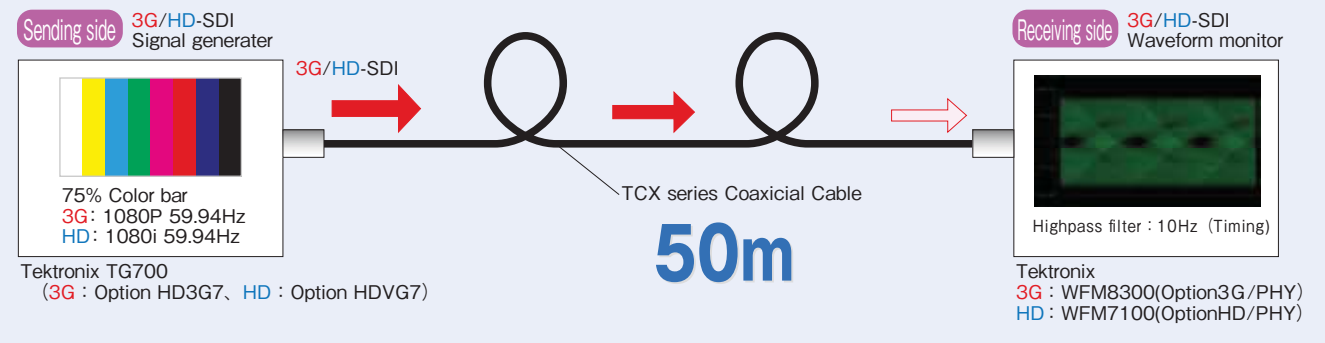


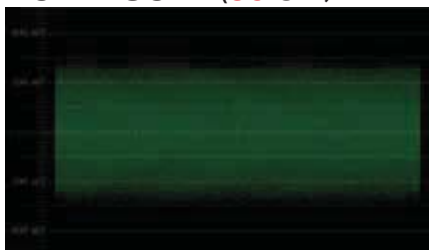
# EYE-pattern on 3G/HD-SDI transmission for 50m

As a way to confirm the transmission condition of 3G/HD-SDI signal at the actual broadcasting field, the EYE-pattern monitoring is oftenly used on the transmission route. The signal (waveform) is deteriorating by transmission through cable, though the signal just after output from sending side equipment keeps the beautiful waveform based on the specifications of 3G:SMPTE 424M and HD:SMPTE 292M.

The transmission parameter of 3G/HD-SDI signal by coaxial cable is specified in the above specification as the attenuation of frequency (1485MHz/742.5MHz) at transmission rate 1/2 to be within 20dB. TACHII this time measured EYE-pattern waveform after connecting as undermentioned for major cables with 50m length. In the EYE-pattern, big aperture shape indicates less cable deterioration, and small or unclear shape means more deterioration. Please use EYE-pattern as a yardstick in cable selection on system designing, in addition to Conversion table for standard transmission distance by SDI signal-wise on Page 1~2.



TCX-2.8CHD(3G-SDI)



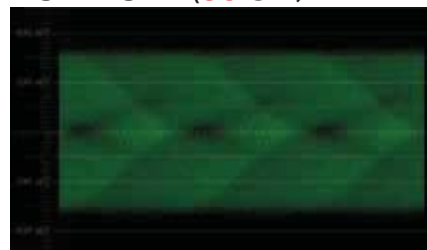
Attenuation value actual : 20.56dB (1485MHz)

TCX-3CHD(3G-SDI)



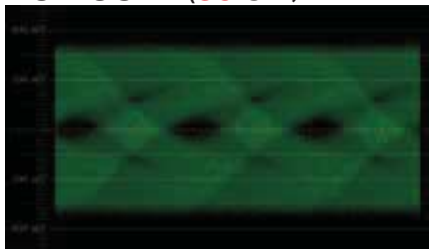
Attenuation value actual : 15.95dB (1485MHz)

TCX-4CHD(3G-SDI)



Attenuation value actual : 12.32dB (1485MHz)

TCX-5CHD(3G-SDI)



Attenuation value actual : 10.75dB (1485MHz)

TCX-6CHD(3G-SDI)



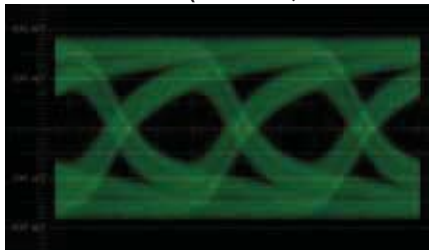
Attenuation value actual : 8.84dB (1485MHz)

TCX-7CHD(3G-SDI)



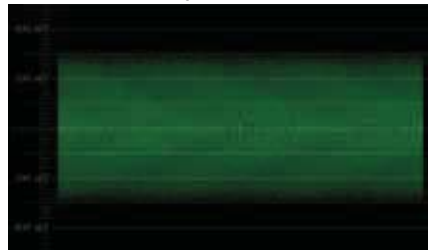
Attenuation value actual : 7.49dB (1485MHz)

TCX-8CHD(3G-SDI)



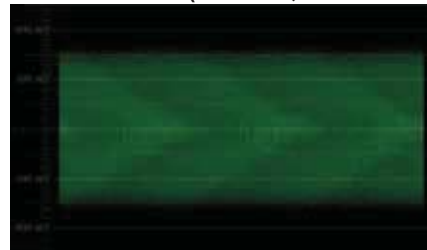
Attenuation value actual : 6.74dB (1485MHz)

TCX-3CFB(3G-SDI)



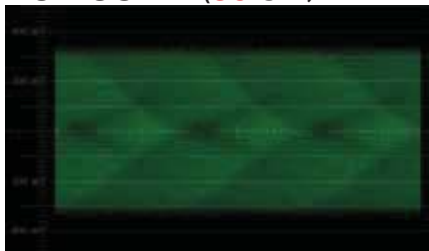
Attenuation value actual : 19.71dB (1485MHz)

TCX-4CFB(3G-SDI)



Attenuation value actual : 15.29dB (1485MHz)

TCX-5CFBL(3G-SDI)



Attenuation value actual : 12.74dB (1485MHz)

TCX-3CFWS(3G-SDI)



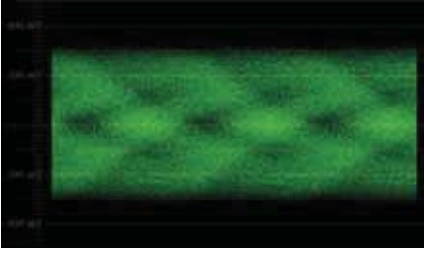
Attenuation value actual : 24.36dB (1485MHz)

TCX-5CFWS(3G-SDI)



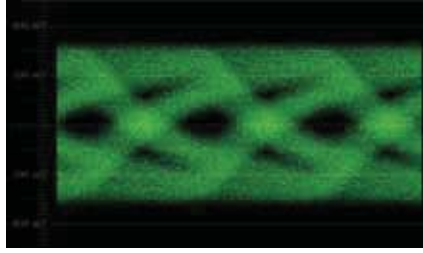
Attenuation value actual : 16.67dB (1485MHz)

TCX-2.8CHD(HD-SDI)



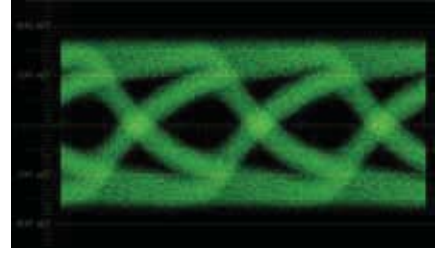
Attenuation value actual : 14.42dB (742.5MHz)

TCX-3CHD(HD-SDI)



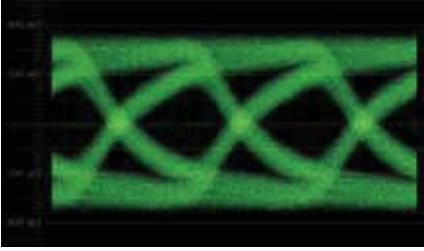
Attenuation value actual : 11.23dB (742.5MHz)

TCX-4CHD(HD-SDI)



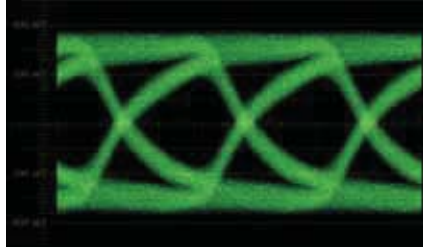
Attenuation value actual : 8.64dB (742.5MHz)

TCX-5CHD(HD-SDI)



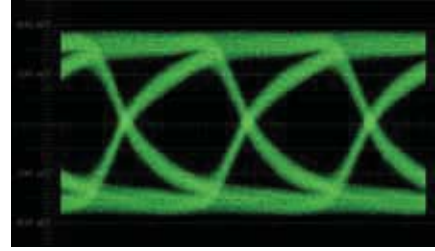
Attenuation value actual : 7.53dB (742.5MHz)

TCX-6CHD(HD-SDI)



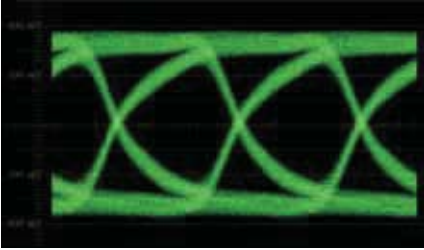
Attenuation value actual : 6.17dB (742.5MHz)

TCX-7CHD(HD-SDI)



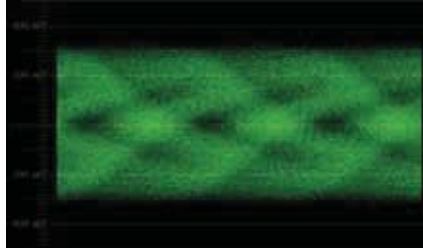
Attenuation value actual : 5.23dB (742.5MHz)

TCX-8CHD(HD-SDI)



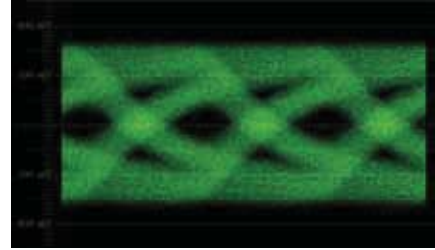
Attenuation value actual : 4.70dB (742.5MHz)

TCX-3CFB(HD-SDI)



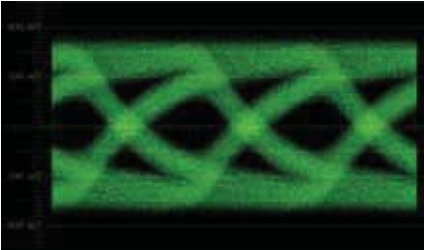
Attenuation value actual : 13.65dB (742.5MHz)

TCX-4CFB(HD-SDI)



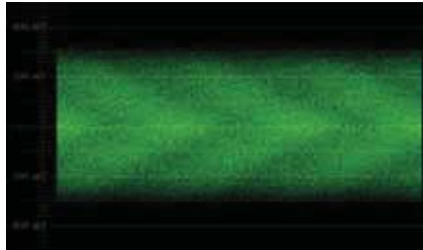
Attenuation value actual : 10.66dB (742.5MHz)

TCX-5CFBL(HD-SDI)



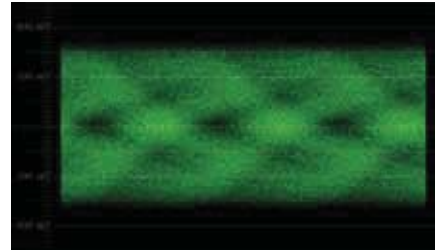
Attenuation value actual : 8.79dB (742.5MHz)

TCX-3CFWS(HD-SDI)



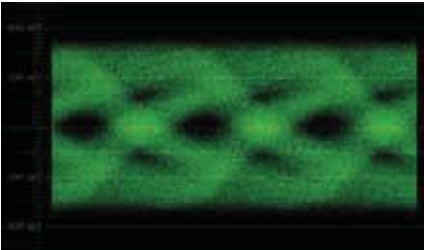
Attenuation value actual : 16.87dB (742.5MHz)

TCX-4CFWS(HD-SDI)



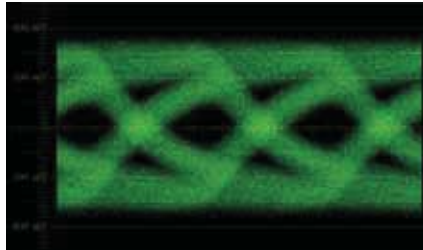
Attenuation value actual : 13.22dB (742.5MHz)

TCX-5CFWS(HD-SDI)



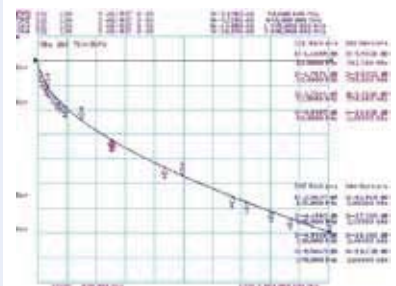
Attenuation value actual : 11.41dB (742.5MHz)

TCX-5CFW(HD-SDI)



Attenuation value actual : 9.54dB (742.5MHz)

Example of actual measurement for attenuation value



Measuring object cable: TCX-5CFW 50m  
 Measuring frequency : 30kHz ~ 3GHz  
 Measuring device : Agilent Technologies 8753ES (75Ω only)

The actually measured value of attenuation was respectively shown by EYE-pattern waveform wise at lower right on the frequency at transmission rate 1/2. The frequency is 1485MHz in 3G-SDI and 742.5MHz in HD-SDI. By each specification in SMPTE, the attenuation value has been specified within 20dB on these frequencies, therefore the transmission conditions become easy to understand more by confirming with both attenuation value actual and EYE-pattern waveform. In attenuation value measurement for each cable, network analyzer is used as per the graph at righthand side. In TACHII, we have the network analyzer for 75Ω only to measure more accurately and have been respectively measuring the specialized SDI cable.