



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

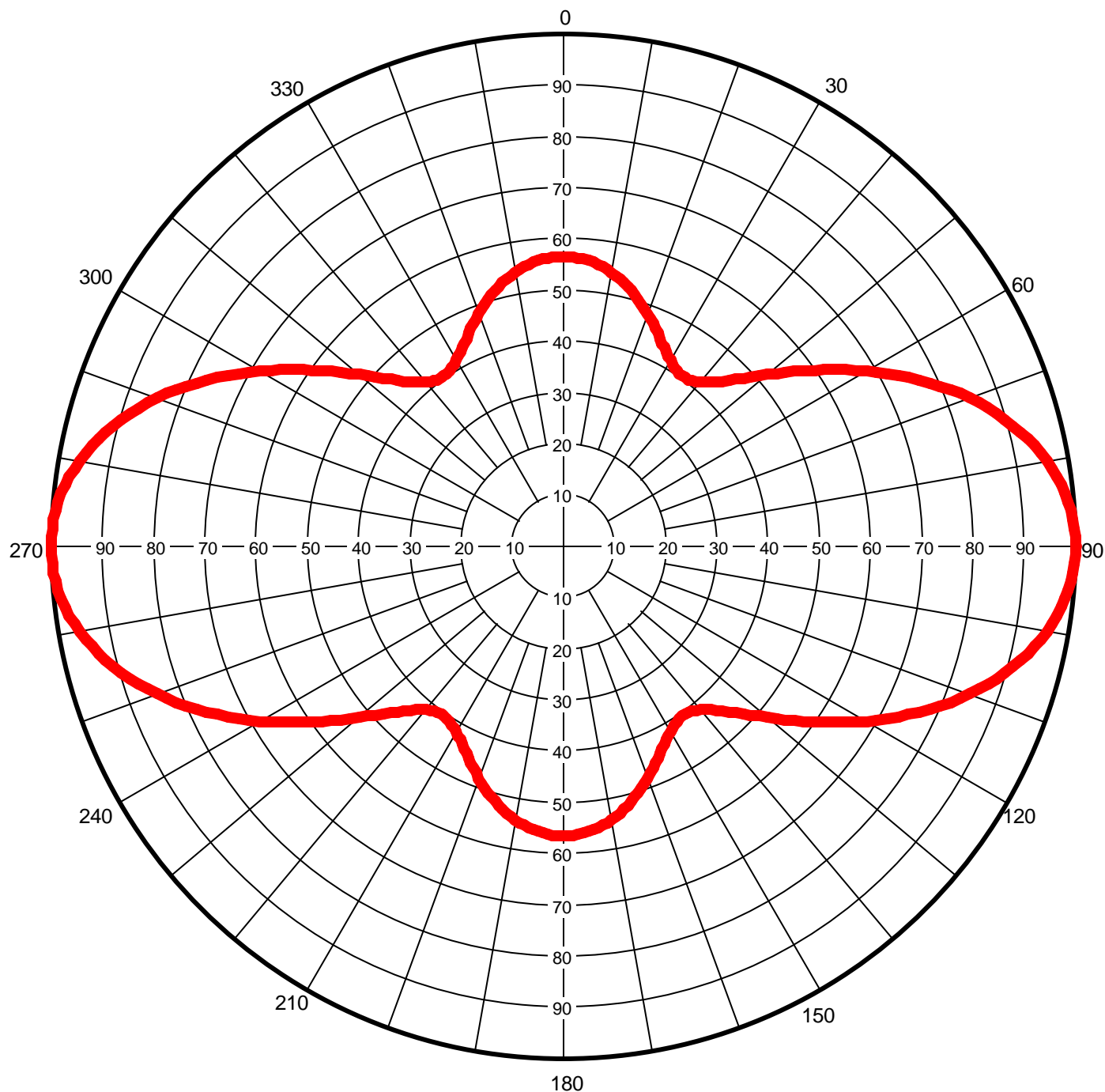
AZIMUTH PATTERN

Gain
Calculated / Measured

2.30 (3.62 dB)
Calculated

Frequency
Drawing #

569 MHz
TFU-P230



Remarks: Proposed KETZ DTV on Channel 30



Exhibit No.
Exhibit 33

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
Call Letters
Location
Customer
Antenna Type

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

Channel
30

TABULATION OF AZIMUTH PATTERN

Azimuth 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
290	0.844	712.3	28.53
300	0.683	466.5	26.69
310	0.520	270.4	24.32
320	0.417	173.9	22.40
330	0.418	174.7	22.42
340	0.482	232.3	23.66
350	0.542	293.8	24.68

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:

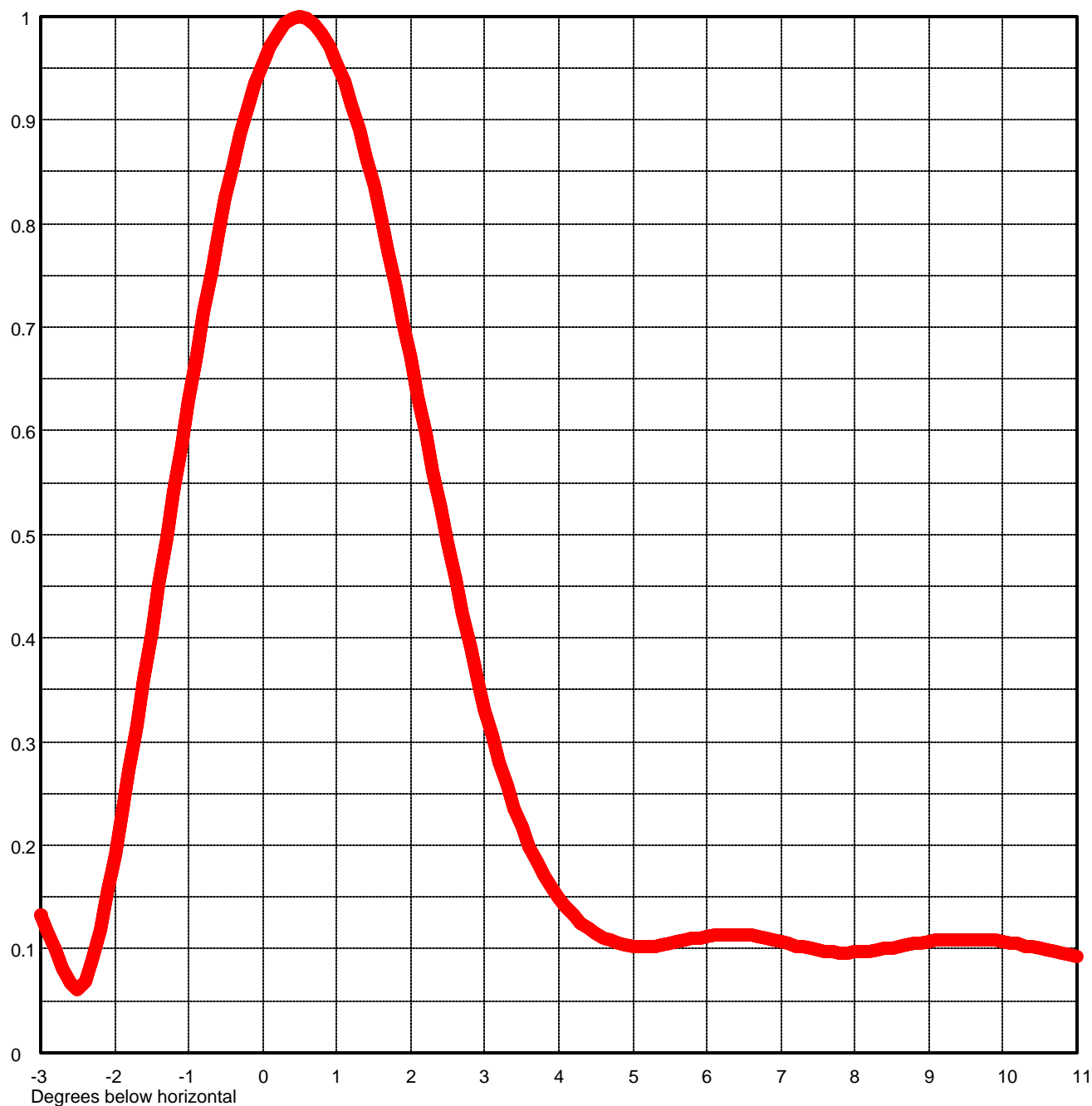
Proposed KETZ DTV on Channel 30



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



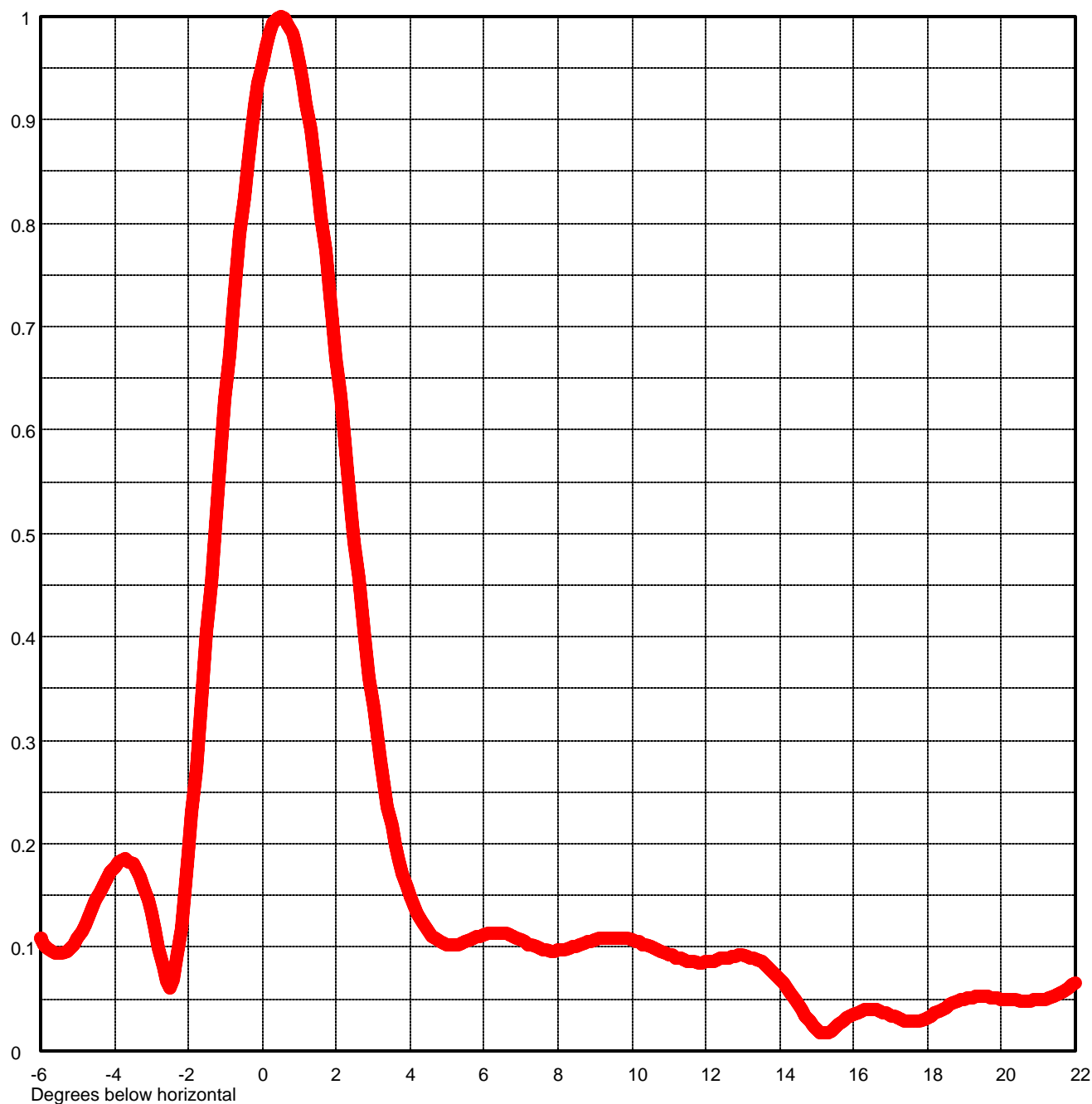
Remarks: Proposed KETZ DTV Channel 30



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 KETZ DTV Channel 30



Exhibit No.
Exhibit 33

Date
Call Letters
Location
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Antenna Type

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

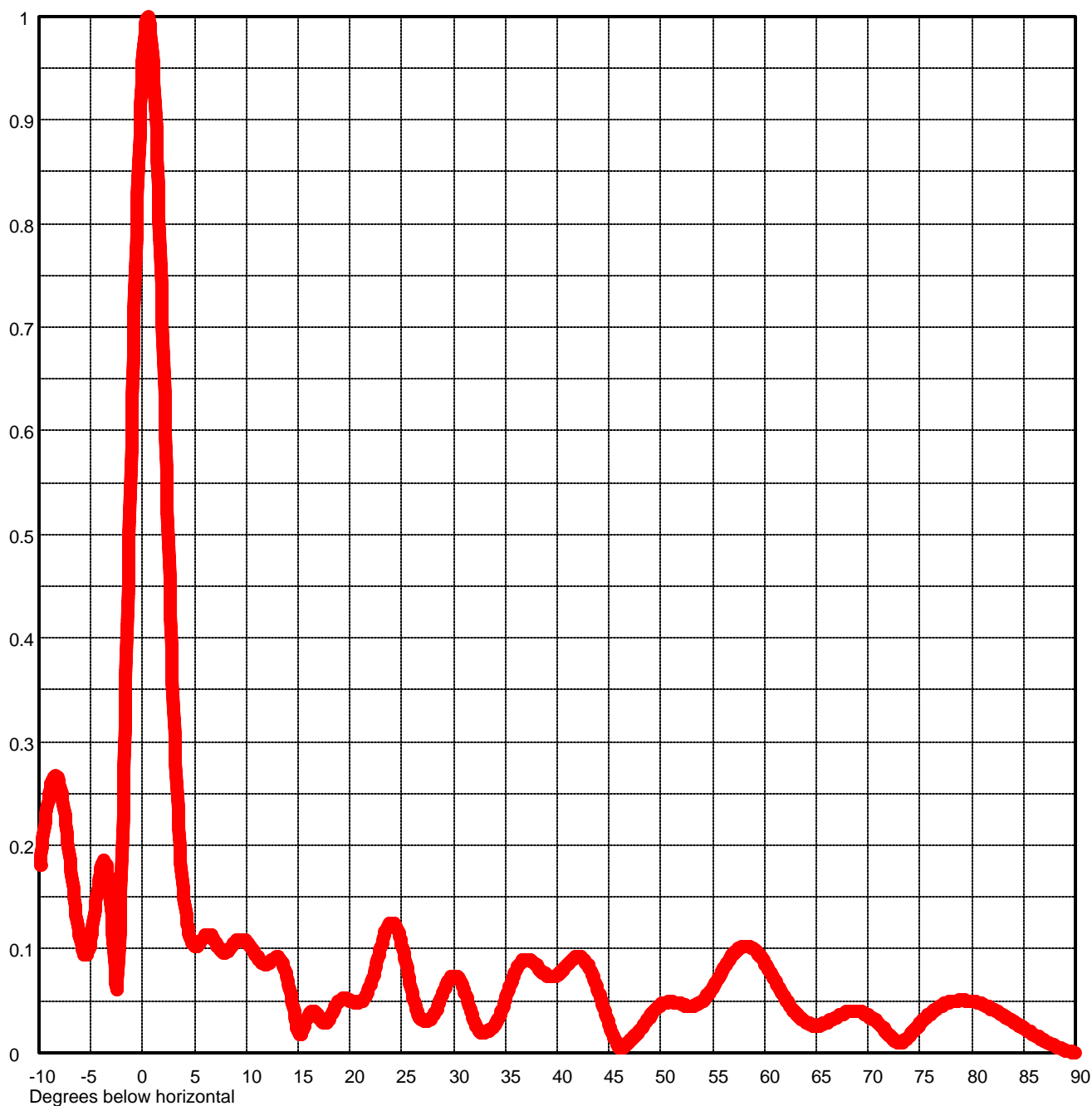
ELEVATION PATTERN

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
22Q185050-90



Remarks: Proposed KETZ DTV Channel 30



Exhibit No.
Exhibit 33

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 KETZ DTV Channel 30



SYSTEM SUMMARY

Antenna:

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

H Pol

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**