November 2, 1990

Re; BER

Drew -

The attached curve is interesting - and quite a relief. As I had hoped, both the ST-8000 and ST-8000A (prototype) have lower BER's than the 1280A/M. Mark T. ran all these curves today, using the same test set-up and calibration criteria. Previous comparisons were to old data Mark and I have taken in years past. The differences included (1) different noise generator (Tolar "Noise Box" today vs R-70 receiver 4 years ago), and (2) Mark T. used the HP400FL to set noise levels - not the HP3400A True RMS meter. The meter itself should contribute a 1.1 dB difference in the "calibration" 0 dB noise setting.

The "mix and match" curves are also interesting - ST-8000 front end with ST-8000A detectors - and - ST-8000A front end with ST-8000 detectors. I see no clear trends, but find it curious that the "best" set-up appears to be old front end plus new detectors. The "mix and match" connections were definitely "risky business" as we had all kinds of opportunities to inject spurious noise and/or ground loops.

I want to do some more testing - using the HP3400A and down to 1E-6 BER, but these early results are very encouraging.

At this point, I will quit worrying about making any substantial changes in the ST-8000A demodulator - at least not until after we get to test a real circuit board version.

It is big on my list to run a complete family of BER curves for both the 1280A/M and the ST-8000 (old) - at 75, 150, 300, 600, 601, 900, and 1200 baud. That will take quite a while to do, but will establish a baseline for comparison.

GWH