

T10/05-194r0 Low Loss TCTF

To: T10 Technical Committee  
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Date: 3 June 2005  
Subject: T10/05-194r0 SAS-1.1 Low Loss TCTF

### **Revision History**

Revision 0 (3 June 2005) first revision

### **Related Documents**

sas1r09d - Serial Attached SCSI 1.1 revision  
05-079r3 SAS-1.1 Minimum XR/IR Receiver Signal Level for 3Gb SATA Mode (Barry Olawsky, Hewlett Packard)

### **Overview**

Letter ballot comments revealed that technical details of the low loss TCTF in sas1r09 are incorrect and did not match the intent of the physical layer working group.

### **Suggested Changes**

Modify coefficients of low-loss TCTF equation to achieve 6dB insertion loss at 4.5GHz (instead of 6dB at 3GHz). The equation value at 3GHz shall be used for frequencies between 3GHz and 5GHz. Modify figure 101 to reflect the above changes to the low-loss TCTF test load definition.

In section 5.3.2.4, modify the insertion loss equation as shown below.

| For 50 MHz < f <= ~~5,0~~ 3,0 GHz:

| |SDD21(f)| <= -20 log10(e) x ((~~3,85~~ 2,24 x 10<sup>-6</sup> x f<sub>0,5</sub>) + (~~1,4~~ 6,9 x 10<sup>-4</sup>~~011~~ x f) + (~~1,82~~ 1,14 x 10<sup>-20</sup> x f<sup>2</sup>)) dB

| and for 3,0 GHz < f <= 5,0 GHz:

| |SDD21(f)| <= -3,75 dB

and, specifying a minimum ISI loss:

| |SDD21(f = 300 MHz)| - |SDD21(f = 1 500 MHz)| > ~~2,2~~ 1,35 dB

| Make the following modifications to figure 101 to reflect the above changes in the equation. The "minimum loss" curve in figure 101 shall be flat between 3.0 and 5.0 GHz. Change the ISI loss note from "ISI loss > ~~2,2~~" to "ISI loss > 1,35"