



RF MEASUREMENT REPORT

FCC ID: DD4ADTQK54
Applicant: Shure Incorporated
Product: Wireless Quad Transmitter
Model No.: ADTQ K54, ADTQ DC K54
Brand Name: , **SHURE**[®]
FCC Classification: Part 15 Wireless Microphone (DWM)
FCC Rule Part(s): Part 15 Subpart C (Section 15.236)
Result: Complies
Received Date: 2024-06-13
Test Date: 2024-07-29 ~ 2024-11-28

Reviewed By:

Jame Yuan

Approved By:

Robin Wu



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
2406RSU021-U5	V01	Initial Report	2024-11-30	Invalid
2406RSU021-U5	V02	Update KDB 206256 Version	2024-12-10	Valid

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1.1. Applicant

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Shure Incorporated

5800 West Touhy Avenue, Niles, IL 60714-4608, USA

☒	Test Site – MRT Suzhou Laboratory				
	Laboratory Location (Suzhou - Wuzhong)				
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	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
	Laboratory Location (Suzhou - Wujiang)				
	Building 1, No.1 Xingdong Road, Wujiang, Suzhou, Jiangsu, People's Republic of China				
☒	Laboratory Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐ R-20025	☐ G-20034	☐ C-20020	☐ T-20020
		☐ R-20141	☐ G-20134	☐ C-20103	☐ T-20104
☐	Test Site – MRT Shenzhen Laboratory				
	Laboratory Location (Shenzhen)				
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	Laboratory Accreditations				
	A2LA: 3628.02		CNAS: L10551		
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	Test Site – MRT Taiwan Laboratory				
	Laboratory Location (Taiwan)				
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	Laboratory Accreditations				
☐	TAF: 3261				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product Name	Wireless Quad Transmitter
Model No.	ADTQ K54, ADTQ DC K54
Serial No.	2DE31787111
Radio Specification	UHF Microphone Transmitter
Antenna Information	Refer to section 1.7
Operating Temperature	-18 ~ 50 °C
Network Interface	10/100/1000 Mbps, Dante Digital Audio
Power Type	ADTQ DC: AC Power Input (100~240V AC) & DC Power Input (12~48V)
	ADTQ: AC Power Output (100~240V AC)
Accessory	
8 Port Antenna Combiner	Model: AD8C, AD8C DC
	AC Ver.: 100-240V~, 50/60Hz, 0.76A max (5.76A max outlet loaded), DC Ver.: 12-48V DC, 4A max
Note 1: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer. Note 2: ADTQ K54 and ADTQ DC K54 are completely same except power supply difference, ADTQ K54 supports AC power supply, while ADTQ DC K54 supports both AC and DC power supply. Note 3: AD8C and AD8C DC are completely same except power supply difference, AD8C supports AC power supply, while AD8C DC supports both AC and DC power supply.	

1.5. Radio Specification under Test

Transmission Mode	Analog FM & Narrowband & 4-channel Wideband (WMAS) & PTP
Frequency Range	606 ~ 608MHz & 614 ~ 616MHz & 657 ~ 663MHz
Declared Power Level	Low & Mid & High
Type of Modulation	Analog FM: FM
	Narrowband: OFDM
	4-channel Wideband: OFDM
	PTP: 16QAM
Declared Occupied Bandwidth	Analog FM: 200kHz
	Narrowband: 200kHz
	4-channel Wideband (WMAS): 440kHz
	4-channel Wideband (WMAS): 850kHz
	PTP: 200kHz
Channel Spacing	25kHz
RF Connector Type	BNC

1.6. Working Frequencies

Bottom Channel (MHz)	Middle Channel (MHz)	Top Channel (MHz)
Analog FM & Narrow Band & PTP		
606 ~ 608 MHz Frequency Band (Max Power = 50mW)		
606.000	N/A	607.875
614 ~ 616 MHz Frequency Band (Max Power = 10mW)		
614.125	N/A	615.875
657 ~ 663 MHz Frequency Band (Max Power = 10mW)		
657.000	N/A	662.875
4-channel wideband		
606 ~ 608 MHz Frequency Band (Max Power = 50mW)		
606.275	N/A	607.600
653 ~ 657 MHz Frequency Band (Max Power = 10mW)		
657.000	N/A	662.600

1.7. Antenna Details

Antenna Type	Frequency Band (MHz)	Manufacturer	Peak Gain (dBi)
Dipole	606 ~ 663	Shure	0.30

2. Test Configuration

2.1. Test Mode

Mode 1: Transmit at K54 Band by Analog FM (Power Level = 50mW & 10mW)
Mode 2: Transmit at K54 Band by Analog FM combined (Power Level = 10mW & 4mW)
Mode 3: Transmit at K54 Band by Narrowband (Power Level = 50mW & 10mW)
Mode 4: Transmit at K54 Band by Narrowband combined (Power Level = 10mW & 4mW)
Mode 5: Transmit at K54 Band by Narrowband spatial diversity (Power Level = 10mW)
Mode 6: Transmit at K54 Band by Narrowband spatial diversity combined (Power Level = 10mW & 4mW)
Mode 7: Transmit at K54 Band by 4-channel wideband (Power Level = 50mW & 10mW)
Mode 8: Transmit at K54 Band by 4-channel wideband 16 audio mixes (Power Level = 50mW & 10mW)
Mode 9: Transmit at K54 Band by 4-channel wideband spatial diversity (Power Level = 10mW)
Mode 10: Transmit at K54 Band by Axient Digital Standard (PTP) (Power Level = 50mW & 10mW)
Mode 11: Transmit at K54 Band by Axient Digital Standard (PTP) combined (Power Level = 10mW & 4mW)
Mode 12: Transmit at K54 Band by Narrowband frequency diversity combined (Power Level = 10mW & 4mW)
Mode 13: Transmit at K54 Band by Narrowband spatial diversity frequency diversity combined (Power Level = 10mW & 4mW)
Mode 14: Transmit at K54 Band by 4-channel wideband frequency diversity (Power Level = 10mW & 4mW)
Mode 15: Transmit at K54 Band by 4-channel wideband spatial diversity frequency diversity (Power Level = 10mW & 4mW)
Note 1: After evaluation, the full test was done for mode 1 & 3 & 7 & 8 & 10 and output power and radiated spurious emission were done for other modes.
Note 2: Mode 12 was covered by mode 4, Mode 14 was covered by Mode 15, Mode 13 was covered by mode 6.
Note 3: For Mode 1 & 3 & 7 & 10, we verify output power and radiated spurious emission with antenna combiner AD8C.

2.2. Test Software

Power level and transmit frequency can be selected using the front panel controls.

2.3. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15.236
- KDB 206256 D01v03
- ANSI C63.10-2013
- ETSI EN 300 422 - 1 V 2.2.1

2.4. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

3. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
Temperature Chamber	BAOYT	BYH-150CL	MRTSUE06051	1 year	2025-09-02	WZ-TR3
Signal Analyzer	Keysight	N9010B	MRTSUE06457	1 year	2025-05-08	WZ-TR3
Thermohygrometer	testo	608-H1	MRTSUE11268	1 year	2024-12-14	WZ-TR3
Signal Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2025-02-03	WZ-SR5
Thermohygrometer	testo	608-H1	MRTSUE06402	1 year	2025-05-12	WZ-SR5
Shielding Room	HUAMING	WZ-SR5	MRTSUE06442	N/A	N/A	WZ-SR5
Signal Analyzer	Keysight	N9010B	MRTSUE06558	1 year	2025-05-20	WZ-SR5
Audio Analyzer	R&S	UPV	MRTSUE06357	1 year	2025-04-11	WZ-SR5
Multifunction Synthesizer	HP	HP8904A	MRTSUE06097	1 year	2025-07-18	WZ-SR5
USB Power Sensor	Keysight	U2021XA	MRTSUE06446	1 year	2025-05-08	WZ-SR5
Attenuator	MVE	MVE2213	MRTSUE11077	1 year	2025-06-05	WZ-SR5
Attenuator	MVE	MVE2213	MRTSUE11078	1 year	2025-06-05	WZ-SR5
Attenuator	MVE	MVE2213	MRTSUE11079	1 year	2025-06-05	WZ-SR5
Attenuator	MVE	MVE2213	MRTSUE11080	1 year	2025-06-05	WZ-SR5
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2025-05-08	SIP-SR2
EMI Test Receiver	R&S	ESR3	MRTSUE06612	1 year	2025-05-08	SIP-SR2
Thermohygrometer	testo	608-H1	MRTSUE06621	1 year	2025-10-29	SIP-SR2
Shielding Room	MIX-BEP	SIP-SR2	MRTSUE06949	5 years	2029-10-13	SIP-SR2
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2024-12-17	WZ-AC1
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2025-07-26	WZ-AC1
Preamplifier	Agilent	83017A	MRTSUE06076	1 year	2024-11-09	WZ-AC1
Preamplifier	Agilent	83017A	MRTSUE06076	1 year	2025-11-08	WZ-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2025-05-15	WZ-AC1
Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2025-04-19	WZ-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2025-10-13	WZ-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2024-10-23	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11039	1 year	2025-10-16	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11039	1 year	2024-10-25	WZ-AC1
TRILOG Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2025-04-17	WZ-AC2
EMI Test Receiver	Agilent	N9038A	MRTSUE06125	1 year	2025-05-08	WZ-AC2
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2025-09-23	WZ-AC2
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2024-10-11	WZ-AC2
Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2025-05-06	WZ-AC2
Anechoic Chamber	RIKEN	WZ-AC2	MRTSUE06213	1 year	2025-04-18	WZ-AC2
Thermohygrometer	testo	608-H1	MRTSUE11263	1 year	2025-10-16	WZ-AC2



Thermohygrometer	testo	608-H1	MRTSUE11263	1 year	2024-11-07	WZ-AC2
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Software	Version	Function
e3	230711	RE & CE
Controller_MF 7802	1.02	RE Antenna & Turntable
BenchVue Power Meter	2018.1	Power

4. Decision Rules and Measurement Uncertainty

4.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.
(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.

4.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT 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 $k = 2$.

AC Conducted Emission Measurement
The maximum measurement uncertainty is evaluated as: 9kHz~150kHz: 3.02dB 150kHz~30MHz: 2.56dB
Radiated Emission Measurement
The maximum measurement uncertainty is evaluated as: Coaxial: 9kHz~30MHz: 2.35dB Coplanar: 9kHz~30MHz: 2.37dB Horizontal: 30MHz~200MHz: 3.46dB 200MHz~1GHz: 3.78dB 1GHz~40GHz: 4.97dB Vertical: 30MHz~200MHz: 4.07dB 200MHz~1GHz: 5.28dB 1GHz~40GHz: 4.78dB
Spurious Emissions, Conducted
Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): 2.5dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): 1.3dB
Power Spectrum Density
Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): 2.5dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): 2.6%

5. Test Result

5.1. Summary

FCC Part Section(s)	Test Description	Test Condition	Test Result
15.236(f) (1&2)	99% Occupied Bandwidth	Conducted	Pass
15.236(f)(1)(iii)	Frequency Tolerance		Pass
15.236(g) (1&2&3)	Emission Mask		Pass
15.236(d)(1)	RF Output Power		Pass
15.236(g)(4)	Radiated Spurious Emission	Radiated	Pass
15.207	AC Conducted Emissions 150kHz - 30MHz	Line Conducted	Pass

Note: The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.

5.2. 99% Occupied Bandwidth Measurement

5.2.1. Test Limit

One or more adjacent 25 kHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200 kHz.

A wireless multichannel audio system may have an operating bandwidth not exceeding 6 megahertz and must have a mode of operation in which it is capable of operating with at least three audio channels per megahertz. For wireless multichannel audio systems operating in the TV bands (channels 2-36), the 6 megahertz (or less) channel must fall entirely within a single TV channel.

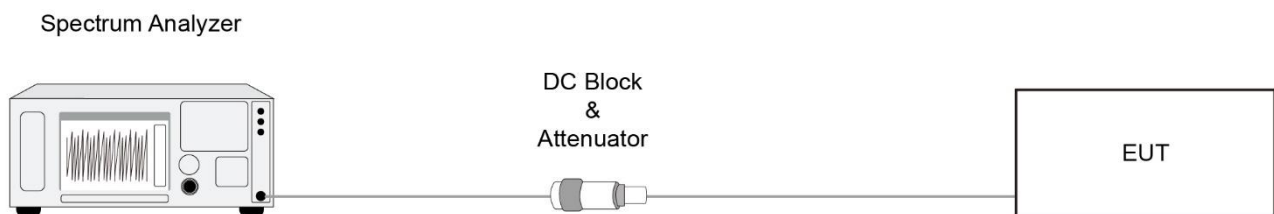
5.2.2. Test Procedure

ANSI C63.10-2013 - Section 6.9.3

5.2.3. Test Setting

1. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
2. Set RBW $\geq$ 1% to 5% of the OBW
3. VBW = Approximately three times RBW
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace to stabilize
8. Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

5.2.4. Test Setup



5.2.5. Test Result

Refer to Appendix A.1.

5.3. Frequency Tolerance Measurement

5.3.1. Test Limit

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.005\%$ of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. Battery operated equipment shall be tested using a new battery.

5.3.2. Test Procedure

ANSI C63.10-2013 - Section 6.8

5.3.3. Test Setting

The EUT was programmed to transmit with an unmodulated carrier.

Frequency Stability Under Temperature Variations:

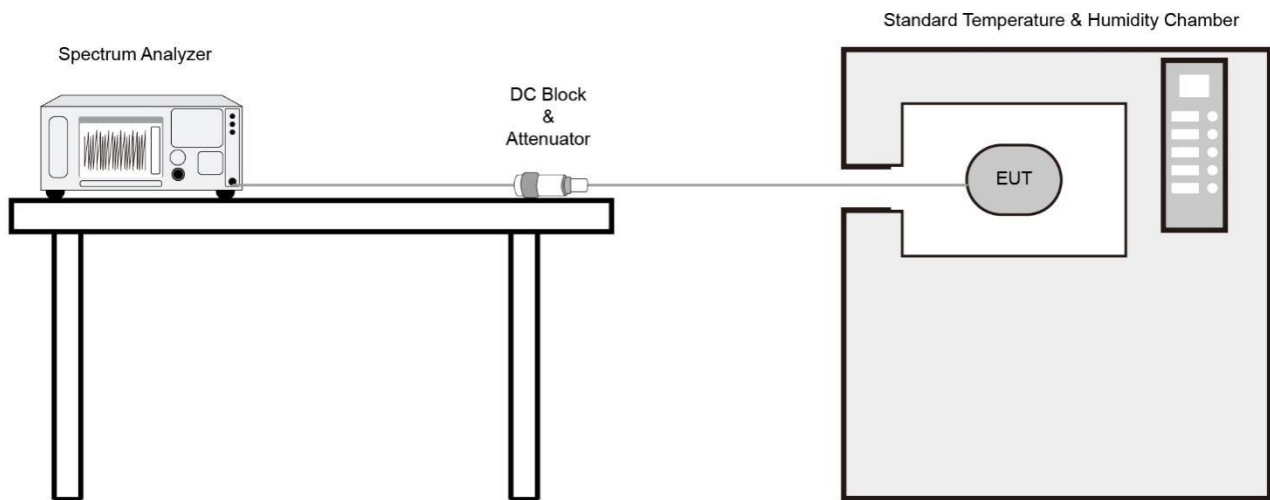
The equipment under test was connected to an external DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. While maintaining a constant temperature inside the environmental chamber, turn the EUT on and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change.

5.3.4. Test Setup



5.3.5. Test Result

Refer to Appendix A.2.

5.4. Emission Mask Measurement

5.4.1. Test Limit

(1) Analog systems. Emissions within the band from $2.5 \times B$ below to $2.5 \times B$ above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 1 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11) (incorporated by reference, see § 15.38).

(2) Digital systems. Emissions within the band from $2.5 \times B$ below to $2.5 \times B$ above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 2 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11) (incorporated by reference, see § 15.38).

(3) Wireless Multichannel Audio Systems. Emissions within the band from $2.5 \times B$ below to $2.5 \times B$ above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 3 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11), (incorporated by reference, see § 15.38).

The mean Power Density, measured with 1 kHz measurement bandwidth and RMS detector, of the transmitter unwanted emissions shall not exceed the limits of the masks provided in figure 1 for equipment employing analogue modulation and figure 2 for equipment employing digital modulation, but excluding WMAS. B is the Declared Channel Bandwidth.



Figure 1: Transmit spectral power mask for equipment employing analogue modulation, RBW = 1 kHz

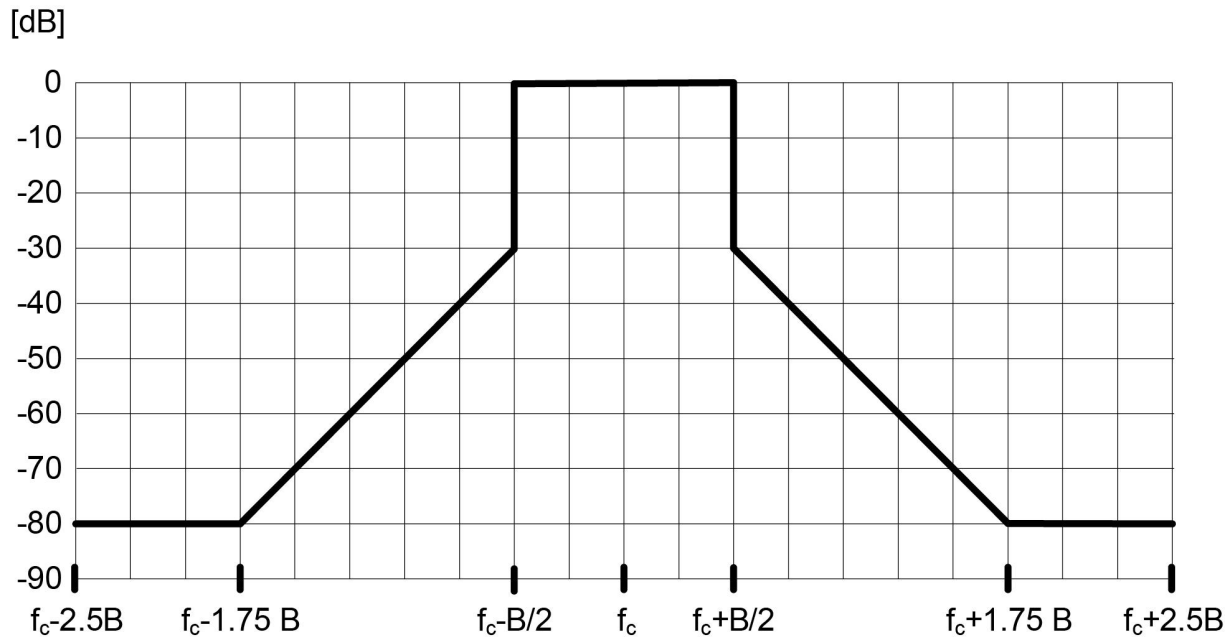


Figure 2: Transmit spectral power mask for equipment employing digital modulation, except WMAS, RBW = 1 kHz

The limits in figure 3 are applicable for WMAS, where B is the Declared Channel Bandwidth.

The mean Power Density, measured with 100 kHz measurement bandwidth and PEAK detector, of the transmitter unwanted emissions shall not exceed the limits of the mask provided in figure 3.

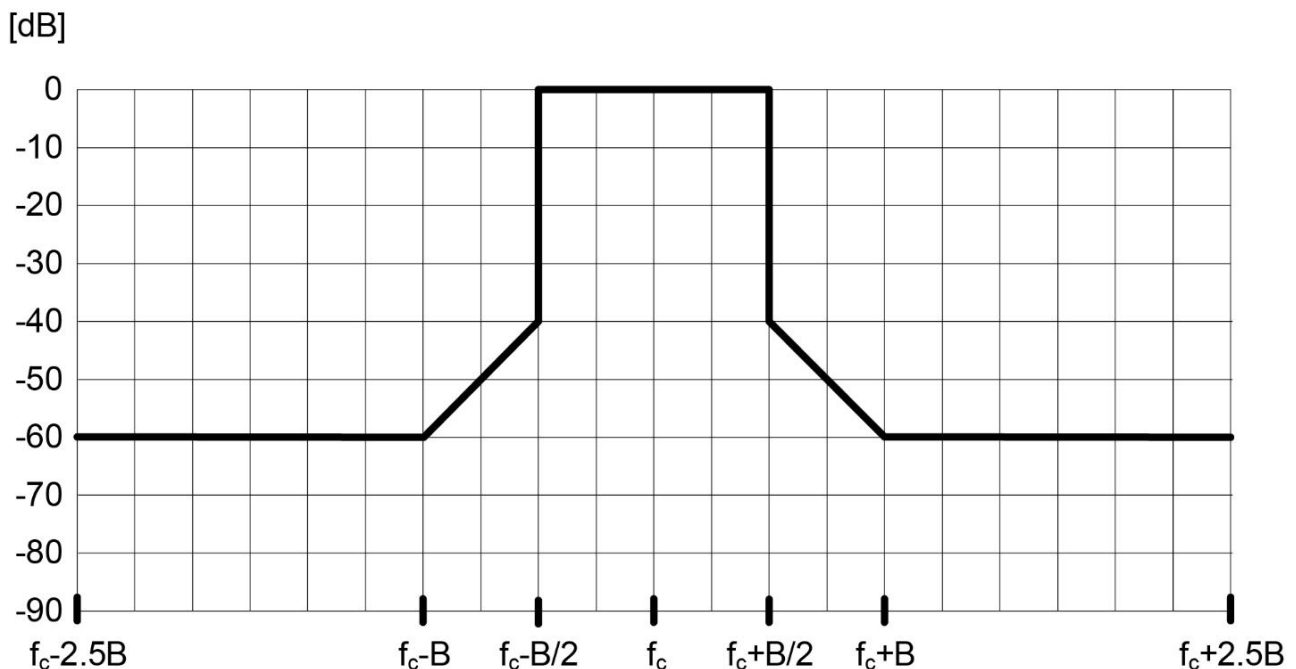


Figure 3: Transmit spectral power mask for WMAS, RBW = 100 kHz

The limits in figure 3 are provided with RBW = 100 kHz. The relevant measurements can also be performed with other RBW for certain ranges of B, accounting that the relevant limit given under RBW = 100 kHz needs to be converted appropriately by adding $c = 10 \times \log_{10} (\text{RBW}/100 \text{ kHz})$ for correction.

Correction Factor for different B and applicable RBW

B	RBW, VBW	c = correction factor
$B < 2 \text{ MHz}$	10 kHz	-10dB
$2 \text{ MHz} \leq B < 5 \text{ MHz}$	25 kHz	-7dB
$5 \text{ Hz} \leq B \leq 20 \text{ MHz}$	100 kHz	0dB

5.4.2. Test Procedure

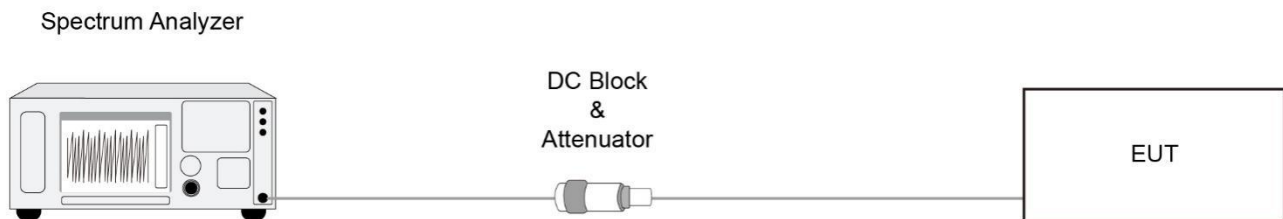
EN 300 422-1 V2.2.1 clause 5.4.3.2.

5.4.3. Test Setting

The EUT was powered up and the transmit frequency & power output of the EUT were selected.

The spectrum analyzer center frequency is set to the nominal EUT channel frequency.

5.4.4. Test Setup



5.4.5. Test Result

Refer to Appendix A.3.

5.5. Output Power Measurement

5.5.1. Test Limit

- (i) Wireless microphones: 50 mW EIRP.
- (ii) Wireless multichannel audio systems with a bandwidth up to 1 MHz: 50 mW EIRP.
- (iii) Wireless multichannel audio systems with a bandwidth greater than 1 MHz: 100 mW EIRP.

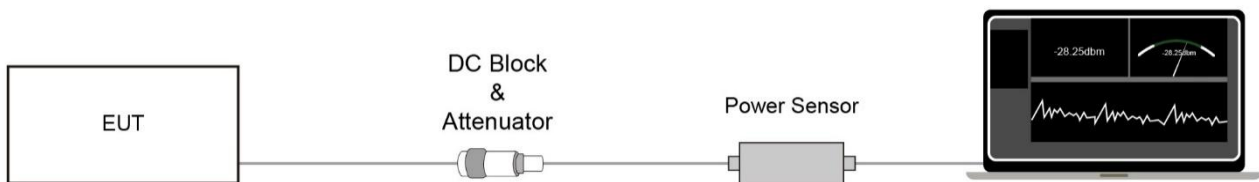
5.5.2. Test Procedure

ANSI C63.10 - 2013 - Section 11.9.2.3.2

5.5.3. Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

5.5.4. Test Setup



5.5.5. Test Result

Refer to Appendix A.4.

5.6. Radiated Spurious Emission Measurement

5.6.1. Test Limit

Spurious emission limits. Emissions outside of the emission masks listed in paragraphs (g)(1) through (g)(3) shall comply with the limits specified in section 4.2.4.1.2 of ETSI EN 300 422-1 V2.2.1 (2021-11), (incorporated by reference, see § 15.38).

The level of transmitter unwanted emissions in the spurious domain shall not exceed the limits given in table Transmitter unwanted emission limits

Frequency Range	Maximum power	RBW
9kHz – 150kHz	-36dBm	1kHz
150kHz – 30MHz	-36dBm	10kHz
30MHz – 1GHz	-36dBm	$F_c + 2.5B \leq f \leq F_c + 4B$: 1kHz $F_c + 4B < f \leq F_c + 10B$: 10kHz $f > F_c + 10B$: 100kHz $f < F_c - 10B$: 100kHz $F_c - 10B \leq f < F_c - 4B$: 10kHz $F_c - 4B \leq f \leq F_c - 2.5B$: 1kHz
Except:		
47MHz to 74MHz 87.5MHz to 118MHz	-54dBm	100kHz
174MHz to 230MHz 470MHz to 862MHz	-36dBm	$F_c + 2.5B \leq f \leq F_c + 4B$: 1kHz $F_c + 4B < f \leq F_c + 10B$: 10kHz $f > F_c + 10B$: 100kHz $f < F_c - 10B$: 100kHz $F_c - 10B \leq f < F_c - 4B$: 10kHz $F_c - 4B \leq f \leq F_c - 2.5B$: 1kHz
$1\text{GHz} < f \leq F_{\text{upper}}$	-30dBm	$F_c + 2.5B \leq f \leq F_c + 10B$: 30kHz $F_c + 10B < f \leq F_c + 12B$: 300kHz $f > F_c + 12B$: 1MHz $f < F_c - 12B$: 1MHz $F_c - 12B \leq f < F_c - 10B$: 300kHz $F_c - 10B \leq f \leq F_c - 2.5B$: 30kHz
With B being the Declared Channel Bandwidth. F_{upper} is defined in table 5.		

Table 5: Frequency range for measurement of unwanted emissions

Applicable fundamental frequency range	Frequency range for measurements	
	Lower frequency	Upper frequency
9 kHz - 100 MHz	9 kHz	1GHz
100 MHz - 300 MHz	9 kHz	10th harmonic of the operating frequency
300 MHz - 600 MHz	30MHz	3GHz
600 MHz - 3 GHz	30MHz	5th harmonic of the operating frequency

5.6.2. Test Procedure

ETSI EN 300 422-1 V2.2.1 clause 5.4.4

5.6.3. Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
30 ~ 1000 MHz	100 kHz
1000 ~ 6000 MHz	1 MHz

Emissions shall be investigated up to the 10th harmonic of the fundamental.

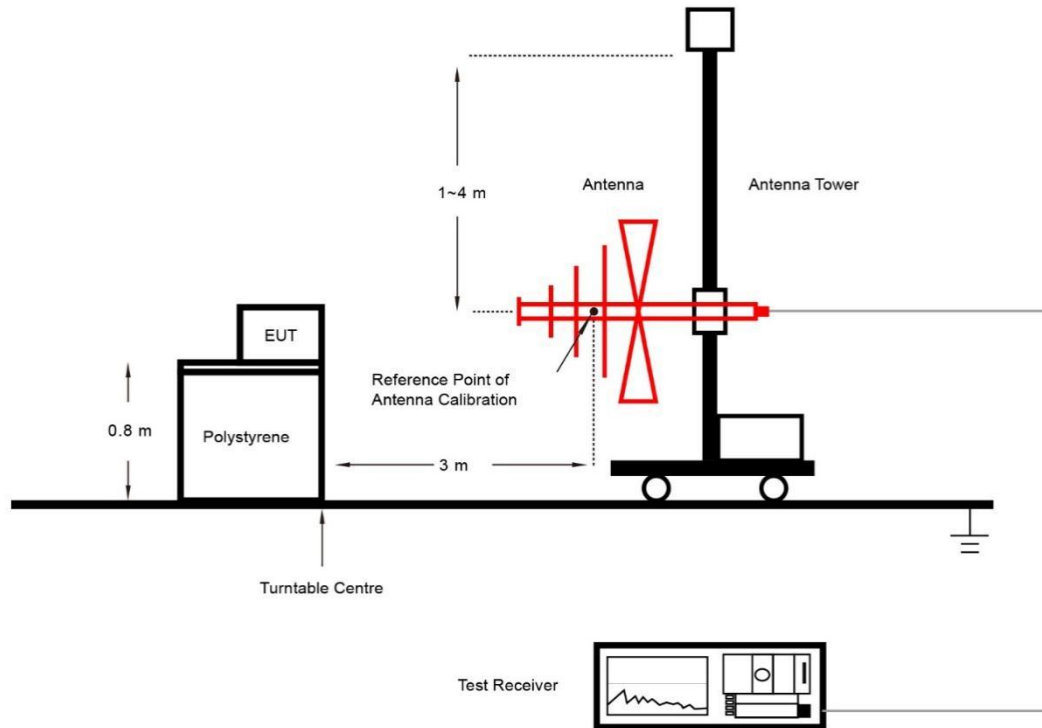
All the emissions shall be demonstrated using a QP detector below 1 GHz and an RMS Average detector above 1 GHz.

All significant broadband and narrowband signals found in the preliminary sweeps were measured using a peak detector at a test distance of 3 meters.

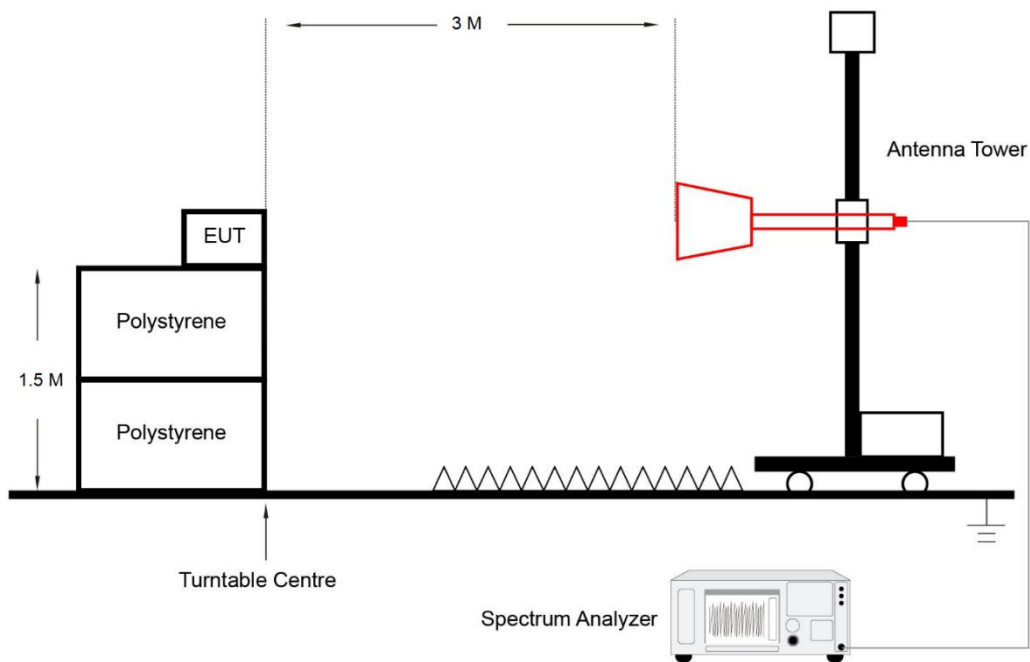
at each frequency at which a component is detected, the sample shall be rotated to obtain maximum response and the effective radiated power of that component determined by a substitution measurement.

5.6.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



5.6.5. Test Result

Refer to Appendix A.5.

5.7. AC Conducted Emissions Measurement

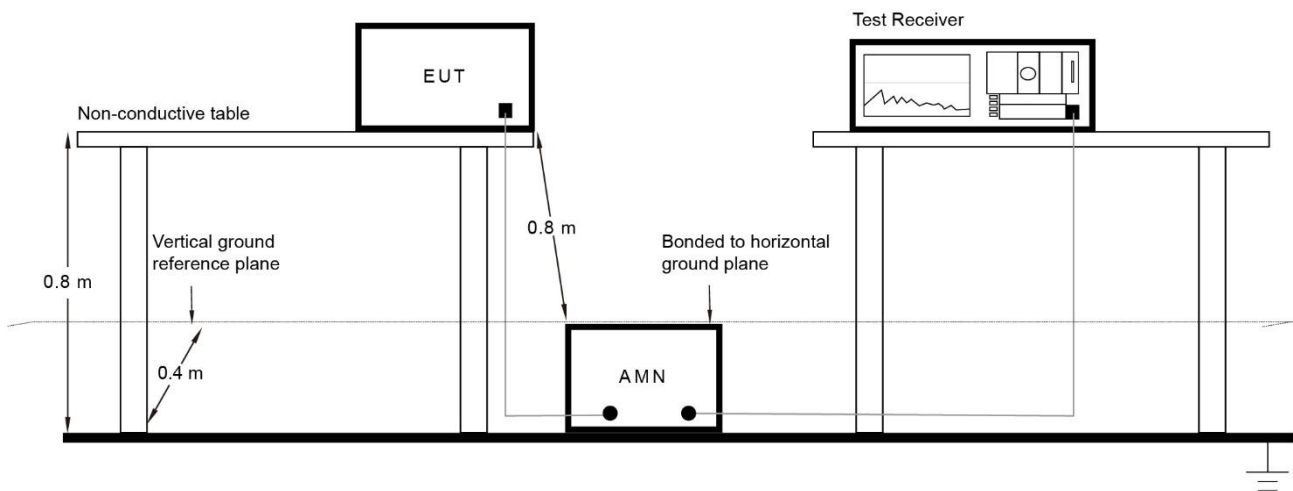
5.7.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dB μ V)	Average (dB μ V)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

5.7.2. Test Setup



5.7.3. Test Result

Refer to Appendix A.6.

Appendix A – Test Result

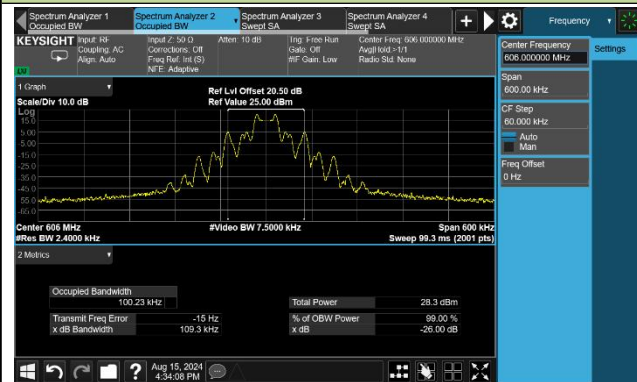
A.1 99% Occupied Bandwidth Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2024-08-15 ~ 2024-08-27	Test Mode	Mode 1

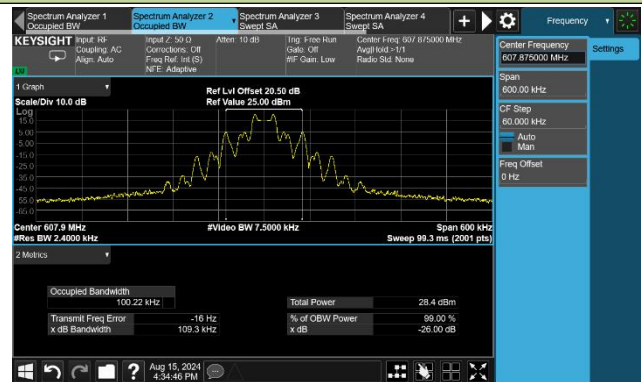
Frequency (MHz)	99% Occupied Bandwidth (kHz)	Limit (kHz)	Result
606.000	100.230	< 200	Pass
607.875	100.220	< 200	Pass
614.125	90.104	< 200	Pass
615.875	89.980	< 200	Pass
657.000	90.136	< 200	Pass
662.875	90.078	< 200	Pass

99% Occupied Bandwidth

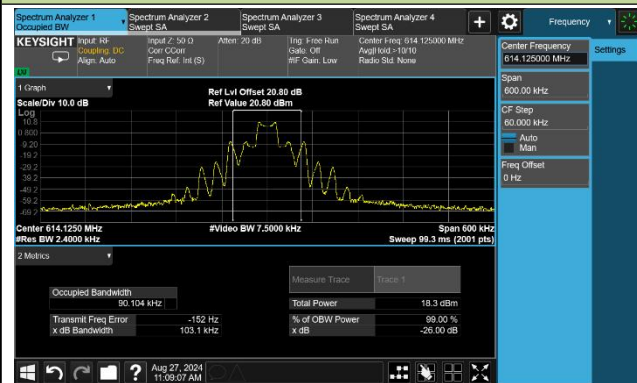
606.000MHz



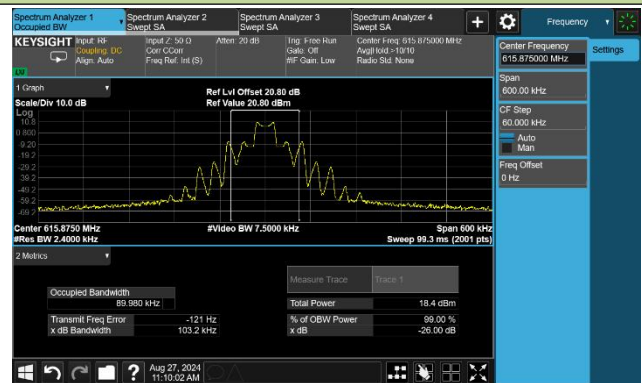
607.875MHz



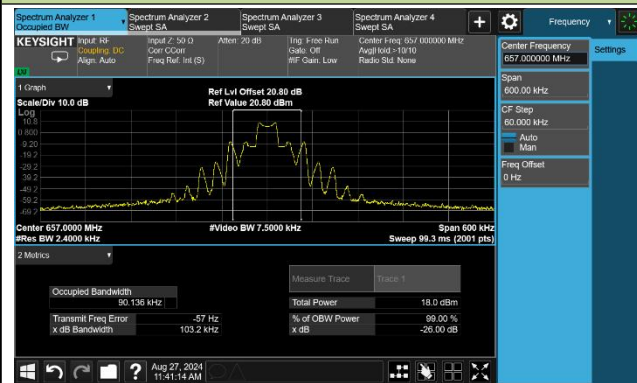
614.125MHz



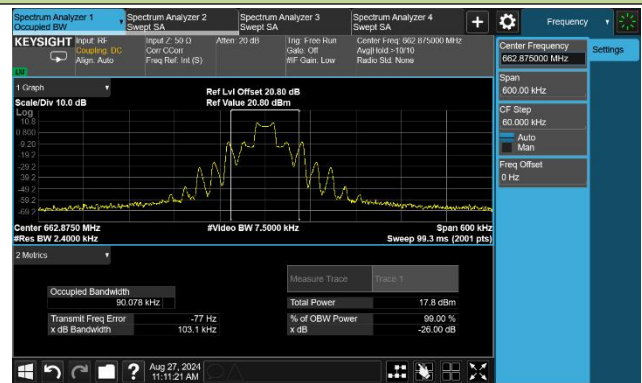
615.875MHz



657.000MHz



662.875MHz

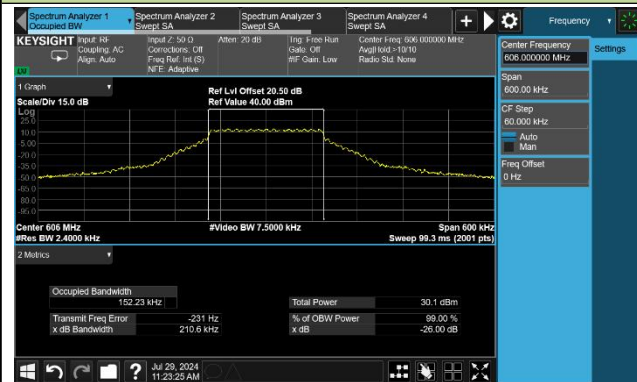


Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2024-07-29 ~ 2024-08-27	Test Mode	Mode 3

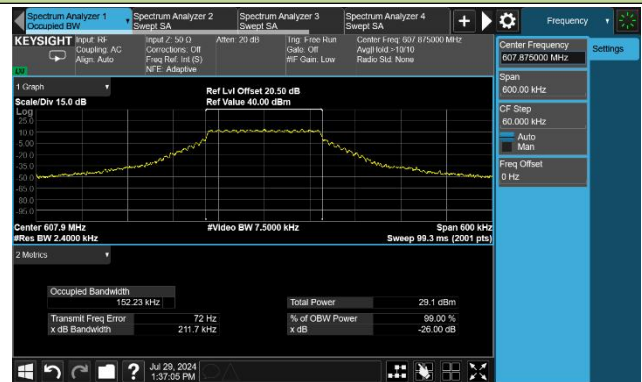
Frequency (MHz)	99% Occupied Bandwidth (kHz)	Limit (kHz)	Result
606.000	152.23	< 200	Pass
607.875	152.23	< 200	Pass
614.125	151.27	< 200	Pass
615.875	151.86	< 200	Pass
657.000	152.38	< 200	Pass
662.875	151.80	< 200	Pass

99% Occupied Bandwidth

606.000MHz



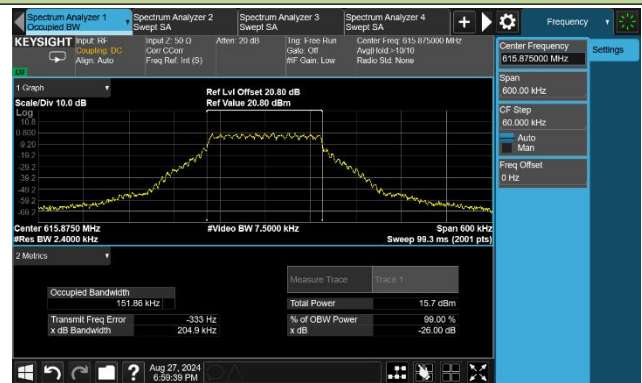
607.875MHz



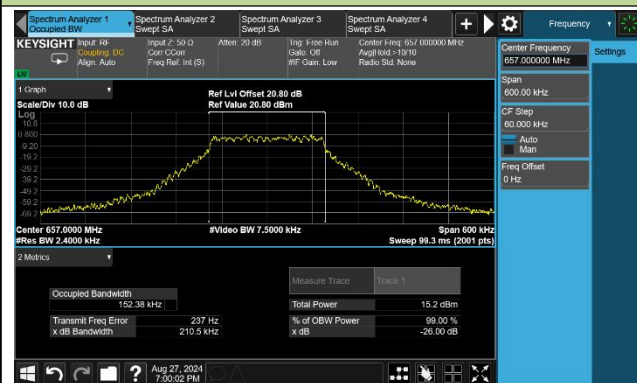
614.125MHz



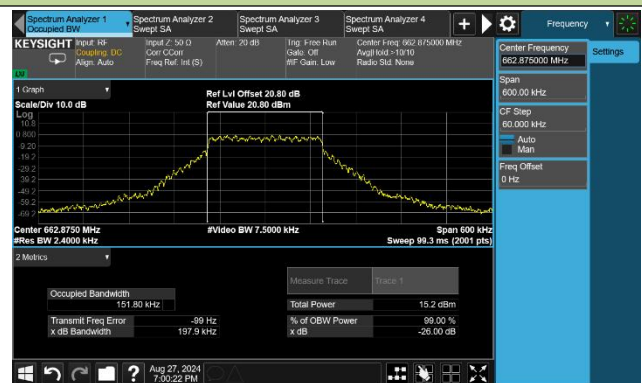
615.875MHz



657.000MHz

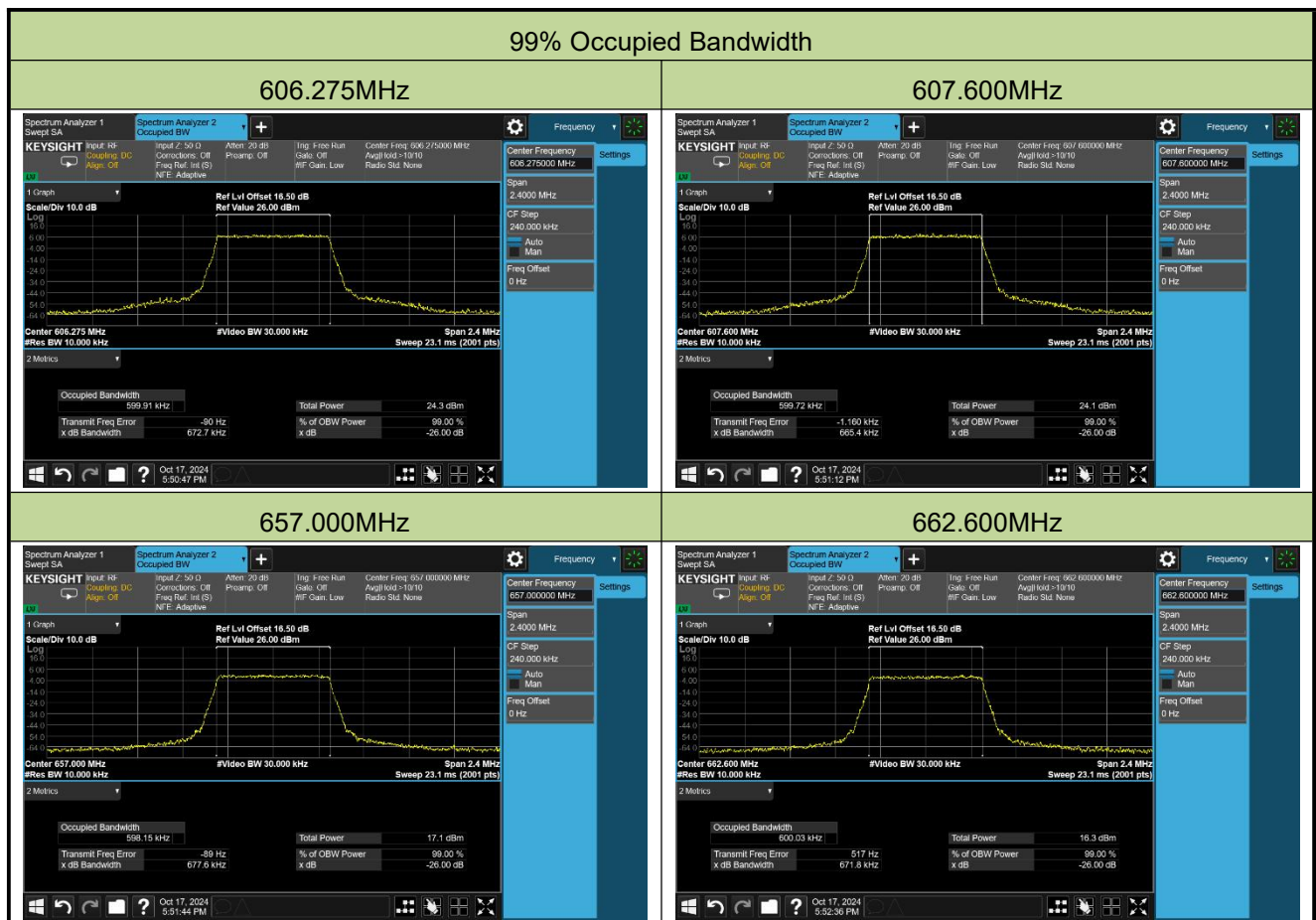


662.875MHz



Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2024-10-17	Test Mode	Mode 7

Frequency (MHz)	99% Occupied Bandwidth (kHz)	Limit (kHz)	Result
606.275	599.91	< 6000	Pass
607.600	599.72	< 6000	Pass
657.000	598.15	< 6000	Pass
662.600	600.03	< 6000	Pass



Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2024-08-15 2024-08-27	Test Mode	Mode 8

Frequency (MHz)	99% Occupied Bandwidth (kHz)	Limit (kHz)	Result
606.275	599.15	< 6000	Pass
607.600	599.23	< 6000	Pass
657.000	598.82	< 6000	Pass
662.600	598.19	< 6000	Pass

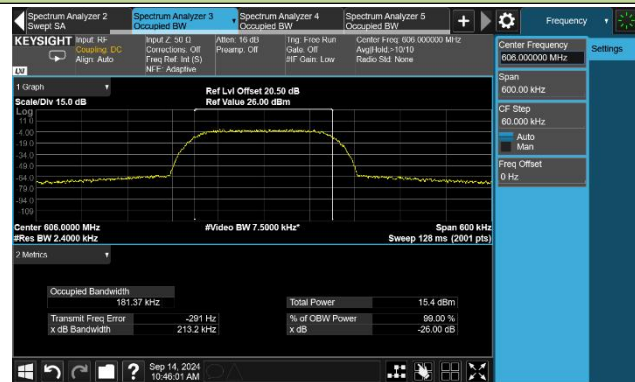


Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2024-09-14	Test Mode	Mode 10

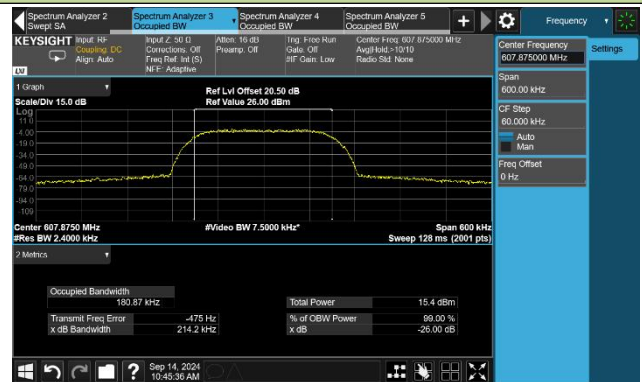
Frequency (MHz)	99% Occupied Bandwidth (kHz)	Limit (kHz)	Result
606.000	181.37	< 200	Pass
607.875	180.87	< 200	Pass
614.125	180.51	< 200	Pass
615.875	181.06	< 200	Pass
657.000	180.90	< 200	Pass
662.875	180.47	< 200	Pass

99% Occupied Bandwidth

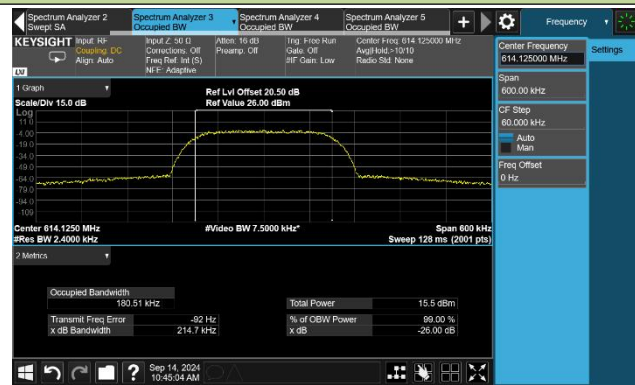
606.000MHz



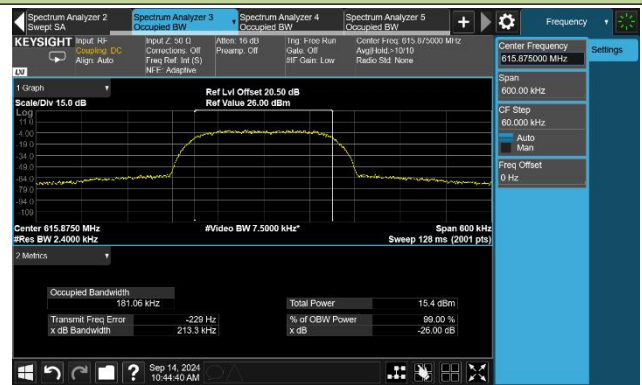
607.875MHz



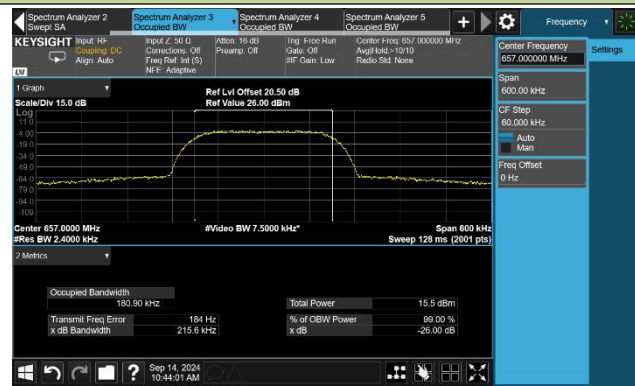
614.125MHz



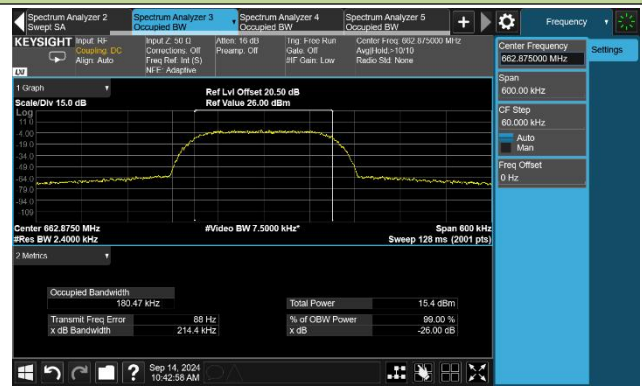
615.875MHz



657.000MHz



662.875MHz



A.2 Frequency Tolerance Test Result

Test Site	WZ-TR3	Test Engineer	Lynn Yang
Test Date	2024-10-10 ~ 2024-10-11	Test Frequency	606MHz

Voltage (%)	Power (AC)	Temp (°C)	Frequency Tolerance (%)			
			0 minutes	2 minutes	5 minutes	10 minutes
100	120	- 20	-0.00000891	0.00000165	-0.00000644	-0.00000908
		-10	-0.00001007	-0.00000941	-0.00000941	-0.00000990
		0	-0.00001601	-0.00001667	-0.00001683	-0.00001320
		+ 10	-0.00001436	-0.00001551	-0.00000528	-0.00000908
		+ 20	-0.00001683	-0.00002129	-0.00002145	-0.00002112
		+ 30	-0.00001172	-0.00000990	-0.00000875	-0.00000858
		+ 40	-0.00000066	-0.00000132	-0.00000165	-0.00000132
		+ 50	0.00001634	0.00001221	0.00001485	0.00001485
115	138	+ 20	-0.00001766	-0.00002112	-0.00002112	-0.00002178
85	102	+ 20	-0.00001782	-0.00002046	-0.00002096	-0.00002129
Limit	0.005%					
Result	Pass					

Note: Frequency Tolerance (ppm) = {[Measured Frequency (Hz) - Declared Frequency (Hz)] / Declared Frequency (Hz)} *10².

A.3 Emission Mask Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2024-10-09 ~ 2024-11-07	Test Mode	Mode 1

Port A

Channel 606.000MHz



Channel 607.875 MHz

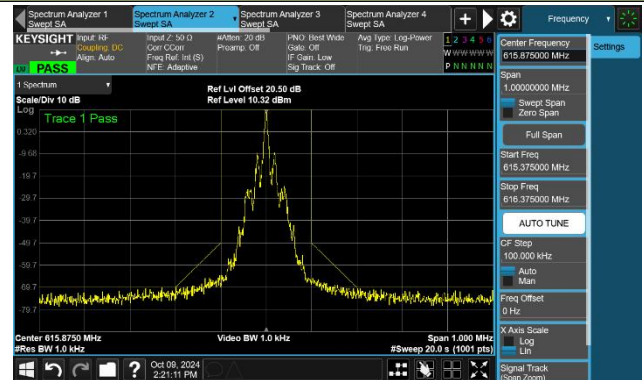


Channel 614.125 MHz

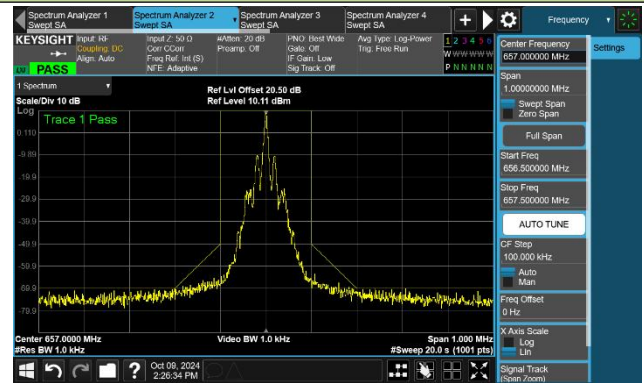


Port A

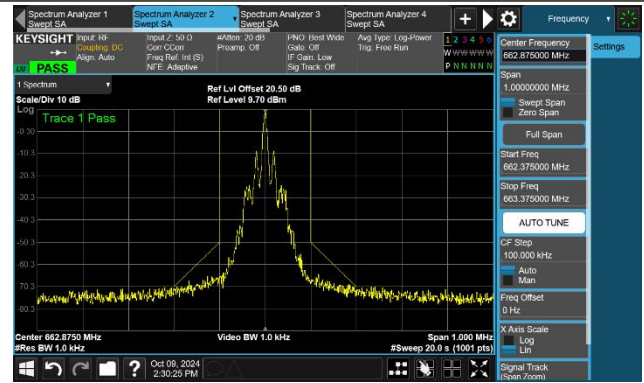
Channel 615.875MHz



Channel 657.000MHz

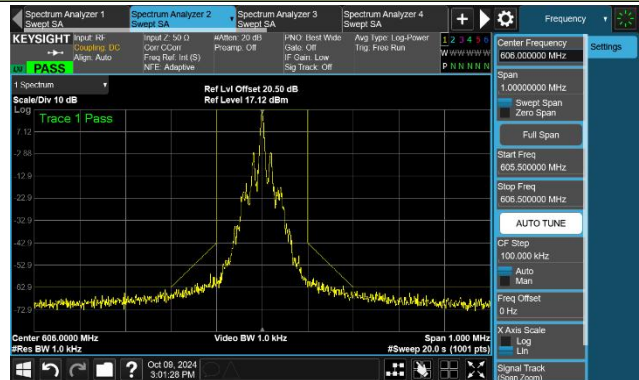


Channel 662.875MHz

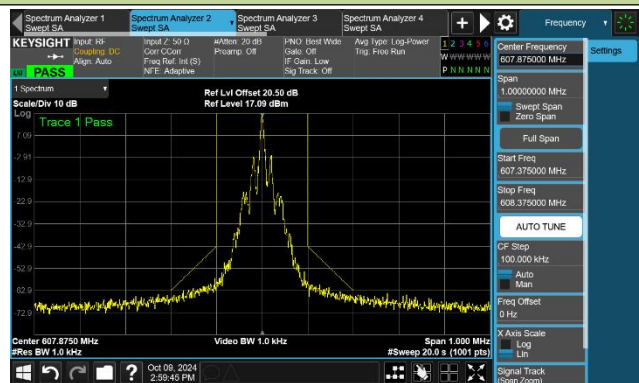


Port B

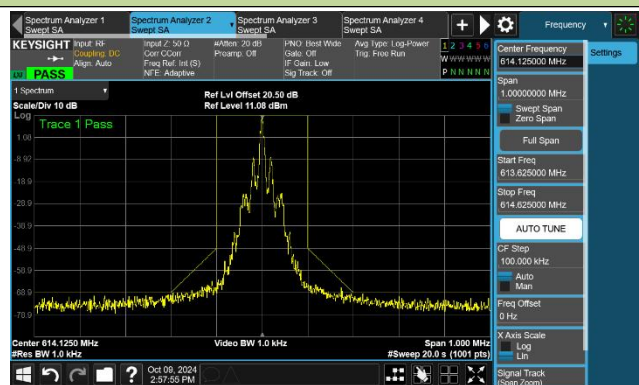
Channel 606.000MHz



Channel 607.875 MHz

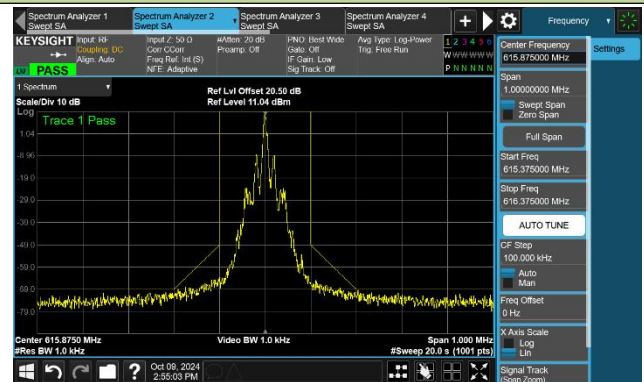


Channel 614.125 MHz

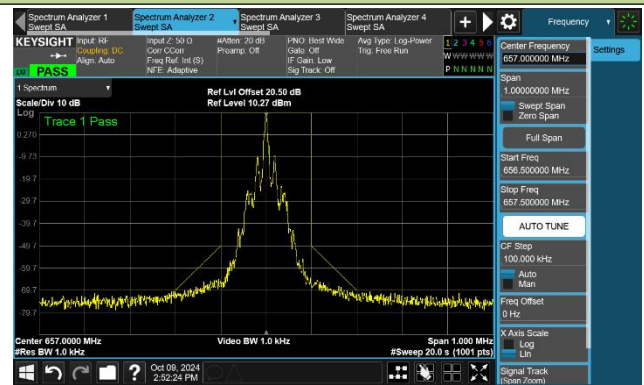


Port B

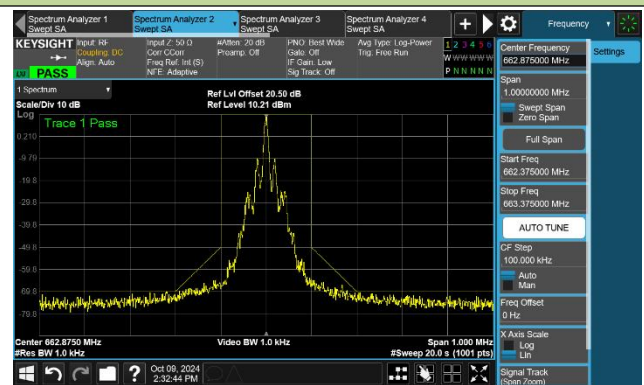
Channel 615.875MHz



Channel 657.000MHz

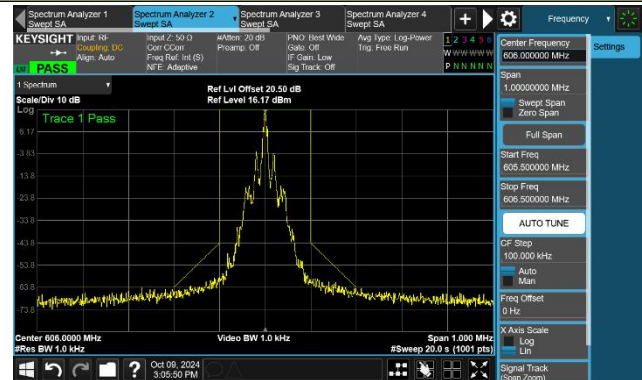


Channel 662.875MHz

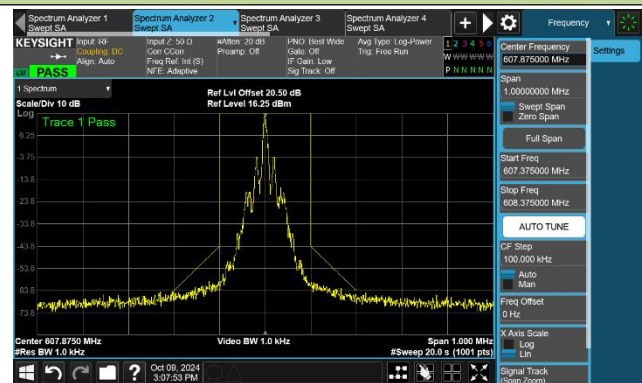


Port C

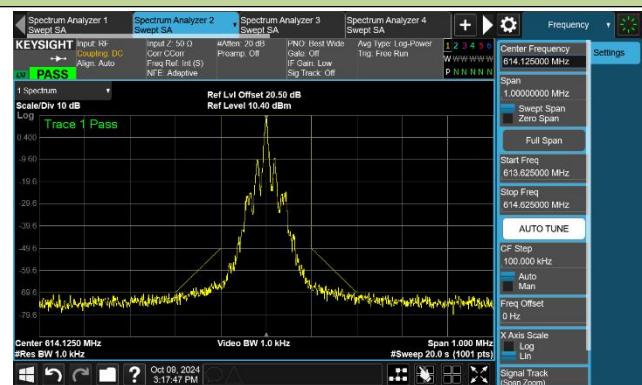
Channel 606.000MHz



Channel 607.875 MHz

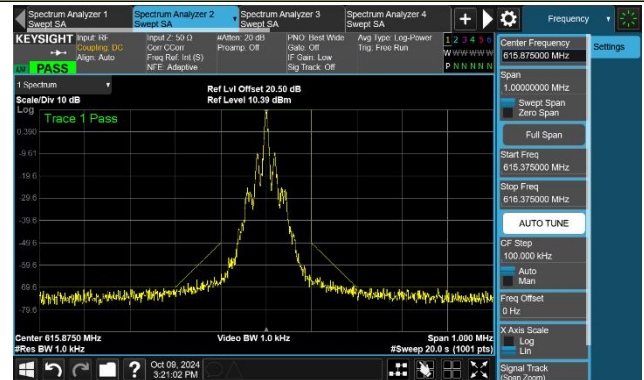


Channel 614.125 MHz

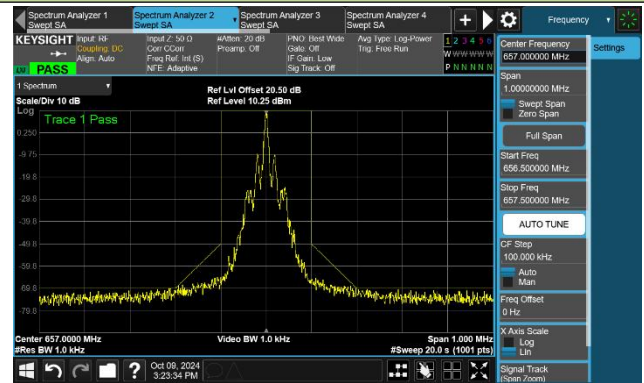


Port C

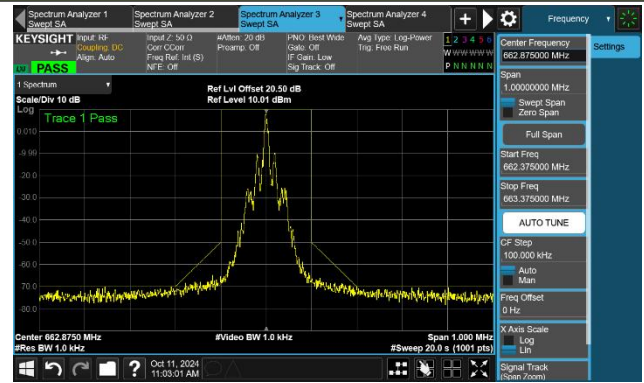
Channel 615.875MHz



Channel 657.000MHz

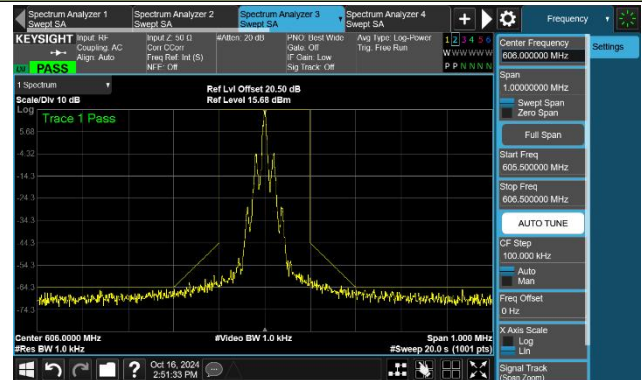


Channel 662.875MHz

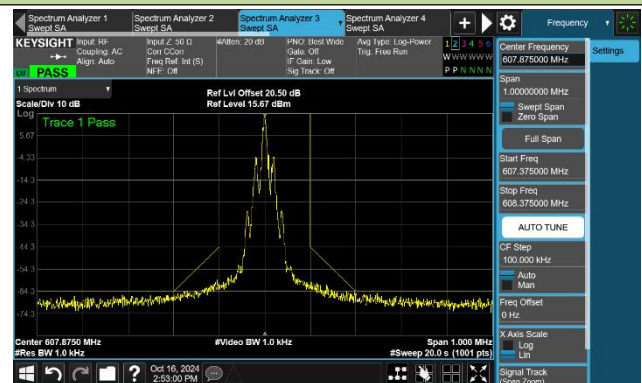


Port D

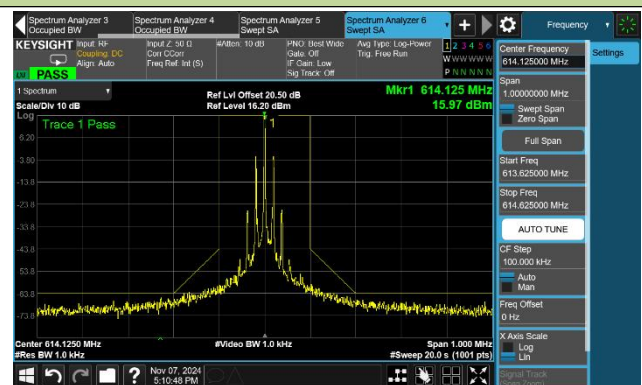
Channel 606.000MHz



Channel 607.875 MHz

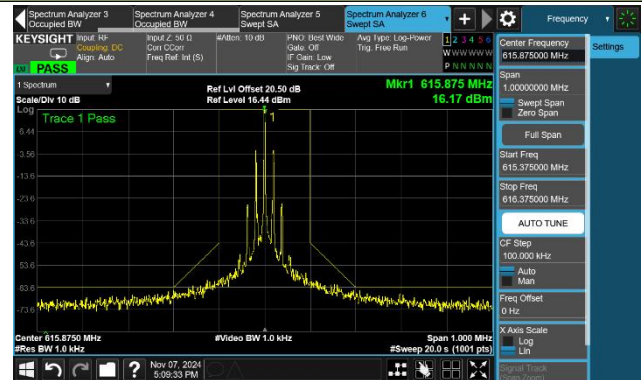


Channel 614.125 MHz

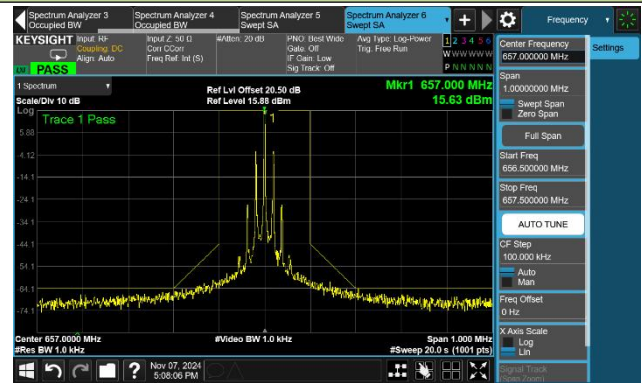


Port D

Channel 615.875MHz



Channel 657.000MHz



Channel 662.875MHz

