

29 JAN 1985

|                                      |           |
|--------------------------------------|-----------|
| FILE                                 |           |
| RHF                                  | <i>SN</i> |
| DNC                                  |           |
| TAC                                  | <i>CB</i> |
| CM                                   |           |
| CSIRO DIVISION OF RADIOPHYSICS       |           |
| INTERFERENCE SURVEY 6 - DENNING SITE |           |
| J.P.W.                               | <i>GW</i> |
| P.J.H.                               | <i>A</i>  |
| AGL                                  | <i>dk</i> |
| CKS                                  | <i>KS</i> |

AT/15.5/030

R.A.KENNEDY  
M.GRAY (Rock Ape)  
30/1/85

### 1.0 INTRODUCTION

This report presents results of interference tests done at the Denning Site at the base of Siding Spring Mountain on 23/1/85. This test location was identified as site C in the first interference survey report (AT/15.5/012).

Relative to the site on the mountain this test location offers greater protection from interference due to the surrounding hills.

### 2.0 RESULTS

The attached graphs give the spectrum vs azimuth angle for the following frequencies. Note there are two scans done at 408 MHz to investigate local diffraction effects, the latter scan displaced 50 metres away (south-west) from the standard test location.

- |               |               |
|---------------|---------------|
| (i) 327 MHz   | (ii) 408 MHz  |
| (iii) 625 MHz | (iv) 843 MHz  |
| (v) 1420 MHz  | (vi) 2300 MHz |

The following general points are made, highlighting interesting features found in the survey.

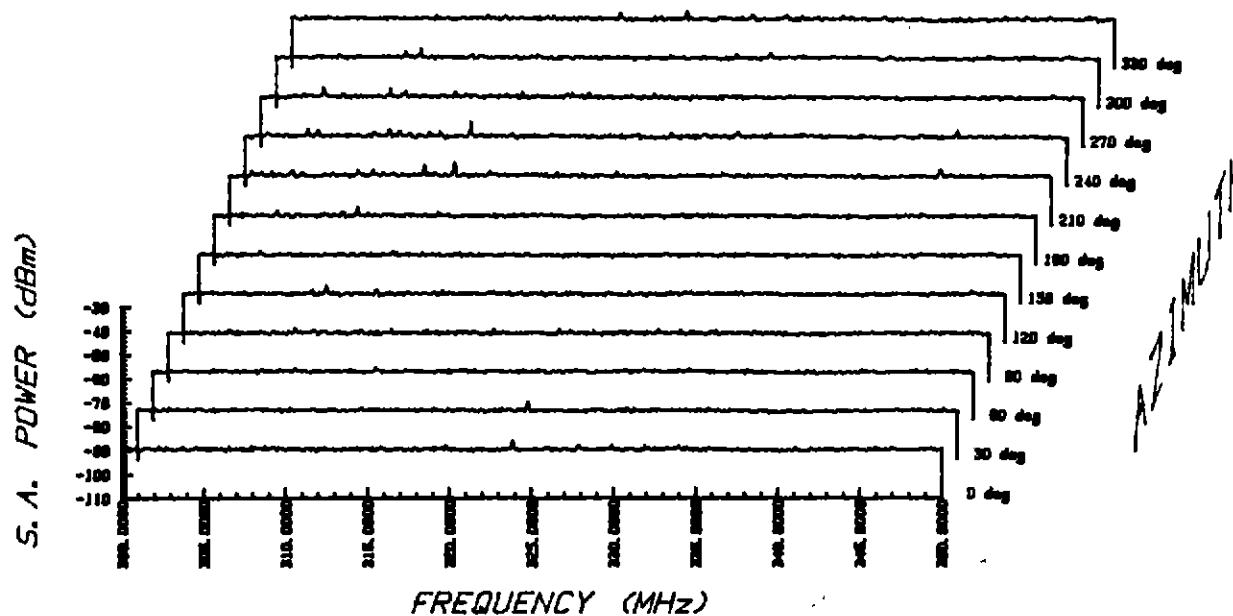
- No interference was detected at 625, 1420 and 2300 MHz.
- There is 20dB of suppression at 327MHz relative to the mountain site
- There is 20dB of suppression at 408MHz relative to the mountain site
- There is 30dB of suppression at 843MHz relative to the mountain site
- Also included is a frequency sweep from 20 to 220 MHz, done with a peak detector and video filter over a full azimuthal sweep (ie a simulated omnidirectional antenna). This was done to determine the radio environment in the AT IF band.
- The two 408 MHz scans demonstrate that local diffraction effects are small (over 50 metres or so).

### 3.0 CONCLUSIONS

On the basis of interference the lower Denning site provides at least 20dB worth of protection relative to the higher, exposed mountain site, at the frequencies tested.

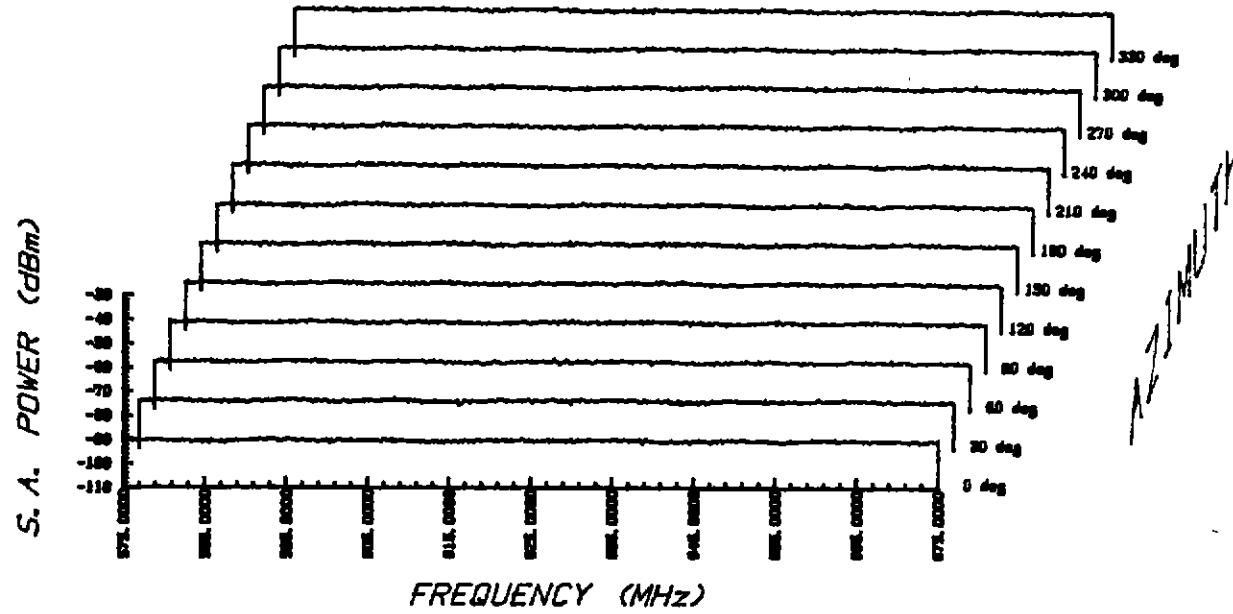
DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 325.0 MHz SPAN 5 MHz/  
REF -30 dBm 10 dB/ ATEN 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG



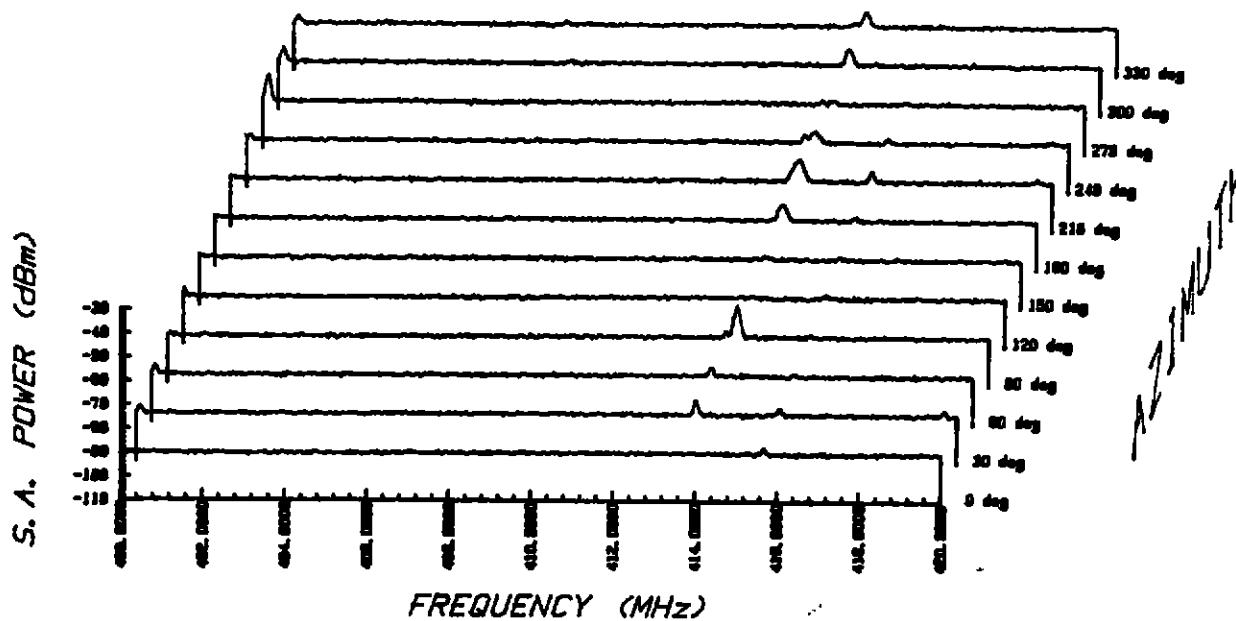
DENNING SITE 23/1/85  
CIRCULAR POLARISATION

CTR 625.0 MHz SPAN 10 MHz/  
REF -30 dBm 10 dB/ ATEN 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG



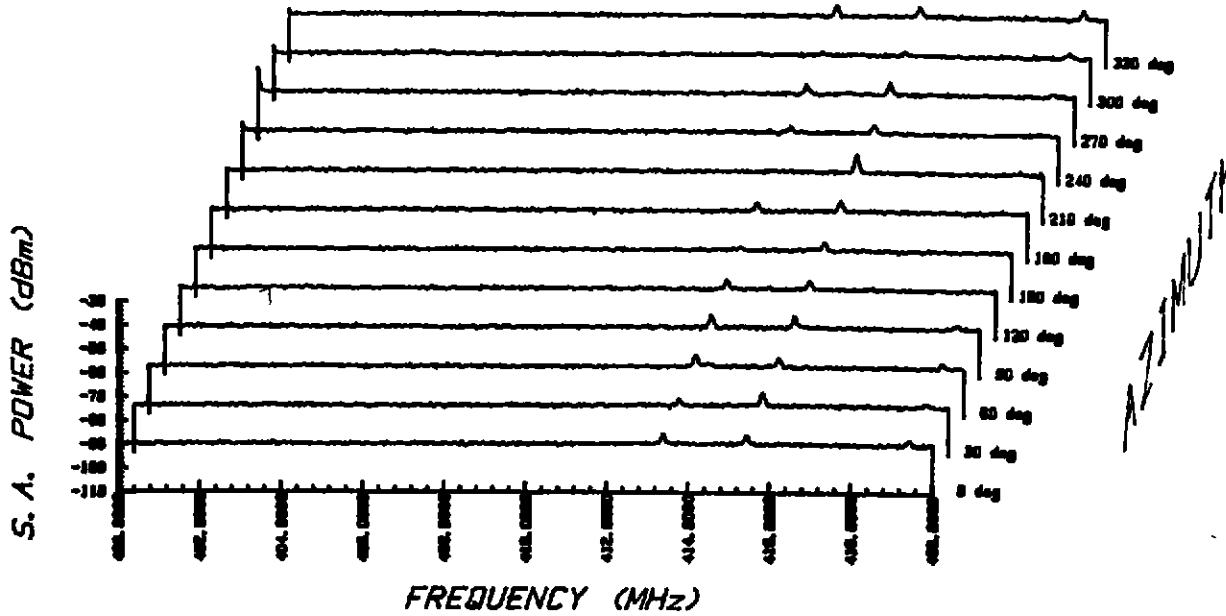
DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 410.0 MHz SPAN 2 MHz/ RES BW 100 kHz VF OFF  
REF -30 dBm 10 dB/ ATTEM 0 dB SWP AUTO D AVG



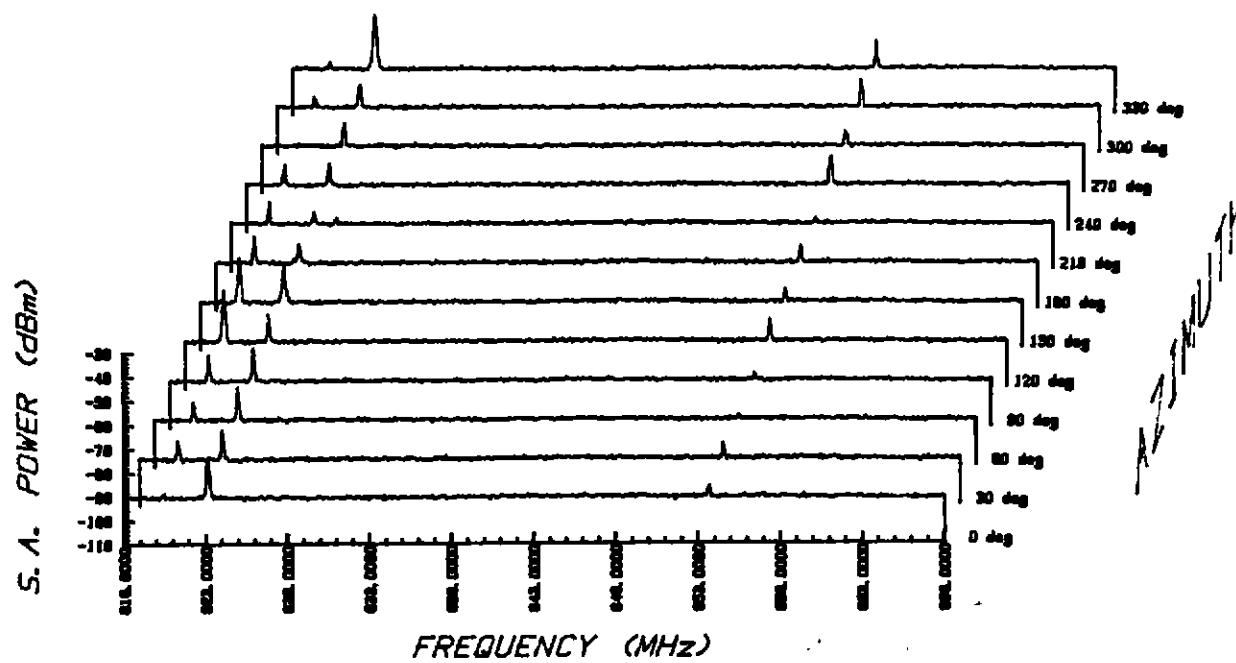
DENNING SITE (2) 23/1/85  
45 DEGREE POLARISATION

CTR 410.0 MHz SPAN 2 MHz/ RES BW 100 kHz VF OFF  
REF -30 dBm 10 dB/ ATTEM 0 dB SWP AUTO D AVG



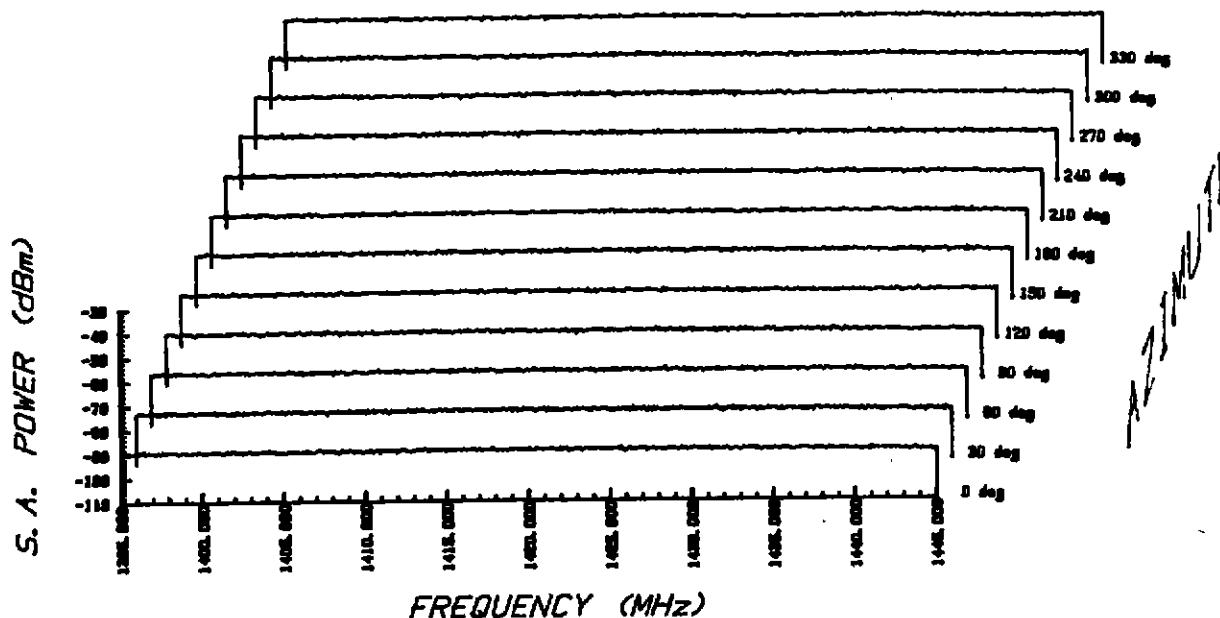
DENNING SITE 23/1/85  
CIRCULAR POLARISATION

CTR 843.0 MHz SPAN 5 MHz/  
REF -30 dBm 10 dB/ ATTN 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG



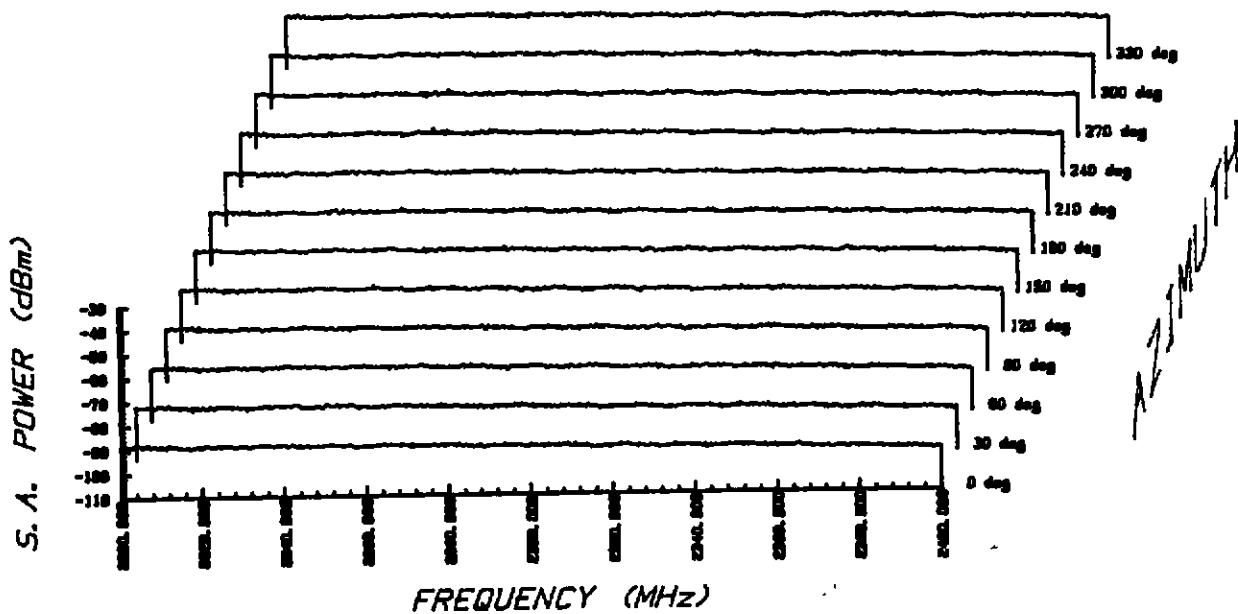
DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 1.4200 GHz SPAN 5 MHz/  
REF -30 dBm 10 dB/ ATTN 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG

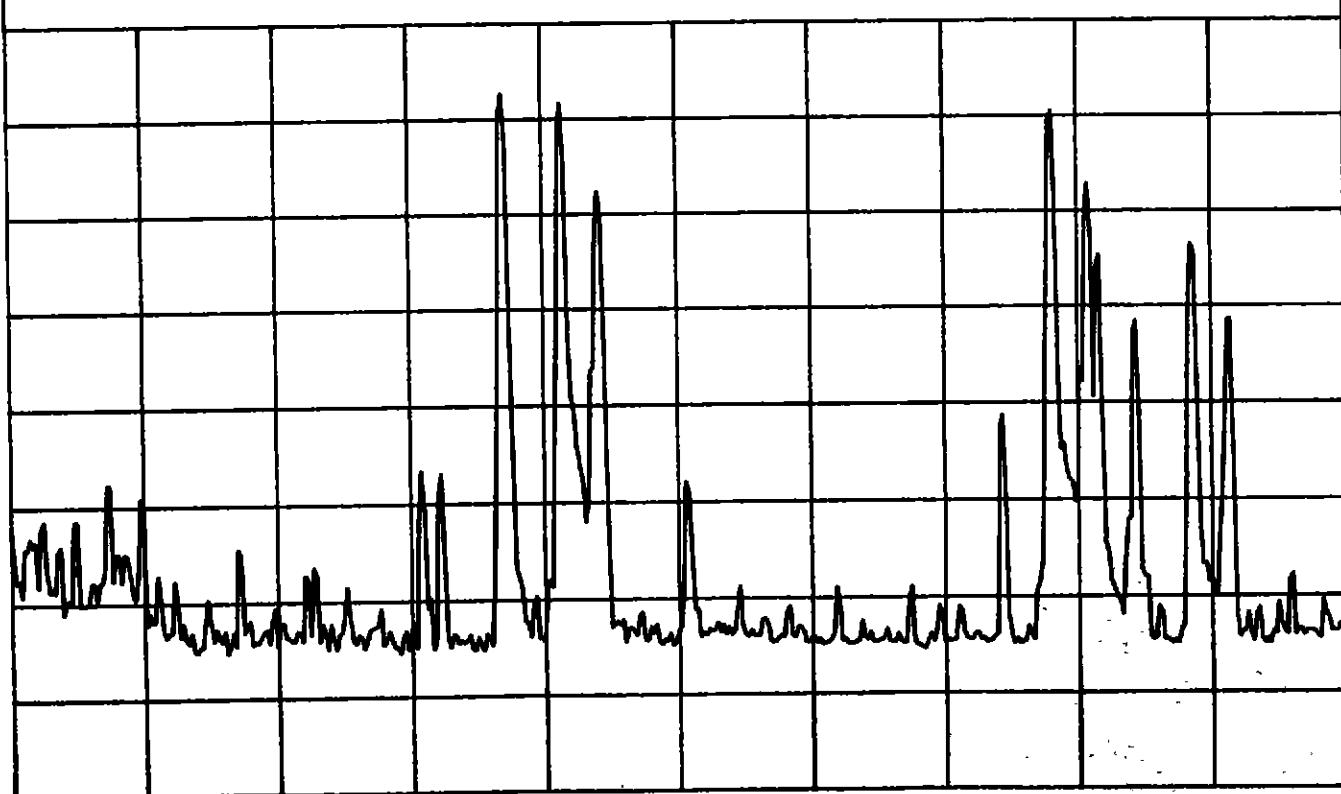


DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 2.3000 GHz SPAN 20 MHz/ RES BW 100 kHz VF OFF  
REF -30 dBm 10 dB/ ATTEN 0 dB SWP AUTO D AVG



CTR 120.0 MHz SPAN 20 MHz/ RES BW 300 kHz VF .003  
REF -20 dBm 10 dB/ ATTEN 0 dB SWP AUTO



AT/15.5/030

CSIRO DIVISION OF RADIOPHYSICS

INTERFERENCE SURVEY 6 - DENNING SITE

R.A.KENNEDY  
M.GRAY (Rock Ape)  
30/1/85

1.0 INTRODUCTION

This report presents results of interference tests done at the Denning Site at the base of Siding Spring Mountain on 23/1/85. This test location was identified as site C in the first interference survey report (AT/15.5/012).

Relative to the site on the mountain this test location offers greater protection from interference due to the surrounding hills.

2.0 RESULTS

The attached graphs give the spectrum vs azimuth angle for the following frequencies. Note there are two scans done at 408 MHz to investigate local diffraction effects, the latter scan displaced 50 metres away (south-west) from the standard test location.

|               |               |
|---------------|---------------|
| (i) 327 MHz   | (ii) 408 MHz  |
| (iii) 625 MHz | (iv) 843 MHz  |
| (v) 1420 MHz  | (vi) 2300 MHz |

The following general points are made, highlighting interesting features found in the survey.

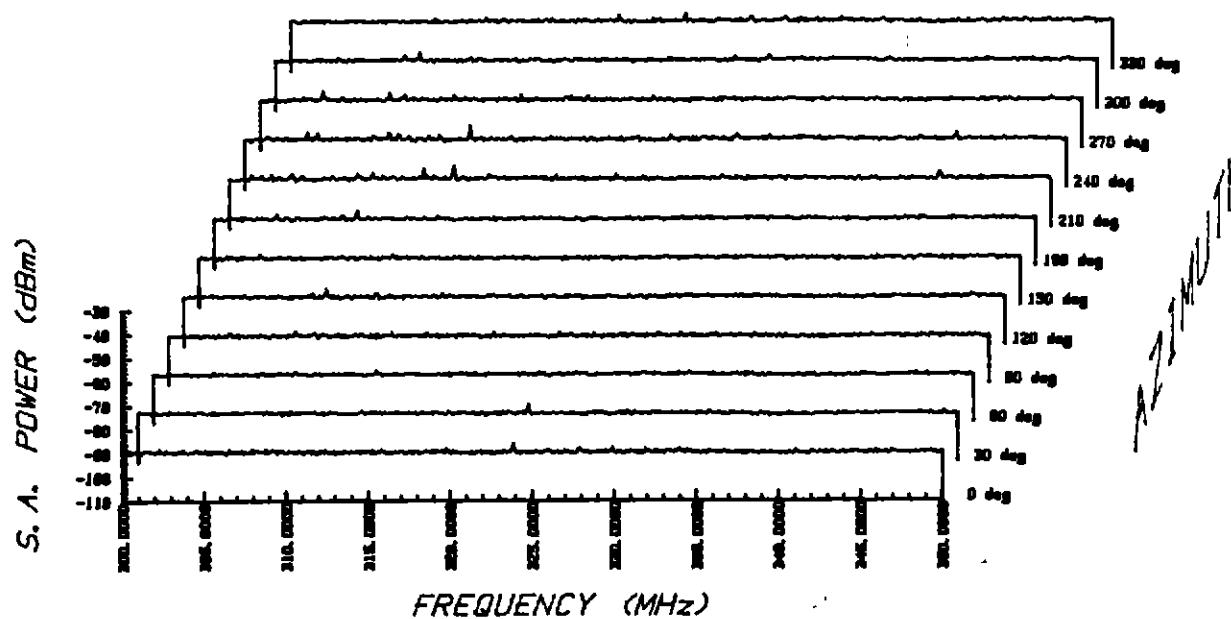
- No interference was *detected* at 625, 1420 and 2300 MHz.
- There is 20dB of suppression at 327MHz relative to the mountain site
- There is 20dB of suppression at 408MHz relative to the mountain site
- There is 30dB of suppression at 843MHz relative to the mountain site
- Also included is a frequency sweep from 20 to 220 MHz, done with a peak detector and video filter over a full azimuthal sweep (ie a simulated omnidirectional antenna). This was done to determine the radio environment in the AT IF band.
- The two 408 MHz scans demonstrate that local diffraction effects are small (over 50 metres or so).

3.0 CONCLUSIONS

On the basis of interference the lower Denning site provides at least 20dB worth of protection relative to the higher, exposed mountain site, at the frequencies tested.

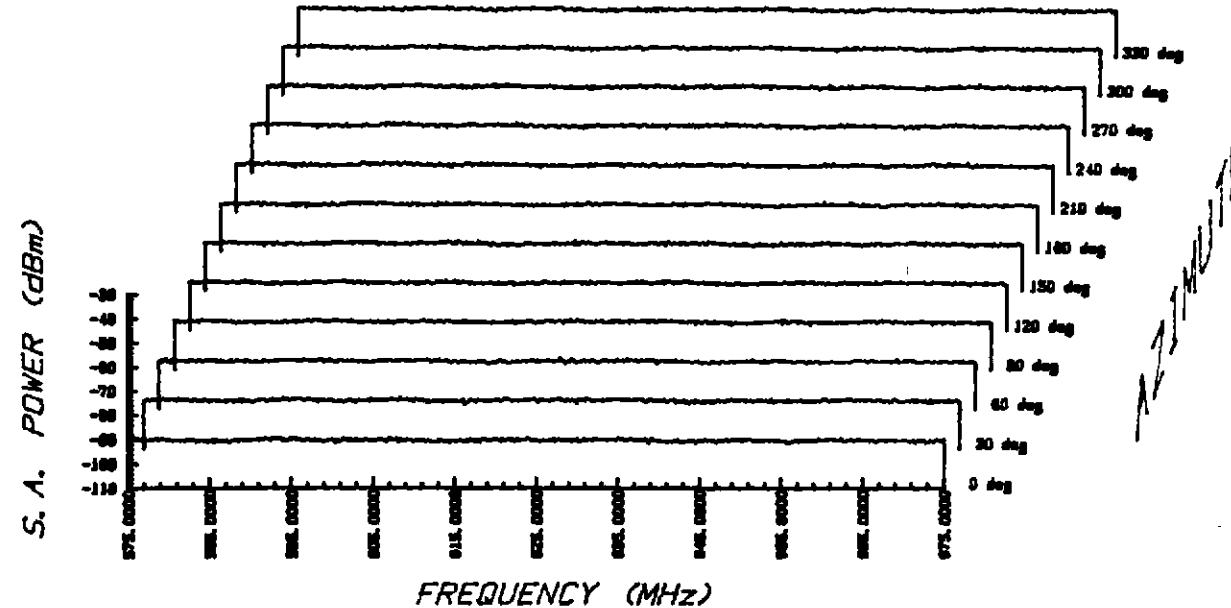
DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 325.0 MHz SPAN 5 MHz/ RES BW 100 kHz VF OFF  
REF -30 dBm 10 dB/ ATTEM 0 dB SWP AUTO D AVG



DENNING SITE 23/1/85  
CIRCULAR POLARISATION

CTR 625.0 MHz SPAN 10 MHz/ RES BW 100 kHz VF OFF  
REF -30 dBm 10 dB/ ATTEM 0 dB SWP AUTO D AVG

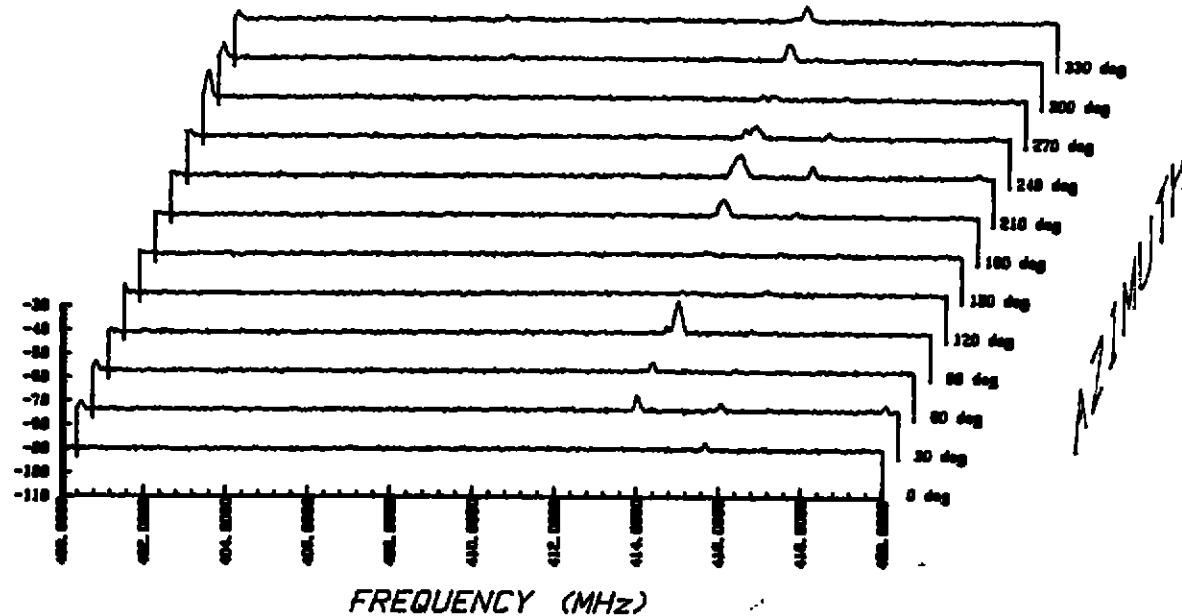


DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 410.0 MHz SPAN 2 MHz/  
REF -30 dBm 10 dB/ ATTN 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG

S. A. POWER (dBm)

FREQUENCY (MHz)

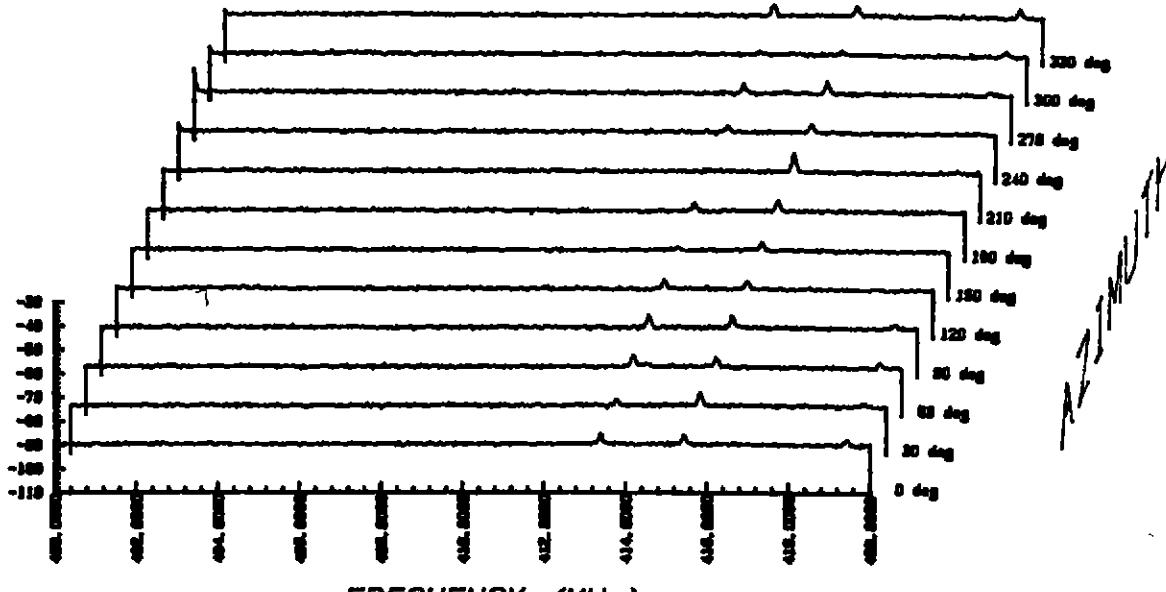


DENNING SITE (2) 23/1/85  
45 DEGREE POLARISATION

CTR 410.0 MHz SPAN 2 MHz/  
REF -30 dBm 10 dB/ ATTN 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG

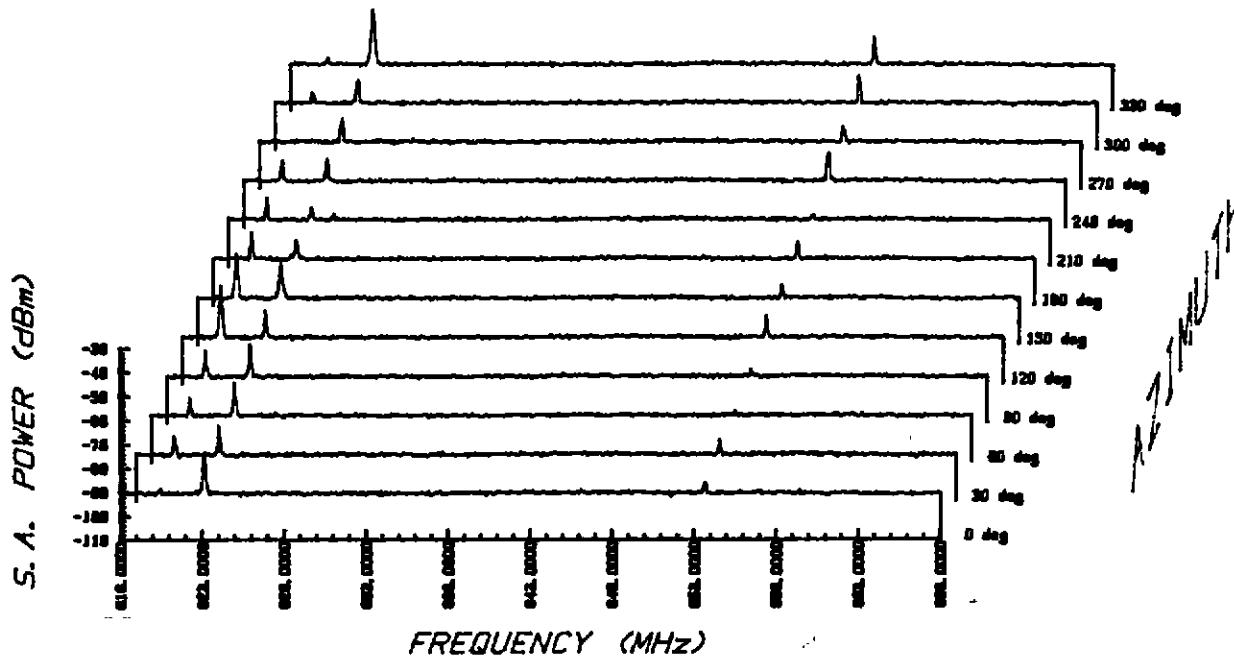
S. A. POWER (dBm)

FREQUENCY (MHz)



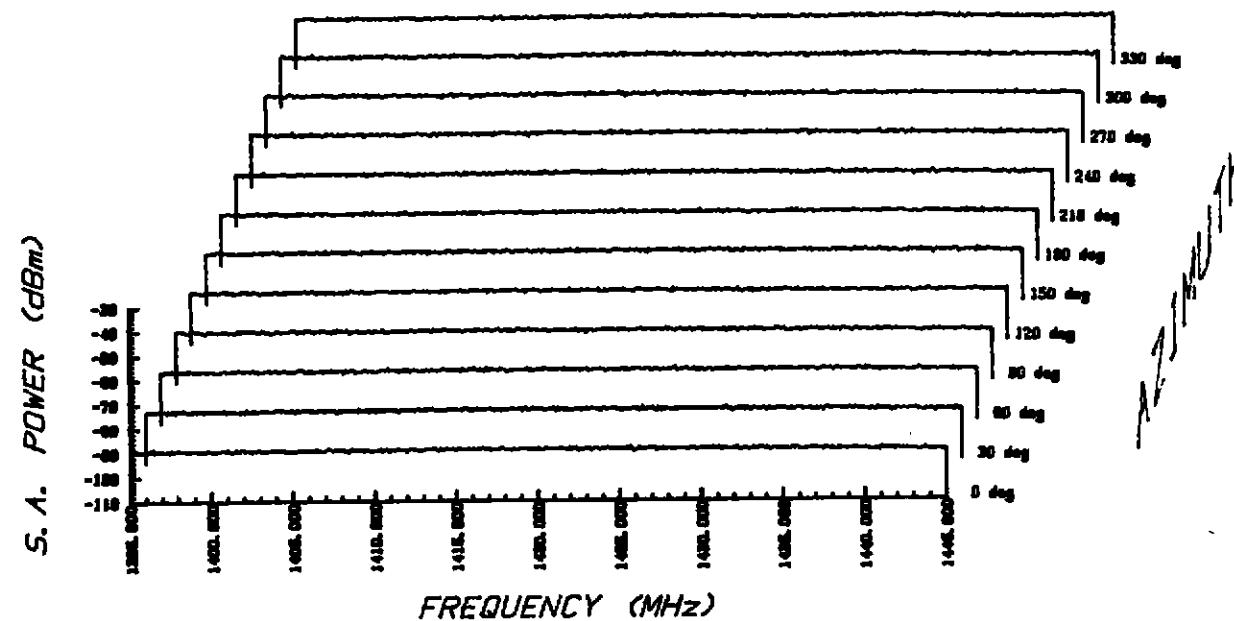
DENNING SITE 23/1/85  
CIRCULAR POLARISATION

CTR 843.0 MHz SPAN 5 MHz/  
REF -30 dBm 10 dB/ RES BW 100 kHz VF OFF  
ATTEN 0 dB SWP AUTO D AVG



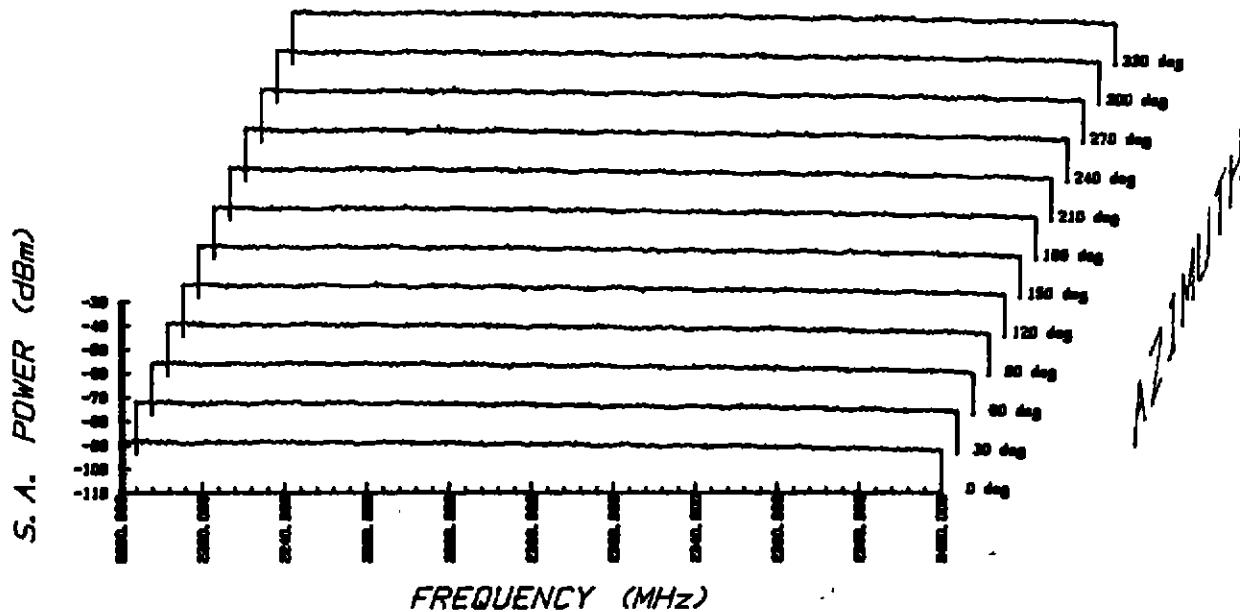
DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 1.4200 GHz SPAN 5 MHz/  
REF -30 dBm 10 dB/ RES BW 100 kHz VF OFF  
ATTEN 0 dB SWP AUTO D AVG

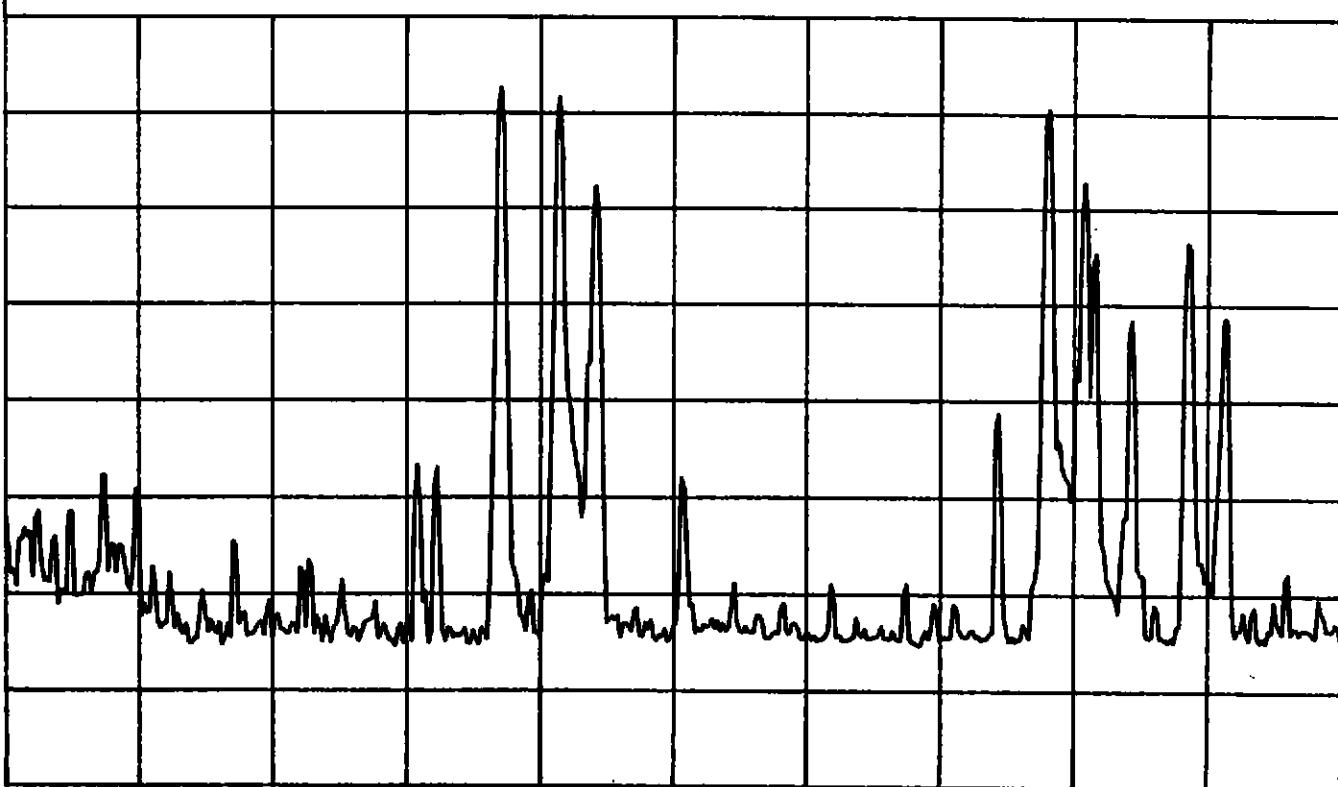


DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 2.3000 GHz SPAN 20 MHz/ RES BW 100 kHz VF OFF  
REF -30 dBm 10 dB/ ATTEM 0 dB SWP AUTO D AVG



CTR 120.0 MHz SPAN 20 MHz/ RES BW 300 kHz VF .003  
REF -20 dBm 10 dB/ ATTEM 0 dB SWP AUTO.



AT/15.5/030

CSIRO DIVISION OF RADIOPHYSICS

INTERFERENCE SURVEY 6 - DENNING SITE

R.A.KENNEDY  
M.GRAY (Rock Ape)  
30/1/85

1.0 INTRODUCTION

This report presents results of interference tests done at the Denning Site at the base of Siding Spring Mountain on 23/1/85. This test location was identified as site C in the first interference survey report (AT/15.5/012).

Relative to the site on the mountain this test location offers greater protection from interference due to the surrounding hills.

2.0 RESULTS

The attached graphs give the spectrum vs azimuth angle for the following frequencies. Note there are two scans done at 408 MHz to investigate local diffraction effects, the latter scan displaced 50 metres away (south-west) from the standard test location.

|               |               |
|---------------|---------------|
| (i) 327 MHz   | (ii) 408 MHz  |
| (iii) 625 MHz | (iv) 843 MHz  |
| (v) 1420 MHz  | (vi) 2300 MHz |

The following general points are made, highlighting interesting features found in the survey.

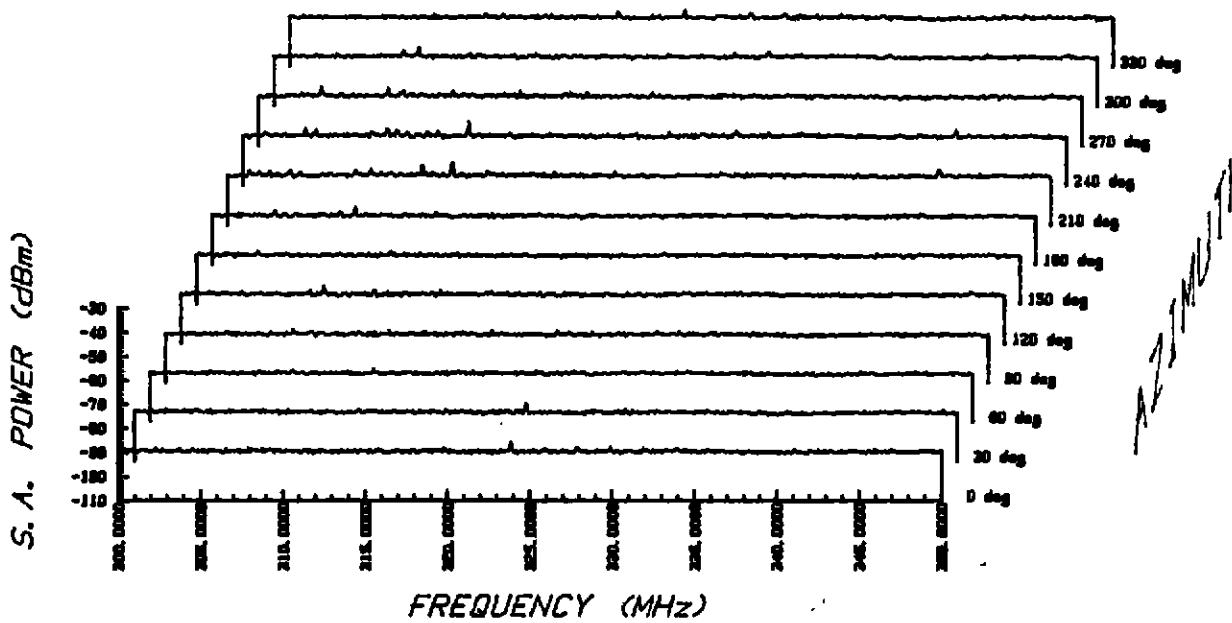
- No interference was detected at 625, 1420 and 2300 MHz.
- There is 20dB of suppression at 327MHz relative to the mountain site
- There is 20dB of suppression at 408MHz relative to the mountain site
- There is 30dB of suppression at 843MHz relative to the mountain site
- Also included is a frequency sweep from 20 to 220 MHz, done with a peak detector and video filter over a full azimuthal sweep (ie a simulated omnidirectional antenna). This was done to determine the radio environment in the AT IF band.
- The two 408 MHz scans demonstrate that local diffraction effects are small (over 50 metres or so).

3.0 CONCLUSIONS

On the basis of interference the lower Denning site provides at least 20dB worth of protection relative to the higher, exposed mountain site, at the frequencies tested.

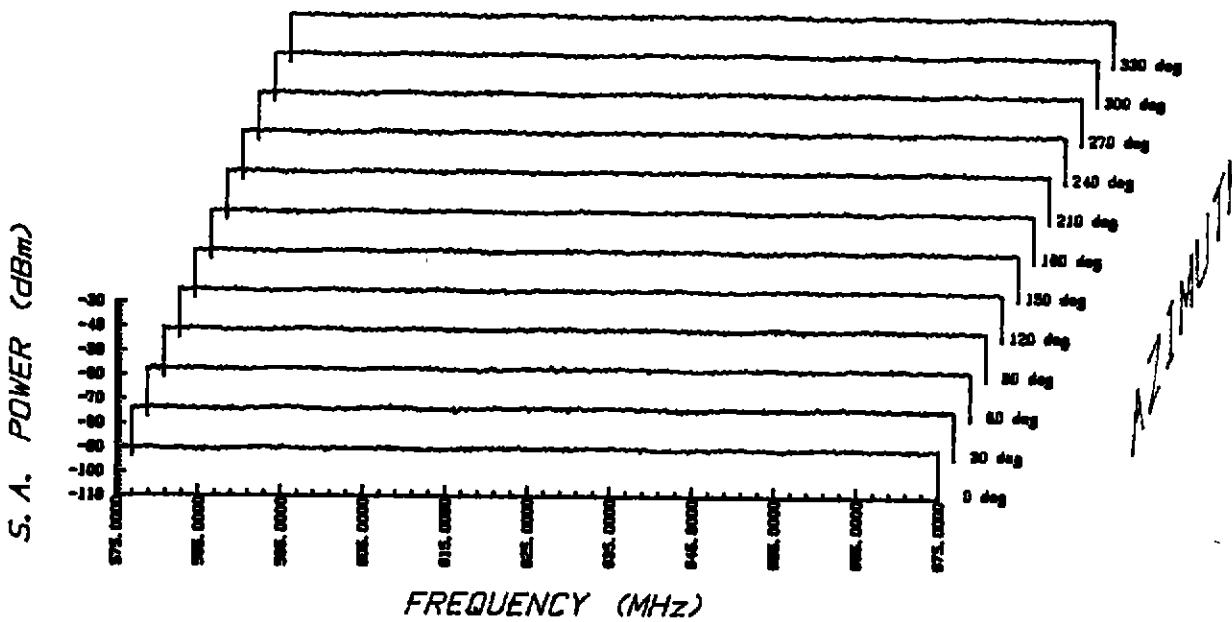
DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 325.0 MHz SPAN 5 MHz/  
REF -30 dBm 10 dB/ ATTN 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG



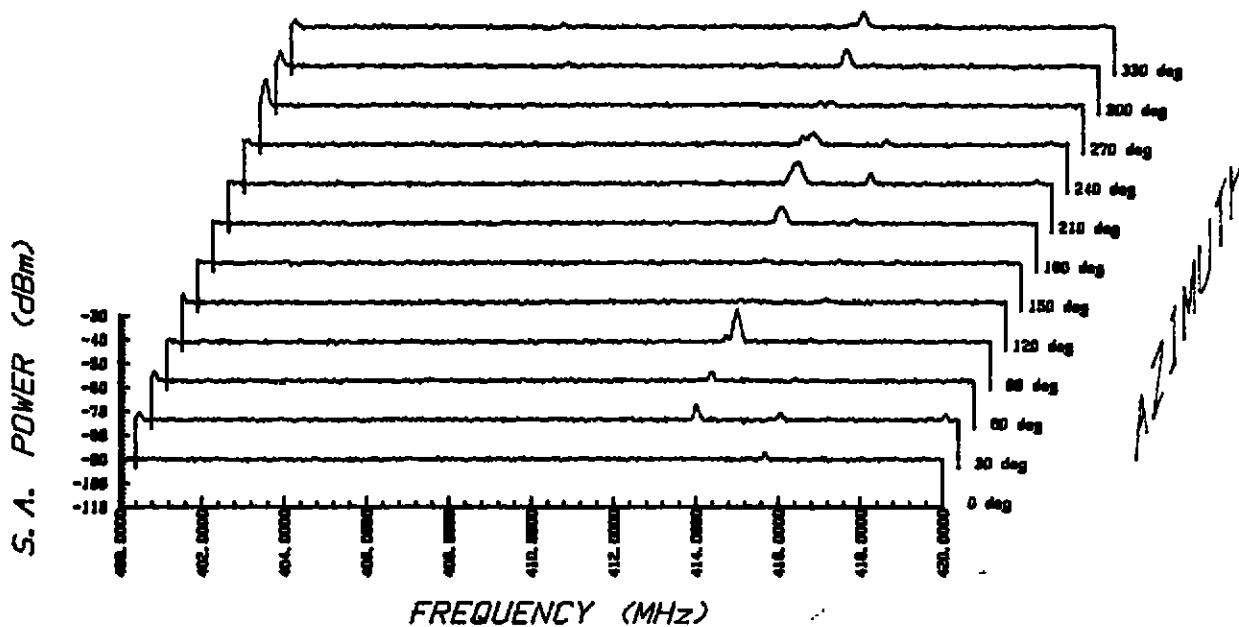
DENNING SITE 23/1/85  
CIRCULAR POLARISATION

CTR 625.0 MHz SPAN 10 MHz/  
REF -30 dBm 10 dB/ ATTN 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG



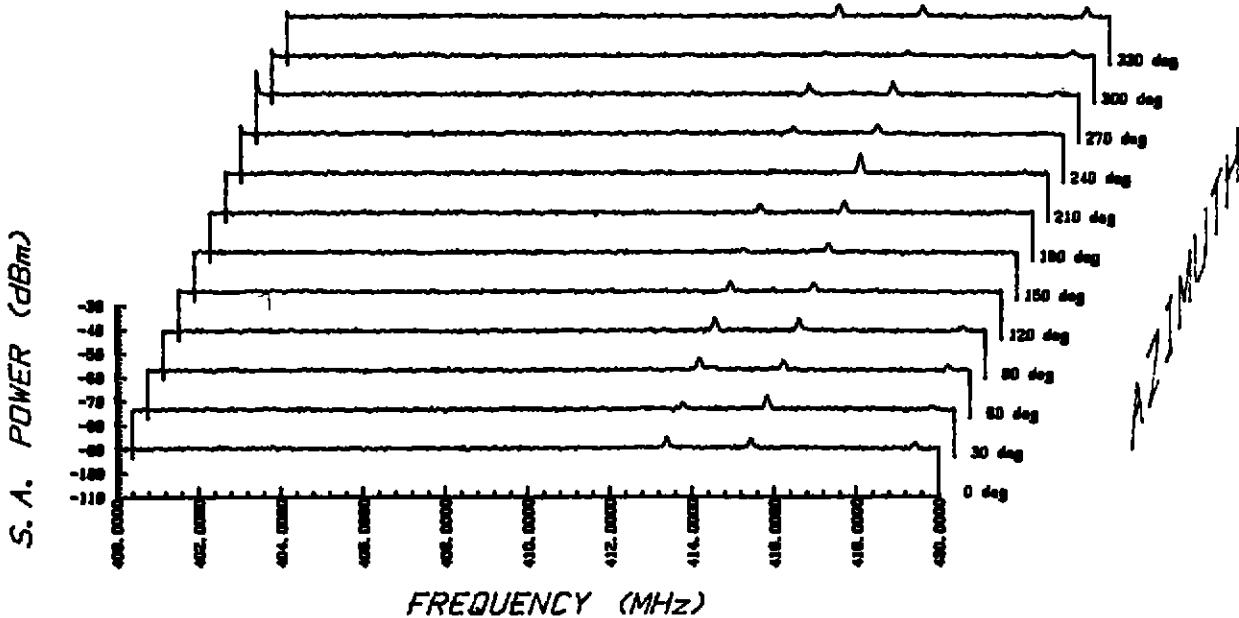
DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 410.0 MHz SPAN 2 MHz/  
REF -30 dBm 10 dB/ ATTEM 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG



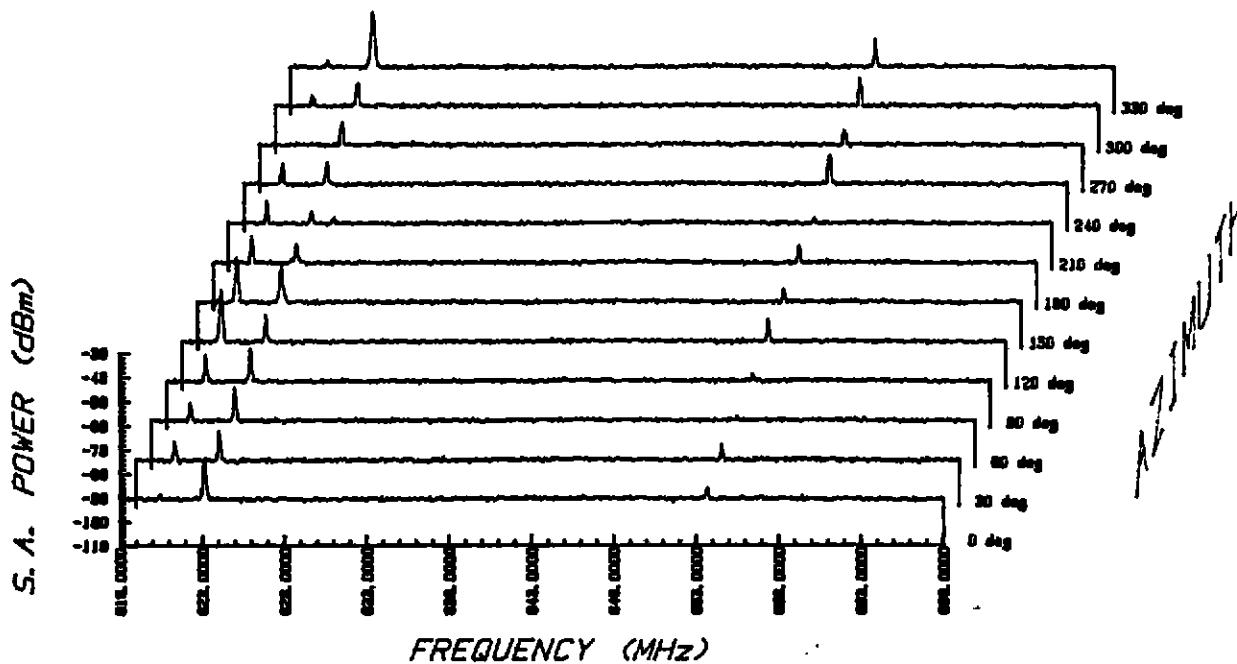
DENNING SITE (2) 23/1/85  
45 DEGREE POLARISATION

CTR 410.0 MHz SPAN 2 MHz/  
REF -30 dBm 10 dB/ ATTEM 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG



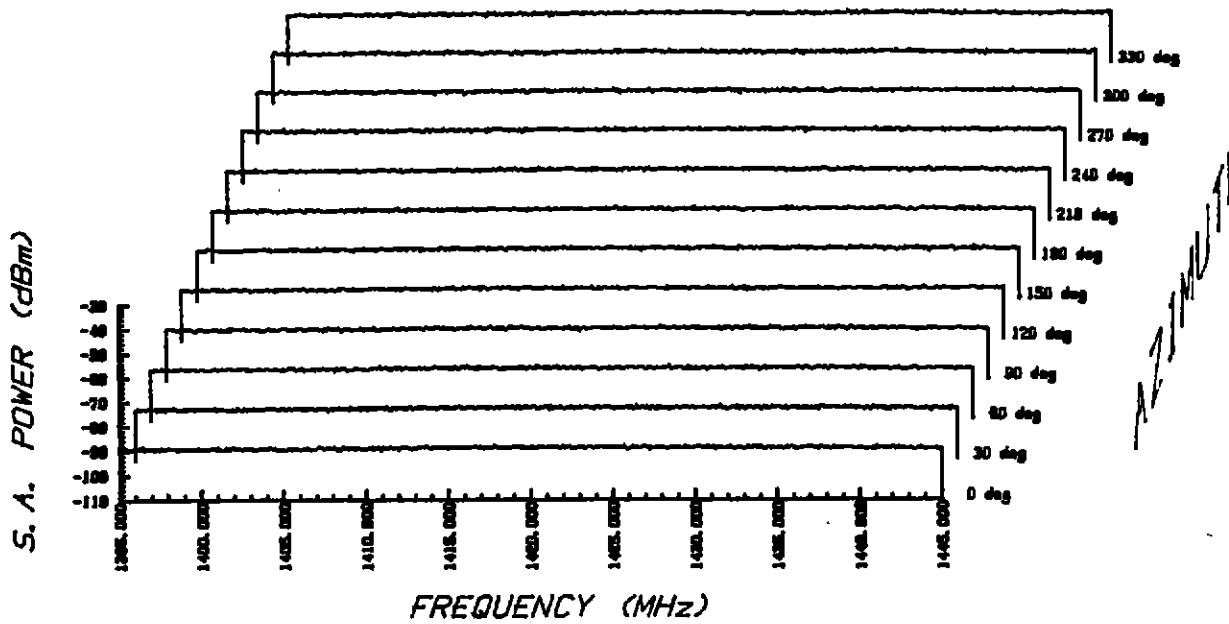
DENNING SITE 23/1/85  
CIRCULAR POLARISATION

CTR 843.0 MHz SPAN 5 MHz/ RES BW 100 kHz VF OFF  
REF -30 dBm 10 dB/ ATTN 0 dB SWP AUTO D AVG



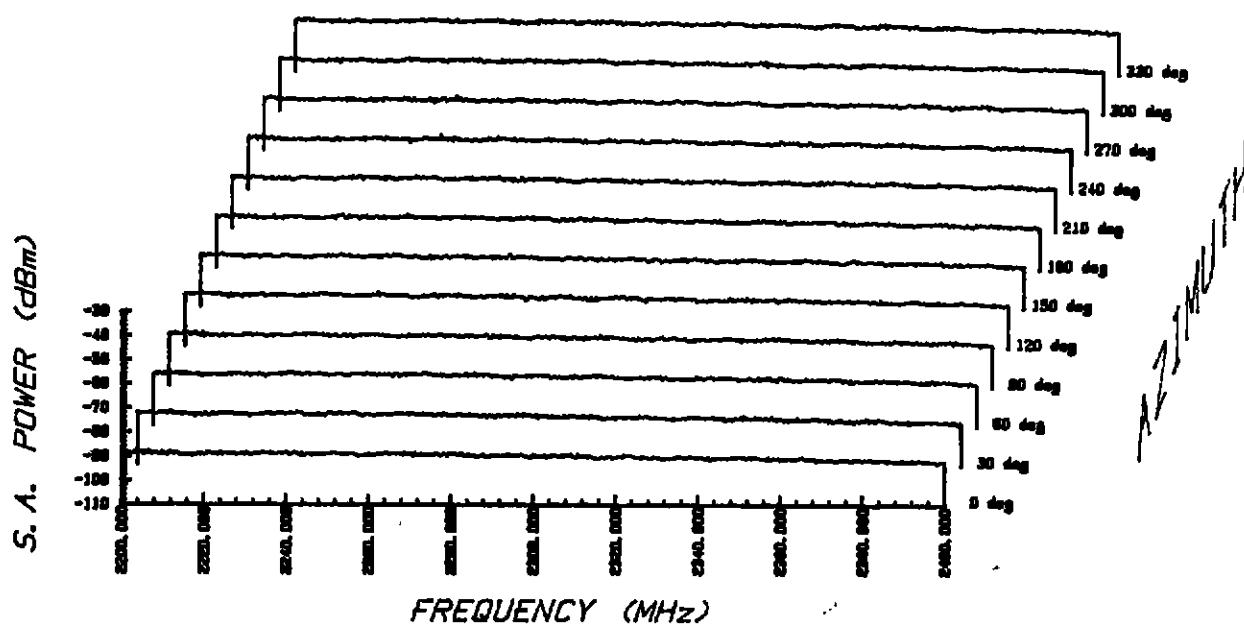
DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 1.4200 GHz SPAN 5 MHz/ RES BW 100 kHz VF OFF  
REF -30 dBm 10 dB/ ATTEN 0 dB SWP AUTO D AVG



DENNING SITE 23/1/85  
45 DEGREE POLARISATION

CTR 2.3000 GHz SPAN 20 MHz/  
REF -30 dBm 10 dB/ ATTN 0 dB RES BW 100 kHz SWP AUTO VF OFF  
D AVG



CTR 120.0 MHz SPAN 20 MHz/ RES BW 300 kHz VF .003  
REF -20 dBm 10 dB/ ATTN 0 dB SWP AUTO

