



SDJ-731 USB Dongle datasheet



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1 Introduction

1.1 Overview

The IEEE 802.15.4 USB Dongle provides an easy way of interfacing a host machine (such as a PC) to a wireless network based on the IEEE 802.15.4 protocol standard, where this network may additionally employ the ZigBee PRO or JenNet networking protocol. The dongle incorporates the Jennic JN5148 wireless microcontroller, allowing a direct USB connection between the host machine and the JN5148 device, which then provides the radio interface to the wireless network.

1.2 Features

The IEEE 802.15.4 USB Dongle provides the following features:

- USB 2.0 Full-Speed Compatible Interface
- Blue LED
- 32-kHz crystal oscillator

2 Hardware Overview

2.1 USB Connection

The USB connector is a standard USB Type A male connector. This allows connection to the power and serial data connections from the USB host.

2.2 USB Interface Device

The USB interface device is an FTDI FD232RL device. It is used to interface between the data connections of the usb port and the standard uart connections for UART0 of the JN5148 device. With the FTDI royalty-free drivers, the USB dongle will appear as a COM port on a Windows PC. Therefore, for many applications there is no requirement to develop

2.3 Power Supply

The power for the dongle is sourced from the USB connector. The wireless microcontroller cannot be directly connected to the WSB port. The USB interface device generates the required voltage levels for the JN5148.

2.4 Wireless Microcontroller

The wireless microcontroller on the dongle board is the Jennic JN5148, which is detailed in the *JN5148 Data Sheet (JN-DS-JN5148)*.

2.5 Serial Flash Device

The application code for the JN5148 is stored in a serial Flash memory device which is provided on the dongle. This is typically a 4-Mbit device, such as the W25x40

2.6 32kHz Crystal Oscillator

The JN5148 has an internal 32kHz RC oscillator. In order to provide more accurate system timings an external 32kHz crystal can be used with the device. This is provided on the USB dongle and can be enabled using the integrated Peripherals Api library. refer to Integrated Peripherals API Reference Manual

3 Programming

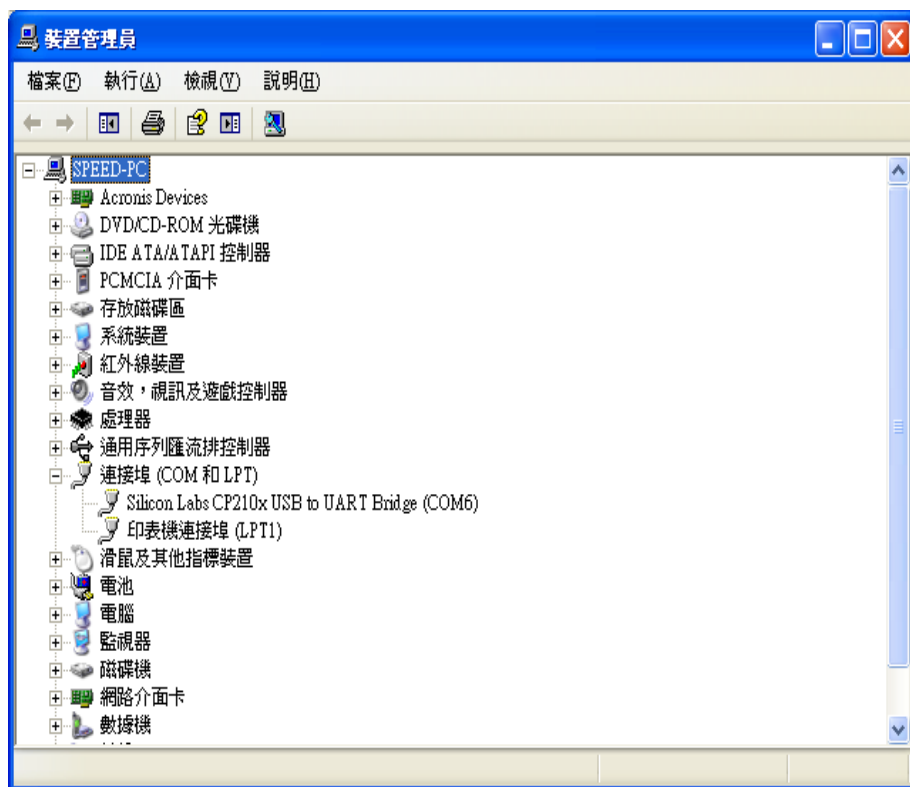
When the IEEE 802.15.4 USB Dongle is powered up, it attempts to load an application from the serial Flash device and then run the application. This may be a self-contained application that sends and receives wireless data, and which does not need to communicate with the host. Alternatively, it may communicate via the USB to an application running on the host, such as a Windows program, and communicate with a wireless device or network.

4.接收操作

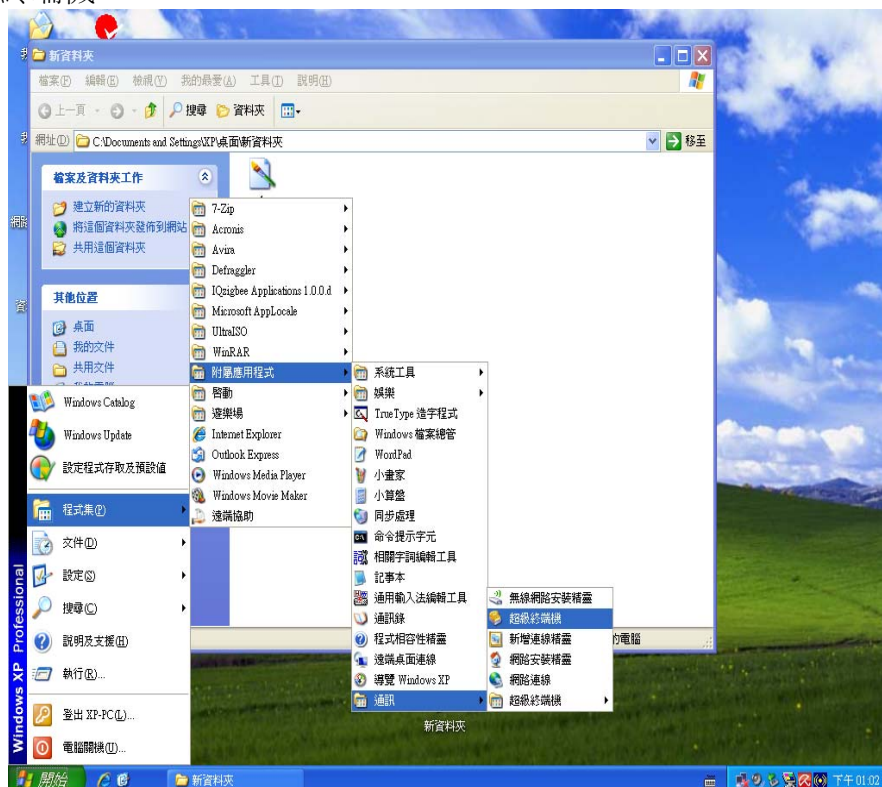
安裝 CustomCP210xDriverInstall 中的 CP210xVCPInstaller.exe 驅動程式後，執行下列步驟

4.1 插入 USB Dongle 開啟裝置管理員，

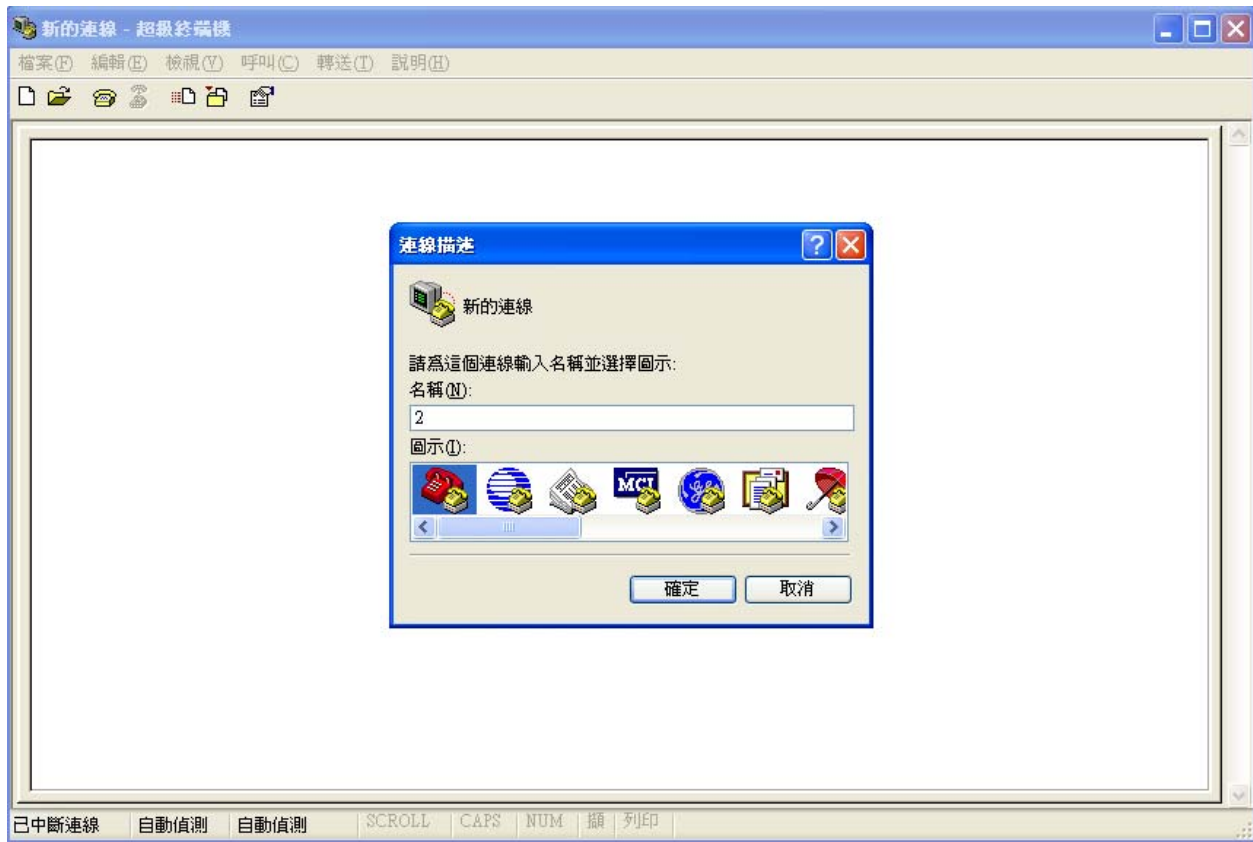
檢視 Silicon Labs CP210x USB to UART Bridge 為 COM 多少



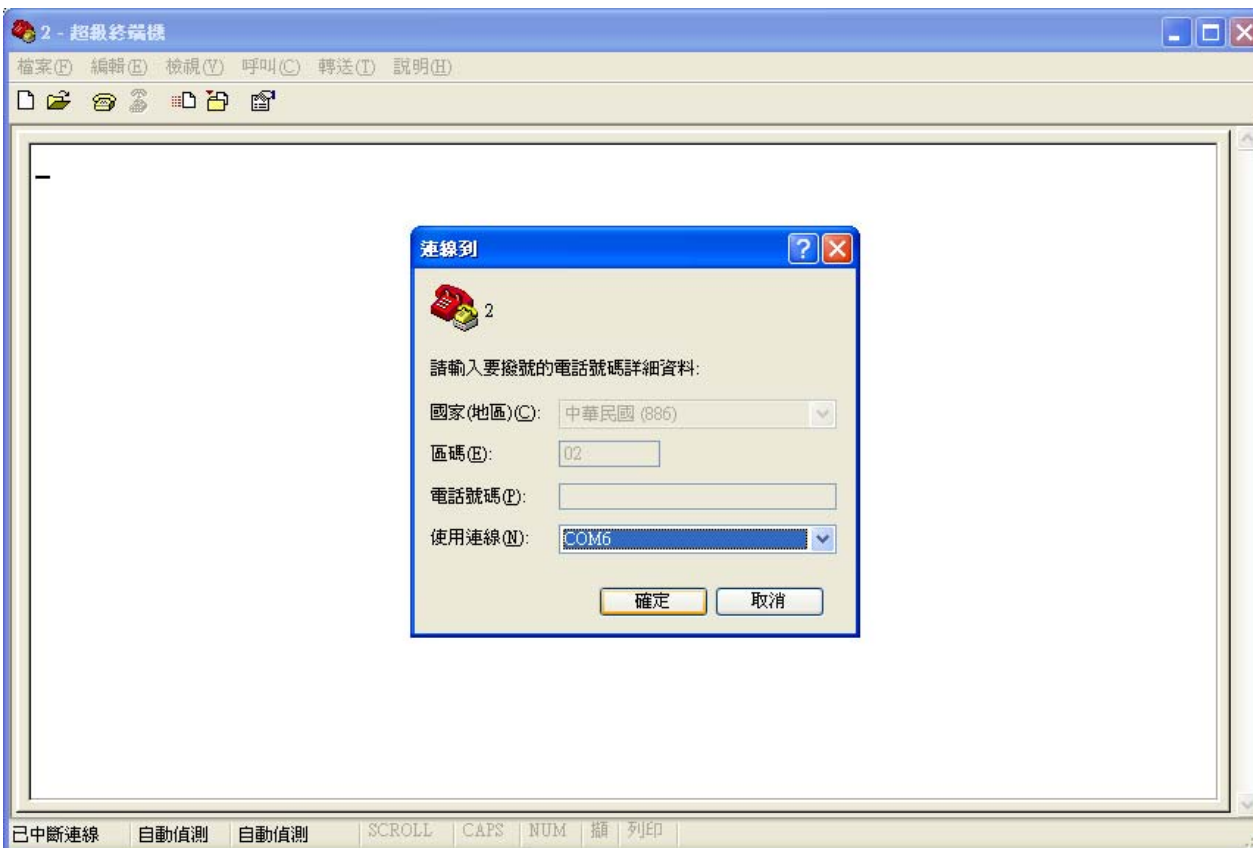
4.2 開啟超級終端機



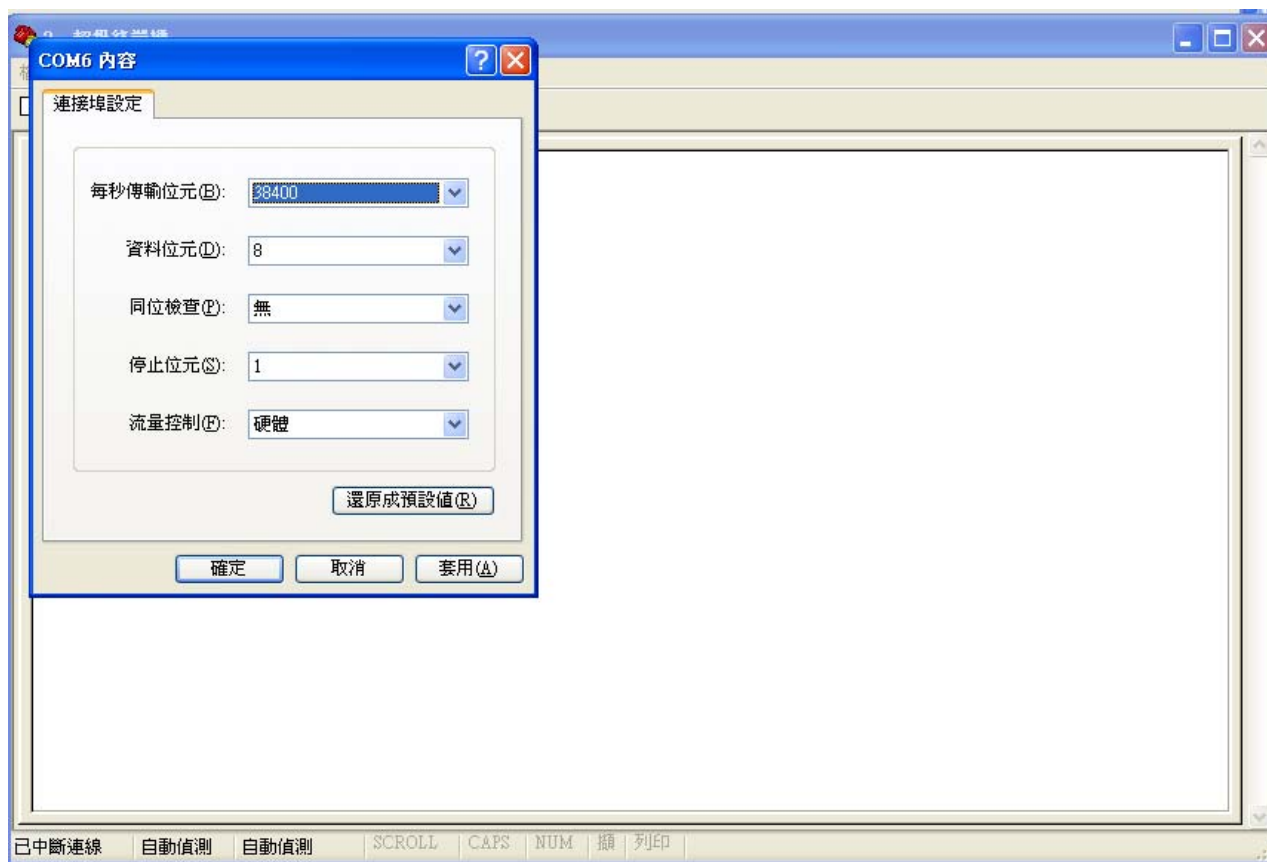
4.3 任意輸入名稱



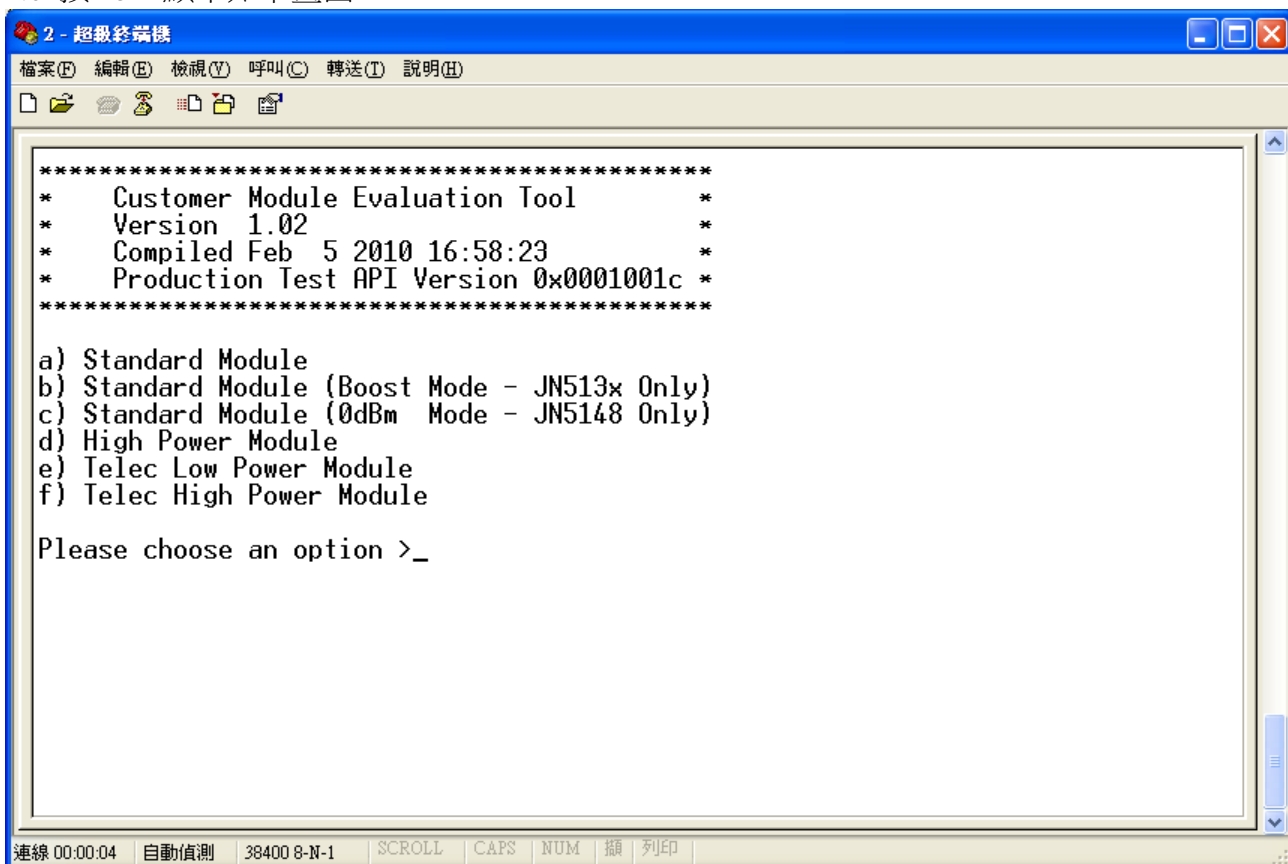
4.4 使用連線選擇裝置管理員顯示的 COM PORT，按確定



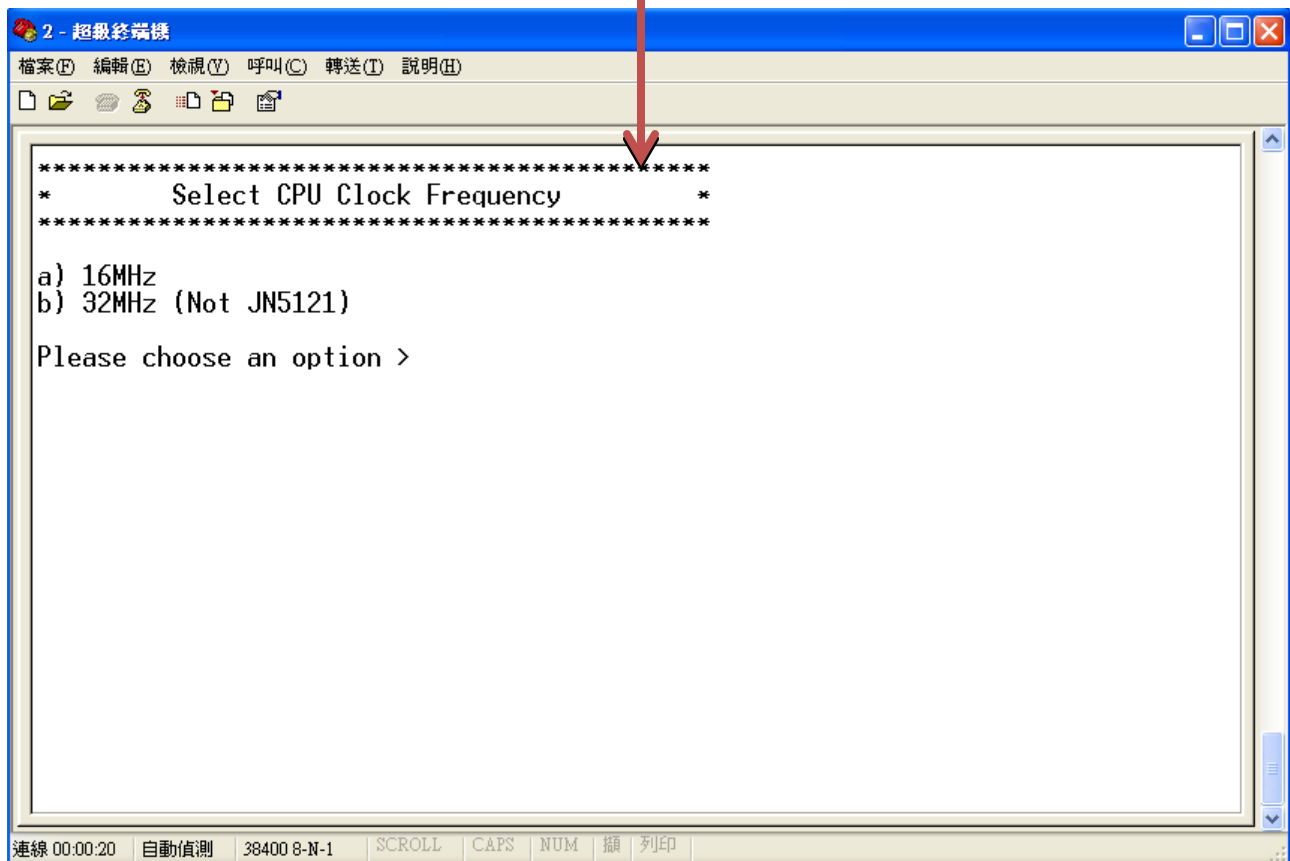
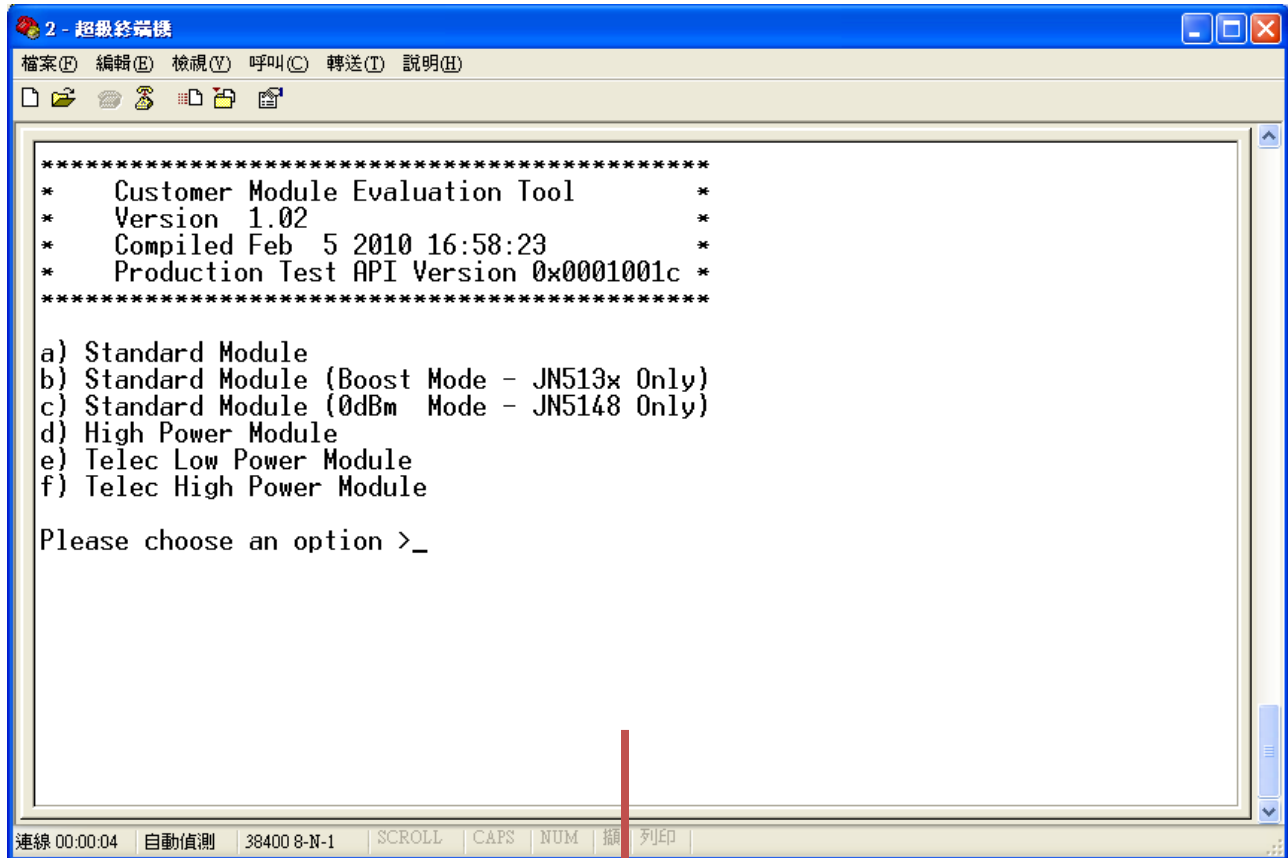
4.5 每秒傳輸位元選擇 38400，按確定



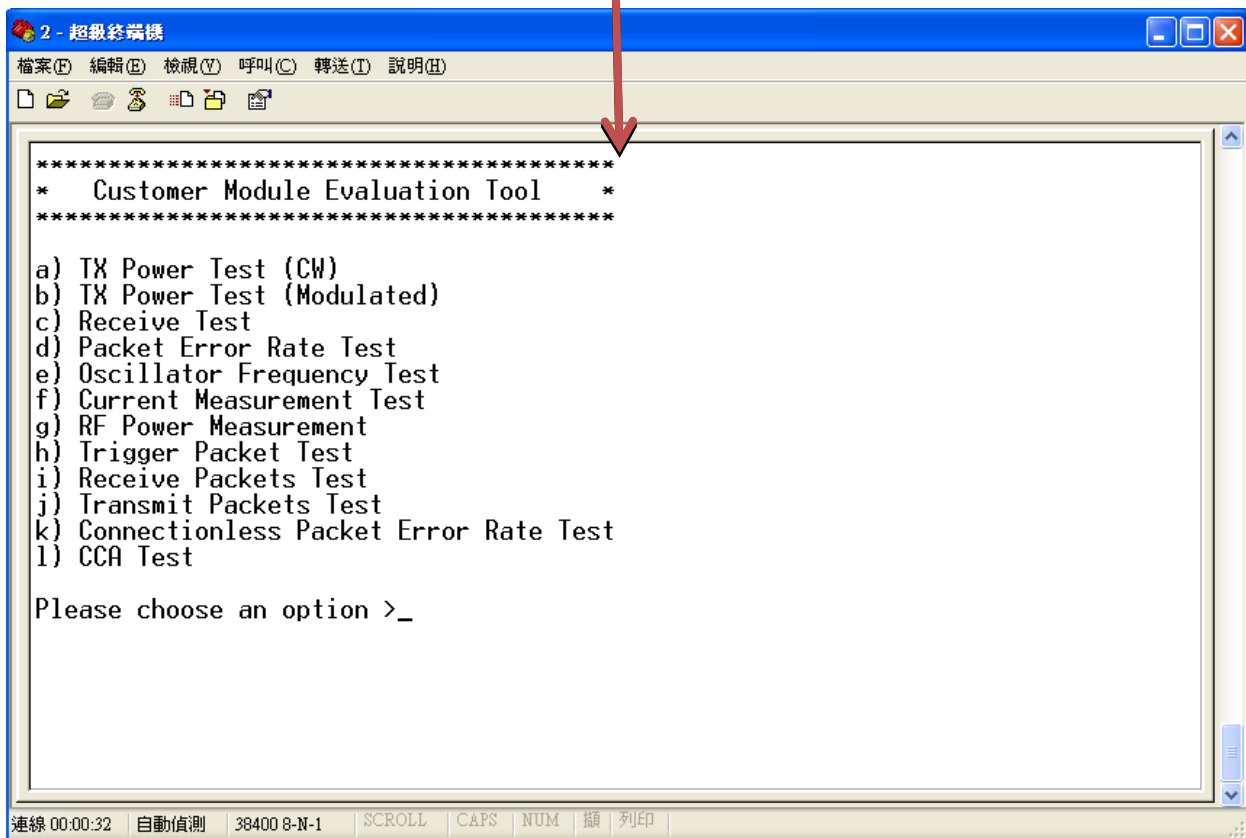
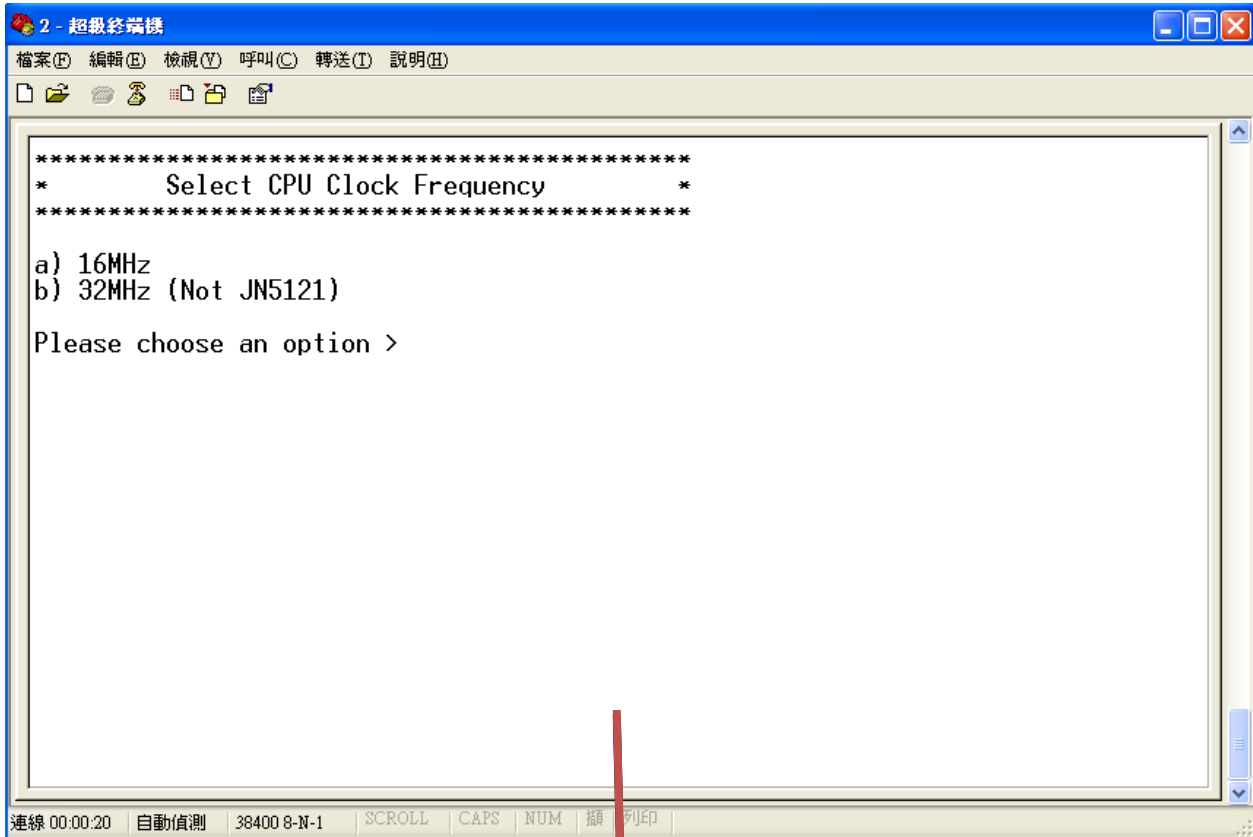
4.6 按 F5，顯示如下畫面



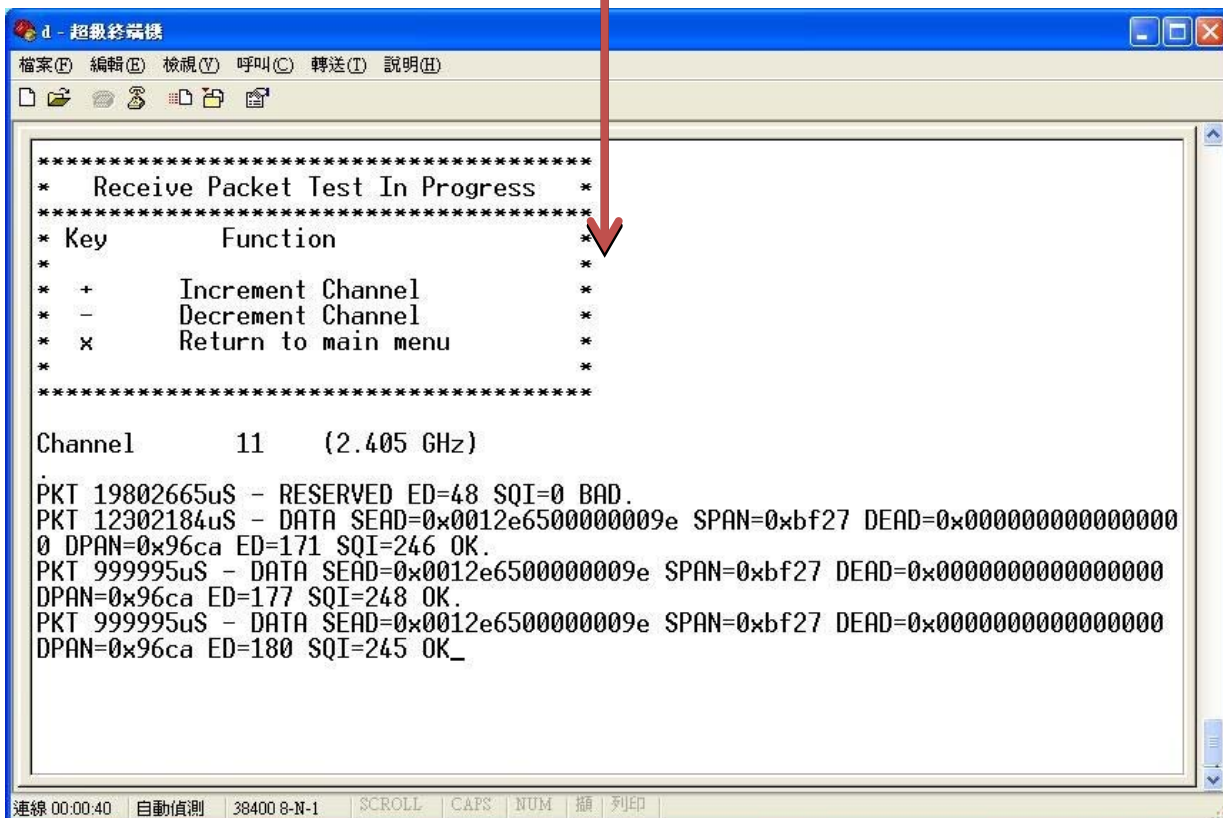
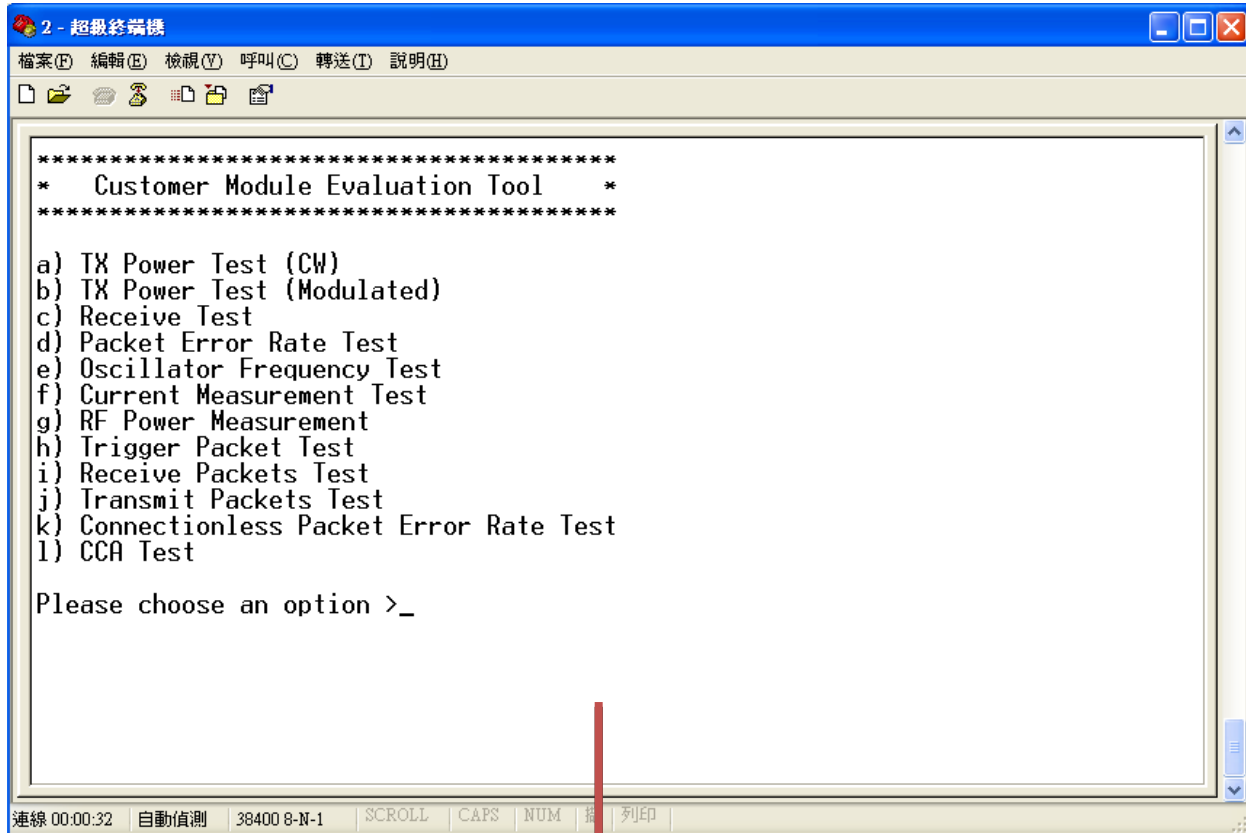
4.7 按下 D 顯示下方畫面



4.8 按下 B 顯示下方畫面



4.9 按下 i 顯示下方畫面



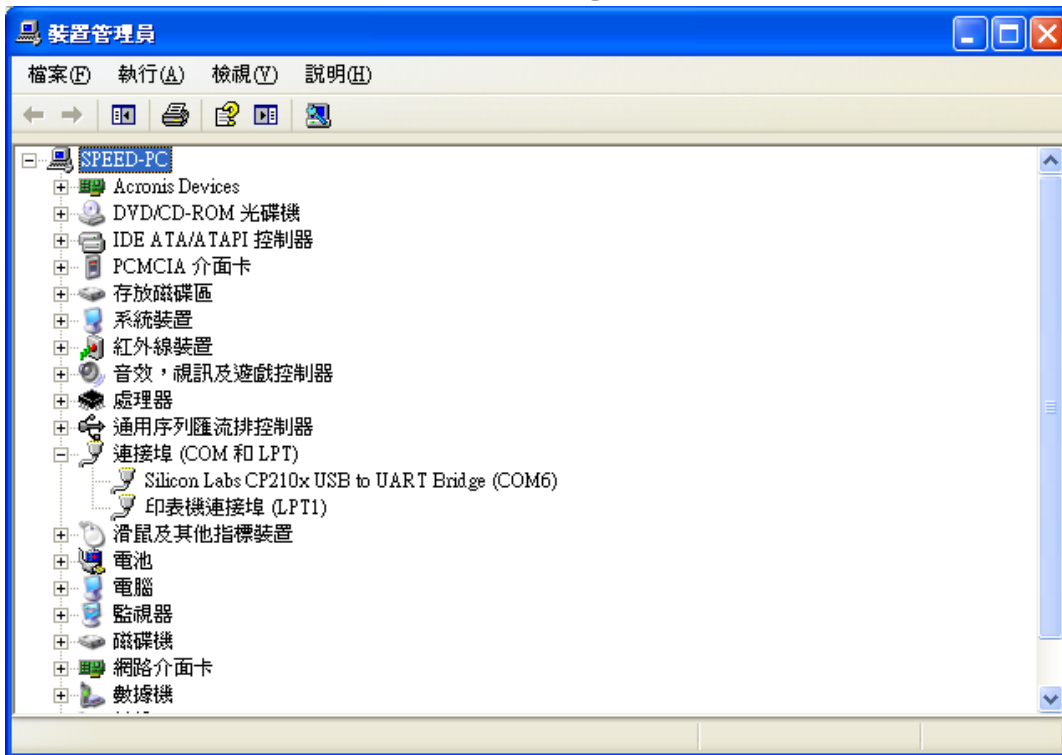
4.10 按+/- 切換 Channel

5.傳輸操作

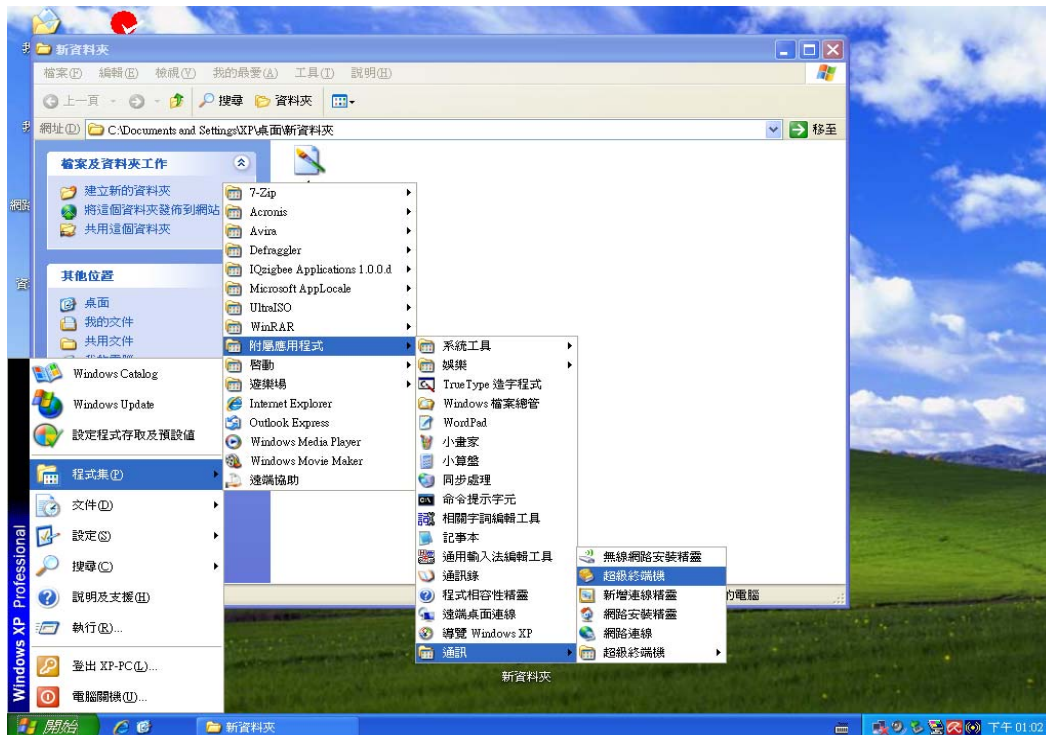
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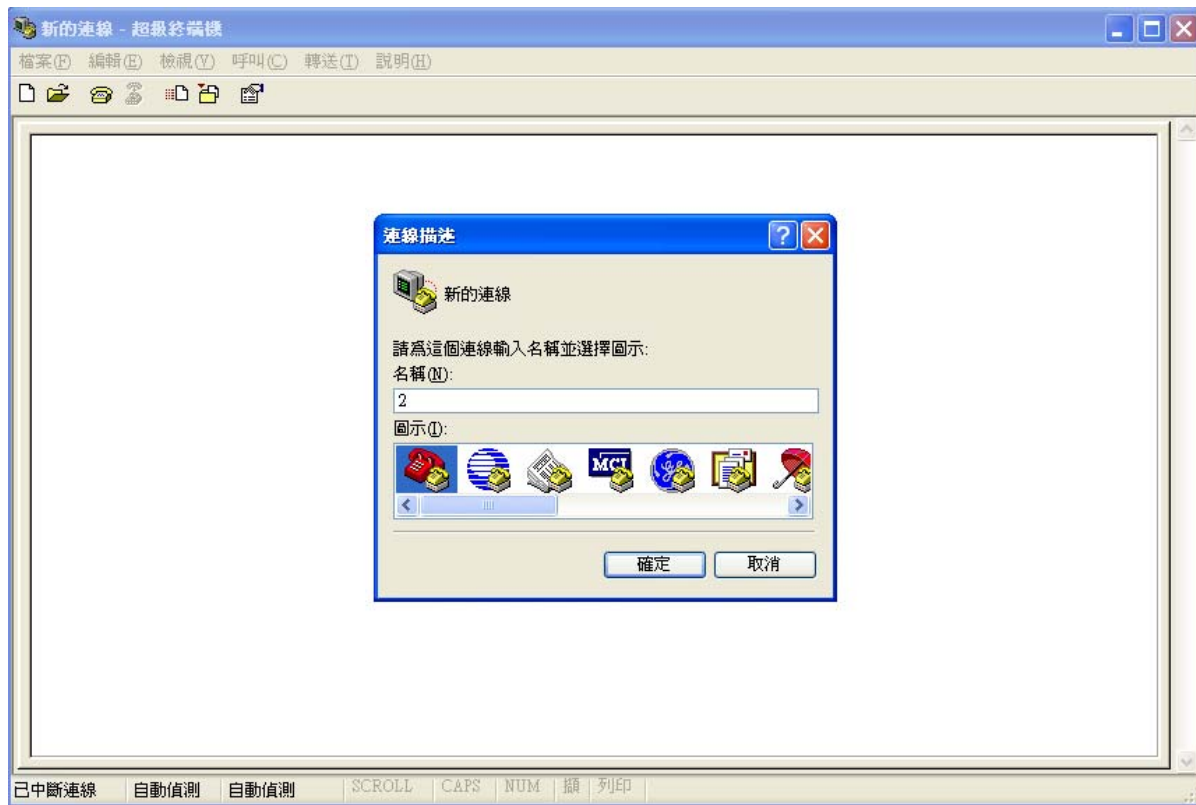
檢視 Silicon Labs CP210x USB to UART Bridge 為 COM 多少



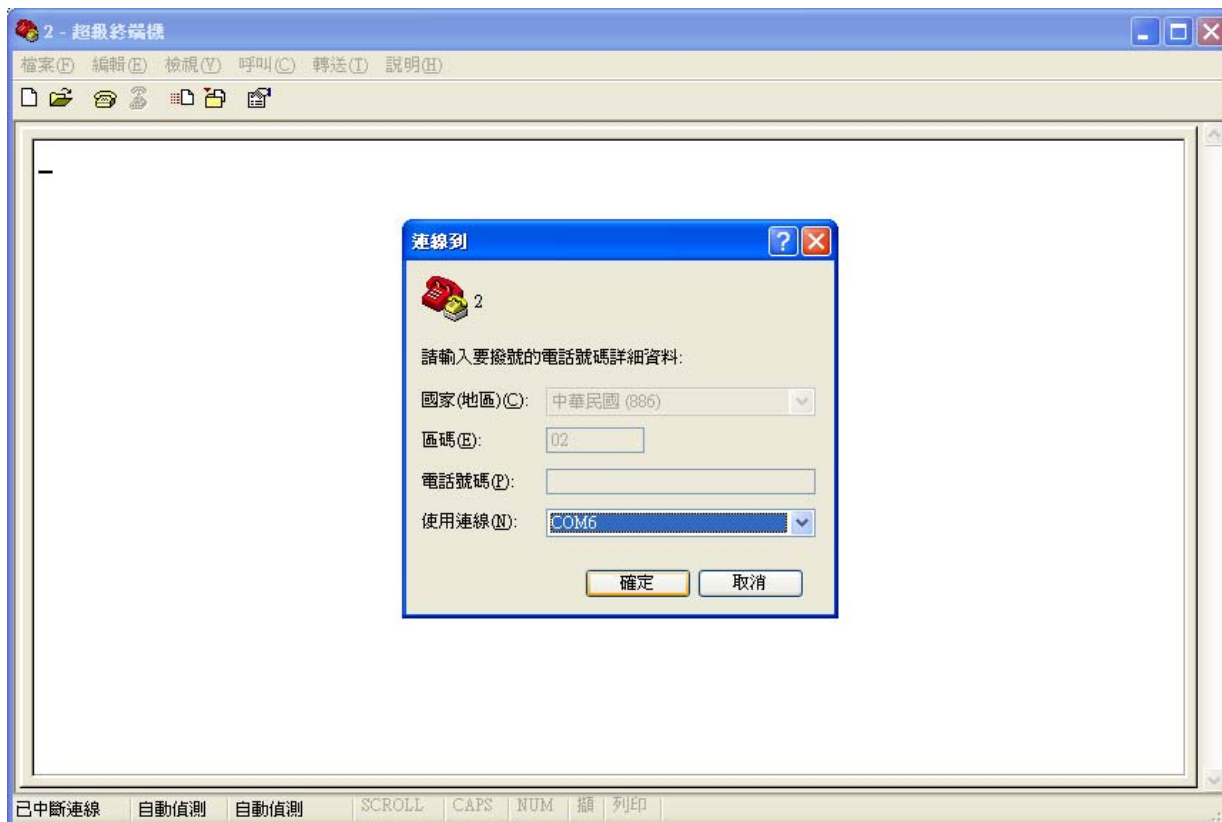
5.2 開啟超級終端機



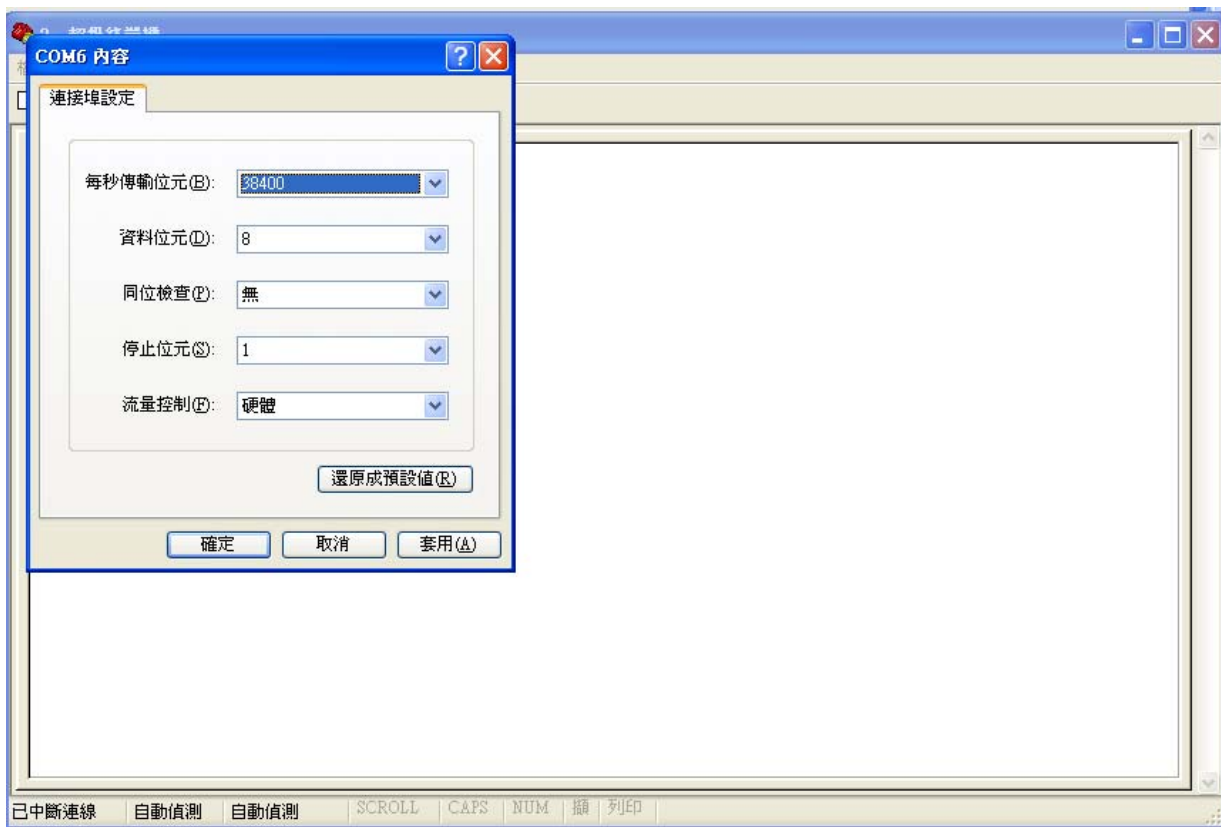
5.3 任意輸入名稱



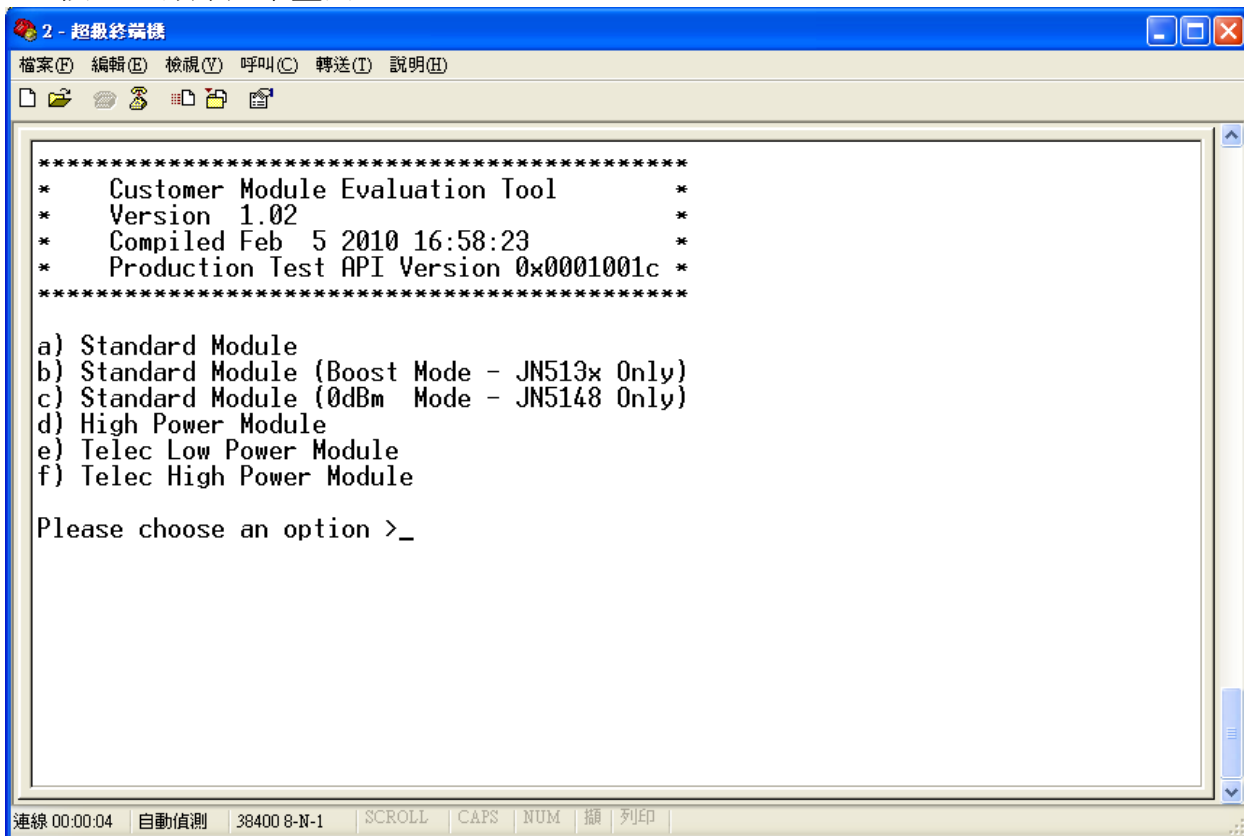
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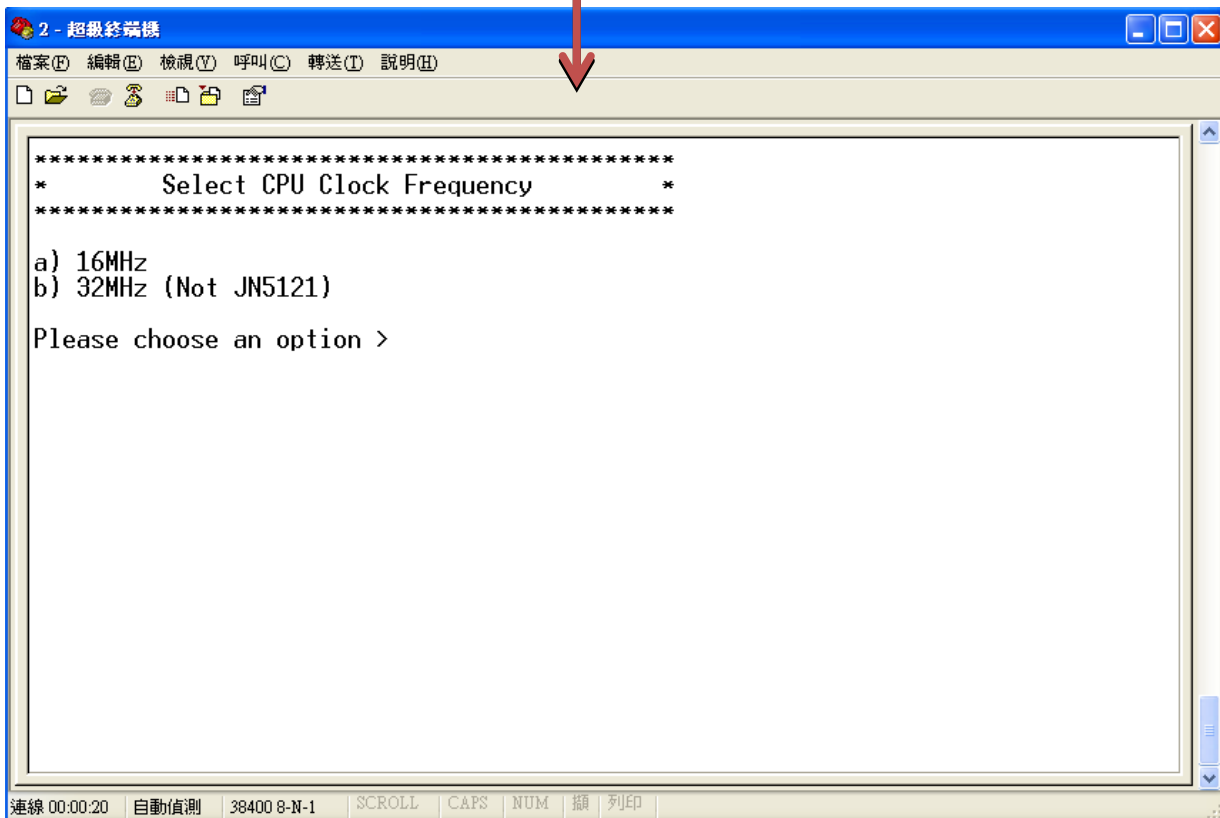
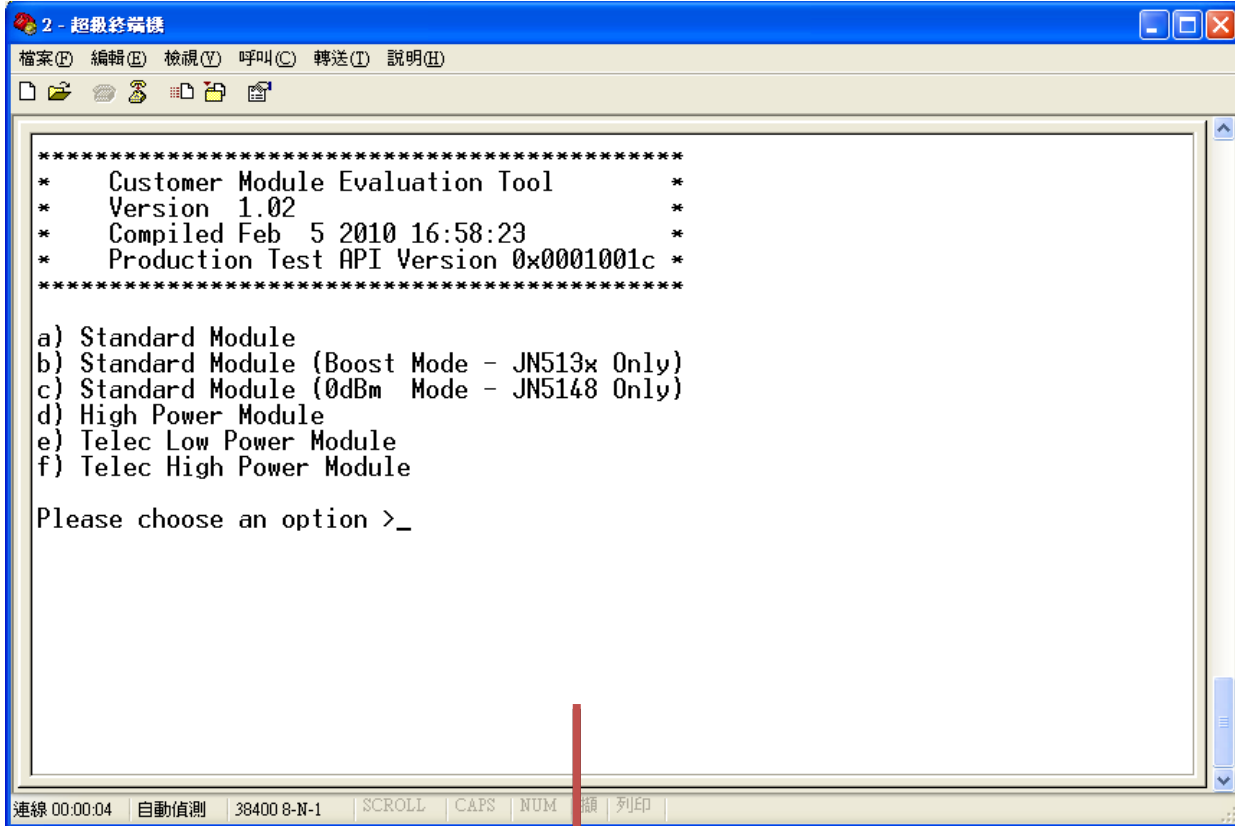
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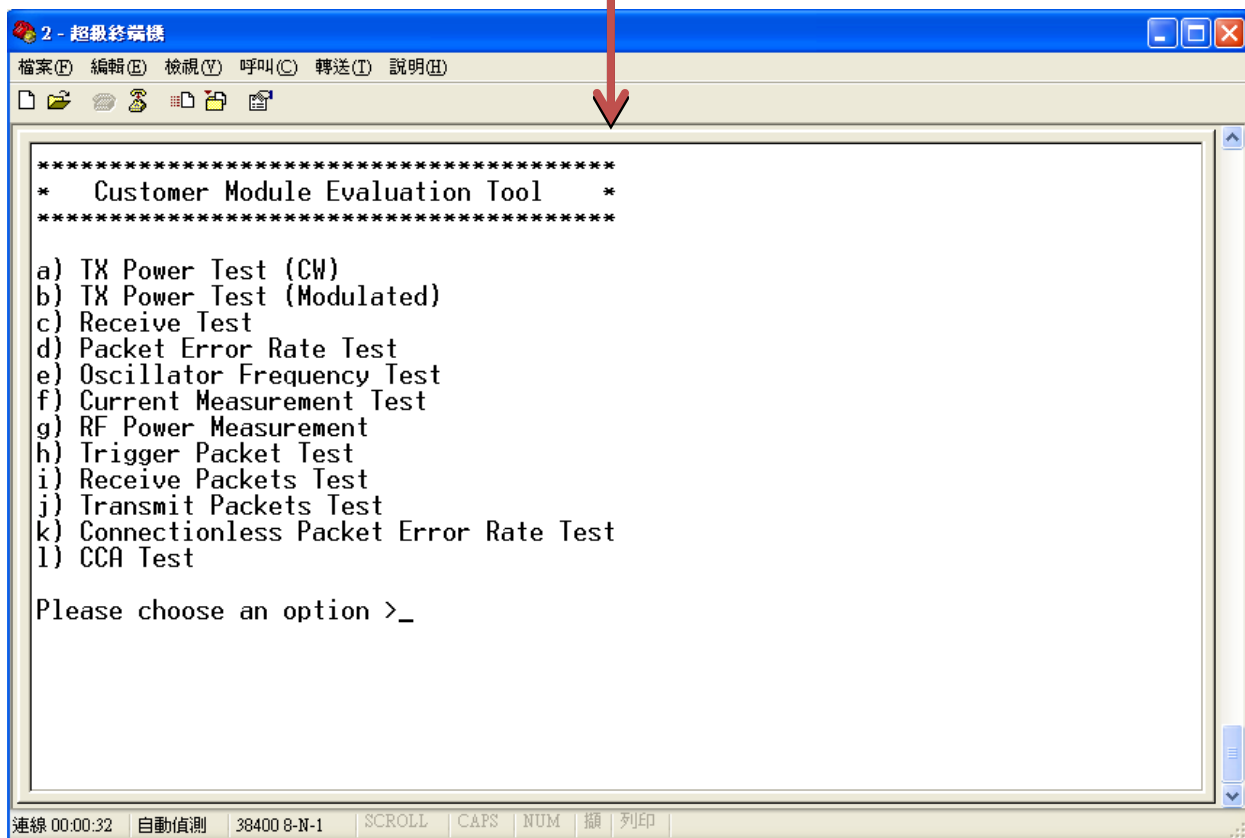
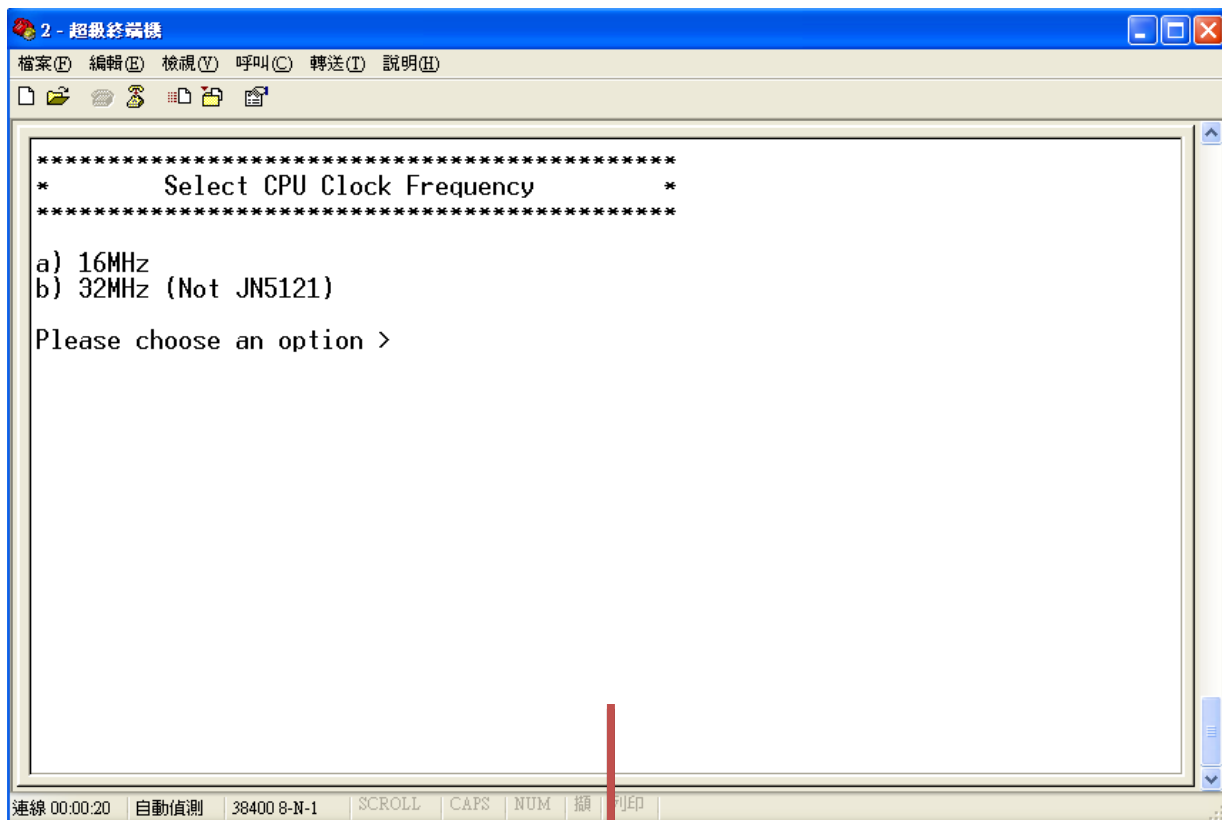
5.6 按 F5，顯示如下畫面



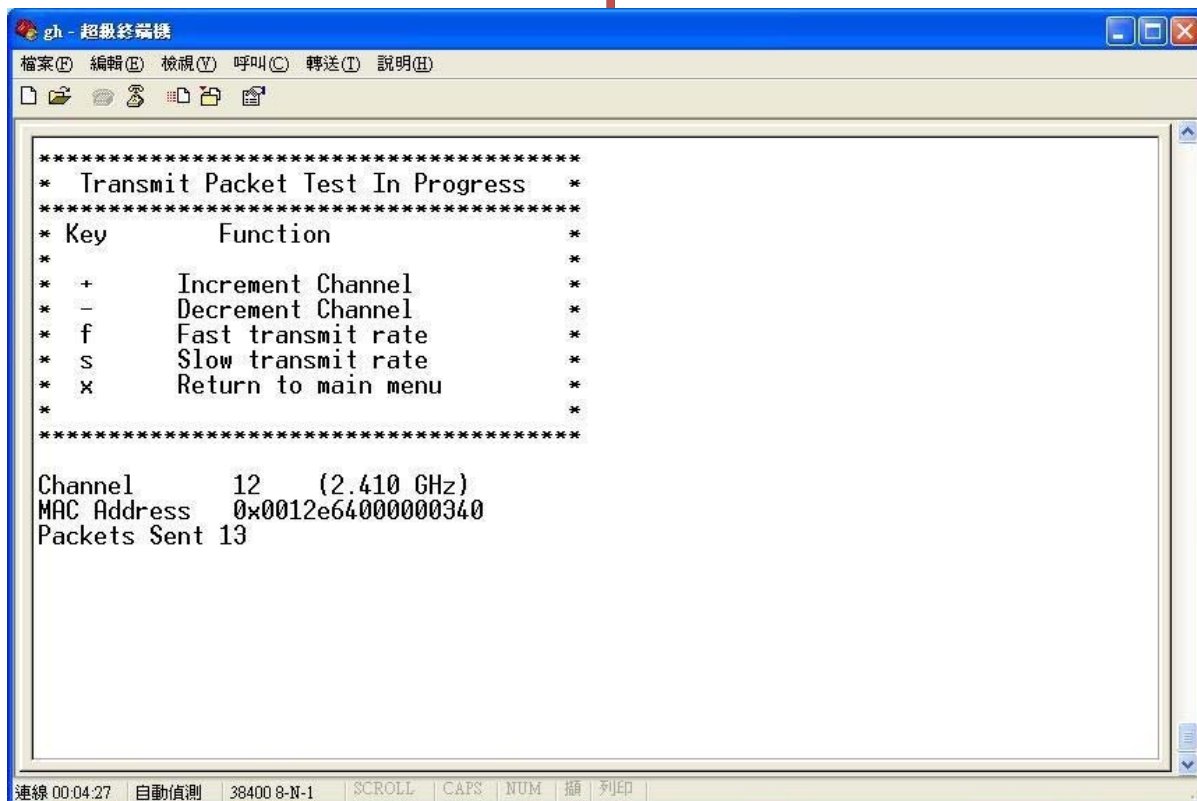
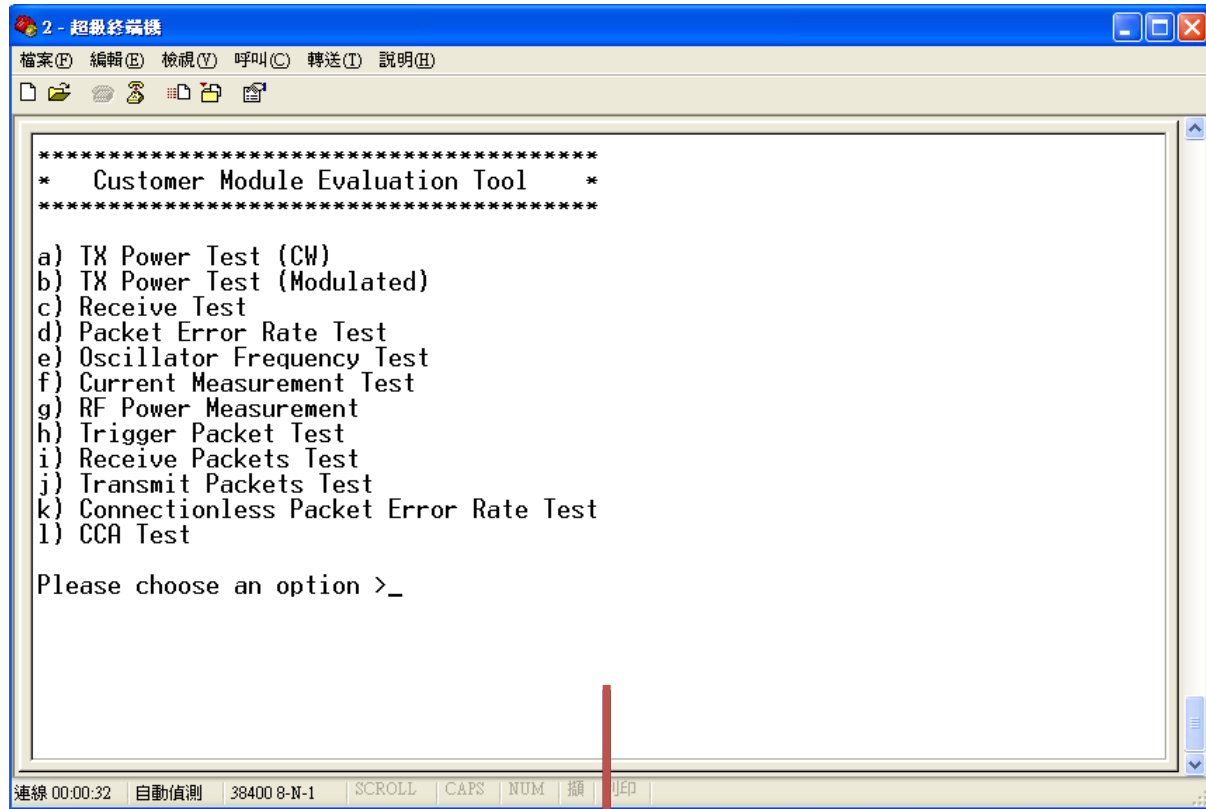
5.7 按下 D 顯示右側畫面



5.8 按下 B 顯示右側畫面



5.9 按下 j 顯示右側畫面



5.10 按+-切換 Channel

Federal Communications Commission (FCC) Statement

15.21

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

15.105(b)

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 or more 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.

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 of the device.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada (IC) Statement

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Canada, avis d'Industry Canada (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-210.

Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

Informations concernant l'exposition aux fréquences radio (RF)

La puissance de sortie émise par l'appareil de sans fil SPECTEC est inférieure à la limite d'exposition aux fréquences radio d'Industry Canada (IC). Utilisez l'appareil de sans fil SPECTEC de façon à minimiser les contacts humains lors du fonctionnement normal.