

# HandyWriter User's Guide

(Second Edition)

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## Introduction

The Holtek HandyWriter was specifically developed to program the range of Holtek OTP microcontroller devices allowing users to easily and efficiently burn their programming code into the OTP devices. The advantages of this writer include its small and easy to manage size, ease of installation and easy to use special features. The structure of the writer includes the following components and is shown in Figure 1 below:

- Single 40 pin DIP TEXTTOOL
- Single 25 pin printer port D-type female connector
- Single 96 pin VME connector

To use the HandyWriter requires the following:

- 16V power adapter with minimum current rating of 500mA. For best purposes please use the adapter included with the HandyWriter carton.
- IBM386 compatible or higher spec. PC
- Win95/98/NT Windows operating system
- HT-IDE2000 microcontroller development system
- If the writer is directly connected to the PC, the HT-ICE is not required.

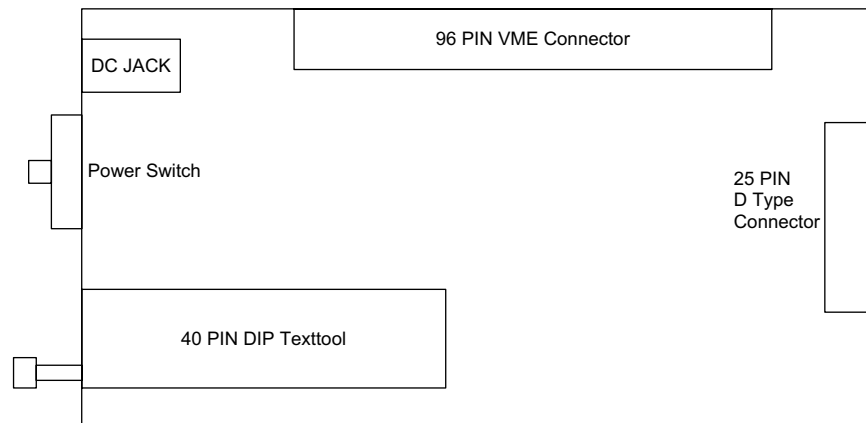


Figure 1

## Installation

- To directly connect to a PC, use the printer cable to connect from the HandyWriter's 25 pin D-type connector to the printer port of the PC as shown in Figure 2. To connect via the HT-ICE, first connect the HandyWriter to the VME 96 pin socket CN1 on the HT-ICE then connect the HT-ICE to the PC's printer port using the printer cable as shown in Figure 3.
- Install the HT-IDE2000 system software, to do so please consult the HT-IDE2000 User's Guide

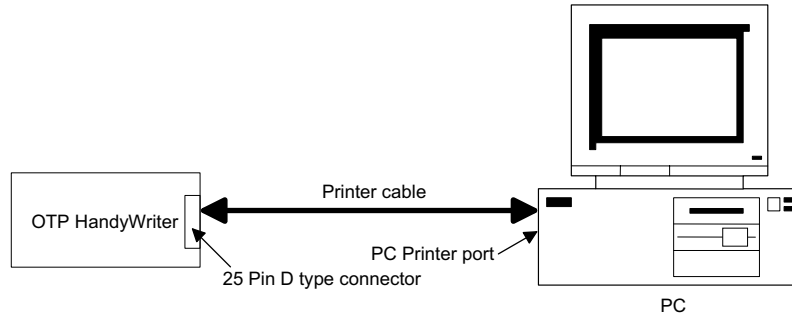


Figure 2

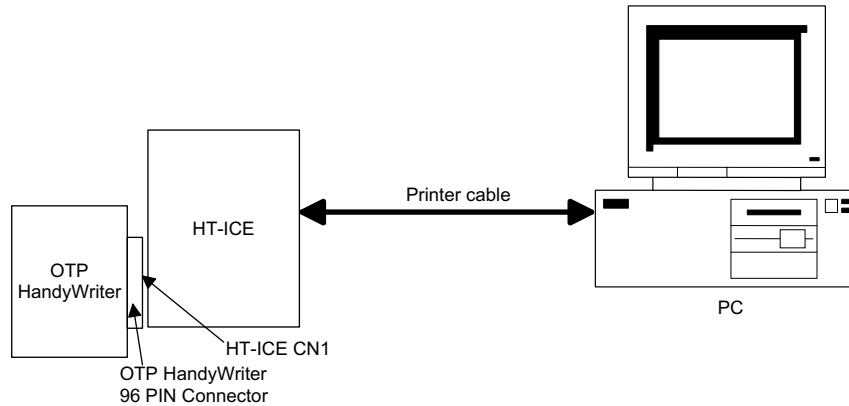


Figure 3

## Programming an OTP chip with the HandyWriter

➔ **Run the HT-HandyWriter system software**

Run the HT-HandyWriter system software under the HT-IDE2000 icon in the main Windows programs menu as shown in the Figure 4 below:



Figure 4

➔ **LPT — Setup the Printer Port**

After running the HandyWriter program, a window as shown in Figure 5 will be shown, however it is first necessary to setup the correct printer port. By selecting "LPT" command, a sub menu as shown in Figure 6 will be displayed. From here LPT1, LPT2 or LPT3 can be chosen. If the OTP HandyWriter is connected to the HT-ICE, then select the printer port to which the HT-ICE is connected. For example if the HT-ICE is connected to LPT1 then select LPT1 from Figure 6. If the OTP HandyWriter is directly connected to the PC printer port then choose the relevant printer port in the same way.

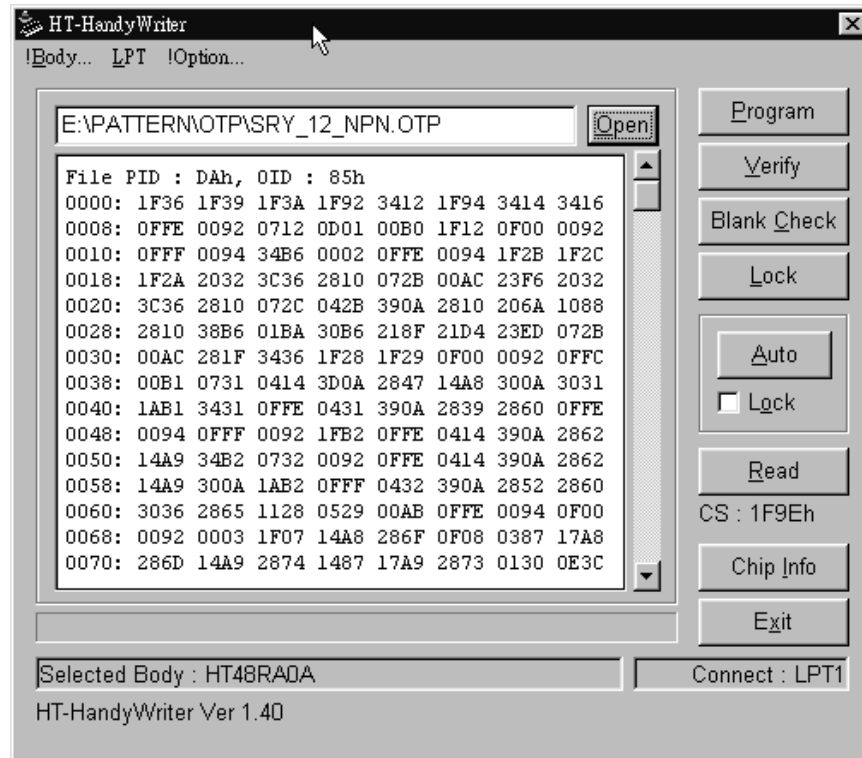


Figure 5

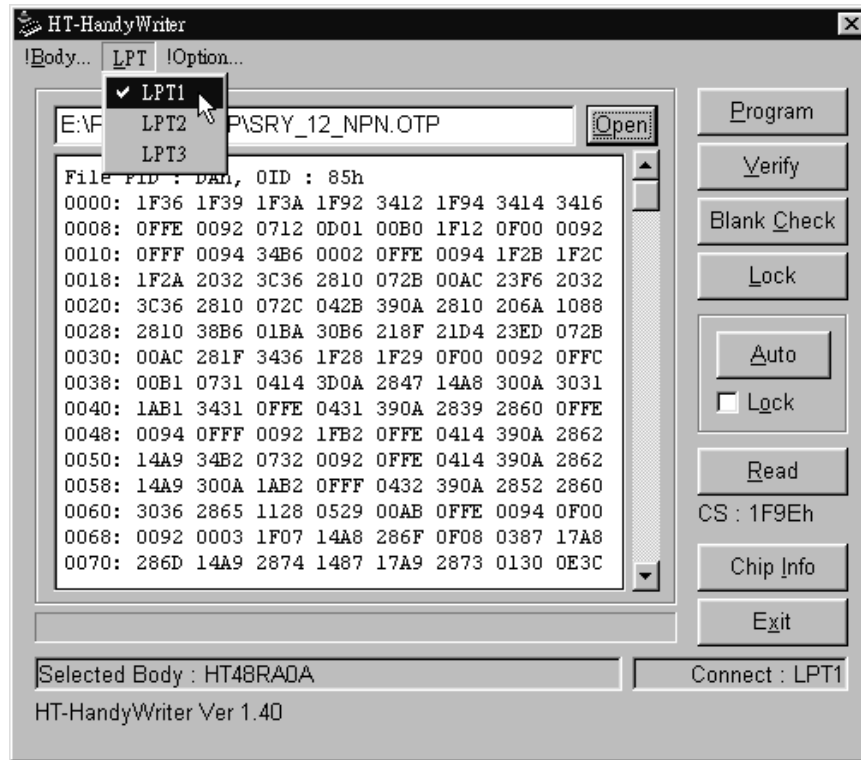


Figure 6

➔ **!Body — Select the OTP Body Type**

By clicking on “!Body”, [Set Body] dialog will be shown as Figure 7. If there is no IC type identifier stored in the OTP chip, all the read/write operations will be completed according to the chip type that selected by users.

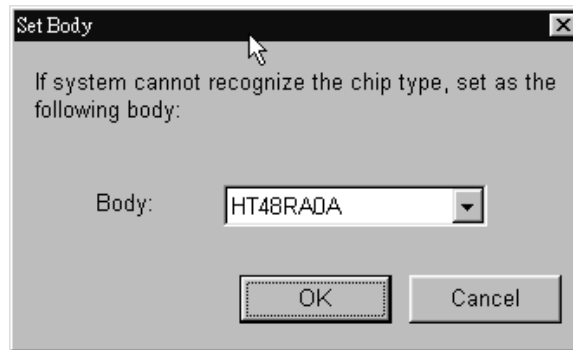


Figure 7

➔ **!Option — Check the IC Option**

By clicking on "!Option", a pop-up dialog, as shown in Figure 8, will be displayed. It will illustrate the option that comes from opened file or OTP chip content.

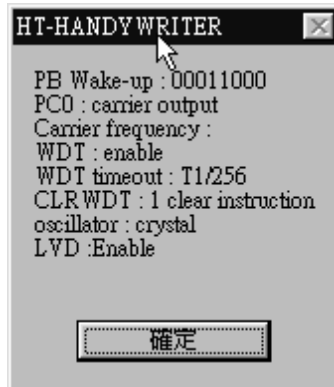


Figure 8

➔ **HT-HandyWriter Programming Functions**

Figure 5 shows the provided HandyWriter functions, the details of which is shown below:

- Open

This opens a file with the .OTP suffix, which will load the program contents into the PC ram memory. This data will be accessed when programming the relevant OTP device. After selecting "Open", the file dialogue box will be displayed from which the correct folder and file name can be chosen. The file content will be displayed in the message window after being opened, and the checksum of the opened file will be shown underneath the "Read" button.

- Program

This instruction encompasses two functions. The first is to place the program data in the PC ram memory into the OTP device, the second is a verification check to verify that the actual data burned into the OTP device is the same as that in the PC ram memory data. After verification the result of this process will be shown on the HandyWriter display.

- Verify

The contents of the presently loaded OTP device will be read and checked that it is the same as the data loaded into the PC ram memory, the results of which will be displayed on the HandyWriter display.

- **Blank Check**

Check that the presently loaded OTP device has not previously been written to. The results of this check will be displayed on the HandyWriter display. If the device is not empty, the memory area that has been written to will also be shown on the display.

- **Lock**

This instruction will implement the protect function in the OTP device preventing the contents of this IC from being read. After programming an OTP device, this instruction can then be used to protect the contents.

- **Auto**

This instruction will execute in order the three instructions Blank Check, Program and Verify. If any of the instructions do not execute correctly, the process will be halted and the following instruction not executed. There is also a lock function, which can be selected to prevent the data from being read out after programming. This lock function should first be selected before the Auto button pressed.

- **Read**

This instruction will read out the contents of the OTP device presently loaded into the HandyWriter and store them in the PC ram memory. This instruction will also cause the file checksum to be displayed underneath the "Read" button. If required, this data can also be stored in a file with the .OTP file suffix.

- **Chip Info**

This instruction will read power-on ID, software ID, ROM size, option size from IC and display "Get info from chip" message to inform users the listed information comes from IC interior. If there is no such information inside IC, the specification defined by "!Body" command will be shown. It will display "Get info from ini" to inform users that above information comes from system setting.



## System Messages

- **HandyWriter Connect to LPT1.**  
OTP HandyWriter already connected to LPT1.
- **Cannot connect to ICE**  
Connection problems between the HandyWriter, the HT-ICE and the printer port.
- **Invalid EV Chip!**  
The HandyWriter is unable to support the EV chip in the HT-ICE. The HT-ICE must be changed for correct operation to take place.
- **Connect to HandyWriter through ICE**  
The OTP HandyWriter is successfully connected via the HT-ICE.
- **Cannot find HandyWriter, please connect it to ICE  
Or this HandyWriter is an old version**  
The HT-ICE is already connected to the printer port, but the HandyWriter is not connected to the HT-ICE. It may also be that an old version of the HandyWriter is being used (THANDYOTP-A) so the system is unable to detect a good connection. If the former case, please connect the HandyWriter directly to the ICE.
- **File PID: ADh, OID: 50h**  
The opened files recorded power-on ID is ADh, the software ID is 50h.
- **Invalid OTP file format**  
The opened file format is incorrect.
- **The chip PID: ADh, OID: 50h doesn't match with the file PID: ADh, OID: 51h  
Are you sure to continue?**  
The type of OTP chip and the chip supported by the opened file does not match.
- **Chip ROM size: 0400h, File ROM size: 0800h. System will set ROM size as 0400h.  
Are you sure to continue?**  
The OTP chip has 400h of writable space, the file content is 800h, so the HandyWriter can only write 400h of data into the contents of the OTP chip.

- **Addr: xxxxh, Data: yyyyh, Rdata: zzzzh  
Program/Option Verify Failed!**  
Errors exist in either the program or option verification information. The reason is because the data at the address xxxxh in the OTP chip is not the same as the data yyyyh in the PC ram memory.
- **Addr: xxxxh, Data: zzzzh  
Not Blank!**  
The OTP chip is not blank as the address xxxxh contains the data zzzzh, inhibiting the implementation of further instructions.
- **Chip mismatched!**  
The OTP chip presently in the HandyWriter and the OTP chip mentioned in the .OTP file do not match, inhibiting the implementation of further instructions.
- **Chip is locked!**  
The OTP chip presently in the HandyWriter is locked, inhibiting the implementation of further instructions.
- **No data to verify/program!**  
Before executing the Verify or Program instruction, the .OTP file must be loaded using the "Open" function in the HandyWriter system software.