

"This Digital Cable Sounds Great!"



"How?"

SURELY THE WHOLE POINT about digital audio is that once the sound is in numeric form, it stays the same wherever it goes. So how can one cable sound better than another?

The problem: *Jitter*. What goes in one end can be very different from what comes out the other.

As your music moves digitally through an AES/EBU cable, powerful forces are at work pulling apart your hard-won, clean, accurately-spaced digital bits. Inaccurate impedance matching, cable capacitance and insufficient bandwidth can all induce timing jitter.

Most digital audio monitoring equipment is much more sensitive to this blurred timing than you realize. Jitter can compromise the stereo image and degrade tonality.

The solution: Apogee **WYDE EYE** cable. Designed from the ground up specifically for digital audio. With tightly-controlled parameters optimized for digital – and better analog, too. Carefully-controlled impedance. Low capacitance.

Wyde Eye cable was designed by Apogee and is produced exclusively by one of America's foremost cable manufacturers: it's not available elsewhere. And Wyde Eye is made from the highest quality raw materials, to the highest

possible specification. There's a special braid with unique gauge and weave, enclosing an exclusive golden shield foil. The distinctive outer insulating jacket remains supple over a wide range of temperatures. In the A-110 (AES/EBU) version, conductors are color-coded and striped to indicate pins 2 and 3, so there's no risk of incorrect wiring.

If you were told that mic or computer cables were fine for digital audio, you were told wrong. You could be audibly degrading the quality you're working so hard to create.

Apogee Wyde Eye cable is available in a number of configurations and lengths, with the highest quality connectors – or you can order in bulk. Ask your dealer for details.

Open your eyes to Wyde Eye, from Apogee. Your ears will appreciate the difference.

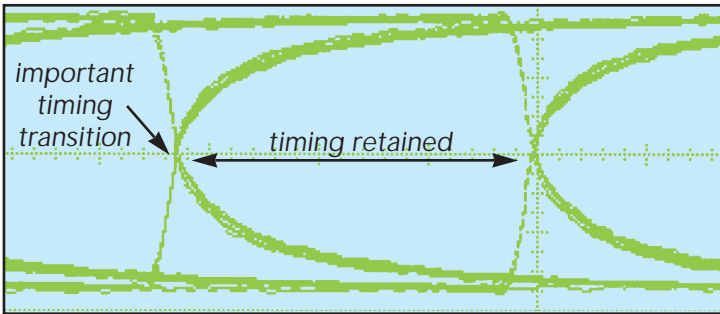


The digital masters.

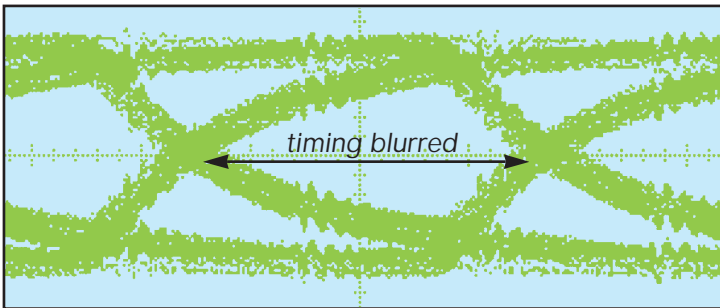
 W Y D E E Y E

The AES/EBU format takes accurate digital audio timing (sync) information, combines it with the left and right audio data and sends it down a mic cable. At the other end, the equipment separates the timing and data components and performs whatever function it is designed to do. In an ideal world, the very regular sync information would exit the cable unaffected by its digital audio travelling companions. In practice, this is not the case.

Quality mic cables are excellent at handling frequencies way beyond the audible range, but they are simply not designed for the requirements of digital audio, where signals can have energy right up to 30 MHz and beyond. Just as you can get an acceptable analog signal through an audio path that is limited solely to audio frequencies, so you can get an AES/EBU signal through a cable with a bandwidth of no more than 6 MHz. However, in both cases, something is lost. In both cases, it's the transients



Wyde Eye and Narrow Eye – The ‘eye’ pattern in the center of these traces is a long-accepted method of measuring the degradation of a data signal. The wider the eye, the better. The upper oscilloscope trace shows the effect of passing a 48 kHz AES/EBU signal through an unusually long 100m (328ft) length of Apogee Wyde Eye cable. The lower trace shows the same signal passed through 100m of quality mic cable. The ‘fuzz’ on the lower trace is caused by timing jitter. Notice also how the overall amplitude of the lower trace is reduced. The width and height of the ‘eye’ are reduced. The width indicates the induced jitter, while the height indicates the signal to noise ratio. The difference is clear.



Specification (Model A-110 – AES/EBU)	
Conductors2 #22 (19 x #34) TC	Braid Shield.....#38 TC, 46° Angle
InsulationFoamed HD PE	Drain Wire.....#24
Color CodingWhite: 2 blk stripes	JacketApogee Purple
.....Slate Gray: 3 blk stripes	Outer Diameter0.266in±0.010in
FillersPE Rod Fillers x 2	Impedance @ 6 MHz110Ω ±5%
Foil Shield.....Apogee Golden Foil	Capacitance @ 100 kHz.....12 pF/ft

that suffer – and in the digital domain this means that the timing precision of the transitions is degraded. In addition, with the loss of high frequency information, jitter is induced by the changing of data bits in the signal. The result: a nasty mess, as can be seen from the diagrams below. And many monitoring D/A converters are particularly susceptible to this kind of error.

Just as an analog signal sounds much better if it is passed through a system whose bandwidth extends well beyond the range of hearing, so Apogee Wyde Eye cable’s extended response preserves the subtleties, stereo image, tonal balance and overall character of the digital audio signal it carries. Meter after meter. In any playback system.

The enemy of AES/EBU cable is loss from input to output, especially any loss which is frequency-dependent. Most is caused by the conductors and shield, and to a lesser degree by the dielectric properties of the insulation. All of these factors have been optimized for wide band performance.

The impedance of a correctly-designed AES/EBU cable is 110Ω. If the impedance is incorrect, reflections occur from one end of the cable to the other, distorting the pulses, even if it is correctly terminated. Even a cable with the correct nominal impedance can exhibit considerable impedance variations over a distance. Apogee Wyde Eye cable has a very accurate and carefully-controlled impedance – 110Ω±5% at 6 MHz in the case of the A110 (AES/EBU) type.

Apogee Wyde Eye A-110 110Ω AES/EBU cable and A-75 Wyde Eye 75Ω S/PDIF cable are available in bulk or as high quality assemblies in various lengths – ready to go to work for you.

Apogee Wyde Eye Cable minimizes losses and accumulated jitter with:

- Low capacitance for minimum pulse degradation
- Carefully controlled impedance accurately matches terminations
- Low dimensional discontinuities for consistent impedance
- Optimum dielectric – foamed high-density polyethylene
- Maintains properties over the full temperature range
- Flexible – supple outer jacket in distinctive purple

