

ANTENNA PROJECT

Communications Technologies, Inc.

TX station: *WYCS*

Site name: *PROPOSED MAIN*

Frequency: *91.50 MHz*

Date: *9/6/2007*

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General data of antenna system

TX station	WYCS
Site name	PROPOSED MAIN
Site longitude (+ddd°pp'ss")	37-04-40.5
Site latitude (+dd°pp'ss")	76-26-46.2
Ground level a.s.l. (m)	9
Antenna system height a.g.l. (m)	106.1
Transmitter power (Watt)	145.0
Carrier wave frequency (MHz)	91.50
Antenna system central frequency (MHz)	91.50
Filename of antenna base diagrams type 1	ALDENA_ASD0102210.ANT
Filename of antenna base diagrams type 2	
Antenna system polarization (H, V, C, X)	V
Transmitting cable attenuation (dB)	0.0
Additional attenuations (dB)	0.0
Base diagrams sectors (A = all, F = front)	A
Velocity factor of cables to antennas (0÷1)	1.00
Coordinate system (C = cartesian, P = polar)	P
Mast side/diameter (cm):	20.0
Mast cross section (Triangular, Square, Circular)	C
Mast rotation w.r.t. North (°)	0
System picture filename (*.bmp *.gif *.jpg)	

Information about antennas used in the system*Antenna of type 1*

Manufacturer	ALDENA
Antenna model	ASD.01.02.215
Band start (MHz)	87.5
Band stop (MHz)	108
Diagrams frequency (MHz)	92
Polariz. (H, V, C, X)	V
Vertical dist. (cm)	270
Height (cm)	134
Width (cm)	20
Thickness (cm)	96
Weight (Kg)	7
Maximum power (KW)	5
Gain (dBd)	2.04
North E.C. (cm)	0
East E.C. (cm)	0
Return loss (dB)	-27.64
R.C. phase (°)	-123.46

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Geometr. and electrical data of antenna system

	<i>Power</i> (%)	<i>Tilt</i> (°)	<i>Az.</i> (°/N)	<i>Phase</i> (°)	<i>V dist.</i> (m)	<i>Scr-D</i> (cm)	<i>Scr-Az</i> (°/N)	<i>Rot.</i> (1÷4)	<i>Type</i> (1÷2)	<i>L cables</i> (cm)	<i>Car. phase</i> (°)	
1	10.000	0	0	0	+0.0	13.28	0.0	0.0	1	1	0.0	0.0
2	10.000	0	0	0	+0.0	10.33	0.0	0.0	1	1	0.0	0.0
3	10.000	0	0	0	+0.0	7.38	0.0	0.0	1	1	0.0	0.0
4	10.000	0	0	0	+0.0	4.43	0.0	0.0	1	1	0.0	0.0
5	10.000	0	0	0	+0.0	1.48	0.0	0.0	1	1	0.0	0.0
6	10.000	0	0	0	+0.0	-1.48	0.0	0.0	1	1	0.0	0.0
7	10.000	0	0	0	+0.0	-4.43	0.0	0.0	1	1	0.0	0.0
8	10.000	0	0	0	+0.0	-7.38	0.0	0.0	1	1	0.0	0.0
9	10.000	0	0	0	+0.0	-10.33	0.0	0.0	1	1	0.0	0.0
10	10.000	0	0	0	+0.0	-13.28	0.0	0.0	1	1	0.0	0.0

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Remarks

This elevation pattern and ERP values apply to the null in the pattern located in the arc between 110 and 230 degrees True.

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E.m. field previsions in free space

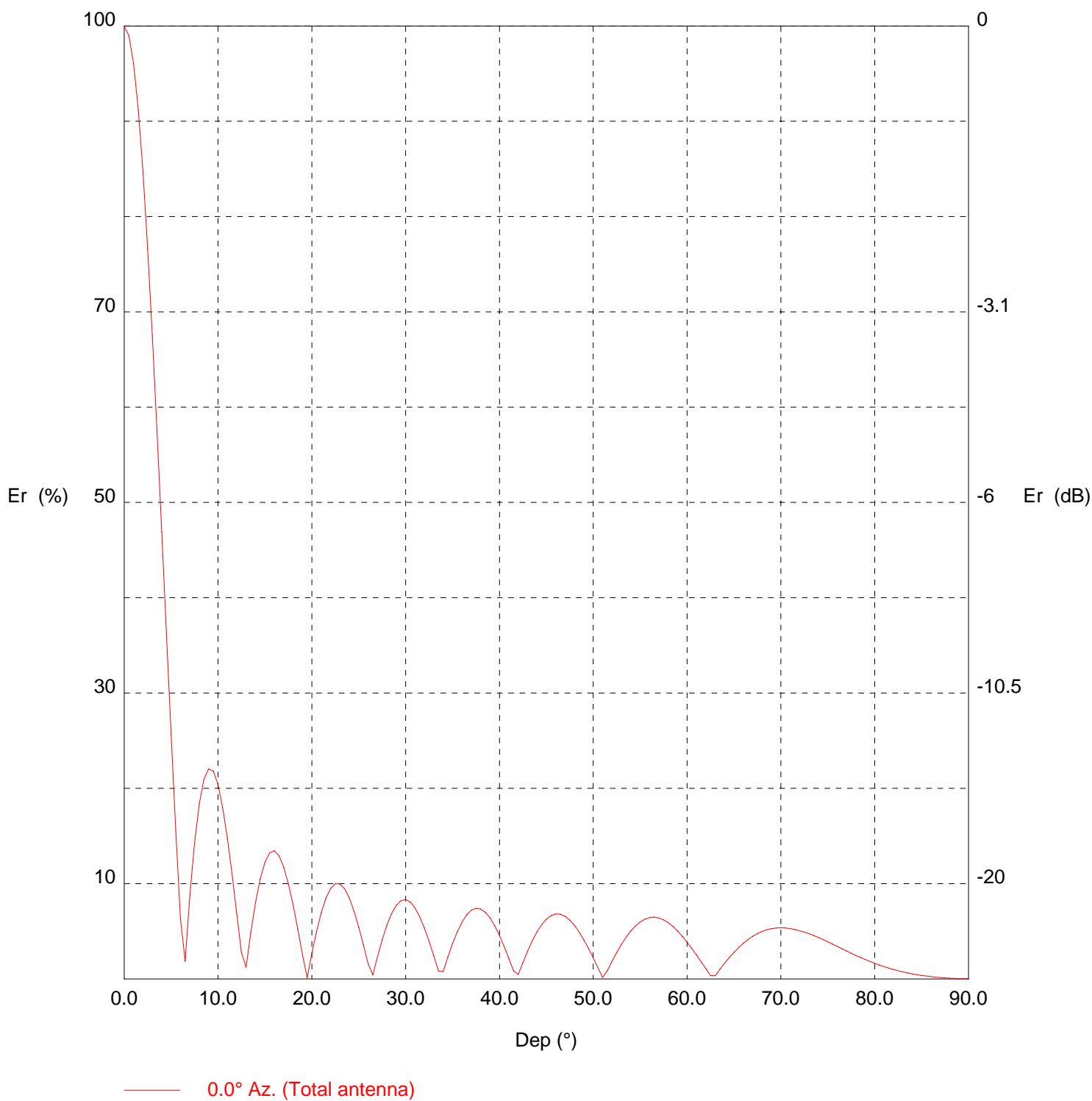
<i>Locality</i>	<i>Alt.</i> (m)	<i>Dist.</i> (Km)	<i>Dep.</i> (°)	<i>Az.</i> (°/N)	<i>ERP</i> (KW)	<i>Field</i> (mV/m)	<i>Field</i> (dBμV/m)
1 POINT A	9	0.3	23.0	0	0.023	123.8	101.9
2 POINT B	9	0.5	12.0	0	0.011	46.1	93.3
3 POINT C	9	0.8	8.1	0	0.082	83.7	98.5
4 POINT D	9	1.0	6.1	0	0.006	17.5	84.9
5 POINT E	9	1.3	4.9	0	0.189	76.9	97.7
6 POINT F	9	1.5	4.1	0	0.485	102.7	100.2
7 POINT G	9	1.8	3.5	0	0.777	111.6	101.0
8 POINT H	9	2.0	3.0	0	1.029	112.3	101.0
9 POINT I	9	2.3	2.7	0	1.234	109.4	100.8
10 POINT J	9	2.5	2.4	0	1.399	104.9	100.4
11 POINT K	9	2.8	2.2	0	1.532	99.8	100.0
12 POINT L	9	3.0	2.0	0	1.640	94.6	99.5
13 POINT M	9	3.3	1.9	0	1.728	89.7	99.1
14 POINT N	9	3.5	1.7	0	1.800	85.0	98.6

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Vertical diagram



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Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)
0.0	100.0	2.32	30.0	8.3	0.02	60.0	3.9	0.00
0.5	99.0	2.27	30.5	8.1	0.02	60.5	3.2	0.00
1.0	96.0	2.14	31.0	7.4	0.01	61.0	2.5	0.00
1.5	91.2	1.93	31.5	6.5	0.01	61.5	1.8	0.00
2.0	84.6	1.66	32.0	5.3	0.01	62.0	1.1	0.00
2.5	76.6	1.36	32.5	4.0	0.00	62.5	0.4	0.00
3.0	67.5	1.06	33.0	2.4	0.00	63.0	0.3	0.00
3.5	57.4	0.77	33.5	0.8	0.00	63.5	1.0	0.00
4.0	46.9	0.51	34.0	0.8	0.00	64.0	1.6	0.00
4.5	36.2	0.30	34.5	2.3	0.00	64.5	2.2	0.00
5.0	25.6	0.15	35.0	3.7	0.00	65.0	2.8	0.00
5.5	15.6	0.06	35.5	4.9	0.01	65.5	3.3	0.00
6.0	6.4	0.01	36.0	6.0	0.01	66.0	3.7	0.00
6.5	1.8	0.00	36.5	6.7	0.01	66.5	4.1	0.00
7.0	8.8	0.02	37.0	7.2	0.01	67.0	4.5	0.00
7.5	14.3	0.05	37.5	7.4	0.01	67.5	4.8	0.01
8.0	18.4	0.08	38.0	7.3	0.01	68.0	5.0	0.01
8.5	20.9	0.10	38.5	7.0	0.01	68.5	5.2	0.01
9.0	22.0	0.11	39.0	6.4	0.01	69.0	5.3	0.01
9.5	21.8	0.11	39.5	5.6	0.01	69.5	5.3	0.01
10.0	20.4	0.10	40.0	4.5	0.00	70.0	5.4	0.01
10.5	18.0	0.07	40.5	3.4	0.00	70.5	5.3	0.01
11.0	14.8	0.05	41.0	2.1	0.00	71.0	5.3	0.01
11.5	11.0	0.03	41.5	0.8	0.00	71.5	5.2	0.01
12.0	6.9	0.01	42.0	0.5	0.00	72.0	5.0	0.01
12.5	2.8	0.00	42.5	1.7	0.00	72.5	4.9	0.01
13.0	1.2	0.00	43.0	2.9	0.00	73.0	4.7	0.01
13.5	4.9	0.01	43.5	4.0	0.00	73.5	4.5	0.00
14.0	8.0	0.01	44.0	4.9	0.01	74.0	4.3	0.00
14.5	10.5	0.03	44.5	5.7	0.01	74.5	4.1	0.00
15.0	12.2	0.03	45.0	6.3	0.01	75.0	3.9	0.00
15.5	13.2	0.04	45.5	6.6	0.01	75.5	3.6	0.00
16.0	13.4	0.04	46.0	6.8	0.01	76.0	3.4	0.00
16.5	12.9	0.04	46.5	6.8	0.01	76.5	3.2	0.00
17.0	11.7	0.03	47.0	6.6	0.01	77.0	2.9	0.00
17.5	10.0	0.02	47.5	6.2	0.01	77.5	2.7	0.00
18.0	7.7	0.01	48.0	5.6	0.01	78.0	2.5	0.00
18.5	5.2	0.01	48.5	4.9	0.01	78.5	2.2	0.00
19.0	2.6	0.00	49.0	4.1	0.00	79.0	2.0	0.00
19.5	0.1	0.00	49.5	3.2	0.00	79.5	1.8	0.00
20.0	2.7	0.00	50.0	2.2	0.00	80.0	1.6	0.00
20.5	5.0	0.01	50.5	1.2	0.00	80.5	1.5	0.00
21.0	6.9	0.01	51.0	0.2	0.00	81.0	1.3	0.00
21.5	8.5	0.02	51.5	0.9	0.00	81.5	1.1	0.00
22.0	9.5	0.02	52.0	1.8	0.00	82.0	1.0	0.00
22.5	10.0	0.02	52.5	2.8	0.00	82.5	0.9	0.00
23.0	10.0	0.02	53.0	3.6	0.00	83.0	0.7	0.00
23.5	9.4	0.02	53.5	4.4	0.00	83.5	0.6	0.00
24.0	8.5	0.02	54.0	5.0	0.01	84.0	0.5	0.00
24.5	7.1	0.01	54.5	5.6	0.01	84.5	0.4	0.00
25.0	5.5	0.01	55.0	6.0	0.01	85.0	0.4	0.00
25.5	3.6	0.00	55.5	6.3	0.01	85.5	0.3	0.00
26.0	1.6	0.00	56.0	6.4	0.01	86.0	0.2	0.00
26.5	0.4	0.00	56.5	6.5	0.01	86.5	0.2	0.00
27.0	2.3	0.00	57.0	6.4	0.01	87.0	0.1	0.00
27.5	4.1	0.00	57.5	6.2	0.01	87.5	0.1	0.00
28.0	5.6	0.01	58.0	5.9	0.01	88.0	0.1	0.00
28.5	6.8	0.01	58.5	5.5	0.01	88.5	0.1	0.00
29.0	7.7	0.01	59.0	5.0	0.01	89.0	0.0	0.00
29.5	8.2	0.02	59.5	4.5	0.00	89.5	0.0	0.00