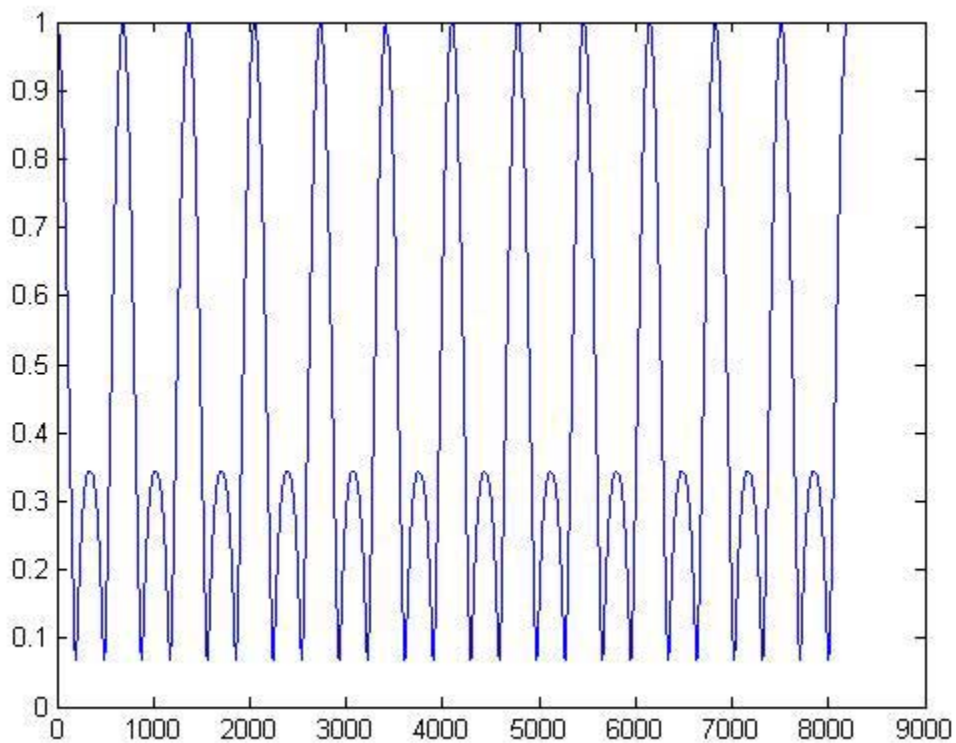


Re Placement of Noise Source after Filtering

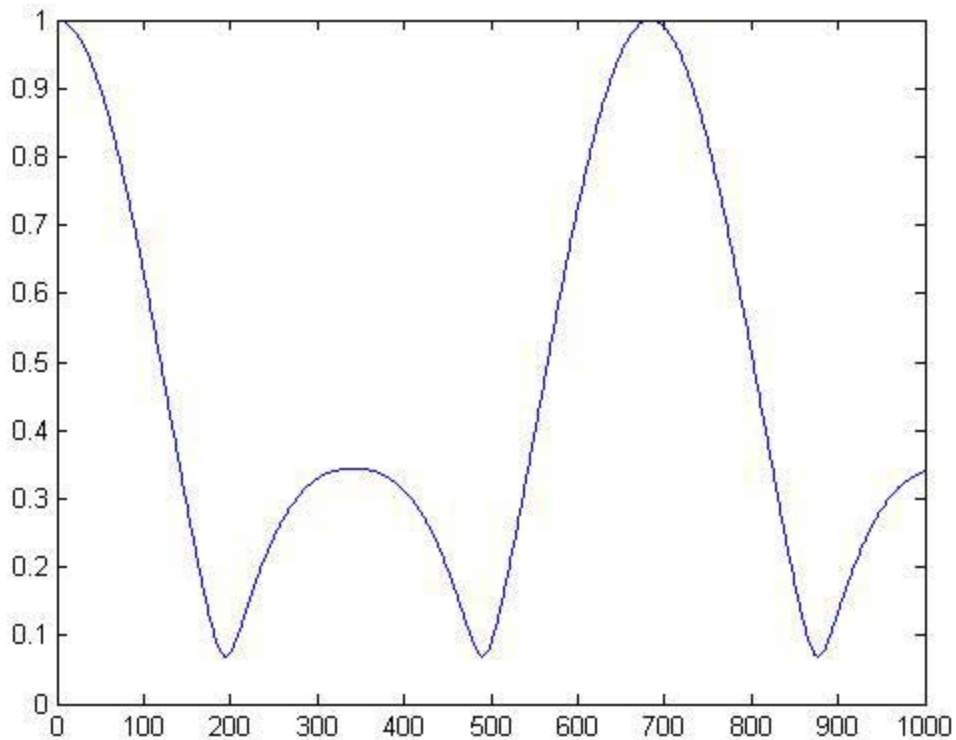
We recommend that the reference comprehensive stressed receiver test, illustrated in Fig. 68-10 be unchanged so that the Noise introduced also passes through the Pulse-shaping filter. Our recommendation is closer to the “real world” as we show below:

In order to see what the noise spectrum would look like if we were to adapt the proposed changes to D2.0 (as a response to comment #346), we ran white noise through the ISI generator, we ran the TWDP MATLAB® program and plotted the ISI frequency response with “plot(abs(Hx))”:



The horizontal scaling is that each bin corresponds to about 20.14 MHz so that the highest displayed frequency corresponds to 160 GHz!

If we concentrate upon the first 1000 bins (namely out to about 20 GHz) with the command, “plot(abs(Hx(1:1000)))”:



Were we to adopt the response to comment #346 to D2.0, we see a huge peak above the low frequency end at about bin 700. This would correspond to about 14 GHz. This is a result of the ISI model that uses a ΔT of 0.75 UI.

However, in the real world, chromatic and modal dispersion due to 300 meters of legacy multimode fiber would not permit the peaks at 14 GHz and multiples thereof to exist as shown.

Also, we do not expect noise sources to be flat for 10's of GHz. Many possible noise sources are expected to be stronger at low frequencies.

Thus we recommend that the reference comprehensive stressed receiver test, illustrated in Fig. 68-10 be unchanged so that the Gaussian noise introduced also passes through the Pulse-shaping filter.

Respectfully submitted June 8, 2005

Ernie Bergmann