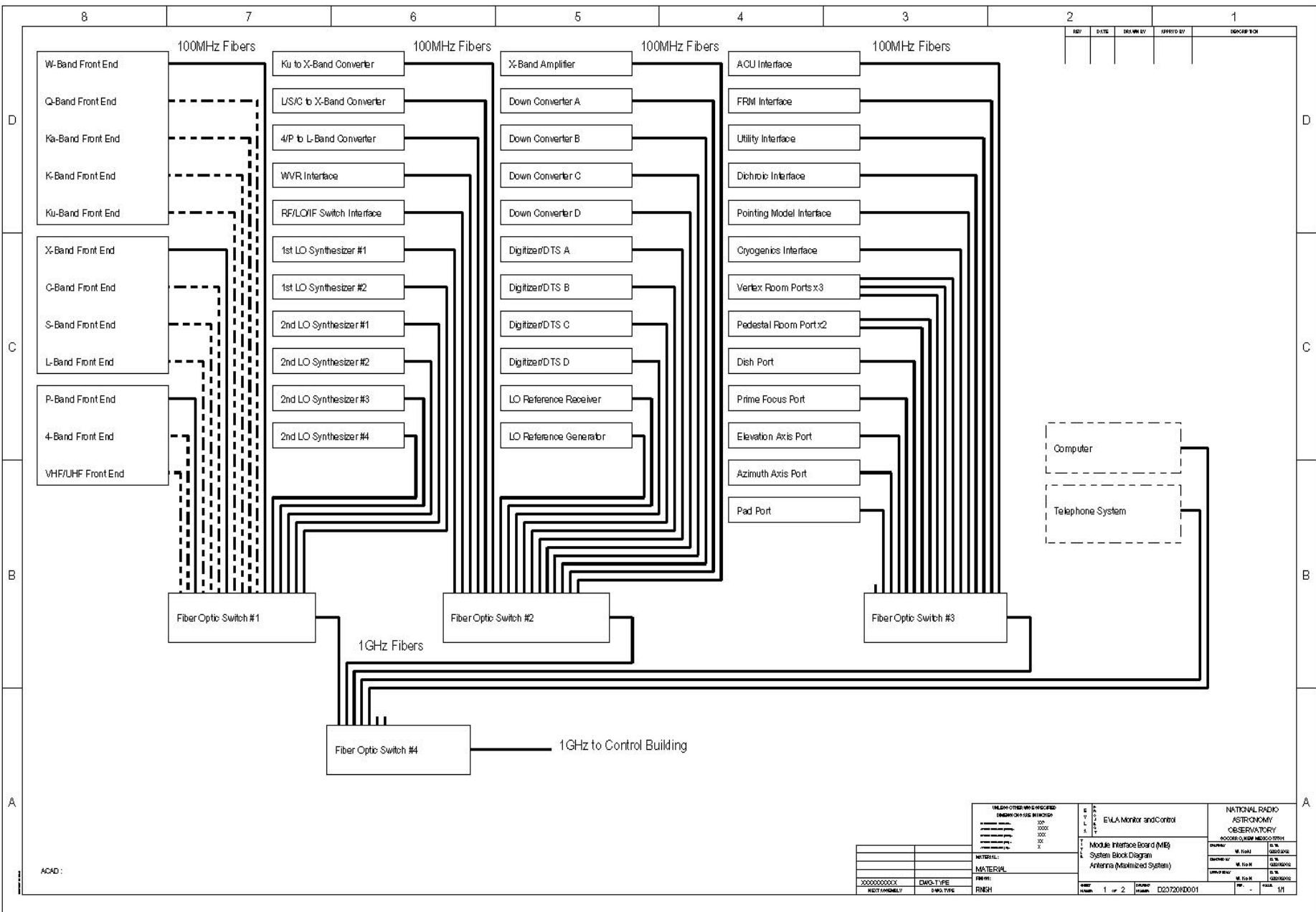


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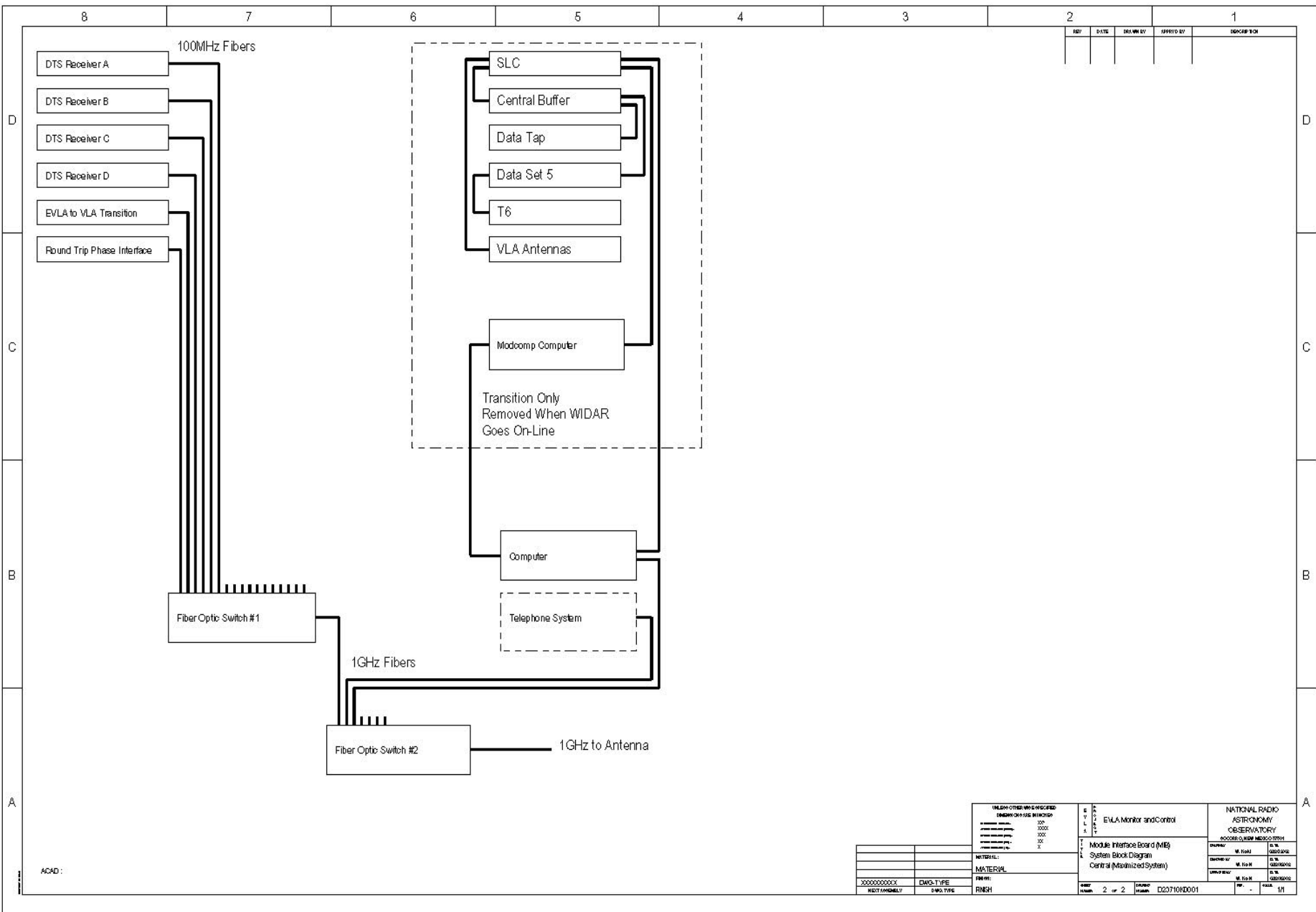
# APPLICATIONS AND DEVICE INTERFACE ISSUES



REV	DATE	DESIGNED BY	APPROVED BY	ISSUED FOR

ACAD :

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES FINISH: 0.005 SURFACE: 0.005 HOLE: 0.005 TOLERANCE: 0.005		ENLA Monitor and Control Module Interface Board (MIB) System Block Diagram Antenna (Maximized System)	NATIONAL RADIO ASTRONOMY OBSERVATORY 80000 GULF BLDG MEDICAL STATION GAITHERSBURG, MD 20898 DESIGNED BY: M. F. HALL CHECKED BY: M. F. HALL DATE: 11/80
MATERIAL: MATERIAL: PART NO.: RECT ANGLE:	DIM: TYPE DIM: TYPE	SHEET: 1 of 2 DRAWN: D23720HD001	M. F. HALL DATE: 11/80

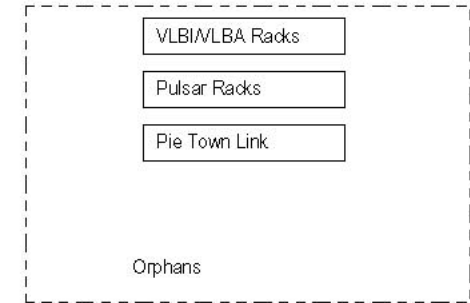
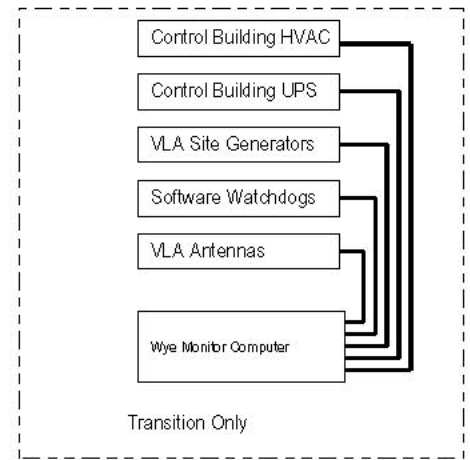
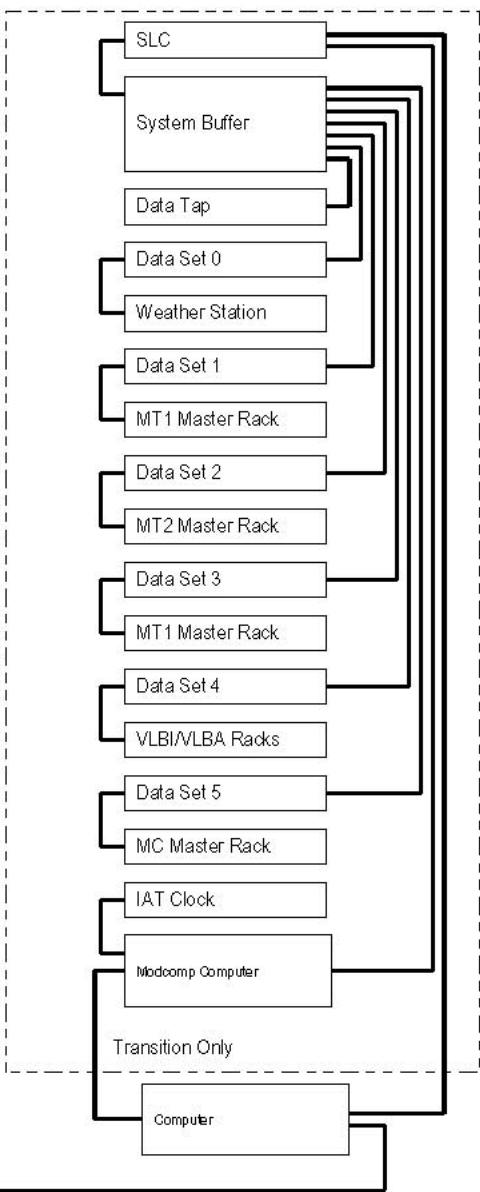
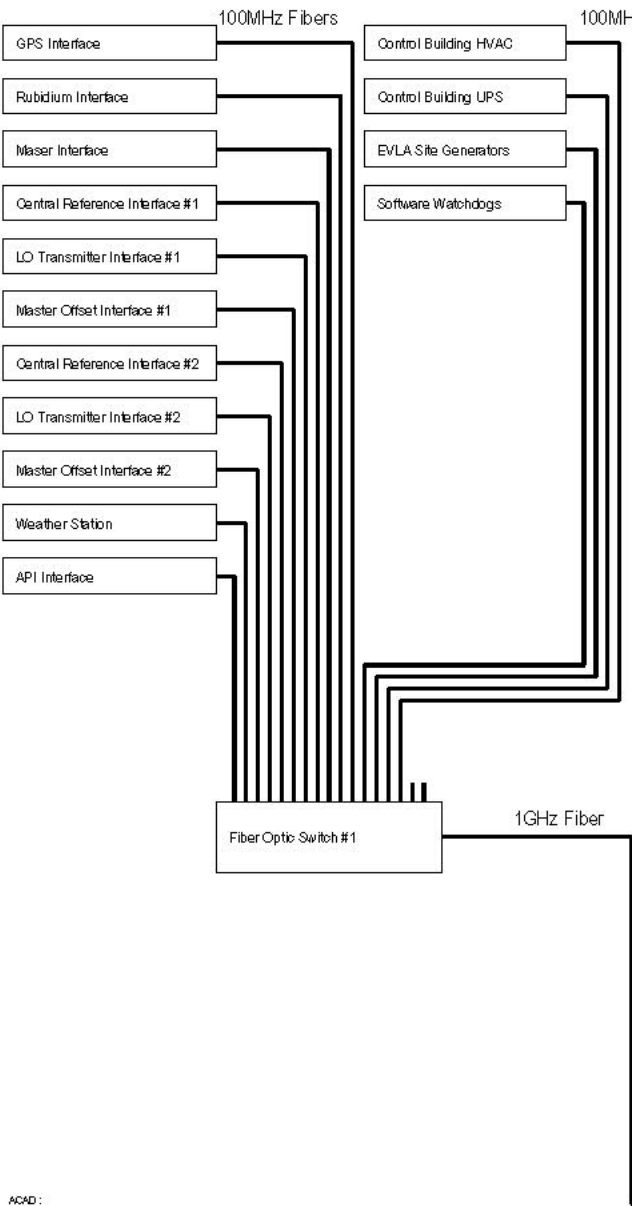


REV	DATE	DESIGNED BY	APPROVED BY	DESCRIPTION

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES FINISHES: UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DIMENSIONS ARE IN INCHES DIMENSIONS ARE IN INCHES DIMENSIONS ARE IN INCHES		ENLA Monitor and Control Module Interface Board (MIB) System Block Diagram Central (Maximized System)	NATIONAL RADIO ASTRONOMY OBSERVATORY 8000 GULF BLDG. MEDICAL CENTER	
MATERIAL: MATERIAL: FINISH: RECT. DIMENSIONS: DIM. TYPE:			DESIGNED BY: M. S. H. (S. W. C. 2000) CHECKED BY: M. S. H. (S. W. C. 2000) APPROVED BY: M. S. H. (S. W. C. 2000)	DATE: 11/11/00 DRAWING NO.: 020110ND001 SHEET NO.: 2 of 2 SCALE: 1:1

ACAD :

REV	DATE	DESIGN BY	APPROVED BY	DESCRIPTION

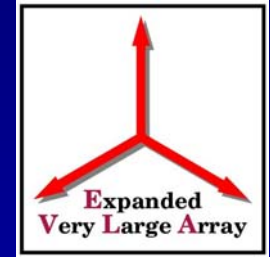


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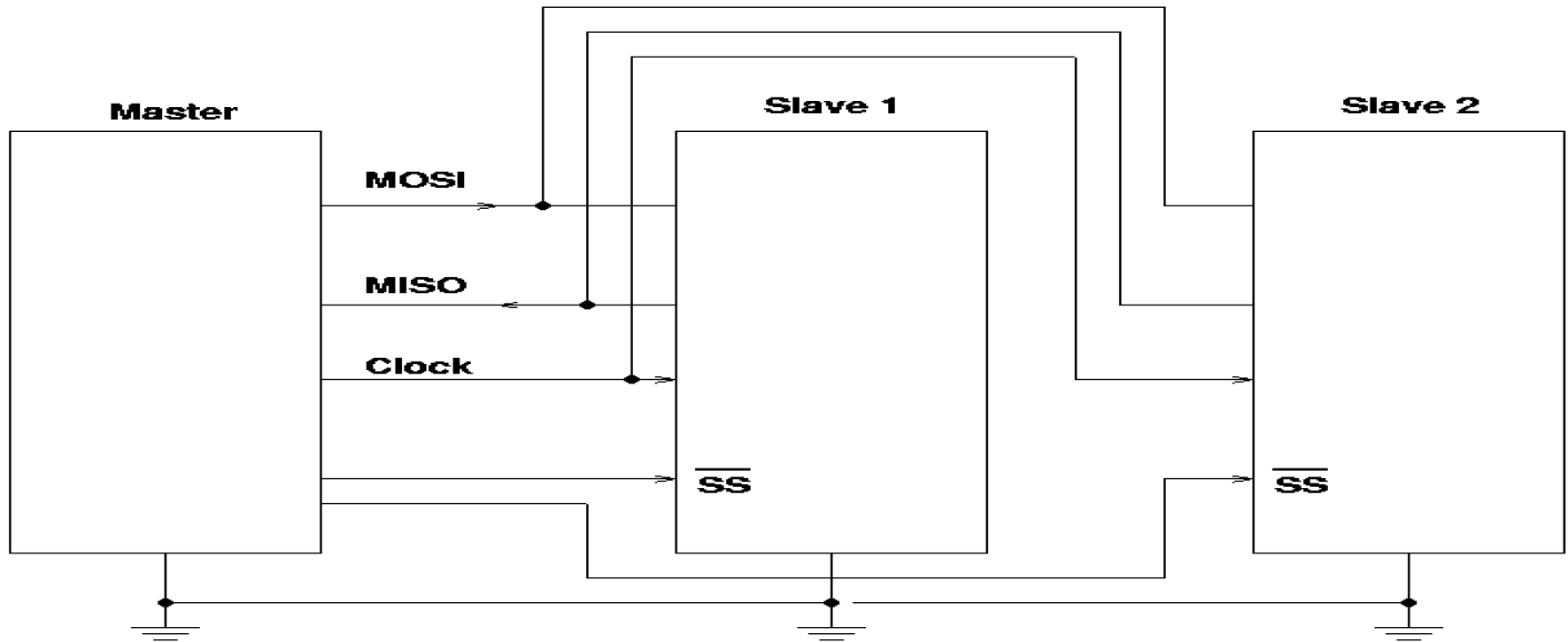
<b>VLBI OTHER VENDOR SPECIFIED</b> DESIGNATION REVISIONS 1. 00000000X 2. 00000000X 3. 00000000X 4. 00000000X		E V L B I A S EVLA Monitor and Control	NATIONAL RADIO ASTRONOMY OBSERVATORY ACCESS CONTROL AND SECURITY
<b>MATERIAL:</b> MATERIAL:			
<b>REVISION:</b> 00000000X 00000000X 00000000X 00000000X		Module Interface Board (MIB) System Block Diagram Master Rack (Maximized System)	DRAWN: M. Kahl CHECKED: M. Kahl APPROVED: M. Kahl DATE: 02/20/00
00000000X 00000000X 00000000X 00000000X	DWG. TYPE DWG. TYPE	RNSH	SHEET 1 of 1 DRAWN DATE 02/20/00



# SERIAL PERIPHERAL INTERFACE (SPI)



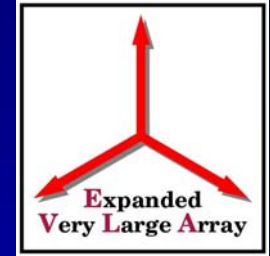
## Synchronous Serial Communications



With select lines, one master can communicate with more than one slave



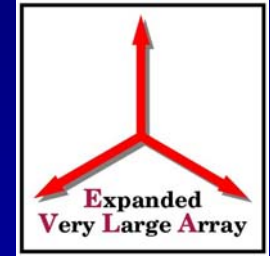
# SERIAL PERIPHERAL INTERFACE (SPI)



- Widely Used to Communicate With Many Devices (A/D & D/A Converters, Memory Chips, Temperature Sensors, Microprocessors, Etc.)
- Clock is Idle When Not Used



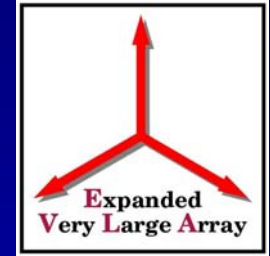
# MIB TO MIB COMMUNICATION



- Can Be Used As Needed – Control Computer to MIB is Most Common
- Pointing Model Interface
- Front End to Cryo Communications
- Total Power to Down Converter Communications
- Utility Module



# FRONT END M & C

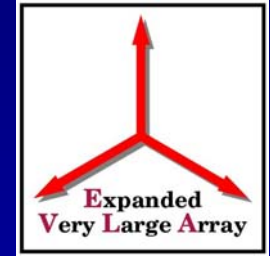


- “F14 Like Module” In Rack Away From Receiver (To Reduce RFI) Contains MIB
- Each Module Interfaces to One or More Front Ends
- Single 25 Pin Connector Carries All Analog and Digital Signals to/from Receiver Card Cage





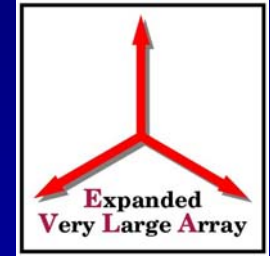
# FRONT END M & C



- SPI Used for Digital Signals
- Analog Multiplexers to Select Three Analog Signals at a Time
- RFI Issues Must be Considered



# Monitor and Control Induced RFI



- Hardware Design to Conform to RFI Plan
- If Glitches Still Occur, Data Could be Flagged Bad
- We Could Plan Periodic Flagging of Data Throughout the Array (Infrequently) For Transactions That May Cause Glitches