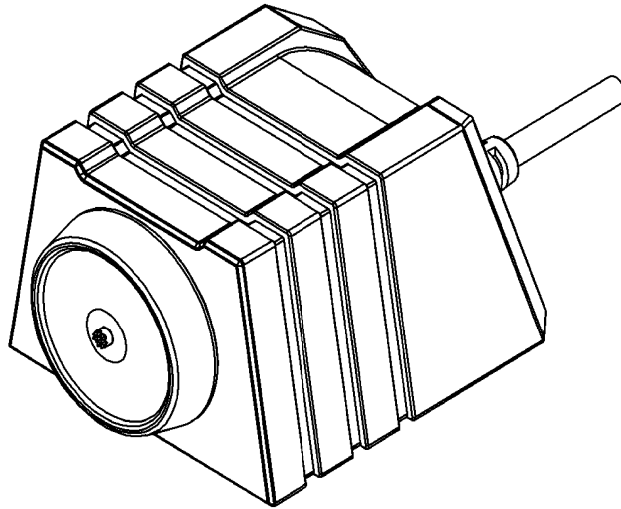


# **TMR901 Series**



## ***Touch Memory Reader User's Manual***

**GIGA-TMS**

**REGISTERED TO ISO 9001:2000**

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# **Information**

## 1. TMR901 series models:

- TMR901U Touch Memory Button With USB HID Keyboard Interface Reader
- TMR901R Touch Memory Button With RS232 Interface Reader

## 2. Standard package includes:

- One TMR901 Touch Memory Button Reader
- One demo software & user manual disk.
- One accessories package.

## 3. Optional accessories (ordered separately)

- iButton tag

## 4. FCC Compliance:

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

## 5. Trademarks:

The following are the trademarks of Dallas Semiconductor Corporation:

Dallas

Dallas Semiconductor

Touch Memory Button

Touch Memory

# Introduction

TMR901 is a device, that lets you read the Identification Code (sometimes referred to as an ID-code or Registration number) of Dallas Semiconductor's Touch Memory Buttons. The device is extremely simple to use: all you need to do is press the Touch Memory Button against the touch probe, located on top of the TMR901's housing. ID-code will then be read out, verified against possible read errors and output into your PC via USB interface.

TMR901 reads out and outputs touch-button's ID-code. After the read, you can compare the data send to your PC with the data engraved on the touch button's housing. Fig.1 shows the Touch Memory Button with the ID-code engraved on it. After the read, computer will receive a full 16-digit string, shown below the button.

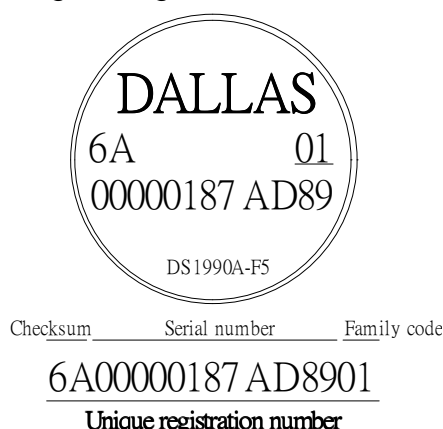


Fig1. Touch Memory Button from Dallas Semiconductor and it'sunique 16-character registration number.

Each of the 16 characters can be a digit from 0 to 9 or a capital letter from A to F. The ID-code of any Touch Memory Buttons is absolutely unique. Dallas Semiconductor guarantees that no two Touch Memory Buttons will ever be manufactured with the same ID-code. Thus, the Buttons can be used for various automated password entry and in other areas requiring a unique code.

In fact, the 16-character ID-code consists of 3 fields:

Family code	Dallas Semiconductor manufactures more than dozen different Touch Memory models. Each model has a unique family code.
Serial number	This serial number is unique for each and any member of the device family.
CRC	2 control characters, used to verify the correctness of the data.

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All together	Unique 16-characters serial number
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All Dallas Semiconductor's Touch Memories, regardless of their type and function have this unique registration number and utilize one single standard protocol for registration number readout. Therefore, you can use the TMR901 to read the registration number of any existing Touch Button.

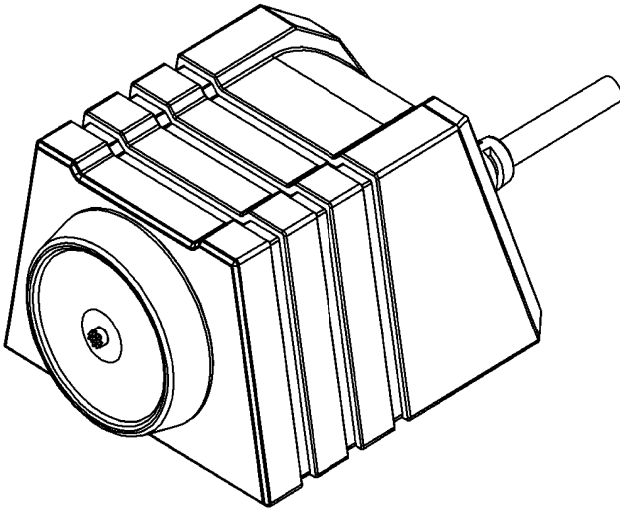
The TMR901 also allows the user to customize the ID-code output format by programming a Prefix and Postfix strings as well as several other options. For more details refer to the "Programming" section of this Manual.

## **Specification**

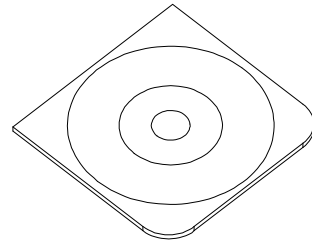
<b>Reading capabilities</b>	Read the ID code of all Touch Buttons conforming to Dallas Semiconductor 1-wire protocol. (*)
<b>PC interface</b>	USB HID Keyboard interface for TMR901U RS232 Interface for TMR901R
<b>Power supply</b>	5V through USB port for TMR901U 5V through RS232 cable DC Jack
<b>Power consumption</b>	90mA max
<b>Certificate</b>	CE、FCC
<b>Dimension</b>	45(L) x 40(W) x 28(H) mm
<b>Weight</b>	75g
<b>Operating Temp</b>	-10 to 60 Deg C
<b>Storage Temp</b>	-20 to 65 Deg C
<b>Humidity</b>	10 ~ 90%

- as described in Dallas semiconductor's "Book of Touch Memory Standards".

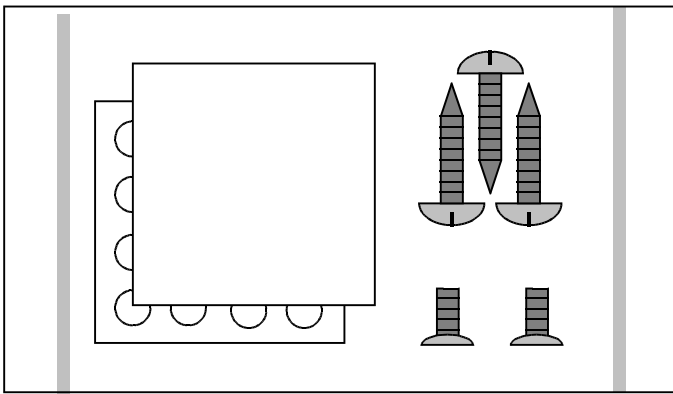
## **Accessory**



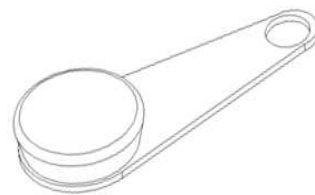
**Main Unit  
( TMR901 )**



**Software and manual  
( DISK5413 )**

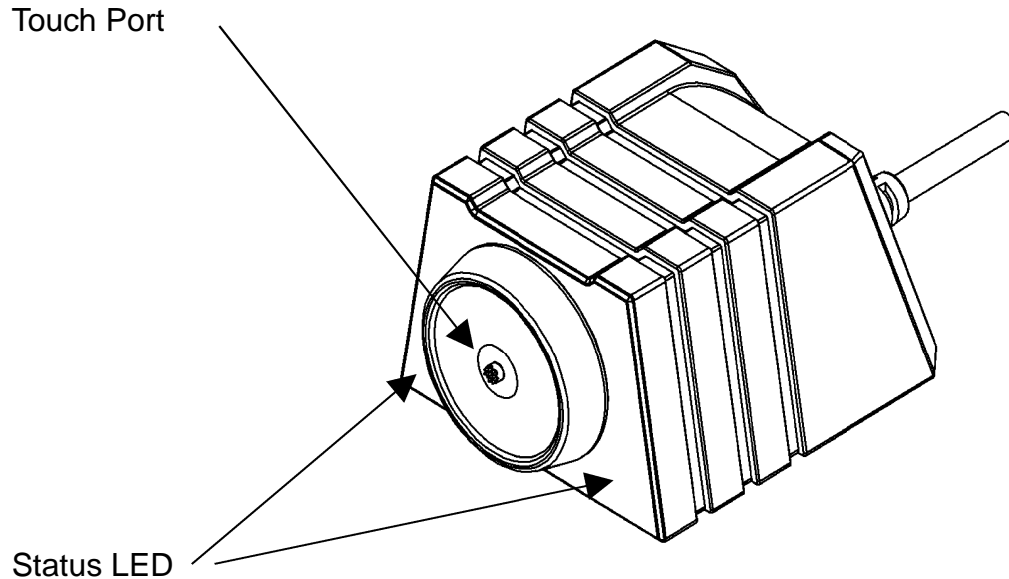


**Accessories package**



**iButton Tag  
( Option )**

# **Technical & Operational Description**



TMR901 Touch Memory Reader

Located on the upper cover is the touch port. To read the Touch Memory Button, just press it firmly against the touch port.

There is also a 2-color ( red & green ) status LED. When TMR901 is powered up without Touch Memory Button is being read, the green light is on. When normal Touch Memory Button read is in progress, the green light is blink once.

## **Status**

Status	Green LED	Red LED	Buzzer*	Read iButton Tag
Power ON	ON	ON	Beep once	X
Ready	ON	OFF	OFF	O
Touch the Tag to the touch port	Blink once	OFF	ON	O
Remove the Tag from the touch port	Blink once	OFF	ON	X
Firmware Management Mode	ON	ON	OFF	X

**\* star mark representing this functionality is configurable with iButton configure software.**

## Cable Pin Assignment & Connection

USB :

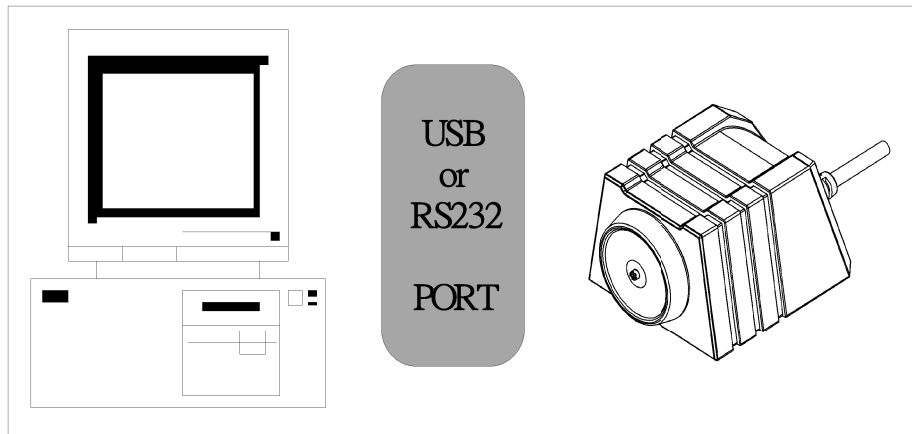
<b>USB PIN Assignment</b>	<b>Discription</b>
PIN1	VDD
PIN2	D -
PIN3	D+
PIN4	GND

RS232 :

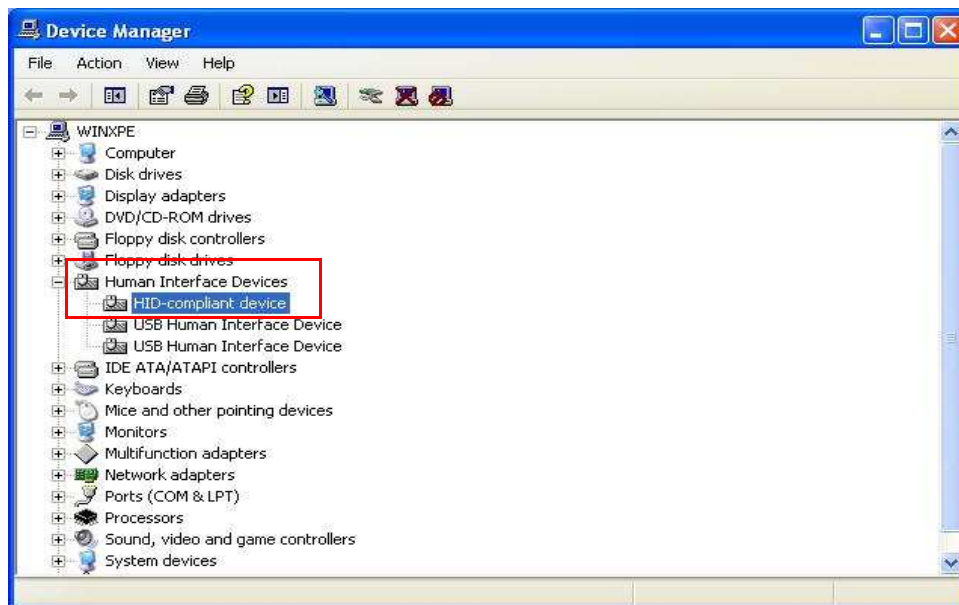
<b>RS232 PIN Assignment</b>	<b>Discription</b>
PIN2	TX
PIN3	RX
DC JACK+	VDD
PIN5 & DC JACK-	GND



## Connect to PC



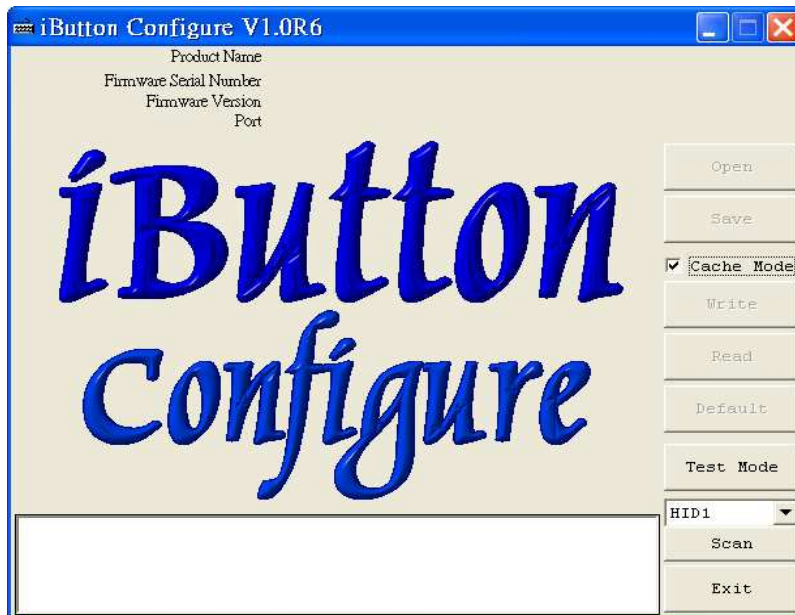
Plug the USB cable of TMR901 to any USB port of your PC. Then go to [Control Panel]\ [System]\ [Hardware]\ [Device Manager]\ [Human Interface Devices], and see if “HID-compliant device” appears. If “HID-compliant device” appears, it indicates TMR901U has been detected by your computer.



# Software Operation

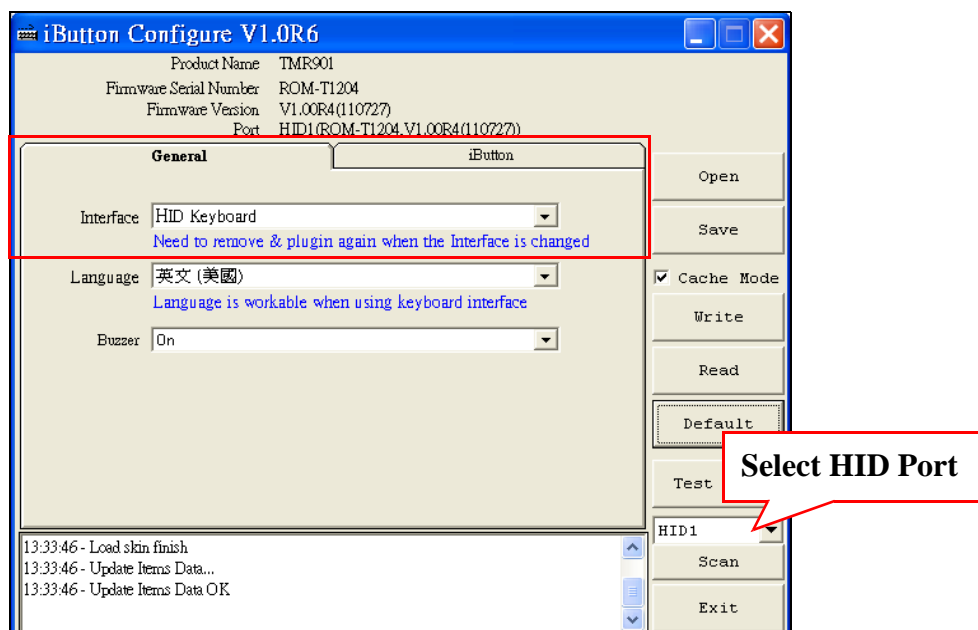
Connect TMR901 with PC through USB port , then run the demo software “iButton configure”.(You can find the software in Disk5413)

## Step 1: Main page



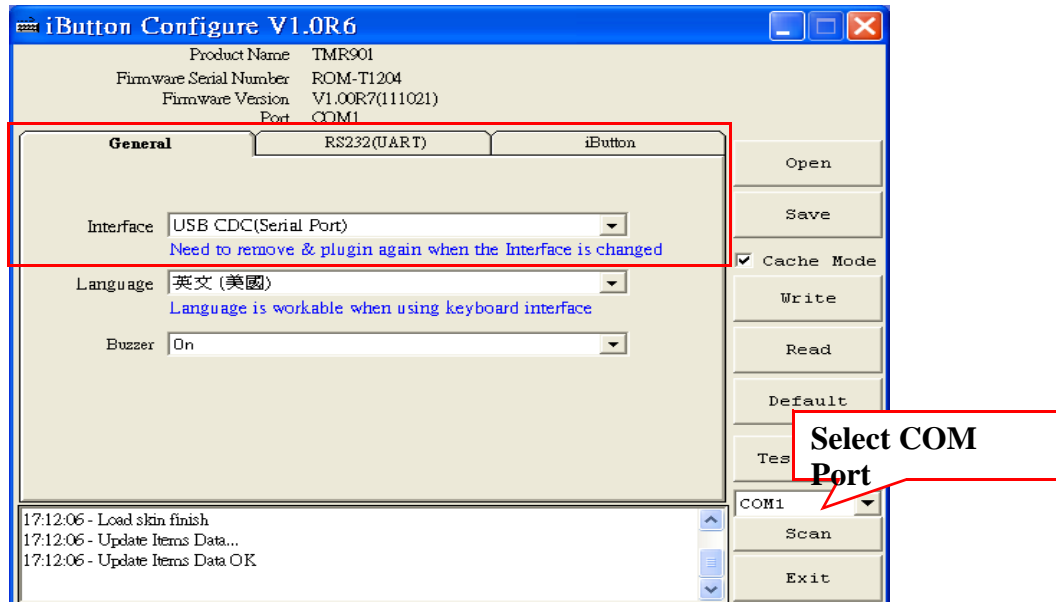
## Step 2: Scan for HID Interface

Select “ HID Port “ and click ”SCAN” to communicate TMR901 with PC. The software will detect TMR901 and related setting. If the communication is successful, it will show”Found TMR901” and product information as below :



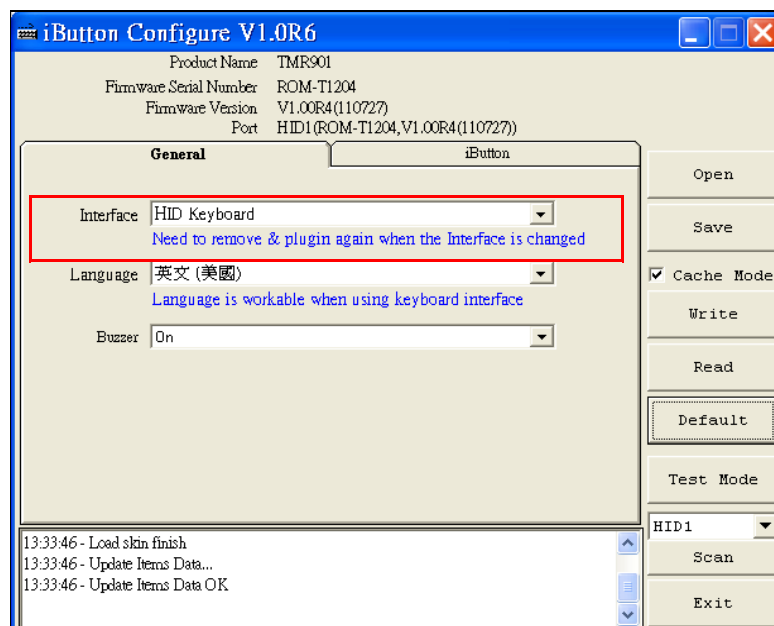
## Scan for RS232 Interface

Select “ COMx Port “ and click ”SCAN” to communicate TMR901 with PC. The software will detect TMR901 and related setting. If the communication is successful, it will show”Found TMR901” and product information as below :



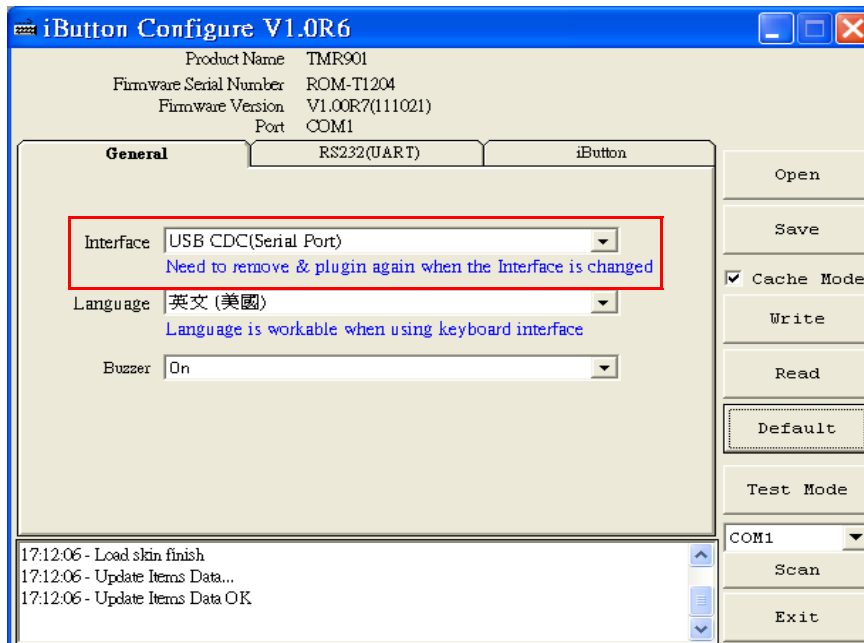
## Step 3: General Settings for HID Interface

Click “General” to set “Buzzer (On or Off)” , “Language (Keyboard type)” . If necessary. Then click “Write” to save the settings to TMR901U.

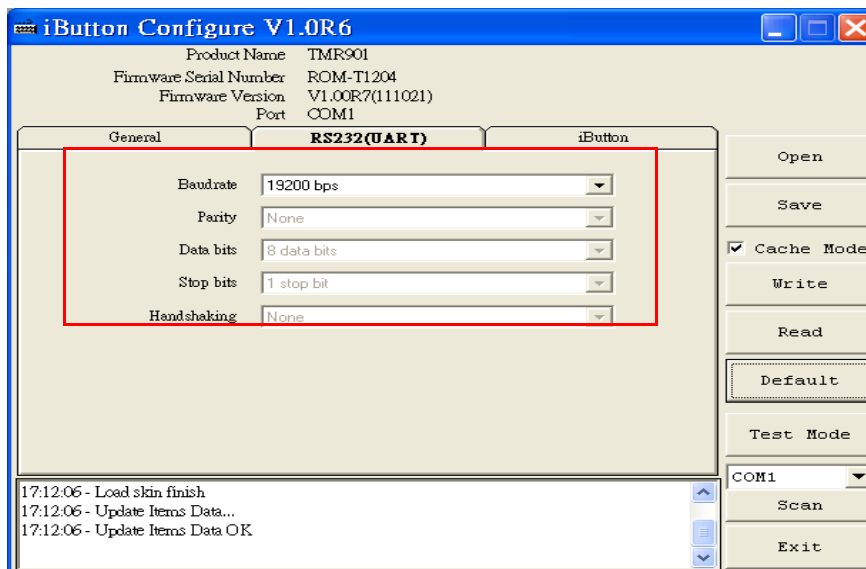


## General Settings for RS232(UART) Interface

Click “General” to set “Buzzer (On or Off)” , “Language (Keyboard type)” .  
If necessary. Then click “Write” to save the settings to TMR901R.



Click “RS232(UART)” to set “Baudrate”

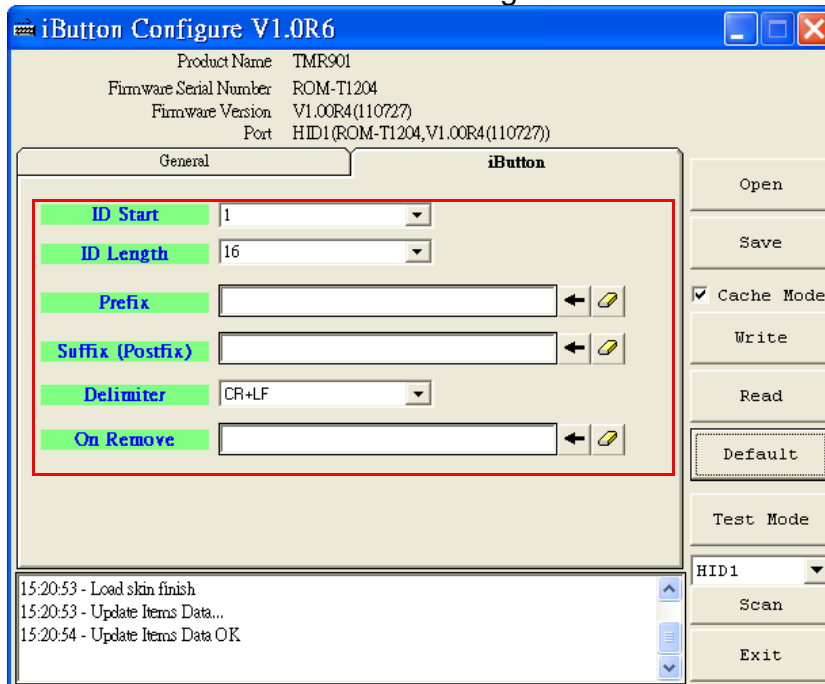


## Step 4: iButton Settings

Select “iButton” to set different iButton formats for data output after reading.

- Set the ID start / length of data information.
- Choose the Prefix / Postfix output data.
- Choose the Delimiter output parameter.
- Choose the iButton tag on remove output parameter..

The click “Write” to save the settings to TMR901.



**Save** : Click “Save” to save all settings as \*.cfg file.

**Open** : If you want to download the settings form the file, click “Open” to open the file and click “Write” to download the settings.

**Read** : If you want to know the setting of TMR901, click ”Read” and download the file to show it on display area.

**Write** : If you want to set new settings , click “Writer” to download the settings for TMR901.

**Default** : Click “Default” to reset TMR901 and get default setting if necessary.  
Default values are as below (red –lined area).

**Test Mode** : Click “Test Mode” to into the test function window.

**Cache Mode** : Cache TMR901 settings for iButton configure software.

**Exit** : Click “Exit” to close iButton configure software.

## Default Settings

<b>Buzzer</b>	On
<b>Language</b>	USA
<b>ID format</b>	Family + ID + CRC
<b>iButton</b>	Enable
<b>iButton Sound</b>	Enable
<b>ID Start</b>	1
<b>ID Length</b>	16
<b>Prefix</b>	Empty
<b>Postfix</b>	Empty
<b>OnRemove</b>	Empty
<b>Package Delimiter</b>	Data+CR+LF
<b>Baudrate</b>	9600 , N , 8 , 1 for RS232 (UART) Interface

## Data Format

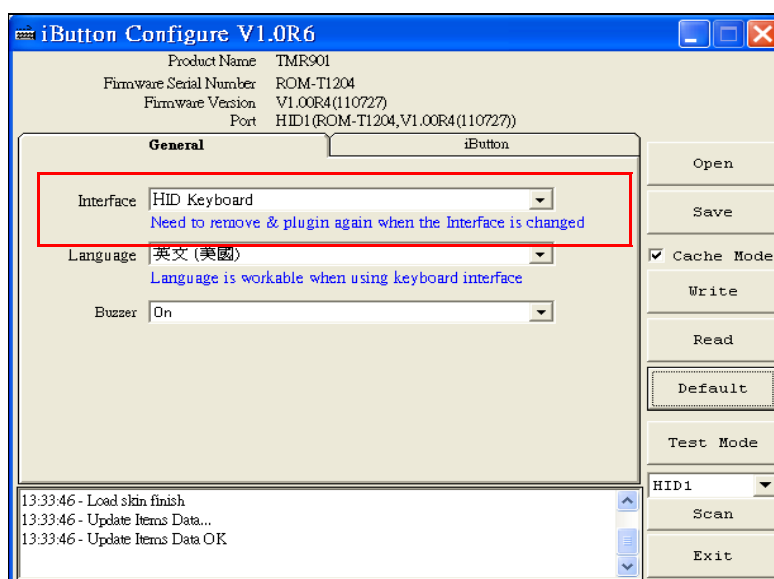
iButton Present / Release Sentinel
iButton Prefix
iButton Data
iButton Suffix
Delimiter

# Switching the interface type (USB model only!) between USB HID (Keyboard Emulation) Interface & USB CDC (Virtual Serial RS232) Interface

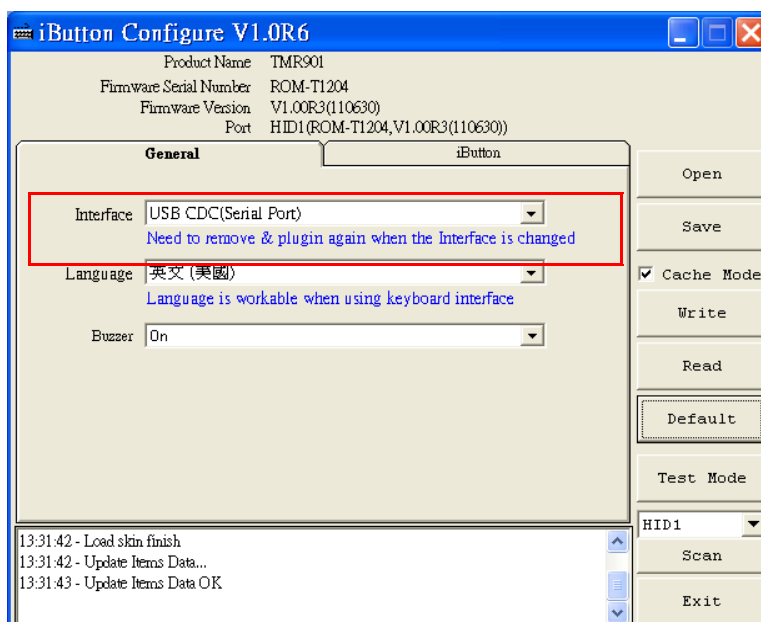
The default interface of TMR901U is USB HID (Human Interface Device). It also allows you to use iButton Configure software to set the interface of TMR901U to USB CDC (Communications Device Class also known as “Serial RS232”). Please refer to the following steps.

**Note : Please install USB-CDC (USB to RS232) driver in your PC in advance. For installation details, please refer it to the file "USB-CDC Driver Installation\_TM970131" inside the disk.**

STEP 1. Select “Interface”.

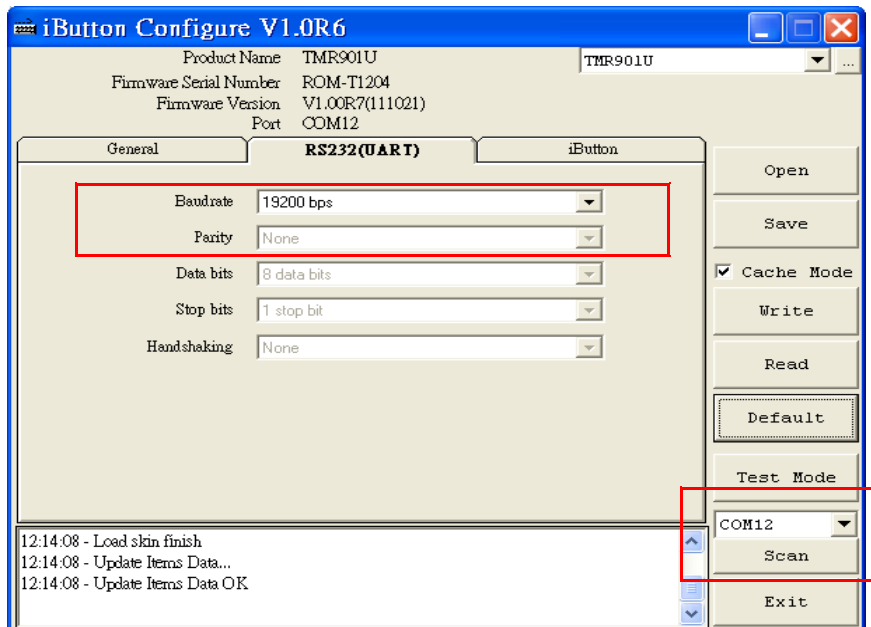


STEP 2. Choose “USB CDC(Serial Port)” and then click “write” to save the settings to TMR901U.

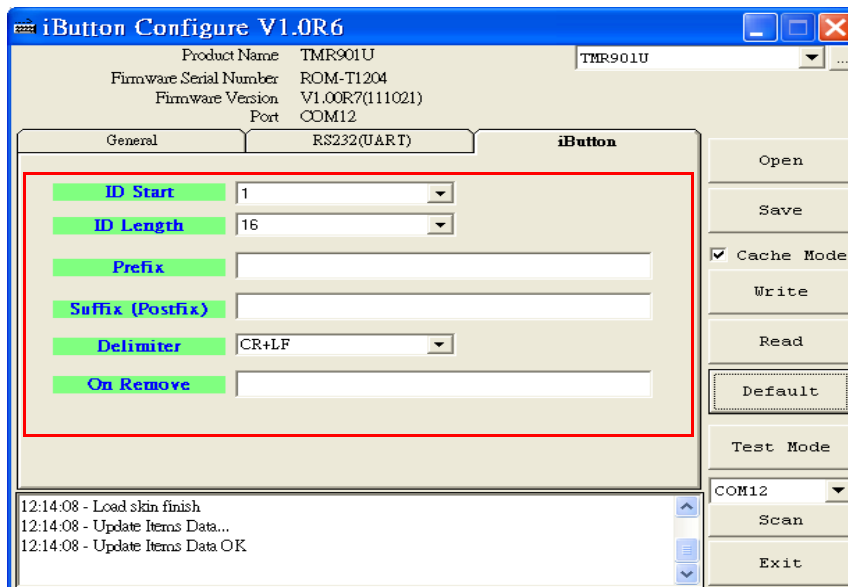


STEP 3. Reboot TMR901U and restart iButton Configure software.

STEP 4. Set “ Baudrate “(default is 9600 ).



STEP 5. Set Output format and then click “ Write “ to save the settings to TMR901U .



STEP 6. Click “ Exit “ to close the software.



**Installation**

