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**SERIES O: SPECIFICATIONS OF MEASURING
EQUIPMENT**

Equipment for the measurement of digital and
analogue/digital parameters

**Jitter measuring equipment for digital systems
based on XG-PON**

Recommendation ITU-T O.175



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SPECIFICATIONS OF MEASURING EQUIPMENT

General	0.1–0.9
Maintenance access	0.10–0.19
Automatic and semi-automatic measuring systems	0.20–0.39
Equipment for the measurement of analogue parameters	0.40–0.129
Equipment for the measurement of digital and analogue/digital parameters	0.130–0.199
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Equipment to perform measurements on leased-circuit services	0.220–0.229

For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T O.175

Jitter measuring equipment for digital systems based on XG-PON

Summary

Recommendation ITU-T O.175 specifies test instrumentation that is used to generate and measure timing jitter in digital systems based on the XG-PON.

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T O.175	2012-10-29	15

FOREWORD

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The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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Jitter measuring equipment for digital systems based on XG-PON

1 Scope

The test instrumentation consists principally of a jitter measurement function and a jitter generation function. Measurements can be performed at the physical layer of XG-PON systems. A bit-error rate test (BERT) set may also be required for certain types of measurements; this may be part of the same instrumentation or it may be physically separate.

Test instrumentation for the generation and measurement of jitter in digital systems based on synchronous digital hierarchy (SDH) is specified in [ITU-T O.172].

It is recommended that [ITU-T G.987.2] should be read in conjunction with this Recommendation.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [ITU-T G.703] Recommendation ITU-T G.703 (2001), *Physical/electrical characteristics of hierarchical digital interfaces*.
- [ITU-T G.783] Recommendation ITU-T G.783 (2006), *Characteristics of synchronous digital hierarchy (SDH) equipment functional blocks*.
- [ITU-T G.810] Recommendation ITU-T G.810 (1996), *Definitions and terminology for synchronization networks*.
- [ITU-T G.987] Recommendation ITU-T G.987 (2012), *10-Gigabit-capable passive optical network (XG-PON) systems: Definitions, abbreviations, and acronyms*.
- [ITU-T G.987.1] Recommendation ITU-T G.987.1 (2010), *10-Gigabit-capable passive optical networks (XG-PON): General requirements*.
- [ITU-T G.987.2] Recommendation ITU-T G.987.2 (2010), *10-Gigabit-capable passive optical networks (XG-PON): Physical media dependent (PMD) layer specification*.
- [ITU-T G.987.3] Recommendation ITU-T G.987.3 (2010), *10-Gigabit-capable passive optical networks (XG-PON): Transmission convergence (TC) specifications*.
- [ITU-T G-Sup.48] ITU-T G-series Recommendations – Supplement 48 (2010), *10-Gigabit-capable passive optical networks: Interface between media access control with serializer/deserializer and physical medium dependent sublayers*.
- [ITU-T O.3] Recommendation ITU-T O.3 (1992), *Climatic conditions and relevant tests for measuring equipment*.
- [ITU-T O.172] Recommendation ITU-T O.172 (2005), *Jitter and wander measuring equipment for digital systems which are based on the synchronous digital hierarchy (SDH)*.