

SPACEWIRE CABLE AND

CONNECTOR VARIATIONS

Session: SpaceWire Components

Long Paper

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ABSTRACT

SpaceWire applications have grown steadily since the introduction of the standard and with them come new and varied requirements. In many cases, these requirements make it difficult to implement the data protocol in the standard method. The need to adapt to these new applications has fuelled the natural growth and development of the standard. The basis of SpaceWire circuits is the physical layer or level, which may consist of the SpaceWire Cable assemblies, including the bulk cable and the SpaceWire connector. This paper summarizes testing done on both standard and non-standard SpaceWire physical layer components, which are suitable for SpaceWire applications and in some cases necessary for systems that have strict performance requirements.

Comparisons will be made of standard SpaceWire cable and non-standard AWG 26 SpaceWire cable. Additionally, comparisons will be made between the standard SpaceWire connector and non-standard Twinax connectors, which offer potential applications through bulkhead interfaces and other applications that must meet tight performance specifications. These new components offer the potential for suitable applications and should be considered as suitable alternatives to the SpaceWire connector and cable.