

TEST REPORT

Product Name : Smart Access Control Terminal
Model Number : Horus E2, Horus E2-FP,
Horus E2-QR, Horus E2-B
FCC ID : 2AJ9T-21013

Prepared for : ZKTECO CO., LTD.
Address : No.32, Pingshan Industrial Avenue, Tangxia Town,
Dongguan City, Guangdong Province, China 523728

Prepared by : EMTEK (SHENZHEN) CO., LTD.
Address : Building 69, Majialong Industry Zone, Nanshan District,
Shenzhen, Guangdong, China

Tel: (0755) 26954280
Fax: (0755) 26954282

Report Number : ENS2503070228W00404R
Date(s) of Tests : March 14, 2025 to April 28, 2025
Date of issue : April 29, 2025

1 TEST RESULT CERTIFICATION

Applicant : ZKTECO CO., LTD.
Address : No.32, Pingshan Industrial Avenue, Tangxia Town, Dongguan City, Guangdong Province, China 523728
Manufacturer : ZKTECO CO., LTD.
Address : No.32, Pingshan Industrial Avenue, Tangxia Town, Dongguan City, Guangdong Province, China 523728
EUT : Smart Access Control Terminal
Model Name : Horus E2, Horus E2-FP, Horus E2-QR, Horus E2-B
Trademark : N/A

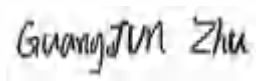
Measurement Procedure Used:

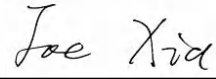
APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 2, Subpart J FCC 47 CFR Part 15, Subpart E	PASS


The above equipment was tested by EMTEK (SHENZHEN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the above table standards requirement.

The test results of this report relate only to the tested sample identified in this report.

Date of Test : March 14, 2025 to April 28, 2025

Prepared by : 
Guangjun Zhu/Editor

Reviewer : 
Joe Xia /Supervisor

Approve & Authorized Signer : 
Lisa Wang/Manager



Modified History

Version	Report No.	Revision Date	Summary
V1.0	ENS2503070228W00404R	/	Original Report



TABLE OF CONTENTS

1 TEST RESULT CERTIFICATION	2
2 EUT TECHNICAL DESCRIPTION	5
3 SUMMARY OF TEST RESULT	7
4 TEST METHODOLOGY	8
4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS	8
4.2 MEASUREMENT EQUIPMENT USED	8
4.3 DESCRIPTION OF TEST MODES	9
5 FACILITIES AND ACCREDITATIONS	12
5.1 FACILITIES	12
5.2 LABORATORY ACCREDITATIONS AND LISTINGS	12
6 TEST SYSTEM UNCERTAINTY	13
7 SETUP OF EQUIPMENT UNDER TEST	14
7.1 RADIO FREQUENCY TEST SETUP	14
7.2 RADIO FREQUENCY TEST SETUP	14
7.3 CONDUCTED EMISSION TEST SETUP	16
7.4 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM	17
7.5 SUPPORT EQUIPMENT	17
8 TEST REQUIREMENTS	18
8.1 BANDWIDTH MEASUREMENT	18
8.2 MAXIMUM CONDUCTED OUTPUT POWER	50
8.3 MAXIMUM PEAK POWER DENSITY	68
8.4 UNDESIRABLE RADIATED SPURIOUS EMISSION	85
8.5 POWER LINE CONDUCTED EMISSIONS	99
8.6 ANTENNA APPLICATION	102

2 EUT TECHNICAL DESCRIPTION

Characteristics	Description
Product	Smart Access Control Terminal
Model Number	Horus E2, Horus E2-FP, Horus E2-QR, Horus E2-B
Sample number	2#
Wifi Type	UNII-1: 5150MHz-5250MHz Band UNII-2A: 5250MHz-5350MHz Band UNII-3: 5725MHz-5850MHz Band
WLAN Supported	IEEE 802.11a IEEE 802.11n(20MHz channel bandwidth) IEEE 802.11n(40MHz channel bandwidth) IEEE 802.11ac(20MHz channel bandwidth) IEEE 802.11ac(40MHz channel bandwidth) IEEE 802.11ac(80MHz channel bandwidth)
Modulation	OFDM/OFDMA
Frequency Range:	5150MHz-5250MHz Band: 5180-5240MHz for 802.11a 5180-5240MHz for 802.11n(20) 5190-5230MHz for 802.11n(40) 5180-5240MHz for 802.11ac(20) 5190-5230MHz for 802.11ac(40) 5210MHz for 802.11ac(80)
	5250MHz-5350MHz Band: 5260-5320MHz for 802.11a 5260-5320MHz for 802.11n(20) 5270-5310MHz for 802.11n(40) 5260-5320MHz for 802.11ac(20) 5270-5310MHz for 802.11ac(40) 5290MHz for 802.11ac(80)
	5725MHz-5850MHz Band: 5745-5825MHz for 802.11a 5745-5825MHz for 802.11n(20) 5755-5795MHz for 802.11n(40) 5745-5825MHz for 802.11ac(20) 5755-5795MHz for 802.11ac(40) 5775MHz for 802.11ac(80)
TPC Function	<input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable
Antenna Type	FPC Antenna
Antenna Gain	0.91 dBi Note: The antenna information provided by the manufacturer will have a

	certain impact on the test results.
Power Supply	DC 12V from adapter
Adapter	MODEL:ADS-40SI-12-3 12036E INPUT: AC100-240V, 50Hz/60Hz,Max.1.0A OUTPUT:12.0V,3.0A,.36.0W
Temperature Range	0°C ~ +45°C

Note: for more details, please refer to the User's manual of the EUT.



3 SUMMARY OF TEST RESULT

FCC Part Clause	Test Parameter	Verdict	Remark
15.407 (a) 15.407 (e)	99% , 6dB and 26dB Bandwidth	PASS	
15.407 (a)	Maximum Conducted Output Power	PASS	
15.407 (a)	Peak Power Spectral Density	PASS	
15.407 (b)	Radiated Spurious Emission	PASS	
15.407 (b)(6) 15.207	Power Line Conducted Emission	PASS	
15.407(a) 15.203	Antenna Application	PASS	
NOTE1: N/A (Not Applicable) Remark: The test method refers to KDB 789033 and FCC 47 CFR Part 2, Subpart J			

RELATED SUBMITTAL(S) / GRANT(S):

This submittal(s) (test report) is intended for FCC ID: 2AJ9T-21013 filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.

4 TEST METHODOLOGY

4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 15, Subpart E

4.2 MEASUREMENT EQUIPMENT USED

4.2.1 Conducted Emission Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	Rohde & Schwarz	ESCI	101045	2024/5/10	1Year
PULSE LIMTER	Rohde & Schwarz	ESH3-Z2	100107	2024/5/10	1Year
AMN	Rohde & Schwarz	ESH3-Z5	100191	2024/5/10	1Year
AMN	Schwarzbeck	NNLK 8129	8129203	2024/5/11	1Year
V-Network	Rohde & Schwarz	ESH3-Z6	100011	2024/5/11	1Year
V-Network	Rohde & Schwarz	ESH3-Z6	100253	2024/5/11	1Year

4.2.2 Radiated Emission Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Pre-Amplifier	HP	8447F	2944A07999	2024/5/11	1Year
EMI Test Receiver	Rohde & Schwarz	ESCI	101414	2024/5/11	1Year
Bilog Antenna	Schwarzbeck	VULB9163	712	2023/7/5	2 Year
Horn antenna	Schwarzbeck	BBHA9120D	9120D-1178	2023/8/28	2 Year
Pre-Amplifie	Bonn	BLMA 0118-5G	2213967B-01	2024/10/23	1Year
Spectrum Analyzer	Rohde & Schwarz	FSV40	100967	2024/5/10	1Year
Horn antenna	Schwarzbeck	BBHA9170	9170-399	2023/5/12	2 Year
Loop Antenna	Schwarzbeck	FMZB1519	1519-012	2023/5/12	2 Year

4.2.3 Cable

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Coaxial Cable	TIMES	NmNm-7-C1570 2	N/A	2024/5/23	1Year
Coaxial Cable	TIMES	HF290-NMSM-6. 5M	N/A	2024/5/23	1Year
Coaxial Cable	TIMES	LMR-240 N-N	N/A	2024/5/23	1Year

4.2.4 Radio Frequency Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Signal Analyzer	Agilent	N9010A	MY53470879	2024/5/10	1Year
Vector Signal Generater	Agilent	N5182B	MY53050878	2024/5/10	1Year
Analog Signal Generator	Agilent	N5171B	MY53050553	2024/5/10	1Year
RF Control Unit(Power Meter)	Tonscend	JS0806-2	\	2024/5/10	1Year
Temperature&Hum idity Chamber	ESPEC	EL-02KA	12107166	2024/5/10	1 Year

4.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Wifi 5G with 5150-5250MHz

Frequency and Channels list for 802.11a/n(20)/ac(20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220	-	-
40	5200	48	5240	-	-

Frequency and Channels list for 802.11n (40)/ac(40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	-	-	-	-
46	5230	-	-	-	-

Frequency and Channel list for 802.11ac(80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	-	-	-	-

Test Frequency and Channels for 802.11a/n(20)/ac(20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	40	5200	48	5240

Test Frequency and channels for 802.11n (40)/ac(40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	-	-	46	5230

Test Frequency and channels for 802.11ac(80):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	-	-	-	-

WIFI 5G with 5250-5350MHz

Frequency and Channels list for 802.11a/n(20)/ac(20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300	-	-
56	5280	64	5320	-	-

Frequency and Channels list for 802.11n (40)/ac(40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270	-	-	-	-
62	5310	-	-	-	-

Frequency and Channels list for 802.11ac(80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
58	5290	-	-	-	-

Test Frequency and Channels for 802.11a/n(20)/ac(20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	56	5280	64	5320

Test Frequency and channels for 802.11n (40)/ac(40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270	-	-	62	5310

Test Frequency and channels for 802.11ac(80):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
58	5290	-	-	-	-

Wifi 5G with 5725MHz-5850MHz

Frequency and Channels list for 802.11a/n(20)/802.11ac(20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785	165	5825
153	5765	161	5805	-	-

Frequency and Channels list for 802.11n(40)/ac(40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	-	-	-	-
159	5795	-	-	-	-

Frequency and Channels list for 802.11ac(80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
155	5775	-	-	-	-

Test Frequency and Channels for 802.11a/n(20)/ac(20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785	165	5825

Test Frequency and channels for 802.11n(40)/ac(40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	-	-	159	5795

Test Frequency and channels for 802.11ac(80):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
155	5775	-	-	-	-

5 FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

Building 69, Majialong Industry Zone District, Nanshan District, Shenzhen, China

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

5.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

EMC Lab.

: **Accredited by CNAS**

The Certificate Registration Number is L2291

The Laboratory has been assessed and proved to be in compliance with CNAS-CL01 (identical to ISO/IEC 17025:2017)

Accredited by FCC

Designation Number: CN1204

Test Firm Registration Number: 882943

Accredited by A2LA

The Certificate Number is 4321.01

Accredited by Industry Canada

The Conformity Assessment Body Identifier is CN0008

Name of Firm

: EMTEK (SHENZHEN) CO., LTD.

Site Location

: Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

6 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

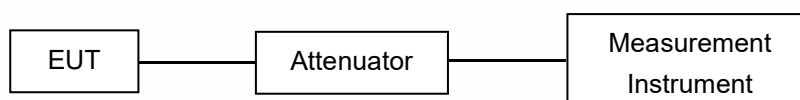
Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-5}$
Maximum Peak Output Power Test	$\pm 1.0\text{dB}$
Conducted Emissions Test	$\pm 2.0\text{dB}$
Radiated Emission Test	$\pm 2.0\text{dB}$
Power Density	$\pm 2.0\text{dB}$
Occupied Bandwidth Test	$\pm 1.0\text{dB}$
Band Edge Test	$\pm 3\text{dB}$
All emission, radiated	$\pm 3\text{dB}$
Antenna Port Emission	$\pm 3\text{dB}$
Temperature	$\pm 0.5^\circ\text{C}$
Humidity	$\pm 3\%$

Measurement Uncertainty for a level of Confidence of 95%

7 SETUP OF EQUIPMENT UNDER TEST

7.1 RADIO FREQUENCY TEST SETUP

The WLAN component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



7.2 RADIO FREQUENCY TEST SETUP

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

Below 30MHz:

The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

Above 30MHz:

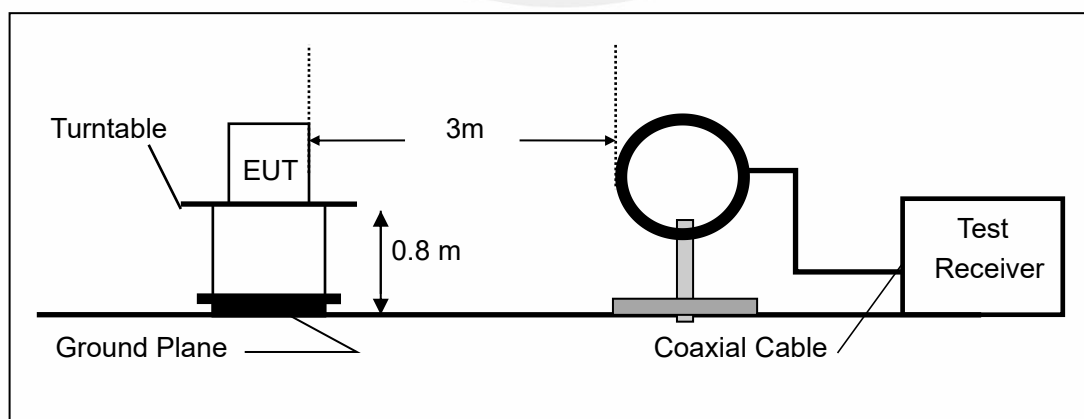
The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

Above 1GHz:

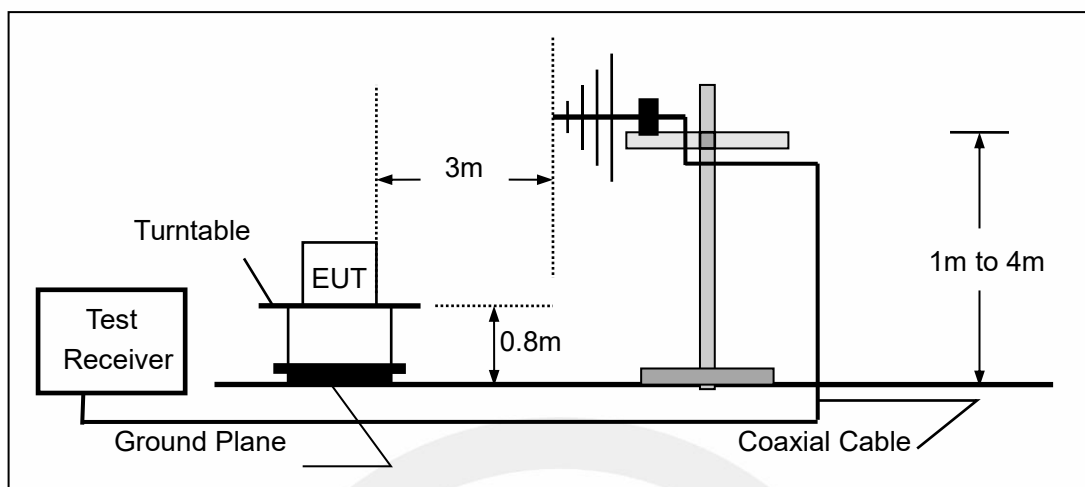
(Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.)

The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

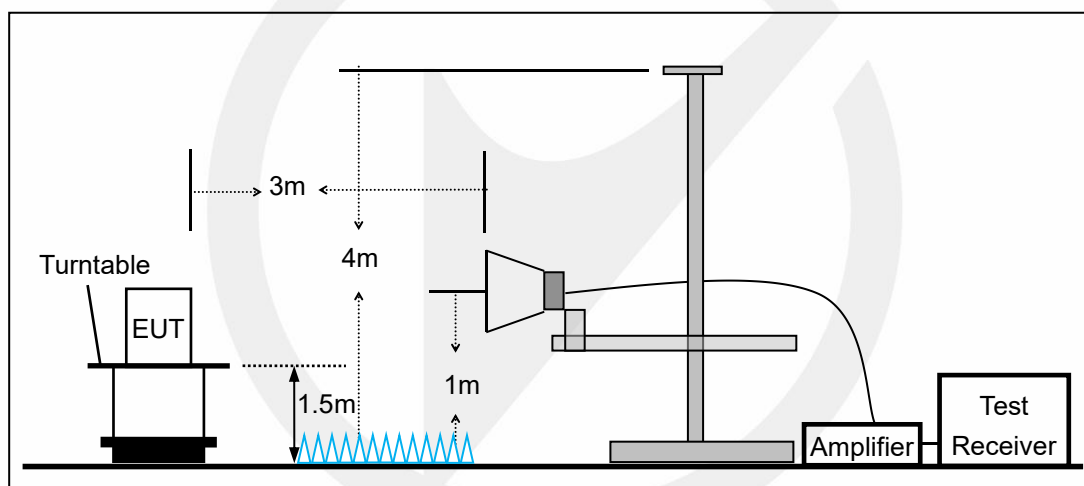
(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



(b) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(c) Radiated Emission Test Set-Up, Frequency above 1000MHz

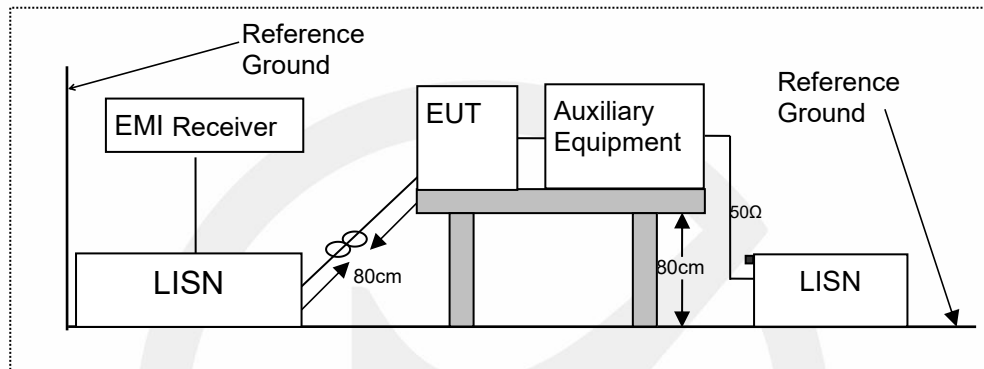


7.3 CONDUCTED EMISSION TEST SETUP

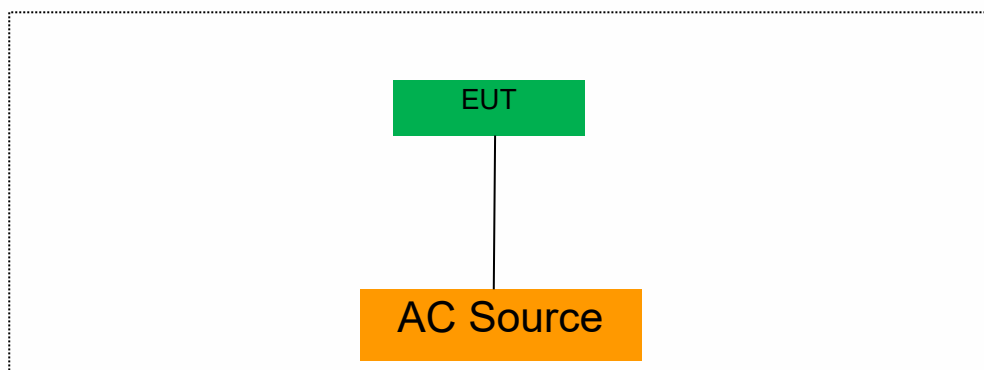
The mains cable of the EUT (maybe per AC/DC Adapter) must be connected to LISN. The LISN shall be placed 0.8 m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8m from the LISN.

Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.1 m.

According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.



7.4 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM



7.5 SUPPORT EQUIPMENT

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

Notes:

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

8 TEST REQUIREMENTS

8.1 BANDWIDTH MEASUREMENT

8.1.1 Applicable Standard

According to FCC Part 15.407(a)(1) for UNII Band I
According to FCC Part 15.407(a)(2) for UNII Band II-A and UNII Band II-C
According to FCC Part 15.407(a)(3) for UNII Band III
According to FCC Part 15.407(e) for UNII Band III
According to 789033 D02 Section II(C)
According to 789033 D02 Section II(D)

8.1.2 Conformance Limit

(1) For the band 5.15-5.25 GHz.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(e) Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

8.1.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

8.1.4 Test Procedure

According to 789033 D02 v02r01 section C&D, the following is the measurement procedure.

1. Emission Bandwidth (EBW)

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission.

Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

D. 99 Percent Occupied Bandwidth

The 99-percent occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99-percent occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in section II.G.3.d). Measurements of 99-percent occupied bandwidth may also optionally be used in lieu of the EBW to 789033 D02 v01r02 General UNII Test Procedures New Rules v01 define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in section II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geq 3 \cdot \text{RBW}$
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

8.1.5 Test Results

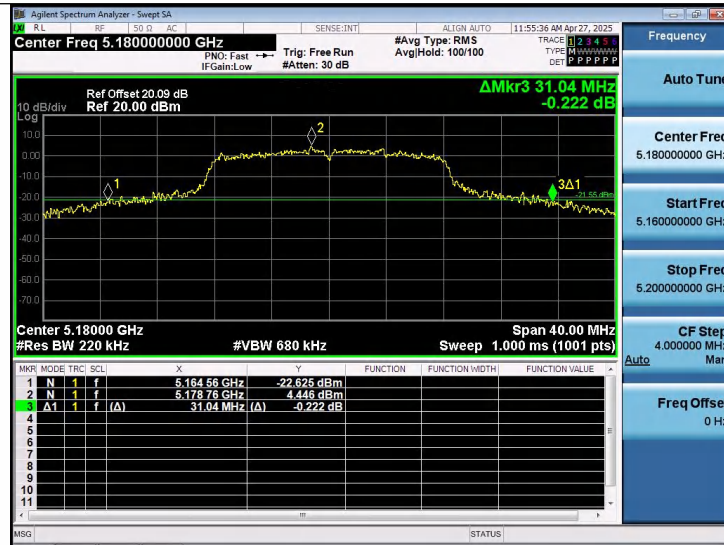
Emission Bandwidth

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	31.040	5164.560	5195.600	---	---
11A	Ant1	5200	32.280	5184.400	5216.680	---	---
11A	Ant1	5240	37.800	5220.920	5258.720	---	---
11A	Ant1	5260	33.440	5242.880	5276.320	---	---
11A	Ant1	5280	31.920	5264.680	5296.600	---	---
11A	Ant1	5320	32.880	5303.280	5336.160	---	---
11A	Ant1	5745	34.680	5727.160	5761.840	---	---
11A	Ant1	5785	36.040	5767.040	5803.080	---	---
11A	Ant1	5825	34.520	5807.120	5841.640	---	---
11N20SISO	Ant1	5180	32.800	5164.000	5196.800	---	---
11N20SISO	Ant1	5200	35.640	5182.800	5218.440	---	---
11N20SISO	Ant1	5240	33.320	5222.600	5255.920	---	---
11N20SISO	Ant1	5260	34.600	5241.760	5276.360	---	---
11N20SISO	Ant1	5280	32.520	5263.200	5295.720	---	---
11N20SISO	Ant1	5320	35.600	5302.600	5338.200	---	---
11N20SISO	Ant1	5745	36.280	5726.360	5762.640	---	---
11N20SISO	Ant1	5785	38.200	5765.280	5803.480	---	---
11N20SISO	Ant1	5825	36.480	5807.400	5843.880	---	---
11N40SISO	Ant1	5190	76.560	5152.160	5228.720	---	---
11N40SISO	Ant1	5230	76.560	5192.080	5268.640	---	---
11N40SISO	Ant1	5270	76.720	5232.800	5309.520	---	---
11N40SISO	Ant1	5310	78.320	5271.200	5349.520	---	---
11N40SISO	Ant1	5755	80.000	5715.000	5795.000	---	---
11N40SISO	Ant1	5795	78.400	5755.000	5833.400	---	---
11AC20SISO	Ant1	5180	36.120	5162.840	5198.960	---	---
11AC20SISO	Ant1	5200	36.520	5181.440	5217.960	---	---
11AC20SISO	Ant1	5240	36.280	5222.240	5258.520	---	---
11AC20SISO	Ant1	5260	36.680	5242.720	5279.400	---	---
11AC20SISO	Ant1	5280	35.400	5262.120	5297.520	---	---
11AC20SISO	Ant1	5320	36.840	5301.720	5338.560	---	---
11AC20SISO	Ant1	5745	39.400	5725.040	5764.440	---	---
11AC20SISO	Ant1	5785	36.160	5767.160	5803.320	---	---
11AC20SISO	Ant1	5825	36.760	5806.240	5843.000	---	---
11AC40SISO	Ant1	5190	76.880	5152.160	5229.040	---	---
11AC40SISO	Ant1	5230	78.400	5191.360	5269.760	---	---
11AC40SISO	Ant1	5270	78.400	5230.080	5308.480	---	---
11AC40SISO	Ant1	5310	77.440	5270.960	5348.400	---	---
11AC40SISO	Ant1	5755	78.720	5715.080	5793.800	---	---
11AC40SISO	Ant1	5795	77.920	5755.080	5833.000	---	---
11AC80SISO	Ant1	5210	158.240	5131.600	5289.840	---	---
11AC80SISO	Ant1	5290	157.280	5211.600	5368.880	---	---
11AC80SISO	Ant1	5775	159.520	5695.000	5854.520	---	---

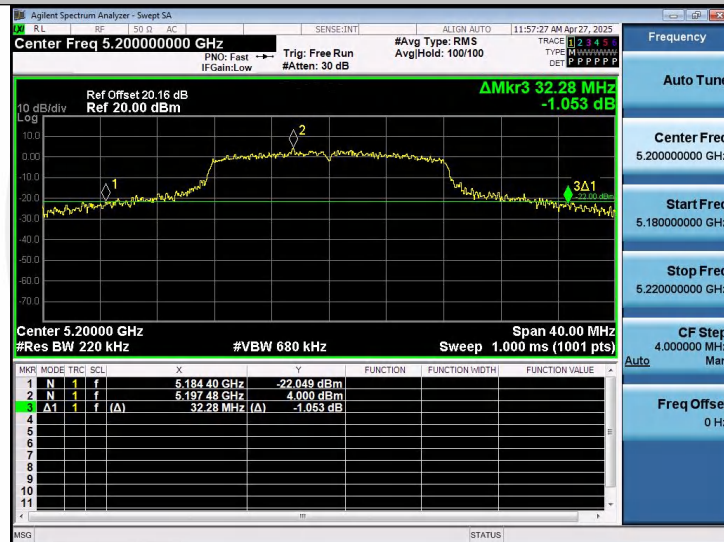
Occupied channel bandwidth

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	18.918	5170.7698	5189.6878	---	---
11A	Ant1	5200	20.087	5190.1872	5210.2742	---	---
11A	Ant1	5240	19.983	5230.3012	5250.2842	---	---
11A	Ant1	5260	19.423	5250.4860	5269.9090	---	---
11A	Ant1	5280	20.179	5269.9560	5290.1350	---	---
11A	Ant1	5320	19.990	5310.0759	5330.0659	---	---
11A	Ant1	5745	22.763	5733.4340	5756.1970	---	---
11A	Ant1	5785	22.737	5773.1857	5795.9227	---	---
11A	Ant1	5825	22.543	5813.7618	5836.3048	---	---
11N20SISO	Ant1	5180	20.165	5169.9496	5190.1146	---	---
11N20SISO	Ant1	5200	20.607	5189.9794	5210.5864	---	---
11N20SISO	Ant1	5240	20.819	5229.7294	5250.5484	---	---
11N20SISO	Ant1	5260	20.598	5249.9246	5270.5226	---	---
11N20SISO	Ant1	5280	21.087	5269.5140	5290.6010	---	---
11N20SISO	Ant1	5320	21.398	5309.3662	5330.7642	---	---
11N20SISO	Ant1	5745	23.550	5733.1105	5756.6605	---	---
11N20SISO	Ant1	5785	24.166	5772.5132	5796.6792	---	---
11N20SISO	Ant1	5825	23.396	5813.2606	5836.6566	---	---
11N40SISO	Ant1	5190	41.610	5170.3478	5211.9578	---	---
11N40SISO	Ant1	5230	42.403	5210.0563	5252.4593	---	---
11N40SISO	Ant1	5270	42.245	5249.2997	5291.5447	---	---
11N40SISO	Ant1	5310	45.231	5287.1092	5332.3402	---	---
11N40SISO	Ant1	5755	48.927	5729.3216	5778.2486	---	---
11N40SISO	Ant1	5795	49.013	5769.3740	5818.3870	---	---
11AC20SISO	Ant1	5180	19.914	5170.3480	5190.2620	---	---
11AC20SISO	Ant1	5200	20.765	5189.9012	5210.6662	---	---
11AC20SISO	Ant1	5240	20.810	5229.9714	5250.7814	---	---
11AC20SISO	Ant1	5260	20.296	5250.1564	5270.4524	---	---
11AC20SISO	Ant1	5280	20.403	5269.9898	5290.3928	---	---
11AC20SISO	Ant1	5320	22.014	5308.9905	5331.0045	---	---
11AC20SISO	Ant1	5745	26.131	5731.6140	5757.7450	---	---
11AC20SISO	Ant1	5785	23.435	5772.9161	5796.3511	---	---
11AC20SISO	Ant1	5825	23.534	5813.3228	5836.8568	---	---
11AC40SISO	Ant1	5190	41.459	5170.4966	5211.9556	---	---
11AC40SISO	Ant1	5230	41.834	5210.6011	5252.4351	---	---
11AC40SISO	Ant1	5270	42.683	5249.2281	5291.9111	---	---
11AC40SISO	Ant1	5310	44.563	5287.7266	5332.2896	---	---
11AC40SISO	Ant1	5755	48.886	5729.3314	5778.2174	---	---
11AC40SISO	Ant1	5795	47.623	5770.1129	5817.7359	---	---
11AC80SISO	Ant1	5210	90.262	5168.8444	5259.1064	---	---
11AC80SISO	Ant1	5290	89.650	5245.8104	5335.4604	---	---
11AC80SISO	Ant1	5775	100.07	5720.2674	5820.3374	---	---

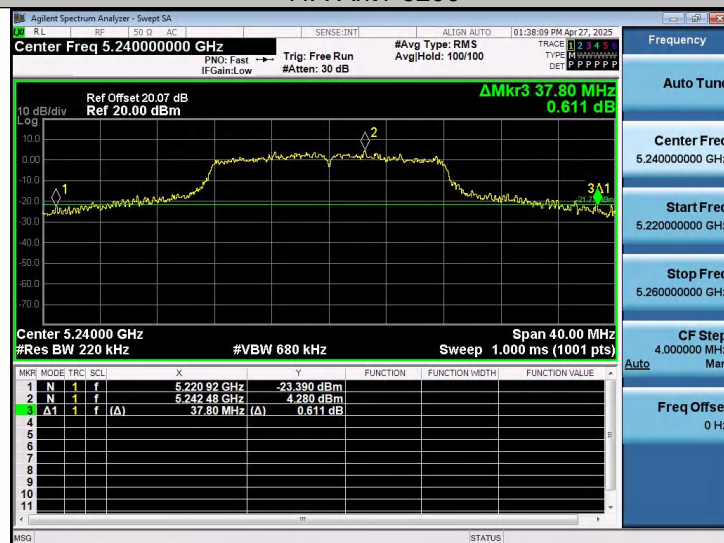
Emission Bandwidth



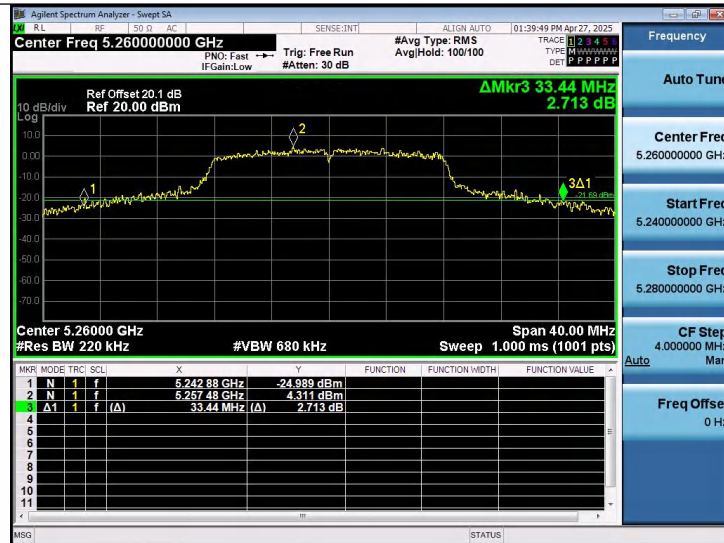
11A-Ant1-5180



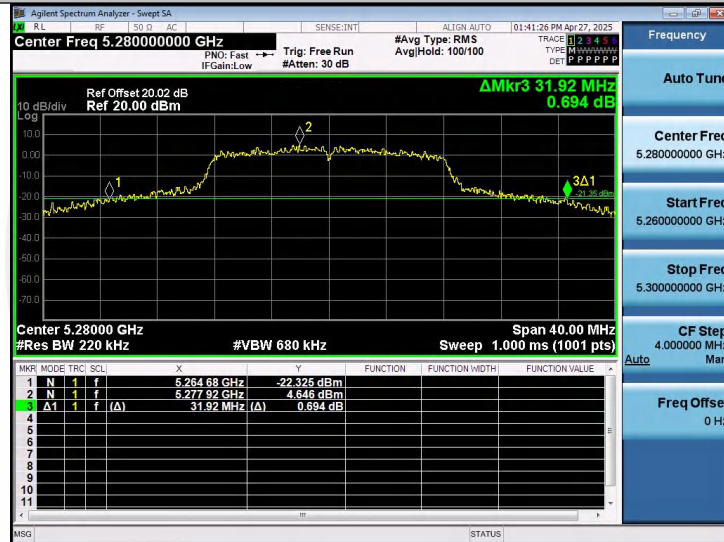
11A-Ant1-5200



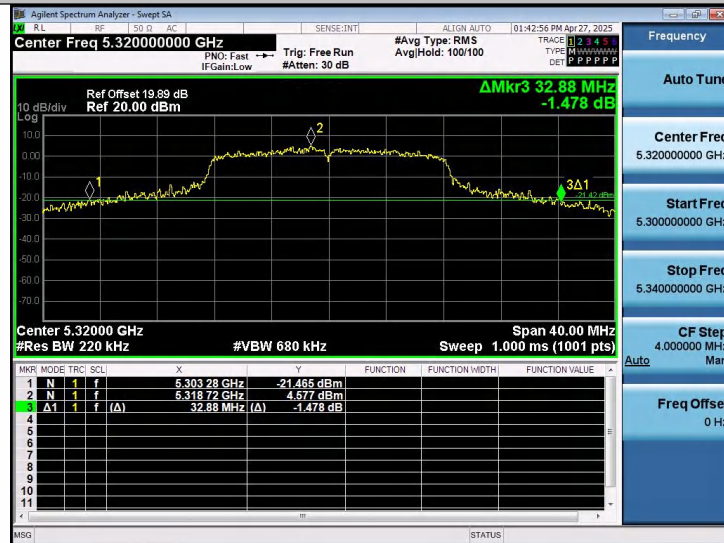
11A-Ant1-5240



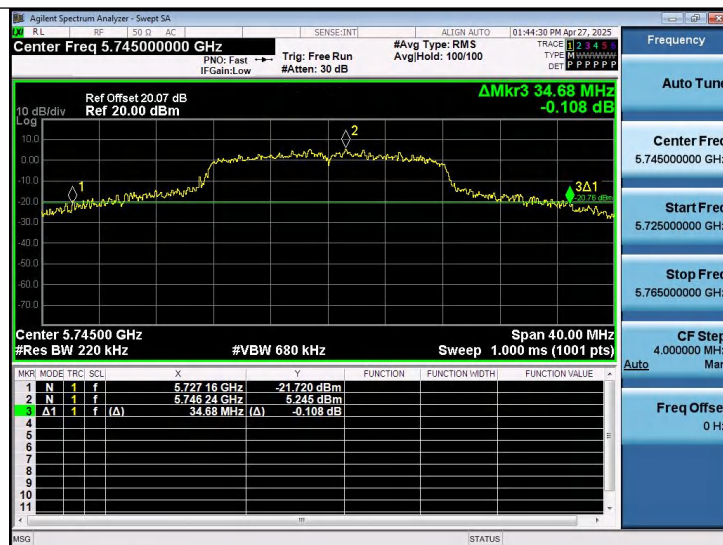
11A-Ant1-5260



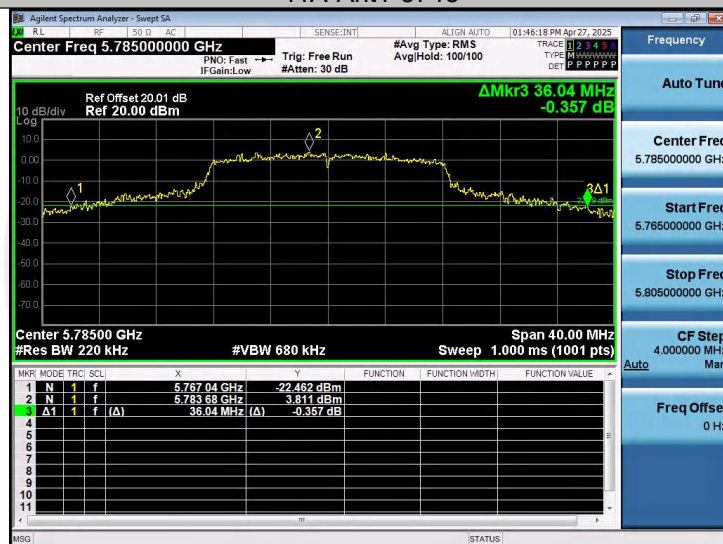
11A-Ant1-5280



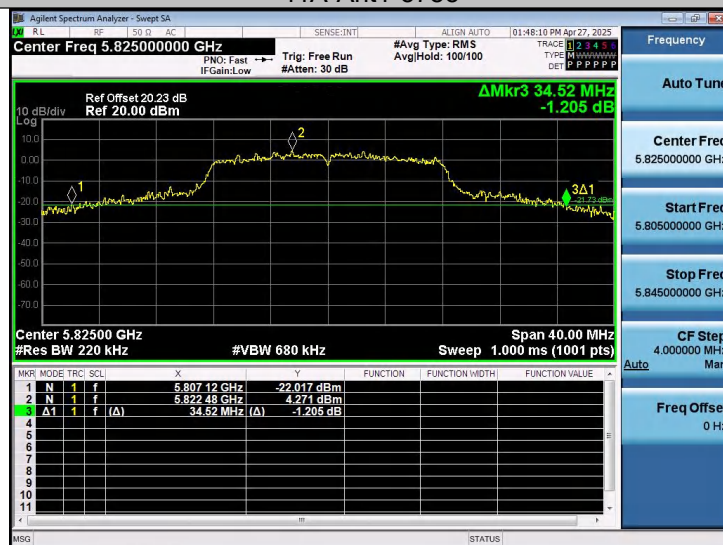
11A-Ant1-5320



11A-Ant1-5745

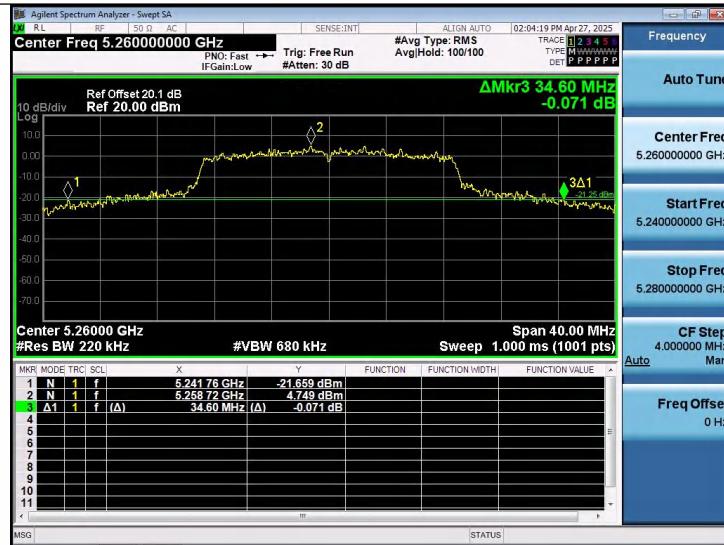


11A-Ant1-5785

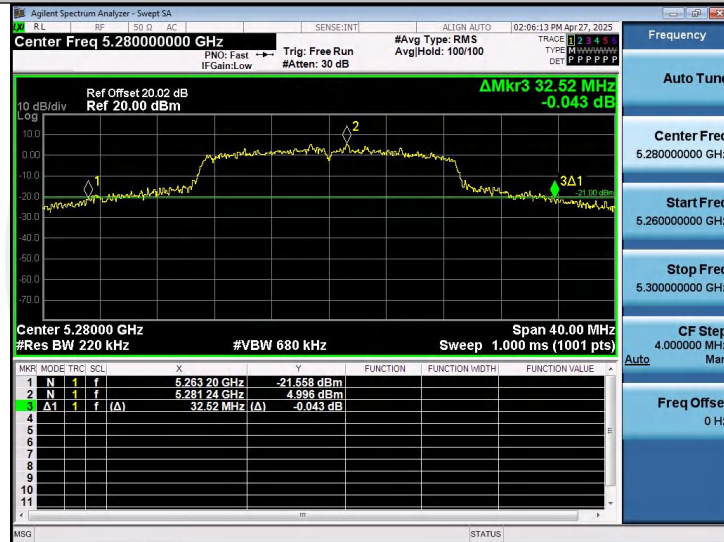


11A-Ant1-5825

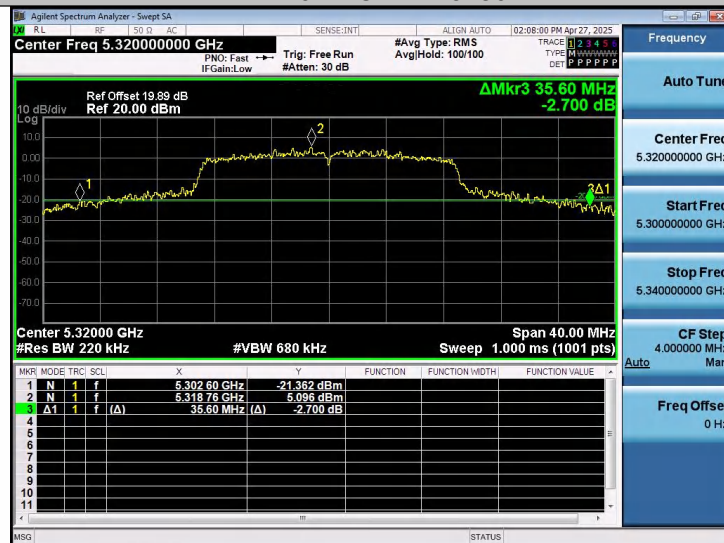




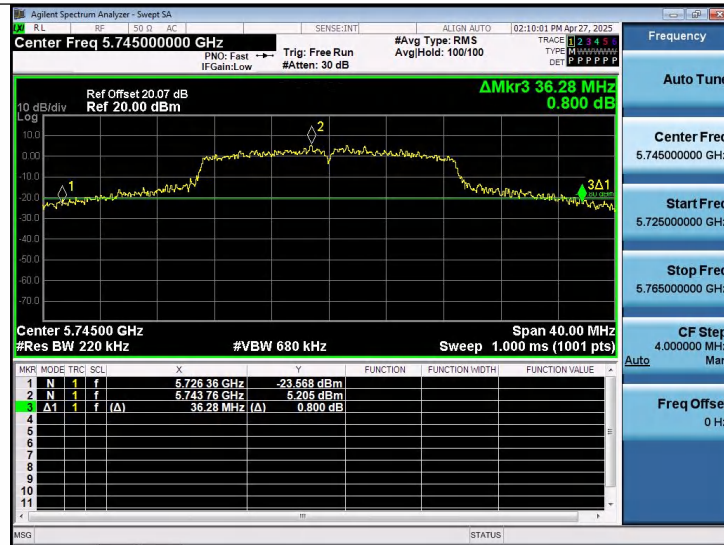
11N20SISO-Ant1-5260



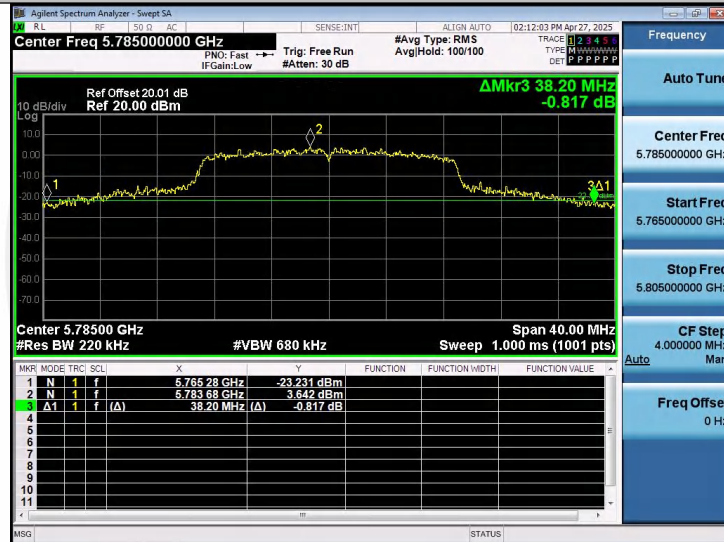
11N20SISO-Ant1-5280



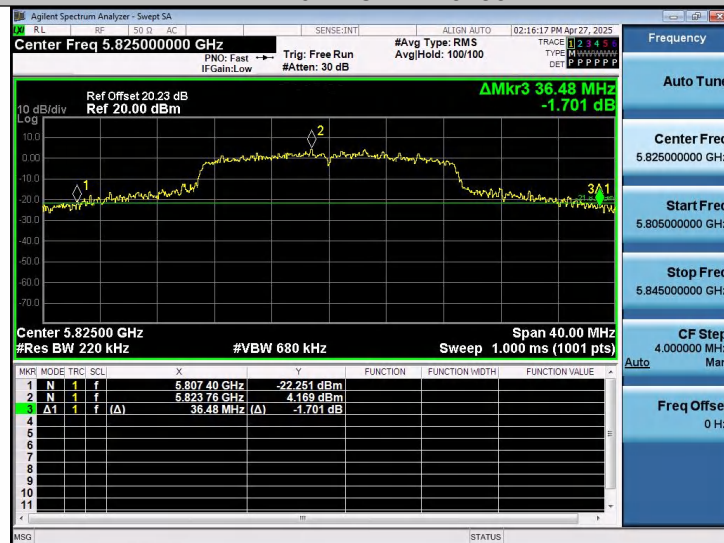
11N20SISO-Ant1-5320



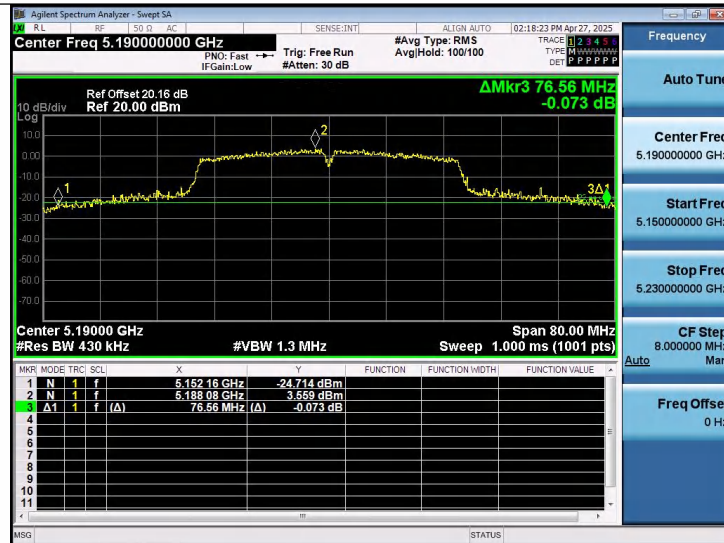
11N20SISO-Ant1-5745



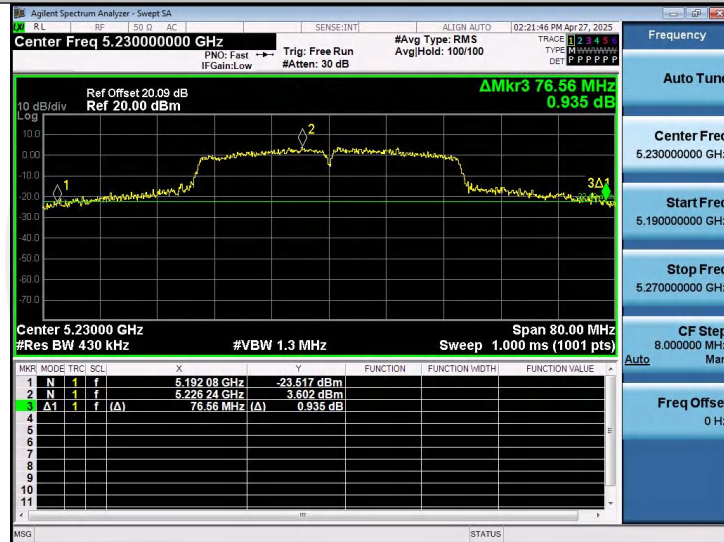
11N20SISO-Ant1-5785



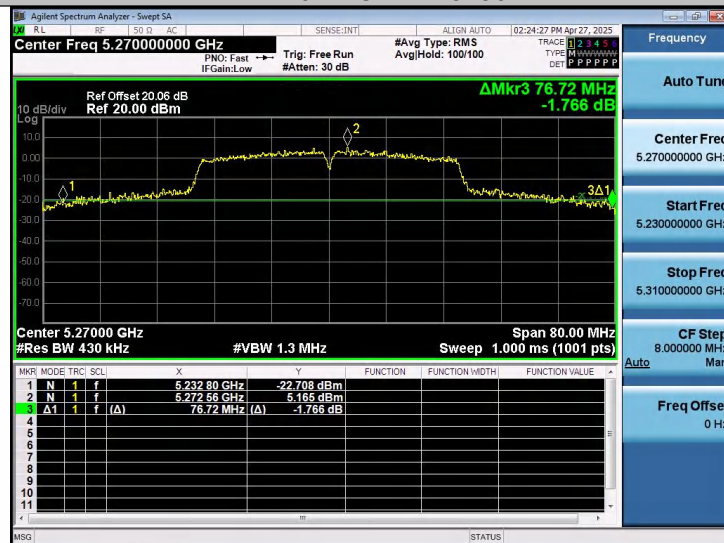
11N20SISO-Ant1-5825



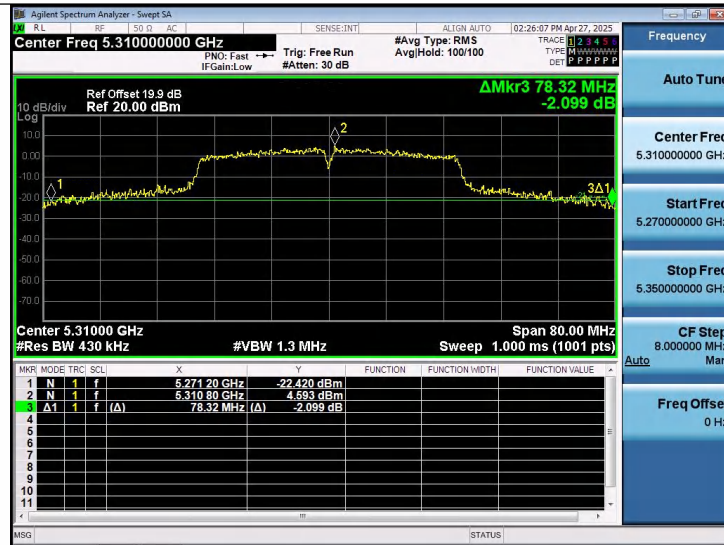
11N40SISO-Ant1-5190



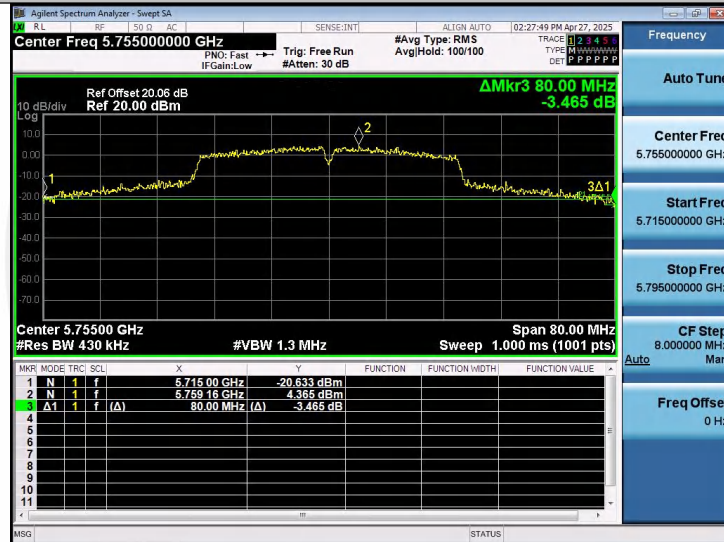
11N40SISO-Ant1-5230



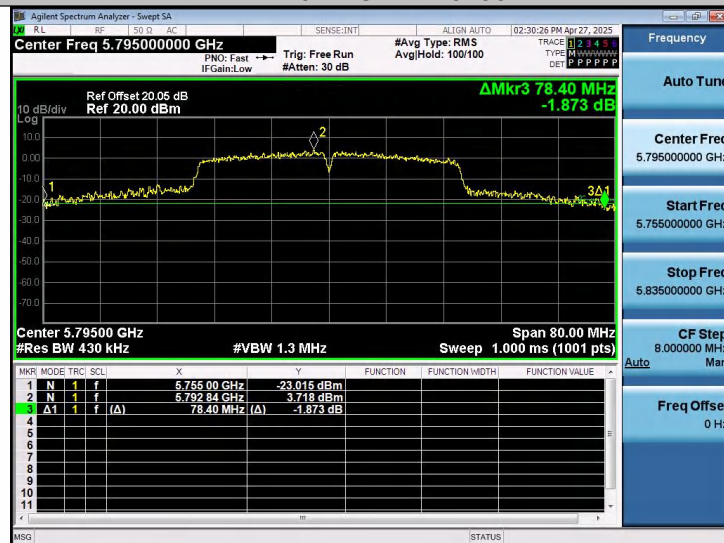
11N40SISO-Ant1-5270



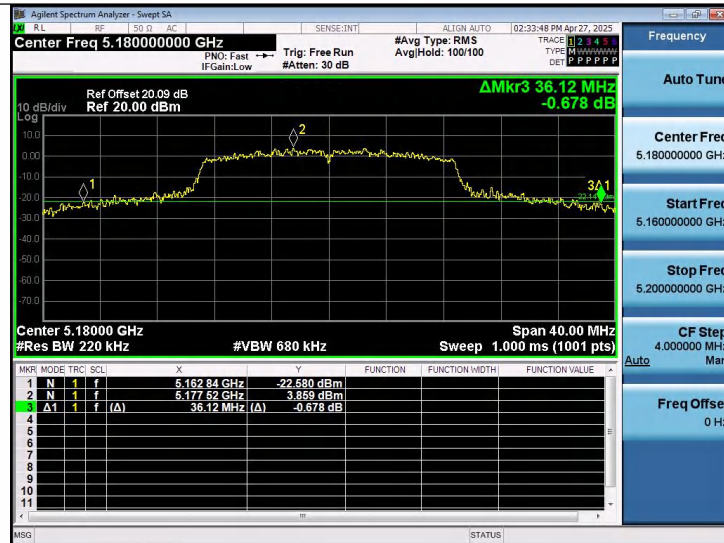
11N40SISO-Ant1-5310



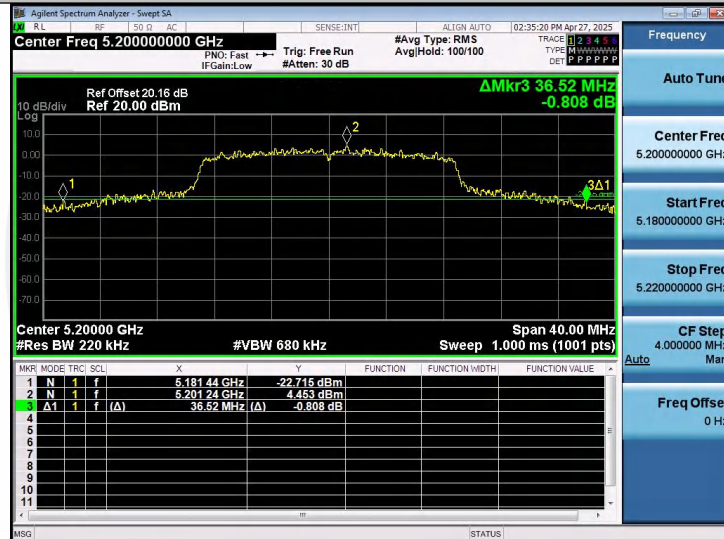
11N40SISO-Ant1-5755



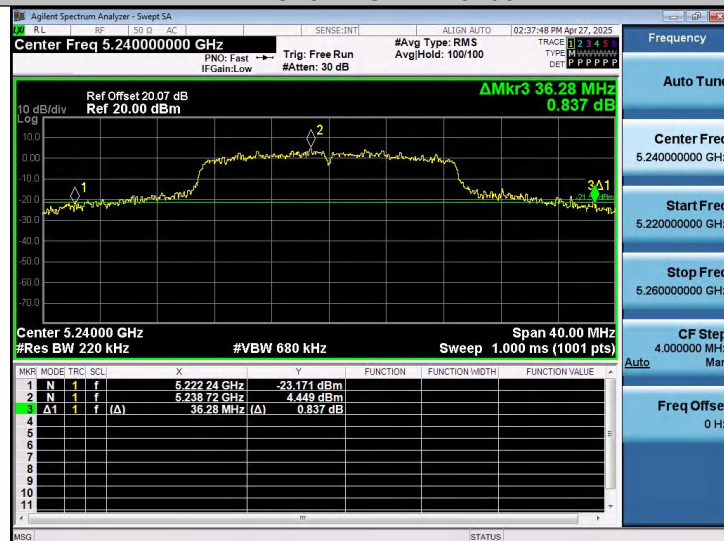
11N40SISO-Ant1-5795



11AC20SISO-Ant1-5180



11AC20SISO-Ant1-5200



11AC20SISO-Ant1-5240