Clarification of SAS “Area of impedance dip” T10/02-352r0

Date: September 6, 02
To: T10 Technical Committee
From: Alvin Cox (alvin.cox@seagate.com)
Subject: Clarification of “Area of impedance dip”

The following change is for clarification of the “Area of impedance dip” specified in Table 19. Units of time for a requirement indicating area is not an obvious relationship.

Change “**Area of impedance dip**” to “**Receiver termination time constant**” under the **Receiver termination** section of **Table 19. Impedance requirements**.

Edit note f as follows:

At the time point corresponding to the connection of the receiver to the transmission line, the input capacitance of the receiver and its connection to the transmission line may cause the measured impedance to fall below the minimum impedances specified in this table. The area of the **impedance** dip (amplitude in units of Γ, the reflection coefficient, and duration in time) caused by this capacitance is ~~**directly proportional to**~~ the **receiver termination time constant** ~~**capacitance**~~**. The receiver termination time constant (area of impedance dip) shall not be greater than the values shown in the above table.** An approximate value for the ~~**area**~~ **receiver termination time constant** is given by the product of the amplitude of the dip (in units of Γ) and its width[a] (in picoseconds) measured at the half amplitude point. ~~**The product calculated by this method shall not be greater than the values shown in the table.**~~ The amplitude is defined as being the difference in the reflection coefficient between the reflection coefficient at the nominal impedance and the reflection coefficient at the minimum impedance point. **The value of the receiver excess input capacitance is given by C = (area of impedance dip) / (R0 || RR) , where (R0 || RR) is the parallel combination of the transmission line characteristic impedance and termination resistance at the receiver.**