

APPLICATION FOR MINOR MODIFICATION
TO
KJMZ, CH 250A. CACHE, OK
FOR
PERRY BROADCASTING OF LAWTON, INC.
LICENSEE OF
KJMZ(FM)

THIS IS A §73.215 APPLICATION

APRIL 2010

BY:
BEEM CO.
ARCADIA, CA
(626) 446-3468

ENGINEERING REPORT OF JOEL T. SAXBERG

This application for minor modification of KJMZ was prepared for Perry Broadcasting of Lawton, Inc., licensee of FM station KJMZ by Joel T. Saxberg of Arcadia. Perry Broadcasting proposes to relocate its main antenna to another location. The present location tower collapsed during an ice storm and made seeking another location necessary. An STA was filed to operate horizontal polarization only using an antenna affixed to one of the KRKX AM towers in Lawton owned by Perry Broadcasting. This application is for a permanent main antenna installation with maximum Class A facilities.

ALTERNATIVE PREDICTION METHOD REQUESTED – The coverage map attached to this application shows the predicted F(50,50) 70 dBu contour does not cover 80% of the city of Cache as required by §73.315. The population of Cache is 2398. The population of Cache within the proposed F(50,50) 70 dBu contour is 128 or 5.3%. A Longley-Rice propagation map, also included, shows the 70 dBu contour completely encompasses the city of Cache, OK. Δh figures were computed using a terrain distance from 10 km to the far city limit (from the tower) and a terrain distance of 3 kilometers to the far city limit. Both of these show a Δh of less than 20m. It is understood that in order to use alternative prediction methods, Δh has to be less than 20m or greater than 100m. It is also understood alternative contour distance must exceed the F(50,50) 70 dBu 3-16 km by 10% in distance, which it does. This area of Oklahoma is very flat and Δh computes at less than 20m. It is believed that the proposed site meets the rules for use of using Longley-Rice computations, in lieu of F(50,50) 3-16km studies. It is respectfully requested that alternative methodology be permitted for use with the KJMZ application.

Calculations are as follows for 3km to City limits:

Bearing Degrees	Far City Limit km	F(50,50) 70 dBu km	Δh m	Longley-Rice dist. km	Dist Incr. %
287	15.6	14.4	10.5	23.0	59%
288	15.7	14.3	13.0	22.7	58%
289	15.7	14.2	13.9	22.4	57%
290	16.8	14.1	15.1	22.4	58%
291	16.9	14.1	15.8	22.7	60%
292	17.1	14.0	16.9	23.8	70%
293	16.4	14.0	17.4	26.2	87%
294	15.8	13.9	18.6	25.9	86%
295	16.1	13.9	16.8	25.8	85%
296	16.3	13.8	17.7	25.9	87%
297	16.0	13.8	15.2	26.0	88%
298	16.1	13.7	16.5	26.2	91%
299	16.3	13.7	16.8	26.5	93%
300	16.1	13.6	17.2	26.6	95%

Calculations are as follows for 10km to City limits:

Bearing Degrees	Far City Limit km	F(50,50) 70 dBu km	Δh m	Longley-Rice dist. km
287	15.6	14.4	8.3	23.0
288	15.7	14.3	9.3	22.7
289	15.7	14.2	12.0	22.4
290	16.8	14.1	11.5	22.4
291	16.9	14.1	11.3	22.7
292	17.1	14.0	16.6	23.8
293	16.4	14.0	15.1	26.2
294	15.8	13.9	16.5	25.9
295	16.1	13.9	15.0	25.8
296	16.3	13.8	16.0	25.9
297	16.0	13.8	12.4	26.0
298	16.1	13.7	12.2	26.2

299	16.3	13,7	12.7	26.5
300	16.1	13.6	11.8	26.6

ALLOCATION STUDY – An allocation study shows the proposed site clears all facilities except one, KICM, CH 249C2, Healdton, OK. KICM is a §73.215 station and has a directional antenna which provided protection to the previous KJMZ site. The pattern does not provide enough of a minima to eliminate contour overlaps between the KICM F(50,10) 54 dBu and the KJMZ F(50,50) 60 dBu. Therefore a directional pattern was designed for KJMZ to eliminate contour overlaps. The proposed site meets the requirements of §73.215 and is thus filed as a §73.215 application.

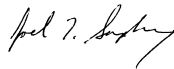
RADIOFREQUENCY ELECTROMAGNETIC FIELDS – It is proposed to use a 5 element, one wavelength spaced rototiller style antenna with center of radiation at 94 m above ground level and with an ERP of 6 kW. Using the FCC OET FM Model program the power density at 2 meters above ground level is shown to be 3.5 uW/cm². This is less than 1.8% of the Maximum Permitted Exposure limit for the general public. This application would be considered to be categorically excluded from environmental processing. When necessary for riggers to go aloft, KJMZ will reduce power or terminate transmissions to protect those workers from RF levels in excess of FCC guideline limits.

ENGINEERING CERTIFICATION

JOEL T. SAXBERG deposes and says:

1. That he is President of Broadcast Engineering and Equipment Maintenance Company, "**BEEM CO.**", radio engineering consultants. **BEEM CO.** maintains offices at: 2322 S. Second Avenue, Arcadia, CA 91006. Telephone (626) 446-3468
2. That he was graduated from California State University at Los Angeles, February 1966, with a Bachelor of Science degree in Electronic Engineering. He received a MS degree in Electronic Engineering Technology in August 1996.
3. That he has submitted many applications to the Federal Communications Commission for broadcast and auxiliary broadcast construction permits and licenses.
4. That his experience in broadcast engineering is a matter of record and he has spent over forty years working in the field of radio engineering.
5. That the attached report was prepared by him or under his direction and supervision. That he believes the facts stated therein to be both true and accurate. Statements that are based on information supplied by others are also believed to be true and accurate.
6. That he has performed field work on AM and FM broadcast transmitting systems throughout this country and continues to provide technical consulting services on a daily basis to broadcasters.
7. That he declares under penalty of perjury the foregoing is true and correct.

Executed on Apr. 8, 2010



Joel T. Saxberg

FM Study for: KJMZ FCC Database Date: 4/9/2010 34-34-24
 Location: CACHE, OK Channel Class: A 98-28-40
 [*] by HAAT indicates calculated as missing in database.
 Call City, State Chan Class Freq kW Latitude Dist. Required
 Status Proponent File Number HAAT Longitude Azm. Clear (km)

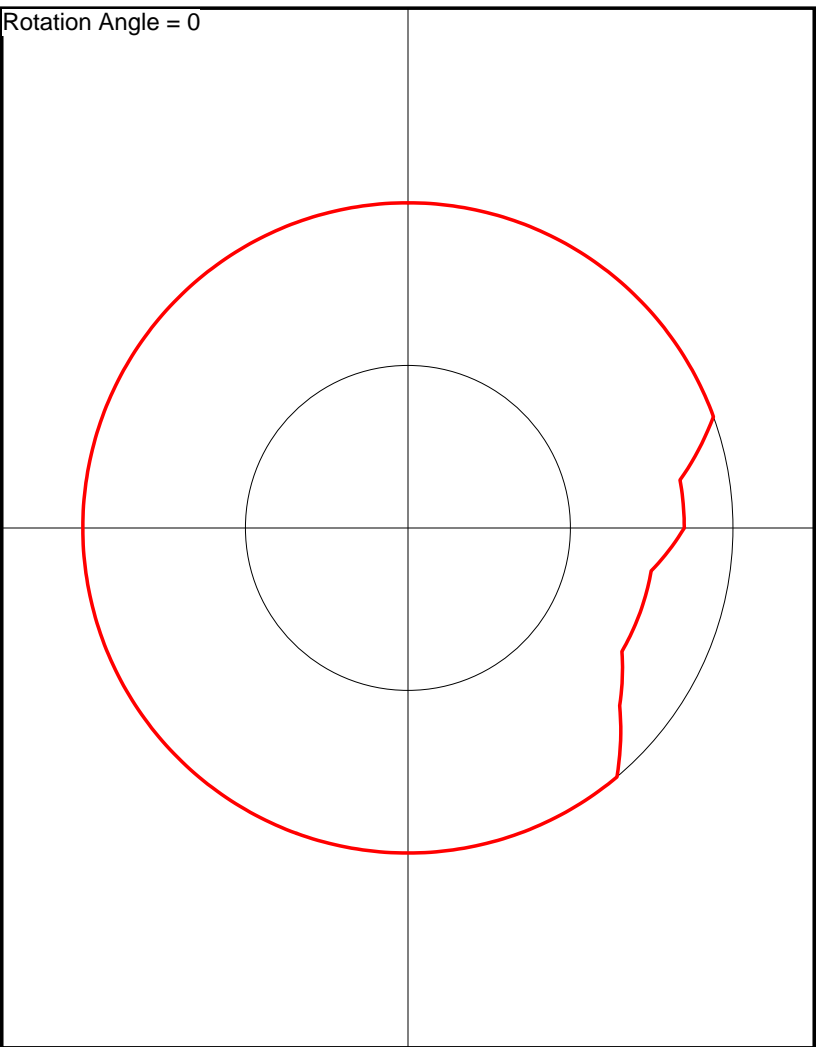
>>>>>>> Study For Channel 250 97.9 MHz <<<<<<<<

KJMZ	CACHE, OK	250 A	97.9	6.00	34-35-31	6.8	115	
LIC	Fac. No. 35031	BLH-20060130AXC	89		98-32-55	287.6	-108.2	SHORT
		Use of 73.215 for short spacing requires:				92	-85.2	SHORT
KICM	HEALDTON, OK	249 C2	97.7	50.0+	34-20-57	97.1	106	73.215
LIC	Fac. No. 71054	BLH-20070419AAV	150		97-27-24	104.6	-8.9	SHORT
		Use of 73.215 for short spacing requires:				89	+8.1	CLOSE
KACO	APACHE, OK	253 C3	98.5	18.5	34-56-30	41.91	42	73.215
LIC	Fac. No. 70015	BLH-20060130AUS	93		98-22-33	12.8	-0.09	CLOSE
ALLOCR	HEALDTON, OK	249 C3	97.7		34-17-28	96.0	89	
DEL		Dockt-2000-148	0		97-29-23	108.7	+7.0	CLOSE
WWLSEFM	THE VILLAGE, OK	251 C1	98.1	28.8	35-33-37	142.1	133	
LIC	Fac. No. 37435	BLH-20080721ACN	470		97-29-07	39.3	+9.1	CLOSE
KHIM	MANGUM, OK	249 A	97.7	.540	34-58-39	96.4	72	
LIC	Fac. No. 85874	BLH-20080530AFX	329		99-24-35	298.0	+24.4	CLEAR
KRZB	ARCHER CITY, TX	248 C2	97.5	50.0	33-51-40	80.5	55	
CP	Fac. No. 79024	BPH-19990217IB	150		98-38-52	191.3	+25.5	CLEAR
ALLOCR	QUANAH, TX	251 C3	98.1		34-24-09	119.9	89	
ADD		RM-11428	0		99-46-02	261.3	+30.9	CLEAR
KBFB	DALLAS, TX	250 C	97.9	99.0	32-35-15	261.1	226	
LIC	Fac. No. 9627	BLH-19910515KB	491		96-57-59	147.1	+35.1	CLEAR
KBFB	DALLAS, TX	250 C	97.9	97.0	32-35-02	261.6	226	
APP	Fac. No. 9627	BPH-20100318AAZ	574		96-57-48	147.1	+35.6	CLEAR
ALLOC	WEATHERFORD, OK	247 C1	97.3		35-33-02	110.9	75	
USE	Fac. No. 73947	-	0		98-43-59	347.9	+35.9	CLEAR
ALLOCR	ARCHER CITY, TX	248 C1	97.5		33-36-58	111.9	75	
DEL		Dockt-2000-148	0		98-51-42	198.6	+36.9	CLEAR
ALLOCR	PURCELL, OK	249 A	97.7		34-56-11	110.5	72	
ADD		Dockt-2000-148	0		97-21-12	68.3	+38.5	CLEAR
ALLOCR	PURCELL, OK	249 A	97.7		34-56-11	110.5	72	
ADD		Dockt-2000-148	0		97-21-12	68.3	+38.5	CLEAR

KJMZ ANTENNA PATTERN
Pre-Rotation Antenna Pattern....

Azimuth (deg)	Effective Field
0.0	1.000
5.0	1.000
10.0	1.000
15.0	1.000
20.0	1.000
25.0	1.000
30.0	1.000
35.0	1.000
40.0	1.000
45.0	1.000
50.0	1.000
55.0	1.000
60.0	1.000
65.0	1.000
70.0	1.000
75.0	0.925
80.0	0.850
85.0	0.850
90.0	0.850
95.0	0.805
100.0	0.760
105.0	0.760
110.0	0.760
115.0	0.760
120.0	0.760
125.0	0.805
130.0	0.850
135.0	0.925
140.0	1.000
145.0	1.000
150.0	1.000
155.0	1.000
160.0	1.000
165.0	1.000
170.0	1.000
175.0	1.000
180.0	1.000
185.0	1.000
190.0	1.000
195.0	1.000
200.0	1.000
205.0	1.000
210.0	1.000
215.0	1.000
220.0	1.000
225.0	1.000
230.0	1.000
235.0	1.000
240.0	1.000
245.0	1.000
250.0	1.000
255.0	1.000
260.0	1.000
265.0	1.000
270.0	1.000
275.0	1.000
280.0	1.000
285.0	1.000
290.0	1.000
295.0	1.000
300.0	1.000
305.0	1.000
310.0	1.000
315.0	1.000

Rotation Angle = 0

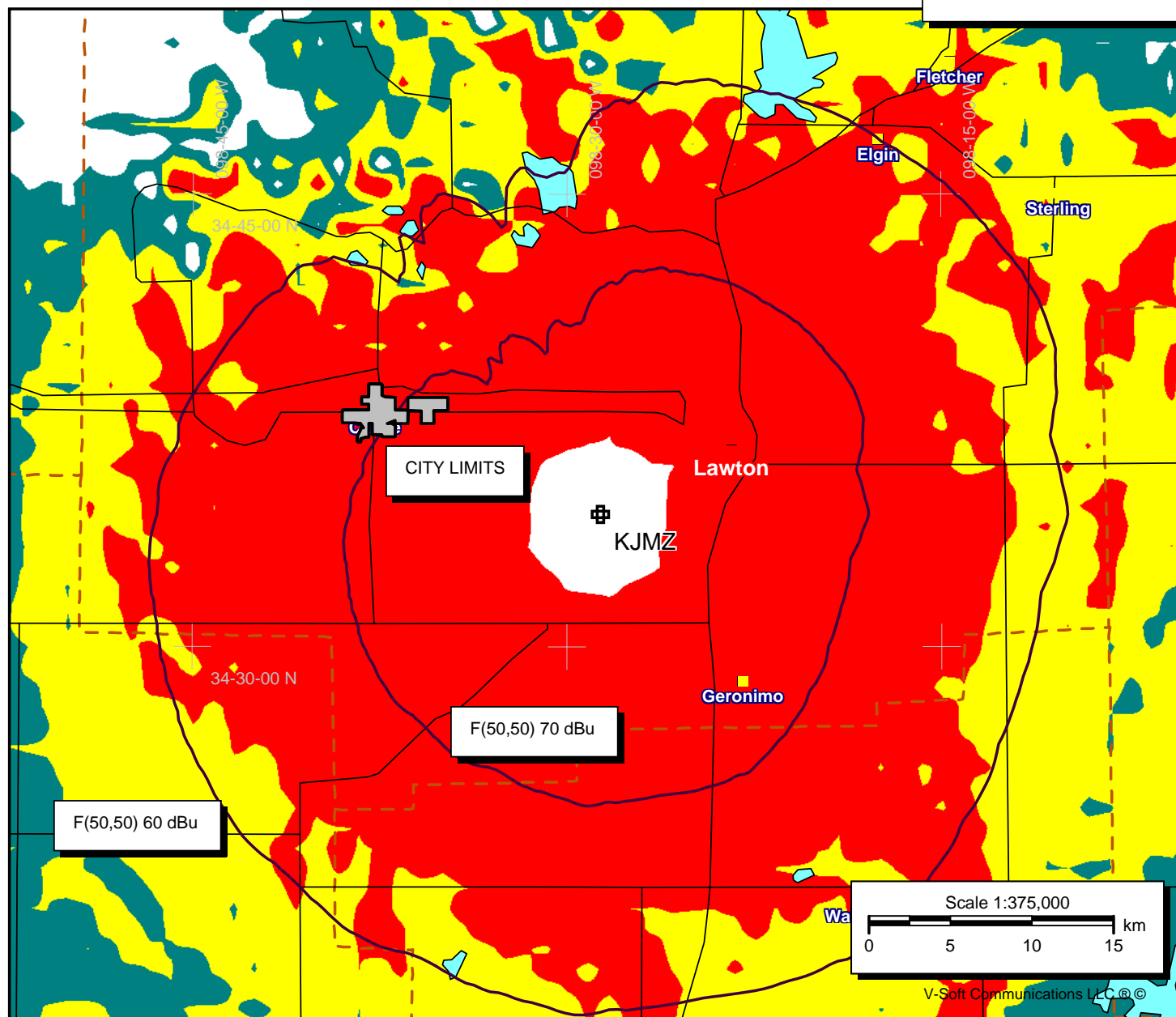
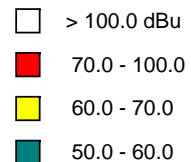


320.0	1.000
325.0	1.000
330.0	1.000
335.0	1.000
340.0	1.000
345.0	1.000
350.0	1.000
355.0	1.000

BEEM Co. 626 446-3468

KJMZ

BLH20060130AXC
Latitude: 34-34-23.70 N
Longitude: 098-28-39.80 W
ERP: 6.00 kW
Channel: 250
Frequency: 97.9 MHz
AMSL Height: 453.7 m
Elevation: 359.7 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: Longley/Rice
Climate: Cont temperate
Conductivity: 0.0050
Dielec Const: 15.0
Refractivity: 311.0
Receiver Ht AG: 10.0 m
Receiver Gain: 0 dB
Time Variability: 50.0%
Sit. Variability: 50.0%
ITM Mode: Broadcast



BEEM Co. 626 446-3468

KJMZ

BLH20060130AXC

Latitude: 34-34-23.70 N

Longitude: 098-28-39.80 W

ERP: 6.00 kW

Channel: 250

Frequency: 97.9 MHz

AMSL Height: 453.7 m

Elevation: 359.7 m

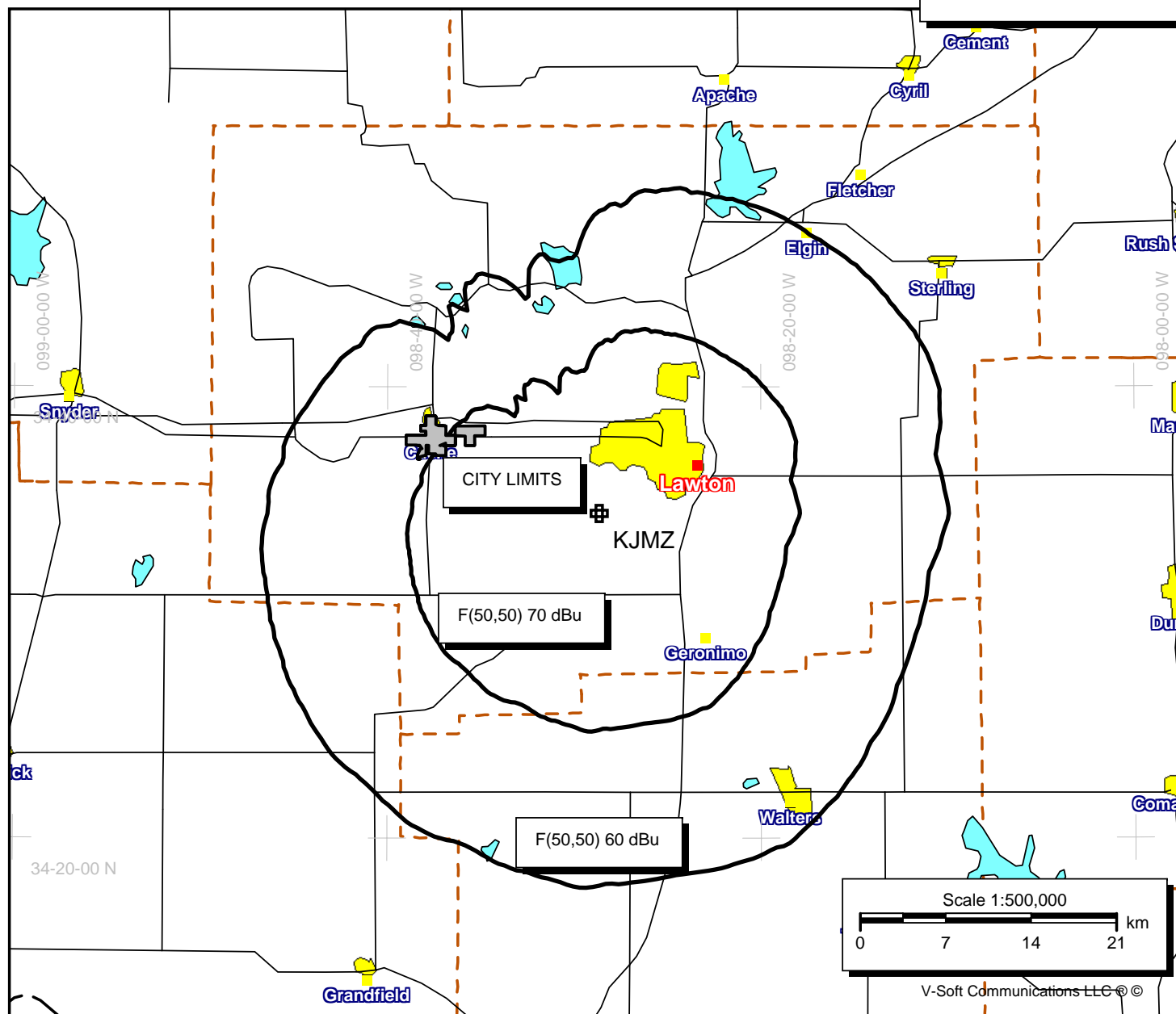
Horiz. Pattern: Directional

Vert. Pattern: No

Prop Model: FCC Model

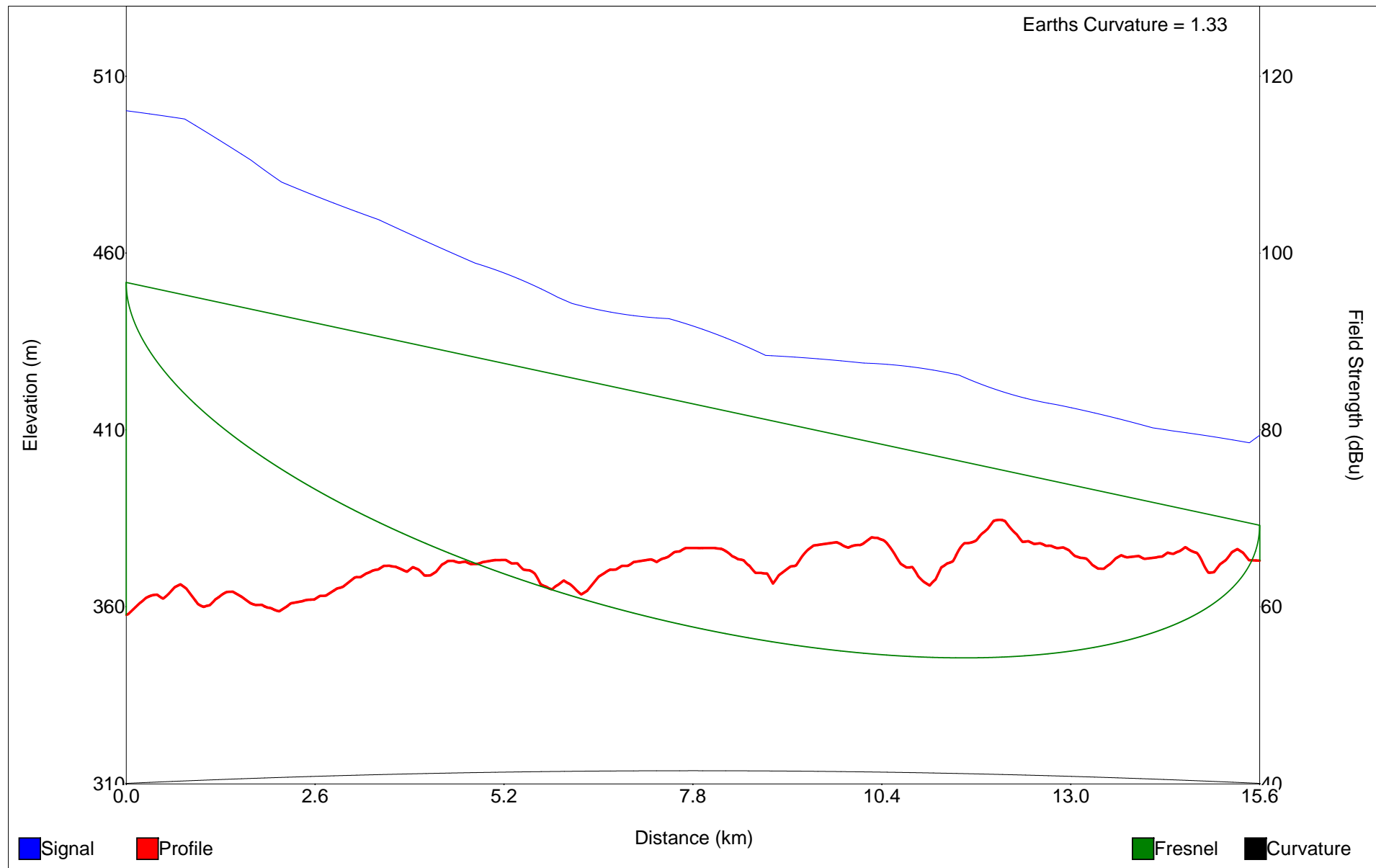
Loc. Variability: 50.0%

Time Variability: 50.0%



V-Soft Communications LLC ©

KJMZ 287 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-36-51.33 N
End Longitude: 098-38-25.37 W

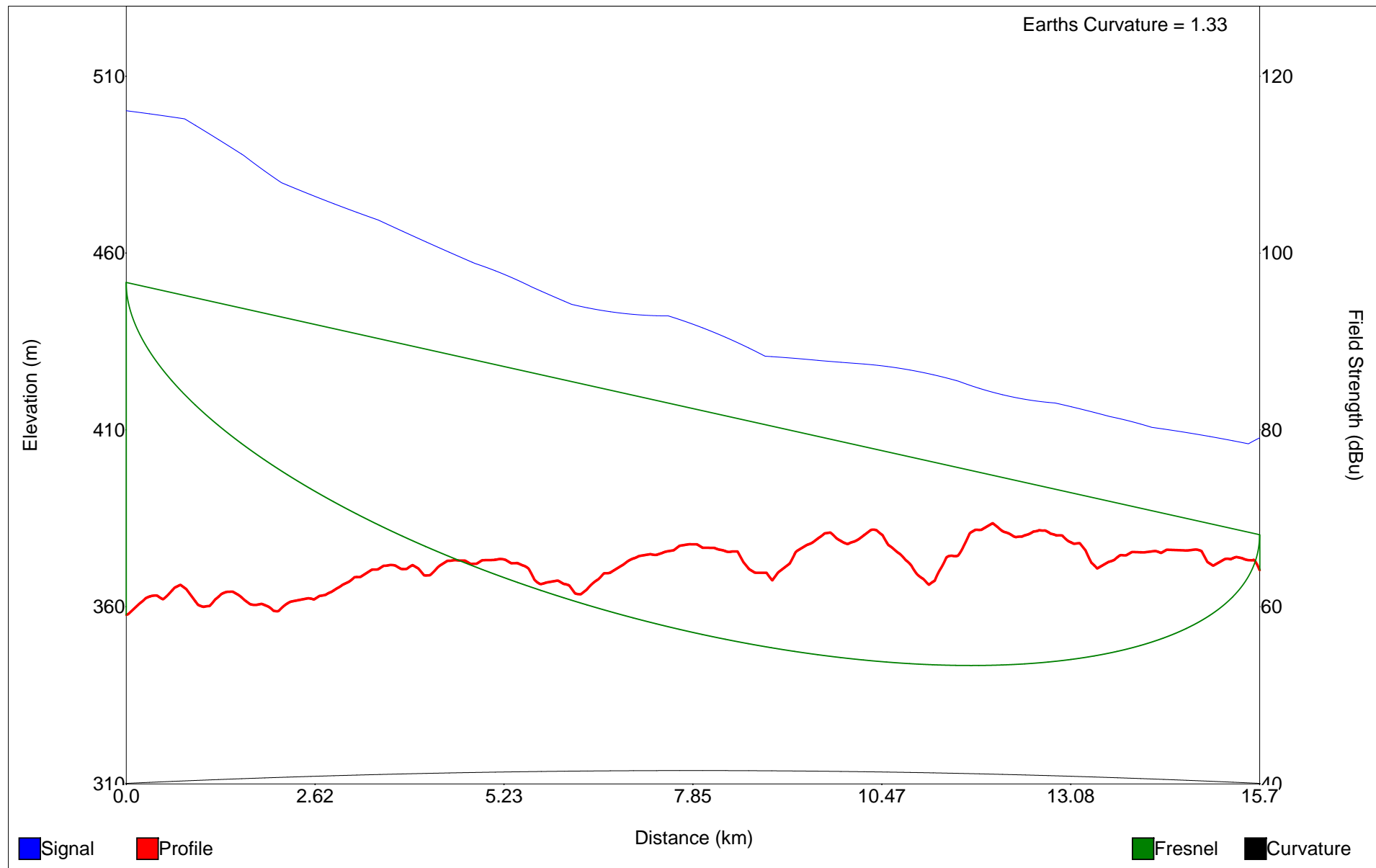
Distance: 15.6 km
Bearing: 287 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 373.0 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 288 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-37-00.76 N
End Longitude: 098-38-25.90 W

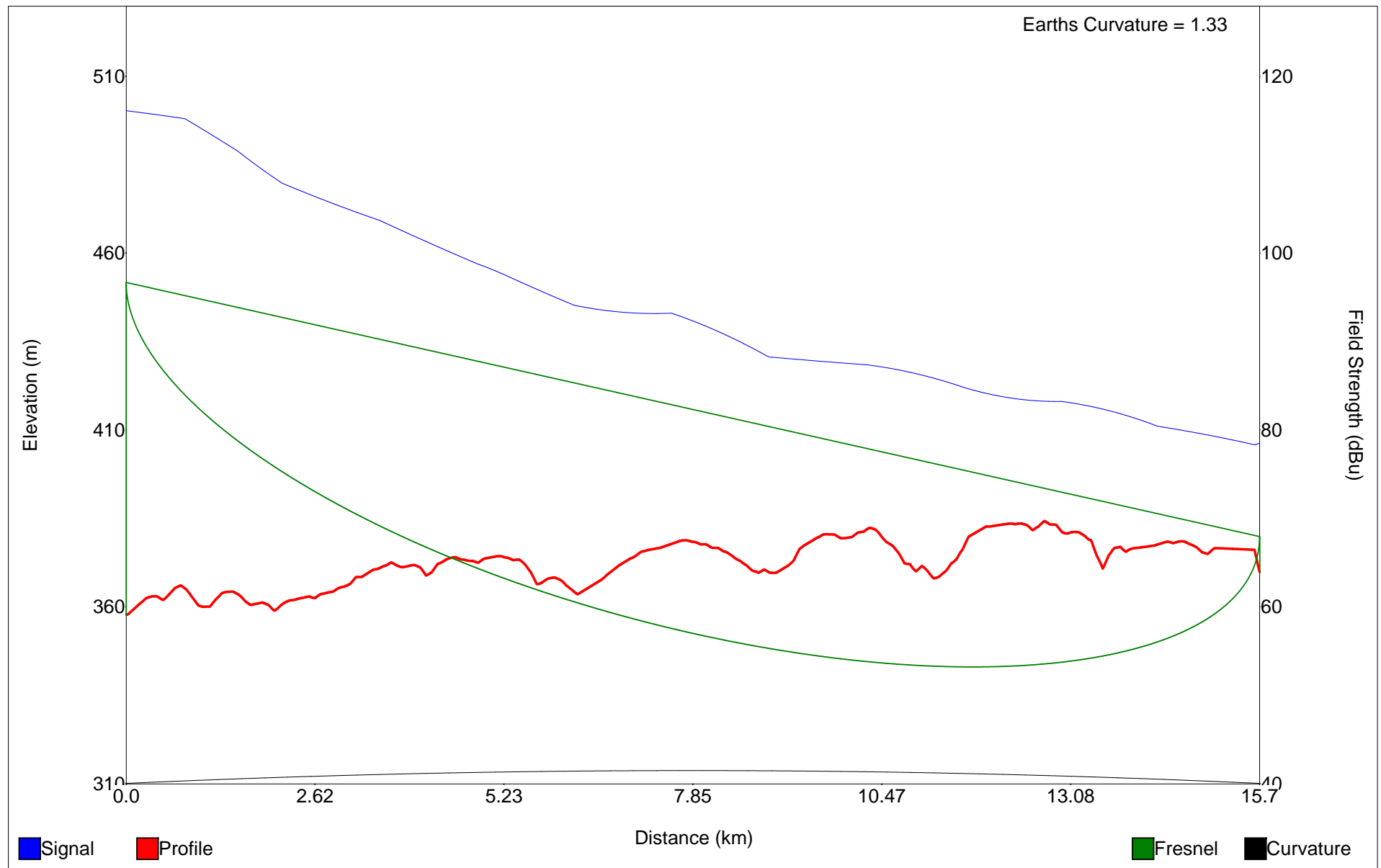
Distance: 15.7 km
Bearing: 288 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 370.3 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 289 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-37-09.19 N
End Longitude: 098-38-22.51 W

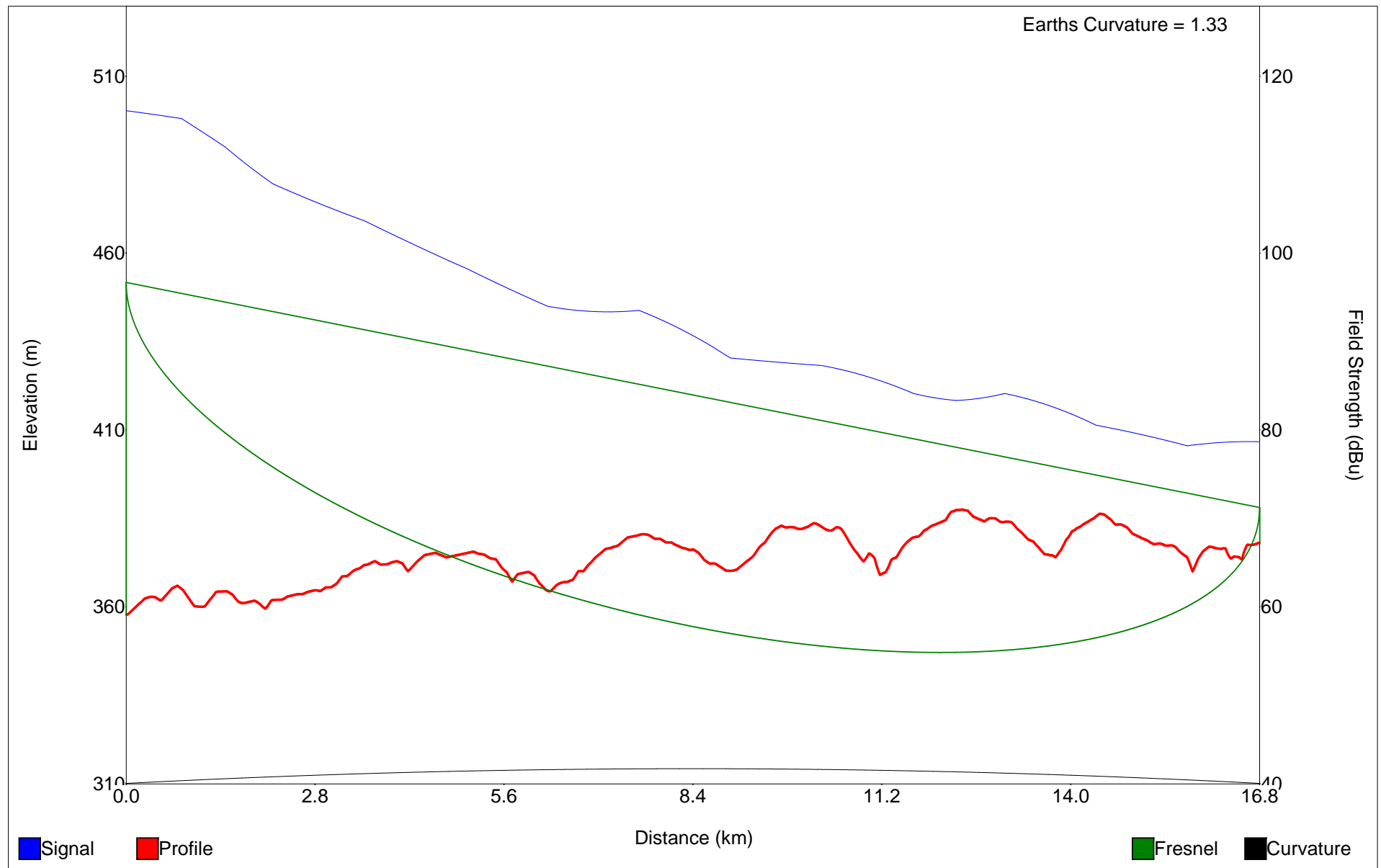
Distance: 15.7 km
Bearing: 289 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 369.8 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 290 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-37-29.74 N
End Longitude: 098-38-59.53 W

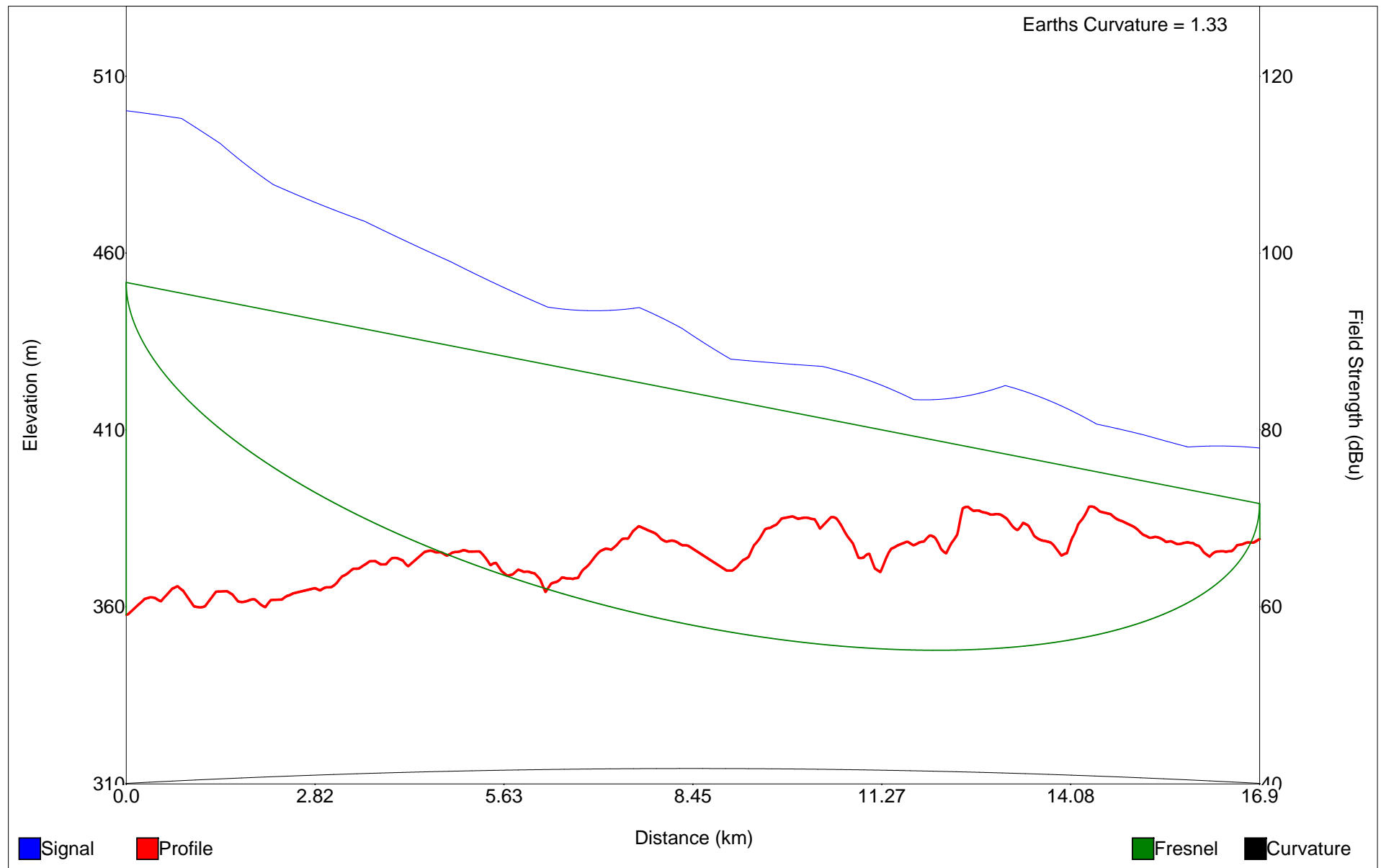
Distance: 16.8 km
Bearing: 290 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 378.0 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 291 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-37-39.81 N
End Longitude: 098-38-59.19 W

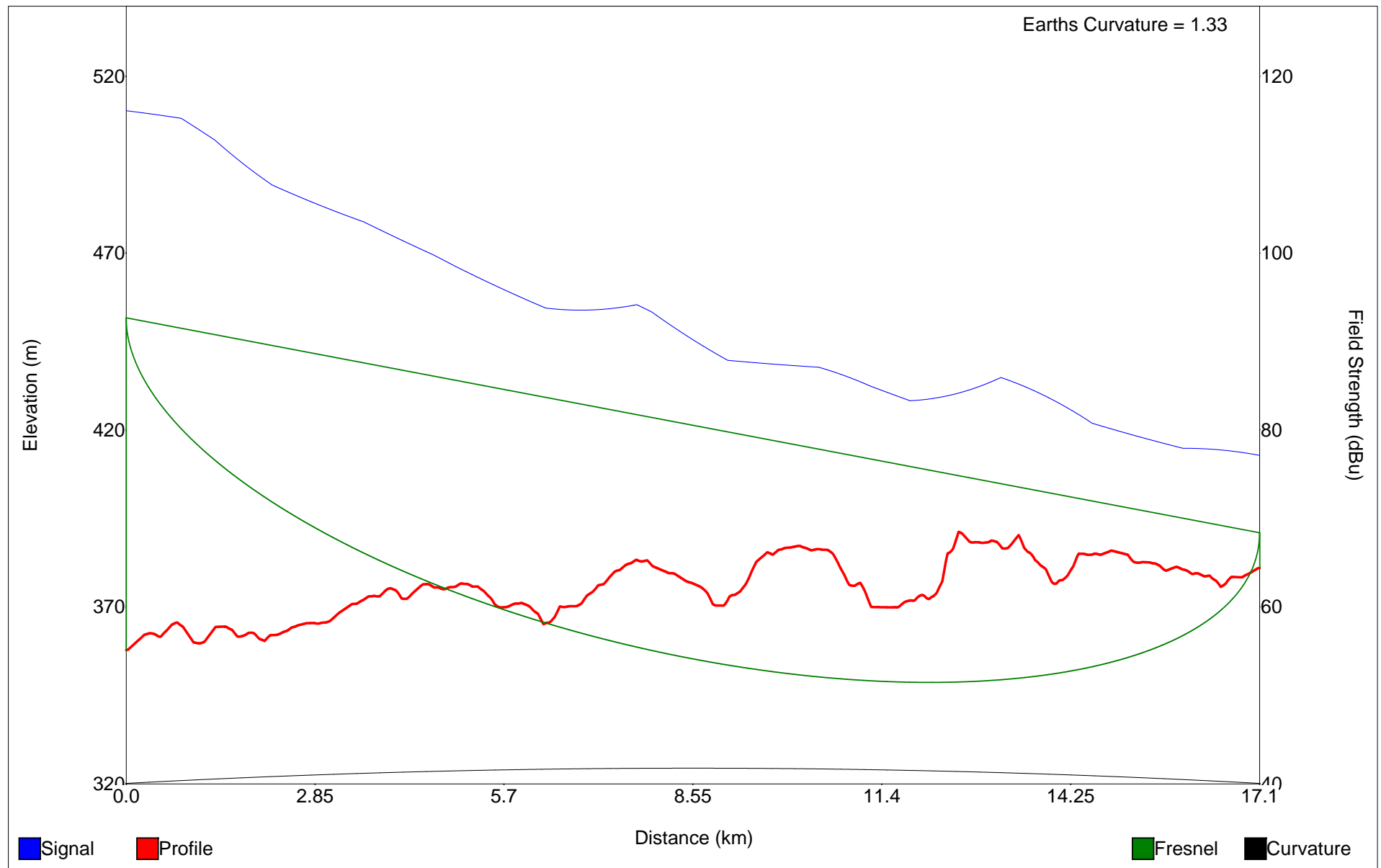
Distance: 16.9 km
Bearing: 291 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 379.1 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 292 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-37-51.14 N
End Longitude: 098-39-02.25 W

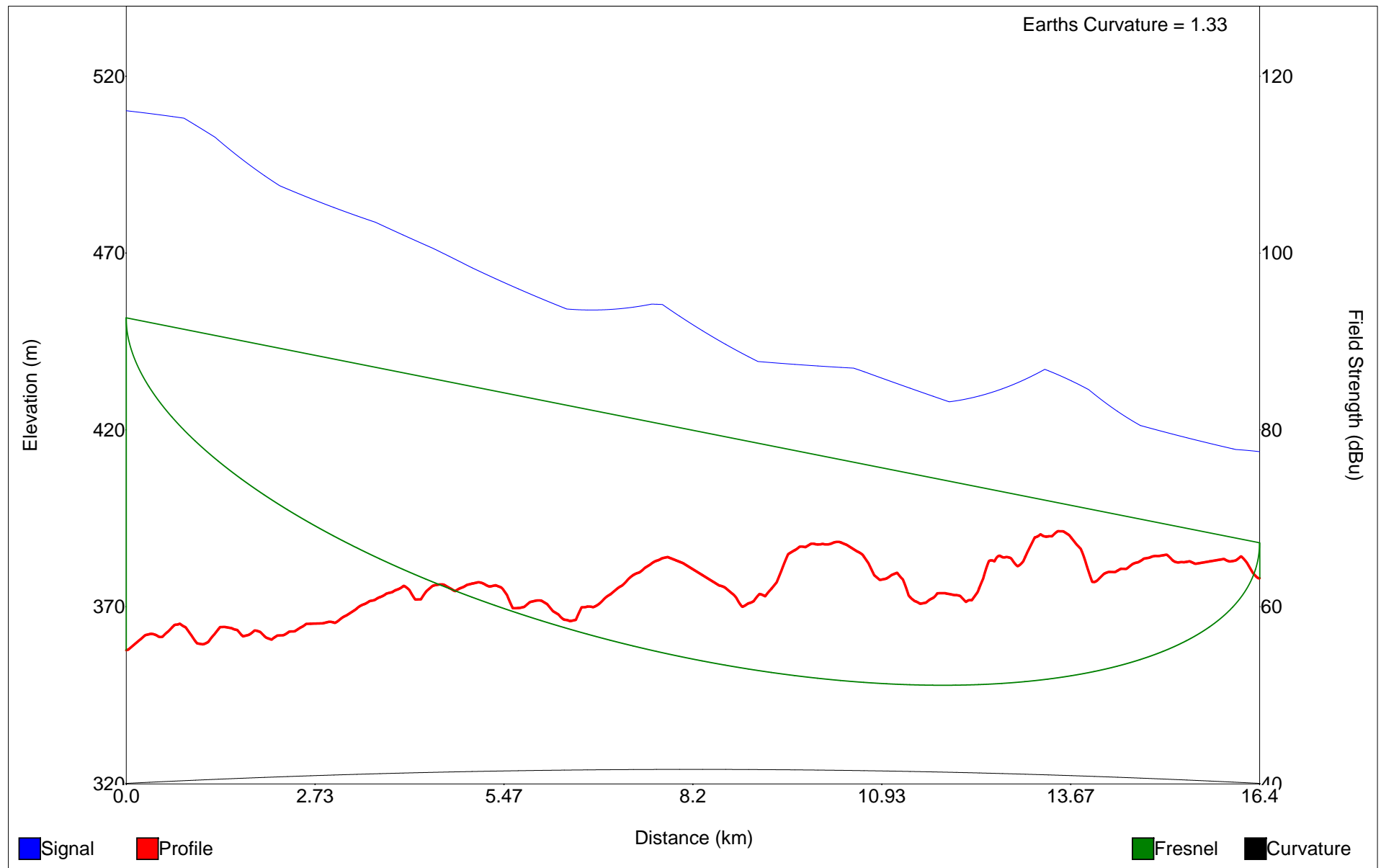
Distance: 17.1 km
Bearing: 292 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 380.9 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 293 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-37-51.26 N
End Longitude: 098-38-32.47 W

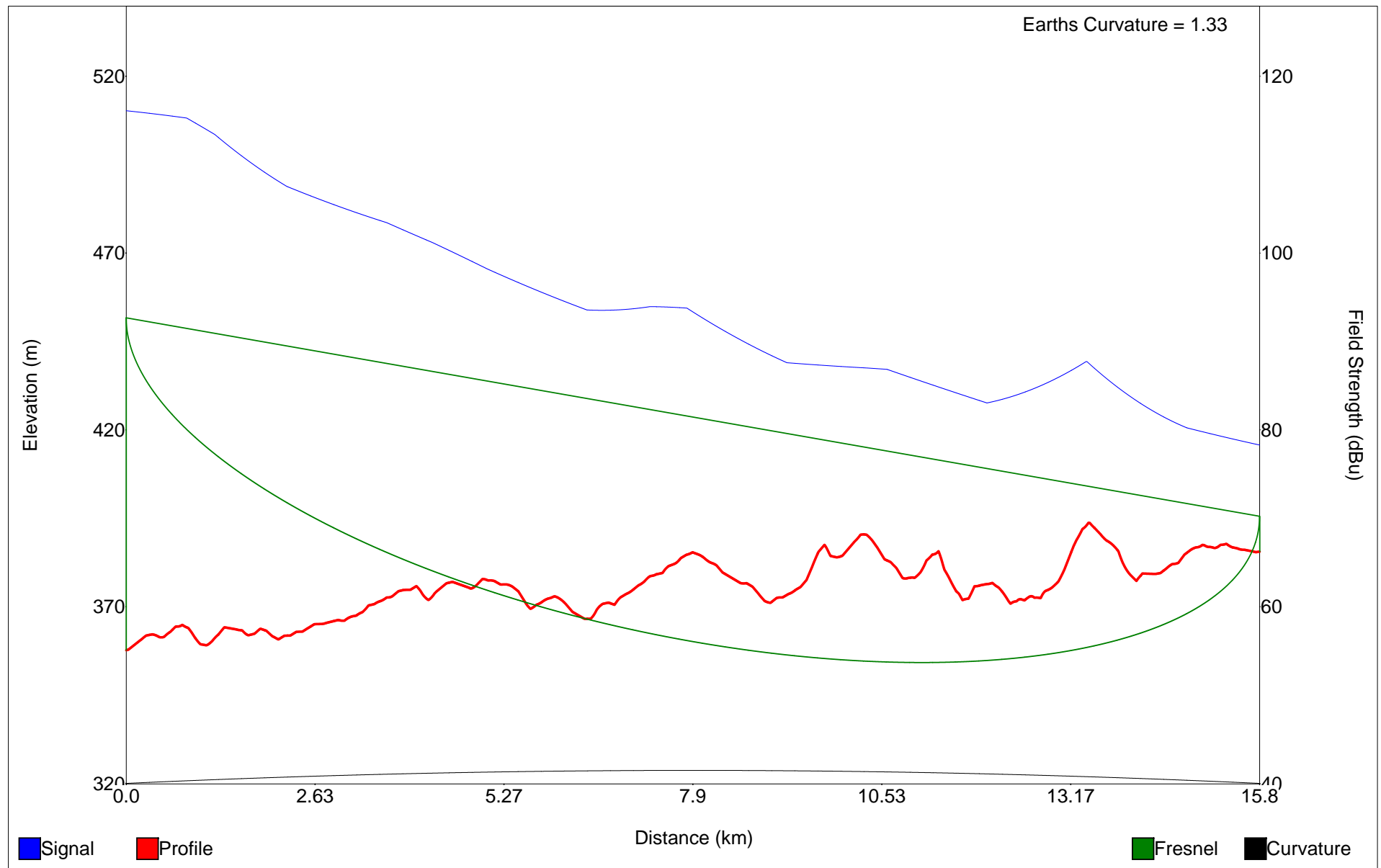
Distance: 16.4 km
Bearing: 293 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 378.0 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 294 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-37-51.89 N
End Longitude: 098-38-06.47 W

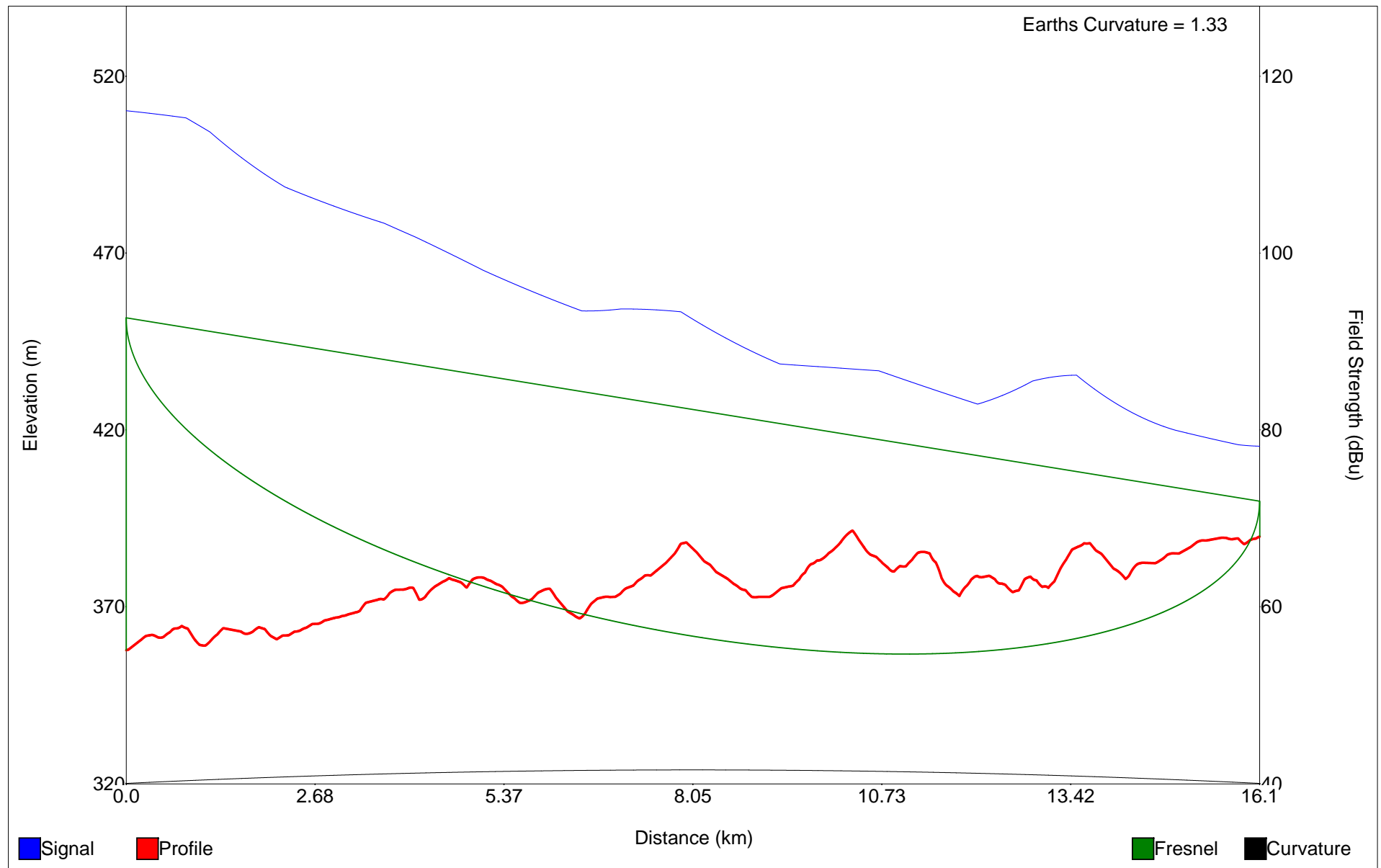
Distance: 15.8 km
Bearing: 294 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 385.5 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 295 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-38-04.14 N
End Longitude: 098-38-12.68 W

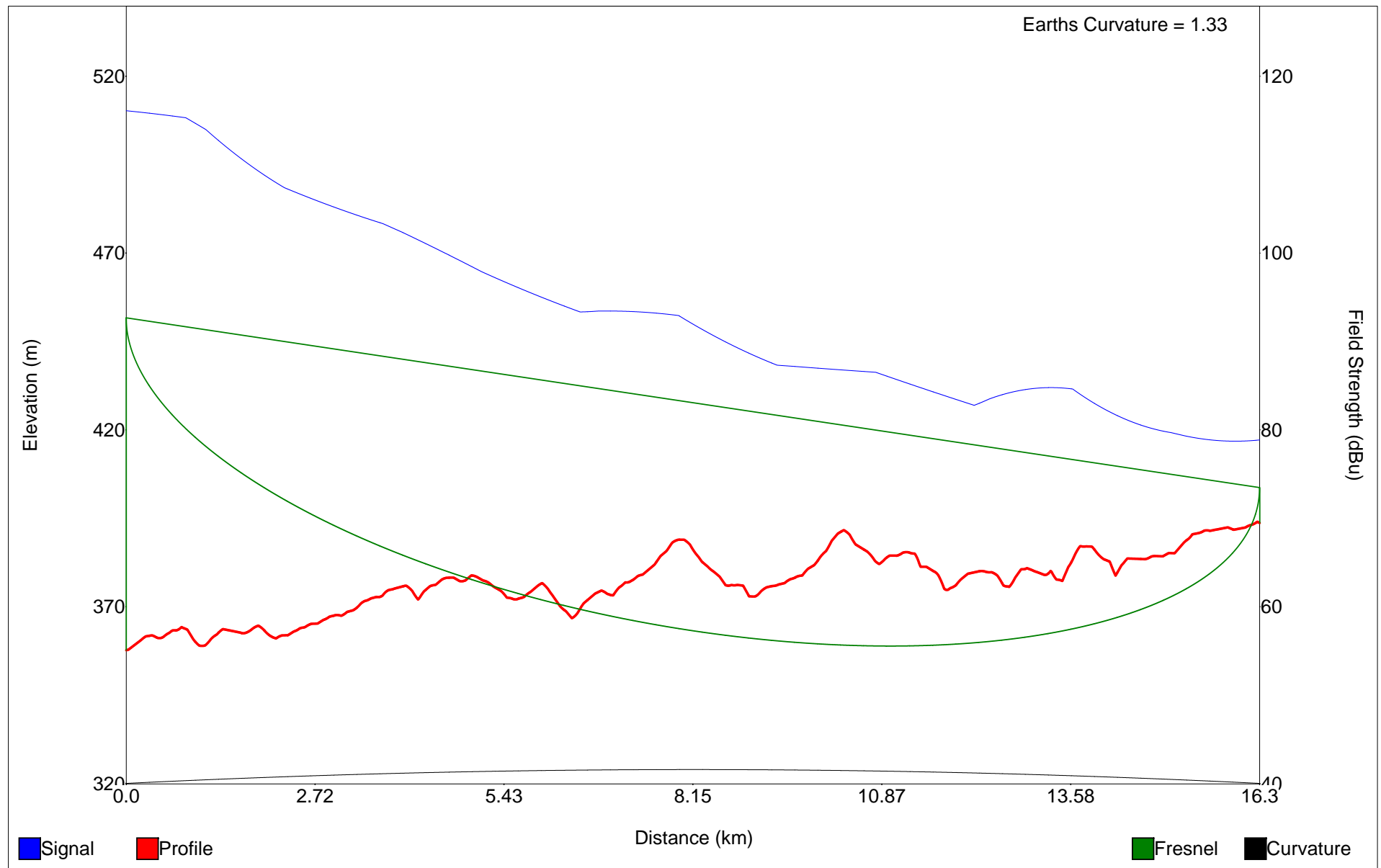
Distance: 16.1 km
Bearing: 295 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 389.8 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 296 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-38-15.21 N
End Longitude: 098-38-15.01 W

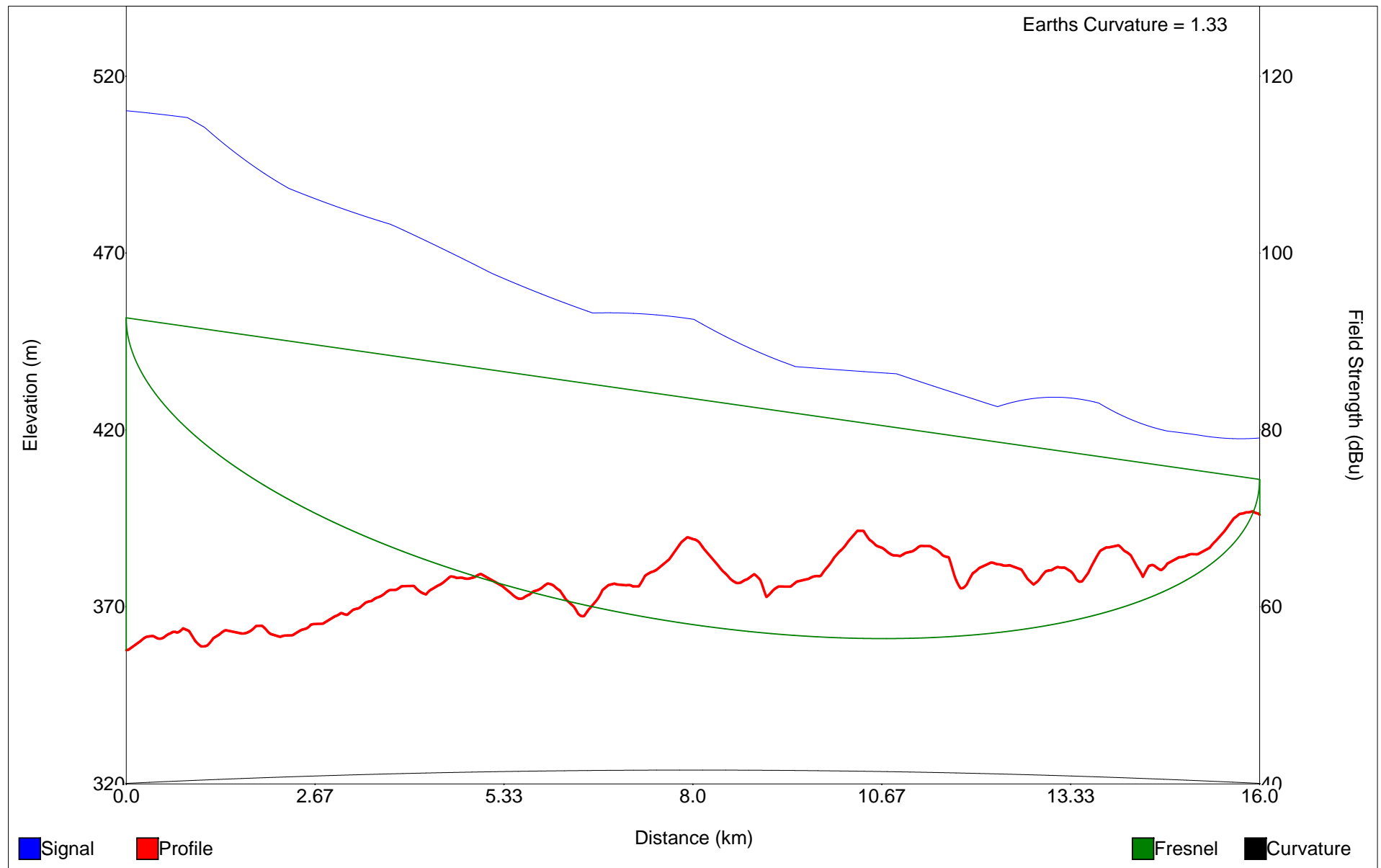
Distance: 16.3 km
Bearing: 296 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 393.7 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 297 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-38-19.08 N
End Longitude: 098-37-59.54 W

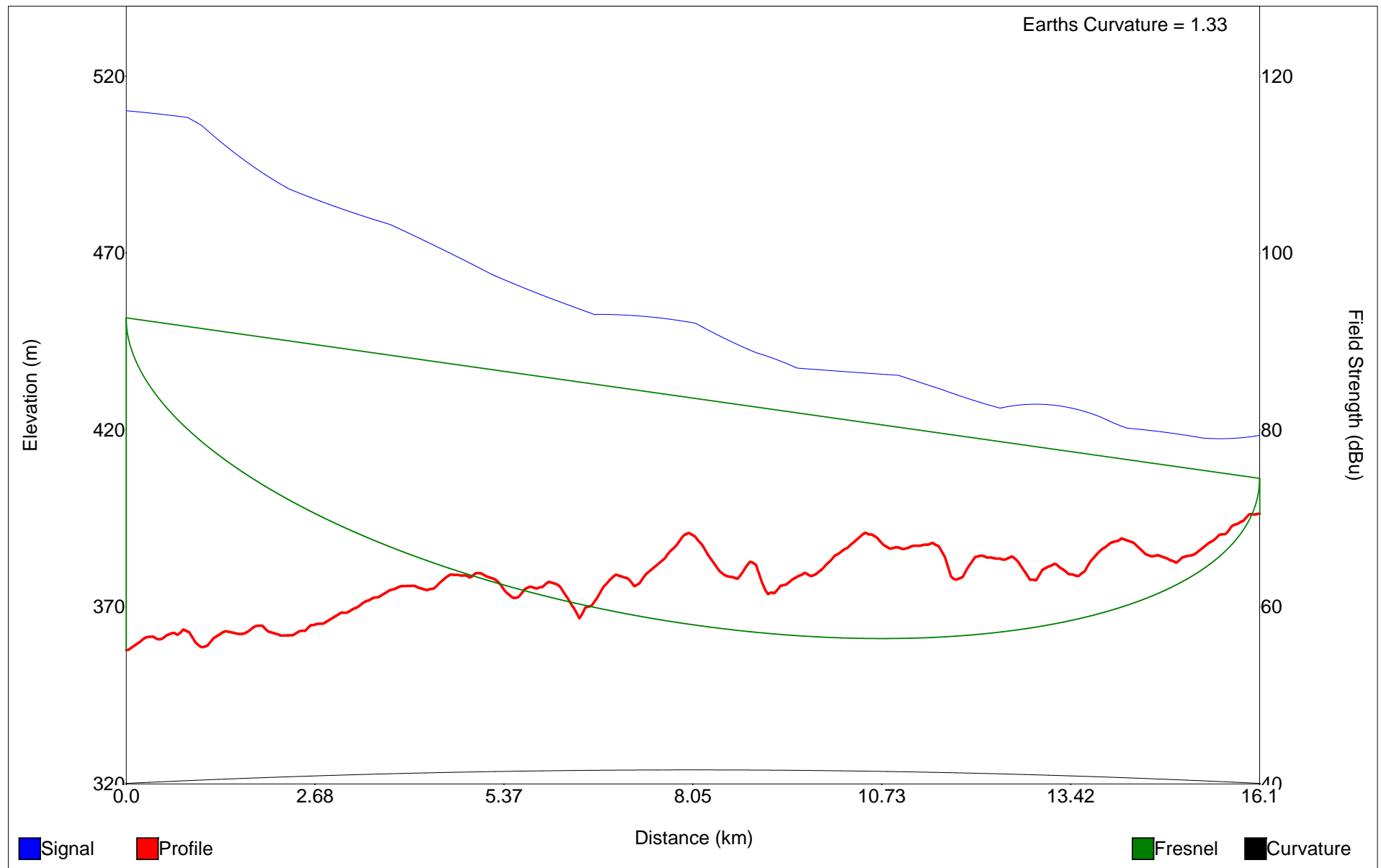
Distance: 16.0 km
Bearing: 297 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 396.0 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 298 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-38-28.64 N
End Longitude: 098-37-57.96 W

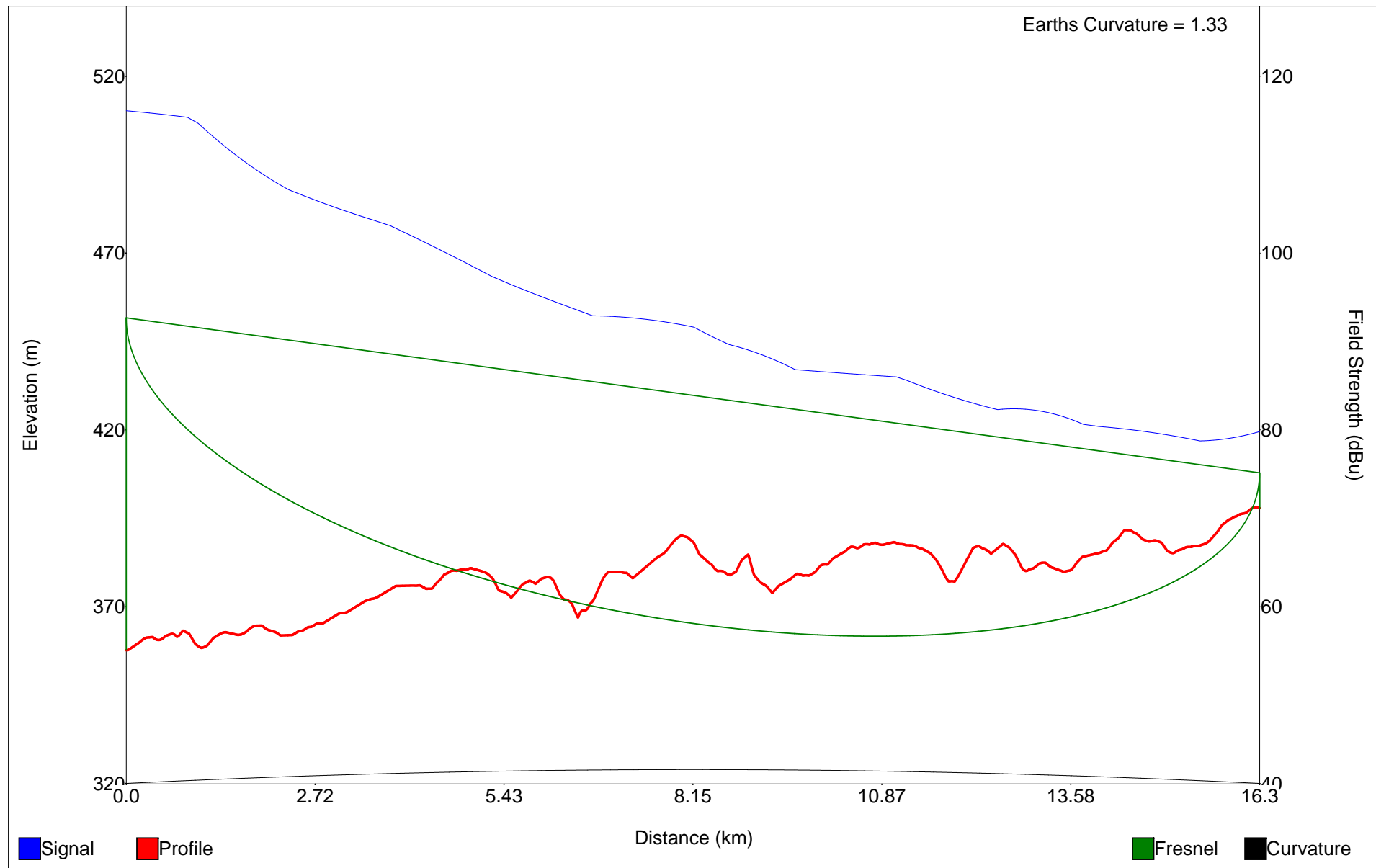
Distance: 16.1 km
Bearing: 298 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 396.3 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 299 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-38-39.80 N
End Longitude: 098-37-59.58 W

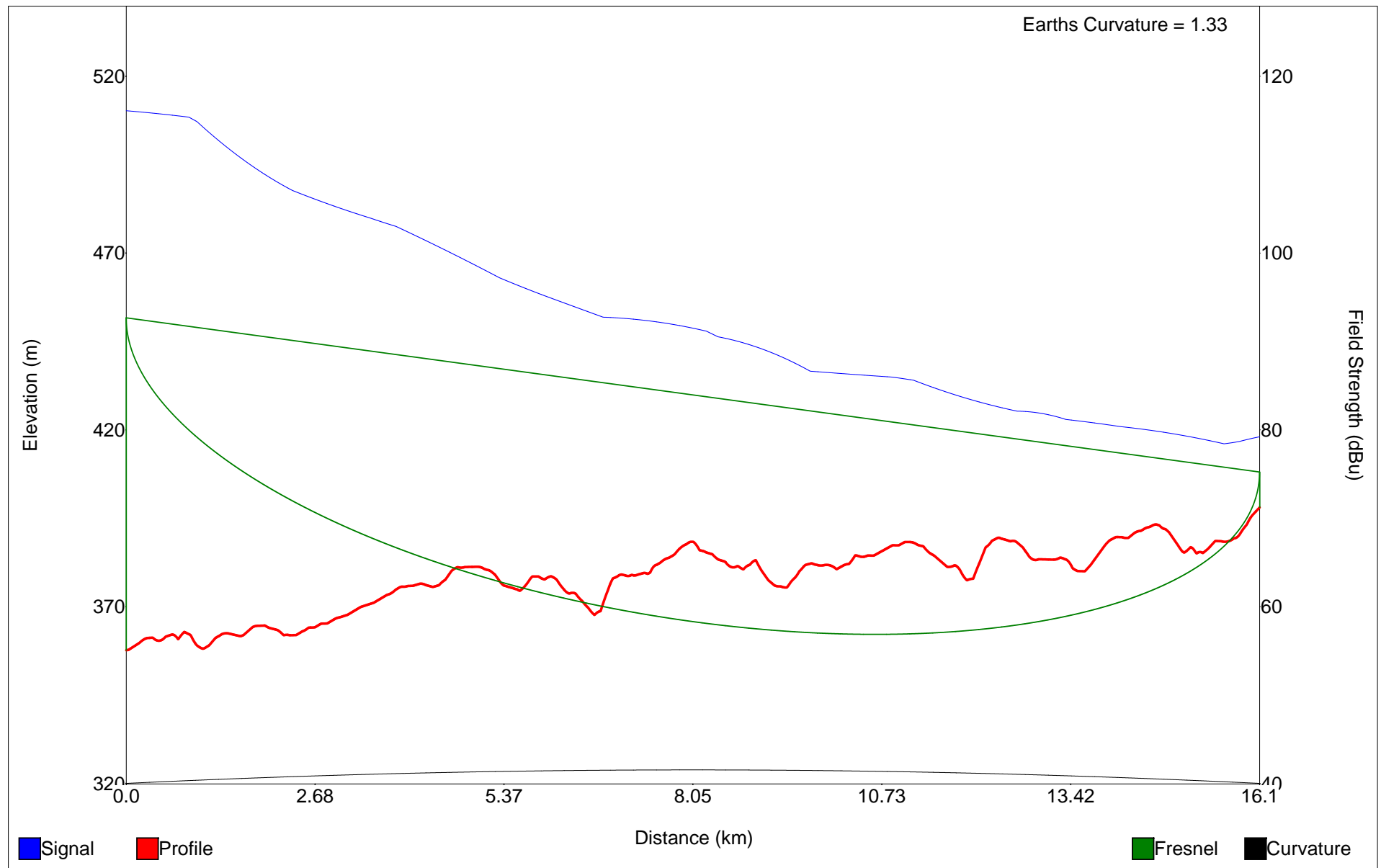
Distance: 16.3 km
Bearing: 299 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 397.8 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

KJMZ 300 DEGREE PROFILE



Starting Latitude: 34-34-23.70 N
Starting Longitude: 098-28-39.80 W

End Latitude: 34-38-44.60 N
End Longitude: 098-37-47.29 W

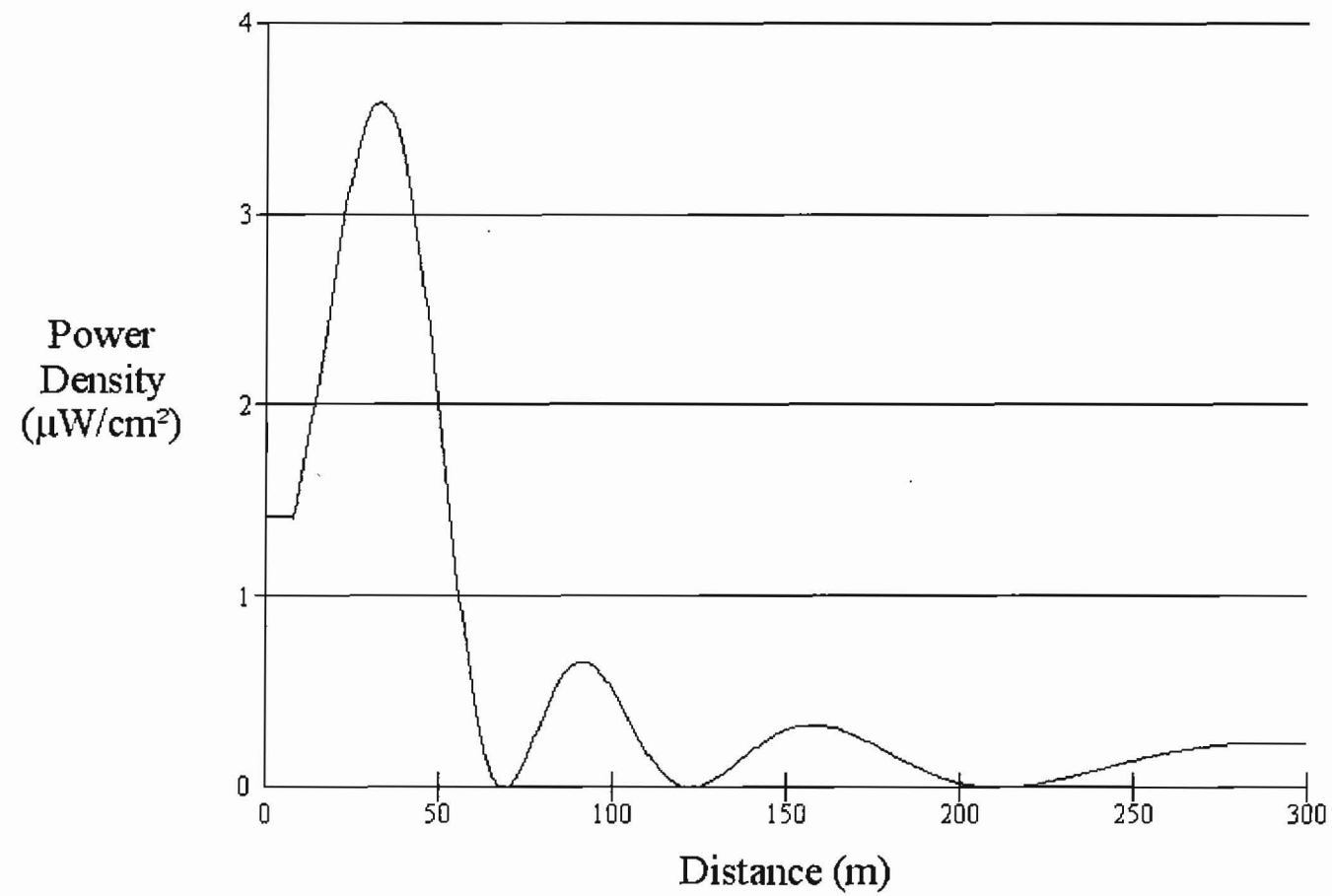
Distance: 16.1 km
Bearing: 300 deg

Transmitter Height (AG) = 94.0 m
Receiver Height (AG) = 10.0 m

Transmitter Elevation = 357.7 m
Receiver Elevation = 398.1 m

Frequency = 97.9 MHz
Fresnel Zone: 0.6

Power Density vs Distance



Office of Engineering and Technology

Distance (m):	<input type="text" value="300"/>	Antenna Type:	<input type="text" value="ERI or JAMPRO JBCP 'Rototiller' (EPA)"/>
Horizontal ERP (W):	<input type="text" value="6000"/>	Number of Elements:	<input type="text" value="5"/>
Vertical ERP (W):	<input type="text" value="6000"/>	Element Spacing:	<input type="text" value="1"/>
Antenna Height (m):	<input type="text" value="94"/>		