Report Number:	R14720550-E4
Issue Date:	2023-05-31
Model Number:	SM-X716B

Electromagnetic Compatibility Test Report

For

Samsung Electronics Company Limited
129 Samsung-Ro Yeongtong-Gu
Suwon-Si, Gyeonggi-Do, 16677, Korea

TEST REPORT DETAILS

Tests Performed By:	UL LLC 12 Laboratory Drive Research Triangle Park, NC 27709, USA
Tests Performed For:	Samsung Electronics Company Limited 129 Samsung-Ro Yeongtong-Gu Suwon-Si, Gyeonggi-Do, 16677, Korea
Issue Date:	2023-05-31
Model Number Tested:	SM-X716B
Sample Serial Number:	5918385
Applicable Standards:	FCC 47 CFR Part 15 Subpart B:2023 ICES-003 Issue 7: 2020 ICES-Gen Issue 1+A1:2021
Date Test Item Received:	2023-03-24
Testing Start Date:	2023-04-24
Date Testing Complete:	2023-05-11
Overall Results:	**Compliant**

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

Report Directory

REPORT REVISION HISTORY

Revision Date	Revision Version	Description	Revised By	Revision Reviewed By
2023-05-15	V1	Initial Issue	B. Kiewra	M. Antola
2023-05-31	V2	Separated photos and setup diagram from test report. Extended calibration dates to end of the month for equipment in section 4.1	B. Kiewra	NA

1.0 TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4:2014, ICES-003 ISSUE 7:2020, ICES-Gen Issue 1.

1.1 Deviations from standard test methods

None

1.2 Device Modifications Necessary for Compliance

None

1.3 TEST RESULTS SUMMARY

This product is considered Class B

Requirement – Test	Result (Compliant / Non-Compliant)
CONDUCTED EMISSIONS	NA[1]
RADIATED EMISSIONS	Compliant

Note 1: This report covers WWAN Rx mode testing only.

Approved & Released For
UL LLC. By:

Michael Antola
Staff Engineer
Consumer Technology Division
UL LLC.

Prepared By:

Brian Kiewra
Project Engineer
Consumer Technology Division
UL LLC.

2.0 DECISION RULES AND MEASUREMENT UNCERTAINTY

2.1 Metrological Traceability

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

2.2 Decision Rules

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

2.3 Measurement Uncertainty

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

PARAMETER	U_{lab}
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3 dB
Worst Case Radiated Disturbance, All Ranges	6 dB

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

2.4 Sample Calculation

RADIATED EMISSIONS
Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

MAINS CONDUCTED EMISSIONS
Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.

36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

3.0 GENERAL - Product Description

3.1 Equipment Description

GSM/WCDMA/LTE 5G NR Tablet + BT/BLE, DTS/UNII a/b/g/n/ac/ax and WPT

3.2 Device Configuration During Test

3.2.1 Equipment Used During Test:

Use	Product Type	Manufacturer	Model	Comments
EUT	Tablet	Samsung	SM-X716B	None
EUT	AC Adaptor	Samsung	EP-TA800	None
Note: **EUT** - Equipment Under Test, **AE** - Auxiliary/Associated Equipment, or **SIM** - Simulator (Not Subjected to Test)				

3.2.2 Input/Output Ports:

Port #	Name	Type*	Cable Max. >3m (Y/N)	Cable Shielded (Y/N)	Comments
0	Enclosure	N/E	—	—	None
1	Mains	DC	N	N	None

*Note:
AC = AC Power Port DC = DC Power Port N/E = Non-Electrical
I/O = Signal Input or Output Port (Not Involved in Process Control)
TP = Telecommunication Ports

3.2.3 EUT Highest Frequencies:

Frequency (MHz)	Description
7115	Highest Tx Frequency

3.2.4 Power Interface:

Mode # /Rated	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
Rated	100-240	-	-	50/60	Single	None
`	120 Vac	-	-	60Hz	Single	None

3.2.5 Subassemblies

Description	Manufacturer	Model
None		

3.2.6 Manufacturer's Description of Model Differences

None

3.2.7 Software and Firmware

The EUT firmware installed during testing was REV0.1.
The test utility software used during testing was X716B.001.

3.3 Block Diagram:

Refer to setup exhibit R14720550-EP2 for block diagram.

3.4 EUT Configurations

Configuration #	Description
1	Configured as tabletop equipment

3.5 EUT Operation Modes

Mode of Operation#	Description
1	Operating as intended connected to power supply. Radio in Rx mode on supported LTE bands that transmit <960MHz. Note: LTE B26 covers GSM850, WCDMA Band 5, and LTE B5. LTE 12 covers LTE B17. Callbox was used to ensure that EUT was placed in Rx mode.

3.6 Rationale for EUT Configurations

Configuration #	Description
1	EUT was investigated in three orientations, X, Y, and Z. It was determined that worst-case orientation for radiated testing was X.

3.7 Rationale for EUT Mode of Operation

Mode of Operation #	Description
1	Testing to meet receiver mode requirements.

4.0 APPLICABLE EMISSIONS LIMITS AND TEST RESULTS

4.1 Test Conditions and Results - RADIATED EMISSIONS

Test Engineer	85501/11993, 25100/11993, 19289/11993	
Test Date	2023-04-24 to 2023-05-11	
Laboratory Parameters	Required prior to the test	During the test
Ambient Temperature	10 to 40 °C	24.3 – 25.0°C
Humidity	10 % to 90 %	24.2 – 39.3%
	Frequency range	Measurement Point
Fully configured sample scanned over the following frequency range	30-40000MHz	3m

Limits - Class B		
Frequency (MHz)	Limit (dBµV/m)	
FCC/ICES Limits for radiated disturbance of Class B ITE at measuring distance of 3 m		
30-88	40	NA
88-216	43.5	NA
216-230	46	NA
230-960	46/47	NA
Above 960	54	NA
	Peak	Average
Above 1 GHz	74	54
Supplementary information: Used FCC limit as worst-case.		

Radiated Emissions EUT Configuration Settings

Power Interface #	EUT Configurations #	EUT Mode of Operation#
1	1	1
Supplementary information: None		

Refer to setup exhibit R14720550-EP2 for setup photos.

Radiated Emissions Test Equipment

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)

Equipment ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
30-1000 MHz					
90629	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2023-01-06	2024-01-06
1-18 GHz					
86408	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2022-05-24	2023-05-31
Gain-Loss Chains					
207639	Gain-loss string: 25-1000MHz	Various	Various	2022-05-20	2023-05-31
207640	Gain-loss string: 1-18GHz	Various	Various	2022-05-20	2023-05-31
Receiver & Software					
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2023-03-24	2024-03-24
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
Additional Equipment used					
208720	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	2022-05-02	2023-05-31

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 2)

Equipment ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
30-1000 MHz					
90627	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2022-09-07	2023-09-07
1-18 GHz					
88761	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2022-09-13	2023-09-13
Gain-Loss Chains					
91978	Gain-loss string: 25-1000MHz	Various	Various	2022-05-10	2023-05-31
91977	Gain-loss string: 1-18GHz	Various	Various	2022-05-10	2023-05-31
Receiver & Software					
SA0026	Spectrum Analyzer	Keysight	N9030A	2022-08-02	2023-08-23
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
Additional Equipment used					
208721	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	2022-05-05	2023-05-31

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)

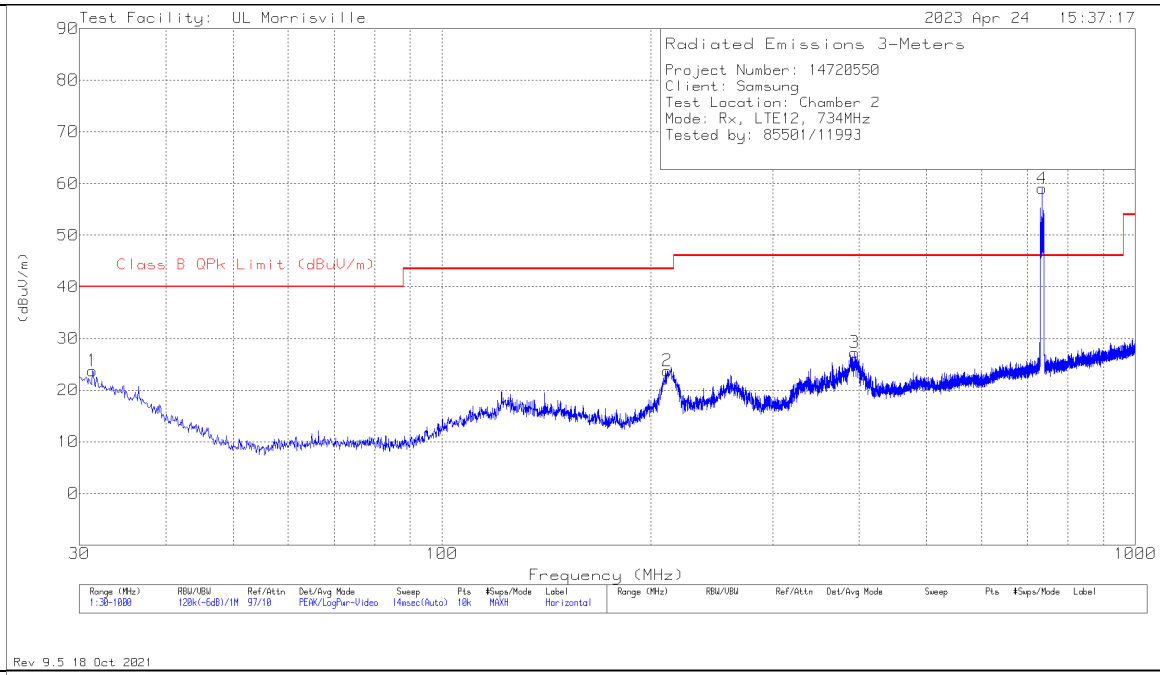
Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
1-18 GHz					
89509	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2022-05-11	2023-05-31
18-40 GHz					
204704	Horn Antenna, 18-26.5GHz	Com-Power	AH-626	2022-07-11	2023-07-11
204705	Horn Antenna, 26-40GHz	Com-Power	AH-640	2022-07-11	2023-07-11
Gain-Loss Chains					
91979	Gain-loss string: 1-18GHz	Various	Various	2022-12-02	2023-12-02
135999	Gain-loss string: 18-40GHz	Various	Various	2022-05-05	2023-05-31
Receiver & Software					
197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2023-02-02	2024-02-02
72823	Spectrum Analyzer	Agilent	E4446A	2022-06-08	2023-06-08
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
Additional Equipment used					
200539	Environmental Meter	Fisher Scientific	15-077-963 s/n 18474341	2022-10-05	2023-10-05
212967	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	2022-12-14	2023-12-14

4.1.1 LTE B12 734MHz Rx

RADIATED EMISSIONS 30 TO 1000 MHz

Radiated Emissions Graph

HORIZONTAL



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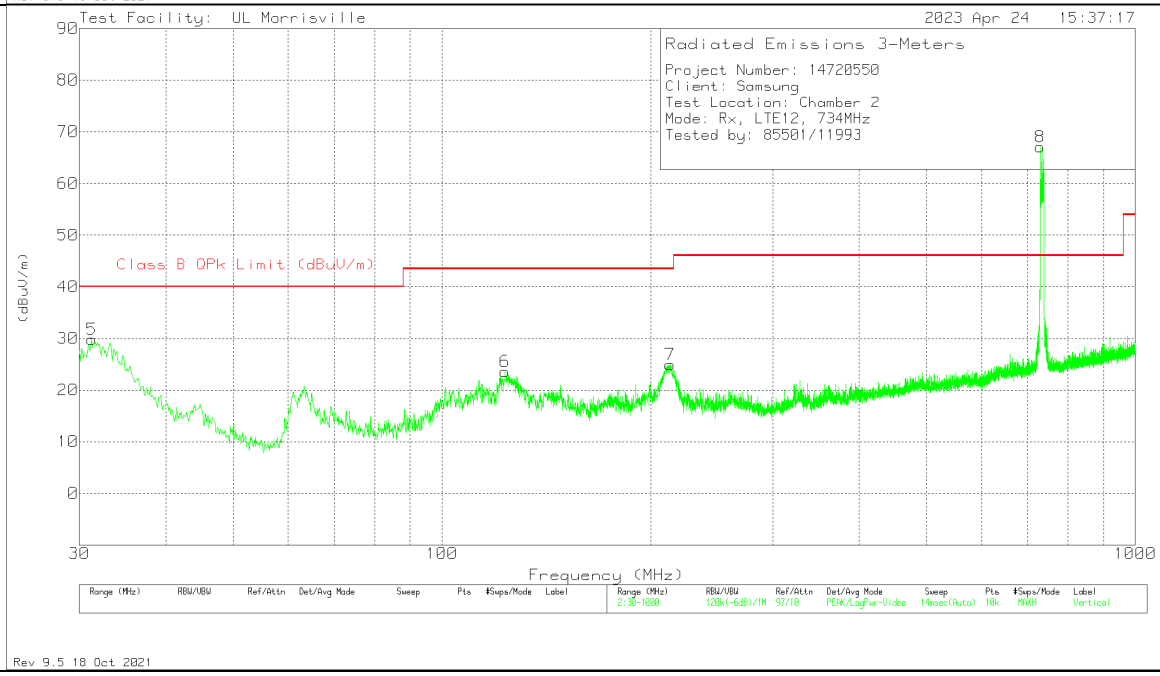


Radiated Emissions Data Points

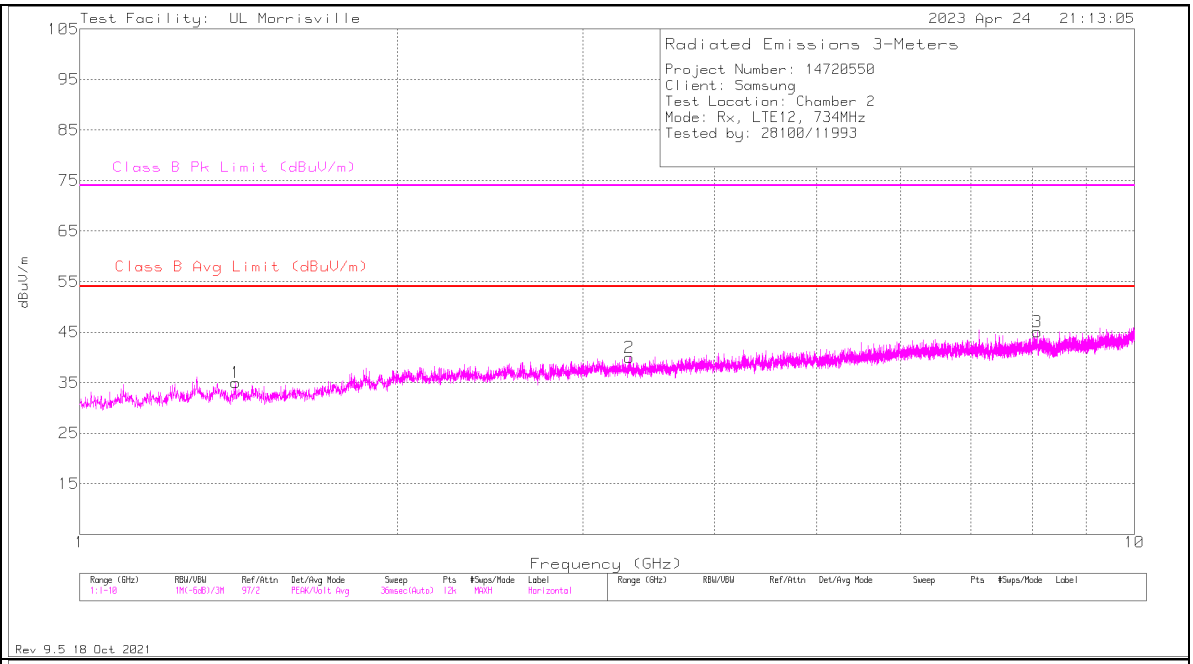
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90627 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	31.261	34.79	Pk	26.4	-31.4	29.79	40	-10.21	0-360	101	V
1	31.358	28.86	Pk	26.3	-31.4	23.76	40	-16.24	0-360	299	H
6	123.314	33.87	Pk	19.9	-30.2	23.57	43.52	-19.95	0-360	101	V
2	211.39	36.86	Pk	16.4	-29.5	23.76	43.52	-19.76	0-360	101	H
7	213.427	37.84	Pk	16.5	-29.4	24.94	43.52	-18.58	0-360	101	V
3	393.653	34.36	Pk	21.2	-28.3	27.26	46.02	-18.76	0-360	101	H
8	729.855 (DL)	67.59	Pk	26.5	-27	67.09	-	-	0-360	101	V
4	734.22 (DL)	59.03	Pk	26.6	-26.6	59.03	-	-	0-360	199	H

Pk - Peak detector
DL – Callbox Downlink

RADIATED EMISSIONS 1000 TO 10,000 MHz

Radiated Emissions Graph

HORIZONTAL



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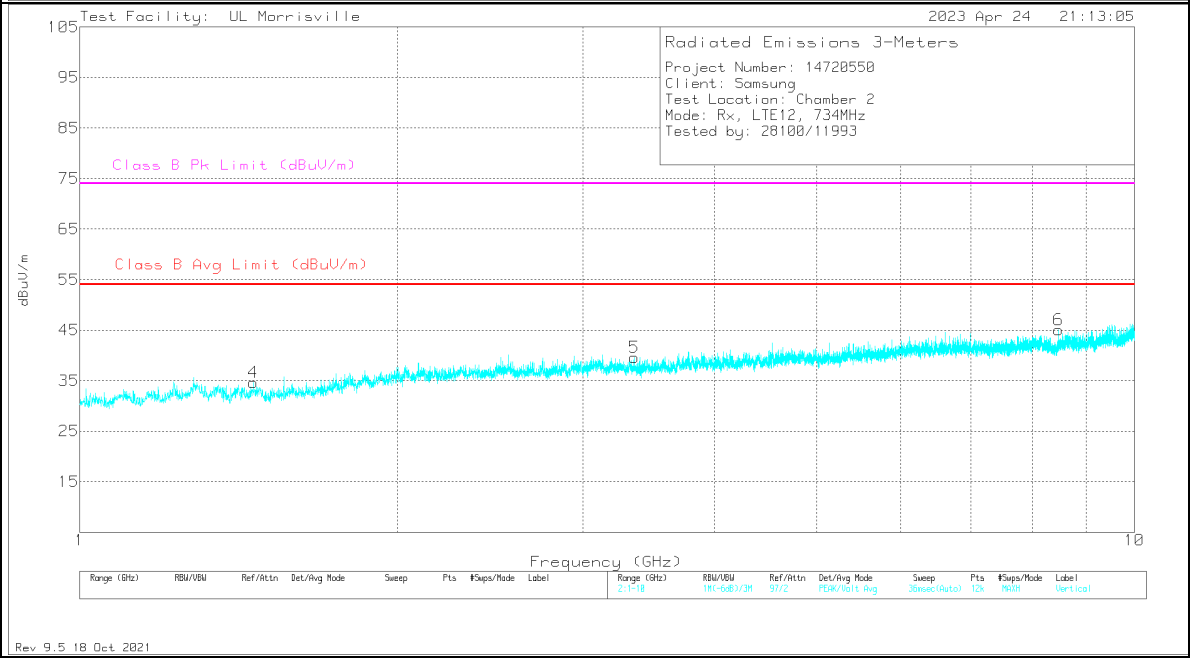


Radiated Emissions Data Points

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	88761 (dB/m)	Gain/Loss (dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.405	41.61	Pk	28.3	-34.9	35.01	54	-18.99	74	-38.99	0-360	101	H
4	1.4605	40.73	Pk	28.3	-34.4	34.63	54	-19.37	74	-39.37	0-360	200	V
2	3.319	40.17	Pk	32.8	-33	39.97	54	-14.03	74	-34.03	0-360	199	H
5	3.3565	39.8	Pk	32.6	-32.8	39.6	54	-14.4	74	-34.4	0-360	200	V
3	8.08675	36.41	Pk	35.8	-27.2	45.01	54	-8.99	74	-28.99	0-360	199	H
6	8.4715	36.17	Pk	35.8	-26.9	45.07	54	-8.93	74	-28.93	0-360	101	V

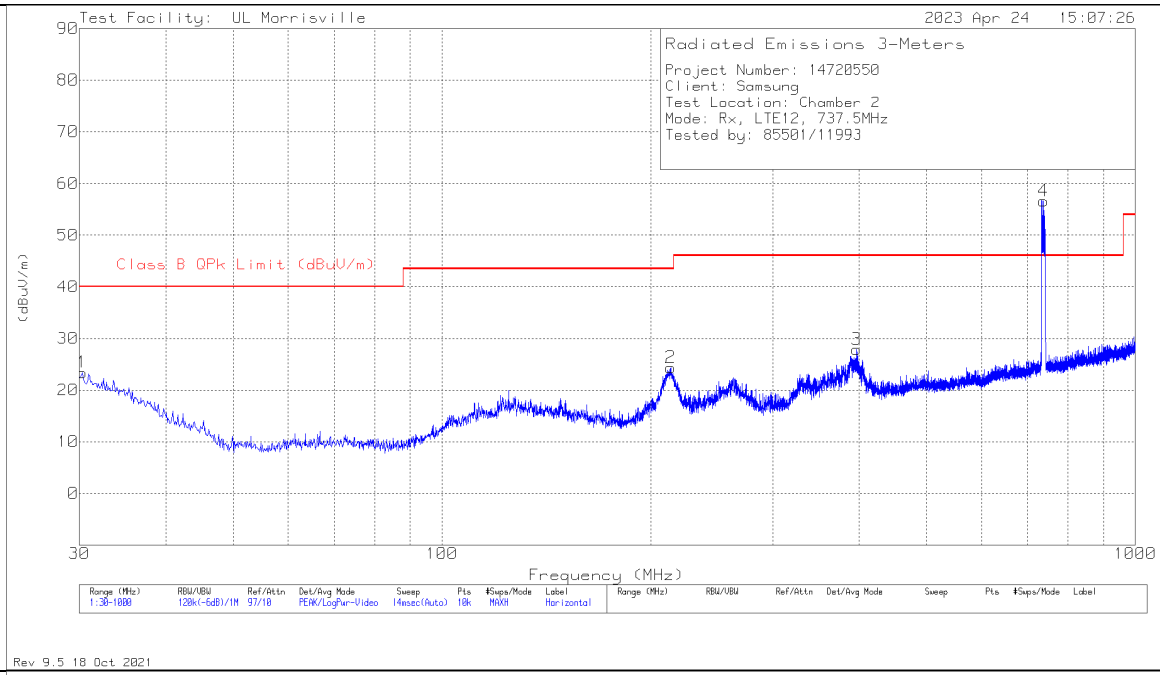
Pk - Peak detector

4.1.2 LTE B12 737.5MHz Rx

RADIATED EMISSIONS 30 TO 1000 MHz

Radiated Emissions Graph

HORIZONTAL



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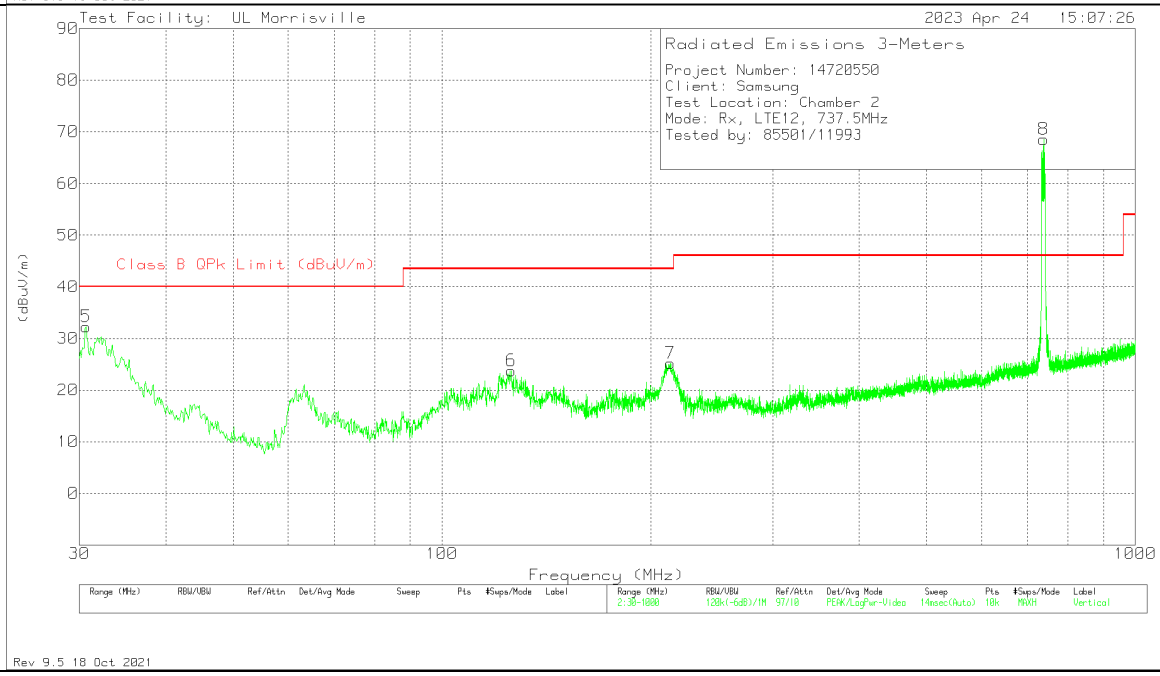


Radiated Emissions Data Points

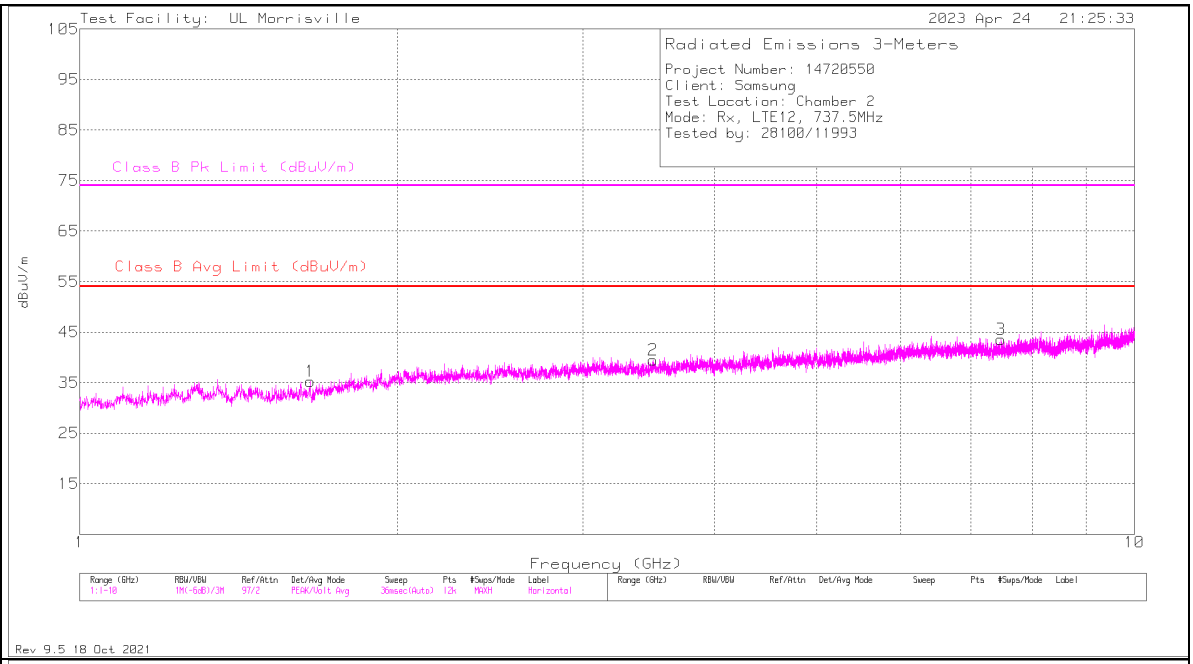
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90627 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.291	27.82	Pk	27.1	-31.5	23.42	40	-16.58	0-360	199	H
5	30.679	36.98	Pk	26.8	-31.5	32.28	40	-7.72	0-360	199	V
6	125.933	34.07	Pk	20	-30.3	23.77	43.52	-19.75	0-360	100	V
7	213.621	38.02	Pk	16.5	-29.3	25.22	43.52	-18.3	0-360	100	V
2	213.815	37.07	Pk	16.5	-29.2	24.37	43.52	-19.15	0-360	101	H
3	396.66	34.6	Pk	21.3	-28	27.9	46.02	-18.12	0-360	101	H
4	737.615 (DL)	57.13	Pk	26.6	-27.1	56.63	-	-	0-360	199	H
8	737.809 (DL)	68.97	Pk	26.6	-27	68.57	-	-	0-360	100	V

Pk - Peak detector
DL – Callbox Downlink

RADIATED EMISSIONS 1000 TO 10,000 MHz

Radiated Emissions Graph

HORIZONTAL



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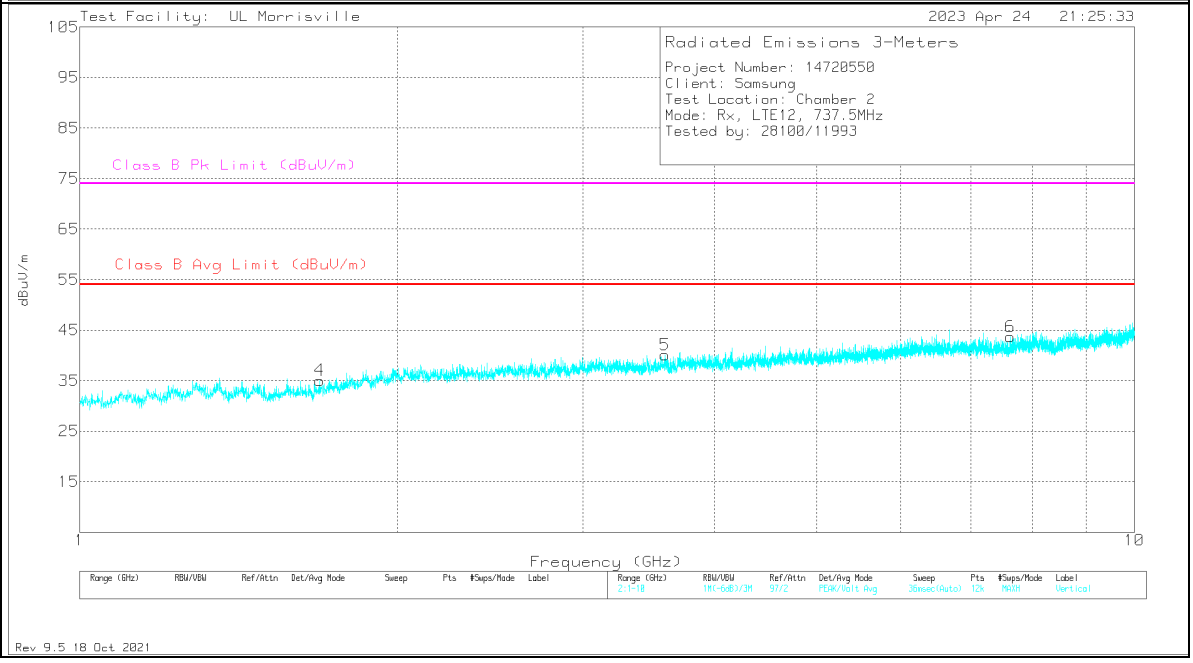


Radiated Emissions Data Points

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	88761 (dB/m)	Gain/Loss (dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.654	41.54	Pk	28.6	-34.9	35.24	54	-18.76	74	-38.76	0-360	200	H
4	1.68775	40.87	Pk	28.8	-34.6	35.07	54	-18.93	74	-38.93	0-360	200	V
2	3.496	39.6	Pk	32.7	-32.8	39.5	54	-14.5	74	-34.5	0-360	200	H
5	3.58975	39.63	Pk	33	-32.5	40.13	54	-13.87	74	-33.87	0-360	200	V
3	7.46725	35.58	Pk	35.6	-27.6	43.58	54	-10.42	74	-30.42	0-360	200	H
6	7.62775	35.75	Pk	35.6	-27.7	43.65	54	-10.35	74	-30.35	0-360	101	V

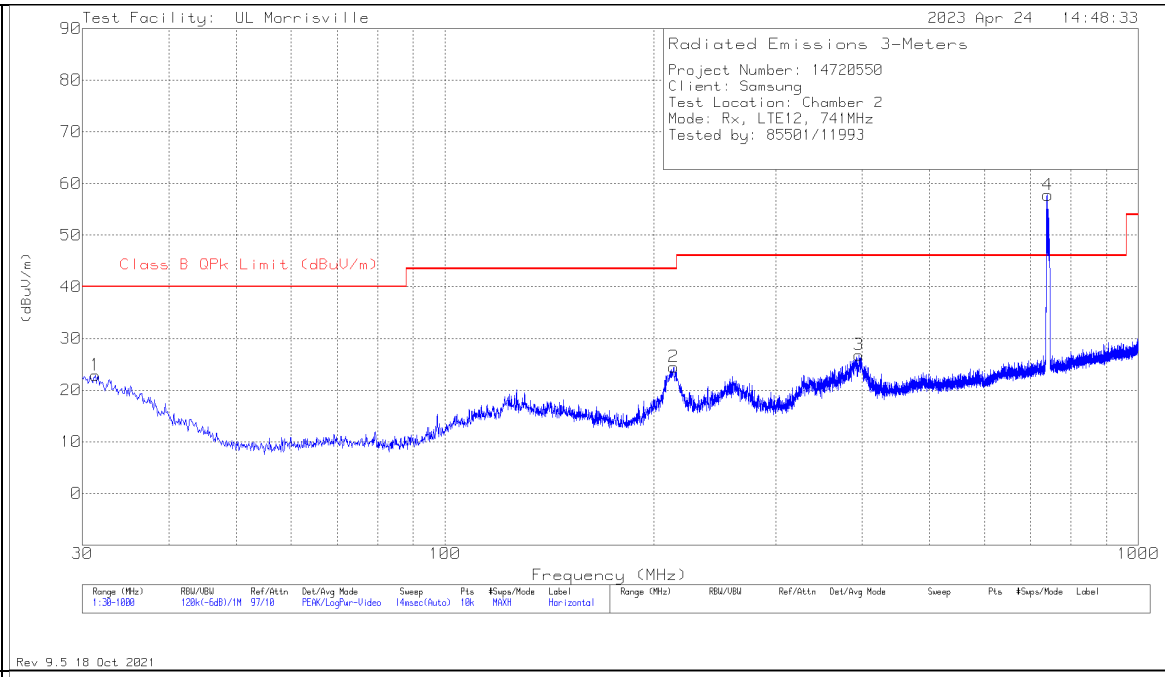
Pk - Peak detector

4.1.3 LTE B12 741MHz Rx

RADIATED EMISSIONS 30 TO 1000 MHz

Radiated Emissions Graph

HORIZONTAL



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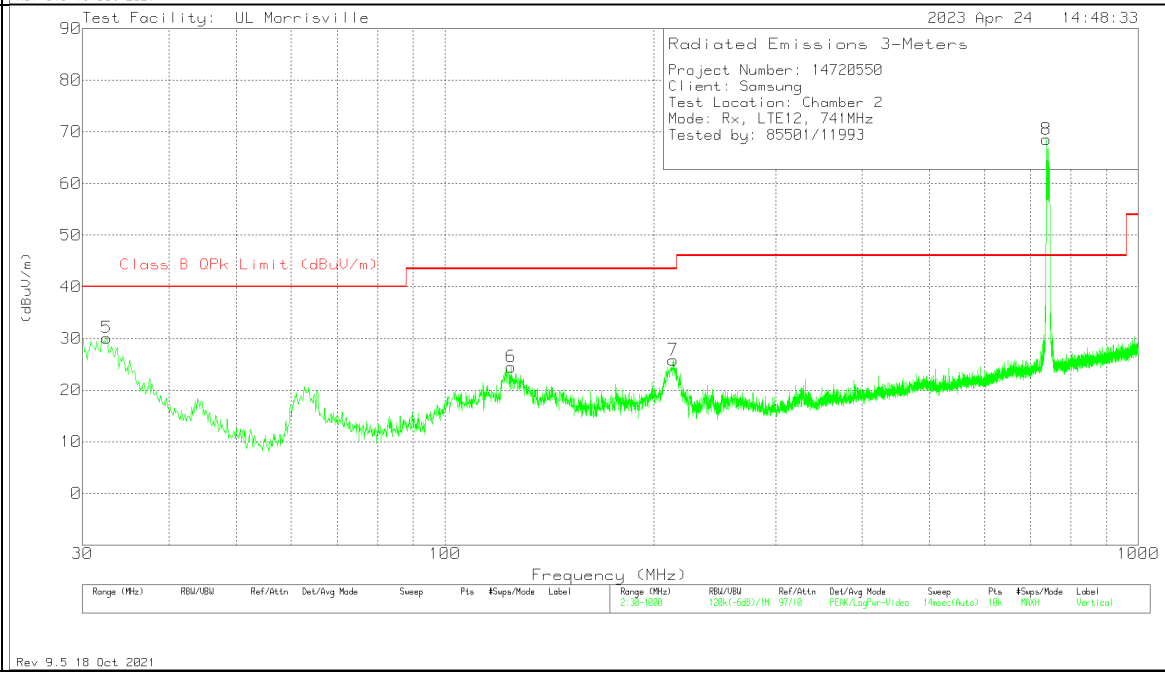


Radiated Emissions Data Points

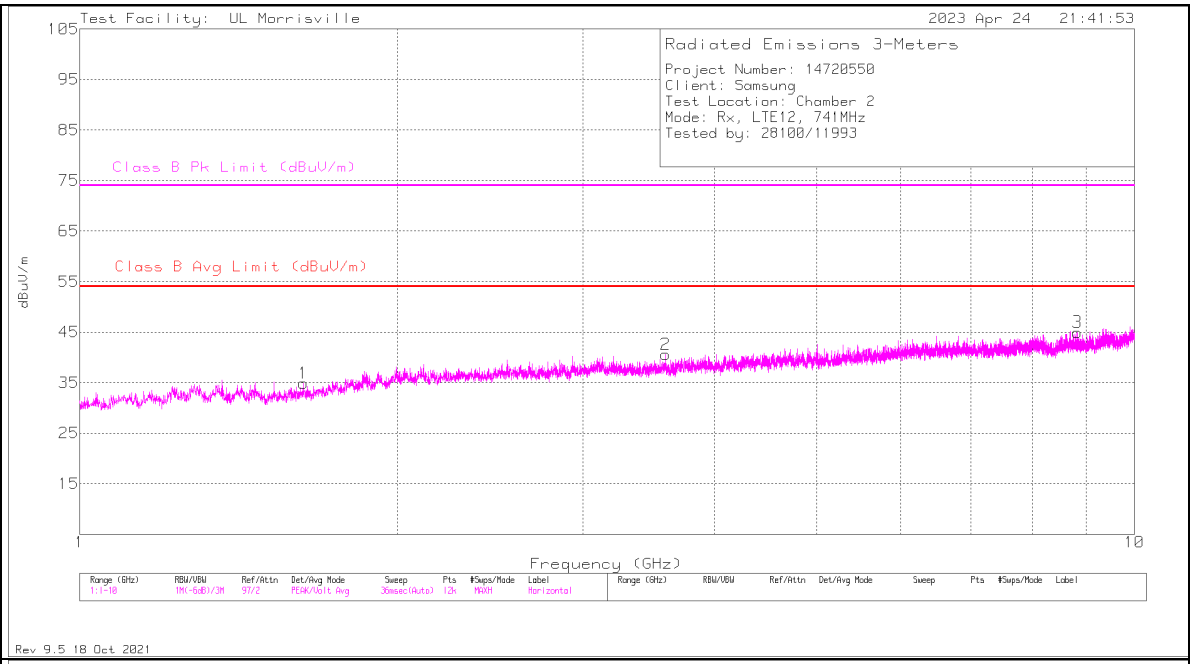
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90627 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.358	27.99	Pk	26.3	-31.4	22.89	40	-17.11	0-360	99	H
5	32.522	36.11	Pk	25.5	-31.5	30.11	40	-9.89	0-360	101	V
6	124.575	34.71	Pk	20	-30.2	24.51	43.52	-19.01	0-360	101	V
7	213.427	38.71	Pk	16.5	-29.4	25.81	43.52	-17.71	0-360	101	V
2	213.815	37.21	Pk	16.5	-29.2	24.51	43.52	-19.01	0-360	199	H
3	395.593	33.62	Pk	21.3	-28.1	26.82	46.02	-19.2	0-360	99	H
8	736.645 (DL)	68.96	Pk	26.6	-27	68.56	-	-	0-360	101	V
4	740.719 (DL)	57.79	Pk	26.7	-26.7	57.79	-	-	0-360	199	H

Pk - Peak detector
DL – Callbox Downlink

RADIATED EMISSIONS 1000 TO 10,000 MHz

Radiated Emissions Graph

HORIZONTAL



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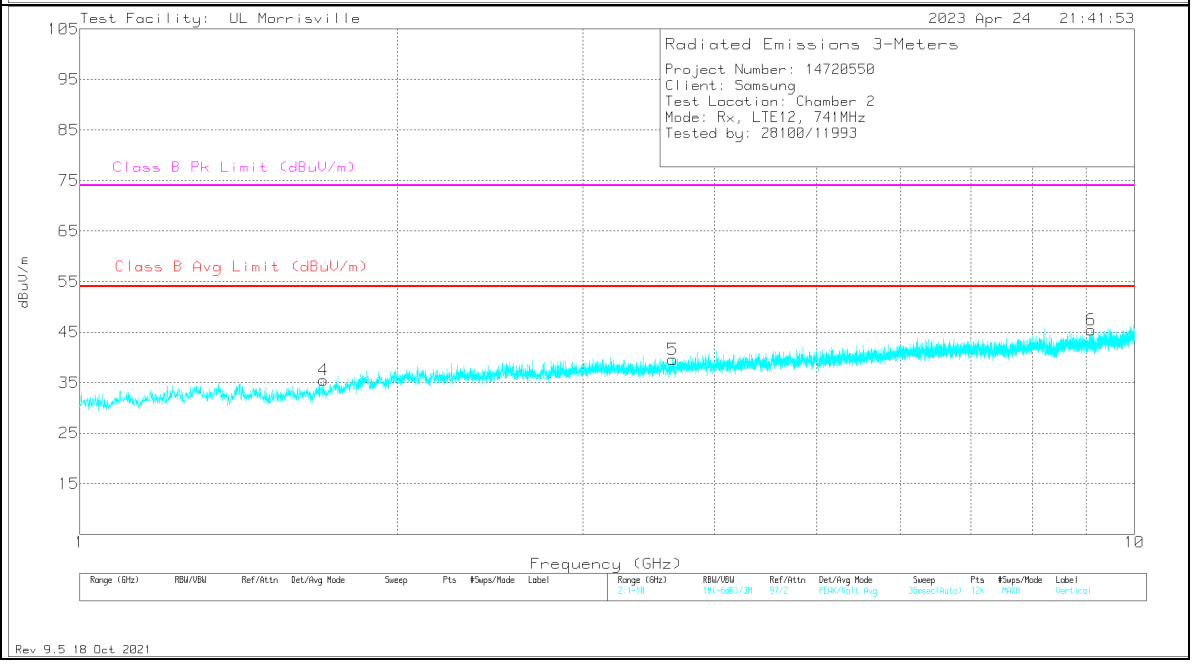


Radiated Emissions Data Points

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	88761 (dB/m)	Gain/Loss (dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.62925	41.15	Pk	28.4	-34.7	34.85	54	-19.15	74	-39.15	0-360	200	H
4	1.702	41.16	Pk	28.8	-34.5	35.46	54	-18.54	74	-38.54	0-360	200	V
2	3.592	40.34	Pk	32.9	-32.6	40.64	54	-13.36	74	-33.36	0-360	200	H
5	3.6505	39.36	Pk	32.9	-32.7	39.56	54	-14.44	74	-34.44	0-360	101	V
3	8.82925	35.7	Pk	36.1	-26.8	45	54	-9	74	-29	0-360	100	H
6	9.09925	35.32	Pk	36.2	-26.1	45.42	54	-8.58	74	-28.58	0-360	101	V

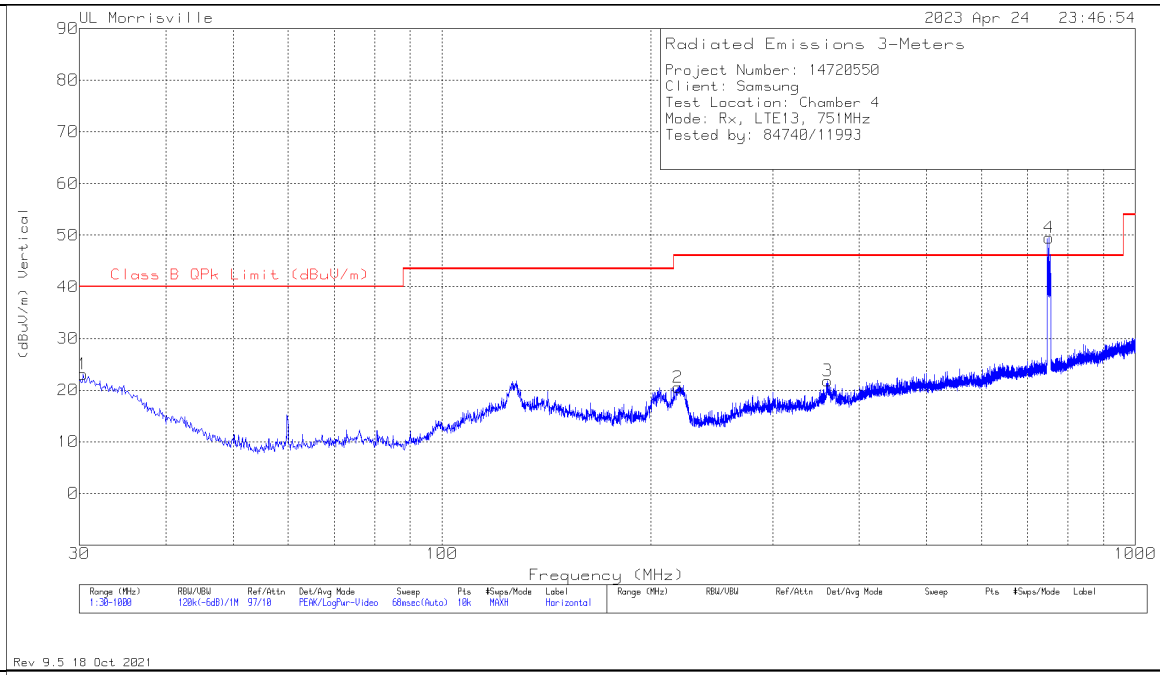
Pk - Peak detector

4.1.4 LTE B13 751MHz Rx

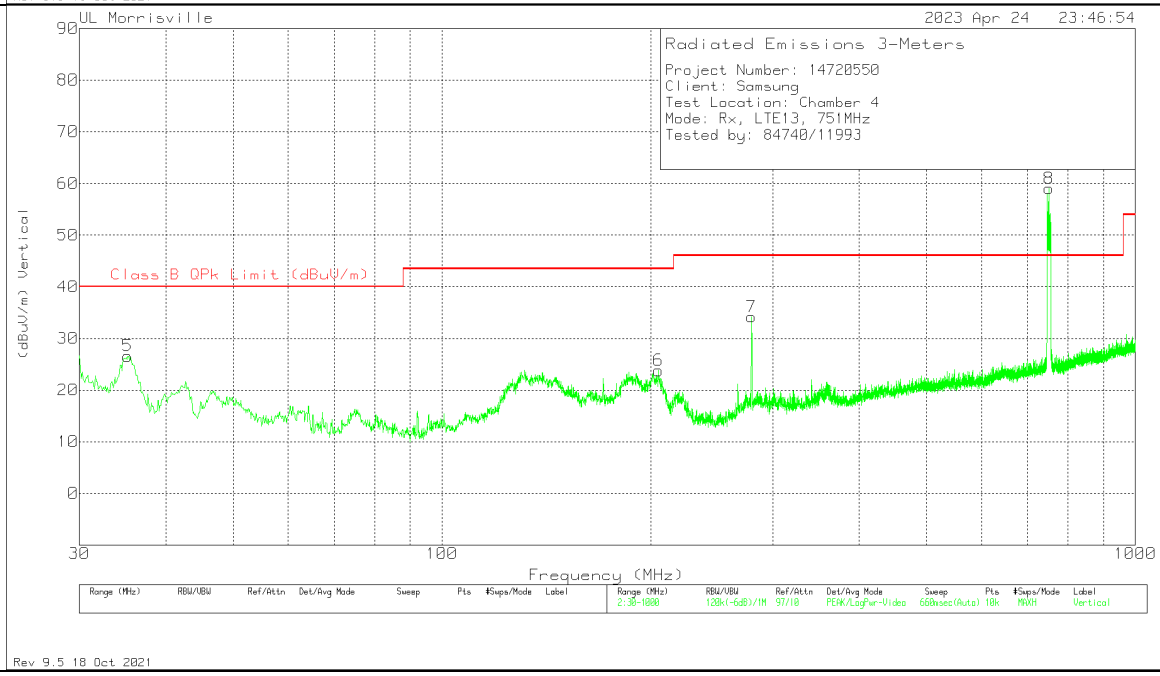
RADIATED EMISSIONS 30 TO 1000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

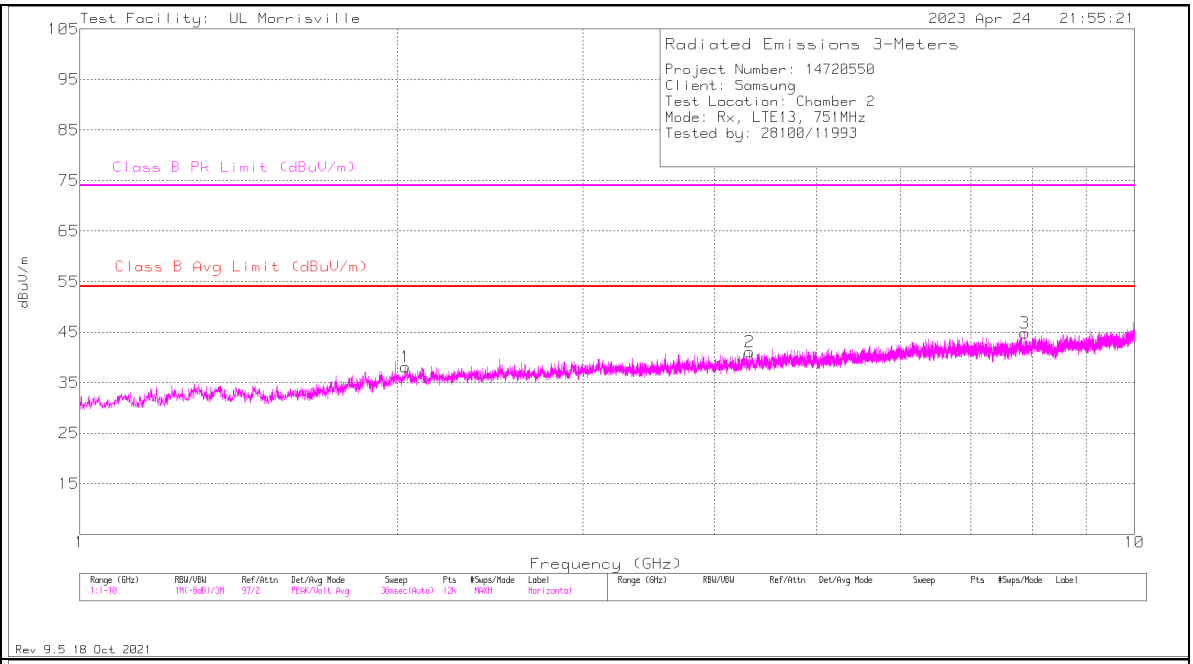
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90629 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.388	28.07	Pk	26.7	-31.7	23.07	40	-16.93	0-360	200	H
5	35.238	34.69	Pk	23.4	-31.5	26.59	40	-13.41	0-360	100	V
6	205.376	36.2	Pk	17.2	-29.6	23.8	43.52	-19.72	0-360	100	V
2	218.859	33.44	Pk	16.7	-29.6	20.54	46.02	-25.48	0-360	100	H
7	279.678	43.99	Pk	19.4	-29.2	34.19	46.02	-11.83	0-360	100	V
3	360.285	29.58	Pk	20.9	-28.7	21.78	46.02	-24.24	0-360	100	H
4	750.904 (DL)	49.6	Pk	26.8	-26.9	49.5	-	-	0-360	200	H
8	751.389 (DL)	59.05	Pk	26.8	-26.8	59.05	-	-	0-360	100	V

Pk - Peak detector
DL – Callbox Downlink

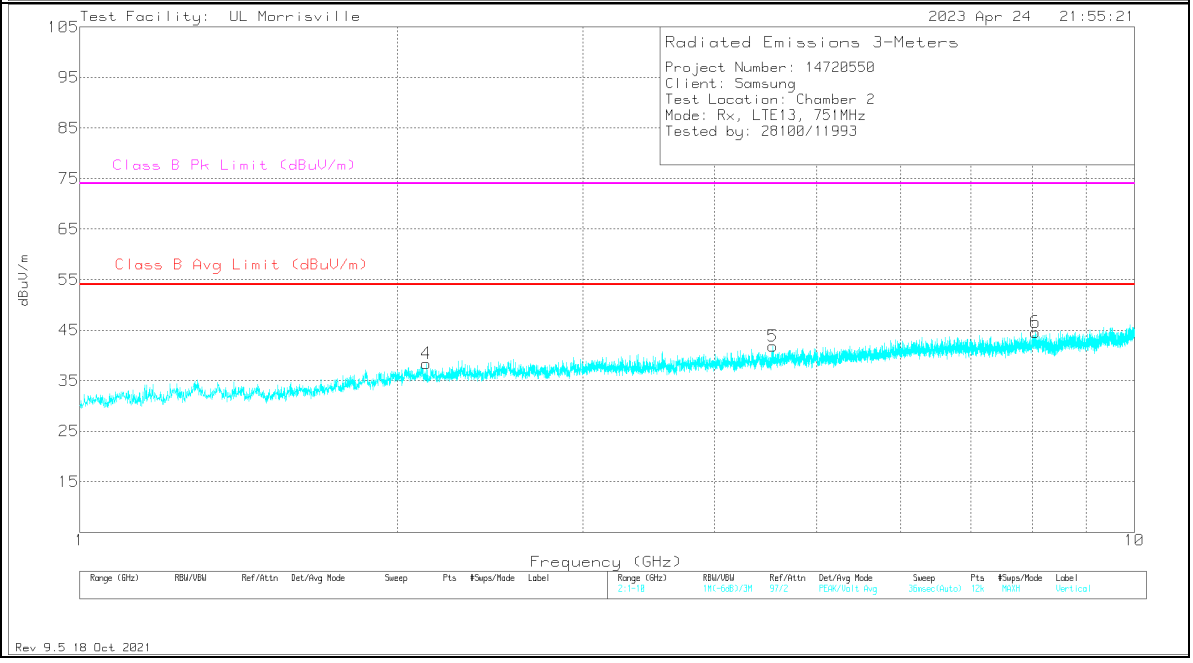
RADIATED EMISSIONS 1000 TO 10,000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	88761 (dB/m)	Gain/Loss (dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.03725	40.73	Pk	31.5	-34.1	38.13	54	-15.87	74	-35.87	0-360	199	H
4	2.131	41.02	Pk	31.5	-34.1	38.42	54	-15.58	74	-35.58	0-360	199	V
2	4.315	39.15	Pk	33.5	-31.5	41.15	54	-12.85	74	-32.85	0-360	101	H
5	4.54075	39.34	Pk	33.9	-31.4	41.84	54	-12.16	74	-32.16	0-360	101	V
3	7.87	36.6	Pk	35.7	-27.5	44.8	54	-9.2	74	-29.2	0-360	199	H
6	8.0575	36.03	Pk	35.8	-27.2	44.63	54	-9.37	74	-29.37	0-360	199	V

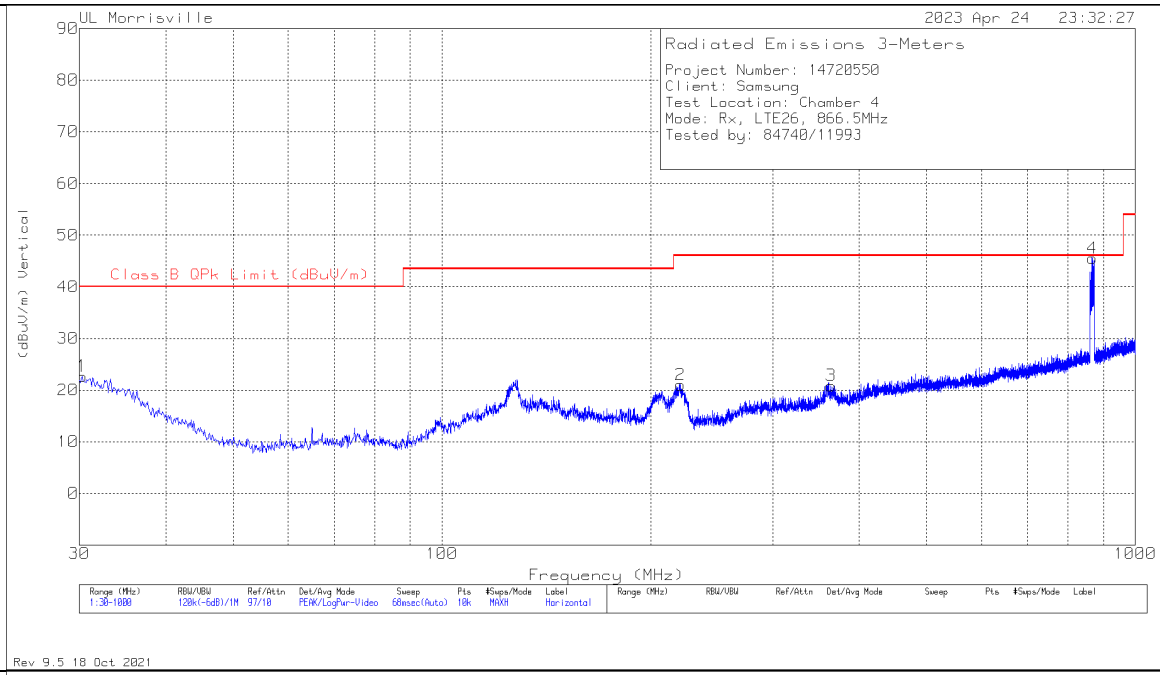
Pk - Peak detector

4.1.5 LTE B26 866.5MHz Rx

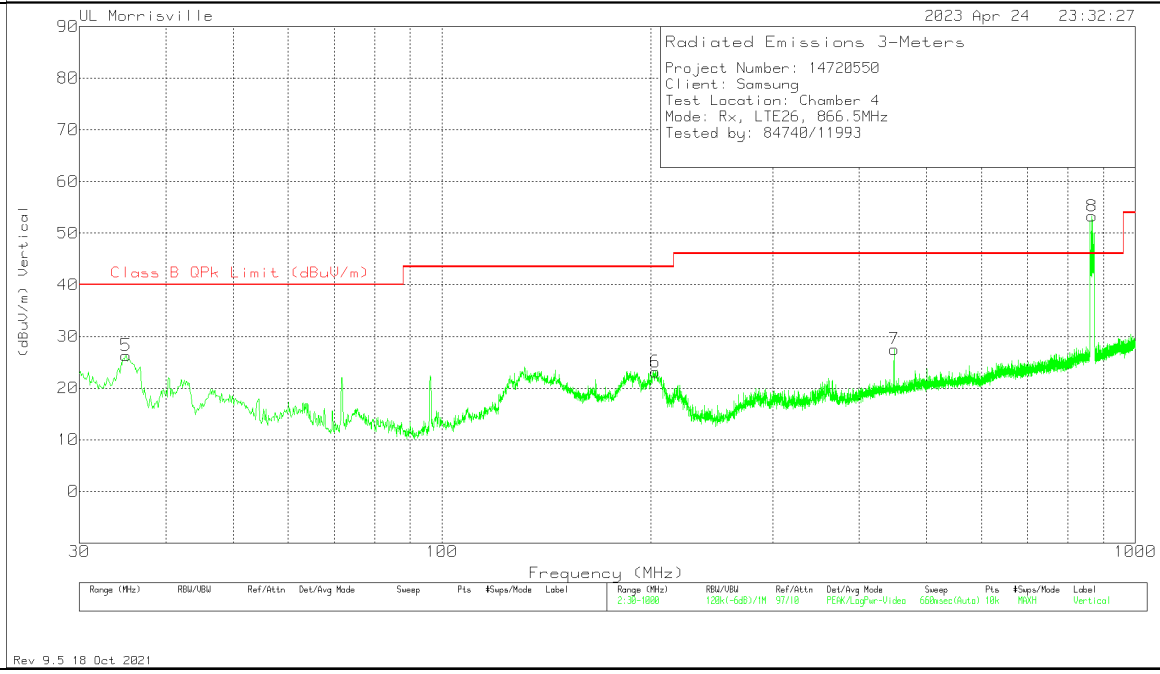
RADIATED EMISSIONS 30 TO 1000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

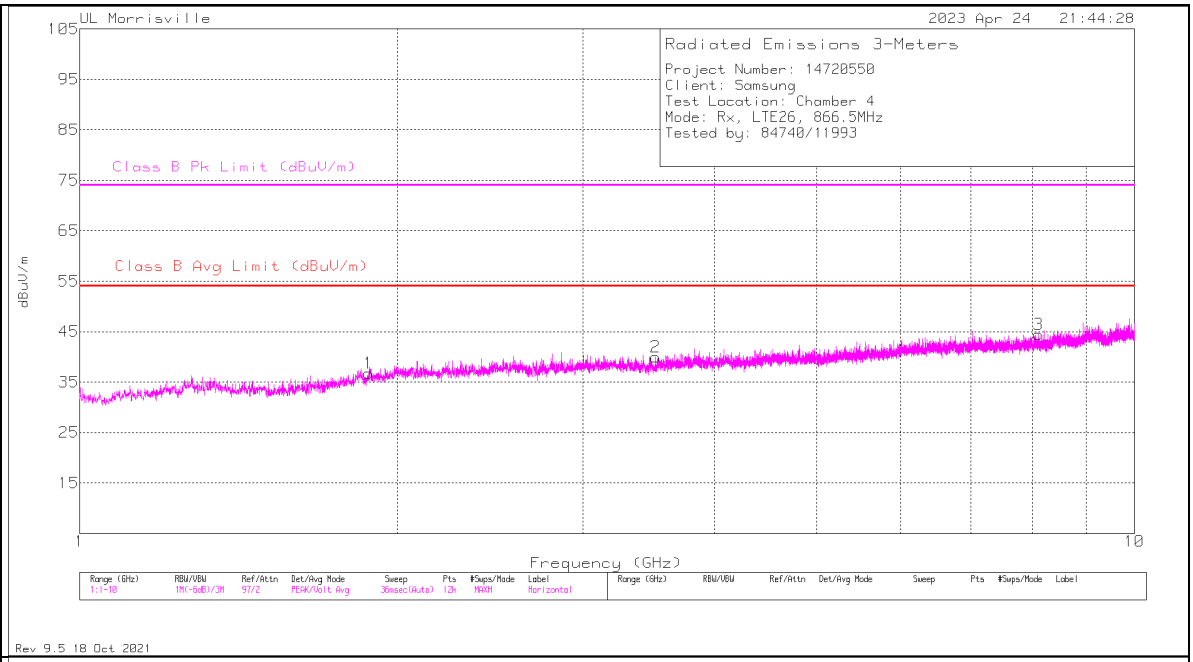
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90629 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.291	27.56	Pk	26.8	-31.7	22.66	40	-17.34	0-360	300	H
5	35.044	34.2	Pk	23.6	-31.5	26.3	40	-13.7	0-360	100	V
6	203.242	34.63	Pk	18.3	-29.8	23.13	43.52	-20.39	0-360	100	V
2	220.896	34.01	Pk	16.8	-29.8	21.01	46.02	-25.01	0-360	100	H
3	364.165	28.56	Pk	21	-28.7	20.86	46.02	-25.16	0-360	100	H
7	448.943	33.05	Pk	22.8	-28.3	27.55	46.02	-18.47	0-360	100	V
8	866.334 (DL)	51.22	Pk	28	-25.9	53.32	-	-	0-360	100	V
4	866.819 (DL)	43.33	Pk	28	-25.8	45.53	-	-	0-360	100	H

Pk - Peak detector
DL – Callbox Downlink

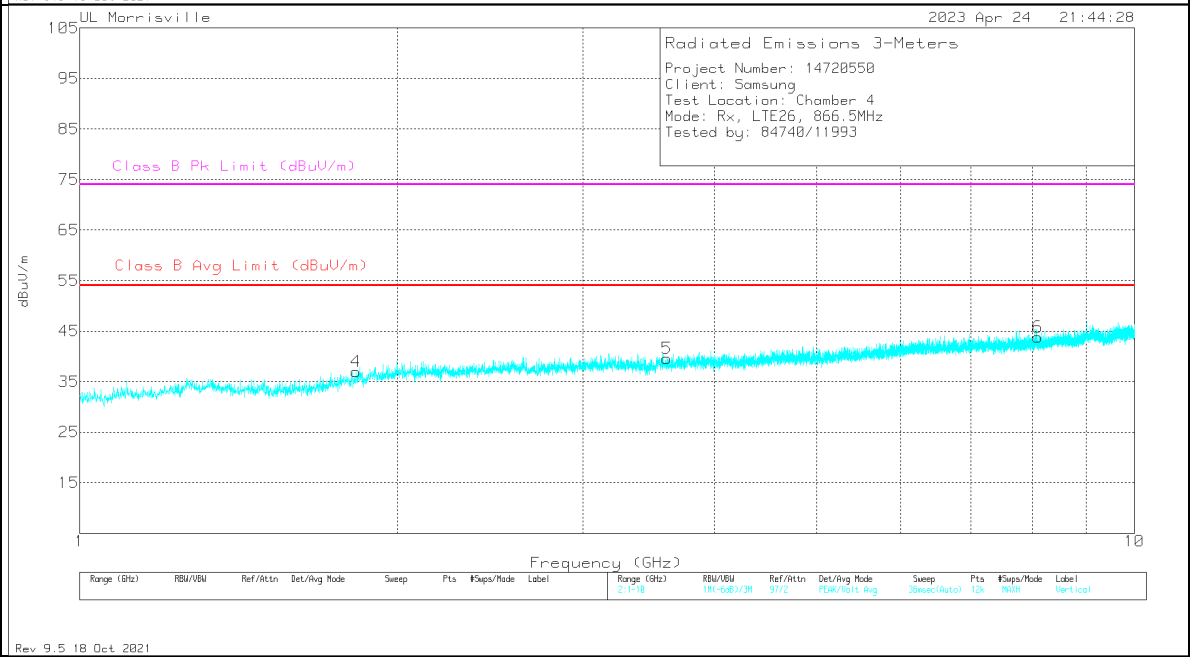
RADIATED EMISSIONS 1000 TO 10,000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.8775	41.77	Pk	31.3	-36.3	36.77	54	-17.23	74	-37.23	0-360	100	H
2	3.517	41.83	Pk	32.9	-34.8	39.93	54	-14.07	74	-34.07	0-360	100	H
3	8.10925	36.76	Pk	35.8	-28.1	44.46	54	-9.54	74	-29.54	0-360	100	H
4	1.828	42.4	Pk	30.8	-36.2	37	54	-17	74	-37	0-360	100	V
5	3.6025	41.06	Pk	33.1	-34.5	39.66	54	-14.34	74	-34.34	0-360	100	V
6	8.09575	36.17	Pk	35.8	-28.2	43.77	54	-10.23	74	-30.23	0-360	100	V

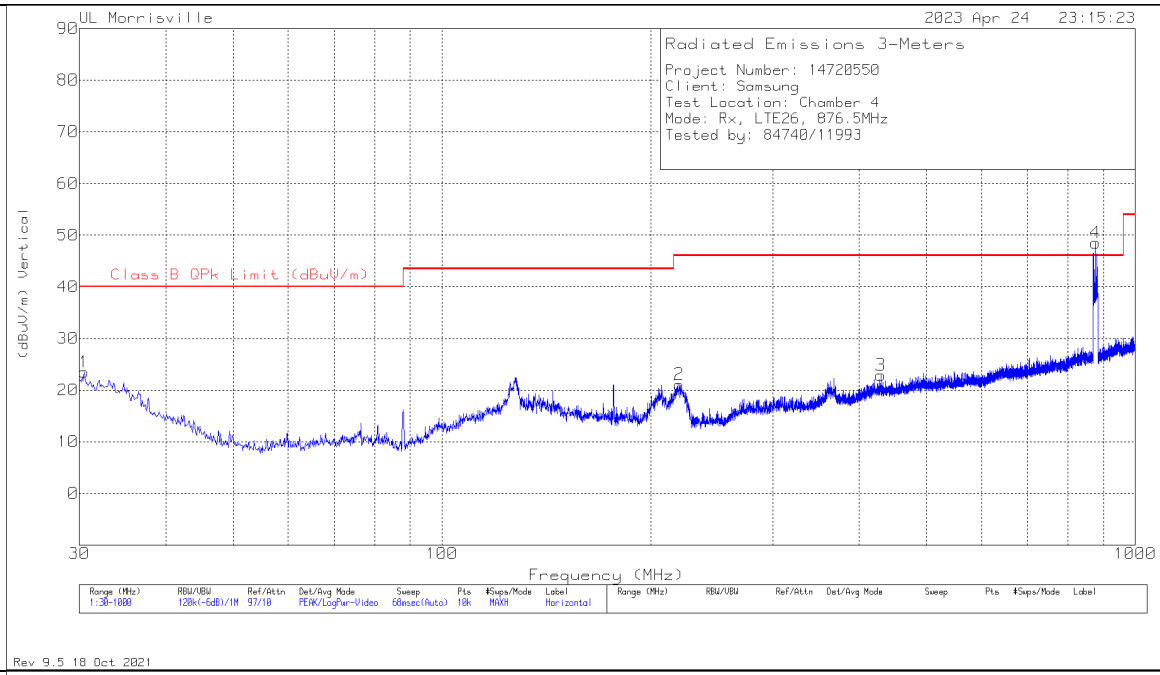
Pk - Peak detector

4.1.6 LTE B26 876.5MHz Rx

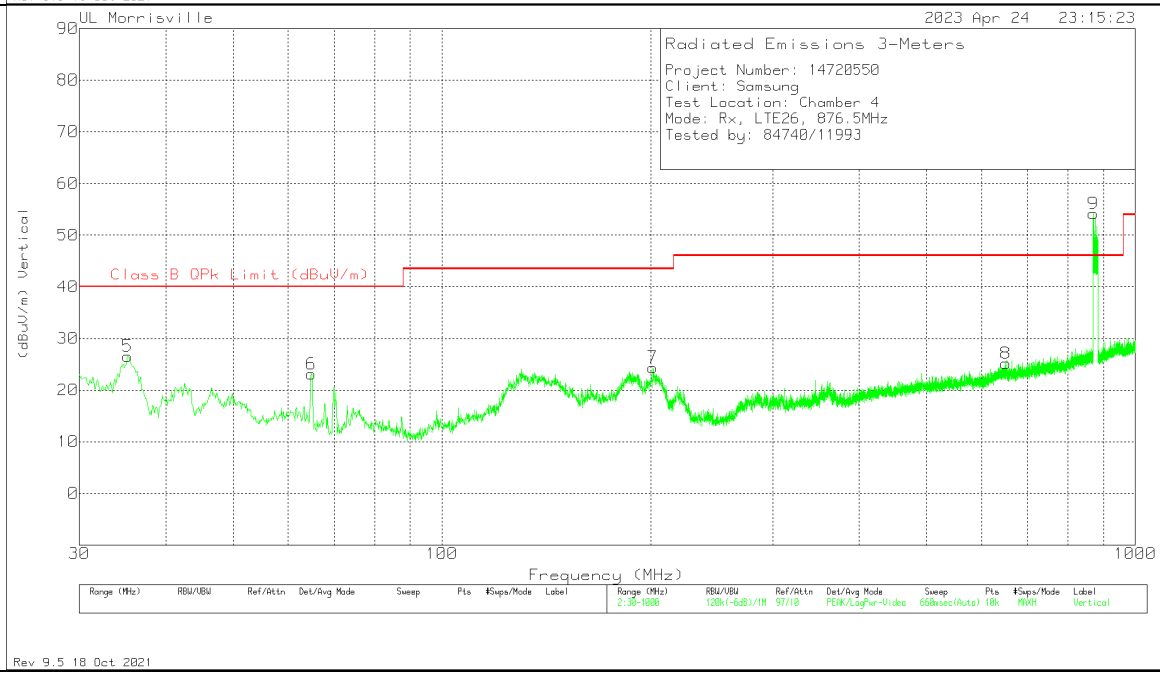
RADIATED EMISSIONS 30 TO 1000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

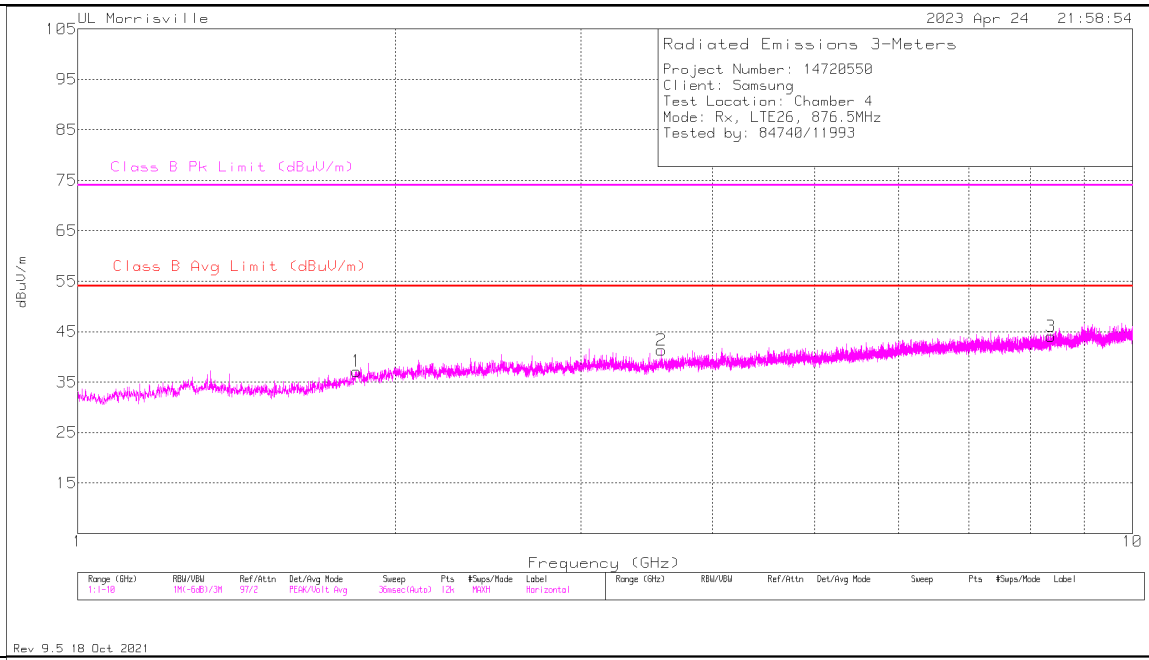
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90629 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.485	28.46	Pk	26.7	-31.7	23.46	40	-16.54	0-360	200	H
5	35.238	34.63	Pk	23.4	-31.5	26.53	40	-13.47	0-360	100	V
6	64.823	40.29	Pk	14.1	-31.3	23.09	40	-16.91	0-360	100	V
7	201.593	35.45	Pk	18.8	-29.9	24.35	43.52	-19.17	0-360	100	V
2	219.926	33.89	Pk	16.8	-29.6	21.09	46.02	-24.93	0-360	100	H
3	429.543	28.69	Pk	22.5	-28.3	22.89	46.02	-23.13	0-360	100	H
8	650.8	26.98	Pk	25.9	-27.7	25.18	46.02	-20.84	0-360	200	V
9	870.311 (DL)	51.97	Pk	28	-25.8	54.17	-	-	0-360	100	V
4	876.616 (DL)	46.32	Pk	27.9	-25.7	48.52	-	-	0-360	100	H

Pk - Peak detector
DL – Callbox Downlink

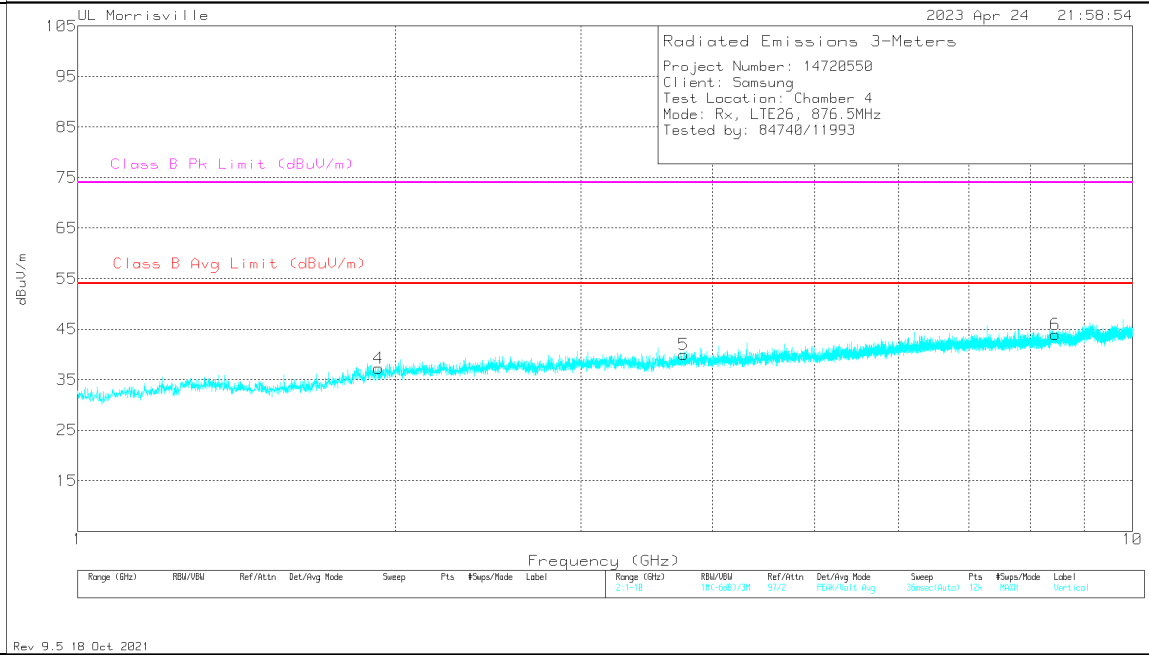
RADIATED EMISSIONS 1000 TO 10,000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.8385	42.38	Pk	30.9	-36.1	37.18	54	-16.82	74	-36.82	0-360	100	H
2	3.57625	42.77	Pk	33.1	-34.5	41.37	54	-12.63	74	-32.63	0-360	100	H
3	8.37325	35.89	Pk	35.7	-27.5	44.09	54	-9.91	74	-29.91	0-360	100	H
4	1.927	42.33	Pk	31.2	-36.3	37.23	54	-16.77	74	-36.77	0-360	200	V
5	3.75475	40.61	Pk	33.5	-34.1	40.01	54	-13.99	74	-33.99	0-360	200	V
6	8.45125	35.37	Pk	35.8	-27.2	43.97	54	-10.03	74	-30.03	0-360	200	V

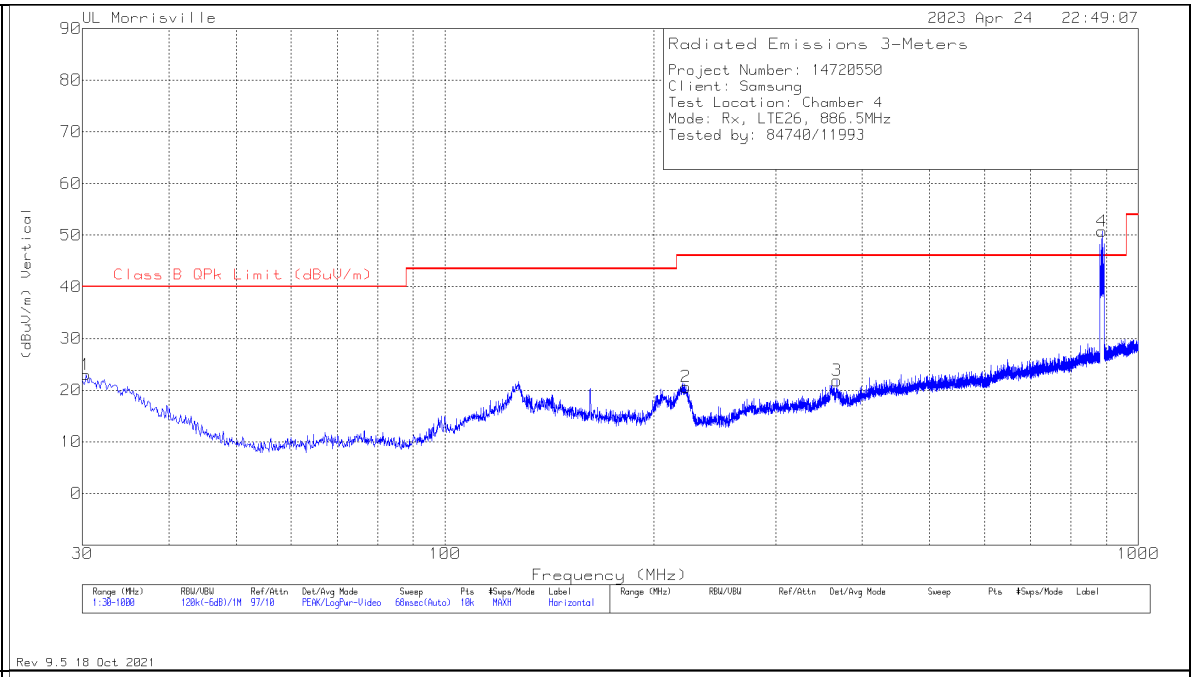
Pk - Peak detector

4.1.7 LTE B26 886.5MHz Rx

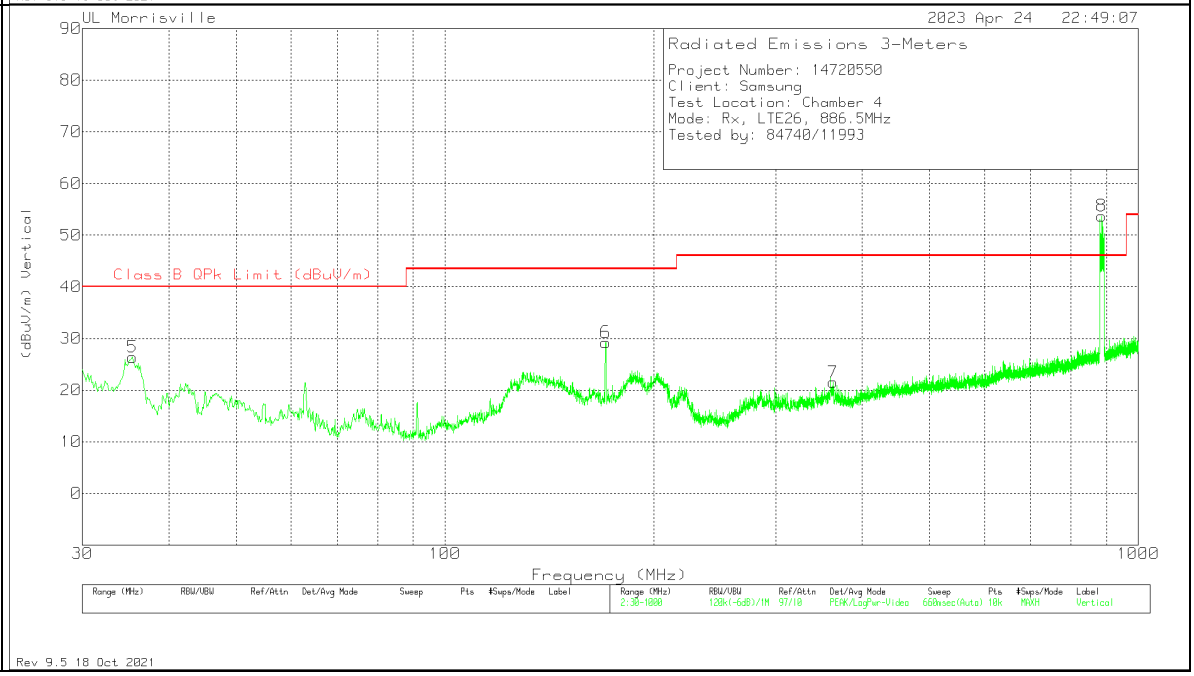
RADIATED EMISSIONS 30 TO 1000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

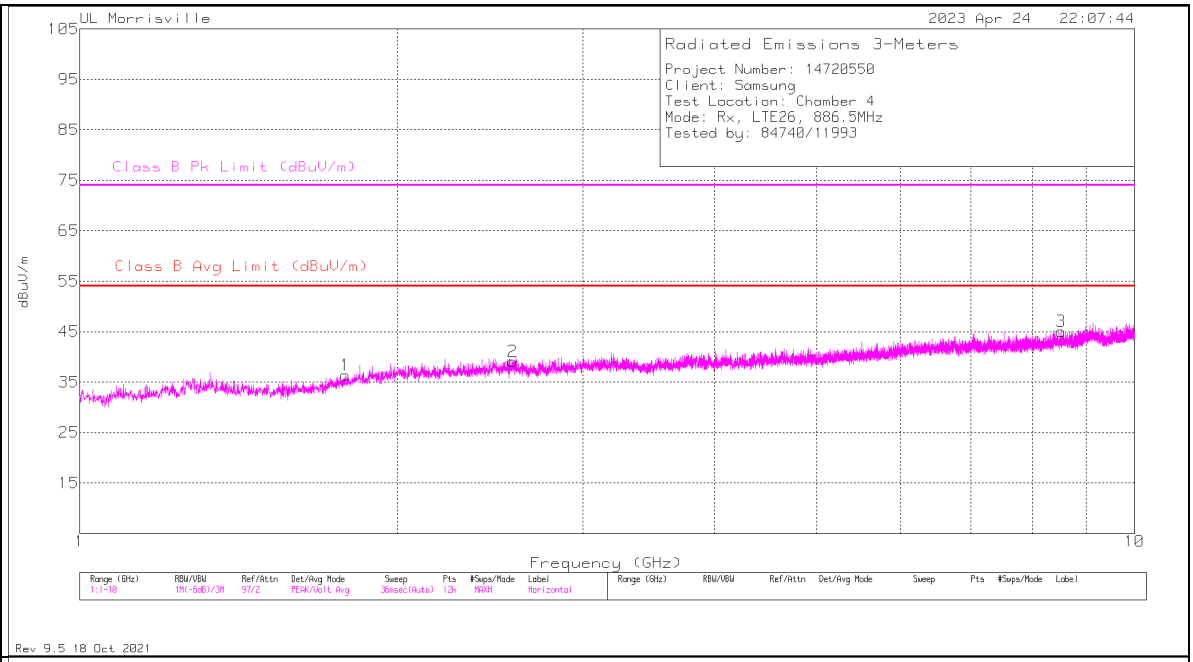
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90629 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.388	27.98	Pk	26.7	-31.7	22.98	40	-17.02	0-360	100	H
5	35.432	34.56	Pk	23.3	-31.5	26.36	40	-13.64	0-360	100	V
6	170.65	41.21	Pk	17.9	-29.9	29.21	43.52	-14.31	0-360	100	V
2	222.642	33.44	Pk	16.9	-29.7	20.64	46.02	-25.38	0-360	100	H
7	363.001	29.3	Pk	21	-28.8	21.5	46.02	-24.52	0-360	100	V
3	367.366	29.45	Pk	21	-28.6	21.85	46.02	-24.17	0-360	100	H
8	886.316 (DL)	51.22	Pk	28	-25.5	53.72	-	-	0-360	100	V
4	886.801 (DL)	48.14	Pk	28	-25.4	50.74	-	-	0-360	100	H

Pk - Peak detector
DL – Callbox Downlink

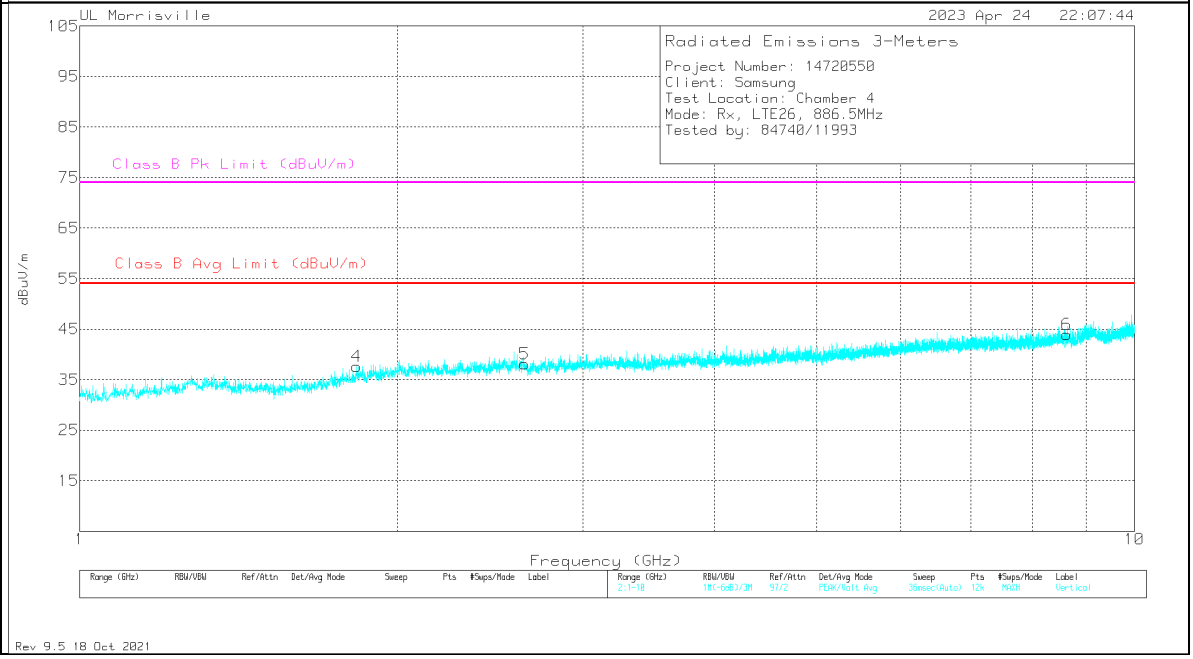
RADIATED EMISSIONS 1000 TO 10,000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	Corrected Reading dBuV/m	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.78525	42.53	Pk	30.2	-36.3	36.43	54	-17.57	74	-37.57	0-360	100	H
2	2.575	42.55	Pk	32.7	-36.1	39.15	54	-14.85	74	-34.85	0-360	100	H
3	8.515	36.53	Pk	35.8	-27.3	45.03	54	-8.97	74	-28.97	0-360	100	H
4	1.83025	43.02	Pk	30.8	-36.2	37.62	54	-16.38	74	-36.38	0-360	200	V
5	2.641	41.74	Pk	32.4	-36	38.14	54	-15.86	74	-35.86	0-360	200	V
6	8.62375	35	Pk	35.8	-26.9	43.9	54	-10.1	74	-30.1	0-360	200	V

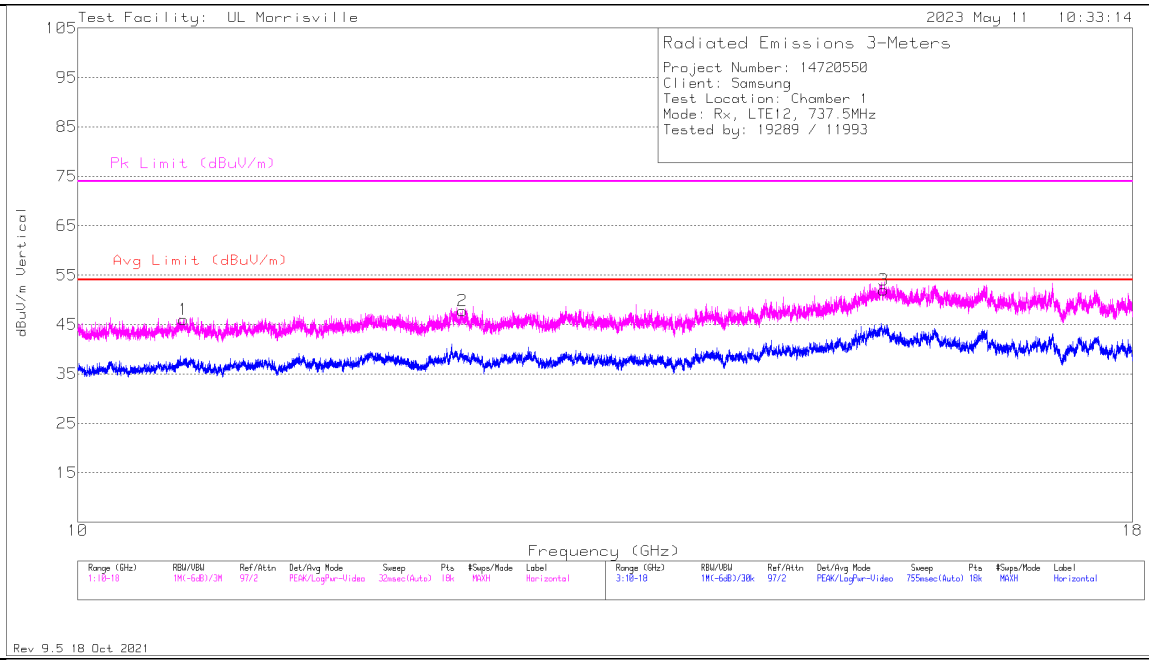
Pk - Peak detector

4.1.8 WORST-CASE Rx

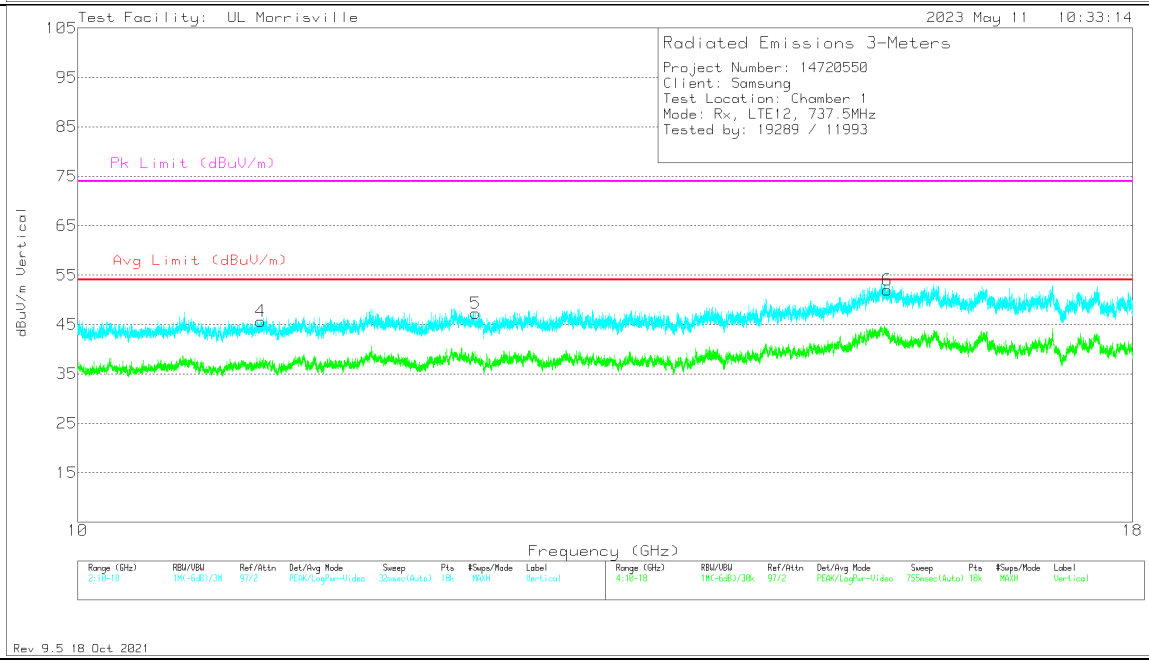
RADIATED EMISSIONS 10,000 TO 18,000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

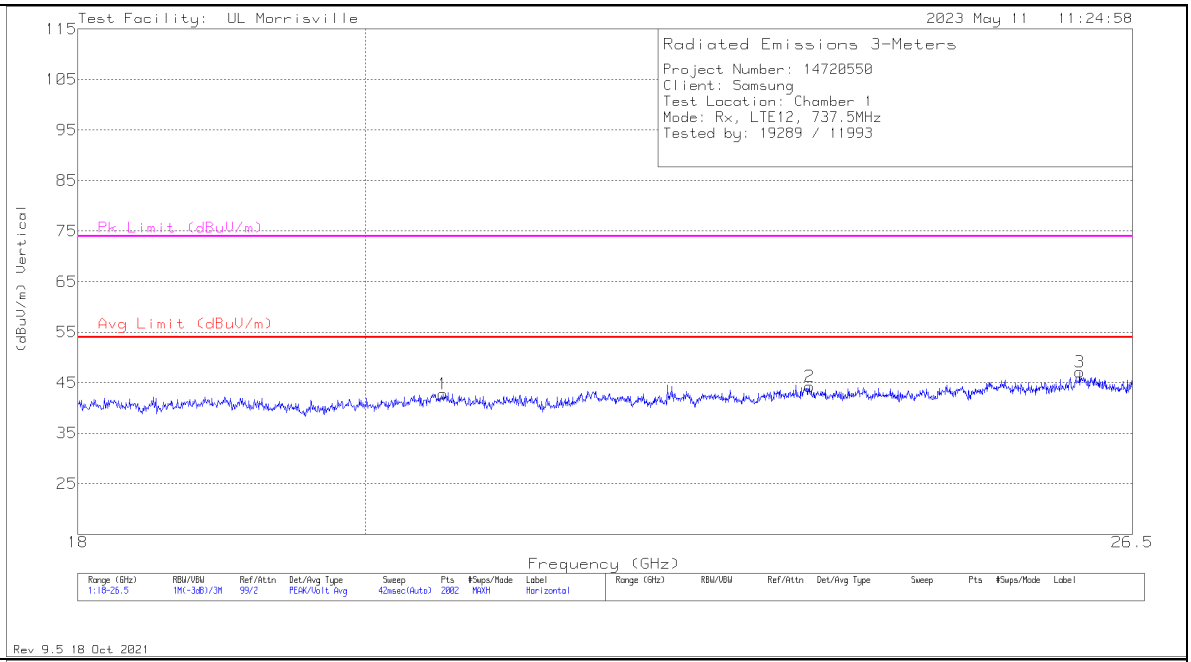
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 (dB/m)	Gain/Loss (dB)	Corrected Reading dBuV/m	Avg Limit (dBuV/m)	Margin (dB)	Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	10.60755	35.15	Pk	37.7	-26.8	46.05	54	-7.95	74	-27.95	0-360	200	H
4	11.07244	34.99	Pk	37.9	-27.2	45.69	54	-8.31	74	-28.31	0-360	200	V
2	12.39022	36.49	Pk	38.9	-27.6	47.79	54	-6.21	74	-26.21	0-360	200	H
5	12.48311	35.46	Pk	38.9	-27.1	47.26	54	-6.74	74	-26.74	0-360	200	V
3	15.66792	37.98	Pk	40.2	-24.4	53.78	-	-	74	-20.22	272	361	H
	15.66792	24.32	Av	40.2	-24.4	40.12	54	-13.88	-	-	272	361	H
6	15.70465	37.33	Pk	40.3	-24.1	53.53	-	-	74	-20.47	108	236	V
	15.70465	23.14	Av	40.3	-24.1	39.34	54	-14.66	-	-	108	236	V

Pk - Peak detector
Av - Average detection

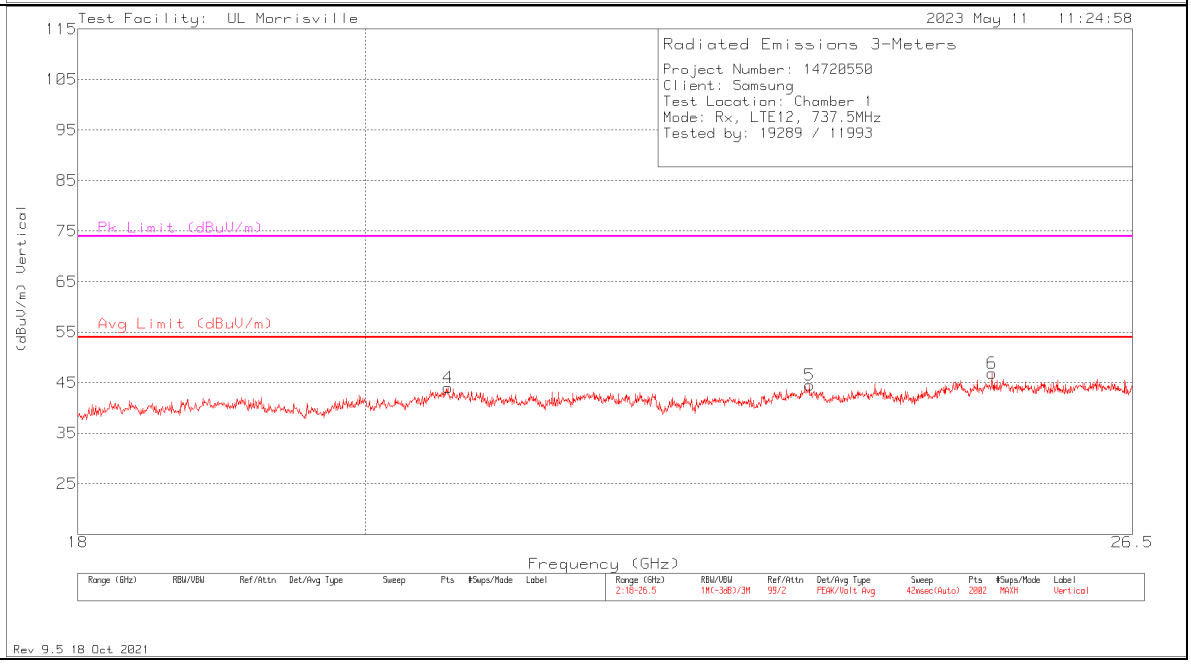
RADIATED EMISSIONS 18,000 TO 26,000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

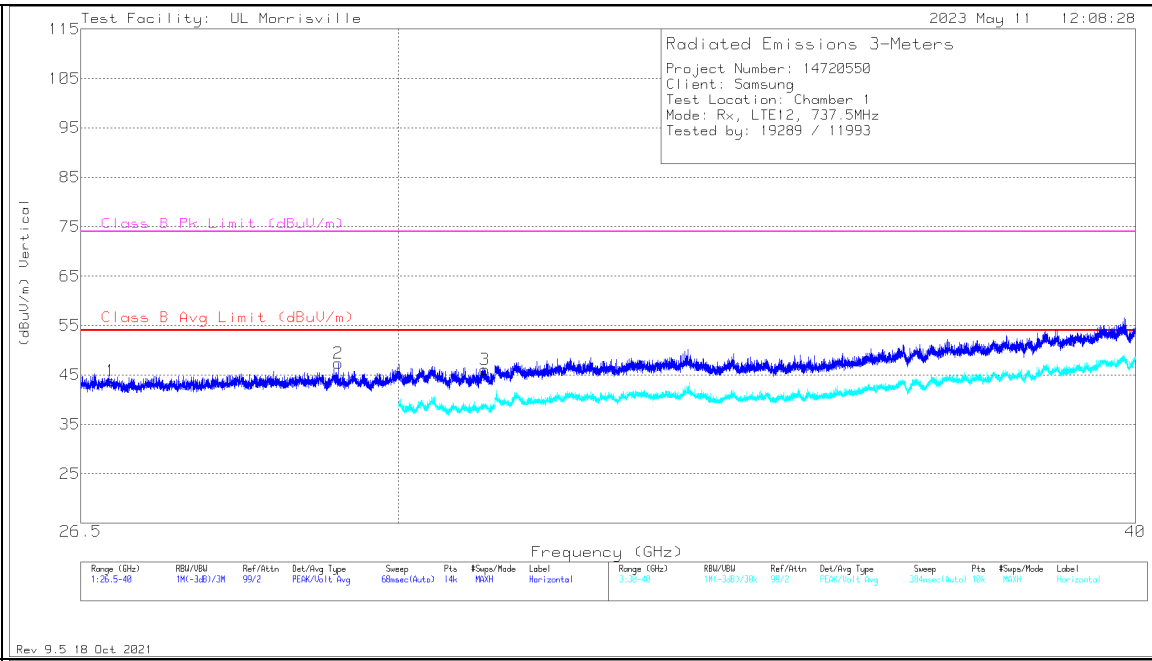
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	204704 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	20.57846	47.8	Pk	34.1	-39.1	42.8	54	-11.2	74	-31.2	0-360	300	H
4	20.61669	49.07	Pk	34.1	-39.1	44.07	54	-9.93	74	-29.93	0-360	101	V
2	23.53923	47.99	Pk	35.2	-38.9	44.29	54	-9.71	74	-29.71	0-360	300	H
5	23.53923	48.25	Pk	35.2	-38.9	44.55	54	-9.45	74	-29.45	0-360	300	V
6	25.17041	48.87	Pk	35.9	-37.9	46.87	54	-7.13	74	-27.13	0-360	150	V
3	25.99025	48.57	Pk	35.9	-37.3	47.17	54	-6.83	74	-26.83	0-360	100	H

Pk - Peak detector

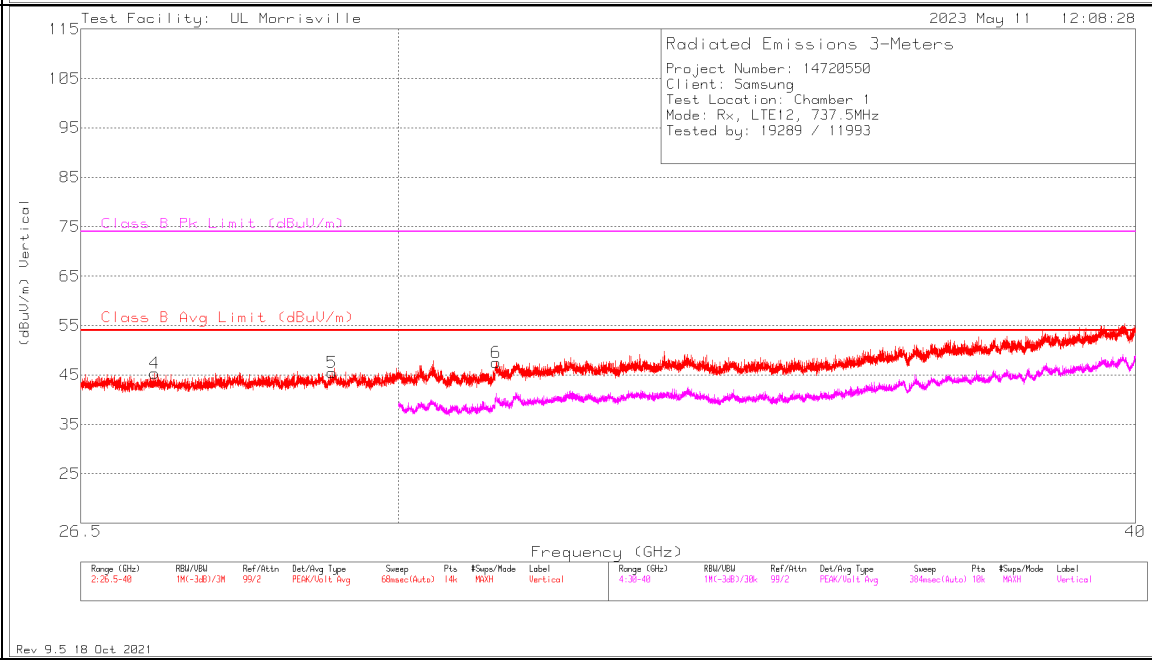
RADIATED EMISSIONS 26,000 TO 40,000 MHz

Radiated Emissions Graph

HORIZONTAL



VERTICAL



Radiated Emissions Data Points

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	204705 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Margin (dB)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	26.80951	44.58	Pk	36.2	-36.9	43.88	54	-10.12	74	-30.12	0-360	250	H
4	27.27716	45.72	Pk	36.1	-36.5	45.32	54	-8.68	74	-28.68	0-360	250	V
5	29.23356	45.42	Pk	36.5	-36.5	45.42	54	-8.58	74	-28.58	0-360	250	V
2	29.29912	47.31	Pk	36.5	-36.4	47.41	54	-6.59	74	-26.59	0-360	149	H
3	31.03182	45.51	Pk	37.1	-36.5	46.11	54	-7.89	74	-27.89	0-360	250	H
6	31.16488	46.39	Pk	37	-35.9	47.49	54	-6.51	74	-26.51	0-360	101	V

Pk - Peak detector

Appendix A

Facilities, Accreditations and Authorizations

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
☒	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

END OF TEST REPORT