

# Antenna Regulatory Information

|                                             |                                    |
|---------------------------------------------|------------------------------------|
| • <b>Product type</b>                       | • <b>WLAN antenna</b>              |
| • <b>Model number</b>                       | • <b>A10127-V1-1L/R</b>            |
| • <b>Revision</b>                           | • <b>1</b>                         |
| • <b>Manufacturer Part No. : Main / Aux</b> | • <b>A10127-V1-1L/A10127-V1-1R</b> |
| • <b>Dell Part No. : Main / Aux</b>         | •                                  |

**Antenova Ltd.**

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**Albert Road**

**Cambridge**

**CB5 9AR**

## 1. Specifications

### Antenna Specifications

|                                           |                                                |
|-------------------------------------------|------------------------------------------------|
| Antenna Type (Material, Technology)       | Flexi-film inverted F antenna over ABS carrier |
| Antenna Model Number                      | A10127-V1-1L/R                                 |
| Operating Frequency Range(s)              | 2.4GHz ~ 2.5GHz and 4.9GHz ~ 5.9GHz            |
| Peak Gain (802.11b/g / 2.4GHz Band) (dBi) | 3.8 dBi                                        |
| Peak Gain (802.11a / 5GHz Band) (dBi)     | 2.0 dBi                                        |
| Radio Connector Type                      | Hirose U.FL-LP-88                              |
| Mid-Line Connector Type (If Applicable)   | N/A                                            |

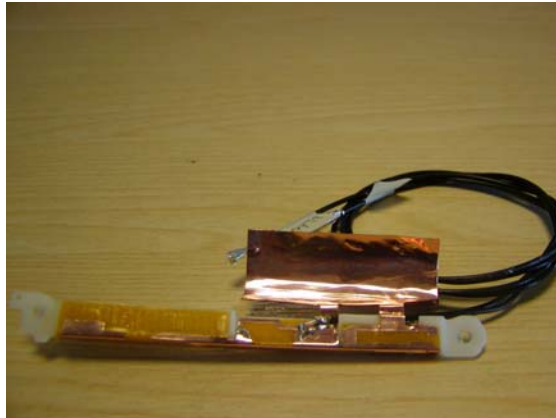
**Remark:** Peak Gains include all system losses (connector, cable, etc)

### Cable Specifications

| Cable Parameters                                | Main                                                        |           |           | Aux                                                         |           |           |
|-------------------------------------------------|-------------------------------------------------------------|-----------|-----------|-------------------------------------------------------------|-----------|-----------|
|                                                 | LCD Side                                                    | Base Side | Total     | LCD Side                                                    | Base Side | Total     |
| Length (mm)                                     | 180                                                         | 280       | 479.25    | 180                                                         | 341       | 540.25    |
| Loss (Including Connectors) (dB, 2.4GHz / 5GHz) |                                                             |           | 1.10/1.78 |                                                             |           | 1.24/2.01 |
| Description (Color, Diameter, Manufacturer)     | Color: White<br>OD: 1.37 mm<br>Vendor: Grand-Tek-Technology |           |           | Color: Black<br>OD: 1.37 mm<br>Vendor: Grand-Tek-Technology |           |           |

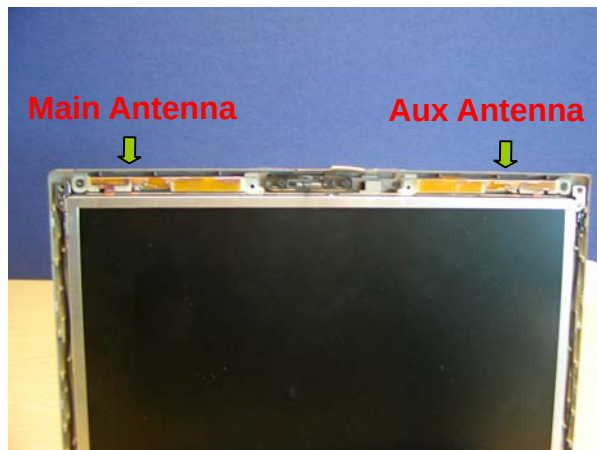
## **2. Antenna Assembly**

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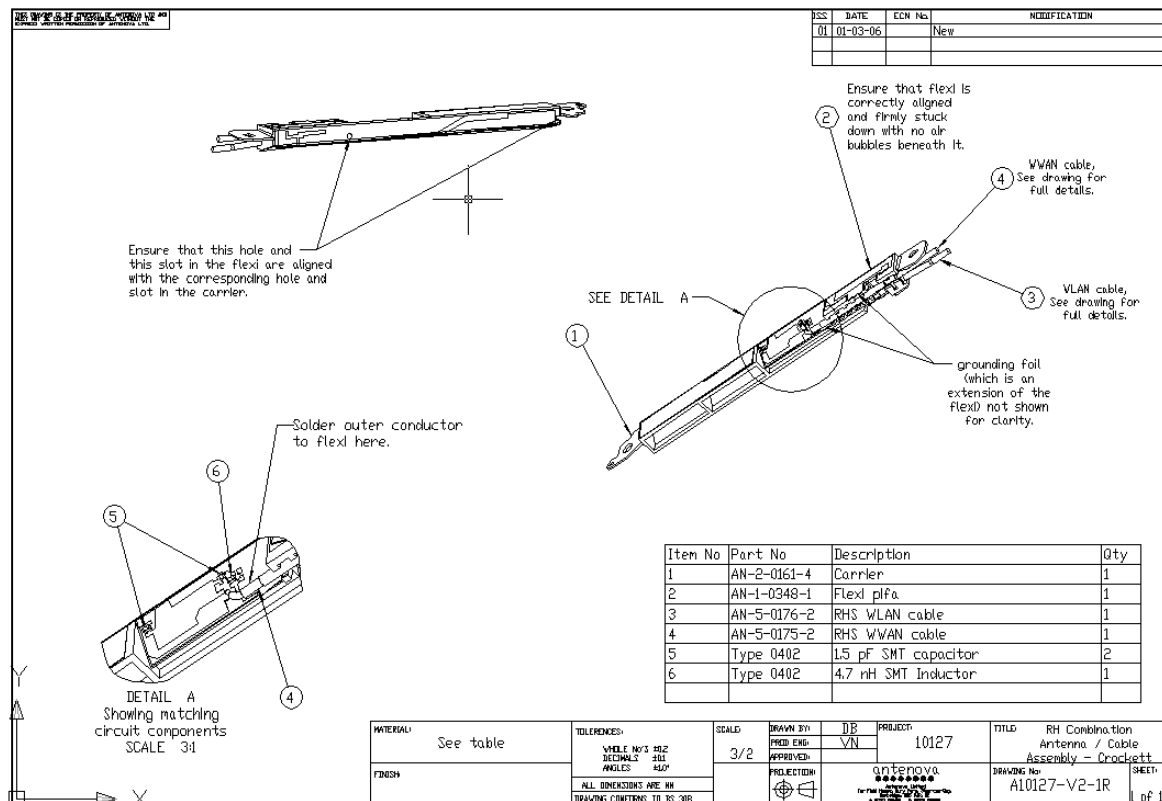
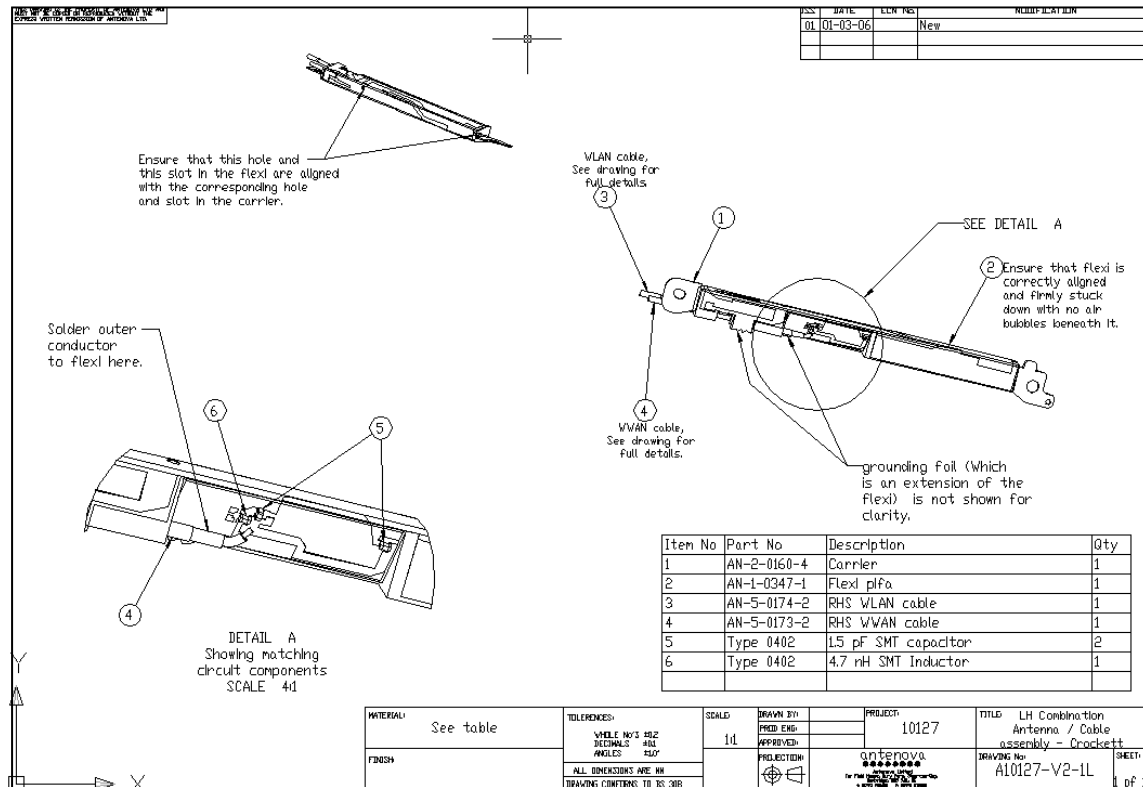


## **3. Antenna Assembly Installed in The Notebook**

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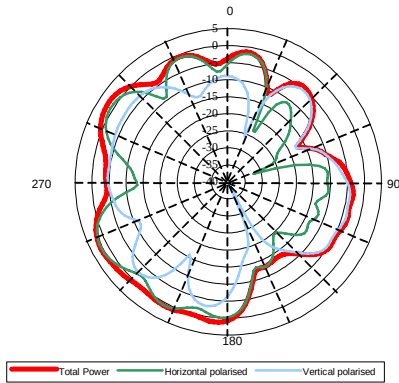
## 4. Mechanical Drawing of Antennas



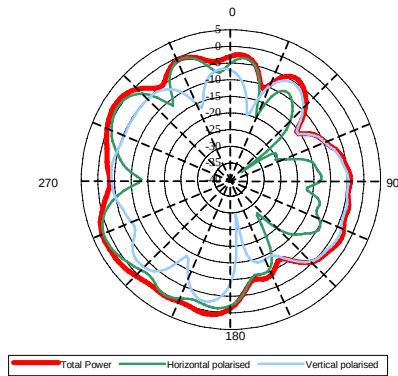
## 5. Gain Patternms

### - Main Antenna

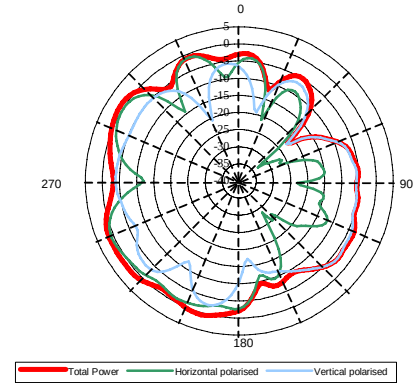
Azimuth Gain at 2400MHz



Azimuth Gain at 2450MHz



Azimuth Gain at 2480MHz

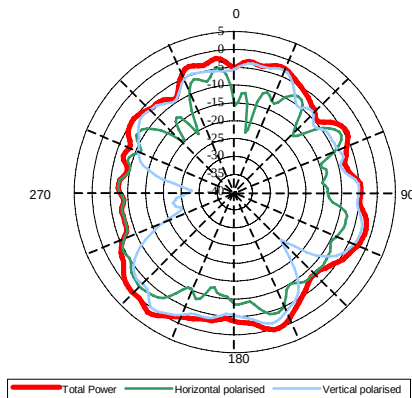


| Frequency                      | 2400MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | 2.0     |
| Vertical Peak Gain (dBi)       | -2.7    |
| Hori + Verti Peak Gain (dBi)   | 2.2     |
| Hori + Vert Average Gain (dBi) | -2.1    |

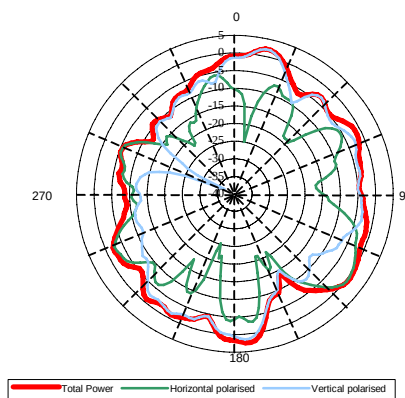
| Frequency                      | 2450MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | 1.7     |
| Vertical Peak Gain (dBi)       | -2.5    |
| Hori + Verti Peak Gain (dBi)   | 2.2     |
| Hori + Vert Average Gain (dBi) | -2.2    |

| Frequency                      | 2480MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | -0.2    |
| Vertical Peak Gain (dBi)       | -2.7    |
| Hori + Verti Peak Gain (dBi)   | 1.0     |
| Hori + Vert Average Gain (dBi) | -3.1    |

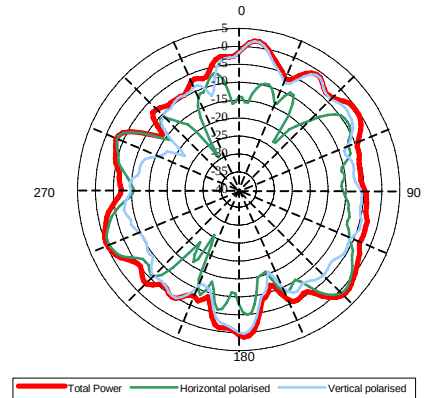
Azimuth Gain at 4900MHz



Azimuth Gain at 5125MHz



Azimuth Gain at 5350MHz

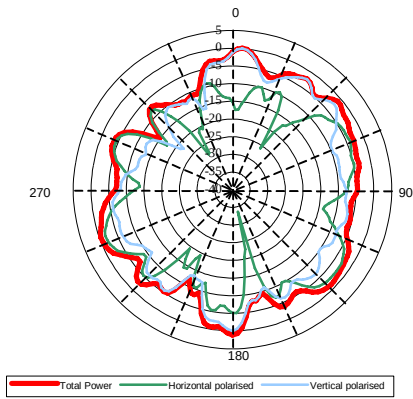


| Frequency                      | 4900MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | -2.4    |
| Vertical Peak Gain (dBi)       | 0.0     |
| Hori + Verti Peak Gain (dBi)   | 1.6     |
| Hori + Vert Average Gain (dBi) | -3.8    |

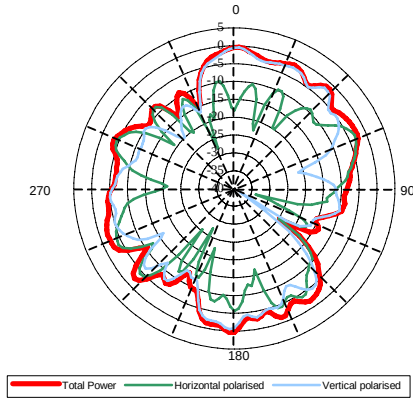
| Frequency                      | 5125MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | 0.3     |
| Vertical Peak Gain (dBi)       | 2.0     |
| Hori + Verti Peak Gain (dBi)   | 2.6     |
| Hori + Vert Average Gain (dBi) | -2.8    |

| Frequency                      | 5350MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | 0.9     |
| Vertical Peak Gain (dBi)       | 1.7     |
| Hori + Verti Peak Gain (dBi)   | 1.8     |
| Hori + Vert Average Gain (dBi) | -3.1    |

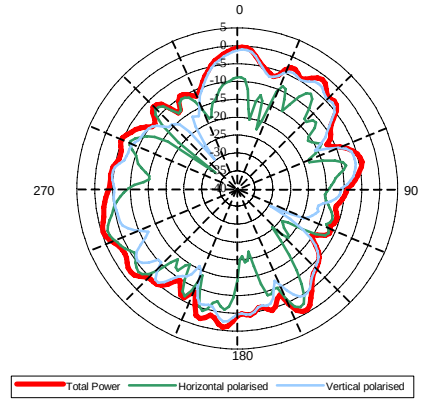
Azimuth Gain at 5470MHz



Azimuth Gain at 5672MHz



Azimuth Gain at 5875MHz



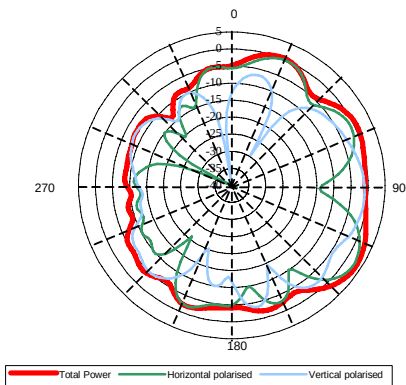
| Frequency                      | 5470MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | -1.7    |
| Vertical Peak Gain (dBi)       | 0.0     |
| Hori + Verti Peak Gain (dBi)   | 1.1     |
| Hori + Vert Average Gain (dBi) | -3.9    |

| Frequency                      | 5672MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | -3.2    |
| Vertical Peak Gain (dBi)       | -0.5    |
| Hori + Verti Peak Gain (dBi)   | 0.3     |
| Hori + Vert Average Gain (dBi) | -4.4    |

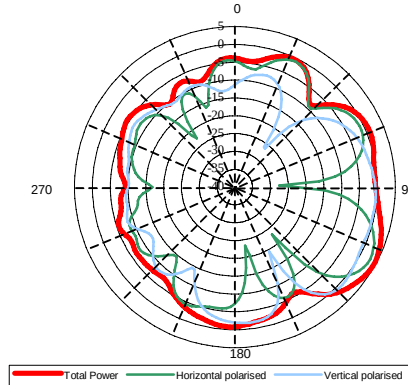
| Frequency                      | 5875MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | -1.7    |
| Vertical Peak Gain (dBi)       | -1.0    |
| Hori + Verti Peak Gain (dBi)   | -0.3    |
| Hori + Vert Average Gain (dBi) | -4.8    |

## - Aux Antenna

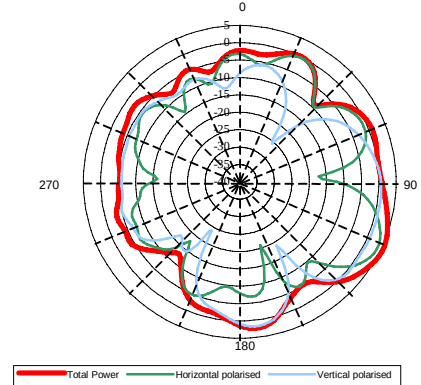
Azimuth Gain at 2400MHz



Azimuth Gain at 2450MHz



Azimuth Gain at 2480MHz

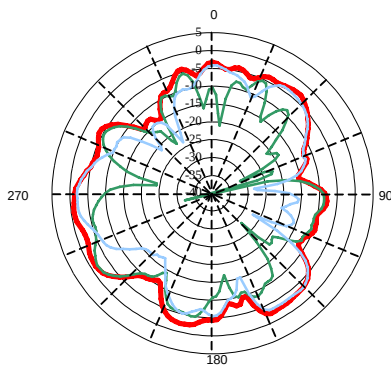


| Frequency                      | 2400MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | 2.6     |
| Vertical Peak Gain (dBi)       | -1.0    |
| Hori + Verti Peak Gain (dBi)   | 3.4     |
| Hori + Vert Average Gain (dBi) | -2.3    |

| Frequency                      | 2450MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | 3.0     |
| Vertical Peak Gain (dBi)       | 0.8     |
| Hori + Verti Peak Gain (dBi)   | 4.6     |
| Hori + Vert Average Gain (dBi) | -2.0    |

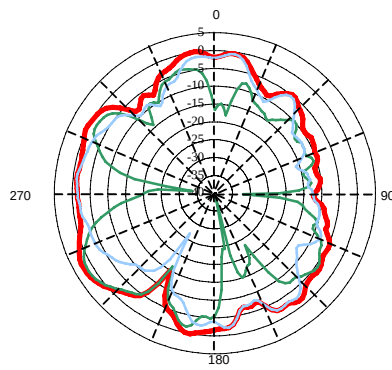
| Frequency                      | 2480MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | 3.8     |
| Vertical Peak Gain (dBi)       | 1.7     |
| Hori + Verti Peak Gain (dBi)   | 5.5     |
| Hori + Vert Average Gain (dBi) | -1.1    |

Azimuth Gain at 4900MHz



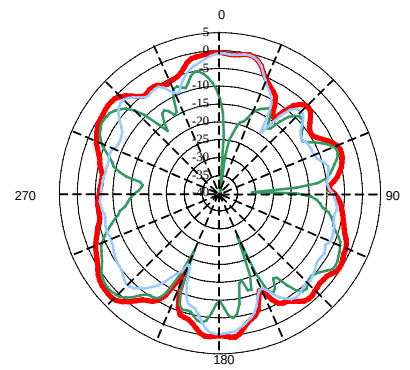
— Total Power — Horizontal polarised — Vertical polarised

Azimuth Gain at 5125MHz



— Total Power — Horizontal polarised — Vertical polarised

Azimuth Gain at 5350MHz



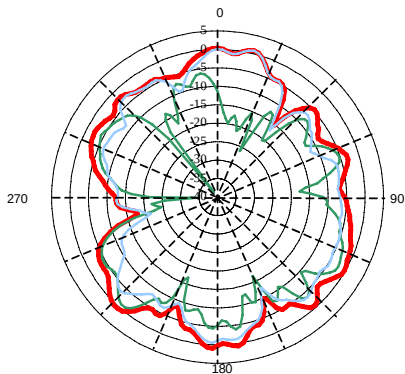
— Total Power — Horizontal polarised — Vertical polarised

| Frequency                      | 4900MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | -1.9    |
| Vertical Peak Gain (dBi)       | -2.0    |
| Hori + Verti Peak Gain (dBi)   | -0.8    |
| Hori + Vert Average Gain (dBi) | -5.1    |

| Frequency                      | 5125MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | 1.6     |
| Vertical Peak Gain (dBi)       | -0.6    |
| Hori + Verti Peak Gain (dBi)   | 2.4     |
| Hori + Vert Average Gain (dBi) | -2.8    |

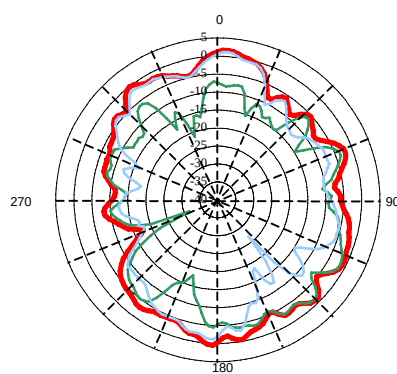
| Frequency                      | 5350MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | 1.1     |
| Vertical Peak Gain (dBi)       | -0.4    |
| Hori + Verti Peak Gain (dBi)   | 2.2     |
| Hori + Vert Average Gain (dBi) | -2.8    |

Azimuth Gain at 5470MHz



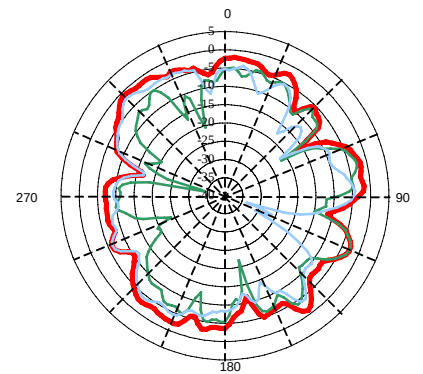
— Total Power — Horizontal polarised — Vertical polarised

Azimuth Gain at 5672MHz



— Total Power — Horizontal polarised — Vertical polarised

Azimuth Gain at 5875MHz



— Total Power — Horizontal polarised — Vertical polarised

| Frequency                      | 5470MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | -1.0    |
| Vertical Peak Gain (dBi)       | 0.8     |
| Hori + Verti Peak Gain (dBi)   | 0.9     |
| Hori + Vert Average Gain (dBi) | -3.2    |

| Frequency                      | 5672MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | -1.4    |
| Vertical Peak Gain (dBi)       | 1.2     |
| Hori + Verti Peak Gain (dBi)   | 1.7     |
| Hori + Vert Average Gain (dBi) | -3.4    |

| Frequency                      | 5875MHz |
|--------------------------------|---------|
| Horizontal Peak Gain (dBi)     | -2.7    |
| Vertical Peak Gain (dBi)       | -2.0    |
| Hori + Verti Peak Gain (dBi)   | -0.9    |
| Hori + Vert Average Gain (dBi) | -4.6    |