FCC REPORT

Product Name	:	Set-Top Box
Trade mark	:	Infomir
Model	:	MAG500A
Extension Model	:	MAG520w3, MAG522w3, MAG524w3
FCC ID	:	2AUIR-IM010CXXX1
Report Number	:	BLA-EMC-202105-A0707
Date of sample receipt	:	2022/1/4
Date of Test	:	2022/1/4 to 2022/1/26
Date of Issue	:	2022/1/26
Test standard	:	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Test result	:	PASS

Prepared for:

TELECOMMUNICATION TECHNOLOGIES, LLC

1, Mytna Sq., Odesa, 65026, Ukraine

Prepared by:

BlueAsia of Technical Services(Shenzhen) Co.,Ltd.

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Compiled by: Hasan

Review by: Sweely

Approved by: BlueZhong

Date: 2022/1/26

BlueAsia of Technical Services(Shenzhen) Co., Ltd. BLA

Version

Version No.	Date	Description
00	*2022/1/26*	*Original*

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1 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.407 (g)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.407 (a)	Pass
26dB Occupied Bandwidth	15.407 (a)	Pass
6dB Emission Bandwidth	15.407(e)	Pass
Power Spectral Density	15.407 (a)	Pass
Band Edge	15.407(b)	Pass
Spurious Emission	15.205/15.209	Pass
Frequency Stability	15.407(g)	Pass

Pass: The EUT complies with the essential requirements in the standard.

2 General Information

2.1 Client Information

Applicant	TELECOMMUNICATION TECHNOLOGIES, LLC
Address	1, Mytna Sq., Odesa, 65026, Ukraine
Manufacturer	TELECOMMUNICATION TECHNOLOGIES, LLC
Address	1, Mytna Sq., Odesa, 65026, Ukraine
Factory	TELECOMMUNICATION TECHNOLOGIES, LLC
Address	1, Mytna Sq., Odesa, 65026, Ukraine
Product Name	Set-Top Box
Test Model No.	MAG500A

2.2 General Description of E.U.T.

Operation Frequency:	Band 2:5260MHz~5320MHz Band 3: 5500MHz~5700MHz; Band 4: 5745MHz-5825MHz
	Band 2: 802.11a/802.11n(HT20)/802.11ac(HT20): 4, 802.11n(HT40)/802.11ac(HT40):2, 802.11ac(HT80): 1
	Band 3: 802.11a/802.11n(HT20)/802.11ac(HT20):11, 802.11n(HT40)/802.11ac(HT40):5, 802.11ac(HT80): 3
	Band 4: 802.11a/802.11n(HT20)/802.11ac(HT20):5, 802.11n(HT40)/802.11ac(HT40):2, 802.11ac(HT80): 1
Channel separation:	802.11a/n/ac(HT2): 20MHz, 802.11n/ac(HT40): 40MHz, 802.11ac(HT80): 80MHz
Modulation technology: (IEEE 802.11a/n/ac)	BPSK, QPSK,16-QAM, 64-QAM, 256-QAM
Antenna Type:	Patch antenna
Antenna gain:	3.11 dBi(Provided by the customer)
Note:	Antenna number : 2 MIMO mode： 802.11n(HT20)/ 802.11n(HT40)/ 802.11ac(HT20)/ 802.11ac(HT40)/ 802.11ac(HT80) Directional gain of MIMO mode:2+10log2=6.12dBi
Remark:The Antenna Gain is supplied by the customer	

Operation Frequency each of channel

Band 2: 5250-5350MHz					
802.11a/802.11n20		802.11n40		802.11ac80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
52	5260MHz	54	5270MHz	58	5290MHz
56	5280MHz	62	5310MHz		
60	5300MHz				
64	5320MHz				
Band 3: 5470-5725MHz					
802.11a/802.11n20		802.11n40		802.11ac80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
100	5500MHz	102	5510MHz	106	5530MHz
120	5600MHz	118	5590MHz	122	5610MHz
140	5700MHz	124	5670MHz	138	5690MHz
Band 4: 5725-5850MHz					
802.11a/802.11n20		802.11n40		802.11ac80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	151	5755MHz	155	5775MHz
157	5785MHz	159	5795MHz		
165	5825MHz				

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

2.3 Test environment and mode

Operating Environment:	
Temperature:	25°C
Humidity:	52 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Continuously transmitting mode	Keep the EUT in 100% duty cycle transmitting with modulation.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate
802.11a	6Mbps
802.11n(HT20)	6.5Mbps
802.11n(HT40)	13Mbps
802.11ac(HT20)	6.5Mbps
802.11ac(HT40)	13.5Mbps
802.11ac(HT80)	29.3Mbps

Final Test Mode:

According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup” 6 Mbps for 802.11a,6.5 Mbps for 802.11n20 and 13 Mbps for 802.11n40. All test items for 802.11a and 802.11n were performed with duty cycle above 98%, meet the requirements of KDB789033.

2.4 Description of Support Units

Manufacturer	Description	Model	Serial Number
Lenovo	Notebook computer	E470C	PF-10FB5C

2.5 Laboratory Location

All tests were performed at:

BlueAsia of Technical Services(Shenzhen) Co., Ltd.

Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China

Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673

No tests were sub-contracted.

2.6 Test Instruments list

Test Equipment Of Power Spectrum Density					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11

Test Equipment Of Conducted Peak Output Power					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11

Test Equipment Of Minimum 6dB Bandwidth					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11

Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11

Test Equipment Of Conducted Emissions at AC Power Line (150kHz-30MHz)

Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Shield room	SKET	833	N/A	2020/11/25	2023/11/24
Receiver	R&S	ESPI3	101082	2020/10/12	2021/10/11
LISN	R&S	ENV216	3560.6550.15	2020/10/12	2021/10/11
LISN	AT	AT166-2	AKK1806000003	2020/10/12	2021/10/11
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A

Test Equipment Of Radiated Spurious Emissions and Band-edge

Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Chamber	SKET	966	N/A	2020/11/10	2023/11/9
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Receiver	R&S	ESR7	101199	2020/10/12	2021/10/11
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2020/9/26	2022/9/25
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	2020/9/26	2022/9/25

Amplifier	SKET	PA-000318G-45	N/A	2020/10/16	2021/10/15
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2020/9/26	2022/9/25
Controller	SKET	N/A	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A

Test Equipment Of Radiated Emissions which fall in the restricted bands

Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Chamber	SKET	966	N/A	2020/11/10	2023/11/9
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Receiver	R&S	ESR7	101199	2020/10/12	2021/10/11
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2020/9/26	2022/9/25
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	2020/9/26	2022/9/25
Amplifier	SKET	PA-000318G-45	N/A	2020/10/16	2021/10/15
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2020/9/26	2022/9/25
Controller	SKET	N/A	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A

3 Test results andMeasurement Data

3.1 Antenna requirement

Standard requirement:	FCC Part15 E Section 15.203 /407(a)

15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

This requirementdoes not apply to carrier currentdevices or to devices operated underthe provisions of §15.211, § 15.213,§ 15.217, § 15.219, or § 15.221. Further, thisrequirement does not apply to intentionalradiators that must be professionallyinstalled, such as perimeterprotection systems and some field disturbancesensors, or to other intentionalradiators which, in accordancewith § 15.31(d), must be measured at theinstallation site. However, the installershall be responsible for ensuring thatthe proper antenna is employed so thatthe limits in this part are not exceeded.

E.U.T Antenna:	

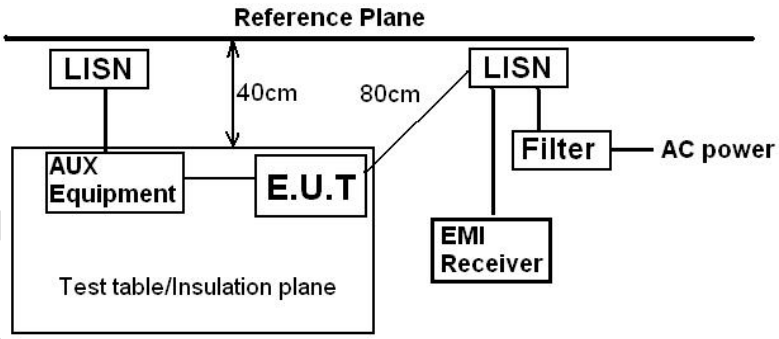
The antenna is Internal Antenna, the best case gain of the antenna is 3.11dBi

4 Conducted Emission

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	150 kHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9 kHz, VBW=30 kHz
Limit:	

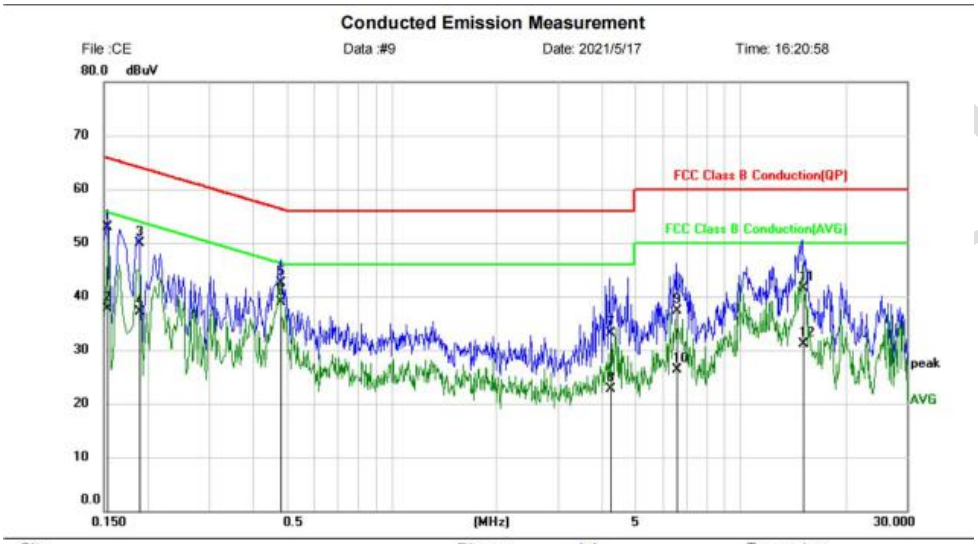
Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test procedure	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. 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: 2014 on conducted measurement.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Pass

Measurement Data:

EUT:	Set-Top Box	Model:	MAG500A
Test By:	Eason	Test mode:	Wifi mode
Power Source:	AC120V/60Hz	Temp./Hum.(%H):	25℃/52%RH
Test Frequency:	150kHz to 30MHz	Phase:	Line



Site
Limit: FCC Class B Conduction(QP)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G WIFI mode
Note:

Phase: L1
Power:

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1539	43.14	9.81	52.95	65.79	-12.84	QP	
2		0.1539	27.96	9.81	37.77	55.79	-18.02	AVG	
3		0.1900	40.00	9.83	49.83	64.04	-14.21	QP	
4		0.1900	27.20	9.83	37.03	54.04	-17.01	AVG	
5		0.4820	32.64	9.87	42.51	56.30	-13.79	QP	
6	*	0.4820	29.02	9.87	38.89	46.30	-7.41	AVG	
7		4.2460	23.13	9.99	33.12	56.00	-22.88	QP	
8		4.2460	12.68	9.99	22.67	46.00	-23.33	AVG	
9		6.5900	27.25	10.08	37.33	60.00	-22.67	QP	
10		6.5900	16.30	10.08	26.38	50.00	-23.62	AVG	
11		15.1340	31.16	10.36	41.52	60.00	-18.48	QP	
12		15.1340	20.69	10.36	31.05	50.00	-18.95	AVG	

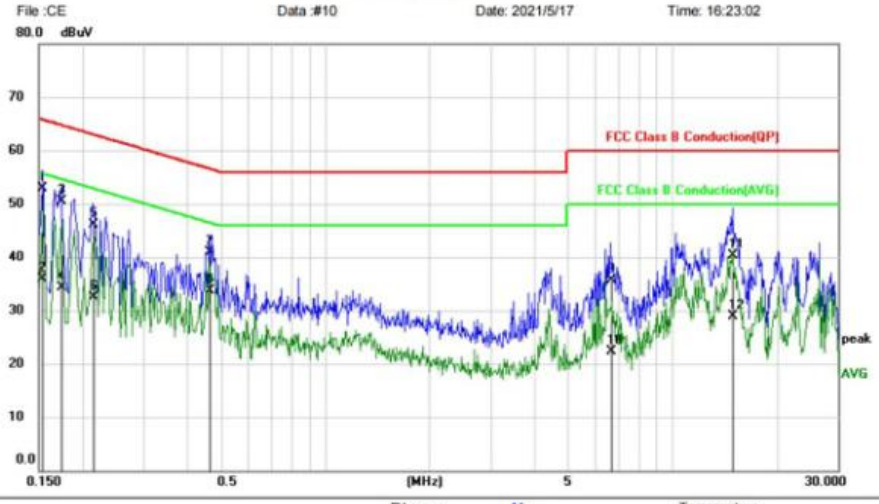
*:Maximum data x:Over limit !:over margin (Reference Only

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.*

EUT:	Set-Top Box	**Model:**	MAG500A
Test By:	Eason	**Test mode:**	Wifi mode
Power Source:	AC120V/60Hz	**Temp./Hum.(%H):**	25℃/52%RH
Test Frequency:	150kHz to 30MHz	**Phase:**	Neutral

Conducted Emission Measurement



Site
Limit: FCC Class B Conduction(QP)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G WIFI mode
Note:

Phase: N
Power:

Temperature:
Humidity: %

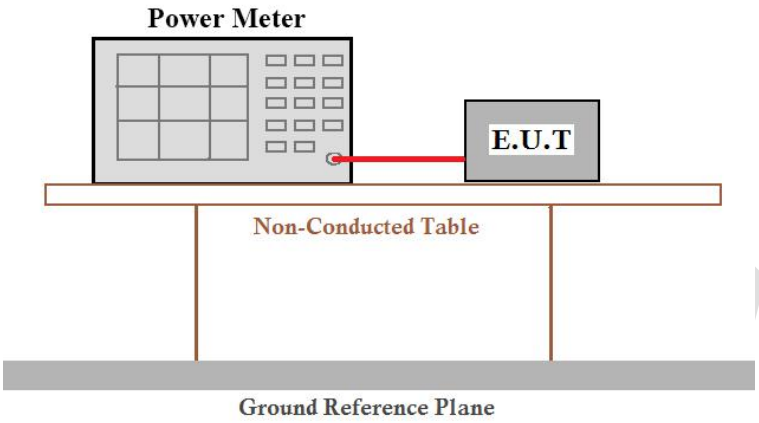
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1539	43.13	9.73	52.86	65.79	-12.93	QP	
2		0.1539	26.08	9.73	35.81	55.79	-19.98	AVG	
3		0.1740	40.83	9.74	50.57	64.77	-14.20	QP	
4		0.1740	24.54	9.74	34.28	54.77	-20.49	AVG	
5		0.2140	36.45	9.75	46.20	63.05	-16.85	QP	
6		0.2140	22.74	9.75	32.49	53.05	-20.56	AVG	
7		0.4660	31.09	9.79	40.88	56.58	-15.70	QP	
8	*	0.4660	23.87	9.79	33.66	46.58	-12.92	AVG	
9		6.6580	25.60	10.01	35.61	60.00	-24.39	QP	
10		6.6580	12.27	10.01	22.28	50.00	-27.72	AVG	
11		14.9140	29.91	10.32	40.23	60.00	-19.77	QP	
12		14.9140	18.54	10.32	28.86	50.00	-21.14	AVG	

*:Maximum data x:Over limit !:over margin 〈Reference Only

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.*

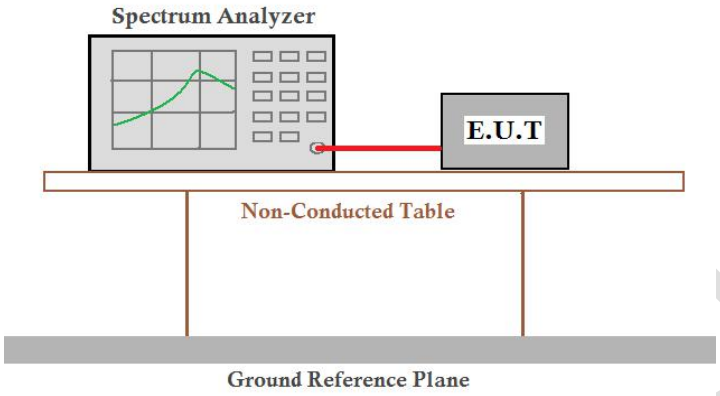
5 Conducted Output Power

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (ii) (2)& (a) (3)
Test Method:	KDB 789033 D02 II E
Limit:	**Band 1:** 250mW, **Band 2:** 250mW, **Band 3:** 250mW, **Band 4:** 1000mW,
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

Please Refer To Appendix: Appendix3

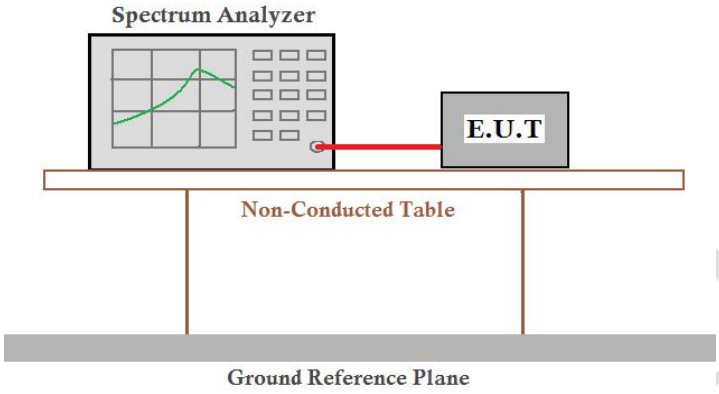
6 Occupy Bandwidth

Test Requirement:	FCC Part15 E Section 15.407 (a) (5) and Section 15.407 (e)
Test Method:	ANSI C63.10:2013 and KDB 789033
Limit:	500KHz(26dB Emission Bandwidth and 99% Occupy Bandwidth)
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

Please Refer To Appendix: Appendix3

7 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (ii) (2)& (a) (3)
Test Method:	ANSI C63.10:2013, KDB 789033
Limit:	**Band 1:**11 dBm/MHz, **Band 2:**11 dBm/MHz, **Band 3:**11 dBm/MHz, **Band 4:**30 dBm/MHz
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

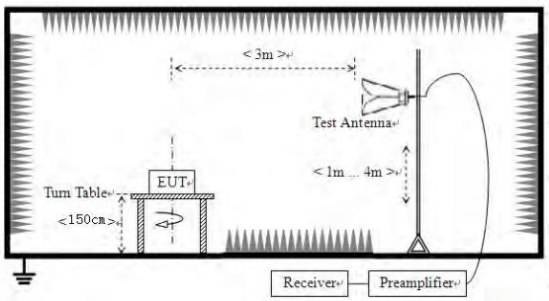
Measurement Data

Please Refer To Appendix: Appendix3

8 Spurious Emission

8.1.1 Band Edge and Restricted Band

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407 (b)</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013 , KDB 789033</td></tr>
<tr><td>Receiver setup:</td><td>Band Edge:
<table>
<tr><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
Restricted Band:
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table></td></tr>
<tr><td>Limit:</td><td>Band Edge:
<table>
<tr><td></td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="4">Band 2/3/4</td><td>68.20</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
<tr><td>68.20</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
<tr><td colspan="3">Remark:
1. Band 1/2/3/4 limit:
E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m,for EIPR[dBm]=-27dBm.</td></tr>
</table>
Restricted Band:
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>74.00</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
</table></td></tr>
<tr><td>Remark:</td><td>The test methods for Band Edge and Restricted Bandare the same.
The following tests use the sideband limits as the minimum reference requirements to determine whether the results meet</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</td></tr>
</table>

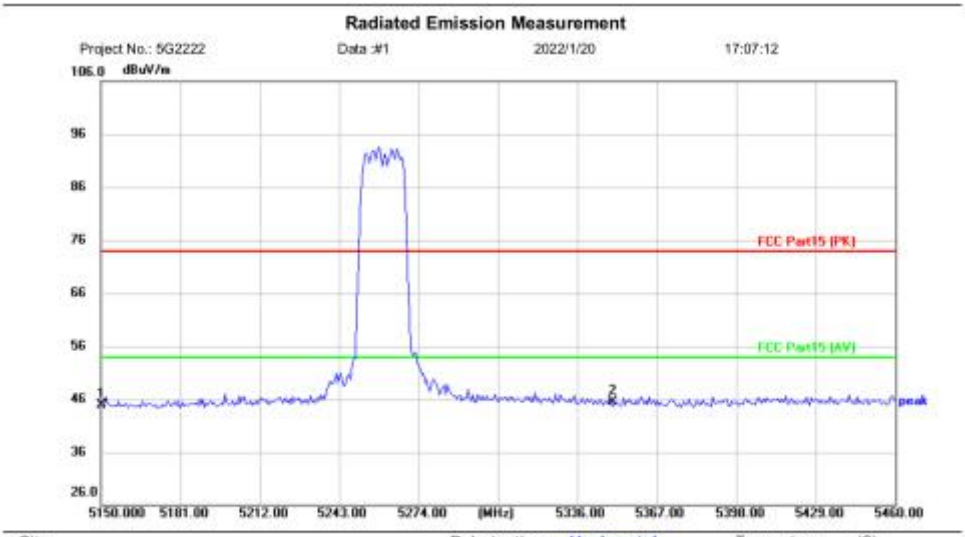
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

Remark: During the test, pre-scan the 802.11a/n/ac mode, and found the 802.11n20 mode which it is worse case.

Band2:

802.11n20:



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band2-N20-TX-L
Note:

Polarization: *Horizontal*
Power:

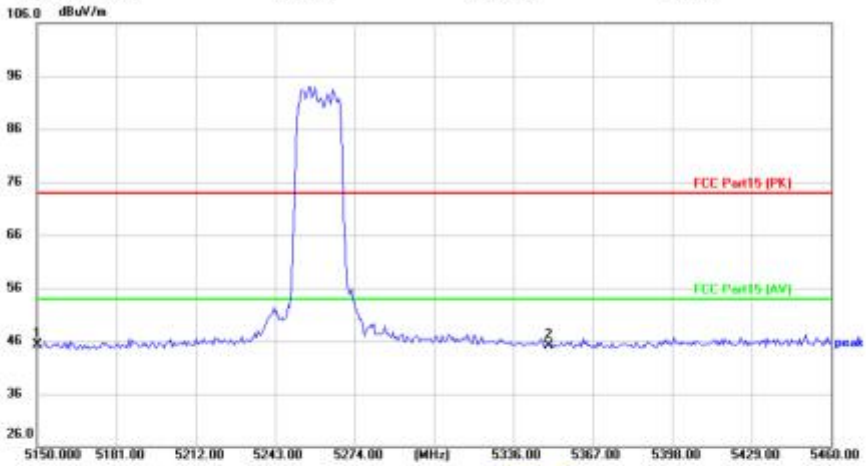
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		5150.000	43.63	1.26	44.89	74.00	-29.11	peak	
2	*	5350.000	43.97	1.55	45.52	74.00	-28.48	peak	

*:Maximum data x:Over limit !:over margin (Reference Only

Radiated Emission Measurement

Project No.: 5G2222 Data :#2 2022/1/20 17:08:29



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band2-N20-TX-L
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5150.000	44.08	1.26	45.34	74.00	-28.66	peak	
2		5350.000	43.63	1.55	45.18	74.00	-28.82	peak	

Radiated Emission Measurement

Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band2-N20-TX-H
Note:

Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5350.000	44.91	1.55	46.46	74.00	-27.54	peak	
2		5460.000	43.99	1.78	45.77	74.00	-28.23	peak	

*:Maximum data x:Over limit !:over margin (Reference Only

Radiated Emission Measurement

Project No.: 5G2222 Data :#9 2022/1/20 17:28:21

Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band2-N20-TX-H
Note:

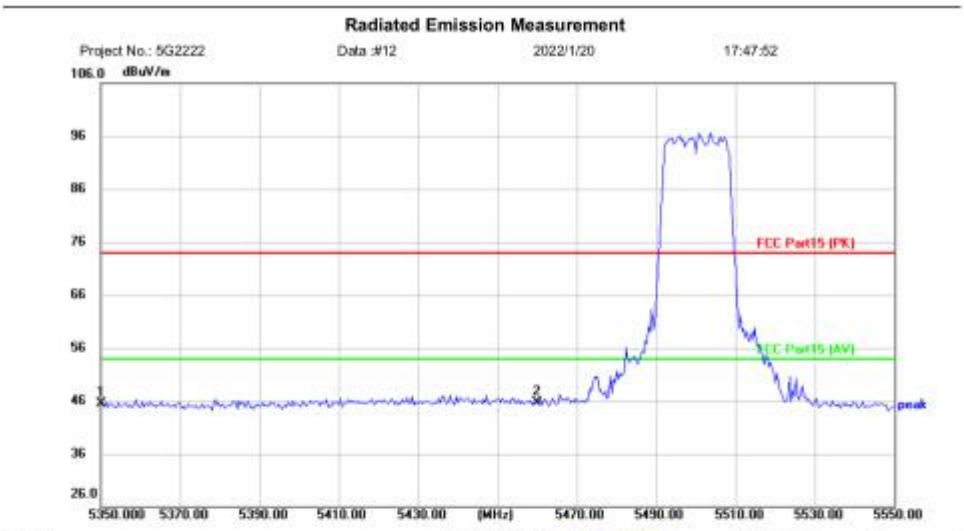
Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5350.000	44.22	1.55	45.77	74.00	-28.23	peak	
2		5460.000	43.64	1.78	45.42	74.00	-28.58	peak	

Band3:

802.11n20:



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band3-N20-TX-L
Note:

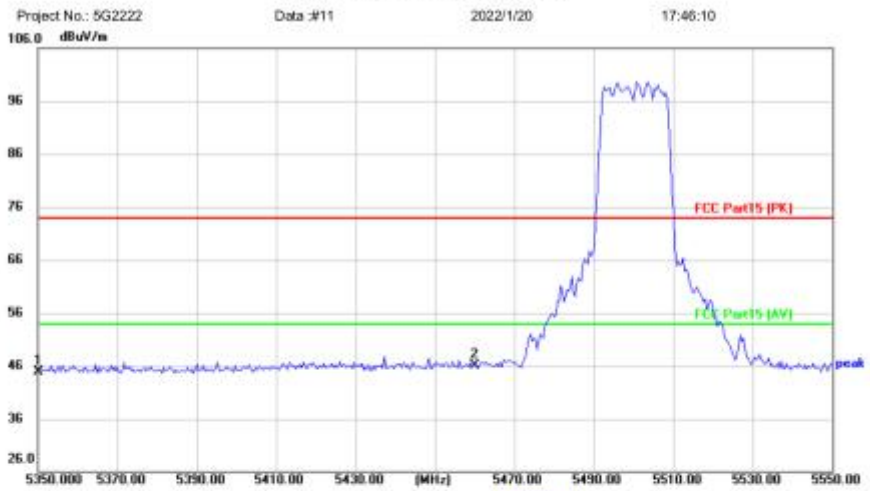
Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		5350.000	44.05	1.55	45.60	74.00	-28.40	peak	
2	*	5460.000	43.97	1.78	45.75	74.00	-28.25	peak	

*:Maximum data x:Over limit !:over margin (Reference Only

Radiated Emission Measurement



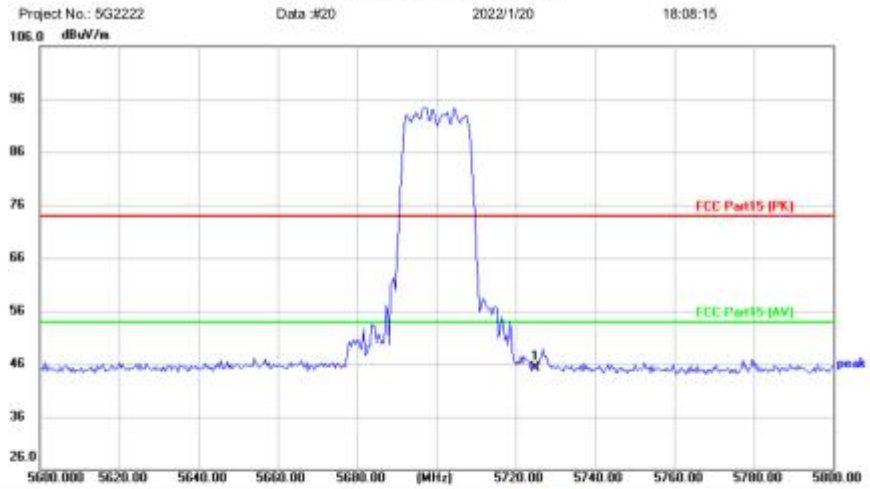
Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band3-N20-TX-L
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		5350.000	43.37	1.55	44.92	74.00	-29.08	peak	
2	*	5460.000	44.35	1.78	46.13	74.00	-27.87	peak	

Radiated Emission Measurement



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band3-N20-TX-H
Note:

Polarization: *Horizontal*
Power:

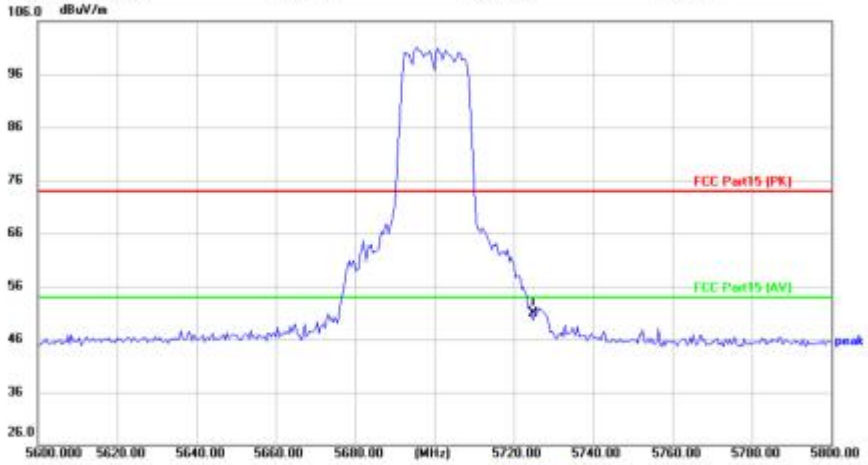
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5725.000	43.58	1.80	45.38	74.00	-28.62	peak	

*:Maximum data x:Over limit !:over margin (Reference Only

Radiated Emission Measurement

Project No.: 5G2222 Data :#19 2022/1/20 18:06:50



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band3-N20-TX-H
Note:

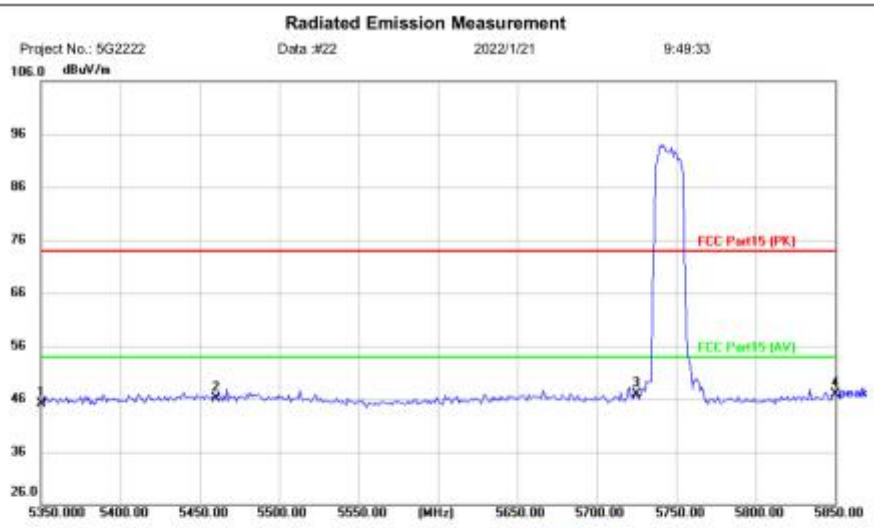
Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5725.000	49.06	1.80	50.86	74.00	-23.14	peak	

Band4:

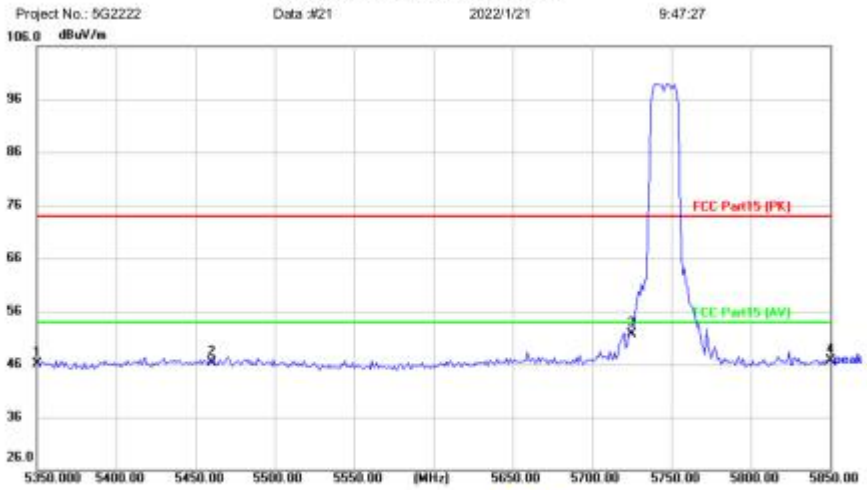
802.11n20:



Site
Polarization: *Horizontal*
Temperature: (C)
Limit: FCC Part15 (PK)
Power:
Humidity: %RH
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band4-N20-TX-L
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		5350.000	43.57	1.55	45.12	74.00	-28.88	peak	
2		5460.000	44.25	1.78	46.03	74.00	-27.97	peak	
3	*	5725.000	45.15	1.80	46.95	74.00	-27.05	peak	
4		5850.000	45.06	1.78	46.84	74.00	-27.16	peak	

Radiated Emission Measurement



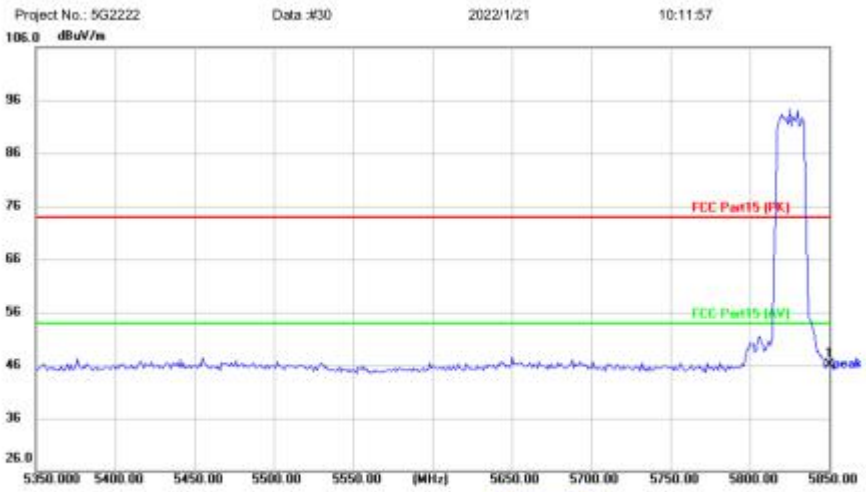
Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band4-N20-TX-L
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		5350.000	44.56	1.55	46.11	74.00	-27.89	peak	
2		5460.000	44.50	1.78	46.28	74.00	-27.72	peak	
3	*	5725.000	49.94	1.80	51.74	74.00	-22.26	peak	
4		5850.000	44.85	1.78	46.63	74.00	-27.37	peak	

Radiated Emission Measurement



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band4-N20-TX-H
Note:

Polarization: *Horizontal*
Power:

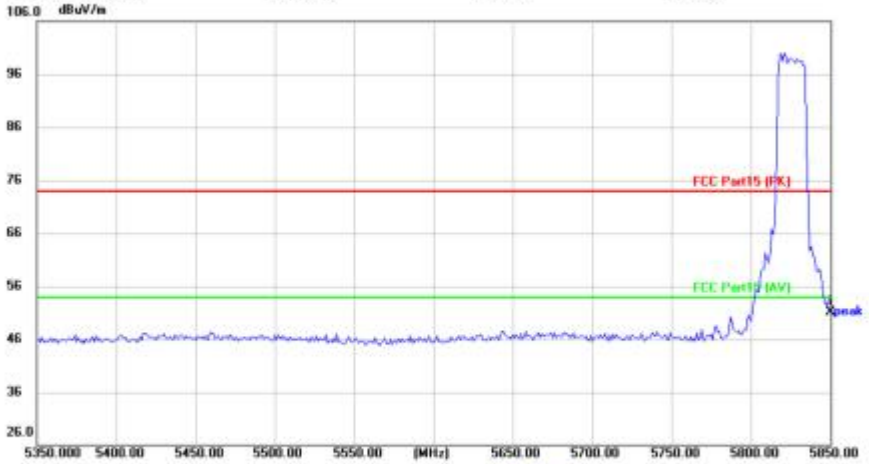
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5850.000	44.38	1.78	46.16	74.00	-27.84	peak	

*:Maximum data x:Over limit !:over margin (Reference Only

Radiated Emission Measurement

Project No.: 5G2222 Data :#29 2022/1/21 10:10:26



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band4-N20-TX-H
Note:

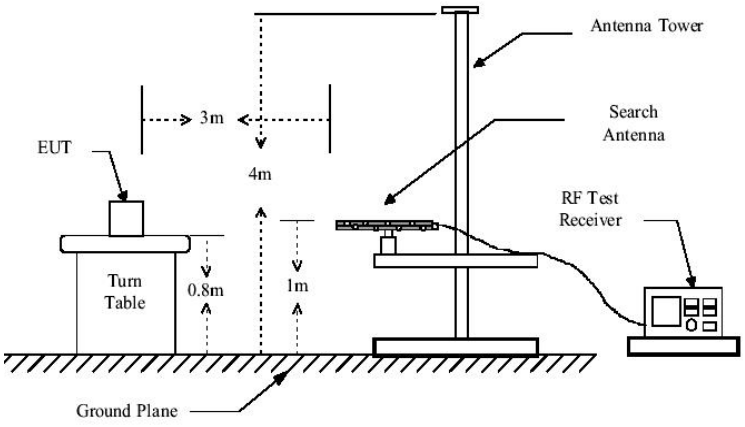
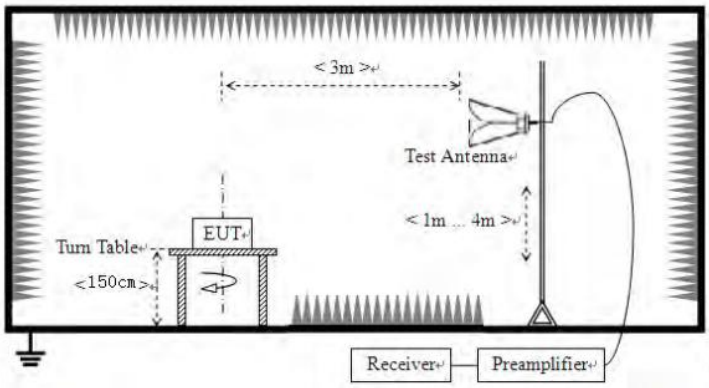
Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5850.000	49.26	1.78	51.04	74.00	-22.96	peak	

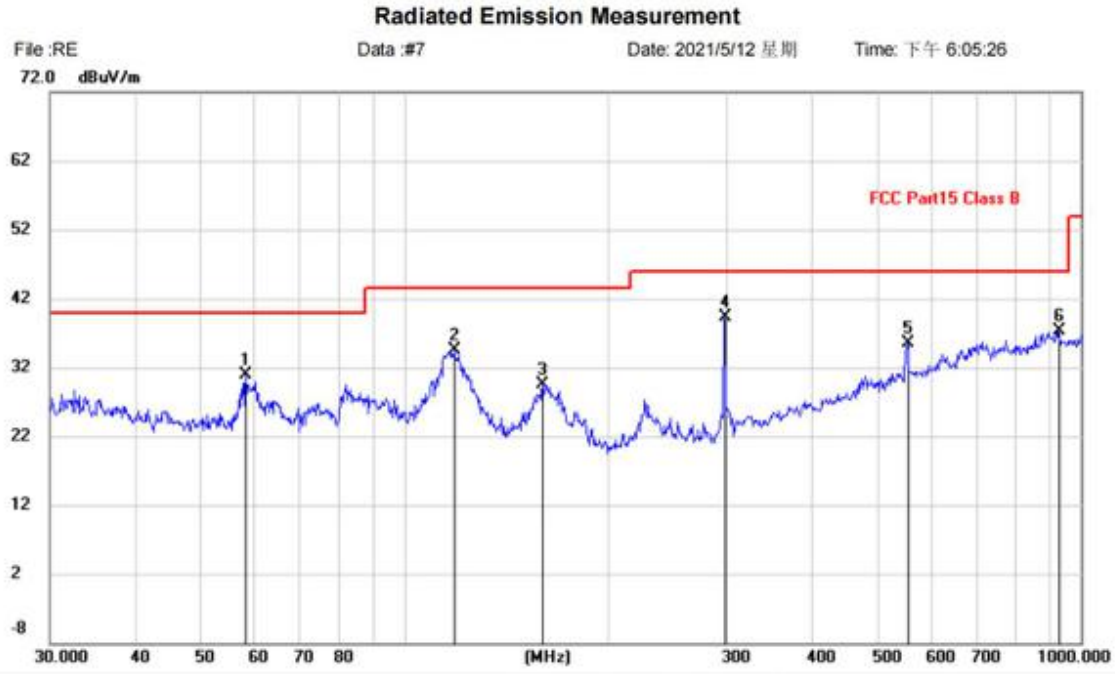
8.1.2 Unwanted Emissions in the Restricted Bands

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 40GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
</table>
<table>
<tr><th>Frequency</th><th>Limit (dBm/MHz)</th><th>Remark</th></tr>
<tr><td rowspan="2">Above 1GHz</td><td>68.20</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
<tr><td colspan="3">Remark:
1. Above 1GHz limit:
E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m,for EIPR[dBm]=-27dBm.</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</td></tr>
</table>

Test setup:	Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Below 1GHz

Horizontal:



Site

Limit: FCC Part15 Class B

EUT: Set-Top Box

M/N: MAG500A

Mode: 5G WIFI mode

Note:

Polarization: *Horizontal*

Power:

Distance: 3m

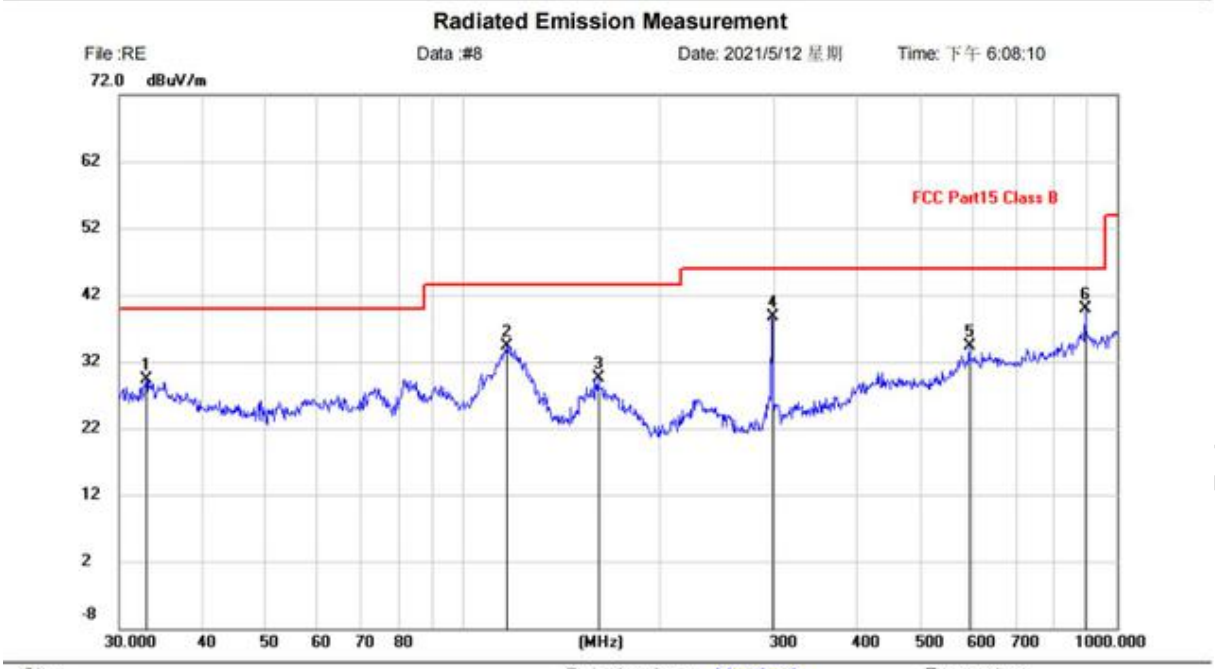
Temperature:

Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		58.4074	7.33	23.50	30.83	40.00	-9.17	QP			
2		118.6012	12.02	22.43	34.45	43.50	-9.05	QP			
3		160.3454	6.45	23.15	29.60	43.50	-13.90	QP			
4	*	297.2241	15.37	23.85	39.22	46.00	-6.78	QP			
5		554.8251	5.37	30.06	35.43	46.00	-10.57	QP			
6		925.7563	1.55	35.68	37.23	46.00	-8.77	QP			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Vertical:



Site
Limit: FCC Part15 Class B
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G WIFI mode
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature:
Humidity: %

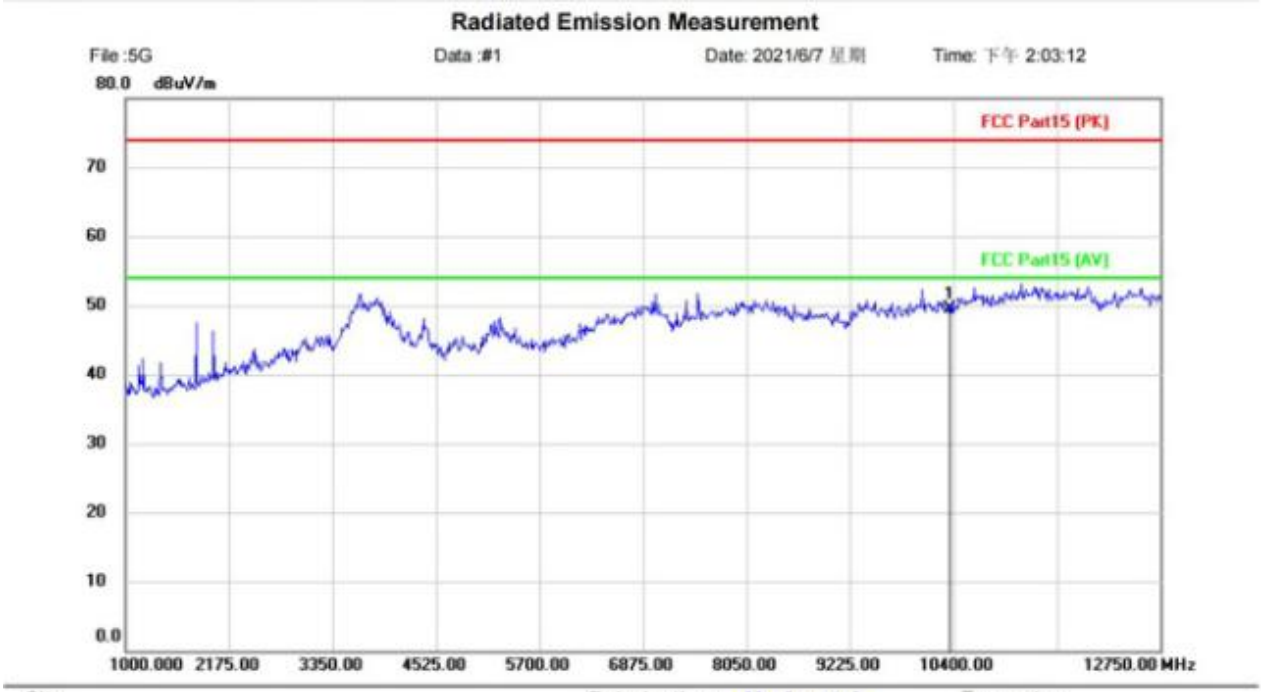
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		32.9791	6.68	22.72	29.40	40.00	-10.60	QP			
2		116.9495	12.02	22.25	34.27	43.50	-9.23	QP			
3		161.4738	6.48	23.05	29.53	43.50	-13.97	QP			
4		297.2241	14.92	23.85	38.77	46.00	-7.23	QP			
5		595.1326	2.88	31.48	34.36	46.00	-11.64	QP			
6	*	893.8567	4.29	35.67	39.96	46.00	-6.04	QP			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Above 1GHz:

Band 1:802.11a mode(worst case)

Lowest channel



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 802.11a-5180
Note:

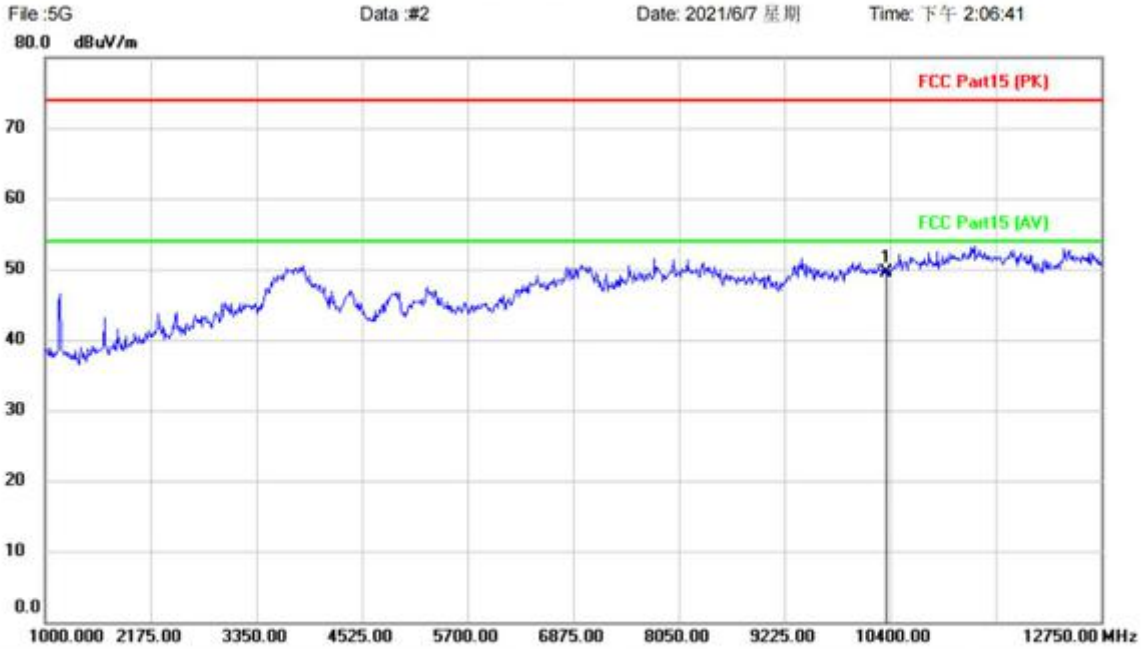
Polarization: *Horizontal*
Power:
Distance:

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	10360.000	38.32	11.09	49.41	74.00	-24.59	peak			

*:Maximum data x:Over limit !:over margin (Reference Only

Radiated Emission Measurement



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 802.11a-5180
Note:

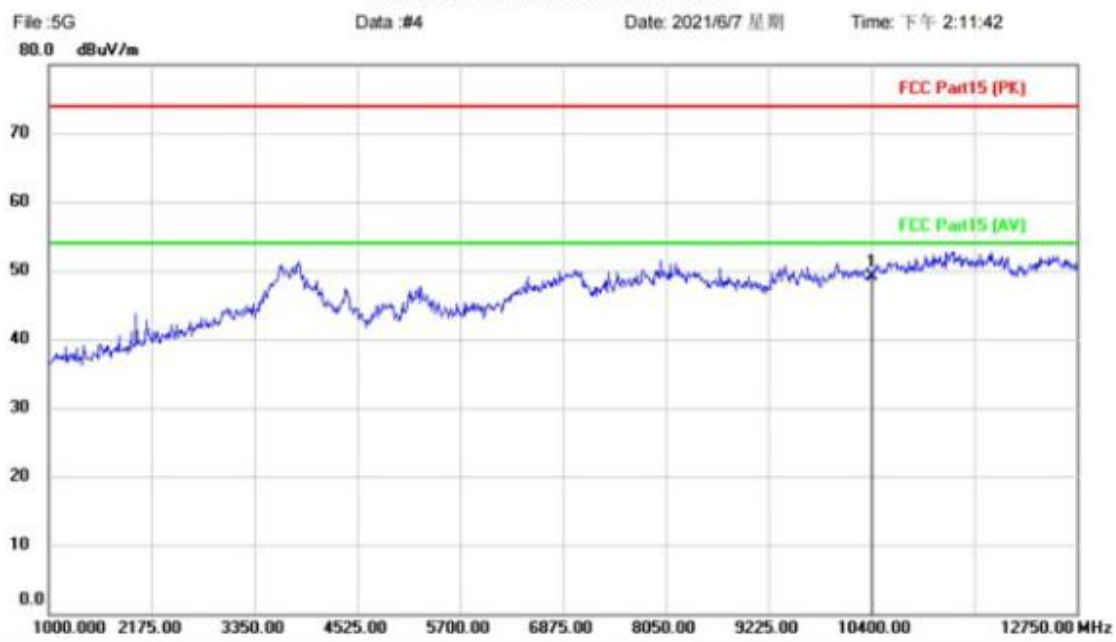
Polarization: *Vertical*
Power:
Distance:

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	10360.000	38.49	11.09	49.58	74.00	-24.42	peak			

*:Maximum data x:Over limit !:over margin (Reference Only

Middle channel



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 802.11a-5200
Note:

Polarization: *Horizontal*
Power:
Distance:

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	10400.000	37.81	11.22	49.03	74.00	-24.97	peak			

*:Maximum data x:Over limit !:over margin (Reference Only

Radiated Emission Measurement

Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 802.11a-5200
Note:

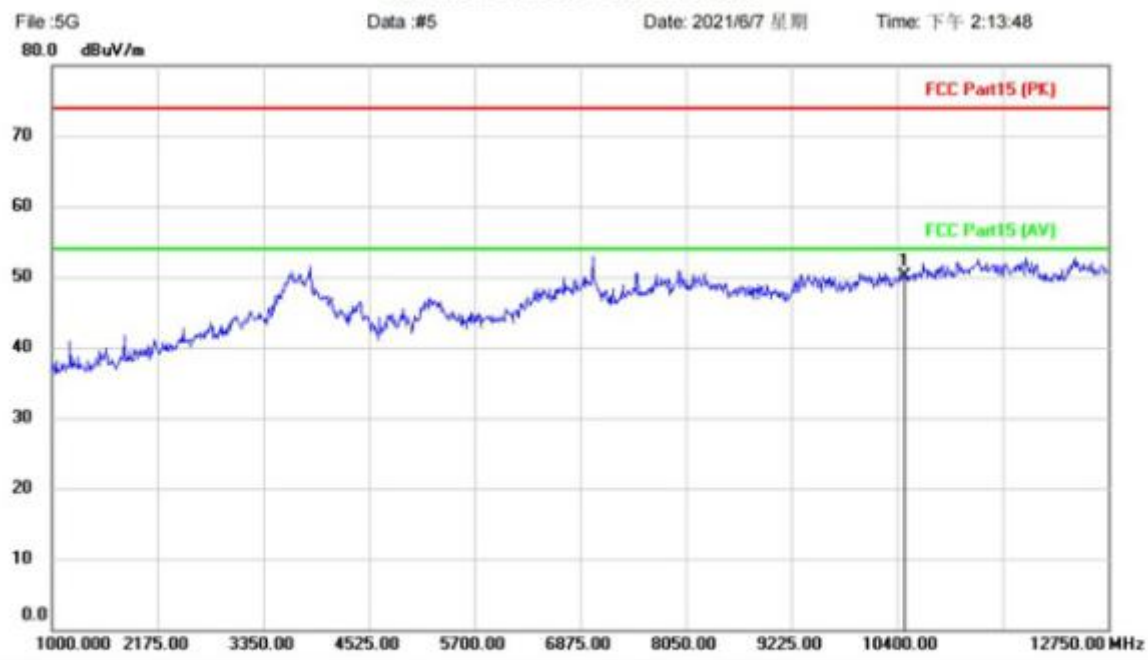
Polarization: *Vertical*
Power:
Distance:

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	10400.000	37.26	11.22	48.48	74.00	-25.52	peak			

*:Maximum data x:Over limit !:over margin 〈Reference Only

Highest channel



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 802.11a-5240
Note:

Polarization: *Horizontal*
Power:
Distance:

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	10480.000	38.98	11.18	50.16	74.00	-23.84	peak			

*:Maximum data x:Over limit !:over margin (Reference Only

Radiated Emission Measurement

Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 802.11a-5240
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	10480.000	38.95	11.18	50.13	74.00	-23.87	peak			

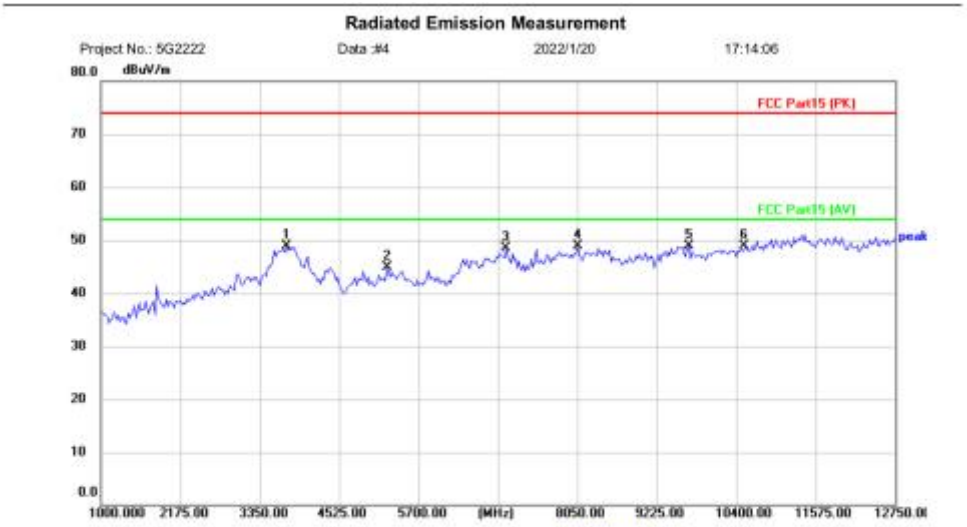
*:Maximum data x:Over limit !:over margin (Reference Only

Remark:

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

Band 2:802.11a mode (worst case)

Lowest channel



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band2-A-TX-L
Note:

Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3749.500	41.55	7.32	48.87	74.00	-25.13	peak	
2		5230.000	39.40	5.44	44.84	74.00	-29.16	peak	
3		6992.500	40.47	7.94	48.41	74.00	-25.59	peak	
4		8050.000	40.83	8.01	48.84	74.00	-25.16	peak	
5		9695.000	39.38	9.48	48.86	74.00	-25.14	peak	
6	*	10520.000	37.75	11.17	48.92	74.00	-25.08	peak	

*:Maximum data x:Over limit !:over margin (Reference Only

Radiated Emission Measurement

Project No.: 5G2222 Data :#3 2022/1/20 17:10:56

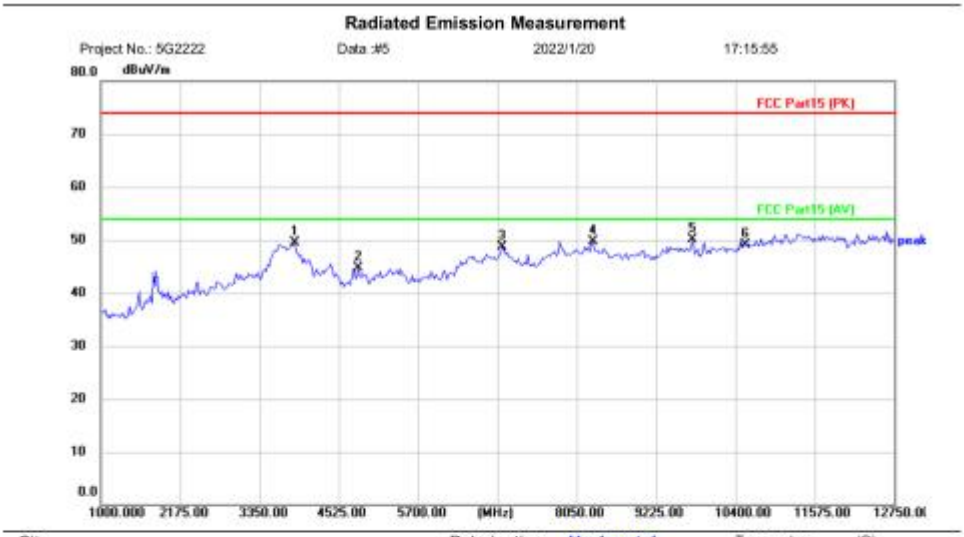
Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band2-A-TX-L
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	3820.000	43.03	7.09	50.12	74.00	-23.88	peak	
2		5418.000	41.24	3.65	44.89	74.00	-29.11	peak	
3		6922.000	39.99	7.92	47.91	74.00	-26.09	peak	
4		8238.000	40.67	8.22	48.89	74.00	-25.11	peak	
5		9554.000	40.07	9.17	49.24	74.00	-24.76	peak	
6		10520.000	38.05	11.17	49.22	74.00	-24.78	peak	

Middle channel



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band2-A-TX-M
Note:

Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3867.000	42.94	6.47	49.41	74.00	-24.59	peak	
2		4807.000	41.69	3.09	44.78	74.00	-29.22	peak	
3		6945.500	40.69	7.93	48.62	74.00	-25.38	peak	
4		8285.000	41.39	8.24	49.63	74.00	-24.37	peak	
5	*	9765.500	40.38	9.63	50.01	74.00	-23.99	peak	
6		10560.000	37.95	11.14	49.09	74.00	-24.91	peak	

Radiated Emission Measurement

Project No.: 5G2222 Data :#6 2022/1/20 17:17:44

Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band2-A-TX-M
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3867.000	42.86	6.47	49.33	74.00	-24.67	peak	
2		5418.000	41.19	3.65	44.84	74.00	-29.16	peak	
3		6992.500	40.27	7.94	48.21	74.00	-25.79	peak	
4		8238.000	41.00	8.22	49.22	74.00	-24.78	peak	
5	*	9742.000	40.95	9.57	50.52	74.00	-23.48	peak	
6		10560.000	37.78	11.14	48.92	74.00	-25.08	peak	

*:Maximum data x:Over limit !:over margin (Reference Only

Highest channel

Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band2-A-TX-H
Note:

Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	3632.000	45.00	7.25	52.25	74.00	-21.75	peak	
2		4901.000	41.81	2.96	44.77	74.00	-29.23	peak	
3		6969.000	40.31	7.93	48.24	74.00	-25.76	peak	
4		8167.500	41.95	8.17	50.12	74.00	-23.88	peak	
5		9742.000	40.57	9.57	50.14	74.00	-23.86	peak	
6		10640.000	37.84	11.26	49.10	74.00	-24.90	peak	

Radiated Emission Measurement

Project No.: 5G2222 Data :#7 2022/1/20 17:22:33

Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band2-A-TX-H
Note:

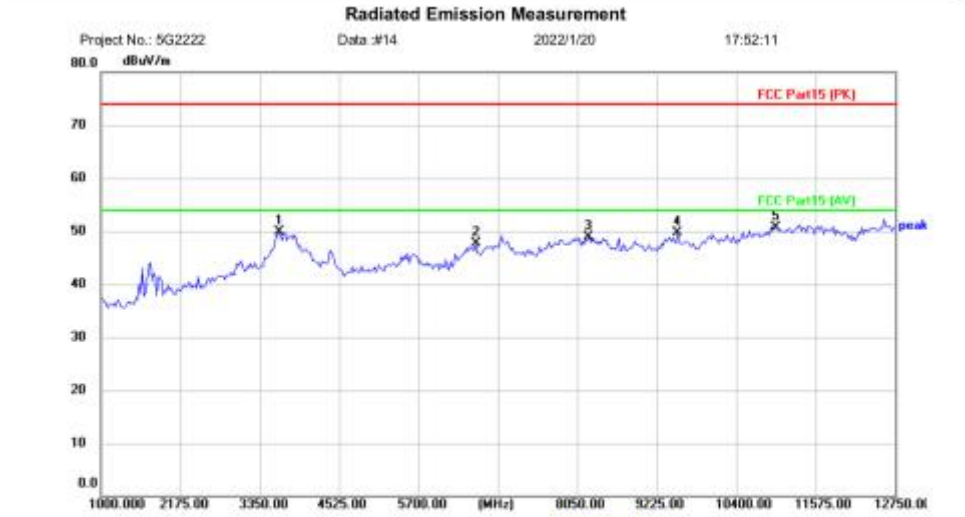
Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	3702.500	42.84	7.29	50.13	74.00	-23.87	peak	
2		5465.000	42.15	3.25	45.40	74.00	-28.60	peak	
3		6945.500	40.68	7.93	48.61	74.00	-25.39	peak	
4		7815.000	41.22	7.72	48.94	74.00	-25.06	peak	
5		9436.500	41.18	8.91	50.09	74.00	-23.91	peak	
6		10640.000	38.09	11.26	49.35	74.00	-24.65	peak	

Band 3:802.11a mode (worst case)

Lowest channel



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band3-A-TX-L
Note:

Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3632.000	42.56	7.43	49.99	74.00	-24.01	peak	
2		6546.000	40.75	6.88	47.63	74.00	-26.37	peak	
3		8214.500	40.62	8.21	48.83	74.00	-25.17	peak	
4		9530.500	40.60	9.12	49.72	74.00	-24.28	peak	
5	*	11000.000	38.71	11.99	50.70	74.00	-23.30	peak	

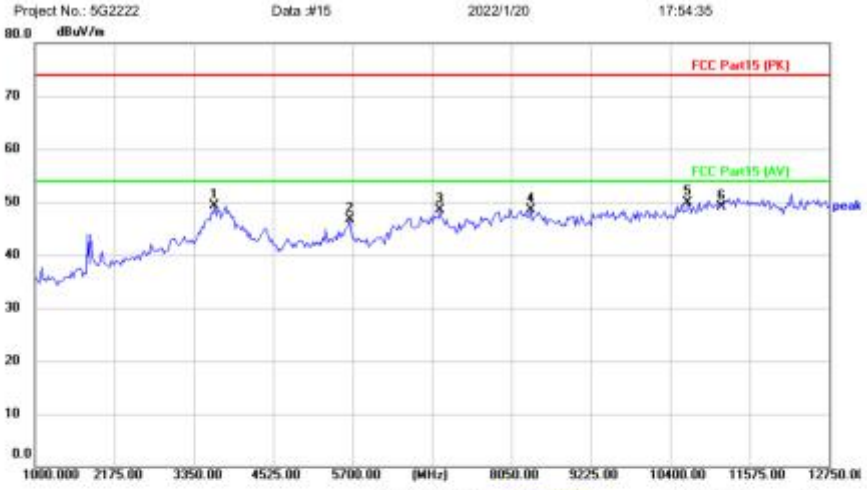
Radiated Emission Measurement

Project No.: 5G2222 Data :#13 2022/1/20 17:50:50

Site Polarization: *Vertical* Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band3-A-TX-L
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3820.000	43.09	7.28	50.37	74.00	-23.63	peak	
2		5488.500	40.36	5.87	46.23	74.00	-27.77	peak	
3		7791.500	41.59	7.68	49.27	74.00	-24.73	peak	
4		8919.500	40.18	7.95	48.13	74.00	-25.87	peak	
5		10094.500	39.27	10.51	49.78	74.00	-24.22	peak	
6	*	11000.000	38.50	11.99	50.49	74.00	-23.51	peak	

Middle channel



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band3-A-TX-M
Note:

Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3655.500	41.83	7.51	49.34	74.00	-24.66	peak	
2		5653.000	41.33	5.47	46.80	74.00	-27.20	peak	
3		6992.500	40.46	7.97	48.43	74.00	-25.57	peak	
4		8332.000	40.27	8.26	48.53	74.00	-25.47	peak	
5	*	10658.500	38.59	11.32	49.91	74.00	-24.09	peak	
6		11160.000	37.05	12.03	49.08	74.00	-24.92	peak	

Radiated Emission Measurement

Project No.: 5G2222 Data :#16 2022/1/20 17:55:48

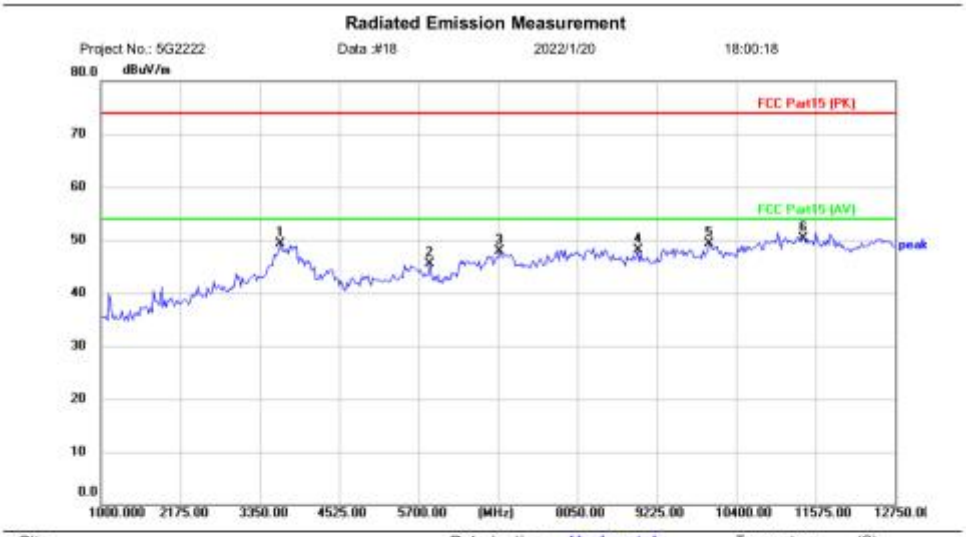
Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band3-A-TX-M
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3796.500	42.34	7.56	49.90	74.00	-24.10	peak	
2		5535.500	40.70	5.76	46.46	74.00	-27.54	peak	
3		7016.000	42.30	5.22	47.52	74.00	-26.48	peak	
4		8026.500	40.62	7.98	48.60	74.00	-25.40	peak	
5	*	9765.500	40.79	9.63	50.42	74.00	-23.58	peak	
6		11160.000	37.65	12.03	49.68	74.00	-24.32	peak	

Highest channel



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band3-A-TX-H
Note:

Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3655.500	41.71	7.51	49.22	74.00	-24.78	peak	
2		5864.500	42.03	3.42	45.45	74.00	-28.55	peak	
3		6898.500	40.14	7.79	47.93	74.00	-26.07	peak	
4		8943.000	40.02	7.99	48.01	74.00	-25.99	peak	
5		10000.500	38.79	10.46	49.25	74.00	-24.75	peak	
6	*	11400.000	38.49	11.76	50.25	74.00	-23.75	peak	

Radiated Emission Measurement

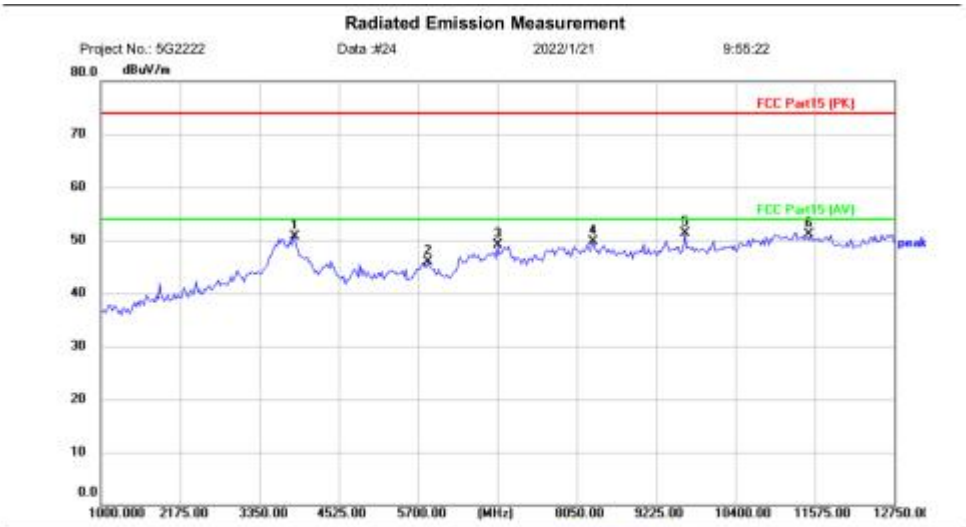
Project No.: 5G2222 Data :#17 2022/1/20 17:57:46

Site Polarization: *Vertical* Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band3-A-TX-H
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3796.500	42.42	7.56	49.98	74.00	-24.02	peak	
2		5559.000	39.50	5.71	45.21	74.00	-28.79	peak	
3		7016.000	42.81	5.22	48.03	74.00	-25.97	peak	
4		9366.000	40.33	8.78	49.11	74.00	-24.89	peak	
5		9977.000	39.14	10.37	49.51	74.00	-24.49	peak	
6	*	11400.000	39.87	11.76	51.63	74.00	-22.37	peak	

Band 4:802.11a mode (worst case)

Lowest channel



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band4-A-TX-L
Note:

Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3867.000	44.28	6.39	50.67	74.00	-23.33	peak	
2		5841.000	41.09	4.77	45.86	74.00	-28.14	peak	
3		6875.000	41.15	7.91	49.06	74.00	-24.94	peak	
4		8285.000	41.53	8.24	49.77	74.00	-24.23	peak	
5	*	9648.000	41.87	9.37	51.24	74.00	-22.76	peak	
6		11490.000	39.17	11.89	51.06	74.00	-22.94	peak	

Radiated Emission Measurement

Project No.: 5G2222 Data :#23 2022/1/21 9:52:45

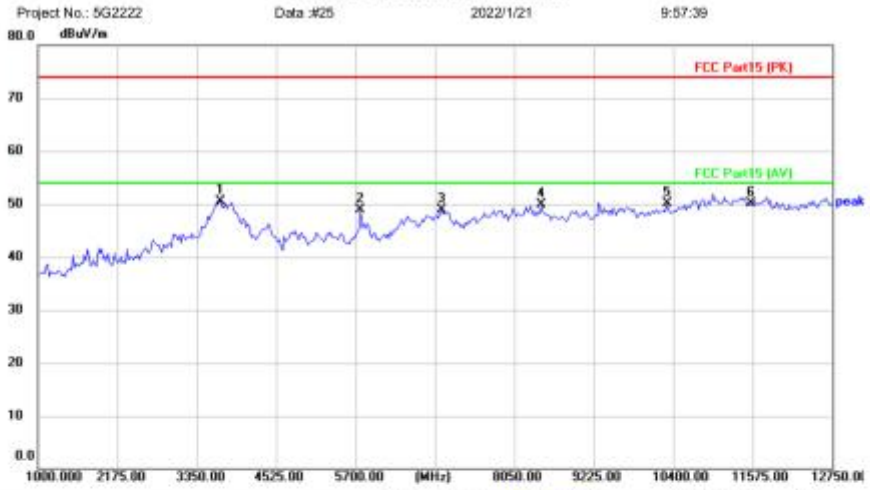
Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band4-A-TX-L
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	3632.000	43.48	7.46	50.94	74.00	-23.06	peak	
2		5817.500	41.16	5.06	46.22	74.00	-27.78	peak	
3		7039.500	43.02	5.32	48.34	74.00	-25.66	peak	
4		8308.500	40.72	8.25	48.97	74.00	-25.03	peak	
5		9648.000	40.47	9.37	49.84	74.00	-24.16	peak	
6		11490.000	38.36	11.89	50.25	74.00	-23.75	peak	

Middle channel



Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band4-A-TX-M
Note:

Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	3702.500	43.28	7.31	50.59	74.00	-23.41	peak	
2		5770.500	43.34	5.66	49.00	74.00	-25.00	peak	
3		6969.000	40.78	8.05	48.83	74.00	-25.17	peak	
4		8449.500	41.66	8.20	49.86	74.00	-24.14	peak	
5		10306.000	39.27	10.92	50.19	74.00	-23.81	peak	
6		11570.000	38.19	12.01	50.20	74.00	-23.80	peak	

Radiated Emission Measurement

Project No.: 5G2222 Data :#26 2022/1/21 10:00:12

Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band4-A-TX-M
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3632.000	42.97	7.46	50.43	74.00	-23.57	peak	
2		5676.500	42.18	3.83	46.01	74.00	-27.99	peak	
3		6945.500	40.75	8.02	48.77	74.00	-25.23	peak	
4		8191.000	42.37	8.20	50.57	74.00	-23.43	peak	
5		9648.000	40.84	9.37	50.21	74.00	-23.79	peak	
6	*	11570.000	38.94	12.01	50.95	74.00	-23.05	peak	

Highest channel

Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band4-A-TX-H
Note:

Polarization: *Horizontal*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3655.500	43.39	7.42	50.81	74.00	-23.19	peak	
2		5911.500	42.60	4.00	46.60	74.00	-27.40	peak	
3		7791.500	41.97	7.68	49.65	74.00	-24.35	peak	
4		9648.000	40.80	9.37	50.17	74.00	-23.83	peak	
5	*	10588.000	40.03	11.14	51.17	74.00	-22.83	peak	
6		11650.000	38.40	11.93	50.33	74.00	-23.67	peak	

Radiated Emission Measurement

Project No.: 5G2222 Data :#27 2022/1/21 10:02:09

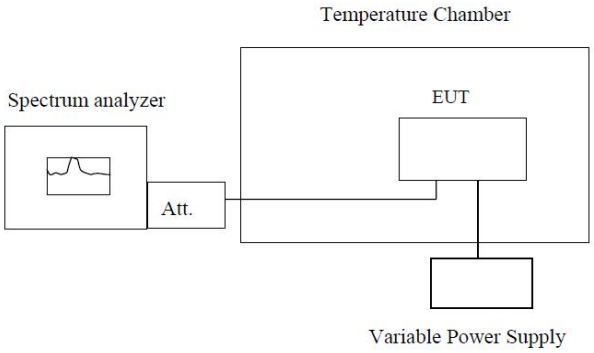
Site
Limit: FCC Part15 (PK)
EUT: Set-Top Box
M/N: MAG500A
Mode: 5G-Band4-A-TX-H
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	3608.500	43.68	7.53	51.21	74.00	-22.79	peak	
2		5770.500	40.68	5.66	46.34	74.00	-27.66	peak	
3		7016.000	43.50	5.22	48.72	74.00	-25.28	peak	
4		7815.000	42.13	7.72	49.85	74.00	-24.15	peak	
5		9648.000	41.34	9.37	50.71	74.00	-23.29	peak	
6		11650.000	38.32	11.93	50.25	74.00	-23.75	peak	

8.2 Frequency stability

Test Requirement:	FCC Part15 E Section 15.407 (g)
Limit:	Manufacturers of U-NII devices are responsible for ensuringfrequency stability such that anemission is maintained within the band of operation under all conditions of normal operation asspecified in the user's manual.
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test procedure:	1. The EUT is installed in an environment test chamber with external power source. 2. Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage ofEUT. 3. A sufficient stabilization period at each temperature is used prior to each frequency measurement. 4. When temperature is stabled, measure the frequency stability. 5. The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage.Change setting of chamber and external power source to complete all conditions.
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report.
Test results:	Passed

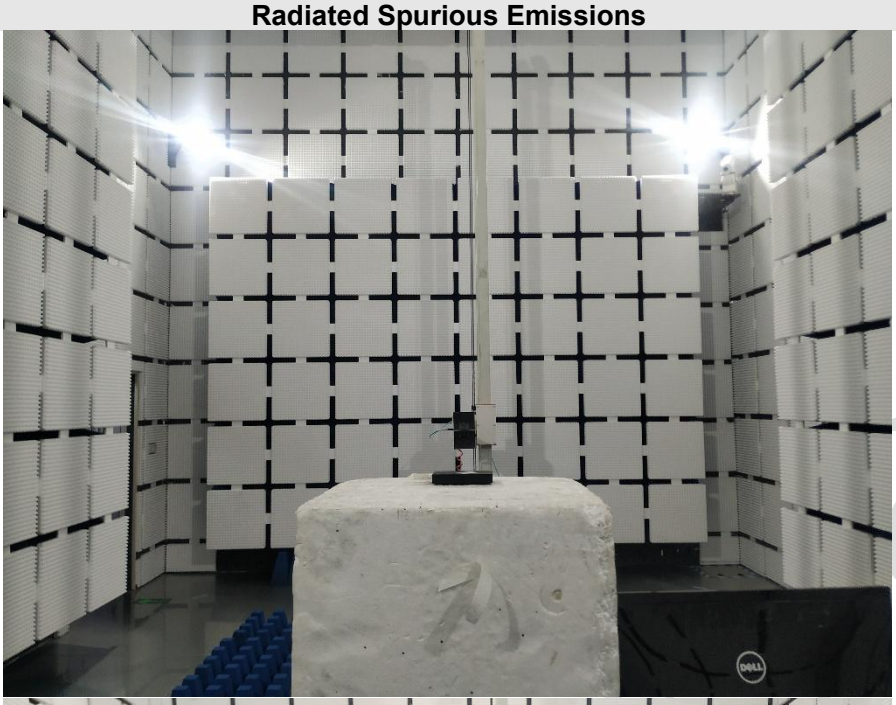
Measurement Data

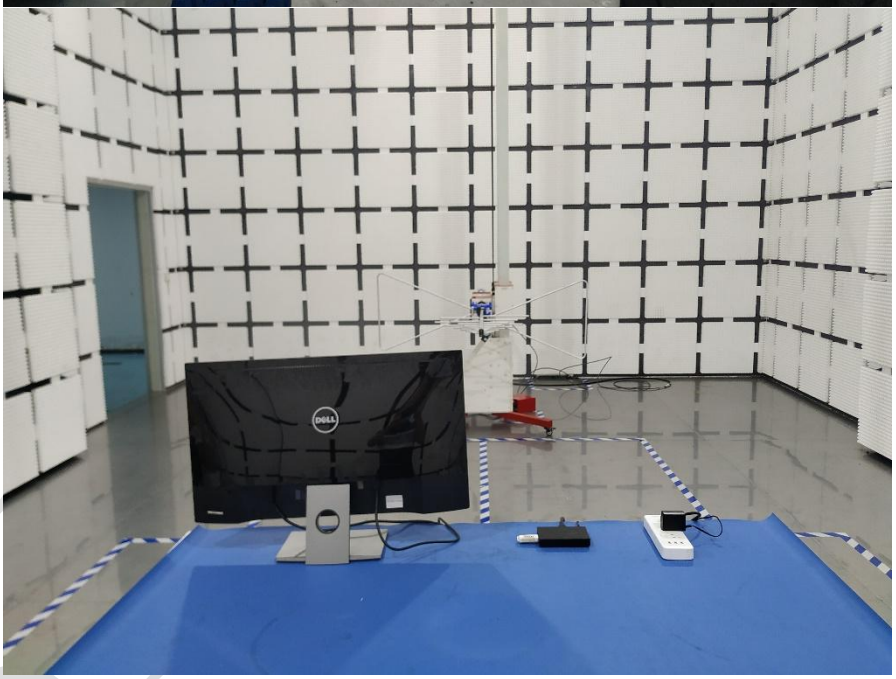
Please Refer To Appendix: Appendix3

9 Test Setup Photo

Conducted Emissions at AC Power Line (150kHz-30MHz)

Radiated Spurious Emissions





10 EUT Constructional Details

Reference to the test report No. BLA-EMC-202105-A0701

------End of report------