Antenna Project

ALDENA

TX station: ***FM 2bays***
Locality: ***Tbilisi Tower***
Frequency: **98** ***MHz***

Date: ***09.06.2026***

General data of antenna System

TX station	FM 2bays
Locality	Tbilisi Tower
Station Name	
System ID	
Description	
Technology	
Status	Preliminary Study
System of coordinates	WGS84
Longitude	44°47'5.53"
Latitude	41°41'44.37"
Ground level a.s.l. (m)	725.0
Antenna system height (m)	90.0
Transmitter power(Watt)	1000.000
Carrier wave frequency (MHz)	98.000
Antenna system central frequency (MHz)	98.000
Antenna base diagrams type 1	ALDENA-ADE01022xx - FM Broadband Dipole
Polarization (H/V/C/X)	V
Transmitting cable attenuation (dB)	0.7
Additional attenuations(dB)	0.5
Base diagrams sectors (T = All, F = Front)	T
Velocity factor of cables to Antennas (0÷1)	0.88
Coordinate System(Cartesian, Polar, Offset)	P
Mast side / diameter(cm)	0.0
Mast cross section (T/Q/C)	T
Structure rotation w.r.t. North (°)	0.0
Mast rotation w.r.t. North (°)	0.0

Information about antennas used in the System

	Antenna type 1
Manufacturer	ALDENA
Antenna model	ALDENA-ADE01022xx - FM Broadband Dipole

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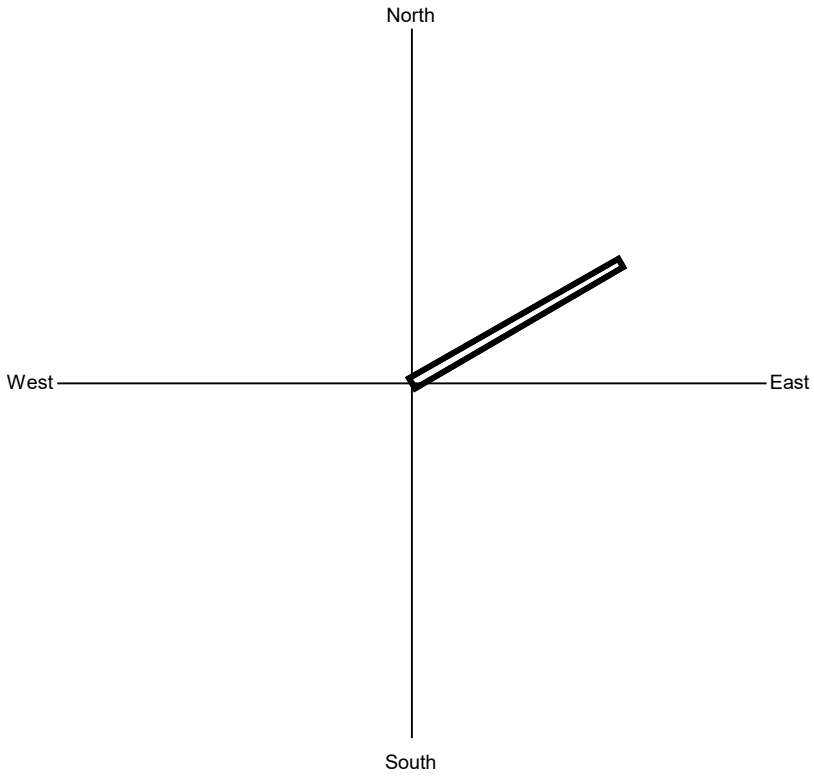
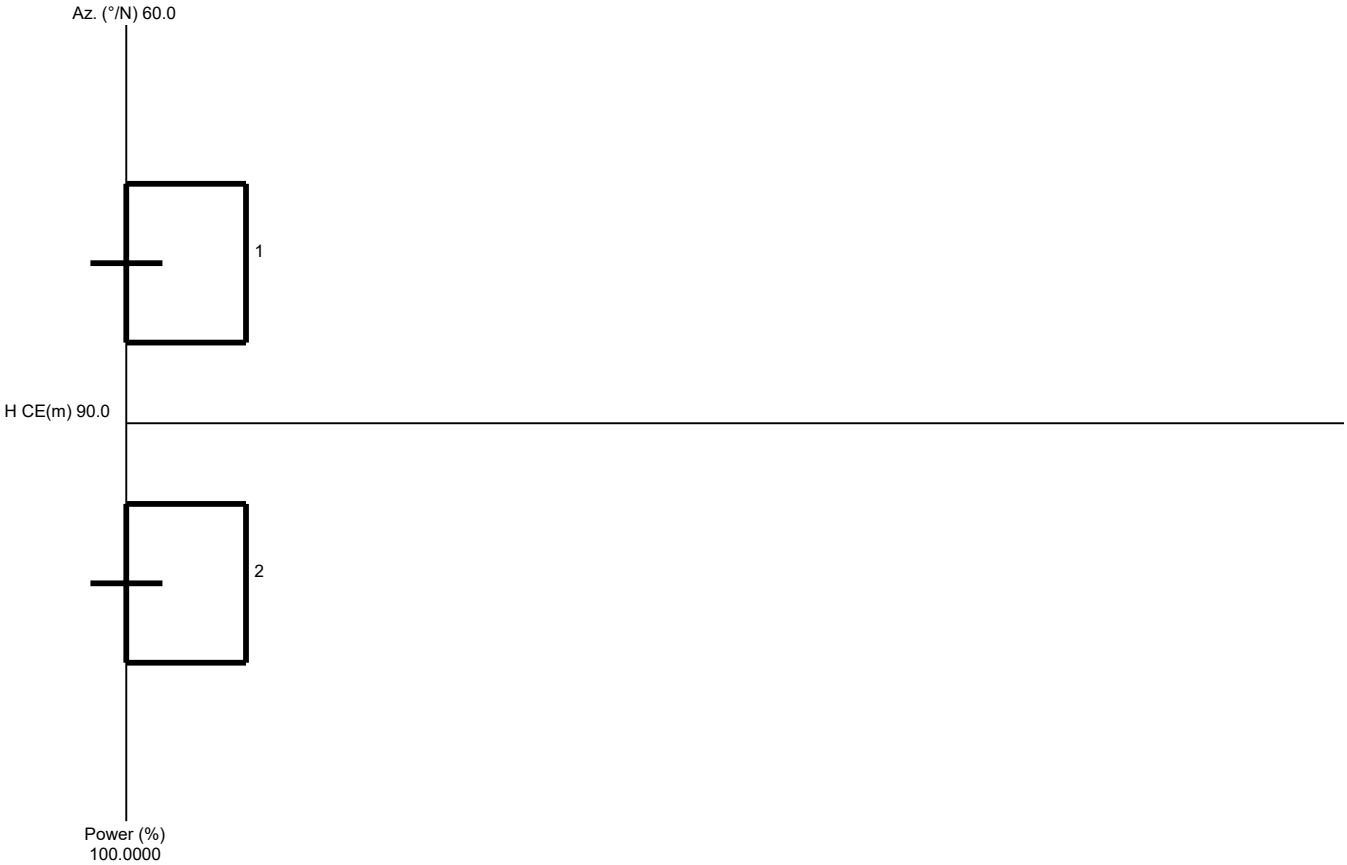
Plan of antenna system



Side of antenna system



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Gain solid integration : enabled

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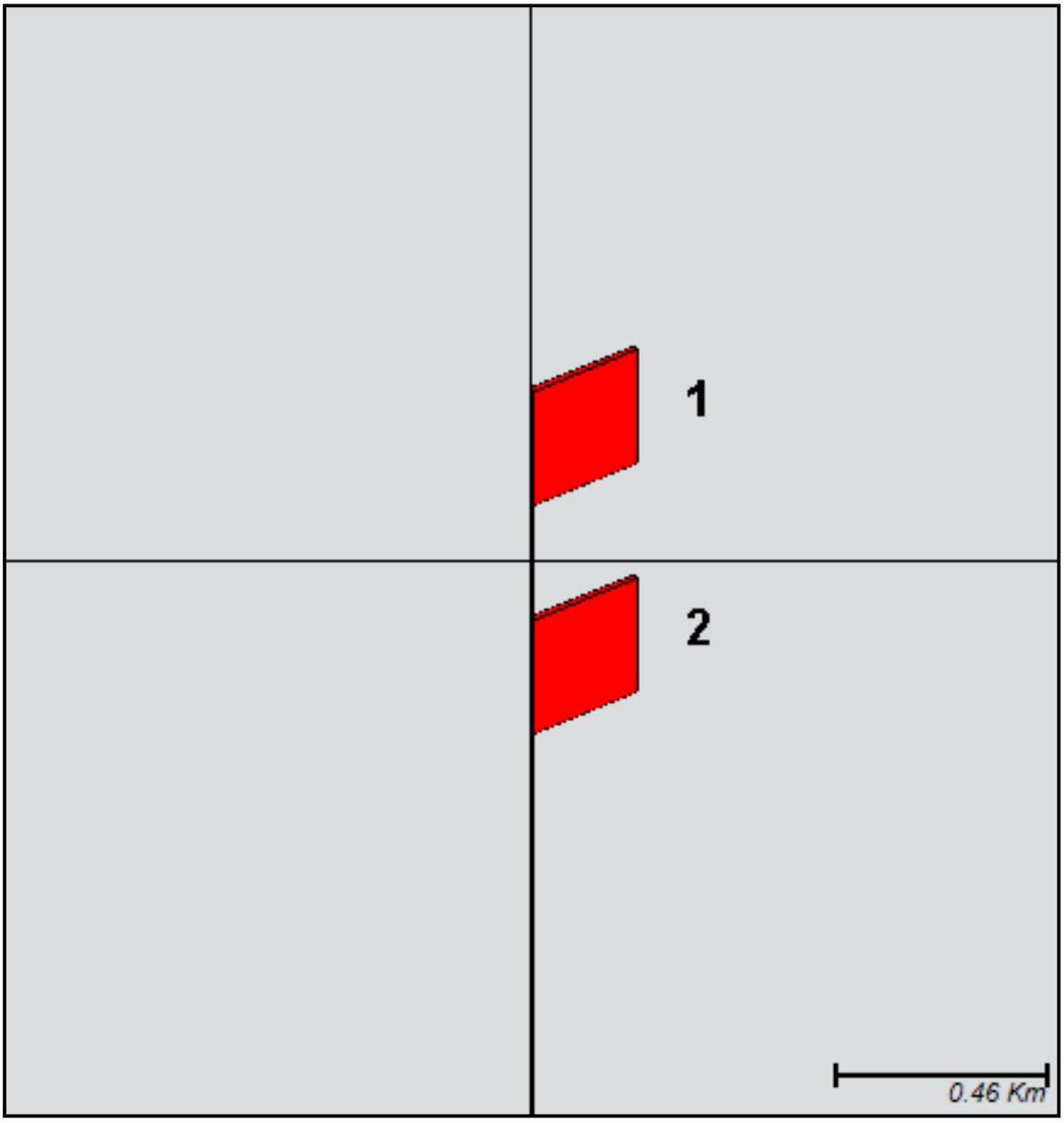
3D VIEW



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Antennas arrays data

A. Antennas array azimuth (°/N)	60
B. Number of antennas	2
C. Nominal power supply (W)	1000.00
D. Losses (addit. + cables) (dB)	1.2
E. Effective power supply (W)	758.58
F. Theor. maximum gain (dBd)	5.30
G. Distribution losses (dB)	0.00
H. Nominal max gain F - G (dBd)	5.30
I. Compensation losses (dB)	0.00
J. Effec. max gain H - I (dBd)	5.30
K. Effec. max gain (times)	3.39
L. Effec. max power E * K (KW)	2.5722
M. Max power depr. angle (°)	0.0
N. Max power az. angle (°)	60

Diagram in dBK calculated at horizon

Az. (°/N)	dBK	Az. (°/N)	dBK	Az. (°/N)	dBK	Az. (°/N)	dBK
0	3.4	90	4.0	180	0.0	270	-1.1
10	3.6	100	3.8	190	-0.5	280	-0.9
20	3.8	110	3.6	200	-0.9	290	-0.5
30	4.0	120	3.4	210	-1.1	300	0.0
40	4.1	130	3.1	220	-1.1	310	0.8
50	4.1	140	2.7	230	-1.1	320	1.6
60	4.1	150	2.2	240	-1.0	330	2.2
70	4.1	160	1.6	250	-1.1	340	2.7
80	4.1	170	0.8	260	-1.1	350	3.1

Diagram in dBK calculated at horizon (without -20dB\'s lower limit vs maximum power)

Az. (°/N)	dBK	Az. (°/N)	dBK	Az. (°/N)	dBK	Az. (°/N)	dBK
0	3.4	90	4.0	180	0.0	270	-1.1
10	3.6	100	3.8	190	-0.5	280	-0.9
20	3.8	110	3.6	200	-0.9	290	-0.5
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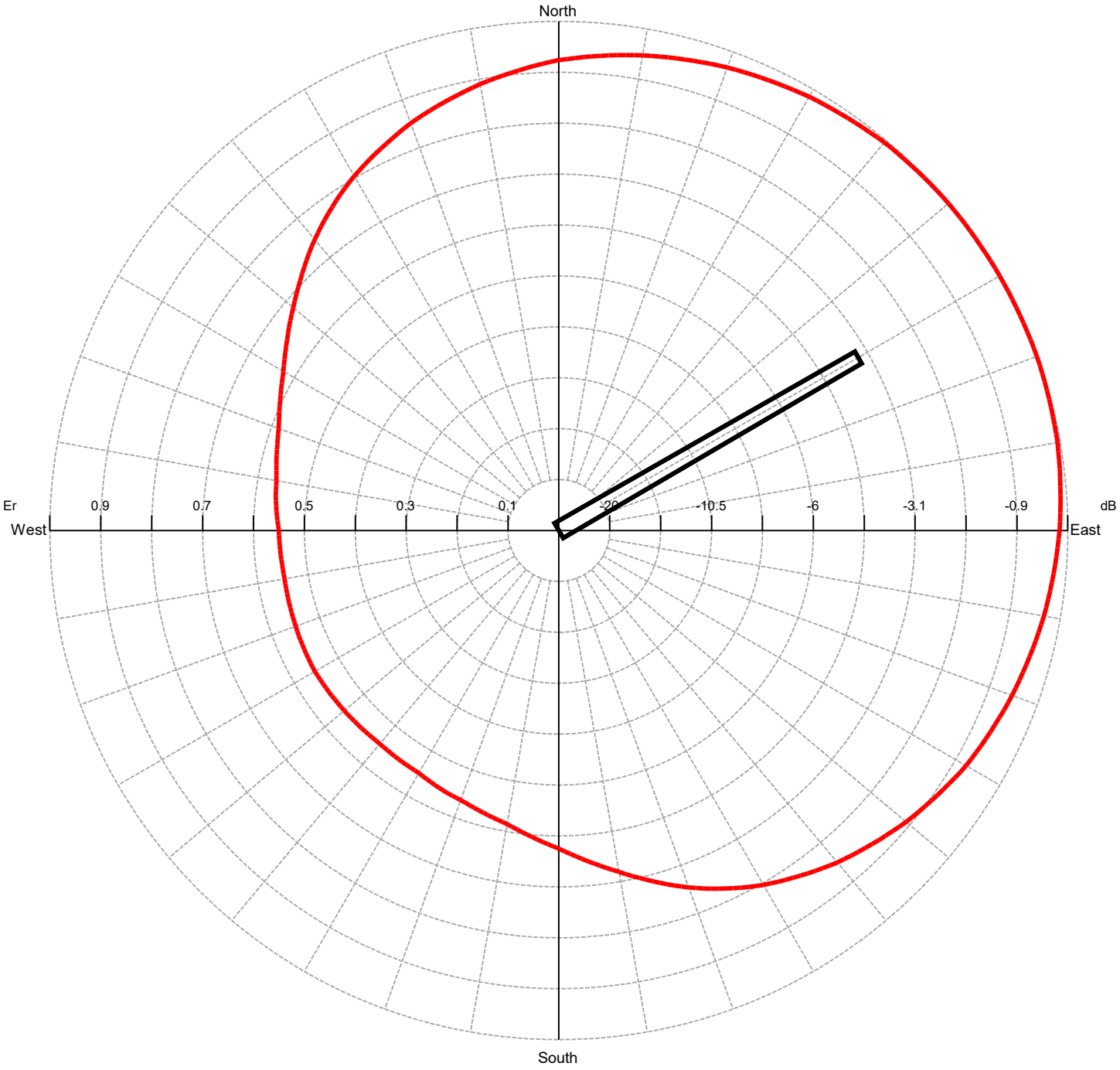
Horizontal diagram at 0.0° depres. (Total Antenna)



0.0° depres. (Total Antenna), Gain (dBd): 5.3

ERP T.Max(KW): 3.391

ERP E.Max(KW) considering attenuations: 2.572

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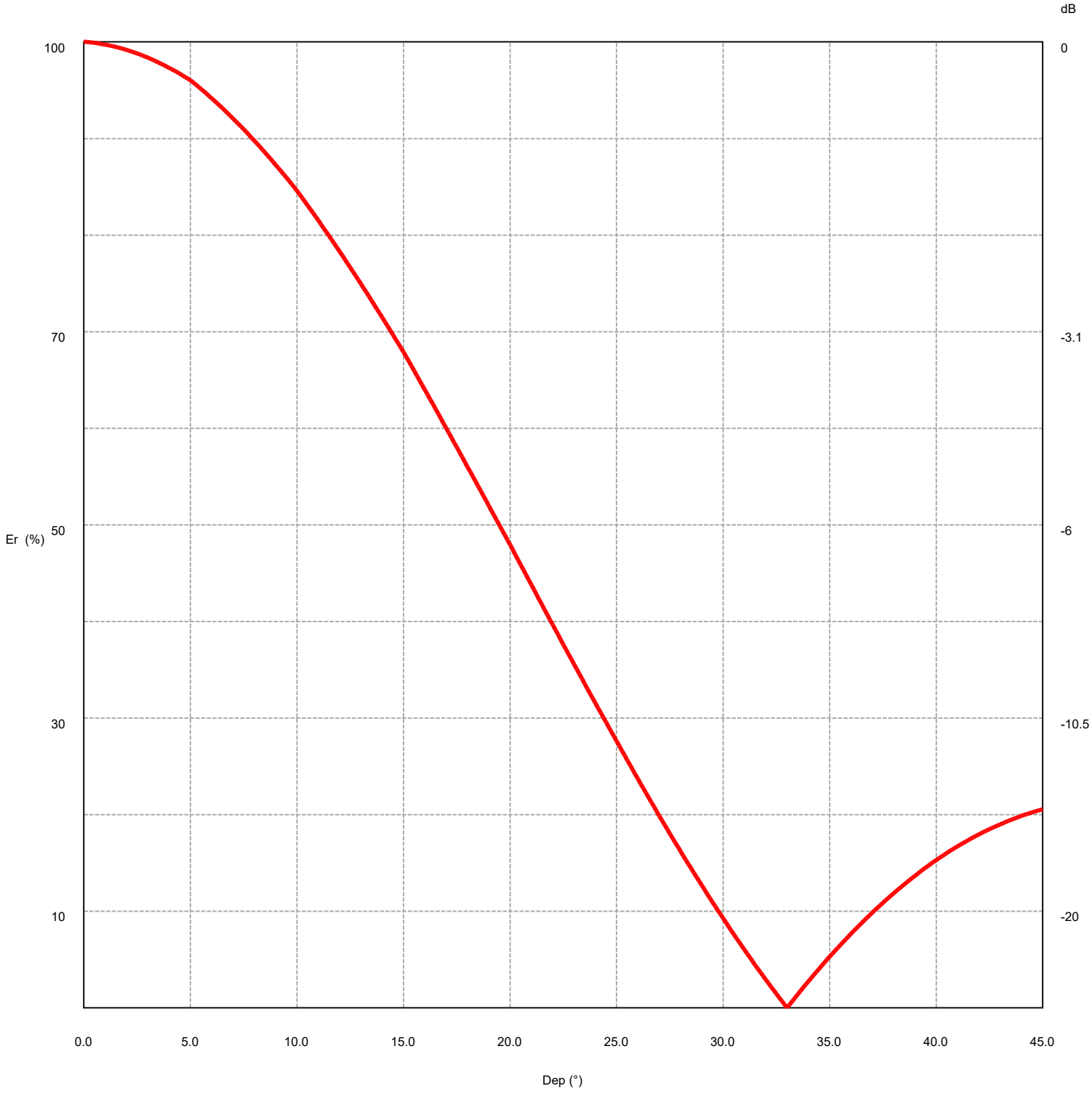
Vertical diagram at an azimuth of 60.0° degrees



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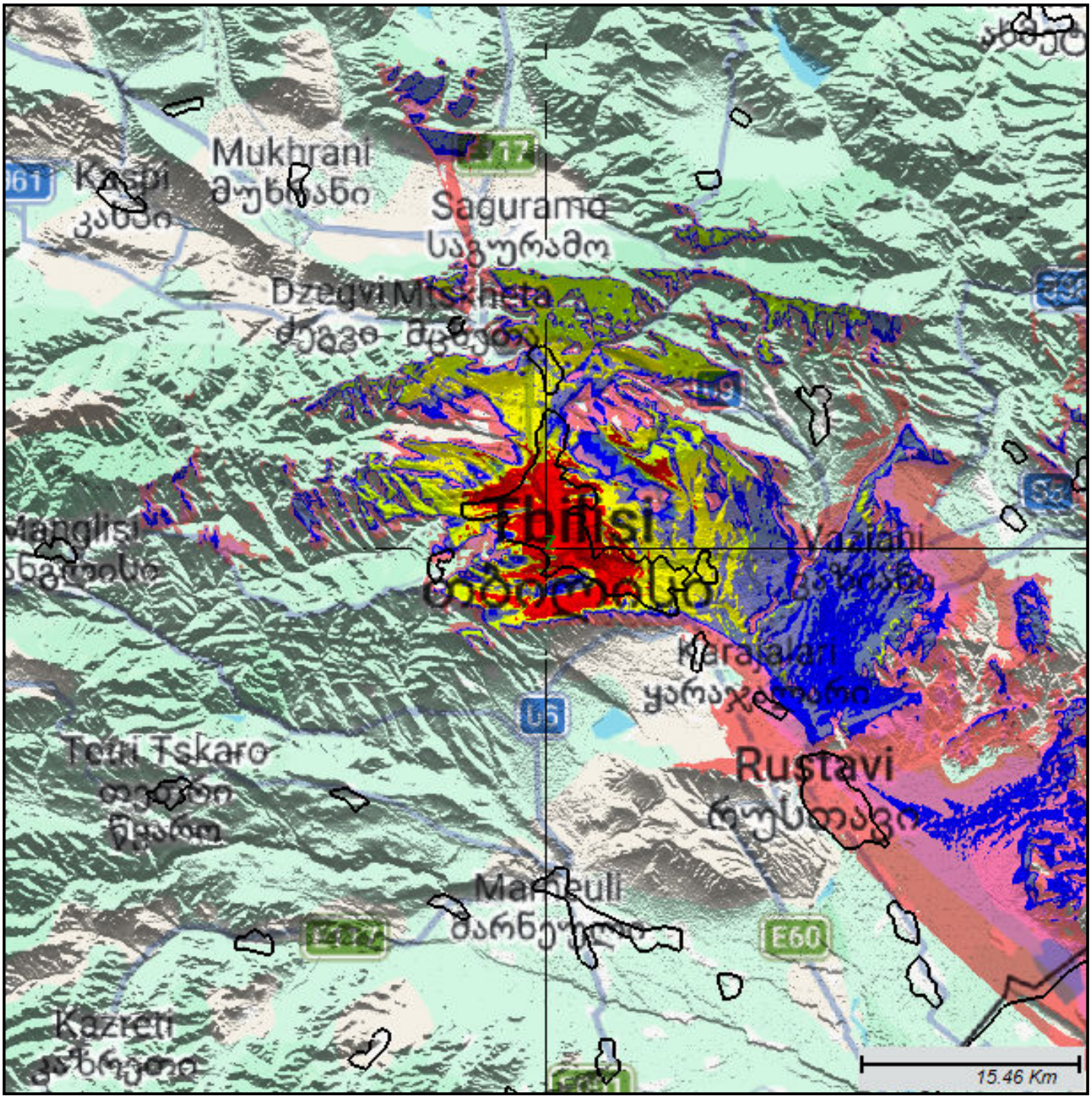
Coverage Area



dBµV/m

≥ 90.0			
≥ 82.0	<	90.0
≥ 76.0	<	82.0
≥ 70.0	<	76.0
≥ 64.0	<	70.0
≥ 58.0	<	64.0
	<	58.0

System of coordinates : WGS84
Longitude : 44°47'5.53" Latitude : 41°41'44.37"
Transmitter : 725 mslm H90.0m
TX Power : 1000.00 W

Side : 100.0 Km Calculation resolution : 150 m
Boundary
Propagation Model : ITU-R 1812-8
Time: 50% Locations: 50%
Receiver height (m) agl : 2.0
Area : Open

The physical phenomena included within the calculation of the propagation model 1812 are the following data:
- Tropospherical scatter;
- Ducting and layer reflection/refraction;
- Terminal surroundings;
- Localtion variability;
- Delta Bullington + Spherical Diffraction