

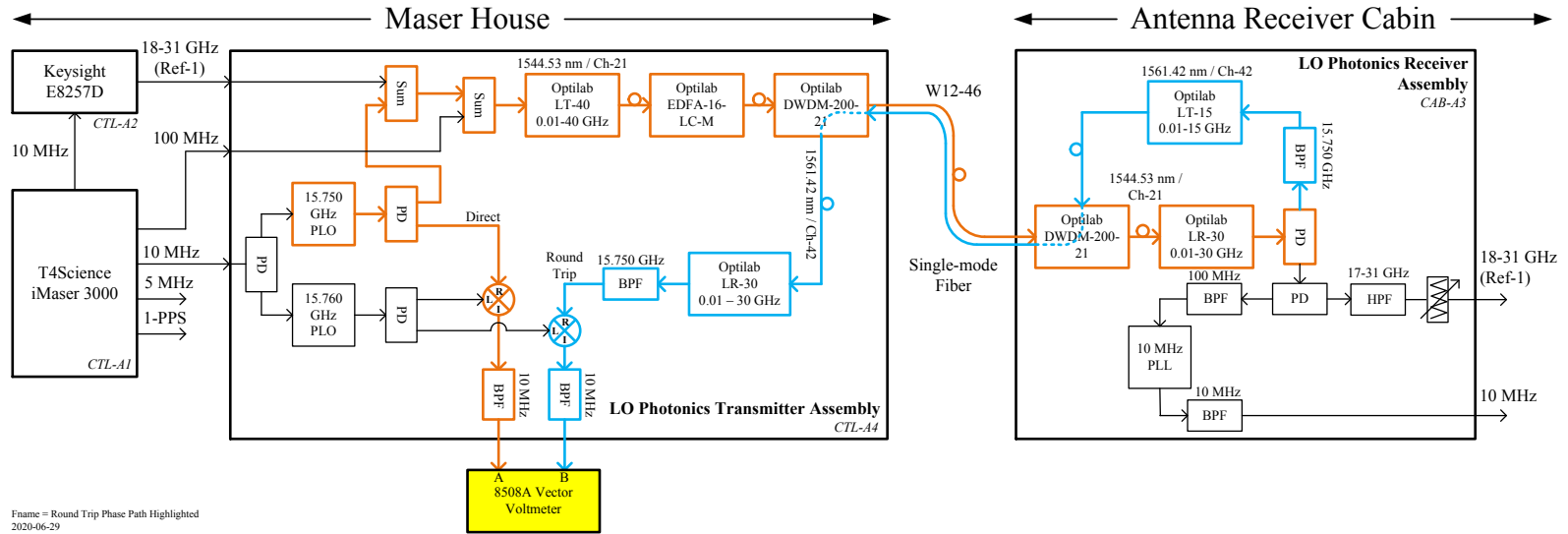
Greenland Telescope



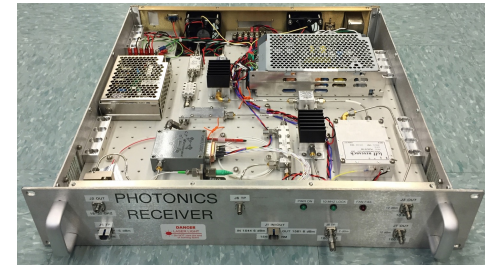
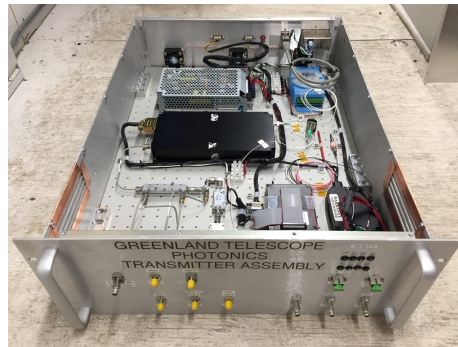
Greenland Telescope



local oscillator subsystem description



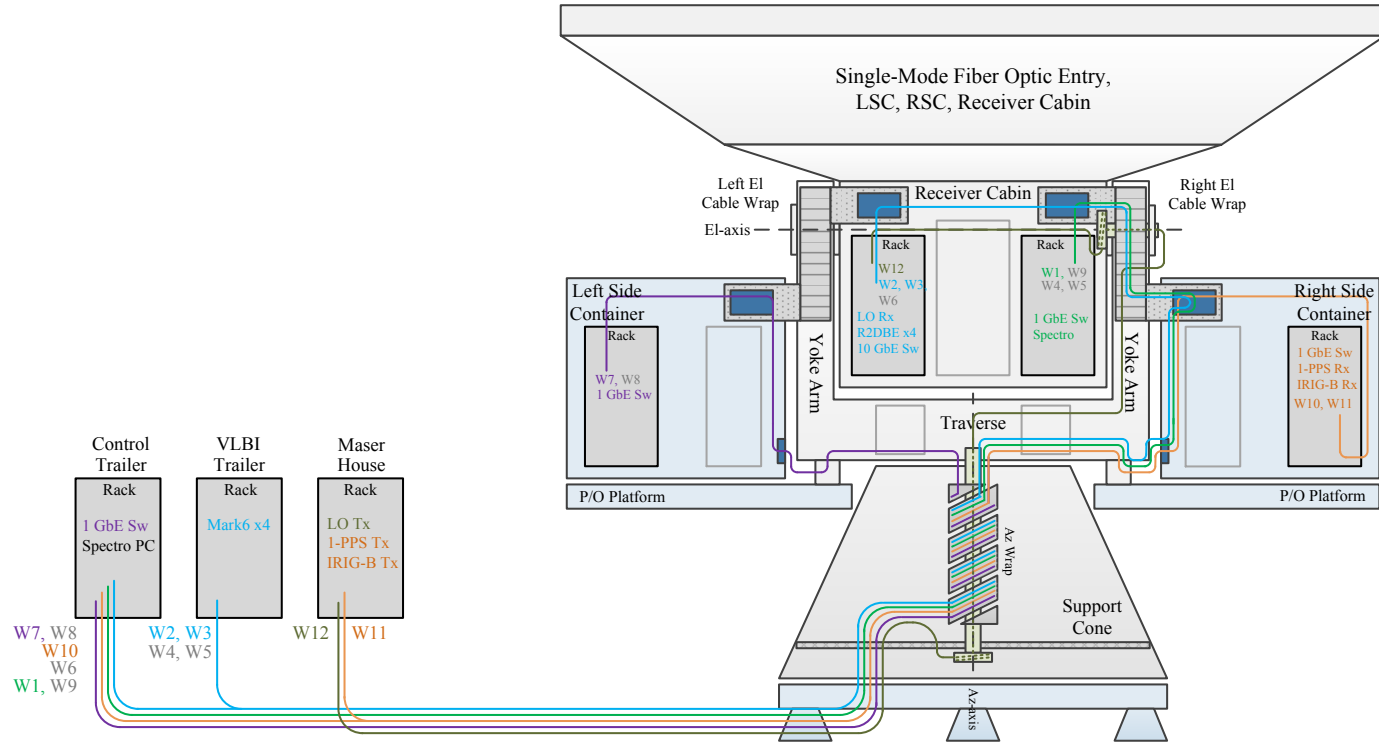
Frame = Round Trip Phase Path Highlighted
2020-06-29



Maser house temperature



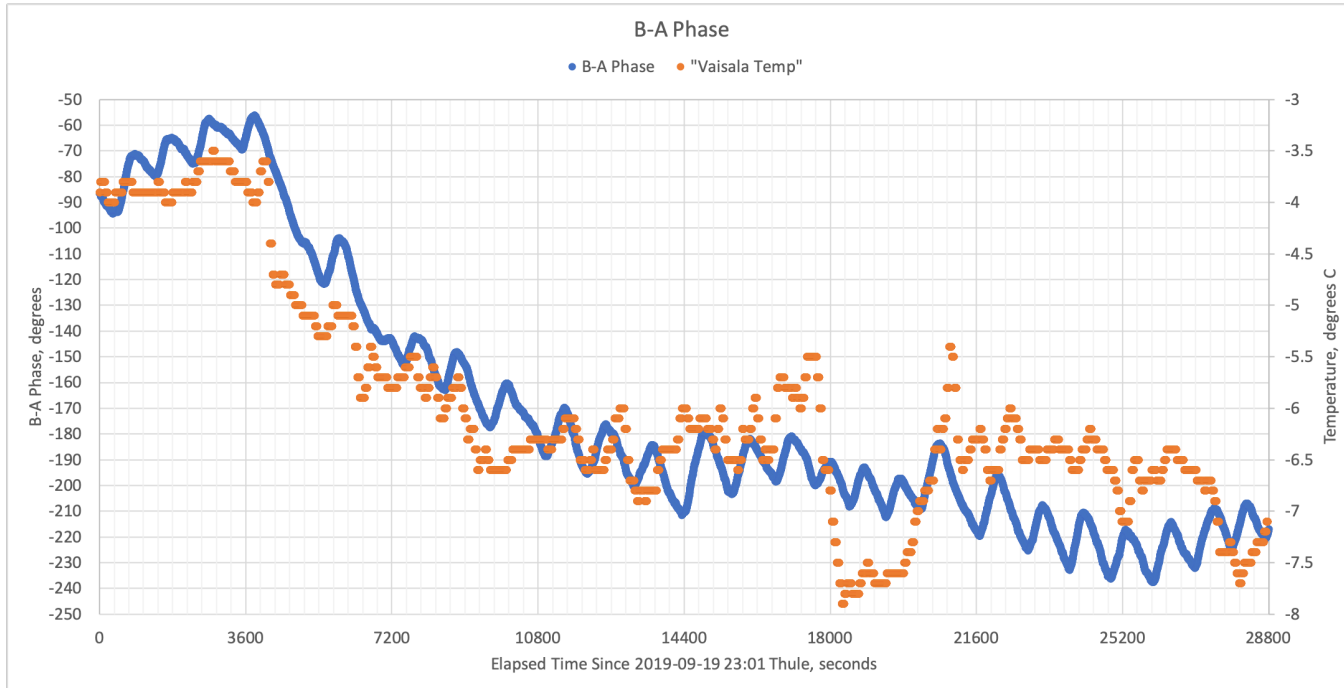
W12 fiber routing for local oscillator subsystem



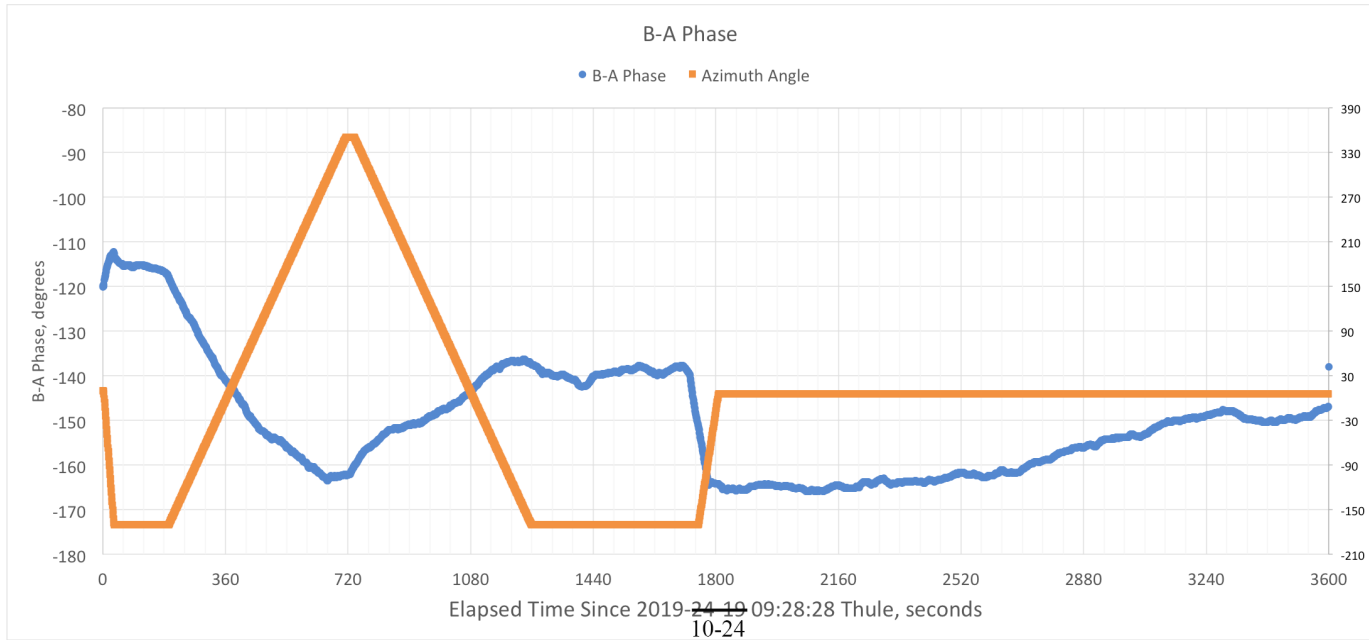
Insulation of fiber conduit



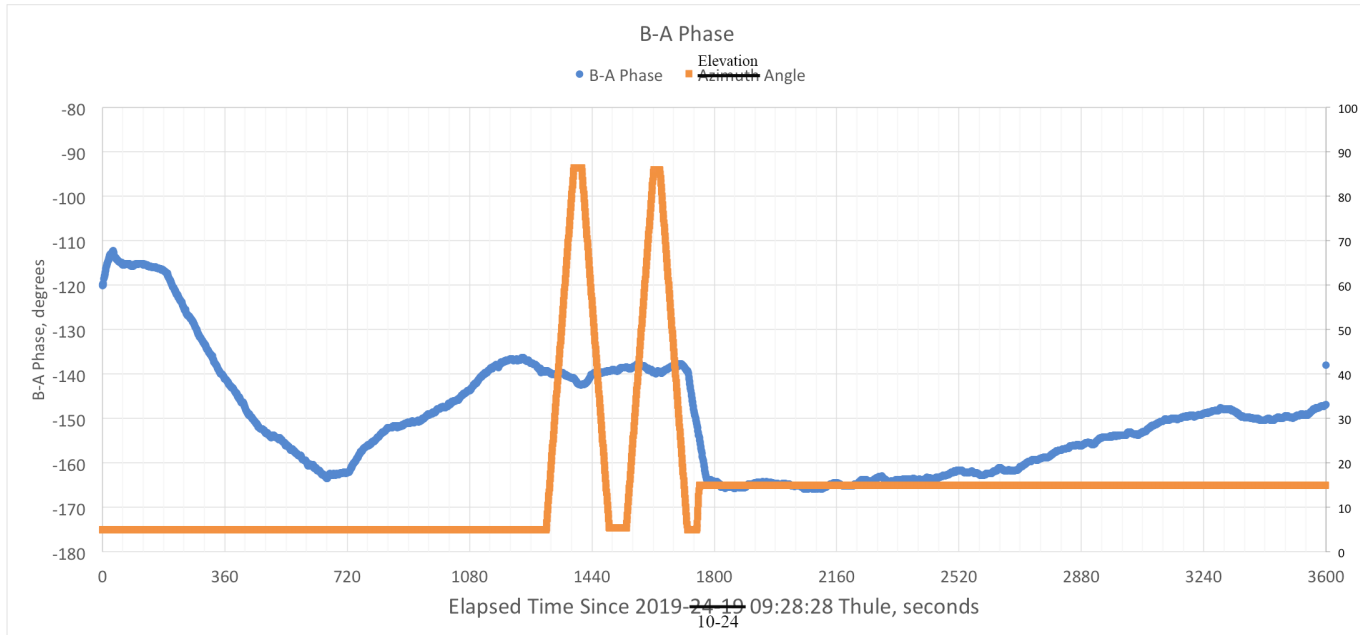
15.75 GHz round trip phase performance with antenna static



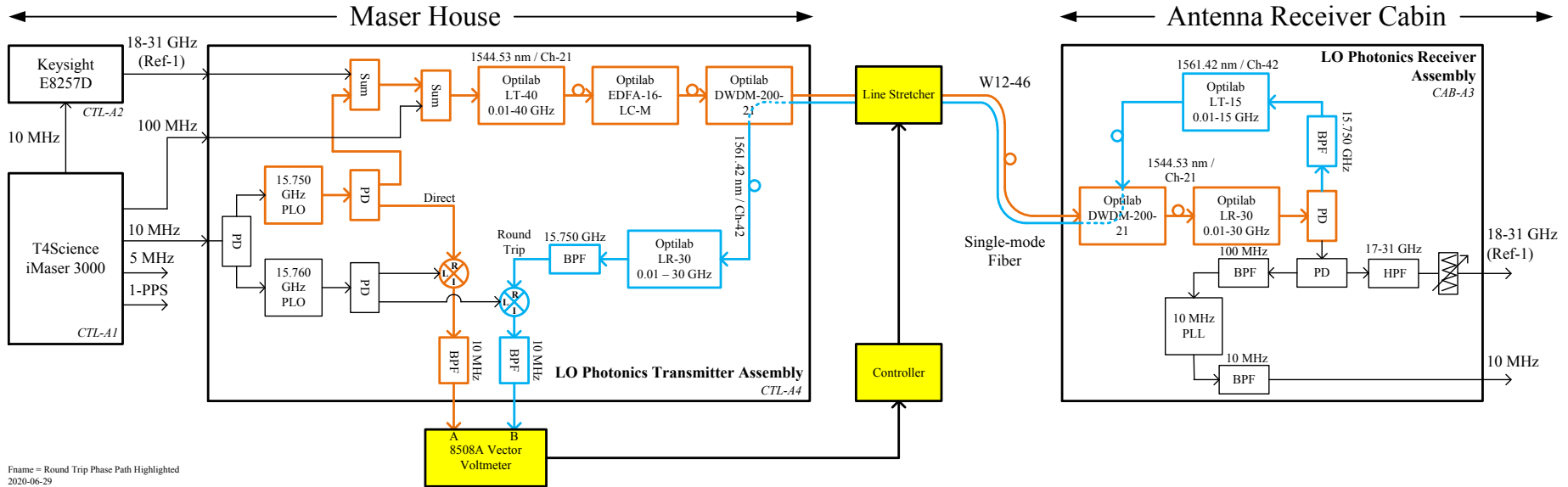
15.75 GHz round trip phase performance wrto azimuth movement



15.75 GHz round trip phase performance wrto elevation movement



Introduction of fiber optic line stretcher



Introduction of fiber optic line stretcher



FST-001-B

Fiber Stretcher

Operation Manual



The FST-001-B is a piezo-driven fiber stretcher with a long optical delay range of up to 3 mm. The device comes complete with a piezo driver packaged in a user-friendly small enclosure. Only +12 VDC is required to power the unit. One attractive feature is that the device is controlled by up to four independent PZTs, so that the user has the option to drive each PZT individually, for high resolution, or collectively, for large stroke. In addition, each PZT can be controlled either with an analog signal or a 12-bit TTL signal. During analog control, the driving circuit simply acts as a 4-channel voltage

amplifier with 30V/V amplification. Alternatively, the output voltage can be controlled by a computer equipped with a digital I/O card, or by a microprocessor. The FST-001-B enables applications from sensing to medical imaging, interferometry, and spectrum analysis. At General Photonics, we stretch the fiber hard to make your work more relaxed.

Specifications:

Optical Path Delay Range	> 3 mm (in air)
Phase Change Sensitivity	810 π /V at 1550nm, (analog input, using 4 channels)
Internal Voltage Amplification	30 V/V
Max. Voltage On PZT	140 volts
Resonance Frequency	2.2 \pm 0.3 kHz
Insertion Loss ¹	< 0.2 dB
Insertion Loss Variation	< 0.1 dB
Return Loss	> 65 dB
PDL	< 0.05 dB
Fiber Type	SMF-28 standard, others available by request
Wavelength Range ²	1260 to 1620 nm
Maximum Optical Power	1000 mW min.
Analog Input	4 channels, 4.7 volts max. for each channel
Digital Input	20-pin digital connector to accept 12 bit TTL control signal.
Software	None
Operation Temperature	0 to 50 °C
Storage Temperature	-40 to 80 °C
Dimensions	170 (L) \times 106 (W) \times 38.6 (H) mm

Note:

1. Values are referenced without connectors.

2. With SMF-28 fiber.

Features:

- Large Delay Range
- High Speed
- Low Insertion Loss
- Analog and Digital Control
- User Friendly

Applications:

- Sensors
- Interferometers
- Medical Imaging
- Spectrum Analysis
- OCT

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