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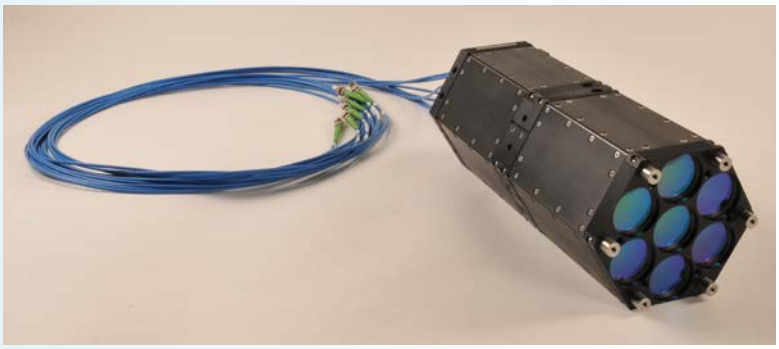
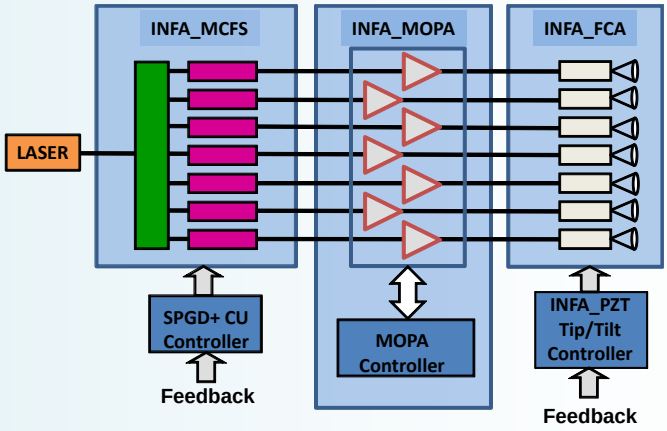
Intelligent Fiber Array Laser Beam Transmitter

INFA

The first commercially available fiber-array adaptive laser beam transmitter system. The INFA is composed of a densely-packed array of adaptive fiber optic collimators for coherent and incoherent beam combining



Above: INFA-FCA, Below: INFA Basic System Architecture



Key Features & Benefits

- ✓ Compact, lightweight and scalable output power and aperture size
- ✓ Output power per fiber collimator up to 10 W
- ✓ Built-in capabilities for precision pointing and re-focusing of the outgoing combined beam, and compensation of mechanical and acoustic jitter
- ✓ Adaptive mitigation of turbulence-induced phase aberrations
- ✓ Hardware and software flexibility

Applications

- ✓ Laser beam projection
- ✓ Free-space laser communications
- ✓ Smart optical sensing
- ✓ Active illumination
- ✓ Active imaging
- ✓ Laser tracking
- ✓ Remote sensing
- ✓ Beam control
- ✓ Education

INFA Subsystems

- **INFA-FCA:** Fiber-array transmitter composed of seven fiber collimators with integrated capabilities for fast (>4 kHz) wavefront tip/tilt control at each sub-aperture
- **INFA-PZT:** Control unit and software for wavefront tip/tilt control in fiber-collimator arrays
- **INFA-MCFS:** Multi-channel fiber system composed of fiber-integrated splitters and phase shifters
- **SPGD+ CU:** SPGD based control unit with 8, 16, or 24 channels and software for coherent beam combining with operational rate up to 250,000 SPGD iterations per second
- **INFA-MOPA:** Fiber amplifier system available with 8, 16, or 24 fiber channels with individual channel power control

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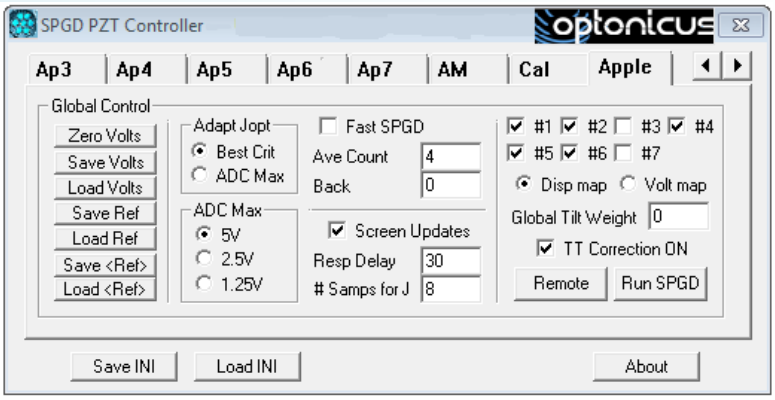
INFA Software

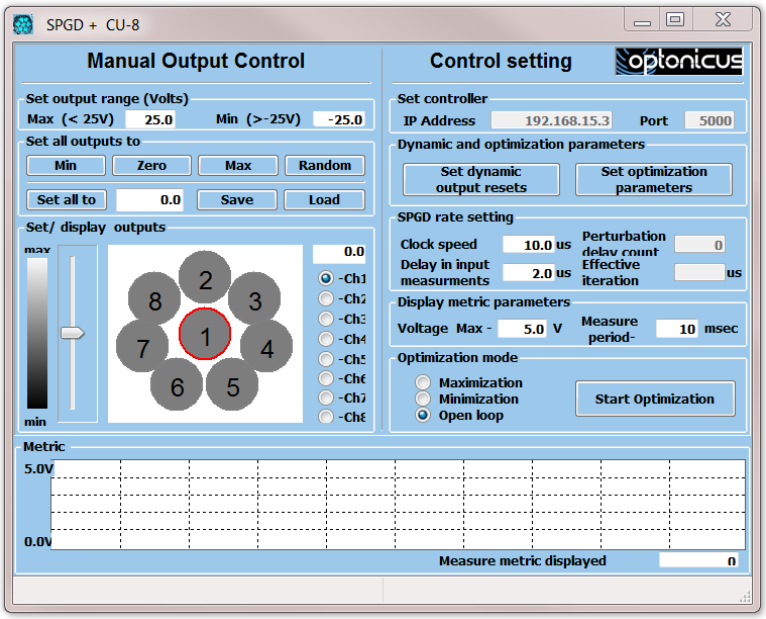
INFA-PZT

- Control unit and software for wavefront tip / tilt control



SPGD+ CU

- Control unit and software for coherent beam combining



INFA-MOPA

- Fiber amplifier system with software