

**Vaughn & Melton**

Engineers & Photogrammetrists, Inc.

170 East Reynolds Road
Lexington, Kentucky 40517
Tel. (859) 271-1483
Fax (859) 271-4373

SURVEYOR'S AFFIDAVIT

This is to certify that my firm with supervision from me on the 12th day of August, 2003 did survey and orientate the directional antenna for the installation of the WFTJ-FM Antenna on a true azimuth of 205°, as authorized in the construction permit.



George A. Anderson
George A. Anderson, Ky. RLS 1920

Dated: 21 AUGUST, 2003

FAX
919 677-2050
K14



SYSTEMS WITH RELIABILITY, INC.
Broadcast Antennas and Transmission Systems

WPTJ Antenna RMS Comparison

PROPOSED ANTENNA

Azimuth Heading	Relative Field
0	0.220
10	0.230
20	0.230
30	0.270
40	0.290
50	0.300
60	0.300
70	0.300
80	0.300
90	0.300
100	0.300
110	0.300
120	0.300
130	0.315
140	0.370
150	0.460
160	0.540
170	0.610
180	0.720
190	0.860
200	0.960
210	1.000
220	1.000
230	1.000
240	0.940
250	0.840
260	0.690

DESIGNED ANTENNA

Azimuth Heading	Relative Field
0	0.210
10	0.220
20	0.220
30	0.230
40	0.240
50	0.250
60	0.260
70	0.260
80	0.270
90	0.270
100	0.260
110	0.280
120	0.300
130	0.310
140	0.350
150	0.370
160	0.400
170	0.430
180	0.500
190	0.650
200	0.800
210	0.930
220	1.000
230	0.990
240	0.930
250	0.820
260	0.670

PROPOSED ANTENNA

Azimuth Heading	Relative Field
270	0.550
280	0.440
290	0.360
300	0.300
310	0.250
320	0.220
330	0.220
340	0.220
350	0.210

Sum of Relative Field Squared : 10.358

Sum Divided by 36 (Readings) : 0.288

Square Root : 0.536

Percentage of Construction Permit Antenna Filled :**DESIGNED ANTENNA**

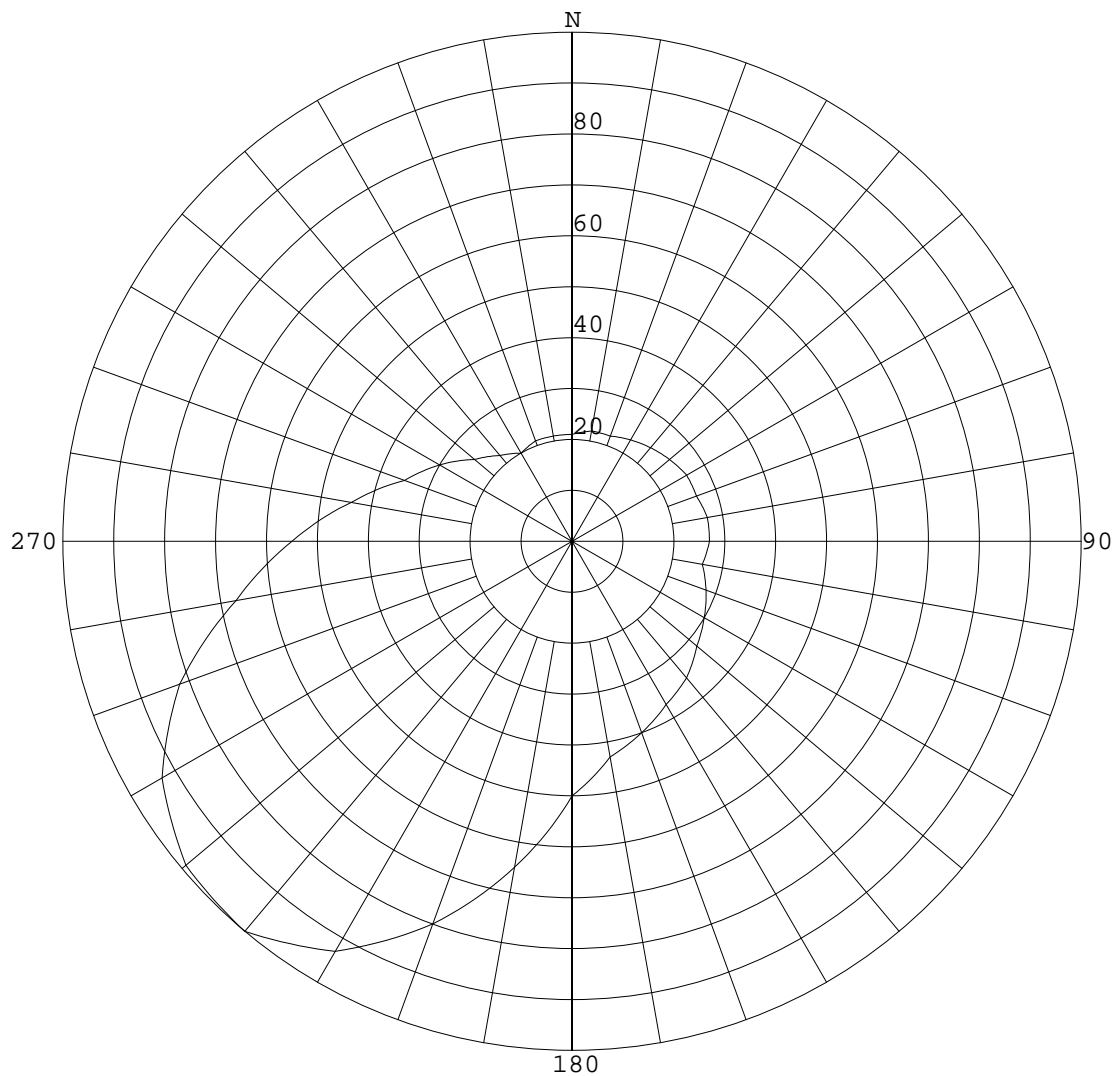
Azimuth Heading	Relative Field
270	0.550
280	0.440
290	0.350
300	0.300
310	0.250
320	0.220
330	0.200
340	0.210
350	0.210

Sum of Relative Field Squared : 8.629

Sum Divided by 36 (Readings) : 0.240

Square Root : 0.490

91.27%



Azimuth Pattern

Systems With Reliability Inc. Scale: Linear
Unit: Relative Field

CLIENT: *Energy-Onix- Exhibit 1*

Date: 6/24/03

ANTENNA TYPE: FM3/2-DA

FREQUENCY: 90.7

PATTERN POL.: Circular

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 4.184 / 6.22dB

PATTERN RMS: 0.489

Relative Field Tabulation(Azimuth)

Azimuth Heading	Relative Field(dB)	Azimuth Heading	Relative Field(dB)
0	.21 (-13.51)	180	.50 (-6)
5	.22 (-13.31)	185	.58 (-4.79)
10	.22 (-13.11)	190	.65 (-3.73)
15	.22 (-13.11)	195	.73 (-2.78)
20	.22 (-13.11)	200	.80 (-1.93)
25	.23 (-12.92)	205	.87 (-1.25)
30	.23 (-12.73)	210	.93 (-0.62)
35	.24 (-12.54)	215	.97 (-0.3)
40	.24 (-12.36)	220	1.00 (0.01)
45	.25 (-12.18)	225	1.00 (-0.03)
50	.25 (-12.01)	230	.99 (-0.08)
55	.26 (-11.84)	235	.96 (-0.35)
60	.26 (-11.67)	240	.93 (-0.62)
65	.26 (-11.67)	245	.88 (-1.15)
70	.26 (-11.67)	250	.82 (-1.71)
75	.27 (-11.5)	255	.75 (-2.55)
80	.27 (-11.34)	260	.67 (-3.47)
85	.27 (-11.34)	265	.61 (-4.28)
90	.27 (-11.34)	270	.55 (-5.18)
95	.27 (-11.5)	275	.50 (-6.09)
100	.26 (-11.67)	280	.44 (-7.11)
105	.27 (-11.34)	285	.40 (-8.05)
110	.28 (-11.03)	290	.35 (-9.09)
115	.29 (-10.72)	295	.33 (-9.74)
120	.30 (-10.43)	300	.30 (-10.43)
125	.31 (-10.14)	305	.28 (-11.18)
130	.31 (-9.87)	310	.25 (-12.01)
135	.34 (-9.47)	315	.23 (-12.54)
140	.35 (-9.09)	320	.22 (-13.11)
145	.36 (-8.85)	325	.21 (-13.51)
150	.37 (-8.61)	330	.20 (-13.94)
155	.39 (-8.27)	335	.21 (-13.72)
160	.40 (-7.94)	340	.21 (-13.51)
165	.42 (-7.62)	345	.21 (-13.51)
170	.43 (-7.31)	350	.21 (-13.51)
175	.47 (-6.63)	355	.21 (-13.51)

Systems With Reliability Inc.

CLIENT: *Energy-Onix- Exhibit 1*

Date: 6/24/03

ANTENNA TYPE: FM3/2-DA

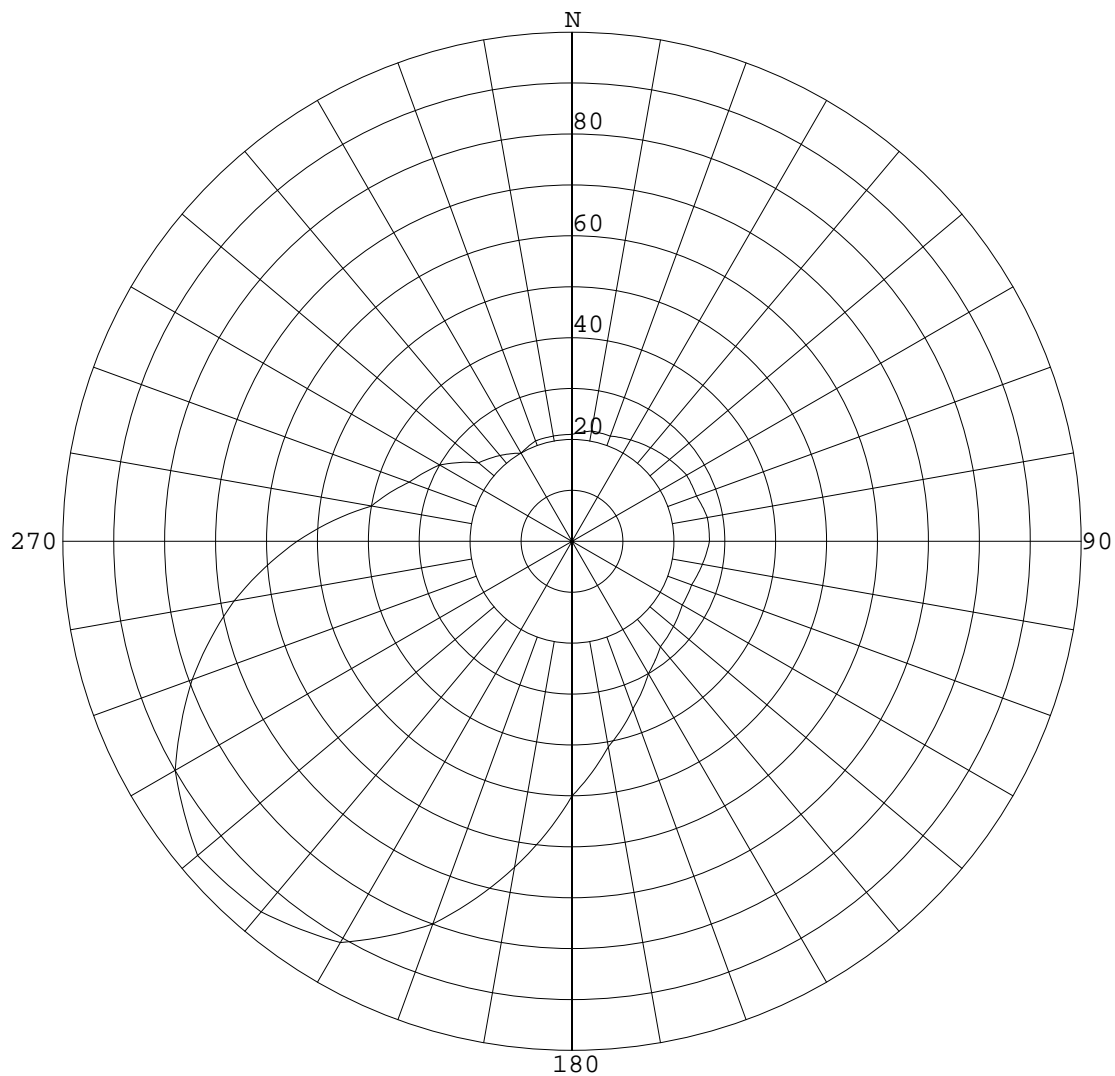
FREQUENCY: 90.7

PATTERN POL.: Circular

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY:4.184 / 6.22dB

PATTERN RMS: 0.489



Azimuth Pattern

Systems With Reliability Inc. Scale: Linear
Unit: Relative Field

CLIENT: *Energy-Onix- Exhibit 2*

Date: 6/23/03

ANTENNA TYPE: FM3/2-DA

FREQUENCY: 90.7

PATTERN POL.: Horizontal

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 4.481 / 6.51dB

PATTERN RMS: 0.472

Relative Field Tabulation(Azimuth)

Azimuth Heading	Relative Field(dB)	Azimuth Heading	Relative Field(dB)
0	.21 (-13.51)	180	.50 (-6)
5	.22 (-13.31)	185	.58 (-4.79)
10	.22 (-13.11)	190	.65 (-3.73)
15	.22 (-13.11)	195	.73 (-2.78)
20	.22 (-13.11)	200	.80 (-1.93)
25	.23 (-12.92)	205	.86 (-1.35)
30	.23 (-12.73)	210	.91 (-0.81)
35	.24 (-12.54)	215	.93 (-0.62)
40	.24 (-12.36)	220	.95 (-0.44)
45	.25 (-12.18)	225	.96 (-0.39)
50	.25 (-12.01)	230	.96 (-0.35)
55	.26 (-11.84)	235	.93 (-0.62)
60	.26 (-11.67)	240	.90 (-0.91)
65	.26 (-11.67)	245	.85 (-1.43)
70	.26 (-11.67)	250	.79 (-1.99)
75	.27 (-11.5)	255	.73 (-2.67)
80	.27 (-11.34)	260	.67 (-3.41)
85	.27 (-11.34)	265	.61 (-4.32)
90	.27 (-11.34)	270	.54 (-5.34)
95	.27 (-11.5)	275	.47 (-6.54)
100	.26 (-11.67)	280	.40 (-7.94)
105	.26 (-11.84)	285	.37 (-8.61)
110	.25 (-12.01)	290	.34 (-9.34)
115	.25 (-12.01)	295	.32 (-9.87)
120	.25 (-12.01)	300	.30 (-10.43)
125	.26 (-11.84)	305	.27 (-11.34)
130	.26 (-11.67)	310	.24 (-12.36)
135	.27 (-11.5)	315	.23 (-12.73)
140	.27 (-11.34)	320	.22 (-13.11)
145	.29 (-10.87)	325	.21 (-13.51)
150	.30 (-10.43)	330	.20 (-13.94)
155	.33 (-9.74)	335	.21 (-13.72)
160	.35 (-9.09)	340	.21 (-13.51)
165	.38 (-8.38)	345	.21 (-13.51)
170	.41 (-7.72)	350	.21 (-13.51)
175	.46 (-6.82)	355	.21 (-13.51)

Systems With Reliability Inc.

CLIENT: *Energy-Onix- Exhibit 2*

Date: 6/23/03

ANTENNA TYPE: FM3/2-DA

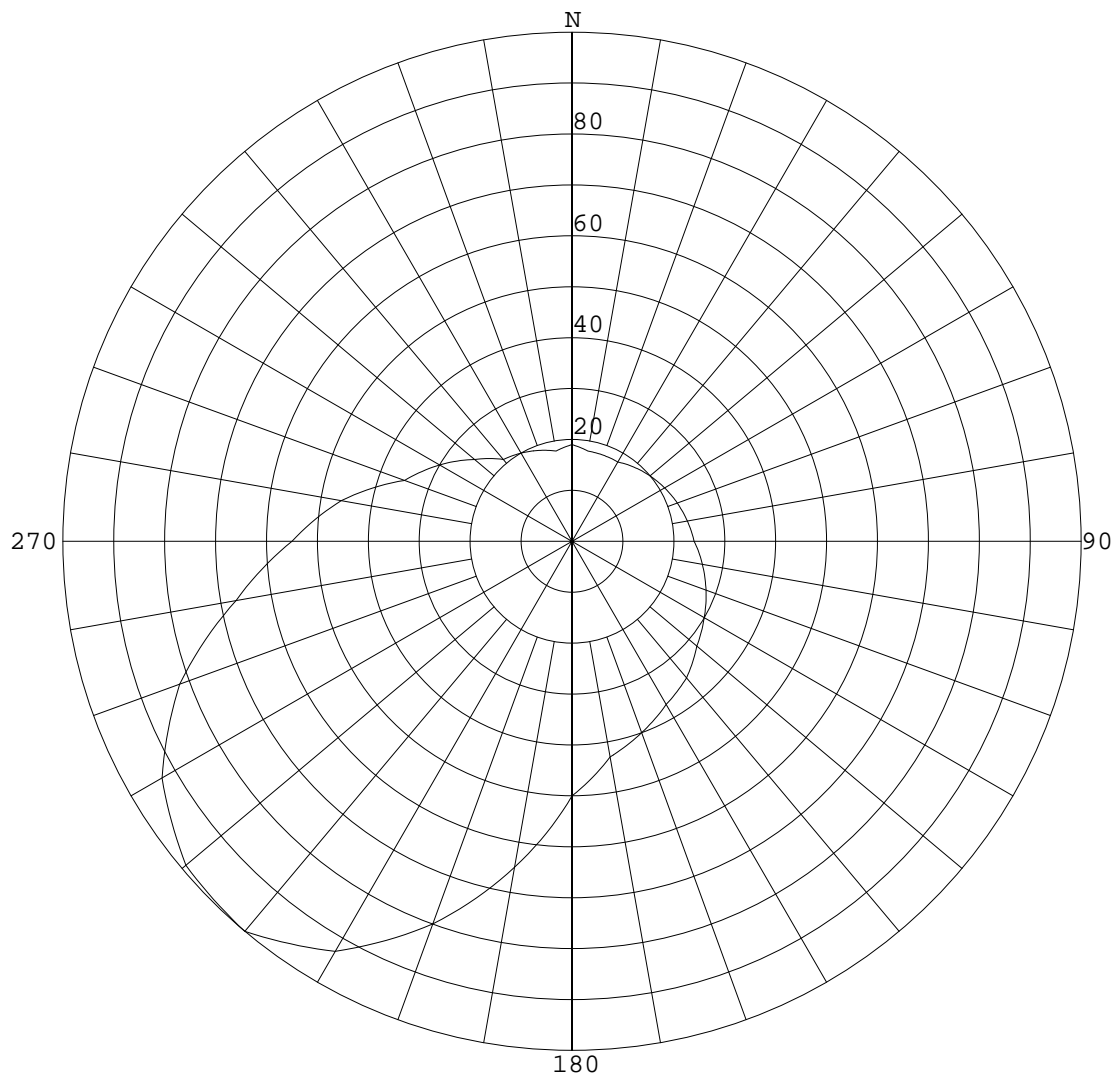
FREQUENCY: 90.7

PATTERN POL.: Horizontal

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY:4.481 / 6.51dB

PATTERN RMS: 0.472



Azimuth Pattern

Scale: Linear
Unit: Relative Field

Systems With Reliability Inc.

CLIENT: *Energy-Onix- Exhibit 3*

Date: 6/25/03

ANTENNA TYPE: FM3/2-DA

FREQUENCY: 90.7

PATTERN POL.: Vertical

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 4.278 / 6.31dB

PATTERN RMS: 0.483

Relative Field Tabulation(Azimuth)

Azimuth Heading	Relative Field(dB)	Azimuth Heading	Relative Field(dB)
0	.19 (-14.38)	180	.50 (-6)
5	.19 (-14.61)	185	.58 (-4.79)
10	.18 (-14.85)	190	.65 (-3.73)
15	.18 (-14.85)	195	.73 (-2.78)
20	.18 (-14.85)	200	.80 (-1.93)
25	.18 (-14.85)	205	.87 (-1.25)
30	.18 (-14.85)	210	.93 (-0.62)
35	.19 (-14.61)	215	.97 (-0.3)
40	.19 (-14.38)	220	1.00 (0.01)
45	.20 (-14.15)	225	1.00 (-0.03)
50	.20 (-13.94)	230	.99 (-0.08)
55	.21 (-13.72)	235	.96 (-0.35)
60	.21 (-13.51)	240	.93 (-0.62)
65	.22 (-13.31)	245	.88 (-1.15)
70	.22 (-13.11)	250	.82 (-1.71)
75	.23 (-12.92)	255	.75 (-2.55)
80	.23 (-12.73)	260	.67 (-3.47)
85	.24 (-12.54)	265	.61 (-4.28)
90	.24 (-12.36)	270	.55 (-5.18)
95	.25 (-12.01)	275	.51 (-5.92)
100	.26 (-11.67)	280	.44 (-6.73)
105	.27 (-11.34)	285	.41 (-7.83)
110	.28 (-11.03)	290	.35 (-9.09)
115	.29 (-10.72)	295	.33 (-9.74)
120	.30 (-10.43)	300	.30 (-10.43)
125	.31 (-10.14)	305	.28 (-11.18)
130	.31 (-9.87)	310	.25 (-12.01)
135	.34 (-9.47)	315	.23 (-12.73)
140	.35 (-9.09)	320	.21 (-13.51)
145	.36 (-8.85)	325	.21 (-13.72)
150	.37 (-8.61)	330	.20 (-13.94)
155	.39 (-8.27)	335	.20 (-14.15)
160	.40 (-7.94)	340	.19 (-14.38)
165	.42 (-7.62)	345	.19 (-14.61)
170	.43 (-7.31)	350	.18 (-14.85)
175	.47 (-6.63)	355	.19 (-14.61)

Systems With Reliability Inc.

CLIENT: *Energy-Onix- Exhibit 3*

Date: 6/25/03

ANTENNA TYPE: FM3/2-DA

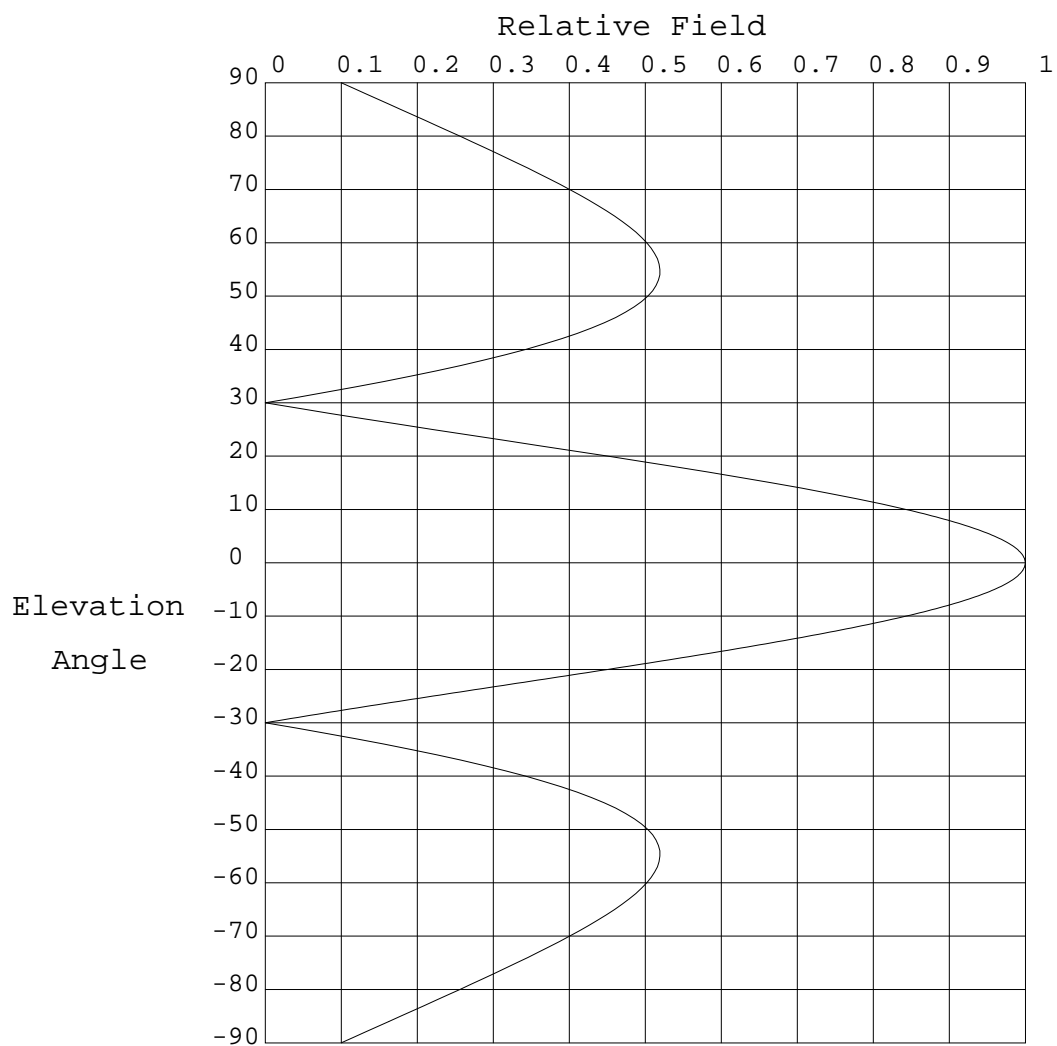
FREQUENCY: 90.7

PATTERN POL.: Vertical

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY:4.278 / 6.31dB

PATTERN RMS: 0.483



Elevation Pattern

Scale: Linear

Systems With Reliability Inc

Units: Field, Relative

CLIENT: Enrgy-Onix- Exhibit 4

Date: 5/21/03

ANTENNA TYPE: FM3/2-DA

FREQUENCY: 90.7

PATTERN POL.: Circular

DIRECTIVITY(Peak)1.918/2.828 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz)1.918/2.828 dBd

Null Fill(s)(%) 0, 0, 0

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)		Elev. Angle	Rel. Fld(dB)		Elev. Angle
3.2	.983 (-0.146)	-4.4	.969 (-0.278)	-12.0	.779 (-2.174)	
3.0	.985 (-0.129)	-4.6	.966 (-0.304)	-12.2	.772 (-2.252)	
2.8	.987 (-0.112)	-4.8	.963 (-0.331)	-12.4	.765 (-2.332)	
2.6	.989 (-0.097)	-5.0	.959 (-0.36)	-12.6	.757 (-2.413)	
2.4	.991 (-0.082)	-5.2	.956 (-0.389)	-12.8	.75 (-2.496)	
2.2	.992 (-0.069)	-5.4	.953 (-0.42)	-13.0	.743 (-2.581)	
2.0	.993 (-0.057)	-5.6	.949 (-0.452)	-13.2	.736 (-2.667)	
1.8	.995 (-0.046)	-5.8	.946 (-0.485)	-13.4	.728 (-2.755)	
1.6	.996 (-0.037)	-6.0	.942 (-0.52)	-13.6	.721 (-2.845)	
1.4	.997 (-0.028)	-6.2	.938 (-0.556)	-13.8	.713 (-2.937)	
1.2	.998 (-0.021)	-6.4	.934 (-0.593)	-14.0	.705 (-3.031)	
1.0	.998 (-0.014)	-6.6	.93 (-0.631)	-14.2	.698 (-3.126)	
.8	.999 (-0.009)	-6.8	.926 (-0.67)	-14.4	.69 (-3.224)	
.6	.999 (-0.005)	-7.0	.921 (-0.711)	-14.6	.682 (-3.323)	
.4	1.00 (-0.002)	-7.2	.917 (-0.753)	-14.8	.674 (-3.425)	
.2	1.00 (-0.001)	-7.4	.912 (-0.797)	-15.0	.666 (-3.528)	
.0	1.00 (0)	-7.6	.908 (-0.841)	-15.2	.658 (-3.634)	
-.2	1.00 (-0.001)	-7.8	.903 (-0.887)	-15.4	.65 (-3.742)	
-.4	1.00 (-0.002)	-8.0	.898 (-0.935)	-15.6	.642 (-3.851)	
-.6	.999 (-0.005)	-8.2	.893 (-0.983)	-15.8	.634 (-3.963)	
-.8	.999 (-0.009)	-8.4	.888 (-1.033)	-16.0	.625 (-4.078)	
-1.0	.998 (-0.014)	-8.6	.883 (-1.084)	-16.2	.617 (-4.194)	
-1.2	.998 (-0.021)	-8.8	.877 (-1.137)	-16.4	.609 (-4.313)	
-1.4	.997 (-0.028)	-9.0	.872 (-1.191)	-16.6	.60 (-4.435)	
-1.6	.996 (-0.037)	-9.2	.866 (-1.246)	-16.8	.592 (-4.558)	
-1.8	.995 (-0.046)	-9.4	.861 (-1.303)	-17.0	.583 (-4.685)	
-2.0	.993 (-0.057)	-9.6	.855 (-1.361)	-17.2	.575 (-4.814)	
-2.2	.992 (-0.069)	-9.8	.849 (-1.421)	-17.4	.566 (-4.945)	
-2.4	.991 (-0.082)	-10.0	.843 (-1.482)	-17.6	.557 (-5.079)	
-2.6	.989 (-0.097)	-10.2	.837 (-1.544)	-17.8	.549 (-5.216)	
-2.8	.987 (-0.112)	-10.4	.831 (-1.608)	-18.0	.54 (-5.356)	
-3.0	.985 (-0.129)	-10.6	.825 (-1.674)	-18.2	.531 (-5.499)	
-3.2	.983 (-0.146)	-10.8	.818 (-1.74)	-18.4	.522 (-5.644)	
-3.4	.981 (-0.165)	-11.0	.812 (-1.809)	-18.6	.513 (-5.793)	
-3.6	.979 (-0.186)	-11.2	.805 (-1.879)	-18.8	.504 (-5.945)	
-3.8	.976 (-0.207)	-11.4	.799 (-1.95)	-19.0	.495 (-6.1)	
-4.0	.974 (-0.229)	-11.6	.792 (-2.023)	-19.2	.486 (-6.259)	
-4.2	.971 (-0.253)	-11.8	.785 (-2.098)	-19.4	.477 (-6.421)	

Systems With Reliability Inc

Page 1 of 2

CLIENT: Energy-Onix- Exhibit 4

Date: 5/21/03

ANTENNA TYPE: FM3/2-DA

FREQUENCY: 90.7

PATTERN POL.: Circular

DIRECTIVITY(Peak)1.918/2.828 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz)1.918/2.828 dBd

Null Fill(s)(%) 0, 0, 0

Relative Field Tabulation

Elev. Angle			Rel. Fld(dB)			Elev. Angle			Rel. Fld(dB)			Elev. Angle		
-19.6	.468	(-6.587)	-27.2	.121	(-18.344)	-54.0	.519	(-5.694)						
-19.8	.459	(-6.756)	-27.4	.112	(-19.006)	-55.0	.519	(-5.69)						
-20.0	.45	(-6.929)	-27.6	.103	(-19.721)	-56.0	.518	(-5.708)						
-20.2	.441	(-7.106)	-27.8	.094	(-20.496)	-57.0	.516	(-5.747)						
-20.4	.432	(-7.288)	-28.0	.086	(-21.343)	-58.0	.512	(-5.807)						
-20.6	.423	(-7.473)	-28.2	.077	(-22.278)	-59.0	.508	(-5.887)						
-20.8	.414	(-7.663)	-28.4	.068	(-23.322)	-60.0	.502	(-5.986)						
-21.0	.405	(-7.858)	-28.6	.06	(-24.503)	-61.0	.495	(-6.103)						
-21.2	.396	(-8.057)	-28.8	.051	(-25.863)	-62.0	.488	(-6.239)						
-21.4	.386	(-8.261)	-29.0	.042	(-27.469)	-63.0	.479	(-6.392)						
-21.6	.377	(-8.471)	-29.2	.034	(-29.429)	-64.0	.47	(-6.563)						
-21.8	.368	(-8.686)	-29.4	.025	(-31.951)	-65.0	.46	(-6.751)						
-22.0	.359	(-8.906)	-29.6	.017	(-35.496)	-66.0	.449	(-6.956)						
-22.2	.349	(-9.132)	-29.8	.008	(-41.54)	-67.0	.438	(-7.178)						
-22.4	.34	(-9.365)	-30.0	.00	(-50)	-68.0	.426	(-7.417)						
-22.6	.331	(-9.604)	-31.0	.041	(-27.712)	-69.0	.413	(-7.673)						
-22.8	.322	(-9.85)	-32.0	.081	(-21.828)	-70.0	.401	(-7.948)						
-23.0	.312	(-10.103)	-33.0	.119	(-18.454)	-71.0	.387	(-8.24)						
-23.2	.303	(-10.364)	-34.0	.156	(-16.113)	-72.0	.374	(-8.551)						
-23.4	.294	(-10.632)	-35.0	.192	(-14.343)	-73.0	.36	(-8.881)						
-23.6	.285	(-10.909)	-36.0	.225	(-12.937)	-74.0	.345	(-9.231)						
-23.8	.276	(-11.195)	-37.0	.257	(-11.786)	-75.0	.331	(-9.603)						
-24.0	.266	(-11.491)	-38.0	.288	(-10.824)	-76.0	.316	(-9.997)						
-24.2	.257	(-11.797)	-39.0	.316	(-10.008)	-77.0	.301	(-10.415)						
-24.4	.248	(-12.113)	-40.0	.342	(-9.31)	-78.0	.286	(-10.859)						
-24.6	.239	(-12.441)	-41.0	.367	(-8.709)	-79.0	.271	(-11.332)						
-24.8	.23	(-12.781)	-42.0	.39	(-8.189)	-80.0	.256	(-11.836)						
-25.0	.22	(-13.135)	-43.0	.41	(-7.738)	-81.0	.241	(-12.374)						
-25.2	.211	(-13.503)	-44.0	.429	(-7.349)	-82.0	.225	(-12.951)						
-25.4	.202	(-13.887)	-45.0	.446	(-7.013)	-83.0	.21	(-13.571)						
-25.6	.193	(-14.287)	-46.0	.461	(-6.724)	-84.0	.194	(-14.242)						
-25.8	.184	(-14.706)	-47.0	.474	(-6.479)	-85.0	.178	(-14.971)						
-26.0	.175	(-15.145)	-48.0	.486	(-6.272)	-86.0	.163	(-15.768)						
-26.2	.166	(-15.606)	-49.0	.495	(-6.101)	-87.0	.147	(-16.648)						
-26.4	.157	(-16.092)	-50.0	.503	(-5.963)	-88.0	.131	(-17.627)						
-26.6	.148	(-16.605)	-51.0	.51	(-5.855)	-89.0	.116	(-18.733)						
-26.8	.139	(-17.149)	-52.0	.514	(-5.775)	-90.0	.10	(-20)						
-27.0	.13	(-17.727)	-53.0	.517	(-5.722)	90.0	.00	(-50)						

Systems With Reliability Inc

Page 2 of 2

CLIENT: Energy-Onix- Exhibit 4

Date: 5/21/03

ANTENNA TYPE: FM3/2-DA

FREQUENCY: 90.7

PATTERN POL.: Circular

DIRECTIVITY(Peak)1.918/2.828 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz)1.918/2.828 dBd

Null Fill(s)(%) 0, 0, 0