



The Fibreoptic Industry Association

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CLASS E_A AND F_A CABLING IS APPROVED – BUT IS IT A FALSE DAWN?

by

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for Networking+ (February 2008)

February 2008 heralds the ratification of two important advances in the standardisation of generic cabling. The United States anticipates the publication of ANSI/TIA/EIA-568-B.2 Addendum 10 (also known as B.2-10). This contains Augmented Category 6 specifications for cables, connecting hardware and installed cabling. TIA/EIA-TSB155 showed how existing balanced cabling could be characterised/assessed to determine its ability to support 10 Gigabit Ethernet, whereas B.2-10 defines component and cabling performance that guarantees that support. Internationally, the national bodies of ISO/IEC JTC1 SC25 WG3 have approved Amendment 1 to ISO/IEC 11801 Ed.2 which contains channel specifications for Class E_A and F_A. Class F_A channels go way beyond the existing Class F channels - specified for performance up to 1000 MHz.

Class E_A channels are essentially equivalent to Augmented Category 6 channels. However, they do differ in one specific characteristic. This renders the ISO/IEC specification more onerous and the guarantor of better performance. Unfortunately, this is confused by the fact that as yet ISO/IEC are unhappy to ratify the specification of both the components required to produce Class E_A and F_A channels i.e. Class 6_A and 7_A components and the installed permanent links. This will be addressed with the publication of Amendment 2 to ISO/IEC 11801 Ed.2 which is hoped to be completed early next year.

So, what does the customer who wishes to specify one of these high performance cabling systems today actually write in his tender? The most stringent demand for 500 MHz cabling would be to require components and installed links to at least meet Augmented Category 6 requirements but with a suppliers guarantee that resulting channels (using the correct cords) will meet Class E_A. Of course. Central European countries would scoff at this and say one should simply specify Class F, specified up to 600 MHz, a superset of Class E_A, standardised since 2002.

But what will Classes E_A, F and F_A be used for and do we need them? All three will support 10GBASE-T, so if you want 10 Gigabit Ethernet to the desk or in your data centre then you may take your pick. But beyond 10GBASE-T the situation is less clear. Class F_A certainly delivers substantially better performance than either E_A or F - but is it necessary? There are some that suggest that "broadcast" applications are the target audience for such cabling but others see the long-term solution for the delivery of broadcast services to be implemented using existing applications such as 1000BASE-T (supported over Class D channels). In the world of LAN strategies, IEEE are already working on 40 Gb/s and 100 Gb/s Ethernet standards which are not expected to be implemented at "useable" lengths over any type of balanced cabling.

It is difficult at this stage to see the "killer app" that justifies the cost, installation complexity together with the cabling volumes and weights (as most of these cables are of much larger than their predecessors) of these high-end products. Many large corporate users are opting for Class E_A cabling

(or at least Augmented Category 6) using the principle of “you never get fired for buying better than you currently need”. However, there are many others who have shunned anything beyond Class D. This latter group feel justified since Class E never delivered the above-mentioned “killer app” and that 10 Gb/s Ethernet is better delivered using optical fibre. On the basis of current application development it will be at least five years before we find out who was right - and five years is along time in cabling.

Further information is available via the FIA web-site at www.fia-online.co.uk or directly via the TIA-B section at www.fia-online.co.uk/TIA-B. Enquiries can be e-mailed to jane@fiasec.demon.co.uk or, alternatively, you can contact the FIA Secretariat in 01763 273039.