

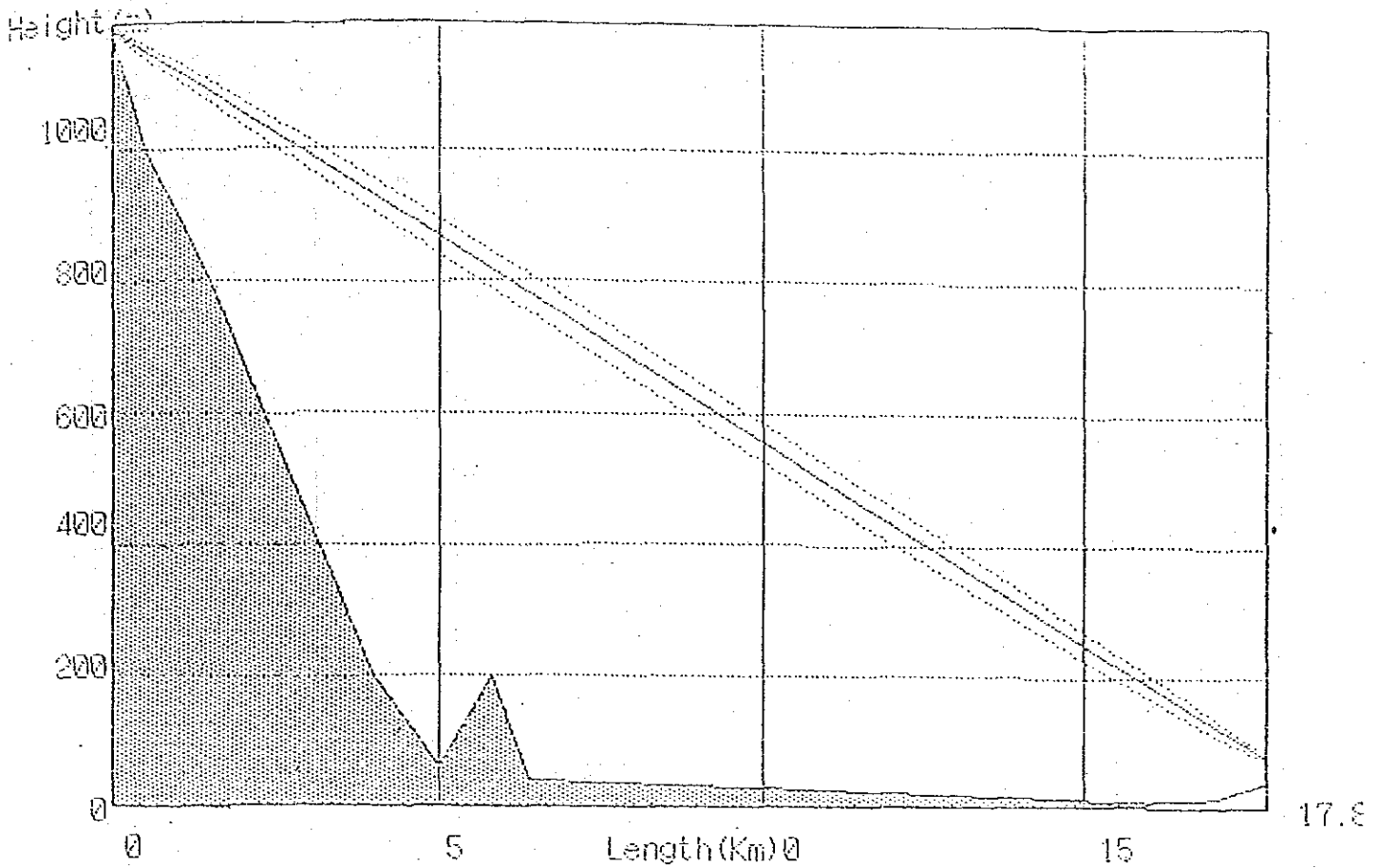
ANNEX 1

RADIO SECTION PROFILE AND CIRCUIT DESIGN

Morobe Province.....	1~21
New Ireland Province	22~39
Western Province.....	40~48

MOROBE PROVINCE

Omsis	~	Lae	(1.5GHZ)	-----	1
Bandong	~	Omsis	(")	-----	2
Boana	~	Bandong	(")	-----	3
Chivasing	~	Omsis	(")	-----	4
Nambamati	~	Chivasing	(")	-----	5
Lae	~	Wideru	(")	-----	6
Bukaua	~	Wideru	(")	-----	7
Silimana	~	Wideru	(")	-----	8
Pindiu	~	Silimana	(")	-----	9
Zenguru	~	Silimana	(")	-----	10
Mindik	~	Zenguru	(")	-----	11
Lae	~	Mt. Mission	(")	-----	12
Salamaua	~	Mt. Mission	(")	-----	13
Yaiwahawa	~	Mt. Mission	(")	-----	14
Kalapit	~	Nambamati	(")	-----	15
Umi	~	Nambamati	(")	-----	16
Watarais	~	Nambamati	(")	-----	17
Pindiu H.C	~	Silimana	(450MHZ)	-----	18
Lengbati	~	Zenguru	(")	-----	19
Baini	~	Mt. Mission	(")	-----	20
Wandumi	~	Wau	(")	-----	21

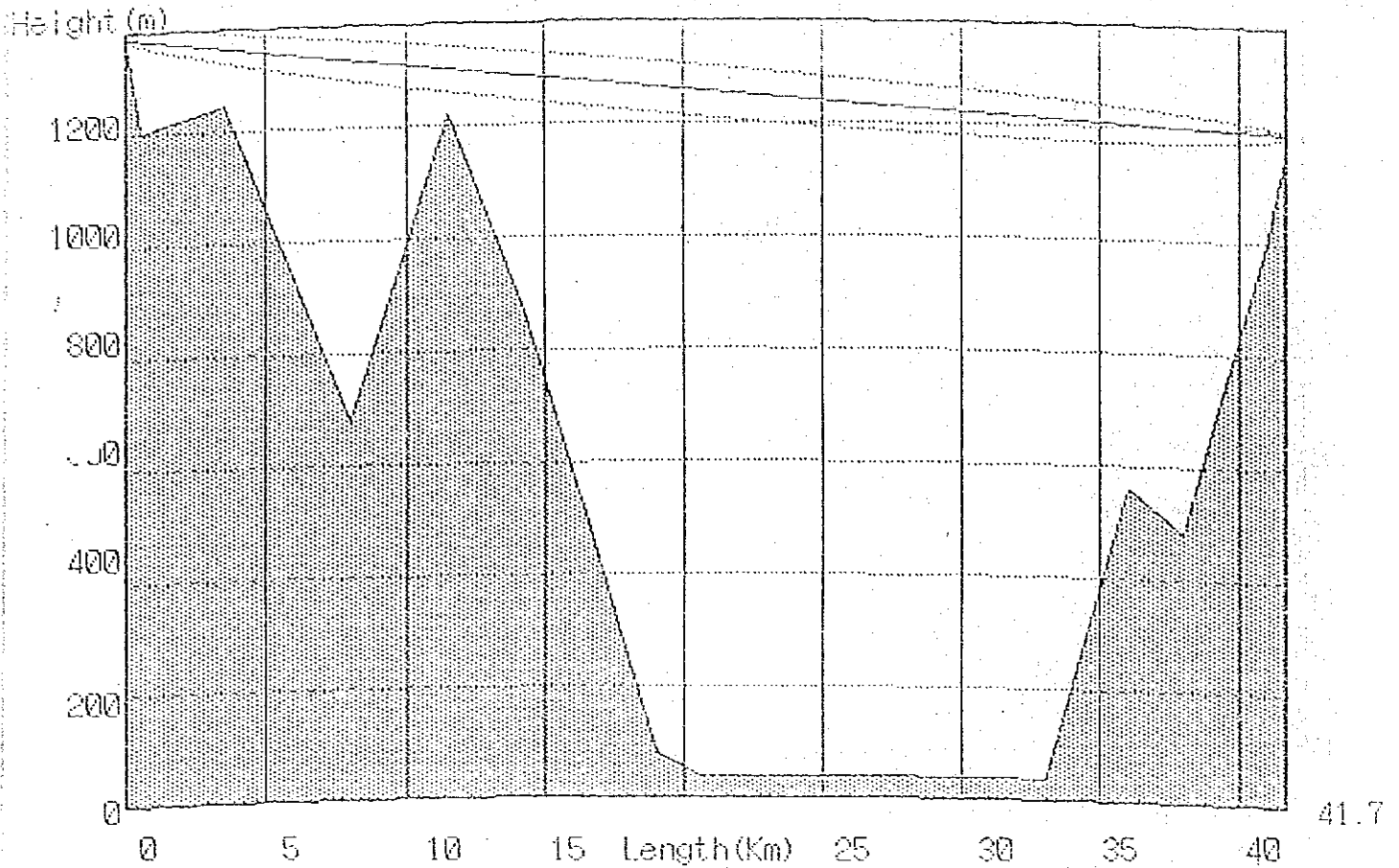


Site 1 : OMSIS
 Ground Elevation : 1,171.0 m
 Antenna Height : 10.0 m

Site 2 : LAE
 Ground Elevation : 40.0 m
 Antenna Height : 37.0 m

Frequency : 1.5 GHz
 Path Length : 17.8 Km(Plane)
 Critical Point : 17.5 Km
 Ridge Height : 31.3 m
 Tree Height : 10.0 m
 Fresnel Dip : 7.4 m
 Clearance : 52.8 m
 Clearance Factor : 7.12
 Propagation Loss 120.9 dB
 Average Propagation height 461.8 m

Transmitting Power 34.8 dBm
 Feeder Loss 1.5 dB (15.0 m) 3.2 dB (32.0 m)
 Duplexer Loss 2.5 dB 3.5 dB
 Additional Loss -2.4 dB
 Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)

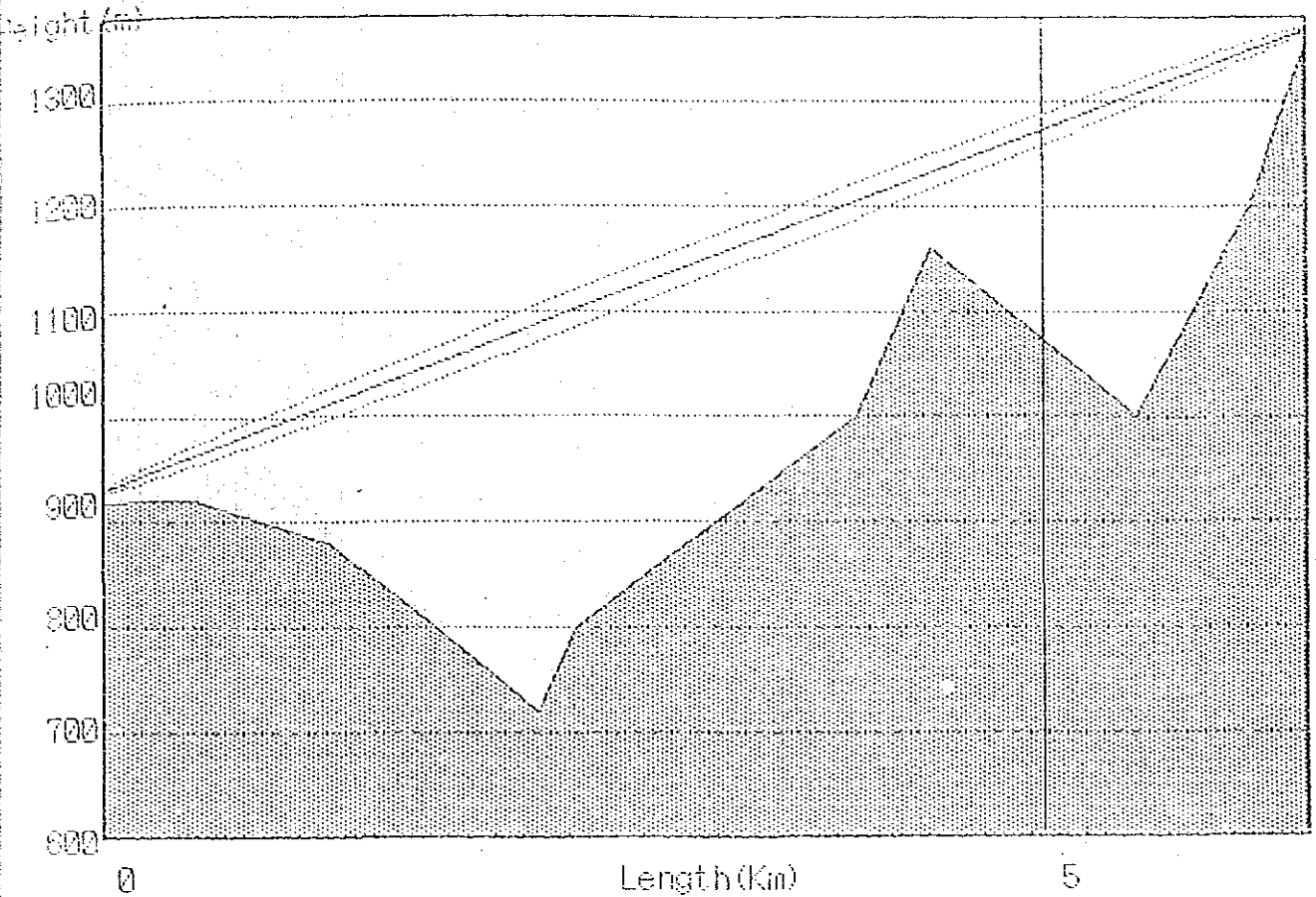


Site 1 : BANDONG
 Ground Elevation : 1,360.0 m
 Antenna Height : 10.0 m

Site 2 : OMSIS
 Ground Elevation : 1,171.0 m
 Antenna Height : 20.0 m

Frequency : 1.5 GHz
 Path Length : 41.7 Km(Mountain)
 Critical Point : 11.5 Km
 Ridge Height : 1,220.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 40.8 m
 Clearance : 70.2 m
 Clearance Factor : 1.72
 Propagation Loss 128.3 dB
 Average Propagation Height 734.2 m

Transmitting Power	34.8 dBm	
Feeder Loss	1.5 dB (15.0 m)	2.5 dB (25.0 m)
Duplexer Loss	2.5 dB	3.5 dB
Additional Loss	0.0 dB	
Antenna	13.0 dB(6Yagi-st)	10.0 dB(Omni)



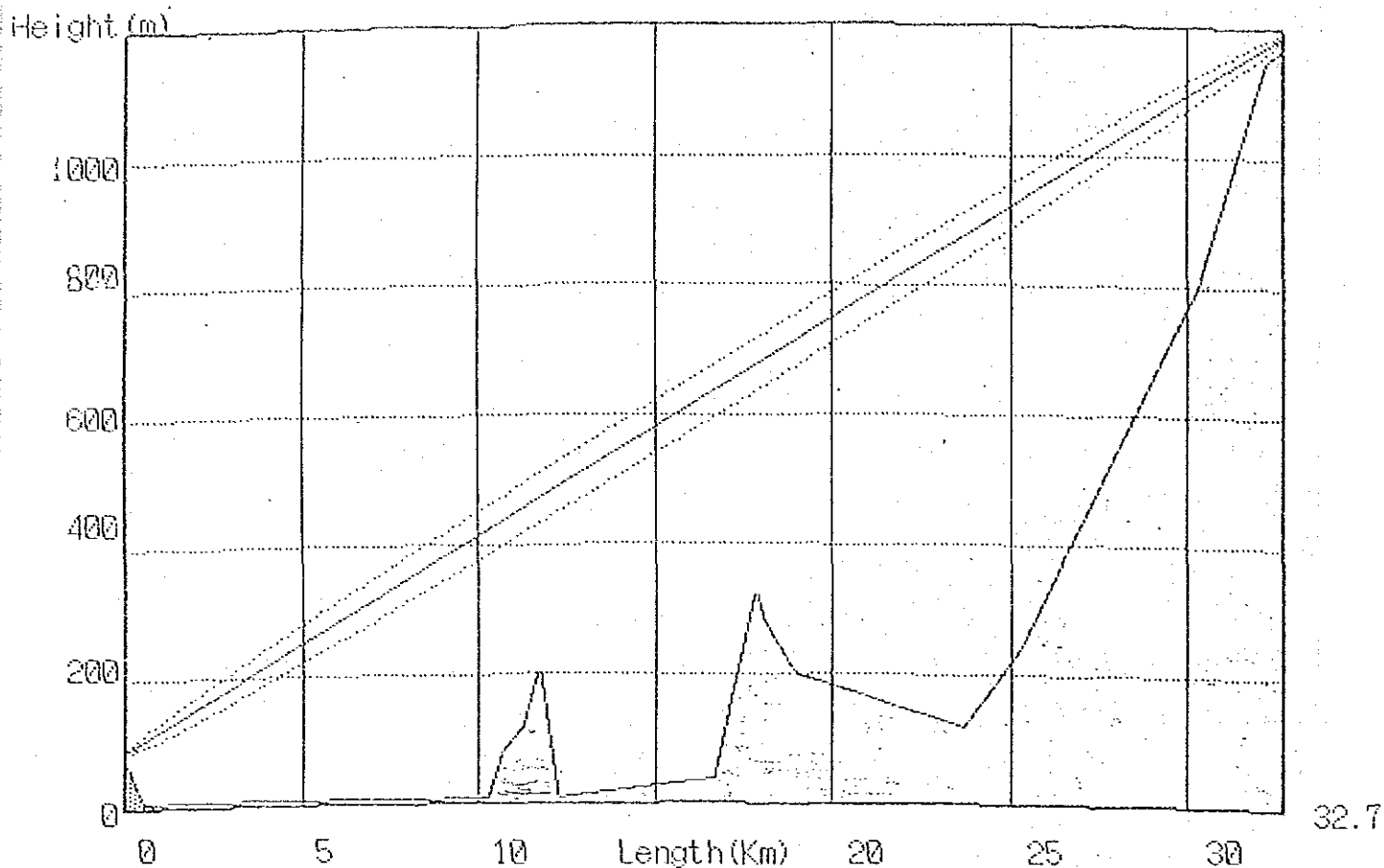
6.4

Site 1 : BOANA
 Ground Elevation : 920.0 m
 Antenna Height : 10.0 m

Site 2 : BANDONG
 Ground Elevation : 1,360.0 m
 Antenna Height : 10.0 m

Frequency : 1.5 GHz
 Path Length : 6.4 Km(Mountain)
 Critical Point : 0.5 Km
 Ridge Height : 920.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 9.6 m
 Clearance : 34.2 m
 Clearance Factor : 3.56
 Propagation Loss : 112.0 dB
 Average Propagation Height : 210.0 m

Transmitting Power : 34.8 dBm
 Feeder Loss : 1.5 dB (15.0 m) 1.5 dB (15.0 m)
 Duplexer Loss : 2.5 dB 3.5 dB
 Additional Loss : 0.0 dB
 Antenna : 13.0 dB(6Yagi-st) 10.0 dB(Omni)



Site 1 : CHIVASING

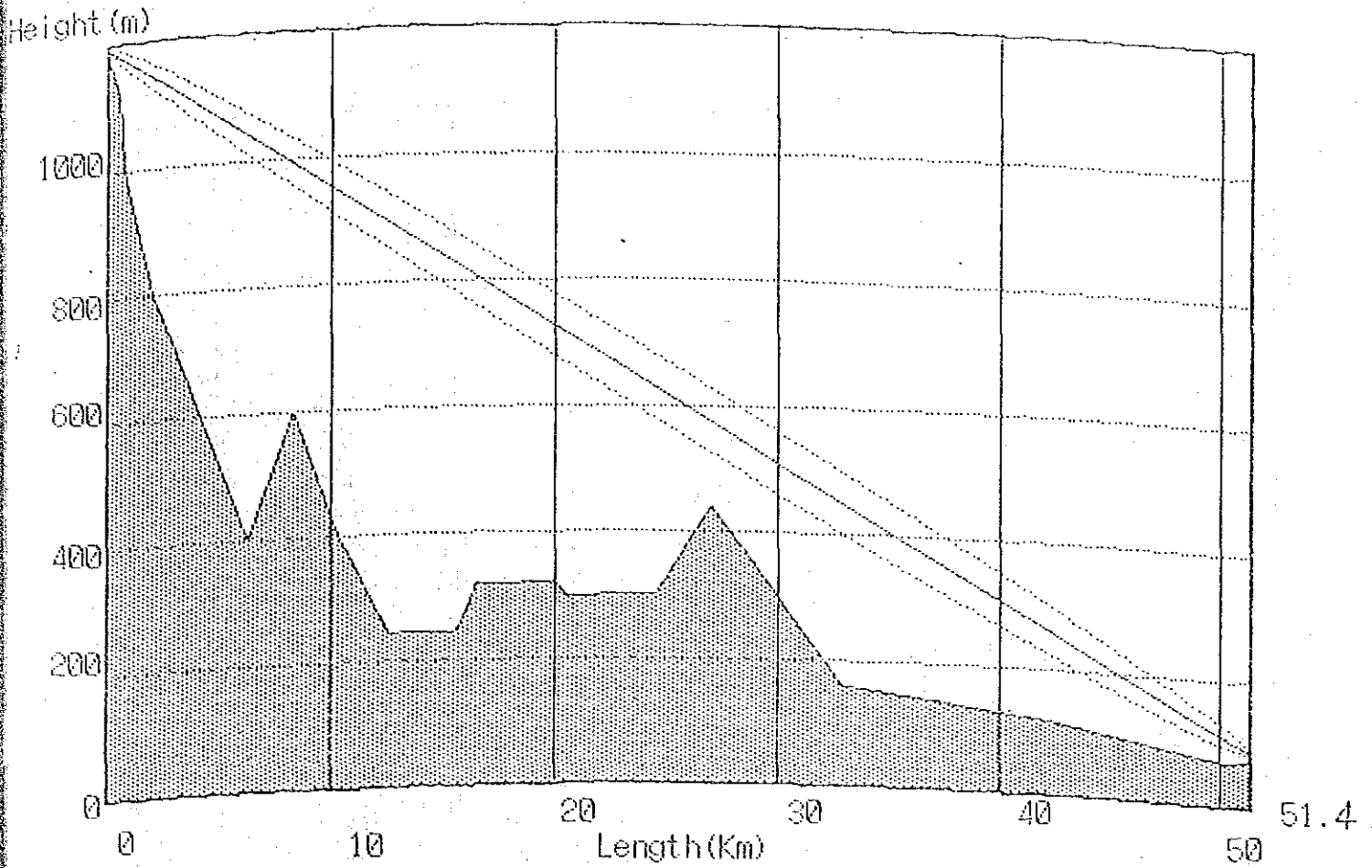
Ground Elevation : 75.0 m
 Antenna Height : 15.0 m

Site 2 : OMSIS

Ground Elevation : 1,171.0 m
 Antenna Height : 20.0 m

Frequency : 1.5 GHz
 Path Length : 32.7 Km(Plane)
 Critical Point : 32.2 Km
 Ridge Height : 1,150.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 9.9 m
 Clearance : 13.2 m
 Clearance Factor : 1.33
 Propagation Loss 126.2 dB
 Average Propagation Height 422.9 m

Transmitting Power 34.8 dBm
 Feeder Loss 2.0 dB (20.0 m) 2.5 dB (25.0 m)
 Duplexer Loss 2.5 dB 3.5 dB
 Additional Loss 0.0 dB
 Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)



Site 1 : NAMBAMATI

Ground Elevation : 1,180.0 m

Antenna Height : 14.0 m

Site 2 : CHIVASING

Ground Elevation : 75.0 m

Antenna Height : 15.0 m

Frequency : 1.5 GHz
 Path Length : 51.4 Km(Mountain)

Critical Point : 51.2 Km

Ridge Height : 73.8 m

Tree Height : 10.0 m

Fresnel Dip : 6.7 m

Clearance : 10.4 m

Clearance Factor : 1.55

Propagation Loss 130.1 dB

Average Propagation Height 314.9 m

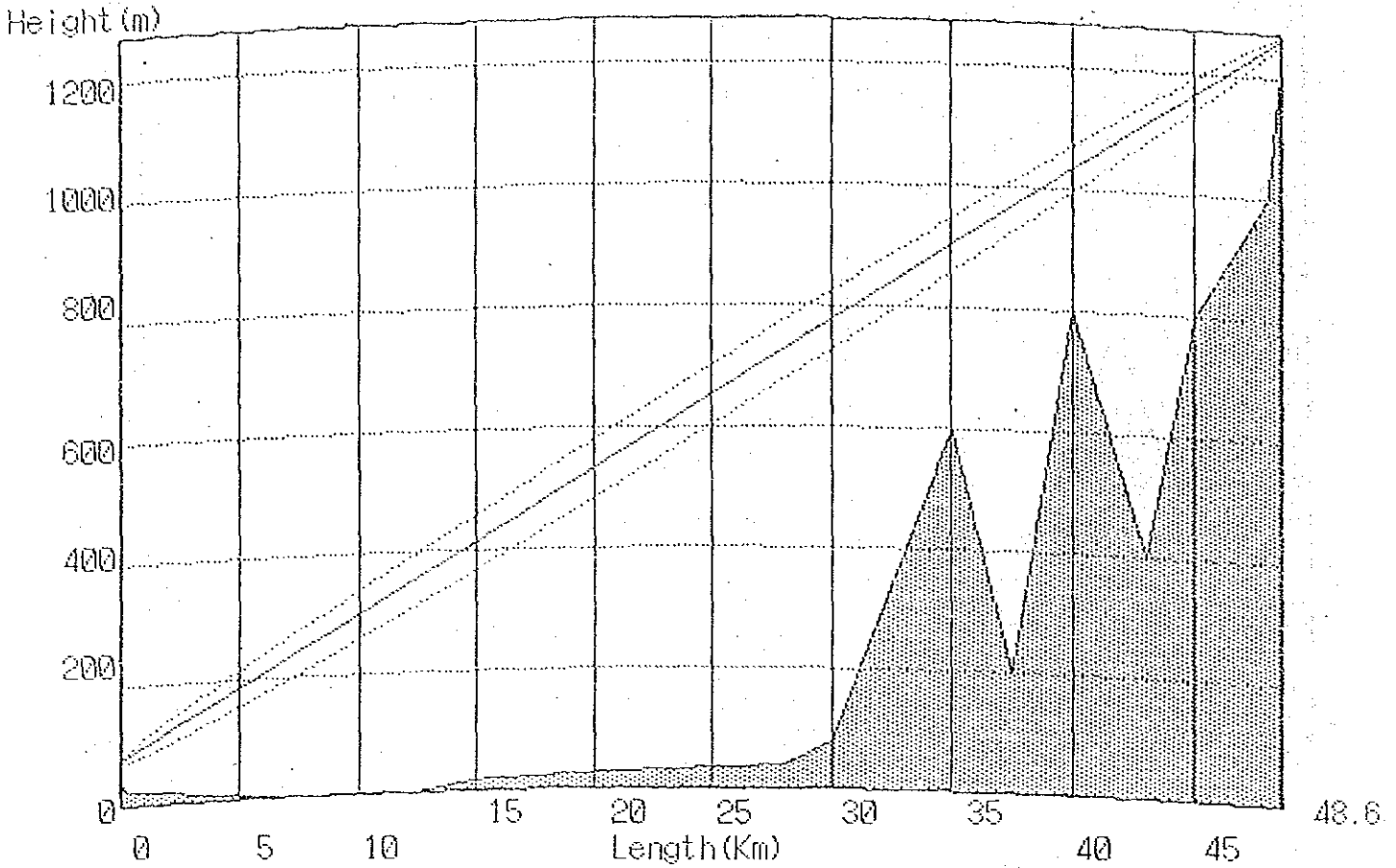
Transmitting Power 34.8 dBm

Feeder Loss 2.8 dB (28.0 m) 2.0 dB (20.0 m)

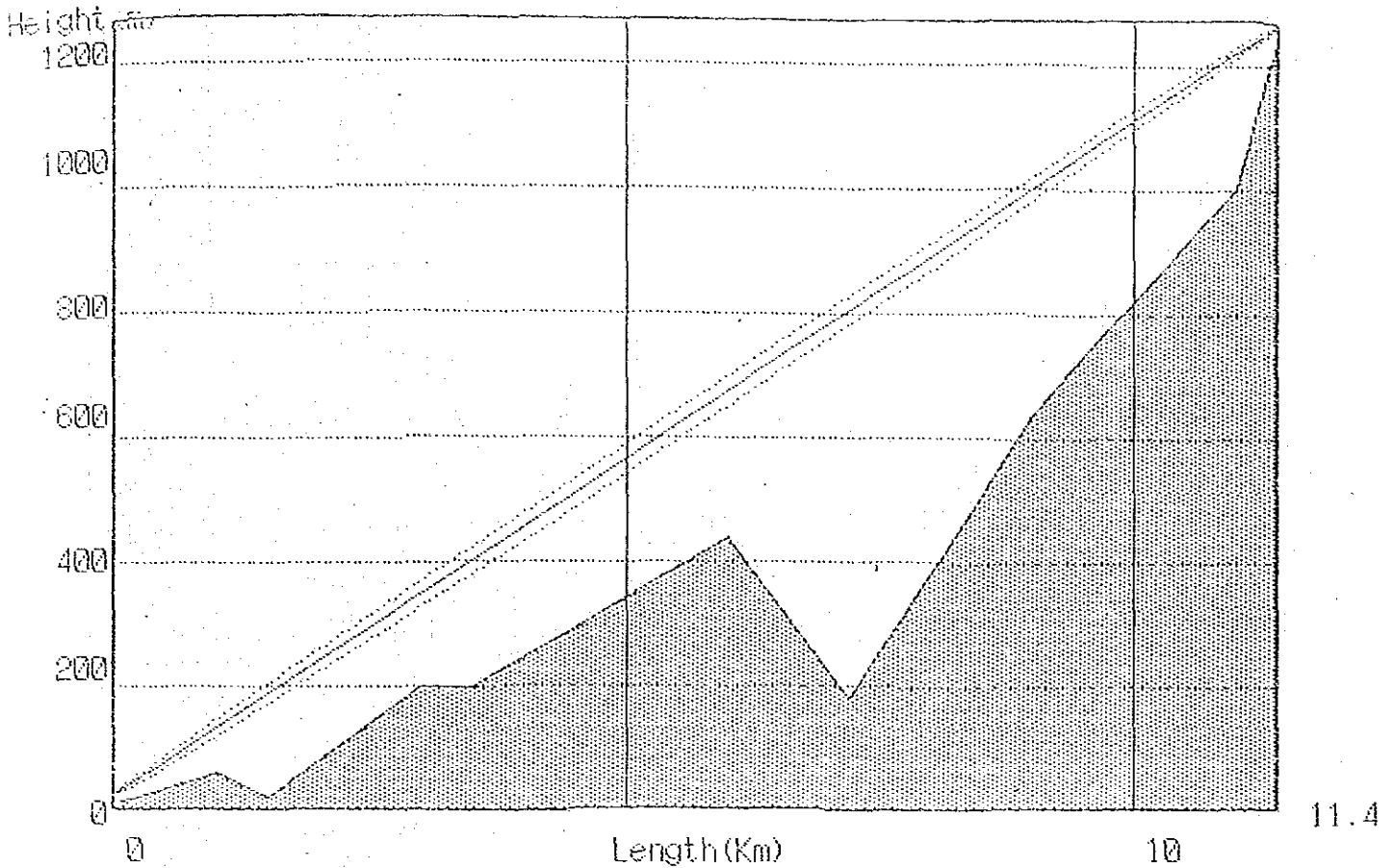
Duplexer Loss 2.5 dB 3.5 dB

Additional Loss 0.0 dB

Antenna 17.0 dB(6Yagi-ro) 10.0 dB(Omni)



Site 1 : LAE		Site 2 : WIDERU
Ground Elevation :	40.0 m	Ground Elevation : 1,250.0 m
Antenna Height :	37.0 m	Antenna Height : 13.0 m
Frequency :	1.5 GHz	
Path Length :	48.6 Km(Sea)	
Critical Point :	1.4 Km	
Ridge Height :	21.3 m	
Tree Height :	10.0 m	
Fresnel Dip :	16.3 m	
Clearance :	75.4 m	
Clearance Factor :	4.62	
Propagation Loss	129.7 dB	
Average Propagation Height	425.8 m	
Transmitting Power	34.8 dBm	
Feeder Loss	3.2 dB (32.0 m)	0.5 dB (5.0 m)
Duplexer Loss	2.5 dB	3.5 dB
Additional Loss	-2.4 dB	
Antenna	10.0 dB(Omni)	23.0 dB(Para-1.2)



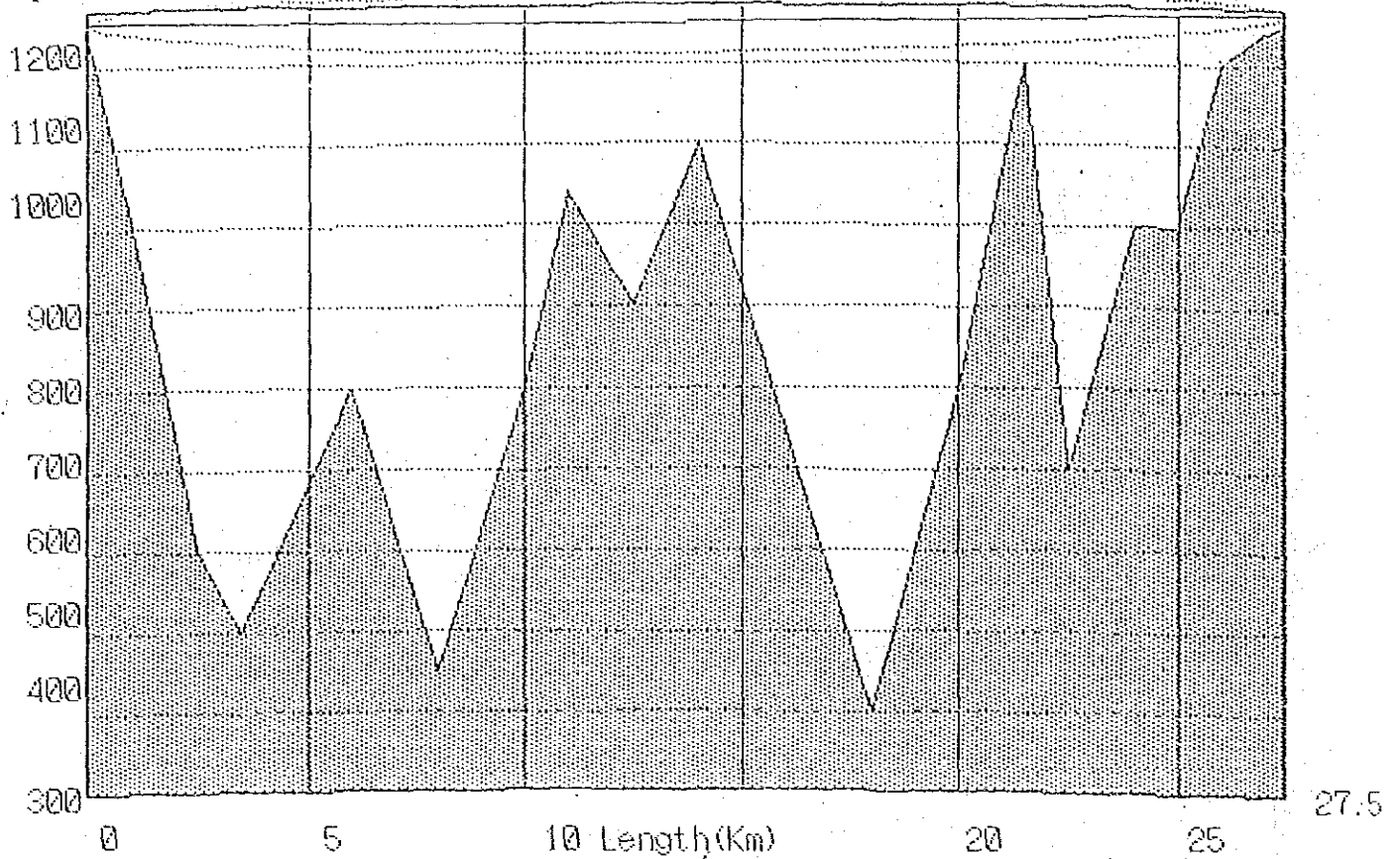
Site 1 : BUKAUA
 Ground Elevation : 10.0 m
 Antenna Height : 15.0 m

Site 2 : WIDERU
 Ground Elevation : 1,250.0 m
 Antenna Height : 15.0 m

Frequency : 1.5 GHz
 Path Length : 11.4 Km(Mountain)
 Critical Point : 1.0 Km
 Ridge Height : 60.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 13.5 m
 Clearance : 63.2 m
 Clearance Factor : 4.68
 Propagation Loss 117.1 dB
 Average Propagation Height 272.7 m

Transmitting Power 34.8 dBm
 Feeder Loss 2.0 dB (20.0 m) 1.0 dB (10.0 m)
 Duplexer Loss 2.5 dB 3.5 dB
 Additional Loss 0.0 dB
 Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)

Height (m)



Site 1 : SILIMANA

Ground Elevation : 1,240.0 m

Antenna Height : 15.0 m

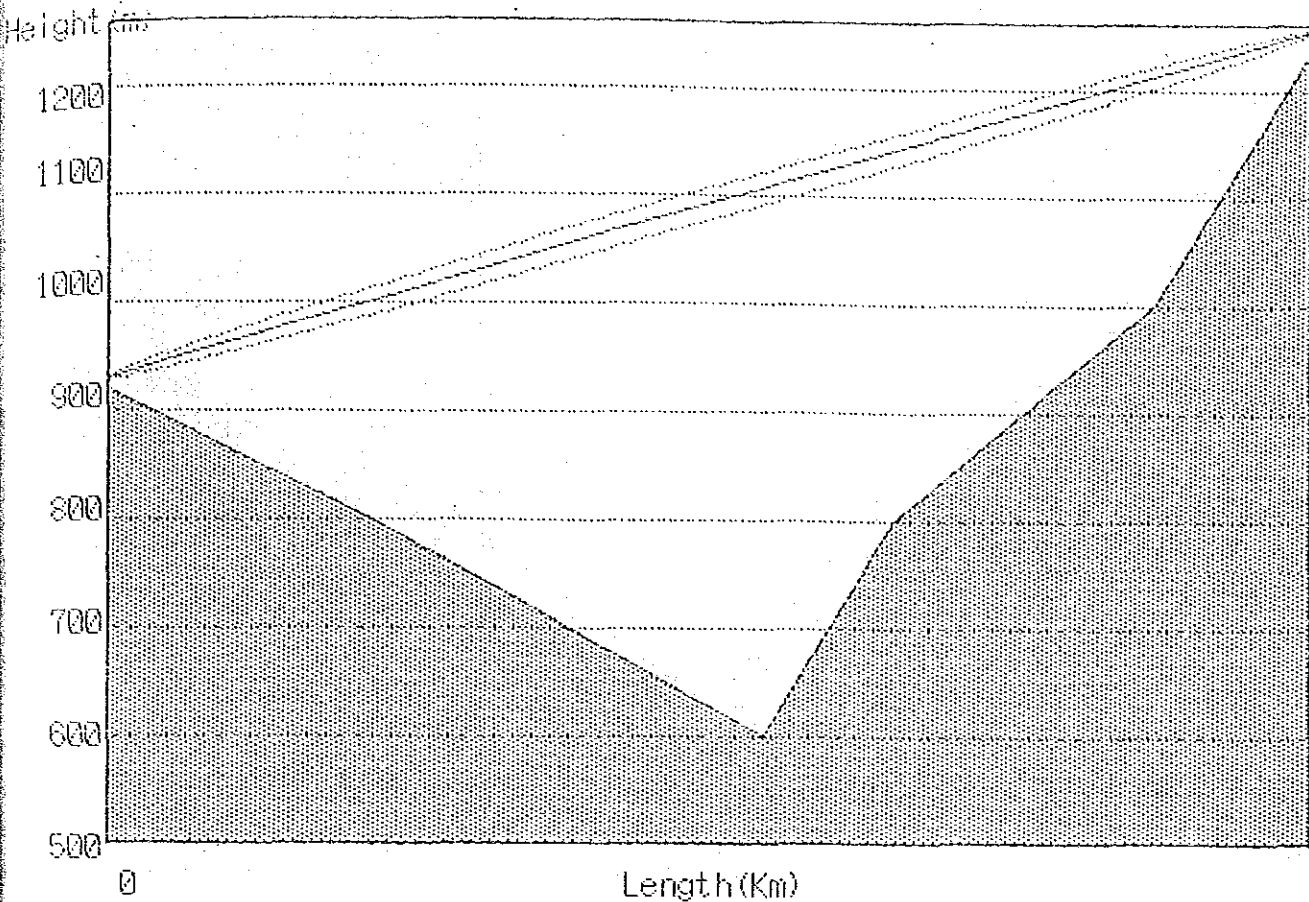
Site 2 : WIDERU

Ground Elevation : 1,250.0 m

Antenna Height : 15.0 m

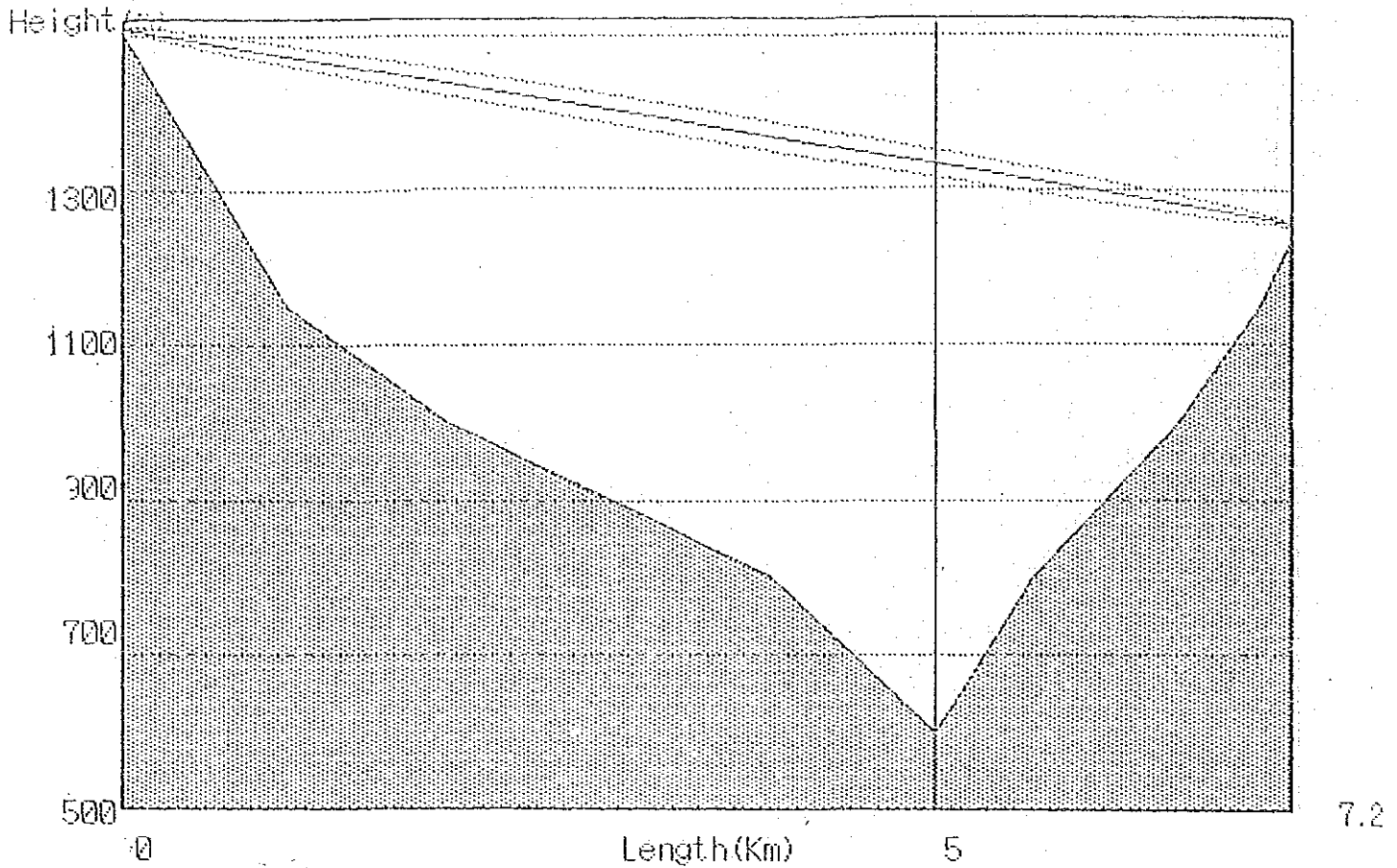
Frequency : 1.5 GHz
 Path Length : 27.5 Km(Mountain)
 Critical Point : 27.2 Km
 Ridge Height : 1,244.5 m
 Tree Height : 10.0 m
 Fresnel Dip : 7.4 m
 Clearance : 10.0 m
 Clearance Factor : 1.35
 Propagation Loss 124.7 dB
 Average Propagation Height 430.9 m

Transmitting Power	34.8 dBm	
Feeder Loss	2.0 dB (20.0 m)	1.0 dB (10.0 m)
Duplexer Loss	2.5 dB	3.5 dB
Additional Loss	0.0 dB	
Antenna	13.0 dB(6Yagi-st)	10.0 dB(Omni)

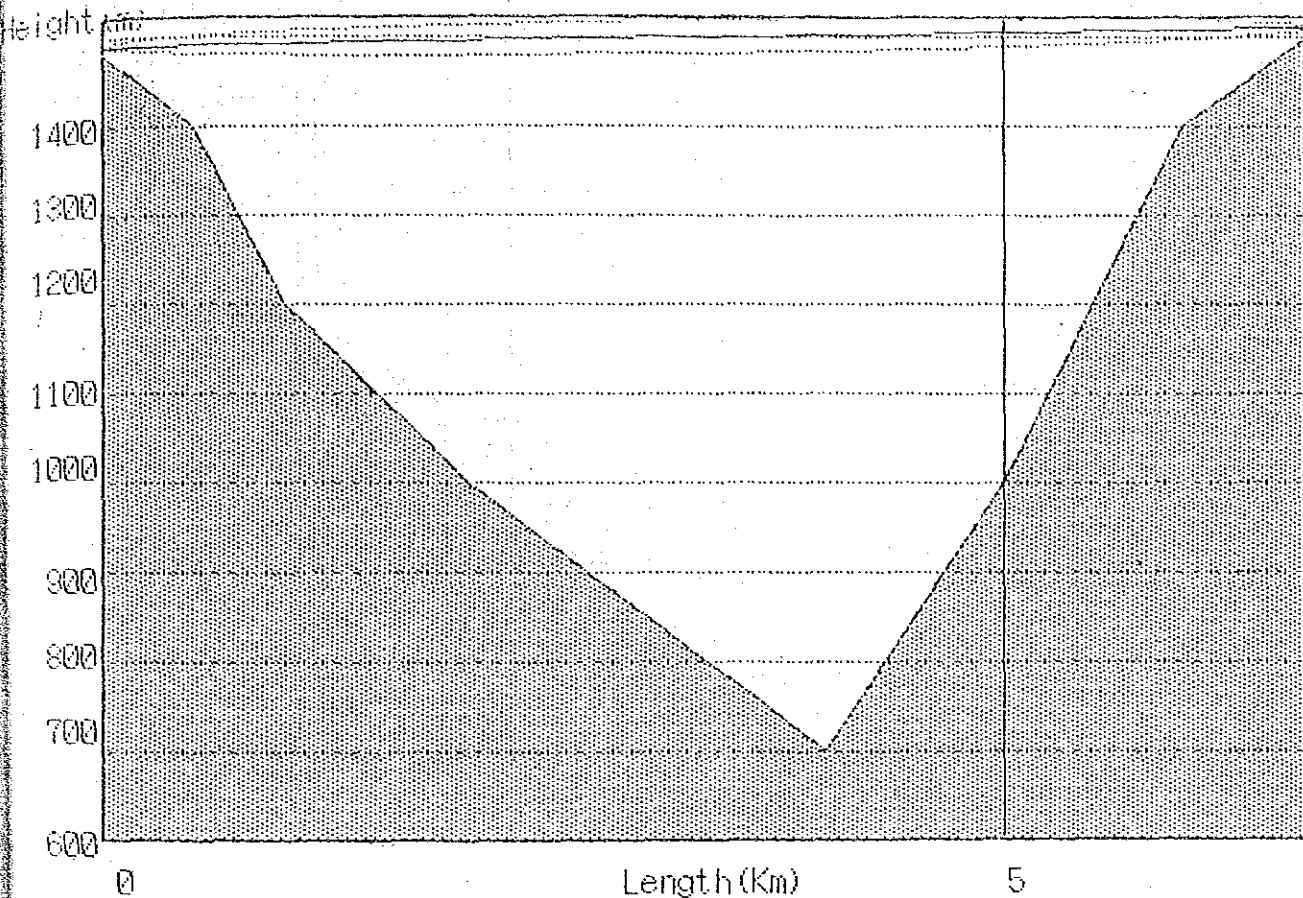


4.6

Site 1 : PINDIU		Site 2 : SILIMANA
Ground Elevation :	920.0 m	Ground Elevation : 1,240.0 m
Antenna Height :	10.0 m	Antenna Height : 15.0 m
Frequency :	1.5 GHz	
Path Length :	4.6 Km(Mountain)	
Critical Point :	4.6 Km	
Ridge Height :	1,234.0 m	
Tree Height :	10.0 m	
Fresnel Dip :	1.7 m	
Clearance :	9.9 m	
Clearance Factor :	5.75	
Propagation Loss	109.2 dB	
Average Propagation Height	289.7 m	
Transmitting Power	34.8 dBm	
Feeder Loss	1.5 dB (15.0 m)	2.0 dB (20.0 m)
Duplexer Loss	2.5 dB	3.5 dB
Additional Loss	0.0 dB	
Antenna	13.0 dB(6Yagi-st)	10.0 dB(Omni)



Site 1 : ZENGURU	Site 2 : SILIMANA
Ground Elevation : 1,500.0 m	Ground Elevation : 1,240.0 m
Antenna Height : 10.0 m	Antenna Height : 15.0 m
Frequency : 1.5 GHz	
Path Length : 7.2 Km(Mountain)	
Critical Point : 7.2 Km	
Ridge Height : 1,231.0 m	
Tree Height : 10.0 m	
Fresnel Dip : 2.0 m	
Clearance : 14.7 m	
Clearance Factor : 7.36	
Propagation Loss : 113.1 dB	
Average Propagation Height : 440.8 m	
Transmitting Power : 34.8 dBm	
Feeder Loss : 1.5 dB (15.0 m)	2.0 dB (20.0 m)
Duplexer Loss : 2.5 dB	3.5 dB
Additional Loss : 0.0 dB	
Antenna : 13.0 dB(6Yagi-st)	10.0 dB(Omni)

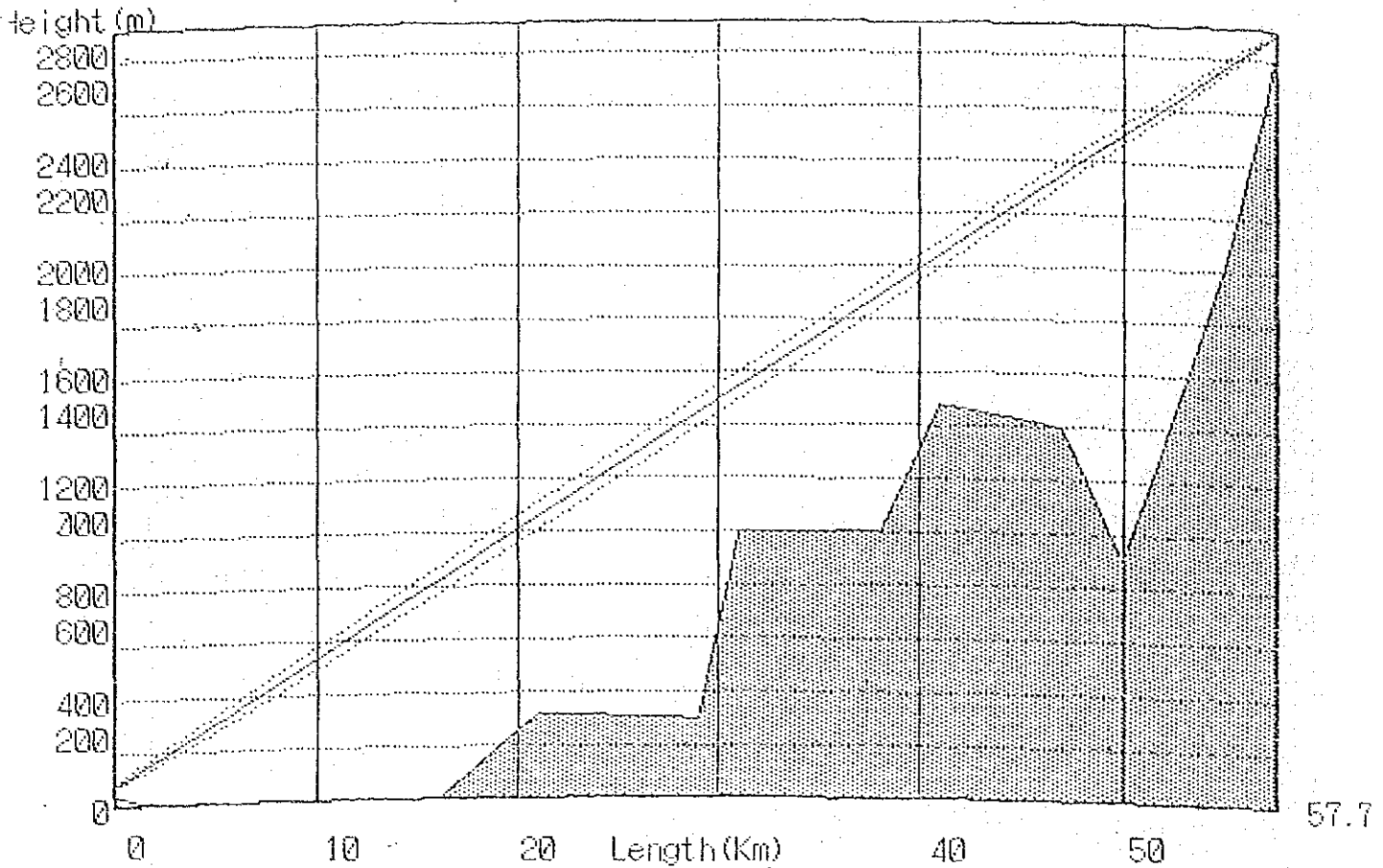


6.7

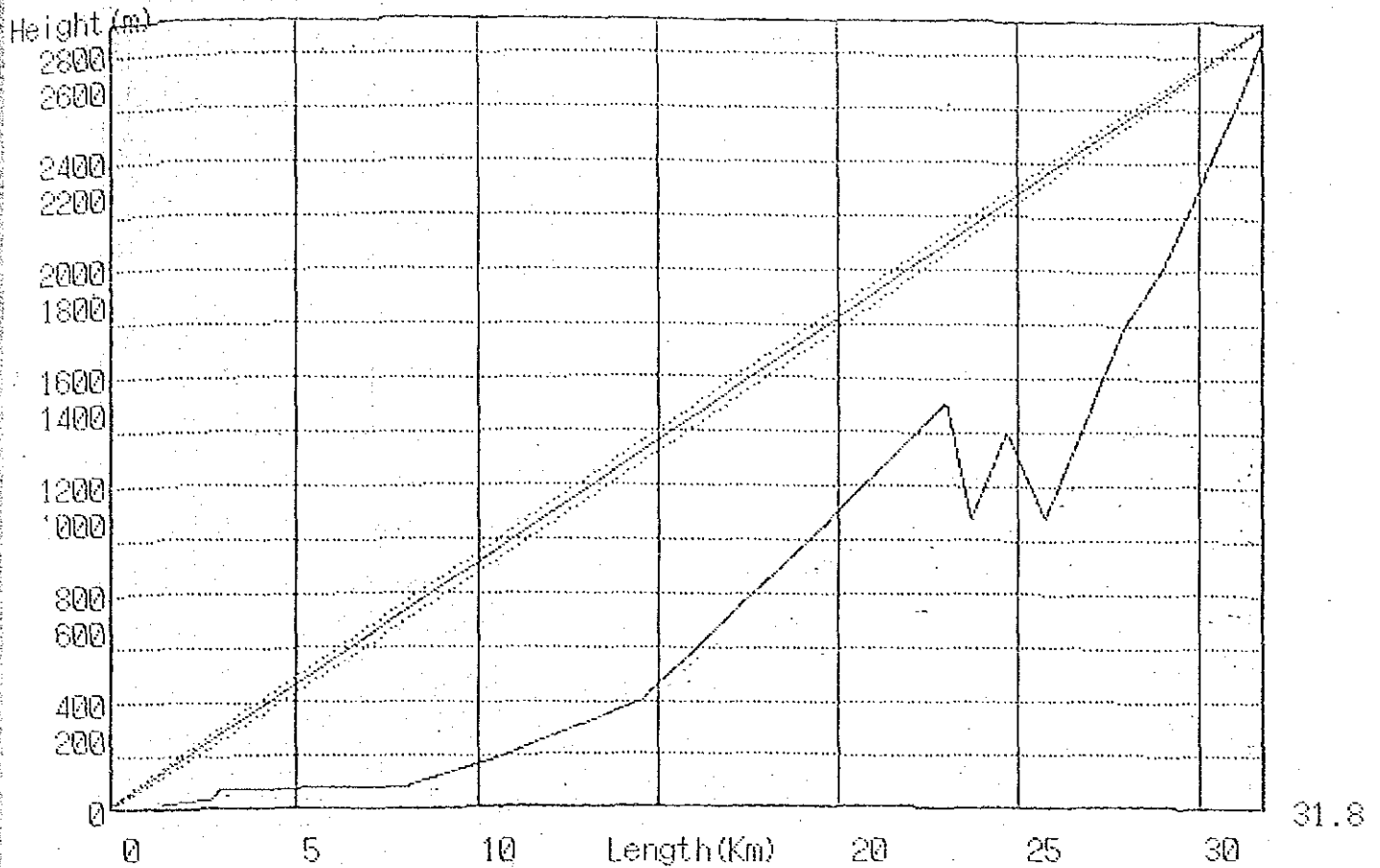
Site 1 : MINDIK
 Ground Elevation : 1,480.0 m
 Antenna Height : 10.0 m

Site 2 : ZENGURU
 Ground Elevation : 1,500.0 m
 Antenna Height : 10.0 m

Frequency : 1.5 GHz
 Path Length : 6.7 Km(Mountain)
 Critical Point : 6.7 Km
 Ridge Height : 1,495.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 2.6 m
 Clearance : 4.9 m
 Clearance Factor : 1.85
 Propagation Loss 112.4 dB
 Average Propagation Height 475.0 m
 Transmitting Power 34.8 dBm
 Feeder Loss 1.5 dB (15.0 m) 1.5 dB (15.0 m)
 Duplexer Loss 2.5 dB 3.5 dB
 Additional Loss 0.0 dB
 Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)



Site 1 : LAE	Site 2 : MT MISSION
Ground Elevation : 40.0 m	Ground Elevation : 2,877.0 m
Antenna Height : 37.0 m	Antenna Height : 26.0 m
Frequency : 1.5 GHz	
Path Length : 57.7 Km(Mountain)	
Critical Point : 1.0 Km	
Ridge Height : 20.0 m	
Tree Height : 10.0 m	
Fresnel Dip : 14.0 m	
Clearance : 92.6 m	
Clearance Factor : 6.61	
Propagation Loss 131.1 dB	
Average Propagation Height 752.7 m	
Transmitting Power 34.8 dBm	
Feeder Loss 3.2 dB (32.0 m)	3.5 dB (35.0 m)
Duplexer Loss 2.5 dB	3.5 dB
Additional Loss	-5.0 dB
Antenna 10.0 dB(Omni)	17.0 dB(6Yagi-ro)



Site 1 : SALAMAUA

Ground Elevation : 5.0 m

Antenna Height : 10.0 m

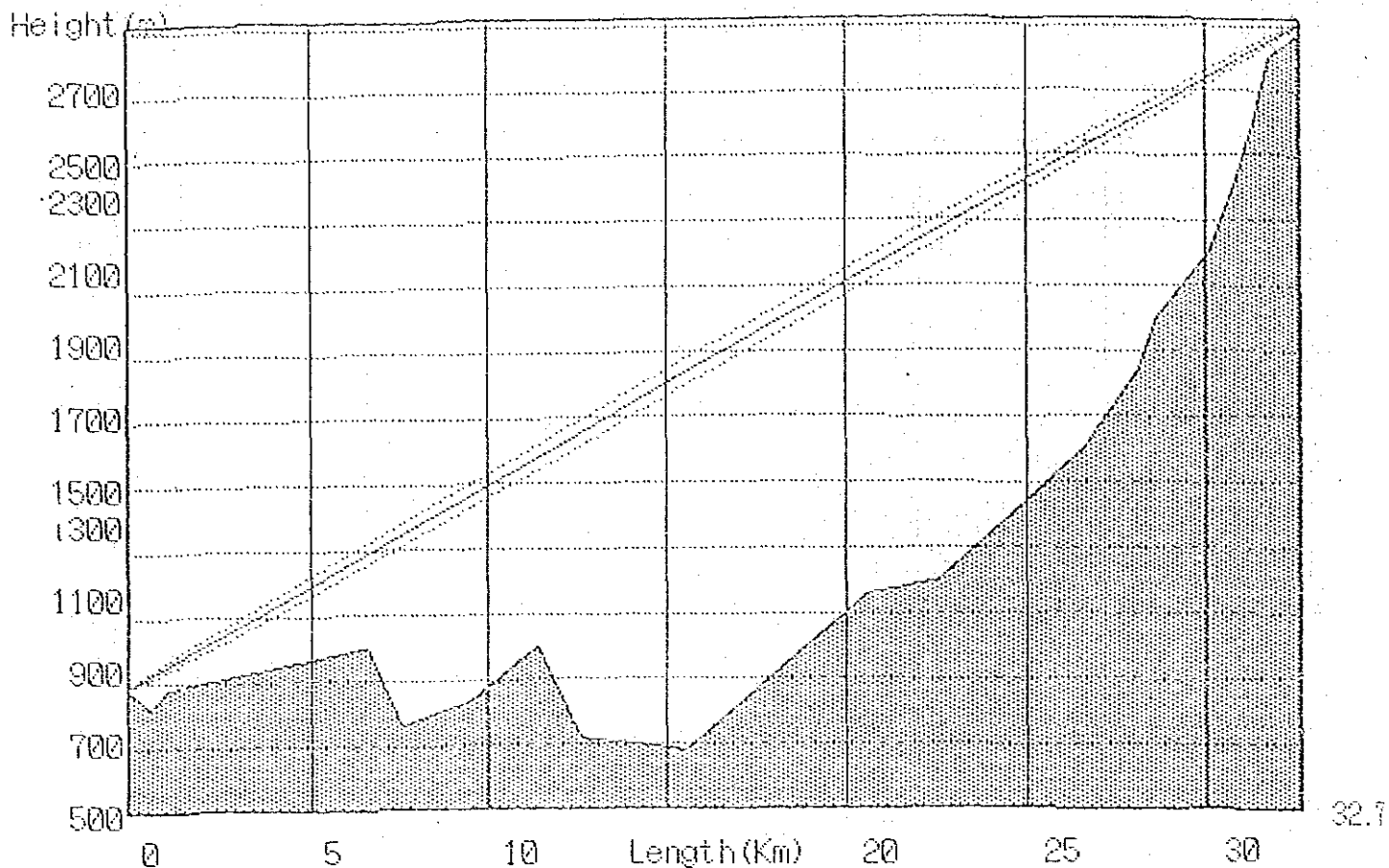
Site 2 : MT MISSION

Ground Elevation : 2,877.0 m

Antenna Height : 33.0 m

Frequency : 1.5 GHz
 Path Length : 31.8 Km(Mountain)
 Critical Point : 0.5 Km
 Ridge Height : 5.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 9.9 m
 Clearance : 44.6 m
 Clearance Factor : 4.50
 Propagation Loss 126.0 dB
 Average Propagation Height 667.4 m

Transmitting Power 34.8 dBm
 Feeder Loss 1.5 dB (15.0 m) 4.2 dB (42.0 m)
 Duplexer Loss 2.5 dB 3.5 dB
 Additional Loss 0.0 dB
 Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)



Site 1 : YAIWAHAWA

Ground Elevation : 880.0 m

Antenna Height : 10.0 m

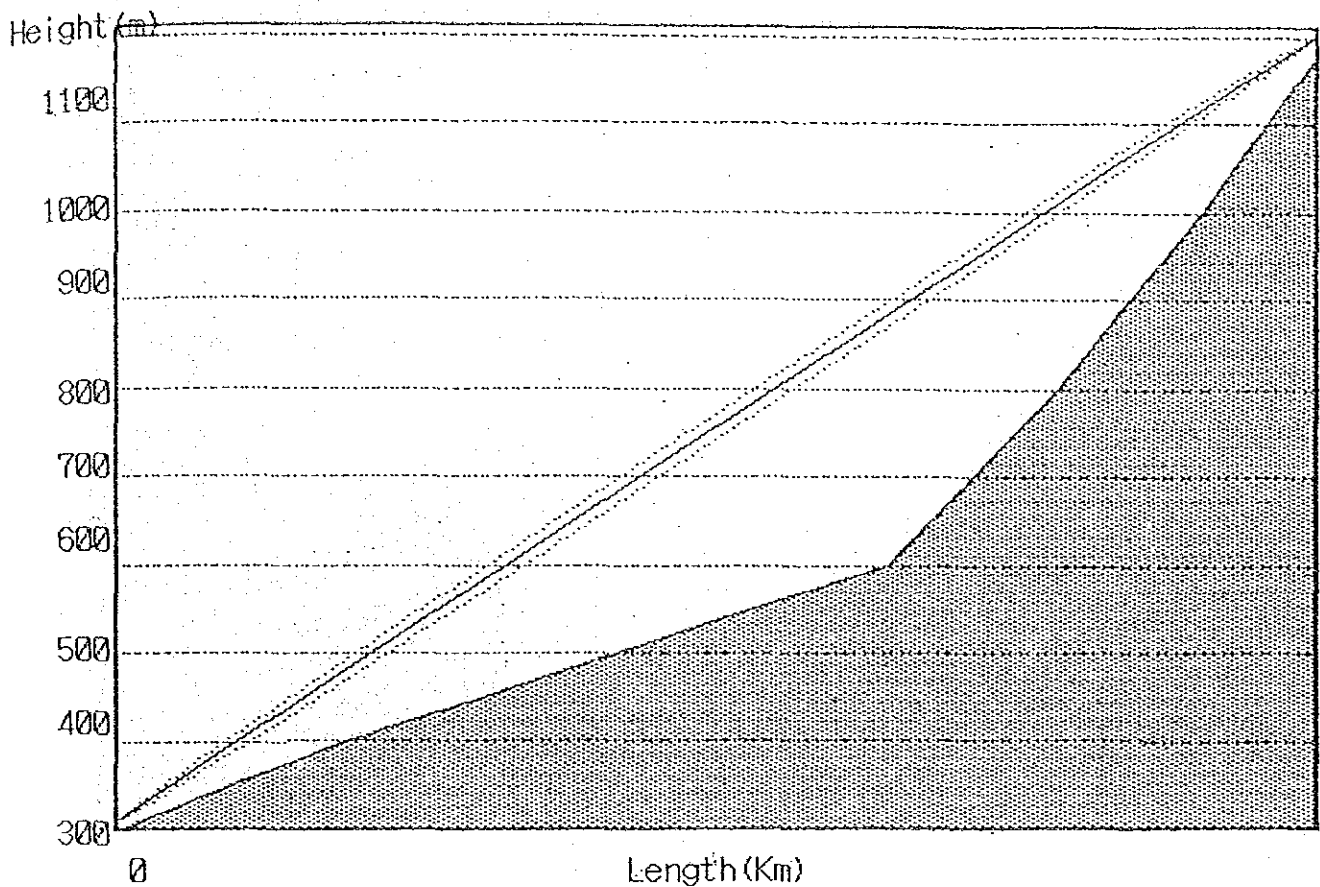
Site 2 : MT MISSION

Ground Elevation : 2,877.0 m

Antenna Height : 33.0 m

Frequency : 1.5 GHz
 Path Length : 32.7 Km(Mountain)
 Critical Point : 31.8 Km
 Ridge Height : 2,800.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 13.2 m
 Clearance : 42.7 m
 Clearance Factor : 3.23
 Propagation Loss : 126.2 dB
 Average Propagation Height : 699.7 m

Transmitting Power	34.8 dBm	
Feeder Loss	1.5 dB (15.0 m)	4.2 dB (42.0 m)
Duplexer Loss	2.5 dB	3.5 dB
Additional Loss	0.0 dB	
Antenna	13.0 dB(6Yagi-st)	10.0 dB(Omni)



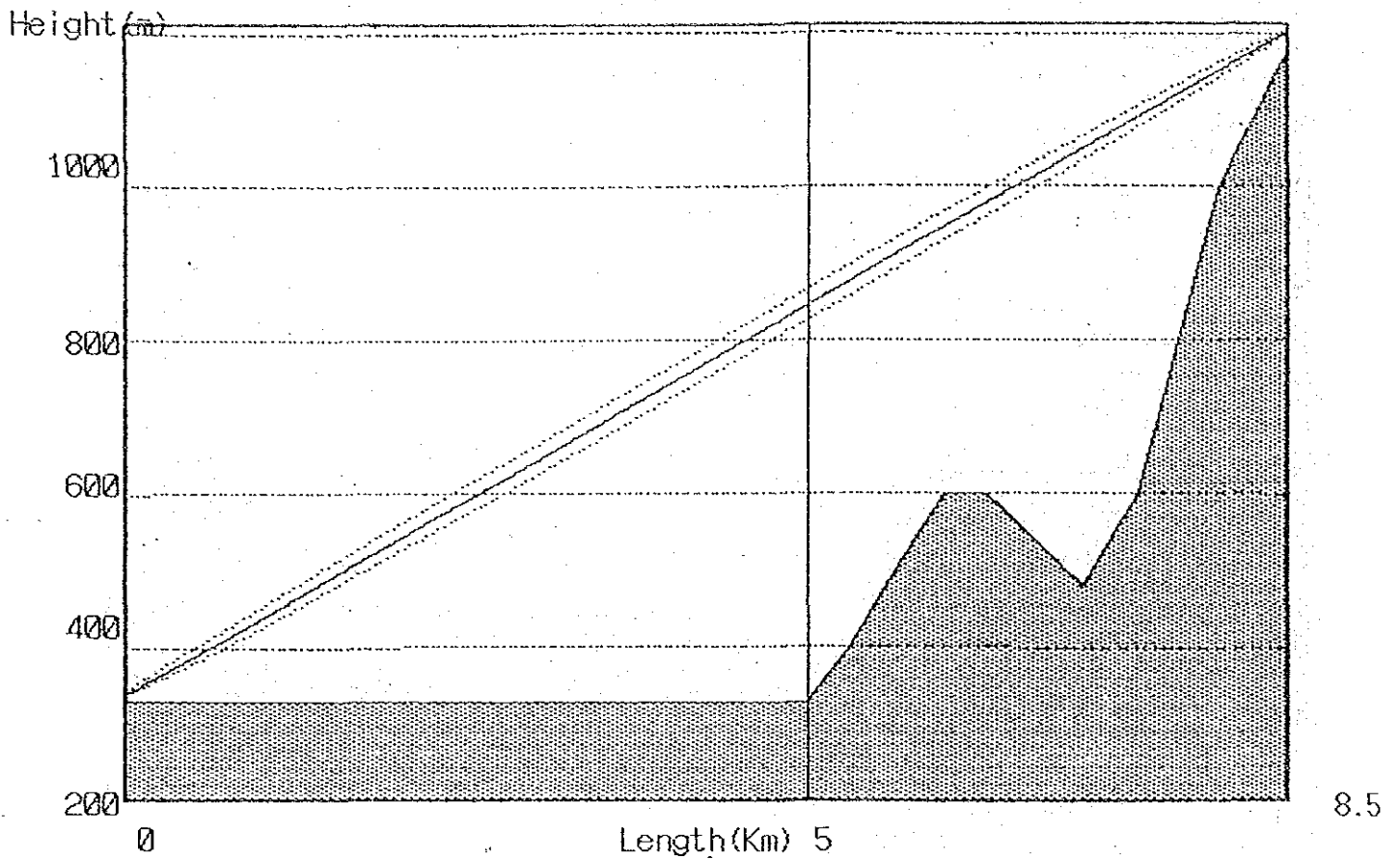
4.2

Site 1 : KAIAPIT
 Ground Elevation : 300.0 m
 Antenna Height : 10.0 m

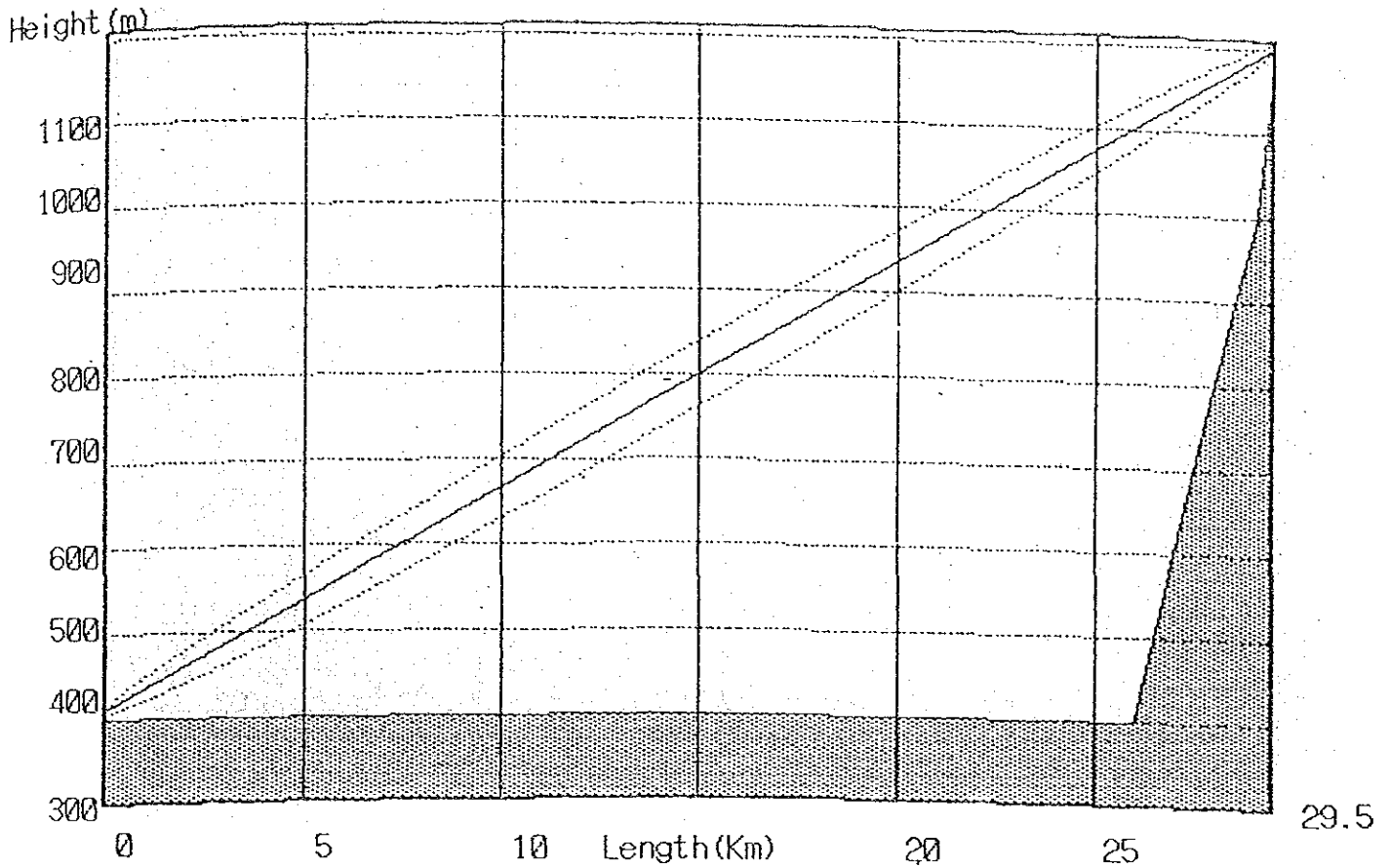
Site 2 : NAMBAMATI
 Ground Elevation : 1,180.0 m
 Antenna Height : 23.0 m

Frequency : 1.5 GHz
 Path Length : 4.2 Km(Mountain)
 Critical Point : 0.8 Km
 Ridge Height : 400.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 11.4 m
 Clearance : 69.9 m
 Clearance Factor : 6.15
 Propagation Loss 108.4 dB
 Average Propagation Height 157.0 m

Transmitting Power 34.8 dBm
 Feeder Loss 1.5 dB (15.0 m) 3.7 dB (37.0 m)
 Duplexer Loss 2.5 dB 3.5 dB
 Additional Loss 0.0 dB
 Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)



Site 1 : UMI		Site 2 : NAMBAMATI
Ground Elevation :	330.0 m	Ground Elevation : 1,180.0 m
Antenna Height :	10.0 m	Antenna Height : 23.0 m
Frequency :	1.5 GHz	
Path Length :	8.5 Km(Mountain)	
Critical Point :	0.5 Km	
Ridge Height :	330.0 m	
Tree Height :	10.0 m	
Fresnel Dip :	9.7 m	
Clearance :	50.5 m	
Clearance Factor :	5.21	
Propagation Loss	114.5 dB	
Average Propagation Height	329.9 m	
Transmitting Power	34.8 dBm	
Feeder Loss	1.5 dB (15.0 m)	3.7 dB (37.0 m)
Duplexer Loss	2.5 dB	3.5 dB
Additional Loss	0.0 dB	
Antenna	13.0 dB(6Yagi-st)	10.0 dB(Omni)



Site 1 : WATARAIS

Ground Elevation : 400.0 m

Antenna Height : 10.0 m

Frequency : 1.5 GHz

Path Length : 29.5 Km(Mountain)

Critical Point : 0.5 Km

Ridge Height : 400.0 m

Tree Height : 10.0 m

Fresnel Dip : 9.9 m

Clearance : 12.6 m

Clearance Factor : 1.27

Propagation Loss 125.3 dB

Average Propagation Height 363.8 m

Transmitting Power 34.8 dBm

Feeder Loss 1.5 dB (15.0 m) 3.7 dB (37.0 m)

Duplexer Loss 2.5 dB 3.5 dB

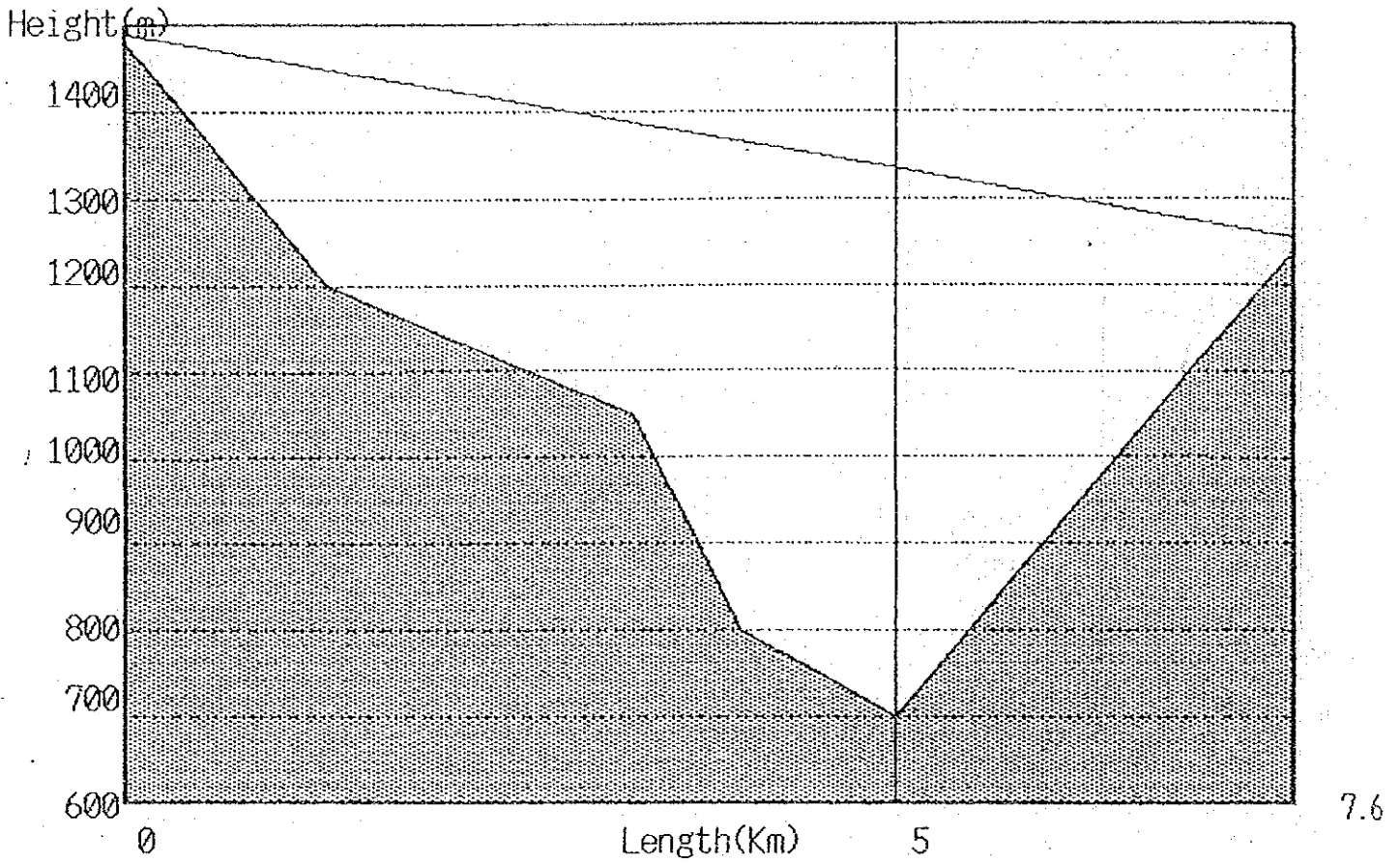
Additional Loss 0.0 dB

Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)

Site 2 : NAMBATI

Ground Elevation : 1,180.0 m

Antenna Height : 23.0 m

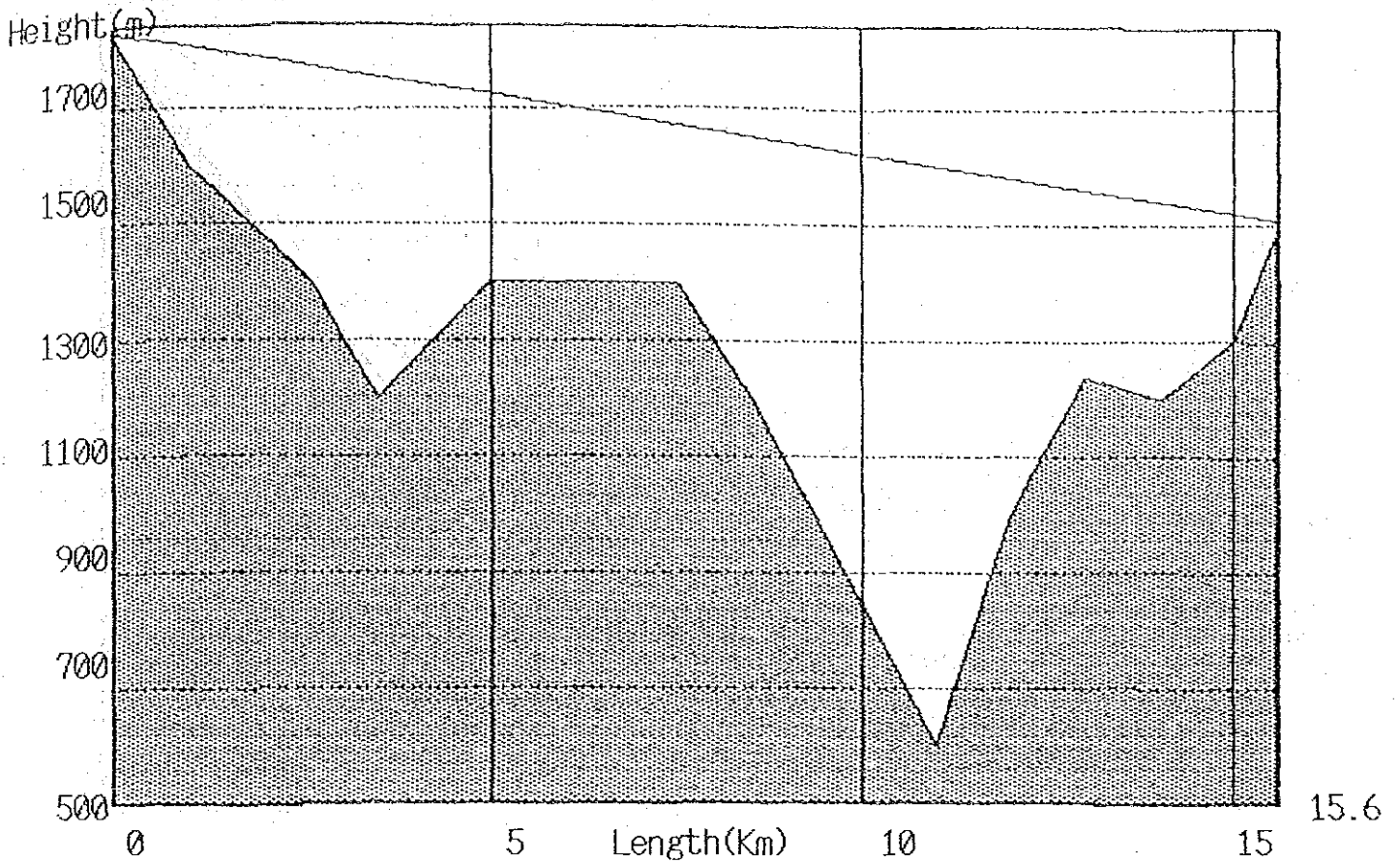


Site 1 : PIND H.C
 Ground Elevation : 1,480.0 m
 Antenna Height : 10.0 m

Site 2 : SILIMANA
 Ground Elevation : 1,240.0 m
 Antenna Height : 15.0 m

Frequency : 450.0 MHz
 Path Length : 7.6 Km(Inland)
 Critical Point : 7.5 Km
 Ridge Height : 1,213.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 9.2 m
 Clearance : 36.0 m
 Clearance Factor : 3.90
 Path Loss 91.8 dB
 Average Propagation Height 365.0 m

Transmitting Power	30.0 dBm	
Feeder Loss	1.8 dB (15.0 m)	2.4 dB (20.0 m)
Duplexer Loss	2.5 dB	2.5 dB
Additional Loss	0.0 dB	
Antenna	12.0 dB(YAGI-8)	12.0 dB(YAGI-8)



Site 1 : LENGBATI

Ground Elevation : 1,820.0 m

Antenna Height : 10.0 m

Site 2 : ZENGURU

Ground Elevation : 1,500.0 m

Antenna Height : 10.0 m

Frequency : 450.0 MHz

Path Length : 15.6 Km(Inland)

Critical Point : 15.6 Km

Ridge Height : 1,500.0 m

Tree Height : 10.0 m

Fresnel Dip : 0.1 m

Clearance : 0.0 m

Clearance Factor : 0.03

Path Loss 93.0 dB

Average Propagation Height 435.9 m

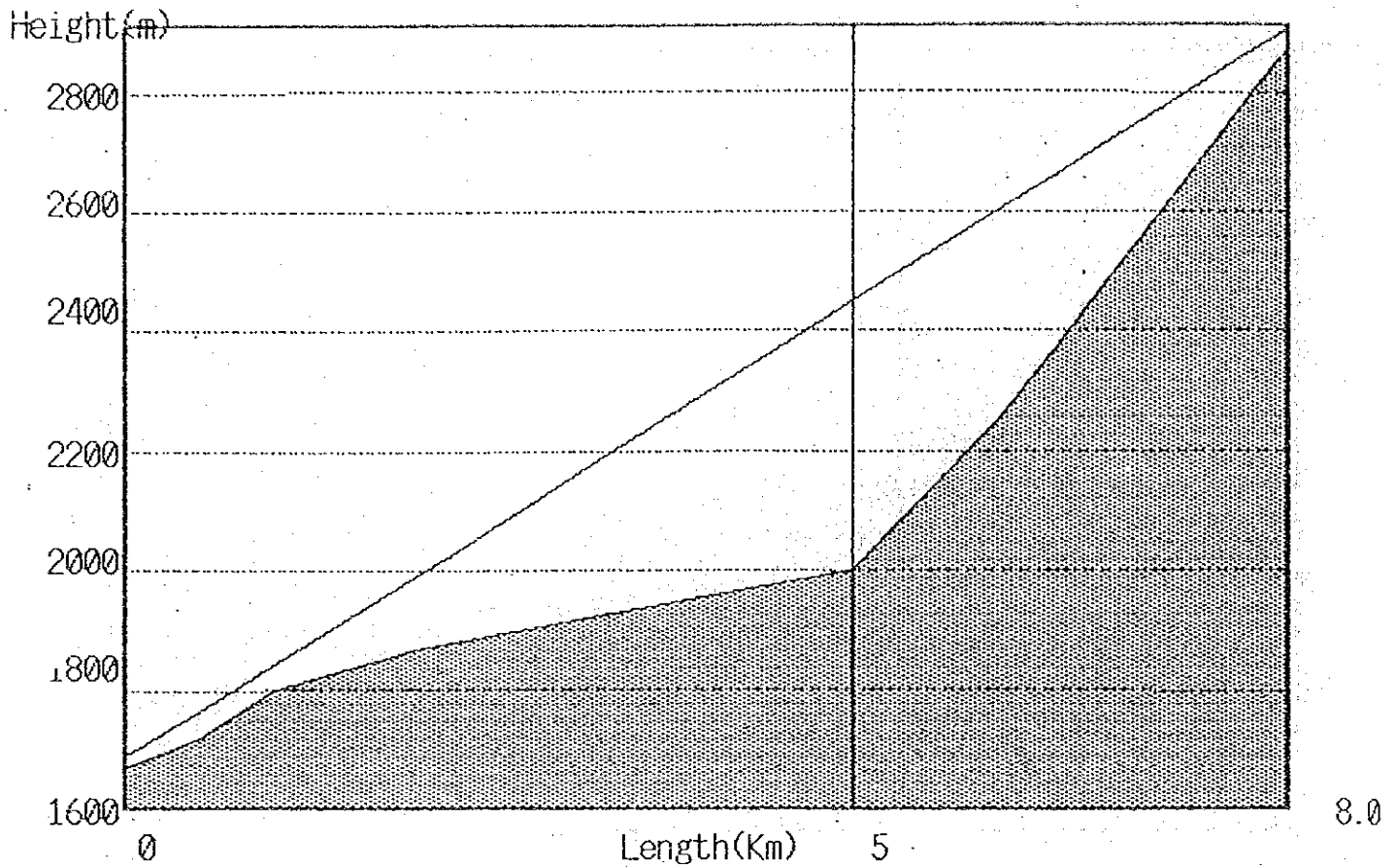
Transmitting Power 30.0 dBm

Feeder Loss 1.8 dB (15.0 m) 1.8 dB (15.0 m)

Duplexer Loss 2.5 dB 2.5 dB

Additional Loss 0.0 dB

Antenna 12.0 dB(YAGI-8) 12.0 dB(YAGI-8)

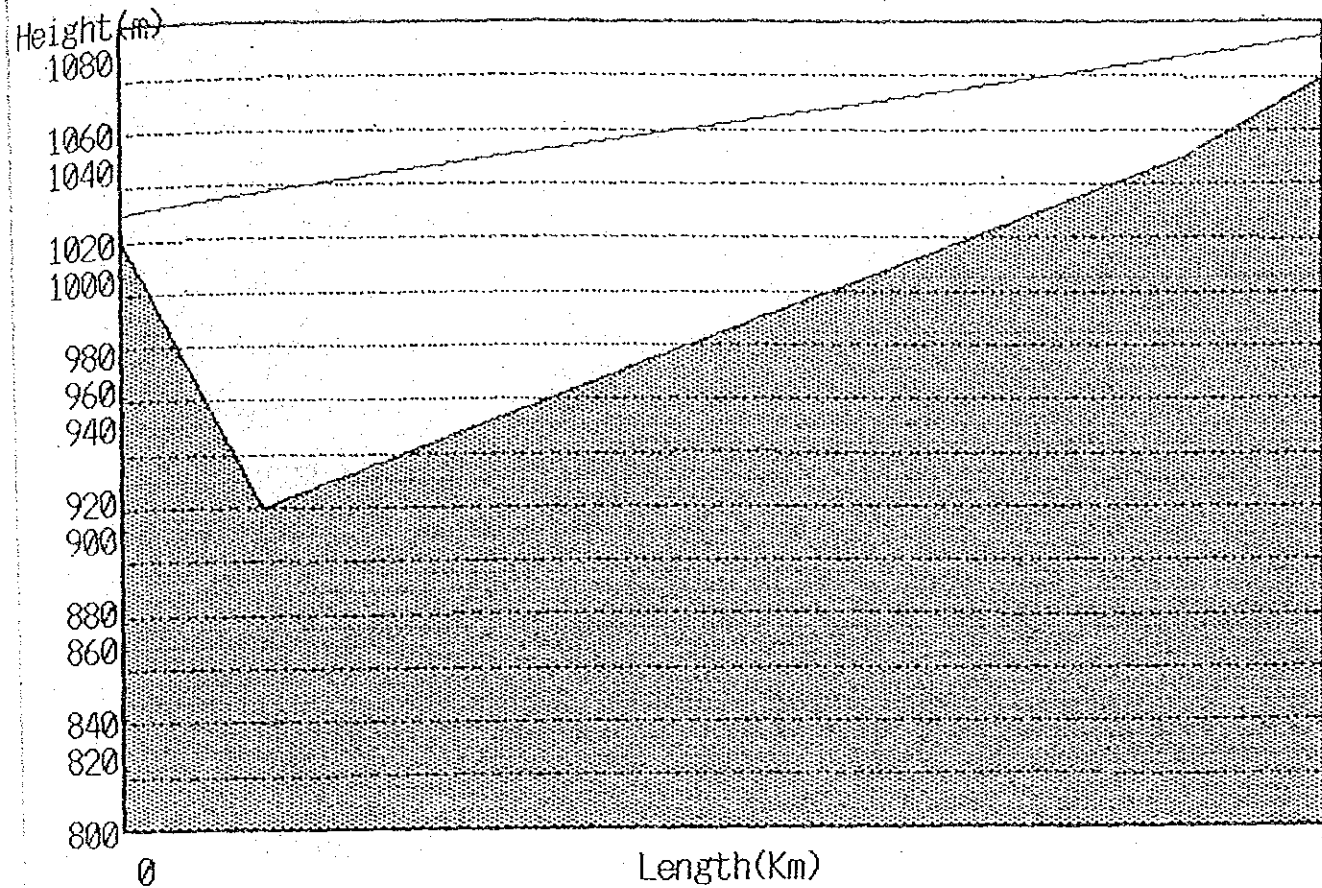


Site 1 : BAINI
 Ground Elevation : 1,670.0 m
 Antenna Height : 20.0 m

Site 2 : MT MISSION
 Ground Elevation : 2,877.0 m
 Antenna Height : 30.0 m

Frequency : 450.0 MHz
 Path Length : 8.0 Km(Inland)
 Critical Point : 1.0 Km
 Ridge Height : 1,800.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 24.2 m
 Clearance : 31.7 m
 Clearance Factor : 1.31
 Path Loss : 92.2 dB
 Average Propagation Height : 247.3 m

Transmitting Power	30.0 dBm	
Feeder Loss	3.0 dB (25.0 m)	4.7 dB (39.0 m)
Duplexer Loss	2.5 dB	2.5 dB
Additional Loss	0.0 dB	
Antenna	12.0 dB(YAGI-8)	12.0 dB(YAGI-8)



4.3

Site 1 : WANDUMI
 Ground Elevation : 1,020.0 m
 Antenna Height : 10.0 m

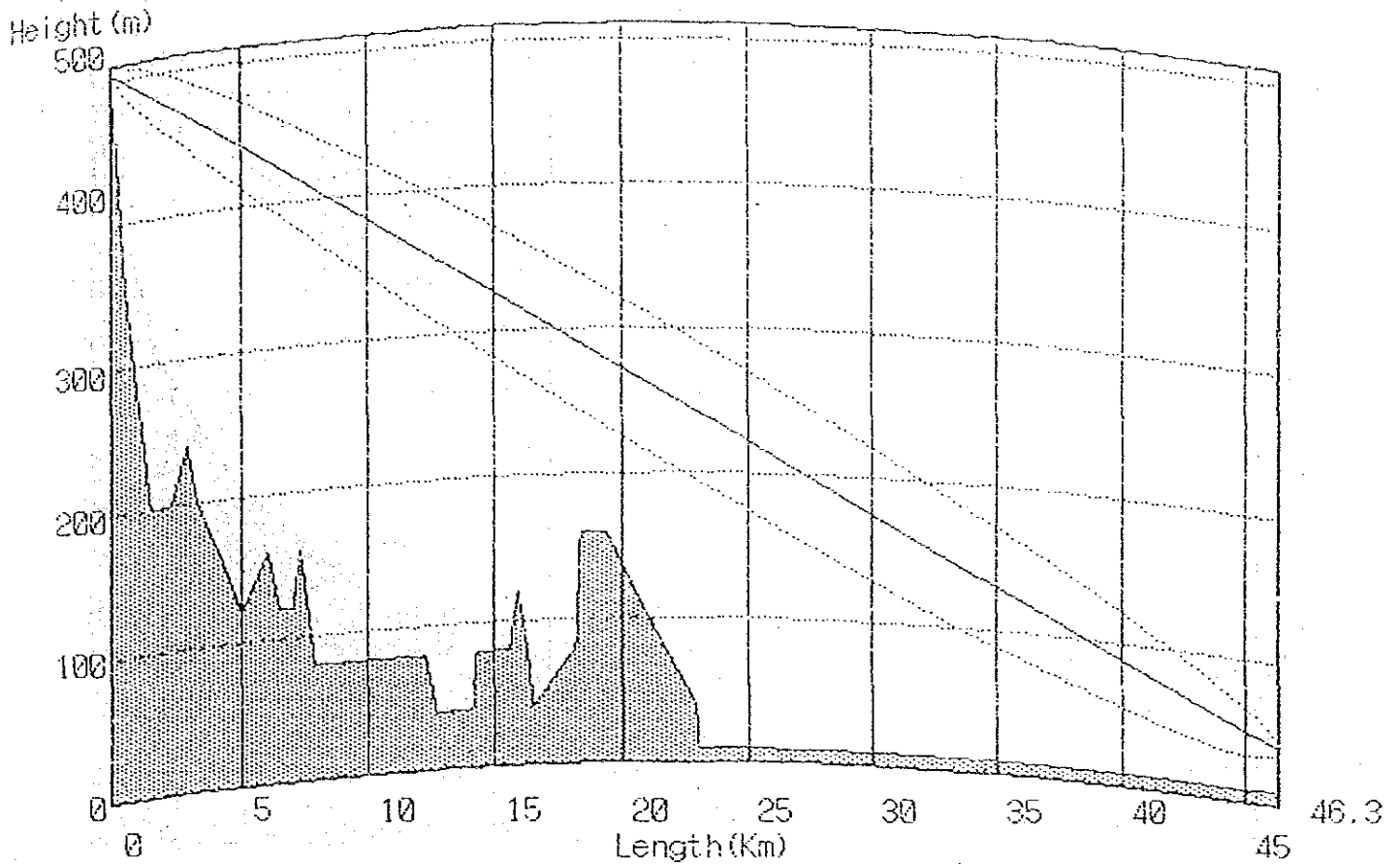
Site 2 : WAU
 Ground Elevation : 1,080.0 m
 Antenna Height : 15.0 m

Frequency : 450.0 MHz
 Path Length : 4.3 Km(Inland)
 Critical Point : 4.2 Km
 Ridge Height : 1,074.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 8.1 m
 Clearance : 9.5 m
 Clearance Factor : 1.17
 Path Loss : 86.8 dB
 Average Propagation Height : 67.8 m

Transmitting Power : 30.0 dBm
 Feeder Loss : 1.8 dB (15.0 m) 3.2 dB (27.0 m)
 Duplexer Loss : 2.5 dB 2.5 dB
 Additional Loss : 0.0 dB
 Antenna : 12.0 dB(YAGI-8) 12.0 dB(YAGI-8)

NEW IRELAND PROVINCE

Mt Kiding	~	Kavieng	(1.5GHZ)	-----	2 2
Mangai	~	Mt. Kiding	(")	-----	2 3
Lemakot	~	Mt. Kiding	(")	-----	2 4
Lakuramau	~	Mt. Kiding	(")	-----	2 5
Madina	~	Mt. Kiding	(")	-----	2 6
Mangop	~	Mt. Kiding	(")	-----	2 7
Pabaul	~	Tomavatur	(")	-----	2 8
Duke of York	~	Tomavatur	(")	-----	2 9
Konokalang	~	Duke of York	(")	-----	3 0
Hursi	~	Konokalang	(")	-----	3 1
Hilalon	~	Huris	(")	-----	3 2
Iipek	~	Huris	(")	-----	3 3
Hipagat	~	Huris	(")	-----	3 4
Palipal	~	Duke of York	(450MHZ)	-----	3 5
Taskul	~	Kavieng	(")	-----	3 6
Kabanut	~	Tomavatur	(150MHZ)	-----	3 7
Kabahon	~	"	(")	-----	3 8
Kait	~	"	(")	-----	3 9



Site 1 : MT KIDING

Ground Elevation : 495.0 m

Antenna Height : 10.0 m

Site 2 : KAVIENG

Ground Elevation : 10.0 m

Antenna Height : 30.0 m

Frequency : 1.5 GHz

Path Length : 46.3 Km(Sea)

Critical Point : 44.4 Km

Ridge Height : 10.0 m

Tree Height : 10.0 m

Fresnel Dip : 19.2 m

Clearance : 34.3 m

Clearance Factor : 1.79

Propagation Loss 129.2 dB

Average Propagation Height 187.2 m

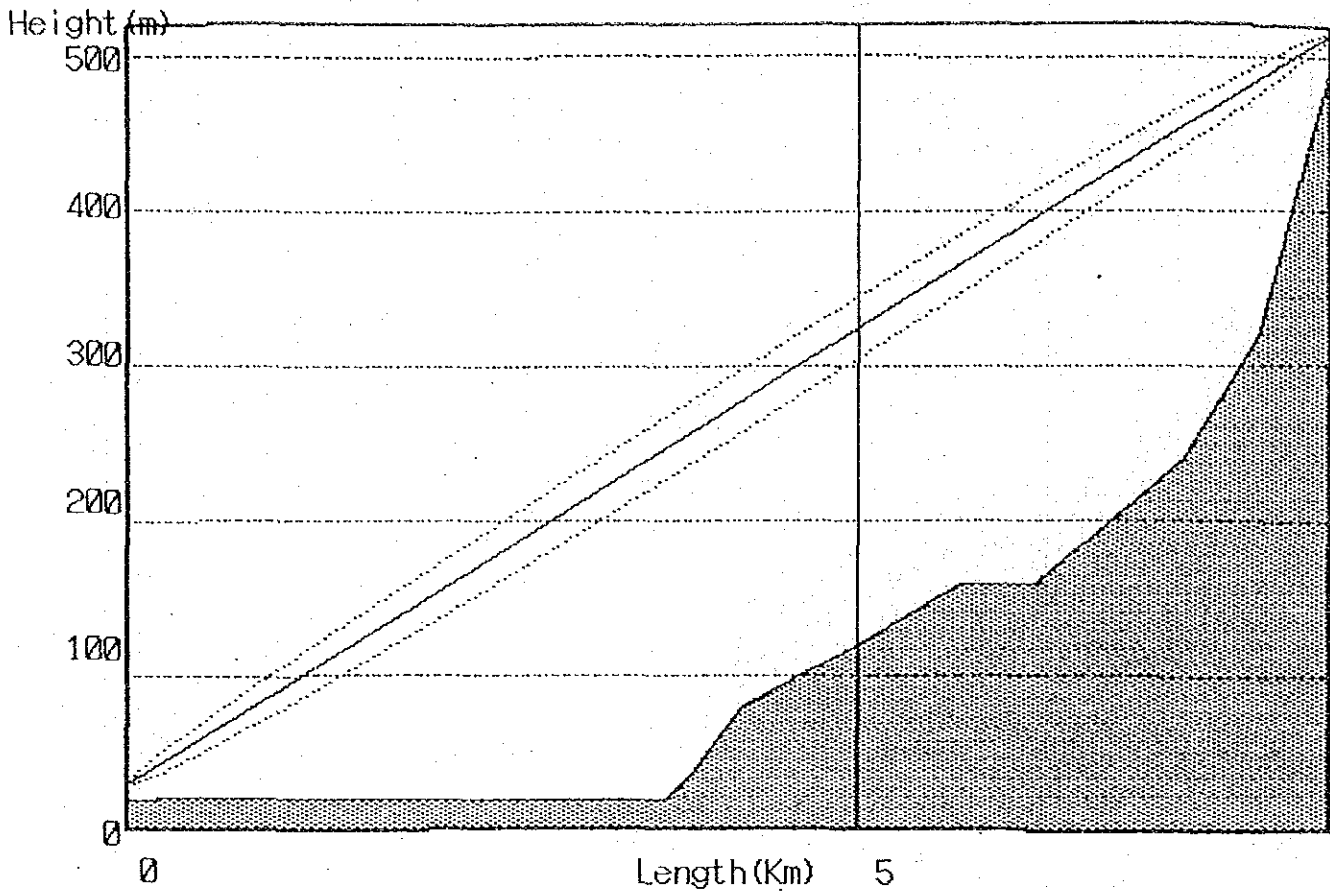
Transmitting Power 34.8 dBm

Feeder Loss 2.5 dB (25.0 m) 5.0 dB (50.0 m)

Duplexer Loss 2.5 dB 3.5 dB

Additional Loss 0.0 dB

Antenna 17.0 dB(6Yagi-ro) 23.0 dB(Para-1.2)



8.2

Site 1 : MANGAI

Ground Elevation : 20.0 m

Antenna Height : 10.0 m

Site 2 : MT KIDING

Ground Elevation : 495.0 m

Antenna Height : 20.0 m

Frequency : 1.5 GHz

Path Length : 8.2 Km(Sea)

Critical Point : 0.7 Km

Ridge Height : 20.0 m

Tree Height : 10.0 m

Fresnel Dip : 11.3 m

Clearance : 41.1 m

Clearance Factor : 3.63

Propagation Loss 114.2 dB

Average Propagation Height 165.2 m

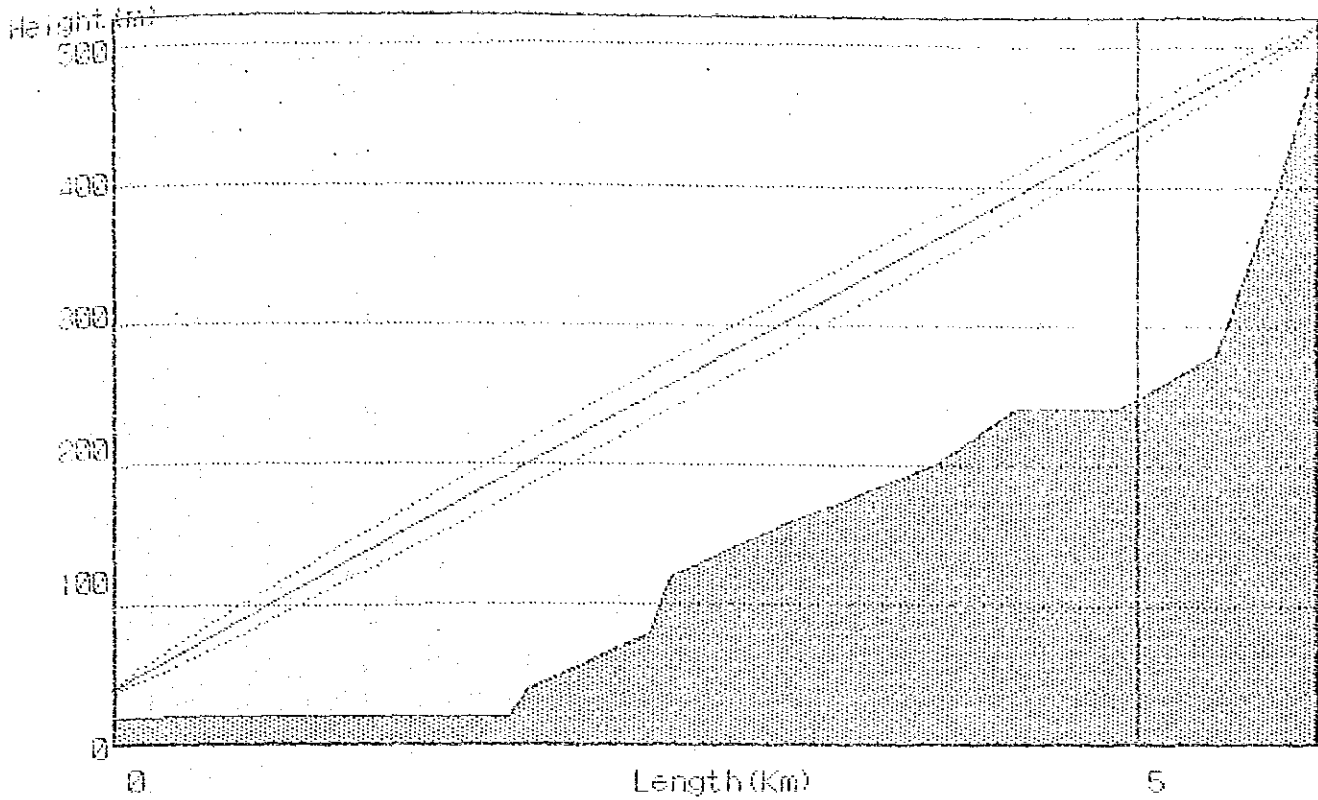
Transmitting Power 34.8 dBm

Feeder Loss 1.5 dB (15.0 m) 3.5 dB (35.0 m)

Duplexer Loss 2.5 dB 3.5 dB

Additional Loss 0.0 dB

Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)



Site 1 : LEMAKOT

Ground Elevation : 20.0 m

Antenna Height : 20.0 m

Site 2 : Mt.KIDING

Ground Elevation : 495.0 m

Antenna Height : 20.0 m

Frequency : 1.5 GHz

Path Length : 5.9 Km(Sea)

Critical Point : 0.4 Km

Ridge Height : 20.0 m

Tree Height : 10.0 m

Fresnel Dip : 8.6 m

Clearance : 42.1 m

Clearance Factor : 4.87

Propagation Loss 111.3 dB

Average Propagation Height 151.5 m

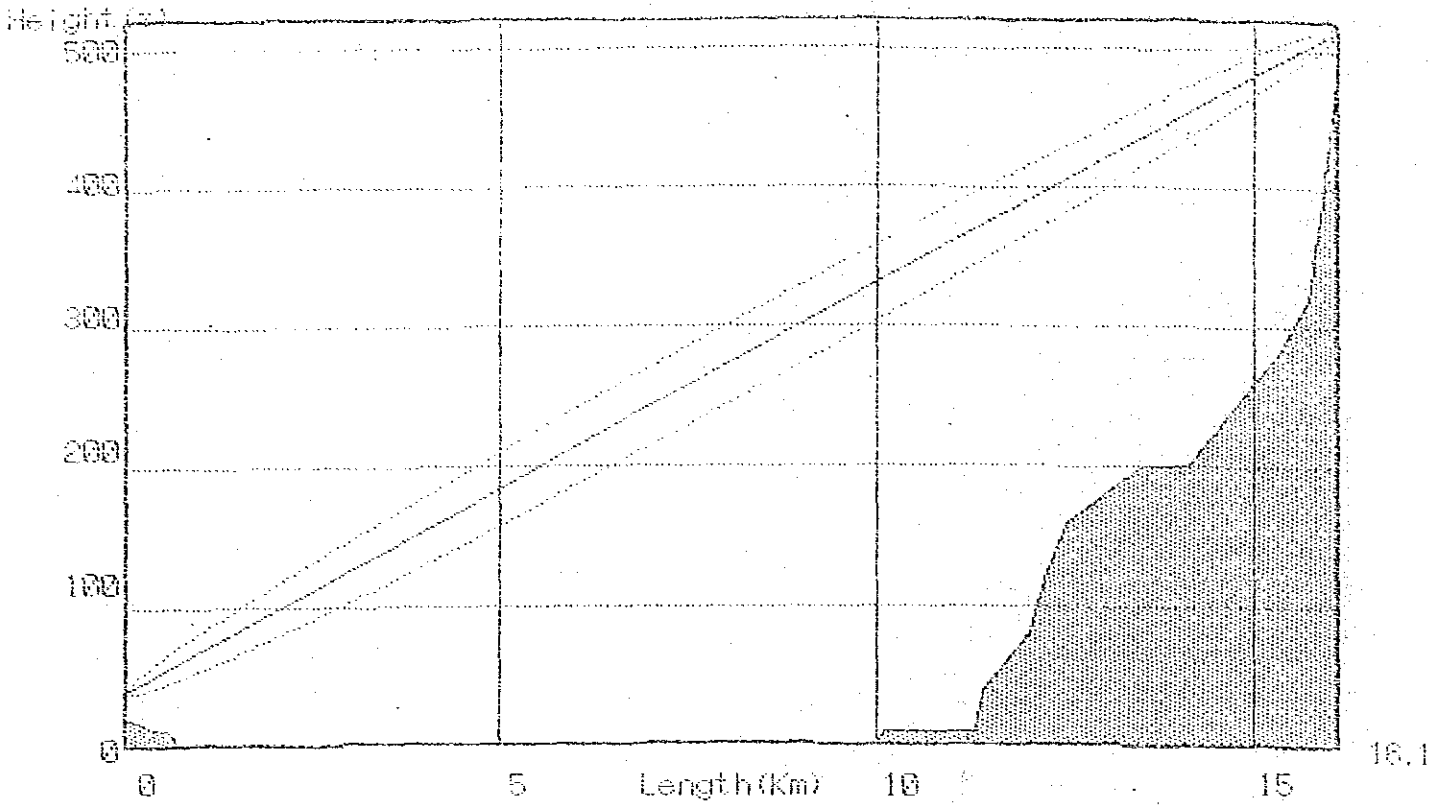
Transmitting Power 34.8 dBm

Feeder Loss 2.5 dB (25.0 m) 3.5 dB (35.0 m)

Duplexer Loss 2.5 dB 3.5 dB

Additional Loss 0.0 dB

Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)



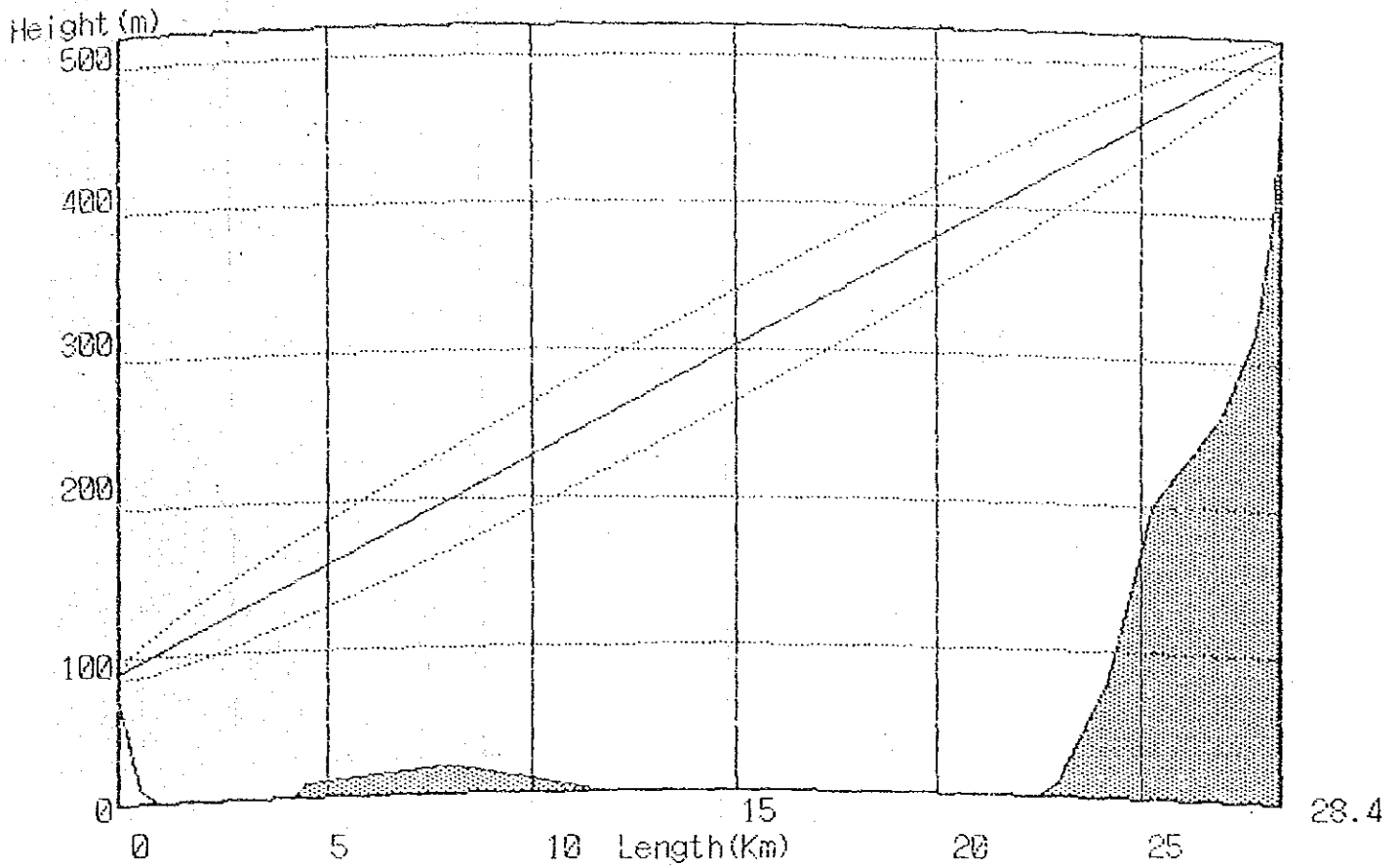
Site 1 : LAKURAMAU

Ground Elevation : 20.0 m
 Antenna Height : 20.0 m

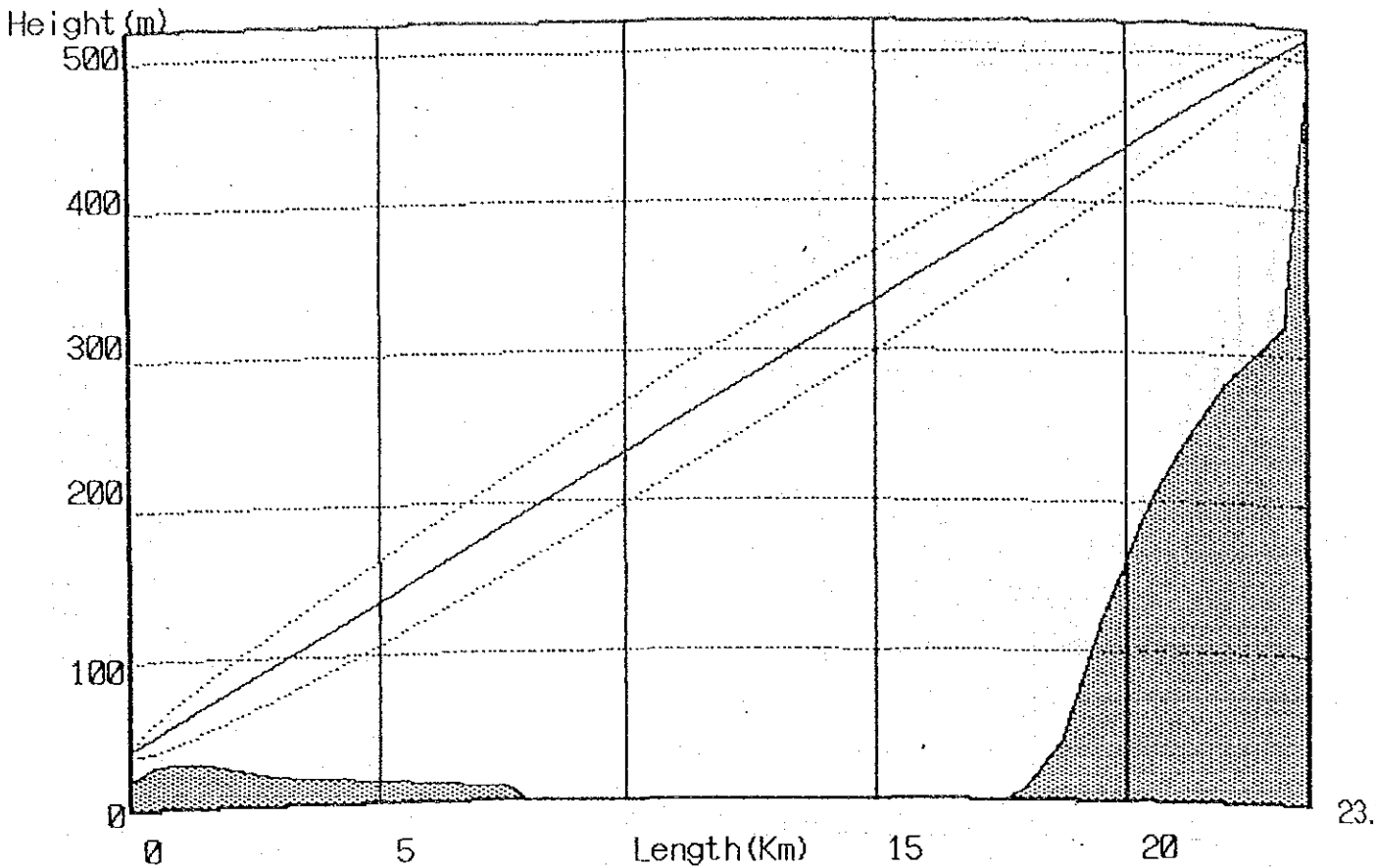
Site 2 : Mt.KIDING

Ground Elevation : 495.0 m
 Antenna Height : 20.0 m

Frequency : 1.5 GHz
 Path Length : 16.1 Km(Sea)
 Critical Point : 0.6 Km
 Ridge Height : 10.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 10.7 m
 Clearance : 37.2 m
 Clearance Factor : 3.46
 Propagation Loss 120.1 dB
 Average Propagation Height 214.6 m
 Transmitting Power 34.8 dBm
 Feeder Loss 2.5 dB (25.0 m) 3.5 dB (35.0 m)
 Duplexer Loss 2.5 dB 3.5 dB
 Additional Loss 0.0 dB
 Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)



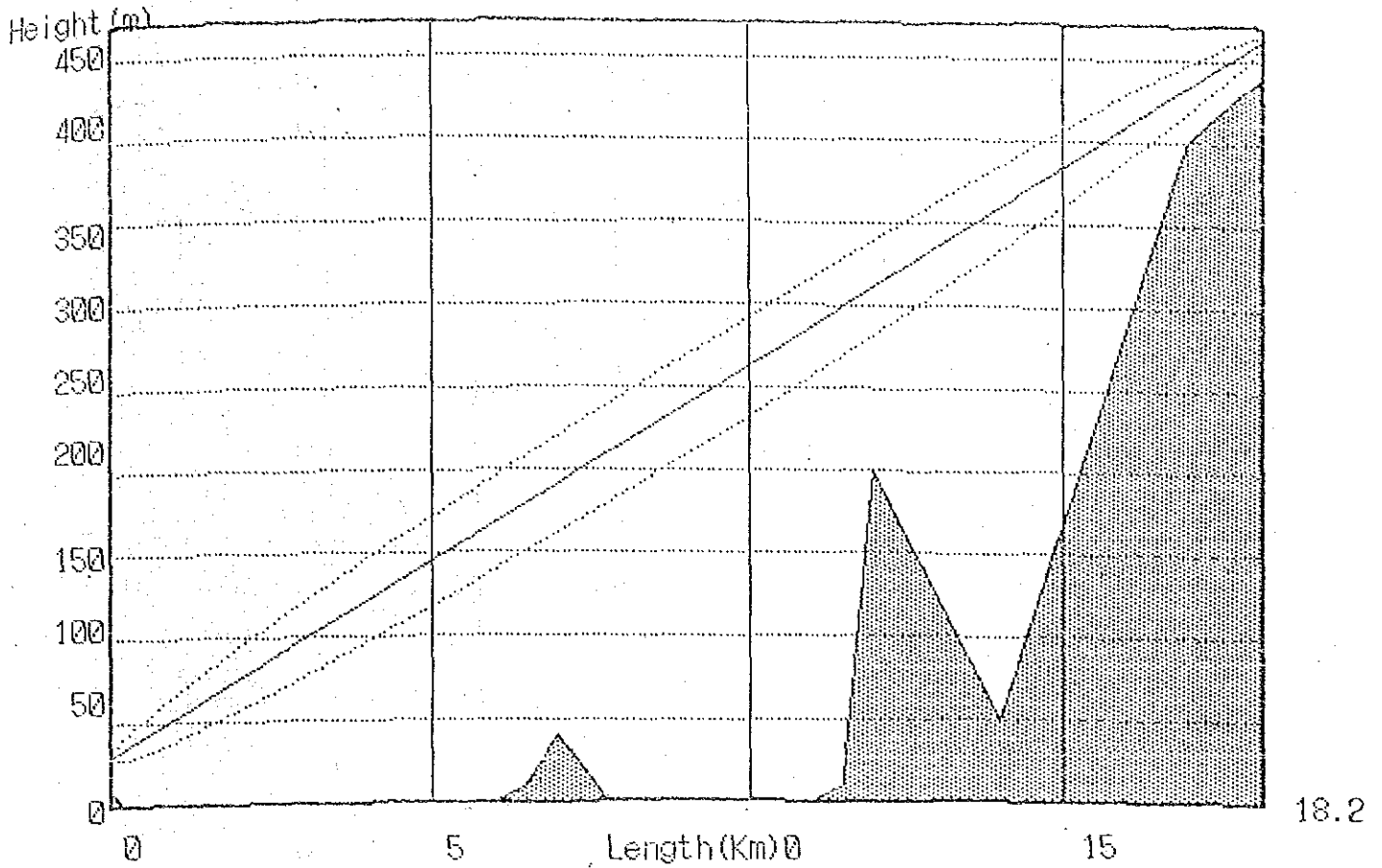
Site 1 : MADINA	Site 2 : MT.KIDING
Ground Elevation : 70.0 m	Ground Elevation : 495.0 m
Antenna Height : 20.0 m	Antenna Height : 20.0 m
Frequency : 1.5 GHz	
Path Length : 28.4 Km(Sea)	
Critical Point : 4.9 Km	
Ridge Height : 11.0 m	
Tree Height : 10.0 m	
Fresnel Dip : 28.4 m	
Clearance : 134.9 m	
Clearance Factor : 4.76	
Propagation Loss 125.0 dB	
Average Propagation Height 256.4 m	
Transmitting Power 34.8 dBm	
Feeder Loss 2.5 dB (25.0 m)	3.5 dB (35.0 m)
Duplexer Loss 2.5 dB	3.5 dB
Additional Loss 0.0 dB	
Antenna 17.0 dB(6Yagi-ro)	10.0 dB(Omni)



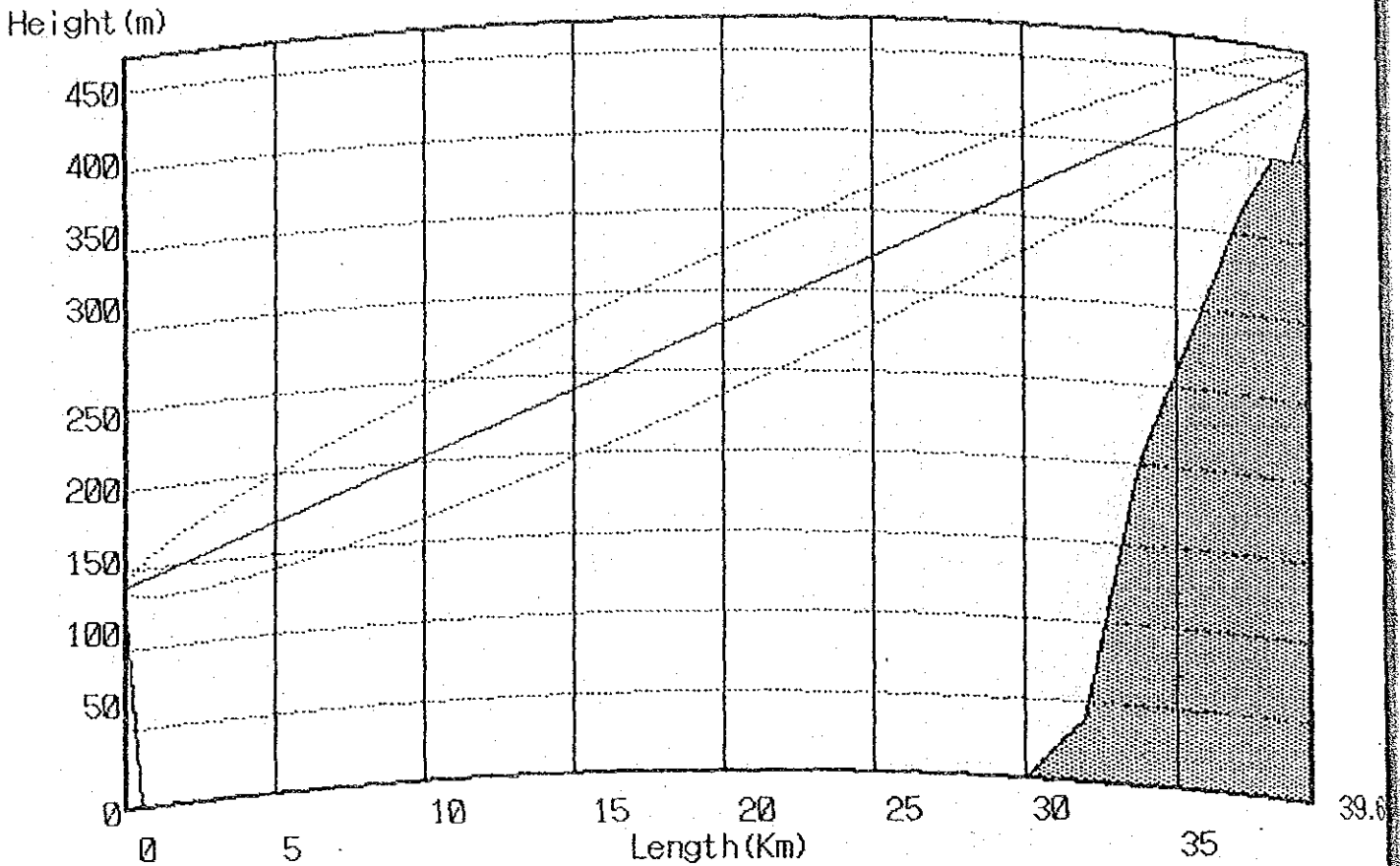
Site 1 : MANGOP
 Ground Elevation : 20.0 m
 Antenna Height : 20.0 m

Site 2 : MT KIDING
 Ground Elevation : 495.0 m
 Antenna Height : 20.0 m

Frequency : 1.5 GHz
 Path Length : 23.7 Km(Sea)
 Critical Point : 0.5 Km
 Ridge Height : 30.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 9.9 m
 Clearance : 9.3 m
 Clearance Factor : 0.94
 Propagation Loss 123.4 dB
 Average Propagation Height 222.8 m
 Transmitting Power 34.8 dBm
 Feeder Loss 2.5 dB (25.0 m) 3.5 dB (35.0 m)
 Duplexer Loss 2.5 dB 3.5 dB
 Additional Loss 0.0 dB
 Antenna 13.0 dB(6Yagi-st) 10.0 dB(Omni)



Site 1 : RABAU	Site 2 : TOMAVATUR
Ground Elevation : 10.0 m	Ground Elevation : 440.0 m
Antenna Height : 20.0 m	Antenna Height : 22.0 m
Frequency : 1.5 GHz	
Path Length : 18.2 Km(Sea)	
Critical Point : 17.0 Km	
Ridge Height : 400.0 m	
Tree Height : 10.0 m	
Fresnel Dip : 15.0 m	
Clearance : 22.3 m	
Clearance Factor : 1.49	
Propagation Loss 121.1 dB	
Average Propagation Height 157.9 m	
Transmitting Power 34.8 dBm	
Feeder Loss 5.0 dB (50.0 m)	3.7 dB (37.0 m)
Duplexer Loss 2.5 dB	3.5 dB
Additional Loss 0.0 dB	
Antenna 10.0 dB(Omni)	13.0 dB(6Yagi-st)



Site 1 : DUKE OF YORK

Ground Elevation : 120.0 m
 Antenna Height : 20.0 m

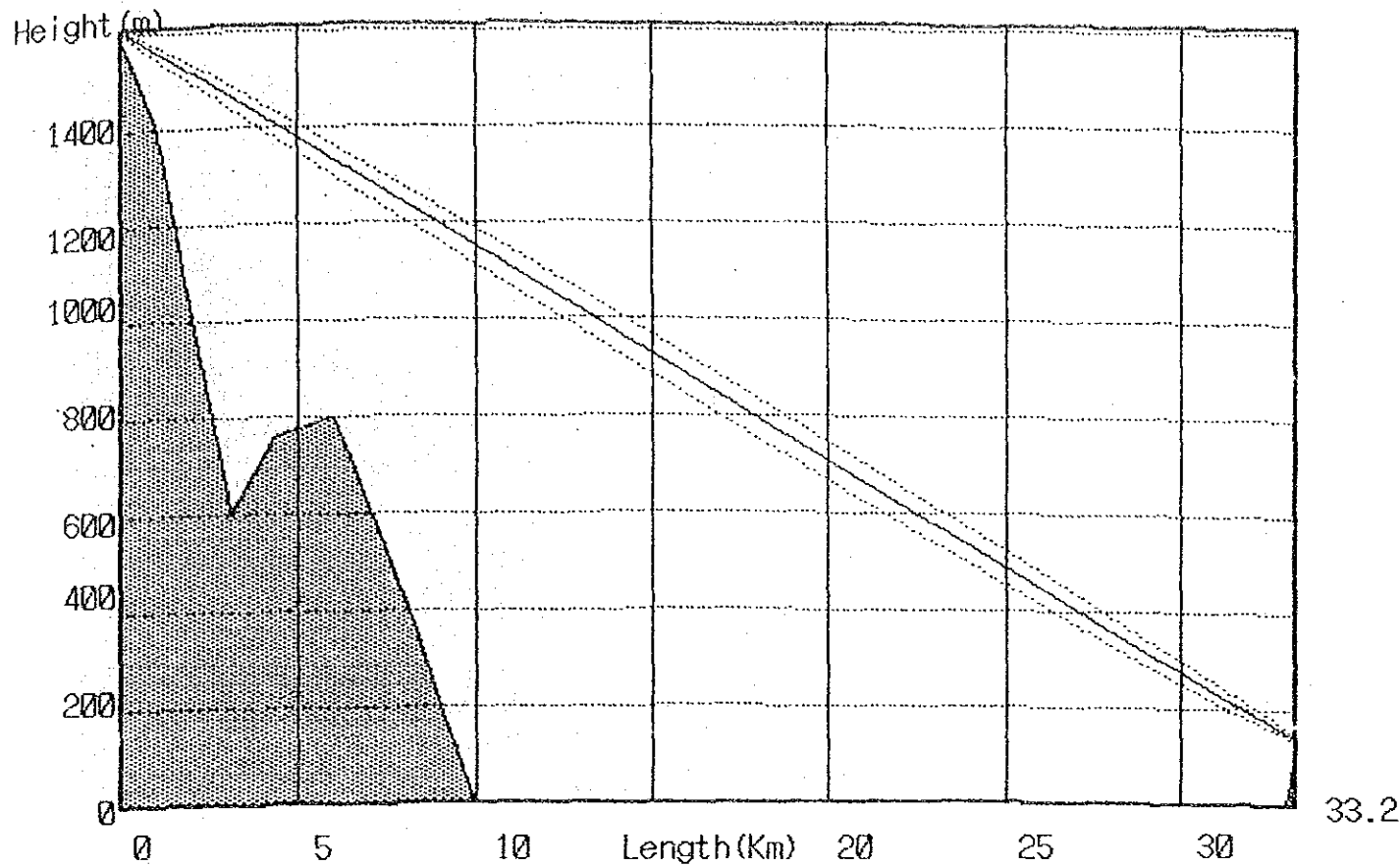
Site 2 : TOMAVATUR

Ground Elevation : 440.0 m
 Antenna Height : 22.0 m

Frequency : 1.5 GHz
 Path Length : 39.6 Km(Sea)
 Critical Point : 38.3 Km
 Ridge Height : 400.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 15.9 m
 Clearance : 38.5 m
 Clearance Factor : 2.43
 Propagation Loss 127.9 dB
 Average Propagation Height 233.0 m
 Transmitting Power 34.8 dBm
 Feeder Loss 3.5 dB (35.0 m)
 Duplexer Loss 2.5 dB
 Additional Loss 0.0 dB
 Antenna 26.0 dB(Paral.8)

3.5 dB (35.0 m)
 3.5 dB

10.0 dB(Omni)



Site 1 : KONOKALANG

Ground Elevation : 1,590.5 m

Antenna Height : 15.0 m

Site 2 : DUKE OF YOKE

Ground Elevation : 120.0 m

Antenna Height : 20.0 m

Frequency : 1.5 GHz

Path Length : 33.2 Km(Sea)

Critical Point : 33.2 Km

Ridge Height : 110.0 m

Tree Height : 10.0 m

Fresnel Dip : 2.0 m

Clearance : 20.9 m

Clearance Factor : 10.43

Propagation Loss 126.3 dB

Average Propagation Height 644.9 m

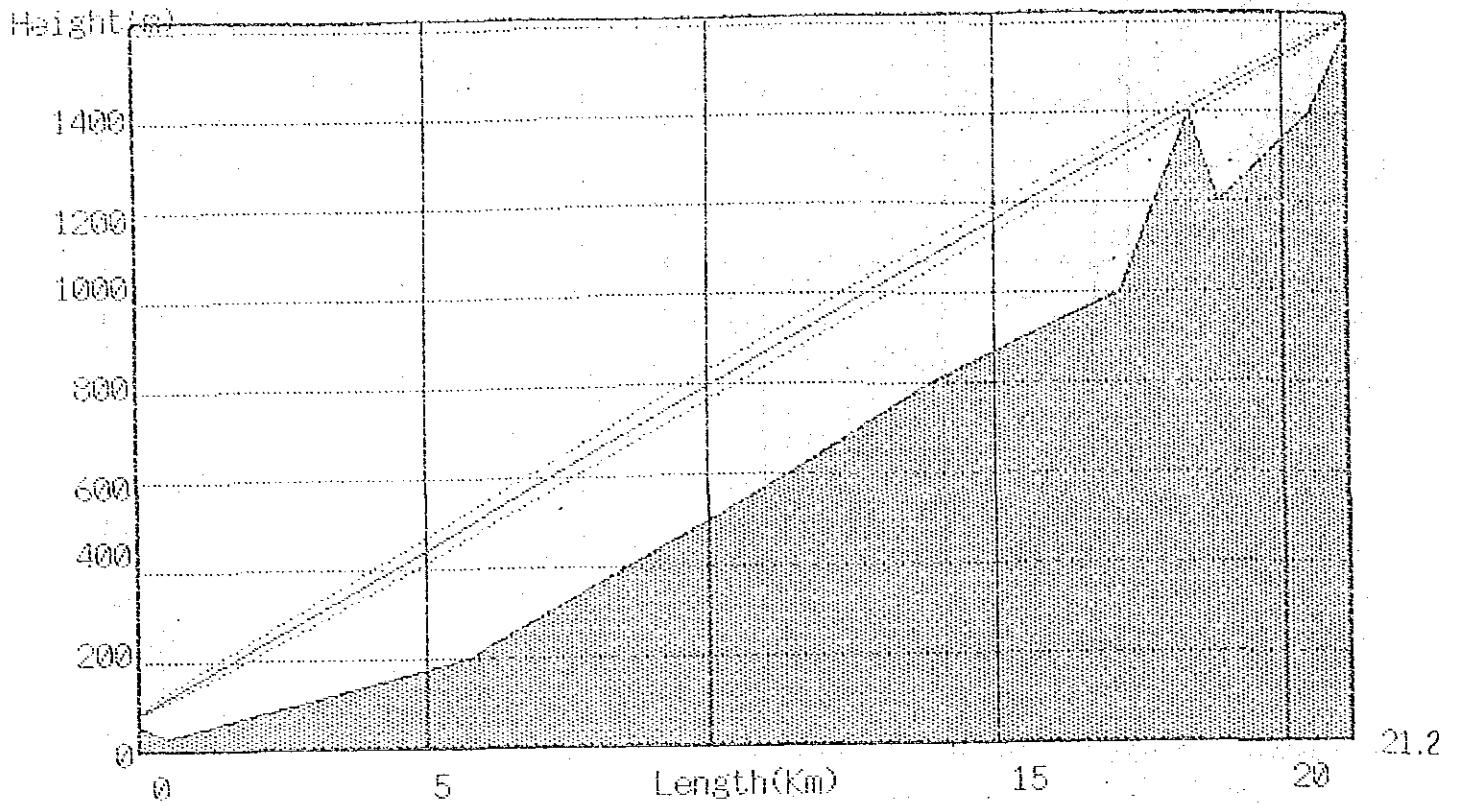
Transmitting Power 34.8 dBm

Feeder Loss 3.0 dB (30.0 m) 3.5 dB (35.0 m)

Duplexer Loss 2.5 dB 3.5 dB

Additional Loss -4.8 dB

Antenna 13.0 dB(6Yagi-st) 13.0 dB(6Yagi-st)



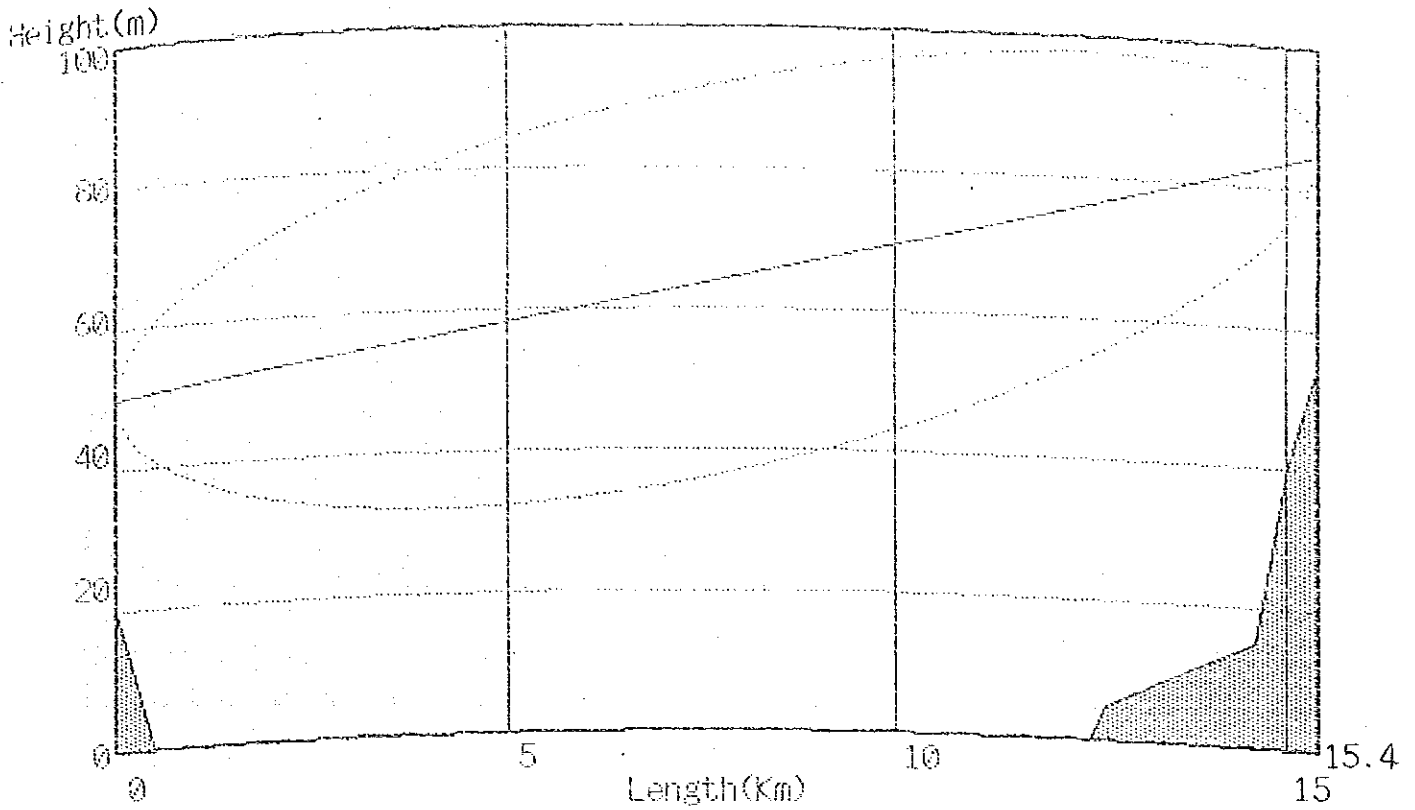
Site 1 : HURIS
 Ground Elevation : 55.0 m
 Antenna Height : 30.0 m

Site 2 : KONOKALANG
 Ground Elevation : 1,590.5 m
 Antenna Height : 23.0 m

Frequency : 1.5 GHz
 Path Length : 21.2 Km(Mountain)
 Critical Point : 18.4 Km
 Ridge Height : 1,400.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 22.0 m
 Clearance : -1.4 m
 Clearance Factor : -0.06

Propagation Loss : 122.4 dB
 Average Propagation Height : 243.9 m

Transmitting Power	34.8 dBm	
Feeder Loss	4.5 dB (45.0 m)	3.8 dB (38.0 m)
Duplexer Loss	2.5 dB	3.5 dB
Additional Loss	7.0 dB	
Antenna	13.0 dB(6Yagi-st)	10.0 dB(Omni)



Site 1 : HILALON

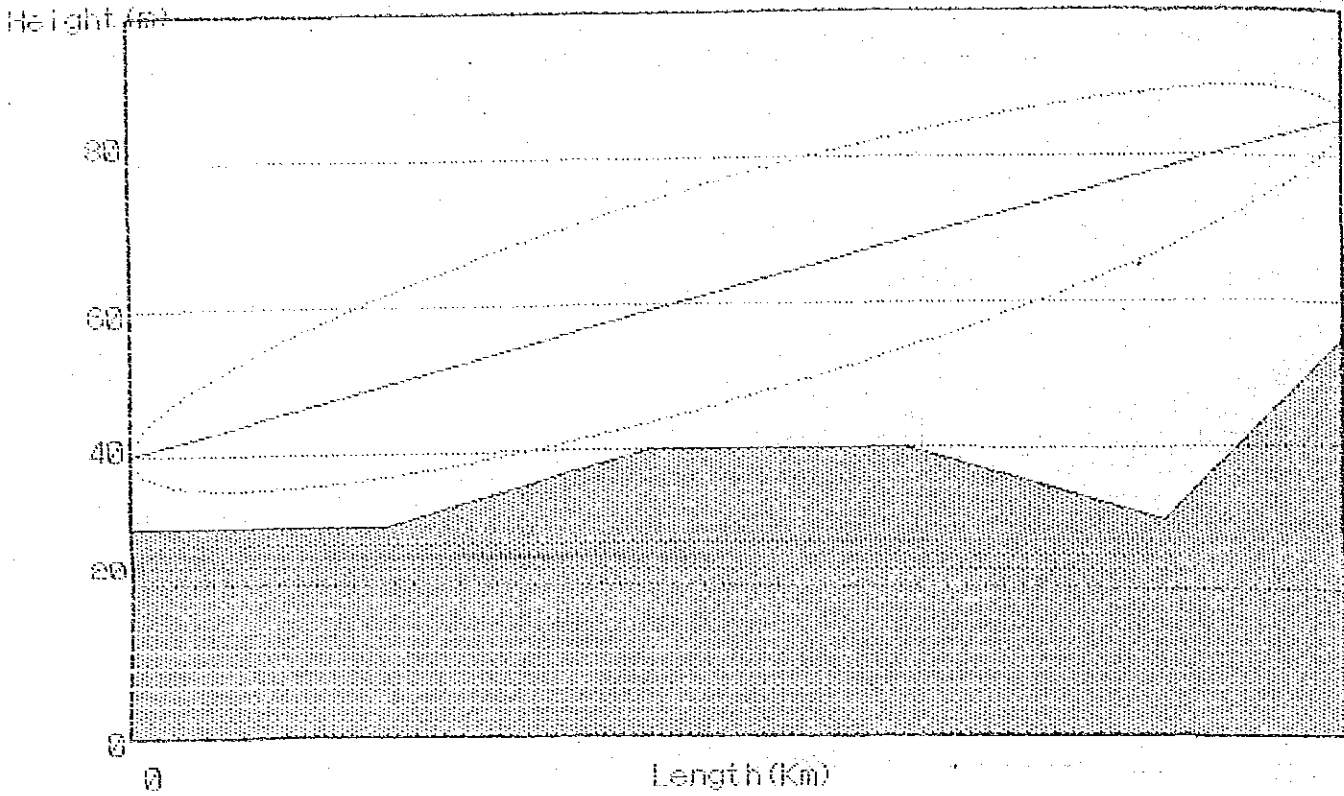
Ground Elevation : 20.0 m
 Antenna Height : 30.0 m

Site 2 : HURIS

Ground Elevation : 55.0 m
 Antenna Height : 30.0 m

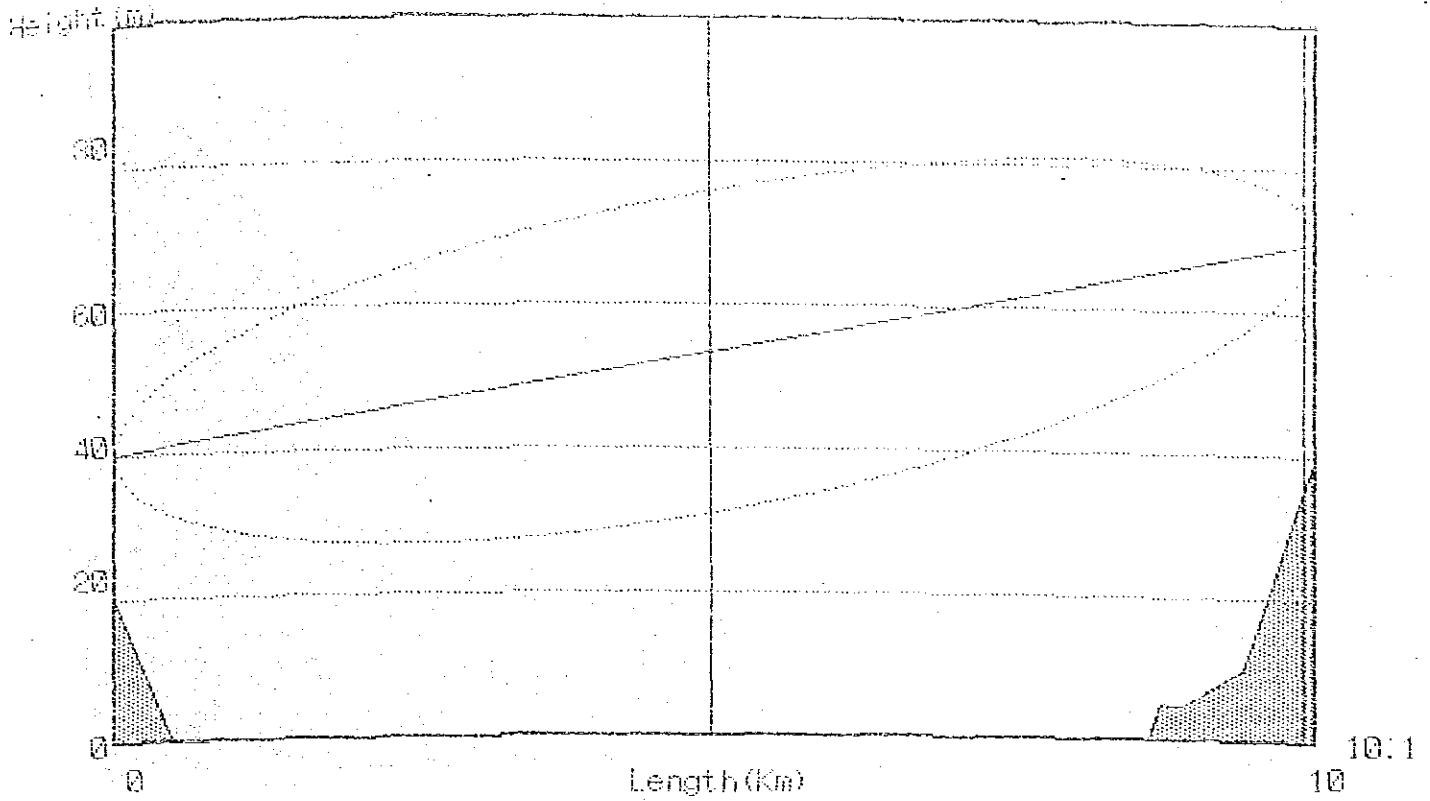
Frequency : 1.5 GHz
 Path Length : 15.4 Km (Sea)
 Critical Point : 5.6 Km
 Ridge Height : 0.0 m
 Tree Height : 0.0 m
 Fresnel Dip : 26.7 m
 Clearance : 59.5 m
 Clearance Factor : 2.23
 Propagation Loss : 119.7 dB
 Average Propagation Height : 61.9 m

Transmitting Power : 34.8 dBm
 Feeder Loss : 3.5 dB (35.0 m)
 Duplexer Loss : 2.5 dB
 Additional Loss : -5.3 dB
 Antenna : 17.0 dB (6Yagi-ro) 10.0 dB (Omni)



4.7

Site 1 : LIPEK		Site 2 : HURIS	
Ground Elevation :	30.0 m	Ground Elevation :	55.0 m
Antenna Height :	10.0 m	Antenna Height :	30.0 m
Frequency :	1.5 GHz		
Path Length :	4.7 Km(Sea)		
Critical Point :	2.0 Km		
Ridge Height :	40.0 m		
Tree Height :	10.0 m		
Fresnel Dip :	15.2 m		
Clearance :	8.8 m		
Clearance Factor :	0.58		
Propagation Loss	109.4 dB		
Average Propagation Height	28.7 m		
Transmitting Power	34.8 dBm		
Feeder Loss	1.5 dB (15.0 m)	3.5 dB (35.0 m)	
Duplexer Loss	2.5 dB	3.5 dB	
Additional Loss	0.0 dB		
Antenna	13.0 dB(6Yagi-st)	10.0 dB(Omni)	



Site 1 : HIPAGAT

Ground Elevation : 20.0 m
 Antenna Height : 20.0 m

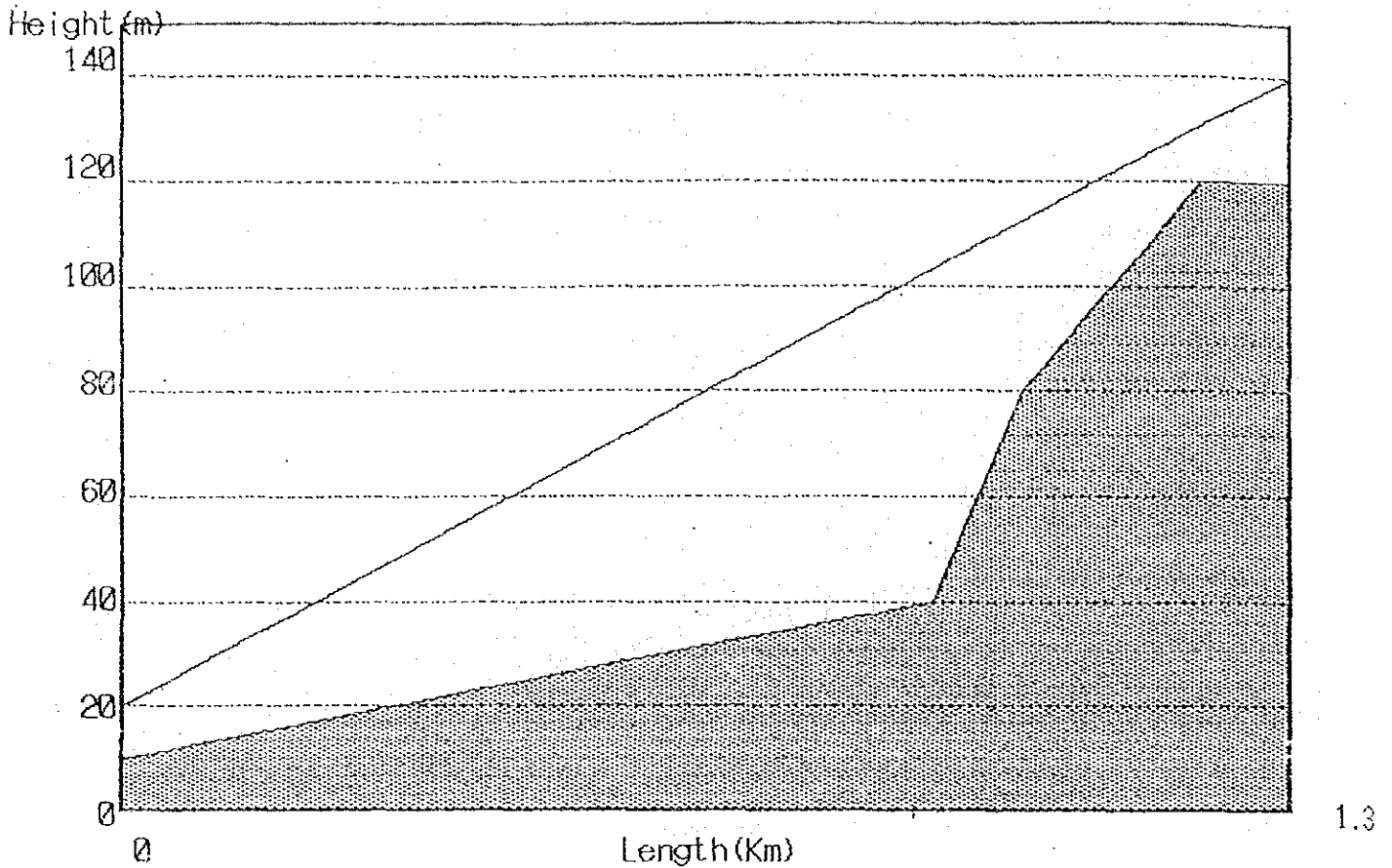
Site 2 : HURIS

Ground Elevation : 40.0 m
 Antenna Height : 30.0 m

Frequency : 1.5 GHz
 Path Length : 10.1 Km(Sea)
 Critical Point : 3.8 Km
 Ridge Height : 0.0 m
 Tree Height : 0.0 m
 Fresnel Dip : 21.8 m
 Clearance : 49.8 m
 Clearance Factor : 2.29

Propagation Loss : 116.0 dB
 Average Propagation Height : 51.3 m

Transmitting Power	34.8 dBm	
Feeder Loss	2.5 dB (25.0 m)	3.5 dB (35.0 m)
Duplexer Loss	2.5 dB	3.5 dB
Additional Loss	0.0 dB	
Antenna	13.0 dB(6Yagi-st)	10.0 dB(Omni)



Site 1 : PALIPAL

Ground Elevation : 10.0 m

Antenna Height : 10.0 m

Frequency : 450.0 MHz

Path Length : 1.3 Km(Sea)

Critical Point : 1.2 Km

Ridge Height : 120.0 m

Tree Height : 10.0 m

Fresnel Dip : 7.8 m

Clearance : 0.8 m

Clearance Factor : 0.10

Path Loss 103.6 dB

Average Propagation Height 32.3 m

Transmitting Power 30.0 dBm

Feeder Loss 1.8 dB (15.0 m) 4.2 dB (35.0 m)

Duplexer Loss 2.5 dB 2.5 dB

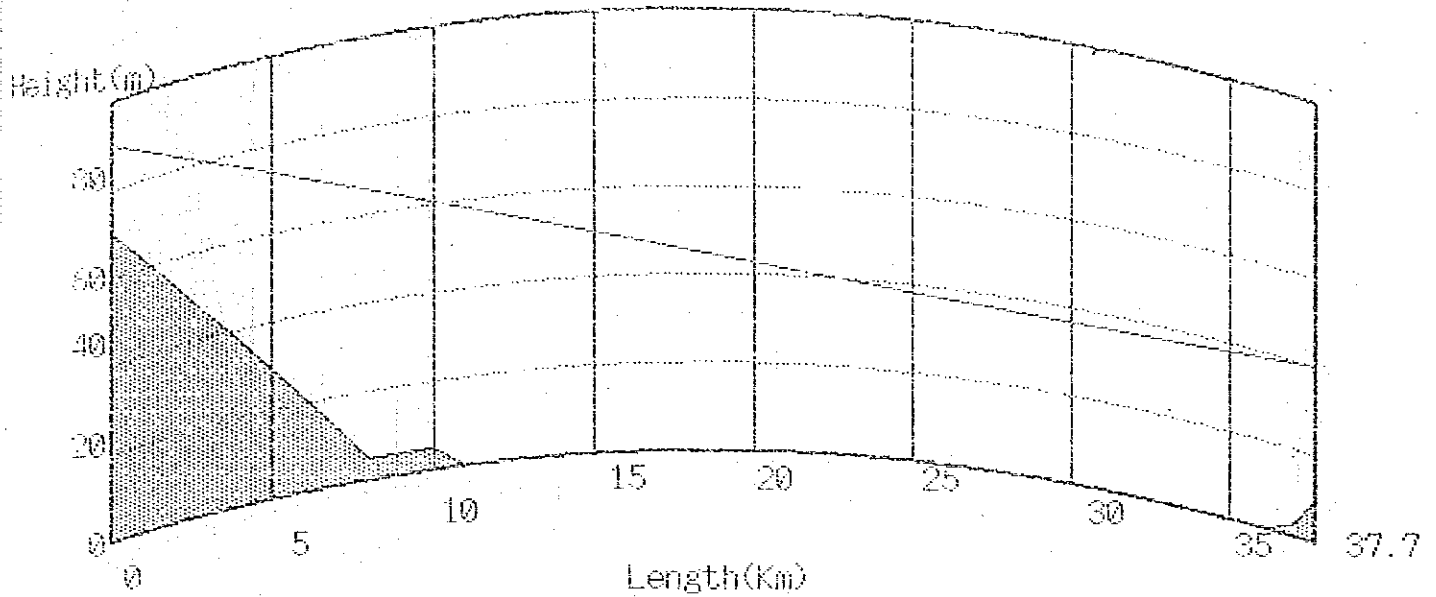
Additional Loss 0.0 dB

Antenna 14.0 dB(Yagi-12) 14.0 dB(Yagi-12)

Site 2 : DUKE OF YOKE

Ground Elevation : 120.0 m

Antenna Height : 20.0 m



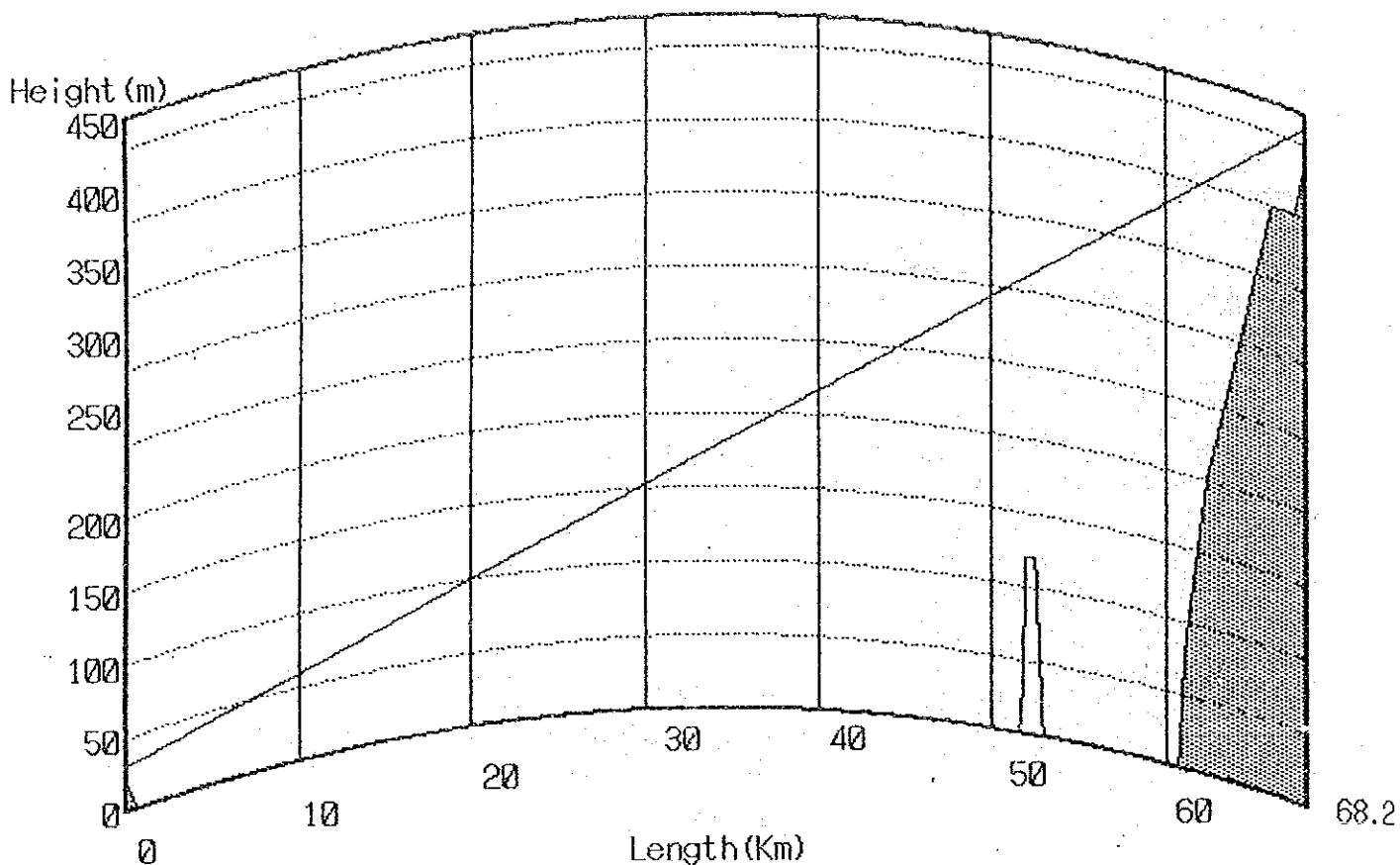
Site 1 : TASKUL

Ground Elevation : 70.0 m
 Antenna Height : 20.0 m

Site 2 : KAVIENG

Ground Elevation : 10.0 m
 Antenna Height : 30.0 m

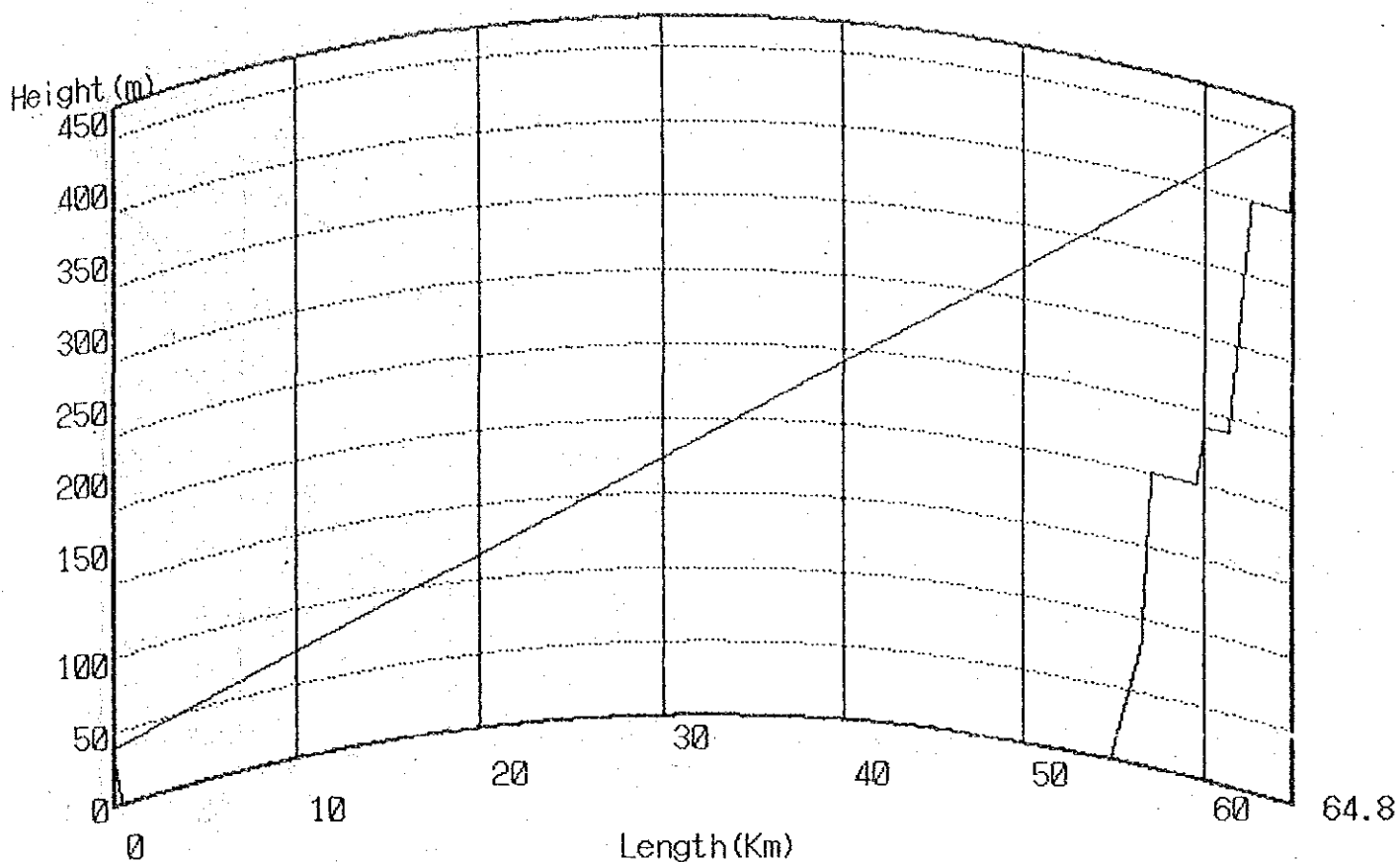
Frequency : 450.0 MHz
 Path Length : 37.7 Km(Sea)
 Critical Point : 24.8 Km
 Ridge Height : 0.0 m
 Tree Height : 0.0 m
 Fresnel Dip : 75.3 m
 Clearance : 38.3 m
 Clearance Factor : 0.51
 Path Loss : 99.8 dB
 Average Propagation Height : 43.0 m
 Transmitting Power : 40.0 dBm
 Feeder Loss : 3.0 dB (25.0 m) 6.0 dB (50.0 m)
 Duplexer Loss : 2.5 dB 2.5 dB
 Additional Loss : 0.0 dB
 Antenna : 14.0 dB(Yagi-12) 14.0 dB(Yagi-12)



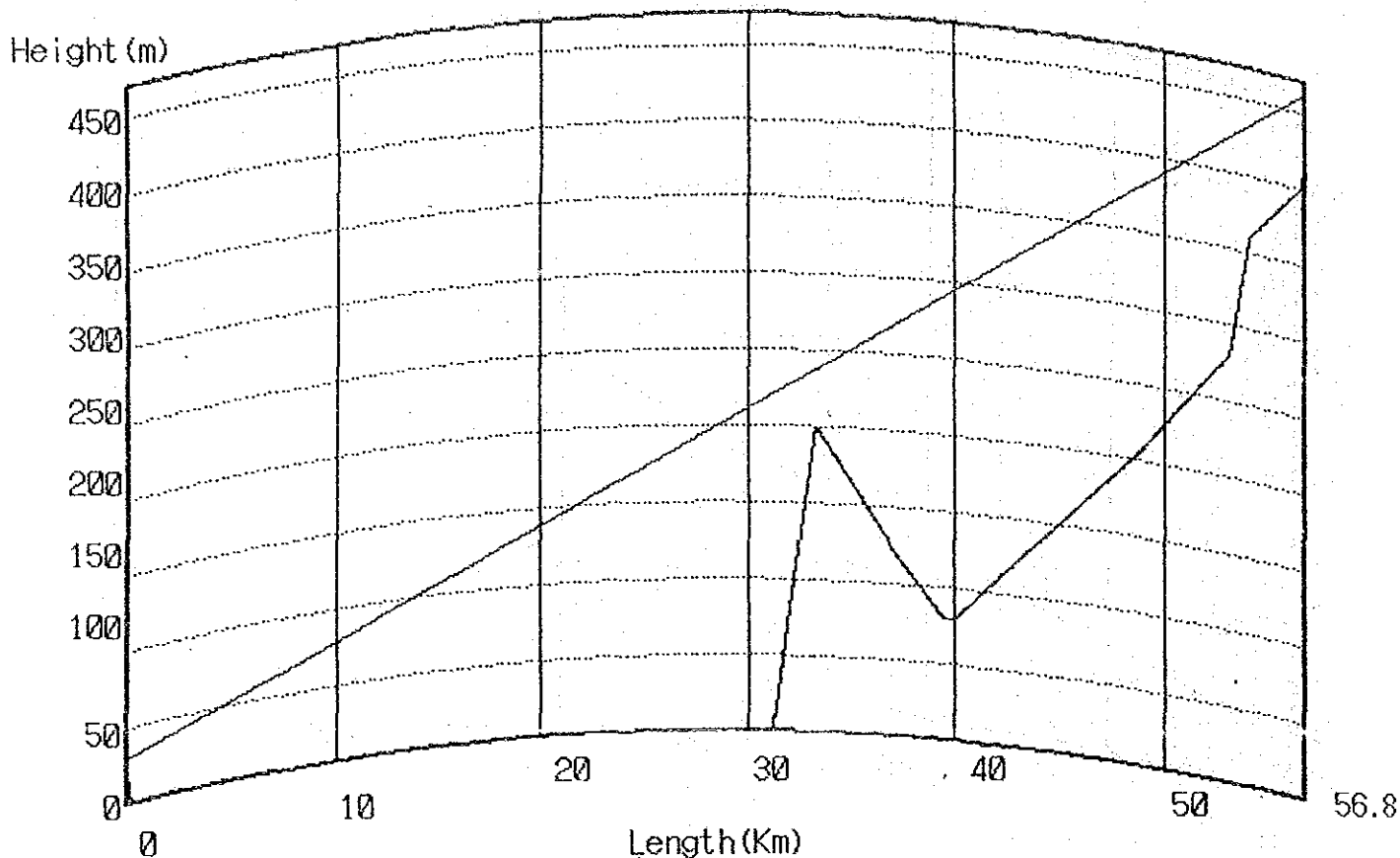
Site 1 : KABANUT
 Ground Elevation : 20.0 m
 Antenna Height : 20.0 m

Site 2 : TOMAVATUR
 Ground Elevation : 440.0 m
 Antenna Height : 22.0 m

Frequency : 150.0 MHz
 Path Length : 68.2 Km (Sea)
 Critical Point : 0.3 Km
 Ridge Height : 10.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 24.4 m
 Clearance : 10.7 m
 Clearance Factor : 0.44
 Path Loss : 103.2 dB
 Average Propagation Height 166.6 m
 Transmitting Power 40.0 dBm
 Feeder Loss 1.6 dB (25.0 m) 2.3 dB (35.0 m)
 Duplexer Loss 2.5 dB 2.5 dB
 Additional Loss 0.0 dB
 Antenna 12.0 dB (8Yagi-si) 12.0 dB (8Yagi-si)



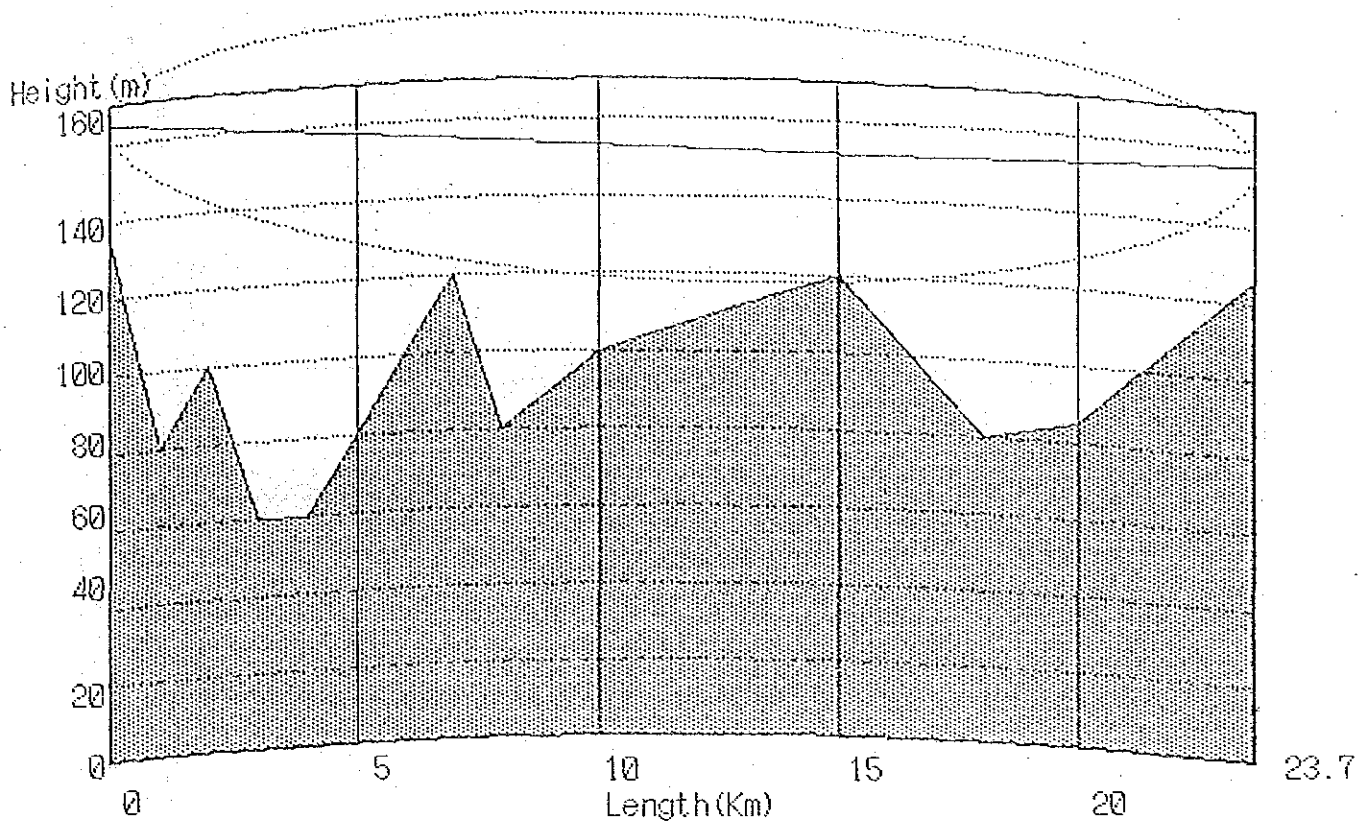
Site 1 : KABAHON	Site 2 : TOMAVATUR
Ground Elevation : 30.0 m	Ground Elevation : 440.0 m
Antenna Height : 20.0 m	Antenna Height : 22.0 m
Frequency : 150.0 MHz	
Path Length : 64.8 Km(Sea)	
Critical Point : 62.5 Km	
Ridge Height : 400.0 m	
Tree Height : 10.0 m	
Fresnel Dip : 66.6 m	
Clearance : 28.6 m	
Clearance Factor : 0.43	
Path Loss : 102.0 dB	
Average Propagation Height 174.7 m	
Transmitting Power 40.0 dBm	
Feeder Loss 1.6 dB (25.0 m)	2.3 dB (35.0 m)
Duplexer Loss 2.5 dB	2.5 dB
Additional Loss 0.0 dB	
Antenna 12.0 dB(8Yagi-si)	12.0 dB(8Yagi-si)



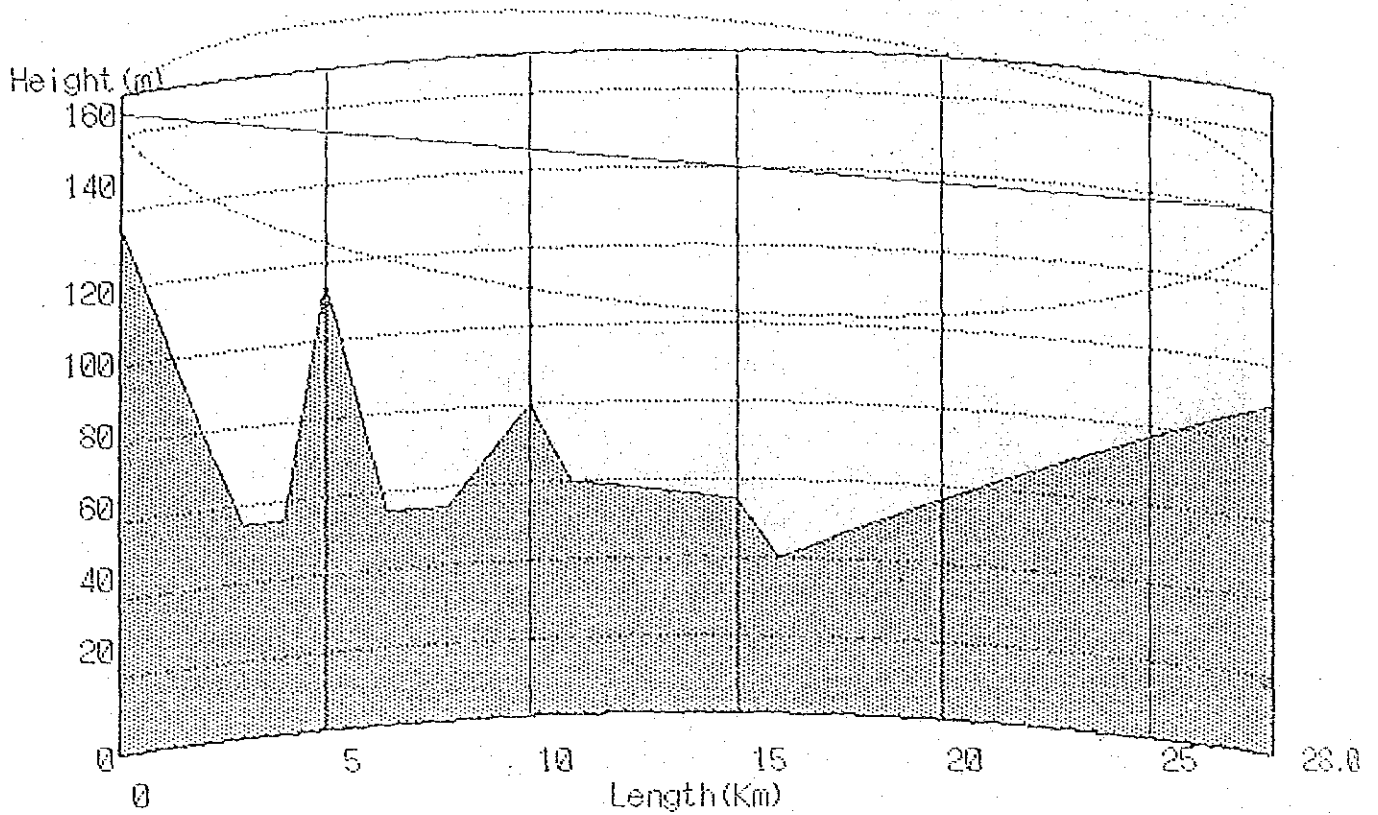
Site 1 : KAIT	Site 2 : TOMAVATUR
Ground Elevation : 20.0 m	Ground Elevation : 440.0 m
Antenna Height : 20.0 m	Antenna Height : 22.0 m
Frequency : 150.0 MHz	
Path Length : 56.8 Km(Sea)	
Critical Point : 33.3 Km	
Ridge Height : 200.0 m	
Tree Height : 10.0 m	
Fresnel Dip : 166.0 m	
Clearance : 27.3 m	
Clearance Factor : 0.16	
Path Loss : 104.7 dB	
Average Propagation Height 132.2 m	
Transmitting Power 40.0 dBm	
Feeder Loss 1.6 dB (25.0 m)	2.3 dB (35.0 m)
Duplexer Loss 2.5 dB	2.5 dB
Additional Loss 0.0 dB	
Antenna 12.0 dB(8Yagi-si)	12.0 dB(8Yagi-si)

WESTERN PROVINCE

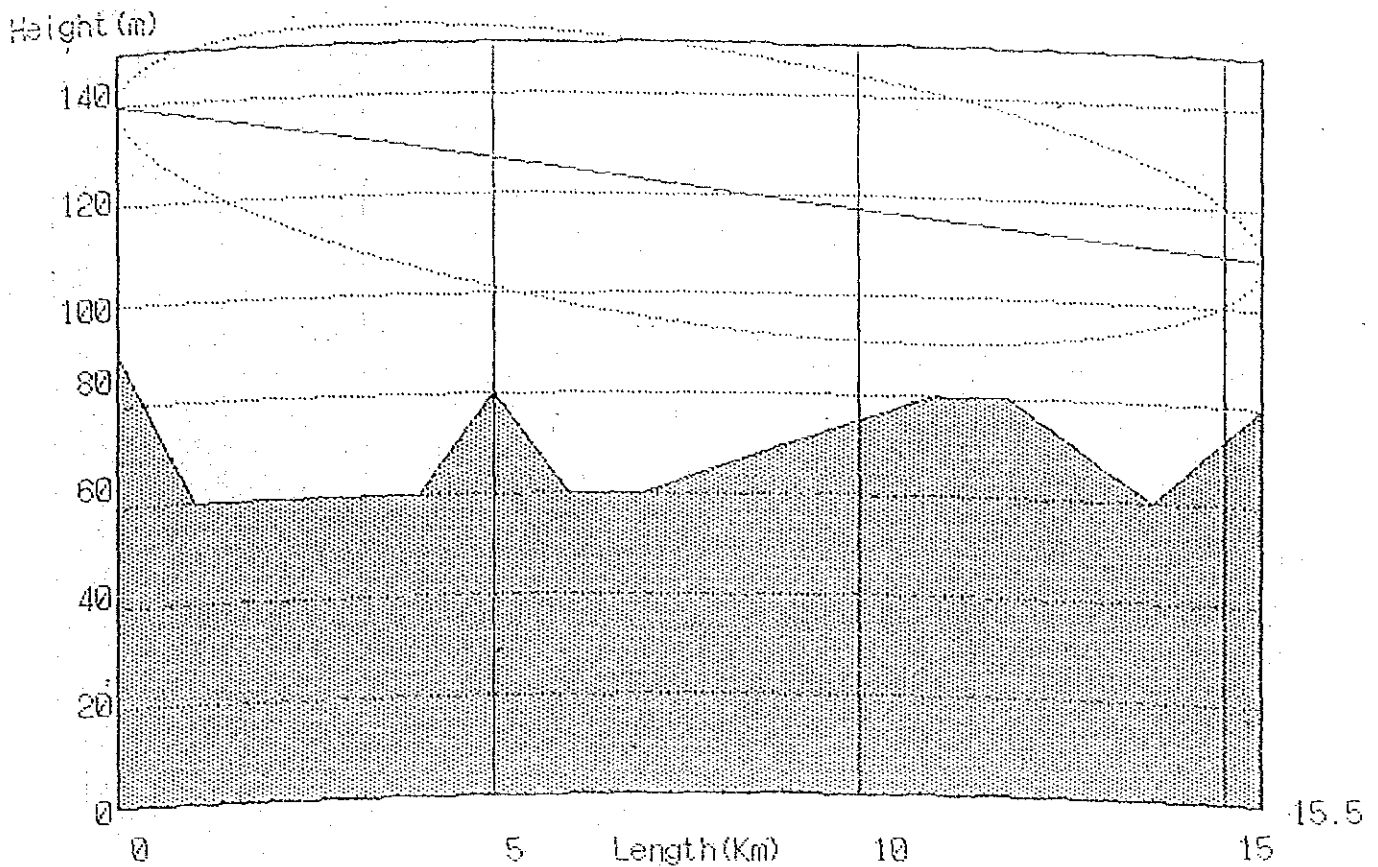
Atkamba	~	Kiunga	(1.5GHZ)	-----	4 0
Atkamba	~	Runginae	(")	-----	4 1
Runginae	~	Matkomrae	(")	-----	4 2
Matkomrae	~	Kungim	(")	-----	4 3
Ningerum	~	Mt. Robinson	(450MHZ)	-----	4 4
Suabi	~	Mt. Karoma	(")	-----	4 5
Debepare	~	Mt. Karoma	(")	-----	4 6
Mogulu	~	Mt. Karoma	(")	-----	4 7
Wipim	~	Daru	(150MHZ)	-----	4 8



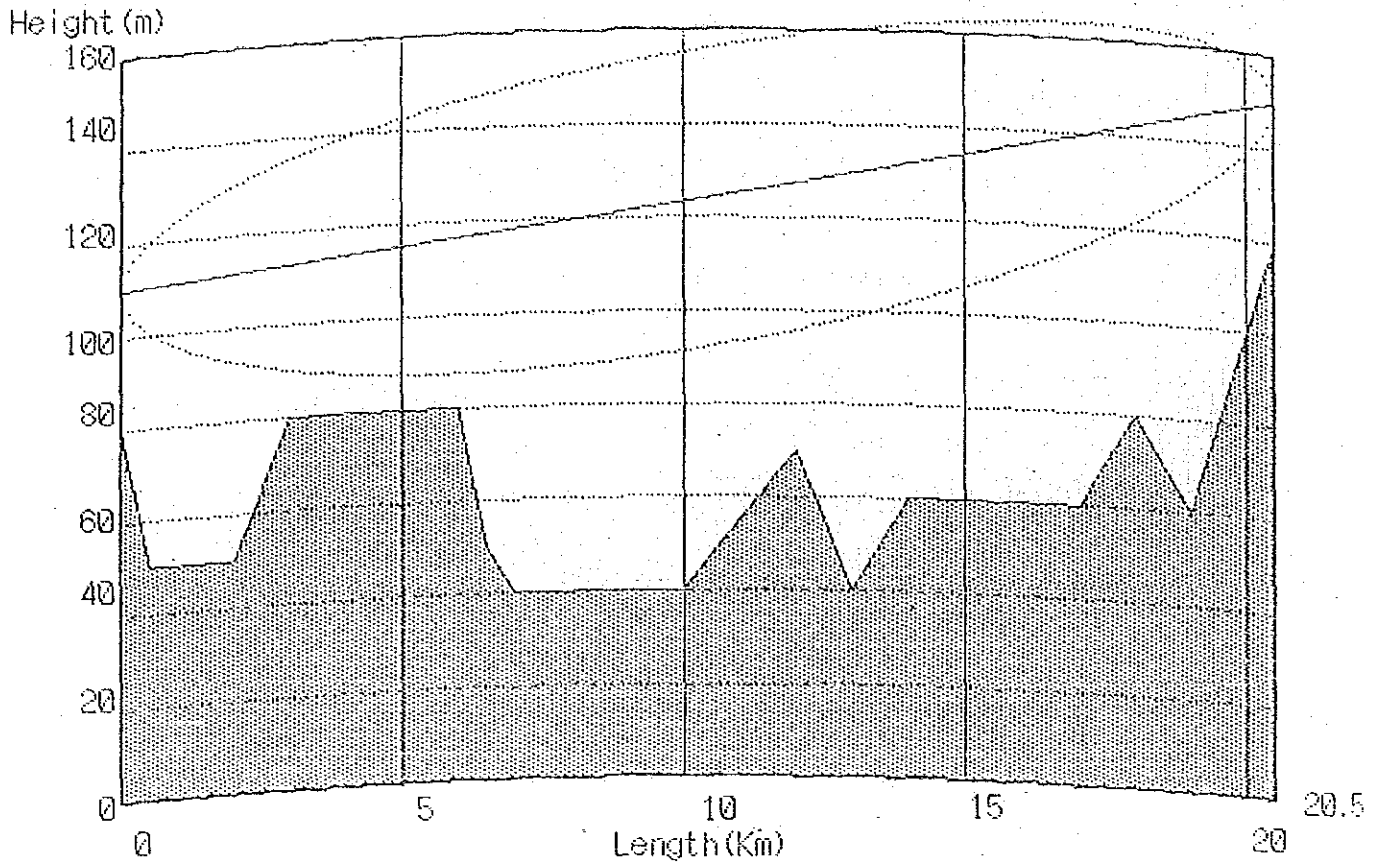
Site 1 : ATKAMBA	Site 2 : KIUNGA
Ground Elevation : 135.0 m	Ground Elevation : 126.0 m
Antenna Height : 30.0 m	Antenna Height : 30.0 m
Frequency : 1.5 GHz	
Path Length : 23.7 Km(Mountain)	
Critical Point : 15.0 Km	
Ridge Height : 120.0 m	
Tree Height : 10.0 m	
Fresnel Dip : 33.2 m	
Clearance : 21.6 m	
Clearance Factor : 0.65	
Propagation Loss 123.4 dB	
Average Propagation Height 59.2 m	
Transmitting Power 34.8 dBm	
Feeder Loss 3.5 dB (35.0 m)	3.5 dB (35.0 m)
Duplexer Loss 2.5 dB	3.5 dB
Additional Loss -5.3 dB	
Antenna 32.0 dB(PARA 4M)	32.0 dB(PARA 4M)



Site 1 : ATKAMBA		Site 2 : RUNGINAE	
Ground Elevation :	135.0 m	Ground Elevation :	90.0 m
Antenna Height :	30.0 m	Antenna Height :	50.0 m
Frequency :	1.5 GHz		
Path Length :	28.0 Km(Mountain)		
Critical Point :	5.0 Km		
Ridge Height :	115.0 m		
Tree Height :	10.0 m		
Fresnel Dip :	28.7 m		
Clearance :	28.8 m		
Clearance Factor :	1.00		
Propagation Loss	124.9 dB		
Average Propagation Height	78.3 m		
Transmitting Power	34.8 dBm		
Feeder Loss	3.5 dB (35.0 m)	5.5 dB (55.0 m)	
Duplexer Loss	2.5 dB	3.5 dB	
Additional Loss	-6.8 dB		
Antenna	23.0 dB(PARA-1.2)	26.0 dB(PARA-1.8)	



Site 1 : RUNGINAE	Site 2 : MATKOMRAE
Ground Elevation : 90.0 m	Ground Elevation : 80.0 m
Antenna Height : 50.0 m	Antenna Height : 30.0 m
Frequency : 1.5 GHz	
Path Length : 15.5 Km(Mountain)	
Critical Point : 11.0 Km	
Ridge Height : 80.0 m	
Tree Height : 10.0 m	
Fresnel Dip : 25.3 m	
Clearance : 25.8 m	
Clearance Factor : 1.02	
Propagation Loss 119.7 dB	
Average Propagation Height 54.5 m	
Transmitting Power 34.8 dBm	
Feeder Loss 5.5 dB (55.0 m)	3.5 dB (35.0 m)
Duplexer Loss 2.5 dB	3.5 dB
Additional Loss -6.8 dB	
Antenna 13.0 dB(6Yagi-st)	23.0 dB(Para-1.2)



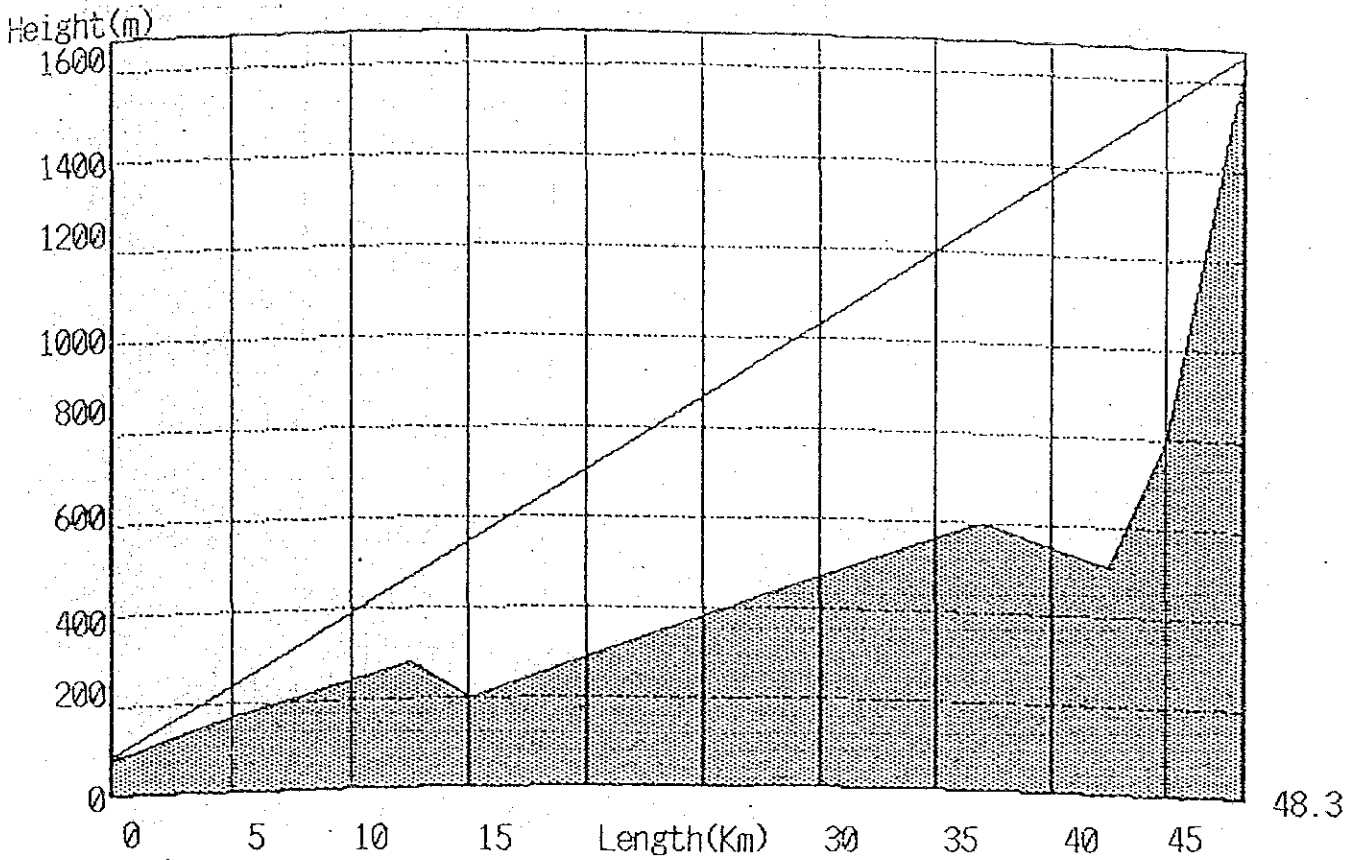
Site 1 : MATKOMRAE

Ground Elevation : 80.0 m
 Antenna Height : 30.0 m

Site 2 : KUNGIM

Ground Elevation : 120.0 m
 Antenna Height : 30.0 m

Frequency : 1.5 GHz
 Path Length : 20.5 Km(Mountain)
 Critical Point : 5.7 Km
 Ridge Height : 80.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 28.7 m
 Clearance : 26.2 m
 Clearance Factor : 0.91
 Propagation Loss 122.2 dB
 Average Propagation Height 65.0 m
 Transmitting Power 34.8 dBm
 Feeder Loss 3.5 dB (35.0 m) 3.5 dB (35.0 m)
 Duplexer Loss 2.5 dB 3.5 dB
 Additional Loss -5.3 dB
 Antenna 17.0 dB(6Yagi-ro) 23.0 dB(Para-1.2)



Site 1 : NINGERUM

Ground Elevation : 80.0 m

Antenna Height : 10.0 m

Site 2 : MT.ROBINSON

Ground Elevation : 1,642.8 m

Antenna Height : 20.0 m

Frequency : 450.0 MHz

Path Length : 48.3 Km(Inland)

Critical Point : 5.0 Km

Ridge Height : 170.0 m

Tree Height : 10.0 m

Fresnel Dip : 54.7 m

Clearance : 60.1 m

Clearance Factor : 1.10

Path Loss : 107.9 dB

Average Propagation Height : 433.4 m

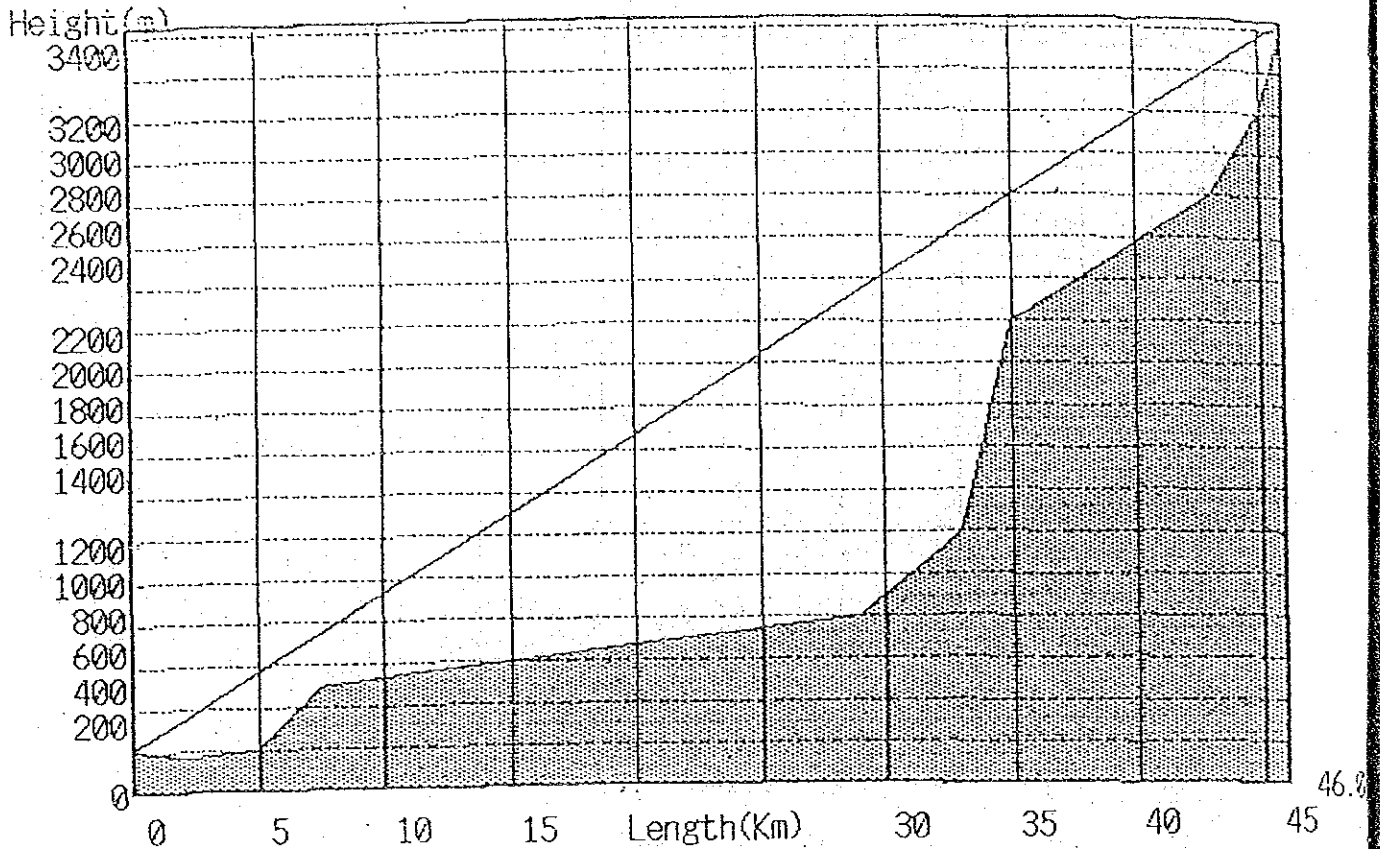
Transmitting Power : 30.0 dBm

Feeder Loss : 1.8 dB (15.0 m) 3.0 dB (25.0 m)

Duplexer Loss : 2.5 dB 2.5 dB

Additional Loss : 0.0 dB

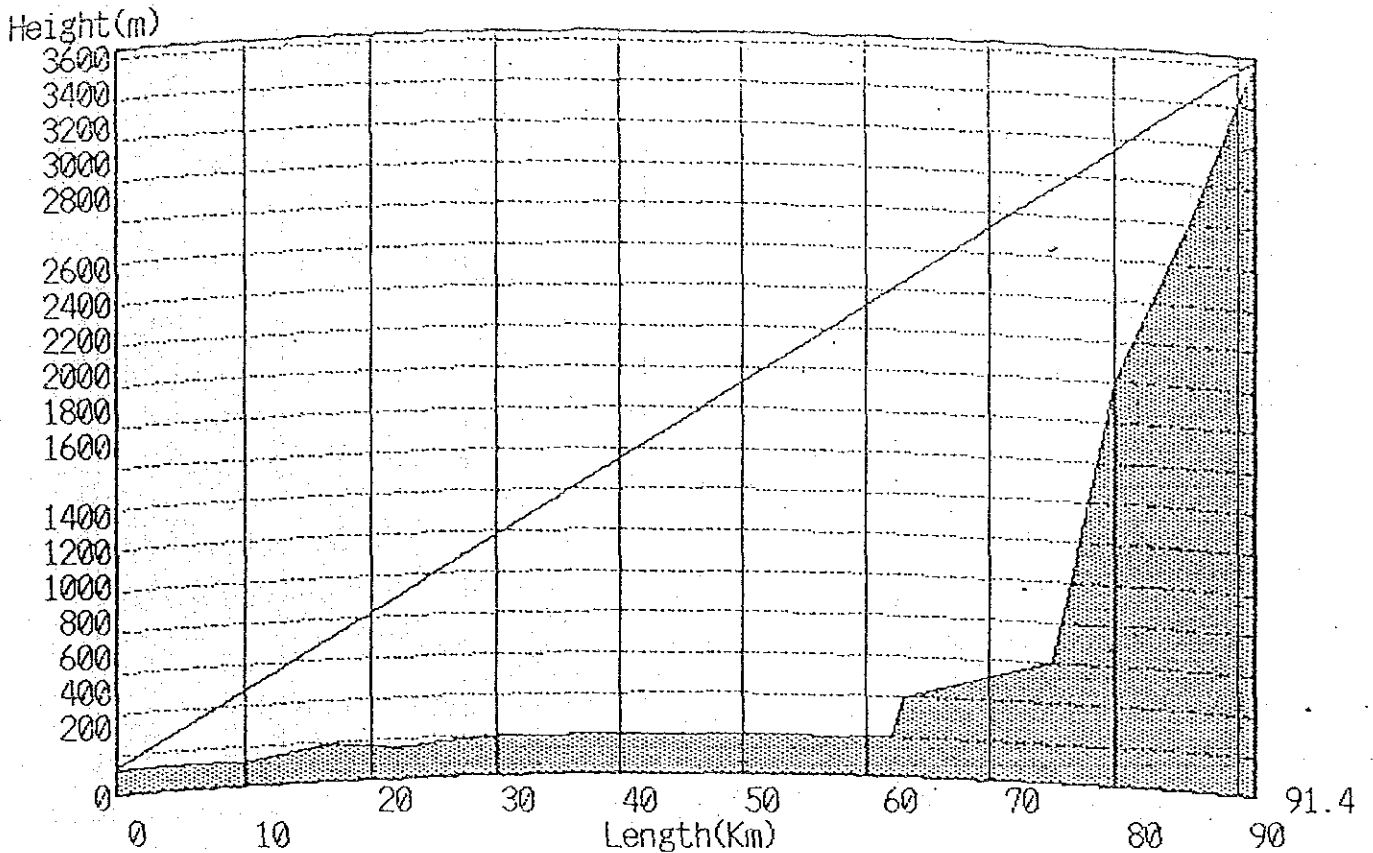
Antenna : 14.0 dB(Yagi-12) 14.0 dB(Yagi-12)



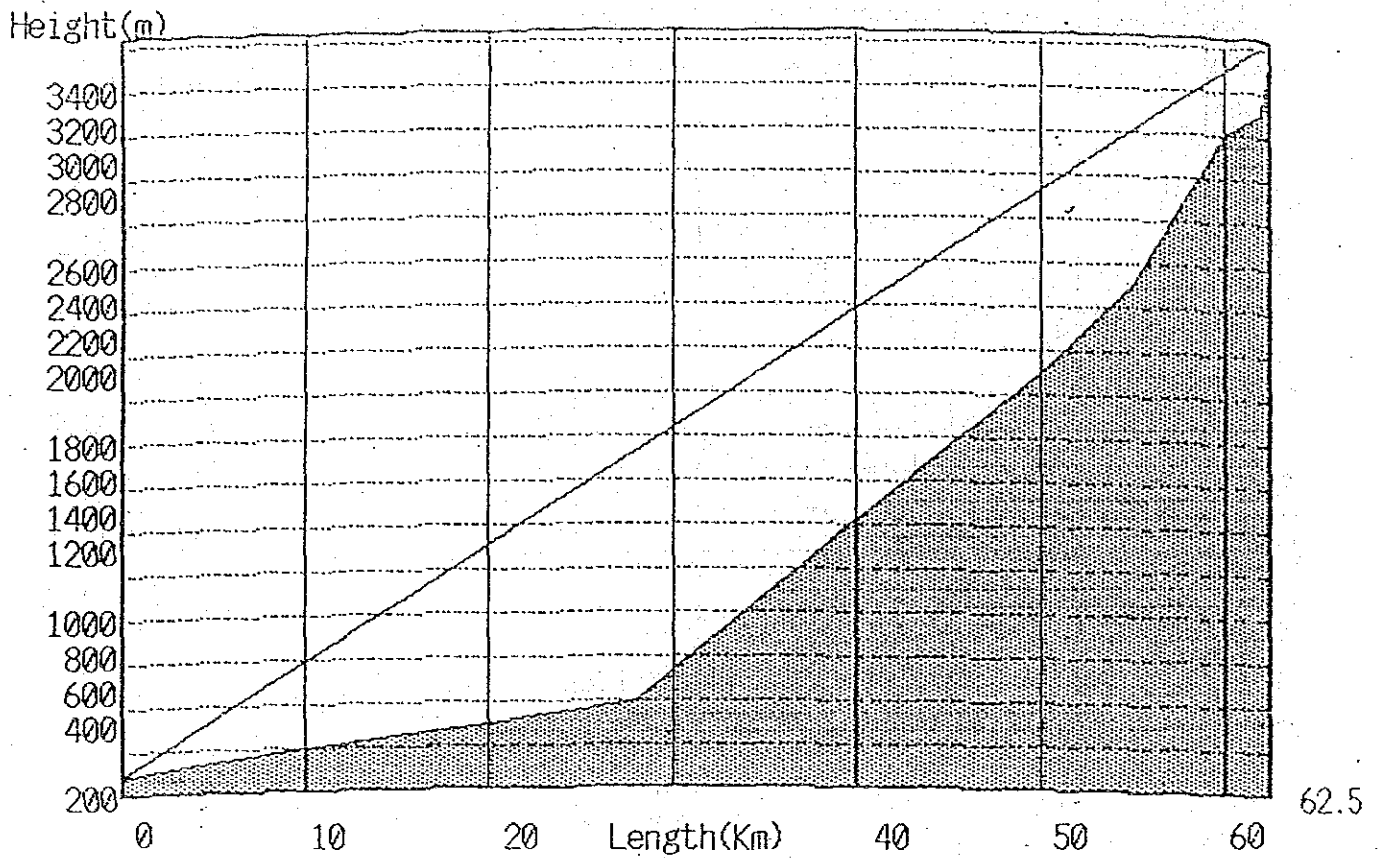
Site 1 : SUABI
 Ground Elevation : 200.0 m
 Antenna Height : 10.0 m

Site 2 : MT.KAROMA
 Ground Elevation : 3,620.5 m
 Antenna Height : 15.0 m

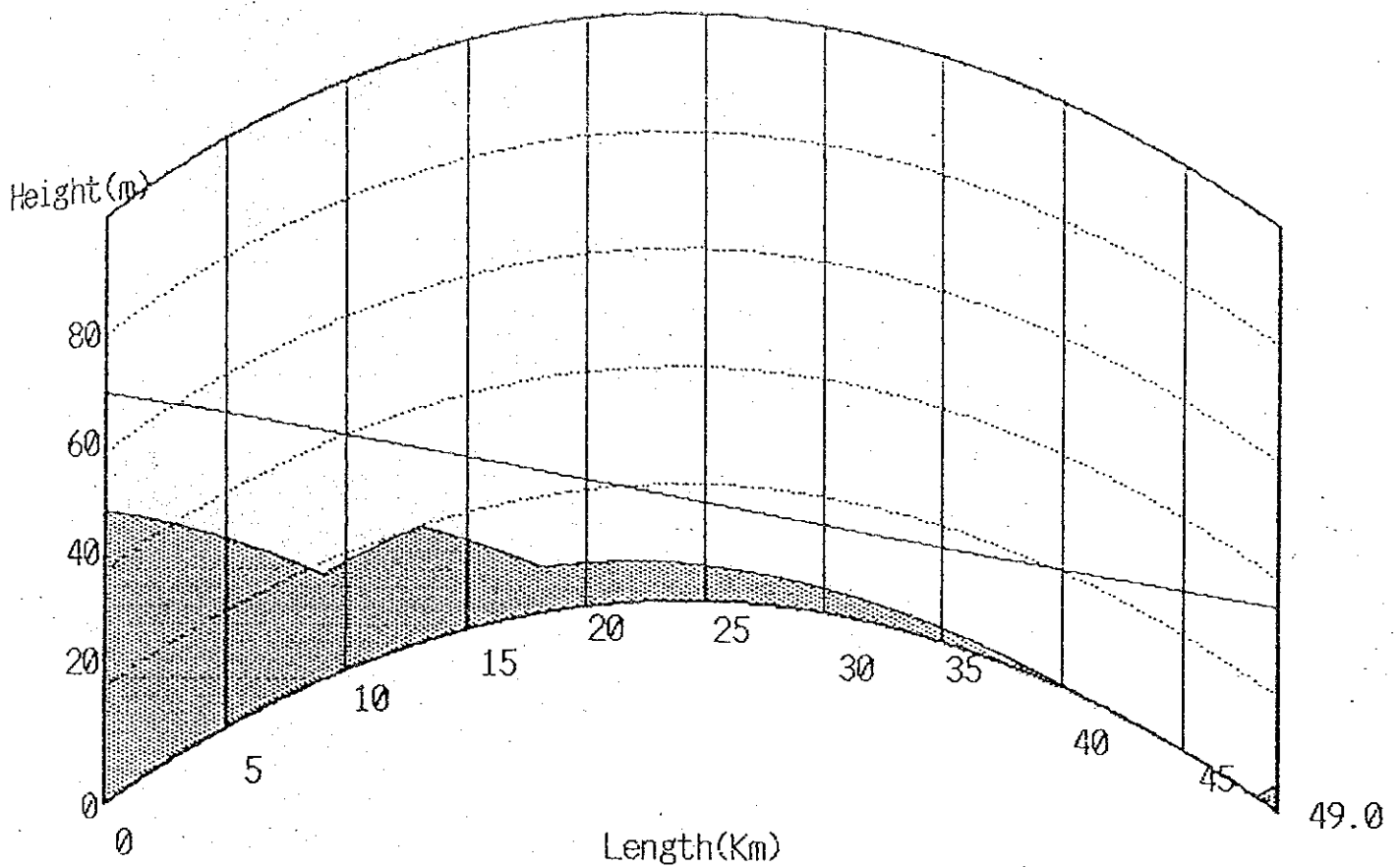
Frequency : 450.0 MHz
 Path Length : 46.0 Km(Inland)
 Critical Point : 7.5 Km
 Ridge Height : 500.0 m
 Tree Height : 10.0 m
 Fresnel Dip : 64.7 m
 Clearance : 241.5 m
 Clearance Factor : 3.73
 Path Loss 107.4 dB
 Average Propagation Height 775.7 m
 Transmitting Power 30.0 dBm
 Feeder Loss 1.8 dB (15.0 m) 2.4 dB (20.0 m)
 Duplexer Loss 2.5 dB 2.5 dB
 Additional Loss 0.0 dB
 Antenna 14.0 dB(Yagi-12) 14.0 dB(Yagi-12)



Site 1 : DEBEPARE	Site 2 : MT. KAROMA
Ground Elevation : 130.0 m	Ground Elevation : 3,620.5 m
Antenna Height : 10.0 m	Antenna Height : 15.0 m
Frequency : 450.0 MHz	
Path Length : 91.4 Km(Inland)	
Critical Point : 91.1 Km	
Ridge Height : 3,579.5 m	
Tree Height : 10.0 m	
Fresnel Dip : 13.4 m	
Clearance : 34.3 m	
Clearance Factor : 2.56	
Path Loss 113.4 dB	
Average Propagation Height 1,202.2 m	
Transmitting Power 40.0 dBm	
Feeder Loss 1.2 dB (15.0 m)	2.4 dB (20.0 m)
Duplexer Loss 2.5 dB	2.5 dB
Additional Loss 0.0 dB	
Antenna 14.0 dB(Yagi-12)	14.0 dB(Yagi-12)



Site 1 : MOGULU	Site 2 : MT.KAROMA
Ground Elevation : 280.0 m	Ground Elevation : 3,620.5 m
Antenna Height : 10.0 m	Antenna Height : 15.0 m
Frequency : 450.0 MHz	
Path Length : 62.5 Km(Inland)	
Critical Point : 1.0 Km	
Ridge Height : 300.0 m	
Tree Height : 10.0 m	
Fresnel Dip : 25.6 m	
Clearance : 29.9 m	
Clearance Factor : 1.17	
Path Loss 110.1 dB	
Average Propagation Height 715.0 m	
Transmitting Power 40.0 dBm'	
Feeder Loss 1.8 dB (15.0 m)	2.4 dB (20.0 m)
Duplexer Loss 2.5 dB	2.5 dB
Additional Loss 0.0 dB	
Antenna 14.0 dB(Yagi-12)	14.0 dB(Yagi-12)



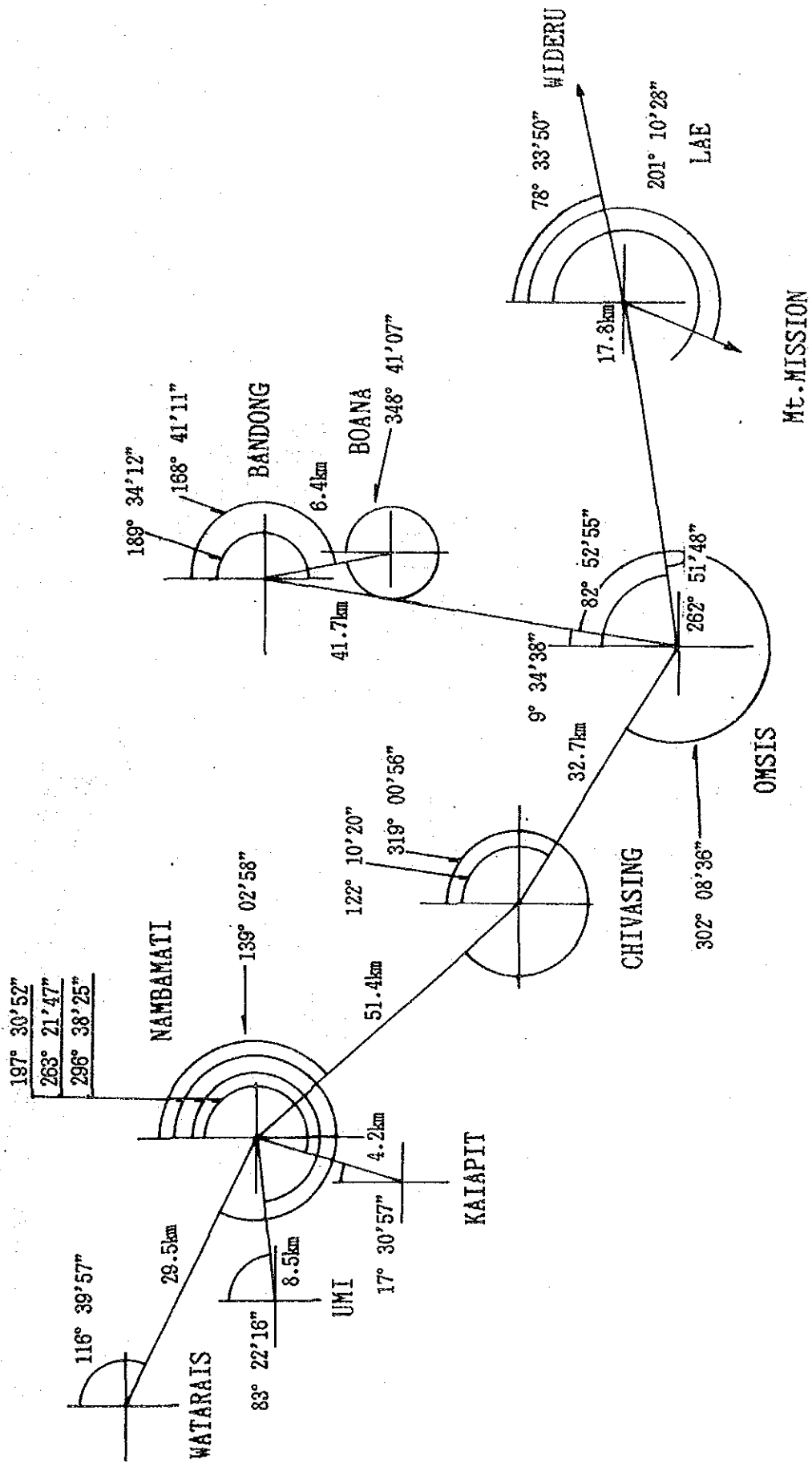
Site 1 : WIPIM		Site 2 : DARU	
Ground Elevation :	50.0 m	Ground Elevation	5.0 m
Antenna Height :	20.0 m	Antenna Height :	30.0 m
Frequency :	150.0 MHz		
Path Length :	49.0 Km(Sea)		
Critical Point :	27.8 Km		
Ridge Height :	5.3 m		
Tree Height :	10.0 m		
Fresnel Dip :	155.1 m		
Clearance :	0.3 m		
Clearance Factor :	0.00		
Path Loss :	125.4 dB		
Average Propagation Height	17.4 m		
Transmitting Power	40.0 dBm		
Feeder Loss	2.3 dB (35.0 m)	2.3 dB (35.0 m)	
Duplexer Loss	2.5 dB	2.5 dB	
Additional Loss	0.0 dB		
Antenna	14.5 dB(8Yagi-st)	14.5 dB(8Yagi-st)	

ANNEX 2

AZIMUTH ANGLE OF EACH SECTION

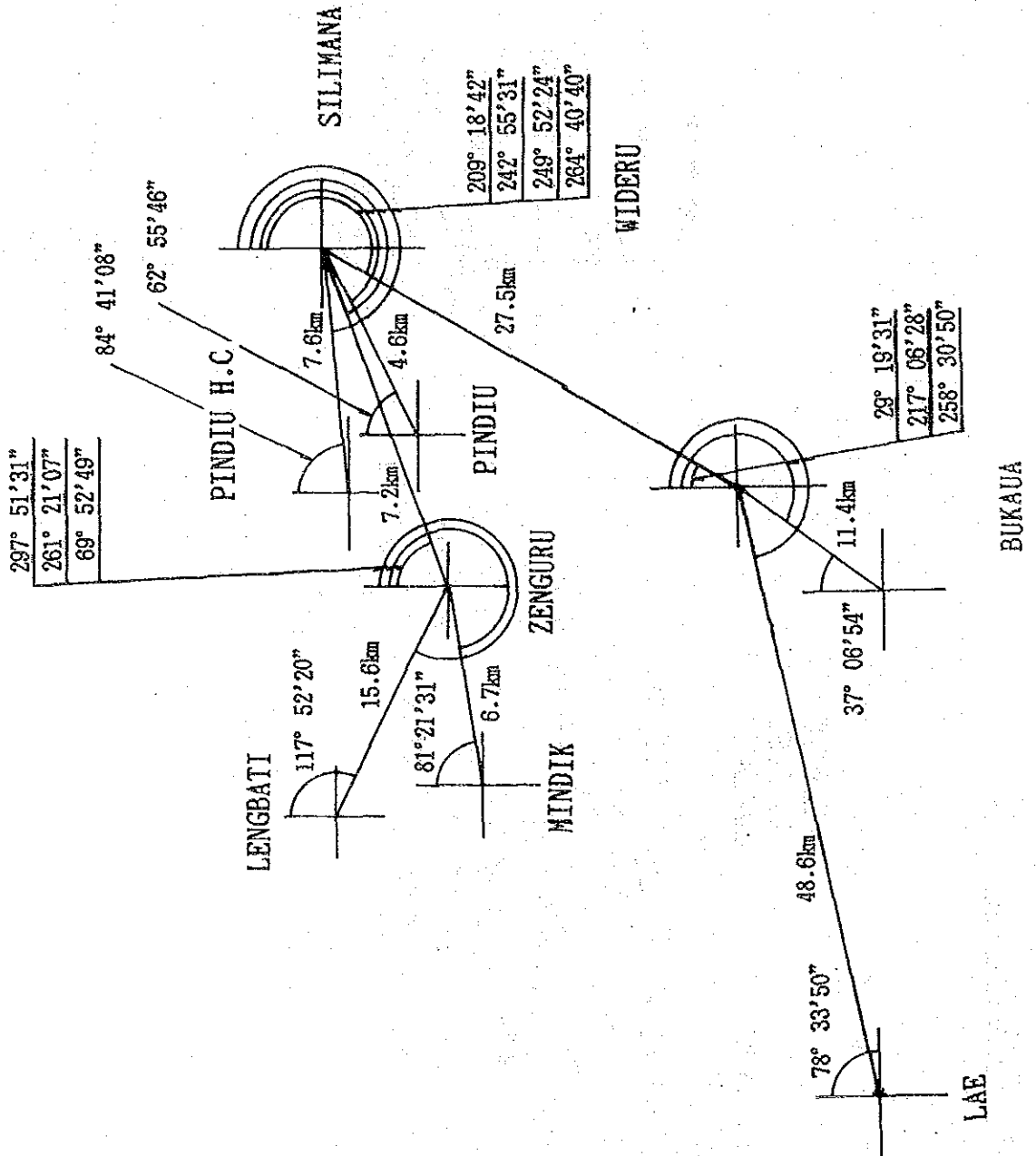
Morobe Province.....	1~3
New Ireland Province	4~5
Western Province	6~7

MOROBE PROVINCE(1/3)

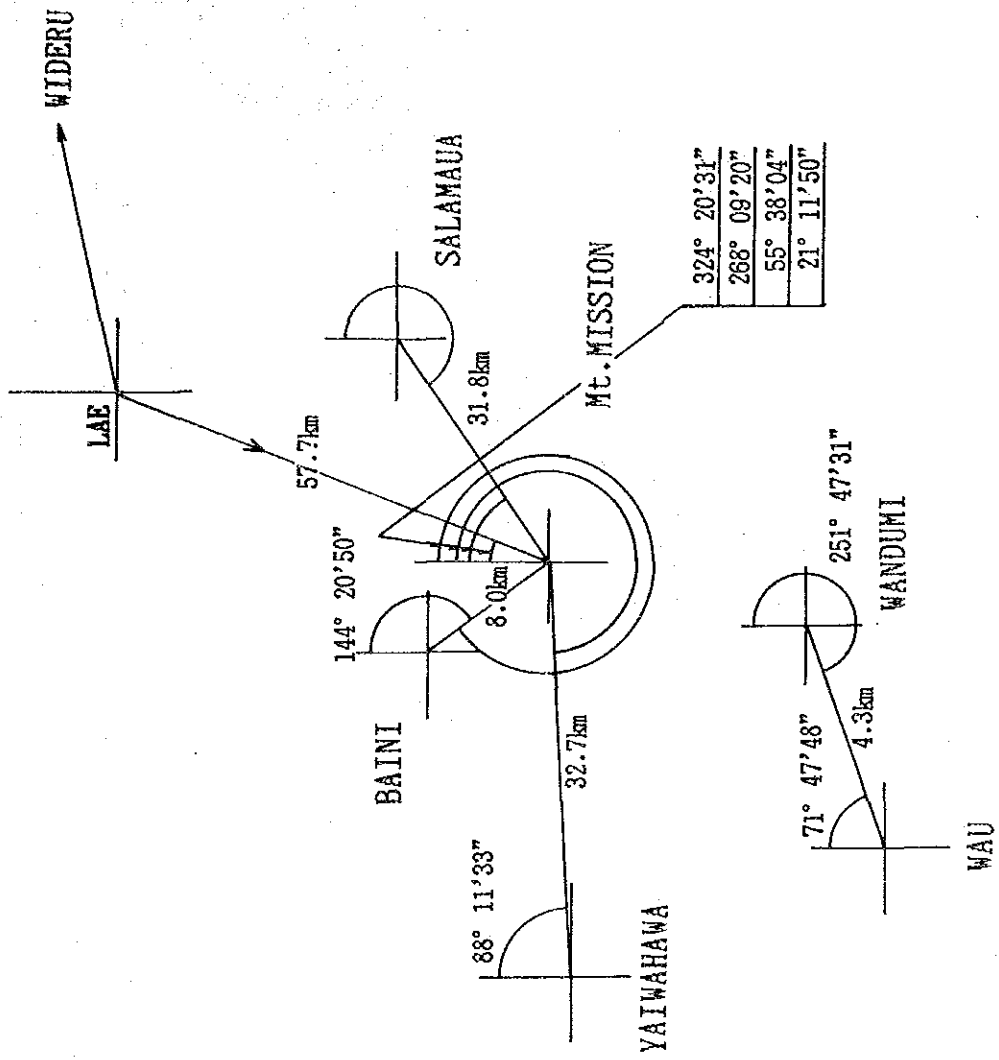


Annex-2-1

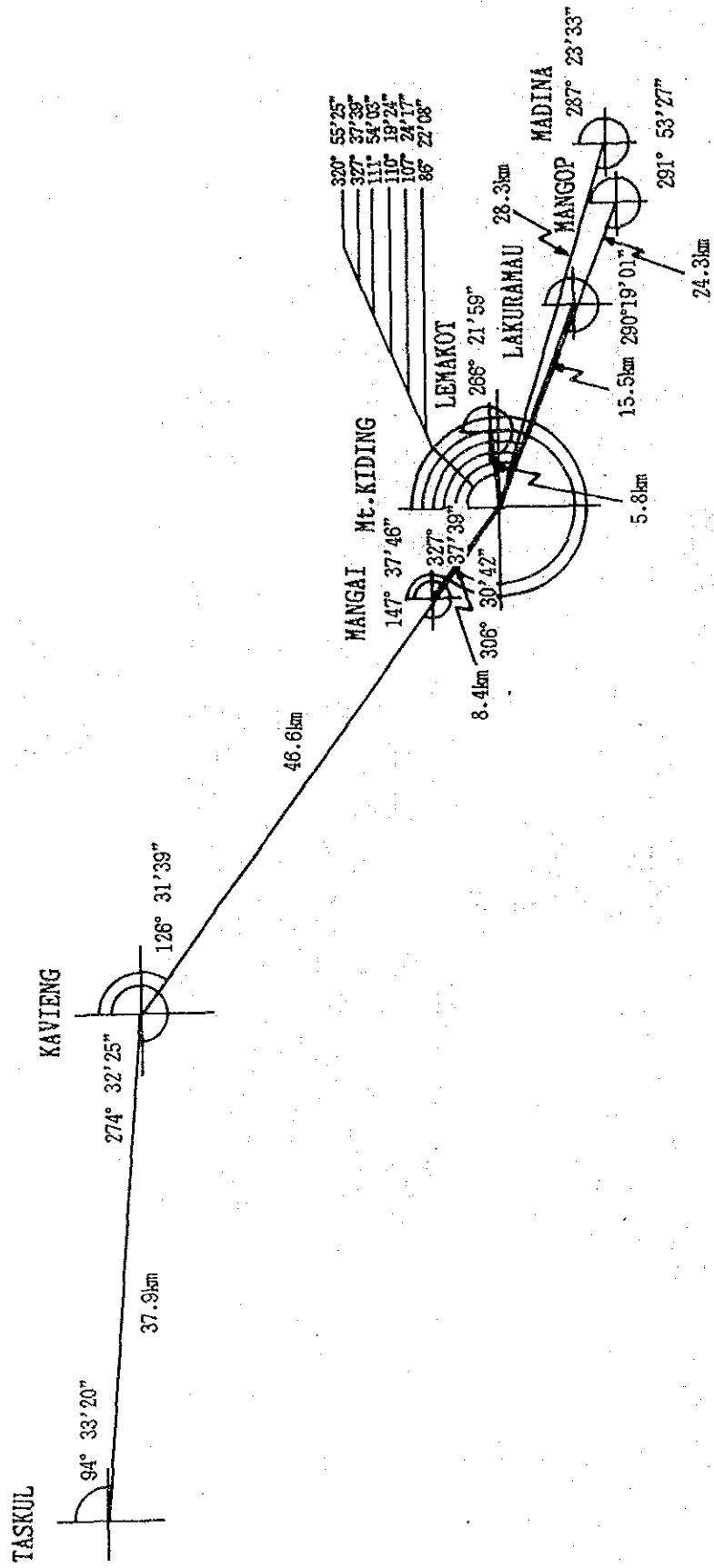
MOROBE PROVINCE(2/3)



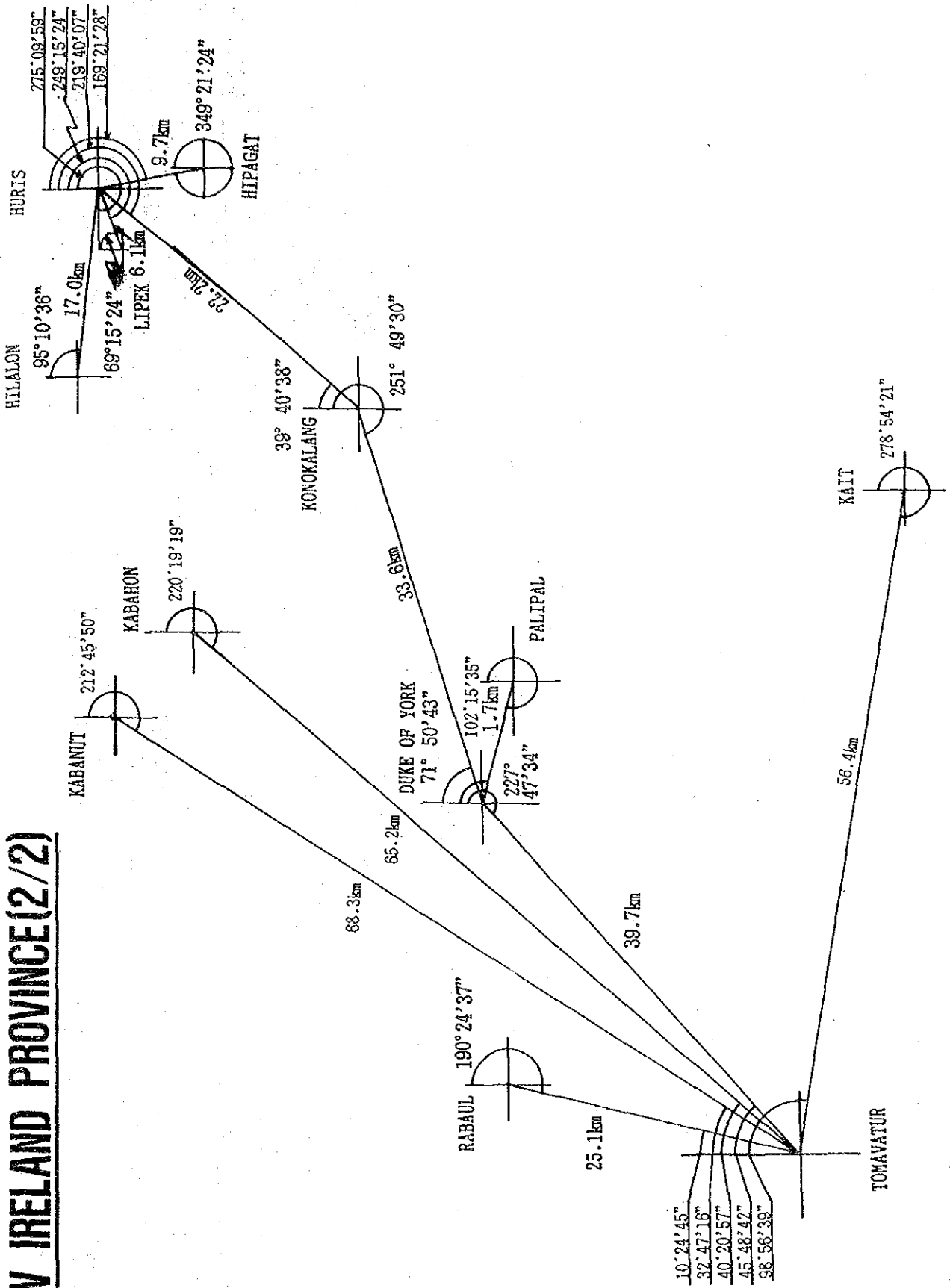
MOROBE PROVINCE(3/3)



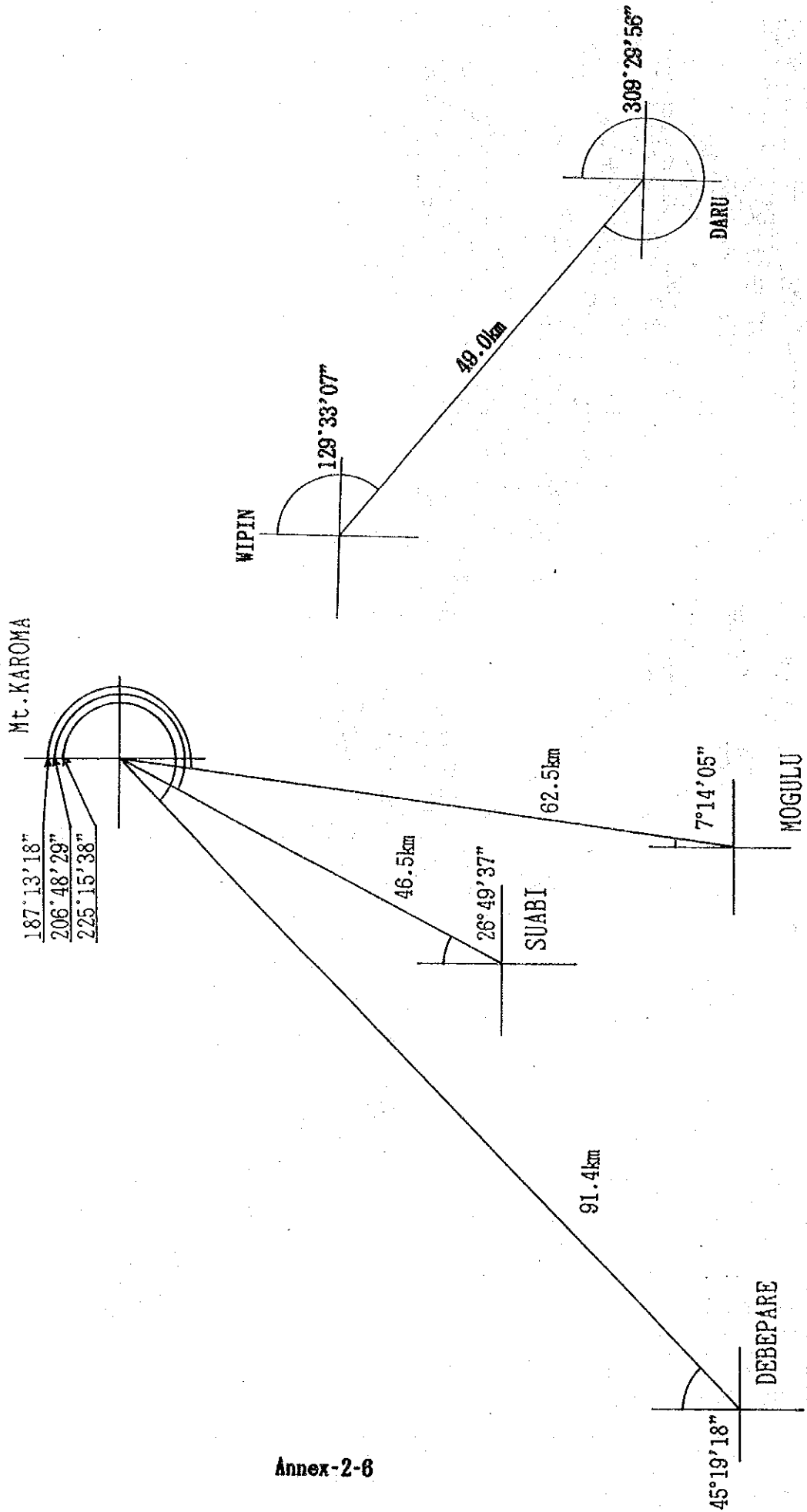
NEW IRELAND PROVINCE(1/2)



NEW IRELAND PROVINCE(2/2)



WESTERN PROVINCE(1/2)



WESTERN PROVINCE(2/2)

