TEST REPORT

Report Number: 14890696-E1V2

Applicant	:	BELKIN INTERNATIONAL, INC. 555 S. AVIATION BLVD., SUITE 180 EL SEGUNDO, CA 90245, USA
Model	:	MMA008
FCC ID	:	K7SMMA008
EUT Description	:	Auto-Tracking Stand Pro with DockKit
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C

Date Of Issue:
2024-02-05

Prepared by:
UL Verification Services Inc.
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ACCREDITED
CERT #0751.05

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2024-01-19	Initial Issue	---
V2	2024-02-05	Updated Section 5.4 to address TCB's question	Tina Chu

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: BELKIN INTERNATIONAL, INC.
555 S. AVIATION BLVD., SUITE 180
EL SEGUNDO, CA 90245, USA

EUT DESCRIPTION: Auto-Tracking Stand Pro with DockKit

MODEL NUMBER: MMA008

BRAND: belkin

SERIAL NUMBER: 57X10F6CD00634 (unit #1), 57X10F6CD00622 (unit#3), 57X10F6CD00627 (unit #6)

SAMPLE RECEIPT DATE: 2023-12-21

DATE TESTED: 2023-12-28 to 2024-01-16

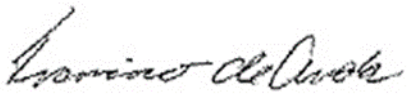
APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15 SUBPART C	Complies

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.

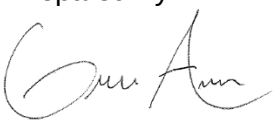
This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

Approved & Released For
UL Verification Services Inc. By:



Francisco de Anda
Staff Engineer
Consumer Technology Division
UL Verification Services Inc.

Prepared By:



Gerardo Abrego
Senior Test Engineer
Consumer Technology Division
UL Verification Services Inc.

Reviewed By:

Tina Chu
Senior Project Engineer
Consumer Technology Division
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:
ANSI C63.10-2013
FCC CFR 47 Part 2
FCC CFR 47 Part 15
KDB 414788 D01 Radiated Test Site

3. FACILITIES AND ACCREDITATION

UL Verification Services Inc. 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	550739
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			

4. DECISION RULES AND MEASUREMENT UNCERTAINTY

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.

4.1. 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.)

4.2. MEASUREMENT UNCERTAINTY

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

4.3.

PARAMETER	U_{Lab}
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	2.75%
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 (E-field)	2.84 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz (H-field)	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Time Domain Measurements	3.39%
Temperature	0.57˚C
Humidity	3.39%

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

5. EQUIPMENT UNDER TEST

DESCRIPTION OF EUT

The EUT is a 360-degree face, body & movement tracking wireless charger with MagSafe that can charge one client device at a time. The EUT is also motorized and supports a 90-degree auto tilt for automatic video angle adjusting. The EUT supports both BLE (1Mbps, 2Mpbs), and NFC (passive). The EUT supports Wireless Power Transfer (WPT) only when directly connected to a USB-C AC/DC power supply.

5.1.

When the EUT is disconnected from the power supply and is powered by the internal battery, the wireless charging coil will not transmit any power. The wireless charging coil can be used for charging either a MagSafe iPhone at 360kHz (15W Max), legacy iPhone at 127.7kHz (7.5W Max), or AirPods Pro case at 127.7kHz (1W Max).

The EUT is powered though a USB-C to USB-Cable that is connected to the bundled 30W USB Type-C PD Power Supply.

MAXIMUM E-FIELD STRENGTH

5.2.

The transmitter has maximum peak radiated electric field strength as follows:

Fundamental Frequency (kHz)	E field (300m distance) (dBuV/m)
360 (MagSafe phone 15W)	-27.22
127.7 (Legacy iPhone 7.5W)	-3.25
127.7 (AirPods Pro Case 1W)	-6.33

5.3.

SOFTWARE AND FIRMWARE

The firmware version installed in the EUT during testing was:
360kHz/127.7kHz: v275.0.0

WORST-CASE CONFIGURATION

Testing for MagSafe phone and New AirPods Pro Case are based on direct contact with no shifts in position due to the embedded magnet in the charger pads.

Legacy phone does not have an embedded magnet, is placed at the maximum power position during the testing.

5.4.

For the entire radiated emissions test, the EUT was tested in desktop mode in the following configurations. The client devices where charging between 20% to 50% state of charge.

Radiated spurious emission 30MHz to 1GHz and AC conducted emissions were performed on Configuration 1, 2 at EUT minimum and maximum load as worst-case.

Charging pad has auto motorized tilt function can move the mount forwards -25 degrees (Down) and backward +70 degrees (Up). Investigation has been performed between tilt up, center and tilt down. The following configurations were tested:

Config	Descriptions	Frequency	Client and worst-case orientation
1	EUT is powered by AC/DC adapter.	No 360kHz/127.7kHz signal observed	No WPT client used. Stand-By.
2	EUT is powered by AC/DC adapter. Direct contact during charging/operating between the EUT & WPT Client. BLE in normal operating mode.	360kHz (15W)	Coil 1: MagSafe Phone. 0 degrees when the lighting connector facing down. Charging pad tilted down.
3		127.7kHz (7.5W)	Coil 1: Legacy Phone. 270 degrees when the lighting connector is 90 degrees away from stand to the left. Charging pad as center position.
4		127.7kHz (1W)	Coil 1: AirPods Pro Case: 270 degrees when the lighting connector is 90 degrees away from stand to the left. Charging pad as center position.

6. TEST AND MEASUREMENT EQUIPMENT

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

RADIATED EMISSIONS TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO METRICS	EM-6871	170013	2024-07-31	2022-07-28
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO METRICS	EM-6872	170015	2024-07-31	2022-07-28
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	232075	2024-03-31	2023-03-13
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	174374	2024-04-30	2023-04-05
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	225688	2024-02-29	2023-02-14
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	191429	2024-02-29	2023-02-15
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	175953	2024-03-31	2023-03-03
Amplifier, 10KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310N	29654	2024-07-31	2023-07-13
AC MAINS LINE CONDUCTED EMISSIONS TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
LISN	Fischer Custom Communications, Inc`	FCC-LISN-50/250-25-2-01-480V	175765	2024-01-31	2023-01-27
EMI TEST RECEIVER	Rohde & Schwarz	ESR	171646	2024-02-29	2023-02-20
Transient Limiter	TE	TBFL1	207996	2024-08-31	2023-08-10
UL AUTOMATION SOFTWARE					
Radiated Software	UL	UL EMC	Ver 2014-07-15 & 2023-12-13 Rev 9.5 03 March 2023		
AC Line Conducted Software	UL	UL EMC	2023-10-16 Rev 9.5 03 March 2023		

7. OCCUPIED BANDWIDTH

TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 300Hz. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

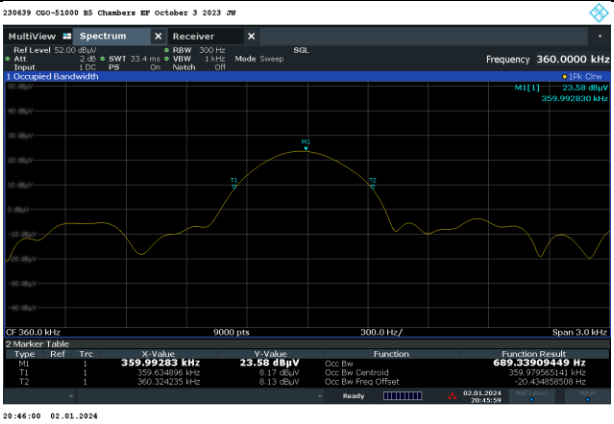
Note: Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.

RESULTS

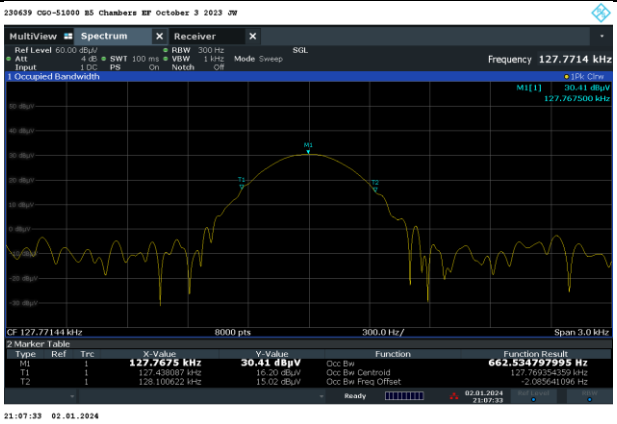
Test Engineer:	SI 23522

Configuration	Frequency (kHz)	99% Bandwidth (Hz)
2	360	689.34
3	127.7	662.53
4	127.7	685.65

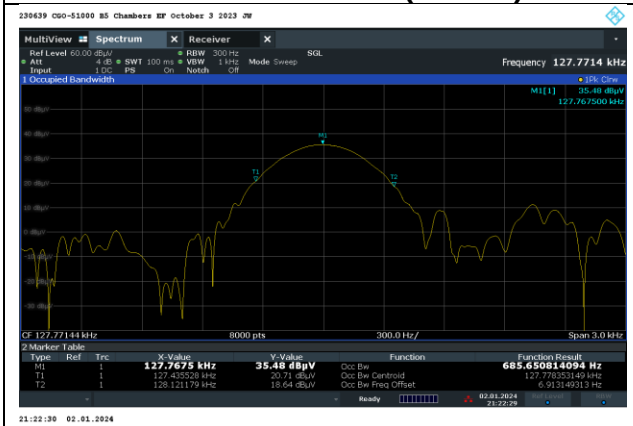
Configuration 1 standby mode: no 360kHz/127.7kHz signal observed.



CONFIGURATION 2 (360kHz)



CONFIGURATION 3 (127.7kHz)



CONFIGURATION 4 (127.7kHz)

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8. RADIATED EMISSION TEST RESULTS

LIMITS AND PROCEDURE

LIMIT

FCC §15.209 (a)

8.1

Frequency (MHz)	Field Strength (microvolts/meter)	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 to 216	150	3
216 to 960	200	3
Above 960 MHz	500	3
Note: The lower limit shall apply at the transition frequency.		

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 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.

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.

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

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

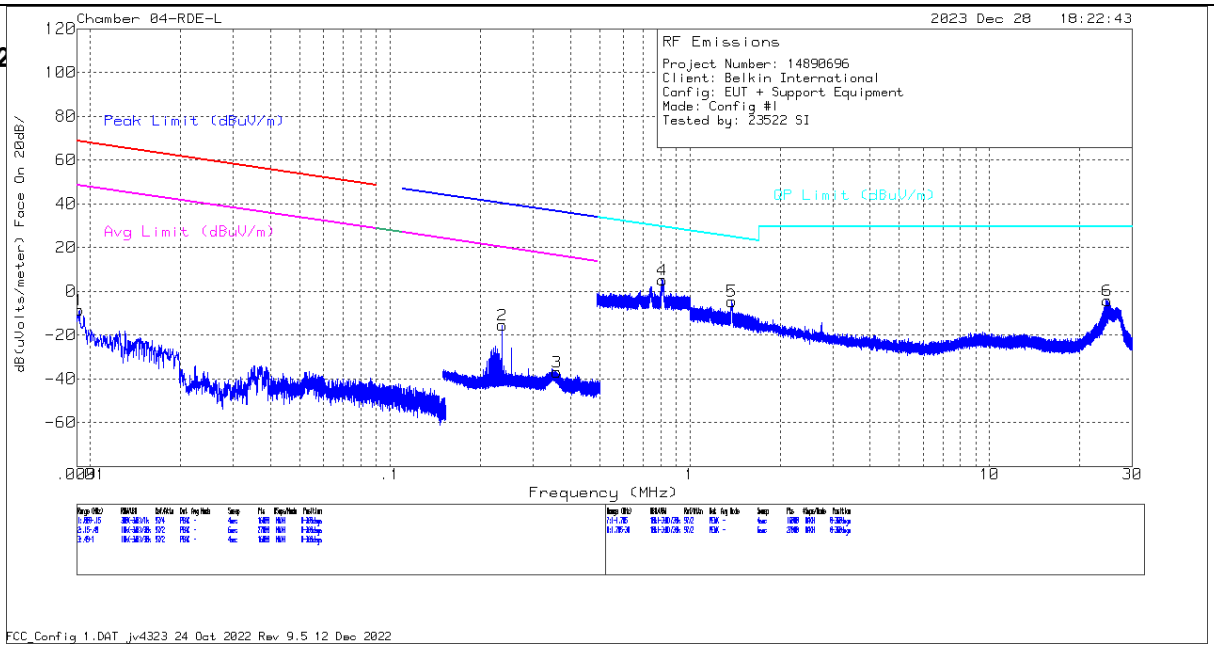
OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

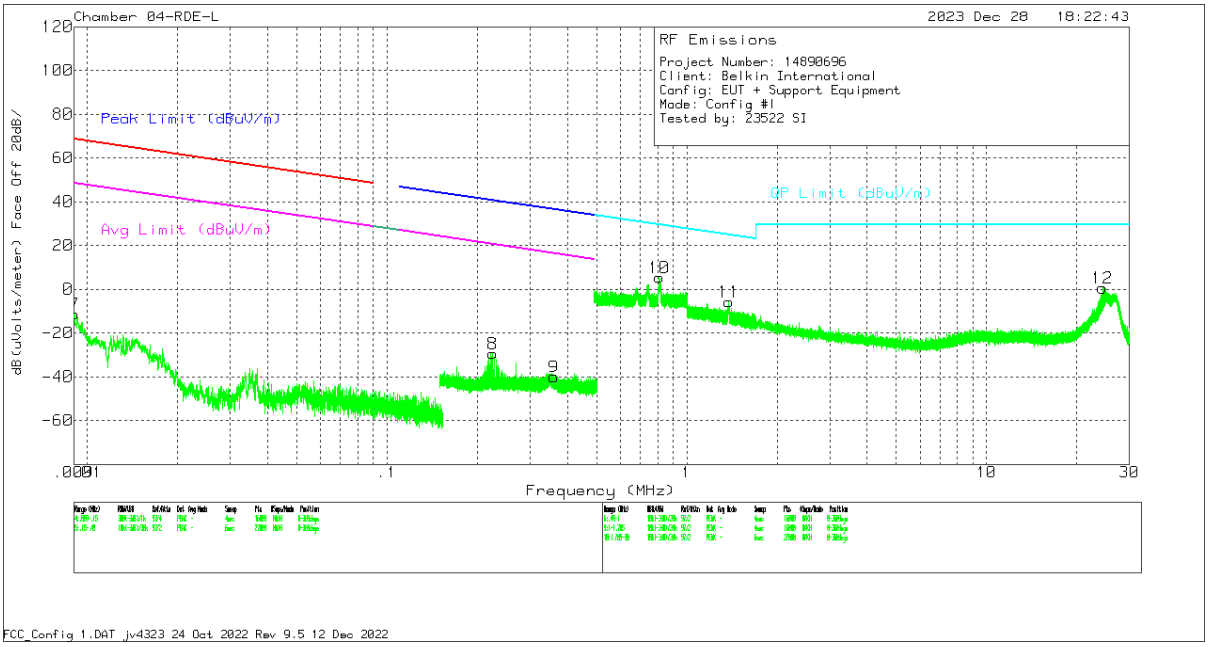
RESULTS

FCC TX FUNDAMENTAL AND SPURIOUS EMISSIONS FROM 9 kHz TO 30 MHz

CONFIGURATION 1: WPT ON STANDBY

8.2





DATA

Range 1: Face On .009 - .15MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.0092	38.84	Pk	61.2	-28.6	-80	-8.56	68.3	-76.86	48.3	-56.86	0-360

Range 2: Face On .15 - .49MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
2	.36	17.07	Pk	56.3	-31.9	-80	-38.53	36.48	-75.01	16.48	-55.01	347
3	.2338	39.33	Pk	56.4	-32	-80	-16.27	40.24	-56.51	20.24	-36.51	320

Range 3: Face On .49 - 1MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	.8116	20.65	Pk	56.4	-31.9	-40	5.15	29.43	-24.28	0-360

Range 4: Face Off .009 - .15MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
7	.0091	35.87	Pk	61.3	-28.5	-80	-11.33	68.44	-79.77	48.44	-59.77	0-360

Range 5: Face Off .15 - .49MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
8	.2247	26.17	Pk	56.4	-32	-80	-29.43	40.58	-70.01	20.58	-50.01	0-360
9	.36	17.28	Pk	56.3	-31.9	-80	-38.32	36.48	-74.8	16.48	-54.8	301

Range 6: Face Off .49 - 1MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
10	.8092	20.85	Pk	56.4	-31.9	-40	5.35	29.46	-24.11	0-360

Range 7: Face On 1 - 1.705MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
5	1.3819	22.37	Pk	44.8	-31.8	-40	-4.63	24.82	-29.45	0-360

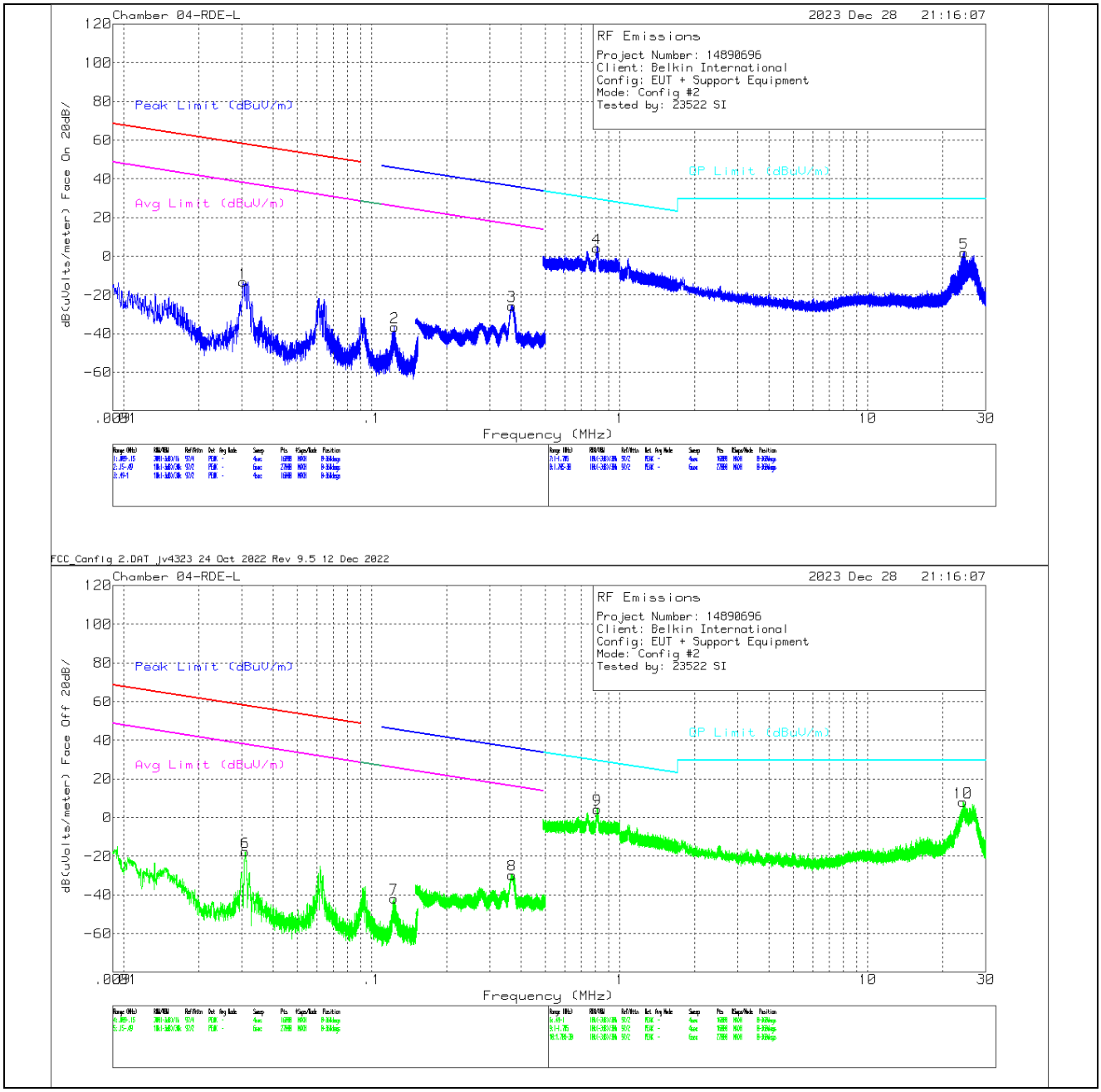
Range 8: Face On 1.705 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
6	24.7222	33.31	Pk	33.6	-31.2	-40	-4.29	29.5	-33.79	0-360

Range 9: Face Off 1 - 1.705MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
11	1.3806	21.31	Pk	44.8	-31.8	-40	-5.69	24.83	-30.52	0-360

Range 10: Face Off 1.705 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
12	24.3732	38.1	Pk	33.6	-31.2	-40	.5	29.5	-29	0-360

Pk - Peak detector

CONFIGURATION 2: OPERATING MODE WITH iPhone (360kHz)



DATA

Range 1: Face On .009 - .15MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.124	12.59	Pk	55.9	-32	-80	-43.51	45.76	-89.27	25.76	-69.27	355	.124	12.59	Pk	55.9
2	.1236	19.52	Pk	55.9	-32	-80	-36.58	-	-	-	-	45.78	-82.36	25.78	-62.36	0-360

Range 2: Face On .15 - .49MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin(dB)	Azimuth (Degs)
3	.3603	28.38	Pk	56.3	-31.9	-80	**-27.22**	36.48	-63.7	16.48	-43.7	175

Range 3: Face On .49 - 1MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	.8087	19.75	Pk	56.4	-31.9	-40	4.25	29.46	-25.21	0-360

Range 4: Face Off .009 - .15MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
6	.0309	35.94	Pk	58	-31.6	-80	-17.66	57.78	-75.44	37.78	-55.44	-	-	-	-	0-360
7	.1239	5.13	Pk	55.9	-32	-80	-50.97	-	-	-	-	45.77	-96.74	25.77	-76.74	294

Range 5: Face Off .15 - .49MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)) (dB/m)	CBL/AMP	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
8	.3609	25.16	Pk	56.3	-31.9	-80	-30.44	36.46	-66.9	16.46	-46.9	63

Range 6: Face Off .49 - 1MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)) (dB/m)	CBL/AMP	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
9	.8116	19.93	Pk	56.4	-31.9	-40	4.43	29.43	-25	0-360

Range 8: Face On 1.705 - 30MHz

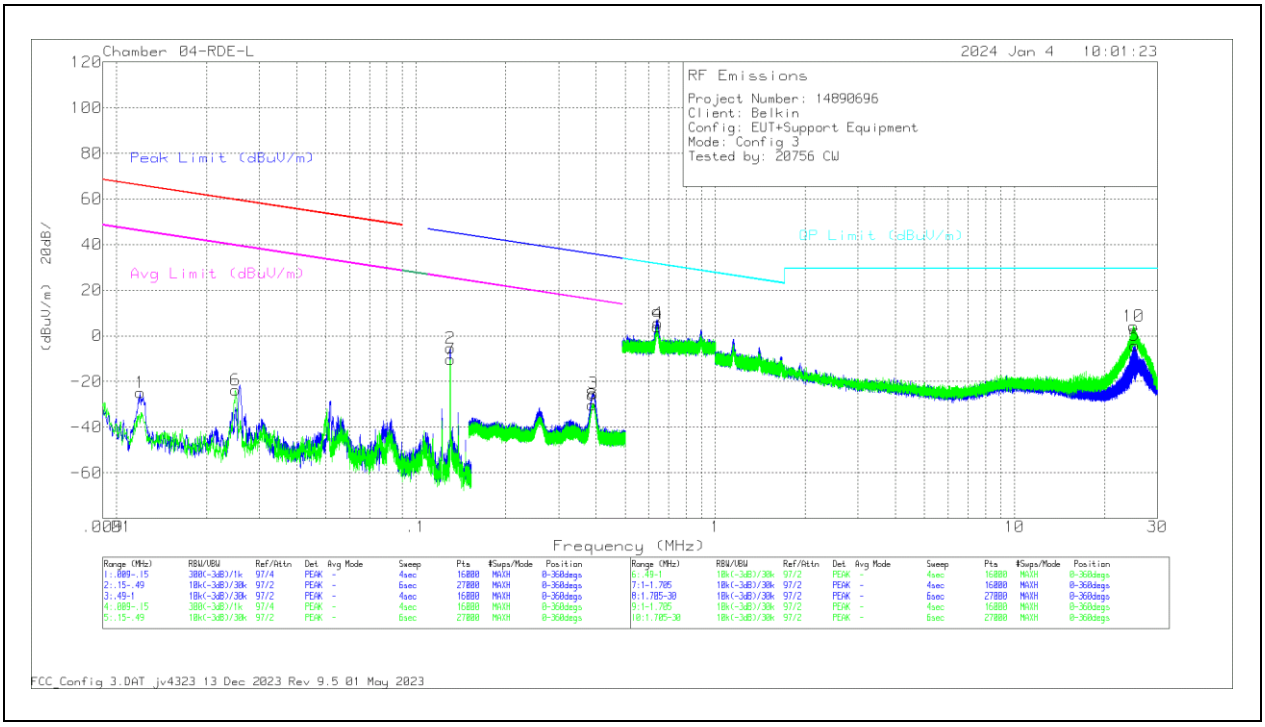
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)) (dB/m)	CBL/AMP	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
5	24.5032	39.46	Pk	33.6	-31.2	-40	1.86	29.5	-27.64	0-360

Range 10: Face Off 1.705 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
10	24.2318	45.61	Pk	33.6	-31.2	-40	8.01	29.5	-21.49	0-360

Pk - Peak detector

CONFIGURATION 3: OPERATING MODE WITH iPhone (127.7kHz)



DATA

Range 1: Face On .009 - .15MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.1278	53.15	Pk	55.9	-32.3	-80	**-3.25**	45.5	-48.75	25.5	-28.75	-	-	-	-	116
2	.1303	51.08	Pk	55.9	-32.2	-80	-5.22	-	-	-	-	45.33	-50.55	25.33	-30.55	0-360

Range 2: Face On .15 - .49MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
3	.392	30.63	Pk	56.3	-32.1	-80	-25.17	35.74	-60.91	15.74	-40.91	0-360

Range 3: Face On .49 - 1MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	.6438	21.58	Pk	56.3	-32.2	-40	5.68	31.44	-25.76	0-360

Range 4: Face Off .009 - .15MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
6	.025	29.4	Pk	58.6	-31.8	-80	-23.8	59.63	-83.43	39.63	-63.43	-	-	-	-	0-360
7	.1278	46.94	Pk	55.9	-32.3	-80	-9.46	-	-	-	-	45.5	-54.96	25.5	-34.96	20

Range 5: Face Off .15 - .49MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
8	.3881	25.61	Pk	56.3	-32.1	-80	-30.19	35.83	-66.02	15.83	-46.02	0-360

Range 6: Face Off .49 - 1MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
9	.6402	20.03	Pk	56.3	-32.2	-40	4.13	31.48	-27.35	0-360

Range 8: Face On 1.705 - 30MHz

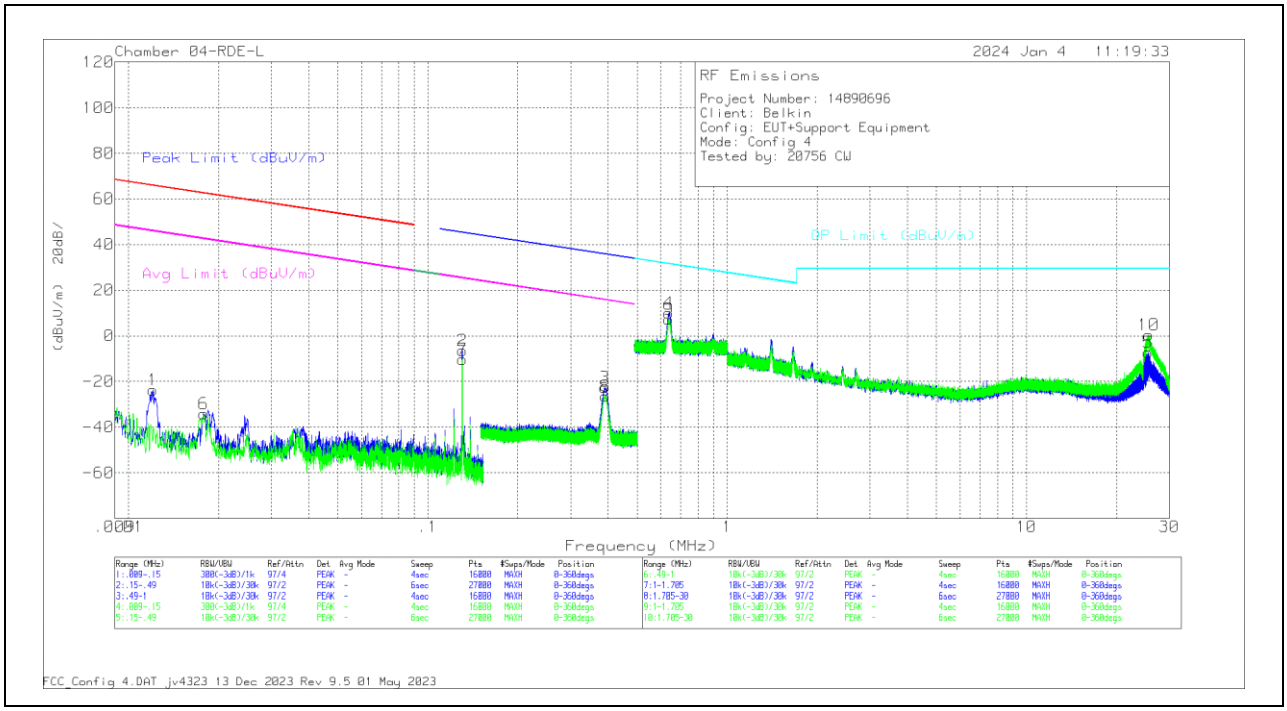
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
5	25.1771	33.68	Pk	33.5	-31.4	-40	-4.22	29.5	-33.72	0-360

Range 10: Face Off 1.705 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
10	24.9392	41.92	Pk	33.6	-31.3	-40	4.22	29.5	-25.28	0-360

Pk - Peak detector

CONFIGURATION 4: OPERATING MODE WITH AirPods Pro Case (127.7kHz)



DATA

Range 1: Face On .009 - .15MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.0121	27.29	Pk	60.1	-31.1	-80	-23.71	65.94	-89.65	45.94	-69.65	0-360
2	.1278	50.07	Pk	55.9	-32.3	-80	**-6.33**	45.5	-51.83	25.5	-31.83	120

Range 2: Face On .15 - .49MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
3	.3898	33.13	Pk	56.3	-32.1	-80	-22.67	35.79	-58.46	15.79	-38.46	0-360

Range 3: Face On .49 - 1MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	.6372	25.84	Pk	56.3	-32.2	-40	9.94	31.52	-21.58	0-360

Range 4: Face Off .009 - .15MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
6	.0178	17.98	Pk	59.4	-31.5	-80	-34.12	62.56	-96.68	42.56	-76.68	0-360
7	.1278	46.43	Pk	55.9	-32.3	-80	-9.97	45.5	-55.47	25.5	-35.47	30

Range 5: Face Off .15 - .49MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
8	.3918	29.34	Pk	56.3	-32.1	-80	-26.46	35.75	-62.21	15.75	-42.21	0-360

Range 6: Face Off .49 - 1MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
9	.639	23.14	Pk	56.3	-32.2	-40	7.24	31.5	-24.26	0-360

Range 8: Face On 1.705 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
5	25.4653	30.66	Pk	33.5	-31.3	-40	-7.14	29.5	-36.64	0-360

Range 10: Face Off 1.705 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
10	25.5302	38.16	Pk	33.5	-31.3	-40	.36	29.5	-29.14	0-360

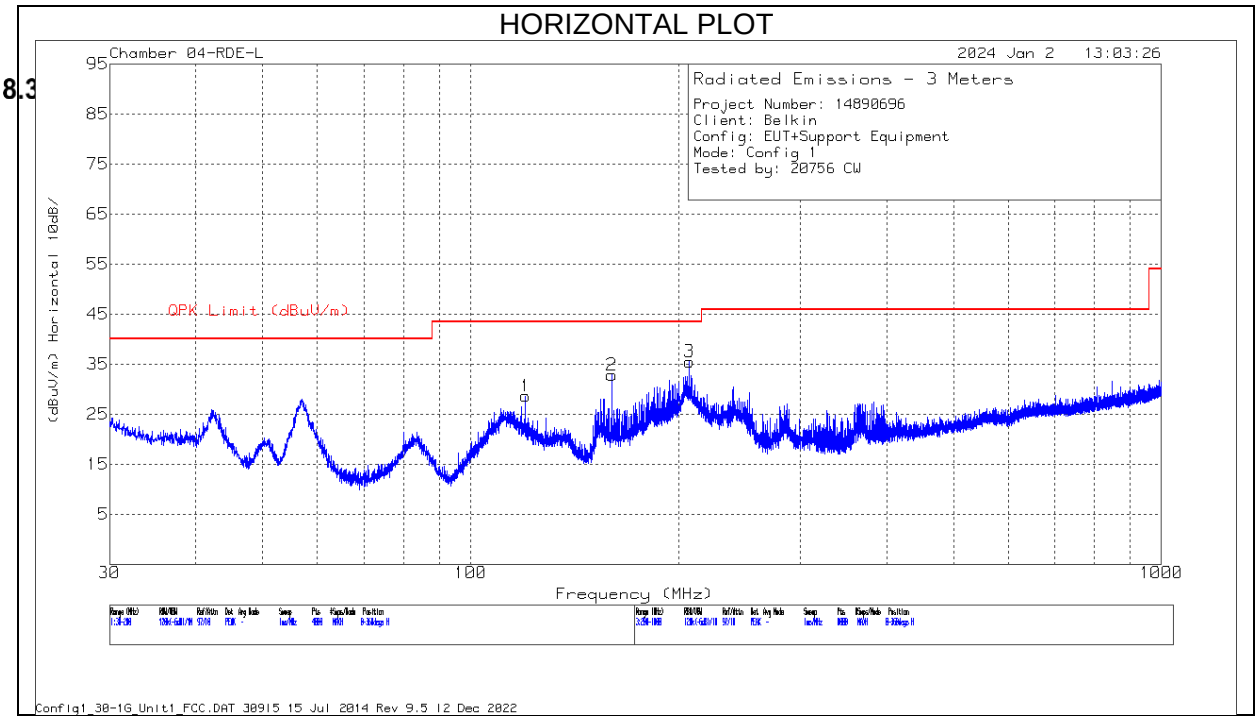
Pk - Peak detector

FCC TX SPURIOUS EMISSION 30 TO 1000 MHz

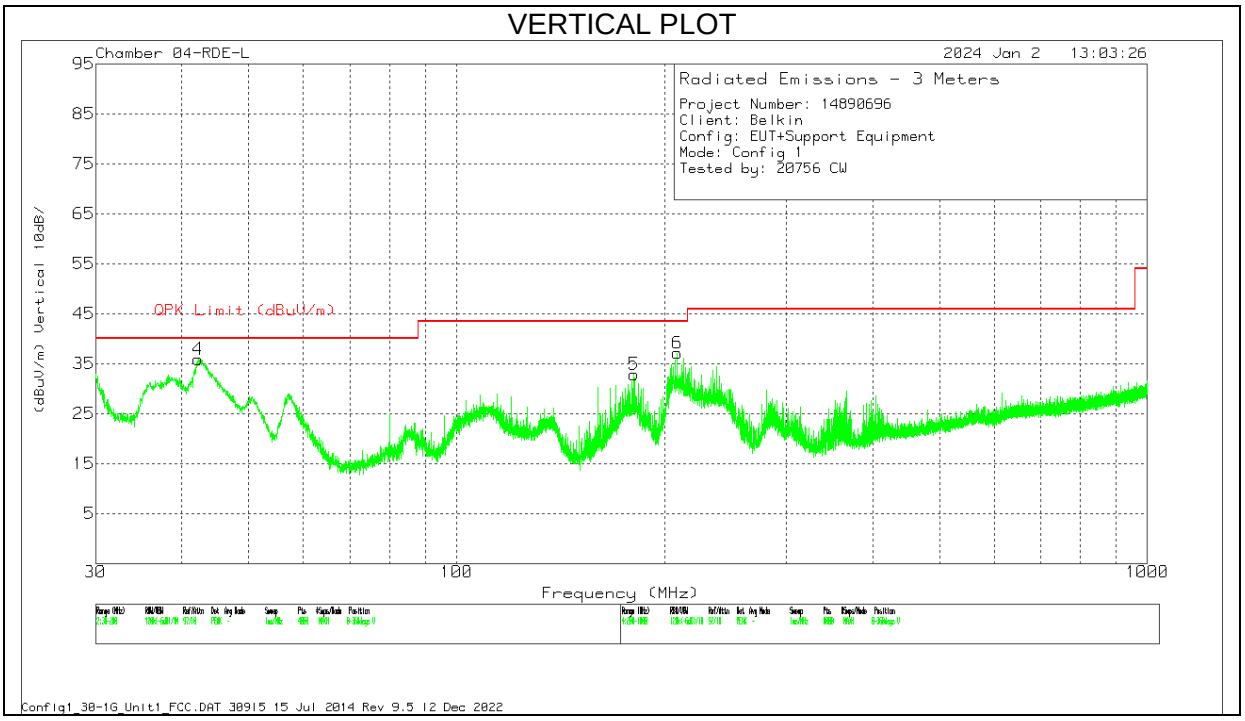
CONFIGURATION 1: WPT ON STANDBY

8.3

HORIZONTAL PLOT



VERTICAL PLOT



DATA

Radiated Emissions

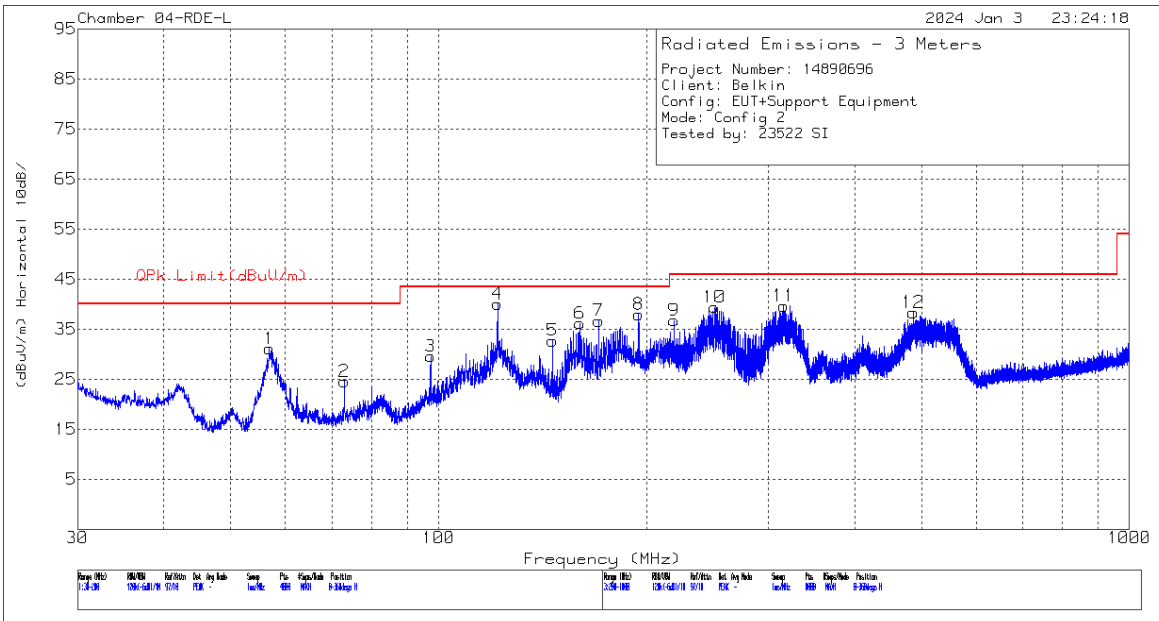
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	232075 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPK Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 120.038	39.3	Pk	19.8	-30.5	28.6	43.52	-14.92	0-360	199	H
2	159.999	44.93	Pk	18.1	-30.2	32.83	43.52	-10.69	0-360	199	H
4	42.364	45.61	Qp	17.9	-31.2	32.31	40	-7.69	82	108	V
5	180.531	45.8	Pk	17.2	-30.1	32.9	43.52	-10.62	0-360	100	V
3	207.311	40.7	Qp	16.7	-29.9	27.5	43.52	-16.02	200	165	H
6	208.701	41.85	Qp	16.5	-30	28.35	43.52	-15.17	297	102	V

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

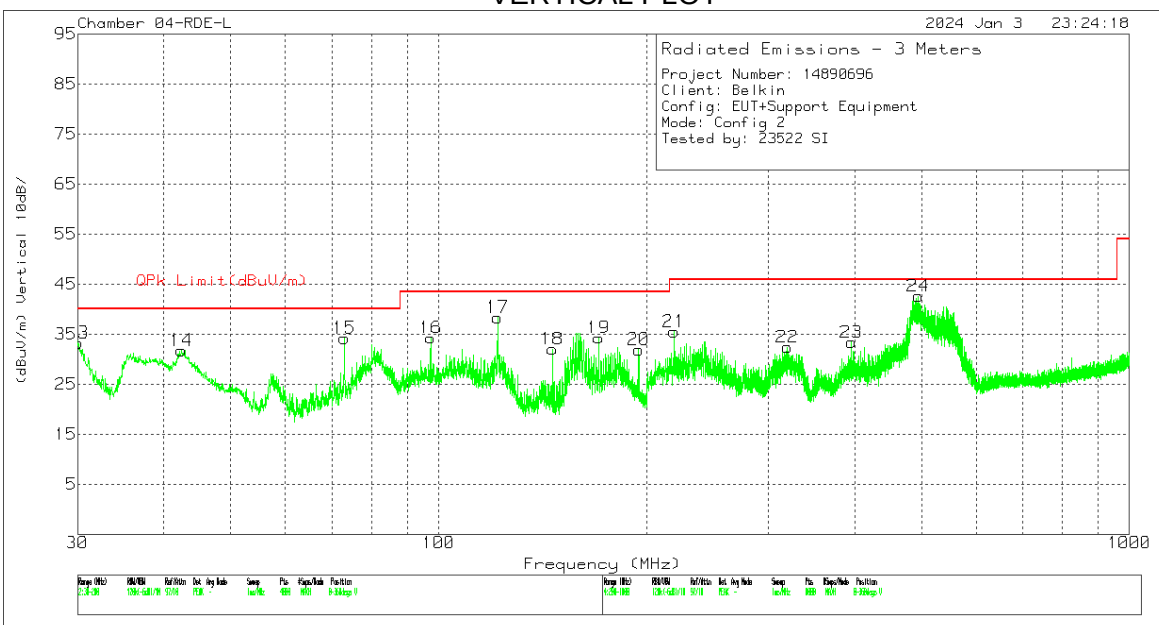
Pk - Peak detector
Qp - Quasi-Peak detector

CONFIGURATION 2: OPERATING MODE WITH iPhone (360kHz)

HORIZONTAL PLOT



VERTICAL PLOT



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	232075 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit(dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	56.867	48.93	Pk	13.2	-31	31.13	40	-8.87	0-360	399	H
2	72.9786	41.59	Pk	13.9	-30.9	24.59	40	-15.41	0-360	399	H
3	97.3799	44.57	Pk	15.6	-30.6	29.57	43.52	-13.95	0-360	199	H
4	* 121.756	49.99	Qp	19.9	-30.5	39.39	43.52	-4.13	114	150	H
5	146.055	44.33	Pk	18.7	-30.3	32.73	43.52	-10.79	0-360	199	H
6	159.996	47.05	Qp	18.1	-30.2	34.95	43.52	-8.57	341	172	H
7	* 170.486	45.83	Qp	17.6	-30.1	33.33	43.52	-10.19	23	206	H
8	194.826	48.74	Qp	17.9	-29.9	36.74	43.52	-6.78	346	193	H
13	30.0425	38.27	Pk	26.4	-31.4	33.27	40	-6.73	0-360	100	V
14	42.4132	45.02	Pk	17.9	-31.2	31.72	40	-8.28	0-360	100	V
15	* 73.0763	50	Qp	13.9	-30.9	33	40	-7	175	103	V
16	97.4416	48.04	Qp	15.6	-30.6	33.04	43.52	-10.48	281	122	V
17	* 121.781	46.35	Qp	19.9	-30.5	35.75	43.52	-7.77	283	118	V
18	* 170.539	42.82	Qp	17.6	-30.1	30.32	43.52	-13.2	223	104	V
19	* 170.414	46.75	Pk	17.6	-30.1	34.25	43.52	-9.27	0-360	100	V
20	194.773	43.9	Pk	17.9	-29.9	31.9	43.52	-11.62	0-360	100	V
9	219.258	47.93	Qp	16.5	-29.8	34.63	46.02	-11.39	306	146	H
10	* 250.607	51.82	Pk	17.3	-29.7	39.42	46.02	-6.6	0-360	99	H
11	315.915	49.36	Pk	19.8	-29.5	39.66	46.02	-6.36	0-360	99	H
12	486.237	43.52	Pk	23.5	-28.7	38.32	46.02	-7.7	0-360	199	H
21	219.218	43.92	Qp	16.5	-29.8	30.62	46.02	-15.4	209	218	V
22	319.616	42.02	Pk	19.8	-29.4	32.42	46.02	-13.6	0-360	99	V
23	395.625	41.39	Pk	21.2	-29.2	33.39	46.02	-12.63	0-360	99	V
24	494.855	41.86	Qp	23.6	-28.6	36.86	46.02	-9.16	84	116	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
Qp - Quasi-Peak detector

9. AC MAINS LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

*Decreases with the logarithm of the frequency.

ICES-001 Issue 5 Table 1

Table 1: Conducted emission limits for induction cooking appliances (AC mains terminals)				
Frequency range (MHz)	Appliances rated 120 V, without an earth connection Quasi-peak (dBµV)	Appliances rated 120 V, without an earth connection Average (dBµV)	All other appliances Quasi-peak (dBµV)	All other appliances Average (dBµV)
0.009 – 0.05	122	—	110	—
0.05 – 0.15	102 to 92 *	—	90 to 80 *	—
0.15 – 0.5	72 to 62 *	62 to 52 *	66 to 56 *	56 to 46 *
0.5 – 5	56	46	56	46
5 – 30	60	50	60	50
Note: The more stringent limit applies at transition frequencies. *The limit level in dBµV decreases linearly with the logarithm of frequency.				

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

The receiver is set to a resolution bandwidth of 200Hz for below 150kHz, 9kHz for 150kHz to 30MHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

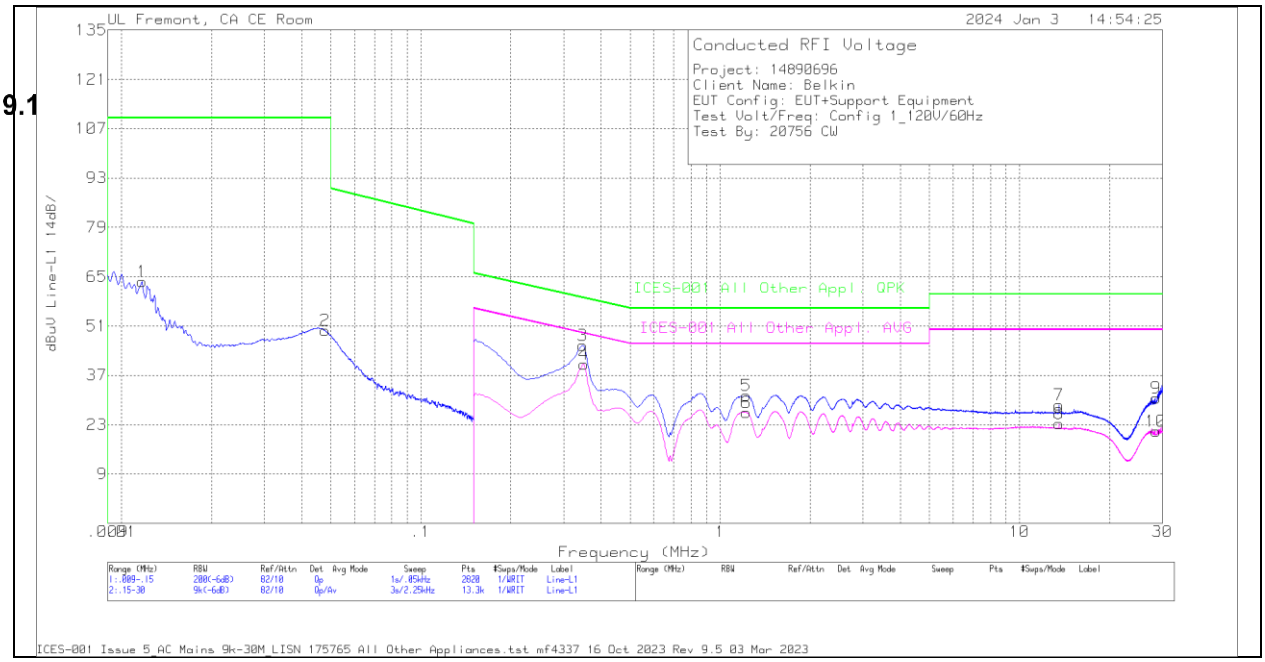
RESULTS

Testing range from 9kHz to 30MHz using ICES-001 Issue Table 1 “All other appliances” limit to cover both FCC and ISED frequency range.

CONFIGURATION 1: WPT ON STANDBY

LINE 1 RESULTS

9.1

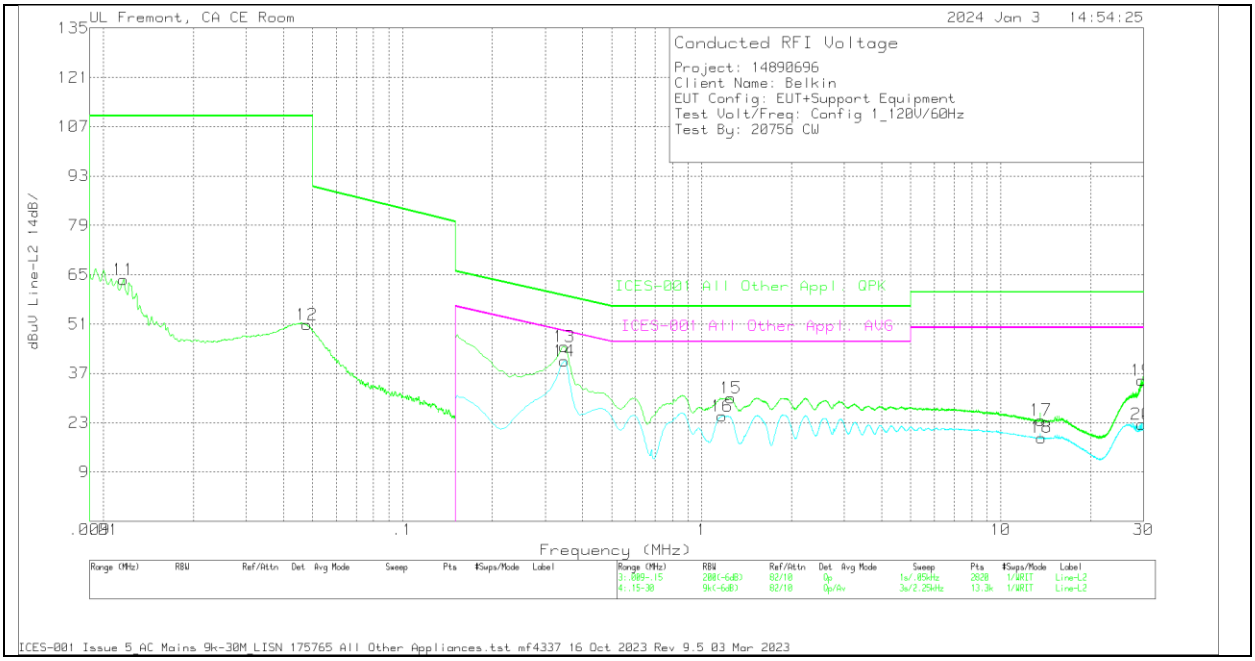


WORST EMISSIONS

Range 1: Line-L1 .009 - .15MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	10dB Atten (dB)	Corrected Reading dBuV	ICES-001 All Other Appl. QPK Limit (dBuV)	Margin (dB)	ICES-001 All Other Appl. AVG Limit (dBuV)	Margin (dB)
1	.0117	37.95	Qp	3.6	-.2	12.2	10	63.55	110	-46.45	-	-
2	.0478	29.55	Qp	.1	0	10.1	10	49.75	110	-60.25	-	-
Range 2: Line-L1 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	10dB Atten (dB)	Corrected Reading dBuV	ICES-001 All Other Appl. QPK Limit (dBuV)	Margin (dB)	ICES-001 All Other Appl. AVG Limit (dBuV)	Margin (dB)
4	.3503	20.74	Av	0	0	9.4	10	40.14	-	-	48.96	-8.82
6	1.2233	6.97	Av	0	.1	9.4	10	26.47	-	-	46	-19.53
8	13.56	3.29	Av	.1	.3	9.5	10	23.19	-	-	50	-26.81
10	28.5968	1.13	Av	.3	.3	9.4	10	21.13	-	-	50	-28.87
3	.348	26.04	Qp	0	0	9.4	10	45.44	59.01	-13.57	-	-
5	1.2233	11.71	Qp	0	.1	9.4	10	31.21	56	-24.79	-	-
7	13.56	8.75	Qp	.1	.3	9.5	10	28.65	60	-31.35	-	-
9	28.5968	10.57	Qp	.3	.3	9.4	10	30.57	60	-29.43	-	-

Qp - Quasi-Peak detector
Av - average detection

LINE 2 RESULTS



WORST EMISSIONS

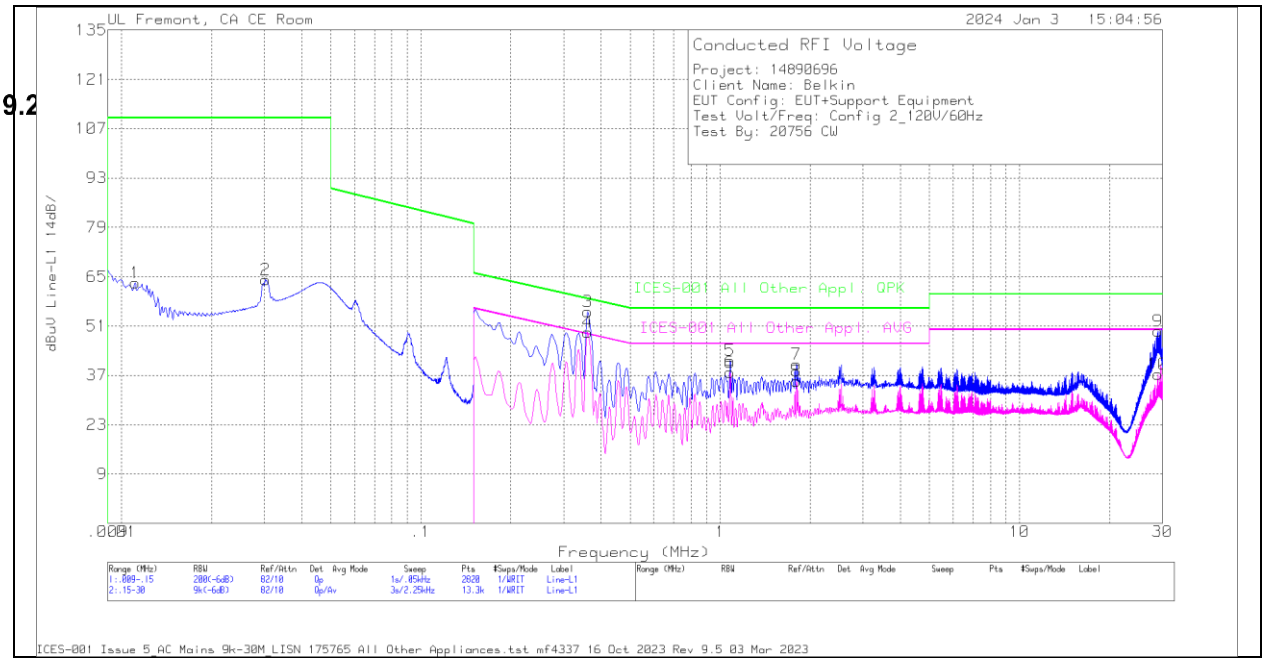
Range 3: Line-L2 .009 - .15MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	10dB Atten (dB)	Corrected Reading dBuV	ICES-001 All Other Appl. QPK Limit (dBuV)	Margin (dB)	ICES-001 All Other Appl. AVG Limit (dBuV)	Margin (dB)
11	.0117	37.6	Qp	3.7	.1	12.2	10	63.6	110	-46.4	-	-
12	.048	30.55	Qp	.1	0	10.1	10	50.75	110	-59.25	-	-
Range 4: Line-L2 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	10dB Atten (dB)	Corrected Reading dBuV	ICES-001 All Other Appl. QPK Limit (dBuV)	Margin (dB)	ICES-001 All Other Appl. AVG Limit (dBuV)	Margin (dB)
14	.348	21.08	Av	0	.1	9.4	10	40.58	-	-	49.01	-8.43
16	1.1704	5.3	Av	0	.2	9.4	10	24.9	-	-	46	-21.1
18	13.6984	-1.06	Av	.1	.3	9.4	10	18.74	-	-	50	-31.26
20	29.5755	2.43	Av	.3	.3	9.5	10	22.53	-	-	50	-27.47
13	.348	25.13	Qp	0	.1	9.4	10	44.63	59.01	-14.38	-	-
15	1.2503	10.47	Qp	0	.1	9.4	10	29.97	56	-26.03	-	-
17	13.6365	4.01	Qp	.1	.2	9.4	10	23.71	60	-36.29	-	-
19	29.5755	14.88	Qp	.3	.3	9.5	10	34.98	60	-25.02	-	-

Qp - Quasi-Peak detector
Av - average detection

CONFIGURATION 2: OPERATING MODE WITH iPhone (360kHz)

LINE 1 RESULTS

9.2

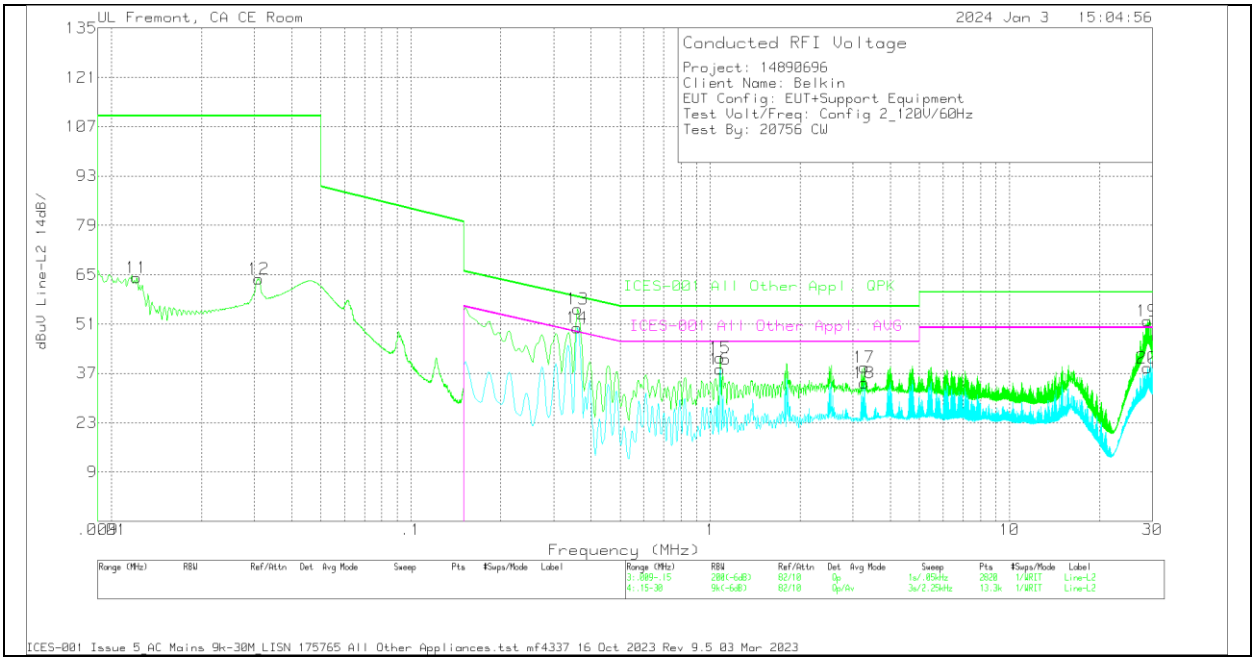


WORST EMISSIONS

Range 1: Line-L1 .009 - .15MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	10dB Atten (dB)	Corrected Reading dBuV	ICES-001 All Other Appl. QPK Limit (dBuV)	Margin (dB)	ICES-001 All Other Appl. AVG Limit (dBuV)	Margin (dB)
1	.0111	37.38	Qp	3.9	-.3	12.3	10	63.28	110	-46.72	-	-
2	.0303	42.86	Qp	.5	.1	10.7	10	64.16	110	-45.84	-	-
Range 2: Line-L1 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	10dB Atten (dB)	Corrected Reading dBuV	ICES-001 All Other Appl. QPK Limit (dBuV)	Margin (dB)	ICES-001 All Other Appl. AVG Limit (dBuV)	Margin (dB)
*4	.3615	29.77	Av	0	0	9.4	10	49.17	-	-	-	-
6	1.0793	18.29	Av	0	.1	9.4	10	37.79	-	-	46	-8.21
8	1.7993	15.91	Av	0	.1	9.4	10	35.41	-	-	46	-10.59
10	28.9793	17.18	Av	.3	.3	9.5	10	37.28	-	-	50	-12.72
3	.3615	35.74	Qp	0	0	9.4	10	55.14	58.69	-3.55	-	-
5	1.0793	21.77	Qp	0	.1	9.4	10	41.27	56	-14.73	-	-
7	1.7993	20.62	Qp	0	.1	9.4	10	40.12	56	-15.88	-	-
9	28.9793	29.48	Qp	.3	.3	9.5	10	49.58	60	-10.42	-	-

Qp - Quasi-Peak detector
Ca - CISPR average detection
*marker 4 signal is WPT transmit frequency.

LINE 2 RESULTS



WORST EMISSIONS

Range 3: Line-L2 .009 - .15MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	10dB Atten (dB)	Corrected Reading dBuV	ICES-001 All Other Appl. QPK Limit (dBuV)	Margin (dB)	ICES-001 All Other Appl. AVG Limit (dBuV)	Margin (dB)
11	.0122	38.29	Qp	3.5	.1	12.2	10	64.09	110	-45.91	-	-
12	.0311	42.52	Qp	.4	.1	10.7	10	63.72	110	-46.28	-	-

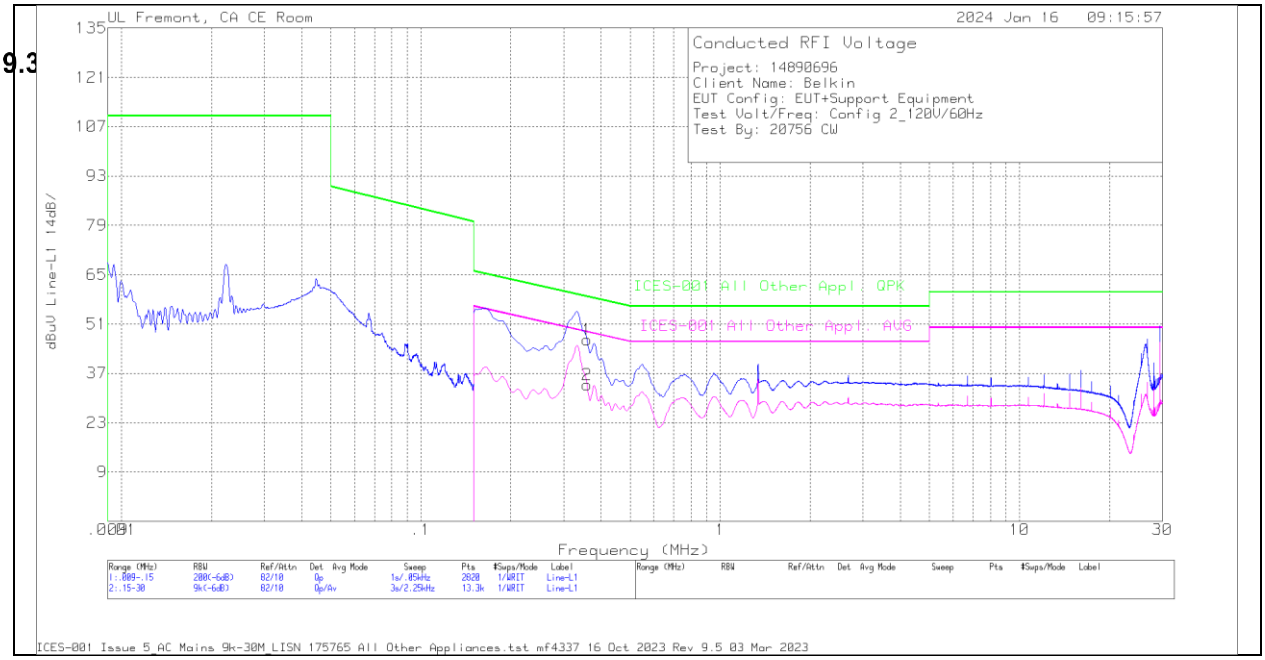
Range 4: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	10dB Atten (dB)	Corrected Reading dBuV	ICES-001 All Other Appl. QPK Limit (dBuV)	Margin (dB)	ICES-001 All Other Appl. AVG Limit (dBuV)	Margin (dB)
*14	.3593	30.43	Av	0	.1	9.4	10	49.93	-	-	-	-
16	1.0793	18.62	Av	0	.1	9.4	10	38.12	-	-	46	-7.88
18	3.2618	14.77	Av	0	.1	9.4	10	34.27	-	-	46	-11.73
20	28.8668	18.33	Av	.3	.4	9.5	10	38.53	-	-	50	-11.47
13	.3615	35.71	Qp	0	.1	9.4	10	55.21	58.69	-3.48	-	-
15	1.0793	21.86	Qp	0	.1	9.4	10	41.36	56	-14.64	-	-
17	3.2618	19.23	Qp	0	.1	9.4	10	38.73	56	-17.27	-	-
19	28.8668	31.75	Qp	.3	.4	9.5	10	51.95	60	-8.05	-	-

Qp - Quasi-Peak detector
Av - Average detection
*marker 14 signal is WPT transmit frequency.

CONFIGURATION 2: OPERATING MODE WITH iPhone (360kHz) with terminator

LINE 1 RESULTS

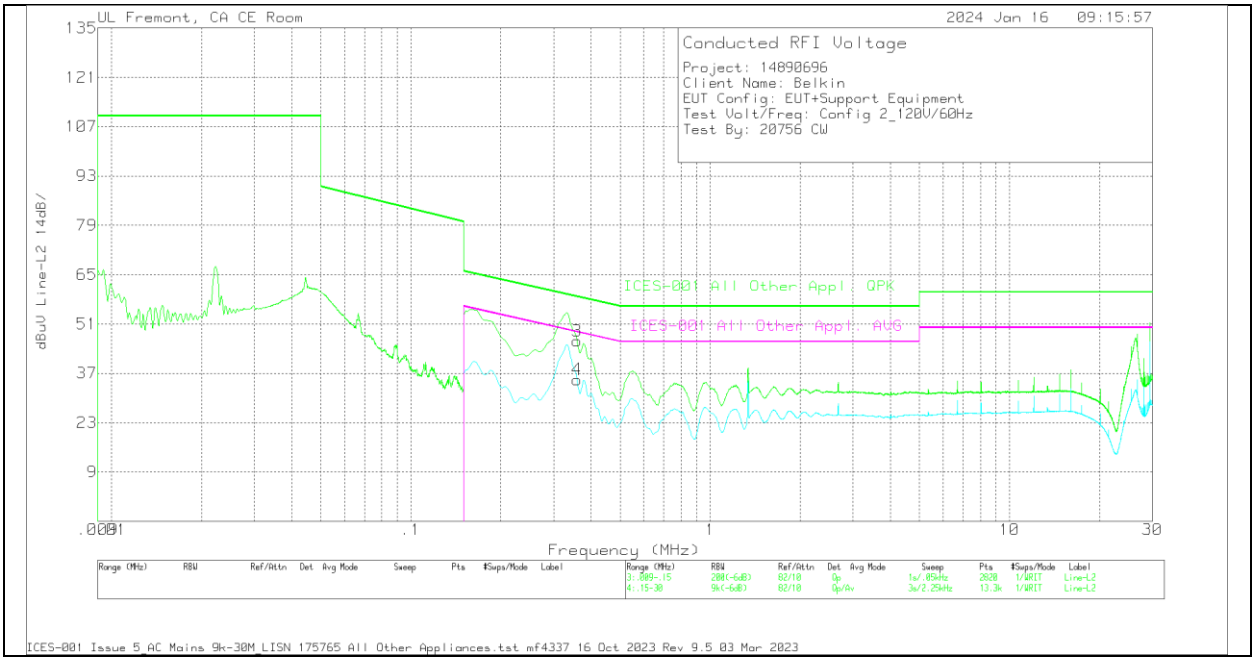


WORST EMISSIONS

Range 2: Line-L1 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	10dB Atten (dB)	Corrected Reading dBuV	ICES-001 All Other Appl. QPK Limit (dBuV)	Margin (dB)	ICES-001 All Other Appl. AVG Limit (dBuV)	Margin (dB)
2	.3593	14.29	Av	0	0	9.4	10	33.69	-	-	48.75	-15.06
1	.3593	27.15	Qp	0	0	9.4	10	46.55	58.75	-12.2	-	-

Qp - Quasi-Peak detector
Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Range 4: Line-L2 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	10dB Atten (dB)	Corrected Reading dBuV	ICES-001 All Other Appl. QPK Limit (dBuV)	Margin (dB)	ICES-001 All Other Appl. AVG Limit (dBuV)	Margin (dB)
4	.3593	15.76	Av	0	.1	9.4	10	35.26	-	-	48.75	-13.49
3	.3593	26.74	Qp	0	.1	9.4	10	46.24	58.75	-12.51	-	-

Qp - Quasi-Peak detector
Av - Average detection

10. DESCRIPTION OF TEST SETUP AND SETUP PHOTOS

Please refer to 14890696-EP1 (FCC) for description of test up and setup photo.

END OF TEST REPORT

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