Report No.: DDT-R20062801-1E22

Issued Date: May 10, 2021

FCC CERTIFICATION TEST REPORT

FOR

Applicant	:	E and F Enterprises Co., Ltd
Address	:	Room A3-8971, No. 58 Fumin Branch Road, Hengsha Township, Chongming District, Shanghai, China.
Equipment under Test	:	EFLamp Prelude d (Smart Speaker Lamp)
Model No.	:	EF_IL_D1, EF_IL_D2, EF_IL_D3, EF_IL_D4, EF_IL_D5, EF_IL_D6, EF_IL_D7, EF_IL_D8, EF_IL_D9, EF_IL_D10, EF_IL_D11, EF_IL_D12
Trade Mark	:	E+F
FCC ID	:	2AXQQ-PRELUDE
Manufacturer	:	DONGGUAN TRISTAR ELECTRONIC CO., LTD.
Address	:	Building 1 & Building2, No.196, Tangxia Dongxing Road, Tangxia Town, Dongguan City, Guangdong Province, China

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

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REPORT

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Test Report Declare

Applicant	:	E and F Enterprises Co., Ltd
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Equipment under Test	:	EFLamp Prelude d (Smart Speaker Lamp)
Model No	:	EF_IL_D1, EF_IL_D2, EF_IL_D3, EF_IL_D4, EF_IL_D5, EF_IL_D6, EF_IL_D7, EF_IL_D8, EF_IL_D9, EF_IL_D10, EF_IL_D11, EF_IL_D12
Trade Mark	:	E+F
Manufacturer	:	DONGGUAN TRISTAR ELECTRONIC CO., LTD.
Address	:	Building 1 & Building2, No.196, Tangxia Dongxing Road, Tangxia Town, Dongguan City, Guangdong Province, China

Test Standard Used: FCC Rules and Regulations Part 15 Subpart E.

Test procedure used: ANSI C63.10:2013, 789033 D02 General U-NII Test Procedures New Rules v02r01

We Declare:

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

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No:	DDT-R20062801-1E22		
Date of Receipt:	Apr. 07, 2020	**Date of Test:**	Apr. 07, 2020 ~ May 10, 2021

Prepared By: ***Approved By:***

Sam Li

Sam Li/Engineer ***Damon Hu/EMC Manager***

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	May 10, 2021	

1. Summary of Test Results

The EUT have been tested according to the applicable standards as referenced below.		
Description of Test Item	**Standard**	**Results**
6/26 dB Bandwidth	FCC 15.407 (e)	PASS
Maximum Conducted Output Power	FCC 15.407 (a)	PASS
Power Spectral Density	FCC 15.407 (a)	PASS
Frequency Stability Measurement	FCC 15.407 (g)	PASS
Spurious Emissions	FCC 15.407 (b) FCC 15.209	PASS
Band Edge Compliance	FCC 15.407 (b) FCC 15.209 FCC 15.205	PASS
Power Line Conducted Emission	FCC 15.207	PASS
Antenna Requirement	FCC 15.203	PASS
Dynamic Frequency Selection	FCC 15.407 (h)	PASS

2. General Test Information

2.1. Description of EUT

EUT* Name	:	EFLamp Prelude d (Smart Speaker Lamp)
Model Number	:	EF_IL_D1, EF_IL_D2, EF_IL_D3, EF_IL_D4, EF_IL_D5, EF_IL_D6, EF_IL_D7, EF_IL_D8, EF_IL_D9, EF_IL_D10, EF_IL_D11, EF_IL_D12
Difference of models	:	All models are identical, except the model name, skin color, Lamp shade, Speaker grille and Accessories, therefore EF_IL_D1 was tested and recorded in this report.
EUT function description	:	Please reference user manual of this device
Power Supply	:	AC 100-240V~, 50/60Hz
Radio Technology	:	IEEE 802.11a/n/ac
Operation frequency	:	IEEE 802.11a: 5180 MHz - 5240 MHz, 5260 MHz - 5320 MHz, 5500 MHz - 5700 MHz, 5745 MHz - 5825 MHz IEEE 802.11n HT20: 5180 MHz - 5240 MHz, 5260 MHz - 5320 MHz, 5500 MHz - 5700 MHz, 5745 MHz - 5825 MHz IEEE 802.11n HT40: 5190 MHz - 5230 MHz, 5270 MHz - 5310 MHz, 5510 MHz - 5670 MHz, 5755 MHz - 5795 MHz IEEE 802.11ac HT20: 5180 MHz - 5240 MHz, 5260 MHz - 5320 MHz, 5500 MHz - 5700 MHz, 5745 MHz - 5825 MHz IEEE 802.11ac HT40: 5190 MHz - 5230 MHz, 5270 MHz - 5310 MHz, 5510 MHz - 5670 MHz, 5755 MHz - 5795 MHz IEEE 802.11ac HT80: 5210 MHz, 5290 MHz, 5530 MHz, 5610 MHz, 5775 MHz
Modulation	:	IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)
Transmitter rate	:	IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11n HT20: 14.4, 28.9, 43.3, 57.8, 86.7, 115.6, 130.0, 144.4 Mbps IEEE 802.11n HT40: 30, 60, 90, 120, 180, 240, 270, 300 Mbps IEEE 802.11ac HT20: 14.4, 28.8, 43.4, 57.8, 86.6, 115.6, 130, 144.4, 173.4 Mbps IEEE 802.11ac HT40: 30, 60, 90, 120, 180, 240, 270, 300, 360, 400 Mbps IEEE 802.11ac HT80: 65, 130, 195, 260, 390, 520, 585, 650, 780, 866.6 Mbps
Antenna Type	:	Dedicated FPCB antenna, maximum PK gain: 2.89 dBi
Serial Number	:	N/A

Note: EUT is the abbreviation of equipment under test.

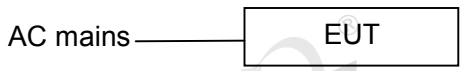
2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
AC cable	N/A	N/A	N/A	Length: 50 cm, unshielded

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
Notebook	Lenovo Beijing Co. Ltd.	ThinkPad	FCC/CE	TP00015A
Wireless LAN Access Point	HUAWEI	AP6050	21500829352SC5000371	FCC ID: QISAP6050DN6150DN

2.4. Block diagram of EUT configuration for test



The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.

Tested mode, channel, and data rate information				
Mode	Setting Tx Power	data rate (Mbps) (see Note)	Channel	Frequency (MHz)
IEEE 802.11a	/	6	Low: CH36	5180
	/	6	Middle: CH40	5200
	/	6	High: CH48	5240
	/	6	Low: CH52	5260
	/	6	Middle: CH56	5280
	/	6	High: CH64	5320
	/	6	Low: CH100	5500
	/	6	Middle: CH116	5580
	/	6	High: CH140	5700
	/	6	Low: CH149	5745
	/	6	Middle: CH157	5785
	/	6	High: CH165	5825
IEEE 802.11n HT20	/	MCS0	Low: CH36	5180
	/	MCS0	Middle: CH40	5200
	/	MCS0	High: CH48	5240
	/	MCS0	Low: CH52	5260
	/	MCS0	Middle: CH56	5280
	/	MCS0	High: CH64	5320
	/	MCS0	Low: CH100	5500
	/	MCS0	Middle: CH116	5580
	/	MCS0	High: CH140	5700
	/	MCS0	Low: CH149	5745
	/	MCS0	Middle: CH157	5785
	/	MCS0	High: CH165	5825
IEEE 802.11n HT40	/	MCS0	Low: CH38	5190
	/	MCS0	Middle: CH46	5230
	/	MCS0	High: CH54	5270
	/	MCS0	Low: CH62	5310
	/	MCS0	Middle: CH102	5510
	/	MCS0	High: CH110	5550
	/	MCS0	Low: CH134	5670
	/	MCS0	Middle: CH151	5755
	/	MCS0	High: CH159	5795
IEEE 802.11ac HT20	/	MCS0	Low: CH36	5180
	/	MCS0	Middle: CH40	5200
	/	MCS0	High: CH48	5240
	/	MCS0	Low: CH52	5260
	/	MCS0	Middle: CH56	5280
	/	MCS0	High: CH64	5320
	/	MCS0	Low: CH100	5500
	/	MCS0	Middle: CH116	5580
	/	MCS0	High: CH140	5700
	/	MCS0	Low: CH149	5745
	/	MCS0	Middle: CH157	5785
	/	MCS0	High: CH165	5825

IEEE 802.11ac HT40	/	MCS0	Low: CH38	5190
	/	MCS0	Middle: CH46	5230
	/	MCS0	High: CH54	5270
	/	MCS0	Low: CH62	5310
	/	MCS0	Middle: CH102	5510
	/	MCS0	High: CH110	5550
	/	MCS0	Low: CH134	5670
	/	MCS0	Middle: CH151	5755
	/	MCS0	High: CH159	5795
IEEE 802.11ac HT80	/	MCS0	CH42	5210
	/	MCS0	CH58	5290
	/	MCS0	CH106	5530
	/	MCS0	CH122	5610
	/	MCS0	CH155	5775
Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.				

2.5. Deviations of test standard

No deviation.

2.6. Test environment conditions

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

Temperature range:	21-25 ℃
Humidity range:	40-75%
Pressure range:	86-106 kPa

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com

CNAS Accreditation No. L6451; A2LA Accreditation No. 3870.01

FCC Designation Number: CN1182; Test Firm Registration Number: 540522

Industry Canada site registration number: 10288A-1

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum Analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted Spurious Emissions	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz ≤ f < 22 GHz)
Uncertainty for Radio Frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 ℃
Humidity	2 %
Uncertainty for Radiation Emission Test (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission Test (1 GHz - 40 GHz)	4.10 dB (1 - 6 GHz)
	4.40 dB (6 GHz - 18 GHz)
	3.54 dB (18 GHz - 26 GHz)
	4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power Line Conduction Emission Test	3.32 dB (150 kHz - 30 MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

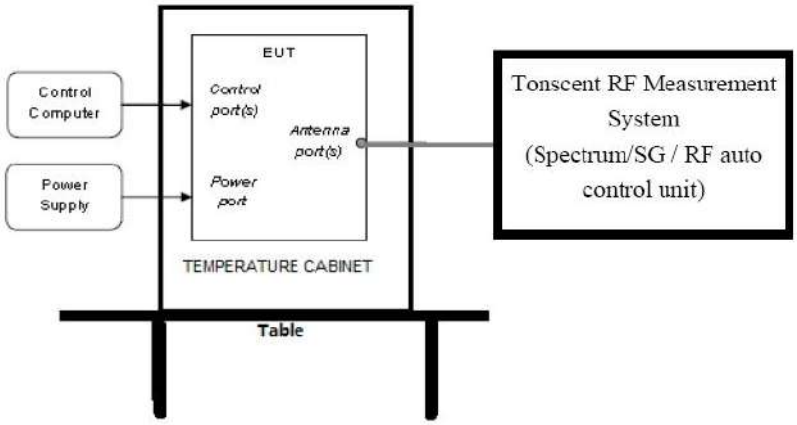
3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
RF Connected Test (Tonscend RF Measurement System 1#)					
Spectrum analyzer	R&S	FSU26	101272	Jul. 01, 2020	1 Year
Spectrum analyzer	Agilent	N9020D	MY49100362	Sep. 28, 2020	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Sep. 24, 2020	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180737	Jul. 01, 2020	1 Year
Power Sensor	Agilent	U2021XA	MY55150010	Jul. 01, 2020	1 Year
Power Sensor	Agilent	U2021XA	MY55150011	Jul. 01, 2020	1 Year
RF Cable	Micable	C10-01-01-1	100309	Sep. 28, 2020	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	Jul. 01, 2020	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.7	N/A	N/A
RF Connected Test (Tonscend RF Measurement System 2#)					
Spectrum analyzer	R&S	FSU26	200071	Sep. 25, 2020	1 Year
Spectrum analyzer	Agilent	N9020D	MY49100362	Sep. 28, 2020	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	N5182A	MY19060405	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180912	Jul. 01, 2020	1 Year
RF Control Unit	Tonsend	JS0806-2	DDT-ZC01449	Jul. 01, 2020	1 Year
RF Cable	Micable	C10-01-01-1	100309	Sep. 28, 2020	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	Jul. 01, 2020	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.7	N/A	N/A
Radiation 1#chamber					
EMI Test Receiver	R&S	ESU8	100316	Sep. 24, 2020	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jul. 01, 2020	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	Nov. 13, 2020	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Nov. 13, 2020	1 Year
Double Ridged Horn Antenna	R&S	HF907	100276	Nov. 18, 2020	1 Year
Pre-amplifier	A.H.	PAM-0118	360	Sep. 28, 2020	1 Year
RF Cable	HUBSER	CP-X2+ CP-X1	W11.03+ W12.02	Sep. 24, 2020	1 Year
RF Cable	N/A	5m+6m+1m	06270619	Sep. 30, 2020	1 Year
MI Cable	HUBSER	C10-01-01-1M	1091629	Sep. 30, 2020	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
Radiation 2#chamber					
EMI Test Receiver	R&S	ESCI	101364	Sep. 28, 2020	1 Year

Spectrum analyzer	Agilent	E4447A	MY50180031	Jul. 01, 2020	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	9163-994	Nov. 13, 2020	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Nov. 13, 2020	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120	02108	Jul. 11, 2020	1 Year
Pre-amplifier	TERA-MW	TRLA-0040 G35	1013 03	Sep. 28, 2020	1 Year
RF Cable	N/A	14+1.5m	06270619	Sep. 28, 2020	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
Power Line Conducted Emissions Test 1#					
EMI Test Receiver	R&S	ESU8	100316	Sep. 24, 2020	1 Year
LISN 1	R&S	ENV216	101109	Sep. 28, 2020	1 Year
LISN 2	R&S	ESH2-Z5	100309	Sep. 28, 2020	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Sep. 24, 2020	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Sep. 24, 2020	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
Power Line Conducted Emissions Test 2#					
Test Receiver	R&S	ESPI	101761	Sep. 24, 2020	1 Year
LISN 1	R&S	ENV216	101170	Sep. 28, 2020	1 Year
LISN 2	R&S	ESH2-Z5	100309	Sep. 28, 2020	1 Year
Pulse Limiter	R&S	KH43101	43101180156 8-12#	Jul. 01, 2020	1 Year
CE Cable 2	HUBSER	N/A	W11.02	Sep. 24, 2020	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A

4. 26 dB Bandwidth and 6 dB Bandwidth

4.1. Block diagram of test setup



4.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Bandwidth	26 dB Bandwidth	5150 - 5250
	26 dB Bandwidth	5250 - 5350
	26 dB Bandwidth	5470 - 5725
	Minimum 500 kHz 6 dB Bandwidth	5725 - 5850

4.3. Test procedure

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

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 6 dB Bandwidth: RBW=100 kHz For 26 dB Bandwidth: approximately 1% of the emission bandwidth.
VBW	For 6 dB Bandwidth: VBW=300 kHz For 26 dB Bandwidth: >3 RBW
Trace	Max hold
Sweep	Auto couple

(2) Allow the trace to stabilize, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB and 6 dB relative to the maximum level measured in the fundamental emission.

4.4. Test result

26 dB EBW:

Test Mode	Antenna	Channel	26dB EBW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5180	21.800	5169.200	5191.000	---	PASS
		5200	21.920	5189.160	5211.080	---	PASS
		5240	22.320	5228.880	5251.200	---	PASS
		5260	22.240	5248.880	5271.120	---	PASS
		5280	21.960	5269.200	5291.160	---	PASS
		5320	21.840	5309.240	5331.080	---	PASS
		5500	21.920	5489.200	5511.120	---	PASS
		5580	21.880	5569.160	5591.040	---	PASS
		5700	22.120	5689.040	5711.160	---	PASS
		5745	21.920	5734.200	5756.120	---	PASS
		5785	21.880	5774.280	5796.160	---	PASS
		5825	21.800	5814.240	5836.040	---	PASS
11N20 SISO	Ant1	5180	21.920	5169.200	5191.120	---	PASS
		5200	21.960	5189.200	5211.160	---	PASS
		5240	21.960	5229.080	5251.040	---	PASS
		5260	21.960	5249.160	5271.120	---	PASS
		5280	22.040	5269.080	5291.120	---	PASS
		5320	21.840	5309.160	5331.000	---	PASS
		5500	22.040	5489.120	5511.160	---	PASS
		5580	21.960	5569.160	5591.120	---	PASS
		5700	22.000	5689.160	5711.160	---	PASS
		5745	22.240	5733.840	5756.080	---	PASS
		5785	21.840	5774.320	5796.160	---	PASS
		5825	22.800	5813.400	5836.200	---	PASS
11N40 SISO	Ant1	5190	40.480	5169.920	5210.400	---	PASS
		5230	40.480	5209.760	5250.240	---	PASS
		5270	41.600	5249.840	5291.440	---	PASS
		5310	40.320	5290.000	5330.320	---	PASS
		5510	40.320	5489.920	5530.240	---	PASS
		5550	40.480	5530.000	5570.480	---	PASS
		5670	40.640	5649.840	5690.480	---	PASS
		5755	40.320	5734.760	5775.080	---	PASS
		5795	40.320	5775.080	5815.400	---	PASS
11AC20 SISO	Ant1	5180	22.040	5169.040	5191.080	---	PASS
		5200	22.120	5189.040	5211.160	---	PASS
		5240	21.920	5229.120	5251.040	---	PASS
		5260	22.000	5249.120	5271.120	---	PASS
		5280	23.080	5268.640	5291.720	---	PASS
		5320	21.840	5309.160	5331.000	---	PASS
		5500	21.960	5489.080	5511.040	---	PASS
		5580	21.720	5569.240	5590.960	---	PASS
		5700	21.840	5689.160	5711.000	---	PASS
		5745	22.720	5733.400	5756.120	---	PASS
		5785	22.560	5774.200	5796.760	---	PASS
		5825	22.000	5814.080	5836.080	---	PASS
11AC40	Ant1	5190	40.320	5169.840	5210.160	---	PASS

SISO		5230	44.000	5209.760	5253.760	---	PASS
		5270	41.920	5249.840	5291.760	---	PASS
		5310	40.960	5290.080	5331.040	---	PASS
		5510	41.600	5489.920	5531.520	---	PASS
		5550	40.400	5529.840	5570.240	---	PASS
		5670	40.560	5649.760	5690.320	---	PASS
		5755	40.720	5735.000	5775.720	---	PASS
		5795	41.920	5775.000	5816.920	---	PASS
11AC80 SISO	Ant1	5210	82.080	5169.200	5251.280	---	PASS
		5290	82.400	5249.040	5331.440	---	PASS
		5530	81.920	5489.200	5571.120	---	PASS
		5610	82.240	5569.200	5651.440	---	PASS
		5690	82.240	5649.040	5731.280	---	PASS
		5775	82.240	5733.880	5816.120	---	PASS

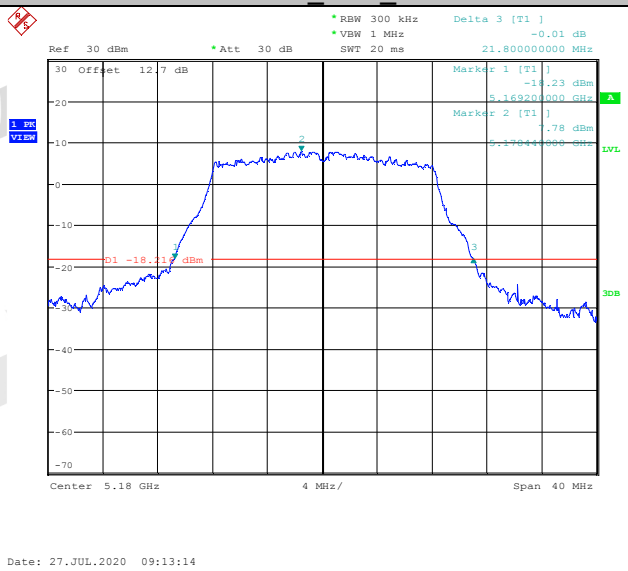
6 dB EBW:

Test Mode	Antenna	Channel	6dB EBW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5745	16.400	5736.880	5753.280	0.5	PASS
		5785	16.360	5776.920	5793.280	0.5	PASS
		5825	16.400	5816.880	5833.280	0.5	PASS
11N20 SISO	Ant1	5745	17.640	5736.280	5753.920	0.5	PASS
		5785	17.640	5776.280	5793.920	0.5	PASS
		5825	17.640	5816.280	5833.920	0.5	PASS
11N40 SISO	Ant1	5755	36.240	5737.080	5773.320	0.5	PASS
		5795	36.000	5777.080	5813.080	0.5	PASS
11AC20 SISO	Ant1	5745	17.360	5736.520	5753.880	0.5	PASS
		5785	17.640	5776.280	5793.920	0.5	PASS
		5825	17.640	5816.280	5833.920	0.5	PASS
11AC40 SISO	Ant1	5755	36.160	5737.160	5773.320	0.5	PASS
		5795	36.160	5777.160	5813.320	0.5	PASS
11AC80 SISO	Ant1	5775	75.520	5737.240	5812.760	0.5	PASS

4.5. Original test data

26 dB EBW:

11A_Ant1_5180



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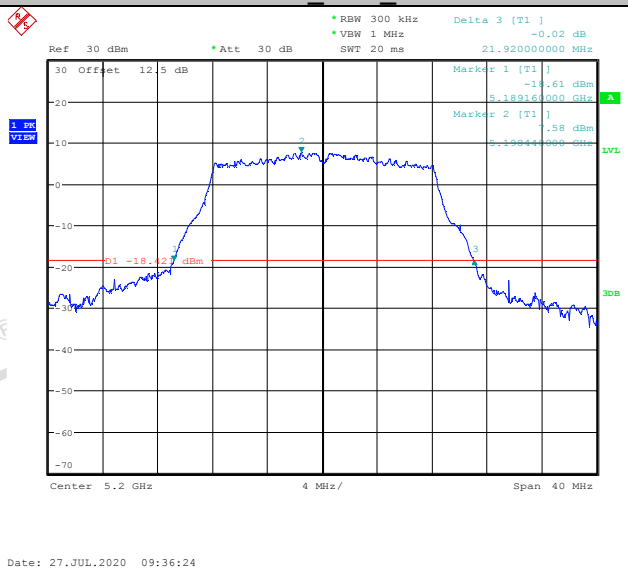

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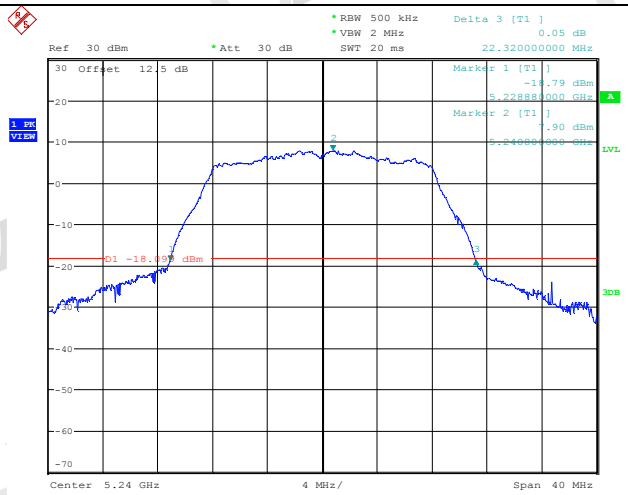

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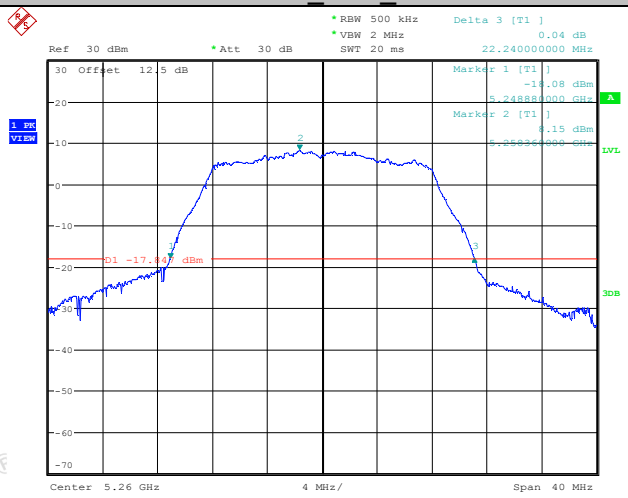

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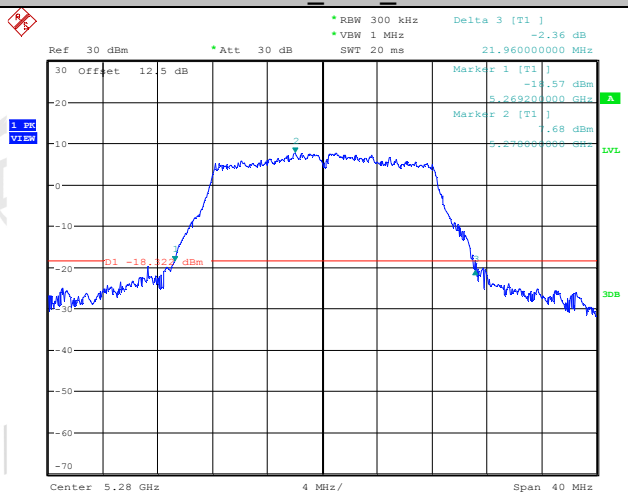

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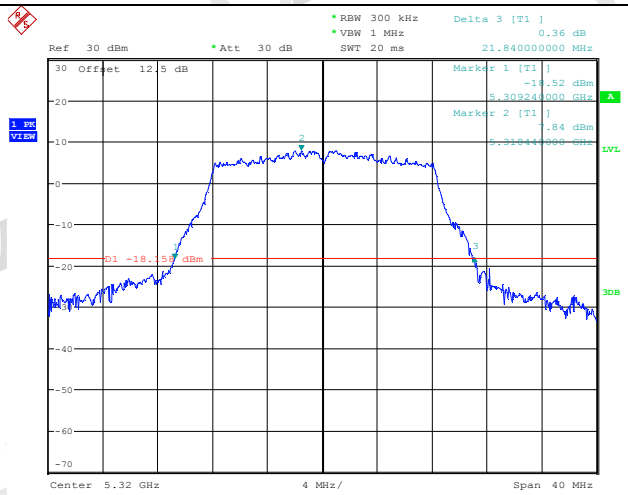

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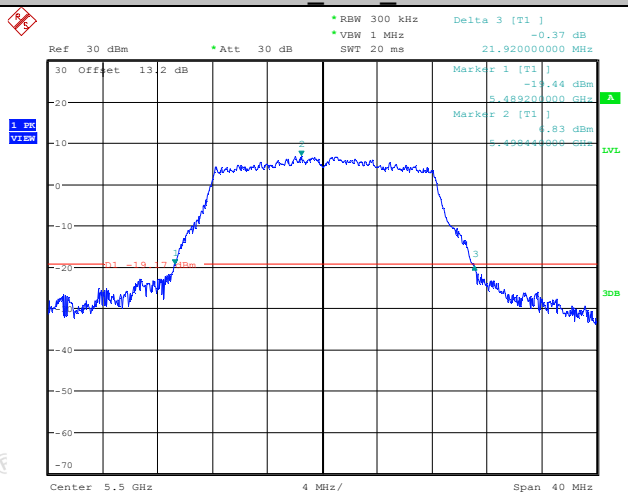

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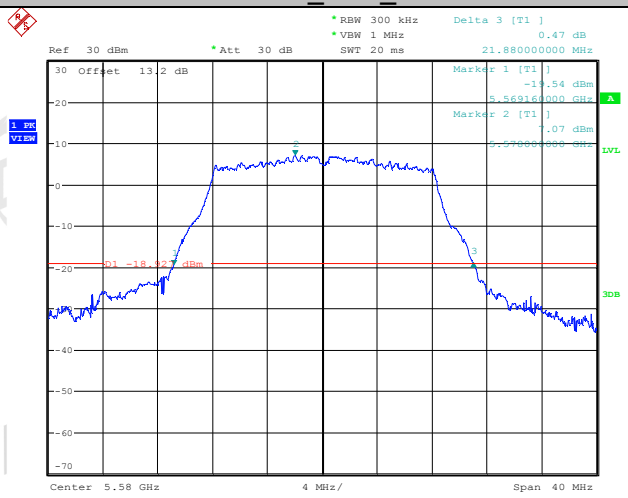

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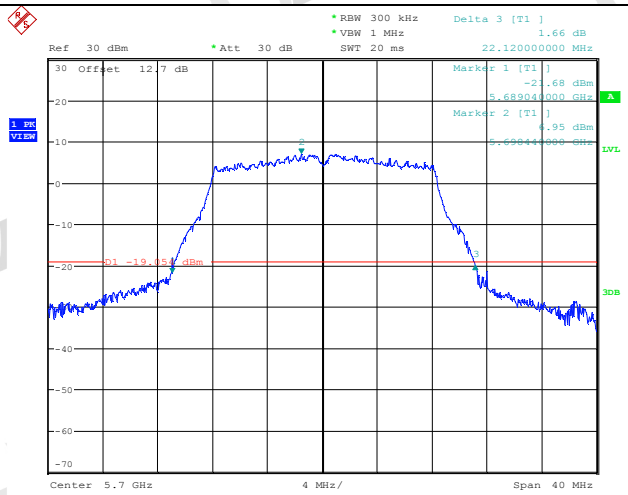

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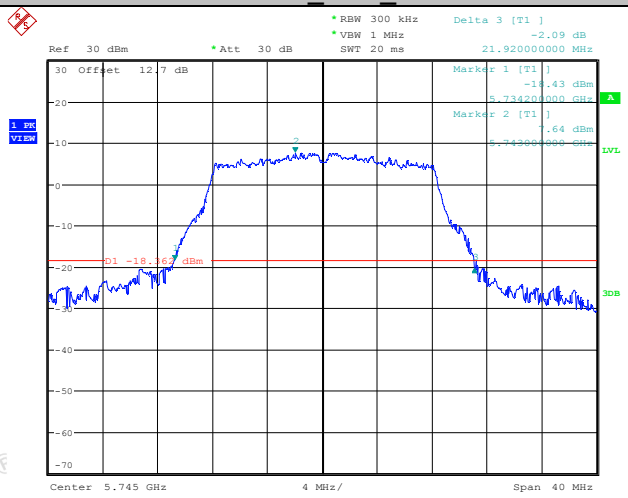

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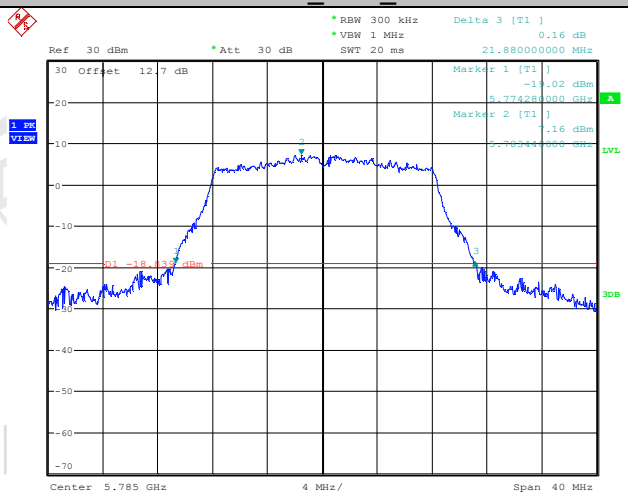

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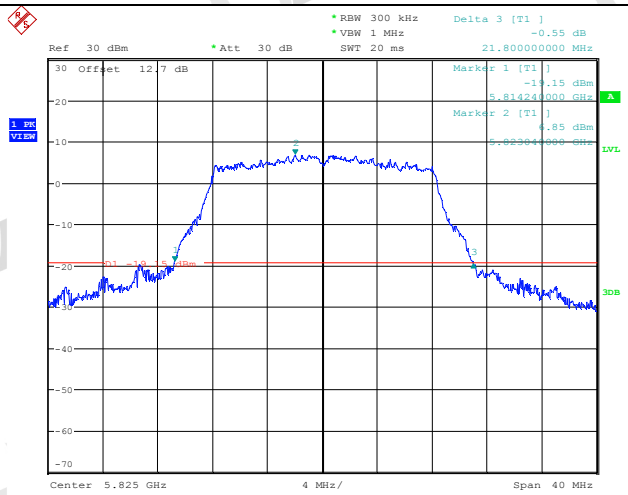

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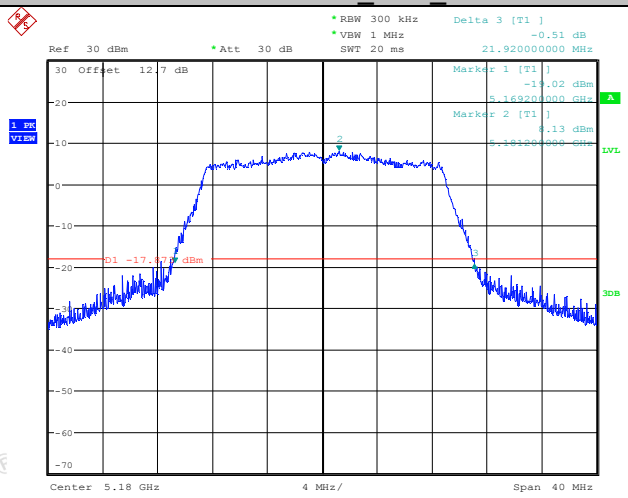

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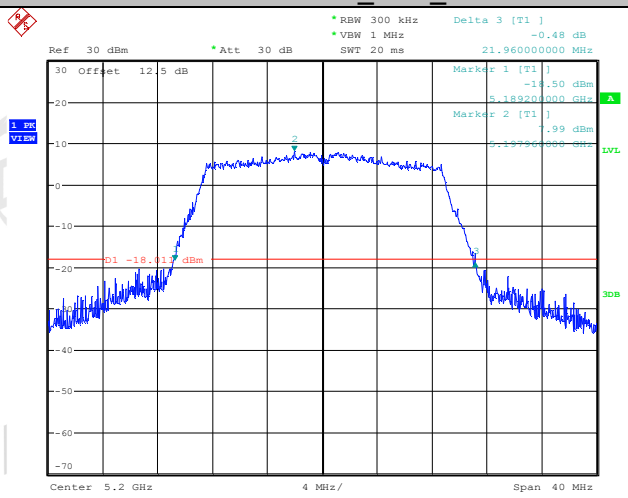

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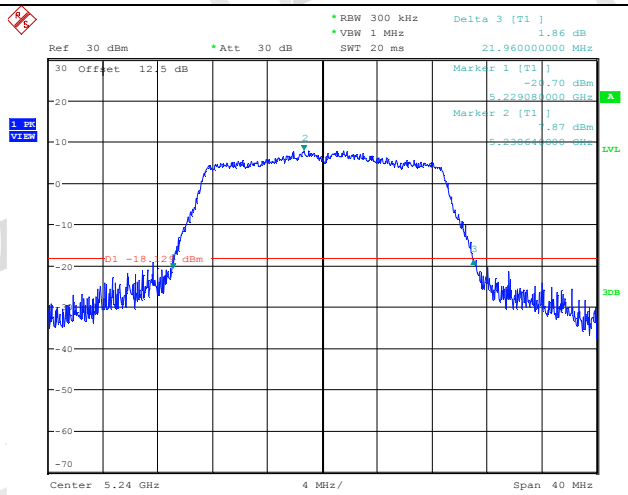

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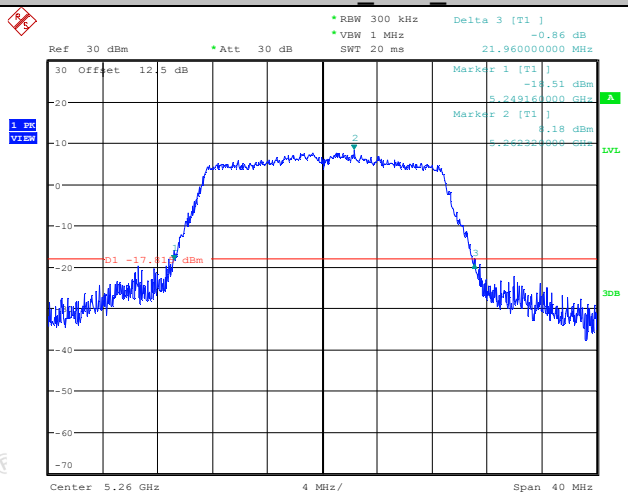

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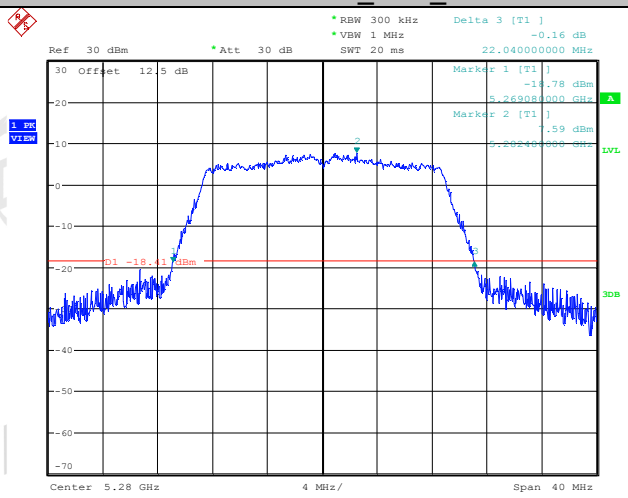

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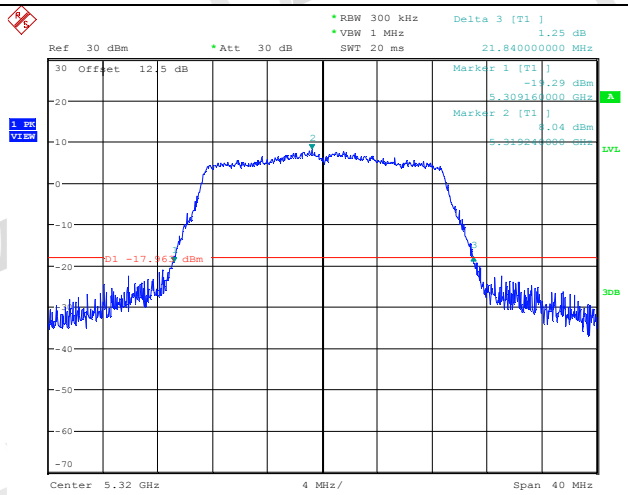

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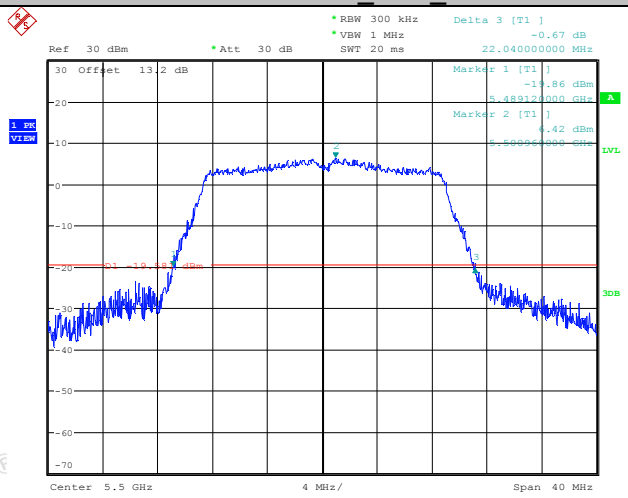

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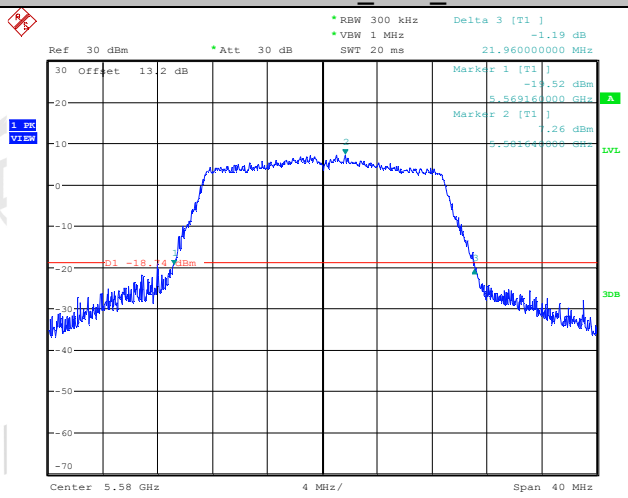

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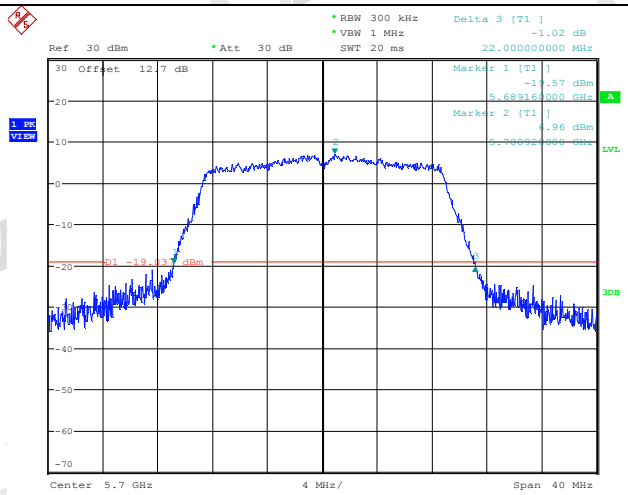

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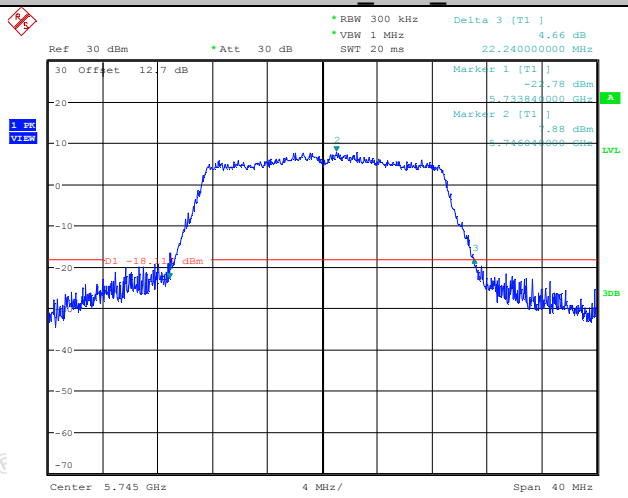

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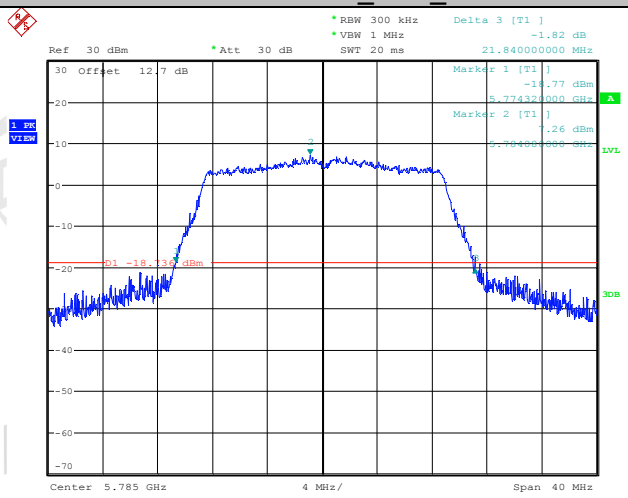

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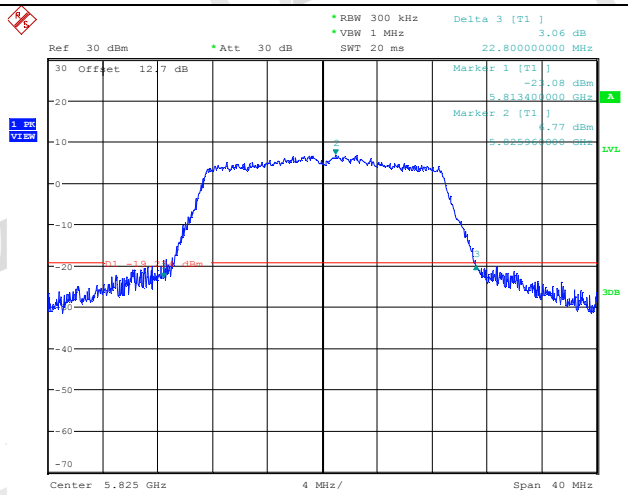

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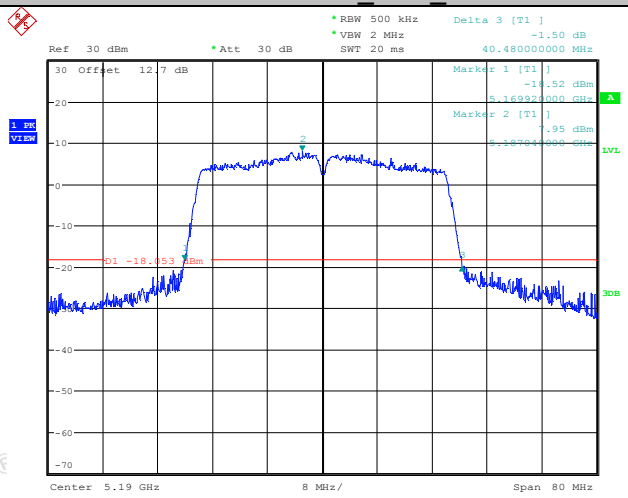

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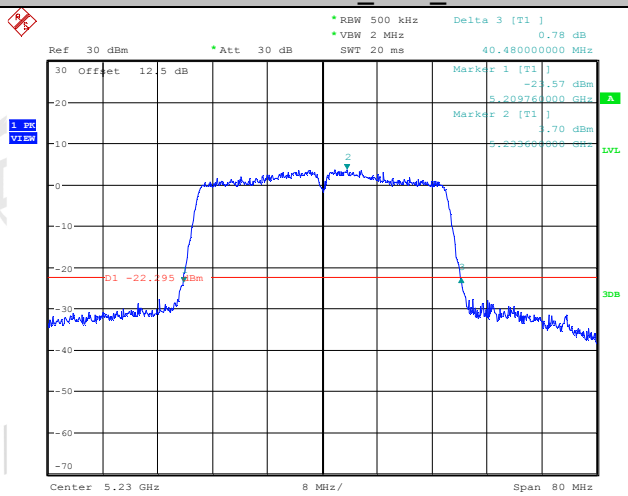

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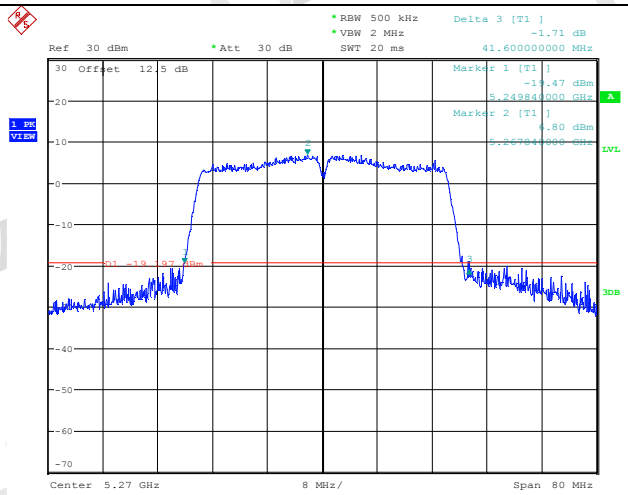

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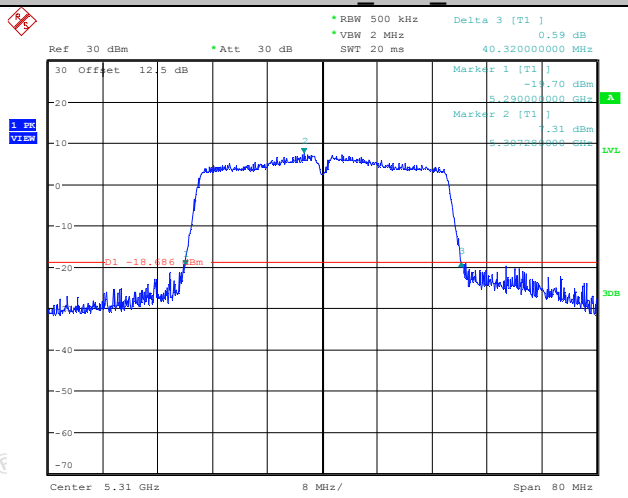

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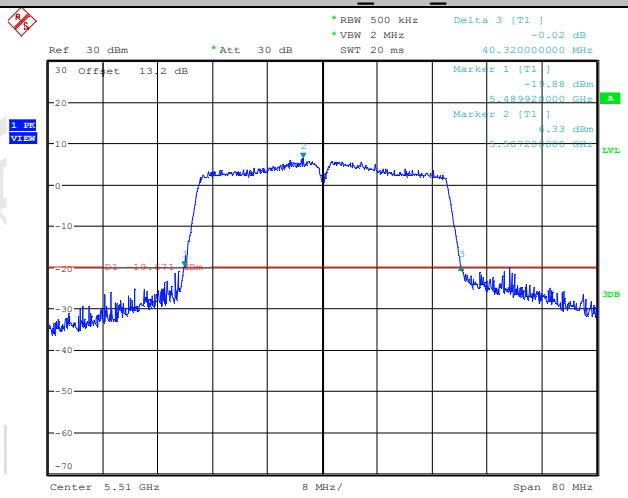

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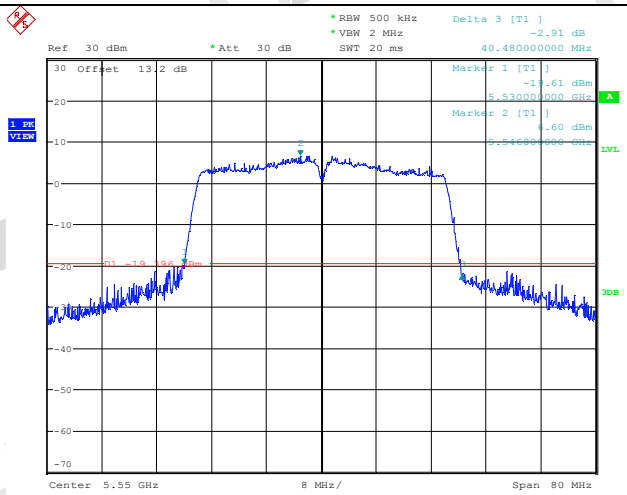

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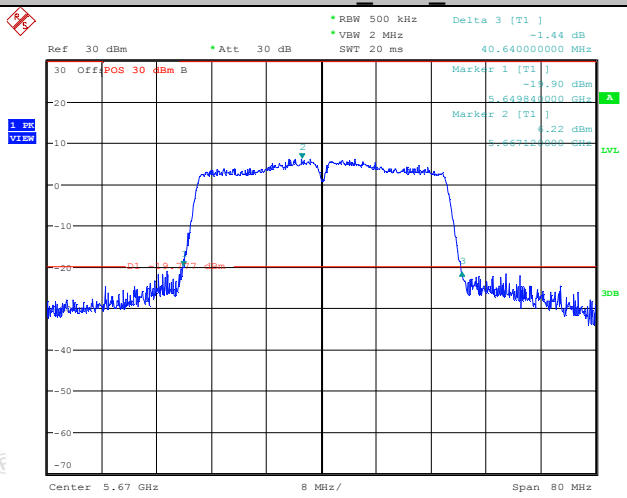

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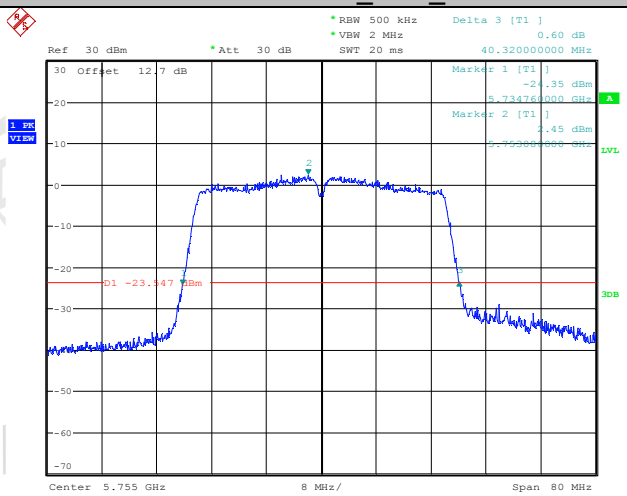

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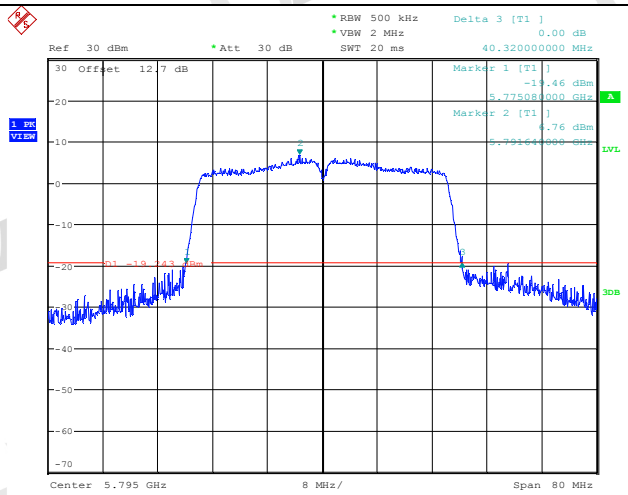

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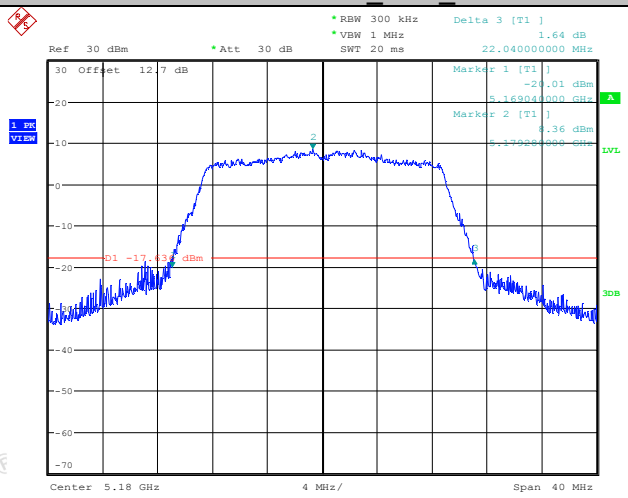

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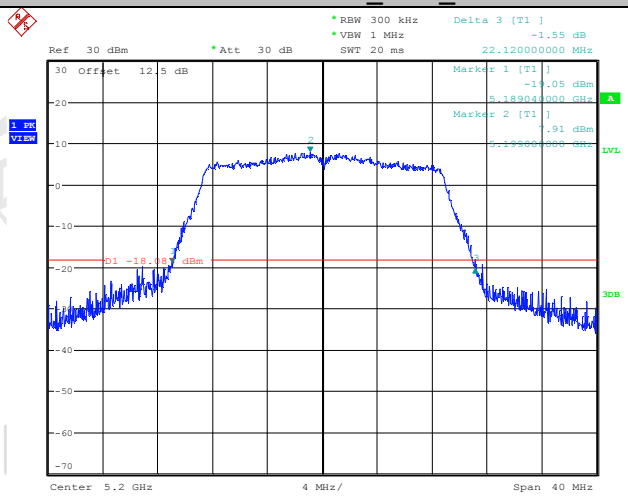

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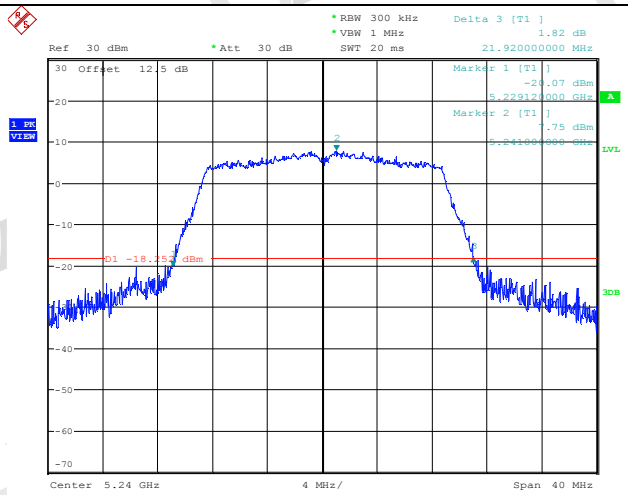

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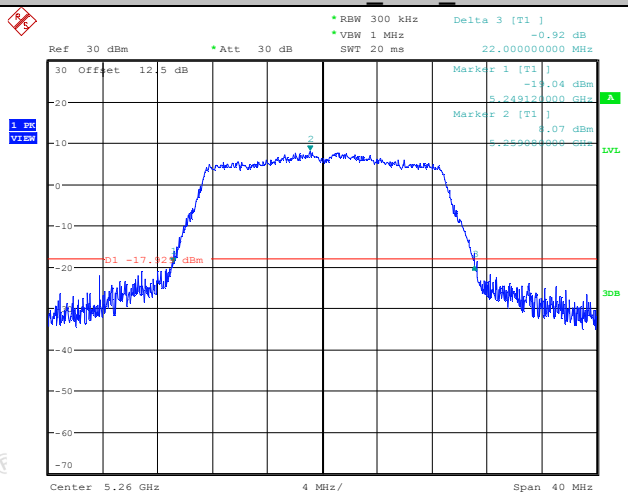

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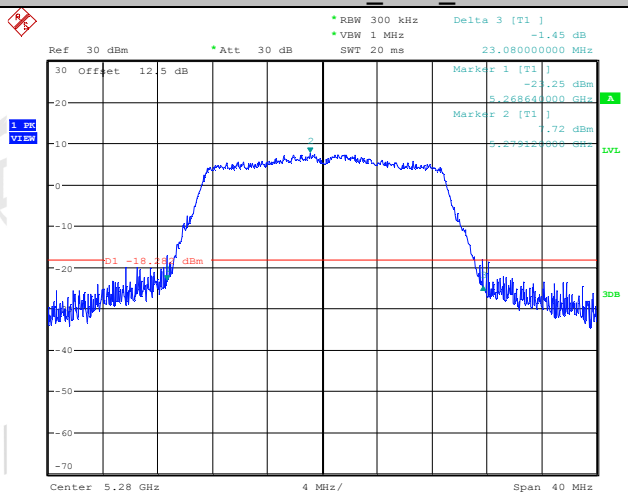

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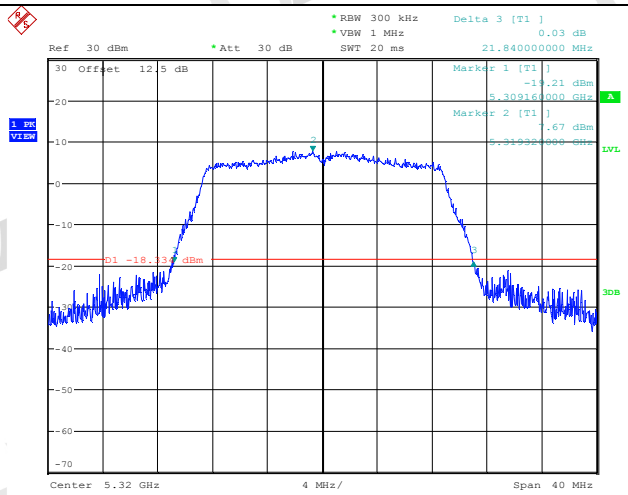

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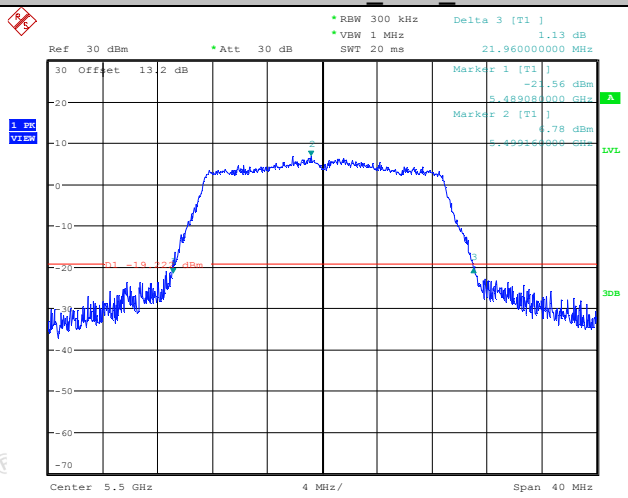

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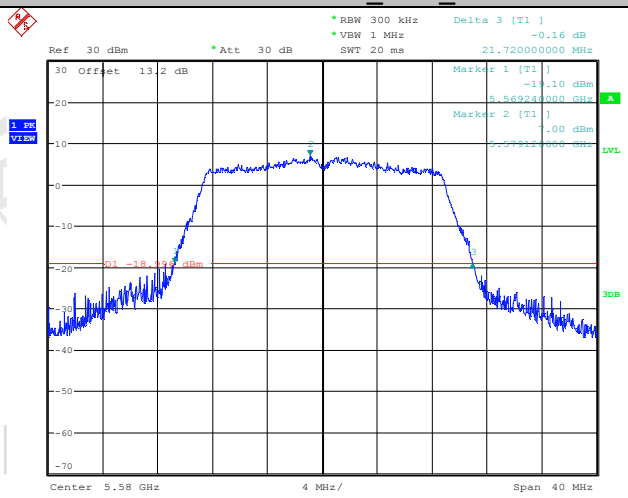

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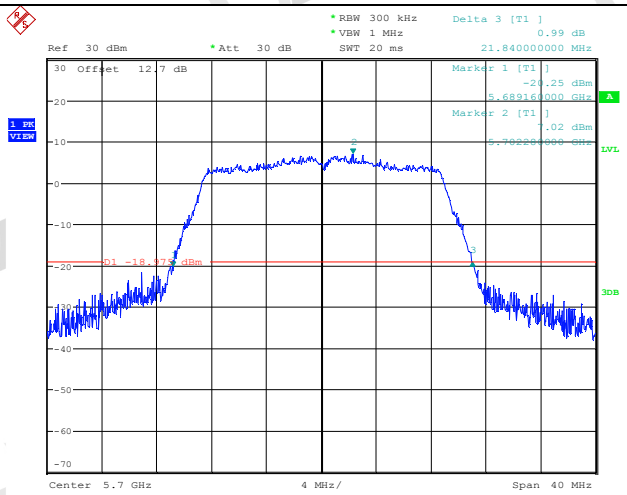

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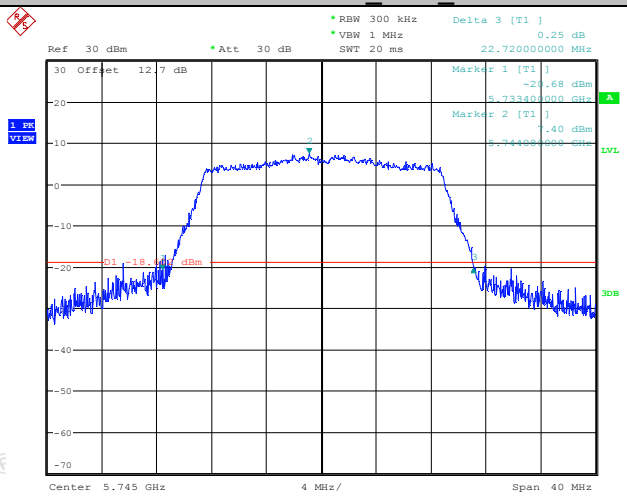

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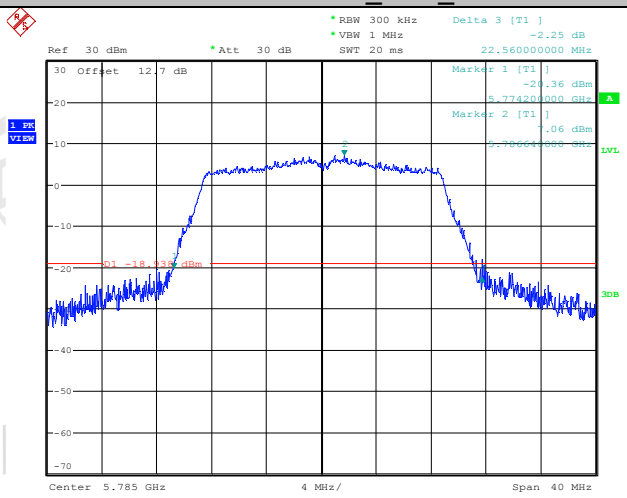

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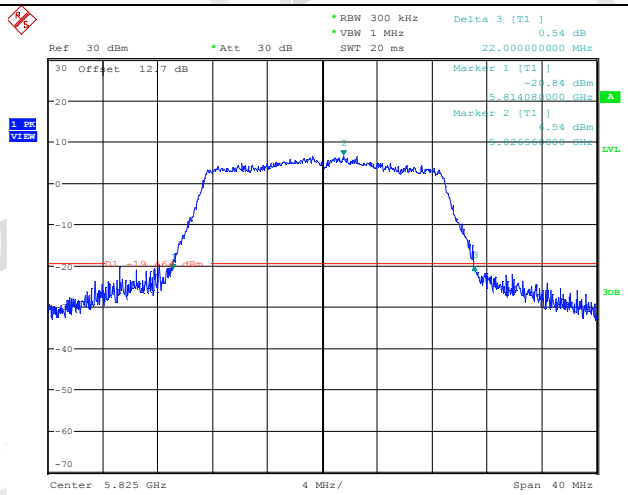

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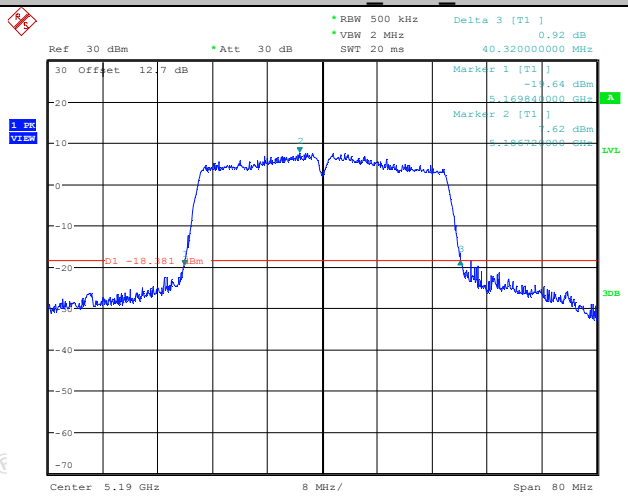

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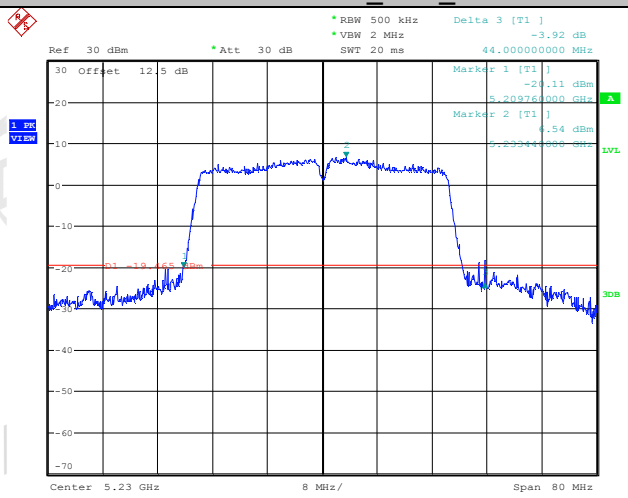

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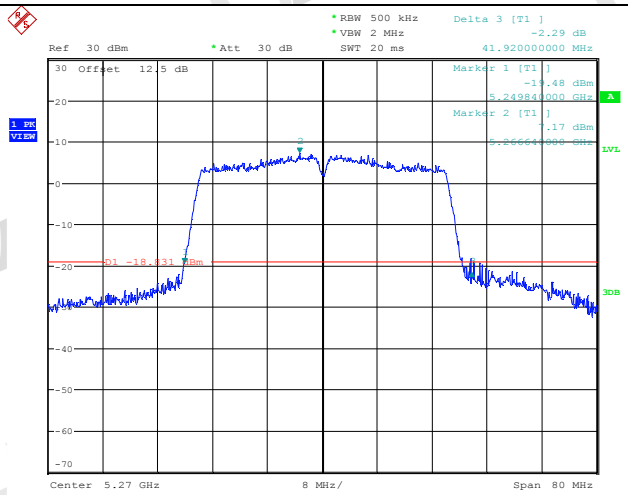

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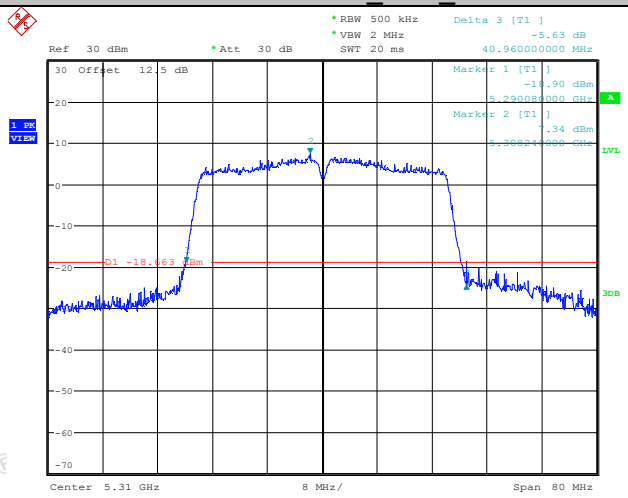
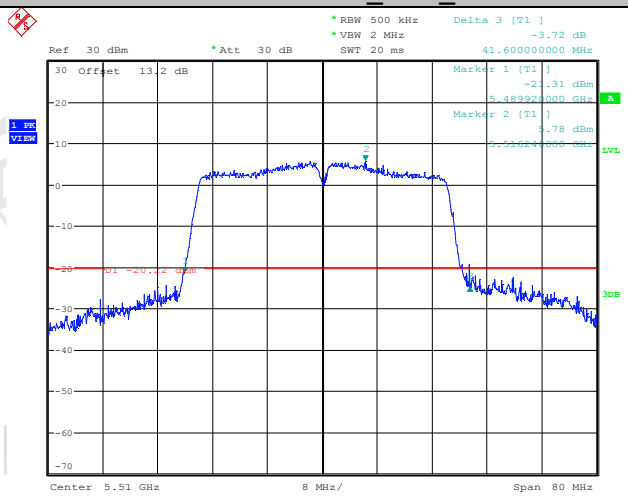
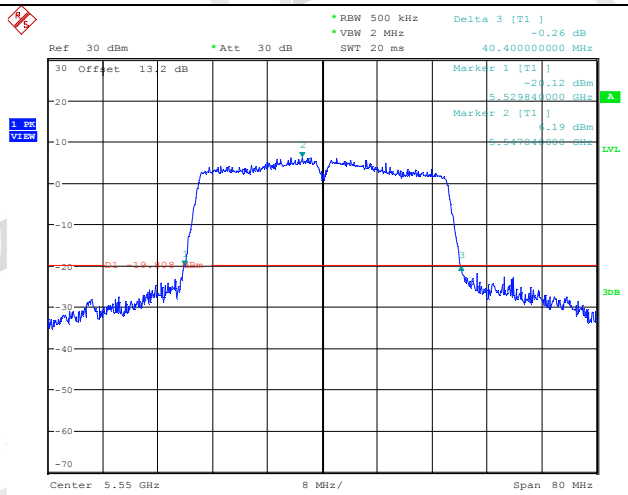


11AC40SISO_Ant1_5510

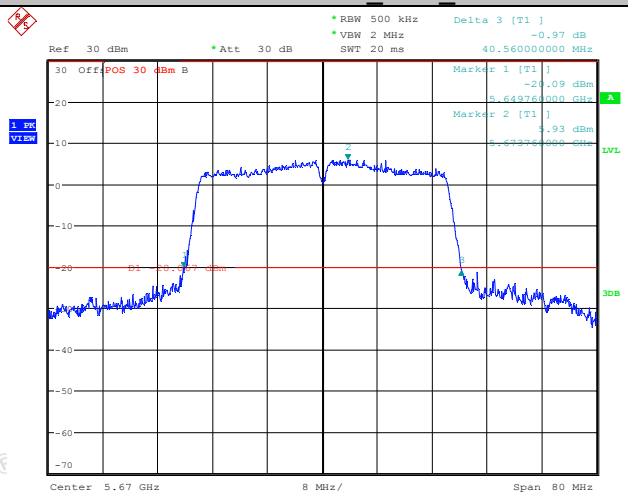


11AC40SISO_Ant1_5550



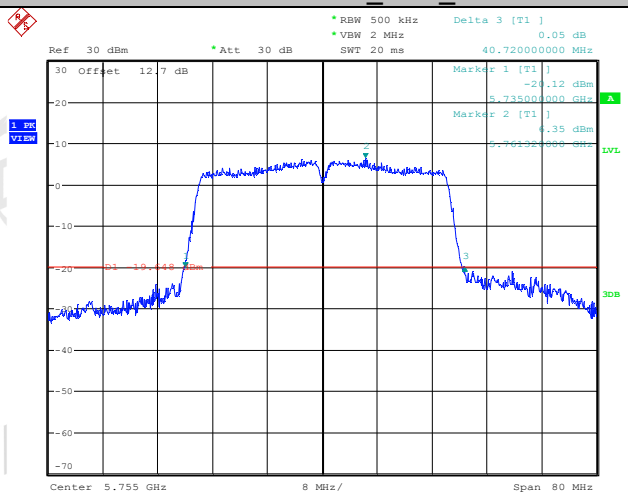
Date: 28.JUL.2020 11:41:54

11AC40SISO_Ant1_5670



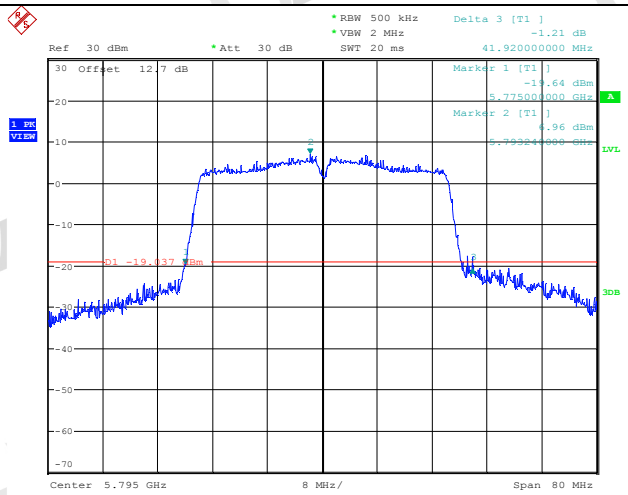
Date: 28.JUL.2020 11:48:25

11AC40SISO_Ant1_5755



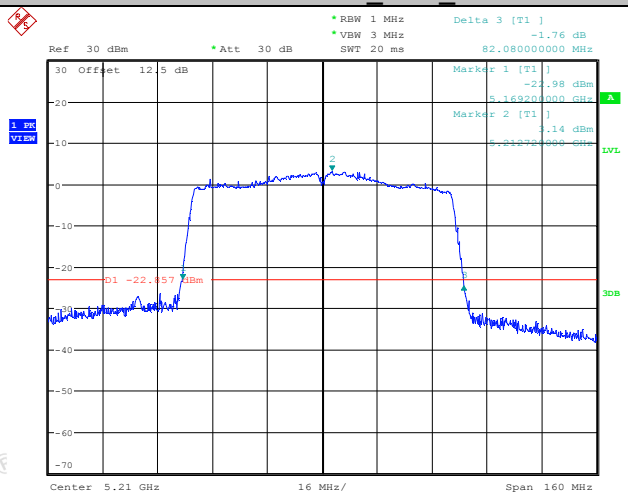
Date: 28.JUL.2020 11:51:37

11AC40SISO_Ant1_5795



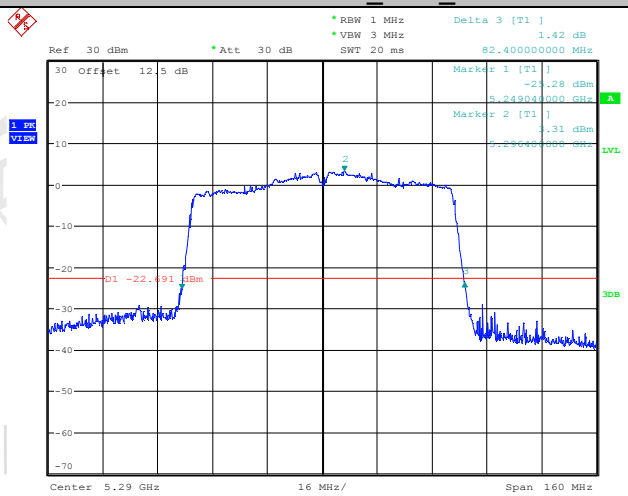
Date: 28.JUL.2020 13:49:37

11AC80SISO_Ant1_5210



Date: 4.AUG.2020 16:03:17

11AC80SISO_Ant1_5290



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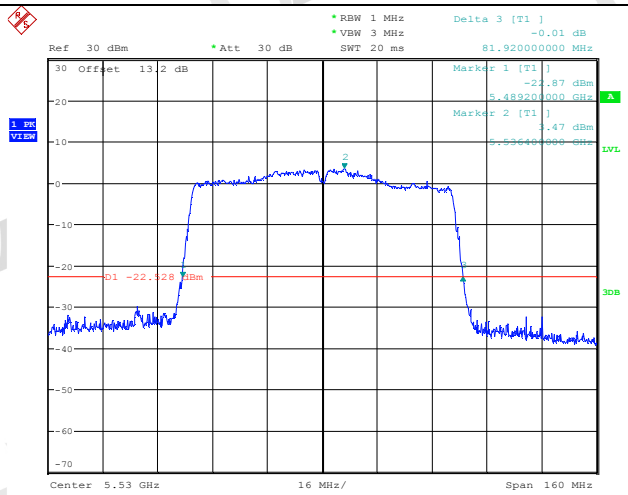
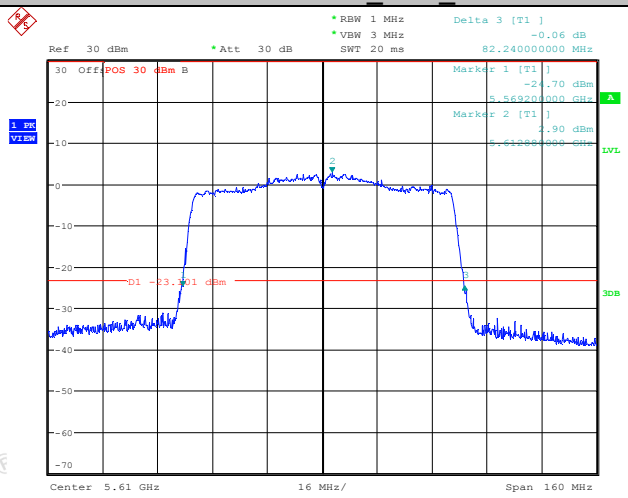
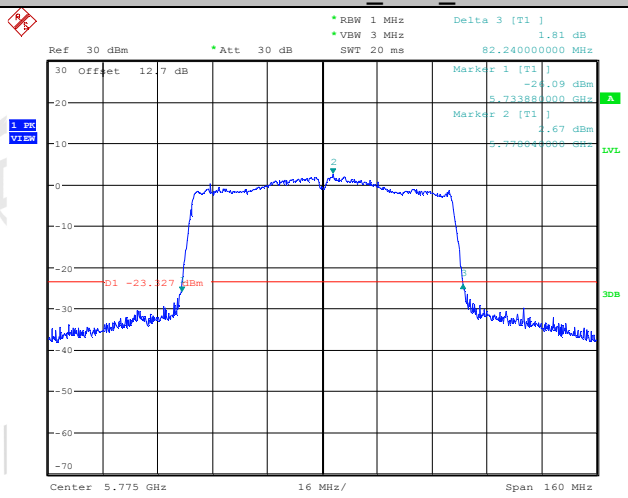
11AC80SISO_Ant1_5530



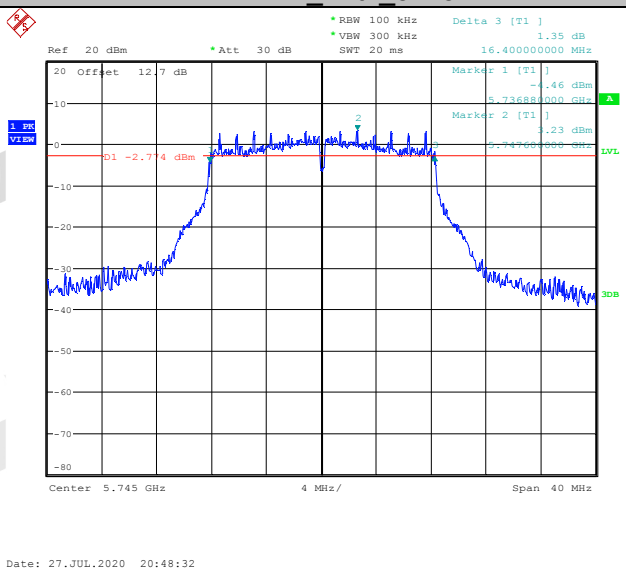
11AC80SISO_Ant1_5610

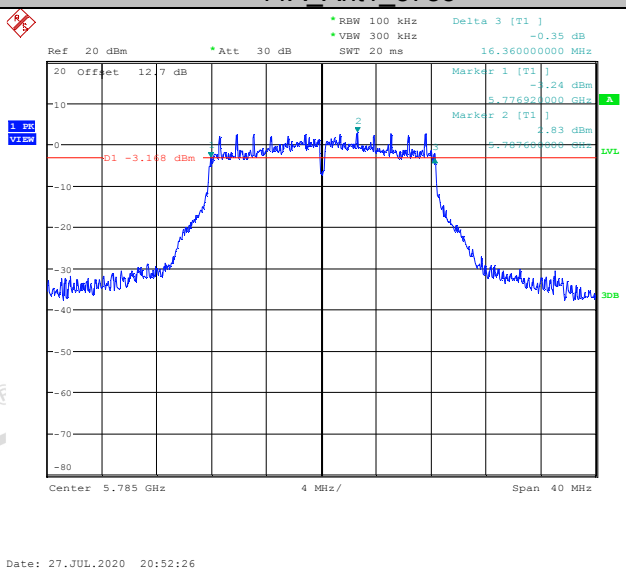


11AC80SISO_Ant1_5775

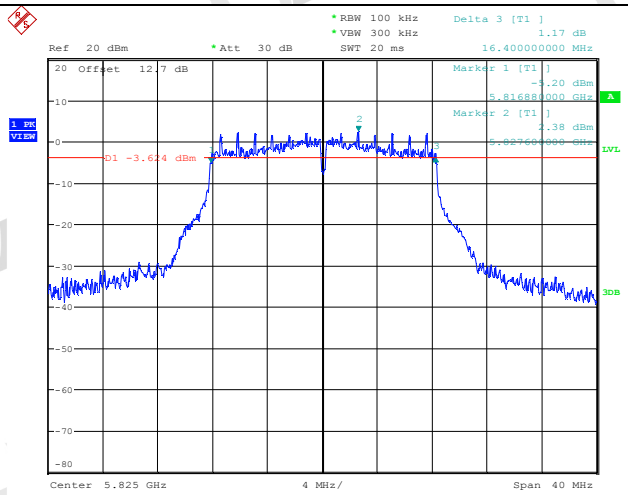


6 dB EBW:

11A_Ant1_5745


11A_Ant1_5785


11A_Ant1_5825



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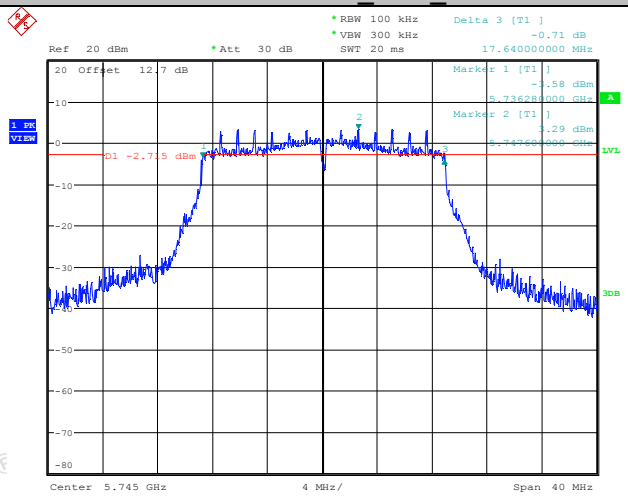
11N20SISO_Ant1_5745



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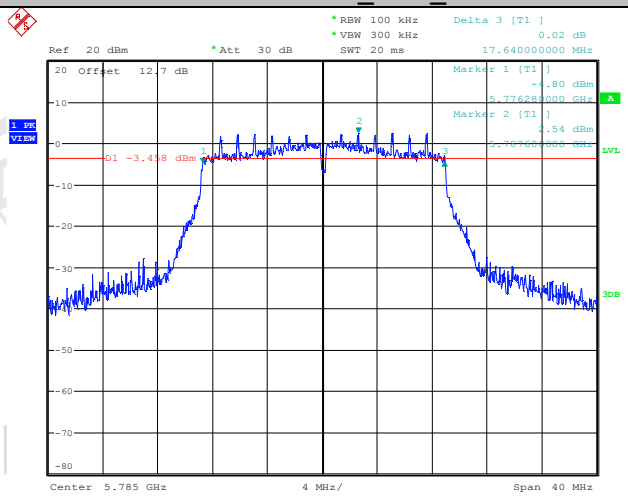

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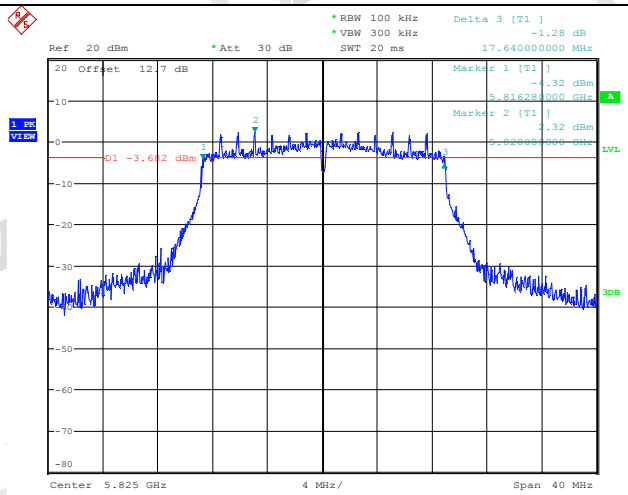
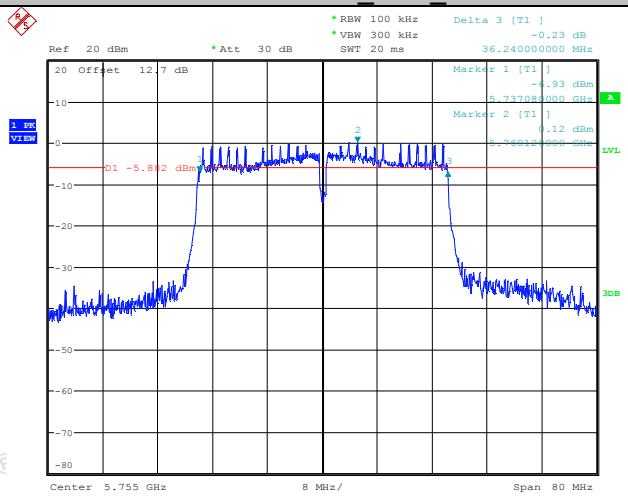
11N20SISO_Ant1_5825



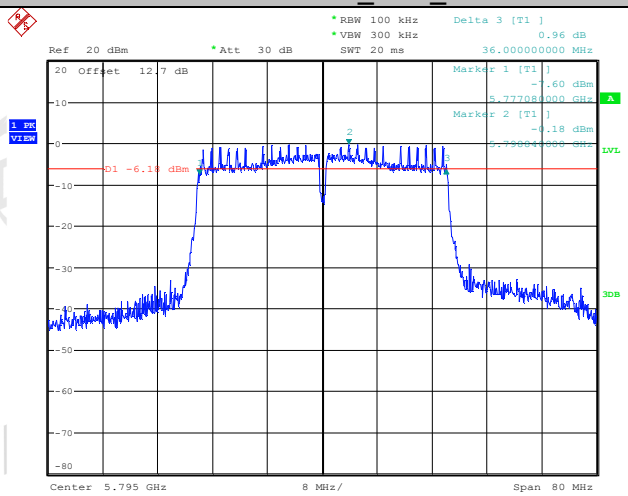
Date: 27.JUL.2020 21:41:07

11N40SISO_Ant1_5755



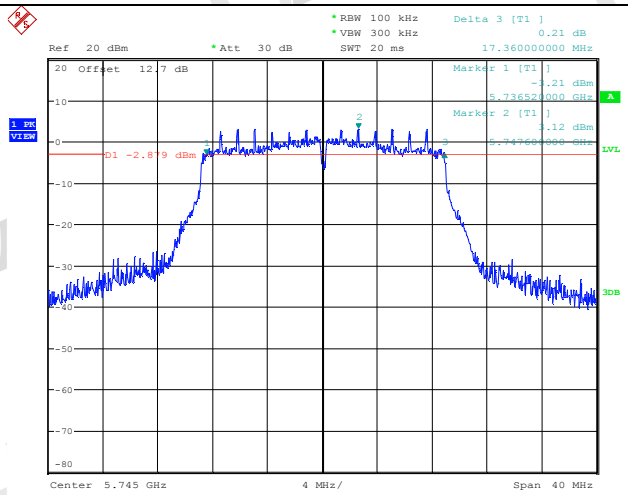
Date: 28.JUL.2020 15:35:29

11N40SISO_Ant1_5795



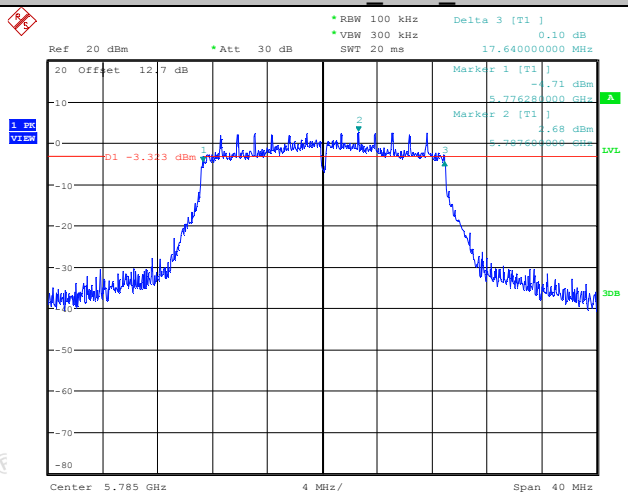
Date: 28.JUL.2020 15:36:55

11AC20SISO_Ant1_5745



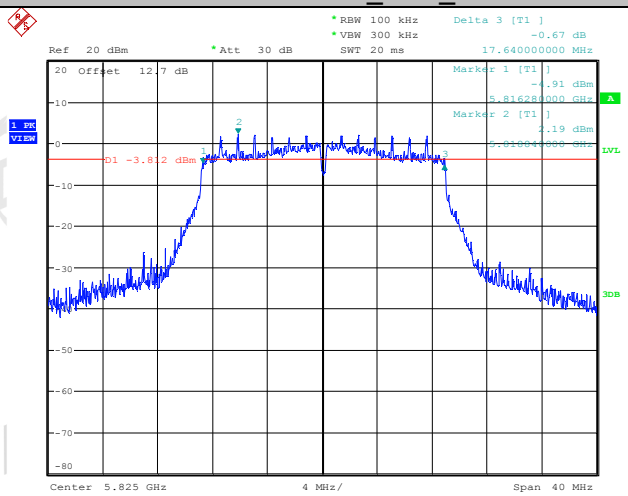
Date: 28.JUL.2020 10:57:31

11AC20SISO_Ant1_5785



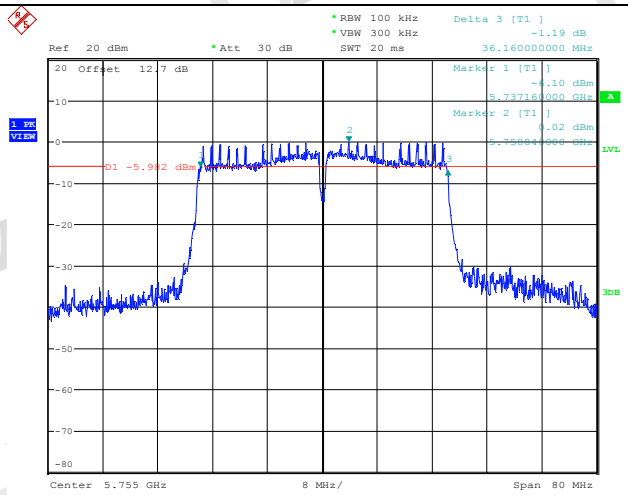
Date: 28.JUL.2020 11:01:26

11AC20SISO_Ant1_5825



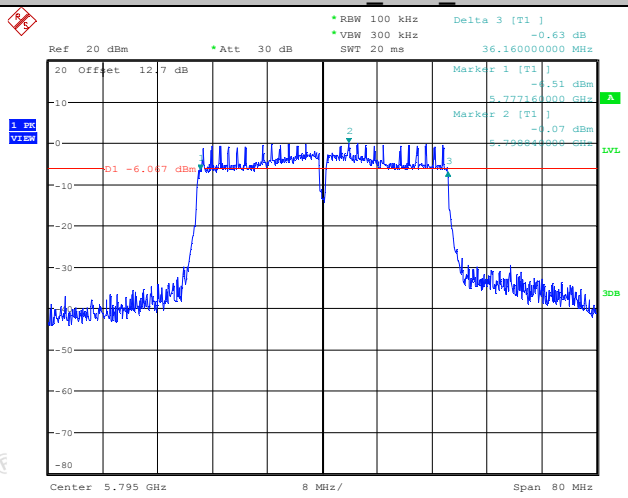
Date: 28.JUL.2020 11:04:52

11AC40SISO_Ant1_5755



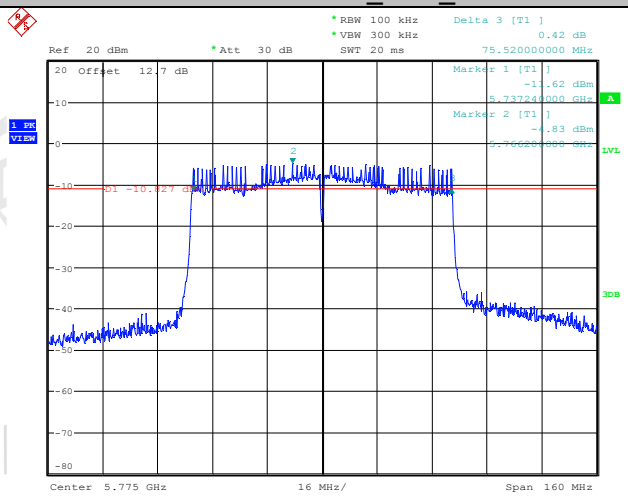
Date: 28.JUL.2020 11:52:00

11AC40SISO_Ant1_5795



Date: 28.JUL.2020 13:50:01

11AC80SISO_Ant1_5775



Date: 18.AUG.2020 14:36:51

5. Maximum Output Power

5.1. Block diagram of test setup

Same as section 4.1

5.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	For FCC client devices: 250 mW (24 dBm)	5150 - 5250
	For FCC: 250 mW (24 dBm) or 11 + 10 $\log_{10}$ B	5250 - 5350
	For FCC: 250 mW (24 dBm) or 11 + 10 $\log_{10}$ B	5470 - 5725
	1 Watt (30 dBm)	5725 - 5850
Note: For FCC: B = 26 dB bandwidth.		

5.3. Test procedure

(1) Connect each EUT's antenna output to Power Sensor by RF cable and attenuator

(2) Add each antenna port's results to get the total output power of EUT.

5.4. Test result

Test Mode	Antenna	Channel	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	12.79	24	PASS
		5200	12.65	24	PASS
		5240	12.31	24	PASS
		5260	12.93	24	PASS
		5280	12.22	24	PASS
		5320	12.12	24	PASS
		5500	12.25	24	PASS
		5580	12.77	24	PASS
		5700	12.31	24	PASS
		5745	10.19	30	PASS
		5785	11.94	30	PASS
		5825	11.37	30	PASS
11N20SISO	Ant1	5180	12.58	24	PASS
		5200	11.94	24	PASS
		5240	11.82	24	PASS
		5260	12.45	24	PASS

		5280	12.15	24	PASS
		5320	11.71	24	PASS
		5500	11.81	24	PASS
		5580	12.18	24	PASS
		5700	12.27	24	PASS
		5745	9.64	30	PASS
		5785	11.55	30	PASS
		5825	11.79	30	PASS
11N40SISO	Ant1	5190	10.85	24	PASS
		5230	10.81	24	PASS
		5270	11.18	24	PASS
		5310	10.30	24	PASS
		5510	10.35	24	PASS
		5550	10.71	24	PASS
		5670	10.80	24	PASS
		5755	8.85	30	PASS
		5795	9.48	30	PASS
11AC20SISO	Ant1	5180	11.81	24	PASS
		5200	12.17	24	PASS
		5240	12.04	24	PASS
		5260	12.56	24	PASS
		5280	12.17	24	PASS
		5320	11.74	24	PASS
		5500	11.87	24	PASS
		5580	12.28	24	PASS
		5700	12.06	24	PASS
		5745	9.75	30	PASS
		5785	11.60	30	PASS
		5825	11.02	30	PASS
11AC40SISO	Ant1	5190	8.57	24	PASS
		5230	10.64	24	PASS
		5270	10.96	24	PASS
		5310	10.49	24	PASS
		5510	10.38	24	PASS
		5550	10.67	24	PASS
		5670	10.68	24	PASS
		5755	8.86	30	PASS
		5795	9.42	30	PASS
11AC80SISO	Ant1	5210	10.15	24	PASS
		5290	10.68	24	PASS
		5530	10.09	24	PASS
		5610	10.62	24	PASS
		5775	9.65	30	PASS

6. Power Spectral Density

6.1. Block diagram of test setup

Same with 4.1

6.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	For FCC: Other than Mobile and portable: 17 dBm/MHz Mobile and portable client devices: 11 dBm/MHz	5150 - 5250
	11 dBm/MHz	5250 - 5350
	11 dBm/MHz	5470 - 5725
	30 dBm/500 kHz	5725 - 5850

6.3. Test procedure

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1 MHz RBW and 3 MHz VBW.
Connect the UUT to the spectrum analyser and use the following settings:

5150 MHz ~ 5250 MHz, 5250 MHz ~ 5350 MHz, 5470 MHz ~ 5725 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	1 MHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

5725 MHz - 5850 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	500 kHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

6.4. Test result

(5150 - 5250)

Test Mode	Ant	Test Channel	PSD [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	ANT1	5180	4.21	11	PASS
11A	ANT1	5200	3.93	11	PASS
11A	ANT1	5240	4.26	11	PASS
11N20SISO	ANT1	5180	3.59	11	PASS
11N20SISO	ANT1	5200	3.30	11	PASS
11N20SISO	ANT1	5240	3.71	11	PASS
11N40SISO	ANT1	5190	-0.62	11	PASS
11N40SISO	ANT1	5230	-0.49	11	PASS
11AC20SISO	ANT1	5180	3.65	11	PASS
11AC20SISO	ANT1	5200	3.50	11	PASS
11AC20SISO	ANT1	5240	3.72	11	PASS
11AC40SISO	ANT1	5190	-1.35	11	PASS
11AC40SISO	ANT1	5230	-0.44	11	PASS
11AC80SISO	ANT1	5210	-3.17	11	PASS

(5250 - 5350, 5470 - 5725)

Test Mode	Ant	Test Channel	PSD [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	ANT1	5260	4.66	11	PASS
11A	ANT1	5280	3.86	11	PASS
11A	ANT1	5320	4.50	11	PASS
11A	ANT1	5500	4.14	11	PASS
11A	ANT1	5580	4.19	11	PASS
11A	ANT1	5700	1.46	11	PASS
11N20SISO	ANT1	5260	3.97	11	PASS
11N20SISO	ANT1	5280	3.23	11	PASS
11N20SISO	ANT1	5320	3.70	11	PASS
11N20SISO	ANT1	5500	3.41	11	PASS
11N20SISO	ANT1	5580	3.62	11	PASS
11N20SISO	ANT1	5700	0.97	11	PASS
11N40SISO	ANT1	5270	-0.75	11	PASS
11N40SISO	ANT1	5310	-0.28	11	PASS
11N40SISO	ANT1	5510	-0.51	11	PASS
11N40SISO	ANT1	5550	0.10	11	PASS
11N40SISO	ANT1	5670	-2.66	11	PASS

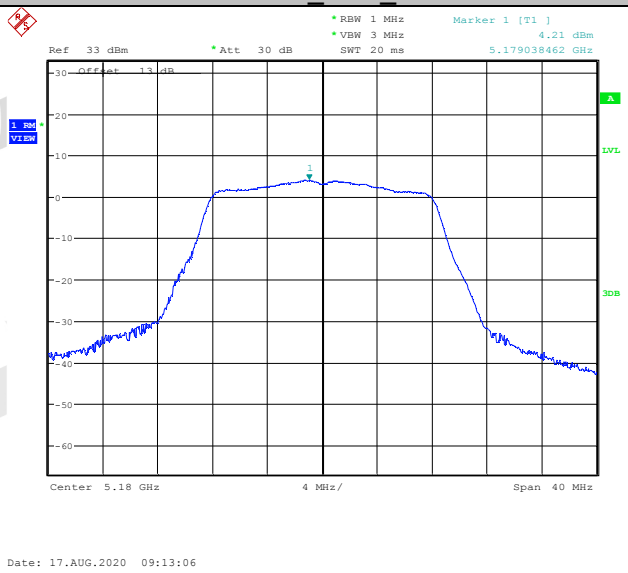
11AC20SISO	ANT1	5260	3.89	11	PASS
11AC20SISO	ANT1	5280	3.02	11	PASS
11AC20SISO	ANT1	5320	4.03	11	PASS
11AC20SISO	ANT1	5500	3.57	11	PASS
11AC20SISO	ANT1	5580	3.81	11	PASS
11AC20SISO	ANT1	5700	1.24	11	PASS
11AC40SISO	ANT1	5270	-0.58	11	PASS
11AC40SISO	ANT1	5310	-0.08	11	PASS
11AC40SISO	ANT1	5510	-0.46	11	PASS
11AC40SISO	ANT1	5550	-0.40	11	PASS
11AC40SISO	ANT1	5670	-2.62	11	PASS
11AC80SISO	ANT1	5290	-3.88	11	PASS
11AC80SISO	ANT1	5530	-2.75	11	PASS
11AC80SISO	ANT1	5610	-4.53	11	PASS

(5725 - 5850)

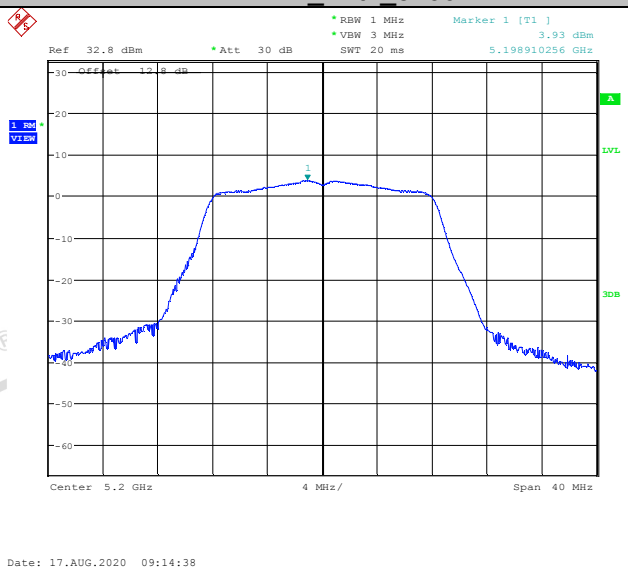
Test Mode	Ant	Test Channel	PSD [dBm/500kHz]	Limit [dBm/500kHz]	Verdict
11A	ANT1	5745	1.14	30	PASS
11A	ANT1	5785	1.93	30	PASS
11A	ANT1	5825	2.72	30	PASS
11N20SISO	ANT1	5745	1.45	30	PASS
11N20SISO	ANT1	5785	1.44	30	PASS
11N20SISO	ANT1	5825	1.99	30	PASS
11N40SISO	ANT1	5755	-1.85	30	PASS
11N40SISO	ANT1	5795	-1.28	30	PASS
11AC20SISO	ANT1	5745	0.98	30	PASS
11AC20SISO	ANT1	5785	1.62	30	PASS
11AC20SISO	ANT1	5825	2.03	30	PASS
11AC40SISO	ANT1	5755	-1.81	30	PASS
11AC40SISO	ANT1	5795	-1.31	30	PASS
11AC80SISO	ANT1	5775	-4.08	30	PASS

6.5. Original test data

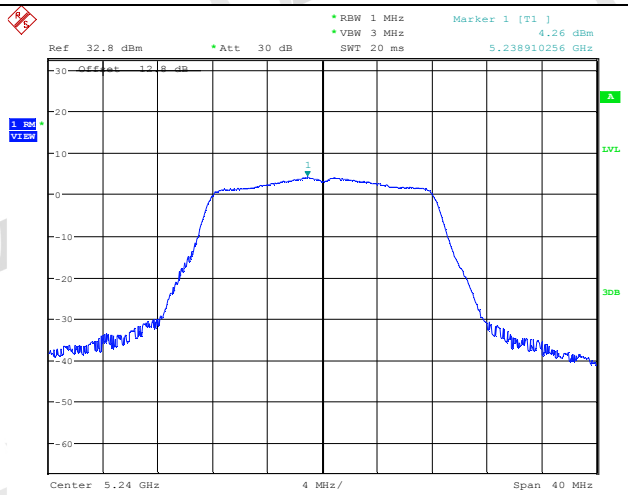
11A_Ant1_5180



11A_Ant1_5200

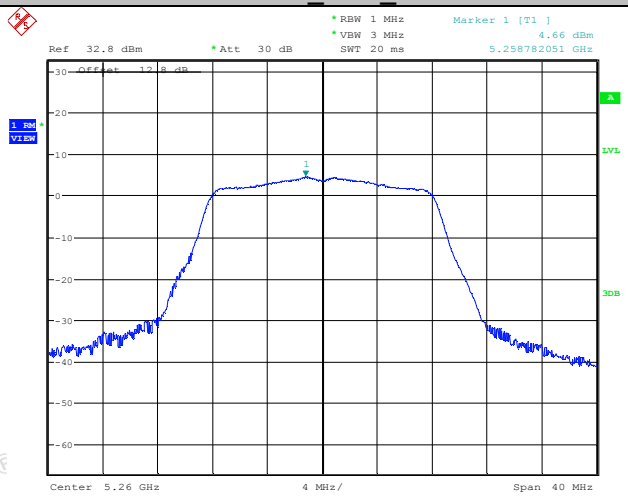


11A_Ant1_5240



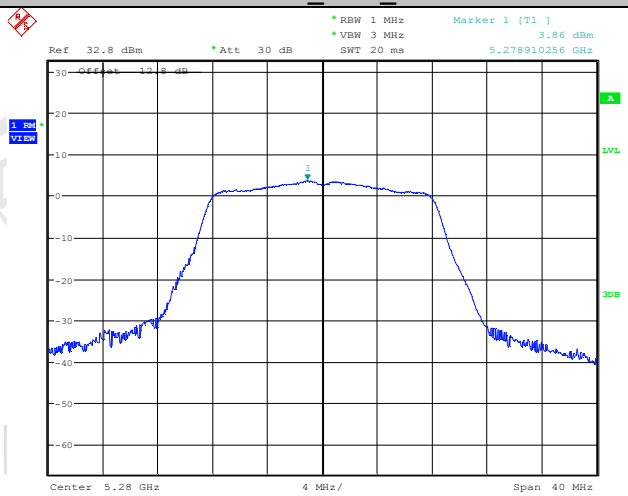
Date: 17.AUG.2020 09:20:16

11A_Ant1_5260



Date: 17.AUG.2020 09:21:35

11A_Ant1_5280



Date: 17.AUG.2020 09:23:06

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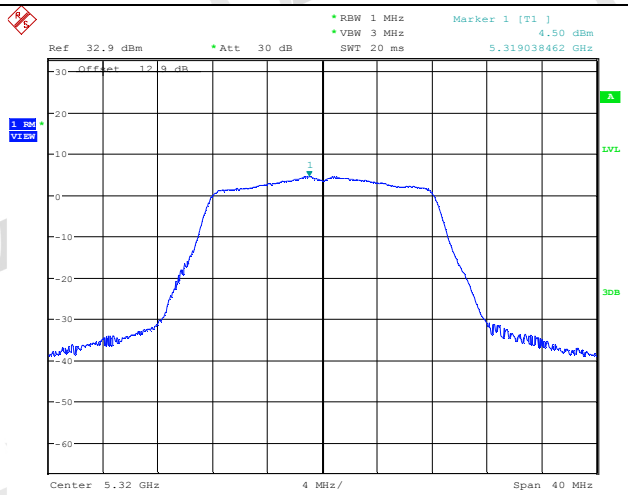
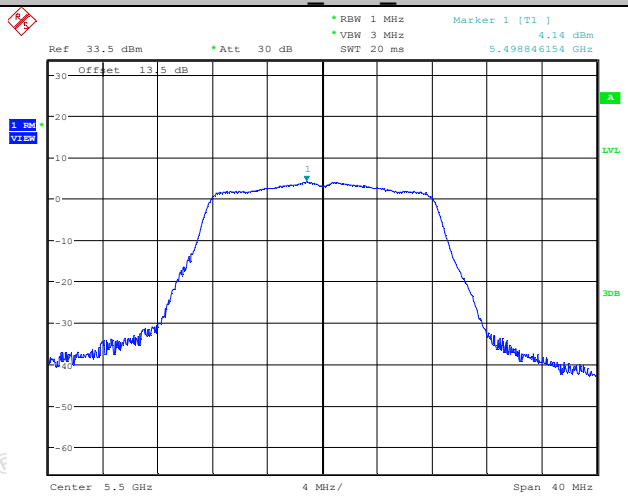


Date: 17.AUG.2020 09:23:49

11A_Ant1_5500



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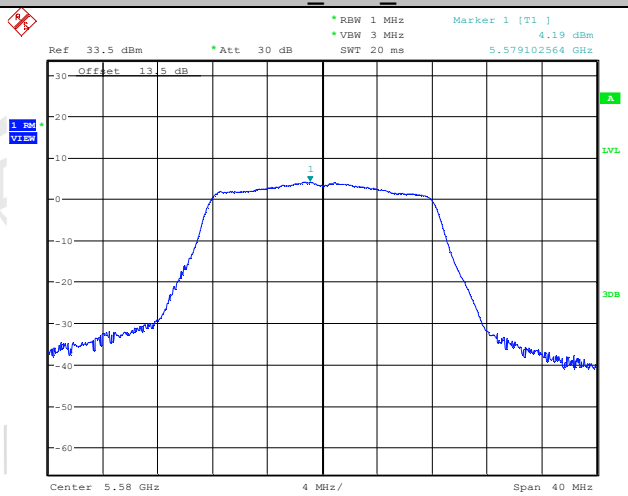
11A_Ant1_5580



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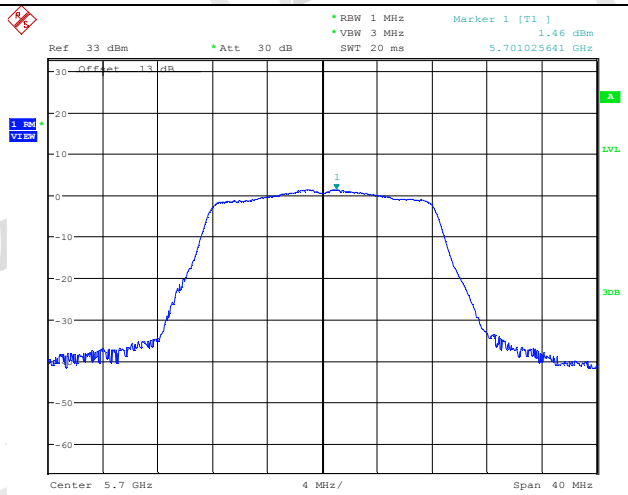
11A_Ant1_5700



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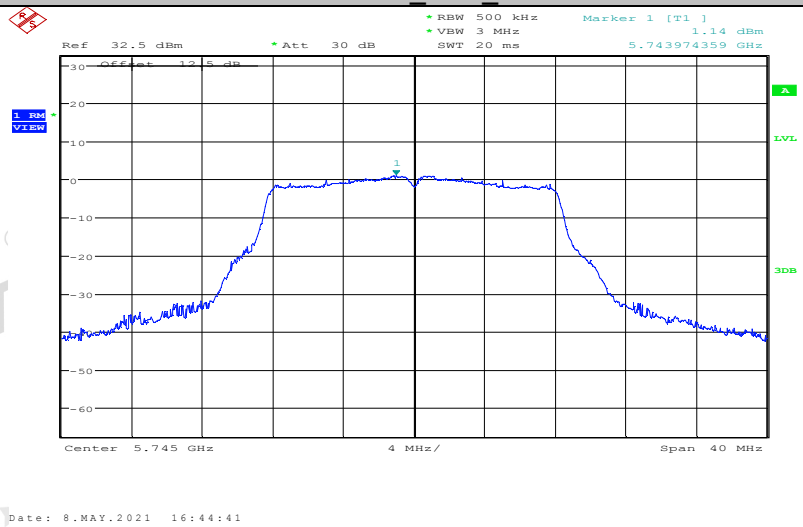
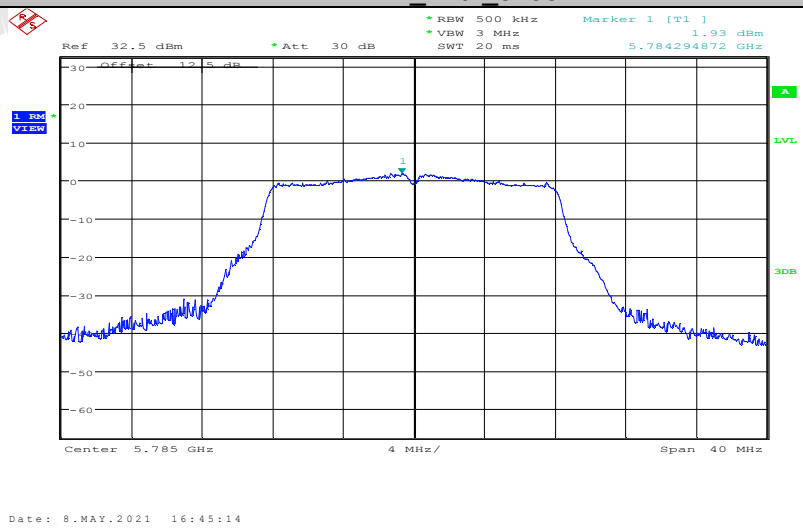


11A_Ant1_5785



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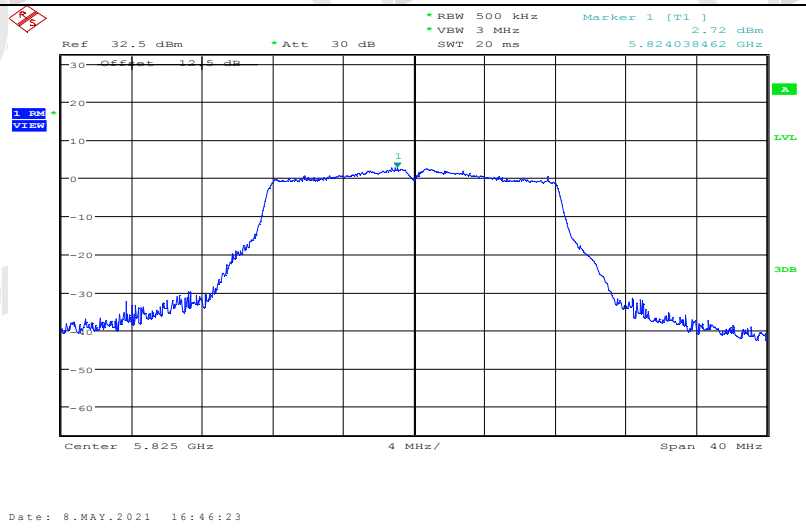

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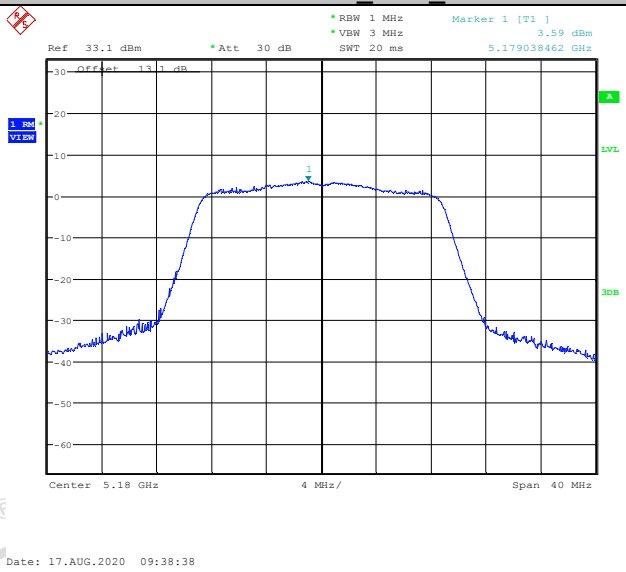

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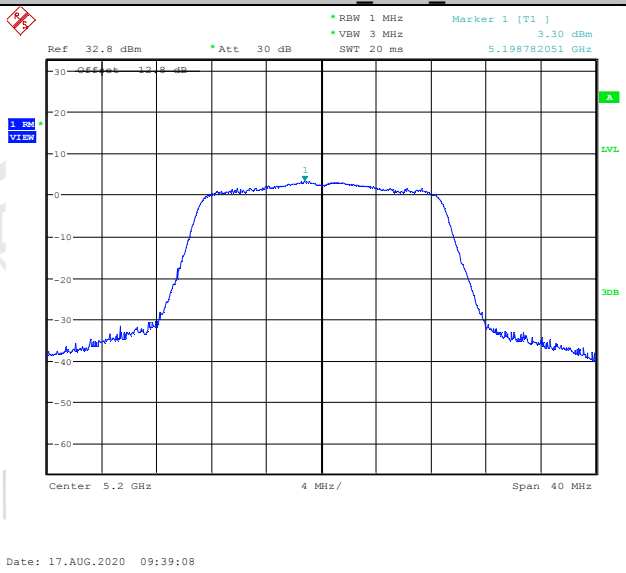

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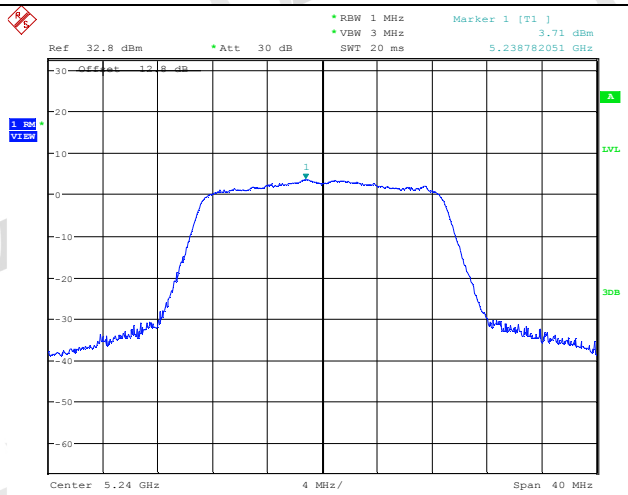

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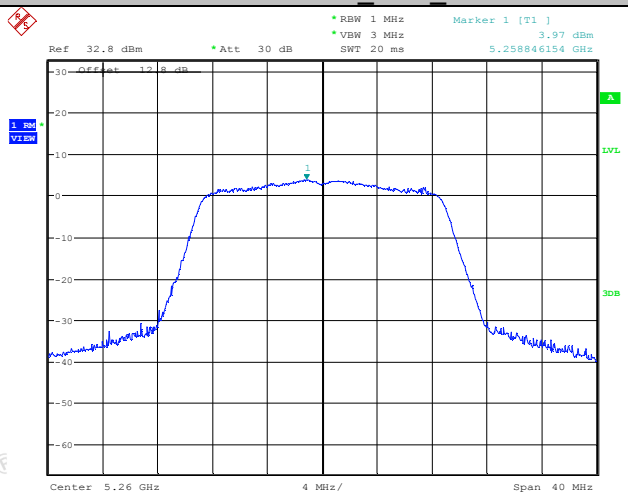

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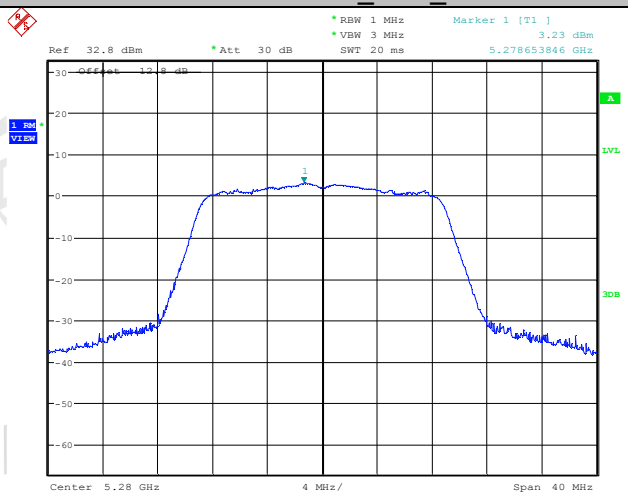

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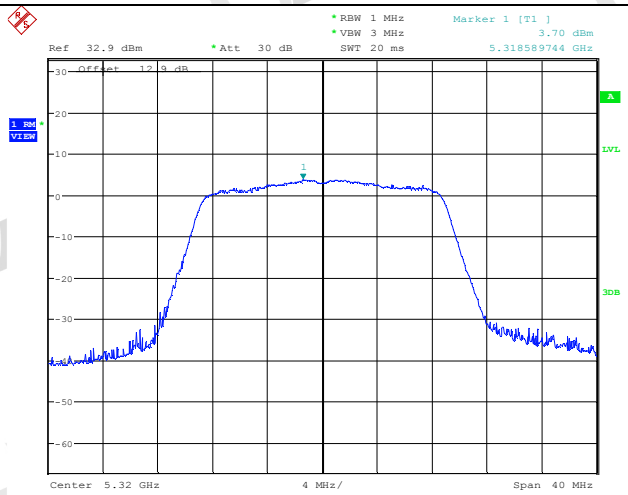

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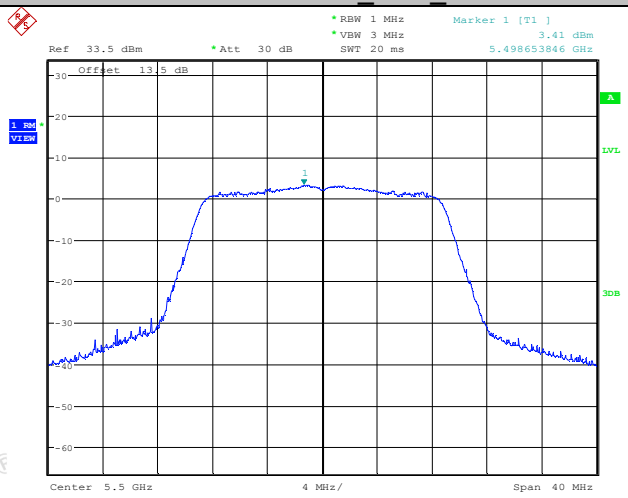

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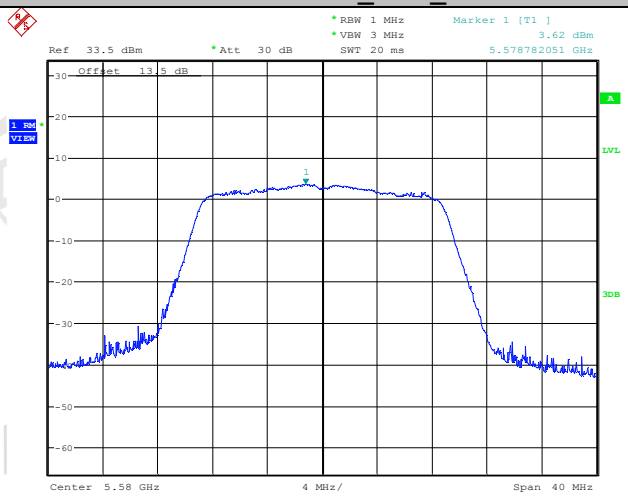

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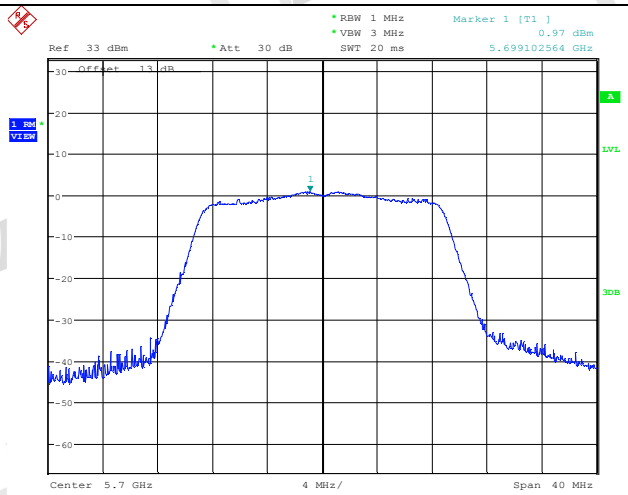

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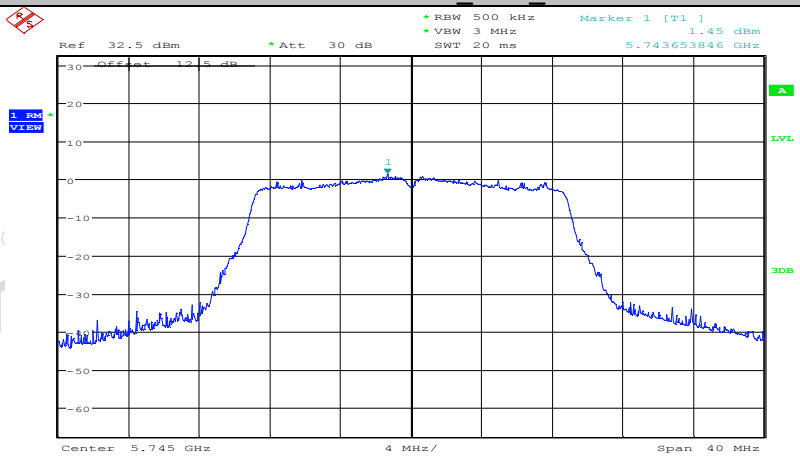

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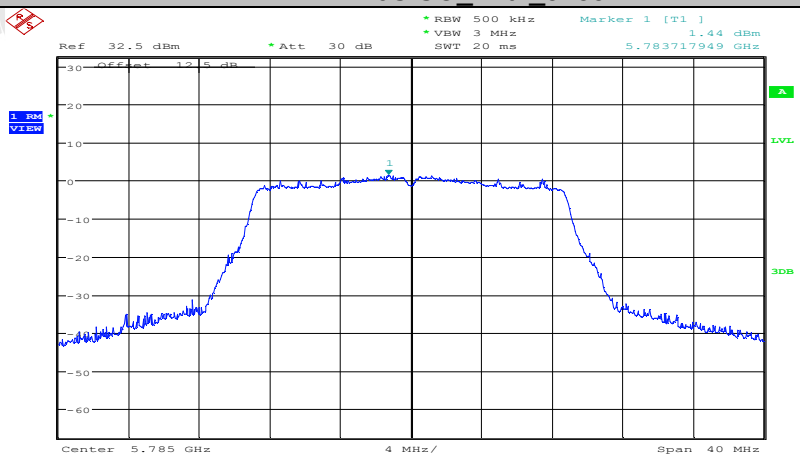

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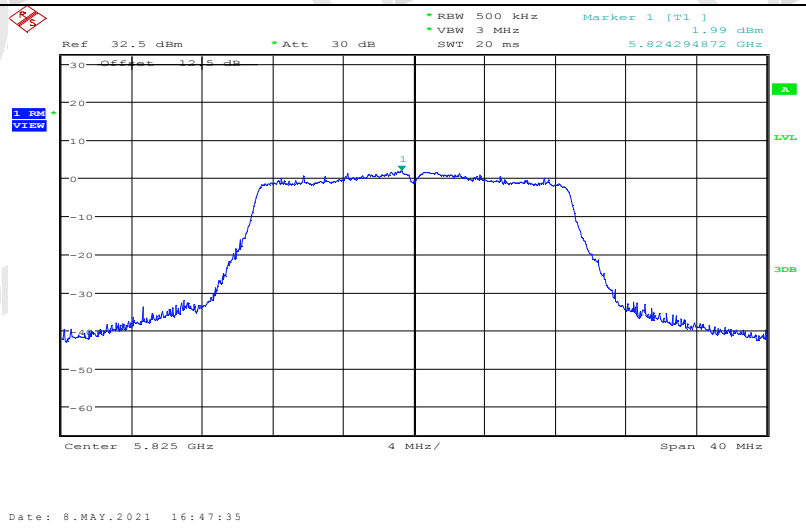

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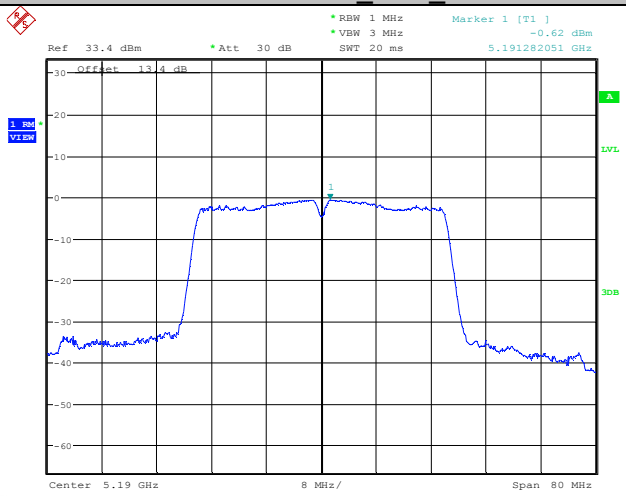

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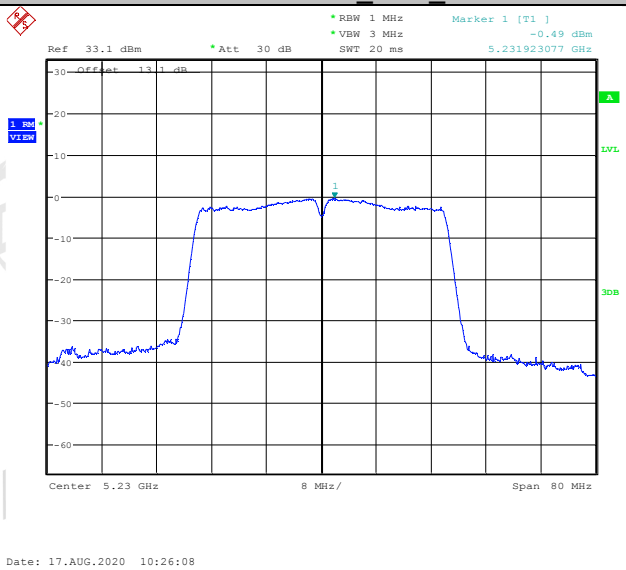

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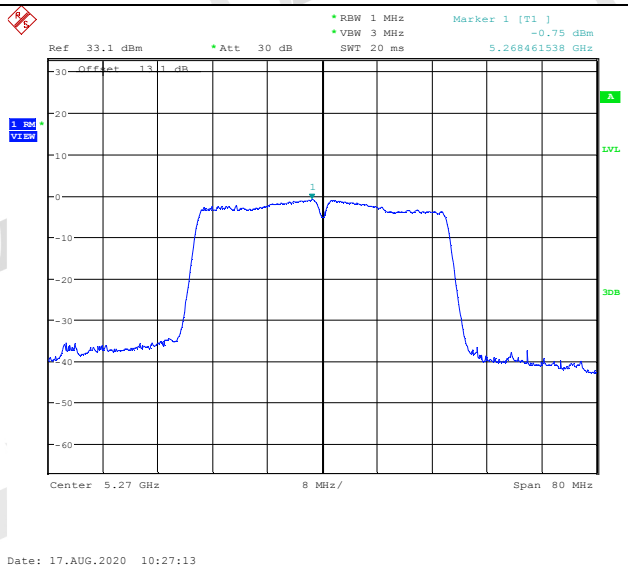

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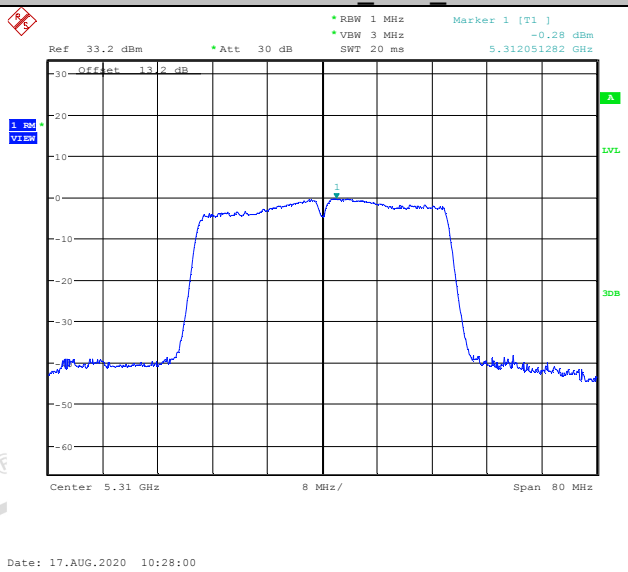

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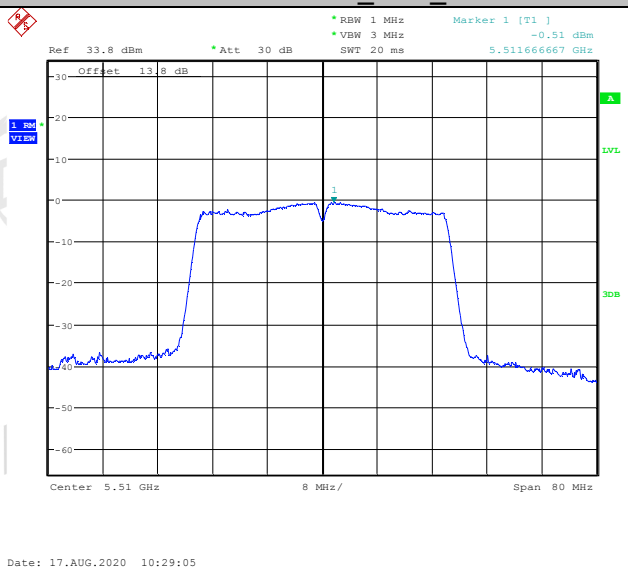

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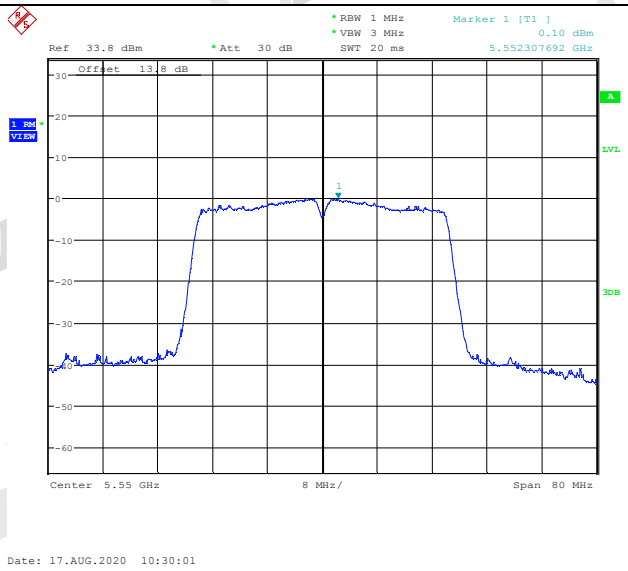

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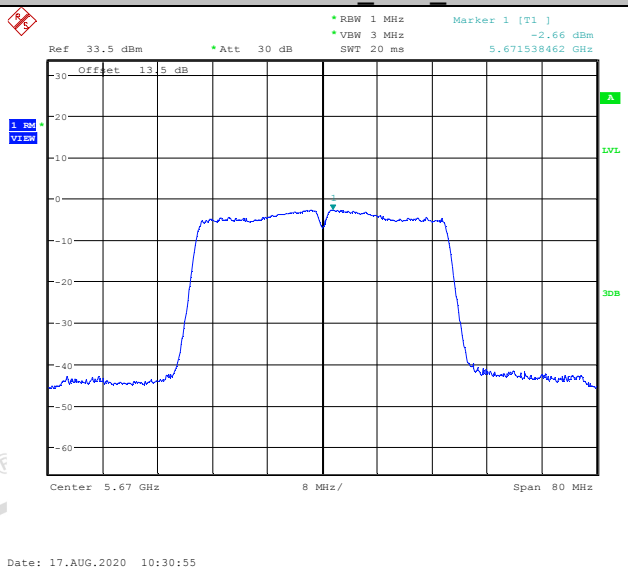

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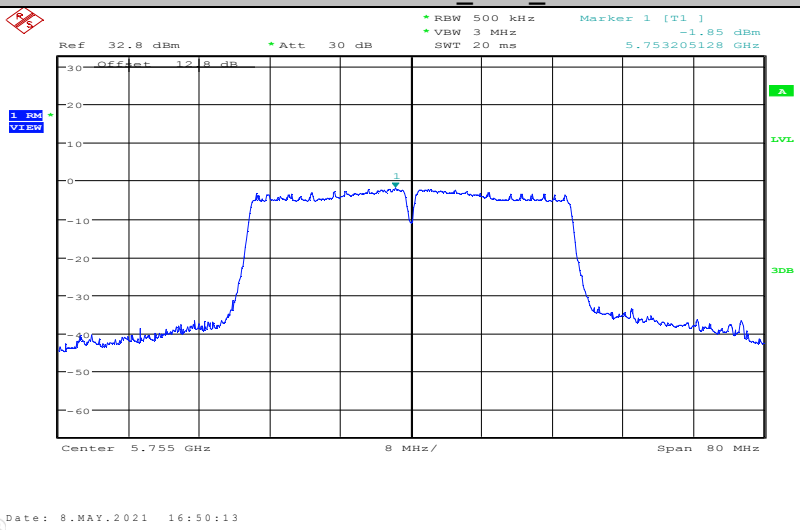

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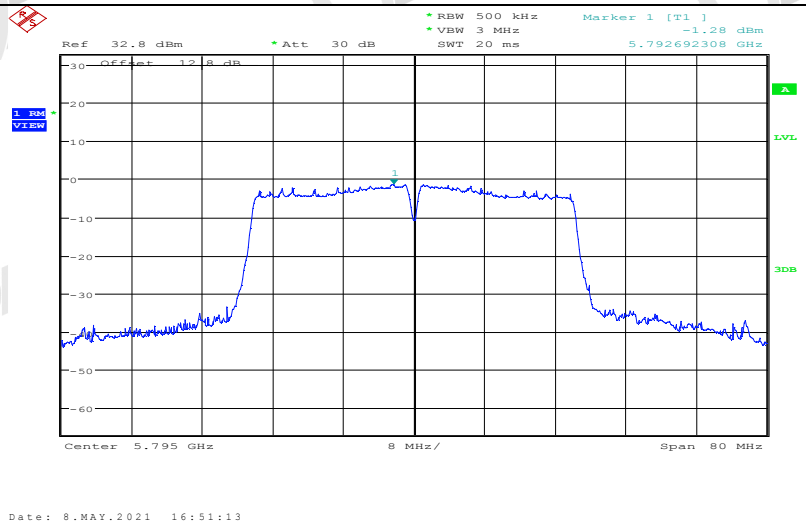

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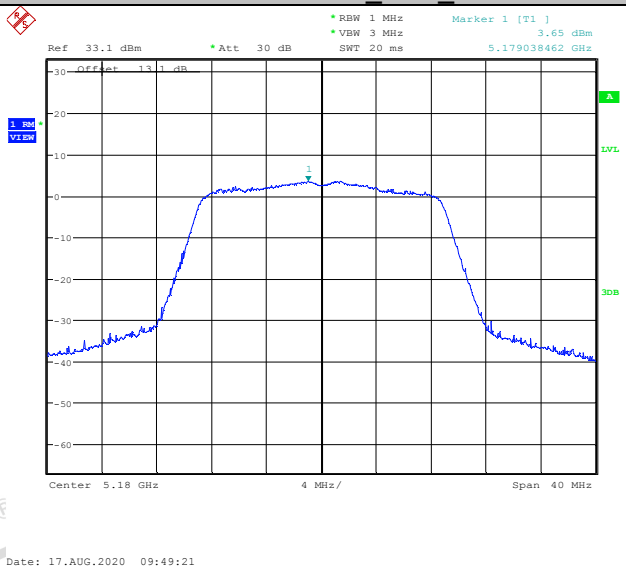

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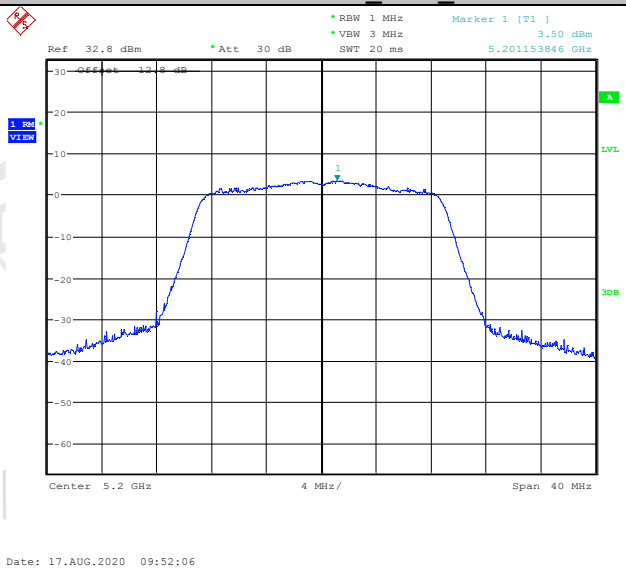

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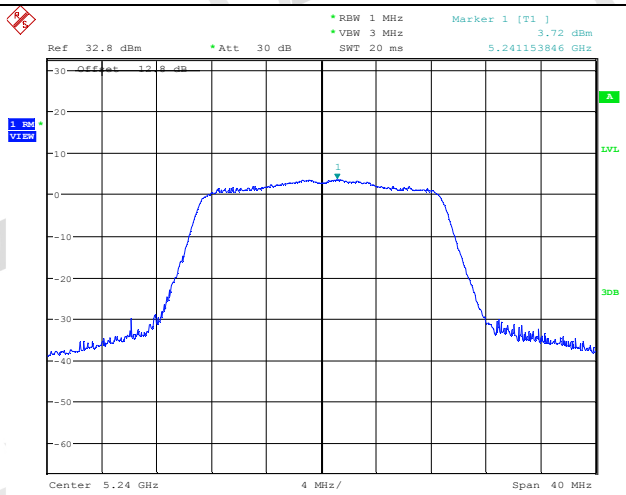

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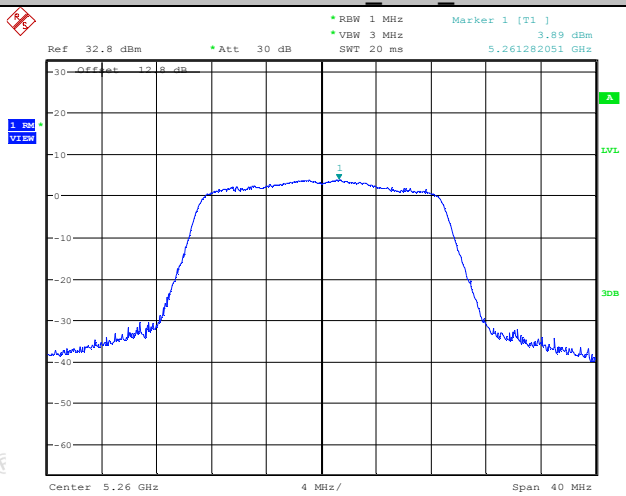

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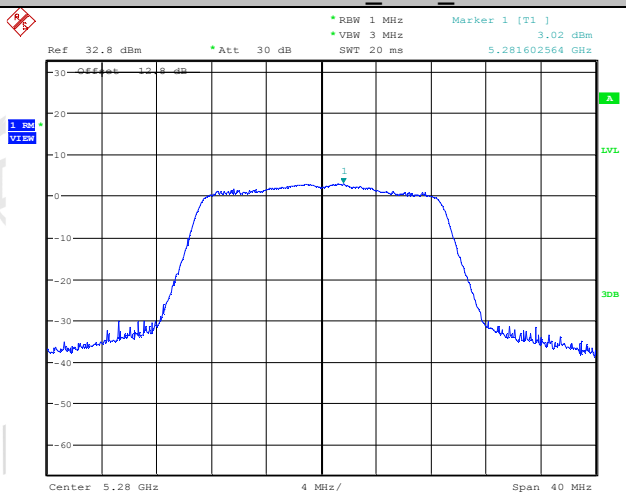

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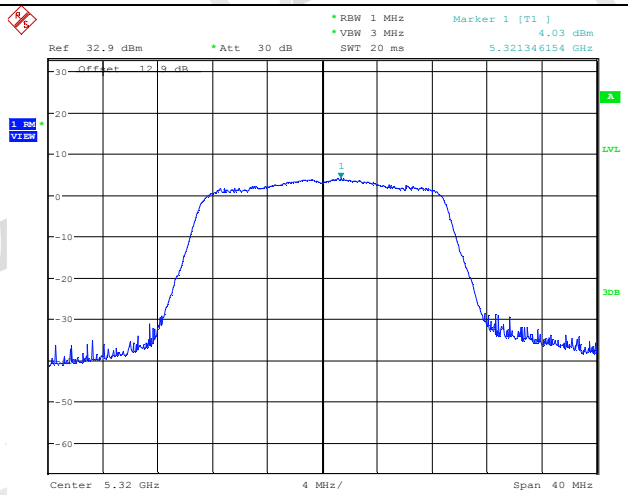

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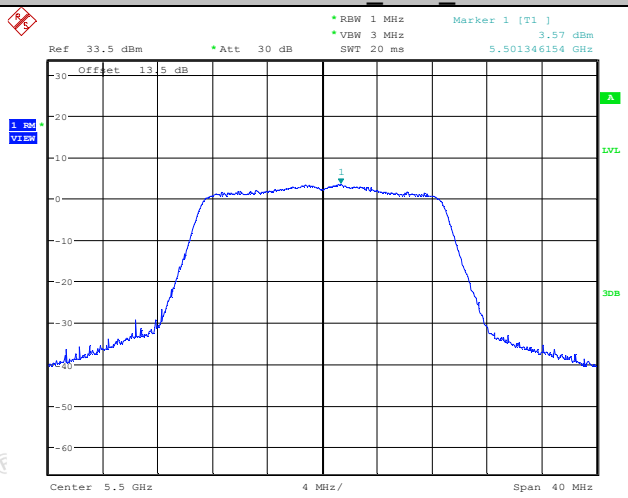

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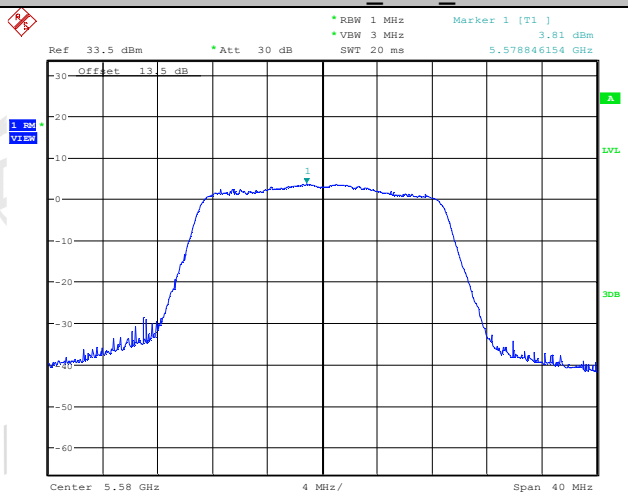

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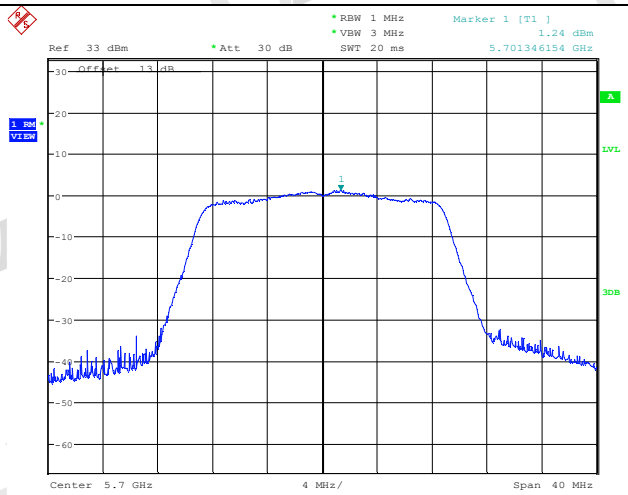

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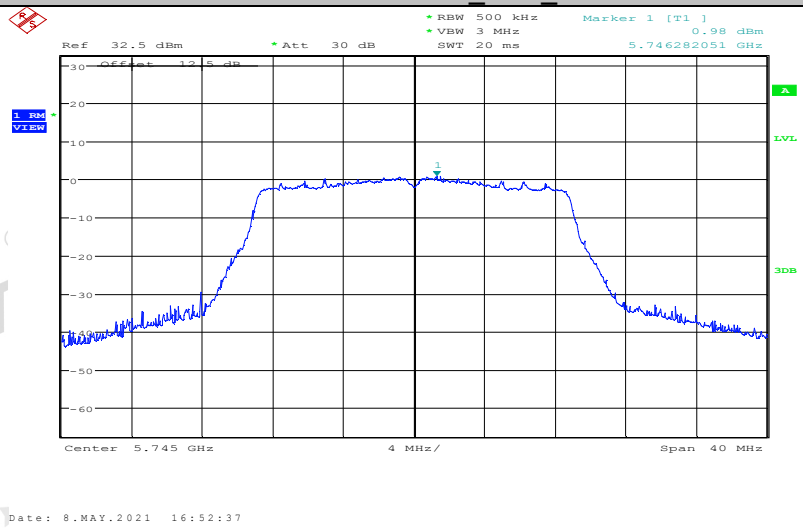

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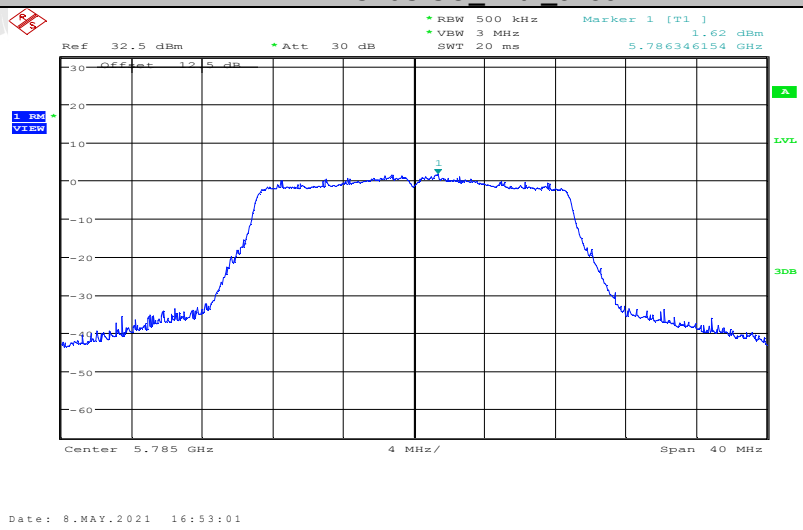

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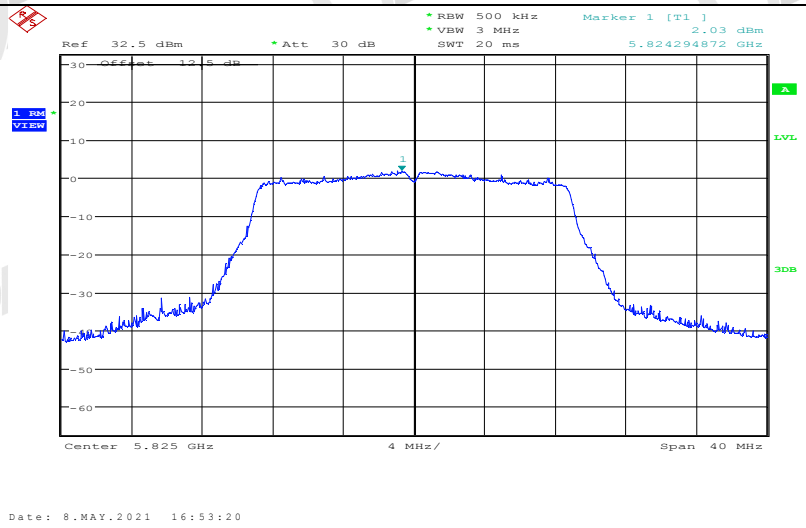

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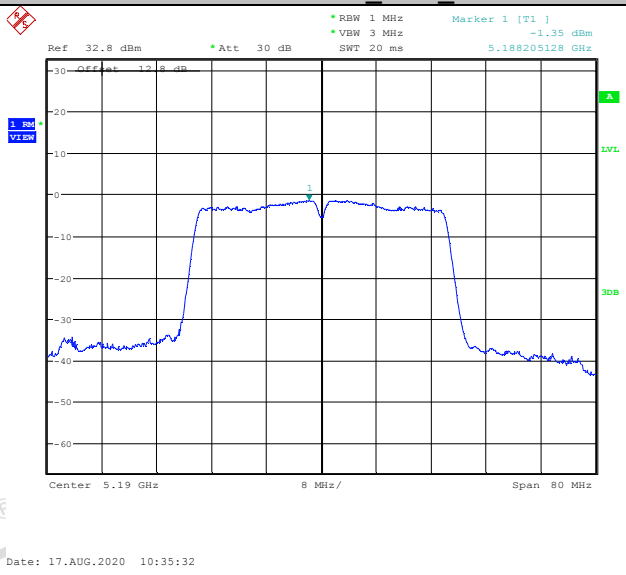

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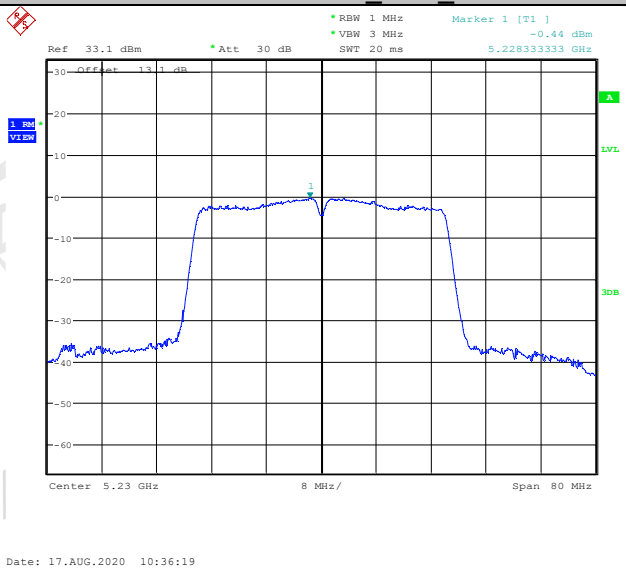

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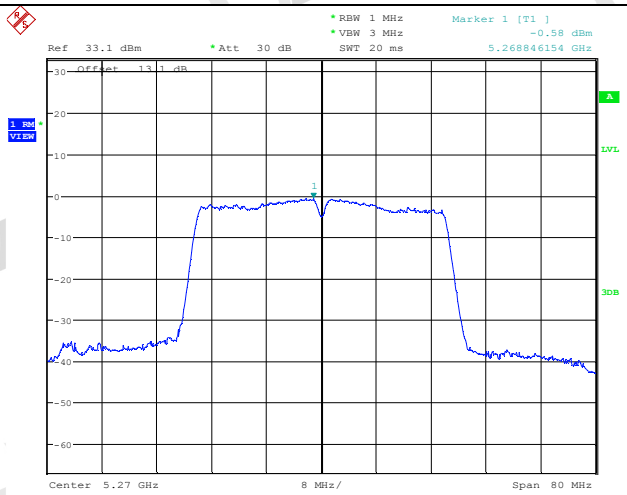

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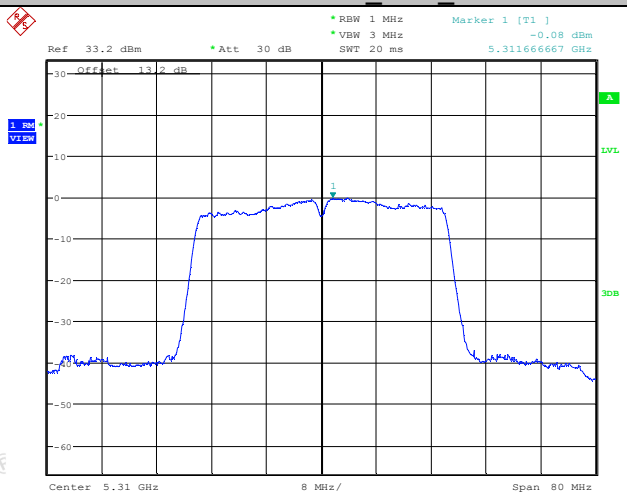

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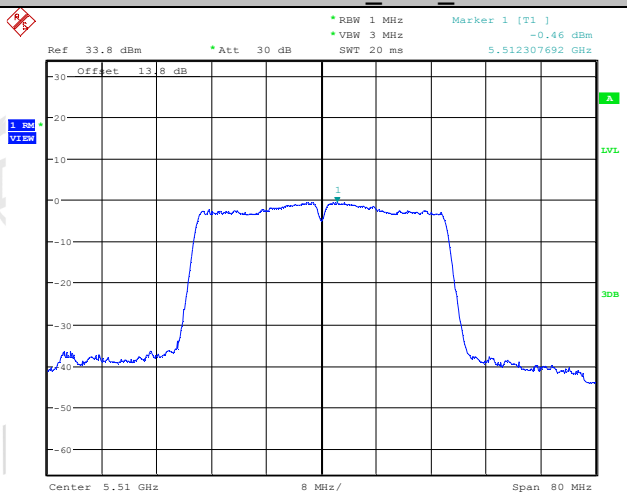

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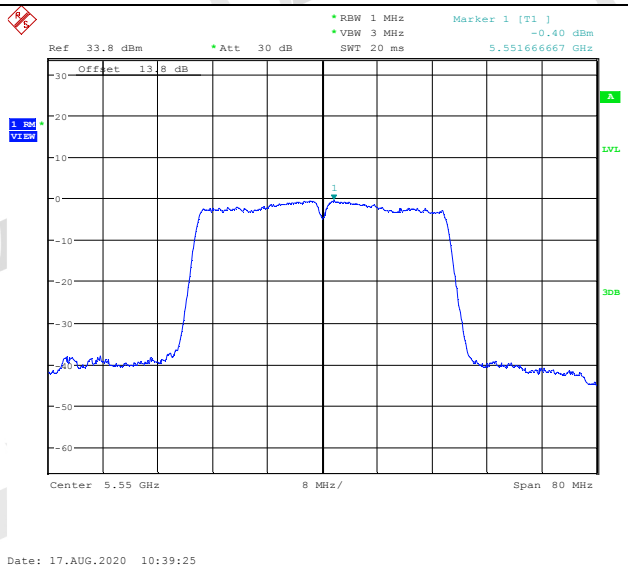

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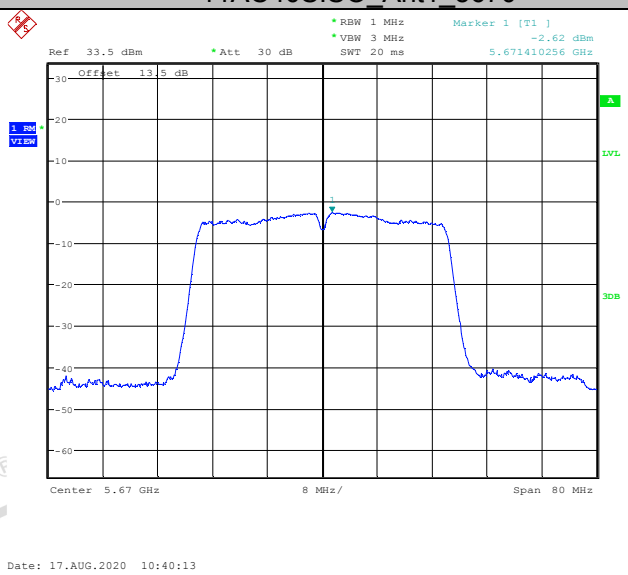

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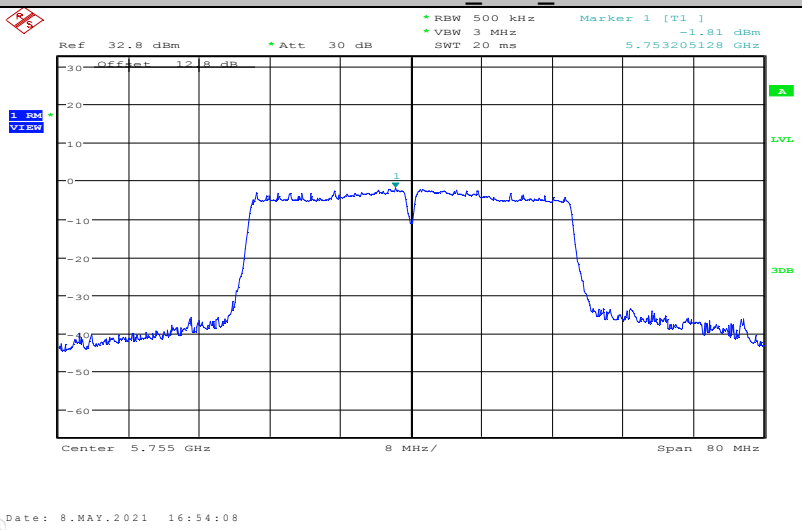

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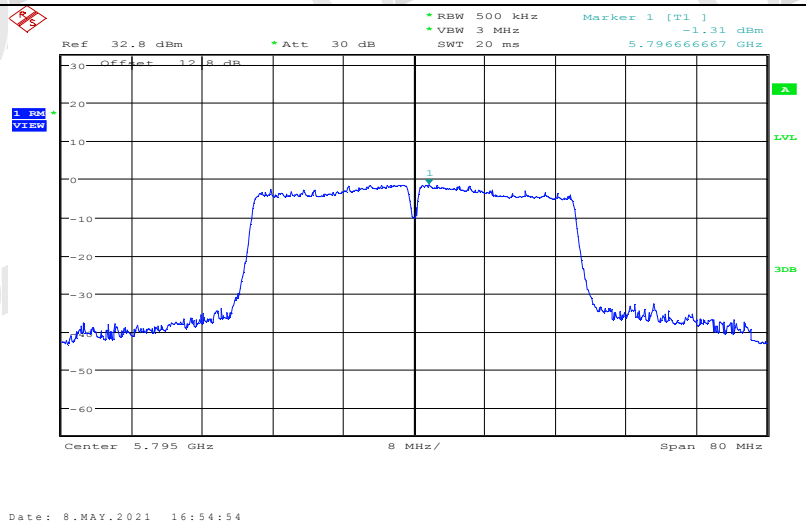

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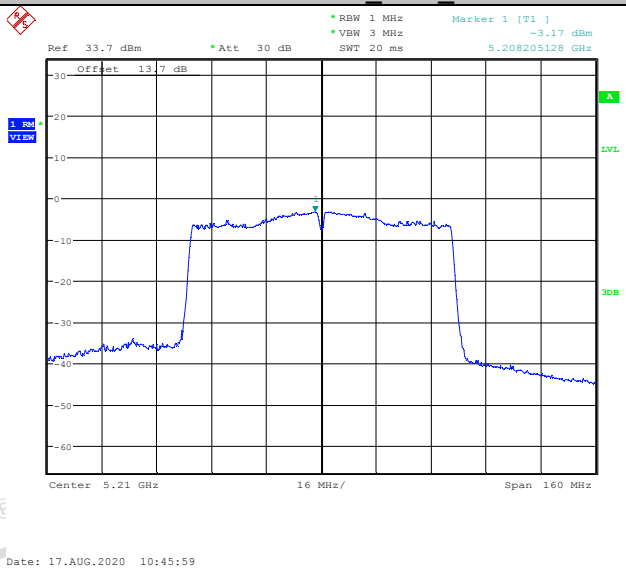

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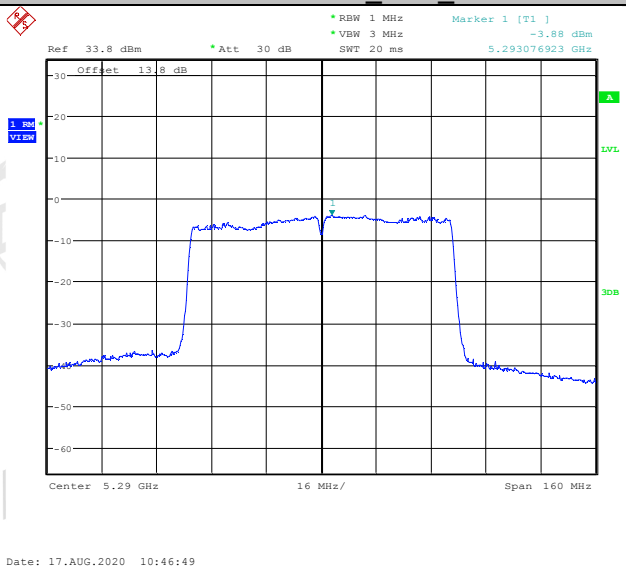

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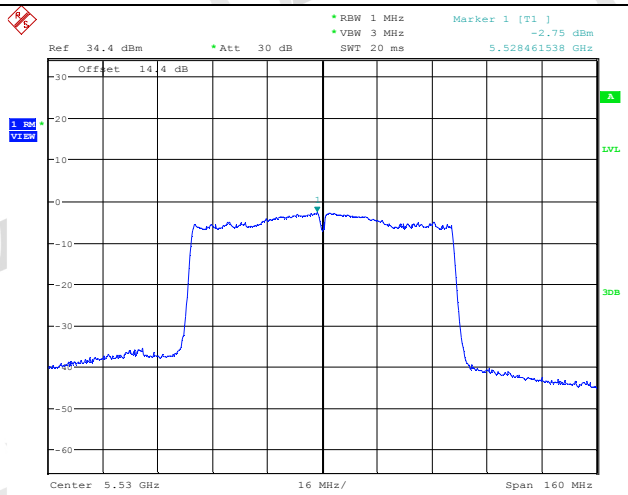

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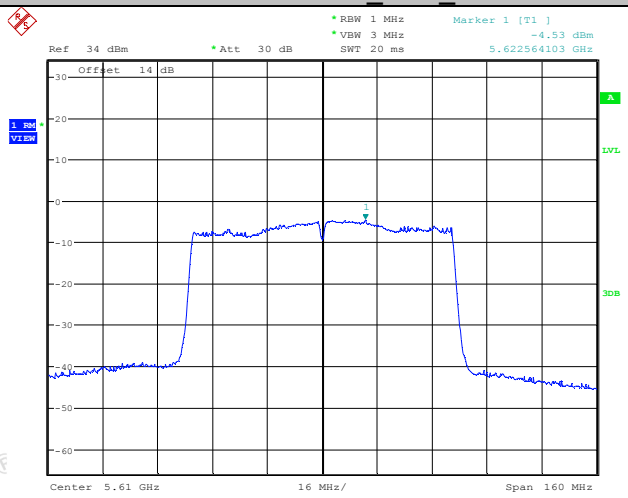
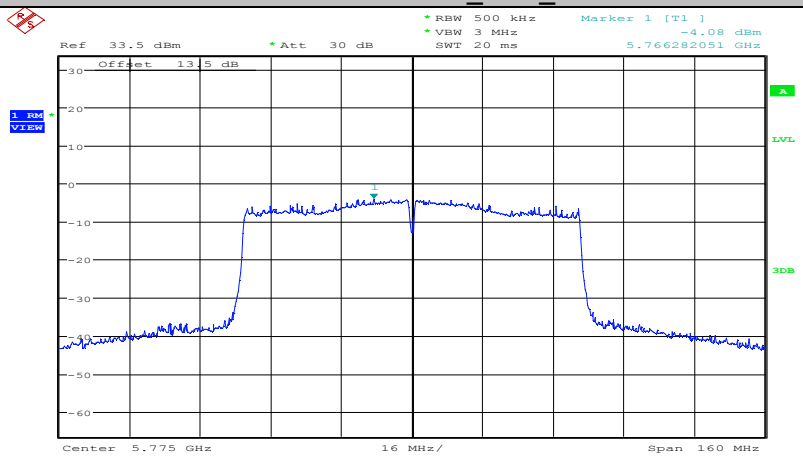


Date: 17.AUG.2020 10:49:14

11AC80SISO_Ant1_5775



Date: 8.MAY.2021 16:55:21

7. Frequency Stability Measurement

7.1. Limit of frequency stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

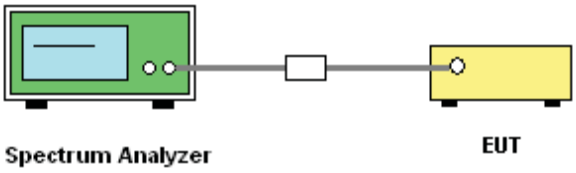
7.2. Measuring instruments

The measuring equipment is listed in the section 4 of this test report.

7.3. Test procedures

(1) To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
(2) The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.
(3) The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

7.4. Test setup



7.5. Test result

Voltage								
Test Mode	Antenna	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5180	NV	NT	84000	16.216216	20	PASS
			LV	NT	84000	16.216216	20	PASS
			HV	NT	84000	16.216216	20	PASS
		5200	NV	NT	86000	16.538462	20	PASS
			LV	NT	85000	16.346154	20	PASS
			HV	NT	85000	16.346154	20	PASS
		5240	NV	NT	82000	15.648855	20	PASS
			LV	NT	82000	15.648855	20	PASS
			HV	NT	82000	15.648855	20	PASS
		5260	NV	NT	82000	15.589354	20	PASS
			LV	NT	82000	15.589354	20	PASS
			HV	NT	82000	15.589354	20	PASS
		5280	NV	NT	83000	15.719697	20	PASS
			LV	NT	83000	15.719697	20	PASS

			HV	NT	83000	15.719697	20	PASS
		5320	NV	NT	84000	15.789474	20	PASS
			LV	NT	84000	15.789474	20	PASS
			HV	NT	83000	15.601504	20	PASS
		5500	NV	NT	86000	15.636364	20	PASS
			LV	NT	86000	15.636364	20	PASS
			HV	NT	86000	15.636364	20	PASS
		5580	NV	NT	85000	15.232975	20	PASS
			LV	NT	85000	15.232975	20	PASS
			HV	NT	85000	15.232975	20	PASS
		5700	NV	NT	89000	15.614035	20	PASS
			LV	NT	89000	15.614035	20	PASS
			HV	NT	90000	15.789474	20	PASS
		5745	NV	NT	91000	15.839861	20	PASS
			LV	NT	90000	15.665796	20	PASS
			HV	NT	90000	15.665796	20	PASS
		5785	NV	NT	91000	15.730337	20	PASS
			LV	NT	91000	15.730337	20	PASS
			HV	NT	91000	15.730337	20	PASS
		5825	NV	NT	92000	15.793991	20	PASS
			LV	NT	92000	15.793991	20	PASS
			HV	NT	92000	15.793991	20	PASS
11N20 SISO	Ant1	5180	NV	NT	82000	15.830116	20	PASS
			LV	NT	82000	15.830116	20	PASS
			HV	NT	82000	15.830116	20	PASS
		5200	NV	NT	82000	15.769231	20	PASS
			LV	NT	82000	15.769231	20	PASS
			HV	NT	82000	15.769231	20	PASS
		5240	NV	NT	82000	15.648855	20	PASS
			LV	NT	83000	15.839695	20	PASS
			HV	NT	82000	15.648855	20	PASS
		5260	NV	NT	83000	15.779468	20	PASS
			LV	NT	82000	15.589354	20	PASS
			HV	NT	83000	15.779468	20	PASS
		5280	NV	NT	83000	15.719697	20	PASS
			LV	NT	83000	15.719697	20	PASS
			HV	NT	83000	15.719697	20	PASS
		5320	NV	NT	84000	15.789474	20	PASS
			LV	NT	84000	15.789474	20	PASS
			HV	NT	84000	15.789474	20	PASS
		5500	NV	NT	86000	15.636364	20	PASS
			LV	NT	87000	15.818182	20	PASS
			HV	NT	87000	15.818182	20	PASS
		5580	NV	NT	88000	15.770609	20	PASS
			LV	NT	88000	15.770609	20	PASS
			HV	NT	88000	15.770609	20	PASS
		5700	NV	NT	90000	15.789474	20	PASS
			LV	NT	90000	15.789474	20	PASS
			HV	NT	90000	15.789474	20	PASS
		5745	NV	NT	91000	15.839861	20	PASS
			LV	NT	91000	15.839861	20	PASS

			HV	NT	91000	15.839861	20	PASS
		5785	NV	NT	91000	15.730337	20	PASS
			LV	NT	92000	15.903198	20	PASS
			HV	NT	91000	15.730337	20	PASS
		5825	NV	NT	92000	15.793991	20	PASS
			LV	NT	92000	15.793991	20	PASS
			HV	NT	92000	15.793991	20	PASS
11N40 SISO	Ant1	5190	NV	NT	82000	15.799615	20	PASS
			LV	NT	82000	15.799615	20	PASS
			HV	NT	82000	15.799615	20	PASS
		5230	NV	NT	83000	15.869981	20	PASS
			LV	NT	82000	15.678776	20	PASS
			HV	NT	82000	15.678776	20	PASS
		5270	NV	NT	83000	15.749526	20	PASS
			LV	NT	83000	15.749526	20	PASS
			HV	NT	83000	15.749526	20	PASS
		5310	NV	NT	84000	15.819209	20	PASS
			LV	NT	84000	15.819209	20	PASS
			HV	NT	84000	15.819209	20	PASS
		5510	NV	NT	87000	15.789474	20	PASS
			LV	NT	87000	15.789474	20	PASS
			HV	NT	87000	15.789474	20	PASS
		5550	NV	NT	87000	15.675676	20	PASS
			LV	NT	88000	15.855856	20	PASS
			HV	NT	87000	15.675676	20	PASS
		5670	NV	NT	90000	15.873016	20	PASS
			LV	NT	90000	15.873016	20	PASS
			HV	NT	89000	15.696649	20	PASS
		5755	NV	NT	91000	15.812337	20	PASS
			LV	NT	91000	15.812337	20	PASS
			HV	NT	91000	15.812337	20	PASS
		5795	NV	NT	92000	15.875755	20	PASS
			LV	NT	91000	15.703192	20	PASS
			HV	NT	91000	15.703192	20	PASS
11AC20 SISO	Ant1	5180	NV	NT	81000	15.637066	20	PASS
			LV	NT	81000	15.637066	20	PASS
			HV	NT	81000	15.637066	20	PASS
		5200	NV	NT	82000	15.769231	20	PASS
			LV	NT	82000	15.769231	20	PASS
			HV	NT	82000	15.769231	20	PASS
		5240	NV	NT	83000	15.839695	20	PASS
			LV	NT	83000	15.839695	20	PASS
			HV	NT	83000	15.839695	20	PASS
		5260	NV	NT	84000	15.969582	20	PASS
			LV	NT	83000	15.779468	20	PASS
			HV	NT	83000	15.779468	20	PASS
		5280	NV	NT	84000	15.909091	20	PASS
			LV	NT	83000	15.719697	20	PASS
			HV	NT	83000	15.719697	20	PASS
		5320	NV	NT	84000	15.789474	20	PASS
			LV	NT	84000	15.789474	20	PASS

			HV	NT	84000	15.789474	20	PASS
		5500	NV	NT	86000	15.636364	20	PASS
			LV	NT	86000	15.636364	20	PASS
			HV	NT	86000	15.636364	20	PASS
		5580	NV	NT	88000	15.770609	20	PASS
			LV	NT	88000	15.770609	20	PASS
			HV	NT	88000	15.770609	20	PASS
		5700	NV	NT	91000	15.964912	20	PASS
			LV	NT	91000	15.964912	20	PASS
			HV	NT	91000	15.964912	20	PASS
		5745	NV	NT	93000	16.18799	20	PASS
			LV	NT	93000	16.18799	20	PASS
			HV	NT	93000	16.18799	20	PASS
		5785	NV	NT	94000	16.24892	20	PASS
			LV	NT	94000	16.24892	20	PASS
			HV	NT	94000	16.24892	20	PASS
		5825	NV	NT	94000	16.137339	20	PASS
			LV	NT	94000	16.137339	20	PASS
			HV	NT	94000	16.137339	20	PASS
11AC40 SISO	Ant1	5190	NV	NT	85000	16.377649	20	PASS
			LV	NT	85000	16.377649	20	PASS
			HV	NT	85000	16.377649	20	PASS
		5230	NV	NT	86000	16.443595	20	PASS
			LV	NT	86000	16.443595	20	PASS
			HV	NT	85000	16.25239	20	PASS
		5270	NV	NT	87000	16.508539	20	PASS
			LV	NT	87000	16.508539	20	PASS
			HV	NT	87000	16.508539	20	PASS
		5310	NV	NT	88000	16.572505	20	PASS
			LV	NT	87000	16.384181	20	PASS
			HV	NT	87000	16.384181	20	PASS
		5510	NV	NT	87000	15.789474	20	PASS
			LV	NT	87000	15.789474	20	PASS
			HV	NT	87000	15.789474	20	PASS
		5550	NV	NT	88000	15.855856	20	PASS
			LV	NT	88000	15.855856	20	PASS
			HV	NT	88000	15.855856	20	PASS
		5670	NV	NT	90000	15.873016	20	PASS
			LV	NT	90000	15.873016	20	PASS
			HV	NT	90000	15.873016	20	PASS
		5755	NV	NT	92000	15.986099	20	PASS
			LV	NT	92000	15.986099	20	PASS
			HV	NT	92000	15.986099	20	PASS
		5795	NV	NT	92000	15.875755	20	PASS
			LV	NT	92000	15.875755	20	PASS
			HV	NT	93000	16.048318	20	PASS
11AC80 SISO	Ant1	5210	NV	NT	80000	15.355086	20	PASS
			LV	NT	80000	15.355086	20	PASS
			HV	NT	80000	15.355086	20	PASS
		5290	NV	NT	81000	15.311909	20	PASS
			LV	NT	81000	15.311909	20	PASS

			HV	NT	82000	15.500945	20	PASS
		5530	NV	NT	87000	15.732369	20	PASS
			LV	NT	87000	15.732369	20	PASS
			HV	NT	86000	15.551537	20	PASS
		5610	NV	NT	89000	15.864528	20	PASS
			LV	NT	90000	16.042781	20	PASS
			HV	NT	89000	15.864528	20	PASS
		5775	NV	NT	92000	15.930736	20	PASS
			LV	NT	91000	15.757576	20	PASS
			HV	NT	91000	15.757576	20	PASS

Temperature								
Test Mode	Antenna	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5180	NV	-30	84000	16.216216	20	PASS
			NV	-20	84000	16.216216	20	PASS
			NV	-10	84000	16.216216	20	PASS
			NV	0	84000	16.216216	20	PASS
			NV	10	84000	16.216216	20	PASS
			NV	20	84000	16.216216	20	PASS
			NV	30	84000	16.216216	20	PASS
			NV	40	84000	16.216216	20	PASS
			NV	50	84000	16.216216	20	PASS
		5200	NV	-30	85000	16.346154	20	PASS
			NV	-20	85000	16.346154	20	PASS
			NV	-10	85000	16.346154	20	PASS
			NV	0	85000	16.346154	20	PASS
			NV	10	85000	16.346154	20	PASS
			NV	20	85000	16.346154	20	PASS
			NV	30	85000	16.346154	20	PASS
			NV	40	85000	16.346154	20	PASS
			NV	50	85000	16.346154	20	PASS
		5240	NV	-30	82000	15.648855	20	PASS
			NV	-20	82000	15.648855	20	PASS
			NV	-10	82000	15.648855	20	PASS
			NV	0	82000	15.648855	20	PASS
			NV	10	81000	15.458015	20	PASS
			NV	20	82000	15.648855	20	PASS
			NV	30	81000	15.458015	20	PASS
			NV	40	81000	15.458015	20	PASS
			NV	50	81000	15.458015	20	PASS
		5260	NV	-30	82000	15.589354	20	PASS
			NV	-20	82000	15.589354	20	PASS
			NV	-10	82000	15.589354	20	PASS
			NV	0	82000	15.589354	20	PASS
			NV	10	82000	15.589354	20	PASS
			NV	20	82000	15.589354	20	PASS
			NV	30	82000	15.589354	20	PASS
			NV	40	82000	15.589354	20	PASS
			NV	50	82000	15.589354	20	PASS

		5280	NV	-30	82000	15.530303	20	PASS
			NV	-20	83000	15.719697	20	PASS
			NV	-10	82000	15.530303	20	PASS
			NV	0	83000	15.719697	20	PASS
			NV	10	82000	15.530303	20	PASS
			NV	20	82000	15.530303	20	PASS
			NV	30	82000	15.530303	20	PASS
			NV	40	82000	15.530303	20	PASS
			NV	50	82000	15.530303	20	PASS
		5320	NV	-30	83000	15.601504	20	PASS
			NV	-20	84000	15.789474	20	PASS
			NV	-10	83000	15.601504	20	PASS
			NV	0	84000	15.789474	20	PASS
			NV	10	83000	15.601504	20	PASS
			NV	20	84000	15.789474	20	PASS
			NV	30	83000	15.601504	20	PASS
			NV	40	83000	15.601504	20	PASS
			NV	50	83000	15.601504	20	PASS
		5500	NV	-30	86000	15.636364	20	PASS
			NV	-20	87000	15.818182	20	PASS
			NV	-10	86000	15.636364	20	PASS
			NV	0	86000	15.636364	20	PASS
			NV	10	86000	15.636364	20	PASS
			NV	20	87000	15.818182	20	PASS
			NV	30	86000	15.636364	20	PASS
			NV	40	86000	15.636364	20	PASS
			NV	50	86000	15.636364	20	PASS
		5580	NV	-30	85000	15.232975	20	PASS
			NV	-20	85000	15.232975	20	PASS
			NV	-10	85000	15.232975	20	PASS
			NV	0	85000	15.232975	20	PASS
			NV	10	85000	15.232975	20	PASS
			NV	20	85000	15.232975	20	PASS
			NV	30	85000	15.232975	20	PASS
			NV	40	85000	15.232975	20	PASS
			NV	50	85000	15.232975	20	PASS
		5700	NV	-30	89000	15.614035	20	PASS
			NV	-20	89000	15.614035	20	PASS
			NV	-10	89000	15.614035	20	PASS
			NV	0	89000	15.614035	20	PASS
			NV	10	89000	15.614035	20	PASS
			NV	20	89000	15.614035	20	PASS
			NV	30	90000	15.789474	20	PASS
			NV	40	89000	15.614035	20	PASS
			NV	50	89000	15.614035	20	PASS
		5745	NV	-30	91000	15.839861	20	PASS
			NV	-20	91000	15.839861	20	PASS
			NV	-10	90000	15.665796	20	PASS
			NV	0	90000	15.665796	20	PASS
			NV	10	90000	15.665796	20	PASS
			NV	20	90000	15.665796	20	PASS

			NV	30	90000	15.665796	20	PASS
			NV	40	90000	15.665796	20	PASS
			NV	50	90000	15.665796	20	PASS
		5785	NV	-30	91000	15.730337	20	PASS
			NV	-20	91000	15.730337	20	PASS
			NV	-10	91000	15.730337	20	PASS
			NV	0	91000	15.730337	20	PASS
			NV	10	91000	15.730337	20	PASS
			NV	20	91000	15.730337	20	PASS
			NV	30	91000	15.730337	20	PASS
			NV	40	91000	15.730337	20	PASS
			NV	50	91000	15.730337	20	PASS
		5825	NV	-30	92000	15.793991	20	PASS
			NV	-20	92000	15.793991	20	PASS
			NV	-10	92000	15.793991	20	PASS
			NV	0	92000	15.793991	20	PASS
			NV	10	92000	15.793991	20	PASS
			NV	20	92000	15.793991	20	PASS
			NV	30	92000	15.793991	20	PASS
			NV	40	92000	15.793991	20	PASS
			NV	50	92000	15.793991	20	PASS
11N20 SISO	Ant1	5180	NV	-30	82000	15.830116	20	PASS
			NV	-20	82000	15.830116	20	PASS
			NV	-10	82000	15.830116	20	PASS
			NV	0	82000	15.830116	20	PASS
			NV	10	81000	15.637066	20	PASS
			NV	20	82000	15.830116	20	PASS
			NV	30	81000	15.637066	20	PASS
			NV	40	82000	15.830116	20	PASS
			NV	50	82000	15.830116	20	PASS
		5200	NV	-30	82000	15.769231	20	PASS
			NV	-20	82000	15.769231	20	PASS
			NV	-10	82000	15.769231	20	PASS
			NV	0	82000	15.769231	20	PASS
			NV	10	82000	15.769231	20	PASS
			NV	20	82000	15.769231	20	PASS
			NV	30	82000	15.769231	20	PASS
			NV	40	82000	15.769231	20	PASS
			NV	50	82000	15.769231	20	PASS
		5240	NV	-30	82000	15.648855	20	PASS
			NV	-20	82000	15.648855	20	PASS
			NV	-10	82000	15.648855	20	PASS
			NV	0	82000	15.648855	20	PASS
			NV	10	82000	15.648855	20	PASS
			NV	20	82000	15.648855	20	PASS
			NV	30	82000	15.648855	20	PASS
			NV	40	82000	15.648855	20	PASS
			NV	50	82000	15.648855	20	PASS
		5260	NV	-30	83000	15.779468	20	PASS
			NV	-20	82000	15.589354	20	PASS
			NV	-10	83000	15.779468	20	PASS

			NV	0	82000	15.589354	20	PASS
			NV	10	82000	15.589354	20	PASS
			NV	20	82000	15.589354	20	PASS
			NV	30	82000	15.589354	20	PASS
			NV	40	82000	15.589354	20	PASS
			NV	50	82000	15.589354	20	PASS
		5280	NV	-30	83000	15.719697	20	PASS
			NV	-20	83000	15.719697	20	PASS
			NV	-10	83000	15.719697	20	PASS
			NV	0	82000	15.530303	20	PASS
			NV	10	83000	15.719697	20	PASS
			NV	20	83000	15.719697	20	PASS
			NV	30	83000	15.719697	20	PASS
			NV	40	83000	15.719697	20	PASS
			NV	50	83000	15.719697	20	PASS
		5320	NV	-30	84000	15.789474	20	PASS
			NV	-20	83000	15.601504	20	PASS
			NV	-10	84000	15.789474	20	PASS
			NV	0	84000	15.789474	20	PASS
			NV	10	84000	15.789474	20	PASS
			NV	20	84000	15.789474	20	PASS
			NV	30	84000	15.789474	20	PASS
			NV	40	84000	15.789474	20	PASS
			NV	50	84000	15.789474	20	PASS
		5500	NV	-30	86000	15.636364	20	PASS
			NV	-20	87000	15.818182	20	PASS
			NV	-10	87000	15.818182	20	PASS
			NV	0	87000	15.818182	20	PASS
			NV	10	87000	15.818182	20	PASS
			NV	20	86000	15.636364	20	PASS
			NV	30	87000	15.818182	20	PASS
			NV	40	87000	15.818182	20	PASS
			NV	50	87000	15.818182	20	PASS
		5580	NV	-30	88000	15.770609	20	PASS
			NV	-20	88000	15.770609	20	PASS
			NV	-10	88000	15.770609	20	PASS
			NV	0	88000	15.770609	20	PASS
			NV	10	88000	15.770609	20	PASS
			NV	20	88000	15.770609	20	PASS
			NV	30	88000	15.770609	20	PASS
			NV	40	88000	15.770609	20	PASS
			NV	50	88000	15.770609	20	PASS
		5700	NV	-30	90000	15.789474	20	PASS
			NV	-20	90000	15.789474	20	PASS
			NV	-10	90000	15.789474	20	PASS
			NV	0	90000	15.789474	20	PASS
			NV	10	90000	15.789474	20	PASS
			NV	20	90000	15.789474	20	PASS
			NV	30	90000	15.789474	20	PASS
			NV	40	90000	15.789474	20	PASS
			NV	50	90000	15.789474	20	PASS

		5745	NV	-30	91000	15.839861	20	PASS
			NV	-20	91000	15.839861	20	PASS
			NV	-10	91000	15.839861	20	PASS
			NV	0	91000	15.839861	20	PASS
			NV	10	91000	15.839861	20	PASS
			NV	20	91000	15.839861	20	PASS
			NV	30	91000	15.839861	20	PASS
			NV	40	91000	15.839861	20	PASS
			NV	50	91000	15.839861	20	PASS
		5785	NV	-30	91000	15.730337	20	PASS
			NV	-20	91000	15.730337	20	PASS
			NV	-10	92000	15.903198	20	PASS
			NV	0	91000	15.730337	20	PASS
			NV	10	91000	15.730337	20	PASS
			NV	20	91000	15.730337	20	PASS
			NV	30	91000	15.730337	20	PASS
			NV	40	92000	15.903198	20	PASS
			NV	50	91000	15.730337	20	PASS
		5825	NV	-30	92000	15.793991	20	PASS
			NV	-20	92000	15.793991	20	PASS
			NV	-10	92000	15.793991	20	PASS
			NV	0	92000	15.793991	20	PASS
			NV	10	92000	15.793991	20	PASS
			NV	20	92000	15.793991	20	PASS
			NV	30	92000	15.793991	20	PASS
			NV	40	92000	15.793991	20	PASS
			NV	50	92000	15.793991	20	PASS
11N40 SISO	Ant1	5190	NV	-30	82000	15.799615	20	PASS
			NV	-20	82000	15.799615	20	PASS
			NV	-10	82000	15.799615	20	PASS
			NV	0	82000	15.799615	20	PASS
			NV	10	82000	15.799615	20	PASS
			NV	20	82000	15.799615	20	PASS
			NV	30	82000	15.799615	20	PASS
			NV	40	82000	15.799615	20	PASS
			NV	50	82000	15.799615	20	PASS
		5230	NV	-30	82000	15.678776	20	PASS
			NV	-20	82000	15.678776	20	PASS
			NV	-10	82000	15.678776	20	PASS
			NV	0	82000	15.678776	20	PASS
			NV	10	82000	15.678776	20	PASS
			NV	20	82000	15.678776	20	PASS
			NV	30	82000	15.678776	20	PASS
			NV	40	82000	15.678776	20	PASS
			NV	50	82000	15.678776	20	PASS
		5270	NV	-30	83000	15.749526	20	PASS
			NV	-20	83000	15.749526	20	PASS
			NV	-10	83000	15.749526	20	PASS
			NV	0	83000	15.749526	20	PASS
			NV	10	83000	15.749526	20	PASS
			NV	20	83000	15.749526	20	PASS

			NV	30	83000	15.749526	20	PASS
			NV	40	83000	15.749526	20	PASS
			NV	50	83000	15.749526	20	PASS
		5310	NV	-30	83000	15.630885	20	PASS
			NV	-20	84000	15.819209	20	PASS
			NV	-10	83000	15.630885	20	PASS
			NV	0	83000	15.630885	20	PASS
			NV	10	84000	15.819209	20	PASS
			NV	20	83000	15.630885	20	PASS
			NV	30	83000	15.630885	20	PASS
			NV	40	84000	15.819209	20	PASS
			NV	50	83000	15.630885	20	PASS
		5510	NV	-30	87000	15.789474	20	PASS
			NV	-20	87000	15.789474	20	PASS
			NV	-10	87000	15.789474	20	PASS
			NV	0	87000	15.789474	20	PASS
			NV	10	86000	15.607985	20	PASS
			NV	20	87000	15.789474	20	PASS
			NV	30	87000	15.789474	20	PASS
			NV	40	87000	15.789474	20	PASS
			NV	50	87000	15.789474	20	PASS
		5550	NV	-30	88000	15.855856	20	PASS
			NV	-20	87000	15.675676	20	PASS
			NV	-10	88000	15.855856	20	PASS
			NV	0	87000	15.675676	20	PASS
			NV	10	87000	15.675676	20	PASS
			NV	20	88000	15.855856	20	PASS
			NV	30	87000	15.675676	20	PASS
			NV	40	87000	15.675676	20	PASS
			NV	50	87000	15.675676	20	PASS
		5670	NV	-30	89000	15.696649	20	PASS
			NV	-20	89000	15.696649	20	PASS
			NV	-10	90000	15.873016	20	PASS
			NV	0	89000	15.696649	20	PASS
			NV	10	90000	15.873016	20	PASS
			NV	20	90000	15.873016	20	PASS
			NV	30	89000	15.696649	20	PASS
			NV	40	90000	15.873016	20	PASS
			NV	50	89000	15.696649	20	PASS
		5755	NV	-30	91000	15.812337	20	PASS
			NV	-20	91000	15.812337	20	PASS
			NV	-10	91000	15.812337	20	PASS
			NV	0	91000	15.812337	20	PASS
			NV	10	91000	15.812337	20	PASS
			NV	20	91000	15.812337	20	PASS
			NV	30	91000	15.812337	20	PASS
			NV	40	91000	15.812337	20	PASS
			NV	50	91000	15.812337	20	PASS
		5795	NV	-30	91000	15.703192	20	PASS
			NV	-20	91000	15.703192	20	PASS
			NV	-10	91000	15.703192	20	PASS

			NV	0	91000	15.703192	20	PASS
			NV	10	92000	15.875755	20	PASS
			NV	20	91000	15.703192	20	PASS
			NV	30	91000	15.703192	20	PASS
			NV	40	91000	15.703192	20	PASS
			NV	50	91000	15.703192	20	PASS
11AC20 SISO	Ant1	5180	NV	-30	81000	15.637066	20	PASS
			NV	-20	81000	15.637066	20	PASS
			NV	-10	82000	15.830116	20	PASS
			NV	0	82000	15.830116	20	PASS
			NV	10	82000	15.830116	20	PASS
			NV	20	82000	15.830116	20	PASS
			NV	30	82000	15.830116	20	PASS
			NV	40	82000	15.830116	20	PASS
			NV	50	82000	15.830116	20	PASS
		5200	NV	-30	82000	15.769231	20	PASS
			NV	-20	82000	15.769231	20	PASS
			NV	-10	82000	15.769231	20	PASS
			NV	0	82000	15.769231	20	PASS
			NV	10	82000	15.769231	20	PASS
			NV	20	82000	15.769231	20	PASS
			NV	30	82000	15.769231	20	PASS
			NV	40	82000	15.769231	20	PASS
			NV	50	82000	15.769231	20	PASS
		5240	NV	-30	83000	15.839695	20	PASS
			NV	-20	83000	15.839695	20	PASS
			NV	-10	83000	15.839695	20	PASS
			NV	0	83000	15.839695	20	PASS
			NV	10	83000	15.839695	20	PASS
			NV	20	83000	15.839695	20	PASS
			NV	30	83000	15.839695	20	PASS
			NV	40	83000	15.839695	20	PASS
			NV	50	83000	15.839695	20	PASS
		5260	NV	-30	83000	15.779468	20	PASS
			NV	-20	83000	15.779468	20	PASS
			NV	-10	83000	15.779468	20	PASS
			NV	0	83000	15.779468	20	PASS
			NV	10	83000	15.779468	20	PASS
			NV	20	83000	15.779468	20	PASS
			NV	30	83000	15.779468	20	PASS
			NV	40	83000	15.779468	20	PASS
			NV	50	83000	15.779468	20	PASS
		5280	NV	-30	83000	15.719697	20	PASS
			NV	-20	83000	15.719697	20	PASS
			NV	-10	83000	15.719697	20	PASS
			NV	0	83000	15.719697	20	PASS
			NV	10	83000	15.719697	20	PASS
			NV	20	83000	15.719697	20	PASS
			NV	30	83000	15.719697	20	PASS
			NV	40	83000	15.719697	20	PASS
			NV	50	83000	15.719697	20	PASS

		5320	NV	-30	84000	15.789474	20	PASS
			NV	-20	84000	15.789474	20	PASS
			NV	-10	84000	15.789474	20	PASS
			NV	0	84000	15.789474	20	PASS
			NV	10	84000	15.789474	20	PASS
			NV	20	84000	15.789474	20	PASS
			NV	30	84000	15.789474	20	PASS
			NV	40	84000	15.789474	20	PASS
			NV	50	84000	15.789474	20	PASS
		5500	NV	-30	86000	15.636364	20	PASS
			NV	-20	86000	15.636364	20	PASS
			NV	-10	86000	15.636364	20	PASS
			NV	0	86000	15.636364	20	PASS
			NV	10	86000	15.636364	20	PASS
			NV	20	86000	15.636364	20	PASS
			NV	30	86000	15.636364	20	PASS
			NV	40	86000	15.636364	20	PASS
			NV	50	86000	15.636364	20	PASS
		5580	NV	-30	88000	15.770609	20	PASS
			NV	-20	88000	15.770609	20	PASS
			NV	-10	88000	15.770609	20	PASS
			NV	0	88000	15.770609	20	PASS
			NV	10	88000	15.770609	20	PASS
			NV	20	88000	15.770609	20	PASS
			NV	30	88000	15.770609	20	PASS
			NV	40	88000	15.770609	20	PASS
			NV	50	88000	15.770609	20	PASS
		5700	NV	-30	91000	15.964912	20	PASS
			NV	-20	91000	15.964912	20	PASS
			NV	-10	91000	15.964912	20	PASS
			NV	0	91000	15.964912	20	PASS
			NV	10	91000	15.964912	20	PASS
			NV	20	91000	15.964912	20	PASS
			NV	30	91000	15.964912	20	PASS
			NV	40	91000	15.964912	20	PASS
			NV	50	91000	15.964912	20	PASS
		5745	NV	-30	93000	16.18799	20	PASS
			NV	-20	93000	16.18799	20	PASS
			NV	-10	93000	16.18799	20	PASS
			NV	0	93000	16.18799	20	PASS
			NV	10	93000	16.18799	20	PASS
			NV	20	93000	16.18799	20	PASS
			NV	30	93000	16.18799	20	PASS
			NV	40	93000	16.18799	20	PASS
			NV	50	93000	16.18799	20	PASS
		5785	NV	-30	94000	16.24892	20	PASS
			NV	-20	94000	16.24892	20	PASS
			NV	-10	94000	16.24892	20	PASS
			NV	0	94000	16.24892	20	PASS
			NV	10	94000	16.24892	20	PASS
			NV	20	94000	16.24892	20	PASS

			NV	30	94000	16.24892	20	PASS
			NV	40	94000	16.24892	20	PASS
			NV	50	94000	16.24892	20	PASS
		5825	NV	-30	94000	16.137339	20	PASS
			NV	-20	94000	16.137339	20	PASS
			NV	-10	94000	16.137339	20	PASS
			NV	0	94000	16.137339	20	PASS
			NV	10	94000	16.137339	20	PASS
			NV	20	94000	16.137339	20	PASS
			NV	30	95000	16.309013	20	PASS
			NV	40	94000	16.137339	20	PASS
			NV	50	95000	16.309013	20	PASS
11AC40 SISO	Ant1	5190	NV	-30	85000	16.377649	20	PASS
			NV	-20	85000	16.377649	20	PASS
			NV	-10	85000	16.377649	20	PASS
			NV	0	85000	16.377649	20	PASS
			NV	10	84000	16.184971	20	PASS
			NV	20	85000	16.377649	20	PASS
			NV	30	84000	16.184971	20	PASS
			NV	40	85000	16.377649	20	PASS
			NV	50	84000	16.184971	20	PASS
		5230	NV	-30	85000	16.25239	20	PASS
			NV	-20	85000	16.25239	20	PASS
			NV	-10	85000	16.25239	20	PASS
			NV	0	85000	16.25239	20	PASS
			NV	10	85000	16.25239	20	PASS
			NV	20	85000	16.25239	20	PASS
			NV	30	85000	16.25239	20	PASS
			NV	40	85000	16.25239	20	PASS
			NV	50	85000	16.25239	20	PASS
		5270	NV	-30	87000	16.508539	20	PASS
			NV	-20	87000	16.508539	20	PASS
			NV	-10	86000	16.318786	20	PASS
			NV	0	86000	16.318786	20	PASS
			NV	10	86000	16.318786	20	PASS
			NV	20	86000	16.318786	20	PASS
			NV	30	86000	16.318786	20	PASS
			NV	40	86000	16.318786	20	PASS
			NV	50	86000	16.318786	20	PASS
		5310	NV	-30	87000	16.384181	20	PASS
			NV	-20	87000	16.384181	20	PASS
			NV	-10	87000	16.384181	20	PASS
			NV	0	87000	16.384181	20	PASS
			NV	10	87000	16.384181	20	PASS
			NV	20	87000	16.384181	20	PASS
			NV	30	87000	16.384181	20	PASS
			NV	40	87000	16.384181	20	PASS
			NV	50	87000	16.384181	20	PASS
		5510	NV	-30	87000	15.789474	20	PASS
			NV	-20	87000	15.789474	20	PASS
			NV	-10	87000	15.789474	20	PASS

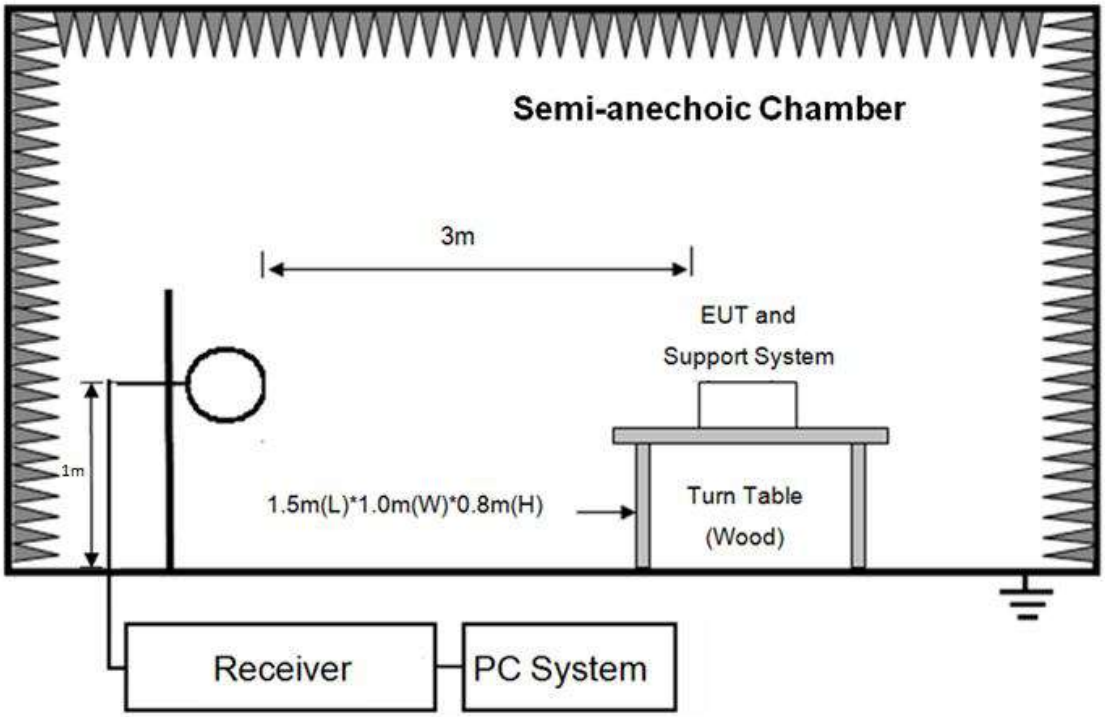
			NV	0	87000	15.789474	20	PASS
			NV	10	87000	15.789474	20	PASS
			NV	20	87000	15.789474	20	PASS
			NV	30	87000	15.789474	20	PASS
			NV	40	87000	15.789474	20	PASS
			NV	50	87000	15.789474	20	PASS
		5550	NV	-30	88000	15.855856	20	PASS
			NV	-20	88000	15.855856	20	PASS
			NV	-10	88000	15.855856	20	PASS
			NV	0	88000	15.855856	20	PASS
			NV	10	88000	15.855856	20	PASS
			NV	20	88000	15.855856	20	PASS
			NV	30	88000	15.855856	20	PASS
			NV	40	88000	15.855856	20	PASS
			NV	50	88000	15.855856	20	PASS
		5670	NV	-30	90000	15.873016	20	PASS
			NV	-20	90000	15.873016	20	PASS
			NV	-10	90000	15.873016	20	PASS
			NV	0	90000	15.873016	20	PASS
			NV	10	90000	15.873016	20	PASS
			NV	20	90000	15.873016	20	PASS
			NV	30	90000	15.873016	20	PASS
			NV	40	90000	15.873016	20	PASS
			NV	50	90000	15.873016	20	PASS
		5755	NV	-30	92000	15.986099	20	PASS
			NV	-20	92000	15.986099	20	PASS
			NV	-10	92000	15.986099	20	PASS
			NV	0	92000	15.986099	20	PASS
			NV	10	92000	15.986099	20	PASS
			NV	20	92000	15.986099	20	PASS
			NV	30	92000	15.986099	20	PASS
			NV	40	92000	15.986099	20	PASS
			NV	50	92000	15.986099	20	PASS
		5795	NV	-30	92000	15.875755	20	PASS
			NV	-20	93000	16.048318	20	PASS
			NV	-10	93000	16.048318	20	PASS
			NV	0	93000	16.048318	20	PASS
			NV	10	93000	16.048318	20	PASS
			NV	20	93000	16.048318	20	PASS
			NV	30	93000	16.048318	20	PASS
			NV	40	93000	16.048318	20	PASS
			NV	50	93000	16.048318	20	PASS
11AC80 SISO	Ant1	5210	NV	-30	80000	15.355086	20	PASS
			NV	-20	79000	15.163148	20	PASS
			NV	-10	80000	15.355086	20	PASS
			NV	0	80000	15.355086	20	PASS
			NV	10	81000	15.547025	20	PASS
			NV	20	80000	15.355086	20	PASS
			NV	30	80000	15.355086	20	PASS
			NV	40	80000	15.355086	20	PASS
			NV	50	80000	15.355086	20	PASS

		5290	NV	-30	82000	15.500945	20	PASS
			NV	-20	82000	15.500945	20	PASS
			NV	-10	82000	15.500945	20	PASS
			NV	0	82000	15.500945	20	PASS
			NV	10	82000	15.500945	20	PASS
			NV	20	82000	15.500945	20	PASS
			NV	30	82000	15.500945	20	PASS
			NV	40	82000	15.500945	20	PASS
			NV	50	82000	15.500945	20	PASS
		5530	NV	-30	86000	15.551537	20	PASS
			NV	-20	87000	15.732369	20	PASS
			NV	-10	87000	15.732369	20	PASS
			NV	0	87000	15.732369	20	PASS
			NV	10	86000	15.551537	20	PASS
			NV	20	87000	15.732369	20	PASS
			NV	30	86000	15.551537	20	PASS
			NV	40	87000	15.732369	20	PASS
			NV	50	86000	15.551537	20	PASS
		5610	NV	-30	89000	15.864528	20	PASS
			NV	-20	90000	16.042781	20	PASS
			NV	-10	90000	16.042781	20	PASS
			NV	0	89000	15.864528	20	PASS
			NV	10	90000	16.042781	20	PASS
			NV	20	90000	16.042781	20	PASS
			NV	30	89000	15.864528	20	PASS
			NV	40	90000	16.042781	20	PASS
			NV	50	90000	16.042781	20	PASS
		5775	NV	-30	91000	15.757576	20	PASS
			NV	-20	91000	15.757576	20	PASS
			NV	-10	90000	15.584416	20	PASS
			NV	0	91000	15.757576	20	PASS
			NV	10	91000	15.757576	20	PASS
			NV	20	91000	15.757576	20	PASS
			NV	30	90000	15.584416	20	PASS
			NV	40	91000	15.757576	20	PASS
			NV	50	91000	15.757576	20	PASS

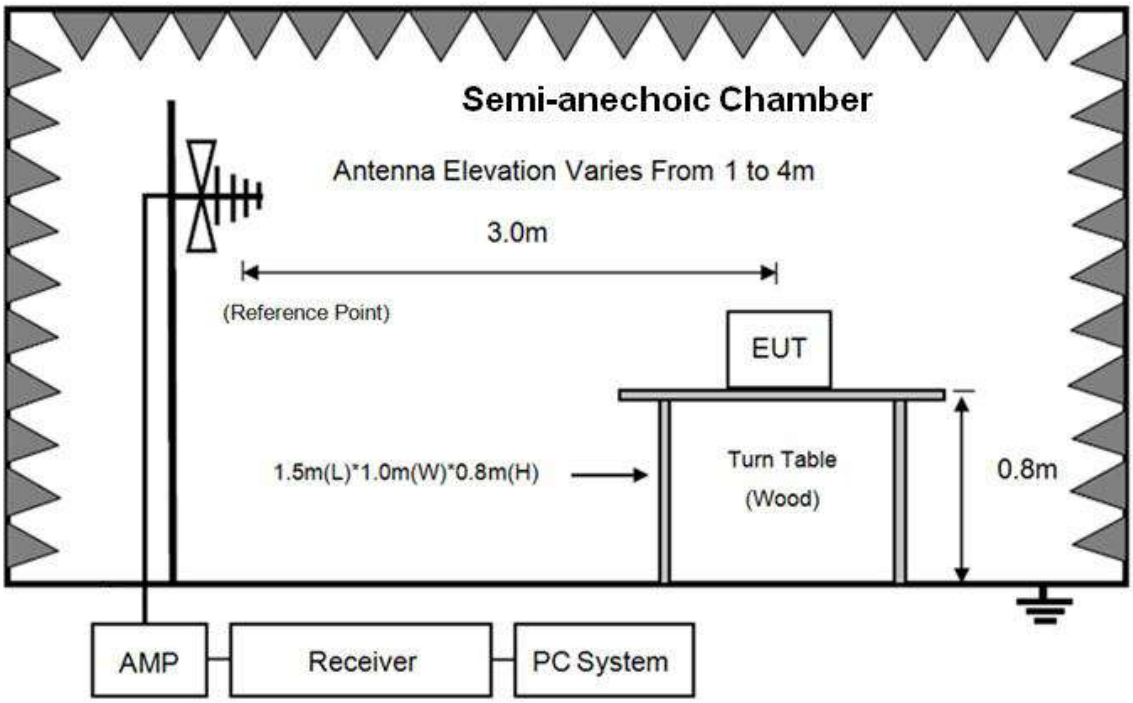
8. Spurious Emissions

8.1. Block diagram of test setup

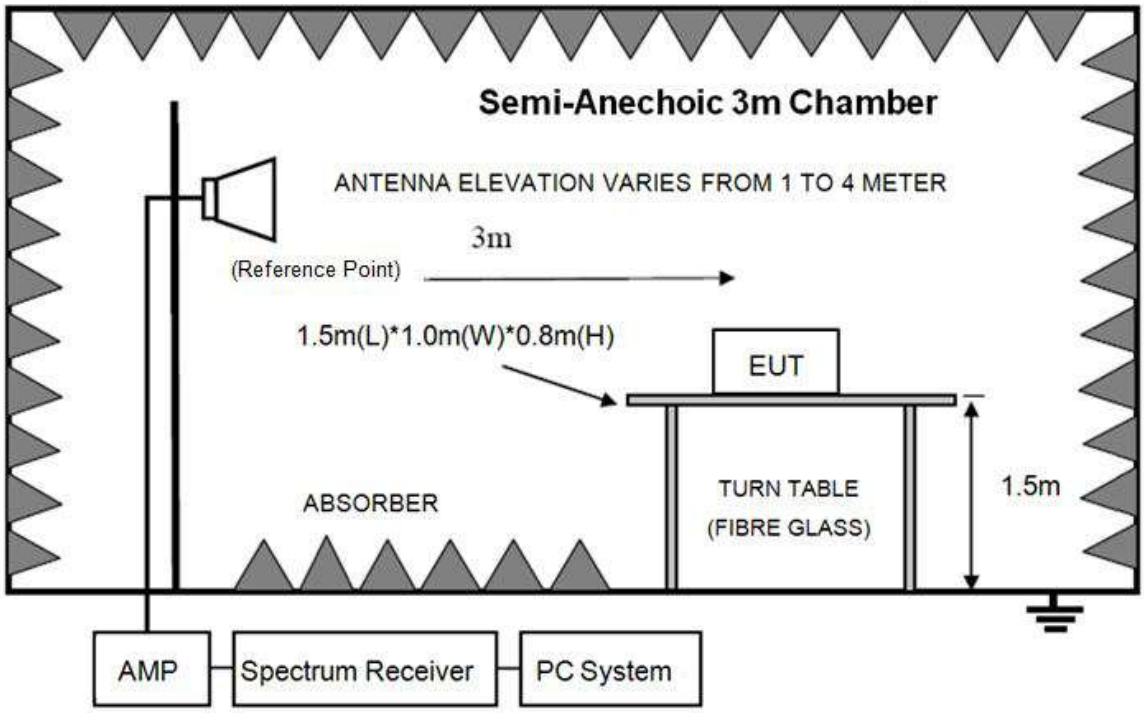
In 3 m Anechoic Chamber Test Setup Diagram for 9 kHz - 30 MHz



In 3 m Anechoic Chamber Test Setup Diagram for 30 MHz - 1 GHz



In 3 m Anechoic Chamber Test Setup Diagram for frequency above 1 GHz



Note: For harmonic emissions test an appropriate high pass filter was inserted in the input port of AMP.

8.2. Limit

8.3.1 FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2]Above 38.6

8.3.2 FCC 15.209 Limit.

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	67.6-20log(F)
0.490 ~ 1.705	30	24000/F(kHz)	87.6-20log(F)
1.705 ~ 30.0	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

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

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

$$Limit_{3m}(dBuV/m) = Limit_{30m}(dBuV/m) + 40Log(30m/3m)$$

8.3.3 Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20 dB below the fundamental emissions or comply with 15.209 limits.

8.3. Test procedure

(1) EUT height should be 0.8 m for below 1 GHz at a semi‐anechoic chamber while EUT height should be 1.5 m for above 1 GHz at full chamber or semi‐anechoic chamber ground with absorbers

(2) Setup EUT and assistant system according clause 2.3 and 8.2

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

Test frequency range	Test antenna used	Test distance
9 kHz - 30 MHz	Active Loop antenna	3 m
30 MHz - 1 GHz	Trilog Broadband Antenna	3 m
1 GHz - 18 GHz	Double Ridged Horn Antenna (1 GHz - 18 GHz)	3 m
18 GHz - 40 GHz	Horn Antenna (18 GHz - 40 GHz)	1 m

According ANSI C63.10:2013 clause 6.4.4.2 and 6,5.3, for measurements below 30 MHz, the

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

(4) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9 kHz to 40 GHz:

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

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

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions. Spectrum frequency from 9 kHz to 40 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 9 kHz to 30 MHz and 18 GHz to 40 GHz, so below final test was performed with frequency range from 30 MHz to 18 GHz.

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

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

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

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

(8) For emissions above 1 GHz, both Peak and Average level were measured with Spectrum

Analyzer, and the RBW is set at 1 MHz, VBW is set at 3 MHz for Peak measure, according ANSI C63.10:2013 clause 4.1.4.2.2 procedure for average measure.

8.4. Test result

PASS. (See below detailed test result)

All the emissions except fundamental emission from 9 kHz to 40 GHz were comply with 15.209 limit.

Note1: According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz and 18 GHz to 40 GHz, so the final test was performed with frequency range from 30 MHz to 18 GHz and recorded in below.

Note2: For emissions below 1 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with EUT working in 11A mode.

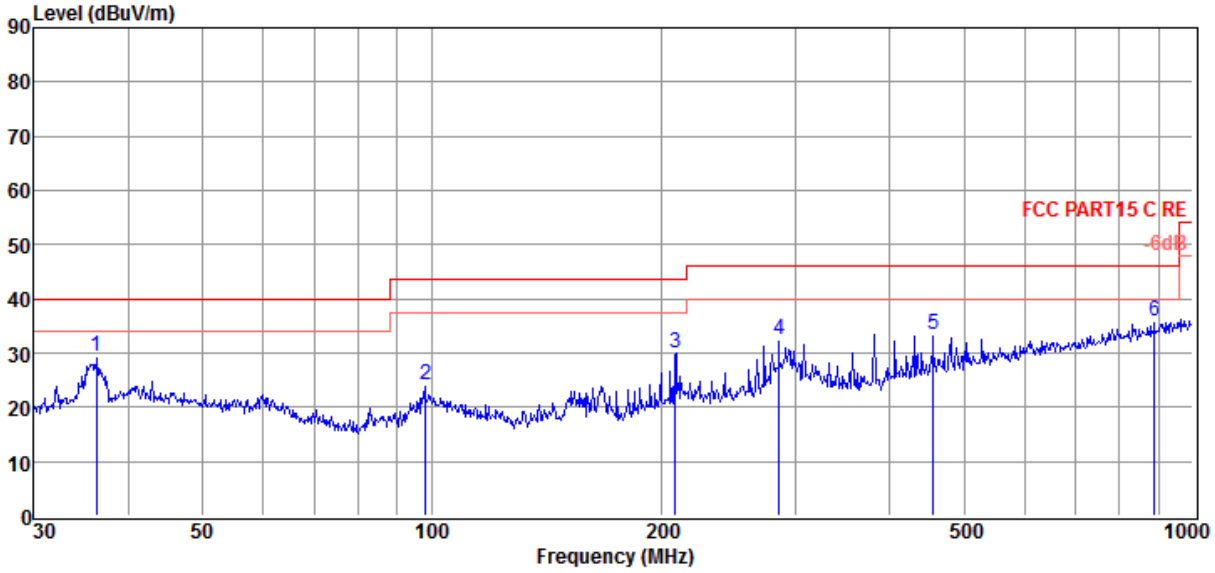
Note3: For below test data, when the limit tabular marked “/” means this frequency point is the fundamental emission and no need comply with this limit.

Radiated Emission test (below 1 GHz)

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC BELOW1G.EM6	
Test Date	: 2020-08-15	**Tested By**	: Talent
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 VULB 9163 2#/3m/VERTICAL
Memo	:		

Data: 7



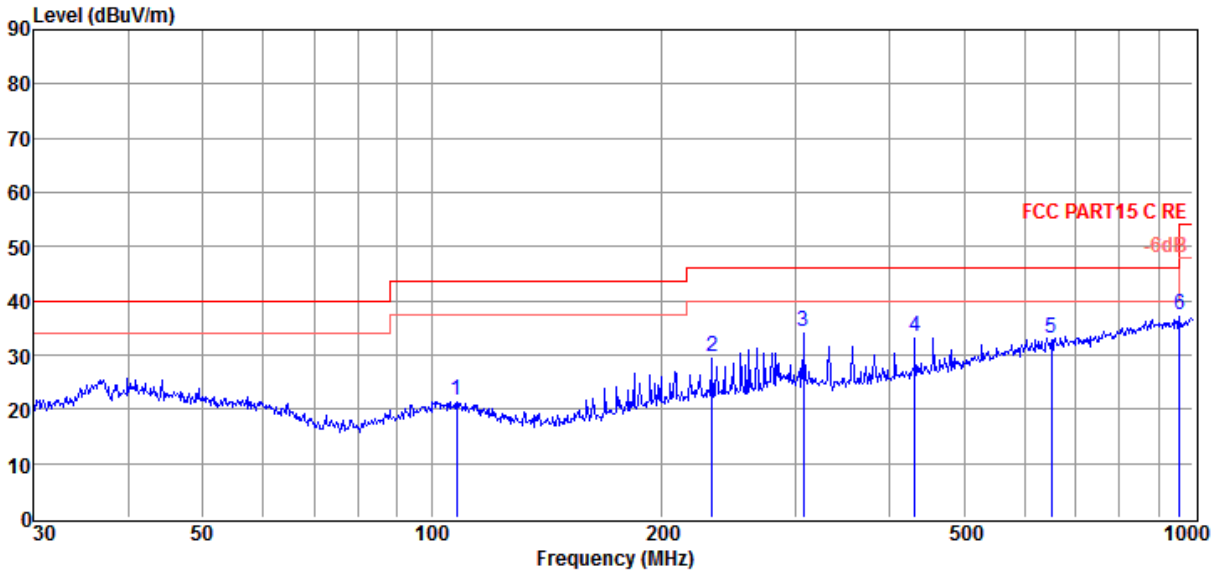
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	36.25	11.95	13.71	3.67	29.33	40.00	-10.67	QP	VERTICAL
2	98.14	8.37	11.42	4.19	23.98	43.50	-19.52	QP	VERTICAL
3	208.58	13.45	11.67	4.89	30.01	43.50	-13.49	QP	VERTICAL
4	285.98	13.34	13.69	5.31	32.34	46.00	-13.66	QP	VERTICAL
5	455.91	10.57	16.79	6.09	33.45	46.00	-12.55	QP	VERTICAL
6	890.73	5.82	22.02	7.89	35.73	46.00	-10.27	QP	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC BELOW1G.EM6	
Test Date	: 2020-08-15	**Tested By**	: Talent
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 VULB 9163 2#/3m/HORIZONTAL
Memo	:		

Data: 8



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	107.89	5.66	11.62	4.27	21.55	43.50	-21.95	QP	HORIZONTAL
2	233.35	12.12	12.39	5.04	29.55	46.00	-16.45	QP	HORIZONTAL
3	307.83	14.86	14.13	5.41	34.40	46.00	-11.60	QP	HORIZONTAL
4	431.03	11.17	16.24	5.98	33.39	46.00	-12.61	QP	HORIZONTAL
5	651.94	6.54	19.62	6.99	33.15	46.00	-12.85	QP	HORIZONTAL
6	958.79	6.67	22.52	8.12	37.31	46.00	-8.69	QP	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

Radiated Emission test (above 1 GHz)

Freq (MHz)	Read level (dBμV)	Antenna Factor (dB/m)	PRM Factor(dB)	Cable Loss (dB)	Result Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector type	Polarization
11a CH36									
5471.00	44.33	32.69	43.26	6.60	40.36	74.00	-33.64	Peak	HORIZONTAL
7715.00	43.96	37.60	42.84	8.37	47.09	74.00	-26.91	Peak	HORIZONTAL
9925.00	43.40	39.44	42.41	9.32	49.75	74.00	-24.25	Peak	HORIZONTAL
11931.00	43.74	39.18	42.30	10.46	51.08	74.00	-22.92	Peak	HORIZONTAL
14345.00	40.62	40.83	40.26	11.18	52.37	74.00	-21.63	Peak	HORIZONTAL
16470.00	40.28	40.47	40.08	11.99	52.66	74.00	-21.34	Peak	HORIZONTAL
8004.00	42.94	38.00	42.80	8.69	46.83	74.00	-27.17	Peak	VERTICAL
9619.00	43.03	39.20	42.47	9.08	48.84	74.00	-25.16	Peak	VERTICAL
12135.00	44.12	38.97	42.15	10.57	51.51	74.00	-22.49	Peak	VERTICAL
13665.00	41.34	40.50	40.61	10.85	52.08	74.00	-21.92	Peak	VERTICAL
14719.00	40.79	40.45	40.22	11.45	52.47	74.00	-21.53	Peak	VERTICAL
16436.00	40.80	40.32	40.08	11.95	52.99	74.00	-21.01	Peak	VERTICAL
11a CH40									
5556.00	44.97	32.76	43.23	6.66	41.16	74.00	-32.84	Peak	HORIZONTAL
7715.00	43.96	37.60	42.84	8.37	47.09	74.00	-26.91	Peak	HORIZONTAL
9925.00	43.40	39.44	42.41	9.32	49.75	74.00	-24.25	Peak	HORIZONTAL
11931.00	43.74	39.18	42.30	10.46	51.08	74.00	-22.92	Peak	HORIZONTAL
14345.00	41.41	40.83	40.26	11.18	53.16	74.00	-20.84	Peak	HORIZONTAL
16334.00	52.35	0.00	0.00	0.00	52.35	74.00	-21.65	Peak	HORIZONTAL
7868.00	42.69	37.82	42.82	8.54	46.23	74.00	-27.77	Peak	VERTICAL
10146.00	42.92	39.70	42.39	9.37	49.60	74.00	-24.40	Peak	VERTICAL
12135.00	44.12	38.97	42.15	10.57	51.51	74.00	-22.49	Peak	VERTICAL
13665.00	41.34	40.50	40.61	10.85	52.08	74.00	-21.92	Peak	VERTICAL
15841.00	42.68	38.59	40.11	11.54	52.70	74.00	-21.30	Peak	VERTICAL
16436.00	40.91	40.32	40.08	11.95	53.10	74.00	-20.90	Peak	VERTICAL
11a CH48									
8089.00	43.65	37.95	42.78	8.68	47.50	74.00	-26.50	Peak	HORIZONTAL
9925.00	43.40	39.44	42.41	9.32	49.75	74.00	-24.25	Peak	HORIZONTAL
11931.00	43.74	39.18	42.30	10.46	51.08	74.00	-22.92	Peak	HORIZONTAL
13801.00	40.80	40.66	40.49	10.88	51.85	74.00	-22.15	Peak	HORIZONTAL
14481.00	40.34	40.80	40.25	11.28	52.17	74.00	-21.83	Peak	HORIZONTAL
16334.00	40.71	39.87	40.08	11.85	52.35	74.00	-21.65	Peak	HORIZONTAL
8089.00	43.06	37.95	42.78	8.68	46.91	74.00	-27.09	Peak	VERTICAL
10146.00	42.92	39.70	42.39	9.37	49.60	74.00	-24.40	Peak	VERTICAL
11659.00	43.32	39.51	42.32	10.12	50.63	74.00	-23.37	Peak	VERTICAL
13121.00	42.33	39.77	41.14	10.72	51.68	74.00	-22.32	Peak	VERTICAL
14464.00	41.66	40.81	40.25	11.26	53.48	74.00	-20.52	Peak	VERTICAL
16470.00	40.80	40.47	40.08	11.99	53.18	74.00	-20.82	Peak	VERTICAL

Freq (MHz)	Read level (dBμV)	Antenna Factor (dB/m)	PRM Factor(dB)	Cable Loss (dB)	Result Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector type	Polarization
11a CH52									
7001.00	43.19	37.00	42.94	7.56	44.81	74.00	-29.19	Peak	HORIZONTAL
8191.00	44.35	37.89	42.76	8.67	48.15	74.00	-25.85	Peak	HORIZONTAL
10435.00	43.18	40.11	42.38	9.35	50.26	74.00	-23.74	Peak	HORIZONTAL
11744.00	43.61	39.41	42.31	10.23	50.94	74.00	-23.06	Peak	HORIZONTAL
13121.00	42.65	39.77	41.14	10.72	52.00	74.00	-22.00	Peak	HORIZONTAL
16436.00	41.52	40.32	40.08	11.95	53.71	74.00	-20.29	Peak	HORIZONTAL
7834.00	42.23	37.77	42.82	8.50	45.68	74.00	-28.32	Peak	VERTICAL
9704.00	41.67	39.26	42.45	9.15	47.63	74.00	-26.37	Peak	VERTICAL
11285.00	41.98	40.00	42.33	9.66	49.31	74.00	-24.69	Peak	VERTICAL
13036.00	42.40	39.65	41.23	10.70	51.52	74.00	-22.48	Peak	VERTICAL
14600.00	39.78	40.64	40.24	11.36	51.54	74.00	-22.46	Peak	VERTICAL
16436.00	40.26	40.32	40.08	11.95	52.45	74.00	-21.55	Peak	VERTICAL
11a CH56									
7664.00	43.83	37.53	42.84	8.31	46.83	74.00	-27.17	Peak	HORIZONTAL
9704.00	42.49	39.26	42.45	9.15	48.45	74.00	-25.55	Peak	HORIZONTAL
11931.00	43.49	39.18	42.30	10.46	50.83	74.00	-23.17	Peak	HORIZONTAL
13665.00	40.37	40.50	40.61	10.85	51.11	74.00	-22.89	Peak	HORIZONTAL
14311.00	40.61	40.84	40.27	11.15	52.33	74.00	-21.67	Peak	HORIZONTAL
16436.00	40.72	40.32	40.08	11.95	52.91	74.00	-21.09	Peak	HORIZONTAL
7885.00	43.02	37.84	42.82	8.56	46.60	74.00	-27.40	Peak	VERTICAL
9704.00	43.34	39.26	42.45	9.15	49.30	74.00	-24.70	Peak	VERTICAL
11965.00	42.99	39.14	42.30	10.51	50.34	74.00	-23.66	Peak	VERTICAL
13036.00	42.40	39.65	41.23	10.70	51.52	74.00	-22.48	Peak	VERTICAL
14481.00	40.79	40.80	40.25	11.28	52.62	74.00	-21.38	Peak	VERTICAL
16844.00	39.92	41.29	40.06	12.36	53.51	74.00	-20.49	Peak	VERTICAL
11a CH64									
7664.00	43.83	37.53	42.84	8.31	46.83	74.00	-27.17	Peak	HORIZONTAL
9534.00	43.27	39.13	42.49	9.02	48.93	74.00	-25.07	Peak	HORIZONTAL
10605.00	42.89	40.24	42.37	9.33	50.09	74.00	-23.91	Peak	HORIZONTAL
11931.00	43.58	39.18	42.30	10.46	50.92	74.00	-23.08	Peak	HORIZONTAL
14311.00	40.61	40.84	40.27	11.15	52.33	74.00	-21.67	Peak	HORIZONTAL
16436.00	40.72	40.32	40.08	11.95	52.91	74.00	-21.09	Peak	HORIZONTAL
7715.00	43.09	37.60	42.84	8.37	46.22	74.00	-27.78	Peak	VERTICAL
9925.00	43.08	39.44	42.41	9.32	49.43	74.00	-24.57	Peak	VERTICAL
11506.00	43.16	39.69	42.32	9.93	50.46	74.00	-23.54	Peak	VERTICAL
13036.00	42.40	39.65	41.23	10.70	51.52	74.00	-22.48	Peak	VERTICAL
14481.00	40.79	40.80	40.25	11.28	52.62	74.00	-21.38	Peak	VERTICAL
16589.00	40.64	40.78	40.07	12.10	53.45	74.00	-20.55	Peak	VERTICAL
Conclusion: Pass									

Freq (MHz)	Read level (dBμV)	Antenna Factor (dB/m)	PRM Factor(dB)	Cable Loss (dB)	Result Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector type	Polarization
11a CH100									
6780.00	41.39	36.25	42.97	7.43	42.10	74.00	-31.90	Peak	HORIZONTAL
8021.00	43.20	37.99	42.80	8.69	47.08	74.00	-26.92	Peak	HORIZONTAL
10435.00	42.61	40.11	42.38	9.35	49.69	74.00	-24.31	Peak	HORIZONTAL
11744.00	43.56	39.41	42.31	10.23	50.89	74.00	-23.11	Peak	HORIZONTAL
13121.00	42.91	39.77	41.14	10.72	52.26	74.00	-21.74	Peak	HORIZONTAL
16436.00	40.76	40.32	40.08	11.95	52.95	74.00	-21.05	Peak	HORIZONTAL
7579.00	42.91	37.41	42.86	8.21	45.67	74.00	-28.33	Peak	VERTICAL
9619.00	43.35	39.20	42.47	9.08	49.16	74.00	-24.84	Peak	VERTICAL
11506.00	43.16	39.69	42.32	9.93	50.46	74.00	-23.54	Peak	VERTICAL
13036.00	42.92	39.65	41.23	10.70	52.04	74.00	-21.96	Peak	VERTICAL
14481.00	41.01	40.80	40.25	11.28	52.84	74.00	-21.16	Peak	VERTICAL
16725.00	40.47	41.05	40.06	12.24	53.70	74.00	-20.30	Peak	VERTICAL
11a CH116									
7664.00	43.83	37.53	42.84	8.31	46.83	74.00	-27.17	Peak	HORIZONTAL
9534.00	43.27	39.13	42.49	9.02	48.93	74.00	-25.07	Peak	HORIZONTAL
10605.00	42.89	40.24	42.37	9.33	50.09	74.00	-23.91	Peak	HORIZONTAL
11931.00	43.58	39.18	42.30	10.46	50.92	74.00	-23.08	Peak	HORIZONTAL
14311.00	40.61	40.84	40.27	11.15	52.33	74.00	-21.67	Peak	HORIZONTAL
16436.00	40.72	40.32	40.08	11.95	52.91	74.00	-21.09	Peak	HORIZONTAL
7715.00	43.09	37.60	42.84	8.37	46.22	74.00	-27.78	Peak	VERTICAL
9925.00	43.08	39.44	42.41	9.32	49.43	74.00	-24.57	Peak	VERTICAL
11506.00	43.16	39.69	42.32	9.93	50.46	74.00	-23.54	Peak	VERTICAL
13036.00	42.40	39.65	41.23	10.70	51.52	74.00	-22.48	Peak	VERTICAL
14481.00	40.79	40.80	40.25	11.28	52.62	74.00	-21.38	Peak	VERTICAL
16589.00	40.64	40.78	40.07	12.10	53.45	74.00	-20.55	Peak	VERTICAL
11a CH140									
6406.00	42.20	34.91	43.03	7.21	41.29	74.00	-32.71	Peak	HORIZONTAL
7749.00	44.02	37.65	42.83	8.41	47.25	74.00	-26.75	Peak	HORIZONTAL
10486.00	42.47	40.18	42.37	9.34	49.62	74.00	-24.38	Peak	HORIZONTAL
11931.00	43.58	39.18	42.30	10.46	50.92	74.00	-23.08	Peak	HORIZONTAL
14090.00	41.76	40.88	40.29	10.99	53.34	74.00	-20.66	Peak	HORIZONTAL
16436.00	40.72	40.32	40.08	11.95	52.91	74.00	-21.09	Peak	HORIZONTAL
8106.00	43.65	37.94	42.78	8.68	47.49	74.00	-26.51	Peak	VERTICAL
9704.00	43.34	39.26	42.45	9.15	49.30	74.00	-24.70	Peak	VERTICAL
11506.00	43.16	39.69	42.32	9.93	50.46	74.00	-23.54	Peak	VERTICAL
13036.00	42.92	39.65	41.23	10.70	52.04	74.00	-21.96	Peak	VERTICAL
14481.00	41.01	40.80	40.25	11.28	52.84	74.00	-21.16	Peak	VERTICAL
16453.00	41.15	40.39	40.08	11.97	53.43	74.00	-20.57	Peak	VERTICAL

Freq (MHz)	Read level (dBμV)	Antenna Factor (dB/m)	PRM Factor(dB)	Cable Loss (dB)	Result Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector type	Polarization
11a CH149									
8140.00	42.22	37.92	42.77	8.68	46.05	74.00	-27.95	Peak	HORIZONTAL
9925.00	42.56	39.44	42.41	9.32	48.91	74.00	-25.09	Peak	HORIZONTAL
11744.00	43.56	39.41	42.31	10.23	50.89	74.00	-23.11	Peak	HORIZONTAL
13121.00	42.91	39.77	41.14	10.72	52.26	74.00	-21.74	Peak	HORIZONTAL
14464.00	39.36	40.81	40.25	11.26	51.18	74.00	-22.82	Peak	HORIZONTAL
16844.00	38.89	41.29	40.06	12.36	52.48	74.00	-21.52	Peak	HORIZONTAL
7664.00	43.54	37.53	42.84	8.31	46.54	74.00	-27.46	Peak	VERTICAL
10129.00	41.85	39.68	42.39	9.37	48.51	74.00	-25.49	Peak	VERTICAL
12611.00	42.63	38.82	41.66	10.64	50.43	74.00	-23.57	Peak	VERTICAL
14379.00	39.69	40.82	40.26	11.20	51.45	74.00	-22.55	Peak	VERTICAL
16334.00	39.27	39.87	40.08	11.85	50.91	74.00	-23.09	Peak	VERTICAL
17184.00	37.97	42.63	40.04	12.65	53.21	74.00	-20.79	Peak	VERTICAL
11a CH157									
3771.00	45.67	30.00	43.73	5.44	37.38	74.00	-36.62	Peak	HORIZONTAL
5420.00	46.47	32.67	43.28	6.56	42.42	74.00	-31.58	Peak	HORIZONTAL
8174.00	45.12	37.90	42.76	8.67	48.93	74.00	-25.07	Peak	HORIZONTAL
9415.00	45.08	39.03	42.51	8.92	50.52	74.00	-23.48	Peak	HORIZONTAL
10401.00	44.49	40.06	42.38	9.35	51.52	74.00	-22.48	Peak	HORIZONTAL
12849.00	44.17	39.30	41.41	10.67	52.73	74.00	-21.27	Peak	HORIZONTAL
7834.00	43.29	37.77	42.82	8.50	46.74	74.00	-27.26	Peak	VERTICAL
10146.00	42.39	39.70	42.39	9.37	49.07	74.00	-24.93	Peak	VERTICAL
13019.00	42.60	39.63	41.24	10.69	51.68	74.00	-22.32	Peak	VERTICAL
14311.00	40.52	40.84	40.27	11.15	52.24	74.00	-21.76	Peak	VERTICAL
16334.00	40.40	39.87	40.08	11.85	52.04	74.00	-21.96	Peak	VERTICAL
17201.00	38.13	42.73	40.04	12.67	53.49	74.00	-20.51	Peak	VERTICAL
11a CH165									
7766.00	42.98	37.67	42.83	8.43	46.25	74.00	-27.75	Peak	HORIZONTAL
9925.00	42.56	39.44	42.41	9.32	48.91	74.00	-25.09	Peak	HORIZONTAL
11285.00	43.96	40.00	42.33	9.66	51.29	74.00	-22.71	Peak	HORIZONTAL
13121.00	42.91	39.77	41.14	10.72	52.26	74.00	-21.74	Peak	HORIZONTAL
14464.00	40.85	40.81	40.25	11.26	52.67	74.00	-21.33	Peak	HORIZONTAL
16351.00	40.72	39.94	40.08	11.87	52.45	74.00	-21.55	Peak	HORIZONTAL
8055.00	42.99	37.97	42.79	8.69	46.86	74.00	-27.14	Peak	VERTICAL
9160.00	42.07	38.83	42.56	8.72	47.06	74.00	-26.94	Peak	VERTICAL
10486.00	42.37	40.18	42.37	9.34	49.52	74.00	-24.48	Peak	VERTICAL
13019.00	42.94	39.63	41.24	10.69	52.02	74.00	-21.98	Peak	VERTICAL
14311.00	40.52	40.84	40.27	11.15	52.24	74.00	-21.76	Peak	VERTICAL
16436.00	41.30	40.32	40.08	11.95	53.49	74.00	-20.51	Peak	VERTICAL
Conclusion: Pass									
Note: -27 dBm/MHz Limit=95.2+EIRP[dBm]=95.2-27=68.2 dBμV/m For transmitters operating in the 5150 MHz - 5250 MHz, 5250 MHz - 5350 MHz, 5470 MHz - 5725 MHz, 5725 MHz - 5850 MHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.									

Note: 1. 30 MHz ~ 40 GHz: (11a, 11n20, n40, 11ac20, 11ac40, 11ac80 mode all have been tested, only 11a mode is the worst case and reported.)

2. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

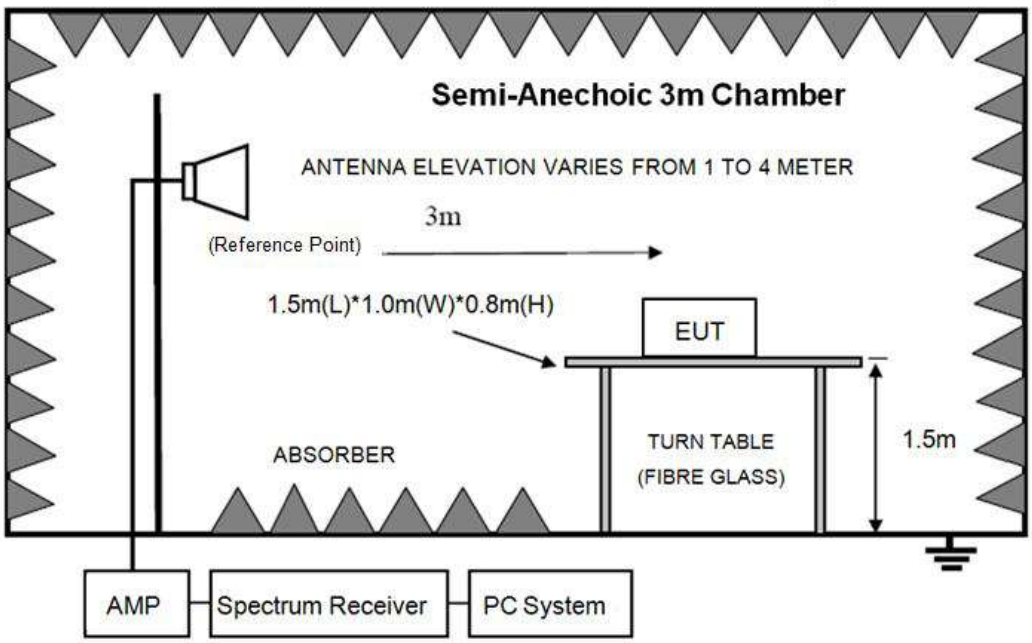
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

4. All the emissions were comply with 54 dBμV/m for Average value in 15.209, so both for the restricted bands and non-restricted bands, all the emissions were comply with the limit.

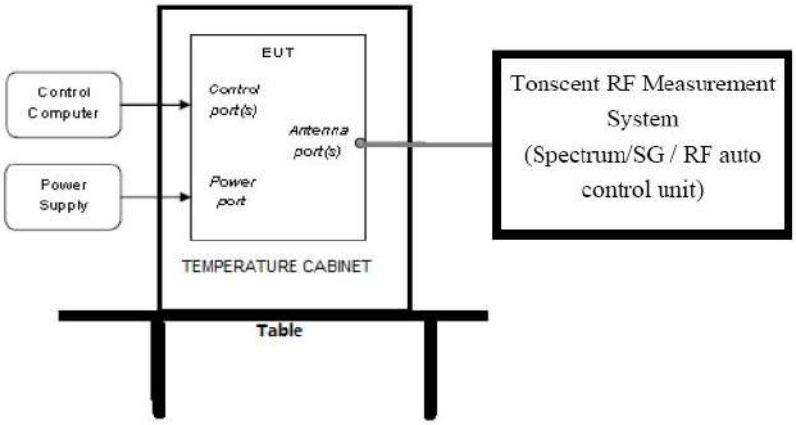
9. Band Edge Compliance

9.1. Block diagram of test setup

Radiated measurement:



Conducted measurement:



9.2. Limit

For transmitters operating in the 5.15 - 5.25 GHz and 5.725 - 5.85 GHz band: all emissions outside of the 5.15 - 5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.

-27 dBm/MHz Limit=95.2+EIRP[dBm]=95.2-27=68.2 dBμV/m

9.3. Test procedure

Same with clause 8.3 except change investigated frequency range from 5.15 - 5.25 GHz, 5250 - 5350 GHz, 5470 - 5725 GHz, 5.725 - 5.85 GHz.

Remark: All restriction band have been tested, and only the worst case is shown in report.

9.4. Test result

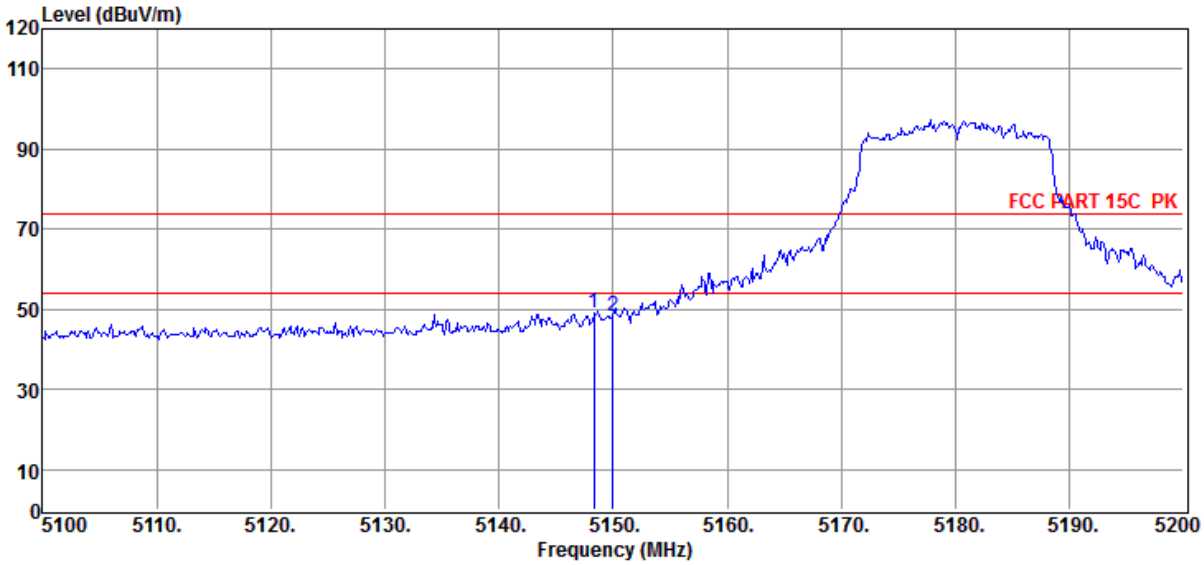
PASS. (See below detailed test result)

Note: As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: 11A 5180		

Data: 1



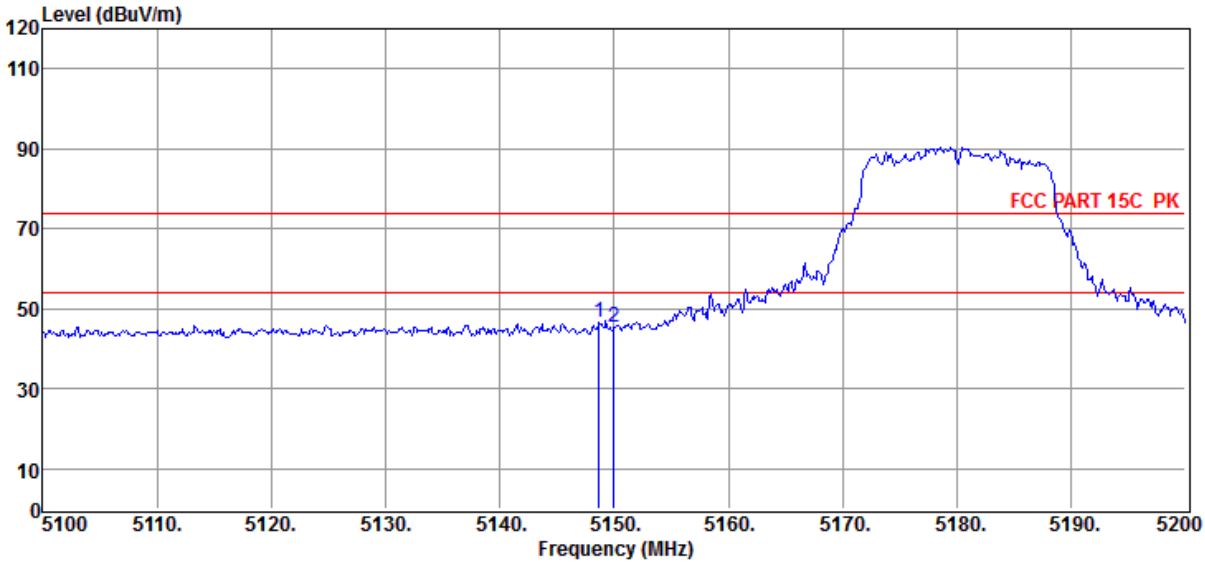
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5148.30	53.65	32.56	43.36	6.37	49.22	74.00	-24.78	Peak	VERTICAL
2	5150.00	52.76	32.56	43.36	6.38	48.34	74.00	-25.66	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: 11A 5180		

Data: 2



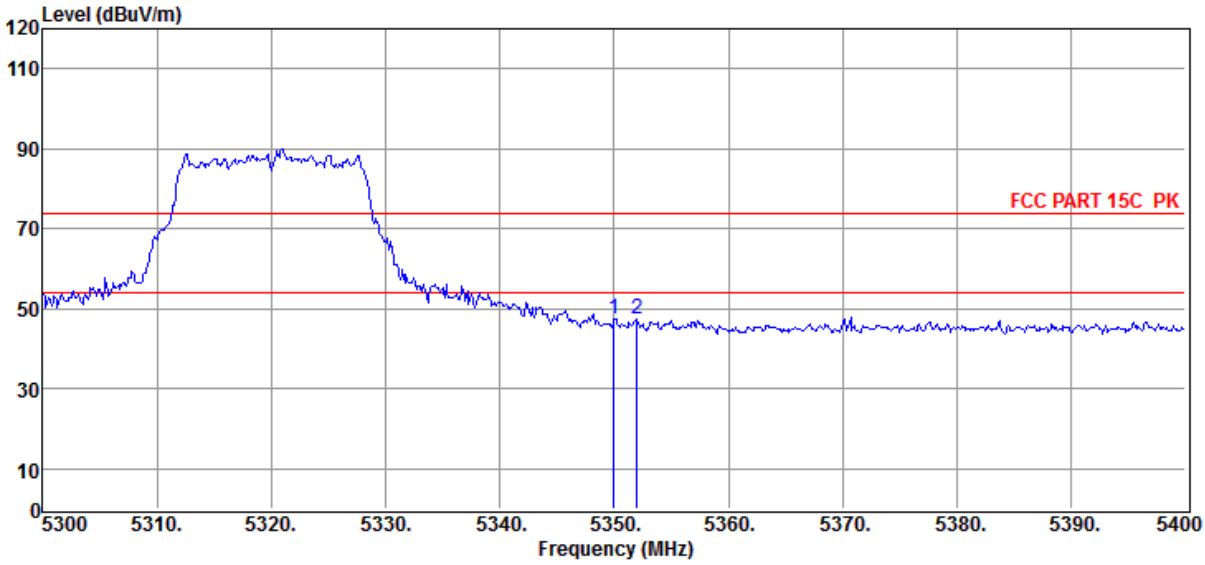
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5148.70	50.88	32.56	43.36	6.37	46.45	74.00	-27.55	Peak	HORIZONTAL
2	5150.00	49.80	32.56	43.36	6.38	45.38	74.00	-28.62	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: 11A 5320		

Data: 3



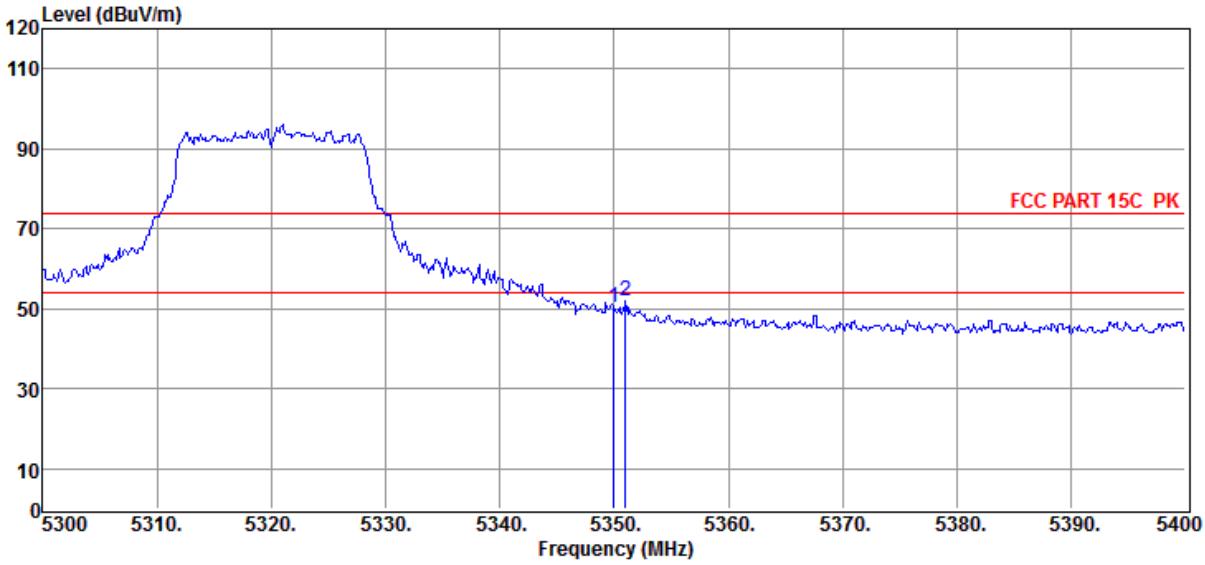
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5350.00	51.52	32.64	43.30	6.51	47.37	74.00	-26.63	Peak	HORIZONTAL
2	5352.00	51.39	32.64	43.30	6.52	47.25	74.00	-26.75	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: 11A 5320		

Data: 4



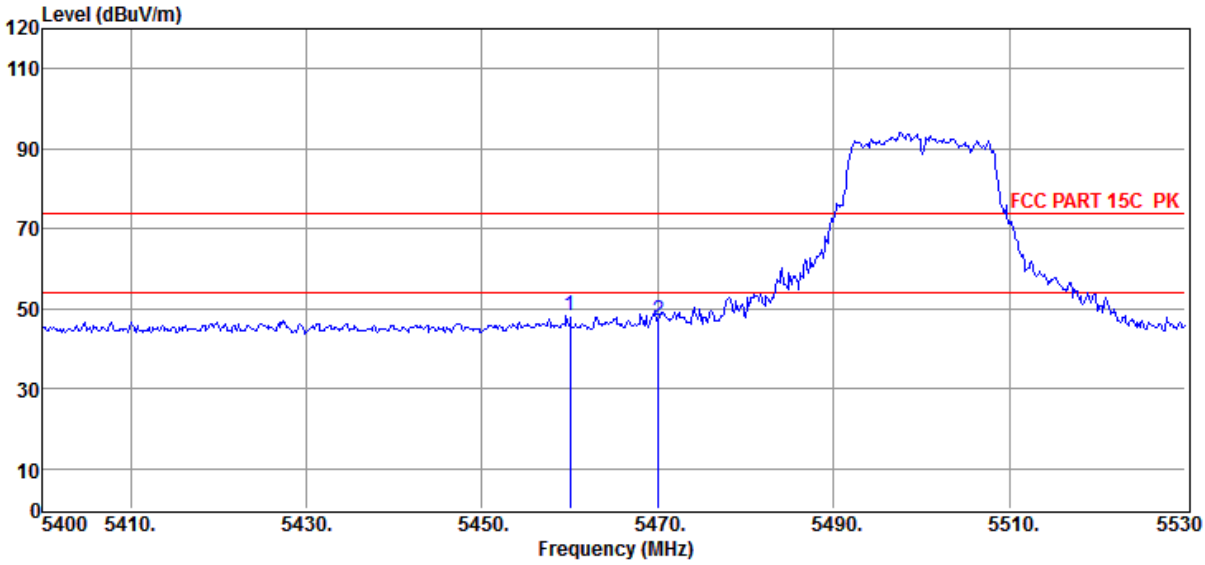
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5350.00	54.64	32.64	43.30	6.51	50.49	74.00	-23.51	Peak	VERTICAL
2	5351.00	56.14	32.64	43.30	6.52	52.00	74.00	-22.00	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: 11A 5500		

Data: 5



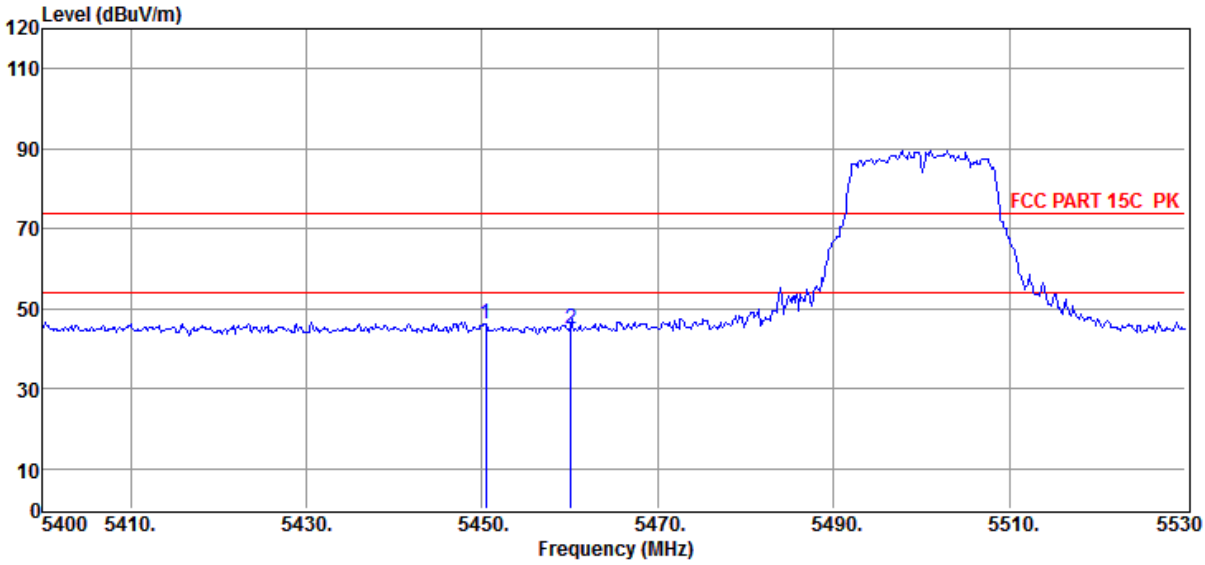
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5460.00	52.13	32.68	43.26	6.59	48.14	74.00	-25.86	Peak	VERTICAL
2	5470.07	51.01	32.69	43.26	6.60	47.04	74.00	-26.96	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: 11A 5500		

Data: 6



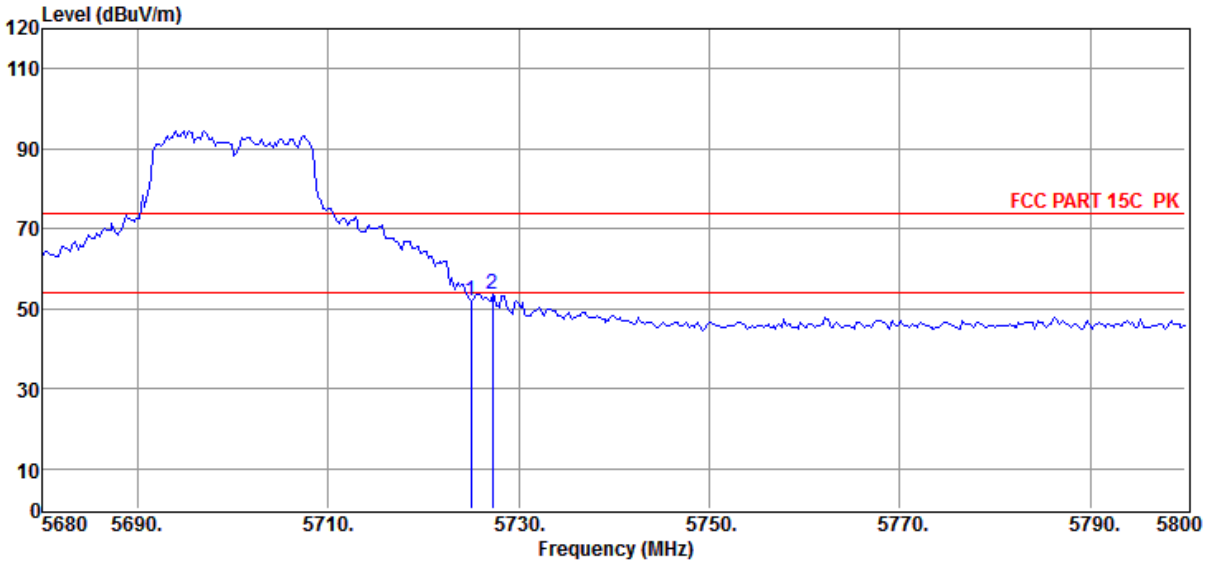
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5450.44	50.26	32.68	43.27	6.59	46.26	74.00	-27.74	Peak	HORIZONTAL
2	5460.06	48.93	32.68	43.26	6.59	44.94	74.00	-29.06	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-12-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: 11A 5700		

Data: 7



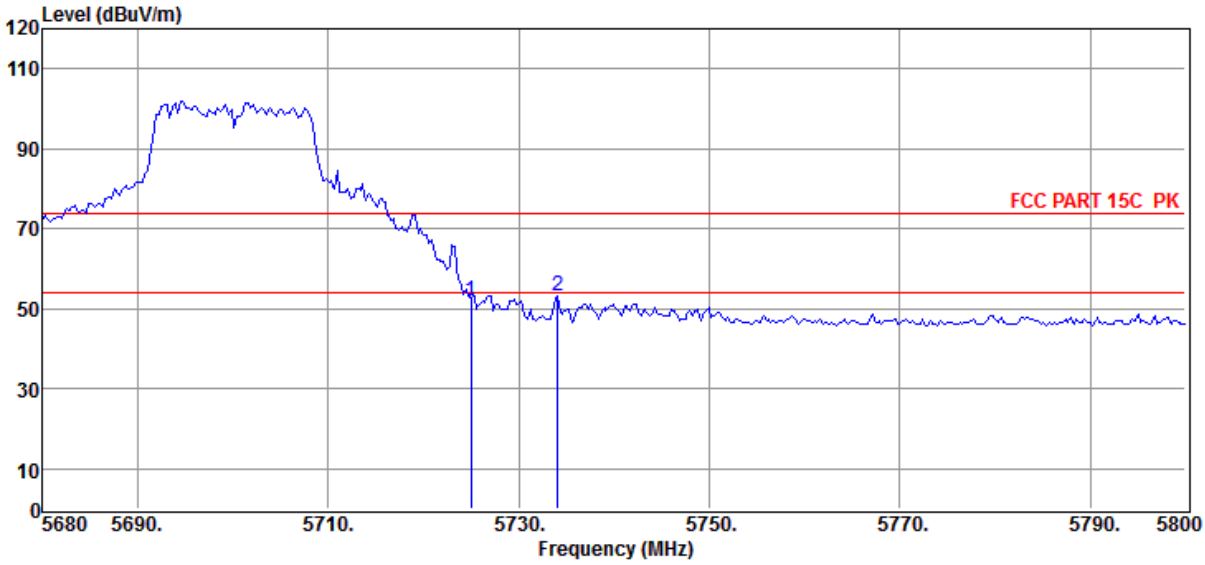
Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	55.58	32.92	43.18	6.78	52.10	74.00	-21.90	Peak	VERTICAL
2	5727.26	57.15	32.93	43.18	6.78	53.68	74.00	-20.32	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-12-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: 11A 5700		

Data: 8



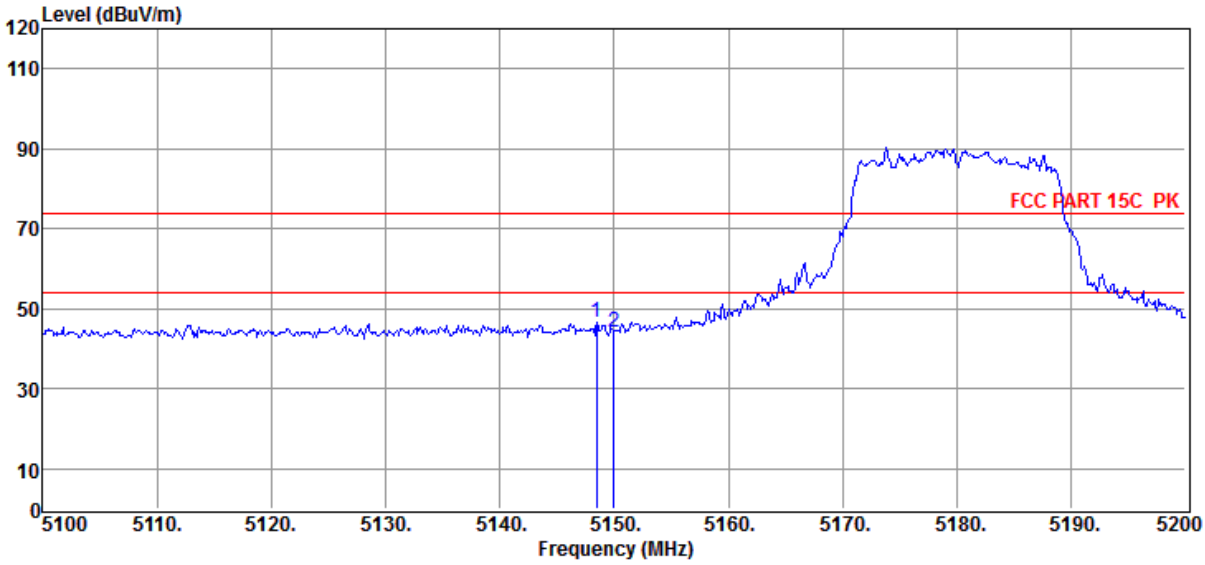
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	55.45	32.92	43.18	6.78	51.97	74.00	-22.03	Peak	HORIZONTAL
2	5734.06	56.74	32.93	43.18	6.78	53.27	74.00	-20.73	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: N20 5180		

Data: 9



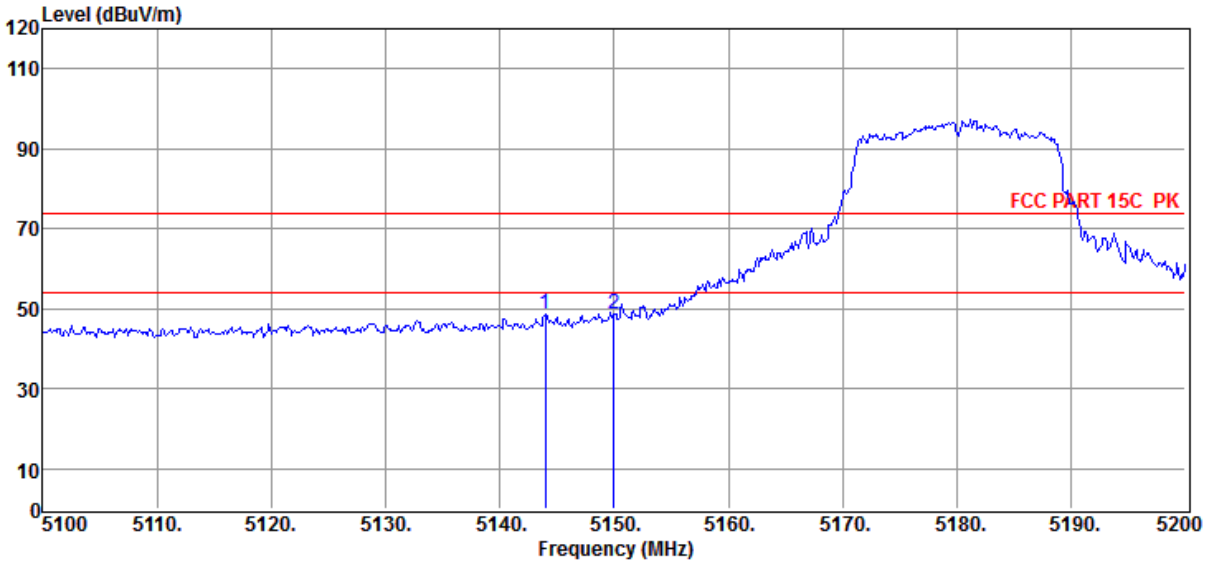
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5148.50	51.08	32.56	43.36	6.37	46.65	74.00	-27.35	Peak	HORIZONTAL
2	5150.00	48.71	32.56	43.36	6.38	44.29	74.00	-29.71	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: N20 5180		

Data: 10



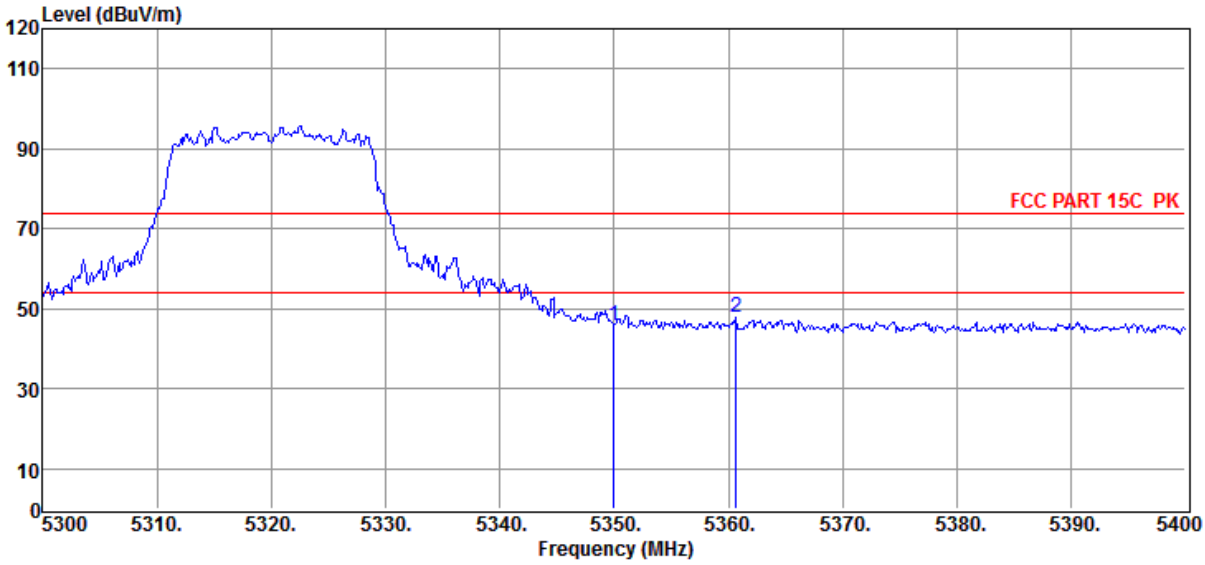
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5144.00	53.00	32.56	43.37	6.37	48.56	74.00	-25.44	Peak	VERTICAL
2	5150.00	53.06	32.56	43.36	6.38	48.64	74.00	-25.36	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: N20 5320		

Data: 11



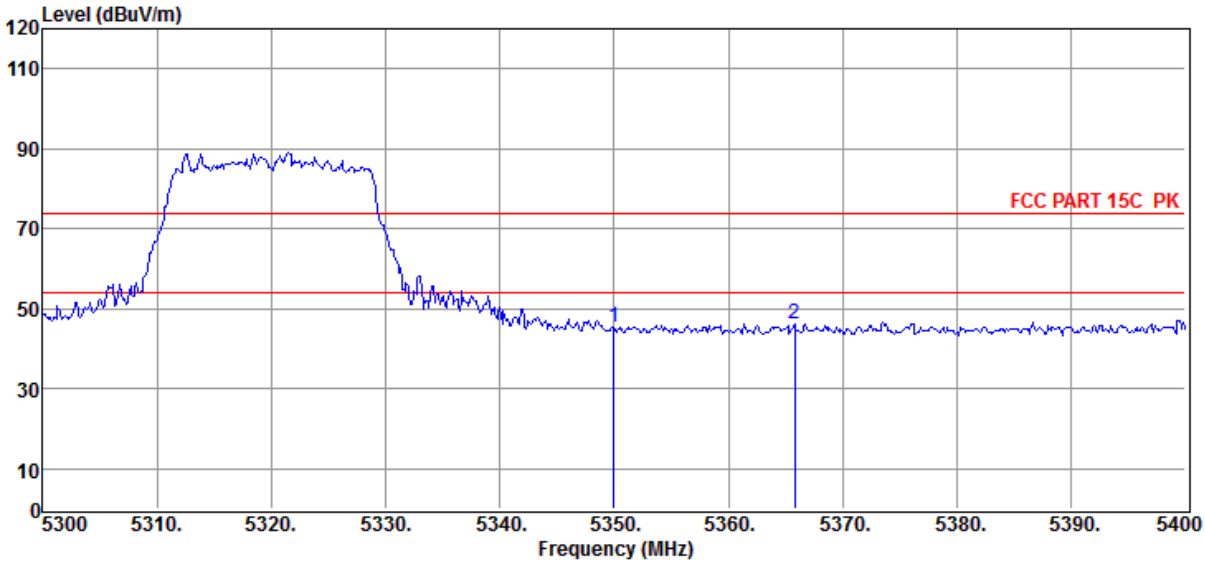
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5350.00	49.86	32.64	43.30	6.51	45.71	74.00	-28.29	Peak	VERTICAL
2	5360.70	52.02	32.64	43.29	6.52	47.89	74.00	-26.11	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: N20 5320		

Data: 12



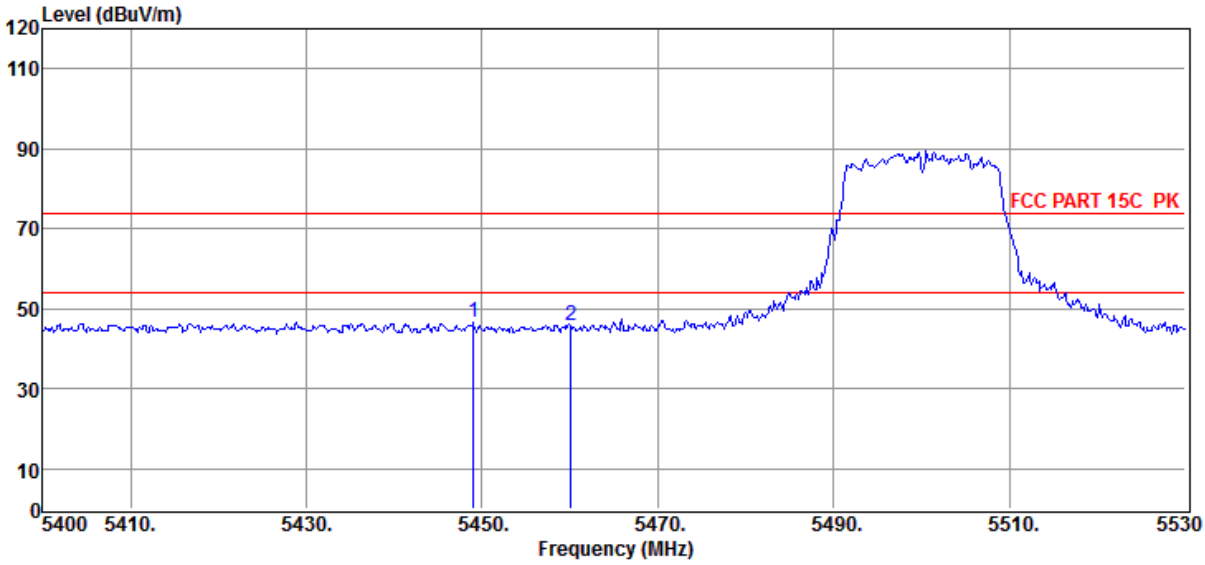
Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	5350.00	49.66	32.64	43.30	6.51	45.51	74.00	-28.49	Peak	HORIZONTAL
2	5365.80	50.29	32.65	43.29	6.53	46.18	74.00	-27.82	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: N20 5500		

Data: 13



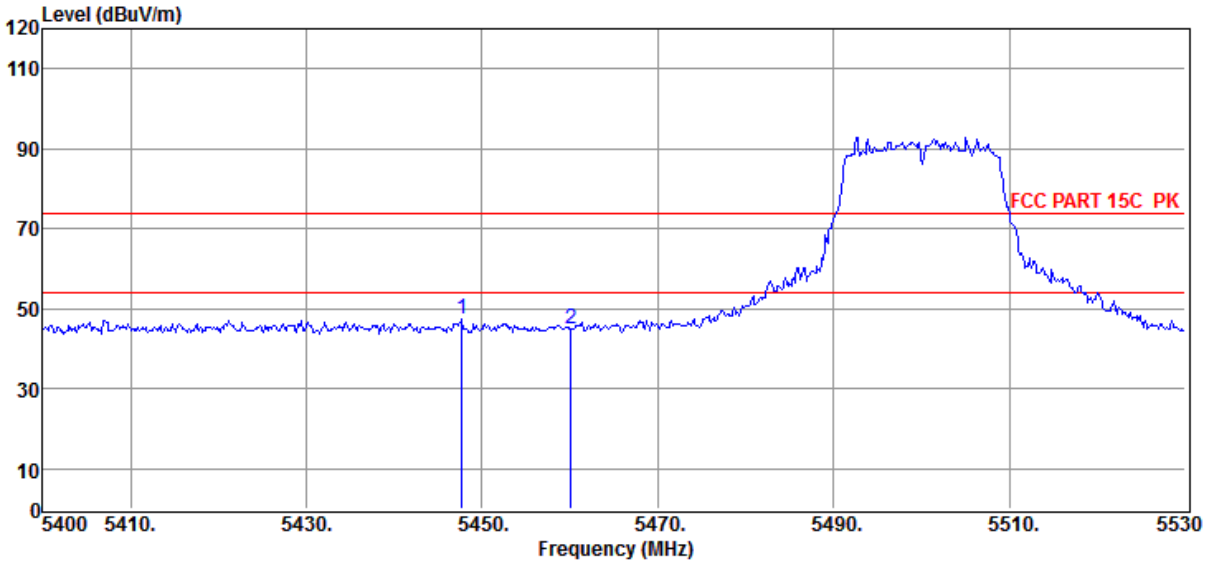
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5449.01	50.74	32.68	43.27	6.58	46.73	74.00	-27.27	Peak	HORIZONTAL
2	5460.06	49.74	32.68	43.26	6.59	45.75	74.00	-28.25	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-22	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: N20 5500		

Data: 14



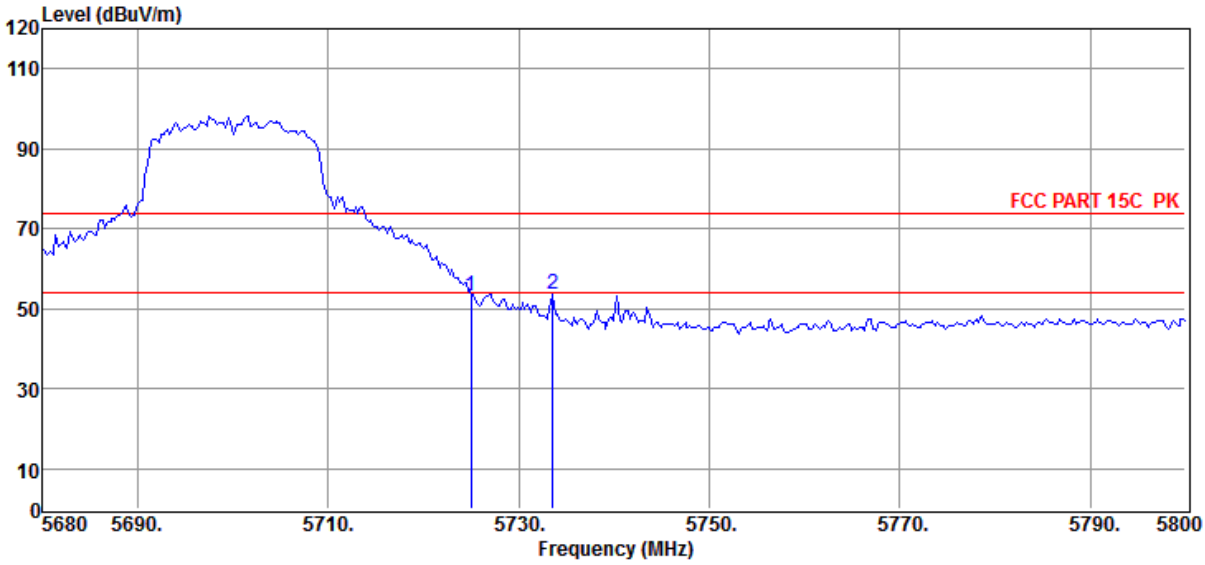
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5447.71	51.40	32.68	43.27	6.58	47.39	74.00	-26.61	Peak	VERTICAL
2	5460.06	48.91	32.68	43.26	6.59	44.92	74.00	-29.08	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-12-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: 11N20 5700		

Data: 15



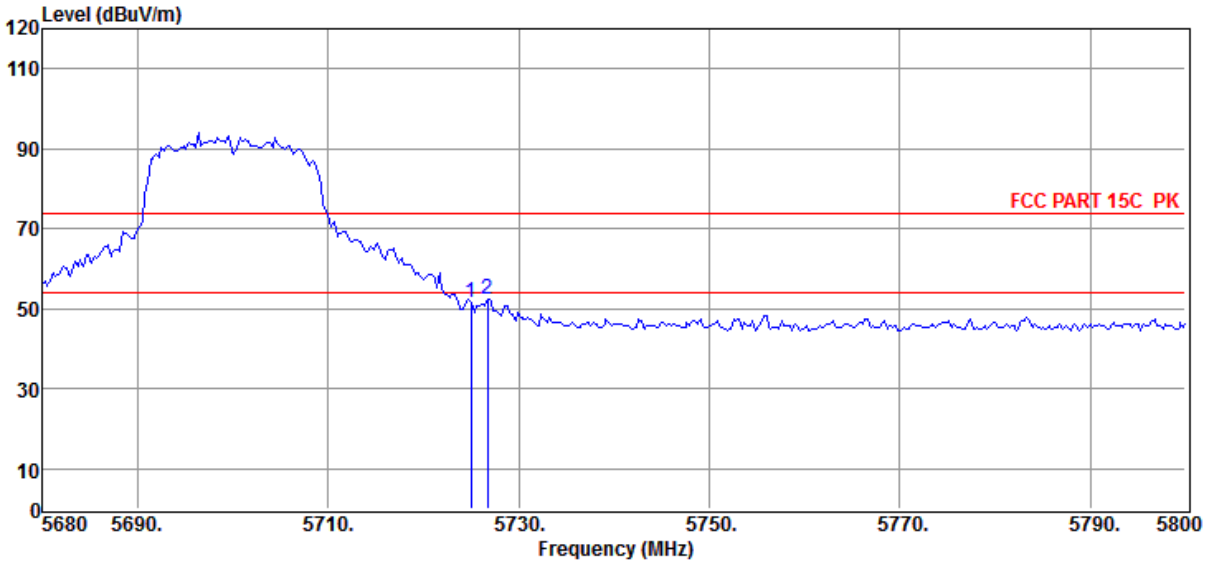
Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	56.64	32.92	43.18	6.78	53.16	74.00	-20.84	Peak	HORIZONTAL
2	5733.55	57.09	32.93	43.18	6.78	53.62	74.00	-20.38	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-12-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: 11N20 5700		

Data: 16



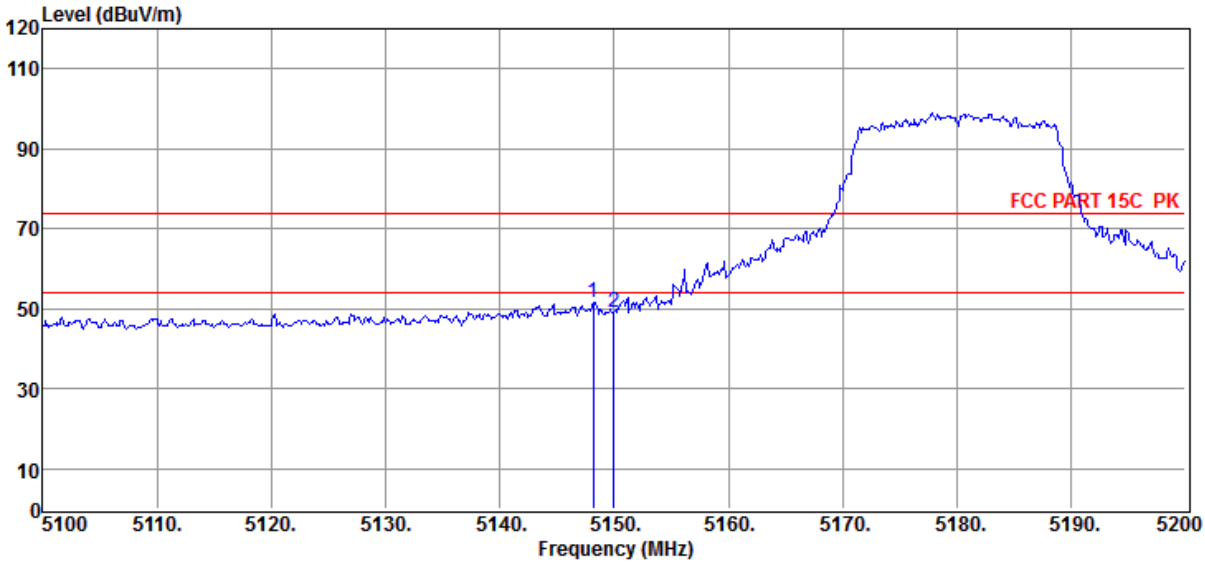
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	54.92	32.92	43.18	6.78	51.44	74.00	-22.56	Peak	VERTICAL
2	5726.75	55.94	32.93	43.18	6.78	52.47	74.00	-21.53	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-28	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC 20 5180		

Data: 17



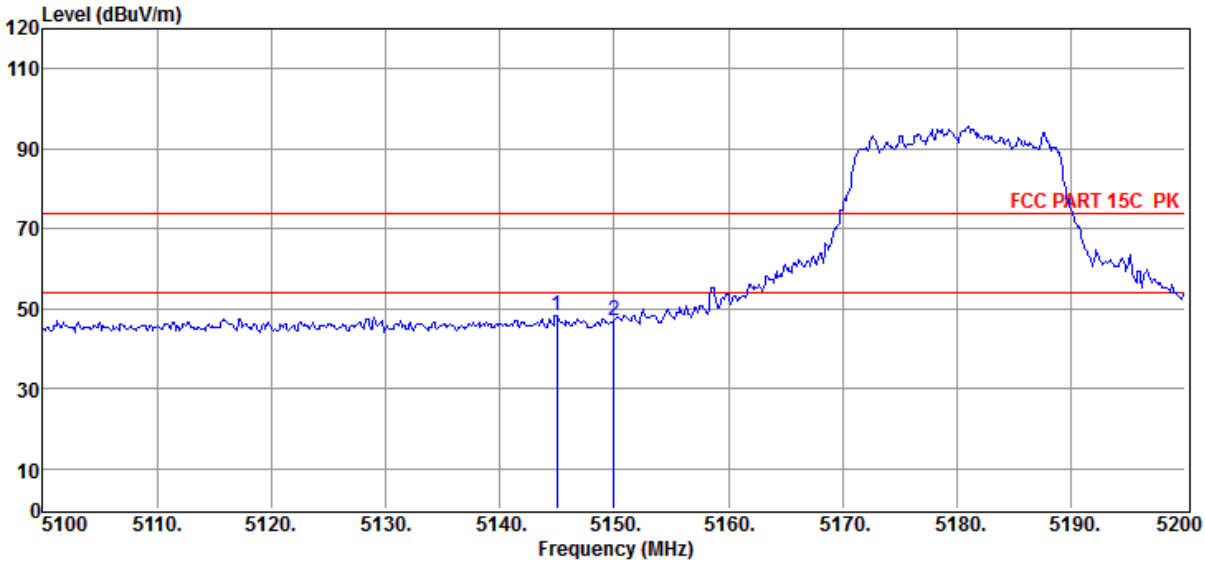
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5148.20	55.95	32.56	43.36	6.37	51.52	74.00	-22.48	Peak	VERTICAL
2	5150.00	53.47	32.56	43.36	6.38	49.05	74.00	-24.95	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-28	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC 20 5180		

Data: 18



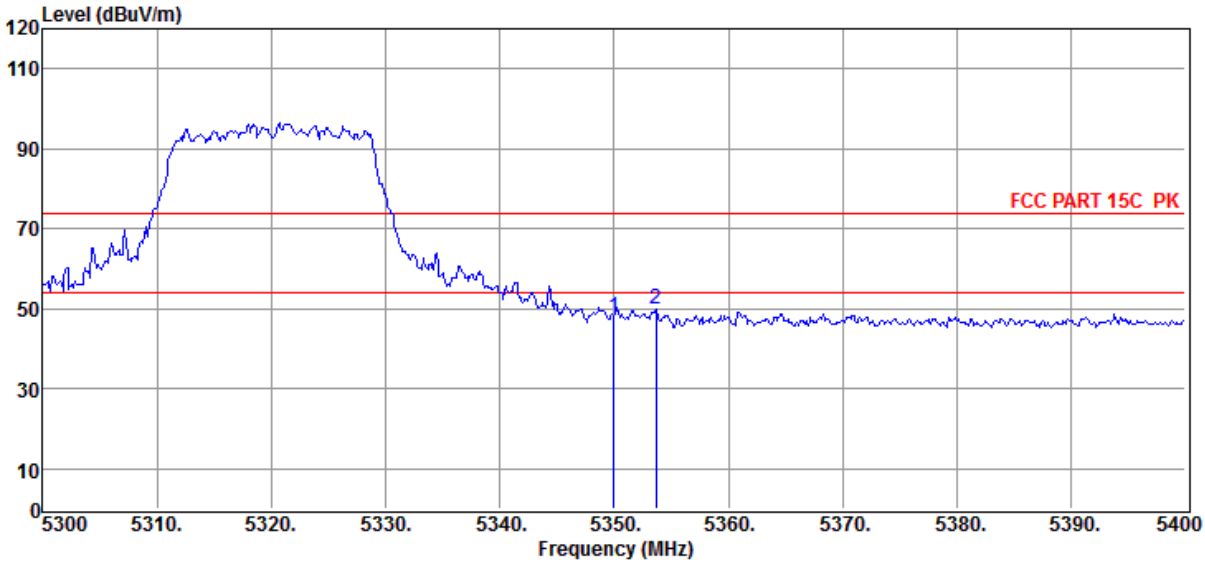
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5145.00	52.55	32.56	43.37	6.37	48.11	74.00	-25.89	Peak	HORIZONTAL
2	5150.00	51.25	32.56	43.36	6.38	46.83	74.00	-27.17	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-28	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC 20 5320		

Data: 19



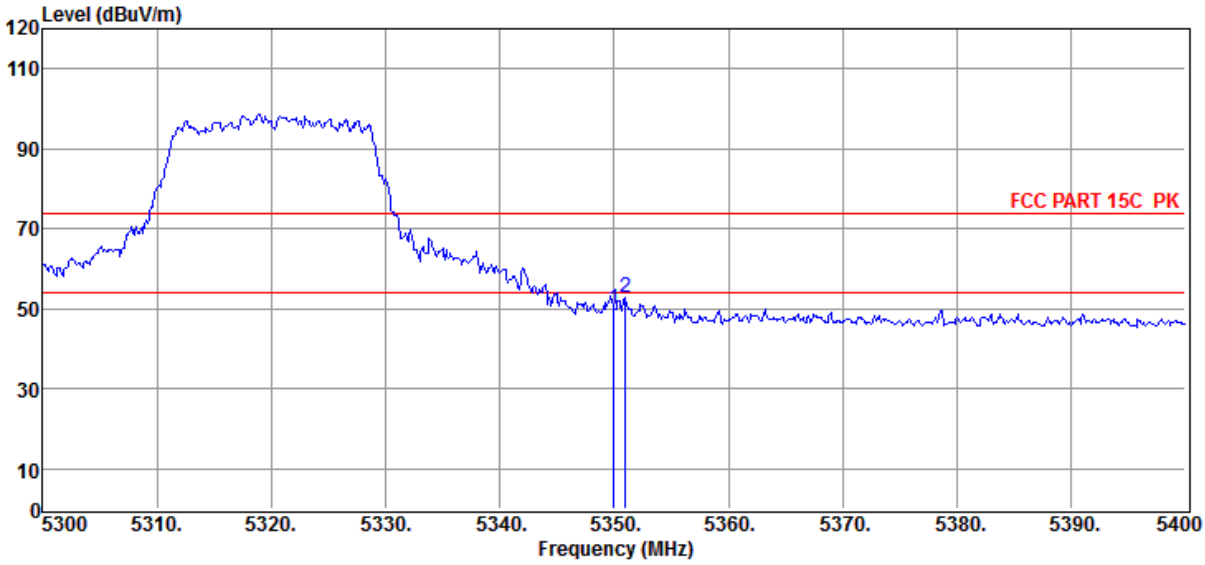
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5350.00	52.02	32.64	43.30	6.51	47.87	74.00	-26.13	Peak	HORIZONTAL
2	5353.70	53.88	32.64	43.30	6.52	49.74	74.00	-24.26	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-28	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC 20 5320		

Data: 20



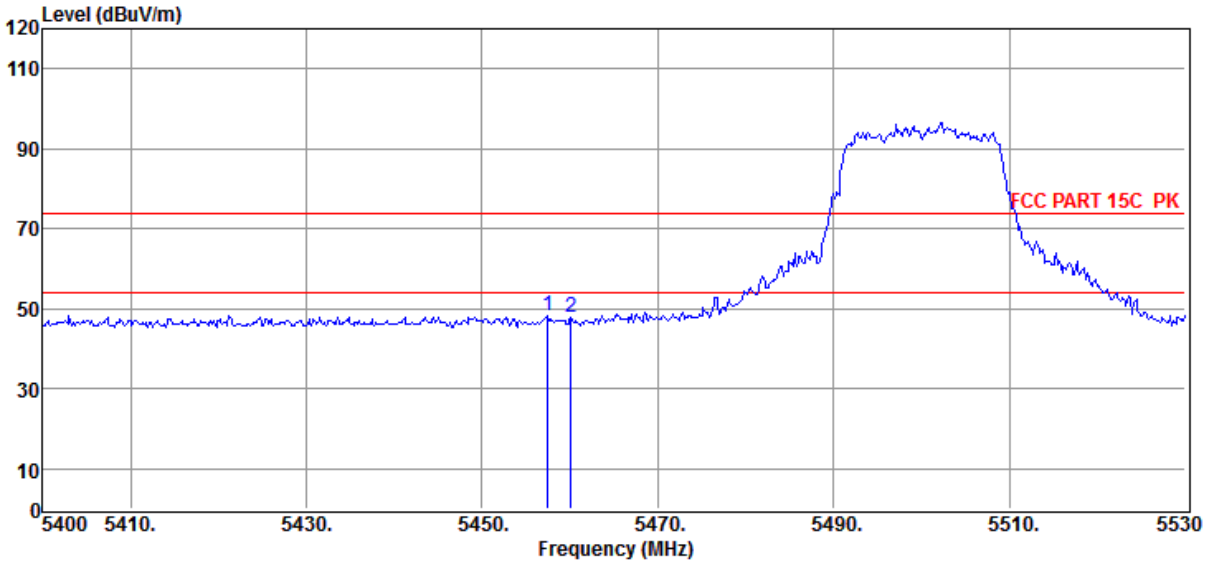
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5350.00	54.25	32.64	43.30	6.51	50.10	74.00	-23.90	Peak	VERTICAL
2	5351.00	56.76	32.64	43.30	6.52	52.62	74.00	-21.38	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-28	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC 20 5500		

Data: 21



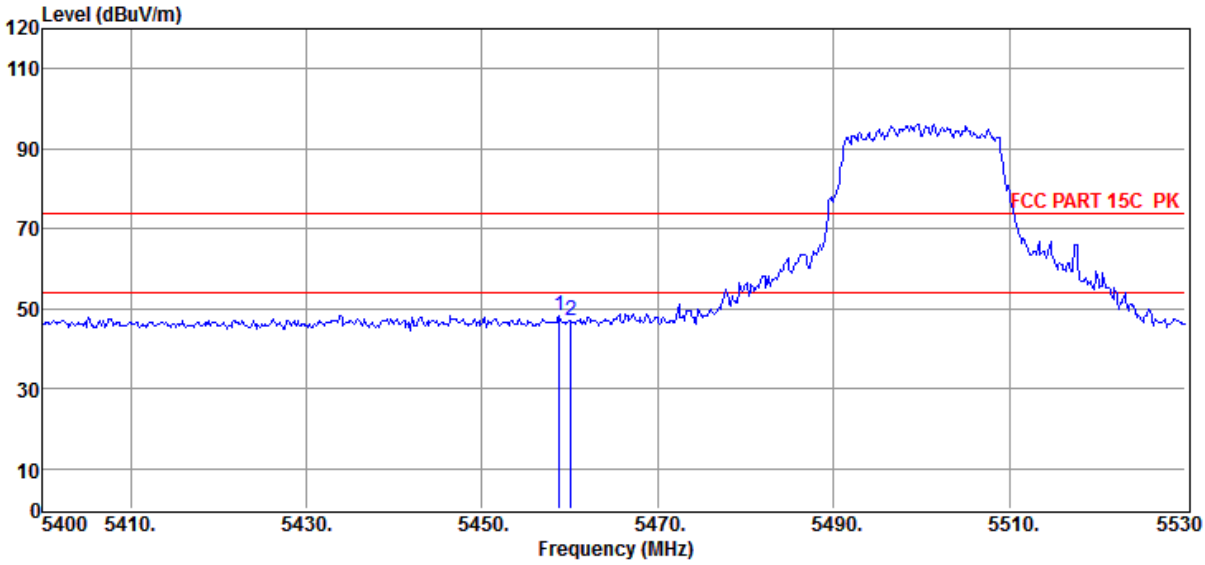
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5457.46	52.41	32.68	43.26	6.59	48.42	74.00	-25.58	Peak	VERTICAL
2	5460.06	51.68	32.68	43.26	6.59	47.69	74.00	-26.31	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-07-28	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC 20 5500		

Data: 22



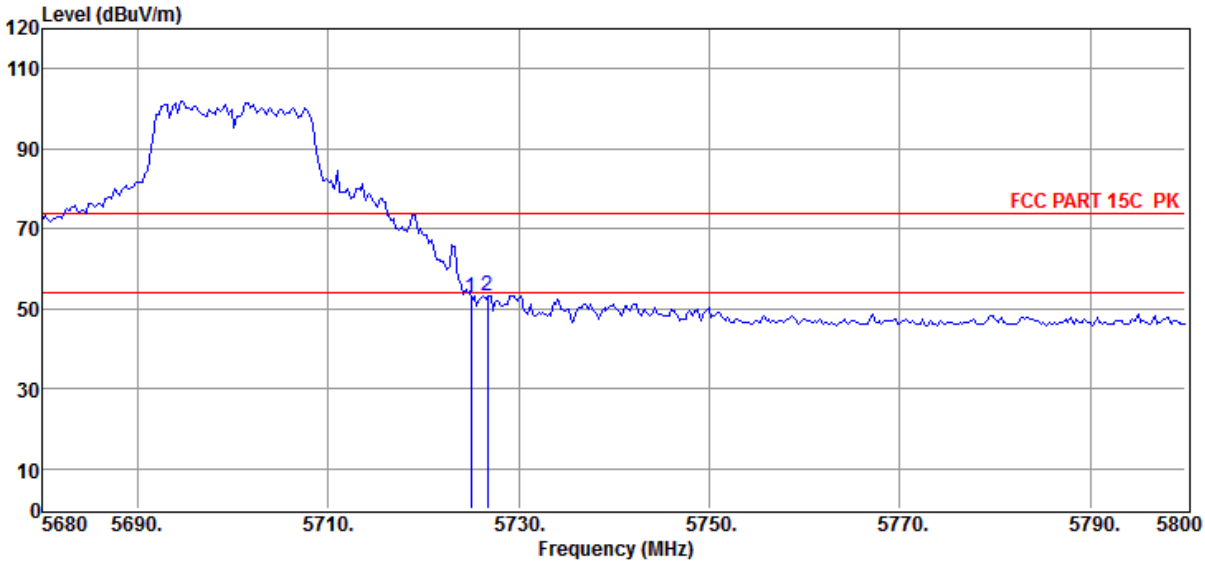
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5458.76	52.32	32.68	43.26	6.59	48.33	74.00	-25.67	Peak	HORIZONTAL
2	5460.06	51.18	32.68	43.26	6.59	47.19	74.00	-26.81	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-12-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: 11AC 20 5700		

Data: 23



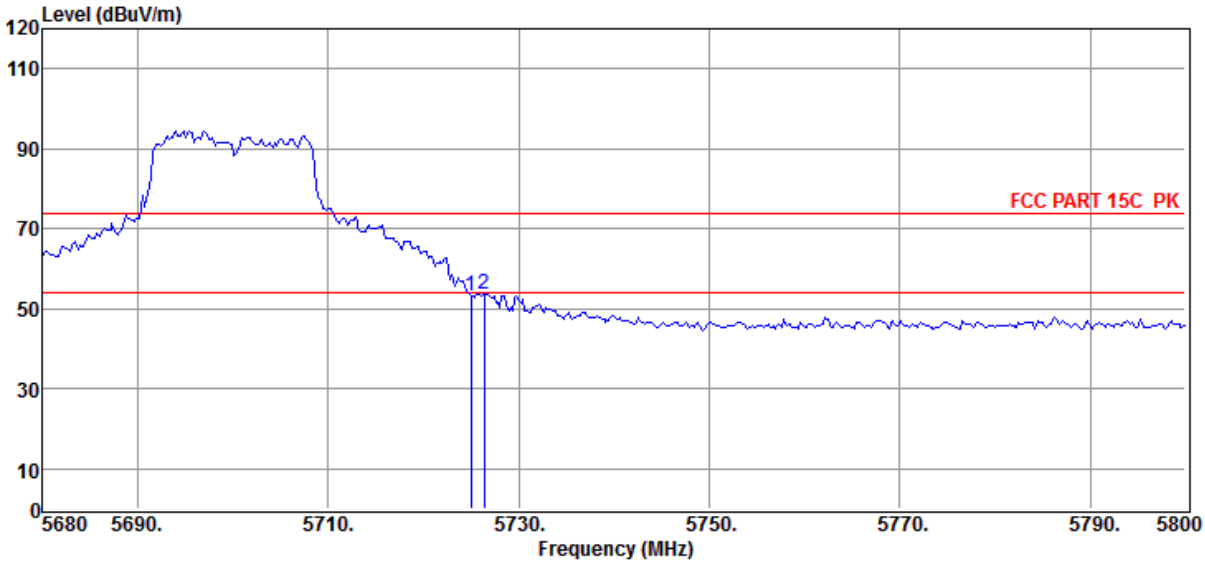
Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	56.45	32.92	43.18	6.78	52.97	74.00	-21.03	Peak	HORIZONTAL
2	5726.75	56.85	32.93	43.18	6.78	53.38	74.00	-20.62	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-12-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: 11AC 20 5700		

Data: 24



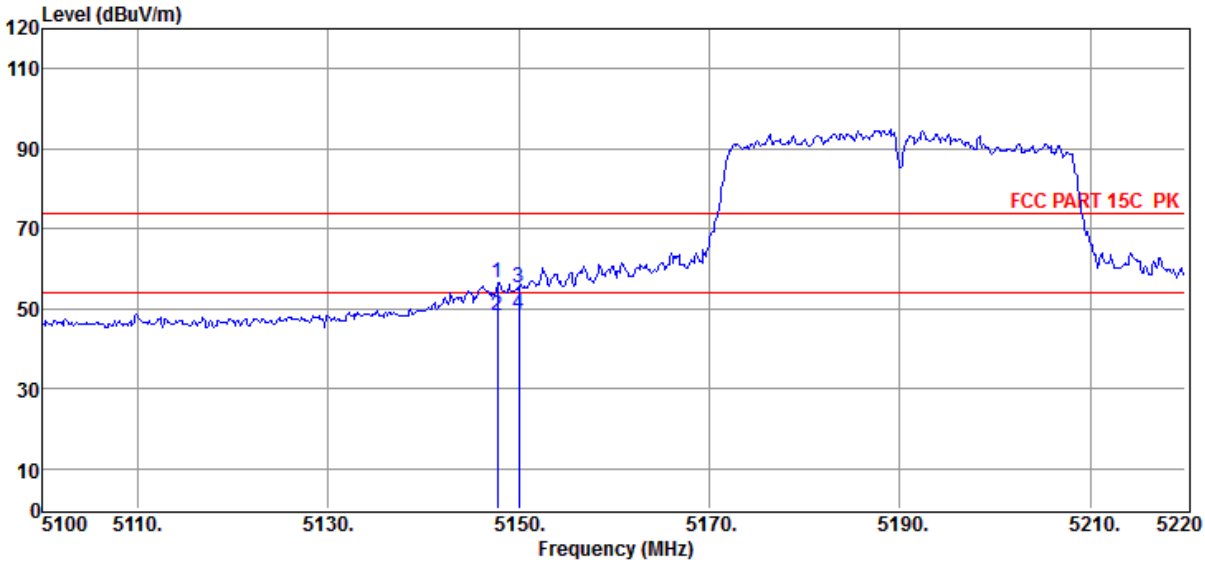
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	56.58	32.92	43.18	6.78	53.10	74.00	-20.90	Peak	VERTICAL
2	5726.41	57.17	32.93	43.18	6.78	53.70	74.00	-20.30	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: N40 5190		

Data: 25



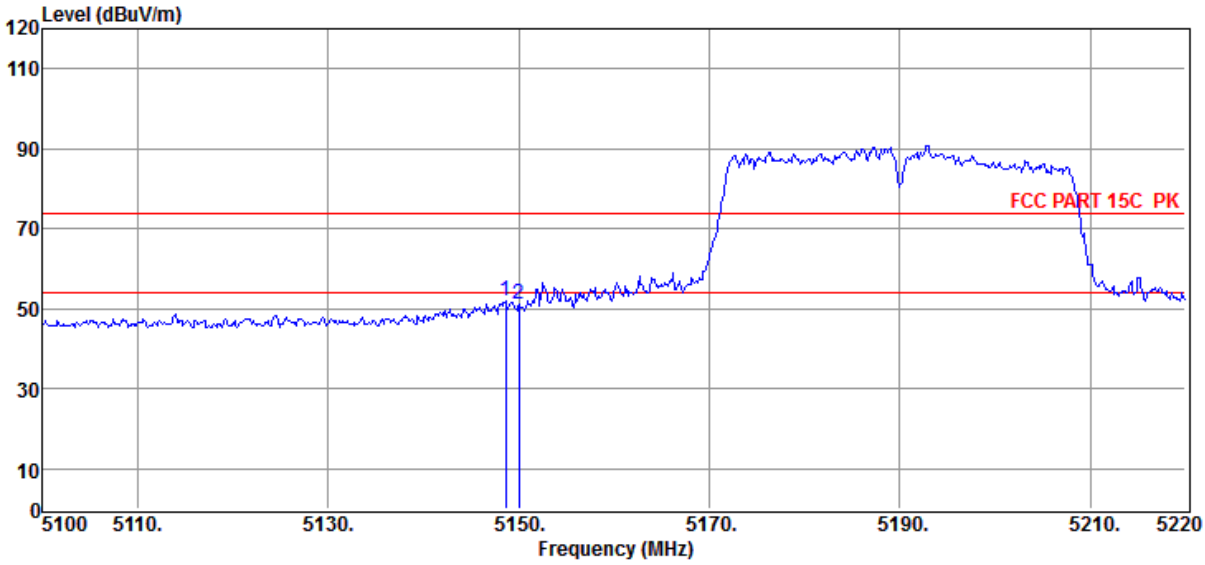
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5147.76	60.89	32.56	43.36	6.37	56.46	74.00	-17.54	Peak	VERTICAL
2	5147.76	52.65	32.56	43.36	6.37	48.22	54.00	-5.78	Average	VERTICAL
3	5150.04	59.71	32.56	43.36	6.38	55.29	74.00	-18.71	Peak	VERTICAL
4	5150.04	53.20	32.56	43.36	6.38	48.78	54.00	-5.22	Average	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: N40 5190		

Data: 26



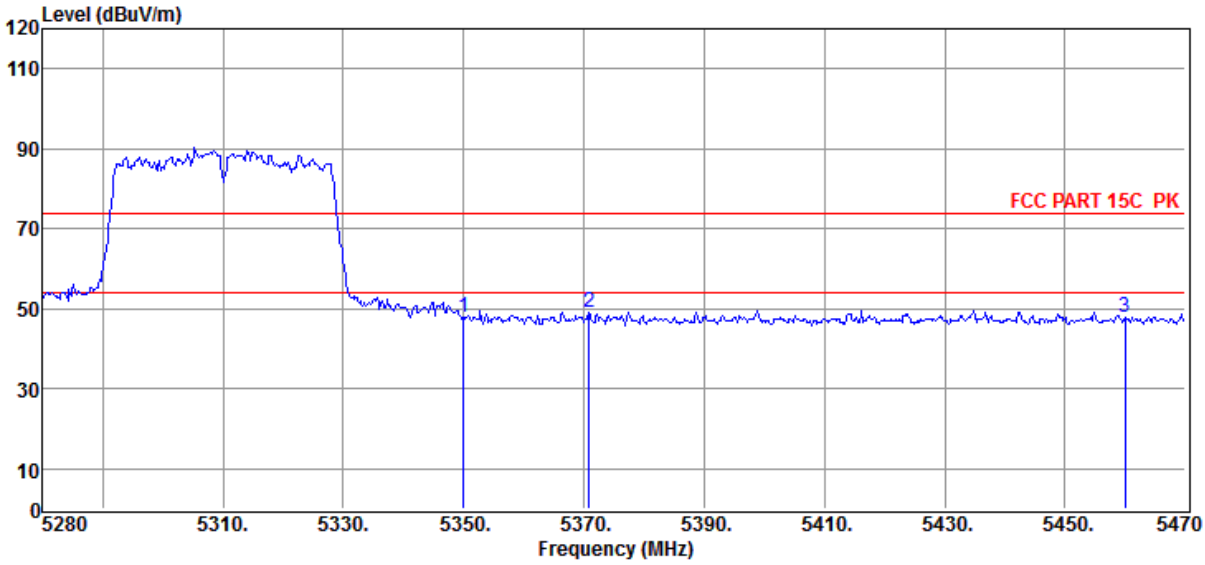
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5148.60	56.19	32.56	43.36	6.37	51.76	74.00	-22.24	Peak	HORIZONTAL
2	5150.04	55.48	32.56	43.36	6.38	51.06	74.00	-22.94	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: N40 5310		

Data: 27



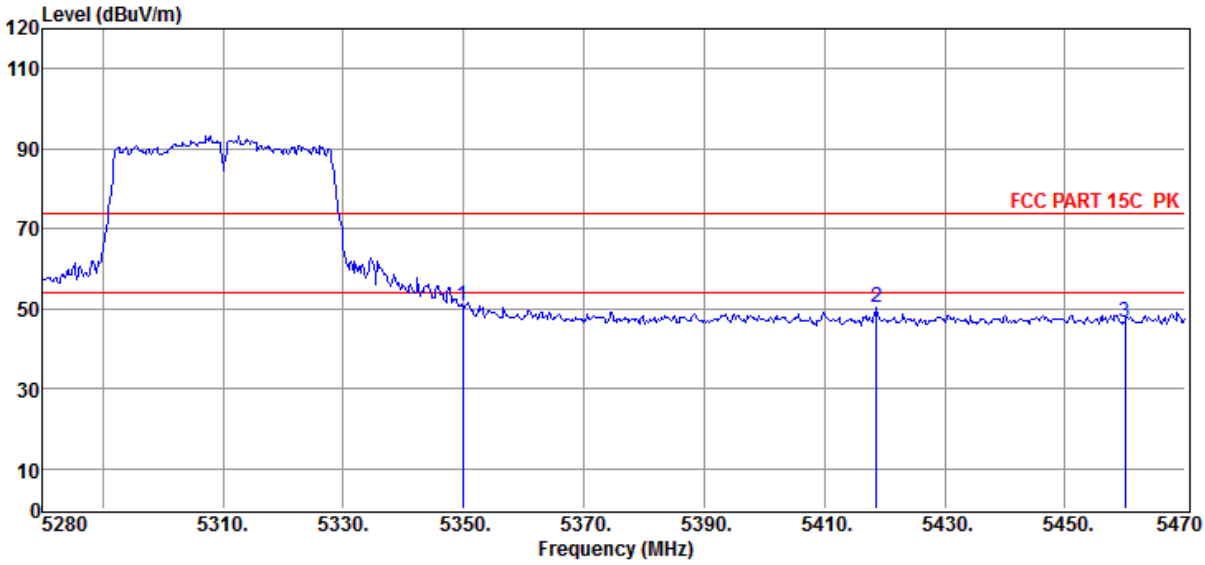
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5350.00	52.02	32.64	43.30	6.51	47.87	74.00	-26.13	Peak	HORIZONTAL
2	5370.82	53.35	32.65	43.29	6.53	49.24	74.00	-24.76	Peak	HORIZONTAL
3	5460.00	51.76	32.68	43.26	6.59	47.77	74.00	-26.23	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: N40 5310		

Data: 28



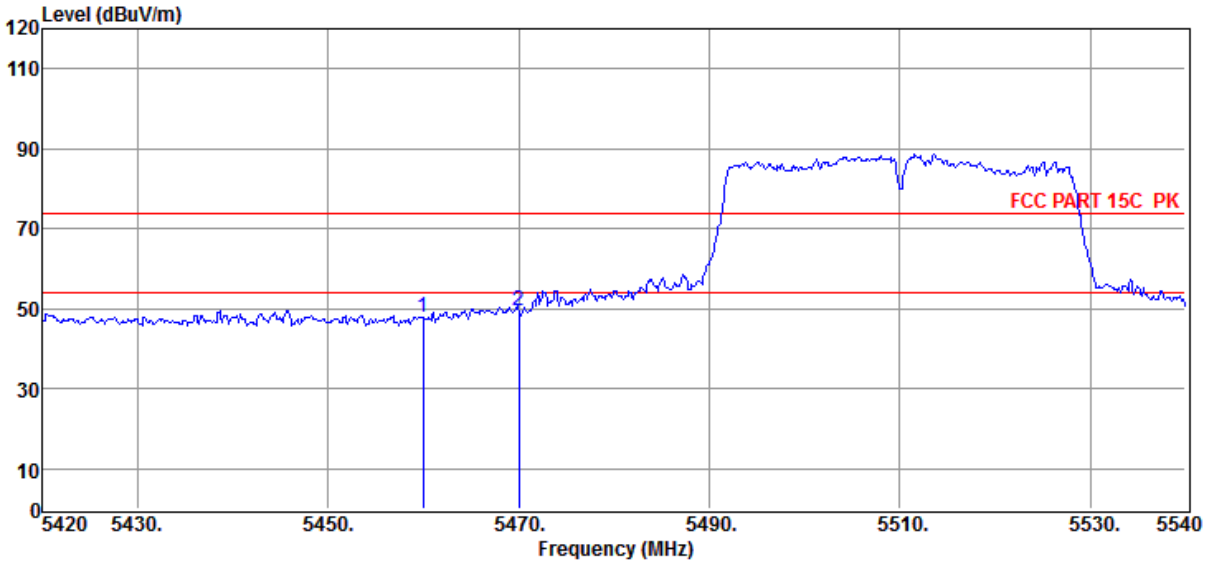
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5349.92	54.86	32.64	43.30	6.51	50.71	74.00	-23.29	Peak	VERTICAL
2	5418.70	54.25	32.67	43.28	6.56	50.20	74.00	-23.80	Peak	VERTICAL
3	5459.93	50.63	32.68	43.26	6.59	46.64	74.00	-27.36	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: N40 5510		

Data: 29



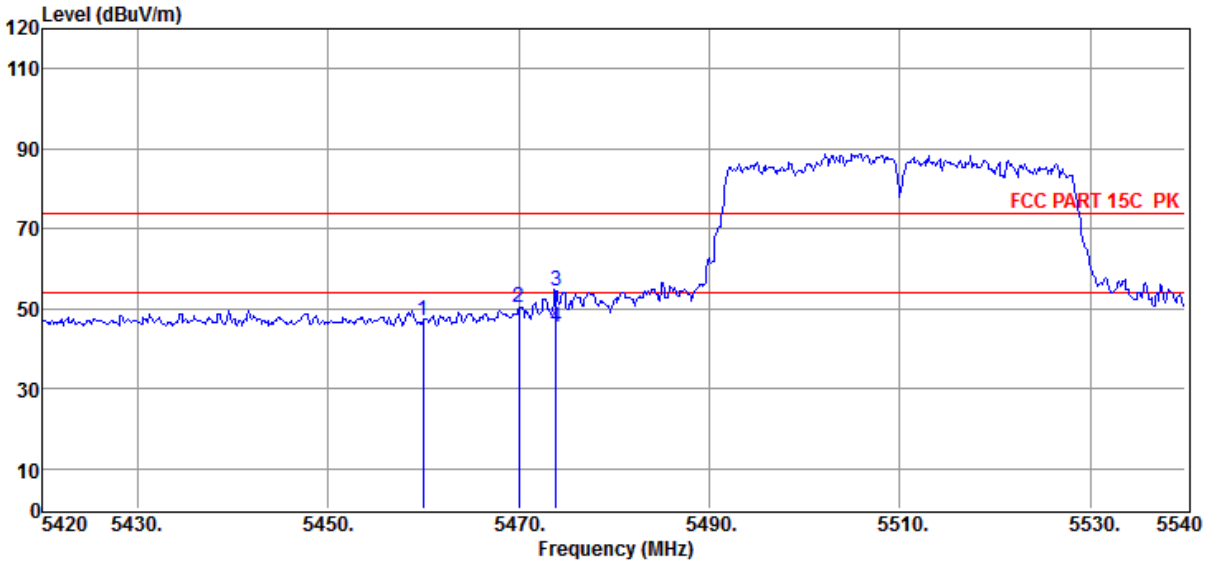
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5460.00	51.92	32.68	43.26	6.59	47.93	74.00	-26.07	Peak	VERTICAL
2	5470.04	53.52	32.69	43.26	6.60	49.55	74.00	-24.45	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: N40 5510		

Data: 30



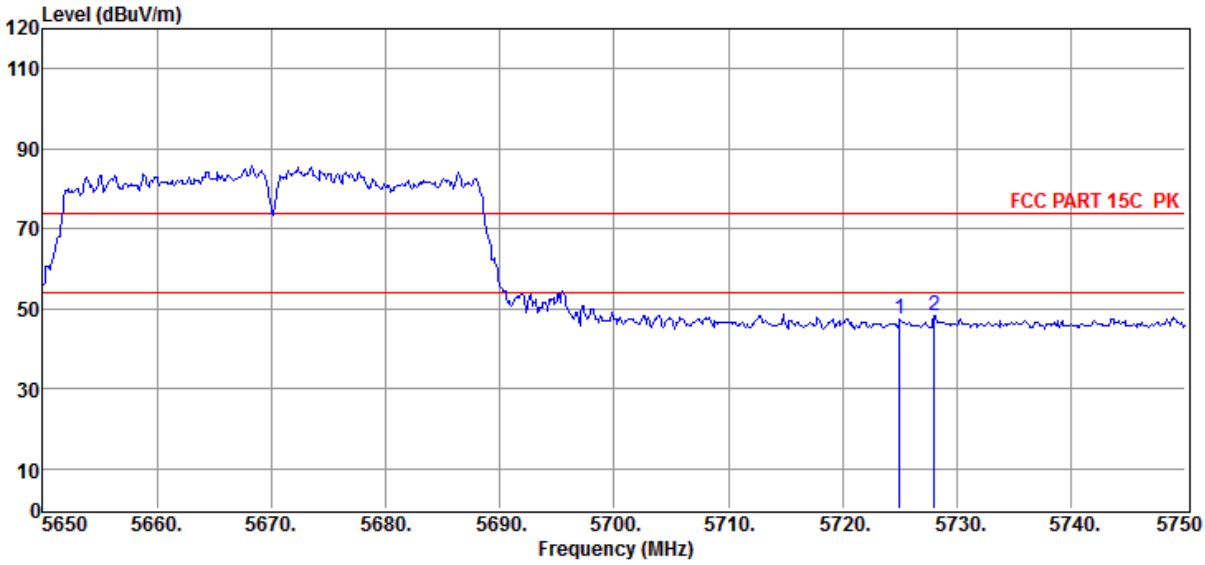
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5459.96	51.03	32.68	43.26	6.59	47.04	74.00	-26.96	Peak	HORIZONTAL
2	5470.04	54.43	32.69	43.26	6.60	50.46	74.00	-23.54	Peak	HORIZONTAL
3	5473.88	58.59	32.69	43.26	6.60	54.62	74.00	-19.38	Peak	HORIZONTAL
4	5473.88	49.21	32.69	43.26	6.60	45.24	54.00	-8.76	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: N40 5670		

Data: 31



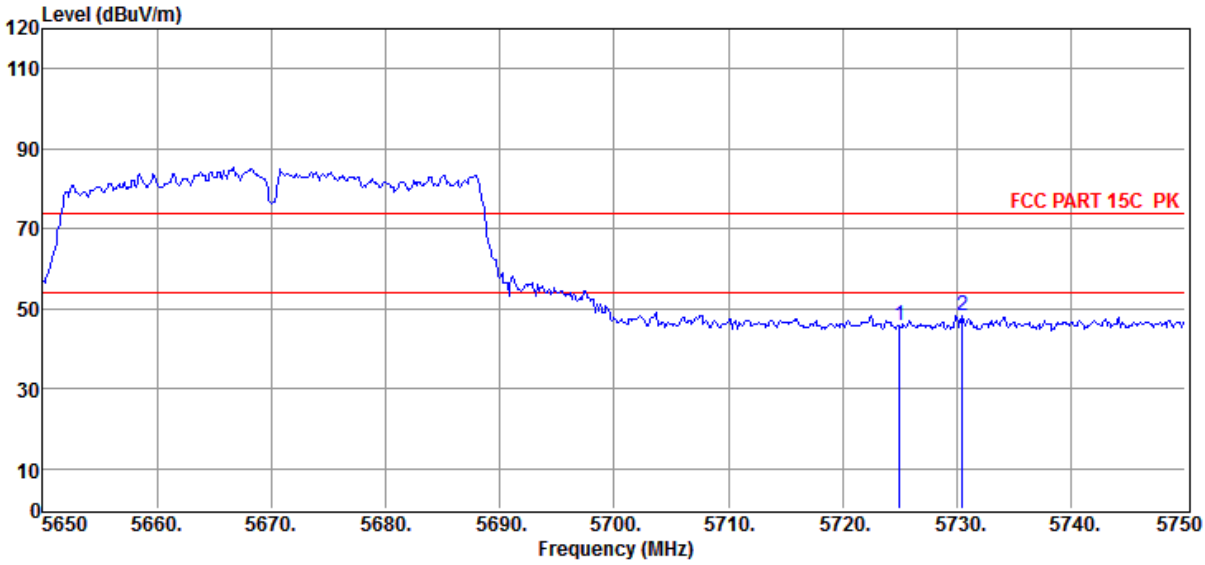
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	50.76	32.92	43.18	6.78	47.28	74.00	-26.72	Peak	HORIZONTAL
2	5728.00	51.67	32.93	43.18	6.78	48.20	74.00	-25.80	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: N40 5670		

Data: 32



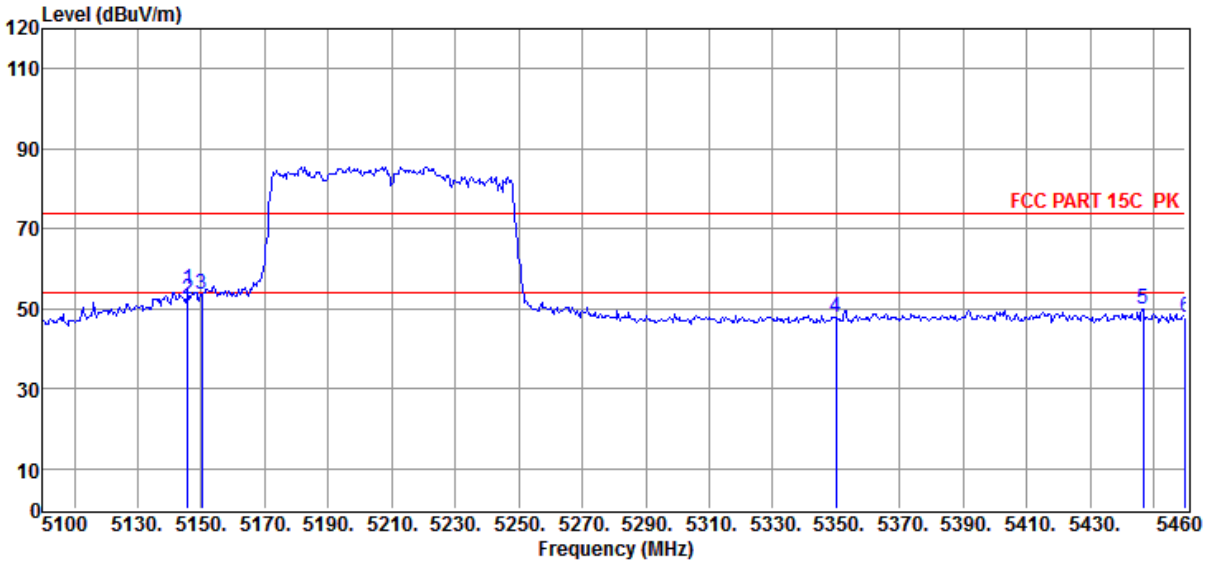
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	49.15	32.92	43.18	6.78	45.67	74.00	-28.33	Peak	VERTICAL
2	5730.50	51.62	32.93	43.18	6.78	48.15	74.00	-25.85	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC80 5210		

Data: 33



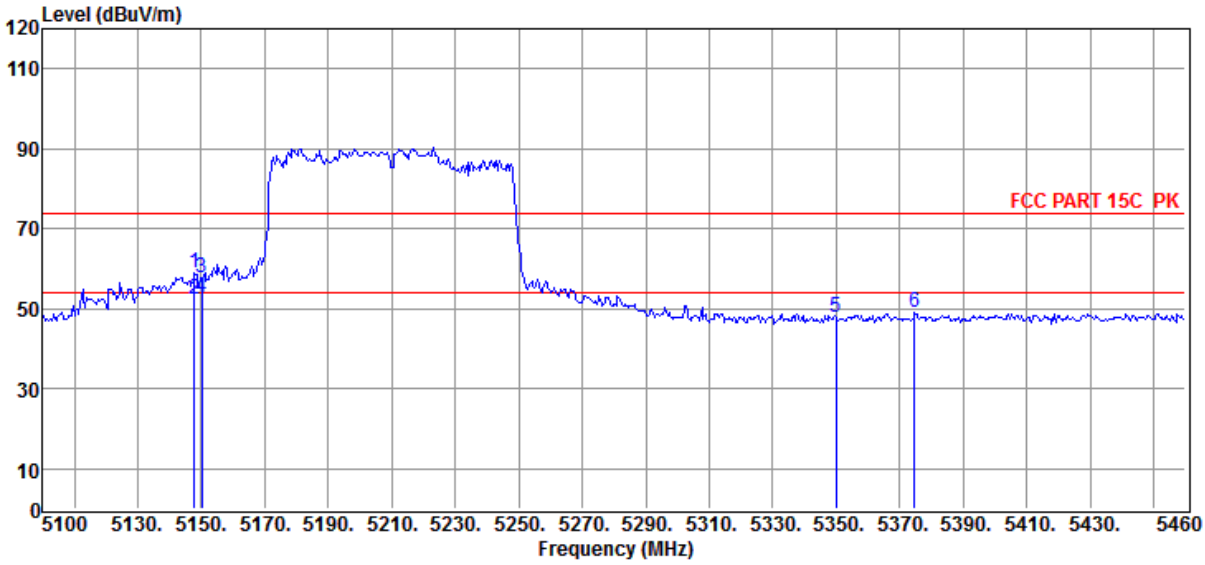
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5145.72	59.31	32.56	43.37	6.37	54.87	74.00	-19.13	Peak	HORIZONTAL
2	5145.72	56.87	32.56	43.37	6.37	52.43	54.00	-1.57	Average	HORIZONTAL
3	5150.04	58.14	32.56	43.36	6.38	53.72	74.00	-20.28	Peak	HORIZONTAL
4	5349.84	51.88	32.64	43.30	6.51	47.73	74.00	-26.27	Peak	HORIZONTAL
5	5446.68	53.87	32.68	43.27	6.58	49.86	74.00	-24.14	Peak	HORIZONTAL
6	5460.00	51.63	32.68	43.26	6.59	47.64	74.00	-26.36	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC80 5210		

Data: 34



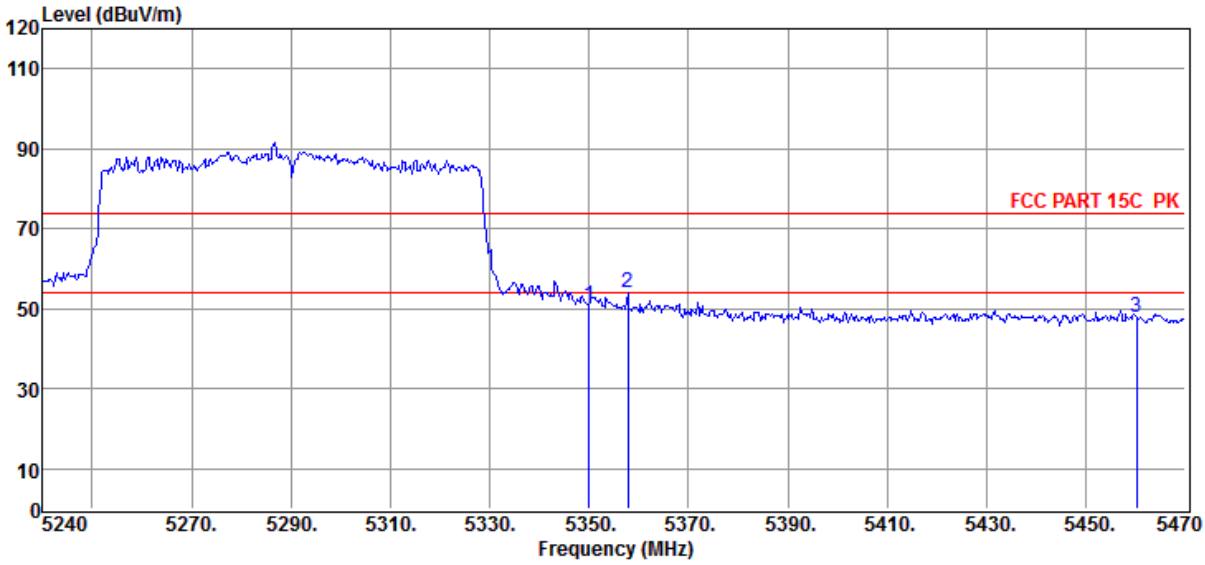
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5147.88	63.32	32.56	43.36	6.37	58.89	74.00	-15.11	Peak	VERTICAL
2	5147.88	56.83	32.56	43.36	6.37	52.40	54.00	-1.60	Average	VERTICAL
3	5150.04	61.99	32.56	43.36	6.38	57.57	74.00	-16.43	Peak	VERTICAL
4	5150.04	57.10	32.56	43.36	6.38	52.68	54.00	-1.32	Average	VERTICAL
5	5349.84	51.80	32.64	43.30	6.51	47.65	74.00	-26.35	Peak	VERTICAL
6	5374.68	52.99	32.65	43.29	6.53	48.88	74.00	-25.12	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC80 5290		

Data: 35



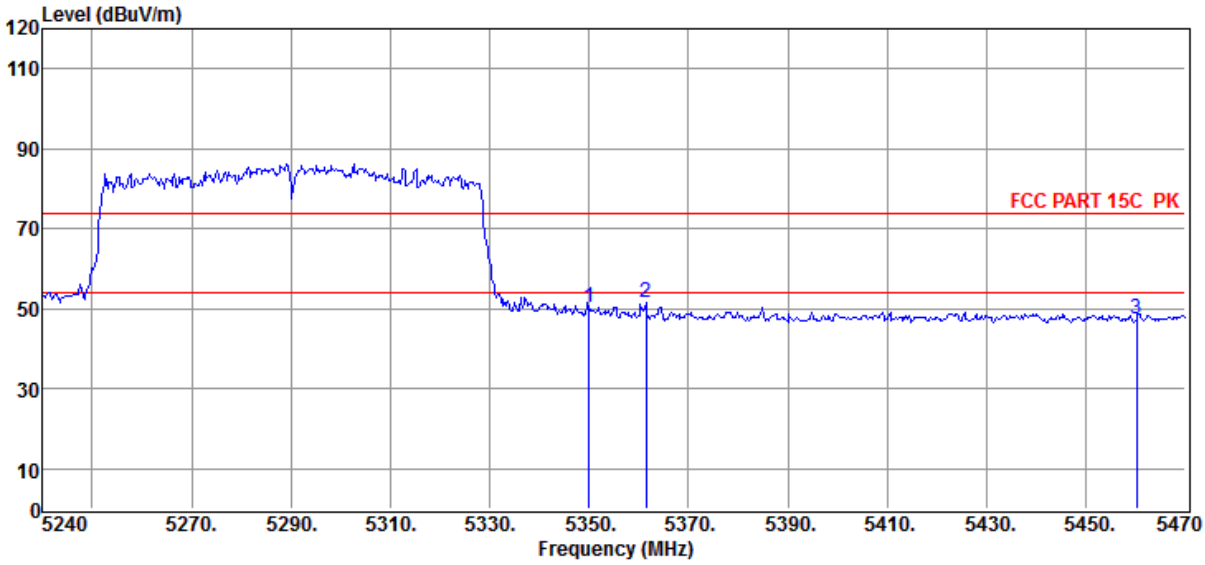
Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	5349.94	54.88	32.64	43.30	6.51	50.73	74.00	-23.27	Peak	VERTICAL
2	5357.76	58.08	32.64	43.30	6.52	53.94	74.00	-20.06	Peak	VERTICAL
3	5460.11	51.64	32.68	43.26	6.59	47.65	74.00	-26.35	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC80 5290		

Data: 36



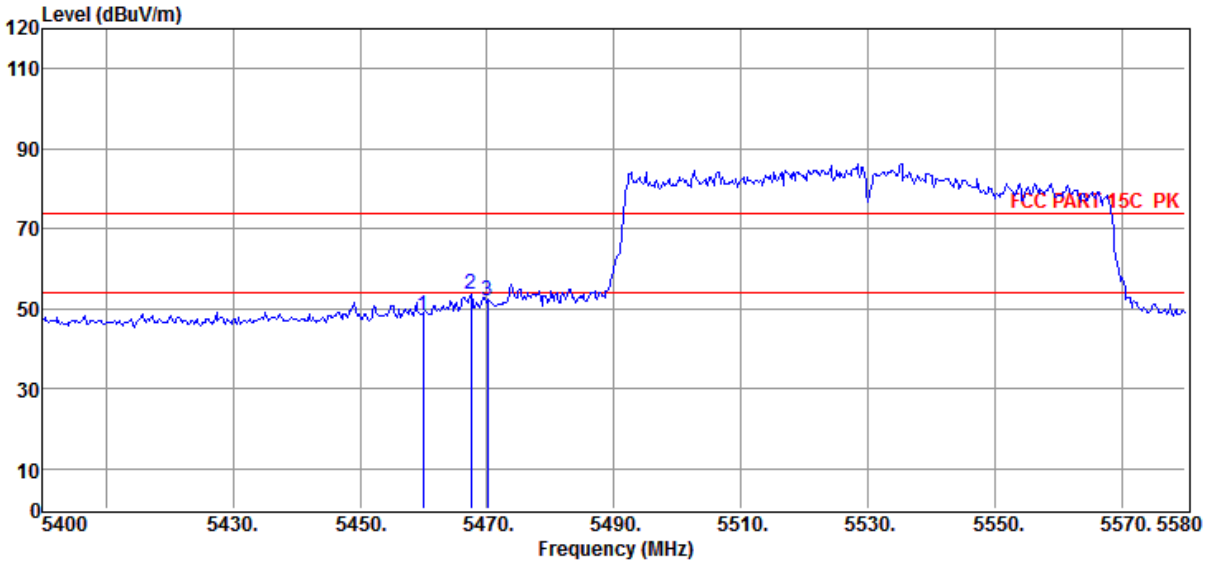
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5349.94	54.41	32.64	43.30	6.51	50.26	74.00	-23.74	Peak	HORIZONTAL
2	5361.44	55.52	32.64	43.29	6.52	51.39	74.00	-22.61	Peak	HORIZONTAL
3	5460.11	51.27	32.68	43.26	6.59	47.28	74.00	-26.72	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC80 5530		

Data: 37



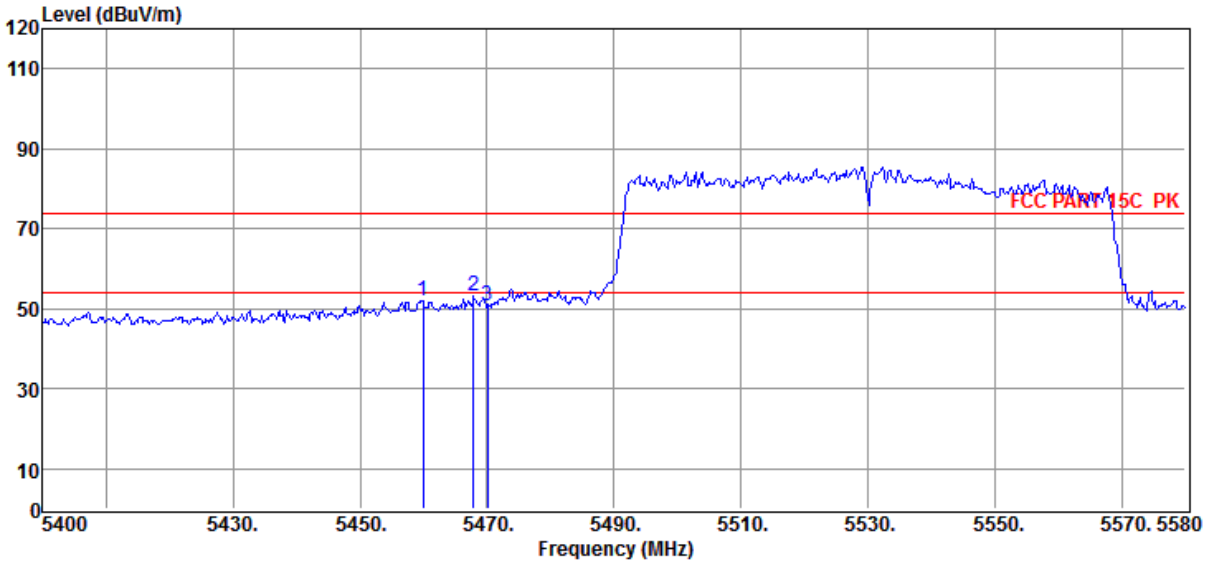
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5459.94	52.19	32.68	43.26	6.59	48.20	74.00	-25.80	Peak	HORIZONTAL
2	5467.50	57.45	32.69	43.26	6.60	53.48	74.00	-20.52	Peak	HORIZONTAL
3	5470.02	55.88	32.69	43.26	6.60	51.91	74.00	-22.09	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC80 5530		

Data: 38



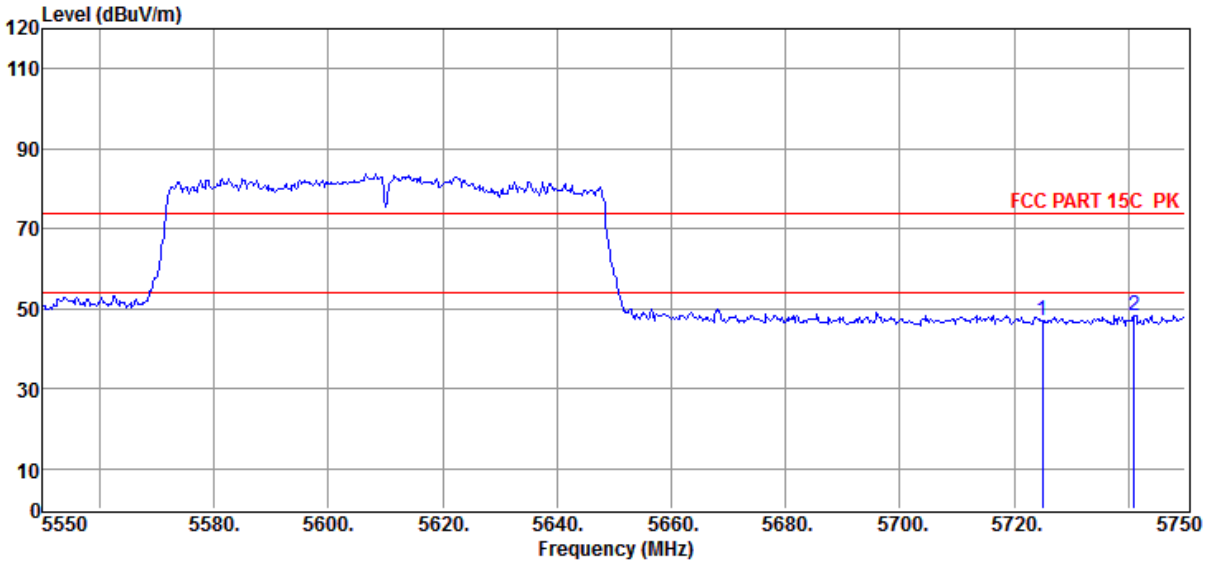
Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	5459.94	56.04	32.68	43.26	6.59	52.05	74.00	-21.95	Peak	VERTICAL
2	5467.86	57.18	32.69	43.26	6.60	53.21	74.00	-20.79	Peak	VERTICAL
3	5470.02	54.75	32.69	43.26	6.60	50.78	74.00	-23.22	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC80 5610		

Data: 39



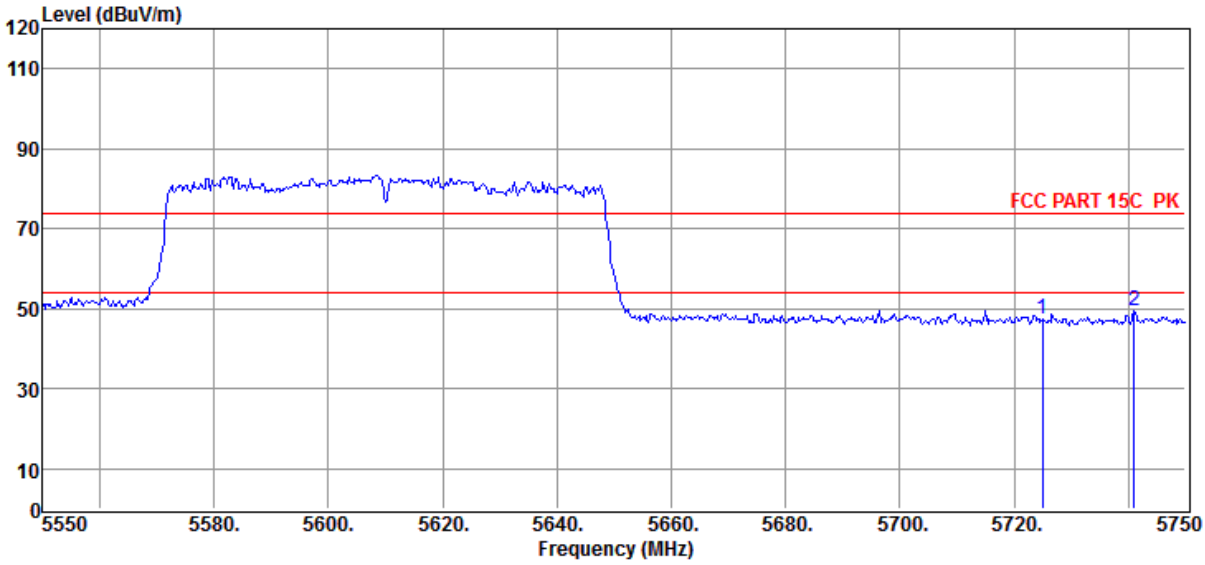
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	50.32	32.92	43.18	6.78	46.84	74.00	-27.16	Peak	VERTICAL
2	5741.00	51.87	32.94	43.18	6.79	48.42	74.00	-25.58	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-03	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC80 5610		

Data: 40



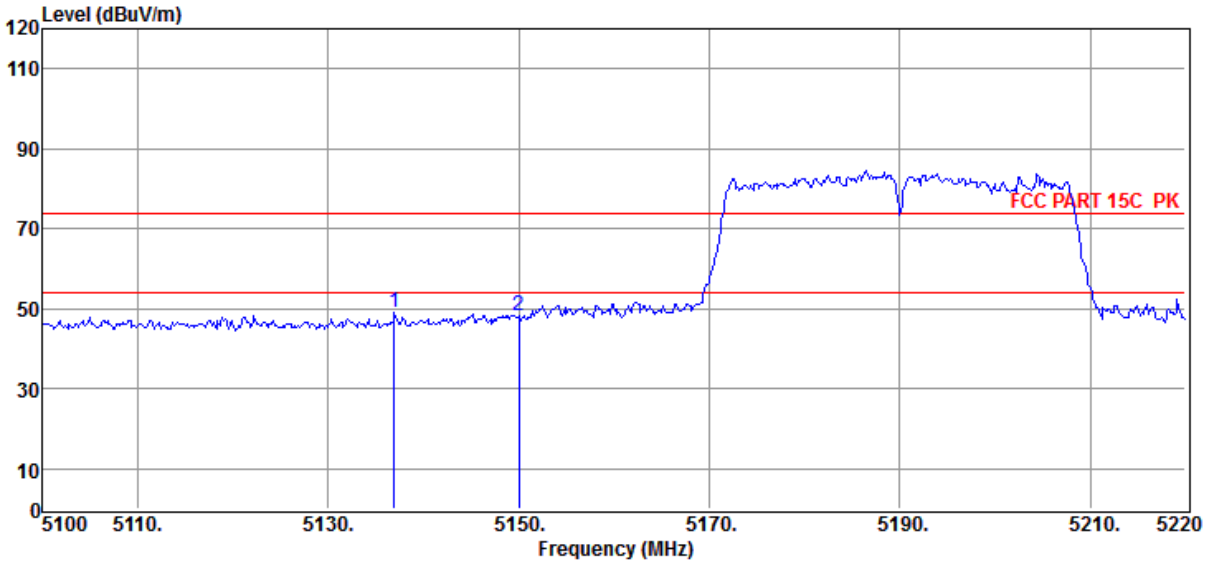
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	50.78	32.92	43.18	6.78	47.30	74.00	-26.70	Peak	HORIZONTAL
2	5741.00	52.81	32.94	43.18	6.79	49.36	74.00	-24.64	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-18	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC40 5190		

Data: 41



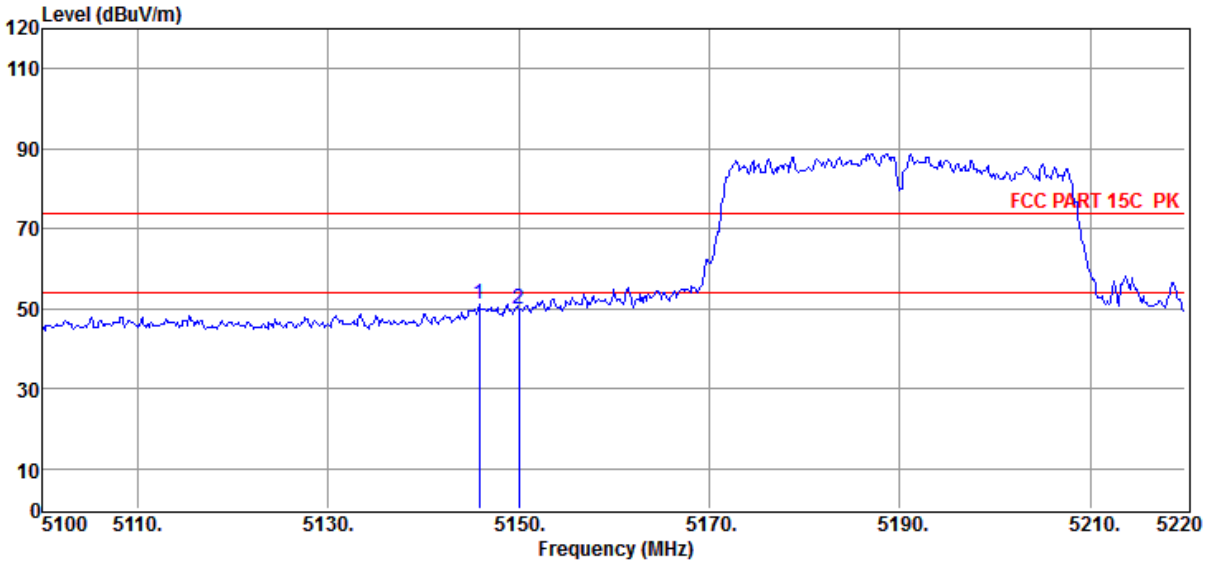
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5136.96	53.70	32.55	43.37	6.37	49.25	74.00	-24.75	Peak	HORIZONTAL
2	5150.04	52.57	32.56	43.36	6.38	48.15	74.00	-25.85	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-18	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC40 5190		

Data: 42



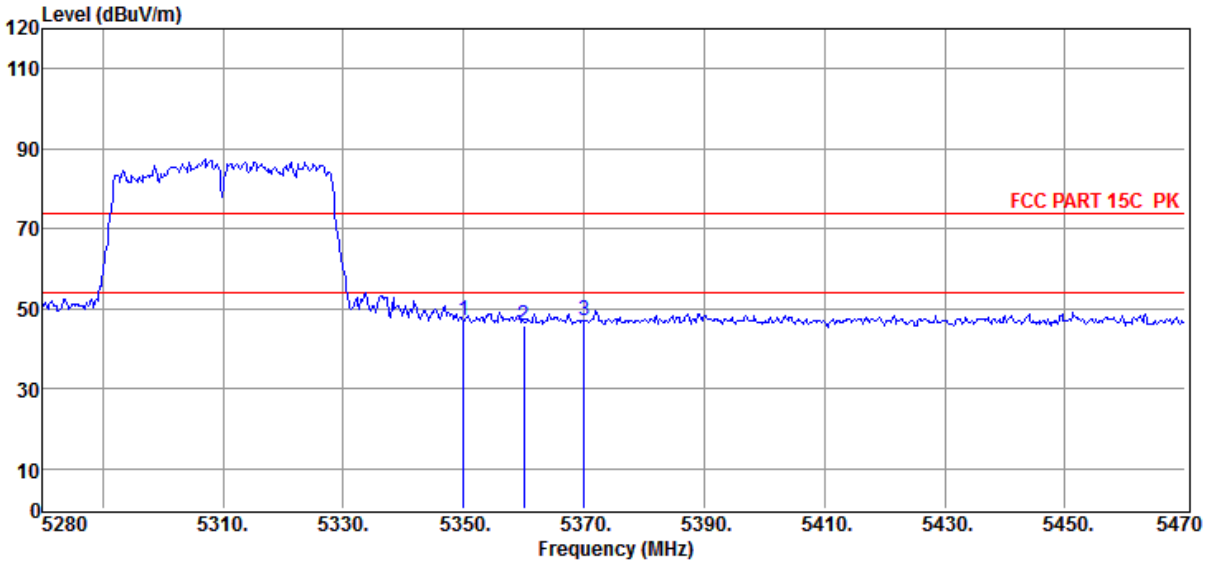
Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	5145.84	55.71	32.56	43.37	6.37	51.27	74.00	-22.73	Peak	VERTICAL
2	5150.04	54.42	32.56	43.36	6.38	50.00	74.00	-24.00	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-18	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC40 5310		

Data: 43



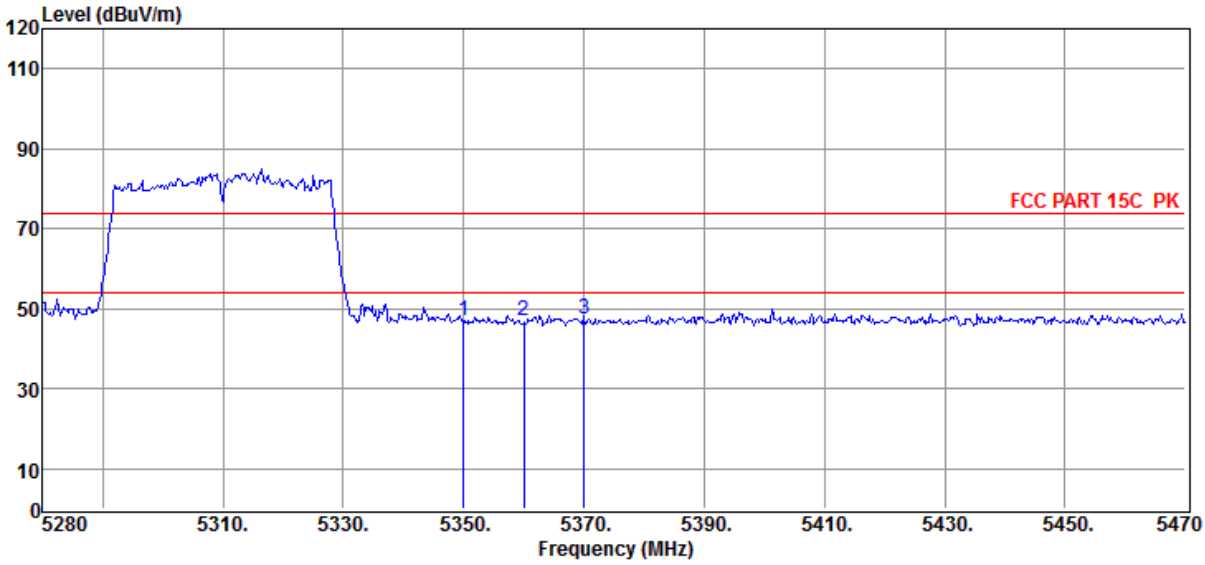
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5350.00	50.96	32.64	43.30	6.51	46.81	74.00	-27.19	Peak	VERTICAL
2	5360.00	50.05	32.64	43.29	6.52	45.92	74.00	-28.08	Peak	VERTICAL
3	5370.06	50.97	32.65	43.29	6.53	46.86	74.00	-27.14	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-18	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC40 5310		

Data: 44



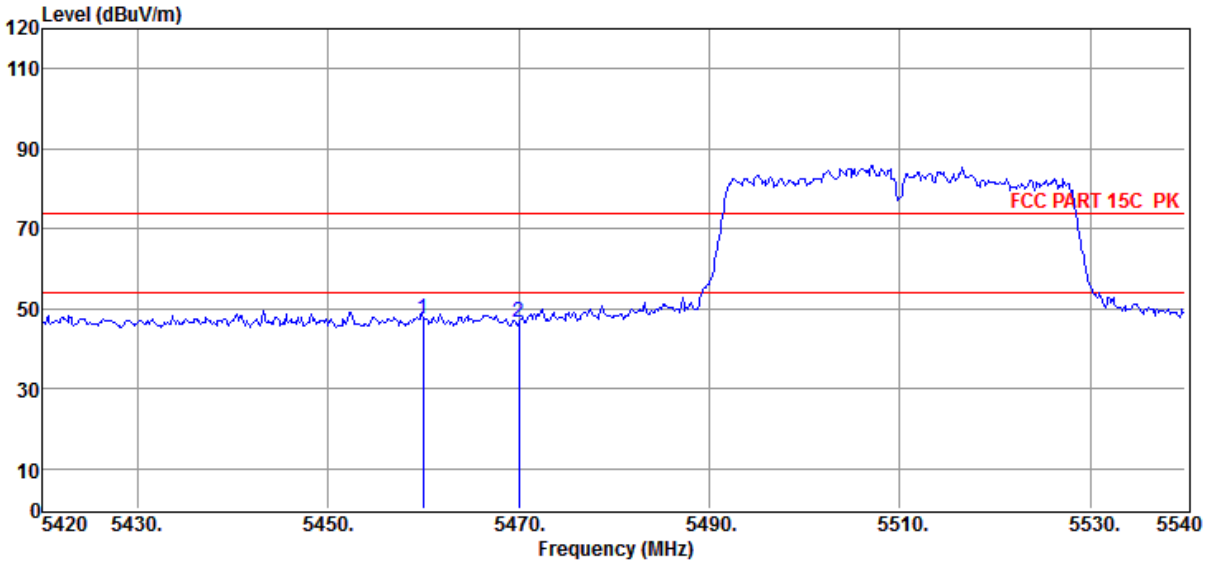
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5350.00	51.30	32.64	43.30	6.51	47.15	74.00	-26.85	Peak	HORIZONTAL
2	5360.00	51.28	32.64	43.29	6.52	47.15	74.00	-26.85	Peak	HORIZONTAL
3	5370.06	51.36	32.65	43.29	6.53	47.25	74.00	-26.75	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-18	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC40 5510		

Data: 45



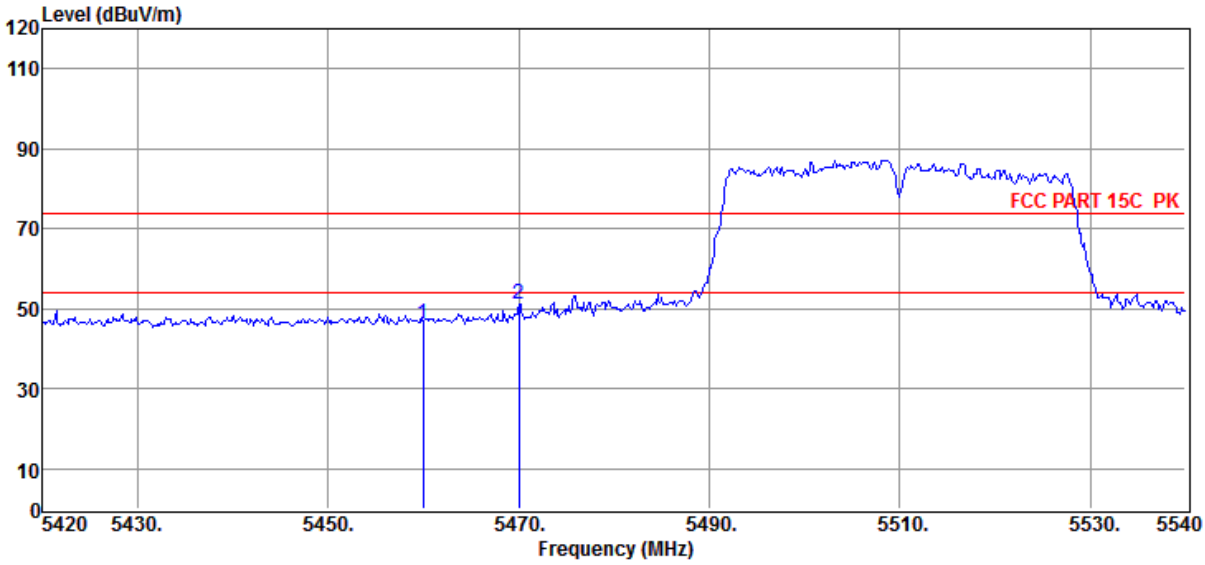
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5460.00	51.51	32.68	43.26	6.59	47.52	74.00	-26.48	Peak	HORIZONTAL
2	5470.04	50.38	32.69	43.26	6.60	46.41	74.00	-27.59	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-18	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC40 5510		

Data: 46



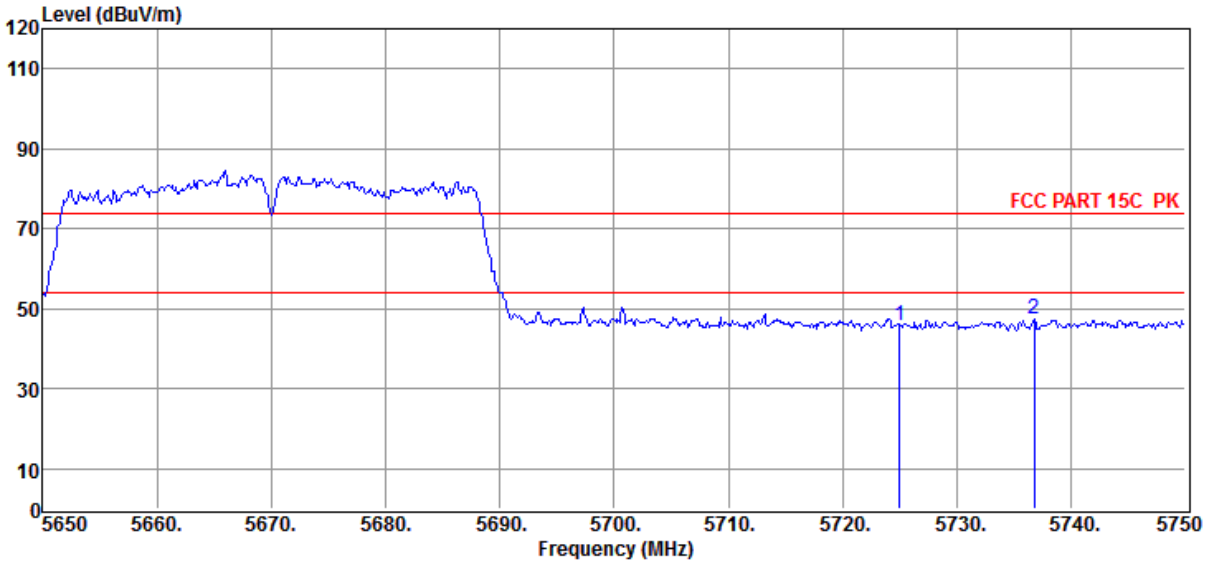
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5460.00	50.14	32.68	43.26	6.59	46.15	74.00	-27.85	Peak	VERTICAL
2	5470.04	55.07	32.69	43.26	6.60	51.10	74.00	-22.90	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-18	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/HORIZONTAL
Memo	: AC40 5670		

Data: 47



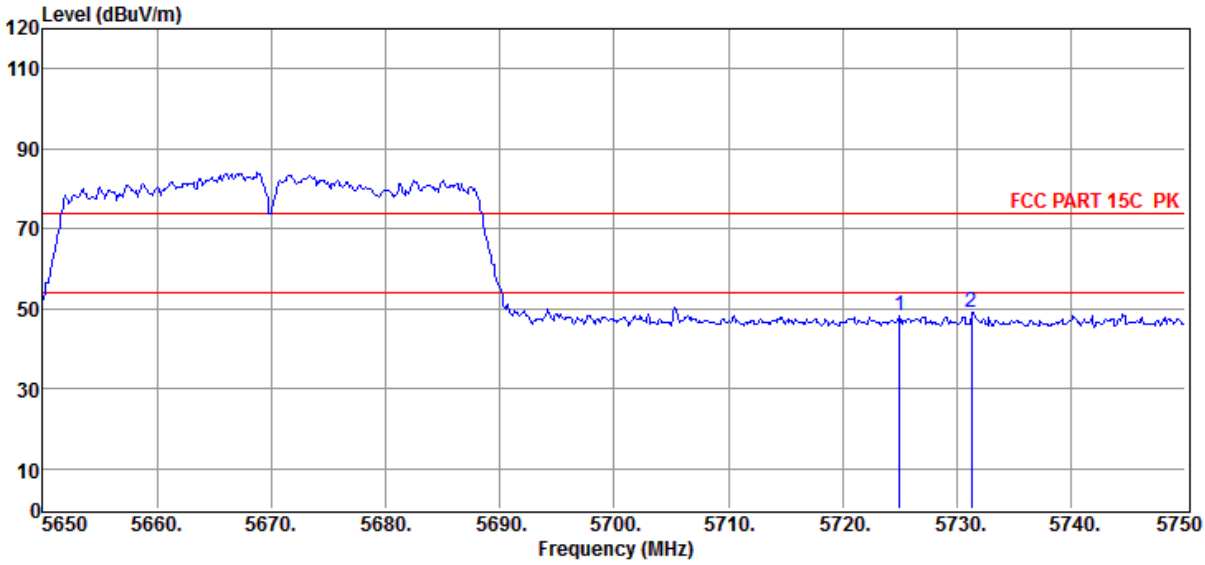
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	49.31	32.92	43.18	6.78	45.83	74.00	-28.17	Peak	HORIZONTAL
2	5736.80	50.83	32.94	43.18	6.79	47.38	74.00	-26.62	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	: DDT 3m Chamber 2#	D:\2020 RE2# Report Data\Q20062801-1E TINGFENG\FCC ABOVE1G 5G - BIANNDAI.EM6	
Test Date	: 2020-08-18	**Tested By**	: Ella
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5°C,Humi:55%,Press:100.1kPa	**Antenna/Distance**	: 2019 BBHA9120D/3m/VERTICAL
Memo	: AC40 5670		

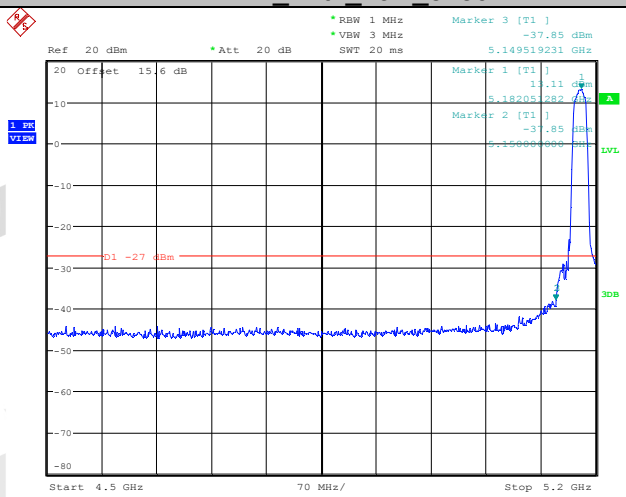
Data: 48



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	5725.00	51.73	32.92	43.18	6.78	48.25	74.00	-25.75	Peak	VERTICAL
2	5731.30	52.39	32.93	43.18	6.78	48.92	74.00	-25.08	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

11A_Ant1_Low_5180



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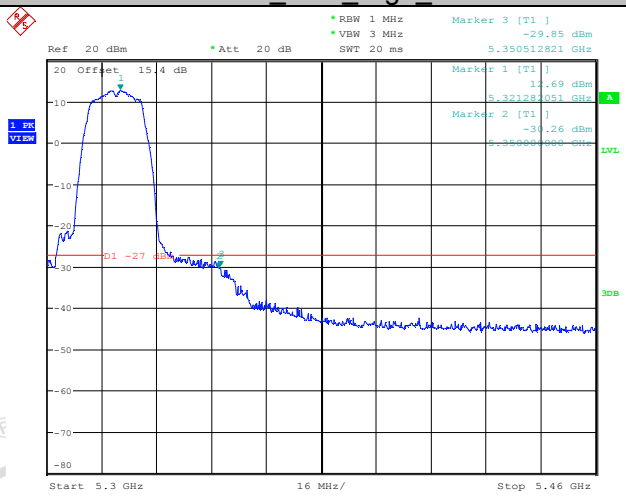
11A_Ant1_High_5320



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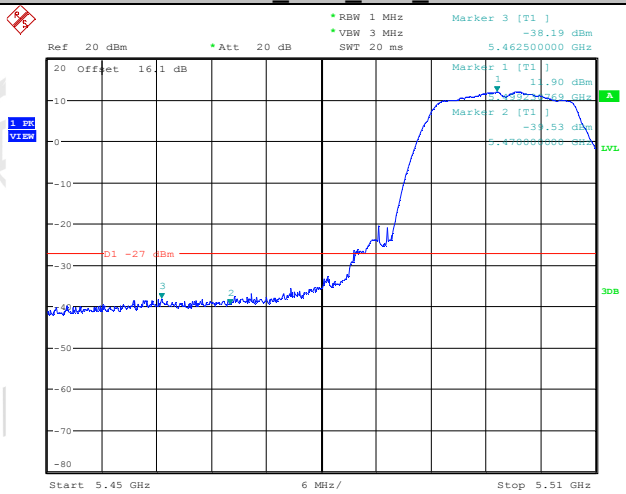
11A_Ant1_Low_5500



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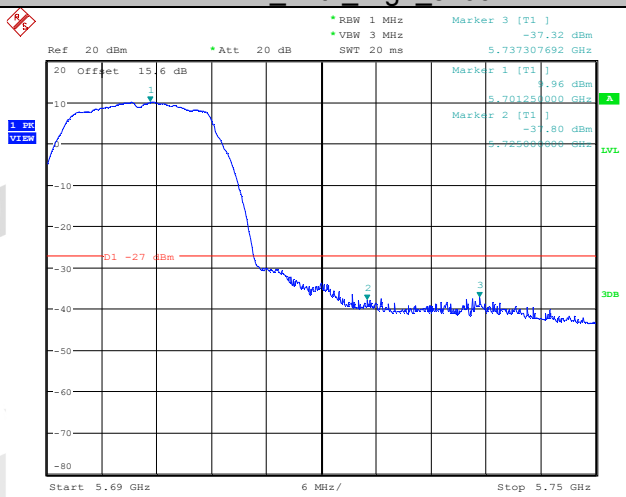
11A_Ant1_High_5700



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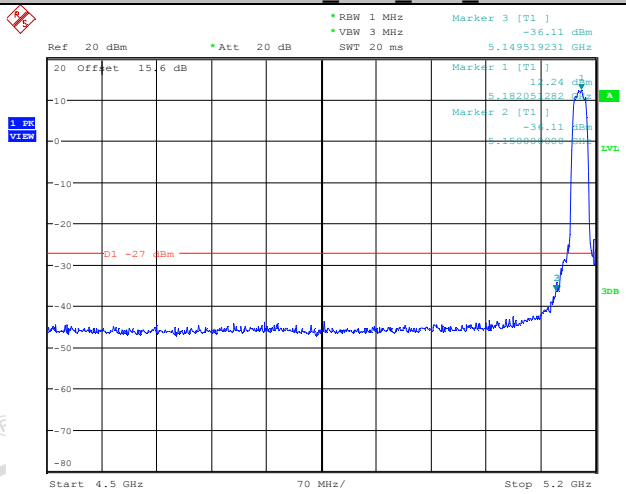
11N20SISO_Ant1_Low_5180



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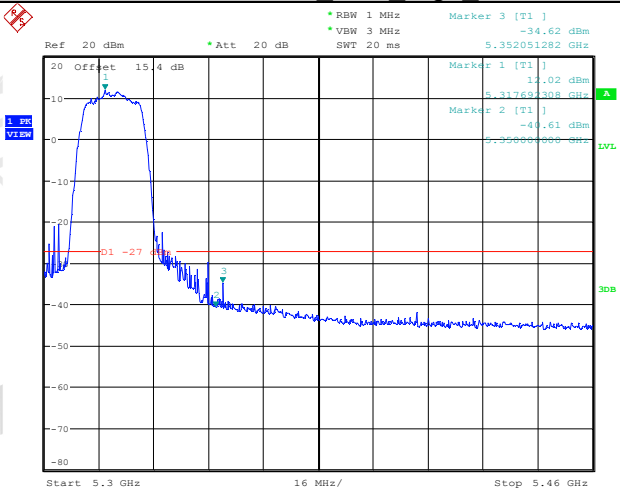

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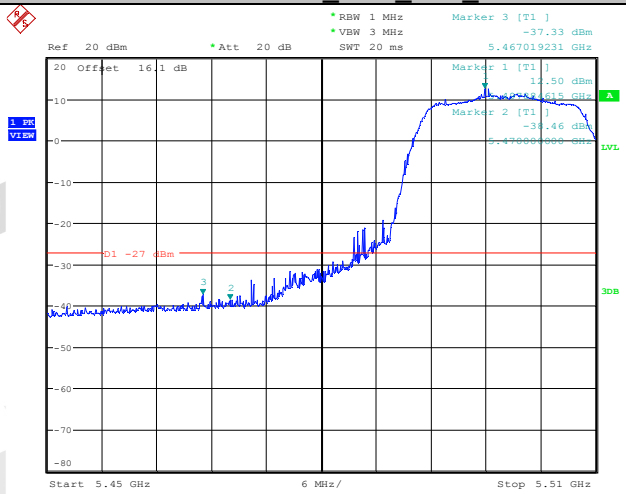

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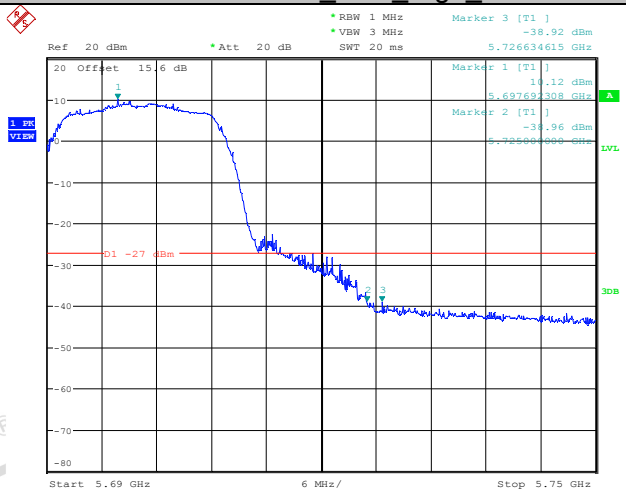
11N20SISO_Ant1_High_5700



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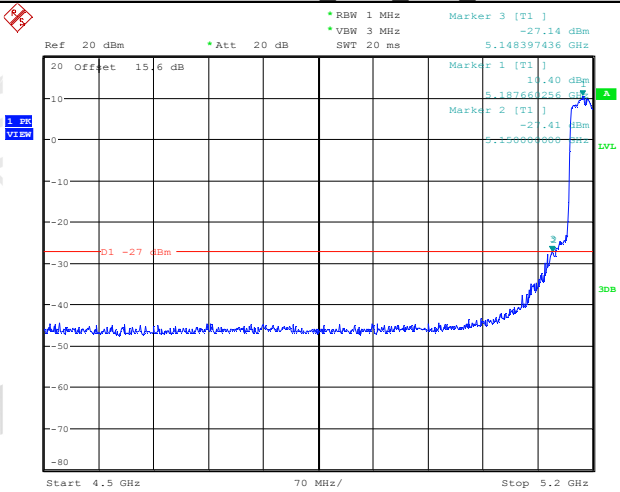
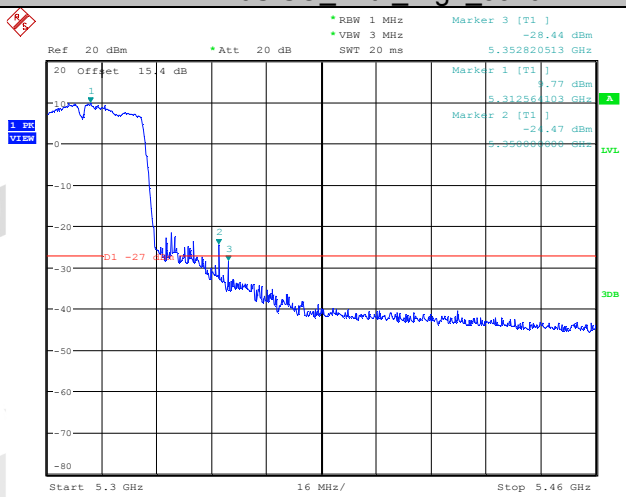


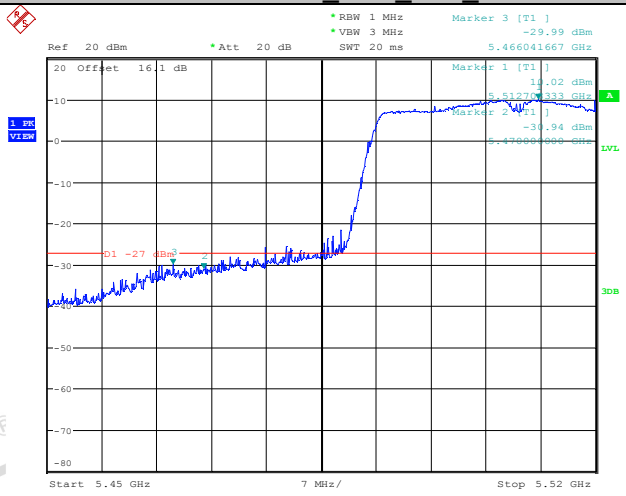
Date: 11.AUG.2020 15:12:12

11N40SISO_Ant1_High_5310



Date: 11.AUG.2020 15:12:49

11N40SISO_Ant1_Low_5510



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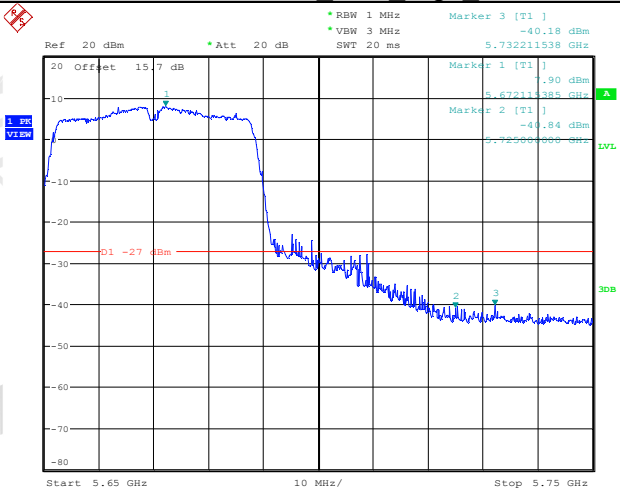
11N40SISO_Ant1_High_5670



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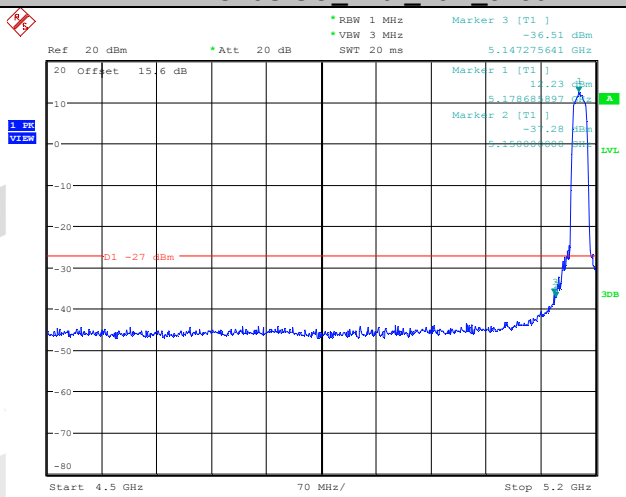
11AC20SISO_Ant1_Low_5180



Date: 11.AUG.2020 14:54:12

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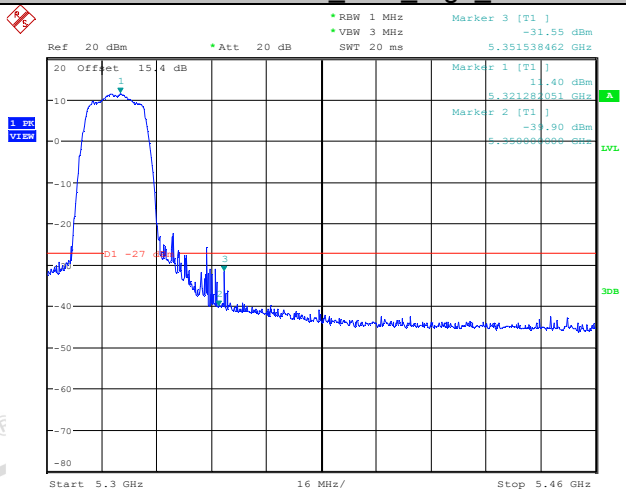

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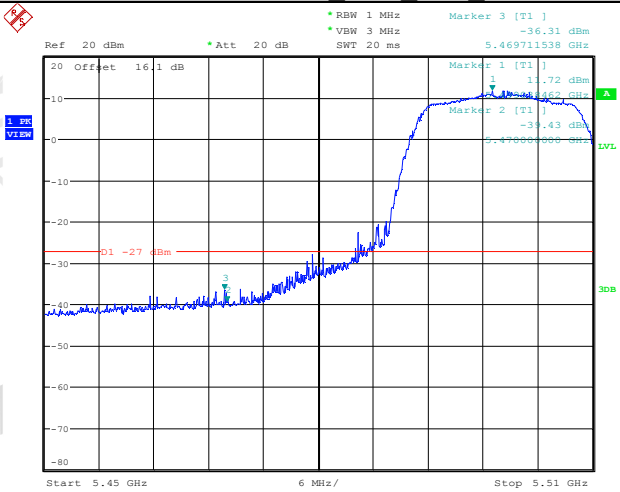

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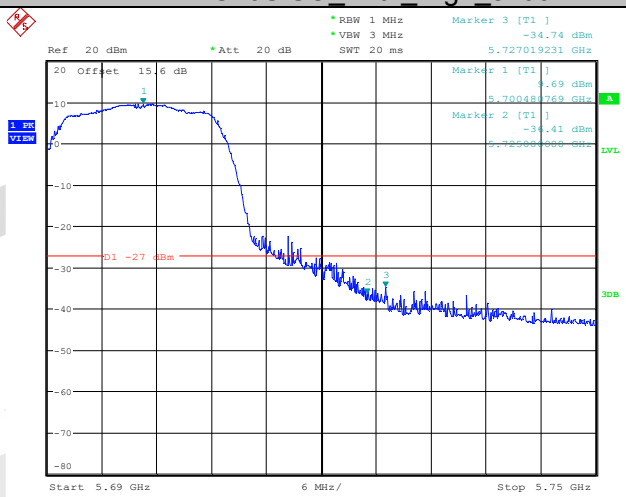
11AC20SISO_Ant1_High_5700



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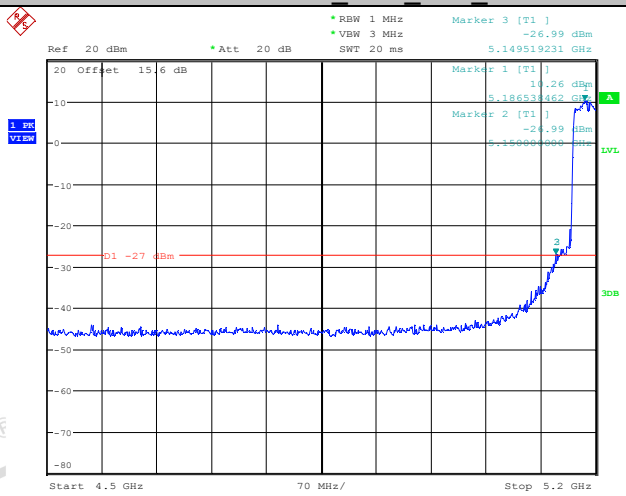

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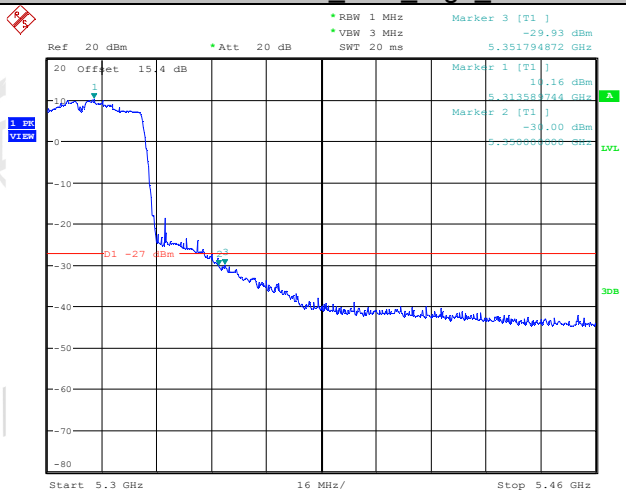

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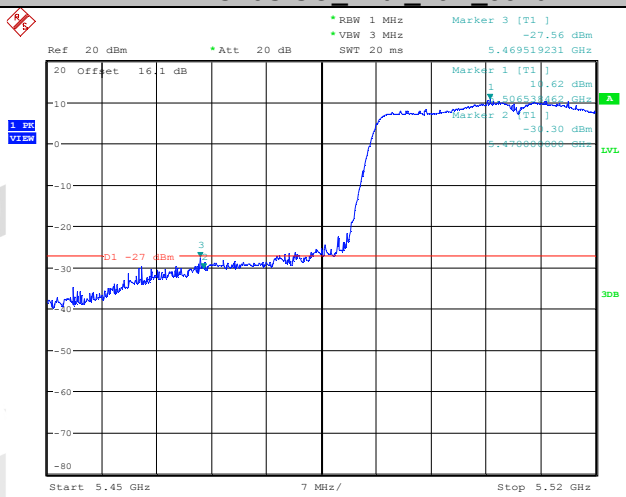

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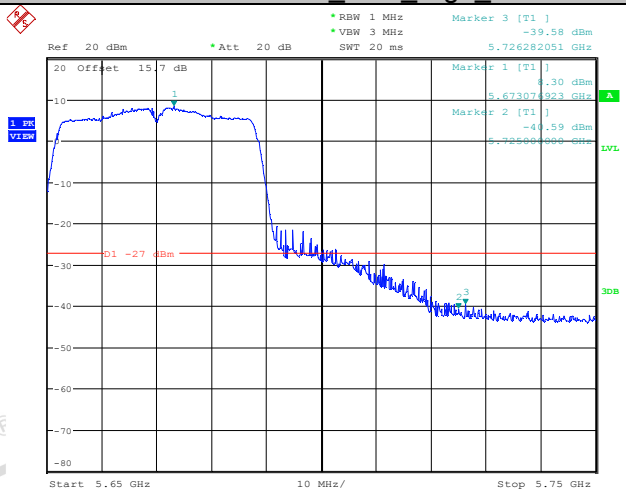
11AC40SISO_Ant1_High_5670



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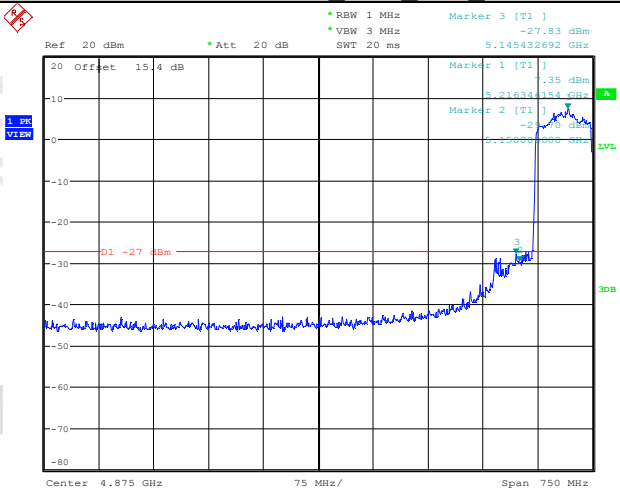

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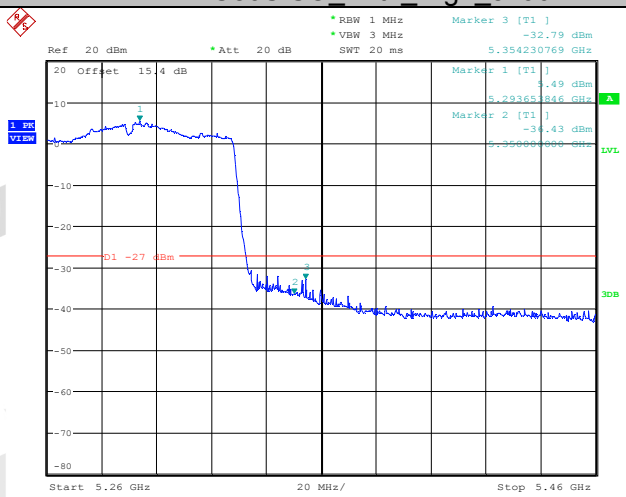

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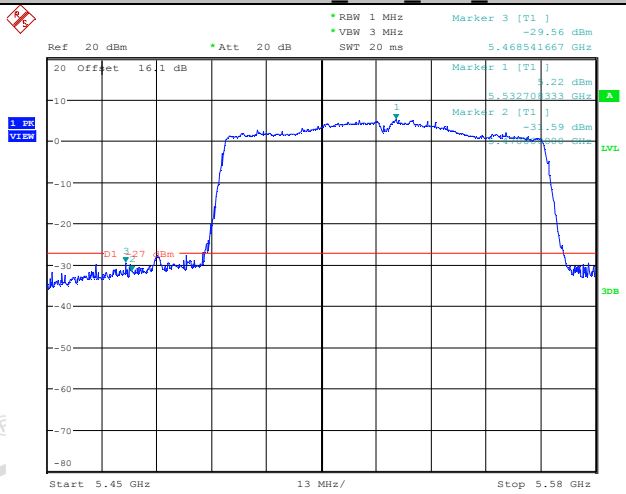
11AC80SISO_Ant1_Low_5530



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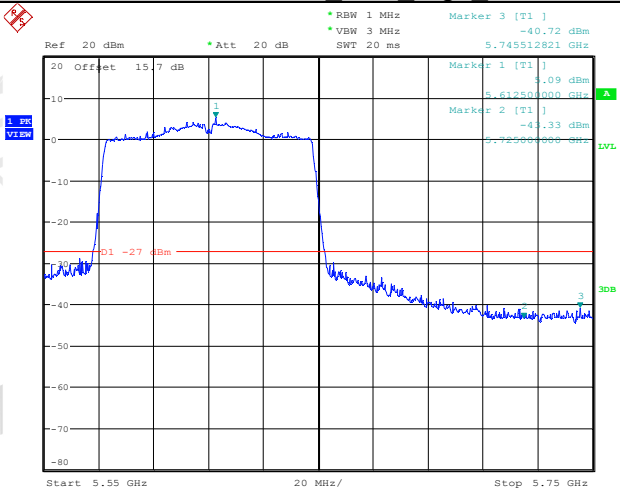

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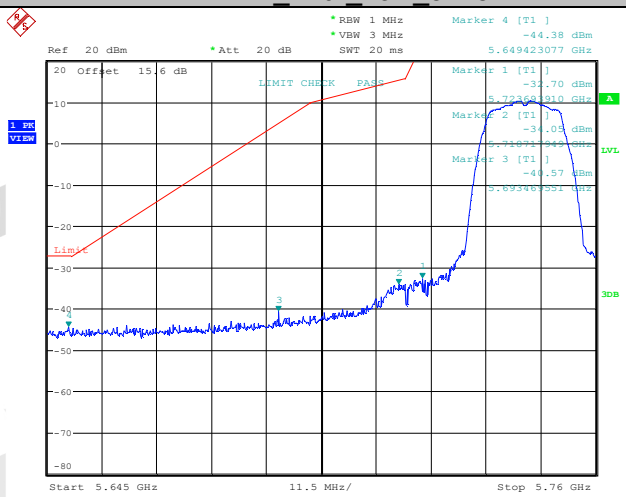
11A_Ant1_Low_5745



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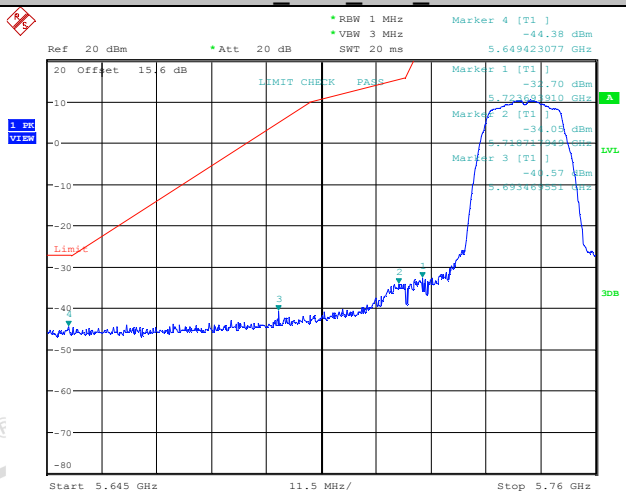

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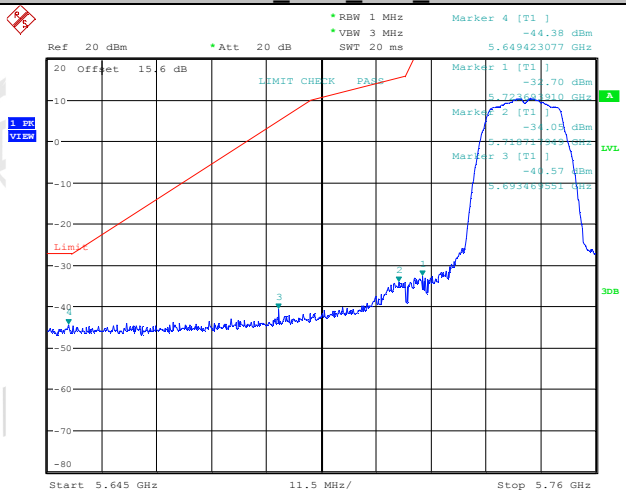

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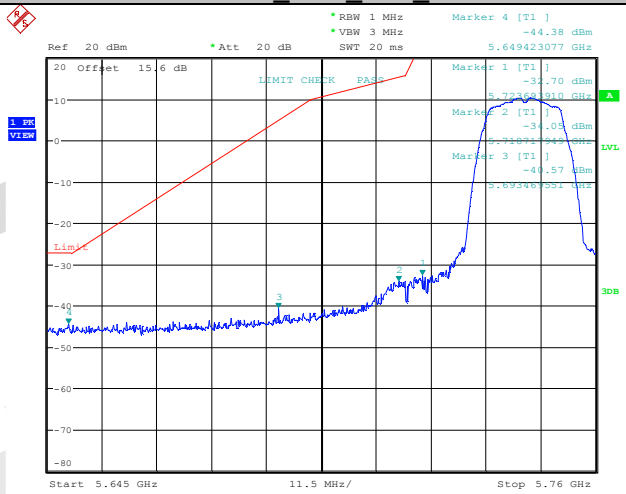

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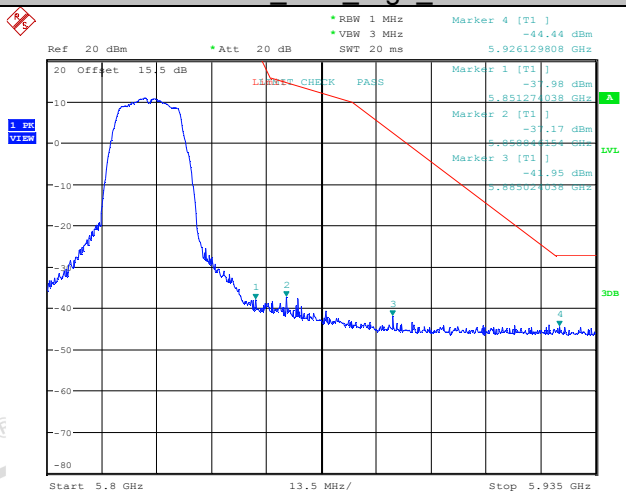

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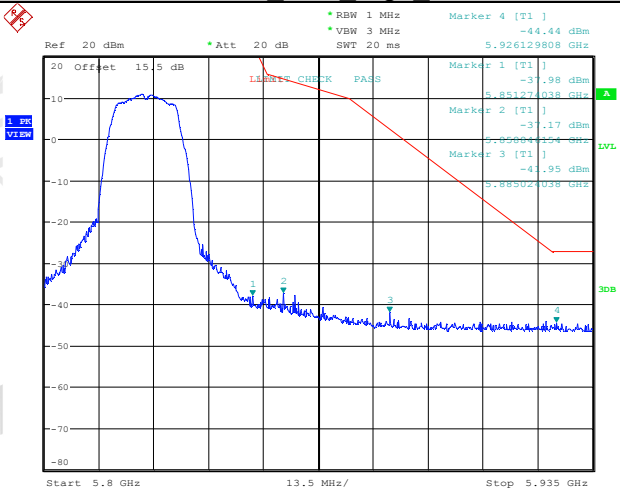

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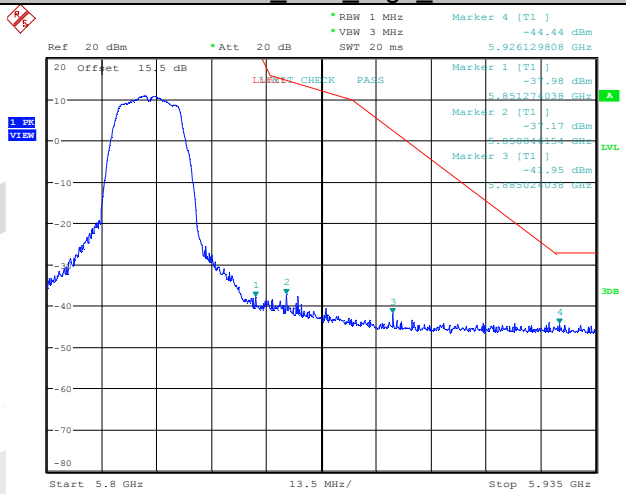

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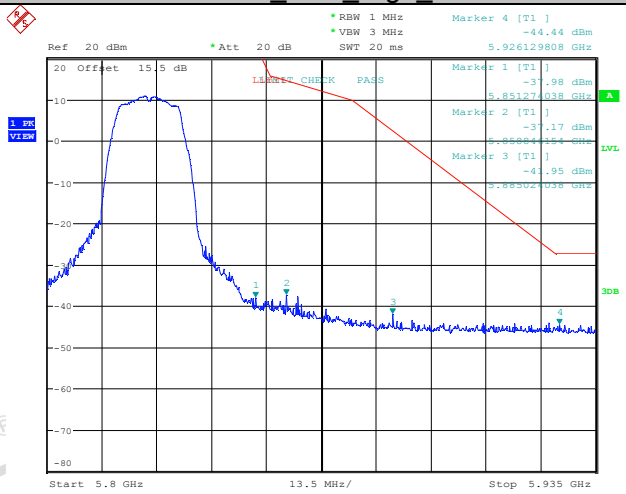

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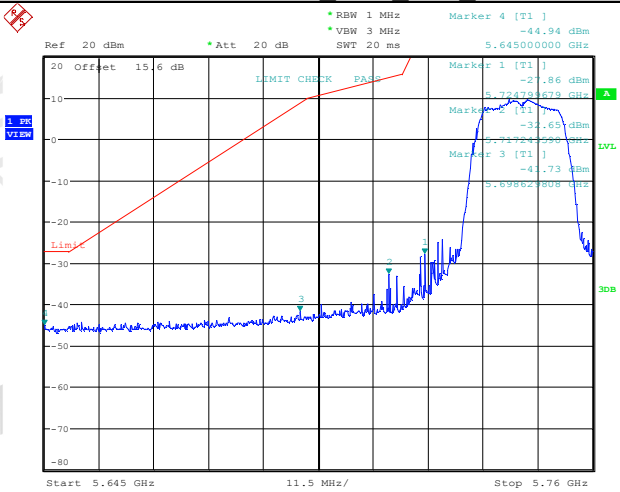

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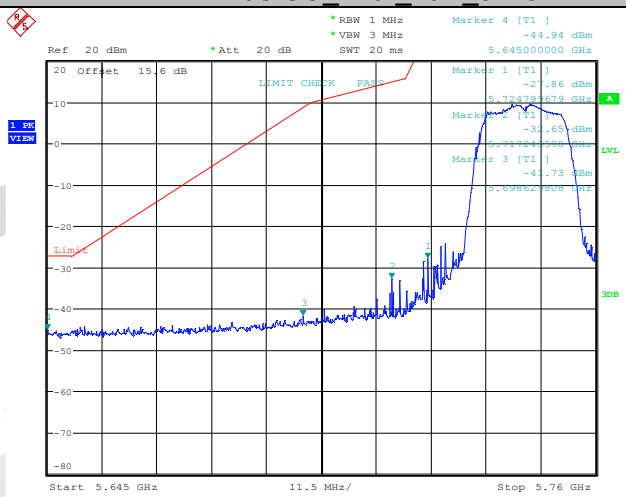

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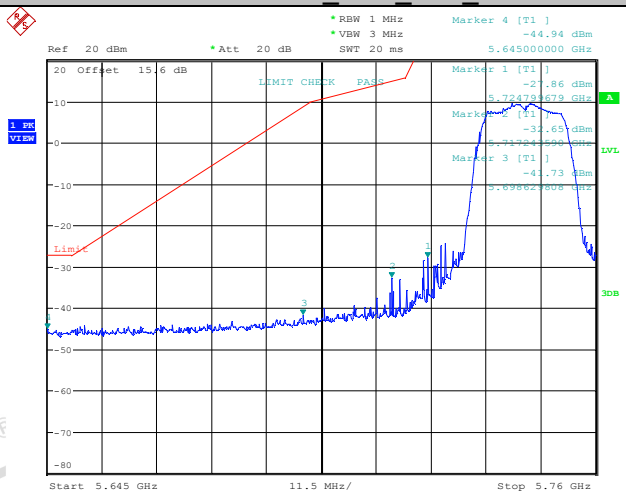

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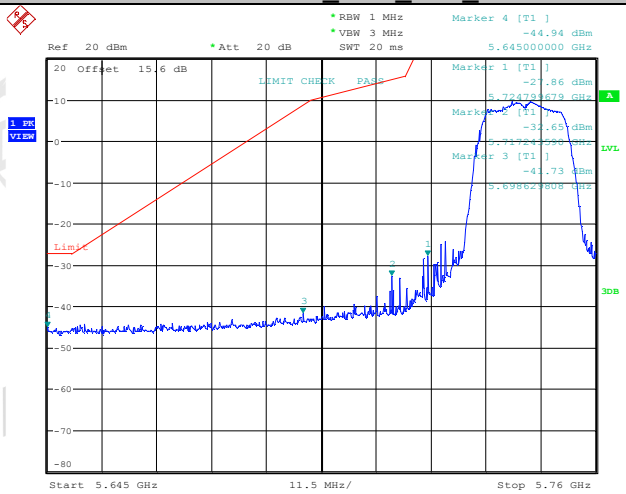

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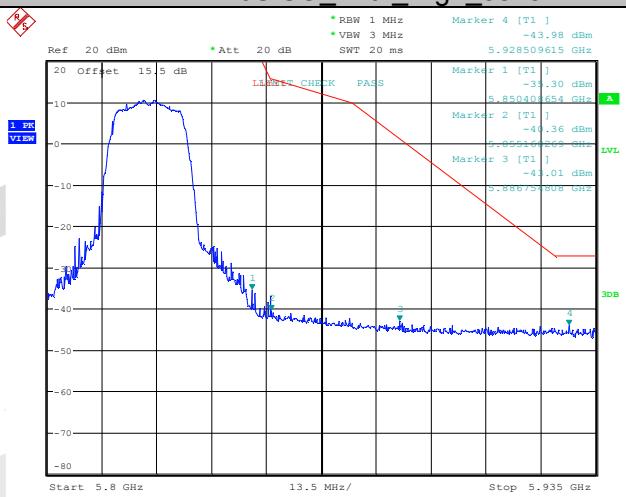

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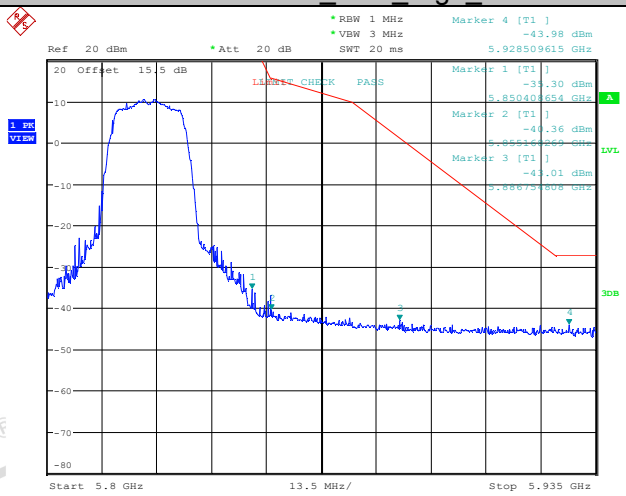

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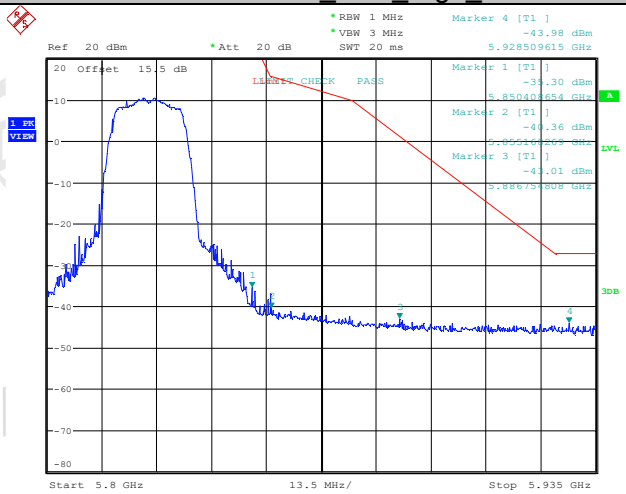

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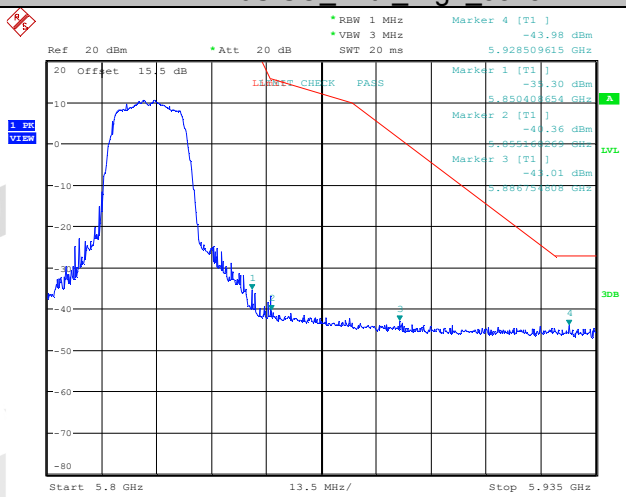

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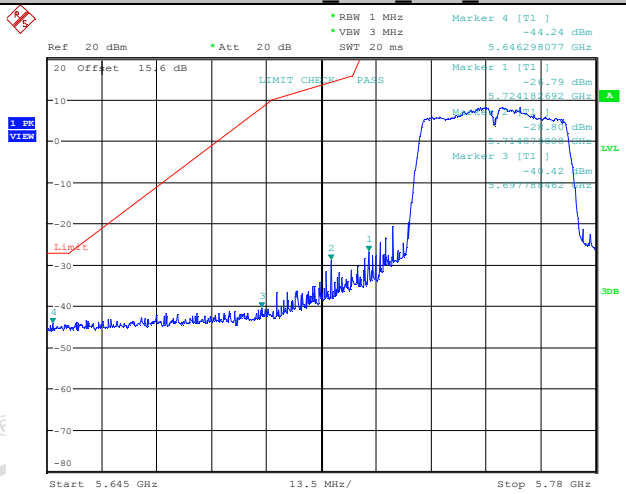
11N40SISO_Ant1_Low_5755



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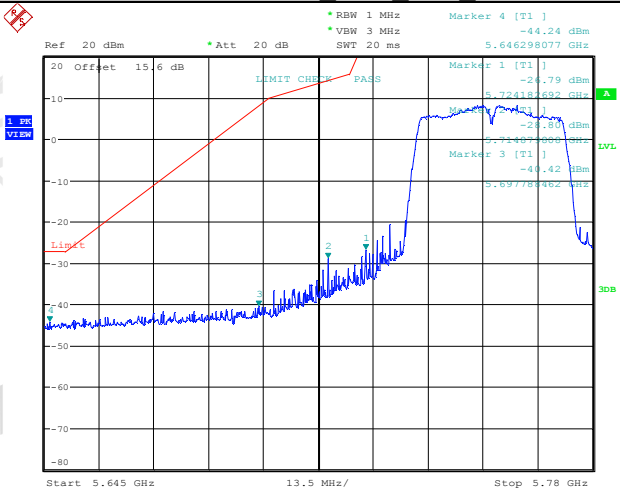

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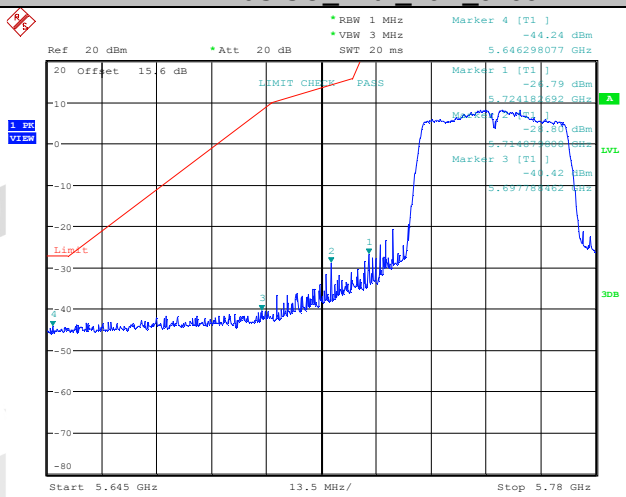

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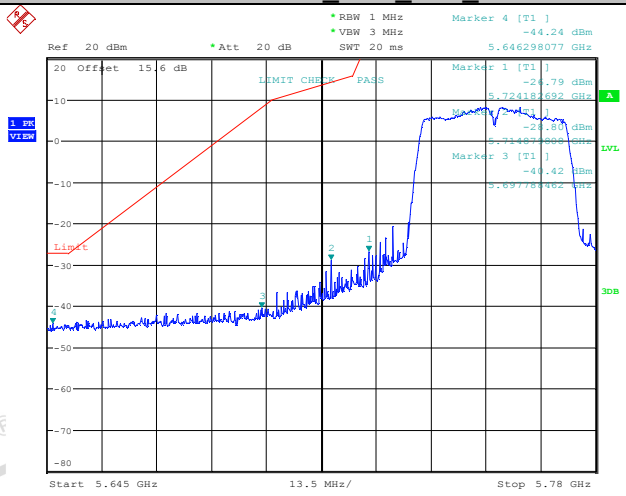

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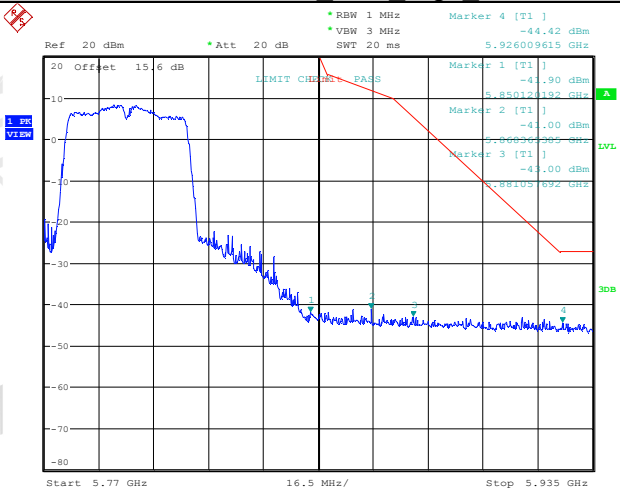

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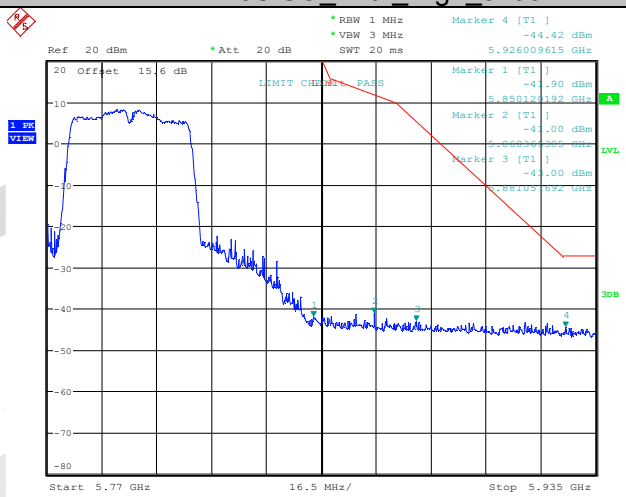

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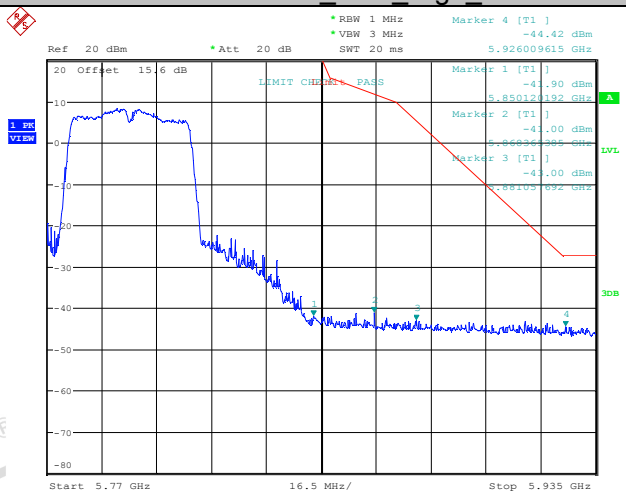

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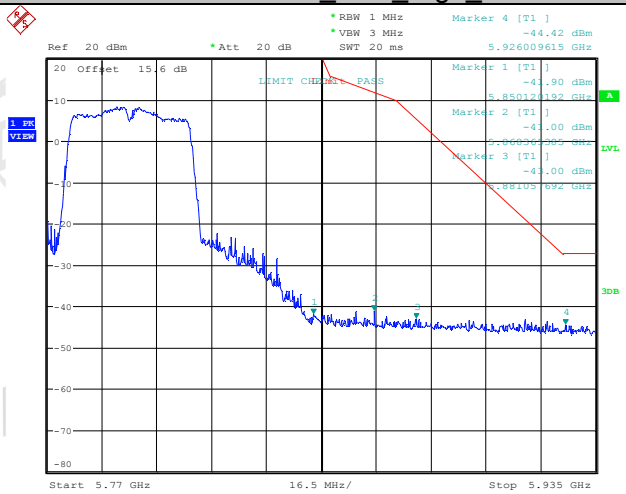

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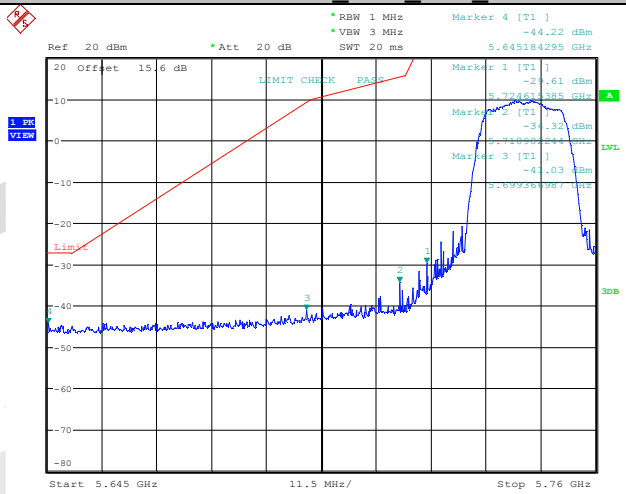

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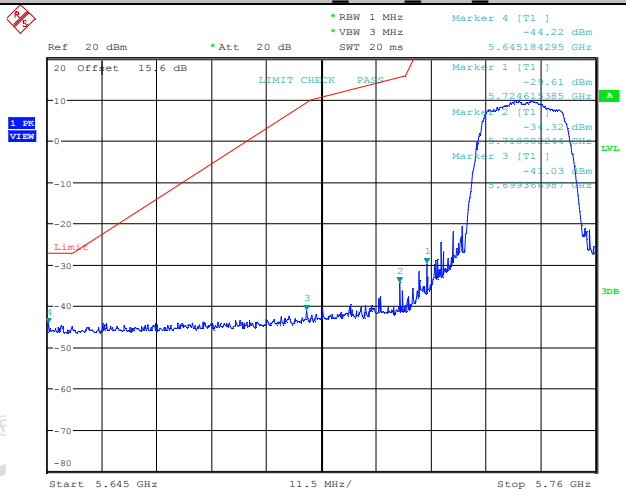
11AC20SISO_Ant1_Low_5745



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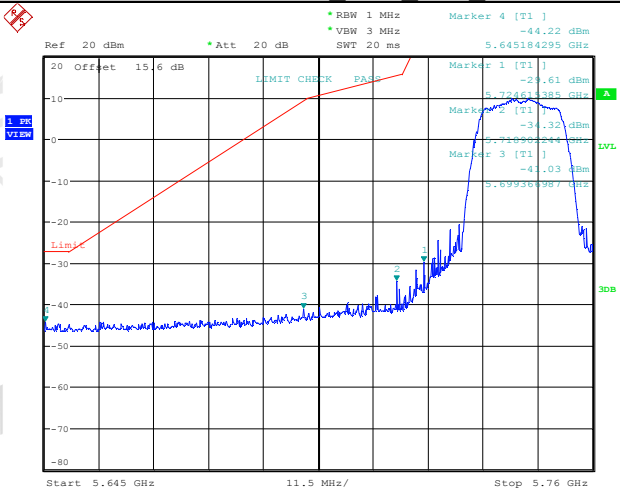

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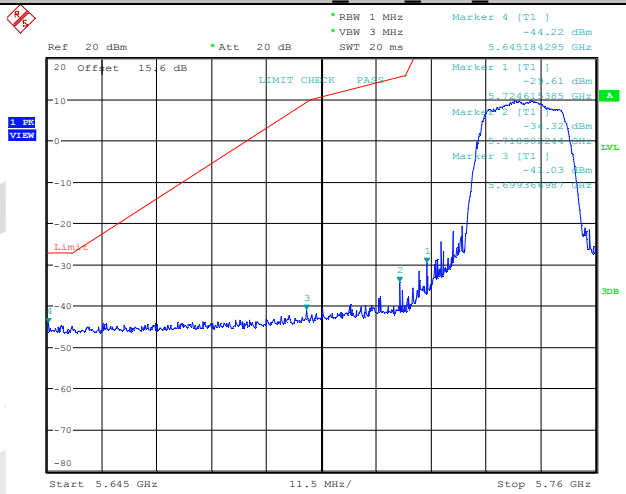

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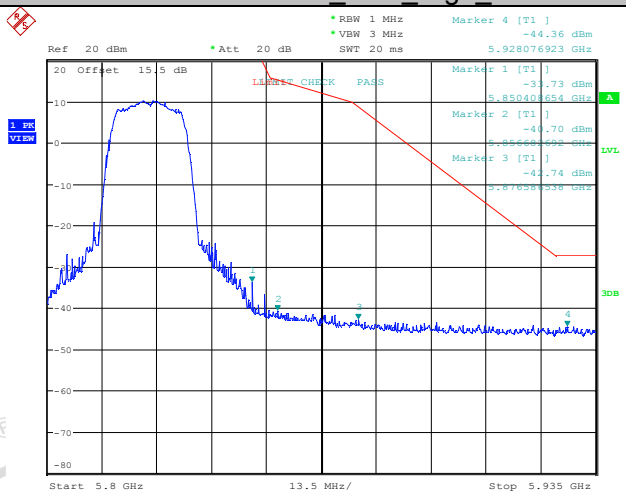
11AC20SISO_Ant1_High_5825



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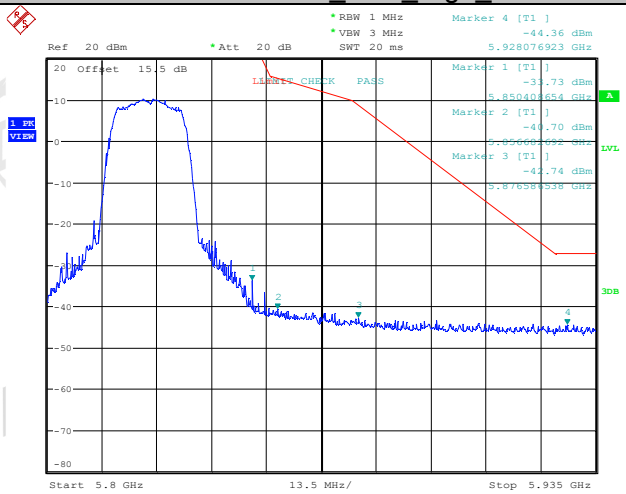

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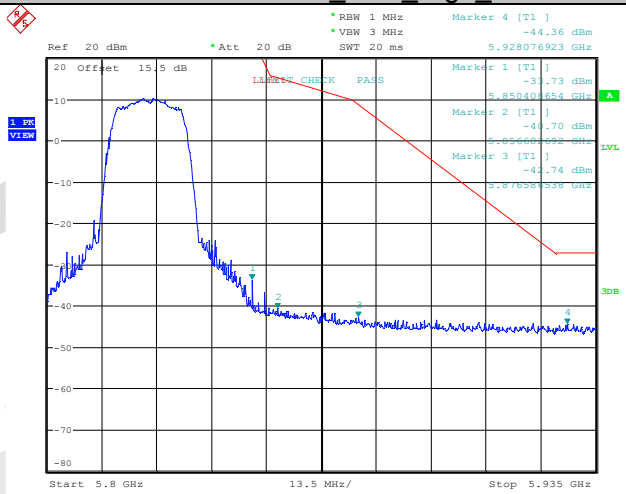

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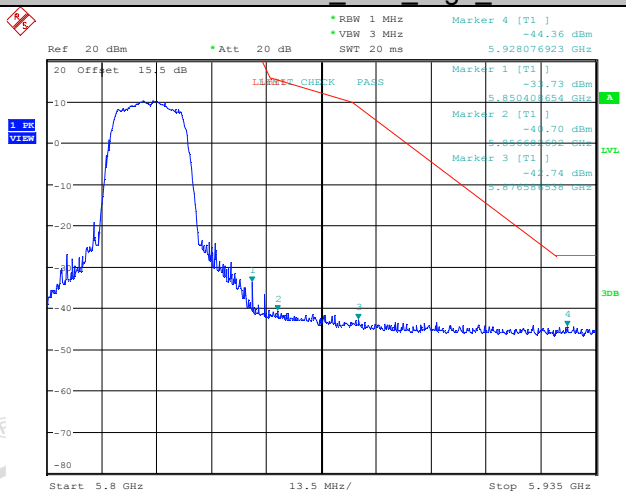

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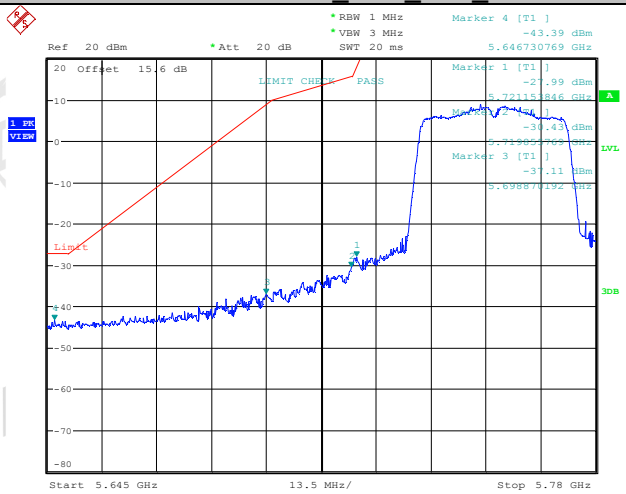
11AC40SISO_Ant1_Low_5755



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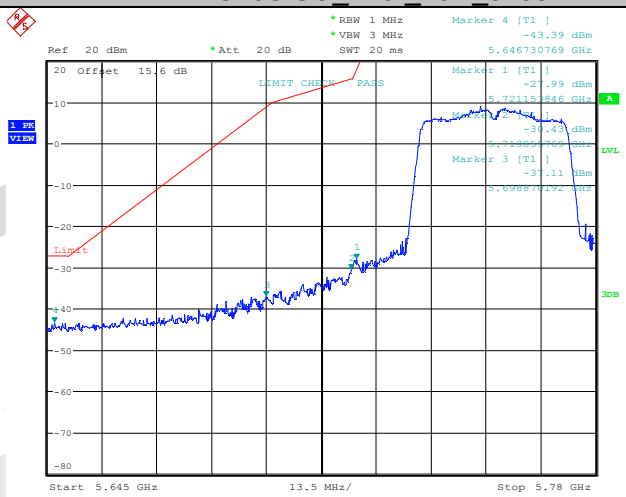

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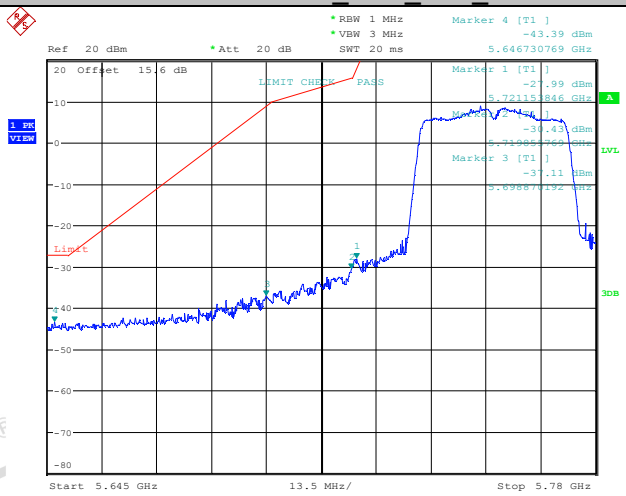

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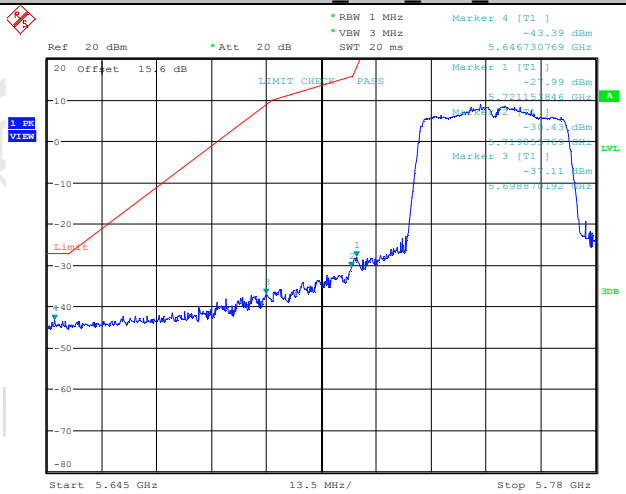

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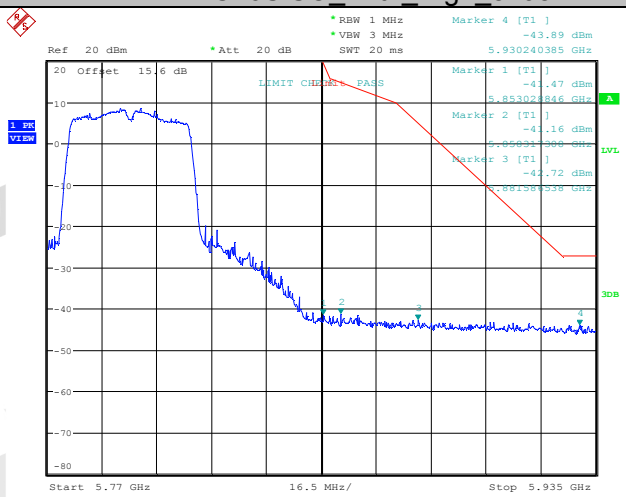

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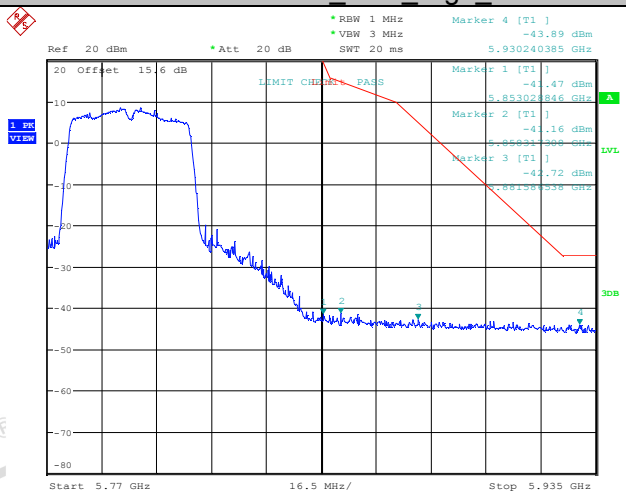

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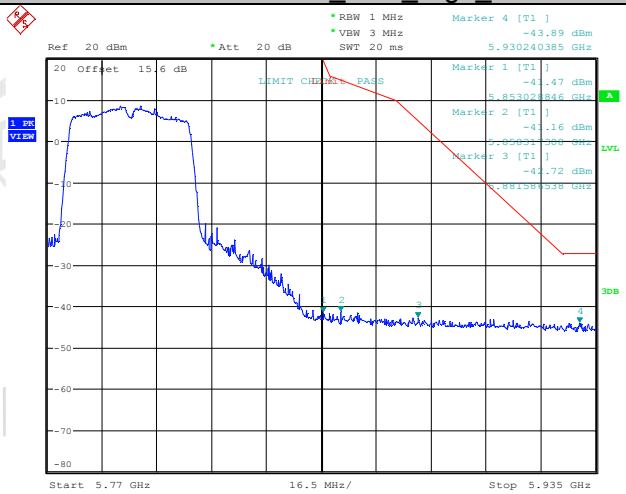

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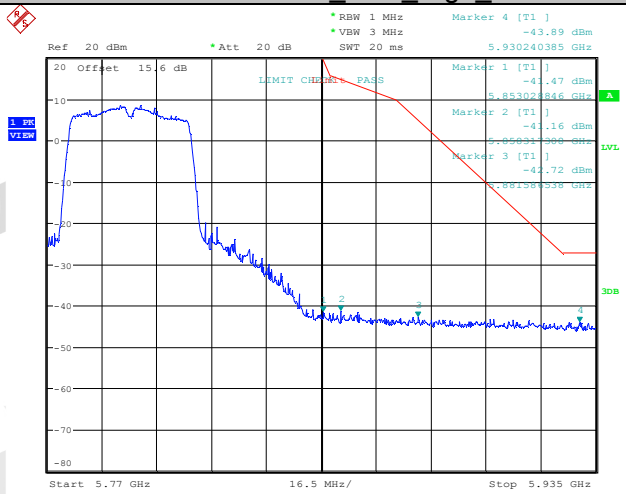

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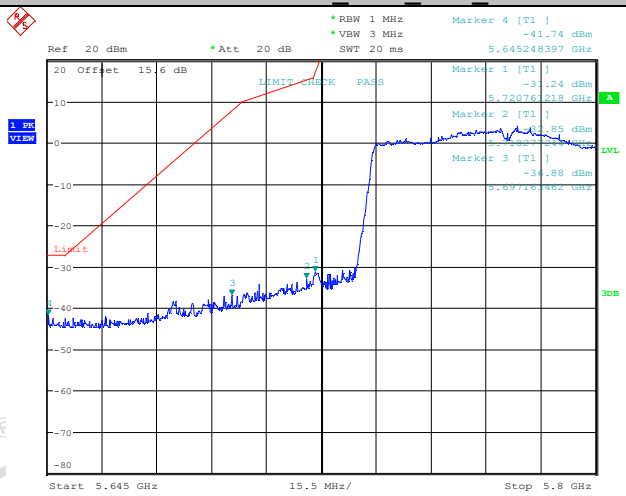

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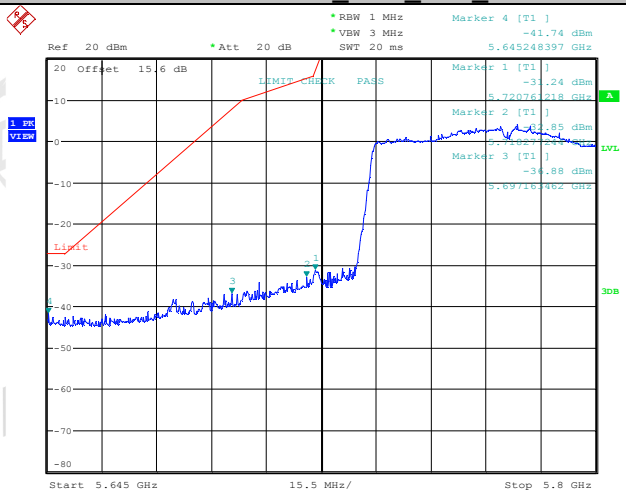

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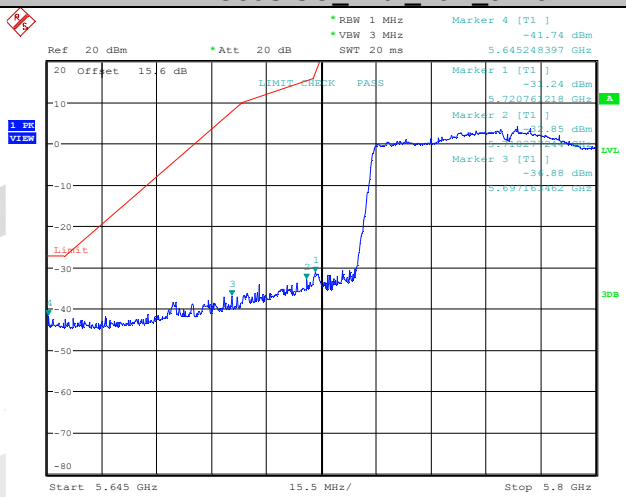

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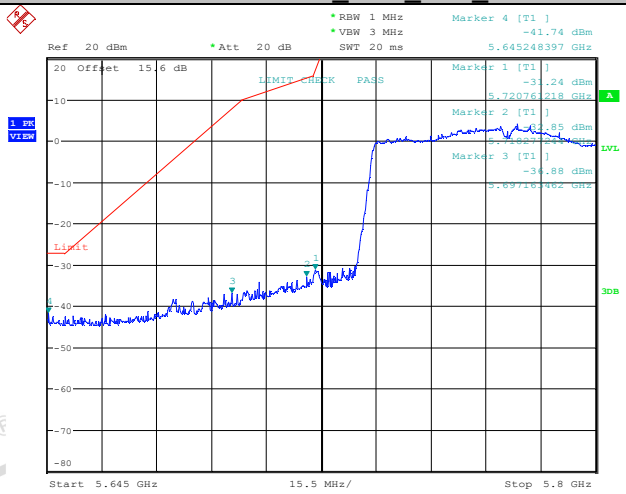

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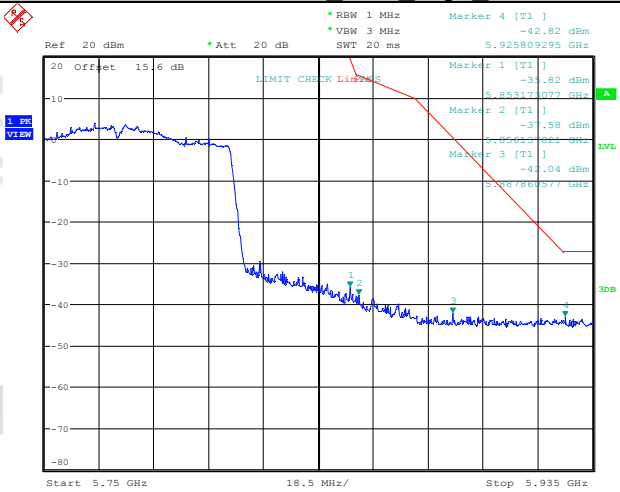

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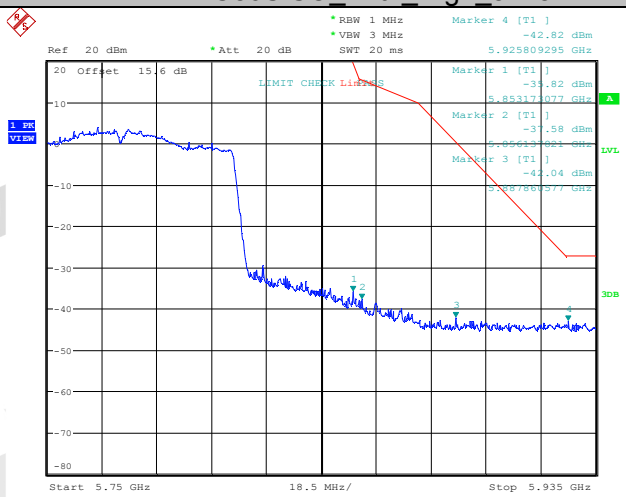

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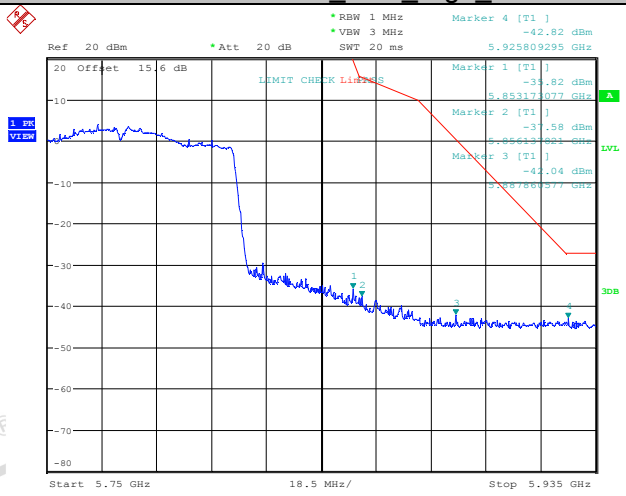

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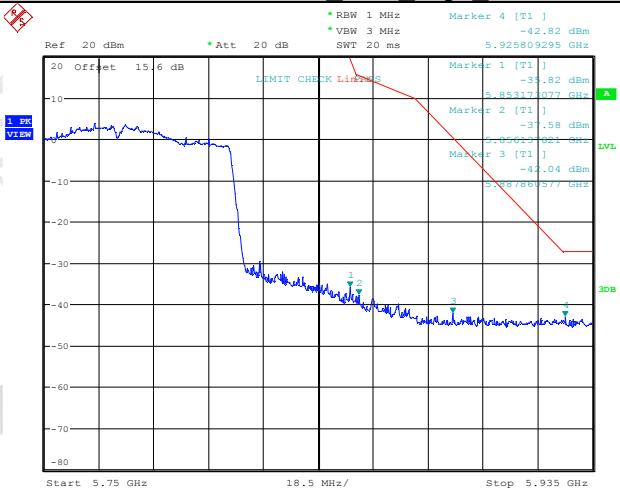
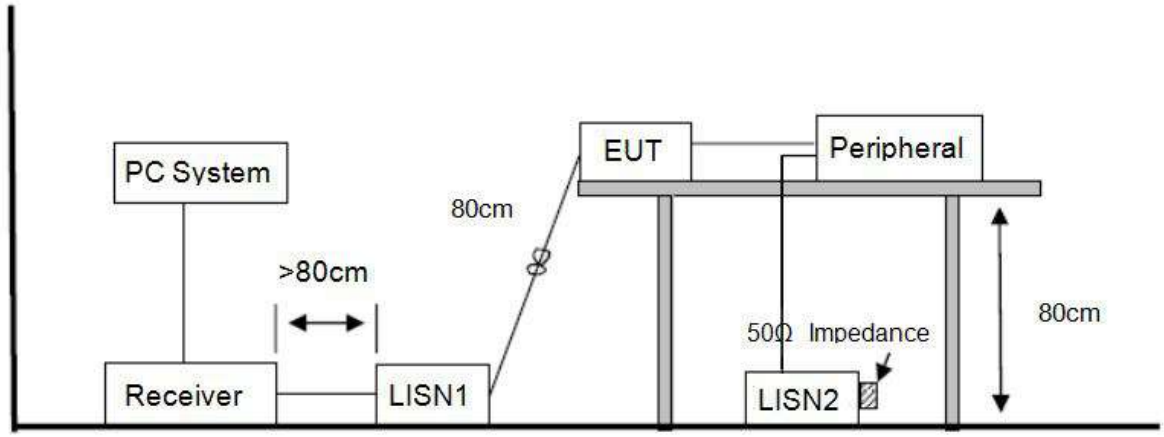


Date: 11.AUG.2020 15:37:14

10. Power Line Conducted Emission

10.1. Block diagram of test setup



10.2. Power line conducted emission limits (Class B)

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150 kHz ~ 500 kHz	66 ~ 56*	56 ~ 46*
500 kHz ~ 5 MHz	56	46
5 MHz ~ 30 MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

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

10.3. Test procedure

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

Configuration EUT to simulate typical usage as described in clause 2.3 and test equipment as described in clause 10.2 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

All support equipment power received from a second LISN.

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

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

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

The test mode(s) described in clause 2.3 were scanned during the preliminary test.

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

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.
EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

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

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

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

The bandwidth of test receiver is set at 9 kHz.

10.4. Test result

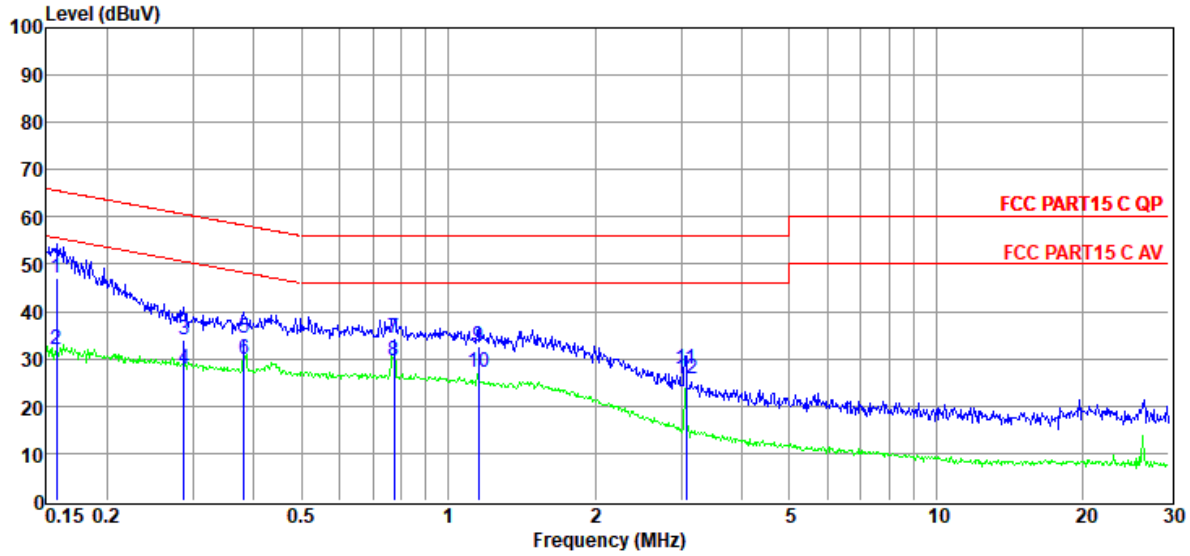
PASS. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.
Note2: "-----" means peak detection; "-----" means average detection
Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded worse case.

TR-4-E-010 Conducted Emission Test Result

Test Site	: DDT 5# Shield Room	D:\2020 report data\Q20062801-1E\FCC.EM6	
Test Date	: 2020-08-05	**Tested By**	: Vic Xie
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5'C,Humi:55.5%,Press:100.1kPa	**LISN**	: 2019 ENV216 2#/NEUTRAL
Memo	:		

Data: 22



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.16	28.05	9.60	-0.44	10.01	47.22	65.60	-18.38	QP	NEUTRAL
2	0.16	12.80	9.60	-0.44	10.01	31.97	55.60	-23.63	Average	NEUTRAL
3	0.29	14.45	9.60	-0.11	10.01	33.95	60.59	-26.64	QP	NEUTRAL
4	0.29	8.47	9.60	-0.11	10.01	27.97	50.59	-22.62	Average	NEUTRAL
5	0.38	14.98	9.60	-0.10	10.01	34.49	58.25	-23.76	QP	NEUTRAL
6	0.38	10.34	9.60	-0.10	10.01	29.85	48.25	-18.40	Average	NEUTRAL
7	0.78	14.83	9.60	-0.09	10.01	34.35	56.00	-21.65	QP	NEUTRAL
8	0.78	10.06	9.60	-0.09	10.01	29.58	46.00	-16.42	Average	NEUTRAL
9	1.15	12.91	9.60	-0.03	10.01	32.49	56.00	-23.51	QP	NEUTRAL
10	1.15	7.69	9.60	-0.03	10.01	27.27	46.00	-18.73	Average	NEUTRAL
11	3.07	7.85	9.60	0.35	10.01	27.81	56.00	-28.19	QP	NEUTRAL
12	3.07	5.80	9.60	0.35	10.01	25.76	46.00	-20.24	Average	NEUTRAL

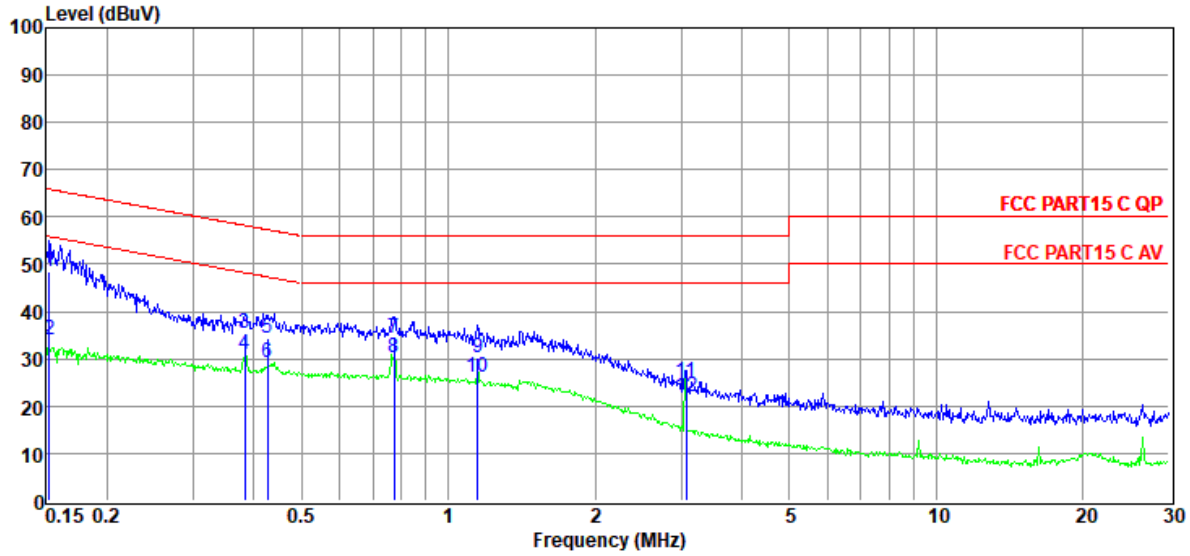
Note:

1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site	: DDT 5# Shield Room	D:\2020 report data\Q20062801-1E\FCC.EM6	
Test Date	: 2020-08-05	**Tested By**	: Vic Xie
EUT	: EFLamp Prelude d (Smart Speaker Lamp)	**Model Number**	: EF-IL-D1
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode
Condition	: Temp:24.5'C,Humi:55.5%,Press:100.1kPa	**LISN**	: 2019 ENV216 2#/LINE
Memo	:		

Data: 24



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.15	29.28	9.60	-0.48	10.01	48.41	65.87	-17.46	QP	LINE
2	0.15	14.81	9.60	-0.48	10.01	33.94	55.87	-21.93	Average	LINE
3	0.38	15.73	9.60	-0.10	10.01	35.24	58.21	-22.97	QP	LINE
4	0.38	11.35	9.60	-0.10	10.01	30.86	48.21	-17.35	Average	LINE
5	0.43	14.88	9.60	-0.10	10.01	34.39	57.33	-22.94	QP	LINE
6	0.43	9.75	9.60	-0.10	10.01	29.26	47.33	-18.07	Average	LINE
7	0.78	14.83	9.60	-0.09	10.01	34.35	56.00	-21.65	QP	LINE
8	0.78	10.70	9.60	-0.09	10.01	30.22	46.00	-15.78	Average	LINE
9	1.15	10.79	9.60	-0.03	10.01	30.37	56.00	-25.63	QP	LINE
10	1.15	6.62	9.60	-0.03	10.01	26.20	46.00	-19.80	Average	LINE
11	3.07	5.21	9.60	0.35	10.01	25.17	56.00	-30.83	QP	LINE
12	3.07	2.19	9.60	0.35	10.01	22.15	46.00	-23.85	Average	LINE

Note:

1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

11. Antenna Requirements

11.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.407 (a), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

11.2. Result

The antenna used for this product is Dedicated FPCB antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain is 2.89 dBi.

12. Dynamic Frequency Selection

12.1. Applicability of DFS requirements

Table 1: Applicability of DFS Requirements Prior to Use of a Channel

Requirement	Operational Mode		
	☐Master	☒Client Without Radar Detection	☐Client with Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	☐Master Device or Client with Radar Detection	☒Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	☐Master Device or Client with Radar Detection	☒Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

12.2. Limit

(1) DFS Detection Thresholds

Table 3: DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

(2) DFS Response Requirements

Table 4: DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required facilitating a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions. Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

12.3. Parameters of radar test waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{\text{PRI}_{\mu\text{sec}}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 µsec, with a minimum increment of 1 µsec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30

Table 6 – Long Pulse Radar Test Waveform

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per *Burst*	Number of *Bursts*	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 7 – Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B. Test aggregate is average of the percentage of successful detections of short pulse radar types 1-4

12.4. Calibration of radar waveform

Radar Waveform Calibration Procedure:

(1) A 50 ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to place of the master

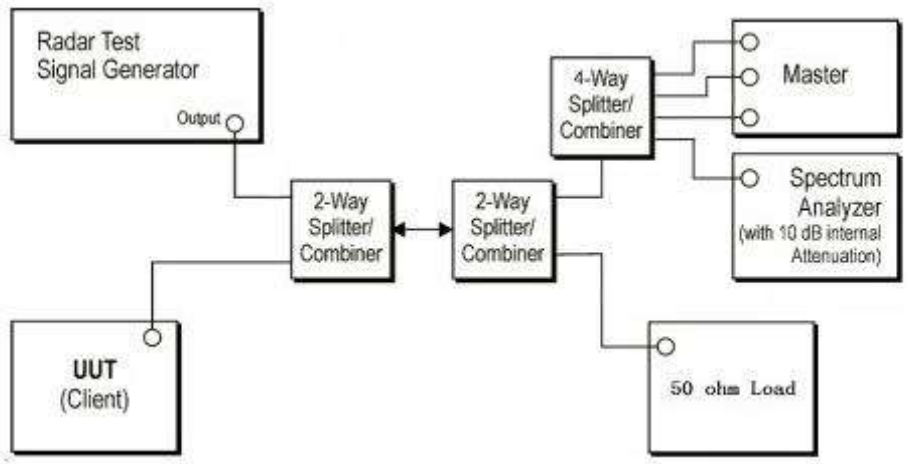
(2) The interference Radar Detection Threshold Level is -62 dBm + 0 dBi +1 dB = -61 dBm that

had been taken into account the output power range and antenna gain.

(3) The following equipment setup was used to calibrate the conducted radar waveform. A vector signal generator was utilized to establish the test signal level for radar type 0. During this process there were no transmissions by either the master or client device.The spectrum analyzer was switched to the zero spans (time domain) at the frequency of the radar waveform generator. Peak detection was used. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3 MHz. The spectrum analyzer had offset -1.0 dB to compensate RF cable loss 1.0 dB.

(4) The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was - -62 dBm + 0 dBi +1 dB = -61 dBm. Capture the spectrum analyzer plots on short pulse radar waveform.

Conducted Calibration Setup:

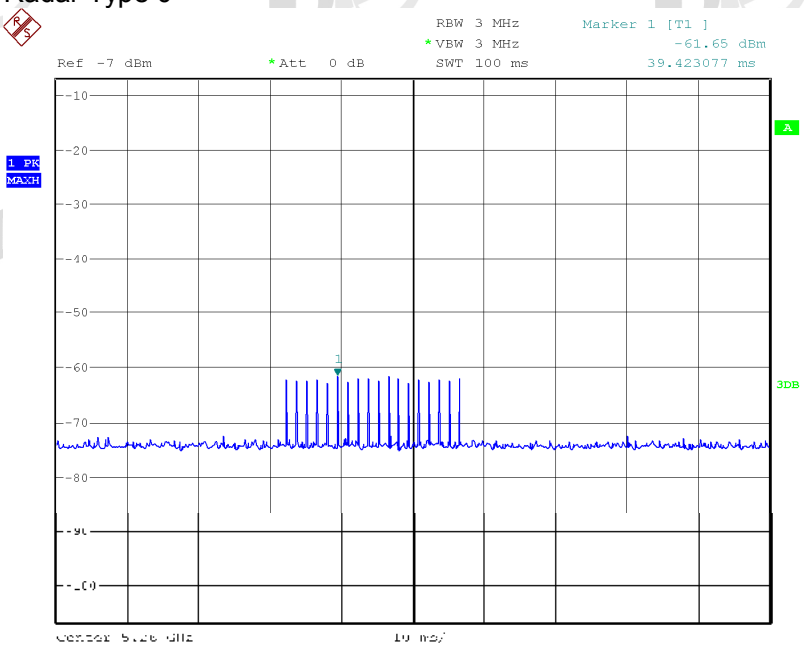


Note: 1. Use the software "Web" to set the frequency channel.

2. EUT is not support TPC and not with Radar detection.

Radar Waveform Calibration Result:

Radar Type 0



Trial List Table - FCC-13-22

Save Load Trigger Download All

Sample Rate 10 MHz

Trial List

	Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
Download	0	Type 0	1.0	1428.0	18	25704.0
Download	1	Type 0	1.0	1428.0	18	25704.0
Download	2	Type 0	1.0	1428.0	18	25704.0
Download	3	Type 0	1.0	1428.0	18	25704.0
Download	4	Type 0	1.0	1428.0	18	25704.0
Download	5	Type 0	1.0	1428.0	18	25704.0
Download	6	Type 0	1.0	1428.0	18	25704.0
Download	7	Type 0	1.0	1428.0	18	25704.0
Download	8	Type 0	1.0	1428.0	18	25704.0
Download	9	Type 0	1.0	1428.0	18	25704.0
Download	10	Type 0	1.0	1428.0	18	25704.0
Download	11	Type 0	1.0	1428.0	18	25704.0
Download	12	Type 0	1.0	1428.0	18	25704.0
Download	13	Type 0	1.0	1428.0	18	25704.0
Download	14	Type 0	1.0	1428.0	18	25704.0
Download	15	Type 0	1.0	1428.0	18	25704.0
Download	16	Type 0	1.0	1428.0	18	25704.0
Download	17	Type 0	1.0	1428.0	18	25704.0
Download	18	Type 0	1.0	1428.0	18	25704.0
Download	19	Type 0	1.0	1428.0	18	25704.0
Download	20	Type 0	1.0	1428.0	18	25704.0
Download	21	Type 0	1.0	1428.0	18	25704.0
Download	22	Type 0	1.0	1428.0	18	25704.0
Download	23	Type 0	1.0	1428.0	18	25704.0
Download	24	Type 0	1.0	1428.0	18	25704.0
Download	25	Type 0	1.0	1428.0	18	25704.0
Download	26	Type 0	1.0	1428.0	18	25704.0
Download	27	Type 0	1.0	1428.0	18	25704.0

12.5. Channel closing transmission time, channel move time and non-occupancy period

Block diagram of test setup Test Procedure:

(1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428 us PRI is used for the testing.

(2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61 dBm at the antenna port of the master device.

(3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.

(4) EUT will associate with the master at channel. The file “iperf.exe” specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Test Software in order to properly load the network for the entire period of the test.

(5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.

(6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.

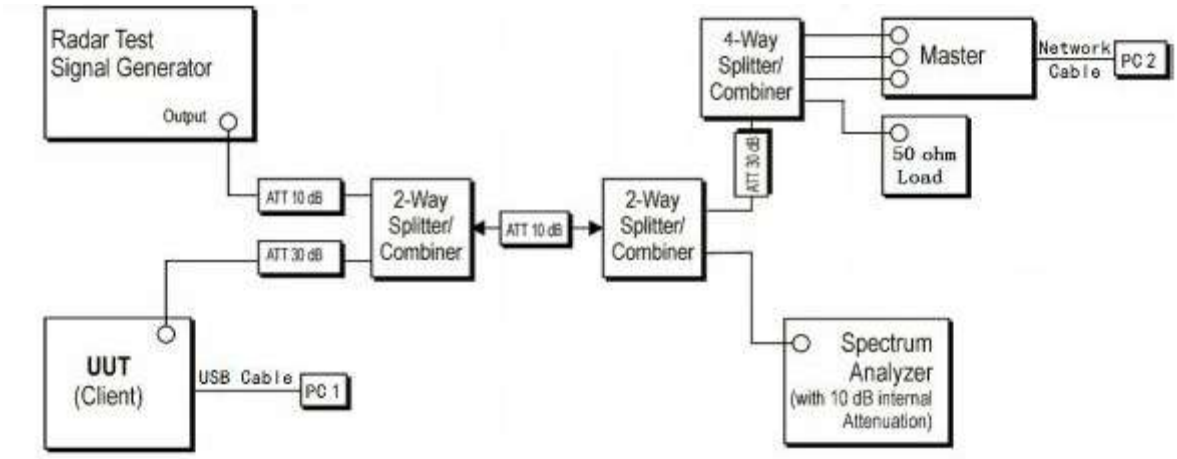
(7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the

(8) spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3 ms) =S (12000 ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3 ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.

Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

12.6. Test setup

Setup for Client with injection at the Master

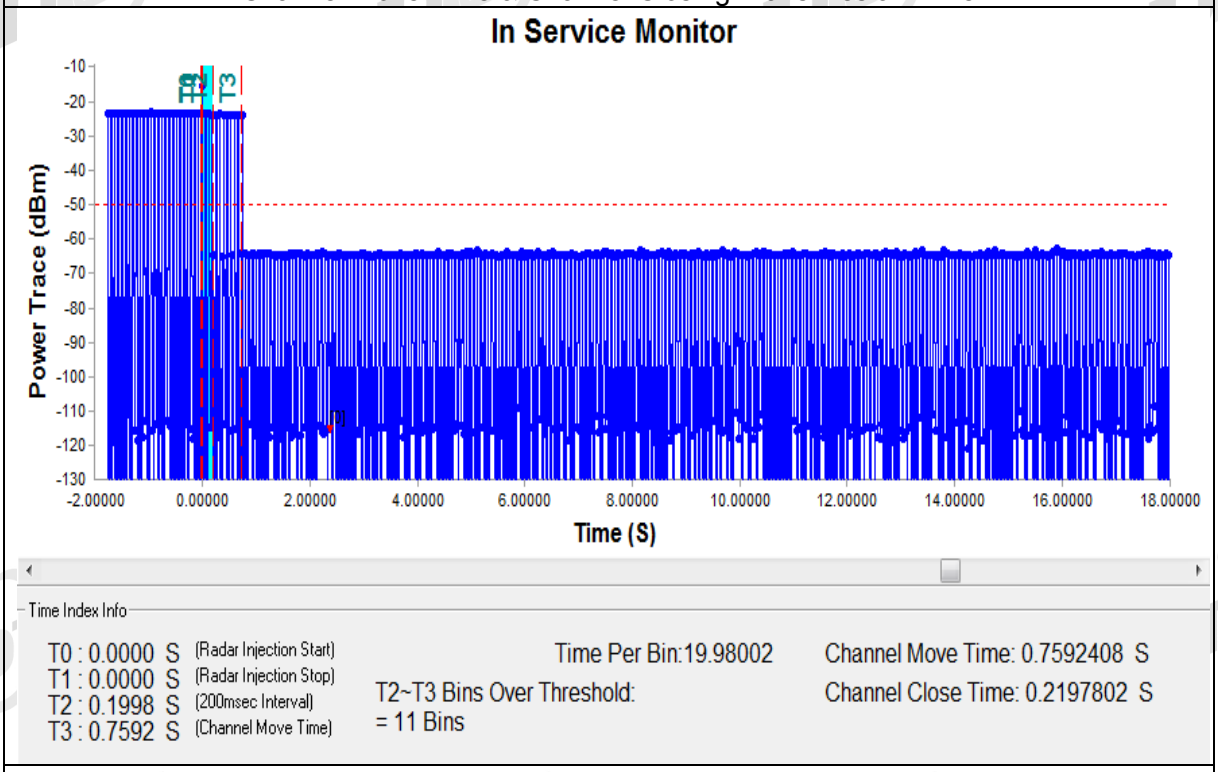


12.7. Test result

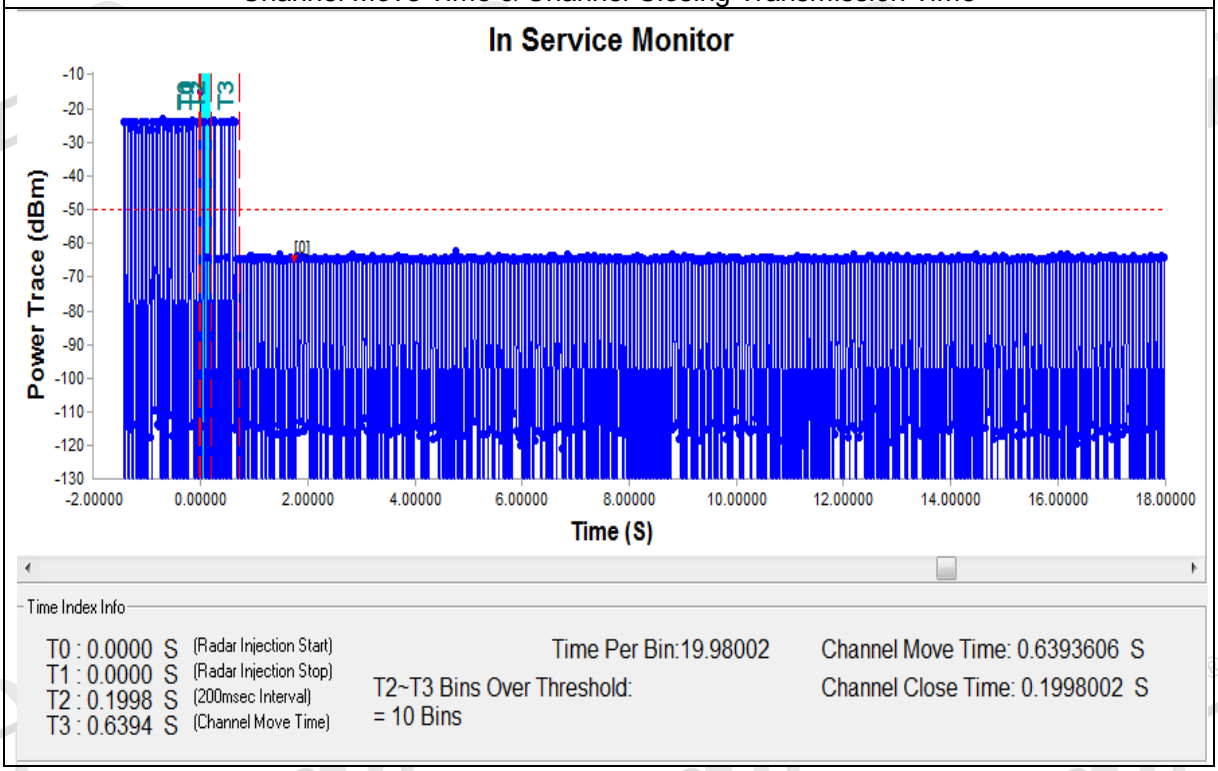
BW/Channel	Test Item	Test Result	Limit	Results
80M/5290MHz	Channel Move Time	0.759 s	＜10 s	Pass
	Channel Closing Transmission Time	0.220 s	＜0.26 s	Pass
80M/5530MHz	Channel Move Time	0.639 s	＜10 s	Pass
	Channel Closing Transmission Time	0.200 s	＜0.26 s	Pass

Test plots as follows:

Channel Move Time & Channel Closing Transmission Time

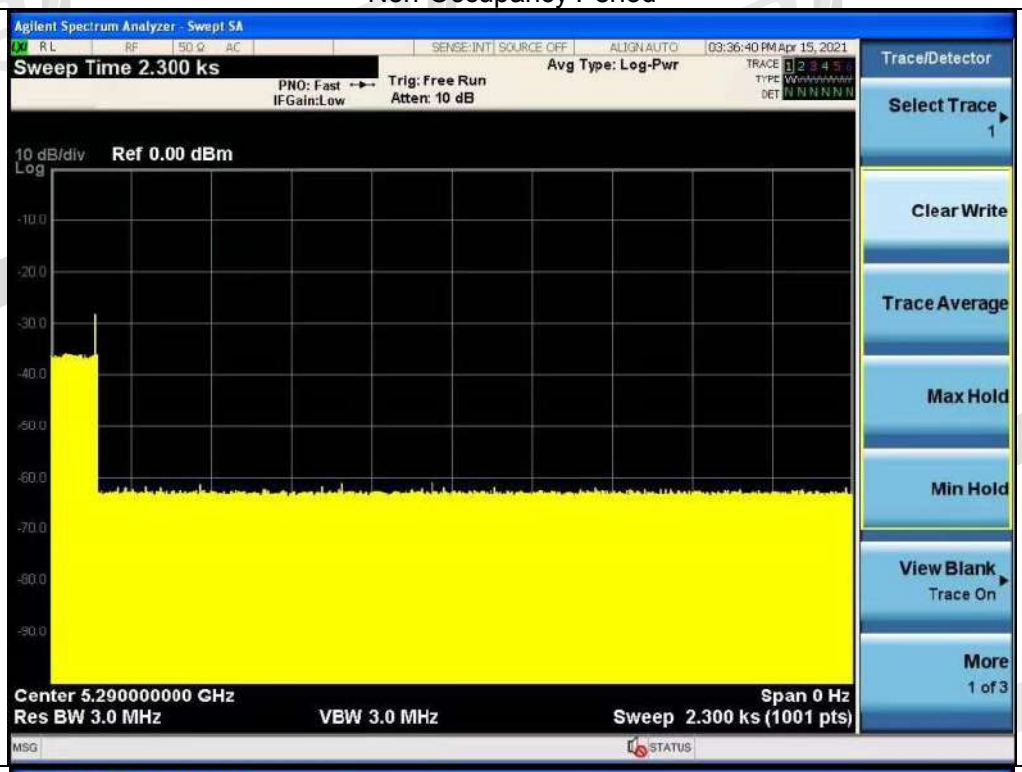


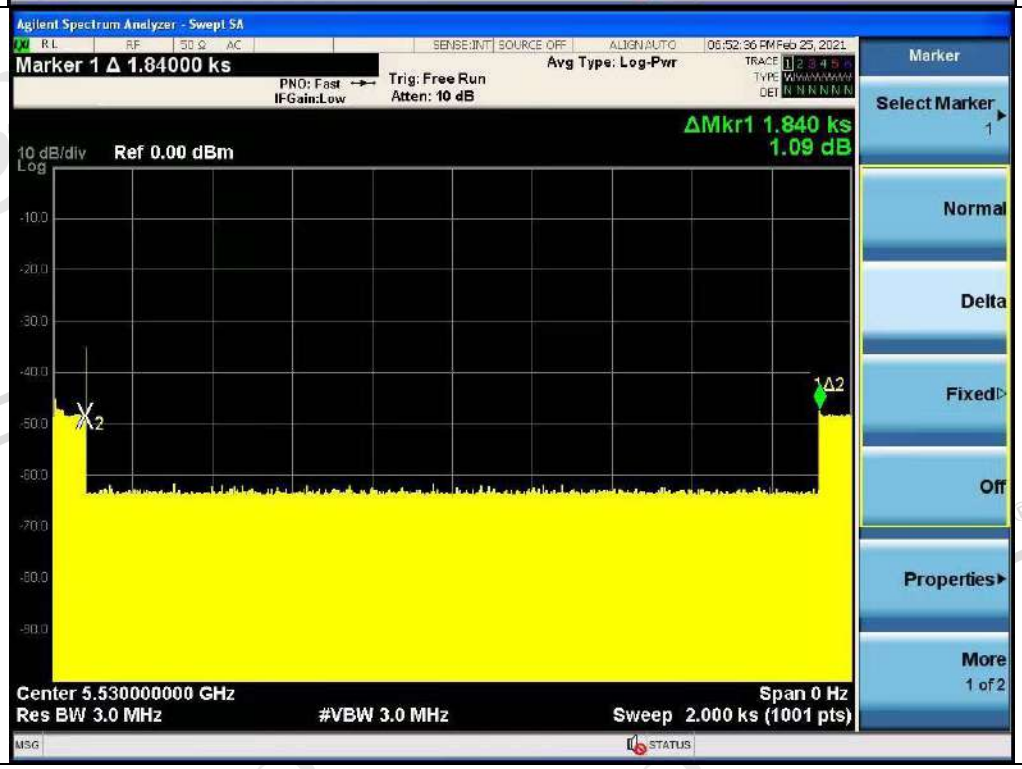
Channel Move Time & Channel Closing Transmission Time



BW/Channel	Test Item	Test Result	Limit	Results
80M/5290MHz	Non-Occupancy Period	> 30 min	30 min	Pass
80M/5530MHz	Non-Occupancy Period	> 30 min	30 min	Pass

Non-Occupancy Period





END OF REPORT