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INCITS Technical Report for Information Technology – Fibre Channel – Methodologies for Signal Quality Specification - 2 (FC-MSQS-2)

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INCITS Technical Report for Information Technology – Fibre Channel – Methodologies for Signal Quality Specification - 2 (FC-MSQS-2)

Secretariat

Information Technology Industry Council

Abstract

This technical report compiles and provides additional information beyond that supplied in FC-MSQS. The technical report further clarifies jitter and signal quality specification clauses of relevant physical interfaces. The technical report focuses on FC-PI-6 signal characteristics and test methods. It specifies budget methods for equalized links and specifies and describes methods of measurement for links using a reference receiver.

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Foreword (This foreword is not part of American National Standard INCITS TR-50-2014.)

This document is an INCITS technical report on the definitions and measurement requirements for parameters related to signal quality on Fibre Channel (FC) links. The document describes measurement methods for non-equalized and equalized links. The document describes new types of jitter associated with reference receivers and methods for determining signal quality in closed eye systems. MSQS-2 does not supersede the previously published Fibre Channel Methods for Signal Quality Specification technical report (hereinafter referred to as FC-MSQS). MSQS-2 represents additional information and methods that are not included in MSQS.

This technical report compiles and provides additional information beyond that supplied in MSQS to provide definitions for the physical interface parameters used in FC-PI-6. The existing signal and jitter specifications are incomplete as a result of changes in how the electronics industry is implementing Fibre Channel systems today compared to how systems were expected to be implemented in the past.

Examples of such changes are the use of adaptive or predictive compensation schemes implemented in active elements or ports, forward error correction (FEC), and higher speed operation at longer distance.

The goals of this technical report are:

- To specify budget methods for equalized links;
- To define host and module test points for 32GFC;
- To define host and module compliance boards for 32GFC;
- To define 32GFC optical and electrical compliance test methodology;
- To give insight into reference receiver implementation;
- To review the extended link spreadsheet model;
- To review forward error correction (FEC) used in the link budget analysis;
- To enable standardized specification enforcement for compliance testing.

The Methods for Signal Quality Specification 2 (MSQS-2) technical report is generated by an Ad Hoc group of companies interested in providing a standard low-cost interface for FC applications. This Ad Hoc group is sanctioned by and operates under the jurisdiction of the T11.2 technical committee of INCITS.

This technical report is informative. Certain contents of this document may be normatively referenced or incorporated into appropriate standards.

Requests for interpretation, suggestions for improvements or addenda, or defect reports are welcome. They should be sent to the INCITS Secretariat, Information Technology Industry Council, 1101 K Street NW Suite 610, Washington, DC 20005-3922.

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1 Scope

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2 References

2.1 General

The documents named in this clause contain provisions that, through reference in this text, constitute provisions of this document. At the time of publication, the editions indicated were valid. All standards and technical reports are subject to revision, and parties to agreements based on this technical report are encouraged to investigate the possibility of applying the most recent editions of the following list of documents. Members of IEC and ISO maintain registers of currently valid international standards.

Some references may not be specifically cited in the text but contain information generally related to the subject matter of FC-MSQS-2.

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