TEST REPORT

Product Name:	Rfid reader
FCC ID:	2A8KBJT-928
Trademark:	
Model Number:	JT-928, JT-929, JT-9292, JT-9380, JT-9300, JT-922, JT-923,JT-929-2, JT-9230, JT-6250, JT-932-8, JT-932-16, JT-2540, JT-2510, JT-2530, JT-9288, JT-932
Prepared For:	Shenzhen Jietong Technology Co.,Ltd
Address:	4/F,7 Building,Lihe industry, NO.1005 Songbai Road , Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen Jietong Technology Co.,Ltd
Address:	4/F,7 Building,Lihe industry, NO.1005 Songbai Road , Nanshan District, Shenzhen, China
Prepared By:	Shenzhen CTB Testing Technology Co., Ltd.
Address:	Floor 1&2, Building A, No. 26 of Xinhe Road, Xinqiao Community, Xinqiao Street, Baoan District, Shenzhen, Guangdong, China.
Sample Received Date:	Jul. 25, 2022
Sample tested Date:	Jul. 25, 2022 to Sep. 15, 2022
Issue Date:	Sep. 15, 2022
Report No.:	CTB220805069RF
Test Standards	FCC Part15.247 ANSI C63.10:2013
Test Results	PASS
Remark:	This is RFID radio test report.

Compiled by:	Reviewed by:	Approved by:
Chen Zheng	Arron Liu	Bin Liu/Director

Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "*" indicates the testing items were fulfilled by subcontracted lab. "#" indicates the items are not in CNAS accreditation scope.

TABLE OF CONTENT

(Note: N/A means not applicable)

1. VERSION

Report No.	Issue Date	Description	Approved
CTB220809005RFX	Sep. 15, 2022	Original	Valid

2. TEST SUMMARY

The Product has been tested according to the following specifications:

Test Item	Test Requirement	Test method	Result
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	PASS
Radiated Spurious emissions	47 CFR Part 15 Subpart C Section 15.205/15.209/15.247(d)	ANSI C63.10-2013	PASS
Band edge and RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)/15.205(a)	ANSI C63.10-2013	PASS
Conducted Peak Output Power	47 CFR Part 15 Subpart C Section 15.247 (b)(2)	ANSI C63.10-2013	PASS
20dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(1)	ANSI C63.10-2013	PASS
Carrier Frequencies Separation	47 CFR Part 15 Subpart C Section 15.247 (a)(1)	ANSI C63.10-2013	PASS
Hopping Channel Number	47 CFR Part 15 Subpart C Section 15.247 (b)	ANSI C63.10-2013	PASS
Dwell Time	47 CFR Part 15 Subpart C Section 15.247 (a)(1)	ANSI C63.10-2013	PASS
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203/15.247 (c)	/	PASS

Remark:
Test according to ANSI C63.10-2013.

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Item	Uncertainty
Occupancy bandwidth	U=±54.3Hz
Conducted output power Above 1G	U=±1.0dB
Conducted output power below 1G	U=±0.9dB
Power Spectral Density , Conduction	U=±1.0dB
Conduction spurious emissions	U=±2.8dB
Out of band emission	U=±54Hz
3m camber Radiated spurious emission(30MHz-1GHz)	U=±4.3dB
3m chamber Radiated spurious emission(1GHz-18GHz)	U=±4.5dB
humidity uncertainty	U=±5.3%
Temperature uncertainty	U=±0.59℃
Supply voltages	U=±3%
Time	U=±5%

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	JT-928, JT-929, JT-9292, JT-9380, JT-9300, JT-922, JT-923,JT-929-2, JT-9230, JT-6250, JT-932-8, JT-932-16, JT-2540, JT-2510, JT-2530, JT-9288, JT-932
Model Description:	All the model are the same circuit and RF module, only for model name. Test sample model: JT-928
Hardware Version:	V1.0
Software Version:	V1.0
peration Frequency:	902-928MHz
Max. RF output power:	11.959dBm
Type of Modulation:	ASK
Antenna installation:	External antenna
Antenna Gain:	1.91dBi
Ratings:	AC 120V/60Hz

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
1.						

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

Channel List							
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
1	902.50	14	909.00	27	915.50	40	922.00
2	903.00	15	909.50	28	916.00	41	922.50
3	903.50	16	910.00	29	916.50	42	923.00
4	904.00	17	910.50	30	917.00	43	923.50
5	904.50	18	911.00	31	917.50	44	924.00
6	905.00	19	911.50	32	918.00	45	924.50
7	905.50	20	912.00	33	918.50	46	925.00
8	906.00	21	912.50	34	919.00	47	925.50
9	906.50	22	913.00	35	919.50	46	926.00
10	907.00	23	913.50	36	920.00	47	926.50
11	907.50	24	914.00	37	920.50	46	927.00
12	908.00	25	914.50	38	921.00	47	927.50
13	908.50	26	915.00	39	921.50		

4.5 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Test mode	Low channel	Middle channel	High channel
Transmitting (ASK)	902.50MHz	915.00MHz	927.50MHz
Receiving (ASK)	902.50MHz	915.00MHz	927.50MHz

EUT has three Internal Antenna with Max Antenna Gain 1.91dBi on every antenna, CDD device with Four spatial streams, according to KDB662911 D01 v02r01,

Directional gain= GANT + Array Gain, where Array Gain is as follows.

1) For power spectral density(PSD) measurements,

Array Gain=10log(NANT/NSS)dB=10log(4/1.91)=3.21dB,

So the directional gain for PSD is 3.21dBi

2) For power measurements,

The Array gain=0 dB for NANT≤4,

So the directional gain for Power measurements is 1.91dBi

NOTE: Dutycycle>98%.

4.6 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(AC):	120
Normal Temperature(℃)	23
Low Temperature(℃)	0
High Temperature(℃)	40

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Floor 1&2, Building A, No. 26 of Xinhe Road, Xinqiao Street, Baoan District, Shenzhen China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

Item	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	2023.07.19
2	Power Sensor	Agilent	U2021XA	MY56120032	2023.07.19
3	Power Sensor	Agilent	U2021XA	MY56120034	2023.07.19
4	Communication test set	R&S	CMW500	108058	2023.07.19
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	2023.07.19
6	Signal Generator	Agilent	N5181A	MY50140365	2023.07.19
7	Vector signal generator	Agilent	N5182A	MY47420195	2023.07.19
8	Communication test set	Agilent	E5515C	MY50102567	2023.07.19
9	2.4 GHz Filter	Shenxiang	MSF2400-2483.5MS-1154	20181015001	2023.07.19
10	5 GHz Filter	Shenxiang	MSF5150-5850 MS-1155	20181015001	2023.07.19
11	Filter	Xingbo	XBLBQ-DZA120	190821-1-1	2023.07.19
12	BT&WI-FI Automatic test software	Micowave	MTS8000	Ver. 2.0.0.0	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	2022.10.30
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	2023.07.19
15	234G Automatic test software	Micowave	MTS8200	Ver. 2.0.0.0	/
16	966 chamber	C.R.T.	966	/	2024.08.11
17	Receiver	R&S	ESPI	100362	2023.07.19
18	Amplifier	HP	8447E	2945A02747	2023.07.19
19	Amplifier	Agilent	8449B	3008A01838	2023.07.19
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	2023.07.22

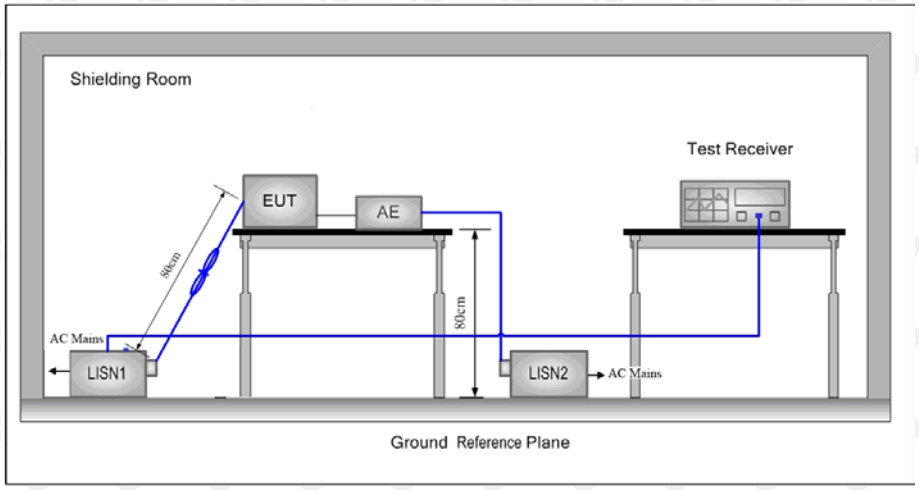
21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	2023.07.22
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	2023.07.23
24	loop antenna	ZHINAN	ZN30900A	GTS534	/
25	40G Horn antenna	A/H/System	SAS-574	588	2024.10.30
26	Amplifier	AEROFLEX	Aeroflex	097	2024.10.30

Continuous disturbance					
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	LISN	ROHDE&SCHWARZ	ESH3-Z5	100318	2023.07.19
2	Pulse limiter	ROHDE&SCHWARZ	ESH3Z2	357881052	2023.07.19
3	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100428/003	2023.07.25
4	Coaxial cable	ZDECL	Z302S	18091904	2023.07.19
5	ISN	Schwarzbeck	NTFM8158	183	2023.07.19
6	Communication test set	Agilent	E5515C	MY50102567	2023.07.19
7	Communication test set	R&S	CMW500	108058	2023.07.19
8	EMI test software	Frad	EZ-EMC	Ver/ EMC-con3A1 /1	/

Radiated emission					
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	01911	2023.07.22
2	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	2023.07.22
3	Preamplifier	Agilent	8449B	3008A01838	2023.07.19
4	Amplifier	HP	8447E	2945A02747	2023.07.19
5	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESPI	100362	2023.07.19
6	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2023.07.19
7	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2023.07.19
8	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2023.07.19
9	Coaxial cable	ETS	RFC-NNS-100 -NMS-300 NI	/	2023.07.19
10	Communication test set	Agilent	E5515C	MY50102567	2023.07.19
11	Communication test set	R&S	CMW500	108058	2023.07.19
12	EZ-EMC	Frad	Ver/ FA-03A2	/	/

6. AC POWER LINE CONDUCTED EMISSION

6.1 Block Diagram Of Test Setup



6.2 Limit

Frequency (MHz)	Maximum RF Line Voltage (dBμV)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency

6.3 Test procedure

1) The mains terminal disturbance voltage test was conducted in a shielded room.

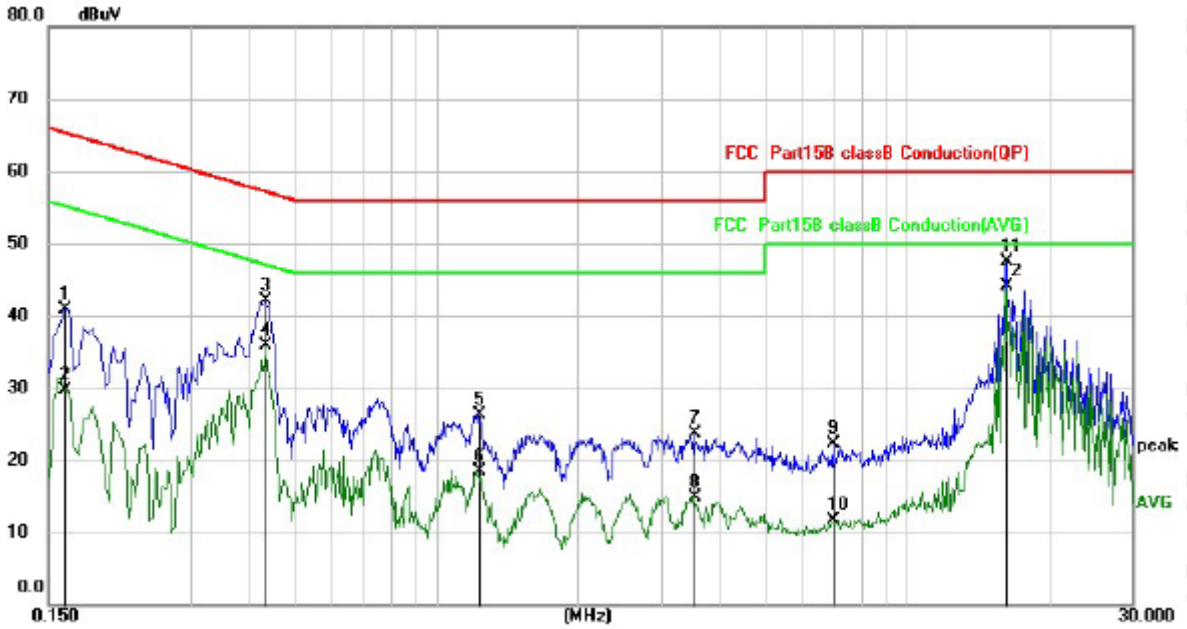
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the 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,

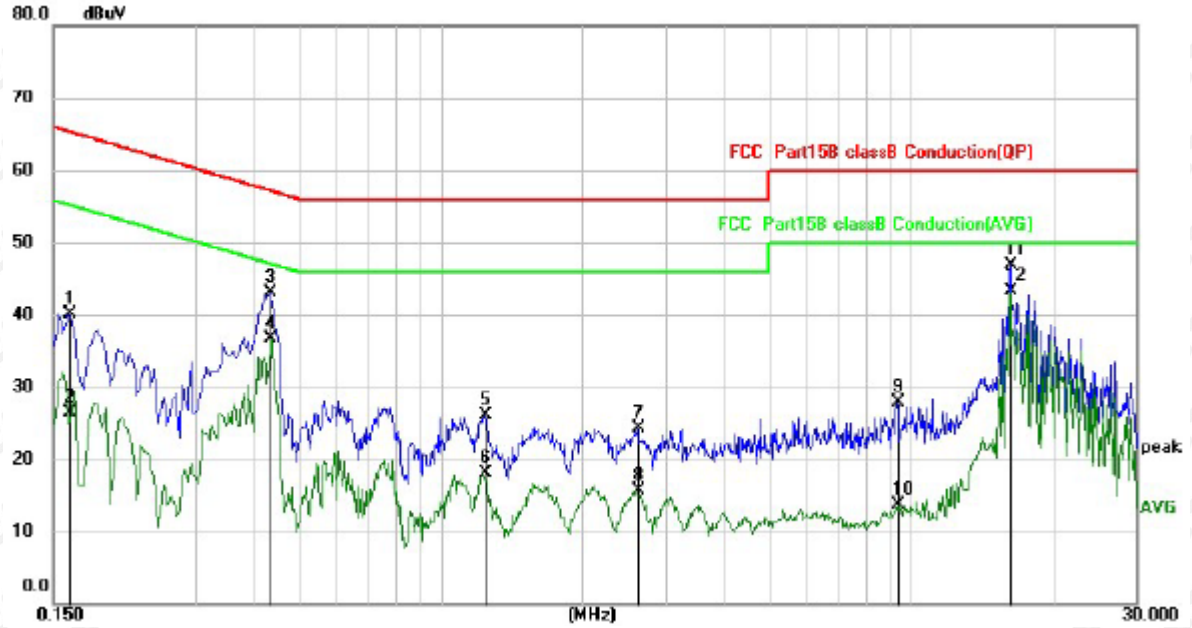
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0,4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0,8 m from the boundary of the unit under test 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.

6.4 Test Result



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1620	30.20	10.71	40.91	65.36	-24.45	QP
2		0.1620	19.04	10.71	29.75	55.36	-25.61	AVG
3		0.4340	31.55	10.56	42.11	57.18	-15.07	QP
4		0.4340	25.27	10.56	35.83	47.18	-11.35	AVG
5		1.2340	15.78	10.62	26.40	56.00	-29.60	QP
6		1.2340	7.87	10.62	18.49	46.00	-27.51	AVG
7		3.5340	13.07	10.64	23.71	56.00	-32.29	QP
8		3.5340	4.25	10.64	14.89	46.00	-31.11	AVG
9		6.9860	11.60	10.72	22.32	60.00	-37.68	QP
10		6.9860	0.92	10.72	11.64	50.00	-38.36	AVG
11		16.2300	36.48	10.93	47.41	60.00	-12.59	QP
12	*	16.2300	33.20	10.93	44.13	50.00	-5.87	AVG



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1620	29.45	10.71	40.16	65.36	-25.20	QP
2		0.1620	15.71	10.71	26.42	55.36	-28.94	AVG
3		0.4340	32.50	10.56	43.06	57.18	-14.12	QP
4		0.4340	26.21	10.56	36.77	47.18	-10.41	AVG
5		1.2380	15.46	10.62	26.08	56.00	-29.92	QP
6		1.2380	7.49	10.62	18.11	46.00	-27.89	AVG
7		2.6180	13.61	10.63	24.24	56.00	-31.76	QP
8		2.6180	5.04	10.63	15.67	46.00	-30.33	AVG
9		9.3339	17.07	10.80	27.87	60.00	-32.13	QP
10		9.3339	2.84	10.80	13.64	50.00	-36.36	AVG
11		16.2300	36.03	10.93	46.96	60.00	-13.04	QP
12	*	16.2300	32.41	10.93	43.34	50.00	-6.66	AVG

Remark:
1. Factor = Cable loss + LISN factor, Margin = Limit – Level, Measurement=Reading level+correct factor
2. All modes were tested at AC 120V and 240V, only the worst result of AC 120V 60Hz was reported.
3. All the test modes completed for test. Only the worst result of ASK Low Channel was reported.

7. RADIATED SPURIOUS EMISSION

7.1 Block Diagram Of Test Setup

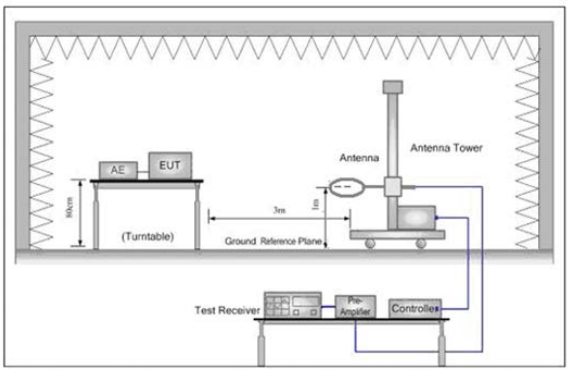


Figure 1. Below 30MHz

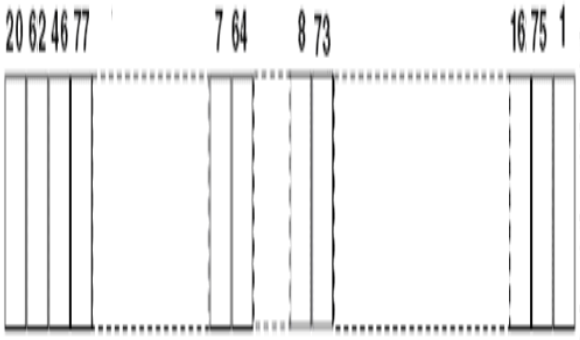


Figure 2. 30MHz to 1GHz

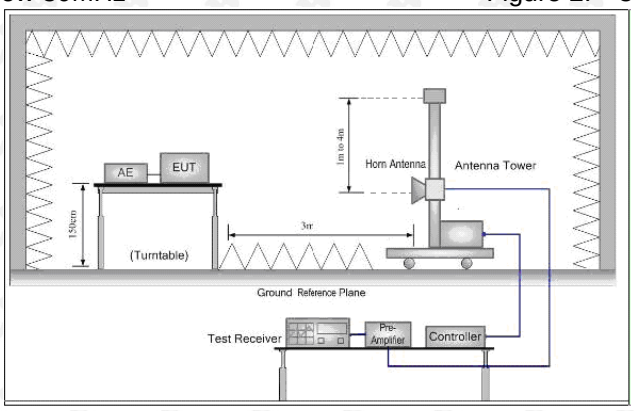


Figure 3. Above 1GHz

7.2 Limit

Spurious Emissions:

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: a.15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.
b. The lower limit shall apply at the transition frequencies.
c. Emission level(dBuV/m)=20log Emission level(uV/m)

7.3 Test procedure

Below 1GHz test procedure as below:

a.The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c.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.

d.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 rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.

e.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f.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.

Above 1GHz test procedure as below:

g.Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).

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

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

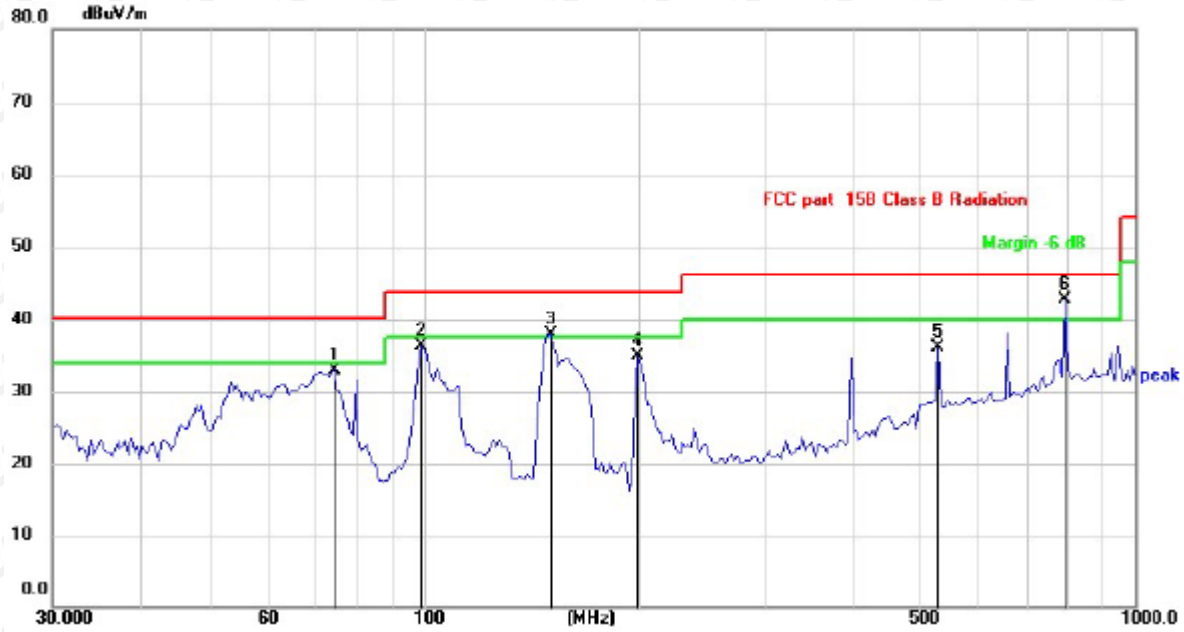
Receiver set:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30KHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30KHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30KHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30KHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30KHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100 kHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

7.4 Test Result

Low channel below 1GHz Test Results:

Antenna polarity: H



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		74.6568	41.67	-8.78	32.89	40.00	-7.11	QP
2		98.8324	45.03	-8.77	36.26	43.50	-7.24	QP
3	!	150.5377	43.46	-5.50	37.96	43.50	-5.54	QP
4		199.2855	43.23	-8.27	34.96	43.50	-8.54	QP
5		527.3202	34.86	1.22	36.08	46.00	-9.92	QP
6	*	796.1829	36.82	5.95	42.77	46.00	-3.23	QP

Remark: Transd = Cableloss + Antenna factor - Pre-amplifier; Margin = Limit – Level.
Measurement=Reading level+correct facto

Antenna polarity: V

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		54.9309	28.26	-5.90	22.36	40.00	-17.64	QP
2		99.7026	38.46	-8.67	29.79	43.50	-13.71	QP
3	*	167.2366	43.25	-5.99	37.26	43.50	-6.24	QP
4		398.3312	36.50	-1.74	34.76	46.00	-11.24	QP
5		527.3202	36.23	1.22	37.45	46.00	-8.55	QP
6		796.1829	32.05	5.95	38.00	46.00	-8.00	QP

Remark: Transd = Cableloss + Antenna factor - Pre-amplifier; Margin = Limit – Level
Measurement=Reading level+correct facto

Above 1 GHz Test Results:

ANT1+ANT2+ANT3+ANT4 MIMO:

CH Low

Horizontal:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1805.5	108.47	-5.84	52.69	74	-21.31	peak
1805.5	95.59	-5.84	43.65	54	-10.35	AVG
2708.25	56.25	-3.64	52.61	74	-21.39	peak
2708.25	47.11	-3.64	43.47	54	-10.53	AVG
3611	58.16	-0.95	57.21	74	-16.79	peak
3611	48.10	-0.95	47.15	54	-6.85	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1805.5	108.35	-5.84	52.69	74	-21.31	peak
1805.5	95.60	-5.84	43.65	54	-10.35	AVG
2708.25	56.30	-3.64	52.66	74	-21.34	peak
2708.25	47.19	-3.64	43.55	54	-10.45	AVG
3611	58.22	-0.95	57.27	74	-16.73	peak
3611	48.01	-0.95	47.06	54	-6.94	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

ANT1+ANT2+ANT3+ANT4 MIMO:

CH Middle

Horizontal:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1829.5	108.25	-5.71	52.67	74	-21.33	peak
1829.5	95.11	-5.71	45.61	54	-8.39	AVG
2744.25	55.99	-3.51	52.48	74	-21.52	peak
2744.25	46.82	-3.51	43.31	54	-10.69	AVG
3659	58.13	-0.82	57.31	74	-16.69	peak
3659	47.97	-0.82	47.15	54	-6.85	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1829.5	108.37	-5.71	52.67	74	-21.33	peak
1829.5	95.04	-5.71	45.61	54	-8.39	AVG
2744.25	55.98	-3.51	52.47	74	-21.53	peak
2744.25	46.78	-3.51	43.27	54	-10.73	AVG
3659	58.13	-0.82	57.31	74	-16.69	peak
3659	47.86	-0.82	47.04	54	-6.96	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

ANT1+ANT2+ANT3+ANT4 MIMO:

CH High

Horizontal:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1851.5	56.33	-5.65	52.36	74	-21.64	peak
1851.5	47.28	-5.65	46.89	54	-7.11	AVG
2777.25	56.18	-3.43	52.75	74	-21.25	peak
2777.25	47.40	-3.43	43.97	54	-10.03	AVG
3703	57.33	-0.75	56.58	74	-17.42	peak
3703	47.61	-0.75	46.86	54	-7.14	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

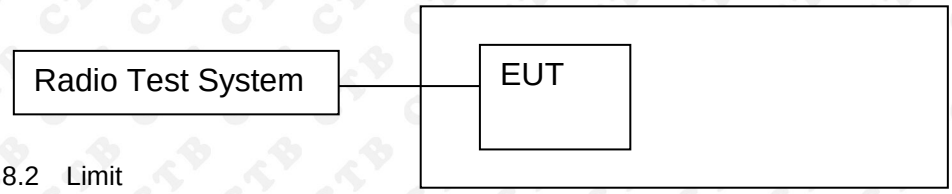
Vertical:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1851.5	56.31	-5.65	52.36	74	-21.64	peak
1851.5	47.35	-5.65	46.89	54	-7.11	AVG
2777.25	56.14	-3.43	52.71	74	-21.29	peak
2777.25	47.38	-3.43	43.95	54	-10.05	AVG
3703	57.28	-0.75	56.53	74	-17.47	peak
3703	47.72	-0.75	46.97	54	-7.03	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Remark:
(1) Measuring frequencies from 1 GHz to the 25 GHz。
(2). All modes of operation were investigated and the worst-case emissions are reported.
(3). Radiated emission test from 9kHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9kHz to 30MHz and not recorded in this report.

8. BAND EDGE AND RF COUNDUCTED SPURIOUS EMISSIONS

8.1 Block Diagram Of Test Setup



8.2 Limit

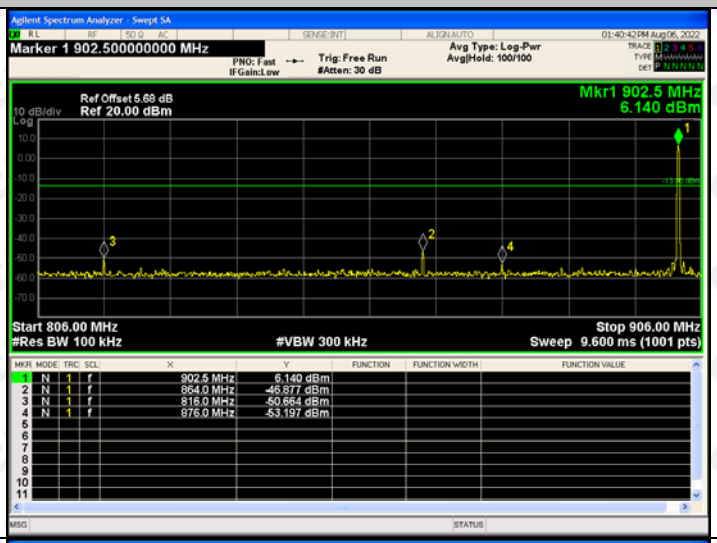
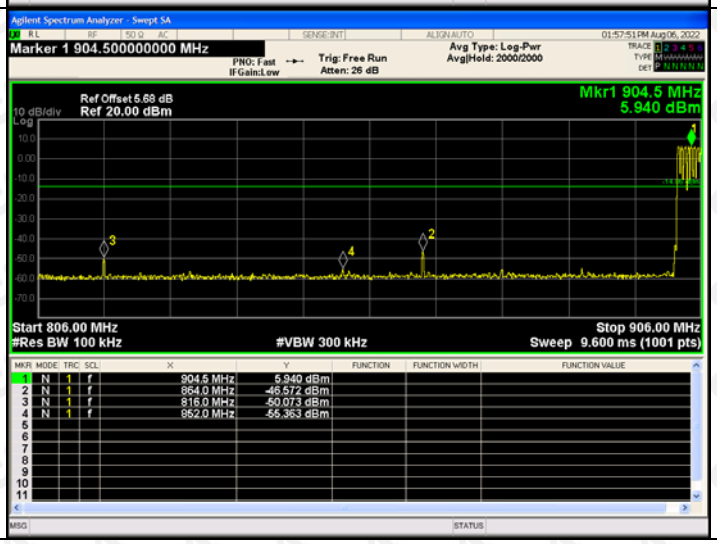
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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)).

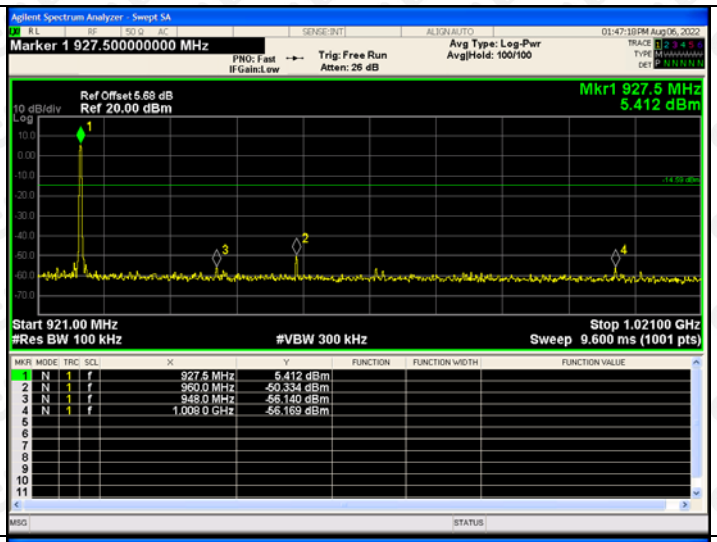
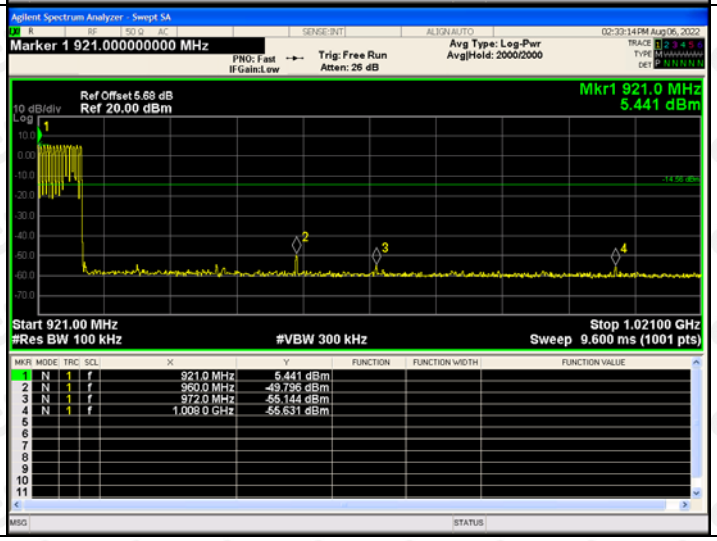
8.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
Blow 30MHz:
RBW = 100kHz, VBW = 300kHz, Sweep = auto
Detector function = peak, Trace = max hold
Above 30MHz:
RBW = 100KHz, VBW = 300KHz, Sweep = auto
Detector function = peak, Trace = max hold

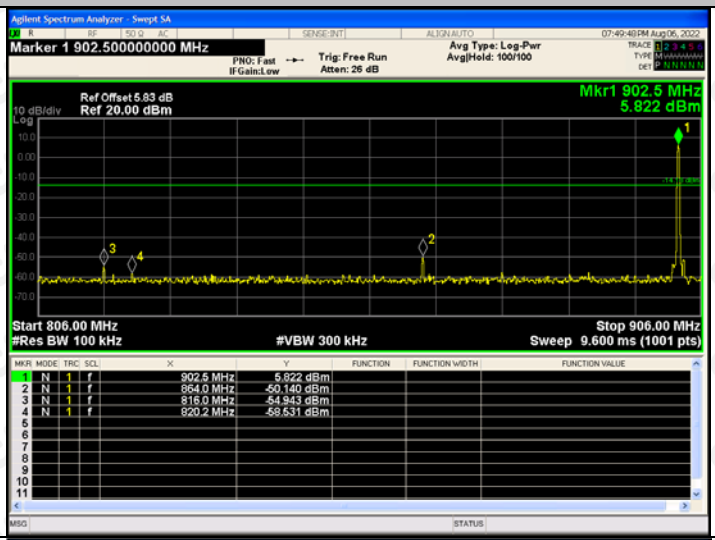
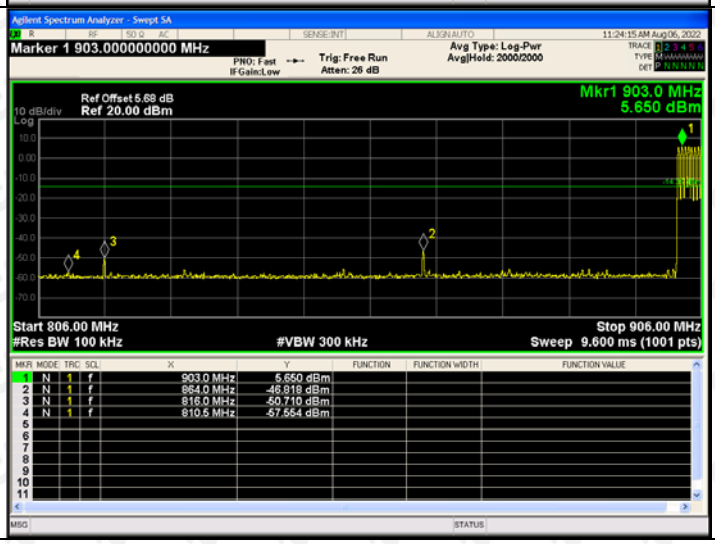
8.4 Test Result

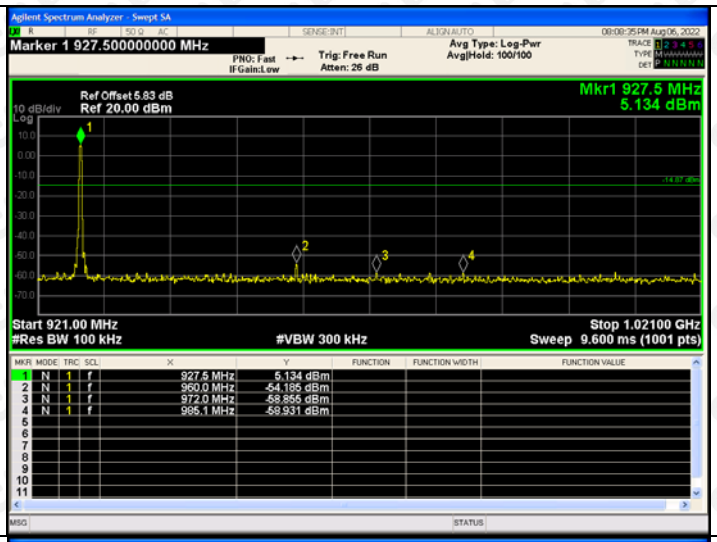
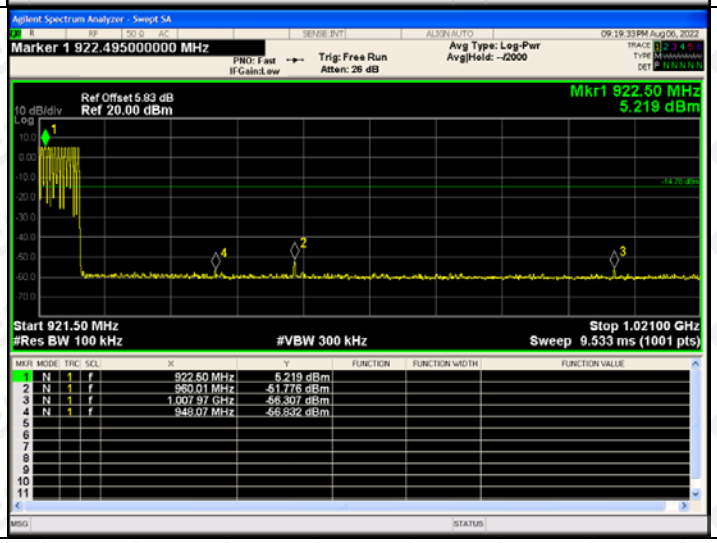
ANT1

BAND EDGE Graphs			
LCH/ No Hop			
LCH/ Hop			

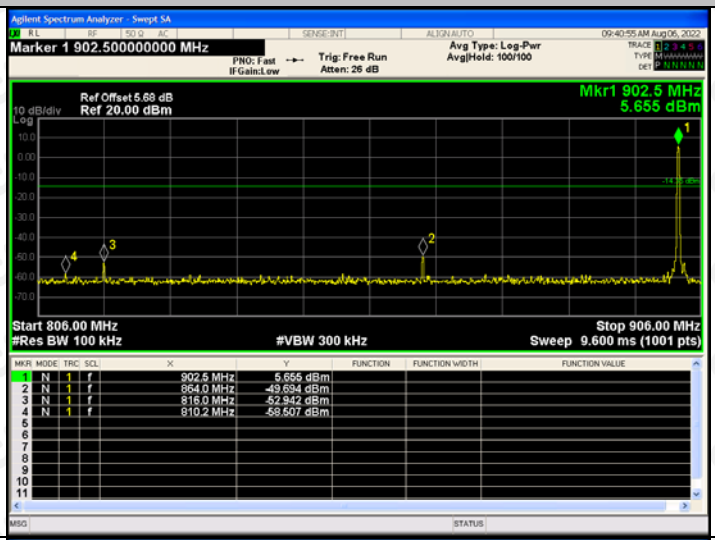
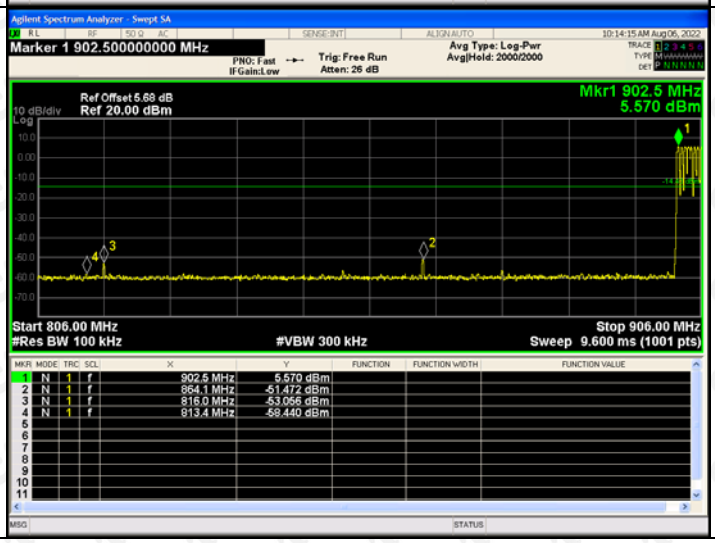
HCH/ No Hop			
HCH/ Hop			

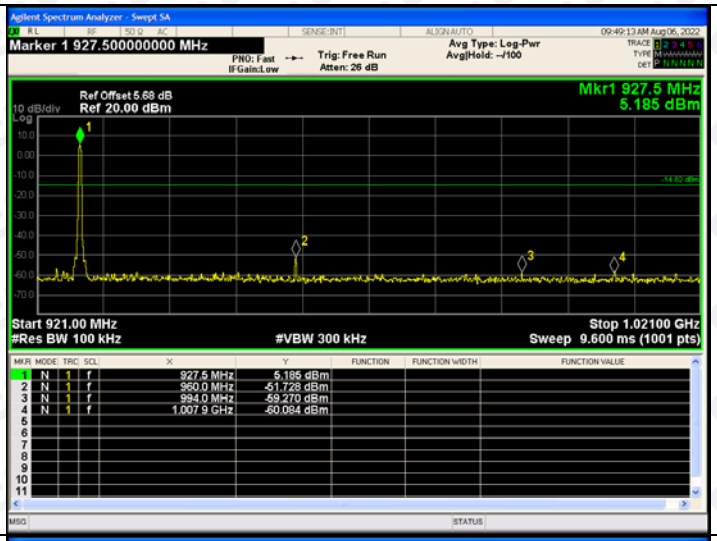
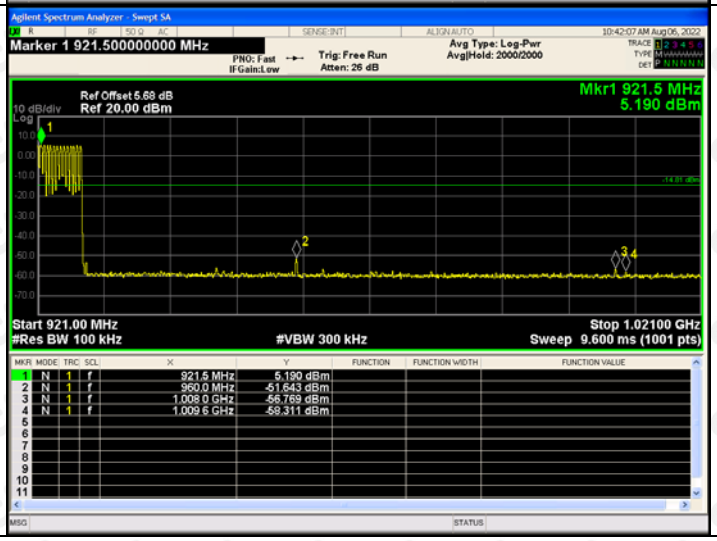
ANT2

BAND EDGE Graphs			
LCH/ No Hop			
LCH/ Hop			

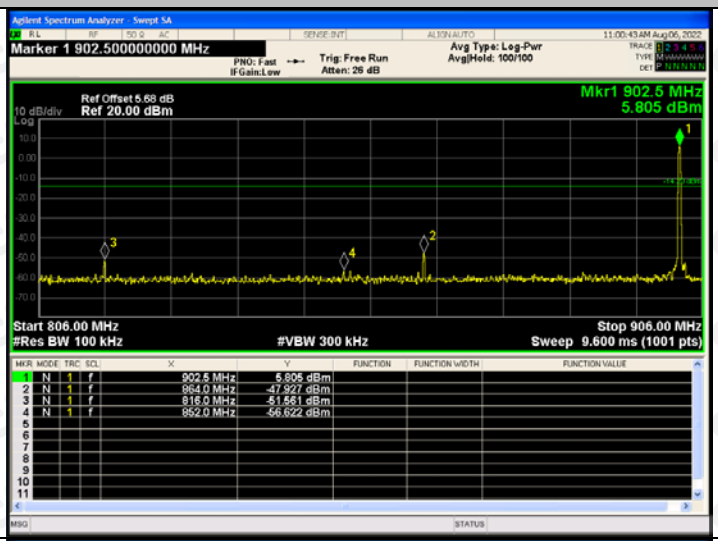
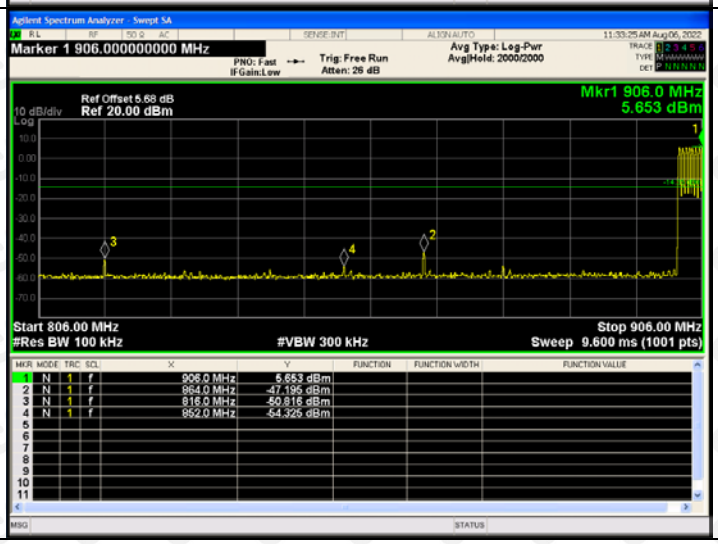
HCH/ No Hop			
HCH/ Hop			

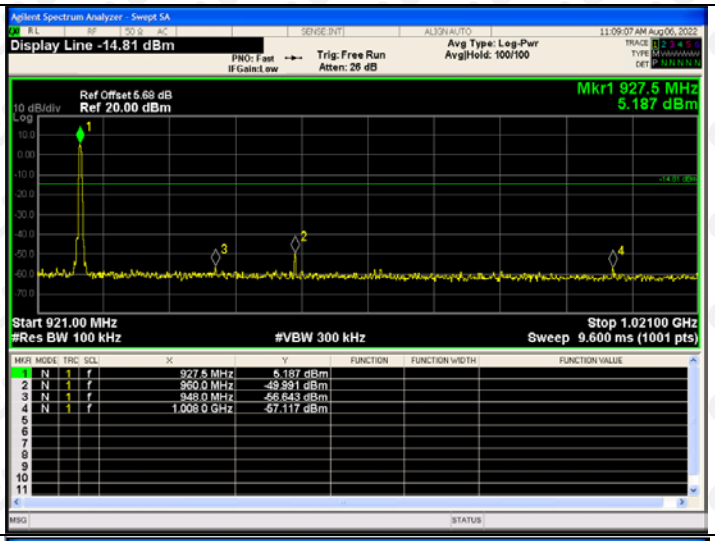
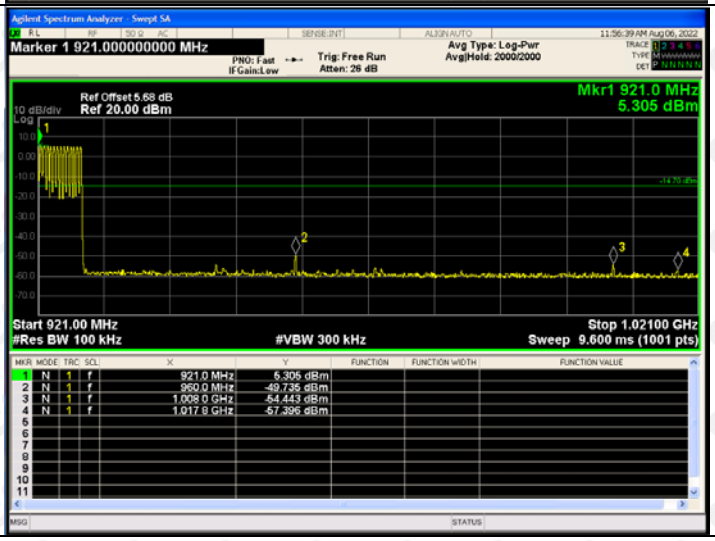
ANT3

BAND EDGE Graphs			
LCH/ No Hop			
LCH/ Hop			

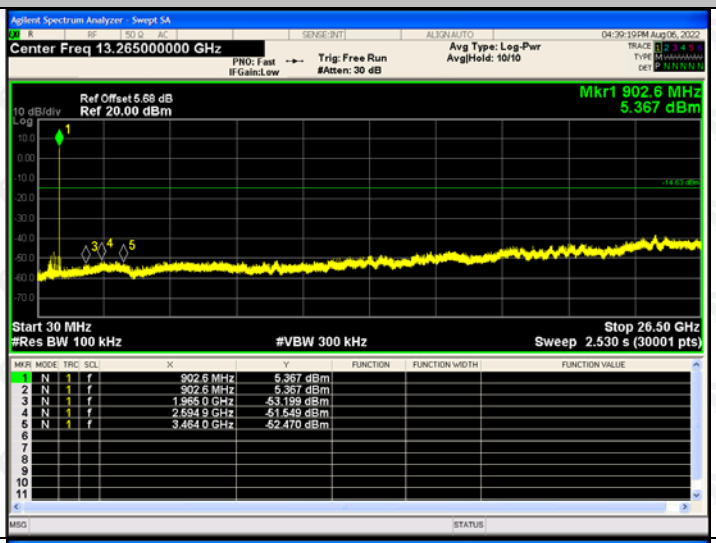
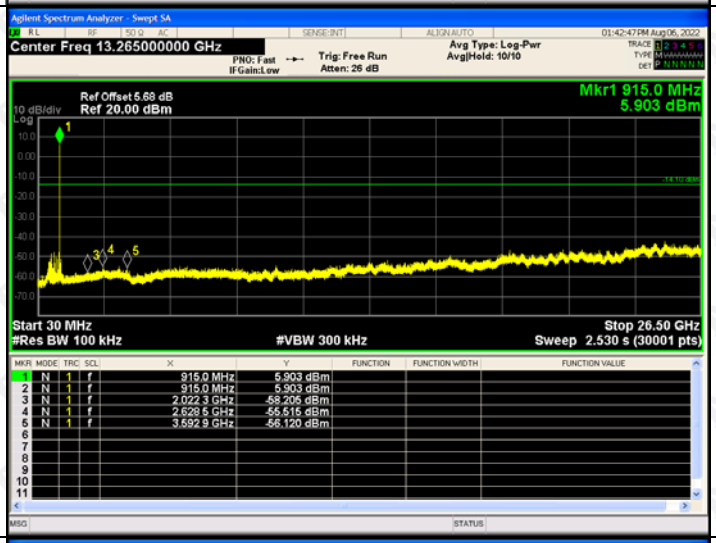
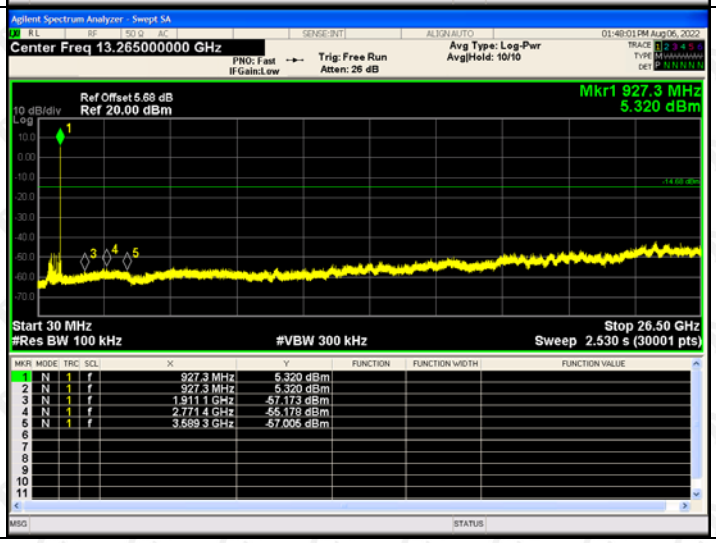
HCH/ No Hop			
HCH/ Hop			

ANT4

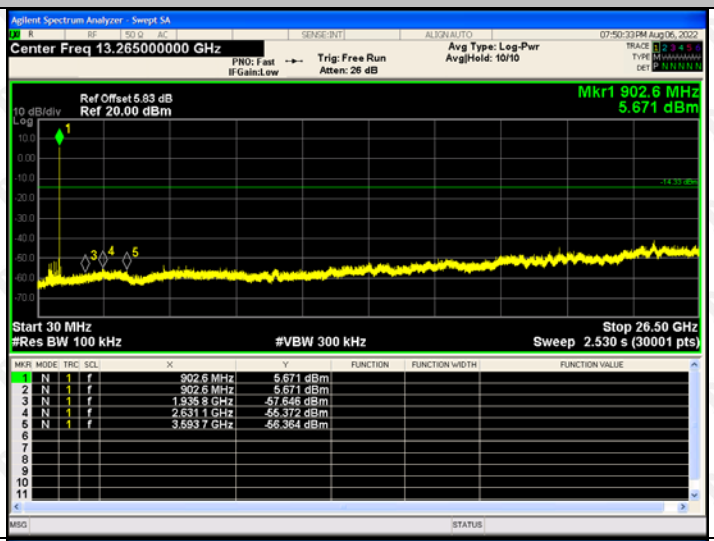
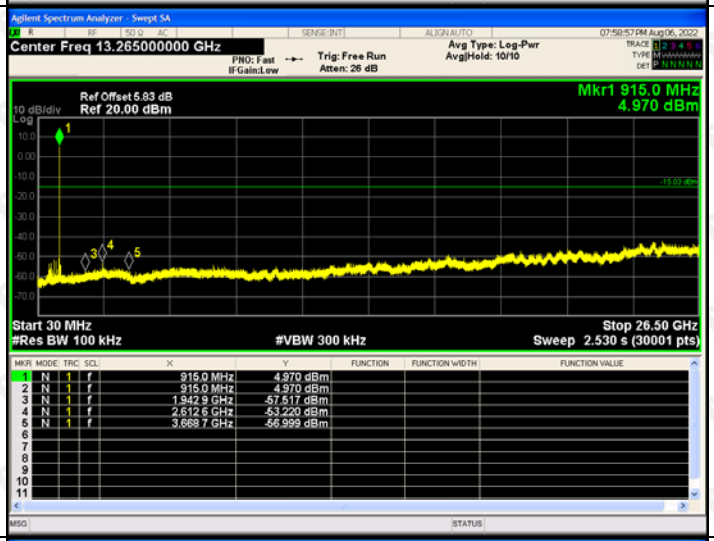
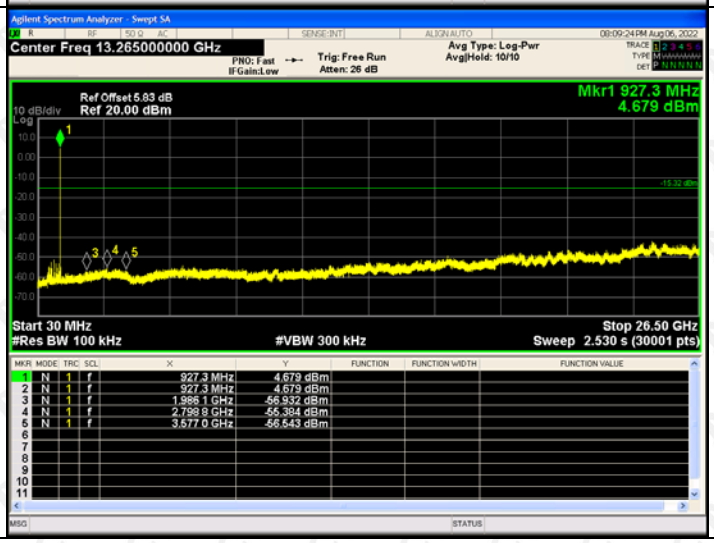
BAND EDGE Graphs		
LCH/ No Hop		
LCH/ Hop		

HCH/ No Hop		
HCH/ Hop		

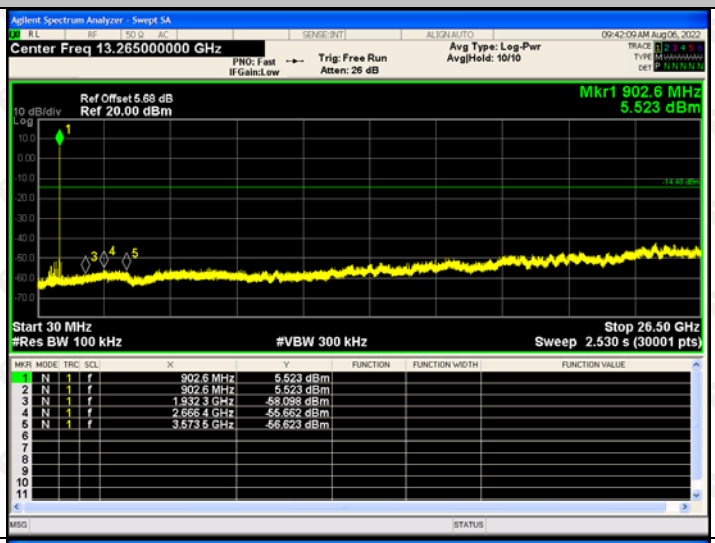
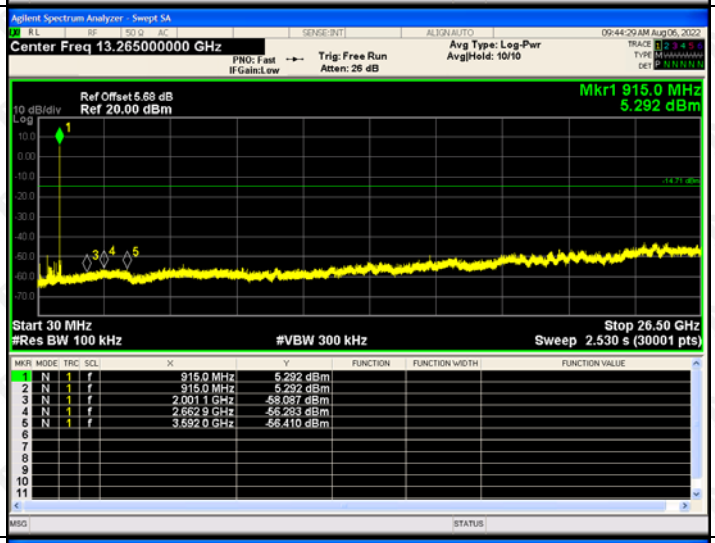
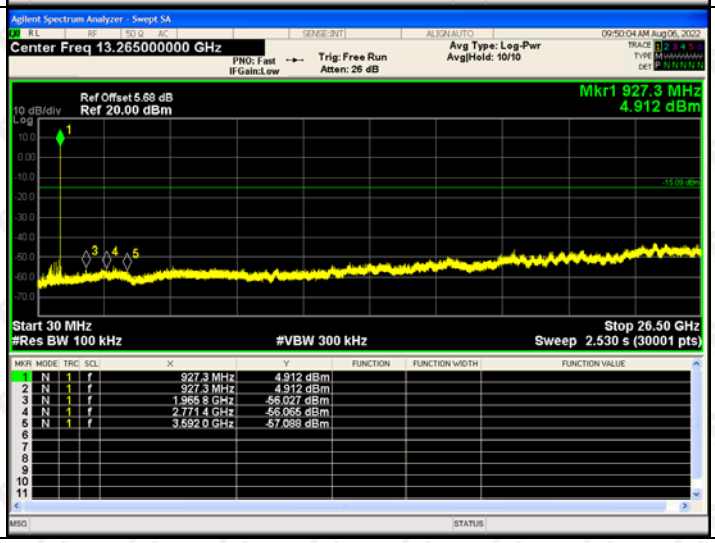
ANT1

RF Conducted Spurious Emissions Graphs			
LCH			
MCH			
HCH			

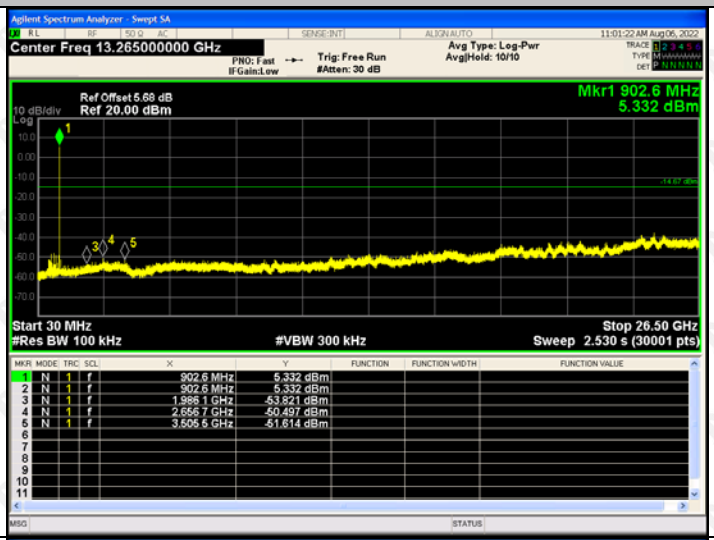
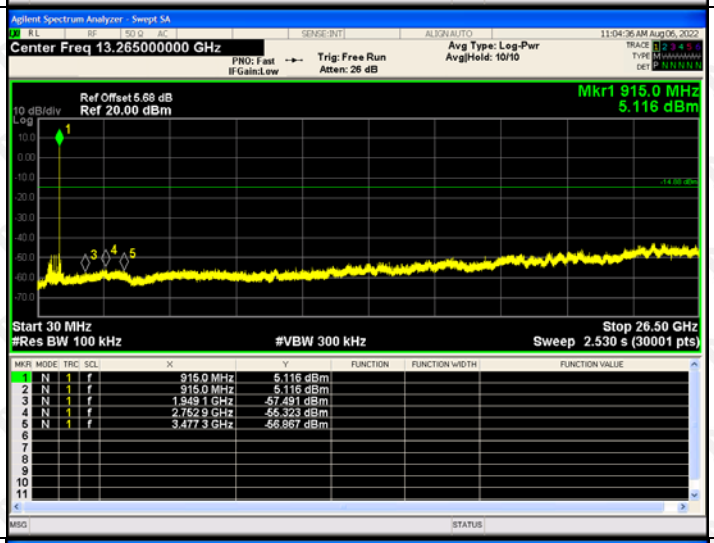
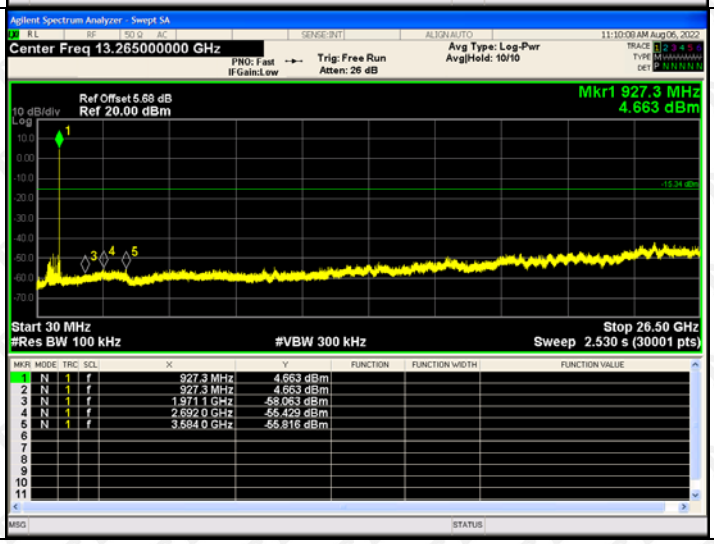
ANT2

RF Conducted Spurious Emissions Graphs			
LCH			
MCH			
HCH			

ANT3

RF Conducted Spurious Emissions Graphs			
LCH			
MCH			
HCH			

ANT4

RF Conducted Spurious Emissions Graphs			
LCH			
MCH			
HCH			

Remark：1.The margin of worst case ANT(1) test data has over 3dB, so the MIMO mode shall be passed.

2. The test range is 9K ~10 times the main wave, and other spurious below the limit of 20dB will not be reflected in the report.