



TEST REPORT

Report Number: 13850325-E1V2

Applicant : CATAPULT SPORTS PTY LTD
10 POST OFFICE SQUARE, FLOOR 9,
BOSTON, MA 02109, U.S.A.

Model : WPT1

FCC ID : 2ADAL-WPT1

EUT Description : WIRELESS CHARGER

Test Standard(s) : FCC CFR 47 PART 18 SUBPART C

Date Of Issue:

June 30, 2021

Prepared by:

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
1	6/22/2021	Initial Issue	--
2	6/30/2021	Updated Section 5.2 to address TCB's questions	Tina Chu

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: CATAPULT SPORTS PTY LTD
10 POST OFFICE SQUARE, FLOOR 9,
BOSTON, MA 02109, U.S.A.

EUT DESCRIPTION: WIRELESS CHARGER

MODEL NUMBER: WPT1

BRAND: CATAPULT

SERIAL NUMBER: 0006

SAMPLE RECEIPT DATE: MAY 28, 2021

DATE TESTED: MAY 28, 2021 – JUNE 17, 2021

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC CFR 47 PART 18 SUBPART C	Complies

UL Verification Services Inc. 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.

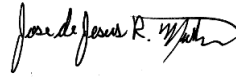
This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST.

Approved & Released For
UL Verification Services Inc. By:



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OPERATIONS LEADER
UL Verification Services Inc.

Prepared By:



JOSE MARTINEZ
TEST ENGINEER
UL Verification Services Inc.

Reviewed By:



TINA CHU
SENIOR PROJECT ENGINEER
UL Verification Services Inc.

2. TEST METHODOLOGY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

The tests documented in this report were performed in accordance with FCC / OST MP-5, "FCC Methods of Measurements of Radio Noise Emissions from Industrial, Scientific, and Medical Equipment."

3. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification #0751.05, 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 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	208313
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA	US0104	22541	208313
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA	US0104	2324B	208313

4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. 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.

4.2. 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.)

4.3. 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, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.84 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB

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

4.4. 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)
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

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.
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

The EUT is a Wireless Charger. Wireless power transfer is only transmitting a continuous carrier wave signal at 917.5MHz frequency single channel when a receiver is placed upon the center top surface of the EUT and requests for charge, only one receiver can be charged at a time at any angle rotation around a horizontal axis (Y-axis). The charger pad uses BLE to pair with the receiving device.

This report documents test results of the Wireless Power Transfer ISM portion of the wireless charger.

5.2. OPERATING FREQUENCY AND POWER

The EUT operates at 917.5 MHz. And the maximum RF energy generated is 34.5dBm as declared by the applicant. The device is powered via a USB-C interface (20V / 1.5 Amps).

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna gain(s) and type, as provided by the manufacturer, are as follows:

The EUT supports one WPT loop antenna with antenna peak gain 6.16dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was Version: 5.0.1.24

The test utility software was WattUp app Version: 4.0.31.

5.5. WORST-CASE CONFIGURATION AND MODE

The EUT is a tabletop device and it has two ports, one is the USB type C port for power only, second port is for command line interface control, end user will not have access to it. Therefore, all final radiated testing was performed with the EUT in tabletop orientation powered by AC/DC adapter via USB cable.

There are three AC/DC power adapters, Model: PA-Y19, Model: 700-014340-0000 and Model: SWC45, investigation has been done and it was determined that AC/DC power adapter Model: 700-014340-0000 is the worse AC/DC power adapter and all radiated emissions test was performed on this AC/DC power adapter. AC power line conducted emissions test was performed on all three AC/DC power adapters.

The antenna is active for all the charging mode testing.

Configuration	Mode	Description
1	Standby mode	EUT is powered by AC/DC adapter via USB cable. WPT in standby mode, BLE is in normal operating mode as the worst case.
2	Charging mode	EUT is powered by AC/DC adapter via USB cable and a receiving device is placed upon the center top surface of the EUT and receives maximum 917.5 MHz RF energy from EUT. Investigation has been performed by manufacturer that any angle rotation around a horizontal axis (Y-axis) of the receiver will receive the same maximum RF energy from the EUT. The BLE and WPT can transmit simultaneously, BLE is in normal operating mode as the worst case.

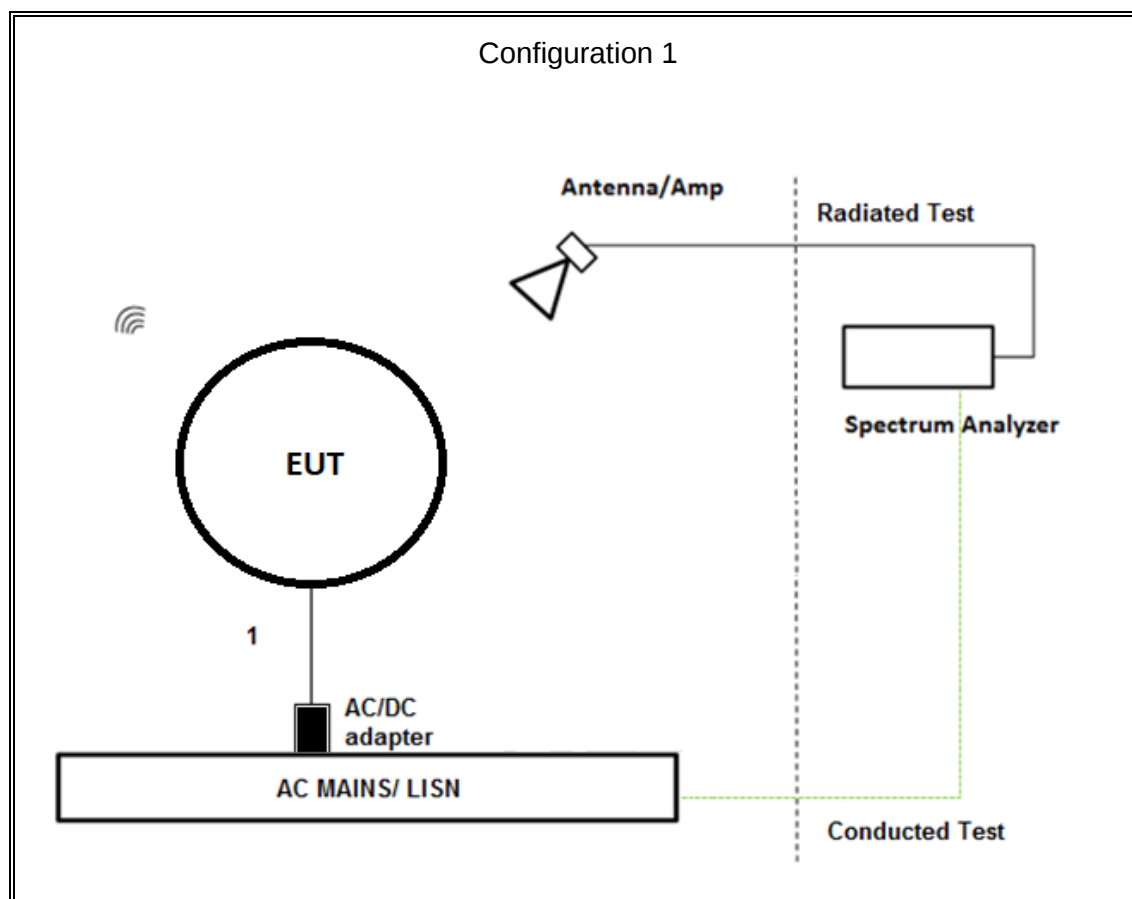
5.6. DESCRIPTION OF TEST SETUP

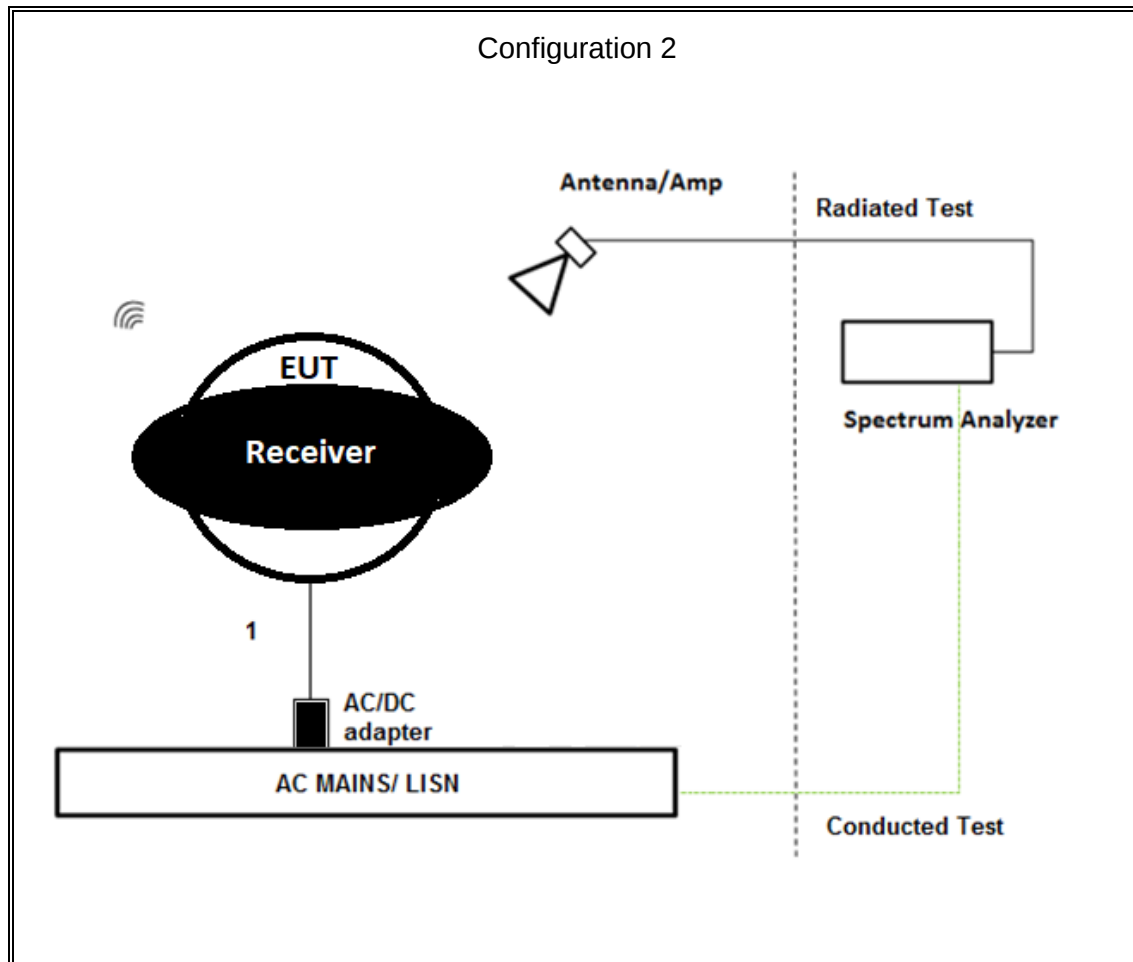
SUPPORT TEST EQUIPMENT						
Description		Manufacturer	Model	Serial Number		FCC ID/ DoC
Receiver (Catapult Smart Football)		Catapult Sports PTY LTD	B001	B1000016		2ADAL-B001
EUT AC/DC Adapter (45W)		Artesyn	700-014340-0000	M101V6006HBNL		DoC
EUT AC/DC Adapter (30W)		Aukey	PA-Y19	AQJ44		DoC
EUT AC/DC Adapter (45W)		CUI INC	SWC45	45PDA20061000001371		DoC
I/O CABLES (RF RADIATED/AC POWER LINE TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB Type C	Un-shielded	1	N/A

TEST SETUP- RADIATED TEST/AC POWER LINE TEST

The EUT is powered by AC/DC adapter via USB cable, one receiving device is placed on the EUT surface for wireless charging purpose at maximum power.

SETUP DIAGRAM





7. 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	Asset	Cal Due
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO METRICS	EM-6871	SC-8015	05/24/2022
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO METRICS	EM-6872	SC-8014	05/24/2022
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T863	08/31/2021
Amplifier, 100MHz-18GHz	AMPLICAL	AMP0.1G18-47-20	PRE0197319	04/08/2022
Antenna, Broadband Hybrid, 30MHz to 2GHz	Sunol Sciences Corp.	JB3	81560	09/24/2021
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	175953	01/21/2022
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179367	02/21/2022
Filter, BRF 902 to 928MHz	MICRO-TRONICS	BRC50722	T1847	04/08/2022
Filter, HPF 1.5 to 18GHz	MICRO-TRONICS	HPM50114	T929	07/07/2021
AC Line Conducted				
Description	Manufacturer	Model	ID Num	Cal Due
LISN	Fischer Custom Communications, Inc	FCC-LISN-50/250-25-2-01-480V	PRE0186446	01/20/2022
EMI TEST RECEIVER	Rohde & Schwarz	ESR	T1436	02/19/2022
Transient Limiter	COM-POWER	LIT-930A	PRE0213145	01/20/2022
UL AUTOMATION SOFTWARE				
Radiated Software	UL	UL EMC	Rev 9.5, 30 Apr, 2020	
AC Line Conducted Software	UL	UL EMC	Rev 9.5, 07 Jul 2020	

8. RADIATED EMISSIONS

LIMIT

§18.301 Operating frequencies

The EUT operates at 917.5 MHz, within the tolerance of the ISM Frequency of 915 +/- 13MHz.

§18.305 Field Strength Limits

(b) The field strength levels of emissions which lie outside the bands specified in §18.301, unless otherwise indicated, shall not exceed the following:

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (µV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500 500 or more	25 $25 \times \text{SQRT}(\text{power}/500)$	300 ¹ 300

¹Field strength may not exceed 10µV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

The RF Power generated by the equipment is below 500 W therefore the field strength limit is 25uV/m at 300 m, equivalent to 28 dBuV/m at 300 m.

TEST PROCEDURE

Tested in accordance with FCC / OST MP-5

The frequency range was investigated from 9 kHz to 10 GHz. An EUT which is normally operated on a table shall be placed on a non-conducting table having a height of 1 meter above test site ground level for all frequency ranges.

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements.

2D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only. Blue color trace on plots: Parallel orientation. Green color trace on plots: Perpendicular orientation.

KDB 414788 Open Field Site(OFS) and Chamber Correlation Justification

For below 30MHz testing, based on KDB 414788, Clause 2, for Part 18 equipment, Section 2.1 of FCC Measurement Procedure MP-5 also permits the use of test sites other than an open-field test site only if it can be shown that the results obtained at such a location are correlated with those made at an open-field test site.

OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Distance Correction Factor

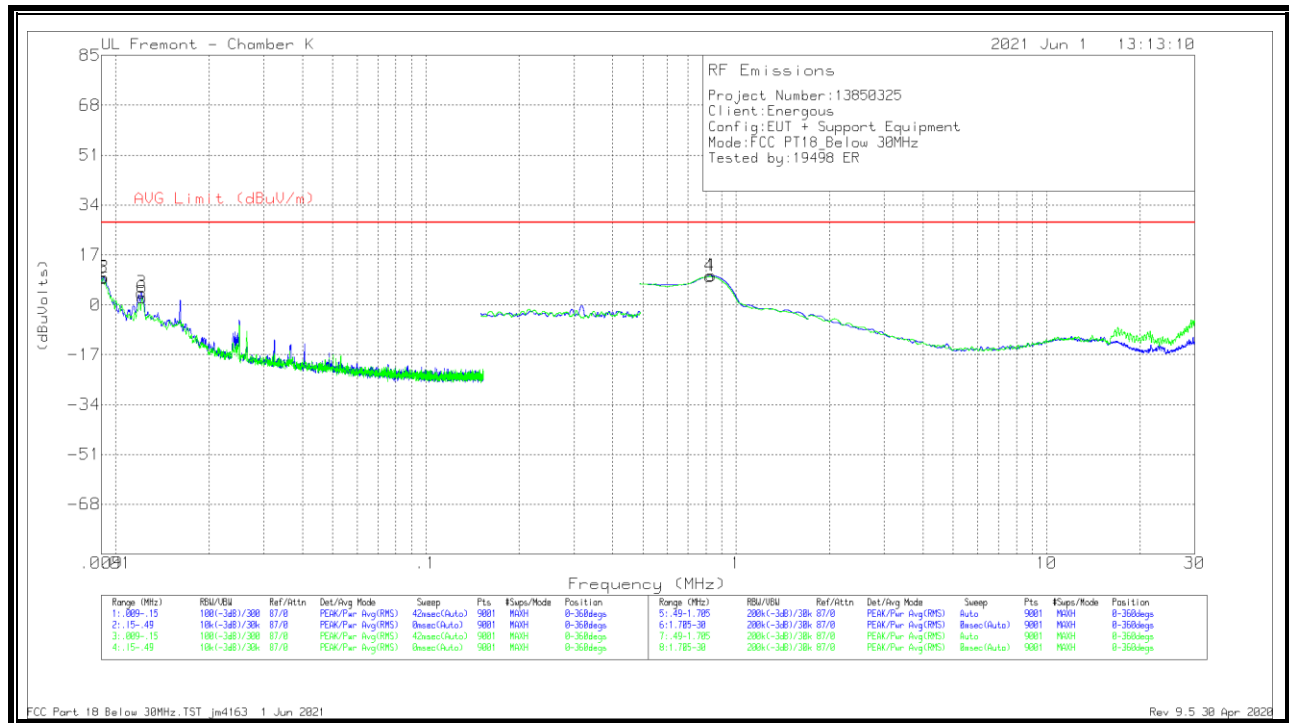
Based on FCC 18.305, note 2. Testing for compliance with these limits may be made at closer distances, provided a sufficient number of measurements are taken to plot the radiation pattern, to determine the major lobes of radiation, and to determine the expected field strength level at 30, 300, or 1600 meters. Alternatively, if measurements are made at only one closer fixed distance, then the permissible field strength limits shall be adjusted using 1/d as an attenuation factor.

- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$

RESULTS

8.1. SPURIOUS EMISSIONS 9 kHz TO 30 MHz

8.1.1. CONFIGURATION 1



DATA

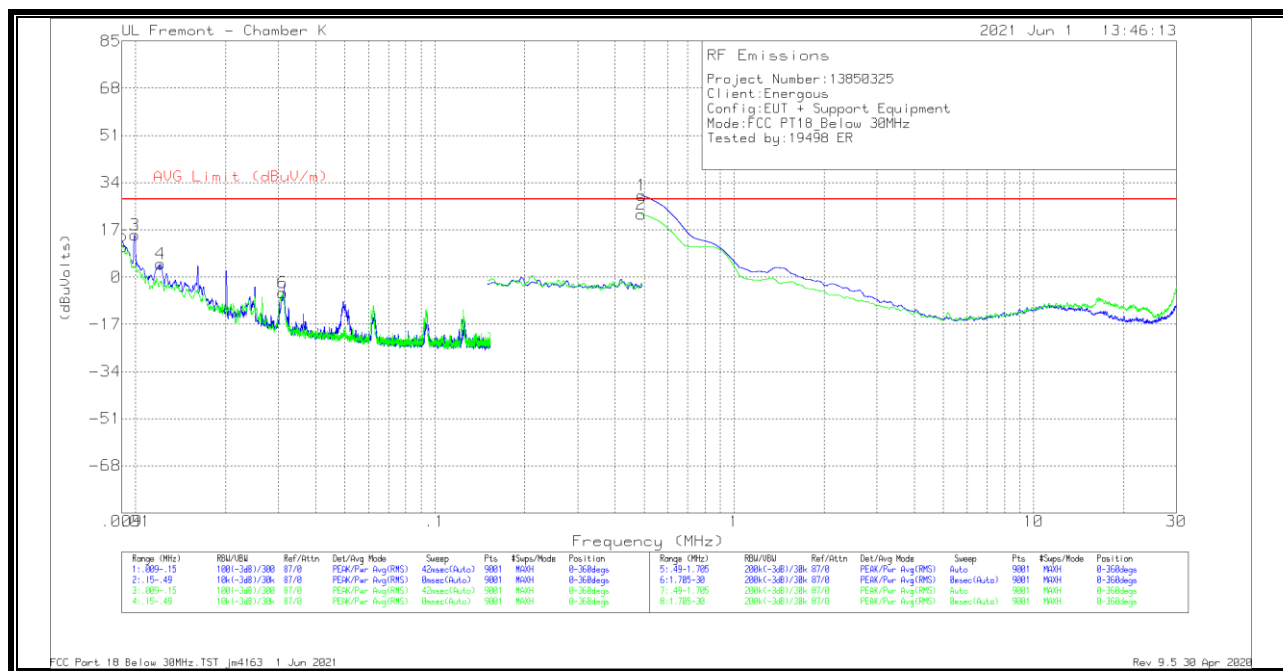
Marker	Frequency (MHz)	Meter Reading (dBUV)	Det	Loop Antenna (E ACF)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBUVolts)	AVG Limit (dBUV/m)	Margin (dB)	Azimuth (Degs)
2	.00916	19.49	Pk	61.2	-31.3	-40	9.39	28	-18.61	0-360
3	.01212	15.46	Pk	60.1	-31.5	-40	4.06	28	-23.94	0-360
5	.00911	19.07	Pk	61.3	-31.3	-40	9.07	28	-18.93	0-360
6	.01218	14	Pk	60.1	-31.5	-40	2.6	28	-25.4	0-360
1	.8314	33.88	Pk	48.2	-32.2	-40	9.88	28	-18.12	0-360
4	.8239	33.45	Pk	48.3	-32.1	-40	9.65	28	-18.35	0-360

Pk - Peak detector

Note:

- Test was performed @ 3 meter distance.
- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$

8.1.2. CONFIGURATION 2



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (E ACF)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	AVG Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
3	.00994	25.91	Pk	60.5	-31.3	-40	15.11	28	-12.89	0-360
4	.01214	16.24	Pk	60.1	-31.5	-40	4.84	28	-23.16	0-360
5	.00908	21	Pk	61.3	-31.3	-40	11	28	-17	0-360
6	.03103	8.7	Pk	57.8	-32.2	-40	-5.7	28	-33.7	0-360
1	.4912	49.21	Pk	52.4	-32.2	-40	29.41	28	1.41	0-360
	0.49248	35.23	Av	52.3	-32.2	-40	15.33	28	-12.67	10
2	.4901	42.37	Pk	52.4	-32.2	-40	22.57	28	-5.43	0-360
	0.49023	25.56	Av	52.4	-32.2	-40	5.76	28	-22.24	143

Pk - Peak detector

Av - RMS detector

Note:

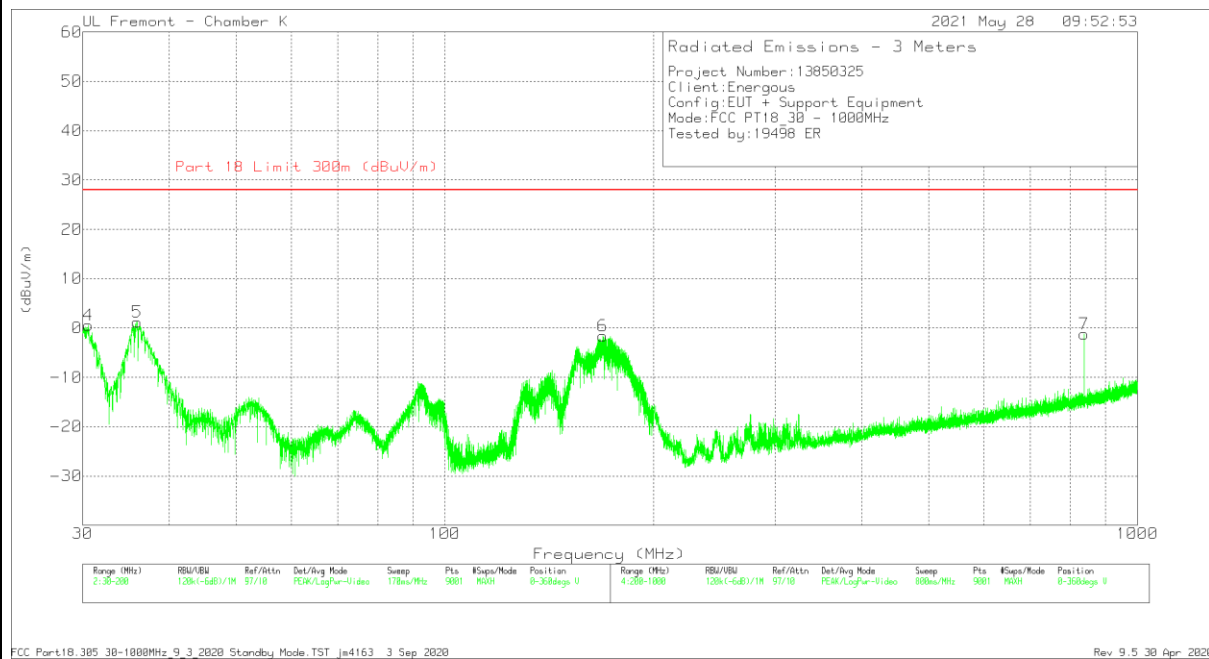
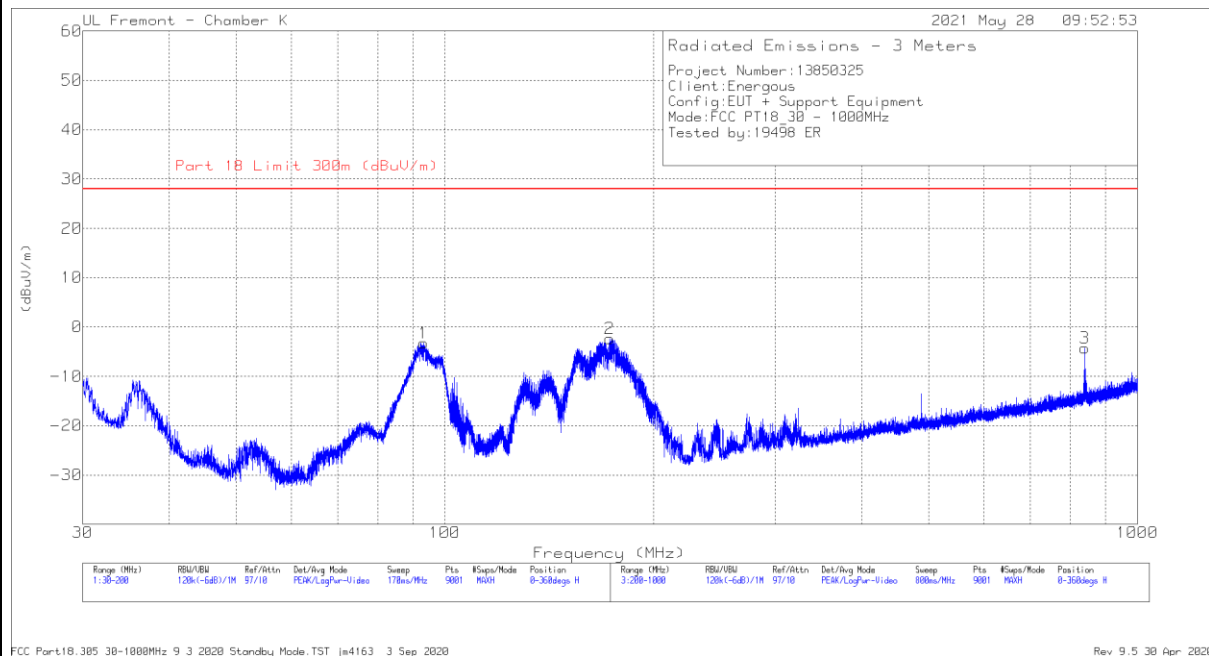
- Test was performed @ 3 meter distance.
- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$

8.2. SPURIOUS EMISSIONS 30 MHz TO 1000 MHz

8.2.1. CONFIGURATION 1

Spurious Emissions 30 – 1000 MHz

30MHz – 1000MHz HORIZONTAL & VERTICAL



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 81560 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuV/m)	Part 18 Limit 300m (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	93.2782	53.41	Pk	14.3	-31	-40	-3.29	28	-31.29	0-360	199	H
2	173.0086	50.29	Pk	17.7	-30.4	-40	-2.41	28	-30.41	0-360	99	H
4	30.5478	44.52	Pk	27.6	-31.6	-40	.52	28	-27.48	0-360	100	V
5	35.9311	49.22	Pk	23.5	-31.5	-40	1.22	28	-26.78	0-360	100	V
	35.9511	45.88	Qp	23.4	-31.5	-40	-2.22	28	-30.22	272	95	V
6	169.2119	50.92	Pk	18	-30.5	-40	-1.58	28	-29.58	0-360	100	V
3	839.6452	35.32	Pk	28.2	-27.8	-40	-4.28	28	-32.28	0-360	399	H
7	837.2452	38.38	Pk	28.2	-27.8	-40	-1.22	28	-29.22	0-360	299	V

Pk - Peak detector

Qp - Quasi-Peak detector

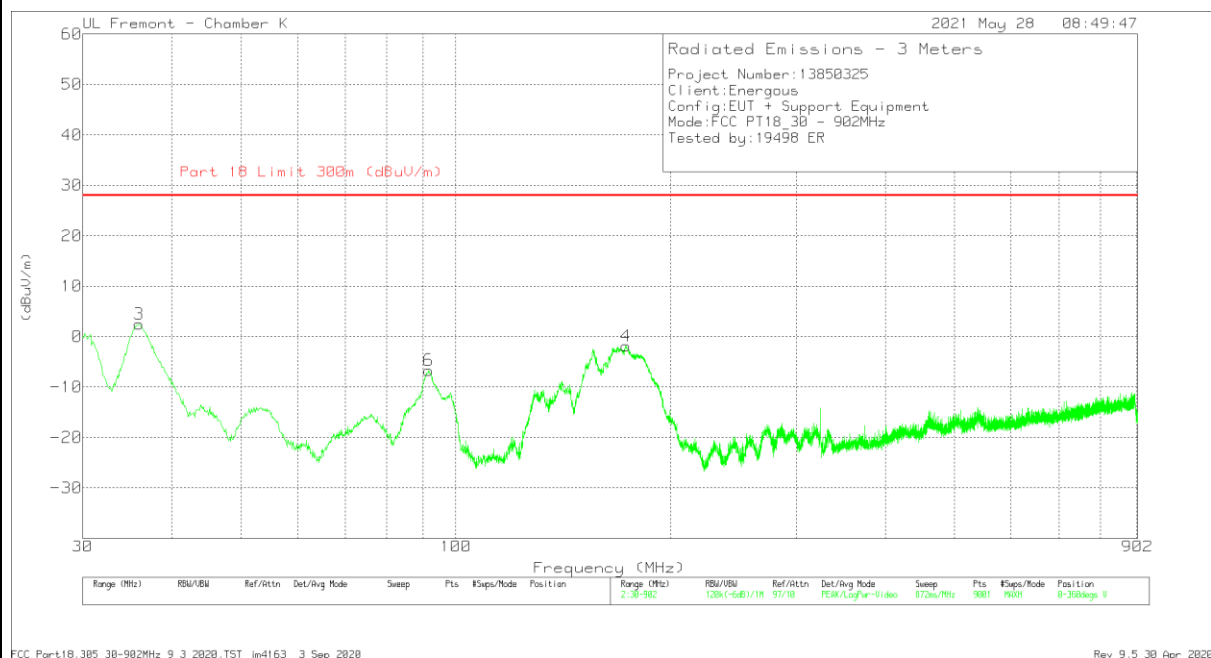
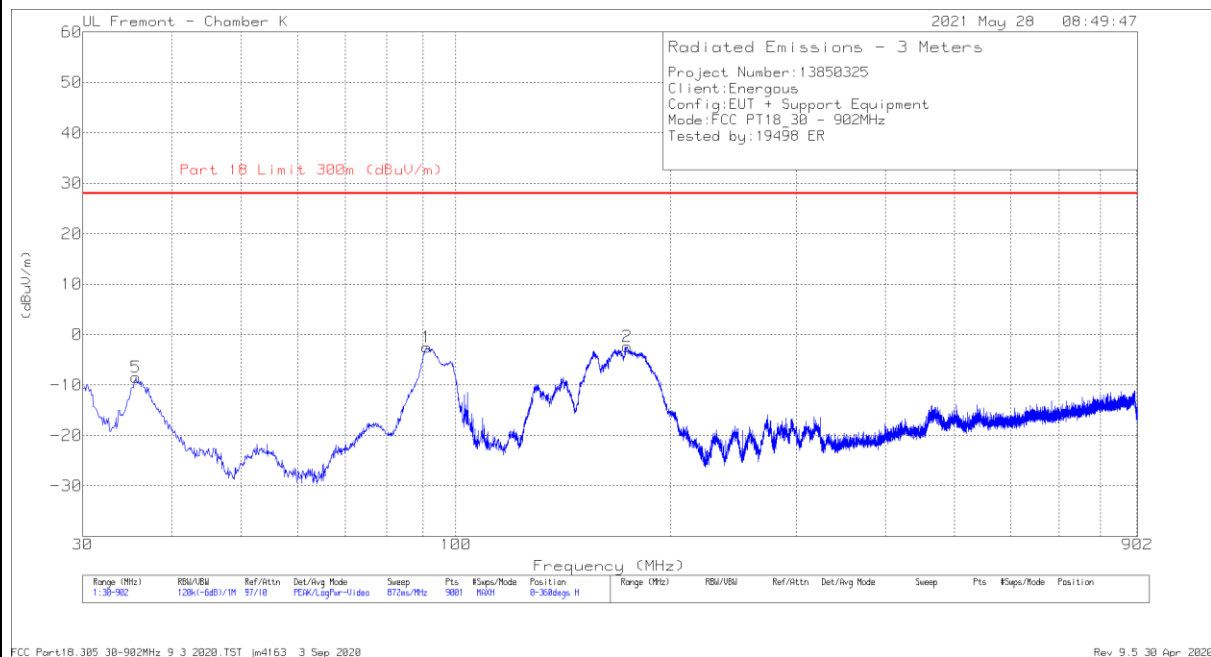
Note:

- Test was performed @ 3 meter distance.
- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$

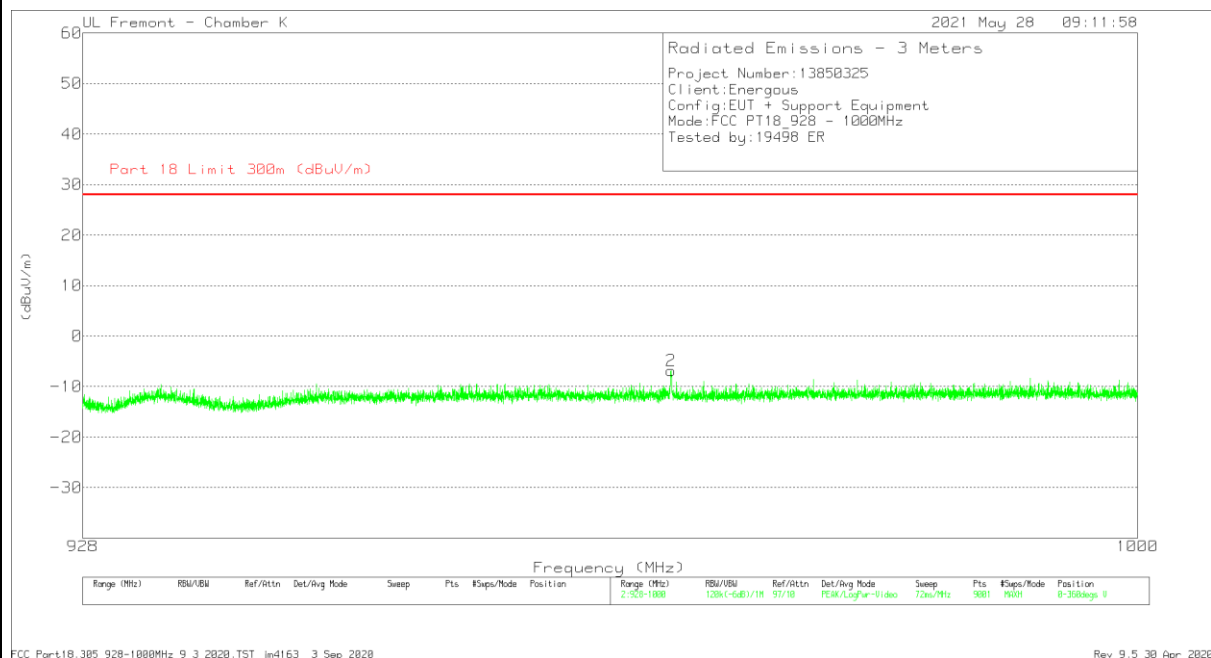
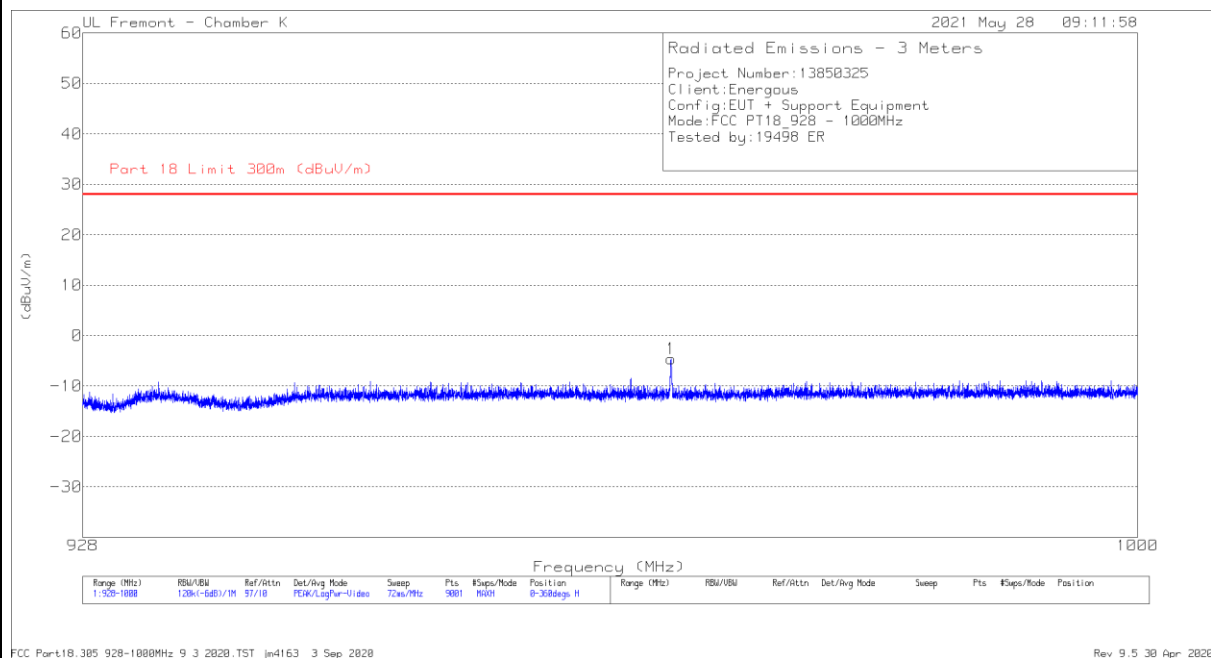
8.2.2. CONFIGURATION 2

Spurious Emissions 30 – 1000 MHz with a Band Reject Filter

30MHz – 902MHz HORIZONTAL & VERTICAL



928MHz – 1000MHz HORIZONTAL & VERTICAL



DATA

30MHz – 902MHz range

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 81560 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	T1847 BRF (dB)	Corrected Reading (dBuV/m)	Part 18 Limit 300m (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	91.0401	53.94	Pk	13.8	-31	-40	.8	-2.46	28	-30.46	0-360	199	H
2	173.9771	49.6	Pk	17.6	-30.4	-40	.8	-2.4	28	-30.4	0-360	101	H
5	35.6196	38.57	Pk	23.7	-31.5	-40	.8	-8.43	28	-36.43	0-360	399	H
3	36.0071	49.74	Pk	23.4	-31.5	-40	.8	2.44	28	-25.56	0-360	99	V
	35.8671	48.2	Qp	23.5	-31.5	-40	.8	1	28	-27	230	95	V
4	173.1051	50.02	Pk	17.7	-30.4	-40	.8	-1.88	28	-29.88	0-360	99	V
6	91.6214	49.65	Pk	13.9	-31	-40	.8	-6.65	28	-34.65	0-360	199	V

Pk - Peak detector

Qp - Quasi-Peak detector

928MHz – 1000MHz range

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 81560 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	T1847 BRF (dB)	Corrected Reading (dBuV/m)	Part 18 Limit 300m (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	967.504	31.63	Pk	29.3	-26.3	-40	.8	-4.57	28	-32.57	0-360	100	H
	967.5136	30.37	Qp	29.3	-26.3	-40	.8	-5.83	28	-33.83	95	125	H
2	967.504	29.37	Pk	29.3	-26.3	-40	.8	-6.83	28	-34.83	0-360	98	V

Pk - Peak detector

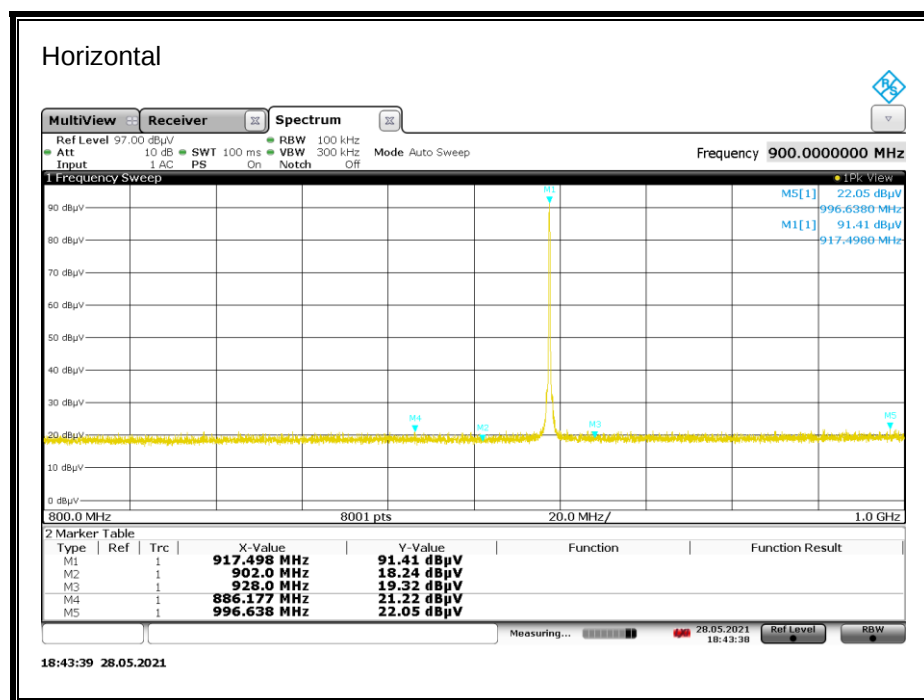
Qp - Quasi-Peak detector

Note:

- Test was performed @ 3 meter distance.
- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$
- Band Reject Filter was used to prevent system overloading

Spurious Emissions 800 – 1000 MHz without a Band Reject Filter and without amplifier

Tested by:	19498 ER
Date:	5/28/2021



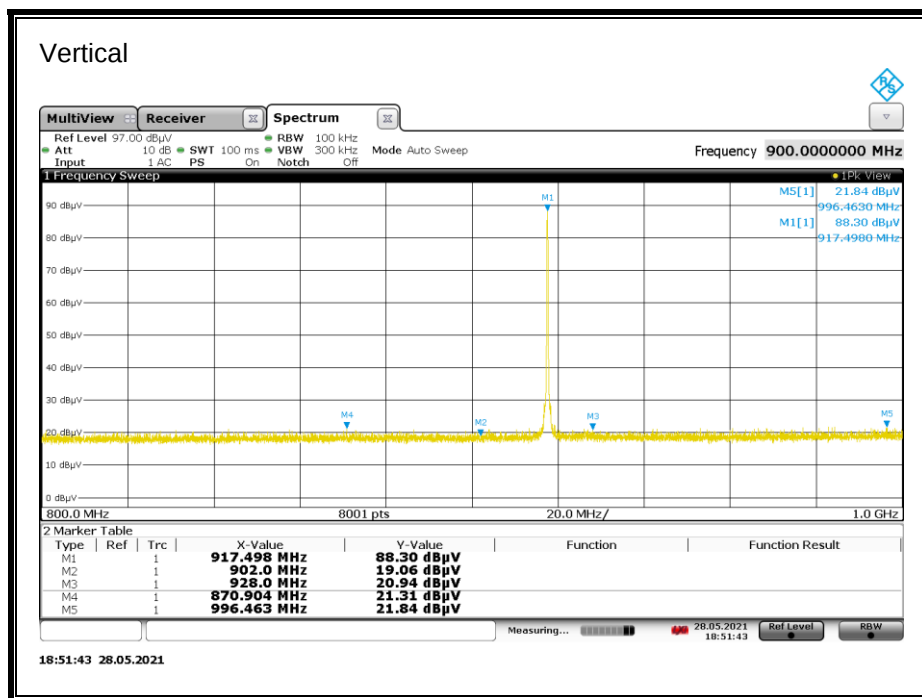
DATA

Marker	Frequency (MHz)	Meter Reading (dBμV)	Det	AF 81560 (dB/m)	Cable (dB)	Dist Corr (dB)	Corrected Reading (dBμV/m)	FCC PART18 300m LIMIT (dBμV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	886.177	21.22	Pk	28.5	4	-40	13.72	28	-14.28	100	132	H
5	996.638	22.05	Pk	29.7	4.3	-40	16.05	28	-11.95	101	132	H

Pk - Peak detector

Note:

- Test was performed @ 3 meter distance.
- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 81560 (dB/m)	Cable (dB)	Dist Corr (dB)	Corrected Reading (dBuV/m)	FCC PART18 300m LIMIT (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	870.904	21.31	Pk	28.4	3.9	-40	13.61	28	-14.39	101	151	V
5	996.463	21.84	Pk	29.7	4.3	-40	15.84	28	-12.16	103	142	V

Pk - Peak detector

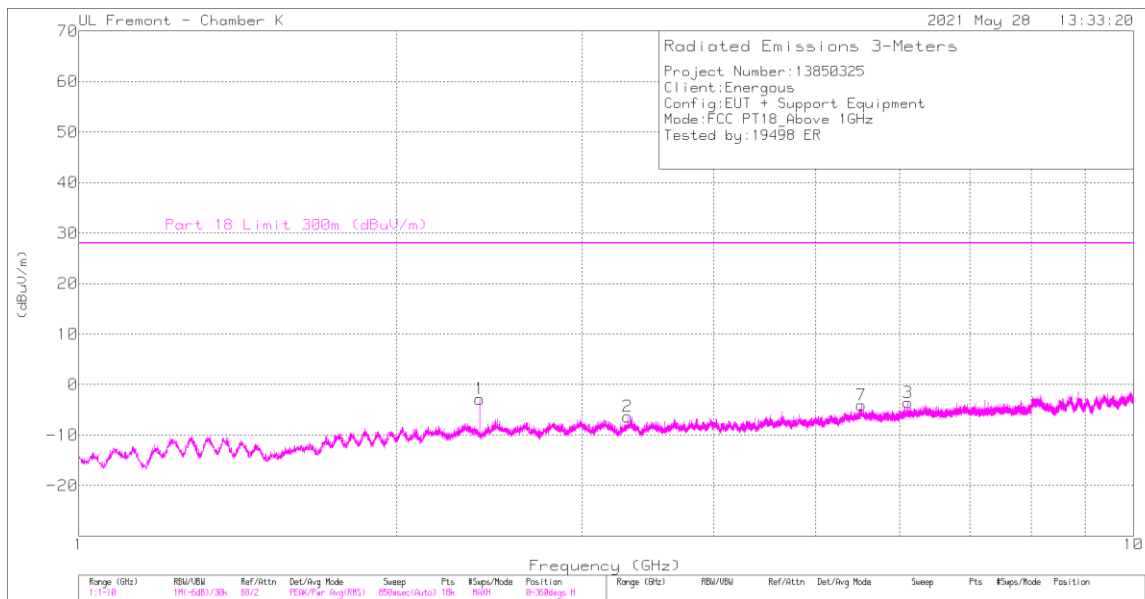
Note:

- Test was performed @ 3 meter distance.
- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$

8.3. SPURIOUS EMISSIONS 1 GHz TO 10 GHz

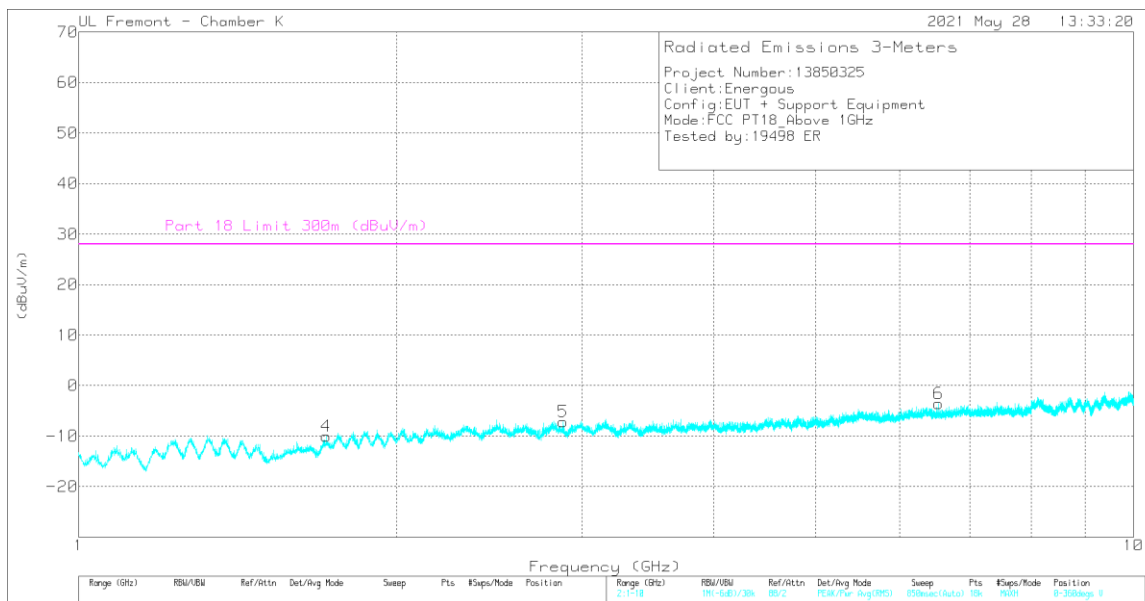
8.3.1. CONFIGURATION 1

HORIZONTAL & VERTICAL



FCC Part18 915MHz RSE High Input Preamp 9_3_2020 Standby mode.TST jn4163 3 Sep 2020

Rev 9.5 30 Apr 2020



FCC Part18 915MHz RSE High Input Preamp 9_3_2020 Standby mode.TST jn4163 3 Sep 2020

Rev 9.5 30 Apr 2020

DATA

Marker	Frequency (GHz)	Meter Reading (dBUV)	Det	AF T863 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBUV/m)	Part 18 Limit 300m (dBUV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.40042	49.14	Pk	32.4	-44.4	-40	-2.86	28	-30.86	0-360	100	H
2	3.3183	39.85	ADR	32.9	-42.1	-40	-9.35	28	-37.35	327	119	H
3	6.1142	36.27	ADR	35.7	-39	-40	-7.03	28	-35.03	67	206	H
7	5.52488	37.29	ADR	35.7	-39.9	-40	-6.91	28	-34.91	25	166	H
4	1.72073	42.58	ADR	29.6	-46.1	-40	-13.92	28	-41.92	271	373	V
5	2.88264	38.54	ADR	32.7	-43	-40	-11.76	28	-39.76	247	100	V
6	6.5362	34.31	ADR	35.8	-38.7	-40	-8.59	28	-36.59	65	182	V

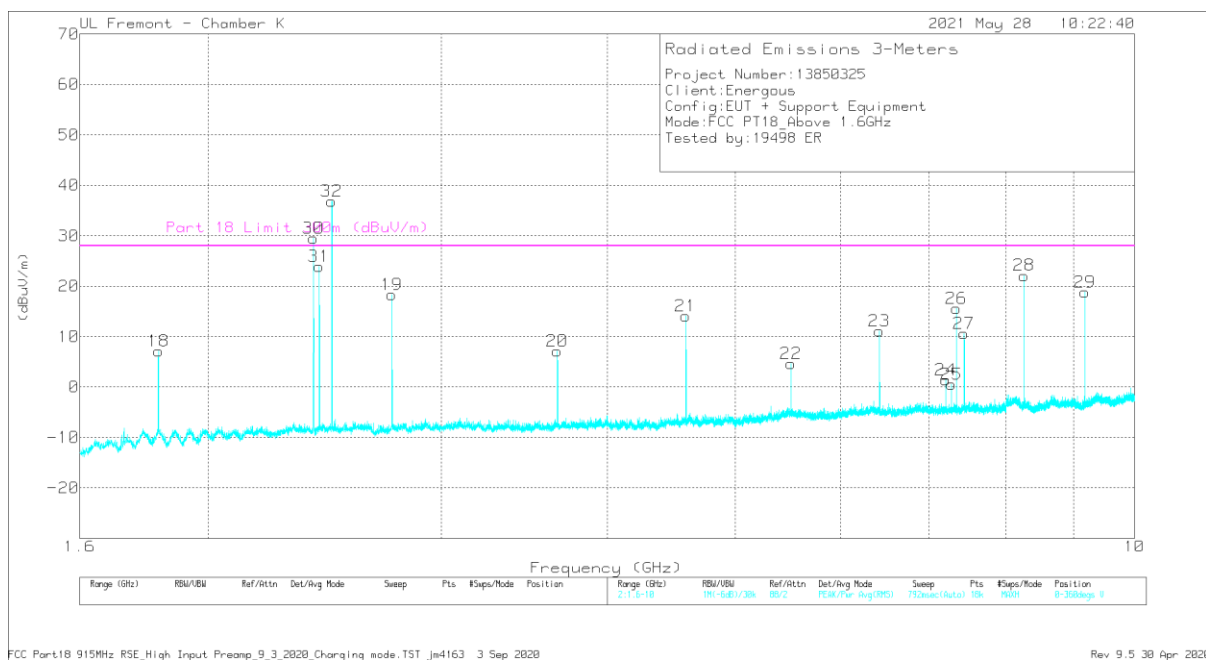
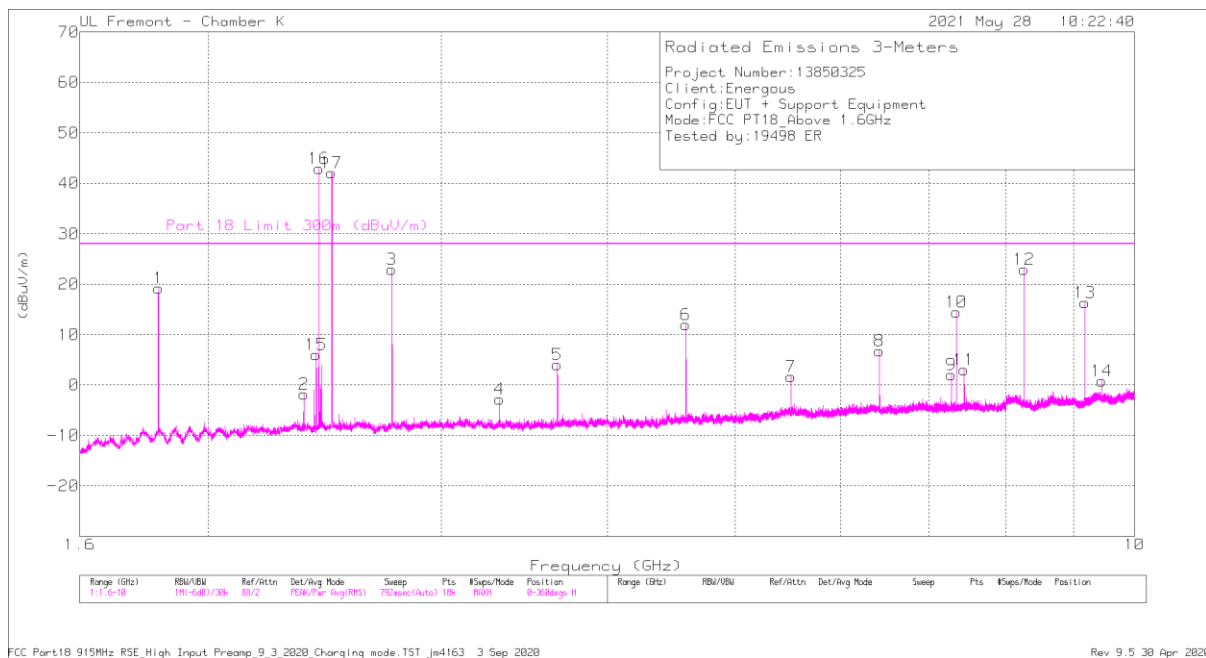
ADR - AD primary method, RMS average

Note:

- Test was performed @ 3 meter distance.
- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$
- * Marker 1 is BLE signal.

8.3.2. CONFIGURATION 2

HORIZONTAL & VERTICAL



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl (dB)	T929 HPF (dB)	Dist Corr (dB)	Corrected Reading (dBuV/m)	Part 18 Limit 300m (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.83472	73.59	Pk	30.7	-45.8	.7	-40	19.19	28	-8.81	0-360	200	H
2	2.36156	49.84	Pk	32.4	-44.7	.7	-40	-1.76	28	-29.76	0-360	200	H
3	2.75214	73.21	Pk	32.5	-43.5	.7	-40	22.91	28	-5.09	0-360	100	H
4	3.31911	45.75	Pk	32.9	-42.1	.7	-40	-2.75	28	-30.75	0-360	200	H
5	3.67002	51.77	Pk	33.5	-41.9	.7	-40	4.07	28	-23.93	0-360	100	H
6	4.58744	58.41	Pk	34.2	-41.3	.7	-40	12.01	28	-15.99	0-360	200	H
7	5.50485	45.33	Pk	35.7	-40	.7	-40	1.73	28	-26.27	0-360	200	H
8	6.42273	49.22	Pk	35.7	-38.8	.7	-40	6.82	28	-21.18	0-360	200	H
9	7.27855	43.39	Pk	36	-38.1	.7	-40	1.99	28	-26.01	0-360	100	H
10	7.34015	55.67	Pk	36	-37.9	.7	-40	14.47	28	-13.53	0-360	200	H
11	7.43955	43.66	Pk	36.1	-37.4	.7	-40	3.06	28	-24.94	0-360	200	H
12	8.25757	63.29	Pk	36.1	-37.2	.7	-40	22.89	28	-5.11	0-360	100	H
13	9.17498	55.63	Pk	36.6	-36.6	.7	-40	16.33	28	-11.67	0-360	100	H
14	9.4475	39.95	Pk	36.7	-36.5	.7	-40	.85	28	-27.15	0-360	100	H
15	* 2.41336	57.17	Pk	32.5	-44.4	.7	-40	5.97	28	-22.03	0-360	100	H
16	* 2.42549	94.24	Pk	32.4	-44.4	.7	-40	42.94	28	14.94	0-360	100	H
17	* 2.47962	93.27	Pk	32.4	-44.3	.7	-40	42.07	28	14.07	0-360	200	H
18	1.83472	61.6	Pk	30.7	-45.8	.7	-40	7.2	28	-20.8	0-360	200	V
19	2.75214	68.64	Pk	32.5	-43.5	.7	-40	18.34	28	-9.66	0-360	200	V
20	3.67002	54.9	Pk	33.5	-41.9	.7	-40	7.2	28	-20.8	0-360	200	V
21	4.58744	60.56	Pk	34.2	-41.3	.7	-40	14.16	28	-13.84	0-360	100	V
22	5.50532	48.3	Pk	35.7	-40	.7	-40	4.7	28	-23.3	0-360	200	V
23	6.42273	53.51	Pk	35.7	-38.8	.7	-40	11.11	28	-16.89	0-360	200	V
24	7.20669	42.83	Pk	36	-38.1	.7	-40	1.43	28	-26.57	0-360	200	V
25	7.27855	42.01	Pk	36	-38.1	.7	-40	.61	28	-27.39	0-360	100	V
26	7.34015	56.76	Pk	36	-37.9	.7	-40	15.56	28	-12.44	0-360	200	V
27	7.44001	51.23	Pk	36.1	-37.4	.7	-40	10.63	28	-17.37	0-360	100	V
28	8.25757	62.52	Pk	36.1	-37.2	.7	-40	22.12	28	-5.88	0-360	100	V
29	9.17498	58.11	Pk	36.6	-36.6	.7	-40	18.81	28	-9.19	0-360	200	V
30	* 2.40169	80.95	Pk	32.4	-44.5	.7	-40	29.55	28	1.55	0-360	100	V
31	* 2.42642	75.2	Pk	32.4	-44.4	.7	-40	23.9	28	-4.1	0-360	100	V
32	* 2.47962	88.06	Pk	32.4	-44.3	.7	-40	36.86	28	8.86	0-360	100	V

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl (dB)	T1853 HPF (dB)	Dist Corr (dB)	Corrected Reading (dBuV/m)	Part 18 Limit 300m (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.835	74.21	ADR	30.7	-45.8	.7	-40	19.81	28	-8.19	42	125	H
3	2.7525	73.56	ADR	32.5	-43.5	.7	-40	23.26	28	-4.74	236	111	H
12	8.2575	61.84	ADR	36.1	-37.2	.7	-40	21.44	28	-6.56	320	205	H
19	2.7525	70.57	ADR	32.5	-43.5	.7	-40	20.27	28	-7.73	131	290	V
28	8.2575	62.41	ADR	36.1	-37.2	.7	-40	22.01	28	-5.99	302	98	V
29	9.175	57.14	ADR	36.6	-36.6	.7	-40	17.84	28	-10.16	4	192	V

Pk - Peak detector

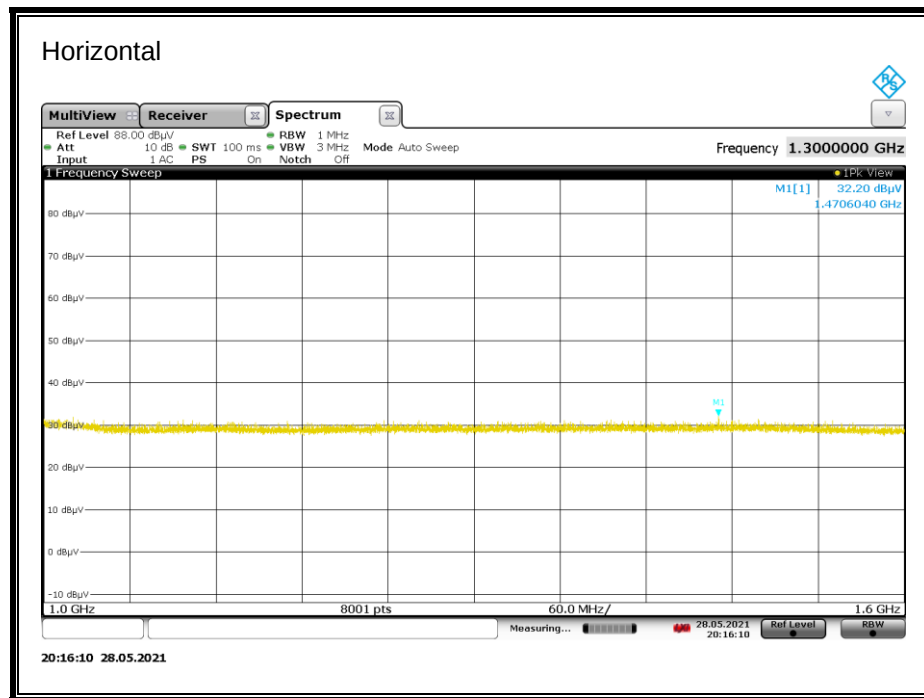
ADR - AD primary method, RMS average

Note:

- Test was performed @ 3 meter distance.
- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$
- * Markers 15, 16, 17, 30, 31, 32 are BLE signals.
- Frequency Range 1GHz – 1.6GHz was investigated due to using a 1.5GHz high pass filter. See the following test result of frequency range 1GHz-1.6GHz.

Spurious Emissions 1GHz – 1.6GHz without a Band Reject Filter, without 1.5 GHz HPF, and without amplifier

Tested by:	19498 ER
Date:	5/28/2021



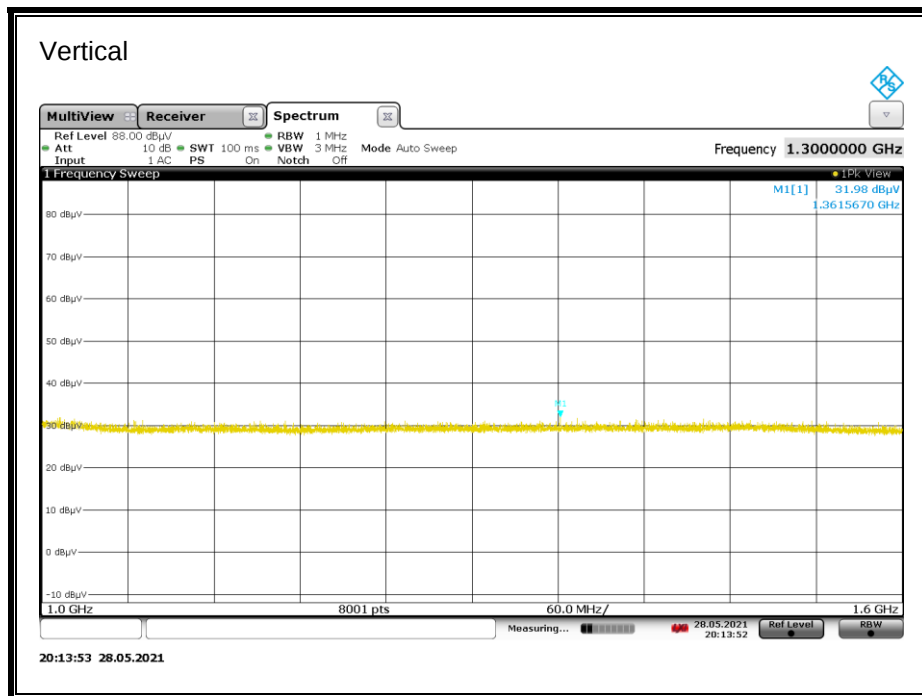
DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Cable (dB)	Dist Corr (dB)	Corrected Reading (dBuV/m)	FCC PART18 300m LIMIT (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.4706	32.2	Pk	28.1	5.6	-40	25.9	28	-2.1	0-360	200	H
	1.4713	7.23	ADR	28.1	5.6	-40	0.93	28	-27.07	188	127	H

Pk - Peak detector

Note:

- Test was performed @ 3 meter distance.
- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Cable (dB)	Dist Corr (dB)	Corrected Reading (dBuV/m)	FCC PART18 300m LIMIT (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.3616	31.98	Pk	29.4	5.4	-40	26.78	28	-1.22	0-360	200	V
	1.3627	7.41	ADR	29.4	5.4	-40	2.21	28	-25.79	58	287	V

Pk - Peak detector

Note:

- Test was performed @ 3 meter distance.
- Distance factor from 3m to 300m = $20\log(3/300) = -40\text{dB}$

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

§ 18.307 For the following equipment, when designed to be connected to the public utility (AC) power line the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies shall not exceed the limits in the following table. Compliance with the provisions of this paragraph shall be based on the measurements of the radio frequency voltage between each power line and ground at the power terminal using a 50 μ H/50 ohms line impedance stabilization network (LISN).

§ 18.307 (b) All other Part 18 consumer devices:

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	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.

TEST PROCEDURE

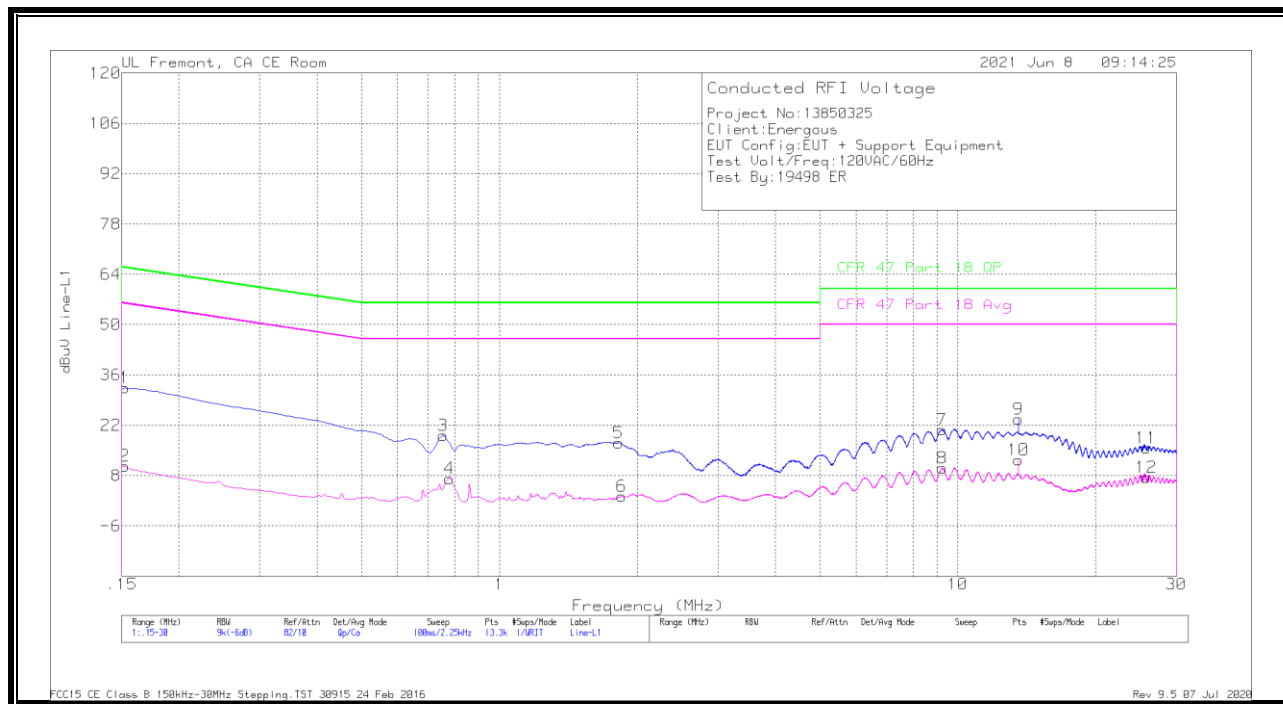
Tested in accordance with FCC / OST MP-5

RESULTS

9.1. CONFIGURATION 1

9.1.1. Power Adapter Model: PA-Y19

LINE 1 RESULTS



WORST EMISSIONS

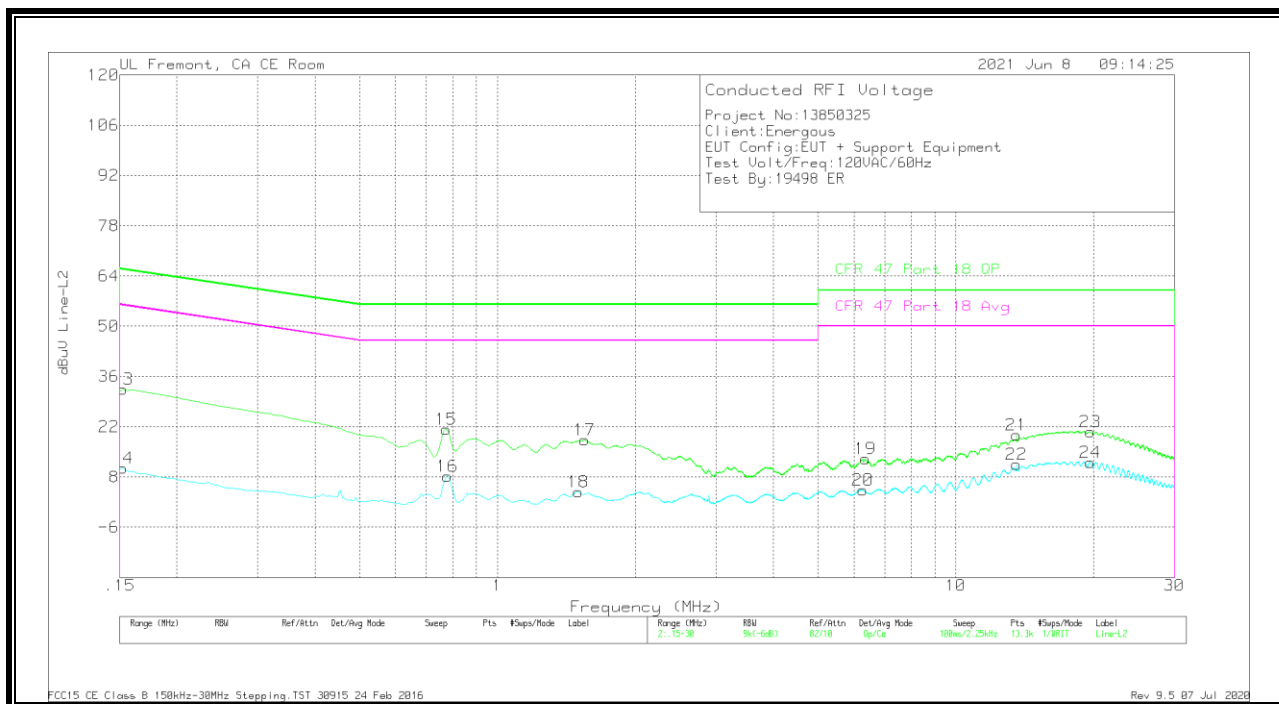
Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR) Margin (dB)
1	.15225	22.99	Qp	.1	0	9.4	32.49	65.88	-33.39	-	-
2	.15225	1.23	Ca	.1	0	9.4	10.73	-	-	55.88	-45.15
3	.753	9.78	Qp	0	.1	9.3	19.18	56	-36.82	-	-
4	.77775	-2.16	Ca	0	.1	9.3	7.24	-	-	46	-38.76
5	1.8195	7.77	Qp	0	.1	9.3	17.17	56	-38.83	-	-
6	1.851	-7.1	Ca	0	.1	9.3	2.3	-	-	46	-43.7
7	9.25463	11.22	Qp	0	.2	9.3	20.72	60	-39.28	-	-
8	9.25575	.58	Ca	0	.2	9.3	10.08	-	-	50	-39.92
9	13.56	14.21	Qp	.1	.2	9.3	23.81	60	-36.19	-	-
10	13.56	2.79	Ca	.1	.2	9.3	12.39	-	-	50	-37.61
11	25.8	6.14	Qp	0	.3	9.3	15.74	60	-44.26	-	-
12	25.76175	-2.04	Ca	0	.3	9.3	7.56	-	-	50	-42.44

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

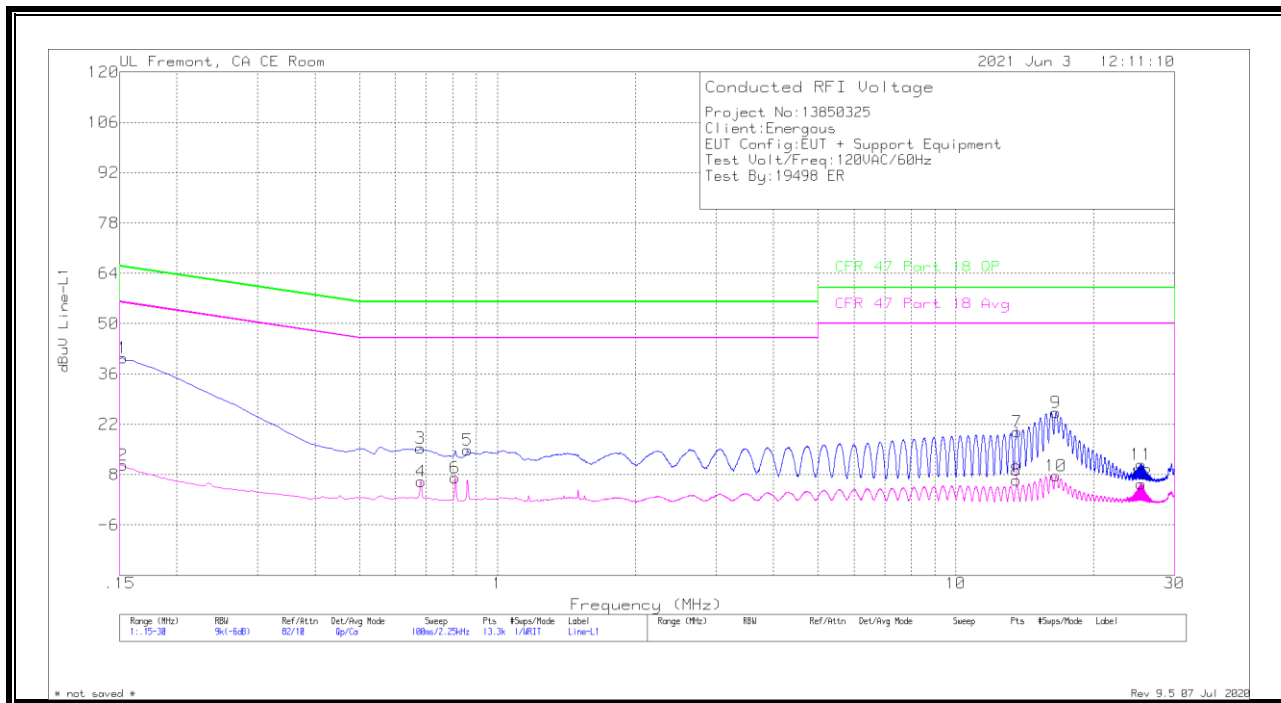
Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)M argin (dB)
13	.15225	23.04	Qp	0	0	9.4	32.44	65.88	-33.44	-	-
14	.15225	1.1	Ca	0	0	9.4	10.5	-	-	55.88	-45.38
15	.77325	12.03	Qp	0	0	9.3	21.33	56	-34.67	-	-
16	.77775	-1.09	Ca	0	0	9.3	8.21	-	-	46	-37.79
17	1.5495	8.98	Qp	0	.1	9.3	18.38	56	-37.62	-	-
18	1.5045	-5.61	Ca	0	.1	9.3	3.79	-	-	46	-42.21
19	6.34875	3.61	Qp	0	.1	9.3	13.01	60	-46.99	-	-
20	6.27225	-5.11	Ca	0	.1	9.3	4.29	-	-	50	-45.71
21	13.56	10.2	Qp	.1	.2	9.3	19.8	60	-40.2	-	-
22	13.56	1.91	Ca	.1	.2	9.3	11.51	-	-	50	-38.49
23	19.69688	11.08	Qp	0	.2	9.3	20.58	60	-39.42	-	-
24	19.69463	2.55	Ca	0	.2	9.3	12.05	-	-	50	-37.95

Qp - Quasi-Peak detector
Ca - CISPR average detection

9.1.2. Power Adapter Model: 700-014340-0000

LINE 1 RESULTS

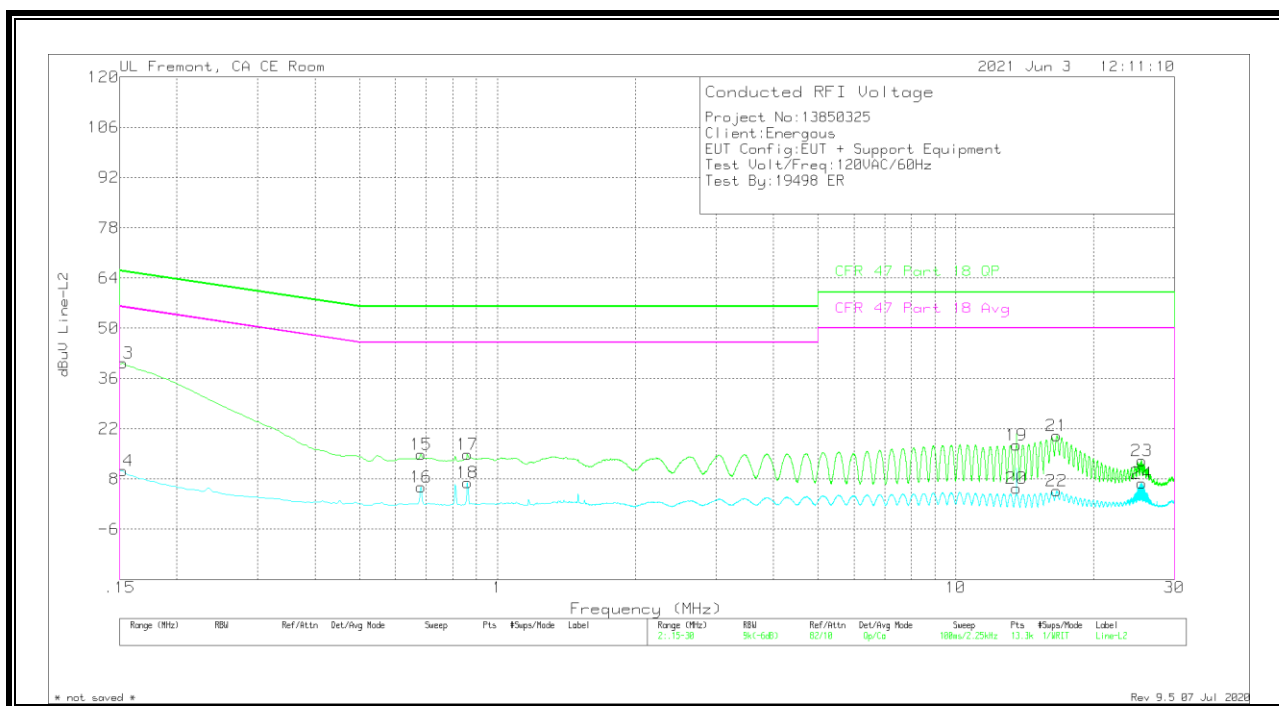


WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)M argin (dB)
1	.15225	31.04	Qp	.1	0	9.4	40.54	65.88	-25.34	-	-
2	.15225	1.22	Ca	.1	0	9.4	10.72	-	-	55.88	-45.16
3	.67875	6.13	Qp	0	0	9.3	15.43	56	-40.57	-	-
4	.681	-3.11	Ca	0	0	9.3	6.19	-	-	46	-39.81
5	.861	5.47	Qp	0	.1	9.3	14.87	56	-41.13	-	-
6	.80925	-2.19	Ca	0	.1	9.3	7.21	-	-	46	-38.79
7	13.59263	10.24	Qp	.1	.2	9.3	19.84	60	-40.16	-	-
8	13.56675	-3.21	Ca	.1	.2	9.3	6.39	-	-	50	-43.61
9	16.53675	15.79	Qp	0	.2	9.3	25.29	60	-34.71	-	-
10	16.5345	-1.86	Ca	0	.2	9.3	7.64	-	-	50	-42.36
11	25.41075	1.15	Qp	0	.3	9.3	10.75	60	-49.25	-	-
12	25.41075	-4.2	Ca	0	.3	9.3	5.4	-	-	50	-44.6

Qp - Quasi-Peak detector
Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Range 2: Line-L2 .15 - 30MHz

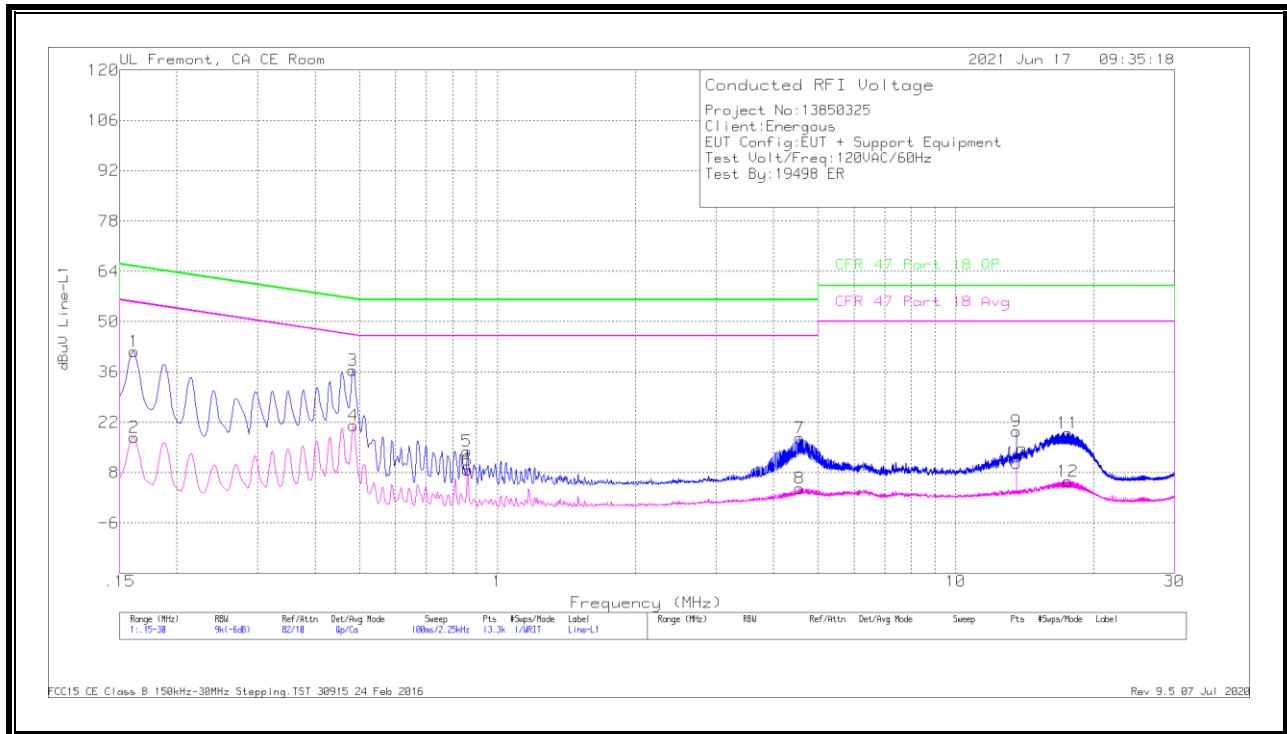
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)M argin (dB)
13	.15225	30.86	Qp	0	0	9.4	40.26	65.88	-25.62	-	-
14	.15225	.93	Ca	0	0	9.4	10.33	-	-	55.88	-45.55
15	.681	5.58	Qp	0	0	9.3	14.88	56	-41.12	-	-
16	.681	-3.58	Ca	0	0	9.3	5.72	-	-	46	-40.28
17	.861	5.44	Qp	0	.1	9.3	14.84	56	-41.16	-	-
18	.861	-2.46	Ca	0	.1	9.3	6.94	-	-	46	-39.06
19	13.56675	7.84	Qp	.1	.2	9.3	17.44	60	-42.56	-	-
20	13.56675	-4.2	Ca	.1	.2	9.3	5.4	-	-	50	-44.6
21	16.61438	10.59	Qp	0	.2	9.3	20.09	60	-39.91	-	-
22	16.611	-4.78	Ca	0	.2	9.3	4.72	-	-	50	-45.28
23	25.449	3.37	Qp	.1	.3	9.3	13.07	60	-46.93	-	-
24	25.449	-2.83	Ca	.1	.3	9.3	6.87	-	-	50	-43.13

Qp - Quasi-Peak detector

Ca - CISPR average detection

9.1.3. Power Adapter Model: SWC45

LINE 1 RESULTS

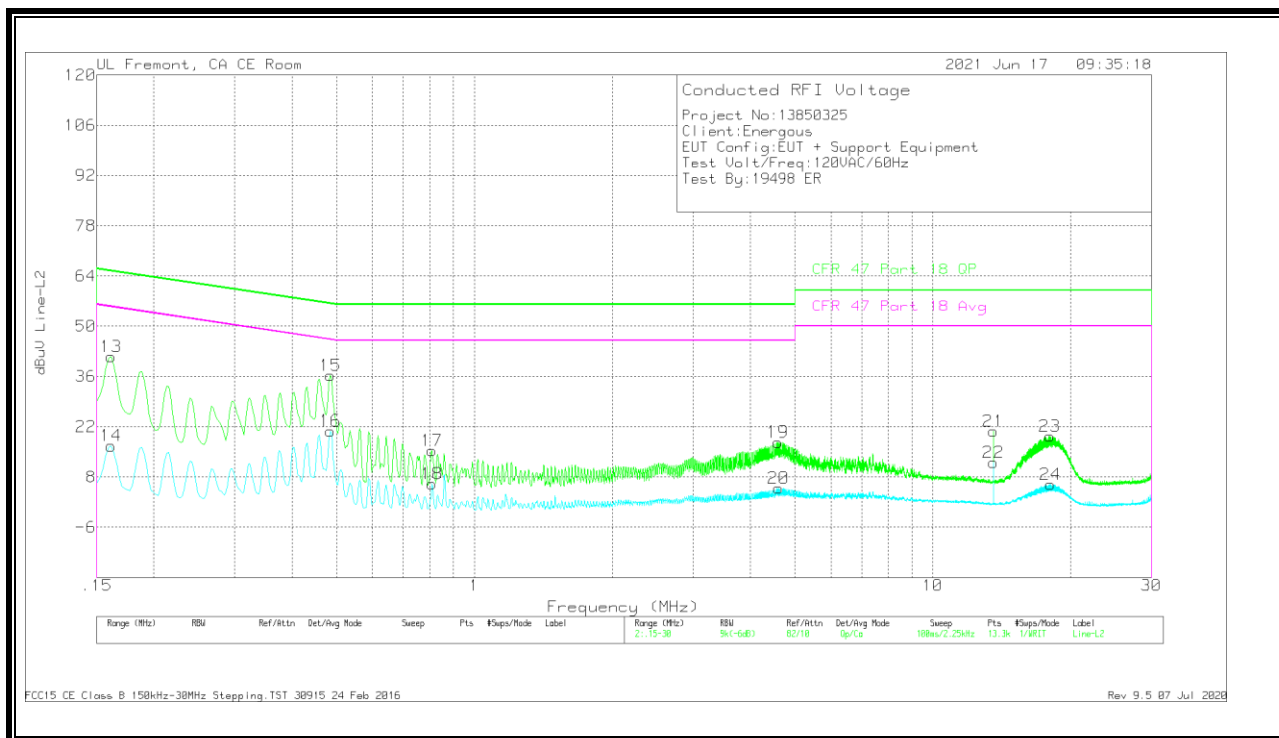


WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)M argin (dB)
1	.16125	32.31	Qp	0	0	9.4	41.71	65.4	-23.69	-	-
2	.16125	8.48	Ca	0	0	9.4	17.88	-	-	55.4	-37.52
3	.483	27.18	Qp	0	0	9.3	36.48	56.29	-19.81	-	-
4	.48525	11.78	Ca	0	0	9.3	21.08	-	-	46.25	-25.17
5	.85875	4.56	Qp	0	.1	9.3	13.96	56	-42.04	-	-
6	.861	-.62	Ca	0	.1	9.3	8.78	-	-	46	-37.22
7	4.56	8.21	Qp	0	.1	9.3	17.61	56	-38.39	-	-
8	4.56	-5.77	Ca	0	.1	9.3	3.63	-	-	46	-42.37
9	13.56	9.95	Qp	.1	.2	9.3	19.55	60	-40.45	-	-
10	13.56	1.06	Ca	.1	.2	9.3	10.66	-	-	50	-39.34
11	17.54138	9.59	Qp	0	.2	9.3	19.09	60	-40.91	-	-
12	17.5695	-3.93	Ca	0	.2	9.3	5.57	-	-	50	-44.43

Qp - Quasi-Peak detector
Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

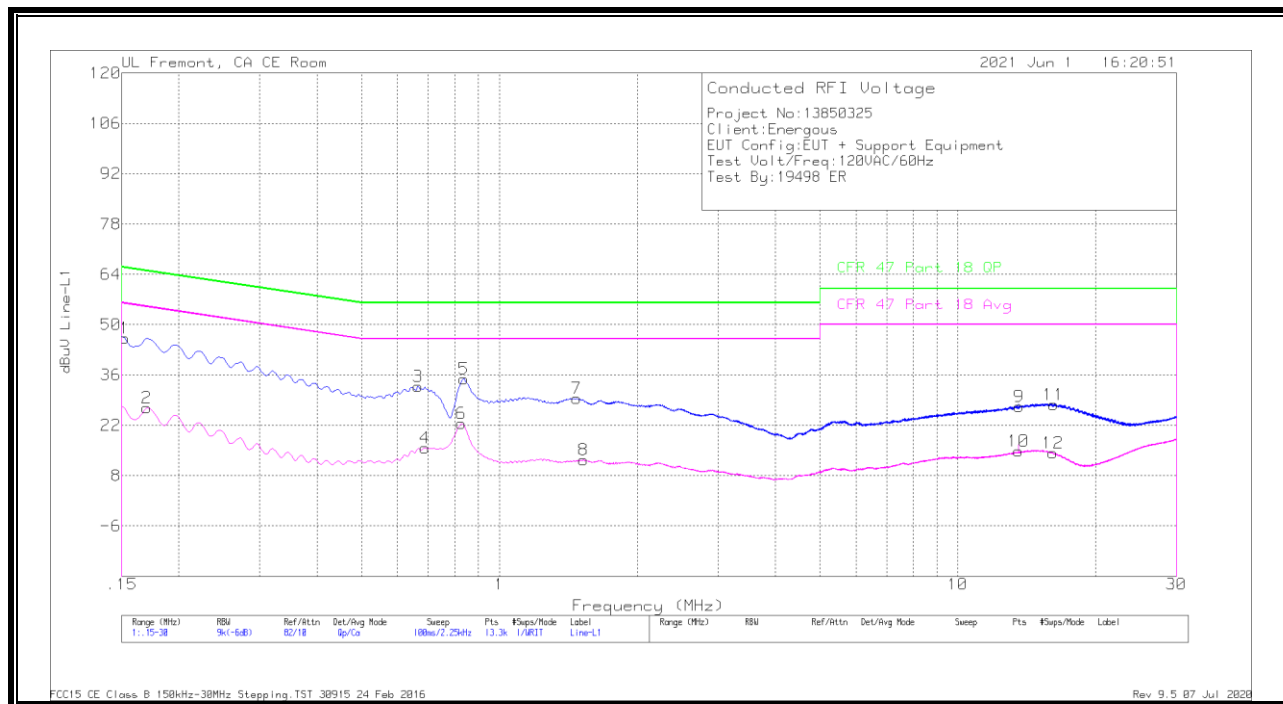
Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)M argin (dB)
13	.16125	32.08	Qp	0	0	9.4	41.48	65.4	-23.92	-	-
14	.16125	7.27	Ca	0	0	9.4	16.67	-	-	55.4	-38.73
15	.48525	26.98	Qp	0	0	9.3	36.28	56.25	-19.97	-	-
16	.48525	11.55	Ca	0	0	9.3	20.85	-	-	46.25	-25.4
17	.807	5.98	Qp	0	.1	9.3	15.38	56	-40.62	-	-
18	.80925	-3.32	Ca	0	.1	9.3	6.08	-	-	46	-39.92
19	4.587	8.31	Qp	0	.1	9.3	17.71	56	-38.29	-	-
20	4.614	-4.52	Ca	0	.1	9.3	4.88	-	-	46	-41.12
21	13.56	11.16	Qp	.1	.2	9.3	20.76	60	-39.24	-	-
22	13.56	2.47	Ca	.1	.2	9.3	12.07	-	-	50	-37.93
23	17.997	9.95	Qp	0	.2	9.3	19.45	60	-40.55	-	-
24	18.051	-3.54	Ca	0	.2	9.3	5.96	-	-	50	-44.04

Qp - Quasi-Peak detector
Ca - CISPR average detection

9.2. CONFIGURATION 2

9.2.1. Power Adapter Model: PA-Y19

LINE 1 RESULTS



WORST EMISSIONS

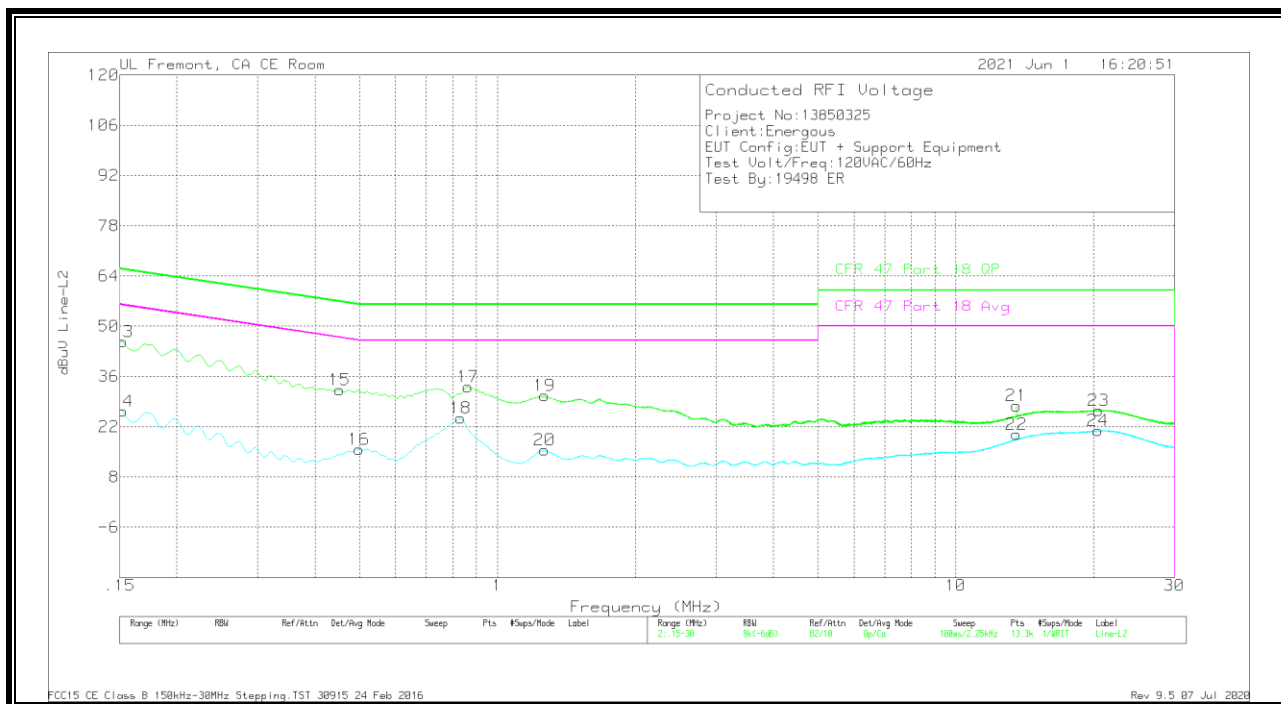
Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)Margin (dB)
1	.15225	36.11	Qp	.1	0	10.1	46.31	65.88	-19.57	-	-
2	.17025	16.8	Ca	0	0	10.1	26.9	-	-	54.95	-28.05
3	.66525	22.73	Qp	0	0	10.1	32.83	56	-23.17	-	-
4	.68775	5.65	Ca	0	0	10.1	15.75	-	-	46	-30.25
5	.83738	24.7	Qp	0	.1	10.1	34.9	56	-21.1	-	-
6	.82725	12.26	Ca	0	.1	10.1	22.46	-	-	46	-23.54
7	1.47525	19.3	Qp	0	.1	10.1	29.5	56	-26.5	-	-
8	1.52475	2.14	Ca	0	.1	10.1	12.34	-	-	46	-33.66
9	13.6275	16.69	Qp	.1	.2	10.2	27.19	60	-32.81	-	-
10	13.56675	4.28	Ca	.1	.2	10.2	14.78	-	-	50	-35.22
11	16.179	17.19	Qp	0	.2	10.3	27.69	60	-32.31	-	-
12	16.116	3.84	Ca	0	.2	10.3	14.34	-	-	50	-35.66

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Range 2: Line-L2 .15 - 30MHz

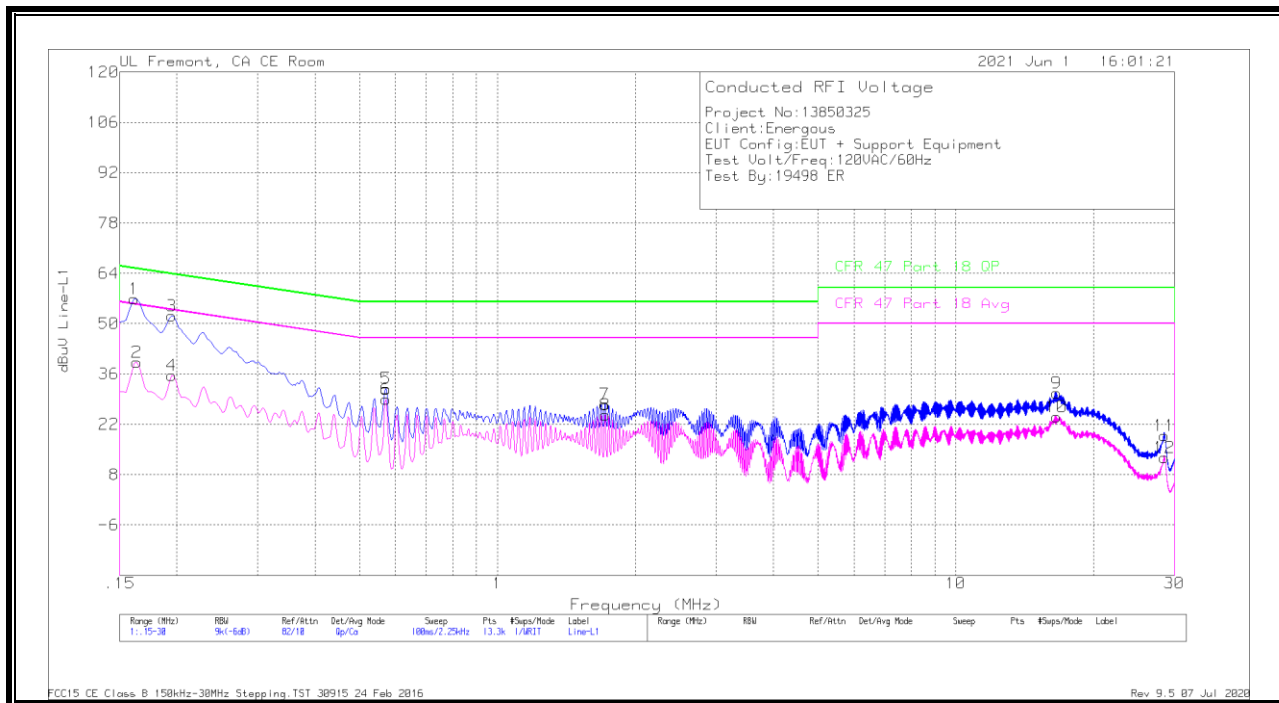
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)M argin (dB)
13	.15225	35.55	Qp	0	0	10.1	45.65	65.88	-20.23	-	-
14	.15225	16.33	Ca	0	0	10.1	26.43	-	-	55.88	-29.45
15	.45263	22.12	Qp	0	0	10.1	32.22	56.83	-24.61	-	-
16	.49875	5.63	Ca	0	0	10.1	15.73	-	-	46.02	-30.29
17	.86325	22.95	Qp	0	.1	10.1	33.15	56	-22.85	-	-
18	.83175	14.2	Ca	0	.1	10.1	24.4	-	-	46	-21.6
19	1.26825	20.45	Qp	0	.1	10.1	30.65	56	-25.35	-	-
20	1.26825	5.28	Ca	0	.1	10.1	15.48	-	-	46	-30.52
21	13.56	17.34	Qp	.1	.2	10.2	27.84	60	-32.16	-	-
22	13.56	9.43	Ca	.1	.2	10.2	19.93	-	-	50	-30.07
23	20.472	15.84	Qp	0	.3	10.4	26.54	60	-33.46	-	-
24	20.45625	10.2	Ca	0	.3	10.4	20.9	-	-	50	-29.1

Qp - Quasi-Peak detector

Ca - CISPR average detection

9.2.2. Power Adapter Model: 700-014340-0000

LINE 1 RESULTS

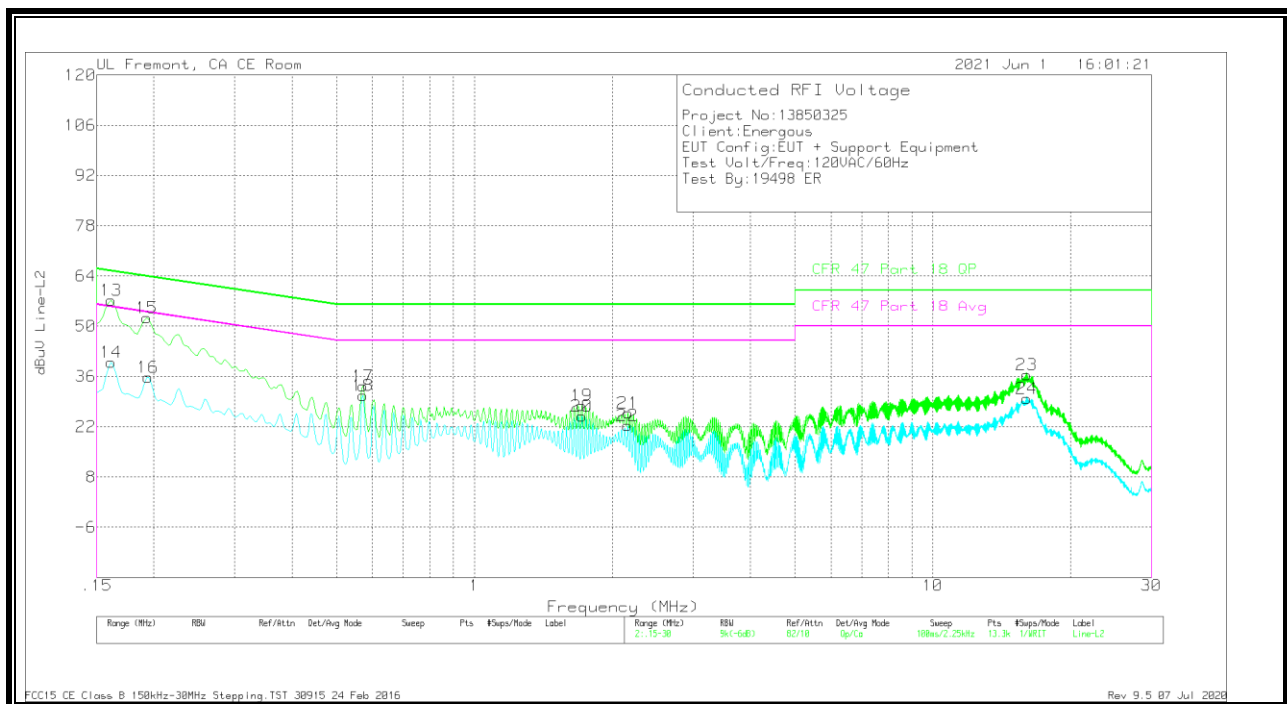


WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)M argin (dB)
1	.16125	46.79	Qp	0	0	10.1	56.89	65.4	-8.51	-	-
2	.1635	29.12	Ca	0	0	10.1	39.22	-	-	55.28	-16.06
3	.195	42.12	Qp	0	0	10.1	52.22	63.82	-11.6	-	-
4	.195	25.55	Ca	0	0	10.1	35.65	-	-	53.82	-18.17
5	.57075	21.78	Qp	0	0	10.1	31.88	56	-24.12	-	-
6	.57075	18.86	Ca	0	0	10.1	28.96	-	-	46	-17.04
7	1.716	17.43	Qp	0	.1	10.1	27.63	56	-28.37	-	-
8	1.71825	14.42	Ca	0	.1	10.1	24.62	-	-	46	-21.38
9	16.59525	20.21	Qp	0	.2	10.3	30.71	60	-29.29	-	-
10	16.593	13.58	Ca	0	.2	10.3	24.08	-	-	50	-25.92
11	28.527	7.99	Qp	0	.3	10.5	18.79	60	-41.21	-	-
12	28.527	1.97	Ca	0	.3	10.5	12.77	-	-	50	-37.23

Qp - Quasi-Peak detector
Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Range 2: Line-L2 .15 - 30MHz

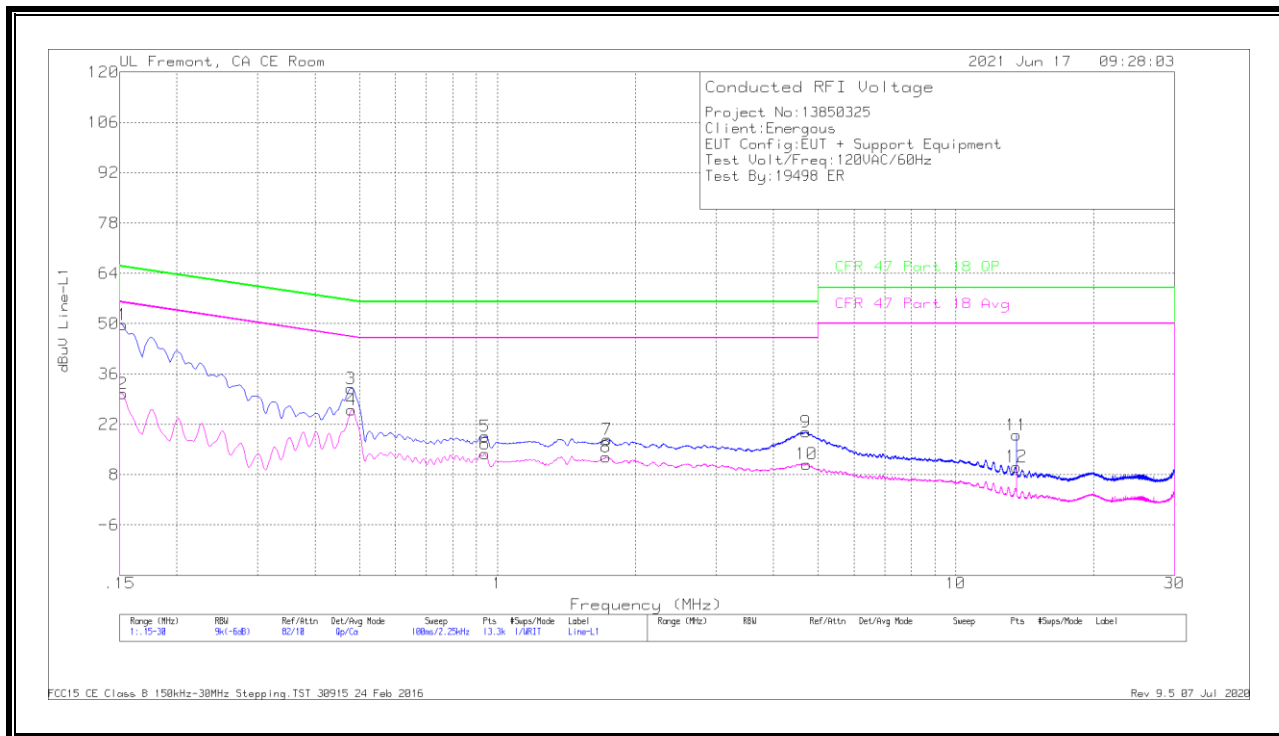
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)M argin (dB)
13	.16125	47.06	Qp	0	0	10.1	57.16	65.4	-8.24	-	-
14	.16125	29.79	Ca	0	0	10.1	39.89	-	-	55.4	-15.51
15	.19275	42.17	Qp	0	0	10.1	52.27	63.92	-11.65	-	-
16	.19388	25.67	Ca	0	0	10.1	35.77	-	-	53.87	-18.1
17	.57075	23.22	Qp	0	0	10.1	33.32	56	-22.68	-	-
18	.57075	20.68	Ca	0	0	10.1	30.78	-	-	46	-15.22
19	1.716	17.72	Qp	0	.1	10.1	27.92	56	-28.08	-	-
20	1.716	14.81	Ca	0	.1	10.1	25.01	-	-	46	-20.99
21	2.1615	15.68	Qp	0	.1	10.1	25.88	56	-30.12	-	-
22	2.15925	12.06	Ca	0	.1	10.1	22.26	-	-	46	-23.74
23	16.03725	26.04	Qp	0	.2	10.3	36.54	60	-23.46	-	-
24	16.03725	19.31	Ca	0	.2	10.3	29.81	-	-	50	-20.19

Qp - Quasi-Peak detector

Ca - CISPR average detection

9.2.3. Power Adapter Model: SWC45

LINE 1 RESULTS

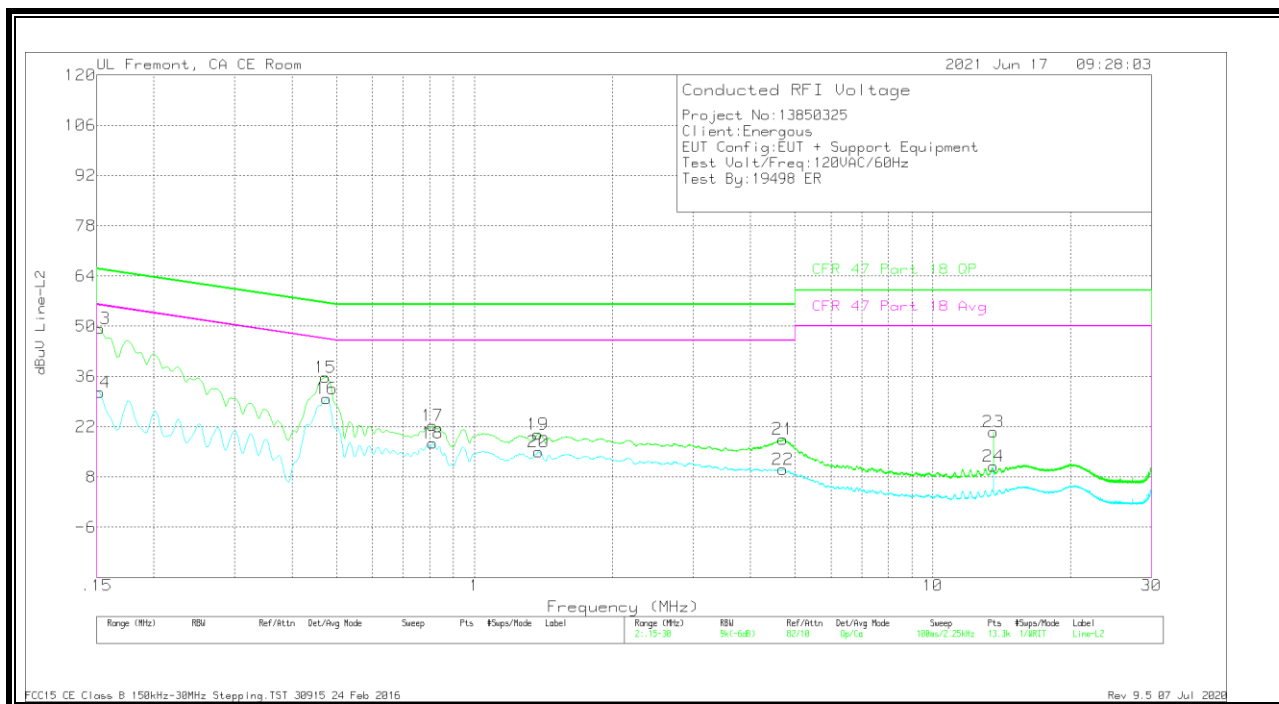


WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)M argin (dB)
1	.15225	40.22	Qp	.1	0	9.4	49.72	65.88	-16.16	-	-
2	.15225	21	Ca	.1	0	9.4	30.5	-	-	55.88	-25.38
3	.47963	22.69	Qp	0	0	9.3	31.99	56.35	-24.36	-	-
4	.48075	16.74	Ca	0	0	9.3	26.04	-	-	46.33	-20.29
5	.94088	9.3	Qp	0	.1	9.3	18.7	56	-37.3	-	-
6	.93975	4.36	Ca	0	.1	9.3	13.76	-	-	46	-32.24
7	1.73625	8.44	Qp	0	.1	9.3	17.84	56	-38.16	-	-
8	1.72725	3.44	Ca	0	.1	9.3	12.84	-	-	46	-33.16
9	4.713	10.42	Qp	0	.1	9.3	19.82	56	-36.18	-	-
10	4.7265	1.51	Ca	0	.1	9.3	10.91	-	-	46	-35.09
11	13.56	9.41	Qp	.1	.2	9.3	19.01	60	-40.99	-	-
12	13.56	.61	Ca	.1	.2	9.3	10.21	-	-	50	-39.79

Qp - Quasi-Peak detector
Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 18 QP	QP Margin (dB)	CFR 47 Part 18 Avg	Av(CISPR)M argin (dB)
13	.15225	40.01	Qp	0	0	9.4	49.41	65.88	-16.47	-	-
14	.15225	22.19	Ca	0	0	9.4	31.59	-	-	55.88	-24.29
15	.47288	26.51	Qp	0	0	9.3	35.81	56.46	-20.65	-	-
16	.47625	20.47	Ca	0	0	9.3	29.77	-	-	46.4	-16.63
17	.8115	12.94	Qp	0	.1	9.3	22.34	56	-33.66	-	-
18	.8115	8.03	Ca	0	.1	9.3	17.43	-	-	46	-28.57
19	1.37625	10.55	Qp	0	.1	9.3	19.95	56	-36.05	-	-
20	1.3785	5.65	Ca	0	.1	9.3	15.05	-	-	46	-30.95
21	4.7175	9.18	Qp	0	.1	9.3	18.58	56	-37.42	-	-
22	4.713	.72	Ca	0	.1	9.3	10.12	-	-	46	-35.88
23	13.56	10.95	Qp	.1	.2	9.3	20.55	60	-39.45	-	-
24	13.56	1.35	Ca	.1	.2	9.3	10.95	-	-	50	-39.05

Qp - Quasi-Peak detector

Ca - CISPR average detection