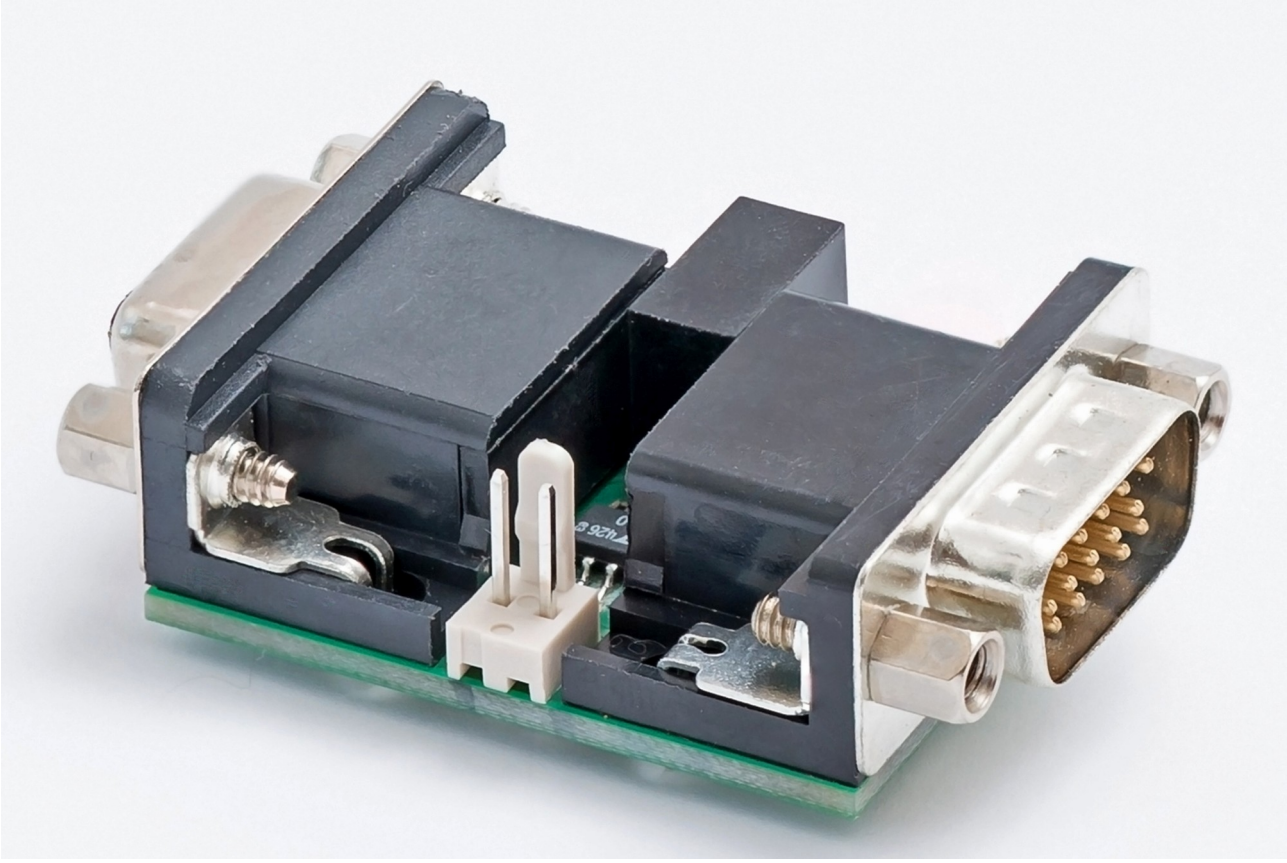
Inventronik GmbH

TT Video ECL to VGA Adapter
Operating Manual



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Subject to change without notice.

W. Förster

Description

Atari TT Computer is equipped with several video modes. The table below lists all the video resolutions of the TT.

Name	Resolution	Signal Level	Suitable Atari Monitors
ST-Low	320x200 / 16 Colours	TTL	SC1224, SC1424
ST-Medium	640x200 / 4 Colours	TTL	SC1224, SC1424
ST-High	640x400 / Duochrome	TTL	SM124, SM125, SM146
TT-Low	320x480 / 256 Colours	TTL	PTC1426
TT-Medium	640x480 / 16 Colours	TTL	PTC1426
TT-High	1280x960 / Monochrome	ECL	SM195

Remarks:

1. Colour resolutions have a palette of 4096 colours to choose from.
2. The Duochrome mode does not only cover black and white but any two colours.
3. TTL stands for **T**ransistor-**T**ransistor-**L**ogic, a widespread electrical standard.
4. ECL stands for **E**mitter-**C**oupled-**L**ogic.

The blue marked TTL signals are suitable to drive common monitors or TFTs equipped with a VGA interface (VGA = **V**ideo **G**raphics **A**rray). In this case a simple cable adapter is sufficient to connect either the colour signals or the monochrome signal to the VGA connector of the monitor. Depending on the cable the monitor works in monochrome or colour mode.
The red marked ECL signal is not suitable to be connected directly via a passive cable adapter but requires some kind of signal level shifter hardware. On the one hand this hardware provides the signal shifting and on the other hand it provides a fast signal processing to meet the requirements of the TT ECL interface.
The TT ECL to VGA Adapter is the appropriate hardware for this purpose. It is easily to install. On one side of the adapter there is a 15-pin VGA male connector which is directly connected to the TT video output. On the other side there is a 15-pin VGA female connector suitable to connect a standard VGA cable which is connected to the VGA input of the monitor. Due to there being active hardware components used for level shifting, the adapter requires a power supply of 5V DC. It can be provided in the following two ways:

1. Connect an appropriate +5V DC power supply (USB or so) to the white power supply connector of the adapter. The polarity is marked on the top of the printed circuit board (+5V and 0V).
2. Alternatively, the adaptor can be powered by modifying the VGA connector of the TT so that the unused pin 11 is internally connected to +5V. In addition the jumper of the ECL to VGA adapter needs to be closed.
   Please be aware that both variants of the power supply may not be used simultaneously at any time because it may damage either the Atari TT or the power supply or even both.
   The modification at the TTs video interface should only be done by an experienced person and it should be ensured, that pin 11 of the TT under modification is not connected or used by anything else before connecting +5V to it.

Remark:
The ECL to VGA Adapter works like a level shifter converting ECL level to conform to VGA signal levels. The video timing of the Atari TT is unaffected. It can therefore not be guaranteed that all monitors will work correctly. It depends moreover on the synchronisation capability of the monitor whether the image is displayed correctly or not. In addition adjusting the phase or clock settings on some monitors may improve the image.

Contact:

lnventronik GmbH, Finkenstraße 48, 70199 Stuttgart. Internet: www.inventronik.de; www.experiment-s.de.
Email: info@inventronik.de