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Calibration Specification for Passive Optical Network (PON) Power Meters

无源光网格（PON）功率计校准规范

(English Translation)

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Introduction

JJF 1071-2010 "Rules for Compiling National Measurement Calibration Standards", JJF 1001-2011 "General Measurement Terms and "Definition", JJF 1059.1-2012 "Measurement Uncertainty Evaluation and Expression" together constitute the support for the formulation of this calibration specification Basic series of work specifications.

This specification is the first release.

Passive optical network (PON) power meter calibration specifications

1 Scope

This specification applies to the calibration of passive optical network (PON) power meters.

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2 Reference documents this specification refers to the following documents.

JJG965-2013 optical power meter for communication YD/T 1531-2006 Test method for access network equipment --- passive optical network based on Ethernet (EPON) for dated reference documents, only the dated version applies to this specification; for those without date references the latest version (including all amendments) is applicable to this specification.

3 Terminology

3.1 Passive optical network, PON the optical distribution network uses an optical access network of passive optical splitters.

3.2 Optical line terminal, OLT A device that provides an optical access network side interface and connects to one or more optical distribution networks.

3.3 Optical network unit, optical network unit, ONU Equipment that provides the user-side interface of the optical access network and is connected to the optical distribution network.

3.4 Burst optical signal burst signal in the upstream transmission direction of the PON, the ONU sends optical pulses to the OLT in a burst mode in the allowed time slot signal.

3.5 Burst optical power in the upstream transmission direction of the PON, the peak power of the optical pulse in the burst optical signal sent by the ONU.

4 Overview

The PON system structure is mainly composed of the OLT located in the central office, the ONU located at the user end, and the passive optical the optical distribution network of the device. The laser wavelength of the downlink transmission link in this structure is 1490nm and 1550nm.

The laser wavelength of the horizontal transmission link is 1310nm, and the block diagram of the transmission link is shown in Figure 1 and Figure 2, respectively. Upstream transmission in the link, the transmission bandwidth is divided into a sequence of time slots and allocated to multiple end users as needed, and the ONU uses time division multiple access the access method sends the upstream signal to the OLT, so the signal sent by the ONU is a burst optical signal to avoid multiple A user sends an uplink request at the same time, causing data collision.

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