FCC RADIO TEST REPORT

FCC ID	:	**HV4DTK2260**
Equipment	:	**LCD TABLET**
Brand Name	:	**Wacom**
Model Name	:	**DTK-2260 , DTK-2260******* , DTK-2261******* , DTK2260*********
Applicant	:	**Wacom Co., Ltd. 2-510-1, Toyonodai, Kazo-shi, Saitama, 349-1148 Japan**
Manufacturer	:	**Wacom Co., Ltd. 2-510-1, Toyonodai, Kazo-shi, Saitama, 349-1148 Japan**
Standard	:	**47 CFR FCC Part 15.209**

The product was received on Mar. 19, 2019, and testing was started from Mar. 27, 2019 and completed on Mar. 29, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FR931935AP	01	Initial issue of report	May 08, 2019
FR931935AP	02	Revise Typo	May 09, 2019

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.209	Transmitter Radiated Emissions	PASS	-
3.3	15.215(c)	Emission Bandwidth	PASS	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
None.

Reviewed by: Jackson Tsai

Report Producer: Ann Hou

1 General Description

1.1 Information

1.1.1 RF General Information

RF General Information			
Frequency		667kHz	
Modulation	Ch. Frequency (kHz)	Channel Number	Field Strength (dBuV/m@1m)
ASK	667	1	48.11
Note 1: Field strength performed peak level at 1m.			

1.1.2 Antenna Information

Antenna Category	
☒	Integral antenna (antenna permanently attached)
	☐ Temporary RF connector provided
	☒ No temporary RF connector provided Transmit chains bypass antenna and soldered temporary RF connector provided for connected measurement. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator and correct for all losses in the RF path.
☐	External antenna (dedicated antennas)
	☐ Single power level with corresponding antenna(s).
	☐ Multiple power level and corresponding antenna(s).

No.	Ant. Cat.	Ant. Type
1	Integral	Coil

1.1.3 Type of EUT

Identify EUT	
Presentation of Equipment	☒ Production ; ☐ Pre-Production ; ☐ Prototype
Type of EUT	
☒	Stand-alone
☐	Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.: …
☐	Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.: …
☐	Other:

1.1.4 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle
☒ Operated normal mode for worst duty cycle
☐ Operated test mode for worst duty cycle
Test Signal Duty Cycle (x)
☒ 100.00%

1.1.5 EUT Operational Condition

Supply Voltage	☒ AC mains	☒ DC	
Type of DC Source	☒ External AC adapter	☒ From Host System	☐ From Battery

1.1.6 Table for Multiple Listing

The brand/model names in the following table are all refer to the identical product.

Model Name	Description
DTK-2260	All the models are identical, the difference model for difference brand served as marketing strategy.
DTK-2260*******	
DTK-2261*******	
DTK2260*******	

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013

1.3 Testing Location Information

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Lego	23.2-24.6°C / 54.4-58.1%	29/Mar/2019
RF Conducted	TH01-HY	Clara	22.2~23.6°C / 59.5~61.6%	27/Mar/2019
Radiated Emission	03CH03-HY	Justin	20.5~23.8°C / 50.1~55.2%	28/Mar/2019

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.54 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 ℃	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

Transmitter Mode	Field Strength (dBuV/m@1m)	Field Strength (dBuV/m@3m)
CTX	48.11	38.57

2.2 Test Channel Frequencies Configuration

Modulation	Test Channel Frequencies (kHz)
ASK	667

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Operating Mode Description
1	Adapter Mode

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth, Field Strength of Fundamental Emissions Transmitter Radiated Unwanted Emissions
Test Condition	Radiated measurement
User Position	☐ EUT will be placed in fixed position.
	☐ EUT will be placed in mobile position and operating multiple positions. EUT shall be performed three orthogonal planes.
	☒ EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions.
Operating Mode	Operating Mode Description
1	Adapter Mode
Transmitter Mode	CTX
Orthogonal Planes of EUT	**Z Plane**
	
Worst Planes of EUT	V

2.4 Accessory and Support Equipment

Accessories Information				
AC Adapter	**Brand Name**	DELTA	**Model Name**	DPS-65VB
	Power Rating	I/P: 100-240Vac, 2A, O/P: 12Vdc, 5.417A		
	Power Cord	1.2 meter, shielded cable, with ferrite core		
AC Power Cable(FCC) 2G.05211.001	**Brand Name**	I-sheng	**Model Name**	VB8VS334B12183QS
	Power Cord	1.8 meter, non-shielded cable, w/o ferrite core		
AC Power Cable(ACMA) 2G.01343.001	**Brand Name**	Linetek / Hongchang / Honglin / I-SHENG	**Model Name**	S0A1083-003/ 5-33CB03-JSD / 200-10975/ V546B30161218000
	Power Cord	1.8 meter, non-shielded cable, w/o ferrite core		
AC Power Cable(CE) 2G.05921.011 2G.06331.001	**Brand Name**	2G.05921.011 Honglin/I-SHENG 2G.06331.001 I-SHENG	**Model Name**	200-12016 /EU65B30EA1218011 V4M6B301612180QI
	Power Cord	1.8 meter, non-shielded cable, w/o ferrite core		
Digital Pen	**Brand Name**	Wacom	**Model Name**	KP-504E
HDMI Cable '5K.4BW01.501	**Brand Name**	Hotron	**Model Name**	D0008200R3PQS
	Signal Line	2 meter, shielded cable, w/o ferrite core		
USB Cable '5K.0L915.511	**Brand Name**	Hotron	**Model Name**	D0005200R28QS
	Signal Line	2 meter, shielded cable, w/o ferrite core		

Note: Regarding to more detail and other information, please refer to user manual.

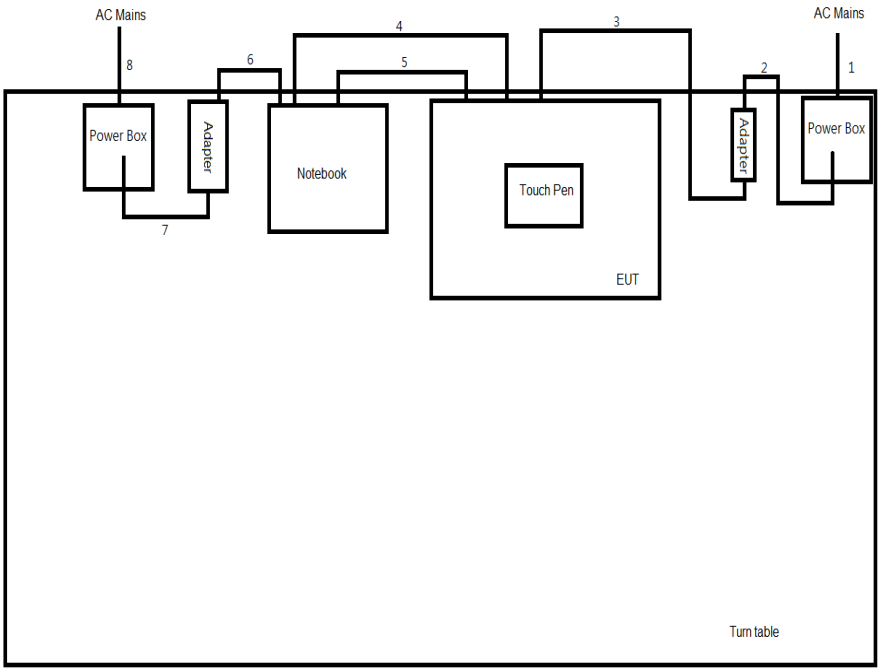
Support Equipment - AC Line Conducted Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	HP	HSTNN-Q85C	DOC
2	Adapter for Notebook	HP	PPP009D	DOC

Support Equipment - RF Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5410	DOC
2	Adapter for Notebook	DELL	HA65NM130	DOC
3	AC Power Source	GW	APS-9102	-

Support Equipment - Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	HP	HSTNN-Q85C	DOC
2	Adapter for Notebook	HP	PPP009D	DOC

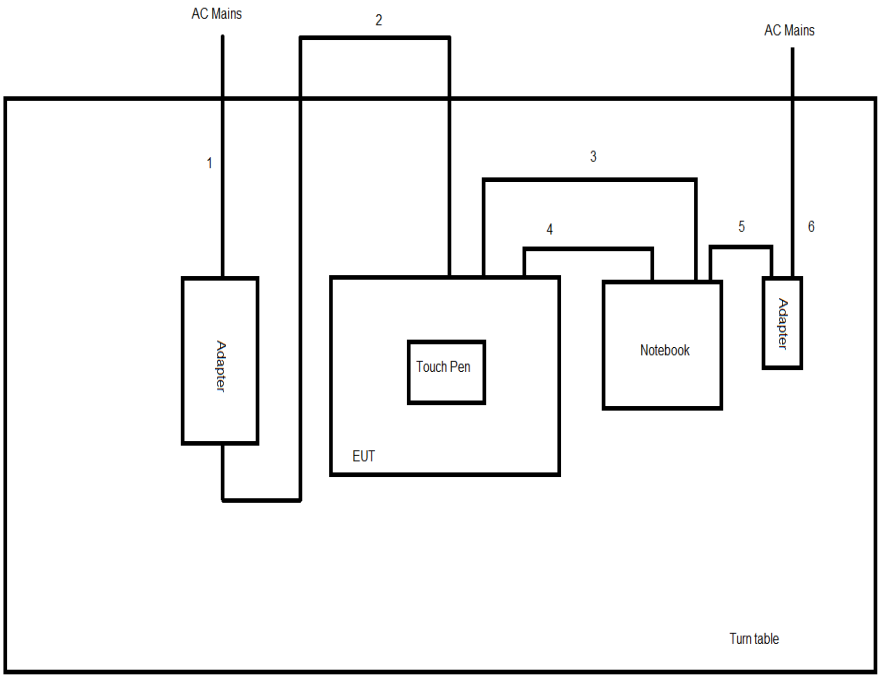
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)
1	AC Power line	No	1.5 m
2	AC Power line	No	1.7 m
3	DC Power line	Yes	1.15 m
4	HDMI cable	Yes	1.99 m
5	USB cable	Yes	2.0 m
6	DC Power line	No	1.5 m
7	AC Power line	No	1.8 m
8	AC Power line	No	1.5 m

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)
1	AC Power line	No	1.7m
2	DC Power line	Yes	1.15m
3	HDMI cable	Yes	1.99m
4	USB cable	Yes	2.0m
5	DC Power line	No	1.5m
6	AC Power line	No	1.8m

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

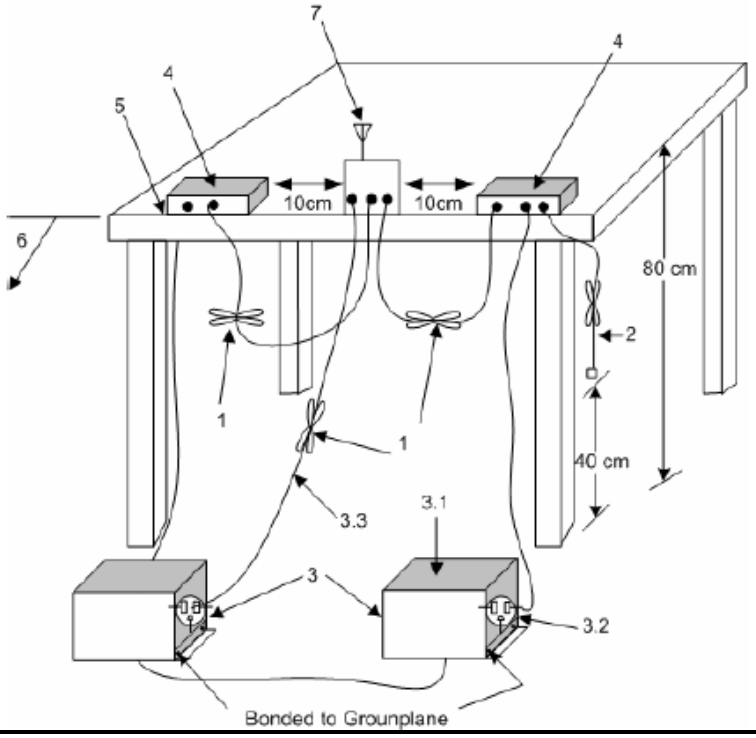
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method	
☒	Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.
☒	If AC conducted emissions fall in operating band, then following below test method confirm final result.
☐	Accept measurements done with a suitable dummy load replacing the antenna under the following conditions: (1) Perform the AC line conducted tests with the antenna connected to determine compliance with FCC 15.207 limits outside the transmitter's fundamental emission band; (2) Retest with a dummy load to determine compliance with FCC 15.207 limits within the transmitter's fundamental emission band.
☒	For a device with a permanent antenna operating at or below 30 MHz, accept measurements done with a suitable dummy load, in lieu of the permanent antenna under the following conditions: (1) Perform the AC line conducted tests with the permanent antenna to determine compliance with the FCC 15.207 limits outside the transmitter's fundamental emission band; (2) Retest with a dummy load in lieu of the permanent antenna to determine compliance with the FCC 15.207 limits within the transmitter's fundamental emission band.

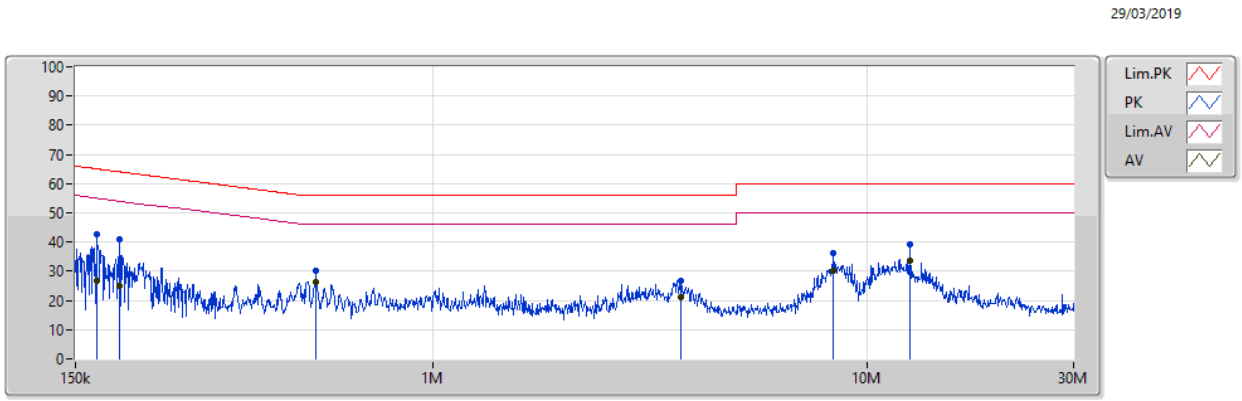
3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

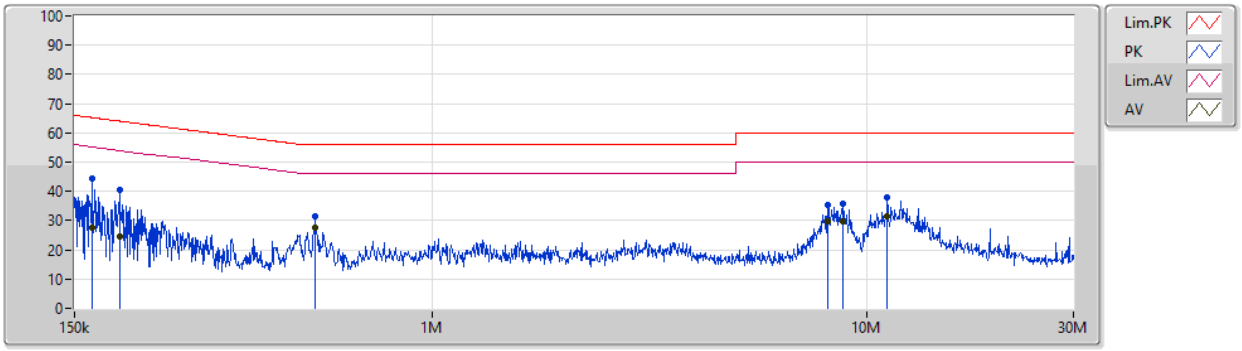
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Ch. Frequency (kHz)	667		



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	168.41k	42.55	65.04	-22.49	19.48	Neutral	-	23.07	9.60	0.01	9.87
AV	168.41k	26.92	55.04	-28.12	19.48	Neutral	-	7.44	9.60	0.01	9.87
QP	189.837k	40.82	64.05	-23.23	19.47	Neutral	-	21.35	9.59	0.01	9.87
AV	189.837k	24.89	54.05	-29.16	19.47	Neutral	-	5.42	9.59	0.01	9.87
QP	538.12k	30.07	56.00	-25.93	19.48	Neutral	-	10.59	9.59	0.01	9.88
AV	538.12k	26.43	46.00	-19.57	19.48	Neutral	-	6.95	9.59	0.01	9.88
QP	3.73M	26.66	56.00	-29.34	19.54	Neutral	-	7.12	9.61	0.04	9.89
AV	3.73M	21.23	46.00	-24.77	19.54	Neutral	-	1.69	9.61	0.04	9.89
QP	8.388M	36.13	60.00	-23.87	19.61	Neutral	-	16.52	9.66	0.06	9.89
AV	8.388M	30.07	50.00	-19.93	19.61	Neutral	-	10.46	9.66	0.06	9.89
QP	12.554M	39.06	60.00	-20.94	19.65	Neutral	-	19.41	9.67	0.08	9.90
AV	12.554M	33.65	50.00	-16.35	19.65	Neutral	"Worst"	14.00	9.67	0.08	9.90

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Ch. Frequency (kHz)	667		

29/03/2019



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	165.082k	44.28	65.20	-20.92	19.48	Line	-	24.80	9.60	0.01	9.87
AV	165.082k	27.66	55.20	-27.54	19.48	Line	-	8.18	9.60	0.01	9.87
QP	190.596k	40.50	64.01	-23.51	19.48	Line	-	21.02	9.60	0.01	9.87
AV	190.596k	24.61	54.01	-29.40	19.48	Line	-	5.13	9.60	0.01	9.87
QP	538.12k	31.27	56.00	-24.73	19.48	Line	-	11.79	9.59	0.01	9.88
AV	538.12k	27.47	46.00	-18.53	19.48	Line	"Worst"	7.99	9.59	0.01	9.88
QP	8.157M	35.21	60.00	-24.79	19.61	Line	-	15.60	9.66	0.06	9.89
AV	8.157M	29.70	50.00	-20.30	19.61	Line	-	10.09	9.66	0.06	9.89
QP	8.835M	35.65	60.00	-24.35	19.62	Line	-	16.03	9.66	0.07	9.89
AV	8.835M	29.56	50.00	-20.44	19.62	Line	-	9.94	9.66	0.07	9.89
QP	11.182M	37.82	60.00	-22.18	19.63	Line	-	18.19	9.66	0.08	9.89
AV	11.182M	31.33	50.00	-18.67	19.63	Line	-	11.70	9.66	0.08	9.89

3.2 Transmitter Radiated Emissions

3.2.1 Transmitter Radiated Emissions Limit

Transmitter Radiated Emissions Limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: the frequency bands 9-90 kHz, 110-490 kHz measurements employing an average detector and other below 1GHz measurements employing a CISPR quasi-peak detector.

3.2.2 Measuring Instruments

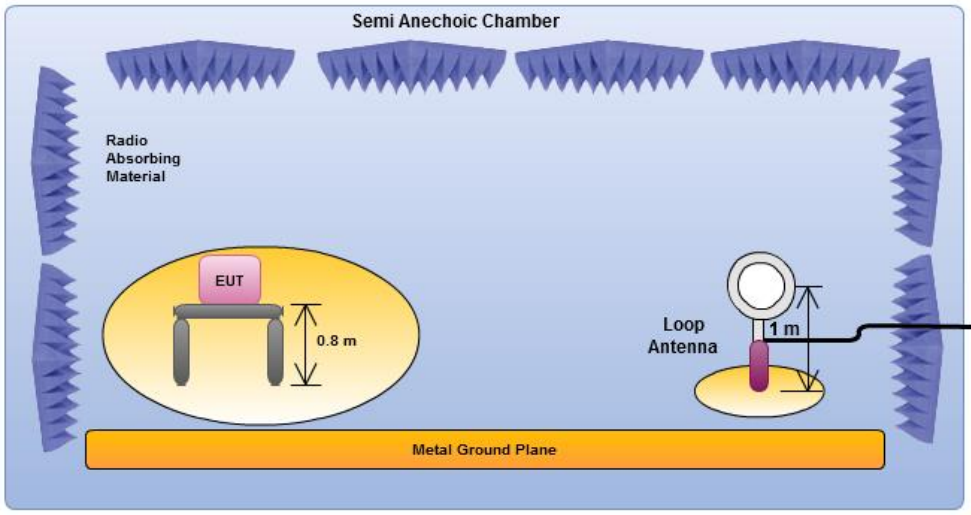
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

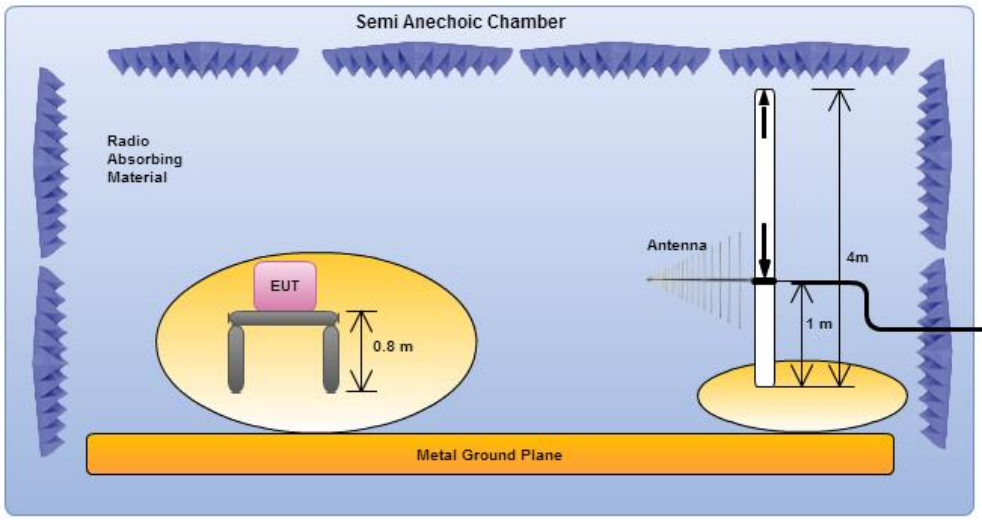
Test Method	
☒	Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1 GHz and test distance is 3m. Note : The test distance of radiated emissions from 662kHz to 672kHz is 1m.
☒	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz. The frequency bands 9-90 kHz, 110-490 kHz measurements employing an average detector and other below 30MHz measurements employing a CISPR quasi-peak detector. Test distance is 3m.
☒	At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the requirements; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be following below methods. Note: If fundamental emission level is smaller than noise at 3m , we will change distance to 1m.
☐	The results shall be extrapolated to the specified distance by making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor.
☒	The results shall be by using the square of an inverse linear distance extrapolation factor (40 dB/decade).
☒	For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.
☒	The any unwanted emissions level shall not exceed the fundamental emission level.
☒	All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.2.4 Test Setup

Transmitter Radiated Emissions



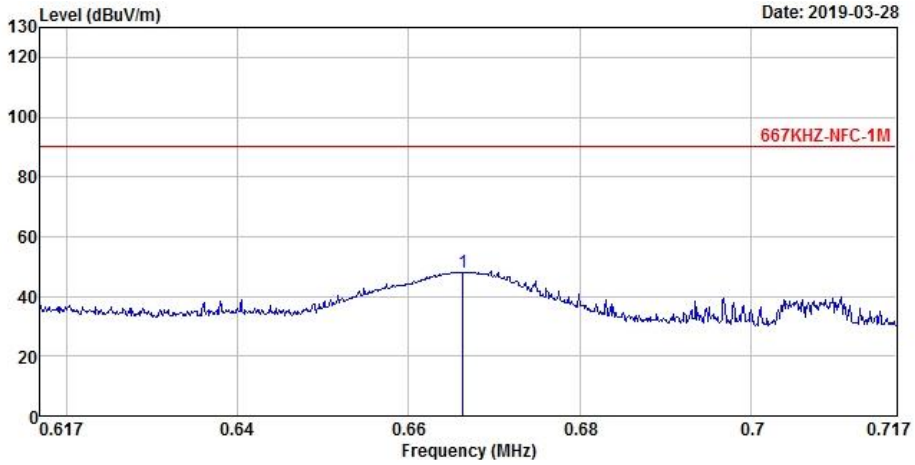
Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. The center of the loop shall be 1 m above the ground.



Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna. the antenna height shall be varied from 1 m to 4 m.

3.2.5 Transmitter Radiated Emissions (Below 30MHz)

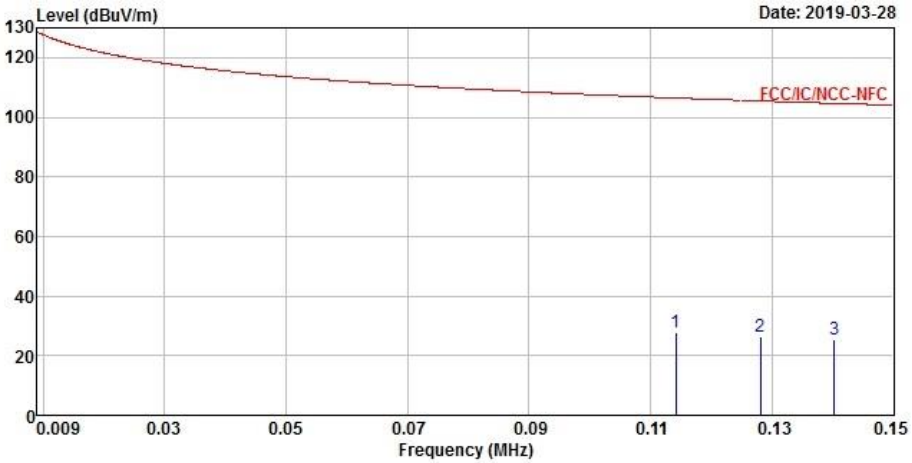
Transmitter Radiated Emissions (667 kHz)			
Mode	CTX	**Test Freq.(kHz)**	667
Operating Mode	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	0.66640	48.11	-42.10	90.21	47.97	0.00	0.14	0.00	Peak	100	182

Note 1: “>20dB” means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement worst emissions of receive antenna polarization: H (Horizontal).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level. /Test fundamental emission at 1m.
Note 6 : Below 30MHz of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

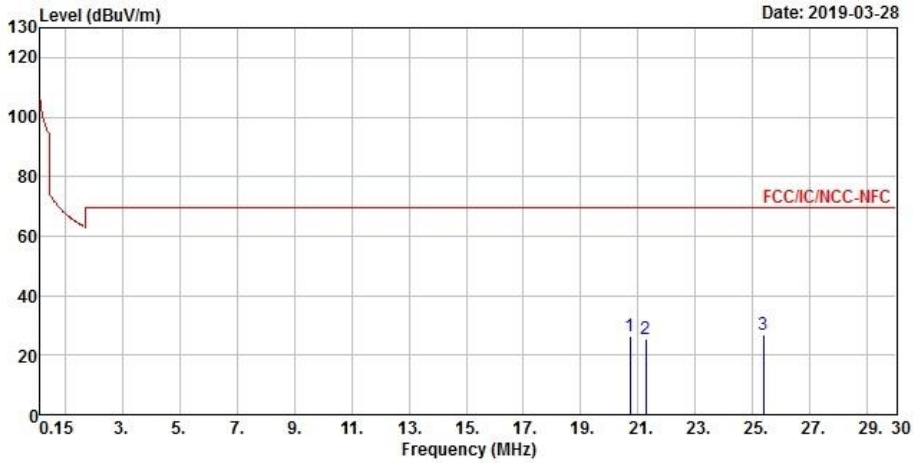
Transmitter Radiated Emissions (9kHz~150kHz)			
Mode	CTX	**Test Freq.(kHz)**	667
Operating Mode	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	0.11419	27.82	-78.64	106.46	7.98	19.74	0.10	0.00	Peak	100	360
2	0.12815	26.15	-79.30	105.45	6.28	19.77	0.10	0.00	Peak	100	360
3	0.14027	25.44	-79.23	104.67	5.54	19.80	0.10	0.00	Peak	100	360

Note 1: ">20dB" means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement worst emissions of receive antenna polarization: H (Horizontal).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.
Note 6 : Below 30MHz of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

Transmitter Radiated Emissions (150kHz~30MHz)			
Mode	CTX	**Test Freq.(kHz)**	667
Operating Mode	1	**Polarization**	H

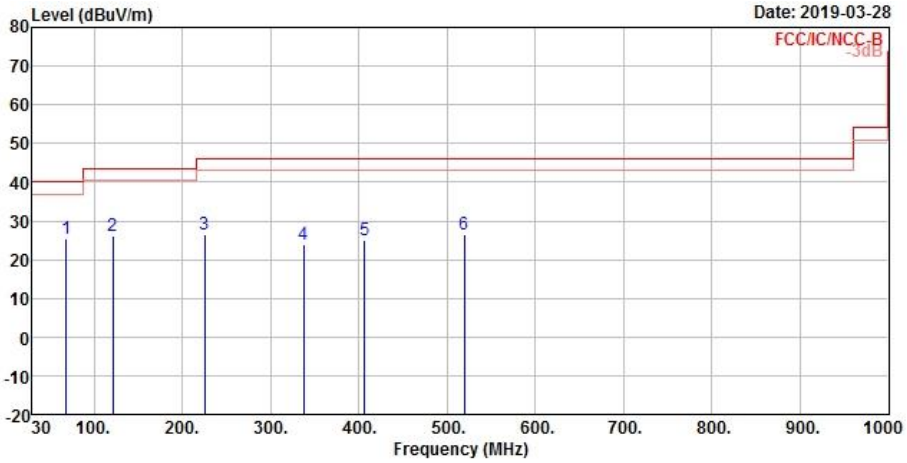


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	20.71665	26.58	-42.96	69.54	3.37	22.55	0.66	0.00	Peak	100	0
2	21.25395	25.20	-44.34	69.54	1.94	22.59	0.67	0.00	Peak	100	0
3	25.37325	26.76	-42.78	69.54	3.14	22.88	0.74	0.00	Peak	100	0

Note 1: “>20dB” means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement worst emissions of receive antenna polarization: H (Horizontal).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.
Note 6 : Below 30MHz of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.2.6 Transmitter Radiated Emissions (Above 30MHz)

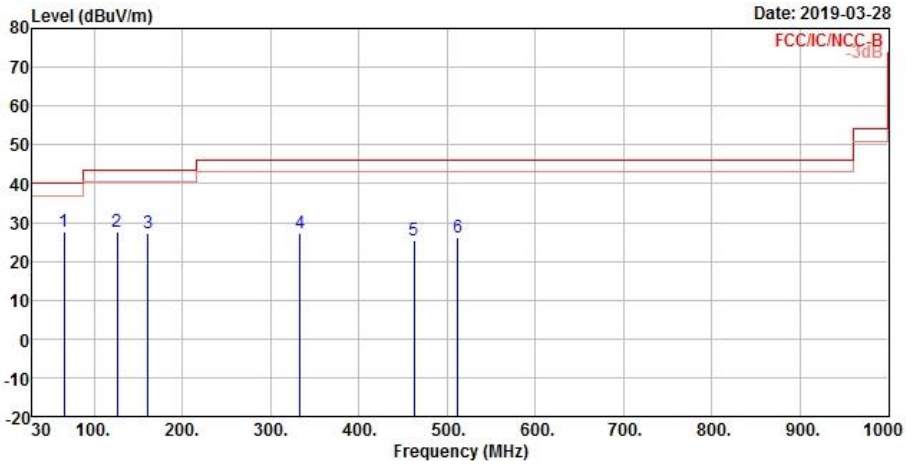
Transmitter Radiated Emissions (Above 30MHz)			
Mode	CTX	**Test Freq.(kHz)**	667
Operating Mode	1	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	68.80000	25.36	-14.64	40.00	40.20	11.36	1.25	27.45	Peak	100	360
2	121.18000	26.17	-17.33	43.50	34.54	17.20	1.69	27.26	Peak	100	360
3	224.97000	26.66	-19.34	46.00	36.42	14.74	2.34	26.84	Peak	100	360
4	337.49000	23.98	-22.02	46.00	29.05	18.90	2.91	26.88	Peak	100	360
5	406.36000	24.85	-21.15	46.00	27.68	21.27	3.21	27.31	Peak	100	360
6	519.85000	26.43	-19.57	46.00	27.99	22.61	3.67	27.84	Peak	100	360

Note 1: “>20dB” means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

Transmitter Radiated Emissions (Above 30MHz)			
Mode	CTX	**Test Freq.(kHz)**	667
Operating Mode	1	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	65.89000	27.76	-12.24	40.00	42.77	11.23	1.22	27.46	Peak	100	0
2	126.03000	27.42	-16.08	43.50	35.88	17.06	1.72	27.24	Peak	100	0
3	160.95000	27.30	-16.20	43.50	37.40	15.02	1.96	27.08	Peak	100	0
4	333.61000	27.39	-18.61	46.00	32.53	18.82	2.90	26.86	Peak	100	0
5	462.62000	25.57	-20.43	46.00	27.51	22.22	3.45	27.61	Peak	100	0
6	512.09000	26.05	-19.95	46.00	27.63	22.60	3.65	27.83	Peak	100	0

Note 1: “>20dB” means spurious emission levels that exceed the level of 6 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical).
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.
Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

3.3 Emission Bandwidth

3.3.1 Emission Bandwidth Limit

Emission Bandwidth Limit
N/A

3.3.2 Measuring Instruments

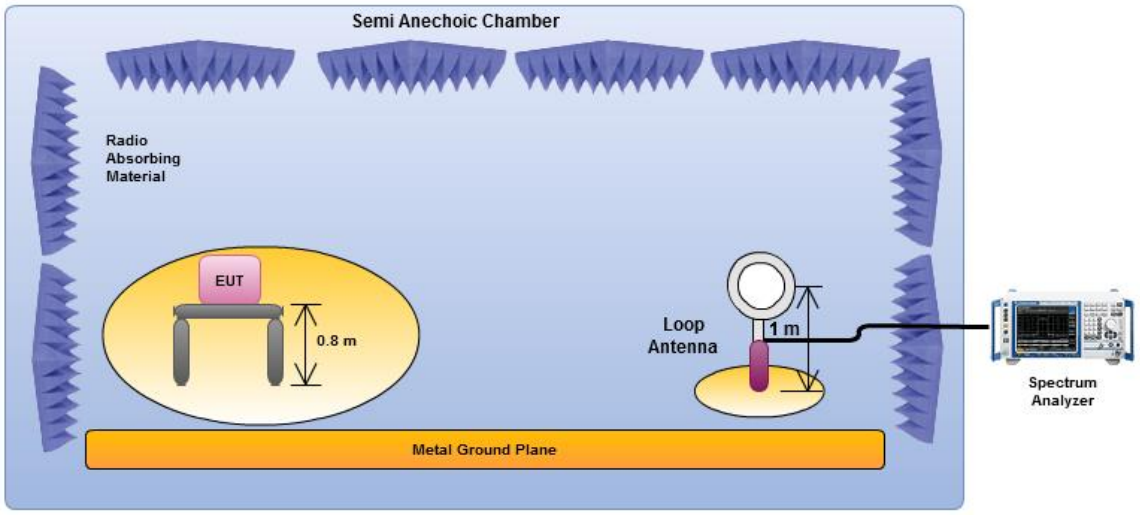
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
☒	For the emission bandwidth refer ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.
☒	For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.

3.3.4 Test Setup

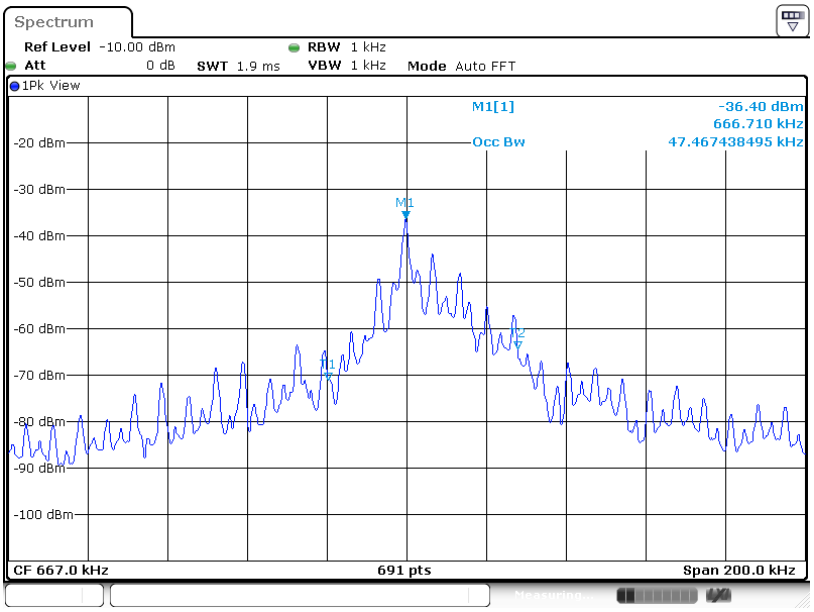
Emission Bandwidth



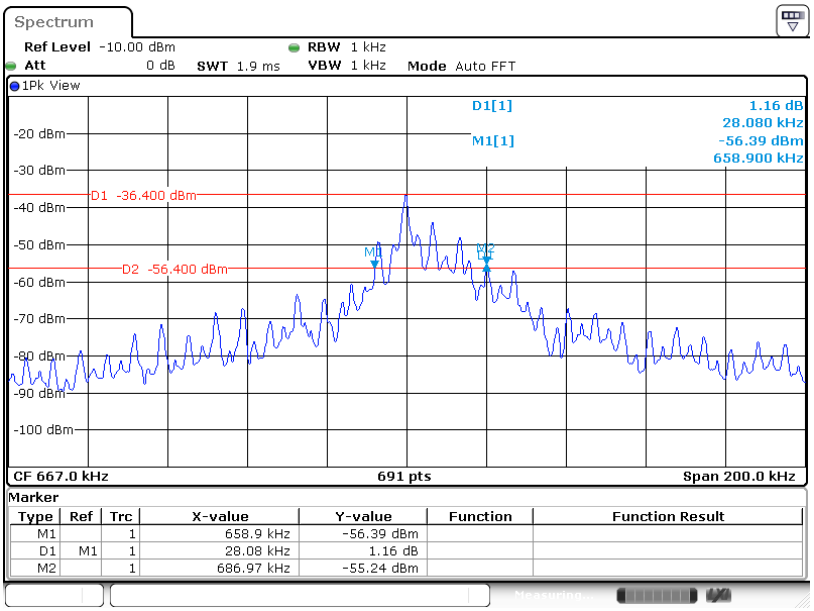
3.3.5 Test Result of Emission Bandwidth

Occupied Channel Bandwidth Result			
Transmitter Mode	**Frequency (kHz)**	**99% Bandwidth (kHz)**	**20dB Bandwidth (kHz)**
CTX	667	47.46	28.08
Limit		**N/A**	
Result		**Complied**	

Emission Bandwidth Plot - 99% Bandwidth



Emission Bandwidth Plot - 20dB Bandwidth



4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR	102051	9kHz ~ 3.6GHz	03/May/2018	02/May/2019
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	08/Nov/2018	07/Nov/2019
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	17/Sep/2018	16/Sep/2019
AC POWER	APC	AFC-11005G	F310050055	47Hz ~ 63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	12/Oct/2018	11/Oct/2019

NCR : Non-Calibration Require

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz ~ 40GHz	13/Mar/2019	12/Mar/2020
Loop Antenna	TESEQ	HLA 6120	31244	9kHz ~ 30MHz	28/Mar/2018	27/Mar/2019

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	30/Oct/2018	29/Oct/2019
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	30/Oct/2018	29/Oct/2019
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	23/Apr/2018	19/Apr/2019
EMI Test Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	10/Apr/2018	09/Apr/2019
Bilog Antenna with 5dB Pad	ETS	3142B & MTJ6102-05	00022055	26MHz - 3GHz	19/Nov/2018	18/Nov/2019
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	18/Jul/2018	17/Jul/2019
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	29/Jan/2018	28/Jan/2019
Loop Antenna	TESEQ	HLA 6120	31244	9kHz ~ 30MHz	15/Mar/2019	14/Mar/2020