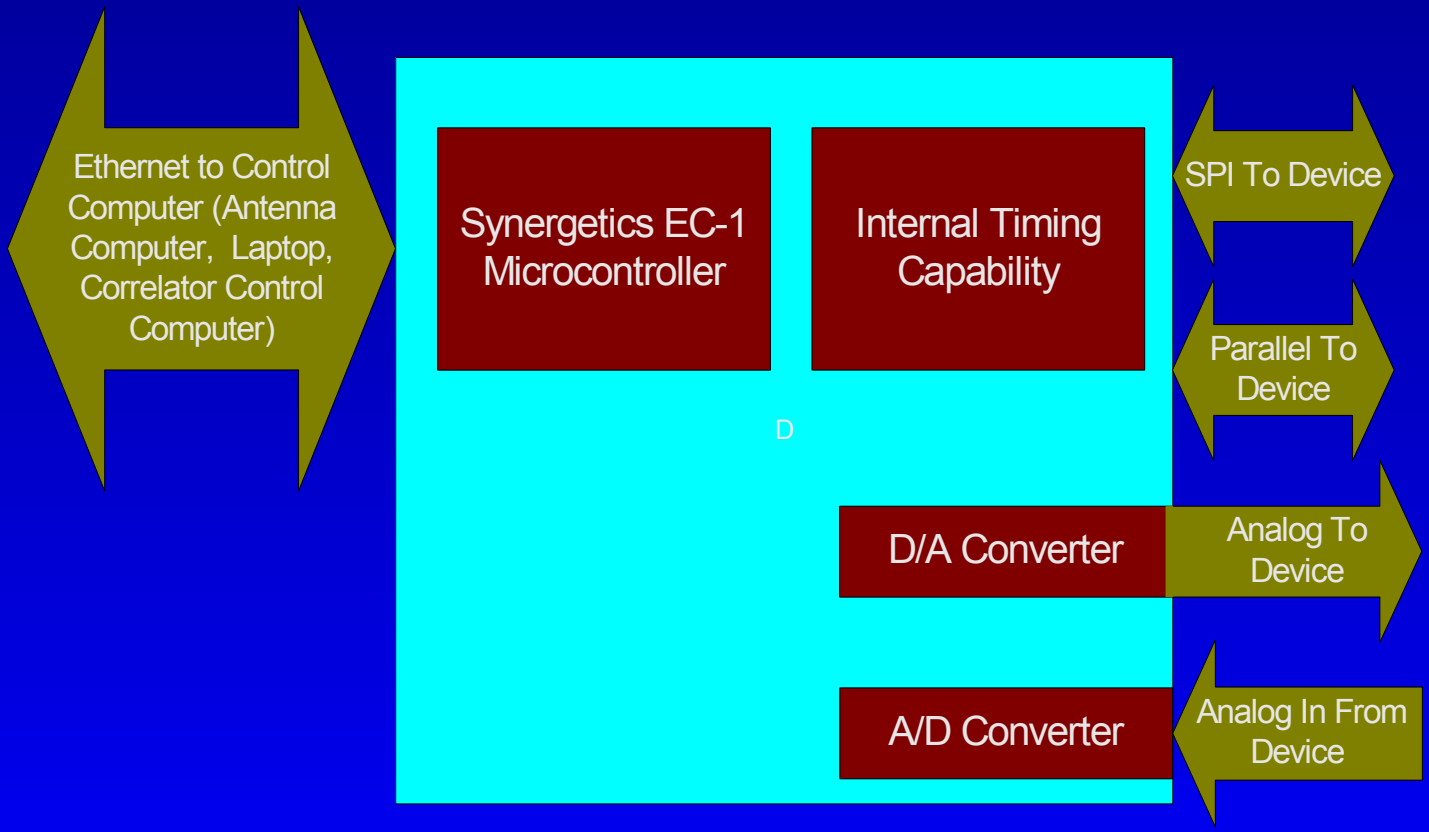
EVLA Monitor and Control Hardware

EVLA Monitor and Control Hardware

- Module Interface Board (MIB)
- Backup Monitor and Control
- Transition Monitor and Control Hardware

Module Interface Board (MIB)



Module Interface Board (MIB)

- Ethernet Interface To Antenna Computer And Technician's Laptop
- Ethernet Interface Between Correlator Modules And Correlator Control Computer
- Ethernet Interface Between Control Building Electronics And Computer

Module Interface Board (MIB)

- Serial (SPI) And Parallel Interfaces To Module
- A/D And D/A Conversion Capabilities
- Small Physical Size (Fits In Module)
- Does Not Have To Be Implemented On A Separate Board
- Finds Its Address From Slot In Rack
- Board Can Be Easily Swapped Between Modules

EC-1 Microprocessor

- 16-Bit, 48 MHZ Microprocessor
- 80186 Compatible
- 10/100 MB/S Ethernet Controller
- 32 I/O Pins
- SPI Interface
- 2K ROM, 256K SRAM
- CAN, Profibus, RS232, RS485

MIB SOFTWARE

- Capable Of Controlling Modules – No Other Microprocessor Needed In Some Cases
- Custom Firmware For Particular Module
- Can Do Multiple Actions With Single Command
- Can Perform Time Synchronized Actions
- TCP/IP Protocol

Backup Monitor and Control

- Replaces Current “Wye Monitor” System
- Allows Monitor And Control Of Critical Antenna Functions During A Power Failure
- Interfaces To Generator And Control Building UPS
- Must Go To Antennas On Fiber, Not Copper

Backup Monitor and Control

- Could Be Part Of EVLA Monitor And Control System
- Would Not Require A Separate Fiber
- Would Not Require A Separate Backup Monitor And Control Computer
- Antenna Computer Must Remain Functional During Power Outage

Backup Monitor and Control

- Could Be Separate From EVLA Monitor and Control System
- This Could Require A Separate Fiber From The Antenna To The Control Building
- This Would Require A Separate Backup Monitor And Control Computer
- This Could Be Implemented Using Utility Modules And A Sensaphone

Transition Monitor and Control Hardware

- Two Types Of Modules Needed
- First Type Would Communicate With Old Style Antenna Control Unit (ACU) (Duplicates Antenna Buffer to Data Set Operation)
- Second Type Replaces Current Data Set For Modules That Will Not Be Upgraded Such As Focus Rotation, Old Style Receivers, and Back End LO Electronics

EVLA Telephone System

- Planning Is In Preliminary Stages
- A Phone Line To Each Antenna Is Desired
- Each Phone Line Would Be Accessible From The Commercial Telephone System
- Voice Over IP Is Being Considered