

# ***Jamming Them In***

## **A Case Study**

Higher Density Inc\* (HDI) are a UK based ISP who use 2Mbps G703 lines extensively for their corporate clients. These clients tend, along with the major financial houses, to cluster in areas where real estate costs are at an absolute premium (up to £30k per annum per 19 inch rack cabinet).

To try to lower rental costs HDI evaluated a number of solutions which claimed densities of 16 to 18 X.21 to G.703 converters in a 2U rack space.

In practice 2 of these slots are lost for each PSU fitted in the rack. Dual redundant power supplies are de rigeur in these locations and a network management system occupying a further slot was highly recommended so the 18 slot rack had already become a 13 slot rack.

HDI found that network management turned out to be a mixed blessing. In some cases the digital codes used to select test modes were emulated by real data and led to spurious loopbacks. In others, the network management locked out all the cards in the rack. They began field trials only to find that when they fitted 9-11 cards the converters became unstable and service calls soared and more alarmingly, with a full complement of cards in the rack parts of the equipment became excessively hot.

In reality what they had was an 8 slot rack in 2U of 19 inch rack space containing equipment which was difficult to install and test correctly with an unreliable management system being sold as the elastoplast to get over the real problems.

HDI approached Teltronix with their requirement and we started a new design with a clean sheet of paper.

We decided that it was the nature of racking systems that caused problems with reliability and we came up with a different answer. The prime goal was to get the highest density of unmanaged X.21 to G703 converters into as little space as possible whilst maintaining our reputation for product reliability.

The new 8 line configuration of our tried and tested TR2 architecture achieves this by maximising the common components and minimising the number of points of failure. The Straight 8 with its integrated power supplies and inherent test functions gave HDI exactly what they wanted - the lowest possible cost per unit rack space with the reliability and ease of installation of a standalone converter.

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\* Names have been changed to avoid accidental disclosure of confidential information.  
All trade marks acknowledged.