Unitech

HT580L Operation Guide
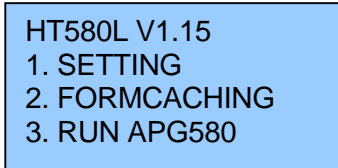
Version 1.0

Overview

HT580L operation guide will cover more detail on F/W setting and software development tool APG580 (Application Generation for HT580L)

After power on HT580LL, it will show **main menu** as below

```
HT580L V1.15
1. SETTING
2. FORMCACHING
3. RUN APG580
```

There are 3 options – Setting , Formaching and Run APG580.

1. Setting

Setting menu do 2 major functions – User mode setting and Supervisor setting. In HT580L User Guide, it already explains user mode operation. This document will also repeat it again from below section.

Note : Due to no barcode scanning requirement on Setting menu, SCAN key will also be treated as ENTER key during Setting operation. So, user can use below 2 ways to select any Setting item
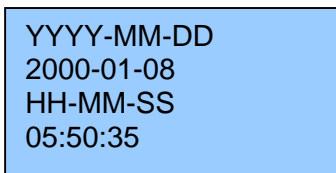- *Press MENU key to move cursor to target item and then press SCAN(or ENTER) key*
- *Direct press item number (without combining with ENTER) to enter setting item*

After pressing "1" key from main screen, there are four setting options which include the following:
1. DATE & TIME
2. DEVICE
3. MODEM
4. SUPERVISOR

1.1. DATE & TIME

Press "1" (or press "**MENU**" key to move cursor to item 1) to enter **DATE & TIME** category so that you are able to set the correct date and time. The page will appear as it is shown below:

```
YYYY-MM-DD
2000-01-08
HH-MM-SS
05:50:35
```

Press numeric keys to input correct date & time.   Once complete, press **[ENTER]** to save the revised settings. To go back to previous menu, press **[ESC].**

1.2.   Device

Use MENU key to move cursor to one of item and then press **ENTER** (or **SCAN** key) or directly press "1" ~ "3" to select target item:

```
1. BACKLIGHT
2. SCANNER
3. AUTORUN
4. MEMORY
```

1.2.1. BACKLIGHT

HT580L's backlight can be automatically on after key pressed and it will automatically off after predefined period time if there is no more key pressed. Timeout period will be reset if any key is pressed. In HT580L, timeout period can be set to 10/20/30 or 60 seconds. Or backlight can be set as always OFF or ALWAYS on.

To set up the backlight, press **MENU** to adjust the setting. There are below options for choice

Item	Description
On 10 SECS	Turn on backlight after key-pressing, and then automatically turn off after **10** seconds
On 20 SECS	Turn on backlight after key-pressing, and then automatically turn off after **20** seconds
On 30 SECS	Turn on backlight after key-pressing, and then automatically turn off after **30** seconds
On 60 SECS	Turn on backlight after key-pressing, and then automatically turn off after **60** seconds
Always	Always turn on backlight
Off	Always turn off backlight

BACKLIGHT selection : ON 10 SECS/ ON 20 SECS/ ON 30 SECS/ ON 60 SECS/ Always/ OFF
Selecting your preference and press **[ENTER]** to save the change. To go back to previous menu, press **[ESC]**.

1.2.2. SCANNER

SCANNER selection: **ON NORMAL/ON FLASH/OFF.** Press **[MENU]** key to select your preference and press **[ENTER]** (or **[SCAN]** key) to save the changes. To go back to the previous menu, press **[ESC]**. Below are explanation for those 3 options

ON NORMAL	**Standard operation way (one trigger on scan), scanning beam will be emitted when press SCAN key and scanning will be off when releasing SCAN key. Scanning beam will be also off when it successfully read barcode**
ON FLASH	**Press SCAN (and then immediately), scanner will automatically continuously emit scanning beam and off scanning beam until Enter flash mode after press SCAN key (and then release SCAN key). User can press SCAN key again to stop Flashing.**
OFF	**Turn off scanner. Scanning beam will not be emitted after press SCNA key**

1.2.3. AUTORUN

AUTORUN is defined to automatically run pre-define **FORMCACHING or APG580** program after power on. Or setup HT580L to back to previous running point before power off. There are below 4 options for choice.

Formcaching	**Always run Formcaching from beginning after power on HT580L**
APG580	**Always run APG580(EasyJob) from beginning after power on HT580L**
RESUME	**Back to previous running point before power off. This option is default setting.**
OFF	**Always warm-start after power on. It will back to start menu.**

1.2.4. Memory

To display total memory and free memory space.

1.3. MODEM

Unitech provide modem cradle as HT580L's accessory. So, user can get data through modem if HT580L is plug into modem cradle.

In general, system administrator need to setup host PC to automatically dial to modem cradle and then issue command from host to do data communication or remote control. For such configuration, it is necessary to setup modem to automatically pick phone when host call modem. So, it provides option "**AUTO ANSWER**" to setup modem from HT580L.

User can also directly call to remote host PC from modem cradle via HT580L. So, it is necessary to setup remote PC's phone number, and then dial out, and then hang up phone if user need to stop modem communication.

There are below 4 options on MODEM

1.PHONE NUMBER	**To setup remote modem's phone number**
2.AUTO ANSWER	**Send ATS0=1 [enter] to modem cradle. So, modem cradle will automatically pickup phone after one ring tone. You will get error message if HT580L is not plugged into cradle or modem cradle is power off.**
3.DIAL OUT	**Dial out according "Phone number" setting. It will send "ATDT" + phone number**
4.HANG OUT	**Hang up phone (send "+++" and then "ATH")**

FormCaching Specification

	DATA FIELD DEFINITION: maximum field number=8		
	Category	*Range*	*Description*
1.	FIELD PROMPT	Max.16 characters	set field prompting
2.	MIN/MAX Field LENGTH	1-48	set minimum field length and maximum field length
3.	Field type	1.NUMERIC 2.ALPHANUM	numeric data (0~9) or alphanumeric data (20H~FCH)
4.	DEVICE TYPE	1.KEY ONLY 2.SCAN ONLY 3.BOTH	input by keyboard only, bar code scanning only or both
	DATA RECORD DEFINITION		
	Category	*Range*	*Description*
5.	Between Field	1.Append Screen 2.Clear Screen	1. Append Screen: Prompt will be displayed on next line according previous cursor place. If cursor is already on the last line, it will scroll one line up. 2. Clear Screen: It will clear screen and then display
6.	FIELD DELIMITER	1. , 2. ; 3.SPACE 4.TAB 5. FIXED LENGTH	Assign field delimiter, "Fixed Length" mean to store data according maxi length setting, it will automatically append spaces to end of field data if length of input data are less than maxi. length
7.	RECORD DELIMITER	1.CR 2.LF 3.CRLF	assign record delimiter
8.	DATE STAMP FIELD	1.NONE 2.MMDD 3.YYYYMMDD 4.DDMMYY 5.YYYYMMDD 6.DDMMYYYY	assign date stamp and specify the format of date stamp
9.	TIME STAMP FIELD	1.NONE 2.HHMM 3.HHMMSS 4.SSMMHH	assign time stamp and specify the format of time stamp
10.	Trasn. Mode	1. Batch 2. Online None 3. Online Multi	T
11.	FIELD DELAY	0-6	specify time delay between each record input in second

When FormCaching is enabled, a data file named FORM.DAT will be created in the HT580L. FORM.DAT stores the data as entered by the user after FormCaching is invoked. The HT580L will not allow the user to redefine the data fields in FormCaching once the FORM.DAT has been created. The file FORM.DAT must be deleted in order to implement any change in the configuration of FormCaching.

Running The Resident FormCaching Application Program

Enable the FormCaching, the HT580L built-in application can be ran by switching the portable terminal to the **main menu** of operation and selecting "**2.FORMCACHING**", select "2.FORMCACHING". The FormCaching application program will follow the setting (as previously defined by the user) as it displays prompts, requests input, and stores data in the FORM.DAT file. Pressing *[ESC]* key will abort the current record inputting action.

HT580L FormCaching Defaults

The HT580L enables FormCaching by default, the following settings also apply:

DATA FIELD DEFINITION: field number=2	
Category	*Setting*
Field #1 FIELD PROMPT	ITEM:
DATA LENGTH	20
DATA TYPE	ALPHANUM
DEVICE TYPE	BOTH
Field #2 FIELD PROMPT	QTY:
DATA LENGTH	8
DATA TYPE	NUMERIC
DEVICE TYPE	KEY ONLY
DATA RECORD DEFINITION	
Category	*Setting*
FIELD DELIMITER	,
RECORD FELIMITER	CR
DATE STAMP FIELD	NONE
TIME STAMP FIELD	NONE
FIELD DELAY	1

1.3.1. BAR

This option is use to configure individual symbologies for each barcode. After enter configuration menu, the LCD will display the BARCODE Setup as shown below.

```
< BARCODE SETUP>
CODE 39
ON
```

Press [**MENU**] key to toggle between settings. Press [**SCAN**] or [**ENTER**] key to set.

Setup decoding of HT580L supported bar code symbologies

Symbology	Function	Option	Default
Code 39	Decoding	ON/OFF	ON
	full ASCII	ON/OFF	OFF
	Check Digit	ON/OFF	OFF
	Start/stop Character	Send/No-send	NO SEND
I 2 of 5	Decoding	ON/OFF	ON
	Check Digit	OFF/On&Not send/ON&Send	OFF
	First digit	SEND/NOT SEND	SEND
	Last digit	SEND/NOT SEND	SEND
Code 32	Decoding	ON/OFF	ON
	First digit	SEND/NOT SEND	SEND
	Last digit	SEND/NOT SEND	SEND
Matrix 2 of 5	Decoding	ON/OFF	ON
	Check Digit	ON/OFF	OFF
Industrial 2 of 5	Decoding	ON/OFF	ON
Codabar	Decoding	ON/OFF	ON
	Check Digit	ON / ON&Not Send / ON&SEND / OFF	OFF
CHINA POST	Decoding	ON/OFF	ON
	Check Digit	ON / ON&Not Send / ON&SEND / OFF	OFF
CHINA POST	Decoding	ON/OFF	OFF
	CHECK DIGIT MOD	SINGLE MOD 10/DOUBLE MOD 10/DOUBLE MOD 11+10	SINGLE MOD 10
	Check Digit	ON&Send / ON&NOT SEND	OFF
IDATA 2 of 5	Decoding	ON/OFF	OFF
	Check Digit	ON / ON&Not Send / ON&SEND / OFF	OFF
CODE 11	Decoding	ON/OFF	OFF
	Check Digit	ON / ON&Not Send / ON&SEND / OFF	OFF
EAN-13	Decoding	ON/OFF	ON
	ISBN	ON/OFF	OFF
	ISBN	ON/OFF	OFF
	Leading Digit	Send/No-send	Send
	Check Digit	Send/No-send	Send
EAN-8	decoding	ON/OFF	ON
	Leading digit	SEND/NOT SEND	SEND
	Check Digit	SEND/NOT SEND	SEND
UPC-A	decoding	ON/OFF	ON
	EXPEND to EAN-13	ON/OFF	OFF

	Leading digit	SEND/NOT SEND	SEND
	Check Digit	SEND/NOT SEND	SEND
UPC-E	decoding	ON/OFF	ON
	UPC-E0	ON/OFF	ON
	UPC-E1	ON/OFF	ON
	EXPEND TO UPC-A	ON/OFF	OFF
	Leading digit	SEND/NOT SEND	SEND
	Check Digit	SEND/NOT SEND	SEND
CODE 93	decoding	ON/OFF	OFF
Code 128	decoding	ON/OFF	ON
	EAN128	ON/OFF	ON
	EAN128 CODE ID	ON/OFF	OFF
	EAN128 FUNC CH	NOT SEND/SEND	NOT SEND
TELPEN	decoding	ON/OFF	ON
UK PLESSEY	decoding	ON/OFF	OFF
	Check Digit	SEND/NOT SEND	SEND

1.3.2. PSWD – Password

Change **Supervisor** password – The default password is "**580**"

1.3.3. SYS – Perform Cold/Warm Start or Update F/W

<div style="background-color:#7ca6e0; border:2px solid black; padding:10px; width:200px;">

1. WARM START
2. COLD START
3. UPDATE F/W
4. UPDATE DEC

</div>

There are 4 options on this item – Warm Start, Cold Start, Update F/W and Update Decoder
- Warm Start : warm boot HT580L
- Cold Start : All of data and setting will be set to system default

- Update F/W : Update F/W version. You can get the latest F/W image from supplier, F/W will be compressed as ZIP file. There are 8 files after unzip it – **bank0.bin ~ bank7.bin.** You can use communication program to send those 8 files into HT580L and then execute this option to update F/W. Please refer to Section **Communication** to know more detail information for communication program.

1.3.4. DIAG - Diagnostics

The HT580L has a built-in diagnostics program to test the terminal's hardware. The test routines are **data destructive**. Therefore, before running the diagnostic program, make sure you back up the data in the HT580L.

Note : When a H/W or S/W service has been made on the PT630, such as maintenance, repair or upgrade, it is strongly recommended to run the diagnostic program.

```
1. VER    2. SCAN
3. LCD    4. COMM
5. PWR    6.KEY
7. RTC    8.MEM
```

At the **Supervisor Mode** menu:

1. Press 7 (7.DIAG), then LCD will display the diagnostic menu as shown on the left. Select 1-8 to run the desired diagnostic routine

1. VER   : Get F/W version for HT580L and Decoder.

2. SCAN   : test bar code input by scanning bar code labels. Press ESC key to return to the diagnostics menu.
3. LCD   : Darken the dots of the LCD screen and cycle power to the LCD backlight to check if the LCD functions OK
4. COMM   :   Connect   to   PC's   communication   testing   program   to   test   USB/RS232 communication
5. PWR   : Testing Battery power
6. KEY   : Test every key response
7. RTC   : Show Current time/date is displayed
8. MEM   : Test RAM condition

Note : Please refer to Service manual for more detail information.

2. Communication
2.1. USB communication
To connect HT580L to PC via USB, you need to install USB driver which will redirect data to virtual COM port. You can get USB driver from HT580L CD.

Window OS will prompt new device dialog box when PC is the first time to be connected to HT580L via USB. Please re-direct driver folder to Unitech's USB driver folder and then follow its prompting to install driver.

Then you can check correct COM port number from Control Panet → System → Hardware → Device manager, then you can find correct COM number from "USB Serial Port" under option "Connection Port(COM and LPT)"

In HT580L, you should change it default communication port to "RS232/USB" from Setting → Supervisor → Comm → Port

2.2. BlueTooth communication
To do BlueTooth communication, you should change HT580L's port setting to BlueTooth from Setting → Supervisor → Comm → Port
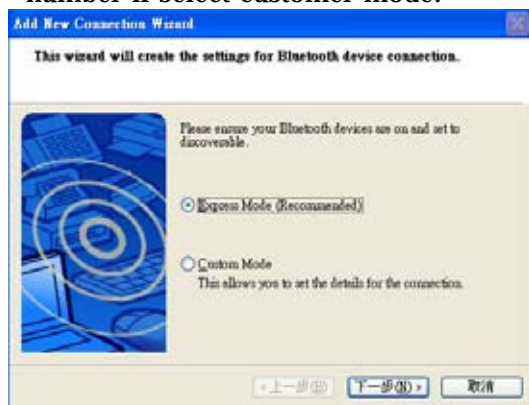
In PC, you should connect Bluetooth dongles if there is no Bluetooth support. And Bluetooth driver should be pre-install.
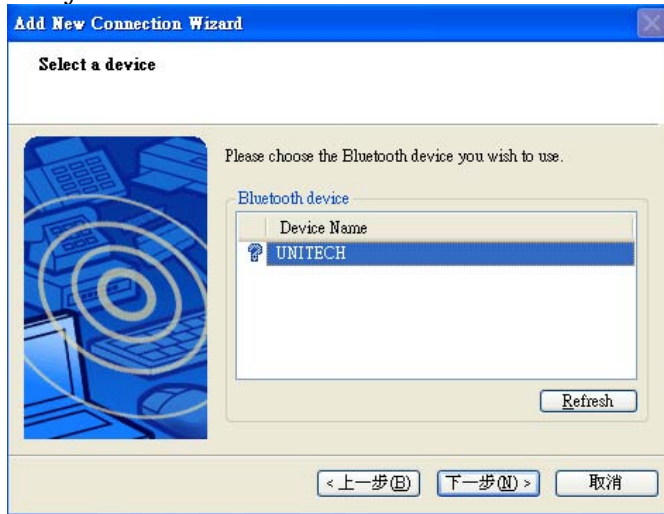Then , you must follow up below steps on you rPC
1. Power on HT580L and then Run Bluetooth manager from PC

2. Click "New Connection" buttom
3. Select proper mode – Express Mode or Customer Mode. User can specify COM port number if select customer mode.

4. Then it will search all of Bluetooth device within BT converge area and then list them down on the screen. You can find all of HT580Ls will be displayed as "UNITECH". Then you can click "Next" button

5. Then it will prompt user to enter PIN code, HT580L's default PIN (Pass key) is "0580", then you can find this HT580L is already on your Bluetooth list. Then click right mouse button to connect it.
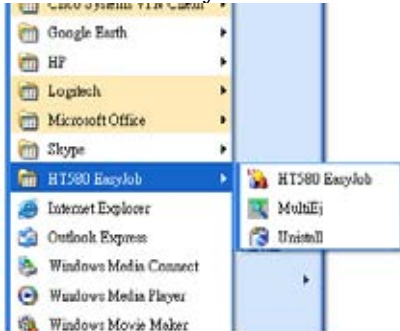

6. You can also check the correct PORT number from "Detail"

PS. HT580L's BT Device name is fixed on "UNITECH", so you will see a lots of "UNITECH" on Bluetooth Manager if you want to connect several HT580Ls to single PC. And user can not identify which one is correct HT580L to map to list. So, it is suggested to power on one HT580L at a time when make connection and please note its MAC address from DETAIL.
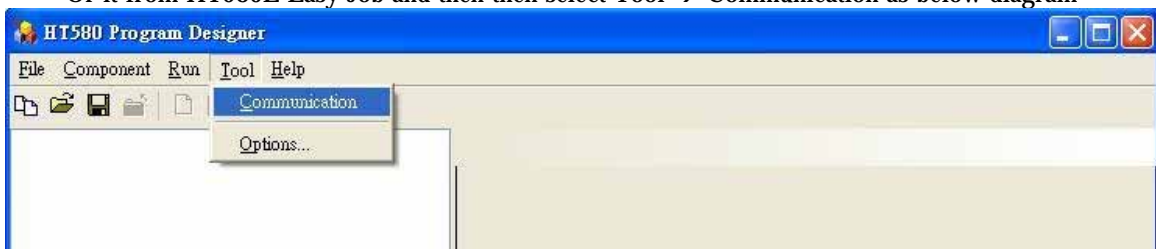
2.3. Communication program

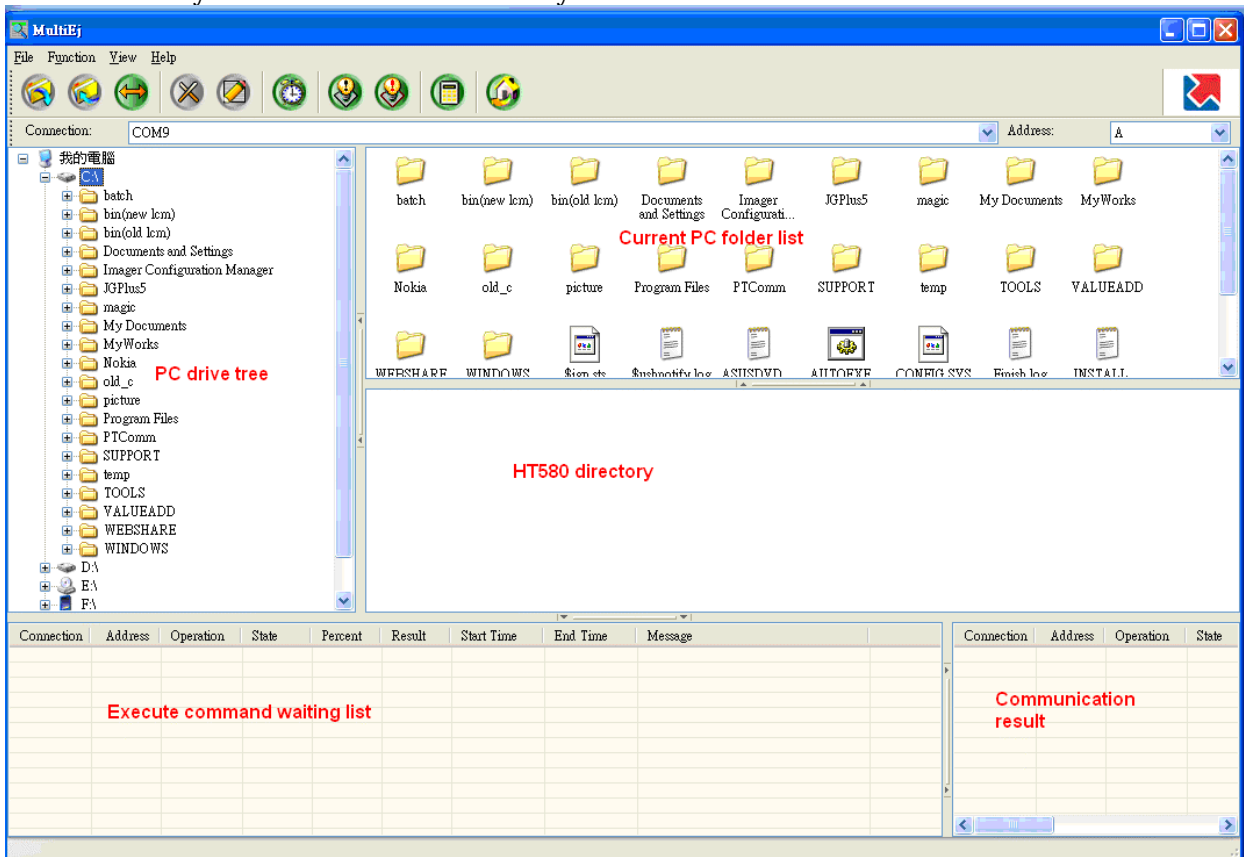In Easy Job, it also bundle one communication program named "MultiEj". You can directly run it from
● HT580L EasyJob

● Or it from HT580L Easy Job and then then select Tool → Communication as below diagram

● Then it will launch **MultiEj** program as below screen, You can directly
  1. drag and drop files from PC folder to HT580L directory to execute download function
  2. drag and drop files from HT580L directory to PC folder to execute upload function
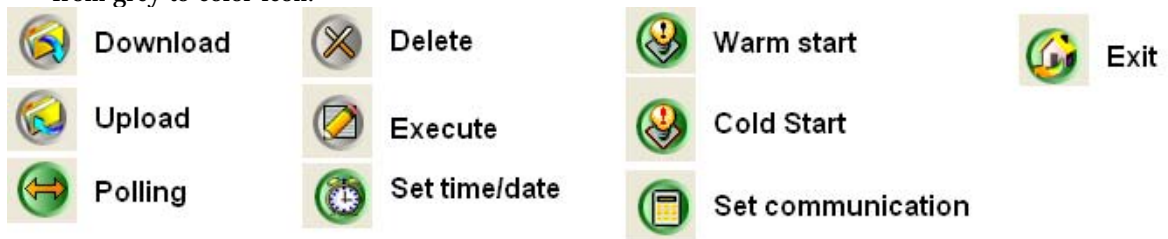 3. directly select files on HT580L directory area and delete.

- Before using MultiEj to do communication, you should setup correct port number and communication parameter by chick **Options** icon on menu bar.

- Then click "**NEW**" button to select a new COM port, then configure its proper communication parameter and click **OK** button to finish setting. Then you can select proper port from Connection List Box

- After select proper COM port, you will find icons of Date/Time , WarmStart and ColdStart changed from grey to color icon.

- Download / Upload / Delete / Execute will also become color if you select click files on **local file area** or **remote files area**

2.4. Modem communication

For HT580L, Unitech provide modem cradle to enable modem communication function between PC and HT580L. So, user must connect phone line to cradle and HT580L still connect to cradle with RS232 interface.
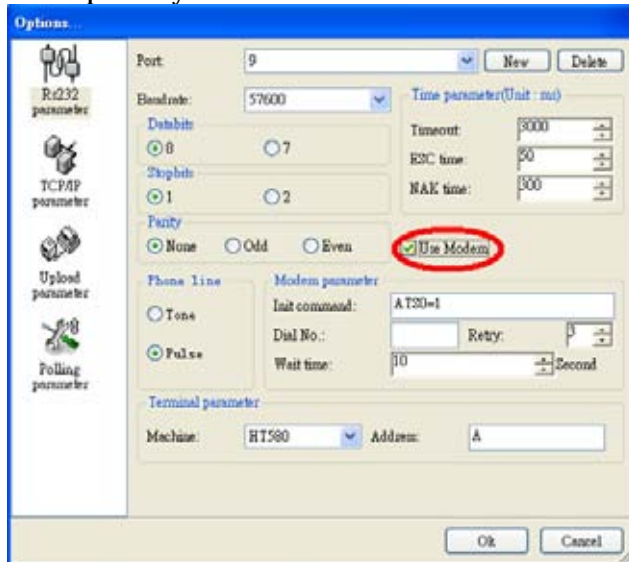
There are 2 ways to do connection.
1. Calling from PC
2. Calling from Terminal

● Call from PC

To call modem from PC, HT580L's modem cradle should be set to automatically pick up external call. So, you should put HT580L into cradle (cradle should be connect to power) and execute Setting → Modem and then select "AUTO ANSWER" to let HT580L send "ATS0=1" to modem board (inside cradle). Then, cradle can automatically pick up external calling after one ring tone. **(After execute "AUTO ANSWER", it is not suggested to power off cradle, or "Auto Answer" function will be disappeared)**

In PC, you can use MultiEj to do modem communication with HT580L, you can setup modem function from Options by check "Modem" check

Then setup to correct Initial command, dial number, and wait time.

● Call from HT580L

Current, HT580L can support modem dial from F/W. We will provide modem function from EasyJob in the future.

In PC side, you can use Hyperterminal to setup modem Auto Answer. And please put HT580L into cradle and phone line should be connected to cradle. Then follow up below step
4. Execute Setting → Modem → Phone to input correct phone number
5. Then execute Setting → Modem → Dial out to connect to remote

After end of communication, execute Setting → Modem → Hang to hang up phone.

3. Technical Specification

Model	HT580L
Dimensions	123mm x 55mm x 25mm
Weight	150g
Drop Specification	1.2M free drop to concrete floor
Display	128 x 64 pixel; 16x8 characters or 12x4 characters
Battery	One 3.7V 730mAH Li-ion battery
Environmental Sealing	IP42
Operation Temperature	0°C~50°C
Storage Temperature	-20°C ~70°C
Humidity	5% to 95% RH, ; not condensed
Electrostatic Discharge (ESD)	4 KV contact discharge 8 KV air discharge
Back-Lit Display	Yes
Keypads	18 alphanumeric keys including one scan trigger
CPU	ST UPSD3354DV
Operating System	Proprietary (C Language)
Memory	1 MB for main program & data storage
Application Development	EZ Job
Communication	RS232/USB1.1/ Bluetooth/Modem
Battery Life	Up to 8 hours
Symbologies	UPC/EAN, Code 39, Interleave 2 of 5, CODABAR, MSI, Code 128, Code 93, Code 32,China Postal Code
Buzzer	Yes, over 75 dB
One LED	Reading – green color

3.1. *Pin Assignment*

The HT580L communicate via the RS232 communication port located on the bottom of the unit. You can connect the unit via the communication cable to PC RS232 jack for data transfer or connect through cradle for communication.

Pin	Name
1	US-POWER
2	GND
3	DC-IN
4	USB DP
5	CTS
6	RTS
7	DSR
8	GND
9	DTR
10	TXD
11	RXD
12	USB DP

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.