



**STATEMENT OF JOHN E. HIDLE, P.E.
IN SUPPORT OF AN
APPLICATION TO AMEND A PENDING
APPLICATION FOR CONSTRUCTION PERMIT
BPCDT-19991029AFM
WBNX-DT - AKRON, OHIO
DTV - CH. 30 - 1000.0 kW - 334.0 m HAAT**

Prepared for: Winston Broadcasting Network, Inc.

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a registered Professional Engineer in the Commonwealth of Virginia, Registration No. 7418, and in the State of New York, Registration No. 63418.

GENERAL

This office has been authorized by Winston Broadcasting Network, Inc., licensee of WBNX-TV, channel 55, Akron, Ohio, and applicant of paired DTV allotment WBNX-DT, channel 30, to prepare this statement, FCC Form 301, Sections III and III-D, and the associated exhibits in support of an application to amend its pending application for construction permit, BPCDT-19991029AFM, to specify a modified antenna pattern. It is proposed herein to alter the antenna patterns as specified in the pending application in order to obtain compliance with contour overlap restrictions set forth in an FCC letter to the applicant dated December 18, 2003.

The applicant has previously submitted Longley-Rice analyses prepared using tv_process, the Commission's application processing program, however, these analyses

have apparently been rejected by Industry Canada, presumably because tv_process first determines areas predicted to receive interference, then does not take into account predicted DTV interference to those areas which already suffer interference from existing, authorized and proposed NTSC and DTV facilities (the masking effect). The applicant must therefore resolve the conflict by reducing contour overlap to less than, or equal to, that which results from WBNX-DT's original allotment facilities.

PROPOSED DIRECTIONAL ANTENNA

The applicant proposes to install a new antenna, a Dielectric TFU-30DSC-R P270BNT custom directional transmitting antenna which is to be mounted on the support structure directly beneath the licensed WBNX-TV antenna. A Vertical Plan Antenna Sketch showing various elevations at WBNX-TV's licensed site is provided in Exhibit 1. The antenna manufacturer's horizontal plane azimuth radiation pattern, illustrating the proposed antenna's horizontal plane directional azimuth pattern characteristics is shown in exhibit 2, and tabulated in exhibit 3.

In addition, and in accordance with §73.622(f)(4) of the Commission's rules, the proposed directional transmitting antenna shall employ an electrical beam tilt of 1.50 degrees below the horizontal plane, and an additional mechanical beam tilt of 0.8 degrees below the horizontal plane toward azimuth 10 degrees True. The maximum lobe plane azimuth radiation pattern is shown in exhibit 2A and tabulated in exhibit 3A. The vertical plane radiation pattern, illustrating the proposed antenna's radiation characteristics above and below the horizontal plane, due to electrical beam tilt, is shown in exhibit 4A and 4B,

and tabulated in exhibit 5. Additional horizontal plane pattern cuts and tabulations for angles 0.09, 0.29, 0.49, 0.69, 0.89, 1.09, 1.29, 1.49, 1.69, 1.89, 2.09, 2.29 and 2.49 below the horizontal plane, and additional vertical plane patterns and tabulations at pertinent azimuths, illustrating the effects of both electrical and mechanical beam tilt, are included in Appendix B. This application complies with §73.685 If the Commission's rules.

PREDICTED COVERAGE CONTOURS

The predicted coverage contours were calculated in accordance with the method described in Section 73.684 of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), proposed Effective Radiated Power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the National Geophysical Data Center Thirty Second Point Database (TPG-0050) as prescribed in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. Exhibit 6 shows the predicted Noise Limited (41 dBu) contour, and the principal community (48 dBu) contour. The 48 dBu contour completely encompasses the principal community of license, Akron, Ohio.

ALLOCATION CONSIDERATIONS

NTSC Allocation Considerations

An allocation study was performed, using the Commission's application processing software, tv_process, to ensure that the proposed DTV facility will comply with the

Commission's *de minimis* interference criteria in Section 73.623(c)(2). The study revealed that the proposed DTV facility for WBNX-DT satisfies the *de minimis* interference requirements as they apply to all pertinent authorized NTSC facilities, including licenses, construction permits and applicable pending applications.

DTV Allocation Considerations - Domestic

A study was performed to determine if the proposed relocation of WBNX-DT is predicted to cause any level of new prohibited interference to domestic DTV stations, expansion construction permits or DTV allotments. Results of the FCC program "tv-process" indicate that the instant proposal for WBNX-DT is predicted to cause no unacceptable level of new interference to the populations served by any domestic DTV station, expansion construction permit or allotment.

DTV Allocation Considerations - International

The purpose of the instant application is to resolve predicted WBNX-DT interference contour overlap with the service contour of a co-channel DTV allotment in Paris, Ontario, Canada. According to the December 18, 2003 FCC letter, WBNX-DT must eliminate the overlap. It is assumed that any contour overlap which is predicted to exist as a result of WBNX-DT's allotment is acceptable, since WBNX-DT could have submitted a "checklist" application and received a construction permit for its allotted facilities.

The applicant proposes to employ beam tilt in excess of 1.0 degrees, as permitted by §73.622(f)(4), to reduce the radiated power toward the Paris, Ontario co-channel DTV allotment equal to, or less than, WBNX-DT's allotment. As shown in exhibit 7, the

proposed combination of 1.5 degrees electrical and 0.8 degrees mechanical beam tilt serves to reduce the effective radiated power in the horizontal plane toward the Canadian DTV allotment, and to reduce the predicted contour overlap to less than that predicted to result from WBNX-DT's allotment. It is submitted that the instant proposal corrects the contour overlap deficiency outlined in the FCC letter.

Class A Television Allocation Considerations

As required in Section 73.623(c)(5) of the FCC's Rules, protection of class A TV stations, a study using tv_process, based on WBNX-DT's pending application, was performed. The study revealed predicted contour overlap with two class A LPTV stations, WAOH-LP, channel 29, Akron, Ohio, and WRAP-CA, channel 32, Cleveland, Ohio. However, WBNX-DT's pending application predates the creation of the Low Power Class A television service and therefore is not required to provide protection to class A LPTV stations beyond that inherently provided by the pending application. The instant amendment does not seek to extend WBNX-DT's proposed contours in any direction. Finally, the tv_process study shows that the proposal causes no additional interference to either class A facility. However, in accordance with Section 73.623(c)(5)(iii) WBNX-DT requests, in each instance, waiver of Section 73.623(c)(5)(i), if deemed necessary.

BLANKETING AND INTERMODULATION INTERFERENCE

A number of broadcast and non-broadcast facilities are located within 10 km of the proposed WBNX-DT antenna site. The applicant recognizes its responsibility to remedy complaints of interference created by this proposal in accordance with applicable Rules.

ENVIRONMENTAL CONSIDERATIONS

RADIO FREQUENCY IMPACT

Effective October 15, 1997 the FCC adopted new guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions. The guidelines are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986) and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines provide a maximum permissible exposure (MPE) level for occupational or "controlled" situations that apply in cases that affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance in the determination of whether FCC-regulated transmitting facilities, operations or devices comply with guideline limits for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC's policies and guidelines.

The FCC's Maximum Permitted Exposure (MPE) level for "uncontrolled" environments is 0.2 milliwatts per centimeter squared (mW/cm^2) when applied to broadcast facilities operating between 30 MHz and 300 MHz, and for broadcast facilities operating between 300 MHz and 1500 MHz, primarily UHF TV stations, is derived from the formula,

(frequency/1500). The MPE level for "controlled" environments is 1.0 milliwatts per centimeter squared (mW/cm^2) for operations between 30 MHz and 300 MHz, and for broadcast stations operating between 300 MHz and 1500 MHz is derived from the formula, (frequency/300). The predicted emissions of WBNX-DT channel 30 must be considered, along with the predicted emissions from other proposed and existing stations at the proposed site. For WBNX-DT, which operates on television Channel 30 (566-572 MHz), the MPE is 0.379 milliwatts per centimeter squared (mW/cm^2) in an "uncontrolled" environment and 1.90 mW/cm^2 in a "controlled" environment. The proposed WBNX-DT facility will operate with a maximum ERP of 1000 kW from a horizontally polarized directional transmitting antenna with a centerline height of 312.8 meters above ground level (AGL). Considering a very conservative vertical plane relative field factor of 0.3, the WBNX-DT facility is predicted to produce a power density at two meters above ground level of 0.03191 mW/cm^2 , which is 8.19% of the FCC's guideline value for an "uncontrolled" environment, and 1.638% of the FCC's guideline value for "controlled" environments (see Appendix A). The total percentage of the ANSI value at the proposed site, considering the cumulative radiation of all stations within relevant proximity is only 41.85% of the limit for "uncontrolled" environments, and 8.37% of the limit for "controlled" environments.

OCCUPATIONAL SAFETY

The permittee of WBNX-DT is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WBNX-DT antenna. The applicant is committed to reducing power and/or ceasing operation during times of service or

maintenance of the transmission systems, when necessary, to ensure protection to personnel. In light of the above, the proposed WBNX-DT facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

SUMMARY

It is submitted that the instant proposal for construction permit for WBNX-DT as described herein complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission, except possibly for Section 73.623(c)(5)(i), in which case waiver is herein sought, if deemed necessary by the Commission. This statement, FCC Form 301, Sections III and III-D, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: February 19, 2004

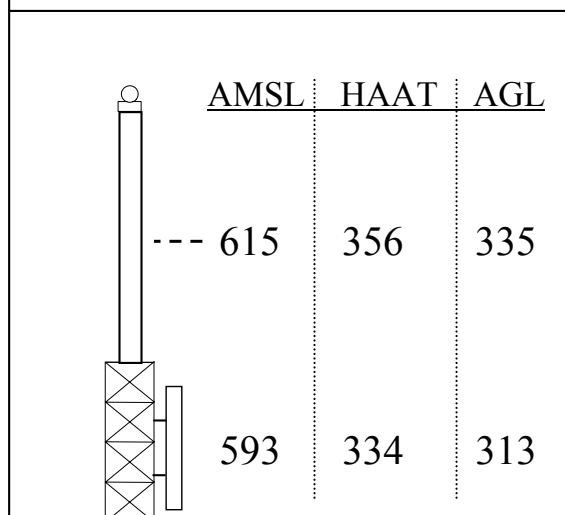

John E. Hidle, P.E.



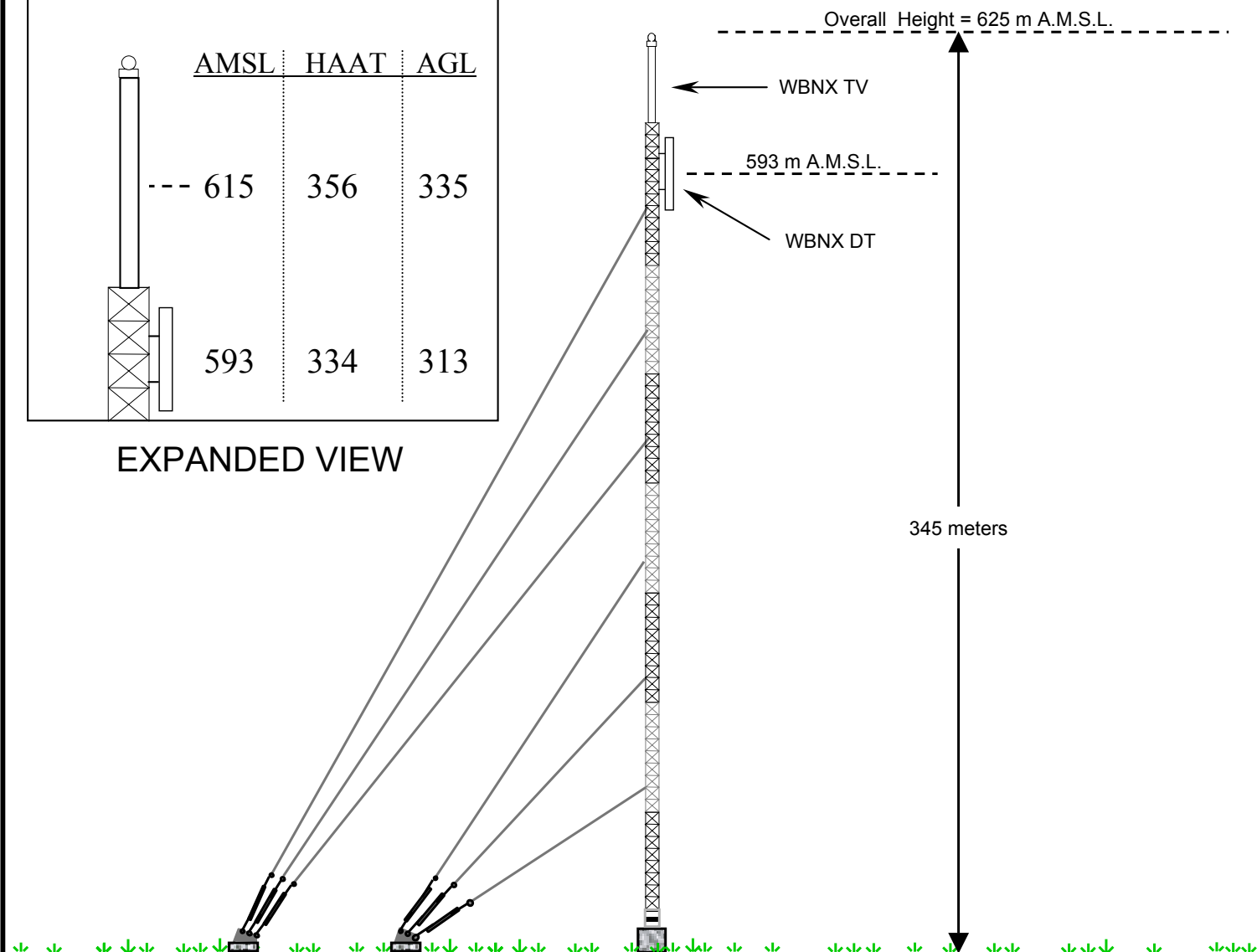
COORDINATES NAD-27

NORTH LATITUDE: 41° 23' 02"

WEST LONGITUDE: 81° 41' 44"

RADIATION CENTERLINE HEIGHT IN METERS

EXPANDED VIEW



GROUND ELEVATION = 280 meters A.M.S.L. / AVERAGE TERRAIN = 259 meters A.M.S.L.

VERTICAL PLAN ANTENNA SKETCH

WBX (DT) - AKRON, OHIO
 Ch. 30 - 1000 kW - 334 m HAAT
 FEBRUARY, 2004

CARL T. JONES
 CORPORATION

NOTE : NOT DRAWN TO SCALE



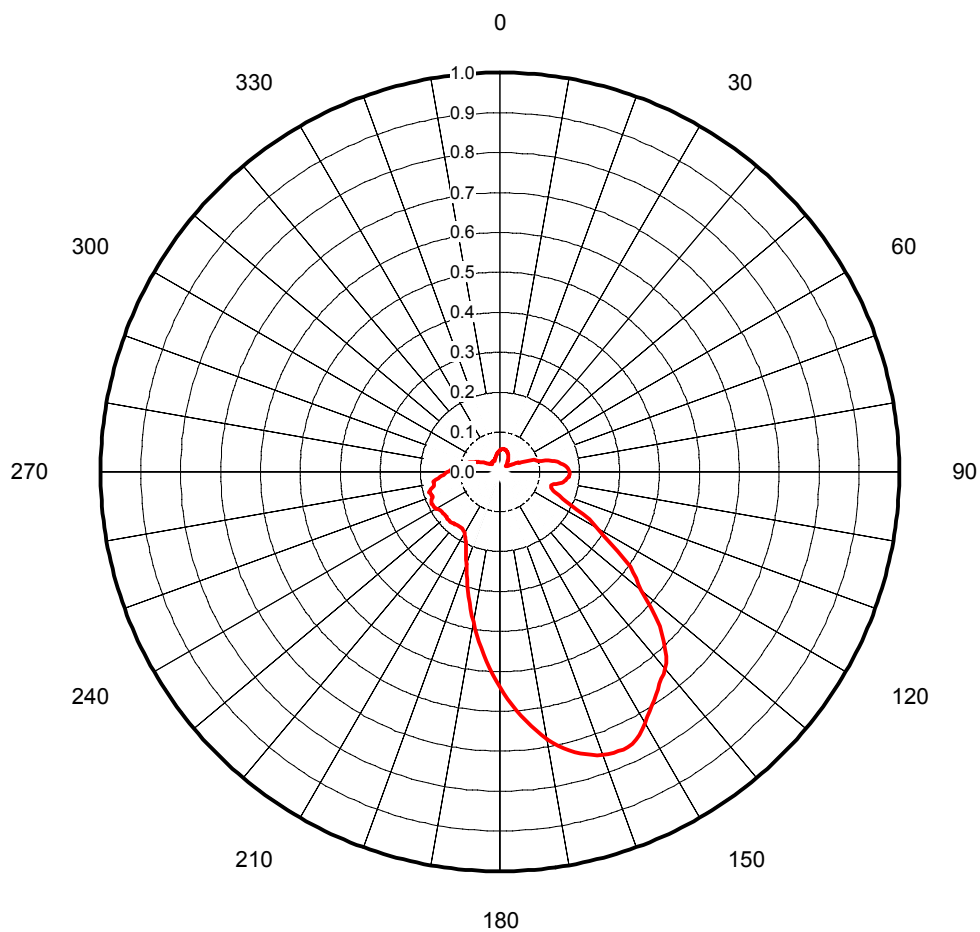
Date	12-Feb-04	Exhibit 2
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

0.00° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Call Letters : WBNX-DT
Channel : 30
Locations : AKRON, OHIO (1000.0 kW, 593 mRCAMSL)
Antenna Type : DIE TFU-30DSC-R P270BNT
(0° DEPRESSION ANGLE)

TABULATION OF AZIMUTH PATTERN

Azimuth (deg T.)	FIELD	ERP (kW)	ERP (dBk)
0°	0.054	2.916	4.65
* 10°	0.058	3.364	5.27
20°	0.053	2.809	4.49
30°	0.041	1.681	2.26
40°	0.028	0.784	-1.06
** 50°	0.022	0.484	-3.15
60°	0.042	1.764	2.46
70°	0.09	8.100	9.08
80°	0.145	21.025	13.23
* 90°	0.174	30.276	14.81
100°	0.157	24.649	13.92
** 110°	0.145	21.025	13.23
120°	0.281	78.961	18.97
130°	0.46	211.600	23.26
140°	0.643	413.449	26.16
150°	0.727	528.529	27.23
* 160°	0.754	568.516	27.55
170°	0.68	462.400	26.65
180°	0.538	289.444	24.62
190°	0.382	145.924	21.64
200°	0.246	60.516	17.82
210°	0.177	31.329	14.96
** 220°	0.172	29.584	14.71
230°	0.175	30.625	14.86
* 240°	0.184	33.856	15.30
250°	0.179	32.041	15.06
260°	0.169	28.561	14.56
270°	0.131	17.161	12.35
280°	0.102	10.404	10.17
290°	0.071	5.041	7.03
300°	0.048	2.304	3.62
310°	0.033	1.089	0.37
** 320°	0.031	0.961	-0.17
330°	0.032	1.024	0.10
340°	0.035	1.225	0.88
350°	0.044	1.936	2.87

* Maxima ** Minima



Proposal Number

DCA-10170

Revision: **2**

Date

9-Feb-04

Exhibit 2A

Call Letters

WBNX-DT

Channel **30**

Location

Akron, OH

Customer

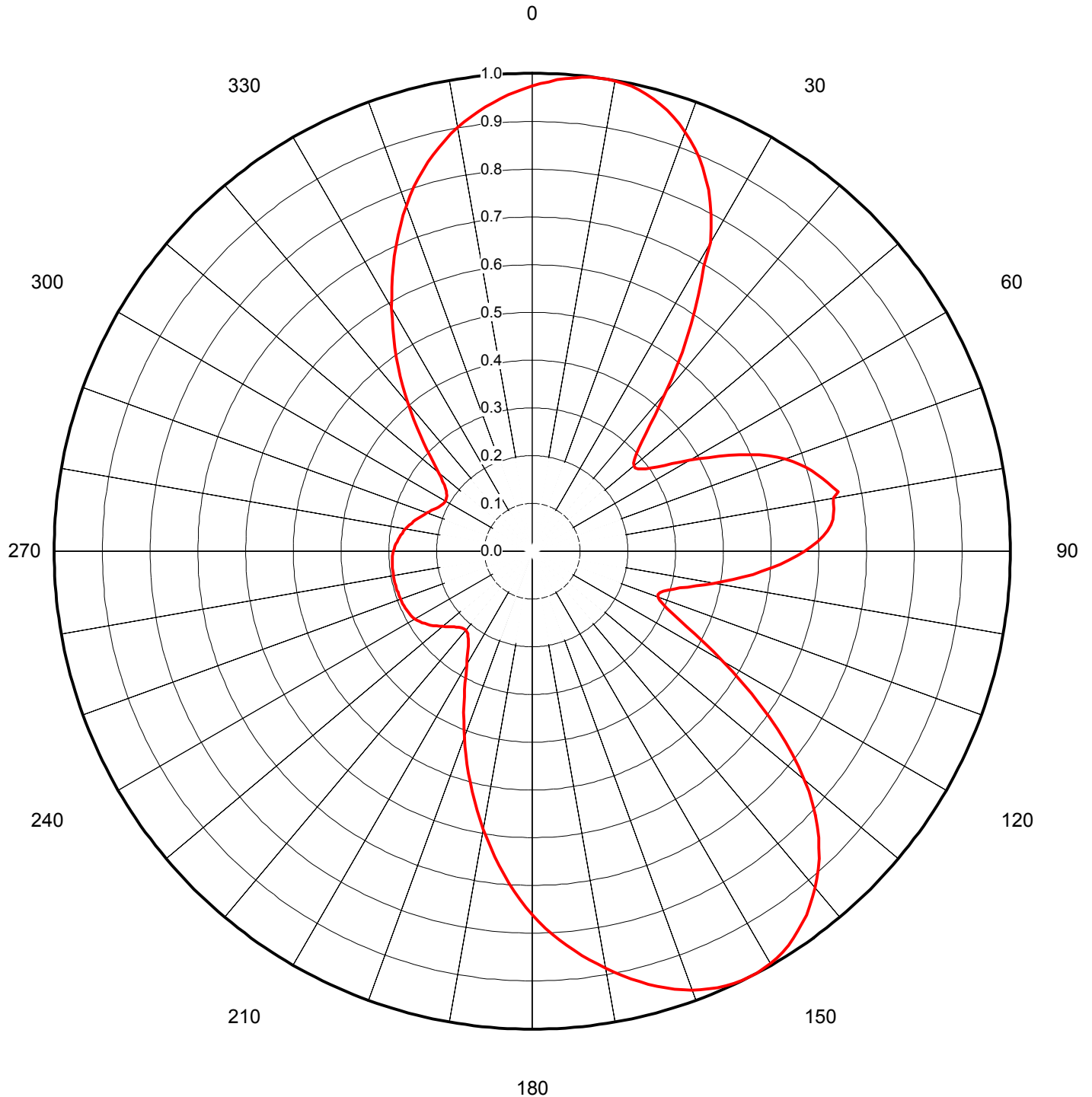
Antenna Type

TFU-30DSC-R P270BNT

AZIMUTH PATTERN

Gain **2.70** **(4.31 dB)**
Calculated / Measured **Calculated**

Frequency **569.00 MHz**
Drawing # **TFU-P270BNT**





Proposal Number **DCA-10170** Revision: **2**
 Date **9-Feb-04** **Exhibit 3A**
 Call Letters **WBNX-DT** Channel **30**
 Location **Akron, OH**
 Customer
 Antenna Type **TFU-30DSC-R P270BNT**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **TFU-P270BNT**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.973	45	0.324	90	0.570	135	0.847	180	0.760	225	0.224	270	0.290	315	0.321
1	0.978	46	0.309	91	0.554	136	0.864	181	0.745	226	0.228	271	0.289	316	0.337
2	0.983	47	0.297	92	0.538	137	0.879	182	0.729	227	0.232	272	0.287	317	0.353
3	0.987	48	0.288	93	0.520	138	0.894	183	0.713	228	0.236	273	0.286	318	0.370
4	0.991	49	0.281	94	0.502	139	0.908	184	0.696	229	0.240	274	0.284	319	0.387
5	0.994	50	0.278	95	0.483	140	0.920	185	0.679	230	0.245	275	0.282	320	0.405
6	0.997	51	0.278	96	0.463	141	0.932	186	0.661	231	0.250	276	0.280	321	0.423
7	0.999	52	0.280	97	0.444	142	0.943	187	0.644	232	0.254	277	0.277	322	0.441
8	1.000	53	0.286	98	0.424	143	0.953	188	0.626	233	0.258	278	0.275	323	0.459
9	1.000	54	0.294	99	0.405	144	0.962	189	0.608	234	0.263	279	0.272	324	0.477
10	0.999	55	0.304	100	0.386	145	0.970	190	0.590	235	0.267	280	0.269	325	0.495
11	0.997	56	0.316	101	0.368	146	0.977	191	0.572	236	0.271	281	0.266	326	0.513
12	0.994	57	0.330	102	0.350	147	0.983	192	0.554	237	0.274	282	0.263	327	0.532
13	0.991	58	0.345	103	0.333	148	0.989	193	0.536	238	0.277	283	0.259	328	0.550
14	0.986	59	0.362	104	0.318	149	0.993	194	0.519	239	0.280	284	0.256	329	0.569
15	0.980	60	0.380	105	0.305	150	0.996	195	0.501	240	0.283	285	0.252	330	0.588
16	0.973	61	0.399	106	0.295	151	0.998	196	0.483	241	0.285	286	0.249	331	0.607
17	0.965	62	0.418	107	0.286	152	1.000	197	0.466	242	0.287	287	0.245	332	0.626
18	0.955	63	0.438	108	0.281	153	1.000	198	0.449	243	0.288	288	0.241	333	0.645
19	0.945	64	0.458	109	0.279	154	0.999	199	0.432	244	0.290	289	0.238	334	0.664
20	0.934	65	0.478	110	0.280	155	0.998	200	0.415	245	0.291	290	0.234	335	0.682
21	0.922	66	0.497	111	0.285	156	0.995	201	0.399	246	0.291	291	0.230	336	0.701
22	0.908	67	0.516	112	0.294	157	0.992	202	0.382	247	0.292	292	0.227	337	0.719
23	0.894	68	0.533	113	0.306	158	0.988	203	0.367	248	0.292	293	0.223	338	0.736
24	0.877	69	0.549	114	0.321	159	0.983	204	0.351	249	0.293	294	0.220	339	0.754
25	0.860	70	0.564	115	0.339	160	0.977	205	0.337	250	0.293	295	0.218	340	0.770
26	0.841	71	0.577	116	0.360	161	0.971	206	0.322	251	0.293	296	0.215	341	0.786
27	0.820	72	0.589	117	0.382	162	0.963	207	0.309	252	0.294	297	0.213	342	0.801
28	0.797	73	0.599	118	0.407	163	0.955	208	0.296	253	0.294	298	0.211	343	0.816
29	0.773	74	0.608	119	0.433	164	0.947	209	0.284	254	0.294	299	0.210	344	0.830
30	0.746	75	0.617	120	0.460	165	0.938	210	0.273	255	0.294	300	0.210	345	0.843
31	0.697	76	0.626	121	0.488	166	0.928	211	0.265	256	0.295	301	0.210	346	0.856
32	0.668	77	0.635	122	0.517	167	0.918	212	0.256	257	0.295	302	0.211	347	0.868
33	0.639	78	0.644	123	0.547	168	0.908	213	0.247	258	0.295	303	0.213	348	0.879
34	0.610	79	0.652	124	0.576	169	0.897	214	0.240	259	0.295	304	0.216	349	0.890
35	0.580	80	0.640	125	0.606	170	0.886	215	0.233	260	0.295	305	0.220	350	0.900
36	0.551	81	0.639	126	0.635	171	0.875	216	0.228	261	0.295	306	0.224	351	0.910
37	0.521	82	0.637	127	0.663	172	0.864	217	0.223	262	0.295	307	0.230	352	0.919
38	0.492	83	0.635	128	0.691	173	0.852	218	0.220	263	0.295	308	0.237	353	0.927
39	0.463	84	0.632	129	0.718	174	0.840	219	0.217	264	0.294	309	0.245	354	0.935
40	0.435	85	0.627	130	0.743	175	0.828	220	0.216	265	0.294	310	0.255	355	0.942
41	0.408	86	0.619	131	0.767	176	0.815	221	0.216	266	0.294	311	0.266	356	0.949
42	0.384	87	0.609	132	0.789	177	0.802	222	0.217	267	0.293	312	0.278	357	0.956
43	0.361	88	0.598	133	0.810	178	0.789	223	0.219	268	0.292	313	0.291	358	0.962
44	0.342	89	0.585	134	0.829	179	0.775	224	0.221	269	0.291	314	0.306	359	0.968

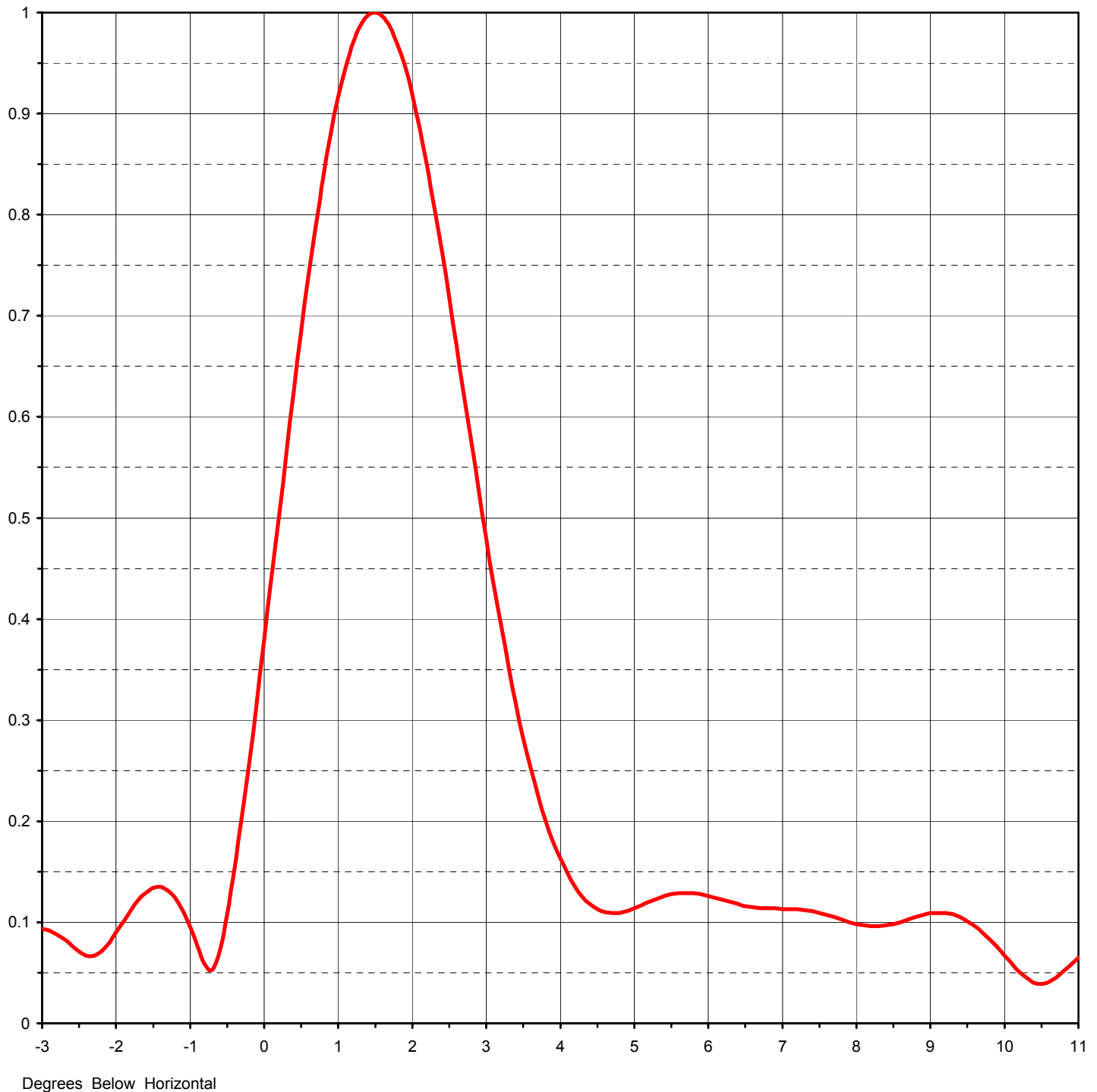


Proposal Number	DCA-10170	Revision:	2
Date	9-Feb-04	Exhibit 4A	
Call Letters	WBNX-DT	Channel	30
Location	Akron, OH		
Customer			
Antenna Type	TFU-30DSC-R P270BNT		

ELEVATION PATTERN

RMS Gain at Main Lobe	24.50 (13.89 dB)
RMS Gain at Horizontal	3.50 (5.44 dB)
Calculated / Measured	Calculated

Beam Tilt	1.50 deg
Frequency	569.00 MHz
Drawing #	30Q245150



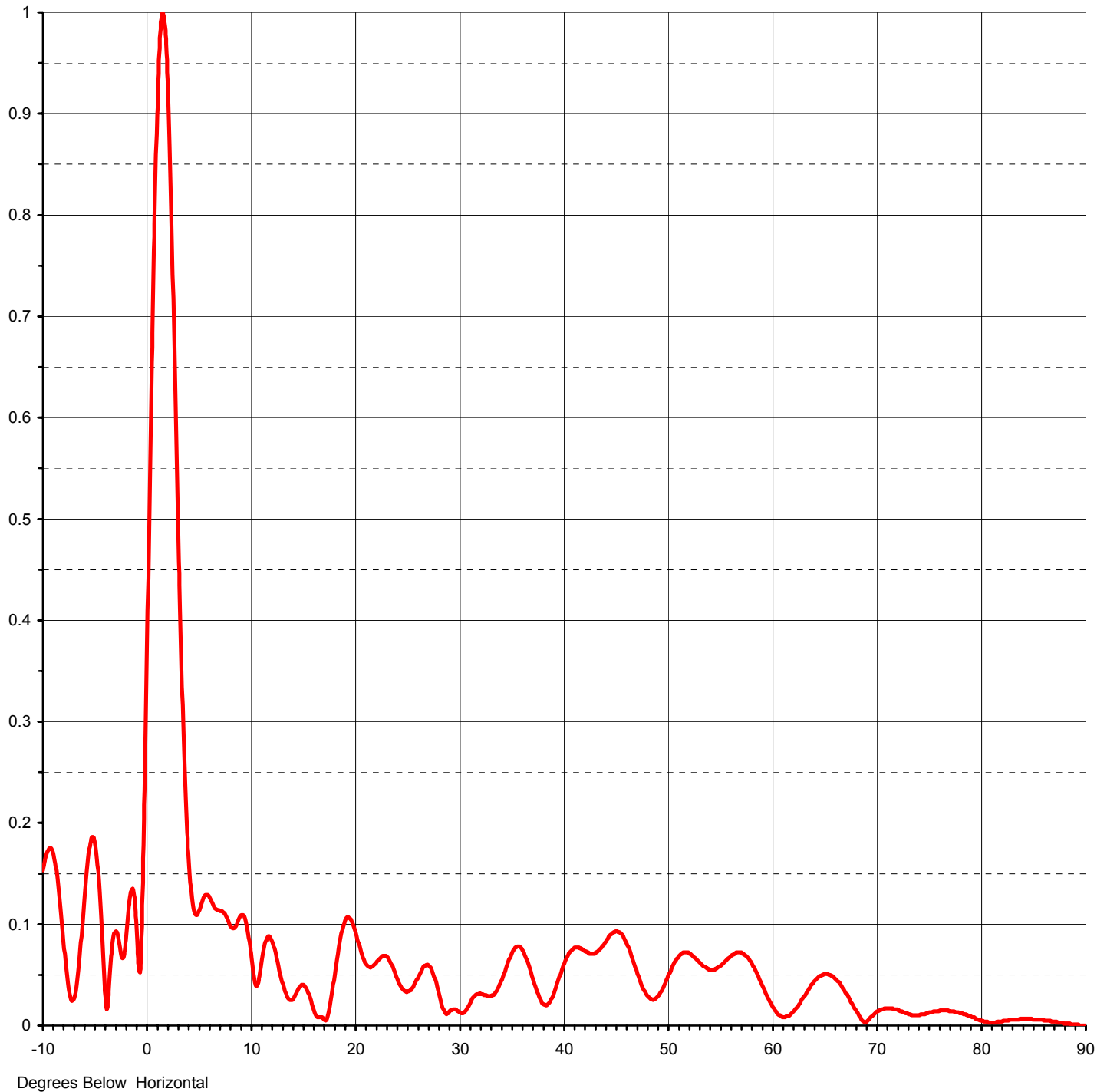


Proposal Number	DCA-10170	Revision:	2
Date	9-Feb-04	Exhibit 4B	
Call Letters	WBNX-DT	Channel	30
Location	Akron, OH		
Customer			
Antenna Type	TFU-30DSC-R P270BNT		

ELEVATION PATTERN

RMS Gain at Main Lobe	24.50 (13.89 dB)
RMS Gain at Horizontal	3.50 (5.44 dB)
Calculated / Measured	Calculated

Beam Tilt	1.50 deg
Frequency	569.00 MHz
Drawing #	30Q245150-90



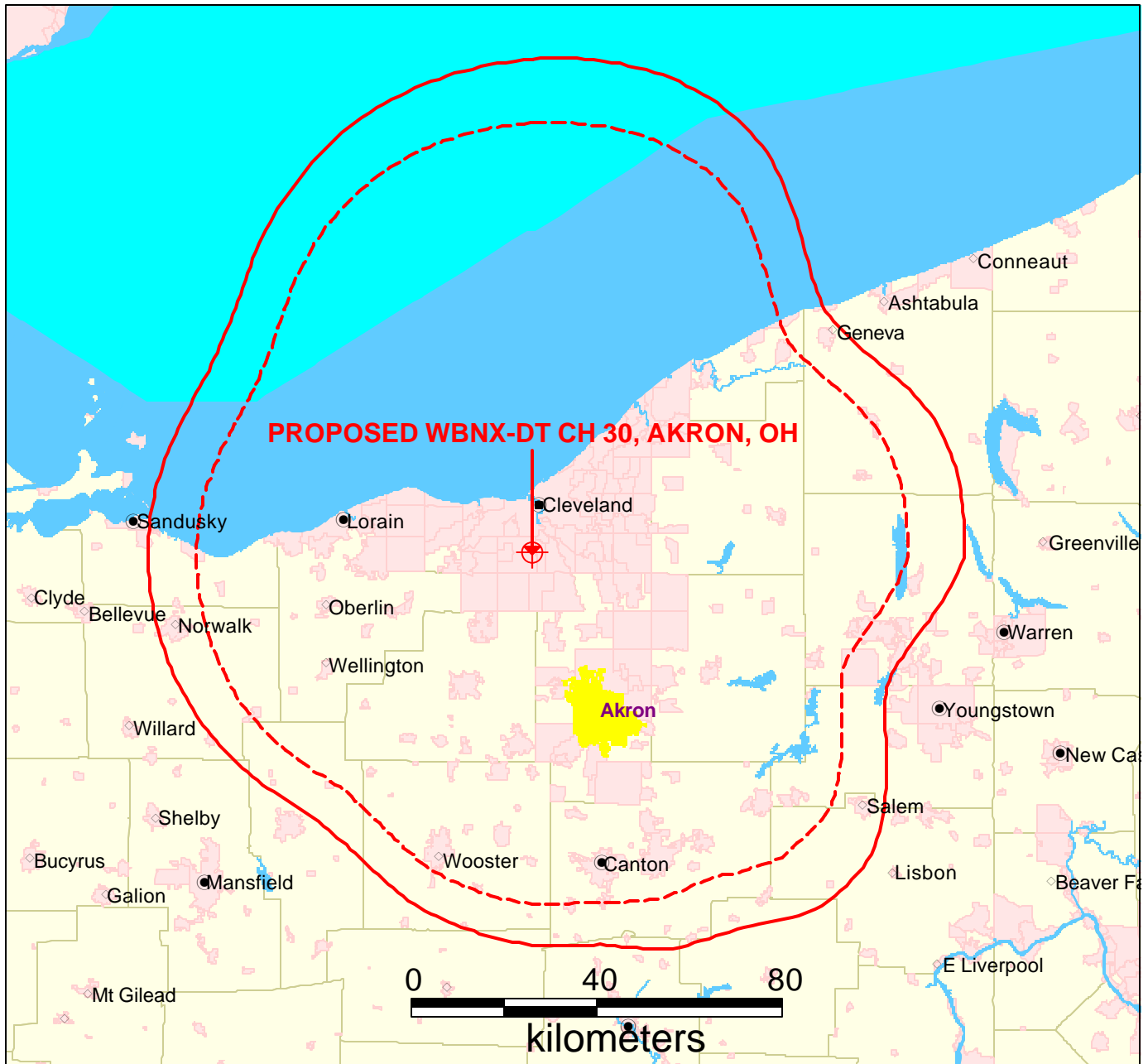


Proposal Number **DCA-10170** Revision: **2**
 Date **9-Feb-04** **Exhibit 5**
 Call Letters **WBNX-DT** Channel **30**
 Location **Akron, OH**
 Customer
 Antenna Type **TFU-30DSC-R P270BNT**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **30Q245150-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.153	2.4	0.764	10.6	0.039	30.5	0.013	51.0	0.067	71.5	0.017
-9.5	0.173	2.6	0.671	10.8	0.045	31.0	0.021	51.5	0.072	72.0	0.015
-9.0	0.170	2.8	0.574	11.0	0.058	31.5	0.029	52.0	0.072	72.5	0.013
-8.5	0.135	3.0	0.480	11.5	0.084	32.0	0.032	52.5	0.068	73.0	0.011
-8.0	0.081	3.2	0.393	12.0	0.085	32.5	0.030	53.0	0.063	73.5	0.010
-7.5	0.035	3.4	0.316	12.5	0.067	33.0	0.029	53.5	0.058	74.0	0.010
-7.0	0.027	3.6	0.252	13.0	0.045	33.5	0.033	54.0	0.055	74.5	0.011
-6.5	0.064	3.8	0.201	13.5	0.029	34.0	0.042	54.5	0.055	75.0	0.013
-6.0	0.127	4.0	0.163	14.0	0.025	34.5	0.056	55.0	0.058	75.5	0.014
-5.5	0.177	4.2	0.135	14.5	0.034	35.0	0.070	55.5	0.063	76.0	0.015
-5.0	0.180	4.4	0.118	15.0	0.040	35.5	0.077	56.0	0.068	76.5	0.015
-4.5	0.122	4.6	0.110	15.5	0.034	36.0	0.076	56.5	0.071	77.0	0.014
-4.0	0.030	4.8	0.109	16.0	0.018	36.5	0.065	57.0	0.072	77.5	0.013
-3.5	0.062	5.0	0.114	16.5	0.008	37.0	0.049	57.5	0.069	78.0	0.012
-3.0	0.093	5.2	0.120	17.0	0.007	37.5	0.033	58.0	0.063	78.5	0.011
-2.8	0.088	5.4	0.126	17.5	0.013	38.0	0.022	58.5	0.053	79.0	0.009
-2.6	0.077	5.6	0.129	18.0	0.044	38.5	0.021	59.0	0.042	79.5	0.007
-2.4	0.067	5.8	0.129	18.5	0.078	39.0	0.029	59.5	0.030	80.0	0.005
-2.2	0.071	6.0	0.126	19.0	0.101	39.5	0.044	60.0	0.020	80.5	0.004
-2.0	0.090	6.2	0.122	19.5	0.106	40.0	0.059	60.5	0.012	81.0	0.003
-1.8	0.112	6.4	0.118	20.0	0.095	40.5	0.070	61.0	0.008	81.5	0.004
-1.6	0.129	6.6	0.115	20.5	0.077	41.0	0.076	61.5	0.009	82.0	0.004
-1.4	0.135	6.8	0.114	21.0	0.062	41.5	0.077	62.0	0.013	82.5	0.005
-1.2	0.124	7.0	0.113	21.5	0.057	42.0	0.074	62.5	0.019	83.0	0.006
-1.0	0.095	7.2	0.113	22.0	0.061	42.5	0.071	63.0	0.027	83.5	0.006
-0.8	0.058	7.4	0.111	22.5	0.067	43.0	0.071	63.5	0.035	84.0	0.007
-0.6	0.072	7.6	0.107	23.0	0.069	43.5	0.075	64.0	0.043	84.5	0.007
-0.4	0.153	7.8	0.103	23.5	0.061	44.0	0.082	64.5	0.049	85.0	0.006
-0.2	0.260	8.0	0.098	24.0	0.048	44.5	0.089	65.0	0.051	85.5	0.006
0.0	0.379	8.2	0.096	24.5	0.037	45.0	0.093	65.5	0.050	86.0	0.005
0.2	0.503	8.4	0.097	25.0	0.033	45.5	0.091	66.0	0.046	86.5	0.005
0.4	0.625	8.6	0.100	25.5	0.037	46.0	0.083	66.5	0.040	87.0	0.004
0.6	0.739	8.8	0.105	26.0	0.046	46.5	0.070	67.0	0.032	87.5	0.003
0.8	0.838	9.0	0.109	26.5	0.056	47.0	0.055	67.5	0.023	88.0	0.002
1.0	0.916	9.2	0.109	27.0	0.060	47.5	0.040	68.0	0.014	88.5	0.002
1.2	0.970	9.4	0.105	27.5	0.052	48.0	0.030	68.5	0.006	89.0	0.001
1.4	0.997	9.6	0.096	28.0	0.035	48.5	0.026	69.0	0.004	89.5	0.000
1.6	0.996	9.8	0.090	28.5	0.016	49.0	0.028	69.5	0.009	90.0	0.000
1.8	0.969	10.0	0.076	29.0	0.012	49.5	0.036	70.0	0.014		
2.0	0.919	10.2	0.059	29.5	0.016	50.0	0.047	70.5	0.016		
2.2	0.849	10.4	0.045	30.0	0.014	50.5	0.059	71.0	0.017		



PREDICTED COVERAGE CONTOUR

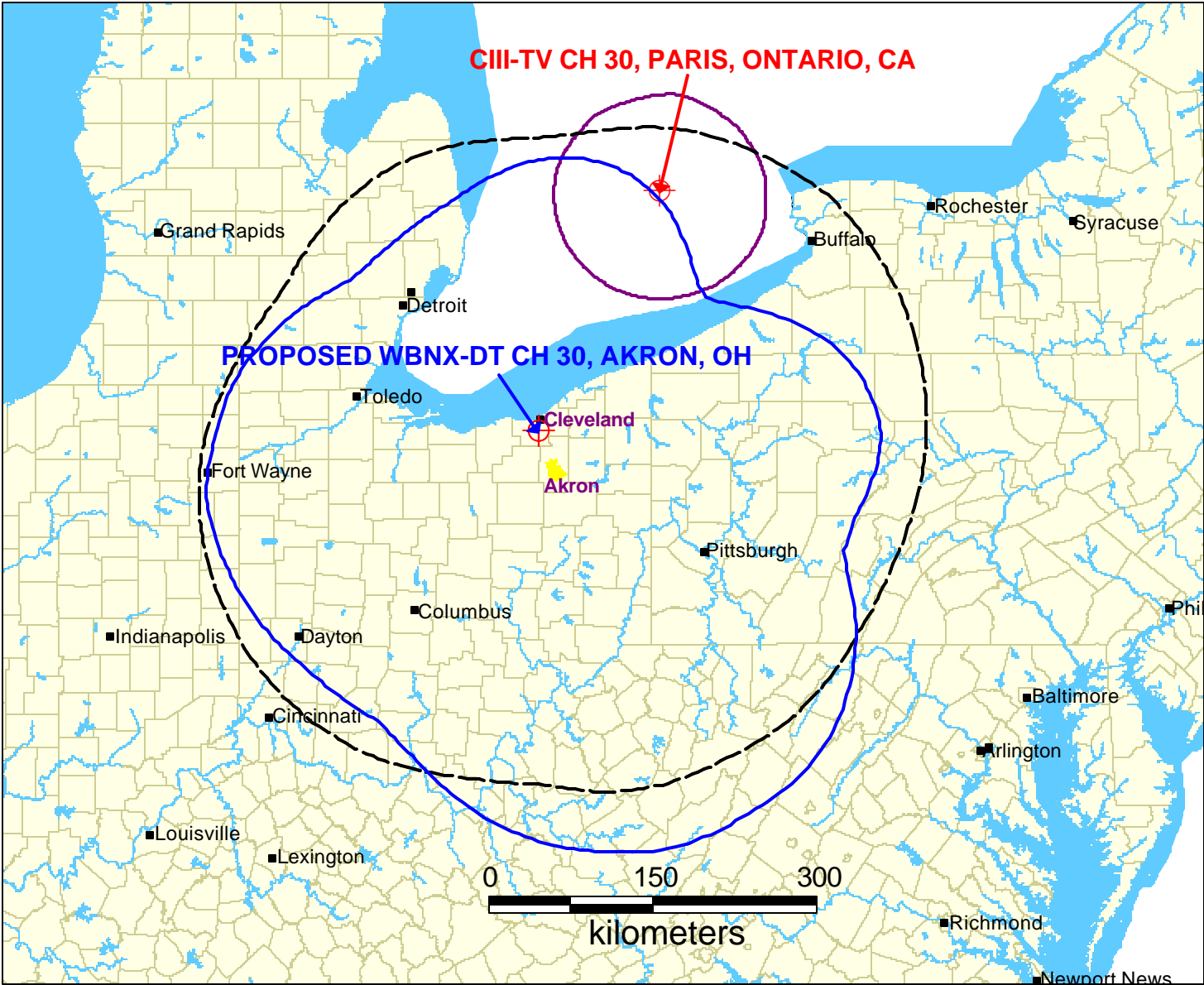
PROPOSED WBX-DT, AKRON, OH
Ch. 30, 1000 kW, 593 m RCAMSL, 334m HAAT
DIE TFU-30DSC-R P270BNT

F(50,90) 41 dBu
Pop Count: 3,665,180

F(50,90) 48 dBu
Pop Count: 3,404,003

FEBRUARY 2004

CARL T. JONES
CORPORATION



PREDICTED PROTECTIVE CONTOURS

PROPOSED WBNX-DT Ch 30, AKRON, OH
1000 kW, 334 mHAAT, 593 mRCAMSL
DIE TFU-30DSC-R P270BNT
(0° DEPRESSION ANGLE)

ALLOTTED WBNX-DT Ch 30, AKRON, OH
108 kW, 356 mHAAT, 615 mRCAMSL
(REP OHAKRON 30)

CIII-TV Ch 30, PARIS, ONTARIO, CA

PREDICTED 19.5 dBu F(10,10)

PREDICTED 19.5 dBu F(10,10)

PREDICTED 39 dBu F(90,90)

FEBRUARY 2004

CARL T. JONES CORPORATION

**SUMMARY OF RADIOFREQUENCY
RADIATION STUDY**
WBNX-DT, AKRON, OHIO
CHANNEL 30, 1000 kW ERP, 334.0 m HAAT
FEBRUARY, 2004

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLARIZATION</u>	<u>ANTENNA HEIGHT ** mAGL</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>PREDICTED POWER DENSITY (mW/cm²)</u>	<u>FCC UNCONTROLLED LIMIT (mW/cm²)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WBNX-TV	TV	55	719	H & V	333	5000.000	0.300	0.13558	0.479	28.29%
WBNX-DT	DT	30	569	H	311	1000.000	0.300	0.03108	0.379	8.19%
WMJI(FM)	FM	289	105.7	H & V	321	16.000	1.000	0.01038	0.200	5.19%
WRAP-LP	TV	32	581	H	259	6.390	0.300	0.00014	0.387	0.04%
W35AX	TV	35	599	H	303	11.800	0.300	0.00019	0.399	0.05%
W53AX	TV	53	707	H	249	11.100	0.300	0.00027	0.471	0.06%
W65DL	TV	65	779	H	251	8.000	0.300	0.00019	0.519	0.04%

TOTAL PERCENTAGE OF ANSI VALUE= 41.85%

*** The antenna heights indicated above are 2 meters less than the actual antenna heights so that the predicted power densities consider the 2 meter human height allowance.*



APPENDIX B

Additional Horizontal Plane Pattern Cuts

and

Tabulations

Electrical and Mechanical

-

Combined Beam Tilt



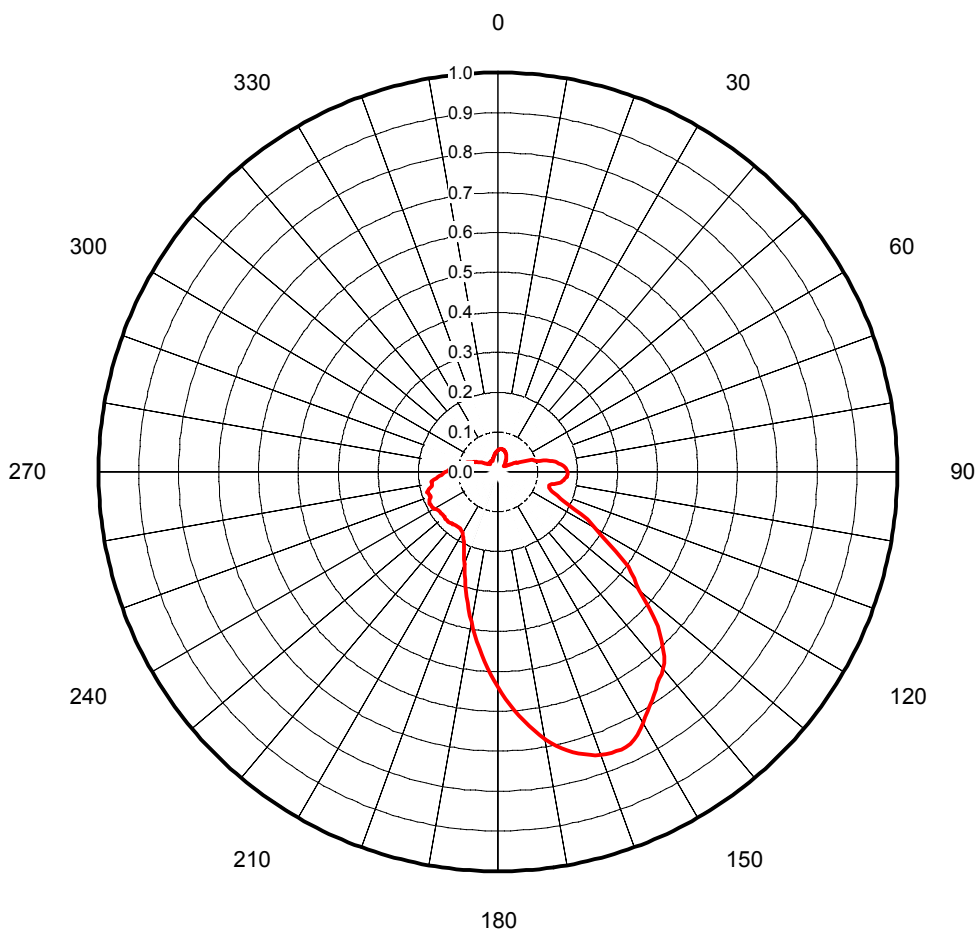
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

0.00° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT 0 ° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.054	45	0.022	90	0.174	135	0.574	180	0.538	225	0.176	270	0.131	315	0.027
1	0.055	46	0.021	91	0.174	136	0.591	181	0.523	226	0.177	271	0.127	316	0.028
2	0.056	47	0.021	92	0.174	137	0.607	182	0.507	227	0.177	272	0.123	317	0.029
3	0.056	48	0.022	93	0.173	138	0.622	183	0.492	228	0.176	273	0.119	318	0.030
4	0.057	49	0.022	94	0.172	139	0.635	184	0.476	229	0.176	274	0.115	319	0.031
5	0.057	50	0.022	95	0.171	140	0.643	185	0.460	230	0.175	275	0.112	320	0.031
6	0.057	51	0.023	96	0.169	141	0.650	186	0.444	231	0.175	276	0.108	321	0.031
7	0.058	52	0.024	97	0.166	142	0.657	187	0.428	232	0.175	277	0.106	322	0.031
8	0.058	53	0.025	98	0.163	143	0.663	188	0.413	233	0.175	278	0.104	323	0.031
9	0.058	54	0.027	99	0.160	144	0.672	189	0.397	234	0.176	279	0.103	324	0.031
10	0.058	55	0.028	100	0.157	145	0.682	190	0.382	235	0.176	280	0.102	325	0.032
11	0.058	56	0.030	101	0.150	146	0.691	191	0.367	236	0.177	281	0.099	326	0.032
12	0.058	57	0.033	102	0.144	147	0.699	192	0.352	237	0.178	282	0.095	327	0.032
13	0.057	58	0.036	103	0.138	148	0.707	193	0.337	238	0.180	283	0.092	328	0.032
14	0.057	59	0.039	104	0.134	149	0.716	194	0.322	239	0.182	284	0.089	329	0.032
15	0.057	60	0.042	105	0.134	150	0.727	195	0.309	240	0.184	285	0.086	330	0.032
16	0.056	61	0.046	106	0.133	151	0.736	196	0.295	241	0.186	286	0.083	331	0.031
17	0.056	62	0.049	107	0.134	152	0.745	197	0.282	242	0.187	287	0.080	332	0.031
18	0.055	63	0.051	108	0.136	153	0.752	198	0.269	243	0.188	288	0.077	333	0.030
19	0.054	64	0.053	109	0.140	154	0.759	199	0.258	244	0.188	289	0.074	334	0.030
20	0.053	65	0.055	110	0.145	155	0.760	200	0.246	245	0.188	290	0.071	335	0.030
21	0.052	66	0.058	111	0.152	156	0.761	201	0.236	246	0.188	291	0.069	336	0.031
22	0.051	67	0.066	112	0.160	157	0.760	202	0.225	247	0.186	292	0.066	337	0.032
23	0.050	68	0.074	113	0.171	158	0.759	203	0.217	248	0.184	293	0.064	338	0.033
24	0.049	69	0.082	114	0.182	159	0.757	204	0.208	249	0.182	294	0.061	339	0.034
25	0.048	70	0.090	115	0.197	160	0.754	205	0.201	250	0.179	295	0.059	340	0.035
26	0.047	71	0.092	116	0.214	161	0.750	206	0.194	251	0.180	296	0.057	341	0.036
27	0.045	72	0.094	117	0.233	162	0.745	207	0.189	252	0.182	297	0.054	342	0.037
28	0.044	73	0.096	118	0.253	163	0.739	208	0.184	253	0.183	298	0.052	343	0.038
29	0.042	74	0.097	119	0.268	164	0.733	209	0.180	254	0.184	299	0.050	344	0.039
30	0.041	75	0.107	120	0.281	165	0.726	210	0.177	255	0.181	300	0.048	345	0.040
31	0.040	76	0.116	121	0.295	166	0.719	211	0.175	256	0.177	301	0.046	346	0.041
32	0.039	77	0.126	122	0.309	167	0.710	212	0.172	257	0.173	302	0.044	347	0.042
33	0.037	78	0.135	123	0.332	168	0.701	213	0.171	258	0.169	303	0.041	348	0.043
34	0.036	79	0.140	124	0.356	169	0.691	214	0.170	259	0.168	304	0.038	349	0.043
35	0.035	80	0.145	125	0.381	170	0.680	215	0.170	260	0.169	305	0.035	350	0.044
36	0.033	81	0.150	126	0.404	171	0.667	216	0.170	261	0.168	306	0.032	351	0.045
37	0.032	82	0.154	127	0.418	172	0.654	217	0.170	262	0.168	307	0.032	352	0.047
38	0.031	83	0.158	128	0.433	173	0.641	218	0.171	263	0.162	308	0.033	353	0.048
39	0.029	84	0.162	129	0.446	174	0.627	219	0.171	264	0.156	309	0.033	354	0.049
40	0.028	85	0.165	130	0.460	175	0.613	220	0.172	265	0.150	310	0.033	355	0.050
41	0.027	86	0.168	131	0.484	176	0.599	221	0.173	266	0.145	311	0.032	356	0.051
42	0.025	87	0.170	132	0.508	177	0.584	222	0.174	267	0.142	312	0.030	357	0.052
43	0.024	88	0.172	133	0.532	178	0.569	223	0.175	268	0.138	313	0.028	358	0.053
44	0.023	89	0.173	134	0.556	179	0.554	224	0.176	269	0.134	314	0.027	359	0.053



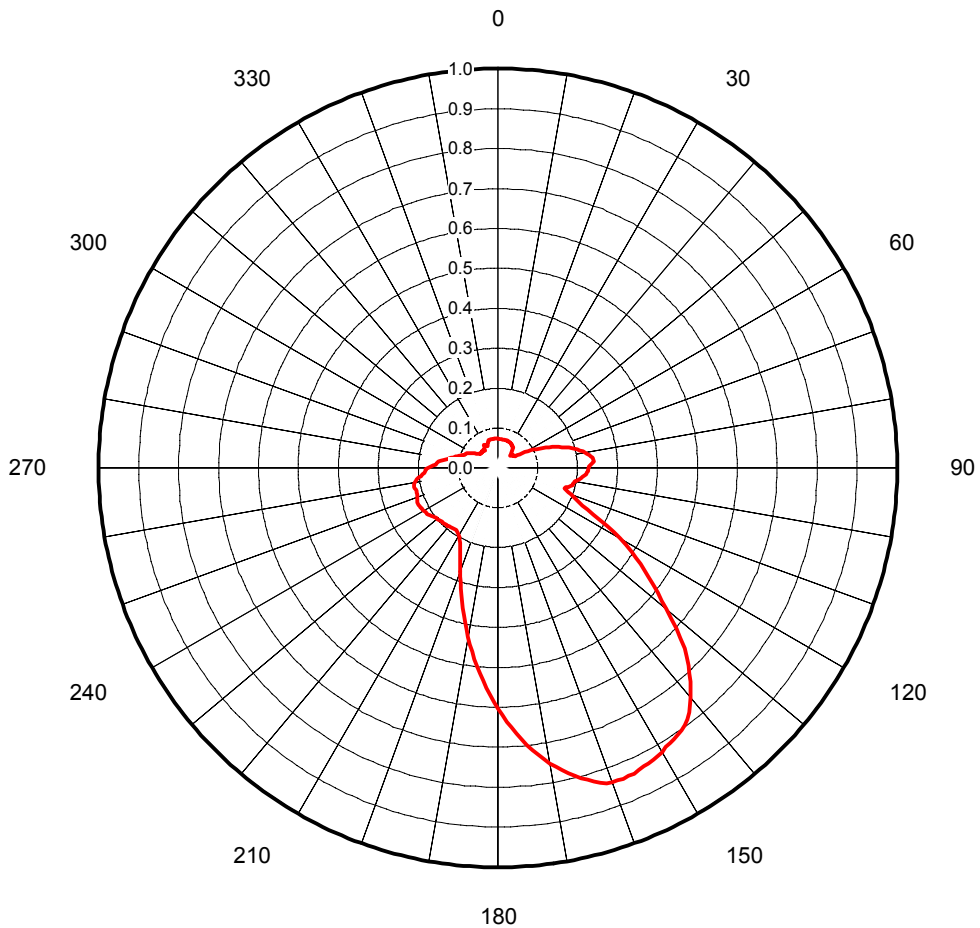
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

0.20° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT .2° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.073	45	0.044	90	0.228	135	0.669	180	0.603	225	0.194	270	0.175	315	0.056
1	0.073	46	0.043	91	0.227	136	0.687	181	0.586	226	0.194	271	0.168	316	0.056
2	0.073	47	0.044	92	0.225	137	0.704	182	0.569	227	0.195	272	0.162	317	0.057
3	0.073	48	0.045	93	0.223	138	0.721	183	0.552	228	0.196	273	0.156	318	0.058
4	0.073	49	0.046	94	0.221	139	0.736	184	0.534	229	0.197	274	0.154	319	0.058
5	0.073	50	0.047	95	0.217	140	0.751	185	0.517	230	0.198	275	0.152	320	0.057
6	0.073	51	0.050	96	0.214	141	0.764	186	0.499	231	0.199	276	0.150	321	0.057
7	0.072	52	0.050	97	0.210	142	0.777	187	0.482	232	0.201	277	0.146	322	0.056
8	0.072	53	0.050	98	0.205	143	0.788	188	0.464	233	0.203	278	0.140	323	0.055
9	0.072	54	0.051	99	0.200	144	0.797	189	0.447	234	0.205	279	0.133	324	0.055
10	0.072	55	0.052	100	0.196	145	0.801	190	0.429	235	0.207	280	0.127	325	0.058
11	0.072	56	0.054	101	0.194	146	0.806	191	0.412	236	0.209	281	0.123	326	0.061
12	0.072	57	0.058	102	0.192	147	0.809	192	0.395	237	0.211	282	0.120	327	0.063
13	0.072	58	0.064	103	0.192	148	0.812	193	0.379	238	0.212	283	0.116	328	0.066
14	0.072	59	0.071	104	0.187	149	0.816	194	0.362	239	0.213	284	0.112	329	0.068
15	0.072	60	0.079	105	0.182	150	0.821	195	0.347	240	0.215	285	0.109	330	0.067
16	0.072	61	0.087	106	0.177	151	0.825	196	0.331	241	0.216	286	0.106	331	0.065
17	0.072	62	0.094	107	0.175	152	0.829	197	0.316	242	0.217	287	0.103	332	0.064
18	0.072	63	0.101	108	0.178	153	0.830	198	0.302	243	0.218	288	0.099	333	0.063
19	0.072	64	0.108	109	0.186	154	0.832	199	0.289	244	0.219	289	0.096	334	0.061
20	0.072	65	0.115	110	0.194	155	0.835	200	0.275	245	0.219	290	0.093	335	0.061
21	0.071	66	0.123	111	0.205	156	0.837	201	0.264	246	0.220	291	0.091	336	0.063
22	0.071	67	0.130	112	0.211	157	0.839	202	0.252	247	0.219	292	0.090	337	0.065
23	0.071	68	0.138	113	0.221	158	0.839	203	0.242	248	0.218	293	0.089	338	0.067
24	0.071	69	0.146	114	0.231	159	0.838	204	0.232	249	0.216	294	0.088	339	0.069
25	0.070	70	0.153	115	0.247	160	0.837	205	0.224	250	0.214	295	0.086	340	0.071
26	0.070	71	0.161	116	0.267	161	0.834	206	0.216	251	0.214	296	0.083	341	0.073
27	0.070	72	0.169	117	0.289	162	0.828	207	0.210	252	0.214	297	0.081	342	0.074
28	0.069	73	0.176	118	0.311	163	0.821	208	0.204	253	0.213	298	0.078	343	0.074
29	0.068	74	0.184	119	0.332	164	0.813	209	0.200	254	0.212	299	0.076	344	0.074
30	0.068	75	0.190	120	0.353	165	0.804	210	0.195	255	0.213	300	0.073	345	0.074
31	0.067	76	0.197	121	0.374	166	0.795	211	0.193	256	0.214	301	0.071	346	0.074
32	0.067	77	0.204	122	0.395	167	0.785	212	0.190	257	0.215	302	0.068	347	0.074
33	0.066	78	0.210	123	0.413	168	0.774	213	0.189	258	0.216	303	0.066	348	0.074
34	0.065	79	0.216	124	0.430	169	0.763	214	0.188	259	0.214	304	0.064	349	0.073
35	0.064	80	0.221	125	0.448	170	0.751	215	0.188	260	0.211	305	0.063	350	0.073
36	0.063	81	0.226	126	0.465	171	0.738	216	0.188	261	0.209	306	0.061	351	0.073
37	0.062	82	0.231	127	0.487	172	0.725	217	0.189	262	0.206	307	0.060	352	0.073
38	0.061	83	0.235	128	0.508	173	0.711	218	0.190	263	0.200	308	0.058	353	0.073
39	0.060	84	0.238	129	0.529	174	0.697	219	0.191	264	0.194	309	0.057	354	0.073
40	0.057	85	0.241	130	0.550	175	0.682	220	0.191	265	0.188	310	0.057	355	0.073
41	0.054	86	0.241	131	0.575	176	0.667	221	0.192	266	0.184	311	0.056	356	0.073
42	0.051	87	0.237	132	0.601	177	0.651	222	0.192	267	0.183	312	0.056	357	0.073
43	0.049	88	0.233	133	0.625	178	0.636	223	0.193	268	0.182	313	0.056	358	0.073
44	0.046	89	0.228	134	0.650	179	0.619	224	0.193	269	0.180	314	0.056	359	0.073



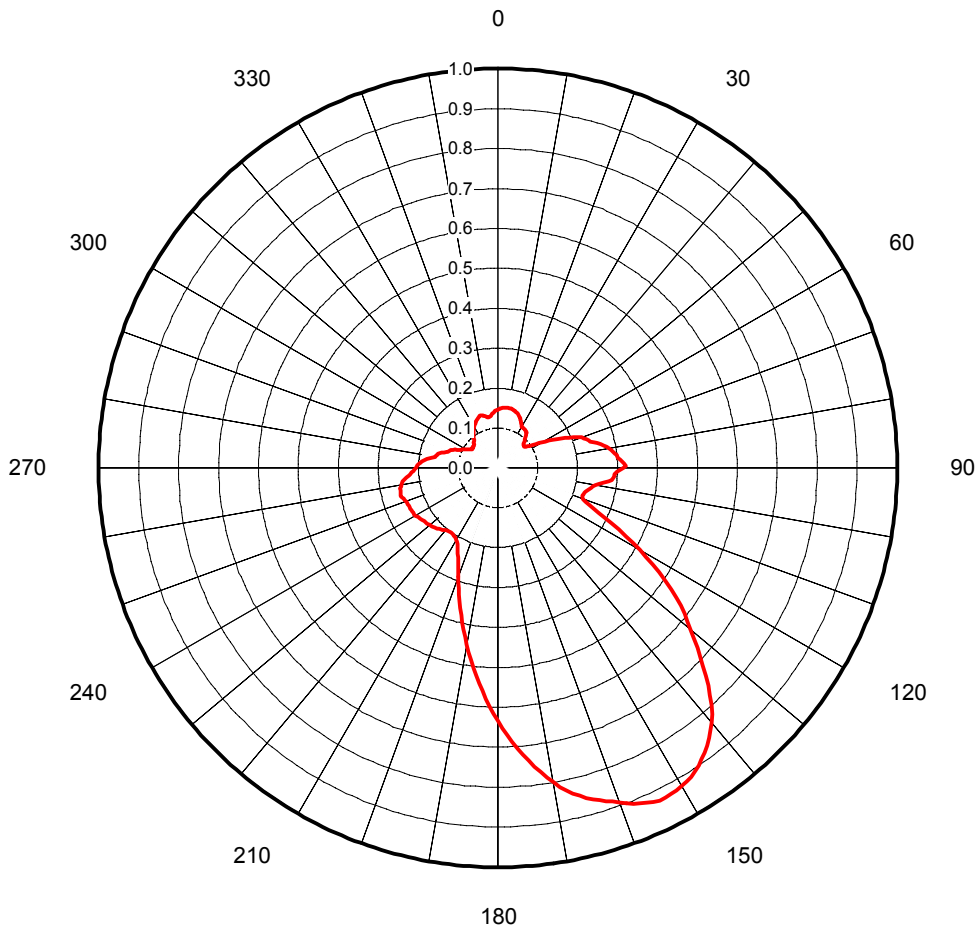
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

0.40° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT .4° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.146	45	0.094	90	0.314	135	0.735	180	0.634	225	0.214	270	0.206	315	0.085
1	0.148	46	0.091	91	0.306	136	0.758	181	0.615	226	0.216	271	0.204	316	0.086
2	0.149	47	0.089	92	0.298	137	0.779	182	0.597	227	0.218	272	0.202	317	0.088
3	0.150	48	0.086	93	0.292	138	0.800	183	0.578	228	0.219	273	0.199	318	0.089
4	0.151	49	0.085	94	0.291	139	0.818	184	0.560	229	0.221	274	0.195	319	0.092
5	0.151	50	0.084	95	0.290	140	0.833	185	0.541	230	0.222	275	0.190	320	0.094
6	0.152	51	0.085	96	0.288	141	0.846	186	0.523	231	0.224	276	0.186	321	0.096
7	0.152	52	0.086	97	0.279	142	0.859	187	0.504	232	0.225	277	0.180	322	0.098
8	0.153	53	0.088	98	0.268	143	0.870	188	0.486	233	0.227	278	0.173	323	0.101
9	0.153	54	0.091	99	0.257	144	0.881	189	0.468	234	0.228	279	0.167	324	0.104
10	0.153	55	0.096	100	0.246	145	0.890	190	0.449	235	0.230	280	0.160	325	0.106
11	0.153	56	0.100	101	0.243	146	0.898	191	0.432	236	0.231	281	0.158	326	0.109
12	0.153	57	0.107	102	0.239	147	0.905	192	0.414	237	0.233	282	0.156	327	0.111
13	0.152	58	0.113	103	0.236	148	0.912	193	0.397	238	0.235	283	0.155	328	0.114
14	0.151	59	0.120	104	0.231	149	0.916	194	0.379	239	0.236	284	0.151	329	0.116
15	0.150	60	0.128	105	0.227	150	0.920	195	0.363	240	0.238	285	0.145	330	0.119
16	0.150	61	0.137	106	0.224	151	0.923	196	0.347	241	0.240	286	0.140	331	0.121
17	0.148	62	0.146	107	0.224	152	0.925	197	0.332	242	0.241	287	0.134	332	0.123
18	0.147	63	0.155	108	0.222	153	0.926	198	0.317	243	0.241	288	0.132	333	0.126
19	0.145	64	0.164	109	0.225	154	0.926	199	0.303	244	0.241	289	0.130	334	0.128
20	0.144	65	0.174	110	0.228	155	0.922	200	0.289	245	0.241	290	0.129	335	0.130
21	0.142	66	0.184	111	0.236	156	0.918	201	0.277	246	0.241	291	0.127	336	0.131
22	0.140	67	0.194	112	0.246	157	0.913	202	0.265	247	0.242	292	0.122	337	0.133
23	0.138	68	0.204	113	0.260	158	0.907	203	0.255	248	0.243	293	0.117	338	0.135
24	0.135	69	0.214	114	0.275	159	0.899	204	0.245	249	0.244	294	0.112	339	0.136
25	0.133	70	0.223	115	0.295	160	0.892	205	0.237	250	0.245	295	0.108	340	0.138
26	0.130	71	0.228	116	0.316	161	0.884	206	0.228	251	0.247	296	0.105	341	0.139
27	0.127	72	0.233	117	0.339	162	0.878	207	0.222	252	0.249	297	0.102	342	0.139
28	0.124	73	0.237	118	0.364	163	0.871	208	0.216	253	0.251	298	0.099	343	0.137
29	0.121	74	0.241	119	0.387	164	0.864	209	0.212	254	0.253	299	0.096	344	0.136
30	0.118	75	0.249	120	0.410	165	0.855	210	0.208	255	0.252	300	0.093	345	0.135
31	0.118	76	0.257	121	0.433	166	0.846	211	0.206	256	0.252	301	0.091	346	0.134
32	0.118	77	0.264	122	0.457	167	0.836	212	0.203	257	0.251	302	0.088	347	0.132
33	0.118	78	0.271	123	0.481	168	0.825	213	0.202	258	0.249	303	0.086	348	0.130
34	0.118	79	0.277	124	0.506	169	0.814	214	0.200	259	0.247	304	0.084	349	0.129
35	0.117	80	0.283	125	0.530	170	0.800	215	0.200	260	0.246	305	0.082	350	0.128
36	0.117	81	0.287	126	0.554	171	0.785	216	0.200	261	0.243	306	0.080	351	0.130
37	0.116	82	0.292	127	0.573	172	0.770	217	0.200	262	0.240	307	0.080	352	0.132
38	0.115	83	0.296	128	0.593	173	0.754	218	0.201	263	0.235	308	0.081	353	0.134
39	0.113	84	0.299	129	0.611	174	0.738	219	0.202	264	0.230	309	0.081	354	0.136
40	0.110	85	0.301	130	0.630	175	0.721	220	0.204	265	0.224	310	0.082	355	0.138
41	0.107	86	0.306	131	0.651	176	0.704	221	0.206	266	0.220	311	0.082	356	0.140
42	0.103	87	0.311	132	0.672	177	0.687	222	0.208	267	0.216	312	0.082	357	0.142
43	0.100	88	0.316	133	0.693	178	0.669	223	0.210	268	0.212	313	0.083	358	0.144
44	0.097	89	0.320	134	0.713	179	0.652	224	0.212	269	0.208	314	0.083	359	0.145



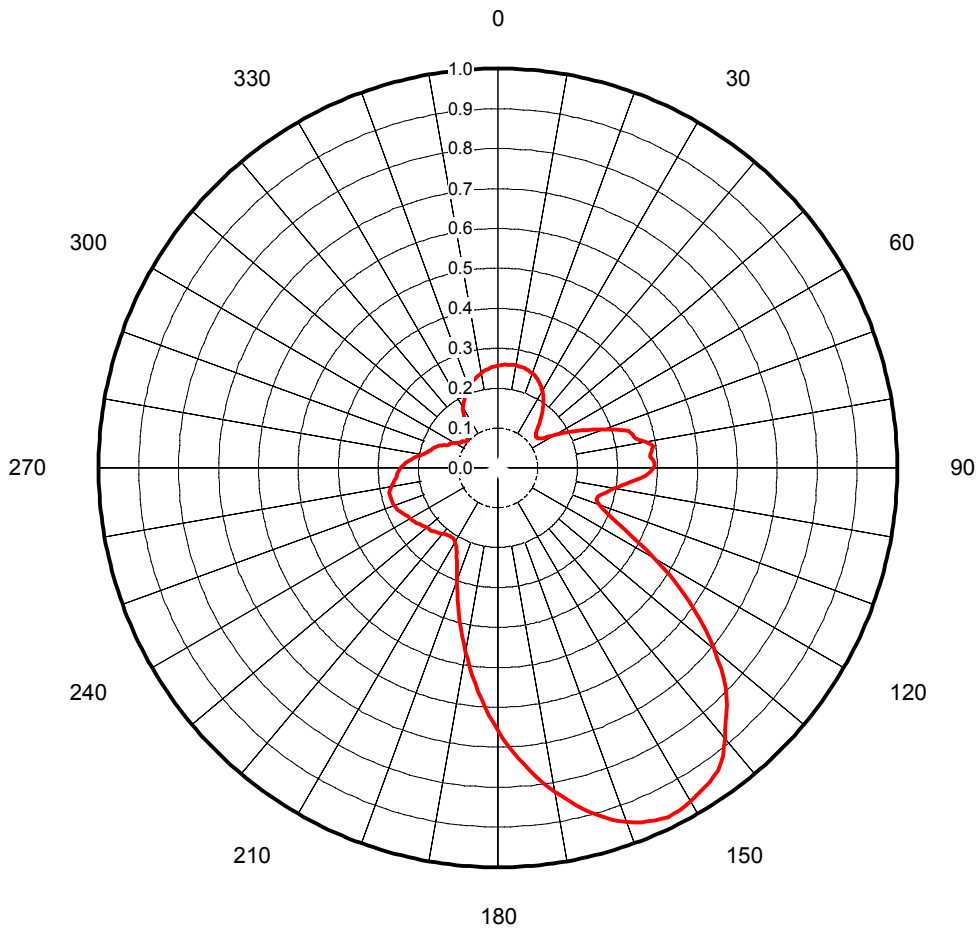
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

0.60° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT .6° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.256	45	0.141	90	0.390	135	0.809	180	0.657	225	0.225	270	0.243	315	0.108
1	0.257	46	0.136	91	0.384	136	0.825	181	0.639	226	0.227	271	0.239	316	0.110
2	0.258	47	0.132	92	0.379	137	0.839	182	0.620	227	0.229	272	0.235	317	0.112
3	0.259	48	0.128	93	0.371	138	0.853	183	0.601	228	0.230	273	0.230	318	0.115
4	0.259	49	0.126	94	0.359	139	0.867	184	0.582	229	0.231	274	0.226	319	0.118
5	0.260	50	0.124	95	0.346	140	0.884	185	0.563	230	0.233	275	0.221	320	0.121
6	0.260	51	0.124	96	0.334	141	0.899	186	0.543	231	0.234	276	0.217	321	0.125
7	0.260	52	0.123	97	0.323	142	0.915	187	0.524	232	0.236	277	0.211	322	0.128
8	0.261	53	0.124	98	0.314	143	0.928	188	0.505	233	0.239	278	0.204	323	0.132
9	0.261	54	0.126	99	0.304	144	0.937	189	0.486	234	0.241	279	0.198	324	0.137
10	0.261	55	0.129	100	0.295	145	0.943	190	0.467	235	0.244	280	0.192	325	0.144
11	0.260	56	0.133	101	0.288	146	0.949	191	0.449	236	0.246	281	0.187	326	0.150
12	0.260	57	0.139	102	0.281	147	0.952	192	0.430	237	0.249	282	0.183	327	0.157
13	0.259	58	0.147	103	0.276	148	0.956	193	0.412	238	0.250	283	0.179	328	0.163
14	0.259	59	0.157	104	0.269	149	0.959	194	0.394	239	0.251	284	0.176	329	0.170
15	0.258	60	0.166	105	0.265	150	0.965	195	0.377	240	0.253	285	0.174	330	0.174
16	0.257	61	0.176	106	0.260	151	0.968	196	0.360	241	0.254	286	0.172	331	0.178
17	0.256	62	0.187	107	0.259	152	0.971	197	0.345	242	0.256	287	0.170	332	0.183
18	0.255	63	0.198	108	0.259	153	0.972	198	0.329	243	0.259	288	0.167	333	0.187
19	0.253	64	0.210	109	0.264	154	0.972	199	0.315	244	0.263	289	0.163	334	0.191
20	0.252	65	0.221	110	0.270	155	0.970	200	0.300	245	0.266	290	0.160	335	0.195
21	0.250	66	0.233	111	0.280	156	0.967	201	0.288	246	0.269	291	0.156	336	0.199
22	0.248	67	0.244	112	0.289	157	0.962	202	0.275	247	0.270	292	0.151	337	0.203
23	0.245	68	0.256	113	0.303	158	0.957	203	0.264	248	0.272	293	0.145	338	0.206
24	0.243	69	0.267	114	0.316	159	0.950	204	0.253	249	0.274	294	0.140	339	0.210
25	0.240	70	0.279	115	0.335	160	0.944	205	0.245	250	0.275	295	0.137	340	0.213
26	0.237	71	0.294	116	0.354	161	0.935	206	0.236	251	0.276	296	0.135	341	0.217
27	0.234	72	0.309	117	0.377	162	0.926	207	0.230	252	0.278	297	0.134	342	0.220
28	0.230	73	0.324	118	0.399	163	0.915	208	0.223	253	0.278	298	0.133	343	0.223
29	0.227	74	0.339	119	0.425	164	0.904	209	0.219	254	0.279	299	0.129	344	0.226
30	0.223	75	0.343	120	0.452	165	0.892	210	0.214	255	0.279	300	0.124	345	0.229
31	0.218	76	0.347	121	0.480	166	0.880	211	0.212	256	0.279	301	0.119	346	0.231
32	0.214	77	0.349	122	0.509	167	0.866	212	0.210	257	0.278	302	0.115	347	0.234
33	0.209	78	0.353	123	0.534	168	0.853	213	0.209	258	0.277	303	0.114	348	0.236
34	0.204	79	0.364	124	0.560	169	0.838	214	0.208	259	0.274	304	0.113	349	0.239
35	0.199	80	0.376	125	0.585	170	0.824	215	0.209	260	0.271	305	0.113	350	0.241
36	0.194	81	0.385	126	0.611	171	0.809	216	0.209	261	0.267	306	0.113	351	0.243
37	0.188	82	0.392	127	0.636	172	0.794	217	0.211	262	0.264	307	0.110	352	0.245
38	0.182	83	0.389	128	0.660	173	0.779	218	0.212	263	0.261	308	0.107	353	0.247
39	0.176	84	0.387	129	0.684	174	0.763	219	0.214	264	0.258	309	0.105	354	0.248
40	0.170	85	0.382	130	0.707	175	0.746	220	0.215	265	0.255	310	0.103	355	0.250
41	0.164	86	0.383	131	0.730	176	0.729	221	0.217	266	0.253	311	0.103	356	0.251
42	0.158	87	0.387	132	0.752	177	0.711	222	0.219	267	0.251	312	0.103	357	0.253
43	0.152	88	0.391	133	0.772	178	0.694	223	0.221	268	0.249	313	0.104	358	0.254
44	0.146	89	0.393	134	0.793	179	0.675	224	0.223	269	0.247	314	0.106	359	0.255



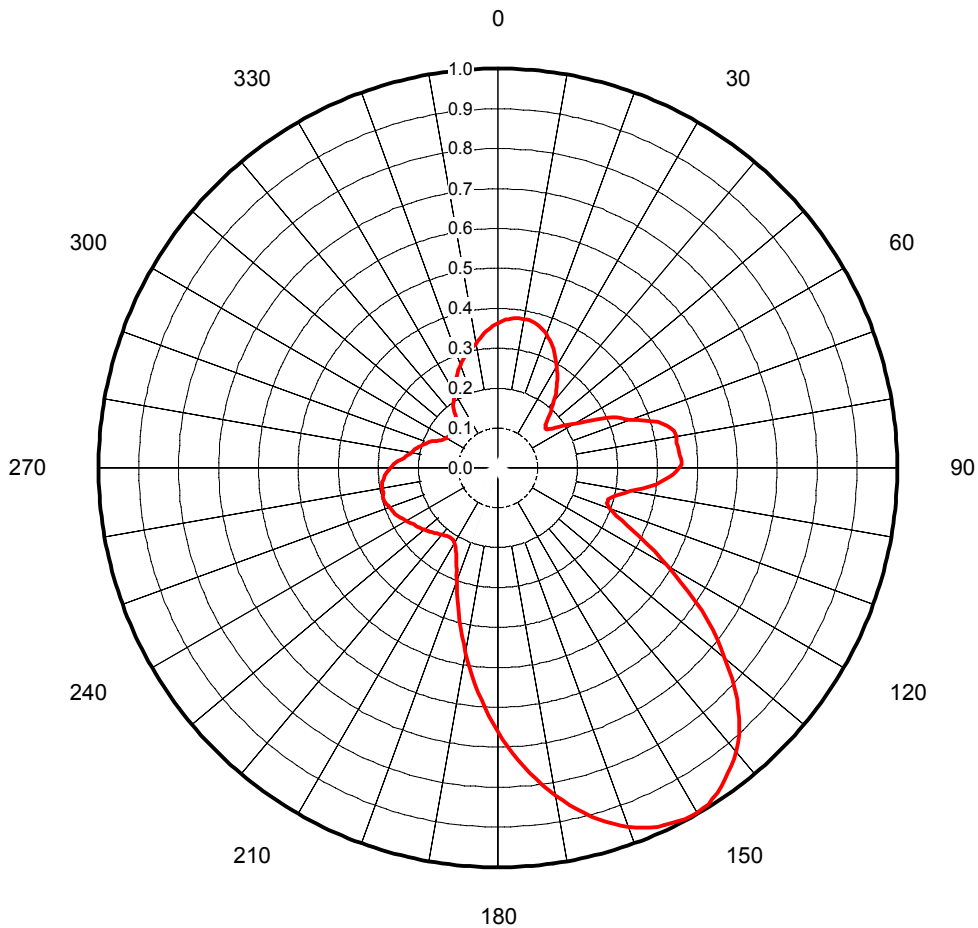
Date	12-Feb-04	Channel	30
Call Letters	WBNX-DT		
Location	Akron, OH		
Customer			
Antenna Type	TFU-30DSC-R P270BNT		

AZIMUTH PATTERN:

0.80° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT .8° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.363	45	0.179	90	0.454	135	0.852	180	0.660	225	0.229	270	0.269	315	0.144
1	0.366	46	0.172	91	0.447	136	0.870	181	0.641	226	0.231	271	0.265	316	0.146
2	0.369	47	0.167	92	0.439	137	0.886	182	0.622	227	0.234	272	0.261	317	0.148
3	0.371	48	0.161	93	0.429	138	0.902	183	0.603	228	0.236	273	0.256	318	0.151
4	0.373	49	0.158	94	0.419	139	0.916	184	0.583	229	0.238	274	0.250	319	0.154
5	0.375	50	0.155	95	0.408	140	0.928	185	0.564	230	0.241	275	0.244	320	0.161
6	0.377	51	0.155	96	0.397	141	0.938	186	0.545	231	0.243	276	0.238	321	0.169
7	0.378	52	0.156	97	0.383	142	0.949	187	0.525	232	0.245	277	0.232	322	0.176
8	0.379	53	0.161	98	0.367	143	0.957	188	0.506	233	0.247	278	0.228	323	0.185
9	0.379	54	0.167	99	0.352	144	0.966	189	0.487	234	0.249	279	0.223	324	0.191
10	0.379	55	0.176	100	0.337	145	0.974	190	0.468	235	0.252	280	0.219	325	0.195
11	0.378	56	0.185	101	0.325	146	0.982	191	0.449	236	0.254	281	0.216	326	0.199
12	0.378	57	0.195	102	0.314	147	0.987	192	0.431	237	0.256	282	0.214	327	0.203
13	0.376	58	0.202	103	0.304	148	0.993	193	0.413	238	0.259	283	0.212	328	0.207
14	0.375	59	0.211	104	0.296	149	0.995	194	0.395	239	0.262	284	0.209	329	0.212
15	0.373	60	0.221	105	0.292	150	0.997	195	0.378	240	0.265	285	0.205	330	0.218
16	0.370	61	0.231	106	0.287	151	0.997	196	0.361	241	0.268	286	0.201	331	0.224
17	0.367	62	0.245	107	0.288	152	0.996	197	0.346	242	0.271	287	0.197	332	0.230
18	0.364	63	0.262	108	0.288	153	0.994	198	0.330	243	0.274	288	0.194	333	0.236
19	0.360	64	0.279	109	0.293	154	0.991	199	0.316	244	0.277	289	0.190	334	0.242
20	0.356	65	0.297	110	0.298	155	0.987	200	0.301	245	0.279	290	0.186	335	0.247
21	0.352	66	0.312	111	0.310	156	0.983	201	0.289	246	0.282	291	0.182	336	0.253
22	0.347	67	0.322	112	0.321	157	0.977	202	0.276	247	0.284	292	0.177	337	0.259
23	0.341	68	0.332	113	0.338	158	0.972	203	0.266	248	0.285	293	0.172	338	0.264
24	0.336	69	0.341	114	0.355	159	0.964	204	0.255	249	0.287	294	0.167	339	0.269
25	0.329	70	0.351	115	0.375	160	0.957	205	0.247	250	0.288	295	0.163	340	0.274
26	0.323	71	0.367	116	0.396	161	0.948	206	0.238	251	0.291	296	0.159	341	0.279
27	0.316	72	0.384	117	0.420	162	0.938	207	0.232	252	0.293	297	0.156	342	0.284
28	0.308	73	0.400	118	0.444	163	0.927	208	0.225	253	0.295	298	0.153	343	0.288
29	0.300	74	0.416	119	0.468	164	0.916	209	0.221	254	0.297	299	0.151	344	0.293
30	0.293	75	0.426	120	0.491	165	0.903	210	0.217	255	0.297	300	0.149	345	0.297
31	0.286	76	0.435	121	0.515	166	0.891	211	0.215	256	0.296	301	0.148	346	0.301
32	0.280	77	0.443	122	0.539	167	0.877	212	0.212	257	0.295	302	0.147	347	0.305
33	0.273	78	0.451	123	0.567	168	0.863	213	0.212	258	0.294	303	0.145	348	0.309
34	0.266	79	0.452	124	0.596	169	0.849	214	0.211	259	0.294	304	0.142	349	0.312
35	0.259	80	0.453	125	0.624	170	0.834	215	0.211	260	0.294	305	0.140	350	0.316
36	0.251	81	0.452	126	0.651	171	0.818	216	0.212	261	0.294	306	0.138	351	0.322
37	0.243	82	0.452	127	0.674	172	0.802	217	0.213	262	0.294	307	0.136	352	0.328
38	0.235	83	0.454	128	0.697	173	0.785	218	0.215	263	0.291	308	0.133	353	0.333
39	0.227	84	0.456	129	0.719	174	0.769	219	0.217	264	0.289	309	0.131	354	0.338
40	0.219	85	0.455	130	0.741	175	0.751	220	0.218	265	0.286	310	0.129	355	0.343
41	0.210	86	0.457	131	0.764	176	0.734	221	0.220	266	0.283	311	0.132	356	0.347
42	0.202	87	0.459	132	0.788	177	0.716	222	0.223	267	0.280	312	0.134	357	0.351
43	0.194	88	0.460	133	0.811	178	0.697	223	0.225	268	0.277	313	0.138	358	0.356
44	0.186	89	0.459	134	0.833	179	0.679	224	0.227	269	0.273	314	0.142	359	0.359



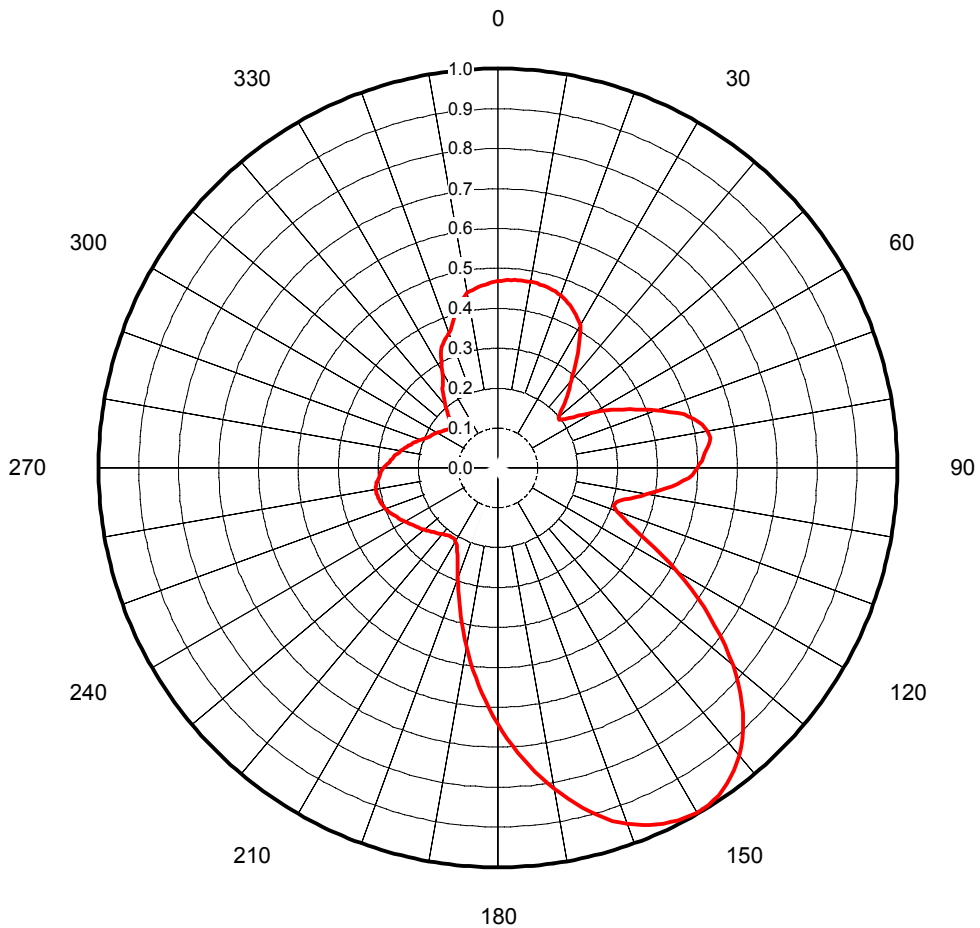
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

1.00° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT 1.0° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.467	45	0.241	90	0.499	135	0.866	180	0.642	225	0.228	270	0.287	315	0.169
1	0.468	46	0.231	91	0.493	136	0.884	181	0.623	226	0.230	271	0.282	316	0.175
2	0.470	47	0.221	92	0.487	137	0.899	182	0.604	227	0.233	272	0.277	317	0.182
3	0.471	48	0.211	93	0.477	138	0.915	183	0.585	228	0.235	273	0.272	318	0.189
4	0.472	49	0.205	94	0.465	139	0.928	184	0.566	229	0.238	274	0.269	319	0.197
5	0.472	50	0.198	95	0.452	140	0.940	185	0.547	230	0.241	275	0.266	320	0.204
6	0.473	51	0.196	96	0.438	141	0.950	186	0.528	231	0.243	276	0.263	321	0.212
7	0.473	52	0.196	97	0.423	142	0.960	187	0.509	232	0.246	277	0.259	322	0.219
8	0.473	53	0.202	98	0.409	143	0.968	188	0.491	233	0.249	278	0.255	323	0.228
9	0.473	54	0.207	99	0.394	144	0.977	189	0.472	234	0.251	279	0.250	324	0.235
10	0.473	55	0.217	100	0.379	145	0.982	190	0.454	235	0.254	280	0.246	325	0.241
11	0.473	56	0.228	101	0.365	146	0.988	191	0.436	236	0.257	281	0.242	326	0.248
12	0.472	57	0.240	102	0.351	147	0.992	192	0.418	237	0.259	282	0.238	327	0.254
13	0.471	58	0.252	103	0.339	148	0.996	193	0.401	238	0.262	283	0.234	328	0.260
14	0.471	59	0.265	104	0.327	149	0.997	194	0.383	239	0.266	284	0.230	329	0.268
15	0.469	60	0.279	105	0.318	150	0.997	195	0.367	240	0.269	285	0.227	330	0.279
16	0.468	61	0.295	106	0.309	151	0.995	196	0.351	241	0.272	286	0.223	331	0.290
17	0.466	62	0.308	107	0.306	152	0.994	197	0.336	242	0.275	287	0.219	332	0.301
18	0.464	63	0.321	108	0.305	153	0.990	198	0.321	243	0.278	288	0.215	333	0.313
19	0.462	64	0.334	109	0.311	154	0.986	199	0.307	244	0.281	289	0.210	334	0.324
20	0.459	65	0.346	110	0.318	155	0.982	200	0.293	245	0.284	290	0.205	335	0.333
21	0.456	66	0.360	111	0.330	156	0.977	201	0.281	246	0.287	291	0.200	336	0.339
22	0.453	67	0.375	112	0.340	157	0.971	202	0.269	247	0.291	292	0.197	337	0.344
23	0.449	68	0.391	113	0.356	158	0.965	203	0.259	248	0.294	293	0.193	338	0.350
24	0.445	69	0.405	114	0.372	159	0.957	204	0.249	249	0.297	294	0.190	339	0.355
25	0.440	70	0.420	115	0.393	160	0.949	205	0.240	250	0.300	295	0.187	340	0.359
26	0.436	71	0.437	116	0.416	161	0.940	206	0.232	251	0.301	296	0.185	341	0.364
27	0.430	72	0.454	117	0.441	162	0.929	207	0.226	252	0.303	297	0.183	342	0.373
28	0.425	73	0.470	118	0.466	163	0.916	208	0.220	253	0.305	298	0.182	343	0.382
29	0.418	74	0.486	119	0.492	164	0.904	209	0.216	254	0.306	299	0.179	344	0.392
30	0.412	75	0.496	120	0.518	165	0.890	210	0.212	255	0.307	300	0.176	345	0.402
31	0.400	76	0.506	121	0.544	166	0.877	211	0.210	256	0.309	301	0.173	346	0.411
32	0.388	77	0.514	122	0.571	167	0.862	212	0.208	257	0.310	302	0.170	347	0.420
33	0.375	78	0.522	123	0.596	168	0.848	213	0.208	258	0.311	303	0.167	348	0.429
34	0.363	79	0.527	124	0.621	169	0.832	214	0.208	259	0.311	304	0.165	349	0.437
35	0.349	80	0.532	125	0.646	170	0.817	215	0.208	260	0.310	305	0.163	350	0.445
36	0.336	81	0.535	126	0.671	171	0.800	216	0.209	261	0.309	306	0.161	351	0.448
37	0.322	82	0.537	127	0.696	172	0.784	217	0.211	262	0.308	307	0.159	352	0.451
38	0.309	83	0.533	128	0.721	173	0.767	218	0.213	263	0.306	308	0.157	353	0.453
39	0.296	84	0.530	129	0.746	174	0.750	219	0.215	264	0.303	309	0.156	354	0.456
40	0.287	85	0.524	130	0.770	175	0.733	220	0.217	265	0.300	310	0.155	355	0.458
41	0.277	86	0.520	131	0.790	176	0.715	221	0.219	266	0.297	311	0.156	356	0.461
42	0.268	87	0.515	132	0.811	177	0.697	222	0.221	267	0.295	312	0.158	357	0.462
43	0.259	88	0.511	133	0.830	178	0.679	223	0.223	268	0.293	313	0.161	358	0.464
44	0.249	89	0.504	134	0.849	179	0.660	224	0.226	269	0.291	314	0.163	359	0.466



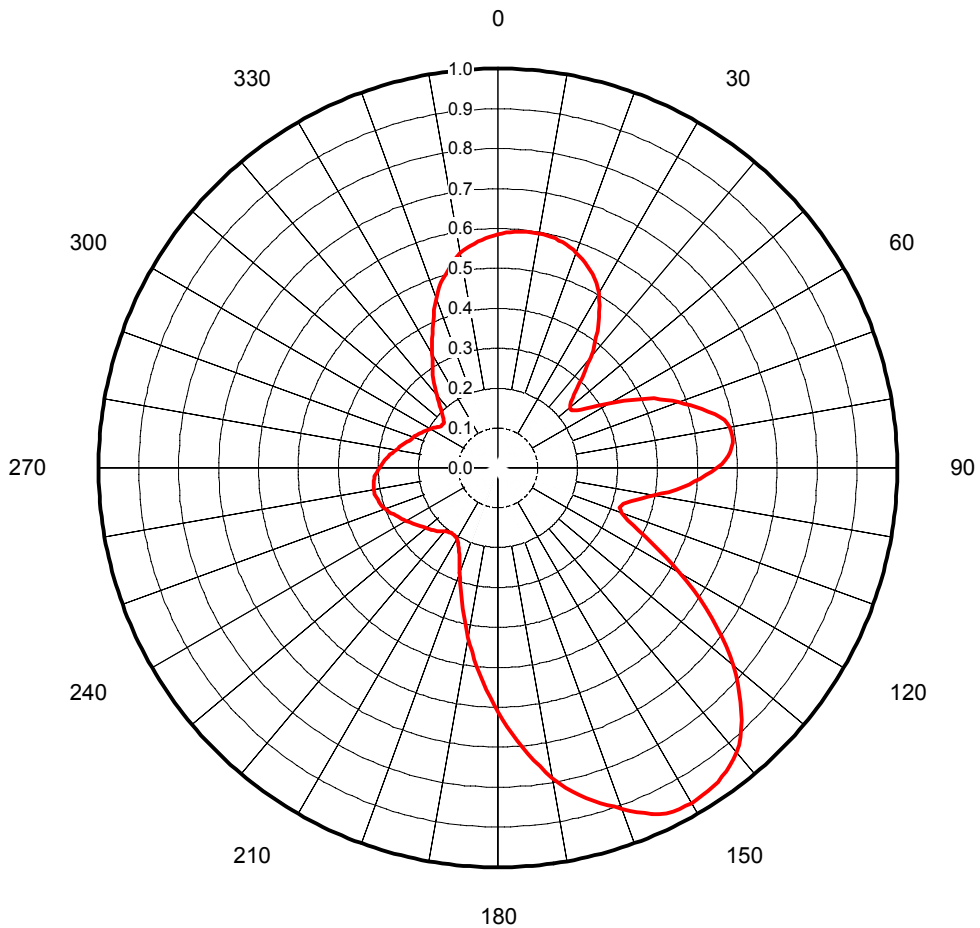
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

1.20° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT 1.2° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.585	45	0.280	90	0.549	135	0.862	180	0.611	225	0.222	270	0.297	315	0.200
1	0.587	46	0.266	91	0.535	136	0.878	181	0.593	226	0.225	271	0.294	316	0.206
2	0.589	47	0.257	92	0.521	137	0.893	182	0.574	227	0.227	272	0.291	317	0.213
3	0.591	48	0.247	93	0.506	138	0.908	183	0.556	228	0.229	273	0.288	318	0.220
4	0.593	49	0.241	94	0.494	139	0.919	184	0.538	229	0.232	274	0.284	319	0.228
5	0.594	50	0.235	95	0.481	140	0.929	185	0.519	230	0.234	275	0.280	320	0.237
6	0.595	51	0.234	96	0.467	141	0.937	186	0.501	231	0.236	276	0.276	321	0.246
7	0.595	52	0.234	97	0.450	142	0.944	187	0.483	232	0.239	277	0.272	322	0.255
8	0.596	53	0.239	98	0.432	143	0.950	188	0.465	233	0.242	278	0.267	323	0.266
9	0.596	54	0.245	99	0.414	144	0.956	189	0.448	234	0.245	279	0.262	324	0.275
10	0.596	55	0.256	100	0.396	145	0.959	190	0.430	235	0.248	280	0.258	325	0.284
11	0.595	56	0.266	101	0.382	146	0.963	191	0.413	236	0.251	281	0.255	326	0.292
12	0.595	57	0.280	102	0.368	147	0.965	192	0.396	237	0.254	282	0.252	327	0.301
13	0.593	58	0.293	103	0.356	148	0.967	193	0.380	238	0.258	283	0.249	328	0.310
14	0.592	59	0.308	104	0.343	149	0.967	194	0.364	239	0.262	284	0.246	329	0.320
15	0.590	60	0.324	105	0.335	150	0.969	195	0.348	240	0.265	285	0.241	330	0.330
16	0.588	61	0.341	106	0.326	151	0.969	196	0.333	241	0.269	286	0.237	331	0.341
17	0.585	62	0.358	107	0.324	152	0.968	197	0.319	242	0.273	287	0.232	332	0.352
18	0.582	63	0.376	108	0.321	153	0.966	198	0.305	243	0.276	288	0.230	333	0.363
19	0.578	64	0.393	109	0.325	154	0.963	199	0.292	244	0.279	289	0.227	334	0.374
20	0.574	65	0.411	110	0.329	155	0.956	200	0.279	245	0.283	290	0.225	335	0.386
21	0.569	66	0.428	111	0.340	156	0.949	201	0.268	246	0.286	291	0.223	336	0.399
22	0.565	67	0.441	112	0.351	157	0.939	202	0.257	247	0.290	292	0.219	337	0.413
23	0.559	68	0.455	113	0.369	158	0.930	203	0.247	248	0.293	293	0.216	338	0.426
24	0.553	69	0.468	114	0.386	159	0.919	204	0.238	249	0.297	294	0.213	339	0.439
25	0.546	70	0.480	115	0.407	160	0.909	205	0.230	250	0.300	295	0.210	340	0.452
26	0.539	71	0.494	116	0.428	161	0.897	206	0.223	251	0.303	296	0.207	341	0.465
27	0.531	72	0.508	117	0.452	162	0.888	207	0.218	252	0.305	297	0.204	342	0.475
28	0.523	73	0.520	118	0.475	163	0.878	208	0.212	253	0.307	298	0.201	343	0.485
29	0.514	74	0.532	119	0.501	164	0.868	209	0.209	254	0.310	299	0.198	344	0.495
30	0.505	75	0.545	120	0.526	165	0.856	210	0.205	255	0.311	300	0.195	345	0.504
31	0.493	76	0.559	121	0.552	166	0.844	211	0.203	256	0.313	301	0.192	346	0.513
32	0.480	77	0.570	122	0.578	167	0.831	212	0.201	257	0.314	302	0.189	347	0.522
33	0.467	78	0.580	123	0.604	168	0.818	213	0.201	258	0.315	303	0.186	348	0.530
34	0.453	79	0.585	124	0.629	169	0.804	214	0.200	259	0.315	304	0.182	349	0.538
35	0.438	80	0.590	125	0.654	170	0.789	215	0.200	260	0.315	305	0.180	350	0.546
36	0.424	81	0.591	126	0.679	171	0.772	216	0.201	261	0.315	306	0.177	351	0.551
37	0.409	82	0.593	127	0.702	172	0.755	217	0.202	262	0.314	307	0.176	352	0.556
38	0.394	83	0.592	128	0.726	173	0.737	218	0.203	263	0.313	308	0.176	353	0.560
39	0.378	84	0.591	129	0.749	174	0.720	219	0.205	264	0.312	309	0.176	354	0.565
40	0.360	85	0.587	130	0.771	175	0.702	220	0.208	265	0.311	310	0.177	355	0.568
41	0.343	86	0.583	131	0.791	176	0.684	221	0.210	266	0.309	311	0.180	356	0.572
42	0.326	87	0.576	132	0.810	177	0.666	222	0.213	267	0.306	312	0.184	357	0.576
43	0.310	88	0.570	133	0.827	178	0.648	223	0.216	268	0.303	313	0.189	358	0.579
44	0.294	89	0.560	134	0.845	179	0.630	224	0.219	269	0.299	314	0.194	359	0.582



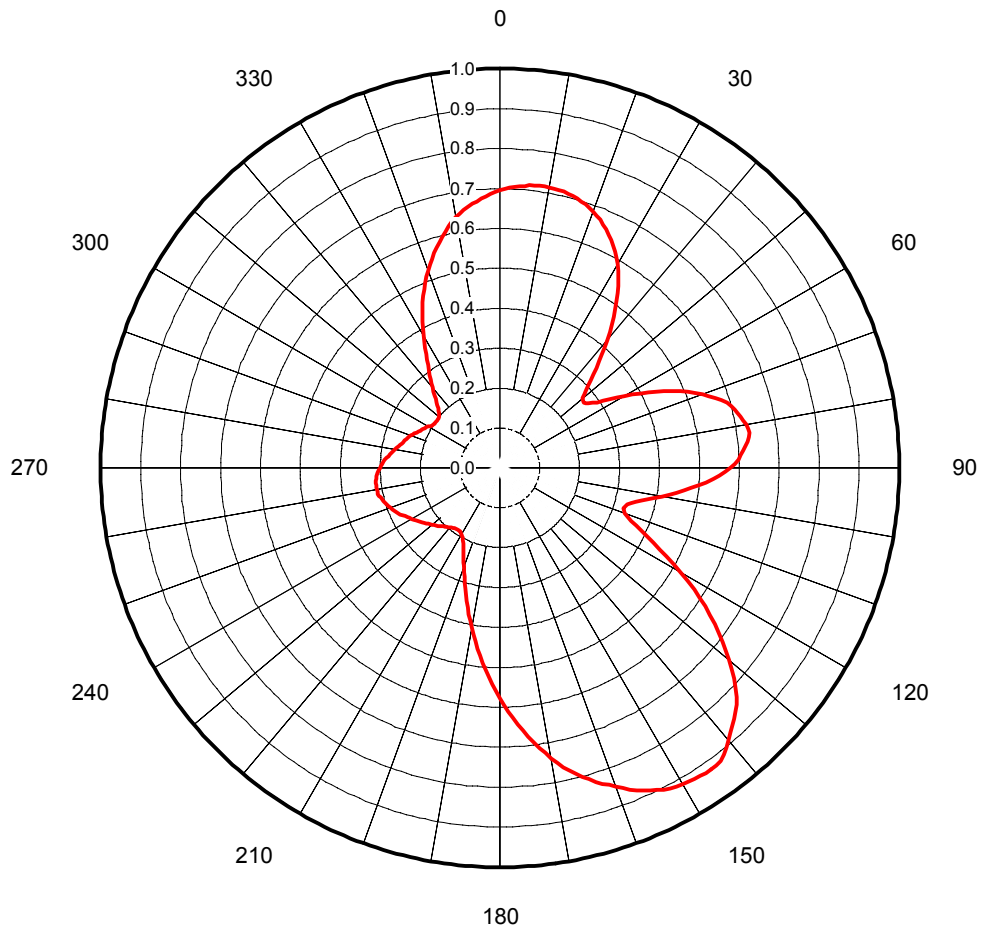
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

1.40° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT

Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT 1.4° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.695	45	0.332	90	0.578	135	0.838	180	0.576	225	0.207	270	0.300	315	0.221
1	0.698	46	0.316	91	0.564	136	0.850	181	0.559	226	0.210	271	0.297	316	0.228
2	0.702	47	0.303	92	0.550	137	0.860	182	0.542	227	0.212	272	0.295	317	0.236
3	0.704	48	0.289	93	0.535	138	0.869	183	0.525	228	0.215	273	0.291	318	0.244
4	0.707	49	0.280	94	0.518	139	0.879	184	0.508	229	0.218	274	0.288	319	0.254
5	0.709	50	0.271	95	0.500	140	0.891	185	0.490	230	0.221	275	0.284	320	0.262
6	0.711	51	0.268	96	0.482	141	0.900	186	0.473	231	0.224	276	0.281	321	0.272
7	0.712	52	0.266	97	0.464	142	0.910	187	0.456	232	0.227	277	0.278	322	0.281
8	0.713	53	0.270	98	0.447	143	0.918	188	0.439	233	0.231	278	0.274	323	0.292
9	0.713	54	0.274	99	0.429	144	0.922	189	0.423	234	0.234	279	0.271	324	0.302
10	0.713	55	0.283	100	0.412	145	0.922	190	0.406	235	0.238	280	0.268	325	0.315
11	0.712	56	0.293	101	0.395	146	0.922	191	0.390	236	0.242	281	0.264	326	0.327
12	0.711	57	0.307	102	0.378	147	0.920	192	0.374	237	0.246	282	0.260	327	0.340
13	0.709	58	0.322	103	0.364	148	0.919	193	0.359	238	0.249	283	0.257	328	0.353
14	0.708	59	0.341	104	0.350	149	0.916	194	0.344	239	0.252	284	0.253	329	0.367
15	0.704	60	0.359	105	0.340	150	0.915	195	0.329	240	0.254	285	0.251	330	0.382
16	0.702	61	0.379	106	0.331	151	0.911	196	0.314	241	0.258	286	0.248	331	0.397
17	0.697	62	0.398	107	0.328	152	0.908	197	0.301	242	0.261	287	0.246	332	0.413
18	0.693	63	0.417	108	0.325	153	0.903	198	0.288	243	0.266	288	0.243	333	0.428
19	0.688	64	0.435	109	0.329	154	0.898	199	0.275	244	0.270	289	0.240	334	0.444
20	0.683	65	0.454	110	0.333	155	0.892	200	0.263	245	0.275	290	0.237	335	0.459
21	0.676	66	0.472	111	0.344	156	0.885	201	0.252	246	0.279	291	0.234	336	0.472
22	0.669	67	0.490	112	0.354	157	0.877	202	0.242	247	0.282	292	0.230	337	0.486
23	0.662	68	0.507	113	0.371	158	0.869	203	0.233	248	0.285	293	0.227	338	0.499
24	0.654	69	0.523	114	0.388	159	0.859	204	0.224	249	0.288	294	0.223	339	0.512
25	0.644	70	0.540	115	0.408	160	0.850	205	0.217	250	0.291	295	0.220	340	0.525
26	0.635	71	0.554	116	0.428	161	0.840	206	0.209	251	0.294	296	0.218	341	0.538
27	0.625	72	0.568	117	0.450	162	0.831	207	0.204	252	0.298	297	0.216	342	0.550
28	0.614	73	0.580	118	0.473	163	0.821	208	0.199	253	0.300	298	0.214	343	0.562
29	0.602	74	0.592	119	0.498	164	0.812	209	0.195	254	0.303	299	0.210	344	0.574
30	0.590	75	0.599	120	0.523	165	0.801	210	0.192	255	0.306	300	0.207	345	0.585
31	0.575	76	0.606	121	0.548	166	0.790	211	0.190	256	0.308	301	0.204	346	0.597
32	0.560	77	0.610	122	0.573	167	0.778	212	0.188	257	0.310	302	0.200	347	0.607
33	0.543	78	0.615	123	0.597	168	0.766	213	0.188	258	0.313	303	0.199	348	0.618
34	0.527	79	0.621	124	0.620	169	0.753	214	0.187	259	0.313	304	0.198	349	0.628
35	0.509	80	0.627	125	0.642	170	0.739	215	0.187	260	0.313	305	0.197	350	0.638
36	0.492	81	0.630	126	0.665	171	0.723	216	0.188	261	0.313	306	0.197	351	0.645
37	0.474	82	0.632	127	0.686	172	0.708	217	0.189	262	0.313	307	0.197	352	0.652
38	0.456	83	0.628	128	0.708	173	0.692	218	0.190	263	0.312	308	0.196	353	0.658
39	0.437	84	0.623	129	0.728	174	0.676	219	0.192	264	0.312	309	0.198	354	0.665
40	0.419	85	0.616	130	0.748	175	0.660	220	0.194	265	0.311	310	0.199	355	0.671
41	0.400	86	0.611	131	0.768	176	0.644	221	0.196	266	0.310	311	0.202	356	0.676
42	0.382	87	0.604	132	0.788	177	0.627	222	0.199	267	0.307	312	0.205	357	0.681
43	0.365	88	0.598	133	0.807	178	0.610	223	0.202	268	0.305	313	0.210	358	0.686
44	0.348	89	0.589	134	0.825	179	0.593	224	0.204	269	0.303	314	0.214	359	0.690



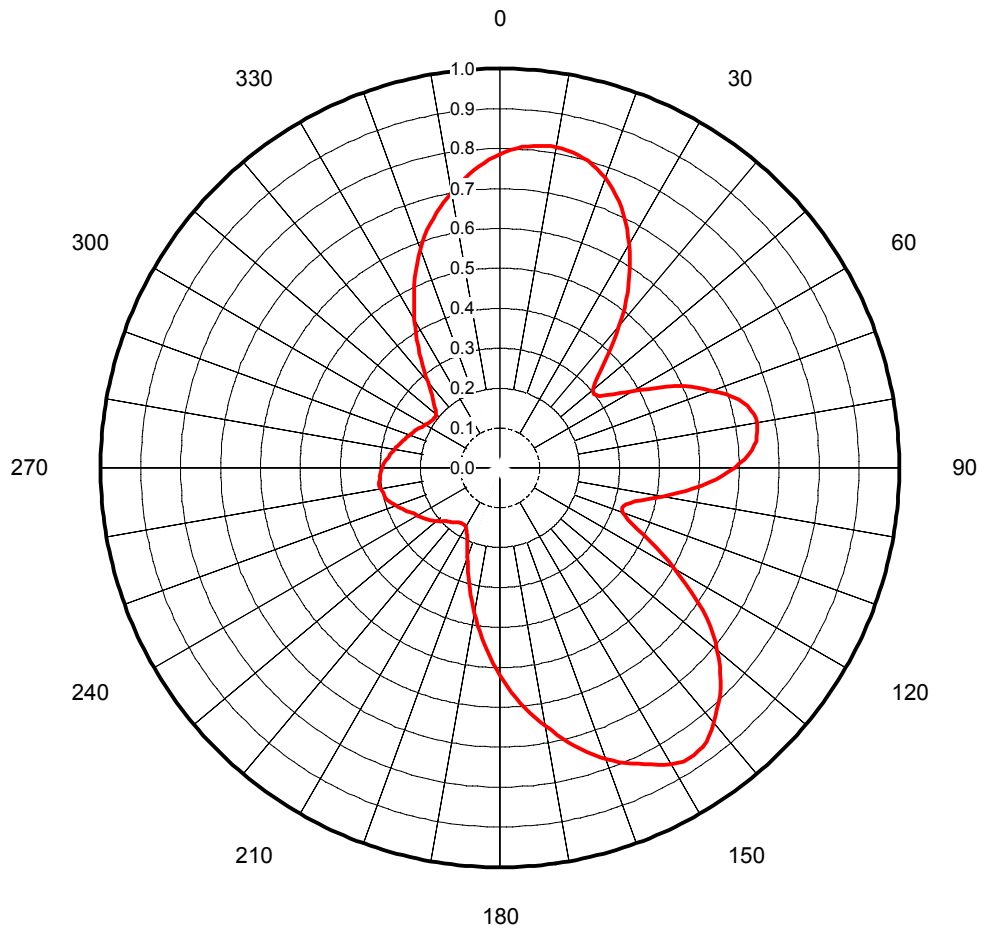
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

1.60° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT 1.6° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.786	45	0.367	90	0.587	135	0.781	180	0.519	225	0.190	270	0.295	315	0.236
1	0.791	46	0.349	91	0.573	136	0.793	181	0.504	226	0.193	271	0.293	316	0.242
2	0.797	47	0.335	92	0.558	137	0.803	182	0.489	227	0.196	272	0.291	317	0.251
3	0.801	48	0.321	93	0.542	138	0.813	183	0.474	228	0.200	273	0.289	318	0.259
4	0.805	49	0.313	94	0.525	139	0.822	184	0.459	229	0.203	274	0.286	319	0.270
5	0.808	50	0.304	95	0.506	140	0.833	185	0.444	230	0.207	275	0.283	320	0.281
6	0.812	51	0.301	96	0.488	141	0.842	186	0.428	231	0.211	276	0.279	321	0.295
7	0.813	52	0.298	97	0.469	142	0.852	187	0.413	232	0.214	277	0.276	322	0.308
8	0.815	53	0.302	98	0.450	143	0.859	188	0.398	233	0.217	278	0.274	323	0.323
9	0.815	54	0.306	99	0.431	144	0.864	189	0.383	234	0.220	279	0.271	324	0.337
10	0.815	55	0.316	100	0.413	145	0.865	190	0.368	235	0.224	280	0.268	325	0.351
11	0.814	56	0.326	101	0.395	146	0.867	191	0.353	236	0.227	281	0.265	326	0.366
12	0.813	57	0.340	102	0.377	147	0.867	192	0.339	237	0.230	282	0.262	327	0.381
13	0.810	58	0.353	103	0.362	148	0.867	193	0.325	238	0.233	283	0.259	328	0.396
14	0.808	59	0.369	104	0.348	149	0.863	194	0.311	239	0.235	284	0.257	329	0.412
15	0.803	60	0.385	105	0.338	150	0.857	195	0.298	240	0.238	285	0.254	330	0.427
16	0.799	61	0.402	106	0.329	151	0.850	196	0.284	241	0.241	286	0.251	331	0.443
17	0.793	62	0.422	107	0.326	152	0.843	197	0.272	242	0.244	287	0.249	332	0.459
18	0.787	63	0.442	108	0.321	153	0.834	198	0.260	243	0.248	288	0.246	333	0.475
19	0.780	64	0.463	109	0.324	154	0.825	199	0.248	244	0.252	289	0.244	334	0.491
20	0.772	65	0.484	110	0.327	155	0.818	200	0.237	245	0.256	290	0.241	335	0.507
21	0.763	66	0.503	111	0.336	156	0.811	201	0.227	246	0.260	291	0.238	336	0.522
22	0.754	67	0.519	112	0.346	157	0.803	202	0.217	247	0.264	292	0.236	337	0.538
23	0.743	68	0.536	113	0.361	158	0.795	203	0.209	248	0.268	293	0.234	338	0.553
24	0.732	69	0.550	114	0.376	159	0.785	204	0.201	249	0.272	294	0.231	339	0.568
25	0.719	70	0.565	115	0.396	160	0.776	205	0.194	250	0.276	295	0.229	340	0.583
26	0.707	71	0.580	116	0.416	161	0.765	206	0.187	251	0.280	296	0.226	341	0.598
27	0.692	72	0.595	117	0.439	162	0.755	207	0.182	252	0.285	297	0.223	342	0.611
28	0.678	73	0.609	118	0.462	163	0.743	208	0.177	253	0.289	298	0.220	343	0.623
29	0.662	74	0.622	119	0.484	164	0.732	209	0.174	254	0.293	299	0.218	344	0.635
30	0.647	75	0.630	120	0.505	165	0.720	210	0.171	255	0.295	300	0.216	345	0.647
31	0.631	76	0.639	121	0.526	166	0.708	211	0.169	256	0.297	301	0.214	346	0.658
32	0.615	77	0.645	122	0.547	167	0.695	212	0.168	257	0.297	302	0.212	347	0.668
33	0.598	78	0.650	123	0.572	168	0.682	213	0.168	258	0.298	303	0.210	348	0.679
34	0.581	79	0.652	124	0.596	169	0.668	214	0.168	259	0.300	304	0.208	349	0.689
35	0.563	80	0.653	125	0.620	170	0.656	215	0.168	260	0.303	305	0.208	350	0.699
36	0.544	81	0.652	126	0.643	171	0.644	216	0.169	261	0.304	306	0.207	351	0.710
37	0.525	82	0.651	127	0.660	172	0.631	217	0.171	262	0.305	307	0.206	352	0.720
38	0.506	83	0.648	128	0.678	173	0.618	218	0.173	263	0.304	308	0.206	353	0.730
39	0.486	84	0.645	129	0.693	174	0.605	219	0.175	264	0.303	309	0.207	354	0.740
40	0.465	85	0.640	130	0.709	175	0.591	220	0.177	265	0.302	310	0.208	355	0.748
41	0.444	86	0.633	131	0.725	176	0.577	221	0.180	266	0.301	311	0.212	356	0.757
42	0.423	87	0.623	132	0.741	177	0.563	222	0.182	267	0.299	312	0.216	357	0.765
43	0.404	88	0.613	133	0.755	178	0.549	223	0.185	268	0.298	313	0.222	358	0.773
44	0.384	89	0.600	134	0.769	179	0.534	224	0.187	269	0.296	314	0.228	359	0.779



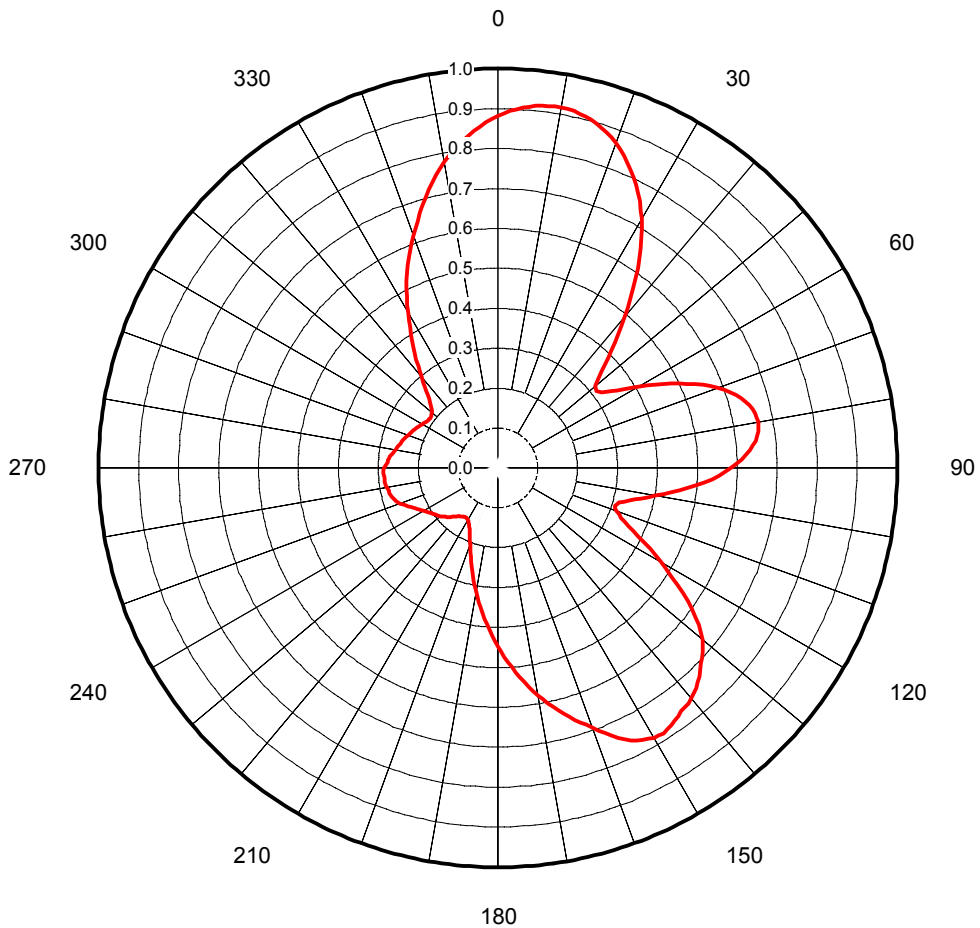
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

1.80° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT 1.8° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.881	45	0.391	90	0.584	135	0.716	180	0.447	225	0.174	270	0.285	315	0.244
1	0.887	46	0.372	91	0.569	136	0.726	181	0.433	226	0.177	271	0.282	316	0.252
2	0.894	47	0.356	92	0.554	137	0.734	182	0.420	227	0.180	272	0.279	317	0.262
3	0.899	48	0.340	93	0.537	138	0.742	183	0.406	228	0.183	273	0.276	318	0.273
4	0.904	49	0.330	94	0.518	139	0.748	184	0.393	229	0.186	274	0.275	319	0.285
5	0.908	50	0.319	95	0.498	140	0.754	185	0.379	230	0.188	275	0.274	320	0.297
6	0.912	51	0.316	96	0.479	141	0.757	186	0.366	231	0.191	276	0.272	321	0.311
7	0.914	52	0.313	97	0.459	142	0.761	187	0.353	232	0.194	277	0.270	322	0.324
8	0.916	53	0.317	98	0.439	143	0.763	188	0.340	233	0.196	278	0.267	323	0.339
9	0.916	54	0.321	99	0.420	144	0.768	189	0.327	234	0.198	279	0.263	324	0.354
10	0.916	55	0.332	100	0.400	145	0.773	190	0.314	235	0.200	280	0.260	325	0.369
11	0.915	56	0.342	101	0.384	146	0.778	191	0.302	236	0.202	281	0.258	326	0.383
12	0.914	57	0.357	102	0.367	147	0.781	192	0.289	237	0.205	282	0.256	327	0.399
13	0.910	58	0.372	103	0.353	148	0.783	193	0.277	238	0.208	283	0.254	328	0.415
14	0.907	59	0.389	104	0.339	149	0.783	194	0.266	239	0.212	284	0.252	329	0.431
15	0.902	60	0.407	105	0.327	150	0.780	195	0.254	240	0.215	285	0.250	330	0.449
16	0.897	61	0.426	106	0.316	151	0.776	196	0.243	241	0.219	286	0.248	331	0.467
17	0.890	62	0.445	107	0.311	152	0.771	197	0.233	242	0.223	287	0.247	332	0.486
18	0.883	63	0.463	108	0.308	153	0.766	198	0.223	243	0.227	288	0.244	333	0.504
19	0.874	64	0.482	109	0.312	154	0.760	199	0.213	244	0.231	289	0.242	334	0.523
20	0.865	65	0.500	110	0.315	155	0.750	200	0.204	245	0.235	290	0.240	335	0.540
21	0.854	66	0.518	111	0.325	156	0.740	201	0.196	246	0.239	291	0.237	336	0.556
22	0.844	67	0.536	112	0.332	157	0.728	202	0.188	247	0.245	292	0.235	337	0.572
23	0.831	68	0.554	113	0.345	158	0.717	203	0.181	248	0.250	293	0.233	338	0.588
24	0.818	69	0.571	114	0.358	159	0.705	204	0.174	249	0.255	294	0.232	339	0.603
25	0.803	70	0.587	115	0.375	160	0.693	205	0.169	250	0.261	295	0.229	340	0.619
26	0.789	71	0.600	116	0.392	161	0.680	206	0.163	251	0.264	296	0.227	341	0.634
27	0.772	72	0.613	117	0.411	162	0.670	207	0.159	252	0.268	297	0.225	342	0.651
28	0.756	73	0.623	118	0.431	163	0.660	208	0.155	253	0.271	298	0.223	343	0.668
29	0.738	74	0.633	119	0.451	164	0.649	209	0.153	254	0.274	299	0.220	344	0.685
30	0.719	75	0.641	120	0.471	165	0.638	210	0.150	255	0.276	300	0.218	345	0.701
31	0.699	76	0.649	121	0.492	166	0.626	211	0.149	256	0.277	301	0.217	346	0.717
32	0.678	77	0.654	122	0.512	167	0.614	212	0.148	257	0.278	302	0.215	347	0.733
33	0.655	78	0.659	123	0.535	168	0.603	213	0.148	258	0.279	303	0.213	348	0.748
34	0.633	79	0.660	124	0.558	169	0.590	214	0.148	259	0.281	304	0.212	349	0.763
35	0.610	80	0.662	125	0.580	170	0.578	215	0.149	260	0.283	305	0.211	350	0.778
36	0.587	81	0.660	126	0.601	171	0.565	216	0.150	261	0.284	306	0.210	351	0.790
37	0.563	82	0.658	127	0.619	172	0.553	217	0.152	262	0.285	307	0.211	352	0.803
38	0.539	83	0.654	128	0.637	173	0.540	218	0.153	263	0.285	308	0.212	353	0.814
39	0.515	84	0.649	129	0.654	174	0.527	219	0.155	264	0.286	309	0.214	354	0.826
40	0.493	85	0.642	130	0.669	175	0.514	220	0.158	265	0.286	310	0.216	355	0.836
41	0.472	86	0.634	131	0.680	176	0.501	221	0.161	266	0.286	311	0.220	356	0.846
42	0.450	87	0.622	132	0.690	177	0.487	222	0.164	267	0.286	312	0.224	357	0.856
43	0.430	88	0.611	133	0.699	178	0.474	223	0.167	268	0.286	313	0.230	358	0.865
44	0.409	89	0.597	134	0.707	179	0.460	224	0.171	269	0.286	314	0.235	359	0.873



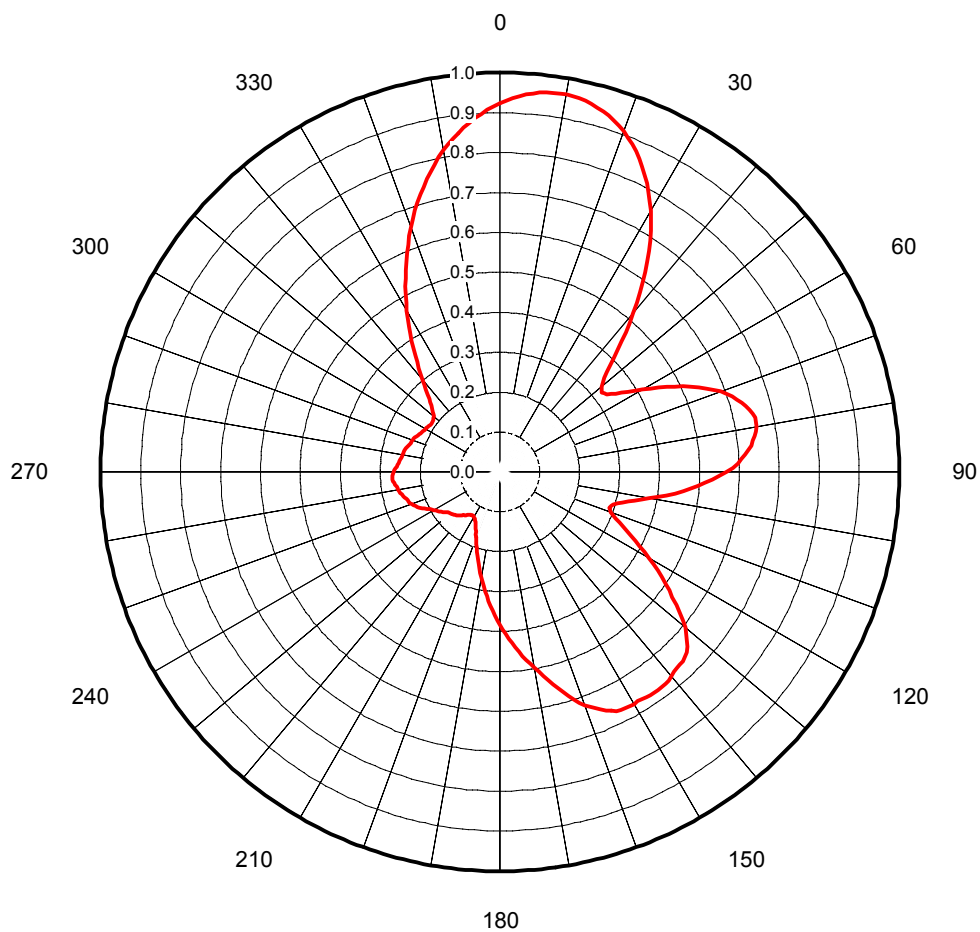
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

2.00° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT 2.0° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.923	45	0.403	90	0.567	135	0.656	180	0.383	225	0.153	270	0.266	315	0.247
1	0.930	46	0.383	91	0.549	136	0.659	181	0.371	226	0.156	271	0.264	316	0.255
2	0.936	47	0.367	92	0.532	137	0.661	182	0.359	227	0.157	272	0.261	317	0.266
3	0.942	48	0.352	93	0.513	138	0.662	183	0.348	228	0.159	273	0.258	318	0.277
4	0.947	49	0.341	94	0.497	139	0.664	184	0.336	229	0.160	274	0.257	319	0.289
5	0.951	50	0.331	95	0.480	140	0.668	185	0.325	230	0.162	275	0.255	320	0.302
6	0.954	51	0.328	96	0.462	141	0.671	186	0.313	231	0.164	276	0.254	321	0.316
7	0.957	52	0.324	97	0.442	142	0.673	187	0.302	232	0.166	277	0.252	322	0.330
8	0.959	53	0.327	98	0.421	143	0.674	188	0.291	233	0.169	278	0.250	323	0.345
9	0.959	54	0.330	99	0.400	144	0.675	189	0.280	234	0.171	279	0.249	324	0.361
10	0.959	55	0.340	100	0.380	145	0.675	190	0.269	235	0.174	280	0.247	325	0.378
11	0.958	56	0.349	101	0.362	146	0.675	191	0.258	236	0.177	281	0.246	326	0.394
12	0.957	57	0.364	102	0.345	147	0.673	192	0.247	237	0.181	282	0.245	327	0.412
13	0.953	58	0.378	103	0.330	148	0.671	193	0.237	238	0.184	283	0.245	328	0.430
14	0.950	59	0.395	104	0.316	149	0.670	194	0.227	239	0.187	284	0.243	329	0.448
15	0.945	60	0.413	105	0.305	150	0.671	195	0.218	240	0.191	285	0.241	330	0.466
16	0.940	61	0.432	106	0.295	151	0.671	196	0.208	241	0.195	286	0.238	331	0.484
17	0.932	62	0.450	107	0.291	152	0.670	197	0.199	242	0.199	287	0.236	332	0.502
18	0.925	63	0.469	108	0.288	153	0.669	198	0.191	243	0.204	288	0.234	333	0.520
19	0.916	64	0.488	109	0.292	154	0.667	199	0.183	244	0.210	289	0.234	334	0.538
20	0.907	65	0.506	110	0.295	155	0.661	200	0.175	245	0.215	290	0.233	335	0.557
21	0.896	66	0.524	111	0.304	156	0.654	201	0.168	246	0.220	291	0.232	336	0.576
22	0.884	67	0.541	112	0.312	157	0.646	202	0.161	247	0.224	292	0.229	337	0.595
23	0.871	68	0.558	113	0.325	158	0.638	203	0.155	248	0.228	293	0.227	338	0.614
24	0.858	69	0.573	114	0.337	159	0.630	204	0.149	249	0.232	294	0.225	339	0.633
25	0.843	70	0.588	115	0.352	160	0.621	205	0.145	250	0.236	295	0.223	340	0.652
26	0.828	71	0.600	116	0.366	161	0.612	206	0.140	251	0.238	296	0.221	341	0.671
27	0.810	72	0.612	117	0.381	162	0.599	207	0.137	252	0.240	297	0.220	342	0.688
28	0.793	73	0.621	118	0.396	163	0.587	208	0.134	253	0.242	298	0.218	343	0.706
29	0.774	74	0.630	119	0.413	164	0.574	209	0.132	254	0.244	299	0.217	344	0.723
30	0.756	75	0.637	120	0.431	165	0.561	210	0.130	255	0.246	300	0.215	345	0.739
31	0.734	76	0.645	121	0.449	166	0.549	211	0.129	256	0.249	301	0.214	346	0.756
32	0.713	77	0.649	122	0.467	167	0.536	212	0.129	257	0.252	302	0.213	347	0.772
33	0.690	78	0.654	123	0.484	168	0.523	213	0.129	258	0.255	303	0.212	348	0.787
34	0.667	79	0.653	124	0.501	169	0.510	214	0.130	259	0.257	304	0.210	349	0.802
35	0.643	80	0.652	125	0.517	170	0.498	215	0.131	260	0.259	305	0.210	350	0.817
36	0.619	81	0.648	126	0.534	171	0.487	216	0.133	261	0.260	306	0.209	351	0.830
37	0.595	82	0.645	127	0.553	172	0.476	217	0.135	262	0.262	307	0.210	352	0.843
38	0.570	83	0.638	128	0.571	173	0.464	218	0.137	263	0.264	308	0.211	353	0.854
39	0.545	84	0.632	129	0.589	174	0.453	219	0.140	264	0.267	309	0.214	354	0.866
40	0.520	85	0.623	130	0.606	175	0.441	220	0.142	265	0.268	310	0.217	355	0.877
41	0.495	86	0.615	131	0.619	176	0.430	221	0.144	266	0.270	311	0.221	356	0.888
42	0.470	87	0.605	132	0.631	177	0.418	222	0.146	267	0.269	312	0.225	357	0.897
43	0.447	88	0.595	133	0.641	178	0.406	223	0.149	268	0.269	313	0.232	358	0.907
44	0.424	89	0.583	134	0.651	179	0.394	224	0.151	269	0.268	314	0.238	359	0.915



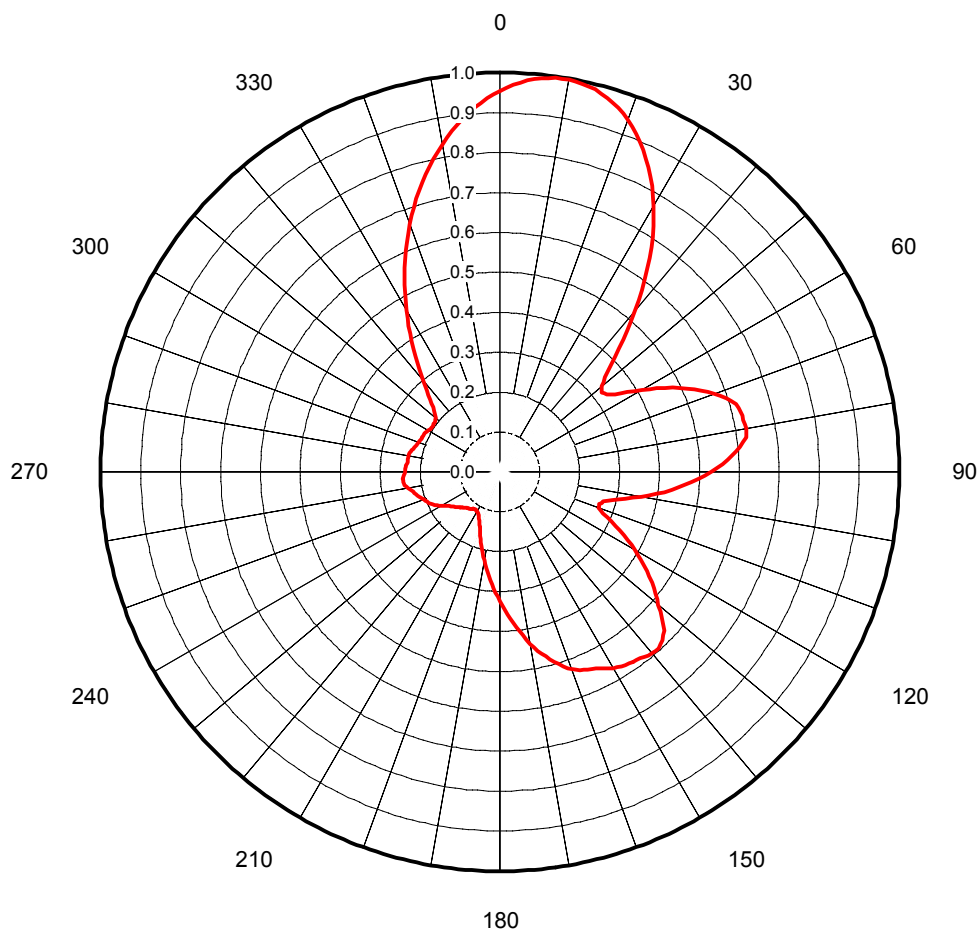
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

2.20° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT 2.2° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.954	45	0.408	90	0.529	135	0.578	180	0.324	225	0.126	270	0.238	315	0.242
1	0.962	46	0.388	91	0.513	136	0.585	181	0.313	226	0.128	271	0.237	316	0.251
2	0.970	47	0.371	92	0.497	137	0.589	182	0.303	227	0.130	272	0.236	317	0.262
3	0.976	48	0.354	93	0.480	138	0.594	183	0.292	228	0.132	273	0.236	318	0.274
4	0.982	49	0.344	94	0.465	139	0.595	184	0.282	229	0.135	274	0.235	319	0.287
5	0.987	50	0.333	95	0.449	140	0.594	185	0.272	230	0.137	275	0.234	320	0.299
6	0.991	51	0.329	96	0.433	141	0.591	186	0.262	231	0.139	276	0.233	321	0.314
7	0.994	52	0.324	97	0.414	142	0.587	187	0.252	232	0.142	277	0.232	322	0.328
8	0.996	53	0.327	98	0.395	143	0.583	188	0.243	233	0.145	278	0.233	323	0.343
9	0.997	54	0.330	99	0.377	144	0.581	189	0.234	234	0.147	279	0.233	324	0.359
10	0.997	55	0.339	100	0.358	145	0.580	190	0.225	235	0.150	280	0.233	325	0.376
11	0.995	56	0.348	101	0.339	146	0.579	191	0.216	236	0.153	281	0.232	326	0.394
12	0.994	57	0.362	102	0.320	147	0.577	192	0.207	237	0.156	282	0.230	327	0.412
13	0.990	58	0.376	103	0.304	148	0.574	193	0.199	238	0.160	283	0.229	328	0.430
14	0.986	59	0.393	104	0.290	149	0.571	194	0.190	239	0.165	284	0.228	329	0.449
15	0.980	60	0.410	105	0.280	150	0.567	195	0.182	240	0.170	285	0.225	330	0.468
16	0.975	61	0.428	106	0.270	151	0.563	196	0.175	241	0.174	286	0.223	331	0.487
17	0.966	62	0.446	107	0.265	152	0.558	197	0.168	242	0.179	287	0.220	332	0.506
18	0.958	63	0.463	108	0.261	153	0.553	198	0.161	243	0.182	288	0.219	333	0.525
19	0.948	64	0.480	109	0.262	154	0.548	199	0.154	244	0.186	289	0.218	334	0.545
20	0.938	65	0.497	110	0.263	155	0.544	200	0.148	245	0.190	290	0.217	335	0.564
21	0.925	66	0.513	111	0.270	156	0.542	201	0.142	246	0.193	291	0.216	336	0.583
22	0.912	67	0.529	112	0.279	157	0.539	202	0.137	247	0.196	292	0.215	337	0.603
23	0.898	68	0.544	113	0.292	158	0.535	203	0.132	248	0.198	293	0.214	338	0.622
24	0.883	69	0.557	114	0.305	159	0.531	204	0.128	249	0.200	294	0.213	339	0.641
25	0.866	70	0.571	115	0.320	160	0.526	205	0.124	250	0.202	295	0.212	340	0.661
26	0.849	71	0.583	116	0.334	161	0.521	206	0.121	251	0.205	296	0.211	341	0.679
27	0.830	72	0.595	117	0.349	162	0.513	207	0.119	252	0.208	297	0.211	342	0.698
28	0.811	73	0.605	118	0.364	163	0.504	208	0.116	253	0.212	298	0.211	343	0.716
29	0.790	74	0.615	119	0.378	164	0.495	209	0.115	254	0.215	299	0.209	344	0.734
30	0.770	75	0.619	120	0.391	165	0.486	210	0.114	255	0.218	300	0.207	345	0.751
31	0.747	76	0.622	121	0.403	166	0.477	211	0.113	256	0.221	301	0.205	346	0.768
32	0.725	77	0.623	122	0.415	167	0.467	212	0.112	257	0.223	302	0.203	347	0.785
33	0.702	78	0.624	123	0.430	168	0.458	213	0.113	258	0.226	303	0.203	348	0.801
34	0.678	79	0.626	124	0.444	169	0.448	214	0.113	259	0.230	304	0.203	349	0.816
35	0.653	80	0.627	125	0.458	170	0.437	215	0.114	260	0.234	305	0.204	350	0.832
36	0.629	81	0.626	126	0.471	171	0.425	216	0.115	261	0.238	306	0.204	351	0.847
37	0.603	82	0.623	127	0.483	172	0.414	217	0.116	262	0.241	307	0.205	352	0.862
38	0.578	83	0.614	128	0.496	173	0.402	218	0.117	263	0.242	308	0.206	353	0.875
39	0.552	84	0.604	129	0.507	174	0.391	219	0.119	264	0.243	309	0.208	354	0.889
40	0.527	85	0.593	130	0.518	175	0.379	220	0.120	265	0.244	310	0.210	355	0.901
41	0.502	86	0.582	131	0.532	176	0.368	221	0.121	266	0.244	311	0.215	356	0.913
42	0.476	87	0.570	132	0.546	177	0.357	222	0.123	267	0.242	312	0.220	357	0.924
43	0.453	88	0.558	133	0.559	178	0.346	223	0.124	268	0.240	313	0.226	358	0.935
44	0.429	89	0.544	134	0.571	179	0.335	224	0.125	269	0.238	314	0.233	359	0.945



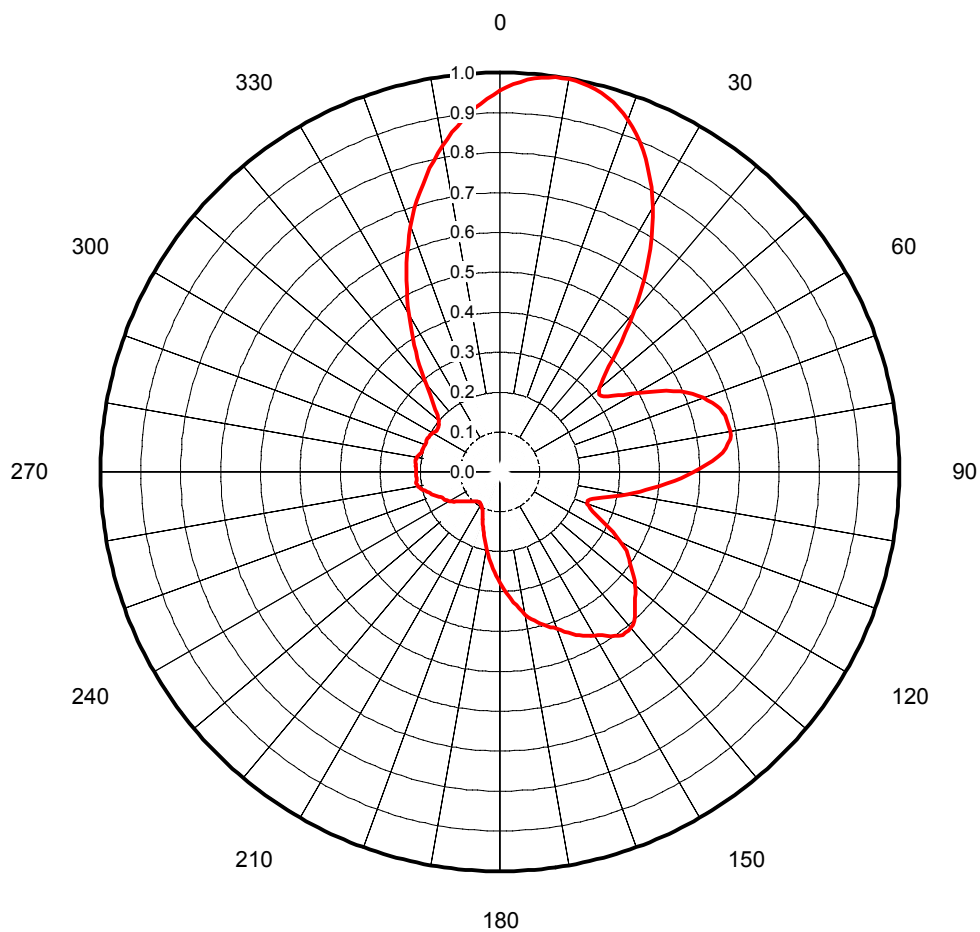
Date	12-Feb-04	
Call Letters	WBNX-DT	Channel 30
Location	Akron, OH	
Customer		
Antenna Type	TFU-30DSC-R P270BNT	

AZIMUTH PATTERN:

2.40° Depression Angle

Gain
Calculated / Measured **Calculated**

Frequency **521.00 MHz**
Drawing # **TFU-P270BNT**



Mech. Tilt: 0.80°
@
Azimuth: 10 deg



Date
Call Letters
Location
Customer
Antenna Type

12-Feb-04

WBNX-DT
Akron, OH

Channel

30

TFU-30DSC-R P270BNT

TABULATION OF AZIMUTH PATTERN AT 2.4° DEPRESSION ANGLE

Azimuth Pattern Drawing #: TFU-P270BNT

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.954	45	0.401	90	0.485	135	0.478	180	0.277	225	0.104	270	0.210	315	0.234
1	0.963	46	0.379	91	0.469	136	0.487	181	0.268	226	0.106	271	0.210	316	0.242
2	0.971	47	0.363	92	0.454	137	0.495	182	0.259	227	0.108	272	0.210	317	0.252
3	0.977	48	0.346	93	0.437	138	0.503	183	0.251	228	0.110	273	0.210	318	0.262
4	0.984	49	0.335	94	0.420	139	0.508	184	0.243	229	0.112	274	0.211	319	0.274
5	0.988	50	0.323	95	0.402	140	0.510	185	0.234	230	0.114	275	0.212	320	0.288
6	0.993	51	0.319	96	0.385	141	0.511	186	0.226	231	0.117	276	0.213	321	0.303
7	0.995	52	0.315	97	0.369	142	0.512	187	0.218	232	0.119	277	0.214	322	0.318
8	0.998	53	0.318	98	0.354	143	0.511	188	0.209	233	0.123	278	0.213	323	0.335
9	0.998	54	0.321	99	0.339	144	0.508	189	0.201	234	0.126	279	0.212	324	0.351
10	0.999	55	0.330	100	0.325	145	0.502	190	0.194	235	0.130	280	0.211	325	0.367
11	0.997	56	0.340	101	0.309	146	0.496	191	0.186	236	0.133	281	0.209	326	0.383
12	0.996	57	0.352	102	0.293	147	0.489	192	0.178	237	0.137	282	0.206	327	0.401
13	0.992	58	0.365	103	0.280	148	0.483	193	0.171	238	0.140	283	0.204	328	0.418
14	0.988	59	0.379	104	0.266	149	0.477	194	0.164	239	0.143	284	0.202	329	0.436
15	0.982	60	0.394	105	0.254	150	0.474	195	0.157	240	0.146	285	0.202	330	0.455
16	0.976	61	0.409	106	0.243	151	0.469	196	0.150	241	0.149	286	0.201	331	0.474
17	0.967	62	0.427	107	0.236	152	0.465	197	0.144	242	0.151	287	0.201	332	0.494
18	0.959	63	0.444	108	0.231	153	0.460	198	0.138	243	0.153	288	0.200	333	0.513
19	0.948	64	0.462	109	0.232	154	0.455	199	0.132	244	0.155	289	0.200	334	0.533
20	0.938	65	0.480	110	0.233	155	0.450	200	0.126	245	0.157	290	0.199	335	0.553
21	0.925	66	0.496	111	0.238	156	0.444	201	0.121	246	0.159	291	0.199	336	0.573
22	0.912	67	0.508	112	0.243	157	0.438	202	0.116	247	0.162	292	0.199	337	0.594
23	0.897	68	0.521	113	0.252	158	0.432	203	0.112	248	0.166	293	0.200	338	0.614
24	0.881	69	0.531	114	0.261	159	0.425	204	0.108	249	0.169	294	0.200	339	0.634
25	0.864	70	0.541	115	0.274	160	0.419	205	0.105	250	0.172	295	0.200	340	0.654
26	0.847	71	0.550	116	0.288	161	0.412	206	0.102	251	0.176	296	0.199	341	0.674
27	0.828	72	0.560	117	0.304	162	0.408	207	0.099	252	0.179	297	0.198	342	0.693
28	0.808	73	0.567	118	0.320	163	0.403	208	0.097	253	0.182	298	0.197	343	0.711
29	0.787	74	0.573	119	0.334	164	0.399	209	0.096	254	0.185	299	0.195	344	0.729
30	0.766	75	0.577	120	0.347	165	0.393	210	0.094	255	0.190	300	0.194	345	0.746
31	0.744	76	0.581	121	0.360	166	0.388	211	0.093	256	0.194	301	0.192	346	0.763
32	0.721	77	0.582	122	0.373	167	0.382	212	0.092	257	0.199	302	0.190	347	0.780
33	0.698	78	0.584	123	0.382	168	0.376	213	0.092	258	0.203	303	0.190	348	0.797
34	0.674	79	0.585	124	0.391	169	0.369	214	0.092	259	0.206	304	0.190	349	0.812
35	0.649	80	0.587	125	0.398	170	0.362	215	0.092	260	0.208	305	0.190	350	0.828
36	0.624	81	0.585	126	0.406	171	0.354	216	0.092	261	0.210	306	0.191	351	0.843
37	0.599	82	0.583	127	0.416	172	0.345	217	0.093	262	0.211	307	0.192	352	0.858
38	0.574	83	0.576	128	0.425	173	0.337	218	0.093	263	0.211	308	0.194	353	0.872
39	0.548	84	0.569	129	0.434	174	0.328	219	0.094	264	0.210	309	0.196	354	0.887
40	0.521	85	0.559	130	0.443	175	0.320	220	0.096	265	0.209	310	0.199	355	0.899
41	0.496	86	0.547	131	0.450	176	0.311	221	0.097	266	0.209	311	0.205	356	0.912
42	0.470	87	0.532	132	0.457	177	0.302	222	0.099	267	0.209	312	0.210	357	0.923
43	0.446	88	0.517	133	0.463	178	0.294	223	0.101	268	0.210	313	0.218	358	0.935
44	0.422	89	0.500	134	0.469	179	0.285	224	0.102	269	0.210	314	0.225	359	0.945



Proposal Number

Date

Call Letters

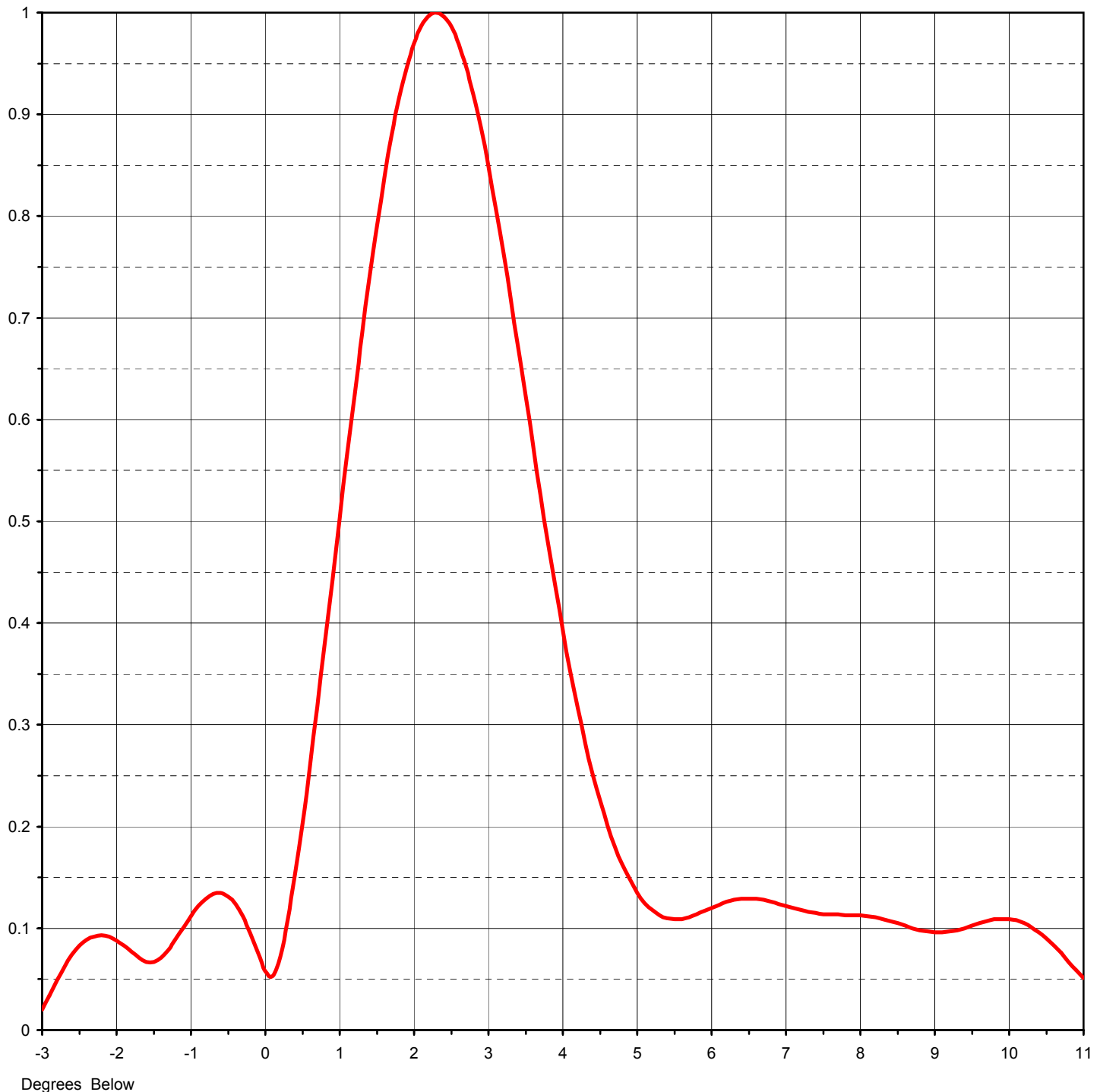
Location

Customer

Antenna Type

18-Feb-04**WBNX-DT****Akron, OH****TFU-30DSC-R P270BNT**

Revision:

Channel **30****ELEVATION PATTERN @ 10 Degrees True**RMS Gain at Main Lobe **24.50 (13.89 dB)**RMS Gain at Horizontal **1.40 (1.52 dB)**Calculated / Measured **Calculated**Beam Tilt **2.30 deg**Frequency **569.00 MHz**Drawing # **30Q245150**



Proposal Number

Revision:

Date

18-Feb-04

Call Letters

WBNX-DT

Channel **30**

Location

Akron, OH

Customer

Antenna Type

TFU-30DSC-R P270BNT

ELEVATION PATTERN @ 10 Degrees True

RMS Gain at Main Lobe **24.50 (13.89 dB)**

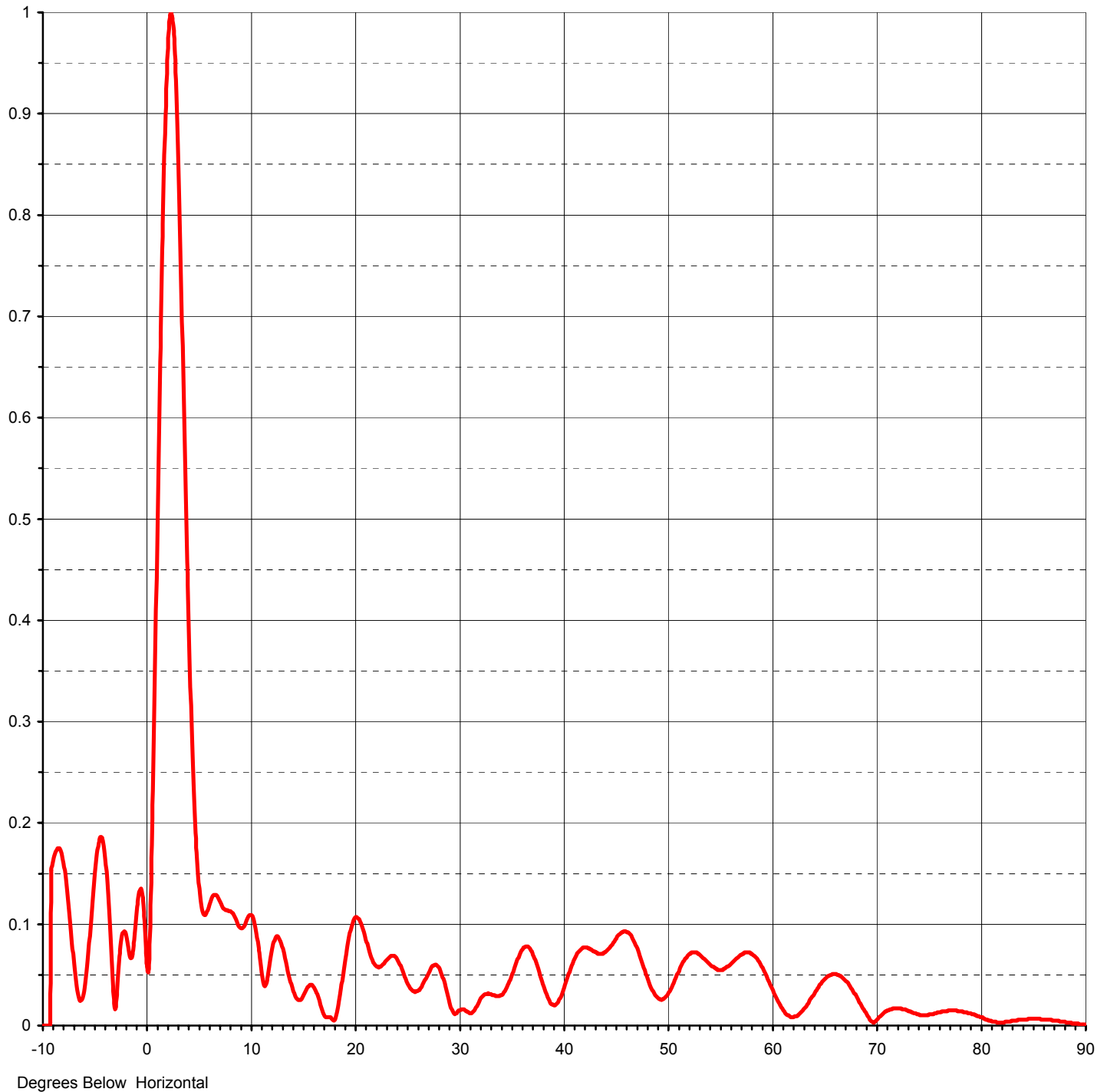
Beam Tilt **2.30 deg**

RMS Gain at Horizontal **1.40 (1.52 dB)**

Frequency **569.00 MHz**

Calculated / Measured **Calculated**

Drawing # **30Q245150-90**





Proposal Number

Revision:

Date

18-Feb-04

Call Letters

WBNX-DT

Channel

30

Location

Akron, OH

Customer

Antenna Type

TFU-30DSC-R P270BNT

TABULATION OF ELEVATION PATTERN @ 10 Degrees True

Elevation Pattern Drawing #: **30Q245150-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.000	2.4	0.996	10.6	0.090	30.5	0.016	51.0	0.052	71.5	0.017
-9.5	0.000	2.6	0.969	10.8	0.076	31.0	0.012	51.5	0.063	72.0	0.017
-9.0	0.163	2.8	0.919	11.0	0.059	31.5	0.015	52.0	0.070	72.5	0.016
-8.5	0.175	3.0	0.849	11.5	0.041	32.0	0.025	52.5	0.072	73.0	0.014
-8.0	0.160	3.2	0.764	12.0	0.071	32.5	0.031	53.0	0.071	73.5	0.012
-7.5	0.115	3.4	0.671	12.5	0.088	33.0	0.031	53.5	0.066	74.0	0.011
-7.0	0.060	3.6	0.574	13.0	0.080	33.5	0.029	54.0	0.061	74.5	0.010
-6.5	0.026	3.8	0.480	13.5	0.058	34.0	0.030	54.5	0.057	75.0	0.011
-6.0	0.037	4.0	0.393	14.0	0.038	34.5	0.036	55.0	0.055	75.5	0.012
-5.5	0.088	4.2	0.316	14.5	0.026	35.0	0.048	55.5	0.056	76.0	0.013
-5.0	0.151	4.4	0.252	15.0	0.028	35.5	0.062	56.0	0.060	76.5	0.014
-4.5	0.186	4.6	0.201	15.5	0.038	36.0	0.074	56.5	0.065	77.0	0.015
-4.0	0.164	4.8	0.163	16.0	0.039	36.5	0.078	57.0	0.070	77.5	0.015
-3.5	0.087	5.0	0.135	16.5	0.028	37.0	0.073	57.5	0.072	78.0	0.014
-3.0	0.020	5.2	0.118	17.0	0.012	37.5	0.059	58.0	0.071	78.5	0.013
-2.8	0.049	5.4	0.110	17.5	0.008	38.0	0.043	58.5	0.067	79.0	0.012
-2.6	0.074	5.6	0.109	18.0	0.005	38.5	0.028	59.0	0.059	79.5	0.010
-2.4	0.089	5.8	0.114	18.5	0.024	39.0	0.021	59.5	0.049	80.0	0.008
-2.2	0.093	6.0	0.120	19.0	0.058	39.5	0.023	60.0	0.037	80.5	0.006
-2.0	0.088	6.2	0.126	19.5	0.089	40.0	0.035	60.5	0.026	81.0	0.004
-1.8	0.077	6.4	0.129	20.0	0.106	40.5	0.050	61.0	0.017	81.5	0.003
-1.6	0.067	6.6	0.129	20.5	0.103	41.0	0.064	61.5	0.010	82.0	0.003
-1.4	0.071	6.8	0.126	21.0	0.088	41.5	0.073	62.0	0.008	82.5	0.004
-1.2	0.090	7.0	0.122	21.5	0.070	42.0	0.077	62.5	0.010	83.0	0.005
-1.0	0.112	7.2	0.118	22.0	0.059	42.5	0.076	63.0	0.015	83.5	0.006
-0.8	0.129	7.4	0.115	22.5	0.058	43.0	0.073	63.5	0.022	84.0	0.006
-0.6	0.135	7.6	0.114	23.0	0.064	43.5	0.071	64.0	0.030	84.5	0.007
-0.4	0.124	7.8	0.113	23.5	0.069	44.0	0.072	64.5	0.040	85.0	0.007
-0.2	0.095	8.0	0.113	24.0	0.067	44.5	0.077	65.0	0.046	85.5	0.007
0.0	0.058	8.2	0.111	24.5	0.056	45.0	0.085	65.5	0.050	86.0	0.006
0.2	0.072	8.4	0.107	25.0	0.043	45.5	0.091	66.0	0.051	86.5	0.006
0.4	0.153	8.6	0.103	25.5	0.035	46.0	0.093	66.5	0.049	87.0	0.005
0.6	0.260	8.8	0.098	26.0	0.034	46.5	0.089	67.0	0.044	87.5	0.004
0.8	0.379	9.0	0.096	26.5	0.040	47.0	0.078	67.5	0.037	88.0	0.004
1.0	0.503	9.2	0.097	27.0	0.050	47.5	0.064	68.0	0.029	88.5	0.003
1.2	0.625	9.4	0.100	27.5	0.059	48.0	0.049	68.5	0.020	89.0	0.002
1.4	0.739	9.6	0.105	28.0	0.058	48.5	0.036	69.0	0.011	89.5	0.001
1.6	0.838	9.8	0.107	28.5	0.046	49.0	0.028	69.5	0.004	90.0	0.001
1.8	0.916	10.0	0.109	29.0	0.027	49.5	0.026	70.0	0.006		
2.0	0.970	10.2	0.108	29.5	0.012	50.0	0.030	70.5	0.011		
2.2	0.997	10.4	0.101	30.0	0.015	50.5	0.040	71.0	0.015		



Proposal Number

Date

Call Letters

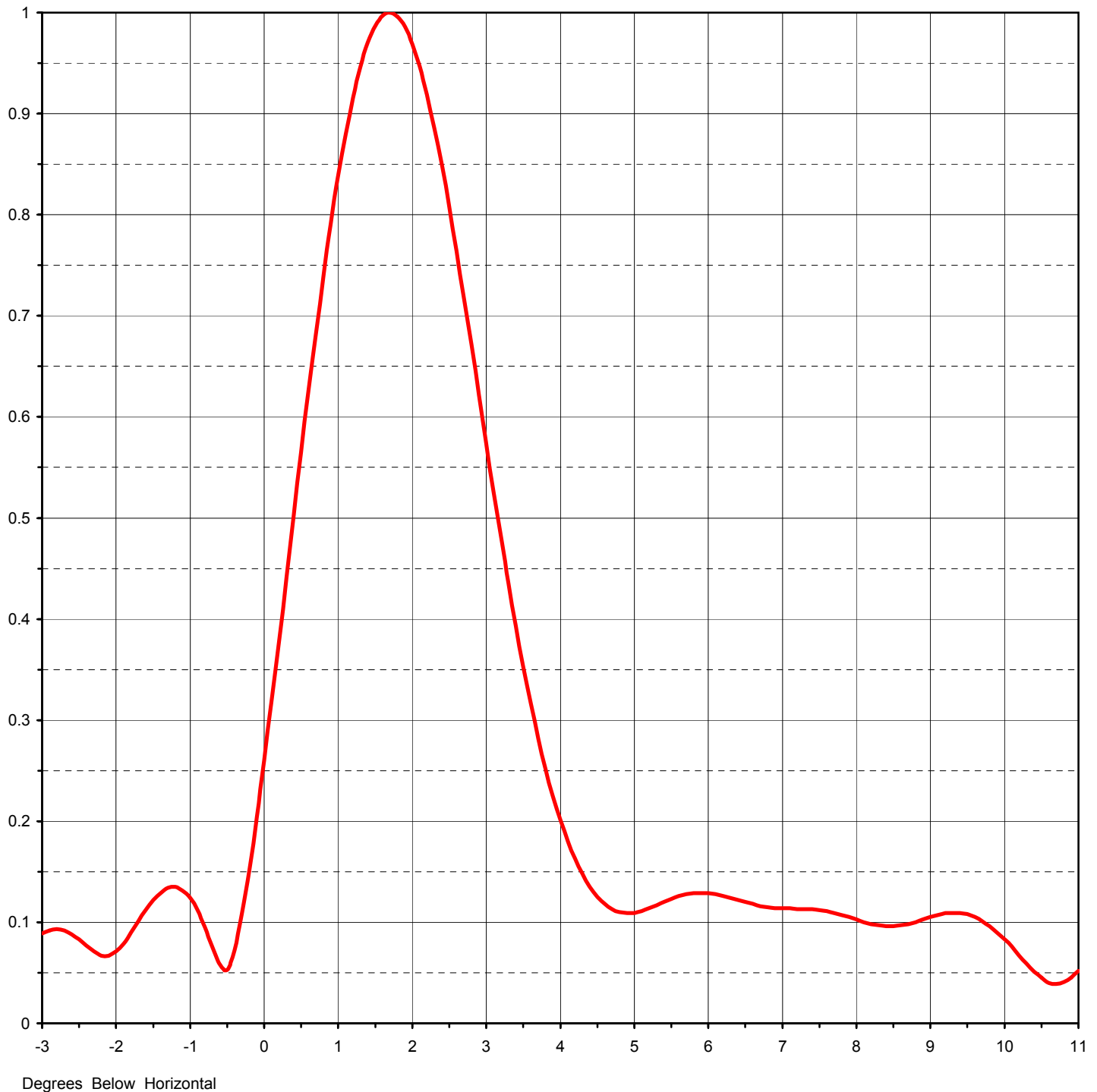
Location

Customer

Antenna Type

18-Feb-04**WBNX-DT****Akron, OH****TFU-30DSC-R P270BNT**

Revision:

Channel **30****ELEVATION PATTERN @ 80 Degrees True**RMS Gain at Main Lobe **24.50 (13.89 dB)**RMS Gain at Horizontal **1.70 (2.19 dB)**Calculated / Measured **Calculated**Beam Tilt **1.70 deg**Frequency **569.00 MHz**Drawing # **30Q245150**



Proposal Number

Date

Call Letters

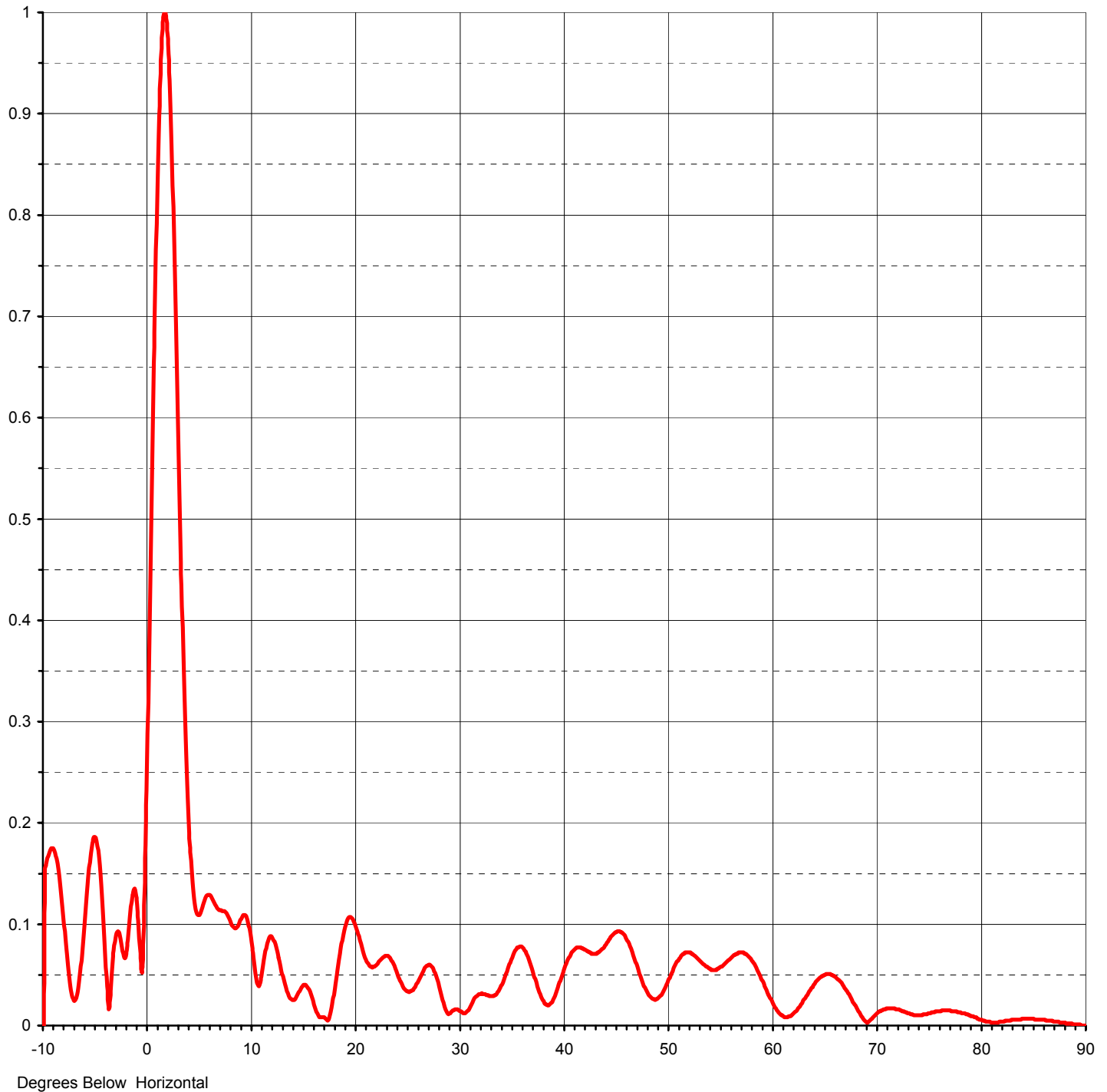
Location

Customer

Antenna Type

18-Feb-04**WBNX-DT****Akron, OH****TFU-30DSC-R P270BNT**

Revision:

Channel **30****ELEVATION PATTERN @ 80 Degrees True**RMS Gain at Main Lobe **24.50 (13.89 dB)**RMS Gain at Horizontal **1.70 (2.19 dB)**Calculated / Measured **Calculated**Beam Tilt **1.70 deg**Frequency **569.00 MHz**Drawing # **30Q245150-90**



Proposal Number

Revision:

Date

18-Feb-04

Call Letters

WBNX-DT

Channel

30

Location

Akron, OH

Customer

Antenna Type

TFU-30DSC-R P270BNT

TABULATION OF ELEVATION PATTERN @ 80 Degrees True

Elevation Pattern Drawing #: **30Q245150-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.000	2.4	0.849	10.6	0.045	30.5	0.012	51.0	0.064	71.5	0.017
-9.5	0.167	2.6	0.764	10.8	0.039	31.0	0.017	51.5	0.071	72.0	0.016
-9.0	0.175	2.8	0.671	11.0	0.045	31.5	0.027	52.0	0.072	72.5	0.014
-8.5	0.153	3.0	0.574	11.5	0.076	32.0	0.031	52.5	0.070	73.0	0.012
-8.0	0.104	3.2	0.480	12.0	0.088	32.5	0.031	53.0	0.065	73.5	0.010
-7.5	0.051	3.4	0.393	12.5	0.076	33.0	0.029	53.5	0.060	74.0	0.010
-7.0	0.024	3.6	0.316	13.0	0.053	33.5	0.030	54.0	0.056	74.5	0.011
-6.5	0.045	3.8	0.252	13.5	0.034	34.0	0.038	54.5	0.055	75.0	0.012
-6.0	0.101	4.0	0.201	14.0	0.025	34.5	0.051	55.0	0.057	75.5	0.013
-5.5	0.161	4.2	0.163	14.5	0.030	35.0	0.065	55.5	0.061	76.0	0.014
-5.0	0.186	4.4	0.135	15.0	0.039	35.5	0.075	56.0	0.066	76.5	0.015
-4.5	0.152	4.6	0.118	15.5	0.038	36.0	0.078	56.5	0.070	77.0	0.015
-4.0	0.067	4.8	0.110	16.0	0.025	36.5	0.070	57.0	0.072	77.5	0.014
-3.5	0.034	5.0	0.109	16.5	0.010	37.0	0.056	57.5	0.071	78.0	0.013
-3.0	0.089	5.2	0.114	17.0	0.008	37.5	0.039	58.0	0.066	78.5	0.011
-2.8	0.093	5.4	0.120	17.5	0.006	38.0	0.026	58.5	0.057	79.0	0.009
-2.6	0.088	5.6	0.126	18.0	0.030	38.5	0.020	59.0	0.046	79.5	0.008
-2.4	0.077	5.8	0.129	18.5	0.065	39.0	0.025	59.5	0.035	80.0	0.006
-2.2	0.067	6.0	0.129	19.0	0.094	39.5	0.038	60.0	0.024	80.5	0.004
-2.0	0.071	6.2	0.126	19.5	0.107	40.0	0.053	60.5	0.015	81.0	0.003
-1.8	0.090	6.4	0.122	20.0	0.101	40.5	0.066	61.0	0.010	81.5	0.003
-1.6	0.112	6.6	0.118	20.5	0.084	41.0	0.074	61.5	0.008	82.0	0.004
-1.4	0.129	6.8	0.115	21.0	0.067	41.5	0.077	62.0	0.011	82.5	0.005
-1.2	0.135	7.0	0.114	21.5	0.058	42.0	0.075	62.5	0.017	83.0	0.006
-1.0	0.124	7.2	0.113	22.0	0.059	42.5	0.072	63.0	0.024	83.5	0.006
-0.8	0.095	7.4	0.113	22.5	0.065	43.0	0.071	63.5	0.032	84.0	0.007
-0.6	0.058	7.6	0.111	23.0	0.069	43.5	0.073	64.0	0.040	84.5	0.007
-0.4	0.072	7.8	0.107	23.5	0.065	44.0	0.079	64.5	0.047	85.0	0.007
-0.2	0.153	8.0	0.103	24.0	0.054	44.5	0.086	65.0	0.050	85.5	0.006
0.0	0.260	8.2	0.098	24.5	0.041	45.0	0.092	65.5	0.051	86.0	0.006
0.2	0.379	8.4	0.096	25.0	0.034	45.5	0.092	66.0	0.048	86.5	0.005
0.4	0.503	8.6	0.097	25.5	0.035	46.0	0.087	66.5	0.043	87.0	0.004
0.6	0.625	8.8	0.100	26.0	0.042	46.5	0.076	67.0	0.036	87.5	0.003
0.8	0.739	9.0	0.105	26.5	0.052	47.0	0.061	67.5	0.027	88.0	0.003
1.0	0.838	9.2	0.109	27.0	0.059	47.5	0.046	68.0	0.018	88.5	0.002
1.2	0.916	9.4	0.109	27.5	0.057	48.0	0.034	68.5	0.009	89.0	0.001
1.4	0.970	9.6	0.105	28.0	0.043	48.5	0.027	69.0	0.003	89.5	0.001
1.6	0.997	9.8	0.101	28.5	0.023	49.0	0.026	69.5	0.007	90.0	0.000
1.8	0.996	10.0	0.090	29.0	0.011	49.5	0.032	70.0	0.012		
2.0	0.969	10.2	0.076	29.5	0.015	50.0	0.042	70.5	0.015		
2.2	0.919	10.4	0.059	30.0	0.015	50.5	0.054	71.0	0.017		



Proposal Number

Date

Call Letters

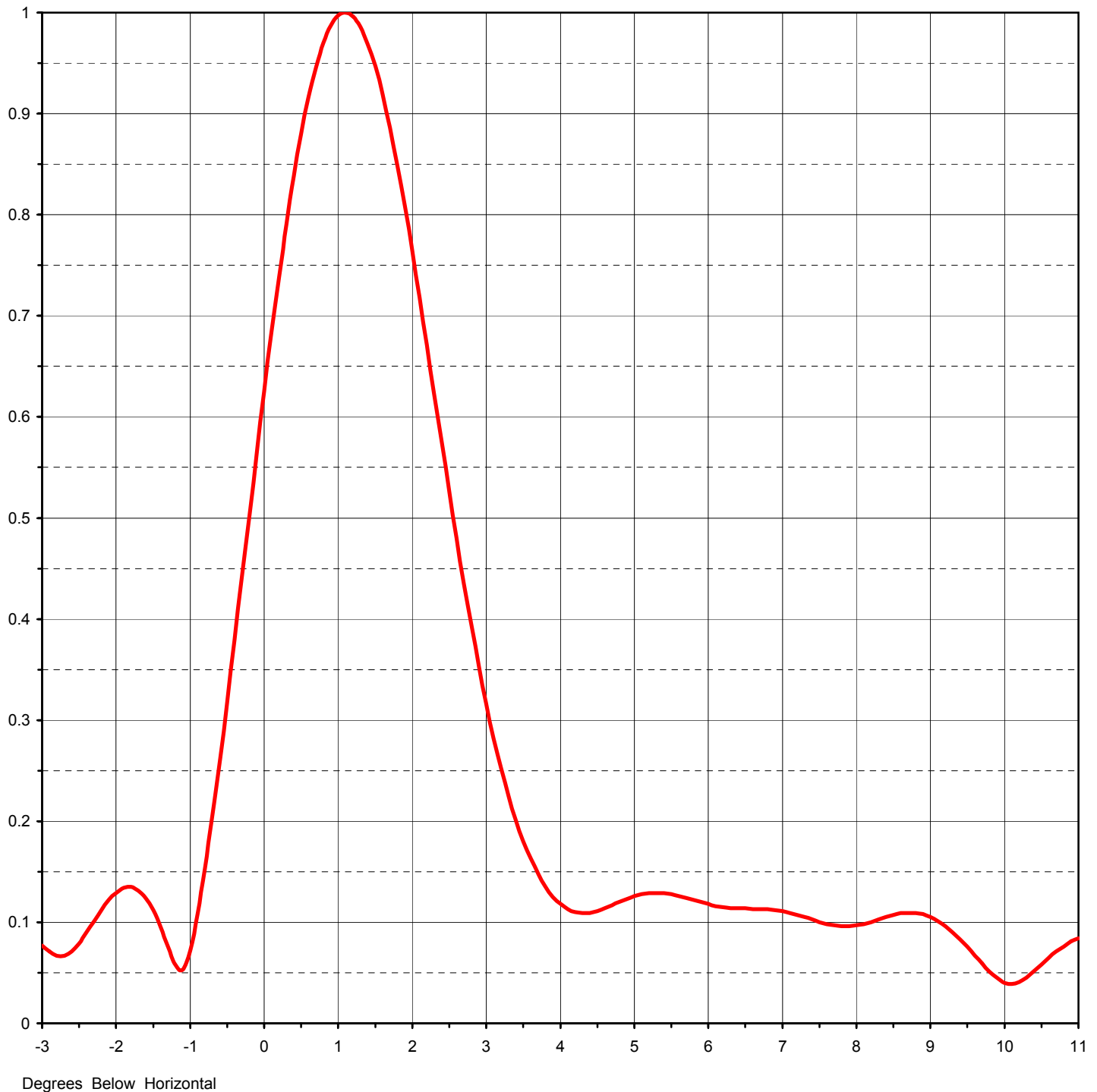
Location

Customer

Antenna Type

18-Feb-04**WBNX-DT****Akron, OH****TFU-30DSC-R P270BNT**

Revision:

Channel **30****ELEVATION PATTERN @ 150 Degrees True**RMS Gain at Main Lobe **24.50 (13.89 dB)**RMS Gain at Horizontal **9.60 (9.82 dB)**Calculated / Measured **Calculated**Beam Tilt **1.10 deg**Frequency **569.00 MHz**Drawing # **30Q245150**



Proposal Number

Revision:

Date

18-Feb-04

Call Letters

WBNX-DT

Channel **30**

Location

Akron, OH

Customer

Antenna Type

TFU-30DSC-R P270BNT

ELEVATION PATTERN @ 150 Degrees True

RMS Gain at Main Lobe **24.50 (13.89 dB)**

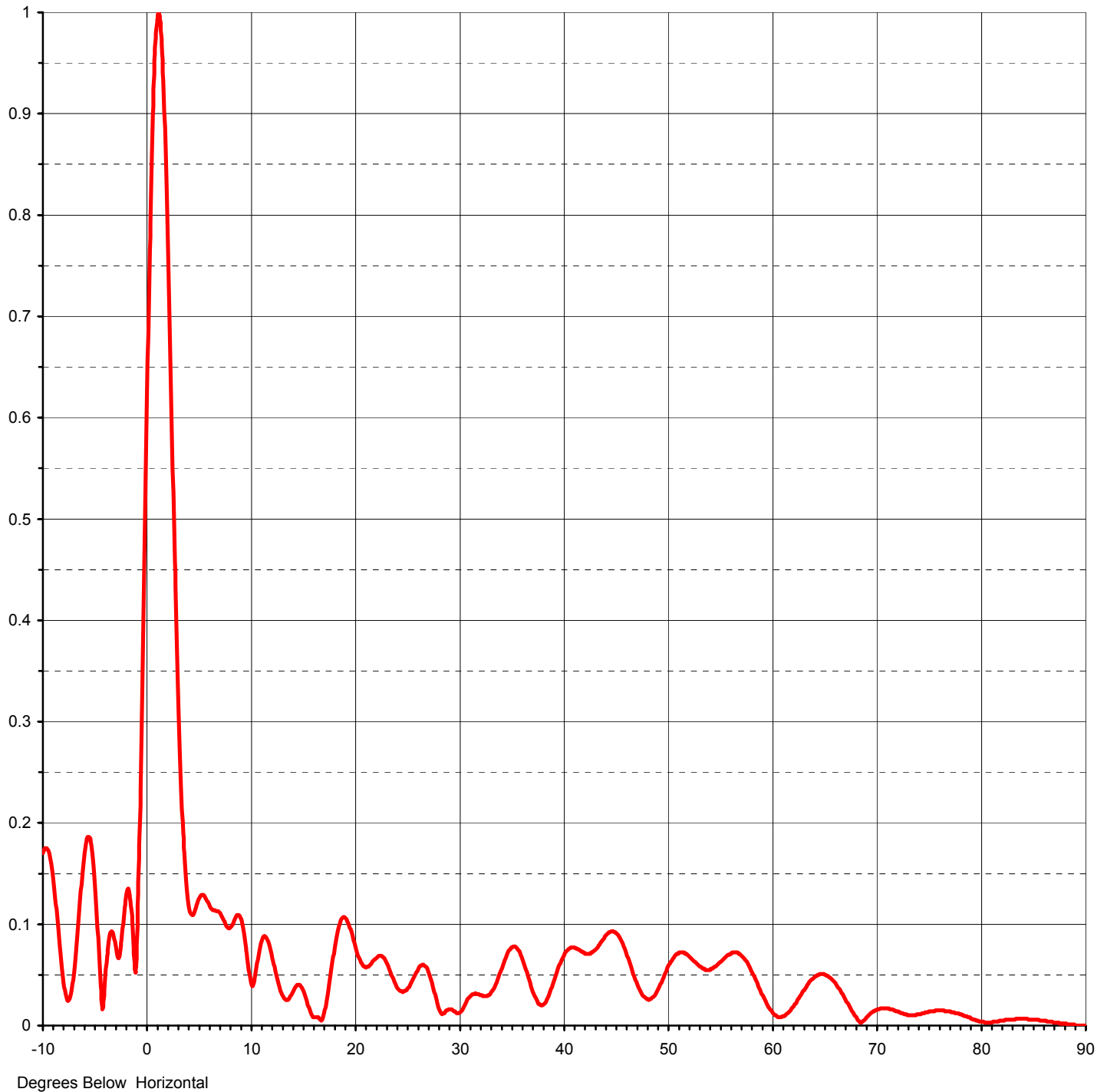
Beam Tilt **1.10 deg**

RMS Gain at Horizontal **9.60 (9.82 dB)**

Frequency **569.00 MHz**

Calculated / Measured **Calculated**

Drawing # **30Q245150-90**





Proposal Number

Revision:

Date

18-Feb-04

Call Letters

WBNX-DT

Channel

30

Location

Akron, OH

Customer

Antenna Type

TFU-30DSC-R P270BNT

TABULATION OF ELEVATION PATTERN @ 150 Degrees True

Elevation Pattern Drawing #: **30Q245150-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.170	2.4	0.574	10.6	0.058	30.5	0.019	51.0	0.071	71.5	0.016
-9.5	0.173	2.6	0.480	10.8	0.071	31.0	0.028	51.5	0.072	72.0	0.014
-9.0	0.145	2.8	0.393	11.0	0.081	31.5	0.031	52.0	0.069	72.5	0.012
-8.5	0.093	3.0	0.316	11.5	0.087	32.0	0.030	52.5	0.064	73.0	0.010
-8.0	0.042	3.2	0.252	12.0	0.072	32.5	0.029	53.0	0.059	73.5	0.010
-7.5	0.025	3.4	0.201	12.5	0.049	33.0	0.031	53.5	0.056	74.0	0.011
-7.0	0.054	3.6	0.163	13.0	0.032	33.5	0.040	54.0	0.055	74.5	0.012
-6.5	0.114	3.8	0.135	13.5	0.025	34.0	0.053	54.5	0.058	75.0	0.014
-6.0	0.170	4.0	0.118	14.0	0.032	34.5	0.067	55.0	0.062	75.5	0.014
-5.5	0.185	4.2	0.110	14.5	0.040	35.0	0.077	55.5	0.067	76.0	0.015
-5.0	0.138	4.4	0.109	15.0	0.036	35.5	0.077	56.0	0.071	76.5	0.014
-4.5	0.048	4.6	0.114	15.5	0.021	36.0	0.068	56.5	0.072	77.0	0.014
-4.0	0.049	4.8	0.120	16.0	0.008	36.5	0.053	57.0	0.070	77.5	0.012
-3.5	0.092	5.0	0.126	16.5	0.008	37.0	0.036	57.5	0.064	78.0	0.011
-3.0	0.077	5.2	0.129	17.0	0.009	37.5	0.024	58.0	0.055	78.5	0.009
-2.8	0.067	5.4	0.129	17.5	0.037	38.0	0.020	58.5	0.044	79.0	0.007
-2.6	0.071	5.6	0.126	18.0	0.071	38.5	0.027	59.0	0.032	79.5	0.005
-2.4	0.090	5.8	0.122	18.5	0.098	39.0	0.041	59.5	0.022	80.0	0.004
-2.2	0.112	6.0	0.118	19.0	0.107	39.5	0.056	60.0	0.014	80.5	0.003
-2.0	0.129	6.2	0.115	19.5	0.098	40.0	0.068	60.5	0.009	81.0	0.003
-1.8	0.135	6.4	0.114	20.0	0.081	40.5	0.075	61.0	0.009	81.5	0.004
-1.6	0.124	6.6	0.113	20.5	0.065	41.0	0.077	61.5	0.012	82.0	0.005
-1.4	0.095	6.8	0.113	21.0	0.058	41.5	0.075	62.0	0.018	82.5	0.006
-1.2	0.058	7.0	0.111	21.5	0.060	42.0	0.072	62.5	0.026	83.0	0.006
-1.0	0.072	7.2	0.107	22.0	0.066	42.5	0.071	63.0	0.034	83.5	0.007
-0.8	0.153	7.4	0.103	22.5	0.069	43.0	0.074	63.5	0.041	84.0	0.007
-0.6	0.260	7.6	0.098	23.0	0.063	43.5	0.080	64.0	0.047	84.5	0.006
-0.4	0.379	7.8	0.096	23.5	0.051	44.0	0.088	64.5	0.051	85.0	0.006
-0.2	0.503	8.0	0.097	24.0	0.039	44.5	0.092	65.0	0.050	85.5	0.006
0.0	0.625	8.2	0.100	24.5	0.034	45.0	0.092	65.5	0.047	86.0	0.005
0.2	0.739	8.4	0.105	25.0	0.035	45.5	0.085	66.0	0.042	86.5	0.004
0.4	0.838	8.6	0.109	25.5	0.044	46.0	0.073	66.5	0.034	87.0	0.003
0.6	0.916	8.8	0.109	26.0	0.054	46.5	0.058	67.0	0.025	87.5	0.002
0.8	0.970	9.0	0.105	26.5	0.060	47.0	0.043	67.5	0.016	88.0	0.002
1.0	0.997	9.2	0.096	27.0	0.055	47.5	0.032	68.0	0.008	88.5	0.001
1.2	0.996	9.4	0.083	27.5	0.039	48.0	0.026	68.5	0.003	89.0	0.000
1.4	0.969	9.6	0.067	28.0	0.019	48.5	0.027	69.0	0.008	89.5	0.000
1.6	0.919	9.8	0.059	28.5	0.012	49.0	0.034	69.5	0.013	90.0	0.000
1.8	0.849	10.0	0.045	29.0	0.016	49.5	0.045	70.0	0.016		
2.0	0.764	10.2	0.039	29.5	0.014	50.0	0.057	70.5	0.017		
2.2	0.671	10.4	0.045	30.0	0.012	50.5	0.066	71.0	0.017		



Proposal Number

Date

Call Letters

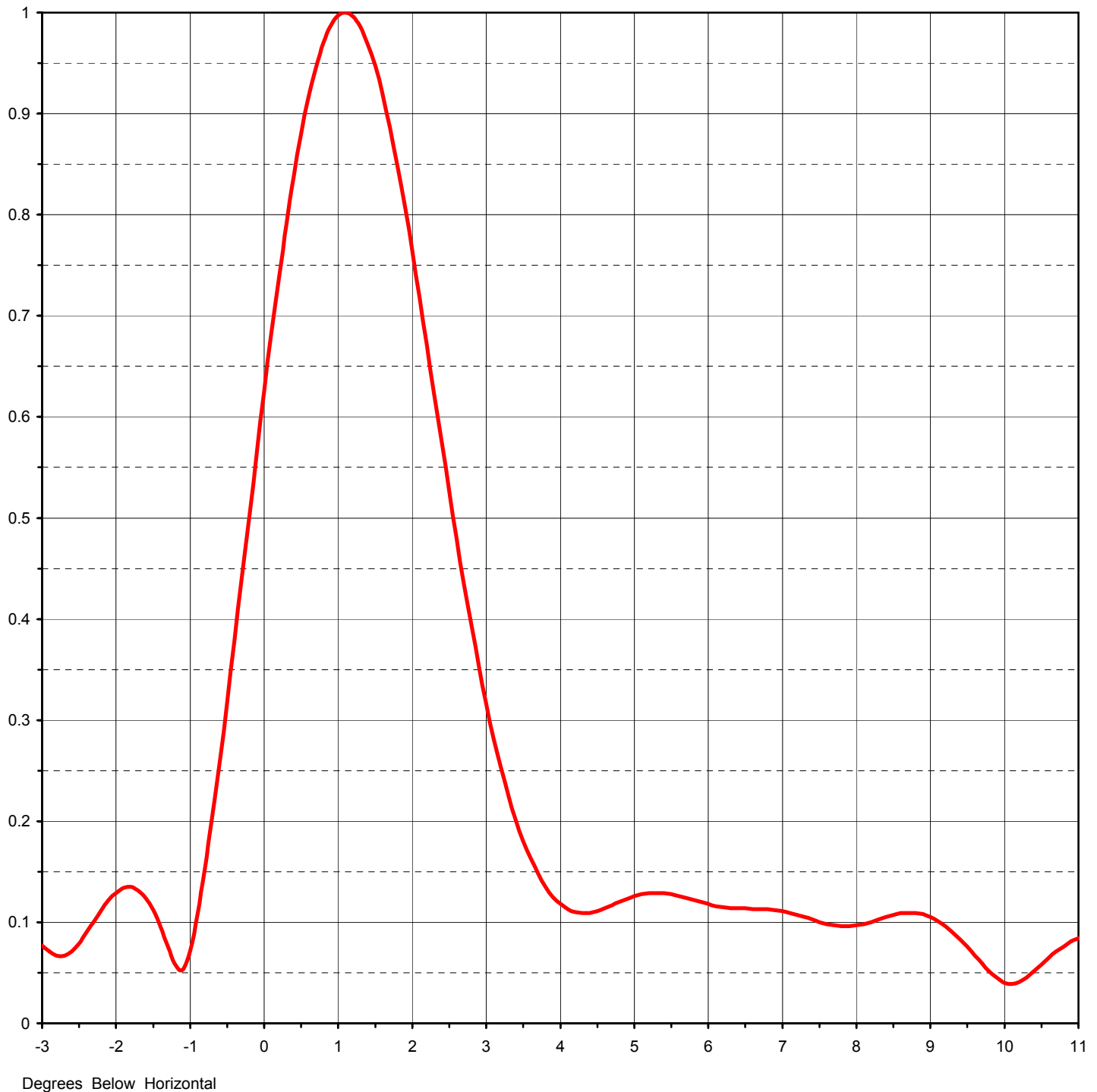
Location

Customer

Antenna Type

18-Feb-04**WBNX-DT****Akron, OH****TFU-30DSC-R P270BNT**

Revision:

Channel **30****ELEVATION PATTERN @ 240 Degrees True**RMS Gain at Main Lobe **24.50 (13.89 dB)**RMS Gain at Horizontal **9.60 (9.82 dB)**Calculated / Measured **Calculated**Beam Tilt **1.10 deg**Frequency **569.00 MHz**Drawing # **30Q245150**



Proposal Number

Date

Call Letters

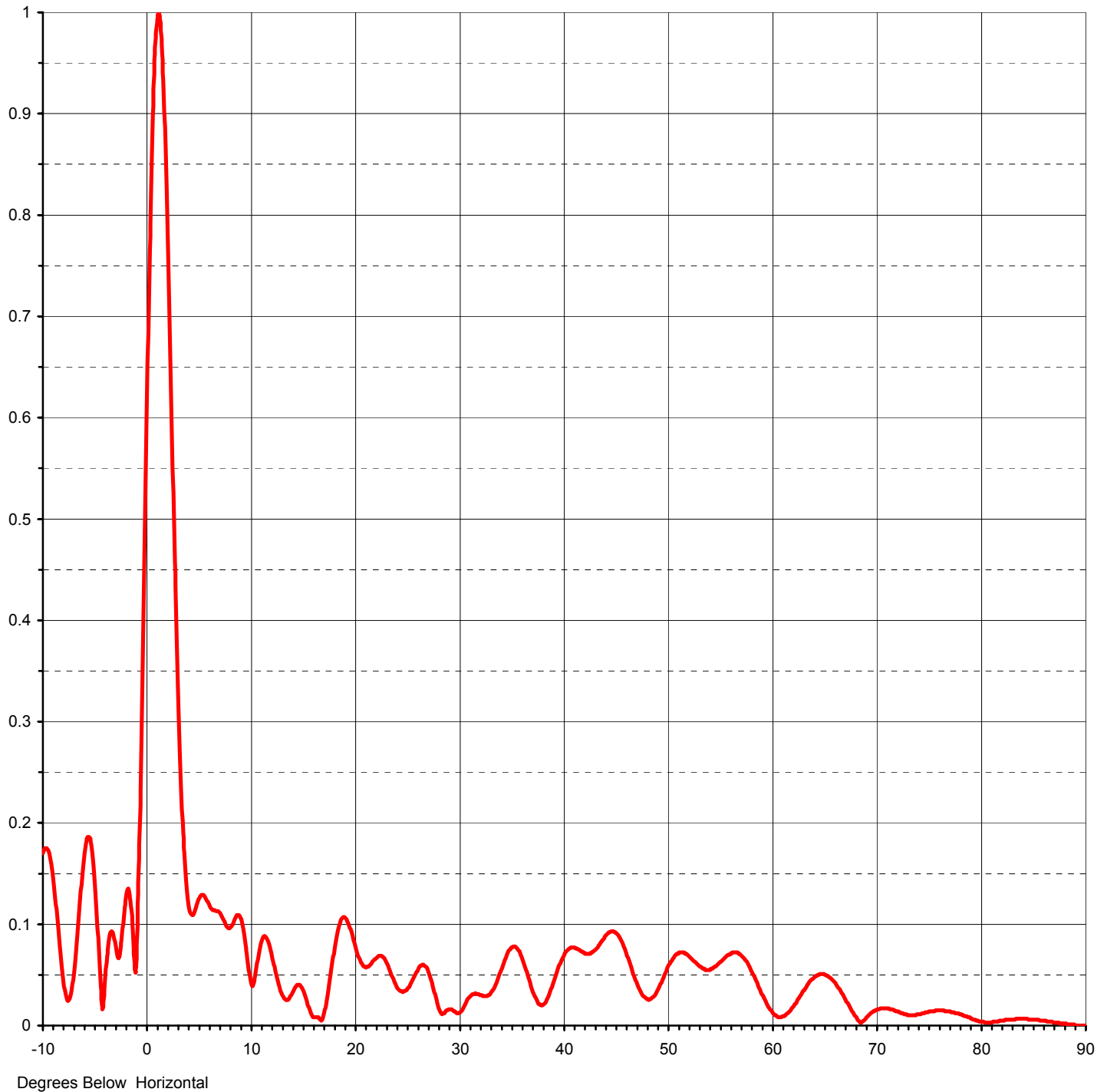
Location

Customer

Antenna Type

18-Feb-04**WBNX-DT****Akron, OH****TFU-30DSC-R P270BNT**

Revision:

Channel **30****ELEVATION PATTERN @ 240 Degrees True**RMS Gain at Main Lobe **24.50 (13.89 dB)**RMS Gain at Horizontal **9.60 (9.82 dB)**Calculated / Measured **Calculated**Beam Tilt **1.10 deg**Frequency **569.00 MHz**Drawing # **30Q245150-90**



Proposal Number

Revision:

Date

18-Feb-04

Call Letters

WBNX-DT

Channel

30

Location

Akron, OH

Customer

Antenna Type

TFU-30DSC-R P270BNT

TABULATION OF ELEVATION PATTERN @ 240 Degrees True

Elevation Pattern Drawing #: **30Q245150-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.170	2.4	0.574	10.6	0.058	30.5	0.019	51.0	0.071	71.5	0.016
-9.5	0.173	2.6	0.480	10.8	0.071	31.0	0.028	51.5	0.072	72.0	0.014
-9.0	0.145	2.8	0.393	11.0	0.081	31.5	0.031	52.0	0.069	72.5	0.012
-8.5	0.093	3.0	0.316	11.5	0.087	32.0	0.030	52.5	0.064	73.0	0.010
-8.0	0.042	3.2	0.252	12.0	0.072	32.5	0.029	53.0	0.059	73.5	0.010
-7.5	0.025	3.4	0.201	12.5	0.049	33.0	0.031	53.5	0.056	74.0	0.011
-7.0	0.054	3.6	0.163	13.0	0.032	33.5	0.040	54.0	0.055	74.5	0.012
-6.5	0.114	3.8	0.135	13.5	0.025	34.0	0.053	54.5	0.058	75.0	0.014
-6.0	0.170	4.0	0.118	14.0	0.032	34.5	0.067	55.0	0.062	75.5	0.014
-5.5	0.185	4.2	0.110	14.5	0.040	35.0	0.077	55.5	0.067	76.0	0.015
-5.0	0.138	4.4	0.109	15.0	0.036	35.5	0.077	56.0	0.071	76.5	0.014
-4.5	0.048	4.6	0.114	15.5	0.021	36.0	0.068	56.5	0.072	77.0	0.014
-4.0	0.049	4.8	0.120	16.0	0.008	36.5	0.053	57.0	0.070	77.5	0.012
-3.5	0.092	5.0	0.126	16.5	0.008	37.0	0.036	57.5	0.064	78.0	0.011
-3.0	0.077	5.2	0.129	17.0	0.009	37.5	0.024	58.0	0.055	78.5	0.009
-2.8	0.067	5.4	0.129	17.5	0.037	38.0	0.020	58.5	0.044	79.0	0.007
-2.6	0.071	5.6	0.126	18.0	0.071	38.5	0.027	59.0	0.032	79.5	0.005
-2.4	0.090	5.8	0.122	18.5	0.098	39.0	0.041	59.5	0.022	80.0	0.004
-2.2	0.112	6.0	0.118	19.0	0.107	39.5	0.056	60.0	0.014	80.5	0.003
-2.0	0.129	6.2	0.115	19.5	0.098	40.0	0.068	60.5	0.009	81.0	0.003
-1.8	0.135	6.4	0.114	20.0	0.081	40.5	0.075	61.0	0.009	81.5	0.004
-1.6	0.124	6.6	0.113	20.5	0.065	41.0	0.077	61.5	0.012	82.0	0.005
-1.4	0.095	6.8	0.113	21.0	0.058	41.5	0.075	62.0	0.018	82.5	0.006
-1.2	0.058	7.0	0.111	21.5	0.060	42.0	0.072	62.5	0.026	83.0	0.006
-1.0	0.072	7.2	0.107	22.0	0.066	42.5	0.071	63.0	0.034	83.5	0.007
-0.8	0.153	7.4	0.103	22.5	0.069	43.0	0.074	63.5	0.041	84.0	0.007
-0.6	0.260	7.6	0.098	23.0	0.063	43.5	0.080	64.0	0.047	84.5	0.006
-0.4	0.379	7.8	0.096	23.5	0.051	44.0	0.088	64.5	0.051	85.0	0.006
-0.2	0.503	8.0	0.097	24.0	0.039	44.5	0.092	65.0	0.050	85.5	0.006
0.0	0.625	8.2	0.100	24.5	0.034	45.0	0.092	65.5	0.047	86.0	0.005
0.2	0.739	8.4	0.105	25.0	0.035	45.5	0.085	66.0	0.042	86.5	0.004
0.4	0.838	8.6	0.109	25.5	0.044	46.0	0.073	66.5	0.034	87.0	0.003
0.6	0.916	8.8	0.109	26.0	0.054	46.5	0.058	67.0	0.025	87.5	0.002
0.8	0.970	9.0	0.105	26.5	0.060	47.0	0.043	67.5	0.016	88.0	0.002
1.0	0.997	9.2	0.096	27.0	0.055	47.5	0.032	68.0	0.008	88.5	0.001
1.2	0.996	9.4	0.083	27.5	0.039	48.0	0.026	68.5	0.003	89.0	0.000
1.4	0.969	9.6	0.067	28.0	0.019	48.5	0.027	69.0	0.008	89.5	0.000
1.6	0.919	9.8	0.059	28.5	0.012	49.0	0.034	69.5	0.013	90.0	0.000
1.8	0.849	10.0	0.045	29.0	0.016	49.5	0.045	70.0	0.016		
2.0	0.764	10.2	0.039	29.5	0.014	50.0	0.057	70.5	0.017		
2.2	0.671	10.4	0.045	30.0	0.012	50.5	0.066	71.0	0.017		