LO/IF System PDR

LO/IF Switches

Doug Scott
LO/IF System PDR

• Type of Switches (# per antenna)
  – IF High Band Switches (4)
  – IF Low Band Switches (4)
  – IF Transfer Switches (2)
  – LO Switches (2)
LO/IF System PDR

- IF High Band Switch Specifications
  - Frequency Range: 8 to 12 GHz
  - VSWR: 1.4 to 1 max
  - Insertion Loss: 0.4 db max
  - Isolation: 60 db min
  - # of poles: 1 per switch
  - # of throws: 9 min per switch
• IF Low Band Switch Specifications
  – Frequency Range: 1 to 8 GHz
  – VSWR: 1.3 to 1 max
  – Insertion Loss: 0.4 db max
  – Isolation: 70 db min
  – # of poles: 1 per switch
  – # of throws: 6 min per switch
• IF Transfer Switch Specifications
  – Frequency Range: DC to 12 GHz
  – VSWR: 1.4 to 1 max
  – Insertion Loss: 0.4 db max
  – Isolation: 60 db min
  – # of poles: 2 per switch
  – # of throws: 2 min per switch
LO/IF System PDR

• LO Switch Specifications
  – Frequency Range: 12 to 20 GHz
  – VSWR: 1.8 to 1 max
  – Insertion Loss: 0.8 db max
  – Isolation: 55 db min
  – # of poles: 1 per switch
  – # of throws: 6 min per switch
LO/IF System PDR

• Mechanical Switches
  – Better Insertion Loss
  – Better VSWR & BW
  – Better Phase & Amplitude Performance
• Electronic Pin Diode Switches
  – Lower Cost
  – High Reliability
## Switch Costs

<table>
<thead>
<tr>
<th>IF High Band</th>
<th>IF Low Band</th>
<th>IF Transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1775 (1-2)</td>
<td>$965 (1-2)</td>
<td>$435 (1-2)</td>
</tr>
<tr>
<td>$1511 (3-5)</td>
<td>$821 (3-5)</td>
<td>$370 (3-5)</td>
</tr>
<tr>
<td>$1384 (6-10)</td>
<td>$743 (6-10)</td>
<td>$328 (6-10)</td>
</tr>
<tr>
<td>$1162 (51-100)</td>
<td>$612 (51-100)</td>
<td>$261 (51-100)</td>
</tr>
</tbody>
</table>

LO Switches to use recycled FE switches.
LO/IF System PDR

• LO/IF Switch Physical Locations
  – IF High Band, Outside B Rack
  – IF Low Band, Outside B Rack
  – IF Transfer, Inside B Rack
  – LO, Outside B Rack
  – Additional Control Switch Module
• **Current Status**
  – Obtaining more switch price quotes
  – Purchase Requisitions signed by 2/02
  – Switches available in 6-10 wks