# Testing the Future LABORATORIES, INC.

# L3 Harris Technologies Communication Systems (AZ)

**REVISED TEST REPORT TO 109068-7** 

Device: Peripheral Overlay Display Model: POD-PVS14\*

\*(See Appendix A for Manufacturers Declaration)

**Tested To The Following Standards:** 

FCC Part 15 Subpart C Section(s) 15.249

Report No.: 109068-7A

Date of issue: July 18, 2024

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Test Certificate #803.01

This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

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# **Administrative Information**

# **Test Report Information**

#### REPORT PREPARED FOR:

L3 Harris Technologies Communication Systems (AZ) 1215 S 52nd Street

Tempe, AZ 85281

Representative: Darius Miller

Customer Reference Number: AZEE000102

**DATE OF EQUIPMENT RECEIPT:** 

DATE(S) OF TESTING:

#### **REPORT PREPARED BY:**

Stacey Noriega CKC Laboratories, Inc. 5046 Sierra Pines Drive Mariposa, CA 95338

Project Number: 109068

February 23, 2024

March 1, March 4 - 6 and March 11, 2024

# **Revision History**

**Original:** Testing of the Peripheral Overlay Display, Model: POD-PVS14\* to FCC Part 15 Subpart C Section 15.249. **Revision A:** To update Test Data for Occupied Bandwidth and Radiated Emissions, add and relabel photos.

# **Report Authorization**

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the equipment provided by the client, tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.

Steve Behm

Steve of Bell

Director of Quality Assurance & Engineering Services CKC Laboratories, Inc.

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# **Test Facility Information**



Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S): CKC Laboratories, Inc. 110 North Olinda Place Brea, CA 92823

### **Software Versions**

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.03.20

# **Site Registration & Accreditation Information**

Location	*NIST CB #	FCC	Canada	Japan
Canyon Park, Bothell, WA	US0103	US1024	3082C	A-0136
Brea, CA	US0103	US1024	3082D	A-0136
Fremont, CA	US0103	US1024	3082B	A-0136
Mariposa, CA	US0103	US1024	3082A	A-0136

<sup>\*</sup>CKC's list of NIST designated countries can be found at: <a href="https://standards.gov/cabs/designations.html">https://standards.gov/cabs/designations.html</a>

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# **Summary of Results**

## Standard / Specification: FCC Part 15 Subpart C – 15.249

Test Procedure	Description	Modifications	Results
15.215(c)	Occupied Bandwidth	NA	Pass
15.249(a)	Field Strength of Fundamental	NA	Pass
15.249(a)	Field Strength of Spurious Emissions	NA	Pass
15.207	AC Conducted Emissions	NA	NP

NA= Not applicable

NP= CKC Laboratories was not contracted to perform test.

#### ISO/IEC 17025 Decision Rule

The equipment sample utilized for testing is selected by the manufacturer. The declaration of pass or fail herein is a binary statement for simple acceptance rule (ILAC G8) based upon assessment to the specification(s) listed above, without consideration of measurement uncertainties. For performance related tests, equipment was monitored for specified criteria identified in that section of testing.

# **Modifications During Testing**

This list is a summary of the modifications made to the equipment during testing.

#### **Summary of Conditions**

No modifications were made during testing.

# **Conditions During Testing**

This list is a summary of the conditions noted to the equipment during testing.

Summary	OTION	HITIONE

None

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# **Equipment Under Test (EUT)**

During testing, numerous configurations may have been utilized. The configurations listed below support compliance to the standard(s) listed in the Summary of Results section.

#### **Configuration 1**

#### **Equipment Tested:**

Device	Manufacturer	Model #	S/N
Peripheral Overlay Display	L3 Harris Technologies	POD-PVS14	233000001
	Communication Systems (AZ)		

#### **Support Equipment:**

Device	Manufacturer	Model #	S/N
Mobile phone	Samsung	S20	RFCT43490TH
Power Supply	Topward	6306D	988614

#### **General Product Information:**

Description of EUT
Peripheral Overlay Display

Product Information	Manufacturer-Provided Details		
Operating Frequencies Tested:	2402-2480MHz		
Equipment Type:	Stand-Alone Equipment		
Maximum Duty Cycle:	98%		
Modulation Type(s):	GFSK		
Antenna Type(s) and Gain:	Trace, -2dBi		
Antenna Connection Type:	Integral		
Nominal Input Voltage:	3 Vdc with range 2.0V - 3.6V DC		
Firmware / Software Version(s):	POD-802-Flex-FCC_TEST		
	This software contains the base POD software, Soft device, and		
Firmware / Software Description: bootloader, while adding additional modes and commands to broadcast			
	our radio for FCC Testing.		
Firmware / Software Setting(s):	User selectable radio settings for FCC Testing		
Tune-up or Adjustment(s): NA			
The validity of results is dependent on the stated product details, the accuracy of which the manufacturer			
assumes full responsibility.			

NA = Not applicable

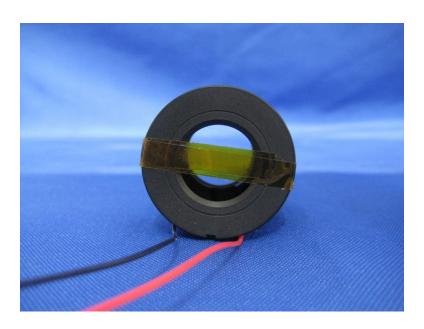
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# EUT Photo(s)



External; View 1

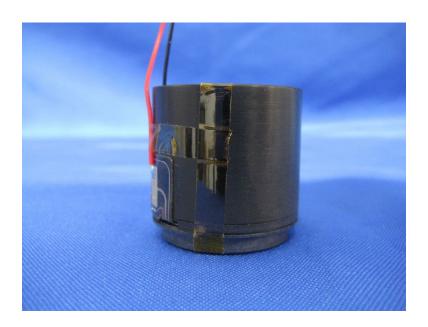


External; View 2



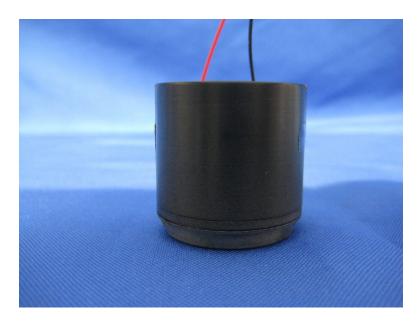


External; View 3

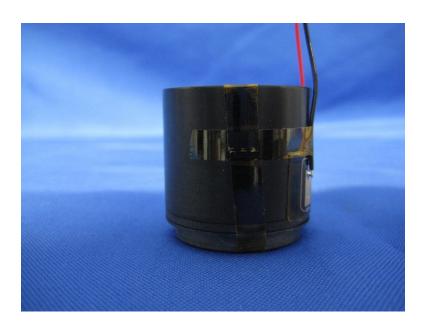


External; View 4





External; View 5



External; View 6



# **Support Equipment Photo(s)**



Mobile Phone



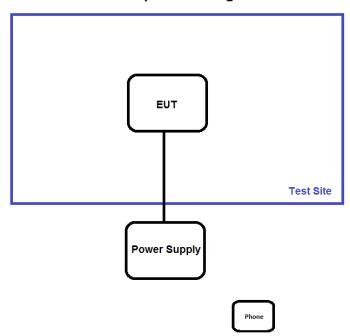
**Power Supply** 



# **Block Diagram of Test Setup(s)**

Config#	Setup Description of Block Diagram
	The equipment under test (EUT) is placed on top of the Styrofoam tabletop. The EUT is placed in a continuous transmit mode.
	Frequency range of the EUT: 2402MHz to 2480MHz
1	Low, High channel frequencies: 2402MHz, 2480MHz
	Protocol:
	BLE +4dBm 2Mbps. Firmware settings: radio:p4, radio:m1
	BLE +8dBm 1Mbps. Firmware settings: radio:p8, radio:m0

# Test Setup Block Diagram



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# Radiated test setup Antenna FUT Turntable Test Site Test Site



# **FCC Part 15 Subpart C**

# 15.215(c) Occupied Bandwidth (20dB BW)

Test Setup/Conditions			
Test Location:	Brea Lab D	Test Engineer:	S. Yamamoto
Test Method:	ANSI C63.10 (2020)	Test Date(s):	3/5/2024
Configuration:	1		

Environmental Conditions				
Temperature (ºC)	18	Relative Humidity (%):	51	

Test Equipment									
Asset#	Description	Manufacturer	Model	Cal Date	Cal Due				
02869	Spectrum Analyzer	Agilent	E4440A	1/17/2024	1/17/2025				
P04382	Cable	andrew	LDF-50	5/18/2022	5/18/2024				
P07691	Cable	CommScope	LDF1-50	9/9/2022	9/9/2024				
00787	Preamp	HP	83017A	6/27/2023	6/27/2025				
P07657	Cable	Astrolab, Inc.	32022-29094K- 29094K-24TC	6/22/2022	6/22/2024				
02113	Horn	EMC Test Systems	3115	1/11/2023	1/11/2025				

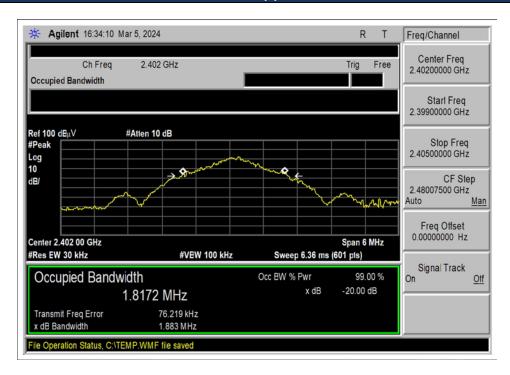
	Test Data Summary								
Frequency (MHz)	Antenna Port	Modulation	odulation Measured (kHz)		Results				
2402	Integral Trace	GFSK 2MBps	1883	None	NA				
2440	Integral Trace	I GESK ZIVIBOS I 1855 I None		None	NA				
2480	Integral Trace	GFSK 2MBps	1881	None	NA				
2402	Integral Trace	GFSK 1MBps	1010	None	NA				
2440	Integral Trace	GFSK 1MBps	1005	None	NA				
2480	Integral Trace	GFSK 1MBps	1015	None	NA				

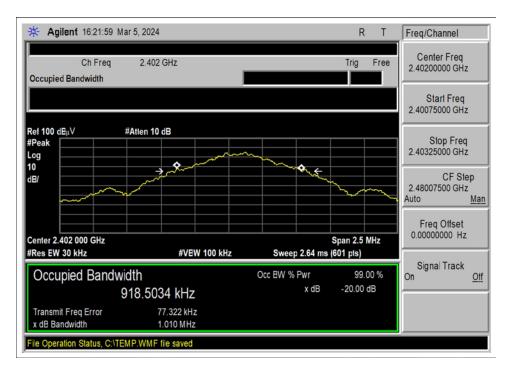
NA = Not applicable, because FCC 15.215 does not give any limits so there is no criteria for pass or fail.

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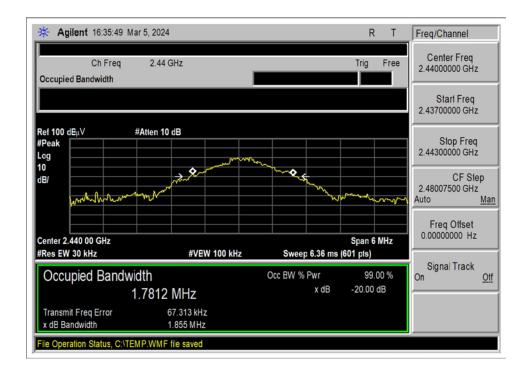


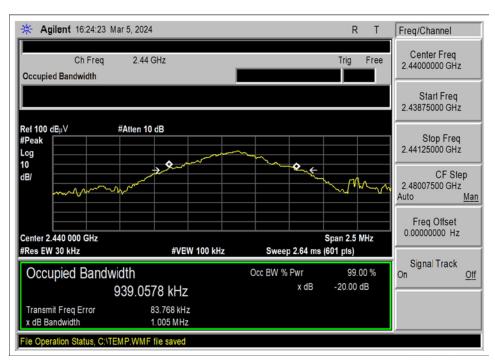
#### Plot(s)



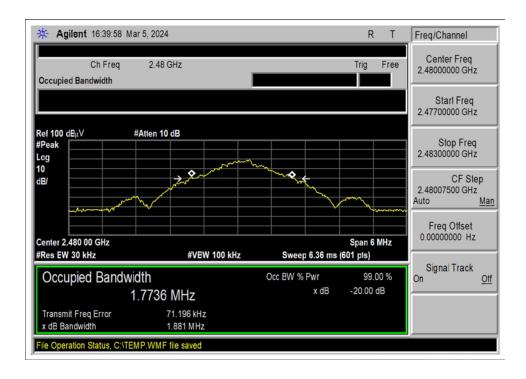


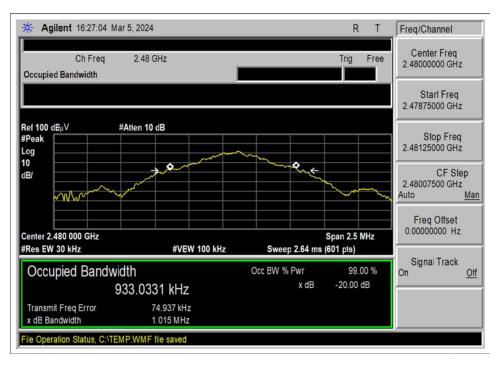














# Test Setup Photo(s)



Occupied Bandwidth



# 15.249(a) Field Strength of Fundamental

Test Setup/Conditions							
Test Location: Brea Lab D Test Engineer: E. Wong							
Test Method:	ANSI C63.10 (2020)	Test Date(s):	3/1/2024				
Configuration:	1						

Environmental Conditions							
Temperature (ºC)	18	Relative Humidity (%):	61				

Asset #	Description	Model	Calibration Date	Cal Due Date
AN02869	Spectrum Analyzer	E4440A	1/17/2024	1/17/2025
AN02113	Horn Antenna- ANSI C63.5	3115		1/11/2025
ANP07657	Cable	32022-29094K- 29094K-24TC	6/22/2022	6/22/2024
AN00787	Preamp	83017A	6/27/2023	6/27/2025
ANP07691	Cable	LDF1-50	9/9/2022	9/9/2024
ANP04382	Cable	LDF-50	5/18/2022	5/18/2024
P07164	Multimeter	8845A/G	8/21/2023	8/21/2025

	Test Data Summary - Voltage Variations								
Frequency (MHz)	Modulation / Ant Port	V <sub>Minimum</sub> (dBuV/m)	V <sub>Nominal</sub> (dBuV/m)	V <sub>Maximum</sub> (dBuV/m)	Max Deviation from V <sub>Nominal</sub> (dB)				
2402	GFSK (BLE 2Mbps)/ integral trace	80.7	80.7	80.7	0				

Test performed using operational mode with the highest output power, representing worst case.

#### **Parameter Definitions:**

Measurements performed at input voltage Vnominal ± 15%.

Parameter	Value
V <sub>Nominal</sub> :	3.0 Vdc
V <sub>Minimum</sub> :	1.7 Vdc
V <sub>Maximum</sub> :	4.14 Vdc

Declared nominal 2.0V- 3.6V dc Using a fresh battery.

	Test Data Summary – Radiated Field Strength Measurement									
Frequency (MHz)	Modulation	Ant. Type	Measured (dBuV/m @ 3m)	Limit (dBuV/m @ 3m)	Results					
2402	GFSK (BLE 2Mbps)	Integral Trace	80.7	≤94	Pass					
2440	GFSK (BLE 2Mbps)	Integral Trace	80.3	≤94	Pass					
2480	GFSK (BLE 2Mbps)	Integral Trace	77.0	≤94	Pass					
2402	GFSK (BLE 1Mbps)	Integral Trace	85.4	≤94	Pass					
2440	GFSK (BLE 1Mbps)	Integral Trace	84.4	≤94	Pass					
2480	GFSK (BLE 1Mbps)	Integral Trace	83.7	≤94	Pass					

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#### **Test Setup / Conditions / Data**

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA • (714) 993 6112

Customer: L3 Harris Technologies Communication Systems (AZ)

Specification: 15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)

Work Order #: 109068 Date: 3/1/2024
Test Type: Radiated Scan Time: 16:46:14
Tested By: E. Wong Sequence#: 2

Software: EMITest 5.03.20

Equipment Tested:

Equipment Testeur				
Device	Manufacturer	Model #	S/N	
Configuration 1				

Support Equipment:

Device	Manufacturer	Model #	S/N	
Configuration 1				

#### Test Conditions / Notes:

The EUT is placed on Styrofoam platform. Set in continuous transmit mode.

Frequency range: 2402- 2480MHz

TX: 2402MHz, 2440MHz, 2480MHz

Protocol:

BLE 2Mbps, Firmware setting: radio:p4, radio:m1

Frequency range of measurement = 9 kHz- 25 GHz. 30 MHz-1000 MHz;RBW=120 kHz,VBW=360 kHz, 1000 MHz-25000 MHz;RBW=1MHz,VBW=3 MHz.

Emission profile of the EUT rotated along three orthogonal axis was investigated.

Recorded data represent worse case emission.

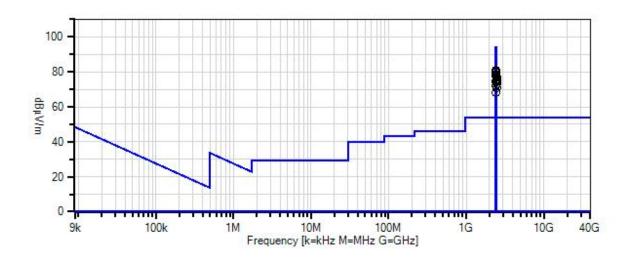
Site D

Test Method: ANSI C63.10-2020

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L3 Harris Technologies Communication Systems (AZ) WO#: 109068 Sequence#: 2 Date: 3/1/2024 15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter) Test Distance: 3 Meters Vert



Sweep Data

- Readings

O Peak Readings

QP Readings

\* Average Readings

▼ Ambient

Software Version: 5.03.20

1 - 15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)

Test Equipment:

ID	Asset #	Description	Model	<b>Calibration Date</b>	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	1/17/2024	1/17/2025
T2	AN02113	Horn Antenna-	3115	1/11/2023	1/11/2025
		ANSI C63.5			
T3	ANP07657	Cable	32022-29094K-	6/22/2022	6/22/2024
			29094K-24TC		
T4	AN00787	Preamp	83017A	6/27/2023	6/27/2025
T5	ANP07691	Cable	LDF1-50	9/9/2022	9/9/2024
T6	ANP04382	Cable	LDF-50	5/18/2022	5/18/2024

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$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	#				ted by ma	0 .				e: 3 Meters		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Freq	Rdng	T1	T2	Т3	T4	Dist	Corr	Spec	Margin	Polar
1 2402.112M 82.3 +0.0 +28.6 +0.5 -39.9 +0.0 80.7 94.0 -13.3 Ho +3.6 +5.6 P4_2Mbps_Y_L max 2 2439.767M 82.0 +0.0 +28.5 +0.5 -39.9 +0.0 80.3 94.0 -13.7 Ho		-	•	T5	T6					-		
+3.6 +5.6 P4_2Mbps_Y_L max 2 2439.767M 82.0 +0.0 +28.5 +0.5 -39.9 +0.0 80.3 94.0 -13.7 Ho		MHz	$dB\mu V$	dB	dB	dB	dB	Table	$dB\mu V/m$	$dB\mu V/m$	dB	Ant
2 2439.767M 82.0 +0.0 +28.5 +0.5 -39.9 +0.0 80.3 94.0 -13.7 Ho	1	2402.112M	82.3	+0.0	+28.6	+0.5	-39.9				-13.3	Horiz
2 2439.767M 82.0 +0.0 +28.5 +0.5 -39.9 +0.0 80.3 94.0 -13.7 Ho				+3.6	+5.6					P4_2Mbps_	_Y_L	
										max		
D4 OM: V M	2	2439.767M	82.0	+0.0	+28.5	+0.5	-39.9	+0.0	80.3	94.0	-13.7	Horiz
+3.0 +5.0 P4_2Mbps_Y_M				+3.6	+5.6					P4_2Mbps_	_Y_M	
3 2402.395M 81.2 +0.0 +28.6 +0.5 -39.9 +0.0 79.6 94.0 -14.4 Ve	3	2402.395M	81.2	+0.0	+28.6	+0.5	-39.9	+0.0	79.6	94.0	-14.4	Vert
+3.6 +5.6 P4_2Mbps_X_L				+3.6	+5.6					P4_2Mbps_	_X_L	
	4	2439.767M	80.4	+0.0	+28.5	+0.5	-39.9	+0.0	78.7			Vert
+3.6 +5.6 P4_2Mbps_X_M				+3.6	+5.6					P4_2Mbps_	$X_M$	
5 2402.112M 80.2 +0.0 +28.6 +0.5 -39.9 +0.0 78.6 94.0 -15.4 Ho	5	2402.112M	80.2	+0.0	+28.6	+0.5	-39.9	+0.0	78.6	94.0	-15.4	Horiz
+3.6 +5.6 P4_2Mbps_Z_L				+3.6	+5.6					P4_2Mbps_	_Z_L	
6 2440.033M 79.9 +0.0 +28.5 +0.5 -39.9 +0.0 78.2 94.0 -15.8 Ho	6	2440.033M	79.9	+0.0	+28.5	+0.5	-39.9	+0.0	78.2	94.0	-15.8	Horiz
+3.6 +5.6 P4_2Mbps_Z_M				+3.6	+5.6					P4_2Mbps_	_Z_M	
7 2402.112M 79.2 +0.0 +28.6 +0.5 -39.9 +0.0 77.6 94.0 -16.4 Ho	7	2402.112M	79.2	+0.0	+28.6	+0.5	-39.9	+0.0	77.6	94.0	-16.4	Horiz
+3.6 +5.6 P4_2Mbps_X_L				+3.6	+5.6					P4_2Mbps_	_X_L	
8 2480.467M 78.6 +0.0 +28.5 +0.5 -40.0 +0.0 77.0 94.0 -17.0 Ho	8	2480.467M	78.6	+0.0	+28.5	+0.5	-40.0	+0.0	77.0	94.0	-17.0	Horiz
+3.7 +5.7 P4_2Mbps_Y_H				+3.7	+5.7					P4_2Mbps_	_Y_H	
9 2480.467M 77.4 +0.0 +28.5 +0.5 -40.0 +0.0 75.8 94.0 -18.2 Ho	9	2480.467M	77.4	+0.0	+28.5	+0.5	-40.0	+0.0	75.8	94.0	-18.2	Horiz
+3.7 +5.7 P4_2Mbps_X_H				+3.7	+5.7					P4_2Mbps_	_X_H	
10 2480.467M 77.2 +0.0 +28.5 +0.5 -40.0 +0.0 75.6 94.0 -18.4 Ve	10	2480.467M	77.2	+0.0	+28.5	+0.5	-40.0	+0.0	75.6	94.0	-18.4	Vert
+3.7 +5.7 P4_2Mbps_X_H				+3.7	+5.7					P4_2Mbps_	_X_H	
11 2402.112M 76.6 +0.0 +28.6 +0.5 -39.9 +0.0 75.0 94.0 -19.0 Ve	11	2402.112M	76.6	+0.0	+28.6	+0.5	-39.9	+0.0	75.0	94.0	-19.0	Vert
+3.6 +5.6 P4_2Mbps_Y_L				+3.6	+5.6					P4_2Mbps_	_Y_L	
12 2480.033M 76.0 +0.0 +28.5 +0.5 -40.0 +0.0 74.4 94.0 -19.6 Ve	12	2480.033M	76.0	+0.0	+28.5	+0.5	-40.0	+0.0	74.4	94.0	-19.6	Vert
+3.7 +5.7 P4_2Mbps_Z_H				+3.7	+5.7					P4_2Mbps_	_Z_H	
13 2439.767M 75.8 +0.0 +28.5 +0.5 -39.9 +0.0 74.1 94.0 -19.9 Ho	13	2439.767M	75.8	+0.0	+28.5	+0.5	-39.9	+0.0	74.1	94.0	-19.9	Horiz
+3.6 +5.6 P4_2Mbps_X_M				+3.6	+5.6					P4_2Mbps_	_X_M	
14 2480.467M 74.8 +0.0 +28.5 +0.5 -40.0 +0.0 73.2 94.0 -20.8 Ve	14	2480.467M	74.8	+0.0	+28.5	+0.5	-40.0	+0.0	73.2	94.0	-20.8	Vert
+3.7 +5.7 P4_2Mbps_Y_H				+3.7	+5.7					P4_2Mbps_	_Y_H	
15 2402.112M 73.8 +0.0 +28.6 +0.5 -39.9 +0.0 72.2 94.0 -21.8 Ve	15	2402.112M	73.8	+0.0	+28.6	+0.5	-39.9	+0.0	72.2	94.0	-21.8	Vert
+3.6 +5.6 P4_2Mbps_Z_L				+3.6	+5.6					P4_2Mbps_	_Z_L	
	16	2439.767M	73.9	+0.0	+28.5	+0.5	-39.9	+0.0	72.2	,		Vert
+3.6 +5.6 P4_2Mbps_Y_M				+3.6						P4_2Mbps_	_Y_M	
	17	$2480.033\overline{M}$	72.6	+0.0		+0.5	-40.0	+0.0	71.0			Horiz
+3.7 +5.7 P4_2Mbps_Z_H				+3.7								
	18	2440.033M	69.8		+28.5	+0.5	-39.9	+0.0	68.1	94.0	-25.9	Vert
+3.6 +5.6 P4_2Mbps_Z_M				+3.6	+5.6					P4_2Mbps_	_Z_M	



Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA • (714) 993 6112

Customer: L3 Harris Technologies Communication Systems (AZ)

Specification: 15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)

Work Order #: 109068 Date: 3/4/2024 Test Type: **Radiated Scan** Time: 16:51:36 Tested By: S. Yamamoto Sequence#: 4

Software: EMITest 5.03.20

**Equipment Tested:** 

Device	Manufacturer	Model #	S/N
Configuration 1			

#### Support Equipment:

Device	Manufacturer	Model #	S/N	
Configuration 1				

#### Test Conditions / Notes:

The EUT is placed on Styrofoam platform. Set in continuous transmit mode.

Freq range: 2402- 2480MHz

TX: 2402MHz, 2440MHz, 2480MHz

Protocol:

BLE 1Mbps, Firmware setting: radio:p8, radio:m0

Measurement of field strength of fundamental Frequency range of measurement = 9 kHz- 25 GHz. 30 MHz-1000 MHz;RBW=120 kHz,VBW=360 kHz, 1000 MHz-25000 MHz;RBW=1MHz,VBW=3 MHz.

Test Environment Conditions:

Temperature: 19°C Humidity: 53% Pressure: 99kPa

Emission profile of the EUT rotated along three orthogonal axis was investigated.

Recorded data represent worse case emission.

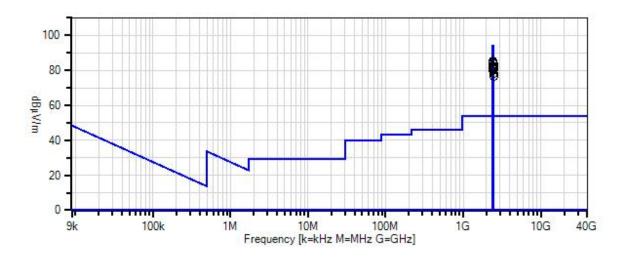
Site D

Test Method: ANSI C63.10-2020

Report No.: 109068-7A



L3 Harris Technologies Communication Systems (AZ) WO#: 109068 Sequence#: 4 Date: 3/4/2024 15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter) Test Distance: 3 Meters Horiz



Sweep Data

Readings

Peak Readings QP Readings

Average Readings

Ambient

Software Version: 5.03.20

1 - 15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)

#### **Test Equipment:**

ID	Asset #	Description	Model	<b>Calibration Date</b>	Cal Due Date
	AN02869	Spectrum Analyzer	E4440A	1/17/2024	1/17/2025
T1	ANP04382	Cable	LDF-50	5/18/2022	5/18/2024
T2	ANP07691	Cable	LDF1-50	9/9/2022	9/9/2024
	AN00787	Preamp	83017A	6/27/2023	6/27/2025
	ANP07657	Cable	32022-29094K-	6/22/2022	6/22/2024
			29094K-24TC		
Т3	AN02113	Horn Antenna-	3115	1/11/2023	1/11/2025
		ANSI C63.5			

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Measu	rement Data:	Re	eading list	ted by ma	argin.	Test Distance: 3 Meters					
#	Freq	Rdng	T1	T2	T3		Dist	Corr	Spec	Margin	Polar
	MHz	dΒμV	dB	dB	dB	dB	Table	$dB\mu V/m$	$dB\mu V/m$	dB	Ant
1	2401.925M	47.6	+5.6	+3.6	+28.6		+0.0	85.4	94.0	-8.6	Horiz
									+8dBm, 1N	MBps, Z	
									axis	1	
2	2401.942M	47.6	+5.6	+3.6	+28.6		+0.0	85.4	94.0	-8.6	Horiz
									+8dBm, 1N	MBps, Y	
									axis	1 ,	
3	2402.250M	47.2	+5.6	+3.6	+28.6		+0.0	85.0	94.0	-9.0	Vert
									+8dBm, 1N		
									axis	1 /	
4	2439.933M	46.7	+5.6	+3.6	+28.5		+0.0	84.4	94.0	-9.6	Horiz
									+8dBm, 1N		
									axis	r ,	
5	2440.233M	46.5	+5.6	+3.6	+28.5		+0.0	84.2	94.0	-9.8	Horiz
									+8dBm, 1N		
									axis	F , -	
6	2440.242M	46.4	+5.6	+3.6	+28.5		+0.0	84.1	94.0	-9.9	Vert
	2110.212111	10.1	15.0	15.0	120.5		10.0	01.1	+8dBm, 1N		, 010
									axis	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
7	2480.217M	45.8	+5.7	+3.7	+28.5		+0.0	83.7	94.0	-10.3	Horiz
	2.00.21711				. 20.0		. 0.0	00.7	+8dBm, 1N		110112
									axis	,12ps, 1	
8	2480.225M	45.7	+5.7	+3.7	+28.5		+0.0	83.6	94.0	-10.4	Vert
	2 100.220111	15.7	15.7	13.7	120.5		10.0	05.0	+8dBm, 1N		, 010
									axis	,12 ps, 11	
9	2440.225M	44.7	+5.6	+3.6	+28.5		+0.0	82.4	94.0	-11.6	Horiz
	2110.220111	,	15.0	15.0	120.5		10.0	02.1	+8dBm, 1N		TIOTIE
									axis	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
10	2480.250M	44.4	+5.7	+3.7	+28.5		+0.0	82.3	94.0	-11.7	Horiz
10	2 100.250111		15.7	13.7	120.5		10.0	02.3	+8dBm, 1N		TIOTIE
									axis	пърз, д	
11	2402.267M	43.8	+5.6	+3.6	+28.6		+0.0	81.6	94.0	-12.4	Horiz
1.1	2 102.207111	13.0	15.0	13.0	120.0		10.0	01.0	+8dBm, 1N		HOHE
									axis	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
12	2402.192M	43.2	+5.6	+3.6	+28.6		+0.0	81.0	94.0	-13.0	Vert
12	2 102.172141	19.4	15.0	13.0	120.0		10.0	01.0	+8dBm, 1N		, 011
									axis	,,, ps, 2	
13	2402.258M	43.0	+5.6	+3.6	+28.6		+0.0	80.8	94.0	-13.2	Vert
13	2702.230111	73.0	13.0	13.0	120.0		10.0	00.0	+8dBm, 1N		V 011
									axis	пры, т	
									аліб		



14 2479.925M	42.3	+5.7	+3.7	+28.5	+0.0	80.2	94.0	-13.8	Horiz
							+8dBm, 11	MBps, X	
							axis	1 /	
15 2439.883M	42.4	+5.6	+3.6	+28.5	+0.0	80.1	94.0	-13.9	Vert
							+8dBm, 11	MBps, Y	
							axis	•	
16 2440.225M	42.2	+5.6	+3.6	+28.5	+0.0	79.9	94.0	-14.1	Vert
							+8dBm, 11	MBps, Z	
							axis		
17 2480.200M	40.4	+5.7	+3.7	+28.5	+0.0	78.3	94.0	-15.7	Vert
							+8dBm, 11	MBps, Y	
							axis		
18 2480.217M	38.8	+5.7	+3.7	+28.5	+0.0	76.7	94.0	-17.3	Vert
							+8dBm, 11	MBps, Z	
							axis		

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# Test Setup Photo(s)



Test Setup



Position X





Position Y



Position Z





Radiated Emissions; Above 1GHz



Radiated Frequency; Above 1GHz, View 1





Radiated Frequency; Above 1GHz, View 2

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# 15.249(a) Field Strength of Spurious Radiated Emissions

#### Test Setup / Conditions / Data

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA • (714) 993 6112

Customer: L3 Harris Technologies Communication Systems (AZ)

Specification: 15.209 Radiated Emissions

Work Order #: 109068 Date: 3/6/2024
Test Type: Radiated Scan Time: 11:54:32
Tested By: S. Yamamoto Sequence#: 5

Software: EMITest 5.03.20

**Equipment Tested:** 

Device Manufacturer Model # S/N
Configuration 1

Support Equipment:

Device Manufacturer Model # S/N
Configuration 1

#### Test Conditions / Notes:

The equipment under test (EUT) is placed on top of the styrofoam tabletop.

The EUT is placed in a continuous transmit mode.

Frequency range of the EUT: 2402MHz to 2480MHz

Low, Middle, High channel frequencies: 2402MHz, 2440MHz, 2480MHz

Protocol:

BLE +4dBm 2Mbps. Firmware settings: radio:p4, radio:m1 BLE +8dBm 1Mbps. Firmware settings: radio:p8, radio:m0

Data sheet is for spurious emissions.

Frequency range of measurement and data sheet: 9kHz to 25GHz

9kHz to 150kHz. RBW=200Hz, VBW=600Hz 150kHz to 30MHz, RBW=9kHz, VBW=30kHz 30MHz to 1000MHz, RBW=120kHz, VBW=360kHz 1000MHz to 25000MHz, RBW=1MHz, VBW=3 MHz.

**Test Environment Conditions:** 

Temperature: 19°C Humidity: 53% Pressure: 99kPa

Site D

Test Method: ANSI C63.10-2020

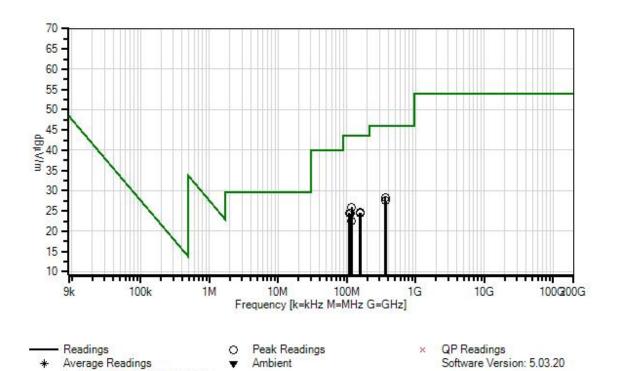
Emission profile of the EUT rotated along three orthogonal axis was investigated.

Recorded data represent worse case emissions.

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L3 Harris Technologies Communication Systems (AZ) WO#: 109068 Sequence#: 5 Date: 3/6/2024 15.209 Radiated Emissions Test Distance: 3 Meters Vert



#### **Test Equipment:**

1 - 15.209 Radiated Emissions

ID	Asset #	Description	Model	<b>Calibration Date</b>	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	1/17/2024	1/17/2025
T2	ANP06664	Cable	PHASEFLEX	3/25/2022	3/25/2024
			FJR01N01036.0		
T3	AN00010	AN00010 Preamp 8447D 1/2/2024		1/2/2024	1/2/2026
T4	ANP04382	Cable	LDF-50	5/18/2022	5/18/2024
T5	ANP05569	Cable-Amplitude	RG-214/U	12/31/2022	12/31/2024
		+15C to +45C (dB)			
Т6	AN01994	Biconilog Antenna	CBL6111C	6/1/2022	6/1/2024
	AN03385	High Pass Filter	11SH10-	5/15/2023	5/15/2025
			3000/T10000-		
			0/0		
	AN00787	Preamp	83017A	6/27/2023	6/27/2025
	AN01413	Horn Antenna	84125-80008	10/3/2022	10/3/2024
	ANP07691	Cable	LDF1-50	9/9/2022	9/9/2024
	ANP07657	Cable	32022-29094K-	6/22/2022	6/22/2024
			29094K-24TC		
	AN02113	Horn Antenna-	3115	1/11/2023	1/11/2025
		ANSI C63.5			
	AN00314	Loop Antenna	6502	3/29/2022	3/29/2024



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Measu	rement Data:	Re	eading lis	ted by ma	argin.		Тє	est Distance	e: 3 Meters		
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6							
	MHz	dΒμV	dB	dB	dB	dB	Table	$dB\muV/m$	$dB\muV/m$	dB	Ant
1	117.610M	33.4	+0.0	+0.1	-27.0	+1.2	+0.0	26.0	43.5	-17.5	Vert
			+1.1	+17.2							
2	361.210M	30.5	+0.0	+0.1	-27.0	+2.1	+0.0	28.3	46.0	-17.7	Vert
			+2.1	+20.5							
3	367.830M	29.3	+0.0	+0.1	-27.0	+2.2	+0.0	27.5	46.0	-18.5	Vert
			+2.2	+20.7							
4	155.506M	32.3	+0.0	+0.1	-26.9	+1.4	+0.0	24.7	43.5	-18.8	Vert
			+1.3	+16.5							
5	156.923M	32.2	+0.0	+0.1	-26.9	+1.4	+0.0	24.5	43.5	-19.0	Vert
			+1.3	+16.4							
6	108.510M	32.5	+0.0	+0.1	-27.0	+1.2	+0.0	24.5	43.5	-19.0	Vert
			+1.0	+16.7							
7	154.889M	32.0	+0.0	+0.1	-26.9	+1.4	+0.0	24.4	43.5	-19.1	Vert
			+1.3	+16.5							
8	112.210M	32.1	+0.0	+0.1	-27.0	+1.2	+0.0	24.4	43.5	-19.1	Vert
			+1.1	+16.9							
9	116.132M	30.0	+0.0	+0.1	-27.0	+1.2	+0.0	22.5	43.5	-21.0	Vert
			+1.1	+17.1							

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Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA • (714) 993 6112

Customer: L3 Harris Technologies Communication Systems (AZ)

15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter) Specification:

Work Order #: 109068 Date: 3/4/2024 Test Type: **Radiated Scan** Time: 14:04:33

Tested By: S. Yamamoto Sequence#: 3

Software: EMITest 5.03.20

#### **Equipment Tested:**

Device	Manufacturer	Model #	S/N
Configuration 1			

#### Support Equipment:

Device	Manufacturer	Model #	S/N
Configuration 1			

#### Test Conditions / Notes:

The equipment under test (EUT) is placed on top of the styrofoam surface.

The EUT is placed in a continuous transmit mode.

Frequency range of the EUT: 2402MHz to 2480MHz

Low, Middle, High channel frequencies: 2402MHz, 2440MHz, 2480MHz

Protocol:

BLE +8dBm 2Mbps. Firmware settings: radio:p8, radio:m1

Data sheet is for field strength of harmonics.

Frequency range of measurement 2.5GHz to 25GHz

RBW=1MHz VBW=3 MHz.

Test Environment Conditions:

Temperature: 19°C Humidity: 53% Pressure: 99kPa

Emission profile of the EUT rotated along three orthogonal axis was investigated.

Recorded data represent worse case emissions.

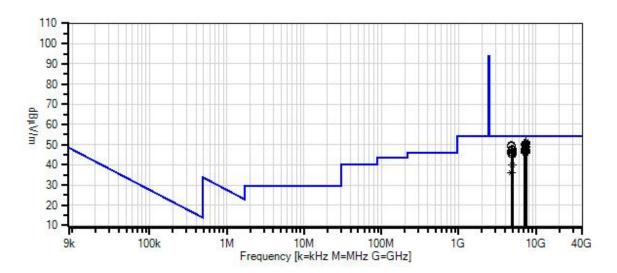
Site D

Test Method: ANSI C63.10-2020

Report No.: 109068-7A



L3 Harris Technologies Communication Systems (AZ) WO#: 109068 Sequence#: 3 Date: 3/4/2024 15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter) Test Distance: 3 Meters Horiz



Readings

- Peak Readings QP Readings
- Average Readings
- Ambient

Software Version: 5.03.20

1 - 15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)

#### **Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	1/17/2024	1/17/2025
T2	ANP04382	Cable LDF-50		5/18/2022	5/18/2024
T3	ANP07691	Cable	LDF1-50	9/9/2022	9/9/2024
T4	AN00787	Preamp	83017A	6/27/2023	6/27/2025
T5	ANP07657	Cable	32022-29094K-	6/22/2022	6/22/2024
			29094K-24TC		
T6	AN03385	High Pass Filter	11SH10-	5/15/2023	5/15/2025
			3000/T10000-		
			0/0		
T7	AN02113	Horn Antenna-	3115	1/11/2023	1/11/2025
		ANSI C63.5			
	AN01413	Horn Antenna	84125-80008	10/3/2022	10/3/2024

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#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec M	Iargin	Polar
			T5	T6	T7						
	MHz	dΒμV	dB	dB	dB	dB			dBμV/m	dB	Ant
1	7321.267M	34.3	+0.0	+11.1	+6.8	-39.5	+0.0	51.3	54.0	-2.7	Vert
	Ave		+0.8	+0.3	+37.5				+8dBm, 2MB	ps, Y	
									axis		
	7439.267M	33.7	+0.0	+11.2	+6.9	-39.5	+0.0	50.9	54.0	-3.1	Vert
	Ave		+0.6	+0.3	+37.7				+8dBm, 2MB	ps, Y	
									axis		
	7205.265M	34.0	+0.0	+11.0	+6.8	-39.4	+0.0	50.8	54.0	-3.2	Vert
	Ave		+0.9	+0.2	+37.3				+8dBm, 2MB	ps, Y	
									axis		
	7441.257M	33.6	+0.0	+11.2	+6.9	-39.5	+0.0	50.8	54.0	-3.2	Vert
	Ave		+0.6	+0.3	+37.7				+8dBm, 2MB	ps, Y	
									axis		
	7439.267M	33.4	+0.0	+11.2	+6.9	-39.5	+0.0	50.6	54.0	-3.4	Vert
	Ave		+0.6	+0.3	+37.7				+8dBm, 2MB	ps, Z	
									axis		
	7319.250M	33.4	+0.0	+11.1	+6.8	-39.5	+0.0	50.4	54.0	-3.6	Horiz
	Ave		+0.8	+0.3	+37.5				+8dBm, 2MB	ps, Z	
									axis		
	7207.265M	33.6	+0.0	+11.0	+6.8	-39.4	+0.0	50.4	54.0	-3.6	Vert
	Ave		+0.9	+0.2	+37.3				+8dBm, 2MB	ps, Y	
									axis		
	7441.267M	33.1	+0.0	+11.2	+6.9	-39.5	+0.0	50.3	54.0	-3.7	Vert
	Ave		+0.6	+0.3	+37.7				+8dBm, 2MB	ps, Z	
									axis		
^	7441.267M	41.8	+0.0	+11.2	+6.9	-39.5	+0.0	59.0	54.0	+5.0	Vert
			+0.6	+0.3	+37.7				+8dBm, 2MB	ps, Z	
									axis		
^	7441.257M	41.3	+0.0	+11.2	+6.9	-39.5	+0.0	58.5	54.0	+4.5	Vert
			+0.6	+0.3	+37.7				+8dBm, 2MB	ps, Y	
	= 1 1 1 2 2 = 3 f		0.0			20.7	0.0	<b>70.0</b>	axis	2.5	
	7441.237M	33.1	+0.0	+11.2	+6.9	-39.5	+0.0	50.3	54.0	-3.7	Horiz
	Ave		+0.6	+0.3	+37.7				+8dBm, 2MB	ps, Z	
	= 100 51		0 -					= -	axis	<b>6</b> 5	<b>.</b> .
	7439.212M	33.0	+0.0	+11.2	+6.9	-39.5	+0.0	50.2	54.0	-3.8	Horiz
	Ave		+0.6	+0.3	+37.7				+8dBm, 2MB	ps, Z	
									axis		
	7319.767M	33.2	+0.0	+11.1	+6.8	-39.5	+0.0	50.2	54.0	-3.8	Vert
	Ave		+0.8	+0.3	+37.5				+8dBm, 2MB	ps, Y	
		,							axis		
٨	7319.767M	40.6	+0.0	+11.1	+6.8	-39.5	+0.0	57.6	54.0	+3.6	Vert
			+0.8	+0.3	+37.5				+8dBm, 2MB	ps, Y	
									axis		
	7321.225M	33.2	+0.0	+11.1	+6.8	-39.5	+0.0	50.2	54.0	-3.8	Horiz
	Ave		+0.8	+0.3	+37.5				+8dBm, 2MB	ps, Z	
									axis		



16 7207.217M Ave	33.4	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	50.2	54.0 -3.8 +8dBm, 2MBps, X	Horiz
17 7205.267M	33.3	+0.0	+11.0	+6.8	-39.4	+0.0	50.1	54.0 -3.9	Horiz
Ave		+0.9	+0.2	+37.3				+8dBm, 2MBps, X axis	
18 4804.850M	41.7	+0.0 +0.6	+8.3 +0.3	+5.3 +33.1	-39.5	+0.0	49.8	54.0 -4.2 +8dBm, 2MBps, Z axis	Horiz
19 7205.283M Ave	32.8	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	49.6	54.0 -4.4 +8dBm, 2MBps, Z axis	Horiz
20 4803.417M	41.5	+0.0 +0.6	+8.3 +0.3	+5.3 +33.1	-39.5	+0.0	49.6	54.0 -4.4 +8dBm, 2MBps, X axis	Horiz
21 7207.283M Ave	32.8	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	49.6	54.0 -4.4 +8dBm, 2MBps, Z axis	Horiz
22 4803.593M	41.0	+0.0 +0.6	+8.3 +0.3	+5.3 +33.1	-39.5	+0.0	49.1	54.0 -4.9 +8dBm, 2MBps, Y axis	Horiz
23 7319.300M Ave	32.1	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	49.1	54.0 -4.9 +8dBm, 2MBps, X axis	Horiz
24 7321.250M Ave	31.7	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	48.7	54.0 -5.3 +8dBm, 2MBps, X axis	Horiz
25 7205.207M Ave	31.2	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	48.0	54.0 -6.0 +8dBm, 2MBps, Y axis	Horiz
^ 7205.267M	42.2	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	59.0	54.0 +5.0 +8dBm, 2MBps, X axis	Horiz
^ 7205.283M	41.4	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	58.2	54.0 +4.2 +8dBm, 2MBps, Z axis	Horiz
^ 7205.207M	39.8	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	56.6	54.0 +2.6 +8dBm, 2MBps, Y axis	Horiz
29 7207.275M Ave	31.1	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	47.9	54.0 -6.1 +8dBm, 2MBps, Y axis	Horiz
^ 7207.217M	42.4	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	59.2	54.0 +5.2 +8dBm, 2MBps, X axis	Horiz
^ 7207.283M	41.1	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	57.9	54.0 +3.9 +8dBm, 2MBps, Z axis	Horiz
^ 7207.275M	39.0	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	55.8	54.0 +1.8 +8dBm, 2MBps, Y axis	Horiz



33 7321.225M Ave	30.8	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	47.8	54.0 -6.2 +8dBm, 2MBps, Y	Horiz
^ 7321.225M	42.0	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	59.0	axis 54.0 +5.0 +8dBm, 2MBps, Z	Horiz
^ 7321.250M	40.5	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	57.5	axis 54.0 +3.5 +8dBm, 2MBps, X axis	Horiz
^ 7321.225M	39.6	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	56.6	54.0 +2.6 +8dBm, 2MBps, Y axis	Horiz
37 7439.325M Ave	30.4	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	47.6	54.0 -6.4 +8dBm, 2MBps, X axis	Horiz
38 7441.250M Ave	30.3	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	47.5	54.0 -6.5 +8dBm, 2MBps, X axis	Horiz
39 7439.358M Ave	30.3	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	47.5	54.0 -6.5 +8dBm, 2MBps, X axis	Vert
^ 7439.267M	41.8	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	59.0	54.0 +5.0 +8dBm, 2MBps, Z axis	Vert
^ 7439.267M	41.6	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	58.8	54.0 +4.8 +8dBm, 2MBps, Y axis	Vert
^ 7439.358M	38.6	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	55.8	54.0 +1.8 +8dBm, 2MBps, X axis	Vert
43 4959.570M	38.6	+0.0 +0.6	+8.5 +0.3	+5.5 +33.5	-39.5	+0.0	47.5	54.0 -6.5 +8dBm, 2MBps, Z axis	Horiz
44 4959.817M	38.4	+0.0 +0.6	+8.5 +0.3	+5.5 +33.5	-39.5	+0.0	47.3	54.0 -6.7 +8dBm, 2MBps, X axis	Horiz
45 4960.417M	38.4	+0.0 +0.6	+8.5 +0.3	+5.5 +33.5	-39.5	+0.0	47.3	54.0 -6.7 +8dBm, 2MBps, Y axis	Vert
46 7319.275M Ave	30.2	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	47.2	54.0 -6.8 +8dBm, 2MBps, Y axis	Horiz
^ 7319.250M	42.0	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	59.0	54.0 +5.0 +8dBm, 2MBps, Z axis	Horiz
^ 7319.300M	40.7	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	57.7	54.0 +3.7 +8dBm, 2MBps, X axis	Horiz
^ 7319.275M	39.4	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	56.4	54.0 +2.4 +8dBm, 2MBps, Y axis	Horiz



50	7205.325M	30.4	+0.0	+11.0	+6.8	-39.4	+0.0	47.2	54.0 -6.8	Vert
	Ave		+0.9	+0.2	+37.3				+8dBm, 2MBps, Z	
									axis	
51	7321.242M	30.2	+0.0	+11.1	+6.8	-39.5	+0.0	47.2	54.0 -6.8	Vert
	Ave		+0.8	+0.3	+37.5				+8dBm, 2MBps, Z	
									axis	
^	7321.267M	42.7	+0.0	+11.1	+6.8	-39.5	+0.0	59.7	54.0 +5.7	Vert
			+0.8	+0.3	+37.5				+8dBm, 2MBps, Y	
									axis	
^	7321.242M	39.3	+0.0	+11.1	+6.8	-39.5	+0.0	56.3	54.0 +2.3	Vert
			+0.8	+0.3	+37.5				+8dBm, 2MBps, Z	
									axis	
54	4880.792M	38.6	+0.0	+8.4	+5.4	-39.5	+0.0	47.1	54.0 -6.9	Horiz
			+0.6	+0.3	+33.3				+8dBm, 2MBps, Y	
									axis	
55	4959.607M	38.1	+0.0	+8.5	+5.5	-39.5	+0.0	47.0	54.0 -7.0	Horiz
			+0.6	+0.3	+33.5				+8dBm, 2MBps, Y	
									axis	
	7439.265M	29.8	+0.0	+11.2	+6.9	-39.5	+0.0	47.0	54.0 -7.0	Horiz
	Ave		+0.6	+0.3	+37.7				+8dBm, 2MBps, Y	
									axis	
^	7439.212M	41.8	+0.0	+11.2	+6.9	-39.5	+0.0	59.0	54.0 +5.0	Horiz
			+0.6	+0.3	+37.7				+8dBm, 2MBps, Z	
									axis	
^	7439.265M	39.2	+0.0	+11.2	+6.9	-39.5	+0.0	56.4	54.0 +2.4	Horiz
			+0.6	+0.3	+37.7				+8dBm, 2MBps, Y	
		20.5	0.0			20.7	0.0		axis	** .
^	7439.325M	38.7	+0.0	+11.2	+6.9	-39.5	+0.0	55.9	54.0 +1.9	Horiz
			+0.6	+0.3	+37.7				+8dBm, 2MBps, X	
(0)	4902 20214	20.0	. 0. 0	.0.2	.5.2	20.5	.00	46.0	axis 54.0 -7.1	Vert
60	4803.392M	38.8	+0.0	+8.3	+5.3	-39.5	+0.0	46.9		vert
			+0.6	+0.3	+33.1				+8dBm, 2MBps, X	
61	7205.268M	30.0	+0.0	+11.0	+6.8	-39.4	+0.0	46.8	axis 54.0 -7.2	Vert
	7203.208M Ave	30.0	+0.0	+11.0	+37.3	-39.4	+0.0	40.8	+8dBm, 2MBps, X	vert
	Ave		+0.9	+0.2	+37.3				axis	
^	7205.265M	41.8	+0.0	+11.0	+6.8	-39.4	+0.0	58.6	54.0 +4.6	Vert
	7203.2031 <b>v</b> 1	41.0	+0.9	+0.2	+37.3	-37.4	+0.0	36.0	+8dBm, 2MBps, Y	VCIT
			+0.9	+0.2	⊤31.3				axis	
^	7205.325M	39.9	+0.0	+11.0	+6.8	-39.4	+0.0	56.7	54.0 +2.7	Vert
	1205.525141	37.7	+0.0	+11.0	+37.3	-J7. <del>4</del>	+0.0	50.7	+8dBm, 2MBps, Z	v CI t
			10.7	10.2	101.0				axis	
٨	7205.268M	39.2	+0.0	+11.0	+6.8	-39.4	+0.0	56.0	54.0 +2.0	Vert
	, 203.200111	37.2	+0.9	+0.2	+37.3	57.7	10.0	50.0	+8dBm, 2MBps, X	7 011
			10.7	10.2	, 51.5				axis	
65	7319.392M	29.6	+0.0	+11.1	+6.8	-39.5	+0.0	46.6	54.0 -7.4	Vert
	Ave		+0.8	+0.3	+37.5	27.0		.0.0	+8dBm, 2MBps, Z	. 511
				. 0.0					axis	
٨	7319.392M	38.7	+0.0	+11.1	+6.8	-39.5	+0.0	55.7	54.0 +1.7	Vert
			+0.8	+0.3	+37.5				+8dBm, 2MBps, Z	
									axis	



	7207.218M	29.6	+0.0 +0.9	+11.0	+6.8 +37.3	-39.4	+0.0	46.4	54.0 -7.6	Vert
	Ave			+0.2					+8dBm, 2MBps, X axis	
	7441.265M	29.0	+0.0	+11.2	+6.9	-39.5	+0.0	46.2	54.0 -7.8	Horiz
	Ave		+0.6	+0.3	+37.7				+8dBm, 2MBps, Y axis	
^	7441.237M	41.4	+0.0	+11.2	+6.9	-39.5	+0.0	58.6	54.0 +4.6	Horiz
			+0.6	+0.3	+37.7				+8dBm, 2MBps, Z axis	
^	7441.250M	39.3	+0.0	+11.2	+6.9	-39.5	+0.0	56.5	54.0 +2.5	Horiz
			+0.6	+0.3	+37.7				+8dBm, 2MBps, X axis	
^	7441.265M	38.9	+0.0	+11.2	+6.9	-39.5	+0.0	56.1	54.0 +2.1	Horiz
			+0.6	+0.3	+37.7				+8dBm, 2MBps, Y axis	
72	4960.233M	37.1	+0.0	+8.5	+5.5	-39.5	+0.0	46.0	54.0 -8.0	Vert
			+0.6	+0.3	+33.5				+8dBm, 2MBps, X axis	
	7207.225M	29.1	+0.0	+11.0	+6.8	-39.4	+0.0	45.9	54.0 -8.1	Vert
	Ave		+0.9	+0.2	+37.3				+8dBm, 2MBps, Z axis	
^	7207.265M	41.9	+0.0	+11.0	+6.8	-39.4	+0.0	58.7	54.0 +4.7	Vert
			+0.9	+0.2	+37.3				+8dBm, 2MBps, Y axis	
^	7207.225M	39.7	+0.0	+11.0	+6.8	-39.4	+0.0	56.5	54.0 +2.5	Vert
			+0.9	+0.2	+37.3				+8dBm, 2MBps, Z axis	
^	7207.218M	39.4	+0.0	+11.0	+6.8	-39.4	+0.0	56.2	54.0 +2.2	Vert
			+0.9	+0.2	+37.3				+8dBm, 2MBps, X axis	
77	4803.560M	37.7	+0.0 +0.6	+8.3 +0.3	+5.3 +33.1	-39.5	+0.0	45.8	54.0 -8.2	Vert
									+8dBm, 2MBps, Y axis	
	7319.275M	28.6	$+0.0 \\ +0.8$	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	45.6	54.0 -8.4	Vert
	Ave		+0.8	+0.3	+37.3				+8dBm, 2MBps, X axis	
^	7319.275M	37.6	+0.0	+11.1	+6.8	-39.5	+0.0	54.6	54.0 +0.6	Vert
			+0.8	+0.3	+37.5				+8dBm, 2MBps, X axis	
80	4880.625M	36.9	+0.0	+8.4	+5.4	-39.5	+0.0	45.4	54.0 -8.6	Vert
			+0.6	+0.3	+33.3				+8dBm, 2MBps, Y axis	
81	4880.167M	36.9	+0.0	+8.4	+5.4	-39.5	+0.0	45.4	54.0 -8.6	Vert
			+0.6	+0.3	+33.3				+8dBm, 2MBps, Z axis	
82	4880.150M	36.8	+0.0	+8.4	+5.4	-39.5	+0.0	45.3	54.0 -8.7	Vert
			+0.6	+0.3	+33.3				+8dBm, 2MBps, X axis	
83	4959.817M	36.4	+0.0	+8.5	+5.5	-39.5	+0.0	45.3	54.0 -8.7	Vert
			+0.6	+0.3	+33.5				+8dBm, 2MBps, Z	
									axis	



84 4880.167M	31.6	+0.0	+8.4	+5.4	-39.5	+0.0	40.1	54.0	-13.9	Horiz
Ave		+0.6	+0.3	+33.3				+8dBm, 2N	IBps, Z	
								axis		
^ 4880.167M	39.7	+0.0	+8.4	+5.4	-39.5	+0.0	48.2	54.0	-5.8	Horiz
		+0.6	+0.3	+33.3				+8dBm, 2N	IBps, Z	
								axis		
^ 4880.125M	38.7	+0.0	+8.4	+5.4	-39.5	+0.0	47.2	54.0	-6.8	Horiz
		+0.6	+0.3	+33.3				+8dBm, 2N	IBps, X	
								axis		
87 4804.233M	28.1	+0.0	+8.3	+5.3	-39.5	+0.0	36.2	54.0	-17.8	Vert
Ave		+0.6	+0.3	+33.1				+8dBm, 2N	IBps, Z	
								axis		
^ 4804.233M	37.7	+0.0	+8.3	+5.3	-39.5	+0.0	45.8	54.0	-8.2	Vert
		+0.6	+0.3	+33.1				+8dBm, 2N	IBps, Z	
								axis		

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Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA • (714) 993 6112

Customer: L3 Harris Technologies Communication Systems (AZ)

15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter) Specification:

Work Order #: 109068 Date: 3/5/2024 Test Type: **Radiated Scan** Time: 14:40:00 Tested By: S. Yamamoto Sequence#: 4

Software: EMITest 5.03.20

**Equipment Tested:** 

Device	Manufacturer	Model #	S/N	
Configuration 1				

Support Equipment:

Device	Manufacturer	Model #	S/N	
Configuration 1				

### Test Conditions / Notes:

The equipment under test (EUT) is placed on top of the styrofoam surface.

The EUT is placed in a continuous transmit mode.

Frequency range of the EUT: 2402MHz to 2480MHz

Low, Middle, High channel frequencies: 2402MHz, 2440MHz, 2480MHz

Protocol:

BLE +8dBm 1Mbps Firmware settings: radio:p8, radio:m0

Data sheet is for field strength of harmonics

Frequency range of measurement 2.5GHz to 25GHz

RBW=1MHz VBW=3 MHz.

Test Environment Conditions:

Temperature: 18°C Humidity: 51% Pressure: 99kPa

Emission profile of the EUT rotated along three orthogonal axis was investigated.

Recorded data represent worse case emissions.

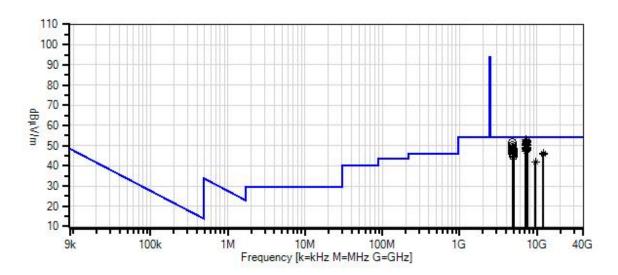
Site D

Test Method: ANSI C63.10-2020

Report No.: 109068-7A



L3 Harris Technologies Communication Systems (AZ) WO#: 109068 Sequence#: 4 Date: 3/5/2024 15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter) Test Distance: 3 Meters Horiz



Readings

- Peak Readings QP Readings
- Average Readings
- Ambient

Software Version: 5.03.20

1 - 15.249 Carrier and Spurious Emissions (2400-2483.5 MHz Transmitter)

## **Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	1/17/2024	1/17/2025
T2	ANP04382	Cable	LDF-50	5/18/2022	5/18/2024
T3	ANP07691	Cable	LDF1-50	9/9/2022	9/9/2024
T4	AN00787	Preamp	83017A	6/27/2023	6/27/2025
T5	ANP07657	Cable	32022-29094K- 29094K-24TC	6/22/2022	6/22/2024
Т6	AN03385	High Pass Filter	11SH10- 3000/T10000- O/O	5/15/2023	5/15/2025
Т7	AN02113	Horn Antenna- ANSI C63.5	3115	1/11/2023	1/11/2025
	AN01413	Horn Antenna	84125-80008	10/3/2022	10/3/2024

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WARNING: This document contains data under International Traffic in Arms Regulations (ITAR). Transfer of the data to a foreign person/entity requires an export license or exemption.

#	Freq	Rdng	eading lis T1	T2	T3	T4	Dist	Corr	Spec N	<b>I</b> argin	Polar
			T5	T6	T7						
	MHz	dΒμV	dB	dB	dB	dB	Table	$dB\mu V/m$	dBμV/m	dB	Ant
1	7205.745M	36.2	+0.0	+11.0	+6.8	-39.4	+0.0	53.0	54.0	-1.0	Vert
	Ave		+0.9	+0.2	+37.3				+8dBm, 1MB	ps, Y	
									axis		
	7440.660M	35.2	+0.0	+11.2	+6.9	-39.5	+0.0	52.4	54.0	-1.6	Vert
	Ave		+0.6	+0.3	+37.7				+8dBm, 1MB	ps, Y	
	= 1.10 = 0= 3.f	27.1	0.0			20.7	0.0		axis		** .
	7440.707M	35.1	+0.0	+11.2	+6.9	-39.5	+0.0	52.3	54.0	-1.7	Horiz
	Ave		+0.6	+0.3	+37.7				+8dBm, 1MB	ps, Z	
	7220 7153 4	25.2	.00	. 1 1 1	0	20.5	. 0. 0	50.0	axis	1.7	TT .
	7320.715M	35.3	+0.0	+11.1	+6.8	-39.5	+0.0	52.3	54.0	-1.7	Horiz
	Ave		+0.8	+0.3	+37.5				+8dBm, 1MB	ps, Z	
5	7319.745M	35.2	+0.0	+11.1	+6.8	-39.5	+0.0	52.2	54.0	-1.8	Uoriz
	7319.743WI Ave	33.2	+0.0 +0.8	+11.1	+37.5	-39.3	+0.0	32.2	+8dBm, 1MB		Horiz
	Avc		+0.6	+0.5	±31.3				axis	ps, <b>Z</b>	
6	7439.769M	34.9	+0.0	+11.2	+6.9	-39.5	+0.0	52.1	54.0	-1.9	Vert
	Ave	37.7	+0.6	+0.3	+37.7	-37.3	10.0	32.1	+8dBm, 1MB		VCIT
	11,0		10.0	10.5	137.7				axis	рз, т	
7	7206.778M	35.1	+0.0	+11.0	+6.8	-39.4	+0.0	51.9	54.0	-2.1	Vert
	Ave		+0.9	+0.2	+37.3	-,			+8dBm, 1MB		
									axis	1 /	
8	7440.700M	34.7	+0.0	+11.2	+6.9	-39.5	+0.0	51.9	54.0	-2.1	Vert
	Ave		+0.6	+0.3	+37.7				+8dBm, 1MB	ps, Z	
									axis	_	
9	7439.767M	34.6	+0.0	+11.2	+6.9	-39.5	+0.0	51.8	54.0	-2.2	Horiz
	Ave		+0.6	+0.3	+37.7				+8dBm, 1MB	ps, Z	
									axis		
٨	7439.767M	42.3	+0.0	+11.2	+6.9	-39.5	+0.0	59.5	54.0	+5.5	Horiz
			+0.6	+0.3	+37.7				+8dBm, 1MB	ps, Z	
									axis		
٨	7439.770M	39.8	+0.0	+11.2	+6.9	-39.5	+0.0	57.0	54.0	+3.0	Horiz
			+0.6	+0.3	+37.7				+8dBm, 1MB	ps, Y	
10	7006 6103 5	25.0	. 0. 0	. 1 1 0	0	20. 1	.0.0	£1.0	axis	2.2	77 '
	7206.610M	35.0	+0.0	+11.0	+6.8	-39.4	+0.0	51.8	54.0	-2.2	Horiz
	Ave		+0.9	+0.2	+37.3				+8dBm, 1MB	ps, Z	
12	7210 79014	247	ΙΔ Ω	, 1 1 1	16.0	20.5	100	517	axis	-2.3	<b>V</b> /
	7319.780M Ave	34.7	$+0.0 \\ +0.8$	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	51.7	54.0 +8dBm, 1MB		Vert
	AVE		+0.0	+0.3	+31.3				axis	ρs, 1	
1/1	7439.775M	34.5	+0.0	+11.2	+6.9	-39.5	+0.0	51.7	54.0	-2.3	Vert
	Ave	J <del>4</del> .J	+0.6	+0.3	+37.7	-37.3	10.0	J1.1	+8dBm, 1MB		v CI t
	1110		10.0	10.5	131.1				axis	γο, Δ	
15	7320.800M	34.5	+0.0	+11.1	+6.8	-39.5	+0.0	51.5	54.0	-2.5	Vert
	Ave	57.5	+0.8	+0.3	+37.5	37.3	10.0	51.5	+8dBm, 1MB		, 011
			. 0.0	. 0.5						P, -	



16 4803.952M	43.2	+0.0 +0.6	+8.3 +0.3	+5.3 +33.1	-39.5	+0.0	51.3	54.0 -2.7 +8dBm, 1MBps, Z axis	Horiz
17 7206.700M Ave	34.3	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	51.1	54.0 -2.9 +8dBm, 1MBps, X axis	Horiz
^ 7206.610M	42.0	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	58.8	54.0 +4.8 +8dBm, 1MBps, Z axis	Horiz
19 7205.765M Ave	33.9	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	50.7	54.0 -3.3 +8dBm, 1MBps, Z axis	Horiz
20 7205.742M Ave	33.9	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	50.7	54.0 -3.3 +8dBm, 1MBps, X axis	Horiz
21 7319.770M Ave	33.6	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	50.6	54.0 -3.4 +8dBm, 1MBps, X axis	Horiz
22 7320.710M Ave	33.3	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	50.3	54.0 -3.7 +8dBm, 1MBps, X axis	Horiz
23 4803.812M	42.1	+0.0 +0.6	+8.3 +0.3	+5.3 +33.1	-39.5	+0.0	50.2	54.0 -3.8 +8dBm, 1MBps, X axis	Horiz
24 7205.777M Ave	33.2	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	50.0	54.0 -4.0 +8dBm, 1MBps, Y axis	Horiz
^ 7205.765M	41.8	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	58.6	54.0 +4.6 +8dBm, 1MBps, Z axis	Horiz
^ 7205.742M	40.9	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	57.7	54.0 +3.7 +8dBm, 1MBps, X axis	Horiz
^ 7205.777M	40.9	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	57.7	54.0 +3.7 +8dBm, 1MBps, Y axis	Horiz
28 7439.870M Ave	32.1	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	49.3	54.0 -4.7 +8dBm, 1MBps, Y axis	Horiz
29 4803.833M	41.2	+0.0 +0.6	+8.3 +0.3	+5.3 +33.1	-39.5	+0.0	49.3	54.0 -4.7 +8dBm, 1MBps, Y axis	Horiz
30 7206.726M Ave	32.4	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	49.2	54.0 -4.8 +8dBm, 1MBps, X axis	Vert



31 7319.780M Ave	32.1	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	49.1	54.0 -4.9 +8dBm, 1MBps, Y	Horiz
^ 7319.745M	42.4	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	59.4	34.0 +5.4 +8dBm, 1MBps, Z	Horiz
^ 7319.770M	41.2	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	58.2	axis 54.0 +4.2 +8dBm, 1MBps, X	Horiz
^ 7319.780M	39.9	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	56.9	axis 54.0 +2.9 +8dBm, 1MBps, Y	Horiz
35 7440.712M Ave	31.8	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	49.0	axis 54.0 -5.0 +8dBm, 1MBps, X axis	Vert
36 7205.745M Ave	32.2	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	49.0	54.0 -5.0 +8dBm, 1MBps, X axis	Vert
37 7439.773M Ave	31.8	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	49.0	54.0 -5.0 +8dBm, 1MBps, X axis	Vert
38 7439.772M Ave	31.7	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	48.9	54.0 -5.1 +8dBm, 1MBps, X axis	Vert
^ 7439.769M	42.3	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	59.5	54.0 +5.5 +8dBm, 1MBps, Y axis	Vert
^ 7439.775M	42.1	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	59.3	54.0 +5.3 +8dBm, 1MBps, Z axis	Vert
^ 7439.773M	40.1	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	57.3	54.0 +3.3 +8dBm, 1MBps, X axis	Vert
^ 7439.772M	39.8	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	57.0	54.0 +3.0 +8dBm, 1MBps, X axis	Vert
43 7320.800M Ave	31.8	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	48.8	54.0 -5.2 +8dBm, 1MBps, Y axis	Horiz
^ 7320.715M	42.6	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	59.6	54.0 +5.6 +8dBm, 1MBps, Z axis	Horiz
^ 7320.710M	41.1	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	58.1	54.0 +4.1 +8dBm, 1MBps, X axis	Horiz
^ 7320.800M	40.2	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	57.2	54.0 +3.2 +8dBm, 1MBps, Y axis	Horiz



47 7206.747M Ave	32.0	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	48.8	54.0 -5.2 +8dBm, 1MBps, Y axis	Horiz
^ 7206.700M	41.0	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	57.8	54.0 +3.8 +8dBm, 1MBps, X axis	Horiz
^ 7206.747M	39.9	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	56.7	54.0 +2.7 +8dBm, 1MBps, Y axis	Horiz
50 7440.690M Ave	31.4	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	48.6	54.0 -5.4 +8dBm, 1MBps, Y axis	Horiz
^ 7440.707M	42.5	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	59.7	54.0 +5.7 +8dBm, 1MBps, Z axis	Horiz
^ 7440.690M	39.6	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	56.8	54.0 +2.8 +8dBm, 1MBps, Y axis	Horiz
53 7440.718M Ave	31.4	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	48.6	54.0 -5.4 +8dBm, 1MBps, X axis	Vert
^ 7440.700M	41.9	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	59.1	54.0 +5.1 +8dBm, 1MBps, Z axis	Vert
^ 7440.660M	41.8	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	59.0	54.0 +5.0 +8dBm, 1MBps, Y axis	Vert
^ 7440.712M	39.8	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	57.0	54.0 +3.0 +8dBm, 1MBps, X axis	Vert
^ 7440.718M	39.4	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	56.6	54.0 +2.6 +8dBm, 1MBps, X axis	Vert
^ 7440.718M	39.3	+0.0 +0.6	+11.2 +0.3	+6.9 +37.7	-39.5	+0.0	56.5	54.0 +2.5 +8dBm, 1MBps, X axis	Vert
59 7319.785M Ave	31.4	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	48.4	54.0 -5.6 +8dBm, 1MBps, X axis	Vert
60 7320.702M Ave	31.3	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	48.3	54.0 -5.7 +8dBm, 1MBps, Z axis	Vert
^ 7320.800M	42.3	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	59.3	54.0 +5.3 +8dBm, 1MBps, Y axis	Vert



62 7319.762M Ave	31.2	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	48.2	54.0 -5.8 +8dBm, 1MBps, Z axis	Vert
^ 7319.780M	42.5	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	59.5	54.0 +5.5 +8dBm, 1MBps, Y axis	Vert
^ 7319.785M	39.3	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	56.3	54.0 +2.3 +8dBm, 1MBps, X axis	Vert
^ 7319.762M	38.9	+0.0 +0.8	+11.1 +0.3	+6.8 +37.5	-39.5	+0.0	55.9	54.0 +1.9 +8dBm, 1MBps, Z axis	Vert
66 7206.710M Ave	31.3	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	48.1	54.0 -5.9 +8dBm, 1MBps, Z axis	Vert
^ 7206.778M	42.5	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	59.3	54.0 +5.3 +8dBm, 1MBps, Y axis	Vert
^ 7206.726M	40.3	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	57.1	54.0 +3.1 +8dBm, 1MBps, X axis	Vert
^ 7206.710M	39.0	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	55.8	54.0 +1.8 +8dBm, 1MBps, Z axis	Vert
^ 7206.710M	38.5	+0.0 +0.9	+11.0 +0.2	+6.8 +37.3	-39.4	+0.0	55.3	54.0 +1.3 +8dBm, 1MBps, Z axis	Vert
71 4880.200M	39.6	+0.0 +0.6	+8.4 +0.3	+5.4 +33.3	-39.5	+0.0	48.1	54.0 -5.9 +8dBm, 1MBps, Y axis	Horiz
72 4804.180M	39.9	+0.0 +0.6	+8.3 +0.3	+5.3 +33.1	-39.5	+0.0	48.0	54.0 -6.0 +8dBm, 1MBps, X axis	Vert
73 4804.288M	39.8	+0.0 +0.6	+8.3 +0.3	+5.3 +33.1	-39.5	+0.0	47.9	54.0 -6.1 +8dBm, 1MBps, Y axis	Vert
74 4880.153M	39.3	+0.0 +0.6	+8.4 +0.3	+5.4 +33.3	-39.5	+0.0	47.8	54.0 -6.2 +8dBm, 1MBps, Z axis	Horiz
75 4879.997M	39.3	+0.0 +0.6	+8.4 +0.3	+5.4 +33.3	-39.5	+0.0	47.8	54.0 -6.2 +8dBm, 1MBps, Y axis	Vert
76 4960.038M	38.8	+0.0 +0.6	+8.5 +0.3	+5.5 +33.5	-39.5	+0.0	47.7	54.0 -6.3 +8dBm, 1MBps, X axis	Vert



77	7320.696M	30.7	+0.0	+11.1	+6.8	-39.5	+0.0	47.7	54.0 -6.3	Vert
	Ave		+0.8	+0.3	+37.5				+8dBm, 1MBps, X	
									axis	
^	7320.702M	40.0	+0.0	+11.1	+6.8	-39.5	+0.0	57.0	54.0 +3.0	Vert
			+0.8	+0.3	+37.5				+8dBm, 1MBps, Z	
									axis	
٨	7320.696M	39.0	+0.0	+11.1	+6.8	-39.5	+0.0	56.0	54.0 +2.0	Vert
	7320.07011	37.0	+0.8	+0.3	+37.5	37.3	10.0	30.0	+8dBm, 1MBps, X	VOIT
			10.0	10.5	137.3				axis	
80	4960.445M	38.8	+0.0	+8.5	+5.5	-39.5	+0.0	47.7	54.0 -6.3	Horiz
80	4300.443IVI	30.0	+0.6			-37.3	+0.0	47.7		110112
			+0.0	+0.3	+33.5				+8dBm, 1MBps, Y	
0.1	4000 2571 5	20.0	0.0	0.4		20.5	0.0	47. 5	axis	** .
81	4880.357M	39.0	+0.0	+8.4	+5.4	-39.5	+0.0	47.5	54.0 -6.5	Horiz
			+0.6	+0.3	+33.3				+8dBm, 1MBps, X	
									axis	
82	4959.816M	38.5	+0.0	+8.5	+5.5	-39.5	+0.0	47.4	54.0 -6.6	Vert
			+0.6	+0.3	+33.5				+8dBm, 1MBps, Y	
									axis	
83	4960.215M	38.5	+0.0	+8.5	+5.5	-39.5	+0.0	47.4	54.0 -6.6	Horiz
			+0.6	+0.3	+33.5				+8dBm, 1MBps, Z	
									axis	
84	7205.760M	30.4	+0.0	+11.0	+6.8	-39.4	+0.0	47.2	54.0 -6.8	Vert
	Ave	30.1	+0.9	+0.2	+37.3	37.1	10.0	17.2	+8dBm, 1MBps, Z	VOIT
	Ave		10.7	10.2	137.3				_	
_	7205.745M	43.7	+0.0	+11.0	+6.8	-39.4	+0.0	60.5	axis 54.0 +6.5	Vert
	7203.743WI	43.7				-39.4	+0.0	00.5		vert
			+0.9	+0.2	+37.3				+8dBm, 1MBps, Y	
	5005 5153 5	40.0		44.0		20.4			axis	**
^	7205.745M	40.3	+0.0	+11.0	+6.8	-39.4	+0.0	57.1	54.0 +3.1	Vert
			+0.9	+0.2	+37.3				+8dBm, 1MBps, X	
									axis	
^	7205.760M	39.1	+0.0	+11.0	+6.8	-39.4	+0.0	55.9	54.0 +1.9	Vert
			+0.9	+0.2	+37.3				+8dBm, 1MBps, Z	
									axis	
88	4804.115M	38.5	+0.0	+8.3	+5.3	-39.5	+0.0	46.6	54.0 -7.4	Horiz
	Ave		+0.6	+0.3	+33.1				+8dBm, 1MBps, Z	
									axis	
89	4880.455M	37.9	+0.0	+8.4	+5.4	-39.5	+0.0	46.4	54.0 -7.6	Vert
			+0.6		+33.3				+8dBm, 1MBps, X	
			. 3.0	. 0.2	. 23.3				axis	
90	12009.623	19.1	+0.0	+14.7	+9.2	-39.2	+0.0	46.3	54.0 -7.7	Horiz
30	M	17.1	+0.0	+14.7	+41.2	-37.4	10.0	+0.5	J <del>T</del> .U -1.1	110112
			±0.7	±0. <del>4</del>	⊤ <del>≒</del> 1.∠				+8dBm, 1MBps, Y	
	Ave								· · · · · · · · · · · · · · · · · · ·	
^	12000 (22	20.1	.00	. 1 4 7	.0.2	20.2	.0.0	56.2	axis	II.
^	12007.023	29.1	+0.0	+14.7	+9.2	-39.2	+0.0	56.3	54.0 +2.3	Horiz
	M		+0.9	+0.4	+41.2				.01D 134D XX	
									+8dBm, 1MBps, Y	
									axis	
92	4804.620M	38.1	+0.0	+8.3	+5.3	-39.5	+0.0	46.2	54.0 -7.8	Vert
			+0.6	+0.3	+33.1				+8dBm, 1MBps, Z	
									axis	



93	12009.623	18.5	+0.0	+14.7	+9.2	-39.2	+0.0	45.7	54.0 -8.3	Vert
	M		+0.9	+0.4	+41.2					
	Ave								+8dBm, 1MBps, Y	
									axis	
٨	12009.623	27.7	+0.0	+14.7	+9.2	-39.2	+0.0	54.9	54.0 +0.9	Vert
	M	21.1	+0.9	+0.4	+41.2	37.2	10.0	34.7	34.0 10.7	VCIT
	1V1		±0.9	⊤0. <del>4</del>	<b>⊤41.</b> ∠				+8dBm, 1MBps, Y	
									-	
- 0.5	10.60 5503.5	26.6	0.0	0.5		20.5	0.0	45.5	axis	***
95	4960.553M	36.6	+0.0	+8.5	+5.5	-39.5	+0.0	45.5	54.0 -8.5	Vert
			+0.6	+0.3	+33.5				+8dBm, 1MBps, Z	
									axis	
96	4959.993M	36.6	+0.0	+8.5	+5.5	-39.5	+0.0	45.5	54.0 -8.5	Vert
			+0.6	+0.3	+33.5				+8dBm, 1MBps, X	
									axis	
97	4879.887M	36.2	+0.0	+8.4	+5.4	-39.5	+0.0	44.7	54.0 -9.3	Vert
			+0.6	+0.3	+33.3				+8dBm, 1MBps, Z	
									axis	
98	9607.730M	19.1	+0.0	+13.2	+7.9	-39.0	+0.0	42.1	54.0 -11.9	Vert
	Ave	17.1	+0.9	+0.5	+39.5	-37.0	10.0	72.1	+8dBm, 1MBps, Y	VCIT
	AVC		±0.9	+0.5	±39.3				axis	
	0.607.7201.4	22.2	. 0. 0	. 12.2	.7.0	20.0	. 0. 0	55.0		X7
	9607.730M	32.2	+0.0	+13.2	+7.9	-39.0	+0.0	55.2	54.0 +1.2	Vert
			+0.9	+0.5	+39.5				+8dBm, 1MBps, Y	
									axis	
100	9607.792M	19.1	+0.0	+13.2	+7.9	-39.0	+0.0	42.1	54.0 -11.9	Horiz
	Ave		+0.9	+0.5	+39.5				+8dBm, 1MBps, Y	
									axis	
٨	9607.792M	28.0	+0.0	+13.2	+7.9	-39.0	+0.0	51.0	54.0 -3.0	Horiz
			+0.9	+0.5	+39.5				+8dBm, 1MBps, Y	
									axis	
L										

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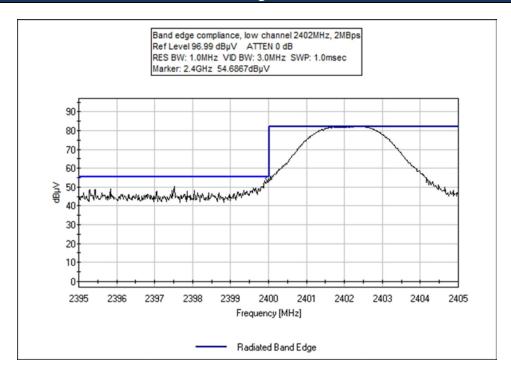
# Band Edge

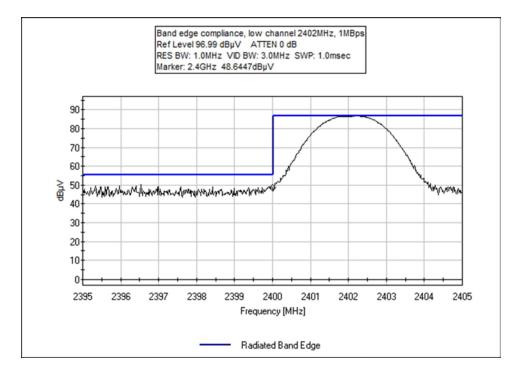
	Band Edge Summary								
Frequency (MHz)	Modulation	Ant. Type	Field Strength (dBuV/m @3m)	Limit (dBuV/m @3m)	Results				
2400	GFSK 2MBps	Integral	53.1	<54	Pass				
2483.5	GFSK 2MBps	Integral	45.6	<54	Pass				
2400	GFSK 1MBps	Integral	48.6	<54	Pass				
2483.5	GFSK 1MBps	Integral	44.6	<54	Pass				

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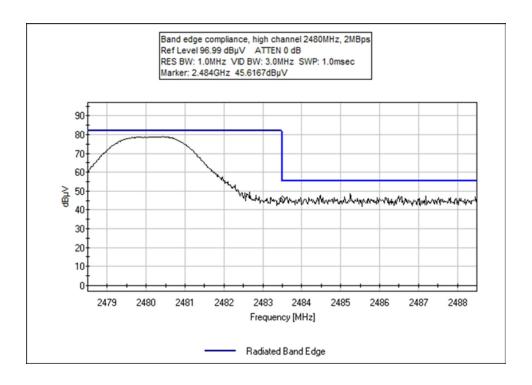


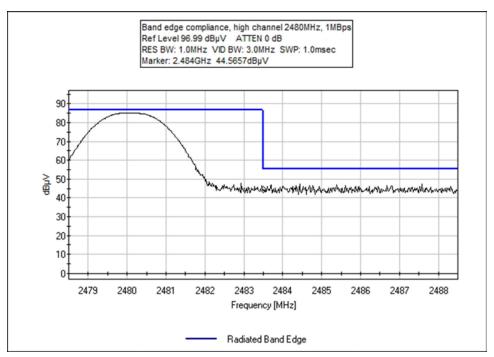
# **Band Edge Plots**













### **Test Setup / Conditions / Data**

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA • (714) 993 6112

Customer: L3 Harris Technologies Communication Systems (AZ)

Specification: Radiated Band Edge

Work Order #: 109068 Date: 3/11/2024
Test Type: Radiated Scan Time: 10:20:35
Tested By: S. Yamamoto Sequence#: 6

Software: EMITest 5.03.20

### **Equipment Tested:**

Device	Manufacturer	Model #	S/N	
Configuration 1				

### Support Equipment:

Device	Manufacturer	Model #	S/N	
Configuration 1				

### Test Conditions / Notes:

The equipment under test (EUT) is placed on top of the styrofoam tabletop.

The EUT is placed in a continuous transmit mode.

Frequency range of the EUT: 2402MHz to 2480MHz

Low, High channel frequencies: 2402MHz, 2480MHz

Protocol:

BLE +4dBm 2Mbps. Firmware settings: radio:p4, radio:m1 BLE +8dBm 1Mbps. Firmware settings: radio:p8, radio:m0

Measurement of radiated band edge compliance

RBW=1MHz, VBW=3 MHz.

**Test Environment Conditions:** 

Temperature: 17°C Humidity: 54% Pressure: 99kPa

Site D

Test Method: ANSI C63.10-2020

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## Test Equipment:

ID	Asset #	Description	Model	<b>Calibration Date</b>	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	1/17/2024	1/17/2025
T2	AN02113	Horn Antenna-	3115	1/11/2023	1/11/2025
		ANSI C63.5			
T3	ANP07657	Cable	32022-29094K-	6/22/2022	6/22/2024
			29094K-24TC		
T4	AN00787	Preamp	83017A	6/27/2023	6/27/2025
T5	ANP07691	Cable	LDF1-50	9/9/2022	9/9/2024
T6	ANP04382	Cable	LDF-50	5/18/2022	5/18/2024

WARNING: This document contains data under International Traffic in Arms Regulations (ITAR). Transfer of the data to a foreign person/entity requires an export license or exemption.

Measi	urement Data:	Re	eading lis	ted by ma	argin.		Тє	est Distance	e: 3 Meters		
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6							
	MHz	dΒμV	dB	dB	dB	dB	Table	$dB\muV/m$	$dB\muV/m$	dB	Ant
1	2400.000M	54.7	+0.0	+28.6	+0.5	-39.9	+0.0	53.1	54.0	-0.9	Horiz
			+3.6	+5.6					p4 m1		
2	2400.000M	48.6	+0.0	+28.6	+0.5	-39.9	+0.0	47.0	54.0	-7.0	Horiz
			+3.6	+5.6					p8 m0		
3	2483.500M	45.6	+0.0	+28.5	+0.5	-40.0	+0.0	44.0	54.0	-10.0	Horiz
			+3.7	+5.7					p4 m1		
4	2483.500M	44.6	+0.0	+28.5	+0.5	-40.0	+0.0	43.0	54.0	-11.0	Horiz
			+3.7	+5.7					p8 m0		

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# Test Setup Photo(s)



Below 1GHz



Above 1GHz, View 1





Above 1GHz, View 2



Above 1GHz, View 3



# **Appendix A: Manufacturer Declaration**

The following models have been tested by CKC Laboratories:

**Device:** Peripheral Overlay Display

Model: POD-PVS14

The manufacturer declares that the following additional models are identical electrically or any differences between them do not affect their EMC characteristics, and therefore meets the level of testing equivalent to the tested model:

Model numbers: Description

POD-PVS14-XY-ZZZZ; where X,Y, and Z are configurable options that do not affect emissions.

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# **Supplemental Information**

## **Measurement Uncertainty**

Uncertainty Value	Parameter			
5.77 dB	Radiated Emissions			
0.673 dB	RF Conducted Measurements			
5.77 x 10 <sup>-10</sup>	Frequency Deviation			
0.00005 s	Time Deviation			
3.18 dB	Mains Conducted Emissions			

Uncertainties reported are worst case for all CKC Laboratories' sites and represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Compliance is deemed to occur provided measurements are below the specified limits.

## **Emissions Test Details**

#### **TESTING PARAMETERS**

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

### **CORRECTION FACTORS**

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in  $dB\mu V/m$ , the spectrum analyzer reading in  $dB\mu V$  was corrected by using the following formula. This reading was then compared to the applicable specification limit. Individual measurements were compared with the displayed limit value in the margin column. The margin was calculated based on subtracting the limit value from the corrected measurement value; a positive margin represents a measurement exceeding the limit, while a negative margin represents a measurement less than the limit.

SAMPLE CALCULATIONS								
	Meter reading (dBμV)							
+	Antenna Factor	(dB/m)						
+	Cable Loss	(dB)						
-	Distance Correction	(dB)						
-	Preamplifier Gain	(dB)						
=	Corrected Reading	(dBμV/m)						

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#### TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE						
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING			
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz			
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz			
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz			
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz			
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz			

### SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or caret ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

### **Peak**

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

### **Quasi-Peak**

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

### <u>Average</u>

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.

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