

TBS Matrix

A little Linux machine for building smart TVs – **Ben Everard** unglues himself from The Jeremy Kyle show long enough to take a look .

The Matrix is designed as a little ARM computer to run Tvheadend, the TV streaming server for Linux. It comes with a minimalist version of Linux, pre-loaded with the drivers for several of TBS's DVB receivers, as well as the software to use them (Tvheadend and XBMC). In theory, this means it should be really easy to create your own Linux-powered smart TV, and record all the shows you want.

The Matrix is well designed for this purpose. The quad-core Freescale i.MX6 processor with 2GB of RAM provides enough horsepower to decode the video streams in Tvheadend and display them in XBMC. There's 16GB of internal storage so there's space to record a limited amount of TV even without external storage, but if you want to expand it, there are plenty of options including a SATA port and a mini PCIe. To get the video out, there's an HDMI port, and for audio there are 3.5mm jack and optical ports.

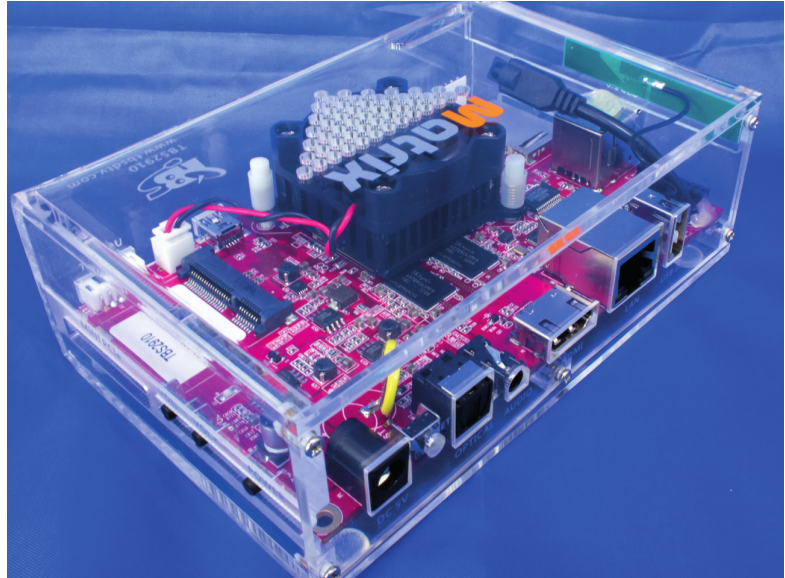
More than a box

The hardware looks good, feels solidly made and works well. However, this alone isn't enough to make a Linux-powered smart TV: there's also the software side of things to consider. Tvheadend is a challenging beast at the best of times (and using it with the Matrix and a TBS USB DVB tuner is the best of times). It takes a little prodding to get everything set up, and there's not much documentation from TBS to help you with that. The Tvheadend wiki is a good place to start (<https://tvheadend.org/projects/tvheadend/wiki>). As long as you're using a supported DVB receiver, all the necessary software will be installed. It shouldn't be beyond a reasonably technical person, but it can take a few hours, especially if you haven't done it before. Once it is set up, Tvheadend integrates really well with XBMC either running on the Matrix itself, or on a separate computer.

In addition to the Matrix's own minimalist distro, there versions of Android (4.2) and Ubuntu (11.10)



XBMC performance is fantastic and could make the Matrix one of the best frontends you could buy.



The clear plastic box feels solid to us, and provides good protection for the Matrix, while showing off the circuitry to glorious effect.

available to download. Unfortunately though, you'll need a Windows machine in order to push them onto the internal eMMC storage. The reliance on Windows will put some people off, and it's a bit of a shame that only Ubuntu 11.10 is available as we much prefer the 12.04 LTS version.

The Matrix is capable of running either of these OSes without any real sluggishness. Android comes with the full Play store, so you've got access to all the usual games. It would be nice to have the ability to dual boot, because we'd really like the option of switching between Android for games and MatrixTV (TBS's custom Linux distro) for TV, but this isn't possible at the moment.

The 16GB of storage means you can run it without any expansion should you wish, which is a big advantage over some ARM boards. We would also expect this storage to be a bit more durable as we've had some issue with SD cards on other ARM boards.

Over all, we'd say that the TBS Matrix is good hardware that's let down by the software. It's a good option for building a PVR, but don't expect it to be completely straightforward.

LINUX VOICE VERDICT

A handy little ARM PC that's most at home as streaming and recording broadcast video.



DATA

Web
www.tbscards.co.uk
Developer
TBS Technologies
Price
£159.99