

Fiber Optic Cable Assemblies for Space Flight Applications:

Issues and Remedies

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Outline

- Justification
- Goals
- Applications
- Terminology
- Needs
- Lessons Learned
- Radiation on optical fiber
- Testing
- Future Activities

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Justification

- Corning fiber 100/140 discontinued.
- SMA connectors non repeatable performance, discontinued.
- Research and Development being driven by telecommunications.
- Push for COTS parts for projects to cost cut.

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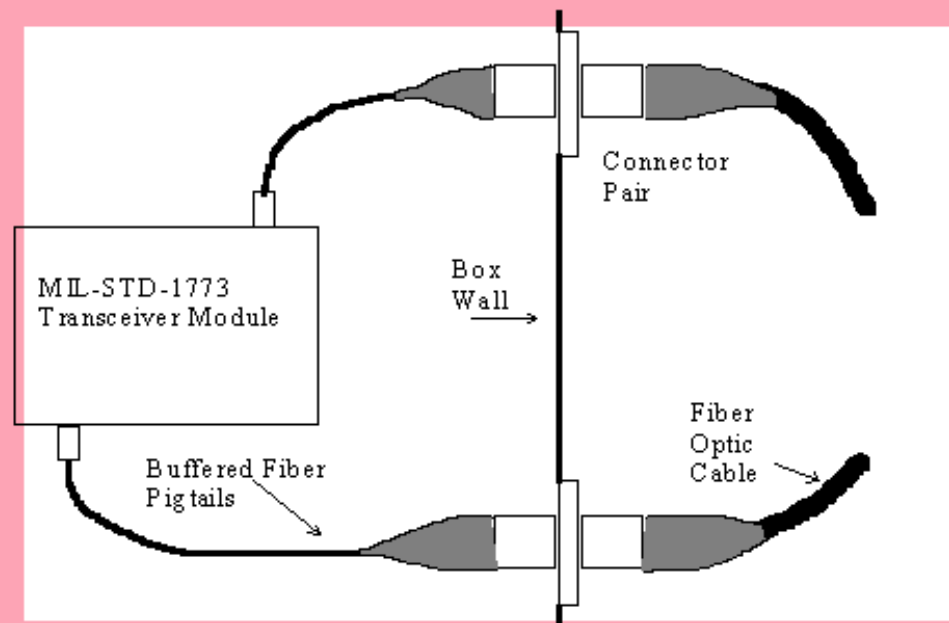
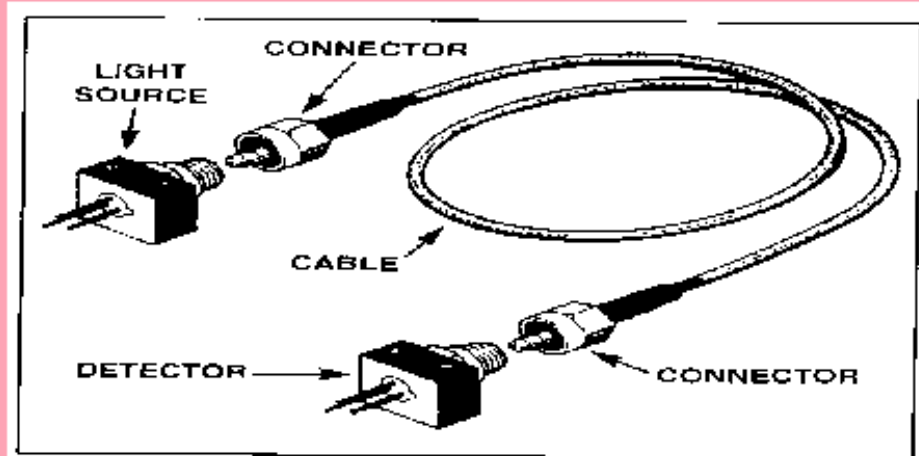
Goals

- NASA wide use.
- Multimode and singlemode applications.
- Cable assembly using Commercial-Off-the-Shelf Technology (COTS).
- Sharing available data.
- Partnerships with vendors.
- Wide variety of products with parameters for usage.

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Applications

- Point-to-Point Spacecraft (> 10 meters)
- Sub-Box Jumpers (@ 0.5 m)

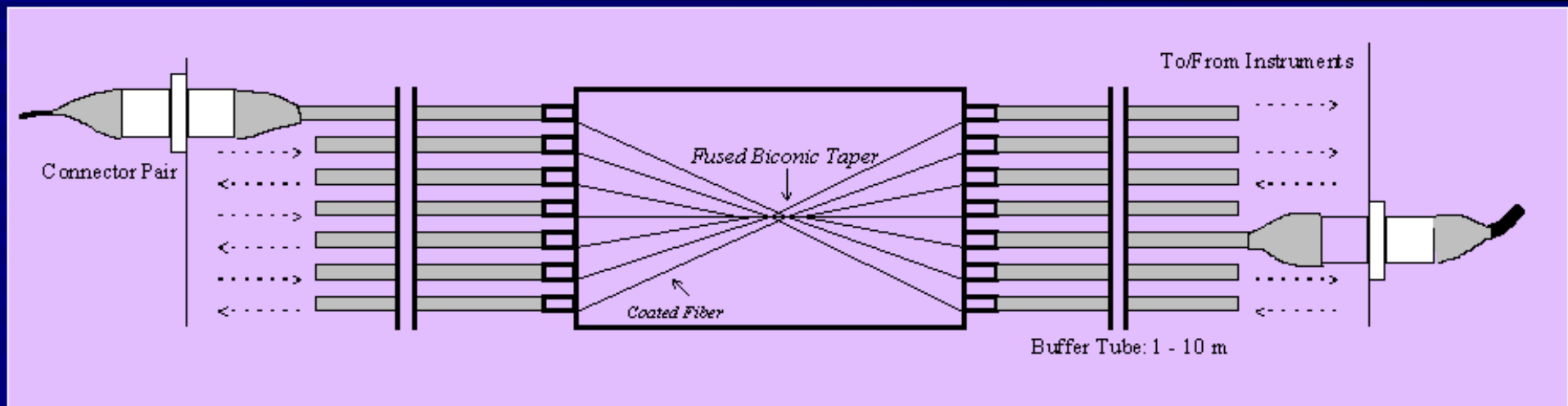


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Applications

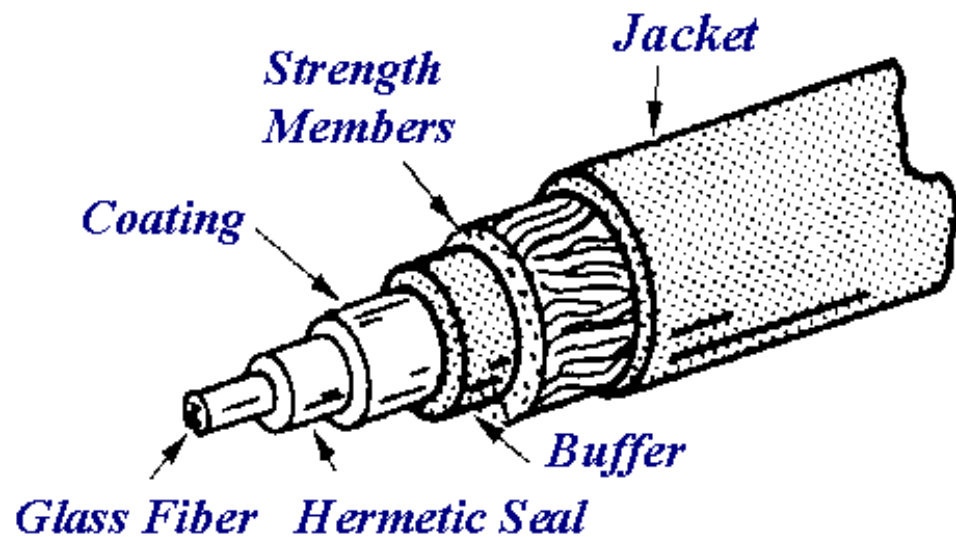
- Extra Vehicular Harness
- Singlemode and Multimode



- Couplers
 - coated fiber inside coupler
 - external packaging

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- Glass Fiber
 - core and cladding
- Hermetic Seal layer
- Coating
- Buffer
 - loose tube, tight tube
- Strength Members
- Jacket



Terminology of Cable

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