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ITU-T

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STANDARDIZATION SECTOR
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G.691

Amendment 1
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SERIES G: TRANSMISSION SYSTEMS AND MEDIA,
DIGITAL SYSTEMS AND NETWORKS

Transmission media characteristics – Characteristics of
optical components and subsystems

Optical interfaces for single channel STM-64 and
other SDH systems with optical amplifiers

Amendment 1:

CAUTION !

PREPUBLISHED RECOMMENDATION

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Amendment 1 to ITU-T Recommendation G.691

Optical interfaces for single channel STM-64 and other SDH systems with optical amplifiers

Amendment 1

Introduction

This document contains the text of amendment 1 to Recommendation ITU-T G.691, "Optical interfaces for single channel STM-64 and other SDH systems with optical amplifiers" for consent.

This document supersedes the version of this amendment contained in D-95

Summary

This amendment contains modifications of the text of ITU-T Rec. G.691 (2003) to clarify the definition of side mode suppression ratio in clause 6.2.1.4 and remove any ambiguity in the text of the definition of receiver sensitivity contained in clause 6.4.1

1) Clause 6.2.1.4

Modify clause 6.2.1.4 as follows:

6.2.1.4 Side mode suppression ratio

The Side Mode Suppression Ratio (SMSR) is defined as the ratio of the largest peak of the total source spectrum to the second largest peak. The spectral resolution of the measurement shall be better (i.e., the optical filter bandwidth shall be less) than the maximum spectral width of the peak, as defined above. The second largest peak may be next to the main peak or far removed from it.

Note – within this definition spectral peaks that are separated from the largest peak by the clock frequency are not considered to be side modes.

The SMSR specification is intended to minimize the occurrence of BER degradations due to Mode Partition Noise (MPN). Since MPN is a transient effect with low probability, SMSR measurements on PRBS or continuous signals may underestimate the MPN. The SMSR specification is relevant only to SLM laser sources.

2) Clause 6.4.1

Modify clause 6.4.1 as follows:

6.4.1 Sensitivity

Receiver sensitivity is defined as the minimum acceptable value of mean received power at point MPI-R to achieve a 1×10^{-12} BER. ~~It takes into account power penalties caused by use of~~ This must be met with a transmitter under standard operating conditions with worst-case values of transmitter eye mask, extinction ratio, optical return loss at point MPI-S, receiver connector degradations and measurement tolerances. The definition of receiver sensitivity under worst-case conditions is further discussed in Annex A.

The receiver sensitivity does not ~~include power penalties associated with the path, such as have to be met in the presence of dispersion, jitter, or reflections from the optical path.~~ These effects are specified separately in the allocation of maximum optical path penalty.

Note - the receiver sensitivity does not have to be met in the presence of transmitter jitter in excess of the appropriate jitter generation limit (e.g. G.783 for SDH optical tributary signals).

Ageing effects are not specified separately since they are typically negotiated between a network provider and an equipment manufacturer.

Typical margins between a beginning-of-life, nominal temperature receiver and its end-of-life, worst-case counterpart are desired to be in the 2 to 4 dB range. The receiver sensitivities specified in Tables 3 to 5 are worst-case, end-of-life values.
