

TEST REPORT

Product Name : Slim Tag

Brand Mark : ATUVOS, VOCOLINC

Model No. : AT2203

Extension model : VT2202, AT2204

Report Number : BLA-EMC-202210-A8902

FCC ID : 2AXT8-AT2203

Date of Sample Receipt : 2022/11/3

Date of Test : 2022/11/3 to 2022/11/14

Date of Issue : 2022/11/14

Test Standard : 47 CFR Part 15, Subpart C 15.247

Test Result : Pass

Prepared for:

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Prepared by:

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Review by:

Date:







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REPORT REVISE RECORD

Version No. Date		Description	
00	2022/11/14	Original	





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1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.5	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	Pass



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2 GENERAL INFORMATION

Applicant	Felion Technologies Company Limited	
Address	304,3/F, Fuxing Office Building, No.6 Binglang Road, Fubao Community, Futian District, Shenzhen	
Manufacturer	Felion Technologies Company Limited	
Address	304,3/F, Fuxing Office Building, No.6 Binglang Road, Fubao Community, Futian District, Shenzhen	
Factory	Felion Technologies Company Limited	
Address	304,3/F, Fuxing Office Building, No.6 Binglang Road, Fubao Community, Futian District, Shenzhen	
Product Name	Slim Tag	
Test Model No.	AT2203	
Extension model	VT2202, AT2204	
Note	All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are model name for commercial purpose.	

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	N/A
Software Version	N/A
Operation Frequency:	2402MHz-2480MHz
Modulation Type:	GFSK
Rate data:	1Mbps; 2Mbps
Channel Spacing:	2MHz
Number of Channels:	40
Antenna Type:	PCB Antenna
Antenna Gain:	0dBi (Provided by the applicant)



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4 TEST ENVIRONMENT

Environment	Temperature	Voltage
Normal	25°C	DC3.0

5 TEST MODE

TEST MODE	TEST MODE DESCRIPTION	
Transmitting mode	Keep the EUT in continuously transmitting mode with modulation.	
Remark: Full battery is used during all test except ac conducted emission, BLE 1M,BLE 2M all have be		
tested, during the test, BLE 1M,BLE 2M modulation were all pre-scanned only BLE 1M worse case is		

6 MEASUREMENT UNCERTAINTY

Parameter	Expanded Uncertainty (Confidence of 95%)	
Radiated Emission(9kHz-30MHz)	±4.34dB	
Radiated Emission(30Mz-1000MHz)	±4.24dB	
Radiated Emission(1GHz-18GHz)	±4.68dB	
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB	

Parameter	Expanded Uncertainty (Confidence of 95%)		
Occupied Channel Bandwidth	±5 %		
RF output power, conducted	±1.5 dB		
Power Spectral Density, conducted	±3.0 dB		
Unwanted Emissions, conducted	±3.0 dB		
Temperature	±3 °C		
Supply voltages	±3 %		
Time	±5 %		
Radiated Emission (30MHz ~ 1000MHz)	±4.35 dB		
Radiated Emission (1GHz ~ 18GHz)	±4.44 dB		



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7 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
AC Adapter (UGREEN)	UGREEN	CD112	N/A	N/A

8 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.



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9 TEST INSTRUMENTS LIST

Test Equipment Of Radiated Spurious Emissions						
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due	
Chamber 1	SKET	966	N/A	2020/11/10	2023/11/9	
Chamber 2	SKET	966	N/A	2021/07/20	2024/07/19	
Spectrum	R&S	FSP40	100817	2022/09/15	2023/09/14	
Receiver	R&S	ESR7	101199	2022/09/15	2023/09/14	
Receiver	R&S	ESPI7	101477	2022/07/16	2023/07/15	
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2022/09/15	2023/09/14	
Horn Antenna	Schwarzbeck	BBHA9120D	01892 P:00331	2022/09/13	2025/09/12	
Amplifier	SKET	LNPA_30M01G-30	SK2021060801	2022/07/16	2023/07/15	
Amplifier	SKET	PA-000318G-45	N/A	2022/09/13	2023/09/12	
Amplifier	SKET	LNPA_18G40G-50	SK2022071301	2022/07/14	2023/07/13	
Filter group	SKET	2.4G/5G Filter group r	N/A	2022/07/16	2023/07/15	
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A	
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2022/9/14	2025/9/13	
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 Equipmen	t Of RF Conducte	ed Test			
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2022/09/15	2023/09/14
Spectrum	Agilent	N9020A	MY49100060	2022/09/07	2023/09/06
Spectrum	KEYSIGHT	N9030A	MY52350152	2022/07/01	2023/06/30
Spectrum	KEYSIGHT	N9010A	MY54330814	2022/07/01	2023/06/30
Signal Generator	Agilent	N5182A	MY47420955	2022/09/07	2023/09/06
Signal Generator	Agilent	E8257D	MY44320250	2022/07/01	2023/06/30
Signal Generator	Agilent	N5181A	MY46240904	2022/08/02	2023/08/01



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Signal Generator	R&S	CMW500	132429	2022/09/07	2023/09/06
BluetoothTester	Anritsu	MT8852B	06262047872	2022/09/07	2023/09/06
Power probe	DARE	RPR3006W	14I00889SN042	2022/09/07	2023/09/06
DCPowersupply	zhaoxin	KXN-305D	20K305D1221363	2022/09/14	2023/09/13
DCPowersupply	zhaoxin	RXN-1505D	19R1505D050168	2022/09/14	2023/09/13





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10 CONDUCTED BAND EDGES MEASUREMENT

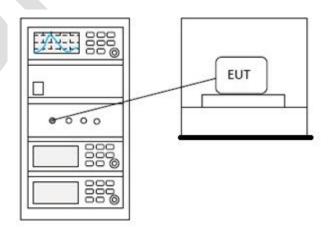
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

10.1 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)).

10.2 BLOCK DIAGRAM OF TEST SETUP





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10.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details





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11 RADIATED SPURIOUS EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

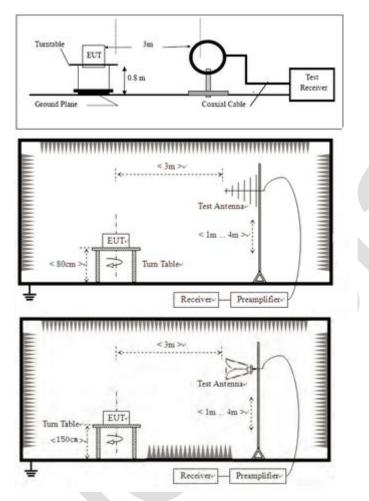
11.1 LIMITS

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

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.



11.2 BLOCK DIAGRAM OF TEST SETUP



11.3 PROCEDURE

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. 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.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.



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h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark:

- 1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

- 3) Scan from 9kHz to 25GHz, the disturbance above 12.75GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. fundamental frequency is blocked by filter, and only spurious emission is shown.
- 4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.



(C)

%RH

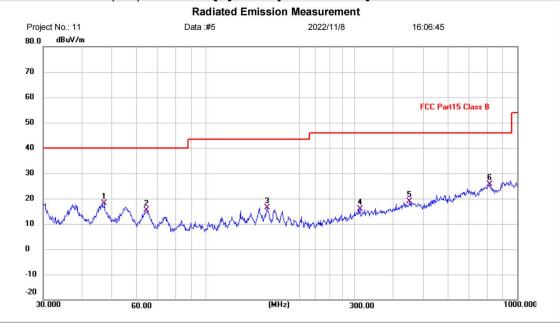
Temperature:

Humidity:

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11.4 TEST DATA

[TestMode: TX mode (SE) below 1G]; [Polarity: Horizontal]



Polarization: Horizontal

Site Limit: FCC Part15 Class B

EUT: Slim Tag M/N: AT2203

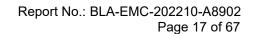
Mode: BLE TX mode

Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	47.1598	24.55	-6.36	18.19	40.00	-21.81	QP	Р	
2	64.4330	23.46	-7.98	15.48	40.00	-24.52	QP	Р	
3	157.0073	22.18	-5.70	16.48	43.50	-27.02	QP	Р	
4	312.1794	21.06	-5.30	15.76	46.00	-30.24	QP	Р	
5	451.1350	20.82	-1.90	18.92	46.00	-27.08	QP	Р	
6 *	815.9678	20.41	5.19	25.60	46.00	-20.40	QP	Р	_

Power:

^{*:}Maximum data x:Over limit !:over margin

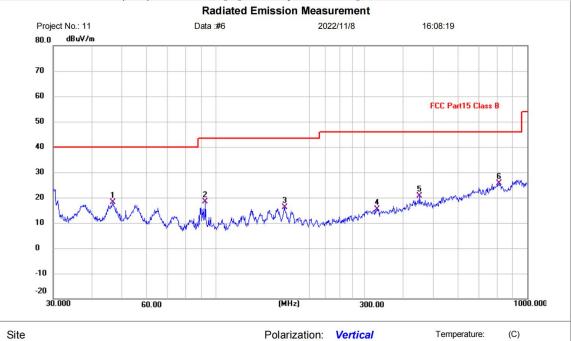


Humidity:

%RH



[TestMode: TX mode (SE) below 1G]; [Polarity: Vertical]



Limit: FCC Part15 Class B EUT: Slim Tag M/N: AT2203

Mode: BLE TX mode

Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	46.6663	24.61	-6.38	18.23	40.00	-21.77	QP	Р	
2	92.4624	28.83	-10.42	18.41	43.50	-25.09	QP	Р	
3	166.0680	22.06	-5.89	16.17	43.50	-27.33	QP	Р	
4	329.0390	20.09	-4.77	15.32	46.00	-30.68	QP	Р	
5	451.1350	22.45	-1.90	20.55	46.00	-25.45	QP	Р	
6 *	810.2653	20.72	4.99	25.71	46.00	-20.29	QP	Р	

Power:

^{*:}Maximum data x:Over limit !:over margin



80.0

70

60

50

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Remark: During the test, pre-scan the BLE 1M,BLE 2M, and found the BLE 1M which it is worse case.

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

dBuV/m

Radiated Emission Measurement Project No.: REH Data:#7 2022/11/10 16:15:28 FCC Part15 (PK)

40 30 20 10 10400.00 11575.00 12750.00 1000.000 2175.00 3350.00 4525.00 5700.00 (MHz) 9225.00

Polarization:

Power:

Horizontal

Temperature:

Humidity:

(C)

%RH

Site Limit: FCC Part15 (PK)

11833.500

39.38

13.82

53.20

EUT: Slim Tag M/N: AT2203 Mode: TX-L Note:

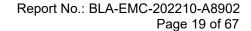
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4824.000	38.46	4.13	42.59	74.00	-31.41	peak	
2		5688.250	40.19	6.80	46.99	74.00	-27.01	peak	
3		7326.000	38.89	8.21	47.10	74.00	-26.90	peak	
4		8167.500	40.31	8.98	49.29	74.00	-24.71	peak	
5		9648.000	37.96	11.01	48.97	74.00	-25.03	peak	

74.00

-20.80

peak

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





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

Radiated Emission Measurement Project No.: REH Data:#8 2022/11/10 16:16:38 dBuV/m 80.0 FCC Part15 (PK) 70 60 50 40 30 20 10 1000.000 2175.00 10400.00 11575.00 12750.00 3350.00 4525.00 5700.00 (MHz) 8050.00 9225.00

Polarization:

Power:

Vertical

Temperature:

Humidity:

(C)

%RH

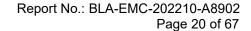
Limit: FCC Part15 (PK)

EUT: Slim Tag M/N: AT2203 Mode: TX-L Note:

Site

No. Mk	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4824.000	38.26	4.13	42.39	74.00	-31.61	peak		
2	5935.000	40.46	6.91	47.37	74.00	-26.63	peak		
3	7326.000	38.33	8.21	46.54	74.00	-27.46	peak		
4	8179.250	40.92	8.98	49.90	74.00	-24.10	peak		
5	9648.000	39.22	11.01	50.23	74.00	-23.77	peak		
6 *	11704.250	38.46	13.77	52.23	74.00	-21.77	peak		

*:Maximum data x:Over limit !:over margin \(\text{Reference Only}





[TestMode: TX mid channel]; [Polarity: Horizontal]

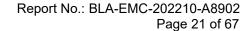
Radiated Emission Measurement Project No.: REH Data:#9 2022/11/10 16:18:16 dBuV/m 80.0 FCC Part15 (PK) 70 60 50 40 30 20 10 1000.000 2175.00 10400.00 11575.00 12750.00 3350.00 4525.00 5700.00 (MHz) 9225.00

Site Limit: FCC Part15 (PK)

EUT: Slim Tag M/N: AT2203 Mode: TX-M Note: Polarization: *Horizontal* Temperature: (C)
Power: Humidity: %RH

No. I	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	40.12	4.32	44.44	74.00	-29.56	peak	
2		6076.000	42.04	4.22	46.26	74.00	-27.74	peak	
3		7311.000	38.39	8.18	46.57	74.00	-27.43	peak	
4		8473.000	39.74	9.12	48.86	74.00	-25.14	peak	
5		9748.000	37.15	11.26	48.41	74.00	-25.59	peak	
6	*	11880.500	38.70	13.85	52.55	74.00	-21.45	peak	

*:Maximum data x:Over limit !:over margin \(\text{Reference Only} \)





[TestMode: TX mid channel]; [Polarity: Vertical]

Radiated Emission Measurement Project No.: REH Data :#10 2022/11/10 16:19:35 dBuV/m 80.0 FCC Part15 (PK) 70 60 50 40 30 20 10 1000.000 2175.00 10400.00 11575.00 12750.00 3350.00 4525.00 5700.00 (MHz) 8050.00 9225.00

Polarization:

Power:

Vertical

Temperature:

Humidity:

(C)

%RH

Limit: FCC Part15 (PK)

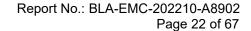
EUT: Slim Tag M/N: AT2203 Mode: TX-M

Note:

Site

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	4874.000	40.14	4.32	44.46	74.00	-29.54	peak	
2	6017.250	42.09	3.97	46.06	74.00	-27.94	peak	
3	7311.000	38.96	8.18	47.14	74.00	-26.86	peak	
4	8144.000	40.14	8.96	49.10	74.00	-24.90	peak	
5	9748.000	37.02	11.26	48.28	74.00	-25.72	peak	
6 *	11845.250	39.56	13.83	53.39	74.00	-20.61	peak	

*:Maximum data x:Over limit !:over margin \(\text{Reference Only}





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

Radiated Emission Measurement Project No.: REH Data :#11 2022/11/10 16:20:47 dBuV/m 80.0 FCC Part15 (PK) 70 60 50 40 30 20 10 1000.000 2175.00 10400.00 11575.00 12750.00 3350.00 4525.00 5700.00 (MHz) 9225.00

Polarization:

Power:

Horizontal

Temperature:

Humidity:

(C)

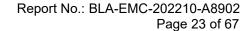
%RH

Site Limit: FCC Part15 (PK)

EUT: Slim Tag M/N: AT2203 Mode: TX-H Note:

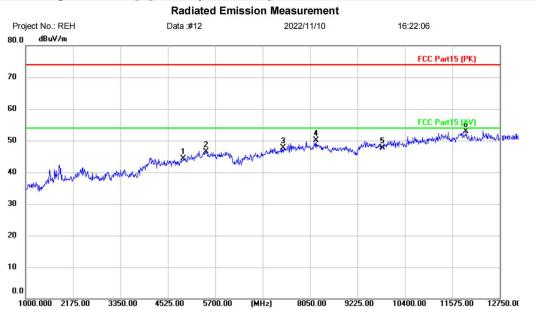
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	4924.000	39.51	4.82	44.33	74.00	-29.67	peak	
2	5993.750	39.89	7.04	46.93	74.00	-27.07	peak	
3	7386.000	38.66	8.36	47.02	74.00	-26.98	peak	
4	8790.250	39.95	9.26	49.21	74.00	-24.79	peak	
5	9848.000	36.76	11.52	48.28	74.00	-25.72	peak	
6 *	11763.000	40.06	13.80	53.86	74.00	-20.14	peak	

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





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



Polarization:

Power:

Vertical

Temperature:

Humidity:

(C)

%RH

Limit: FCC Part15 (PK)

EUT: Slim Tag M/N: AT2203 Mode: TX-H Note:

Site

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.000	39.43	4.82	44.25	74.00	-29.75	peak	
2		5476.750	39.50	6.92	46.42	74.00	-27.58	peak	
3		7386.000	39.35	8.36	47.71	74.00	-26.29	peak	
4		8191.000	41.02	8.99	50.01	74.00	-23.99	peak	
5		9848.000	36.15	11.52	47.67	74.00	-26.33	peak	
6	*	11915.750	39.14	13.86	53.00	74.00	-21.00	peak	

*:Maximum data x:Over limit !:over margin \(\text{Reference Only} \)



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12 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS

Test Standard	47 CFR Part 15, Subpart C 15.247						
Test Method	ANSI C63.10 (2013) Section 6.10.5						
Test Mode (Pre-Scan)	TX						
Test Mode (Final Test)	TX						
Tester	Jozu						
Temperature	25℃						
Humidity	60%						

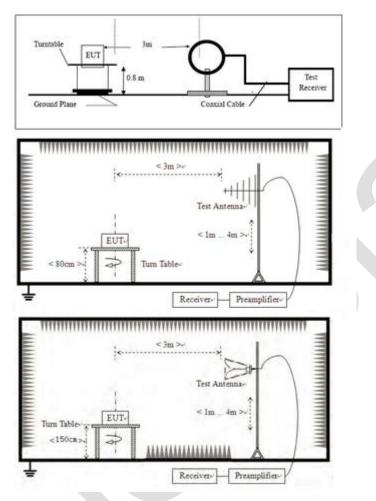
12.1 LIMITS

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

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.



12.2 BLOCK DIAGRAM OF TEST SETUP



12.3 PROCEDURE

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. 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.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.



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h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

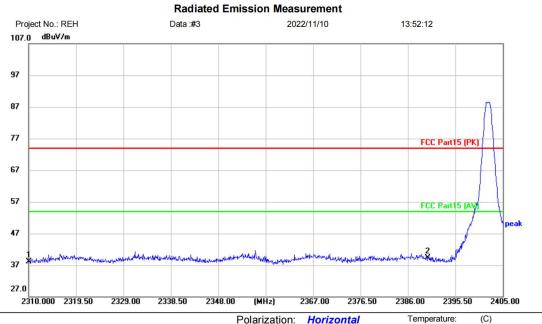




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12.4 TEST DATA

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

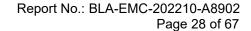


EUT: Slim Tag M/N: AT2203 Mode: TX-L Note:

Site Limit: FCC Part15 (PK) Humidity: %RH Power:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2310.000	42.37	-4.27	38.10	74.00	-35.90	peak	
2	*	2390.000	43.13	-3.82	39.31	74.00	-34.69	peak	

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



2405.00

(C)

%RH



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

Radiated Emission Measurement Project No.: REH Data:#4 2022/11/10 13:54:33 107.0 dBuV/m 97 87 77 FCC Part15 (PK) 67 57 FCC Part15 (AV 47 27.0

(MHz)

Polarization:

2367.00

Vertical

2376.50

Temperature:

Humidity:

2310.000 2319.50

EUT: Slim Tag M/N: AT2203 Mode: TX-L Note:

Site

Limit: FCC Part15 (PK) Power:

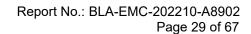
2338.50

2348.00

2329.00

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2310.000	43.14	-4.27	38.87	74.00	-35.13	peak	
2	*	2390.000	44.32	-3.82	40.50	74.00	-33.50	peak	

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





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

Radiated Emission Measurement Project No.: REH Data:#5 2022/11/10 16:08:45 107.0 dBuV/m 97 87 77 FCC Part15 (PK) 67 57 FCC Part15 (AV) 47 37

Site

27.0

2478.000 2480.20

EUT: Slim Tag M/N: AT2203 Mode: TX-H Note:

Polarization: Horizontal Temperature: (C) Limit: FCC Part15 (PK) Humidity: %RH Power:

(MHz)

2491.20

2493.40

2495.60

2497.80

2500.00

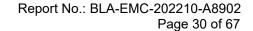
2486.80

2484.60

2482.40

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2483.500	52.35	-3.96	48.39	74.00	-25.61	peak	
2		2500.000	42.84	-4.00	38.84	74.00	-35.16	peak	

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



2497.80

(C)

%RH

Temperature:

Humidity:



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

Radiated Emission Measurement Project No.: REH Data:#6 2022/11/10 16:11:31 107.0 dBuV/m 97 87 77 FCC Part15 (PK) 67 57 FCC Part15 (AV) 47 37 27.0

Polarization:

Power:

2491.20

Vertical

2493.40

Site Limit: FCC Part15 (PK)

2478.000 2480.20

2484.60

2486.80

2482.40

EUT: Slim Tag M/N: AT2203 Mode: TX-H

Note:

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment		Over		
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	2483.500	44.36	-3.96	40.40	74.00	-33.60	peak	
2 *	2500.000	44.65	-4.00	40.65	74.00	-33.35	peak	

*:Maximum data x:Over limit !:over margin \(\text{Reference Only} \)