

FCC AND ISCED CERTIFICATION TEST REPORT

Applicant:	Sahara Presentation Systems Ltd
Address:	Europa house, Littlebrook DC1, Shield Road, Dartford, Kent
Manufacturer:	Sahara Presentation Systems Ltd
Address:	Europa house, Littlebrook DC1, Shield Road, Dartford, Kent
Product Description:	Interactive Touchscreen Display
Brand Name:	CLEVERTOUCH
Tested Model:	UX Pro Edge 65", UX Pro Edge 75", UX Pro Edge 86"
FCC ID:	2APKO-EKXXFH
IC ID:	25437-EKXXFH
Report No.:	JCF230823204-001
Received Date:	Aug. 29, 2023
Tested Date:	Aug. 29, 2023 - Oct. 30, 2023
Issued Date:	Nov. 14, 2023
Test Standards:	FCC Rules and Regulations Part 15 Subpart C, RSS-210 Issue 10 December 2019
Test Procedure :	ANSI C63.10: 2013, RSS-Gen Issue 5, A2 (February 2021)
Test Result:	Pass

Prepared By:  <u>Kennys Zhang/Engineer</u>		Date: Nov. 14, 2023
Reviewed By:  <u>Roger Li/Engineer</u>		Date: Nov. 14, 2023
Approved By:  <u>Talent Zhang/Engineer</u>		Date: Nov. 14, 2023

Note: The test results in this report apply exclusively to the tested model / sample. Without written approval of Guangzhou Jingce Testing Technology Co., Ltd. the test report shall not be reproduced except in full.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Nov. 14, 2023	Original Report	/

Table of Contents

1. Test Report Declare	4
2. Summary of Test Results	5
3. Test Laboratory	5
4. Equipment Under Test	6
4.1. Description of EUT	6
4.2. Test Channel Configuration and Channel List	6
4.3. Test environment conditions	6
4.4. Description of Available Antennas	6
5. Description of Test Setup	6
5.1. Accessory	6
5.2. Support Equipment	7
5.3. Test Setup	7
5.4. Setup Diagram for Tests	7
6. Measurement Uncertainty	8
7. Measuring Instrument and Software Used	8
8. 20 dB Occupied Bandwidth and 99 % Occupied Bandwidth	10
8.1. Block diagram of test setup	10
8.2. Limit	10
8.3. Test Procedure	10
8.4. Results	10
8.5. Original test data	11
9. Frequency Tolerance	12
9.1. Block diagram of test setup	12
9.2. Limits	12
9.3. Test Procedure	12
9.4. Results	12
10. Radiated Emission	13
10.1. Block diagram of test setup	13
10.2. Limit	14
10.3. Test Procedure	15
10.4. Results	16
11. AC Power Line Conducted Emissions	17
11.1. Block diagram of test setup	17
11.2. Limits	17
11.3. Test procedure	17
11.4. Test result	18
11.5. Original test data	18
12. Antenna Requirements	19
12.1. Limits	19
12.2. Result	19
APPENDIX A – Radiated Emission Below 30MHz Test Data	20
APPENDIX B – Radiated Emission Above 30MHz Test Data	21
APPENDIX C – AC Power Line Conducted Emission Test Data	27

1. Test Report Declare

Applicant:	Sahara Presentation Systems Ltd
Address:	Europa house, Littlebrook DC1, Shield Road, Dartford, Kent
Manufacturer:	Sahara Presentation Systems Ltd
Address:	Europa house, Littlebrook DC1, Shield Road, Dartford, Kent
Product Name:	Interactive Touchscreen Display
Brand Name:	CLEVERTOUCH
Model Name:	UX Pro Edge 65", UX Pro Edge 75", UX Pro Edge 86"
Difference Description:	Compare with UX Pro Edge 65", UX Pro Edge 75" only the appearance, size and power main board are different, others completely the same. Compare with UX Pro Edge 65", UX Pro Edge 86" only the appearance, size, power main board, AC power socket board are different, others completely the same. All models' RF hardware and software, including modules, crystal oscillator, antenna, function exactly the same. According to the pretest results, the differences between the models only affect the results of the Radiated Emission (30MHz-1GHz) and Power Line Conducted Emissions. Therefore, in addition to the two test projects, the results of three models (UX Pro Edge 65", UX Pro Edge 75", UX Pro Edge 86") are recorded, and the remaining projects only record the test results of the worst model: UX Pro Edge 86".

We Declare:

The equipment described above is tested by Guangzhou Jingce Testing Technology Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained this test report and Guangzhou Jingce Testing Technology Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

2. Summary of Test Results

Summary of Test Results			
Clause	Test Items	FCC/ISED Rules	Test Result
1	20 dB Bandwidth and 99 % Occupied Bandwidth	FCC Part 15: 15.215 ANSI C63.10:2013 RSS-210 Issue 10 RSS-Gen Issue 5	Pass
2	Frequency tolerance	FCC Part 15:15.225 ANSI C63.10:2013 RSS-210 Issue 10 RSS-Gen Issue 5	Pass
3	Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.225 ANSI C63.10:2013 RSS-210 Issue 10 RSS-Gen Issue 5	Pass
4	Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10:2013 RSS-210 Issue 10 RSS-Gen Issue 5	Pass
5	Antenna requirement	FCC Part 15: 15.203 ANSI C63.10:2013 RSS-210 Issue 10 RSS-Gen Issue 5	Pass

3. Test Laboratory

Guangzhou Jingce Testing Technology Co., Ltd.

Add.: No.192, Kezhu Road, Huangpu District, Guangzhou, Guangdong, China

Association for Laboratory Accreditation(A2LA). Certificate Number: 6594.01

FCC Designation Number: CN1331. Test Firm Registration Number: 360543

IC Test Firm Registration Number: 28796

Conformity Assessment Body identifier: CN0138

4. Equipment Under Test

4.1. Description of EUT

EUT Name:	Interactive Touchscreen Display
Model Number:	UX Pro Edge 65", UX Pro Edge 75", UX Pro Edge 86"
EUT Function Description:	Please reference user manual of this device
Power Supply:	UX Pro Edge 65": AC 100-240V~ 50/60Hz 4.5A, UX Pro Edge 75": AC 100-240V~ 50/60Hz 5.5A, UX Pro Edge 86": AC 100-240V~ 50/60Hz 6.5A
Hardware Version:	N/A
Software Version:	N/A
Radio Specification:	NFC
Operation Frequency:	13.56 MHz
Modulation:	ASK
Antenna Type:	PCB Loop antenna

Note 1: EUT is the ab. of equipment under test.

Note 2: The antenna gain is declared by the customer and the laboratory is not responsible for the accuracy of the antenna gain.

4.2. Test Channel Configuration and Channel List

Tested mode, channel, information	
Mode	Frequency (MHz)
ASK	13.56

4.3. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

/	Normal Conditions	Extreme Conditions
Temperature range:	21-25 °C	0 °C to +40 °C
Humidity range:	40-75 %	40-75 %
Pressure range:	86-106 kPa	86-106kPa
Power supply	NV: AC 120V 60Hz	AC 108V and 132 V

Note: The Extreme temperature range and extreme voltages are declared by the manufacturer.

4.4. Description of Available Antennas

Test Mode	Transmit and Receive Mode	Description
ASK	☒ 1TX	Antenna 1 can be used as transmitting/receiving antenna.

5. Description of Test Setup

5.1. Accessory

Description of Accessories	Manufacturer	Model Number	Description	Remark
/	/	/	/	/

5.2. Support Equipment

Equipment	Brand Name	Model Name	P/N
/	/	/	/

5.3. Test Setup

The EUT can work in normal operation.

5.4. Setup Diagram for Tests



6. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
AC Power Conduction emission	1.37 dB
All Radiated emissions	4.6dB
Conducted emissions	3.09 dB
Occupied Channel Bandwidth	1.1%
Conducted Output power	0.82dB
Power Spectral Density	0.82dB
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k = 2.	

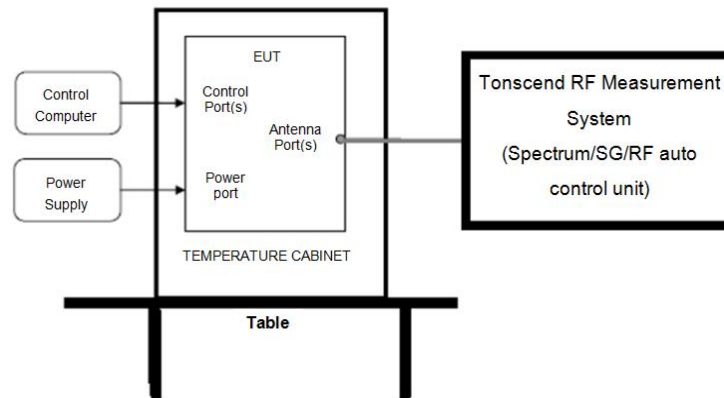
7. Measuring Instrument and Software Used

TS Test System						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☒	Spectrum Analyzer	Keysight	N9030B	MY56320512	Sep. 12, 2023	Sep. 11, 2024
☒	Vector Signal Generator	Keysight	N5182B	MY57300334	Sep. 12, 2023	Sep. 11, 2024
☒	Signal Generator	Keysight	N5171B	MY57280639	Sep. 12, 2023	Sep. 11, 2024
☒	DC POWER	Keysight	E342A	MY59020356	Jul. 14, 2023	Jul. 13, 2024
☒	Incubator thermometer	GWS	EL-02JA	21107288	Sep. 12, 2023	Sep. 11, 2024
☒	Control unit(Power sensor)	Tonscend	JS0806-2	/	Sep. 12, 2023	Sep. 11, 2024
☒	Wideband radio communication tester	R&S	CMW500	163478	Jul. 11, 2023	Jul. 10, 2024
Software						
Used	Description	Manufacturer	Name		Version	
☒	Test software	TS+	JS1120-3		V3.3.10	
RSE Test System						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☒	EMI Receiver	R&S	ESW	101685	Jul. 12, 2023	Jul. 11, 2024
☒	Bilog Antenna	Schwarzbeck	VULB 9163	01416	Mar. 21, 2023	Mar. 20, 2024
☒	Horn Antenna 1	Schwarzbeck	BBHA 9120 D	02411	May. 25, 2023	May. 24, 2024
☒	Horn Antenna 2	ETS	BBHA 9170	1090	Sep. 04, 2023	Sep. 03, 2024
☒	loop-antenna	Schwarzbeck	FMZB 1513-60	00030	Jan.14,2023	Jan.13,2024
☒	Signal Pre-Amplifier	Tonscend	TAP01018050	AP21C806122	Jul. 10, 2023	Jul. 09, 2024
☒	Signal Pre-Amplifier	Tonscend	TAP9K3G32	AP20K806104	Jul. 10, 2023	Jul. 09, 2024

☒	Signal Pre-Amplifier	ETS	3116C-PA	00217677	Aug. 24, 2023	Aug. 23, 2024
☒	3m Fully-anechoic Chamber	ETS	RFD-100	/	Apr. 24, 2021	Apr. 23, 2024
Software						
Used	Description	Manufacturer	Name		Version	
☒	Test software	TS+	TS+		V3.0.0.4	
Conducted Emission Test For AC Power Port						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☒	LISN	R&S	ENV216	102154	Jul. 10, 2023	Jul. 09, 2024
☒	EMI Receiver	R&S	ESR3	102509	Jul. 12, 2023	Jul. 11, 2024
Software						
Used	Description	Manufacturer	Name		Version	
☒	Test software	EZ	EZ-EMC		EMEC-3A1	
Other Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☒	Temperature & Humidity	Temperature	HTC-1	/	Nov. 25, 2022	Nov. 24, 2023

8. 20 dB Occupied Bandwidth and 99 % Occupied Bandwidth

8.1. Block diagram of test setup



8.2. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

8.3. Test Procedure

Connect EUT's antenna output to spectrum analyzer by RF cable.

Set the spectrum analyzer as follows:

RBW:	10kHz
VBW:	30kHz
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

Allow the trace to stabilize, measure the 20dB and 99% bandwidth of signal.

8.4. Results

Mode	Freq. (MHz)	20dB bandwidth Result (kHz)	99% bandwidth Result (kHz)	Conclusion
ASK	13.56	25.5	22.786	PASS

8.5. Original test data

20 dB Occupied Bandwidth:

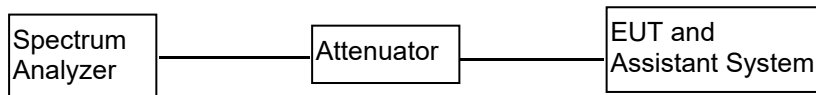


99 % Occupied bandwidth:



9. Frequency Tolerance

9.1. Block diagram of test setup



9.2. Limits

As contained in § 15.225 the frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply Voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

9.3. Test Procedure

(1) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Centre Frequency: The centre frequency of the channel under test.

Resolution BW: 10 kHz.

Video BW: 10 kHz.

Span: 1MHz.

Detector: Peak.

Trace Mode: Max Hold.

(2) When the trace is complete, find the peak value of the power envelope and record the frequency.

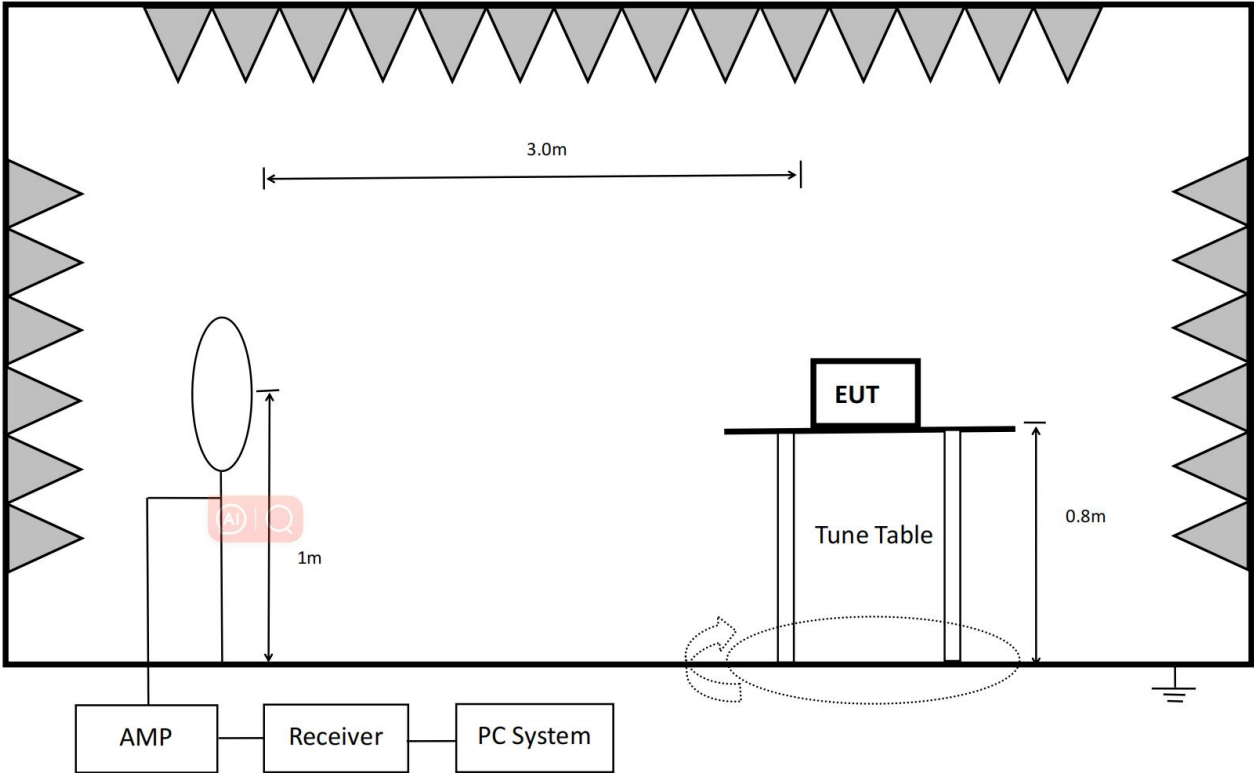
9.4. Results

	Condition		Result			Limit
	Temperature ($^{\circ}\text{C}$)	Voltage (V)	Measured (MHz)	Tolerance (kHz)	Tolerance (ppm)	ppm
Mode	-20	NV	13.56006	0.06	4.42	100
	-10	NV	13.56006	0.06	4.42	100
	0	NV	13.56006	0.06	4.42	100
	10	NV	13.56006	0.06	4.42	100
	20	NV	13.56006	0.06	4.42	100
	30	NV	13.56006	0.06	4.42	100
	40	NV	13.56006	0.06	4.42	100
	50	NV	13.56006	0.06	4.42	100
	NT	102V	13.56006	0.06	4.42	100
	NT	138V	13.56006	0.06	4.42	100
Note: NT:20 $^{\circ}\text{C}$, NV:120V						

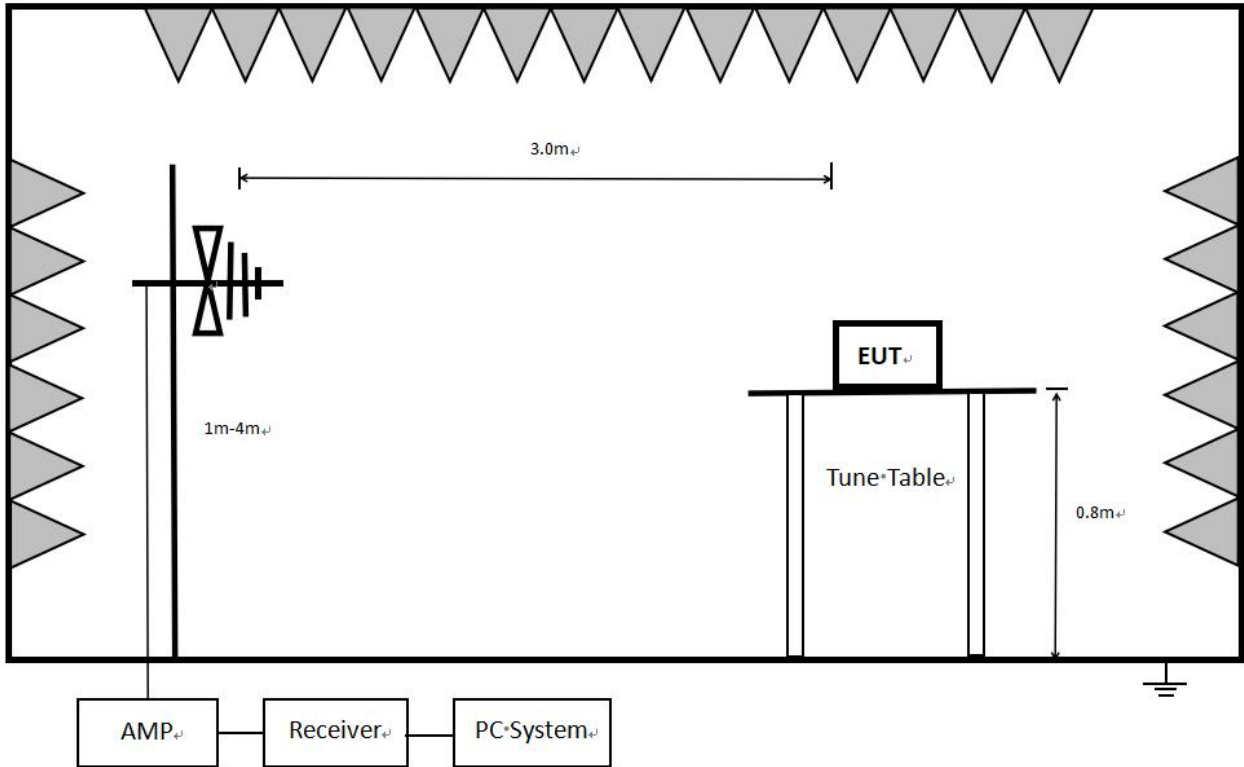
10. Radiated Emission

10.1. Block diagram of test setup

In 3m Anechoic Chamber, test setup diagram for 9kHz - 30MHz:



In 3m Anechoic Chamber, test setup diagram for 30 MHz - 1 GHz:



10.2. Limit

Operation within the band 13.110-14.010 MHz as contained in §15.225:

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 ~ 0.490	300	$2400/\text{F}(\text{kHz})$	$67.6-20\log(\text{F})$
0.490 ~ 1.705	30	$24000/\text{F}(\text{kHz})$	$87.6-20\log(\text{F})$
1.705 ~ 13.110	30	30	29.54
13.110 ~ 13.410	30	106	40.51
13.410 ~ 13.553	30	334	50.47
13.553 ~ 13.567	30	15848	84.00
13.567 ~ 13.710	30	334	50.47
13.710 ~ 14.010	30	106	40.51
14.010 ~ 30	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

Note: (1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$\text{Limit}_{3\text{m}}(\text{dB}\mu\text{V}/\text{m}) = \text{Limit}_{300\text{m}}(\text{dB}\mu\text{V}/\text{m}) + 40\log(300\text{m}/3\text{m}) = \text{Limit}_{300\text{m}}(\text{dB}\mu\text{V}/\text{m}) + 80$$

$$\text{Limit}_{3\text{m}}(\text{dB}\mu\text{V}/\text{m}) = \text{Limit}_{30\text{m}}(\text{dB}\mu\text{V}/\text{m}) + 40\log(30\text{m}/3\text{m}) = \text{Limit}_{30\text{m}}(\text{dB}\mu\text{V}/\text{m}) + 40$$

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT $\text{dB}(\mu\text{V})/\text{m}$
0.009 ~ 0.490	3	$147.6-20\log(\text{F})$
0.490 ~ 1.705	3	$127.6-20\log(\text{F})$
1.705 ~ 13.110	3	69.54
13.110 ~ 13.410	3	80.51
13.410 ~ 13.553	3	90.47
13.553 ~ 13.567	3	124.00
13.567 ~ 13.710	3	90.47
13.710 ~ 14.010	3	80.51
14.010 ~ 30	3	69.54
30 ~ 88	3	40.00
88 ~ 216	3	43.50
216 ~ 960	3	46.00
960 ~ 1000	3	54.00

10.3. Test Procedure

(1) EUT was placed on a non-metallic table, 100 cm above the ground plane inside a semi-anechoic chamber.

(2) Test antenna was located 3m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used	Test antenna distance
9kHz-30MHz	Active Loop antenna	3m
30MHz-1GHz	Trilog Broadband Antenna	3m

According ANSI C63.10:2013 clause 6.4.4.2 and 6.5.3, for measurements below 30 MHz, the loop antenna was positioned with its plane vertical from the EUT and rotated about its vertical axis for maximum response at each azimuth position around the EUT. And the loop antenna also be positioned with its plane horizontal at the specified distance from the EUT. The center of the loop is 1 m above the ground. for measurement above 30MHz, the Trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9kHz to 1GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1m to 4m(Except loop antenna, it's fixed 1m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions. Spectrum frequency from 9kHz to 1GHz (tenth harmonic of fundamental frequency) was investigated.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2013 on Radiated Emission test.

(5) The emissions from 9kHz to 1GHz were measured based on CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz, for emissions from 9kHz-90kHz, 110kHz-490kHz and above 1GHz were measured based on average detector, for emissions above 1GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9kHz to 1GHz, QP or average values were measured with EMI receiver with below RBW.

Frequency band	RBW
9kHz-150kHz	200Hz
150kHz-30MHz	9kHz
30MHz-1GHz	120kHz

10.4. Results

Pass. (See below detailed test result)

Below 30MHz

Frequency (MHz)	Result @3m (dBuV/m)	Limit @3m (dBuV/m)	Detector	Conclusion
0.2694	65.10	98.99	Average	PASS
0.2694	65.10	118.99	Peak	PASS
0.3988	62.86	95.59	Average	PASS
0.3988	62.86	115.59	Peak	PASS
0.5382	58.47	72.99	QP	PASS
0.6676	50.86	71.12	QP	PASS
1.0757	52.45	66.99	QP	PASS
2.0212	43.86	69.54	QP	PASS
13.5571	43.41	124.00	QP	PASS

Refer to appendix A

Note: EMI = Trace + Cable(Loss) + ERP Factor + Transducer

Margin = EMI - Limit

Above 30MHz test data:

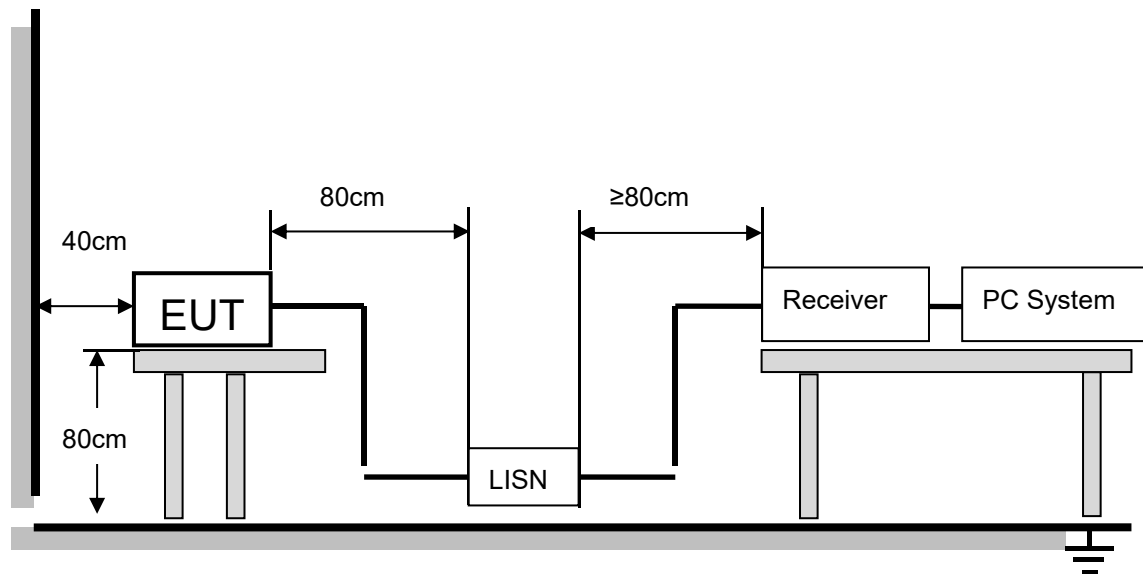
Refer to appendix B

Note: EMI = Trace + Cable(Loss) + ERP Factor + Transducer

Margin = EMI - Limit

11. AC Power Line Conducted Emissions

11.1. Block diagram of test setup



The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

11.2. Limits

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8.

Frequency (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

11.3. Test procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 10.2 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

11.4. Test result

Pass. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.

Note2: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded worse case.

11.5. Original test data

AC Power Line Conducted Emission Test Data Refer to appendix C.

12. Antenna Requirements

12.1. Limits

Please refer to FCC §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

12.2. Result

The antenna used for this product is PCB Loop antenna and that no antenna other than that furnished by the responsible party shall be used with the device.

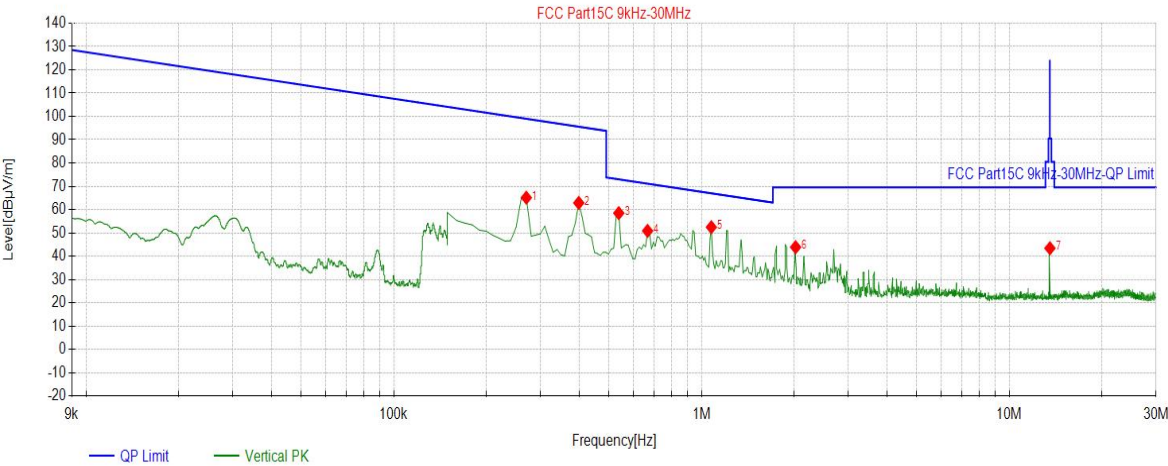
APPENDIX A – Radiated Emission Below 30MHz Test Data

Test Report

Project Information			
EUT:	Interactive LED Display	Environment:	23℃ 56%
Model:	UX Pro Edge 86"	SN:	
Mode:	NFC Mode	Voltage:	AC 120V/60Hz
Customer:		Engineer:	Kennys Zhang
Remark:			

Start of Test: 2023-09-09 11:21:08

Test Graph



Suspected Data List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	0.2694	65.10	18.68	98.99	33.89	100	63	Vertical
2	0.3988	62.86	18.61	95.59	32.73	100	67	Vertical
3	0.5382	58.47	18.56	72.99	14.52	100	63	Vertical
4	0.6676	50.86	18.56	71.12	20.26	100	81	Vertical
5	1.0757	52.45	18.57	66.99	14.54	100	67	Vertical
6	2.0212	43.86	18.57	69.54	25.68	100	56	Vertical
7	13.5571	43.41	18.85	124.00	80.59	100	63	Vertical

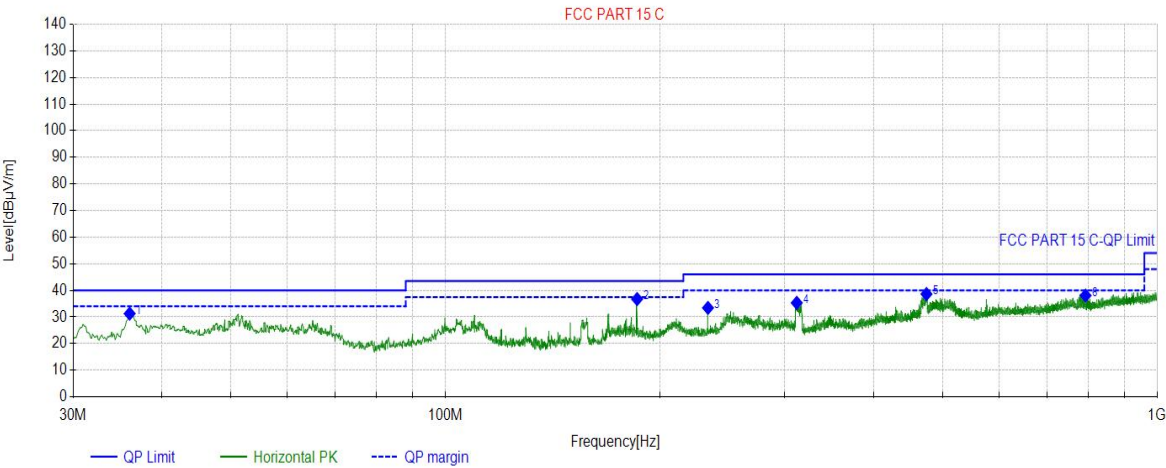
APPENDIX B – Radiated Emission Above 30MHz Test Data

Test Report

Project Information			
EUT:	Interactive Touchscreen Display	Environment:	23℃ 54%
Model:	UX Pro Edge 65"	SN:	
Mode:	NFC Mode	Voltage:	AC120V/60Hz
Customer:		Engineer:	Kennys Zhang
Remark:			

Start of Test: 2023-09-11 19:30:43

Test Graph



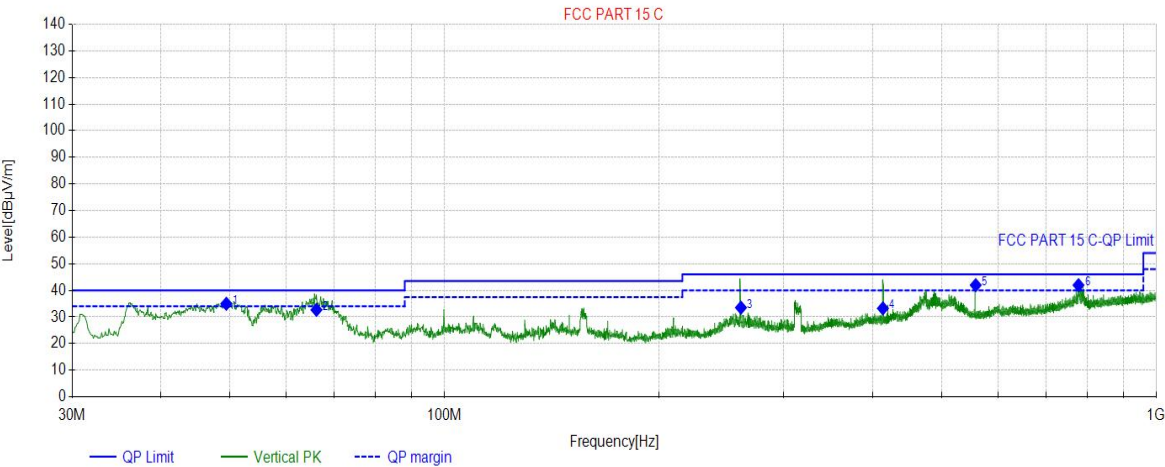
Final Data List								
NO.	Freq. (MHz)	Factor (dB)	QP Value (dBμV/m)	QP Limit (dBμV/m)	QP Margin (dB)	Height (cm)	Angle (°)	Polarity
1	36.0146	20.27	31.29	40.00	8.71	100	73	Horizontal
2	185.9916	19.21	36.74	43.50	6.76	100	141	Horizontal
3	233.9144	21.15	33.43	46.00	12.57	100	343	Horizontal
4	311.7162	22.47	35.34	46.00	10.66	100	359	Horizontal
5	474.3044	27.11	38.62	46.00	7.38	100	73	Horizontal
6	793.6604	32.66	38.07	46.00	7.93	100	122	Horizontal

Test Report

Project Information			
EUT:	Interactive Touchscreen Display	Environment:	23℃ 54%
Model:	UX Pro Edge 65"	SN:	
Mode:	NFC Mode	Voltage:	AC120V/60Hz
Customer:		Engineer:	Kennys Zhang
Remark:			

Start of Test: 2023-09-11 19:31:27

Test Graph



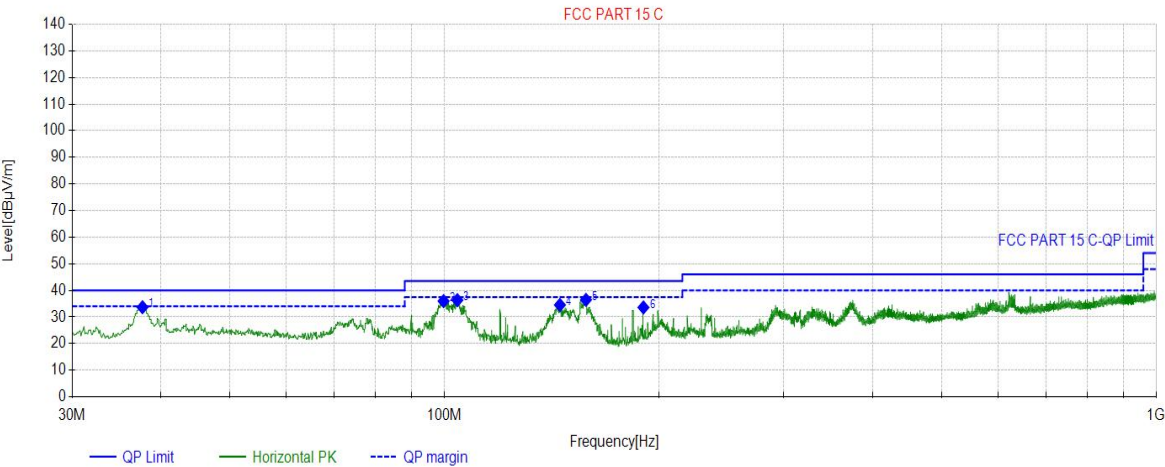
Final Data List								
NO.	Freq. (MHz)	Factor (dB)	QP Value (dBµV/m)	QP Limit (dBµV/m)	QP Margin (dB)	Height (cm)	Angle (°)	Polarity
1	49.4019	22.41	34.98	40.00	5.02	100	172	Vertical
2	66.1266	19.53	32.70	40.00	7.30	100	227	Vertical
3	261.1061	21.61	33.54	46.00	12.46	100	198.5	Vertical
4	413.2854	25.96	33.27	46.00	12.73	100	10.2	Vertical
5	558.0238	28.82	41.97	46.00	4.03	100	176	Vertical
6	778.1388	32.59	41.98	46.00	4.02	100	334	Vertical

Test Report

Project Information			
EUT:	Interactive Touchscreen Display	Environment:	23℃ 54%
Model:	UX Pro Edge 75"	SN:	
Mode:	NFC Mode	Voltage:	AC120V/60Hz
Customer:		Engineer:	
Remark:			

Start of Test: 2023-09-21 11:21:32

Test Graph



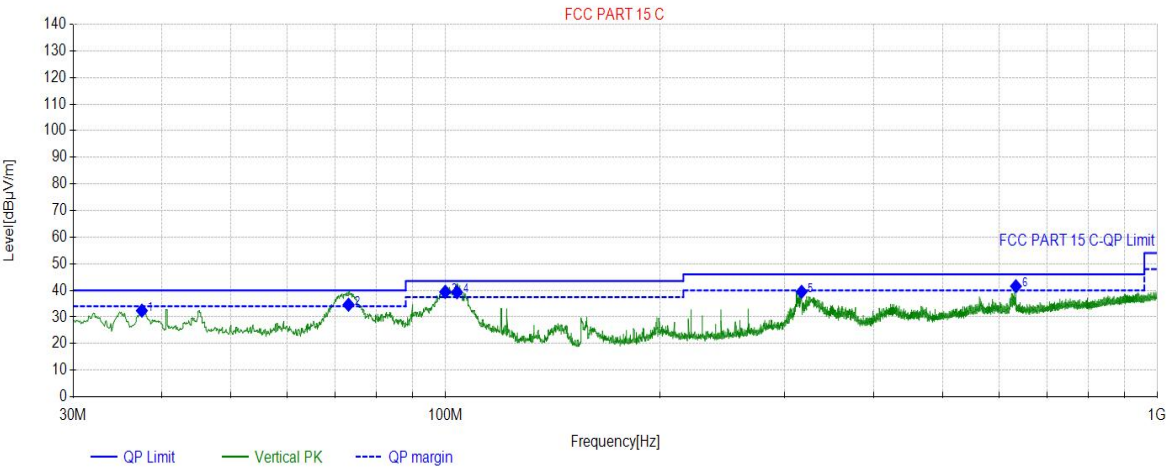
Final Data List								
NO.	Freq. (MHz)	Factor (dB)	QP Value (dBµV/m)	QP Limit (dBµV/m)	QP Margin (dB)	Height (cm)	Angle (°)	Polarity
1	37.6638	20.67	33.68	40.00	6.32	200	123	Horizontal
2	99.7500	20.72	35.98	43.50	7.52	100	358	Horizontal
3	104.3094	20.52	36.35	43.50	7.15	100	358	Horizontal
4	145.3445	17.05	34.54	43.50	8.96	100	324	Horizontal
5	158.1498	17.59	36.46	43.50	7.04	100	313	Horizontal
6	190.4540	19.76	33.60	43.50	9.90	100	172	Horizontal

Test Report

Project Information			
EUT:	Interactive Touchscreen Display	Environment:	23℃ 54%
Model:	UX Pro Edge 75"	SN:	
Mode:	NFC Mode	Voltage:	AC120V/60Hz
Customer:		Engineer:	
Remark:			

Start of Test: 2023-09-21 12:06:49

Test Graph



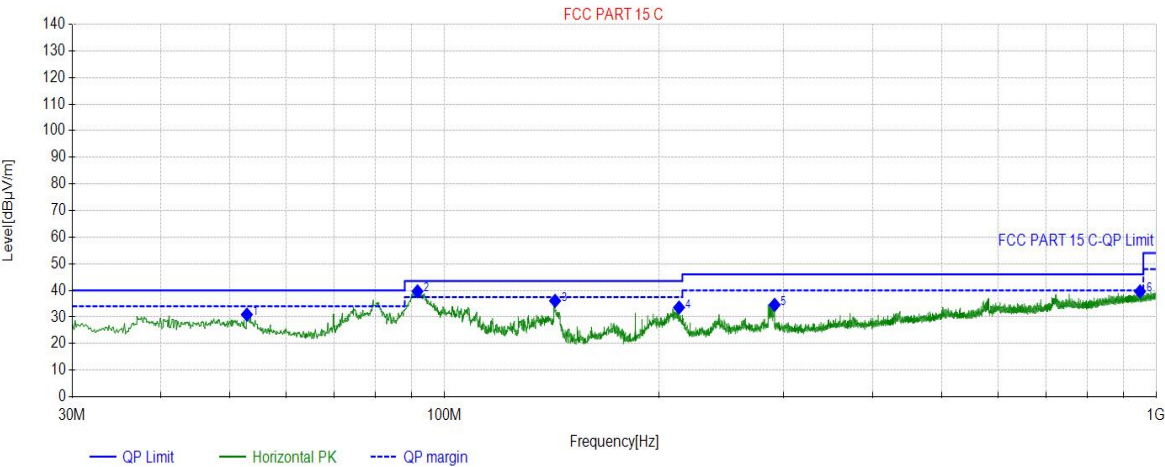
Final Data List								
NO.	Freq. (MHz)	Factor (dB)	QP Value (dBµV/m)	QP Limit (dBµV/m)	QP Margin (dB)	Height (cm)	Angle (°)	Polarity
1	37.4697	20.62	32.40	40.00	7.60	200	237	Vertical
2	73.1156	17.41	34.62	40.00	5.38	100	133.5	Vertical
3	99.9631	20.76	39.41	43.50	4.09	100	8.1	Vertical
4	103.8595	20.53	39.29	43.50	4.21	100	12.3	Vertical
5	316.6637	22.74	39.48	46.00	6.52	200	350	Vertical
6	633.4974	30.45	41.57	46.00	4.43	100	0	Vertical

Test Report

Project Information			
EUT:	Interactive Touchscreen Display	Environment:	23℃ 54%
Model:	UX Pro Edge 86"	SN:	
Mode:	NFC Mode	Voltage:	AC120V/60Hz
Customer:		Engineer:	Kennys Zhang
Remark:			

Start of Test: 2023-09-19 16:50:08

Test Graph



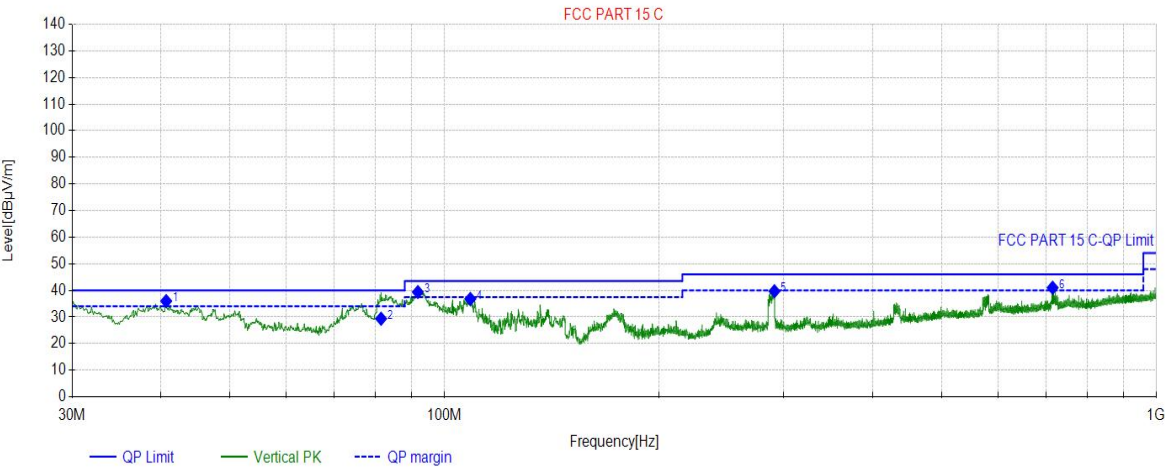
Final Data List								
NO.	Freq. (MHz)	Factor (dB)	QP Value (dBµV/m)	QP Limit (dBµV/m)	QP Margin (dB)	Height (cm)	Angle (°)	Polarity
1	52.7973	22.15	30.92	40.00	9.08	100	318	Horizontal
2	91.6982	18.81	39.65	43.50	3.85	200	133	Horizontal
3	143.1133	17.07	36.08	43.50	7.42	100	328	Horizontal
4	213.7364	20.67	33.57	43.50	9.93	100	334	Horizontal
5	291.1501	21.79	34.58	46.00	11.42	200	38	Horizontal
6	949.5550	35.01	39.63	46.00	6.37	100	344	Horizontal

Test Report

Project Information			
EUT:	Interactive Touchscreen Display	Environment:	23℃ 54%
Model:	UX Pro Edge 86"	SN:	
Mode:	NFC Mode	Voltage:	AC120V/60Hz
Customer:		Engineer:	Kennys Zhang
Remark:			

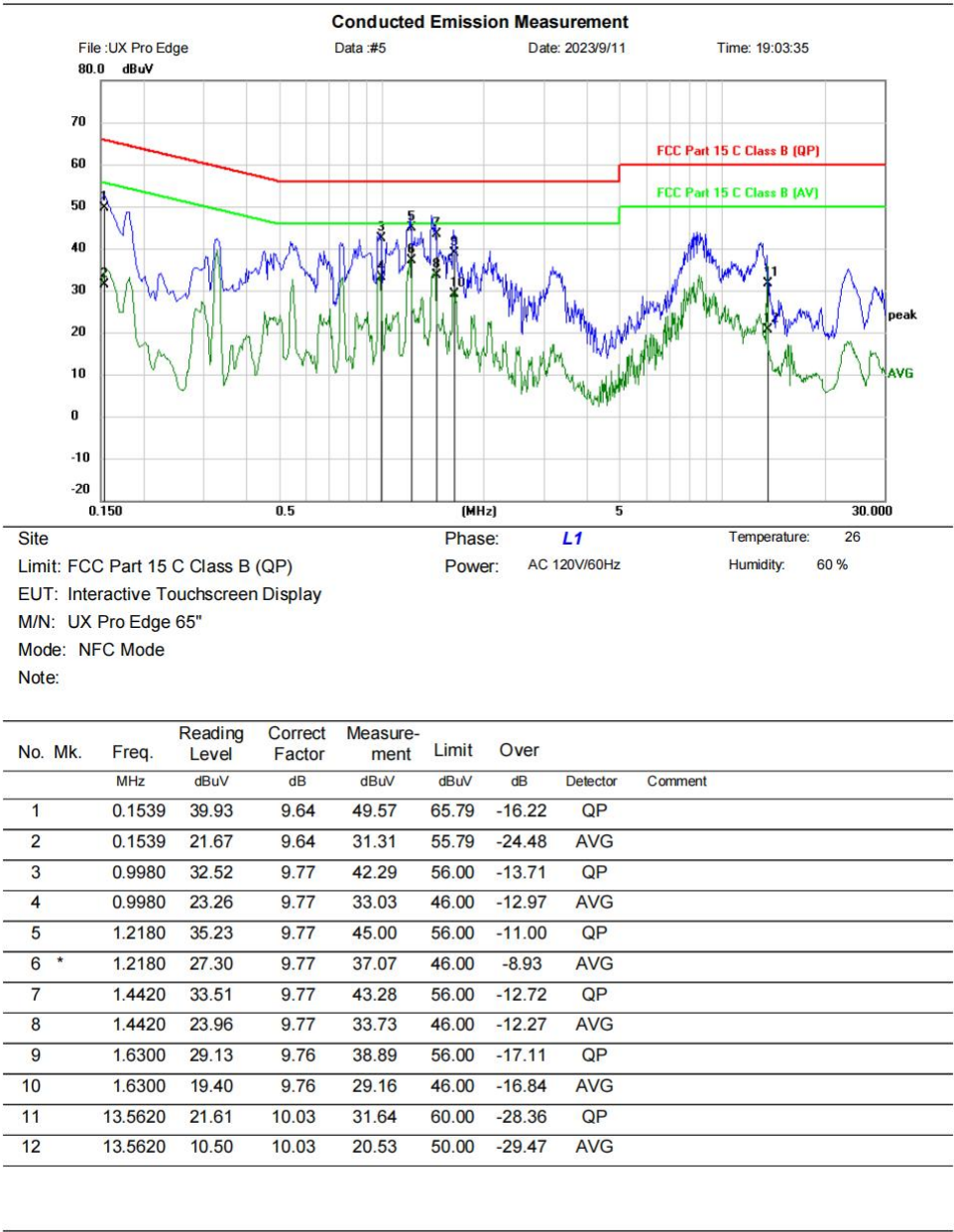
Start of Test: 2023-09-19 16:53:57

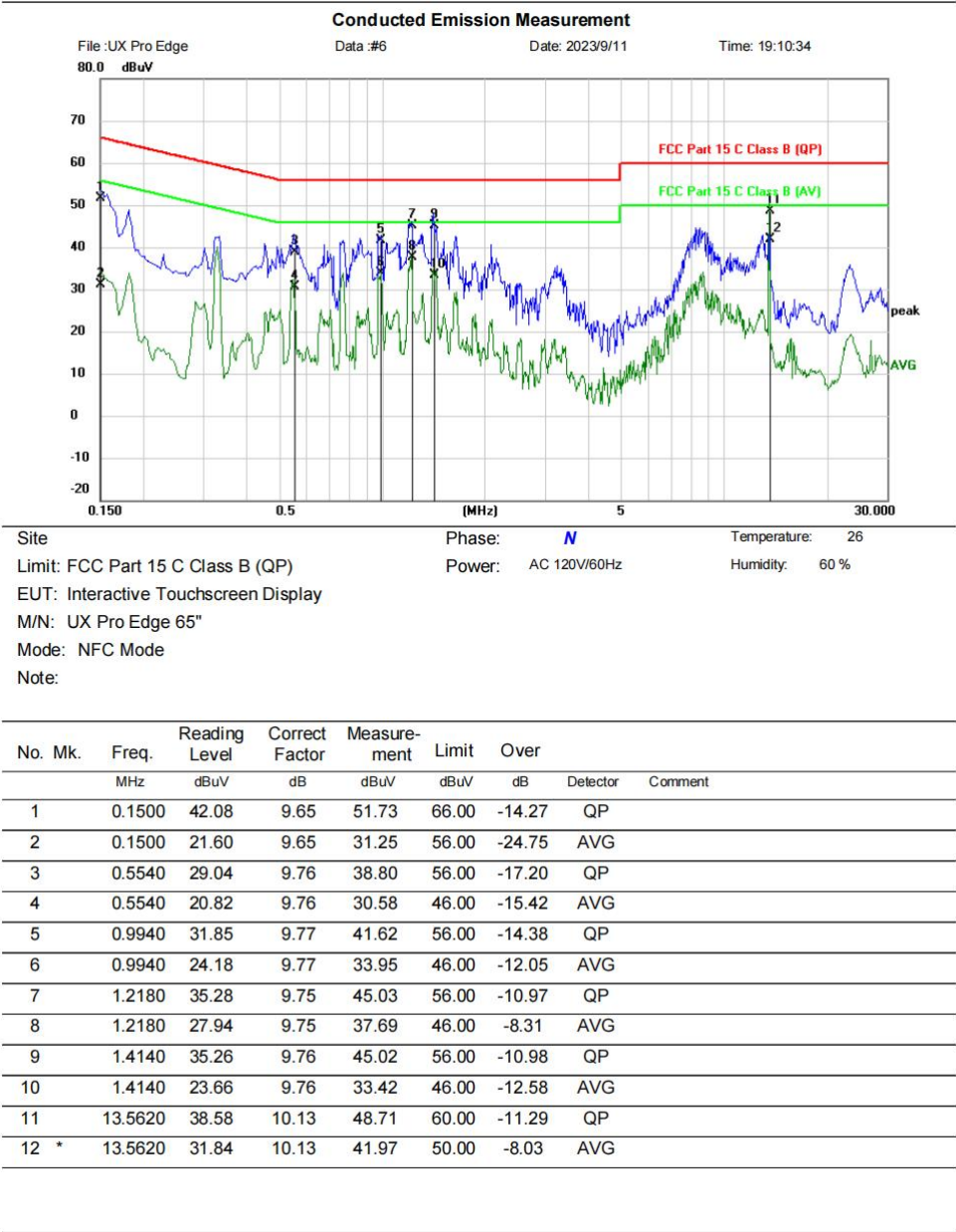
Test Graph

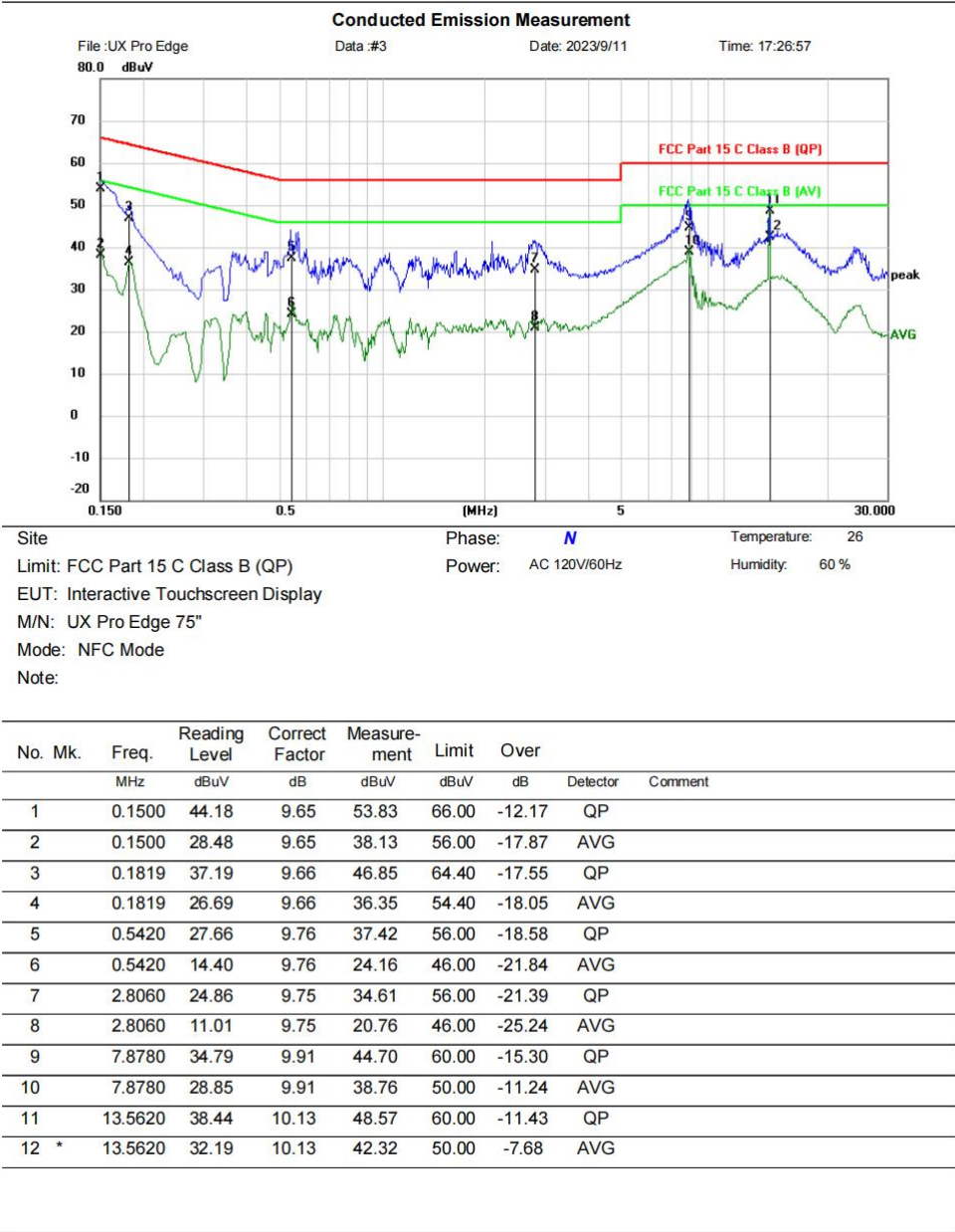


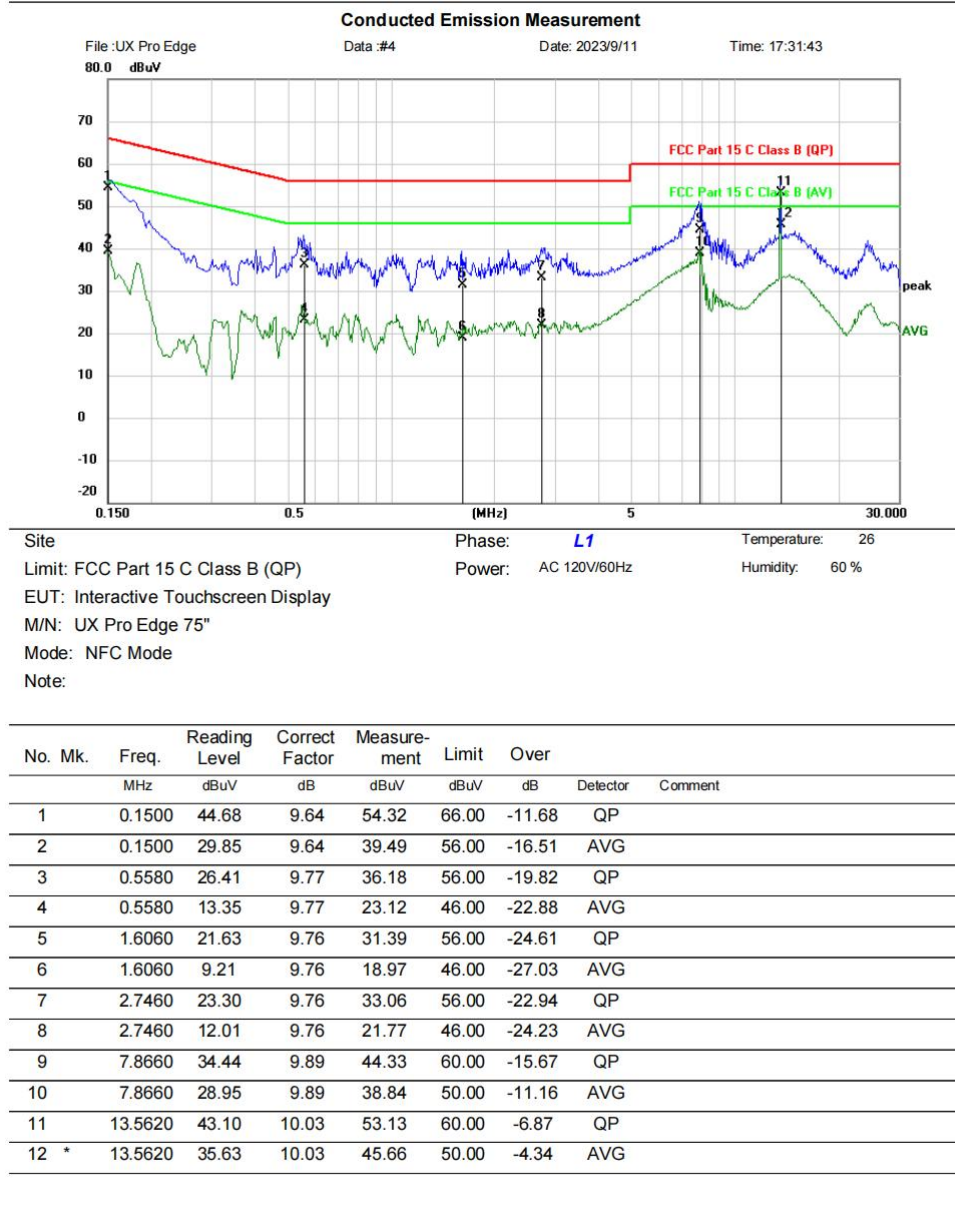
Final Data List								
NO.	Freq. (MHz)	Factor (dB)	QP Value (dBµV/m)	QP Limit (dBµV/m)	QP Margin (dB)	Height (cm)	Angle (°)	Polarity
1	40.6711	21.31	36.00	40.00	4.00	100	77	Vertical
2	81.5008	16.17	29.37	40.00	10.63	100	265.9	Vertical
3	91.7952	18.84	39.38	43.50	4.12	100	207	Vertical
4	108.7719	20.26	36.79	43.50	6.71	100	284	Vertical
5	290.9561	21.79	39.71	46.00	6.29	200	4	Vertical
6	715.6646	31.33	41.02	46.00	4.98	200	318	Vertical

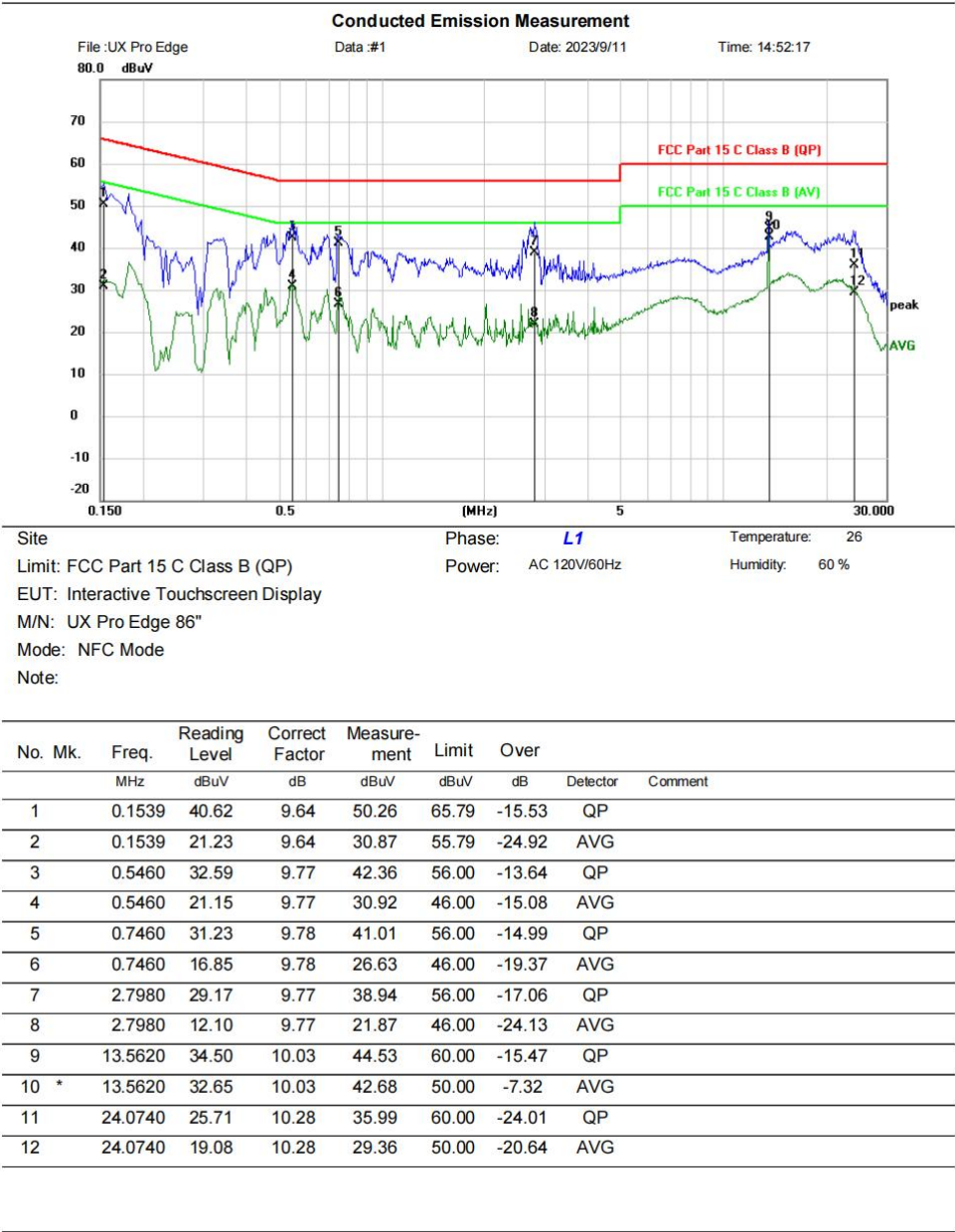
APPENDIX C – AC Power Line Conducted Emission Test Data

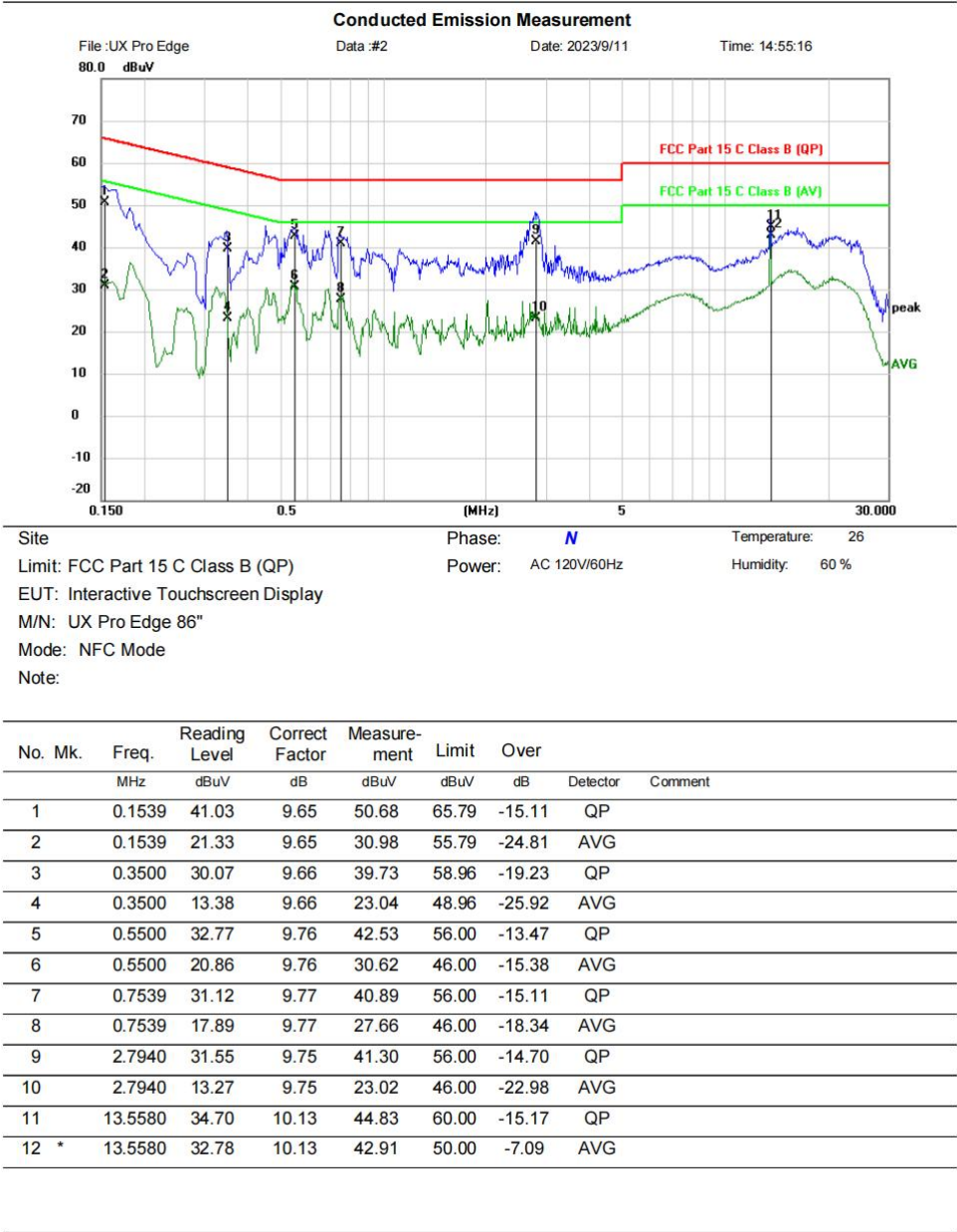












END OF REPORT