

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.996.2

Amendment 5

(12/2017)

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

Digital sections and digital line system – Metallic access
networks

Single-ended line testing for digital subscriber lines
(DSL)

Amendment 5

Recommendation ITU-T G.996.2 (2009) –
Amendment 5

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

Recommendation ITU-T G.996.2

Single-ended line testing for digital subscriber lines (DSL)

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Summary

Amendment 5 to Recommendation ITU-T G.996.2 (2009) provides updates to Annexes A and B, defining SELT operating in conjunction with ITU-T G.9701 transceivers.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
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* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

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.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

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1) Updates to Annex A

Update Annex A as follows:

Annex A

Specific requirements of a SELT-PMD

(This annex forms an integral part of this Recommendation.)

A.1 SELT-PMD functions

A.1.1 SELT-PMD measurement functions

A.1.1.1 Measurement of uncalibrated echo response

The uncalibrated echo response function $UER(f)$ is defined as the estimated mean value of the voltage ratio $V(f)/E(f)$ measured inside the SELT-PMD.

$$UER(f) = Estimated_Mean(X(f)) \quad \text{with} \quad X(f) = \left(\frac{V(f)}{E(f)} \right)$$

where $E(f)$ is the excitation signal and $V(f)$ the measured signal at frequency f .

$E(f)$ is the voltage of a 0 ohm voltage source applied to the SELT-PMD transmitter front end, which transmits a voltage waveform $V1+$ on the SELT-PMD U-interface. The U-interface is connected to the one-port network (line) under test, that will generate a reflected voltage wave $V1-$. A linear combination of the voltage waveform $V1+$ and the reflected voltage wave $V1-$ is transformed by the SELT-PMD receiver front end into a voltage $V(f)$ measured with a high impedance voltage measurement unit.

The schematic representation of the SELT-PMD unit is shown in Figure A.1.

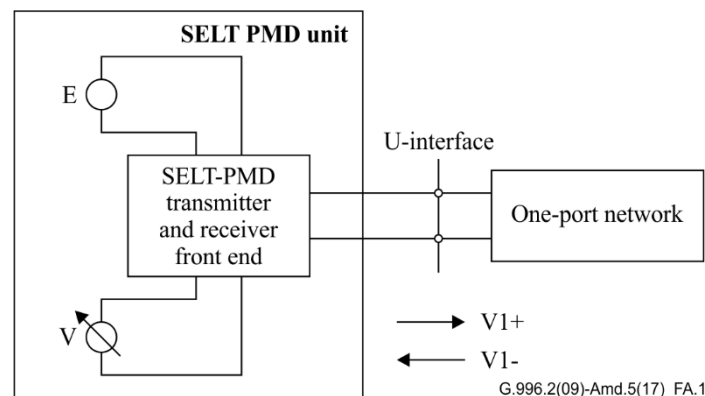


Figure A.1 – SELT-PMD during measurement of "uncalibrated echo response"