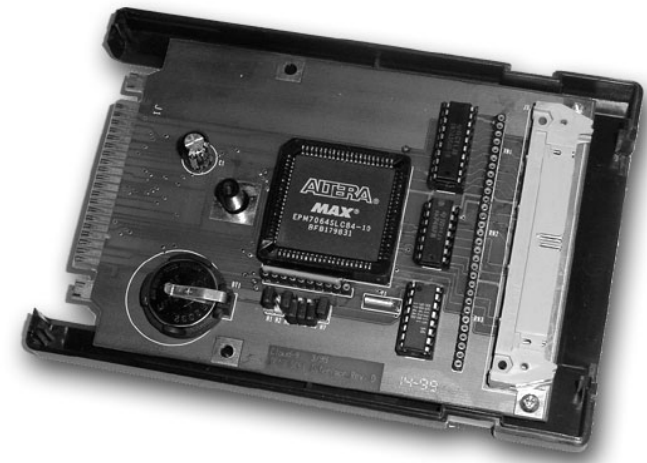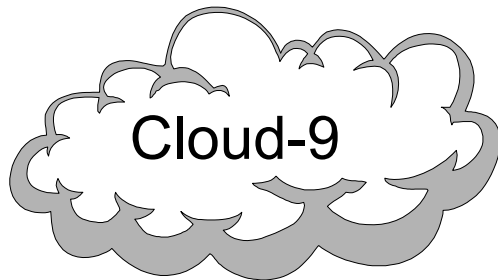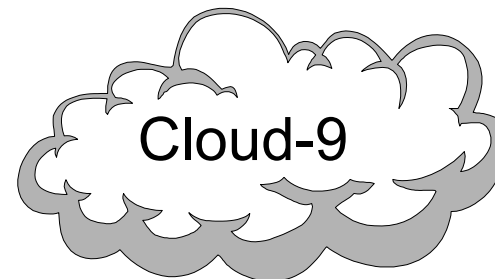# TC^3 SCSI
Interface
User Manual

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Cloud-9

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DEDICATION

This product is dedicated to my father who passed on during this project. In his life and death he had taught me more than he will have known. He was always amazed at what I could do with this wonderful machine. I love and miss you father. This one for you!

TC^3 SCSI Controller
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TC^3 SCSI Controller User Manual
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1. Congratulations!

Thank you for purchasing the TC^3 SCSI Interface, another one of the fine products offered by Cloud-9. This product was designed to be used with the Radio Shack TRS-80 Color Computers 1, 2, and the Tandy Color Computer 3.

SCSI stands for Small Computer System Interface, and is pronounced 'scuzzy'. It is a parallel interface bus for computer peripherals and has become extremely popular in mass storage devices such as hard drives and CD-ROMs.

Features

- Support for 256, 512, 1024 and 2048 byte sectors.
- Full SCSI-1 addresses 0-7 are supported.
- Full 24-bit sector addressing, up to 4 GB drive support.
- Parity Generation allows use of iomega® devices.

Disclaimers

Cloud-9 assumes that the user has the ability to make a backup of the hard drive if needed. We highly recommend the use of iomega® External ZIP 100 drive. This drive is an EXCELLENT selection for doing backups.

Most drives today don't allow for you to change the physical sector size. This is on a drive by drive basis and MUST be checked before you attempt to physically change the sector size.

4. If Problems Arise

Although our products are engineered with quality and care, Cloud-9 can not guarantee that you won't run into problems.

If you have a problem or question, please contact us via the Internet at support@cloud9tech.com. You can also visit our website at http://www.cloud9tech.com for up-to-date information on your product.

3. Where To Go From Here

Now that your TC^3 SCSI Controller is configured and connected to your Color Computer, it's time to set up your OS-9 or Disk BASIC software. For OS-9 driver installation and configuration, refer to the accompanying SCSI System User Manual, which is included with the TC^3 SCSI Controller.

If you purchased Cloud-9's HDB-DOS product, which provides hard drive compatibility with Disk BASIC, then you should refer to that User Manual for detailed instructions on how to use your hard drive under Disk BASIC.

2. Getting Started

Configuration and installation of the SCSI Interface should be trouble free if you are patient and check through the following steps carefully. While it may involve a considerable amount of work, once it is done it will be worth it.
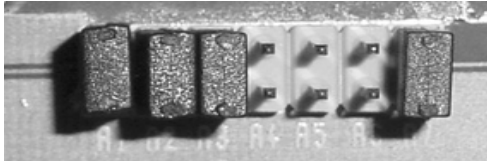
Setting the Base Address

As shipped, the interface's base address is set up at a default of $FF74 to $FF75. We recommend keeping this setting if possible. In order to this, you must verify that no other devices in your system conflict with this address allocation.

If you do have a conflict then a base address must be selected where there are no conflicts. The interface allows an address selection of $FF00 to $FFFF. Even though this isn't practical for the Color Computer, the interface allows you to allocate a base address for the TC9 computer also.

When the jumper is installed across the two pins, it is defined as a logic "0". When the jumper is removed, it is defined as a logic "1", "X" is a don't care condition. The upper 8 bits of address are not selectable and is controlled by the Altera Complex Programmable Logic Device (CPLD). Address bit A0 is not included in the jumper field and is a don't care location. It is shown here in the examples for full sixteen bit addressing. Here are a couple of examples.
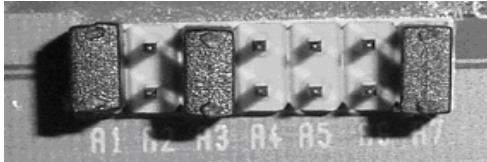
Example 1: Jumper Settings at $FF74-$FF75

Example 2: Jumper Settings at $FF76-$FF77

A typical base address range for the Color Computer is $FF60 to $FF7F, though an address of $FF7E and $FF7F would not be a good selection for the interface since $FF7F is mapped to the Multi-Pak's slot select register. If your interface has a Real Time Clock (RTC) then its address is also mapped from $FF78 to $FF7C. The addresses are fully decoded to the RTC and the addresses of $FF7A and $FF7B are excluded from the RTC's map. This allows the interface to exist with the Orchestra-90 pak.

Now, it's time to insert your TC^3 SCSI Interface into any slot in your Multi-Pak interface or Y-cable. Hook up the hard drive to your interface, and select the SCSI ID of the drive with the jumpers on the controller board. Your main drive is best set for an ID of zero. If you do not know the pin out of the jumpers on your drive, chances are pulling all the jumpers off will make the SCSI ID zero.

SCSI Termination

The SCSI bus requires that the last drive on the cable to have termination resistors installed. The termination resistors are in the host interface and the only other device to have them is the last drive on the cable. If more than one device is on the bus be sure that the terminator settings are correct for that device. Ignoring this will cause the bus to be overloaded and erroneous results will occur.