



JARLTECH

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**OPERATION
MANUAL**

**Programmable Keyboard
SERIES JP8037**

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CHAPTER 1 Before You Install

The Jarltech 8037 programmable keyboards have been specially designed for use with personal computers or terminals in point-of-sale and industrial applications.

This manual describes how to connect the Jarltech keyboard to your system, how to design a keyboard layout which meets your special requirements, and how to install your keyboard layout into the Jarltech keyboard.

8037 is a tactile keyboard with seven rows and ten columns for a maximum of 70 keys; which is with single, double, and quadruple key caps. For the keyboard layout, key functions and key-data strings are completely programmable. [Each keyboard is capable of two concurrent keyboard maps with switching between the maps controlled by one designated key. Go to Appendix I for picture reviewing.](#)

JP-8037 has both RS232 and IBM keyboard wedge interface operation mode, and they can be set before you start to use. The 8037 keyboard is capable of receiving data from any external RS232 device (e.g., bar code scanner) and transmitting that data to a host computer via either the keyboard wedge or an RS232 interface. A magnetic stripe reading decoder is built into the circuit board of the 8037, allowing easy stripe of the built card reader.

Step 1: Turn off your computer

By shutting off your computer, you will prevent any accidental damage to the keyboard and your computer.

Step 2: Review packing list

Before You Install,

Please ensure that your keyboard shipment is complete.

Jarltech keyboard Model 8037 includes:

- 1 pce 8037 programmable keyboard
- 1 pce Operation Manual CD
- 1 pce keyboard wedge Y cable
- 1 package Key-top

—

CHAPTER 2 Preparation for Programming

This chapter describes the connection of Jarltech Series 8037 keyboards to a host computer for programming. The Jarltech 8037 keyboard may be programmed through either the RS232 port or IBM keyboard port.

Programming via the RS232 Port

Step 1: Turn off your computer

If you have not already done so, turn off your computer to avoid any accidental damage to the keyboard and your computer.

Step 2: Decide on power access

The keyboard requires +12V DC for programming via the RS232 port (Please refer to Appendix II). This may be provided through an internal connection in your computer or through an external connection to a 110V/220V adapter. The components for an internal connection are provided. If you are using an external adapter, be sure that it conforms with the specifications listed in Appendix II and then go to Step 4.

Step 3: Using internal power source

Review the RS232 installation shown in Diagram 2.1. Plug the RS232 cable to your computer on the COM port, system will provide +12V DC to the keyboard through RS232 cable.

**Diagram 2.1****Step 4: Connect keyboard to computer**

Attach the 9-pin female (DB9F) RS232 connector with built-in DC jack to an available male equivalent (DB9M) RS232 communication port on your computer. Provide power to the DC jack on the DB9F connector using either a cable connection to the +12V DC power plate or an external adapter.

Connect the 9-pin female (DB9M) side of the RS232 cable to the HOST port on the rear face of the keyboard.

Step 5: Disconnect peripherals from keyboard

While using the HOST port for programming the keyboard, be sure that no peripheral devices are connected to any of the remaining ports.

Step 6: Confirm RS232 pin assignments

Please ensure that the RS232 on your computer conform with the pin assignments of the HOST port on the Jarltech keyboard:

Step 7: Turn on your computer

Once all connections are complete, and then turn on your computer. It should boot up normally.

The keyboard will "beep" three times. The keyboard is now ready for programming.

Turn to Chapter 3.

Programming via the Keyboard Port

Turn off your computer to avoid any accidental damage to the keyboard. Refer to the keyboard installation shown in Diagram 2.2.

Unplug the QWERTY keyboard cable from your computer. Plug the QWERTY keyboard cable into female side of the Y cable on the Jarltech keyboard cable. Plug the male end of the Y cable into the keyboard port of your computer.

—Once all connections are complete, turn on your computer. It should boot up normally. The keyboard will "beep" three times. The keyboard is now ready for programming.

Turn to Chapter 3.



Diagram 2.2

Programming Your Keyboard

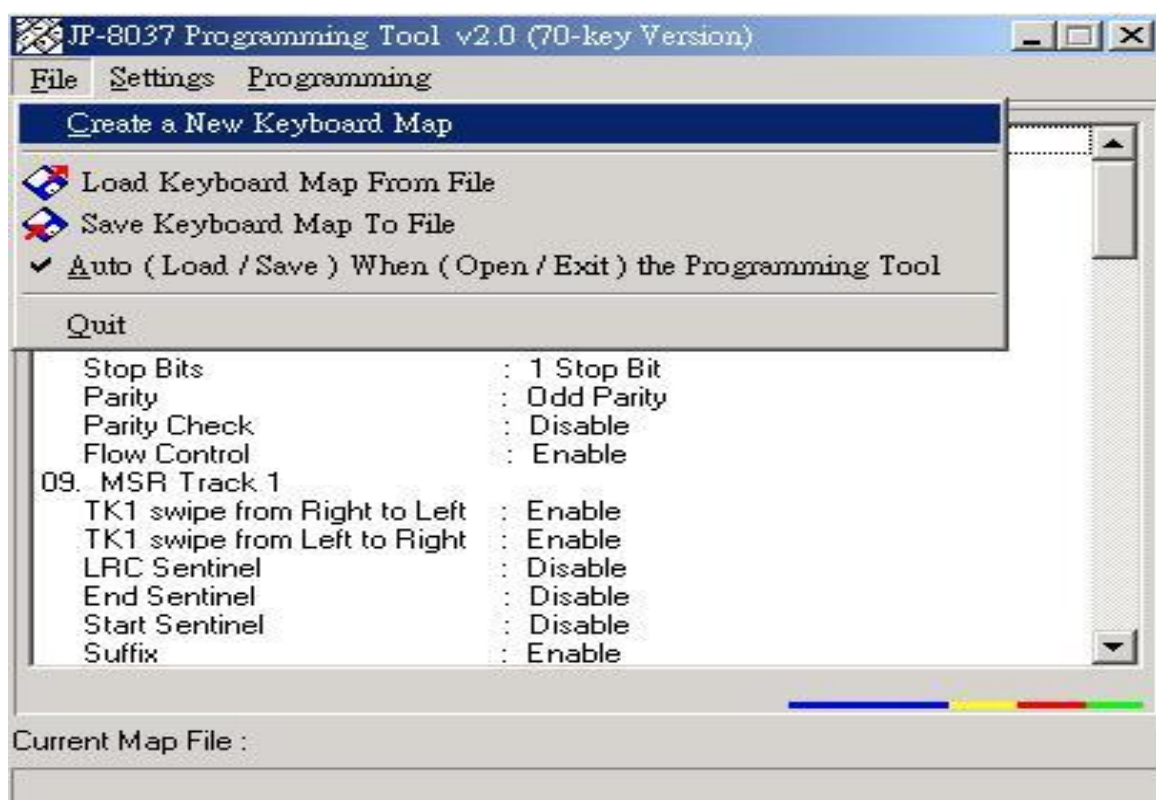
The Jarltech keyboard may be custom programmed to meet the requirements of your application software. This chapter describes the procedure for programming custom maps into the Jarltech keyboard.

The programming tool allows user defines two maps; each map contains 70 keys, and each key allows length 60 characters. It is also a Multilanguage supported keyboard.

Step 1: Install Jarltech 8037 programming tool

Download the programming tool from Jarltech web site [HTTP://WWW.JARLTECH.COM](http://www.jarltech.com) .

–Then run "setup.exe" of the setup file, the install shield will complete this installation, and create a shortcut to windows start menu.



Picture 3-1

Step2: Create or open a keyboard maps file (See Picture 3-1)

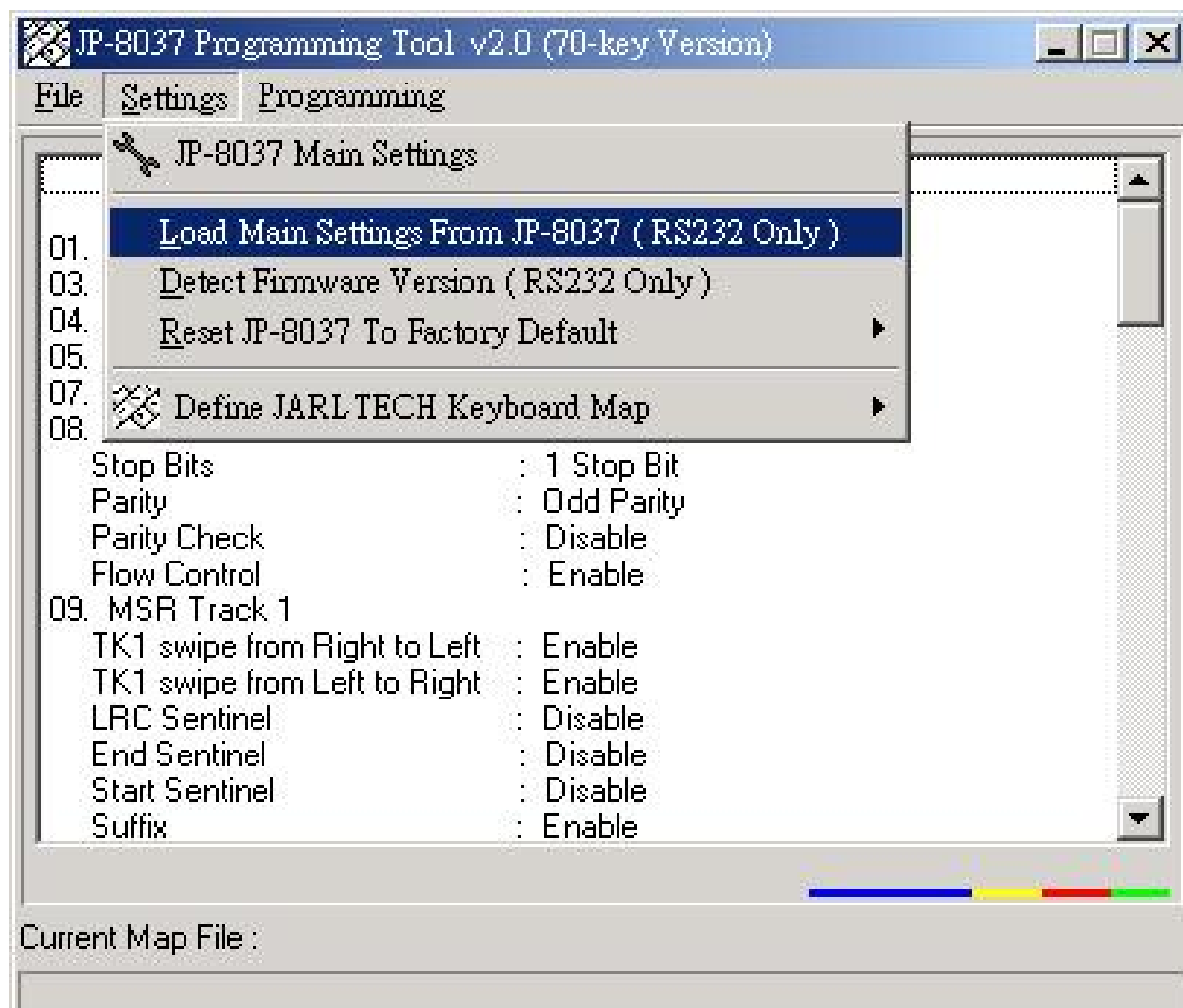
As picture bellowing, the main item includes "Create' Load 'Save' Auto Save" function for creating a new map file; load map file from a created file, and also save defined file to a file.

The using file will be show on the bottom as the "current map file":

NOTE: Before you starting to define JP-8037 keyboard map, ensure you are working with Keyboard interface or RS232 mode.

Step3: Load Main Setting from JP-8037 (See Picture 3-2)

The select allows user load main setting from JP-8037, and this action only executes in RS232 mode.



Picture 3-2

Step4: Detect Firmware Version

This select allows user detects JP-8037 firmware, and it can only be executing via RS232 mode.

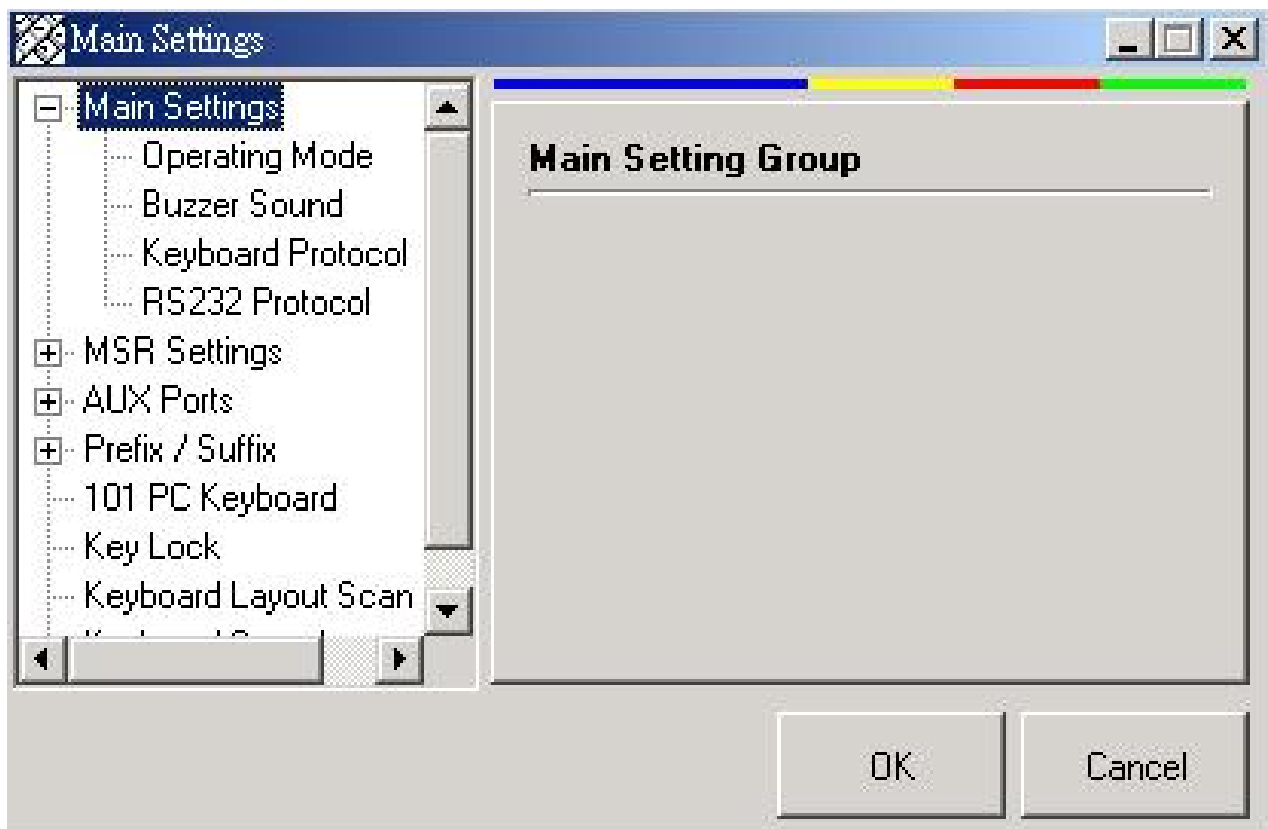
Step5: Reset JP-8037 To Factory Setting

The select allows user reset keyboard parameters and maps setting to be factory default value.

This action can be executing via RS232 mode and keyboard mode, [and the keyboard interface can only execute with operating system Windows 95' Windows98 and Window/ME..](#)

Step6: Environment of keyboard setting (See picture 3-3)

In the "JP-8037 Main Settings" as picture shown at bellowing, customer may set all configuration items of the keyboard. The results will be shows as a list on the first programming window.



picture 3-3

Step6-1: Main Setting Page

Operation Mode:

The Operating mode allows user designing the host of 8037.

There are two interfaces built as "RS232 mode" and "Keyboard mode" and all the output data from 8037 will go through the interface, which is selected by user.

Buzzer Sound:

When Buzzer Sound is enabled, it's enabled all sound of JP-8037 Keyboard, which includes key sound; card reader stripe sound; buffer full sound etc.,

Once the function is disabled, there's no sound appeared excepting keyboard boot-up sound(For twice).

Keyboard protocol:

This selection allows user to defining "KB Mode scan code delay" and "KB mode character delay". The range is from 0 to 255.

The delay time value:

Scan Code Delay = 0~255 (X 50us)

Character Delay = 0~255 (X 50us)

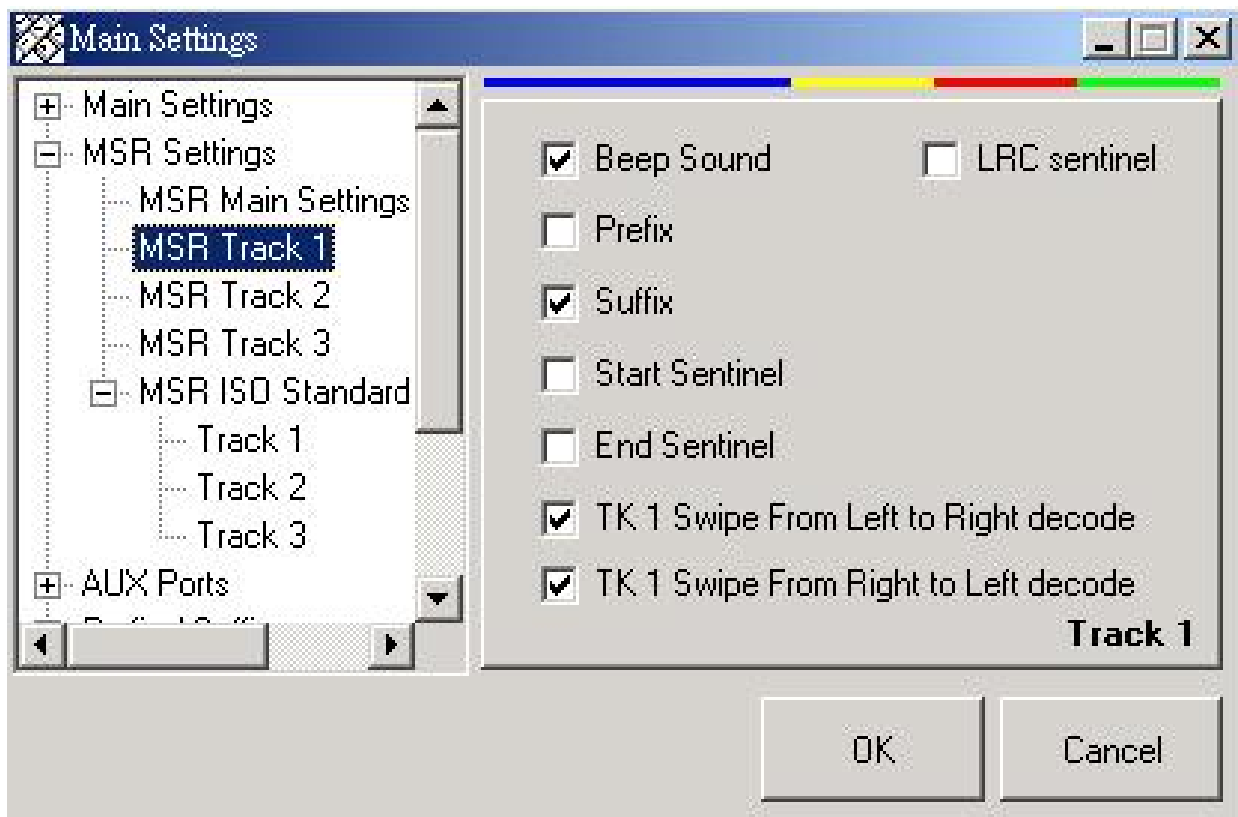
RS232 Protocol:

This setting allows user define RS232 parameters (EX: Baud-rate). and baud rate and the RS232 parameters are required for the properfunctioning of both the host and the auxiliary RS232 port.

Step6-2: MSR settings: (See Picture 3-4)

The setting allows user defining MSR settings including Track1'Track2' Track3 main setting as Error Beep sounds; Prefix/Suffix enable setting; KB Data Output Mode.

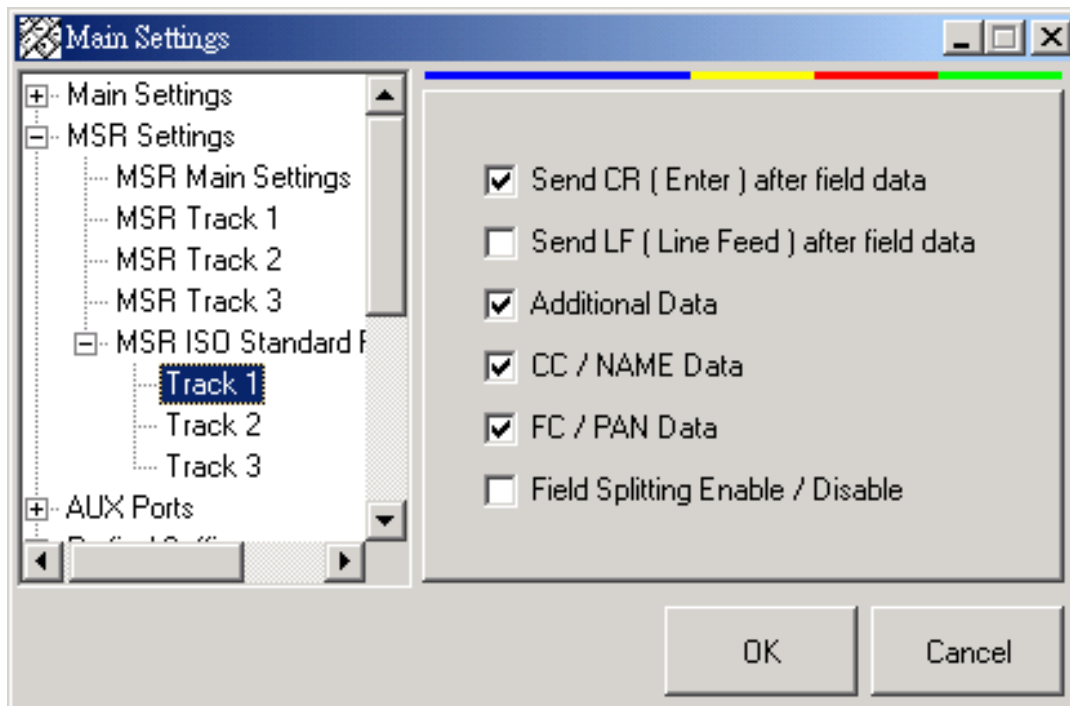
And in the details Tracks setting, each track may define track's stripe direction; enable end/start/LRC Sentinel; enable prefix/suffix; Beep sound when stripe....



Picture 3-4

MSR ISO Standard Field Splitting: (See Picture 3-5)

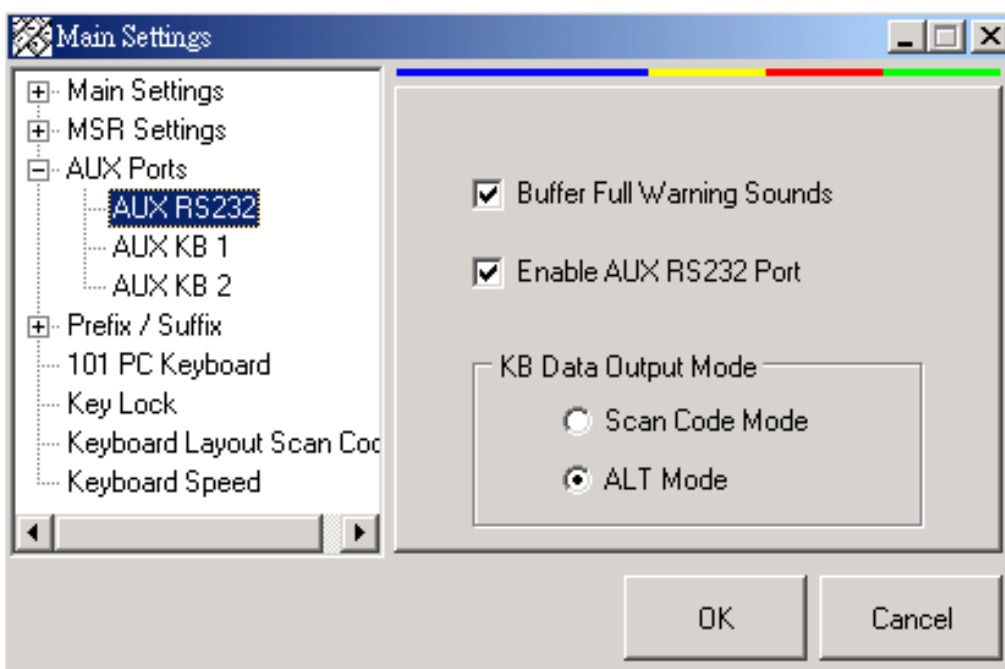
The setting allows user define configuration of MSR ISO Standard Field Splitting. The default settings are disable



Picture 3-5

Step6-3: AUX Ports: (See Picture 3-6)

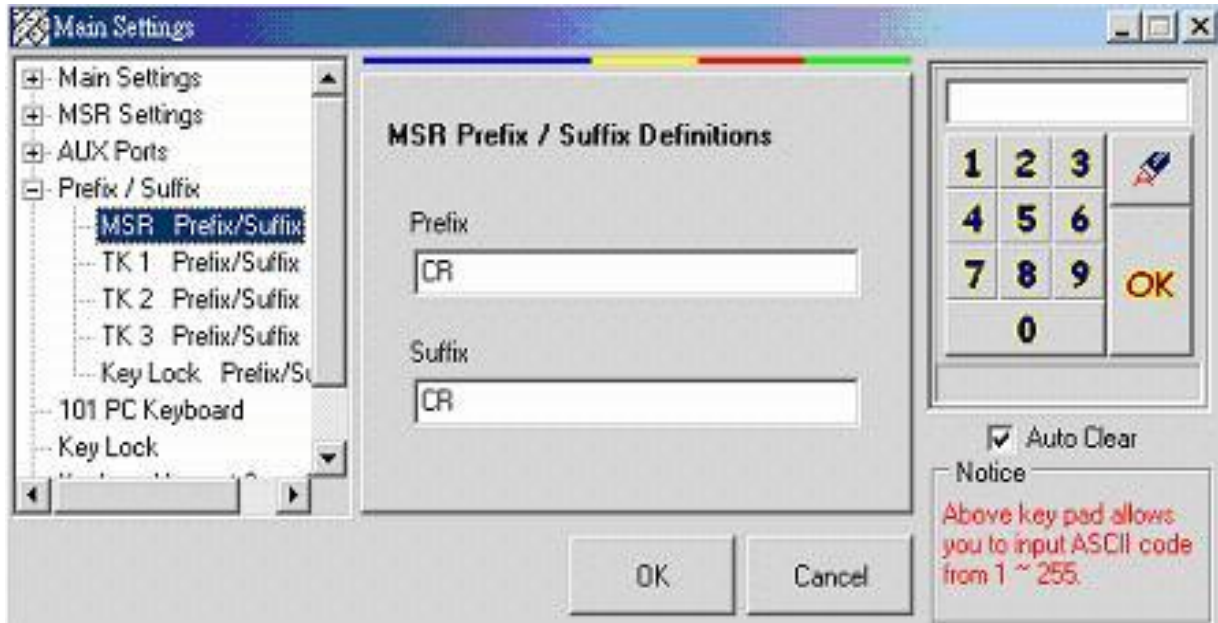
The setting allows user defining AUX port settings including *enable AUX RS232 / AUX KB1 / AUX KB2* and *Buffer full warning sounds*. When buffer queues with full data and couldn't send them out, system will give beeps for warning.



Picture 3-6

Step6-4: Prefix/Suffix: (See Picture 3-7)

This setting allows user defining MSR prefix and suffix of Track1, Track2 and Track3.



Picture 3-7

Step6-5: 101 PC Keyboard:

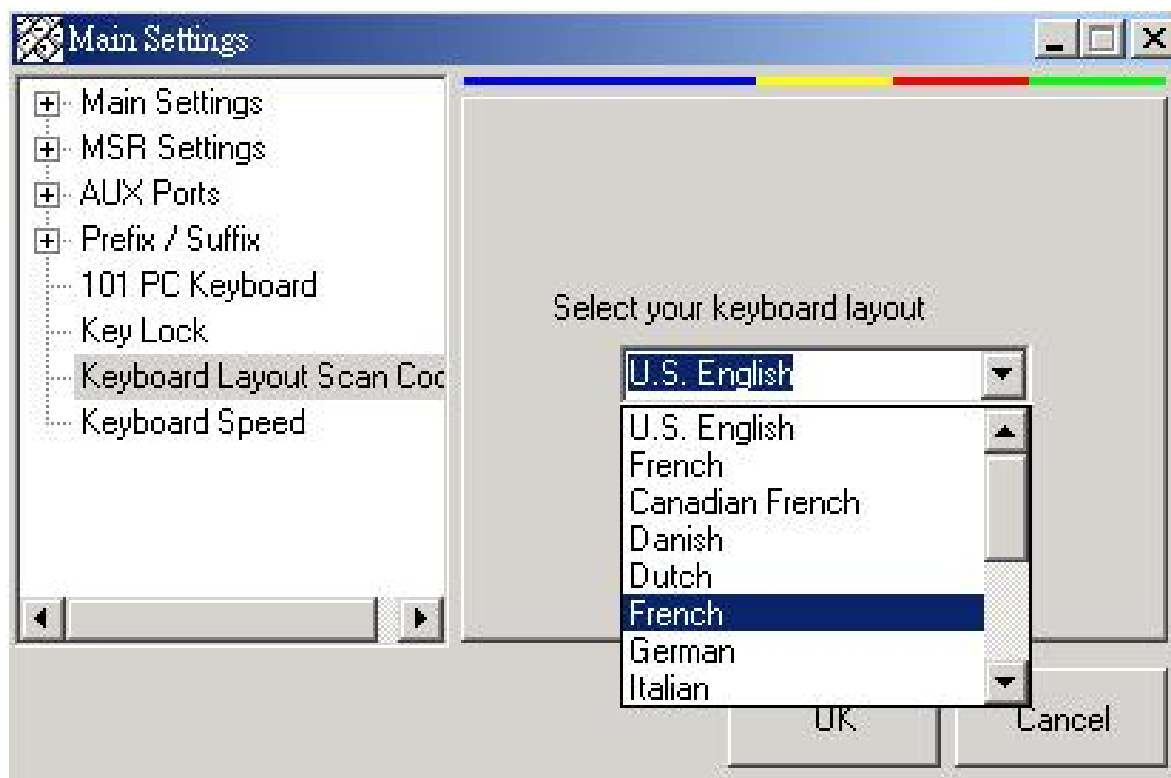
The setting allows user define QWERTY 101 PC keyboard. It includes *Buffer full warning sounds* and *Enable Keyboard*.

Step6-6: Key Lock:

The setting is defining key lock of 8037 keys. User may define the key locks configuration (EX: The levels of key lock) when the setting is enabled.

Step6-7: Keyboard Layout Scan Code: (See Picture 3-8)

The setting allows user define Key board scan code layout of each language. Please select language as what language of your operation system.



Picture 3-8

Step6-8: Keyboard Speed

The setting allows user define Key board speed with "repeating rate" and "Delay before repeate".

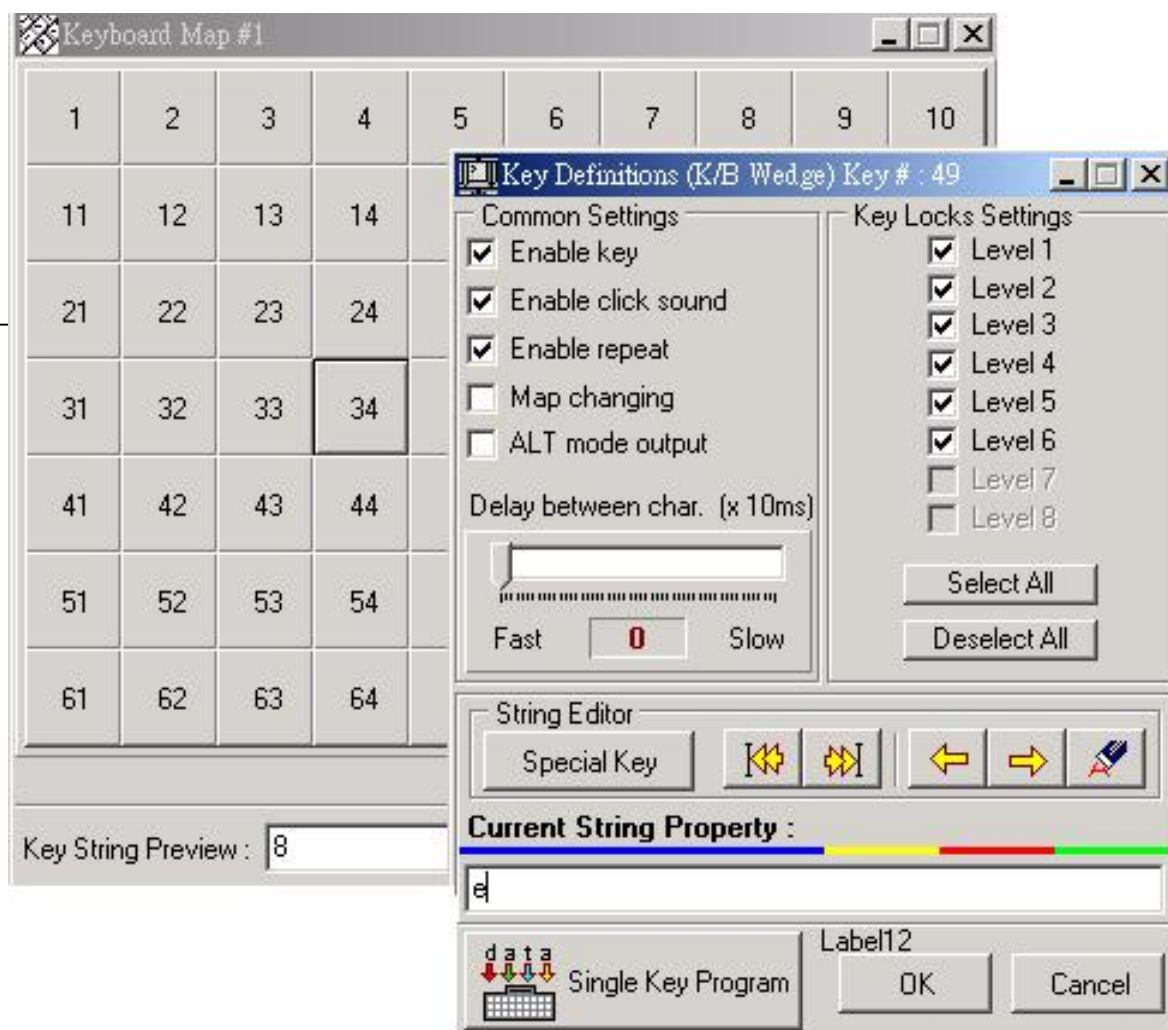
Step7: Defined Keyboard Maps

The setting allows user define 8037 keyboard map. You may click each key, and the sub window for key maps details setting will appear for designing.

Choose **【Settings】** - **【Define JARLTECH Keyboard Map】** - **【Define Map #1】**

Following steps are description for the common settings of keys status.

See Picture 3-9-1



Picture 3-9-1

Step7-1: Enable Key

This setting allows user active key or clear mark to disable the keyactivity.

Step7-2: Enable Click Sound

This setting allows user enable click sound of keys.

Step7-3: Enable Repeat

This setting allows user enable keys repeating speed.

Step7-4: Map Changing

The 8037 has two maps for designs.

This keyboard allows use defining a key to switch maps; once a key be enabled for map changing function, then, the keyboard map will be swapped between map1 to map2 when press this key.

Step7-5: ALT mode output

This setting allows user enabling a function for the keyboard's ASCII code output, it can be set to "Alt" mode or "Scan code" mode.

The default mode is "Scan code mode"

Note: For the details description of "ALT mode" and "Scan code mode", please see [Appendix IV](#)

Step7-6: Delay between character

When user scrolling the scale, the keyboard output speed between characters will be changed as what you adjusted.

Step7-7: Key Locks Settings

This setting allows user define key lock's level.

i.e. when you set key #1 to be level 1 and level 2, then the key#1 can only be use when the key

lock set to be level 1 and level 2.

Note: Jarltech JP-8037 allow user setting key lock with 6 level key lock.

Step7-8: Current String Property

The field allows use key in characters or string to be contents of one key.

i.e. when you set key #1 as "Welcome to Jarltech Web Site", then, when you press Key #1, the output will be what you typed in this field: " Welcome to Jarltech Web Site".

Note: If your operate Mode set to be RS232 interface, then, the output should be a RS232 recognized tool, ex: "Windows Terminal"; When your operate Mode set to be keyboard mode. The output should be a keyboard recognized tool, ex: "Windows notepad".

Above buttons of the **【String Editor】** field in the picture 3-9-1 is a tool for editing key contents. You may use them to edit string or characters.

The "Special key", that can only exist on keyboard operating mode, is as (picture 3-9-2) bellow, which is designed for "special function", you may use the "special key " to define each key as picture's below. i.e. in your key #1 setting field, click <F1> from the special key and add it to your "current string property", after you write it to map (you may use "single key program" to write data of a key), press key #1. The <F1> function appears as QWERTY PC keyboard behavior.

You may also set "ALT" and "Shift" functions key On/Off to fit your expect. In keyboard mode, the capital characters cannot be type on the field, and you may click "Shift ON" before the string to set them on,

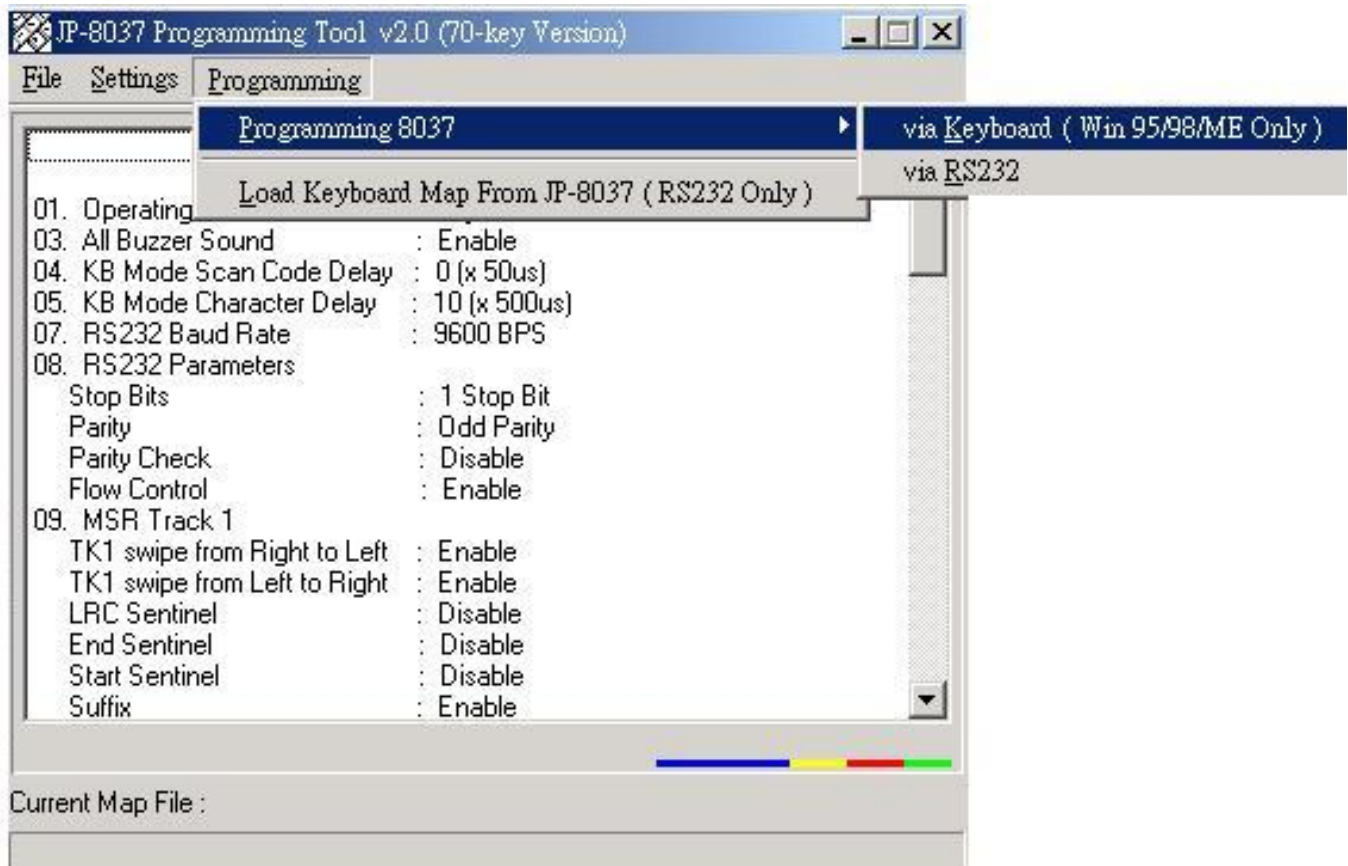
For example: <shift-on> abcd<shift-off>abcd

The result will be: ABCDabcd



Picture 3-9-2

Step8: Programming (See Picture 3-10)



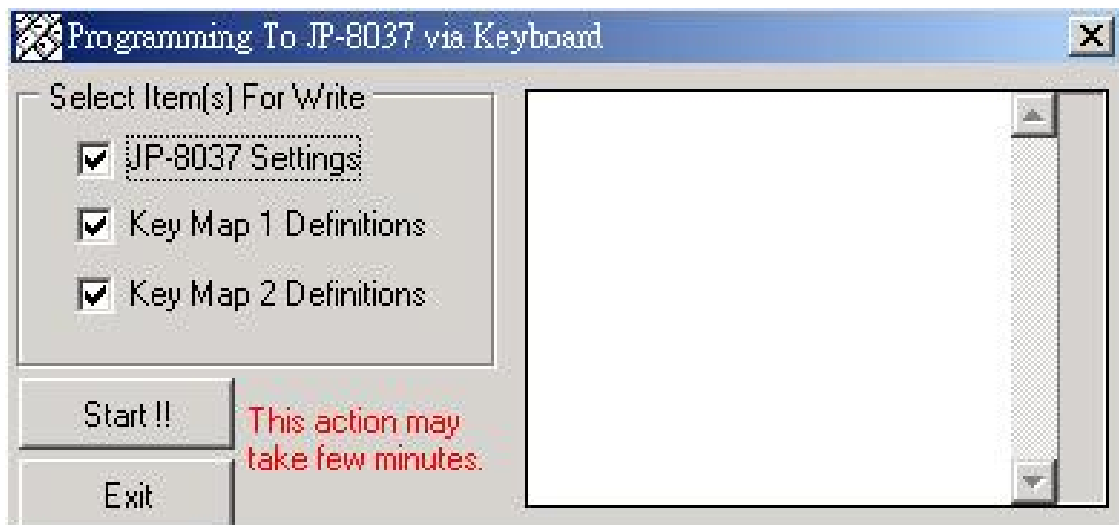
Picture 3-10

After the values and maps setting of keyboard was defined completely. The settings need to be written into 8037 EEPROM for record.

There are two interfaces for 8037 programming. You may select keyboard interface when you are working with Windows 95/98/ME and ensured connected Keyboard to 8037.

Another interface is RS232, you may use this interface when you are work with RS232 interface.

The following window (Picture 3-11) will appear:



Picture 3-11

After press "Start" button, 8037 programming tool will start to write values and maps file to Keyboard.

Step9: Load keyboard map from JP-8037 (RS232 only)

Under RS232 operating mode, when you select this item, you may load 8037 currently setting and maps to be new keyboard setting and map, and they are including maps configuration.

Once you press "Start" button, the 8037 programming tool will start to load setting and map from 8037.

After the map loaded, you may save it to be a new file with another file name, so that, user can easy to restore it in the future.

CHAPTER 4 Operating Your 8037

The Jarltech Series 8037 keyboards may be operated in conjunction with your host computer or terminal using either a keyboard wedge interface or an RS232 interface. As your requirements change in the future, the keyboards may be reprogrammed to match the interface you require.

Step 1: Connect 8037 to computer

The Jarltech keyboard connections for RS232 or keyboard wedge interface are the same as those described in Chapter 2. Please refer to Diagram 2.1 for RS232 mode or Diagram 2.2 for keyboard wedge mode.

Step 2: Connect RS232 Device to 8037 AUX Port (male)

The RS232 AUX port on the rear panel of the 8037 is available for an RS232 input device, as in Diagram 4.1.

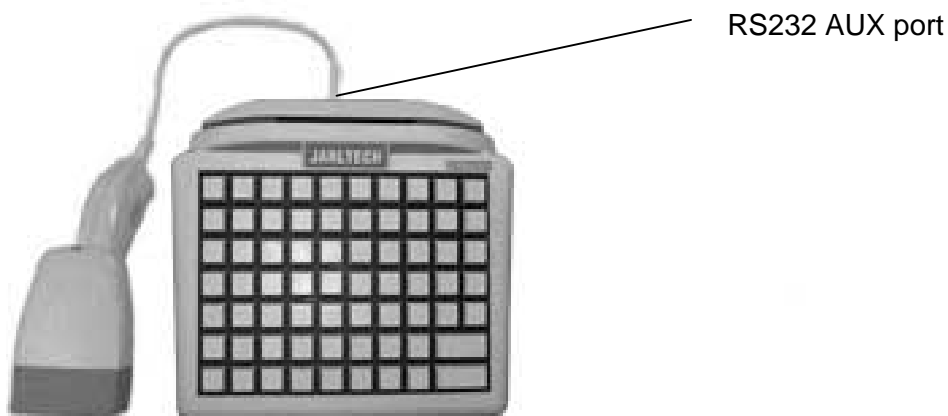


Diagram 4.1

Step 3: Connect K/B Device to 8037 Keyboard port(Female)

The K/B port on the rear panel of the 8037 is available for an Keyboard input device, as in Diagram 4.2.

Note: The K/B AUX port 2 is optional.

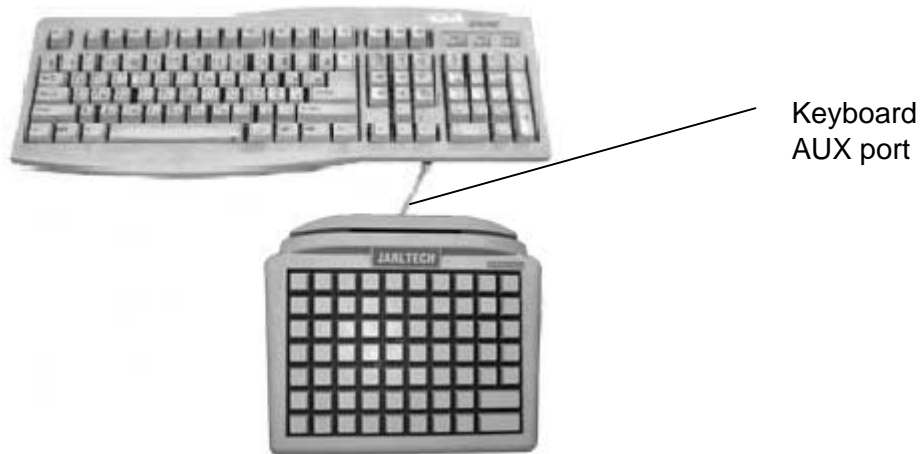


Diagram 4.2

Step 4: Using the Card Reader

A built magnetic stripe decoder is configured on the Jarltech 8037 with a card reader. User may use it with the 8037 programming tool as Chapter3 step6 defined.

Step 3: Using the Optional Key Lock

There is built circuit for optional key lock, once you set the key lock's level of 8037 programming tool. You may use it to control what level's lock for each key.

The 8037 keyboard supports key locks level from level 1 to level 6 (customized)

Appendix I**Specifications****Model 8037
Keyboard**

- Tactile keyboard
- 7 rows x 15 columns
- Cherry keyswitch
- ABS plastic key caps
- Single, dual and quadruple key caps available
- User-definable key layout

**Power
Requirements**

- RS232 interface: +12V DC from host computer or through adaptor from external 110/220V AC source with polarity as follows:
- Keyboard interface: +5V DC from host computer

Physical

- Dimensions: 330mm (L) x 195mm (W) x 55mm (H)
- Weight: 1170g

**Communication
Ports**

- One internal connector for TTL-signal magnetic stripe reader
- One Internal connect for KeyLock
- One RS232 input-output HOST port
- One RS232 input AUX port
- One keyboard AUX port

LED indicator

- LED1 Green -- Power ON
- -- MAP1 ON
- LED2 Red -- MAP2 ON
- LED2 Green -- Caps Lock ON

Appendix II

Specifications of Connector and Switcher

Connector

Pin Assignments

Keyboard AUX Port

#1: Keyboard data(AUX 1)
 #2: Keyboard data(AUX2)
 #3: Ground
 #4: + 5V
 #5: Keyboard clock(AUX1)
 #6: Keyboard click(AUX 2)

RS232 AUX Port (Male)

#3: RX
 #5: Ground
 #6: RTS
 #9: +12V/+5V DC power

RS232 HOST Port (Female)

#2: RX
 #3: TX
 #5: Ground
 #7: RTS
 #9: +12V/+5V DC Power

Keyboard Host port

#1: Keyboard data
 #3: +5 V
 #4: Ground
 #5: Keyboard clock

Switcher

SW1

ON : Enable RS232 Host Data In

: Disable RS232 AUX Data In

OFF: Disable RS232 Host Data in

: Enable RS232 AUX data In

SW2

ON: Reset 8037 to Default setting.

Switch pin to ON until beep sound appear(around 3~5 sec.), then, switch it to OFF.(The switching time should be finished in 2 sec.)

Appendix III**Scan Code mode and ALT mode**

JP-8037 supports two ways for keyboard wedge data sending:

1. Scan Code Mode:

This is the standard code of PC keyboard designation, when you press a key, there are two kind of code sending. One is "make code", and another is "Break code" when key-press-down, it makes a key data: "Make Code", when key-press-up, it makes a key data called: " Break Code", this mode is useful for normal application design.

Note: In scan code mode, if you design a key "A", the software will get data "A" or "a" that depends on the "Caps lock" status.

2. ALT mode code:

Sometimes, user cannot use "Scan Code" for special application design, so, there's a "ALT mode" code for user easier to design theirs application. The ALT-mode is for sending ASCII code, and through PC keyboard. The method is use "ALT" key and the numbers of PC keypad.

For example, Code number "A" in ASCII table is "65". So, you may keep press "ALT" function key and then press number "6", and number "5", after that, release "ALT" key, the "A" will appears on the screen.

Note: In ALT mode, if you design a key "A", the software will only get data "A".



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