

TEST REPORT

Report Number : 14523778-E12V2

Applicant : APPLE INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A.

Model : A2847 (Parent Model)
A3093, A3094, A3096 (Variant Models)

FCC ID : BCG-E8431A (Parent Model)
BCG-E8432A, BCG-E8433A, BCG-E8434A (Variant Models)

IC : 579C-E8431A (Parent Model)
579C-E8432A, 579C-E8433A, 579C-E8434A (Variant Models)

EUT Description : SMARTPHONE

Test Standard(s) : FCC CFR 47 PART 15 SUBPART F §15.519
ISED RSS-220 ISSUE 1 AMENDMENT 1

Date Of Issue:
AUGUST 09, 2023

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	7/31/2023	Initial Review	--
V2	8/9/2023	Adress TCB questions Sec. 1, 8, 9.2, 9.4	Alfonso Sanchez

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1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.	
Model	A2847 (Parent Model, Full Test) A3093, A3094, A3096 (Variant Models)	
Brand	APPLE	
FCC ID	BCG-E8431A (Parent Model) BCG-E8432A, BCG-E8433A, BCG-E8434A (Variant Models)	
IC	579C-E8431A (Parent model) 579C-E8432A, 579C-E8433A, 579C-E8434A (Variant Models)	
EUT Description	SMARTPHONE	
Serial Number	LG2RMFJ661, YRN2MWW1K3, M2XKGV73X, K2FYPFMWGG	
Sample Receipt Date	Feb 20, 2023, June 14, 2023, June 14, 2023, July 17, 2023	
Date Tested	FEBRUARY 27, 2023 to JULY 23, 2023	
Applicable Standards	FCC CFR 47 PART 15 SUBPART F §15.519 ISED RSS-220 ISSUE 1 AMENDMENT 1	
Test Results	COMPLIES	
<p>UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.</p> <p>The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.</p> <p>This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.</p>		
Approved & Released By:	Prepared & Reviewed By:	
		
Thu Chan Staff Engineer UL Verification Services Inc.	Alfonso Sanchez Senior Test Engineer UL Verification Services Inc.	

2. TEST RESULTS SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.4
15.503 & 15.519 (b)	RSS-220 Sect. 2	-10 dB BW	Complies	ANSI C63.10 Section 10.1
15.519 (c) & (e)	RSS-220 Sect. 4 (c) & 5.3.1 (d)	Pk Power & Max Avg Emissions	Complies	ANSI C63.10 Section 10.3
15.519 (a)(1)	RSS-220 Sect. 5.3.1 (b)	Cessation Time	Complies	None
15.519 (c) & 15.209 (a)	RSS-220 Sect. 3.4	Emissions Below 960 MHz	Complies	ANSI C63.10 Section 10.2
15.519 (c) & (d)	RSS-220 Sect. 5.3.1 (d) & (e)	Emissions Above 960 MHz	Complies	ANSI C63.10 Section 10.3
15.207 (a)	RSS-Gen 8.8	AC Power Line Conducted Emissions	Complies	ANSI C63.10 Section 6.2

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:

- CFR Title 47 Part 15 Subpart F
- KDB 393764 D01 UWB FAQ v02r01
- ANSI C63.10:2013
- ISED RSS-220 Issue 1 Amendment 1
- ISED RSS GEN Issue 5 Amendment 2

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
<input type="checkbox"/>	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
<input checked="" type="checkbox"/>	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
<input type="checkbox"/>	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
<input checked="" type="checkbox"/>	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
<input checked="" type="checkbox"/>	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

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

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U _{LAB}
Conducted Antenna Port Emission Measurement	1.940 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 %
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\begin{aligned}
 \text{EIRP (dBm)} &= \text{Meter Reading (dBm)} + \text{Antenna Factor (dB/m)} + \text{Pre-Amp Gain/Cbl Loss (dB)} \\
 &\quad + \text{dBm-to-dBm Unit Conversion Factor @ 3m} \\
 &= -60 \text{ dBm} + 28 \text{ dB/m} + (-27) \text{ dB} + 11.8 \\
 &= -47.2 \text{ dBm}
 \end{aligned}$$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\begin{aligned}\text{Final Voltage (dBuV)} &= \text{Measured Voltage (dBuV)} + \text{LISN Insertion Loss (dB)} + \text{Cable Loss (dB)} \\ &\quad + \text{Limiter Factor (dB)} \\ &= 38.32 \text{ dBuV} + 0.1 \text{ dB} + 0 \text{ dB} + 9.4 \text{ (dB)} \\ &= 47.82 \text{ dBuV}\end{aligned}$$

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The Apple iPhone is a smartphone with cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G NR1, 5G NR2, IEEE 802.11a/b/g/n/ac/ax, Bluetooth (BT), Ultra-Wideband (UWB), GPS, NFC, 802.15.4ab-NB and MSS technologies. The rechargeable battery is not user accessible.

The EUT has a UWB transceiver with two integral antennas (ANT1 = UWB1, ANT2 = ANT6/UWB0). ANT1 only operates on 8 GHz (Channel 9). ANT2 operates on 6.5 GHz (Channel 5) and 8 GHz (Channel 9). The antennas are not user accessible.

Testing was performed on the parent model and is used to support the application for the parent and variants identified in this report based on the test plan submitted and approved via KDB inquiry by the FCC and by ISED-Canada.

Parent Model: A2847, FCC ID: BCG-E8431A, IC: 579C-E8431A

Variant Models: A3093, FCC ID: BCG-E8432A, IC: 579C-E8432A
 A3094, FCC ID: BCG-E8433A, IC: 579C-E8433A
 A3096, FCC ID: BCG-E8434A, IC: 579C-E8434A

6.2. MAXIMUM OUTPUT POWER

Highest Average Powers based on ANT/CH for the parent model are listed as follow:

Parent Model (A2847)			
ANT	CH	CONFIG	Average Power (dBm EIRP)
1	9	101	-42.42
2	5	103	-42.36
2	9	701	-42.31

6.3. MODULATION

The UWB signal is BPSK pulsed modulated signal.

6.4. SOFTWARE AND FIRMWARE

The Software and Firmware version used at test is FT: 1868.0.30.0.1~1536.4601.33

7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

SUPPORT EQUIPMENT LIST			
Description	Manufacturer	Model	Serial Number
Laptop + Adapter	Apple	MacBook Pro	FVF1CBUHV29
Brisket – USB Adapter	Apple	Brisket UART Cable Pigtail	F2010M00004786
USB-C Power Adapter	Apple	A2305	C4H9516000APF4F4P
USB-C Ethernet Adapter	Ugreen	CM475	60600
USB-A to USB-C adapter	Anker	A8731	X002NCP6GR
USB-A Cable with Repeater	Ugreen	10321	X000TT2OLL

I/O CABLES

I/O CABLES					
Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
AC	1	AC	Un-shielded	2	N/A
USB	1	USB	Un-shielded	1	N/A

TEST SETUP

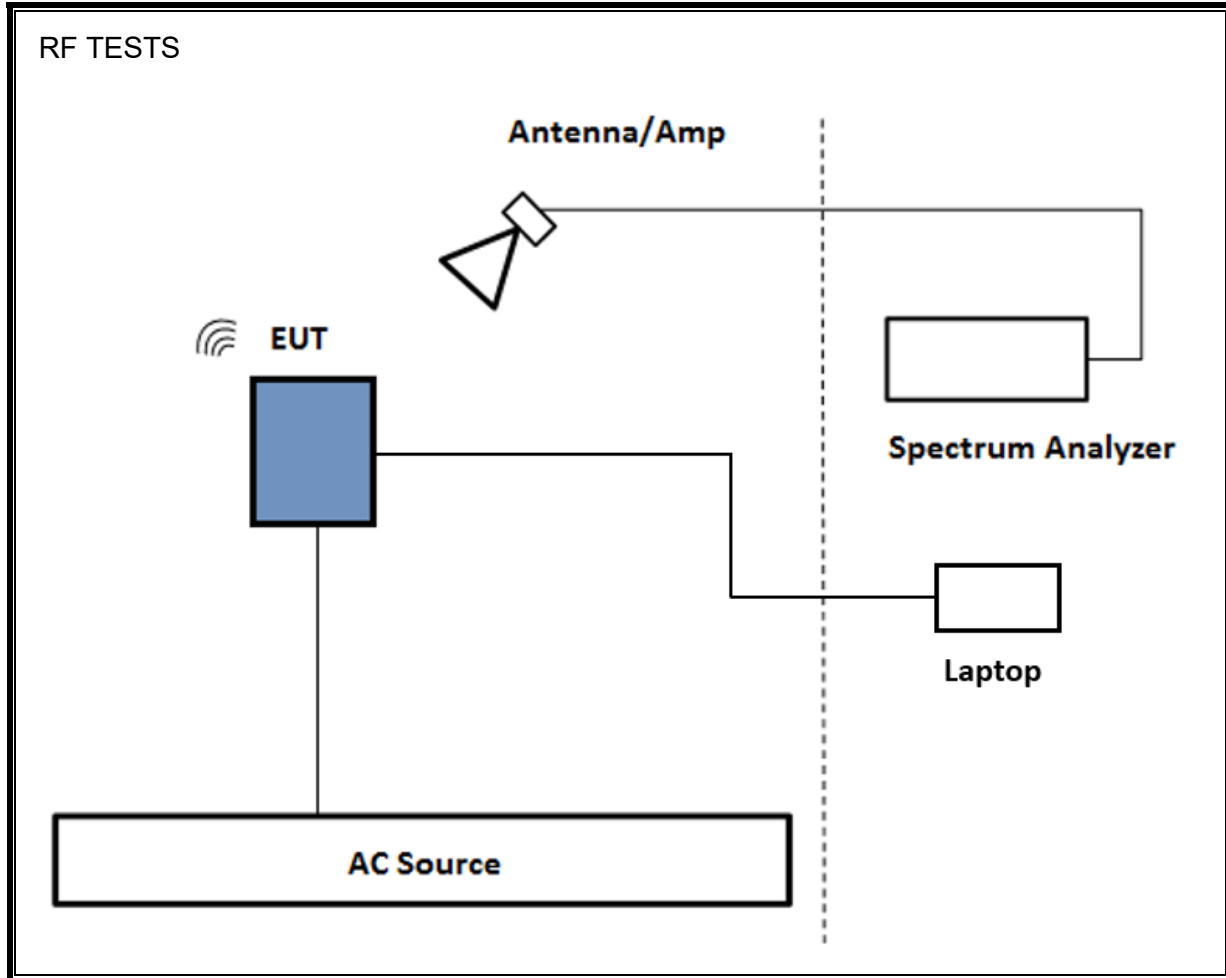
The EUT was examined at pre-scan test using a fundamental frequency in the portrait (z), landscape (y), and flatbed (x) position and the worst-case orientation of individual ANT/CH/CONFIG setting was determined for final spurious emission measurement. All selected configs are used for the Ant/Ch settings that were tested at default power (0 dBm), and Config 9 Payload 125 was chose for unwanted emission test with CH9 on Ant 1 and both CH5 and CH9 on Ant 2 on the parent model by setting at maximum output power higher than 0 dBm.

Measurements of spurious average emissions were made with the device operating at a higher power than production power to ensure compliance. Measurements of the in-band signal (peak and average emissions, 10 dBc bandwidth, 99% bandwidth) were all made at the production power settings.

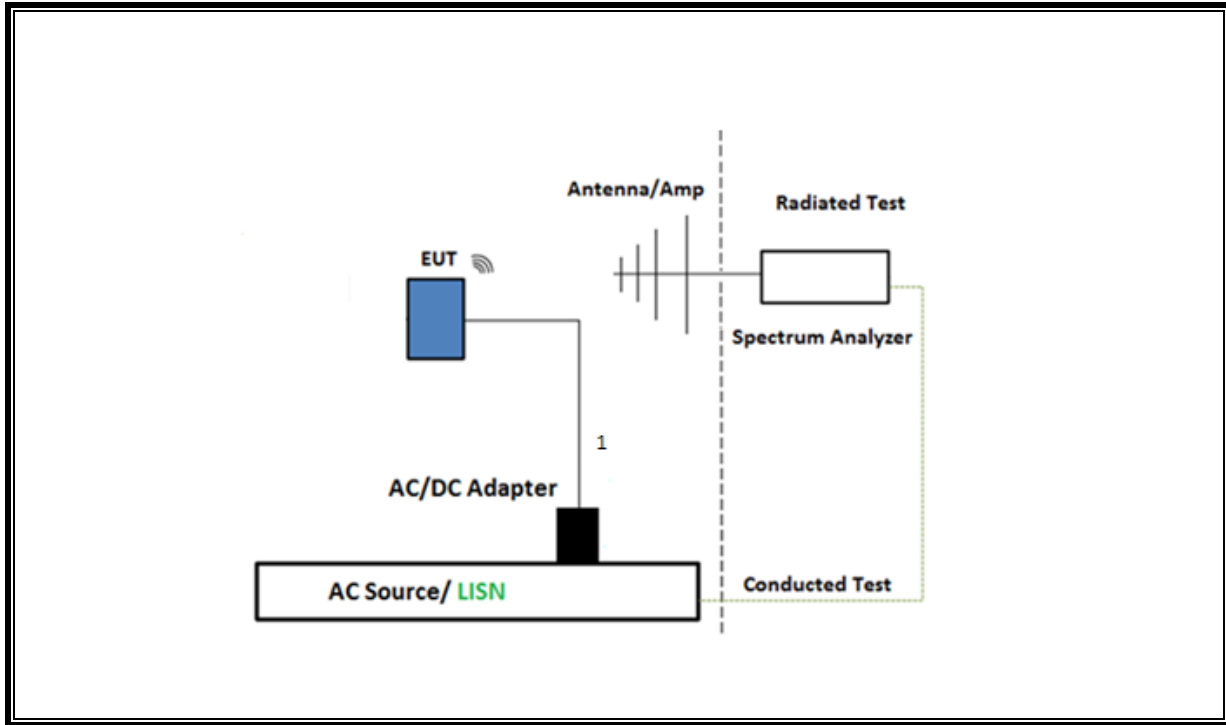
EUT was connected to AC power adapter in all test cases except 0.96-6GHz, 1164-1240MHz, and 1559-1610MHz due to noise unrelated to the UWB signal from the device.

For simultaneous transmission on the same antenna of multiple channels in the UWB and WiFi, no noticeable new emission was found.

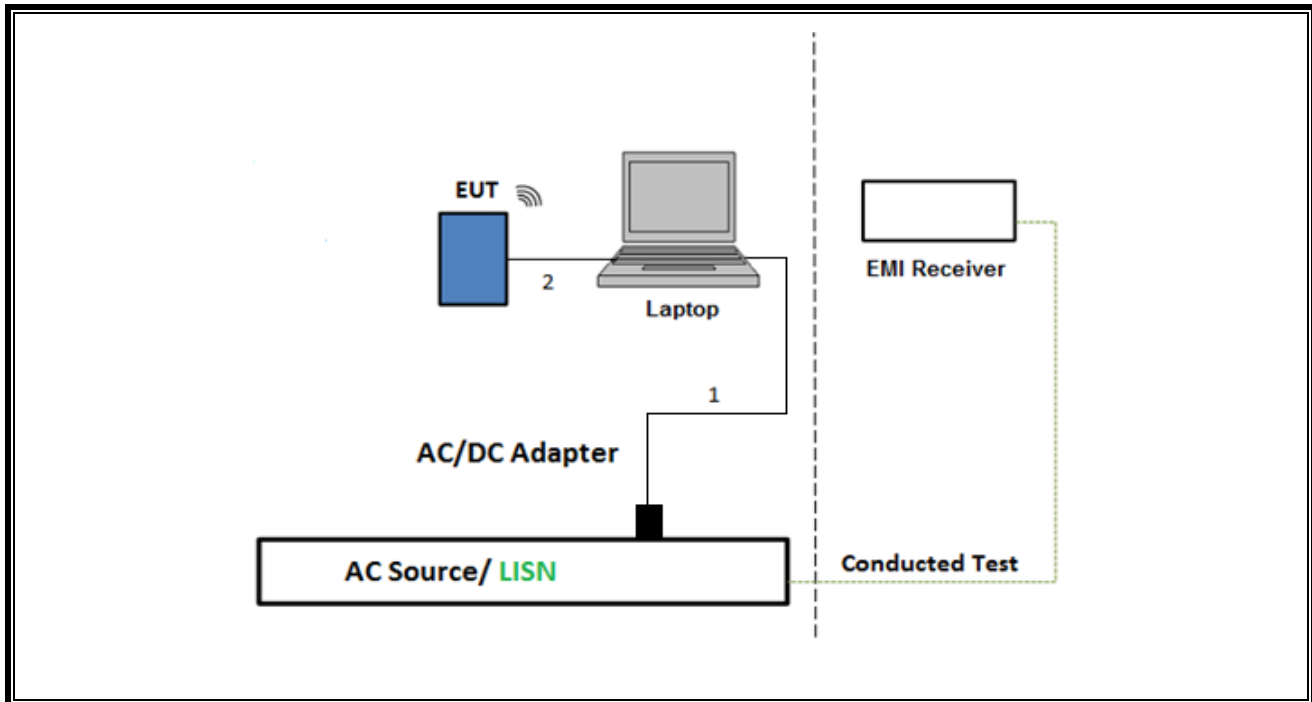
SETUP DIAGRAM FOR Above 1GHz TESTS



SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST



TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION



8. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List					
Description	Manufacturer	Model	Local ID	Cal Date	Cal Due
EMI Test Receiver	Rohde & Schwarz	ESW44	169937	2/16/2023	2/29/2024
Horn Antenna, 1-18 GHz	ETS-Lindgren	3117	200896	2/14/2023	2/28/2024
RF Filter Box, 1-18GHz	UL-FR1 (CTECH)	N/A	173528	12/22/2022	10/22/2023
EMI Test Receiver	Rohde & Schwarz	ESW44	223460	2/18/2023	2/29/2024
Horn Antenna, 1-18 GHz	ETS-Lindgren	3117	206805	7/5/2022	7/5/2023
RF Filter Box, 1-18GHz	UL-FR1 (CTECH)	N/A	224478	10/26/2022	10/26/2023
EMI Test Receiver	Rohde & Schwarz	ESW44	226078	2/22/2023	2/29/2024
Horn Antenna, 1-18 GHz	ETS-Lindgren	3117	226671	1/9/2023	1/9/2024
RF Filter Box, 1-18GHz	UL-FR1 (CTECH)	N/A	226779	3/5/2023	3/5/2024
EMI Test Receiver	Rohde & Schwarz	ESW44	235266	3/30/2023	3/31/2024
Horn Antenna, 1-18 GHz	ETS-Lindgren	3117	206808	3/7/2023	3/31/2024
RF Filter Box, 1-18GHz	UL-FR1 (CTECH)	N/A	173233	3/13/2023	3/31/2024
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	230634	1/23/2023	1/31/2024
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	79584	8/15/2022	8/15/2023
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	172354	10/21/2022	10/21/2023
Rf amplifier 18-26.5GHz	AMPLICAL	AMP18G26.5-60	221832	2/13/2023	2/13/2024
Antenna, Horn 26.5 to 40GHz	A.R.A.	MWH-2640/B	172369	10/21/2022	10/21/2023
Rf Amplifier, 26-40GHz	AMPLICAL	AMP26G40-60	221834	2/13/2023	2/13/2024
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170015	7/28/2022	7/28/2023
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	170013	7/28/2022	7/28/2023
Filter, HPF 11.2GHz, Ch9 11.5G HPF	Wainwright Instruments GmbH	WHW2-8165-11500-21000-40CD	176234	12/28/2022	12/28/2023
Filter, LPF 0-5400MHz Ch5/9 5.4G LPF	Wainwright Instruments GmbH	WLKX12-5400-5913-18000-60ST	204843	11/10/2022	11/10/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESR	93091	2/20/2023	2/29/2024
Cable, RG223 Coax, double shield, BNC	Pasternack Enterprises	RG233/U	202326	7/15/2022	7/31/2023
Cable, RG223 Coax, double shield, BNC	Pasternack Enterprises	RG233/U	202322	7/15/2022	7/31/2023
*Transient Limiter	TE	TBFL1	207996	7/15/2022	7/31/2023
LISN for Conducted Emissions CISPR-16	Fischer Custom Communications, Inc	FCC-LISN-50/250-25-2-01-480V	175765	1/27/2023	1/31/2024
Radiated Software	UL	UL EMC		Ver 9.5, 21 Jan 2022	
AC Line Conducted Software	UL	UL EMC		Ver 9.5, 21 Jan 2022	

*Tests were performed prior to the calibration date to ensure accurate measurements were recorded.

9. APPLICABLE LIMITS AND TEST RESULTS

9.1. 99% BANDWIDTH

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

ANSI C63.10 Section 6.9.3

The transmitter output is connected to a spectrum analyzer. The RBW is in the range of 1% to 5% of the OBW bandwidth. The VBW is set to $\geq 3 \cdot \text{RBW}$. The sweep time is coupled.

Tabulated data provides the test results of all available test configurations for the parent model. The plots for the parent model of Ant 1, CONFIG 9, Payload 125 on CH9 and Ant 2, CONFIG 9, Payload 125 on CH5 and CH9 bandwidth measurement on are presented and same measurement settings apply to the rest of the test configurations.

RESULTS

Parent Model

Employee IDs: 32188, 28499, 32479

Location: Chamber 05-RDE-A

Test Date: 6/18/23 – 6/20/23

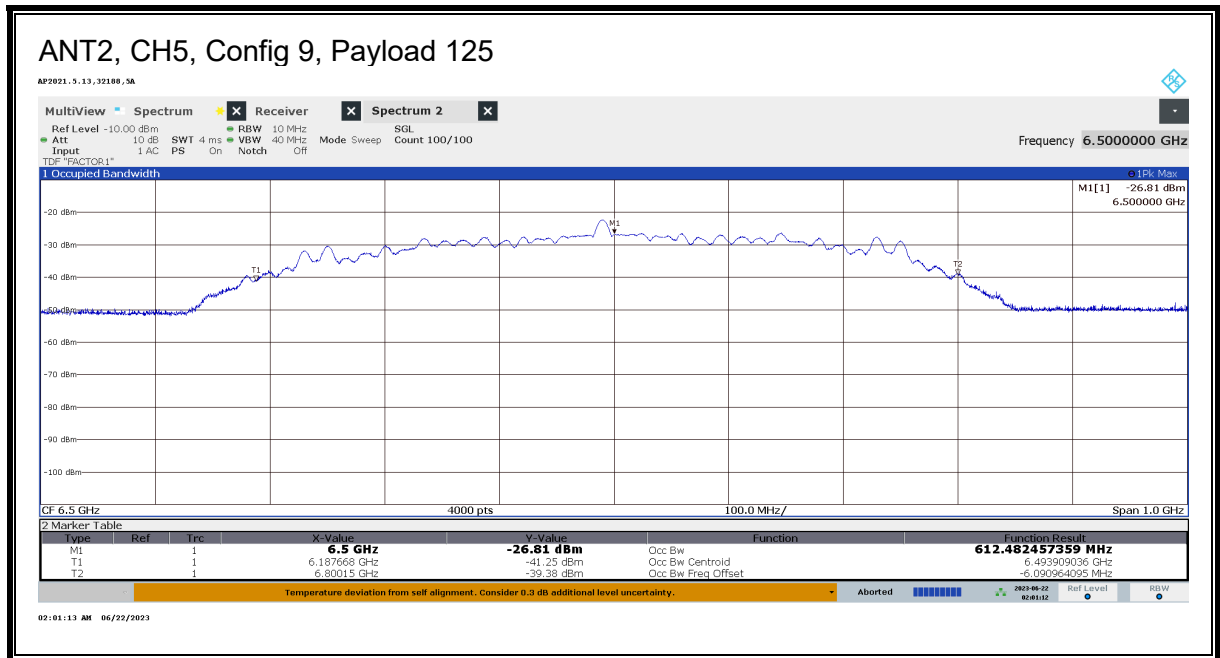
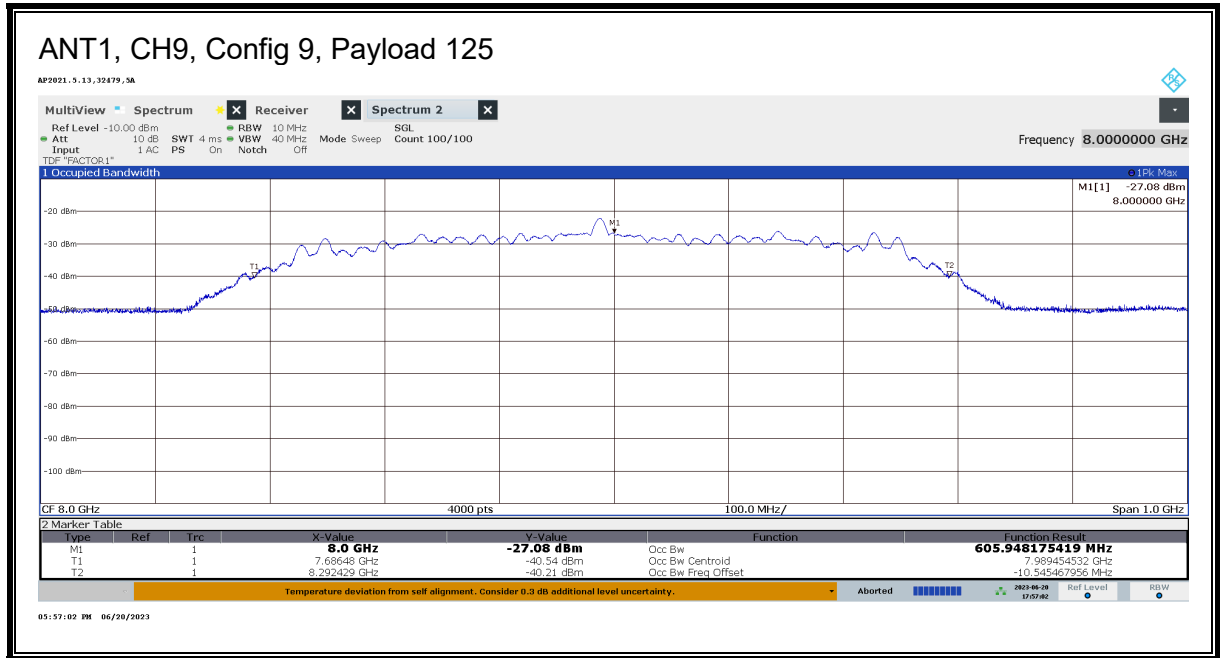
ANT	CH	CF	PL	EUT Orientation	Ant. Polarity	99% BW (MHz)
1	9	0	25	Portrait	H	589.14
1	9	1	45	Portrait	H	590.01
1	9	9	125	Portrait	H	605.95
1	9	10	25	Portrait	H	584.13
1	9	11	25	Portrait	H	584.17
1	9	11	65	Portrait	H	584.31
1	9	101	25	Portrait	H	584.78
1	9	101	65	Portrait	H	584.14
1	9	102	25	Portrait	H	584.10
1	9	102	65	Portrait	H	584.05
1	9	103	25	Portrait	H	585.02
1	9	103	125	Portrait	H	593.11
1	9	202	625	Portrait	H	853.17
1	9	402	445	Portrait	H	777.56
1	9	501	0	Portrait	H	586.09
1	9	503	0	Portrait	H	587.28
1	9	601	0	Portrait	H	590.60
1	9	605	0	Portrait	H	585.57
1	9	607	0	Portrait	H	584.67
1	9	701	0	Portrait	H	615.49
1	9	702	0	Portrait	H	598.79
1	9	703	0	Portrait	H	608.71
1	9	704	0	Portrait	H	613.28
1	9	705	0	Portrait	H	596.23
1	9	706	0	Portrait	H	599.61
1	9	405	4093	Portrait	H	814.27
1	9	407	4093	Portrait	H	793.87
1	9	801	0	Portrait	H	598.05
1	9	802	0	Portrait	H	591.98
1	9	803	0	Portrait	H	588.42
1	9	804	0	Portrait	H	611.95
1	9	805	0	Portrait	H	608.94
1	9	806	0	Portrait	H	603.25
1	9	807	0	Portrait	H	595.02
1	9	808	0	Portrait	H	589.79
1	9	809	0	Portrait	H	588.88
1	9	80A	0	Portrait	H	614.29
1	9	80B	0	Portrait	H	602.95
1	9	80C	0	Portrait	H	603.84

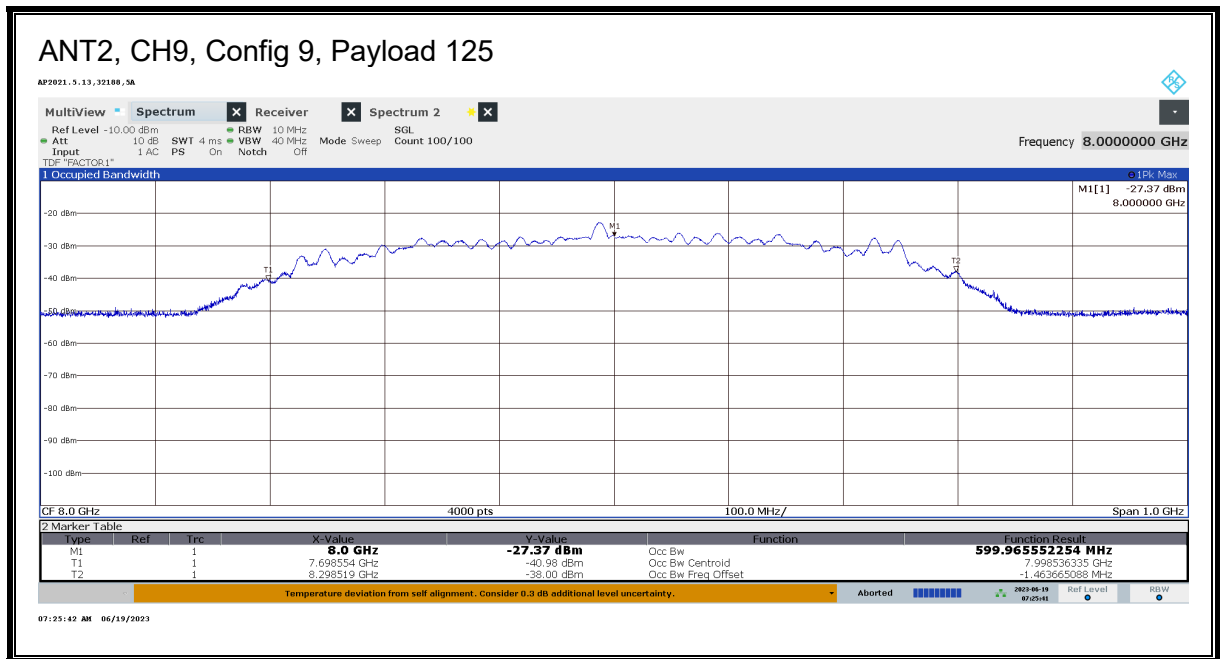
ANT	CH	CF	PL	EUT Orientation	Ant. Polarity	99% BW (MHz)
2	5	0	25	Landscape	V	587.55
2	5	1	45	Landscape	V	585.43
2	5	9	125	Landscape	V	612.48
2	5	10	25	Landscape	V	586.98
2	5	11	25	Landscape	V	585.70
2	5	11	65	Landscape	V	601.46
2	5	101	25	Landscape	V	594.57
2	5	101	65	Landscape	V	597.08
2	5	102	25	Landscape	V	593.95
2	5	102	65	Landscape	V	598.51
2	5	103	25	Landscape	V	598.22
2	5	103	125	Landscape	V	606.63
2	5	202	625	Landscape	V	865.90
2	5	402	445	Landscape	V	821.71
2	5	501	0	Landscape	V	593.30
2	5	503	0	Landscape	V	588.70
2	5	601	0	Landscape	V	613.95
2	5	605	0	Landscape	V	600.63
2	5	607	0	Landscape	V	601.20
2	5	701	0	Landscape	V	630.87
2	5	702	0	Landscape	V	619.02
2	5	703	0	Landscape	V	602.40
2	5	704	0	Landscape	V	608.28
2	5	705	0	Landscape	V	594.39
2	5	706	0	Landscape	V	597.76
2	5	405	4093	Landscape	V	770.97
2	5	407	4093	Landscape	V	739.91
2	5	801	0	Landscape	V	590.76
2	5	802	0	Landscape	V	590.70
2	5	803	0	Landscape	V	585.60
2	5	804	0	Landscape	V	611.87
2	5	805	0	Landscape	V	613.15
2	5	806	0	Landscape	V	602.47
2	5	807	0	Landscape	V	509.46
2	5	808	0	Landscape	V	589.51
2	5	809	0	Landscape	V	587.37
2	5	80A	0	Landscape	V	611.40
2	5	80B	0	Landscape	V	604.99
2	5	80C	0	Landscape	V	605.47

ANT	CH	CF	PL	EUT Orientation	Ant. Polarity	99% BW (MHz)
2	9	0	25	Flatbed	V	578.00
2	9	1	45	Flatbed	V	577.19
2	9	9	125	Flatbed	V	599.97
2	9	10	25	Flatbed	V	577.48
2	9	11	25	Flatbed	V	574.77
2	9	11	65	Flatbed	V	577.31
2	9	101	25	Flatbed	V	574.33
2	9	101	65	Flatbed	V	576.91
2	9	102	25	Flatbed	V	574.39
2	9	102	65	Flatbed	V	576.34
2	9	103	25	Flatbed	V	576.24
2	9	103	125	Flatbed	V	584.20
2	9	202	625	Flatbed	V	853.53
2	9	402	445	Flatbed	V	774.87
2	9	501	0	Flatbed	V	585.93
2	9	503	0	Flatbed	V	590.47
2	9	601	0	Flatbed	V	589.93
2	9	605	0	Flatbed	V	585.69
2	9	607	0	Flatbed	V	589.15
2	9	701	0	Flatbed	V	615.98
2	9	702	0	Flatbed	V	600.31
2	9	703	0	Flatbed	V	613.87
2	9	704	0	Flatbed	V	616.35
2	9	705	0	Flatbed	V	594.23
2	9	706	0	Flatbed	V	597.75
2	9	405	4093	Flatbed	V	823.83
2	9	407	4093	Flatbed	V	796.76
2	9	801	0	Flatbed	V	588.80
2	9	802	0	Flatbed	V	587.94
2	9	803	0	Flatbed	V	584.24
2	9	804	0	Flatbed	V	607.10
2	9	805	0	Flatbed	V	606.81
2	9	806	0	Flatbed	V	595.88
2	9	807	0	Flatbed	V	588.64
2	9	808	0	Flatbed	V	585.18
2	9	809	0	Flatbed	V	585.01
2	9	80A	0	Flatbed	V	605.64
2	9	80B	0	Flatbed	V	579.86
2	9	80C	0	Flatbed	V	599.95

99% BW

Parent Model





9.2. OPERATING BANDWIDTH

LIMITS

FCC

§15.503 (a) *UWB bandwidth*. For the purpose of this subpart, the UWB bandwidth is the frequency band bounded by the points that are 10 dB below the highest radiated emission, as based on the complete transmission system including the antenna. The upper boundary is designated f_H and the lower boundary is designated f_L . The frequency at which the highest radiated emission occurs is designated f_M .

§15.503 (b) *Center frequency*. The center frequency, f_C , equals $(f_H + f_L)/2$.

§15.503 (c) *Fractional bandwidth*. The fractional bandwidth equals $2(f_H - f_L)/(f_H + f_L)$.

§15.503 (d) *Ultra-wideband (UWB) transmitter*. An intentional radiator that, at any point in time, has a fractional bandwidth equal to or greater than 0.20 or has a UWB bandwidth equal to or greater than 500 MHz, regardless of the fractional bandwidth.

§15.519 (b) The UWB bandwidth of a device operating under the provisions of this section must be contained between 3100 MHz and 10,600 MHz.

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Section 2 A *UWB device* is an intentional radiator that has either a *-10 dB bandwidth* of at least 500 MHz or a *-10 dB fractional bandwidth* greater than 0.2.

Section 5.1 (a) The *-10 dB bandwidth* of the device shall be totally contained in the band 3.1-10.6 GHz.

“-10 dB bandwidth B_{-10} ” and “-10 dB fractional bandwidth μ_{-10} ” are defined as follows:

$$B_{-10} = f_H - f_L$$

$$\mu_{-10} = B_{-10}/f_C$$

where:

f_M is the frequency of maximum UWB transmission;

f_H is the highest frequency at which the power spectral density of the UWB transmission is -10 dB relative to f_M ;

f_L is the lowest frequency at which the power spectral density of the UWB transmission is -10 dB relative to f_M ; and

$f_C = (f_H + f_L)/2$ is the centre frequency of the -10 dB bandwidth.

TEST PROCEDURE

ANSI C63.10 Clause 10.1

RSS-220 Section 2 of the Annex

Tabulated data provides the test results of all available test configurations for the parent model. The plots for the parent model of Ant 1, CONFIG 9, Payload 125 on CH9 and Ant 2, CONFIG 9, Payload 125 on CH5 and CH9 bandwidth measurement on are presented and same measurement settings apply to the rest of the test configurations.

RESULTS

Employee IDs: 32188, 32479, 28499

Location: 05-RDE- A

Test Date: 6/18/23 – 6/23/23

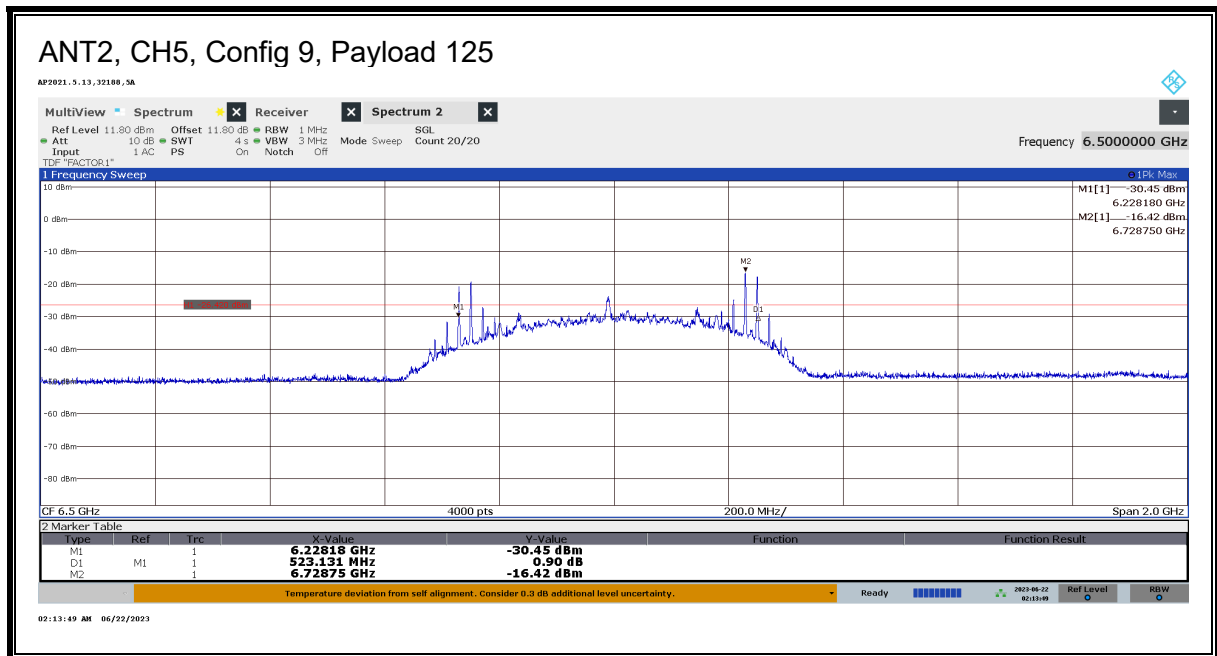
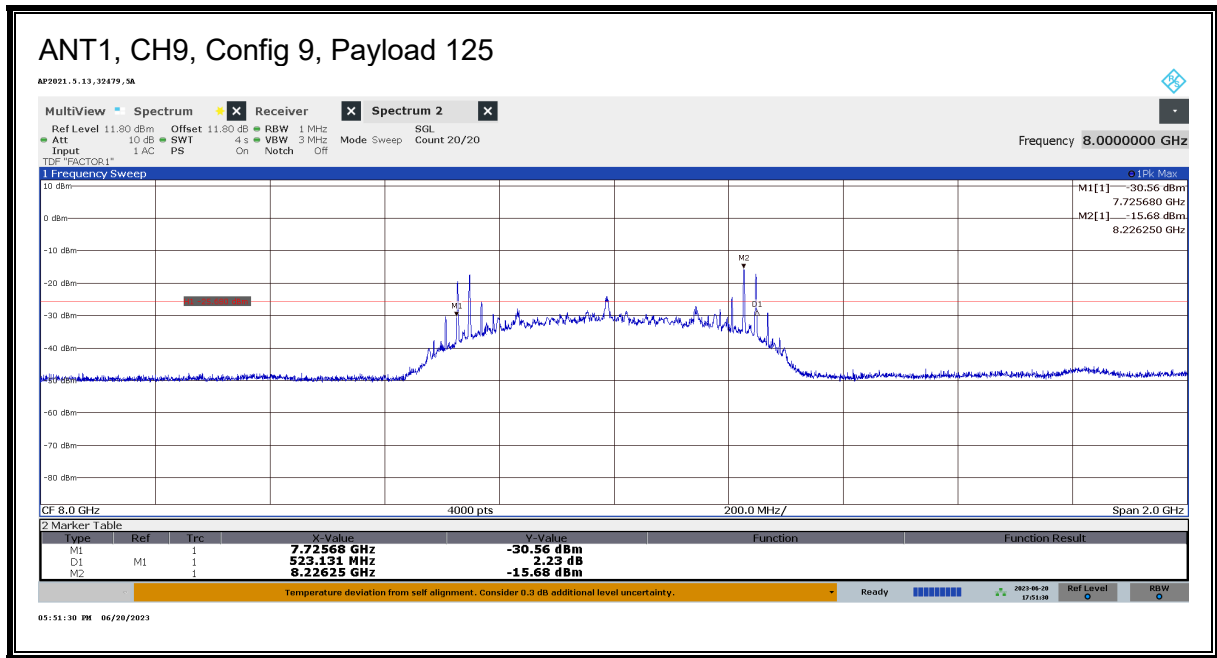
ANT	CH	CF	PL	EUT Orientation	Ant. Polarity	FM (GHz)	FL (GHz)	FH (GHz)	FC (GHz)	OBW (MHz)	Min. OBW (MHz)	OBW Margin (MHz)	OBW Pass/Fail
1	9	0	25	Portrait	H	8.22625	7.72418	8.25031	7.987245	526.13	500	26.13	P
1	9	1	45	Portrait	H	8.22625	7.72418	8.25031	7.987245	526.13	500	26.13	P
1	9	9	125	Portrait	H	8.2263	7.7257	8.248811	7.987246	523.13	500	23.131	P
1	9	10	25	Portrait	H	8.2263	7.7242	8.250313	7.987247	526.13	500	26.132	P
1	9	11	25	Portrait	H	8.2268	7.7242	8.250313	7.987247	526.13	500	26.132	P
1	9	11	65	Portrait	H	8.2268	7.7242	8.250313	7.987247	526.13	500	26.132	P
1	9	101	25	Portrait	H	8.2268	7.7265	8.252111	7.989296	525.63	500	25.631	P
1	9	101	65	Portrait	H	8.2268	7.7242	8.250313	7.987247	526.13	500	26.133	P
1	9	102	25	Portrait	H	8.2268	7.7247	8.250313	7.987497	525.63	500	25.633	P
1	9	102	65	Portrait	H	8.2263	7.7247	8.250312	7.987497	525.63	500	25.631	P
1	9	103	25	Portrait	H	8.2268	7.7247	8.250312	7.987497	525.63	500	25.631	P
1	9	103	125	Portrait	H	8.2263	7.7247	8.250312	7.987497	525.63	500	25.631	P
1	9	202	625	Portrait	H	8.2268	7.7252	8.250312	7.987747	525.13	500	25.131	P
1	9	402	445	Portrait	H	8.2263	7.7247	8.25031	7.987495	525.63	500	25.63	P
1	9	501	0	Portrait	H	8.2268	7.7247	8.250313	7.987497	525.63	500	25.633	P
1	9	503	0	Portrait	H	8.2268	7.7247	8.250312	7.987497	525.63	500	25.631	P
1	9	601	0	Portrait	H	8.2268	7.7242	8.25031	7.987246	526.13	500	26.129	P
1	9	605	0	Portrait	H	8.2263	7.7242	8.25031	7.987245	526.13	500	26.13	P
1	9	607	0	Portrait	H	8.2268	7.7242	8.25031	7.987245	526.13	500	26.13	P
1	9	701	0	Portrait	H	8.2263	7.7232	8.25131	7.987246	528.13	500	28.129	P
1	9	702	0	Portrait	H	8.2263	7.7227	8.25781	7.990245	535.13	500	35.13	P
1	9	703	0	Portrait	H	8.2263	7.7232	8.25331	7.988245	530.13	500	30.13	P
1	9	704	0	Portrait	H	8.2263	7.7222	8.25732	7.98975	535.14	500	35.14	P
1	9	705	0	Portrait	H	8.2258	7.7232	8.25681	7.989995	533.63	500	33.63	P
1	9	706	0	Portrait	H	8.2258	7.7192	8.26232	7.99075	543.14	500	43.14	P
1	9	405	0	Portrait	H	8.2268	7.7232	8.25681	7.989995	533.63	500	33.63	P
1	9	407	0	Portrait	H	7.9563	7.7242	8.25381	7.988995	529.63	500	29.63	P
1	9	801	0	Portrait	H	7.9418	7.7232	8.26582	7.9945	542.64	500	42.64	P
1	9	802	0	Portrait	H	8.2263	7.7157	8.270818	7.993249	555.14	500	55.139	P
1	9	803	0	Portrait	H	7.9248	7.7157	8.273819	7.994749	558.14	500	58.14	P
1	9	804	0	Portrait	H	7.9873	7.7232	8.266317	7.994749	543.14	500	43.136	P
1	9	805	0	Portrait	H	8.2258	7.7157	8.271318	7.993499	555.64	500	55.639	P
1	9	806	0	Portrait	H	7.9248	7.7157	8.273819	7.994749	558.14	500	58.14	P
1	9	807	0	Portrait	H	7.9418	7.7232	8.266317	7.994749	543.14	500	43.136	P
1	9	808	0	Portrait	H	7.9418	7.7237	8.269818	7.99675	546.14	500	46.137	P
1	9	809	0	Portrait	H	7.9418	7.7232	8.266817	7.994999	543.64	500	43.636	P
1	9	80A	0	Portrait	H	7.9078	7.7232	8.270818	7.997	547.64	500	47.637	P
1	9	80B	0	Portrait	H	7.9873	7.7237	8.265316	7.994499	541.64	500	41.635	P
1	9	80C	0	Portrait	H	7.9873	7.7237	8.266817	7.995249	543.14	500	43.136	P

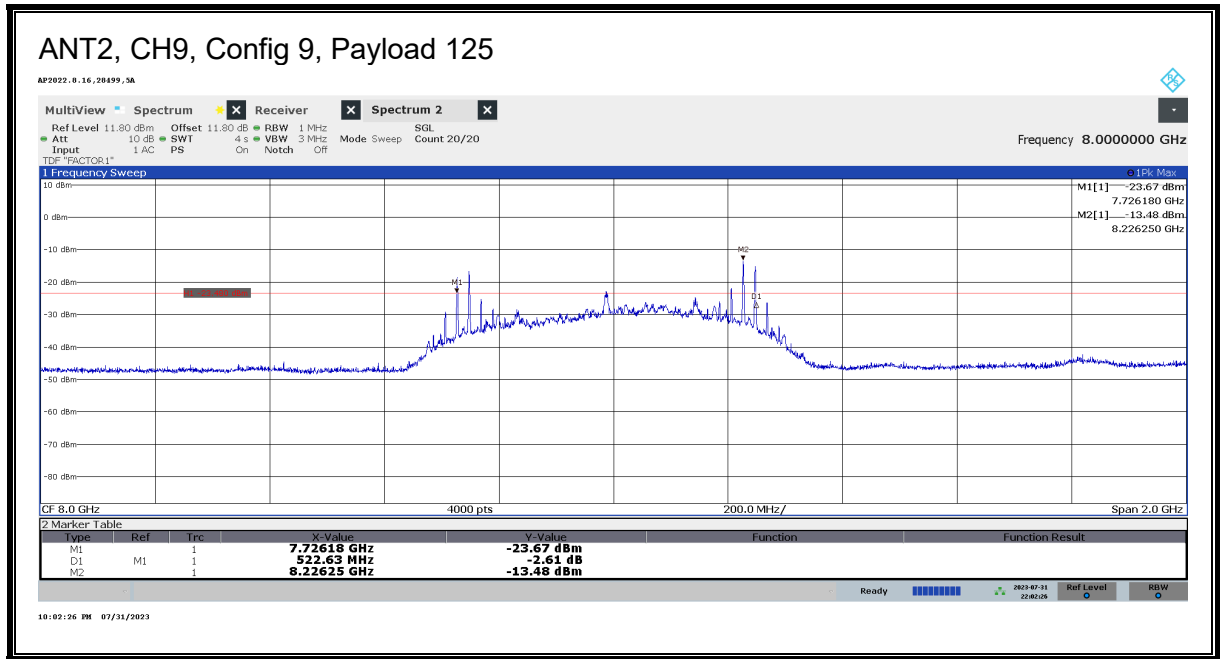
ANT	CH	CF	PL	EUT Orientation	Ant. Polarity	FM (GHz)	FL (GHz)	FH (GHz)	FC (GHz)	OBW (MHz)	Min. OBW (MHz)	OBW Margin (MHz)	OBW Pass/Fail
2	5	0	25	Landscape	V	6.7288	6.2267	6.752814	6.489748	526.13	500	26.132	P
2	5	1	45	Landscape	V	6.7288	6.2267	6.752814	6.489748	526.13	500	26.132	P
2	5	9	125	Landscape	V	6.7288	6.2282	6.751311	6.489746	523.13	500	23.131	P
2	5	10	25	Landscape	V	6.7288	6.2267	6.752814	6.489748	526.13	500	26.132	P
2	5	11	25	Landscape	V	6.7288	6.2267	6.752814	6.489748	526.13	500	26.132	P
2	5	11	65	Landscape	V	6.2503	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	101	25	Landscape	V	6.2508	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	101	65	Landscape	V	6.2503	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	102	25	Landscape	V	6.2503	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	102	65	Landscape	V	6.2508	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	103	25	Landscape	V	6.2508	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	103	125	Landscape	V	6.2503	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	202	625	Landscape	V	6.2503	6.2262	6.75231	6.489246	526.13	500	26.128	P
2	5	402	445	Landscape	V	6.2503	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	501	0	Landscape	V	6.2508	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	503	0	Landscape	V	6.2503	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	601	0	Landscape	V	6.2508	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	605	0	Landscape	V	6.2503	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	607	0	Landscape	V	6.2503	6.2262	6.75231	6.489245	526.13	500	26.13	P
2	5	701	0	Landscape	V	6.2513	6.2247	6.75331	6.488995	528.63	500	28.63	P
2	5	702	0	Landscape	V	6.2508	6.2202	6.75331	6.486745	533.13	500	33.13	P
2	5	703	0	Landscape	V	6.2513	6.2207	6.753313	6.486997	532.63	500	32.633	P
2	5	704	0	Landscape	V	6.2513	6.2167	6.753313	6.484996	536.63	500	36.634	P
2	5	705	0	Landscape	V	6.2508	6.2237	6.753312	6.488496	529.63	500	29.632	P
2	5	706	0	Landscape	V	6.2508	6.2217	6.753313	6.487497	531.63	500	31.633	P
2	5	405	4093	Landscape	V	6.2503	6.2202	6.752313	6.486247	532.13	500	32.133	P
2	5	407	4093	Landscape	V	6.2508	6.2167	6.752313	6.484496	535.63	500	35.634	P
2	5	801	0	Landscape	V	6.2508	6.2162	6.753314	6.484747	537.13	500	37.134	P
2	5	802	0	Landscape	V	6.2508	6.2162	6.753313	6.484746	537.13	500	37.134	P
2	5	803	0	Landscape	V	6.2508	6.2162	6.753313	6.484746	537.13	500	37.134	P
2	5	804	0	Landscape	V	6.3648	6.2182	6.753314	6.485747	535.13	500	35.134	P
2	5	805	0	Landscape	V	6.2508	6.2147	6.753314	6.483997	538.64	500	38.635	P
2	5	806	0	Landscape	V	6.2503	6.2162	6.753313	6.484746	537.13	500	37.134	P
2	5	807	0	Landscape	V	6.2508	6.2112	6.753314	6.482246	542.14	500	42.136	P
2	5	808	0	Landscape	V	6.4103	6.2162	6.753314	6.484747	537.13	500	37.134	P
2	5	809	0	Landscape	V	6.4273	6.2187	6.753314	6.485997	534.63	500	34.634	P
2	5	80A	0	Landscape	V	6.3648	6.2167	6.753313	6.484996	536.63	500	36.634	P
2	5	80B	0	Landscape	V	6.4273	6.2257	6.75331	6.489495	527.63	500	27.63	P
2	5	80C	0	Landscape	V	6.4273	6.2262	6.75331	6.489746	527.13	500	27.128	P

ANT	CH	CF	PL	EUT Orientation	Ant. Polarity	FM (GHz)	FL (GHz)	FH (GHz)	FC (GHz)	OBW (MHz)	Min. OBW (MHz)	OBW Margin (MHz)	OBW Pass/Fail
2	9	0	25	Flatbed	V	8.2268	7.7243	8.25031	7.98728	526.06	500	26.06	P
2	9	1	45	Flatbed	V	8.2268	7.7242	8.25082	7.9875	526.64	500	26.64	P
2	9	9	125	Flatbed	V	8.2263	7.7262	8.24881	7.987495	522.63	500	22.63	P
2	9	10	25	Flatbed	V	8.2263	7.7237	8.25132	7.987505	527.63	500	27.63	P
2	9	11	25	Flatbed	V	8.2268	7.7247	8.25031	7.987495	525.63	500	25.63	P
2	9	11	65	Flatbed	V	8.2263	7.7242	8.25083	7.987505	526.65	500	26.65	P
2	9	101	25	Flatbed	V	8.2268	7.7242	8.25058	7.98738	526.40	500	26.4	P
2	9	101	65	Flatbed	V	8.2268	7.7232	8.2708	7.997	547.60	500	47.6	P
2	9	102	25	Flatbed	V	8.2263	7.7232	8.27031	7.99675	547.12	500	47.12	P
2	9	102	65	Flatbed	V	8.2273	7.7237	8.27081	7.99725	547.12	500	47.12	P
2	9	103	25	Flatbed	V	8.2268	7.7237	8.27182	7.99776	548.12	500	48.12	P
2	9	103	125	Flatbed	V	8.2268	7.7237	8.27028	7.996985	546.59	500	46.59	P
2	9	202	625	Flatbed	V	8.2268	7.7237	8.27082	7.99725	547.14	500	47.14	P
2	9	402	445	Flatbed	V	8.2263	7.7237	8.25981	7.99175	536.12	500	36.12	P
2	9	501	0	Flatbed	V	8.2268	7.7232	8.27481	7.999005	551.61	500	51.61	P
2	9	503	0	Flatbed	V	8.2263	7.7247	8.25031	7.987495	525.63	500	25.63	P
2	9	601	0	Flatbed	V	8.2263	7.7247	8.25081	7.987745	526.13	500	26.13	P
2	9	605	0	Flatbed	V	8.2268	7.7247	8.25031	7.987495	525.63	500	25.63	P
2	9	607	0	Flatbed	V	8.2263	7.7247	8.25031	7.987495	525.63	500	25.63	P
2	9	701	0	Flatbed	V	8.2263	7.7237	8.251813	7.987747	528.13	500	28.132	P
2	9	702	0	Flatbed	V	8.2258	7.7237	8.257815	7.990748	534.13	500	34.134	P
2	9	703	0	Flatbed	V	8.2263	7.7237	8.263316	7.993499	539.64	500	39.635	P
2	9	704	0	Flatbed	V	8.2258	7.7237	8.265817	7.994749	542.14	500	42.136	P
2	9	705	0	Flatbed	V	8.2258	7.7237	8.261315	7.992498	537.63	500	37.634	P
2	9	706	0	Flatbed	V	8.2258	7.7237	8.271318	7.9975	547.64	500	47.637	P
2	9	405	4093	Flatbed	V	8.2268	7.7247	8.25081	7.987745	526.13	500	26.13	P
2	9	407	4093	Flatbed	V	8.0183	7.7247	8.25381	7.989245	529.13	500	29.13	P
2	9	801	0	Flatbed	V	8.0498	7.7237	8.26131	7.992495	537.63	500	37.63	P
2	9	802	0	Flatbed	V	8.0498	7.7237	8.25582	7.98975	532.14	500	32.14	P
2	9	803	0	Flatbed	V	8.0498	7.7237	8.25432	7.989	530.64	500	30.64	P
2	9	804	0	Flatbed	V	8.0498	7.7237	8.26582	7.99475	542.14	500	42.14	P
2	9	805	0	Flatbed	V	8.0498	7.7237	8.26182	7.99275	538.14	500	38.14	P
2	9	806	0	Flatbed	V	8.0498	7.7237	8.26182	7.99275	538.14	500	38.14	P
2	9	807	0	Flatbed	V	8.0493	7.7237	8.26282	7.99325	539.14	500	39.14	P
2	9	808	0	Flatbed	V	8.0498	7.7237	8.26632	7.995	542.64	500	42.64	P
2	9	809	0	Flatbed	V	8.0498	7.7237	8.26032	7.992	536.64	500	36.64	P
2	9	80A	0	Flatbed	V	8.0498	7.7237	8.26282	7.99325	539.14	500	39.14	P
2	9	80B	0	Flatbed	V	8.0498	7.7237	8.26632	7.995	542.64	500	42.64	P
2	9	80C	0	Flatbed	V	8.0498	7.7237	8.26708	7.99538	543.40	500	43.4	P

OPERATING BANDWIDTH

Parent Model





9.3. PEAK POWER AND MAXIMUM AVERAGE EMISSIONS

LIMITS

FCC

15.519 (e) There is a limit on the peak level of the emissions contained within a 50 MHz bandwidth centered on the frequency at which the highest radiated emission occurs, f_M . That limit is 0 dBm EIRP.

15.519 (c) The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

Frequency in MHz	EIRP in dBm
3100 - 10600	-41.3

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Annex, Section 4 (c) Peak measurements shall be made in addition to average measurements. Transmissions shall not exceed 0 dBm e.i.r.p. in any 50 MHz bandwidth when the average limit is -41.3 dBm/MHz.

Section 5.3.1 (d) Radiated emissions above 960 MHz from a device shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz.

Frequency	E.I.R.P. in a Resolution Bandwidth of 1 MHz
4.75 – 10.6 GHz	-41.3 dBm

TEST PROCEDURE

ANSI C63.10 Clause 10.3

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Peak EIPR power is measured using RBW of 50 MHz.

The radiated emissions of 6 - 9 GHz frequency band are performed at 3-meter test distance.

Tabulated data provides the test results of all available test configurations for the parent model. Plots for the parent model of Ant 1, CONFIG 9, Payload 125 on CH9 and Ant 2, CONFIG 9, Payload 125 on CH5 and CH9 peak and maximum average power measurements are presented and same measurement settings apply to the rest of test configurations.

RESULTS

Parent Model

Employee IDs: 32188, 32479, 28499

Location: 05-RDE- A

Test Date: 6/13/23 – 6/23/23

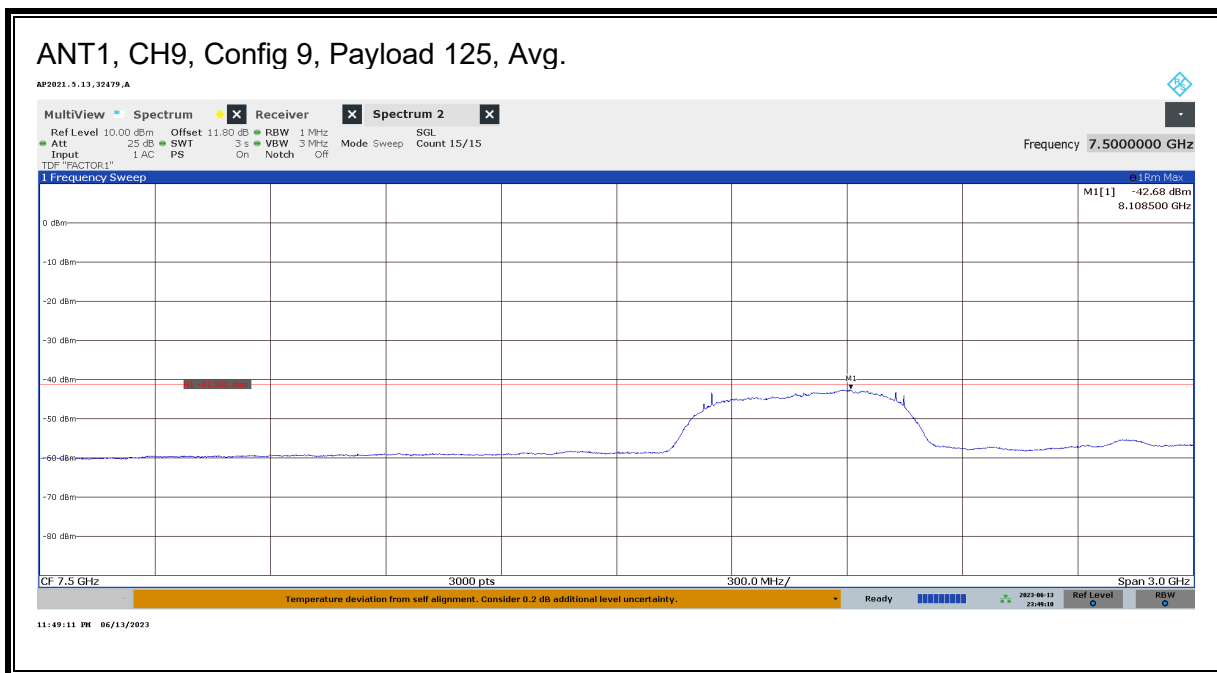
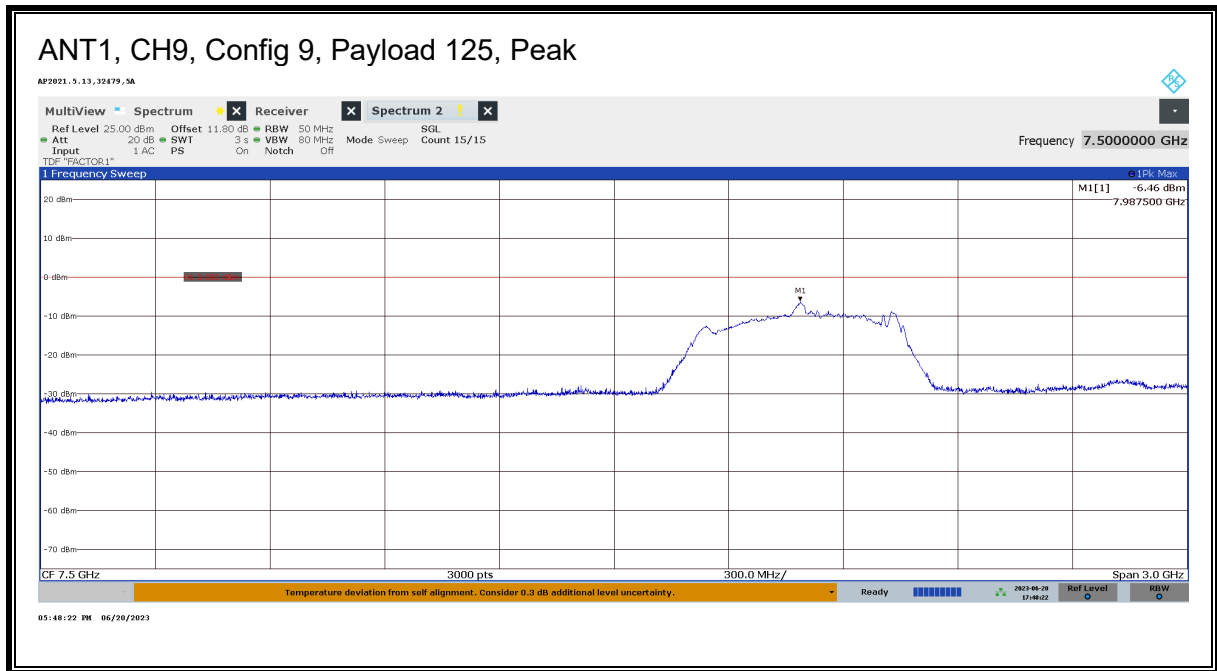
ANT	CH	CONFIG	Payload	EUT Orientation	Ant. Polarity	Peak EIRP Power				Average EIRP Power			
						FM (GHz)	Adj Pk	Peak Limit	Margin (dB)	FM (GHz)	Adj Avg	Avg Limit (dBm/MHz)	Margin (dB)
1	9	0	25	Portrait	H	7.9875	-1.47	0	-1.47	7.9715	-42.68	-41.3	-1.38
1	9	1	45	Portrait	H	7.9875	-1.35	0	-1.35	7.9555	-43.51	-41.3	-2.21
1	9	9	125	Portrait	H	7.9875	-6.46	0	-6.46	7.9655	-42.68	-41.3	-1.38
1	9	10	25	Portrait	H	7.9875	-1.37	0	-1.37	7.9715	-42.69	-41.3	-1.39
1	9	11	25	Portrait	H	7.9885	-1.15	0	-1.15	7.9565	-44.21	-41.3	-2.91
1	9	11	65	Portrait	H	7.9855	-1.59	0	-1.59	7.9555	-42.51	-41.3	-1.21
1	9	101	25	Portrait	H	7.9885	-1.45	0	-1.45	7.9565	-44.67	-41.3	-3.37
1	9	101	65	Portrait	H	7.9865	-1.44	0	-1.44	7.9555	-42.42	-41.3	-1.12
1	9	102	25	Portrait	H	7.9855	-1.24	0	-1.24	7.9555	-44.36	-41.3	-3.06
1	9	102	65	Portrait	H	7.9885	-1.44	0	-1.44	7.9565	-42.52	-41.3	-1.22
1	9	103	25	Portrait	H	7.9875	-1.33	0	-1.33	7.9715	-42.54	-41.3	-1.24
1	9	103	125	Portrait	H	7.9875	-3.81	0	-3.81	7.9555	-42.54	-41.3	-1.24
1	9	202	625	Portrait	H	8.2355	-11.65	0	-11.65	7.9875	-42.46	-41.3	-1.16
1	9	402	445	Portrait	H	8.2325	-9.97	0	-9.97	7.9995	-42.65	-41.3	-1.35
1	9	501	0	Portrait	H	8.2345	-1.21	0	-1.21	7.9715	-44.49	-41.3	-3.19
1	9	503	0	Portrait	H	8.2325	-1.38	0	-1.38	7.9665	-44.90	-41.3	-3.60
1	9	601	0	Portrait	H	8.2335	-2.62	0	-2.62	7.9485	-42.44	-41.3	-1.14
1	9	605	0	Portrait	H	8.2345	-1.27	0	-1.27	7.9475	-43.70	-41.3	-2.40
1	9	607	0	Portrait	H	8.2355	-1.43	0	-1.43	7.9565	-43.85	-41.3	-2.55
1	9	701	0	Portrait	H	8.2325	-5.23	0	-5.23	7.9945	-42.56	-41.3	-1.26
1	9	702	0	Portrait	H	8.2325	-5.43	0	-5.43	7.9605	-42.43	-41.3	-1.13
1	9	703	0	Portrait	H	8.2335	-5.46	0	-5.46	7.9995	-42.64	-41.3	-1.34
1	9	704	0	Portrait	H	8.2315	-7.20	0	-7.20	7.9875	-42.46	-41.3	-1.16
1	9	705	0	Portrait	H	7.9875	-3.01	0	-3.01	7.9875	-42.45	-41.3	-1.15
1	9	706	0	Portrait	H	8.1035	-4.35	0	-4.35	7.9995	-42.57	-41.3	-1.27
1	9	405	4093	Portrait	H	8.2335	-13.74	0	-13.74	7.9915	-42.57	-41.3	-1.27
1	9	407	4093	Portrait	H	8.2255	-13.34	0	-13.34	7.9875	-42.62	-41.3	-1.32
1	9	801	0	Portrait	H	8.2325	-3.75	0	-3.75	7.9875	-42.77	-41.3	-1.47
1	9	802	0	Portrait	H	8.2335	-3.18	0	-3.18	7.9665	-42.61	-41.3	-1.31
1	9	803	0	Portrait	H	8.2325	-2.80	0	-2.80	7.9665	-42.62	-41.3	-1.32
1	9	804	0	Portrait	H	8.2335	-6.24	0	-6.24	7.9875	-42.60	-41.3	-1.30
1	9	805	0	Portrait	H	8.2335	-6.07	0	-6.07	7.9655	-42.72	-41.3	-1.42
1	9	806	0	Portrait	H	8.2325	-5.40	0	-5.40	7.9655	-42.71	-41.3	-1.41
1	9	807	0	Portrait	H	8.2335	-3.62	0	-3.62	7.9875	-42.67	-41.3	-1.37
1	9	808	0	Portrait	H	8.2325	-2.73	0	-2.73	7.9585	-42.52	-41.3	-1.22
1	9	809	0	Portrait	H	8.2325	-2.61	0	-2.61	7.9975	-42.65	-41.3	-1.35
1	9	80A	0	Portrait	H	8.2335	-6.28	0	-6.28	7.9875	-42.58	-41.3	-1.28
1	9	80B	0	Portrait	H	8.2345	-5.24	0	-5.24	7.9975	-42.68	-41.3	-1.38
1	9	80C	0	Portrait	H	8.2325	-5.53	0	-5.53	7.9975	-42.69	-41.3	-1.39

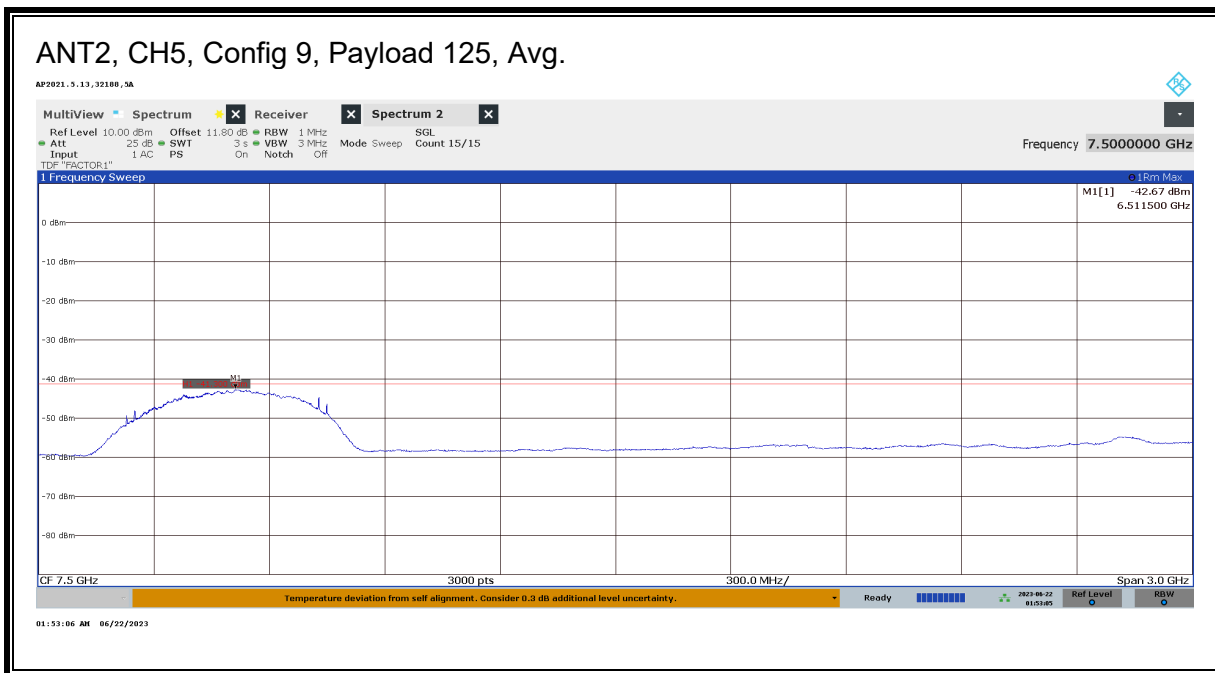
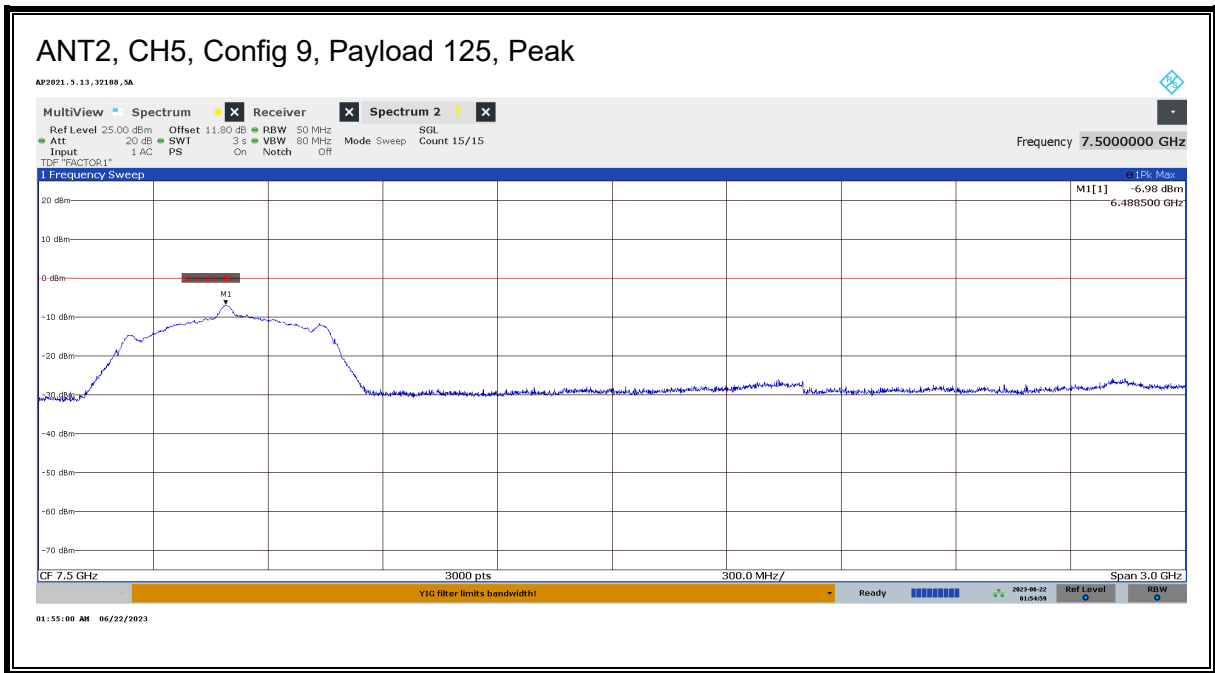
ANT	CH	CONFIG	Payload	EUT Orientation	Ant. Polarity	Peak EIRP Power				Average EIRP Power			
						FM (GHz)	Adj Pk	Peak Limit	Margin (dB)	FM (GHz)	Adj Avg	Avg Limit (dBm/MHz)	Margin (dB)
2	5	0	25	Landscape	V	6.5005	-1.82	0	-1.82	6.5175	-42.64	-41.3	-1.34
2	5	1	45	Landscape	V	6.5025	-1.28	0	-1.28	6.5205	-42.53	-41.3	-1.23
2	5	9	125	Landscape	V	6.4885	-6.98	0	-6.98	6.5115	-42.67	-41.3	-1.37
2	5	10	25	Landscape	V	6.4995	-1.73	0	-1.73	6.5175	-42.60	-41.3	-1.30
2	5	11	25	Landscape	V	6.5025	-1.17	0	-1.17	6.5205	-43.51	-41.3	-2.21
2	5	11	65	Landscape	V	6.4785	-3.48	0	-3.48	6.3955	-42.52	-41.3	-1.22
2	5	101	25	Landscape	V	6.4915	-1.81	0	-1.81	6.3885	-42.40	-41.3	-1.10
2	5	101	65	Landscape	V	6.5025	-3.13	0	-3.13	6.3955	-42.47	-41.3	-1.17
2	5	102	25	Landscape	V	6.4775	-1.22	0	-1.22	6.3795	-42.46	-41.3	-1.16
2	5	102	65	Landscape	V	6.4775	-3.73	0	-3.73	6.3805	-42.64	-41.3	-1.34
2	5	103	25	Landscape	V	6.4895	-3.51	0	-3.51	6.3805	-42.50	-41.3	-1.20
2	5	103	125	Landscape	V	6.4885	-5.96	0	-5.96	6.3805	-42.36	-41.3	-1.06
2	5	202	625	Landscape	V	6.2385	-14.75	0	-14.75	6.3805	-42.74	-41.3	-1.44
2	5	402	445	Landscape	V	6.2365	-12.67	0	-12.67	6.3785	-42.50	-41.3	-1.20
2	5	501	0	Landscape	V	6.2355	-2.17	0	-2.17	6.3795	-42.67	-41.3	-1.37
2	5	503	0	Landscape	V	6.2405	-2.30	0	-2.30	6.3855	-42.64	-41.3	-1.34
2	5	601	0	Landscape	V	6.2385	-5.13	0	-5.13	6.3815	-42.70	-41.3	-1.40
2	5	605	0	Landscape	V	6.2365	-2.68	0	-2.68	6.3815	-42.63	-41.3	-1.33
2	5	607	0	Landscape	V	6.2375	-2.72	0	-2.72	6.3815	-42.70	-41.3	-1.40
2	5	701	0	Landscape	V	6.2365	-7.74	0	-7.74	6.3895	-42.74	-41.3	-1.44
2	5	702	0	Landscape	V	6.3665	-7.40	0	-7.40	6.3915	-42.39	-41.3	-1.09
2	5	703	0	Landscape	V	6.3655	-7.04	0	-7.04	6.3775	-42.48	-41.3	-1.18
2	5	704	0	Landscape	V	6.3645	-8.30	0	-8.30	6.3645	-42.68	-41.3	-1.38
2	5	705	0	Landscape	V	6.3645	-3.48	0	-3.48	6.3825	-42.63	-41.3	-1.33
2	5	706	0	Landscape	V	6.3645	-4.89	0	-4.89	6.3755	-42.52	-41.3	-1.22
2	5	405	4093	Landscape	V	6.2415	-15.99	0	-15.99	6.3825	-42.68	-41.3	-1.38
2	5	407	4093	Landscape	V	6.2385	-15.24	0	-15.24	6.3815	-42.50	-41.3	-1.20
2	5	801	0	Landscape	V	6.2345	-5.46	0	-5.46	6.3645	-42.68	-41.3	-1.38
2	5	802	0	Landscape	V	6.2385	-5.36	0	-5.36	6.3855	-42.53	-41.3	-1.23
2	5	803	0	Landscape	V	6.2385	-4.34	0	-4.34	6.3865	-42.70	-41.3	-1.40
2	5	804	0	Landscape	V	6.2375	-8.68	0	-8.68	6.3645	-42.53	-41.3	-1.23
2	5	805	0	Landscape	V	6.2365	-8.33	0	-8.33	6.3435	-42.67	-41.3	-1.37
2	5	806	0	Landscape	V	6.2355	-7.22	0	-7.22	6.3865	-42.71	-41.3	-1.41
2	5	807	0	Landscape	V	6.2355	-5.33	0	-5.33	6.3645	-42.62	-41.3	-1.32
2	5	808	0	Landscape	V	6.2375	-4.87	0	-4.87	6.3935	-42.65	-41.3	-1.35
2	5	809	0	Landscape	V	6.2365	-4.48	0	-4.48	6.3945	-42.61	-41.3	-1.31
2	5	80A	0	Landscape	V	6.2345	-8.51	0	-8.51	6.3645	-42.63	-41.3	-1.33
2	5	80B	0	Landscape	V	6.2405	-8.21	0	-8.21	6.4415	-42.39	-41.3	-1.09
2	5	80C	0	Landscape	V	6.2765	-8.34	0	-8.34	6.4425	-42.68	-41.3	-1.38

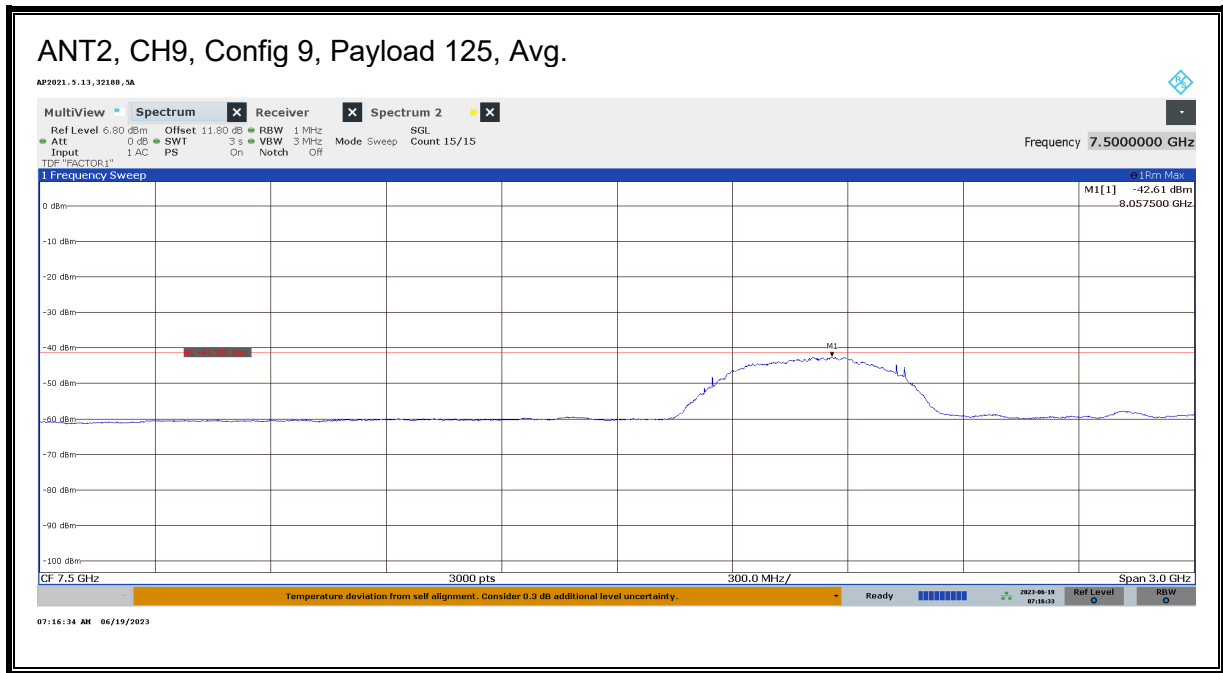
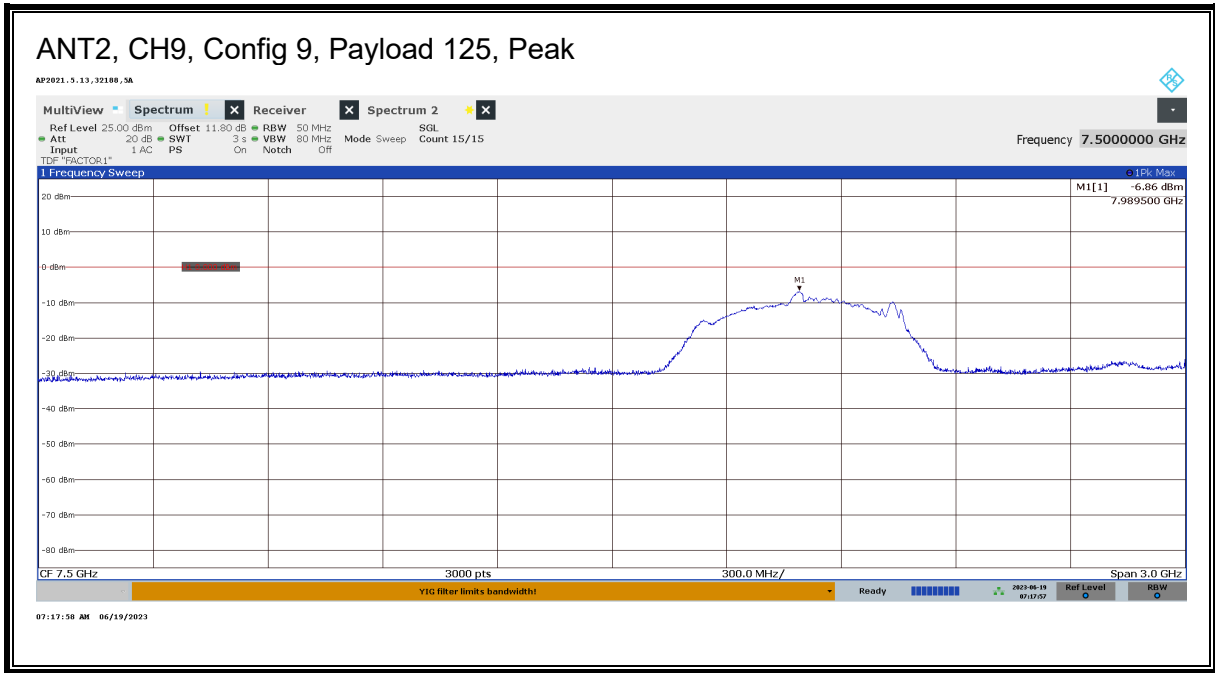
ANT	CH	CONFIG	Payload	EUT Orientation	Ant. Polarity	Peak EIRP Power				Average EIRP Power			
						FM (GHz)	Adj Pk	Peak Limit	Margin (dB)	FM (GHz)	Adj Avg	Avg Limit (dBm/MHz)	Margin (dB)
2	9	0	25	Flatbed	V	7.9865	-2.17	0	-2.17	8.0585	-42.62	-41.3	-1.32
2	9	1	45	Flatbed	V	7.9875	-1.04	0	-1.04	8.0655	-42.33	-41.3	-1.03
2	9	9	125	Flatbed	V	7.9895	-6.86	0	-6.86	8.0575	-42.61	-41.3	-1.31
2	9	10	25	Flatbed	V	7.9875	-2.10	0	-2.10	8.0655	-42.60	-41.3	-1.30
2	9	11	25	Flatbed	V	7.9875	-1.05	0	-1.05	8.0655	-43.05	-41.3	-1.75
2	9	11	65	Flatbed	V	7.9050	-2.11	0	-2.11	8.0655	-42.79	-41.3	-1.49
2	9	101	25	Flatbed	V	7.9895	-1.05	0	-1.05	8.0625	-43.16	-41.3	-1.86
2	9	101	65	Flatbed	V	7.9875	-1.93	0	-1.93	8.0185	-42.75	-41.3	-1.45
2	9	102	25	Flatbed	V	7.9855	-1.34	0	-1.34	8.0625	-43.41	-41.3	-2.11
2	9	102	65	Flatbed	V	7.9875	-1.74	0	-1.74	8.0185	-42.60	-41.3	-1.30
2	9	103	25	Flatbed	V	7.9875	-2.33	0	-2.33	8.0585	-42.71	-41.3	-1.41
2	9	103	125	Flatbed	V	7.9875	-4.33	0	-4.33	8.0185	-42.47	-41.3	-1.17
2	9	202	625	Flatbed	V	8.2345	-12.45	0	-12.45	8.0545	-42.55	-41.3	-1.25
2	9	402	445	Flatbed	V	8.2325	-10.41	0	-10.41	8.0575	-42.43	-41.3	-1.13
2	9	501	0	Flatbed	V	8.2345	-1.01	0	-1.01	8.0655	-43.34	-41.3	-2.04
2	9	503	0	Flatbed	V	8.2285	-1.37	0	-1.37	7.9885	-44.12	-41.3	-2.82
2	9	601	0	Flatbed	V	8.2355	-2.69	0	-2.69	7.9965	-42.40	-41.3	-1.10
2	9	605	0	Flatbed	V	8.2335	-1.12	0	-1.12	8.0185	-43.40	-41.3	-2.10
2	9	607	0	Flatbed	V	8.2335	-1.20	0	-1.20	7.9965	-43.45	-41.3	-2.15
2	9	701	0	Flatbed	V	8.2355	-5.20	0	-5.20	7.9865	-42.31	-41.3	-1.01
2	9	702	0	Flatbed	V	8.2335	-5.40	0	-5.40	8.0135	-42.46	-41.3	-1.16
2	9	703	0	Flatbed	V	8.2335	-6.27	0	-6.27	7.9895	-42.44	-41.3	-1.14
2	9	704	0	Flatbed	V	8.0425	-7.09	0	-7.09	7.9875	-42.31	-41.3	-1.01
2	9	705	0	Flatbed	V	8.1075	-3.06	0	-3.06	7.9865	-42.38	-41.3	-1.08
2	9	706	0	Flatbed	V	8.1045	-4.21	0	-4.21	7.9875	-42.38	-41.3	-1.08
2	9	405	4093	Flatbed	V	8.2345	-14.36	0	-14.36	7.9875	-42.34	-41.3	-1.04
2	9	407	4093	Flatbed	V	8.2325	-13.51	0	-13.51	7.9865	-42.45	-41.3	-1.15
2	9	801	0	Flatbed	V	8.2345	-3.75	0	-3.75	7.9875	-42.45	-41.3	-1.15
2	9	802	0	Flatbed	V	8.2345	-3.65	0	-3.65	8.0495	-42.35	-41.3	-1.05
2	9	803	0	Flatbed	V	8.2335	-2.62	0	-2.62	8.0495	-42.48	-41.3	-1.18
2	9	804	0	Flatbed	V	8.2345	-7.40	0	-7.40	7.9875	-42.63	-41.3	-1.33
2	9	805	0	Flatbed	V	8.2355	-6.96	0	-6.96	7.9985	-42.64	-41.3	-1.34
2	9	806	0	Flatbed	V	8.2335	-5.34	0	-5.34	8.0805	-42.49	-41.3	-1.19
2	9	807	0	Flatbed	V	8.2335	-3.92	0	-3.92	7.9875	-42.38	-41.3	-1.08
2	9	808	0	Flatbed	V	8.2355	-2.18	0	-2.18	8.0805	-42.31	-41.3	-1.01
2	9	809	0	Flatbed	V	8.2345	-2.33	0	-2.33	8.0165	-42.31	-41.3	-1.01
2	9	80A	0	Flatbed	V	8.2345	-6.85	0	-6.85	7.9875	-42.34	-41.3	-1.04
2	9	80B	0	Flatbed	V	8.2265	-5.37	0	-5.37	7.9965	-42.40	-41.3	-1.10
2	9	80C	0	Flatbed	V	8.2265	-5.66	0	-5.66	8.0245	-42.77	-41.3	-1.47

PEAK POWER AND MAXIMUM AVERAGE EMISSIONS

Parent Model







9.4. CESSATION TIME

LIMITS

FCC

§15.519(a)(1) A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver. The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting.

RSS-220

Section 5.3.1 (b) The device is to transmit only when it is sending information to an associated receiver. The device shall cease transmission of information within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB device at least every 10 seconds or the UWB device shall cease transmitting any information other than periodic signals used for the establishment or re-establishment of a communication link with an associated receiver.

TEST PROCEDURES

* Initiator = EUT

* Responder = associated receiver

Transmissions are monitored for two cases:

1. The Initiator ends the UWB link.
2. The Responder ends the UWB link.

RESULTS

Parent

Employee ID: 26051
Location: Chamber D
Test Date: 07/17/23

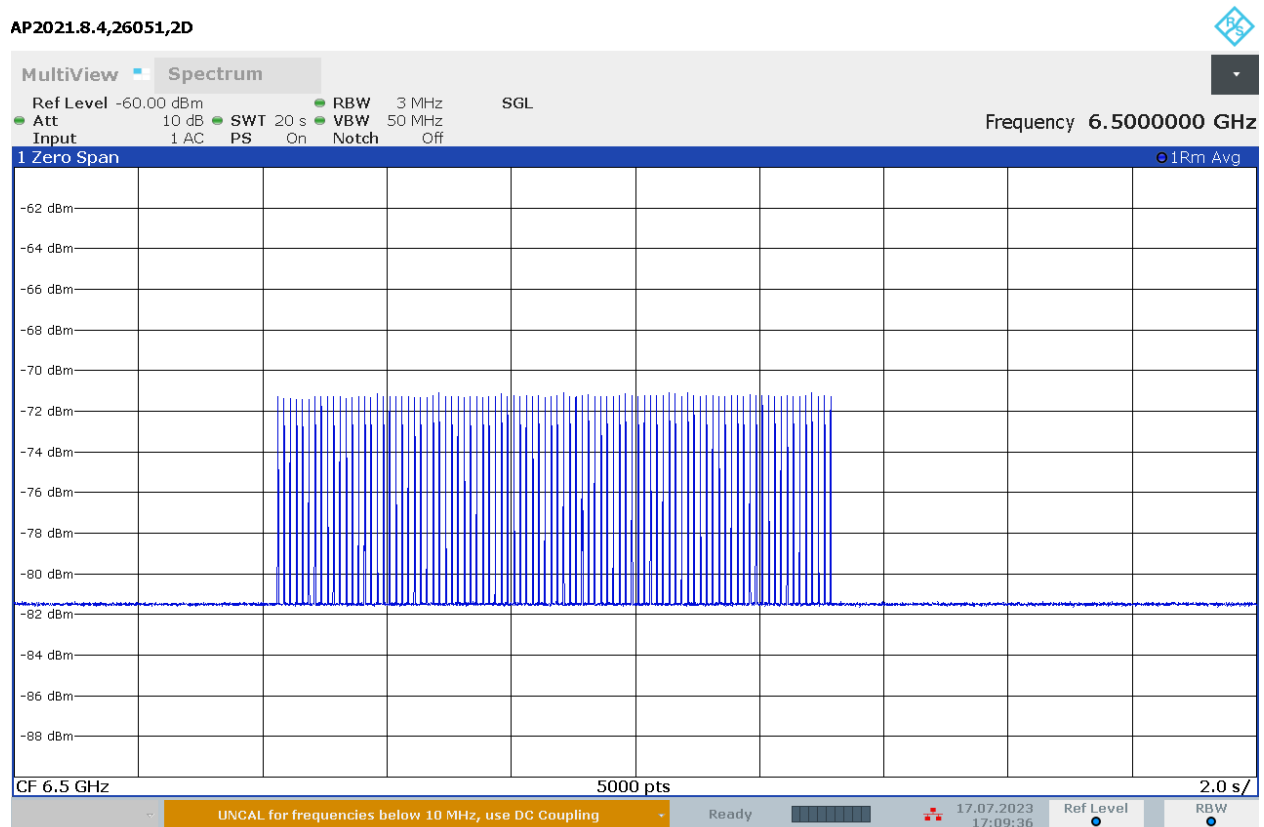
Signal Levels on all Plots

- Initiator is Low Amplitude
- Responder is High Amplitude

Case 1: Initiator ends the UWB link

Parent Model

AP2021.8.4,26051,2D



17:09:37 17.07.2023

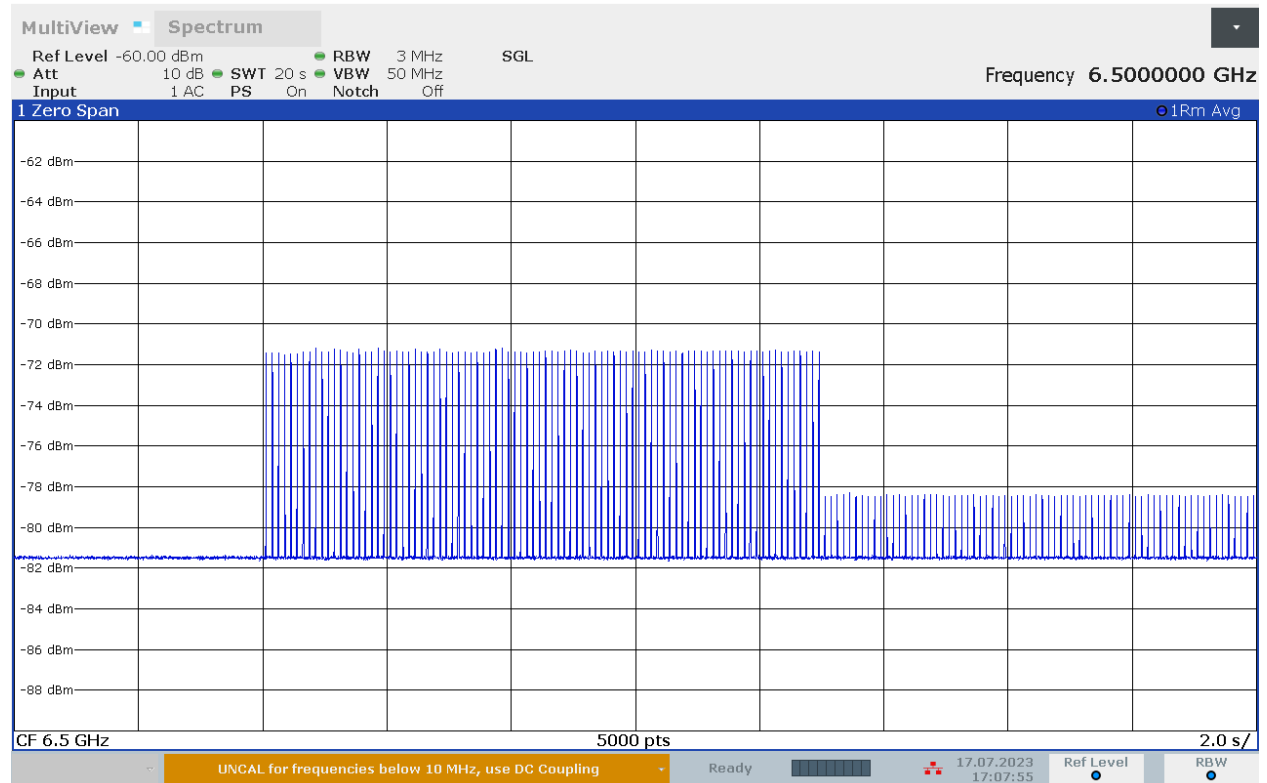
RESULT

- All devices, including the Responder, cease transmissions

Case 2: Responder ends the UWB link

Parent Model

AP2021.8.4,26051,2D



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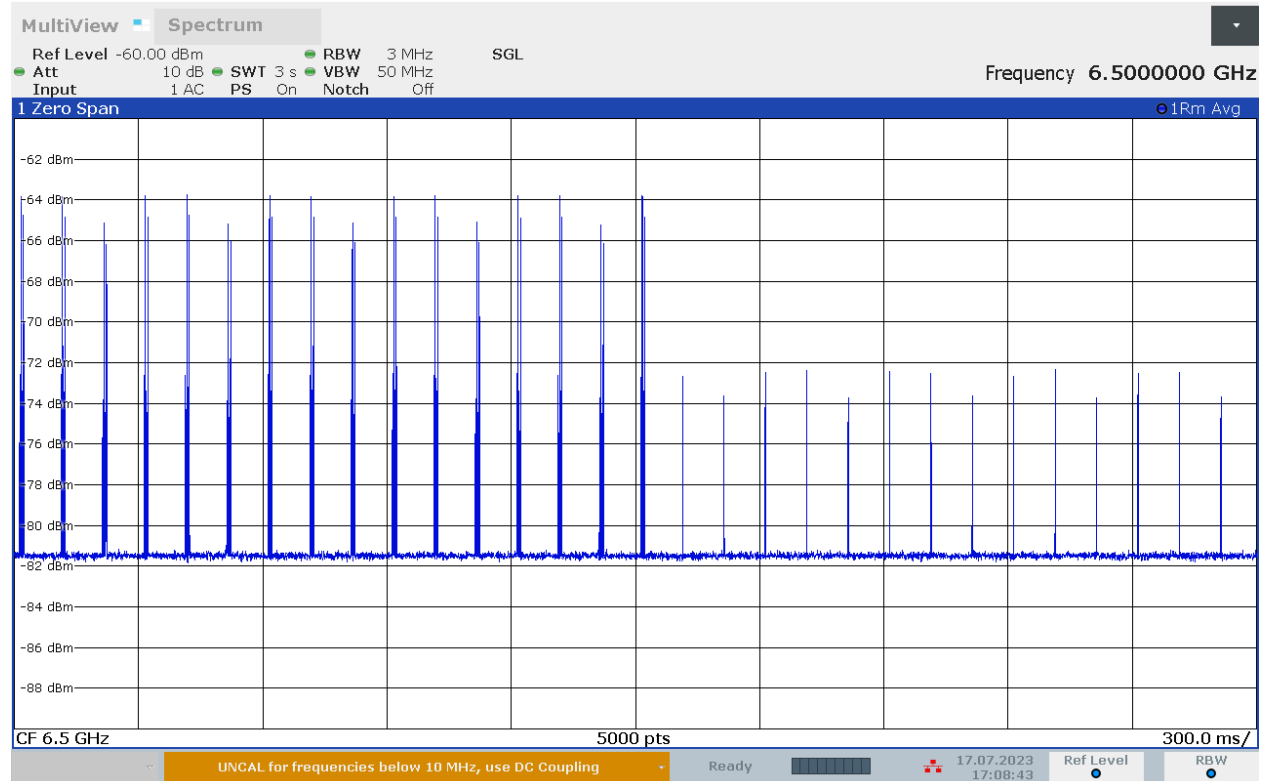
RESULT

- Responder ends the link; Initiator stops Acknowledgements but continues Polling.
 - Responder ceases transmissions, does not respond to Polling Signals.

Zoom-in Plot during On-Off Transition

Parent Model

AP2021.8.4,26051,2D



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RESULT

- Shows Link Traffic, Acknowledgements and Polling Signals while Link is established
- Shows Polling Signals after Link has ended

9.5. EMISSIONS BELOW 960 MHz

LIMITS

FCC

§15.519 (c) The radiated emissions at or below 960 MHz from a device operating under the provisions of this section shall not exceed the emission levels in §15.209. The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

15.209 (a)

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3

RSS-220

Section 3.4 Radiated emissions at or below 960 MHz for all subclasses of UWB device shall not exceed the following limits. Measurements of radiated emissions at and below 960 MHz are to be made using a CISPR quasi-peak detector. CISPR measurement bandwidth specifications are to be used.

Frequency (MHz)	Field Strength (Microvolts/m)	Measurement Distance (Metres)	E.i.r.p. (dBmW)
0.009-0.490	2,400/F (F in kHz)	300	10 log (17.28 / F ²) (F in kHz)
0.490-1.705	24,000/F (F in kHz)	30	10 log (17.28 / F ²) (F in kHz)
1.705-30	30	30	-45.7
30-88	100	3	-55.2
88-216	150	3	-51.7
216-960	200	3	-49.2

Note: The emission limits for the bands 9-90 kHz and 110-490 kHz are based on measurements employing an average emissions detector.

TEST PROCEDURE

ANSI C63.10 Clause 10.2

RSS-220 Annex

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 3m from the EUT.

For below 30 MHz testing, investigation was done on three antenna orientations: RX antenna Face-on, Face-off and horizontal (parallel to ground). The worst-case configurations were determined on RX antenna Face-on and Face-off; therefore, all final tests were performed using these two orientations.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30-meter open area test site. Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

A final test is made at any frequencies at which emissions are found. During this final scan, the antenna is kept no further from the EUT than the maximum distance calculated for each band that yields a minimum system noise floor.

RESULTS

Results for the parent model are shown below.

Emissions Summary**Parent Model**

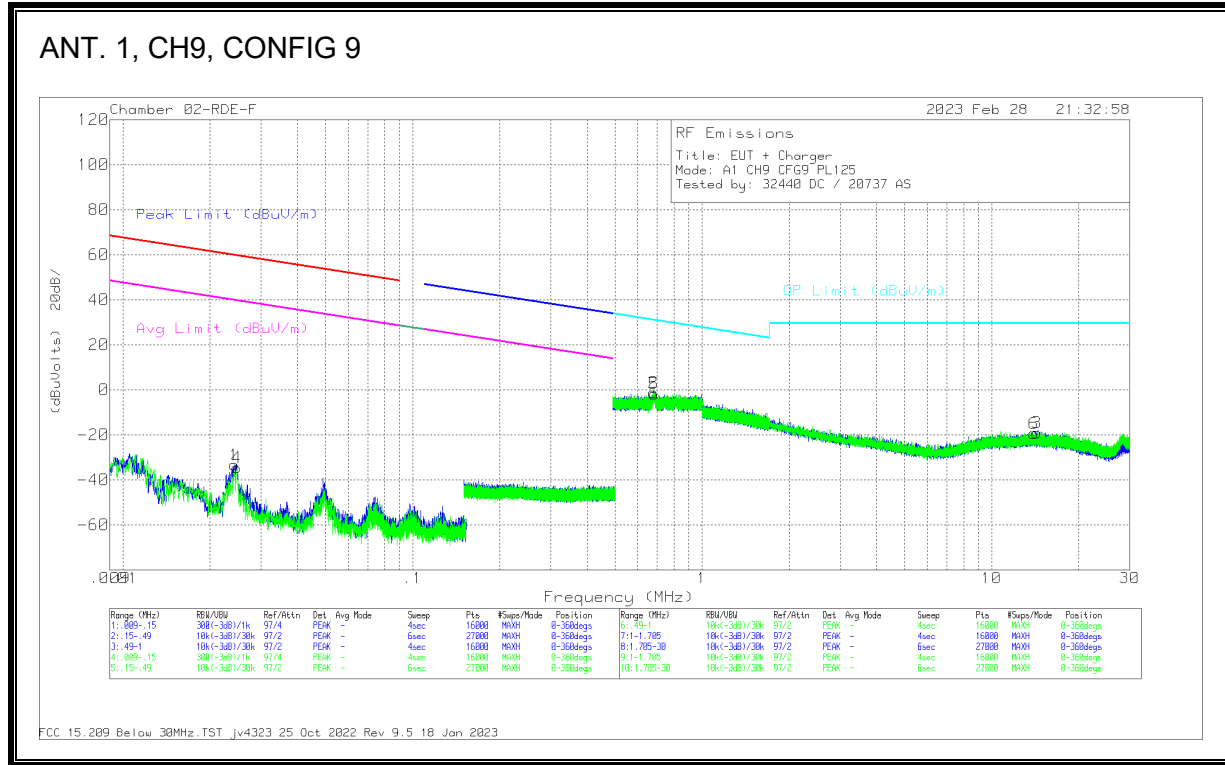
Employee IDs: 32440, 20737, 32067

Location: Chamber F

Test Date: 02/28/23 – 03/01/23

Ant	CH	Config	Payload	Power Setting	Frequency Range	
					9 kHz - 30 MHz	30 - 960 MHz
1	9	9	125	Max	PASS	PASS
2	5	9	125	Max	PASS	PASS
2	9	9	125	Max	PASS	PASS

9.5.1. EMISSIONS, 9 kHz – 30 MHz



Trace Markers

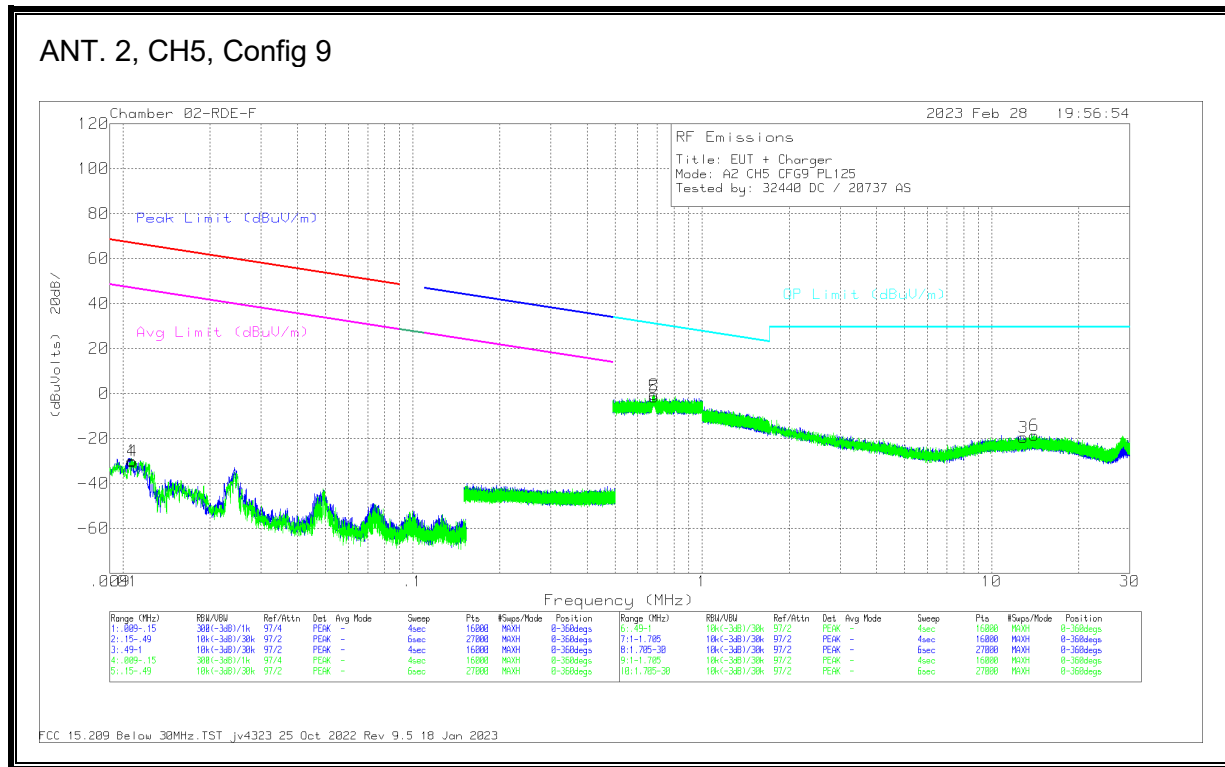
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)	Chamber F port 0 loss	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Antenna Face
1	.0242	19.99	Pk	58.6	-31.9	-80	-33.31	59.91	-93.22	39.91	-73.22	0-360	On
4	.0247	18.79	Pk	58.6	-32	-80	-34.61	59.72	-94.33	39.72	-74.33	0-360	Off

Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)	Chamber F port 0 loss	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Antenna Face
2	.6788	14.99	Pk	56.4	-32.5	-40	-1.11	30.98	-32.09	0-360	On
3	14.2978	19.06	Pk	34.1	-32.2	-40	-19.04	29.5	-48.54	0-360	On
5	.682	14.33	Pk	56.4	-32.5	-40	-1.77	30.94	-32.71	0-360	Off
6	13.9551	18.66	Pk	34.2	-32.2	-40	-19.34	29.5	-48.84	0-360	Off

Pk - Peak detector

ANT. 2, CH5, Config 9



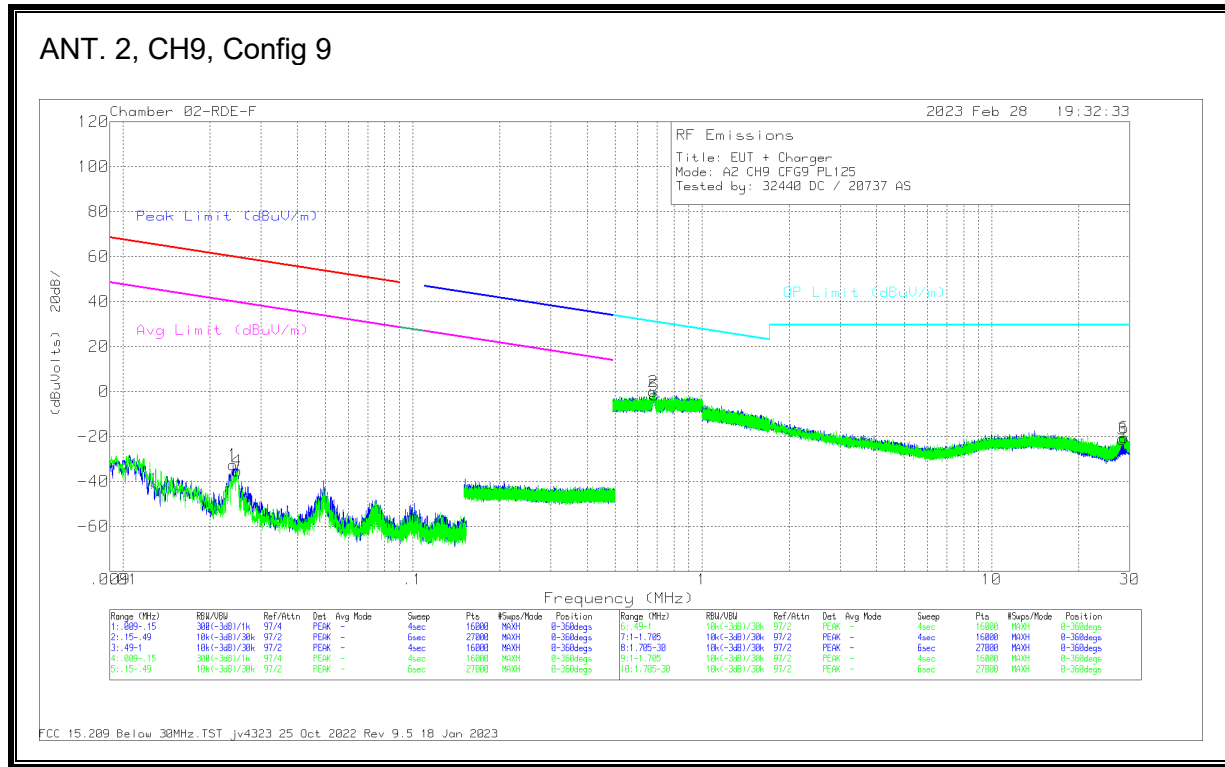
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)	Chamber F port 0 loss	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Antenna Face
1	.0107	20.1	Pk	60.3	-30.3	-80	-29.9	66.97	-96.87	46.97	-76.87	0-360	On
4	.0108	20.02	Pk	60.3	-30.5	-80	-30.18	66.93	-97.11	46.93	-77.11	0-360	Off

Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)	Chamber F port 0 loss	Dist Corr 40Log (dB)	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Antenna Face
2	.6817	15.5	Pk	56.4	-32.5	-40	-.6	30.94	-31.54	0-360	On
3	12.8935	18.22	Pk	34.3	-32.1	-40	-19.58	29.5	-49.08	0-360	On
5	.6821	14.55	Pk	56.4	-32.5	-40	-1.55	30.94	-32.49	0-360	Off
6	14.062	19.24	Pk	34.2	-32.1	-40	-18.66	29.5	-48.16	0-360	Off

Pk - Peak detector



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)	Chamber F port 0 loss	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Antenna Face
1	.024	20.61	Pk	58.7	-32	-80	-32.69	59.99	-92.68	39.99	-72.68	0-360	On
4	.0247	18.11	Pk	58.6	-32	-80	-35.29	59.72	-95.01	39.72	-75.01	0-360	Off

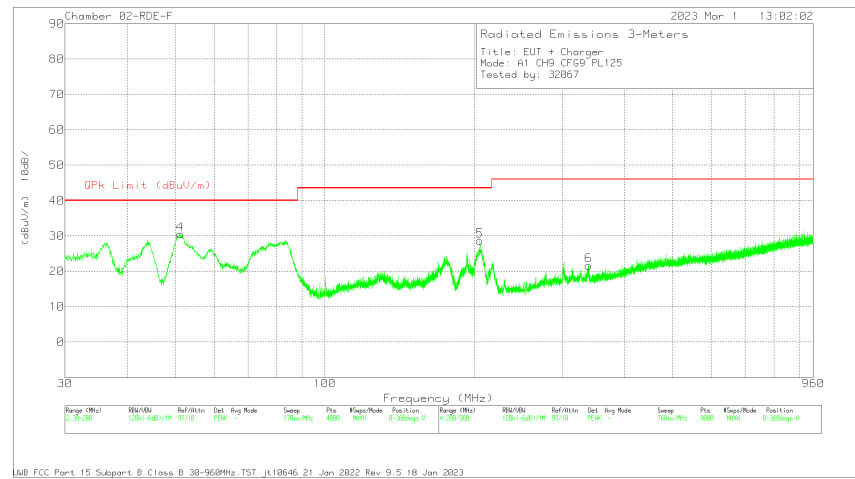
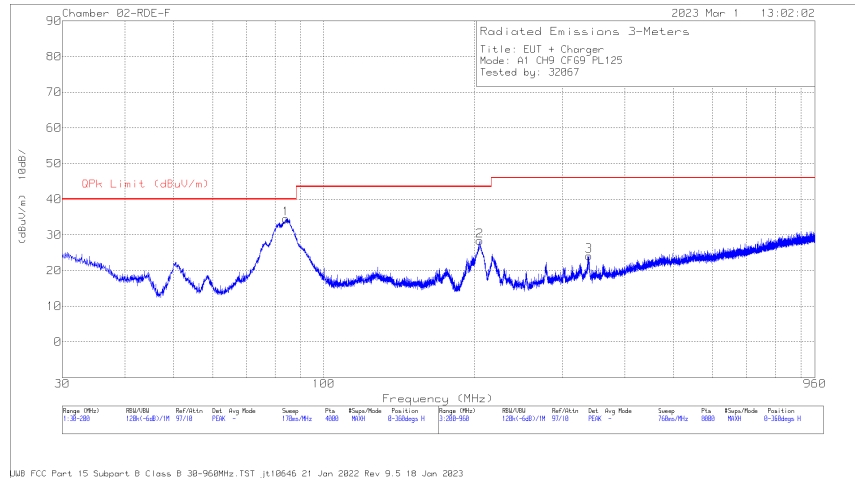
Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)	Chamber F port 0 loss	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	GP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Antenna Face
2	.6794	16.04	Pk	56.4	-32.5	-40	-.06	30.97	-31.03	0-360	On
3	28.3095	17.18	Pk	33.6	-32	-40	-21.22	29.5	-50.72	0-360	On
5	.685	14.38	Pk	56.4	-32.5	-40	-1.72	30.9	-32.62	0-360	Off
6	28.713	17.74	Pk	33.7	-32	-40	-20.56	29.5	-50.06	0-360	Off

Pk - Peak detector

9.5.2. EMISSIONS, 30 - 960 MHz

ANT. 1, CH9, CONFIG 9

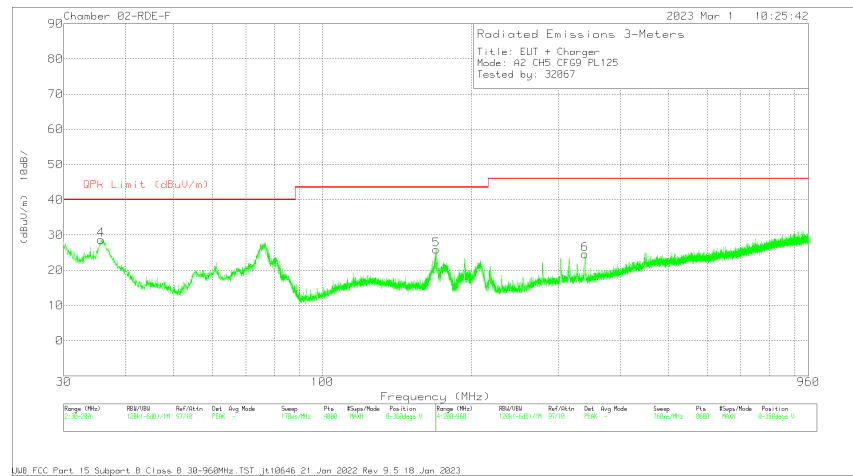
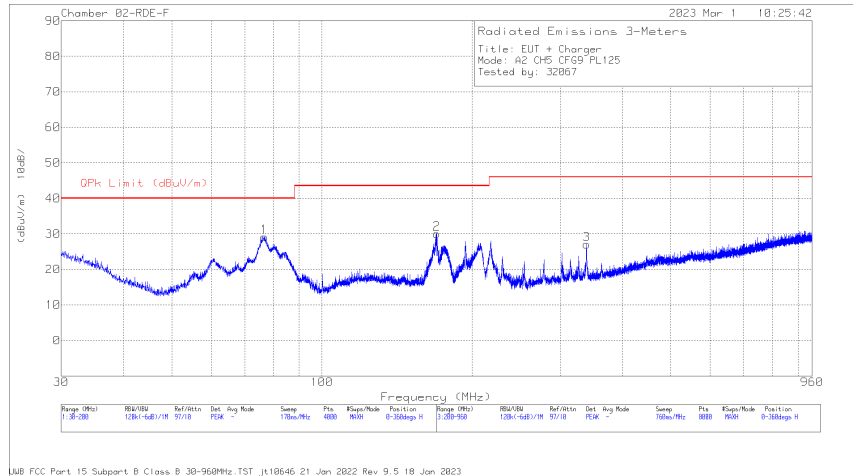


Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	230634 ACF (dB) 10m H	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	83.989	52.32	Pk	13.2	-31	34.52	40	-5.48	0-360	399	H
2	205.131	41.86	Pk	16.9	-30.4	28.36	43.52	-15.16	0-360	101	H
3	339.003	34.32	PK	19.7	-29.9	24.12	46.02	-21.9	0-360	101	H
4	51.128	48.13	Pk	13.6	-31.2	30.53	40	-9.47	0-360	101	V
5	205.036	42.06	Pk	17	-30.4	28.66	43.52	-14.86	0-360	101	V
6	339.003	31.84	Pk	19.7	-29.9	21.64	46.02	-24.38	0-360	199	V

Pk - Peak detector

ANT. 2, CH5, CONFIG 9

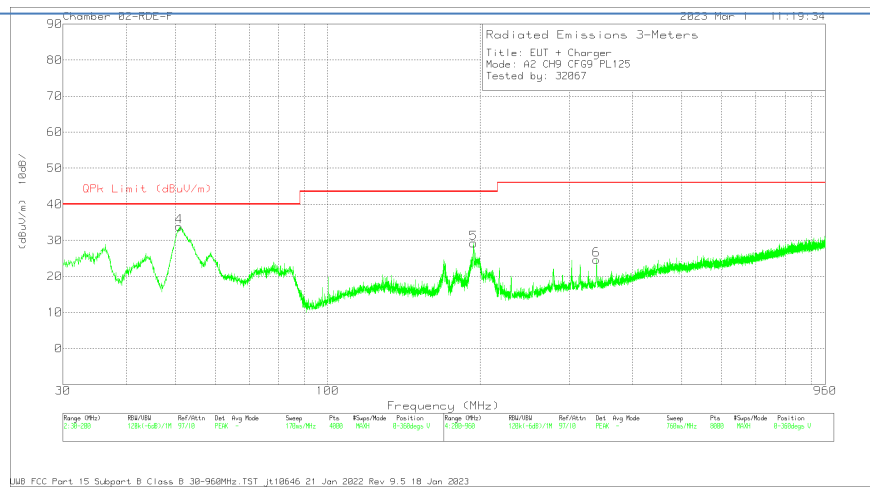
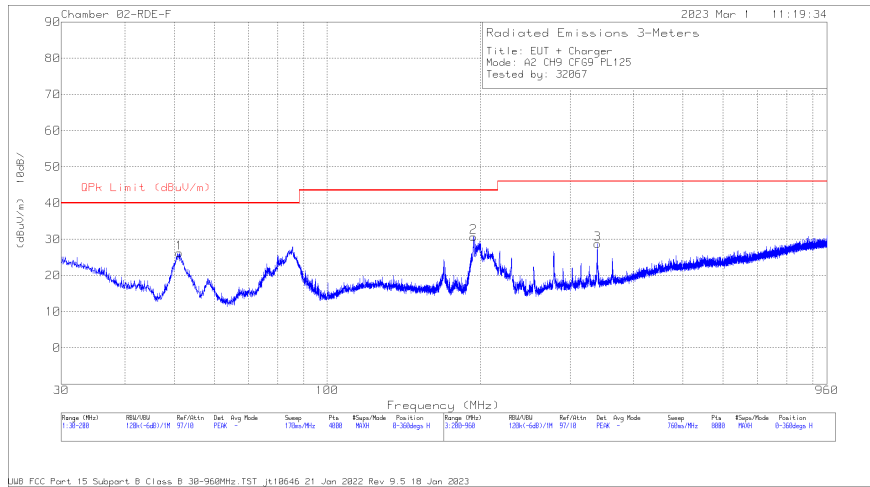


Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	230634 ACF (dB) 10m H	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	76.6346	46.59	Pk	13.7	-31.1	29.19	40	-10.81	0-360	199	H
2	169.734	43.07	Pk	17.5	-30.5	30.07	43.52	-13.45	0-360	199	H
3	338.908	37.28	Pk	19.7	-29.9	27.08	46.02	-18.94	0-360	102	H
4	35.6965	37.25	Pk	22.7	-31.3	28.65	40	-11.35	0-360	102	V
5	169.734	38.86	Pk	17.5	-30.5	25.86	43.52	-17.66	0-360	102	V
6	338.908	34.76	Pk	19.7	-29.9	24.56	46.02	-21.46	0-360	102	V

Pk - Peak detector

ANT. 2, CH9, CONFIG 9



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	230634 ACF (dB) 10m H	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	51.1705	43.94	Pk	13.5	-31.2	26.24	40	-13.76	0-360	399	H
2	193.752	43.67	Pk	17.5	-30.5	30.67	43.52	-12.85	0-360	99	H
3	339.668	39.06	Pk	19.7	-30	28.76	46.02	-17.26	0-360	101	H
4	50.8729	51.43	Pk	13.6	-31.2	33.83	40	-6.17	0-360	101	V
5	194.05	42.22	Pk	17.5	-30.5	29.22	43.52	-14.3	0-360	101	V
6	339.098	34.82	Pk	19.7	-29.9	24.62	46.02	-21.4	0-360	299	V

Pk - Peak detector

9.6. AVERAGE EMISSIONS ABOVE 960 MHz

LIMITS

FCC

15.519 (c)

Frequency in MHz	EIRP in dBm
960-1610	-75.3
1610-1990	-63.3
1990-3100	-61.3
3100-10600	-41.3
Above 10600	-61.3

§15.519 (d) In addition to the radiated emission limits specified in the table in paragraph (c) of this section, UWB transmitters operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of no less than 1 kHz:

Frequency in MHz	EIRP in dBm
1164-1240	-85.3
1559-1610	-85.3

RSS-220

Section 5.3.1 (d) Radiated emissions above 960 MHz from a device shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz.

Hand-held (Outdoor) Communication, Measurement, Location Sensing, and Tracking Devices	
Frequency	E.i.r.p. in a Resolution Bandwidth of 1 MHz
960-1 610 MHz	-75.3 dBm
1.61-4.75 GHz	-70.0 dBm
4.75-10.6 GHz	-41.3 dBm
Above 10.6 GHz	-61.3 dBm

Section 5.3.1 (e) In addition to the limits specified in paragraph (d) of this section, radiated emissions shall not exceed the following average limits when measured using a resolution bandwidth greater than or equal to 1 kHz. The measurements shall demonstrate compliance with the stated limits at whatever resolution bandwidth is used.

Frequency	E.i.r.p. in a Resolution Bandwidth of no less than 1 kHz
1 164-1 240 MHz	-85.3 dBm
1 559-1 610 MHz	-85.3 dBm

TEST PROCEDURE

ANSI C63.10 Clause 10.3.

RSS-220 Annex

Exploratory measurements for all frequency ranges are performed with the measurement antenna at close distances to the EUT as described in ANSI C63.10 6.6.4.2. Where emissions are observed the measurement antenna is then positioned at a height of 1.5m and a distance of 1m from the EUT and final measurements are made at the frequencies observed in the exploratory scans using the alternative measurement procedures detailed in ANSI C63.10 section 6.6.5. If no emissions are observed, a plot is made at a test distance of 1m from the EUT to show the measurement system noise floor.

PROCEDURE FOR 0.96 TO 6 GHz

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 0.5m from the EUT.

A low pass filter with a cut off frequency of 5.4 GHz is used to suppress the fundamental and perform measurement for 0.96 - 6 GHz.

Distance Correction Factor from 3m to 0.5m = $20 \cdot \log(0.5\text{m}/3\text{m}) = -15.56 \text{ dB}$

RESULTS FOR 6 GHz TO 9 GHz

The 6 - 9 GHz frequency band is covered in Section 9.3.

PROCEDURE FOR 9 GHz TO 18 GHz

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 0.5m from the EUT.

A high pass filter with pass band frequency beyond 9 GHz is used to suppress the fundamental and perform measurement for 9 - 18 GHz.

Distance Correction Factor from 3m to 0.5m = $20 \cdot \log(0.5\text{m}/3\text{m}) = -15.56 \text{ dB}$

PROCEDURE FOR 1.164 TO 1.240 GHz

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 0.5m from the EUT.

RBW = 120 kHz & VBW = 500 kHz were used at pre-scan.

A low pass filter with a cut off frequency of 6 GHz is used to suppress the fundamental and perform measurement for 1.164 – 1.240 GHz.

Distance Correction Factor from 3m to 0.5m = $20 \cdot \log(0.5\text{m}/3\text{m}) = -15.56 \text{ dB}$

PROCEDURE FOR 1.559 TO 1.610 GHz

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 0.5m from the EUT.

RBW = 120 kHz & VBW = 500 kHz were used at pre-scan.

A low pass filter with a cut off frequency of 6 GHz is used to suppress the fundamental and perform measurement for 1.559 – 1.610 GHz.

Distance Correction Factor from 3m to 0.5m = $20 \cdot \log(0.5m/3m) = -15.56 \text{ dB}$

PROCEDURE FOR 18 GHz TO 40 GHz

Measurements are made with the antenna feeding a spectrum analyzer via a preamplifier and cables, at a maximum distance of 1m from the EUT.

A final test is made at any frequencies at which emissions are found. During this final scan, the antenna is kept no further from the EUT than the maximum distance calculated for each band that yields a minimum system noise floor.

Distance Correction Factor from 3m to 1m = $20 \cdot \log(1m/3m) = -9.54 \text{ dB}$

RESULTS

Results for the parent model are shown below.

Average Emissions Summary

Parent Model

Employee IDs: 32440, 20737, 32067 28499

Location: Chambers F & E

Test Date: 02/27/23 - 03/27/23

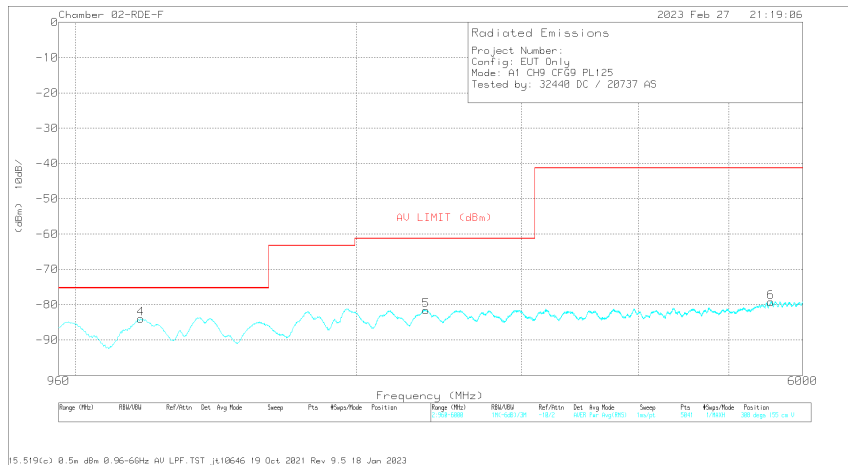
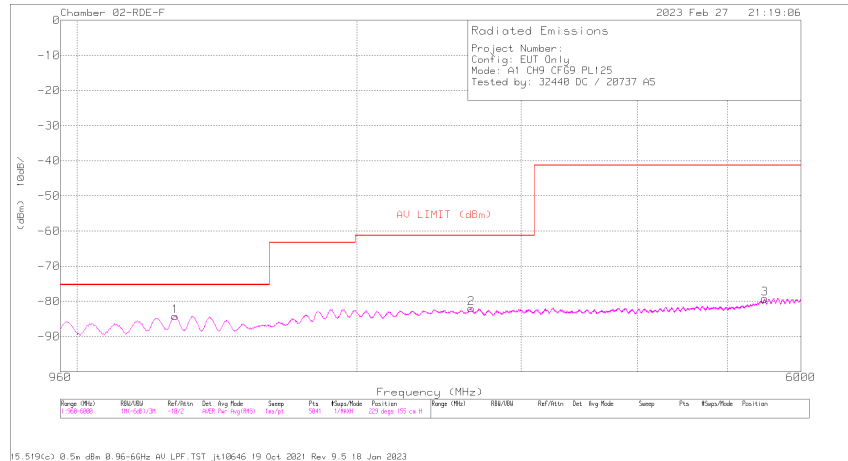
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					1164 - 1240 MHz	1559 - 1610 MHz	0.96 - 18 GHz	18 - 26.5 GHz	26.5 - 40 GHz
1	9	9	125	Max	PASS	PASS	PASS	PASS	PASS
2	5	9	125	Max	PASS	PASS	PASS	PASS	PASS
2	9	9	125	Max	PASS	PASS	PASS	PASS	PASS

9.6.1. AVERAGE EMISSIONS, 0.96 – 6 GHz

FCC15.519 (C)

Parent

ANT. 1, CH9, CONFIG 9



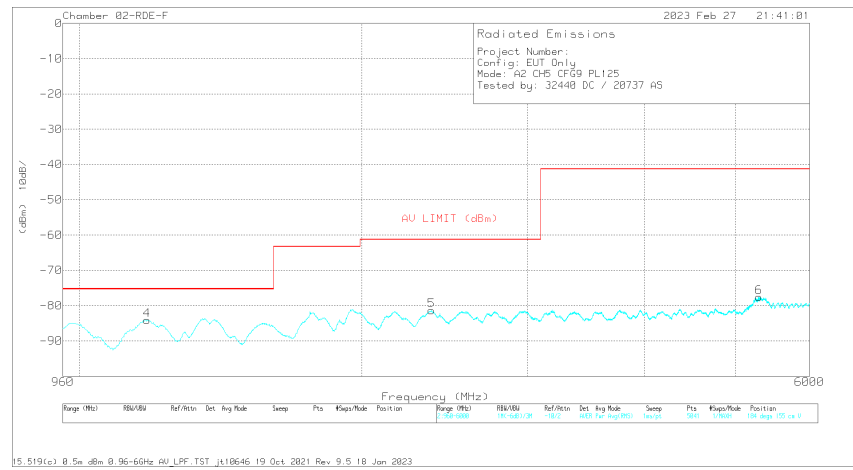
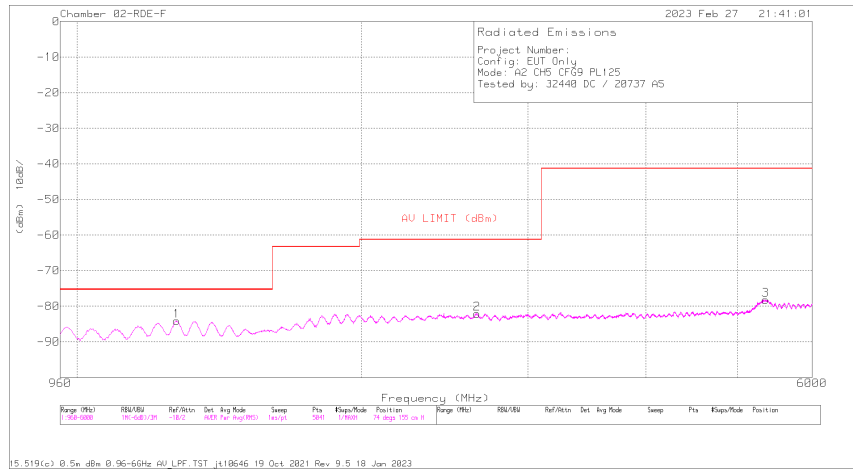
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	81887 ACF (dB)	Amp/Cbl (dB)	Dist. Corr. (dB)	Conv. Fact. (dB)	204843 LPF (dB)	Corrected Reading (dBm)	AV LIMIT (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1275	-61.35	RMS	29.6	-48.9	-15.6	11.8	.2	-84.25	-75.3	-8.95	52	155	H
2	2655	-62.93	RMS	33	-48.6	-15.6	11.8	.3	-82.03	-61.3	-20.73	118	155	H
3	5486	-65.37	RMS	35.1	-47.2	-15.6	11.8	2	-79.27	-41.3	-37.97	294	155	H
4	1176	-60	RMS	28.6	-49	-15.6	11.8	.2	-84	-75.3	-8.7	264	155	V
5	2372	-61.31	RMS	32.5	-49.3	-15.6	11.8	.3	-81.61	-61.3	-20.31	286	155	V
6	5546	-65.27	RMS	35.1	-47.3	-15.6	11.8	2	-79.27	-41.3	-37.97	0	155	V

RMS - RMS detection

*Note: Test was performed with a low-pass filter with cutoff frequency at 5.4 GHz to suppress CH9 fundamental signal.

ANT. 2, CH5, CONFIG 9

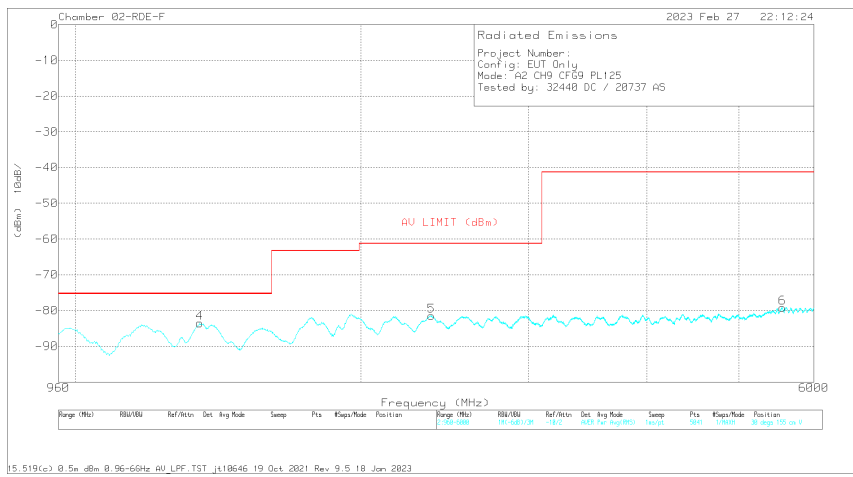
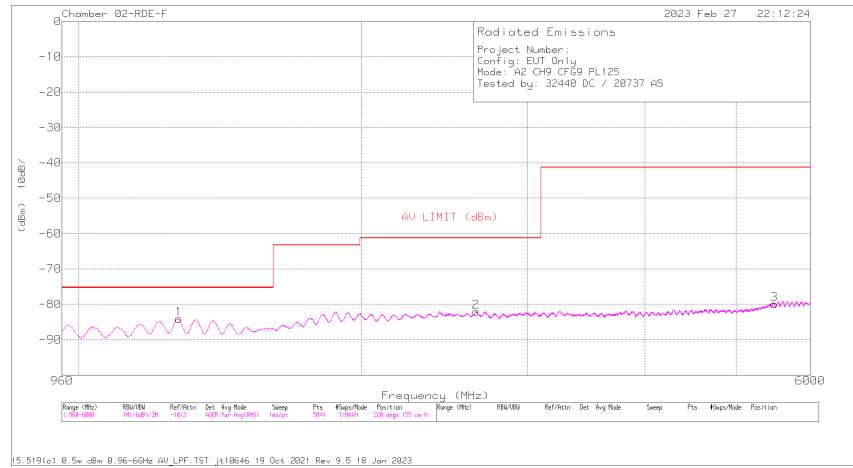


Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	11887 ACF (dB)	Amp/Cbl (dB)	Dist. Corr. (dB)	Conv. Fact. (dB)	204843 LFF (dB)	Corrected Reading (dBm)	AV LIMIT (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1275	-61.18	RMS	29.6	-48.9	-15.6	11.8	.2	-84.08	-75.3	-8.78	228	155	H
2	2652	-62.96	RMS	33	-48.6	-15.6	11.8	.3	-82.06	-61.3	-20.76	360	155	H
3	5359	-63.44	RMS	35	-47.5	-15.6	11.8	1.5	-78.24	-41.3	-36.94	360	155	H
4	1190	-59.97	RMS	28.7	-49.2	-15.6	11.8	.2	-84.07	-75.3	-8.77	360	155	V
5	2372	-61.05	RMS	32.5	-49.3	-15.6	11.8	.3	-81.35	-61.3	-20.05	162	155	V
6	5300	-62.36	RMS	34.9	-47.5	-15.6	11.8	1.2	-77.56	-41.3	-36.26	251	155	V

RMS - RMS detection

ANT. 2, CH9, CONFIG 9



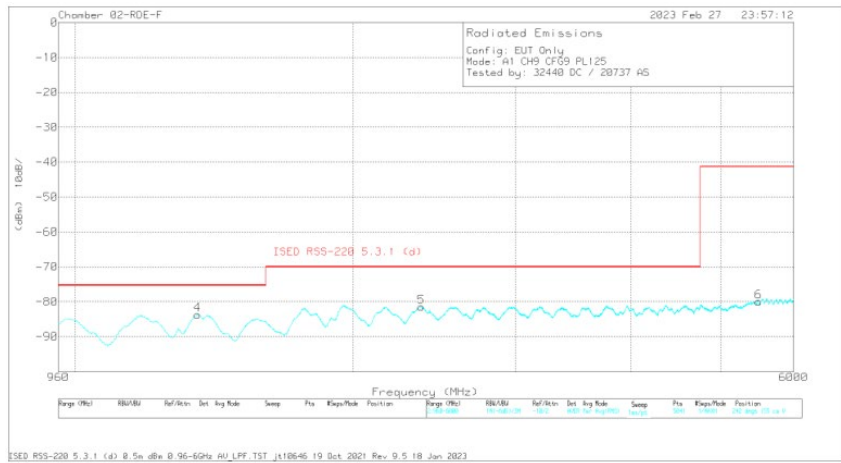
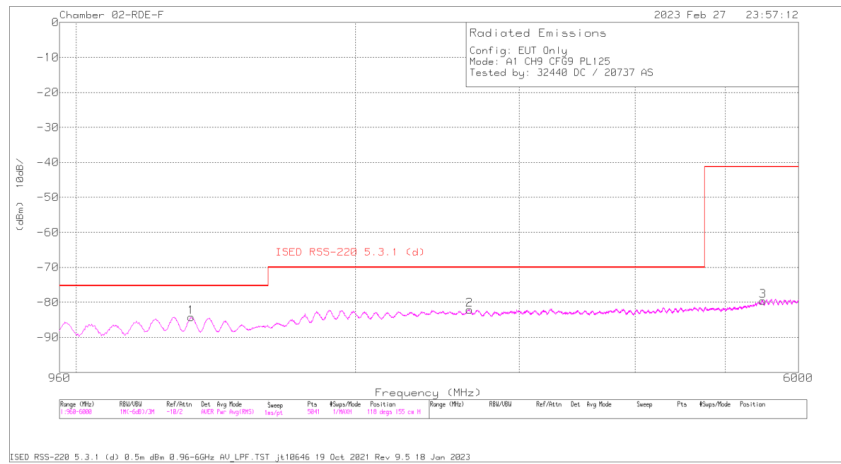
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	81887 ACF (dB)	Amp/Ctrl (dB)	Dist. Corr. (dB)	Conv. Fact. (dB)	204643 LPF (dB)	Corrected Reading (dBm)	AV LIMIT (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1278	-61.32	RMS	29.6	-48.8	-15.6	11.8	.2	-84.12	-75.3	-8.82	264	155	H
2	2646	-63.06	RMS	33.1	-48.6	-15.6	11.8	.3	-82.06	-61.3	-20.76	264	155	H
3	5495	-65.84	RMS	35.1	-47.4	-15.6	11.8	2	-79.94	-41.3	-38.64	264	155	H
4	1353	-60.64	RMS	29.4	-48.7	-15.6	11.8	.2	-83.54	-75.3	-8.24	272	155	V
5	2372	-61.2	RMS	32.5	-49.3	-15.6	11.8	.3	-81.5	-61.3	-20.2	118	155	V
6	5557	-65.4	RMS	35.1	-47.1	-15.6	11.8	2	-79.2	-41.3	-37.9	316	155	V

RMS - RMS detection

RSS-220 5.3.1 (d)

ANT. 1, CH9, CONFIG 9

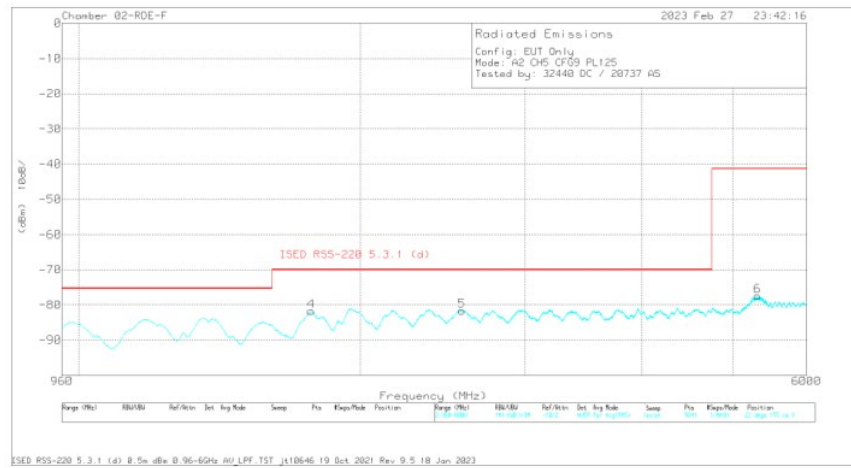
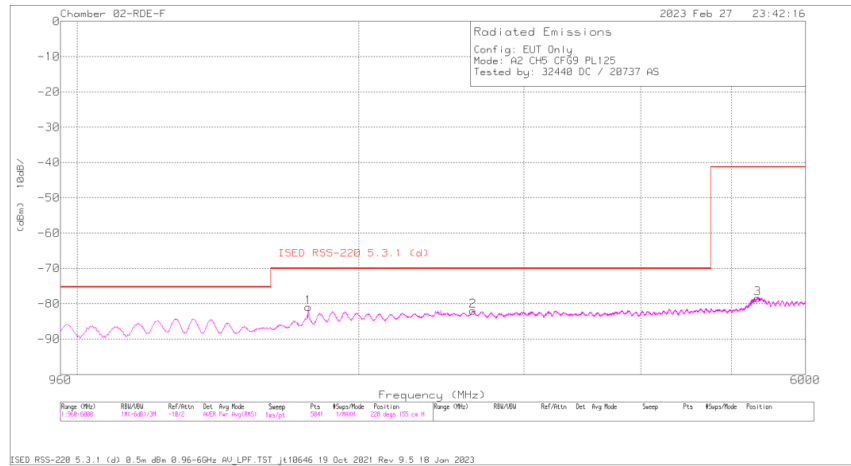


Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	81887 ACF (dB)	Amp/Cbl (dB)	Dist. Corr. (dB)	Conv. Fact. (dB)	204843 LPF (dB)	Corrected Reading (dBm)	ISED RSS-220 5.3.1 (d)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1331	-61.26	RMS	29.4	-48.8	-15.6	11.8	.2	-84.26	-75.3	-8.96	96	155	H
2	2653	-63.03	RMS	33	-48.6	-15.6	11.8	.3	-82.13	-70	-12.13	52	155	H
3	5491	-65.63	RMS	35.1	-47.3	-15.6	11.8	2	-79.63	-41.3	-38.33	206	155	H
4	1359	-60.77	RMS	29.4	-46.7	-15.6	11.8	.2	-83.67	-75.3	-8.37	110	155	V
5	2372	-61.15	RMS	32.5	-49.3	-15.6	11.8	.3	-81.45	-70	-11.45	176	155	V
6	5500	-66.01	RMS	35.1	-47.2	-15.6	11.8	2	-79.91	-41.3	-38.61	154	155	V

RMS - RMS detection

ANT. 2, CH5, CONFIG 9

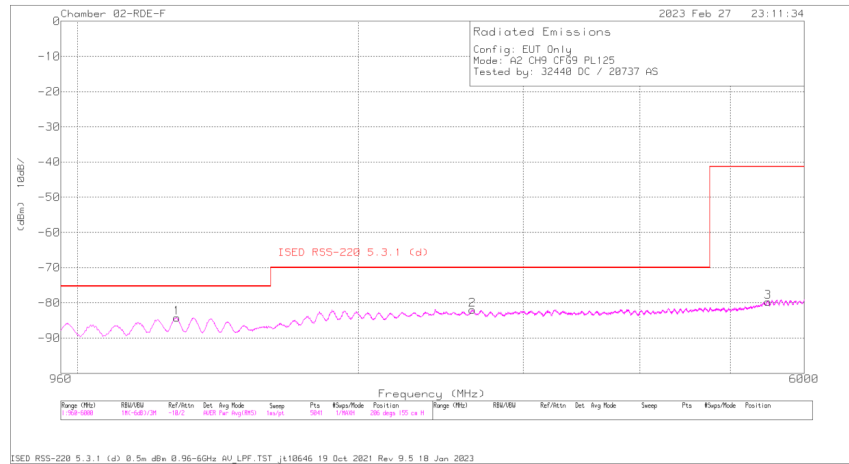


Trace Markers

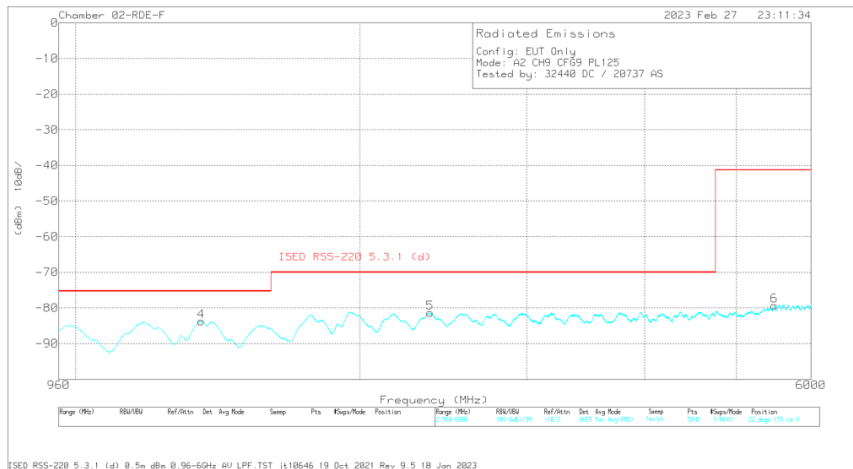
Marker	Frequency (MHz)	Meter Reading (dBm)	Det	81887 ACF (dB)	Amp/Chl (dB)	Dist. Corr. (dB)	Conv. Fact. (dB)	204843 LPF (dB)	Corrected Reading (dBm)	ISED RSS-220 5.3.1 (d)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1766	-59.22	RMS	30.8	-49	-15.6	11.8	.3	-80.92	-70	-10.92	316	155	H
2	2647	-62.92	RMS	33	-48.6	-15.6	11.8	.3	-82.02	-70	-12.02	162	155	H
3	5332	-63.26	RMS	34.9	-47.6	-15.6	11.8	1.3	-78.46	-41.3	-37.16	30	155	H
4	1773	-60.23	RMS	30.9	-48.9	-15.6	11.8	.3	-81.73	-70	-11.73	286	155	V
5	2568	-62.31	RMS	32.9	-48.7	-15.6	11.8	.3	-81.61	-70	-11.61	44	155	V
6	5315	-62.15	RMS	34.9	-47.5	-15.6	11.8	1.1	-77.45	-41.3	-36.15	264	155	V

RMS - RMS detection

ANT. 2, CH9, CONFIG 9



ISED RSS-220 5.3.1 (d) 0.5m dBm/100MHz AU_LPF_TST jk110646 19 Oct 2021 Rev 9.5 18 Jan 2023



ISED RSS-220 5.3.1 (d) 0.5m dBm/100MHz AU_LPF_TST jk110646 19 Oct 2021 Rev 9.5 18 Jan 2023

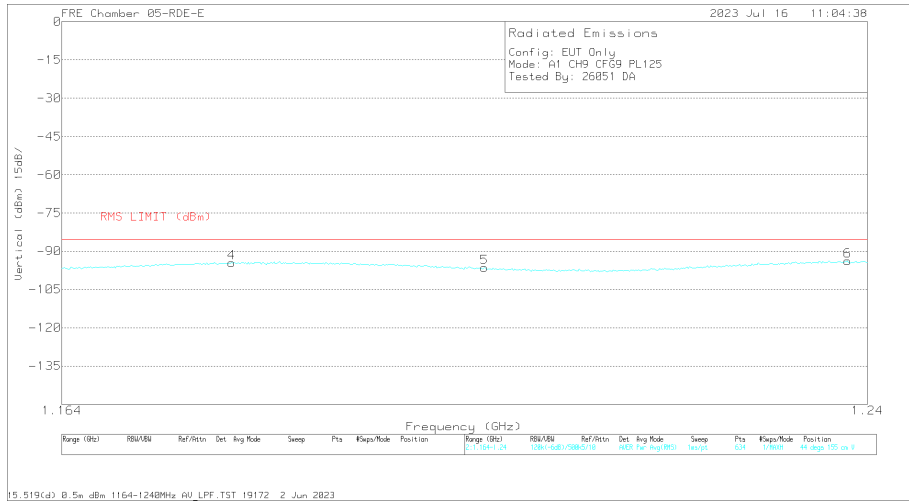
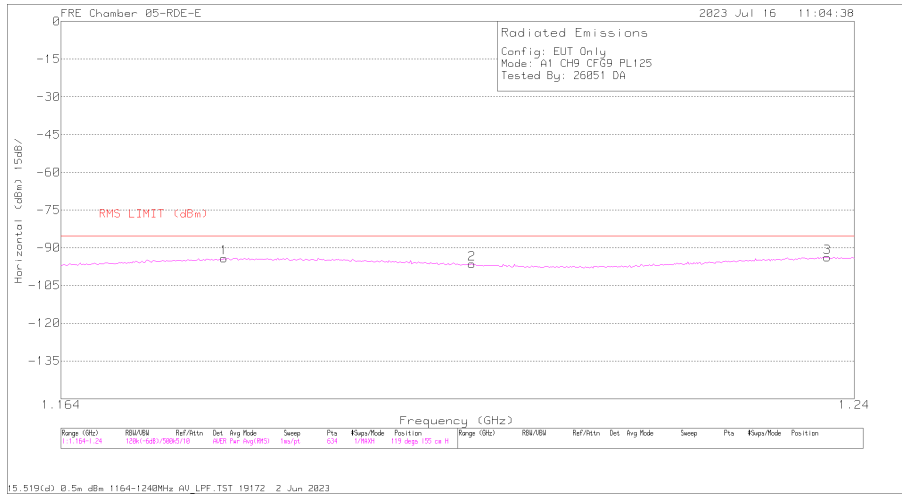
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	81987 ACF (dB)	Amp/CoI (dB)	Dist. Corr. (dB)	Conv. Fact. (dB)	264643 LPF (dB)	Corrected Reading (dBm)	ISED RSS-220 5.3.1 (d)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1278	-61.46	RMS	29.6	-48.8	-15.6	11.8	.2	-84.26	-75.3	-8.96	294	155	H
2	2647	-62.84	RMS	33	-48.6	-15.6	11.8	.3	-81.94	-70	-11.94	360	155	H
3	5488	-65.66	RMS	35.1	-47.3	-15.6	11.8	2	-79.66	-41.3	-38.36	250	155	H
4	1359	-60.78	RMS	29.4	-48.7	-15.6	11.8	.2	-83.68	-75.3	-8.38	308	155	V
5	2372	-61.03	RMS	32.5	-49.3	-15.6	11.8	.3	-81.33	-70	-11.33	132	155	V
6	5486	-65.44	RMS	35.1	-47.2	-15.6	11.8	2	-79.34	-41.3	-38.04	44	155	V

RMS - RMS detection

9.6.2. AVERAGE EMISSIONS, 1.164 – 1.240 GHz

ANT. 1, CH9, CONFIG 9

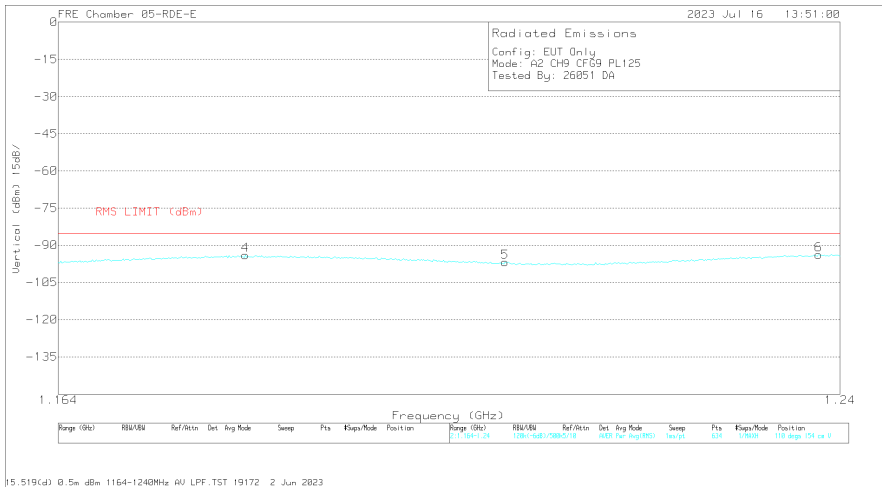
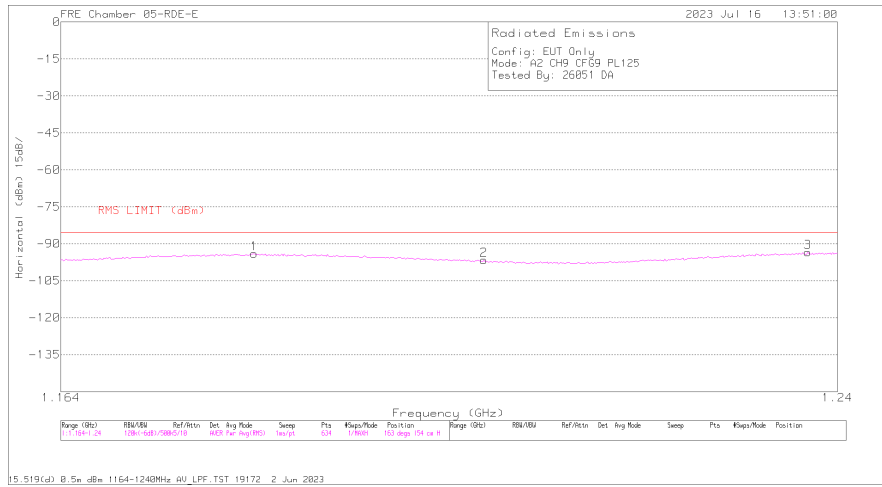


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	226671 ACF (dB) 3mH	Dist. Corr. (dB)	Conversion Factor (dB)	Gain/Loss (dB)	Corrected Reading (dBm)	RMS LIMIT	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.179248	-67.83	RMS	28.1	-15.6	11.8	-50.53	-94.06	-85.3	-8.76	96	155	H
4	1.179608	-68.34	RMS	28.1	-15.6	11.8	-50.52	-94.56	-85.3	-9.26	330	155	V
2	1.20278	-70.3	RMS	28.2	-15.6	11.8	-50.51	-96.41	-85.3	-11.11	163	155	H
5	1.203261	-70.34	RMS	28.2	-15.6	11.8	-50.49	-96.43	-85.3	-11.13	88	155	V
3	1.237358	-67.86	RMS	28.4	-15.6	11.8	-50.51	-93.77	-85.3	-8.47	96	155	H
6	1.238079	-67.98	RMS	28.5	-15.6	11.8	-50.53	-93.81	-85.3	-8.51	330	155	V

MS - RMS detection

ANT. 2, CH9, CONFIG 9

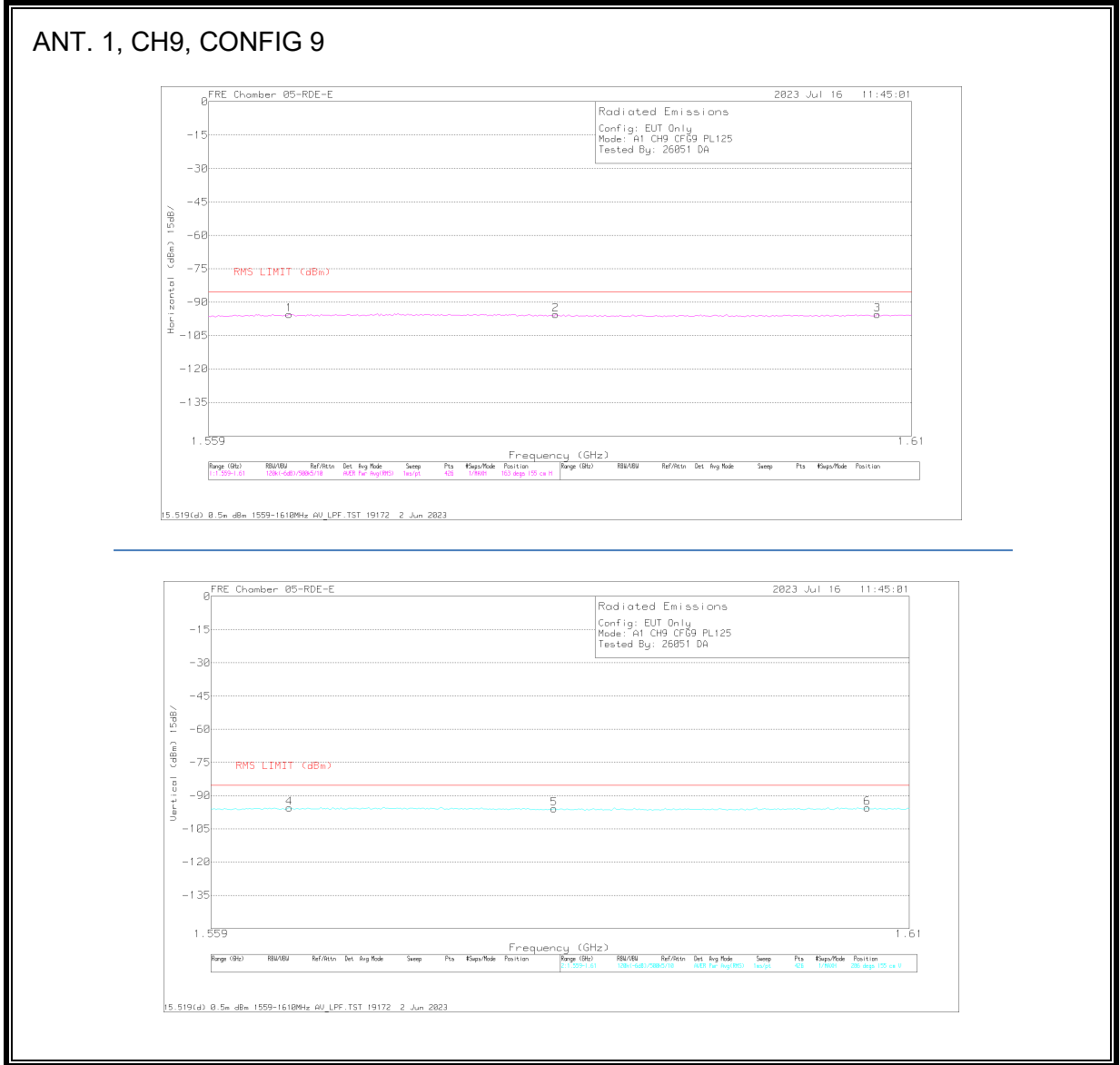


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	226671 ACF (dB) 3mH	Dist. Corr. (dB)	Conversion Factor (dB)	Gain/Loss (dB)	Corrected Reading (dBm)	RMS LIMIT (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.181769	-67.73	RMS	28.1	-15.6	11.8	-50.58	-94.01	-85.3	-8.71	176	154	V
1	1.18249	-67.74	RMS	28.1	-15.6	11.8	-50.61	-94.05	-85.3	-8.75	207	154	H
2	1.204821	-70.48	RMS	28.2	-15.6	11.8	-50.5	-96.58	-85.3	-11.28	119	154	H
5	1.206862	-70.68	RMS	28.2	-15.6	11.8	-50.53	-96.81	-85.3	-11.51	22	154	V
3	1.236998	-67.47	RMS	28.4	-15.6	11.8	-50.5	-93.37	-85.3	-8.07	74	154	H
6	1.237839	-67.86	RMS	28.4	-15.6	11.8	-50.53	-93.79	-85.3	-8.49	330	154	V

RMS - RMS detection

9.6.3. AVERAGE EMISSIONS, 1.559 – 1.610 GHz

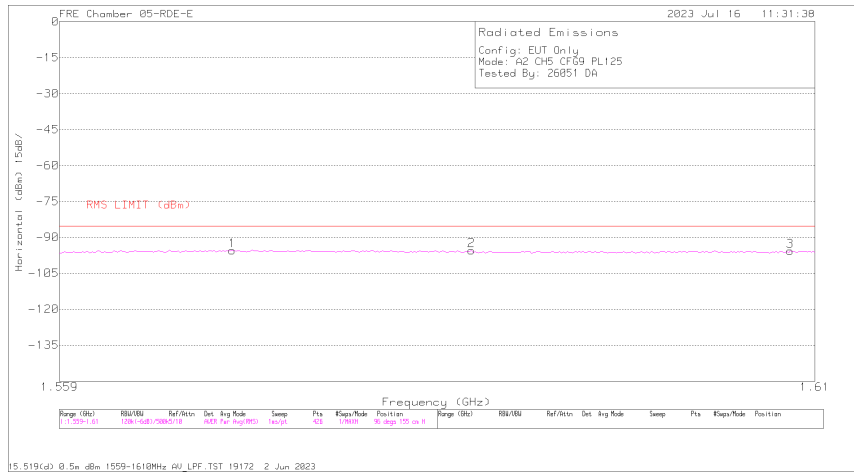


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	226671 ACF (dB) 3mH	Dist. Corr. (dB)	Conversion Factor (dB)	Gain/Loss (dB)	Corrected Reading (dBm)	RMS LIMIT (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.56464	-69.41	RMS	27.9	-15.6	11.8	-50.19	-95.5	-85.3	-10.2	44	155	V
1	1.56476	-69.42	RMS	27.9	-15.6	11.8	-50.19	-95.51	-85.3	-10.21	119	155	H
5	1.58384	-69.61	RMS	27.8	-15.6	11.8	-50.25	-95.86	-85.3	-10.56	308	155	V
2	1.58396	-69.22	RMS	27.8	-15.6	11.8	-50.25	-95.47	-85.3	-10.17	30	155	H
6	1.60688	-69.36	RMS	27.9	-15.6	11.8	-50.29	-95.55	-85.3	-10.25	131	155	V
3	1.60748	-69.35	RMS	27.9	-15.6	11.8	-50.29	-95.54	-85.3	-10.24	360	155	H

RMS - RMS detection

ANT. 2, CH5, CONFIG 9

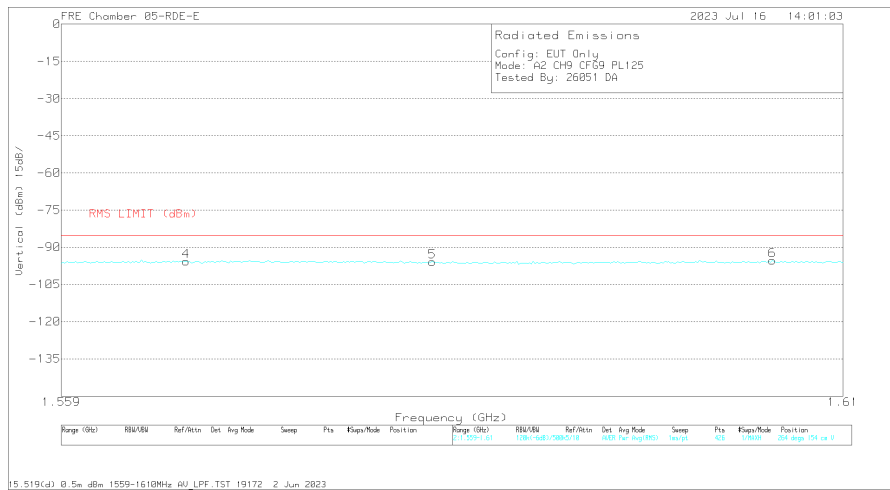
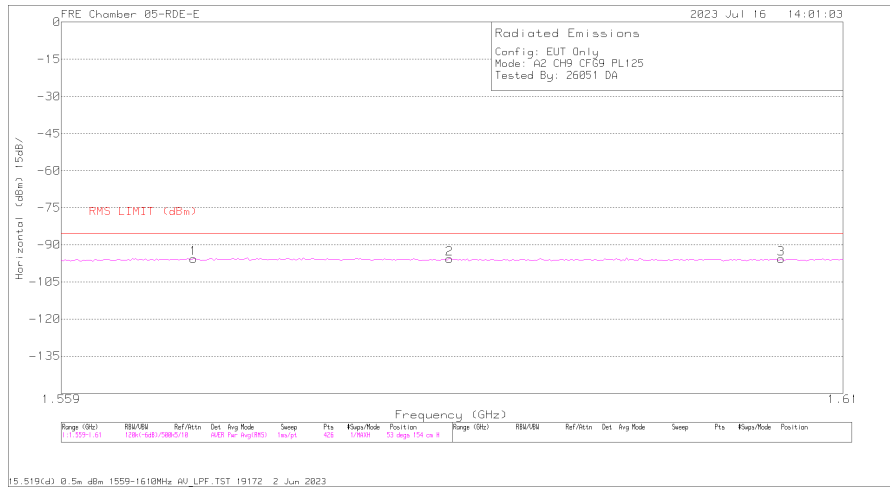


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	226671 ACF (dB) 3mH	Dist. Corr. (dB)	Conversion Factor (dB)	Gain/Loss (dB)	Corrected Reading (dBm)	RMS LIMIT (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.56872	-69.16	RMS	27.9	-15.6	11.8	-50.14	-95.2	-85.3	-9.9	1	155	V
1	1.57052	-69.4	RMS	27.9	-15.6	11.8	-50.13	-95.43	-85.3	-10.13	31	155	H
2	1.5866	-69.09	RMS	27.8	-15.6	11.8	-50.29	-95.38	-85.3	-10.08	140	155	H
5	1.5866	-69.37	RMS	27.8	-15.6	11.8	-50.29	-95.66	-85.3	-10.36	286	155	V
3	1.60832	-69.56	RMS	27.9	-15.6	11.8	-50.28	-95.74	-85.3	-10.44	118	155	H
6	1.60844	-69.56	RMS	27.9	-15.6	11.8	-50.28	-95.74	-85.3	-10.44	43	155	V

RMS - RMS detection

ANT. 2, CH9, CONFIG 9



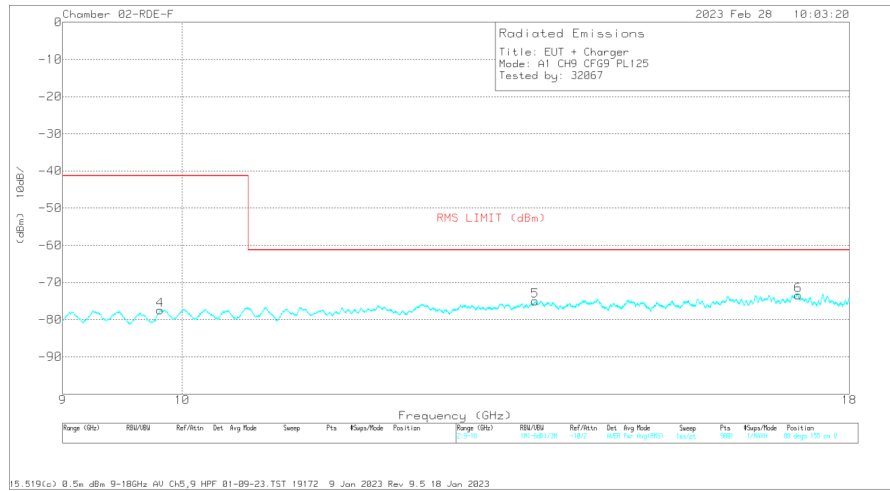
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	226671 ACF (dB) 3mH	Dist. Corr. (dB)	Conversion Factor (dB)	Gain/Loss (dB)	Corrected Reading (dBm)	RMS LIMIT (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.56704	-69.65	RMS	27.9	-15.6	11.8	-50.14	-95.69	-85.3	-10.39	154	154	V
1	1.56752	-69.5	RMS	27.9	-15.6	11.8	-50.16	-95.56	-85.3	-10.26	141	154	H
5	1.583	-69.6	RMS	27.8	-15.6	11.8	-50.24	-95.84	-85.3	-10.54	132	154	V
2	1.58414	-69.32	RMS	27.8	-15.6	11.8	-50.25	-95.57	-85.3	-10.27	360	154	H
6	1.60532	-69.19	RMS	27.9	-15.6	11.8	-50.26	-95.35	-85.3	-10.05	308	154	V
3	1.60592	-69.44	RMS	27.9	-15.6	11.8	-50.27	-95.61	-85.3	-10.31	339	154	H

RMS - RMS detection

9.6.4. AVERAGE EMISSIONS, 9 – 18 GHz

ANT. 1, CH9, CONFIG 9

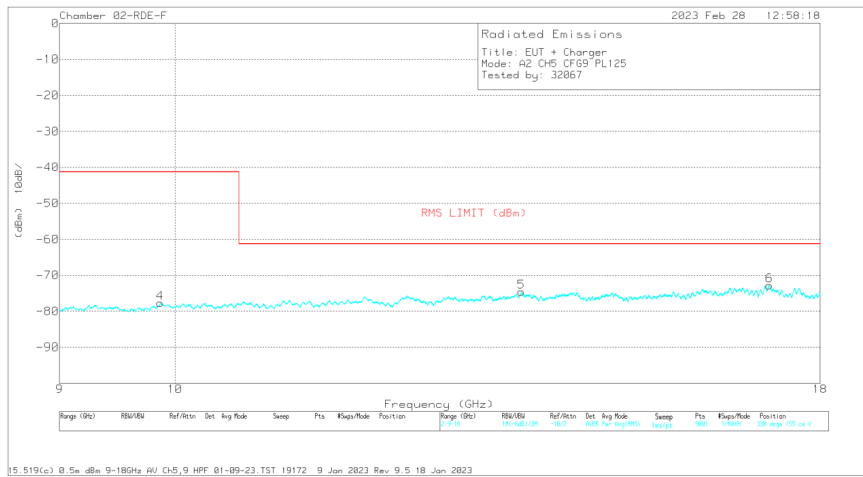
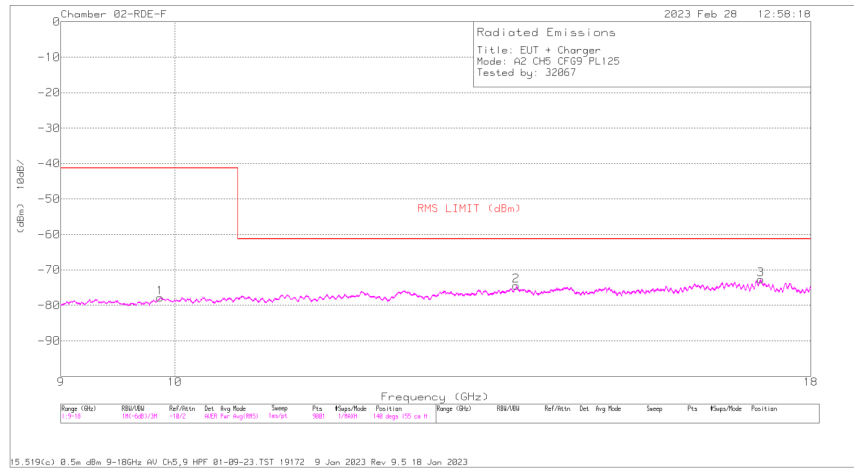


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	81887 ACF (dB)	Amp/Cbt (dB)	Dist. Corr. (dB)	Conv. Fact. (dB)	High Pass Filter (dB)	Corrected Reading (dBm)	RMS LIMIT (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	9.841	-64.27	RMS	37	-46.7	-15.6	11.8	-3	-77.47	-41.3	-36.17	74	155	H
2	13.646	-65.16	RMS	38.9	-45.2	-15.6	11.8	-3	-74.96	-61.3	-13.66	272	155	H
3	17.188	-67.44	RMS	42.2	-44.8	-15.6	11.8	-3	-73.54	-61.3	-12.24	164	155	H
4	9.807	-64.5	RMS	37	-46.4	-15.6	11.8	-3	-77.4	-41.3	-36.1	110	155	V
5	13.646	-65.2	RMS	38.9	-45.2	-15.6	11.8	-3	-75	-61.3	-13.7	286	155	V
6	17.21	-66.5	RMS	42.1	-45.5	-15.6	11.8	-3	-73.4	-61.3	-12.1	44	155	V

RMS - RMS detection

ANT. 2, CH5, CONFIG 9

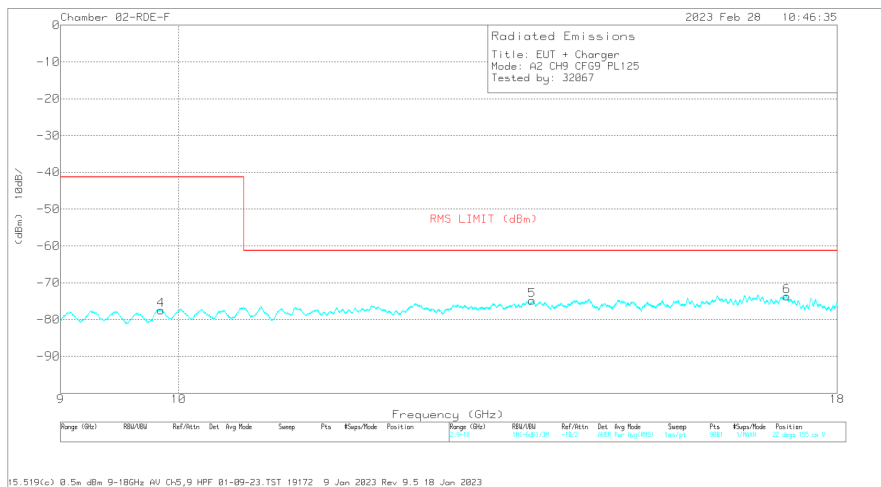
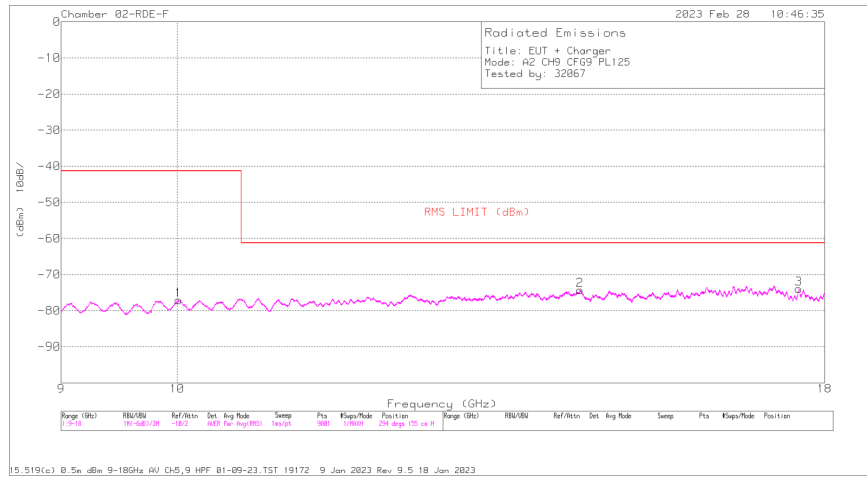


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	dB187 ACF (dB)	Amp/Chl (dB)	Dist. Corr. (dB)	Conv. Fact. (dB)	High Pass Filter (dB)	Corrected Reading (dBm)	RMS LIMIT (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	9.866	-64.91	RMS	37.1	-46.5	-15.6	11.8	.3	-77.81	-41.3	-36.51	162	155	H
2	13.712	-65.29	RMS	39	-44.9	-15.6	11.8	.5	-74.49	-61.3	-13.19	338	155	H
3	17.185	-66.6	RMS	42.2	-44.8	-15.6	11.8	.3	-72.7	-61.3	-11.4	118	155	H
4	9.866	-64.85	RMS	37.1	-46.5	-15.6	11.8	.3	-77.75	-41.3	-36.45	44	155	V
5	13.712	-65.39	RMS	39	-44.9	-15.6	11.8	.5	-74.59	-61.3	-13.29	264	155	V
6	17.185	-66.66	RMS	42.2	-44.8	-15.6	11.8	.3	-72.76	-61.3	-11.46	330	155	V

RMS - RMS detection

ANT. 2, CH9, CONFIG 9

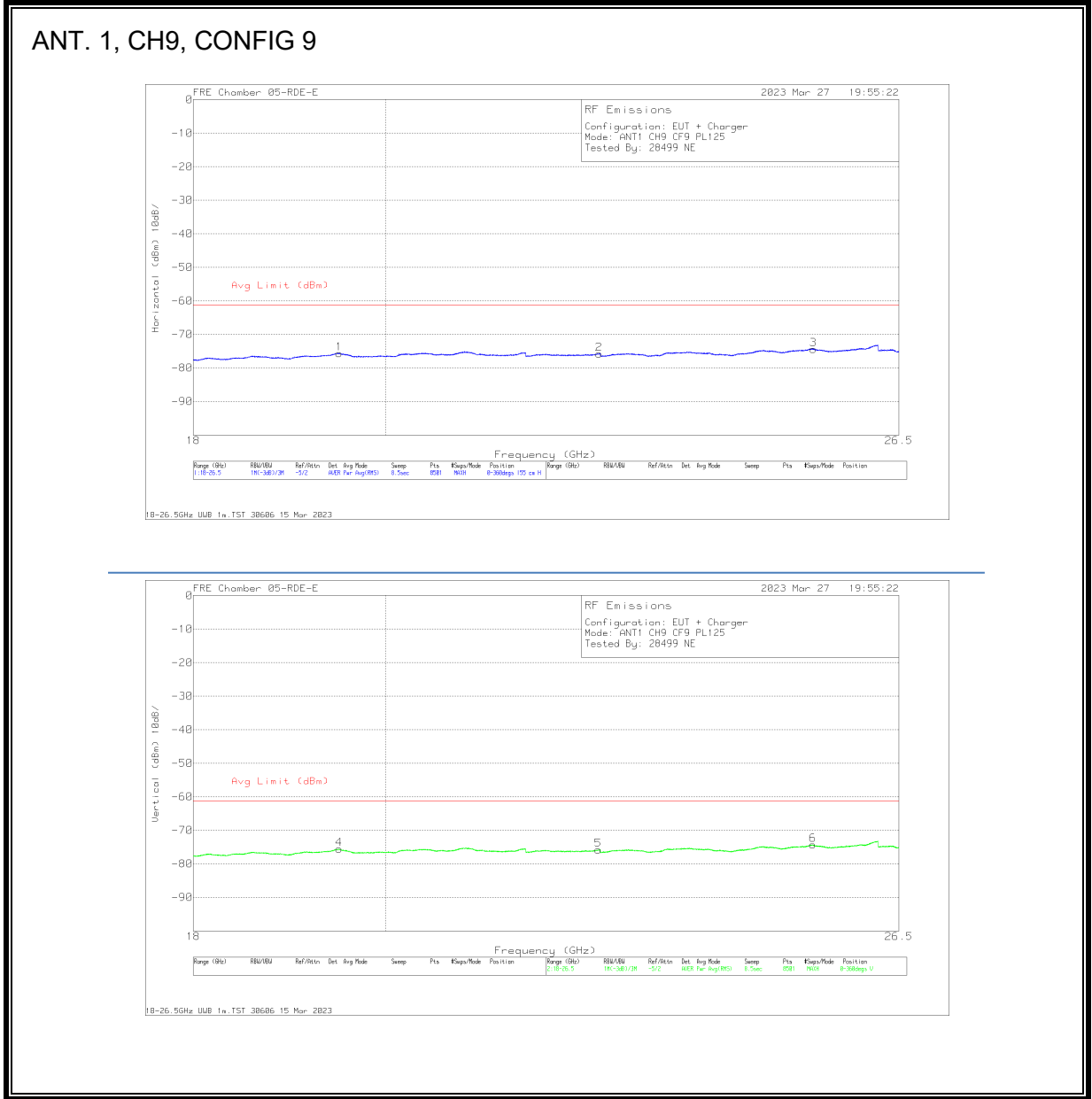


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	dB187 ACF (dB)	Amp/Cbl (dB)	Dist. Corr. (dB)	Conv. Fact. (dB)	High Pass Filter (dB)	Corrected Reading (dBm)	RMS LMI (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	10.013	-64.22	RMS	37.3	-46.7	-15.6	11.8	.3	-77.12	-41.3	-35.82	228	155	H
2	14.419	-64.81	RMS	39.7	-45.7	-15.6	11.8	.3	-74.31	-61.3	-13.01	184	155	H
3	17.584	-68.39	RMS	41.6	-43.7	-15.6	11.8	.3	-73.99	-61.3	-12.69	184	155	H
4	9.845	-64.41	RMS	37	-46.5	-15.6	11.8	.3	-77.41	-41.3	-36.11	22	155	V
5	13.712	-65.57	RMS	39	-44.9	-15.6	11.8	.5	-74.77	-61.3	-13.47	154	155	V
6	17.209	-66.8	RMS	42.1	-45.5	-15.6	11.8	.3	-73.7	-61.3	-12.4	110	155	V

RMS - RMS detection

9.6.5. AVERAGE EMISSIONS, 18 – 26.5 GHz

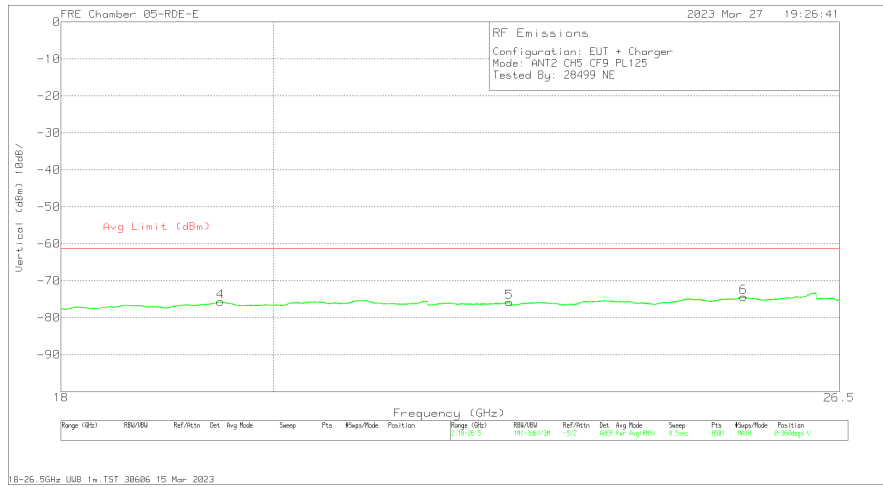
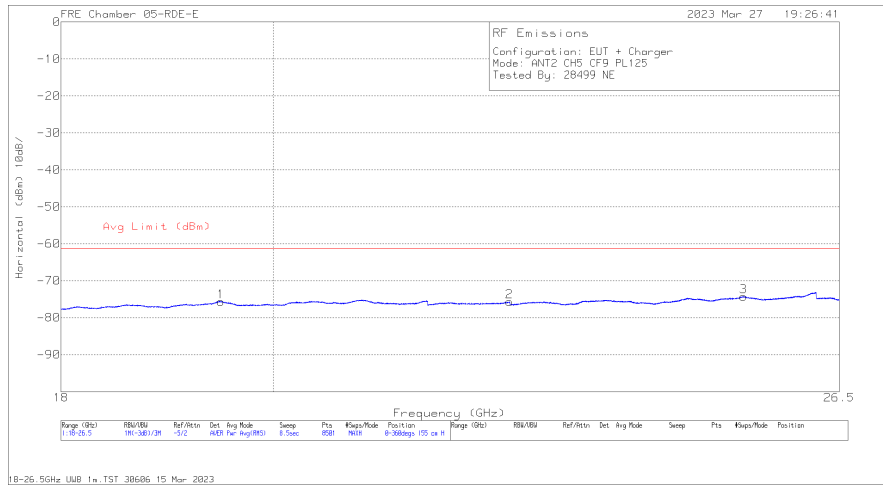


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	Horn ACF (dB/m)	220194 Amp (dB)	CBL/SWITCH	Dist Corr (dB)	Conv. Fact. (dB)	Corrected Reading (dBm)	Avg Limit (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	19.499	-62.7	RMS	33.1	-61.7	13.4	-9.5	11.8	-75.6	-61.3	-14.3	0-360	155	H
4	19.499	-62.64	RMS	33.1	-61.7	13.4	-9.5	11.8	-75.54	-61.3	-14.24	0-360	155	V
5	22.476	-64.92	RMS	33.7	-61.2	14.3	-9.5	11.8	-75.82	-61.3	-14.52	0-360	155	V
2	22.484	-64.87	RMS	33.7	-61.2	14.3	-9.5	11.8	-75.77	-61.3	-14.47	0-360	155	H
6	25.282	-66.03	RMS	34.9	-60.7	15.2	-9.5	11.8	-74.33	-61.3	-13.03	0-360	155	V
3	25.288	-66.05	RMS	34.9	-60.7	15.2	-9.5	11.8	-74.35	-61.3	-13.05	0-360	155	H

RMS - RMS detection

ANT. 2, CH5, CONFIG 9

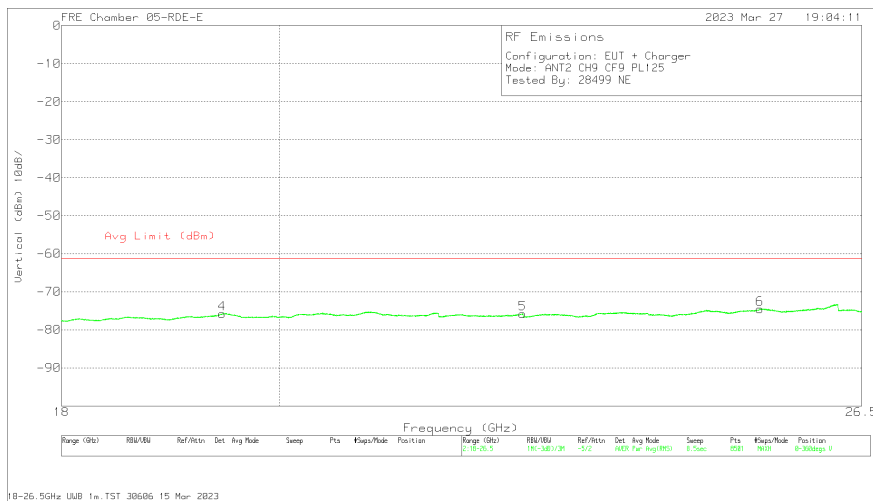


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	Horn ACF (dB/m)	220194 Amp (dB)	CBL/SWITCH	Dist Corr (dB)	Conv. Fact. (dB)	Corrected Reading (dBm)	Avg Limit (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	19.485	-62.75	RMS	33.1	-61.7	13.4	-9.5	11.8	-75.65	-61.3	-14.35	0-360	155	V
1	19.49	-62.73	RMS	33.1	-61.7	13.4	-9.5	11.8	-75.63	-61.3	-14.33	0-360	155	H
5	22.492	-64.91	RMS	33.7	-61.2	14.3	-9.5	11.8	-75.81	-61.3	-14.51	0-360	155	V
2	22.497	-64.79	RMS	33.7	-61.2	14.3	-9.5	11.8	-75.69	-61.3	-14.39	0-360	155	H
3	25.267	-66.02	RMS	34.9	-60.7	15.2	-9.5	11.8	-74.32	-61.3	-13.02	0-360	155	H
6	25.27	-66.11	RMS	34.9	-60.7	15.2	-9.5	11.8	-74.41	-61.3	-13.11	0-360	155	V

RMS - RMS detection

ANT. 2, CH9, CONFIG 9

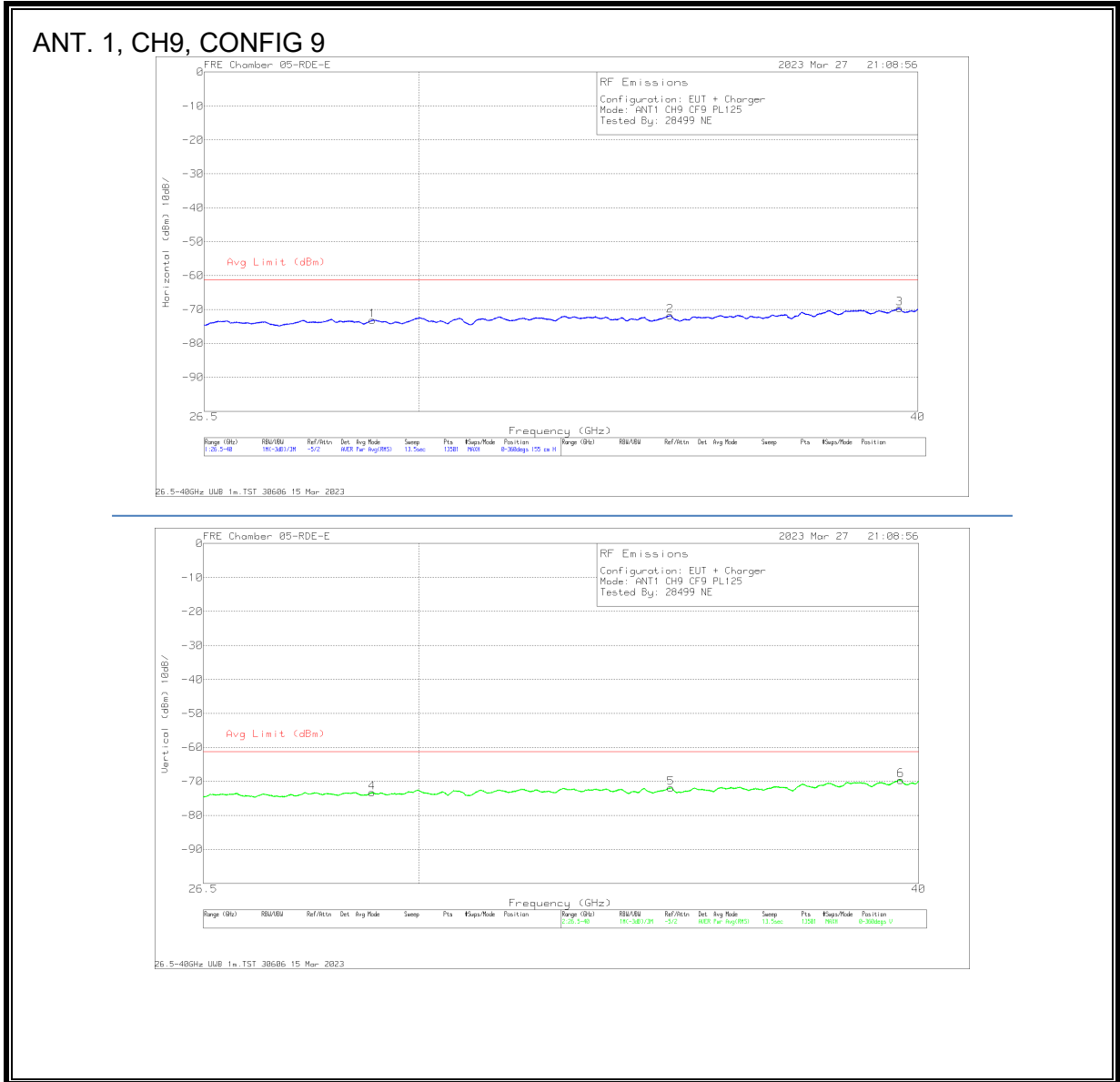


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	Horn ACF (dBm)	220194 Amp (dB)	CBL/SWITCH	Dist Corr (dB)	Conv. Fact. (dB)	Corrected Reading (dBm)	Avg Limit (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	19.454	-82.68	RMS	33.1	-61.8	13.3	-9.5	11.8	-75.78	-61.3	-14.48	0-360	155	V
1	19.489	-82.66	RMS	33.1	-61.8	13.4	-9.5	11.8	-75.66	-61.3	-14.36	0-360	155	H
2	22.492	-84.78	RMS	33.7	-61.2	14.3	-9.5	11.8	-75.68	-61.3	-14.38	0-360	155	H
5	22.497	-84.86	RMS	33.7	-61.2	14.3	-9.5	11.8	-75.76	-61.3	-14.46	0-360	155	V
6	25.23	-66.28	RMS	34.9	-60.7	15.2	-9.5	11.8	-74.58	-61.3	-13.28	0-360	155	V
3	25.235	-66.16	RMS	34.9	-60.7	15.2	-9.5	11.8	-74.46	-61.3	-13.16	0-360	155	H

RMS - RMS detection

9.6.6. AVERAGE EMISSIONS, 26.5 – 40 GHz

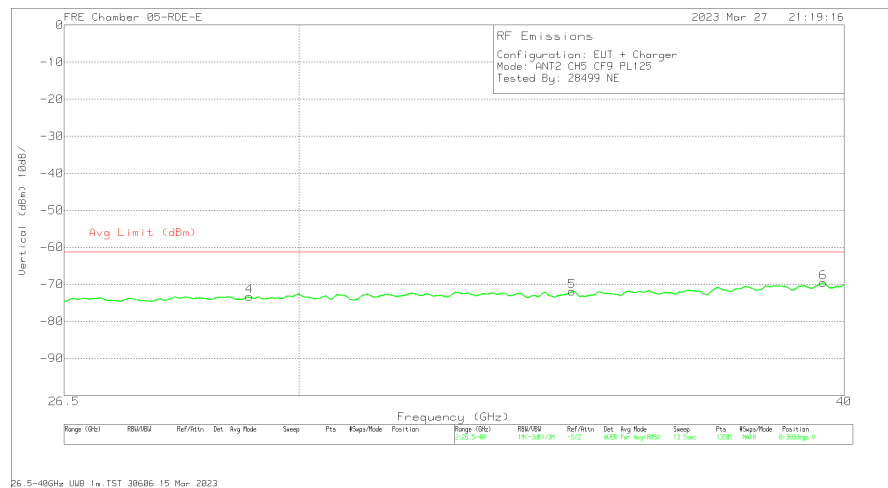
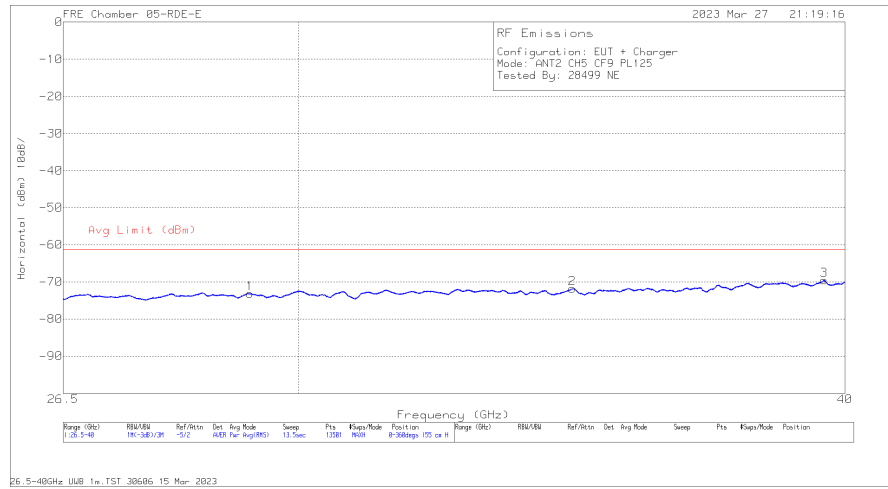


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	Horn ACF (dBm)	220193 Amp (dB)	CBL/SWITCH	Dist Corr (dB)	Conversion Factor (dB)	Corrected Reading (dBm)	Avg Limit (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	29.202	-64.84	RMS	36.2	-63.7	16.9	-9.5	11.8	-73.14	-61.3	-11.84	0-360	155	H
4	29.204	-64.98	RMS	36.2	-63.7	16.9	-9.5	11.8	-73.28	-61.3	-11.98	0-360	155	V
2	34.673	-65.57	RMS	37.4	-64.5	18.6	-9.5	11.8	-71.77	-61.3	-10.47	0-360	155	H
5	34.68	-65.65	RMS	37.4	-64.5	18.6	-9.5	11.8	-71.85	-61.3	-10.55	0-360	155	V
3	39.577	-65.91	RMS	38.4	-64.2	19.8	-9.5	11.8	-69.61	-61.3	-8.31	0-360	155	H
6	39.592	-65.99	RMS	38.4	-64.2	19.9	-9.5	11.8	-69.59	-61.3	-8.29	0-360	155	V

RMS - RMS detection

ANT. 2, CH5, CONFIG 9

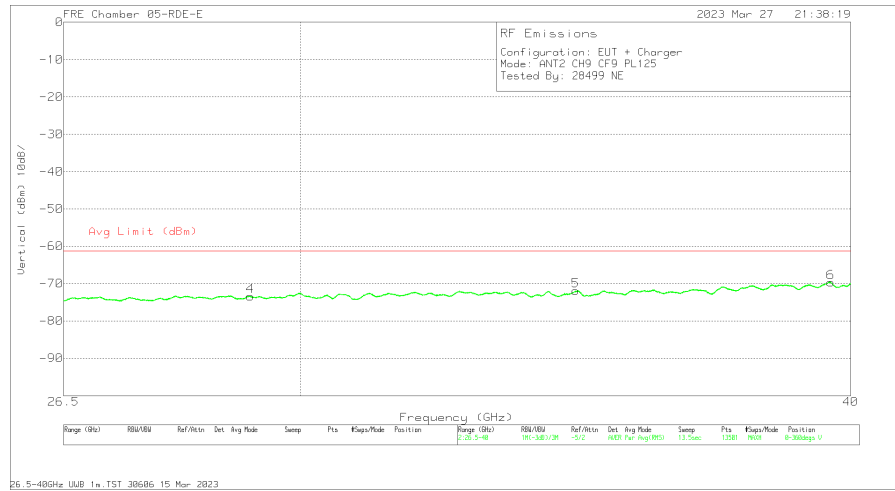
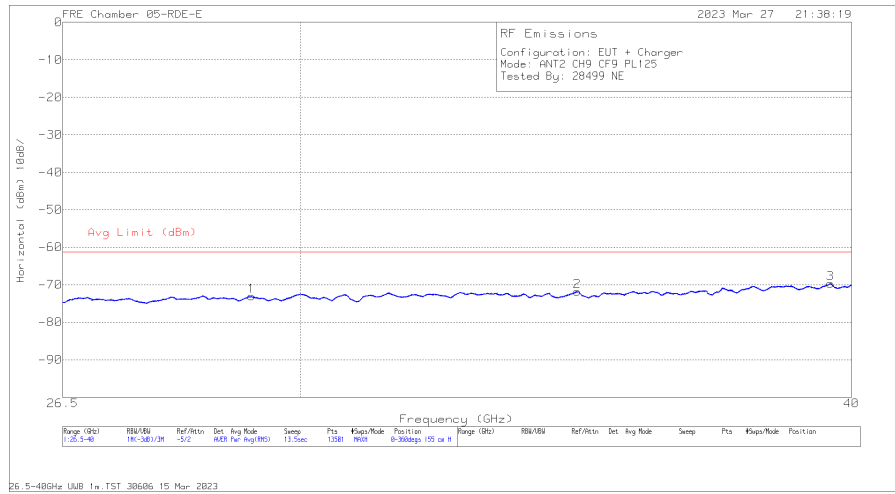


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	Hom ACF (dB/m)	220193 Amp (dB)	CBL/SWITCH	Dist Corr (dB)	Conversion Factor (dB)	Corrected Reading (dBm)	Avg Limit (dBm)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	29.227	-64.92	RMS	36.2	-63.7	16.8	-9.5	11.8	-73.32	-61.3	-12.02	0-360	155	V
1	29.236	-64.72	RMS	36.2	-63.7	16.8	-9.5	11.8	-73.12	-61.3	-11.82	0-360	155	H
2	34.649	-65.43	RMS	37.4	-64.6	18.5	-9.5	11.8	-71.83	-61.3	-10.53	0-360	155	H
5	34.65	-65.55	RMS	37.4	-64.6	18.5	-9.5	11.8	-71.95	-61.3	-10.65	0-360	155	V
6	39.561	-65.88	RMS	38.4	-64.1	19.8	-9.5	11.8	-69.48	-61.3	-8.18	0-360	155	V
3	39.566	-65.87	RMS	38.4	-64.1	19.8	-9.5	11.8	-69.47	-61.3	-8.17	0-360	155	H

RMS - RMS detection

ANT. 2, CH9, CONFIG 9



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	Horn ACF (dBm)	220193 Amp (dB)	CBL/SWITCH	Dist Corr (dB)	Conversion Factor (dB)	Corrected Reading (dBm)	Avg Limit (dBm)	Margin (dB)	Azimuth (Dege)	Height (cm)	Polarity
4	29.22	-64.98	RMS	36.2	-63.7	16.8	-9.5	11.8	-73.38	-61.3	-12.08	0-360	155	V
1	29.245	-64.68	RMS	36.2	-63.7	16.8	-9.5	11.8	-73.08	-61.3	-11.78	0-360	155	H
5	34.641	-65.5	RMS	37.4	-64.6	18.5	-9.5	11.8	-71.9	-61.3	-10.6	0-360	155	V
2	34.669	-65.48	RMS	37.4	-64.5	18.5	-9.5	11.8	-71.78	-61.3	-10.48	0-360	155	H
3	39.559	-66	RMS	38.4	-64.1	19.8	-9.5	11.8	-69.6	-61.3	-8.3	0-360	155	H
6	39.586	-66	RMS	38.4	-64.2	19.9	-9.5	11.8	-69.6	-61.3	-8.3	0-360	155	V

RMS - RMS detection

9.7. AC POWER-LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a) & RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 [*]	56 to 46 [*]
0.5-5	56	46
5-30	60	50

^{*} Decreases with the logarithm of the frequency.

TEST PROCEDURE

ANSI C63.10 Section 6.2

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

Results for the parent model are shown below.

Parent Model

Employee IDs: 26051

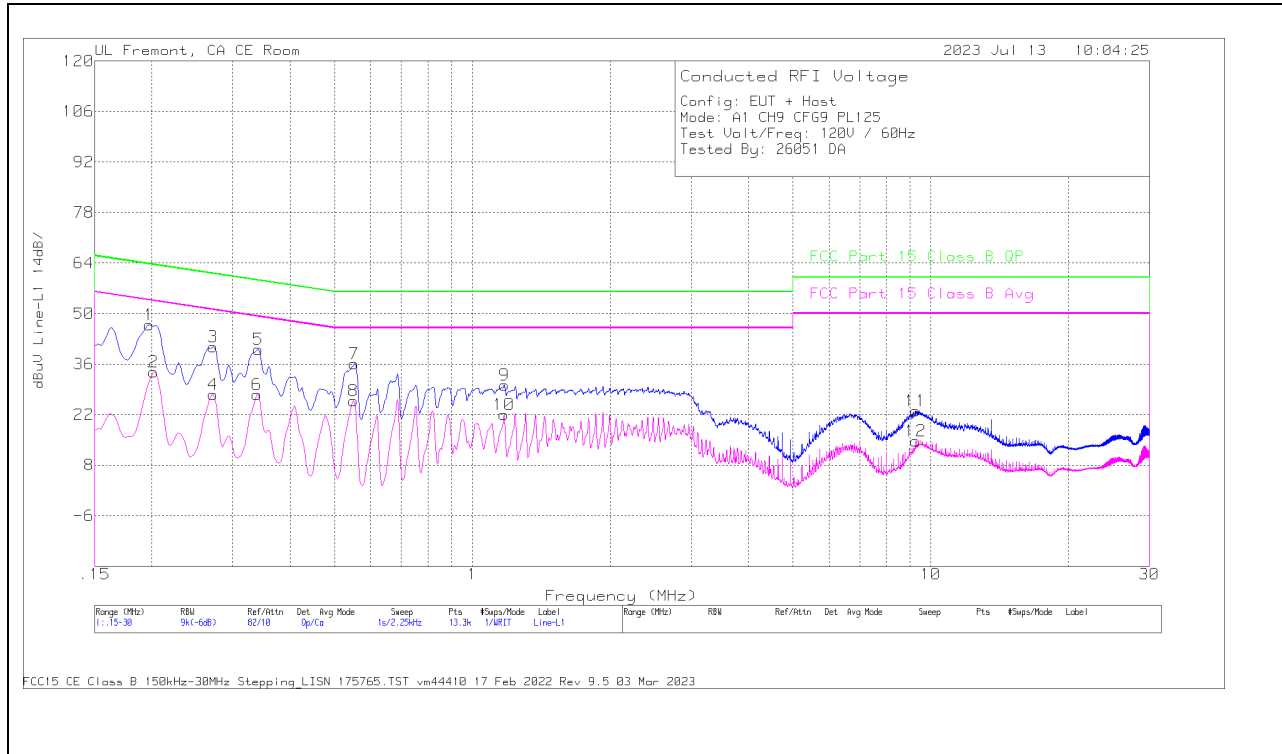
Location: Immunity Test Lab

Test Date: 07/13/23

9.7.1. AC Power Line with Laptop

Parent

LINE 1 RESULTS

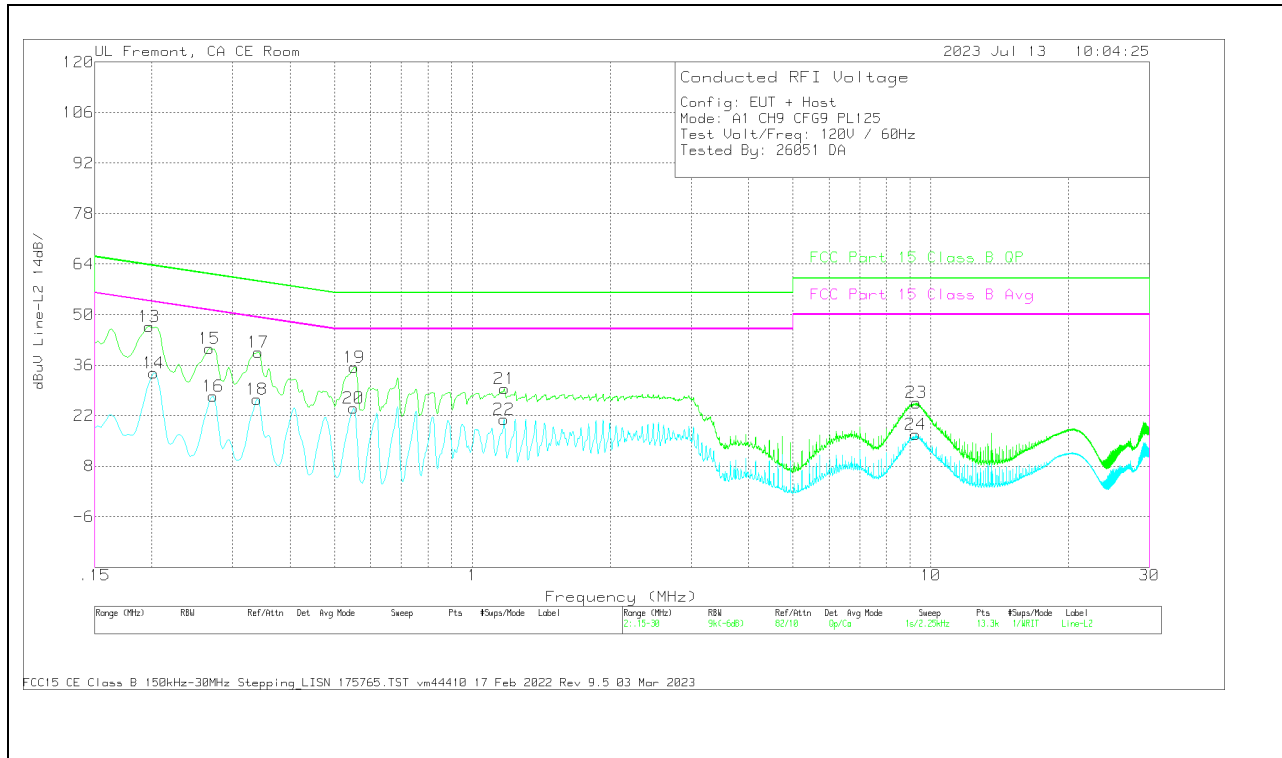


Trace Markers

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv (dB)	C1&C3 cable path loss (dB)	207996 Limiter with short cable (dB)	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR) Margin (dB)
2	.2018	24.5	Ca	0	0	9.4	33.9	-	-	53.54	-19.64
4	.2715	18.33	Ca	0	0	9.3	27.63	-	-	51.07	-23.44
6	.339	18.23	Ca	0	0	9.3	27.53	-	-	49.23	-21.7
8	.5505	16.46	Ca	0	.1	9.3	25.86	-	-	46	-20.14
10	1.1715	12.57	Ca	0	.1	9.3	21.97	-	-	46	-24.03
12	9.2828	5.29	Ca	0	.2	9.3	14.79	-	-	50	-35.21
1	.1973	37.49	Qp	0	0	9.4	46.89	63.73	-16.84	-	-
3	.2715	31.42	Qp	0	0	9.3	40.72	61.07	-20.35	-	-
5	.3413	30.72	Qp	0	.1	9.3	40.12	59.17	-19.05	-	-
7	.5528	26.75	Qp	0	.1	9.3	36.15	56	-19.85	-	-
9	1.1738	20.81	Qp	0	.1	9.3	30.21	56	-25.79	-	-
11	9.2828	13.5	Qp	0	.2	9.3	23	60	-37	-	-

Qp - Quasi-Peak detector
 Ca - CISPR average detection

LINE 2 RESULTS



Trace Markers

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2 LISN (dB)	C2&C3 cable path loss (dB)	207996 Limiter with short cable (dB)	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR) Margin (dB)
14	.2018	24.48	Ca	0	0	9.4	33.88	-	-	53.54	-19.66
16	.2715	18.06	Ca	0	0	9.3	27.36	-	-	51.07	-23.71
18	.339	17.3	Ca	0	0	9.3	26.6	-	-	49.23	-22.63
20	.5505	14.7	Ca	0	.1	9.3	24.1	-	-	46	-21.9
22	1.1715	11.5	Ca	0	.1	9.3	20.9	-	-	46	-25.1
24	9.2828	7.33	Ca	0	.2	9.3	16.83	-	-	50	-33.17
13	.1973	37.37	Qp	0	0	9.4	46.77	63.73	-16.96	-	-
15	.267	31.25	Qp	0	0	9.3	40.55	61.21	-20.66	-	-
17	.3413	30.34	Qp	0	0	9.3	39.64	59.17	-19.53	-	-
19	.5528	26.04	Qp	0	.1	9.3	35.44	56	-20.56	-	-
21	1.1738	20.01	Qp	0	.1	9.3	29.41	56	-26.59	-	-
23	9.3053	16.08	Qp	0	.2	9.3	25.58	60	-34.42	-	-

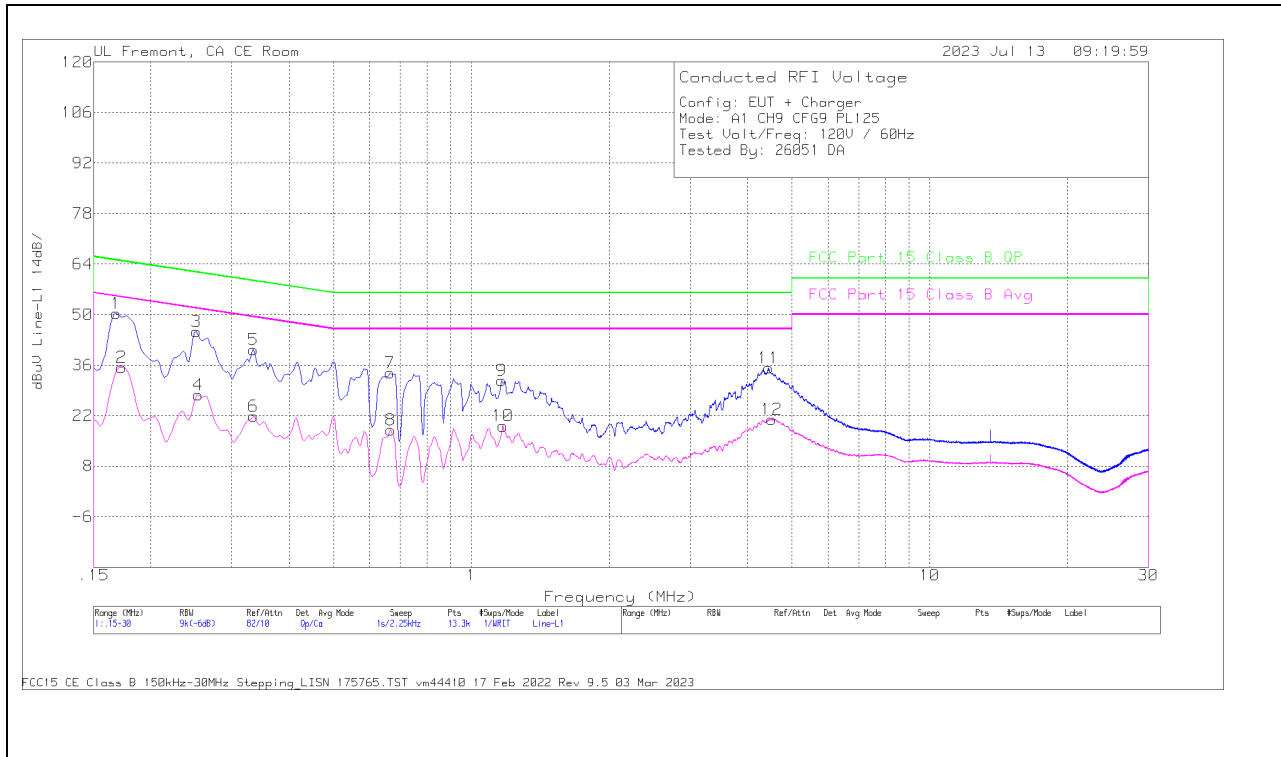
Qp - Quasi-Peak detector

Ca - CISPR average detection

9.7.2. AC Power Line with AC/DC Adapter

Parent

LINE 1 RESULTS

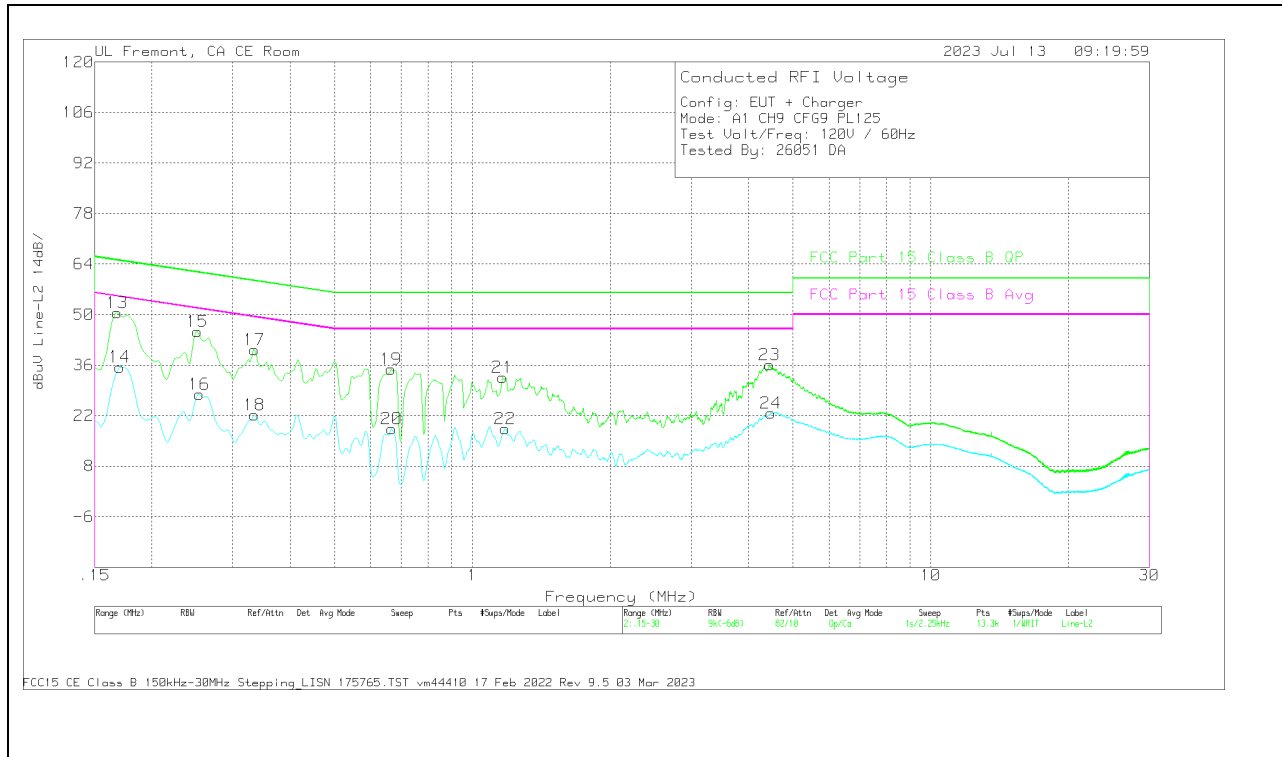


Trace Markers

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv (dB)	C1&C3 cable path loss (dB)	207996 Limiter with short cable (dB)	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR) Margin (dB)
2	.1725	26.02	Ca	0	0	9.4	35.42	-	-	54.84	-19.42
4	.2535	18.44	Ca	0	0	9.3	27.74	-	-	51.64	-23.9
6	.3345	12.53	Ca	0	0	9.3	21.83	-	-	49.34	-27.51
8	.6675	8.58	Ca	0	.1	9.3	17.98	-	-	46	-28.02
10	1.1715	9.75	Ca	0	.1	9.3	19.15	-	-	46	-26.85
12	4.5173	11.56	Ca	0	.1	9.3	20.96	-	-	46	-25.04
1	.168	40.93	Qp	0	0	9.4	50.33	65.06	-14.73	-	-
3	.2513	36.08	Qp	0	0	9.3	45.38	61.72	-16.34	-	-
5	.3345	30.91	Qp	0	0	9.3	40.21	59.34	-19.13	-	-
7	.6653	24.43	Qp	0	.1	9.3	33.83	56	-22.17	-	-
9	1.1648	22.33	Qp	0	.1	9.3	31.73	56	-24.27	-	-
11	4.4453	25.75	Qp	0	.1	9.3	35.15	56	-20.85	-	-

Qp - Quasi-Peak detector
Ca - CISPR average detection

LINE 2 RESULTS



Trace Markers

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN (dB)	C2&C3 cable path loss (dB)	207996 Limiter with short cable (dB)	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR) Margin (dB)
14	.1703	26.08	Ca	0	0	9.4	35.48	-	-	54.95	-19.47
16	.2535	18.62	Ca	0	0	9.3	27.92	-	-	51.64	-23.72
18	.3345	12.87	Ca	0	0	9.3	22.17	-	-	49.34	-27.17
20	.6675	8.92	Ca	0	.1	9.3	18.32	-	-	46	-27.68
22	1.1805	8.93	Ca	0	.1	9.3	18.33	-	-	46	-27.67
24	4.4813	13.23	Ca	0	.1	9.3	22.63	-	-	46	-23.37
13	.168	41.11	Qp	0	0	9.4	50.51	65.06	-14.55	-	-
15	.2513	36.03	Qp	0	0	9.3	45.33	61.72	-16.39	-	-
17	.3345	31.01	Qp	0	0	9.3	40.31	59.34	-19.03	-	-
19	.6653	25.41	Qp	0	.1	9.3	34.81	56	-21.19	-	-
21	1.1648	23.28	Qp	0	.1	9.3	32.68	56	-23.32	-	-
23	4.452	26.74	Qp	0	.1	9.3	36.14	56	-19.86	-	-

Qp - Quasi-Peak detector
Ca - CISPR average detection

10. SETUP PHOTOS

Please refer to 1523778-EP1V1 for setup photos.

END OF REPORT