SPACE PHOTONICS

Mission-specific space optical amplifiers

Custom optical booster and low-noise amplifier configurations for orbital laser links.

Applications to discuss: Optical inter-satellite links; Satellite optical terminals.

Custom mission hardware; qualification to confirm

Selection points
1060 nm-band or 1550 nm-band options / PM and non-PM designs / Booster, preamplifier or combined functions

Configuration options

Optical band	Possible functions	Output-power limit
1060 nm band	Booster or low-noise amplification	Mission-specific; confirm
1550 nm band	Booster or low-noise amplification	Mission-specific; confirm

Each row is a separate configuration. Limits from different rows must not be combined.

Technical details

Parameter	Specification or condition
Orbit classes for design review	LEO, MEO or GEO requirements
Polarization	Polarization-maintaining or non-PM configurations
Control electronics	Radiation-tolerant electronics can be considered; grade and test evidence to confirm

Integration and delivery

Item	Configuration detail
Housing	Custom mission footprint, mass and thermal interface
Interface conformance	Agree the required optical-communications interface standard and revision

Conditions and configuration notes

• Mission acceptance requires a configuration-specific qualification plan and evidence for the delivered hardware. No blanket flight, radiation or standards qualification is asserted by this draft.

• Review thermal-vacuum, vibration, shock, radiation and electromagnetic requirements with the mission interfaces.