SPEED HINTS – ETHERLINK_IV
Long distance / Many Copper lines

S-Access

In order to get the best performance out of your Copper Infrastructure like in the environment as seen in the pictures below, it is important to understand the basics of the line coding of G.SHDSL

Historic DOWNTOWN / denselv built

WATERWAYS - long-distance

HIGHWAYS - long-distance

Speed, Distance and Power Spectral Density

The following table gives you an overview of the possible data rates using Etherlink_II and Etherlink_IV, dependant on TC-PAM coding.

About Speed Hints: Usually it is better to choose a lower TC-PAM coding, it will lead to a better immunity to interference. But sometimes the filter characteristic of the copper cable affects the data transmission and a change to higher TC-PAM coding can help to get better performance.

TC-PAM	Etherlink_II		Etherlink_IV		Etherlink_V (MiniAccess)		Speed Hint
							Best Selection
	Base rate	Data Rate [Kbit/s]	Base rate	Data Rate [Kbit/s]	Base rate	Data Rate [Kbit/s]	Data Rate [Kbit/s]
4	**-**	**-**	**2-99**	**128- 2496**	**2-99**	**128- 2496**	**128**
8	**-**	**-**	**3-79**	**192- 5056**	**3-79**	**192- 5056**	**192- 1152**
16	**3-60**	**192-3840**	**4-119**	**256- 7616**	**4-119**	**256- 7616**	**192- 4160**
32	**12-89**	**768-5696**	**4-159**	**256-10176**	**4-159**	**256-10176**	**2048- 8960**
64	**-**	**-**	**2-199**	**128-12736**	**2-199**	**128-12736**	**5440-12736**
128	-	-	**4-238**	**256-15232**	**4-238**	**256-15232**	**7040-15232**

The next diagram shows the reach against the data rate with different TC-PAM coding. This diagram is measured on 0.4mm (AWG 26) real copper cable (please do not compare it to the perfect PE 0.4mm cable). The diagram shows different data rates for the optimum PAM coding. Again, this can change depending on the characteristic of the used cable.

Conclusion: The flexibility of Etherlink_IV makes it the best solution for long distance applications and applications in densely populated areas for transmission of data over copper pair cable!