

FCC 15.209 & RSS-Gen Test Report

for

LG Electronics Inc.

**222, LG-ro Jinwi-myeon, Pyeongtaek-Si, Gyeonggi-Do,
451-713, Korea**

**Product Name : LG Cloud Device
All-in-One Thin Client**

**Model Name : (1)24CN670N
(2)24CN670W
(3)24CN670NK
(4)24CN670WK**

Brand : LG

FCC ID : BEJNT-24CN670

IC : 2703H-24CN670

**Prepared by: : AUDIX Technology Corporation,
EMC Department**



The test report is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.

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TEST REPORT

Applicant : LG Electronics Inc.
Manufacture : LG Electronics Inc.
Factory : LG Electronics Nanjing New Technology Co., Ltd.
EUT Description
(1) Product : LG Cloud Device All-in-One Thin Client
(2) Model : (1)24CN670N (2)24CN670W (3)24CN670NK (4)24CN670WK
(3) Brand : LG
(4) Power Supply: DC 19V, 6.32A

Applicable Standards:

47CFR FCC Part 15 Subpart C
RSS-Gen (Issue 5), March 2019
ANSI C63.10:2013

Audix Technology Corp. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Audix Technology Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Report: 2020. 07. 27

Reviewed by:

Annie Yu

(Annie Yu/Administrator)

Approved by:

Johnny Hsueh

(Johnny Hsueh/Section Manager)

1. REVISION RECORD OF TEST REPORT

Edition No	Issued Data	Revision Summary	Report Number
0	2020. 07. 27	Original Report	EM-F200324

2. SUMMARY OF TEST RESULTS

Rule		Description	Results
FCC	IC		
15.207	RSS-Gen §8.8	Conducted Emission	PASS
15.209	RSS-Gen §8.9	Radio Spurious Emission	PASS
15.215 (c)	---	20dB Bandwidth	PASS
---	RSS-Gen §6.6	99%dB Bandwidth	PASS
15.203	RSS-Gen §8.3	Antenna Requirement	Compliance
Note: The uncertainties value is not used in determining the result.			

3. GENERAL INFORMATION

3.1. Description of Application

Applicant	LG Electronics Inc. 222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 451-713 Korea.																		
Manufacturer	LG Electronics Inc. 222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 451-713 Korea.																		
Factory	LG Electronics Nanjing New Technology Co., Ltd. 346, Yaoxin Road Economic & Technical Development Zone 210038 Nanjing PEOPLE'S REPUBLIC OF CHINA																		
Product	LG Cloud Device All-in-One Thin Client																		
Model	(1)24CN670N (2)24CN670W (3)24CN670NK (4)24CN670WK The difference between models is as following, and the difference has no influence on RF function. The model 24CN670N was tested in this report. <table><tr><th>Model Difference</th><th>24CN670N</th><th>24CN670W</th><th>24CN670NK</th><th>24CN670WK</th></tr><tr><td>Windows OS</td><td>No</td><td>Yes</td><td>No</td><td>No</td></tr><tr><td>Packing Keyboard/Mouse</td><td>No</td><td>No</td><td>Yes</td><td>Yes</td></tr></table> Note: The 4 models (24CN670N, 24CN670W, 24CN670NK, 24CN670WK) are for FCC ID application, and only 1 model (24CN670N) is for ISCED application.				Model Difference	24CN670N	24CN670W	24CN670NK	24CN670WK	Windows OS	No	Yes	No	No	Packing Keyboard/Mouse	No	No	Yes	Yes
Model Difference	24CN670N	24CN670W	24CN670NK	24CN670WK															
Windows OS	No	Yes	No	No															
Packing Keyboard/Mouse	No	No	Yes	Yes															
Brand	LG																		

3.2. Description of EUT

Test Model	24CN670N		
Test Sample	Sample No.	Test Item	Firmware
	#1	AC Conduction	N/A
	#1	RSE	N/A
	#1	Conducted	N/A
Serial Number	N/A		
Power Rating	DC 19V, 6.32A		
RF Features	RFID		
Transmit Type	1T1R		
Sample Status	Production		
Date of Receipt	2020. 07. 09		
Date of Test	2020. 07. 22 ~ 23		
Interface Ports of EUT	Back View • DP Out Port x1 • USB (Type C) Port x1 • USB 3.0 Port (DC 5V/0.9A) x4 • LAN Port x1 • SFP Port x1 • DC In Port x1 • HDMI In Port x1 • Audio In Port x1 Side View • USB In 1 (DC 5V/0.5A) Port x1 • USB In 2 (DC 5V/0.5A) Port x1		
Accessories Supplied	• AC Adapter • USB Keyboard (Option) • USB Mouse (Option)		

3.3. Antenna Information

No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)
1	N/A	N/A	Loop	N/A	N/A
2	N/A	N/A	Loop	N/A	N/A

3.4. EUT Specifications Assessed in Current Report

Mode	Fundamental Range (MHz)	Channel Number	Modulation
RFID	13.56	1	ASK, FSK, PSK
	0.125	1	ASK, FSK, PSK

3.5. Description of Key Components

Item	Supplier	Model / Type	Character
System	Microsoft	Non OS	27CN670W/ 27CN670WK : Windows 10IoT LTSC
Main Board	LG	CL66 MB	---
Control Board	LG	LM21F	---
USB Board	PEGARTRON	USB CL66	---
CPU (Socket: BGA1090)	Intel	J4105	1.50GHz
LCD Panel	LG Display	LM238WF1-SJM1	1920*1080
Memory (RAM)	SAMSUNG	M471A5244CB0-CTD	4GB DDR4 2666MHz
Integrated RFID Reader	RF IDEas	OEM-805N23KU	125kHz 13.56MHz
RFID Antenna	RF IDEas	PCB-1101-03	---
WLAN Combo Card	Intel	9560NGW	WLAN and BT, 2x2 PCIe M.2 2230 adapter card FCC ID: PD99560NG IC: 1000M-9560NG
WLAN Combo Antenna	LG	27/34CL650 MAIN V2	Manufacturer: INPAQ TECHNOLOGY CO., LTD. Main: Black, PIFA Type
	LG	27/34CL650 AUX V2	Manufacturer: INPAQ TECHNOLOGY CO., LTD. Aux: Gray, PIFA Type
USB Mouse	LG	SM-9023	---
USB Keyboard	LG	KB25C	---
AC Adapter	LG	DA-120D19	Manufacturer: Asian Power Devices Inc. I/P: AC 100-240V, 50-60Hz, 1.8-0.7A, O/P: DC 19V, 6.32A
		AC Power Cord: Non-Shielded, Detached, 1.5m (3C)	

Remark: For more detailed features description, please refer to the manufacturer's specifications or the user manual.

3.6. Test Configuration

AC Conduction	
Test Case	Normal operation

Item		Test Frequency (kHz)
Radiated Test Case	Radiated Spurious Emission	125
Conducted Test Case	20dB Bandwidth	125

Note 1:

☒ Mobile Device:

☐ Portable Device, and 3 axis were assessed. ☐ Lie ☐ Side ☐ Stand

3.7. Tested Supporting System List

3.7.1. Support Peripheral Unit

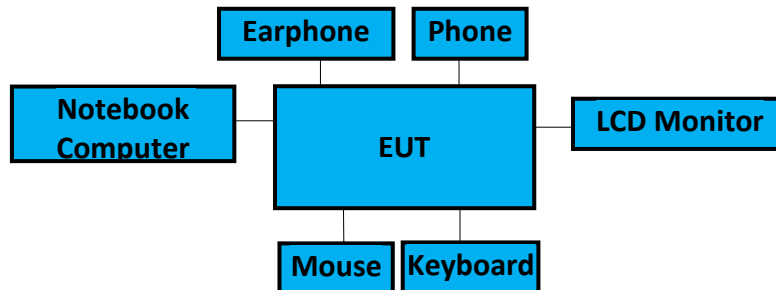
No.	Product	Brand	Model No.	Serial No.	Approval
1.	Notebook Computer	ASUS	E403SA	N/A	N/A
2.	LCD Monitor	DELL	MS116C	CN-049PRO-CH400-8BM-06YI-A00	FCC By DoC
3.	Mobile Phone	ASUS	ZE620KL	N/A	N/A
4.	USB Keyboard	LG	KB25C	N/A	FCC By DoC
5.	USB Mouse	LG	SM-9023	68600009	FCC By DoC
6.	Earphone	LGITON	FS-99	N/A	N/A

3.7.2. Cable Lists

No.	Cable Description Of The Above Support Units
1.	HDMI Cable: Shielded, Detachable, 1.5m Adapter: ASUS, M/N AD890526 DC Power Cord : Unshielded, Detachable, 2.0m
2.	DP Cable: Shielded, Detachable, 1.5m DC Power Cable: Unshielded, Detachable, 1.5 m AC Power Cord: Unshielded, Detachable, 1.8m
4.	USB Cable: Unshielded, Detachable, 3.0m+1.8m
5.	USB Cable: Unshielded, Detachable, 1.5m
6.	USB Cable: Unshielded, Detachable, 1.8m
7.	Earphone Cable: Unshielded, Detachable, 1.2m

3.8. Setup Configuration

3.8.1. EUT Configuration for AC Conduction and Radiated Emission



3.8.2. EUT Configuration for RF Conducted Test Items



3.9. Operating Condition of EUT

To Set EUT RF function on continues transmitting.

3.10. Description of Test Facility

Name of Test Firm	Audix Technology Corporation / EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Tel: +886-2-26092133 Fax: +886-2-26099303 Website : www.audixtech.com Contact e-mail: attemc_report@audixtech.com
Accreditations	The laboratory is accredited by following organizations under ISO/IEC 17025:2017 (1) NVLAP(USA) NVLAP Lab Code 200077-0 (2) TAF(Taiwan) No. 1724
Test Facilities	FCC OET Designation Number under APEC MRA by NCC is : TW1724 ISED CAB Identifier Number under APEC TEL MRA by NCC is TW1724 (1) No. 8 Shielding Room (2) No.1 3m Semi Anechoic Chamber

3.11.Measurement Uncertainty

Test Items/Facilities		Frequency Range	Uncertainty
Conduction Test		9kHz-150kHz	±3.7dB
		150kHz-30MHz	±3.5dB
Radiation Test	No.1 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.1dB
		200MHz-1000MHz, 3m, Horizontal	±3.9dB
		30MHz-200MHz, 3m, Vertical	±4.2dB
		200MHz-1000MHz, 3m, Vertical	±4.1dB
		1GHz-6GHz, 3m	±4.2dB
		6GHz-18GHz, 3m	±4.6dB
	No.3 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±3.9dB
		200MHz-1000MHz, 3m, Horizontal	±3.9dB
		30MHz-200MHz, 3m, Vertical	±4.4dB
		200MHz-1000MHz, 3m, Vertical	±4.1dB
	No.4 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.3dB
		200MHz-1000MHz, 3m, Horizontal	±4.0dB
		30MHz-200MHz, 3m, Vertical	±4.3dB
		200MHz-1000MHz, 3m, Vertical	±4.4dB
		1GHz-6GHz, 3m	±4.5dB
		6GHz-18GHz, 3m	±4.6dB
	No.5 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.0dB
		200MHz-1000MHz, 3m, Horizontal	±3.9dB
		30MHz-200MHz, 3m, Vertical	±4.2dB
		200MHz-1000MHz, 3m, Vertical	±4.3dB
		1GHz-6GHz, 3m	±4.3dB
		6GHz-18GHz, 3m	±4.7dB
	Fully Anechoic Chamber	30MHz~1000MHz	±4.7dB
		1GHz~18GHz	±5.3dB

Remark : Uncertainty = $ku_c(y)$

Test Item	Uncertainty
20dB Bandwidth	± 0.2kHz
99% Bandwidth	± 0.38%

4. MEASUREMENT EQUIPMENT LIST

4.1. Conducted Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
1.	Test Receiver	R&S	ESR3	101774	2020.02.04	1 Year
2.	A.M.N.	R&S	ENV432	101567	2020.04.20	1 Year
3.	L.I.S.N.	Kyoritsu	KNW-407	8-855-9	2019.12.10	1 Year
4.	Pulse Limiter	R&S	ESH3-Z2	100354	2020.01.05	1 Year
5.	Cable	Yeida	RG/58AU	CE-08	2019.09.20	1 Year
6.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.8 S/R	2019.09.20	N.C.R.
7	Test Software	Audix	e3	V6.120619c	N.C.R.	N.C.R.

4.2. Radiated Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2019. 09. 11	1 Year
2.	Spectrum Analyzer	Agilent	N9030A-526	MY53310269	2020. 01. 16	1 Year
3.	Test Receiver	R & S	ESCS30	100338	2020. 06. 10	1 Year
4.	Amplifier	HP	8447D	2944A06305	2020. 01. 16	1 Year
5.	Bilog Antenna	TESEQ	CBL6112D	33821	2020. 01. 17	1 Year
6.	Loop Antenna	R&S	HFH2-Z2	891847/27	2019.12. 26	2 Years
7.	Coaxial Cable	MIYAZAKI	5D2W	RE-11	2020. 01. 31	1 Year
8.	Coaxial Cable	MIYAZAKI	5D2W	CLAMP-01	2020. 01. 31	1 Year
9.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.1 3m A/C	2020. 04. 17	1 Year
10.	Test Software	Audix	e3	V6.120619c	N.C.R.	N.C.R.

4.3. RF Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Keysight	N9020B-544	MY57120357	2020. 01. 10	1 Year
2.	Probe Antenna	EMCO	7405	9011-1836	N.C.R.	N.C.R.
3.	Digital Thermo-Hygro Meter	Shenzhen Datronn Electronics	KT-905	RF	2020. 04. 17	1 Year

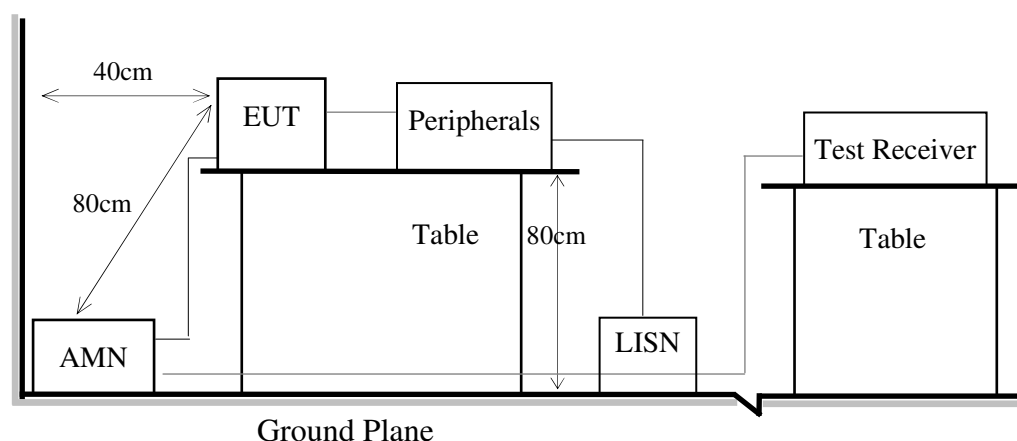
5. CONDUCTED EMISSION

5.1. Block Diagram of Test Setup

5.1.1. Block Diagram of EUT

Indicated as section 3.8.1

5.1.2. Shielded Room Setup Diagram



5.2. Conducted Emission Limit

Frequency	Conducted Limit	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dB μ V	56 ~ 46 dB μ V
500kHz ~ 5MHz	56 dB μ V	46 dB μ V
5MHz ~ 30MHz	60 dB μ V	50 dB μ V

Remark1.: If the average limit is met when using a Quasi-Peak detector, the measurement using the average detector is not required.

2.: The lower limit applies to the band edges.

5.3. Test Procedure

- 5.3.1. To set up the EUT as indicated in ANSI C 63.10. The EUT was placed on the table which has 80 cm height to the ground and 40 cm distance to the conducting wall.
- 5.3.2. Power supplier of the EUT was connected to the AC mains through an Artificial Mains Network (A.M.N.).
- 5.3.3. The AC power supplies to all peripheral devices must be provided through line impedance stabilization network (L.I.S.N.)
- 5.3.4. Checking frequency range from 150kHz to 30 MHz and record the emission which does not have 20 dB below limit.

5.4. Test Results

Please refer to Appendix A.

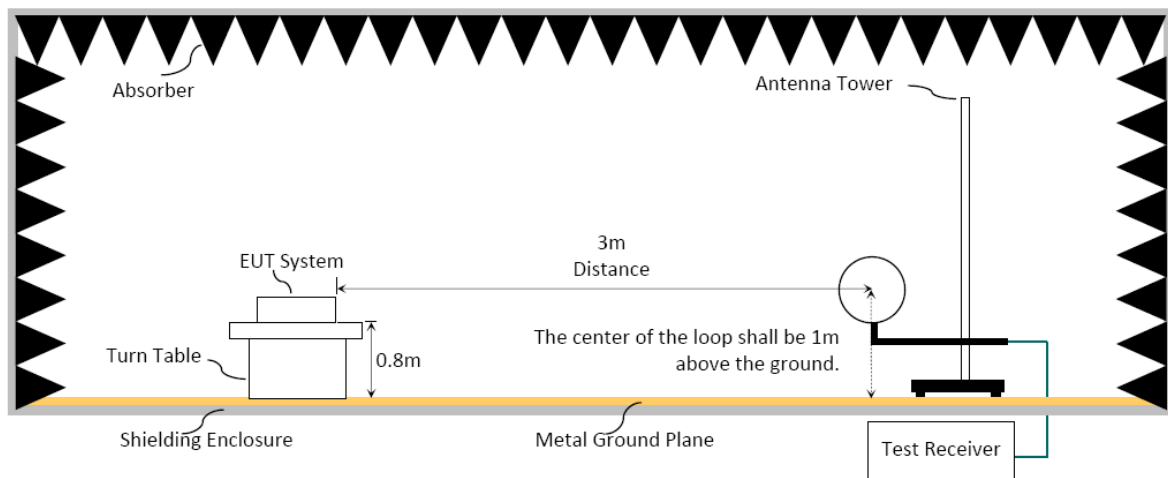
6. RADIATED SPURIOUS EMISSION

6.1. Block Diagram of Test Setup

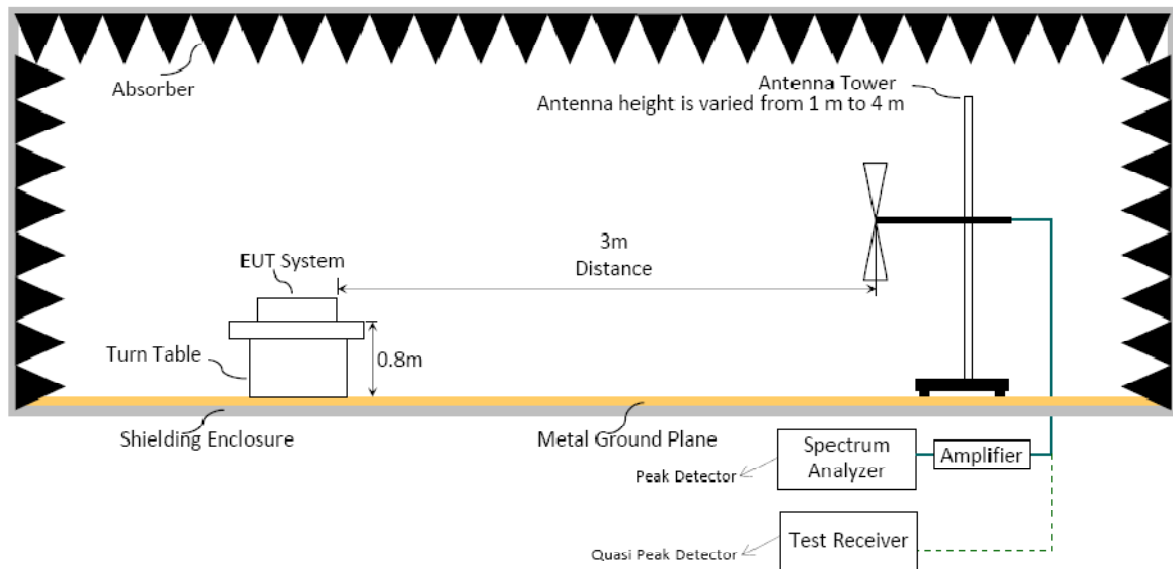
6.1.1. Block Diagram of EUT

Indicated as section 3.8.2

6.1.2. Setup Diagram for 9kHz-30MHz



6.1.3. Setup Diagram for 30MHz-1000MHz



6.2. Radiated Emission Limits

In any 100kHz bandwidth outside the frequency band, the radio frequency power produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205/RSS-Gen Section 8.10 table 6 must also comply with the radiated emission limits specified as below.

Frequency (MHz)	Distance(m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6	2400/kHz
0.490 - 1.705	30	87.6	24000/kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark : (1) $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$

- (2) The tighter limit applies to the edge between two frequency bands.
- (3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- (4) Fundamental and emission fall within operation band are exempted from this section.
- (5) Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

6.3. Test Procedure

Frequency Range 9kHz~30MHz:

The EUT setup on the turntable which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

- (1) RBW = 9kHz with peak and average detector.
- (2) Detector: average and peak (10kHz-490kHz)
Q.P. (490kHz-30MHz)

Frequency Range 30MHz ~ 1000MHz:

The EUT setup on the turntable which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 regulation.

Spectrum Analyzer is used for pre-testing with following setting:

- (1) RBW = 120KHz
- (2) VBW $\geq 3 \times$ RBW.
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.
- (7) When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required. Otherwise using Q.P. for finally measurement.

6.4. Measurement Limit Formula

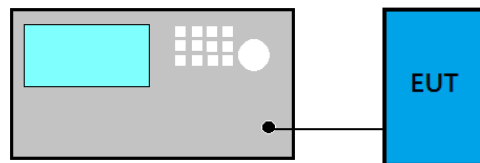
Frequency (MHz)	Formula
0.009 - 0.490MHz	3m Limit (dB μ V/m) = $20\log(2400/F^{\text{Note}}) + 40\log(300\text{m}/3\text{m})$
0.490-1.705MHz	3m Limit (dB μ V/m) = $20\log(24000/F^{\text{Note}}) + 40\log(300\text{m}/3\text{m})$
1.750-30MHz	3m Limit (dB μ V/m) = $20\log(30) + 40\log(300\text{m}/3\text{m})$
Note: F is test frequency	

6.5. Test Results

Please refer to Appendix A.

7. 20dB/99% BANDWIDTH

7.1. Block Diagram of Test Setup



7.2. Specification Limits

The bandwidth shall be specified in operating frequency band.

7.3. Test Procedure

20dB

Following measurement procedure is reference to ANSI C63.10:2013:

- (1) Set Span range 2~5 times the OBW
- (2) Set VBW $\geq 3 \times$ RBW.
- (3) Detector = Peak.
- (4) Trace mode = Max hold.
- (5) Sweep = Auto couple.
- (6) Allow the trace to stabilize.
- (7) Setting channel bandwidth function x dB to -20 dB to record the final bandwidth.

99%

Following measurement procedure is reference to ANSI C63.10:2013:

- (1) Set Span range 1.5~5 times the OBW
- (2) Set RBW close to 1% to 5% of OBW.
- (3) Set VBW $\geq 3 \times$ RBW.
- (4) Detector = Peak.
- (5) Trace mode = Max hold.
- (6) Sweep = Auto couple.
- (7) Allow the trace to stabilize.

7.4. Test Results

Please refer to Appendix A

8. DEVIATION TO TEST SPECIFICATIONS

【NONE】



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No. 53-11, Dingfu, Linkou, Dist.,
New Taipei City 244, Taiwan

APPENDIX A

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APPDNDIX A

TEST DATA AND PLOTS

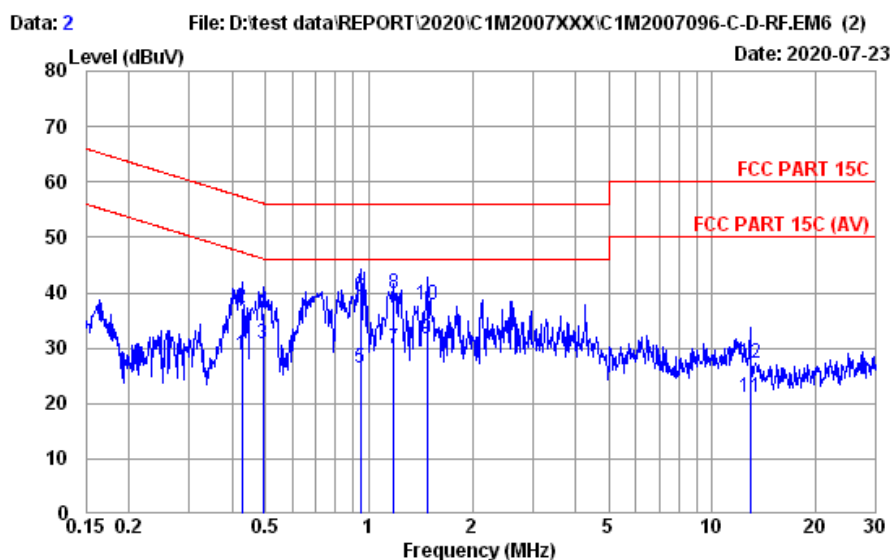
(Model: (1)24CN670N (2)24CN670W (3)24CN670NK (4)24CN670WK)

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A.1 CONDUCTED EMISSION

Test Date	2020/07/23	Temp./Hum.	27°C/51%
Test Voltage	AC 120V/60Hz		

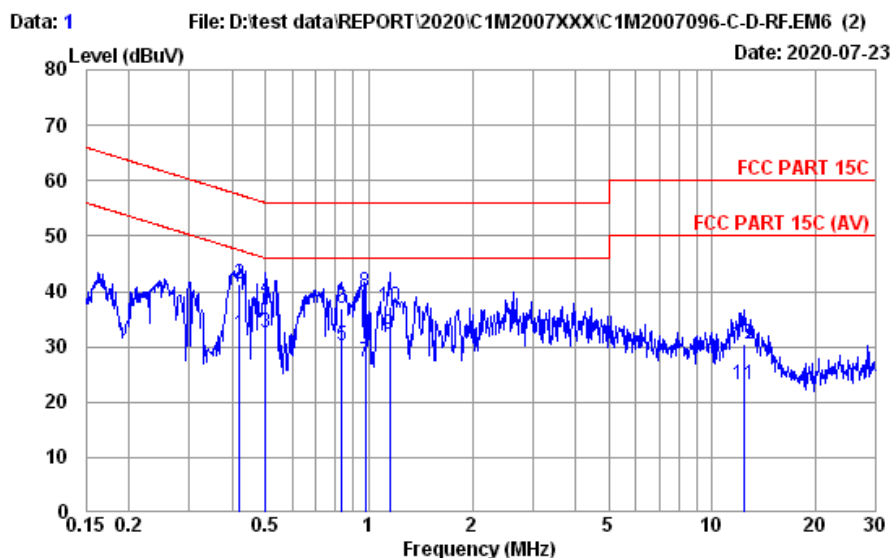


Site No. : No.8 Shielded Room Data No. : 2
Instrument 1 : Receiver ESR(774)
Instrument 2 : ENI432 (567)(A)|CE-08|ESH3-Z2 (354)
Limit : FCC PART 15C Phase : NEUTRAL
Environment : 27°C / 51% Engineer : Roy Hung
EUT Model : 24CH670M Test Rating : 120Vac/60Hz
Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.426	10.20	0.04	9.85	8.62	28.71	47.33	18.62	Average
2	0.426	10.20	0.04	9.85	17.03	37.12	57.33	20.21	QP
3	0.491	10.20	0.04	9.86	10.77	30.87	46.14	15.27	Average
4	0.491	10.20	0.04	9.86	16.32	36.42	56.14	19.72	QP
5	0.943	10.20	0.05	9.86	6.37	26.48	46.00	19.52	Average
6	0.943	10.20	0.05	9.86	19.17	39.28	56.00	16.72	QP
7	1.184	10.20	0.05	9.86	9.83	29.94	46.00	16.06	Average
8	1.184	10.20	0.05	9.86	19.66	39.77	56.00	16.23	QP
9	1.479	10.29	0.06	9.86	11.34	31.55	46.00	14.45	Average
10	1.479	10.29	0.06	9.86	17.62	37.83	56.00	18.17	QP
11	12.920	10.62	0.15	9.93	0.26	20.96	50.00	29.04	Average
12	12.920	10.62	0.15	9.93	6.43	27.13	60.00	32.87	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

Test Date	2020/07/23	Temp./Hum.	27°C/51%
Test Voltage	AC 120V/60Hz		



Site No.	: No.8 Shielded Room	Data No.	: 1
Instrument 1	: Receiver ESR(774)		
Instrument 2	: ENH432 (567)(A) CE-08 ESH3-Z2 (354)		
Limit	: FCC PART 15C	Phase	: LINE
Environment	: 27°C / 51%	Engineer	: Roy Hung
EUT Model	: 24CH670H	Test Rating	: 120Vac/60Hz
Test Mode	: Operating		

	Freq. (MHz)	AMH Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.420	10.20	0.04	9.85	12.00	32.09	47.44	15.35	Average
2	0.420	10.20	0.04	9.85	21.37	41.46	57.44	15.98	QP
3	0.500	10.20	0.04	9.86	12.56	32.66	46.01	13.35	Average
4	0.500	10.20	0.04	9.86	18.57	38.67	56.01	17.34	QP
5	0.835	10.20	0.05	9.86	9.98	30.09	46.00	15.91	Average
6	0.835	10.20	0.05	9.86	16.76	36.87	56.00	19.13	QP
7	0.975	10.20	0.05	9.86	7.01	27.12	46.00	18.88	Average
8	0.975	10.20	0.05	9.86	19.76	39.87	56.00	16.13	QP
9	1.147	10.28	0.05	9.86	11.94	32.13	46.00	13.87	Average
10	1.147	10.28	0.05	9.86	16.89	37.08	56.00	18.92	QP
11	12.384	10.45	0.15	9.93	2.76	23.29	50.00	26.71	Average
12	12.384	10.45	0.15	9.93	9.87	30.40	60.00	29.60	QP

Remarks: 1. Emission Level= AMH Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

A.2 RADIATED SPURIOUS EMISSION

Test Date	2020/07/22	Temp./Hum.	23°C/56%
Test Voltage	AC 120V, 60Hz	Tested by	Sean Wang
Test Frequency	TX 125kHz		

A.2.1. Frequency 9kHz~30MHz

Antenna at 0 Degree

Test Frequency (kHz)	Test Result (dBμV/m at 3m)	Limits (dBμV/m at 3m)	Margin (dB)	Detector
124.990	72.10	105.67	33.57	Peak ^{Note 2}
375.300	48.70	96.12	47.42	Peak ^{Note 2}

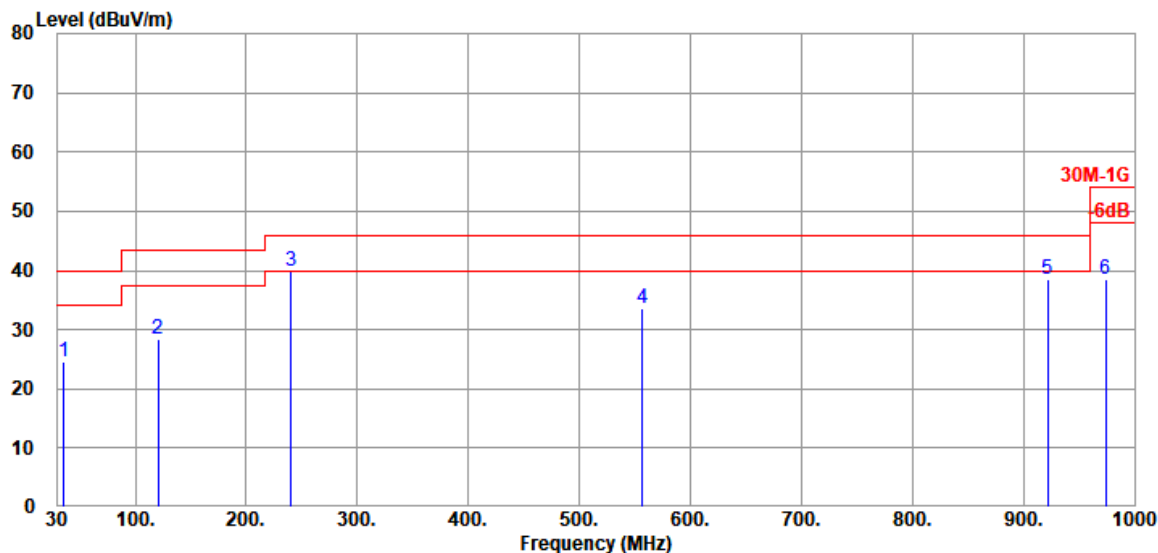
Antenna at 90 Degree

Test Frequency (kHz)	Test Result (dBμV/m at 3m)	Limits (dBμV/m at 3m)	Margin (dB)	Detector
125.000	68.00	105.67	37.67	Peak ^{Note 2}

Note: 1. All emissions are lower than the ambient level cannot be measured.

2. The Peak value has been compliance with Average limit, thus measurement with Average is not needed.

A.2.2. Frequency 30MHz ~ 1000MHz

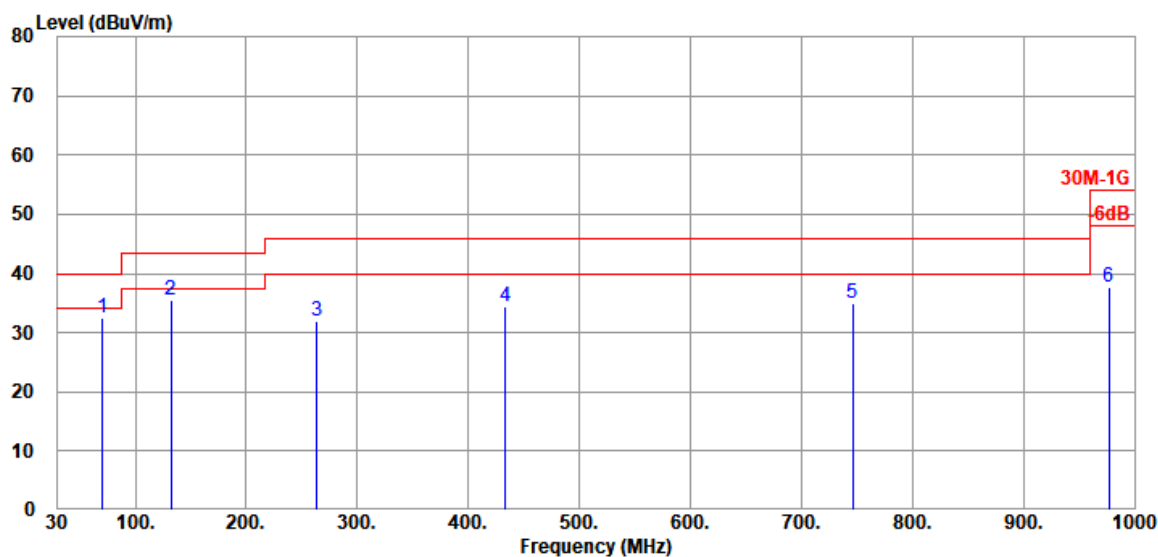


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
35.820	21.56	1.38	26.52	28.21	24.63	40.00	15.37	Peak
120.210	18.71	2.68	26.20	33.09	28.28	43.50	15.22	Peak
240.490	18.12	3.93	25.79	43.69	39.95	46.00	6.05	Peak
556.710	24.27	6.99	27.37	29.67	33.56	46.00	12.44	Peak
921.430	26.96	8.81	27.07	29.81	38.51	46.00	7.49	Peak
973.810	27.25	9.04	26.90	29.18	38.57	54.00	15.43	Peak

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Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
70.740	12.54	2.03	26.41	44.36	32.52	40.00	7.48	Peak
131.850	18.33	2.84	26.14	40.53	35.56	43.50	7.94	Peak
263.770	18.86	4.17	25.75	34.53	31.81	46.00	14.19	Peak
433.520	22.45	6.33	26.78	32.43	34.43	46.00	11.57	Peak
745.860	25.51	7.85	27.46	29.07	34.97	46.00	11.03	Peak
976.720	27.26	9.06	26.90	28.20	37.62	54.00	16.38	Peak

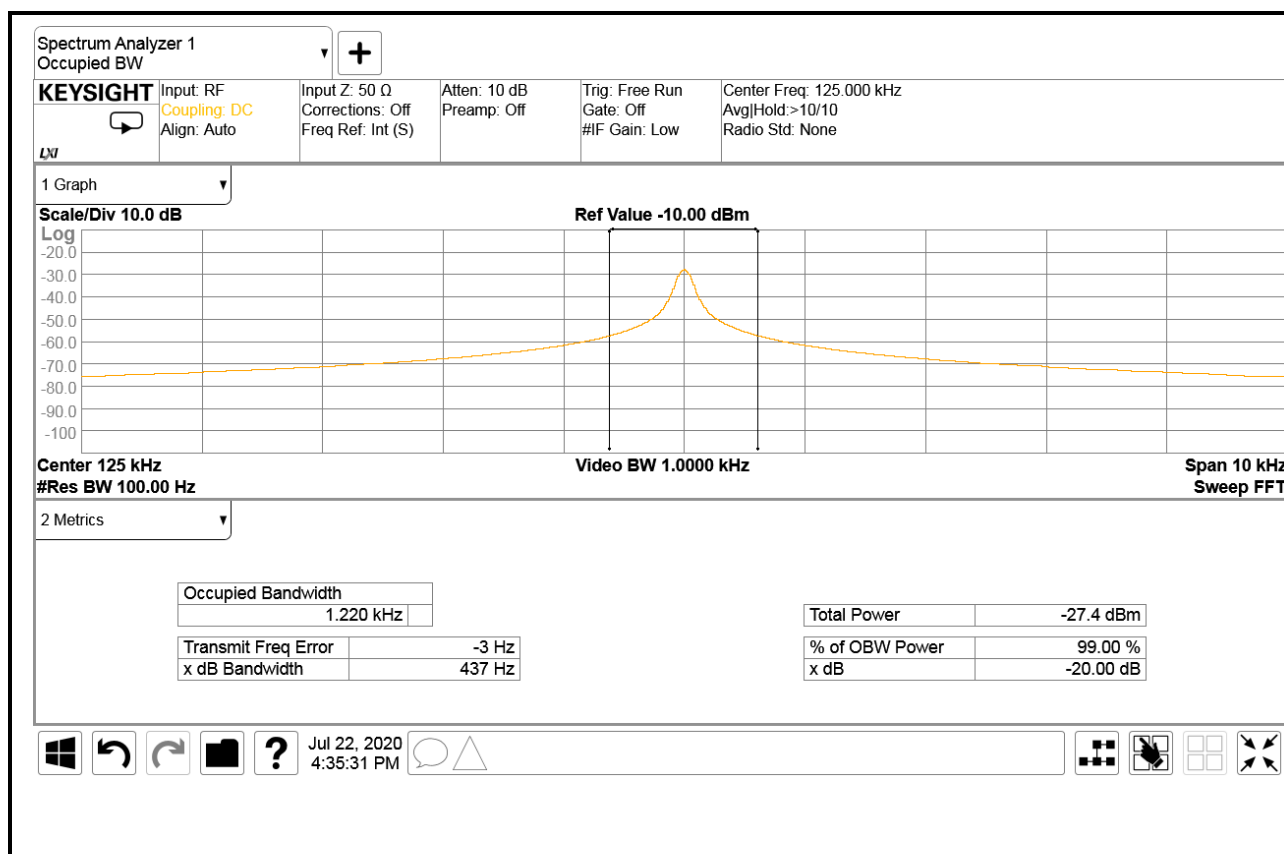
A.3 20dB/99% BANDWIDTH

Test Date	2020/07/22	Temp./Hum.	27°C/59%
Cable Loss	N/A	Tested by	Sean Wang
Test Voltage	AC 120V, 60Hz		

A.4.1.1 20dB/99% Bandwidth Result

Centre Frequency (kHz)	20 dB Bandwidth (Hz)	99% Bandwidth (Hz)
125	437	1220

A.4.1.2 Measurement Plots





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APPENDIX B

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APPDNDIX B

TEST PHOTOGRAPHS

(Model: (1)24CN670N (2)24CN670W (3)24CN670NK (4)24CN670WK)