

Exhibit 1 for FCC Experimental License Request. File#: 0298-EX-PL-2012, which is replacing previous exhibit 1 under former license WD2XBD Under FRN# 0007940240 Polarity key: LHC = Left-hand circular
No changes to the original license Exhibit 1 technical information, submitted again herein as a part of the new license request.
 Test methods, frequencies and setups planned for the shielding evaluation of multiple structures at the St. Petersburg and Largo site were determined using IEEE STD 299-1997,
IEEE Standard Method for Measuring the Effectiveness of Electromagnetic Shielding Enclosures, as a guide.
 Test equipment used for tests may be replaced with suitable equivalent equipment due to availability.
 Tx signal sources and antennas are listed below. Rx equipment consists of same model antenna connected to a HP 8562A (1k-22GHz) or equivalent spectrum analyzer.

#	Antenna List	Line	Frequency list using IEEE STD 299-1997 as a guide.	Freq. Units	Modulation	Output waveform type	Tx and Rx Antenna #'s	EIRP		EIRP		EIRP		ERP License Value (mW)	dB margin to EEEEC Action Level	Does License emission value Exceed EEEEC Action Levels?	EIRP converted to mW/cm ²	EEEC Action Level (mW/cm ²)	Ant. Gain	Signal source, signal generator	Signal source power out (dBm)	Signal source power out (1E-3 Watts)	Polarity used in testing			
								Peak, CW. Based on AF (1 meter) and source Pout.	A/m	Peak, CW = dB Watts + dB Gain	dBW	mW	ERP											ERP		
1	LG-105A, Loop	1	14	kHz	N/A	CW	1	0.750	A/m	-18.5	dBW	14.13	mW	-20.66	8.59	8.60	-24	No Action	21.2E+0	5004.10	1.5	HP 651A	10	10.00	milli watts	V/H
2	LP-105, Loop	2	80	kHz	N/A	CW	1,2	1.050	A/m	-18.5	dBW	14.13	mW	-20.66	8.59	8.60	-21	No Action	41.6E+0	5004.10	1.5	HP 651A	10	10.00	milli watts	V/H
3	VA105 Rod	3	520	kHz	N/A	CW	2	1.050	A/m	-18.5	dBW	14.13	mW	-20.66	8.59	8.60	-14	No Action	41.6E+0	962.33	1.5	HP 651A	10	10.00	milli watts	V/H
4	EMCO 3104, Biconical	4	520	kHz	N/A	CW	3	0.0006	V/m	-14.0	dBW	39.81	mW	-16.16	24.21	24.00	-130	No Action	95.5E-12	962.33	1	HP 651A	15	31.62	milli watts	V/H
5	EMCO 3101, log spiral	5	1	MHz	N/A	CW	3	0.0006	V/m	-14.0	dBW	39.81	mW	-16.16	24.21	24.00	-127	No Action	95.5E-12	500.41	1	HP3325A	15	31.62	milli watts	V/H
6	EMCO 3146, log periodic	6	5.1	MHz	N/A	CW	3	0.0006	V/m	-14.0	dBW	39.81	mW	-16.16	24.21	24.00	-114	No Action	95.5E-12	25.81	1	HP3325A	15	31.62	milli watts	V/H
7	EMCO 3115, Horn 1-18	7	10.1	MHz	N/A	CW	3	0.0006	V/m	-14.0	dBW	39.81	mW	-16.16	24.21	24.00	-108	No Action	95.5E-12	6.58	1	HP83640A	15	31.62	milli watts	V/H
8	EMCO 3102, log spiral 1-10	8	52	MHz	N/A	CW	4	0.019	V/m	-13.0	dBW	50.12	mW	-15.16	30.48	31.00	-65	No Action	96.3E-9	0.30	2	HP83640A	15	31.62	milli watts	V/H
9	EMCO 3105, double ridged horn 1-12 GHz	9	100	MHz	N/A	CW	4	0.072	V/m	-13.0	dBW	50.12	mW	-15.16	30.48	31.00	-49	No Action	1.4E-6	0.10	2	HP83640A	15	31.62	milli watts	V/H
10		10	523	MHz	N/A	CW	5	0.211	V/m	-11.0	dBW	79.43	mW	-13.16	48.31	49.00	-42	No Action	11.8E-6	0.17	4	HP83640A	15	31.62	milli watts	V/H
11		11	523	MHz	N/A	CW	6	1.420	V/m	-12.0	dBW	63.10	mW	-14.16	38.37	49.00	-25	No Action	534.9E-6	0.17	3	HP83640A	15	31.62	milli watts	any/all
12		12	1.29	GHz	N/A	CW	7	3.333	V/m	1.0	dBW	1258.93	mW	-1.16	765.60	770.00	-22	No Action	2.9E-3	0.43	11	HP8340A	20	100.00	milli watts	any/all
13		13	1.29	GHz	N/A	CW	8	0.714	V/m	-7.0	dBW	199.53	mW	-9.16	121.34	770.00	-35	No Action	135.3E-6	0.43	3	HP8340A	20	100.00	milli watts	any/all
14		14	1.29	GHz	N/A	CW	9	1.667	V/m	-2.0	dBW	630.96	mW	-4.16	383.71	770.00	-28	No Action	736.8E-6	0.43	8	HP8340A	20	100.00	milli watts	any/all
15		15	4.19	GHz	N/A	CW	7,8,9	3.333	V/m	1.0	dBW	1258.93	mW	-1.16	765.60	770.00	-27	No Action	2.9E-3	1.40	11	HP8340A	20	100.00	milli watts	any/all
16		16	4.8	GHz	N/A	CW	7,8,9	3.333	V/m	1.0	dBW	1258.93	mW	-1.16	765.60	770.00	-27	No Action	2.9E-3	1.60	11	HP8340A	20	100.00	milli watts	any/all
17		17	5.47	GHz	N/A	CW	7,8,9	3.333	V/m	1.0	dBW	1258.93	mW	-1.16	765.60	770.00	-28	No Action	2.9E-3	1.82	11	HP8340A	20	100.00	milli watts	any/all
18		18	10.495	GHz	N/A	CW	7,8,9	3.333	V/m	1.0	dBW	1258.93	mW	-1.16	765.60	770.00	-31	No Action	2.9E-3	3.50	11	HP8340A	20	100.00	milli watts	any/all
19		19	18	GHz	N/A	CW	7	3.333	V/m	1.0	dBW	1258.93	mW	-1.16	765.60	770.00	-32	No Action	2.9E-3	5.00	11	HP8340A	20	100.00	milli watts	any/all

NOTE: convert from EIRP to ERP -2.16 dB

See file on comparison of ERP to EIRP - excerpt below:
 "antenna info - ERP.PDF" on D drive.

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 Reference Antennas
 ERP and EIRP
 • ERP is by comparison to a Dipole
 – This is the standard in cellular, land mobile, HF communications, and FM/TV broadcasting
 • EIRP is by comparison to an Isotropic Radiator
 – This is the tradition in PCS at 1900 MHz, point-to-point microwave, satellite communications, and radar.
 • ERP values can be converted to EIRP and vice versa. For a given amount of power input, a dipole produces 2.16 dB more radiation than an isotropic radiator, due to the dipoles slight directionality.
 • ERP dB = EIRP dB - 2.16 dB
 • ERP Watts = EIRP Watts /1.64