

# FCC Radio Test Report

## FCC ID: KA2CS8630LHA1

This report concerns: Original Grant

**Project No.** : 1911H008  
**Equipment** : Full HD Wi-Fi Spotlight Camera  
**Brand Name** : D-Link  
**Test Model** : DCS-8630LH  
**Series Model** : DCS-8627LH  
**Applicant** : D-Link Corporation  
**Address** : No.289,Sinhu 3rd Rd, Neihu District, Taipei 114, Taiwan, R.O.C  
**Manufacturer** : D-Link Corporation  
**Address** : No.289, Sinhu 3rd Rd, Neihu District, Taipei 114, Taiwan, R.O.C  
**Factory** : LEEDARSON LIGHTING CO., LTD.  
**Address** : Xingtai Industrial Zone, Economic Development Zone, Changtai County, Zhangzhou City, Fujian Province, P.R.China  
**Date of Receipt** : Dec. 30, 2019  
**Date of Test** : Dec. 30, 2019 ~ Mar. 13, 2020  
**Issued Date** : Mar. 31, 2020  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: SH2019121835, SH2019121836, SH2020012018, SH2020030390  
**Standard(s)** : FCC Part15, Subpart C (15.247)  
ANSI C63.10-2013  
FCC KDB 558074 D01 15.247 Meas Guidance v05r02

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

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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.	Mar. 31, 2020

### 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart C (15.247)				
Standard(s) Section	Test Item	Test Result	Judgment	Remark
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS	-----
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	PASS	-----
15.247(a)(2)	Bandwidth	APPENDIX E	PASS	-----
15.247(b)(3)	Maximum Output Power	APPENDIX F	PASS	-----
15.247(d)	Conducted Spurious Emission	APPENDIX G	PASS	-----
15.247(e)	Power Spectral Density	APPENDIX H	PASS	-----
15.203	Antenna Requirement	-----	PASS	Note(2)

Note:

- (1) "N/A" denotes test is not applicable to this device.
- (2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

### 1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210,China  
 BTL's Test Firm Registration Number for FCC: 476765  
 BTL's Designation Number for FCC: CN1241

### 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)
SH-C01	CISPR	150 kHz~30MHz	2.40

B. Radiated emissions Measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
SH-CB01	CISPR	9 KHz~30 MHz	V	3.79
		9 KHz~30 MHz	H	3.57
		30 MHz~200 MHz	V	4.04
		30 MHz~200 MHz	H	3.76
		200 MHz~1,000 MHz	V	4.24
		200 MHz~1,000 MHz	H	3.84
		1 GHz~18 GHz	V	4.46
		1 GHz~18 GHz	H	4.40
		18 GHz~40 GHz	V	3.95
		18 GHz~40 GHz	H	3.95

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	18°C	56%	AC 120V	Bill Dong
Radiated Emissions-30 MHz to 1GHz	18°C	42%	AC 120V	Vince Zong
Radiated Emissions-Above 1000 MHz	18°C	42%	AC 120V	Vince Zong
Bandwidth	18°C	56%	AC 120V	Bill Dong
Maximum Output Power	18°C	56%	AC 120V	Bill Dong
Conducted Spurious Emission	18°C	56%	AC 120V	Bill Dong
Power Spectral Density	18°C	56%	AC 120V	Bill Dong

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	Full HD Wi-Fi Spotlight Camera
Brand Name	D-Link
Test Model	DCS-8630LH
Series Model	DCS-8627LH
Model Difference(s)	DCS-8630LH has one more zigbee module than DCS-8627LH.
Power Source	DC voltage supplied from AC/DC adapter. 1# Brand/Model: APD/WB-12G12FU, WB-12G12R 2# Brand/Model:Keyu/KA1201A-1201000US
Power Rating	1# I/P: 100-240 ~ 50-60Hz 0.3A Max O/P: 12.0V --- 1.0A 2# I/P: 100-240 ~ 50/60Hz 0.4A Max O/P: 12.0V --- 1000mA
Operation Frequency	2405 MHz ~ 2480 MHz
Modulation Technology	O-QPSK
Bit Rate of Transmitter	0.25Mbps
Max. Output Power	7.82 dBm (0.0061 W)

Note:

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

2. Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
11	2405	19	2445
12	2410	20	2450
13	2415	21	2455
14	2420	22	2460
15	2425	23	2465
16	2430	24	2470
17	2435	25	2475
18	2440	26	2480

3. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Internal	IPEX	2.80



## 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 <b>NOTE (1)</b>
Mode 2	TX Mode Channel 19

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 2	TX Mode Channel 19

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 2	TX Mode Channel 19

Radiated emissions test - Above 1GHz	
Final Test Mode	Description
Mode 1	TX Mode <b>NOTE (1)</b>

Conducted test	
Final Test Mode	Description
Mode 1	TX Mode <b>NOTE (1)</b>

Note:

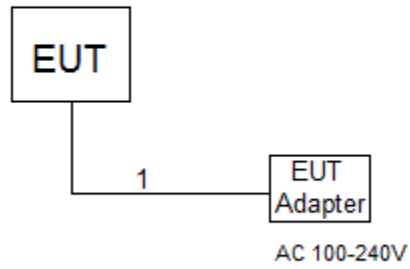
- (1) The measurements are performed at the high, middle, low available channels.
- (2) For radiated emission above 1 GHz test, 1GHz~26.5GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.
- (3) The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

## 2.3 PARAMETERS OF TEST SOFTWARE

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of BT LE

Test Software	N/A		
Frequency (MHz)	2405	2445	2480
Parameters	default	default	default

**2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED**



**2.5 SUPPORT UNITS**

Item	Equipment	Brand	Model No.	Series No.
-	-	-	-	-

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC	N/A	N/A	1m

### 3. AC POWER LINE CONDUCTED EMISSIONS TEST

#### 3.1 LIMIT

Frequency of Emission (MHz)	Limit (dB $\mu$ 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.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

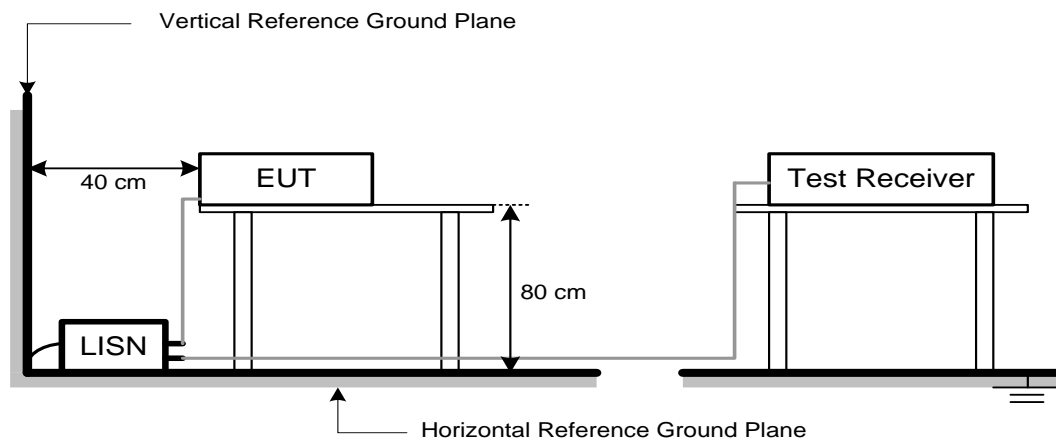
#### 3.2 TEST PROCEDURE

- 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

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	(dBuV/m at 3 m)	
	Peak	Average
Above 1000	74	54

**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).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	RBW 1 MHz VBW 3 MHz peak detector for Pk value RMS detector for AV value

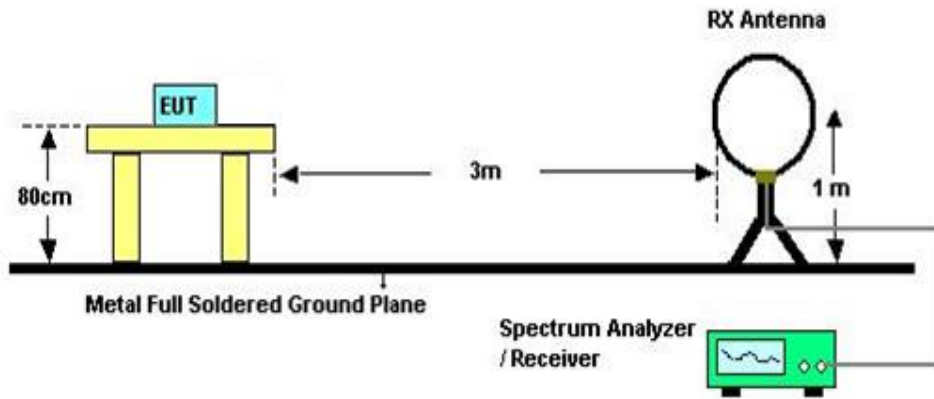
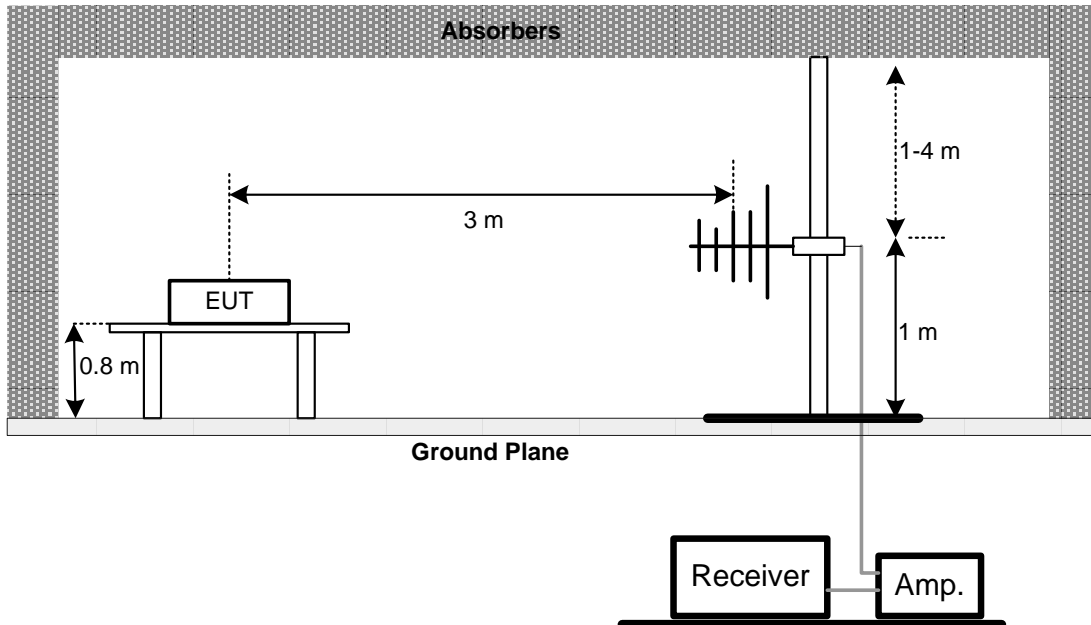
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector

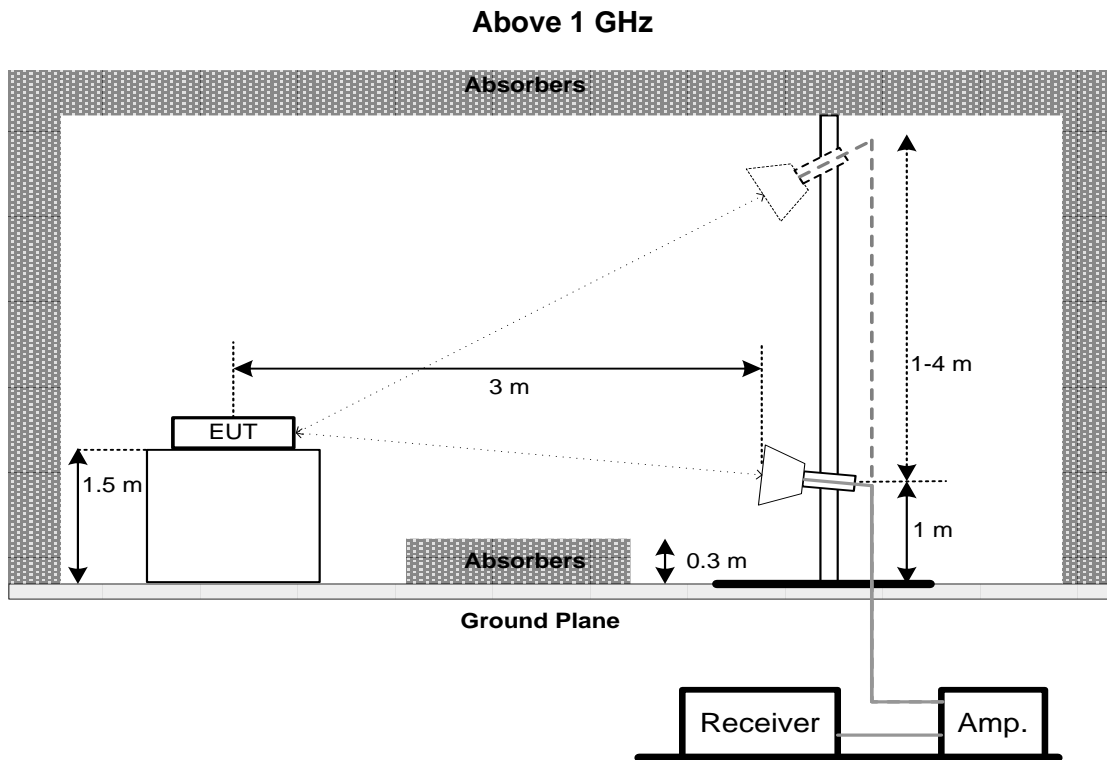
#### 4.2 TEST PROCEDURE

- 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 measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 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.(above 1 GHz)
- c. 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.
- d. 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).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f. 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.
- g. 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)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
- i. 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 RESULT - 30 MHz TO 1000 MHz

Please refer to the APPENDIX C.

#### 4.8 TEST RESULT - ABOVE 1000 MHz

Please refer to the APPENDIX D.

Remark:

- (1) No limit: This is fundamental signal, the judgment is not applicable.  
For fundamental signal judgment was referred to Peak output test.



## 5. BANDWIDTH TEST

### 5.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(a)(2)	Bandwidth	$\geq 500$ kHz (6 dB 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= 100 kHz, VBW=300 kHz, Sweep time = 2.5 ms.

### 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 E.

## 6. MAXIMUM OUTPUT POWER

### 6.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(b)(3)	Maximum Output Power	1 watt or 30 dBm

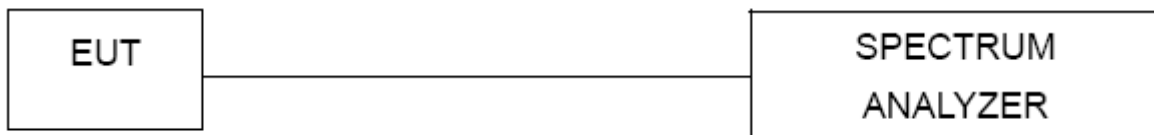
### 6.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- The maximum conducted output power was performed in accordance with method 11.9.2.2 of ANSI C63.10-2013.

### 6.3 DEVIATION FROM STANDARD

No deviation.

### 6.4 TEST SETUP



### 6.5 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.

### 6.6 TEST RESULTS

Please refer to the APPENDIX F.

## 7. CONDUCTED SPURIOUS EMISSION

### 7.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

### 7.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting : RBW= 100 kHz, VBW=300 kHz, Sweep time = 10 ms.

### 7.3 DEVIATION FROM STANDARD

No deviation.

### 7.4 TEST SETUP



### 7.5 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.

### 7.6 TEST RESULTS

Please refer to the APPENDIX G.

## 8. POWER SPECTRAL DENSITY TEST

### 8.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

### 8.2 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=3 kHz, VBW=10 kHz, Sweep time = auto.

### 8.3 DEVIATION FROM STANDARD

No deviation.

### 8.4 TEST SETUP



### 8.5 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.

### 8.6 TEST RESULTS

Please refer to the APPENDIX H.

## 9. MEASUREMENT INSTRUMENTS LIST

AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Line Impedance Stabilisation Network	Schwarzbeck	NNLK 8121	8121-822	Mar. 29, 2020
2	TWO-LINE V-NETWORK	R&S	ENV216	101340	Sep. 01, 2020
3	Test Cable	emci	EMCRG400-BM-N M-10000	170628	Apr. 17, 2020
4	EMI Test Receiver	R&S	ESCI	100082	Mar. 29, 2020
5	50Ω Terminator	SHX	TF2-1G-A	17051602	Mar. 29, 2020
6	50Ω coaxial switch	Anritsu	MP59B	6201750902	Mar. 29, 2020
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020
4	Test Cable	emci	EMC104-SM-SM-7000	170330	Apr. 17, 2020
5	Test Cable	emci	EMC104-SM-SM-1000	170331	Apr. 17, 2020
6	Test Cable	emci	EMC104-SM-NM-3500	170621	Apr. 17, 2020
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emissions - Above 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	9120D	00206960	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC012645SE	980421	Mar. 29, 2020
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480545	Mar. 29, 2020
4	Test Cable	emci	EMC104-SM-SM-7000	170330	Apr. 17, 2020
5	Test Cable	emci	EMC104-SM-SM-1000	170331	Apr. 17, 2020
6	Test Cable	emci	EMC104-SM-NM-3500	170621	Apr. 17, 2020
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020
9	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Mar. 29, 2020
10	Pre-Amplifier	emci	EMC184045SE	980409	Mar. 29, 2020
11	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 29, 2020
12	Test Cable	emci	EMC102-KM-KM-800	170654	Apr. 17, 2020
13	Test Cable	emci	Super Reliable-40G-SS11-7000	W0030860001	Apr. 17, 2020
14	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020

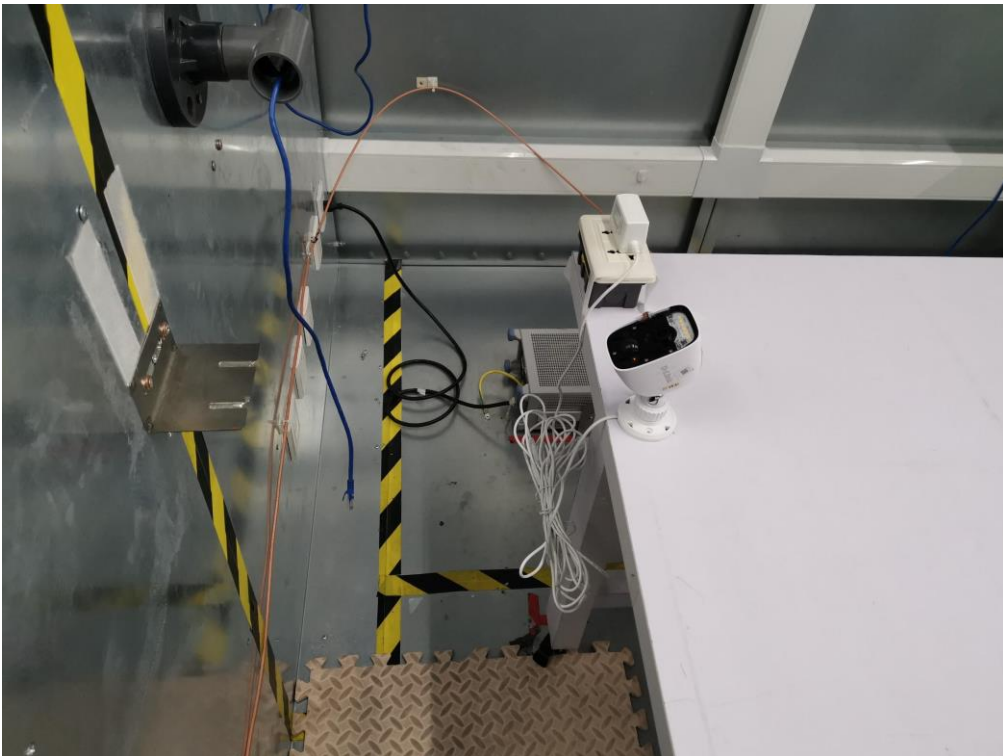
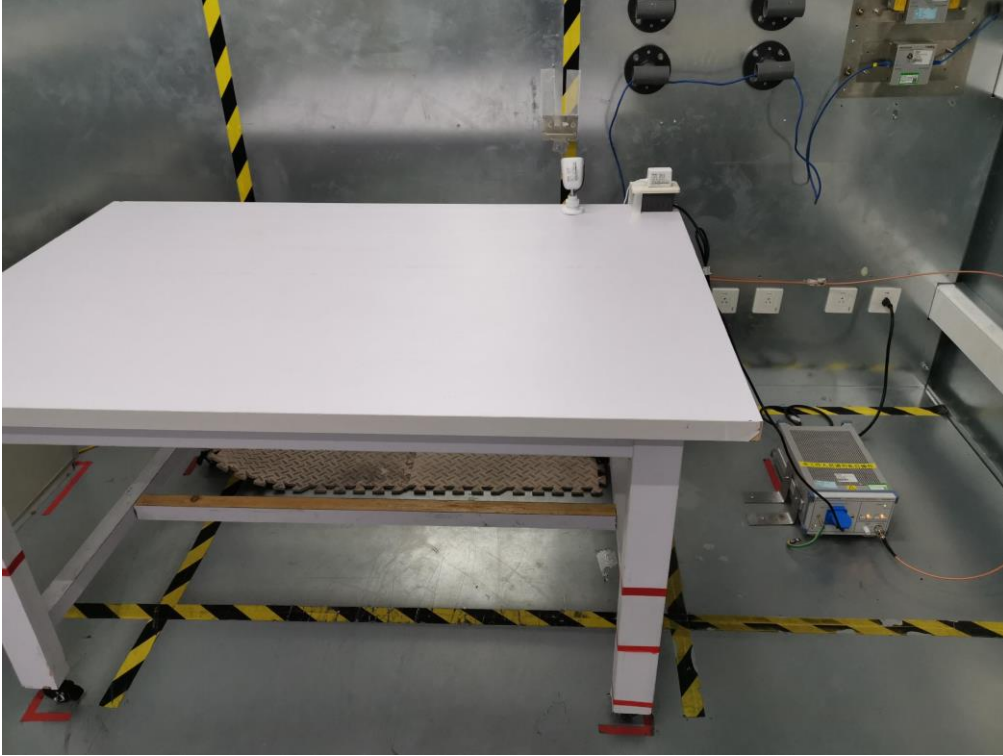
Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Peak Power Analyze	Keysight	8990B	MY51000507	Mar. 29, 2020
2	Wideband Power Sensor	Keysight	N9123A	MY58310003	Mar. 29, 2020

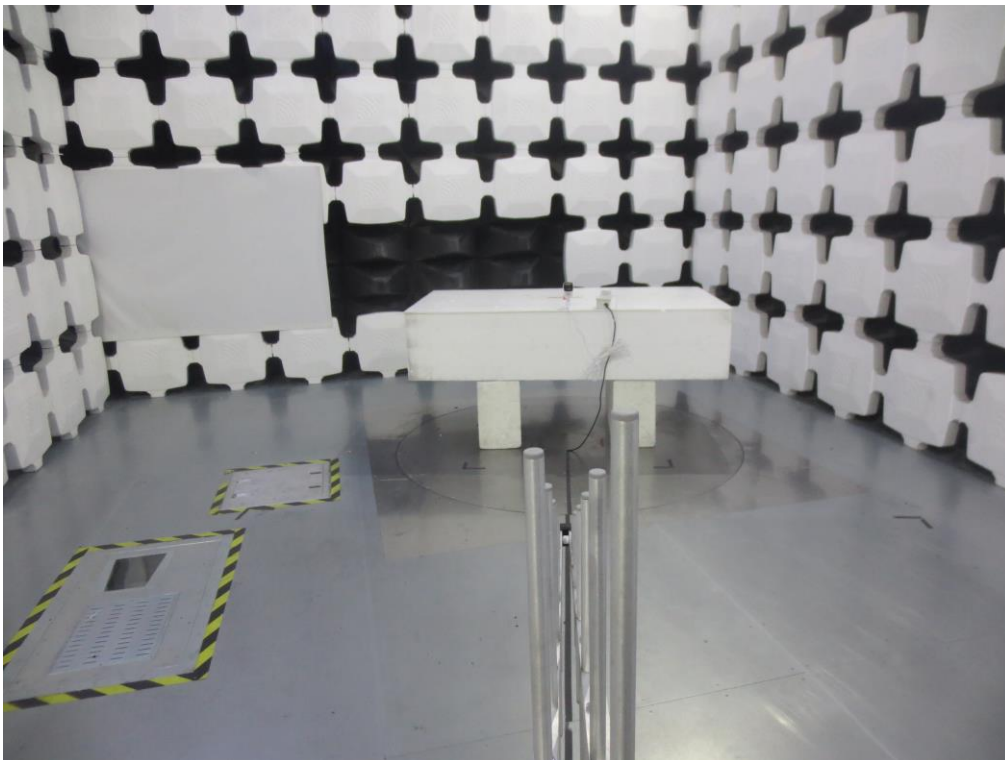
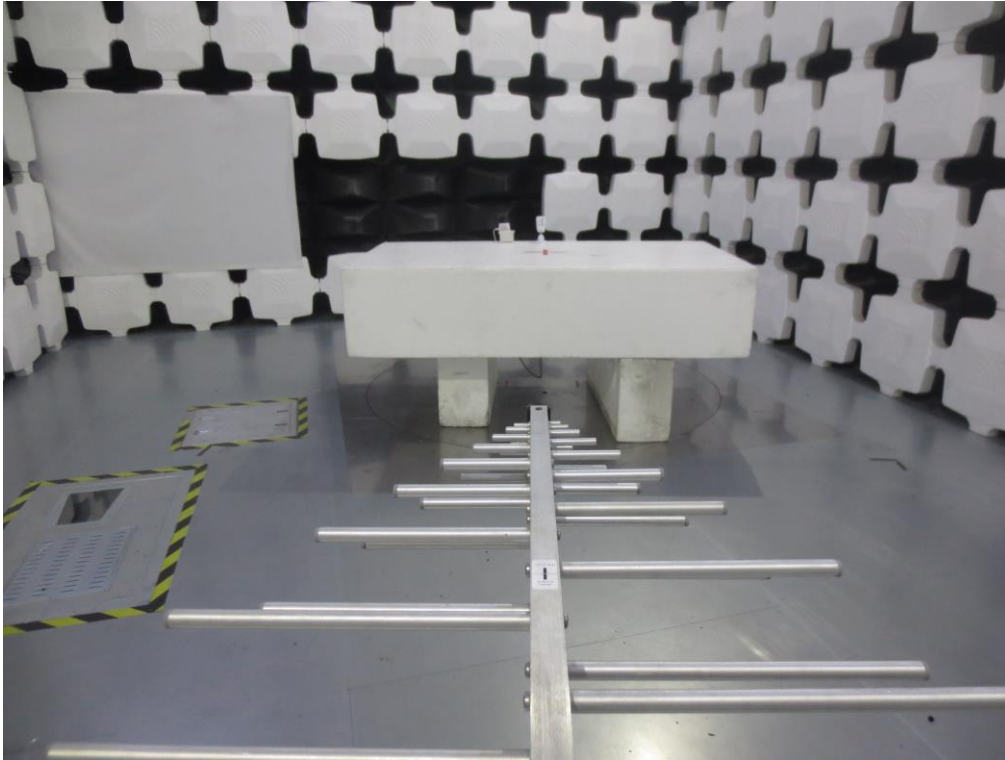
Antenna Conducted Spurious Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020

Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020

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

All calibration period of equipment list is one year.

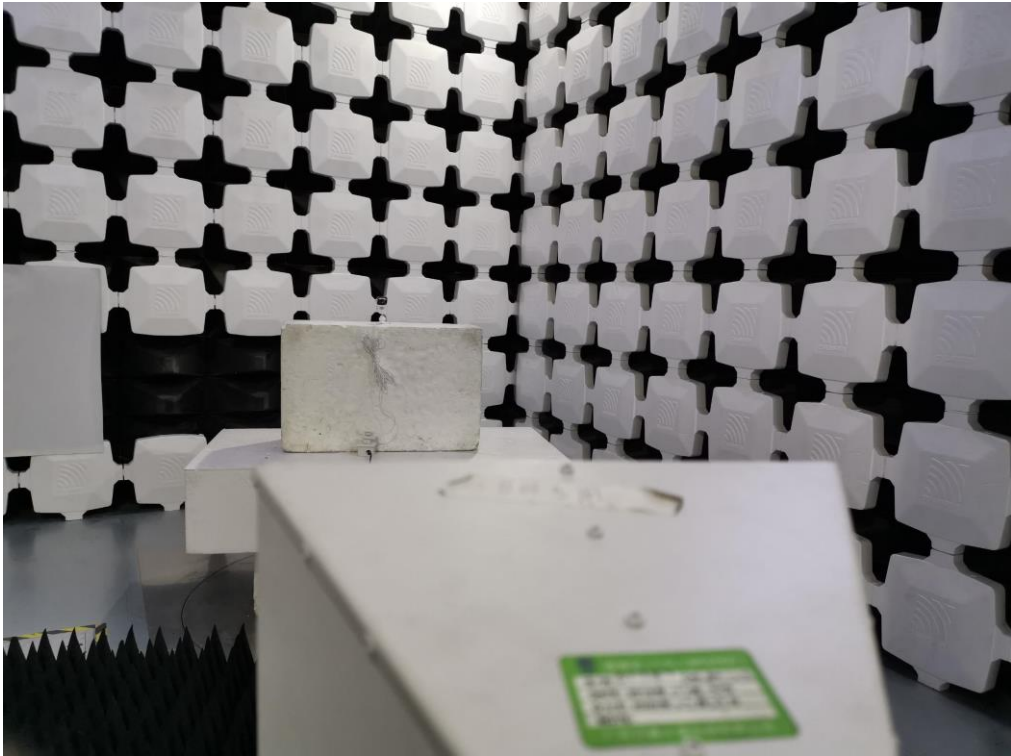
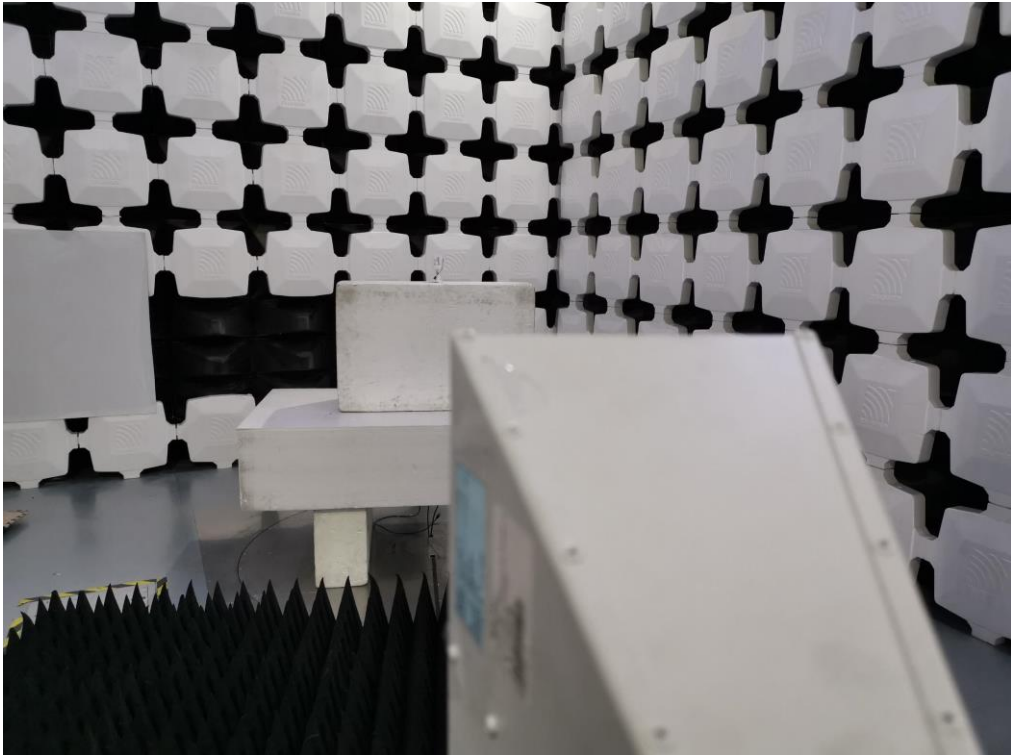
**10. EUT TEST PHOTO****AC Power Line Conducted Emissions Test Photos**

**Radiated Emissions Test Photos****30 MHz to 1000 MHz**



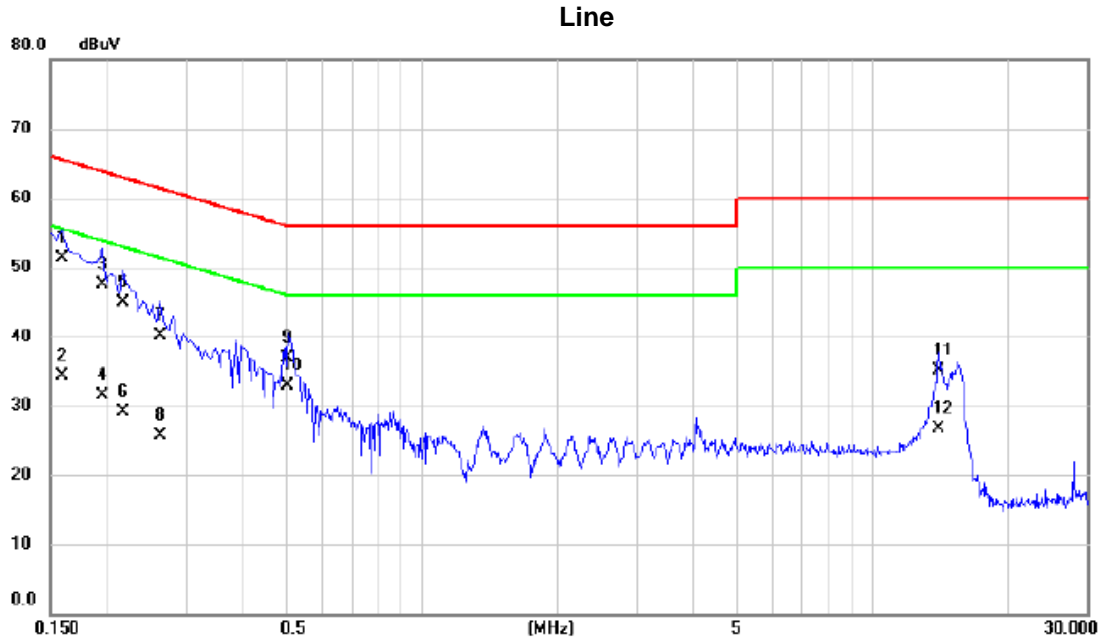
**Radiated Emissions Test Photos**

**Above 1 GHz**



## APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode : TX Mode Adapter: WB-12G12FU



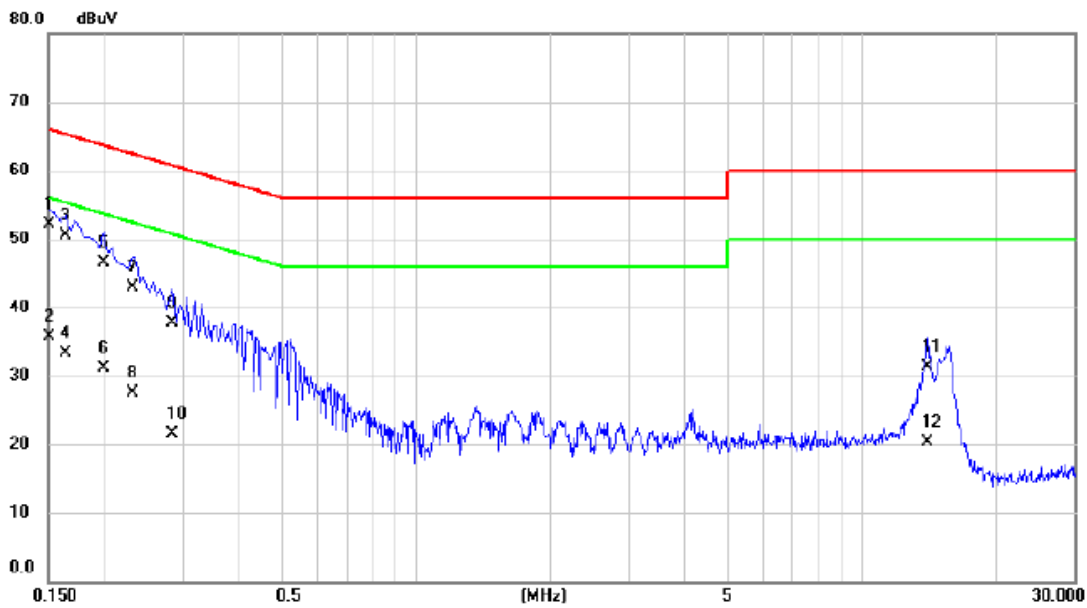
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1590	41.50	9.77	51.27	65.52	-14.25	QP	
2		0.1590	24.60	9.77	34.37	55.52	-21.15	AVG	
3		0.1950	37.60	9.82	47.42	63.82	-16.40	QP	
4		0.1950	21.60	9.82	31.42	53.82	-22.40	AVG	
5		0.2175	35.10	9.84	44.94	62.91	-17.97	QP	
6		0.2175	19.30	9.84	29.14	52.91	-23.77	AVG	
7		0.2625	30.20	9.85	40.05	61.35	-21.30	QP	
8		0.2625	15.90	9.85	25.75	51.35	-25.60	AVG	
9		0.5055	26.90	10.00	36.90	56.00	-19.10	QP	
10	*	0.5055	22.90	10.00	32.90	46.00	-13.10	AVG	
11		14.0010	25.10	10.09	35.19	60.00	-24.81	QP	
12		14.0010	16.70	10.09	26.79	50.00	-23.21	AVG	

**REMARKS:**

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

Test Mode : TX Mode Adapter: WB-12G12FU

### Neutral

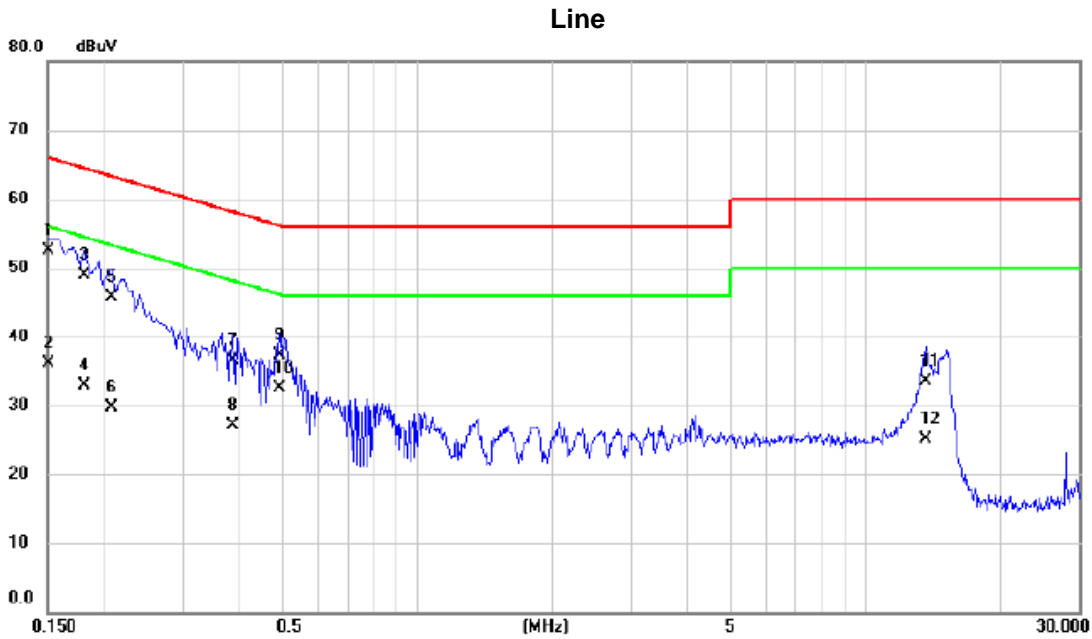


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1500	42.50	9.63	52.13	66.00	-13.87	QP	
2		0.1500	26.00	9.63	35.63	56.00	-20.37	AVG	
3		0.1635	40.90	9.59	50.49	65.28	-14.79	QP	
4		0.1635	23.80	9.59	33.39	55.28	-21.89	AVG	
5		0.1995	36.90	9.66	46.56	63.63	-17.07	QP	
6		0.1995	21.40	9.66	31.06	53.63	-22.57	AVG	
7		0.2310	33.20	9.70	42.90	62.41	-19.51	QP	
8		0.2310	17.90	9.70	27.60	52.41	-24.81	AVG	
9		0.2850	28.00	9.76	37.76	60.67	-22.91	QP	
10		0.2850	11.80	9.76	21.56	50.67	-29.11	AVG	
11		13.9965	21.20	10.11	31.31	60.00	-28.69	QP	
12		13.9965	10.20	10.11	20.31	50.00	-29.69	AVG	

**REMARKS:**

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

Test Mode : TX Mode Adapter: WB-12G12R



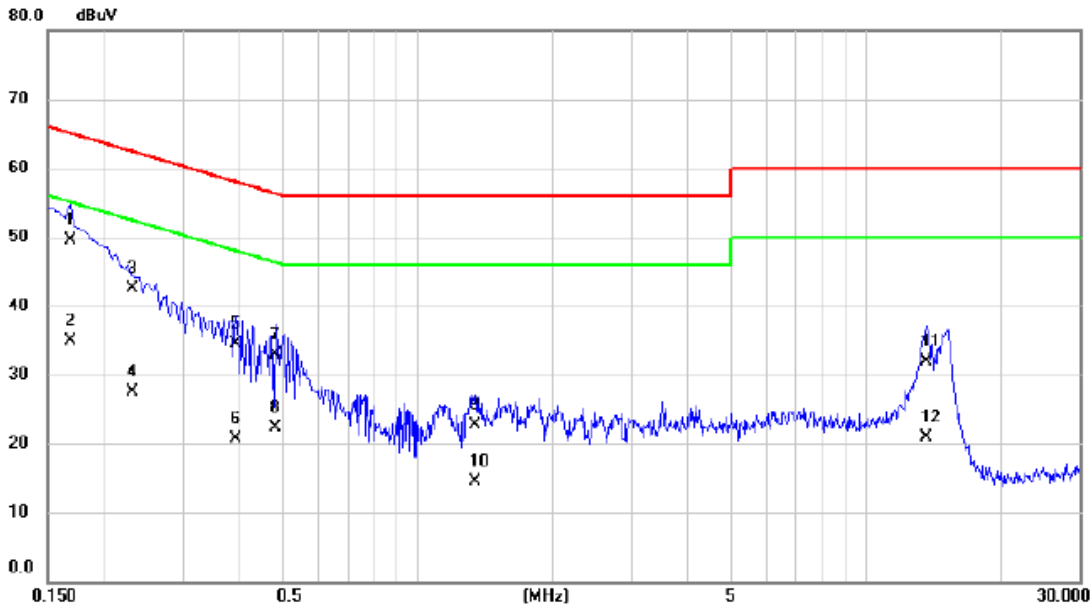
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1500	42.70	9.76	52.46	66.00	-13.54	QP	
2		0.1500	26.40	9.76	36.16	56.00	-19.84	AVG	
3		0.1815	39.10	9.81	48.91	64.42	-15.51	QP	
4		0.1815	23.00	9.81	32.81	54.42	-21.61	AVG	
5		0.2085	35.90	9.83	45.73	63.26	-17.53	QP	
6		0.2085	19.80	9.83	29.63	53.26	-23.63	AVG	
7		0.3885	26.60	9.88	36.48	58.10	-21.62	QP	
8		0.3885	17.20	9.88	27.08	48.10	-21.02	AVG	
9		0.4920	27.30	9.99	37.29	56.13	-18.84	QP	
10		0.4920	22.60	9.99	32.59	46.13	-13.54	AVG	
11		13.6545	23.40	10.10	33.50	60.00	-26.50	QP	
12		13.6545	15.10	10.10	25.20	50.00	-24.80	AVG	

REMARKS:

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

Test Mode : TX Mode Adapter: WB-12G12R

### Neutral

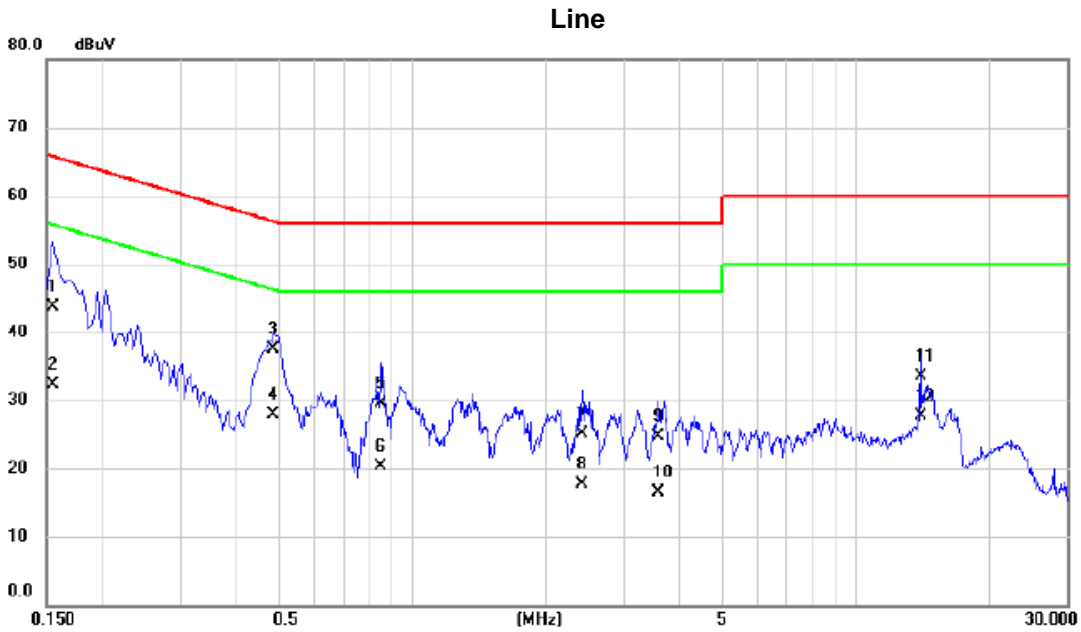


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1680	40.00	9.58	49.58	65.06	-15.48	QP	
2		0.1680	25.40	9.58	34.98	55.06	-20.08	AVG	
3		0.2310	32.90	9.70	42.60	62.41	-19.81	QP	
4		0.2310	17.80	9.70	27.50	52.41	-24.91	AVG	
5		0.3930	24.70	9.76	34.46	58.00	-23.54	QP	
6		0.3930	10.90	9.76	20.66	48.00	-27.34	AVG	
7		0.4830	23.00	9.82	32.82	56.29	-23.47	QP	
8		0.4830	12.50	9.82	22.32	46.29	-23.97	AVG	
9		1.3470	12.90	9.82	22.72	56.00	-33.28	QP	
10		1.3470	4.70	9.82	14.52	46.00	-31.48	AVG	
11		13.6275	21.70	10.12	31.82	60.00	-28.18	QP	
12		13.6275	10.80	10.12	20.92	50.00	-29.08	AVG	

**REMARKS:**

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

Test Mode : TX Mode Adapter: KA1201A-1201000US

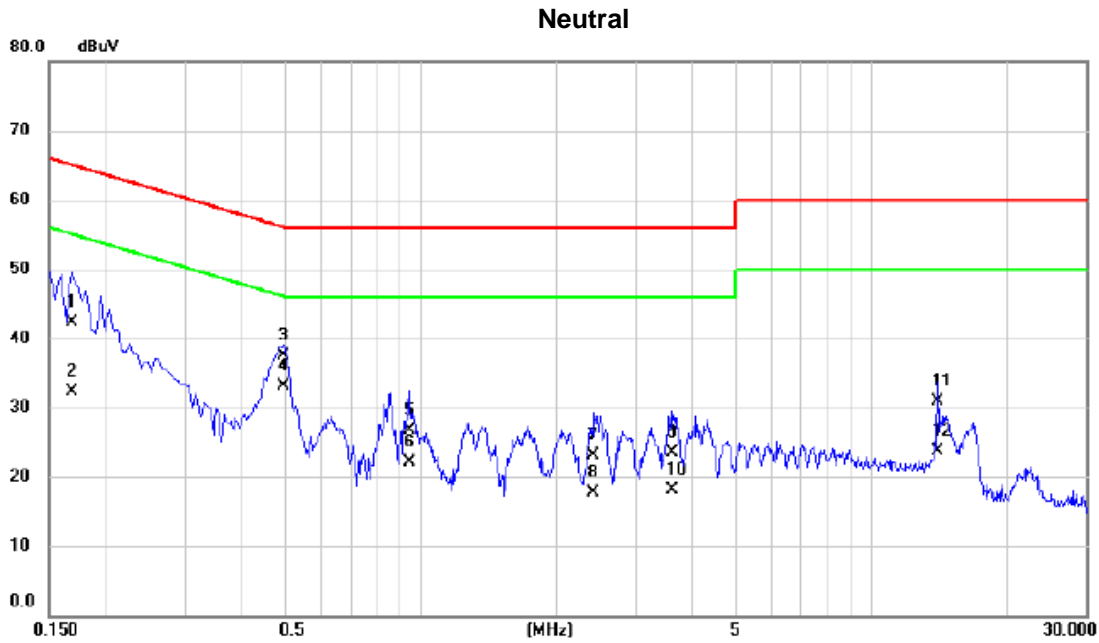


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.1545	33.90	9.73	43.63	65.75	-22.12	QP	
2	0.1545	22.60	9.73	32.33	55.75	-23.42	AVG	
3	0.4875	27.60	9.90	37.50	56.21	-18.71	QP	
4 *	0.4875	18.10	9.90	28.00	46.21	-18.21	AVG	
5	0.8520	19.80	9.79	29.59	56.00	-26.41	QP	
6	0.8520	10.60	9.79	20.39	46.00	-25.61	AVG	
7	2.4180	15.20	9.82	25.02	56.00	-30.98	QP	
8	2.4180	7.80	9.82	17.62	46.00	-28.38	AVG	
9	3.5880	14.80	9.89	24.69	56.00	-31.31	QP	
10	3.5880	6.70	9.89	16.59	46.00	-29.41	AVG	
11	14.0010	23.40	10.19	33.59	60.00	-26.41	QP	
12	14.0010	17.60	10.19	27.79	50.00	-22.21	AVG	

**REMARKS:**

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

Test Mode : TX Mode Adapter: KA1201A-1201000US



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1680	32.60	9.61	42.21	65.06	-22.85	QP	
2		0.1680	22.60	9.61	32.21	55.06	-22.85	AVG	
3		0.4965	27.80	9.69	37.49	56.06	-18.57	QP	
4	*	0.4965	23.40	9.69	33.09	46.06	-12.97	AVG	
5		0.9420	16.90	9.72	26.62	56.00	-29.38	QP	
6		0.9420	12.30	9.72	22.02	46.00	-23.98	AVG	
7		2.4224	13.20	9.81	23.01	56.00	-32.99	QP	
8		2.4224	7.80	9.81	17.61	46.00	-28.39	AVG	
9		3.6285	13.60	9.89	23.49	56.00	-32.51	QP	
10		3.6285	8.20	9.89	18.09	46.00	-27.91	AVG	
11		14.0010	20.80	10.15	30.95	60.00	-29.05	QP	
12		14.0010	13.60	10.15	23.75	50.00	-26.25	AVG	

**REMARKS:**

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

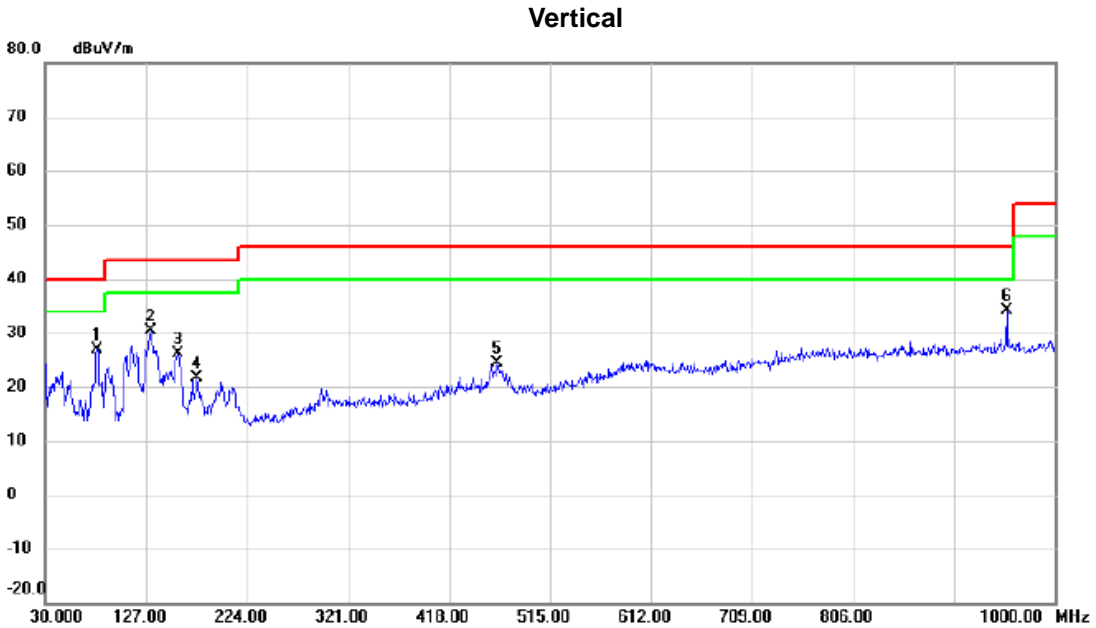


## **APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ**

Note: The measured value have enough margin over 20dB than the limit, therefore they are not reported.

**APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ**

Test Mode : TX Mode Adapter: WB-12G12FU (For DCS-8630LH)

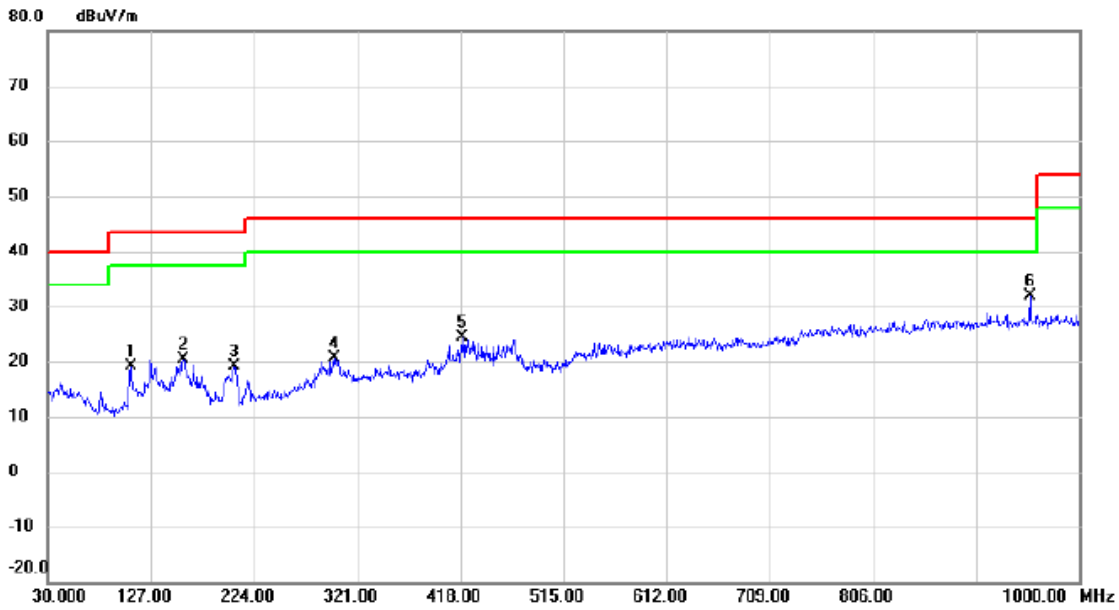


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		79.9550	47.24	-20.29	26.95	40.00	-13.05	peak	
2		131.3650	47.18	-16.72	30.46	43.50	-13.04	peak	
3		157.0700	41.24	-15.16	26.08	43.50	-17.42	peak	
4		175.9850	38.38	-16.70	21.68	43.50	-21.82	peak	
5		463.5900	37.25	-12.91	24.34	46.00	-21.66	peak	
6	*	953.4400	39.29	-5.13	34.16	46.00	-11.84	peak	

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

Test Mode : TX Mode Adapter: WB-12G12FU (For DCS-8630LH)

### Horizontal

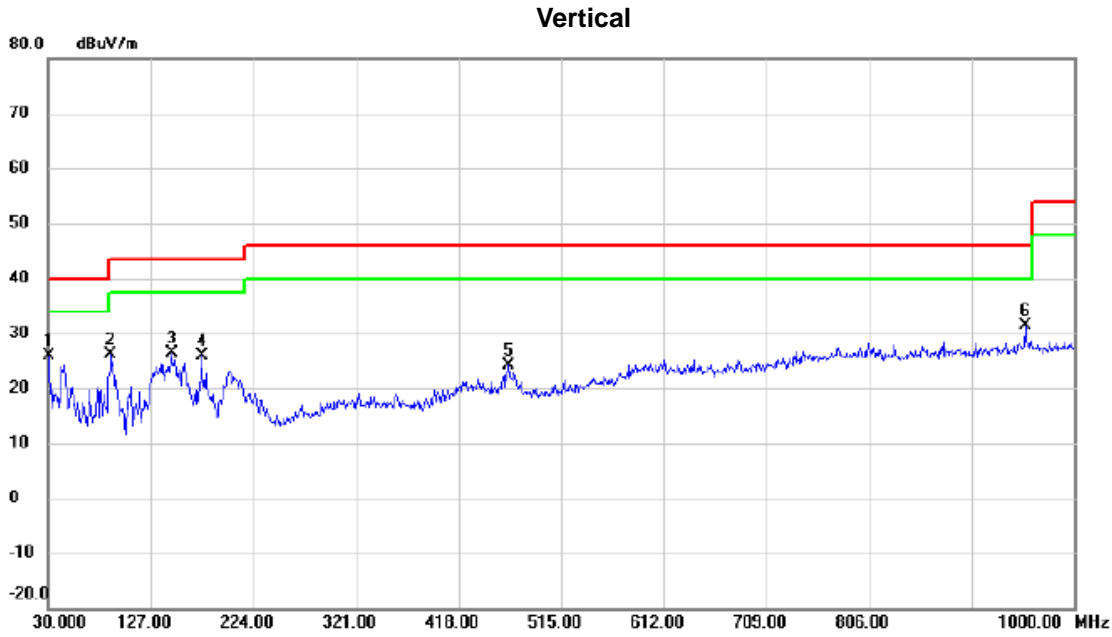


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		107.6000	37.58	-18.57	19.01	43.50	-24.49	peak	
2		157.0700	35.66	-15.16	20.50	43.50	-23.00	peak	
3		205.5700	37.78	-18.59	19.19	43.50	-24.31	peak	
4		299.1750	34.87	-14.36	20.51	46.00	-25.49	peak	
5		419.9400	37.48	-13.01	24.47	46.00	-21.53	peak	
6	*	953.4400	37.06	-5.13	31.93	46.00	-14.07	peak	

**REMARKS:**

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

Test Mode : TX Mode Adapter: WB-12G12R (For DCS-8630LH)



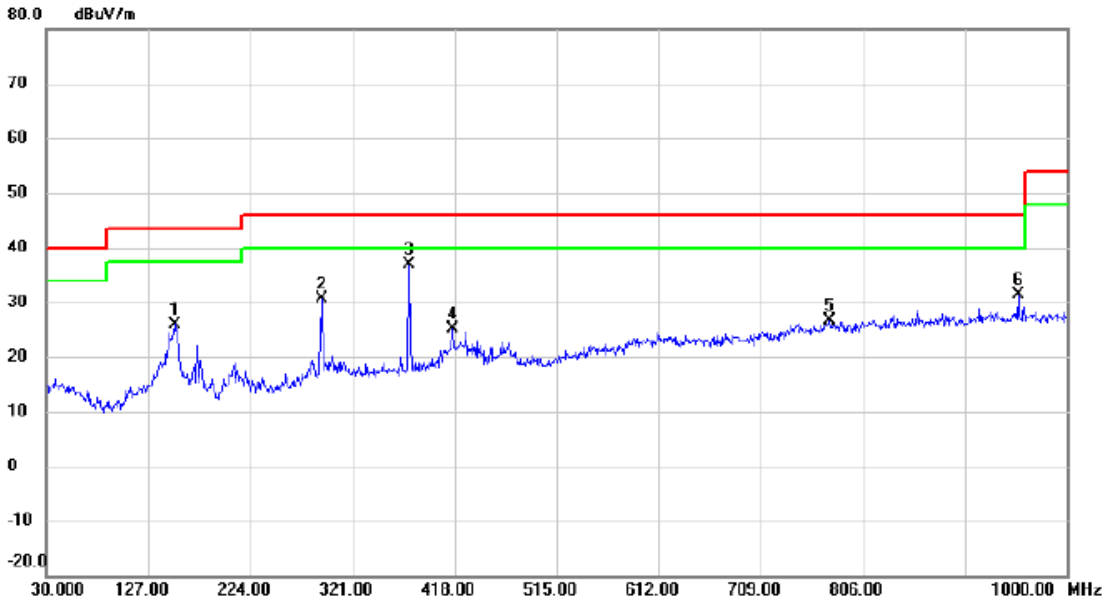
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	30.0000	43.18	-17.34	25.84	40.00	-14.16	peak	
2		89.1700	46.53	-20.45	26.08	43.50	-17.42	peak	
3		146.4000	41.42	-15.12	26.30	43.50	-17.20	peak	
4		175.0150	42.52	-16.52	26.00	43.50	-17.50	peak	
5		465.5300	37.09	-12.89	24.20	46.00	-21.80	peak	
6		953.4400	36.46	-5.13	31.33	46.00	-14.67	peak	

**REMARKS:**

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

Test Mode : TX Mode Adapter: WB-12G12R (For DCS-8630LH)

### Horizontal

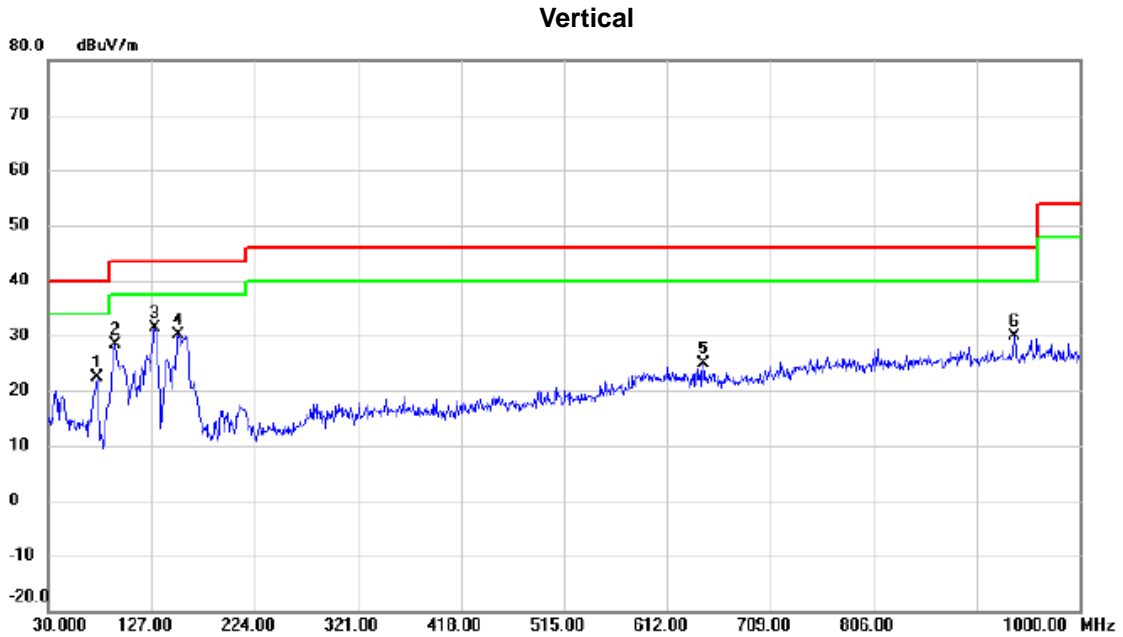


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	151.7350	40.89	-14.89	26.00	43.50	-17.50	peak	
2	291.9000	45.37	-14.76	30.61	46.00	-15.39	peak	
3 *	374.8350	50.65	-13.86	36.79	46.00	-9.21	peak	
4	416.5450	38.19	-13.17	25.02	46.00	-20.98	peak	
5	773.9900	33.21	-6.56	26.65	46.00	-19.35	peak	
6	953.4400	36.57	-5.13	31.44	46.00	-14.56	peak	

**REMARKS:**

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

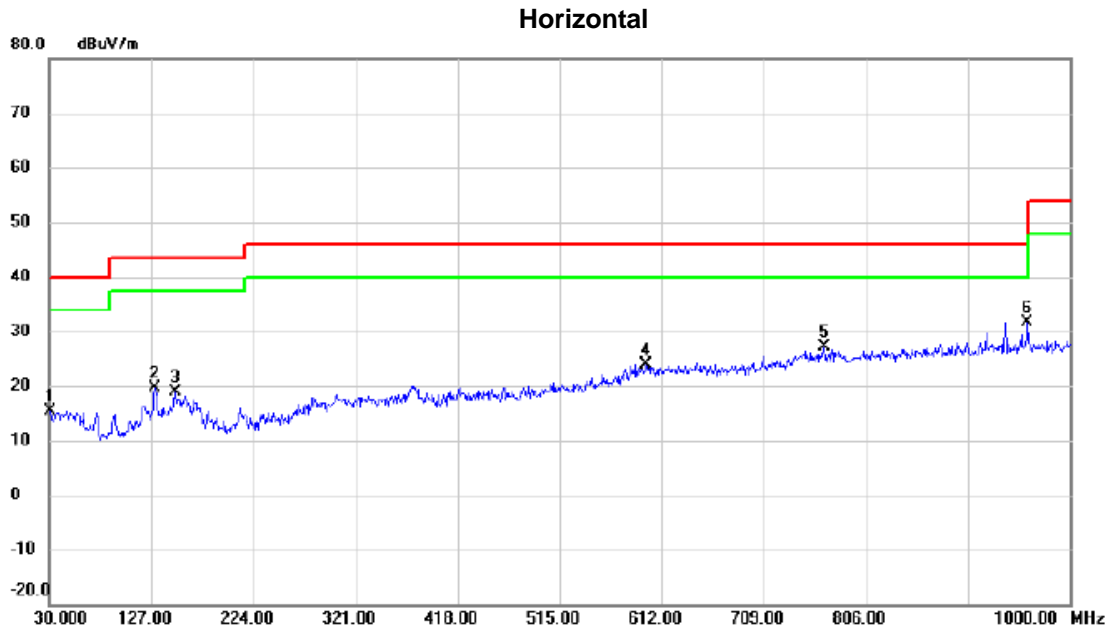
Test Mode : TX Mode Adapter: KA1201A-1201000US (For DCS-8630LH)



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	75.5900	42.70	-20.32	22.38	40.00	-17.62	peak	
2	92.5650	48.82	-20.39	28.43	43.50	-15.07	peak	
3 *	130.3950	48.14	-16.84	31.30	43.50	-12.20	peak	
4	152.2200	44.95	-14.91	30.04	43.50	-13.46	peak	
5	646.4350	33.45	-8.52	24.93	46.00	-21.07	peak	
6	938.4050	35.15	-5.20	29.95	46.00	-16.05	peak	

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

Test Mode : TX Mode Adapter: KA1201A-1201000US (For DCS-8630LH)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		30.9700	32.82	-17.32	15.50	40.00	-24.50	peak	
2		130.3950	36.39	-16.84	19.55	43.50	-23.95	peak	
3		149.7950	33.71	-14.83	18.88	43.50	-24.62	peak	
4		596.4800	32.83	-8.84	23.99	46.00	-22.01	peak	
5		766.7150	33.76	-6.60	27.16	46.00	-18.84	peak	
6	*	959.7450	36.80	-5.09	31.71	46.00	-14.29	peak	

**REMARKS:**

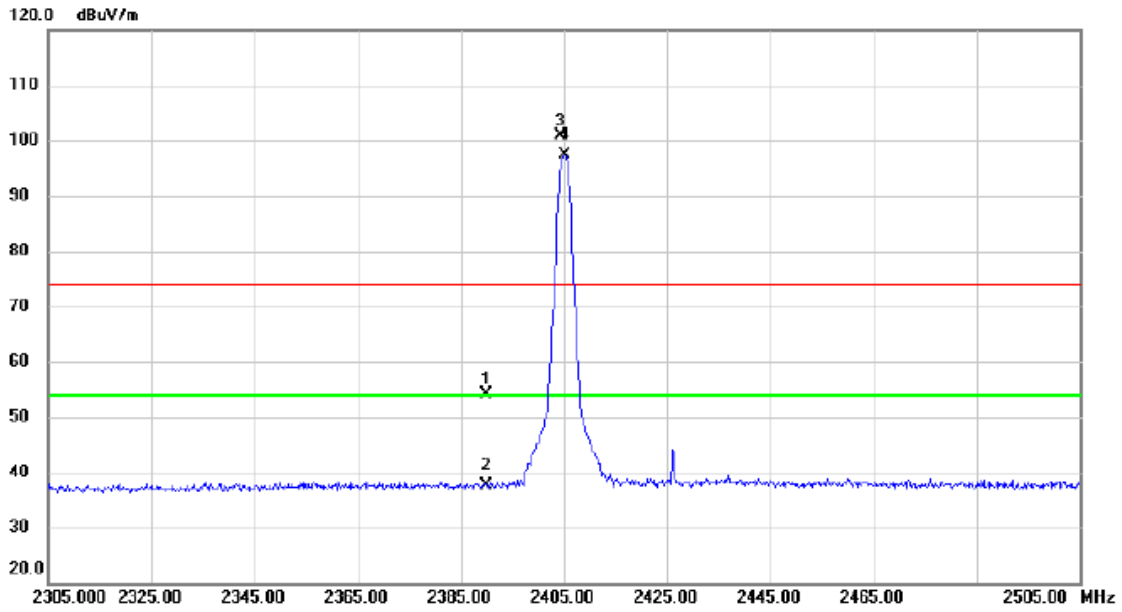
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.



**APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ**

Test Mode : TX 2405 MHz \_CH11

**Vertical**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	21.66	32.39	54.05	74.00	-19.95	peak	
2		2390.000	5.13	32.39	37.52	54.00	-16.48	AVG	
3	X	2404.400	68.51	32.44	100.95	74.00	26.95	peak	No Limit
4	*	2405.000	64.91	32.44	97.35	54.00	43.35	AVG	No Limit

**REMARKS:**

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

Test Mode : TX 2405 MHz \_CH11

### Vertical



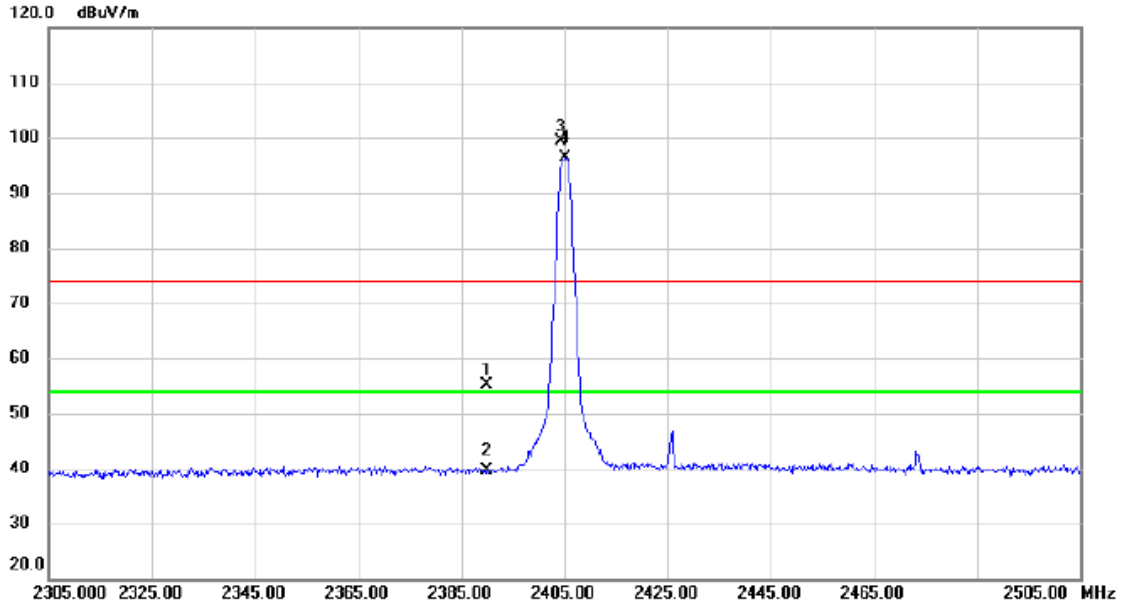
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	3197.825	60.32	-14.27	46.05	74.00	-27.95	peak	
2		4264.220	54.92	-11.70	43.22	74.00	-30.78	peak	

**REMARKS:**

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

Test Mode : TX 2405 MHz \_CH11

### Horizontal



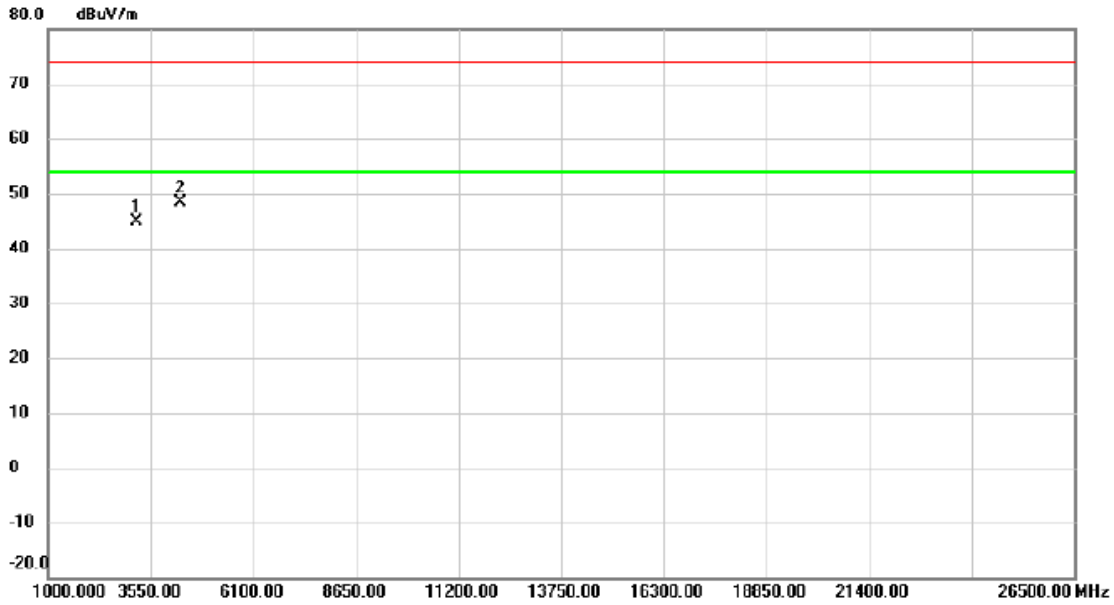
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2390.000	22.79	32.39	55.18	74.00	-18.82	peak	
2		2390.000	7.17	32.39	39.56	54.00	-14.44	AVG	
3	X	2404.400	66.90	32.44	99.34	74.00	25.34	peak	No Limit
4	*	2405.200	64.01	32.44	96.45	54.00	42.45	AVG	

**REMARKS:**

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

Test Mode : TX 2405 MHz \_CH11

### Horizontal



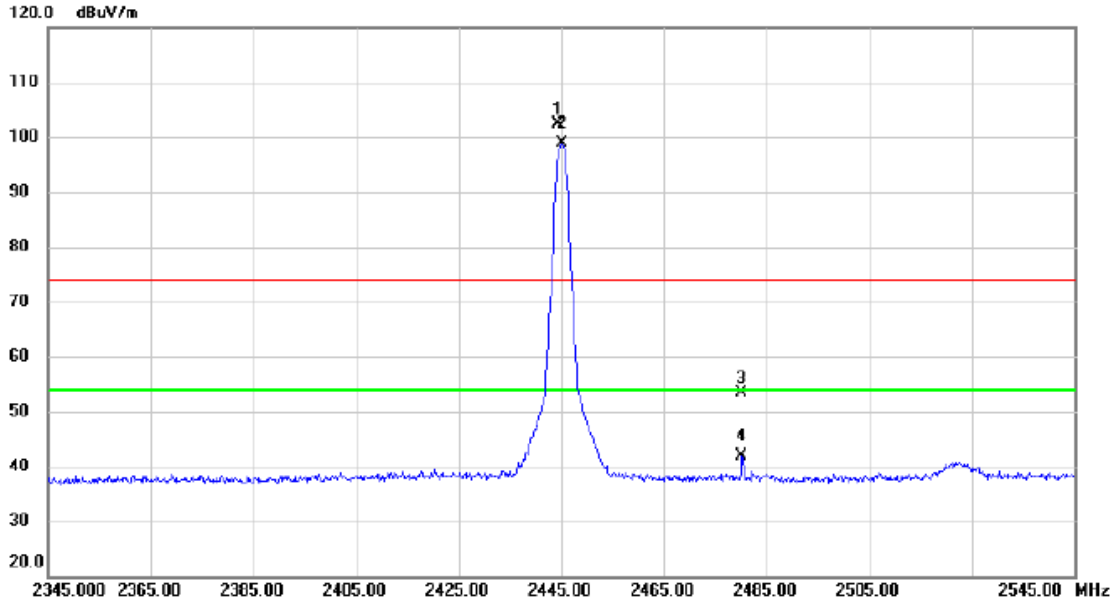
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	3197.875	59.21	-14.27	44.94	74.00	-29.06	peak	
2 *	4264.030	60.03	-11.70	48.33	74.00	-25.67	peak	

**REMARKS:**

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

Test Mode : TX 2445 MHz \_CH19

### Vertical



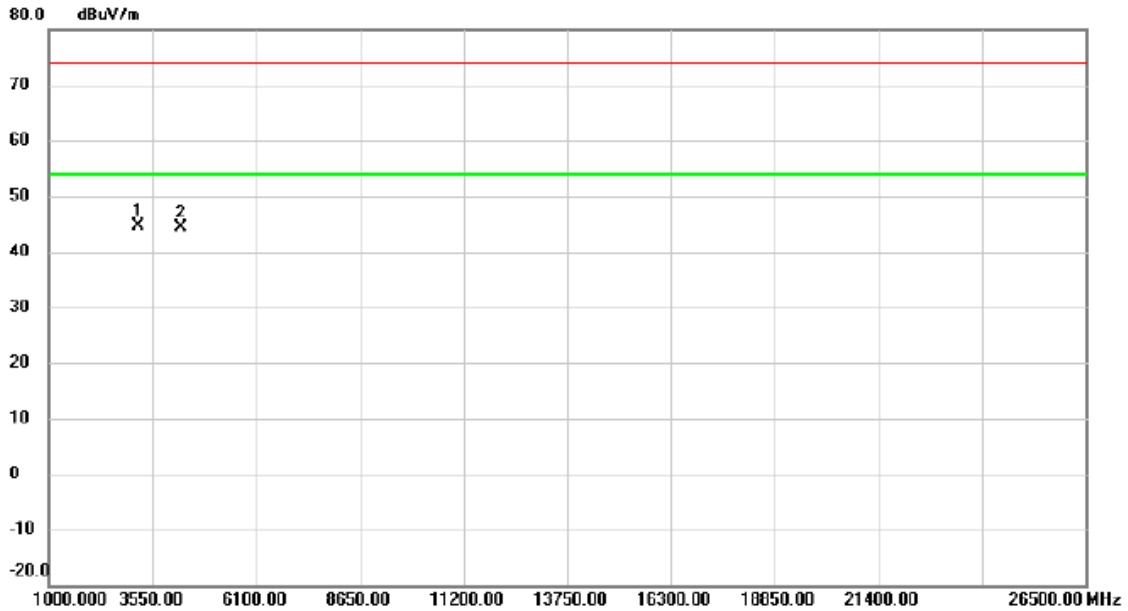
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2444.400	69.77	32.55	102.32	74.00	28.32	peak	No Limit
2	*	2445.200	66.37	32.55	98.92	54.00	44.92	AVG	No Limit
3		2480.200	20.75	32.65	53.40	74.00	-20.60	peak	No Limit
4		2480.200	9.33	32.65	41.98	54.00	-12.02	AVG	No Limit

**REMARKS:**

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

Test Mode : TX 2445 MHz \_CH19

### Vertical



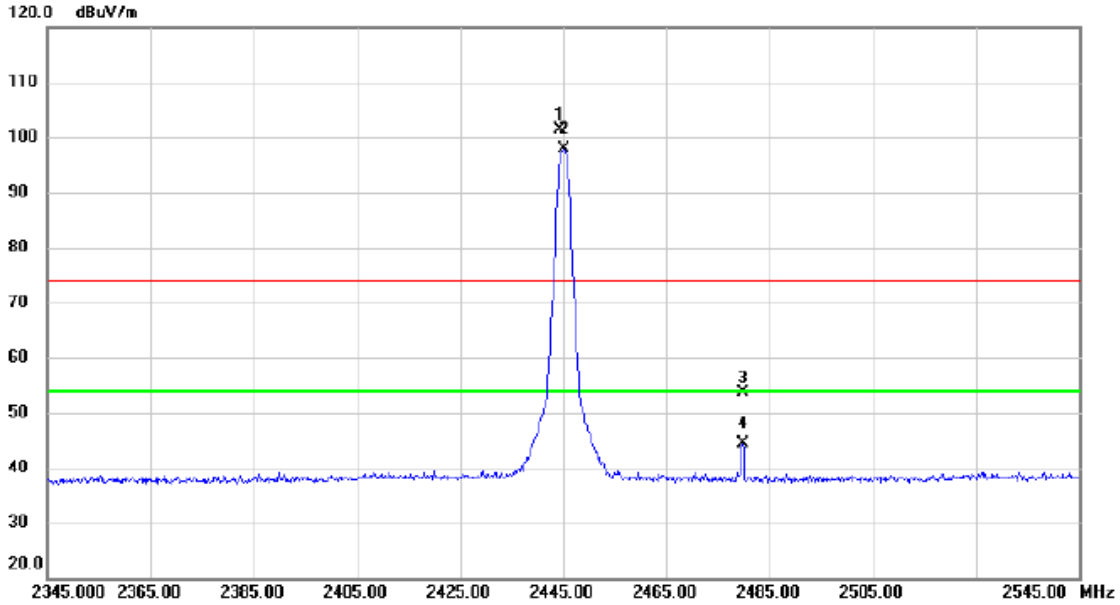
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	3198.185	58.94	-14.27	44.67	74.00	-29.33	peak	
2		4263.860	56.10	-11.70	44.40	74.00	-29.60	peak	

**REMARKS:**

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

Test Mode : TX 2445 MHz \_CH19

### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2444.400	68.79	32.55	101.34	74.00	27.34	peak	No Limit
2	*	2445.200	65.32	32.55	97.87	54.00	43.87	AVG	No Limit
3		2479.800	20.94	32.65	53.59	74.00	-20.41	peak	No Limit
4		2479.800	11.71	32.65	44.36	54.00	-9.64	AVG	No Limit

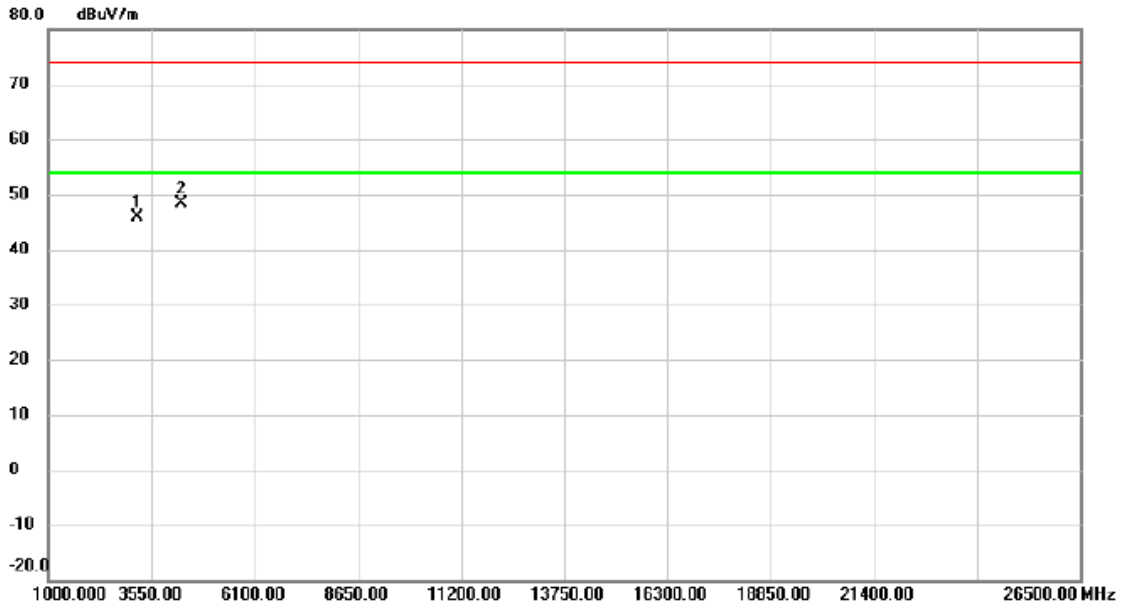
**REMARKS:**

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



Test Mode : TX 2445 MHz \_CH19

### Horizontal



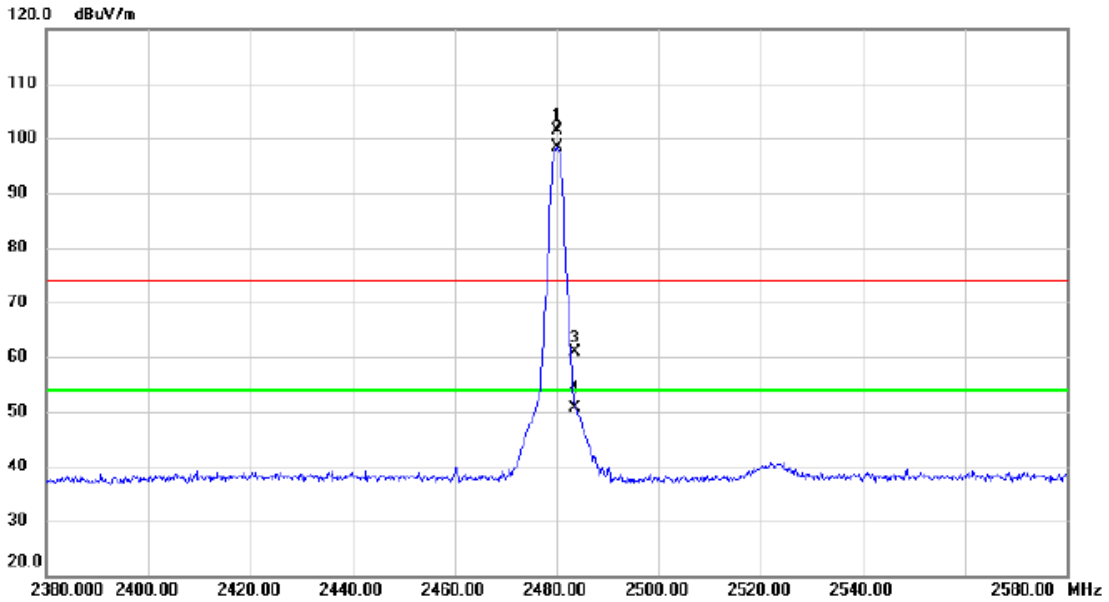
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		3197.570	60.12	-14.27	45.85	74.00	-28.15	peak	
2	*	4264.030	59.98	-11.70	48.28	74.00	-25.72	peak	

**REMARKS:**

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

Test Mode : TX 2480 MHz \_CH26

### Vertical



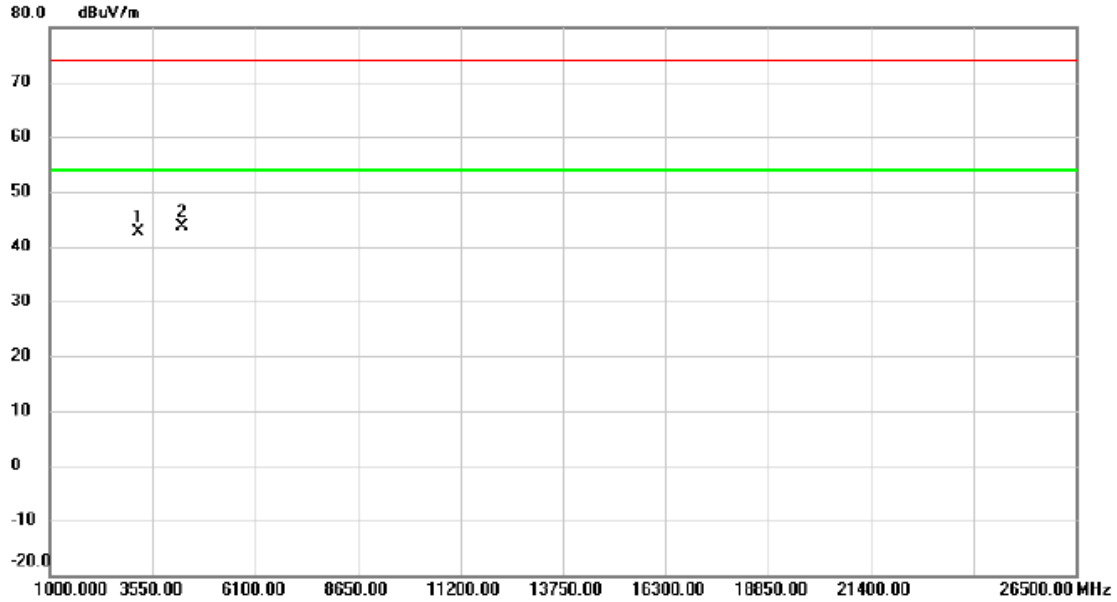
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2480.000	68.79	32.65	101.44	74.00	27.44	peak	No Limit
2	*	2480.200	65.81	32.65	98.46	54.00	44.46	AVG	No Limit
3		2483.500	28.30	32.66	60.96	74.00	-13.04	peak	
4		2483.500	18.06	32.66	50.72	54.00	-3.28	AVG	

**REMARKS:**

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

Test Mode : TX 2480 MHz \_CH26

### Vertical



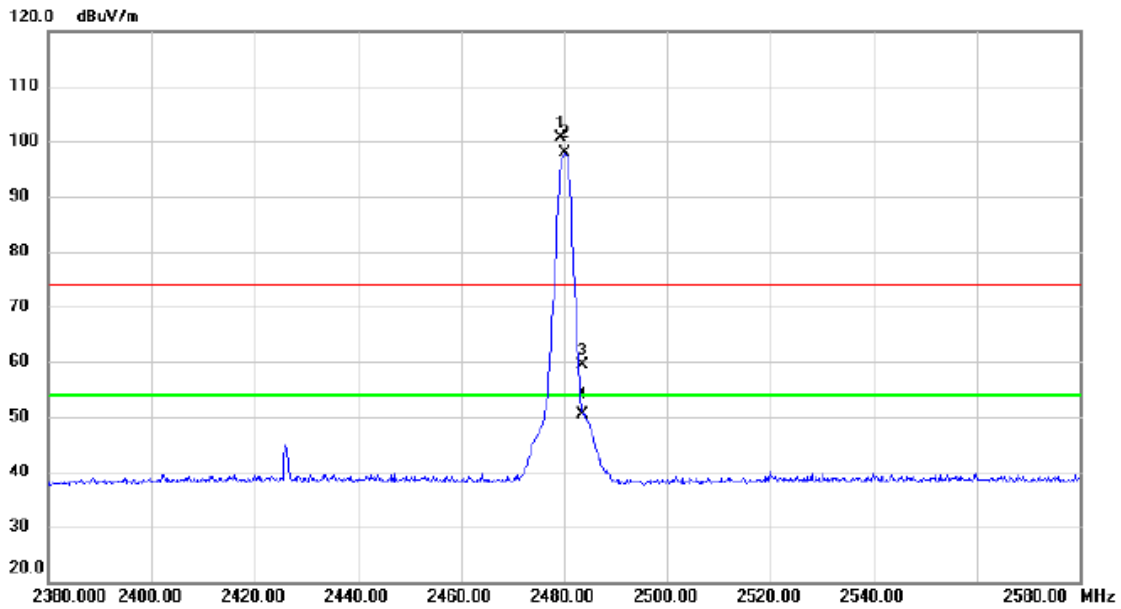
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		3198.355	56.93	-14.27	42.66	74.00	-31.34	peak	
2	*	4264.225	55.27	-11.70	43.57	74.00	-30.43	peak	

#### REMARKS:

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

Test Mode : TX 2480 MHz \_CH26

### Horizontal



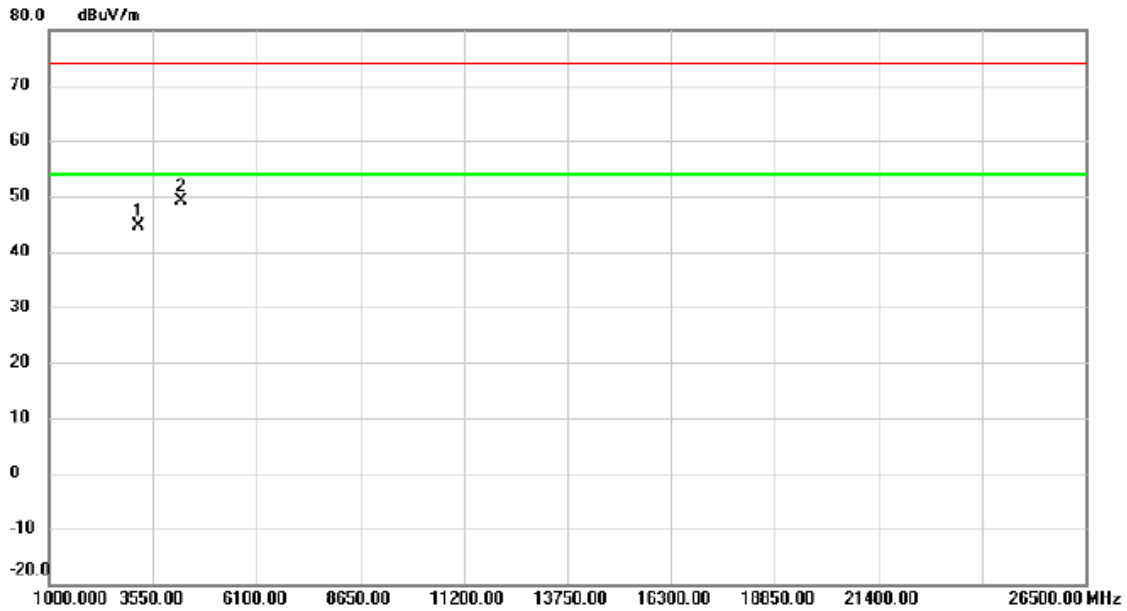
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2479.400	68.07	32.65	100.72	74.00	26.72	peak	No Limit
2	*	2480.200	65.22	32.65	97.87	54.00	43.87	AVG	No Limit
3		2483.500	26.82	32.66	59.48	74.00	-14.52	peak	
4		2483.500	17.70	32.66	50.36	54.00	-3.64	AVG	

**REMARKS:**

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

Test Mode : TX 2480 MHz \_CH26

### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		3197.995	58.82	-14.27	44.55	74.00	-29.45	peak	
2	*	4263.905	60.87	-11.70	49.17	74.00	-24.83	peak	

**REMARKS:**

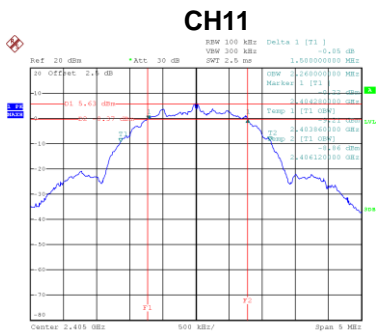
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

## APPENDIX E - BANDWIDTH

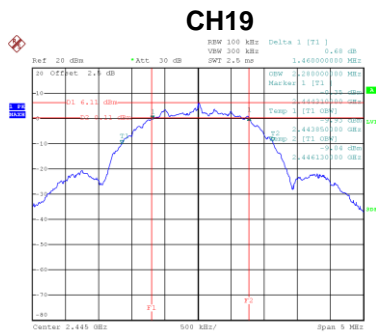
Test Mode:	CH11, CH19, CH26
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Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Test Result
11	2405	1.50	2.24	500	Pass
19	2445	1.46	2.24	500	Pass
26	2480	2.48	2.24	500	Pass

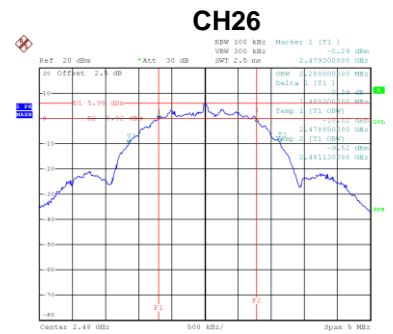
### 6dB Bandwidth



Date: 15.JAN.2020 18:51:50

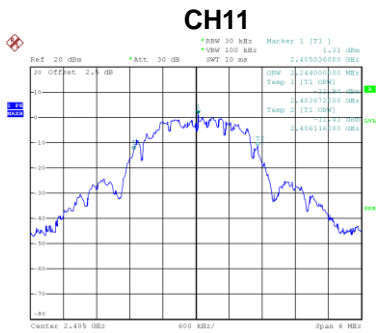


Date: 15.JAN.2020 18:49:52

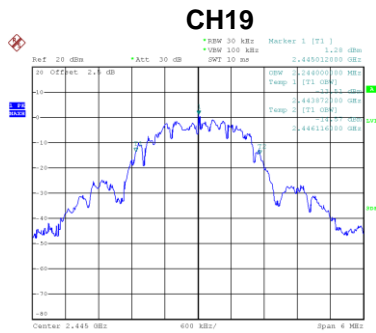


Date: 15.JAN.2020 18:47:19

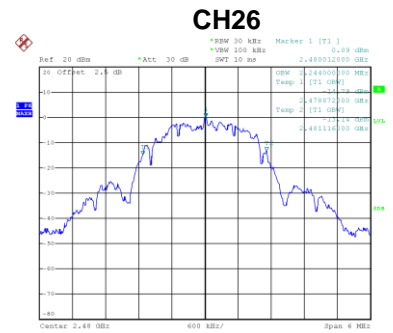
### 99% Emission Bandwidth



Date: 15.JAN.2020 16:32:53



Date: 15.JAN.2020 16:33:56



Date: 15.JAN.2020 16:34:36

## APPENDIX F - MAXIMUM OUTPUT POWER



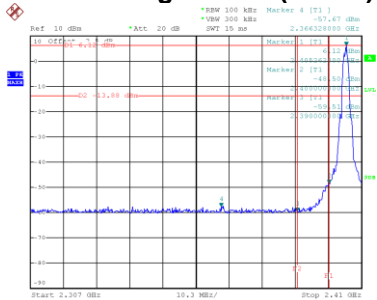
Test Mode :	CH11, CH19 , CH26
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Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2405	7.85	0.0061	30.00	1.00	Pass
2445	7.61	0.0058	30.00	1.00	Pass
2480	7.55	0.0057	30.00	1.00	Pass

## **APPENDIX G - CONDUCTED SPURIOUS EMISSION**

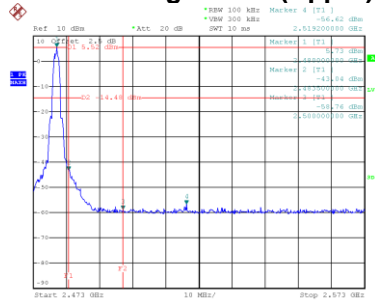
Test Mode : CH11, CH19, CH26

### Bandedge- CH11 (Lower)



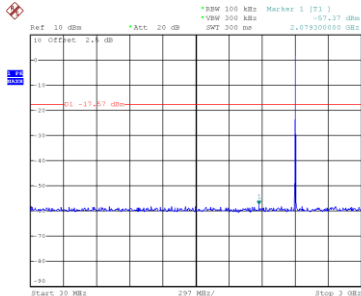
Date: 15.JAN.2020 19:10:45

### Bandedge CH26 (Upper)

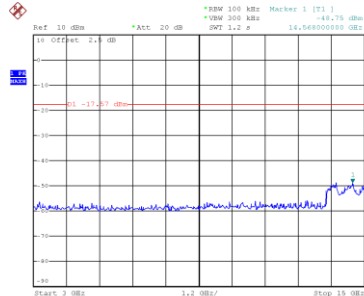


Date: 15.JAN.2020 19:10:23

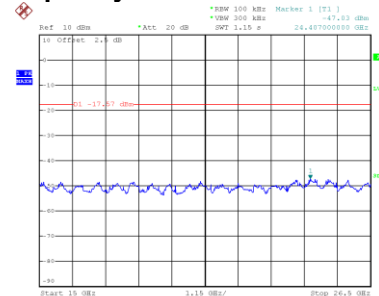
### CH11 – 10th Harmonic of the fundamental frequency



Date: 15.JAN.2020 19:19:40

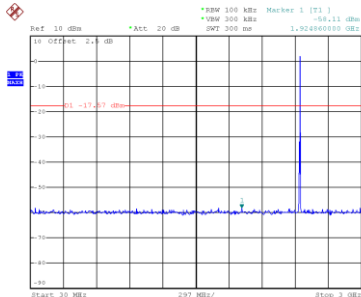


Date: 15.JAN.2020 19:20:33

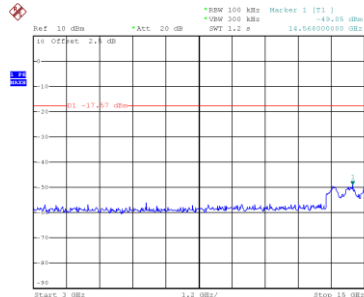


Date: 15.JAN.2020 19:21:47

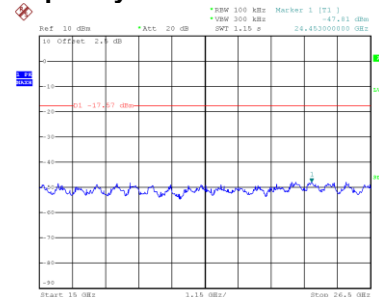
### CH19 – 10th Harmonic of the fundamental frequency



Date: 15.JAN.2020 19:23:24

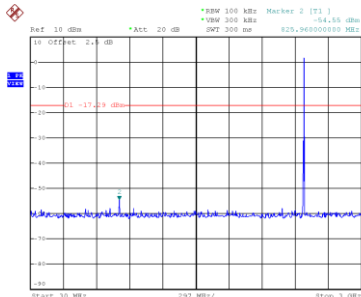


Date: 15.JAN.2020 19:23:50

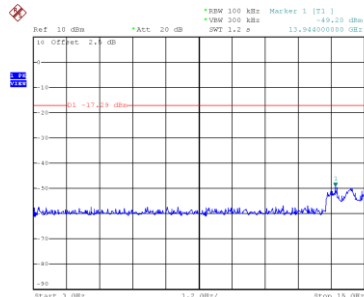


Date: 15.JAN.2020 19:24:14

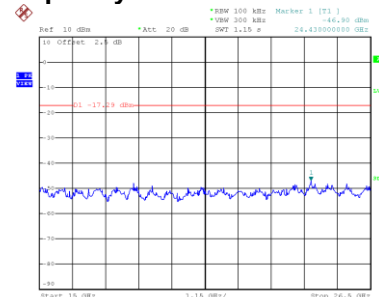
### CH26 – 10th Harmonic of the fundamental frequency



Date: 15.JAN.2020 18:39:24



Date: 15.JAN.2020 18:39:31

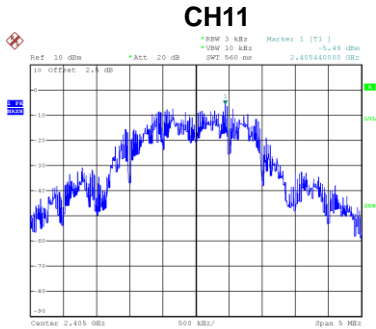


Date: 15.JAN.2020 18:39:37

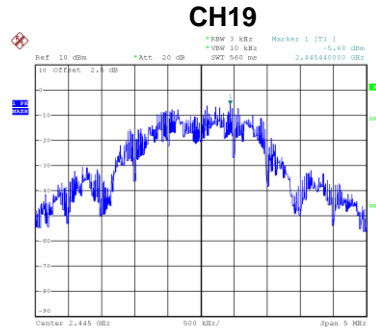
## APPENDIX H - POWER SPECTRAL DENSITY

Test Mode: CH11, CH19, CH26

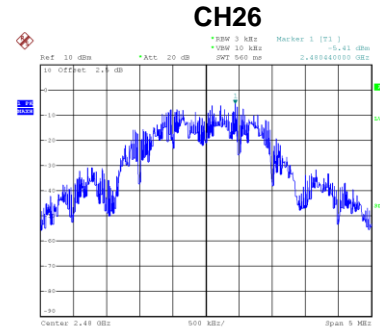
Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
11	2405	-5.49	8.00	Pass
19	2445	-5.68	8.00	Pass
26	2480	-5.41	8.00	Pass



Date: 15-JAN-2020 19:16:14



Date: 15-JAN-2020 19:15:07



Date: 15-JAN-2020 19:12:31

End of Test Report