

International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.8263/Y.1363

Amendment 1
(08/2013)

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

Packet over Transport aspects – Quality and availability
targets

SERIES Y: GLOBAL INFORMATION
INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS
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Timing characteristics of packet-based equipment
clocks

Amendment 1

Recommendation ITU-T G.8263/Y.1363 (2012) –
Amendment 1



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

Recommendation ITU-T G.8263/Y.1363

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Summary

Amendment 1 to Recommendation ITU-T G.8263/Y.1363 (2012) adds clarification to several clauses and introduces Appendix IV "Variable temperature testing methodology".

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T G.8263/Y.1363	2012-02-13	15	11.1002/1000/11524-en
1.1	ITU-T G.8263/Y.1363 (2012) Amd. 1	2013-08-29	15	11.1002/1000/12014-en

* 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.

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

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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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Recommendation ITU-T G.8263/Y.1363

Timing characteristics of packet-based equipment clocks

Amendment 1

1) Clause 6.1

Change the following sentence in clause 6.1 from:

When temperature effects are included, the allowance for the total MTIE contribution increases by the values in Table 2.

to:

When temperature effects are included, the limits are given in Table 2.

Replace the current Table 2 with:

Table 2 – Wander generation (MTIE) for PEC-S-F with temperature effects

MTIE limit (ns)	Observation interval τ (s)
1000	$0.1 < \tau \leq 100$
10τ	$\tau > 100$ (Note)

Add the following note as "NOTE 2" after NOTE 1:

NOTE 2 – When testing under the worst case temperature variation and depending on the time constant of the loop, the ageing characteristics of the oscillator may add an additional noise at the output of PEC-S-F that may slightly exceed the variable temperature mask.

2) Clause 7.1

Change the following bullet in clause 7.1 from:

The limits defined for Case 3 in clause 7.2.2 of [ITU-T G.8261.1], as defined in reference point D in Figure 3 of [ITU-T G.8261.1], or

to:

The limits defined for Case 3 in clause 7.2.2 of [ITU-T G.8261.1], as defined in reference point D in Figure 3 of [ITU-T G.8261.1], where $n=16$ ppb as shown in Table 1 of [ITU-T G.8261.1] and Figure 4 of [ITU-T G.8261.1],

3) Clause 8

Change the following note from:

NOTE – This specification for holdover applies assuming that there is no frequency offset before entering holdover. Other cases are for further study.

to:

NOTE – This specification for holdover assumes that an ideal input was applied to the PEC-S-F before entering holdover.

4) Clause 8.1

Remove the following text:

The second derivative of $\Delta x(S)$, the fractional frequency drift, should, over any period of S seconds, meet the following:

$$\left| d^2(\Delta x(S))/dS^2 \right| \leq \mathbf{d} \left[\text{ns/s}^2 \right]$$

Change the following sentence from:

In applying the above requirements for the derivative of $\Delta x(S)$ and the second derivative of $\Delta x(S)$, the period S must begin after any transient associated with entry into hold-over is over.

to:

In applying the above requirements for the derivative of $\Delta x(S)$, the period S must begin after any transient associated with entry into hold-over is over.

Remove the following text:

NOTE 5 – **d** represents the maximum temporary frequency drift rate at constant temperature allowed during hold-over. However, it is not required that **d** and **b** be equal.

Remove "**d** (ns/s²)" from Table 3.

5) Appendix IV

Add Appendix IV "Variable temperature testing methodology" after Appendix III.

Appendix IV

Variable temperature testing methodology

(This appendix does not form an integral part of this Recommendation.)

Where variable temperature testing is required, it should be conducted using the temperature profile shown in Figure IV.1.

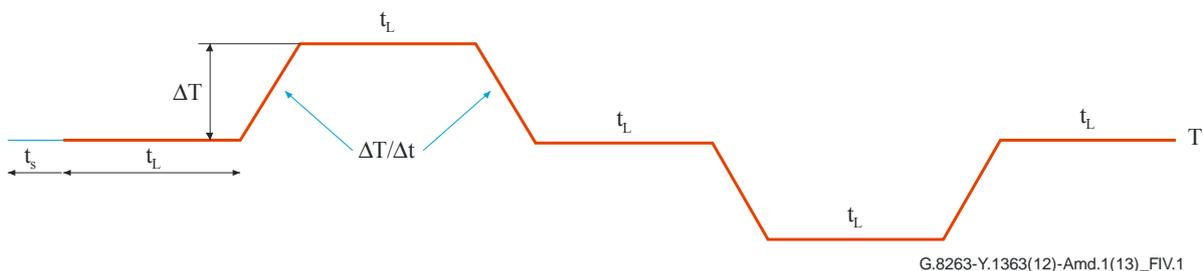


Figure IV.1 – Temperature profile

The test should be repeated at different test reference temperatures, T, to cover the required temperature range. As a minimum the tests should be performed at nominal and temperature extremes, i.e., the reference temperature T set to $T_{\min} + \Delta T$, T_{nom} and $T_{\max} - \Delta T$.

The test stabilisation time t_s should be long enough to remove start-up effects. The loop recovery time t_L is dictated by the loop time constant and should be as a minimum three times the loop time constant to allow the loop to recover.

The constrained temperature excursion ΔT and the ramp rate $\Delta T/\Delta t$ should be aligned to the environmental profile.

As an example, the constrained temperature excursion ΔT could be set to 20°C and the ramp rate $\Delta T/\Delta t$ to 0.5°C/minute, if these are the applicable environmental conditions.

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