# PCB Specification

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|---|---|
| Date: | 11th October 2010 |
| Company: | SKA SA |
| Billing Address: | 17 Baker St, Rosebank, Johannesburg, South Africa<br>PO Box 522940, Saxonwold, 2132 |
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| | |
|---|---|
| Board name: | **ROACH 2** |
| Board Revision: | **0** |
| Release: | **A** |

## PCB Details

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|---|---|
| *PCB Specifications:* | IPC 6012 Class 2 |
| *Finished Board Size:* | 12 x 9.6 inches [305x244 mm] |
| *PCB Type:* | Multi-layer |
| *Layer Count:* | 16 |
| *Dielectric:* | All dielectric layers to be Isola 370HR high temperature laminate |
| *Nominal board Thickness:* | 93 mil (2.13 mm); tolerance +/-10% |
| *Hole tolerance:* | +3mil for vias; +/- 3mil for component holes and slots |
| *Finish:* | ENIG |
| *Soldermask:* | Green |
| *Silkscreen:* | White |
| *Minimum clearance:* | 4 mil |

# PCB Stackup

| Layer | # | Copper (oz) | Dieletric (mil)** | Filename |
|---|---|---|---|---|
| Pastemask Top | | - | - | roach2.GTP |
| Silkscreen Top | | - | - | roach2.GTO |
| Soldermask Top | | - | - | roach2.GTS |
| Signal Top | 1 | 0.5 | | roach2.GTL |
| | | | 3mil | |
| Ground 1 | 2 | 0.5 | | roach2.GP1 |
| | | | 5mil | |
| Signal 1 | 3 | 0.5 | | roach2.G1 |
| | | | 5mil | |
| Ground 2 | 4 | 0.5 | | roach2.GP2 |
| | | | 5mil | |
| Signal 2 | 5 | 0.5 | | roach2.G2 |
| | | | 5mil | |
| Power 1 | 6 | 1 | | roach2.GP3 |
| | | | ** | |
| Ground 3 | 7 | 1 | | roach2.GP4 |
| | | | 4mil | |
| Signal 3 | 8 | 0.5 | | roach2.G3 |
| | | | 4mil | |
| Signal 4 | 9 | 0.5 | | roach2.G4 |
| | | | 4mil | |
| Power 2 | 10 | 1 | | roach2.GP5 |
| | | | ** | |
| Power 3 | 11 | 1 | | roach2.GP6 |
| | | | 5mil | |
| Signal 5 | 12 | 0.5 | | roach2.G5 |
| | | | 5mil | |
| Power 4 | 13 | 0.5 | | roach2.GP7 |
| | | | 5mil | |
| Signal 6 | 14 | 0.5 | | roach2.G6 |
| | | | 5mil | |
| Ground 4 | 15 | 0.5 | | roach2.GP8 |
| | | | 3mil | |
| Signal Bottom | 16 | 0.5 | | roach2.GBL |
| Soldermask Bottom | | - | - | roach2.GBS |
| Silkscreen Bottom | | - | - | roach2.GBO |
| Pastemask Bottom | | - | - | roach2.GBP |

* Thickness may be adjusted to achieve nominal total thickness of 93 mil, to satisfy impedance targets and to accommodate manufacturing processes.

# Impedance Controlled Traces

All impedance matching to +/- 10%

### Microstrip

| | |
|---|---|
| Layers: | Signal Top (#1), Signal Bottom (#16) |
| Target Impedance: | 50 ohm |
| Trace thickness: | 5 mil ( 127um ) |

### Stripline

| | |
|---|---|
| Layers: | Layers: Signal 1 (#3), Signal 2 (#5),  Signal 5 (#12), Signal 6 (#14) |
| Target Impedance: | 50 ohm |
| Trace thickness: | 3.8 mil ( 96.52 um ) |

### Asymmetrical Stripline

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|---|---|
| Layers: | Signal 3 (#8), Signal 4 (#9) |
| Target Impedance: | 50 ohm |
| Trace thickness: | 3.8 mil ( 96.52 um ) |