

ENGINEERING STATEMENT
Of

Dennis W. Wallace
Wallace & Associates

In Support of Application for Minor Change
Non-Commercial Television
For Applicant

Arkansas Educational Television Commission

KETZ

EL DORADO, ARKANSAS
CHANNEL 30

May 20, 2004

Prepared By:



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WALLACE & ASSOCIATES

ENGINEERING STATEMENT

KETZ

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El Dorado, AR.

Background

The Arkansas Educational Telecommunications Commission (AETC), permittee of KETZ-TV, currently holds a Construction Permit for a new Analog Television station on Channel 30 at El Dorado, Arkansas (File Number BPET-19960920JZ). The channel 30 analog allotment at El Dorado was not paired with a DTV allotment as part of the FCC's DTV proceedings. Therefore, KETZ-TV currently has no DTV allocation.

This statement details the results of a study for a change of KETZ-TV from analog television to digital television on its current channel 30 allotment. AETC would like KETZ to instantly convert from an Analog Television Station to a Digital Television station.

Allotment Study

It is proposed to change the channel *30 analog allotment to DTV on Channel *30 utilizing the facility parameters contained herein.

A study has been conducted using TechWare software utilizing the parameters and criteria from the Commission's OET Bulletin 69 to evaluate potential interference, which would be caused by DTV operation on channel 30 at El Dorado. However, the study appended hereto demonstrates that use of a directional antenna will permit a maximum ERP of 1,000 KW while maintaining the interference within the *de minimus* limits set forth in Section 73.623 (c) (2) to other effected stations.

The study indicates that the proposed operation would increase the service loss to KLRT-DT, Little Rock, Arkansas by 1.58% using the original DTV Plan parameters or 1.44% using the actual KLRT-DT License parameters. The aggregate total interference to KLRT-DT including this proposal is 1.98%, well below the aggregate 10% limit. Hence, no significant increase in service loss would be expected by the proposed DTV operation on channel 30 at El Dorado. Thus, it is believed that the grant of this petition would not materially effect the service of KLRT-DT since the predicted service loss is less than the *de minimus* requirements.

Further, the study indicates that the proposed operation would increase the service loss to WLFT-CA, Baton Rouge, Louisiana, by 0.05%. Hence, no significant increase in service loss would be expected by the proposed operation on channel 30 at El Dorado. Thus, it is believed that the grant of this petition would not materially effect the service of WLFT-CA since the predicted service loss is less than the *de minimus* requirements.

In addition to meeting the interference criteria, a DTV facility constructed on channel *30 at the reference coordinates would also comply with the principal city coverage requirements. (A map showing the contour is included with the interference study as exhibit 3).

Environmental Considerations

Under section 1.1306 of the Commission rules, an environmental impact assessment is not required for this request. The proposal does not specify a location in a designated wilderness area, a wildlife preserve, areas of critical habitats, historic district, Indian religious site, or flood plain, and will not involve significant change in surface features. Additionally, the tower is an existing structure.

The proposed operation was evaluated for human exposure to radiofrequency (RF) energy using the procedures outlined in the Commission's OET Bulletin 65. The proposed antenna will be installed such that its center of radiation is approximately 530 meters above the ground level. An ERP of 1,000 kilowatts, horizontally polarized, will be employed. An analysis was conducted using the elevation pattern data provided by the antenna manufacturer. The analysis was conducted using formulas from FCC Bulletin OET-65. The analysis indicated that the power density at the base of the tower (2 meters above ground) are well below the maximum permissible exposure limits for the "uncontrolled/general population" limits. At locations away from the base of the tower and building the calculated power density is even lower, due to the increasing distance away from the antenna.

Additionally, the applicant will restrict access to the tower and building areas to prevent unauthorized personnel from accessing the antenna. Further, the applicant will conduct measurements of RF Exposure levels following construction to ensure compliance with applicable RFR standards. The applicant will also develop an RF exposure safety program for all workers that will be accessing the site. Any time workers will be working on the tower the applicant will cease operations of the transmitters.

Based upon the preceding, it is believed that this instant proposal may be categorically excluded from environmental processing under Section 1.1306 of the Commission's Rules therefore preparation of an Environmental Assessment is not required.

Conclusion

Digital Television Channel *30 can be operated at El Dorado, Arkansas for DTV Service while complying with the Commission's service and interference requirements with the following parameters:

Channel:	30
Reference Coordinates:	33-04-41 N, 92-13-41 W
Antenna Height (RCAGL)	530 Meters
Antenna Height (RCAMSL)	569 Meters
Maximum ERP	1,000 KW

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ENGINEERING STATEMENT
KETZ

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El Dorado, AR.

Antenna Pattern:	Directional Per Exhibit 2
Tower Registration Number:	1039950
Facility ID:	92872

Certification

This statement with associated exhibits was prepared by me or under my direction. All assertions in this statement are true of my own personal knowledge except where otherwise indicated and these latter assertions are based on information from sources known reliable and believed to be true.

Submitted this 20th day of May, 2004.

By: _____
Dennis Wallace
Wallace & Associates

INTERFERENCE STUDY REPORT
Proposed Use of Channel 30 DTV
at
KETZ
EL DORADO, ARKANSAS
CHANNEL 30

May 20, 2004

Prepared By:



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WALLACE & ASSOCIATES

ENGINEERING STATEMENT
KETZ-DT

2
El Dorado, AR.

Proposed Parameters:

It is proposed to use DTV Channel 12 at El Dorado, Arkansas as follows:

Channel:	30
Reference Coordinates:	33-04-41 N 92-13-41W
Antenna Height (RCAGL)	530 Meters
Antenna Height (RCAMSL)	569 Meters
Maximum ERP	1,000 KW
Antenna Pattern:	Directional Per Exhibit 2
Tower Registration Number:	1039950
Facility ID:	92872

Channel Study:

A detailed analysis was undertaken to determine the interference that would result from a DTV facility operating on channel 30 at El Dorado, Arkansas using TechWare software, which utilizes the parameters and methods in OET Bulletin 69. The results of these studies with respect to interference, based on the use of the parameters listed above are summarized in Table 1. Interference to all NTSC and DTV stations meet the Commission's *de minimus* interference requirements.

TechWare Study TABLE 1

Proposed Station:

Channel	Call	City/State
30 (DTV)	KETZ	EL DORADO AR

ERP: 1,000 kW HAAT: 538 m RCAMSL: 569 m

Antenna: Directional

(Dielectric Slotted Coaxial P230 rotated 90 degrees)

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	App. Ref. No.	Percent New IX
22	KMNO-LP	MONROE LA	64.0	CP	BPTTA-20040323AAB	0.00%
22	KMNO-LP	MONROE LA	64.0	LIC	BLTTL-19910520IV	0.00%
23	KLMB-LP	EL DORADO AR	42.1	LIC	BLTTL-19990329JC	0.00%
29	WMPN-TV	JACKSON MS	197.0	CP MOD	BMPET-20000107ABT	0.00%
29	WMPN-TV	JACKSON MS	197.0	LIC	BLET-20001227AAE	0.00%
30	KLRT-TV	LITTLE ROCK AR	192.8	LIC	BLCDDT-20020507AAK	1.44%
30	KLRT-DT	LITTLE ROCK AR	192.8	PLN	DTVPLN-DTVP0775	1.58%
30	WLFT-CA	BATON ROUGE LA	319.7	CP	BPTTA-20030306AAY	0.05%
30	WLFT-CA	BATON ROUGE LA	319.7	APP	BPTTA-20030903ABG	0.00%
30	KVHP	LAKE CHARLES LA	335.0	CP	BPCDDT-19990714LD	0.00%
30	KVHP-DT	LAKE CHARLES LA	335.0	PLN	DTVPLN-DTVP0789	0.00%
30	WWL-DT	NEW ORLEANS LA	409.0	PLN	DTVPLN-DTVP0790	0.00%
30	WGBC	MERIDIAN MS	341.6	LIC	BLCT-19910923KF	0.00%
30	WLMT	MEMPHIS TN	332.3	LIC	BLCT-19991202AAW	0.00%
31	KLAX-TV	ALEXANDRIA LA	170.9	LIC	BLCT-19890705KG	0.00%

The interference values are based upon the use of a directional antenna pattern with the relative field values listed in Exhibit 2.

From the above table, it can be seen that implementation of channel 30 for DTV service at El Dorado, Arkansas as proposed would comply with the Commission's *de minimus* interference requirements. It is also noted that none of the above listed stations would exceed the 10% maximum aggregate interference limit.

Exhibit 3 shows the proposed coverage area of the facility and demonstrates that the proposed facility meets the City Grade contour for DTV operation on Channel 30.



Date **20 May 2004**
Call Letters **KETZ** Channel **30**
Location **El Dorado, Arkansas**
Customer **AETN**
Antenna Type **TFU-22DSC-R P230**

TABULATION OF AZIMUTH PATTERNAzimuth Pattern Drawing # **TFU-P230**

Angle	Field	ERP (kW)	ERP (dBk)
0	0.566	320.4	25.06
10	0.542	293.8	24.68
20	0.482	232.3	23.66
30	0.418	174.7	22.42
40	0.417	173.9	22.40
50	0.520	270.4	24.32
60	0.683	466.5	26.69
70	0.844	712.3	28.53
80	0.959	919.7	29.64
90	1.000	1000.0	30.00
100	0.959	919.7	29.64
110	0.844	712.3	28.53
120	0.683	466.5	26.69
130	0.520	270.4	24.32
140	0.417	173.9	22.40
150	0.418	174.7	22.42
160	0.482	232.3	23.66
170	0.542	293.8	24.68
180	0.566	320.4	25.06
190	0.542	293.8	24.68
200	0.482	232.3	23.66
210	0.418	174.7	22.42
220	0.417	173.9	22.40
230	0.520	270.4	24.32
240	0.683	466.5	26.69
250	0.844	712.3	28.53
260	0.959	919.7	29.64
270	1.000	1000.0	30.00
280	0.959	919.7	29.64
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300	0.683	466.5	26.69
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320	0.417	173.9	22.40
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Maxima

Angle	Field	ERP (kW)	ERP (dBk)
0	0.566	320.4	25.06
90	1.000	1000.0	30.00
180	0.566	320.4	25.06
270	1.000	1000.0	30.00

Minima

Angle	Field	ERP (kW)	ERP (dBk)
35	0.405	164.0	22.15
145	0.405	164.0	22.15
215	0.405	164.0	22.15
325	0.405	164.0	22.15

Remarks: Proposed KETZ DTV on Channel 30

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ENGINEERING STATEMENT
KETZ-DT

4
El Dorado, AR.

Certification

This statement with associated exhibits was prepared by my or under my direction. All assertions in the statement are true of my own knowledge except where otherwise indicated and these latter assertions are based on information from sources known to be reliable and are believed to be true.

Submitted this 20th day of May, 2004.

By: _____
Dennis Wallace
Wallace & Associates

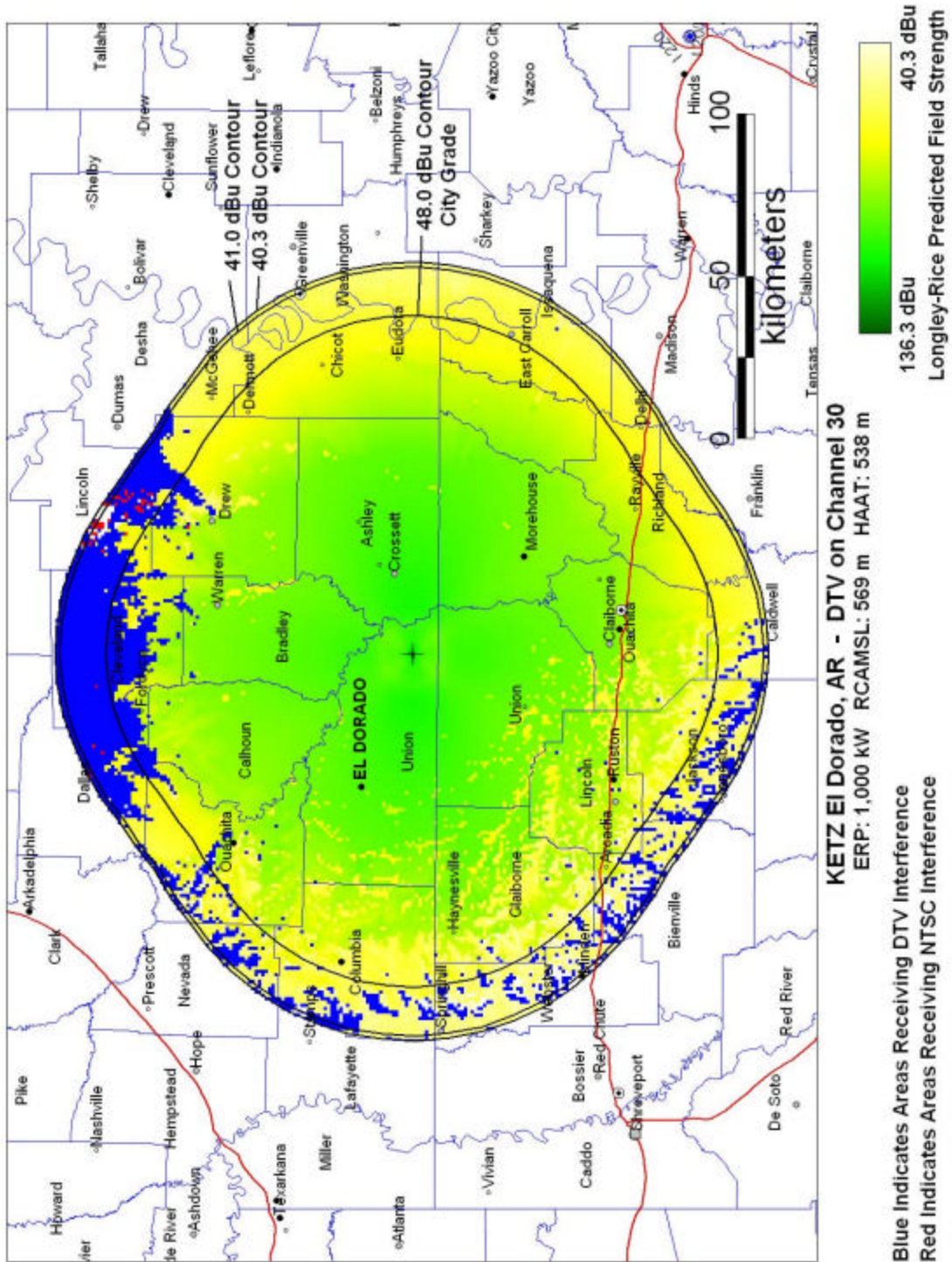


EXHIBIT 3



Exhibit No.

1

Date

20 May 2004

Call Letters

KETZ

Channel

30

Location

El Dorado, Arkansas

Customer

AETN

Antenna Type

TFU-22DSC-R P230

AZIMUTH PATTERN

Gain

2.30 (3.62 dB)

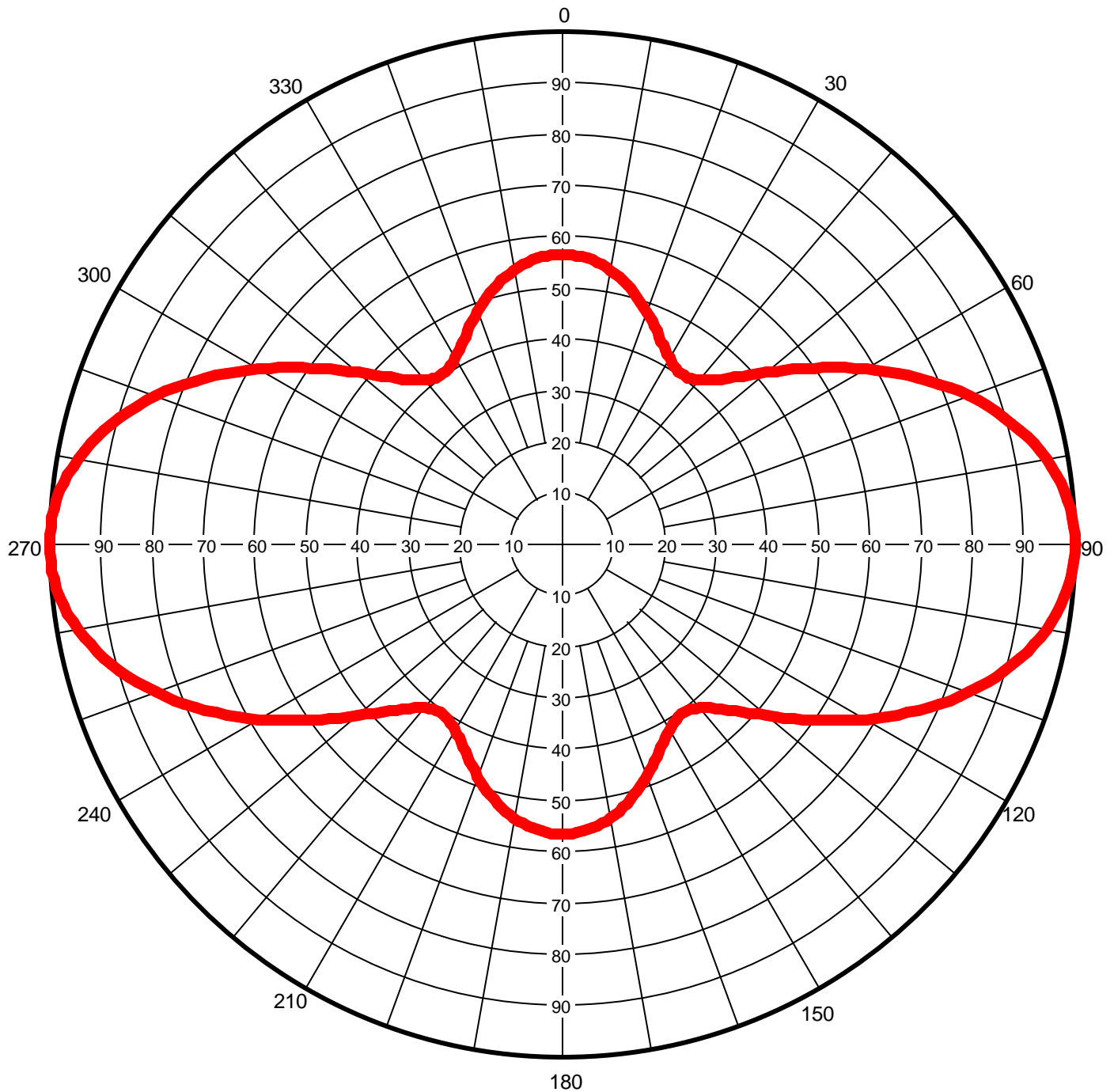
Frequency

569 MHz

Calculated / Measured

Calculated

Drawing #

TFU-P230

Remarks:

Proposed KETZ DTV on Channel 30



Exhibit No.

2

Date **20 May 2004**
 Call Letters **KETZ** Channel **30**
 Location **El Dorado, Arkansas**
 Customer **AETN**
 Antenna Type **TFU-22DSC-R P230**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TFU-P230**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.566	45	0.457	90	1.000	135	0.457	180	0.566	225	0.457	270	1.000	315	0.457
1	0.565	46	0.468	91	1.000	136	0.447	181	0.565	226	0.468	271	1.000	316	0.447
2	0.565	47	0.480	92	0.998	137	0.438	182	0.565	227	0.480	272	0.998	317	0.438
3	0.563	48	0.493	93	0.996	138	0.430	183	0.563	228	0.493	273	0.996	318	0.430
4	0.562	49	0.506	94	0.993	139	0.423	184	0.562	229	0.506	274	0.993	319	0.423
5	0.560	50	0.520	95	0.990	140	0.417	185	0.560	230	0.520	275	0.990	320	0.417
6	0.557	51	0.535	96	0.985	141	0.413	186	0.557	231	0.535	276	0.985	321	0.413
7	0.554	52	0.550	97	0.980	142	0.409	187	0.554	232	0.550	277	0.980	322	0.409
8	0.551	53	0.566	98	0.973	143	0.407	188	0.551	233	0.566	278	0.973	323	0.407
9	0.547	54	0.582	99	0.967	144	0.406	189	0.547	234	0.582	279	0.967	324	0.406
10	0.542	55	0.599	100	0.959	145	0.405	190	0.542	235	0.599	280	0.959	325	0.405
11	0.538	56	0.615	101	0.950	146	0.406	191	0.538	236	0.615	281	0.950	326	0.406
12	0.533	57	0.632	102	0.941	147	0.408	192	0.533	237	0.632	282	0.941	327	0.408
13	0.527	58	0.649	103	0.931	148	0.411	193	0.527	238	0.649	283	0.931	328	0.411
14	0.522	59	0.666	104	0.921	149	0.414	194	0.522	239	0.666	284	0.921	329	0.414
15	0.516	60	0.683	105	0.909	150	0.418	195	0.516	240	0.683	285	0.909	330	0.418
16	0.509	61	0.700	106	0.898	151	0.423	196	0.509	241	0.700	286	0.898	331	0.423
17	0.503	62	0.717	107	0.885	152	0.428	197	0.503	242	0.717	287	0.885	332	0.428
18	0.496	63	0.734	108	0.872	153	0.434	198	0.496	243	0.734	288	0.872	333	0.434
19	0.489	64	0.751	109	0.858	154	0.440	199	0.489	244	0.751	289	0.858	334	0.440
20	0.482	65	0.767	110	0.844	155	0.447	200	0.482	245	0.767	290	0.844	335	0.447
21	0.475	66	0.783	111	0.830	156	0.454	201	0.475	246	0.783	291	0.830	336	0.454
22	0.468	67	0.799	112	0.815	157	0.461	202	0.468	247	0.799	292	0.815	337	0.461
23	0.461	68	0.815	113	0.799	158	0.468	203	0.461	248	0.815	293	0.799	338	0.468
24	0.454	69	0.830	114	0.783	159	0.475	204	0.454	249	0.830	294	0.783	339	0.475
25	0.447	70	0.844	115	0.767	160	0.482	205	0.447	250	0.844	295	0.767	340	0.482
26	0.440	71	0.858	116	0.751	161	0.489	206	0.440	251	0.858	296	0.751	341	0.489
27	0.434	72	0.872	117	0.734	162	0.496	207	0.434	252	0.872	297	0.734	342	0.496
28	0.428	73	0.885	118	0.717	163	0.503	208	0.428	253	0.885	298	0.717	343	0.503
29	0.423	74	0.898	119	0.700	164	0.509	209	0.423	254	0.898	299	0.700	344	0.509
30	0.418	75	0.909	120	0.683	165	0.516	210	0.418	255	0.909	300	0.683	345	0.516
31	0.414	76	0.921	121	0.666	166	0.522	211	0.414	256	0.921	301	0.666	346	0.522
32	0.411	77	0.931	122	0.649	167	0.527	212	0.411	257	0.931	302	0.649	347	0.527
33	0.408	78	0.941	123	0.632	168	0.533	213	0.408	258	0.941	303	0.632	348	0.533
34	0.406	79	0.950	124	0.615	169	0.538	214	0.406	259	0.950	304	0.615	349	0.538
35	0.405	80	0.959	125	0.599	170	0.542	215	0.405	260	0.959	305	0.599	350	0.542
36	0.406	81	0.967	126	0.582	171	0.547	216	0.406	261	0.967	306	0.582	351	0.547
37	0.407	82	0.973	127	0.566	172	0.551	217	0.407	262	0.973	307	0.566	352	0.551
38	0.409	83	0.980	128	0.550	173	0.554	218	0.409	263	0.980	308	0.550	353	0.554
39	0.413	84	0.985	129	0.535	174	0.557	219	0.413	264	0.985	309	0.535	354	0.557
40	0.417	85	0.990	130	0.520	175	0.560	220	0.417	265	0.990	310	0.520	355	0.560
41	0.423	86	0.993	131	0.506	176	0.562	221	0.423	266	0.993	311	0.506	356	0.562
42	0.430	87	0.996	132	0.493	177	0.563	222	0.430	267	0.996	312	0.493	357	0.563
43	0.438	88	0.998	133	0.480	178	0.565	223	0.438	268	0.998	313	0.480	358	0.565
44	0.447	89	1.000	134	0.468	179	0.565	224	0.447	269	1.000	314	0.468	359	0.565

Remarks: Proposed KETZ DTV on Channel 30



Date **20 May 2004**
Call Letters **KETZ** Channel **30**
Location **El Dorado, Arkansas**
Customer **AETN**
Antenna Type **TFU-22DSC-R P230**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TFU-P230**

Angle	Field	ERP (kW)	ERP (dBk)
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10	0.542	293.8	24.68
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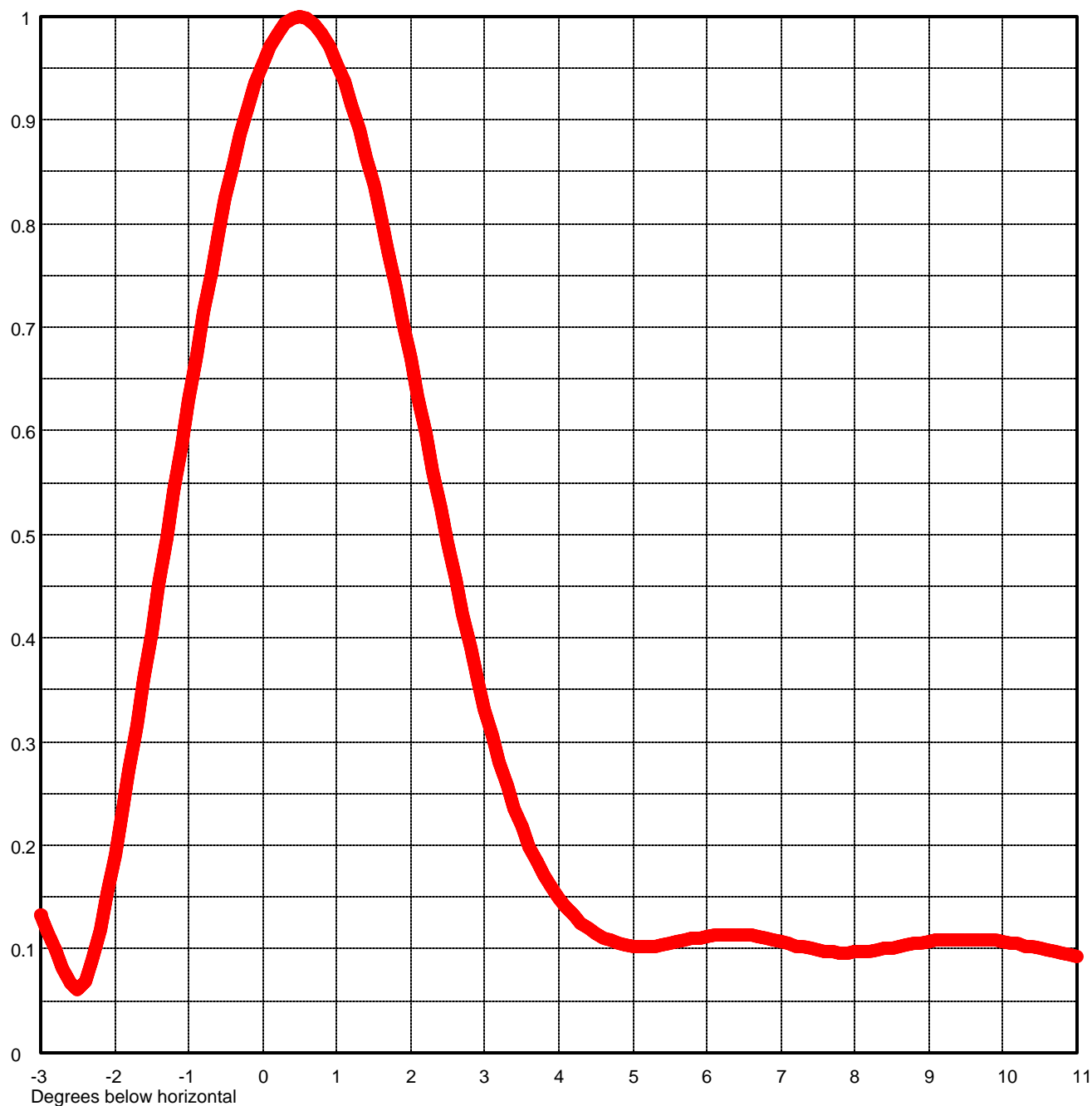
Remarks: Proposed KETZ DTV on Channel 30



Date	20 May 2004		
Call Letters	KETZ	Channel	30
Location	El Dorado, Arkansas		
Customer	AETN		
Antenna Type	TFU-22DSC-R P230		

ELEVATION PATTERN

RMS Gain at Main Lobe	18.5 (12.67 dB)	Beam Tilt	0.50 Degrees
RMS Gain at Horizontal	16.9 (12.28 dB)	Frequency	569.00 MHz
Calculated / Measured	Calculated	Drawing #	22Q185050



Remarks: Proposed DTV at KETZ on Channel 30



Date
Call Letters
Location
Customer
Antenna Type

20 May 2004
KETZ Channel 30
El Dorado, Arkansas
AETN
TFU-22DSC-R P230

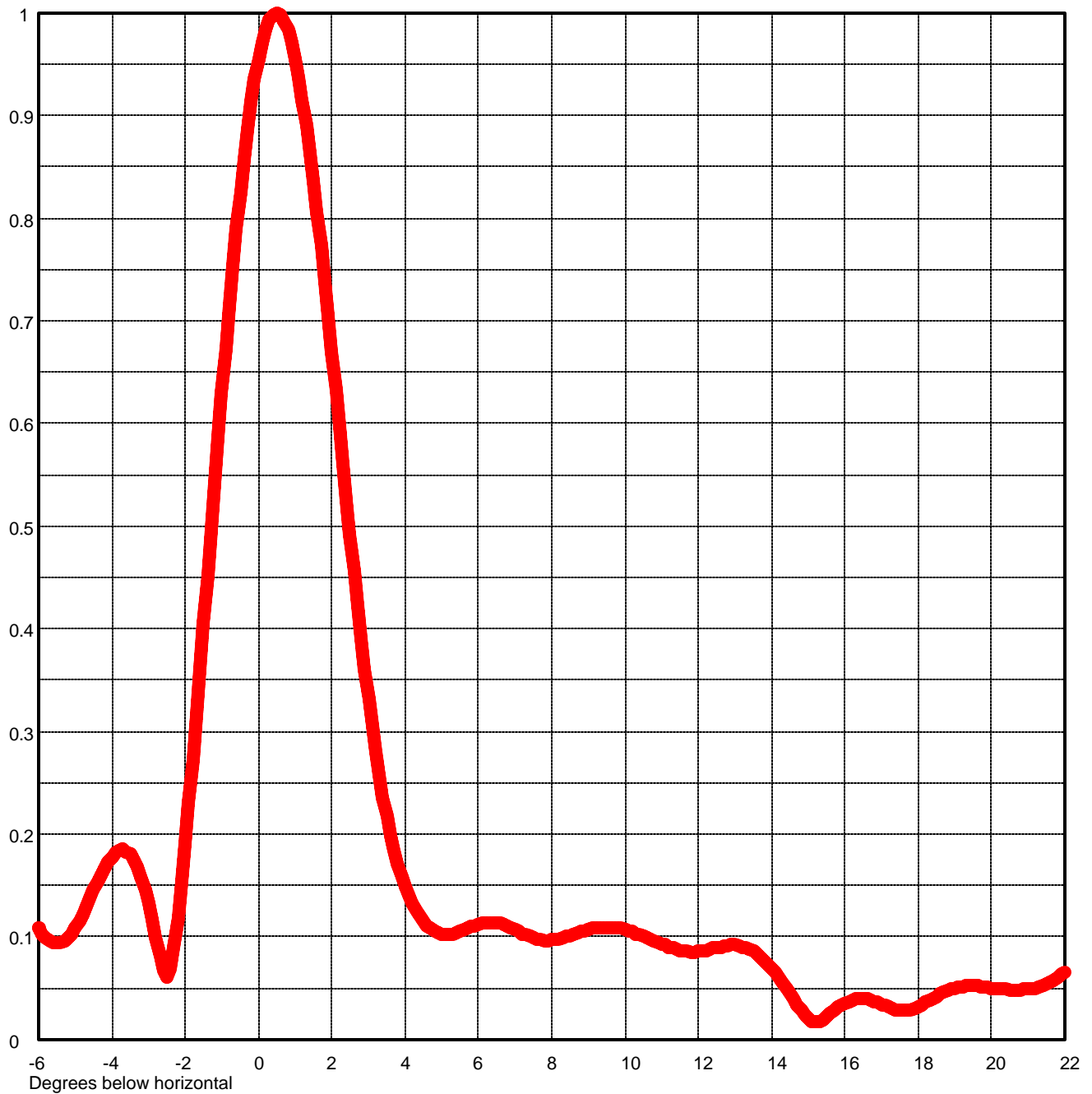
ELEVATION PATTERN

RMS Gain at Main Lobe
RMS Gain at Horizontal
Calculated / Measured

18.5 (12.67 dB)
16.9 (12.28 dB)
Calculated

Beam Tilt
Frequency
Drawing #

0.50 Degrees
569.00 MHz
22Q185050



Remarks: Proposed DTV at KETZ on Channel 30



Date	20 May 2004	
Call Letters	KETZ	Channel 30
Location	El Dorado, Arkansas	
Customer	AETN	
Antenna Type	TFU-22DSC-R P230	

ELEVATION PATTERN

RMS Gain at Main Lobe	18.5 (12.67 dB)	Beam Tilt	0.50 Degrees
RMS Gain at Horizontal	16.9 (12.28 dB)	Frequency	569.00 MHz
Calculated / Measured	Calculated	Drawing #	22Q185050-90



Remarks: Proposed DTV at KETZ on Channel 30



Exhibit No.

7

Date

20 May 2004

Call Letters

KETZ

Channel

30

Location

El Dorado, Arkansas

Customer

AETN

Antenna Type

TFU-22DSC-R P230

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #

22Q185050-90

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.173	2.4	0.526	10.6	0.099	30.5	0.071	51.0	0.049	71.5	0.023
-9.5	0.215	2.6	0.456	10.8	0.096	31.0	0.061	51.5	0.048	72.0	0.017
-9.0	0.250	2.8	0.391	11.0	0.093	31.5	0.045	52.0	0.046	72.5	0.012
-8.5	0.266	3.0	0.332	11.5	0.087	32.0	0.030	52.5	0.045	73.0	0.010
-8.0	0.259	3.2	0.280	12.0	0.086	32.5	0.020	53.0	0.045	73.5	0.012
-7.5	0.229	3.4	0.236	12.5	0.089	33.0	0.019	53.5	0.046	74.0	0.016
-7.0	0.185	3.6	0.199	13.0	0.092	33.5	0.022	54.0	0.050	74.5	0.022
-6.5	0.141	3.8	0.171	13.5	0.086	34.0	0.027	54.5	0.055	75.0	0.028
-6.0	0.108	4.0	0.148	14.0	0.069	34.5	0.037	55.0	0.062	75.5	0.033
-5.5	0.094	4.2	0.132	14.5	0.045	35.0	0.051	55.5	0.071	76.0	0.037
-5.0	0.109	4.4	0.120	15.0	0.021	35.5	0.066	56.0	0.080	76.5	0.041
-4.5	0.145	4.6	0.111	15.5	0.022	36.0	0.079	56.5	0.088	77.0	0.045
-4.0	0.178	4.8	0.105	16.0	0.035	36.5	0.087	57.0	0.095	77.5	0.047
-3.5	0.180	5.0	0.103	16.5	0.039	37.0	0.090	57.5	0.100	78.0	0.049
-3.0	0.132	5.2	0.102	17.0	0.034	37.5	0.088	58.0	0.103	78.5	0.050
-2.8	0.099	5.4	0.104	17.5	0.028	38.0	0.084	58.5	0.102	79.0	0.051
-2.6	0.067	5.6	0.107	18.0	0.032	38.5	0.078	59.0	0.099	79.5	0.050
-2.4	0.069	5.8	0.110	18.5	0.042	39.0	0.074	59.5	0.094	80.0	0.050
-2.2	0.119	6.0	0.112	19.0	0.050	39.5	0.073	60.0	0.087	80.5	0.048
-2.0	0.191	6.2	0.114	19.5	0.052	40.0	0.075	60.5	0.079	81.0	0.046
-1.8	0.272	6.4	0.114	20.0	0.050	40.5	0.079	61.0	0.070	81.5	0.044
-1.6	0.360	6.6	0.113	20.5	0.048	41.0	0.085	61.5	0.061	82.0	0.042
-1.4	0.451	6.8	0.110	21.0	0.049	41.5	0.090	62.0	0.052	82.5	0.039
-1.2	0.541	7.0	0.107	21.5	0.054	42.0	0.092	62.5	0.044	83.0	0.036
-1.0	0.630	7.2	0.103	22.0	0.065	42.5	0.090	63.0	0.038	83.5	0.033
-0.8	0.714	7.4	0.100	22.5	0.083	43.0	0.084	63.5	0.033	84.0	0.030
-0.6	0.790	7.6	0.098	23.0	0.102	43.5	0.073	64.0	0.029	84.5	0.027
-0.4	0.857	7.8	0.096	23.5	0.118	44.0	0.058	64.5	0.027	85.0	0.023
-0.2	0.913	8.0	0.097	24.0	0.125	44.5	0.043	65.0	0.026	85.5	0.020
0.0	0.955	8.2	0.098	24.5	0.120	45.0	0.027	65.5	0.027	86.0	0.017
0.2	0.984	8.4	0.100	25.0	0.104	45.5	0.014	66.0	0.029	86.5	0.014
0.4	0.998	8.6	0.103	25.5	0.081	46.0	0.005	66.5	0.032	87.0	0.011
0.6	0.998	8.8	0.105	26.0	0.057	46.5	0.006	67.0	0.034	87.5	0.009
0.8	0.983	9.0	0.107	26.5	0.039	47.0	0.011	67.5	0.037	88.0	0.006
1.0	0.955	9.2	0.108	27.0	0.031	47.5	0.016	68.0	0.039	88.5	0.004
1.2	0.915	9.4	0.109	27.5	0.030	48.0	0.022	68.5	0.040	89.0	0.002
1.4	0.864	9.6	0.109	28.0	0.035	48.5	0.029	69.0	0.040	89.5	0.001
1.6	0.805	9.8	0.108	28.5	0.044	49.0	0.036	69.5	0.038	90.0	0.000
1.8	0.739	10.0	0.107	29.0	0.057	49.5	0.042	70.0	0.036		
2.0	0.669	10.2	0.105	29.5	0.069	50.0	0.046	70.5	0.032		
2.2	0.597	10.4	0.102	30.0	0.074	50.5	0.048	71.0	0.028		

Remarks:

Proposed DTV at KETZ on Channel 30



SYSTEM SUMMARY

Antenna:

Type:	TFU-22DSC-R P230	ERP:	1000 kW	H Pol (30.00 dBk)
Channel:	30	Peak Gain*:	42.6	(16.29 dB)
Location:	El Dorado, Arkansas	Input Power:	23.47 kW	(13.71 dBk)

Transmission Line:

Type:	Digitline TL	Attenuation:	2.24 dB
Size:	6" 50 ohm	Efficiency:	59.7%
Length	1800 ft	549 m	

Transmitter:

Average Power Required: 39.32 kW (15.95 dBk)

* Gain is with respect to half wave dipole.



MECHANICAL SPECIFICATIONS

Antenna:

Type: **TFU-22DSC-R P230**
Channel: **30**
Location: **El Dorado, Arkansas**

Antenna Length (H2): **43.5 ft**

Center of Radiation (H3): **21.8 ft**