

TECHNICAL ATTACHMENT **NEW LFPM FOR SAN DIEGO**

PARAMETERS

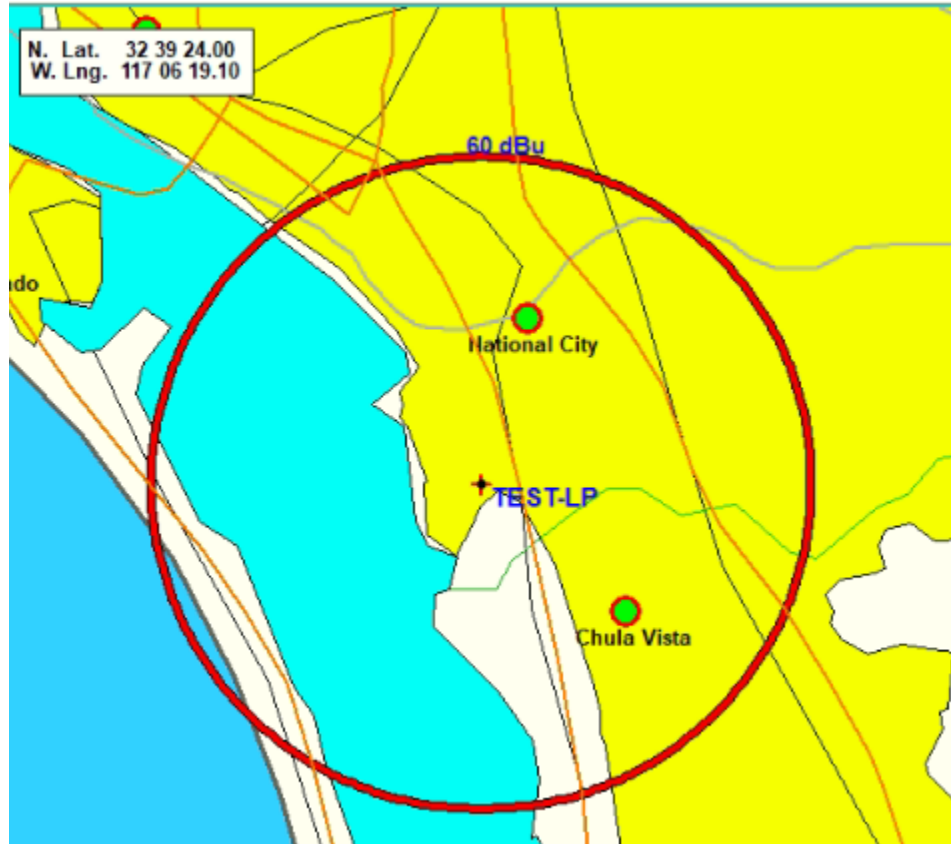
Channel 245
 New Location: 32 39 24.00 N.117 06 19.10 W. -- NAD 83
 Antenna AGL 14.6
 Tower Total 20.2
 Antenna Ground 3
 Antenna COR 17.6
 HAAT -30.9
 Power 50 w

REFERENCE 32 39 24.00 N. CLASS = L1 DATA 09-04-23
 117 06 19.10 W. Current Spacings to 2nd Adj. SEARCH 09-07-23
 ----- Channel 245 - 96.9 MHz -----

Call	Channel	Location	Azi	Dist	FCC	Margin
KWFN	LIC 247B	San Diego CA	24.1	7.73	66.5	-58.8
KWFN	CP 247B	San Diego CA	13.1	8.35	66.5	-58.2
KYXY	LIC 243B	San Diego CA	326.4	24.32	66.5	-42.2
K245AI	LIC-D245D	San Pasqual CA	17.6	41.01	38.5	2.5
AL8892	VAC 245B	Ensenada BN	153.6	99.63	91.0	8.6
AL00377	ALO 245B	Ensenada BN	153.6	99.63	91.0	8.6
R11853	VAC 299B1	Tijuana BN	166.4	19.75	8.0	11.8
AL07053	ALO 299AA	Tecate BN	101.3	45.80	5.0	40.8
AL8543	VAC 299A	Tecate BN	101.3	45.80	5.0	40.8
KPTL-LP	LIC 245L1	Temecula CA	1.2	94.12	23.5	70.6

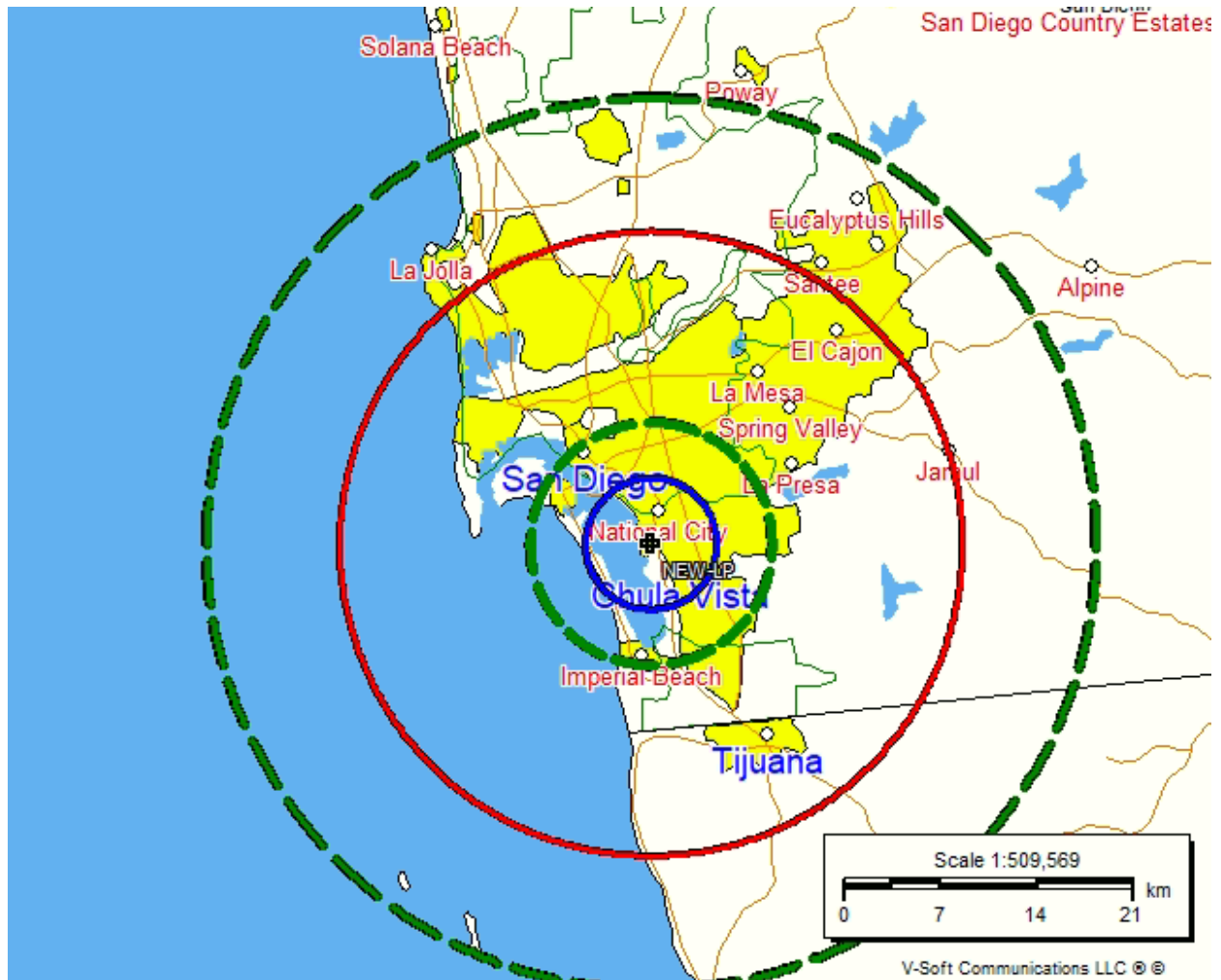
 Reference station has protected zone issue: Mexico
 All separation margins include rounding

PROPOSED F(50,50) 60 dBu



MEXICAN BORDER COMPLIANCE

Both 60 dBu and 34 dBu contours meet compliance of 8.7 km and 32 km limitations toward Mexico.



SECOND ADJACENT WAIVER REQUEST

License respectfully requests a "second adjacent channel waiver" with regards to Section 47 C.F.R. Section 73.807 of the FCC rules based upon the "Living Way" precedence (Living Way Ministries, Inc., Memorandum Opinion and Order, 17 FCC Red 17054, 17056, ¶ 5 (2002), recon. denied 23 FCC Red 15070 (2008)). This will be accomplished by using Free Space methodology of calculation.

Using U/D methodology, at the proposed transmitter location KWFN/KWFN-CP has a signal strength of 98.9 dBu and KYXY has a signal strength of 77.1 dBu. Interference will occur when the smaller of two station's (KYXY) signal strength's interfering signal exceeds the desired signal by 40 dbu. So the area of predicted interference would then be bounded by the 117.1 dBu contour.

The distance to this contour, using free space method:

$$D = (7.01 * P^{1/2}) / E,$$

where P is power (watts), E is field strength (v/m), and D is distance to contour (meters):

$$P = 50 \text{ w}, E = 117.1 \text{ dBu } D = 69.5 \text{ meters}$$

However, the field strength of the proposed LPFM's antenna system falls quickly at depression angles below the horizon. Using elevation pattern data provided by Shively for a ring-stub type antenna setup (2 Bay Shively 6812 ½ wave spaced) the distance to the 117.1 dBu contour at various depression angles is tabulated below. The data shows that the lowest point at which the signal strength rises to 117.1 dBu is 10.6 meters below the center of radiation of the antenna system, or 4 meters above the ground. Therefore, this is sufficient clearance of the nearby one-story office park structures, and the interference area encompasses zero population. The table below shows that the lowest elevation point of the 117.1 F(50,10) interfering contour is 4 meters above ground.

Due to zero population within this radiation radius, this meets the "Living Way" Criteria to qualify for a Waiver of 47 C.F.R. Section 73.807.

Thus, the applicant requests a second adjacent waiver based upon evidence no interference is proposed.

MAX ERP	DEPRESSION ANGLE	RELATIVE FIELD	dB FROM RELATIVE	ERP	ANGULAR DISTANCE TO 117.1 dBu CONTOUR	VERTICAL DISTANCE (below antenna)	HORIZONTAL DISTANCE TO 117.1 dBu CONTOUR	CLEARANCE OF CONTOUR ABOVE GROUND
50	-90	0	-32.640	0.03	1.2	1.1	0	13.5
50	-89	0	-36.310	0.01	0.8	0.7	0	13.9

50	-88	0	-40.000	0.01	0.5	0.4	0	14.2
50	-87	0	-40.000	0.01	0.5	0.4	0	14.2
50	-86	0.001	-40.000	0.01	0.5	0.4	0	14.2
50	-85	0.001	-35.090	0.02	0.9	0.8	0	13.8
50	-84	0.001	-31.710	0.03	1.4	1.3	0.1	13.3
50	-83	0.002	-29.240	0.06	1.8	1.7	0.2	12.9
50	-82	0.003	-27.330	0.09	2.3	2.2	0.3	12.4
50	-81	0.004	-25.740	0.13	2.8	2.7	0.4	11.9
50	-80	0.005	-24.400	0.18	3.2	3.1	0.5	11.5
50	-79	0.007	-23.220	0.24	3.7	3.6	0.7	11
50	-78	0.008	-22.190	0.30	4.2	4.1	0.8	10.5
50	-77	0.011	-21.250	0.37	4.7	4.5	1	10.1
50	-76	0.013	-20.420	0.45	5.1	4.9	1.2	9.7
50	-75	0.016	-19.640	0.54	5.6	5.4	1.4	9.2
50	-74	0.019	-18.930	0.64	6.1	5.8	1.6	8.8
50	-73	0.022	-18.280	0.74	6.6	6.3	1.9	8.3
50	-72	0.026	-17.680	0.85	7	6.6	2.1	8
50	-71	0.03	-17.110	0.97	7.5	7	2.4	7.6
50	-70	0.035	-16.59	1.10	8	7.5	2.7	7.1
50	-69	0.04	-16.11	1.22	8.5	7.9	3	6.7
50	-68	0.046	-15.66	1.36	8.9	8.2	3.3	6.4
50	-67	0.052	-15.23	1.50	9.4	8.6	3.6	6
50	-66	0.059	-14.85	1.64	9.8	8.9	3.9	5.7
50	-65	0.066	-14.47	1.79	10.2	9.2	4.3	5.4
50	-64	0.073	-14.14	1.93	10.6	9.5	4.6	5.1
50	-63	0.082	-13.83	2.07	11	9.7	4.9	4.9
50	-62	0.09	-13.55	2.21	11.4	10	5.3	4.6
50	-61	0.099	-13.3	2.34	11.7	10.2	5.6	4.4
50	-60	0.109	-13.08	2.46	12	10.3	6	4.3
50	-59	0.119	-12.87	2.58	12.3	10.5	6.3	4.1
50	-58	0.13	-12.71	2.68	12.5	10.5	6.6	4.1
50	-57	0.142	-12.57	2.77	12.7	10.6	6.9	4
50	-56	0.154	-12.46	2.84	12.9	10.6	7.2	4
50	-55	0.166	-12.38	2.89	13	10.6	7.4	4
50	-54	0.179	-12.34	2.92	13.1	10.5	7.7	4.1

50	-53	0.193	-12.33	2.92	13.1	10.4	7.8	4.2
50	-52	0.207	-12.37	2.90	13	10.2	8	4.4
50	-51	0.222	-12.44	2.85	12.9	10	8.1	4.6
50	-50	0.237	-12.56	2.77	12.7	9.7	8.1	4.9
50	-49	0.253	-12.74	2.66	12.5	9.4	8.2	5.2
50	-48	0.269	-12.97	2.52	12.2	9	8.1	5.6
50	-47	0.286	-13.26	2.36	11.8	8.6	8	6
50	-46	0.303	-13.63	2.17	11.3	8.1	7.8	6.5
50	-45	0.32	-14.09	1.95	10.7	7.5	7.5	7.1
50	-44	0.338	-14.64	1.72	10	6.9	7.1	7.7
50	-43	0.357	-15.32	1.47	9.3	6.3	6.8	8.3
50	-42	0.375	-16.15	1.21	8.4	5.6	6.2	9
50	-41	0.394	-17.18	0.96	7.5	4.9	5.6	9.7
50	-40	0.414	-18.47	0.71	6.4	4.1	4.9	10.5
50	-39	0.433	-20.14	0.48	5.3	3.3	4.1	11.3
50	-38	0.453	-22.41	0.29	4.1	2.5	3.2	12.1
50	-37	0.473	-25.78	0.13	2.7	1.6	2.1	13
50	-36	0.494	-31.91	0.03	1.3	0.7	1	13.9
50	-35	0.514	-40	0.01	0.5	0.2	0.4	14.4
50	-34	0.535	-30.02	0.05	1.7	0.9	1.4	13.7
50	-33	0.555	-24.11	0.19	3.3	1.7	2.7	12.9
50	-32	0.576	-20.49	0.45	5.1	2.7	4.3	11.9
50	-31	0.597	-17.86	0.82	6.9	3.5	5.9	11.1
50	-30	0.617	-15.77	1.32	8.8	4.3	7.6	10.3
50	-29	0.638	-14.04	1.97	10.7	5.1	9.3	9.5
50	-28	0.658	-12.56	2.77	12.7	5.9	11.2	8.7
50	-27	0.678	-11.28	3.72	14.8	6.7	13.1	7.9
50	-26	0.698	-10.14	4.84	16.9	7.4	15.1	7.2
50	-25	0.718	-9.12	6.12	19	8	17.2	6.6
50	-24	0.737	-8.2	7.57	21.1	8.5	19.2	6.1
50	-23	0.756	-7.36	9.18	23.2	9	21.3	5.6
50	-22	0.774	-6.6	10.94	25.4	9.5	23.5	5.1
50	-21	0.792	-5.91	12.82	27.5	9.8	25.6	4.8
50	-20	0.81	-5.26	14.89	29.6	10.1	27.8	4.5
50	-19	0.827	-4.68	17.02	31.7	10.3	29.9	4.3

50	-18	0.843	-4.14	19.27	33.7	10.4	32	4.2
50	-17	0.859	-3.65	21.58	35.7	10.4	34.1	4.2
50	-16	0.874	-3.19	23.99	37.6	10.3	36.1	4.3
50	-15	0.889	-2.78	26.36	39.4	10.1	38	4.5
50	-14	0.903	-2.4	28.77	41.2	9.9	39.9	4.7
50	-13	0.915	-2.05	31.19	42.9	9.6	41.8	5
50	-12	0.928	-1.73	33.57	44.5	9.2	43.5	5.4
50	-11	0.939	-1.44	35.89	46	8.7	45.1	5.9
50	-10	0.949	-1.18	38.10	47.4	8.2	46.6	6.4
50	-9	0.959	-0.95	40.18	48.7	7.6	48.1	7
50	-8	0.967	-0.74	42.17	49.9	6.9	49.4	7.7
50	-7	0.975	-0.57	43.85	50.8	6.1	50.4	8.5
50	-6	0.981	-0.42	45.39	51.7	5.4	51.4	9.2
50	-5	0.987	-0.29	46.77	52.5	4.5	52.3	10.1
50	-4	0.992	-0.19	47.86	53.1	3.7	52.9	10.9
50	-3	0.995	-0.11	48.75	53.6	2.8	53.5	11.8
50	-2	0.998	-0.05	49.43	54	1.8	53.9	12.8
50	-1	0.999	-0.01	49.89	54.2	0.9	54.1	13.7
50	0	1	0	50.00	54.3	0	54.3	14.6
50	1	0.999	-0.01	49.89	54.2	0.9	54.1	13.7
50	2	0.998	-0.05	49.43	54	1.8	53.9	12.8
50	3	0.995	-0.11	48.75	53.6	2.8	53.5	11.8
50	4	0.992	-0.19	47.86	53.1	3.7	52.9	10.9
50	5	0.987	-0.29	46.77	52.5	4.5	52.3	10.1
50	6	0.981	-0.42	45.39	51.7	5.4	51.4	9.2
50	7	0.975	-0.57	43.85	50.8	6.1	50.4	8.5
50	8	0.967	-0.74	42.17	49.9	6.9	49.4	7.7
50	9	0.959	-0.95	40.18	48.7	7.6	48.1	7
50	10	0.949	-1.18	38.10	47.4	8.2	46.6	6.4
50	11	0.939	-1.44	35.89	46	8.7	45.1	5.9
50	12	0.928	-1.73	33.57	44.5	9.2	43.5	5.4
50	13	0.915	-2.05	31.19	42.9	9.6	41.8	5
50	14	0.903	-2.4	28.77	41.2	9.9	39.9	4.7
50	15	0.889	-2.78	26.36	39.4	10.1	38	4.5
50	16	0.874	-3.19	23.99	37.6	10.3	36.1	4.3

50	17	0.859	-3.65	21.58	35.7	10.4	34.1	4.2
50	18	0.843	-4.14	19.27	33.7	10.4	32	4.2
50	19	0.827	-4.68	17.02	31.7	10.3	29.9	4.3
50	20	0.81	-5.26	14.89	29.6	10.1	27.8	4.5
50	21	0.792	-5.91	12.82	27.5	9.8	25.6	4.8
50	22	0.774	-6.6	10.94	25.4	9.5	23.5	5.1
50	23	0.756	-7.36	9.18	23.2	9	21.3	5.6
50	24	0.737	-8.2	7.57	21.1	8.5	19.2	6.1
50	25	0.718	-9.12	6.12	19	8	17.2	6.6
50	26	0.698	-10.14	4.84	16.9	7.4	15.1	7.2
50	27	0.678	-11.28	3.72	14.8	6.7	13.1	7.9
50	28	0.658	-12.56	2.77	12.7	5.9	11.2	8.7
50	29	0.638	-14.04	1.97	10.7	5.1	9.3	9.5
50	30	0.617	-15.77	1.32	8.8	4.3	7.6	10.3
50	31	0.597	-17.86	0.82	6.9	3.5	5.9	11.1
50	32	0.576	-20.49	0.45	5.1	2.7	4.3	11.9
50	33	0.555	-24.11	0.19	3.3	1.7	2.7	12.9
50	34	0.535	-30.02	0.05	1.7	0.9	1.4	13.7
50	35	0.514	-40	0.01	0.5	0.2	0.4	14.4
50	36	0.494	-31.91	0.03	1.3	0.7	1	13.9
50	37	0.473	-25.78	0.13	2.7	1.6	2.1	13
50	38	0.453	-22.41	0.29	4.1	2.5	3.2	12.1
50	39	0.433	-20.14	0.48	5.3	3.3	4.1	11.3
50	40	0.414	-18.47	0.71	6.4	4.1	4.9	10.5
50	41	0.394	-17.18	0.96	7.5	4.9	5.6	9.7
50	42	0.375	-16.15	1.21	8.4	5.6	6.2	9
50	43	0.357	-15.32	1.47	9.3	6.3	6.8	8.3
50	44	0.338	-14.64	1.72	10	6.9	7.1	7.7
50	45	0.32	-14.09	1.95	10.7	7.5	7.5	7.1
50	46	0.303	-13.63	2.17	11.3	8.1	7.8	6.5
50	47	0.286	-13.26	2.36	11.8	8.6	8	6
50	48	0.269	-12.97	2.52	12.2	9	8.1	5.6
50	49	0.253	-12.74	2.66	12.5	9.4	8.2	5.2
50	50	0.237	-12.56	2.77	12.7	9.7	8.1	4.9
50	51	0.222	-12.44	2.85	12.9	10	8.1	4.6

50	52	0.207	-12.37	2.90	13	10.2	8	4.4
50	53	0.193	-12.33	2.92	13.1	10.4	7.8	4.2
50	54	0.179	-12.34	2.92	13.1	10.5	7.7	4.1
50	55	0.166	-12.38	2.89	13	10.6	7.4	4
50	56	0.154	-12.46	2.84	12.9	10.6	7.2	4
50	57	0.142	-12.57	2.77	12.7	10.6	6.9	4
50	58	0.13	-12.71	2.68	12.5	10.5	6.6	4.1
50	59	0.119	-12.87	2.58	12.3	10.5	6.3	4.1
50	60	0.109	-13.08	2.46	12	10.3	6	4.3
50	61	0.099	-13.3	2.34	11.7	10.2	5.6	4.4
50	62	0.09	-13.55	2.21	11.4	10	5.3	4.6
50	63	0.082	-13.83	2.07	11	9.7	4.9	4.9
50	64	0.073	-14.14	1.93	10.6	9.5	4.6	5.1
50	65	0.066	-14.47	1.79	10.2	9.2	4.3	5.4
50	66	0.059	-14.85	1.64	9.8	8.9	3.9	5.7
50	67	0.052	-15.23	1.50	9.4	8.6	3.6	6
50	68	0.046	-15.66	1.36	8.9	8.2	3.3	6.4
50	69	0.04	-16.11	1.22	8.5	7.9	3	6.7
50	70	0.035	-16.59	1.10	8	7.5	2.7	7.1
50	71	0.03	-17.11	0.97	7.5	7	2.4	7.6
50	72	0.026	-17.69	0.85	7	6.6	2.1	8
50	73	0.022	-18.28	0.74	6.6	6.3	1.9	8.3
50	74	0.019	-18.93	0.64	6.1	5.8	1.6	8.8
50	75	0.016	-19.64	0.54	5.6	5.4	1.4	9.2
50	76	0.013	-20.42	0.45	5.1	4.9	1.2	9.7
50	77	0.011	-21.25	0.37	4.7	4.5	1	10.1
50	78	0.008	-22.19	0.30	4.2	4.1	0.8	10.5
50	79	0.007	-23.22	0.24	3.7	3.6	0.7	11
50	80	0.005	-24.4	0.18	3.2	3.1	0.5	11.5
50	81	0.004	-25.74	0.13	2.8	2.7	0.4	11.9
50	82	0.003	-27.33	0.09	2.3	2.2	0.3	12.4
50	83	0.002	-29.24	0.06	1.8	1.7	0.2	12.9
50	84	0.001	-31.71	0.03	1.4	1.3	0.1	13.3
50	85	0.001	-35.09	0.02	0.9	0.8	0	13.8
50	86	0.001	-40	0.01	0.5	0.4	0	14.2

50	87	0	-40	0.01	0.5	0.4	0	14.2
50	88	0	-40	0.01	0.5	0.4	0	14.2
50	89	0	-36.31	0.01	0.8	0.7	0	13.9
50	90	0	-32.64	0.03	1.2	1.1	0	13.5