

Test Report C-3939F

Equipment Under Test:	116.495.00.1
Requirement(s):	FCC 15.247 15.207 RSS-247
Test Date(s):	12/2/2025 – 2/10/2026
Prepared for:	Geberit International AG Attn: Ziga Kovacic Schachenstrasse 77. 8645 Jona / Switzerland

Report Issued by: Mitchell Freund, EMC Test Engineer	
Signature: 	Date: 3/31/2026
Report Reviewed by: Adam Alger, Sr. Manager, EMC Laboratory	
Signature: 	Date: 3/31/2026
Report Constructed by: Mitchell Freund, Test Engineer	
Signature: 	Date: 3/31/3026

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Report: TR3939F		Model:GW-21-A
Quote: NBO-01-2024-006892-4		Serial:Engineering Sample

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Ezurio Test Services in Review

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



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



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

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1 TEST REPORT SUMMARY

During **12/2/2025 – 2/10/2026** the Equipment Under Test (EUT), **116.495.00.1**, as provided by **Geberit International AG** was tested to the following requirements:

FCC 15.247 | RSS-247 – Bluetooth Low Energy

Requirements	Description	Method	Compliant
15.247(d) 15.209 RSS-247 Clause 6.6 RSS-GEN Clause 8.10	Spurious Radiated Emissions in Restricted Bands 30-40000 MHz	ANSI C64.10	Yes
15.247(a)(2) RSS-247 Clause 6.3.1(a)	6 dB and 99% Occupied Bandwidth	ANSI C64.10	Yes
15.247(b)(3) RSS-247 Clause 6.3.2	RF Output Power	ANSI C64.10	Yes
15.247(d) RSS-247 Clause 6.6 RSS-GEN A1 Clause 8.9	Out-of-Band Emissions	ANSI C64.10	Yes
15.247(e) RSS-247 Clause 6.3.1(b)	Power Spectral Density	ANSI C64.10	Yes
2.1055(d) RSS-GEN 6.11	Frequency Stability	ANSI C64.10	Reported
15.207 RSS-GEN 8.8	AC Conducted Emissions	ANSI C63.10	Yes

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

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2 CLIENT INFORMATION

Company Name	Geberit International AG
Contact Person	Ziga Kovacic
Address	Schachenstrasse 77. 8645 Jona / Switzerland

2.1 Equipment Under Test (EUT) Information

The following information has been supplied by the client

Product Name	116.495.00.1
Model Number	GW-21-A
Serial Number	Engineering Sample
Date of Receipt	11/25/2025
Condition	Good
FCC ID	2A75ZGW21A
IC ID	35230-GW21A

2.2 Product Description

The Geberit Gateway is a network device containing BLE & Wi-Fi radios to power and communicated with plumbing devices and building management systems.

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 Additional Information

Input power 120 VAC @ 60 Hz

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2.6 EUT Programming

Equipment used for EUT programming (not part of the EUT)

HP EliteBook 840

Linksys E6900 V1.1 - Router

Teraterm Version 5.1 (Git 9ffa9f6b0)

2.7 Antenna Information

Range	2.4 GHz WiFi	U-NII 1-2	5.8 GHz WiFi/ U-NII-3 Band
Range (GHz)	2.4 - 2.5	5.125 – 5.725	5.725 – 5.875
Peak Gain	2.8 dBi	4.5 dBi	2.92 dBi

2.8 Test Channels

Channel	Frequency (MHz)	Data Rates
0	2402.0	GFSK (1 Mbps) QPSK (2 Mbps) 8DPSK (3 Mbps)
19	2440.0	
39	2480.0	

2.9 Power Tables and Reduced Video Bandwidth

Data Rate	Minimum Average VBW (Hz)	Power Setting
GFSK (1 Mbps)	300Hz	Power Setting 0 (max)
QPSK (2 Mbps)		
8DPSK (3 Mbps)		

3 REFERENCES

Publication	Edition	Date	AMD 1	AMD 2
FCC eCFR 47 Part 15		2026		
ANSI C63.10		2020	2024	
RSS-247	4	2025		
RSS-GEN	5	2018	2019	2021
KDB 558074 D01		2019		

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 $\pm$
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

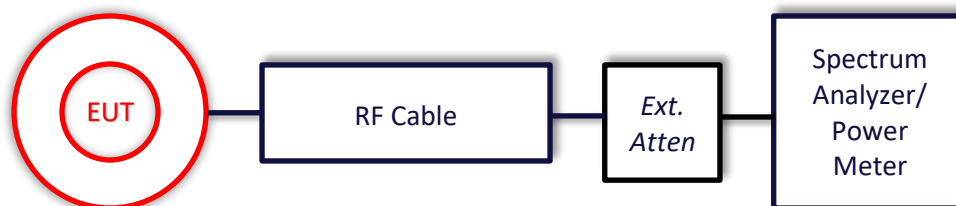
Parameter	ETSI U.C. $\pm$	U.C. $\pm$
Radio Frequency, from F0	1×10^{-7}	0.55×10^{-7}
Occupied Channel Bandwidth	5 %	2 %
RF conducted Power (Power Meter)	1.5 dB	1.2 dB
RF conducted emissions (Spectrum Analyzer)	3.0 dB	1.7 dB
All emissions, radiated	6.0 dB	5.3 dB
Temperature	1° C	0.65° C
Humidity	5 %	2.9 %
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



5.1.1 6dB and 99% Occupied Bandwidth

Operator	Mitchell Freund	QA	Dylan Rosenfeldt
Temperature	20.7°C	R.H. %	26.8%
Test Date	12/2/2025	Location	Cond Bench
Requirement	15.247(a)(2) RSS-247 Clause 6.3.1(a)	Method	ANSI C63.10 6.9

Limits: The minimum 6 dB bandwidth shall be at least 500 kHz

Test Parameters

Frequency	2400-2483.5 MHz	Setup	Connected via Antenna Port
RBW	99% OBW – 30kHz 6dB DTS – 100kHz	VBW	300 kHz
Detector(s)	Peak	Settings	Max Hold

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	388	1/28/2025	2/28/2026	Active Verification
EE 960087	Analyzer - Spectrum	Agilent	N9010A	MY53400296	6/1/2025	6/1/2026	Active Calibration

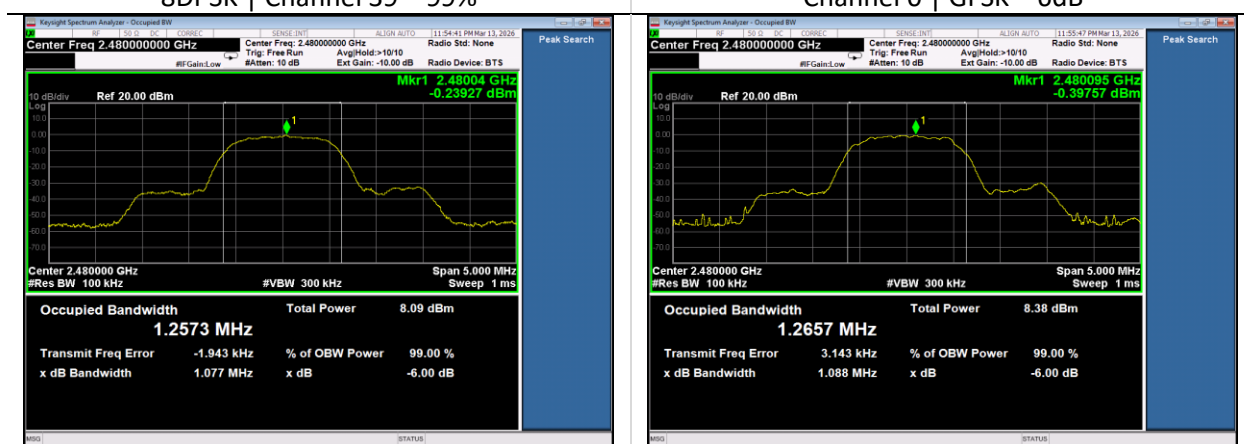
EUT Parameters

Input Power	120 VAC 60 Hz	Mode	BLE Tx
Frequency	2400-2483.5 MHz	Channel	0, 19, 39

Table

Rate	Channel	6dB BW (kHz)	99% BW (kHz)
GFSK (1Mbps)	0	503	926
	19	570	923
	39	551	930
QPSK (2Mbps)	0	1087	1228
	19	1084	1225
	39	1077	1222
8DPSK (3Mbps)	0	1092	1226
	19	1091	1227
	39	1088	1238

Plots



Channel 39 | QPSK - 6dB

Channel 39 | 8DPSK - 6dB

5.1.2 RF Output Power

Operator	Mitchell Freund	QA	Dylan Rosenfeldt
Temperature	20.7°C	R.H. %	26.8%
Test Date	12/2/2025	Location	Cond Bench
Requirement	15.247(b)(3) RSS-247 Clause 6.3.2	Method	ANSI C63.10 11.9.1

Limits: The maximum peak conducted output power of the intentional radiator shall not exceed 1 Watt.

Test Parameters

Frequency	2400-2483.5 MHz	Setup	Connected via Antenna Port
RBW	3 MHz	VBW	50 MHz
Detector(s)	Peak	Settings	Max Hold Span: 10 Hz

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	388	1/28/2025	2/28/2026	Active Verification
EE 960087	Analyzer - Spectrum	Agilent	N9010A	MY53400296	6/1/2025	6/1/2026	Active Calibration

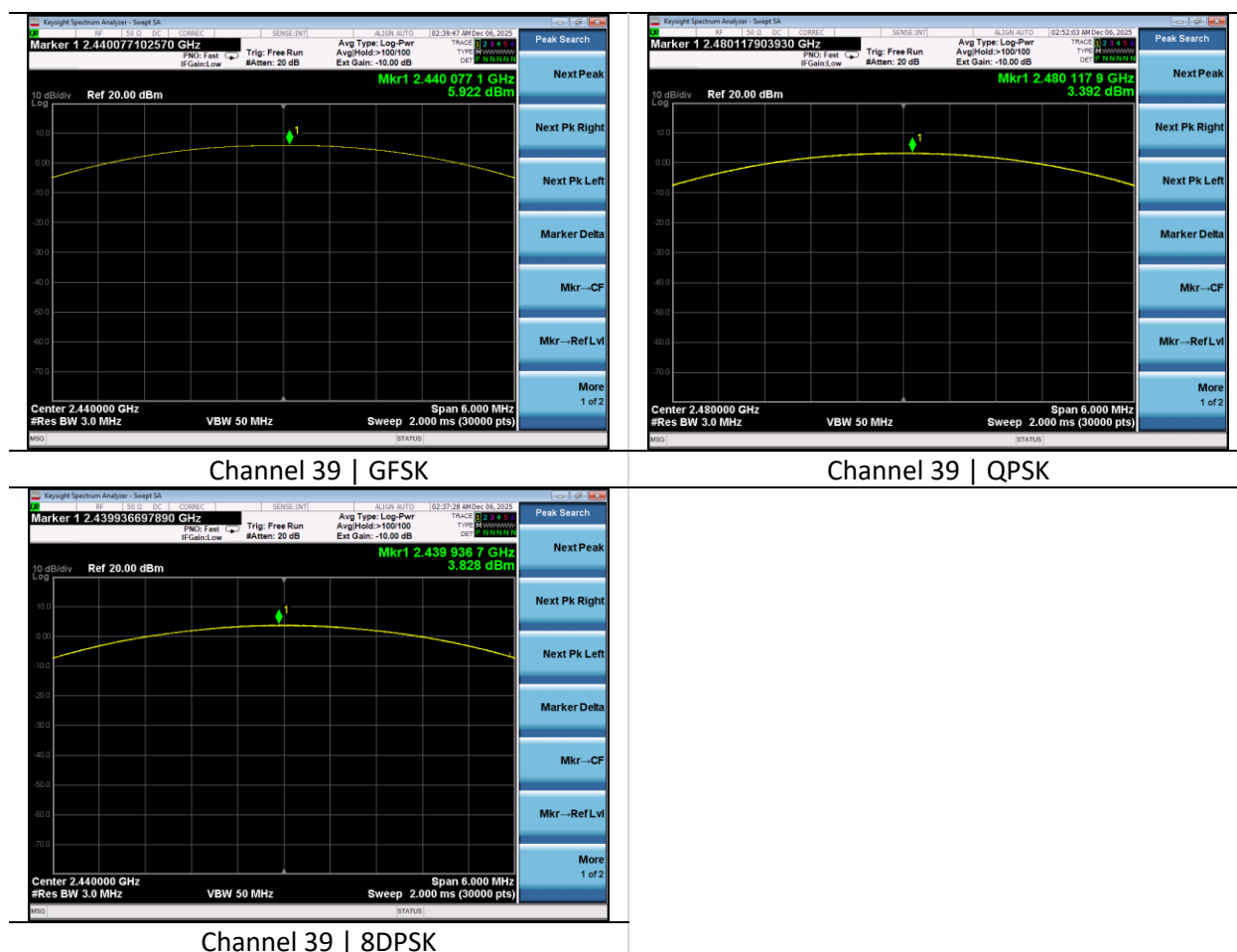
EUT Parameters

Input Power	120 VAC 60 Hz	Mode	BTC Tx
Frequency	2400-2483.5 MHz	Channel	0, 19, 39

Table

Rate	Channel	Peak Output Power (dBm)	Limit (dBm)	Margin (dB)
GFSK (1Mbps)	0	5.4	30	24.6
	19	5.9	30	24.1
	39	5.4	30	24.6
QPSK (2Mbps)	0	3.0	30	27.0
	19	3.4	30	26.6
	39	3.4	30	26.6
8DPSK (3Mbps)	0	3.3	30	26.7
	19	3.8	30	26.2
	39	3.6	30	26.4

Plots



5.1.3 Power Spectral Density

Operator	Mitchell Freund	QA	Adam Alger
Temperature	20.8°C	R.H. %	21.60%
Test Date	12/5/2025	Location	Cond. Bench
Requirement	15.247(e) RSS-247 Clause 6.3.1(b)	Method	ANSI C63.10 11.10.2

Limits: Power spectral density shall not be greater than 8 dBm in any 3 kHz band.

Test Parameters

Frequency	2400-2483.5 MHz	Detector(s)	Peak
RBW	100 kHz	VBW	300 kHz
Notes	The same method of determining the conducted output power shall be used to determine the power spectral density		

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	388	1/28/2025	2/28/2026	Active Verification
EE 960087	Analyzer - Spectrum	Agilent	N9010A	MY53400296	6/1/2025	6/1/2026	Active Calibration

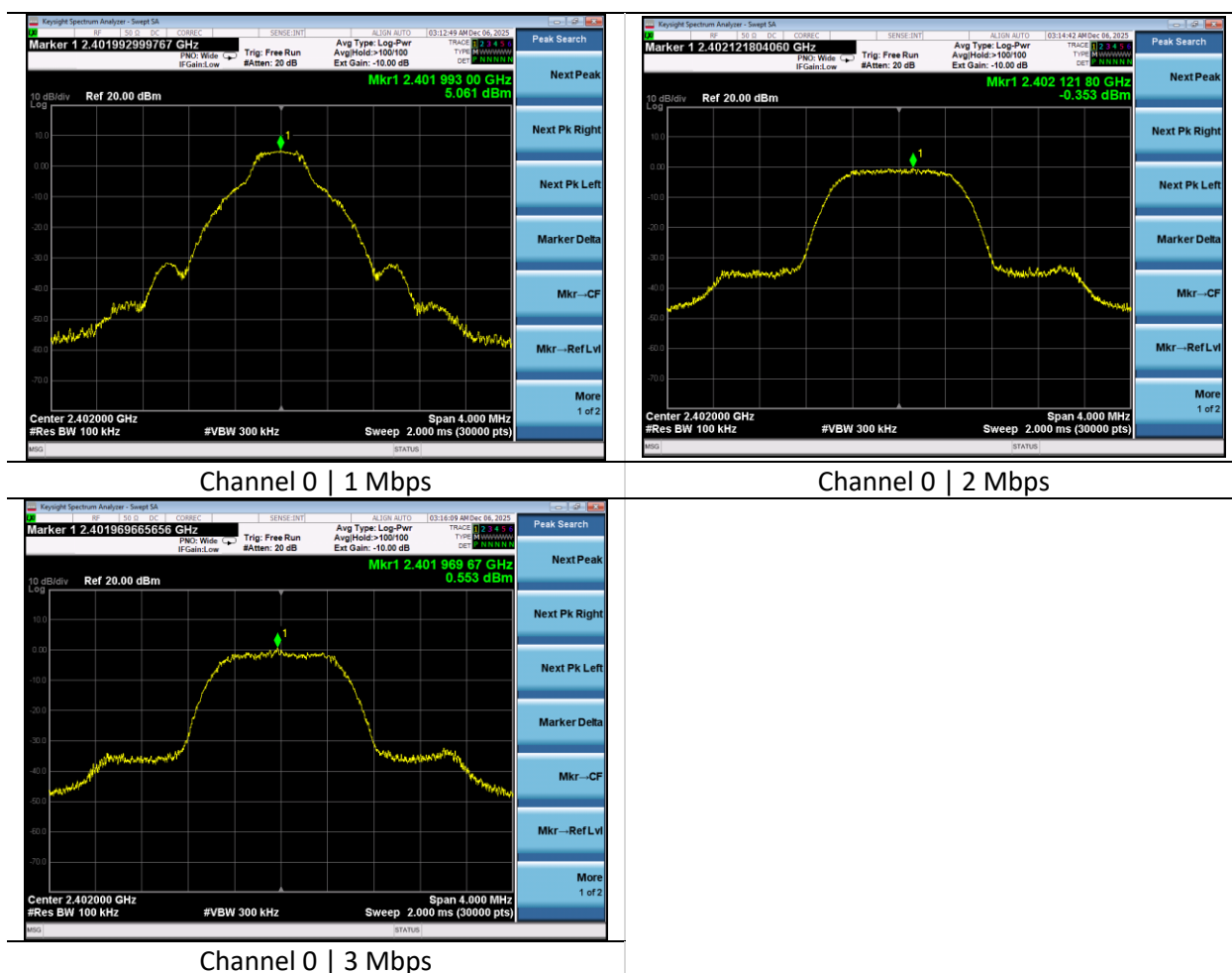
EUT Parameters

Input Power	120 VAC 60 Hz	Mode	BLE Tx
Frequency	2400-2483.5 MHz	Channel	37, 17, 39

Table

Rate	Frequency (MHz)	Channel	Peak PSD (dBm/100 kHz)	Limit (dBm/3 kHz)	Margin (dB)
1M	2402.0	0	5.1	8	2.9
2M	2402.0	0	-0.4	8	8.4
3M	2402.0	0	0.6	8	7.4

Plots



5.1.4 Out-of-Band Emissions

Operator	Mitchell Freund	QA	Adam Alger
Temperature	21.3°C	R.H. %	21.68%
Test Date	12/9/2025	Location	Cond. Bench
Requirement	15.247(d) RSS-247 Clause 6.6 RSS-GEN A1 Clause 8.9	Method	ANSI C63.10 11.10.2

Limits: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement provided the transmitter demonstrates compliance with the peak conducted power limits.

Reference Level (Worse Case PSD):

Channel 0 | 1 Mbps | 5.1 dBm

5.1 dBm – 20 dB = -14.9

Test Parameters

Frequency	30-40000 MHz	Setup	Connected via Antenna Port
RBW	100 kHz	VBW	300 kHz
Detector(s)	Peak and Average (RMS)		

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	388	1/28/2025	2/28/2026	Active Verification
EE 960087	Analyzer - Spectrum	Agilent	N9010A	MY53400296	6/1/2025	6/1/2026	Active Calibration

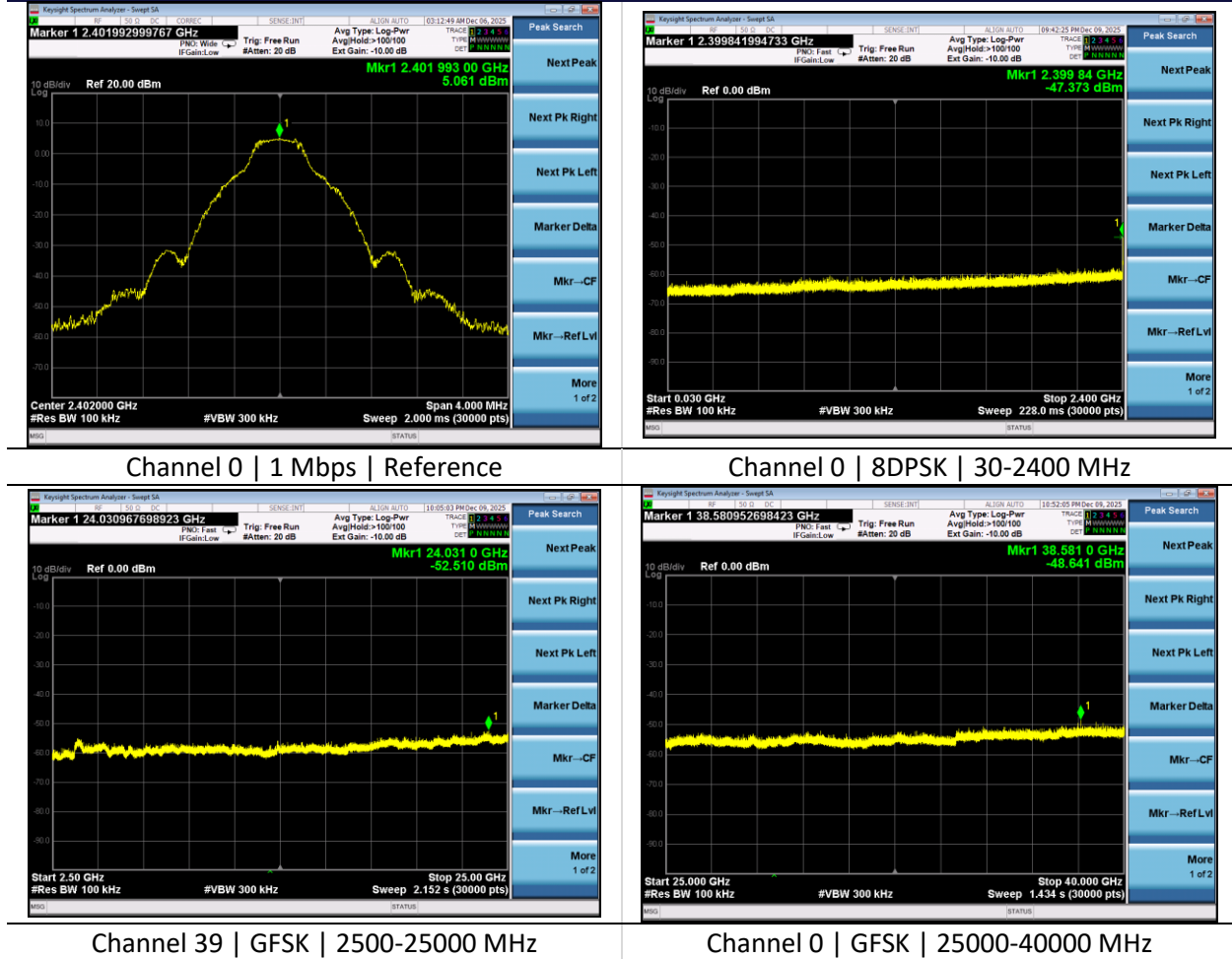
EUT Parameters

Input Power	120 VAC 60 Hz	Mode	BTC Tx
Frequency	2400-2483.5 MHz	Channel	0, 19, 39

Table

Channel	Rate	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Margin (dB)
0	GFSK (1Mbps)	2399.9	-54.1	-14.9	39.2
	QPSK (2Mbps)	2400.0	-56.5	-14.9	41.6
	8DPSK (3Mbps)	2399.8	-47.4	-14.9	32.4
39	GFSK (1Mbps)	2260.7	-57.9	-14.9	42.9
	QPSK (2Mbps)	2290.0	-58.8	-14.9	43.9
	8DPSK (3Mbps)	2371.6	-57.5	-14.9	42.5
	GFSK (1Mbps)	24031.0	-52.5	-14.9	37.6
	QPSK (2Mbps)	23858.5	-53.0	-14.9	38.0
	8DPSK (3Mbps)	23686.0	-53.2	-14.9	38.2
0	GFSK (1Mbps)	24181.7	-52.9	-14.9	38.0
	QPSK (2Mbps)	23926.0	-53.3	-14.9	38.4
	8DPSK (3Mbps)	24041.5	-52.5	-14.9	37.5
	GFSK (1Mbps)	38581.0	-48.6	-14.9	33.7
	QPSK (2Mbps)	37933.9	-49.3	-14.9	34.4
	8DPSK (3Mbps)	38678.5	-49.5	-14.9	34.5
39	GFSK (1Mbps)	39364.0	-49.4	-14.9	34.5
	QPSK (2Mbps)	38765.5	-49.2	-14.9	34.3
	8DPSK (3Mbps)	38482.9	-49.4	-14.9	34.5

Plots



5.1.5 Frequency Stability

Operator	Mitchell Freund	QA	Dylan Rosenfeldt
Temperature	22.9°C	R.H. %	29.8%
Test Date	1/13/2025	Location	Cond. Bench
Requirement	15.407(g) RSS-GEN Clause 6.11	Method	ANSI C63.10.6.8

Test Parameters

Frequency	2402-2483.5 MHz	Setup	Connected via Antenna Port
Detector(s)	Peak		
Settings	Max Hold		

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960173	Cable	A.H. Systems, Inc.	SAC-26G-1	388	1/28/2025	2/28/2026	Active Verification
EE 960087	Analyzer - Spectrum	Agilent	N9010A	MY53400296	6/1/2025	6/1/2026	Active Calibration

EUT Parameters

Input Power	120 VAC 60 Hz	Mode	BTC Tx
Frequency	2400-2483.5 MHz	Channel	0, 19, 39

Table

Channel	Voltage	Frequency (Hz)
0	102	2401994467
	120	2402001644
	138	2402002414
19	102	2411984477
	120	2439965854
	138	2439984768
39	102	2479976844
	120	2479998295
	138	2479974154

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	Mitchell Freund, Marcos Pineda, Cheikhna Ouattara	QA	Dylan Rosenfeldt, Adam Alger, Anthony Smith
Temperature	24.1°C / 24.2°C	R.H. %	26.5% / 35.5%
Test Date	12/5/2025 -1/21/2026	Location	Chamber 3 and 5
Requirement	15.247(d) 15.209 RSS-247 Clause 6.6 RSS-GEN Clause 8.10	Method	ANSI C63.10

15.209 Limits:

Frequency (MHz)	Quasi-Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Peak Limit (dBμV/m)
30-88	40.0	-	-
88-216	43.5	-	-
216-960	46.0	-	-
960-1000	54.0	-	-
1000-40000	-	54.0	74.0

Test Parameters

Frequency	30-40000 MHz	Distance	3 Meters
Detector(s)	Peak Trace Peak, QP, Average	Table height	150 cm
RBW	<1000 MHz – 120 kHz >1000 – 1 MHz	VBW	<1000 – 1.2 MHz >1000 – 3 MHz

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
LSC-300	Cable	Chamber 3 Emissions	-	-	1/24/2025	2/24/2026	Active Verification
LSC-500	Cable	Chamber 5 Emissions	-	-	1/27/2025	2/27/2026	Active Verification
AA 960220	Cable	A.H. Systems, Inc.	SAC-26G-6	552	1/28/2025	1/28/2026	Active Verification
AA 960162	Cable	MegaPhase	EM2-S1S1-120	51503501001	1/28/2025	1/28/2026	Active Verification
AA 960194	Antenna - Biconical	A.H. Systems, Inc.	SAS-540	780	10/9/2025	10/9/2026	Active Calibration
AA 960163	Antenna - Log Periodic	A.H. Systems, Inc.	SAS-512-2	500	10/8/2025	10/8/2026	Active Calibration
AA 960007	Antenna - Double Ridge Horn	EMCO	3115	9311-4138	9/24/2025	9/24/2026	Active Calibration
AA 960081	Antenna - Double Ridge Horn	EMCO	3115	6907	10/8/2025	10/8/2026	Active Calibration
AA 960174	Antenna - Small Horn	ETS Lindgren	3116C-PA	00206880	10/7/2025	10/7/2026	Active Calibration
AA 960153	Filter - High Pass 2.4 GHz	KWM	HPF-L-14186	7272-04	4/3/2025	4/3/2026	Active Calibration
AA 960154	Filter - High Pass 2.4 GHz	KWM	HPF-L-14186	7272-02	4/3/2025	4/3/2026	Active Calibration
AA 960209	Antenna - Low Noise Amplifier	Mini-Circuits	ZVA-213X-S+	037101808	9/24/2025	9/24/2026	Active Calibration
AA 960194	Antenna - Biconical	A.H. Systems, Inc.	SAS-540	780	10/9/2025	10/9/2026	Active Calibration
EE 960087	Analyzer - Spectrum	Agilent	N9010A	MY53400296	6/1/2025	6/1/2026	Active Calibration
EE 960085	Analyzer - EMI Receiver	Agilent	N9038A	MY51210148	4/3/2025	4/3/2026	Active Calibration
EE 960203	Analyzer - EMI Receiver	Keysight	N9038A	MY56400072	4/2/2025	4/2/2026	Active Calibration

EUT Parameters

Input Power	120 VAC 60 Hz	Mode	BLE Tx
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Under 1 GHz Table

Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Quasi-Peak Reading (dBμV/m)	Quasi-Peak Limit (dBμV/m)	Quasi-Peak Margin (dB)	Note
971.4	H	150	0	30.2	54.0	36.4	Mid Channel
877.4	V	100	0	30.0	46.0	35.7	Mid Channel
198.7	H	170	280	24.9	43.5	31.1	Mid Channel
131.8	H	204	150	23.6	43.5	30.3	Mid Channel
162.4	V	100	120	28.0	43.5	34.7	Mid Channel
89.9	V	100	0	24.0	43.5	30.3	Mid Channel

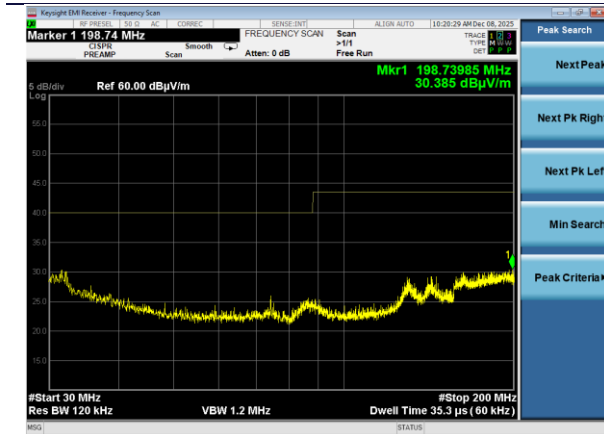
Above 1 GHz Table - Peak

Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBμV/m)	Peak Limit (dBμV/m)	Peak Margin (dB)	Note
17731.0	H	100	360	55.6	74.0	18.5	Mid Channel
14148.0	H	100	0	52.0	74.0	22.1	Mid Channel
17824.0	H	100	0	55.1	74.0	18.9	Mid Channel
17851.0	V	100	280	55.2	74.0	18.8	Mid Channel
14237.0	V	100	360	51.2	74.0	22.8	Mid Channel
10081.0	V	100	360	46.3	74.0	27.7	Mid Channel
3896.5	H	150	283	53.7	74.0	20.3	High Channel
3595.7	V	150	0	54.3	74.0	19.7	High Channel
2062.6	V	150	0	47.9	74.0	26.1	Low Channel
2442.6	H	150	0	48.0	74.0	26.0	Low Channel
2379.5	H	161	230	49.5	74.0	24.5	Low Channel
2379.5	V	156	242	49.5	74.0	24.5	Low Channel
2364.1	V	150	230	49.3	74.0	24.7	Low Channel
2329.7	H	150	223	48.6	74.0	25.4	Low Channel
2362.5	H	150	227	49.0	74.0	25.0	Low Channel
2388.6	V	162	214	48.8	74.0	25.2	Low Channel
2483.6	V	150	258	58.5	74.0	15.5	High Channel
2483.5	H	150	230	51.0	74.0	23.0	High Channel
2493.3	H	150	216	49.4	74.0	24.6	High Channel
2483.8	V	173	282	50.9	74.0	23.1	High Channel
2483.6	V	150	224	53.3	74.0	20.7	High Channel
2488.8	H	160	220	49.6	74.0	24.4	High Channel

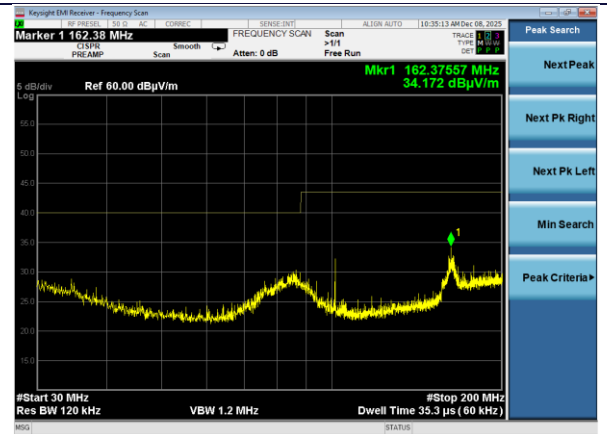
Above 1 GHz Table - Average

Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Average Reading (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Note
17728.0	H	280	300	43.2	54.0	10.8	Mid Channel
17828.0	H	300	150	42.9	54.0	11.1	Mid Channel
14152.0	H	180	165	39.1	54.0	14.9	Mid Channel
17846.0	V	110	360	43.2	54.0	10.9	Mid Channel
14232.0	V	100	290	39.2	54.0	14.8	Mid Channel
10076.0	V	100	360	32.3	54.0	21.7	Mid Channel
3887.9	H	150	283	40.9	54.0	13.1	High Channel
3888.6	V	150	0	40.8	54.0	13.2	High Channel
2308.6	V	150	0	34.5	54.0	19.5	Low Channel
2304.6	H	150	0	34.4	54.0	19.6	Low Channel
2387.3	H	161	230	35.2	54.0	18.8	Low Channel
2383.7	V	158	242	35.2	54.0	18.8	Low Channel
2389.0	V	150	230	35.2	54.0	18.8	Low Channel
2387.5	H	150	223	35.2	54.0	18.8	Low Channel
2386.4	H	150	227	35.2	54.0	18.8	Low Channel
2387.6	V	162	214	35.2	54.0	18.8	Low Channel
2483.5	V	150	258	38.5	54.0	15.5	High Channel
2483.5	H	150	230	36.0	54.0	18.0	High Channel
2498.4	H	150	216	35.5	54.0	18.5	High Channel
2483.5	V	173	282	36.7	54.0	17.3	High Channel
2483.5	V	150	224	39.1	54.0	14.9	High Channel
2483.6	H	160	220	36.0	54.0	18.0	High Channel

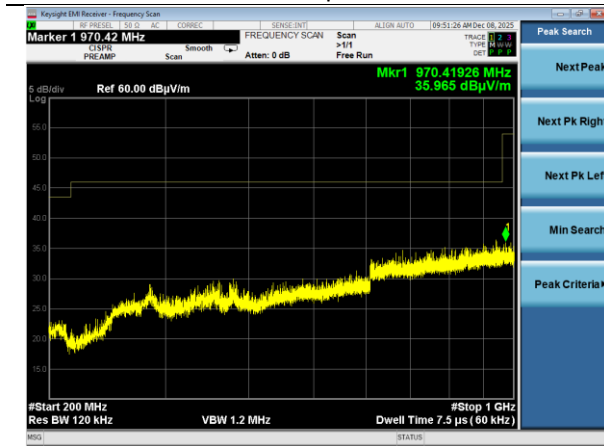
Plots



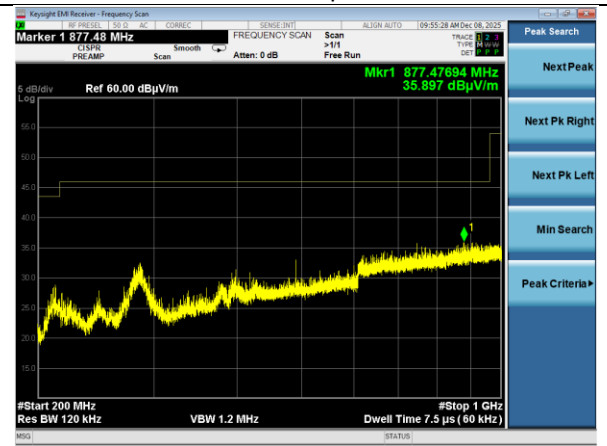
Mid Channel | Channel 19 | 1 Mbps
30-200 MHz | Horizontal



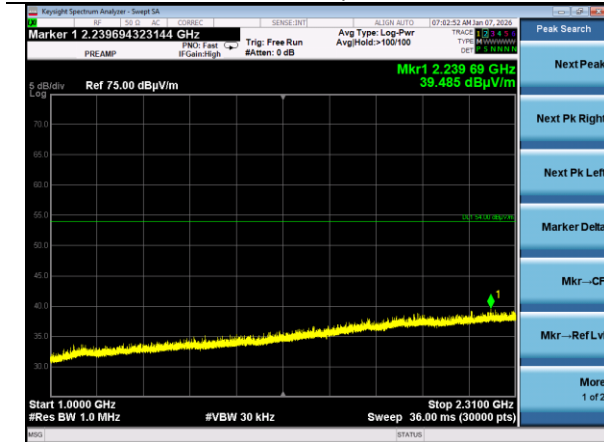
Mid Channel | Channel 19 | 1 Mbps
30-200 MHz | Vertical



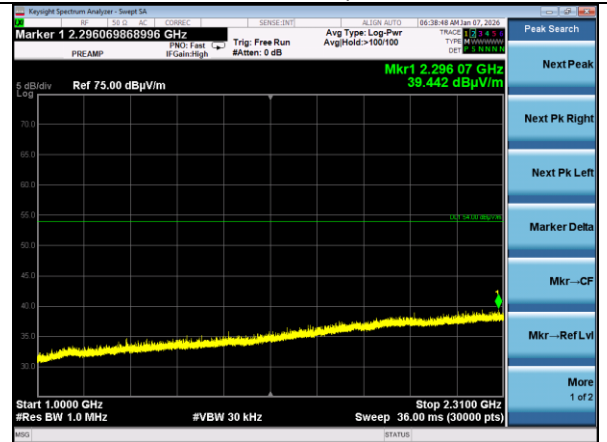
Mid Channel | Channel 19 | 1 Mbps
200-1000 MHz | Horizontal



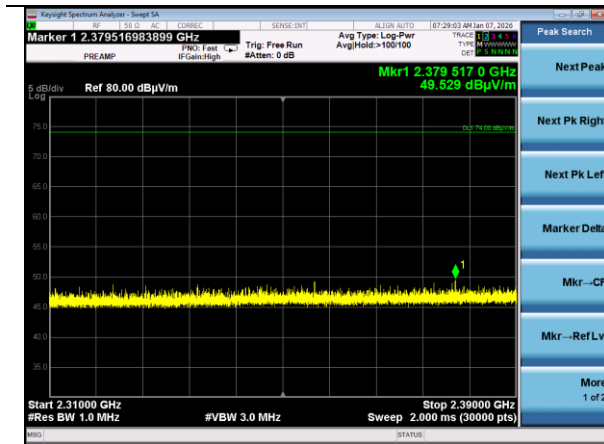
Mid Channel | Channel 19 | 1 Mbps
200-1000 MHz | Vertical



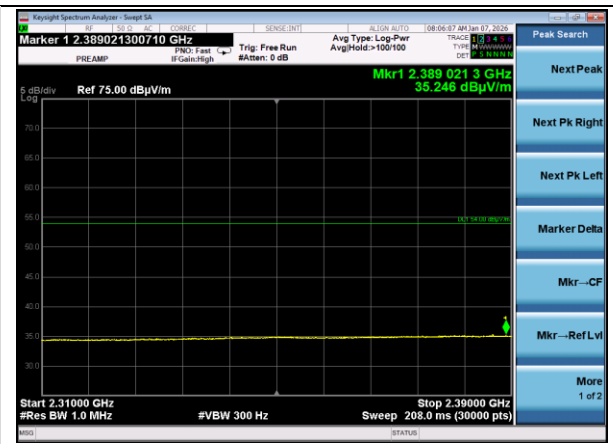
Low Channel | Channel 0 | 1 Mbps
1000-2310 MHz | Horizontal



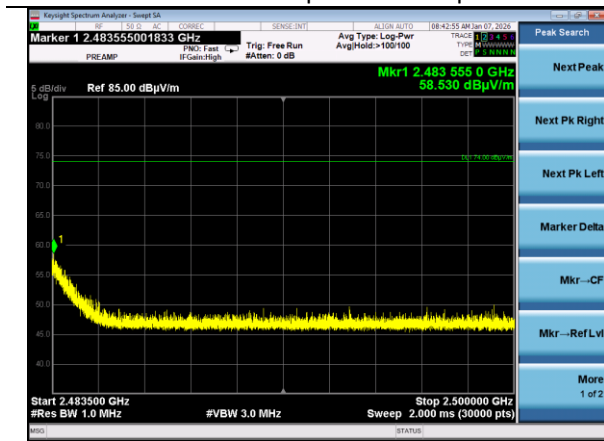
Low Channel | Channel 0 | 1 Mbps
1000-2310 MHz | Vertical



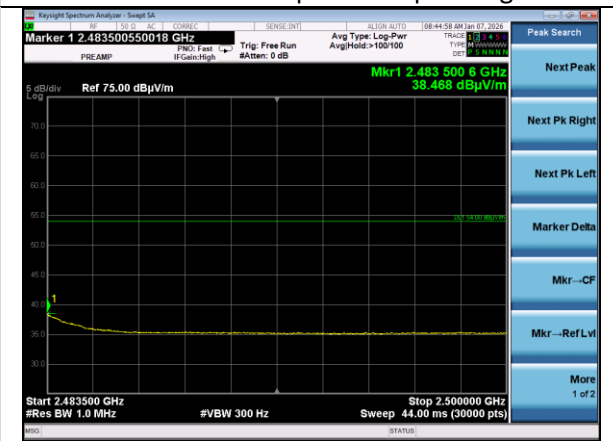
Low Channel | Channel 0 | 1 Mbps
2310-2390 MHz | Horizontal | Peak



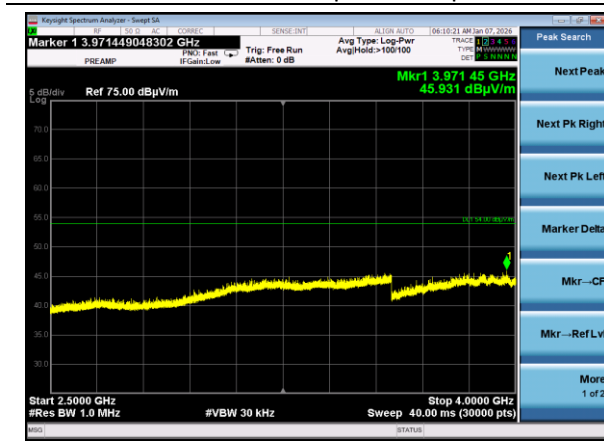
Low Channel | Channel 0 | 2 Mbps
2310-2390 MHz | Vertical | Average



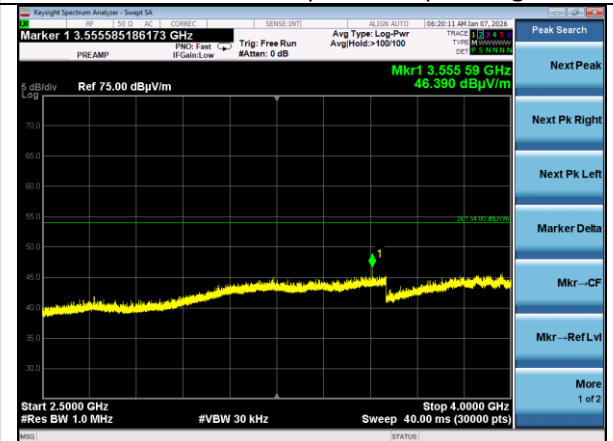
High Channel | Channel 39 | 3 Mbps
2483.5-2500 MHz | Vertical | Peak



High Channel | Channel 39 | 3 Mbps
2483.5-2500 MHz | Vertical | Average

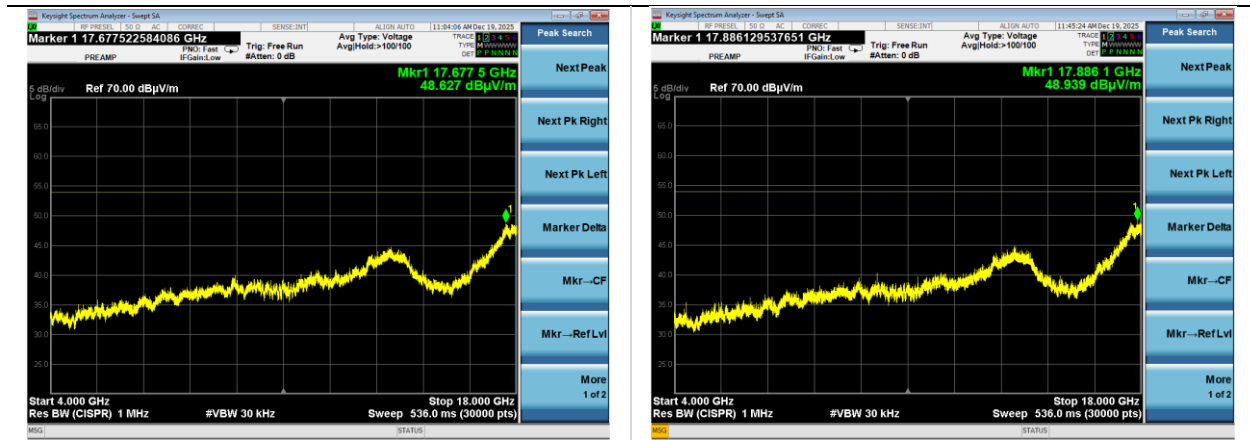


High Channel | Channel 39 | 1 Mbps
2500-4000 MHz | Horizontal



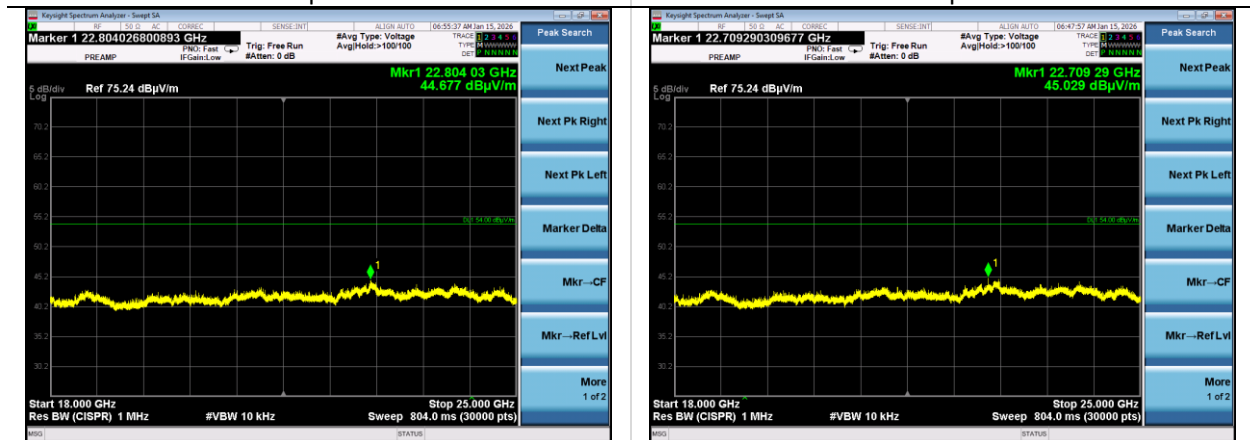
High Channel | Channel 39 | 1 Mbps
2500-4000 MHz | Vertical

Company: Geberit International AG		Name: 116.495.00.1
Report: TR3939F	Page 28 of 33	Model: GW-21-A
Quote: NBO-01-2024-006892-4		Serial: Engineering Sample



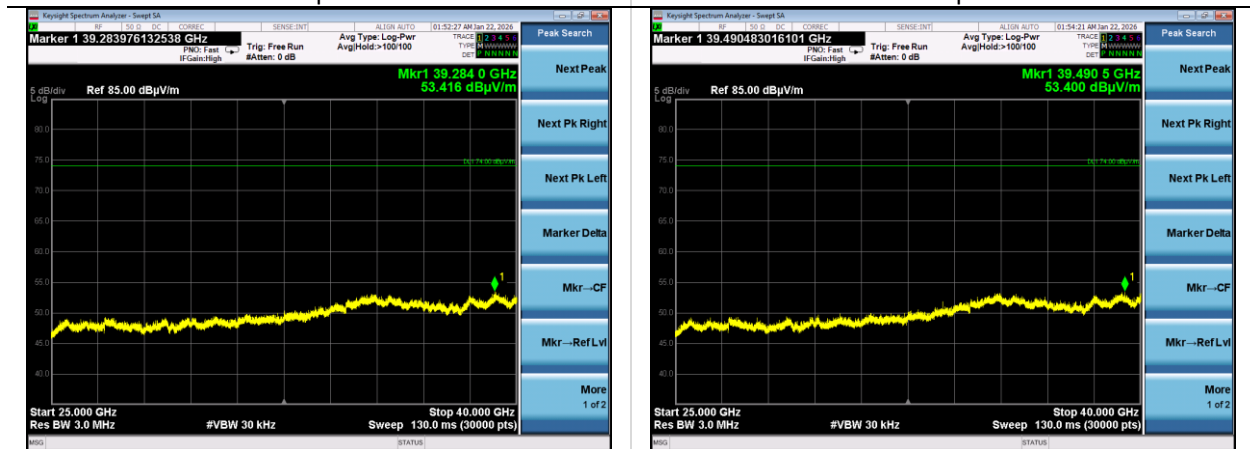
Mid Channel | Channel 19 | 1 Mbps
4-18 GHz | Horizontal

Mid Channel | Channel 19 | 1 Mbps
4-18 GHz | Vertical



Mid Channel | Channel 19 | 1 Mbps
18-25 GHz | Horizontal

Mid Channel | Channel 19 | 1 Mbps
18-25 GHz | Vertical



Mid Channel | Channel 19 | 1 Mbps
25-40 GHz | Horizontal

Mid Channel | Channel 19 | 1 Mbps
25-40 GHz | Vertical

5.3 AC Mains Conducted Emissions

A line impedance stabilization network (LISN) or artificial mains network (AMN) allows the emissions of the power supply conductors to be measured while isolating the EUT from the supply mains.

Description of Measurement

The AMN, cable, and other necessary measurement system correction factors are loaded onto the EMI receiver when the measurements are performed. The data is gathered and reported as the corrected values.

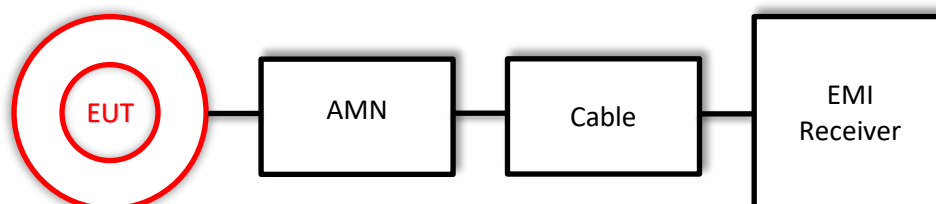
Maximum emissions are determined with a peak max hold trace then measurements at a selection of the highest points are made with quasi-peak and average detectors. Results are recorded and compared to limit for each line. (e.g. line and neutral)

Example Calculations

Measurement (dBμV) + Cable factor (dB) + Other (dB) = Corrected Reading (dBμV)

Margin (dB) = Limit (dBμV) - Corrected Reading (dBμV)

Block Diagram



5.3.1 AC Mains Conducted Emissions

Operator	Mitchell Freund	QA	Adam Alger
Temperature	20.7°C	R.H. %	39.9%
Test Date	2/10/2026	Location	Bench
Requirement	15.207	Method	ANSI C63.10

15.207 Limits:

Frequency	Quasi-Peak Limit (dBμV)	Average Limit (dBμV)
0.15 – 0.50	66.0-56.0*	56.0-46.0*
0.50 – 5	56.0	46.0
5 - 30	60.0	50.0

**Decreases with the logarithm of the frequency.*

Test Parameters

Frequency	0.15-30 MHz	Distance	40 cm from wall 80 cm from LISN
Detector(s)	Peak, QP, Average	Table height	80 cm
RBW	9kHz	VBW	62kHz

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
EE 960088	Analyzer - EMI Receiver	Agilent	N9038A	MY51210138	4/1/2025	4/1/2026	Active Calibration
EE 960089	LISN	COM-POWER	LI-215A	191943	3/31/2025	3/31/2026	Active Calibration
LSC-214	Cable	Micro-Coax	UFB311A-0-1440-70U70U	64639 224071-006	1/29/2025	2/29/2026	Active Verification

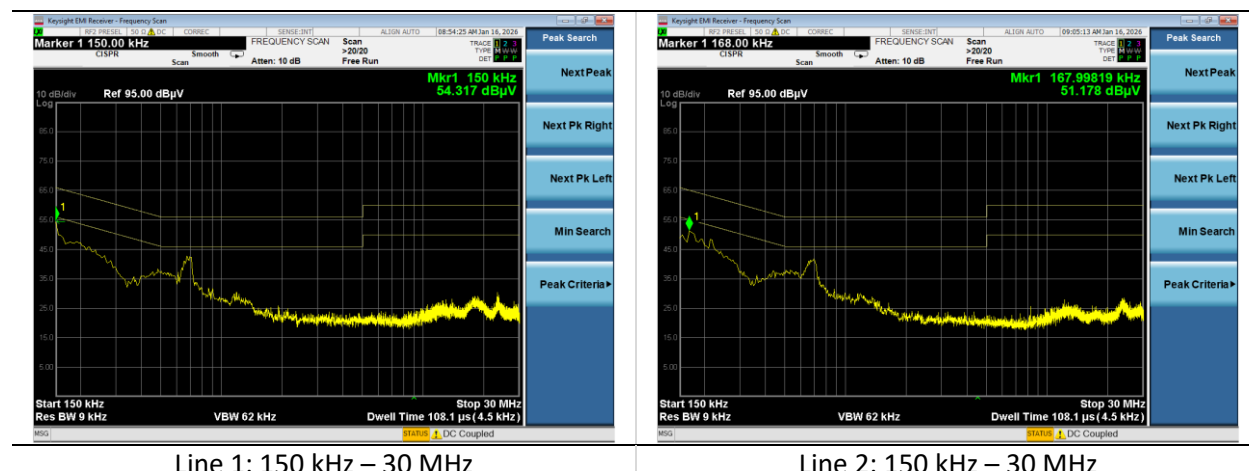
EUT Parameters

Input Power	120 VAC @ 60 Hz	Mode	Tx
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Table

Line	Frequency (MHz)	Peak Reading (dBμV)	Quasi-Peak Reading (dBμV)	Quasi-Peak Limit (dBμV)	Quasi-Peak Margin (dB)	Average Reading (dBμV)	Average Limit (dBμV)	Average Margin (dB)
L1	0.150	58.3	52.6	66.0	13.4	44.5	56.0	11.5
L1	0.176	55.4	49.4	64.6	15.3	44.6	54.6	10.0
L1	0.707	45.6	41.4	56.0	14.6	33.8	46.0	12.2
L2	0.150	62.0	51.8	66.0	14.2	44.6	56.0	11.4
L2	0.204	54.7	45.8	63.5	17.6	42.6	53.5	10.9
L2	0.707	45.3	41.9	56.0	14.1	33.6	46.0	12.4

Plots



6 REVISION HISTORY

Version	Date	Notes	Person
0.0	2/18/2026	Initial Draft	Mitchell Freund
1.0	3/31/2026	Revised Draft	Mitchell Freund

END OF REPORT