





EVLA Racks Bins and Modules PDR

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What will be covered?



- Vertex room layout
- Vertex room LO/IF rack/bin/module designs
- CEB LO/IF rack/bin/module designs
- Digitizer/IF DTS rack/bin/module designs
- Antenna MCB rack design
- Vertex room fiber optic patch panel



Considerations



- Top Priority minimize self generated RFI
- Cooling
- Ease of maintenance
- Cost
- Connectors







- Shielding of racks/bins and modules
 - New packaging design for high speed digital
 - Improved shielding of IF/LO electronics
 - Filtering of power and control signals
 - Use of honeycomb filter materials
 - Use of fiber optics







- Shielding of vertex room
 - New feed cone
 - Modifications to walls and floor
 - Door gaskets
 - Cable penetrations
 - HVAC penetrations
 - L-band feed penetrating floor



Cooling



- Use of honeycomb filter materials
- Use of solid extruded heatsinks
- Flomerics Flotherm software
 - Modeling of airflow in racks and modules
 - Identifies potential hot spots



Maintenance



- Tradeoffs between RFI integrity and easy access
- Blind mate connectors on LO/IF modules
- No blind mate connectors on
 - Digitizer/IF DTS
 - MCB routers/switches







- Use of extrusions where possible
- New blind mate connectors on modules
 - Existing VLA connectors very expensive or obsolete
- Reuse of some hardware
 - Bins
 - CEB racks



Connectors



- Blind Mate
 - Coax: OSP (same as VLBA and ALMA)
 - Data/Power: D-SUB or military style
 - D-SUB is current default (ALMA and ATNF)
 - Other styles still being researched
- Others connectors
 - As required