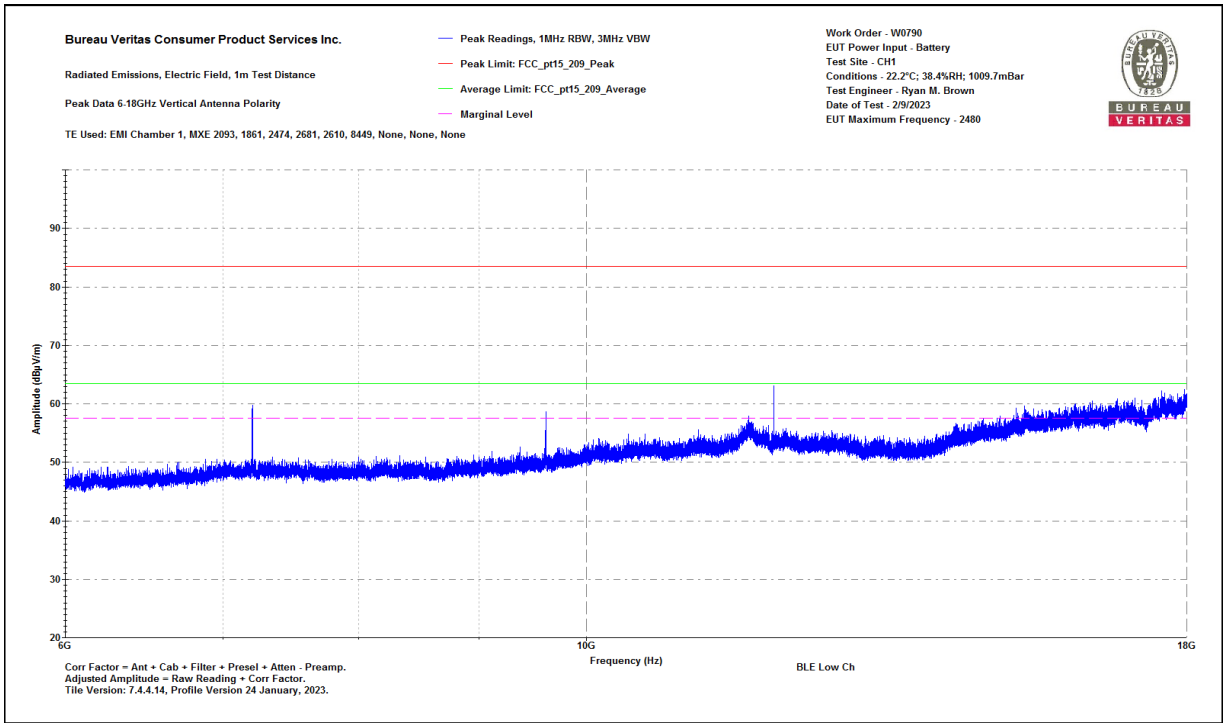
Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 1m Distance	EUT Power Input - Battery
Top Peaks Vertical 6-18GHz	Test Site - CH1
Notes:	Conditions - 22.2°C; 38.4%RH; 1009.7mBar
BLE Low Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/9/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
11720.1	49.1	38.1	8.7	57.8	46.8	83.5	-25.7	PASS	--	63.5	-16.7	PASS	--	150	108
12012.6	54.5	49.3	8.6	63.1	57.9	83.5	-20.4	PASS	-20.4	63.5	-5.6	PASS	-5.6	150	70
17964.3	47.1	35.4	15.4	62.5	50.8	83.5	-21.0	PASS	--	63.5	-12.7	PASS	--	150	32

6-18GHz Vertical Data Table

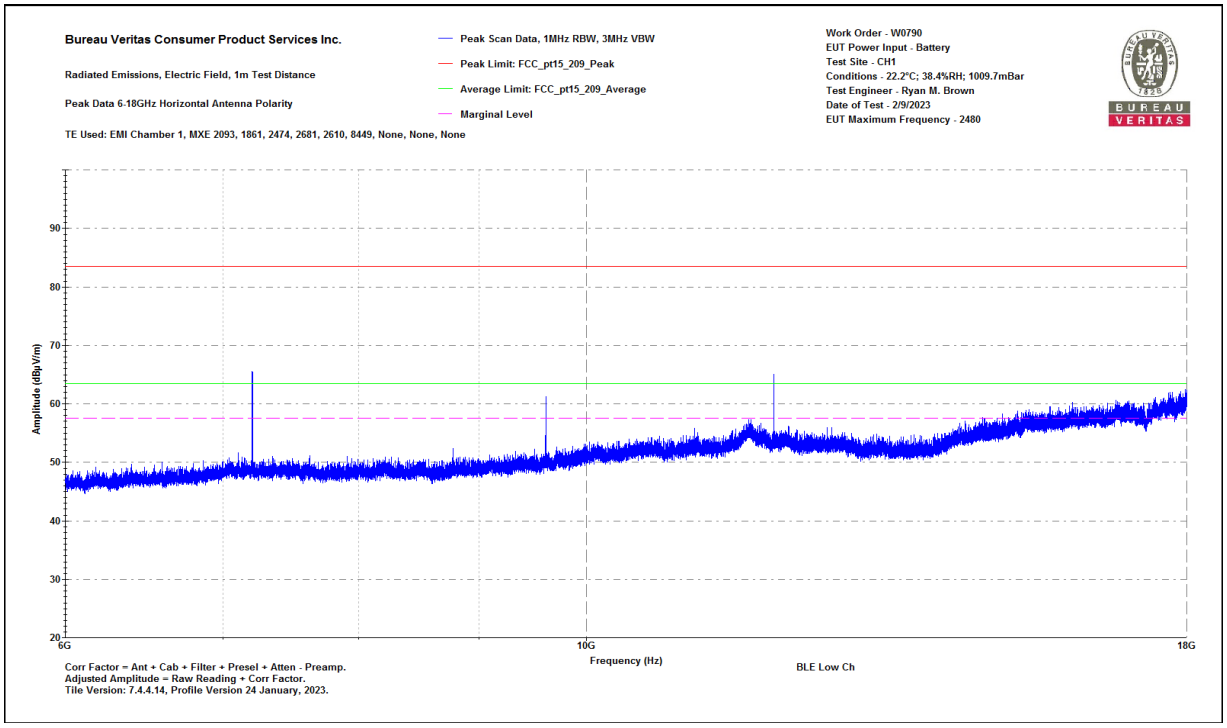


6-18GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 1m Distance	EUT Power Input - Battery
Top Peaks Horizontal 6-18GHz	Test Site - CH1
Notes:	Conditions - 22.2°C; 38.4%RH; 1009.7mBar
BLE Low Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/9/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
12007.5	56.4	50.8	8.6	65.0	59.4	83.5	-18.5	PASS	-18.5	63.5	-4.1	PASS	-4.1	175	56
17975.4	47.0	35.7	15.5	62.5	51.2	83.5	-21.0	PASS	--	63.5	-12.3	PASS	--	175	131

6-18GHz Horizontal Data Table



6-18GHz Horizontal Plot

Radiated Emissions Table

Date: 29-Mar-23 **Company:** Assa Abloy **Work Order:** W0790
Engineer: Ryan M. Brown **EUT Desc:** CEM100 **EUT Operating Voltage/Frequency:** Battery
Temp: 21 **Humidity:** 43% **Pressure:** 1005
Frequency Range: 18-25GHz **Measurement Distance:** 0.1 m
Notes: BLE Low **EUT Max Freq:** 2480MHz

Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC Class B High Frequency - Peak Limit (dBµV/m)	FCC Class B High Frequency - Peak Margin (dB)	FCC Class B High Frequency - Peak Result (Pass/Fail)	FCC Class B High Frequency - Average Limit (dBµV/m)	FCC Class B High Frequency - Average Margin (dB)	FCC Class B High Frequency - Average Result (Pass/Fail)
Noise Floor				---	---	---	---	---	---	---	---	---	---	---
	24931.8	52.56	52.6	41.2	40.3	9.1	60.8	60.8	103.5	-42.7	Pass	83.5	-22.7	Pass

Table Result: Pass by -22.7 dB ***Worst Freq:*** 24931.8 MHz

Test Site: EMI Chamber 1 **Cable 1:** Asset #2323 **Cable 2:** --- **Cable 3:** ---
Analyzer: Gold **Preamp:** 18-26.5GHz **Antenna:** 18-26.5GHz Horn **Preselector:** ---
CSsoft Radiated Emissions Calculator v 1.017.225
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor

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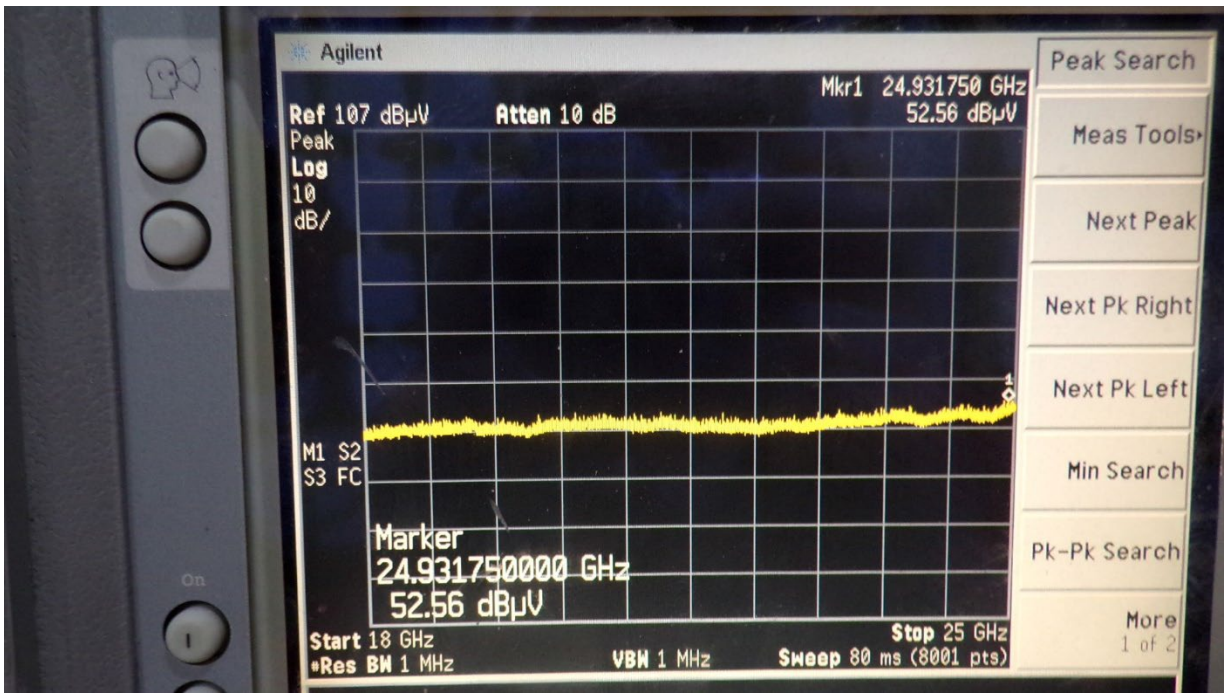
18-25GHz Data Table



18-25GHz Plot

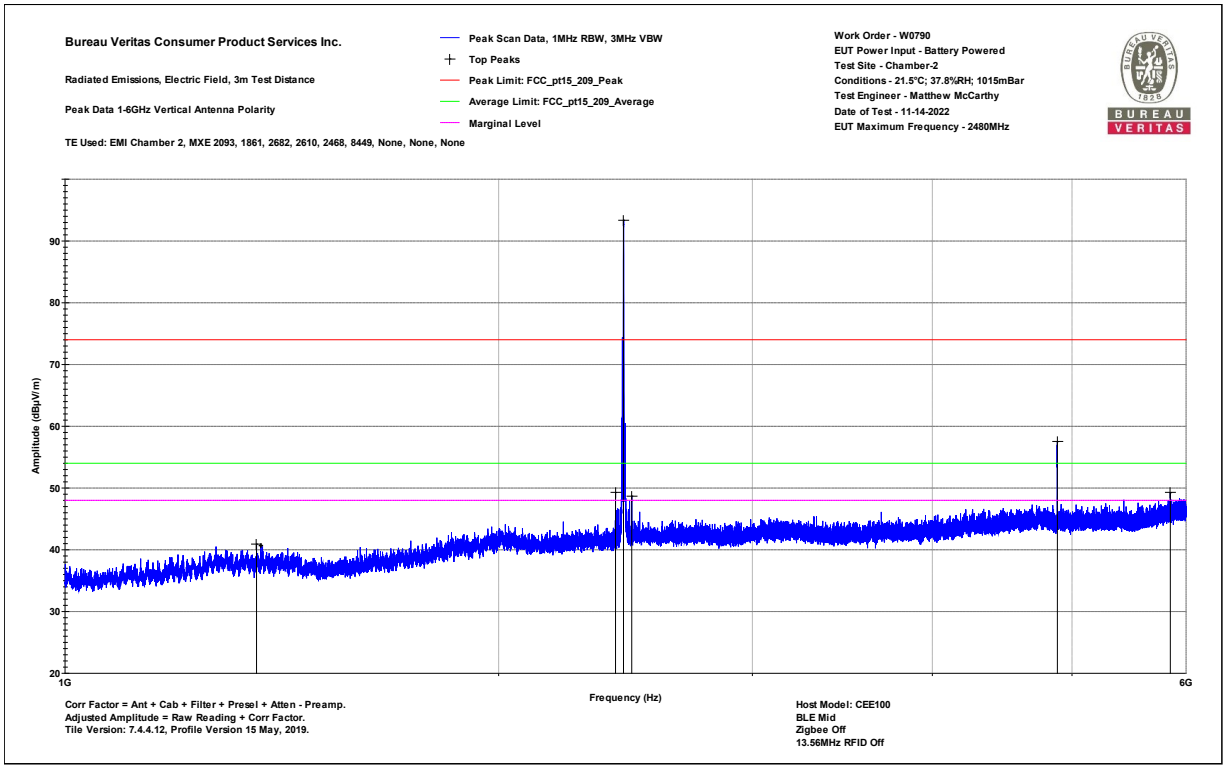
Channel 20

Host Model CEE100

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery Powered
Top Peaks Vertical 1-6GHz	Test Site - Chamber-2
Notes:	Conditions - 21.5°C; 37.8%RH; 1015mBar
Host Model: CEE100	Test Engineer - Matthew McCarthy
BLE Mid	Date of Test - 11-14-2022
Zigbee Off	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1358.13	48.3	36.6	-7.4	40.9	29.2	74	-33.1	PASS	--	54	-24.8	PASS	--	200	259
2410.63	52	37.4	-2.7	49.3	34.7	74	-24.7	PASS	--	54	-19.3	PASS	--	200	31
2441.5	FUNDAMENTAL														
2474	50.7	37.5	-2.1	48.6	35.4	74	-25.4	PASS	--	54	-18.6	PASS	--	200	31
4885	56.1	49.6	1.4	57.5	51	74	-16.5	PASS	-16.5	54	-3	PASS	-3	200	50
5851.25	46.3	46.3	3	49.3	49.3	74	-24.7	PASS	--	54	-4.7	PASS	--	300	188

1-6GHz Vertical Data Table

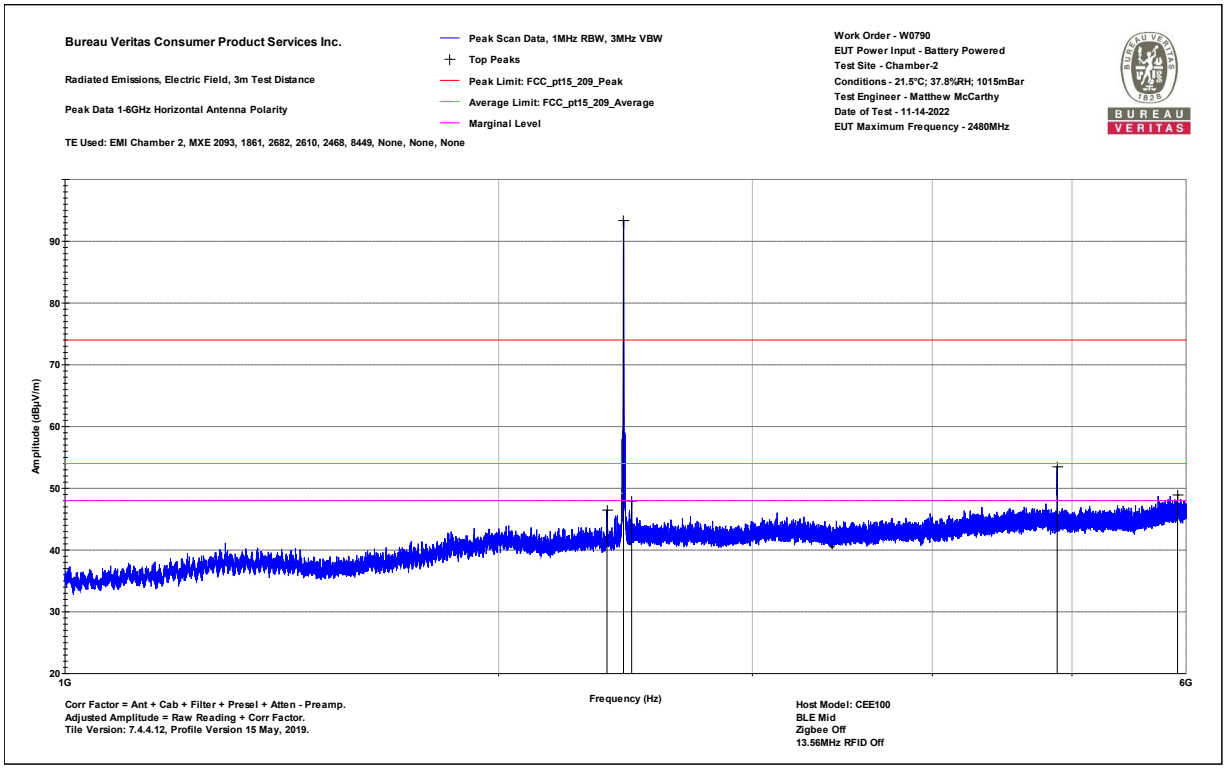


1-6GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery Powered
Top Peaks Horizontal 1-6GHz	Test Site - Chamber-2
Notes:	Conditions - 21.5°C; 37.8%RH; 1015mBar
Host Model: CEE100	Test Engineer - Matthew McCarthy
BLE Mid	Date of Test - 11-14-2022
Zigbee Off	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2378.25	49.4	36.3	-2.9	46.5	33.4	74	-27.5	PASS	--	54	-20.6	PASS	--	100	18
2441.5	FUNDAMENTAL														
2473.75	50	37.1	-2.1	47.9	35	74	-26.1	PASS	--	54	-19	PASS	--	100	266
4883.13	52.2	46.2	1.4	53.6	47.6	74	-20.4	PASS	-20.4	54	-6.4	PASS	-6.4	300	18
5919.5	45.9	34	3	48.9	37	74	-25.1	PASS	--	54	-17	PASS	--	200	69

1-6GHz Horizontal Data Table

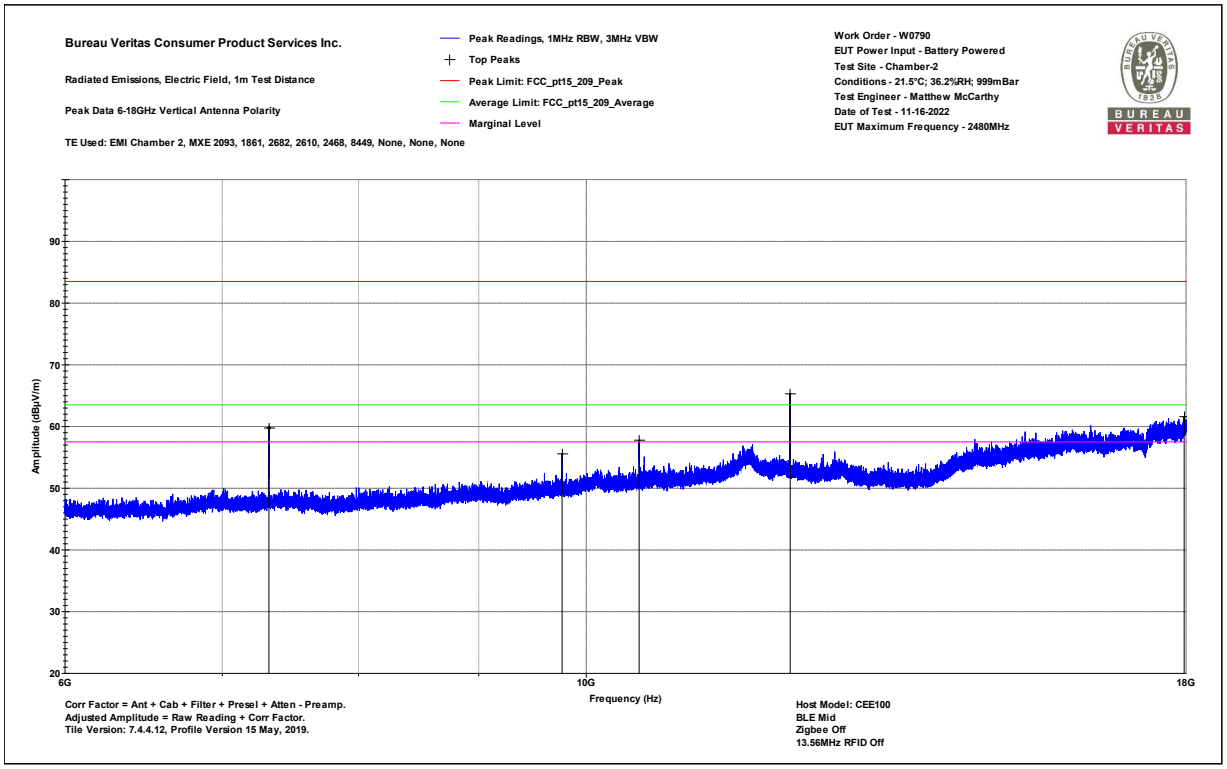


1-6GHz Horizontal Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery Powered
Vertical 6-18GHz	Test Site - Chamber-2
Notes:	Conditions - 21.5°C; 36.2%RH; 999mBar
Host Model: CEE100	Test Engineer - Matthew McCarthy
BLE Mid	Date of Test - 11-16-2022
Zigbee Off	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7327.5	55.6	49.7	4.2	59.8	53.9	83.5	-23.7	PASS	--	63.5	-9.6	PASS	--	175	31
9766.2	49.8	43	5.7	55.5	48.7	83.5	-28	PASS	--	63.5	-14.8	PASS	--	175	315
10532.4	50.7	35.5	7.1	57.8	42.6	83.5	-25.7	PASS	--	63.5	-20.9	PASS	--	200	246
12212.7	56.8	51	8.5	65.3	59.5	83.5	-18.2	PASS	-18.2	63.5	-4	PASS	-4	150	56
17967.9	46.3	35	15.3	61.6	50.3	83.5	-21.9	PASS	--	63.5	-13.2	PASS	--	175	279

6-18GHz Vertical Data Table



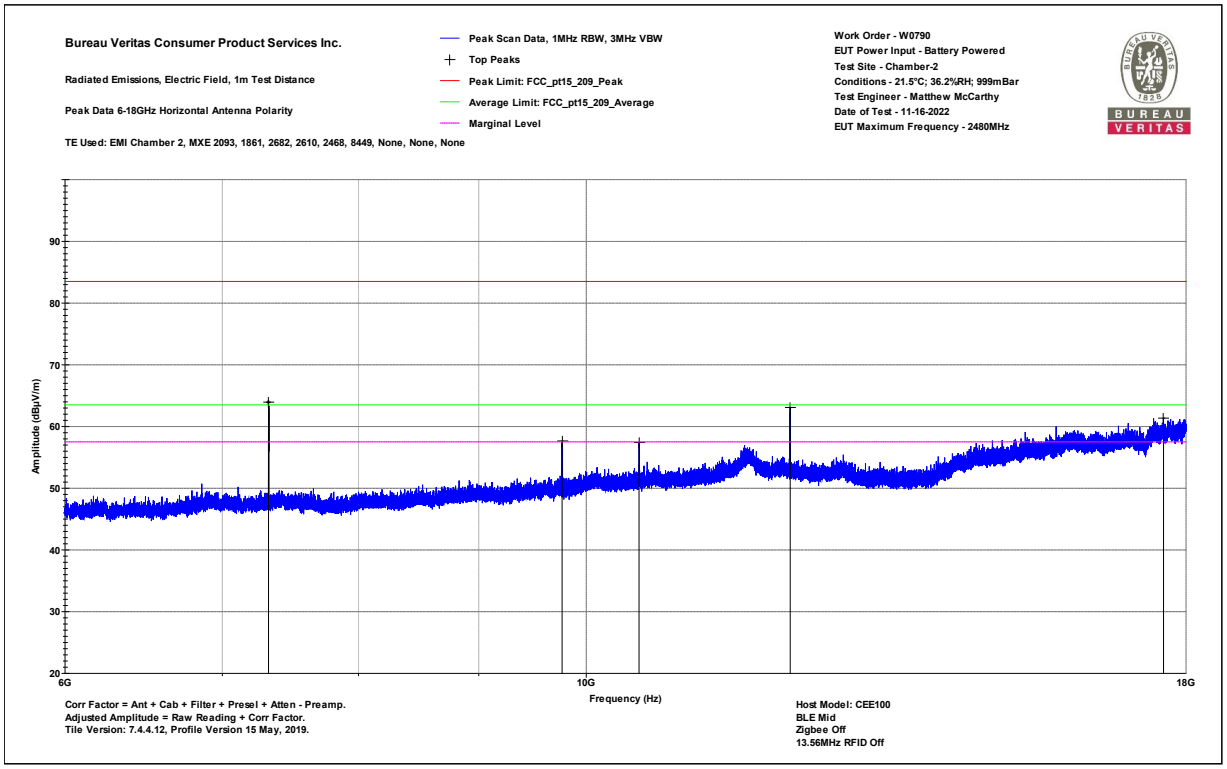
6-18GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.
Radiated Emissions Electric Field 3m Distance
Horizontal 6-18GHz
Notes:
Host Model: CEE100
BLE Mid
Zigbee Off

Work Order - W0790
EUT Power Input - Battery Powered
Test Site - Chamber-2
Conditions - 21.5°C; 36.2%RH; 999mBar
Test Engineer - Matthew McCarthy
Date of Test - 11-16-2022

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7324.5	59.7	54.1	4.2	63.9	58.3	83.5	-19.6	PASS	-19.6	63.5	-5.2	PASS	-5.2	150	17
9766.2	51.9	47.3	5.7	57.6	53	83.5	-25.9	PASS	--	63.5	-10.5	PASS	--	175	50
10531.5	50.3	34.7	7.1	57.4	41.8	83.5	-26.1	PASS	--	63.5	-21.7	PASS	--	100	18
12212.7	54.5	47	8.5	63	55.5	83.5	-20.5	PASS	--	63.5	-8	PASS	--	125	12
17608.8	46.3	34.7	15	61.3	49.7	83.5	-22.2	PASS	--	63.5	-13.8	PASS	--	200	286

6-18GHz Horizontal Data Table



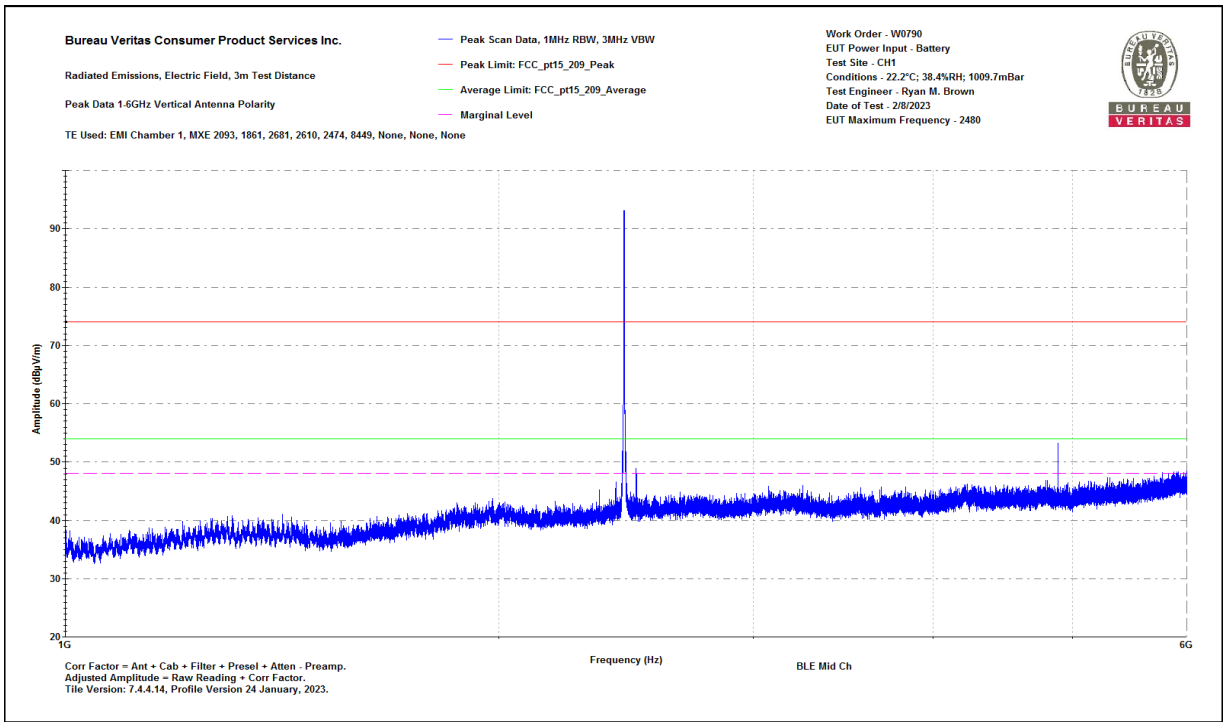
6-18GHz Horizontal Plot

Host Model CEB100

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery
1-6GHz Vertical Data	Test Site - CH1
Notes:	Conditions - 22.2°C; 38.4%RH; 1009.7mBar
BLE Mid Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/8/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2410.38	49.4	49.4	-2.8	46.6	46.6	74	-27.4	PASS	--	54	-7.4	PASS	--	200	133
2441.5	Fundamental														
2490.13	51.3	36.9	-2.4	48.9	34.5	74	-25.1	PASS	--	54	-19.5	PASS	--	300	0
3246.88	47.3	47.3	-1.4	45.9	45.9	74	-28.1	PASS	--	54	-8.1	PASS	--	300	181
4885	54.7	48.1	0.6	55.3	48.7	74	-18.7	PASS	-18.7	54	-5.3	PASS	-5.3	200	59
5997.13	45.4	36.6	3.0	48.4	39.6	74	-25.6	PASS	--	54	-14.4	PASS	--	100	221

1-6GHz Vertical Data Table

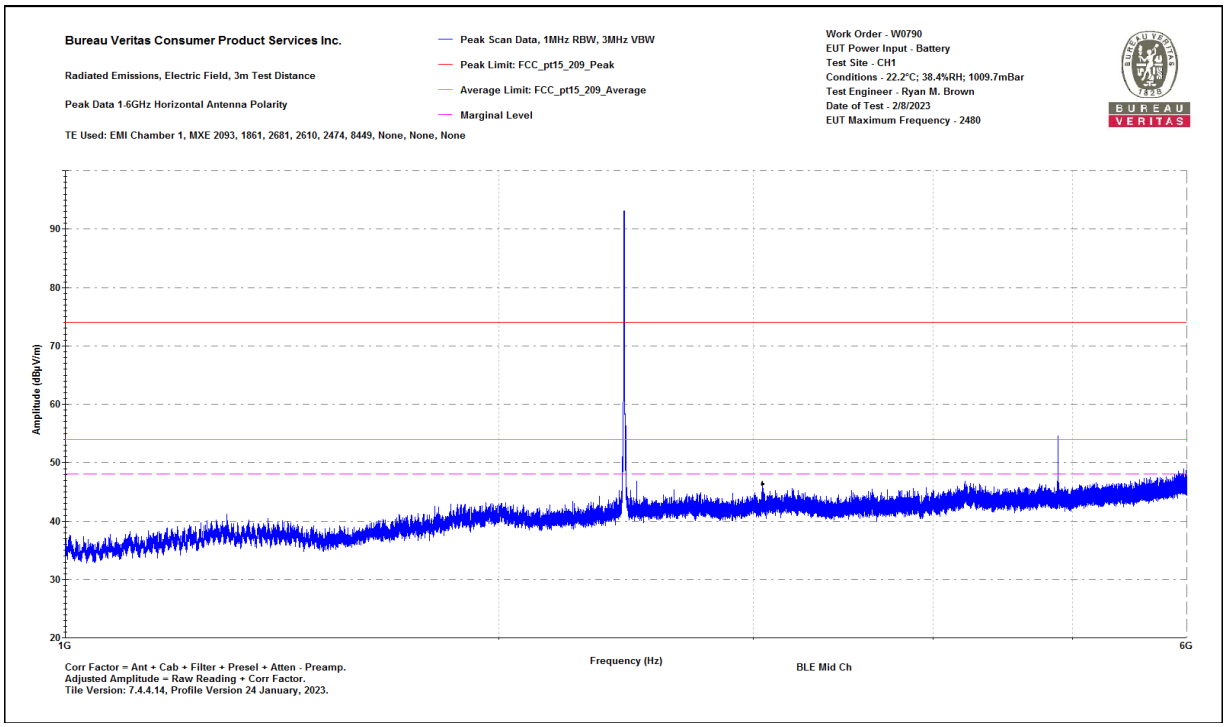


1-6GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery
1-6GHz Horizontal Data	Test Site - CH1
Notes:	Conditions - 22.2°C; 38.4%RH; 1009.7mBar
BLE Mid Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/8/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1295.13	48.6	48.6	-7.6	41.0	41.0	74	-33.0	PASS	--	54	-13.0	PASS	--	200	206
2441.5	Fundamental														
2490.38	49.2	49.2	-2.4	46.8	46.8	74	-27.2	PASS	--	54	-7.2	PASS	--	200	130
3047.5	47.7	47.7	-1.3	46.4	46.4	74	-27.6	PASS	--	54	-7.6	PASS	--	200	54
4885	54.0	46.4	0.6	54.6	47.0	74	-19.4	PASS	-19.4	54	-7.0	PASS	-7.0	300	329
5971	45.9	36.3	3.0	48.9	39.3	74	-25.1	PASS	--	54	-14.7	PASS	--	300	296

1-6GHz Horizontal Data Table

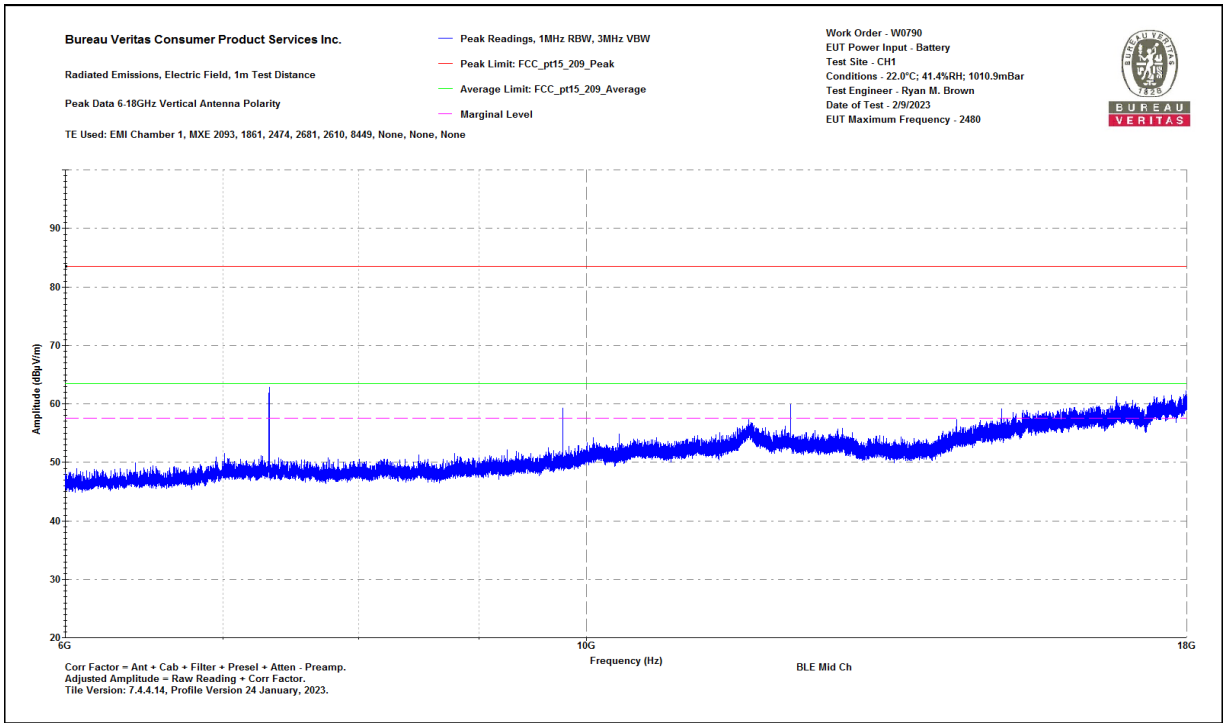


1-6GHz Horizontal Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 1m Distance	EUT Power Input - Battery
Top Peaks Vertical 6-18GHz	Test Site - CH1
Notes:	Conditions - 22.0°C; 41.4%RH; 1010.9mBar
BLE Mid Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/9/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7327.5	58.0	52.7	4.8	62.8	57.5	83.5	-20.7	PASS	--	63.5	-6.0	PASS	-6.0	185	0
12207.6	54.0	46.4	9.1	63.1	55.5	83.5	-20.4	PASS	-20.4	63.5	-8.0	PASS	--	187	70
17987.1	46.6	35.4	15.6	62.2	51.0	83.5	-21.3	PASS	--	63.5	-12.5	PASS	--	175	208

6-18GHz Vertical Data Table

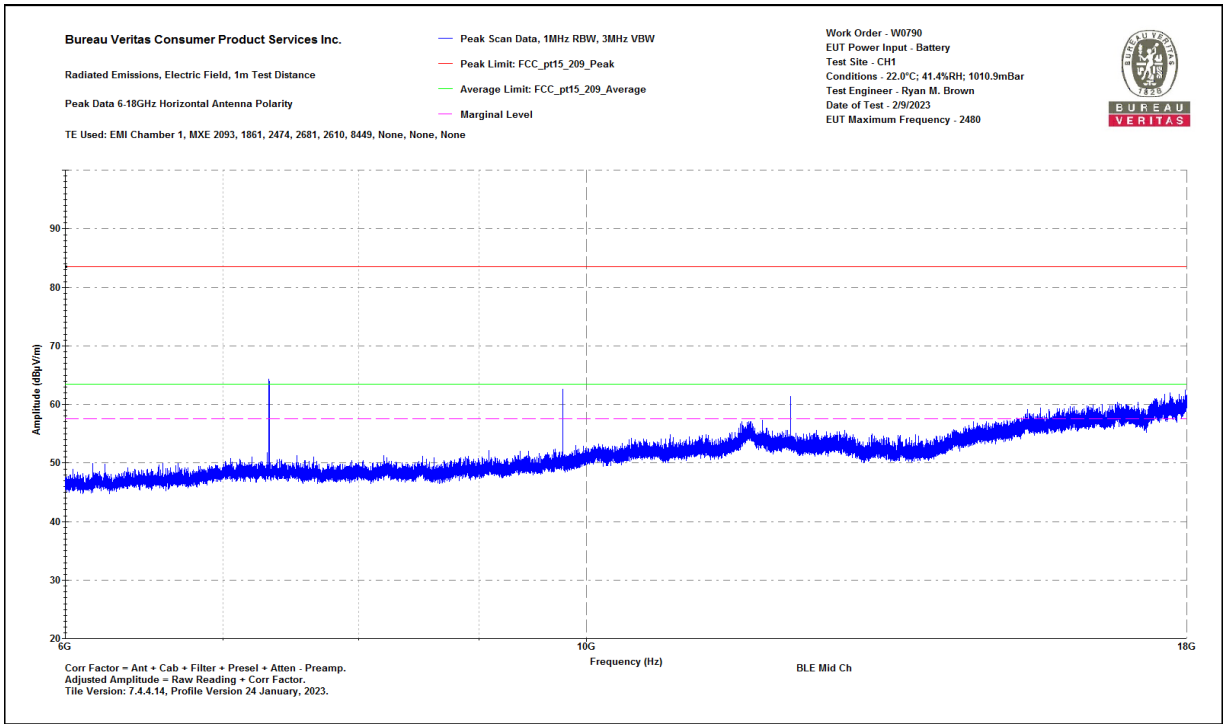


6-18GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 1m Distance	EUT Power Input - Battery
Top Peaks Horizontal 6-18GHz	Test Site - CH1
Notes:	Conditions - 22.0°C; 41.4%RH; 1010.9mBar
BLE Mid Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/9/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7324.8	59.5	54.5	4.8	64.3	59.3	83.5	-19.2	PASS	-19.2	63.5	-4.2	PASS	-4.2	150	0
12207.6	52.2	46.8	9.1	61.3	55.9	83.5	-22.2	PASS	--	63.5	-7.6	PASS	--	175	0
17976.9	46.9	35.8	15.5	62.4	51.3	83.5	-21.1	PASS	--	63.5	-12.2	PASS	--	150	70

6-18GHz Horizontal Data Table



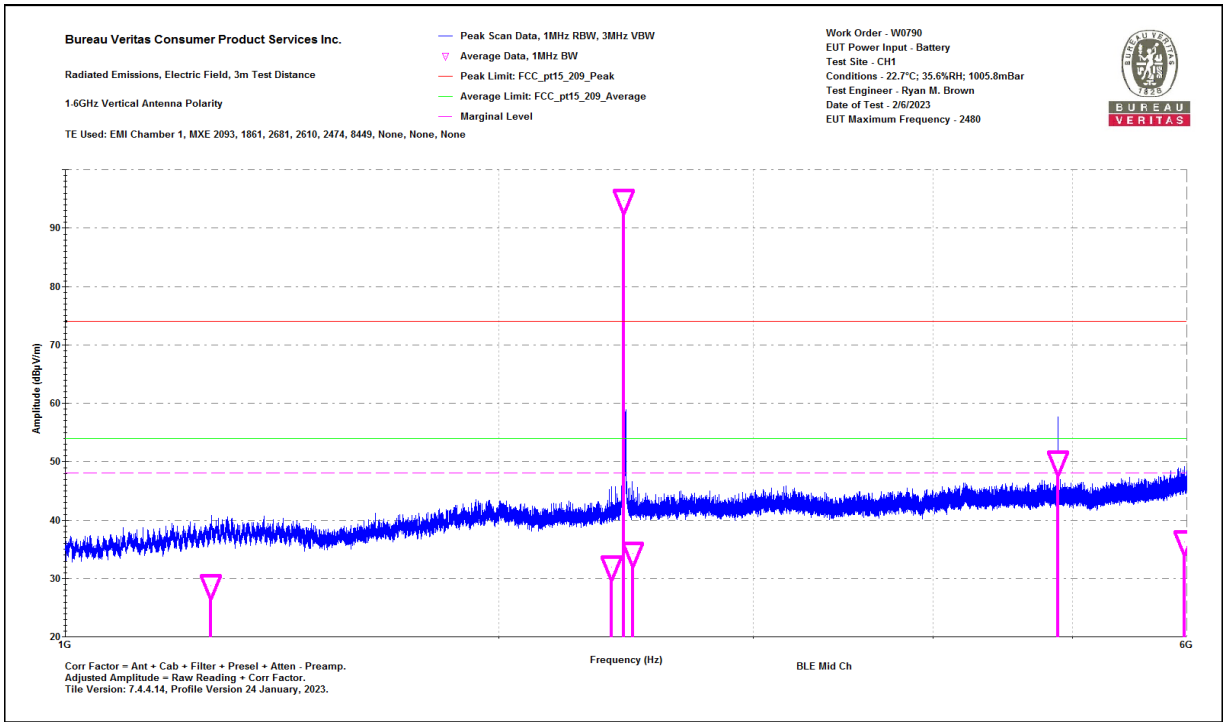
6-18GHz Horizontal Plot

Host Model CEM100

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery
1-6GHz Vertical Data	Test Site - CH1
Notes:	Conditions - 22.7°C; 35.6%RH; 1005.8mBar
BLE Mid Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/6/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1261.3	46.6	38.4	-7.7	38.9	30.7	74	-35.1	PASS	--	54	-23.3	PASS	--	100	301
2394.5	44.2	37.6	-3.0	41.2	34.6	74	-32.8	PASS	--	54	-19.4	PASS	--	292	25
2441.5	Fundamental														
2475.5	43.4	36.3	-2.5	40.9	33.8	74	-33.1	PASS	--	54	-20.2	PASS	--	125	319
4885.1	56.2	52.2	0.6	56.8	52.8	74	-17.2	PASS	-17.2	54	-1.2	PASS	-1.2	224	33
5978.9	42.7	35.6	3.0	45.7	38.6	74	-28.3	PASS	--	54	-15.4	PASS	--	275	248

1-6GHz Vertical Data Table

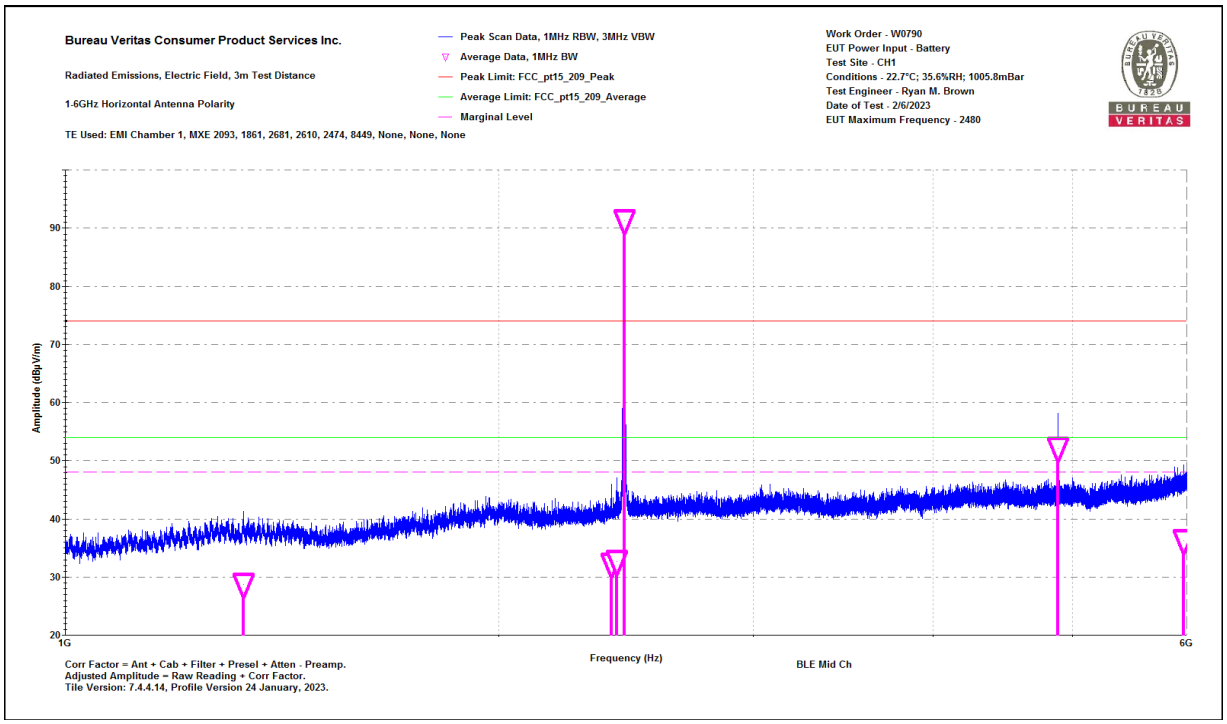


1-6GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery
1-6GHz Horizontal Data	Test Site - CH1
Notes:	Conditions - 22.7°C; 35.6%RH; 1005.8mBar
BLE Mid Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/6/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1329.7	44.9	38.3	-7.7	37.2	30.6	74	-36.8	PASS	--	54	-23.4	PASS	--	101	81
2394	44.9	36.5	-3.0	41.9	33.5	74	-32.1	PASS	--	54	-20.5	PASS	--	299	275
2414.4	46.3	36.8	-2.8	43.5	34.0	74	-30.5	PASS	--	54	-20.0	PASS	--	293	295
2442.5	Fundamental														
4885	58.1	52.4	0.6	58.7	53.0	74	-15.3	PASS	-15.3	54	-1.0	PASS	-1.0	300	289
5972.2	42.1	34.5	3.0	45.1	37.5	74	-28.9	PASS	--	54	-16.5	PASS	--	125	45

1-6GHz Horizontal Data Table

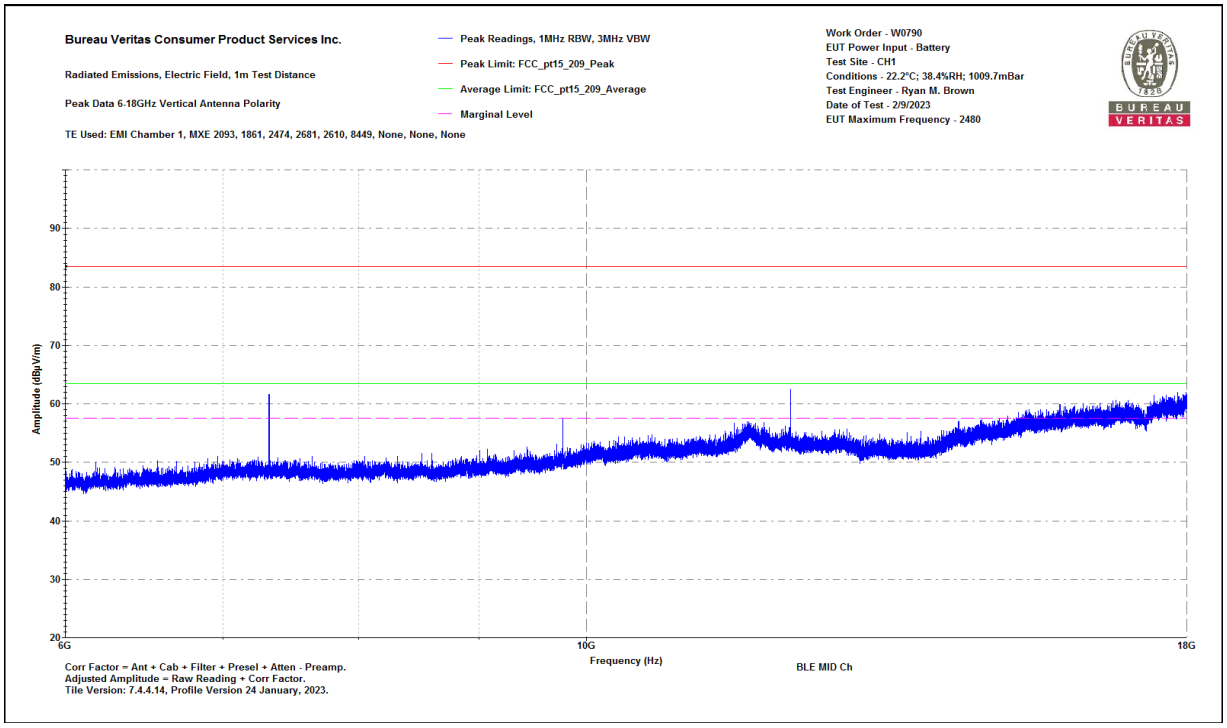


1-6GHz Horizontal Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 1m Distance	EUT Power Input - Battery
Top Peaks Vertical 6-18GHz	Test Site - CH1
Notes:	Conditions - 22.2°C; 38.4%RH; 1009.7mBar
BLE MID Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/9/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7327.5	56.8	51.8	4.8	61.6	56.6	83.5	-21.9	PASS	--	63.5	-6.9	PASS	--	150	297
12207.6	53.3	48.5	9.1	62.4	57.6	83.5	-21.1	PASS	-21.1	63.5	-5.9	PASS	-5.9	150	69
17841.9	47.3	35.1	14.6	61.9	49.7	83.5	-21.6	PASS	--	63.5	-13.8	PASS	--	125	95

6-18GHz Vertical Data Table

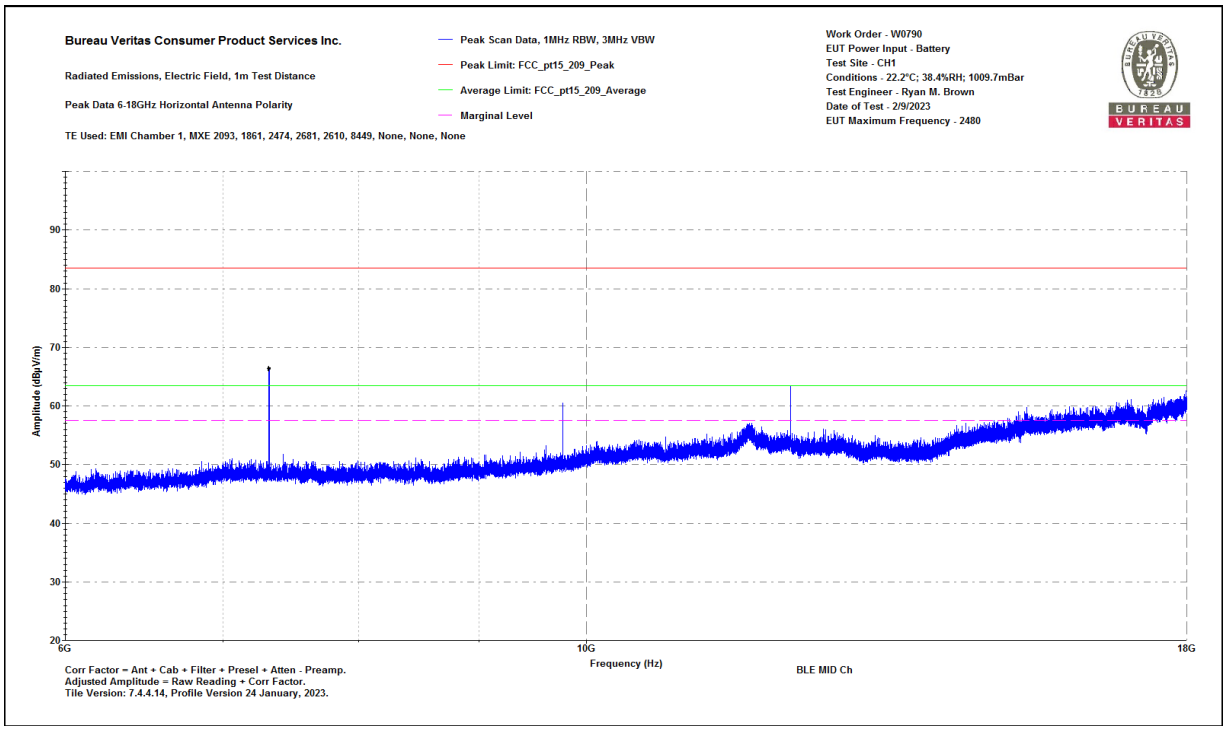


6-18GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 1m Distance	EUT Power Input - Battery
Top Peaks Horizontal 6-18GHz	Test Site - CH1
Notes:	Conditions - 22.2°C; 38.4%RH; 1009.7mBar
BLE MID Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/9/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7324.5	61.6	57.3	4.8	66.4	62.1	83.5	-17.1	PASS	-17.1	63.5	-1.4	PASS	-1.4	150	32
12212.4	54.3	43.5	9.1	63.4	52.6	83.5	-20.1	PASS	--	63.5	-10.9	PASS	--	175	21
17984.4	46.9	35.4	15.6	62.5	51.0	83.5	-21.0	PASS	--	63.5	-12.5	PASS	--	200	32

6-18GHz Horizontal Data Table



6-18GHz Horizontal Plot

Radiated Emissions Table

Date: 29-Mar-23 **Company:** Assa Abloy **Work Order:** W0790
Engineer: Ryan M. Brown **EUT Desc:** CEM100 **EUT Operating Voltage/Frequency:** Battery
Temp: 21 **Humidity:** 43% **Pressure:** 1005
Frequency Range: 18-25GHz **Measurement Distance:** 0.1 m
Notes: BLE Mid **EUT Max Freq:** 2480MHz

Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC Class B High Frequency - Peak Limit (dBµV/m)	FCC Class B High Frequency - Peak Margin (dB)	FCC Class B High Frequency - Peak Result (Pass/Fail)	FCC Class B High Frequency - Average Limit (dBµV/m)	FCC Class B High Frequency - Average Margin (dB)	FCC Class B High Frequency - Average Result (Pass/Fail)
Noise Floor	24934.4	52.96	53.0	--- 41.1	--- 40.3	--- 9.1	--- 61.3	--- 61.3	--- 103.5	--- -42.2	--- Pass	--- 83.5	--- -22.2	--- Pass

Table Result: Pass by -22.2 dB ***Worst Freq:*** 24934.4 MHz

Test Site: EMI Chamber 1 **Cable 1:** Asset #2323 **Cable 2:** --- **Cable 3:** ---
Analyzer: Gold **Preamp:** 18-26.5GHz **Antenna:** 18-26.5GHz Horn **Preselector:** ---
CSsoft Radiated Emissions Calculator v 1.017.225
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor

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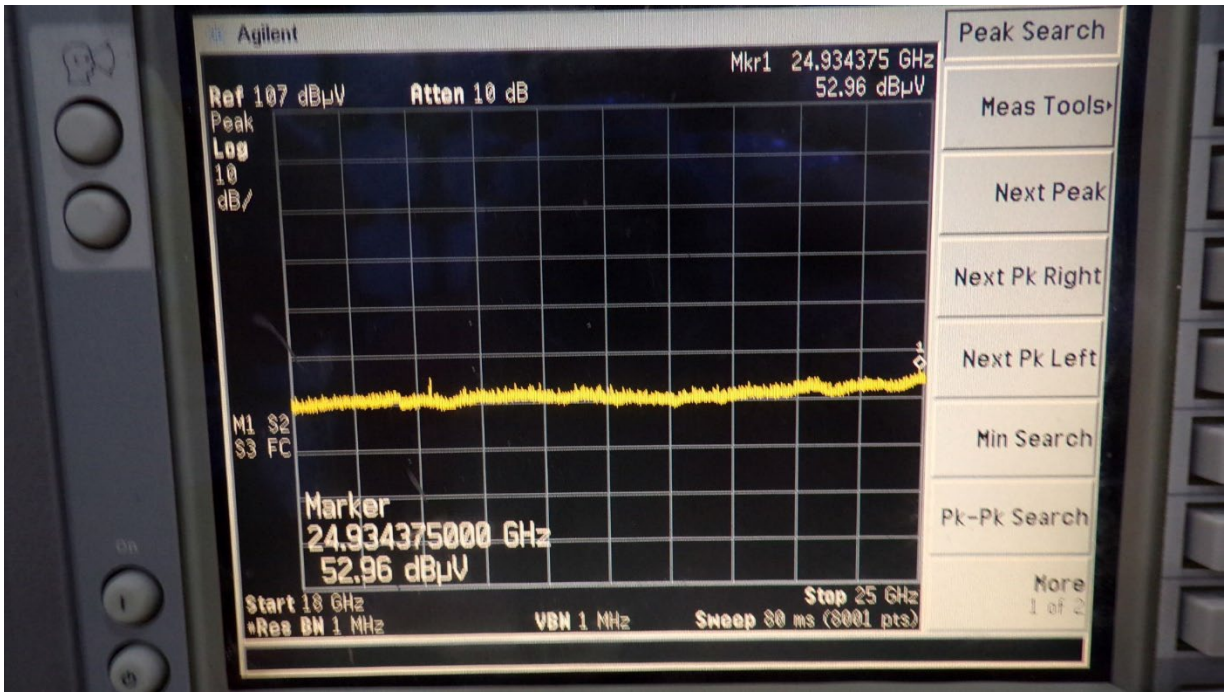
18-25GHz Data Table



18-25GHz Plot

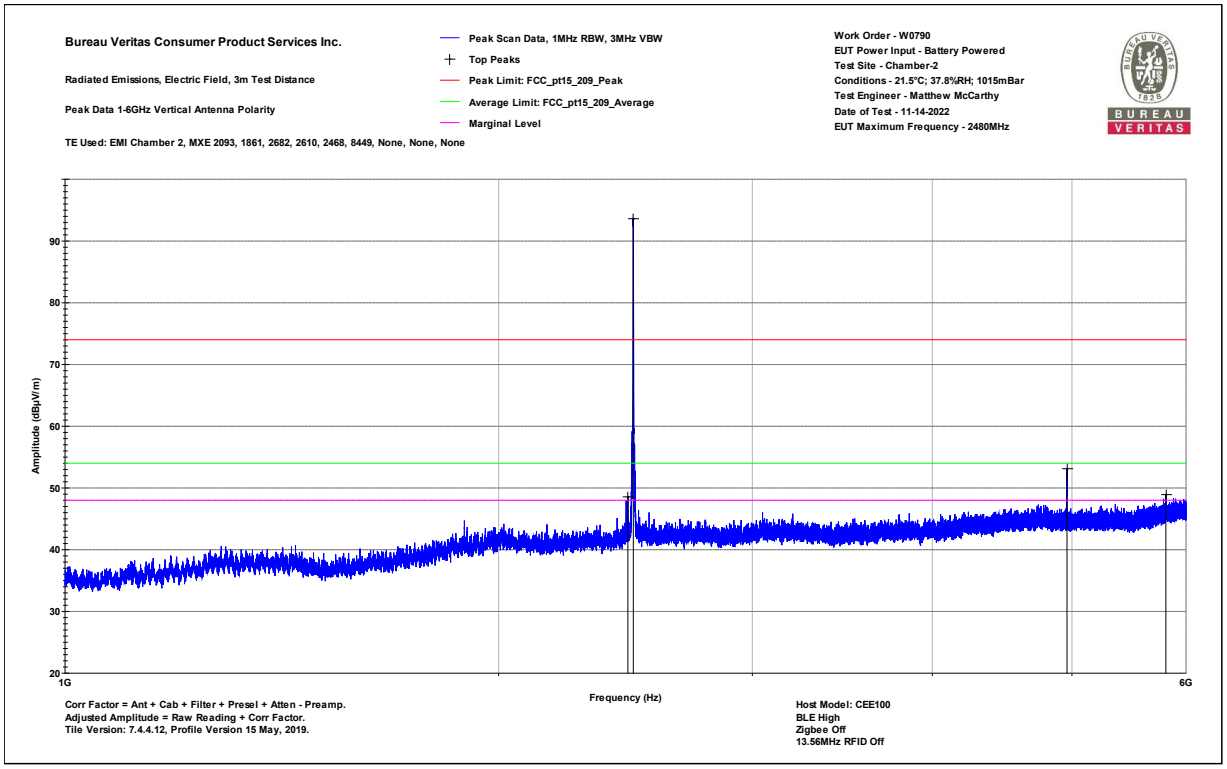
Channel 39

Host Model CEE100

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery Powered
Top Peaks Vertical 1-6GHz	Test Site - Chamber-2
Notes:	Conditions - 21.5°C; 37.8%RH; 1015mBar
Host Model: CEE100	Test Engineer - Matthew McCarthy
BLE High	Date of Test - 11-14-2022
Zigbee Off	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2458.88	50.8	35.7	-2.2	48.6	33.5	74	-25.4	PASS	--	54	-20.5	PASS	--	200	50
2480.5	FUNDAMENTAL														
4961.13	51.4	44.9	1.8	53.2	46.7	74	-20.8	PASS	-20.8	54	-7.3	PASS	-7.3	200	50
5810.5	45.9	33.8	3	48.9	36.8	74	-25.1	PASS	--	54	-17.2	PASS	--	300	170

1-6GHz Vertical Data Table

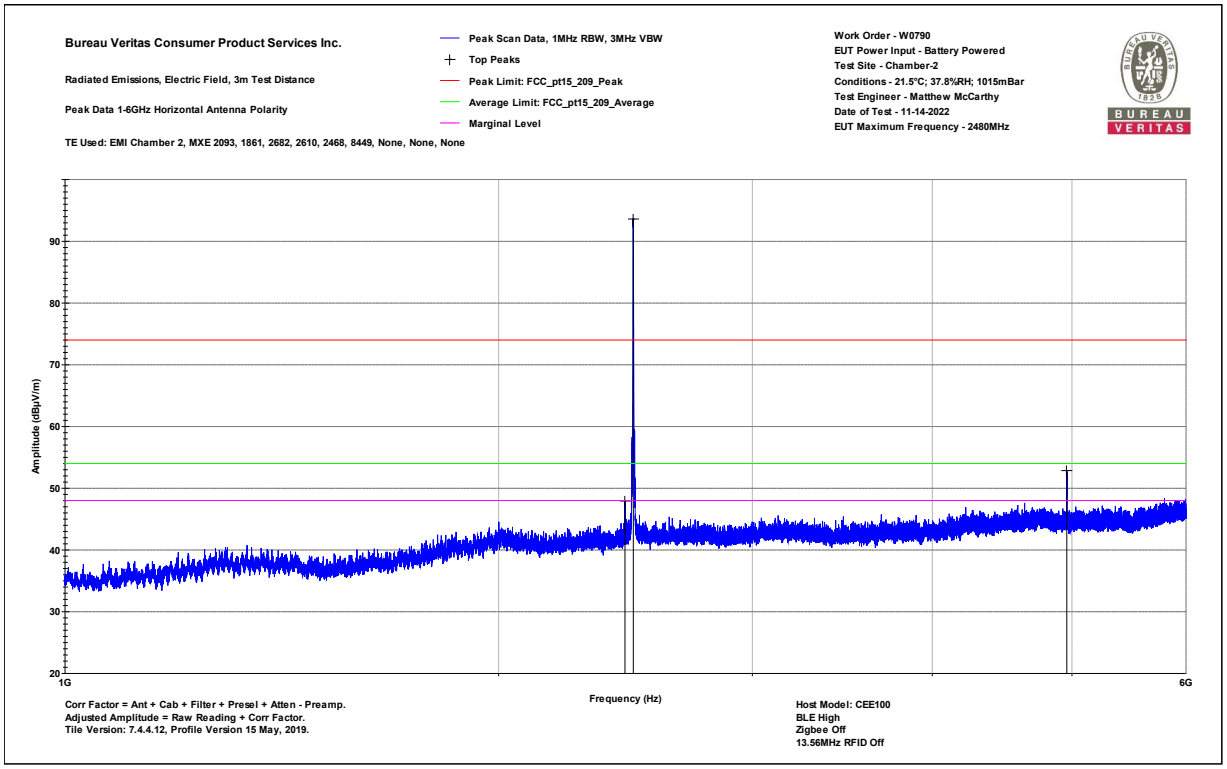


1-6GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery Powered
Top Peaks Horizontal 1-6GHz	Test Site - Chamber-2
Notes:	Conditions - 21.5°C; 37.8%RH; 1015mBar
Host Model: CEE100	Test Engineer - Matthew McCarthy
BLE High	Date of Test - 11-14-2022
Zigbee Off	

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2447.63	50.3	36.1	-2.4	47.9	33.7	74	-26.1	PASS	--	54	-20.3	PASS	--	200	146
2480.5	FUNDAMENTAL														
4959	51.1	46	1.8	52.9	47.8	74	-21.1	PASS	-21.1	54	-6.2	PASS	-6.2	100	266

1-6GHz Horizontal Data Table



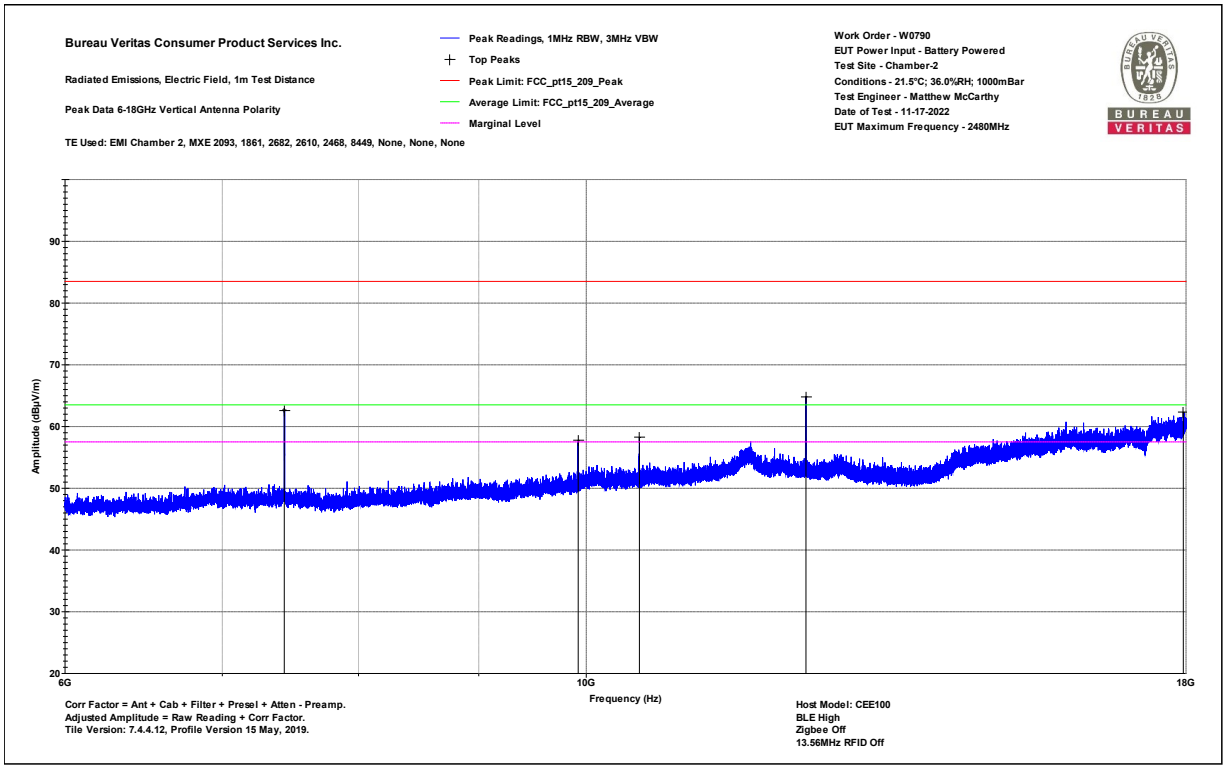
1-6GHz Horizontal Plot

Bureau Veritas Consumer Product Services Inc.
Radiated Emissions Electric Field 3m Distance
Vertical 6-18GHz
Notes:
Host Model: CEE100
BLE High
Zigbee Off

Work Order - W0790
EUT Power Input - Battery Powered
Test Site - Chamber-2
Conditions - 21.5°C; 36.0%RH; 1000mBar
Test Engineer - Matthew McCarthy
Date of Test - 11-17-2022

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7438.5	58.5	52.9	4.1	62.6	57	83.5	-20.9	PASS	--	63.5	-6.5	PASS	--	175	13
9921.9	51.9	46.9	5.8	57.7	52.7	83.5	-25.8	PASS	--	63.5	-10.8	PASS	--	175	315
10535.4	51.1	35.3	7.1	58.2	42.4	83.5	-25.3	PASS	--	63.5	-21.1	PASS	--	100	112
12402.6	56.4	49.1	8.4	64.8	57.5	83.5	-18.7	PASS	-18.7	63.5	-6	PASS	-6	150	55
17953.5	47.2	35.1	15.1	62.3	50.2	83.5	-21.2	PASS	--	63.5	-13.3	PASS	--	100	266

6-18GHz Vertical Data Table



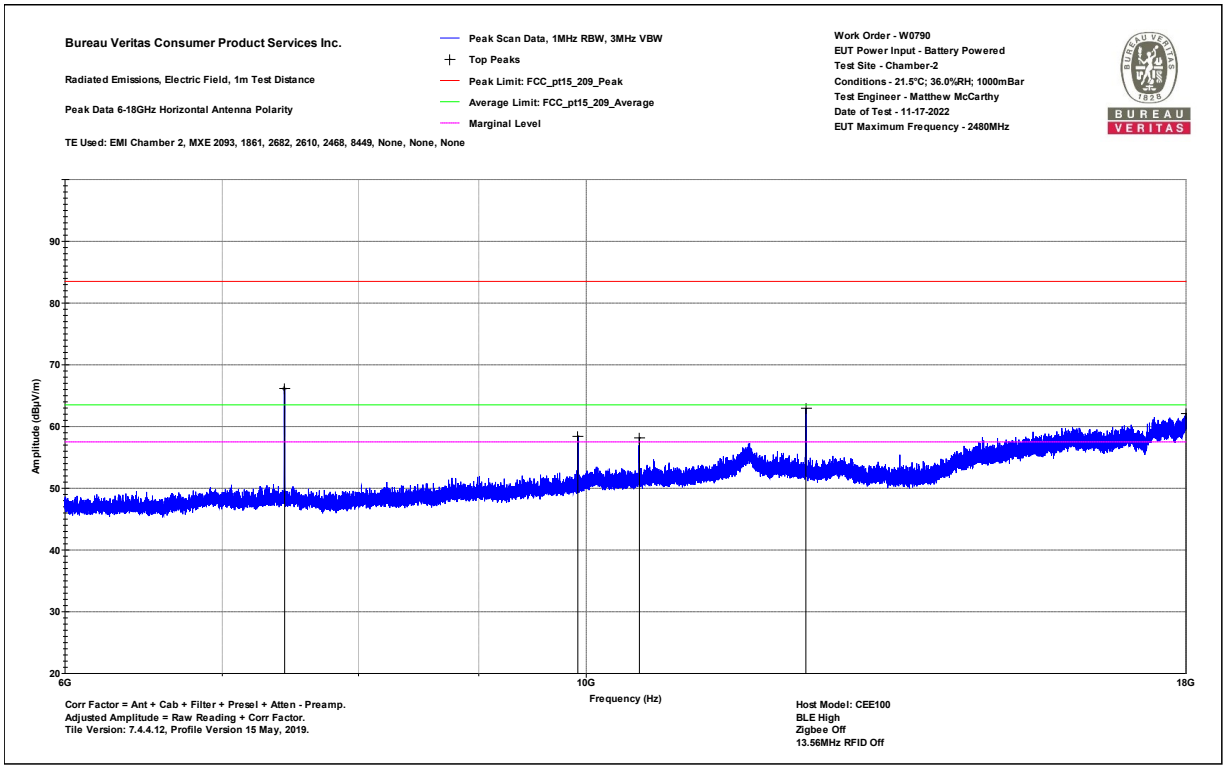
6-18GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.
Radiated Emissions Electric Field 3m Distance
Horizontal 6-18GHz
Notes:
Host Model: CEE100
BLE High
Zigbee Off

Work Order - W0790
EUT Power Input - Battery Powered
Test Site - Chamber-2
Conditions - 21.5°C; 36.0%RH; 1000mBar
Test Engineer - Matthew McCarthy
Date of Test - 11-17-2022

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7441.5	62.1	56.7	4.1	66.2	60.8	83.5	-17.3	PASS	-17.3	63.5	-2.7	PASS	-2.7	150	18
9918	52.7	46.7	5.8	58.5	52.5	83.5	-25	PASS	--	63.5	-11	PASS	--	175	48
10535.4	51	34.5	7.1	58.1	41.6	83.5	-25.4	PASS	--	63.5	-21.9	PASS	--	100	229
12402.3	54.5	48.4	8.4	62.9	56.8	83.5	-20.6	PASS	--	63.5	-6.7	PASS	--	175	30
18000	46.3	35.8	15.7	62	51.5	83.5	-21.5	PASS	--	63.5	-12	PASS	--	150	95

6-18GHz Horizontal Data Table



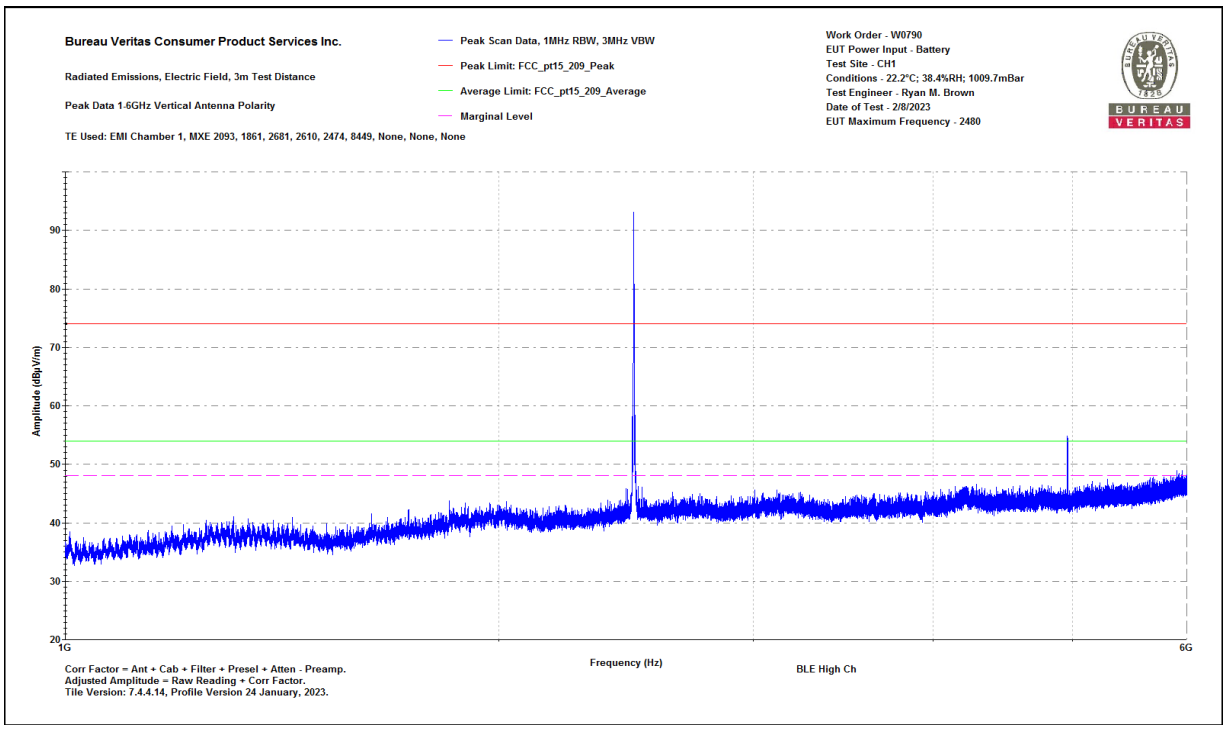
6-18GHz Horizontal Plot

Host Model CEB100

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery
1-6GHz Vertical Data	Test Site - CH1
Notes:	Conditions - 22.2°C; 38.4%RH; 1009.7mBar
BLE High Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/8/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1308.13	48.7	48.7	-7.7	41.0	41.0	74	-33.0	PASS	--	54	-13.0	PASS	--	200	315
1437.13	48.4	48.4	-7.5	40.9	40.9	74	-33.1	PASS	--	54	-13.1	PASS	--	200	95
1847.88	48.3	48.3	-4.5	43.8	43.8	74	-30.2	PASS	--	54	-10.2	PASS	--	300	221
2480.5	Fundamental														
4959.25	56.4	50.1	1.0	57.4	51.1	74	-16.7	PASS	-16.7	54	-2.9	PASS	-2.9	200	57
5908.38	46.1	36.0	2.9	49.0	38.9	74	-25.0	PASS	--	54	-15.1	PASS	--	100	182

1-6GHz Vertical Data Table

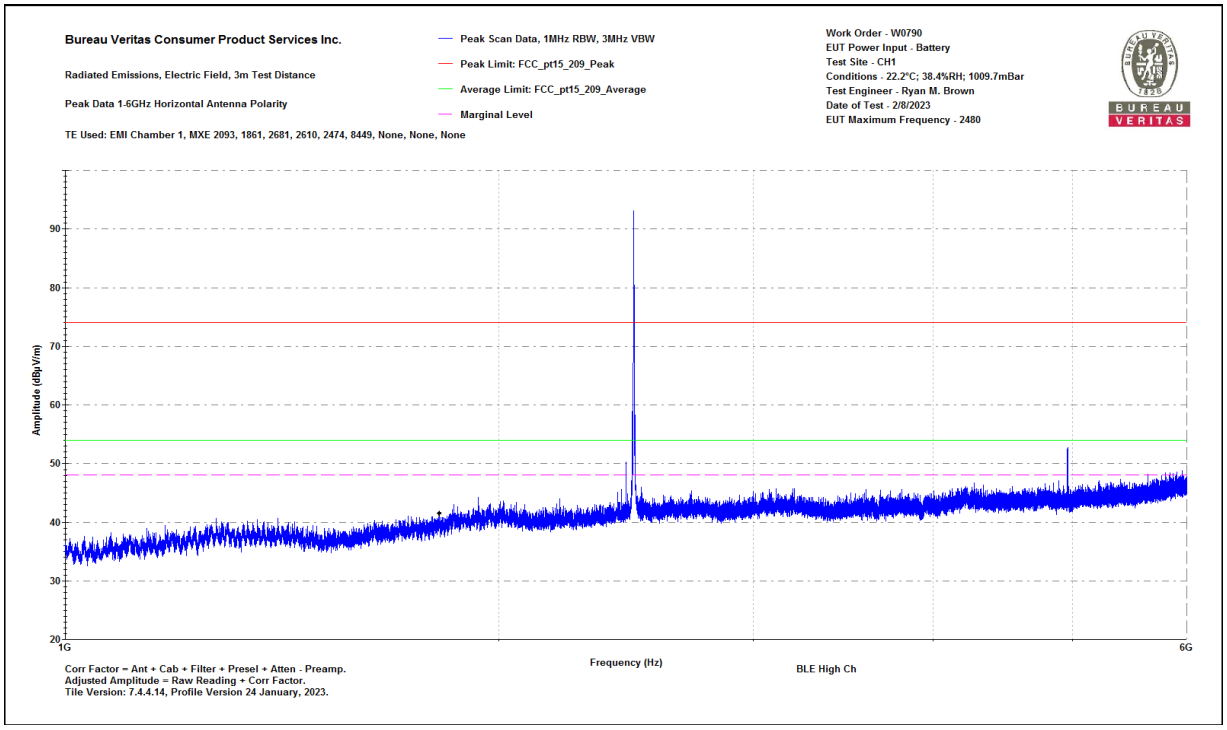


1-6GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery
1-6GHz Horizontal Data	Test Site - CH1
Notes:	Conditions - 22.2°C; 38.4%RH; 1009.7mBar
BLE High Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/8/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2448.38	52.9	38.1	-2.6	50.3	35.5	74	-23.7	PASS	--	54	-18.5	PASS	--	239	108
2480.5	Fundamental														
4961	54.9	47.3	1.0	55.9	48.3	74	-18.1	PASS	-18.1	54	-5.7	PASS	-5.7	287	0
5956.25	45.8	36.2	3.0	48.8	39.2	74	-25.2	PASS	--	54	-14.8	PASS	--	220	246

1-6GHz Horizontal Data Table

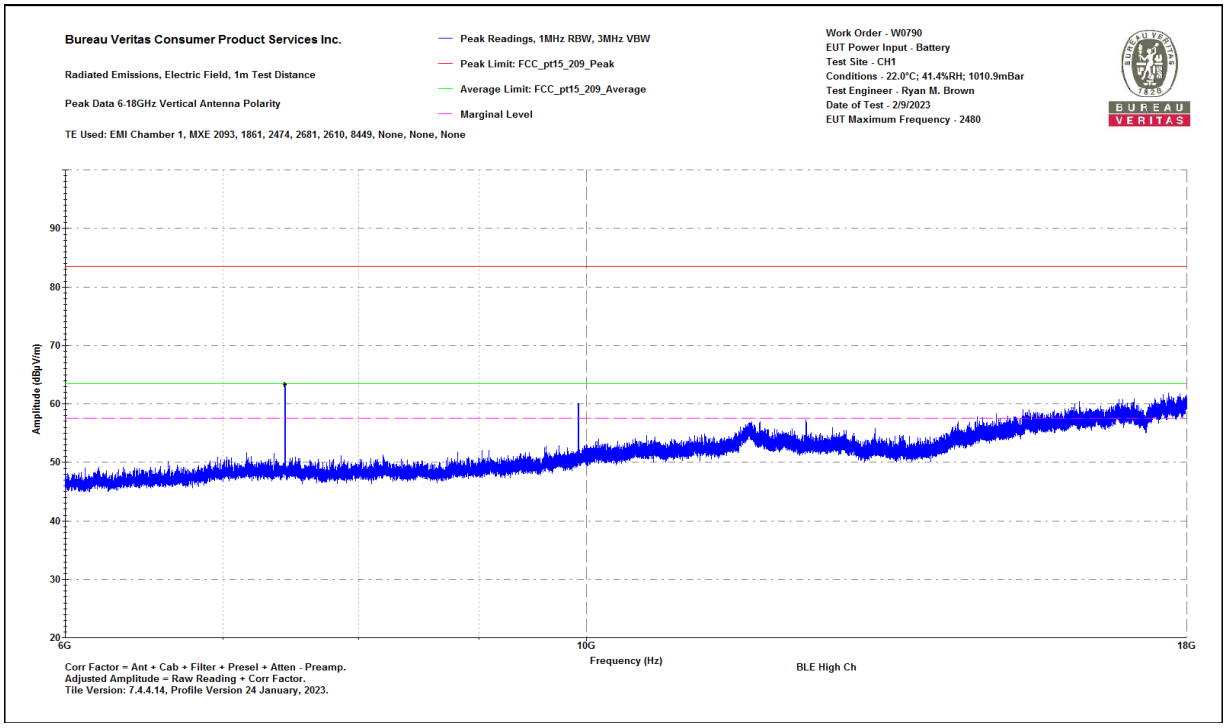


1-6GHz Horizontal Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 1m Distance	EUT Power Input - Battery
Top Peaks Vertical 6-18GHz	Test Site - CH1
Notes:	Conditions - 22.0°C; 41.4%RH; 1010.9mBar
BLE High Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/9/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7441.5	58.7	53.2	4.6	63.3	57.8	83.5	-20.2	PASS	-20.2	63.5	-5.7	PASS	-5.7	200	0
12397.5	48.6	45.6	8.7	57.3	54.3	83.5	-26.2	PASS	--	63.5	-9.2	PASS	--	150	69
17681.7	47.0	35.9	14.9	61.9	50.8	83.5	-21.6	PASS	--	63.5	-12.7	PASS	--	175	315

6-18GHz Vertical Data Table

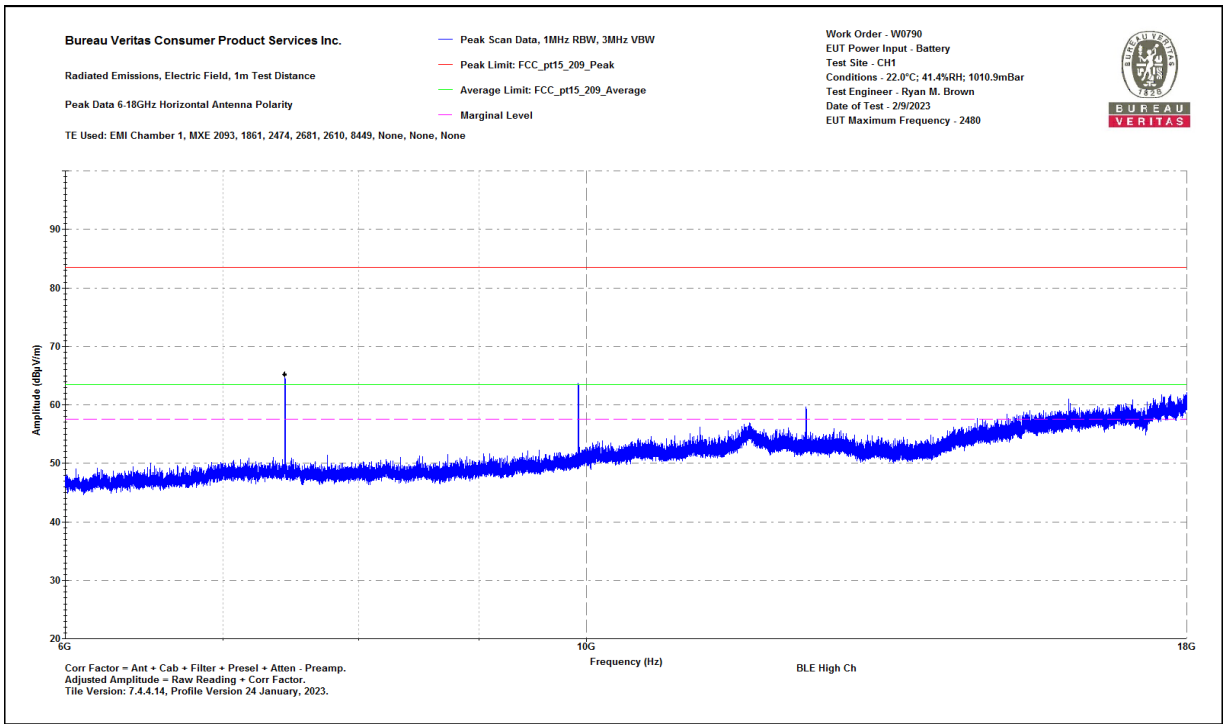


6-18GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 1m Distance	EUT Power Input - Battery
Top Peaks Horizontal 6-18GHz	Test Site - CH1
Notes:	Conditions - 22.0°C; 41.4%RH; 1010.9mBar
BLE High Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/9/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7438.5	60.5	57.7	4.6	65.1	62.3	83.5	-18.4	PASS	-18.4	63.5	-1.2	PASS	-1.2	150	0
12397.5	50.9	45.6	8.7	59.6	54.3	83.5	-23.9	PASS	--	63.5	-9.2	PASS	--	175	19
16038.3	49.0	36.6	11.9	60.9	48.5	83.5	-22.6	PASS	--	63.5	-15.0	PASS	--	125	208
17999.1	46.4	35.5	15.7	62.1	51.2	83.5	-21.4	PASS	--	63.5	-12.3	PASS	--	200	32

6-18GHz Horizontal Data Table



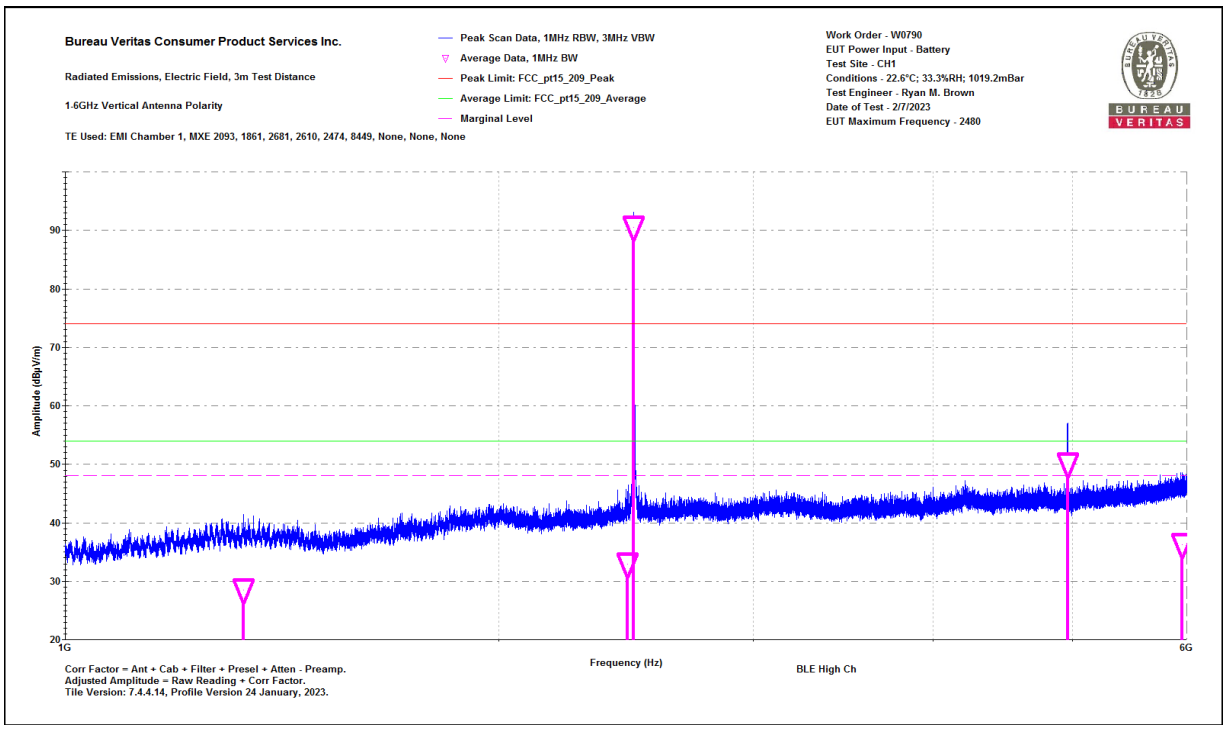
6-18GHz Horizontal Plot

Host Model CEM100

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery
1-6GHz Vertical Data	Test Site - CH1
Notes:	Conditions - 22.6°C; 33.3%RH; 1019.2mBar
BLE High Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/7/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
1329	44.9	37.3	-7.7	37.2	29.6	74	-36.8	PASS	--	54	-24.4	PASS	--	125	87
2457.1	45.0	36.6	-2.6	42.4	34.0	74	-31.6	PASS	--	54	-20.0	PASS	--	192	17
2480.5	Fundamental														
4961	55.7	51.8	1.0	56.7	52.8	74	-17.3	PASS	-17.3	54	-1.2	PASS	-1.2	196	47
5960.5	41.7	34.8	3.0	44.7	37.8	74	-29.3	PASS	--	54	-16.2	PASS	--	114	284

1-6GHz Vertical Data Table

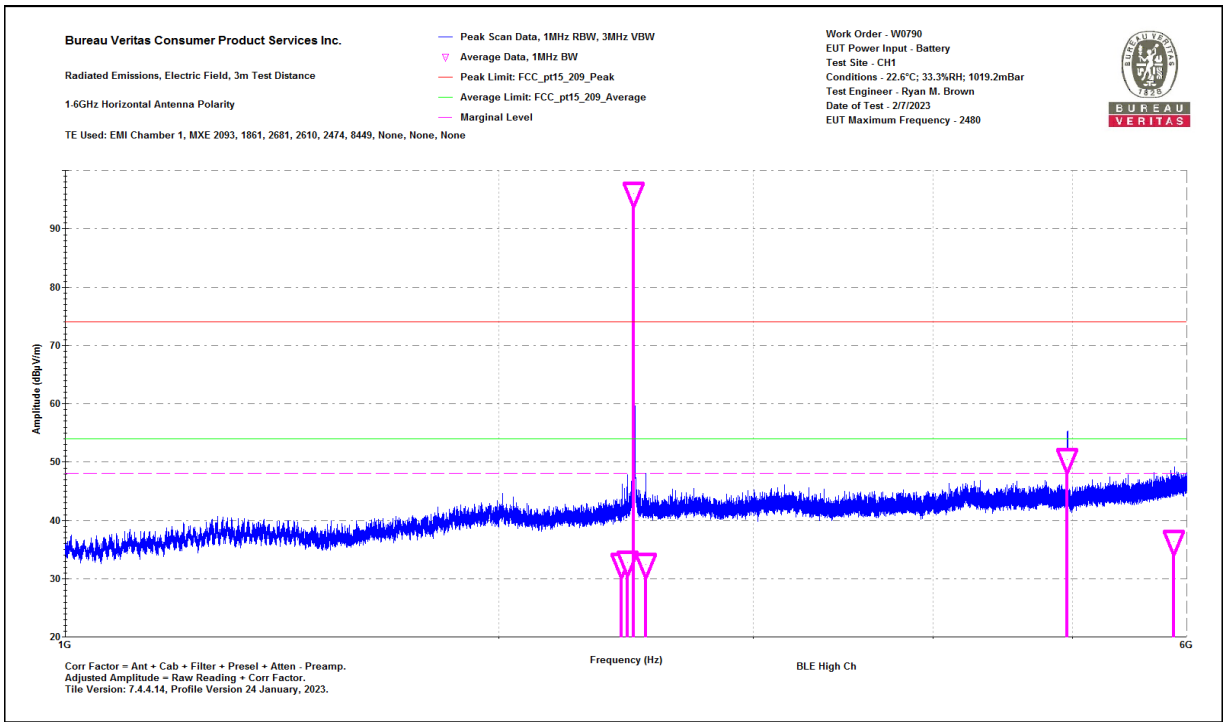


1-6GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 3m Distance	EUT Power Input - Battery
1-6GHz Horizontal Data	Test Site - CH1
Notes:	Conditions - 22.6°C; 33.3%RH; 1019.2mBar
BLE High Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/7/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
2432.5	43.2	37.3	-2.7	40.5	34.6	74	-33.5	PASS	--	54	-19.4	PASS	--	298	320
2454.4	44.5	36.9	-2.6	41.9	34.3	74	-32.1	PASS	--	54	-19.7	PASS	--	275	292
2479.5	Fundamental														
2529.2	44.0	36.1	-2.3	41.7	33.8	74	-32.3	PASS	--	54	-20.2	PASS	--	275	267
4959	56.5	50.8	1.0	57.5	51.8	74	-16.5	PASS	-16.5	54	-2.2	PASS	-2.2	280	300
5880.7	42.7	34.3	2.8	45.5	37.1	74	-28.5	PASS	--	54	-16.9	PASS	--	284	46

1-6GHz Horizontal Data Table

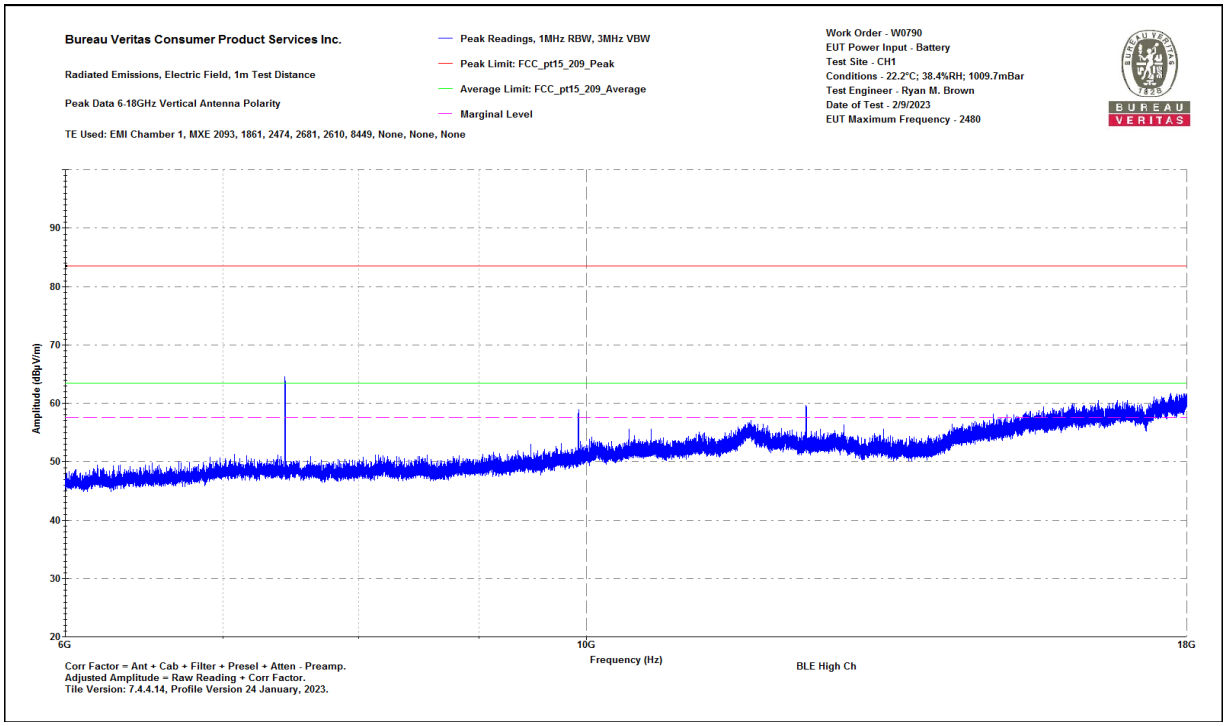


1-6GHz Horizontal Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 1m Distance	EUT Power Input - Battery
Top Peaks Vertical 6-18GHz	Test Site - CH1
Notes:	Conditions - 22.2°C; 38.4%RH; 1009.7mBar
BLE High Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/9/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7438.5	59.9	56.0	4.6	64.5	60.6	83.5	-19.0	PASS	-19.0	63.5	-2.9	PASS	-2.9	200	0
12397.5	50.8	43.1	8.7	59.5	51.8	83.5	-24.0	PASS	--	63.5	-11.7	PASS	--	150	32
17723.4	46.9	35.7	14.8	61.7	50.5	83.5	-21.8	PASS	--	63.5	-13.0	PASS	--	100	108

6-18GHz Vertical Data Table

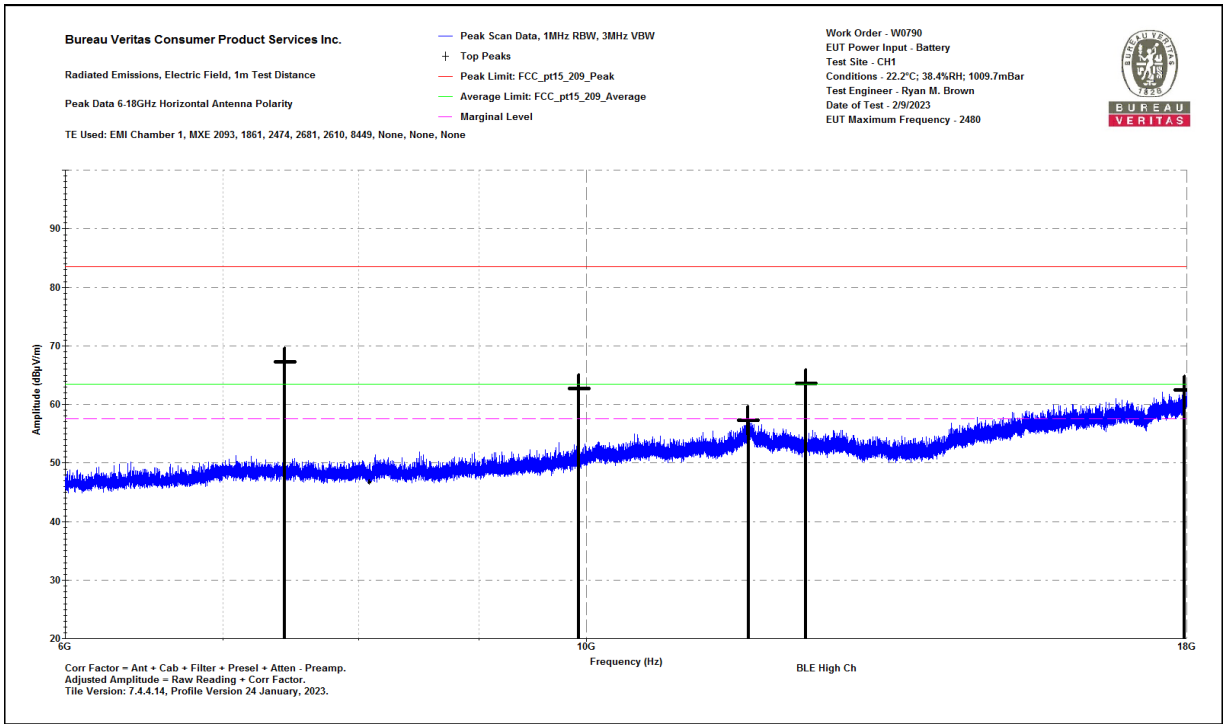


6-18GHz Vertical Plot

Bureau Veritas Consumer Product Services Inc.	Work Order - W0790
Radiated Emissions Electric Field 1m Distance	EUT Power Input - Battery
Top Peaks Horizontal 6-18GHz	Test Site - CH1
Notes:	Conditions - 22.2°C; 38.4%RH; 1009.7mBar
BLE High Ch	Test Engineer - Ryan M. Brown
0	Date of Test - 2/9/2023

Frequency (MHz)	Raw Peak (dBµV)	Raw RMS Average (dBµV)	Correction Factor (dB/m)	Adjusted Peak (dBµV/m)	Adjusted RMS Average (dBµV/m)	Peak Limit FCC 15.209 (dBµV/m)	Peak Margin (dB)	Peak Result (Pass/Fail)	Peak Worst Margin (dB)	Average Limit FCC 15.209 (dBµV/m)	Average Margin (dB)	Average Result (Pass/Fail)	Average Worst Margin (dB)	Antenna Height (cm)	EUT Azimuth (degrees)
7441.5	62.6	58.2	4.6	67.2	62.8	83.5	-16.3	PASS	-16.3	63.5	-0.7	PASS	-0.7	175	56
11715	48.5	37.8	8.8	57.3	46.6	83.5	-26.2	PASS	--	63.5	-16.9	PASS	--	125	284
12397.8	54.9	48.7	8.7	63.6	57.4	83.5	-19.9	PASS	--	63.5	-6.2	PASS	--	175	18
17959.2	47.1	35.3	15.3	62.4	50.6	83.5	-21.1	PASS	--	63.5	-12.9	PASS	--	100	71

6-18GHz Horizontal Data Table



6-18GHz Horizontal Plot

Radiated Emissions Table

Date: 29-Mar-23 **Company:** Assa Abloy **Work Order:** W0790
Engineer: Ryan M. Brown **EUT Desc:** CEM100 **EUT Operating Voltage/Frequency:** Battery
Temp: 21 **Humidity:** 43% **Pressure:** 1005
Frequency Range: 18-25GHz **Measurement Distance:** 0.1 m
Notes: BLE High **EUT Max Freq:** 2480MHz

Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC Class B High Frequency - Peak Limit (dBµV/m)	FCC Class B High Frequency - Peak Margin (dB)	FCC Class B High Frequency - Peak Result (Pass/Fail)	FCC Class B High Frequency - Average Limit (dBµV/m)	FCC Class B High Frequency - Average Margin (dB)	FCC Class B High Frequency - Average Result (Pass/Fail)
Noise Floor	24977.3	52.92	52.9	--- 40.9	--- 40.3	--- 9.2	--- 61.5	--- 61.5	--- 103.5	--- -42.0	--- Pass	--- 83.5	--- -22.0	--- Pass

Table Result: Pass by -22.0 dB ***Worst Freq:*** 24977.3 MHz

Test Site: EMI Chamber 1 **Cable 1:** Asset #2323 **Cable 2:** --- **Cable 3:** ---
Analyzer: Gold **Preamp:** 18-26.5GHz **Antenna:** 18-26.5GHz Horn **Preselector:** ---
CSsoft Radiated Emissions Calculator v 1.017.225
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor

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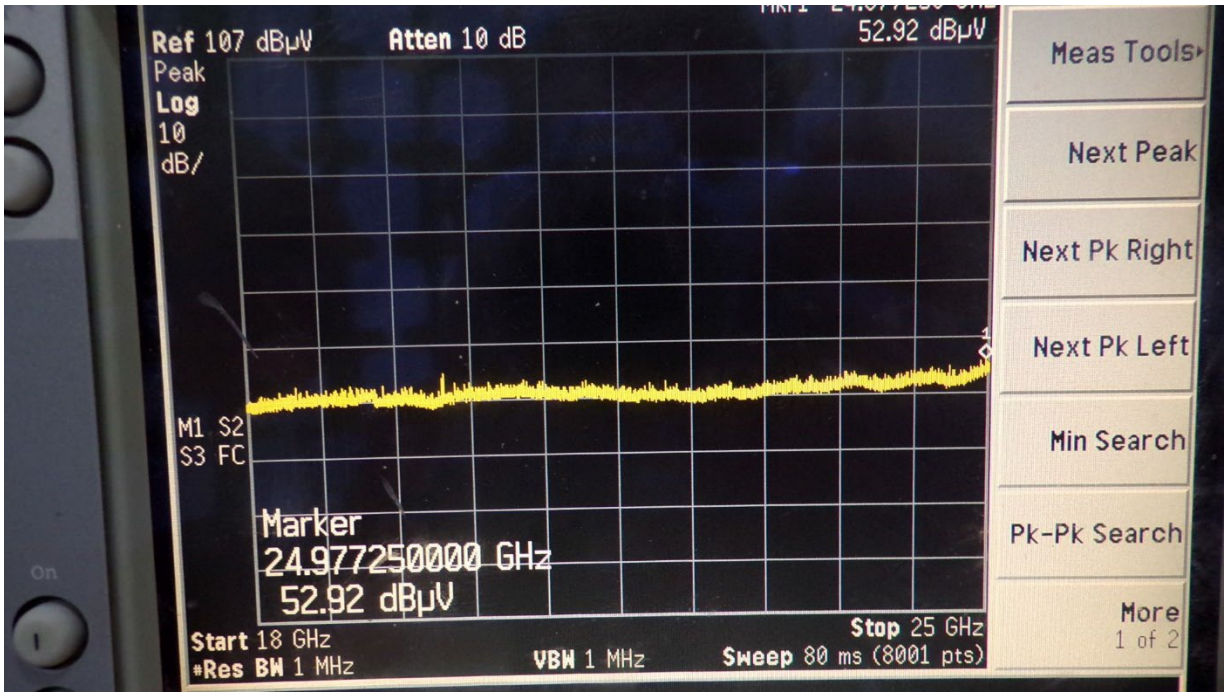
18-25GHz Data Table



18-25GHz Plot

Radiated Band-edges:

Host Model CEE100

Radiated Emissions Table

Date: 17-Nov-22 **Company:** Assa Abloy **Work Order:** W0790
Engineer: Matthew McCarthy **EUT Desc:** CEE100 **EUT Operating Voltage/Frequency:** Battery
Temp: 21.5°C **Humidity:** 36% **Pressure:** 1000mBar
Frequency Range: 2400-2500MHz **Measurement Distance:** 1 m
Notes: Power Setting 5 **EUT Max Freq:** 2480MHz

Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC 15.209 - Peak Limit (dBµV/m)	FCC 15.209 - Peak Margin (dB)	FCC 15.209 - Peak Result (Pass/Fail)	FCC 15.209 - Average Limit (dBµV/m)	FCC 15.209 - Average Margin (dB)	FCC 15.209 - Average Result (Pass/Fail)
BLE Low Channel				---	---	---	---	---	---	---	---	---	---	---
V	2390.0	48.37	48.4	38.5	32.0	3.1	44.9	44.9	83.5	-38.6	Pass	63.5	-18.6	Pass
H	2390.0	52.1	52.1	38.5	32.0	3.1	48.7	48.7	83.5	-34.9	Pass	63.5	-14.9	Pass
				---	---	---	---	---	---	---	---	---	---	---
BLE High Channel				---	---	---	---	---	---	---	---	---	---	---
V	2483.5	72.7	65.1	38.6	32.8	3.4	70.3	62.7	83.5	-13.3	Pass	63.5	-0.9	Pass
H	2483.5	70.29	63.6	38.6	32.8	3.4	67.8	61.2	83.5	-15.7	Pass	63.5	-2.4	Pass

Table Result: Pass by -0.9 dB ***Worst Freq:*** 2483.5 MHz

Test Site: EMI Chamber 2 **Cable 1:** Asset #2682 **Cable 2:** Asset #2610 **Cable 3:** Asset #2468
Analyzer: 2093 **Preamp:** 8449B **Antenna:** Blue Horn **Preselector:** ---
CSsoft Radiated Emissions Calculator v 1.017.222
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Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor

Host Model CEB100

Radiated Emissions Table

Date: 13-Feb-23 **Company:** Assa Abloy **Work Order:** W0790
Engineer: Ryan M. Brown **EUT Desc:** CEB 100 **EUT Operating Voltage/Frequency:** Battery
Temp: 20.0 **Humidity:** 47% **Pressure:** 993
Frequency Range: BLE Band Edge **Measurement Distance:** 1 m
Notes: Power Set to 5 **EUT Max Freq:** 2480

Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC Class B High Frequency - Peak Limit (dBµV/m)	FCC Class B High Frequency - Peak Margin (dB)	FCC Class B High Frequency - Peak Result (Pass/Fail)	FCC Class B High Frequency - Average Limit (dBµV/m)	FCC Class B High Frequency - Average Margin (dB)	FCC Class B High Frequency - Average Result (Pass/Fail)
V	2390.0	49.35	49.4	38.5	32.6	3.4	46.9	46.9	83.5	-36.6	Pass	63.5	-16.6	Pass
H	2390.0	48.05	48.1	38.5	32.6	3.4	45.6	45.6	83.5	-37.9	Pass	63.5	-17.9	Pass
				---	---	---	---	---	---	---	---	---	---	---
V	2483.5	71.47	65.1	38.6	32.8	3.3	69.0	62.6	83.5	-14.5	Pass	63.5	-0.9	Pass
H	2483.5	71.94	65.4	38.6	32.8	3.3	69.4	62.9	83.5	-14.1	Pass	63.5	-0.6	Pass

Table Result: Pass by -0.6 dB ***Worst Freq:*** 2483.5 MHz

Test Site: EMI Chamber 1 **Cable 1:** Asset #2682 **Cable 2:** Asset #2610 **Cable 3:** Asset #2474
Analyzer: Asset #2093 **Preamp:** 8449B **Antenna:** Blue Horn **Preselector:** ---
CSsoft Radiated Emissions Calculator v 1.017.225
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Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor

Host Model CEM100

Radiated Emissions Table

Date: 10-Feb-23 **Company:** Assa Abloy **Work Order:** W0790
Engineer: Ryan M. Brown **EUT Desc:** CEM 100 **EUT Operating Voltage/Frequency:** Battery
Temp: 22.6 **Humidity:** 33% **Pressure:** 1019.2
Frequency Range: BLE Band Edge **Measurement Distance:** 1 m
Notes: Power Set to 5 **EUT Max Freq:** 2480

Antenna Polarization (H / V)	Frequency (MHz)	Peak Reading (dBµV)	Average Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Peak Reading (dBµV/m)	Adjusted Avg Reading (dBµV/m)	FCC Class B High Frequency - Peak Limit (dBµV/m)	FCC Class B High Frequency - Peak Margin (dB)	FCC Class B High Frequency - Peak Result (Pass/Fail)	FCC Class B High Frequency - Average Limit (dBµV/m)	FCC Class B High Frequency - Average Margin (dB)	FCC Class B High Frequency - Average Result (Pass/Fail)
V	2390.0	50.05	50.1	38.5	32.6	3.4	47.6	47.6	83.5	-35.9	Pass	63.5	-15.9	Pass
H	2390.0	50.8	50.8	38.5	32.6	3.4	48.3	48.3	83.5	-35.2	Pass	63.5	-15.2	Pass
				---	---	---	---	---	---	---	---	---	---	---
V	2483.5	72.07	65.1	38.6	32.8	3.3	69.6	62.6	83.5	-13.9	Pass	63.5	-0.9	Pass
H	2483.5	68.32	60.7	38.6	32.8	3.3	65.8	58.2	83.5	-17.7	Pass	63.5	-5.3	Pass

Table Result: Pass by -0.9 dB ***Worst Freq:*** 2483.5 MHz

Test Site: EMI Chamber 1 **Cable 1:** Asset #2681 **Cable 2:** Asset #2610 **Cable 3:** Asset #2474
Analyzer: Asset #1328 **Preamp:** 8449B **Antenna:** Blue Horn **Preselector:** ---
CSsoft Radiated Emissions Calculator v 1.017.225
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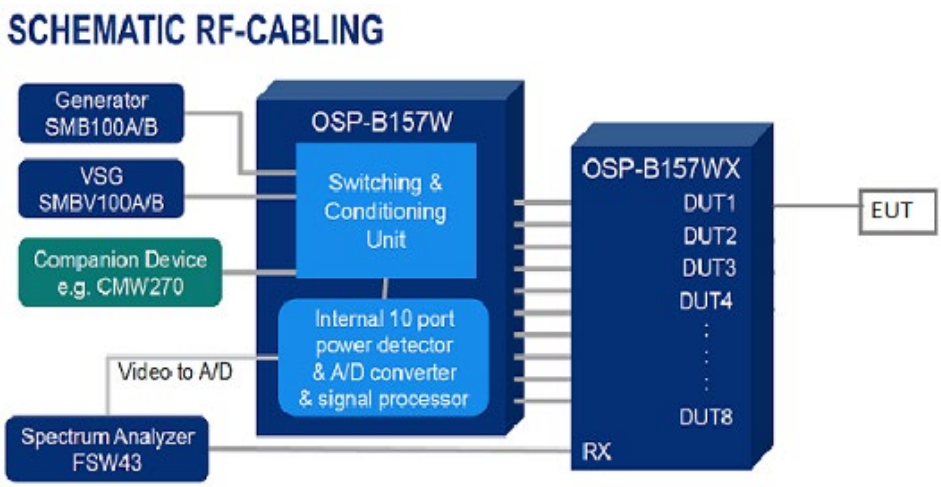
Adjusted Reading = Reading - Preamp Factor + Antenna Factor + Cable Factor

4.3 6dB CHANNEL BANDWIDTH & 99% OBW

4.3.1 LIMITS

The minimum 6 dB bandwidth shall be 500 kHz.

4.3.2 TEST SETUP



4.3.3 TEST EQUIPMENT USED

Equipment	Manufacturer	Asset No.	Model No.	Serial No.	Last Cal.	Next Cal.
Cable	Carlisle	2595	UTiFLEX	None	1/21/2022	1/21/2023
Signal Analyzer	Rohde-Schwarz	2200	FSV 40	101551	10/26/2021	10/26/2022
OSP-B157W8	Rohde-Schwarz	2558	OSP_B157W8	100955	8/26/2021	8/26/2023

Test equipment used for all conducted antenna port tests (Test Date: 7/7/2022) except for Conducted Peak Output Power and 99% Occupied Bandwidth

Equipment	Manufacturer	Asset No.	Model No.	Serial No.	Last Cal.	Next Cal.
Cable	Carlisle	2595	UTiFLEX	None	1/17/2023	1/17/2024
Signal Analyzer	Rohde-Schwarz	2200	FSV 40	101551	10/11/2022	10/11/2023
OSP-B157W8	Rohde-Schwarz	2558	OSP_B157W8	100955	8/26/2021	8/26/2023

Test equipment used for Conducted Peak Output Power (Test Date: 3/9/2023) and 99% Occupied Bandwidth (Test Date: 4/24/2023)

4.3.4 TEST PROCEDURES

6dB CHANNEL BANDWIDTH

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

99% OBW

a. The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
b. The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
c. Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
d. Step a) through step c) might require iteration to adjust within the specified range.
e. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
f. Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

4.3.5 DEVIATIONS

No deviations from the standard.

4.3.6 EUT OPERATING CONDITIONS

EUT was operated according to manufacturer's specifications.

4.3.7 TEST RESULTS

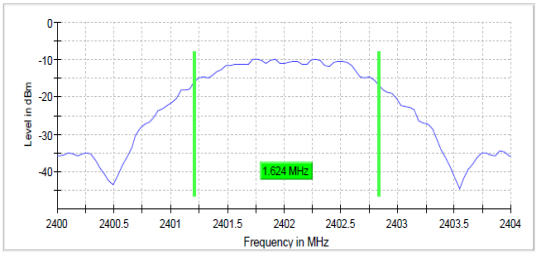
6dB BW Test date: 7/7/2022

99% OBW Test date: 4/24/2023

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	99% OBW (MHz)	PASS / FAIL
0	2402	1.624	2.232	Pass
20	2442	1.584	2.232	Pass
39	2480	1.624	2.232	Pass

CH0

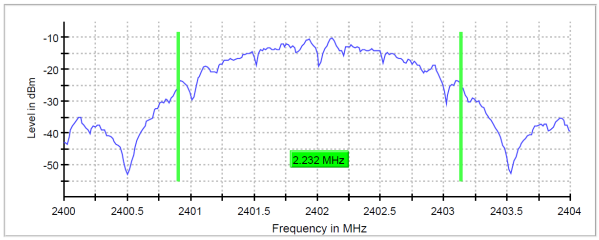
6dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	4.000 MHz	4.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 80
Sweeptime	18.938 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	18 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.12 dB	0.50 dB

99% OBW

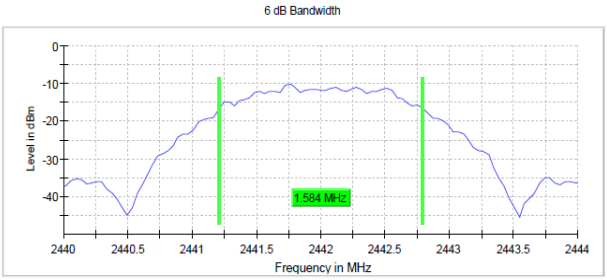


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	4.000 MHz	4.000 MHz
RBW	30.000 kHz	>= 30.000 kHz
VBW	100.000 kHz	>= 100.000 kHz
SweepPoints	267	~ 267
Sweeptime	63.230 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	13 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.24 dB	0.30 dB

CH20

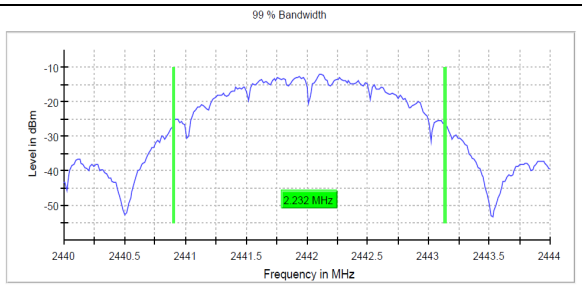
6dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44400 GHz	2.44400 GHz
Span	4.000 MHz	4.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 80
Sweeptime	18.938 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	15 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.18 dB	0.50 dB

99% OBW

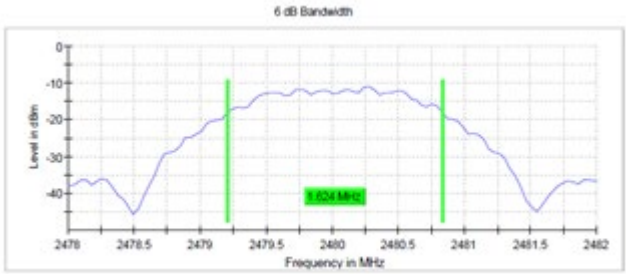


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44400 GHz	2.44400 GHz
Span	4.000 MHz	4.000 MHz
RBW	30.000 kHz	>= 30.000 kHz
VBW	100.000 kHz	>= 100.000 kHz
SweepPoints	267	~ 267
Sweeptime	63.230 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	18 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.24 dB	0.30 dB

CH39

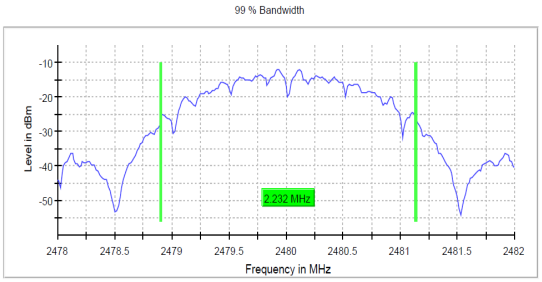
6dB Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48200 GHz	2.48200 GHz
Span	4.000 MHz	4.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 80
Sweeptime	18.938 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	18 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.02 dB	0.50 dB

99% OBW



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48200 GHz	2.48200 GHz
Span	4.000 MHz	4.000 MHz
RBW	30.000 kHz	>= 30.000 kHz
VBW	100.000 kHz	>= 100.000 kHz
SweepPoints	267	~ 267
Sweeptime	63.230 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	16 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.14 dB	0.30 dB

4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS

For systems using digital modulation in the 2400–2483.5 MHz band: 1 Watt (30dBm)

4.4.2 TEST SETUP

Refer to section 4.3.2.

4.4.3 TEST EQUIPMENT USED

Refer to section 4.3.3.

4.4.4 TEST PROCEDURES

Peak conducted output power was measured in accordance with ANSI C63.10 - 2013 Section 11.9.1.1 (RBW ≥ DTS bandwidth).

4.4.5 DEVIATIONS

No deviations from the standard.

4.4.6 EUT OPERATING CONDITIONS

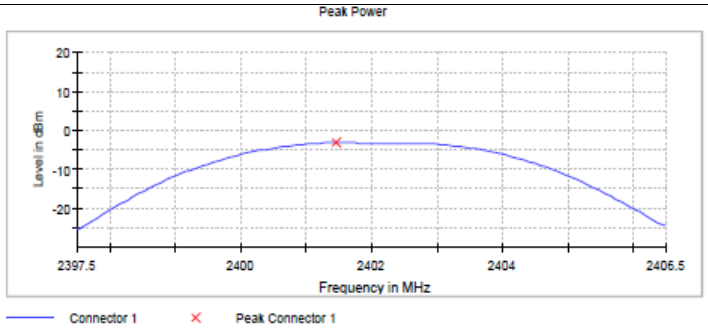
EUT was operated according to manufacturer's specifications

4.4.7 TEST RESULTS

Test date: 3/9/2023

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (W)	PASS/FAIL
0	2402	-3.2	0.48	1	PASS
20	2442	-4.0	0.40	1	PASS
39	2480	-4.4	0.36	1	PASS

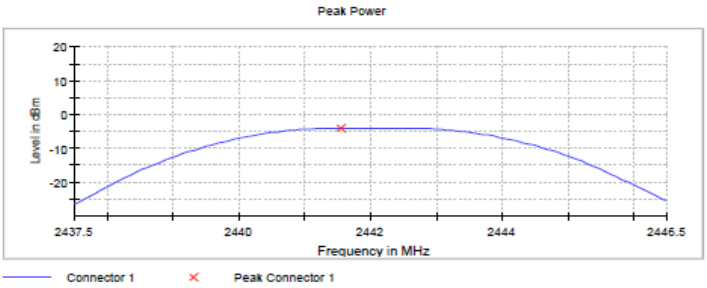
CH0 2402MHz



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39750 GHz	2.39750 GHz
Stop Frequency	2.40650 GHz	2.40650 GHz
Span	9.000 MHz	9.000 MHz
RBW	3.000 MHz	>= 2.000 MHz
VBW	10.000 MHz	>= 9.000 MHz
SweepPoints	101	~ 101
Sweeptime	1.271 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.06 dB	0.50 dB

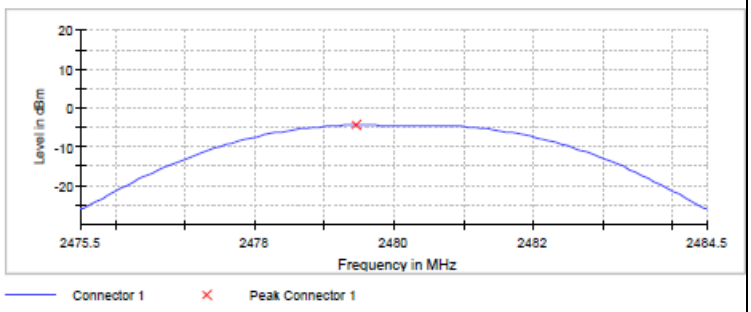
CH20 2442MHz



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43750 GHz	2.43750 GHz
Stop Frequency	2.44650 GHz	2.44650 GHz
Span	9.000 MHz	9.000 MHz
RBW	3.000 MHz	>= 2.000 MHz
VBW	10.000 MHz	>= 9.000 MHz
SweepPoints	101	~ 101
Sweeptime	1.271 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.06 dB	0.50 dB

CH39 2480MHz



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47550 GHz	2.47550 GHz
Stop Frequency	2.48450 GHz	2.48450 GHz
Span	9.000 MHz	9.000 MHz
RBW	3.000 MHz	>= 2.000 MHz
VBW	10.000 MHz	>= 9.000 MHz
SweepPoints	101	~ 101
Sweeptime	1.271 µs	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.02 dB	0.50 dB

4.5 POWER SPECTRAL DENSITY

4.5.1 LIMITS

The limit for Power Spectral Density is 8dBm/3KHz.

4.5.2 TEST SETUP

Refer to section 4.3.2.

4.5.3 TEST EQUIPMENT USED

Refer to section 4.3.3.

4.5.4 TEST PROCEDURES

1. Set the span to 1.5 times the DTS bandwidth
2. Set the RBW = 10 kHz, VBW ≥ 3 x RBW, Detector = peak.
3. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

4.5.5 DEVIATIONS

No deviations from the standard.

4.5.6 EUT OPERATING CONDITIONS

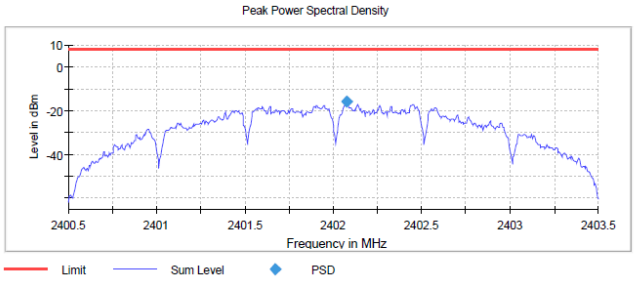
EUT was operated according to manufacturer's specifications.

4.5.7 TEST RESULTS

Test date: 7/7/2022

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-15.742	8	PASS
20	2442	-16.984	8	PASS
39	2480	-17.819	8	PASS

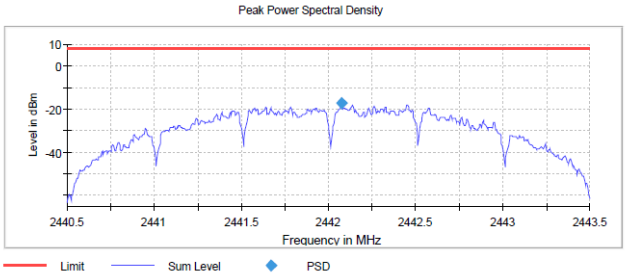
CH0 2402MHz



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40050 GHz	2.40050 GHz
Stop Frequency	2.40350 GHz	2.40350 GHz
Span	3.000 MHz	3.000 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	600	~ 600
Sweeptime	3.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.43 dB	0.50 dB

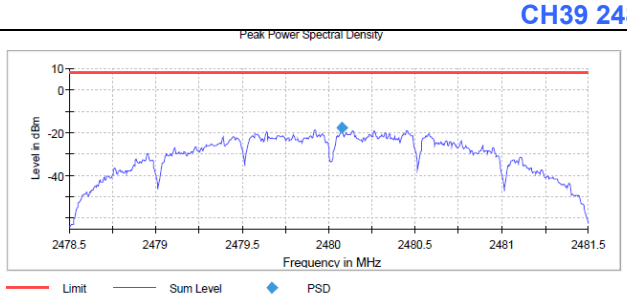
CH20 2442MHz



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44050 GHz	2.44050 GHz
Stop Frequency	2.44350 GHz	2.44350 GHz
Span	3.000 MHz	3.000 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	600	~ 600
Sweeptime	3.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.20 dB	0.50 dB

CH39 2480MHz



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47850 GHz	2.47850 GHz
Stop Frequency	2.48150 GHz	2.48150 GHz
Span	3.000 MHz	3.000 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	600	~ 600
Sweeptime	3.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	9 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.28 dB	0.50 dB

4.6 CONDUCTED SPURIOUS EMISSIONS AND BAND-EDGES

4.6.1 LIMITS

20dB below the highest emission level in the operating band (in 100kHz RBW).

4.6.2 TEST SETUP

Refer to section 4.3.2.

4.6.3 TEST EQUIPMENT USED

Refer to section 4.3.3.

4.6.4 TEST PROCEDURES

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

4.6.5 DEVIATIONS

No deviations from the standard.

4.6.6 EUT OPERATING CONDITIONS

EUT was operated according to manufacturer's specifications.

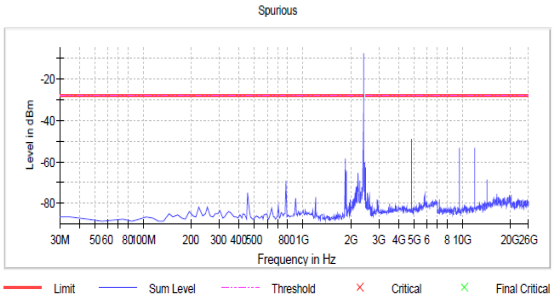
4.6.7 TEST RESULTS

Test date: 7/7/2022

CH 0

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2395.021008	-33.0	5.3	-27.6
4807.166065	-49.1	21.4	-27.6
12003.035168	-53.3	25.7	-27.6
9614.406396	-53.3	25.7	-27.6
9604.412133	-53.5	25.9	-27.6
12013.029431	-54.3	26.6	-27.6
1847.331933	-58.6	31.0	-27.6
1867.247899	-64.2	36.6	-27.6
2225.735294	-65.3	37.7	-27.6
2205.819328	-68.0	40.4	-27.6
4797.171802	-68.4	40.8	-27.6
14411.652465	-68.7	41.1	-27.6
2275.525210	-69.2	41.5	-27.6
781.827731	-69.2	41.6	-27.6
2385.063025	-70.6	42.9	-27.6



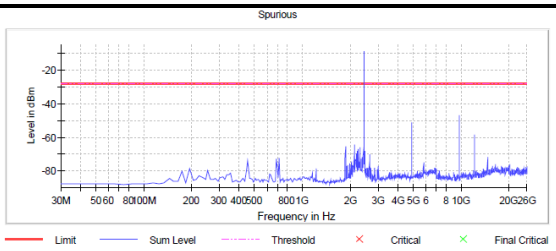
Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
Sweeptime	23.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	1.00 dB	1.00 dB
Run	3 / max. 40	max. 40
Stable	2 / 2	2
Max Stable Difference	0.00 dB	1.00 dB

CH 20

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
9764.320336	-46.9	18.3	-28.6
9774.314598	-47.0	18.4	-28.6
4887.120166	-51.1	22.5	-28.6
12212.914683	-58.7	30.2	-28.6
12202.920421	-60.3	31.7	-28.6
2126.155462	-64.8	36.2	-28.6
1867.247899	-65.5	36.9	-28.6
2315.357143	-66.1	37.6	-28.6
2245.651261	-66.9	38.3	-28.6
2116.197479	-68.3	39.7	-28.6
2215.777311	-68.4	39.8	-28.6
2225.735294	-69.0	40.4	-28.6
4877.125903	-69.4	40.8	-28.6
2185.903361	-69.8	41.2	-28.6
2255.609244	-69.8	41.3	-28.6



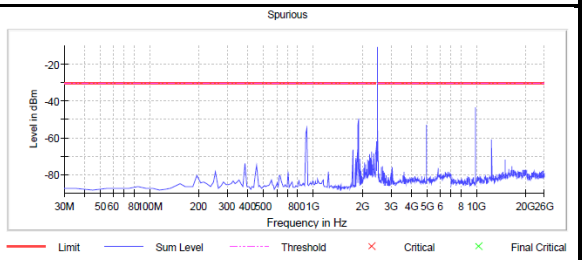
Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
Sweeptime	23.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	1.00 dB	1.00 dB
Run	8 / max. 40	max. 40
Stable	2 / 2	2
Max Stable Difference	0.00 dB	1.00 dB

CH 39

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
9924.228538	-43.6	13.1	-30.4
9914.234275	-44.8	14.4	-30.4
1897.121849	-49.7	19.3	-30.4
2488.497131	-52.8	22.4	-30.4
4957.080004	-52.9	22.5	-30.4
1887.163866	-53.5	23.0	-30.4
911.281513	-54.8	24.3	-30.4
901.323529	-57.5	27.1	-30.4
12402.805674	-61.2	30.8	-30.4
12392.811411	-61.3	30.9	-30.4
1867.247899	-65.8	35.4	-30.4
1747.752101	-66.4	35.9	-30.4
2275.525210	-67.6	37.2	-30.4
2355.189076	-68.6	38.2	-30.4
2225.735294	-69.1	38.7	-30.4



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
Sweeptime	23.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	1.00 dB	1.00 dB
Run	5 / max. 40	max. 40
Stable	2 / 2	2
Max Stable Difference	0.00 dB	1.00 dB

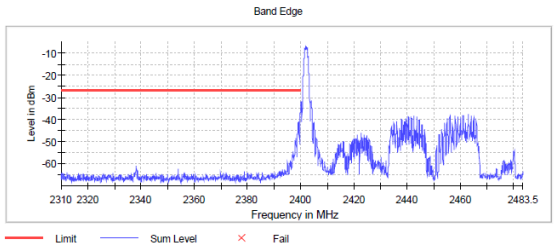
Conducted Band-edges:

Test date: 7/7/2022

CH0

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2399.925000	-34.1	7.2	-27.0	PASS
2399.875000	-34.5	7.5	-27.0	PASS
2399.975000	-34.5	7.5	-27.0	PASS
2399.825000	-36.8	9.8	-27.0	PASS
2399.775000	-37.0	10.1	-27.0	PASS
2399.725000	-37.8	10.8	-27.0	PASS
2399.675000	-40.7	13.7	-27.0	PASS
2399.125000	-41.3	14.3	-27.0	PASS
2399.075000	-41.6	14.6	-27.0	PASS
2399.275000	-41.8	14.8	-27.0	PASS
2399.225000	-42.2	15.3	-27.0	PASS
2399.175000	-42.5	15.5	-27.0	PASS
2399.325000	-42.9	15.9	-27.0	PASS
2398.975000	-43.1	16.1	-27.0	PASS
2398.925000	-43.2	16.2	-27.0	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Measurement 2

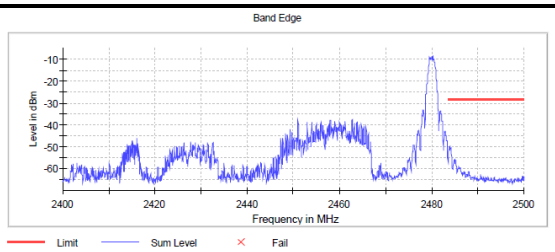
Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.29 dB	0.50 dB

CH39

Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2483.925000	-49.6	21.4	-28.2	PASS
2483.975000	-49.8	21.6	-28.2	PASS
2483.875000	-50.1	22.0	-28.2	PASS
2483.775000	-50.1	22.0	-28.2	PASS
2483.825000	-50.5	22.4	-28.2	PASS
2484.125000	-50.6	22.4	-28.2	PASS
2484.075000	-50.8	22.7	-28.2	PASS
2483.725000	-51.0	22.9	-28.2	PASS
2484.025000	-51.5	23.4	-28.2	PASS
2484.175000	-52.0	23.8	-28.2	PASS
2484.225000	-52.4	24.3	-28.2	PASS
2483.675000	-52.6	24.5	-28.2	PASS
2484.275000	-53.1	24.9	-28.2	PASS
2483.625000	-53.4	25.2	-28.2	PASS
2483.575000	-54.6	26.5	-28.2	PASS



Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	15 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.17 dB	0.50 dB

Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.48350 GHz	2.48350 GHz
Stop Frequency	2.50000 GHz	2.50000 GHz
Span	16.500 MHz	16.500 MHz

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	330	~ 330
Sweeptime	18.945 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	25 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.30 dB	0.50 dB

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the Test Setup Photos exhibit.

6 APPENDIX A – MODIFICATIONS

No modifications were made to the EUT during testing.

---END OF REPORT---