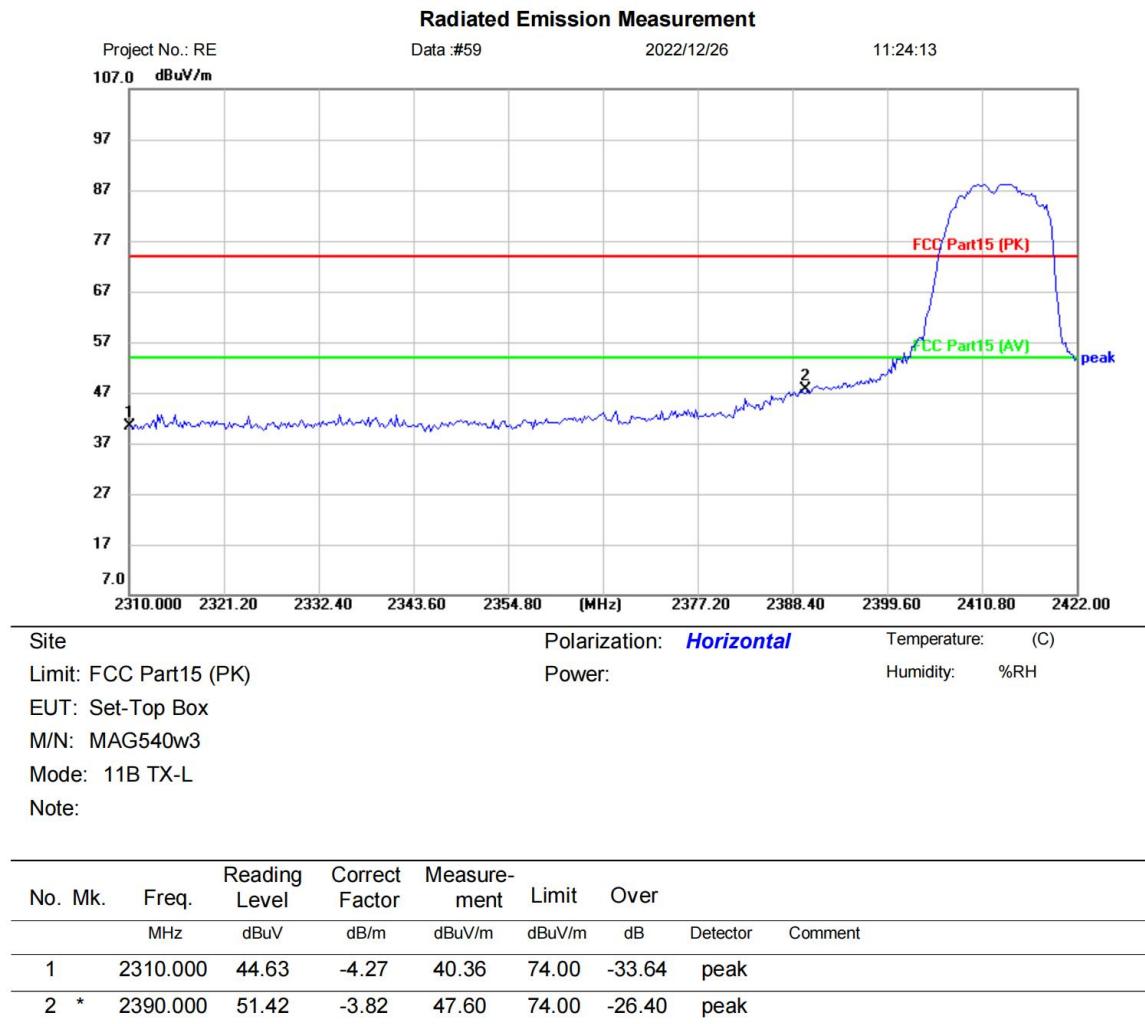


14.4 TEST DATA

[TestMode: TX 11B low channel]; [Polarity: Horizontal]

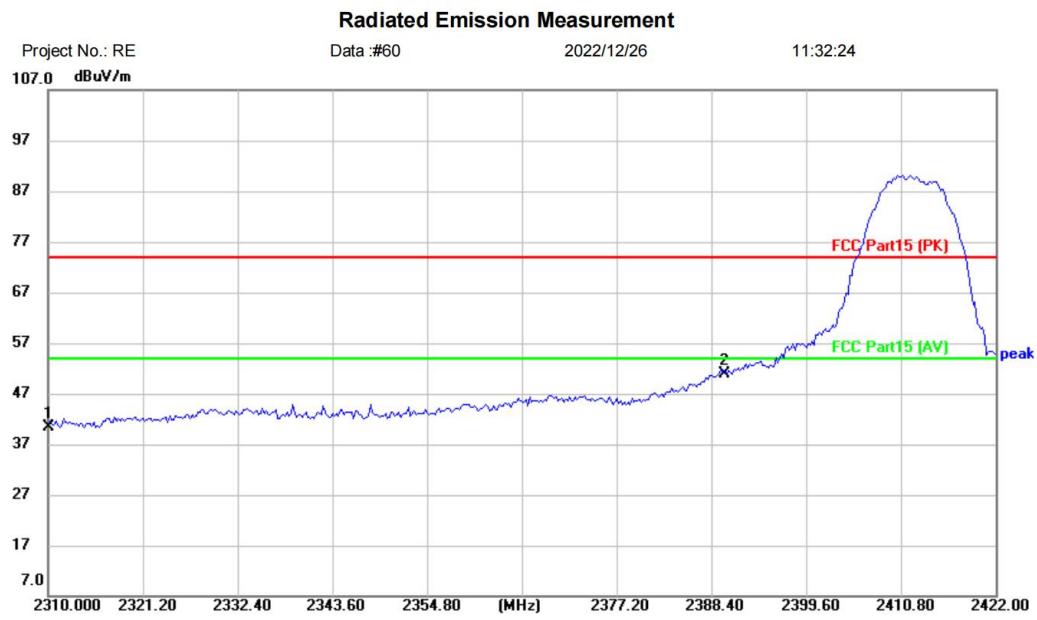


*:Maximum data x:Over limit !:over margin

(Reference Only)

Test Result: Pass

[TestMethod: TX 11B low channel]; [Polarity: Vertical]



Site

Polarization: **Vertical**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11B TX-L

Note:

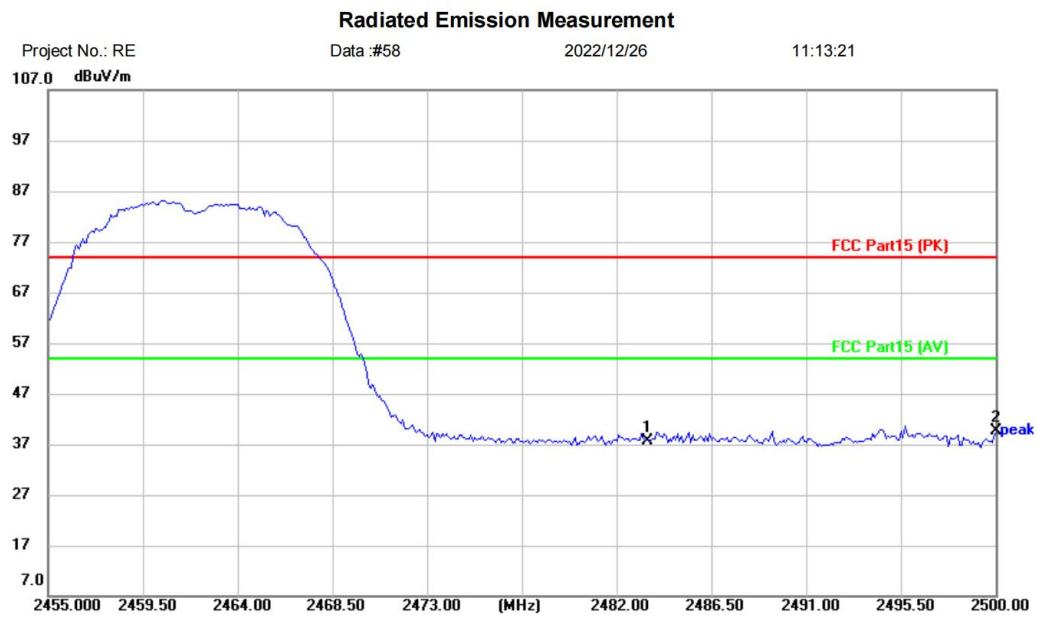
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB/m	dBuV/m	dB			
1		2310.000	44.63	-4.27	40.36	74.00	-33.64	peak	
2	*	2390.000	54.61	-3.82	50.79	74.00	-23.21	peak	

*:Maximum data x:Over limit !:over margin

⟨ Reference Only

Test Result: Pass

[TestMode: TX 11B high channel]; [Polarity: Vertical]



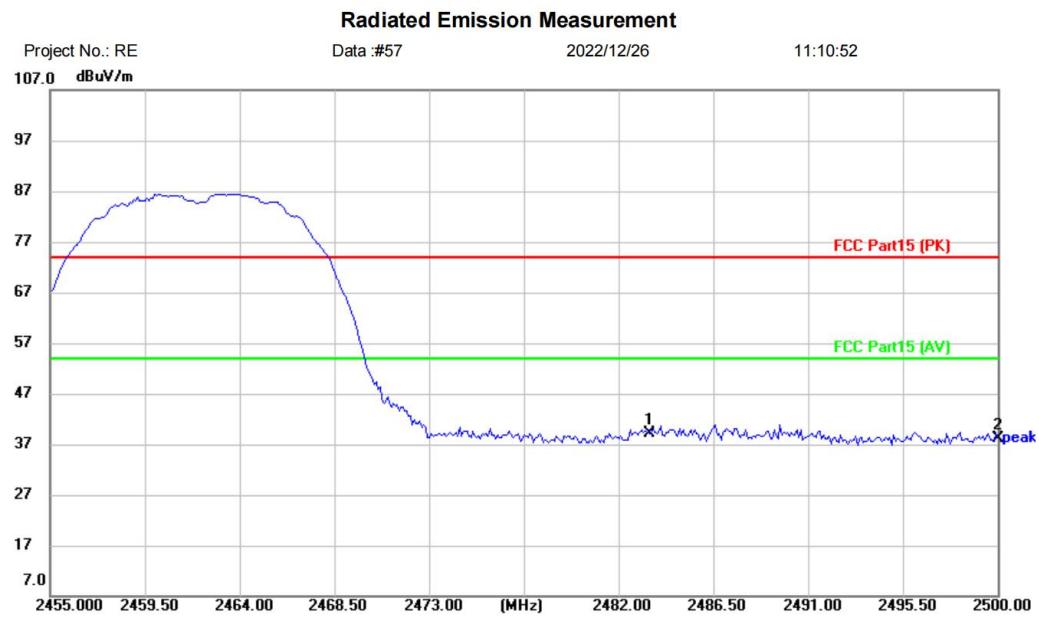
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dB _{uV}	dB/m	dB _{uV/m}	dB			
1		2483.500	41.54	-3.96	37.58	74.00	-36.42	peak	
2	*	2500.000	43.68	-4.00	39.68	74.00	-34.32	peak	

*:Maximum data x:Over limit !:over margin

⟨Reference Only

Test Result: Pass

[TestMode: TX 11B high channel]; [Polarity: Horizontal]



Site

Polarization: **Horizontal**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11G TX-L

Note:

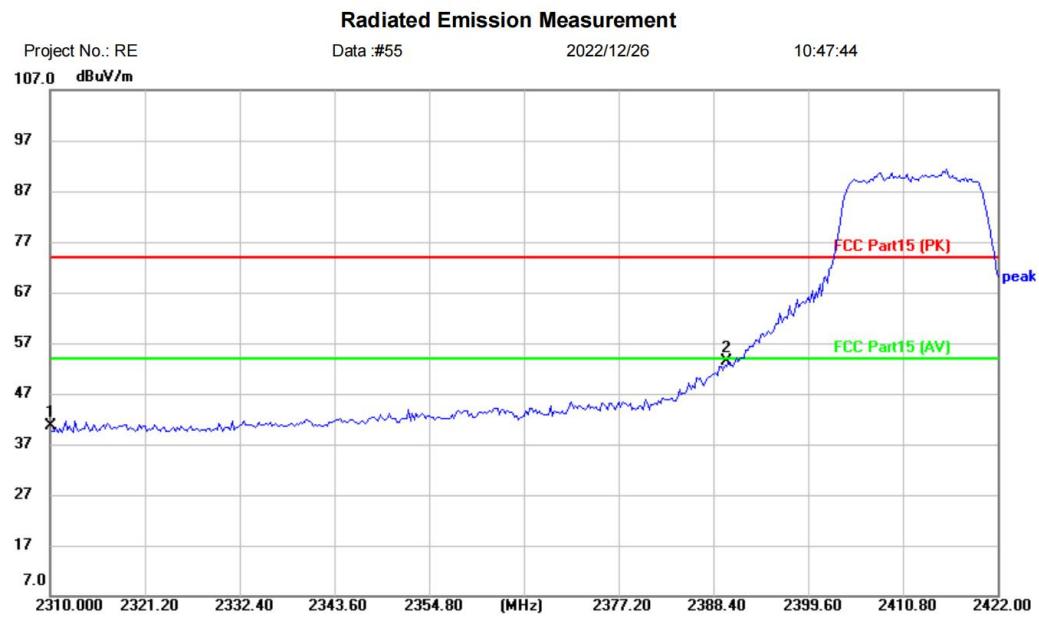
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
			MHz	dBuV	dB/m	dBuV/m	dB		
1	*	2483.500	43.16	-3.96	39.20	74.00	-34.80	peak	
2		2500.000	42.07	-4.00	38.07	74.00	-35.93	peak	

*:Maximum data x:Over limit !:over margin

⟨ Reference Only

Test Result: Pass

[TestMode: TX 11G low channel]; [Polarity: Horizontal]



Site

Polarization: **Horizontal**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11G TX-L

Note:

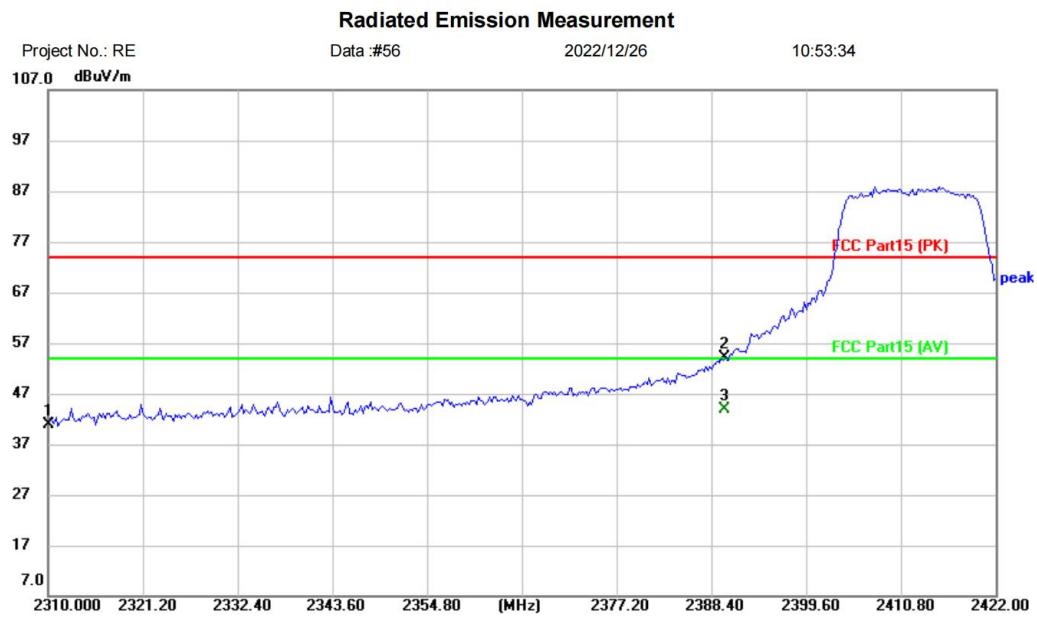
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB	Detector	Comment
1		2310.000	44.87	-4.27	40.60	74.00	-33.40	peak
2	*	2390.000	57.22	-3.82	53.40	74.00	-20.60	peak

*:Maximum data x:Over limit !:over margin

⟨ Reference Only

Test Result: Pass

[TestMethod: TX 11G low channel]; [Polarity: Vertical]



Site

Polarization: **Vertical**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11G TX-L

Note:

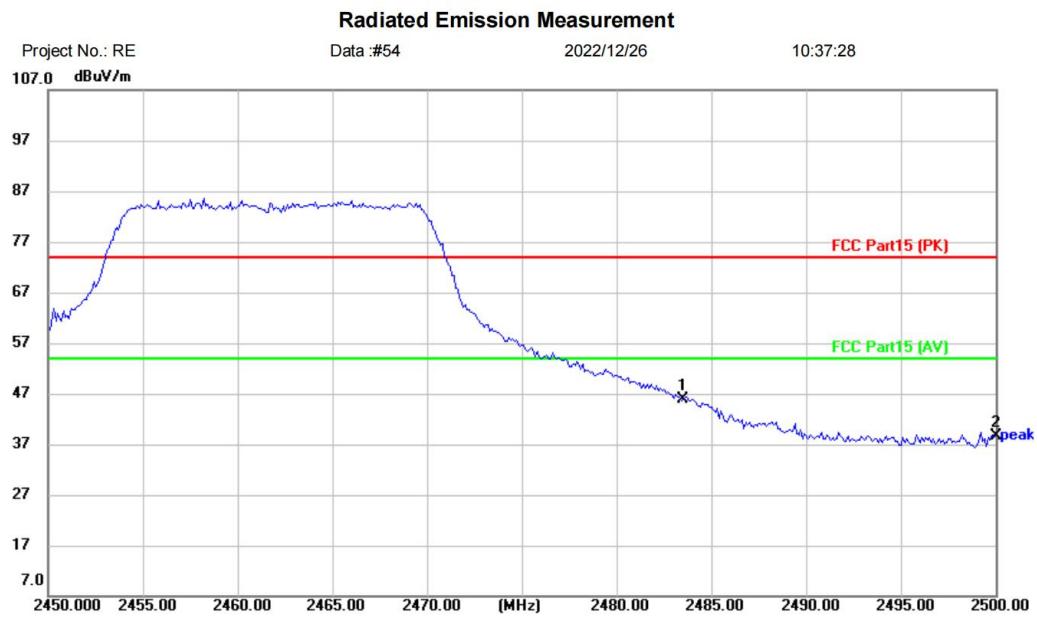
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB	Detector	Comment
1		2310.000	45.12	-4.27	40.85	74.00	-33.15	peak
2		2390.000	58.06	-3.82	54.24	74.00	-19.76	peak
3	*	2390.000	47.65	-3.82	43.83	54.00	-10.17	AVG

*:Maximum data x:Over limit !:over margin

⟨Reference Only⟩

Test Result: Pass

[TestMethod: TX 11G high channel]; [Polarity: Vertical]



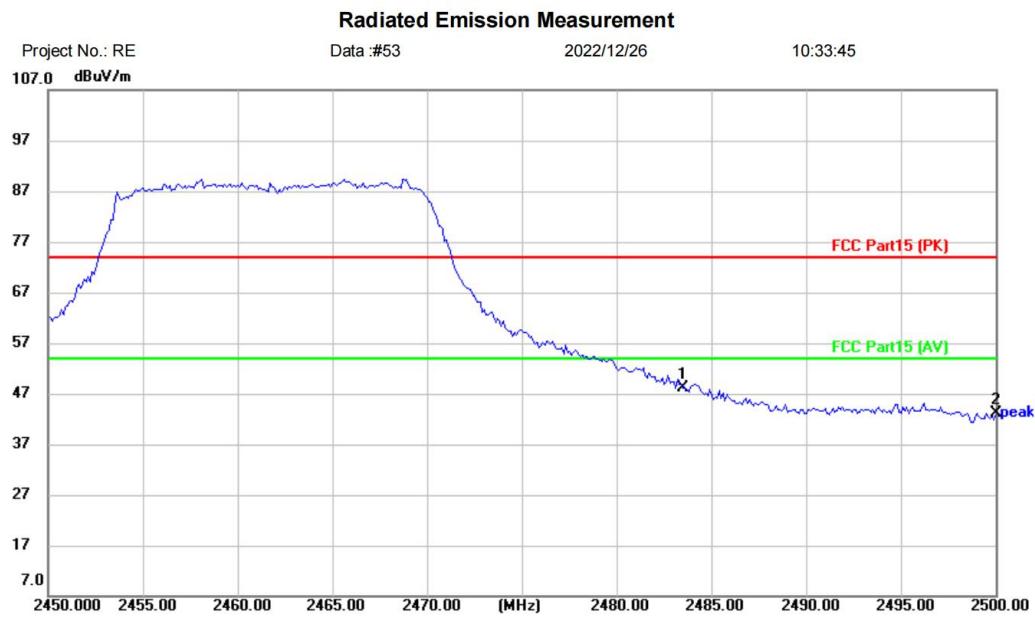
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
			MHz	dBuV	dB/m	dBuV/m	dB		
1	*	2483.500	49.87	-3.96	45.91	74.00	-28.09	peak	
2		2500.000	42.59	-4.00	38.59	74.00	-35.41	peak	

*:Maximum data x:Over limit !:over margin

⟨Reference Only

Test Result: Pass

[TestMode: TX 11G high channel]; [Polarity: Horizontal]



Site

Polarization: **Horizontal**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11G TX-H

Note:

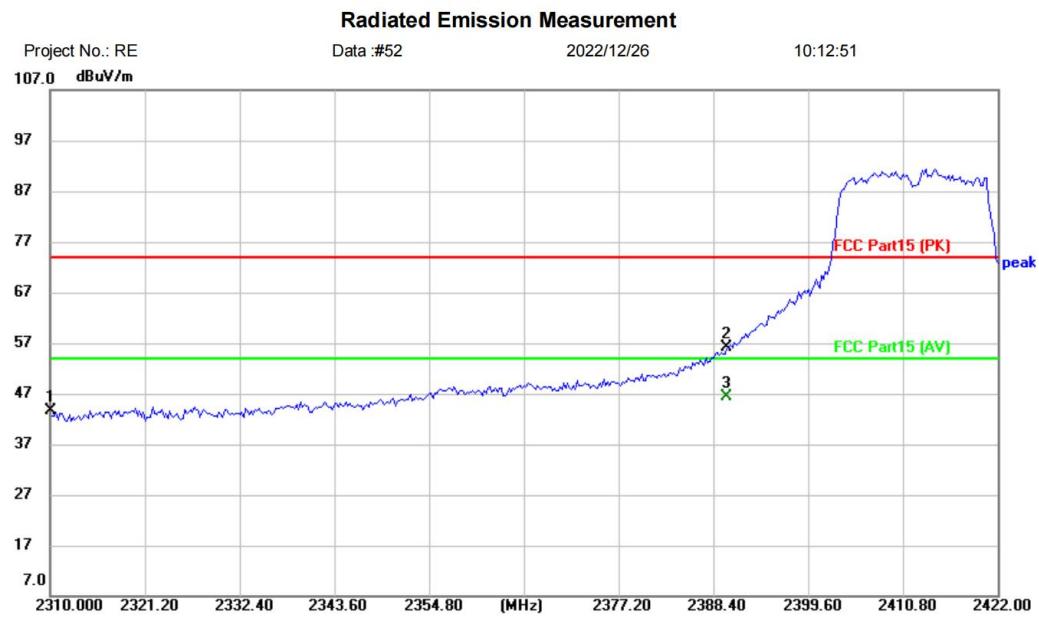
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
			MHz	dB _{uV}	dB/m	dB _{uV/m}	dB		
1	*	2483.500	52.12	-3.96	48.16	74.00	-25.84	peak	
2		2500.000	47.21	-4.00	43.21	74.00	-30.79	peak	

*:Maximum data x:Over limit !:over margin

⟨Reference Only

Test Result: Pass

[TestMode: TX N20 low channel]; [Polarity: Vertical]



Site

Polarization: **Vertical**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11N20 TX-L

Note:

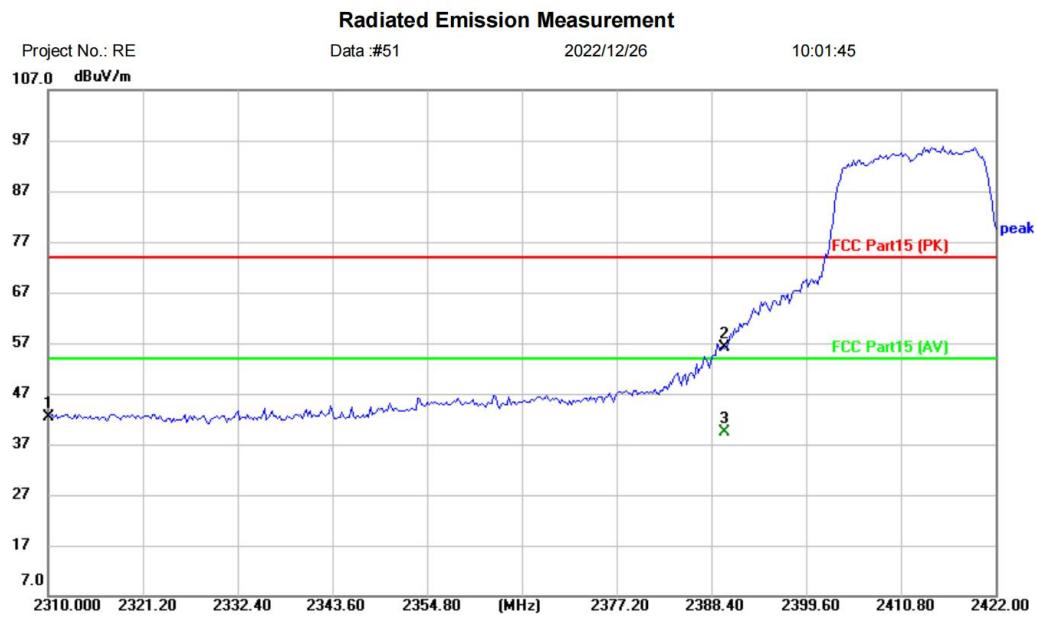
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB	Detector	Comment
1		2310.000	47.95	-4.27	43.68	74.00	-30.32	peak
2		2390.000	60.07	-3.82	56.25	74.00	-17.75	peak
3	*	2390.000	50.11	-3.82	46.29	54.00	-7.71	AVG

*:Maximum data x:Over limit !:over margin

⟨Reference Only⟩

Test Result: Pass

[TestMethod: TX N20 low channel]; [Polarity: Horizontal]



Site

Polarization: **Horizontal**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11N20 TX-L

Note:

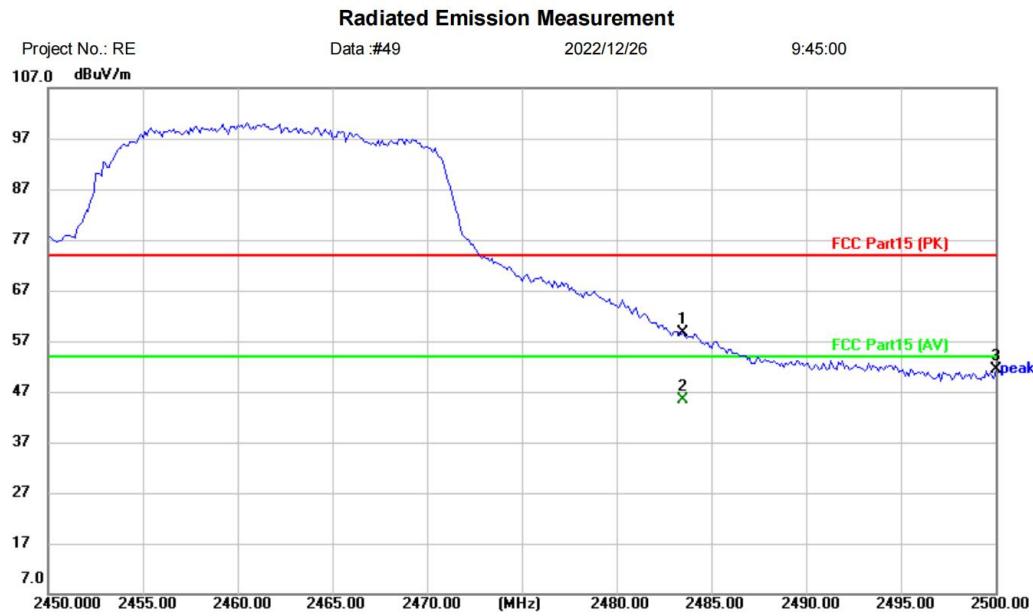
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB	Detector	Comment
1		2310.000	46.75	-4.27	42.48	74.00	-31.52	peak
2		2390.000	59.93	-3.82	56.11	74.00	-17.89	peak
3	*	2390.000	43.14	-3.82	39.32	54.00	-14.68	AVG

*:Maximum data x:Over limit !:over margin

⟨Reference Only⟩

Test Result: Pass

[TestMode: TX N20 high channel]; [Polarity: Horizontal]



Site

Limit: FCC Part15 (PK)

Polarization: **Horizontal**

Temperature: (C)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11N20 TX-H

Note:

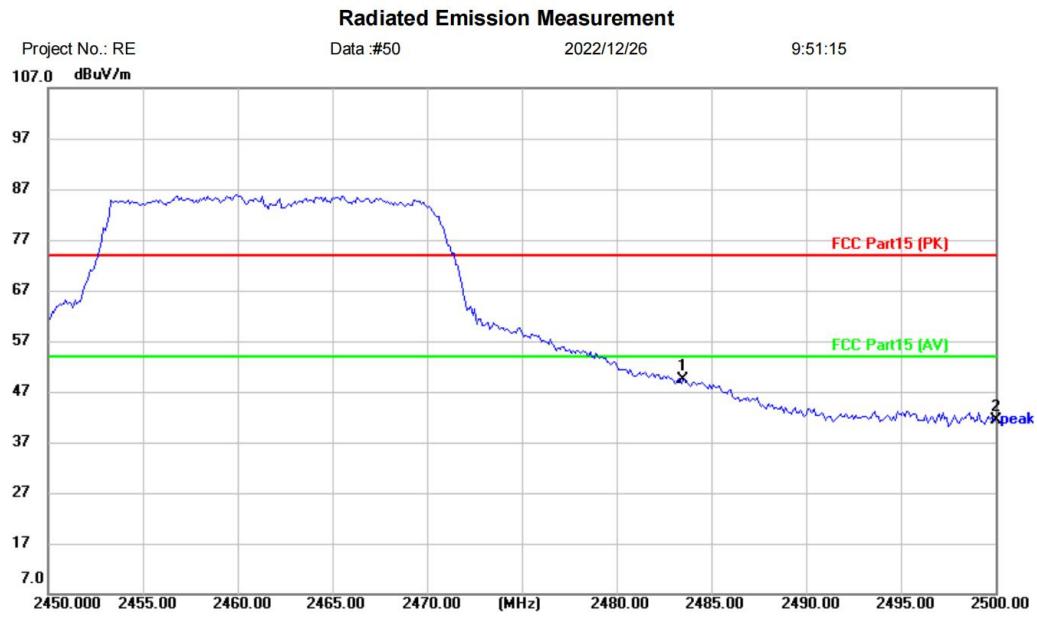
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
			MHz	dB _{uV}	dB/m	dB _{uV/m}	dB		
1		2483.500	62.63	-3.96	58.67	74.00	-15.33	peak	
2	*	2483.500	49.42	-3.96	45.46	54.00	-8.54	AVG	
3		2500.000	55.49	-4.00	51.49	74.00	-22.51	peak	

*:Maximum data x:Over limit !:over margin

⟨ Reference Only

Test Result: Pass

[TestMethod: TX N20 high channel]; [Polarity: Vertical]



Site

Polarization: **Vertical**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11N20 TX-H

Note:

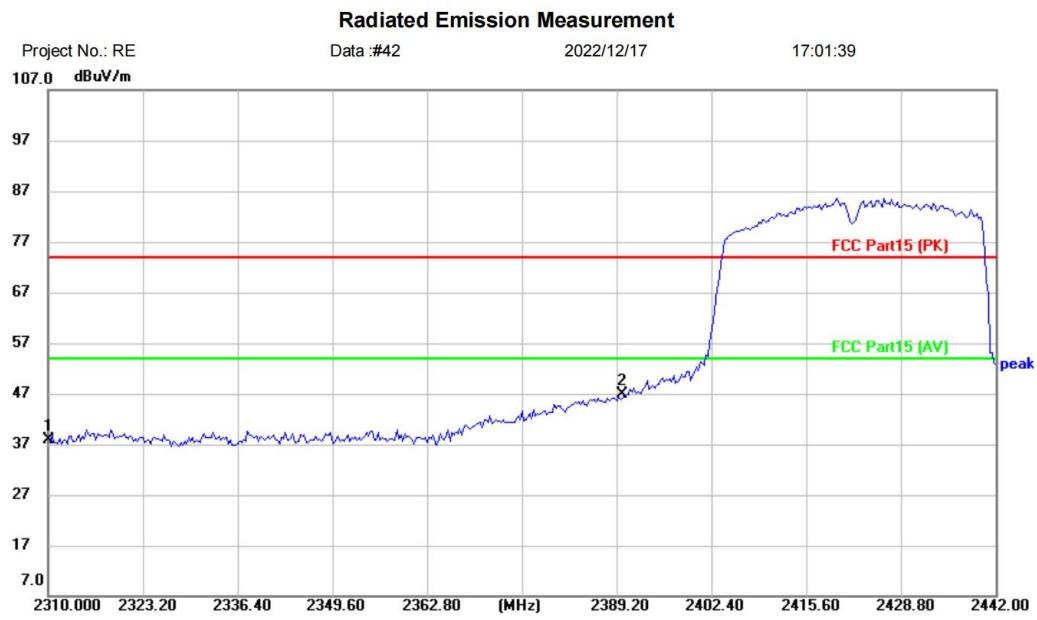
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dB _{uV}	dB/m	dB _{uV/m}	dB			
1	*	2483.500	53.42	-3.96	49.46	74.00	-24.54	peak	
2		2500.000	45.48	-4.00	41.48	74.00	-32.52	peak	

*:Maximum data x:Over limit !:over margin

⟨ Reference Only

Test Result: Pass

[TestMethod: TX N40 low channel]; [Polarity: Horizontal]



Site

Polarization: **Horizontal**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11N40 TX-L

Note:

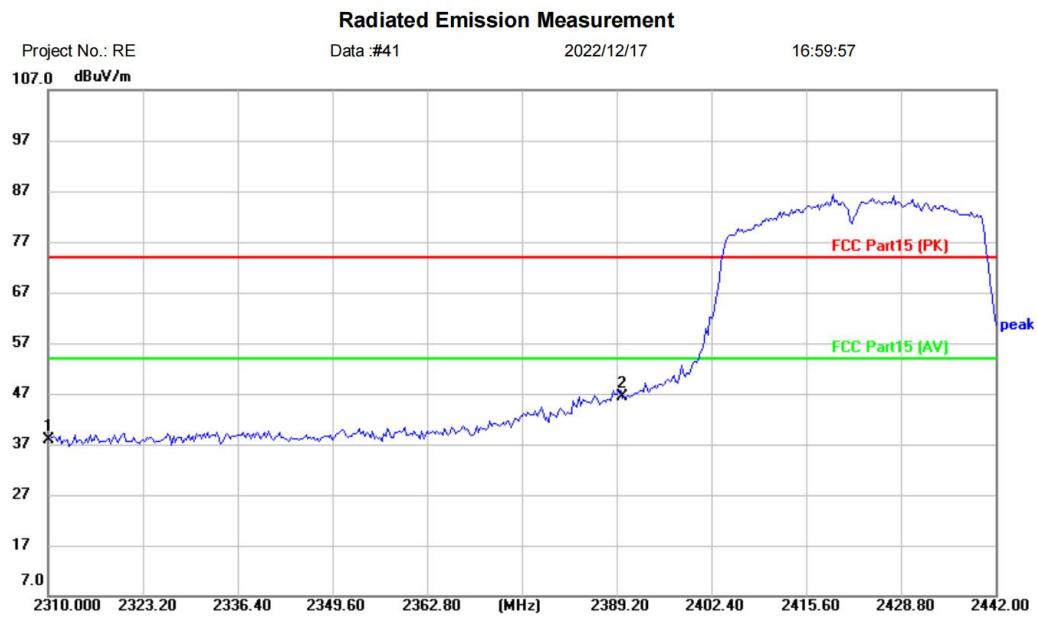
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB/m	dBuV/m	dB			
1		2310.000	42.08	-4.27	37.81	74.00	-36.19	peak	
2	*	2390.000	50.62	-3.82	46.80	74.00	-27.20	peak	

*:Maximum data x:Over limit !:over margin

⟨ Reference Only

Test Result: Pass

[TestMethod: TX N40 low channel]; [Polarity: Vertical]



Site

Polarization: **Vertical**

Temperature: (C)

Limit: FCC Part15 (PK)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11N40 TX-L

Note:

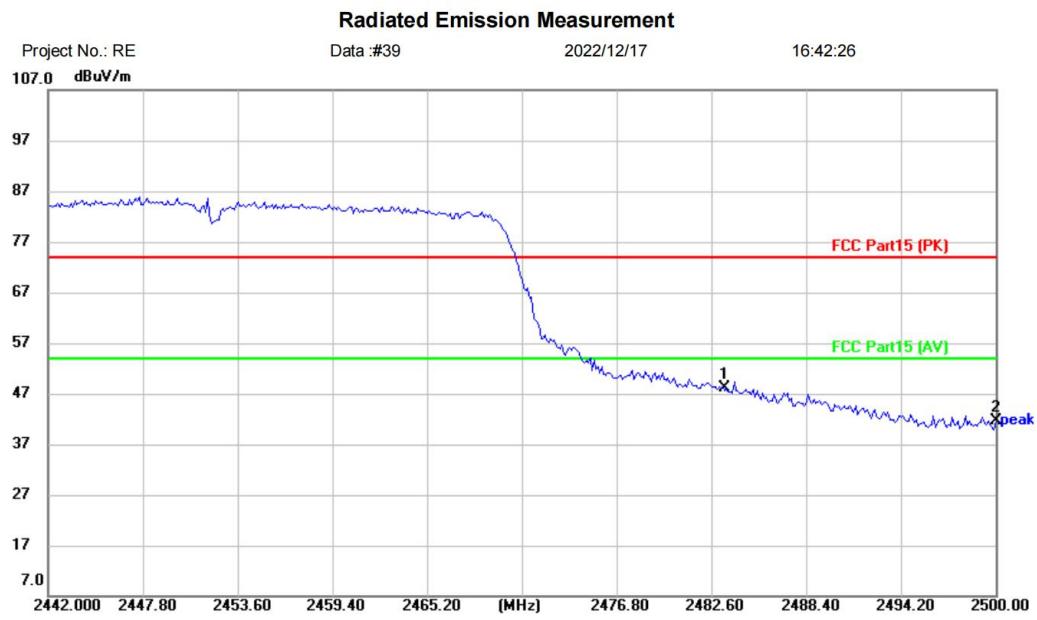
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB/m	dBuV/m	dB			
1		2310.000	42.09	-4.27	37.82	74.00	-36.18	peak	
2	*	2390.000	50.16	-3.82	46.34	74.00	-27.66	peak	

*:Maximum data x:Over limit !:over margin

⟨ Reference Only

Test Result: Pass

[TestMode: TX N40 high channel]; [Polarity: Horizontal]



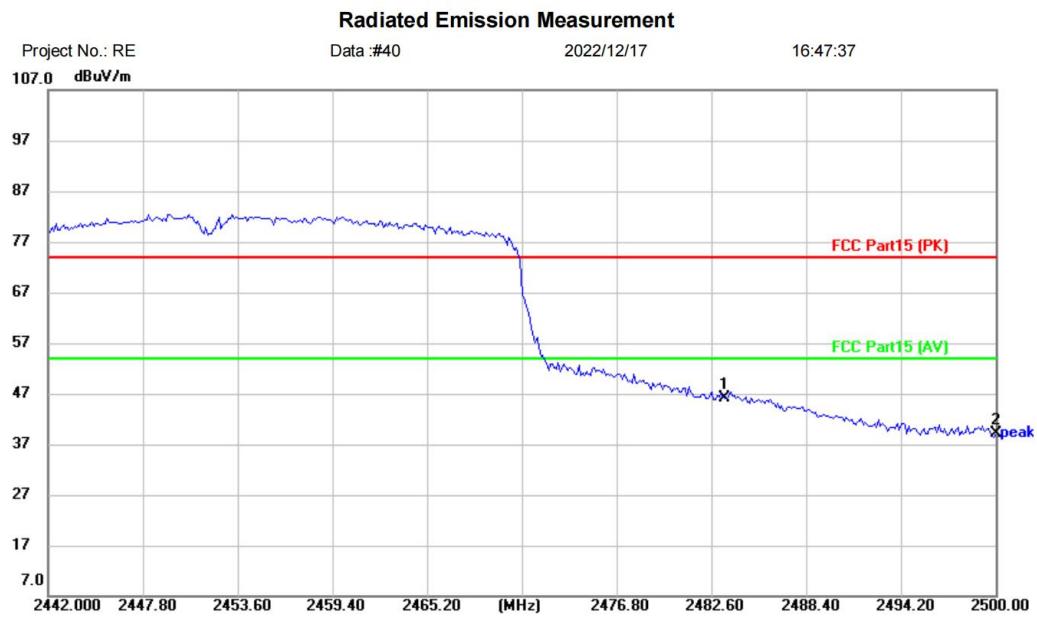
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB/m	dBuV/m	dB			
1	*	2483.500	52.18	-3.96	48.22	74.00	-25.78	peak	
2		2500.000	45.54	-4.00	41.54	74.00	-32.46	peak	

*:Maximum data x:Over limit !:over margin

⟨Reference Only

Test Result: Pass

[TestMode: TX N40 high channel]; [Polarity: Vertical]



Site

Limit: FCC Part15 (PK)

Polarization: **Vertical**

Temperature: (C)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 11N40 TX-H

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
			MHz	dBuV	dB/m	dBuV/m	dB		
1	*	2483.500	50.06	-3.96	46.10	74.00	-27.90	peak	
2		2500.000	43.02	-4.00	39.02	74.00	-34.98	peak	

*:Maximum data x:Over limit !:over margin

⟨ Reference Only

Test Result: Pass

Remark:

1. Final Level = Receiver Read level + Correct factor
2. Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

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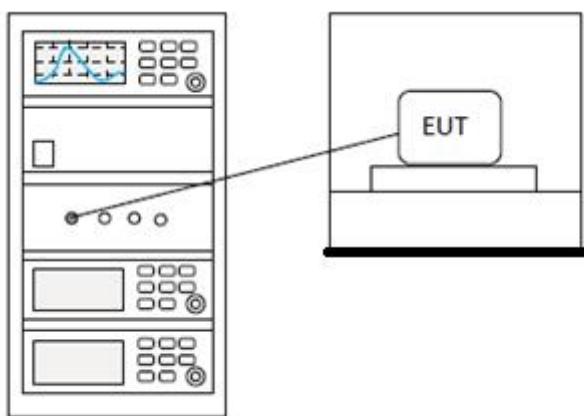
15 CONDUCTED SPURIOUS EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25 °C
Humidity	60%

15.1 LIMITS

Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
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15.2 BLOCK DIAGRAM OF TEST SETUP



15.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

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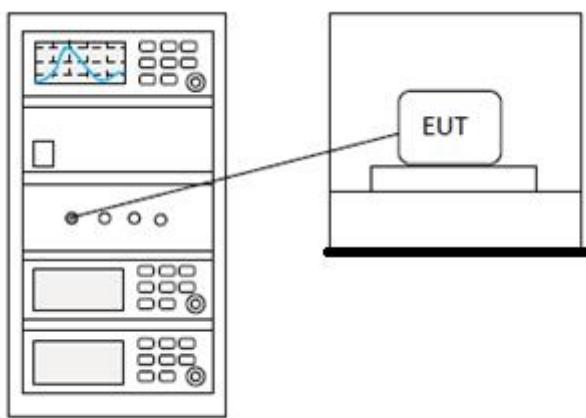
16 CONDUCTED BAND EDGES MEASUREMENT

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25 °C
Humidity	60%

16.1 LIMITS

Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
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16.2 BLOCK DIAGRAM OF TEST SETUP



16.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

BlueAsia

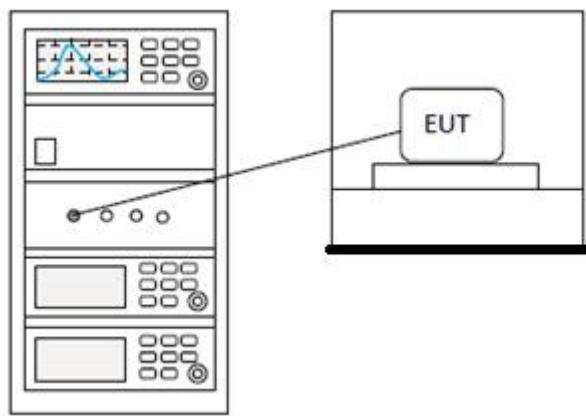
17 MINIMUM 6DB BANDWIDTH

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 11.8.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25 °C
Humidity	60%

17.1 LIMITS

Limit: ≥ 500 kHz

17.2 BLOCK DIAGRAM OF TEST SETUP



17.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

18 CONDUCTED EMISSIONS AT AC POWER LINE (150KHZ-30MHZ)

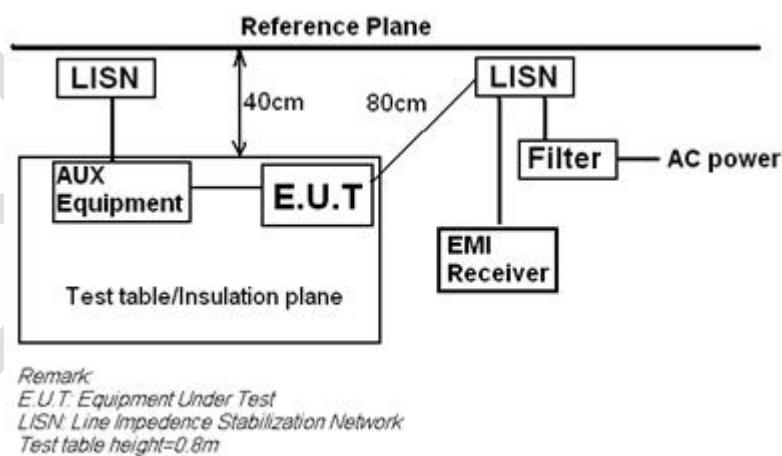
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.2
Test Mode (Pre-Scan)	Transmitting mode
Test Mode (Final Test)	Transmitting mode
Tester	Jozu
Temperature	25°C
Humidity	60%

18.1 LIMITS

Frequency of emission(MHz)	Conducted limit(dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

18.2 BLOCK DIAGRAM OF TEST SETUP



18.3 PROCEDURE

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50H + 50hm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: LISN=Read Level+ Cable Loss+ LISN Factor

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18.4 TEST DATA

[TestMode: Transmitting mode]; [Line: Neutral];[Power:AC120V/60Hz]

Conducted Emission Measurement



Site

Phase: **N**

Temperature: (C)

Limit: FCC Class B Conduction(QP)

Power:

Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 2.4G TX mode

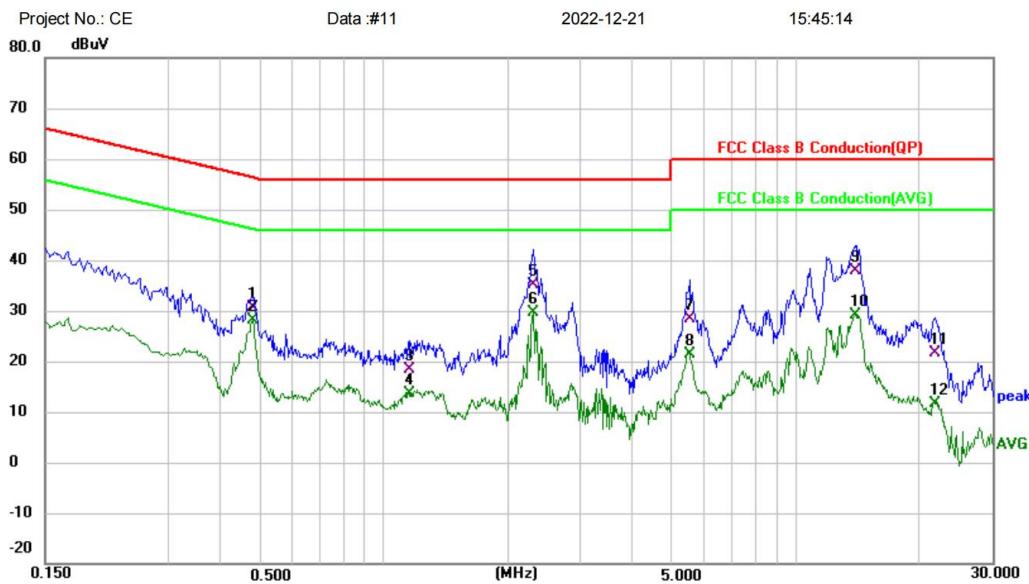
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dB	Detector	Comment
1		0.4780	26.81	0.41	27.22	56.37	-29.15	QP
2		0.4780	19.59	0.41	20.00	46.37	-26.37	AVG
3		1.0540	16.25	0.30	16.55	56.00	-39.45	QP
4		1.0540	10.58	0.30	10.88	46.00	-35.12	AVG
5		2.3220	35.17	0.26	35.43	56.00	-20.57	QP
6		2.3220	14.32	0.26	14.58	46.00	-31.42	AVG
7		5.5260	29.91	0.34	30.25	60.00	-29.75	QP
8		5.5260	14.34	0.34	14.68	50.00	-35.32	AVG
9 *		14.0460	39.17	0.42	39.59	60.00	-20.41	QP
10		14.0460	23.77	0.42	24.19	50.00	-25.81	AVG
11		22.1460	20.12	0.45	20.57	60.00	-39.43	QP
12		22.1460	7.68	0.45	8.13	50.00	-41.87	AVG

Test Result: Pass

[TestMethod: Transmitting mode]; [Line: Line] ;[Power: AC120V/60Hz]

Conducted Emission Measurement


Site Phase: **L1** Temperature: (C)

Limit: FCC Class B Conduction(QP) Power: Humidity: %RH

EUT: Set-Top Box

M/N: MAG540w3

Mode: 2.4G TX mode

Note:

No. Mk.	Freq. MHz	Reading Level	Correct Factor	Measure- ment	Limit	Over	Detector	Comment
		dBuV	dB	dBuV	dB			
1	0.4780	30.36	0.35	30.71	56.37	-25.66	QP	
2	0.4780	27.79	0.35	28.14	46.37	-18.23	AVG	
3	1.1539	18.19	0.24	18.43	56.00	-37.57	QP	
4	1.1539	13.49	0.24	13.73	46.00	-32.27	AVG	
5	2.3020	34.96	0.23	35.19	56.00	-20.81	QP	
6 *	2.3020	29.44	0.23	29.67	46.00	-16.33	AVG	
7	5.5300	28.01	0.31	28.32	60.00	-31.68	QP	
8	5.5300	21.18	0.31	21.49	50.00	-28.51	AVG	
9	13.9300	37.50	0.31	37.81	60.00	-22.19	QP	
10	13.9300	28.91	0.31	29.22	50.00	-20.78	AVG	
11	21.7380	21.23	0.45	21.68	60.00	-38.32	QP	
12	21.7380	11.20	0.45	11.65	50.00	-38.35	AVG	

Test Result: Pass

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss.

BlueAsia

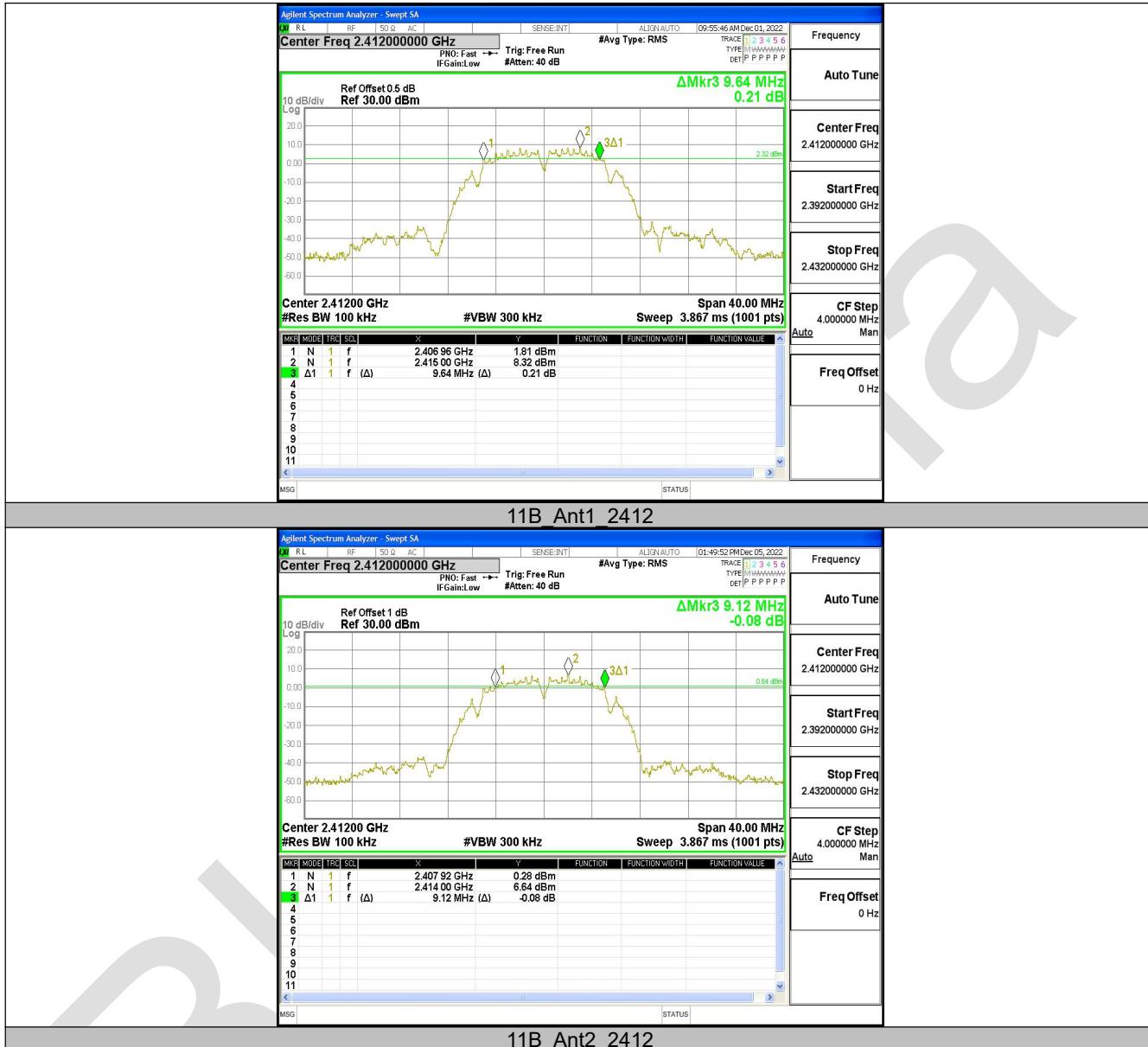
19 APPENDIX

19.1 APPENDIX A: DTS BANDWIDTH

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.640	2406.960	2416.600	≥ 0.5	PASS
	Ant2	2412	9.120	2407.920	2417.040	≥ 0.5	PASS
	Ant1	2437	9.640	2431.920	2441.560	≥ 0.5	PASS
	Ant2	2437	9.160	2431.920	2441.080	≥ 0.5	PASS
	Ant1	2462	9.600	2457.440	2467.040	≥ 0.5	PASS
	Ant2	2462	9.160	2457.440	2466.600	≥ 0.5	PASS
11G	Ant1	2412	16.160	2404.040	2420.200	≥ 0.5	PASS
	Ant2	2412	16.200	2404.040	2420.240	≥ 0.5	PASS
	Ant1	2437	15.800	2428.760	2444.560	≥ 0.5	PASS
	Ant2	2437	16.120	2428.800	2444.920	≥ 0.5	PASS
	Ant1	2462	16.200	2454.040	2470.240	≥ 0.5	PASS
	Ant2	2462	16.440	2453.800	2470.240	≥ 0.5	PASS
11N20SISO	Ant1	2412	16.960	2403.840	2420.800	≥ 0.5	PASS
	Ant2	2412	16.480	2404.080	2420.560	≥ 0.5	PASS
	Ant1	2437	16.240	2428.320	2444.560	≥ 0.5	PASS
	Ant2	2437	16.600	2428.200	2444.800	≥ 0.5	PASS
	Ant1	2462	16.360	2454.440	2470.800	≥ 0.5	PASS
	Ant2	2462	17.000	2453.800	2470.800	≥ 0.5	PASS
11N40SISO	Ant1	2422	32.720	2406.880	2439.600	≥ 0.5	PASS
	Ant2	2422	34.000	2405.600	2439.600	≥ 0.5	PASS
	Ant1	2437	31.520	2419.320	2450.840	≥ 0.5	PASS
	Ant2	2437	35.200	2419.400	2454.600	≥ 0.5	PASS
	Ant1	2452	35.760	2434.240	2470.000	≥ 0.5	PASS
	Ant2	2452	35.920	2433.760	2469.680	≥ 0.5	PASS
11N20MIMO	Ant1	2412	16.120	2404.440	2420.560	≥ 0.5	PASS
	Ant2	2412	17.000	2403.800	2420.800	≥ 0.5	PASS
	Ant1	2437	16.360	2428.400	2444.760	≥ 0.5	PASS
	Ant2	2437	16.720	2428.440	2445.160	≥ 0.5	PASS
	Ant1	2462	16.480	2454.080	2470.560	≥ 0.5	PASS
	Ant2	2462	17.000	2453.800	2470.800	≥ 0.5	PASS
11N40MIMO	Ant1	2422	35.200	2404.400	2439.600	≥ 0.5	PASS
	Ant2	2422	35.200	2404.400	2439.600	≥ 0.5	PASS
	Ant1	2437	33.920	2419.400	2453.320	≥ 0.5	PASS
	Ant2	2437	33.920	2419.400	2453.320	≥ 0.5	PASS
	Ant1	2452	36.080	2433.920	2470.000	≥ 0.5	PASS
	Ant2	2452	36.080	2433.760	2469.840	≥ 0.5	PASS

Test Graphs




11B_Ant1_2437
11B_Ant2_2437