



# COVERING NOTE

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GENERAL SECRETARIAT OF THE INTERNATIONAL TELECOMMUNICATION UNION

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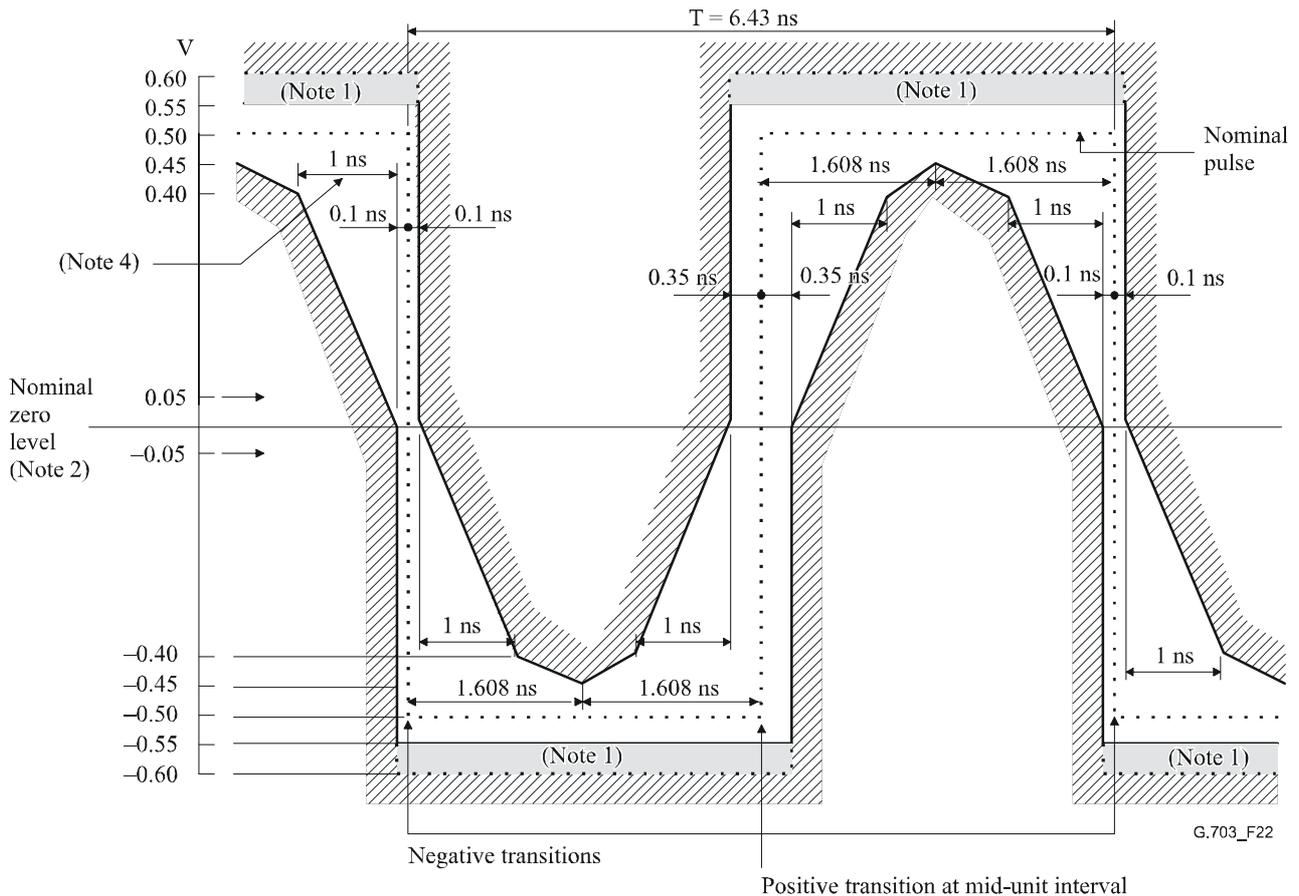
Geneva, 20 July 2005

ITU – TELECOMMUNICATION  
STANDARDIZATION SECTOR

**Subject: Erratum 1 (07/2005) to**

ITU-T Recommendation G.703 (11/2001), *Physical/electrical characteristics of hierarchical digital interfaces*

1) In Figure 22/G.703 "Mask of a pulse corresponding to a binary 0 (at the 155 520 kbit/s interface)", mask values were incorrect (pulse period of 19.3 ns instead of 6.43 ns). Replace the whole figure by the following:



NOTE 1 – The maximum "steady state" amplitude should not exceed the 0.55 V limit. Overshoots and other transients are permitted to fall into the dotted area, bounded by the amplitude levels 0.55 V and 0.6 V, provided that they do not exceed the steady state level by more than 0.05 V. The possibility of relaxing the amount by which the overshoot may exceed the steady state level is under study.

NOTE 2 – For all measurements using these masks, the signal should be AC coupled, using a capacitor of not less than 0.01  $\mu\text{F}$ , to the input of the oscilloscope used for measurements. The nominal zero level for both masks should be aligned with the oscilloscope trace with no input signal. With the signal then applied, the vertical position of the trace can be adjusted with the objective of meeting the limits of the masks. Any such adjustment should be the same for both masks and should not exceed  $\pm 0.05$  V. This may be checked by removing the input signal again and verifying that the trace lies within  $\pm 0.05$  V of the nominal zero level of the masks.

NOTE 3 – Each pulse in a coded pulse sequence should meet the limits of the relevant mask, irrespective of the state of the preceding or succeeding pulses, with both pulse masks fixed in the same relation to a common timing reference, i.e. with their nominal start and finish edges coincident.

The masks allow for HF jitter caused by intersymbol interference in the output stage, but not for jitter present in the timing signal associated with the source of the interface signal.

When using an oscilloscope technique to determine pulse compliance with the mask, it is important that successive traces of the pulses overlay in order to suppress the effects of low frequency jitter. This can be accomplished by several techniques [e.g. a) triggering the oscilloscope on the measured waveform or b) providing both the oscilloscope and the pulse output circuits with the same clock signal]. These techniques require further study.

NOTE 4 – For the purpose of these masks, the rise time and decay time should be measured between  $-0.4$  V and  $0.4$  V, and should not exceed 2 ns.

2) In Figure 26/G.703 "Mask of a pulse corresponding to a binary 0 (at the 51 840 kbit/s interface)", correct Note 4 as follows:

NOTE 4 – For the purpose of these masks, the rise time and decay time should be measured between  $-0.4$  V and  $0.4$  V, and should not exceed 26 ns.