VIDI

VIDI-ZX

VIDEO DIGITISER FOR ZX-SPECTRUM

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1. INTRODUCTION

1.1 Items Supplied

Your VIDI-ZX pack should contain :- VIDI-ZX interface, Software on tape or disc and this manual.

1.2 Hardware Requirements

To use VIDI-ZX you will need a Spectrum 48k, 128, +2 or +3. A video source is also required. This can be a Video Recorder, Camera (Black and White or Colour) or any Composite Video Signal (usually marked as Video Out). A suitable cable is also required. (SEE Technical details)

1.3 VIDI-ZX Overview

VIDI-ZX is a Video Digitiser. This means that it is able to scan signals from a Video Source and represent them on the Spectrum display. VIDI-ZX is a frame-grabber, taking a single frame in full flight. This means that a still frame is not necessary to get a good picture.

VIDI-ZX represents each point on the picture (or Pixel) as either black or white. It can also use a stipple method to produce an intermediate grey.

Software is included to easily grab a picture, load and save and print (Using the Spectrum's COPY command).

VIDI-ZX produces screen files suitable for use in all the major Spectrum art and design packages, or can be loaded easily in the user's own programs.

Full details are included to allow you to drive the VIDI-ZX hardware from within you own customised programs. VIDI-ZX is easily configurable to work with other storage devices (DISCiple interface, Microdrives etc.).

2. GETTING STARTED

2.1 Connecting Up

Connect the VIDI-ZX interface to the Expansion Connector at the back of your Spectrum.

IMPORTANT :

NEVER CONNECT OR REMOVE THE VIDI-ZX INTERFACE WITH SPECTRUM POWERED UP - YOU WILL DAMAGE YOUR COMPUTER.

Connect the Video Lead to the Socket on the side of VIDI-ZX and the other end to the Video Out on the video source.

2.2 Loading the Software

Load the tape in the normal way by typing LOAD"" . The first program is VIDI (BASIC) and then VIDCODE (Machine Code). The programs are recorded twice on the same side of the tape.

N.B. If you are using the DISCiple interface see Technical Details for details of using the different VIDI4 program.

3. USING VIDI-ZX

3.1 Grab/Run

You should now be watching the Spectrum screen displaying your video picture (if not then SEE Troubleshooting in the Technical Details section).

The VIDI program has a MENU bar along the top of the screen. Options are selected by pressing the letter in brackets. For example the first option is (G)rab. Press G and the picture will freeze (or be grabbed). The Option now says (R)un. Press R to action it.

3.2 Brightness Control

The orange knob on the side of the VIDI-ZX is the Brightness Control. Adjust it by turning to get the best picture.

3.2 Shades On/Off

The (S)hades On/Off option selects either 2 or 3 shaded pictures. Remember the option is to change the current mode - so when you actually have shades on then the menu will say (S)hades Off, as that is the next option.

3.3 View

(V)iew if selected will remove the menu bar and show the entire screen. This is useful to see how the whole screen looks. The menu options operate exactly the same regardless of whether the View is on or off. Press V again to redisplay the menu.

3.4 Menu

The (M)enu option will take you to the 2nd menu. This is used for loading, saving and printing. When you move to this menu the picture is automatically frozen.

3.5 Load

(L)oad will load a previously saved picture to the screen. Press L then respond to the request for a filename in the normal way. If no filename is entered then the command is cancelled.

3.6 Save

(S)ave works in the same way as load, except it saves the current screen to tape or disc. Only the picture information is saved and not the attributes.

If for any reason an error occurs and the program stops - type RUN to return to the save and Load menu.

3.7 Copy

(C)opy activates the built in COPY command. Remember this only prints the top 22 lines and not the bottom two lines on the screen.

3.8 Menu-2

The final option is (M)enu again. This will return you the the 1st menu bar.

4. TECHNICAL DETAILS

4.1 Troubleshooting and Video Cables

If you have the software loaded and the menu showing, but no picture then check :-

1. Brightness control on the VIDI-ZX interface, turn it both ways to see if a moving picture is actually there. NOTE : when adjusting the Brightness control the menu should say (G)rab and NOT (R)un.

2. Video Source - the Video Out should be connected to VIDI-ZX, make sure the video is switched on and playing!

3. Video Lead - most videos have the Video Out on a BNC connector, in this case you will need a BNC to PHONO lead (available from ROMBO at £3.95 inc). Some older videos have a PHONO socket on the Video Out, others (especially in Europe) have a SCART connector - in these cases consult your video dealer for a suitable cable, remember that the connector on the VIDI-ZX is 'PHONO'.

4. Check the small link on the VIDI-ZX at the back of the edge connector. It should be on the inner two pins if you are using the VIDI program - or the Outer 2 pins if you are using VIDI4, see DISCiple interface below. If the link is disconnected the VIDI-ZX will ignore all request signals.

5. Phone ROMBO technical support.

4.2 DISCiple interface and VIDI4 program

VIDI-ZX uses address line 6 for its control. This is also used by the DISCiple interface. To ensure compatibility there is a small link on the VIDI-ZX by the back of the edge connector. This is normally on the inner two pins for the VIDI program using address line 6.

To use address line 4 change the link to the outer two pins. You will also have to load in the VIDI4 program and not VIDI. VIDI4 and its code is recorded twice on the tape after the two recordings of the VIDI program.

If the link is removed then VIDI-ZX will effectively be transparent to the system and will not respond to any signals.

4.3 Using Microdrives and other Storage devices

The Save and Load options are situated at the end of the VIDI BASIC program. These can be easily edited to suit microdrives etc. The program should be resaved to start at line 20 (i.e. SAVE "VIDI" LINE 20).

4.4 The Machine Code program

The routines to operate the VIDI-ZX hardware are written in machine code. They have been split up into small modules or subroutines. Each subroutine controls a specific function of the VIDI-ZX.

The Subroutines are as follows : (the VIDCODE should be loaded in at address 32768 it is not relocatable - CLEAR 32767 first)

If start is 32768 then

INITIALISE	= START+0	- Initialises the interface
SYNC	= START+3	- Grabs a frame after a sync
FETCH	= START+6	- Reads the frame from VIDI-ZX
VIEWSWITCH	= START+9	- Switches the menu bar on/o
STORE	= START+12	- Stores the screen
RETRIEVE	= START+15	- Retrievs the screen
FETCHSTIPPLE	= START+18	- Reads a stippled frame
STIPPLE	= START+21	- Stipples a shaded screen
FILTERVAR	= START+24	- 0=2 shade, 1=3 Shade
VIEWVAR	= START+25	- 0=menu 1=full screen
SYNCFLAG	= START+26	- 0=sync 1= no sync

4.5 Driving VIDI from your own BASIC program

It is not difficult to drive VIDI from BASIC with the VIDCODE (or VIDCODE4) machine code loaded at 32768, and the addresses set up with BASIC LET statements. Look at the VIDI BASIC program to see the technique used.

The INITIALISE routine must be called at the start.

To get a picture make sure to POKE,VIEWVAR=0, POKE FILTERVAR,0 [or 1], call SYNC to synchronise on the next video picture, if PEEK(SYNCFLAG) = 0 then call (RANDOMIZE USR) FETCH (or FETCHSTIPPLE if FILTERVAR=1)

4.6 Backing up the VIDI software

The VIDI software is unprotected and should be backed up straight away. The easiest way is to run the program, press BREAK then :

```
SAVE "VIDI" LINE 20
SAVE "VIDCODE" CODE 32768,1000
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4.7 Technical Support

Technical support is available from ROMBO Productions. During office hours phone (0506) 39046, or write to :

ROMBO Productions, 107 Raeburn Rigg, Livingston, West Lothian EH54 8PH

GOOD LUCK! and HAPPY DIGITISING!