

FCC Radio Test Report

FCC ID: RNE01194TX

This report concerns: Original Grant

Project No. : 2009C236
Equipment : Wireless Charging Forecaster
Brand Name : ACURITE
Test Model : 01194L
Series Model : 01193, 01193M
Applicant : Chaney Instrument Co.
Address : Flat 09,19/F.,Metro Centre Phase I,32 Lam Hing Street, Kowloon Bay,Kowloon, Hong Kong,China.
Manufacturer : Chaney Instrument Co.
Address : Flat 09,19/F.,Metro Centre Phase I,32 Lam Hing Street, Kowloon Bay,Kowloon, Hong Kong,China.
Factory : Chaney Instrument Co.
Address : Flat 09,19/F.,Metro Centre Phase I,32 Lam Hing Street, Kowloon Bay,Kowloon, Hong Kong,China.
Date of Receipt : Sep. 27, 2020
Date of Test : Sep. 28, 2020 ~ Oct. 16, 2020
Issued Date : Nov. 04, 2020
Report Version : R01
Test Sample : Sample No.: DG2020092729
Standard(s) : FCC Part15, Subpart C (15.209)
ANSI C63.10-2013

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

Simon Ling

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Certificate #5123.02

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Declaration

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

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

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Oct. 28, 2020
R01	Modify the comments.	Nov. 04, 2020

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart C (15.209)				
Standard(s) Section	Test Item	Test Result	Judgment	Remark
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS	-----
15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C	PASS	-----
-----	Bandwidth	APPENDIX D	PASS	-----

NOTE:

(1) "N/A" denotes test is not applicable to this device.

1.1 TEST FACILITY

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

BTL's Test Firm Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

1.2 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))

The BTL measurement uncertainty as below table:

A. AC power line conducted emissions Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)
DG-C02	CISPR	150 kHz ~ 30 MHz	2.68

B. Radiated emissions Measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
DG-CB03	CISPR	9kHz ~ 30MHz	V	3.79
		9kHz ~ 30MHz	H	3.57
		30MHz ~ 200MHz	V	4.26
		30MHz ~ 200MHz	H	3.38
		200MHz ~ 1,000MHz	V	3.98
		200MHz ~ 1,000MHz	H	3.94

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

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	25°C	53%	AC 120V/60Hz	Kwok Guo
Radiated Emissions-9K-30MHz	26°C	52%	AC 120V/60Hz	Kwok Guo
Radiated Emissions-30 MHz to 1GHz	26°C	52%	AC 120V/60Hz	Kwok Guo
Bandwidth	25°C	46%	AC 120V/60Hz	Hayden Chen

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Wireless Charging Forecaster
Brand Name	ACURITE
Test Model	01194L
Series Model	01193, 01193M
Model Difference(s)	Only differ in model name and packaging
Power Source	1# DC Voltage supplied from AC adapter. Model: XZ0500-2000 2# Supplied from 2*AA battery
Power Rating	1# I/P: 100-240V~ 50/60Hz 0.4A O/P: 5.0V \equiv 2000mA 2# DC 3V
Operation Frequency	110-148kHz

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Output power from primary coil is to 5 watts (MAX).
3. Mobile exposure conditions only.

2.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX Mode

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Final Test Mode	Description
Mode 1	TX Mode

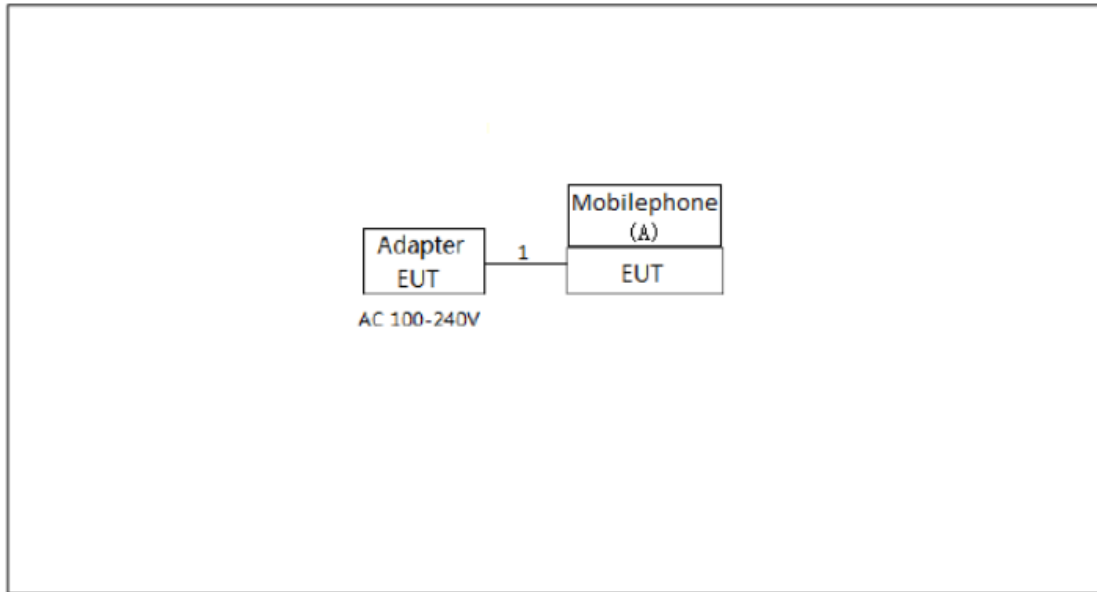
Radiated emissions test	
Final Test Mode	Description
Mode 1	TX Mode

Bandwidth	
Final Test Mode	Description
Mode 1	TX Mode

Note:

(1) The EUT has the maximum average output power when the support unit is in low power and being charged by EUT.

2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
A	Mobile phone	Apple	MWN02CH/A	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	USB Cable	NO	NO	1.5m

3. AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency of Emission (MHz)	Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56*	56 to 46*
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

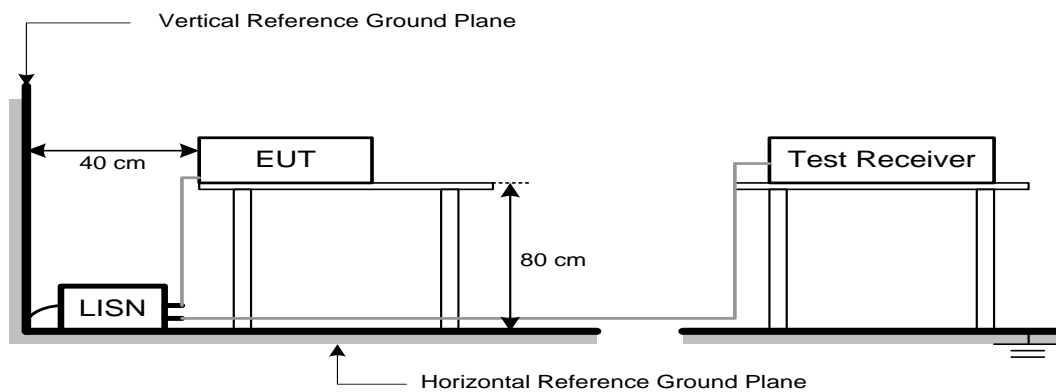
3.2 TEST PROCEDURE

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

3.3 DEVIATION FROM TEST STANDARD

No deviation

3.4 TEST SETUP



3.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.6 TEST RESULTS

Please refer to the APPENDIX A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of 『Note』 . If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a “ * ” marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150 kHz to 30 MHz.

4. RADIATED EMISSION TEST

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT(9 kHz-1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Note:

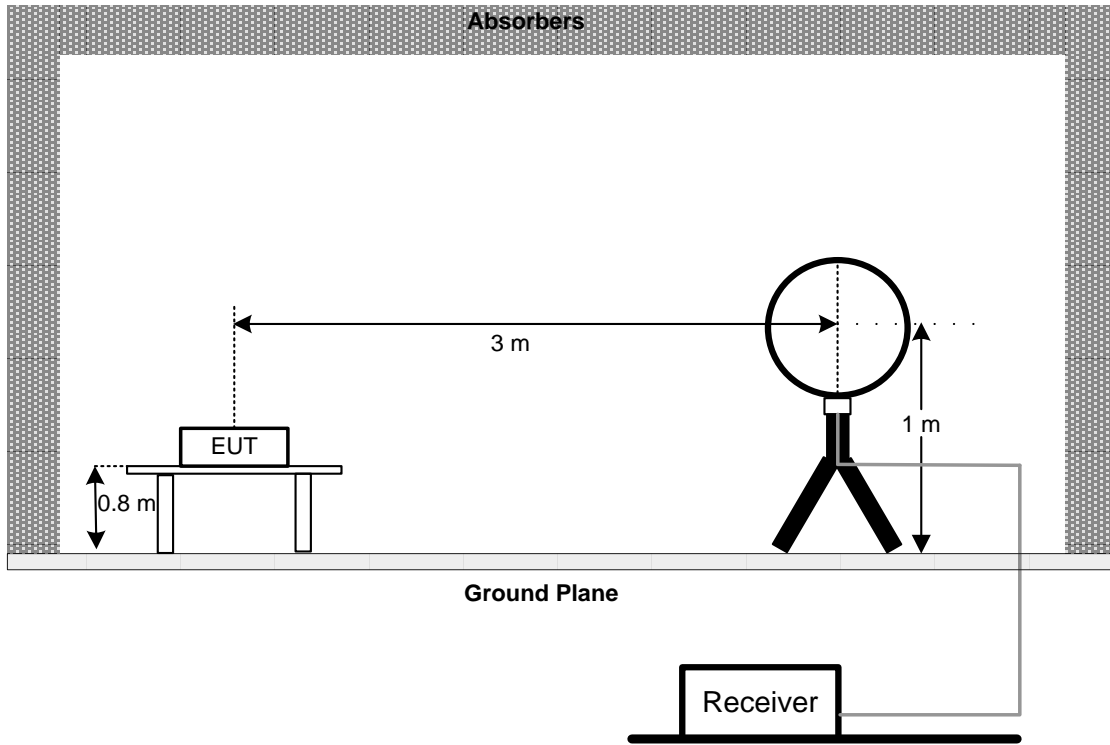
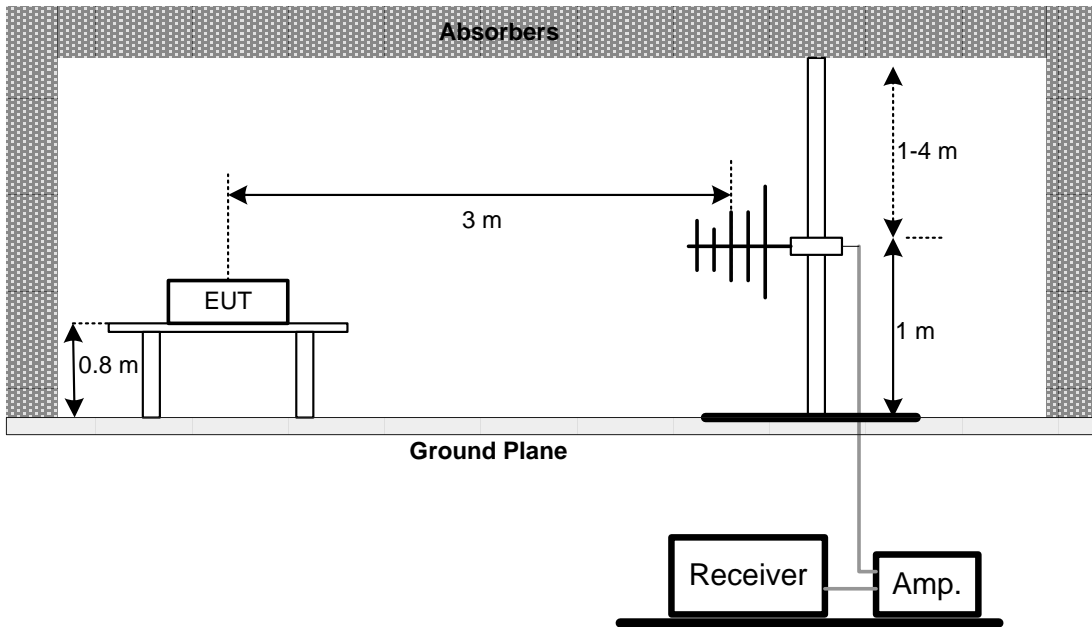
- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

4.2 TEST PROCEDURE

- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- b. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- c. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- d. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
(below 1 GHz)
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.3 DEVIATION FROM TEST STANDARD

No deviation.

4.4 TEST SETUP**9 kHz-30 MHz****30 MHz to 1 GHz**

4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT - 9 kHz TO 30 MHz

Please refer to the APPENDIX B

Remark:

- (1) Distance extrapolation factor = $40 \log(\text{specific distance} / \text{test distance})$ (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.7 TEST RESULTS - 30 MHz TO 1000 MHz

Please refer to the APPENDIX C.

5. BANDWIDTH TEST

5.1 LIMIT

Section	Test Item	Limit
-	Bandwidth	-

5.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting : RBW= 10 Hz, VBW=30 Hz, Sweep time = auto.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 3.5 unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULTS

Please refer to the APPENDIX D.

6. MEASUREMENT INSTRUMENTS LIST

AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	100382	Feb. 28, 2021
2	LISN	EMCO	3816/2	52765	Mar. 01, 2021
3	TWO-LINE V-NETWORK	R&S	ENV216	101447	Feb. 28, 2021
4	50Ω Terminator	SHX	TF5-3	15041305	Mar. 01, 2021
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	Cable	N/A	RG223	12m	Mar. 10, 2021
7	643 Shield Room	ETS	6*4*3m	N/A	N/A

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	EM	EM-6876-1	230	Apr. 16, 2021
2	Cable	N/A	RG 213/U	N/A	May 29, 2021
3	EMI Test Receiver	R&S	ESCI	100895	Feb. 28, 2021
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
5	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 09, 2021
2*	Amplifier	HP	8447D	2944A09673	Aug. 11, 2021
3	Receiver	Agilent	N9038A	MY52130039	Jul. 25, 2021
4	Cable	emci	LMR-400(30MHz-1 GHz)(8m+5m)	N/A	May 22, 2021
5	Controller	CT	SC100	N/A	N/A
6	Controller	MF	MF-7802	MF780208416	N/A
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Jul. 25, 2021
2	DC Block	Mini	N/A	N/A	N/A
3	RF Cable	Tongkaichuan	N/A	N/A	N/A

Remark: "N/A" denotes no model name, serial no. or calibration specified.

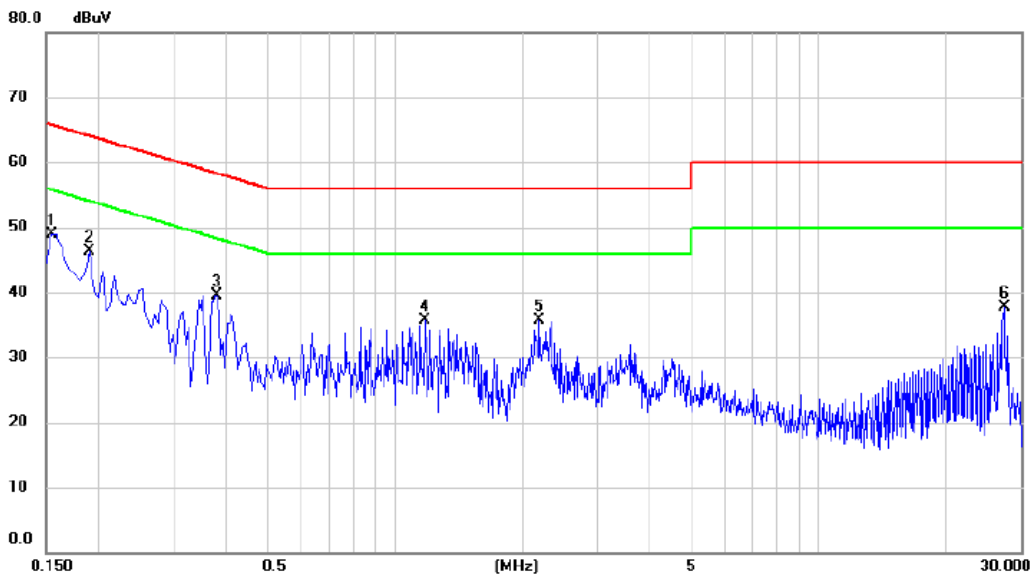
"**" calibration period of equipment list is three year.

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

APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode: TX Mode

Line



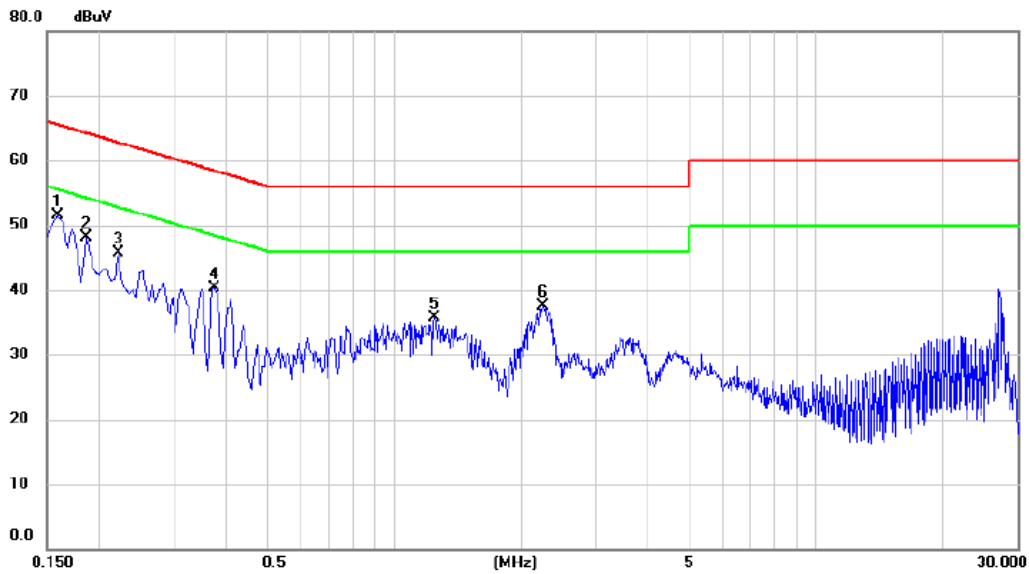
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1545	39.18	9.70	48.88	65.75	-16.87	peak	
2		0.1905	36.50	9.88	46.38	64.01	-17.63	peak	
3		0.3795	29.59	9.92	39.51	58.29	-18.78	peak	
4		1.1760	25.60	10.02	35.62	56.00	-20.38	peak	
5		2.1975	25.55	10.10	35.65	56.00	-20.35	peak	
6		27.3840	26.66	11.12	37.78	60.00	-22.22	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX Mode

Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1590	41.65	9.81	51.46	65.52	-14.06	peak	
2		0.1860	38.11	9.95	48.06	64.21	-16.15	peak	
3		0.2220	35.78	9.99	45.77	62.74	-16.97	peak	
4		0.3750	30.24	10.06	40.30	58.39	-18.09	peak	
5		1.2480	25.42	10.33	35.75	56.00	-20.25	peak	
6		2.2515	27.04	10.45	37.49	56.00	-18.51	peak	

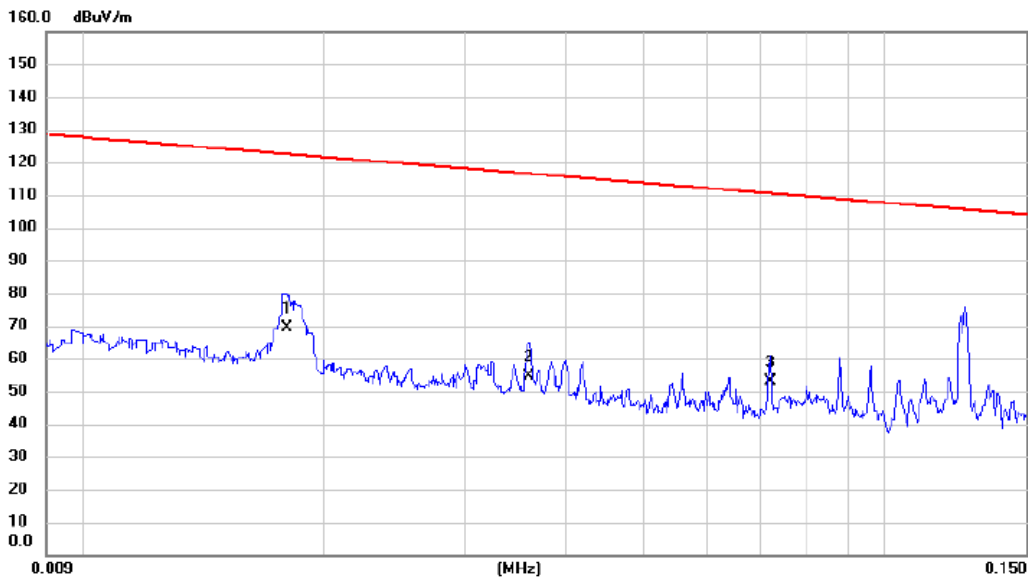
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

Test Mode: TX Mode

Ant 0°



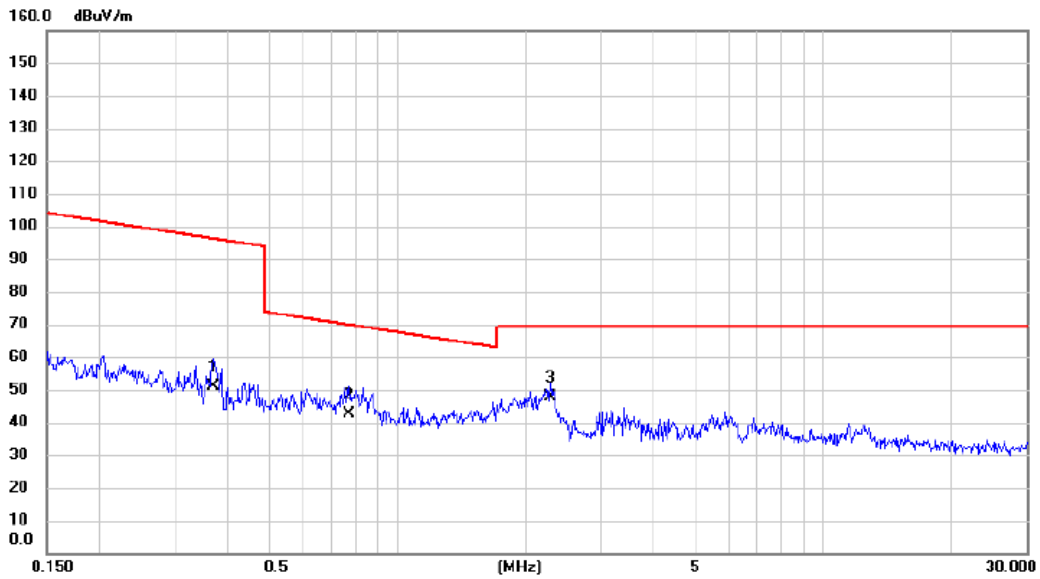
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	0.0180	55.46	13.84	69.30	122.50	-53.20	AVG	
2		0.0360	41.68	12.79	54.47	116.48	-62.01	AVG	
3		0.0720	40.59	12.55	53.14	110.46	-57.32	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX Mode

Ant 0°



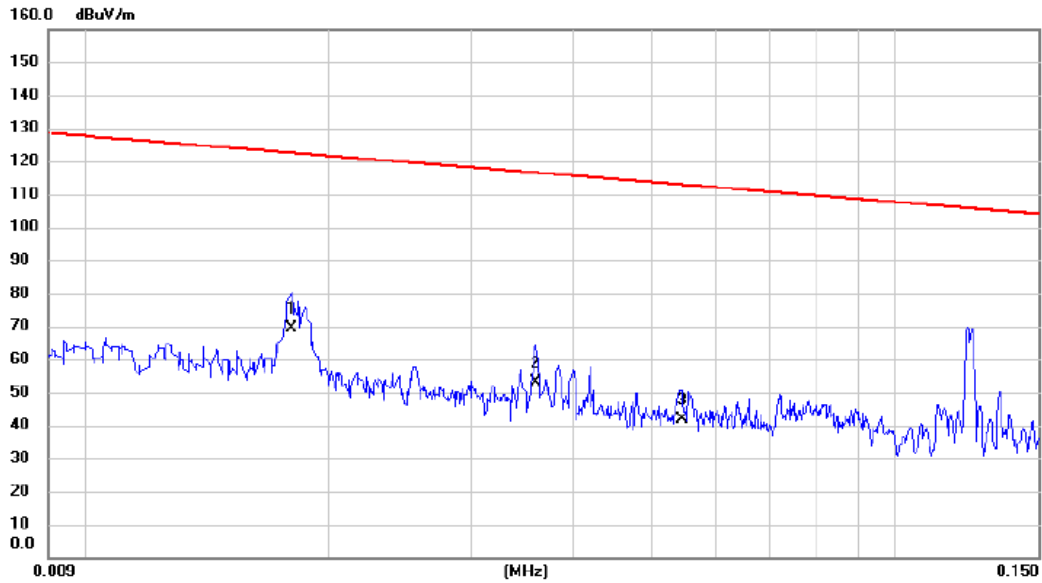
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.3692	38.49	12.34	50.83	96.26	-45.43	AVG	
2		0.7711	30.59	11.89	42.48	69.86	-27.38	AVG	
3	*	2.2847	36.77	11.16	47.93	69.54	-21.61	QP	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX Mode

Ant 90°



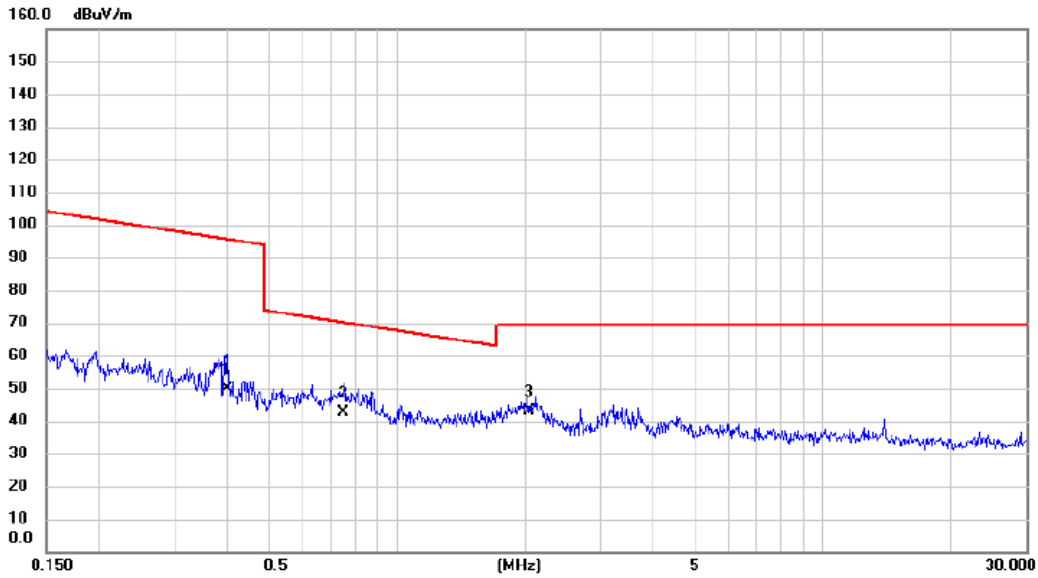
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	0.0180	55.49	13.84	69.33	122.50	-53.17	AVG	
2		0.0360	40.37	12.79	53.16	116.48	-63.32	AVG	
3		0.0546	29.46	12.45	41.91	112.86	-70.95	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX Mode

Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.3997	37.49	12.26	49.75	95.57	-45.82	AVG	
2		0.7508	30.59	11.90	42.49	70.09	-27.60	AVG	
3	*	2.0333	31.67	11.29	42.96	69.54	-26.58	QP	

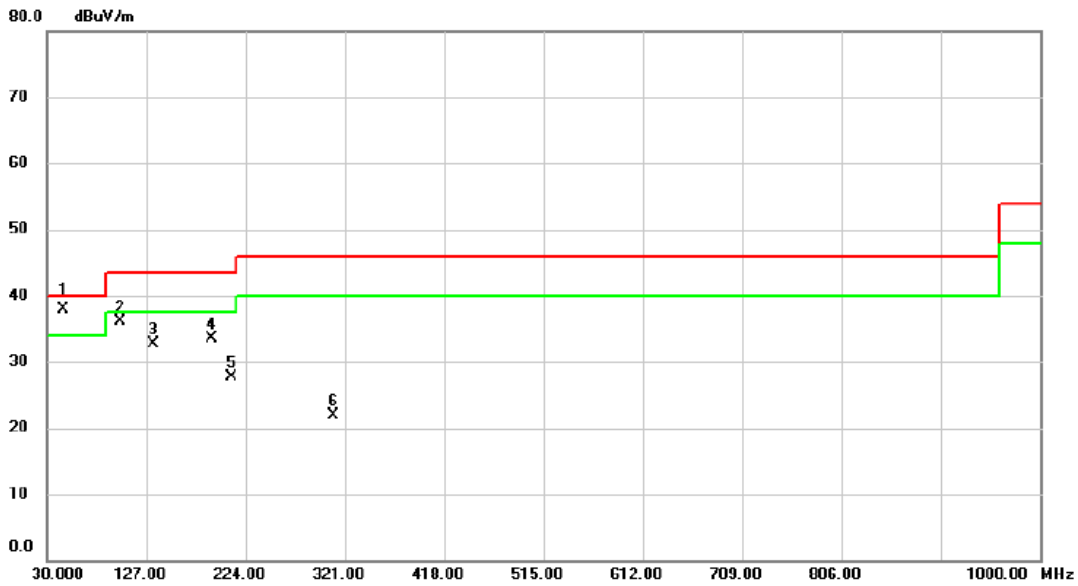
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

Test Mode: TX Mode

Vertical



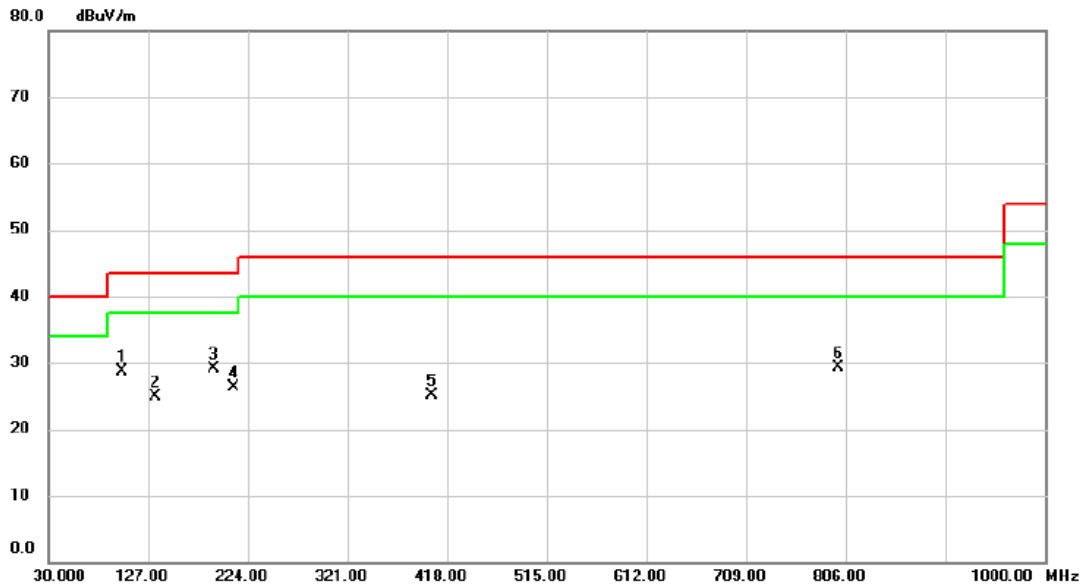
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	45.520	51.98	-14.05	37.93	40.00	-2.07	QP	
2	102.265	50.78	-14.76	36.02	43.50	-7.48	peak	
3	134.275	45.30	-12.67	32.63	43.50	-10.87	peak	
4	191.505	47.64	-14.20	33.44	43.50	-10.06	peak	
5	210.420	42.94	-15.18	27.76	43.50	-15.74	peak	
6	309.360	32.71	-10.85	21.86	46.00	-24.14	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX Mode

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		102.265	43.49	-14.76	28.73	43.50	-14.77	peak	
2		134.275	37.51	-12.67	24.84	43.50	-18.66	peak	
3	*	191.505	43.29	-14.20	29.09	43.50	-14.41	peak	
4		210.905	41.39	-15.14	26.25	43.50	-17.25	peak	
5		402.480	33.96	-8.94	25.02	46.00	-20.98	peak	
6		799.210	31.78	-2.54	29.24	46.00	-16.76	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

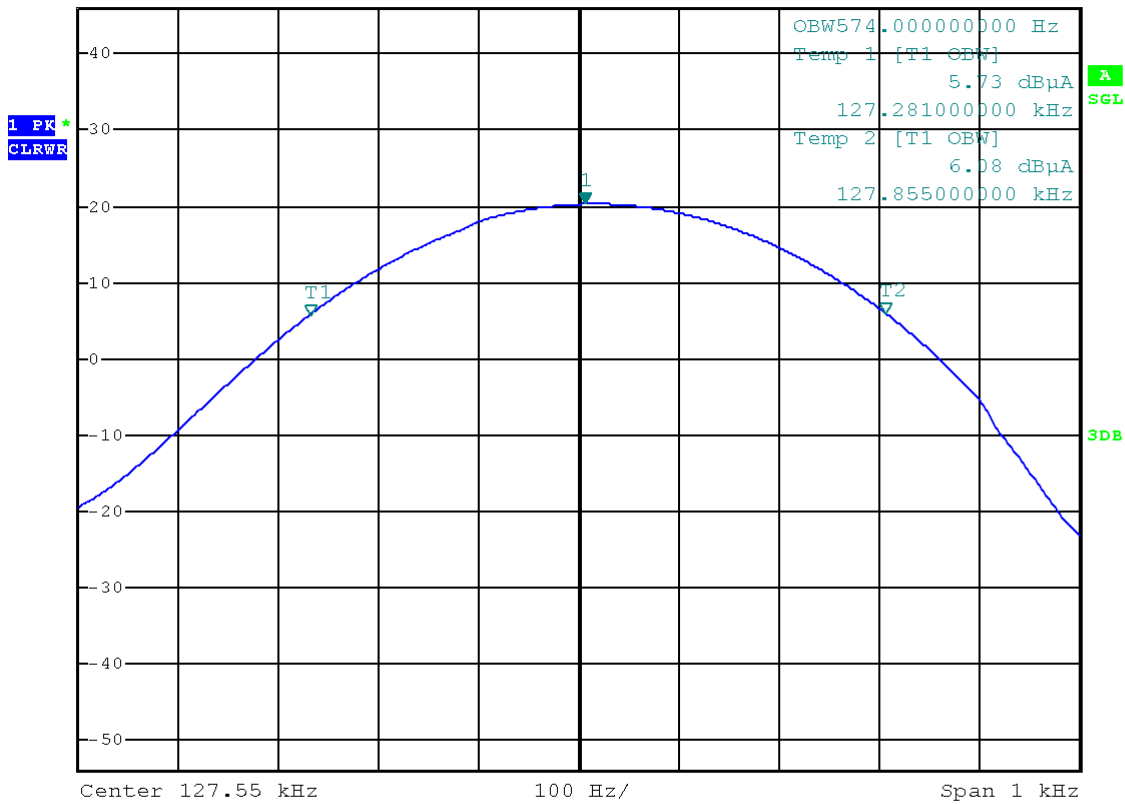
APPENDIX D - BANDWIDTH

Test Mode: TX Mode

Frequency (kHz)	99 % Emission Bandwidth (Hz)	Test Result
127.55	574	Pass



Ref 46 dBµA *Att 10 dB *RBW 10 Hz Marker 1 [T1] 20.29 dBµA
 *VBW 30 Hz *SWT 200 ms 127.556000000 kHz



DWELL1

Date: 13.OCT.2020 11:23:20

End of Test Report