

TEST REPORT

FCC/ISED Test for ALH442000, 282D-442000
Class II Permissive Change

APPLICANT
JVCKENWOOD Corporation

REPORT NO.
HCT-RF-2606-FI005

DATE OF ISSUE
July 2, 2026

Tested by
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Applicant

JVCKENWOOD Corporation

3-12, Moriyacho, Kanagawa-ku, Yokohama-shi, Kanagawa, 221-0022, Japan

Product Name

700/800MHz DIGITAL TRANSCEIVER

FCC Model Name

NX-5400-K2, NX-5400-K3, NX-5400-F2, NX-5400-F3, TK-5430-F2, TK-5430-F3,
VP5430-F2, VP5430-F3, VP6430-F2, VP6430-F3

ISED Model Name

NX-5400-K2, NX-5400-K3, TK-5430-F2, TK-5430-F3, VP5430-F2, VP5430-F3,
VP6430-F2, VP6430-F3

FCC ID

ALH442000

IC

282D-442000

Date of Test

May 27, 2026 ~ June 30, 2026

Location of Test

☒ Permanent Testing Lab

☐ On Site Testing Lab

(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

Test Standard Used

FCC Rule Part(s): § 2, § 90

ISED Rule Part(s):

RSS-Gen Issue 5_Amendment 2

RSS-119 Issue 12_Amendment 2

Test Results

PASS

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	July 02, 2026	Initial Release

Notice

Content

The measurements shown in this report were made in accordance with the procedures specified in § 2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S.C. 853(a)

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked *.

Information provided by the applicant is marked **.

Test results provided by external providers are marked ***.

When confirmation of authenticity of this test report is required, please contact www.hct.co.kr

The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

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1. GENERAL INFORMATION

Manufacturer:	JVCKENWOOD Corporation
Address:	3-12, Moriyacho, Kanagawa-ku, Yokohama-shi, Kanagawa, 221-0022, Japan
FCC ID:	ALH442000
IC:	282D-442000
EUT Type:	700/800MHz DIGITAL TRANSCEIVER
PMN: (Product Marketing Name)	NX-5400-K2, NX-5400-K3, TK-5430-F2, TK-5430-F3, VP5430-F2, VP5430-F3, VP6430-F2, VP6430-F3
HMN: (Host Marketing Name)	N/A
HVIN: (Hardware Version Identification Number)	NX-5400-K2, NX-5400-K3, TK-5430-F2, TK-5430-F3, VP5430-F2, VP5430-F3, VP6430-F2, VP6430-F3
FVIN: (Firmware Version Identification Number)	N/A

2. EUT DESCRIPTION

Power Supply Voltage	DC 7.5V $\pm$ 20%
Output Power	3 W (Power output continuously variable to 1 W)
Type of Emission	1. Analogue16K0F3E, 14K0F3E, 11K0F3E, 2. P25 phase 1: 8K10F1E, 8K10F1D 3. P25 phase 2: 8K10F1W 4. NXDN: 8K30F1E, 8K30F1D, 8K30F7W 5. DMR: 7K60FXD, 7K60FXE 6. NXDN: 4K00F1E, 4K00F1D, 4K00F7W 7. CWID: 4K00F2D
Battery type	KNB-LS15 (1880mAh Li-ion Battery) KNB-LS17 (3760mAh Li-ion Battery)
Channel Bandwidth	25kHz / 12.5kHz / 6.25kHz
Operating Temperature	-30 °C ~ +60 °C
Peak. Antenna gain	0 dBd
Frequency Range	FCC : 769 ~ 775, 799 ~ 805, 806 ~ 824, 851 ~ 869 MHz ISED : 768 ~ 776, 798 ~ 806, 806 ~ 824, 851 ~ 869 MHz

3. INTRODUCTION

3.1. TEST METHODOLOGY

FCC:

TIA-603-E & ANSI 63.26-2015 were used in the measurement.

ISED:

RSS-119 Issue 12 Amendment 2, RSS-Gen Issue 5 Amendment 2, and ANSI C63.26-2015 were used in the measurement.

3.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

3.3. TEST FACILITY

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea. The site is constructed in conformance with the requirements of ANSI C63.4-2014 and CISPR Publication 22.

Detailed description of test facility was submitted to the Commission and accepted dated February 26, 2026 (Registration Number: KR0032).

The site is constructed in conformance with the requirements of ANSI C63.4-2014 + C63.4a-2017 and ANSI C63.25.1-2018.

Detailed description of test facility was submitted to the Commission and accepted dated March 11, 2026 (CAB identifier: KR0032).

The Fully-anechoic chamber and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea.

Detailed description of test facility was submitted to the Commission and accepted dated February 26, 2026 (Registration Number: KR0032).

The SAC(Semi-Anechoic Chamber) facility for Receiver Spurious Emissions constructed in conformance with the requirements of ANSI C63.4-2014 + C63.4a-2017 and ANSI C63.25.1-2018.

Detailed description of test facility was submitted to the Commission and accepted dated March 11, 2026 (CAB identifier: KR0032).

3.4. EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements. Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to ANSI/USEMCSC C63.2-2023, "American National Standard for Specifications of Electromagnetic Interference and Field Strength Measuring Instrumentation in the Frequency Range 9 kHz to 40 GHz".

3.5 DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting is programmed.

4. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4:2014.

All measurement uncertainty values are shown with a coverage factor of $k=2$ to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty ($\pm$ dB)
Emission Mask	0.70 (Confidence level about 95 %, $k=2$)
Adjacent Channel Leakage Ratio(ACLR)	0.68 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.54 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.80 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.86 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.44 (Confidence level about 95 %, $k=2$)

5. SUMMARY TEST OF RESULTS

FCC: 769 ~ 775 MHz, 799 ~ 805 MHz

ISED: 768 ~ 776 MHz, 798 ~ 806 MHz

Test Requirement	FCC Part Section(s)	ISED Part Section(s)	Test Condition	Test Result	Status
Carrier RF Output Power	§90.205, § 90.541	RSS-119 (5.4)	Conducted	PASS	C ^{Note4}
Unwanted Emissions	§90.543 (c)	RSS-119 (5.8.9.2)		PASS	NT ^{Note2}
99% Bandwidth	N/A	RSS-119 (5.5)		PASS	NT ^{Note2}
Carrier Frequency Stability	§90.539	RSS-119 (5.3)		PASS	NT ^{Note2}
Audio Frequency Response	§2.1047(a)	-		PASS	NT ^{Note2}
Audio Low Pass Filter	§2.1047(a)	-		PASS	NT ^{Note2}
Modulation Limiting	§2.1047(b)	-		PASS	NT ^{Note2}
Adjacent Channel Power	§90.543	RSS-119 (5.8.9.1)		PASS	C ^{Note3, 4}
Field Strength of Spurious Radiation	§90.543 (c)	RSS-119 (5.8.9.2)	Radiated	PASS	C ^{Note3, 4}
GNSS (EIRP for 1559 – 1610MHz)	§90.543	RSS-119 (5.8.9.2)		PASS	NT ^{Note2}
Receiver Spurious Emissions	N/A	RSS-Gen (7)		PASS	NT ^{Note2}

FCC/ ISSED: 806-824 MHz, 851-869 MHz

Test Requirement	FCC Part Section(s)	ISED Part Section(s)	Test Condition	Test Result	Status
Carrier RF Output Power	§90.205, §90.635	RSS-119 (5.4)	Conducted	PASS	C ^{Note4}
Unwanted Emissions	§90.210, §90.691	RSS-119 (5.8)		PASS	NT ^{Note2}
99% Bandwidth	N/A	RSS-119 (5.5)		PASS	NT ^{Note2}
Carrier Frequency Stability	§90.213(a),	RSS-119 (5.3)		PASS	NT ^{Note2}
Audio Frequency Response	§2.1047(a)	-		PASS	NT ^{Note2}
Audio Low Pass Filter	§2.1047(a)	-		PASS	NT ^{Note2}
Modulation Limiting	§2.1047(b)	-		PASS	NT ^{Note2}
Emission Mask	§90.210, §90.691	RSS-119 (5.8)		PASS	C ^{Note3, 4}
Field Strength of Spurious Radiation	§90.210, §90.691	RSS-119 (5.8)	Radiated	PASS	C ^{Note3, 4}
Receiver Spurious Emissions	N/A	RSS-Gen (7)		PASS	NT ^{Note2}

Note:

1. C = Comply, NT = Not Tested, NA = Not Applicable, NC = Not Comply
2. The C2PC models are electrically identical to the original models. therefore, only selected test requirement were spot checked.
3. The data from that application has been verified through worst-case spot checks to demonstrate the device compliance, as shown in the test results in Section 8.
Please refer to the worst-case below.

Worst-case
1) Adjacent Channel Power:

Type of emission	Channel Bandwidth (kHz)	Frequency (MHz)
16K0F3E	25 kHz	768.05, 769.05
11K0F3E	12.5 kHz	768.05, 769.05
4K00F1E, 4K00F1D, 4K00F7W	6.25 kHz	768.05, 769.05

2) Emission Mask:

Type of emission	Channel Bandwidth (kHz)	Emission Mask	Frequency (MHz)
16K0F3E	25 kHz	Mask B, Mask EA	823.95
11K0F3E	12.5 kHz	Mask D	823.95
4K00F1E, 4K00F1D, 4K00F7W	6.25 kHz	Mask E	823.95
4K00F2D	6.25 kHz	Mask E	823.95

3) Field Strength of Spurious Radiation:

- Type of emission: 4K00F1E, 4K00F1D, 4K00F7W
- Channel Bandwidth: 6.25 kHz
- Frequency: 815.05 MHz

4. Testing was performed only at the high power.
5. The NX-5400-K3 model was tested among various models.
6. The decision rule applies 'simple acceptance'

6. TEST LIMIT

FCC: 769 ~ 775 MHz, 799 ~ 805 MHz
 ISED: 768 ~ 776 MHz, 798 ~ 806 MHz

Test Description	Test Limit (FCC)	Test Limit (ISED)
Carrier RF Output Power	< 3 W ERP	< 3 W ERP
Unwanted Emissions	43 + 10 log (P)dB	43 + 10 log (P)dB
99% Bandwidth	-	Provided that the ACP requirements are met, any authorized bandwidth that does not exceed the channel bandwidth can be used.
Carrier Frequency Stability	0.4 ppm	0.4 ppm
Audio Frequency Response	Varies	-
Audio Low Pass Filter	Varies	-
Modulation Limiting	12.5 kHz = 2.5 kHz 25 kHz = 5 kHz	-
Adjacent Channel Power	Note ²	Note ²
Field Strength of Spurious Radiation	43 + 10 log (P)dB	43 + 10 log (P)dB
GNSS (EIRP for 1559 – 1610MHz)	–70 dBW EIRP (Wide) –80 dBW EIRP (Narrow)	–70 dBW EIRP (Wide) –80 dBW EIRP (Narrow)
Receiver Spurious Emissions	-	Note ¹

FCC/ ISED: 806-824 MHz, 851-869 MHz

Test Description	Test Limit (FCC)	Test Limit (ISED)
Carrier RF Output Power	< 100 W	< 30 W
Unwanted Emissions	$43 + 10 \log (P)\text{dB}$	6.25 kHz: $55 + 10 \log (P)\text{dB}$ 12.5 kHz: $50 + 10 \log (P)\text{dB}$ 25 kHz: $43 + 10 \log (P)\text{dB}$
99% Bandwidth	-	6.25 kHz: 6 kHz 12.5 kHz: 11.25kHz 25 kHz: 20 kHz
Carrier Frequency Stability	809MHz-824MHz= 2.5 ppm 854MHz-869MHz= 2.5 ppm 806MHz-809MHz= 1.5 ppm 851MHz-854MHz= 1.5 ppm	6.25 kHz = 0.4 ppm 12.5 kHz = 1.5 ppm 25 kHz = 2.5 ppm
Audio Frequency Response	Varies	-
Audio Low Pass Filter	Varies	-
Modulation Limiting	12.5 kHz = 2.5 kHz 25 kHz = 5 kHz	-
Emission Mask	Emission Mask B, D, EA (Note ³)	Emission Mask B, D, E (Note ³)
Field Strength of Spurious Radiation	$43 + 10 \log (P)\text{dB}$	6.25 kHz: $55 + 10 \log (P)\text{dB}$ 12.5 kHz: $50 + 10 \log (P)\text{dB}$ 25 kHz: $43 + 10 \log (P)\text{dB}$
Receiver Spurious Emissions	-	Note ¹

Note:

1. Receiver Spurious Emissions Limit :

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$ at 3meters)
30 – 88	100
88 - 216	150
216 – 960	200
Above 960	500

2. Adjacent Channel Power Limit :

6.25 kHz Mobile Transmitter ACP Requirements		
Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
6.25	6.25	-40
12.5	6.25	-60
18.75	6.25	-60
25.00	6.25	-65
37.50	25.00	-65
62.50	25.00	-65
87.50	25.00	-65
150.00	100.00	-65
250.00	100.00	-65
350.00	100.00	-65
>400 kHz to 12 MHz	30 (s)	-75
12 MHz to paired receive band	30 (s)	-75
In the paired receive band	30 (s)	-100

12.5 kHz Mobile Transmitter ACP Requirements

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
9.375	6.25	-40
15.625	6.25	-60
21.875	6.25	-60
37.50	25.00	-60
62.50	25.00	-65
87.50	25.00	-65
150.00	100	-65
250.00	100	-65
350.00	100	-65
>400 to 12 MHz	30 (s)	-75
12 MHz to paired receive band	30 (s)	-75
In the paired receive band	30 (s)	-100

25 kHz Mobile Transmitter ACP Requirements

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
15.625	6.25	-40
21.875	6.25	-60
37.50	25	-60
62.50	25	-65
87.50	25	-65
150.00	100	-65
250.00	100	-65
350.00	100	-65
>400 kHz to 12 MHz	30 (s)	-75
12 MHz to paired receive band	30 (s)	-75
In the paired receive band	30 (s)	-100

3. Emission Mask Limit :

Emission Mask B.

For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

- (1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.
- (2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.
- (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB.

Emission Mask D

For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

- (1) On any frequency from the center of the authorized bandwidth f_0 to 5.625 kHz removed from f_0 : Zero dB.
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least $7.27(f_d - 2.88 \text{ kHz})$ dB.
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz: At least $50 + 10 \log (P)$ dB or 70 dB, whichever is the lesser attenuation.

Emission Mask E

For transmitters designed to operate with a 6.25 kHz or less bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

- (1) On any frequency from the center of the authorized bandwidth f_0 to 3.0 kHz removed from f_0 : Zero dB.
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 3.0 kHz but no more than 4.6 kHz: At least $30 + 16.67(f_d - 3 \text{ kHz})$ or $55 + 10 \log(P)$ or 65 dB, whichever is the lesser attenuation.
- (3) On any frequency removed from the center of the authorized bandwidth by more than 4.6 kHz: At least $55 + 10 \log(P)$ or 65 dB, whichever is the lesser attenuation.

Emission Mask EA

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

- (1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
- (2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

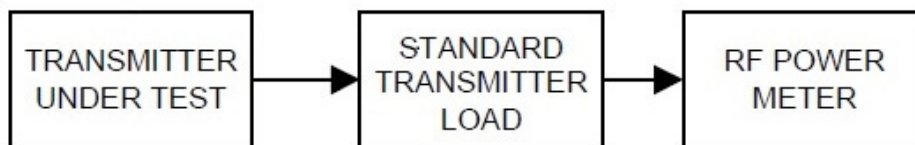
7. DESCRIPTION OF TESTS

7.1 Carrier Output Power

▣ DEFINITION

The conducted carrier power output rating for a transmitter is the power available at the output terminals of the transmitter when the output terminals are connected to the standard transmitter load.

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

ANSI C63.26-2015 Section 5.2.4.2

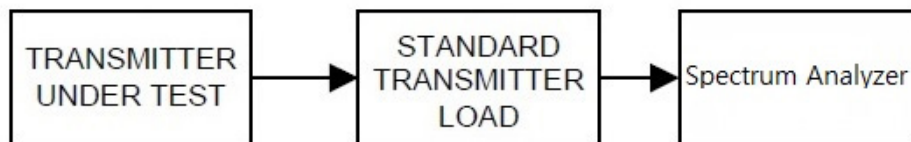
- a) Connect the equipment as illustrated.
- b) Detector: AVG RMS measurement
- c) Measure the transmitter output power during the defined duty cycle.
Correct for all losses in the RF path.
- d) The value recorded in step b) is the conducted carrier output power rating.

7.2 Carrier Frequency Stability

▣ DEFINITION

The carrier frequency stability is the ability of the transmitter to maintain an assigned carrier frequency.

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

ANSI C63.26-2015 Section 5.6

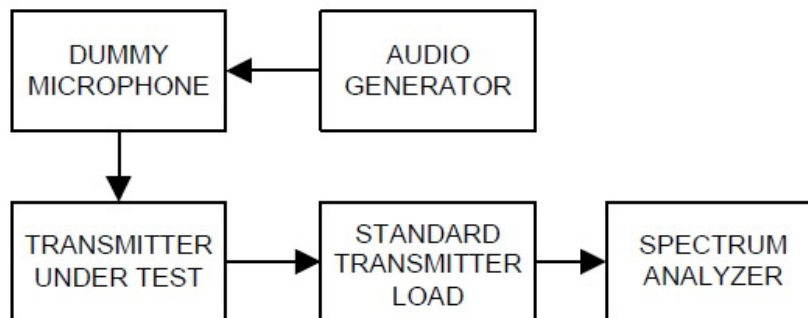
- a) The carrier frequency of the transmitter is measured at room temperature (20 °C to provide a reference).
- b) The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter.
Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- c) Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

7.3 Occupied Bandwidth

▣ DEFINITION

The transmitter sideband spectrum denotes the sideband power produced at a discrete frequency separation from the carrier up to the test bandwidth due to all sources of unwanted noise within the transmitter in a modulated condition.

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

ANSI C63.26-2015 Section 5.4.4

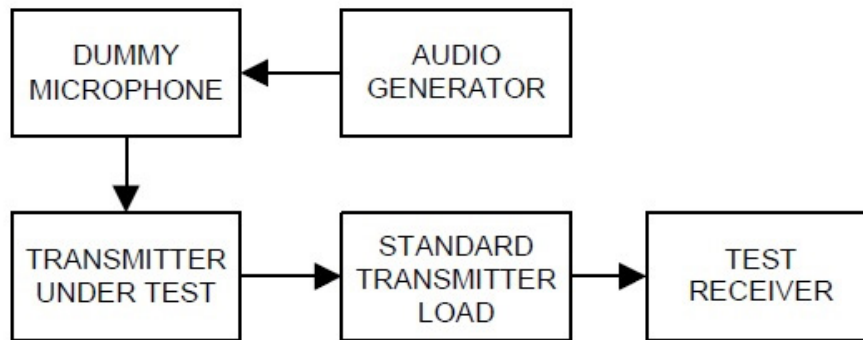
- a) The signal analyzer's automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- b) $RBW = 1 - 5 \%$ of the expected OBW
- c) $VBW \geq 3 \times RBW$
- d) Detector = Peak
- e) Trace mode = max hold
- f) Sweep = auto couple
- g) The trace was allowed to stabilize

7.4 Modulation Limiting

■ DEFINITION

Modulation limiting is the transmitter circuit's ability to limit the transmitter from producing deviations in excess of a rated system deviation.

■ TEST CONFIGURATION



■ TEST PROCEDURE

FCC: TIA-603-E Section 2.2.3

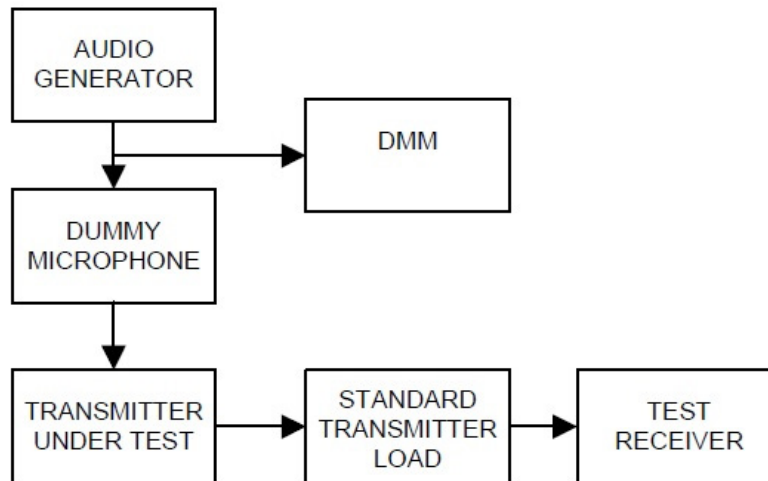
- a) Connect the equipment as illustrated.
- b) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
- c) Set the test receiver to measure Peak positive deviation.
Set the audio bandwidth for ≤ 0.25 Hz to $\geq 15,000$ Hz.
Turn the de-emphasis function off.
- d) Apply a 1000 Hz modulating signal to the transmitter from the audio frequency generator, and adjust the level obtain 60% of full rated system deviation.
- e) Increase the level form the audio frequency generator by 20 dB in one step(rise time between the 10% and 90% points shall be 0.1 second maximum).
- f) Measure both the instantaneous and steady-state deviation at and after the time of increasing the audio input level.
- g) With the level from the audio frequency generator held constant at the level obtained in step e), Slowly vary the audio frequency from 300 Hz to 3000 Hz and observe the steady-state deviation. Record the maximum deviation.
- h) Set the test receiver to measure Peak negative deviation and repeat steps d) through g).
- i) The values recorded in steps g) and h) are the modulation limiting.

7.5 Audio Frequency Response / Audio Low Pass Filter Response

▣ DEFINITION

The audio frequency response is the degree of closeness to which the frequency deviation of the transmitter follows a prescribed characteristic.

▣ TEST CONFIGURATION



■ TEST PROCEDURE

According to 2.2.6 in TIA-603-E Standard.

- a) Connect the equipment as illustrated.
- b) Set the test receiver to measure Peak positive deviation. Set the audio bandwidth for ≤ 50 Hz to $\geq 15,000$ Hz. Turn the de-emphasis function off.
- c) Set the DMM to measure rms voltage.
- d) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
- e) Apply a 1000 Hz tone and adjust the audio frequency generator to produce 20% of the rated system deviation.
- f) Set the test receiver to measure rms deviation and record the deviation reading.
- g) Record the DMM reading as V_{REF} .
- h) Set the audio frequency generator to the desired test frequency between 300 Hz and 3000 Hz.
- i) Vary the audio frequency generator output level until the deviation reading that was recorded in step f) is obtained.
- j) Record the DMM reading as V_{FREQ} .
- k) Calculate the audio frequency response at the present frequency as:
audio frequency response = $20 \times \log_{10}(V_{FREQ}/V_{REF})$
- l) Repeat steps h) through k) for all the desired test frequencies.

Note

Audio Filter of the above result is substituted with the same structure as Audio Frequency Response.

On the transmission condition below 3kHz, Transceiver shows pre-emphasis condition of transmission function.

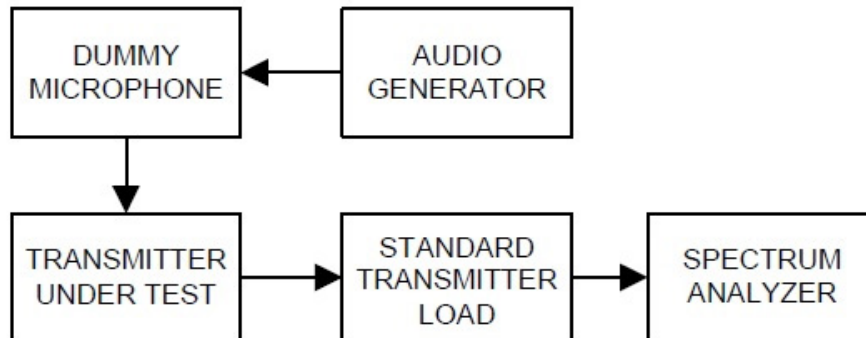
On the transmission condition above 3kHz, Transceiver shows Audio Low Pass Filter.

7.6 Emission Mask

■ DEFINITION

The transmitter sideband spectrum denotes the sideband power produced at a discrete frequency separation from the carrier up to the test bandwidth (see 1.3.4.4) due to all sources of unwanted noise within the transmitter in a modulated condition.

■ TEST CONFIGURATION



■ TEST PROCEDURE

FCC: TIA-603-E Section 2.2.11

ISED: RSS-119 Section 4.2

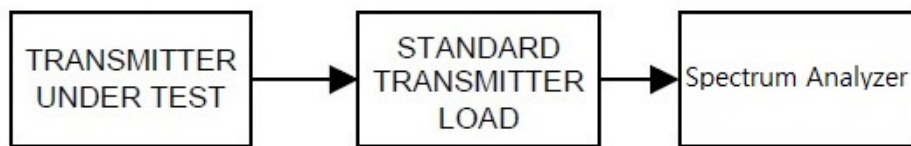
- a) Connect the equipment as illustrated. Use the table to determine the spectrum analyzer setting:
 - RBW = 300Hz(Emission Mask B, EA), 100Hz(Emission Mask D, E)
 - VBW $\geq 3 \times$ RBW
 - Detector = Average(Emission Mask B, EA), Peak(Emission Mask D, E)
 - Trace mode = Average(Emission Mask B, EA), Max hold(Emission Mask D, E)
- b) Modulate the transmitter with a 2500 Hz sine wave at an input level 16 dB greater than that necessary to produce 50% of rated system deviation. The input level shall be established at the frequency of maximum response of the audio modulating circuit. Transmitters employing digital modulation techniques that bypass the limiter and the audio low-pass filter shall be modulated as specified by the manufacturer.

7.7 Unwanted Emissions : Conducted Spurious Emission

■ DEFINITION

Conducted spurious emissions are emissions at the antenna terminals on a frequency or frequencies that are outside a band sufficient to ensure transmission of information of required quality for the class of communication desired.

■ TEST CONFIGURATION



■ TEST PROCEDURE

FCC: ANSI C63.26-2015 Section 5.7

ISED: ANSI C63.26-2015 Section 5.7/ RSS-119 Section 4.2

- a) RBW = 100 kHz(Below 1GHz), 1 MHz(Above 1GHz)
- b) VBW $\geq$ 3 MHz
- c) Detector = Average(Emission Mask B, EA), Peak(Emission Mask D, E)
- d) Trace mode = Average(Emission Mask B, EA), Max hold(Emission Mask D, E)
- e) Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$ (Emission Mask B, EA)
Number of points in sweep = Auto (Emission Mask D, E)
- f) Sweep time > number of points in sweep $\times$ symbol period (Emission Mask B, EA)
Sweep time > number of points in sweep $\times$ symbol period (Emission Mask D, E)

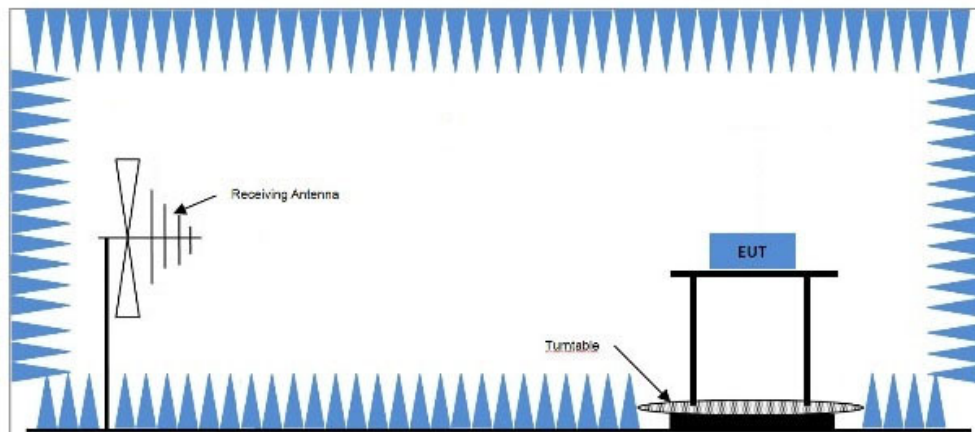
7.8 Unwanted Emissions : Radiated Spurious Emission

■ DEFINITION

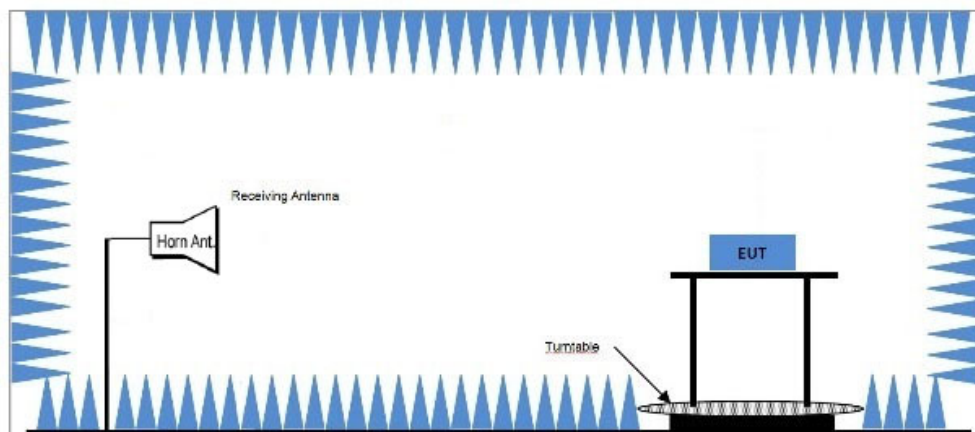
Radiated spurious emissions are emissions from the equipment when transmitting into a non-radiating load on a frequency or frequencies that are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

■ TEST CONFIGURATION

Below 1 GHz



Above 1 GHz



■ TEST PROCEDURE

FCC: ANSI C63.26-2015 Section 5.5.3

ISED: ANSI C63.26-2015 Section 5.5.3/ RSS-119 Section 4.2

- a) Radiated tests are performed in the Fully-anechoic chamber.
- b) RBW = 100 kHz(Below 1GHz), 1 MHz(Above 1GHz)
- c) VBW $\geq$ 3 MHz
- d) Detector = Average(Emission Mask B, EA), Peak(Emission Mask D, E)
- e) Trace mode = Average(Emission Mask B, EA), Max hold(Emission Mask D, E)
- f) In the fully-anechoic chamber, setup as illustrated above the DUT placed on the 2.5m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization.
The “Read Value” is the spectrum reading the maximum power value.
- g) The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization to find the maximum radiation power.
Record the power level of maximum radiation power from spectrum.
So, the measured Factor value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.
- h) Result(dBm) = “Reading” + Factor

7.9 Unwanted Emissions : Receiver Radiated Spurious Emission

■ TEST PROCEDURE

ISED: RSS-Gen Section 7

a) Radiated tests are performed in the Semi Anechoic Chamber.

b) Test Settings:

Operating conditions:	Under normal test conditions
Operation Mode:	Receive
Method of testing:	Radiated
S/A. Settings:	F < 1 GHz: RBW: 120 kHz, VBW: 300 kHz (Quasi-Peak) F > 1 GHz: RBW: 1 MHz, VBW: 1 MHz (Average)
Mode of operation:	Receive

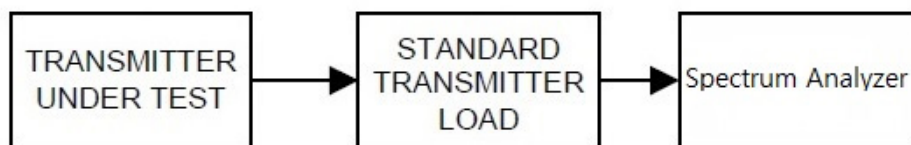
7.10 Adjacent Channel Power

▣ Definition

Transmitters designed to operate in 769-775 MHz, 799-805 MHz (FCC) and 768-776 MHz, 798-806 MHz (ISED) frequency bands must meet the adjacent channel power.

The adjacent channel power (ACP) requirements for transmitters designed for various channel sizes are shown in the § 90.543 & RSS-119 5.8.9.

▣ Test Configuration



■ Test Procedure

For all measurements modulate the transmitter as it would be modulated in normal operating conditions. The ACP measurements may be made with a spectrum analyzer capable of making direct ACP measurements. “Measurement bandwidth”, as used for non-swept measurements, implies an instrument that measures the power in many narrow bandwidths equal to the nominal resolution bandwidth and integrates these powers to determine the total power in the specified measurement bandwidth.

Setting reference level. Set transmitter to maximum output power. Using a spectrum analyzer capable of ACP measurements, set the measurement bandwidth to the channel size. For example, for a 6.25 kHz transmitter set the measurement bandwidth to 6.25 kHz. Set the frequency offset of the measurement bandwidth to zero and adjust the center frequency of the instrument to the assigned center frequency to measure the average power level of the transmitter. Record this power level in dBm as the “reference power level.”

Non-swept power measurement. Using a spectrum analyzer capable of ACP measurements, set the measurement bandwidth and frequency offset from the assigned center frequency as shown in the tables in § 90.543 (a) above. Any value of resolution bandwidth may be used as long as it does not exceed 2 percent of the specified measurement bandwidth. Measure the power level in dBm. These measurements should be made at maximum power. Calculate ACP by subtracting the reference power level measured in (b)(1) from the measurements made in this step. The absolute value of the calculated ACP must be greater than or equal to the absolute value of the ACP given in the table for each condition above

Swept power measurement. Set a spectrum analyzer to 30 kHz resolution bandwidth, 1 MHz video bandwidth and average, sample, or RMS detection. Set the reference level of the spectrum analyzer to the RMS value of the transmitter power. Sweep above and below the carrier frequency to the limits defined in the tables. Calculate ACP by subtracting the reference power level measured in (b)(1) from the measurements made in this step. The absolute value of the calculated ACP must be greater than or equal to the absolute value of the ACP given in the table for each condition above.

8. TEST RESULT

8.1 Carrier Output Power

Note:

1. Limit:

FCC(769 ~ 775 MHz, 799 ~ 805 MHz): < 3 W e.r.p.

ISED(768 ~ 776 MHz, 798 ~ 806 MHz): < 3 W e.r.p.

FCC(806-824 MHz, 851-869 MHz): < 100W

ISED(806-824 MHz, 851-869 MHz): < 30W

2. Effective Radiated Power(dBm) = Carrier Output Power(dBm) + Peak. Antenna Gain(dBd).

Peak. Antenna Gain = 0 dBd

3. Effective Radiated Power(dBm) = Carrier Output Power(dBm)

■ Channel Bandwidth : 6.25 kHz

Type of Emission	Channel Spacing (kHz)	Standard	Frequency (MHz)	Carrier Output Power	
				(dBm)	(W)
4K00F1E, 4K00F1D, 4K00F7W	6.25	ISED	768.05	34.72	2.965
		ISED/FCC	769.05	34.72	2.963
		ISED/FCC	774.95	34.41	2.764
		ISED	775.95	34.43	2.772
		ISED	798.05	34.49	2.814
		ISED/FCC	799.05	34.53	2.841
		ISED/FCC	804.95	34.33	2.713
		ISED	805.95	34.31	2.698
		ISED/FCC	806.05	34.49	2.813
		ISED/FCC	815.05	34.39	2.746
		ISED/FCC	823.95	34.58	2.870
		ISED/FCC	851.05	34.31	2.699
		ISED/FCC	860.05	34.38	2.740
		ISED/FCC	868.95	34.32	2.704
4K00F2D	6.25	ISED	768.05	34.70	2.953
		ISED/FCC	769.05	34.71	2.957
		ISED/FCC	774.95	34.67	2.931
		ISED	775.95	34.63	2.902
		ISED	798.05	34.69	2.942
		ISED/FCC	799.05	34.63	2.907
		ISED/FCC	804.95	34.50	2.820
		ISED	805.95	34.46	2.796
		ISED/FCC	806.05	34.57	2.861
		ISED/FCC	815.05	34.49	2.809
		ISED/FCC	823.95	34.66	2.924
		ISED/FCC	851.05	34.46	2.791
		ISED/FCC	860.05	34.56	2.859
		ISED/FCC	868.95	34.65	2.918

■ Channel Bandwidth : 12.5 kHz

Type of Emission	Channel Spacing (kHz)	Standard	Frequency (MHz)	Carrier Output Power	
				(dBm)	(W)
7K60FXD, 7K60FXE	12.5	ISED	768.05	34.50	2.817
		ISED/FCC	769.05	34.34	2.717
		ISED/FCC	774.95	34.50	2.821
		ISED	775.95	34.67	2.931
		ISED	798.05	34.43	2.771
		ISED/FCC	799.05	34.25	2.658
		ISED/FCC	804.95	34.33	2.707
		ISED	805.95	34.52	2.833
		ISED/FCC	806.05	34.53	2.835
		ISED/FCC	815.05	34.55	2.849
		ISED/FCC	823.95	34.61	2.891
		ISED/FCC	851.05	34.43	2.776
		ISED/FCC	860.05	34.48	2.808
		ISED/FCC	868.95	34.45	2.785
8K10F1E, 8K10F1D	12.5	ISED	768.05	34.75	2.983
		ISED/FCC	769.05	34.75	2.985
		ISED/FCC	774.95	34.60	2.883
		ISED	775.95	34.34	2.719
		ISED	798.05	34.46	2.794
		ISED/FCC	799.05	34.50	2.815
		ISED/FCC	804.95	34.55	2.854
		ISED	805.95	34.73	2.973
		ISED/FCC	806.05	34.39	2.747
		ISED/FCC	815.05	34.66	2.924
		ISED/FCC	823.95	34.66	2.926
		ISED/FCC	851.05	34.50	2.818
		ISED/FCC	860.05	34.35	2.721
		ISED/FCC	868.95	34.59	2.880

Type of Emission	Channel Spacing (kHz)	Standard	Frequency (MHz)	Carrier Output Power	
				(dBm)	(W)
8K10F1W	12.5	ISED	768.05	34.72	2.967
		ISED/FCC	769.05	34.71	2.961
		ISED/FCC	774.95	34.69	2.946
		ISED	775.95	34.47	2.801
		ISED	798.05	34.59	2.881
		ISED/FCC	799.05	34.70	2.952
		ISED/FCC	804.95	34.42	2.767
		ISED	805.95	34.33	2.709
		ISED/FCC	806.05	34.55	2.850
		ISED/FCC	815.05	34.37	2.733
		ISED/FCC	823.95	34.55	2.852
		ISED/FCC	851.05	34.31	2.699
		ISED/FCC	860.05	34.47	2.798
		ISED/FCC	868.95	34.41	2.761
8K30F1E, 8K30F1D, 8K30F7W	12.5	ISED	768.05	34.76	2.995
		ISED/FCC	769.05	34.75	2.987
		ISED/FCC	774.95	34.49	2.810
		ISED	775.95	34.47	2.799
		ISED	798.05	34.67	2.934
		ISED/FCC	799.05	34.50	2.820
		ISED/FCC	804.95	34.55	2.854
		ISED	805.95	34.50	2.819
		ISED/FCC	806.05	34.57	2.865
		ISED/FCC	815.05	34.35	2.722
		ISED/FCC	823.95	34.58	2.873
		ISED/FCC	851.05	34.31	2.700
		ISED/FCC	860.05	34.40	2.754
		ISED/FCC	868.95	34.49	2.814

Type of Emission	Channel Spacing (kHz)	Standard	Frequency (MHz)	Carrier Output Power	
				(dBm)	(W)
11K0F3E	12.5	ISED	768.05	34.77	2.996
		ISED/FCC	769.05	34.76	2.995
		ISED/FCC	774.95	34.72	2.965
		ISED	775.95	34.69	2.945
		ISED	798.05	34.69	2.948
		ISED/FCC	799.05	34.67	2.928
		ISED/FCC	804.95	34.64	2.910
		ISED	805.95	34.73	2.968
		ISED/FCC	806.05	34.69	2.941
		ISED/FCC	815.05	34.67	2.932
		ISED/FCC	823.95	34.69	2.945
		ISED/FCC	851.05	34.57	2.865
		ISED/FCC	860.05	34.52	2.834
		ISED/FCC	868.95	34.49	2.809

■ Channel Bandwidth : 25 kHz

Type of Emission	Channel Spacing (kHz)	Standard	Frequency (MHz)	Carrier Output Power	
				(dBm)	(W)
16K0F3E	25	ISED	768.05	34.77	2.997
		ISED/FCC	769.05	34.77	2.996
		ISED/FCC	774.95	34.74	2.977
		ISED	775.95	34.72	2.967
		ISED	798.05	34.72	2.967
		ISED/FCC	799.05	34.69	2.944
		ISED/FCC	804.95	34.65	2.918
		ISED	805.95	34.74	2.980
		ISED/FCC	806.05	34.66	2.924
		ISED/FCC	815.05	34.68	2.937
		ISED/FCC	823.95	34.69	2.946
		ISED/FCC	851.05	34.59	2.877
		ISED/FCC	860.05	34.55	2.851
		ISED/FCC	868.95	34.50	2.820
14K0F3E	25	ISED	768.05	34.74	2.975
		ISED/FCC	769.05	34.74	2.978
		ISED/FCC	774.95	34.70	2.949
		ISED	775.95	34.67	2.934
		ISED	798.05	34.70	2.949
		ISED/FCC	799.05	34.60	2.885
		ISED/FCC	804.95	34.63	2.904
		ISED	805.95	34.66	2.923
		ISED/FCC	806.05	34.65	2.920
		ISED/FCC	815.05	34.65	2.921
		ISED/FCC	823.95	34.66	2.927
		ISED/FCC	851.05	34.55	2.852
		ISED/FCC	860.05	34.48	2.806
		ISED/FCC	868.95	34.47	2.798

8.2 Adjacent Channel Power

Note:

Only the noise floor level was measured in the paired receive band.
therefore, only the results for the 400 kHz to 12 MHz frequency range are reported.

■ Channel Bandwidth : 6.25 kHz

Setting	Frequency (MHz)	Offset from center frequency (kHz)	Measurement Bandwidth (kHz)	Lower (dBc)	Upper (dBc)	Limit (dBc)
High Power	768.05	6.25	6.25	-47.01	-49.88	-40
		12.5	6.25	-76.08	-76.30	-60
		18.75	6.25	-80.36	-80.54	-60
		25	6.25	-82.68	-82.62	-65
		37.5	25	-78.93	-78.73	-65
		62.5	25	-80.38	-80.38	-65
		87.5	25	-78.91	-78.85	-65
		150	100	-76.28	-76.47	-65
		250	100	-82.04	-81.99	-65
		350	100	-83.19	-83.30	-65
		>400 to 12000	30 (s)	-87.49	-87.51	-75
	769.05	6.25	6.25	-48.24	-49.42	-40
		12.5	6.25	-76.00	-76.11	-60
		18.75	6.25	-80.11	-80.11	-60
		25	6.25	-82.68	-82.54	-65
		37.5	25	-78.48	-78.50	-65
		62.5	25	-79.76	-80.01	-65
		87.5	25	-78.67	-78.40	-65
		150	100	-76.67	-76.92	-65
		250	100	-82.36	-82.21	-65
		350	100	-83.50	-83.47	-65
		>400 to 12000	30 (s)	-88.15	-87.38	-75

■ Channel Bandwidth : 12.5 kHz

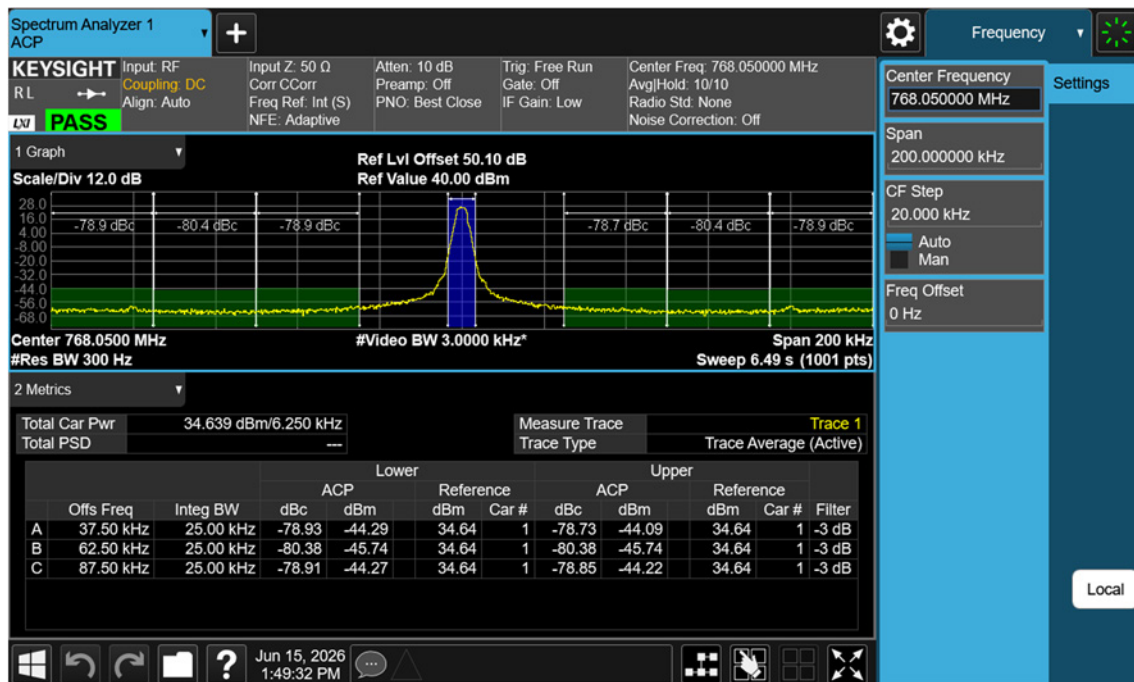
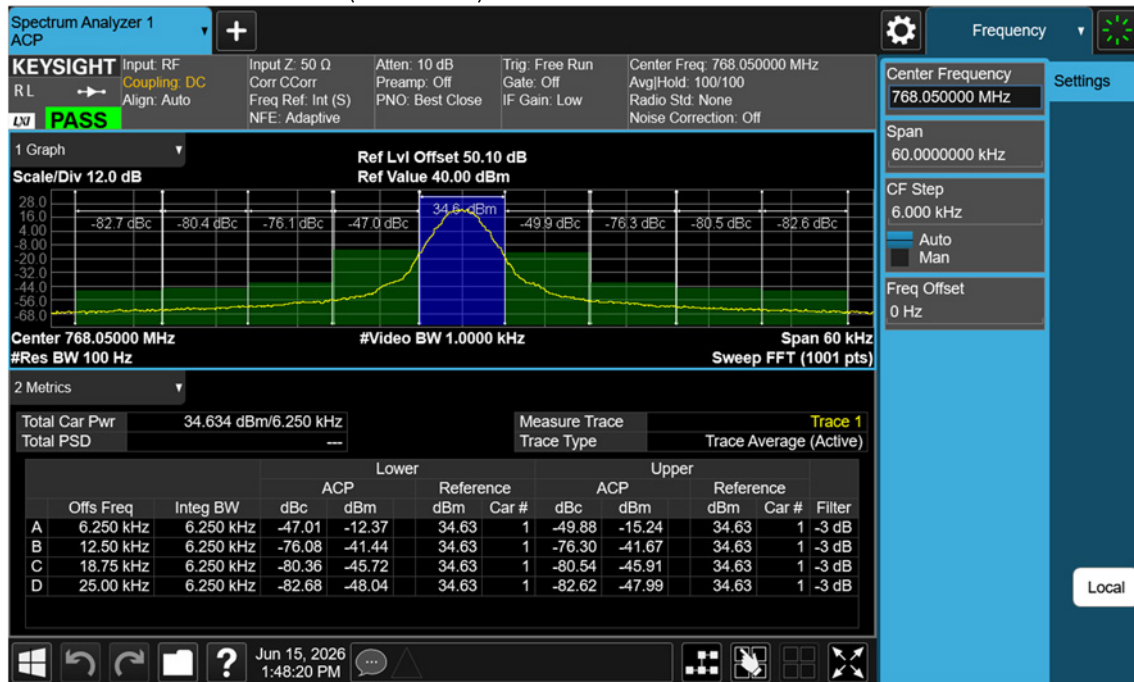
Setting	Frequency (MHz)	Offset from center frequency (kHz)	Measurement Bandwidth (kHz)	Lower (dBc)	Upper (dBc)	Limit (dBc)
High Power	768.05	9.375	6.25	-40.88	-40.84	-40
		15.625	6.25	-75.31	-78.47	-60
		21.875	6.25	-79.61	-78.86	-60
		37.5	25	-77.81	-77.72	-60
		62.5	25	-79.16	-79.09	-65
		87.5	25	-78.47	-78.70	-65
		150	100	-77.28	-77.14	-65
		250	100	-82.15	-82.05	-65
		350	100	-83.34	-83.10	-65
		>400 to 12000	30 (s)	-88.54	-88.47	-75
	769.05	9.375	6.25	-40.85	-40.80	-40
		15.625	6.25	-75.44	-76.07	-60
		21.875	6.25	-78.70	-78.85	-60
		37.5	25	-77.11	-77.24	-60
		62.5	25	-78.77	-78.55	-65
		87.5	25	-78.51	-78.31	-65
		150	100	-77.36	-77.32	-65
		250	100	-82.06	-81.90	-65
		350	100	-83.08	-83.31	-65
		> 400 to 12000	30 (s)	-88.43	-88.79	-75

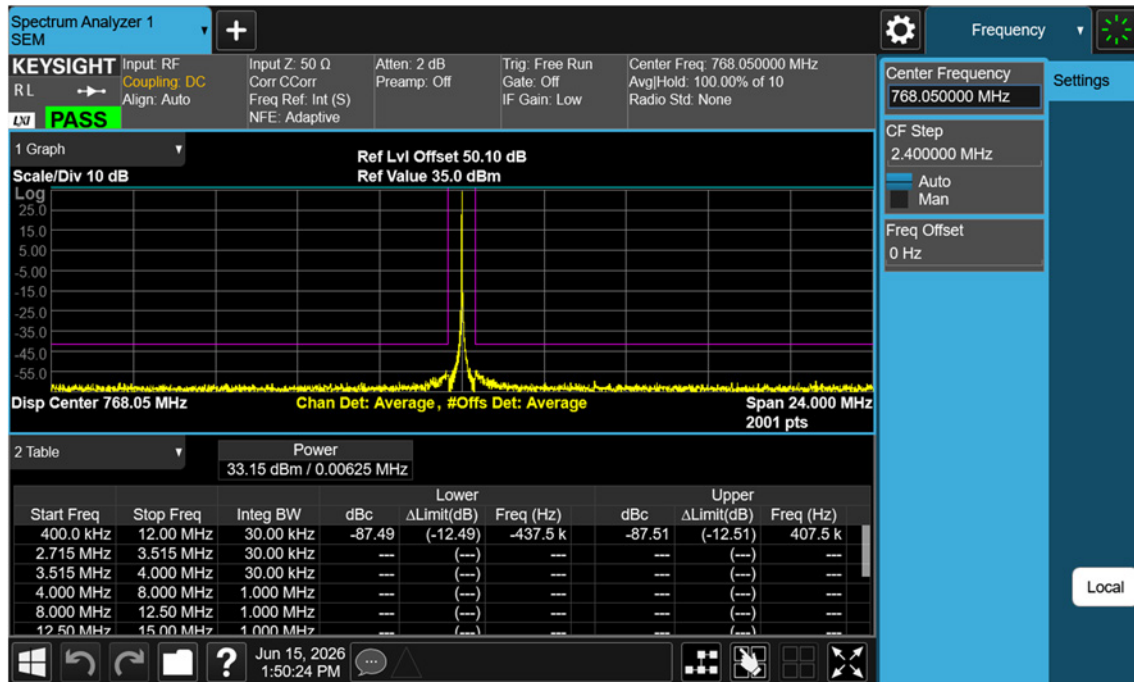
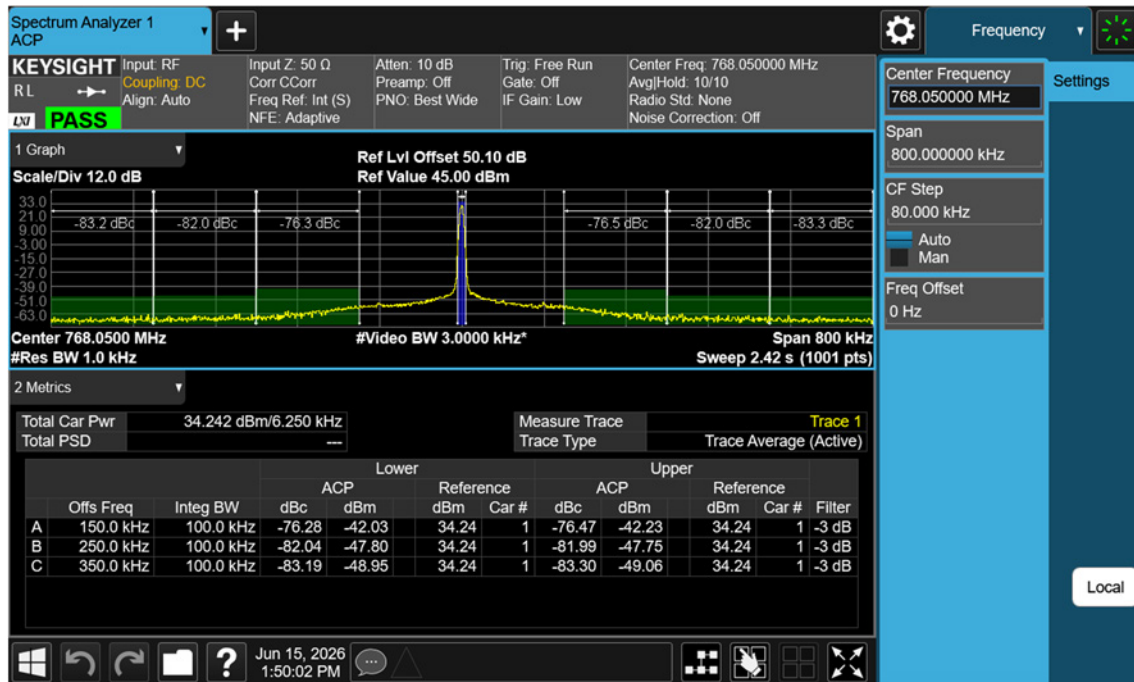
■ Channel Bandwidth : 25 kHz

Setting	Frequency (MHz)	Offset from center frequency (kHz)	Measurement Bandwidth (kHz)	Lower (dBc)	Upper (dBc)	Limit (dBc)
High Power	768.05	15.625	6.25	-53.86	-60.99	-40
		21.875	6.25	-79.47	-78.06	-60
		37.5	25	-77.22	-77.22	-60
		62.5	25	-79.15	-78.81	-65
		87.5	25	-78.56	-78.50	-65
		150	100	-77.26	-77.42	-65
		250	100	-82.30	-82.05	-65
		350	100	-83.33	-83.22	-65
		>400 to 12000	30 (s)	-88.80	-88.96	-75
	769.05	15.625	6.25	-53.56	-63.77	-40
		21.875	6.25	-78.08	-78.58	-60
		37.5	25	-76.50	-76.54	-60
		62.5	25	-78.67	-78.54	-65
		87.5	25	-78.65	-78.28	-65
		150	100	-77.26	-77.37	-65
		250	100	-82.37	-82.26	-65
		350	100	-83.36	-83.07	-65
		>400 to 12000	30 (s)	-88.36	-89.10	-75

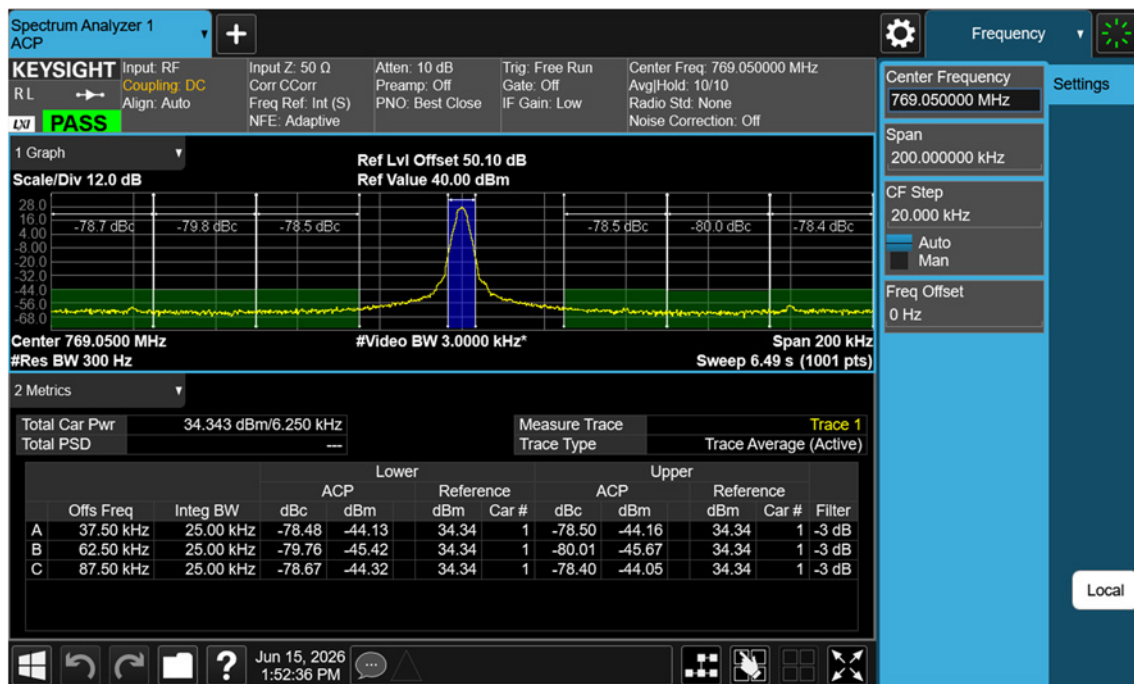
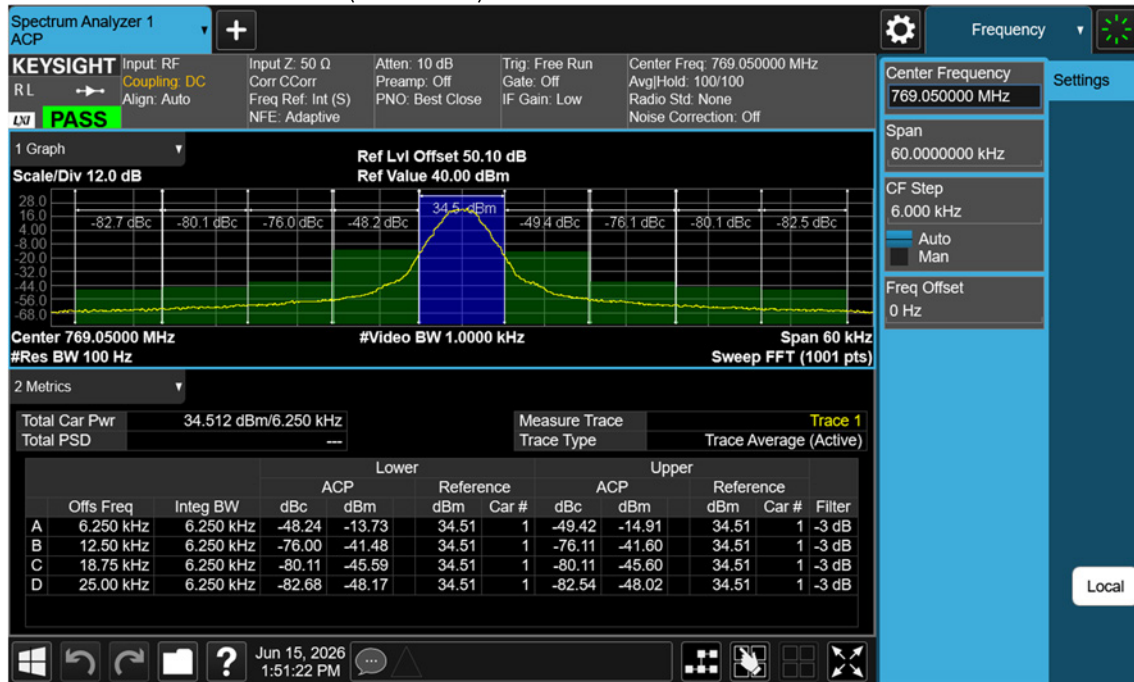
Test Plots(4K00F1E, 4K00F1D, 4K00F7W)

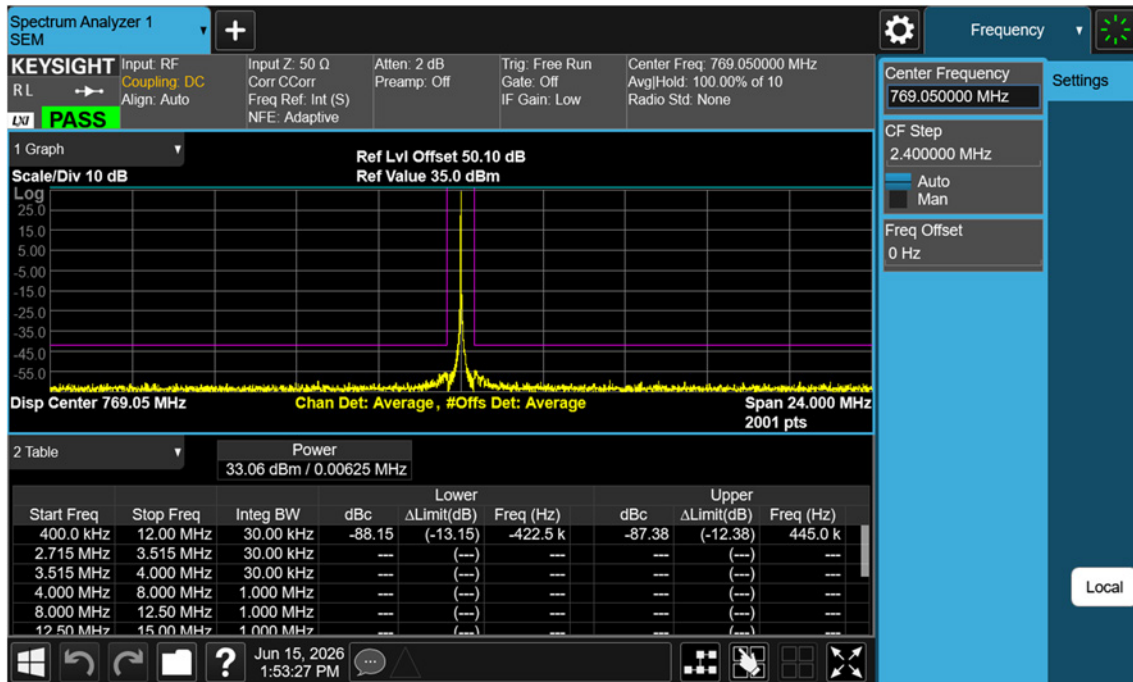
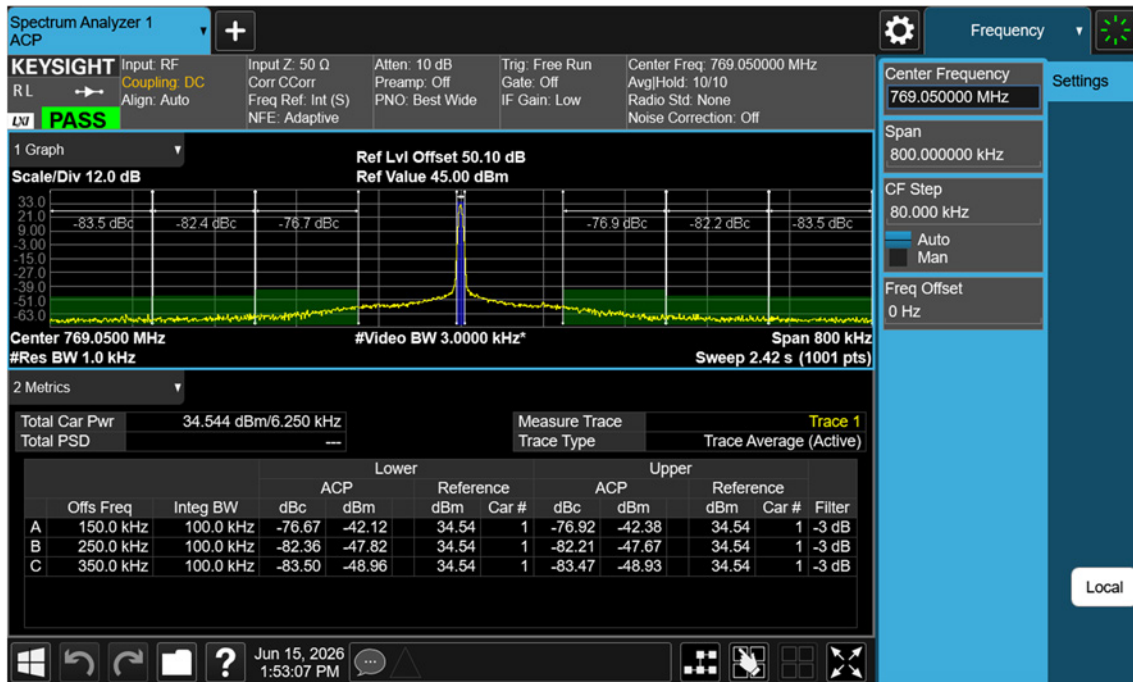
Channel Bandwidth : 6.25 kHz (768.05MHz)





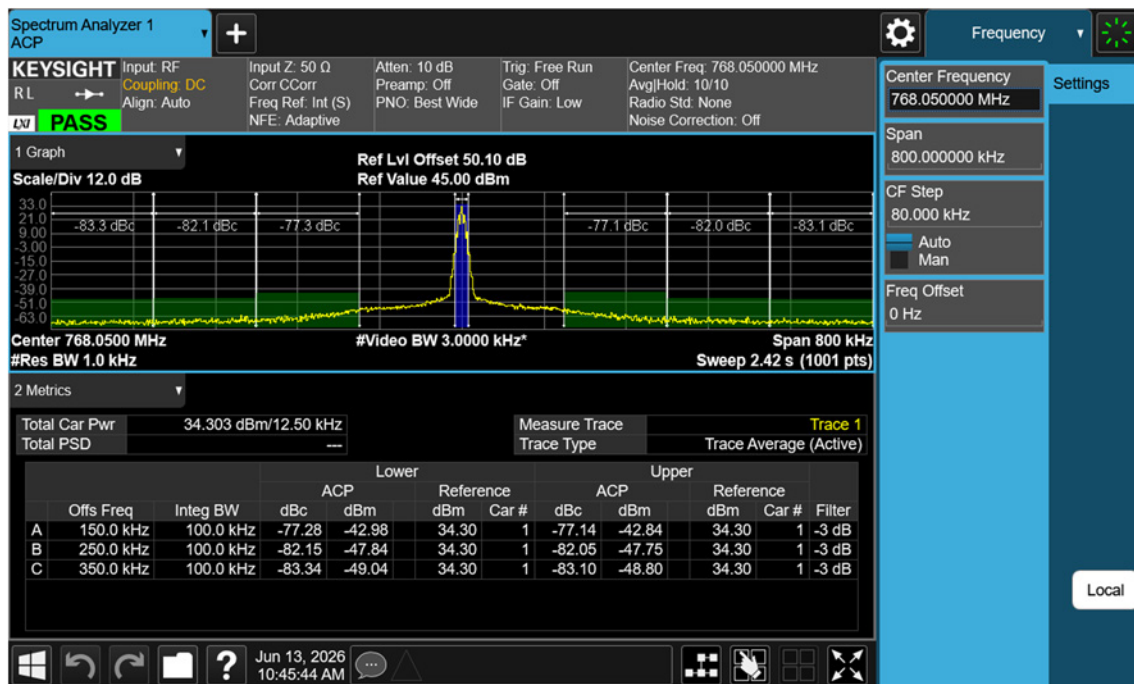
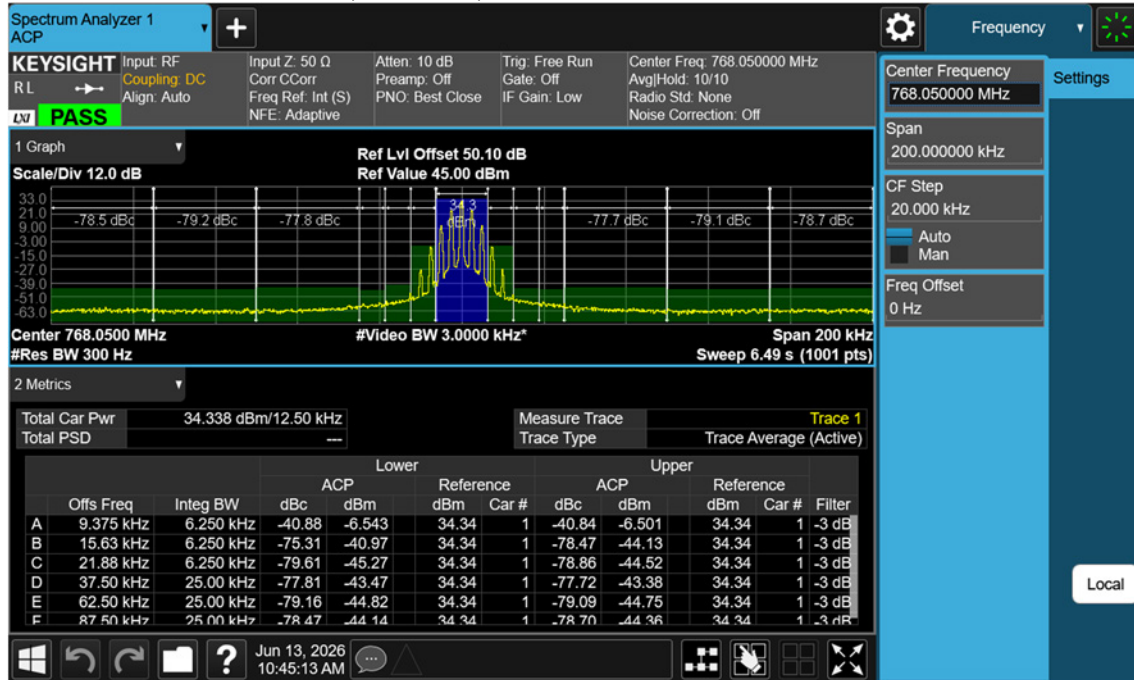
Channel Bandwidth : 6.25 kHz (769.05MHz)

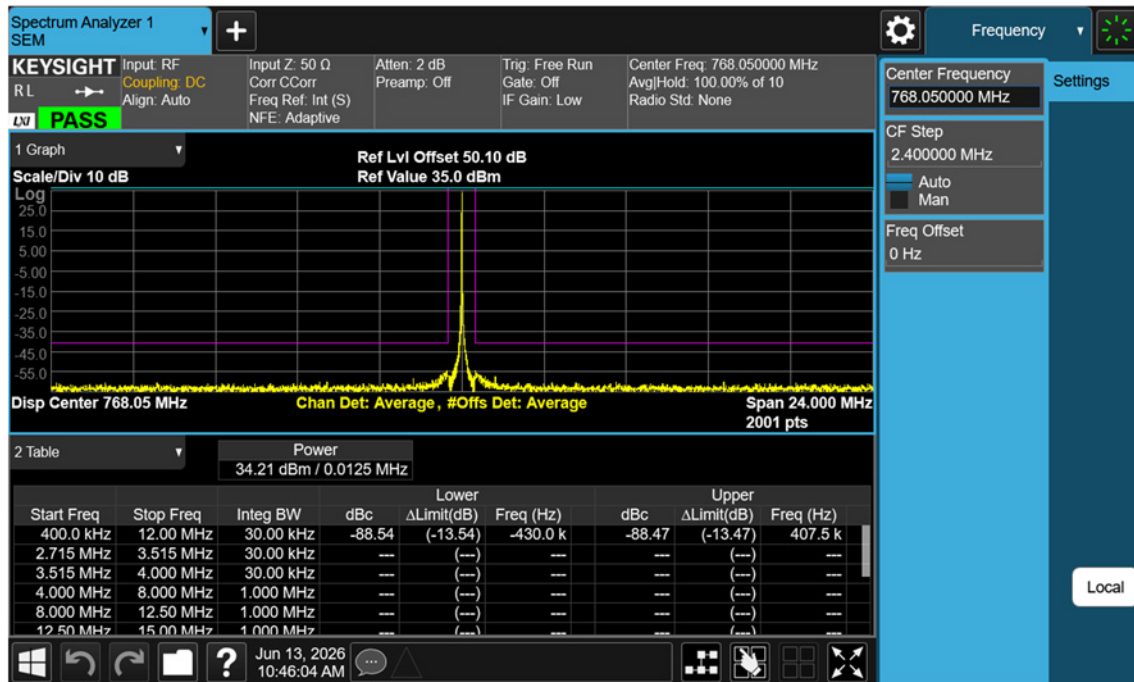




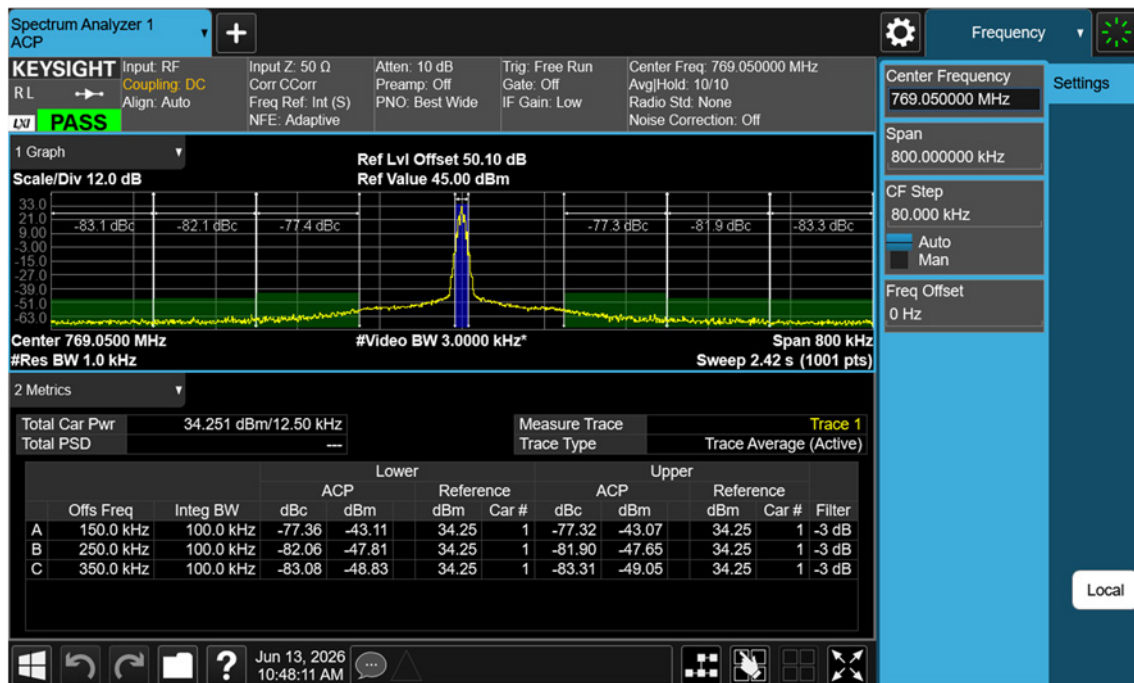
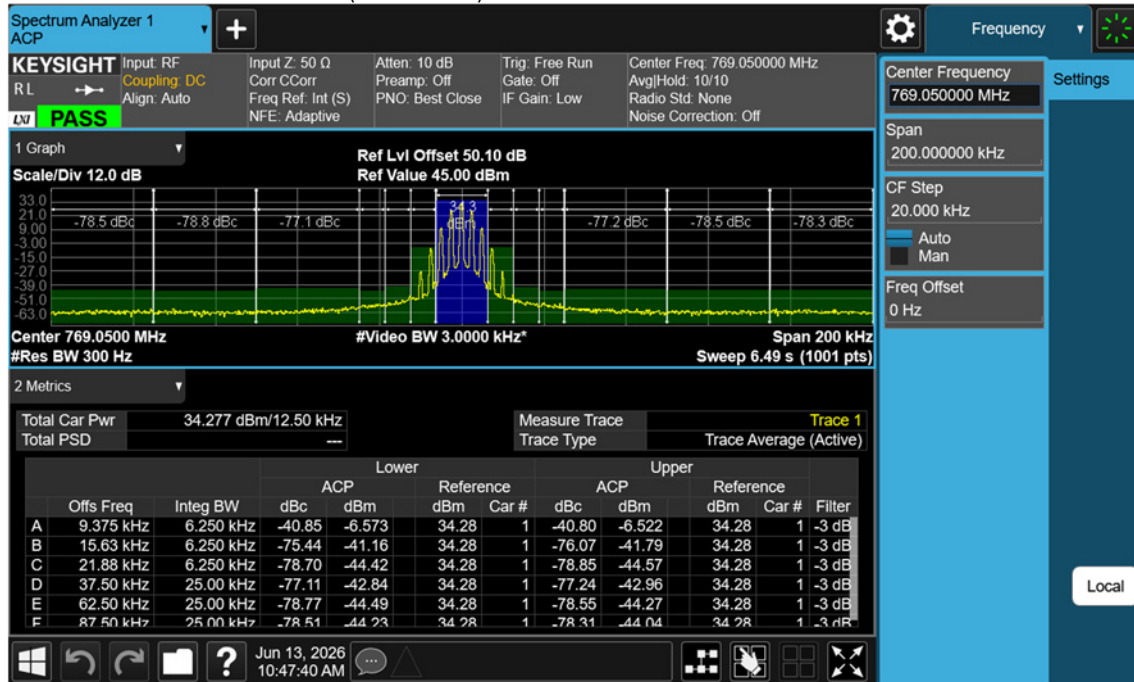
Test Plots(11K0F3E)

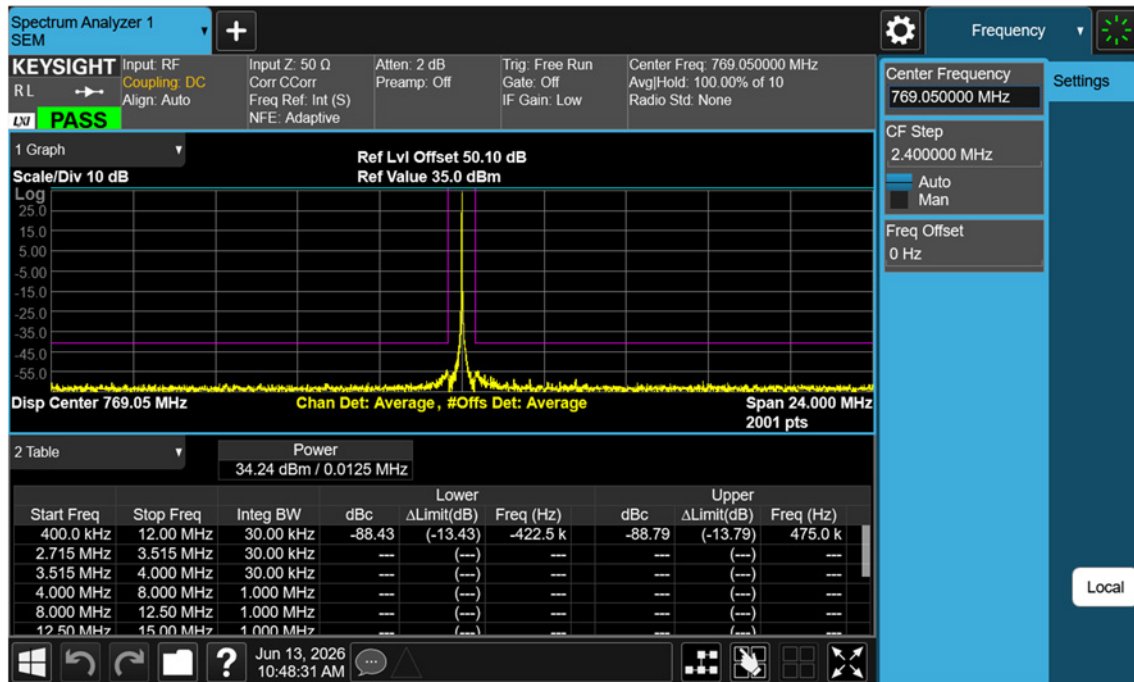
Channel Bandwidth : 12.5 kHz (768.05MHz)





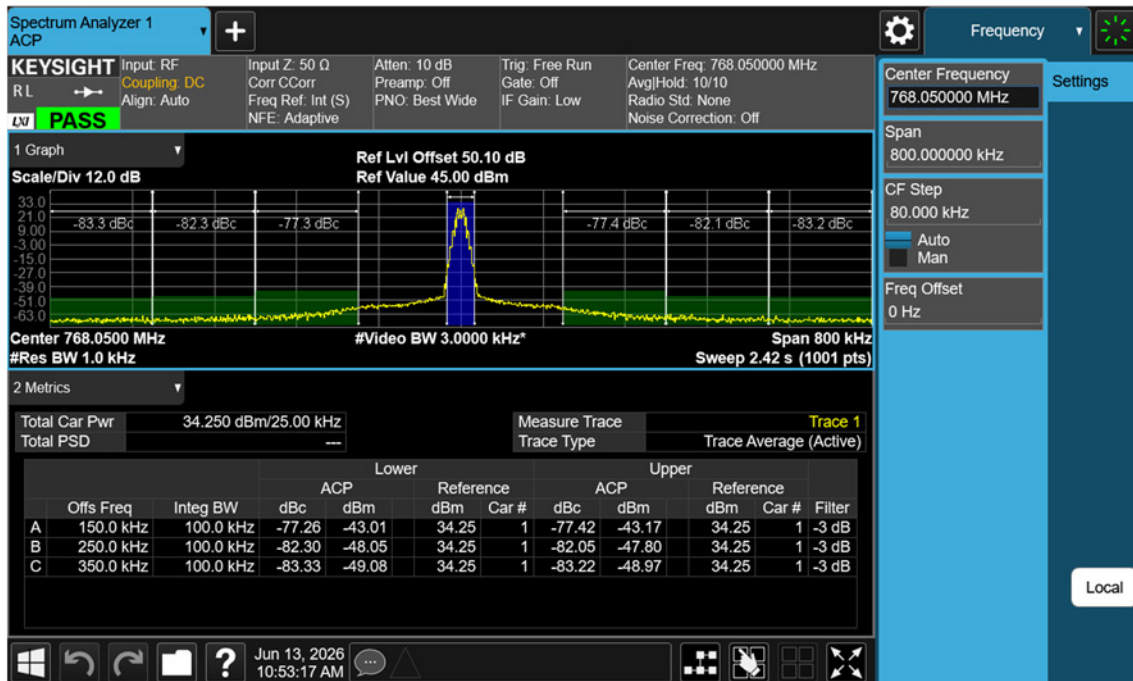
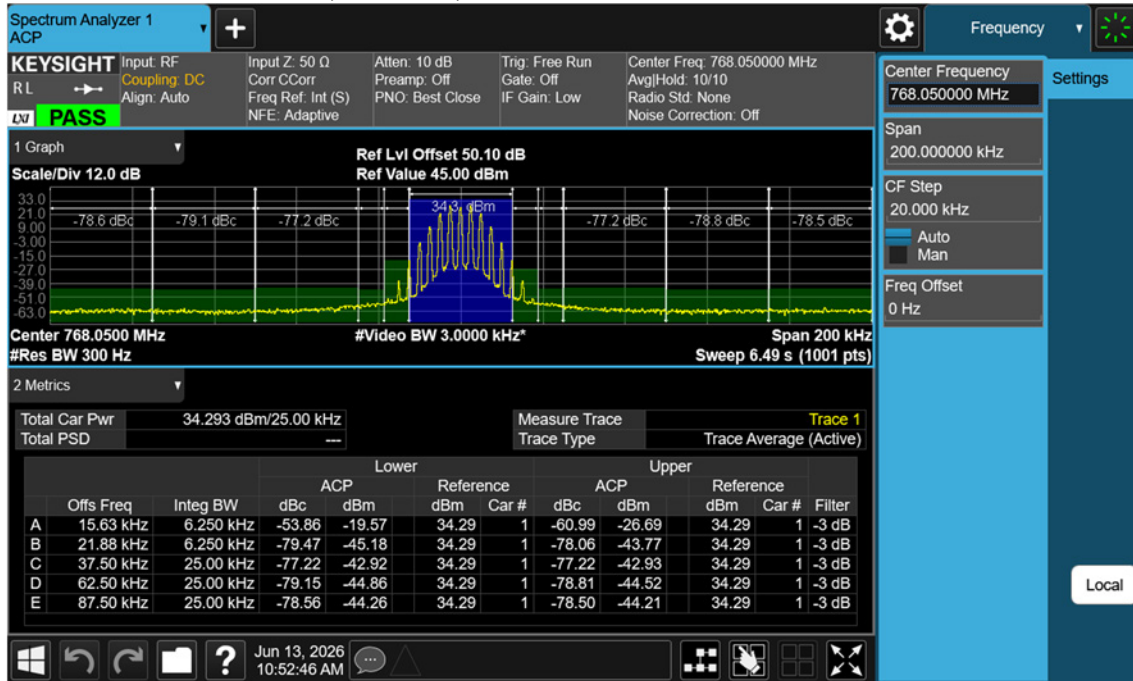
Channel Bandwidth : 12.5 kHz (769.05MHz)

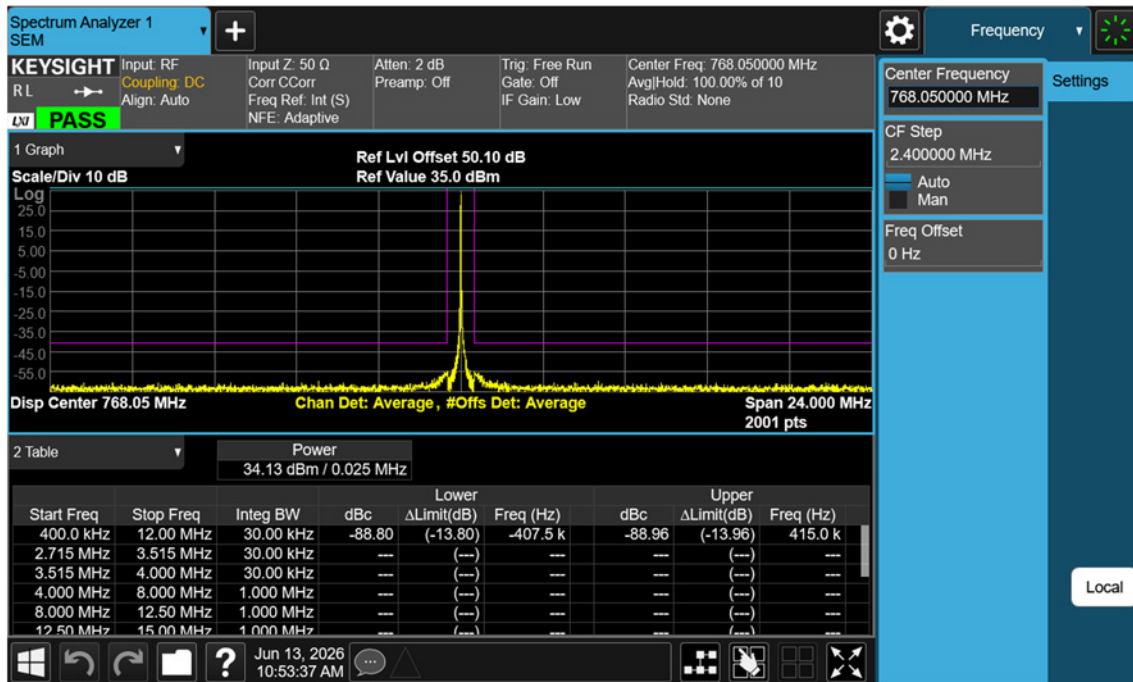




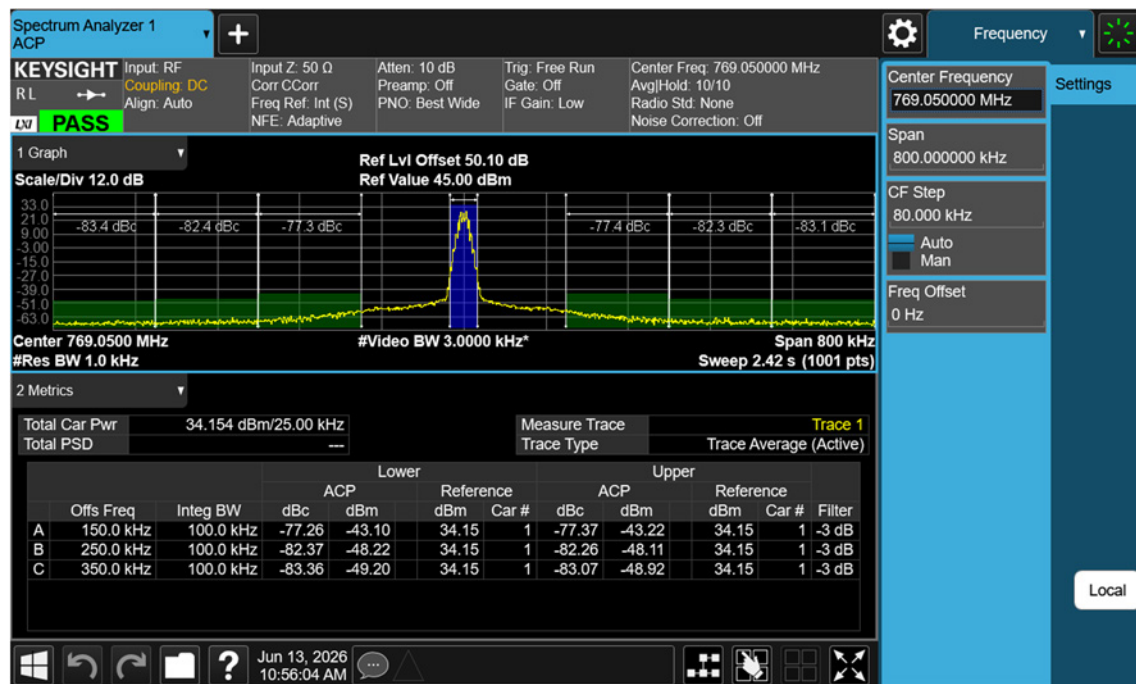
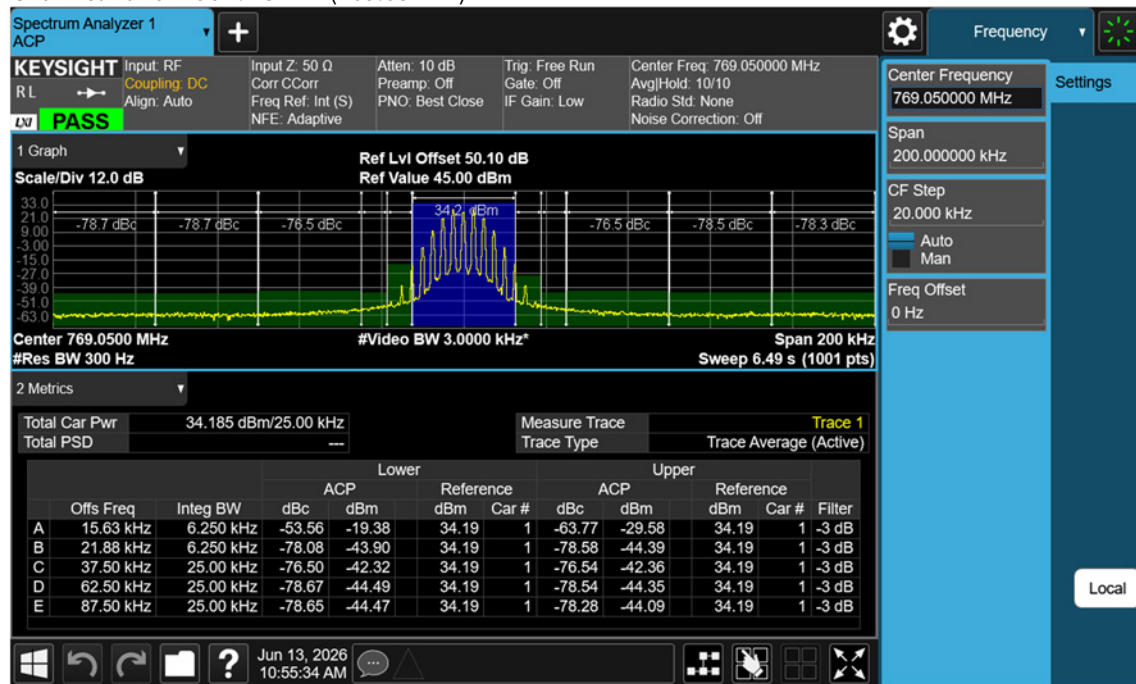
Test Plots(16K0F3E)

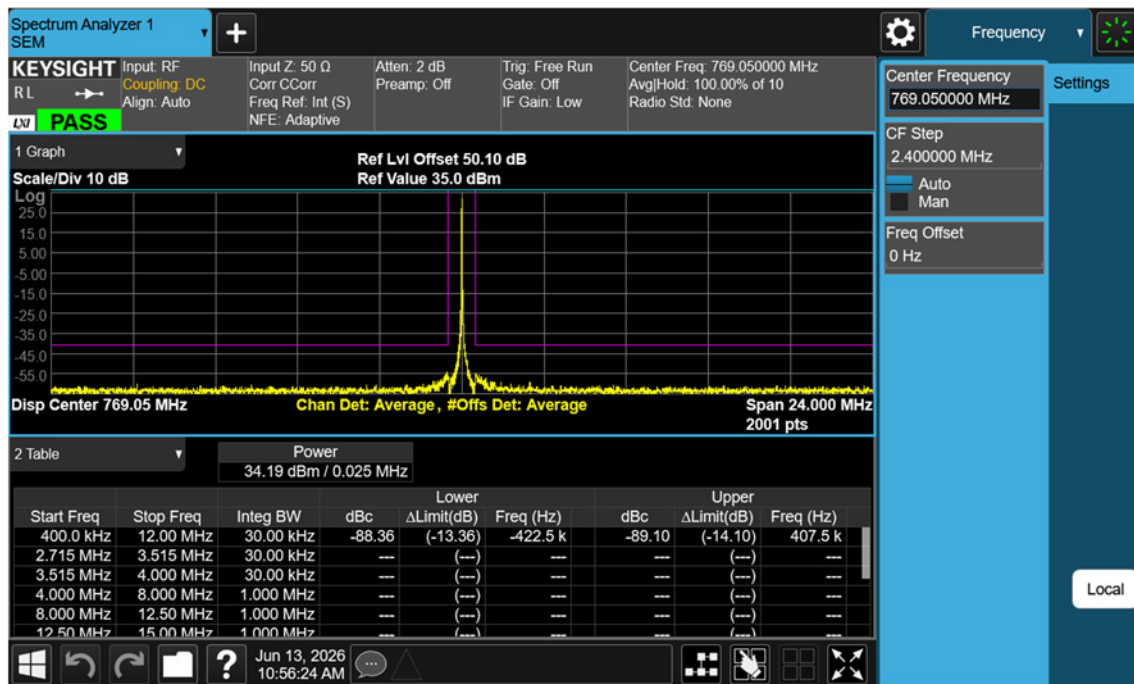
Channel Bandwidth : 25 kHz (768.05MHz)





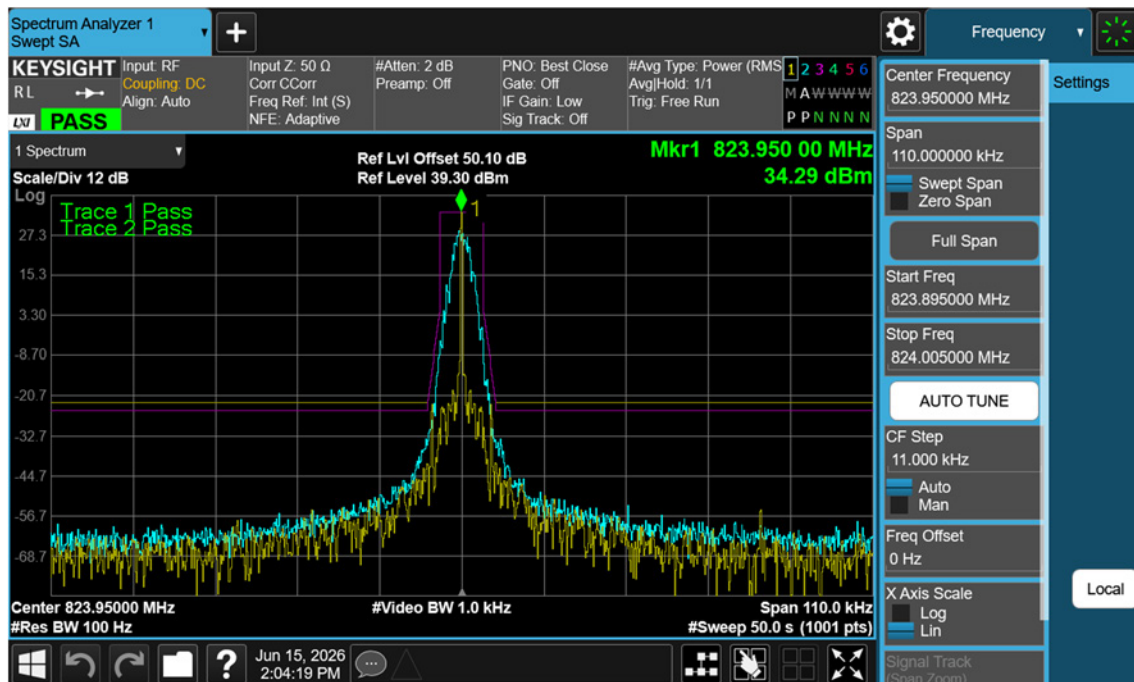
Channel Bandwidth : 25 kHz (769.05MHz)





8.3 Emission Mask

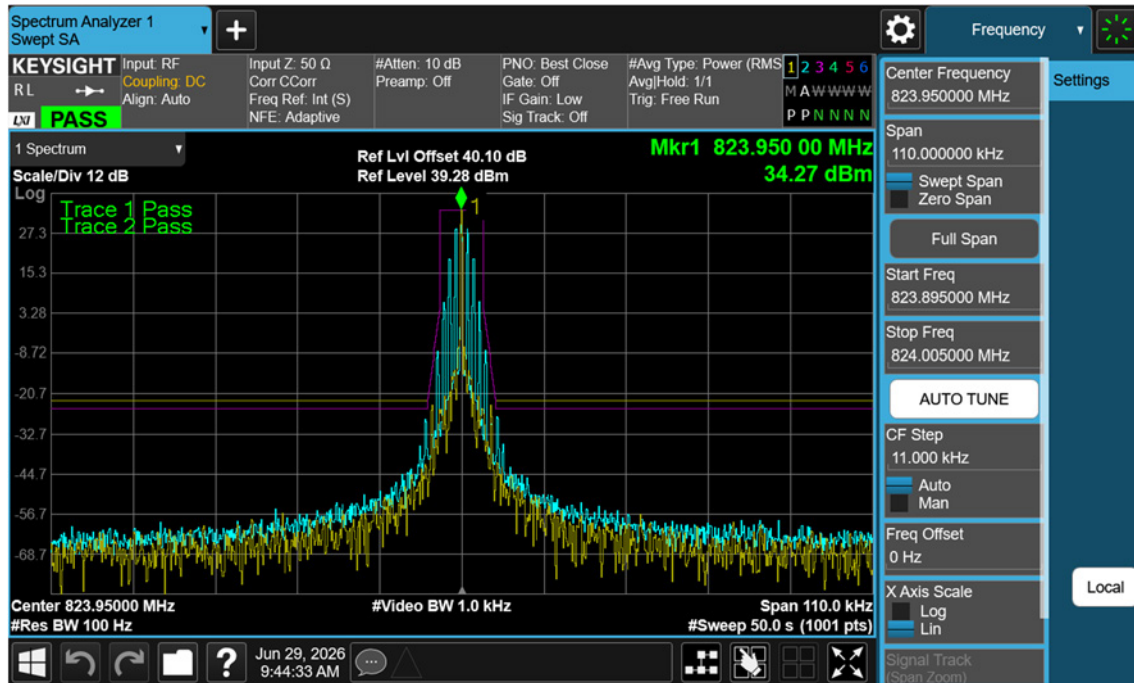
- ☒ TYPE OF EMISSION: 4K00F1E, 4K00F1D, 4K00F7W
- ☒ CHANNEL BANDWIDTH: 6.25 kHz
- ☒ FREQUENCY (MHz): 823.95



Note:

1. Emission Mask E.
2. Applied the yellow line with the lesser limit.

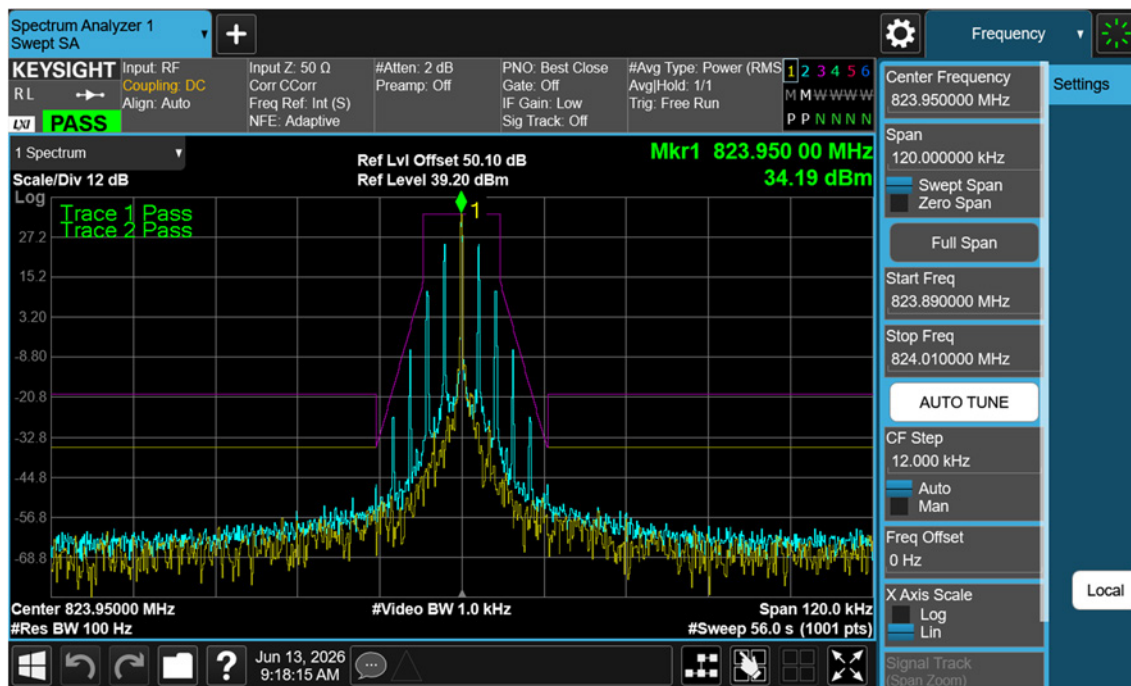
- TYPE OF EMISSION: 4K00F2D
- CHANNEL BANDWIDTH: 6.25 kHz
- FREQUENCY (MHz): 823.95



Note:

1. Emission Mask E.
2. Applied the yellow line with the lesser limit.

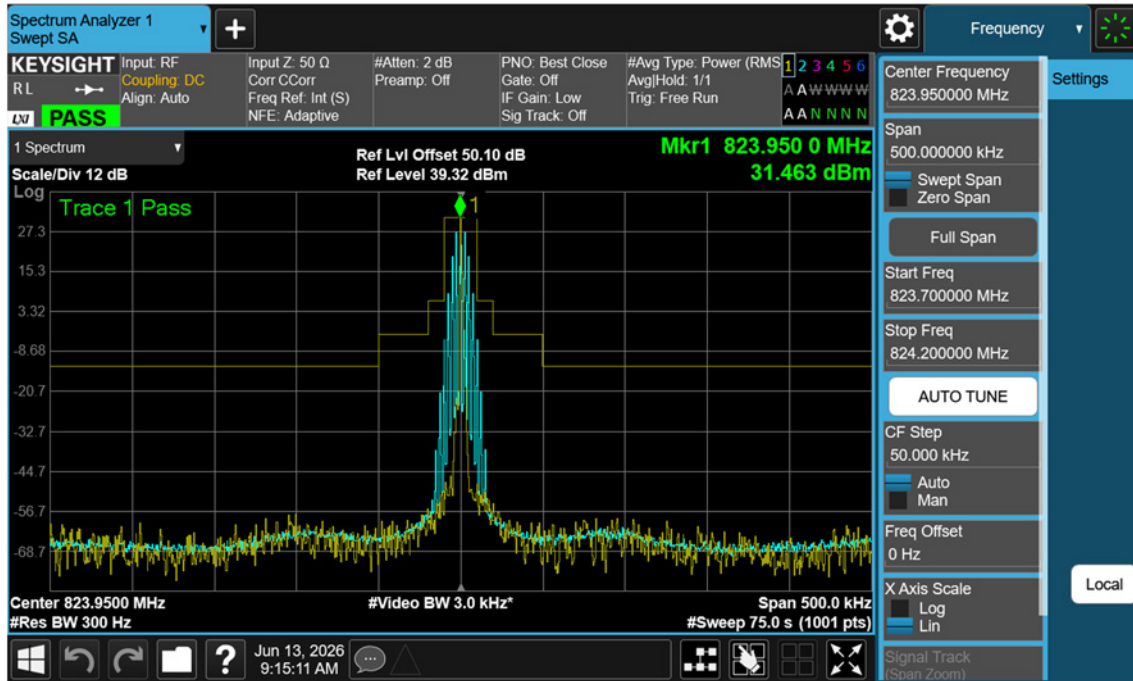
☒ TYPE OF EMISSION: 11K0F3E
☒ CHANNEL BANDWIDTH: 12.5 kHz
☒ FREQUENCY (MHz): 823.95



Note:

1. Emission Mask D.
2. Applied the purple line with the lesser limit.

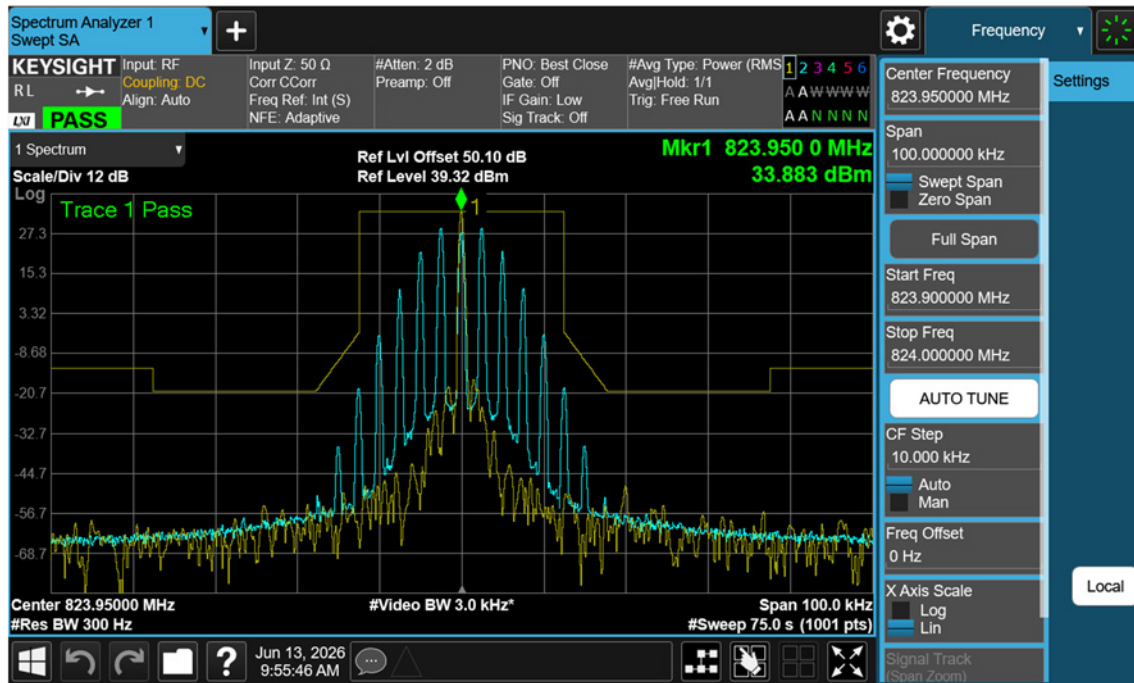
☒ TYPE OF EMISSION: 16K0F3E
☒ CHANNEL BANDWIDTH: 25 kHz
☒ FREQUENCY (MHz): 823.95



Note:

1. Emission Mask B.

☒ TYPE OF EMISSION: 16K0F3E
☒ CHANNEL BANDWIDTH: 25 kHz
☒ FREQUENCY (MHz): 823.95



Note:

1. Emission Mask EA.

8.4 Unwanted Emissions: Radiated Spurious Emission

8.4.1. Battery Type: KNB-LS15

▣ TYPE OF EMISSION:	4K00F1E, 4K00F1D, 4K00F7W
▣ CHANNEL BANDWIDTH:	6.25 kHz
▣ FREQUENCY (MHz):	815.05

Measured Frequency (MHz)	Reading [dBm]	Factor (dB)	Pol	Result (dBm)	Limit (dBm)	Margin (dB)
6 520.40	-50.80	9.63	V	-41.17	-25.00	16.17

8.4.2. Battery Type: KNB-LS17

▣ TYPE OF EMISSION:	4K00F1E, 4K00F1D, 4K00F7W
▣ CHANNEL BANDWIDTH:	6.25 kHz
▣ FREQUENCY (MHz):	815.05

Measured Frequency (MHz)	Reading [dBm]	Factor (dB)	Pol	Result (dBm)	Limit (dBm)	Margin (dB)
6 520.40	-51.58	9.63	H	-41.95	-25.00	16.95

8.5 Simultaneous transmission

Worst-case

Simultaneous transmission Scenario	700/800MHz	Bluetooth	Bluetooth LE	Worst-case Scenario
700/800MHz + Bluetooth	on	on		
700/800MHz + Bluetooth LE	on		on	O

Test Configuration	700/800MHz	Bluetooth LE
Frequency (MHz)	815.05	2 402
Mode	4K00F1E, 4K00F1D, 4K00F7W	1 Mbps

Note

1. The worst-case configuration was selected based on the result with the minimum RSE margin for each test (700/800MHz, Bluetooth, and Bluetooth LE).
 2. Simultaneous transmission testing was performed in a Semi-Anechoic Chamber (SAC).
 3. No intermodulation signals were detected during the simultaneous transmission testing.
 4. All type of battery were investigated and the worst case configuration results are reported.
 - Battery type : KNB-LS15, KNB-LS17
 - Worstcase : KNB-LS15
 5. Spurious emissions from the 700/800MHz and Bluetooth LE carriers were tested in accordance with their respective regulations.
- All results comply with the applicable limits, as summarized in the table below.

Bluetooth LE

Frequency [MHz]	Measured value [dBμV]	Duty Cycle Factor [dB]	C.L.+A.F.+D.F.-A.G. [dB/m]	ANT. POL [H/V]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4 804	44.35	0.00	3.51	V	47.86	73.98	26.12	PK
4 804	32.44	7.69	3.51	V	43.64	53.98	10.34	AV

700/800MHz

Frequency [MHz]	Measured value [dBμV]	C.L.+ATT.+A.F.+D.F.-A.G. [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Result [dBm]	Limit [dBm]	Margin [dB]
6 520.40	42.60	18.67	V	61.27	-33.93	-25.00	8.93

9. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
Audio Analyzer	8903B	Hewlett Packard	3413A13913	2026-08-18	Annual
Modulation Analyzer	8901B	Hewlett Packard	2406A00169	2026-07-04	Annual
Attenuator	5930_SMA-50-010	HUBER+SUHNER	57	2026-09-16	Annual
Attenuator	5930_SMA-50-010	HUBER+SUHNER	40	2026-09-15	Annual
Attenuator	5930_SMA-50-010	HUBER+SUHNER	19	2026-09-15	Annual
Horn Antenna	BBHA 9120D	Schwarzbeck	03197	2026-11-28	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	03201	2026-11-28	Biennial
Trilog Broadband Antenna	VULB 9168	Schwarzbeck	00895	2026-08-28	Biennial
RF Switching System	INPUT1 + 1GHz HPF + LNA	HCT CO., LTD.,	F2L2	2026-12-01	Annual
RF Switching System	INPUT1 + 3GHz HPF + LNA	HCT CO., LTD.,	F2L3	2026-12-01	Annual
RF Switching System	INPUT1 + 7GHz HPF + LNA	HCT CO., LTD.,	F2L5	2026-12-01	Annual
RF Switching System	INPUT3 + 6GHz HPF + LNA	HCT CO., LTD.,	F2L14	2026-12-01	Annual
SIGNAL GENERATOR	SMB100A	ROHDE & SCHWARZ	177633	2026-07-22	Annual
Signal Analyzer	FSV 40	ROHDE & SCHWARZ	101733	2026-09-17	Annual
Signal Analyzer	N9030B	KEYSIGHT	MY55480167	2027-04-28	Annual
MXA SIGNAL ANALYZER	N9020A	Agilent	MY52090906	2027-04-08	Annual
DC POWER SUPPLY	E3632A	Agilent	MY50360067	2027-01-27	Annual
Antenna Mast Controller	CO3000	Innco system GmbH	CO3000/842/ 35030115/L	N/A	N/A
Antenna Mast	MA4640/800-XP-EP	Innco system GmbH	S3AM	2026-07-25	Annual
Turn Table	DS1500-S-1t	Innco system GmbH	6290425	N/A	N/A
Trilog Broadband Antenna	VULB 9168	Schwarzbeck Mess-Elektronik OHG	01135	2026-08-19	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck Mess-Elektronik OHG	9120D-1191	2027-10-21	Biennial
RF Switching System	FBSR-03A (3G HPF+LNA)	T&M SYSTEM	S3L1	2026-10-20	Annual
RF Switching System	FBSR-03A (10dB ATT+LNA)	T&M SYSTEM	S3L2	2026-10-20	Annual
RF Switching System	FBSR-03A (7G HPF+LNA)	T&M SYSTEM	S3L3	2026-10-20	Annual
RF Switching System	FBSR-03A (3dB ATT+LNA)	T&M SYSTEM	S3L4	2026-10-20	Annual
RF Switching System	FBSR-03A (Thru)	T&M SYSTEM	S3L5	2026-10-20	Annual
Automation Software	FCC WLAN Radiated	HCT CO., LTD.	-	-	-
Broadband LNA	CBL18265035	CERNEX	22966	2026-10-21	Annual
Broadband LNA	CBL26405040	CERNEX	25956	2027-02-09	Annual
SIGNAL ANALYZER	FSV40	ROHDE&SCHWARZ	100900	2027-04-14	Annual
High Pass Filter	F5	Wainwright Instruments GmbH	F5	2027-04-20	Annual

Note:

1. Equipment whose calibration due date was updated during the test period was not used between the previous due date and the update.
All reported measurements were performed using equipment within valid calibration.
2. Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

10. ANNEX A_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2606-FI005-P