

# Amphenol Spectra-Strip

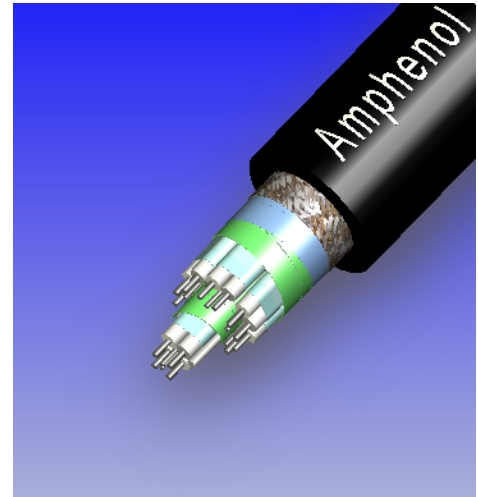
SkewClear®

720 Sherman Avenue, Hamden CT, 06514 USA

**166 series 4X SkewClear EXD™  
(Extended Distance) Cables for  
10Gb + applications Patent Pending**

## Introduction

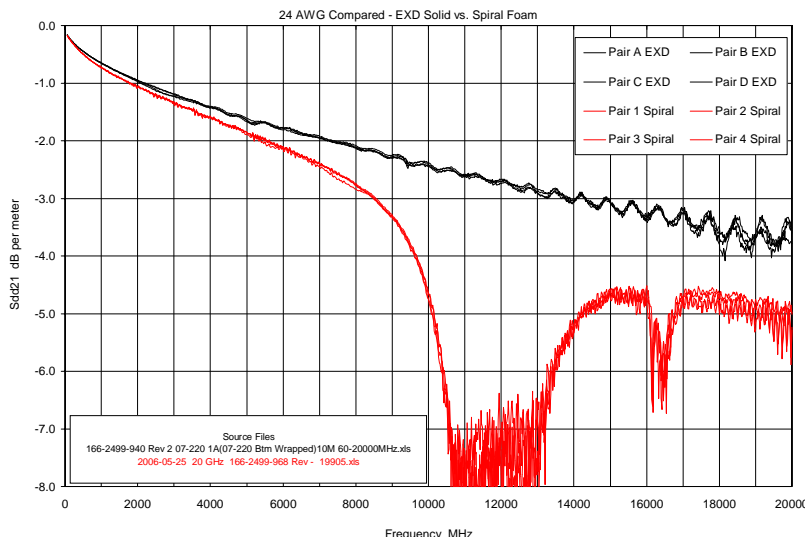
**EXD is the next generation solution for 8 pair 10Gb + applications, where the periodic structure of traditional spiral shield constructions in the twinax pair shield design causes a resonance of attenuation response at high frequency (red traces below).**



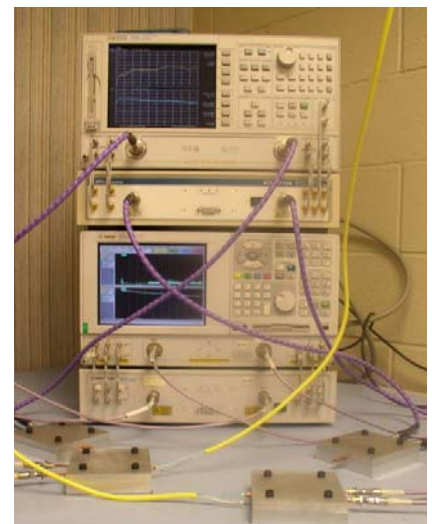
Spectra-Strip's EXD SkewClear® product line of high precision 4X bulk cable (4 pairs transmit, 4 pairs receive) is for high frequency applications such as QSFP. In cables such as this, building 4X cables with a high degree of electrical consistency from pair to pair and lot to lot is a difficult and demanding task. There are no easy shortcuts. Precision extrusion, pair shielding, and cabling are key elements necessary for consistent performance. As the biggest contributor to the total interconnect link performance, one of the biggest technical challenges that confronts any cable manufacturer is attenuation stability, i.e., how consistent all the pairs in the cable are relative to each other. Since all the standards specify maximum assembly insertion loss at a given frequency, it is crucial that all the pairs meet a specified **MAXIMUM** attenuation at the fundamental frequency of interest, as well as the 3<sup>rd</sup> odd harmonic.

In short, the cable is only as good as the worst pair in the cable, as this will be the one that limits the overall length performance. It is important to note that Spectra-Strip specifies **MAXIMUM** not **NOMINAL** attenuation performance at multiple frequencies on all of its 4X cables.

## The EXD Advantage over traditional Spiral Wrap Shield



4 port 20GHz Agilent VNA



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## EXD Features / Benefits:

- **No suckout (resonance) up to 20GHz. Harmonic signal content is preserved**
- **Improvement in high frequency attenuation for more margin**
- **Maximum attenuation specified for all pairs**
- Available with standard silver plate conductor or Eye Opener Plus® conductor
- RoHS compliant
- Standard shield materials, and same stripping process as standard cable
- Potential for AWG size reduction. Available 30 through 24 AWG

## EXD Cable Specifications

Part Number	Description	Diameter (inches)	Min bend radius (inches)	Impedance	Maximum within pair skew	Maximum attenuation @ 5.0GHz
166-3099-941	4X 30 AWG	0.270	1.62	100 ± 5 Ω	35 ps / 4m	3.35 dB / m
166-2899-921	4X 28 AWG	0.330	1.98	100 ± 5 Ω	40 ps / 5m	2.75 dB / m
166-2699-941	4X 26 AWG	0.380	2.28	100 ± 5 Ω	60 ps / 7.5m	2.28 dB / m
166-2499-940	4X 24 AWG	0.435	2.61	100 ± 5 Ω	80 ps / 10m	1.87 dB / m
Conductor	Dielectric	Drain wire	Pair shield	Overall Shield	Jacket / UL / CSA	Voltage / Temp rating
Solid silver plated copper  see below for Eye Opener Plus® option	Solid polyolefin	Solid tinned copper	Longitudinal aluminum / polyester tape + heat sealed polyester tape	Spiral wrapped aluminum / polyester tape + ≥ 85% coverage tin copper braid	PVC  UL CL2	-40 to +75C  300V

\*\* Note: Eye Opener Plus® conductor is available for self equalized cable constructions. Contact your local sales representative. Eye Opener Plus is a registered trademark of W.L. Gore Associates.