

# Tube tales

**When QED launch an IEC mains cable, you expect it to be different. Martin Pipe finds out how.**

**T**wenty five years ago, QED published an appraisal of speaker-cable technology that it somewhat-gradiosely entitled "The Genesis Report". Factors including insulation materials, 'acoustic crosstalk', the electrical parameters of the conductors and their effects on what we hear were discussed. QED's research also influenced the design of its own cables, one aspect of which was the clever 'X-Tube'. Here, the signal-carrying strands of wire are not bunched together. Instead, QED uniformly wraps them around a 'polycore' insulator - the 'tube' that gives the technology its name.

Why is this approach taken? "At high frequencies", QED tells us, "current flow is highest at the periphery, with rapidly-deteriorating current-density towards the centre of the conductor". With conventional speaker cables, its effect is to "reduce the actual cross-sectional area of the cable at 15kHz to less than 75% of that at low frequencies...resulting in higher distortion and performance compromises". X-Tube gets around this "self-inductance" problem by effectively eliminating the centre.

And now, X-Tubes are a key component of a QED mains cable, the mid-priced XT5. But surely, X-Tube technology is irrelevant to mains cables? After all, these only have to carry low-frequency high-voltage a.c. and don't have to respond to musical harmonics. Indeed, a mains cable that conducts well at high frequencies could actually cause more problems - as mains-borne interference such as powerline-networking data-signalling and power-supply switching noise from other equipment could be passed with greater ease to your hi-fi equipment.

QED assures us, however, that the XT5 features an "adapted version of X-Tube Technology...specifically-tuned for this new application". When I put my observations to QED's R&D team I

was told that it was "natural...to employ the same solution to this (mains cables) as we do to speaker cables using X-Tube". QED was however constrained by safety standards; instead of "preferred" dielectrics like LDPE, it had to use PVC to support the 1.5 mm<sup>2</sup> OFC conductors. This was however "about the only change from the normal X-Tube configuration".

QED defends its use of X-Tube for mains cables in a white paper, stating that "variations in the current demanded by the amplifier resembles the output (audio) signal". The implication is that there are similarities between the two ("modulation of the cable impedances is the same") and so the use of a technology designed for audio cables can therefore be

justified for mains cables. A more tangible feature of the XT5, though, is an ferrite-impregnated inner jacket that helps to keep external interference at bay.

## USE AND PERFORMANCE

In physical terms, the XT5 chunky-looking cable is lighter than it appears, on account of that X-Tube internal construction. In other words, it won't drag smaller items like DACs and headphone amps to their doom! The XT5 - which is available in 1m, 2m



and 3m versions - looks the part with its 'black pearl' finish, and is robustly constructed. It's also reassuring that the XT5 terminates in IEC and 13 Amp mains plugs of appropriately-high standard. I tried it with a number of pieces of equipment - including a Cambridge Edge W/A combo, Arcam A49 integrated amplifier, Quadral Aurum Wotan VIII floorstanders, Prism Callia DAC and Focal

Utopia 'phones.

I noted that, in particular, the XT5 benefitted finely-etched recordings with a wide dynamic range and low-level information. Relative to a cheap moulded IEC cable of the sort that's often bundled with equipment, there was a subtle but perceptible drop in the noise floor - in particular, the subtleties of the performance venue's acoustics become more evident. I could hear this with well-recorded Blue Coast music like Emily Palen's Light in the Fracture.

But it isn't just hi-res music; live evening concerts carried by the 320kbps Radio 3 stream seemed cleaner and

more involving too.

Source gear and DACs tended to derive the most advantage from the XT5 - here, I could hear the difference (notably with basslines) between mains sockets! That's perhaps not as daft as it seems; it turned out that one of my sockets was on a 'spur', while the other was directly on the ring main.

Clearly, these cables are assets if used properly. It should also be borne in mind that although the XT5 sells for £169 in the 2m form tested, you can of course spend considerably more on an IEC mains lead. QED have managed to strike a sensible balance between pricing and performance, thanks in no small part to the proprietary X-Tube technology that once connected speakers to amplifiers.



"XT5 benefitted finely-etched recordings with a wide dynamic range and low-level information"

**QED XT5 £169  
2M VERSION,  
AS TESTED £149**

**1M AND £199 3M  
VERSIONS ARE  
ALSO AVAILABLE**



**OUTSTANDING - amongst  
the best.**

**VERDICT**

An attractively-priced high-tech IEC cable that can make a real difference.

**FOR**

- high build quality
- improved low-level detail

**AGAINST**

- nothing at the price

**QED**  
www.qed.co.uk