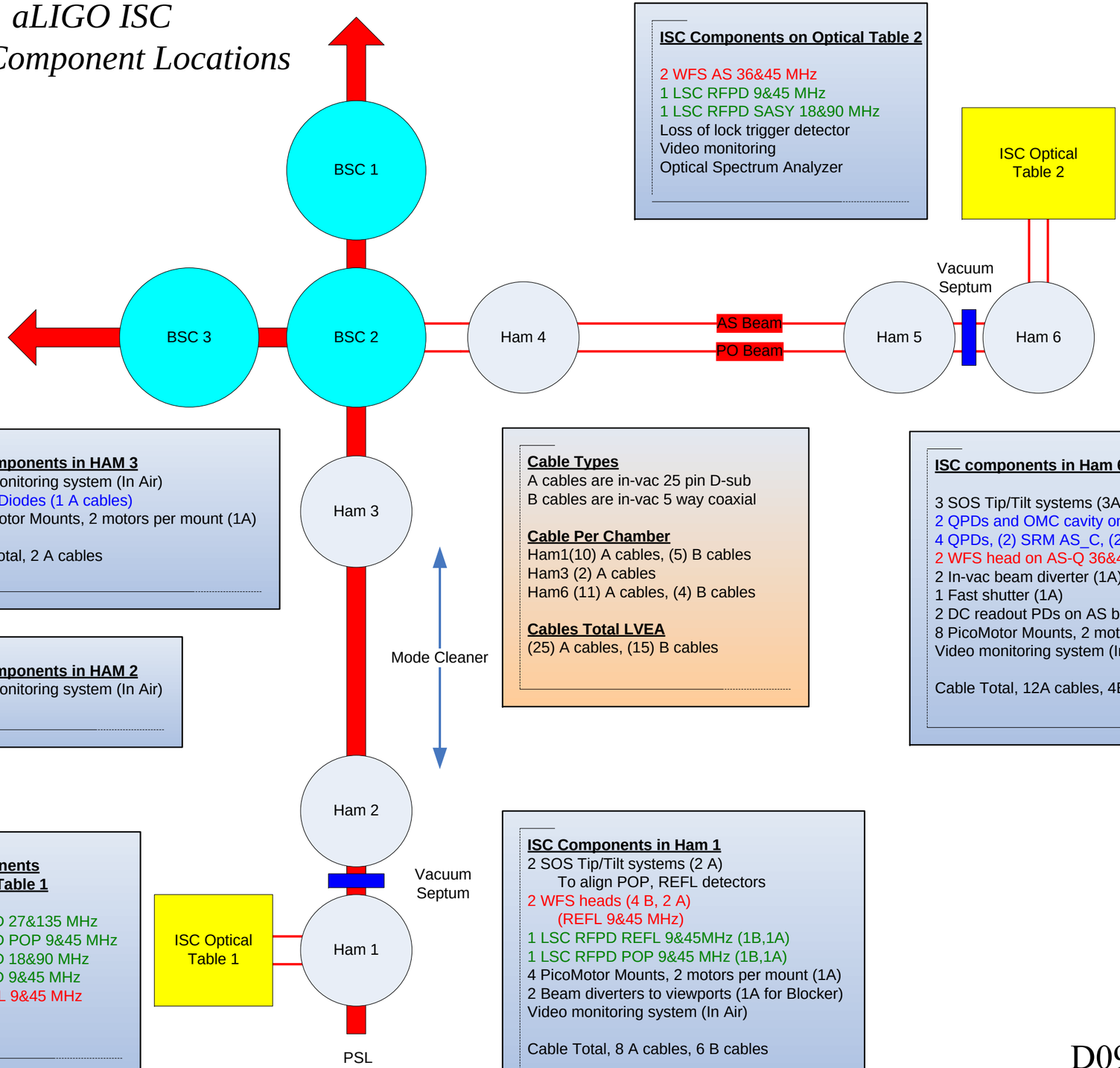
aLIGO ISC
LVEA Component Locations



ISC Components on Optical Table 2

2 WFS AS 36&45 MHz
1 LSC RFPD 9&45 MHz
1 LSC RFPD SASY 18&90 MHz
Loss of lock trigger detector
Video monitoring
Optical Spectrum Analyzer

ISC Components in HAM 3
Video monitoring system (In Air)
2 Quad Diodes (1 A cables)
3 PicoMotor Mounts, 2 motors per mount (1A)

Cable Total, 2 A cables

ISC Components in HAM 2
Video monitoring system (In Air)

ISC Components on Optical Table 1

1 LSC RFPD 27&135 MHz
1 LSC RFPD POP 9&45 MHz
1 LSC RFPD 18&90 MHz
1 LSC RFPD 9&45 MHz
2 WFS REFL 9&45 MHz

Cable Types
A cables are in-vac 25 pin D-sub
B cables are in-vac 5 way coaxial

Cable Per Chamber
Ham1(10) A cables, (5) B cables
Ham3 (2) A cables
Ham6 (11) A cables, (4) B cables

Cables Total LVEA
(25) A cables, (15) B cables

ISC Components in Ham 1
2 SOS Tip/Tilt systems (2 A)
To align POP, REFL detectors
2 WFS heads (4 B, 2 A)
(REFL 9&45 MHz)
1 LSC RFPD REFL 9&45MHz (1B,1A)
1 LSC RFPD POP 9&45 MHz (1B,1A)
4 PicoMotor Mounts, 2 motors per mount (1A)
2 Beam diverters to viewports (1A for Blocker)
Video monitoring system (In Air)

Cable Total, 8 A cables, 6 B cables

ISC components in Ham 6

3 SOS Tip/Tilt systems (3A)
2 QPDs and OMC cavity on OMC breadboard (1A)
4 QPDs, (2) SRM AS_C, (2) REFL (2A)
2 WFS head on AS-Q 36&45 MHz (2A, 4B)
2 In-vac beam diverter (1A)
1 Fast shutter (1A)
2 DC readout PDs on AS beam (1A)
8 PicoMotor Mounts, 2 motors per mount (2A)
Video monitoring system (In Air)

Cable Total, 12A cables, 4B cables

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aLIGO ISC
End-station Component Locations (for one IFO)

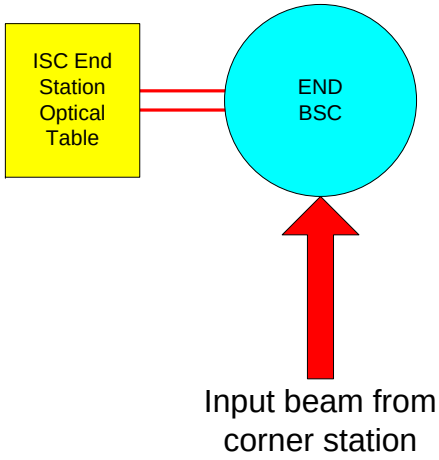
End Station Optical Table

ALS - End Station Optical Table

(1) DC PD, 532 nm (commercial)
(1) DC PD, 1064 nm (commercial)
(1) RF PD @24.5 MHz, 532 nm (PDH)
(2) RF WFS @24.5 MHz, 532 nm
(2) XY PZT Steering Mirror (interface to Mad City Labs Module, 2x in, 2x out)
(1) RF PD broadband BW~, 1064 nm (Phase locking)
(1) DC PD, 1064 nm (TRX/Y high gain PD for IFO lock acquisition)

Single Arm Test - End Station Optical Table

(1) RF PD @xx MHz, 1064 nm (PHD Ref Cav)
(1) DC PD, 1064 nm (Tr Ref Cav, commercial)



ISC Components in End BSC

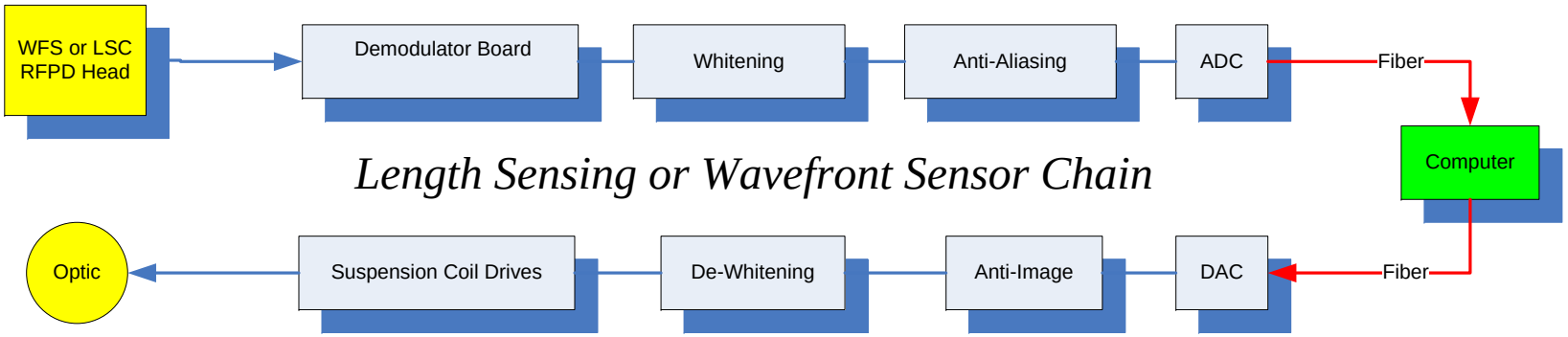
4 PicoMotor Mounts, 2 motors per mount (1A cables)
2 ETM TransMon. Quads 1064nm (1 A cable)
2 ETM TransMon. Quads 532nm (1 A cable)
1 TransMon Beam Diverter (1A cable)

Cable Total – (4) A cables

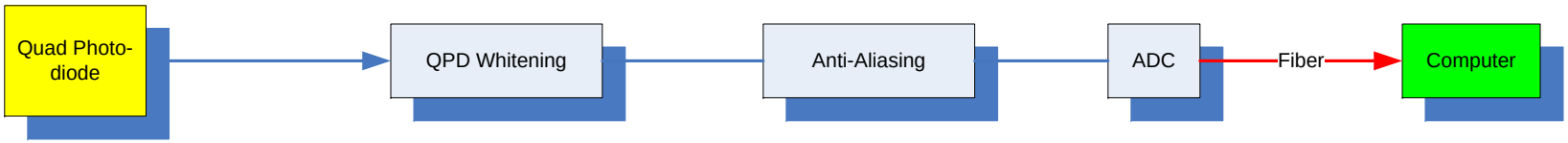
Cable Types
A cables are in-vac 25 pin D-sub
B cables are in-vac 5 way coaxial

Cable Totals
End BSC (6) A cables

Typical ISC Electronics Chains

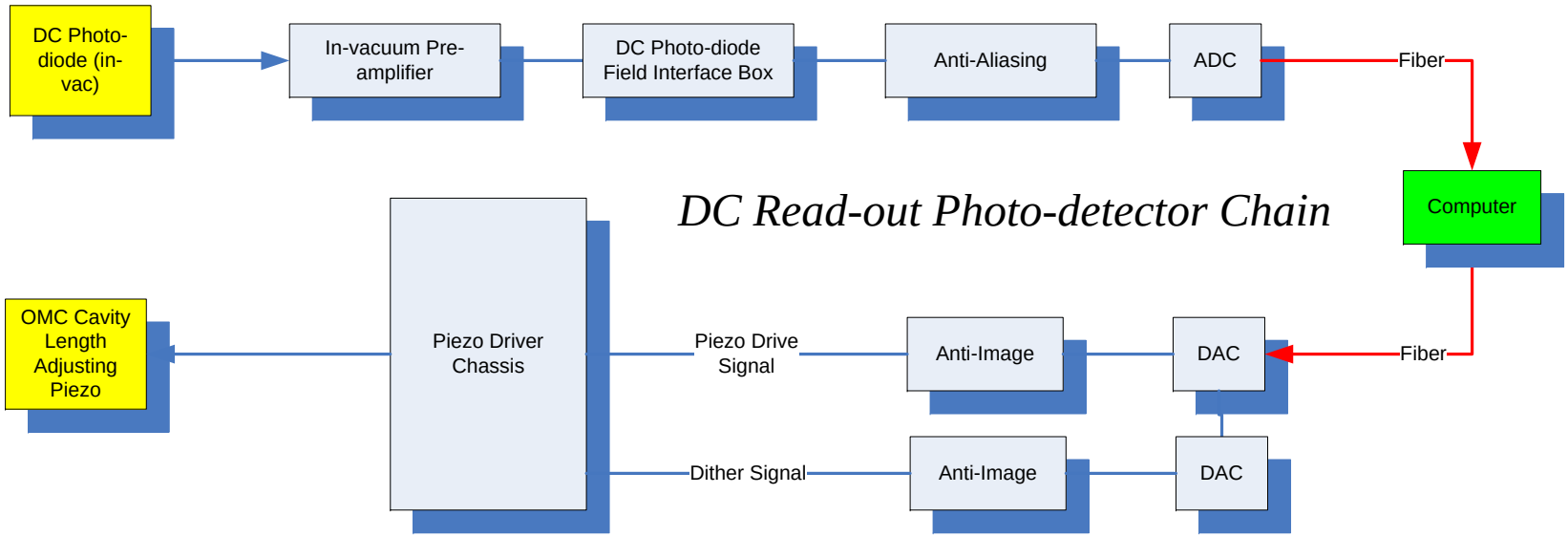


Length Sensing or Wavefront Sensor Chain

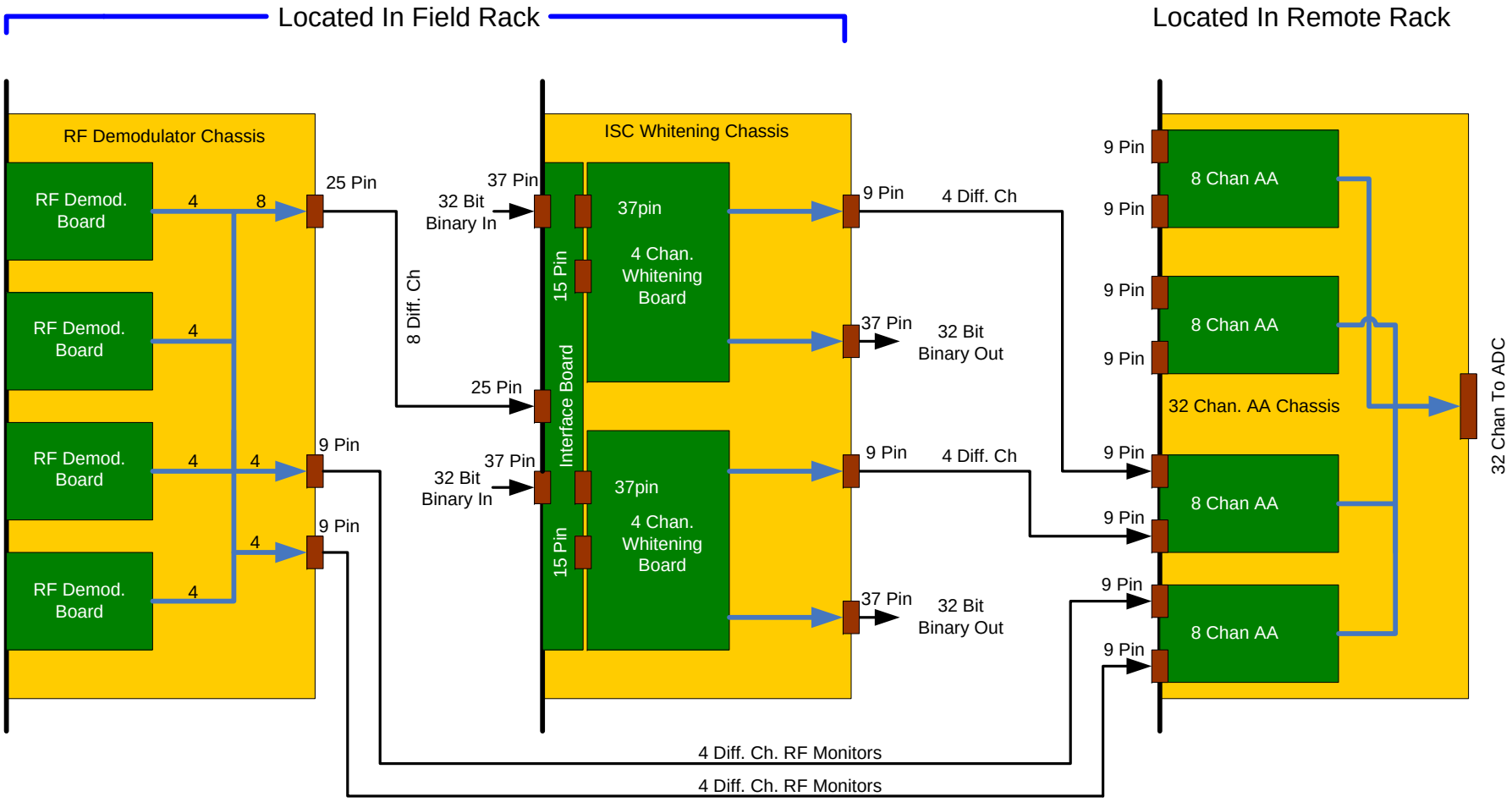


Quadrant Photo-diode Sensor Chain

Typical ISC Electronics Chains (Cont.)



RF Demodulation Chain



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