

Microtan-R Starter Project

Introduction

If building a Microtan-R (MT-R) system, a suitable first step would be a MT65-R CPU and TANEX Plus configuration. This is equivalent to the Tangerine Micron which was sold back in the early 1980s. It provides a Video output of 16 rows of 32 text characters or 64x64 'chunky' graphics. Programs are saved and downloaded as audio .wav files to/from a PC/Laptop/Media Player.

Components

In 1980 the Micron and a Tangerine Keyboard would have cost £395. It should be possible to build this project for around half that cost. The other items items required are listed below in the following sub-paragraphs. The final sub-paragraph shows the completed project.

Power Supply

A 5v 2A supply is required to power the CPU and TANEX boards. Depending on choice of display, a 12v supply to power it may also be required. These could be purchased separately but it would be more economical and neater to purchase a dual output supply such as the Meanwell RD-35A. If use of the RS232 compatible interface on the TANEX board is required, then a further -12v supply would also be needed. If choosing this option, then consideration should be given to purchase a power supply that has the capacity to power a full Microtan system. Possible supplies would be the Meanwell RQ-65B or Meanwell RQ-85B. Suitable Mains and power connection cables will also be required.

Display Monitor

To view the video output from the MT-R a monitor or TV that accepts an AV video source is required. These will have an RCA (Phono) socket usually yellow as shown in Photo 1. A video cable with an RCA plug at each end will also be required.



Photo 1 - TV/Monitor AV connection

Alternatively if a cheap, stand-alone, portable solution is required for getting started, then a mini 'car reversing monitor' would be suitable. These require a 12v supply.

Keyboard

The MT-R requires either a 20 key Tangerine Keypad or a full ASCII keyboard. The former has a limited number of characters and is not suitable for accessing the full capability of the MT-R. The latter is quite rare these days. A modern replacement 'Keyboard-R' has been developed, but this is expensive, particularly if a custom set of key-caps is required. A much cheaper alternative for the starter project is an old PC-AT keyboard together with a Serial to ASCII adaptor. The adaptor accepts a PS2 (Mini DIN6) connector. Older PC-AT Keyboards were fitted with a DIN5 (180 deg) plug. Male DIN5 to Female Mini DIN6 adaptors are available (see Photo 2).

All options require the same 16 way flat connection cable with 16 way DIL plugs attached.



Photo 2 - Male DIN5 to Female Mini DIN6 adaptor

Motherboard

A mini-motherboard designed to specifically socket the MT65 CPU and TANEX boards is required.

Assembly

A [kit of parts](#) comprising the 4 Printed Circuit Boards (PCBs) and the EPROMS/PIC is available from the Microtan-R [shop](#). For each PCB, a manual (where applicable) and a list of components required is given in the relevant section.

Completed System

A photo of the completed system is shown in Photo3.



Photo 3 - Complete system

The fully assembled MT65-R CPU, TANEX+ and Mini-motherboards are shown top-left. These are connected to the PC-AT keyboard via the Serial to ASCII converter. The power-supply is the Meanwell RQ-85B. Photo 4 is a close-up of the monitor display.



Photo 4 - 4.3inch monitor