EVANS ENGINEERING SOLUTIONS

EXHIBIT IN SUPPORT OF
THIRD-ADJACENT CHANNEL CONTOUR OVERLAP EXCEPTION

Proposed W270CZ Ch. 270 (101.9 MHz) Transmitter Move
Bay Springs, MS
and
WJKX, Ch. 273C2 (102.5 MHz), Ellisville, MS

As per §74.1204(a)(3) of the FCC rules, the pertinent protected contour for WJKX is the F(50,50) 60 dBu contour, and the appropriate interference contour of W270CZ, as proposed, is the 100 dBu contour. The proposed W270CZ transmitter site is well inside the predicted 60 dBu contour of WJKX, thus not meeting §74.1204(a) of the FCC rules. The applicant requests an exception to this section of the rules because, as shown in this exhibit, no interference is predicted to occur at any residential location, a factor provided for in §74.1204(d).

The proposed W270CZ site (at an existing tower) is in a rural area where residential buildings are sparse. The calculated WJKX F(50,50) signal at the proposed W270CZ site is 66.3 dBu. Based on the 40 dB undesired-to-desired signal ratio, the W270CZ interference threshold level is 106.3 dBu. Attached is a Google Earth map showing the proposed W270CZ site and the predicted F(50,10) 106.3 dBu contour of W270CZ. The radius of this contour is 0.54 kilometer.
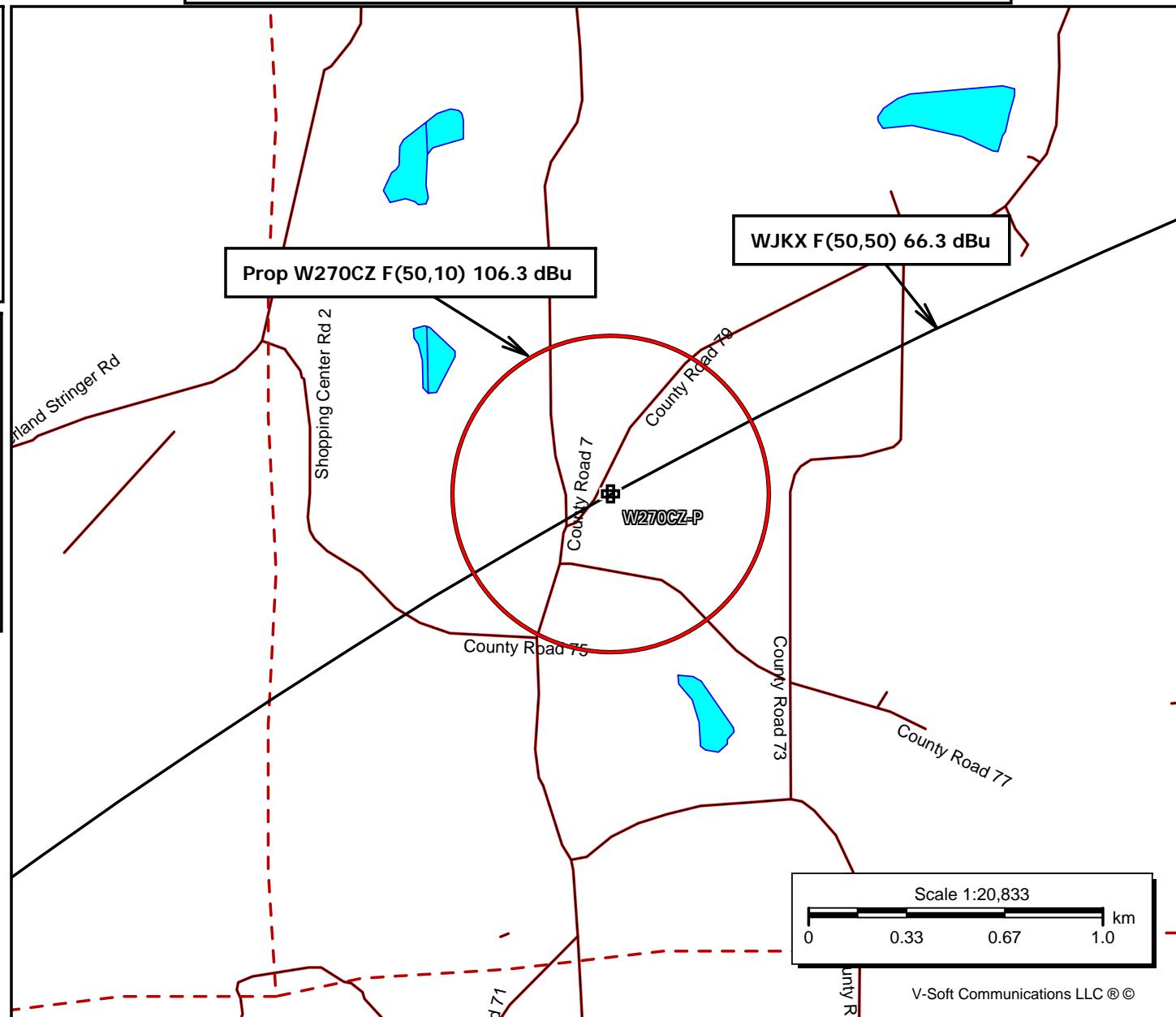
As indicated in the image shown in the attachment, and as confirmed by a site visit and Google Earth street view, there are eight residential buildings within W270CZ's proposed 106.3 dBu contour. The F(50,10) signal level of W270CZ at each dwelling was calculated based on the slant distance from the proposed antenna (at an elevation of 118.9 meters above ground) to the dwelling at 1.5 meters above ground, and the effective radiated power at the elevation angle based on the Shively 6812-2 vertical plane radiation pattern (attached hereto). The signal levels were calculated using the free space equation.
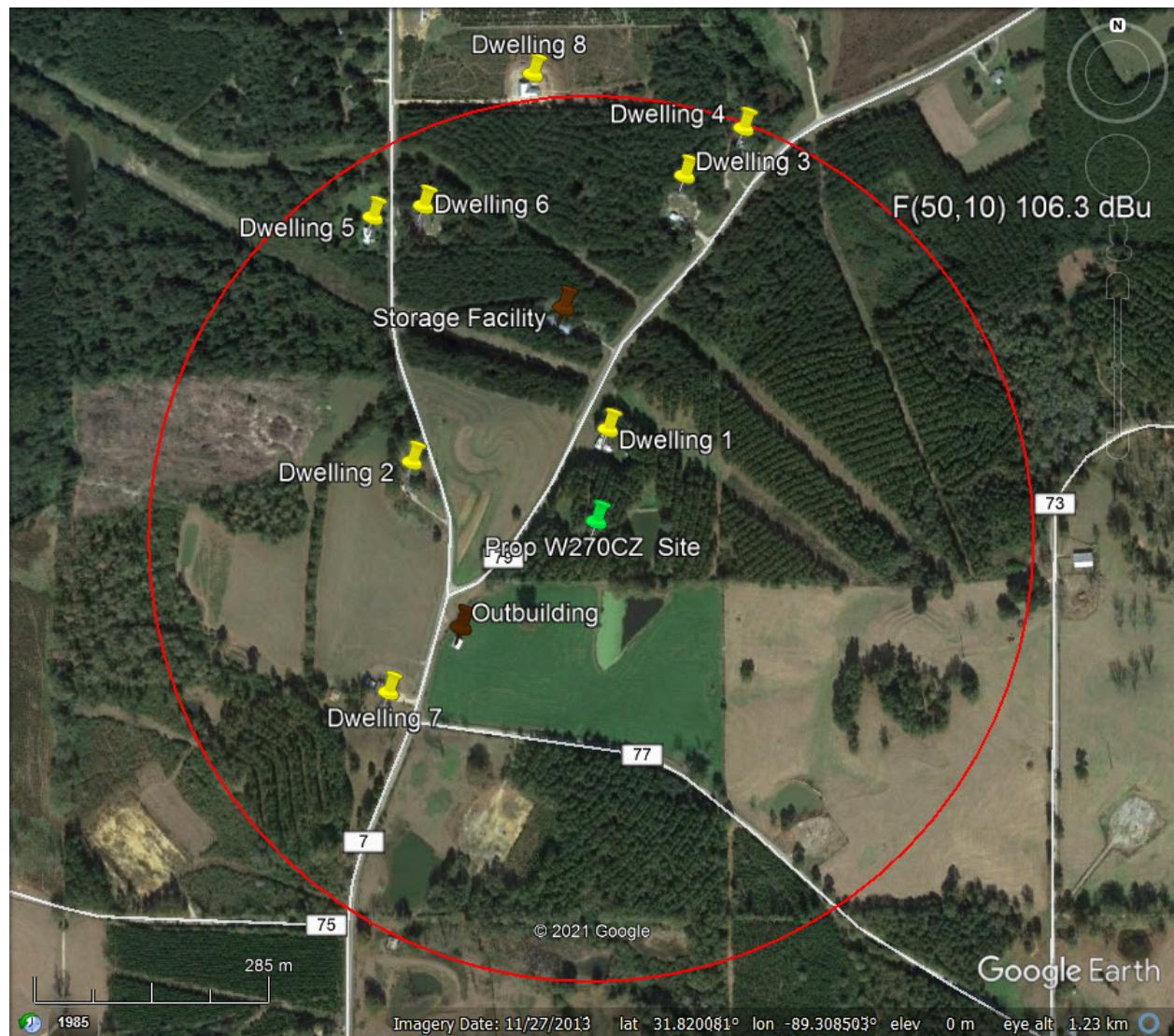
A summary of the location data, distances, elevation angles and ERP and signal calculations are shown in a table on the page attached hereto. As can be seen, the predicted W270CZ signal levels at all dwelling locations do not exceed the 106.3 dBu threshold interference level. Thus, there are no residents in the area where predicted interference to WJKX would occur.

# WJKX Signal at Proposed W270CZ Transmitter Site

W270CZ-P
Bay Springs, MS
Latitude: 31-49-16.40 N
Longitude: 089-18-36.80 W
ERP: 0.25 kW
Channel: 270
Frequency: 101.9 MHz
AMSL Height: 222.5 m
Elevation: 103.6 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC F(50,10)

WJKX
Ellisville, MS
BLH20120914ACD
Latitude: 31-31-37.40 N
Longitude: 089-08-06.80 W
ERP: 11.50 kW
Channel: 273
Frequency: 102.5 MHz
AMSL Height: 323.0 m
Elevation: 113.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC F(50,50)

Prop W270CZ F(50,10) 106.3 dBu

WJKX F(50,50) 66.3 dBu

Ortland Stringer Rd

Shopping Center Rd 2

County Road 7

County Road 79

W270CZ-P

County Road 75

County Road 73

County Road 77

County Rd 71

Scale 1:20,833

km

0   0.33   0.67   1.0

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Interference Calculations
Proposed W270CZ F(50,10) Signal into WJKX F(50,50) 66.3 dBu Signal

Xmtr Location Name	Xmtr Latitude	Xmtr Longitude	Xmt Site AMSL(m)	Xmt Ant Ht AGL(m)	Rcvr Location Name	Rcvr Location	Rcvr Latitude	Rcvr Longitude	Rcvr Site AMSL(m)	Rvcr Ant Ht AGL(m)	Dist Xmtr to Rcvr(m)	Bearing (deg)	Slant Dist Ant to Rcvr(m)	Elevation Angle(deg)	Relative Fld-Shively 6812-2	ERP @ Elev Angle(KW)	Slant Dist to 106.3 dBu(m)	F(50,10) Level at Rcvr(dBu)	U/D Ratio > 40 dB?
WLAU Twr	31.821321	-89.309943	112	118.9	Dwelling 1	32 CR 79	31.822329	-89.309792	105	1.5	112.99	7.25	168.1	-47.8	0.279	0.01946	150	105.3	No
WLAU Twr	31.821321	-89.309943	112	118.9	Dwelling 2	279 CR 7	31.821972	-89.312319	113	1.5	235.87	287.87	263.0	-26.3	0.334	0.02789	179	103.0	No
WLAU Twr	31.821321	-89.309943	112	118.9	Dwelling 3	71 CR 79	31.825105	-89.308803	109	1.5	434.33	14.36	450.7	-15.5	0.726	0.13177	390	105.0	No
WLAU Twr	31.821321	-89.309943	112	118.9	Dwelling 4	83 CR 79	31.825625	-89.308043	107	1.5	511.14	20.56	525.6	-13.5	0.788	0.15524	423	104.4	No
WLAU Twr	31.821321	-89.309943	112	118.9	Dwelling 5	317 CR 7	31.824651	-89.312825	107	1.5	459.62	323.67	475.6	-14.9	0.745	0.13876	400	104.8	No
WLAU Twr	31.821321	-89.309943	112	118.9	Dwelling 6	318 CR 7	31.824773	-89.312173	109	1.5	437.87	331.24	454.1	-15.4	0.729	0.13286	391	105.0	No
WLAU Twr	31.821321	-89.309943	112	118.9	Dwelling 7	CR7/CR77	31.819451	-89.312623	113	1.5	327.65	230.61	347.7	-19.6	0.585	0.08556	314	105.4	No
WLAU Twr	31.821321	-89.309943	112	118.9	Dwelling 8	334 CR 7	31.826218	-89.310761	113	1.5	549.98	351.92	562.2	-11.9	0.833	0.17347	447	104.3	No
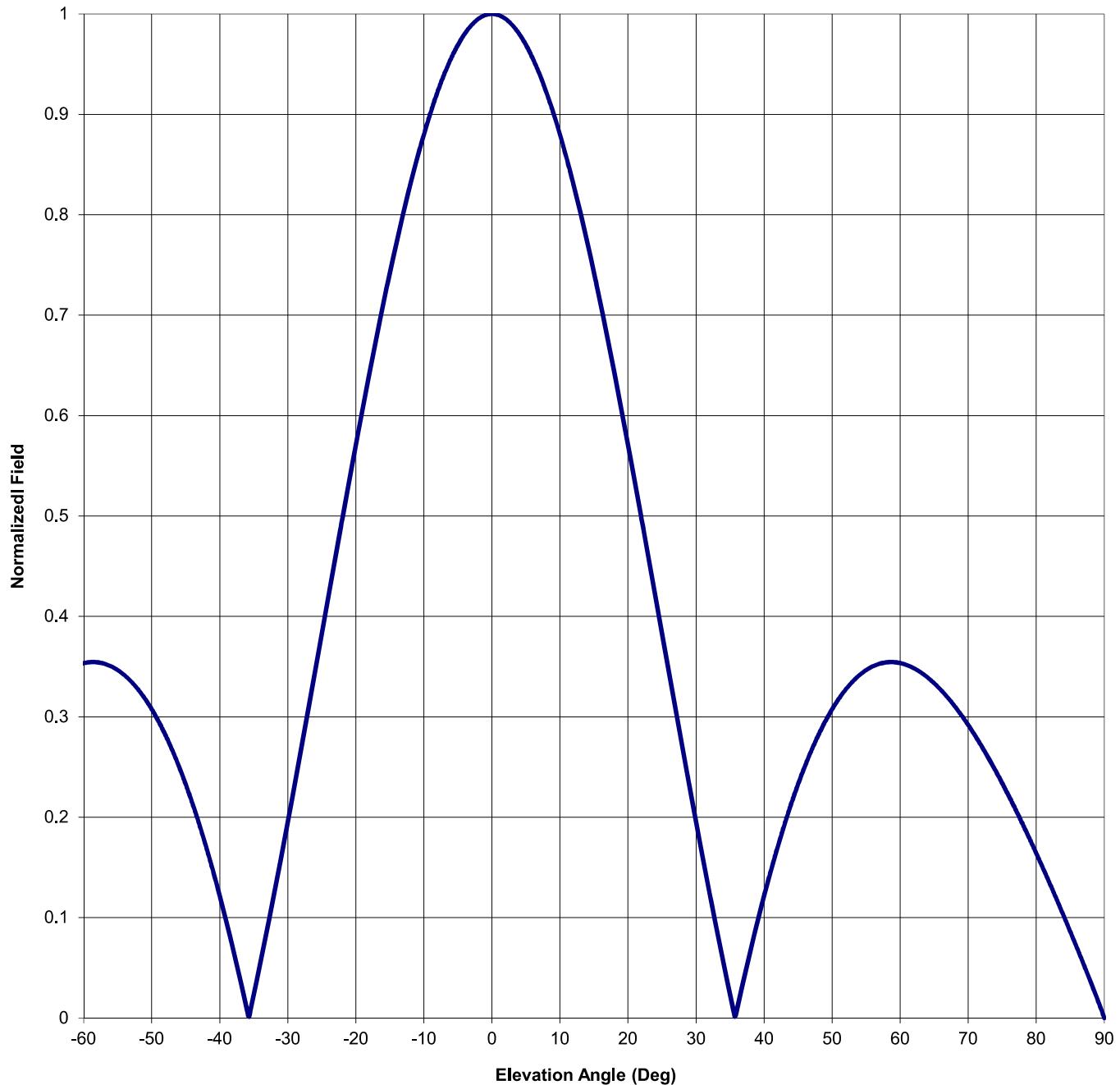
Antenna Mfg.: Shively Labs **Date: 11/3/2020**
Antenna Type: 6812B-FW-2
Station: 0   **Beam Tilt**   **0**
Frequency: 98.1   **Gain (Max)**   **1.006**   **0.027 dB**
Channel #: 251   **Gain (Horizon)**   **1.006**   **0.027 dB**
Figure: Figure 3

Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field
-90	0.000	-44	0.214	0	1.000	46	0.251
-89	0.018	-43	0.193	1	0.999	47	0.267
-88	0.036	-42	0.171	2	0.995	48	0.282
-87	0.053	-41	0.147	3	0.989	49	0.296
-86	0.070	-40	0.122	4	0.980	50	0.308
-85	0.086	-39	0.095	5	0.969	51	0.318
-84	0.102	-38	0.068	6	0.956	52	0.327
-83	0.118	-37	0.038	7	0.940	53	0.335
-82	0.134	-36	0.008	8	0.922	54	0.342
-81	0.149	-35	0.023	9	0.902	55	0.347
-80	0.164	-34	0.056	10	0.880	56	0.350
-79	0.179	-33	0.089	11	0.856	57	0.353
-78	0.193	-32	0.124	12	0.830	58	0.354
-77	0.207	-31	0.159	13	0.802	59	0.354
-76	0.221	-30	0.195	14	0.773	60	0.354
-75	0.234	-29	0.232	15	0.742	61	0.351
-74	0.246	-28	0.269	16	0.710	62	0.348
-73	0.259	-27	0.307	17	0.677	63	0.344
-72	0.270	-26	0.345	18	0.642	64	0.339
-71	0.281	-25	0.383	19	0.607	65	0.333
-70	0.292	-24	0.421	20	0.571	66	0.327
-69	0.302	-23	0.459	21	0.534	67	0.319
-68	0.311	-22	0.497	22	0.497	68	0.311
-67	0.319	-21	0.534	23	0.459	69	0.302
-66	0.327	-20	0.571	24	0.421	70	0.292
-65	0.333	-19	0.607	25	0.383	71	0.281
-64	0.339	-18	0.642	26	0.345	72	0.270
-63	0.344	-17	0.677	27	0.307	73	0.259
-62	0.348	-16	0.710	28	0.269	74	0.246
-61	0.351	-15	0.742	29	0.232	75	0.234
-60	0.354	-14	0.773	30	0.195	76	0.221
-59	0.354	-13	0.802	31	0.159	77	0.207
-58	0.354	-12	0.830	32	0.124	78	0.193
-57	0.353	-11	0.856	33	0.089	79	0.179
-56	0.350	-10	0.880	34	0.056	80	0.164
-55	0.347	-9	0.902	35	0.023	81	0.149
-54	0.342	-8	0.922	36	0.008	82	0.134
-53	0.335	-7	0.940	37	0.038	83	0.118
-52	0.327	-6	0.956	38	0.068	84	0.102
-51	0.318	-5	0.969	39	0.095	85	0.086
-50	0.308	-4	0.980	40	0.122	86	0.070
-49	0.296	-3	0.989	41	0.147	87	0.053
-48	0.282	-2	0.995	42	0.171	88	0.036
-47	0.267	-1	0.999	43	0.193	89	0.018
-46	0.251	0	1.000	44	0.214	90	0.000
-45	0.233			45	0.233		