

MODS Instrument Control

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Outline

- Scope
- Requirements
- MODS Mechanisms
- Design Architecture
- IMS MicroLynx Controller
- Progress

Scope

What is included in Instrument Control?

- Motor control
- Position feedback
- Process variable indication
- IMCS sensor readout and laser control
- Calibration Lamp control

Requirements

Requirements

- No negative effect on science detector
- Move multiple mechanisms at once
- Handle all MODS mechanism types
- Use same drive for all mechanisms
- Electronics heat load does no harm to environment near telescope

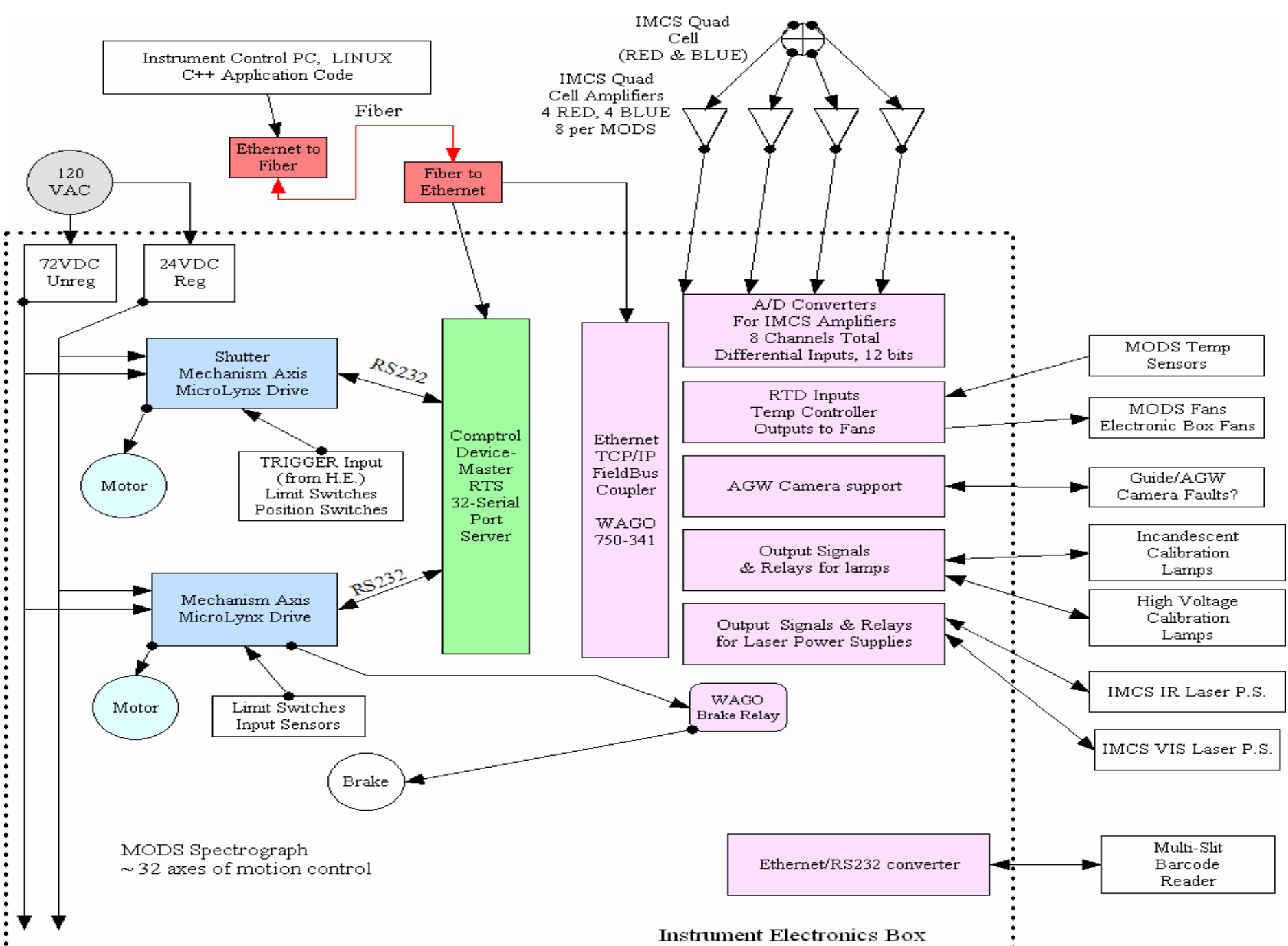
MODS Mechanisms

How many?

- 29 Stepper Motors per MODS

Topologies

- 2-Position Linear
- Indexed Linear
- Continuous Linear
- Indexed Rotary



Instrument Electronics Box

IMS MicroLynx

MicroLynx 7

- 3A typical, 6A peak
- 24 to 75 VDC
- RS232/485
- 6 Digital I/O
- 3 Expansion Slots
- Up to 18 Digital I/O
- Analog Input Module
- Encoder Module
- \$512 each



Progress

Selected Motor Controller

- Ordered 8 Microlynx 7
- Need 70-80 more for both MODS (\$40K)

Defined Mechanism Interconnect

- 28-pin Series 2 CPC at mechanism
- Custom Cable on order (28 cond + drain)

Selected hardware for other I/O

- WAGO DIN rail mount hardware
- Ethernet connectivity

Upcoming Tasks

Mechanism Wiring

- Official Wiring at the Mechanisms
- Order Mechanism Cables

Enclosure

- Determine Maximum Enclosure Size
- Buy Maximum Enclosure Size
- Design of Heat Removal System