

# LOWE ELECTRONICS LIMITED

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## HIRES SOFTWARE Tape Version 1.1

The VIEW command has been improved since the production of the HIRES manual, so that it uses slightly, less memory in operation. Because of this the address locations of the tape version have changed. These are now:-

Start address	7800H
End address	7F1DH
Entry point	7896H

The above addresses are given in Hexadecimal notation. The program is therefore located between addresses 7800 and 7F1D. The new entry point address (7896) converts to 30870 in decimal notation, and this value should be used to execute the software instead of 30868 (see page 3 of the manual).

RS/8/82

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## LE 18 HI-RES Unit Fitting instructions

### 1/ Fitting

#### 1.1 Nomenclature

These instructions assume that the Genie is facing the user, in a normal operating position when referring to left and right. They are equally applicable to Video Genie Systems, Genie 1 and Genie 11 computers except where stated.

The HI-RES unit connects directly to the 50 way expansion bus on the rear of the computer, if any other peripherals are already connected to this expansion connector an extender cable (type no. BUSEXT), is available from your dealer.

#### 1.2 Fitting the HI-RES to your computer

To do this it is necessary to remove the case and keyboard from the computer and solder in the piece of multiway cable. If in any doubt about the instructions to do this, or your abilities with a soldering iron STOP, contact the dealer who supplied the HI-RES, and ask him to fit the unit for you. If not, read these instructions fully before starting work. You will require a small soldering iron. sidecutters and a philips type screwdriver to fit the unit.

##### 1.2.1 Dismantling the case

Remove the screws which are recessed into the holes on the bottom case of the Genie (do not remove the 3 screws which are in a triangle by the mains cable entry, they simply secure the PSU). Secondly remove the black knobs on the reset (and video cut) switches. It is now possible to remove the top case.

##### 1.2.2 Removing the keyboard

Remove the 20 way wiremate cable connected to the keyboard assembly by pulling gently backward (DO NOT leave this cable connected whilst working, (it is likely to fracture and cause future faults). Remove the 8 screws fixing the keyboard and lift away the keyboard unit.

### 1.2.3 Adding the internal wiring

The multiway ribbon cable should first be prepared as per the following instructions. The conductors should be separated to 2cm beyond the point where they, are to be cut and stripped back 3mm from the cut. Lengths quoted are the amount to be REMOVED and measured from the open end of the cable.

Brown 26cm

Red 22cm

Orange 9cm

Yellow Uncut

Green 2cm

Blue 8.5cm

Purple 9cm

Grey and White 7.5cm

Also prepare both ends of the 9cm orange wire removed

With reference to diagrams 1 and 2 solder the single 9cm orange lead between pins 4 and 5 of Z28 (74LS132) and pin 8 of Z31 (74LS04). Ensure that the two pins on Z28 are linked together.

### 1.2.4 Fitting the multiway cable

Lay the multiway cable toward the back of the unit as shown, with the white wire on the left and the cable arranged between the Video Cut switch and the interboard connector. Make the following connections:-

Yellow lead to pin 4 of Z11 (74LS02)

Green lead to pin 3 of Z23 (74LS11)

Orange lead to pin 6 of Z28 (74LS132)

Red lead to right hand end of R7

Brown lead to the back right hand pin on the video cut switch (S1)

This should leave 4 free leads to be connected.

### 1.2.5 Connecting the power leads to the left board (CPU)

The HI -RES unit requires. that 4 power. connections are made to the computer, with the purple, blue, grey and white wires remaining. These are connected as follows:-

Purple lead to the night hand side of R16 (-15V)

Blue lead to right hand side of C36 (+8V)

Grey lead to bottom track from 7812 regulator. (+15V)

White wire to centre pin from 7812 (ground connection)

This completes the wiring changes. Before doing anything else CHECK all wiring, better still find someone else to check it for you. Mistakes can be expensive.

## 2/ Test and operation

### 2.1 Testing the wiring

When you are satisfied that all connections are correct, reconnect the keyboard and connect your monitor. DO NOT connect the HI-RES at this stage.

Switch on, check that the computer is still working properly. If not recheck all wiring and correct any errors.

### 2.2 Reassembly

Replace the keyboard unit, and fasten this down with the eight screws, be careful that these are replaced correctly, they are not all the same size. Refit the keyboard cable so that all conductors are correctly, inserted; and replace the case top so that the multiway cable is left trailing through the case back. Reconnect the computer to the monitor and mains, and again test its operation without the HI-RES attached.

### 2.3 Connection of the HI-RES

Assuming all is well you can now connect the HI-RES unit. With the power off, plug the HI-RES unit onto the 50 expansion connector, with the cable exiting downwards. Next connect your monitor to the socket on the LE18 unit, and finally connect together the trailing lead and socket.

### 2.4 Final Testing

Switch on the computer, all should be as normal with the "READY" prompt in the top left corner of the screen. Press Newline, and enter the following short program:-

```
10 A$=INKEY$ : IF A$="" THEN 10
20 OUT239,A : A=(A+ 1) AND 1 : GOTO 10
```

Run this program; each time a key is pressed the HI-RES screen will switch in or out (see users. Manual). With the HI-RES screen switched in the whole screen will display a totally random dot pattern which will simply appear as a mess on the screen, and show the HI-RES is working. If any problems occur at this stage recheck all wiring, and the fitting of the HI-RES unit itself, if problems persist, the complete system I.E. computer and HI-RES should be returned to your dealer for examination.

### 3 SOFTWARE

#### 3.1 Cassette

Load the cassette following the instructions in the Users manual, and try the demonstration programs.

#### 3.2 EPROM

If you have an EP3 EPROM with the HI-RES software, this can be fitted internally to the Genie 1 or 11 if you have a Video Genie System this EPROM may be added externally via the LE19 unit. Refer to the instructions with the EPROM and LE19 for full details.

#### WARNING

NEVER CONNECT OR DISCONNECT THE HI-RES UNIT WITH THE SYSTEM POWER SWITCHED ON, SERIOUS DAMAGE WILL RESULT TO THE COMPUTER AND HI-RES

#### NOTE

The HI-RES is not normally suitable for use with TV receivers, a display monitor must be used to achieve the definition required for a good picture. It is however possible to connect the HIRES unit to the video modulator within t h e Genie t o produce a TV picture. Take a lead from the video output on the HIRES unit, (pin 4 on the video socket), to the video input pin on the Genie modulator, (the pin closest to the rear of the case). Be sure to disconnect the existing video lead from the modulator first.

