TEST REPORT

Product Name:	UHF Reader Writer
Trademark:	Fongwah
Model Number:	U6-CU-91A
Prepared For:	Shenzhen Fenghua Technology Co., ltd
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Prepared By:	Shenzhen CTB Testing Technology Co., Ltd.
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Sample Received Date:	Mar. 21, 2025
Sample tested Date:	Mar. 21, 2025 to May. 14, 2025
Issue Date:	May. 14, 2025
Report No.:	CTB25032100204RF01
Test Standards	Ordinance Article 2 paragraph 1 item 6-2
Test Results	PASS
Remark:	This is RFID radio test report

Compiled by:	Reviewed by:	Approved by:
Zhou Kui	Arron Liu	Bin Mei / 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.

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1. TEST SUMMARY

1.1VERSION

Report No.	Issue Date	Description	Approved
CTB25032100204RF01	May. 14, 2025	Original	Valid

1.2 Test description

Test Requirement	Test Parameter	Verdict	Remark
Article 2 paragraph 1 item 6-2	Antenna power	Compliant	
Article 2 paragraph 1 item 6-2	Frequency tolerance	Compliant	
Article 2 paragraph 1 item 6-2	Radio channel	Compliant	
Article 2 paragraph 1 item 6-2	Occupied Bandwidth	Compliant	
Article 2 paragraph 1 item 6-2	Adjacent channel leakage power	Compliant	
Article 2 paragraph 1 item 6-2	Spurious Emission	Compliant	
Article 2 paragraph 1 item 6-2	Receiver Spurious Emission	Compliant	
Article 2 paragraph 1 item 6-2	Radio Interference Prevention Capability	Compliant	
Article 2 paragraph 1 item 6-2	Transmission time control equipment	Compliant	
Article 2 paragraph 1 item 6-2	Carrier sense	Compliant	
Article 2 paragraph 1 item 6-2	Construction Protection, Antenna gain, Reception from a responder	Compliant	
Article 2 paragraph 1 item 6-2	Compliance of radiation protection	Compliant	
NOTE1: N/A (Not Applicable)			

1.3 Measurement uncertainty

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Item	Uncertainty
Occupancy bandwidth	54.3kHz
Conducted output power Above 1G	0.9dB
Conducted output power Below 1G	0.9dB
Power Spectral Density , Conduction	0.9dB
Conduction spurious emissions	2.0dB
Out of band emission	2.0dB
3m camber Radiated spurious emission(30MHz-1GHz)	4.6dB
3m chamber Radiated spurious emission(1GHz-18GHz)	5.1dB
3m chamber Radiated spurious emission(18GHz-40GHz)	3.4dB
Frequency Error	54.3Hz
Adjacent channel power Below 1G	2.6dB
Adjacent channel power Above 1G	2.8dB
humidity uncertainty	5.5%
Temperature uncertainty	0.63℃
frequency	1×10^{-7}

2. GENERAL INFORMATION

2.1 General description of EUT

Model(s):	U6-CU-91A
Model Description:	N/A
Hardware Version:	U6-CU-91 V02
Software Version:	UHF Reader Config V1.1
Operation Frequency:	916.8-920.8MHz
Rated output power:	700mW
Type of Modulation:	ASK
Antenna installation:	Ceramic antenna
Antenna Gain:	1.5dBi
Ratings:	DC 5V

Note: For more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

2.2 Description of test modes

The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.

Unit radio channel number	**Frequency (MHz)**	Unit radio channel number	**Frequency (MHz)**
5	916.8	23	920.4
11	918.0	24	920.6
17	919.2	25	920.8

Note: Test performed at the lowest/middle/highest frequencies selected in the list above for EUT supported while working on specified mode.

Pretest Mode	Description
Transmitting mode	Low channel: 916.8MHz
	Middle channel: 919.2MHz
	High channel: 920.8MHz
Receiver mode	Low channel: 916.8MHz
	Middle channel: 919.2MHz
	High channel: 920.8MHz

2.3 Environmental conditions

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

Supply Voltage			
	supply power V	Rated module power V	Tolerance (%)
Normal	5	3.3	
+10%	5.5	3.3	0
-10%	4.5	3.3	0
Others			
Temperature (°C)	20-25		
Relative humidity	54 %.		
ATM Pressure:	1010 mbar		
Note 1: When the input voltage is reduced or increased by 10%, the regulator voltage changes of less than 1%. So the following test items are conducted in the normal voltage.			

2.4 Block diagram showing the configuration of system tested

Mode 1:

2.5 Description of support units (conducted mode)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Note
E-1	UHF Reader Writer	Fongwah	U6-CU-91A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

(2) For detachable type I/O cable should be specified the length in cmin(Length) column.

(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “withoutcore”.

2.6 Measurement equipment list

No.	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	A.14.16	2025/6/28
2	Power Sensor	Agilent	U2021XA	MY56120032	/	2025/6/28
3	Power Sensor	Agilent	U2021XA	MY56120034	/	2025/6/28
4	Communication test set	R&S	CMW500	108058	V3.5.80	2025/6/28
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/6/28
6	Signal Generator	Agilent	N5181A	MY50140365	A.01.60	2025/6/28
7	Vector signal generator	Agilent	N5182A	MY47420195	A.01.87	2025/6/28
8	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/6/28
9	2.4 GHz Filter	Shenxiang	MSF2400-2483.5MS-1154	20181015001	/	2025/6/30
10	5 GHz Filter	Shenxiang	MSF5150-5850MS-1155	20181015001	/	2025/6/30
11	Filter	Xingbo	XBLBQ-DZA120	190821-1-1	/	2025/6/30
12	BT&WI-FI Automatic test software	Micowave	MTS8310	Ver. 2.0.0.0	/	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	/	2025/6/28
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	/	2025/6/28
15	234G Automatic test software	Micowave	MTS8200	Ver. 2.0.0.0	/	/
16	966 chamber	C.R.T.	966	/	/	2027/6/21
17	Receiver	R&S	ESPI	100362	RF_ATTEN_7 (104489/003)	2025/6/28
18	Amplifier	HP	8447E	2945A02747	/	2025/6/28

19	Amplifier	Agilent	8449B	3008A01838	/	2025/6/28
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	/	2025/6/28
21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	/	2025/6/28
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2025/6/28
24	loop antenna	ZHINAN	ZN30900A	GTS534	/	/
25	40G Horn antenna	A/H/System	SAS-574	588	/	2025/6/28
26	Amplifier	AEROFLEX	Aeroflex	097	/	2025/6/28
27	Power Metter	KEYSIGHT	N1912AP	N/A	A.05.00	2025/6/28
28	DC power supply	Agilent	E3640A	MY53050046	/	2025/6/28

Note: Calibration conducted in foreign countries, which is equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).

Note: Calibration institution "Guangzhou Lisai Measurement and Testing Co., LTD."

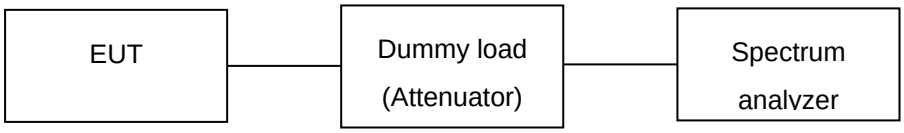
3. TEST CONDITIONS AND RESULTS

3.1 Frequency error

3.1.1 Limit

Item	Limits
Frequency Error	+/-20ppm

3.1.2 Test configuration



3.1.3 Test procedure

The EUT was connected to the spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: non-modulation

Spectrum analyzer Condition:

Frequency: test frequency

Span: 1MHz

RBW: 10kHz

VBW: 10kHz

Sweep time: Auto

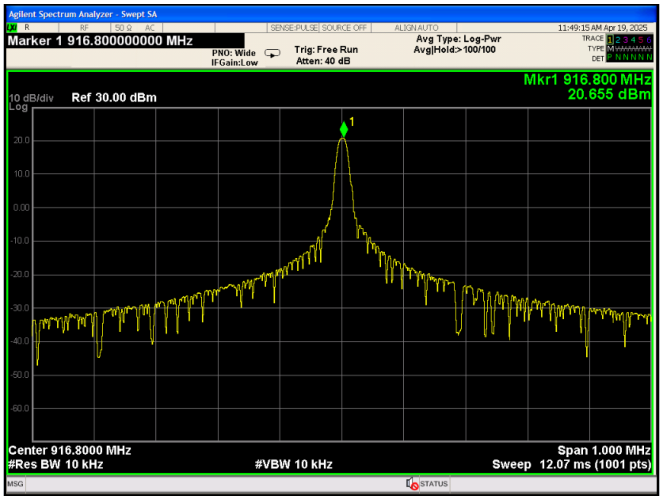
Detector mode: Positive peak

Indication mode: max hold

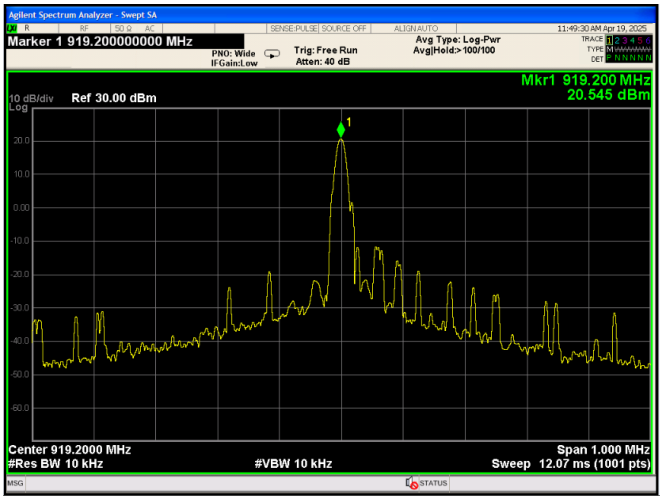
3.1.4 Test results

Test voltage (V)	Frequency (MHz)	Read (MHz)	Deviation (MHz)	Tolerance (ppm)	Limit (ppm)	Result
Normal Voltage	916.8	916.800	0	0	+/-20.00	Pass
	919.2	919.200	0	0		
	920.8	920.800	0	0		

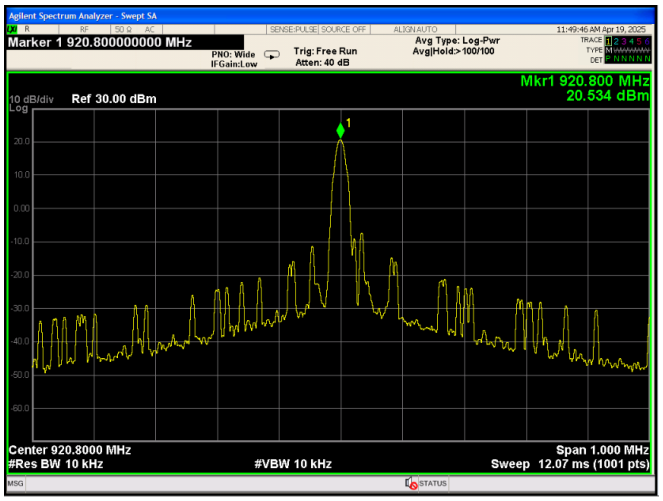
Normal Voltage



916.8MHz



919.2MHz



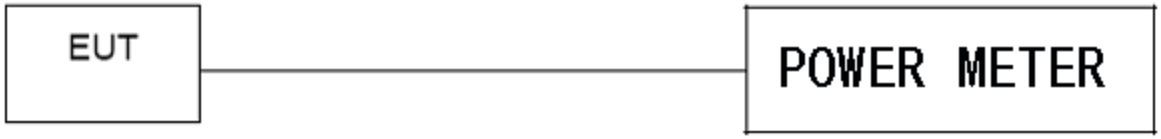
920.8MHz

3.2 Antenna output power and output power tolerance

3.2.1 Limit

Item	Limits
Antenna Power Density	≦1W
Antenna Power Error	+20%, -80% (Base on manufacturer declare antenna power density)

3.2.2 Test configuration



3.2.3 Test procedure

1. The EUT was directly connected to the Power meter

3.2.4 Test results

Test modulation	Test Channel	Average burst power(dBm)	Output power (mW)	Rated output power (mW)	Tolerance (%)	Limit	Result
ASK	L	27.377	546.638	700	-21.909	1W -80%~20%	Pass
	M	28.254	668.960	700	-4.434	1W -80%~20%	Pass
	H	27.519	564.807	700	-19.313	1W -80%~20%	Pass

Test voltage (V)	Mode	Channel	Polar	EIRP (dBm)	Limit (dBm)
Normal Voltage	ASK	L	H	28.877	36
		M	H	29.754	
		H	H	29.019	

Note: 1. The EUT max support antenna gain is 1.5dBi.

2. Antenna output power tolerance=(Antenna output power-Rated output power)/Rated output power*100%

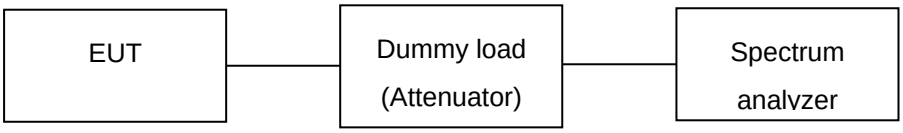
3. All antennas do not support simultaneous transmitting.

3.3 Occupied bandwidth and spreading bandwidth

3.3.1 Limit

Item	Limits
Occupied BandWidth:	≤200kHz;

3.3.2 Test configuration



3.3.3 Test procedure

1. Setting of SA is following as fellow:

   RBW: Less than 3% of the allowable value specified in Equipment Regulations

   VBW: Comparable to the resolution bandwidth

   Sweep time: Auto

   Sweep Mode: Continuous sweep

   Detect mode: Positive peak

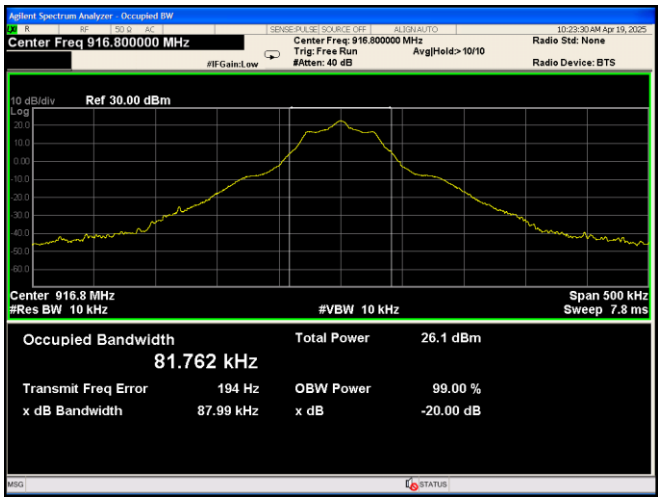
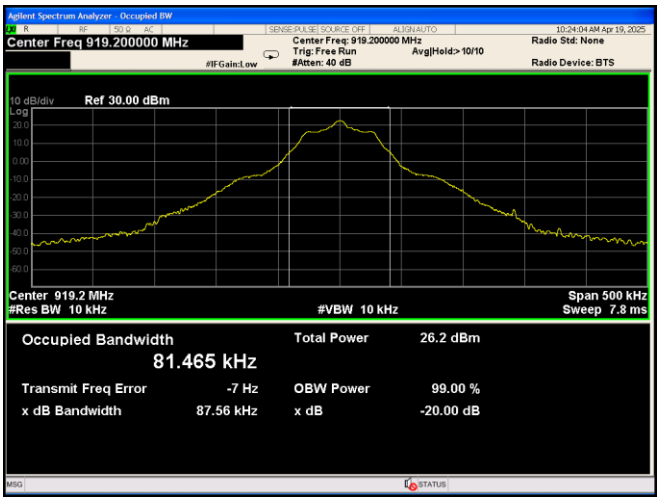
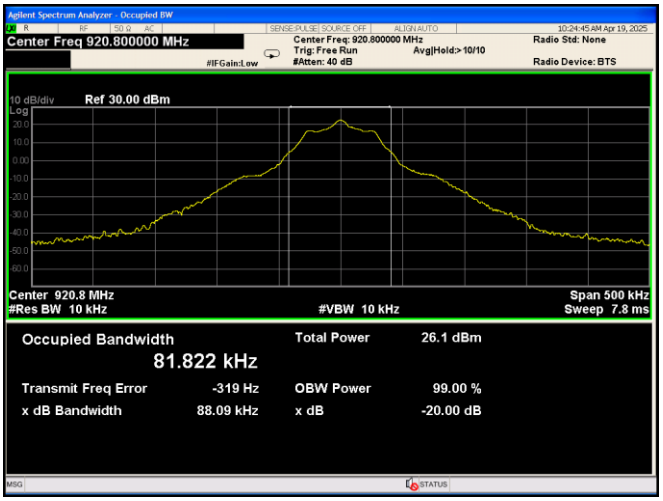
   Trace mode: Max hold

2. EUT have transmitted the maximum modulation signal and fixed channelize. SA set to 99% of occupied bandwidth to measure occupied bandwidth.

3.3.4 Test results

Test modulation	Test Channel	Occupy 99% Bandwidth (kHz)	Limit	Result
ASK	L	81.762	≤200kHz	Pass
	M	81.465		
	H	81.822		

99% Bandwidth

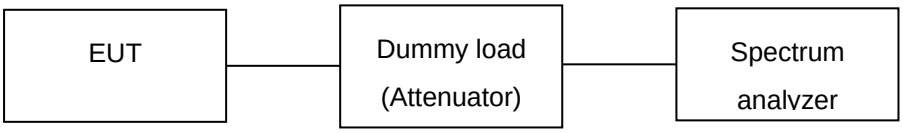
Test condition:	
	
L	M
	
H	

3.4 Unwanted emission strength

3.4.1 Limit

Frequency band	Permissible Value for Spurious Emission / Unwanted Emission Intensity (average power)	Reference bandwidth
f ≤ 710 MHz	−36 dBm	100 kHz
710 MHz < f ≤ 900 MHz	−58 dBm	1 MHz
900 MHz < f ≤ 915 MHz	−58 dBm	100 kHz
915 MHz < f ≤ 915.7 MHz 923.5 MHz < f ≤930 MHz	−39 dBm	100 kHz
915.7 MHz < f ≤ 923.5 MHz (except for |f-fc| ≤ 100x(n+1)kHz)	−29 dBm	100 kHz
930 MHz < f ≤ 1000 MHz	−58 dBm	100 kHz
1000 MHz < f ≤ 1215 MHz	−48 dBm	1 MHz
1.215 GHz < f	−30 dBm	1 MHz

3.4.2 Test configuration



3.4.3 Test procedure

Spectrum analyzer set at the time of measurement of firing sub is as follows.

Center frequency Firing frequency side

Span From 30MHz to 5GHz

RBW 100kHz: 30MHz-710MHz and 900MHz-1GHz

1MHz: 710MHz-900MHz and 1GHz-5GHz

VBW Equal to RBW

Y-axis scale 10dB/Div

Sweep time the minimum time is guaranteed measurement accuracy

Sweep mode Signal sweep

Detection mode Sample

(1) Set as spectrum analyzer, to explore the maximum value of the amplitude of the firing side to sweep up to 10GHz from 30MHz.

(2) If the allowable value is the value that you search the Regulations equipment, the measured values and the values that you search.

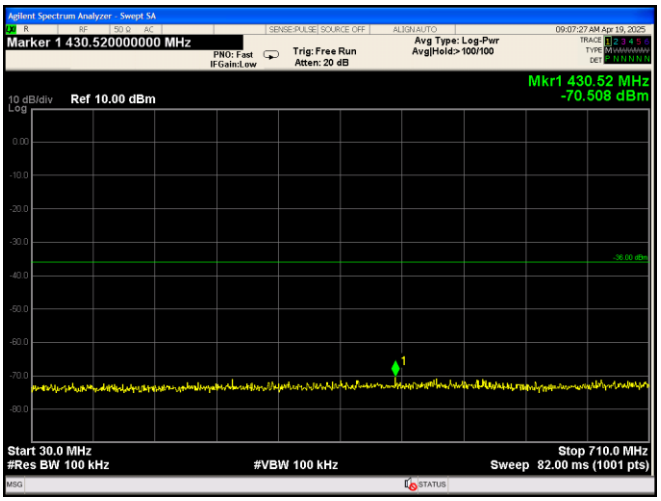
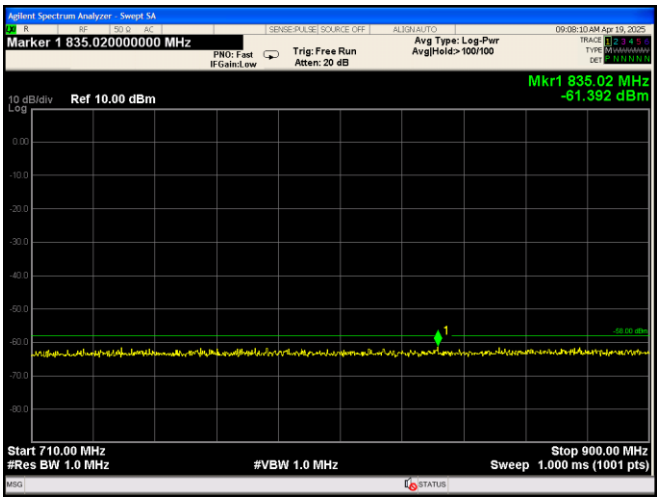
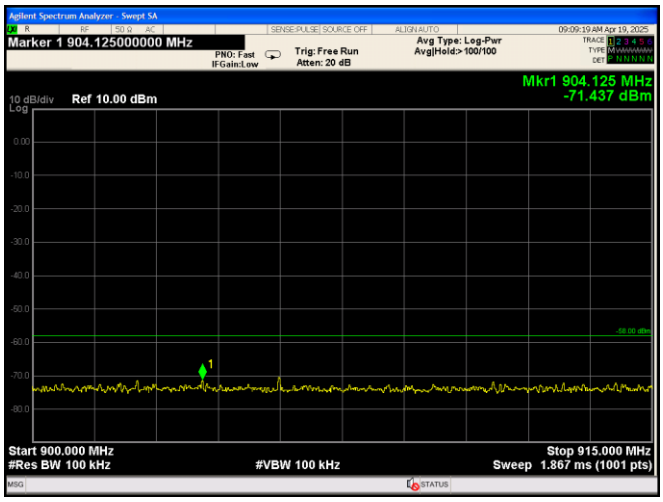
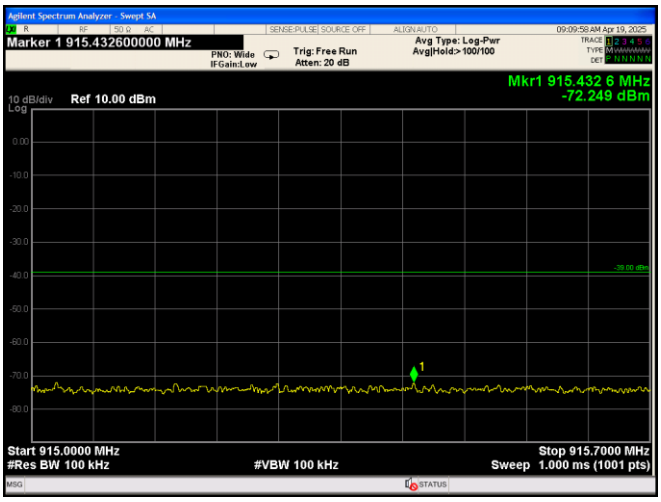
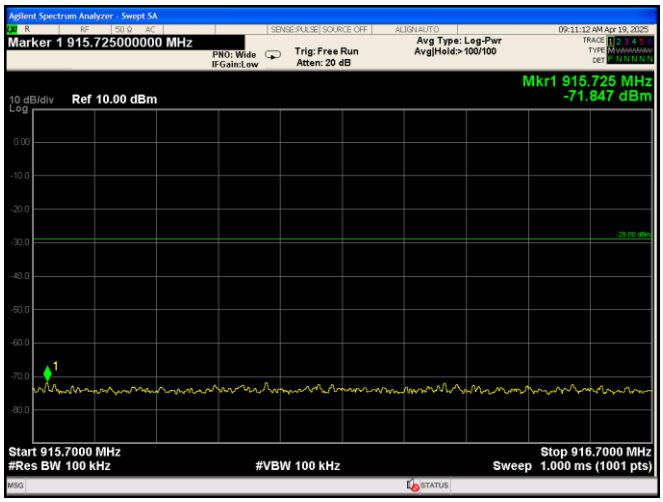
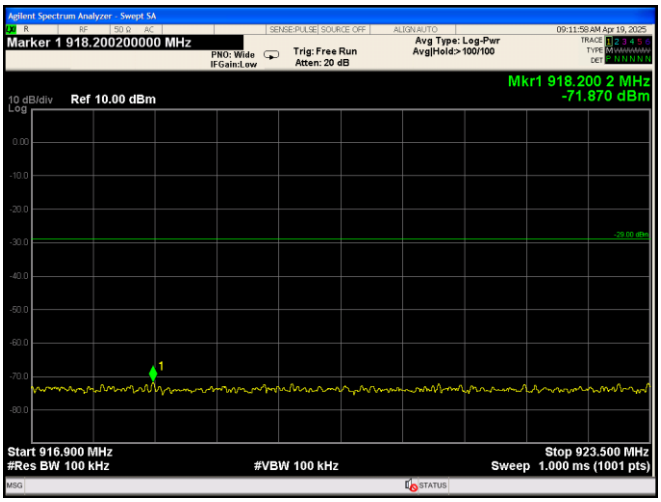
(3) If you exceed the allowable value is the value that you search the Regulations facilities, asking the frequency of side-firing, set as spectrum analyzer to measure the average power averaging processing is performed.

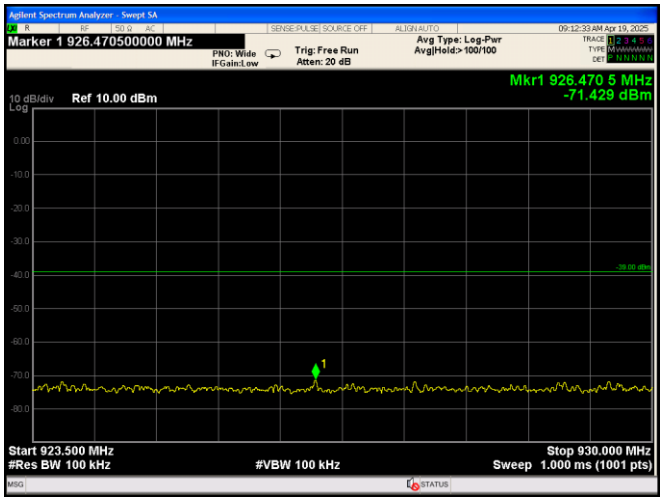
(4) If you cannot set the state of the receive-only facilities receiving radio to use the antenna that are common in the measurement of up to(3),external trigger signal spectrum analyzer using a broadband detector the transmission power of the test equipment from (1) transmission and , except time to measure the transmission time.

3.4.4 Test results

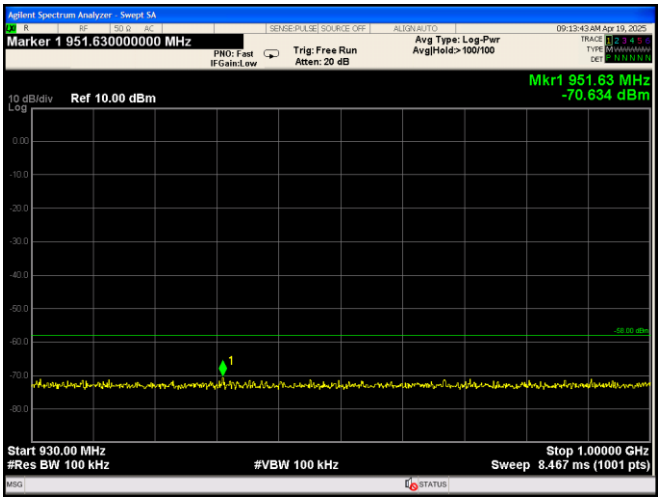
Test modulation	Test freq.	Test freq. range	Emission Frequency (MHz)	Test result (dBm)	Limits (dBm)	Refernce bandwidth	Result
ASK	916.8MHz	30MHz≦f≦710MHz	430.52	-70.508	-36	100kHz	PASS
		710MHz<f≦900MHz	835.02	-61.392	-58	1MHz	PASS
		900MHz<f≦915MHz	904.125	-71.437	-58	100kHz	PASS
		915MHz≦f<915.7MHz	915.4326	-72.249	-39	100kHz	PASS
		915.7MHz≦f<916.6MHz	915.725	-71.847	-29	100kHz	PASS
		917.0MHz≦f<923.5MHz	918.2002	-71.870	-29	100kHz	PASS
		923.5MHz≦f<930MHz	926.4705	-71.429	-39	100kHz	PASS
		930MHz<f≦1000MHz	951.63	-70.634	-58	100kHz	PASS
		1000MHz<f≦1215MHz	1010.965	-61.547	-48	1MHz	PASS
		1215MHz≦f<5000MHz	3149	-58.612	-30	1MHz	PASS
	919.2MHz	30MHz≦f≦710MHz	484.24	-72.052	-36	100kHz	PASS
		710MHz<f≦900MHz	745.91	-60.792	-58	1MHz	PASS
		900MHz<f≦915MHz	909.015	-71.881	-58	100kHz	PASS
		915MHz≦f<915.7MHz	915.679	-71.905	-39	100kHz	PASS
		915.7MHz≦f<917.8MHz	918.2058	-72.453	-29	100kHz	PASS
		918.2MHz≦f<923.5MHz	922.1854	-70.356	-29	100kHz	PASS
		923.5MHz≦f<930MHz	925.840	-73.129	-39	100kHz	PASS
		930MHz<f≦1000MHz	931.05	-71.385	-58	100kHz	PASS
		1000MHz<f≦1215MHz	1144.695	-60.624	-48	1MHz	PASS
		1215MHz≦f<5000MHz	2653	-58.617	-30	1MHz	PASS
	920.8MHz	30MHz≦f≦710MHz	448.20	-71.618	-36	100kHz	PASS
		710MHz<f≦900MHz	746.86	-61.263	-58	1MHz	PASS
		900MHz<f≦915MHz	903.330	-71.058	-58	100kHz	PASS
		915MHz≦f<915.7MHz	915.5033	-72.779	-39	100kHz	PASS
		915.7MHz≦f<919MHz	918.285	-71.659	-29	100kHz	PASS
		919.4MHz≦f<923.5MHz	922.4808	-72.245	-29	100kHz	PASS

		923.5MHz≦f<930MHz	926.8735	-71.538	-39	100kHz	PASS
		930MHz<f≦1000MHz	958.98	-71.661	-58	100kHz	PASS
		1000MHz<f≦1215MHz	1121.905	-60.205	-48	1MHz	PASS
		1215MHz≦f<5000MHz	2706	-58.712	-30	1MHz	PASS

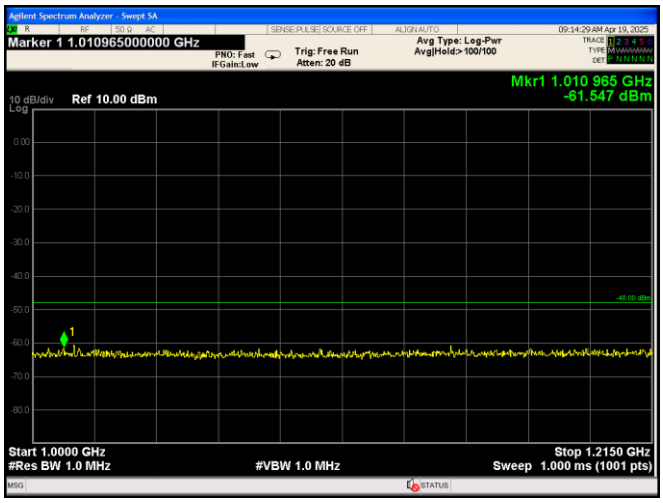
Test channel:	916.8MHz
	
30MHz≦f≦710MHz	710MHz<f≦900MHz
	
900MHz<f≦915MHz	915MHz≦f<915.7MHz
	
915.7MHz<f≦916.6MHz	917.0MHz<f≦923.5MHz



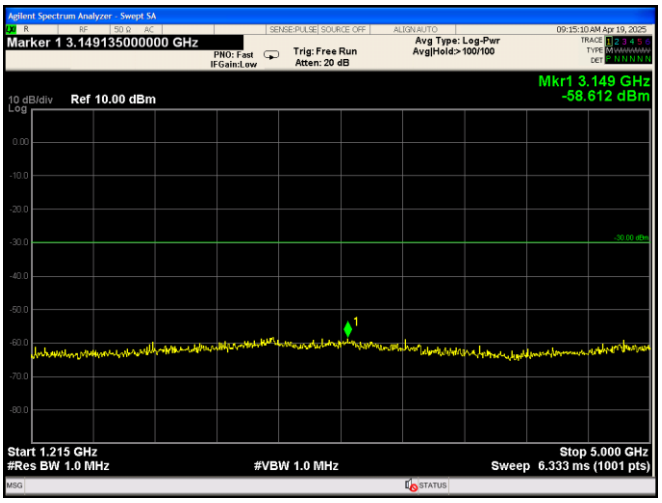
923.5MHz≦f<930MHz



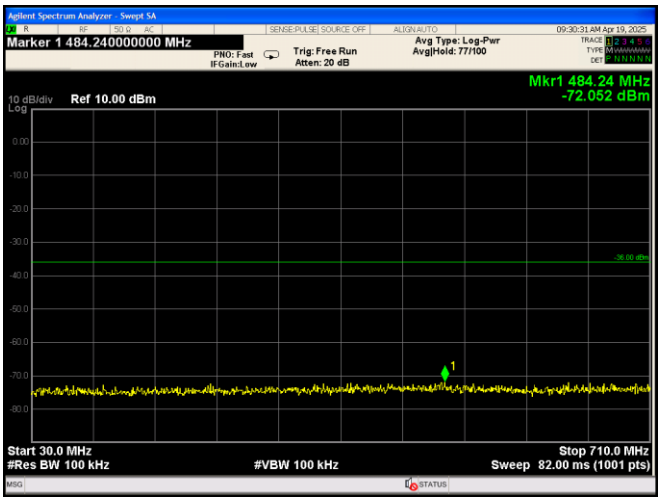
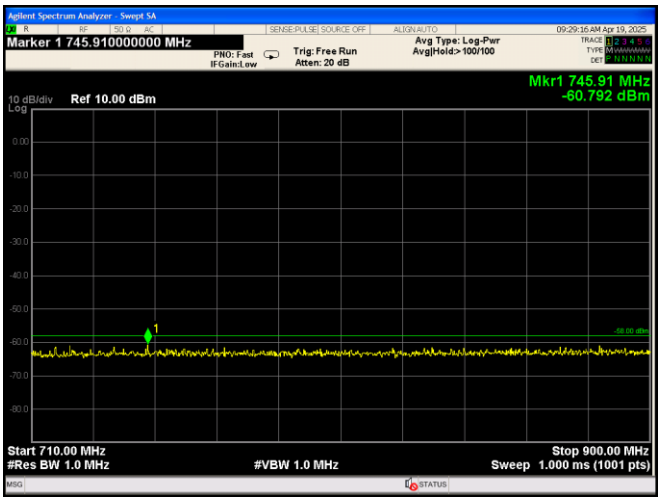
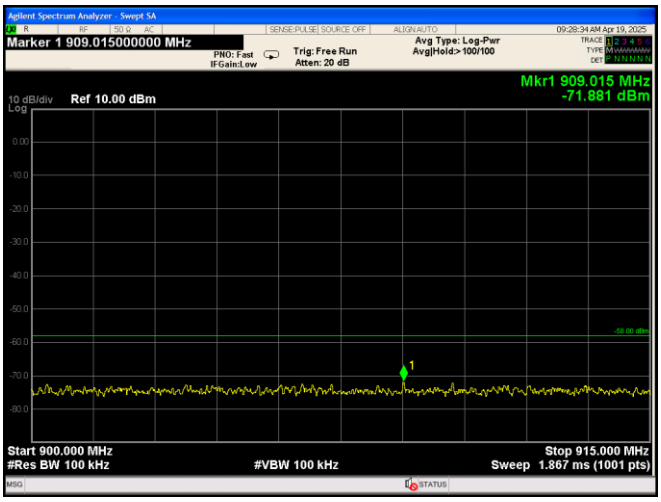
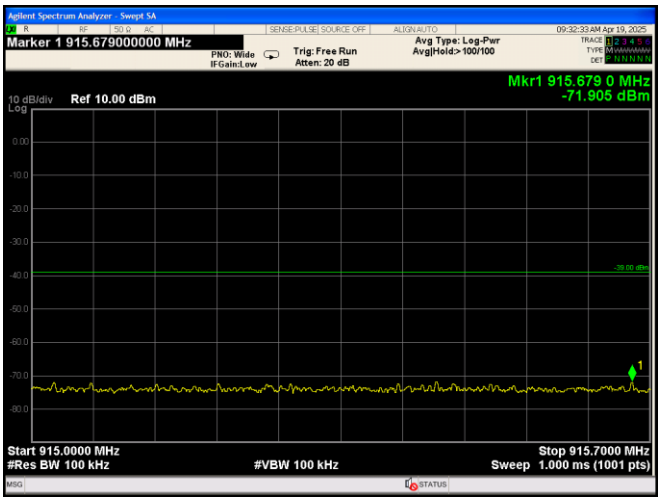
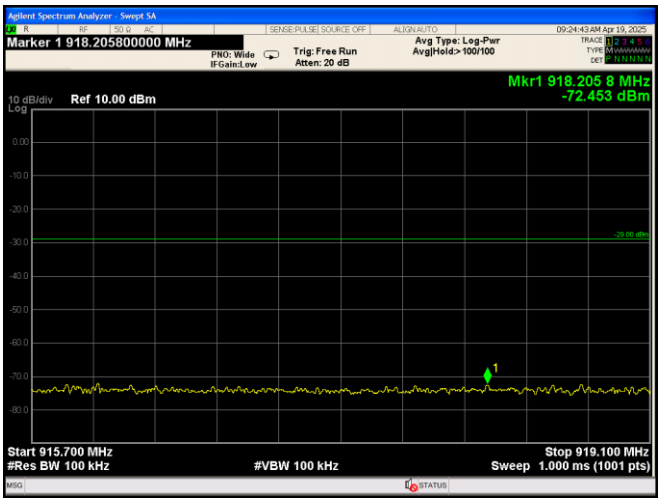
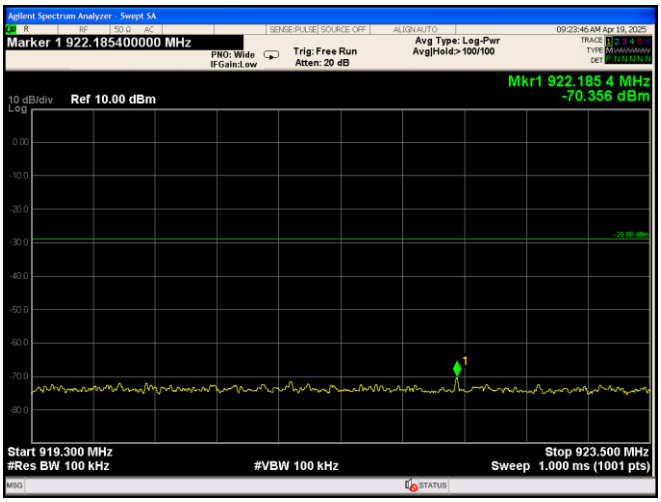
930MHz<f≦1000MHz

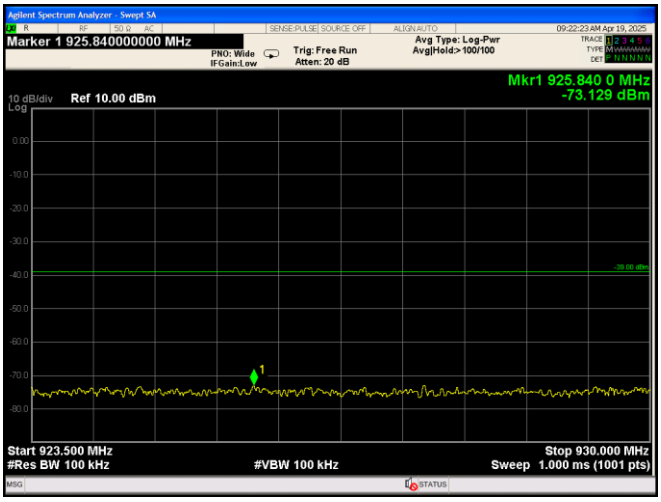


1000MHz<f≦1215MHz

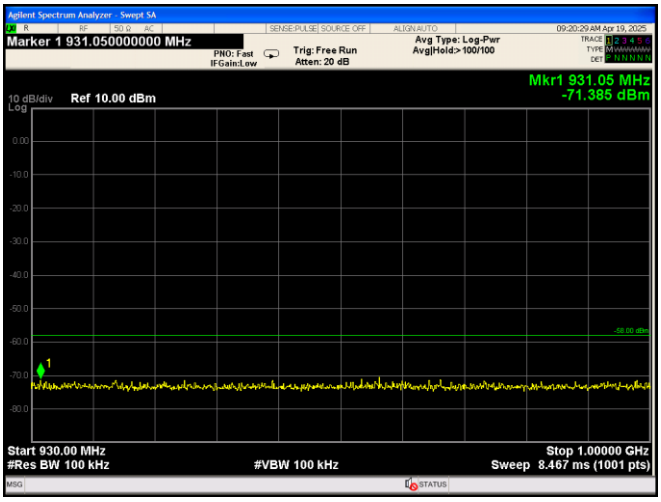


1215MHz≦f<12500MHz

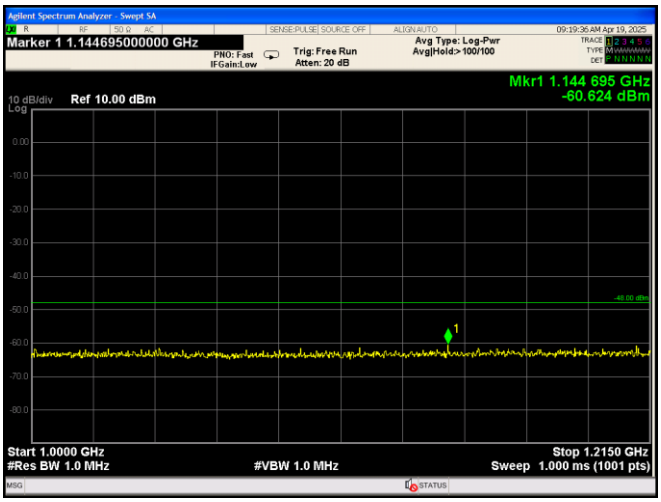
Test channel:	919.2MHz
	
30MHz≦f≦710MHz	710MHz<f≦900MHz
	
900MHz<f≦915MHz	915MHz≦f<915.7MHz
	
915.7MHz<f≦920.2MHz	920.6MHz<f≦923.5MHz



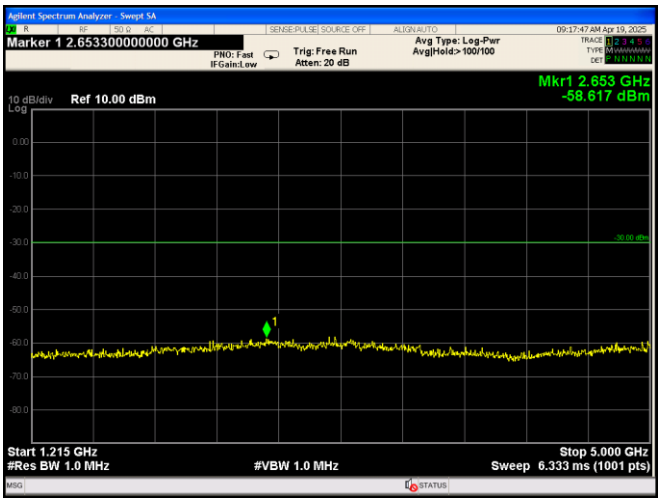
923.5MHz≦f<930MHz



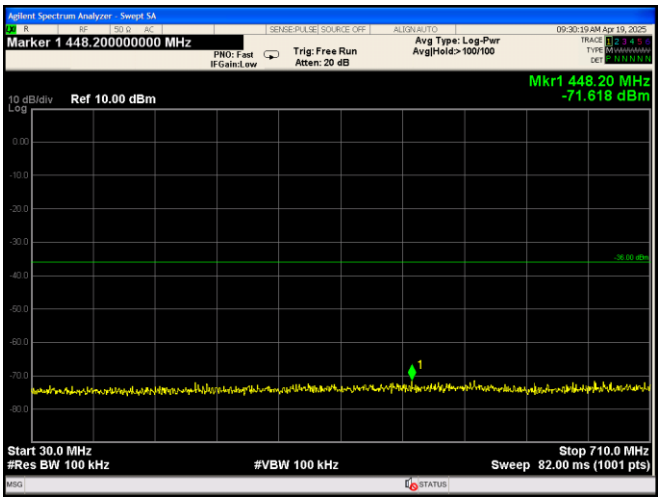
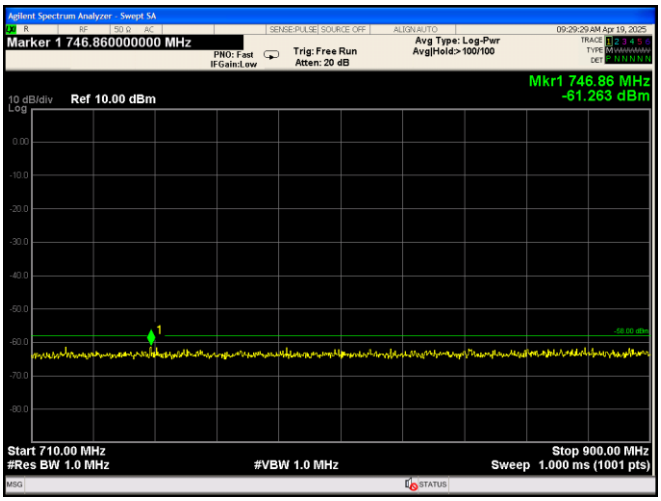
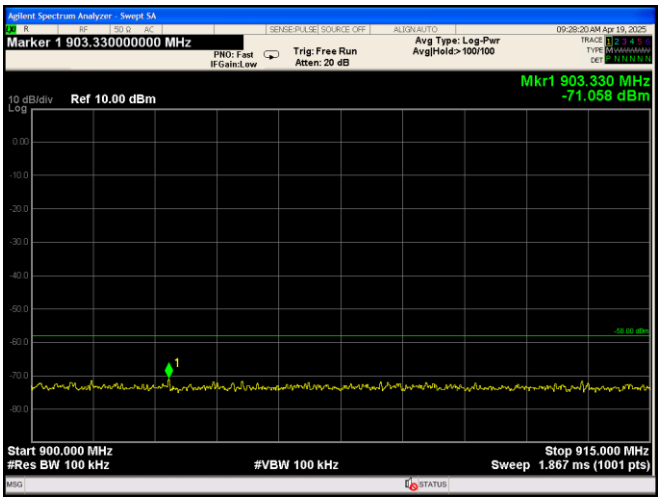
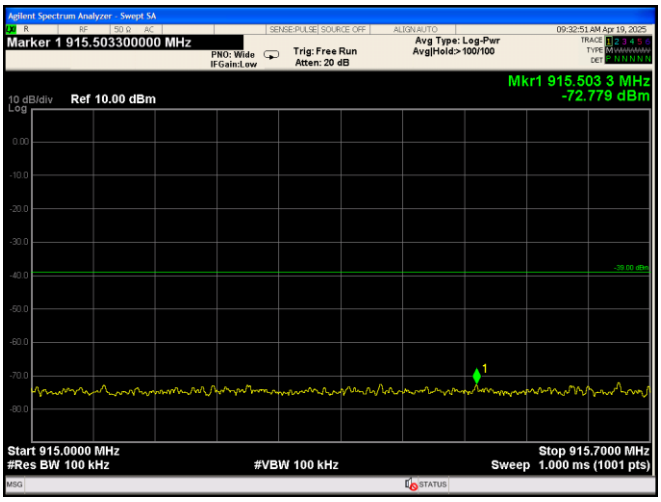
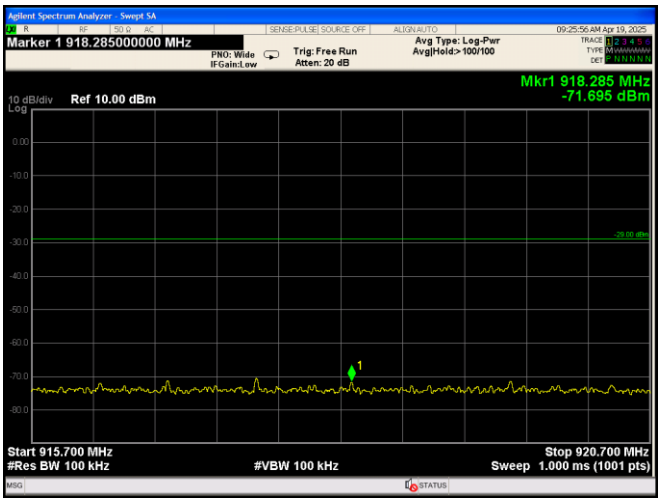
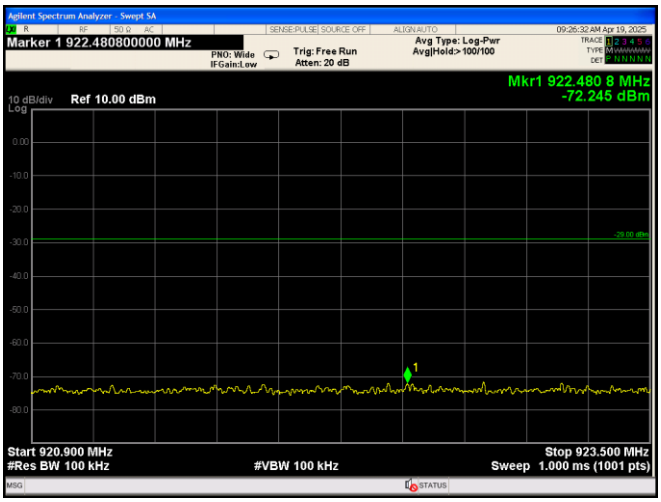
930MHz<f≦1000MHz

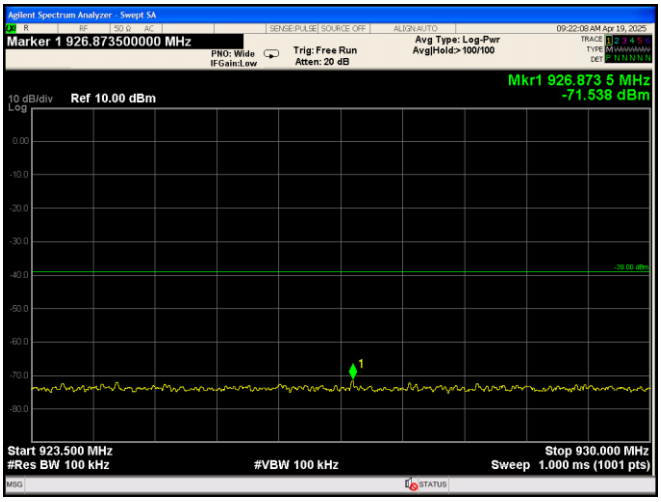
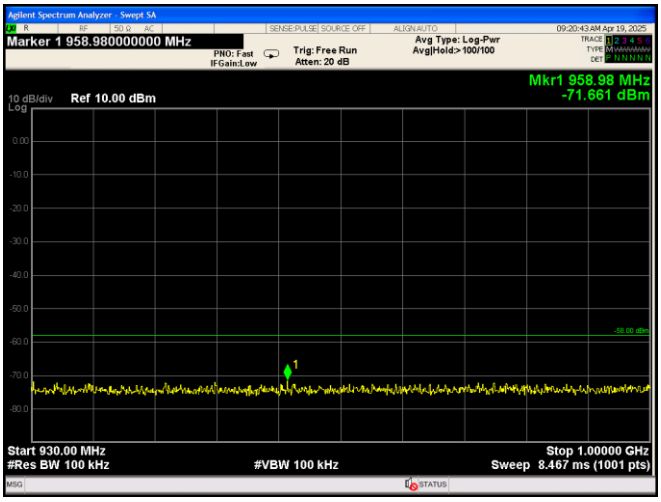
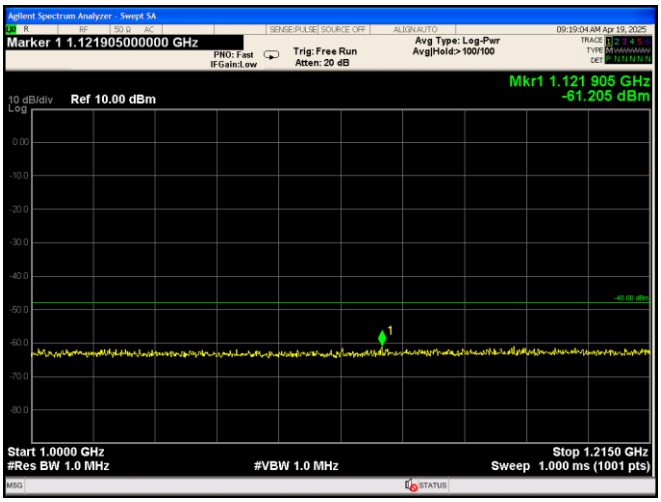
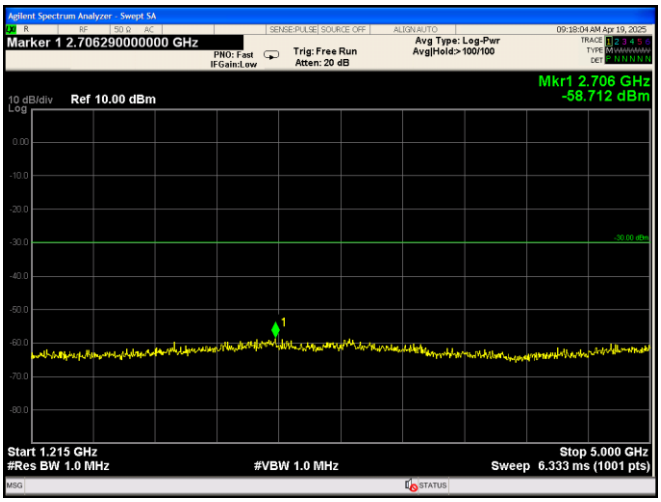


1000MHz<f≦1215MHz



1215MHz≦f<12500MHz

Test channel:	920.8MHz
	
30MHz≦f≦710MHz	710MHz<f≦900MHz
	
900MHz<f≦915MHz	915MHz≦f<915.7MHz
	
915.7MHz<f≦920.6MHz	921.0MHz<f≦923.5MHz

	
923.5MHz≦f<930MHz	930MHz<f≦1000MHz
	
1000MHz<f≦1215MHz	1215MHz≦f<12500MHz

3.5 ADJACENT CHANNEL LEAKAGE POWER

3.5.1 Limit

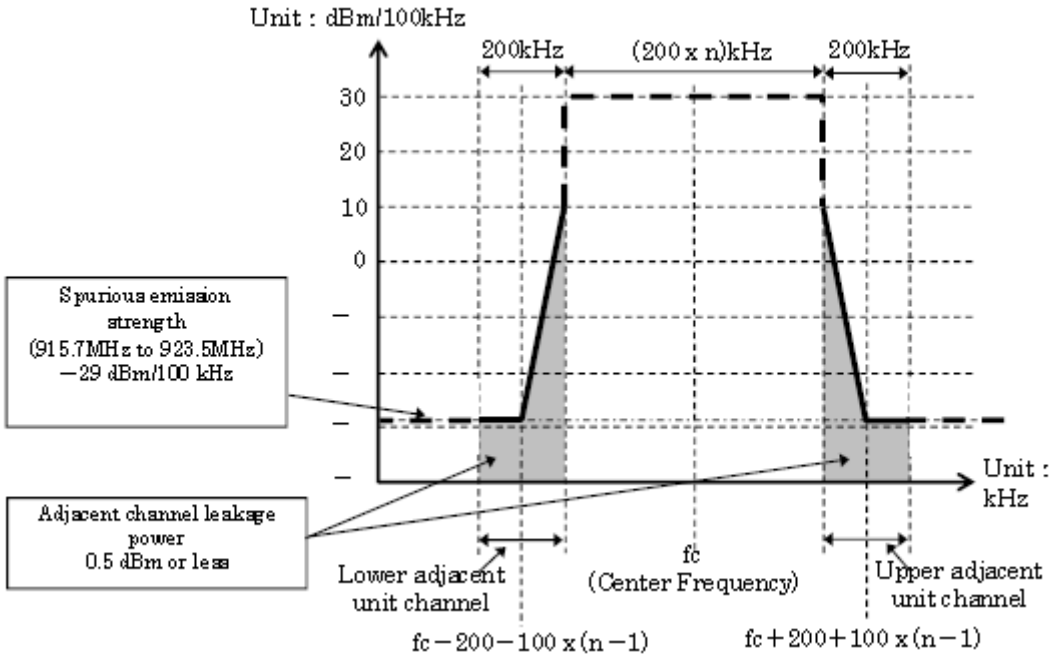
Frequency band of signal in use is from 916.8MHz to 920.8MHz. (Antenna power is 1W or less (with carrier sense).)

A. Spectral power at the both edges of a radio channel

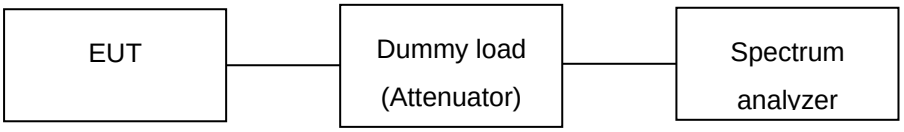
It shall be 10 dBm or less, respectively.

B. Leakage power in a unit radio channel adjacent to a radio channel (200 kHz)

It shall be 0.5 dBm or less, respectively.



3.5.2 Test configuration



3.5.3 Test procedure

Spectrum analyzer is set as follows.

Center frequency	Carrier frequency
	Carrier frequency + 100kHz× (n + 1)
	Carrier frequency - 100kHz× (n + 1)
Span	When measuring the total power (carrier power) : n ×200kHz
Adjacent channel leakage power measurement when the upper and lower: 200kHz	
Resolution bandwidth	3 kHz
Video bandwidth	more than three times the resolution bandwidth
Sweep time	the minimum time is guaranteed measurement accuracy (in the case of
wave	burst, burst duration of one or more per sample)
Sweep mode	Single sweep
Detection mode	RMS

n is the number of channel units used at the same time as a radio channel.

If it takes a long time to sweep a long burst period, continuous sweep sweep mode, as Max Hold the display mode can be measured until there is no variation of the displayed waveform. In this case, it is possible to shorten the time spectrum analyzer sweep.

3.5.4 Test results

Adjacent unit channels:

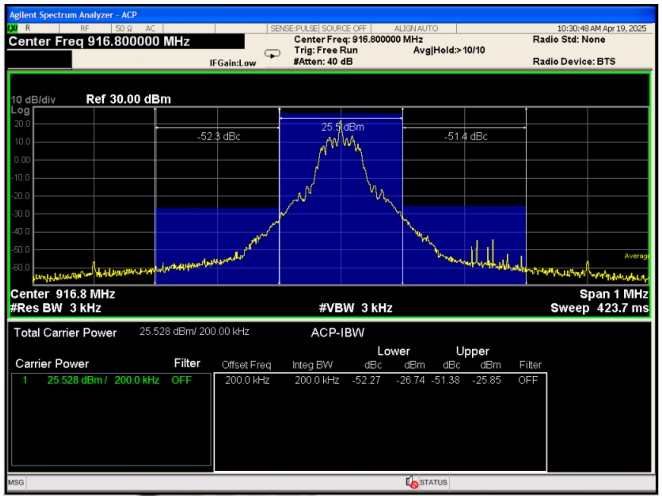
Test modulation	Test freq.	Edges	Test result (dBm)	Limit (dBm)	Result
ASK	916.8MHz	Lower	-26.74	0.5	PASS
		Upper	-25.85		PASS
	919.2MHz	Lower	-26.29		PASS
		Upper	-26.30		PASS
	920.8MHz	Lower	-25.99		PASS
		Upper	-26.67		PASS

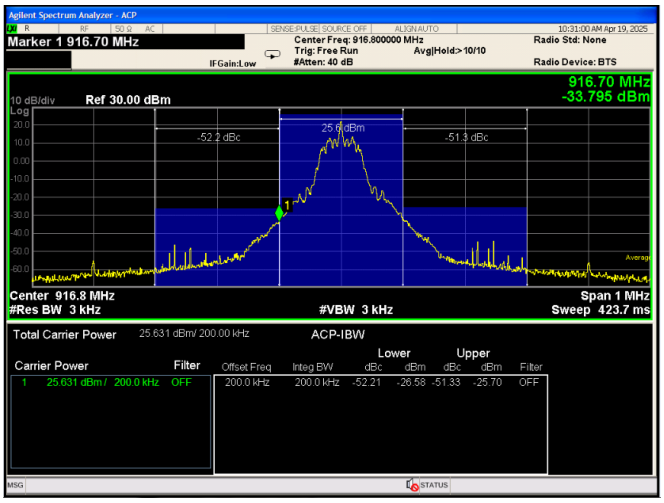
Radio channel both ends:

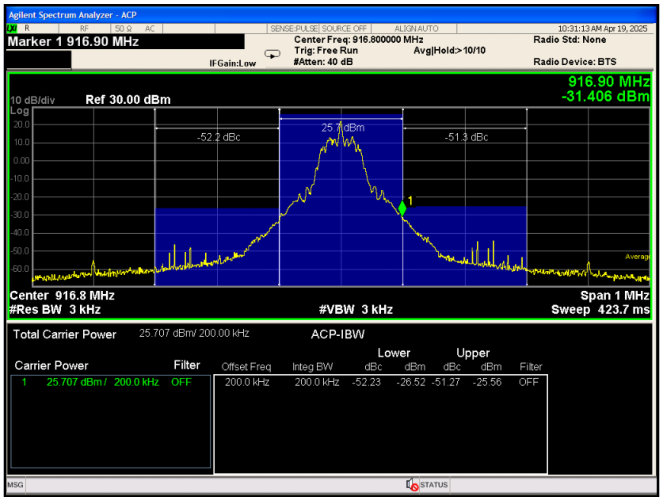
Test modulation	Test freq.	Edges	Test result (dBm/3kHz)	Test result (dBm/100kHz)	Limit (dBm/100kHz)	Result
ASK	916.8MHz	Lower	-33.795	-18.566	10	PASS
		Upper	-31.406	-16.177		PASS
	919.2MHz	Lower	-33.174	-17.945		PASS
		Upper	-33.730	-18.501		PASS
	920.8MHz	Lower	-32.410	-17.181		PASS
		Upper	-33.758	-18.529		PASS

Remark: A(dBm/100kHz)=B(dBm/3kHz)+10log(100/3)

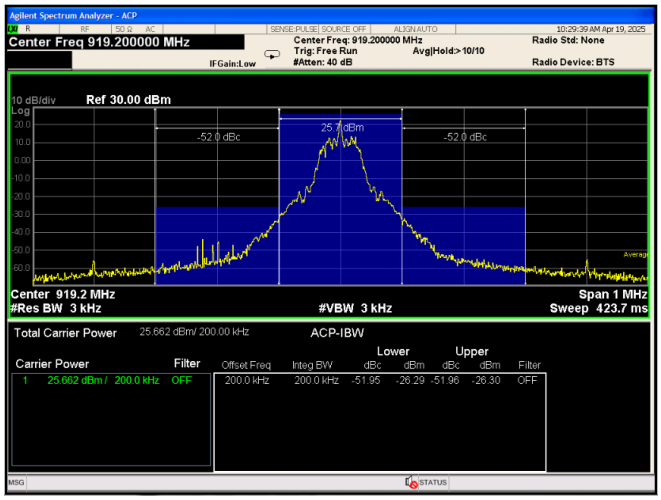
916.8MHz channel

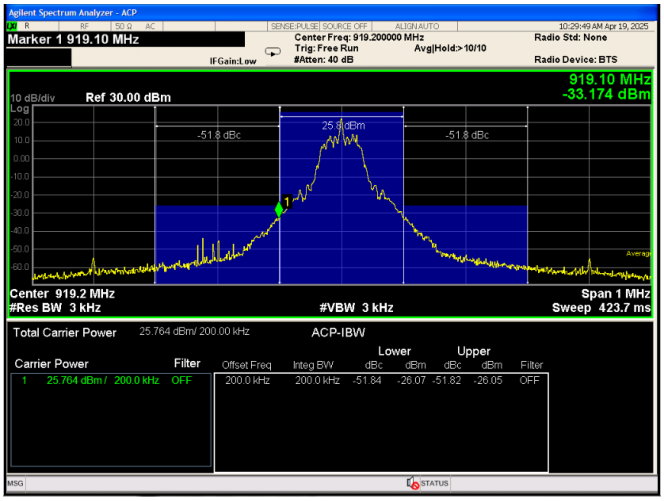


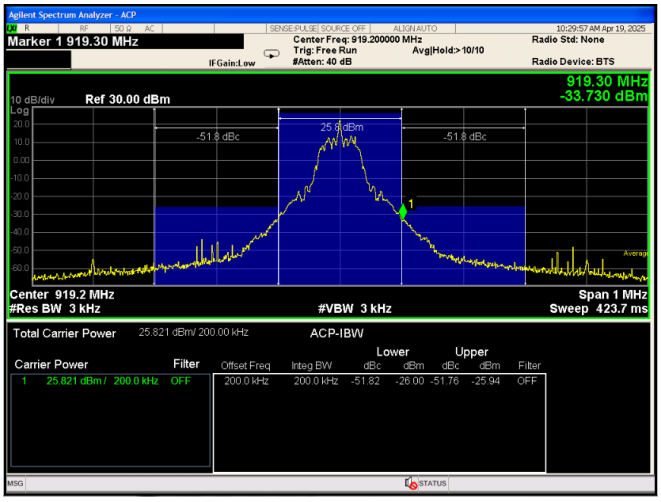




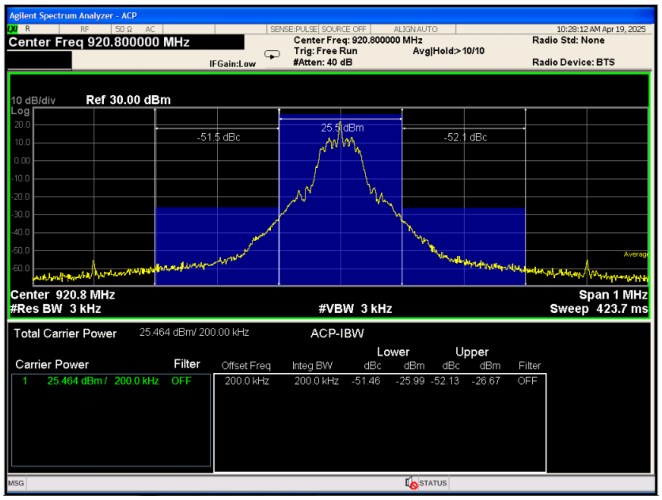
919.2MHz channel

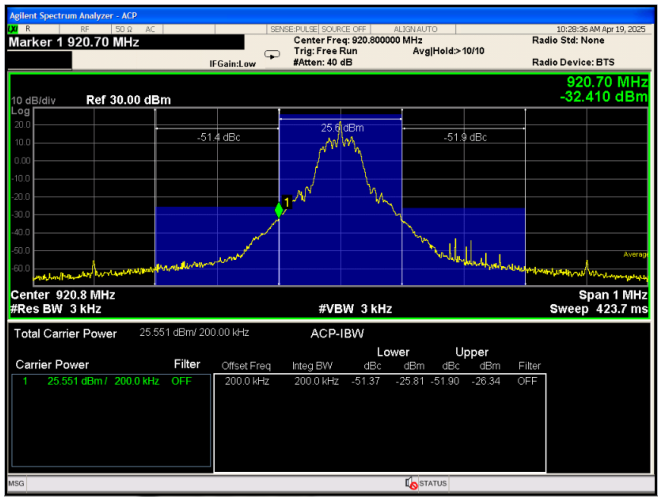


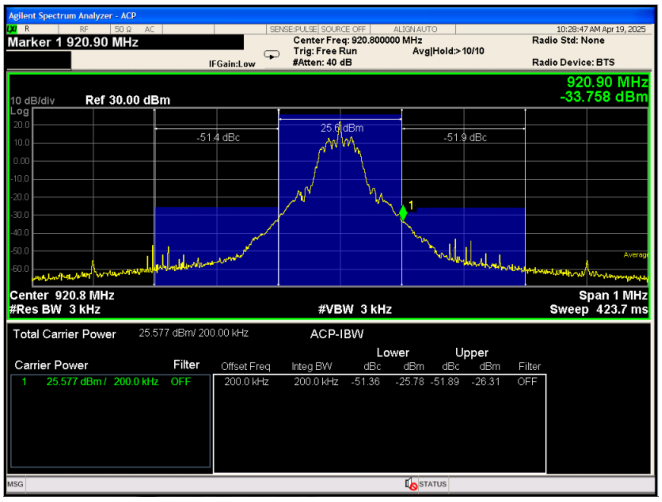




920.8MHz channel







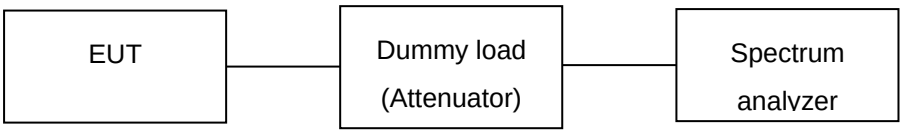
3.6Secondary radiated emission strength

3.6.1 Limit

Permissible Values for Spurious Emission / Unwanted Emission Intensity at the antenna input shall be less than the value in the table below

Frequency band	Limit on Secondary Radiated Emissions, etc. (Antenna input)	Reference bandwidth
f ≤ 710 MHz	−54 dBm	100 kHz
710 MHz < f ≤ 900 MHz	−58 dBm	1 MHz
900 MHz < f ≤ 915 MHz	−58 dBm	100 kHz
915 MHz < f ≤ 930 MHz	−54 dBm	100 kHz
930 MHz < f ≤ 1000 MHz	−58 dBm	100 kHz
1000 MHz < f ≤ 1215 MHz	−48 dBm	1 MHz
1215 MHz < f	−47 dBm	1 MHz

3.6.2 Test configuration



3.6.3 Test procedure

Spectrum analyzer set at the time of measurement of firing sub is as follows.

Center frequency Firing frequency side

Span From 30MHz to 12.75GHz

RBW RBW 100kHz: 30MHz-710MHz and 900MHz-1GHz

1MHz: 710MHz-900MHz and 1GHz-12.75GHz

VBW Equal to RBW

Y-axis scale 10dB/Div

Sweep time the minimum time is guaranteed measurement accuracy

Sweep mode Signal sweep

Detection mode Sample

(1) Set as spectrum analyzer, to explore the maximum value of the amplitude of the firing side to sweep up to 10GHz from 30MHz.

(2) If the allowable value is the value that you search the Regulations equipment, the measured values and the values that you search.

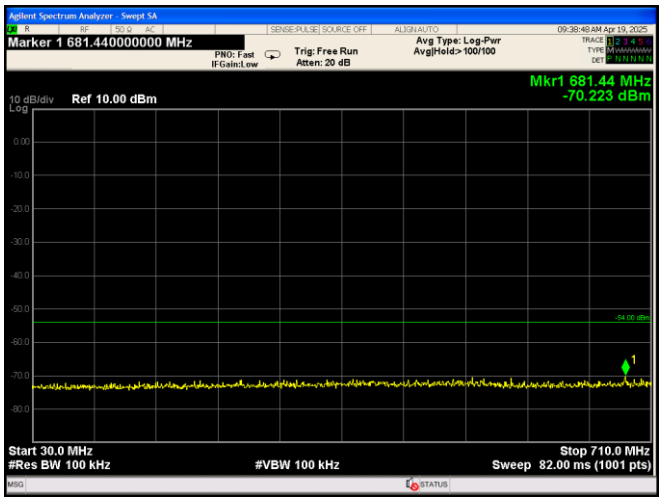
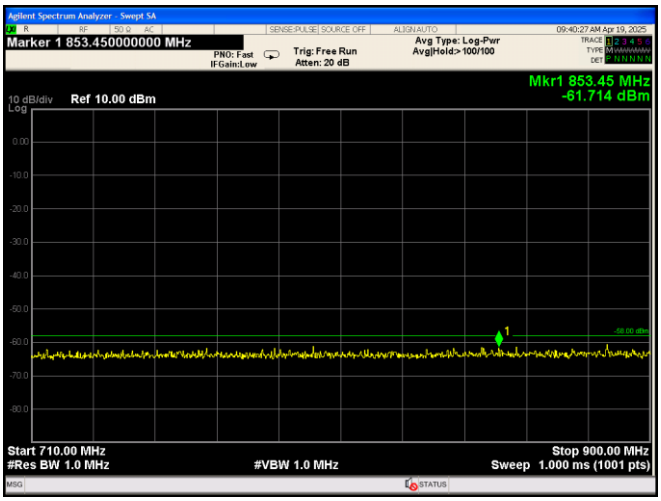
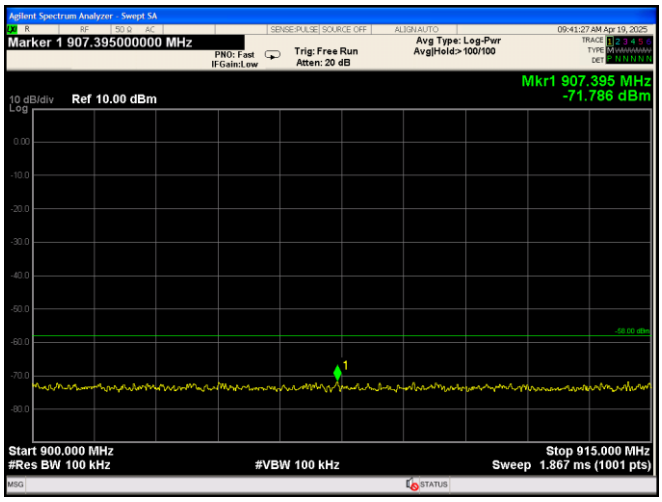
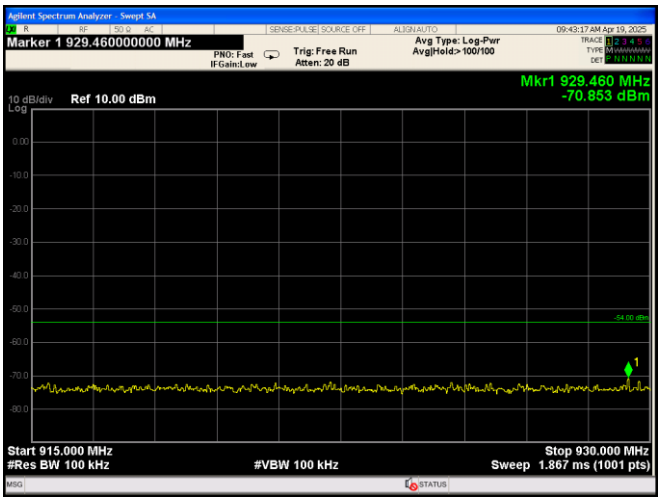
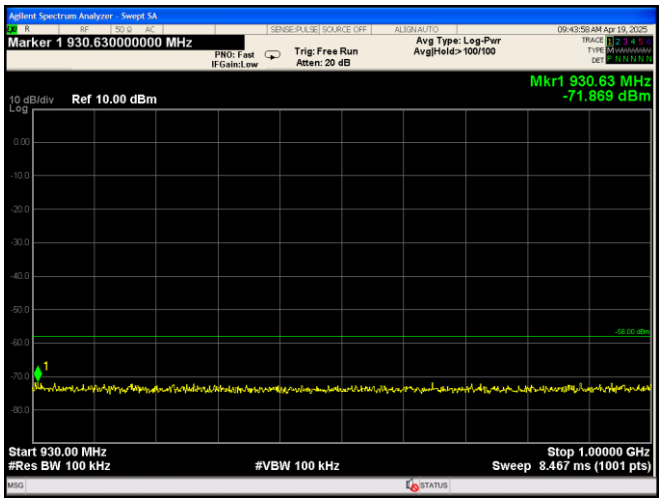
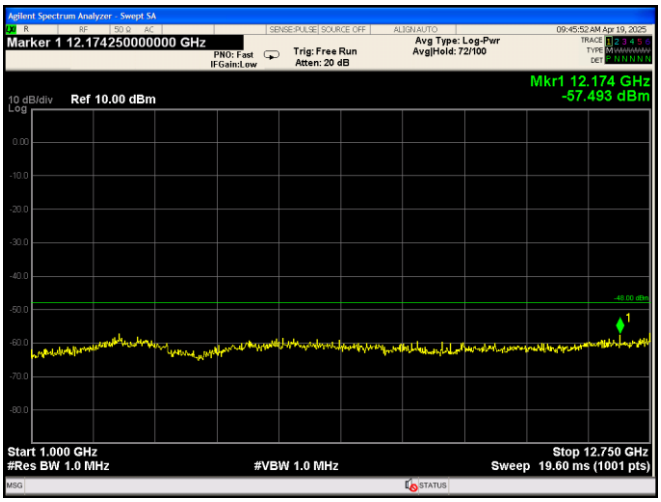
(3) If you exceed the allowable value is the value that you search the Regulations facilities, asking the

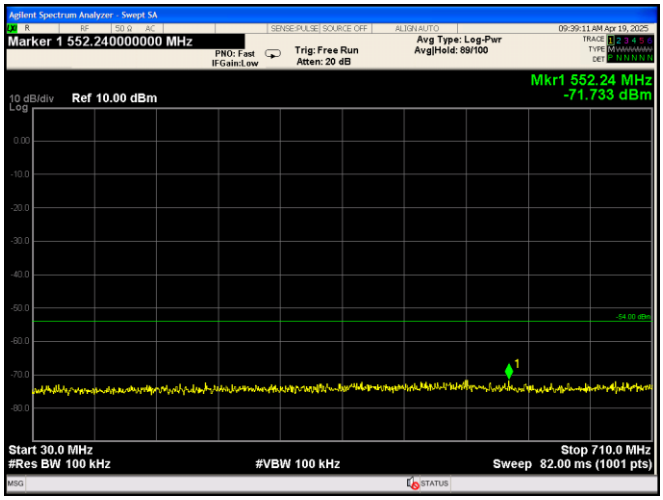
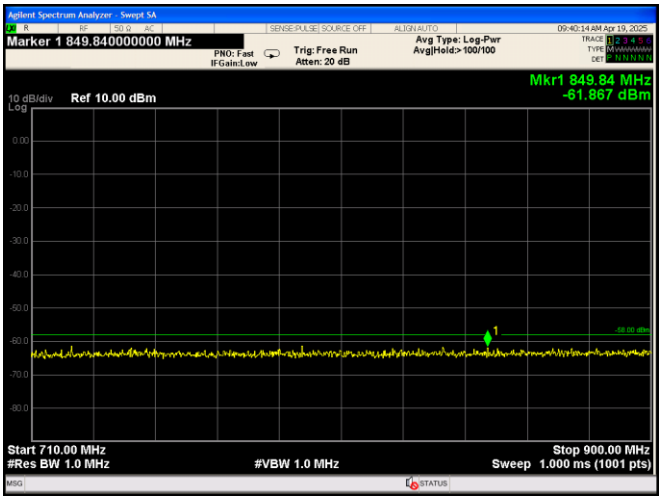
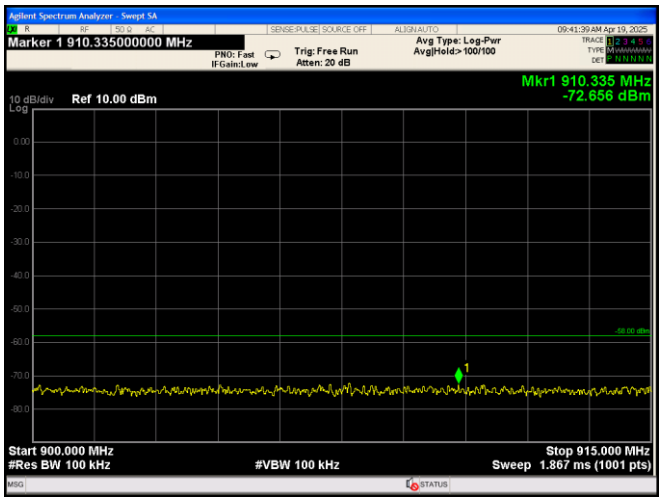
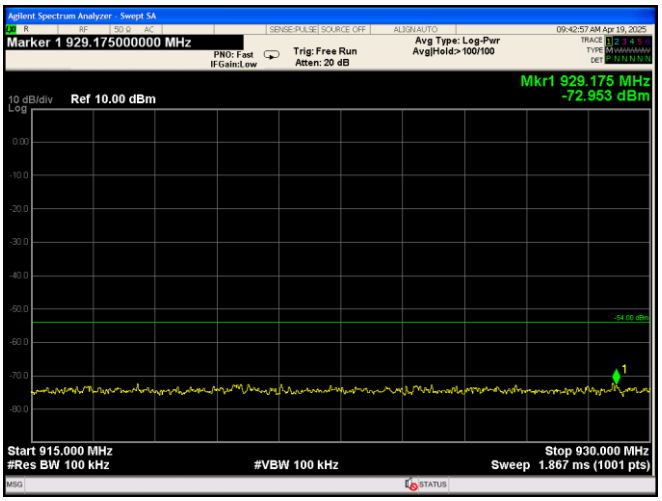
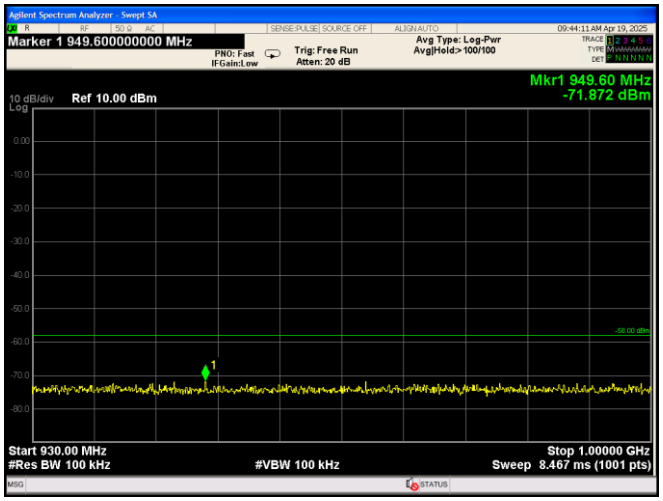
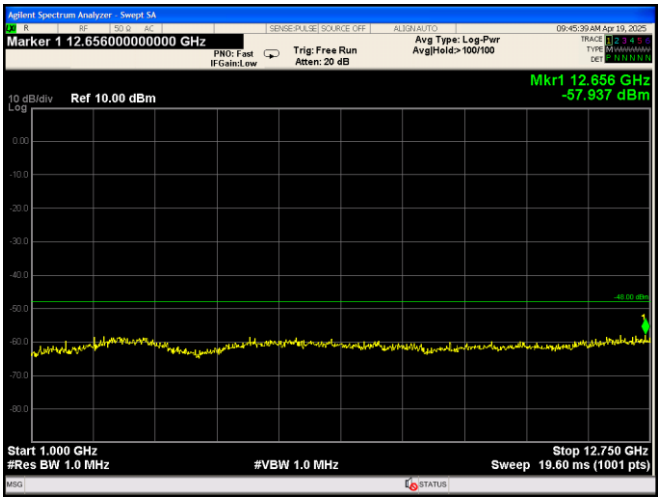
frequency of side-firing, set as spectrum analyzer to measure the average power averaging processing is performed.

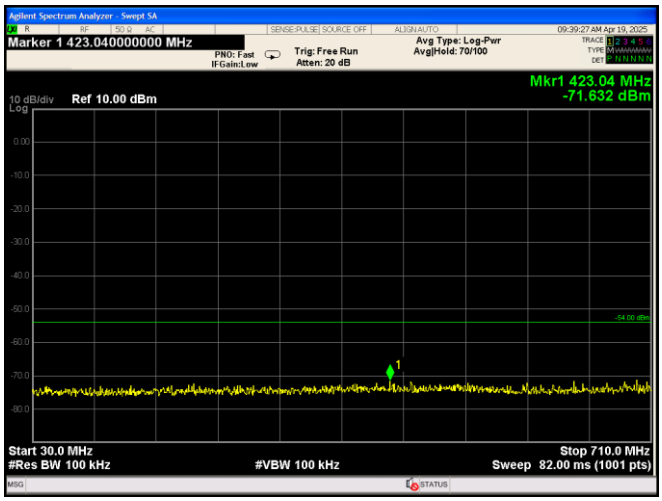
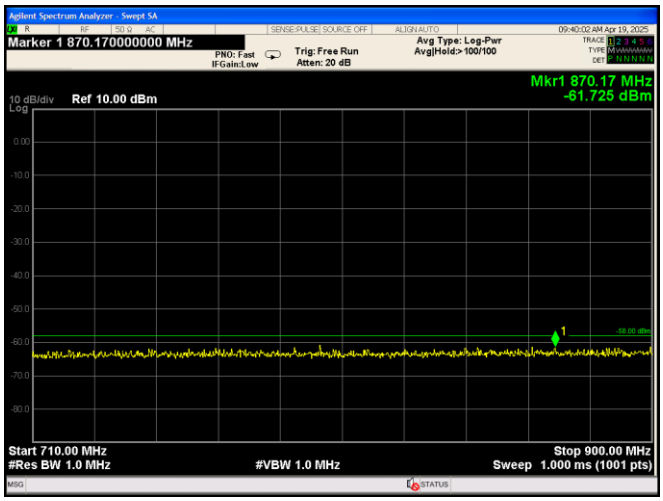
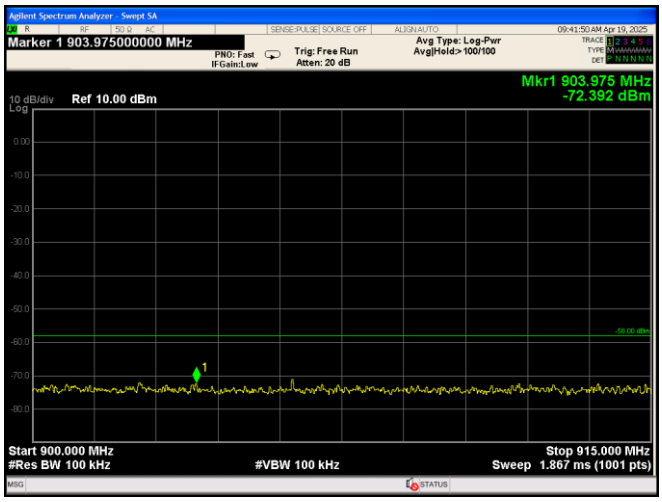
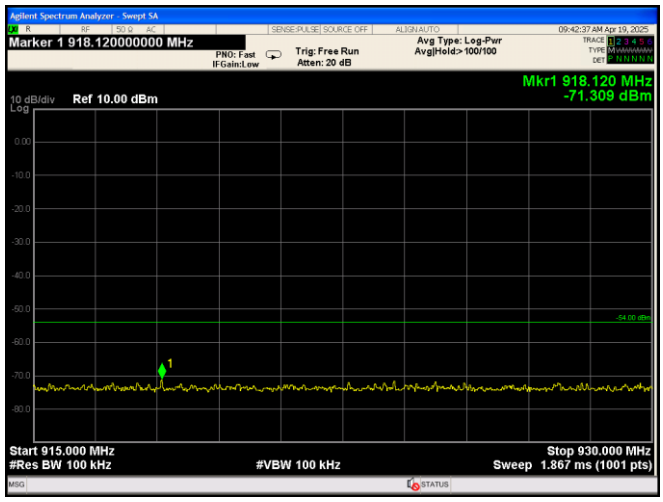
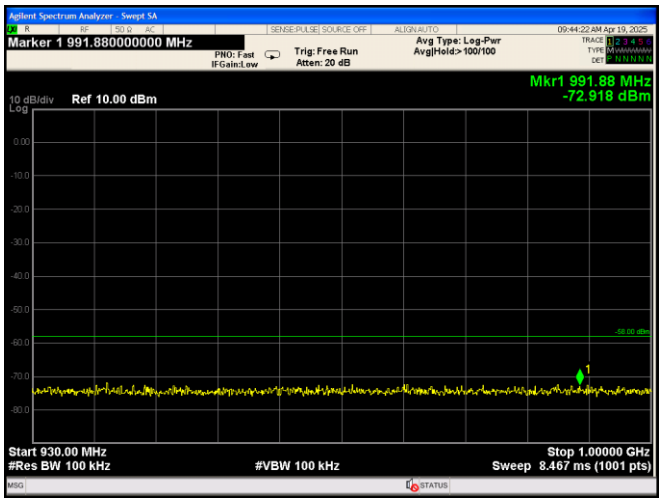
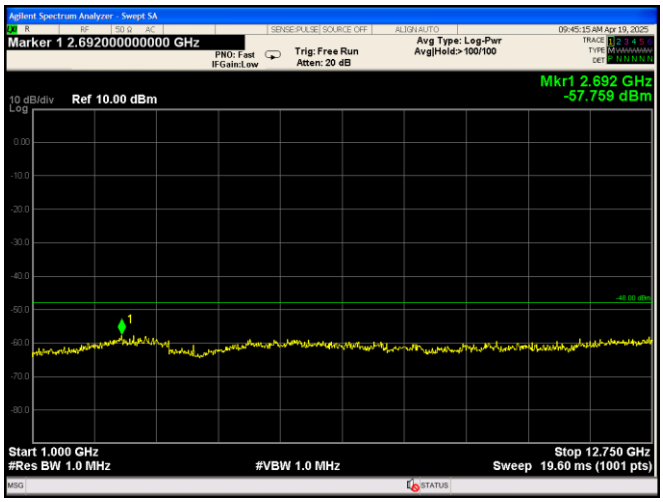
(4) If you cannot set the state of the receive-only facilities receiving radio to use the antenna that are common in the measurement of up to(3),external trigger signal spectrum analyzer using a broadband detector the transmission power of the test equipment from(1) transmission and , except time to measure the transmission time.

3.6.4 Test results

Test modulation	Test freq.	Test freq. range	Emission Frequency (MHz)	Test result dBm	Limit (dBm)	Reference bandwidth	Result
ASK	916.8MHz	30MHz≦f≦710MHz	681.4	-70.223	-54	100kHz	PASS
		710MHz<f≦900MHz	853.45	-61.714	-58	1MHz	PASS
		900MHz<f≦915MHz	907.395	-71.786	-58	100kHz	PASS
		915MHz≦f<930MHz	929.460	-70.853	-54	100kHz	PASS
		930MHz<f≦1000MHz	930.63	-71.869	-58	100kHz	PASS
		1000MHz≦f<12750MHz	12174	-57.493	-48	1MHz	PASS
	919.2MHz	30MHz≦f≦710MHz	552.24	-71.733	-54	100kHz	PASS
		710MHz<f≦900MHz	849.84	-61.867	-58	1MHz	PASS
		900MHz<f≦915MHz	910.335	-72.656	-58	100kHz	PASS
		915MHz≦f<930MHz	929.175	-72.953	-54	100kHz	PASS
		930MHz<f≦1000MHz	949.60	-71.872	-58	100kHz	PASS
		1000MHz≦f<12750MHz	12656	-57.937	-48	1MHz	PASS
	920.8MHz	30MHz≦f≦710MHz	423.04	-71.632	-54	100kHz	PASS
		710MHz<f≦900MHz	870.17	-61.725	-58	1MHz	PASS
		900MHz<f≦915MHz	903.975	-72.392	-58	100kHz	PASS
		915MHz≦f<930MHz	918.120	-71.309	-54	100kHz	PASS
		930MHz<f≦1000MHz	991.88	-72.918	-58	100kHz	PASS
		1000MHz≦f<12750MHz	2692	-57.759	-48	1MHz	PASS

Test channel:	916.8MHz
	
30MHz≦f≦710MHz	710MHz<f≦900MHz
	
900MHz<f≦915MHz	915MHz≦f<930MHz
	
930MHz<f≦1000MHz	1000MHz<f≦12750MHz

Test channel:	919.2MHz
	
30MHz≦f≦710MHz	710MHz<f≦900MHz
	
900MHz<f≦915MHz	915MHz≦f<930MHz
	
930MHz<f≦1000MHz	1000MHz<f≦12750MHz

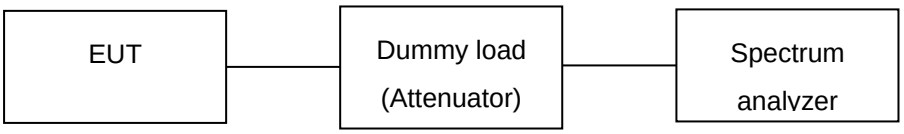
Test channel:	920.8MHz
	
30MHz≦f≦710MHz	710MHz<f≦900MHz
	
900MHz<f≦915MHz	915MHz≦f<930MHz
	
930MHz<f≦1000MHz	1000MHz<f≦12750MHz

3.7TRANSMISSION TIME CONTROL EQUIPMENT

3.7.1 LIMIT

The controller shall cease emission of radio waves within 4 seconds after starting of emission. It shall pause emission for 50 ms or more until the next emission.

3.7.2Test Setup Block Diagram



3.7.3 TEST PROCEDURES

Setting the spectrum analyzer is as follows.

Center frequency	Test frequency
Span	0Hz
RBW	1MHz
VBW	Equal to RBW
Sweep time	Approximately twice the value of equipment acceptable to the Regulations
Detection mode	Positive peak
Triggering condition	Level rise

1) As two sets of spectrum analyzer, set to trigger at rising edge trigger conditions, to launch state radio test equipment.

2) To verify that, and stopped firing of radio equipment within the time prescribed in the regulations, downtime is greater than or equal to time transmitting equipment to the Regulations.

3) If there is not enough time resolution of the spectrum analyzer in the measurement of the transmission pause time, set the trigger down to shorten the time to sweep up the trigger conditions, the time after stopping the firing of test equipment radio equipment prescribed in the regulations ensure that the time is greater than or equal to.

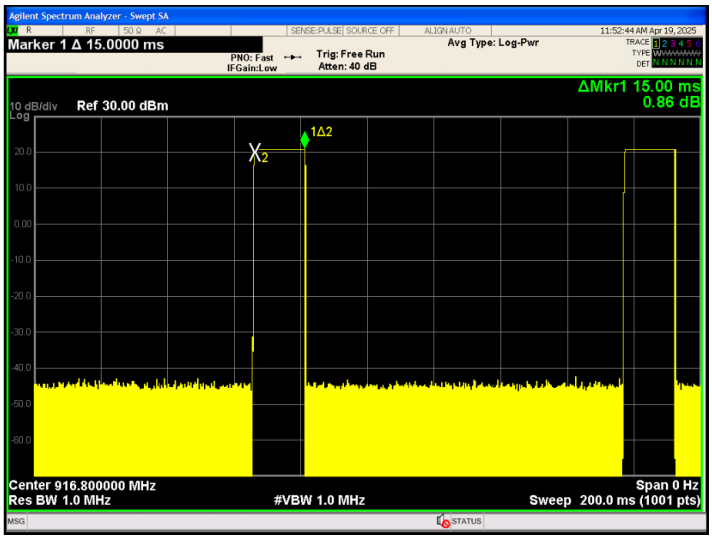
3.7.4 TEST RESULT

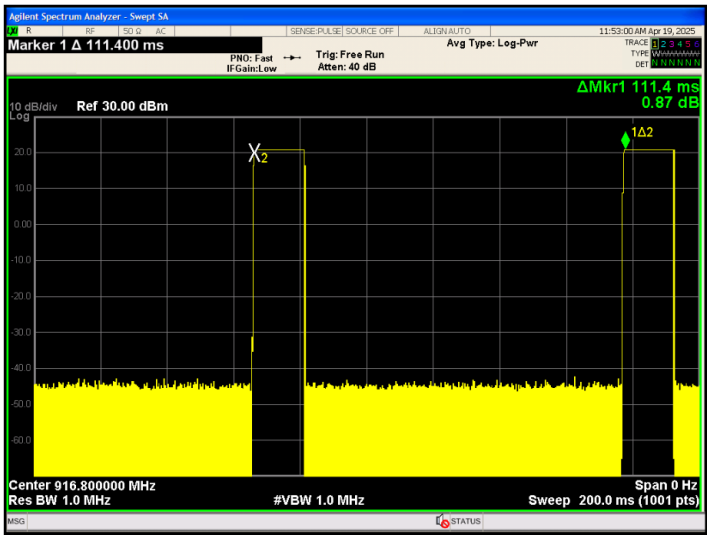
Test Item	Frequency (MHz)	Transmission Time(s)	Limit (s)	Sending duration(s)	Pause duration (ms)	Limit (ms)
Test Result	916.8	0.0150	< 4	0.1114	96.4	＞50
	919.2	0.0146	< 4	0.1108	96.2	＞50
	920.8	0.0150	< 4	0.1110	96.0	＞50

Remarks: Pause duration =(Sending duration-Transmission)*1000

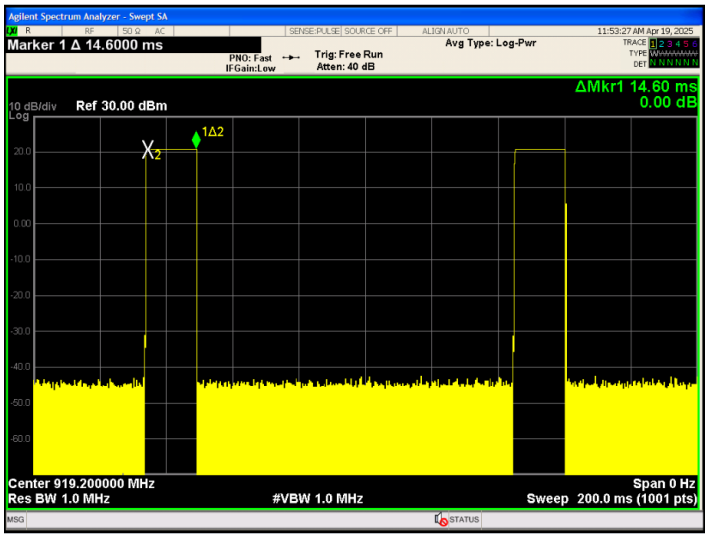
Test Result: Pass

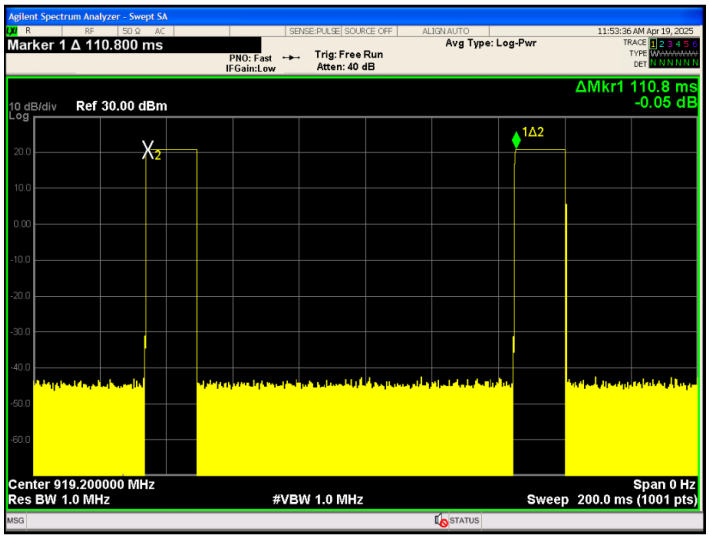
916.8MHz



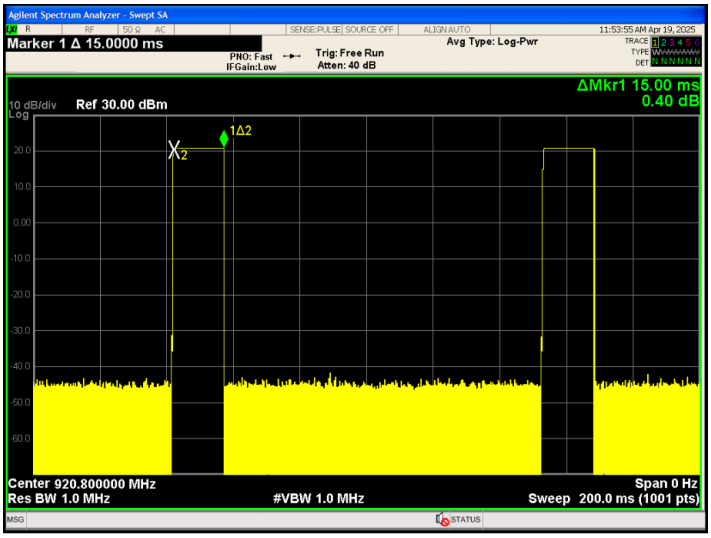


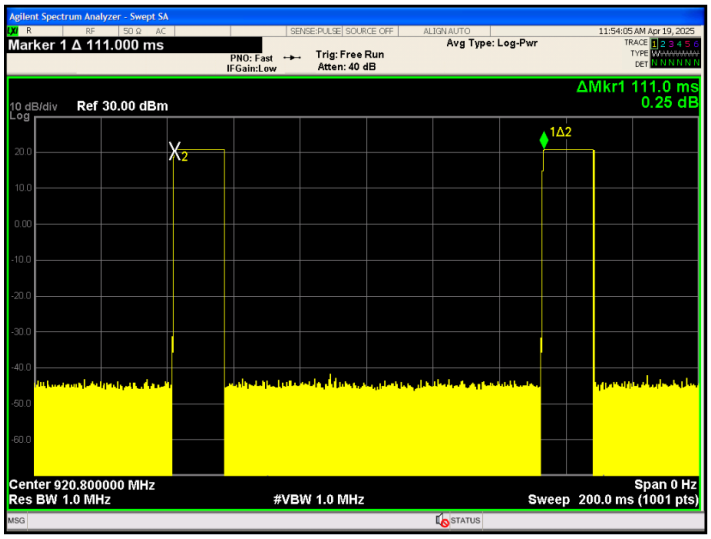
919.2MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 Δ 14.6000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 40 dB
Avg Type: Log-Pwr
11:53:27 AM Apr 19, 2025
ΔMkr1 14.60 ms
0.00 dB
10 dB/div
Log
Ref 30.00 dBm
1Δ2
Center 919.200000 MHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 200.0 ms (1001 pts)


Agilent Spectrum Analyzer - Swept SA
Marker 1 Δ 110.800 ms
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 40 dB
Avg Type: Log-Pwr
11:53:36 AM Apr 19, 2025
ΔMkr1 110.8 ms
-0.05 dB
10 dB/div
Log
Ref 30.00 dBm
1Δ2
Center 919.200000 MHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 200.0 ms (1001 pts)

920.8MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 Δ 15.0000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 40 dB
Avg Type: Log-Pwr
11:53:55 AM Apr 19, 2025
ΔMkr1 15.00 ms
0.40 dB
10 dB/div
Log
Ref 30.00 dBm
1Δ2
Center 920.800000 MHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 200.0 ms (1001 pts)


Agilent Spectrum Analyzer - Swept SA
Marker 1 Δ 111.000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 40 dB
Avg Type: Log-Pwr
11:54:05 AM Apr 19, 2025
ΔMkr1 111.0 ms
0.25 dB
10 dB/div
Log
Ref 30.00 dBm
1Δ2
Center 920.800000 MHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 200.0 ms (1001 pts)

3.8CARRIER SENSE

3.8.1 Limit

According to STD-T106, 3.2.3 (2) Carrier sense (ORE: article 49, Ministerial ordinance of MIC: No.162, 2011)

Controller shall have functions that comply with the conditions A, B and C

A. Carrier sense level

When the amount of the received power at the antenna input is -74 dBm or more, the controller shall prohibit transmission of radio wave in the same channel of the received power.

B. Bandwidth of carrier sense

The receiving bandwidth for carrier sense shall be the same bandwidth of its transmitting radio channel. In this regulation, emission shall be prohibited when the carrier sense level on the intended radio channel is more than -74dBm(200 kHz x n) at the antenna input. (Note: n is the number of the unit radio channels used , simultaneously in a radio channel. n=1, 2, 3.)

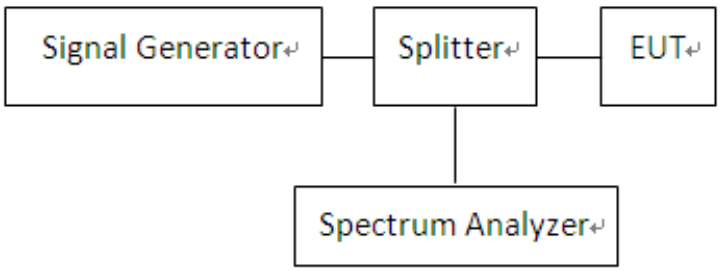
C.Carrier sense time

Time duration shall be more than 5 ms to detect whether the intended radio channel is open or not.

In this regulation, time duration is calculated as follows:

Time≥ 5 + (R x 0.5) ms, where R is a random integer from 0 to 10.

3.8.2 Test Setup Block Diagram



3.8.3Test Procedure

1. SG adjust the frequency as same as the EUT transmitted signal, unmodulation, power level 0dBm, Then turn off the RF signal.

2. EUT have transmitted the maximum modulation signal and fixed channel

3. Setting of the SA following as RBW/VBW: 100kHz/300kHz SPAN: 50MHz Sweep time: Auto continue PK

4. SG Signal -74dBm (Bandwide=200kHz) to EUT, EUT prohibit transmission

3.8.4Test results

For Require (Level -74dBm)

Test Result: Pass

Test Condition	Frequency(MHz)	Transmitting Power(dBm)
Normal Operating	916.8	27.38
Inject CW(-74dBm, 200kHz Bandwidth)	916.8	-67.22(Base noise, Stop transmission)
Stop Inject CW	916.8	27.22

Test Condition	Frequency(MHz)	Transmitting Power(dBm)
Normal Operating	919.2	28.25
Inject CW(-74dBm, 200kHz Bandwidth)	919.2	-67.95 (Base noise, Stop transmission)
Stop Inject CW	919.2	28.16

Test Condition	Frequency(MHz)	Transmitting Power(dBm)
Normal Operating	920.8	27.52
Inject CW(-74dBm, 200kHz Bandwidth)	920.8	-68.63(Base noise, Stop transmission)
Stop Inject CW	920.8	27.43

Test Condition	Frequency(MHz)	Time duration (ms)
Carrier sense time	916.8	8
	919.2	8
	920.8	8

3.9Radio Channel

3.9.1limit

Unit channel: 916.8MHz, 918.0MHz, 919.2MHz, 920.4MHz, 920.6MHz, 920.8MHz,

200kHz BW

Simultaneous use channels：MAX 3 unit channels

3.9.2 Test results

Pass

N=1, Frequency allocation 916.8MHz, 918.0MHz, 919.2MHz, 920.4MHz, 920.6MHz, 920.8MHz

3.10 Antenna gain, Reception from a responder

Antenna

Antenna gain 6 dBi or less (absolute gain)

Provided that measured EIRP (Equivalent Isotropically Radiated Power) is less than the value of 6dBi plus 1W of antenna power, it is allowed to fill in the gap by the antenna gain.

Antenna gain=1.5dBi<6dBi

Reception from a responder

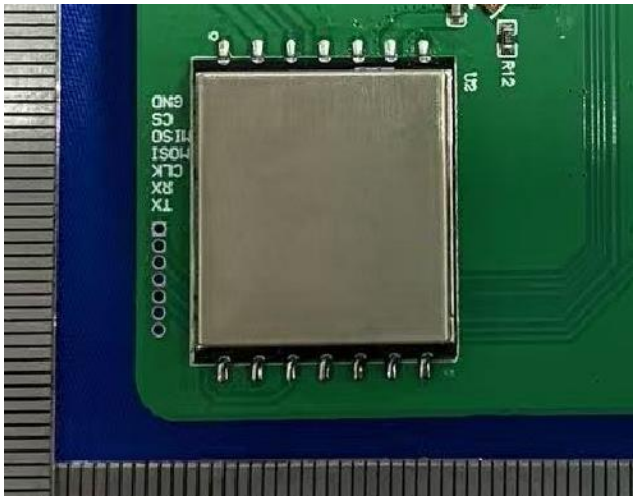
Receiver can receive a radio wave from a responder.

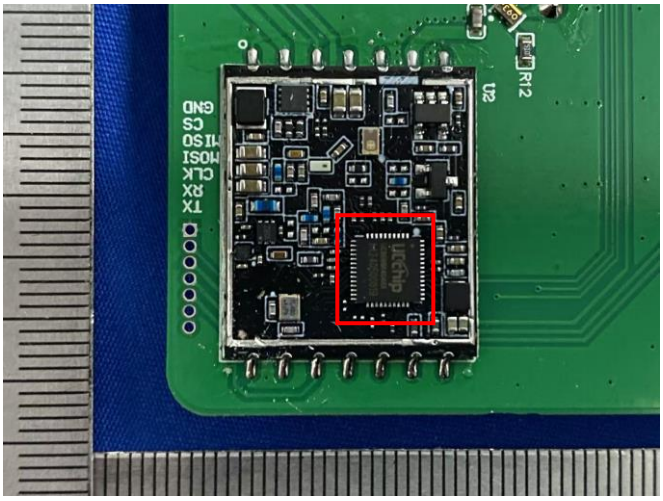
3.11RF SHIELDINGMETHOD

The high-frequency section and modulation section of the radio equipment except for the antenna system shall not be capable of being opened easily.

Confirmation method

☐ Sealed with special screws.
☐ Plastic chassis is being welded using ultrasonic wavs.
☐ Chassis is glued using a special adhesive.
☐ Metal covers are spot-fused.
☐ Cover is specially interlocked.
☒ RF and Modulation components are covered with shielding case and this shielding case is soldered.
☐ Shield case is welded ant RF and modulations parts, and ID-ROM is welded using BGA Method.
☐ Shield case is welded ant RF and modulations parts, and ID-ROM is glued at its lead with a special adhesive.
☐ Shield case is welded ant RF and modulations parts, and ID-ROM is glued with a non-transparent laminating agent.
☐ Other: All RF and modulation section packet in one IC, and IC is welded using SMT Method, and RF module is welded on the main board, end-User can't open it easily.





3.12 Compliance of radiation protection

3.12.1 LIMIT

According to Chapter 4 Compliance of radiation protection

Signal intensity means electric field strength, power flux density and magnetic field strength (hereinafter the same)..It is set forth as that the place at which the signal intensity coming from radio equipment exceeds the value shown in table 4-1, protection facilities are required to guardperson who are there except for operator.

Frequency	Electric field strength (V/m)	Magnetic field strength (A/m)	Power flux density (mW/cm^2)	Average Time (minute)
More than 300 MHz and less than 1.5 GHz	$1.585\ f^{1/2}$	$f^{1/2}/237.8$	$f/1500$	6

Note1: Unit of f is in MHz.

Note2: Electric field strength and Magnetic field strength should be filled in effective values.

3.12.2 TEST RESULT

Manufacturer declare the distance is at least 50cm to other person, test period 6min

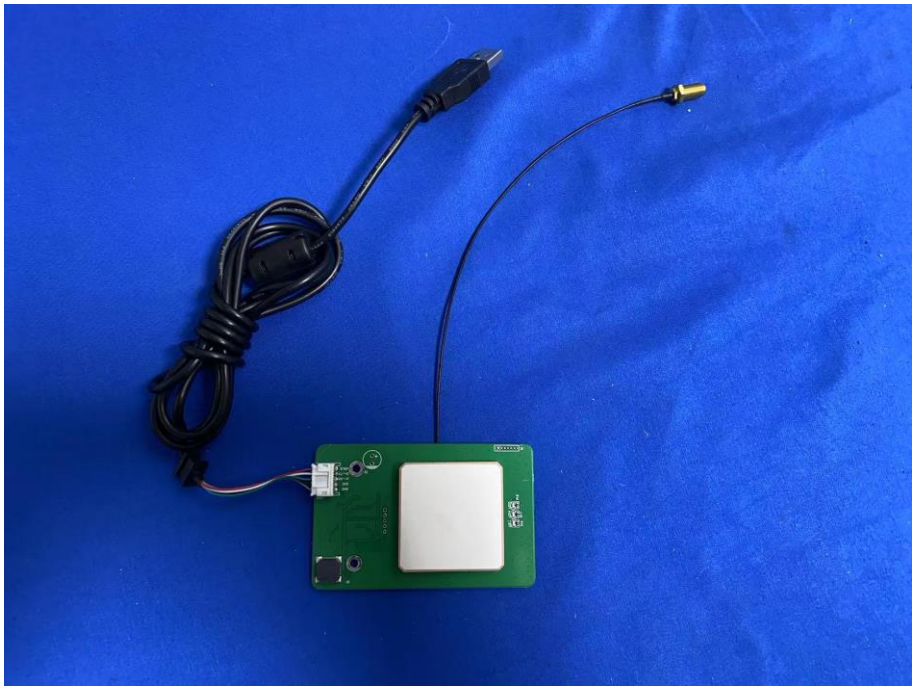
Electric field strength			
Test Position	Measure Value (V/m)	Limit(V/m)	Test Result
Antenna Front Side	3.578	48.09	Compliance
Magnetic field strength			
Test Position	Measure Value (A/m)	Limit(A/m)	Test Result
Antenna Front Side	0.084	0.13	Compliance
Power Flux density			
Test Position	Power flux density (mW/cm2)	Limit(mW/cm2)	Test Result
Antenna Front Side	0.084	0.6136	Compliance

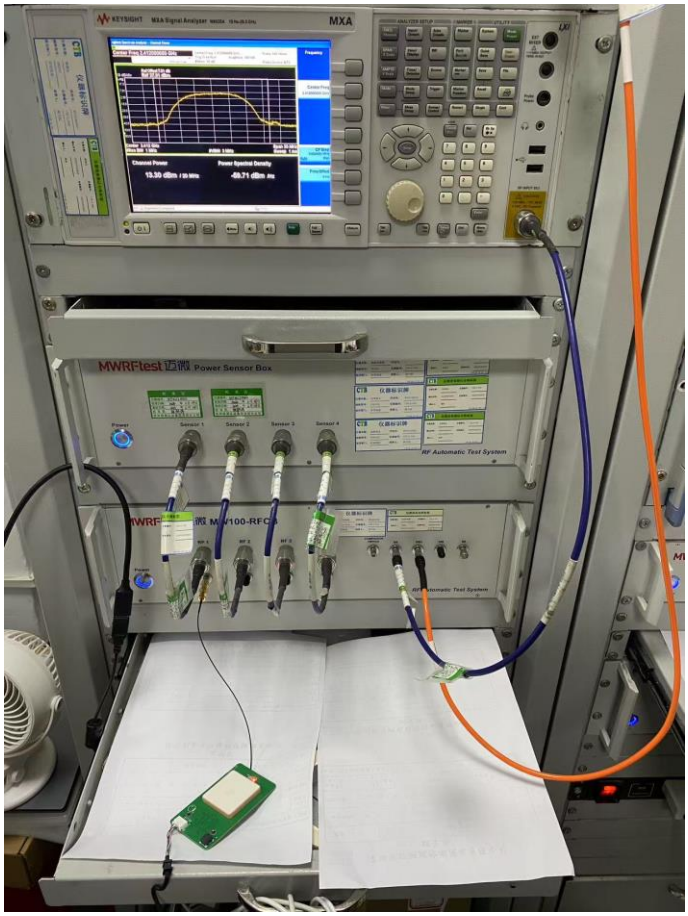
Limit (V/m)=1.585*f1/2=1.585*920.4/1/2=48.09;

Limit (A/m)=f1/2/237.8=920.4 1/2/237.8=0.13

Limit (mW/cm2)=f/1500=920.4/1500=0.6136

4. TEST SETUP PHOTOS OF EUT





※※※※※ **END OF REPORT** ※※※※※