

AMENDMENT

KIKO-FM

243C2 TO 243C ONE-STEP UPGRADE

This technical report has been developed in support of an application for a minor modification to KIKO-FM which has implemented a channel change to 243C2 and filed a form 302 for that construction permit. KIKO-FM now requests a one-step upgrade to 243C.

The USGS 3 second terrain database is used throughout.

Allocation analysis:

The proposed facility is fully spaced with the exception of a Mexico allotment to which a restricted ERP is proposed.

E1 Application and Reference Point channel study:

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REFERENCE                                     DISPLAY DATES
33 17 20.0 N.                                DATA 10-13-16
110 49 45.0 W.                               SEARCH 10-13-16
----- CLASS = C Int = C -----
Current Spacings to 3rd Adj.
----- Channel 243 - 96.5 MHz -----
    
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Call	Channel	Location		Azi	Dist	FCC	Margin
KIKO-FM	RSV-A 243C2	Claypool	AZ	0.0	0.00	248.5	-248.5
KIKO-FM	CP 243C2	Claypool	AZ	0.0	0.00	248.5	-248.5
KRFM	LIC 243C0	Show Low	AZ	38.6	130.83	289.5	-158.7 *

Channel changed to 253C0 by grant of application.

NEW-FM	243C	Sonoita	SO	233.1	284.70	290.0	-5.3 *
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Directional antenna used to afford protection (E1A) and restricted assignment requested (E3).

XHNGSFM	244B	Nogales	SO	182.9	218.02	215.0	3.0
XHNGSFM	OPE 244B	Nogales	SO	183.2	219.30	215.0	4.3
KMXP	LIC 245C	Phoenix	AZ	272.9	114.73	104.5	10.2
KLPX	LIC 241C	Tucson	AZ	193.2	118.43	104.5	13.9
KSWG	LIC-Z 242C3	Wickenburg	AZ	291.8	195.61	175.5	20.1
KDAP-FM	LIC 243A	Douglas	AZ	150.5	245.88	225.5	20.4
KVVA-FM	LIC 296C3	Apache Junction	AZ	283.5	75.79	30.5	45.3
KYWD	CP -Z 246C3	Green Valley	AZ	178.8	142.63	95.5	47.1
KWMX	LIC 244C2	Williams	AZ	330.0	237.10	187.5	49.6

RSV-R = reserved - needs protection, RSV-A = allocation.
 All separation margins include rounding

E2 70 dBu coverage:

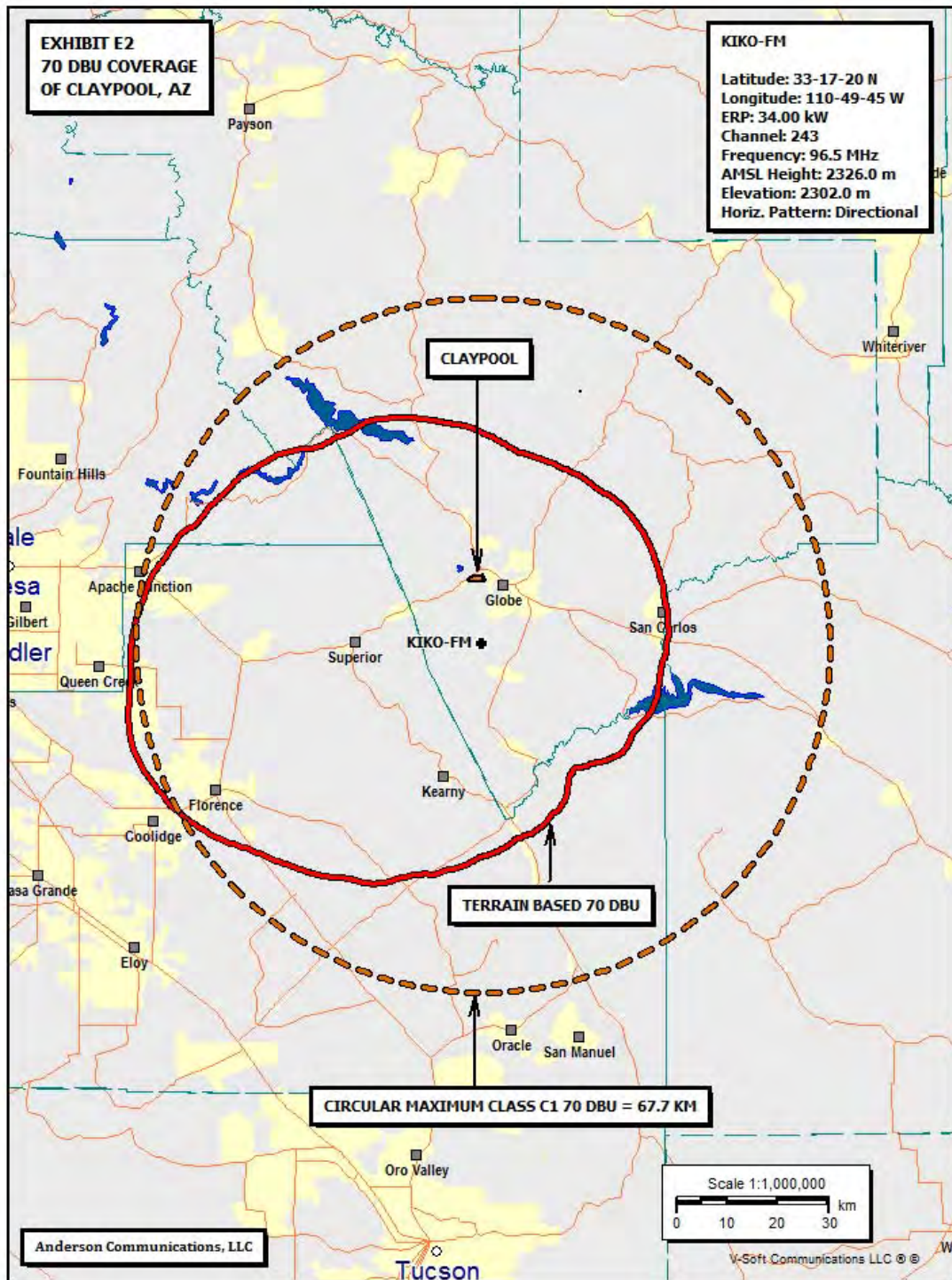


Exhibit E-2 demonstrates that the proposed facility will place a 70 dBu contour over one hundred percent (100%) of the Claypool, AZ 2010 boundaries based on terrain from the existing KIKO-FM tower site and with a uniform maximum class C2 circular contour.

243C2 reference point and restricted status to Mexico:

This is the same site as proposed in the application and exhibits E1 and E2 included herein demonstrate compliance with allocation requirements. No topographic map is required since it is an authorized transmitter site.

Proposed restricted assignment:

KIKO-FM
Channel 243
Domestic and international class = C
Claypool, AZ
N 33-17-20 W 110-49-45

Restricted to 24 kW/ 2,326 meters AMSL/ 1,032.73 m HAAT at 233 degrees true
(equivalent to 60 kw at 600 meters average HAAT)

Restricted allocation directional pattern proposed to satisfy the Mexico Treaty specifying 0.841 field at 230 and 240 degrees True.

<u>Az</u>	<u>Field</u>
220	1.0
230	0.841
240	0.841
250	1.00

Az	kW	HAAT (m)	40 dBu (50:10) (km)
225		1,032	
233	24	1,032.73 (interpolated)	189.3 + 92 km max 60 dbu = 281.3 - 284.7 = +3.4 km
270		1,040.2	

Mexico allotment:

NEW-FM Sonoita, MX 243C
N 31-43-44 W 113-14-15
284.7 km @ 233.2 degrees

Application HAAT calculation:

N. Lat. = 331720.0 W. Lng. = 1104945.0
 HAAT and Distance to Contour,
 3-16 km, 51 pts Method - USGS 03 SEC

Azi.	AV EL	HAAT	ERP kW	70-F5	60-F5
000	1227.1	1098.9	1.7986	41.10	63.21
036	1274.2	1051.8	1.3600	37.65	59.60
072	1324.6	1001.4	1.3600	36.74	58.65
108	1403.5	922.5	1.3600	35.21	57.09
144	1632.9	693.1	1.3600	29.85	50.89
180	1240.8	1085.2	1.7986	40.87	62.96
216	1276.0	1050.0	8.5340	55.11	78.76
252	1168.5	1157.5	34.0000	70.79	96.10
288	1517.7	808.3	34.0000	63.41	88.05
324	1530.7	795.3	8.5340	49.55	72.85

Ave El= 1359.59 M HAAT= 966.41 M AMSL= 2326 M

Maximum 60 dBu at 34 kW and 966 m HAAT = 92.2 km which rounds to 92 km maximum for a class C.

Antenna and RF calculation:

The proposed KIKO-FM facility will utilize a 2 bay PSI panel antenna spaced at 0.875 wavelength. The RF contribution of the proposed translator was calculated using a worst case F factor of 0.210 between 30 and 90 degrees elevation (pattern enclosed) vertical at 24meters AGL and the formula provided below to be 206.9 uWatts/cm² or 20.7% of the maximum permissible occupational exposure.

$$S \text{ (RF in } u\text{Watts/cm}^2\text{)} = \frac{33.4 (F^2 - \text{Vert Factor}) X (H \text{ ERP} + V \text{ ERP in Watts})}{R^2 \text{ (distance to radiation center in meters - 2 m)}}$$

The other facility on the same tower is a KQMR auxiliary licensed for 6.2 kW H and V using an ERI 6 bay full wavelength spaced antenna at 42 meters. Its RF level wwas evaluated using FMModel to be 17.77uWatts/cm² or 1.8% of the occupational limit. Therefore, thhe combined RF exposure at this restricted occupational site is 22.5% of the maximum limit.

Conclusion:

It is concluded that the proposed KIKO-FM one-step upgrade is in full compliance with Commission rules and policies.

August 5, 2017

Charles M. Anderson

E1 CHANNEL STUDY

REFERENCE		DISPLAY DATES
33 17 20.0 N.	CLASS = C Int = C	DATA 10-13-16
110 49 45.0 W.	Current Spacings to 3rd Adj.	SEARCH 10-13-16
----- Channel 243 - 96.5 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
KIKO-FM	RSV-A 243C2	Claypool	AZ 0.0	0.00	248.5	-248.5
KIKO-FM	APP 243C2	Claypool	AZ 0.0	0.00	248.5	-248.5 (1)
KRFM	LIC 243C0	Show Low	AZ 38.6	130.83	289.5	-158.7 (2)
NEW-FM	--- 243C	Sonoita	SO 233.1	284.70	290.0	-5.3 (3)
XHNGSFM	--- 244B	Nogales	SO 182.9	218.02	215.0	3.0
XHNGSFM	OPE 244B	Nogales	SO 183.2	219.30	215.0	4.3
KMXP	LIC 245C	Phoenix	AZ 272.9	114.73	104.5	10.2
KLPX	LIC 241C	Tucson	AZ 193.2	118.43	104.5	13.9
KSWG	LIC-Z 242C3	Wickenburg	AZ 291.8	195.61	175.5	20.1
KDAP-FM	LIC 243A	Douglas	AZ 150.5	245.88	225.5	20.4
KVVA-FM	LIC 296C3	Apache Junction	AZ 283.5	75.79	30.5	45.3
KYWD	CP -Z 246C3	Green Valley	AZ 178.8	142.63	95.5	47.1
KWMX	LIC 244C2	Williams	AZ 330.0	237.10	187.5	49.6

Reference station has protected zone issue: Mexico
 RSV-R = reserved - needs protection, RSV-A = allocation
 % = Station Fails minimum 73.215 spacings
 All separation margins include rounding

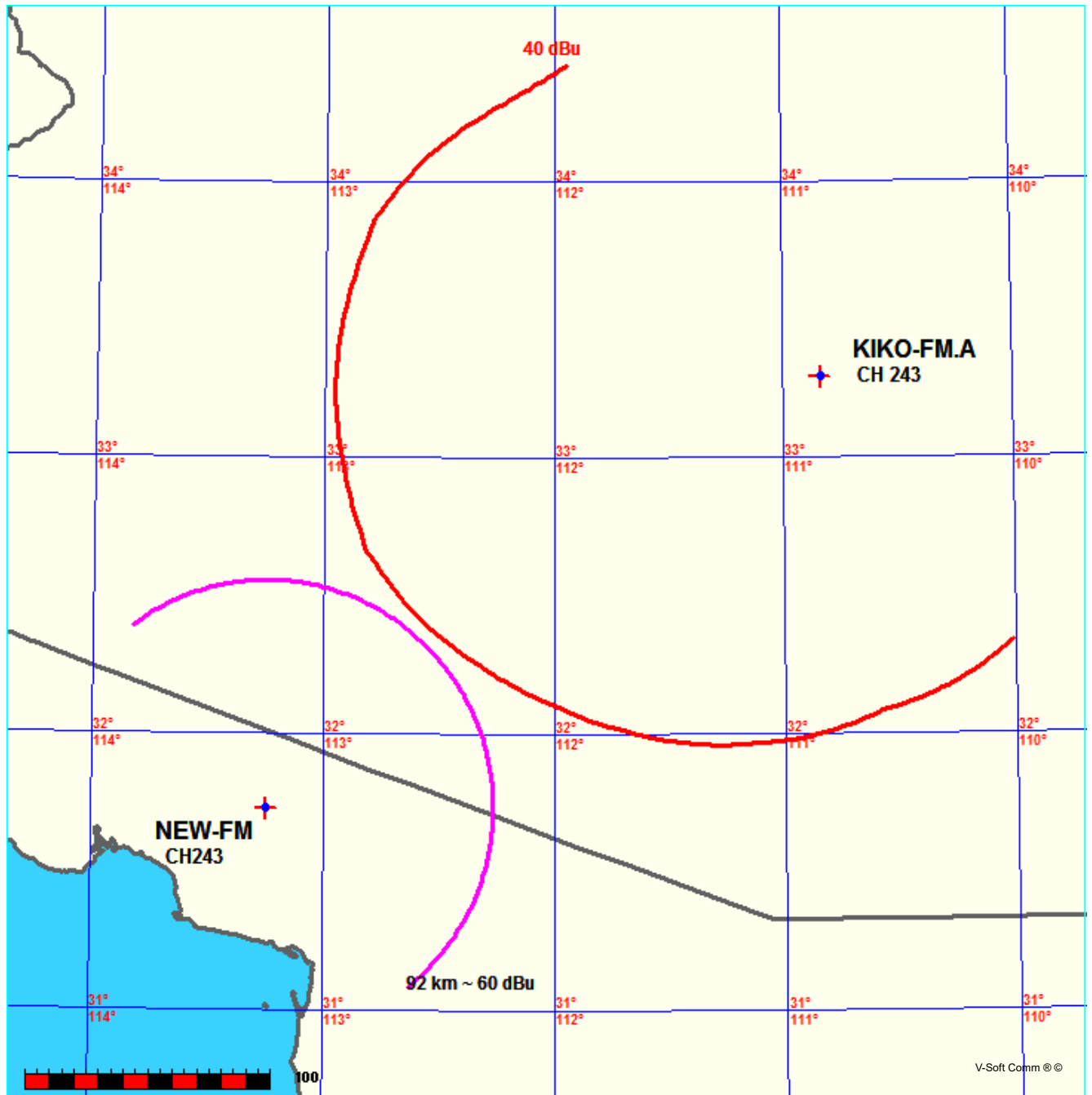
- (1) Built and form 302 filed.
- (2) Move to channel 253C0 effective with grant of construction permit.
- (3) Restricted ERP of 24 kW to Mexico at 233 degrees True proposed. See E3 and Technical Report.

E1A KIKO-FM TO MAX CLASS MEXICO ALLOTMENT

FMCommander Single Allocation Study - 09-21-2016 - USGS 03 SEC
KIKO-FM.A's Overlaps (In= 0.0 km, Out= 0.0 km)

KIKO-FM.A CH 243 C DA
Lat= 33 17 20.0, Lng= 110 49 45.0
34.0 kW 988.5 m HAAT, 2326 m COR
Prot.= 60 dBu, Intef.= 40 dBu

NEW-FM^ CH 243 C
Lat= 31 43 44.0, Lng= 113 14 15.0
Max Cls: 100.0 kW 600 m HAAT, 789.6 m COR
Prot.= 60 dBu, Intef.= 40 dBu



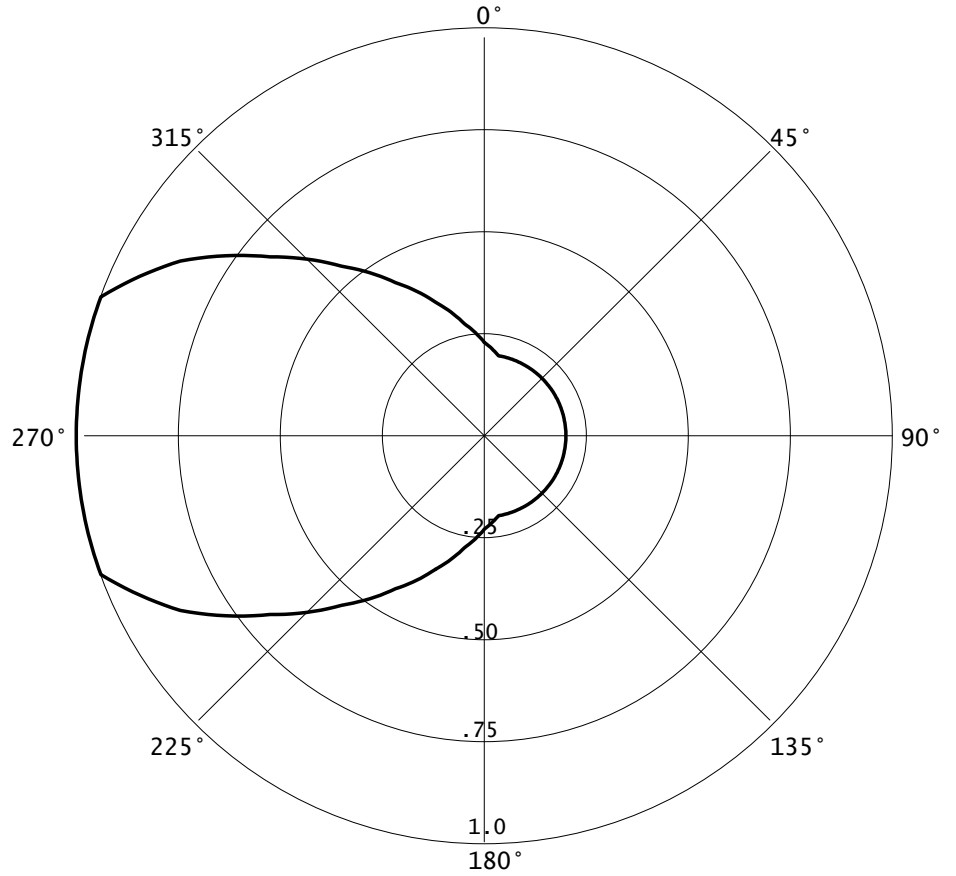
E1B Proposed DA

09-21-2016

RMS(V)= .515

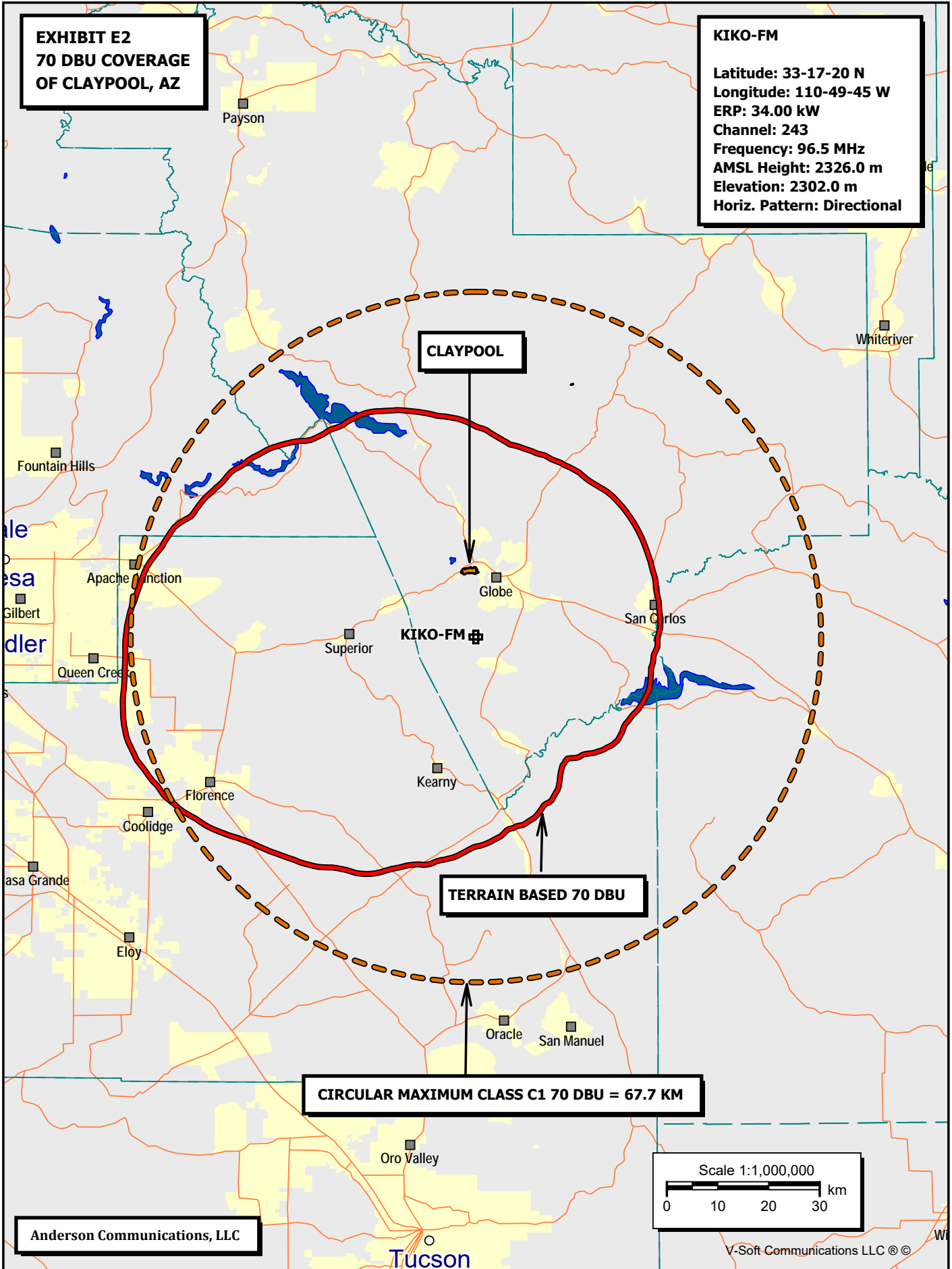
Graph is Relative Field

Azi	Field	dBk	kw
000	0.230	02.549	1.799
010	0.200	01.335	1.360
020	0.200	01.335	1.360
030	0.200	01.335	1.360
040	0.200	01.335	1.360
050	0.200	01.335	1.360
060	0.200	01.335	1.360
070	0.200	01.335	1.360
080	0.200	01.335	1.360
090	0.200	01.335	1.360
100	0.200	01.335	1.360
110	0.200	01.335	1.360
120	0.200	01.335	1.360
130	0.200	01.335	1.360
140	0.200	01.335	1.360
150	0.200	01.335	1.360
160	0.200	01.335	1.360
170	0.200	01.335	1.360
180	0.230	02.549	1.799
190	0.280	04.258	2.666
200	0.350	06.196	4.165
210	0.435	08.085	6.434
220	0.545	10.043	10.099
230	0.685	12.029	15.954
240	0.860	14.005	25.146
250	1.000	15.315	34.000
260	1.000	15.315	34.000
270	1.000	15.315	34.000
280	1.000	15.315	34.000
290	1.000	15.315	34.000
300	0.860	14.005	25.146
310	0.685	12.029	15.954
320	0.545	10.043	10.099
330	0.435	08.085	6.434
340	0.350	06.196	4.165
350	0.280	04.258	2.666



**EXHIBIT E2
70 DBU COVERAGE
OF CLAYPOOL, AZ**

KIKO-FM
Latitude: 33-17-20 N
Longitude: 110-49-45 W
ERP: 34.00 kW
Channel: 243
Frequency: 96.5 MHz
AMSL Height: 2326.0 m
Elevation: 2302.0 m
Horiz. Pattern: Directional



Anderson Communications, LLC

Scale 1:1,000,000
0 10 20 30 km

V-Soft Communications LLC ©

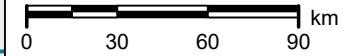
EXHIBIT E3

KIKO-FM 243C ALLOCATION
 40 DBU (50:10) USING USGS 3 SECOND
 TERRAIN AND INTERPOLATED
 HAAT VALUES IN ACCORDANCE WITH THE
 MEXICO TREATY.

KIKO-FM

Latitude: 33-17-20 N
 Longitude: 110-49-45 W
 ERP: 34.00 kW
 Channel: 243
 Frequency: 96.5 MHz
 AMSL Height: 2326.0 m
 Elevation: 2302.0 m
 Horiz. Pattern: Directional

Scale 1:2,500,000



KIKO-FM

PROPOSED RESTRICTED ASSIGNMENT

KIKO-FM 243
 CLAYPOOL, AZ
 DOMESTIC AND INTERNATIONAL CLASS = C

RESTRICTED TO:

24 KW/ 1,032.73 M HAAT AT 233 DEGREES TRUE
 (EQUIVALENT TO 60 KW AT 600 METERS AVERAGE HAAT)
 N 33-17-20 W 110-49-45
 RADIATION CENTER = 2326 Meters AMSL

AZ	KW	HAAT (M)	40 dBu (50:10) (KM)
225		1,032	
233	24	1,032.73 (interpolated)	189.3 *
270		1,040.2	

* 189.3 km + 92 km maximum 60 dBu = 281.3 - 284.7 = (+3.4 KM CLEAR)

MEXICO ALLOTMENT:

NEW-FM Sonoita, MX 243C
 N 31-43-44 W 113-14-15
 284.7 KM @ 233.2 Degrees

233.0°

NEW-FM

SONOITA 243C MAXIMUM CLASS
 60 DBU 92 KM CIRCLE

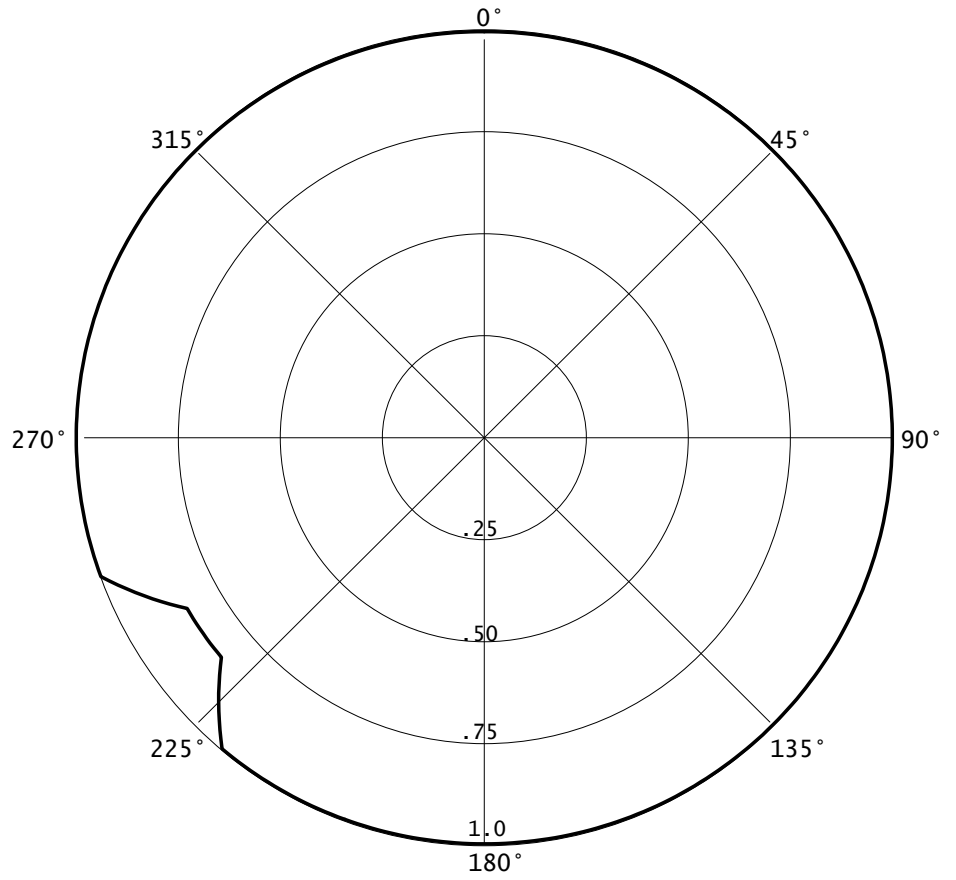
E3A RESTRICTED ALLOTMENT DA

09-28-2016

RMS(V)= .992

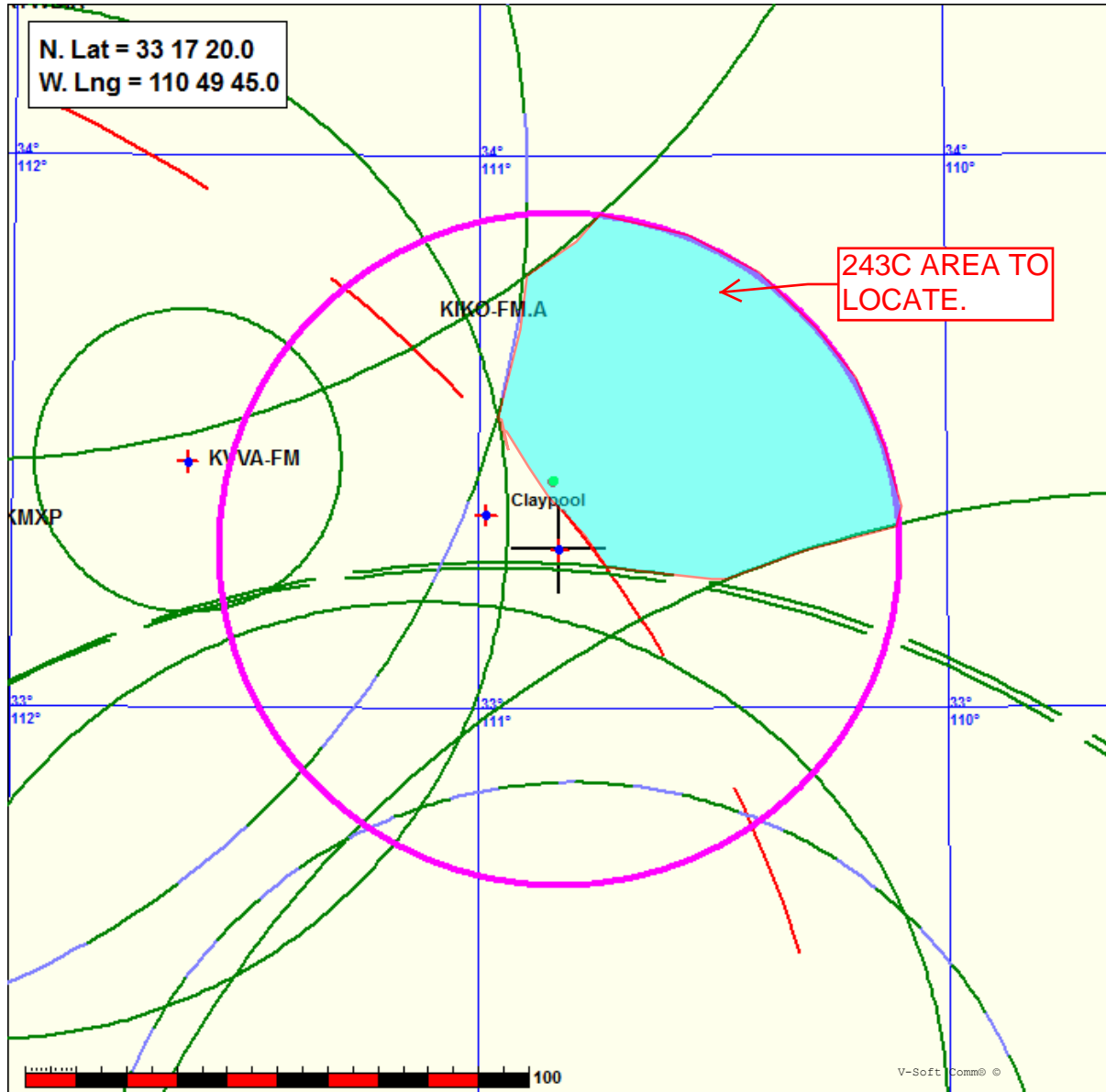
Graph is Relative Field

Azi	Field	dBk	kw
000	1.000	15.315	34.000
010	1.000	15.315	34.000
020	1.000	15.315	34.000
030	1.000	15.315	34.000
040	1.000	15.315	34.000
050	1.000	15.315	34.000
060	1.000	15.315	34.000
070	1.000	15.315	34.000
080	1.000	15.315	34.000
090	1.000	15.315	34.000
100	1.000	15.315	34.000
110	1.000	15.315	34.000
120	1.000	15.315	34.000
130	1.000	15.315	34.000
140	1.000	15.315	34.000
150	1.000	15.315	34.000
160	1.000	15.315	34.000
170	1.000	15.315	34.000
180	1.000	15.315	34.000
190	1.000	15.315	34.000
200	1.000	15.315	34.000
210	1.000	15.315	34.000
220	1.000	15.315	34.000
230	0.841	13.811	24.048
240	0.841	13.811	24.048
250	1.000	15.315	34.000
260	1.000	15.315	34.000
270	1.000	15.315	34.000
280	1.000	15.315	34.000
290	1.000	15.315	34.000
300	1.000	15.315	34.000
310	1.000	15.315	34.000
320	1.000	15.315	34.000
330	1.000	15.315	34.000
340	1.000	15.315	34.000
350	1.000	15.315	34.000



CH 243 C, C, 96.5 MHz

Current Spacings to 3rd Adj.
KIKO-FM 243C AREA TO LOCATE



Data Date: 10-13-16 Job Date: 10-13-16

Call	CH#	Type	Location	Azi	D-KM	FCC	Margin	
NEW-FM	243C		Sonoita	SO	233.1	284.70	290.0	-5.3
XHNGSFM	244B		Nogales	SO	182.9	218.02	215.0	3.0
XHNGSFM	244B	OPE	Nogales	SO	183.2	219.30	215.0	4.3
KMXP	245C	LIC	Phoenix	AZ	272.9	114.73	104.5	10.2
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KYWD.A	246C3	APP-Z	Green Valley	AZ	178.8	142.63	95.5	47.1
KWMX	244C2	LIC	Williams	AZ	330.0	237.10	187.5	49.6

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

Propagation Systems Inc.

Relative Field Tabulation Elevation Pattern

Antenna Model: PSIFMDP-2-875WS-DA

Gain: 5.6 (7.5 dBd)

Station: KIKO

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90	0.111	-19.09	-50	0.205	-13.76	-10	0.861	-1.30
-89	0.111	-19.09	-49	0.201	-13.94	-9	0.885	-1.06
-88	0.111	-19.09	-48	0.197	-14.11	-8	0.907	-0.85
-87	0.111	-19.09	-47	0.191	-14.38	-7	0.927	-0.66
-86	0.111	-19.09	-46	0.184	-14.70	-6	0.946	-0.48
-85	0.110	-19.17	-45	0.176	-15.09	-5	0.962	-0.34
-84	0.112	-19.02	-44	0.166	-15.60	-4	0.974	-0.23
-83	0.114	-18.86	-43	0.154	-16.25	-3	0.984	-0.14
-82	0.115	-18.79	-42	0.141	-17.02	-2	0.991	-0.08
-81	0.117	-18.64	-41	0.126	-17.99	-1	0.997	-0.03
-80	0.118	-18.56	-40	0.110	-19.17	0	1.000	0.00
-79	0.121	-18.34	-39	0.092	-20.72	1	0.997	-0.03
-78	0.124	-18.13	-38	0.073	-22.73	2	0.991	-0.08
-77	0.127	-17.92	-37	0.052	-25.68	3	0.984	-0.14
-76	0.130	-17.72	-36	0.029	-30.75	4	0.974	-0.23
-75	0.133	-17.52	-35	0.005	-46.02	5	0.962	-0.34
-74	0.137	-17.27	-34	0.021	-33.56	6	0.946	-0.48
-73	0.141	-17.02	-33	0.049	-26.20	7	0.927	-0.66
-72	0.145	-16.77	-32	0.078	-22.16	8	0.907	-0.85
-71	0.149	-16.54	-31	0.108	-19.33	9	0.885	-1.06
-70	0.153	-16.31	-30	0.140	-17.08	10	0.861	-1.30
-69	0.158	-16.03	-29	0.173	-15.24	11	0.831	-1.61
-68	0.163	-15.76	-28	0.207	-13.68	12	0.799	-1.95
-67	0.167	-15.55	-27	0.243	-12.29	13	0.766	-2.32
-66	0.172	-15.29	-26	0.280	-11.06	14	0.732	-2.71
-65	0.175	-15.14	-25	0.318	-9.95	15	0.696	-3.15
-64	0.182	-14.80	-24	0.355	-9.00	16	0.659	-3.62
-63	0.188	-14.52	-23	0.392	-8.13	17	0.621	-4.14
-62	0.194	-14.24	-22	0.430	-7.33	18	0.583	-4.69
-61	0.199	-14.02	-21	0.468	-6.60	19	0.545	-5.27
-60	0.203	-13.85	-20	0.507	-5.90	20	0.507	-5.90
-59	0.205	-13.76	-19	0.545	-5.27	21	0.468	-6.60
-58	0.207	-13.68	-18	0.583	-4.69	22	0.430	-7.33
-57	0.208	-13.64	-17	0.621	-4.14	23	0.392	-8.13
-56	0.209	-13.60	-16	0.659	-3.62	24	0.355	-9.00
-55	0.208	-13.64	-15	0.696	-3.15	25	0.318	-9.95
-54	0.210	-13.56	-14	0.732	-2.71	26	0.280	-11.06
-53	0.210	-13.56	-13	0.766	-2.32	27	0.243	-12.29
-52	0.209	-13.60	-12	0.799	-1.95	28	0.207	-13.68
-51	0.207	-13.68	-11	0.831	-1.61	29	0.173	-15.24