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MEASUREMENT REPORT
FCC Part 15C Wireless Power Transfer

Applicant Name:
Samsung Electronics Co., Ltd.
129, Samsung-ro,
Yeongtong-gu, Suwon-si
Gyeonggi-do, 16677, Korea

Date of Testing:
9/2/2025 - 10/31/2025
Test Report Issue Date:
12/11/2025
Test Site/Location:
ELEMENT Lab. Columbia, MD, USA
Test Report Serial No.:
1M2508270082-17.A3L

FCC ID:	**A3LSMS948JPN**
APPLICANT:	**Samsung Electronics Co., Ltd.**

Application Type:	Certification
Model:	SC-53G
Additional Model(s):	SCG37
EUT Type:	Portable Handset
Frequency Range:	110 – 148kHz, 0.53 – 0.60MHz
FCC Rule Part:	Part 15 Subpart C
FCC Classification:	Part 15 Low Power Transmitter Below 1705kHz (DCD)
Test Procedure(s):	ANSI C63.10:2020, KDB 484596 D01 v03

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10:2020. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

RJ Ortanez
Executive Vice President

ACCREDITED
CERT #2041.01

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TEST REPORT REVISION HISTORY

Rev. No.	Report S/N	Description	Issue Date
-	1M2508270082-17.A3L	Initial Release	12/11/2025

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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 Element Test Location

Measurements were conducted at the Element laboratory(ies) indicated in Section 1.3 below. All measurement facilities are compliant with the test site requirements specified in ANSI C63.4:2014 and KDB 414788 D01 v01r01.

1.3 Test Facility / Accreditations

Measurements were performed at Element Engineering lab located in Columbia, MD 21046, U.S.A.

- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.

- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).

- Element Washington DC LLC facility is a registered test laboratory with the site description on file with ISED (Wireless Test Lab number 2451B) and FCC (Designation Number US1113).

- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Recognition Agreements (MRAs).

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMS948JPN**. The test data contained in this report pertains only to the emissions generated by the IC of the EUT that receive or transmit AC power signal through magnetic induction (MI) or magnetic resonance (MR) wirelessly.

The authorization for this device utilize data referencing from FCC ID: A3LSMS948U as permitted per KDB 484596 D01 v03. Data referencing data test results are included in Appendix A of this report.

Test Device Serial No.: 0542M, 0693M

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850 WCDMA/HSPA, Multi-band LTE, Multi-band 5G NR (FR1), 802.11b/g/n/ac/ax/be WLAN, 802.11a/n/ac/ax/be UNII (5GHz and 6GHz), Bluetooth (1x, EDR, LE), NFC, Wireless Power Transfer, UWB

2.3 Test Configuration

The EUT can be configured to receive or transmit an AC power signal through magnetic induction (MI) or magnetic resonance (MR). The operating frequency range is 110 – 148kHz and can produce a maximum power of 9W.

During wireless charging testing, one of the devices is configured to be AC power transmitter, and the other is configured to be receiver. The charging area of both devices are aligned to provide for maximum power transfer.

The EUT is used with a stylus device (S-PEN). The EUT operates with the S-PEN in there different inductive coupling modes of S-PEN motion detection (Hover, Click, and Eraser). The EUT was set to continuously transmit to the SPEN in each of the three modes. Data is additionally included for this condition.

The EUT was tested in accordance with the guidance of ANSI C63.10:2020. See Sections 3.2 and 3.3 of this test report for a description of the AC line conducted and radiated emissions test setups, respectively.

2.4 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

2.5 Software and Firmware

The test was conducted with software/firmware version S948USQU0AYIB installed on the EUT.

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3.0 DESCRIPTION OF TEST

3.1 Evaluation Procedure

The measurement procedures described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10:2020) was used in the measurement of the EUT.

Deviation from measurement procedure…….....None

3.2 AC Line Conducted Emissions

The line-conducted facility is located inside a 10'x16'x9' shielded enclosure. The shielded enclosure is manufactured by ETS Lindgren RF Enclosures. The shielding effectiveness of the shielded room is in accordance with MIL-Std-285 or NSA 65-5. A 1m x 1.5m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50μH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. The external power line filter is an ETS Lindgren Model LPRX-4X30 (100dB Attenuation, 14kHz-18GHz) and the two EMI/RFI filters are ETS Lindgren Model LRW-2030-S1 (100dB Minimum Insertion Loss, 14kHz – 10GHz). These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and this supply line(s) will be connected to the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference groundplane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The spectrum was scanned from 150kHz to 30MHz with a spectrum analyzer. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 10kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions is used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

Line conducted emissions test results are shown in Section 7.4. Automated test software was used to perform the AC line conducted emissions testing.

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3.3 Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. An 80cm tall test table made of Styrodur is placed on top of the turn table. For measurements above 1GHz, an additional Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33 depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up was placed on top of the 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, mode of operation, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions.

3.4 Environmental Conditions

The temperature is controlled within range of 15°C to 35°C. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

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4.0 ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:
"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

• The antenna of the EUT are **permanently attached.**

• This unit was tested with its standard battery.

Conclusion:
The EUT complies with the requirement of §15.203.

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5.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10:2020. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (±dB)
Line Conducted Disturbance	3.09
Radiated Disturbance (<1GHz)	4.98

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6.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	NMLC-2	Line Conducted Emissions Cable (NM)	3/25/2025	Annual	3/25/2026	NMLC-2
-	AP2-001	EMC Cable and Switch System	2/25/2025	Annual	2/25/2026	AP2-001
-	AP2-002	EMC Cable and Switch System	2/25/2025	Annual	2/25/2026	AP2-002
Agilent	N9038A	MXE EMI Receiver	9/16/2024	Annual	11/22/2025	MY51210133
Keysight Technologies	N9030A	3Hz-44GHz PXA Signal Analyzer	9/15/2025	Annual	9/15/2026	MY49430494
Rohde & Schwarz	HFH2-Z2E	Loop	6/4/2024	Biennial	6/4/2026	100854
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	9/11/2024	Biennial	9/11/2026	A051107

Table 6-1. Annual Test Equipment Calibration Schedule

Component	Serial Number
Flex Cable	P2A-0001
Micro-Coax Utilfex Cable UFB311A-Q-3346-50U50U MFR 64639	231978-003
Chamber Passthrough	CP4/X12
Micro-Coax Utilfex Cable UFB311A-1-0629-50U50U MFR 64639	231986-003
Micro-Coax Utiflex Cable UFB142A-0-0629-5GU200 MFR 6463	232069-001
Rohde & Schwarz TS-PR8 Pre-Amplifier	102335
Rohde & Schwarz OSP130 Open Switch and Control Unit	101181

Table 6-2. AP2-001 EMC Cable and Switch System Components

Component	Serial Number
MiniCircuits Cable CBL-0.5M-SMNM+	47261
Micro-Coax Utilfex Cable UFB311A-Q-3346-50U50U MFR 64639	231978-001
Micro-Coax Utilfex Cable UFB311A-1-0629-50U50U MFR 64639	231986-002
MegaPhase (CAGE 1GVT4) Cable NC29-N1N1-324	19046401 001
Megaphase (CAGE 1GVT4) Flex Cable 10511-1	15044701-006
Micro-Coax Utiflex Cable UFB311A-Q-3346-50U50U MFR 64639	231978-002
Micro-Coax Utilfex Cable UFB311A-1-0629-50U50U MFR 64639	231986-004
Micro-Coax Utiflex Cable UFB142A-0-0629-5GU200 MFR 64639	232069-001
Rohde & Schwarz SF Unit	102138
Rohde & Schwarz OSP130 Open Switch and Control Unit	101181
Micro-Coax Utilfex Cable UFB311A-Q-3346-50U50U MFR 64639	231978-003
· Micro-Coax Utilfex Cable UFB311A-1-0629-50U50U MFR 64639	231986-003
Rohde & Schwarz TS-PR8 Pre-Amplifier	102335

Table 6-3. AP2-002 EMC Cable and Switch System Components

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7.0 TEST DATA

7.1 Summary

Company Name: Samsung Electronics Co., Ltd.

FCC ID: A3LSMS948JPN

FCC Classification: Part 15 Low Power Transmitter Below 1705kHz (DCD)

Frequency Range: 110 – 148kHz, 0.53 – 0.60MHz

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference	Data Referencing
2.1049	Occupied Bandwidth	NA	Conducted	Pass	Section 7.2	Yes
15.209	Out-of-Band Emissions	Emissions must meet the radiated limits detailed in 15.209	Radiated	PASS	Section 7.3	Yes
15.207	AC Conducted Emissions 150kHz – 30MHz	<15.207 Limits	LINE CONDUCTED	PASS	Section 7.4	No

Table 7-1. Summary of Test Results

Note:

This unit was tested while transferring maximum power wirelessly to a similar unit.

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7.2 Occupied Bandwidth Measurement

RSS-Gen (6.6)

Test Overview and Limit

The occupied bandwidth is measured with a spectrum analyzer connected to the receive antenna while the EUT is operating in transmission mode at the appropriate frequency.

Test Settings

1. Spectrum analyzer frequency is set to the nominal EUT channel center frequency.
2. RBW = 1 – 5% OBW
3. VBW ≥ 3 x RBW
4. Reference level set to keep signal from exceeding maximum input mixer level for linear operation.
5. Detector = Peak
6. Trace mode = max hold
7. Sweep = auto couple
8. The trace was allowed to stabilize
9. Using the 99% power bandwidth function of the instrument and report the measured bandwidth.

Mode	Frequency	Occupied Bandwidth
Device to Device	113.85kHz	54Hz
Click	531.25kHz	62Hz
Hover	562.5kHz	62Hz
Eraser	593.76kHz	69Hz

Table 7-2. Occupied Bandwidth Measurement

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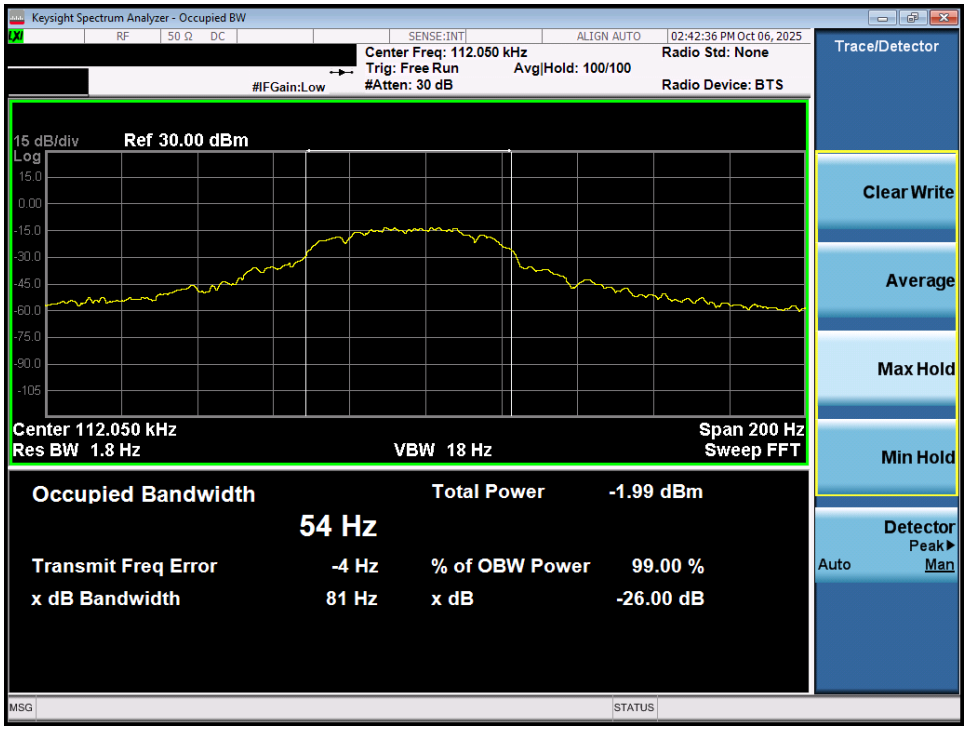
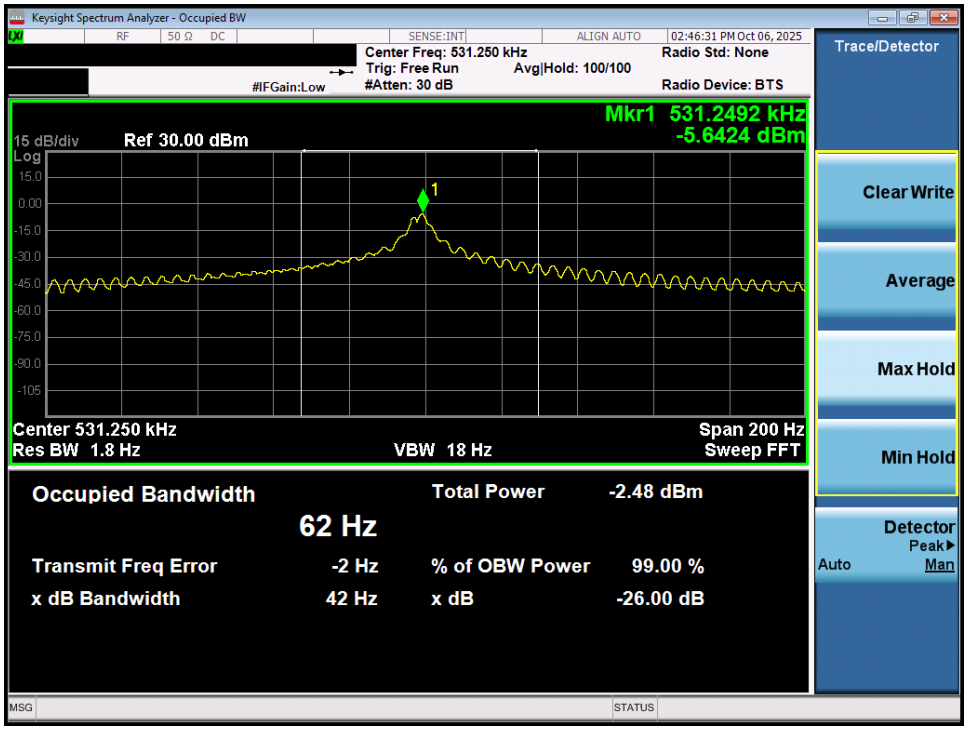


Plot 7-1. Occupied Bandwidth Measurement – Device to Device



Plot 7-2. Occupied Bandwidth Measurement – Click

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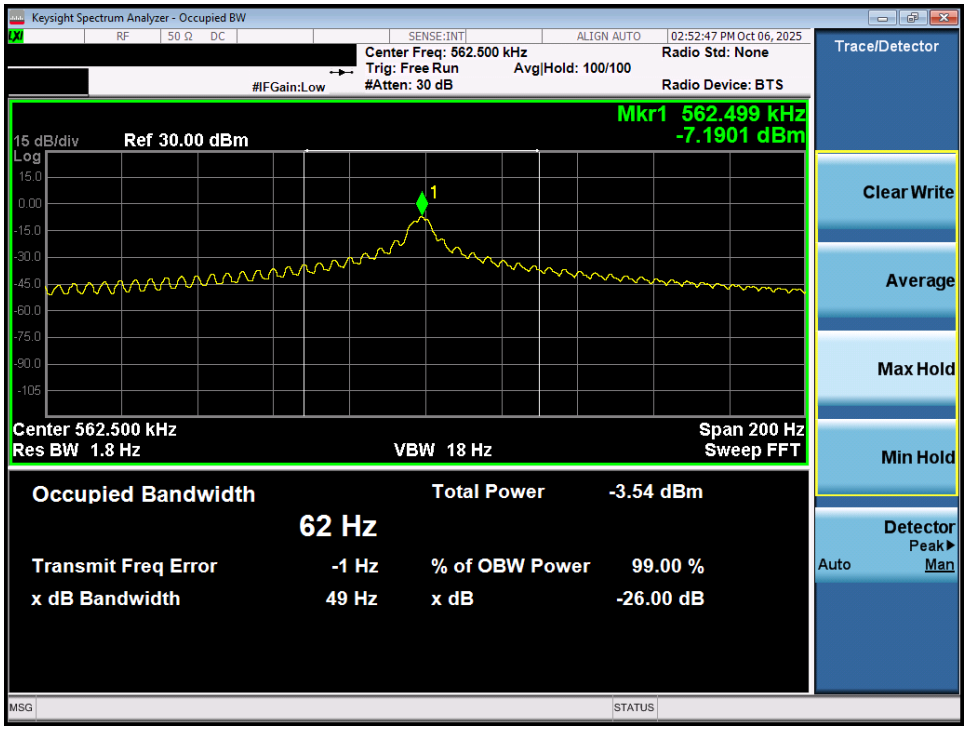
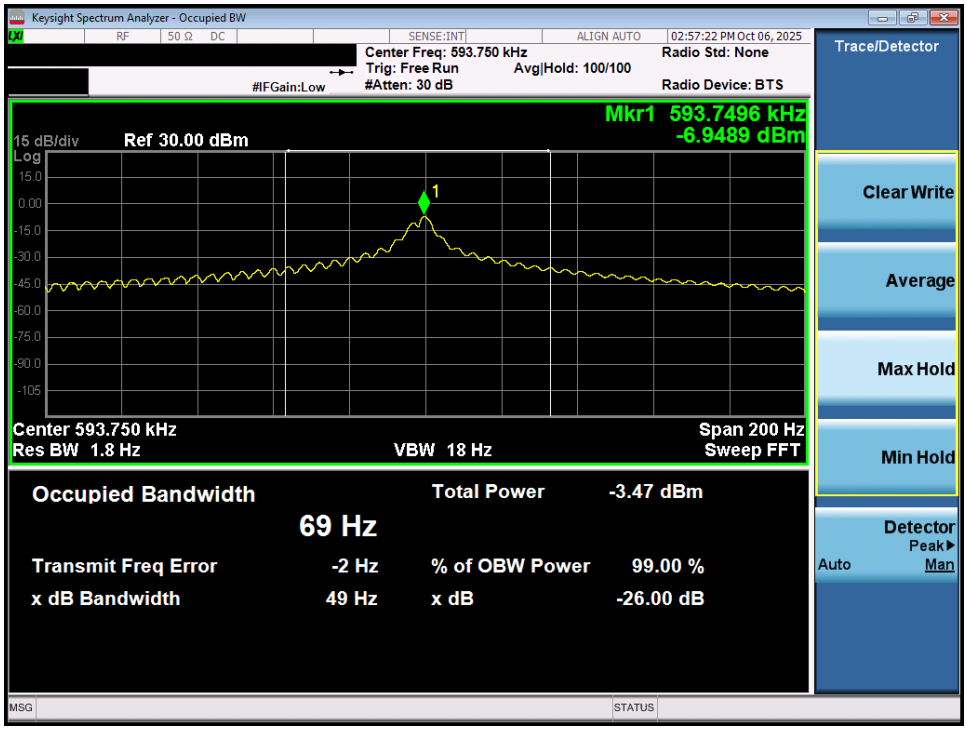


Plot 7-3. Occupied Bandwidth Measurement – Hover



Plot 7-4. Occupied Bandwidth Measurement – Eraser

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7.3 Radiated Spurious Emission Measurements, Out-of-Band

RSS-210 [B.2], RSS-Gen [8.9]

Test Overview and Limit

The EUT was tested from 9kHz up to the 30MHz. All measurements up to 30MHz were recorded with a spectrum analyzer employing a quasi-peak detector.

All out-of-band emissions must not exceed the limits shown in Table 7-3 per RSS-Gen.

Frequency	Field Strength [μV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-3. Radiated Limits – Out of band

Test Procedures Used

ANSI C63.10:2020 – Section 6.4

Test Settings

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 9kHz for emissions below 30MHz
3. VBW ≥ 3 x RBW
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

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Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

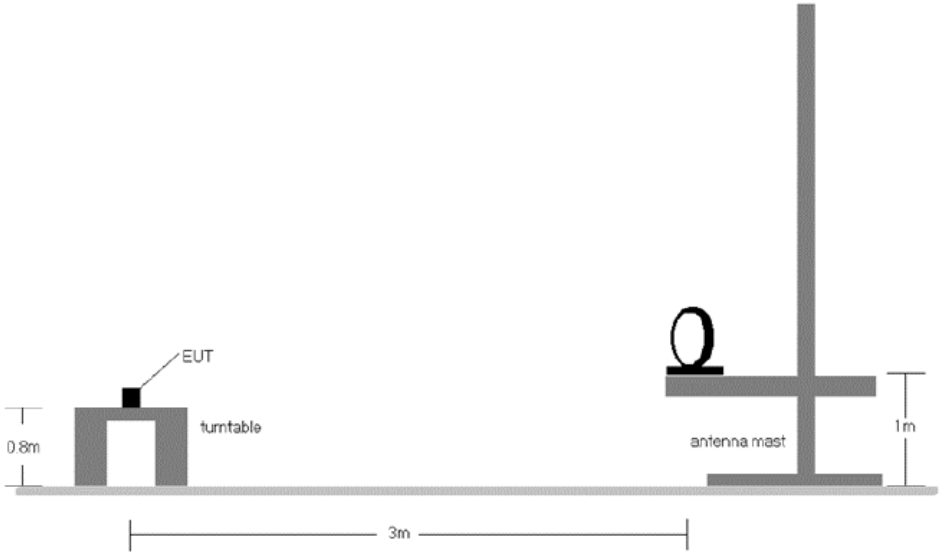

Figure 7-1. Radiated Test Setup

Test Notes:

1. All measurements were recorded using a spectrum analyzer employing a quasi-peak detector for emissions below 30MHz.
2. A loop antenna was used to investigate emissions below 30MHz.
3. Below 30MHz the loop antenna was positioned in 3 orthogonal planes (X front, Y side, Z top) to determine the orientation resulting in the worst case emissions.
4. The EUT was positioned in three orthogonal planes to determine the orientation resulting in the worst case emissions.
5. The spectrum is investigated from 9kHz up to 30MHz per §15.33. The worst-case emissions are reported.
6. No spurious emissions levels were found to be greater than the level of the fundamental.
7. The "-" shown in the following RSE tables are used to denote a noise floor measurement.

Sample Calculation

- Field Strength Level $_{[dB\mu V/m]}$ = Analyzer Level $_{[dBm]}$ + 107 + AFCL $_{[dB/m]}$
- AFCL $_{[dB/m]}$ = Antenna Factor $_{[dB/m]}$ + Cable Loss $_{[dB]}$
- Margin $_{[dB]}$ = Field Strength Level $_{[dB\mu V/m]}$ – Limit $_{[dB\mu V/m]}$

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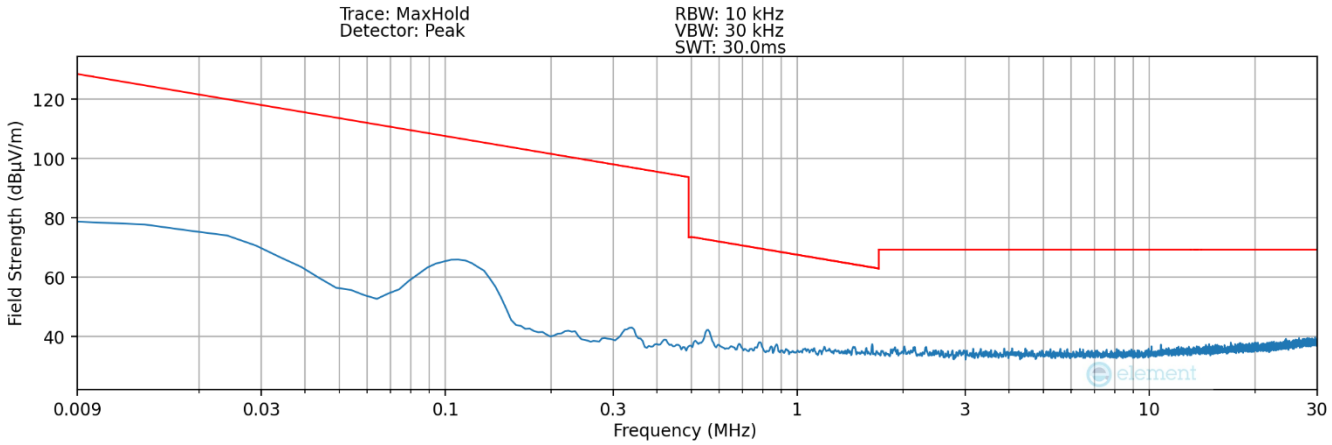
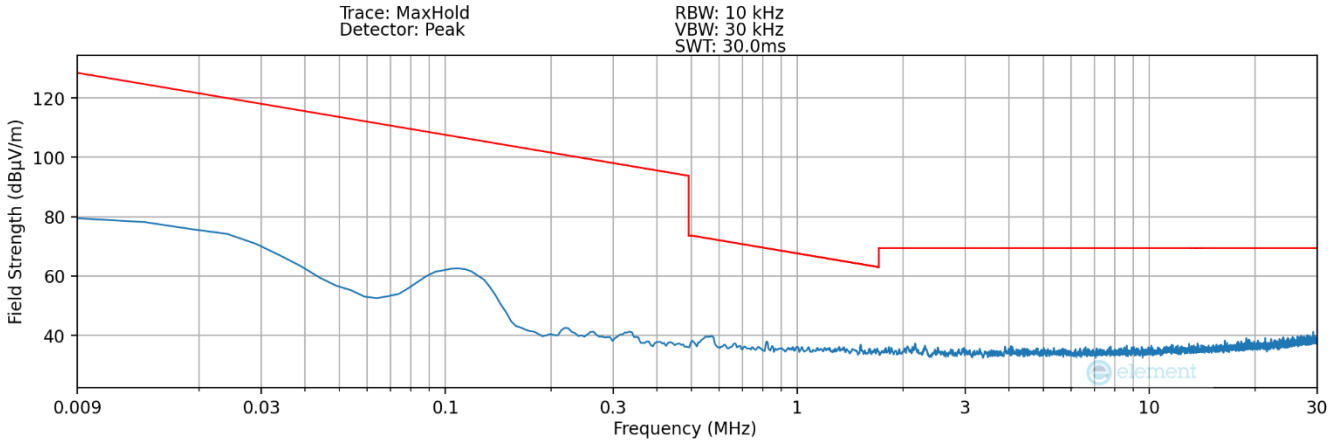
Radiated Spurious Emission Measurements, Out-of-Band

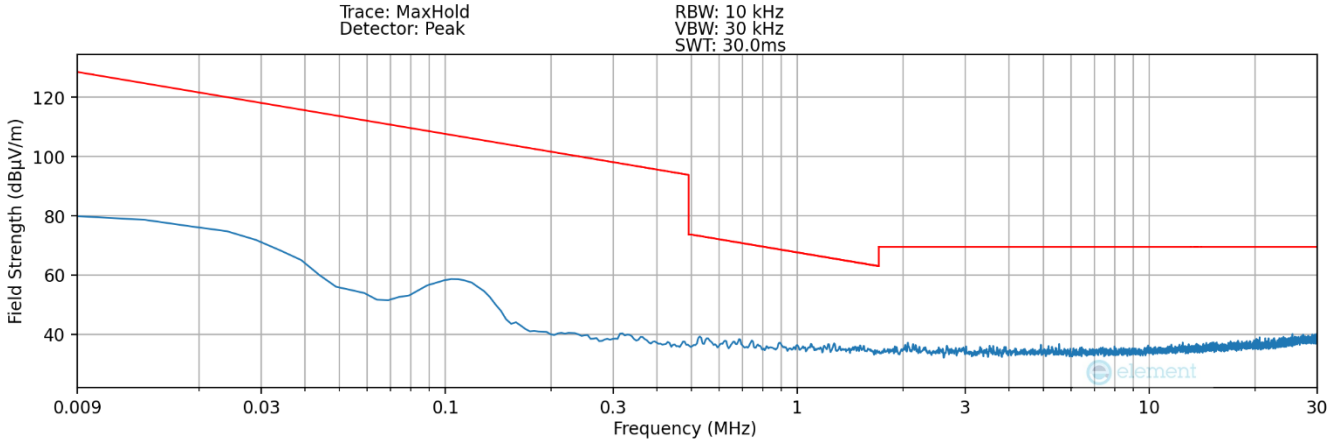
§15.209



Plot 7-5. Radiated Spurious Plot 9kHz – 30MHz (Pol. X – Device to Device)



Plot 7-6Radiated Spurious Plot 9kHz – 30MHz (Pol. Y – Device to Device)



Plot 7-7. Radiated Spurious Plot 9kHz – 30MHz (Pol. Z– Device to Device)

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Tx Frequency 112kHz

Measurement Distance: 3 Meters

Frequency [MHz]	Detector	Ant. Pol. [X/Y/Z]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	3m Field Strength [dBµV/m]	Distance Correction Factor	Corrected Field Strength	Limit [µV/m]	Limit [dBµV/m]	Margin [dB]
0.112	Quasi-Peak	X	100	39	-54.63	20.05	72.42	-80.00	-7.58	21.43	26.62	-34.20
0.224	Quasi-Peak	X	100	334	-82.94	20.11	44.17	-80.00	-35.83	10.71	20.60	-56.43
0.336	Quasi-Peak	X	100	197	-79.28	19.98	47.70	-80.00	-32.30	7.14	17.08	-49.38
0.448	Quasi-Peak	X	-	-	-88.69	20.06	38.37	-80.00	-41.63	5.36	14.58	-56.20
0.560	Quasi-Peak	X	100	196	-82.26	20.22	44.96	-40.00	4.96	42.86	32.64	-27.68
0.672	Quasi-Peak	X	-	-	-89.52	20.28	37.76	-40.00	-2.24	35.71	31.06	-33.29
0.784	Quasi-Peak	X	100	205	-87.82	20.25	39.43	-40.00	-0.57	30.61	29.72	-30.29
0.896	Quasi-Peak	X	-	-	-90.73	20.28	36.55	-40.00	-3.45	26.79	28.56	-32.01
1.008	Quasi-Peak	X	-	-	-88.97	20.55	38.58	-40.00	-1.42	23.81	27.54	-28.96
1.120	Quasi-Peak	X	-	-	-91.68	20.63	35.95	-40.00	-4.05	21.43	26.62	-30.67

Table 7-4. Radiated Measurements (Device to Device)

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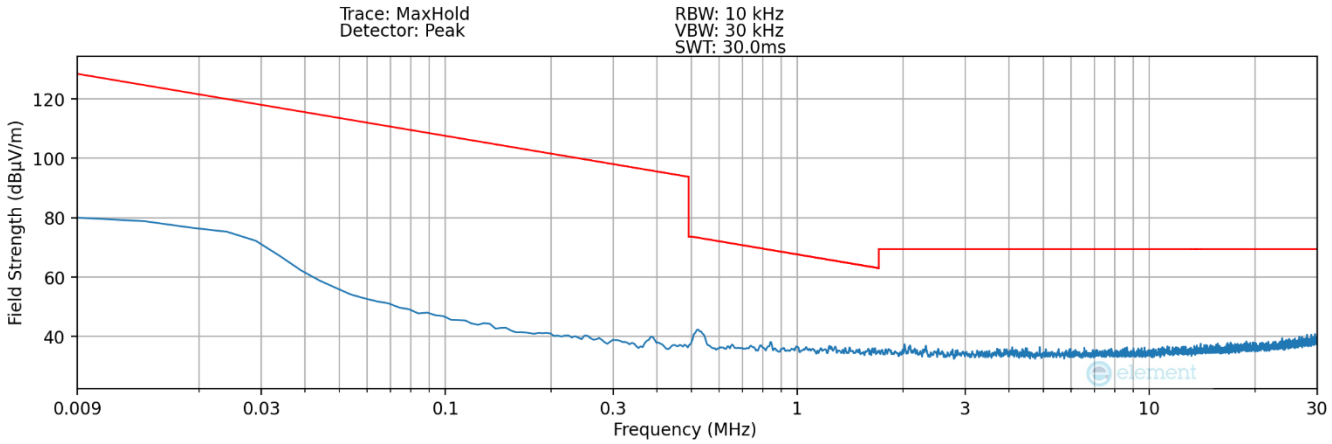
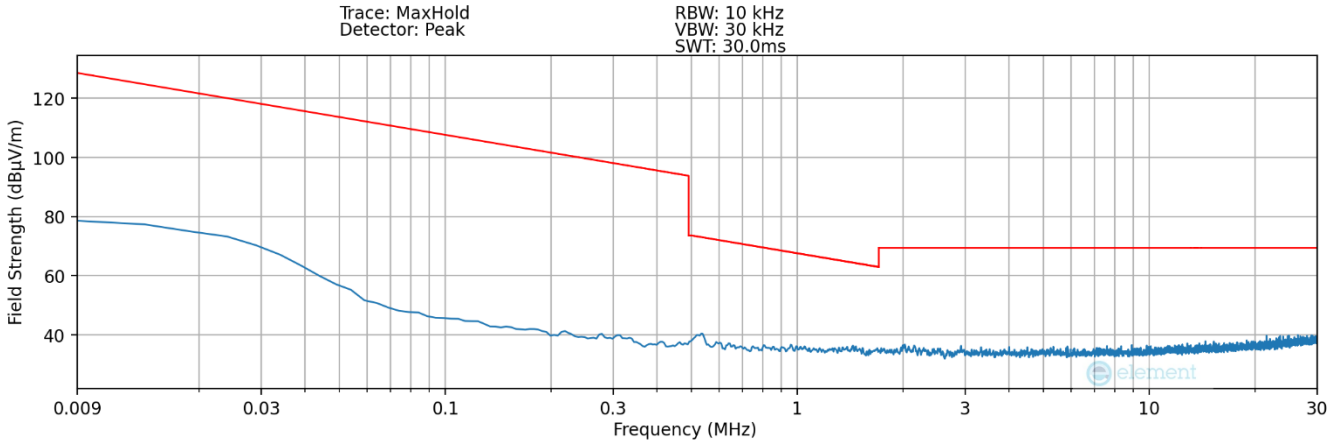
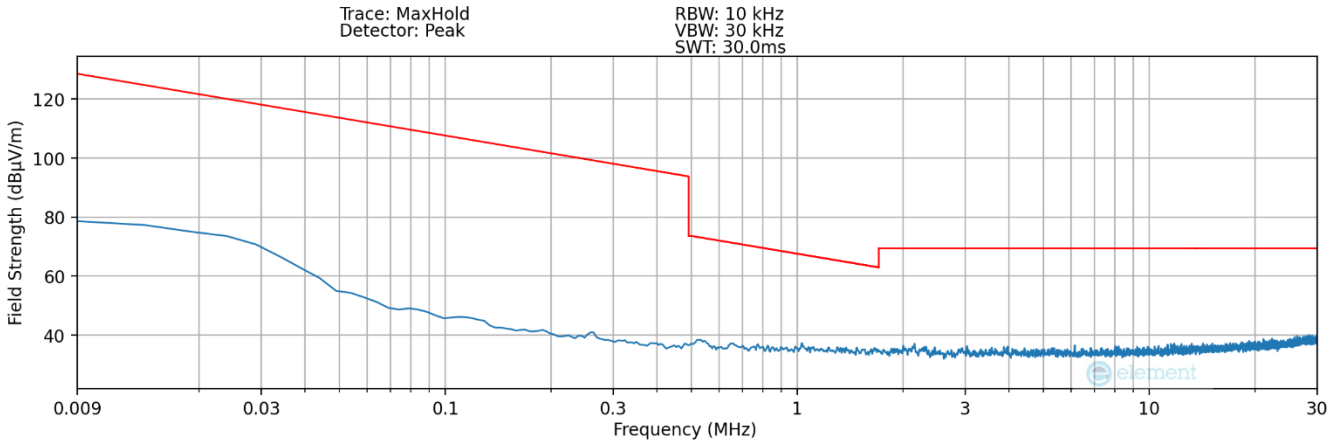


Plot 7-8. Radiated Spurious Plot 9kHz – 30MHz (Pol. X – Digitizer – Click)



Plot 7-9Radiated Spurious Plot 9kHz – 30MHz (Pol. Y – Digitizer – Click)



Plot 7-10. Radiated Spurious Plot 9kHz – 30MHz (Pol. Z– Digitizer – Click)

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Tx Frequency 531.25kHz

Measurement Distance: 3 Meters

Frequency [MHz]	Detector	Ant. Pol. [X/Y/Z]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	3m Field Strength [dBµV/m]	Distance Correction Factor	Corrected Field Strength	Limit [µV/m]	Limit [dBµV/m]	Margin [dB]
0.531	Quasi-Peak	X	100	139	-80.61	20.19	46.58	-40.00	6.58	45.18	33.10	-26.52
1.063	Quasi-Peak	X	-	-	-90.31	20.57	37.26	-40.00	-2.74	22.59	27.08	-29.82
1.594	Quasi-Peak	X	-	-	-91.33	20.66	36.33	-40.00	-3.67	15.06	23.56	-27.23
2.125	Quasi-Peak	X	-	-	-92.51	21.63	36.12	-40.00	-3.88	30.00	29.54	-33.43
2.656	Quasi-Peak	X	-	-	-93.28	20.40	34.12	-40.00	-5.88	30.00	29.54	-35.42
3.188	Quasi-Peak	X	-	-	-93.05	20.54	34.49	-40.00	-5.51	30.00	29.54	-35.06

Table 7-5. Radiated Measurements (Digitizer – Click)

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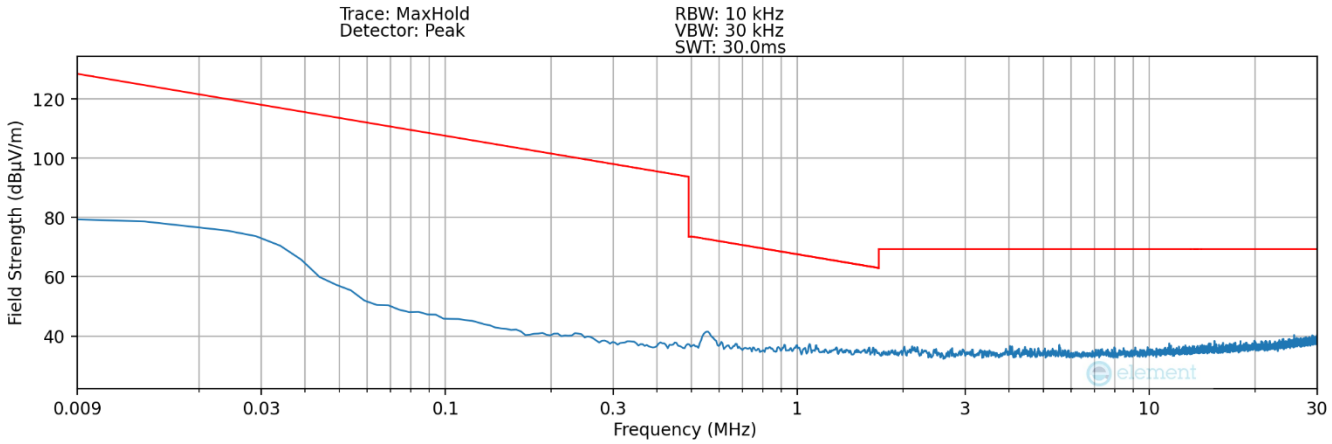
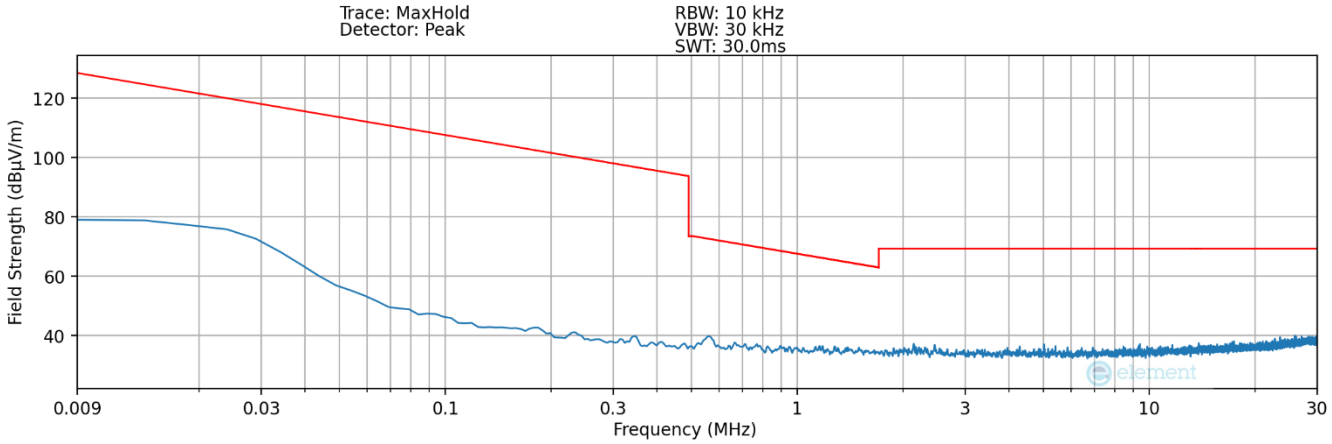
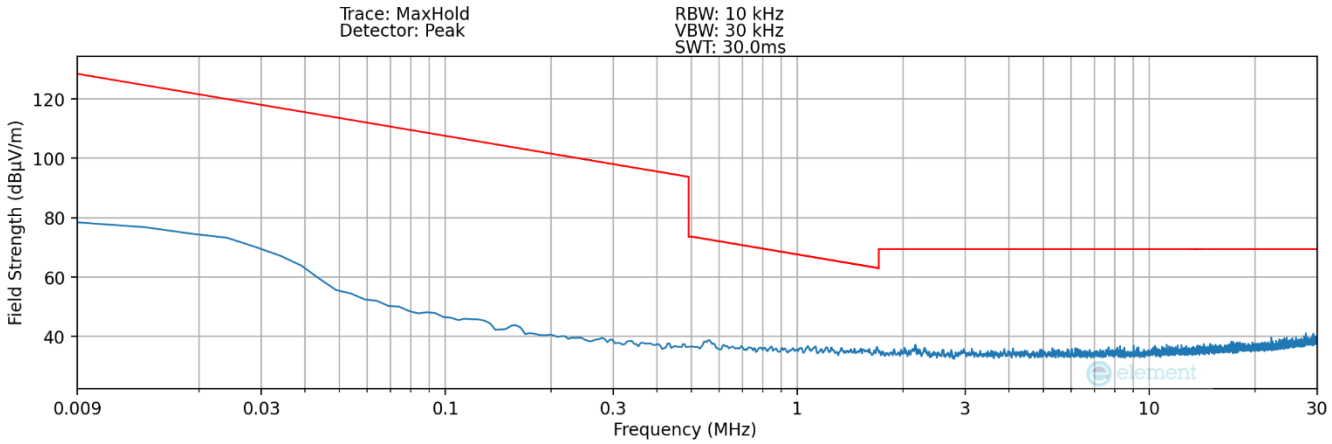


Plot 7-11. Radiated Spurious Plot 9kHz – 30MHz (Pol. X – Digitizer – Hover)



Plot 7-12Radiated Spurious Plot 9kHz – 30MHz (Pol. Y – Digitizer – Hover)



Plot 7-13. Radiated Spurious Plot 9kHz – 30MHz (Pol. Z – Digitizer – Hover)

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Tx Frequency 562.5kHz

Measurement Distance: 3 Meters

Frequency [MHz]	Detector	Ant. Pol. [X/Y/Z]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	3m Field Strength [dBµV/m]	Distance Correction Factor	Corrected Field Strength	Limit [µV/m]	Limit [dBµV/m]	Margin [dB]
0.563	Quasi-Peak	X	100	116	-80.40	20.22	46.82	-40.00	6.82	42.67	32.60	-25.78
1.125	Quasi-Peak	X	-	-	-91.80	20.61	35.81	-40.00	-4.19	21.33	26.58	-30.77
1.688	Quasi-Peak	X	-	-	-92.42	20.70	35.28	-40.00	-4.72	14.22	23.06	-27.78
2.250	Quasi-Peak	X	-	-	-92.69	20.76	35.07	-40.00	-4.93	30.00	29.54	-34.47
2.813	Quasi-Peak	X	-	-	-93.05	20.21	34.16	-40.00	-5.84	30.00	29.54	-35.38
3.375	Quasi-Peak	X	-	-	-92.68	20.63	34.95	-40.00	-5.05	30.00	29.54	-34.60

Table 7-6. Radiated Measurements (Digitizer – Hover)

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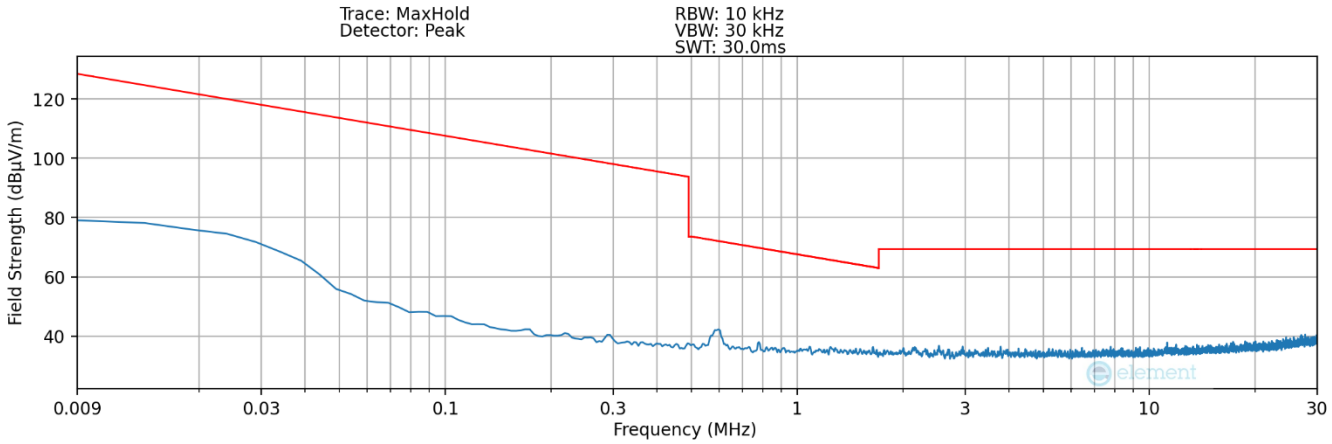
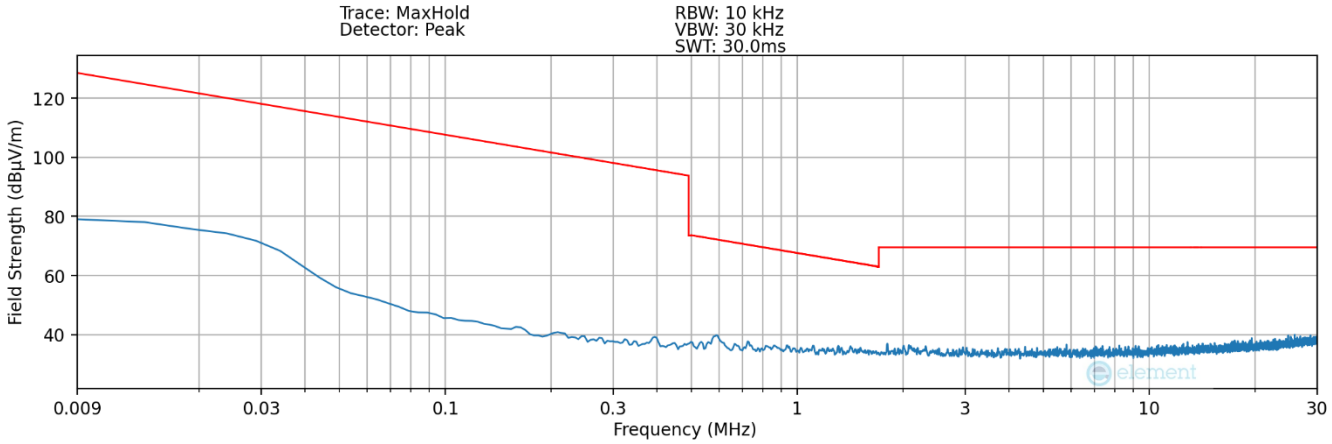
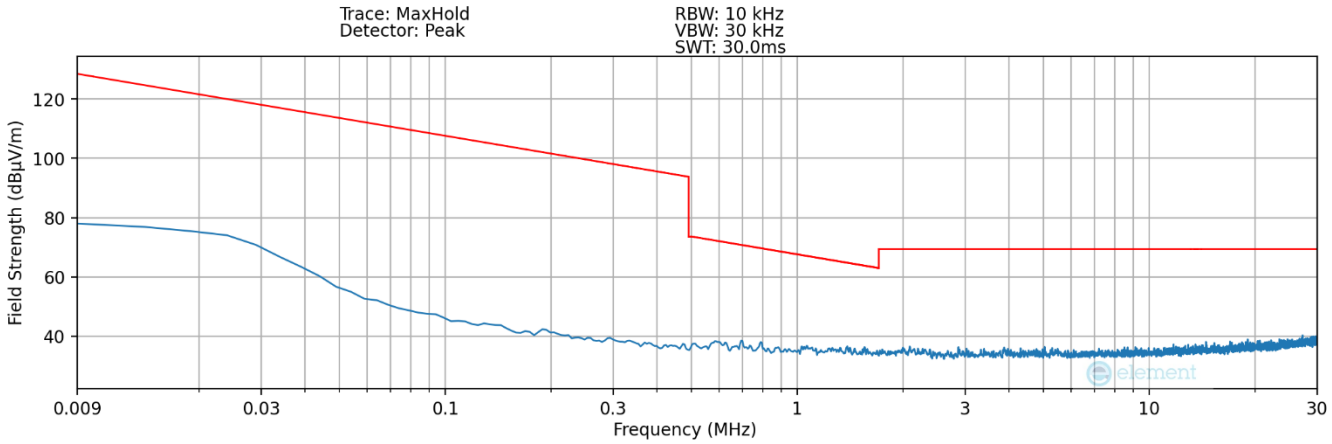


Plot 7-14. Radiated Spurious Plot 9kHz – 30MHz (Pol. X – Digitizer – Eraser)



Plot 7-15Radiated Spurious Plot 9kHz – 30MHz (Pol. Y – Digitizer – Eraser)



Plot 7-16. Radiated Spurious Plot 9kHz – 30MHz (Pol. Z– Digitizer – Eraser)

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Tx Frequency 593.76kHz

Measurement Distance: 3 Meters

Frequency [MHz]	Detector	Ant. Pol. [X/Y/Z]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	3m Field Strength [dBµV/m]	Distance Correction Factor	Corrected Field Strength	Limit [µV/m]	Limit [dBµV/m]	Margin [dB]
0.594	Quasi-Peak	X	100	117	-80.46	20.25	46.79	-40.00	6.79	40.42	32.13	-25.34
1.188	Quasi-Peak	X	-	-	-91.31	20.55	36.24	-40.00	-3.76	20.21	26.11	-29.87
1.781	Quasi-Peak	X	-	-	-92.13	20.66	35.53	-40.00	-4.47	30.00	29.54	-34.01
2.375	Quasi-Peak	X	-	-	-92.34	20.16	34.82	-40.00	-5.18	30.00	29.54	-34.72
2.969	Quasi-Peak	X	-	-	-92.92	21.53	35.61	-40.00	-4.39	30.00	29.54	-33.93
3.563	Quasi-Peak	X	-	-	-93.18	20.50	34.32	-40.00	-5.68	30.00	29.54	-35.22

Table 7-7. Radiated Measurements (Digitizer – Eraser)

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7.4 Line Conducted Measurement Data

RSS-Gen [8.8]

Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

All conducted emissions must not exceed the limits shown in the table below, per RSS-Gen 8.8

Frequency of emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-8. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10:2020, Section 6.2

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = RMS
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

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Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

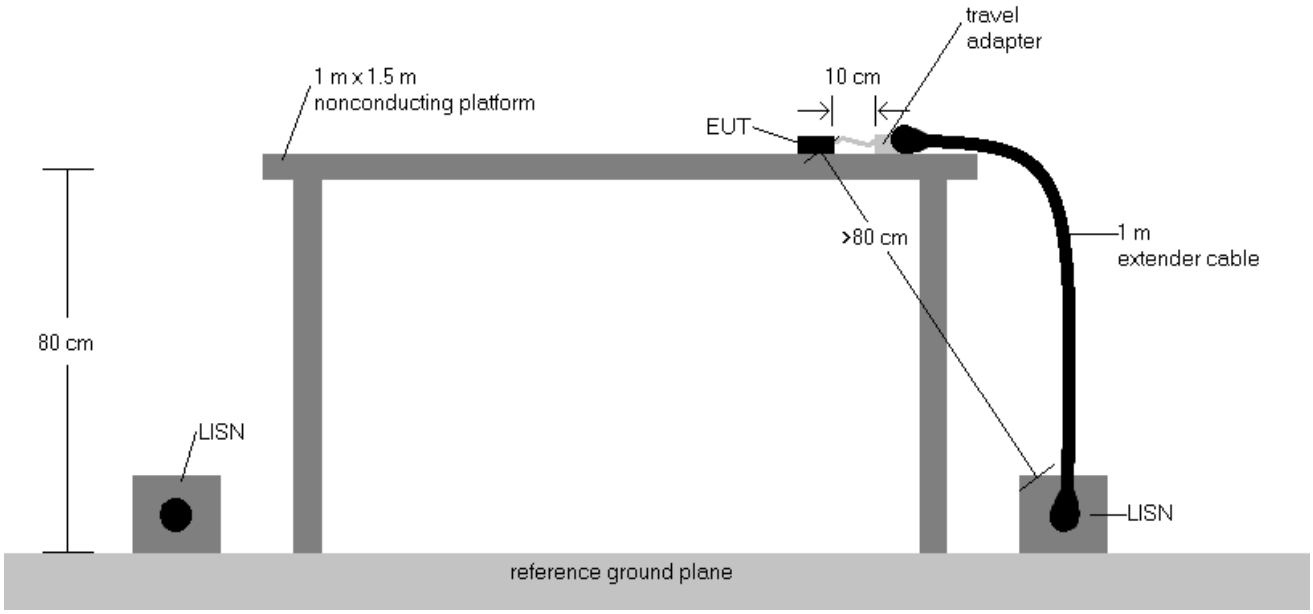

Figure 7-2. Test Instrument & Measurement Setup

Test Notes

1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
2. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207 and RSS-Gen (8.8).
3. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
5. Margin (dB) = QP/AV Limit (dBμV) - QP/AV Level (dBμV)
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

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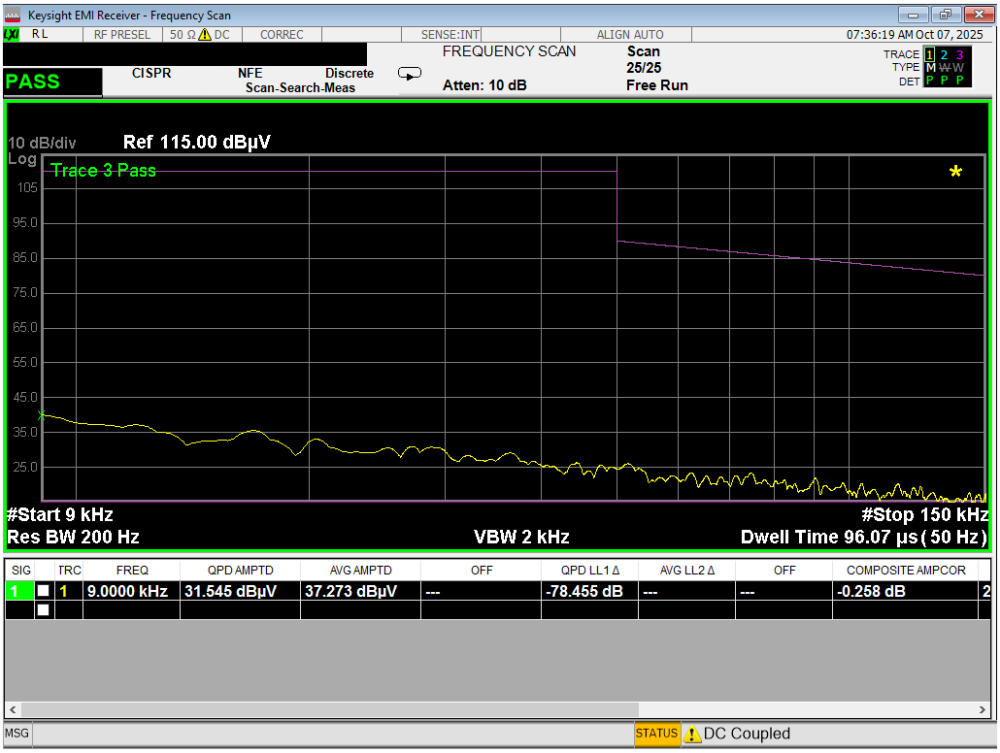
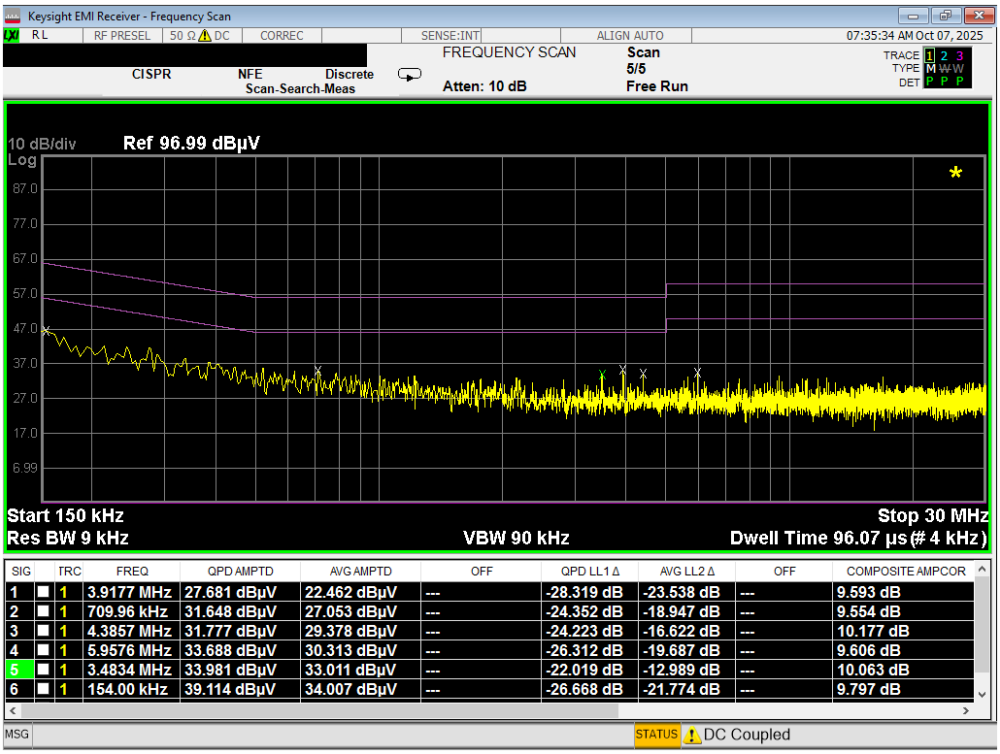


Plot 7-17. Line-Conducted Test Plot (L1) – Device to Device



Plot 7-18. Line-Conducted Test Plot (L1) – Device to Device

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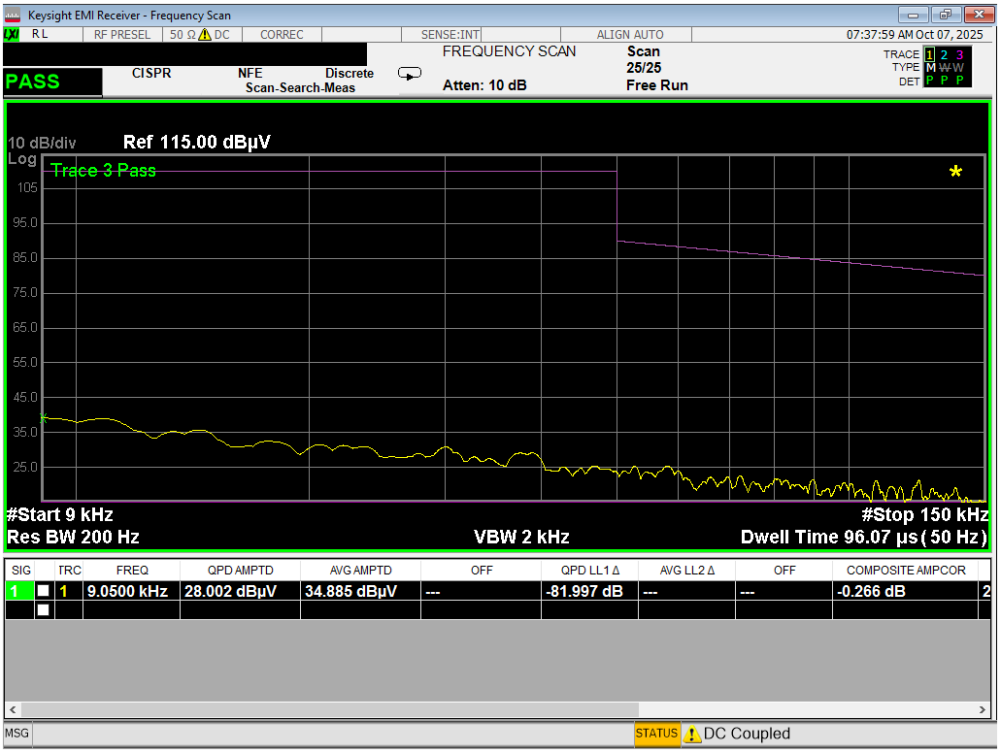
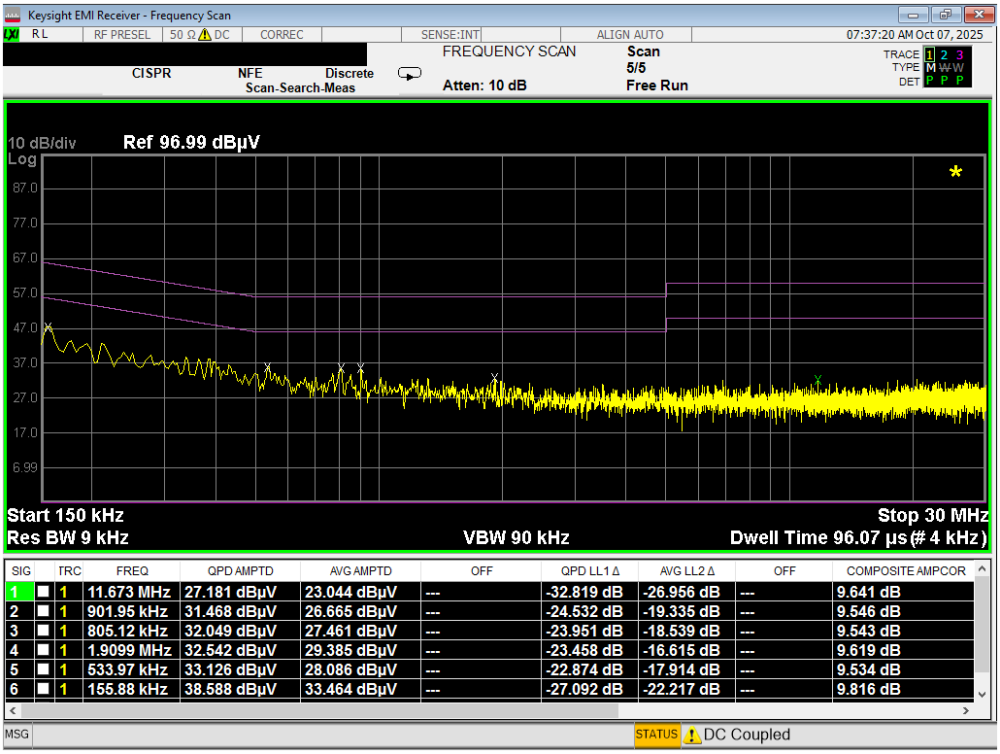


Plot 7-19. Line-Conducted Test Plot (N) – Device to Device



Plot 7-20. Line-Conducted Test Plot (N) – Device to Device

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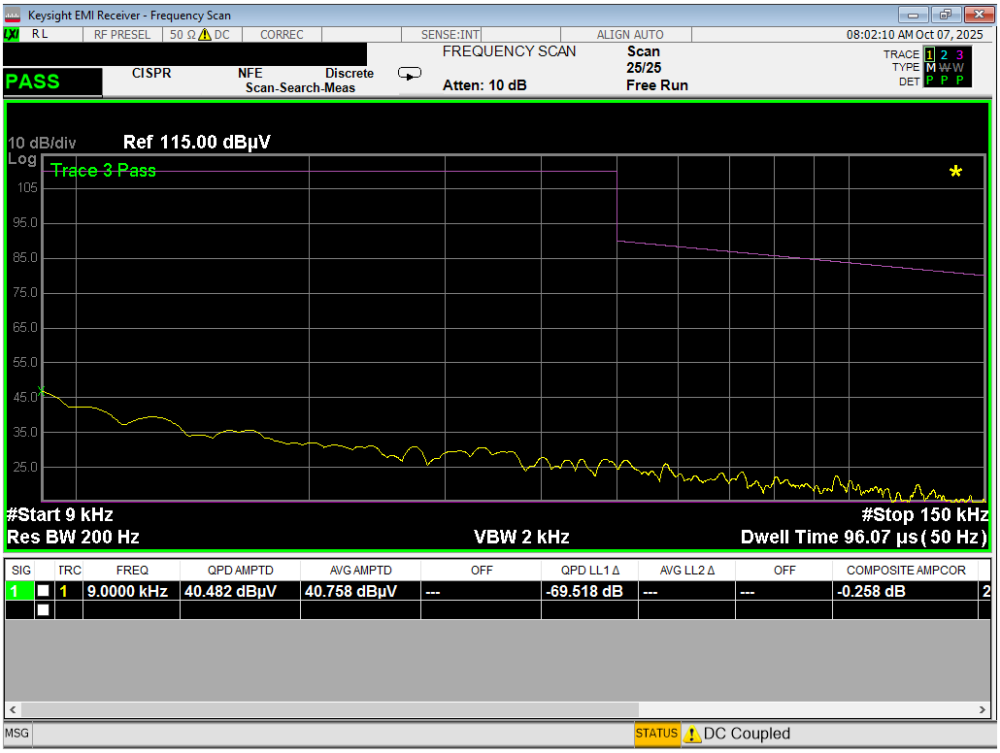
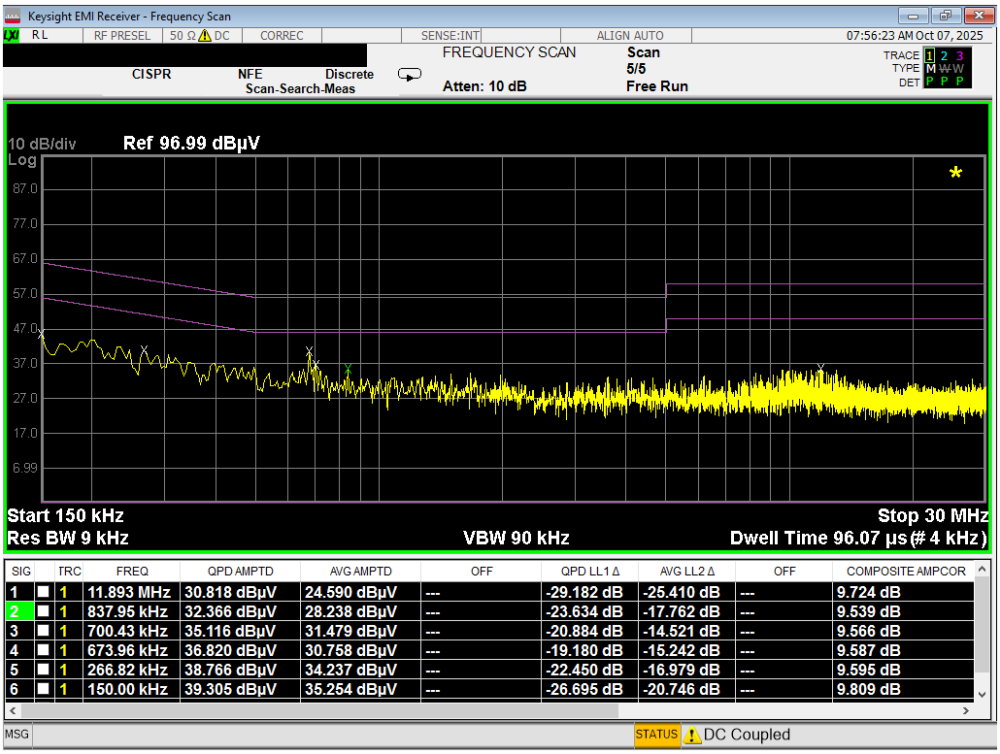


Plot 7-21. Line-Conducted Test Plot (L1) – Digitizer (Click)



Plot 7-22. Line-Conducted Test Plot (L1) – Digitizer (Click)

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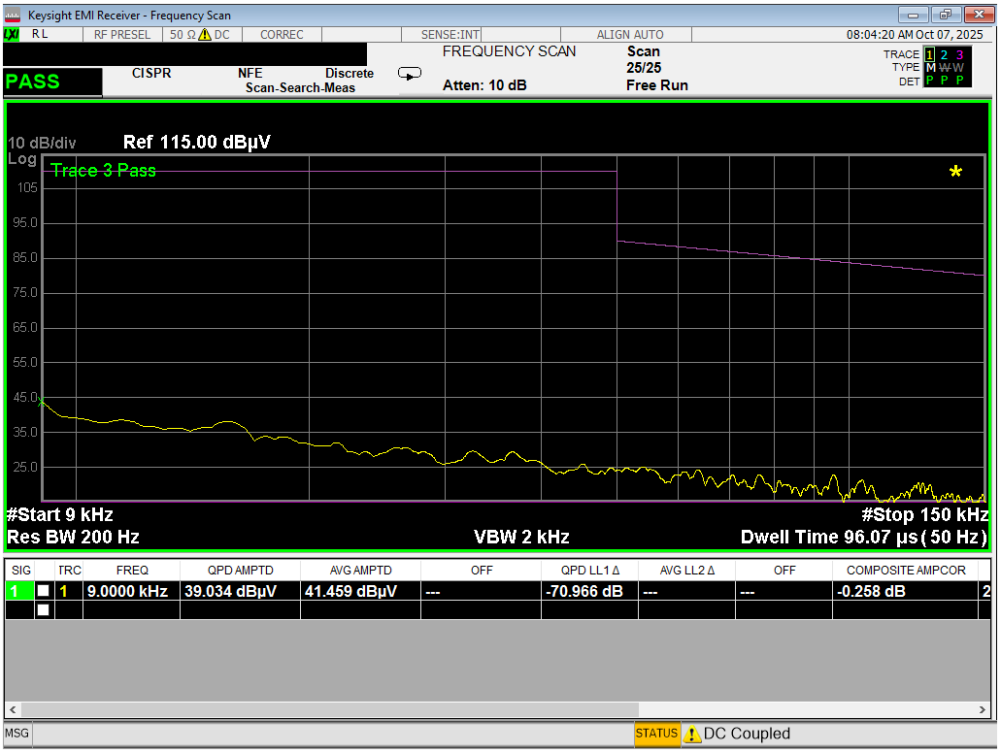
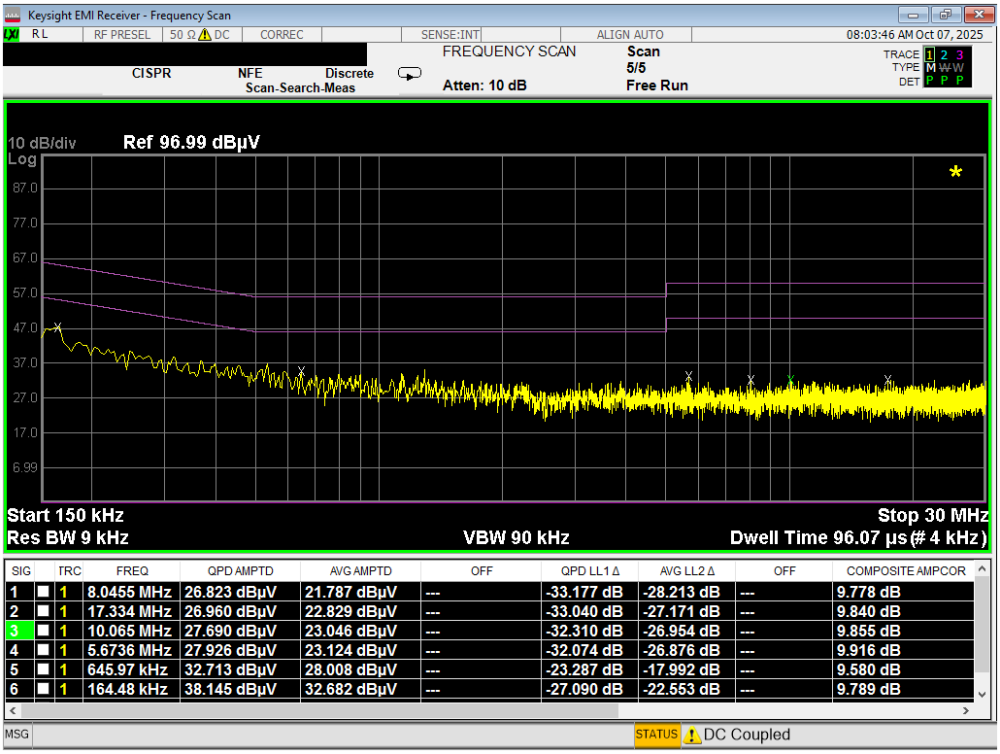


Plot 7-23. Line-Conducted Test Plot (N) – Digitizer (Click)



Plot 7-24. Line-Conducted Test Plot (N) – Digitizer (Click)

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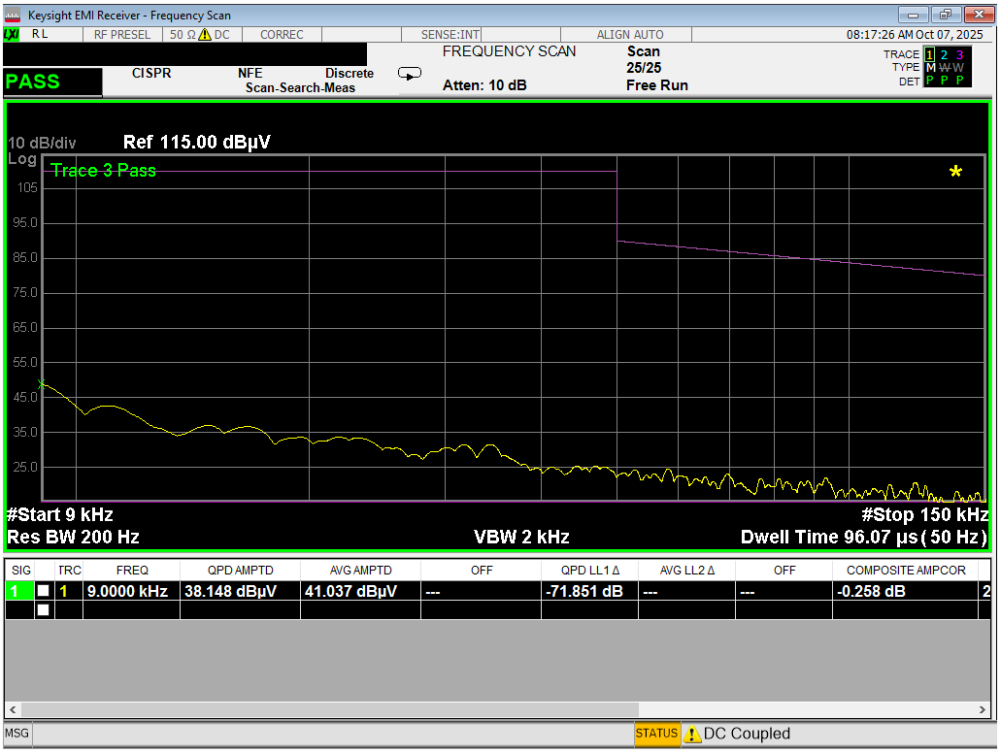
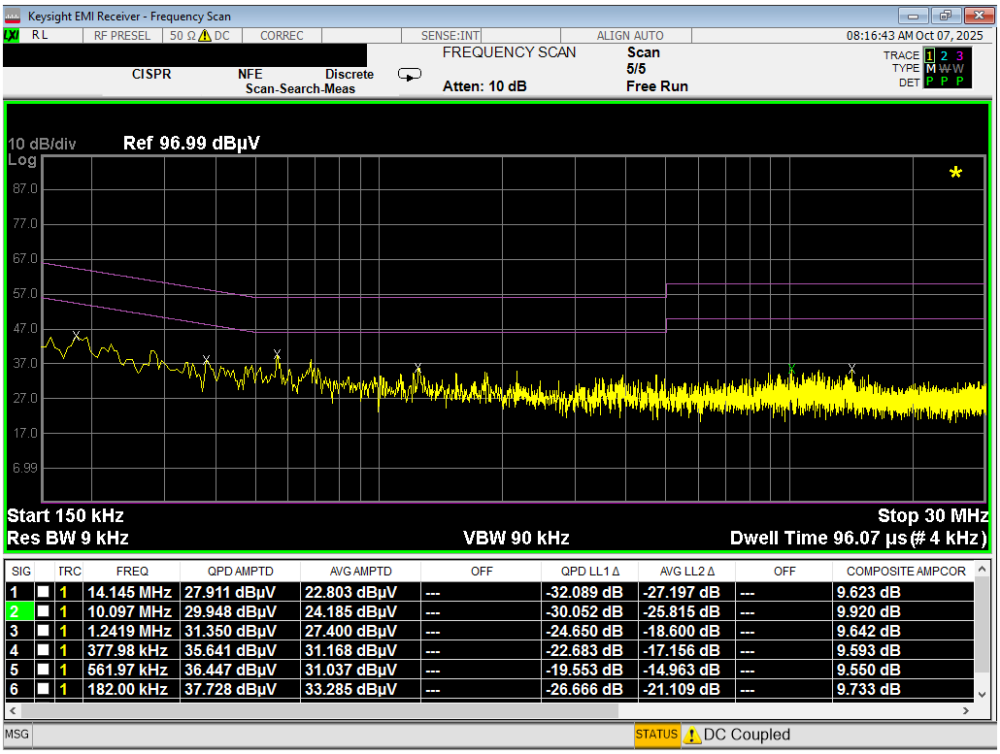


Plot 7-25. Line-Conducted Test Plot (L1) – Digitizer (Hover)



Plot 7-26. Line-Conducted Test Plot (L1) – Digitizer (Hover)

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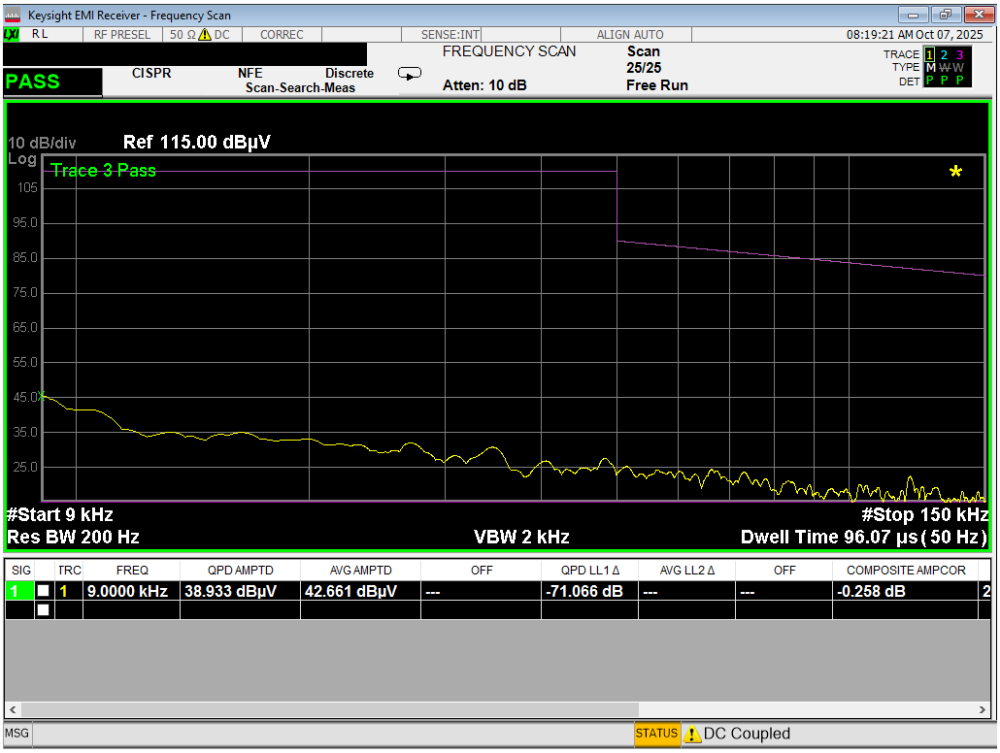
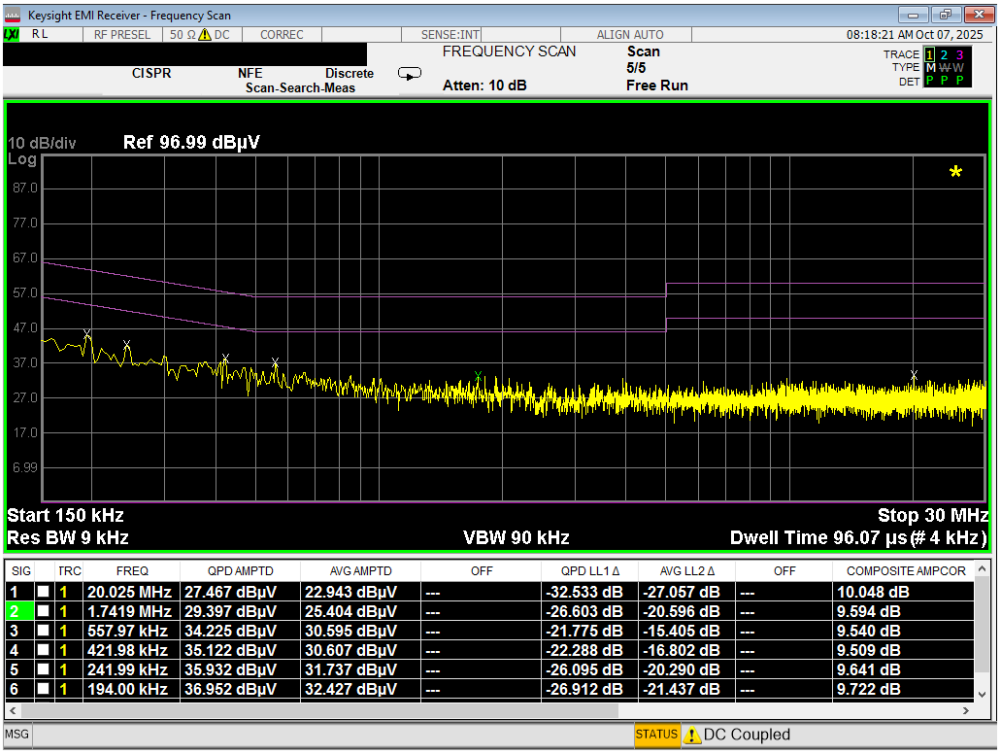


Plot 7-27. Line-Conducted Test Plot (N) – Digitizer (Hover)



Plot 7-28. Line-Conducted Test Plot (N) – Digitizer (Hover)

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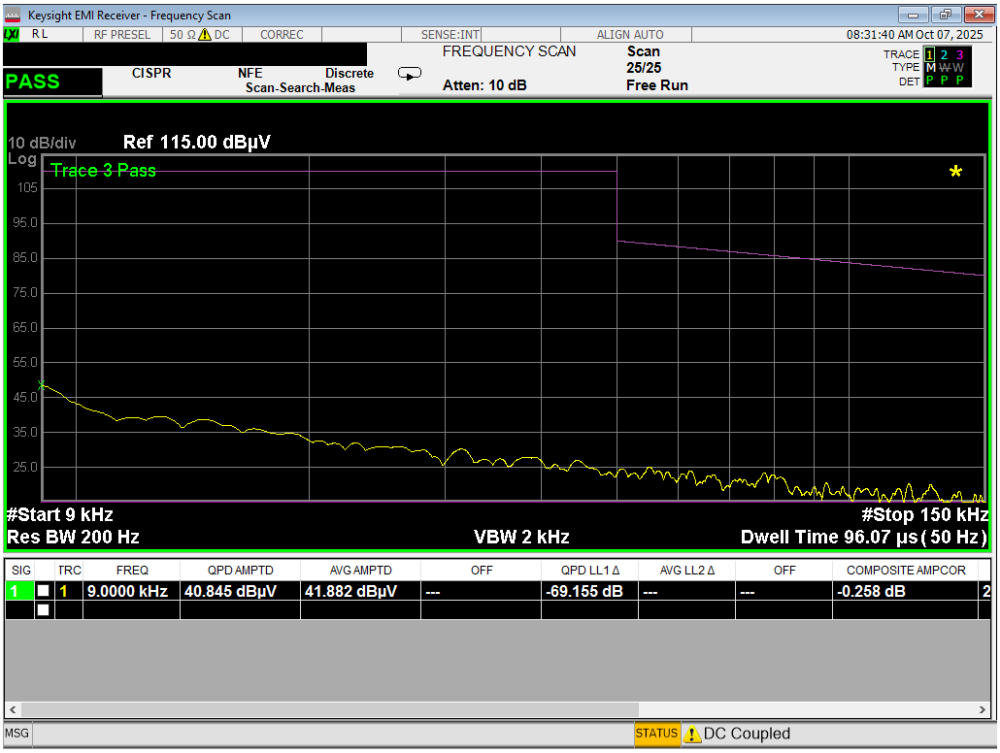
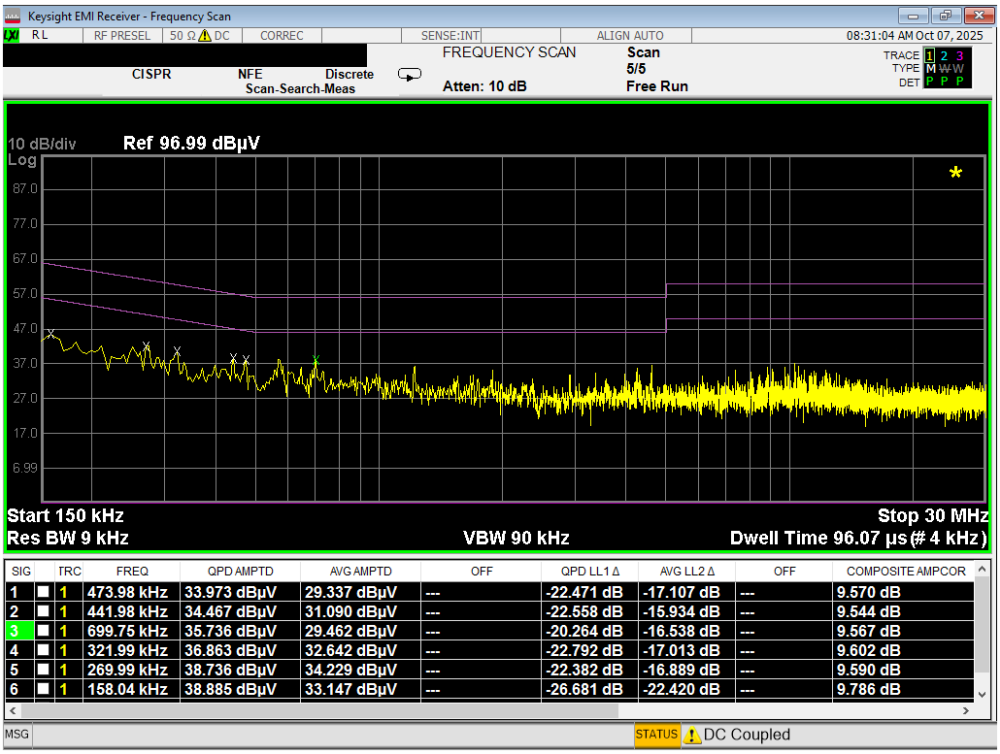


Plot 7-29. Line-Conducted Test Plot (L1) – Digitizer (Eraser)



Plot 7-30. Line-Conducted Test Plot (L1) – Digitizer (Eraser)

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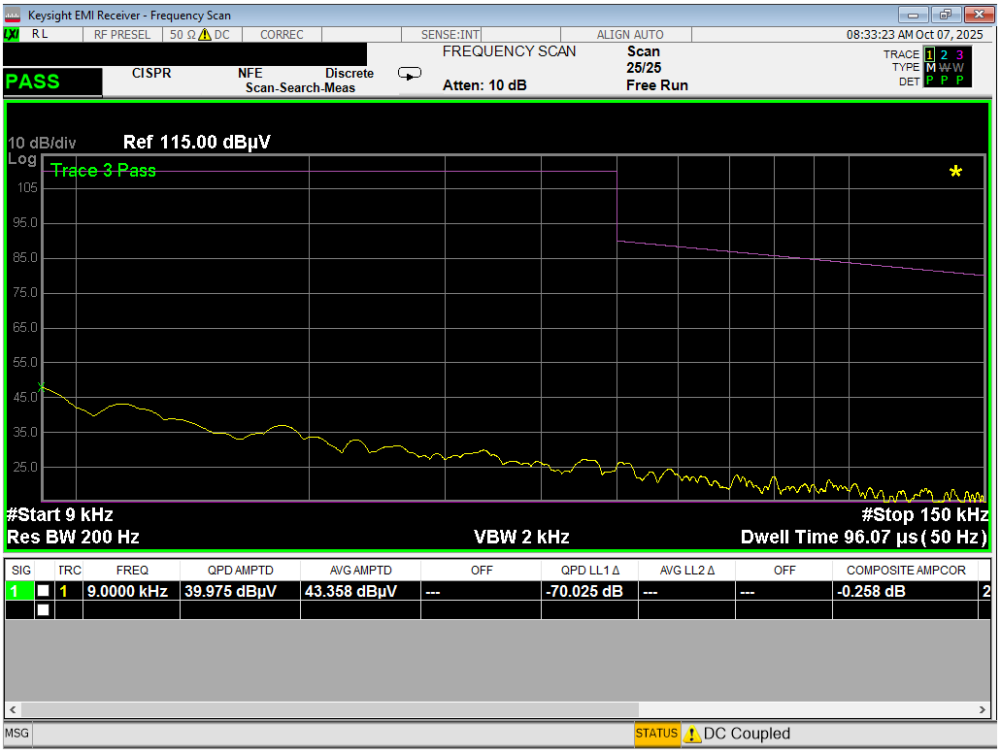
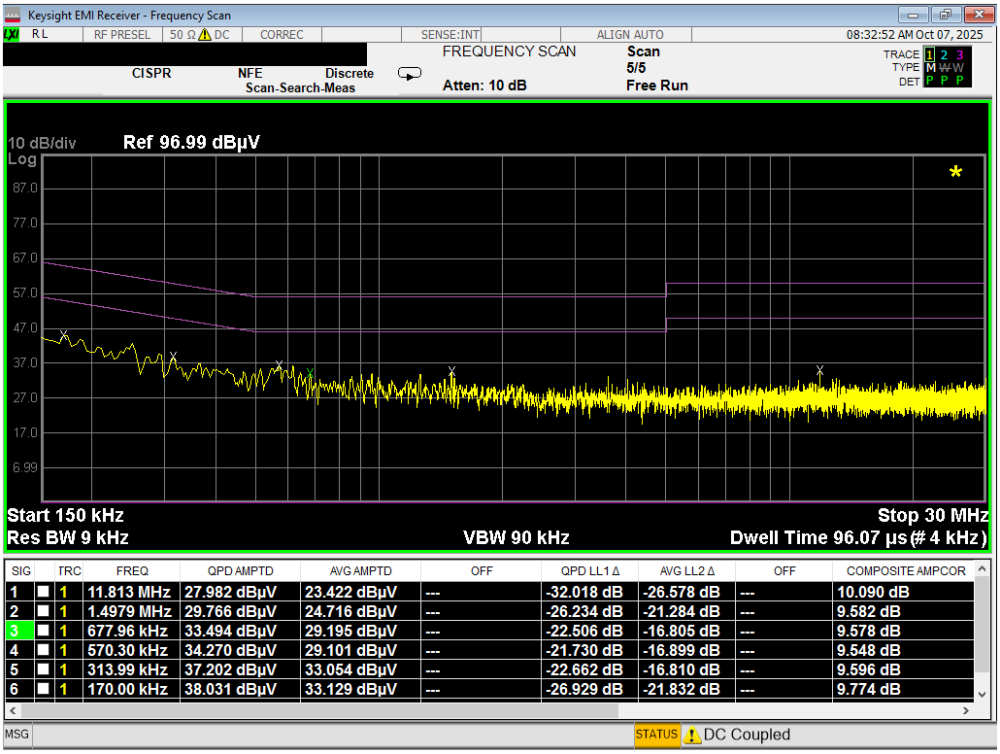


Plot 7-31. Line-Conducted Test Plot (N) – Digitizer (Eraser)



Plot 7-32. Line-Conducted Test Plot (N) – Digitizer (Eraser)

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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMS948JPN** has been verified to comply with the requirements specified in Part 15 (§15.207 and §15.209) of the FCC Rules. The data referenced from **FCC ID: A3LSMS948U** (Model SM-S948U) included in this report have been reviewed and are deemed acceptable to support the compliance of **FCC ID: A3LSMS948JPN**.

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9.0 APPENDIX A – DATA REFERENCING RESULTS

Overview

The spot-check data presented in this section was measured on the variant model following the guidance of the FCC's Data Referencing guidance in KDB 484596 D01 v03. Each spot-check test on the EUT was performed using the same procedure and setting that were used to perform the test on the corresponding reference device. For the worst-case RSE data, the measurement is determined by an actual emission and not by noise floor.

All test cases were performed to verify the variant EUT is still in compliance with the spot-checked results to the reference device and was performed using the guidance of ANSI C63.10:2020

Notes

1. Each spot check test on the EUT was performed using the same procedure and setting that were used to perform the test on the corresponding reference device.

Radiated Spot-Checks – SC-53G

Frequency [MHz]	Detector	Ant. Pol. [X/Y/Z]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	3m Field Strength [dBµV/m]	Distance Correction Factor	Corrected Field Strength	Limit [µV/m]	Limit [dBµV/m]	Margin [dB]
0.112	Quasi-Peak	X	100	38	-54.88	20.05	72.17	-80.00	-7.83	21.43	26.62	-34.45
0.224	Quasi-Peak	X	100	331	-83.07	20.11	44.04	-80.00	-35.96	10.71	20.60	-56.56
0.336	Quasi-Peak	X	100	195	-79.52	19.98	47.46	-80.00	-32.54	7.14	17.08	-49.62

Table 9-1. Radiated Measurements (Device to Device) - (Spot-check)

Frequency [MHz]	Detector	Ant. Pol. [X/Y/Z]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	3m Field Strength [dBµV/m]	Distance Correction Factor	Corrected Field Strength	Limit [µV/m]	Limit [dBµV/m]	Margin [dB]
0.531	Quasi-Peak	X	100	142	-80.17	20.19	47.02	-40.00	7.02	45.18	33.10	-26.08

Table 9-2. Radiated Measurements (Click) - (Spot-check)

Frequency [MHz]	Detector	Ant. Pol. [X/Y/Z]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	3m Field Strength [dBµV/m]	Distance Correction Factor	Corrected Field Strength	Limit [µV/m]	Limit [dBµV/m]	Margin [dB]
0.563	Quasi-Peak	X	100	118	-79.56	20.22	47.66	-40.00	7.66	42.67	32.60	-24.94

Table 9-3. Radiated Measurements (Hover) - (Spot-check)

Frequency [MHz]	Detector	Ant. Pol. [X/Y/Z]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	3m Field Strength [dBµV/m]	Distance Correction Factor	Corrected Field Strength	Limit [µV/m]	Limit [dBµV/m]	Margin [dB]
0.594	Quasi-Peak	X	100	128	-79.85	20.25	47.40	-40.00	7.40	40.42	32.13	-24.73

Table 9-4. Radiated Measurements (Eraser) - (Spot-check)

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Results

FCC Rules	Test Item	Test Case	Units	Limit	Reference Model: SM-S948U	Variant Model: SM-S948D	Deviation (dB)	Max Deviation (dB)	Pass/Fail
15.209	Radiated Spurious Emissions at 3m	WPT D2D	dBuV/m	26.62	-7.58	-7.83	0.25	3	PASS
15.209	Radiated Spurious Emissions at 3m	Digitizer Click	dBuV/m	33.10	6.58	7.02	0.44	3	PASS
15.209	Radiated Spurious Emissions at 3m	Digitizer Hover	dBuV/m	32.60	6.82	7.66	0.84	3	PASS
15.209	Radiated Spurious Emissions at 3m	Dgitizer Eraser	dBuV/m	32.13	6.79	7.40	0.61	3	PASS

Table 9-5. Summary of Spot-checks

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