



CERTIFICATION TEST REPORT

Report Number. : 4790485266-FR1V3

Applicant : SEGI LIMITED
Unit J2, 4/F, Block 1, Kinho Industrial Building, 14-24 Au Pui Wan
Street, Shatin, New Territories, Hongkong

Model : 2WQ9R-SS

FCC ID : VA5RCL300-2WLR
IC : 7087A-2WRCL300LR

EUT Description : Keyless Entry System

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-247 Issue 2
INDUSTRY CANADA RSS-GEN Issue 5

Date Of Issue:
2022-08-03

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2022-07-28	Initial issue	Jaejin Lee
V2	2022-08-02	Updated to address about the TCB's question	Jaejin Lee
V3	2022-08-03	Updated to address about the TCB's question	Jaejin Lee

TABLE OF CONTENTS

REPORT REVISION HISTORY	2
TABLE OF CONTENTS	3
1. ATTESTATION OF TEST RESULTS	4
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION	5
4. DECISION RULES AND MEASUREMENT UNCERTAINTY	6
4.1. METROLOGICAL TRACEABILITY	6
4.2. SAMPLE CALCULATION	6
4.3. MEASUREMENT UNCERTAINTY	6
4.4. DECISION RULES	6
5. EQUIPMENT UNDER TEST	7
5.1. EUT DESCRIPTION	7
5.2. MAXIMUM OUTPUT POWER	7
5.3. DESCRIPTION OF AVAILABLE ANTENNAS	7
5.4. WORST-CASE CONFIGURATION AND MODE	7
5.5. DESCRIPTION OF TEST SETUP	8
6. MEASUREMENT METHOD	10
7. TEST AND MEASUREMENT EQUIPMENT	11
8. SUMMARY TABLE	12
9. ANTENNA PORT TEST RESULTS	13
9.1. ON TIME AND DUTY CYCLE	13
9.2. 99% BANDWIDTH	14
9.3. 6 dB BANDWIDTH	16
9.4. PEAK OUTPUT POWER	18
9.5. POWER SPECTRAL DENSITY	20
9.6. CONDUCTED SPURIOUS EMISSIONS	22
10. RADIATED TEST RESULTS	24
10.1. LIMITS AND PROCEDURE	24
10.2. TRANSMITTER ABOVE 1 GHz	26
10.3. WORST CASE BELOW 1 GHz	32
11. AC POWER LINE CONDUCTED EMISSIONS	34

ATTESTATION OF TEST RESULTS

COMPANY NAME: SEGI LIMITED

EUT DESCRIPTION: Keyless Entry System

MODEL: 2WQ9R-SS

SERIAL NUMBER: Prototype (CONDUCTED)
Prototype (RADIATED);

DATE TESTED: 2022-07-13 ~ 2022-08-02;

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Complies
INDUSTRY CANADA RSS-247 Issue 2	Complies
INDUSTRY CANADA RSS-GEN Issue 5	Complies

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

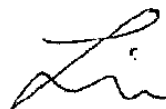
Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Korea, Ltd. By:



Anthony Kim
Senior Laboratory Engineer
UL Korea, Ltd.

Tested By:



Jaehyong Lee
Laboratory Engineer
UL Korea, Ltd.

1. TEST METHODOLOGY

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. IC RSS-247 Issue 2
4. IC RSS-GEN Issue 5
5. KDB 558074 D01 15.247 Meas Guidance v05r02.
6. ANSI C63.10-2013.

2. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro	
☐	Chamber 1
☒	Chamber 2
☒	Chamber 3

Used ISED Test Site Reg.(company number): 2324L

CAB Identifier: KR0161

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

3. DECISION RULES AND MEASUREMENT UNCERTAINTY

3.1. METROLOGICAL TRACEABILITY

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

3.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned}\text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 28.9 \text{ dBuV/m} &= 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB}\end{aligned}$$

3.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	2.87 dB
Radiated Disturbance, 30 MHz to 1 GHz	4.05 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.78 dB
Radiated Disturbance, 18 GHz to 40 GHz	5.58 dB

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

3.4. DECISION RULES

Decision rule for statement(s) of conformity is based on Procedure 2, Clause 4.4.3 in IEC Guide 115:2021.

4. EQUIPMENT UNDER TEST

4.1. EUT DESCRIPTION

The EUT is Keyless Entry System.
This test report addresses the DTS operational mode.

4.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum total conducted output power as follows:

Frequency Range[MHz]	Modulation Type	Power Mode	Output Power [dBm]	Output Power [mW]
907 ~ 919	DSSS	Peak	16.940	49.43

4.3. DESCRIPTION OF AVAILABLE ANTENNAS

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 internal antenna was Permanently attached.
Therefore this E.U.T Complies with the requirement of §15.203.

The radio utilizes an internal antenna, with a maximum gain of -2.7 dBi

4.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Radiated emission above 1GHz was performed with the EUT set to transmit low/mid/high channels.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

4.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
N/A	N/A	N/A	N/A	N/A

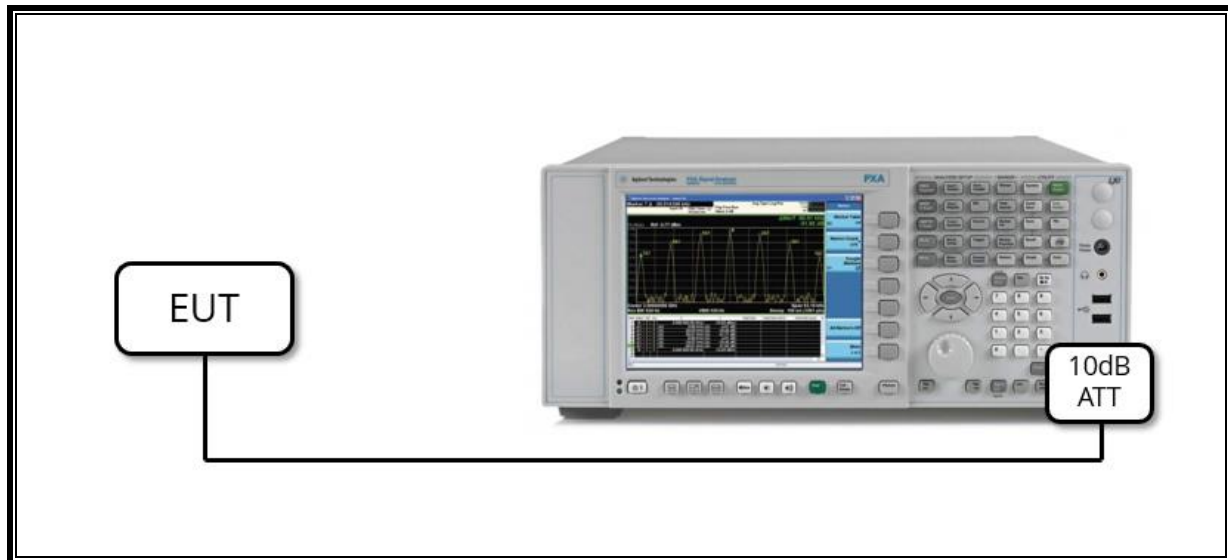
I/O CABLE

Cable No	Port	# of identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
N/A	N/A	N/A	N/A	N/A	N/A	N/A

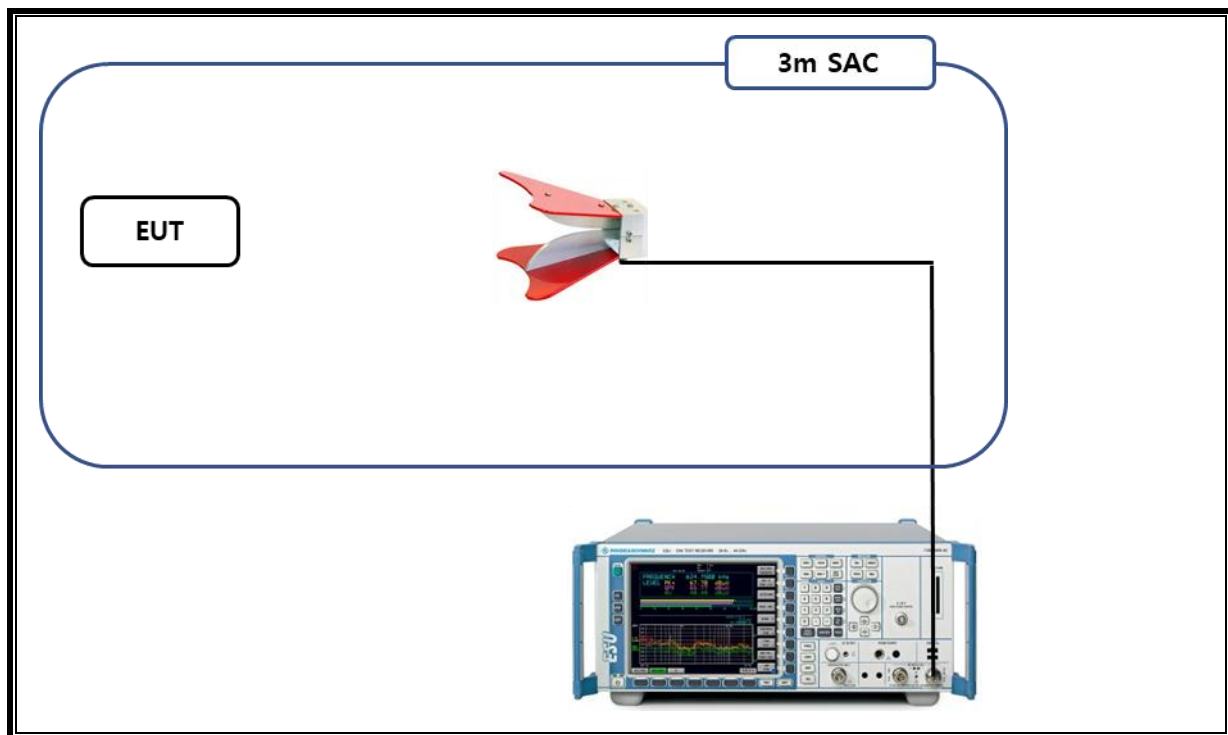
TEST SETUP

The EUT is a stand-alone unit during the tests.

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



5. MEASUREMENT METHOD

6 dB BW : KDB 558074 D01 v05r02, Section 8.2.

OUTPUT POWER : KDB 558074 D01 v05r02, Section 8.3.1.1

POWER SPECTRAL DENSITY : KDB 558074 D01 v05r02, Section 8.4.

Out-of-band Emissions (Conducted) : KDB 558074 D01 v05r02, Section 8.5.

Out-of-band Emissions in Non-restricted Bands: KDB 558074 D01 v05r02, Section 8.5.

Out-of-band Emissions in Restricted Bands : KDB 558074 D01 v05r02, Section 8.6.

AC Power Line Conducted Emission : ANSI C63.10-2013, Section 6.2

6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	Manufacturer	Model	S/N	Cal Due
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	2022-08-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	2022-08-13
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	2022-08-13
Antenna, Horn, 18 GHz	ETS	3115	00167211	2022-07-27
Antenna, Horn, 18 GHz	ETS	3115	00161451	2022-08-15
Antenna, Horn, 18 GHz	ETS	3117	00168724	2022-07-27
Antenna, Horn, 18 GHz	ETS	3117	00168717	2022-08-15
Preamplifier	ETS	3116C-PA	00168841	2022-08-04
Preamplifier, 1000 MHz	Sonoma	310N	341282	2022-08-02
Preamplifier, 1000 MHz	Sonoma	310N	351741	2022-08-02
Preamplifier, 1000 MHz	Sonoma	310N	370599	2022-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	2022-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	2022-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029168	2022-08-02
Spectrum Analyzer, 44 GHz	KEYSIGHT	N9030B	MY57143652	2023-01-11
10dB ATTENUATOR	MINI-CIRCUITS	BW-K10-2W44+	2117	2022-10-22
Attenuator	PASTERNAK	PE7087-10	A001	2022-08-03
Attenuator	PASTERNAK	PE7087-10	A008	2022-08-03
Attenuator	PASTERNAK	PE7004-10	2	2022-08-02
Attenuator	PASTERNAK	PE7087-10	A009	2022-08-03
EMI Test Receive, 44 GHz	R&S	ESW44	101590	2022-08-02
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2022-08-02
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2022-08-02
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G005	2022-08-03
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	2023-10-06
UL Software				
Description	Manufacturer	Model	Version	
Radiated software	UL	UL EMC	Ver 9.5	

7. SUMMARY TABLE

FCC Part Section	IC Section	Test Description	Test Limit	Test Condition	Test Result
15.247 (a)(2)	RSS-247 5.2(a)	Occupied Band width (6dB)	> 500KHz	Conducted	PASS
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		PASS
15.247 (b)(3)	RSS-247 5.4(d)	TX conducted output power	< 30dBm		PASS
15.247 (e)	RSS-247 5.2(b)	PSD	< 8dBm		PASS
15.205, 15.209	RSS-GEN 8.9 & 8.10	Radiated Spurious Emission	< 54dBuV/m	Radiated	PASS
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 11	Power Line Conducted	N/A ^{note1}

Note1 : This EUT is only supplied by DC power (AAA battery).

8.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

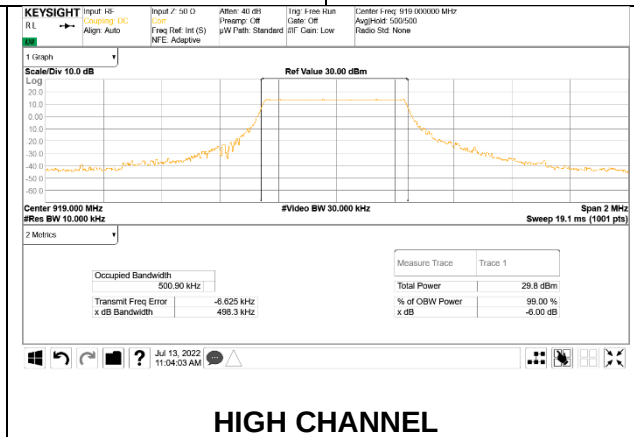
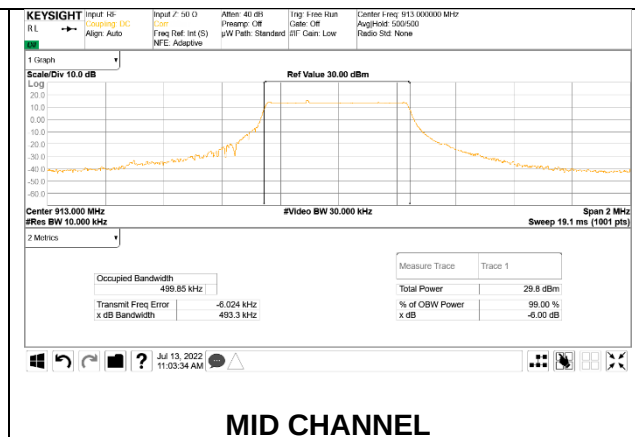
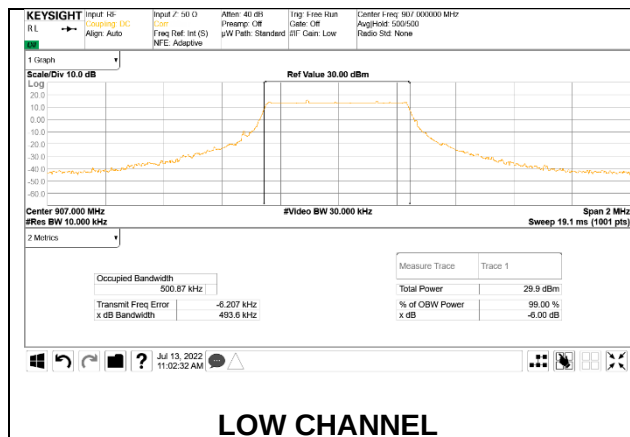
TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to ≥ 3 times the RBW. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

99% BANDWIDTH data

Channel	Frequency [MHz]	99% Bandwidth [kHz]
Low	907	500.87
Mid	913	499.85
High	919	500.90
Worst		500.90



8.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

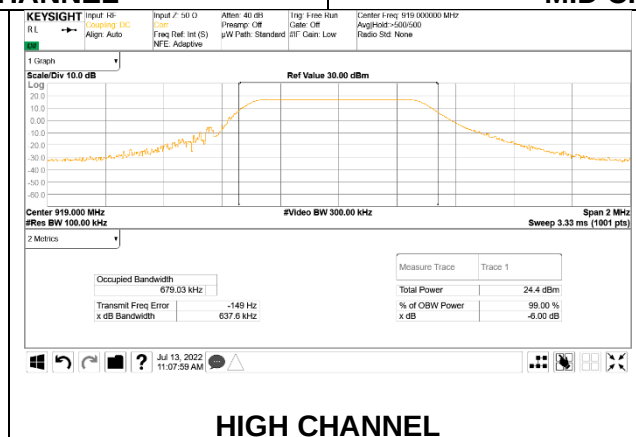
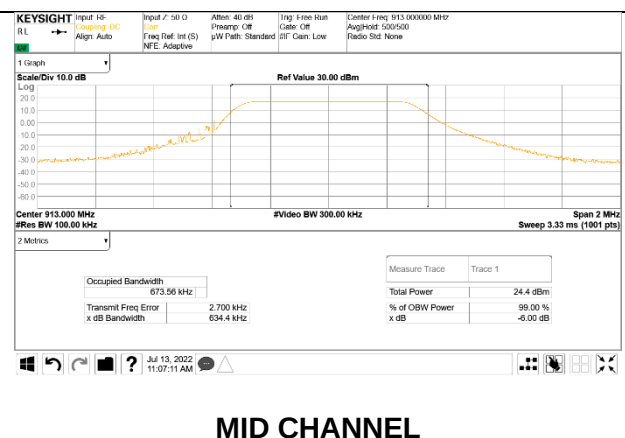
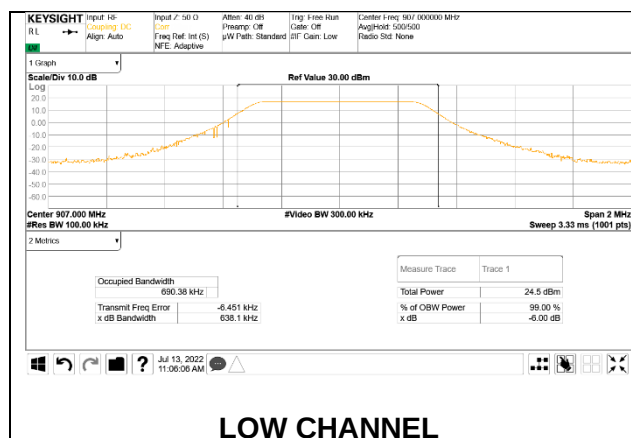
IC RSS-247 5.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

6dB Bandwidth data

Channel	Frequency [MHz]	6 dB Bandwidth [kHz]	Minumun Limit [kHz]
Low	907	638.1	500.0
Mid	913	634.4	500.0
High	919	637.6	500.0
Worst		634.4	500.0



8.4. PEAK OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

IC RSS-247 5.4 (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

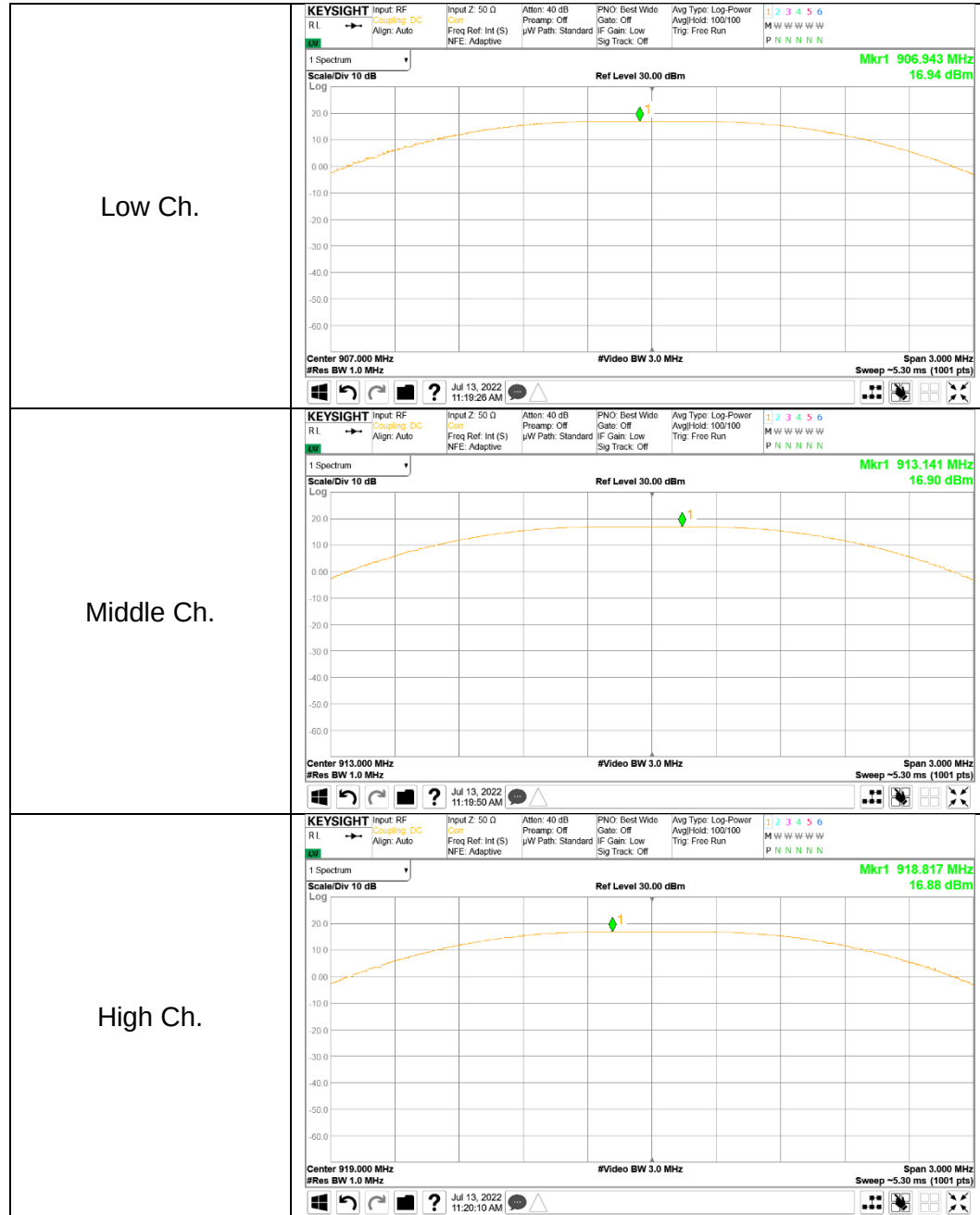
Peak power is measured using ANSI C63.10(2013) under section 11.9.1.1 utilizing spectrum analyzer.

RESULTS

PEAK OUTPUT POWER data

Channel	Frequency [MHz]	Peak Power [dBm]	Limit [dBm]	Margin [dB]
Low	907	16.94	30.00	-13.06
Mid	913	16.90	30.00	-13.10
High	919	16.88	30.00	-13.12
Worst		16.94	30.00	-13.06

PEAK OUTPUT POWER PLOTS



8.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

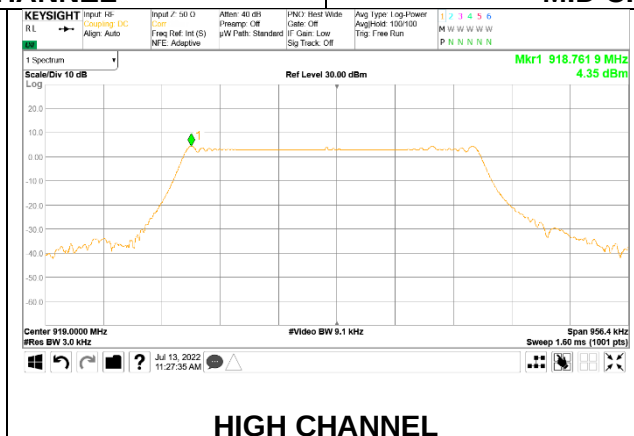
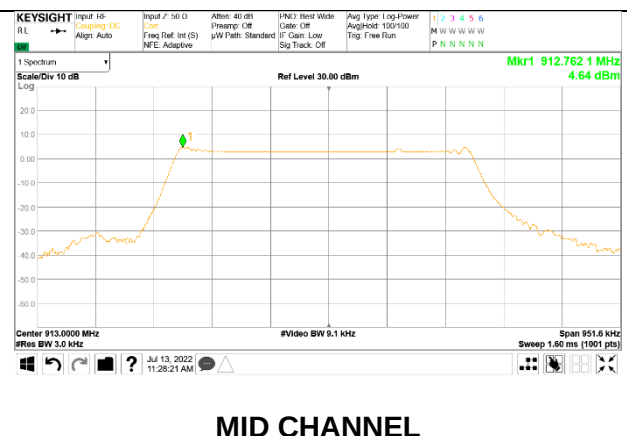
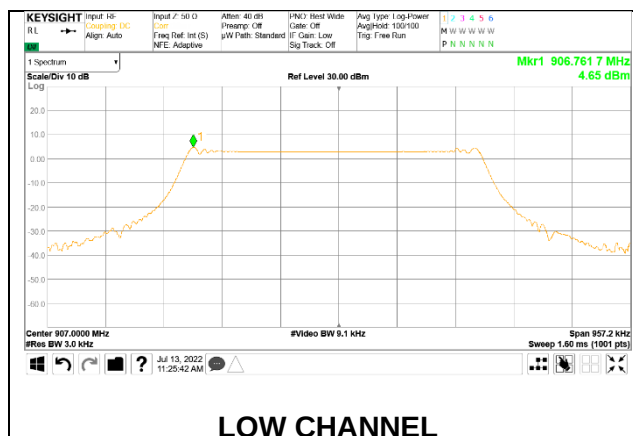
TEST PROCEDURE

Power Spectral Density was measured using ANSI C63.10(2013) under section 11.10.2 utilizing spectrum analyzer.

RESULTS

PSD data

Channel	Frequency [MHz]	PSD [dBm/3kHz]	Limit [dBm/3kHz]	Margin [dB]
Low	907	4.65	8.00	-3.35
Mid	913	4.64	8.00	-3.36
High	919	4.35	8.00	-3.65



8.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 5.5

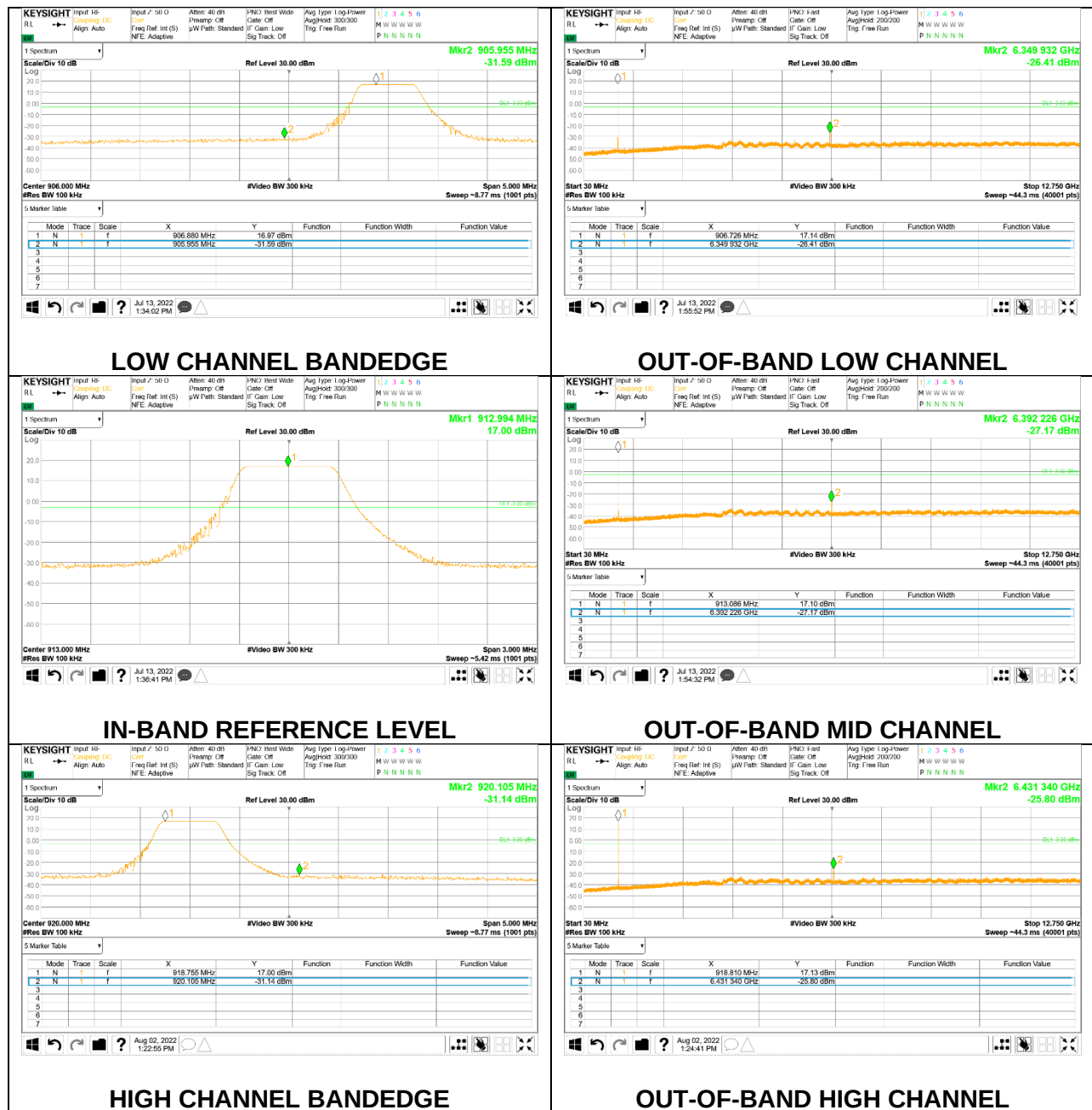
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

CONDUCTED SPURIOUS EMISSIONS PLOTS



9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209
IC RSS-GEN 8.9 and 8.10

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

FCC Part 15.205 (a) : Only spurious emissions are permitted in any of the frequency bands listed below :

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.1735 ~ 2.1905	12.51975 ~ 12.52025	149.9 ~ 150.05	1645.5 ~ 1646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.57675 ~ 12.57725	156.52475 ~	1660 ~ 1710	8.025 ~ 8.5	22.01 ~ 23.12
4.17725 ~ 4.17775	13.36 ~ 13.41	156.52525	1718.8 ~ 1722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.20725 ~ 4.20775	16.42 ~ 16.423	156.7 ~ 156.9	2200 ~ 2300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.69475 ~ 16.69525	162.0125 ~	2310 ~ 2390	10.6 ~ 12.7	36.43 ~ 36.5
6.26775 ~ 6.26825	16.80425 ~ 16.80475	167.17	2483.5 ~ 2500	13.25 ~ 13.4	Above 38.6
6.31175 ~ 6.31225	25.5 ~ 25.67	167.72 ~ 173.2	2655 ~ 2900		
8.291 ~ 8.294	37.5 ~ 38.25	240 ~ 285	3260 ~ 3267		
8.362 ~ 8.366	73 ~ 74.6	322 ~ 335.4	3332 ~ 3339		
8.37625 ~ 8.38675	74.8 ~ 75.2	399.90 ~ 410	3345.8 ~ 3358		
		608 ~ 614	3600 ~ 4400		
		960 ~ 1240			

▪ FCC Part 15.205(b) : The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. (Restricted band-edge, Final detection of spurious harmonic emissions)

Duty cycle factor = $10 \log (1/x)$. But this EUT operated on a duty cycle of over 98% during test. Therefore, duty cycle factor is not applied.

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the band (902 MHz ~ 928 MHz).
(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

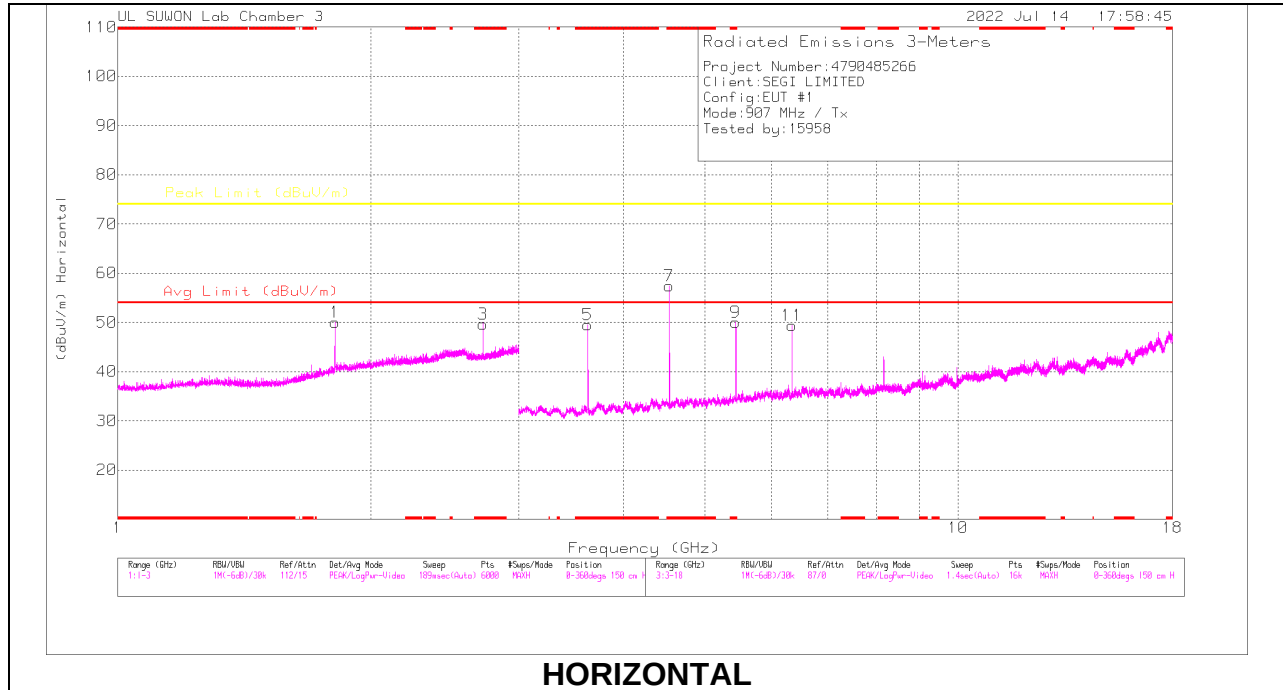
Note : Emission was pre-scanned from 9kHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).
Per FCC part 15.31(o), test results were not reported.

Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open area test site.
Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

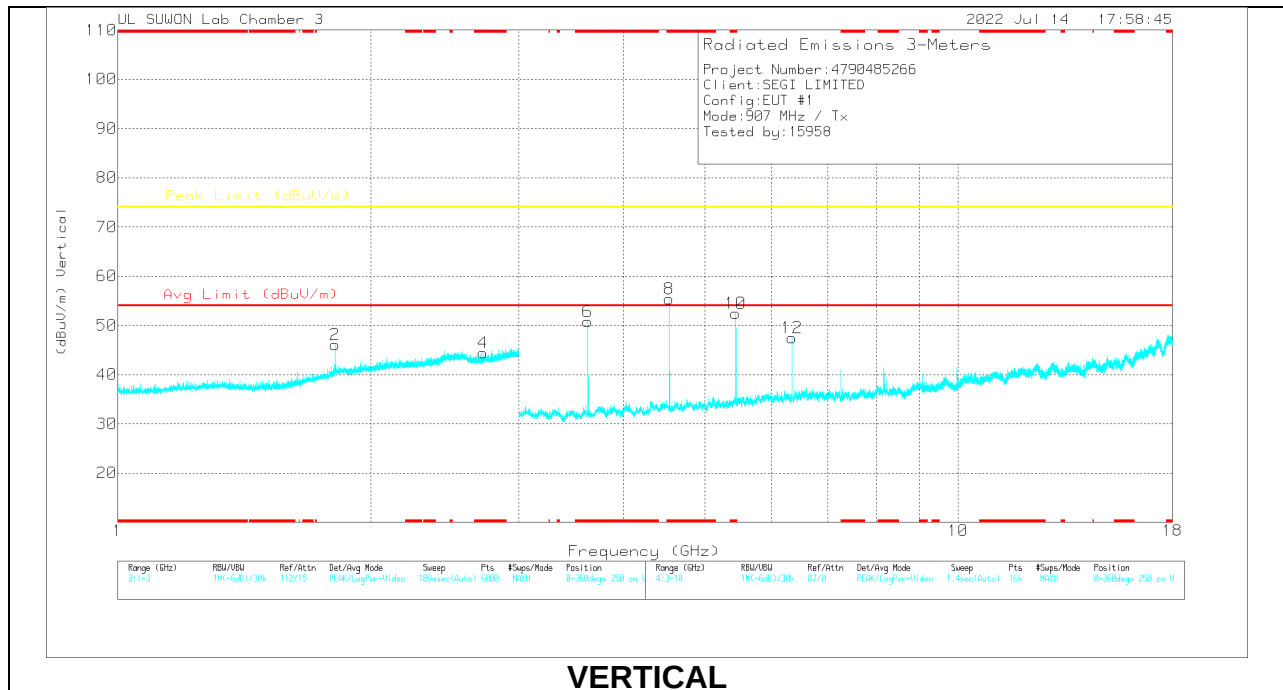
9.2. TRANSMITTER ABOVE 1 GHz

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT +1.2GHz HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.81373	50.2	PK2	31	-25.5	55.7	-	-	74	-18.3	36	138	H
* 2.72092	48.2	PK2	32.7	-24.6	56.3	-	-	74	-17.7	120	101	H
* 2.72098	37.83	MAv1	32.7	-24.6	45.93	54	-8.07	-	-	120	101	H
1.81416	47.12	PK2	31	-25.5	52.62	-	-	74	-21.38	124	112	V
* 2.7179	44.63	PK2	32.7	-24.6	52.73	-	-	74	-21.27	299	100	V
* 2.72076	33.5	MAv1	32.7	-24.5	41.7	54	-12.3	-	-	299	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

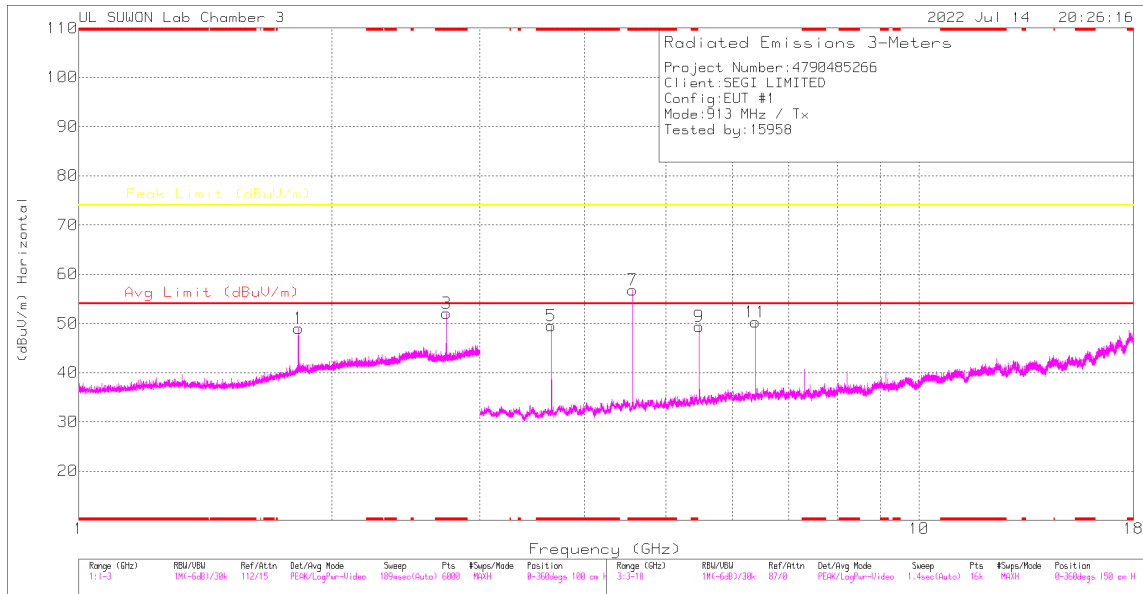
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.6277	44.64	MAv1	33.6	-32.6	45.64	54	-8.36	-	-	347	126	H
* 4.53514	46.97	MAv1	34.4	-31.1	50.27	54	-3.73	-	-	328	128	H
* 5.44133	39.06	MAv1	35.3	-28.4	45.96	54	-8.04	-	-	132	100	H
* 3.62796	44.65	MAv1	33.6	-32.6	45.65	54	-8.35	-	-	50	101	V
* 4.53503	45.09	MAv1	34.4	-31.1	48.39	54	-5.61	-	-	54	101	V
* 5.44173	40.43	MAv1	35.3	-28.4	47.33	54	-6.67	-	-	210	102	V
* 3.62761	53.44	PK2	33.6	-32.6	54.44	-	-	74	-19.56	347	126	H
* 4.53536	57.68	PK2	34.4	-31.1	60.98	-	-	74	-13.02	328	128	H
* 5.44047	49.26	PK2	35.3	-28.4	56.16	-	-	74	-17.84	132	100	H
6.34943	48.18	PK2	36.2	-27.6	56.78	-	-	74	-17.22	50	101	H
* 3.62758	53.55	PK2	33.6	-32.6	54.55	-	-	74	-19.45	50	101	V
* 4.53527	57.7	PK2	34.4	-31.1	61	-	-	74	-13	54	101	V
* 5.44101	49.86	PK2	35.3	-28.4	56.76	-	-	74	-17.24	210	102	V
6.34957	44.42	PK2	36.2	-27.6	53.02	-	-	74	-20.98	234	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

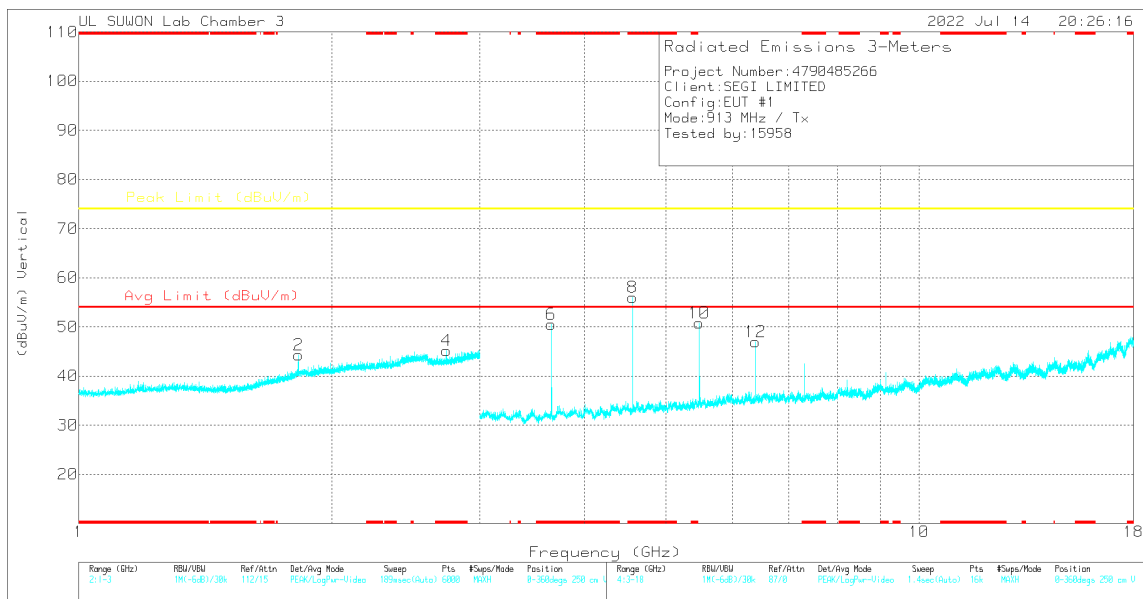
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT +1.2GHz HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.82589	49.01	PK2	31.1	-25.5	54.61	-	-	74	-19.39	63	302	H
* 2.73848	48.15	PK2	32.8	-24.4	56.55	-	-	74	-17.45	118	111	H
* 2.73887	37.28	MAv1	32.8	-24.4	45.68	54	-8.32	-	-	118	111	H
1.82608	46.79	PK2	31.1	-25.5	52.39	-	-	74	-21.61	122	101	V
* 2.73882	45.07	PK2	32.8	-24.4	53.47	-	-	74	-20.53	55	276	V
* 2.73878	33.34	MAv1	32.8	-24.4	41.74	54	-12.26	-	-	55	276	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

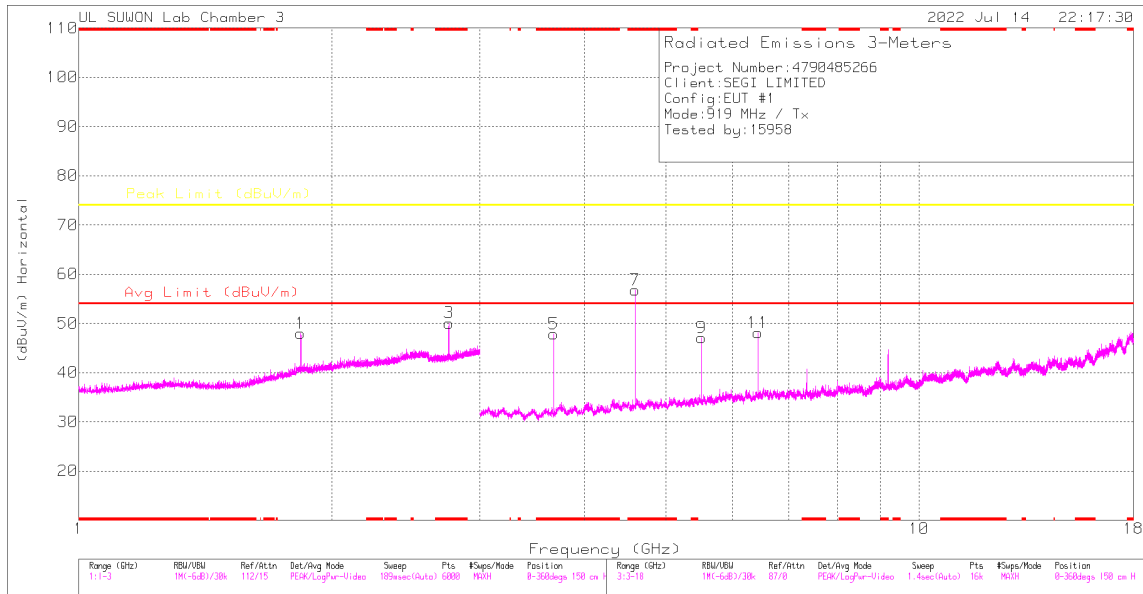
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.65195	44.18	MAv1	33.6	-32.2	45.58	54	-8.42	-	-	317	138	H
* 4.56489	47.72	MAv1	34.4	-31.1	51.02	54	-2.98	-	-	335	112	H
* 3.65188	44.77	MAv1	33.6	-32.2	46.17	54	-7.83	-	-	226	100	V
* 4.56495	46.41	MAv1	34.4	-31.1	49.71	54	-4.29	-	-	54	119	V
* 3.65198	53.34	PK2	33.6	-32.2	54.74	-	-	74	-19.26	317	138	H
* 4.56526	57.06	PK2	34.4	-31.2	60.26	-	-	74	-13.74	335	112	H
5.47675	47.52	PK2	35.3	-28.2	54.62	-	-	74	-19.38	134	100	H
6.39145	48.8	PK2	36.3	-27.9	57.2	-	-	74	-16.8	51	106	H
* 3.65121	53.45	PK2	33.6	-32.2	54.85	-	-	74	-19.15	226	100	V
* 4.56531	56.6	PK2	34.4	-31.2	59.8	-	-	74	-14.2	54	119	V
5.47746	48.05	PK2	35.3	-28.2	55.15	-	-	74	-18.85	223	105	V
6.3915	45.32	PK2	36.3	-27.9	53.72	-	-	74	-20.28	230	107	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

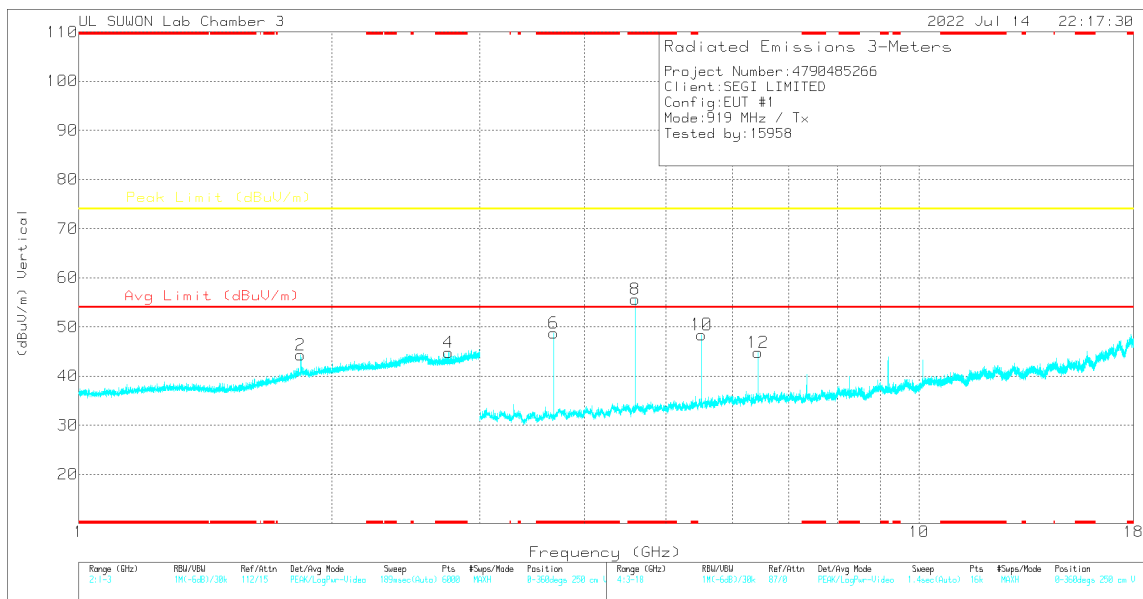
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.83765	48.68	PK2	31.1	-25.5	54.28	-	-	74	-19.72	325	253	H
* 2.75645	47.62	PK2	32.8	-24.4	56.02	-	-	74	-17.98	125	100	H
* 2.75681	36.73	MAv1	32.8	-24.5	45.03	54	-8.97	-	-	125	100	H
1.83797	46.78	PK2	31.1	-25.5	52.38	-	-	74	-21.62	121	113	V
* 2.76079	44.97	PK2	32.8	-24.4	53.37	-	-	74	-20.63	54	100	V
* 2.75707	33.11	MAv1	32.8	-24.5	41.41	54	-12.59	-	-	54	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	3GHz_HP[dB]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.67588	42.89	MAv1	33.7	-31.9	44.69	54	-9.31	-	-	343	154	H
* 4.59478	47.89	MAv1	34.5	-30.9	51.49	54	-2.51	-	-	346	110	H
* 3.6757	42.36	MAv1	33.7	-31.9	44.16	54	-9.84	-	-	59	111	V
* 4.59491	43.28	MAv1	34.5	-30.9	46.88	54	-7.12	-	-	0	100	V
* 3.676	51.9	PK2	33.7	-31.9	53.7	-	-	74	-20.3	343	154	H
* 4.59527	56.68	PK2	34.5	-30.9	60.28	-	-	74	-13.72	346	110	H
5.51394	47.5	PK2	35.3	-28.1	54.7	-	-	74	-19.3	133	106	H
6.43353	45.71	PK2	36.4	-28	54.11	-	-	74	-19.89	50	105	H
* 3.67603	51.29	PK2	33.7	-31.9	53.09	-	-	74	-20.91	59	111	V
* 4.59392	50.19	PK2	34.5	-30.9	53.79	-	-	74	-20.21	0	100	V
5.51405	47.38	PK2	35.3	-28.1	54.58	-	-	74	-19.42	208	110	V
6.43348	42.77	PK2	36.4	-28	51.17	-	-	74	-22.83	229	102	V

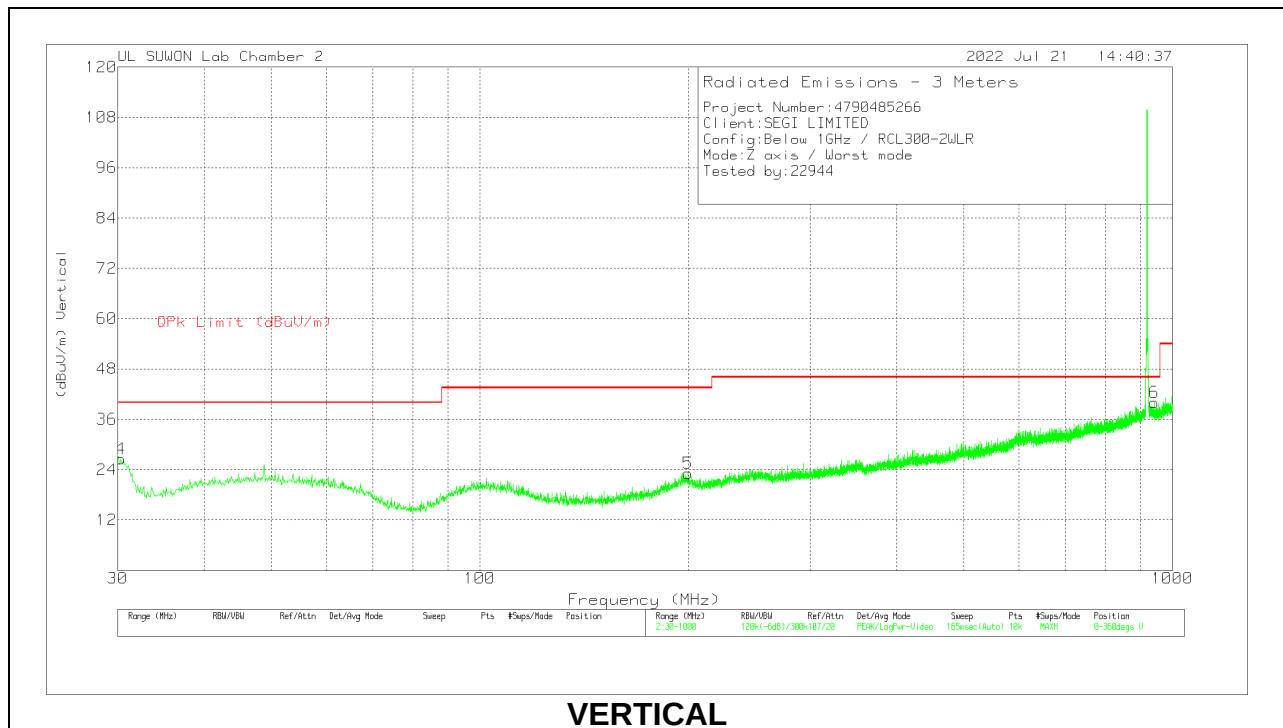
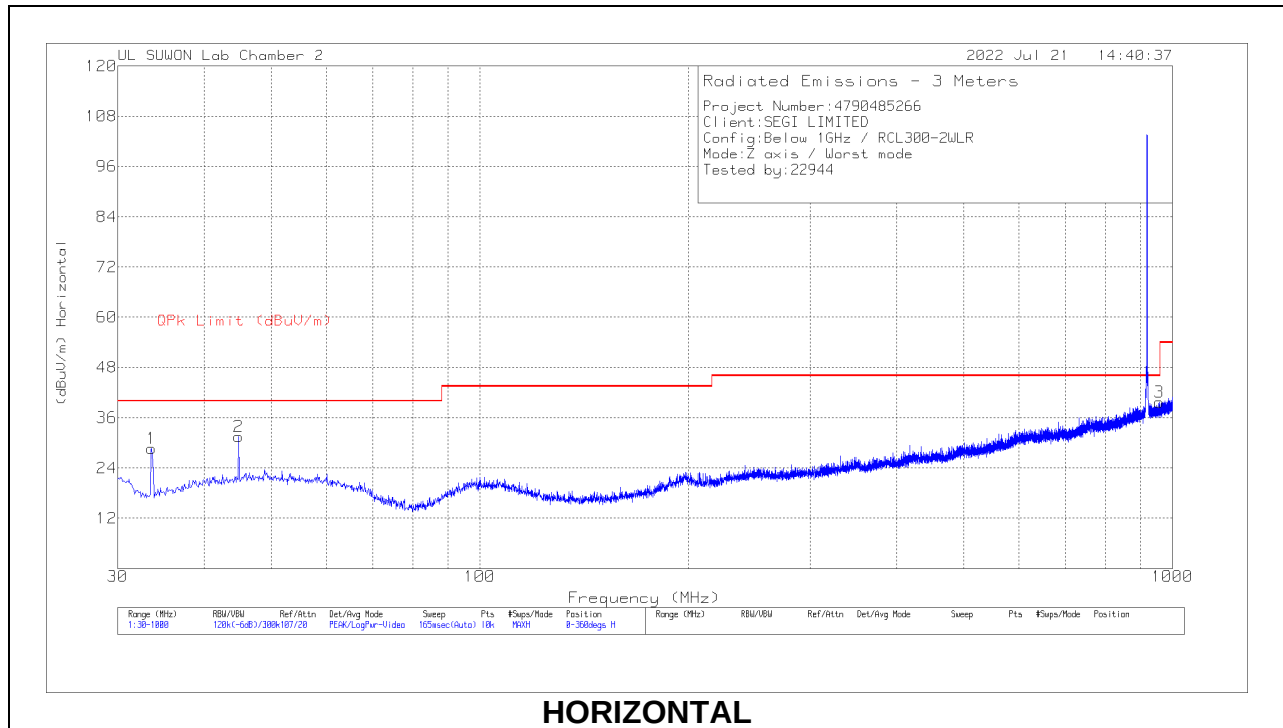
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

9.3. WORST CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



Below 1GHz Data

Radiated Emissions

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_749	Below 1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	33.589	44.35	Pk	15.9	-31.6	28.65	40	-11.35	0-360	200	H
2	44.841	43.05	Pk	19.7	-31.2	31.55	40	-8.45	0-360	200	H
3	956.932	36.69	Pk	28.1	-25.1	39.69	46.02	-6.33	0-360	100	H
4	30.291	42.43	Pk	15.8	-31.6	26.63	40	-13.37	0-360	100	V
5	199.556	34.67	Pk	18.2	-29.7	23.17	43.52	-20.35	0-360	300	V
6	941.897	36.97	Pk	28.2	-25.2	39.97	46.02	-6.05	0-360	300	V

Pk - Peak detector

Note1: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than Quasi-Peak limit.

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

IC RSS-GEN 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 [*]	56 to 46 [*]
0.5-5	56	46
5-30	60	50

^{*} Decreases with the logarithm of the frequency.

RESULTS (Not applicable)

This EUT is only supplied by DC power (AAA battery).

END OF TEST REPORT