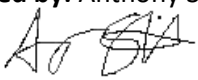
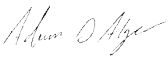
Test Report # C-3600D

Equipment Under Test:	DCE045
Requirement(s):	FCC 15.247, RSS-247
Test Date(s):	6/5/2023-6/7/2023
Prepared for:	Stanley Black & Decker Attn: Kirwan Magdamo 701 East Joppa Road Towson, MD 21286

Report Issued by: Anthony Smith, EMC Engineering Specialist

Signature:  Date: 07/27/2023

Report Reviewed by: Adam Alger, Laboratory Manager

Signature:  Date: 07/27/2023

Report Constructed by: Anthony Smith, EMC Engineering Specialist

Signature:  Date: 06/09/2023

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Laird Connectivity Test Services in Review

The Laird Connectivity, Inc. laboratory located at W66 N220 Commerce Court Cedarburg, Wisconsin, 53012 USA is recognized through the following organizations:

Certificate #1255.01

A2LA – American Association for Laboratory Accreditation

Accreditation based on ISO/IEC 17025:2017 with Electrical (EMC) Scope

A2LA Certificate Number: 1255.01

Scope of accreditation includes all test methods listed herein unless otherwise noted

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Federal Communications Commission (FCC) – USA

Accredited Test Firm Registration Number: 953492

Recognition of two 3 meter Semi-Anechoic Chambers

Innovation, Science and Economic Development Canada

Accredited U.S. Identification Number: US0218

Recognition of two 3 meter Semi-Anechoic Chambers

1 TEST REPORT SUMMARY

During **June 5th, 2023 to June 7th, 2023** the Equipment Under Test (EUT), **DCE045**, as provided by **Stanley Black & Decker** was tested to the following requirements:

FCC 15.247 / RSS-247, DTS

Requirement	Description	Specification	Method	Result
FCC: 15.247 (a)(2) IC: RSS-247 5.2 (a)	Digital Modulation System 6 dB bandwidth	500 kHz	ANSI C63.10	Pass
FCC: 2.1049 IC: RSS-GEN 6.7	Occupied Bandwidth	Reported	ANSI C63.10	Pass
FCC: 15.247 (b)(3) IC: RSS-247 5.4 (d)	Maximum Conducted Output Power	30 dBm	ANSI C63.10	Pass
FCC: 15.247 (e) IC: RSS-247 5.2 (b)	Digital Modulation System Power Spectral Density	8 dBm / 3 kHz	ANSI C63.10	Pass
FCC: 15.247 (d) IC: RSS-247 5.5	RF Spurious Emissions at the Transmitter Antenna Terminal	20 dBc	ANSI C63.10	Pass
FCC: 15.247 (d) IC: RSS-GEN 8.10	Spurious Radiated Emissions in Restricted Bands	FCC 15.209 RSS-GEN 8.9	ANSI C63.10	Pass
FCC: 2.1055 (d) IC: RSS-GEN 6.11	Frequency Stability	Reported	ANSI C63.10	Pass

Notice:

The results relate only to the item tested as configured and described in this report. Any additional configurations, modes of operation, or modifications made to the equipment under test after the specified test date(s) are at the decision of the client and may not apply to the data seen in this test report.

The decision rule for Pass / Fail assessment to the specification or standard listed in this test report has been agreed upon by the client and laboratory to be as follows:

Measurement Type	Rule
Emissions – Amplitude	1 dB below specified limit
Emissions – Frequency	1% less than the specification
Immunity	Tested at specified level

2 CLIENT INFORMATION

Company Name	Stanley Black & Decker
Contact Person	Kirwan Magdamo
Address	701 East Joppa Road Towson, MD 21286

2.1 Equipment Under Test (EUT) Information

The following information has been supplied by the client

Product Name	DCE045
Model Number	DCE045
Serial Number	Engineering Sample
FCC ID	YJ7-DCE045
IC ID	9082A-DCE045

2.2 Product Description

The DCE045 is designed for tracking and locating professional power tools, equipment, and machines using the DeWALT Tool Connect Site Manager and Control apps.

2.3 Modifications Incorporated for Compliance

None noted at time of test

2.4 Deviations and Exclusions from Test Specifications

None noted at time of test

2.5 Programming Information

Device is powered via 3VDC coin cell battery. Device is programmed via a FTDI-USB cable, with the USB end connected to a programming laptop. Programming software used is nRF Connect for Desktop v4.0.0. Within the nRF Connect software the Direct Test Mode v.2.0.4 utility is used. Channels tested were 37 (2402 MHz), 17 (2440 MHz), and 39 (2480 MHz) with a 1M Data Rate. Transmit Power Settings used in the device are +4 dBm and -40 dBm.

2.6 Additional Information

The worst case operational duty cycle is 2.33%. The Duty Cycle relaxation calculation is 20*log(0.0233) = -32 dB.

3 REFERENCES

Publication	Edition	Date	AMD 1	AMD 2
FCC eCFR	-	2023	-	-
RSS-247	2	2017	-	-
RSS-GEN	5	2018	2019	2021
ANSI C63.10	-	2013	-	-

4 UNCERTAINTY SUMMARY

Using the guidance of the following publications the calculated measurement uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level, using a coverage factor of k = 2.

References
CISPR 16-4-1
CISPR 16-4-2
CISPR 32
ANSI C63.23
A2LA P103
A2LA P103c
ETSI TR 100-028

Measurement Type	Configuration	Uncertainty ±
Radiated Emissions	Biconical Antenna	5.0 dB
Radiated Emissions	Log Periodic Antenna	5.3 dB
Radiated Emissions	Horn Antenna	4.7 dB
AC Line Conducted Emissions	Artificial Mains Network	3.4 dB
Telecom Conducted Emissions	Asymmetric Artificial Network	4.9 dB
Disturbance Power Emissions	Absorbing Clamp	4.1 dB
Radiated Immunity	3 Volts/meter	2.2 dB
Conducted Immunity	CDN/EM/BCI	2.4/3.5/3.4 dB
EFT Burst/Surge	Peak pulse voltage	164 volts
ESD Immunity	15 kV level	1377 Volts

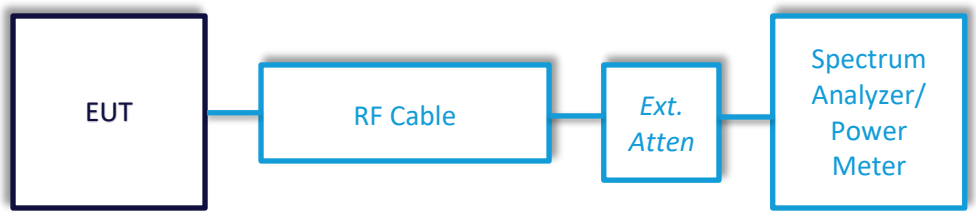
Parameter	ETSI U.C. ±	U.C. ±
Radio Frequency, from F0	$1x10^{-7}$	$0.55x10^{-7}$
Occupied Channel Bandwidth	5 %	2 %
RF conducted Power (Power Meter)	1.5 dB	1.2 dB
RF conducted emissions (Spectrum Analyzer)	3.0 dB	1.7 dB
All emissions, radiated	6.0 dB	5.3 dB
Temperature	1° C	0.65° C
Humidity	5 %	2.9 %
Supply voltages	3 %	1 %

5 TEST DATA

5.1 Antenna Port Conducted Emissions

Description of Measurement	The direct measurement of emissions at the antenna port of the EUT is achieved by use of a RF connection to a spectrum analyzer or power meter. The cable and attenuator factors are loaded into the analyzer or power meter allowing for direct measurement readings without the need for further corrections.
Example Calculations	Measurement (dBm) + Cable factor (dB) + External Attenuator (dB) = Corrected Reading (dBm) Margin (dB) = Limit (dBm) – Corrected Reading (dBm)

Block Diagram



Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960172	Cable	A.H. Systems, Inc.	SAC-26G-1	387	3/22/2023	3/22/2024	Active Verification
EE 960085	Analyzer - EMI Receiver	Agilent	N9038A	MY51210148	4/11/2023	4/11/2024	Active Calibration

5.1.1 Antenna Port Conducted Emissions – DTS Bandwidth

Operator	Anthony Smith	**QA**	Adam Alger
Temperature	21.1°C	**R.H. %**	45.3%
Test Date	6/7/2023	**Location**	Conducted RF Bench
Requirement	FCC: 15.247 (a)(2) IC: RSS-247 5.2(a)	**Method**	ANSI C63.10 §11.8

Limits: BW Greater than 500 kHz

Test Parameters

Frequency	2402, 2440, 2480 MHz	**Setup**	Conducted
RBW	100 kHz	**VBW**	300 kHz
Detector(s)	Max Peak Hold	**Sweep Time**	Auto

EUT Parameters

Input Power	3VDC	**Mode**	BLE Transmit
Frequency	2402, 2440, 2480 MHz	**Channel**	37, 17, 39
Data Rate	1 Mbps		

Data

Table

Channel	Data Rate	DTS BW (MHz)	Limit (MHz)	Margin (MHz)
37	1M	0.7	0.5	0.2
17	1M	0.7	0.5	0.2
39	1M	0.7	0.5	0.2

Plots

Ch 37 DTS BW

Ch 17 DTS BW

Ch 39 DTS BW

5.1.2 Antenna Port Conducted Emissions – 99% OBW

Operator	Anthony Smith	**QA**	Adam Alger
Temperature	21.1°C	**R.H. %**	45.3%
Test Date	6/7/2023	**Location**	Conducted RF Bench
Requirement	FCC: 2.1049 IC: RSS-GEN 6.7	**Method**	ANSI C63.10 §6.9

Limits: Reported

Test Parameters

Frequency	2402, 2440, 2480 MHz	**Setup**	Conducted
RBW	20 kHz	**VBW**	62 kHz
Detector(s)	Max Peak Hold	**Sweep Time**	Auto

EUT Parameters

Input Power	3VDC	**Mode**	BLE Transmit
Frequency	2402, 2440, 2480 MHz	**Channel**	37, 17, 39
Data Rate	1 Mbps		

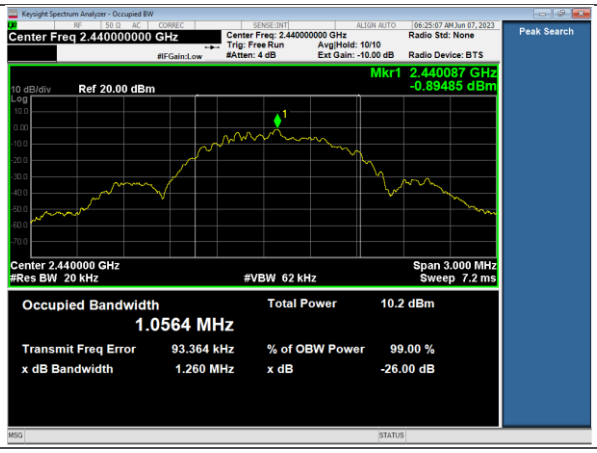
Data

Table

Channel	Data Rate	99% OBW (MHz)
37	BLE 1Mbps	1.06
17	BLE 1Mbps	1.06
39	BLE 1Mbps	1.06

Plots

Ch 37 OBW



Ch 17 OBW

Ch 39 OBW

5.1.3 Antenna Port Conducted Emissions – Peak Output Power

Operator	Anthony Smith	**QA**	Adam Alger
Temperature	21.1°C	**R.H. %**	45.3%
Test Date	6/7/2023	**Location**	Conducted RF Bench
Requirement	FCC: 15.247 (b)(3) IC: RSS-247 5.4 (d)	**Method**	ANSI C63.10 §11.9

Limits: 30 dBm

Test Parameters

Frequency	2402, 2440, 2480 MHz	**Setup**	Conducted
RBW	3 MHz	**VBW**	50 MHz
Detector(s)	Max Peak Hold	**Sweep Time**	Auto

EUT Parameters

Input Power	3VDC	**Mode**	BLE Transmit
Frequency	2402, 2440, 2480 MHz	**Channel**	37, 17, 39
Data Rate	1 Mbps		

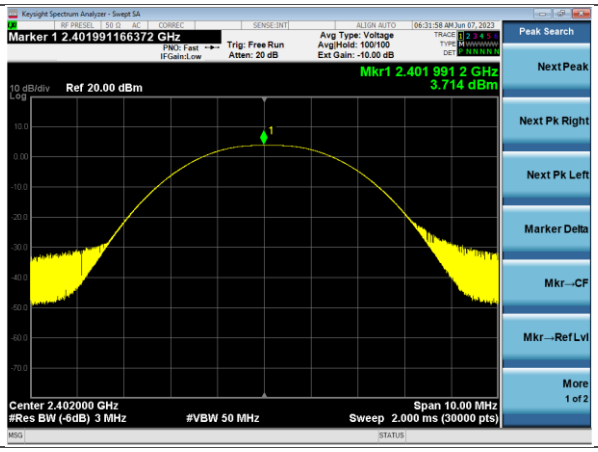
Data

Table

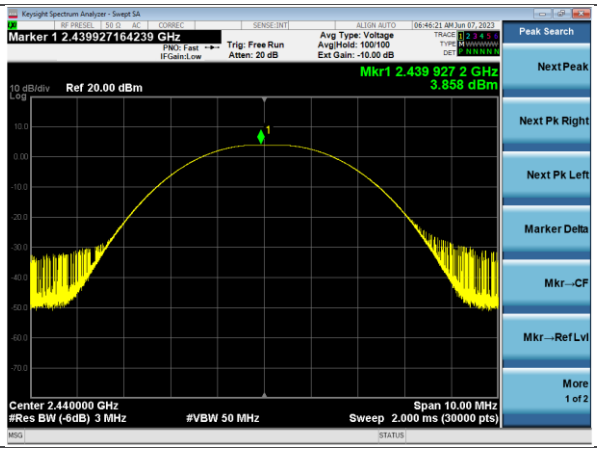
Channel	Peak Output Power (dBm)	Limit (dBm)	Margin (dB)	Transmit Power Setting
37	3.7	30.0	26.3	4
17	3.9	30.0	26.1	4
39	4.0	30.0	26.0	4

Channel	Peak Output Power (dBm)	Limit (dBm)	Margin (dB)	Transmit Power Setting
37	-36.6	30.0	66.6	-40
17	-36.0	30.0	66.0	-40
39	-36.2	30.0	66.2	-40

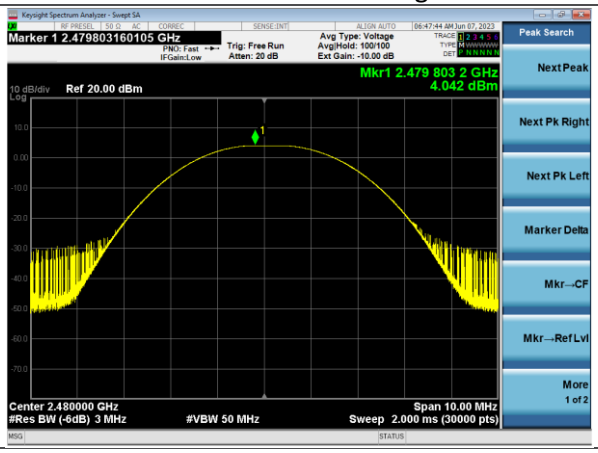
Plots



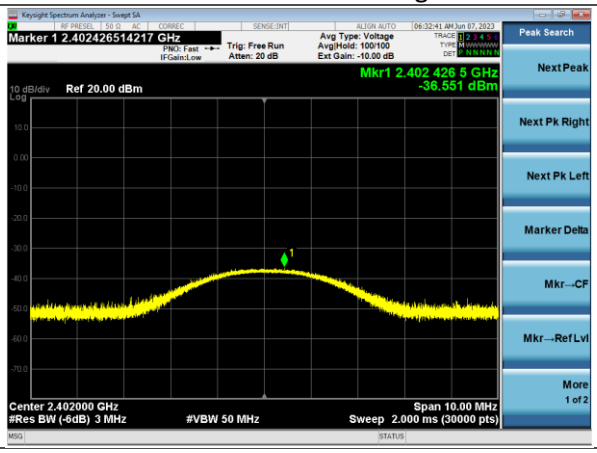
Ch 37
Transmit Power Setting 4



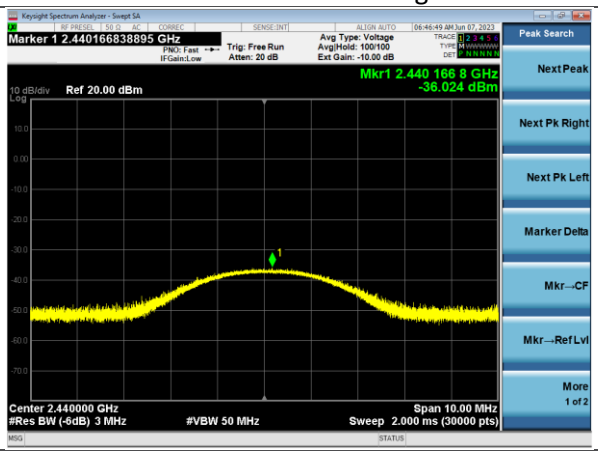
Ch 17
Transmit Power Setting 4



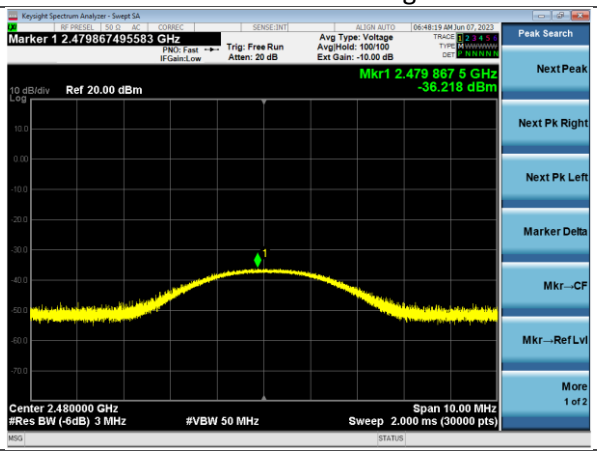
Ch 39
Transmit Power Setting 4



Ch 37
Transmit Power Setting -40



Ch 17
Transmit Power Setting -40



Ch 39
Transmit Power Setting -40

5.1.4 Antenna Port Conducted Emissions – Peak Power Spectral Density

Operator	Anthony Smith	**QA**	Adam Alger
Temperature	21.1°C	**R.H. %**	45.3%
Test Date	6/7/2023	**Location**	Conducted RF Bench
Requirement	FCC: 15.247 (e) IC: RSS-247 5.2 (b)	**Method**	ANSI C63.10 §11.10

Limits: 8dBm / 3kHz

Test Parameters

Frequency	2402, 2440, 2480 MHz	**Setup**	Conducted
RBW	100 kHz	**VBW**	300 kHz
Detector(s)	Max Peak Hold	**Sweep Time**	Auto

EUT Parameters

Input Power	3VDC	**Mode**	BLE Transmit
Frequency	2402, 2440, 2480 MHz	**Channel**	37, 17, 39
Data Rate	1 Mbps		

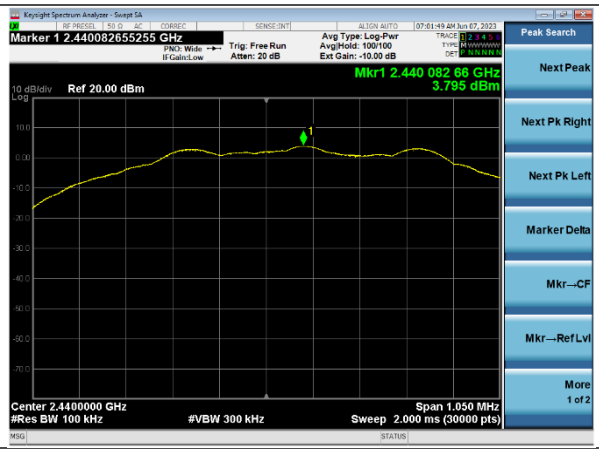
Data

Table

Channel	Data Rate	PSD Reading (dBm/100kHz)	Limit (dBm/3kHz)	Margin (dB)
37	1M	3.7	8.0	4.3
17	1M	3.8	8.0	4.2
39	1M	4.0	8.0	4.0

Plots

Ch 37 Peak PSD



Ch 17 Peak PSD

Ch 39 Peak PSD

5.1.5 Antenna Port Conducted Emissions – Spurious Emissions in Non-Restricted Frequency Bands

Operator	Anthony Smith	**QA**	Adam Alger
Temperature	21.1°C	**R.H. %**	45.3%
Test Date	6/7/2023	**Location**	Conducted RF Bench
Requirement	FCC: 15.247 (d) IC: RSS-247 5.5	**Method**	ANSI C63.10 §11.11

Limits: 20dBc

Reference Level = 4dBm

Limit = -16dBm

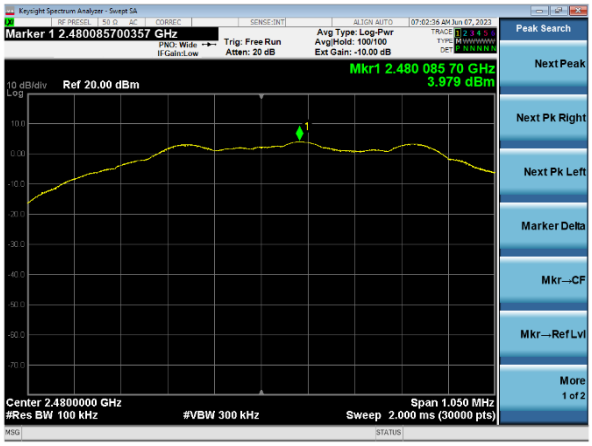
Test Parameters

Frequency	30-25000 MHz	**Setup**	Conducted
RBW	100kHz	**VBW**	300kHz
Detector(s)	Max Peak Hold	**Sweep Time**	Auto
Limit Calculation	Reference Level (dBm) – 20dB = Limit (dBm)		

EUT Parameters

Input Power	3VDC	**Mode**	BLE Transmit
Frequency	2402, 2440, 2480 MHz	**Channel**	37, 17, 39
Data Rate	1 Mbps		

Reference Level Plot

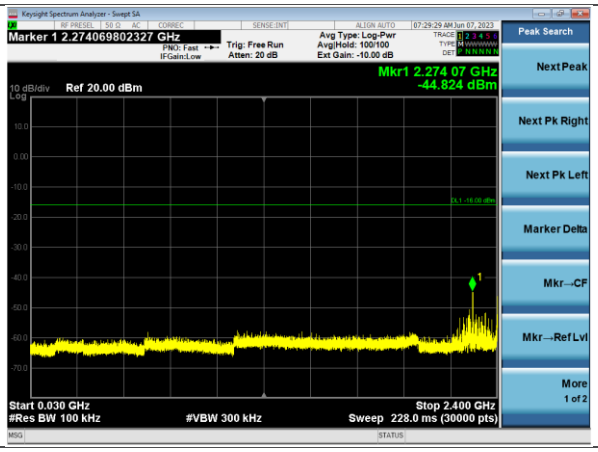


Data

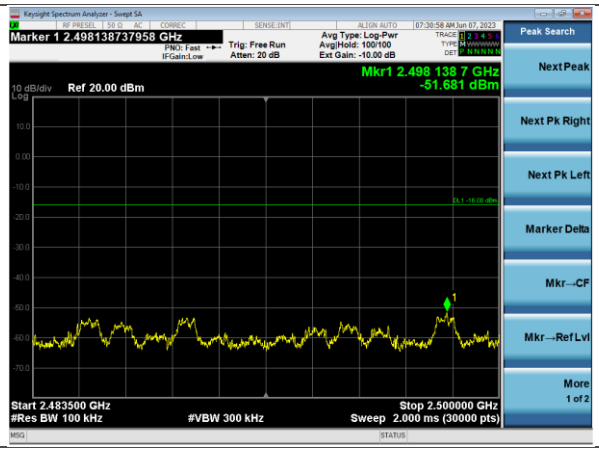
Table

Frequency (MHz)	Emission Measurement (dBm)	Limit (dBm)	Margin (dB)	Channel	Data Rate
2274.1	-45.0	-16.0	29.0	37	1M
2498.1	-51.7	-16.0	35.7	37	1M
4804.1	-39.6	-16.0	23.6	37	1M
7206.2	-47.0	-16.0	31.0	37	1M
2312.1	-44.9	-16.0	28.9	17	1M
2487.8	-52.3	-16.0	36.3	17	1M
4880.2	-38.7	-16.0	22.7	17	1M
7320.3	-46.2	-16.0	30.2	17	1M
2352.1	-44.3	-16.0	28.3	39	1M
2483.5	-50.5	-16.0	34.5	39	1M
2608.1	-42.9	-16.0	26.9	39	1M
4960.2	-40.9	-16.0	24.9	39	1M
7440.3	-47.6	-16.0	31.6	39	1M

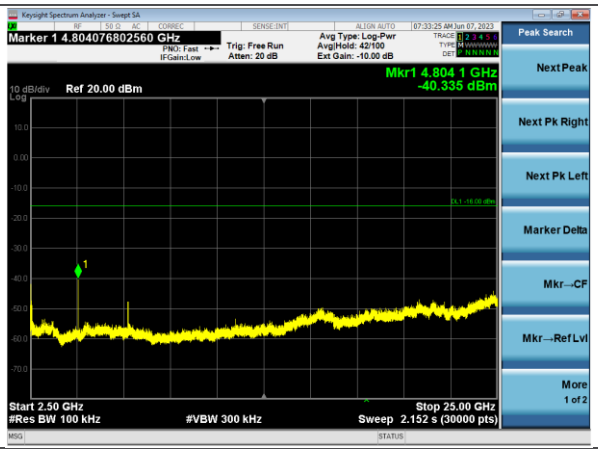
Plots



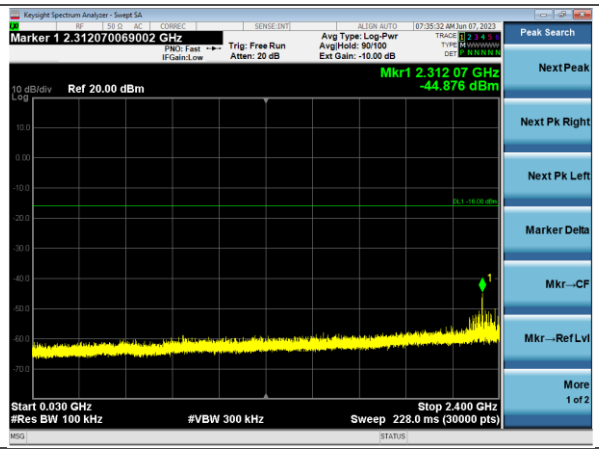
30-2400 MHz
Tx Low



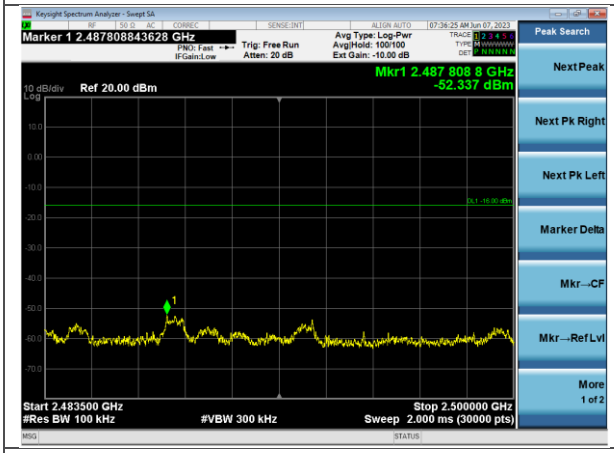
2483.5-2500 MHz
Tx Low



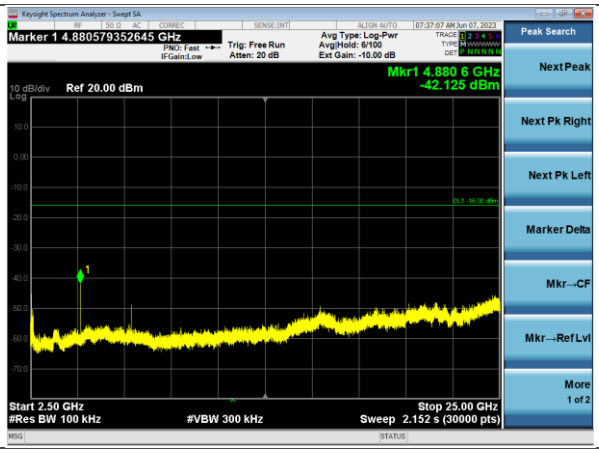
2500-25000 MHz
Tx Low



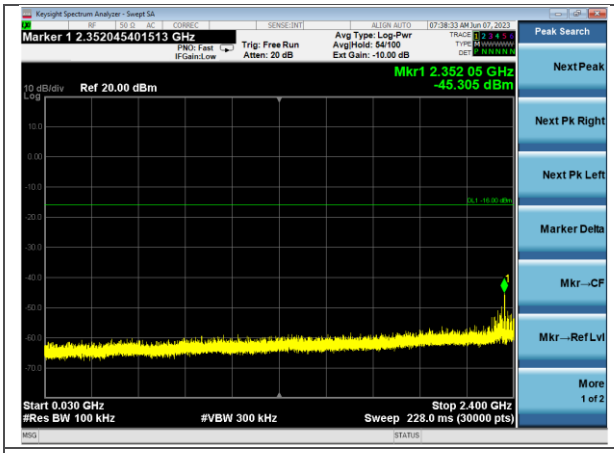
30-2400 MHz
Tx Mid



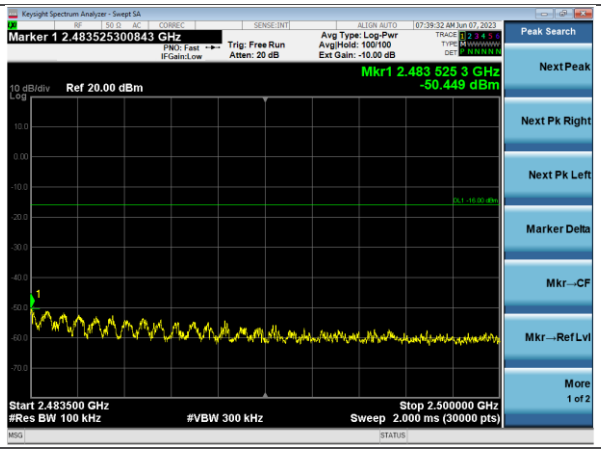
2483.5-2500 MHz
Tx Mid



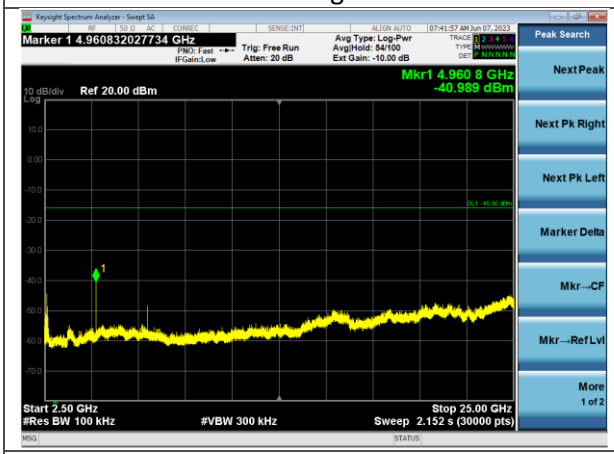
2500-25000 MHz
Tx Mid



30-2400 MHz
Tx High



2483.5-2500 MHz
Tx High



2500-25000 MHz
Tx High

5.1.6 Antenna Port Conducted Emissions – Frequency Stability

Operator	Anthony Smith	**QA**	Adam Alger
Temperature	21.1°C	**R.H. %**	45.3%
Test Date	6/7/2023	**Location**	Conducted RF Bench
Requirement	FCC: 2.1055 (d) IC: RSS-GEN 6.11	**Method**	ANSI C63.10 §6.8

Limits: Reported

Test Parameters

Frequency	2402, 2440, 2480 MHz	**Setup**	Conducted
RBW	1 kHz	**VBW**	3 kHz
Detector(s)	Max Peak Hold	**Sweep Time**	Auto

EUT Parameters

Input Power	3VDC Battery	**Mode**	BLE CW
Frequency	2402, 2440, 2480 MHz	**Channel**	37, 17, 39

Data

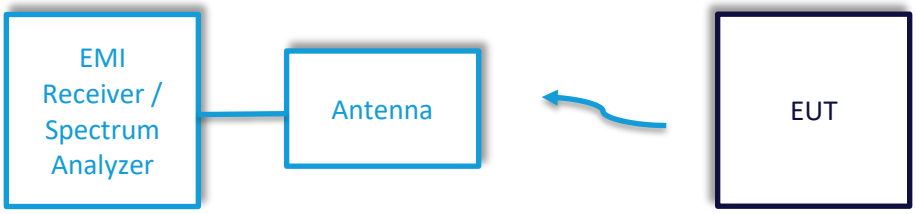
Table

Channel	Frequency (Hz) 2.55VDC	Frequency (Hz) 3VDC	Frequency (Hz) 3.45VDC	Deviation (Hz)	Limit (Hz)	Margin (Hz)
37	2402082634	2402082757	2402082754	123	120104	119981
17	2440083978	2440084018	2440084149	171	122004	121833
39	2480085311	2480085406	2480085408	97	124004	123907

5.2 Radiated Emissions

Description of Measurement	The frequency spectrum is investigated for intentional and / or unintentional signals emanating from the EUT by use of a standardized test site and measurement antenna. The antenna, cable, pre-amp, and other necessary measurement system correction factors are loaded onto the EMI receiver / spectrum analyzer when the measurements are performed allowing the data to be gathered and reported as corrected values. The maximum emissions from the EUT are determined by turn-table azimuth rotation (360°) and scanning of the measurement antenna. Maximized levels are noted at degree values of azimuth, measurement antenna height, and measurement antenna polarity.
Example Calculations	Measurement (dBµV) + Cable factor (dB) + Other (dB) + Antenna Factor (dB/m) = Corrected Reading (dBµV/m) Margin (dB) = Limit (dBµV/m) - Corrected Reading (dBµV/m) Example at 4000 MHz: Reading = 40 dBµV + 3.4 dB + 0.9 dB + 6.5 dB/m = 50.8 dBµV/m Average Limit = 20 log (500) = 54 dBµV/m Margin = 54 dBµV/m - 50.8 dBµV/m = 3.2 dB

Block Diagram



5.2.1 Radiated Emissions

Operator	Braden Smith, Anthony Smith	**QA**	Adam Alger, Jon Dilley
Temperature	24.8°C, 24.3°C	**R.H. %**	39.5%, 42.6%
Test Date	6/5/2023, 6/6/2023	**Location**	Chamber 3
Requirement	FCC 15.247 (d) IC RSS-Gen 8.10	**Method**	ANSI C63.10 § 11.12

Limits:

Frequency (MHz)	Quasi Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Peak Limit (dBuV/m)
30-88	40.0	-	-
88-216	43.5	-	-
216-960	46.0	-	-
960-1000	54.0	-	-
1000-25000	-	54.0	74.0

Test Parameters

Frequency	30-25000 MHz	**Distance**	3m
Detector(s)	Peak, Quasi-Peak	**Table height**	80cm Below 1 GHz 150cm Above 1 GHz
RBW	120 kHz Below 1 GHz 1 MHz Above 1 GHz	**VBW**	1.2 MHz Below 1 GHz 3 MHz Above 1 GHz
Notes	See Section 2.6 for Justification for Duty Cycle Relaxation		
Example Calculations	Peak Reading – Worst Case Duty Cycle = Calculated Average Duty Cycle Relaxation: 20*log(0.0233) = -32 dB Worst Case Duty Cycle: 2.33%		

EUT Parameters

Input Power	3VDC Battery	**Mode**	Transmit Modulated
Channels	37 (2402) 17 (2440) 39 (2480)	**Data Rate**	1 Mbps

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960007	Antenna - Double Ridge Horn	EMCO	3115	9311-4138	8/23/2022	8/23/2023	Active Calibration
AA 960153	Filter - High Pass 2.4 GHz	KWM	HPF-L-14186	7272-04	4/13/2023	4/13/2024	Active Calibration
AA 960163	Antenna - Log Periodic	A.H. Systems, Inc.	SAS-512-2	500	8/25/2022	8/25/2023	Active Calibration
AA 960174	Antenna - Small Horn	ETS Lindgren	3116C-PA	00206880	9/27/2022	9/27/2023	Active Calibration
AA 960209	Antenna - Low Noise Amplifier	Mini-Circuits	ZVA-213X-S+	037101808	8/23/2022	8/23/2023	Active Calibration
AA 960218	Antenna - Biconical	A.H. Systems, Inc.	SAS-540	853	6/9/2022	6/9/2023	Active Calibration
AA 960220	Cable	A.H. Systems, Inc.	SAC-26G-6	552	2/16/2023	2/16/2024	Active Verification
EE 960203	Analyzer - EMI Receiver	Keysight	N9038A	MY56400072	4/13/2023	4/13/2024	Active Calibration
LSC-300	Cable	Chamber 3 Emissions	-	-	4/26/2023	4/26/2024	Active Verification

Data

Tables

Band Edge

Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBµV/m)	Peak Limit (dBµV/m)	Peak Margin (dB)	EUT Orientation	Channel
2389.8	H	150	66	54.7	74.0	19.3	Flat	37
2483.8	H	150	70	59.7	74.0	14.3	Flat	39

Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading with Relaxation (dBµV/m)*	Average Limit (dBµV/m)	Average Margin (dB)	Channel	EUT Orientation
2389.8	H	150	66	22.7	54.0	31.3	Flat	37
2483.8	H	150	70	27.7	54.0	26.3	Flat	39

*Peak Reading – Worst Case Duty Cycle = Calculated Average

Duty Cycle Relaxation: 20*log(0.0233) = -32 dB

Spurious Emissions

Peak Data

Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBµV/m)	Peak Limit (dBµV/m)	Peak Margin (dB)	Channel	EUT Orientation
4879.6	V	103	11	57.6	74.0	16.4	17	Flat
7321.0	V	100	238	71.6	74.0	2.5	17	Flat
12201.6	V	100	197	55.5	74.0	18.5	17	Flat
4879.6	H	115	173	62.4	74.0	11.6	17	Flat
7321.0	H	150	219	63.4	74.0	10.6	17	Flat
12199.4	H	247	66	51.7	74.0	22.3	17	Flat
4879.6	H	338	168	62.1	74.0	11.9	17	Vertical
7319.4	H	246	167	69.6	74.0	4.4	17	Vertical
12201.7	H	173	116	53.0	74.0	21.0	17	Vertical
4879.7	V	150	285	59.3	74.0	14.7	17	Vertical
7319.4	V	181	179	70.2	74.0	3.8	17	Vertical
12199.1	V	198	114	53.1	74.0	20.9	17	Vertical
4880.7	V	100	107	64.0	74.0	10.0	17	Horizontal
7320.3	V	245	333	67.4	74.0	6.6	17	Horizontal
12199.0	V	202	84	49.6	74.0	24.4	17	Horizontal
4879.6	H	109	305	56.5	74.0	17.6	17	Horizontal
7321.0	H	150	200	68.8	74.0	5.2	17	Horizontal
12199.0	H	240	85	54.0	74.0	20.0	17	Horizontal
7207.0	V	100	238	70.1	74.0	3.9	37	Flat
12009.2	V	100	199	56.1	74.0	17.9	37	Flat
4804.6	V	100	107	64.2	74.0	9.8	37	Horizontal
7439.4	V	100	241	69.7	74.0	4.3	39	Flat
12400.1	V	100	192	52.4	74.0	21.6	39	Flat
4959.6	V	100	111	64.3	74.0	9.7	39	Horizontal

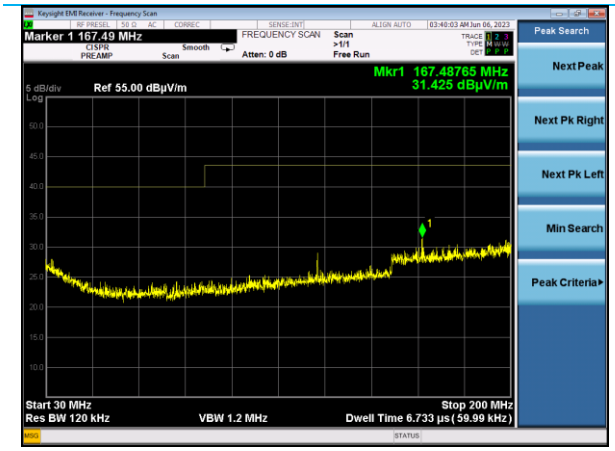
Peak Reading with Relaxation against Average Limit

Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading with Relaxation (dBµV/m)*	Average Limit (dBµV/m)	Average Margin (dB)	Channel	EUT Orientation
4879.6	V	103	11	25.6	54.0	28.4	17	Flat
7321.0	V	100	238	39.6	54.0	14.5	17	Flat
12201.6	V	100	197	23.5	54.0	30.5	17	Flat
4879.6	H	115	173	30.4	54.0	23.6	17	Flat
7321.0	H	150	219	31.4	54.0	22.6	17	Flat
12199.4	H	247	66	19.7	54.0	34.3	17	Flat
4879.6	H	338	168	30.1	54.0	23.9	17	Vertical
7319.4	H	246	167	37.6	54.0	16.4	17	Vertical
12201.7	H	173	116	21.0	54.0	33.0	17	Vertical
4879.7	V	150	285	27.3	54.0	26.7	17	Vertical
7319.4	V	181	179	38.2	54.0	15.8	17	Vertical
12199.1	V	198	114	21.1	54.0	32.9	17	Vertical
4880.7	V	100	107	32.0	54.0	22.0	17	Horizontal
7320.3	V	245	333	35.4	54.0	18.6	17	Horizontal
12199.0	V	202	84	17.6	54.0	36.4	17	Horizontal
4879.6	H	109	305	24.5	54.0	29.6	17	Horizontal
7321.0	H	150	200	36.8	54.0	17.2	17	Horizontal
12199.0	H	240	85	22.0	54.0	32.0	17	Horizontal
7207.0	V	100	238	38.1	54.0	15.9	37	Flat
12009.2	V	100	199	24.1	54.0	29.9	37	Flat
4804.6	V	100	107	32.2	54.0	21.8	37	Horizontal
7439.4	V	100	241	37.7	54.0	16.3	39	Flat
12400.1	V	100	192	20.4	54.0	33.6	39	Flat
4959.6	V	100	111	32.3	54.0	21.7	39	Horizontal

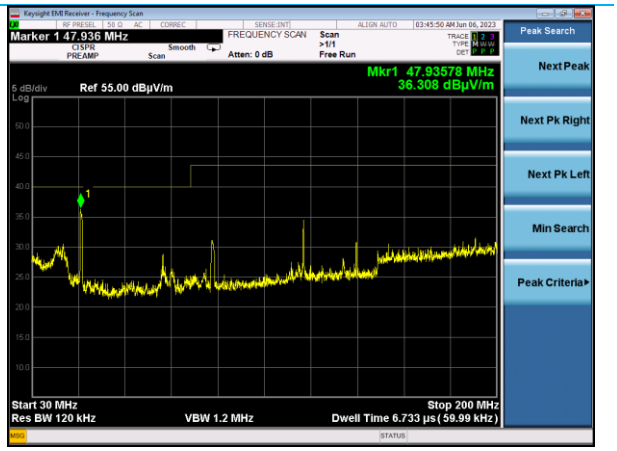
*Peak Reading – Worst Case Duty Cycle = Calculated Average

Duty Cycle Relaxation: 20*log(0.0233) = -32 dB

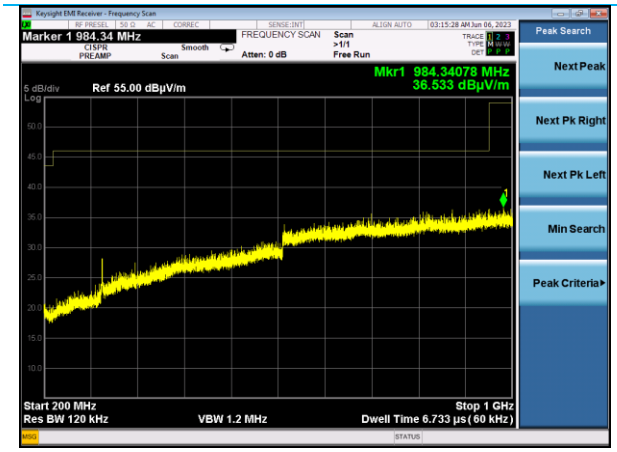
Plots



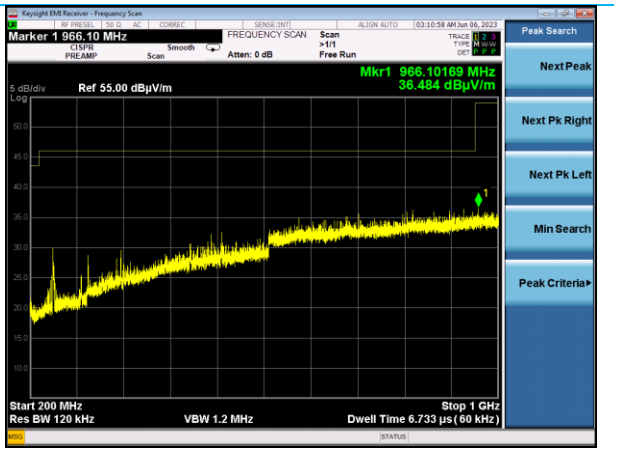
30-200 MHz Horizontal
EUT Vertical Tx Ch 17



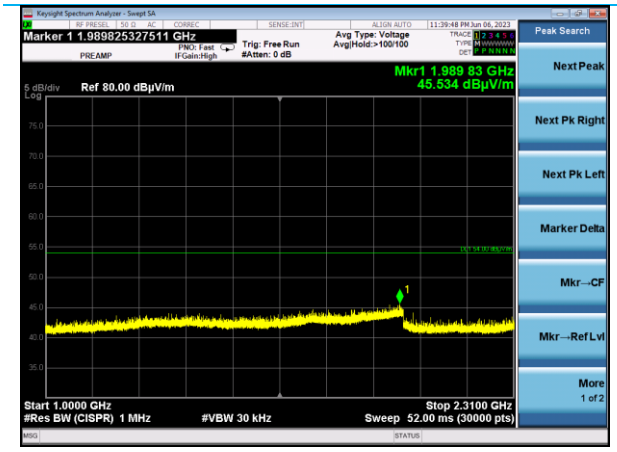
30-200 MHz Vertical
EUT Vertical Tx Ch 17



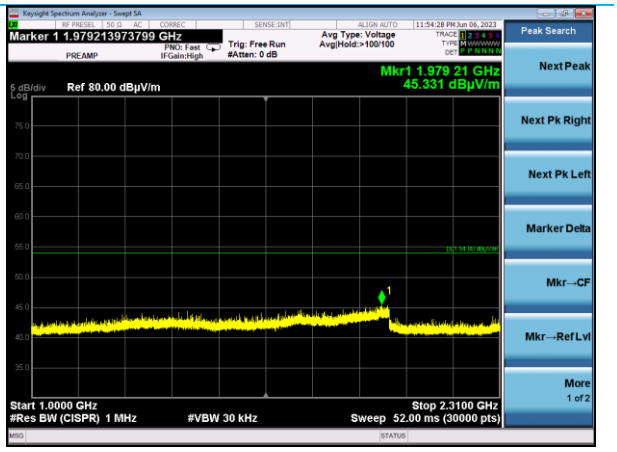
200-1000 MHz Horizontal
EUT Vertical Tx Ch 17



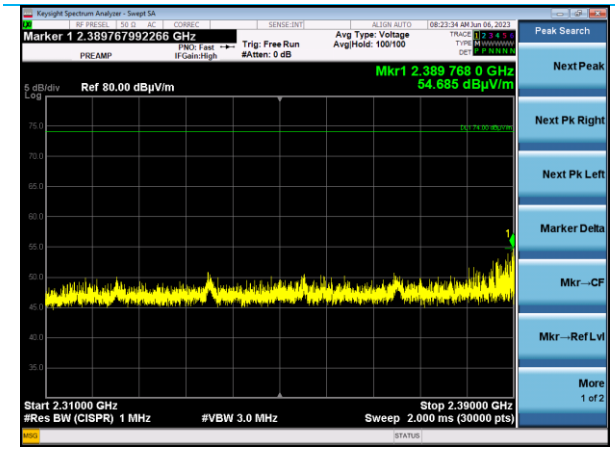
200-1000 MHz Vertical
EUT Vertical Tx Ch 17



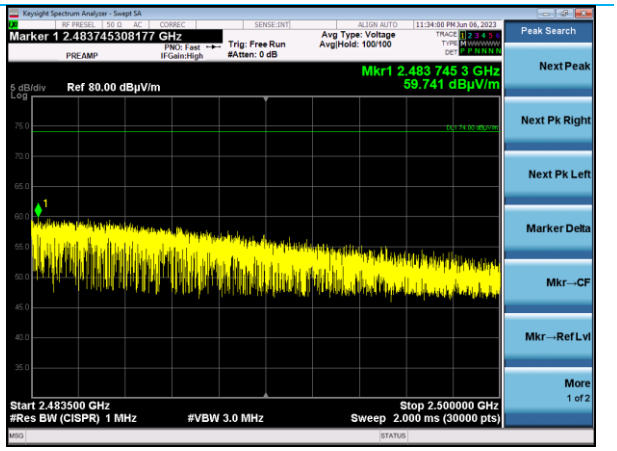
1000-2310 MHz Horizontal
EUT Flat Tx Ch 39



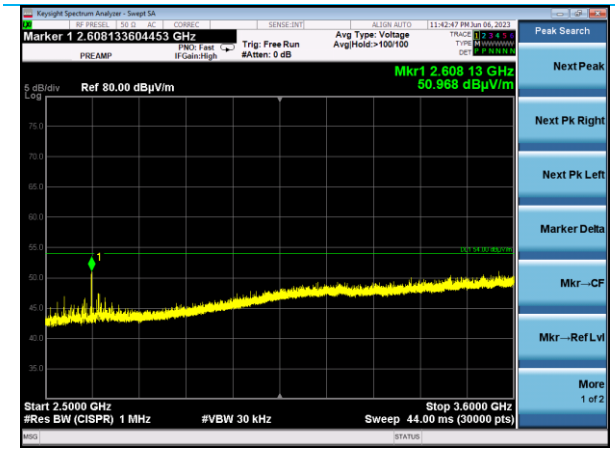
1000-2310 MHz Vertical
EUT Flat Tx Ch 39



2310-2390 MHz Horizontal
Lower Band Edge Peak
EUT Flat Tx Ch 37

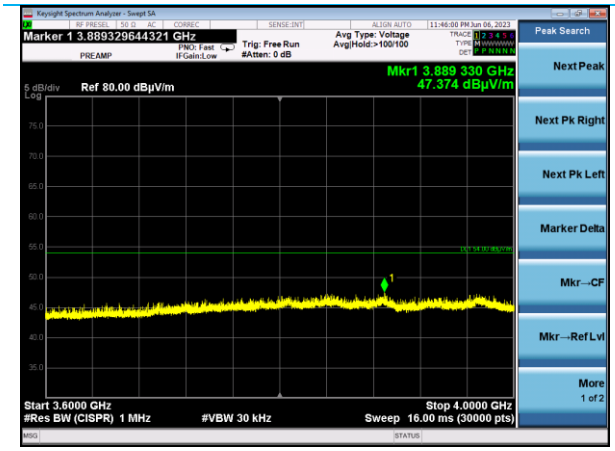


2483.5-2500 MHz Horizontal
Upper Band Edge Peak
EUT Flat Tx Ch 39

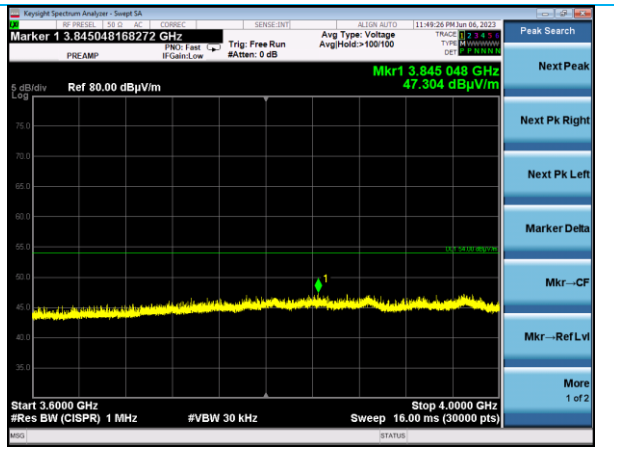


2500-3600 MHz Horizontal
EUT Flat Tx Ch 39

2500-3600 MHz Vertical
EUT Flat Tx Ch 39

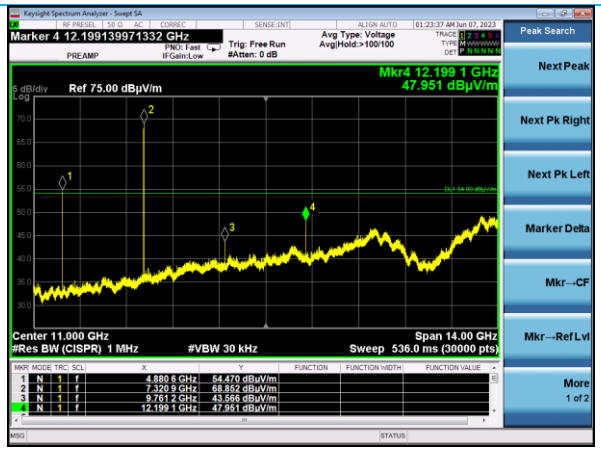


3600-4000 MHz Horizontal
EUT Flat Tx Ch 39

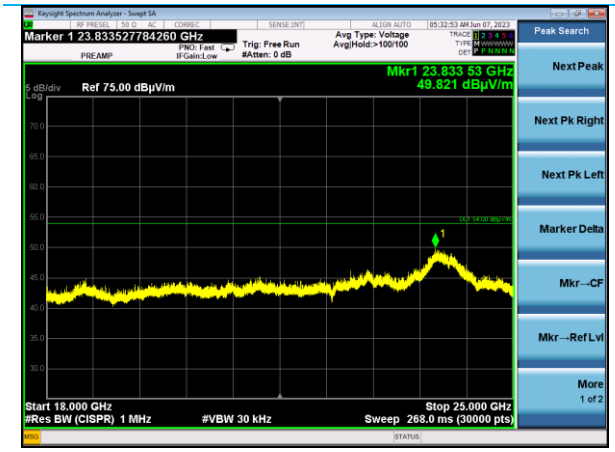


3600-4000 MHz Vertical
EUT Flat Tx Ch 39

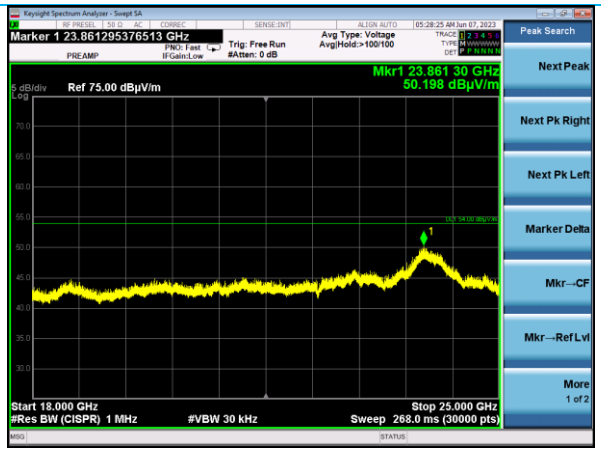
4-18 GHz Horizontal
EUT Flat Tx Ch 17



4-18 GHz Vertical
EUT Flat Tx Ch 17



18-25 GHz Horizontal
EUT Flat Tx Ch 17



18-25 GHz Vertical
EUT Flat Tx Ch 17

6 REVISION HISTORY

Version	Date	Notes	Person
0	6/8/2023	Initial Draft	Anthony Smith
1	6/9/2023	Revised Draft	Anthony Smith
2	7/27/2023	Revised Draft	Anthony Smith

END OF REPORT