

ERICSSON 

Dokument - Document

Blad - Sheet

1

Uppgjord - Prepared KI/ERA/T/U Jan-Erik Berg 75	Tfn - Telephone 72641 19	Datum - Date 1990-06-20	Rev A	Dokumentnr - Document no T/U 90:44
Godkänd - Approved	Kontr - Checked	Ert datum - Your date	Tillhör referens - File/reference	

Background material  
referring to SWEDEN-1  
Marogöte July 1990

## Sharing of spectrum between FPLMTS and fixed point-to-point links

### 1 Introduction

The frequency bands between 1 and 3 GHz considered for FPLMTS are today used for other purposes, among them fixed and mobile point-to-point links.

In this document a distance from the link is estimated, where no FPLMTS transmitters should exist in order to not give rise to an unacceptable interference level into a link.

### 2 Radio link

The following table shows an example of radio link systems at about 1800 MHz:

Fixed link bit rate	8 Mbit/s	34 Mbit/s
Receiver threshold at $10^{-6}$ BER	-86 dBm	-78 dBm
Minimum C/I	15 dB	20 dB
Fading margin for network planning	30 dB	30 dB

Datum - Date  
1990-06-20

Rev

Dokumentnr - Document no

T/U 90: 44

Radiation pattern envelope:

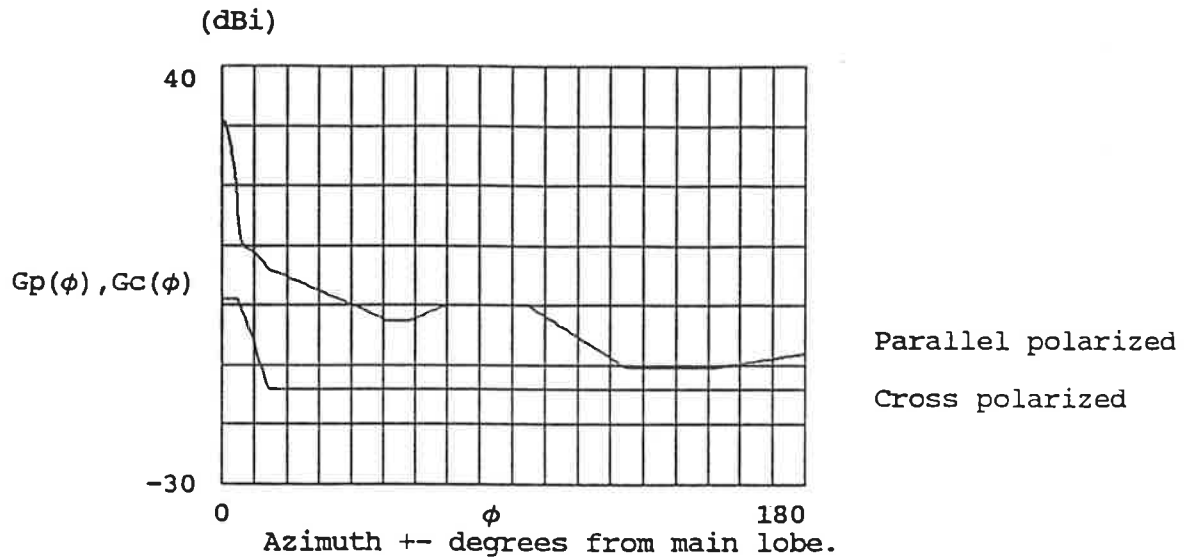


Fig 1 Example of used link antenna characteristic at 1800 MHz

### 3 FPLMTS

Three different scenarios are considered:

#### 1 Macrocell base stations

EIRP: 35 dBm  
Base antenna Height: 30 m  
Average distance between bases: 3 km

#### 2 Microcell stations

EIRP: 24 dBm  
Antenna Height: 1-5 m  
Average distance between stations: 250 m

#### 3 Picocell stations

EIRP: 17 dBm  
Average distance between stations: 100 m

Datum - Date 1990-06-20	Rev	Dokumentnr - Document no T/U 90: 44
----------------------------	-----	--

Two interference levels are considered: -85 dBm and -100 dBm.

The FPLMTS system is spread uniformly over the area.

The link antenna is either using vertical polarisation, that is parallell with FPLMTS, or horisontal, cross-polarisation.

4 Results

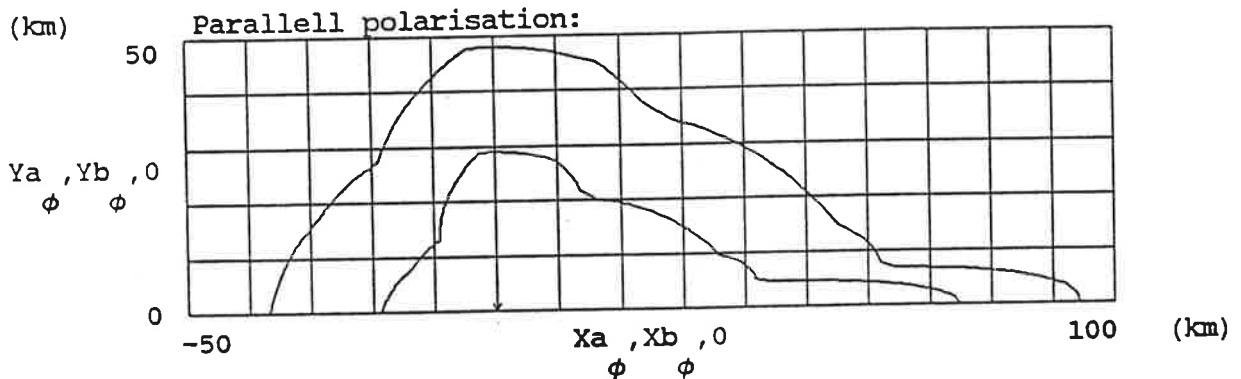


Fig 4.1 Macro cells. Parallell polarisation. The outer line describes the -100 dBm distance, and the other the -85 dBm distance.

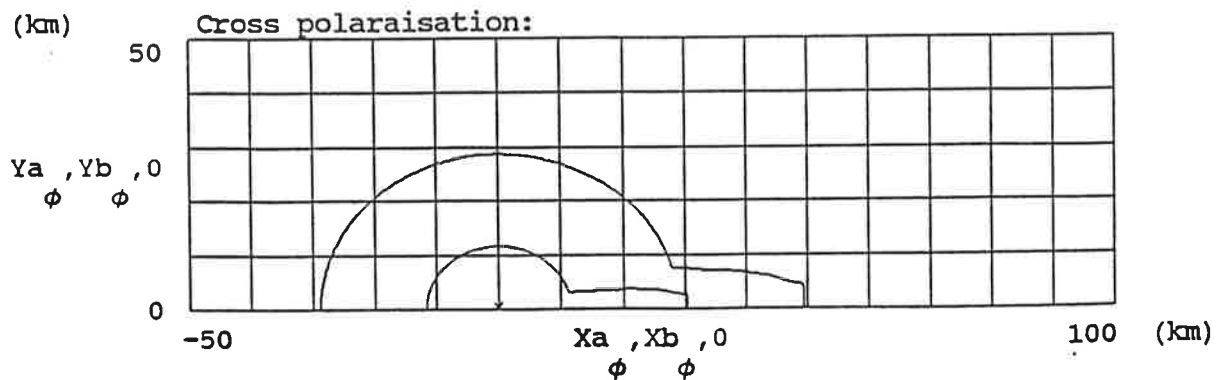
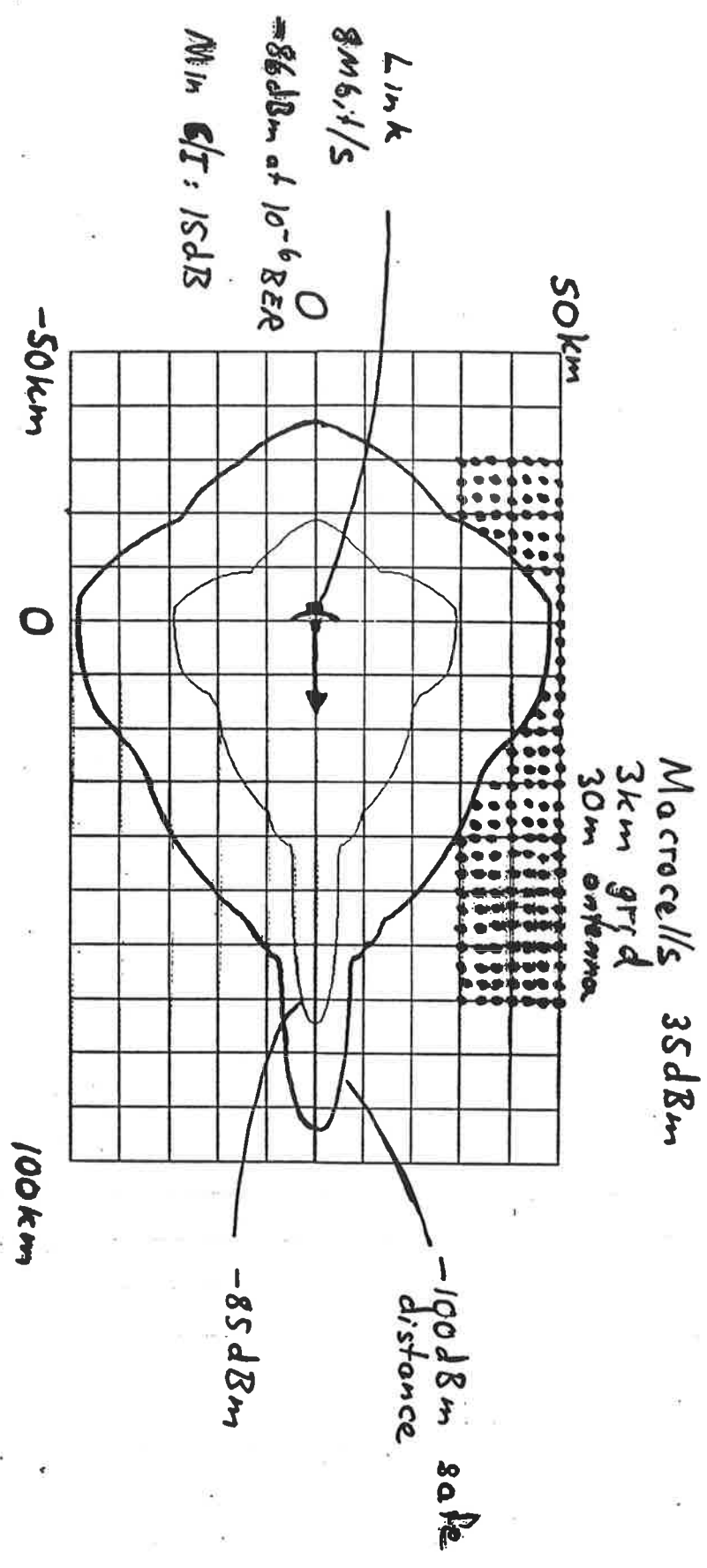


Fig 4.2 Macro cells cross polarisation.

# Sharing of spectrum between FPLMTS and fixed point-to-point links



*Bilaga 1*

Radio link

Receiver threshold  $10^{-6}$  BER: R := -86 (dBm)  
 8\_Mbit

R := -78 (dBm)  
 34\_Mbit

Feeder loss: F := 3 (dB)

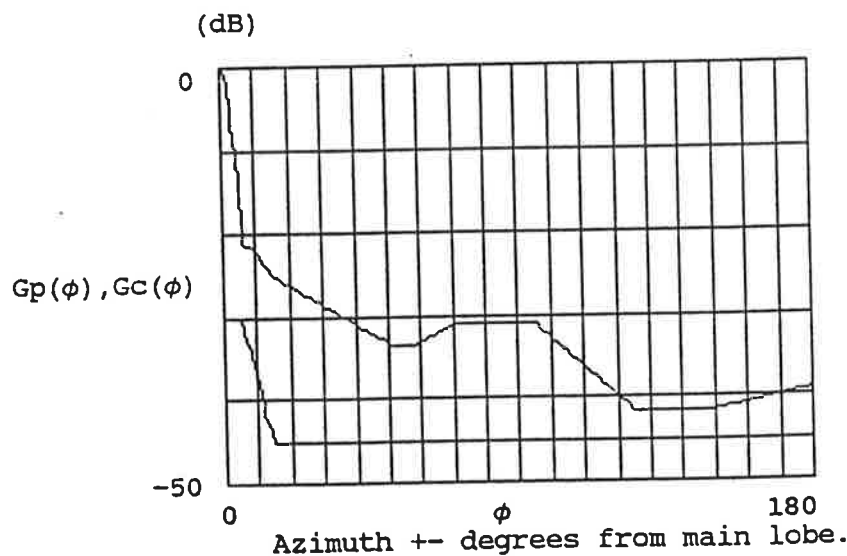
Minimum carrier to inter-  
 ference when disturbed by  
 an another radio link: CImin := 15 (dB)  
 8\_Mbit

CImin := 20 (dB)  
 34\_Mbit

Fading margin above  
 receiver threshold: M := 30 (dB)

Antenna gain main lobe  
 2.4 m (8 foot) diameter: G := 31 (dBi)  
 L

Radiation pattern envelope:



Parallel polarized  
 Cross polarized