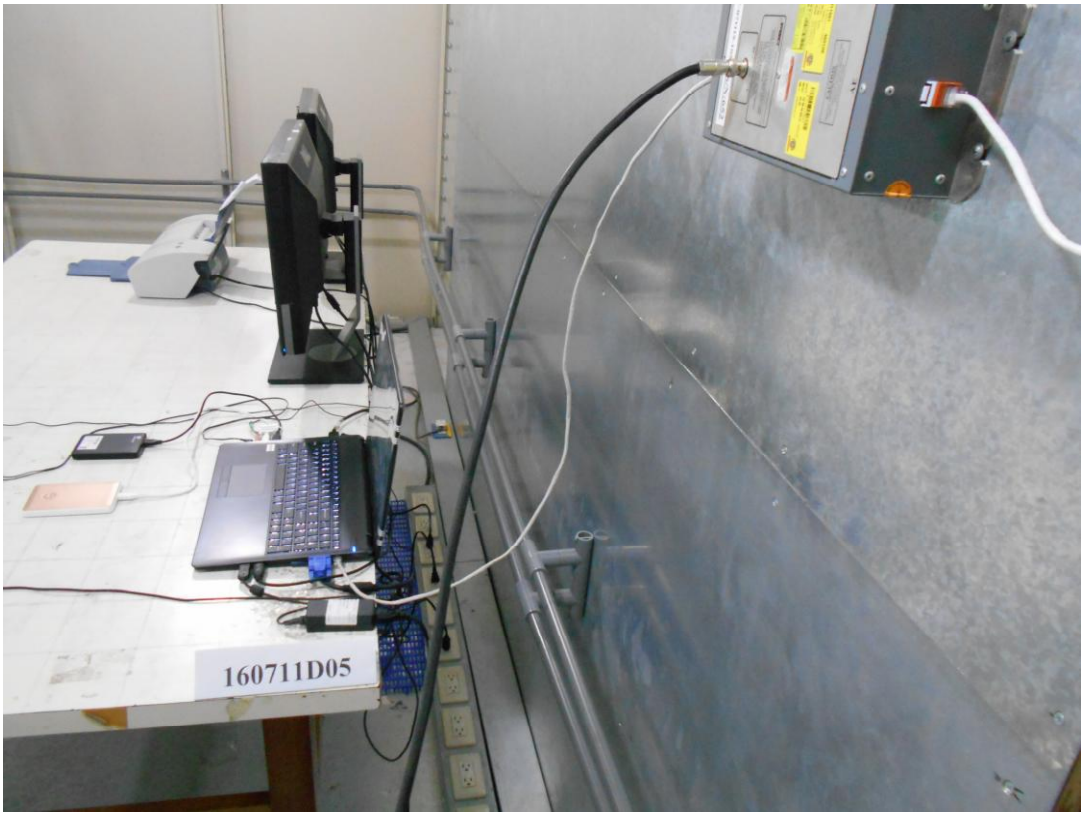


For Mode 5 ~ 8

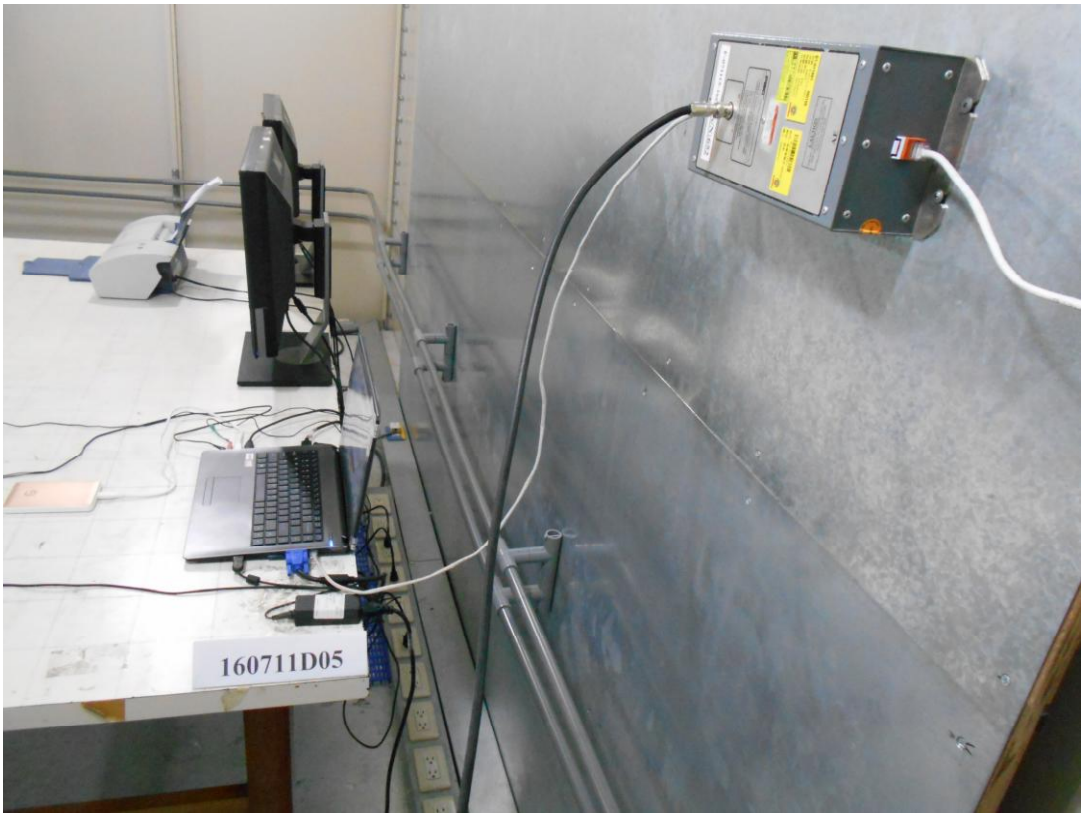


19.2 Asymmetric Mode Conducted Emission at Telecommunication Ports

For Mode 1 ~ 4

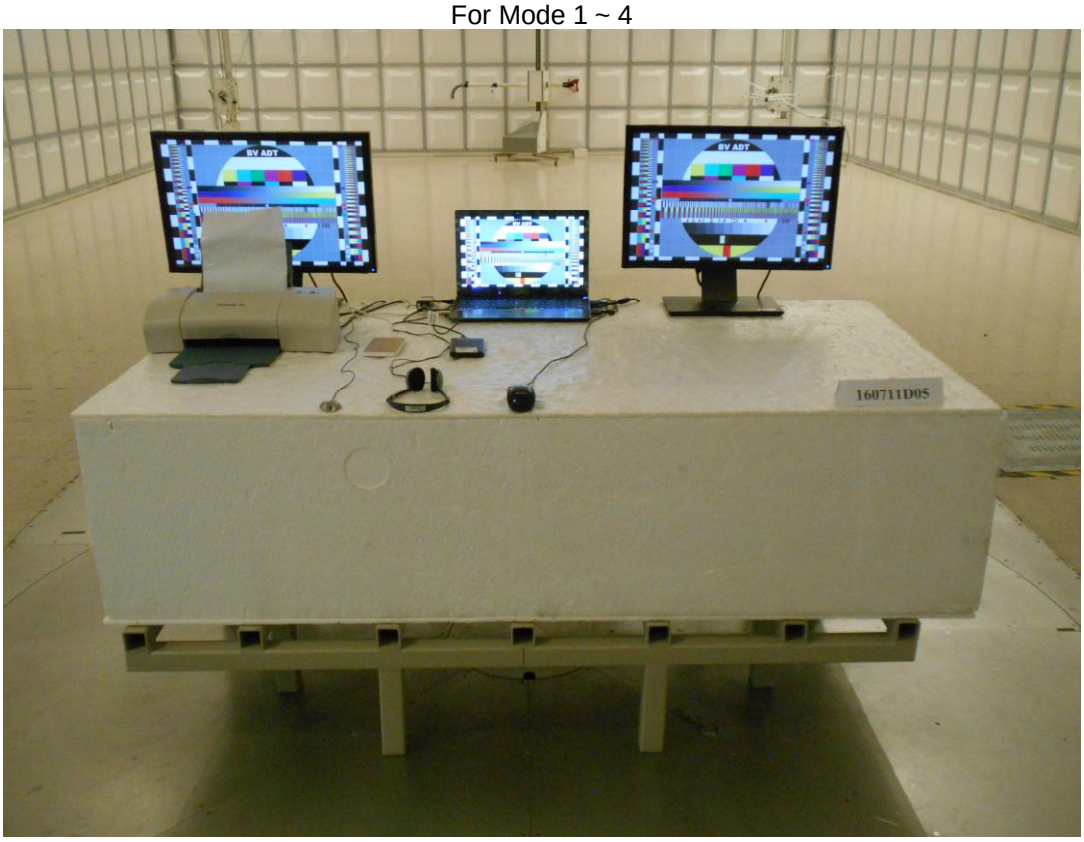


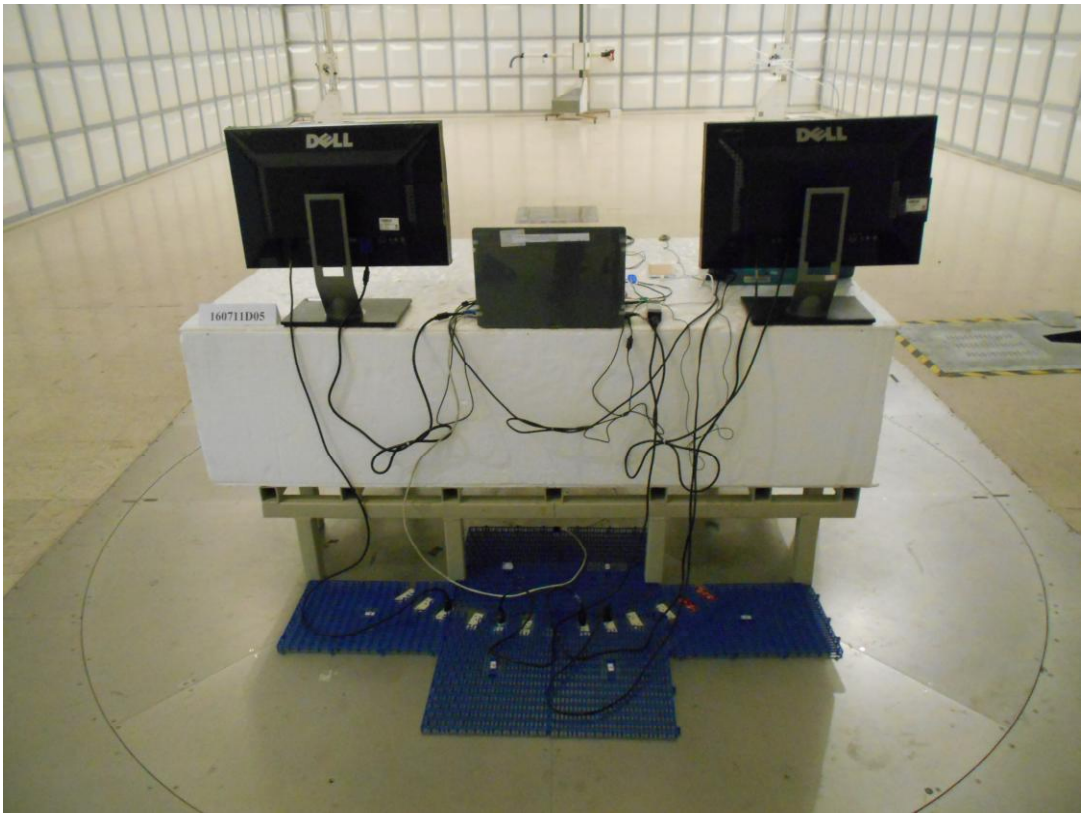
For Mode 5 ~ 8



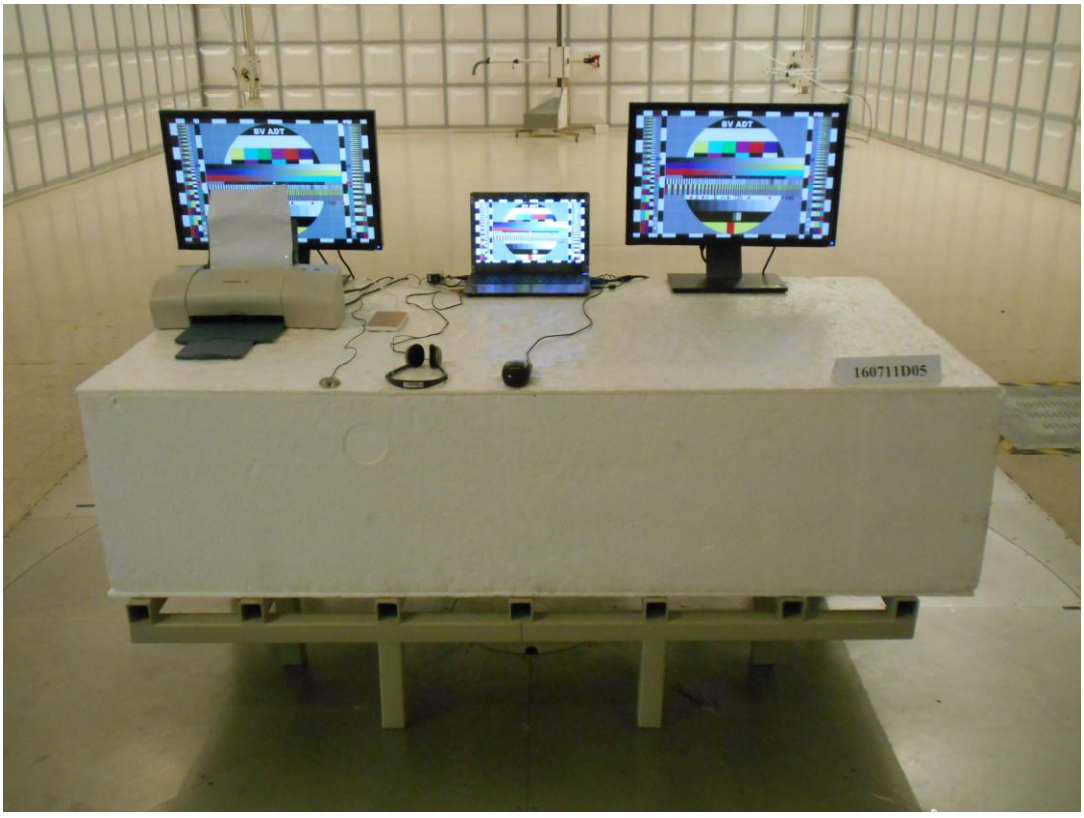
19.3 Radiated Emission at Frequencies up to 1GHz

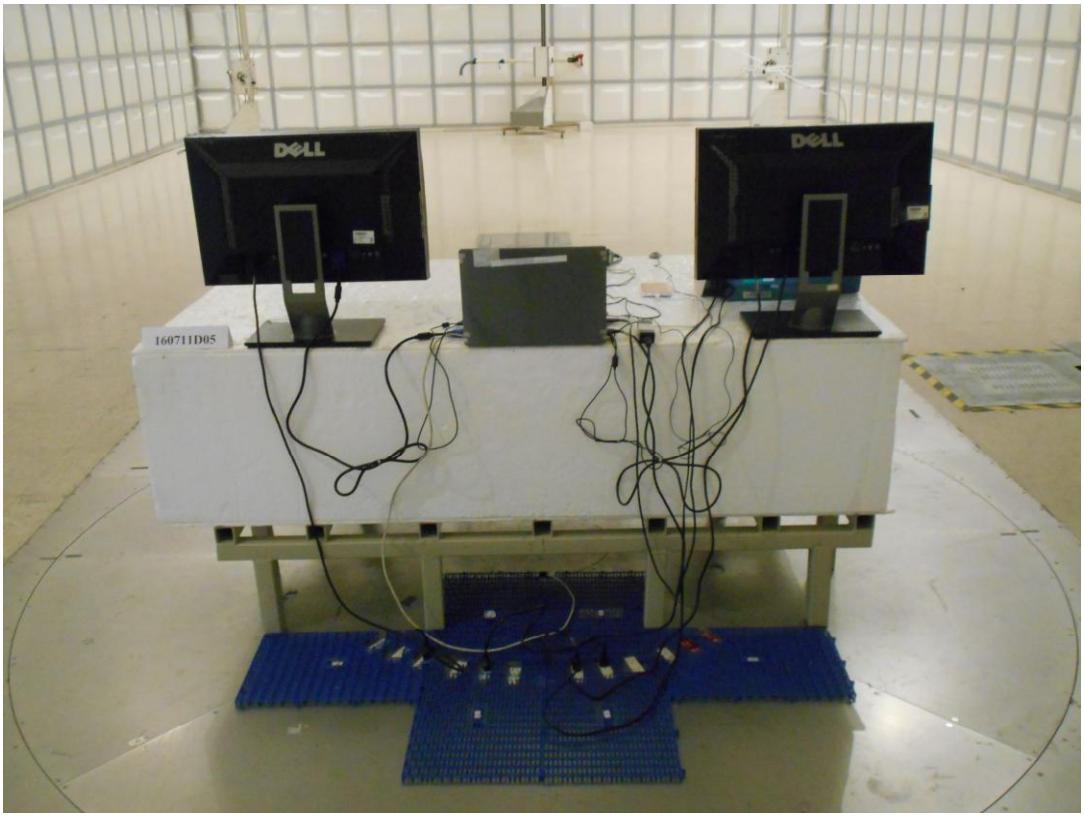
For Mode 1 ~ 4





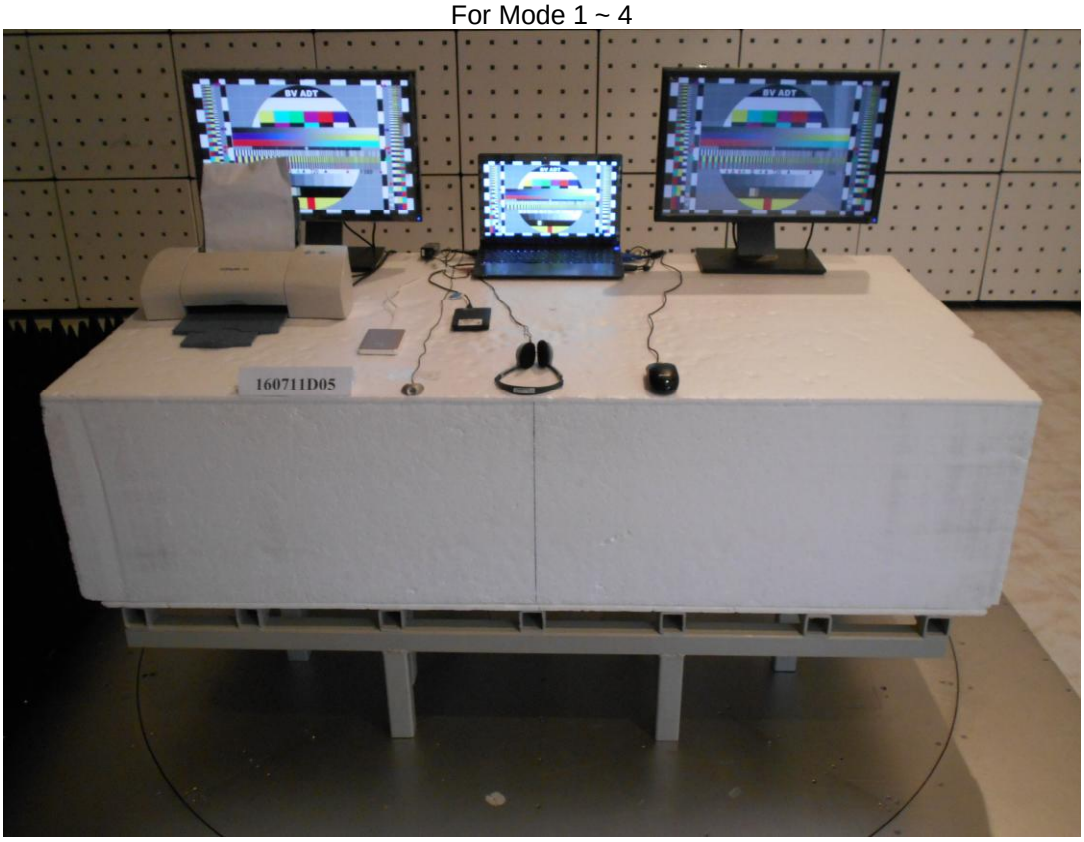
For Mode 5 ~ 8

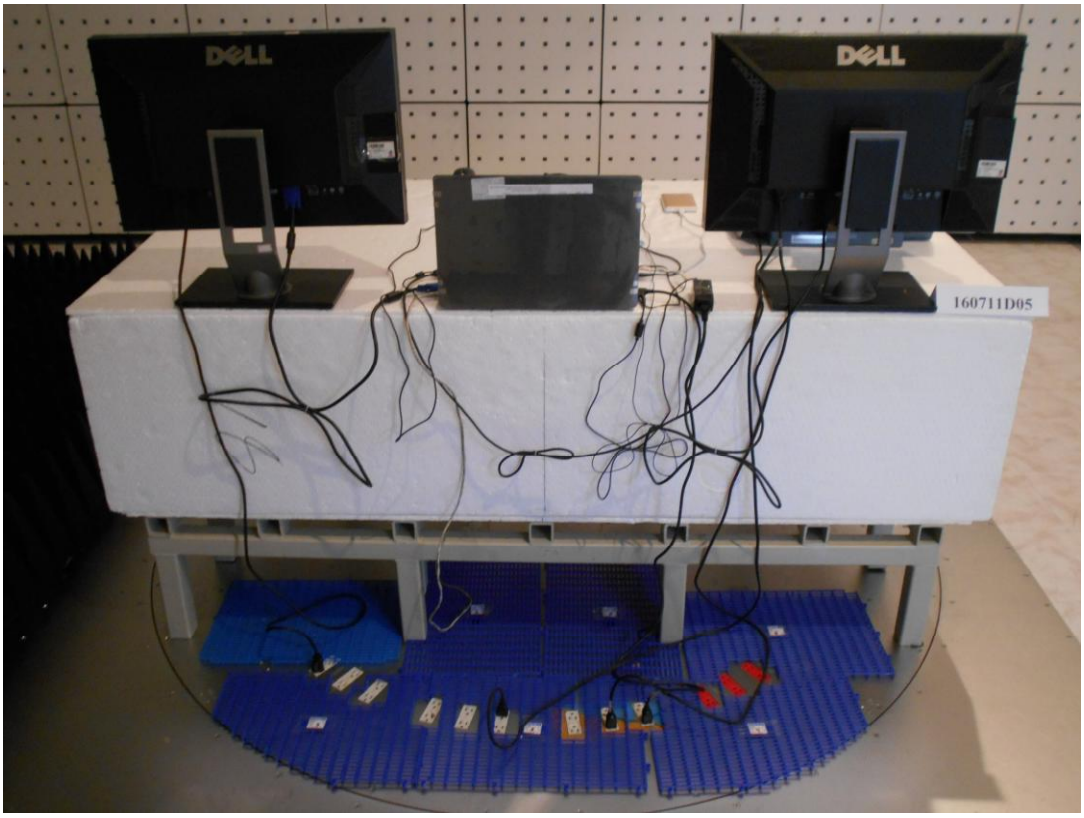




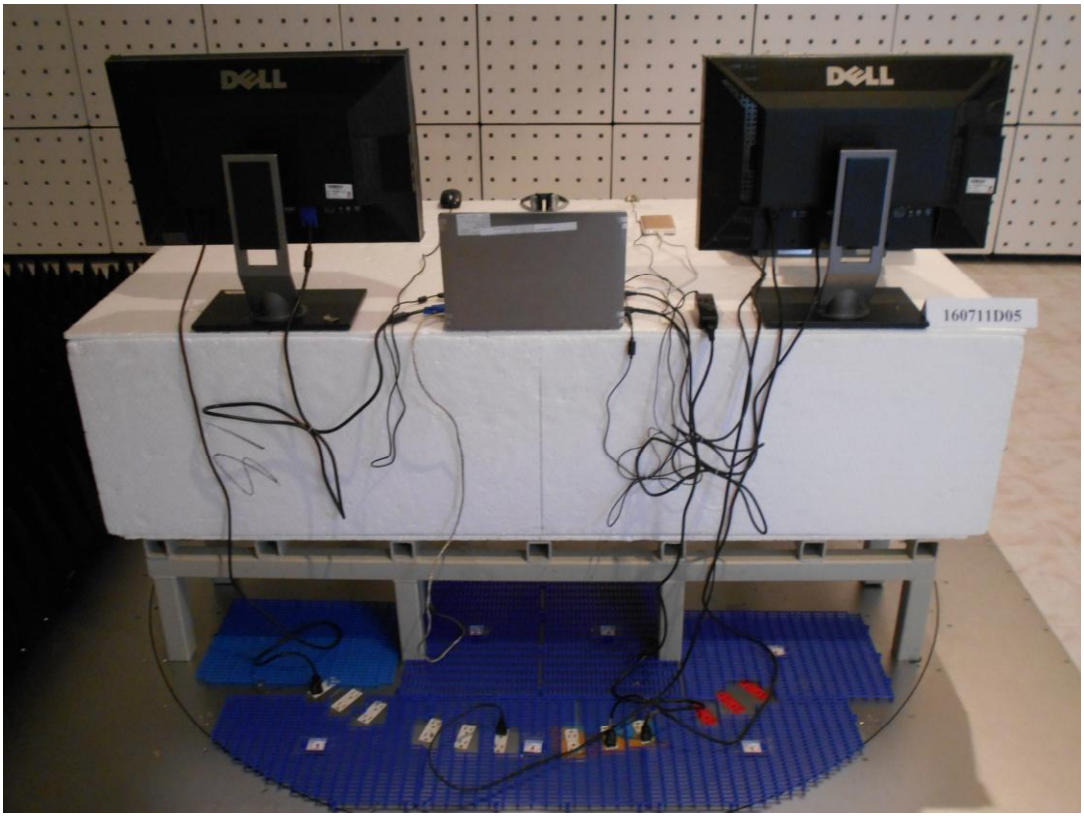
19.4 Radiated Emission at Frequencies above 1GHz

For Mode 1 ~ 4



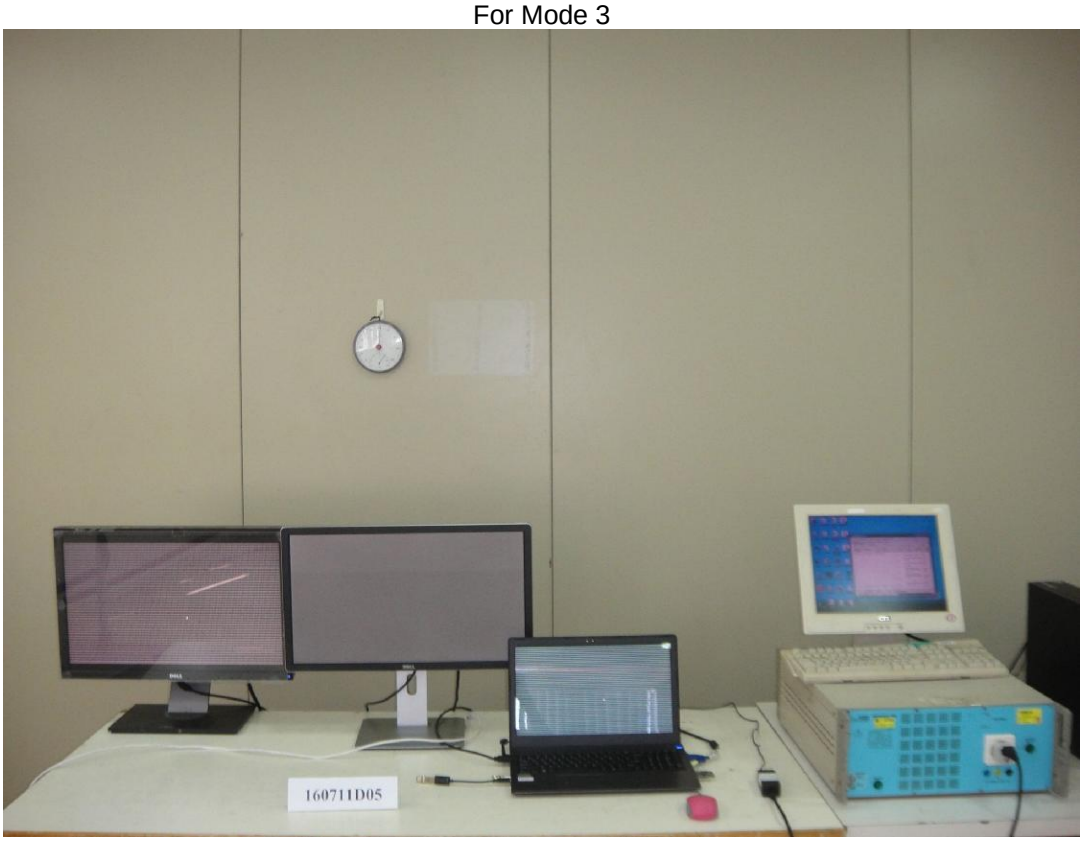


For Mode 5 ~ 8

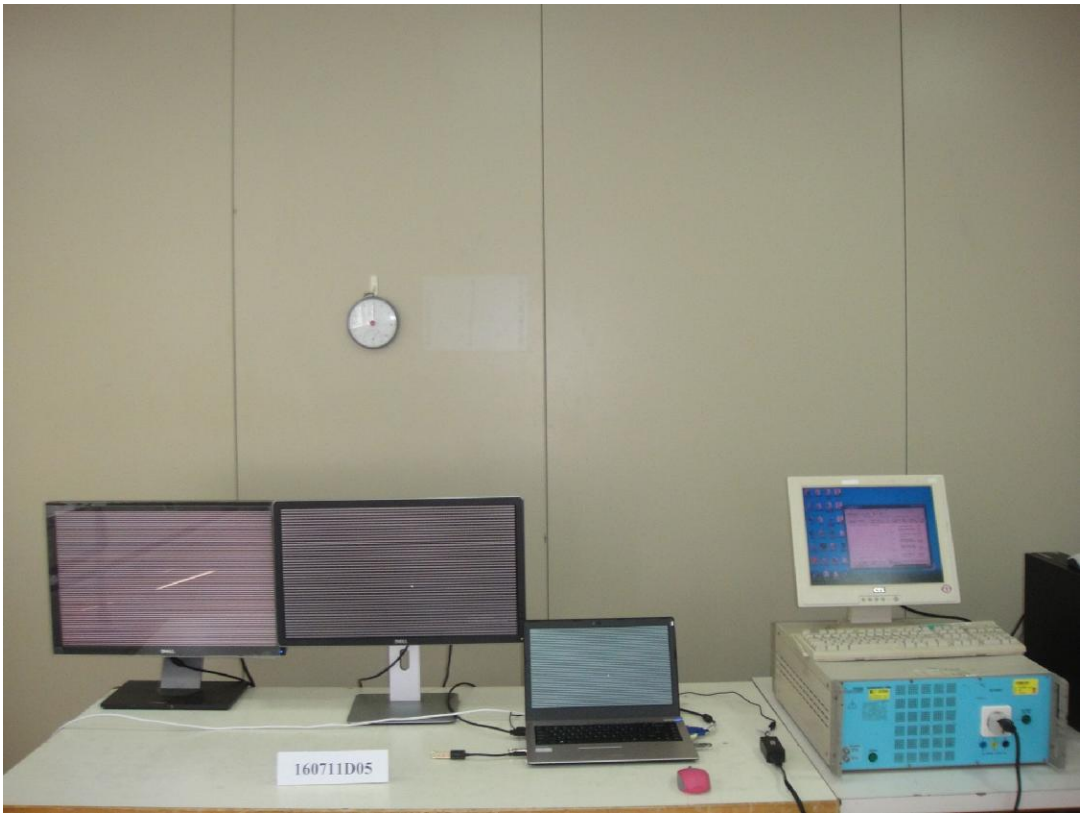


19.5 Harmonics Current, Volta asurement Fluctuations and Flicker Measurement

For Mode 3



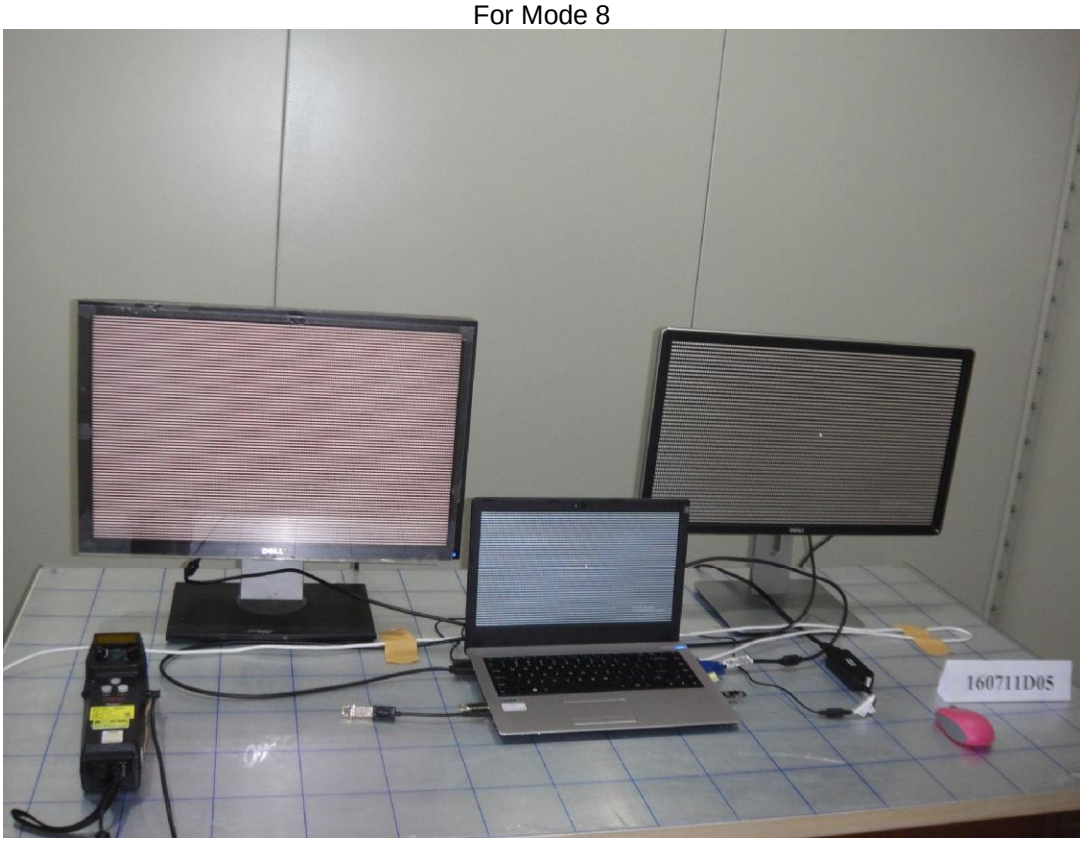
For Mode 8



19.6 Electrostatic Discharge Immunity Test (ESD)

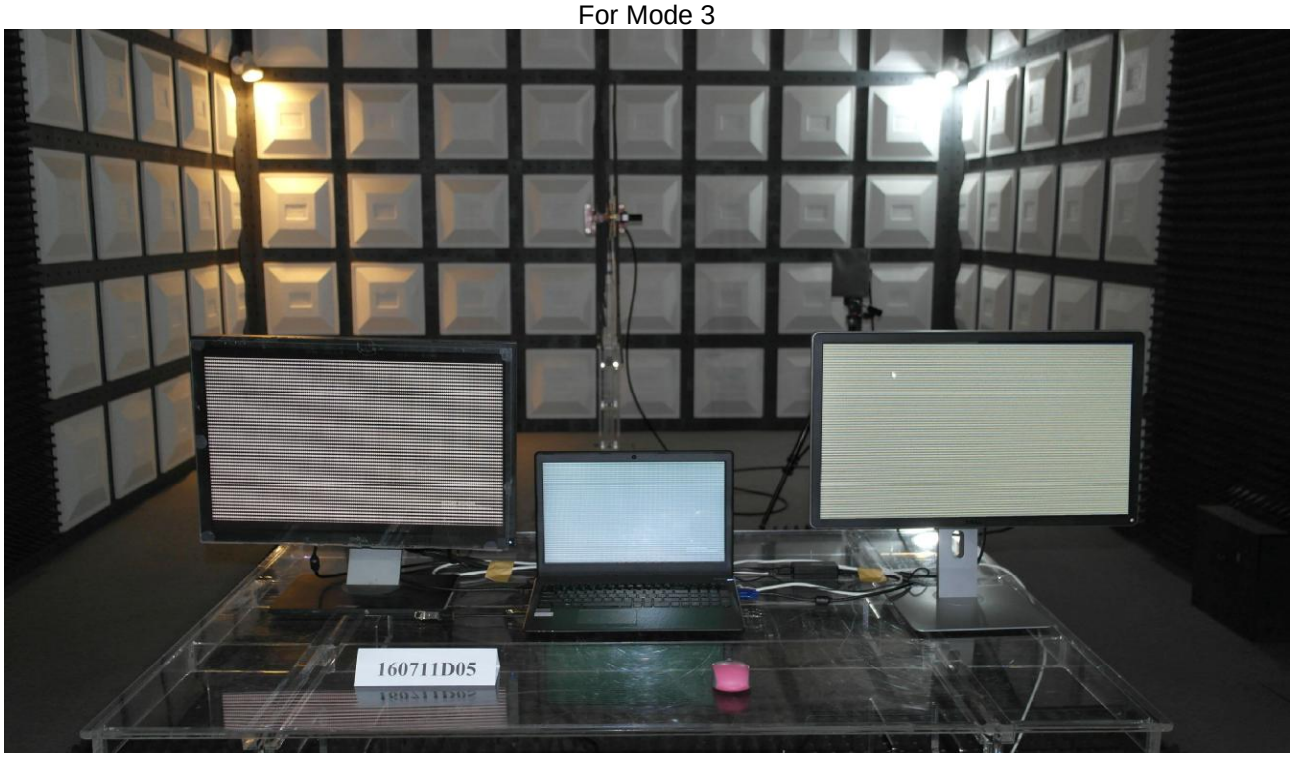
For Mode 3

For Mode 8

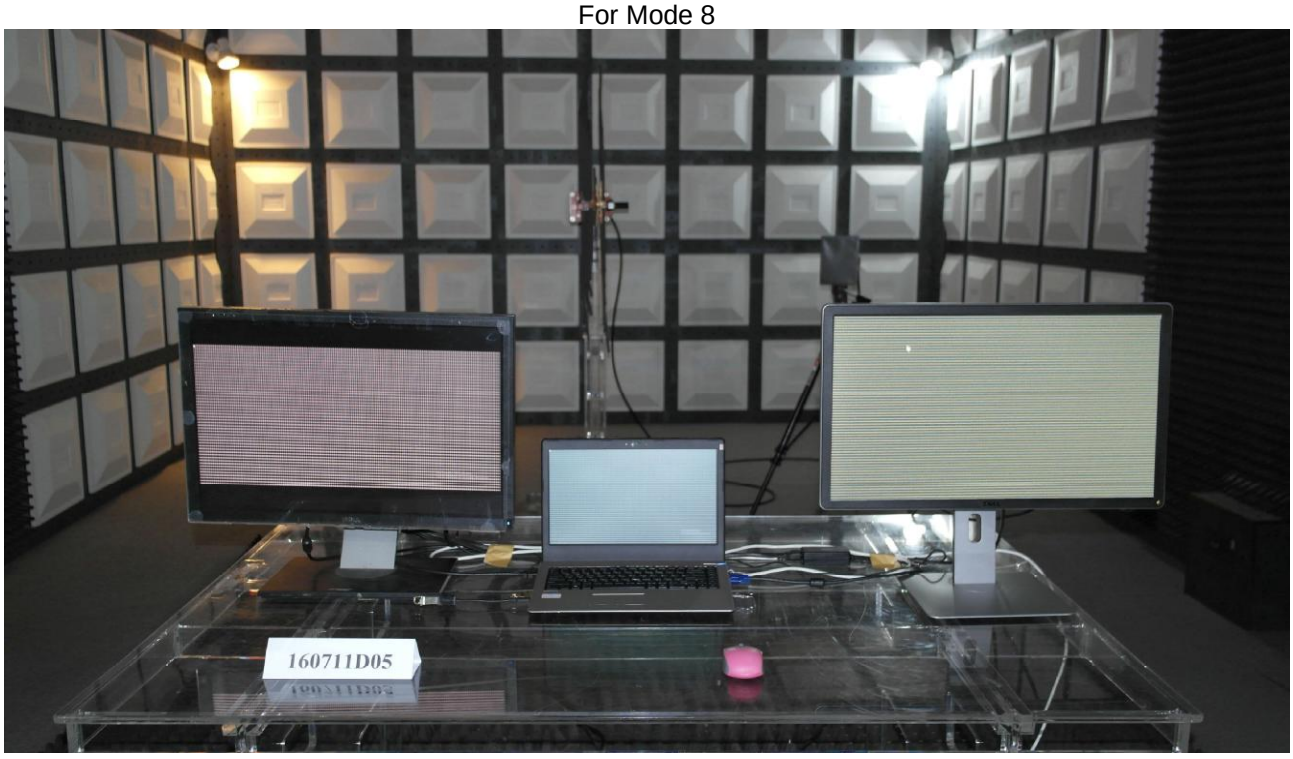


19.7 Radio-frequency, Electromagnetic Field Immunity Test (RS)

For Mode 3

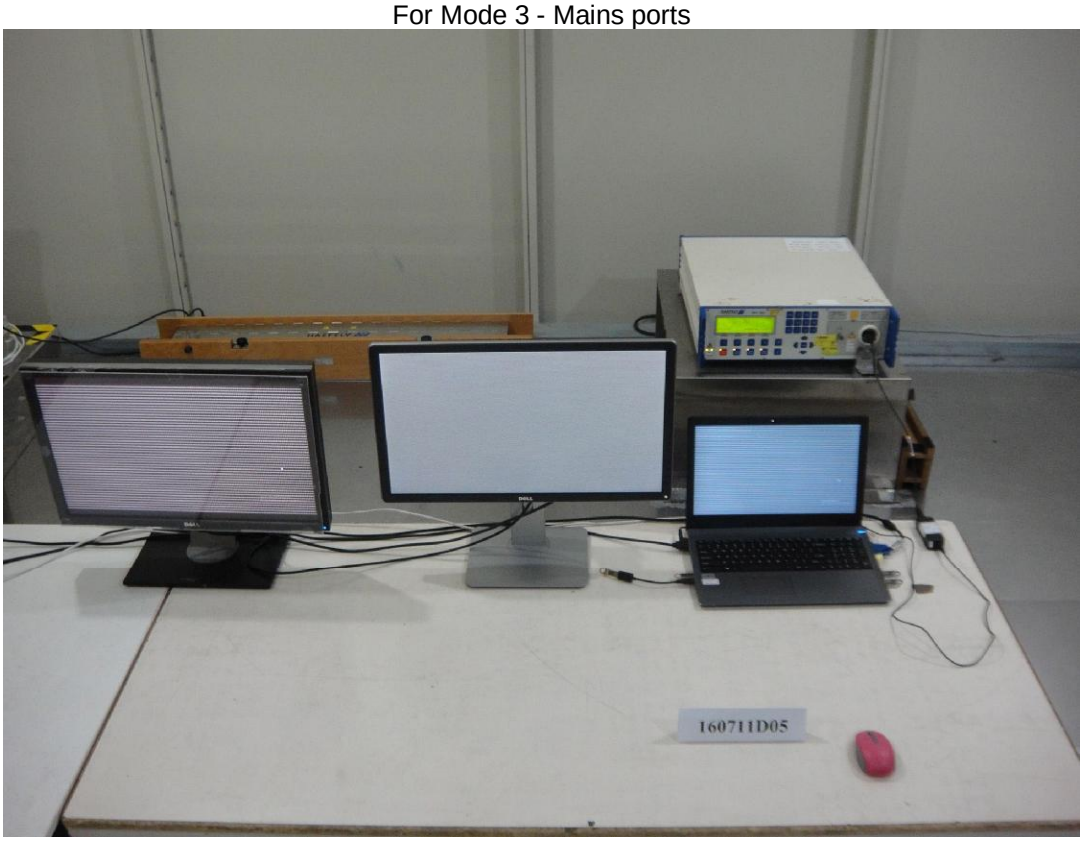


For Mode 8

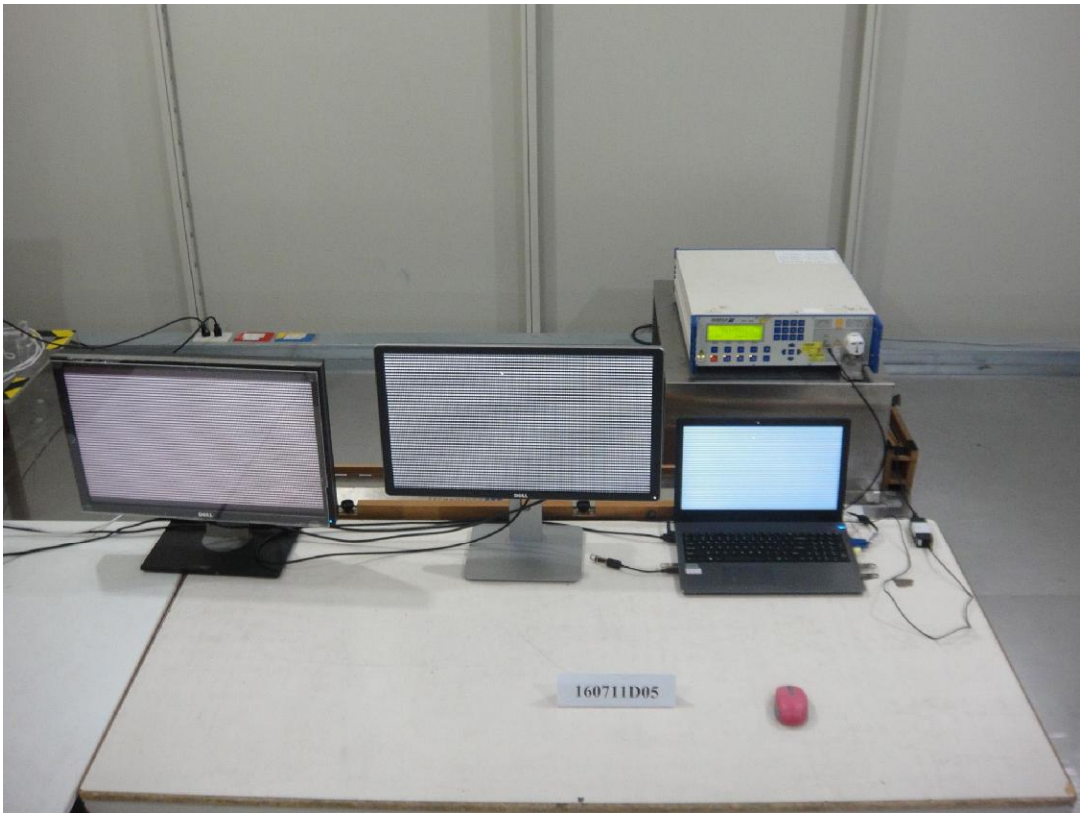


19.8 Electrical Fast Transient/Burst Immunity Test (EFT)

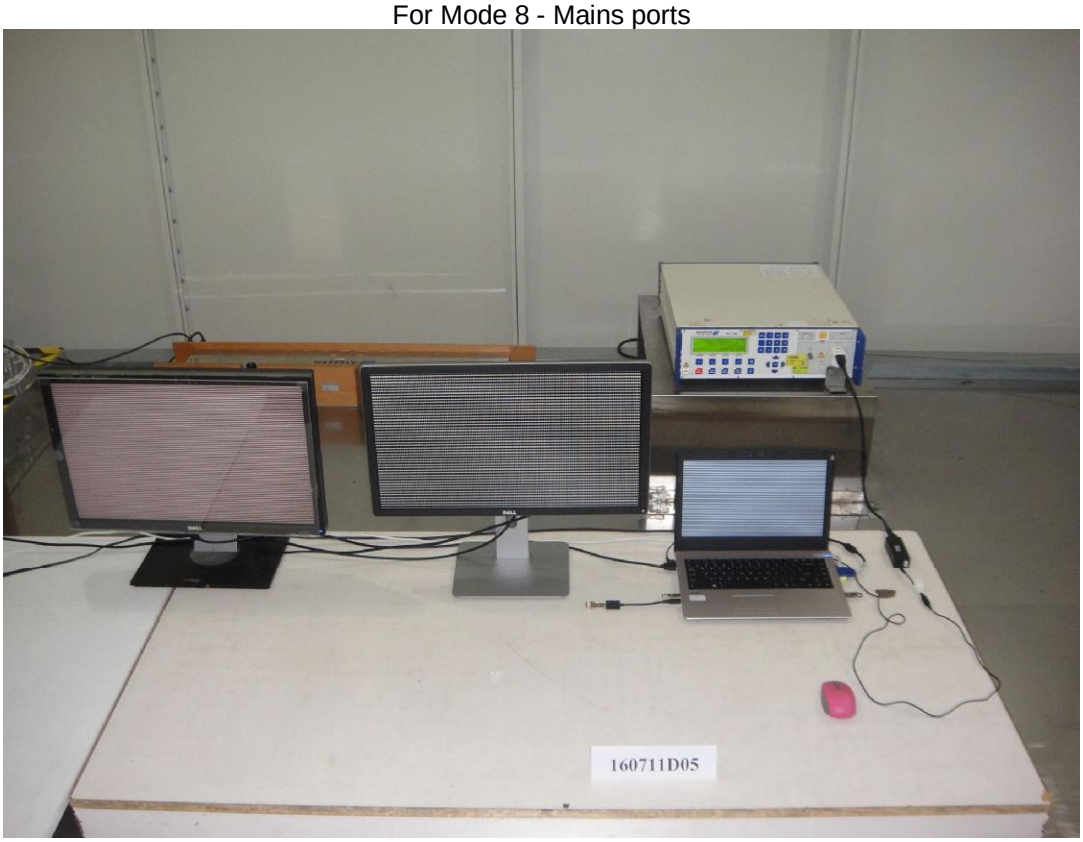
For Mode 3 - Mains ports



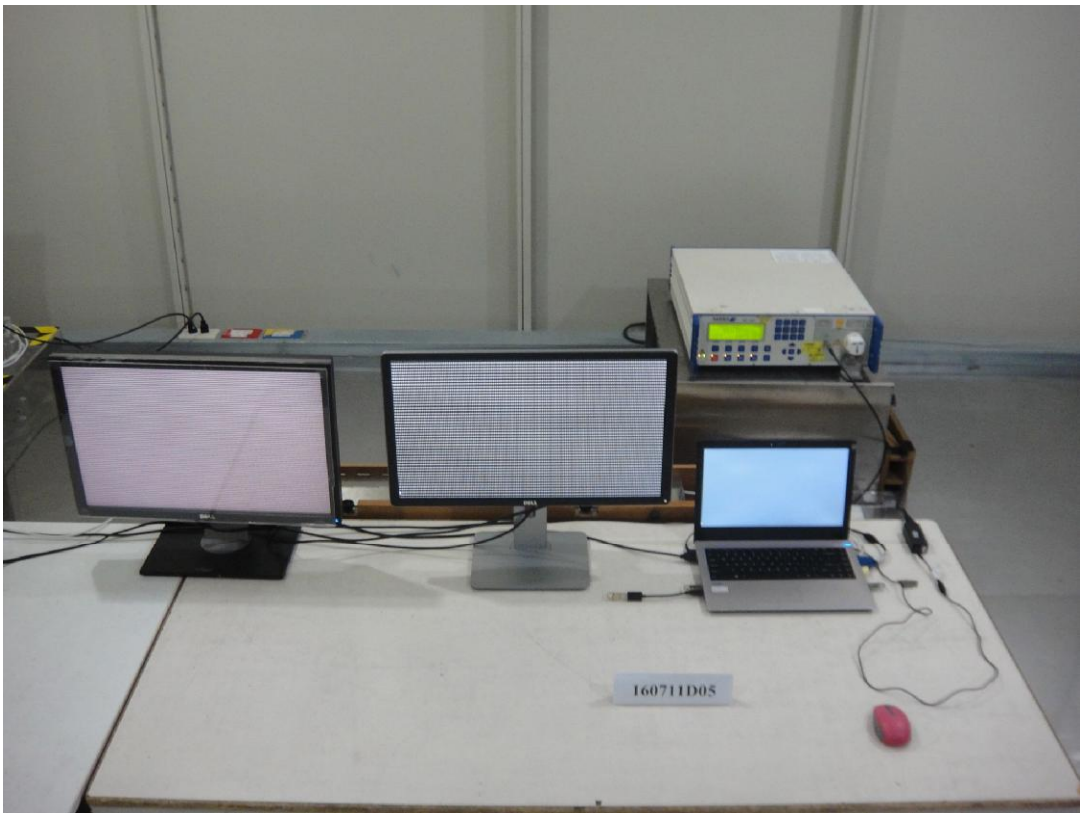
For Mode 3 - LAN



For Mode 8 - Mains ports



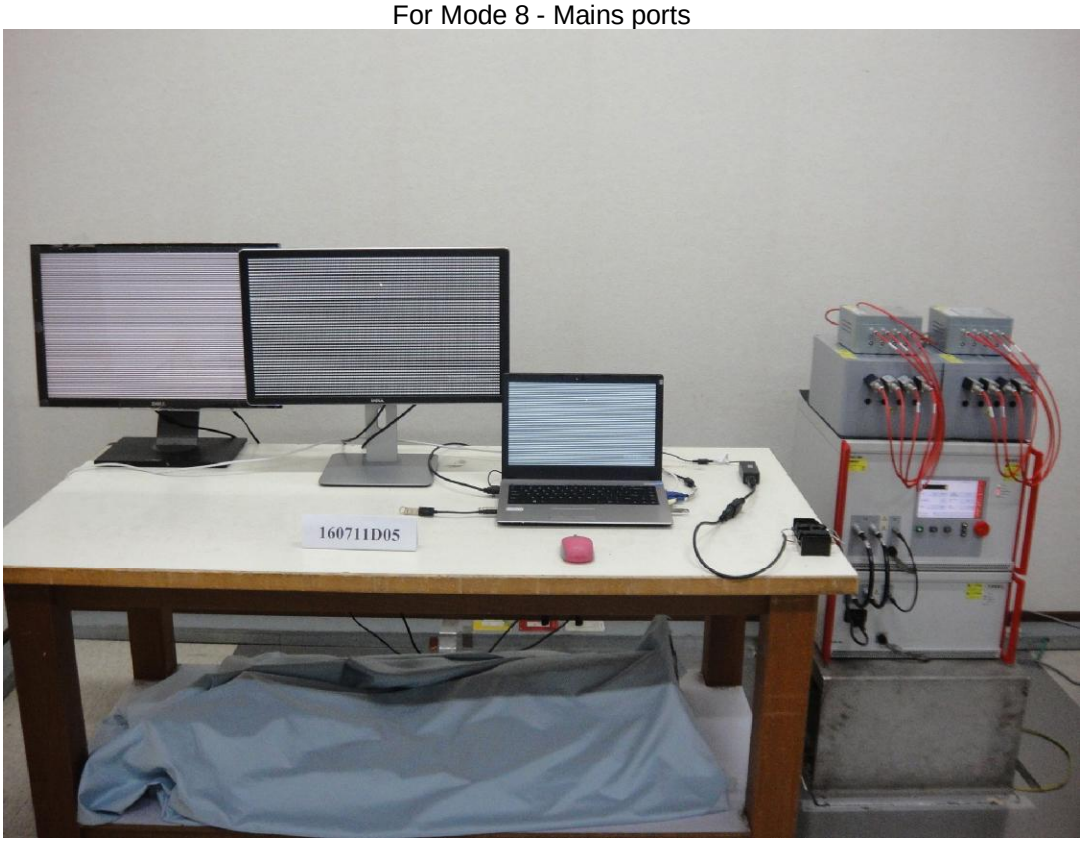
For Mode 8 - LAN



19.9 Surge Immunity Test

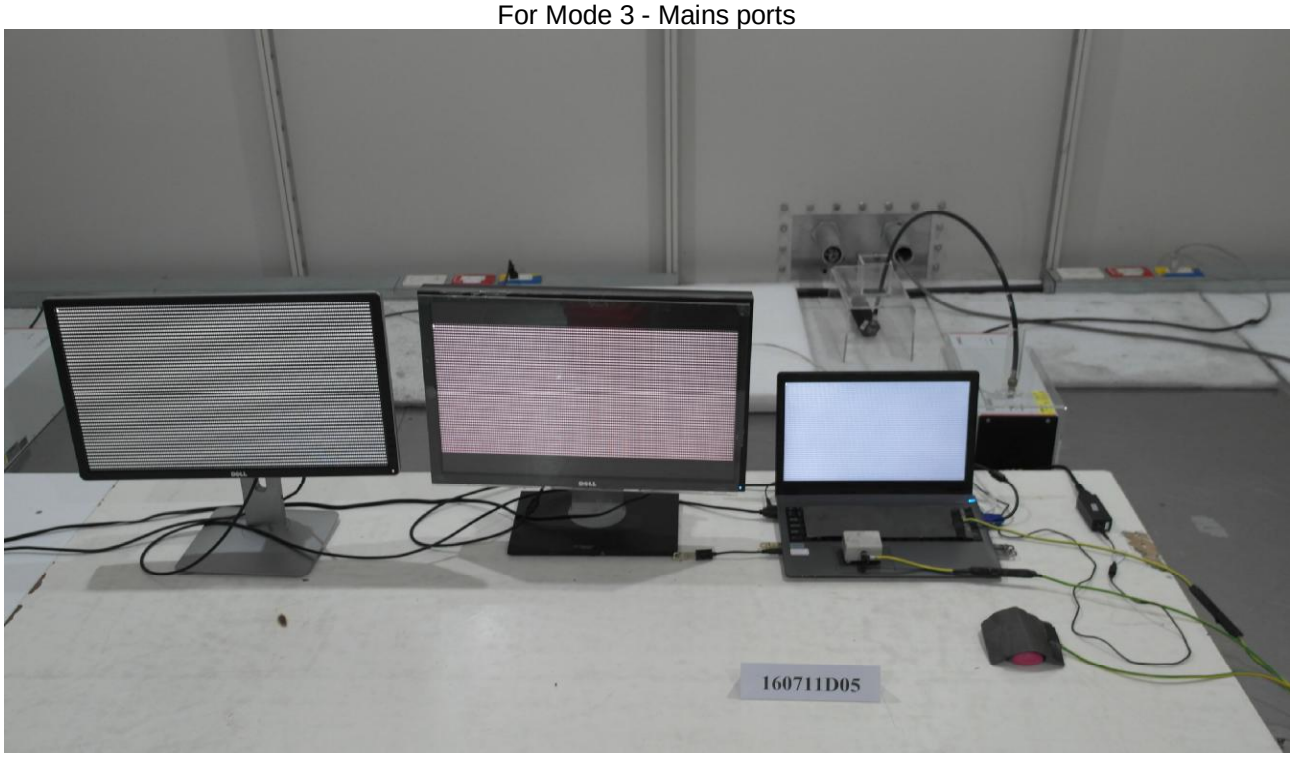
For Mode 3 - Mains ports

For Mode 8 - Mains ports

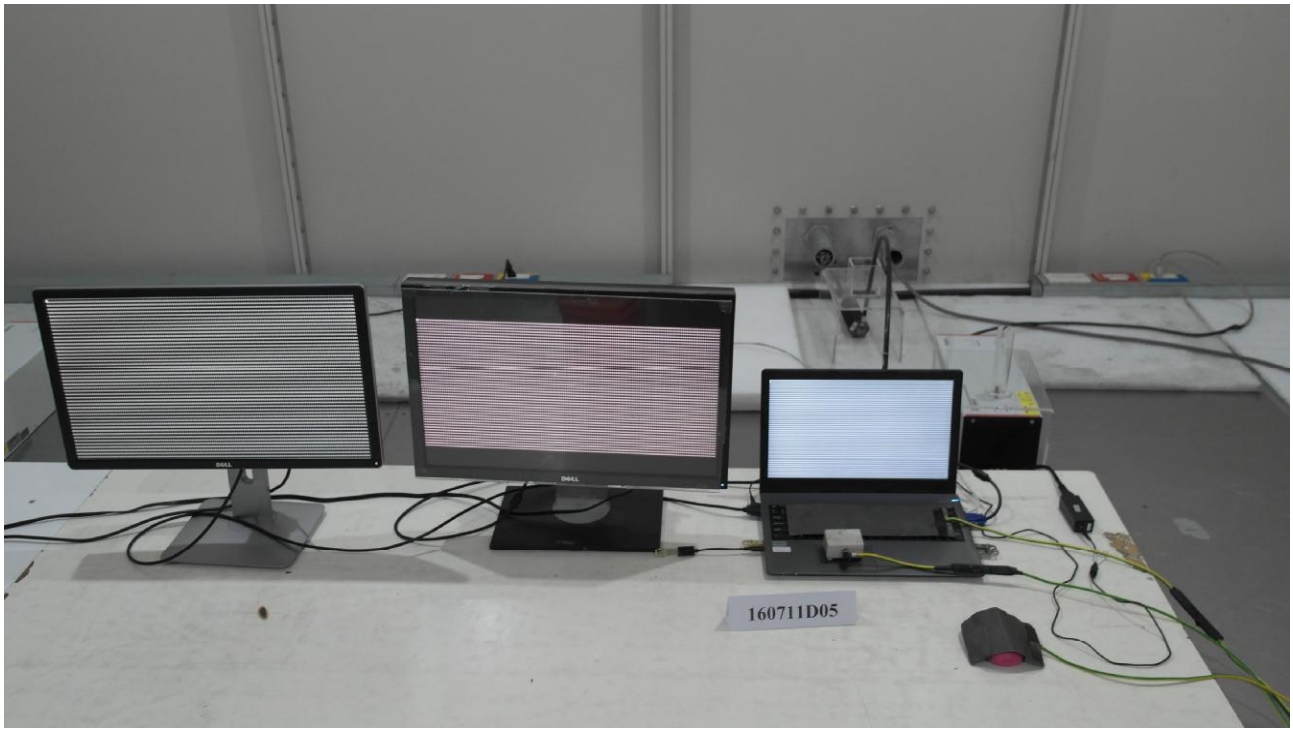


19.10 Conducted Disturbances Induced by RF Fields (CS)

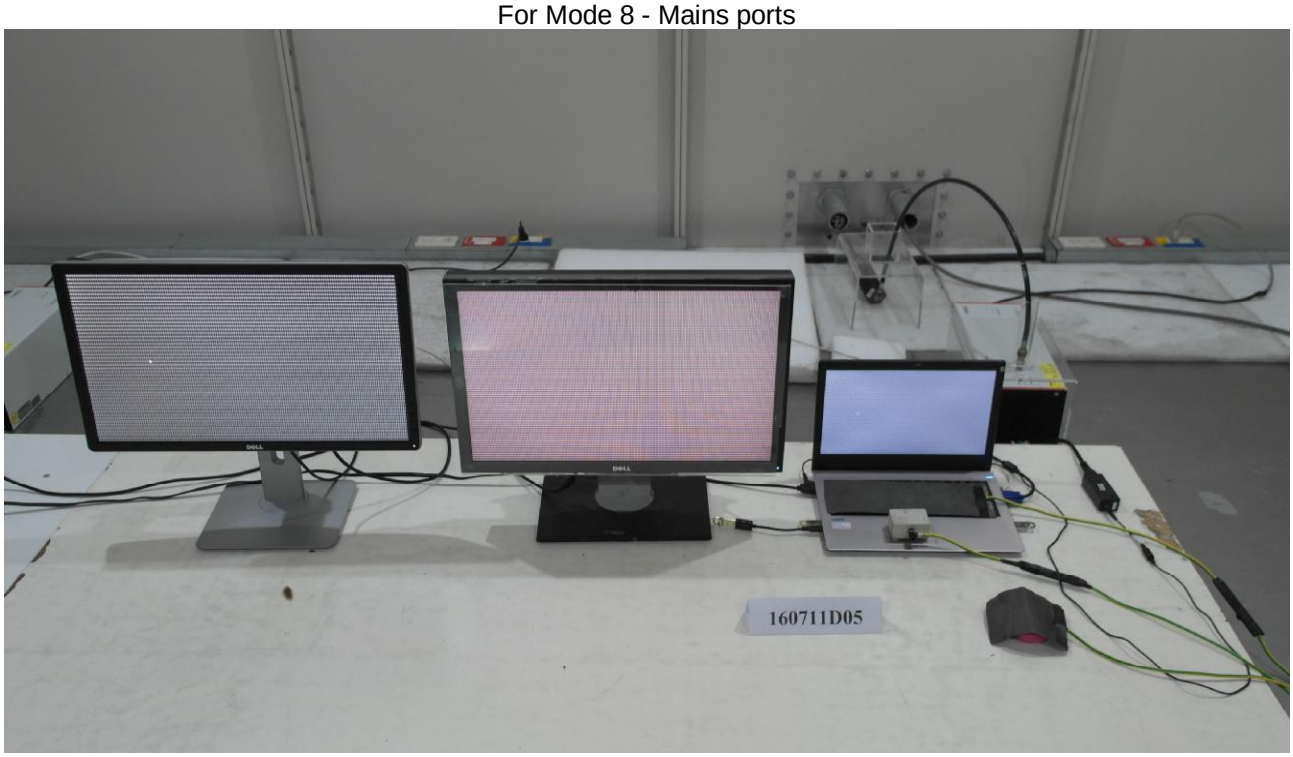
For Mode 3 - Mains ports



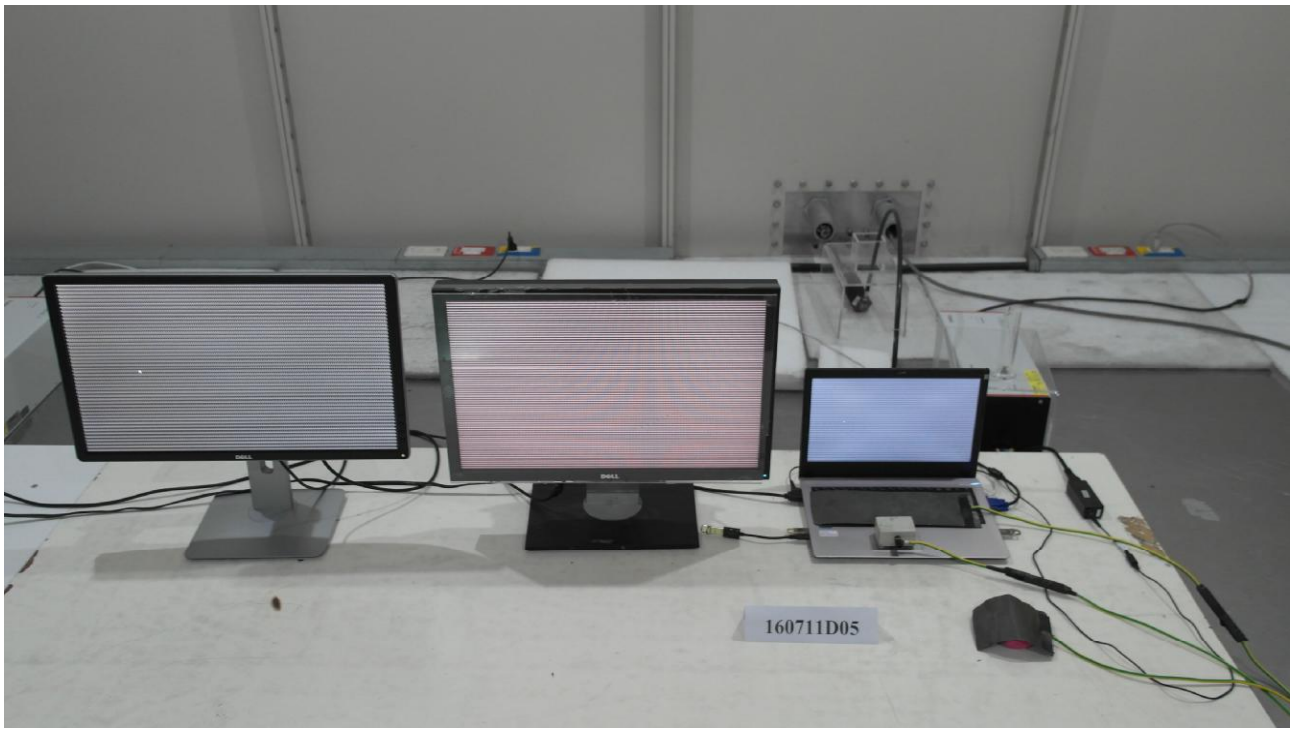
For Mode 3 - LAN



For Mode 8 - Mains ports

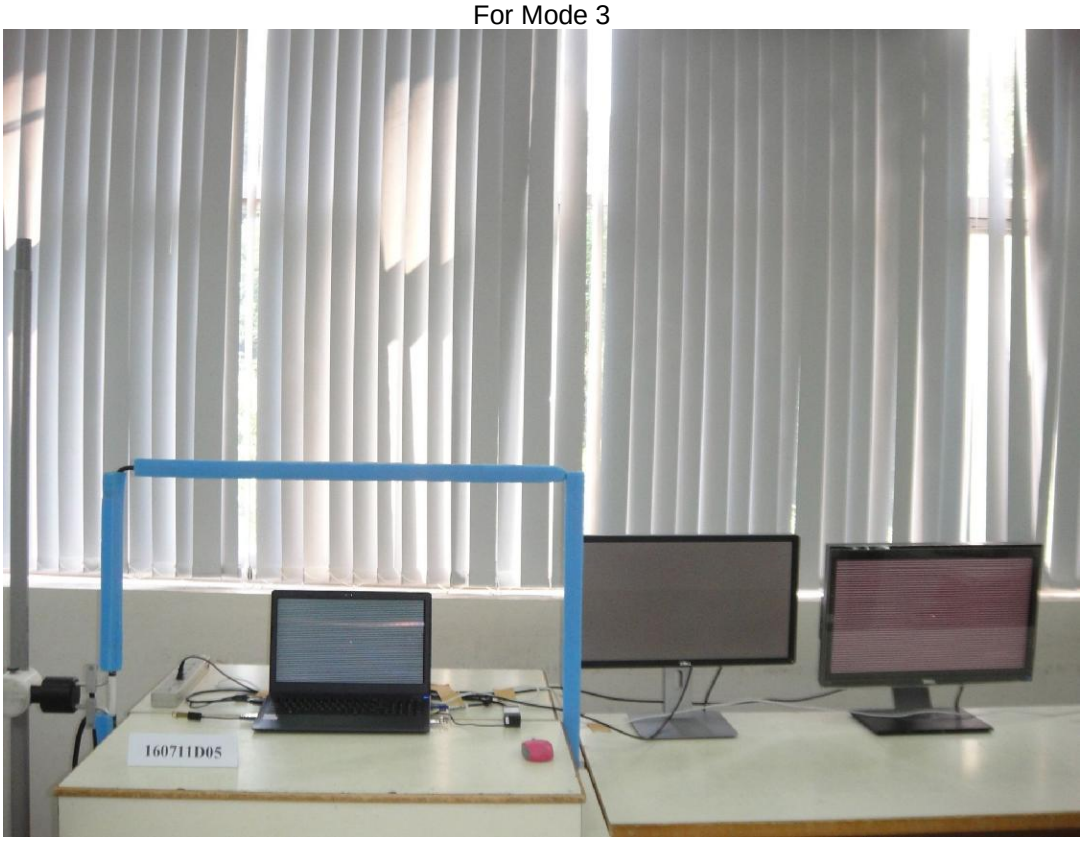


For Mode 8 - LAN

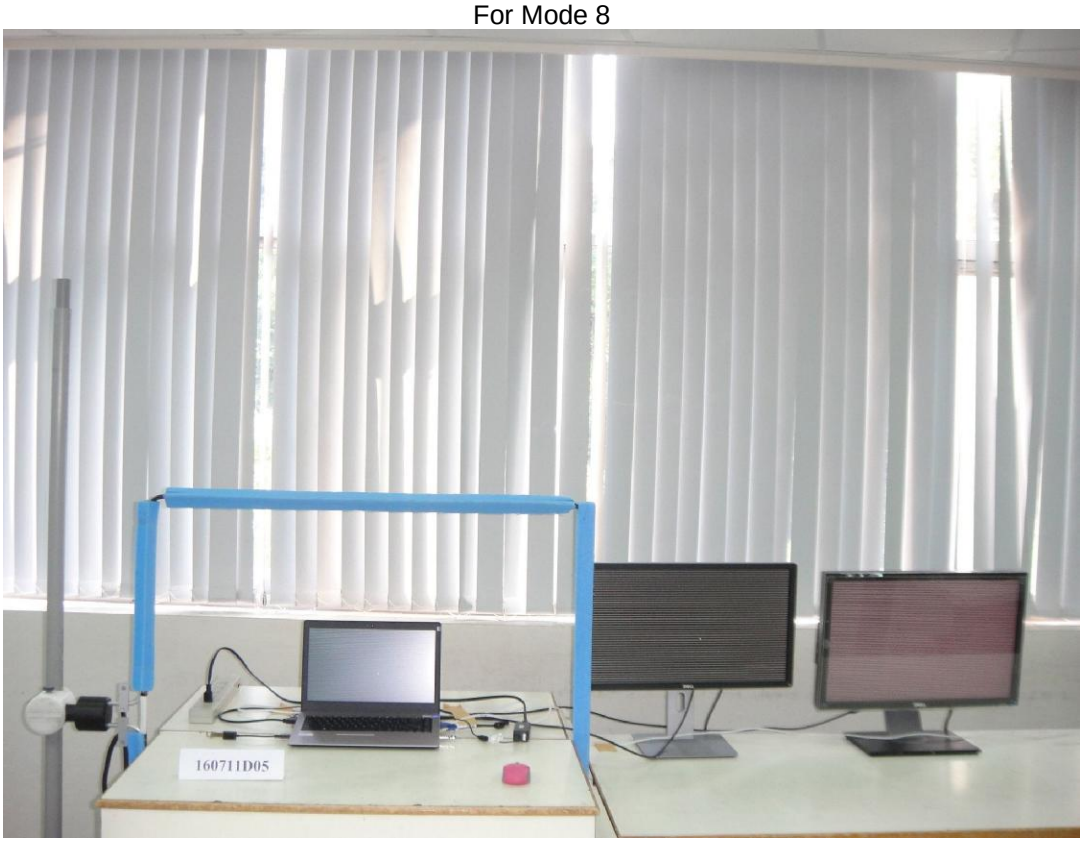


19.11 Power Frequency Magnetic Field Immunity Test (PFMF)

For Mode 3

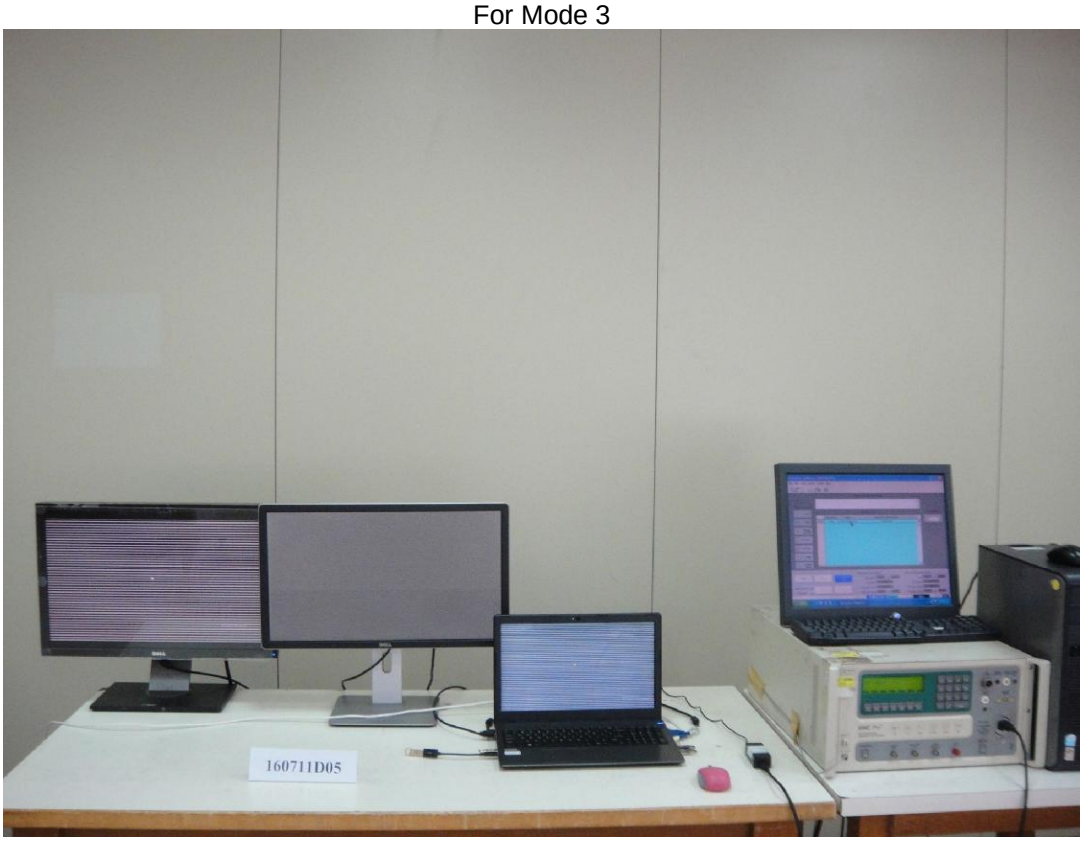


For Mode 8

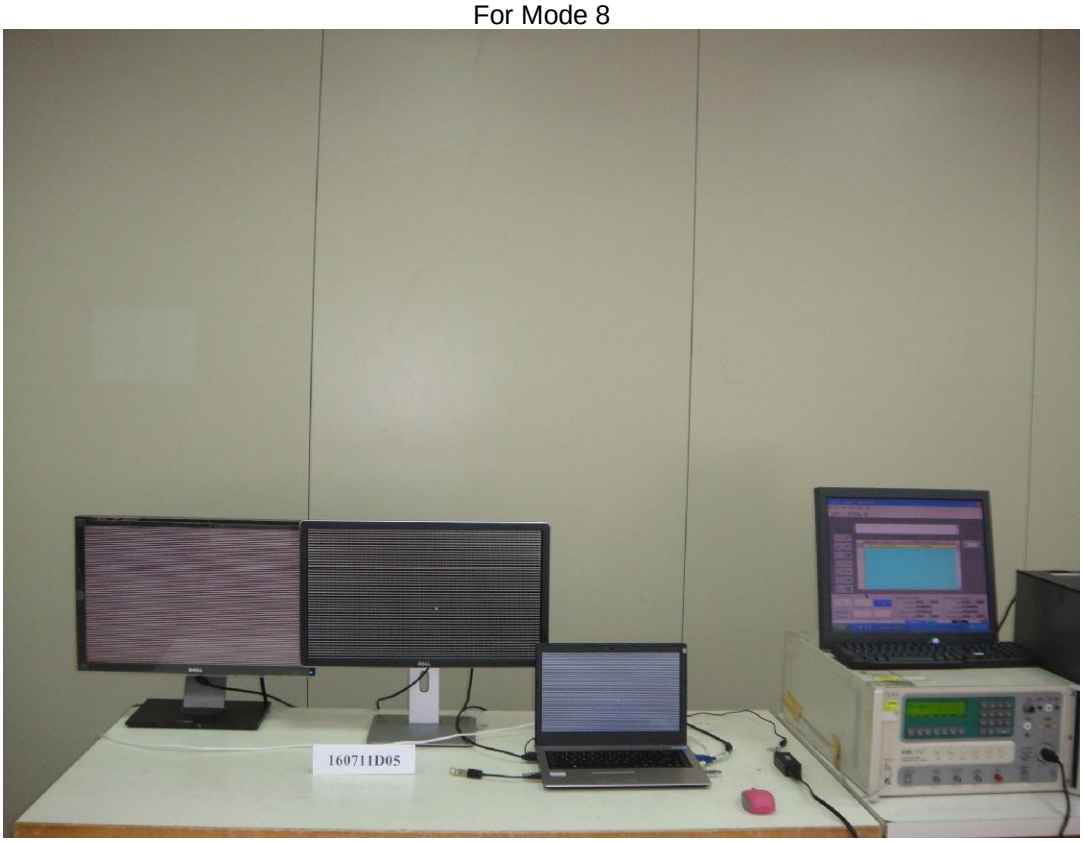


19.12 Voltage Dips and Interruptions

For Mode 3



For Mode 8



Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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