

KTAZ Application for Post-Repack Construction Permit

June 26, 2017

Engineering Exhibit

The purpose of this application is to request authority to construct a post-repack broadcast facility for operation on channel 29 for KTAZ, Phoenix, AZ, Facility ID 81458, licensed to NBC Telemundo License LLC.

This application specifies a top mount antenna location at a radiation center height of 909.9m AMSL, on the same tower and immediately above the antenna currently authorized for KTAZ. The TVStudy computed HAAT of 552m was used for the Schedule A Antenna Data. Effective radiated power was reduced to 425 kW to offset the increase in height and avoid extending the contour by more than 1% in any direction. The contour of the proposed facility will not exceed the authorized post-repack contour by more than 1% in any direction and will not cause new interference above 0.5% to any other station.

Antenna System

The proposed facility will use a directional antenna with elliptical polarization. The proposed vertically polarized ERP is 212.5 kW. The vertically polarized ERP will not exceed the horizontally polarized ERP (425 kW) in any direction. Plots and tabulation of antenna data required by FCC Rules Section 73.625(c) is attached.

Environmental Statement

The requested facility will be installed on an existing tower located in an antenna farm. No tower construction other than strengthening the existing tower to meet current standards is required for this facility. No overall increase in tower height is required for this application.

RF power density from the facility using combined horizontal and vertically polarized ERP was calculated using the procedures described in FCC Office of Engineering and Technology Bulletin 65. The maximum power density at any location on the ground or on a roof-top or structure up to 10m above ground after allowing for terrain height variation around the site is 0.0081 mW/cm², or 2.15% of the public exposure limit of 0.375 mW/cm² at 563 MHz for an uncontrolled environment as specified in FCC rule §1.1310. This power density is present on the roof of buildings along a road accessible only through a locked gate with posted warning signs.

At full power, RF power density on nearby towers from this facility may exceed occupational exposure levels. KTAZ will comply with the site RF exposure plan. Power will be reduced or shut off as required to protect workers on the tower from RF exposure above the limits specified in FCC rule §1.1310.

Broadcast Facility

The facility proposed in this application provides similar coverage to the current authorized facility and matches, within the limits allowed, the post-repack facility assigned by the FCC.

Doug Lung
June 26, 2017

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**73.625(c)
June 24, 2017**

AZIMUTH PATTERN (H-Pol): Dielectric TFU-14ETT/VP-R4C165

Main beam axis of symmetry: 50° true

Electrical Beam Tilt: 1.20

Main Beam Calculated Max. H-pol Azimuth Pattern Gain (peak) 1.63 (2.13 dBd)

Maximum Main Beam H-Pol. Effective Radiated Power (ERP): 425.0 kW 26.28 dBk

Maximum Main Beam V-Pol. Effective Radiated Power (ERP): 212.5 kW 23.27 dBk

Tabulation of Azimuth Pattern (Horizontal polarization)

Angle	RF	dBk	ERP kW
0	0.980	26.11	408.2
10	0.960	25.93	391.7
20	0.940	25.75	375.5
30	0.940	25.75	375.5
40	0.930	25.65	367.6
50	0.930	25.65	367.6
60	0.930	25.65	367.6
70	0.940	25.75	375.5
80	0.940	25.75	375.5
90	0.960	25.93	391.7
100	0.980	26.11	408.2
110	1.000	26.28	425.0
120	1.000	26.28	425.0
130	0.980	26.11	408.2
140	0.920	25.56	359.7
150	0.840	24.77	299.9
160	0.740	23.67	232.7
170	0.620	22.13	163.4
180	0.490	20.09	102.0
190	0.380	17.88	61.4
200	0.300	15.83	38.3
210	0.260	14.58	28.7
220	0.260	14.58	28.7
230	0.260	14.58	28.7
240	0.260	14.58	28.7
250	0.260	14.58	28.7
260	0.300	15.83	38.3
270	0.380	17.88	61.4
280	0.490	20.09	102.0
290	0.620	22.13	163.4
300	0.740	23.67	232.7
310	0.840	24.77	299.9
320	0.920	25.56	359.7
330	0.980	26.11	408.2
340	1.000	26.28	425.0
350	1.000	26.28	425.0

Maximum

Angle	RF	dBk	ERP kW
115	1.000	26.3	425.0
345	1.000	26.3	425.0

Minimum

Angle	RF	dBk	ERP kW
50	0.930	25.7	367.6
230	0.260	14.6	28.7

AZIMUTH PATTERN (H-Pol): Dielectric TFU-14ETT/VP-R4C165

Main beam axis of symmetry: 50° true

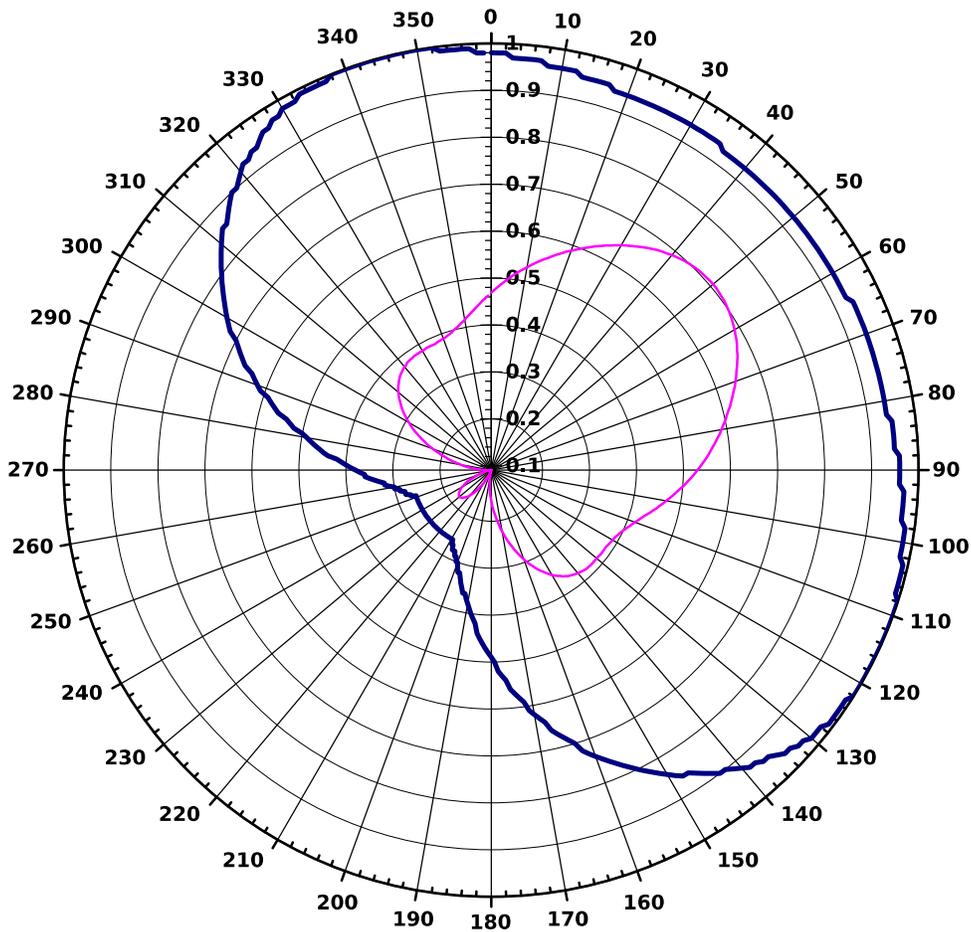
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AZIMUTH PATTERN RELATIVE FIELD



Blue plot shows azimuth pattern relative field for horizontal polarization
Red plot shows azimuth pattern relative field for vertical polarization

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Main beam axis of symmetry: 50° true

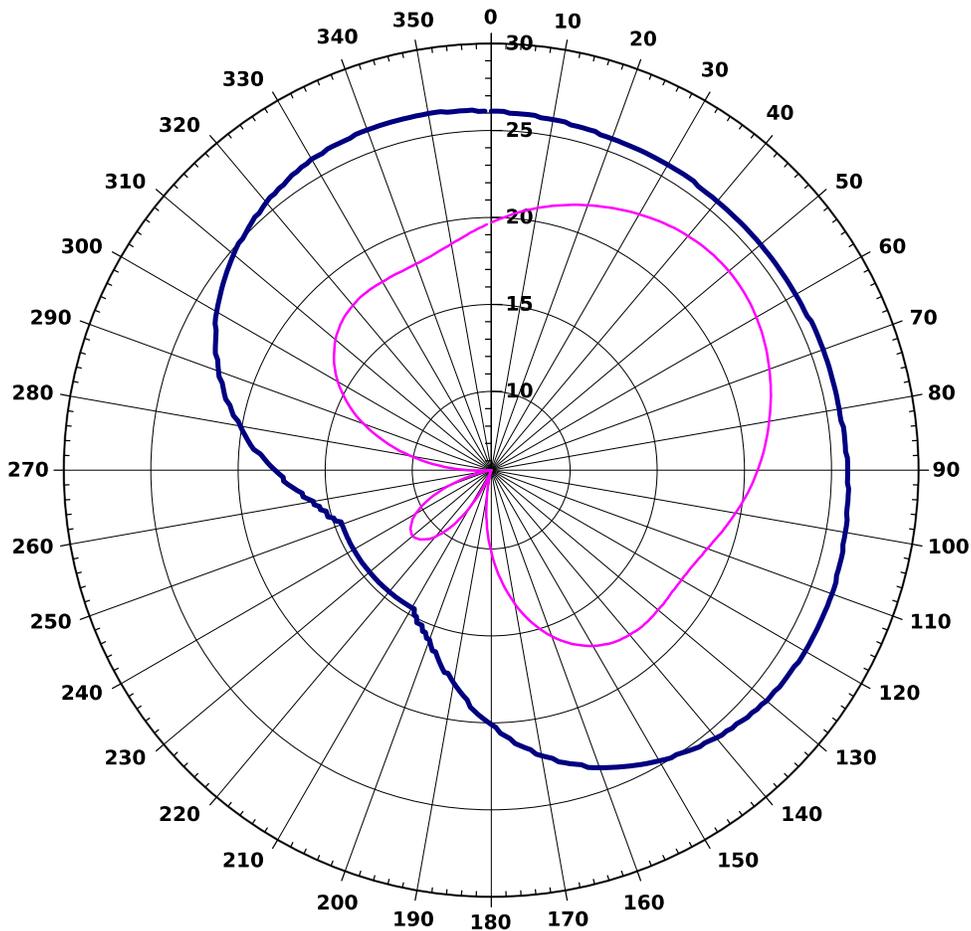
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AZIMUTH PATTERN ERP (dBk)



Blue plot shows effective radiated power (dBk) for horizontal polarization
Red plot shows effective radiated power (dBk) for vertical polarization

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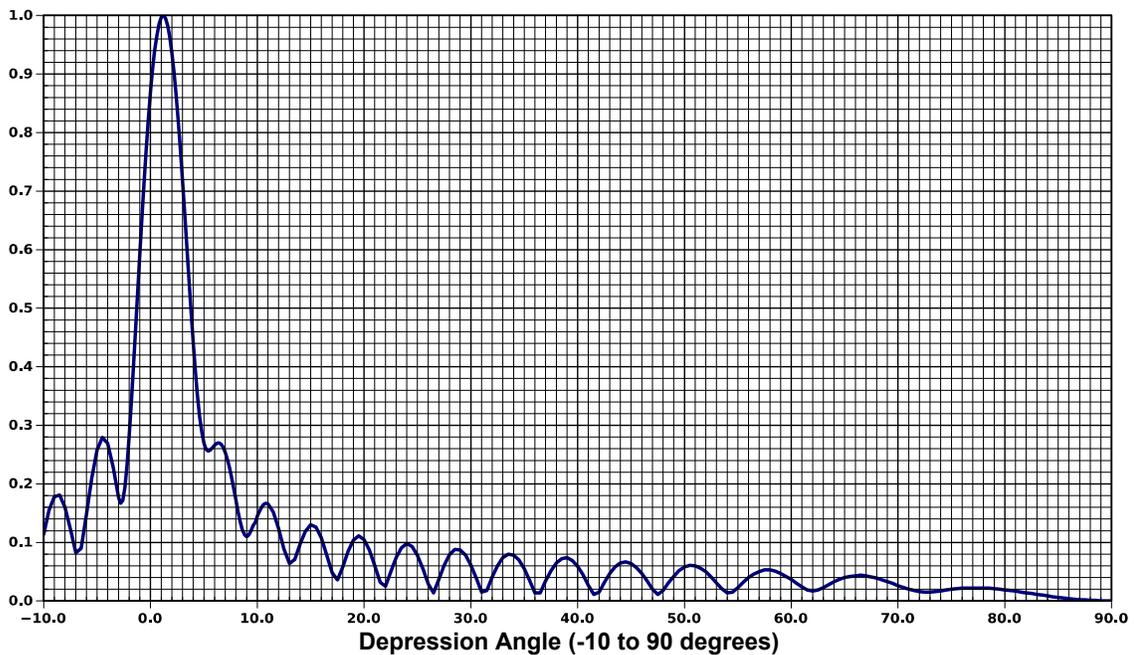
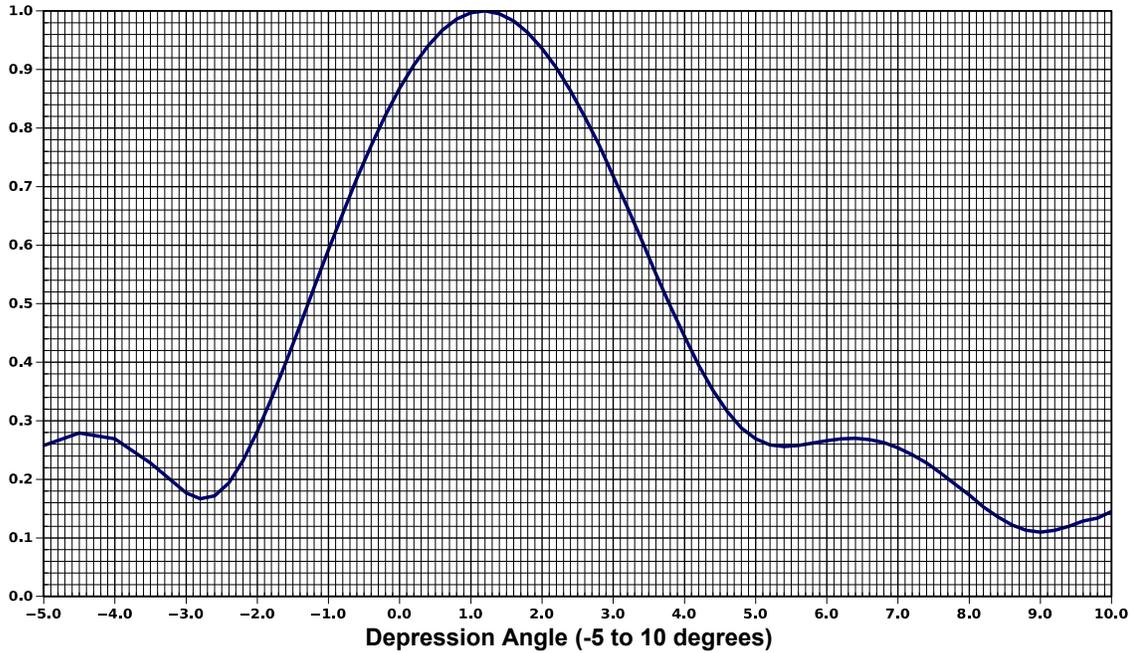
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ELEVATION PATTERN Dielectric TFU-14ETT/VP-R4C165

Electrical Beam Tilt: 1.20°

Calculated Maximum Elevation Gain (H + V polarization):	14.20	11.52 dBd
RMS Gain at Horizontal (H + V polarization):	10.70	10.29 dBd
Maximum Main Beam H-Pol. Effective Radiated Power (ERP):	425.0 kW	26.28 dBk
Maximum Main Beam V-Pol. Effective Radiated Power (ERP):	212.5 kW	23.27 dBk

Relative Field



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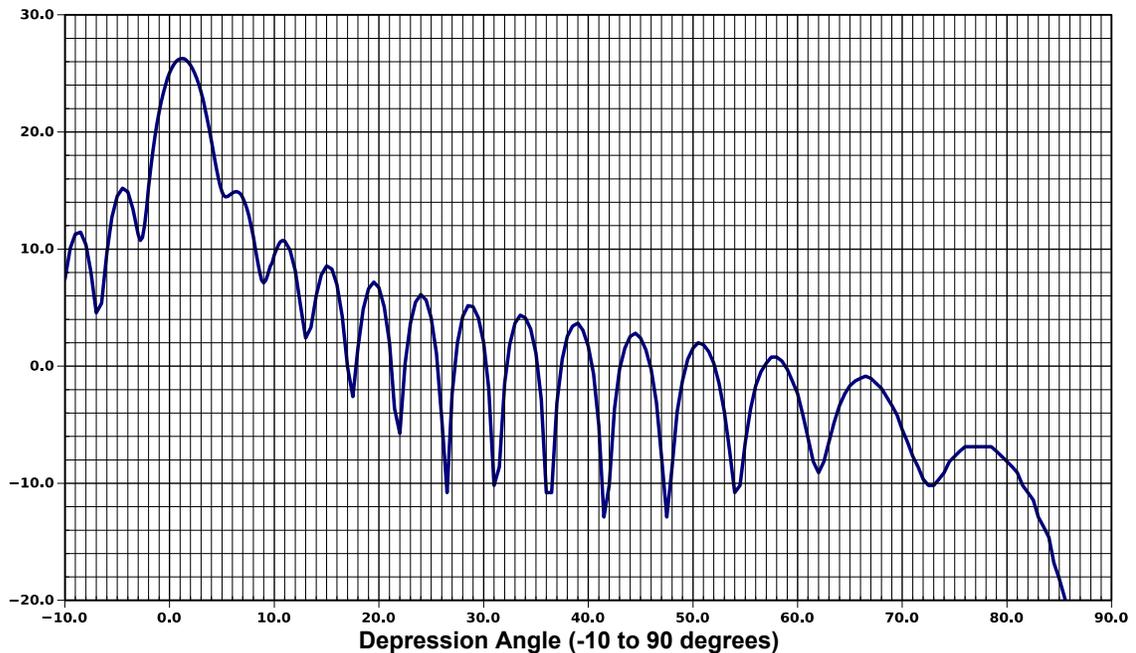
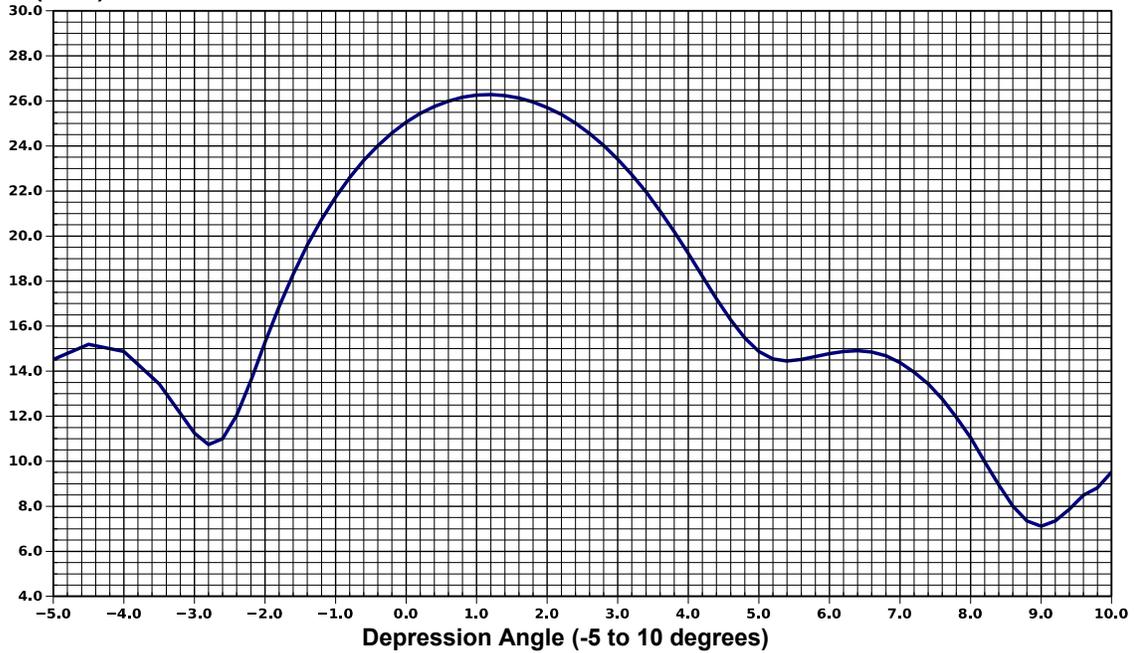
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ERP (dBK)



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Angle	Field												
-10.0	0.114	1.2	1.000	8.2	0.153	21.5	0.032	39.0	0.074	56.5	0.046	74.0	0.017
-9.5	0.155	1.4	0.995	8.4	0.136	22.0	0.025	39.5	0.069	57.0	0.050	74.5	0.019
-9.0	0.178	1.6	0.983	8.6	0.122	22.5	0.050	40.0	0.059	57.5	0.053	75.0	0.020
-8.5	0.181	1.8	0.963	8.8	0.113	23.0	0.074	40.5	0.045	58.0	0.053	75.5	0.021
-8.0	0.160	2.0	0.936	9.0	0.110	23.5	0.091	41.0	0.027	58.5	0.051	76.0	0.022
-7.5	0.122	2.2	0.903	9.2	0.113	24.0	0.098	41.5	0.011	59.0	0.047	76.5	0.022
-7.0	0.082	2.4	0.864	9.4	0.120	24.5	0.093	42.0	0.015	59.5	0.042	77.0	0.022
-6.5	0.090	2.6	0.819	9.6	0.129	25.0	0.078	42.5	0.032	60.0	0.037	77.5	0.022
-6.0	0.148	2.8	0.771	9.8	0.134	25.5	0.055	43.0	0.047	60.5	0.030	78.0	0.022
-5.5	0.210	3.0	0.718	10.0	0.145	26.0	0.029	43.5	0.058	61.0	0.024	78.5	0.022
-5.0	0.258	3.2	0.664	10.2	0.153	26.5	0.014	44.0	0.065	61.5	0.019	79.0	0.021
-4.5	0.279	3.4	0.608	10.4	0.160	27.0	0.037	44.5	0.067	62.0	0.017	79.5	0.020
-4.0	0.269	3.6	0.551	10.6	0.165	27.5	0.061	45.0	0.064	62.5	0.019	80.0	0.019
-3.5	0.228	3.8	0.496	10.8	0.167	28.0	0.079	45.5	0.057	63.0	0.023	80.5	0.018
-3.0	0.177	4.0	0.444	11.0	0.166	28.5	0.088	46.0	0.047	63.5	0.028	81.0	0.017
-2.8	0.167	4.2	0.395	11.5	0.152	29.0	0.087	46.5	0.034	64.0	0.033	81.5	0.015
-2.6	0.172	4.4	0.352	12.0	0.124	29.5	0.078	47.0	0.020	64.5	0.037	82.0	0.014
-2.4	0.194	4.6	0.316	12.5	0.089	30.0	0.061	47.5	0.011	65.0	0.040	82.5	0.013
-2.2	0.232	4.8	0.288	13.0	0.064	30.5	0.039	48.0	0.018	65.5	0.042	83.0	0.011
-2.0	0.282	5.0	0.269	13.5	0.071	31.0	0.015	48.5	0.031	66.0	0.043	83.5	0.010
-1.8	0.338	5.2	0.259	14.0	0.097	31.5	0.018	49.0	0.042	66.5	0.044	84.0	0.009
-1.6	0.399	5.4	0.256	14.5	0.119	32.0	0.041	49.5	0.052	67.0	0.043	84.5	0.007
-1.4	0.463	5.6	0.258	15.0	0.130	32.5	0.060	50.0	0.058	67.5	0.041	85.0	0.006
-1.2	0.528	5.8	0.262	15.5	0.126	33.0	0.074	50.5	0.061	68.0	0.039	85.5	0.005
-1.0	0.592	6.0	0.266	16.0	0.108	33.5	0.080	51.0	0.060	68.5	0.036	86.0	0.004
-0.8	0.654	6.2	0.269	16.5	0.079	34.0	0.078	51.5	0.056	69.0	0.033	86.5	0.003
-0.6	0.714	6.4	0.270	17.0	0.048	34.5	0.070	52.0	0.050	69.5	0.030	87.0	0.002
-0.4	0.770	6.6	0.268	17.5	0.036	35.0	0.055	52.5	0.041	70.0	0.026	87.5	0.002
-0.2	0.822	6.8	0.263	18.0	0.058	35.5	0.035	53.0	0.031	70.5	0.023	88.0	0.001
0.0	0.868	7.0	0.254	18.5	0.085	36.0	0.014	53.5	0.021	71.0	0.020	88.5	0.001
0.2	0.908	7.2	0.242	19.0	0.104	36.5	0.014	54.0	0.014	71.5	0.018	89.0	0.000
0.4	0.941	7.4	0.228	19.5	0.111	37.0	0.034	54.5	0.015	72.0	0.016	89.5	0.000
0.6	0.967	7.6	0.211	20.0	0.105	37.5	0.052	55.0	0.023	72.5	0.015	90.0	0.000
0.80	0.986	7.8	0.192	20.5	0.087	38.0	0.065	55.5	0.032	73.0	0.015		
1.0	0.997	8.0	0.173	21.0	0.061	38.5	0.072	56.0	0.040	73.5	0.016		