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INTERNATIONAL STANDARD

**Fibre optic communication subsystem test procedures –
Part 2-1: Digital systems – Receiver sensitivity and overload measurement**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC COMMUNICATION SUBSYSTEM
TEST PROCEDURES –****Part 2-1: Digital systems –
Receiver sensitivity and overload measurement**

FOREWORD

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International Standard IEC 61280-2-1 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

This second edition cancels and replaces the first edition, published in 1998, and constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

- revised to include the requirements associated with data communication equipment, regenerators and amplifiers;
- the term “jumper lead” has been replaced by “test cord”;
- a section for definitions has been added;
- a section on measurement uncertainties has been added.

The text of this standard is based on the following documents:

CDV	Report on voting
86C/881/CDV	86C/945/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61280 series, published under the general title *Fibre optic communication subsystem test procedures*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

FIBRE OPTIC COMMUNICATION SUBSYSTEM TEST PROCEDURES –

Part 2-1: Digital systems – Receiver sensitivity and overload measurement

1 Scope and object

This part of IEC 61280 describes the test procedures applicable to digital fibre optic communication and data systems.

The object of this test procedure is to measure the minimum and maximum optical powers required and allowed at the optical input port of a fibre optic system to ensure its operation within specified limits. Another objective is to verify that the guaranteed error performance is obtained at the minimum and the maximum optical input powers specified by the terminal equipment manufacturer.

Figure 1 shows the typical elements associated with optical fibre systems. Optical amplifiers or regenerators may be used in long haul telecom systems, but are not usually associated with data transport systems such as Ethernet, etc. In bi-directional systems the transmitter and corresponding receiver are usually co-located, as indicated by the dotted lines. This specification is concerned with the characteristics of the optical input interface of the receiver, amplifier or regenerator shown.

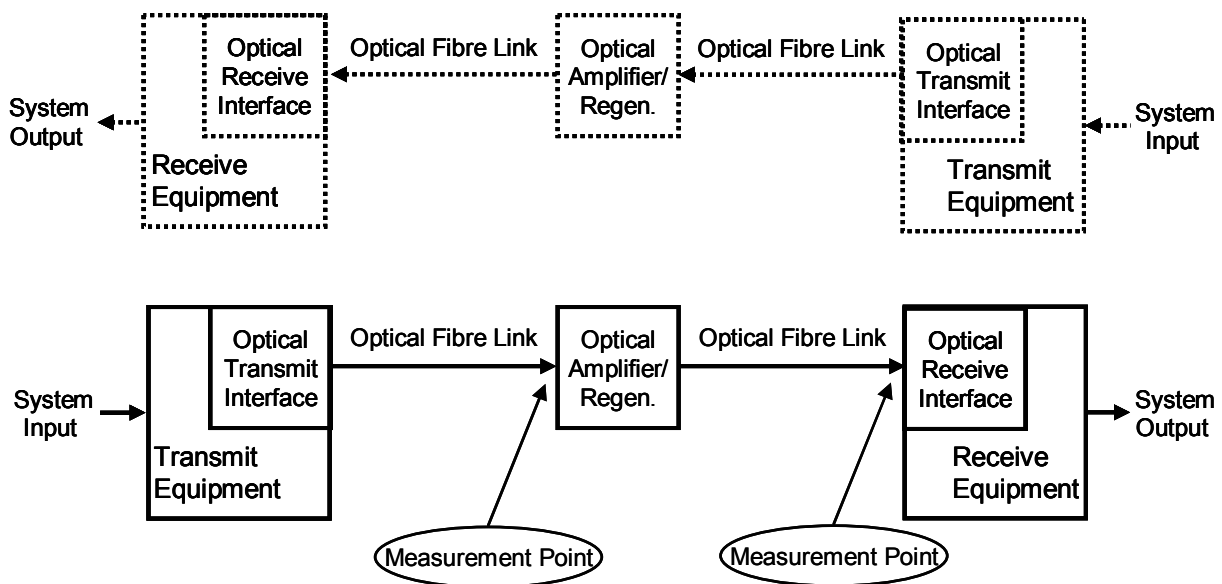


Figure 1 – Optical fibre system

It should be noted that the performance of fibre optic receivers may differ for different signal formats. It is therefore necessary to use the signal format that represents actual operating conditions.