MS860
WiFi
Bar Code
Scanner

unitech

General Advisory

Improper handling, storage, environmental influences, and/or product modification can lead to problems during use.
This is particularly true if repairs and maintenance work are not performed by trained personnel.
We reserve the right to make technical modifications in accordance with technological advancements as they occur.

FCC Information

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interferance when the device is operated in a commercial environment. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interferance to radio communications. Operation of this equipment in a residential area is likely to cause harmful interferance, in which case the user will be required to correct the interferance at his or her own expense.

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INTRODUCTION

The MS860 WiFi laser bar code scanner is one of the newest members of Unitech's MS series. The MS860 incorporates the latest WiFi technology, making it ideal for real-time bar code data collection in warehouse, loading dock, inventory, back office, document tracking, retail environments - anywhere cables would restrict movement or limit access.

The incorporated 802.11b module allows the MS860 to be used within approximately 100 feet (30m) from an Access Point (AP) in an office environment, and up to 330 feet (100m) in an open environment. This gives users mobility and freedom to scan bulky and difficult to reach items.

The cradle of MS860 works as a battery charger for the scanner. When resting in the cradle, the scanner can reach a fully charged state in 4½ to 5 hours. When fully charged, the scanner can provide up to 16 hours scanning time. For long-term product storage, the scanner can be powered off by using the scanner's push down on/off switch. Alternatively, the scanner can remain powered but unused for up to 1 month before the batteries require recharging.

The MS860 offers checkout personnel the ability to scan bulky items without the need for heavy lifting by customers or checkout personnel, making for added convenience and safety. The MS860 is perfect for applications such as supermarkets, hypermarkets, shopping clubs, retailers, light warehouse, and manufacturing.

MS860
Scanner

MS086
Cradle

INTRODUCTION

QUICK START

1. Connect the plug of the power adapter into the power jack on the cradle, and connect the power adapter into an AC outlet. You will hear a beep, and the Power Status and Charging Status LEDs on the top of the cradle will glow green.

2. Use an unfolded paperclip to push down the battery power on/off internal switch located inside the round hole on the yellow warning label underneath the scanner. You will feel a 'click' as you push down the switch and then hear one beep from the scanner. When shipped from the factory, the scanner's on/off switch is in the "off" position, so the scanner must be switched on before operation.

3. Place the MS860 scanner on the cradle - the cradle's Charging Status LED will now glow red while charging. After 4½ to 5 hours the status LED color will change to green, meaning that the MS860 has been fully charged and is ready to use.

4. Two different methods are provided to setup the MS860 WiFi's TCP/IP network settings - one uses Scanner Configuration Manager (SCM) and one uses manually scanned-in barcodes. Select only one method. SCM is the simplest.

    a. Install Scanner Configuration Manager from the User Guide CD. Once the installation is complete, the SCM icon will appear on your desktop. Open SCM and click "Tools" / "WiFi-Setup". Follow the wizard, and after filling in all the network configuration info that you've obtained from your Network Administrator, you will be able to print out a barcode setup sheet by clicking the SCM "Print" icon. Use your MS860 to scan the printed barcode sheet to configure your scanner.

    b. The other method is to use your MS860 to manually scan in bar codes found on page 70 and the ASCII Chart on pages 72 to 75. This technique is more difficult and time-consuming than SCM, but can give the user full hands-on control over the MS860's IP settings. This method is not appropriate for the purposes of this Quick Start, but the user should be aware of it if SCM proves too limiting. The Network Setting with Bar Codes section begins on page 16.

5. Install the VCOM utility from the User Guide CD to your PC's desktop. After installation is complete, the VCOM icon will appear on the desktop and task bar. Double click one of the VCOM icons and the Virtual Com utility screen will appear.
   Press the "CONFIG" button. Enter an IP address and (virtual) com port to associate with each other. Once these values are set click OK, then press the Start ("Star") button to begin communication.

INTRODUCTION

IMPORTANT NOTES

- "ACK" helps avoid data loss during an Access Point (AP) power disconnection. To turn "ACK" on, follow the steps below:
  Print out the RS232 Settings on page 54.
  Scan:
  Enter Group 4
  C5
  1
  Exit

  After "ACK" is turned on, the scan data transmission rate might be a little slower, depending on your wireless network condition.

  If "ACK" is turned off, the scan data transmission rate will be normal, but because the scanner's read and transmit functions are separate, by the time the scanner discovers that it's become disconnected from the AP, as many as 8 scanned data records may not have been sent to the network, even though the scanner gives a "good read" signal after each scan.

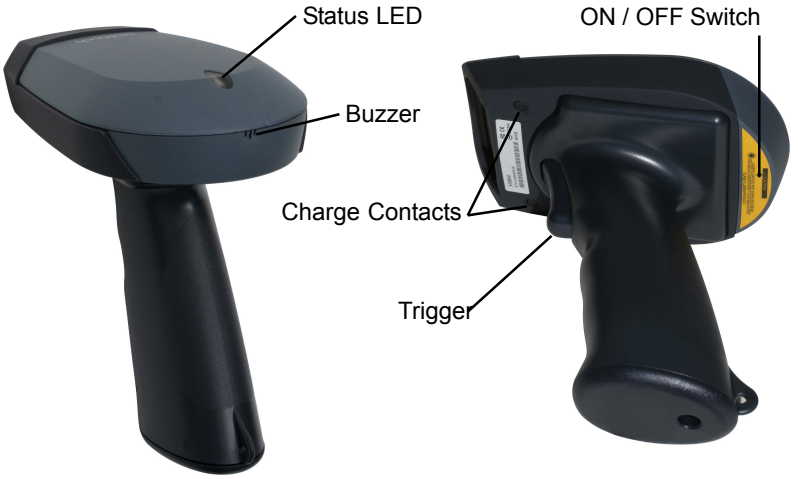
- Some APs may not be compatible with MS860 reconnection while out of range. In this case the MS860 will need to be powered off and on again, and also VCOM communication will need to be restarted.

- The VCOM Utility supports Windows 2000 and XP.
  Unfortunately, Windows 98 and NT are not supported.

- If using bar codes to configure your network (TCP/IP) settings, before you start scanning, power off the scanner, and then scan the "Enter Group 10" bar code on page 70 within 5 seconds after turning the scanner power back on.

INTRODUCTION

SCANNER PARTS:



Scanner LED

The MS860 has one LED indicator located on the head of the scanner which indicates the operating status of the scanner.

Red LED is ON
When the scanner attempts to read a bar code, the LED will glow red.

Single Green LED Flash
When the scanner successfully reads a bar code the scanner LED flashes green once, and you will hear a single beep.

Flashing Green LED
When the scanner reads a 'start configuration' bar code ("Enter Group 5", for instance) and enters configuration mode, the scanner will emit one high-low-high tone beep and the scanner's LED will flash green.
Upon exiting configuration mode, the scanner will emit one high tone beep, and the scanner's LED will stop flashing.

Green LED remains ON
- If scans are attempted out of range, communication will be broken, the scanner LED will remain green, and you will hear continuous Hi-Low beeps from the scanner when attempting to scan a bar code.
- The first time when you establish the communication, the LED will remain green before VCOM communication is established.

Red LED Flash
The scanner LED flashing red indicates the scanner has low power and you will need to charge the scanner immediately.

Buzzer

The MS860 provides audible feedback while it's in operation. These sounds indicate the operating status of the scanner.

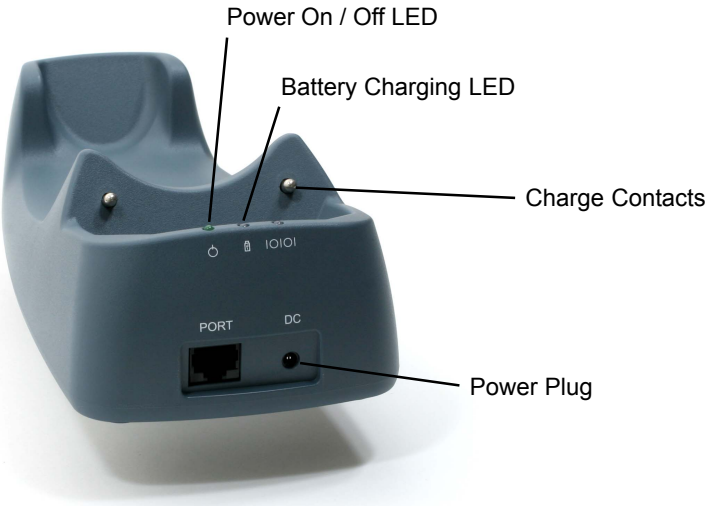
One High Tone Beep
The scanner will beep once after successfully reading a bar code.

One High-Low-High Beep
After scanning a 'begin configuration' bar code ("Enter Group 5", for instance), the scanner LED will flash green while the scanner simultaneously gives one high-low-high tone beep. Upon exiting configuration mode by scanning an "Exit" bar code, the scanner will give one high tone beep, and the scanner LED will stop flashing.

Continuous High-Low Beeps
If scans are attempted out of range, communication will be broken. The scanner LED will remain red and you will hear a continuous high-low beep from the scanner when you scan bar codes.
If the Access Point is powered off, this means the communication between the scanner and the Access Point is lost. You will also hear a continuous high-low beep from the scanner when you scan bar codes.

INTRODUCTION

CRADLE PARTS:



Cradle LEDs

The MS860 charging cradle has two LED indicators (power on/off status and battery charging status).

Power ON/OFF Status LED glows Green
When the power adapter plug is connected into the power jack on the cradle, and the power adapter is connected into an AC outlet, the cradle will beep, and the LED on the top of the cradle will glow green.

Battery Charging Status LED glows Red
The red glowing LED indicates the scanner battery is charging.

Battery Charging Status LED glows Green
The LED color changes to green when scanner battery charging is complete.

Please Note:
The MS086 Cradle has an interface port (to the left of the power plug) and a communication LED next to the two other LEDs. **These components are inactive** due to the wireless nature of the MS860 WiFi.

INTRODUCTION

CHARGING THE SCANNER:

Prior to performing any operation with the scanner, make sure it has been fully charged.

How to determine if the scanner needs recharging:

1. During operation, a flashing red scanner LED indicates the scanner has low power.
2. When the trigger is pressed and a scan laser line is not visible (**do NOT look directly into the scanner**), the scanner has no power. Make sure the scanner is not merely switched off.
   To charge the scanner, place the unit into the cradle. The battery status LED on the cradle will glow red, indicating the charging process has begun.

To Charge the MS860:

Simply place the MS860 into the MS086 Charging Cradle. Make sure the MS086 Cradle is plugged into an available electrical outlet via its Power Supply.

A complete charging process takes about 4 to 5 hours, during which the cradle's battery charging LED will glow red. After charging is complete the battery charging LED will remain a steady green. When charging the scanner for the first time, make sure the scanner remains on the cradle until after the battery charging LED changes from red to green.

Manufacturer's Suggestion:

If the scanner is not to be used for a long period of time, it is recommended that you turn off the battery power of the scanner. Use an unfolded paper clip to push down the internal power on/off switch, located inside the round hole on the yellow laser warning label of the scanner (see page 4). You will feel a 'click' when the internal switch is moved up to the "OFF" position or when the internal switch is moved down to the "ON" position.

To insure that the scanner has been switched off, press the scanner's trigger and make sure that the scanner's LED does not glow red.

NETWORK SETTINGS

INTRODUCTION

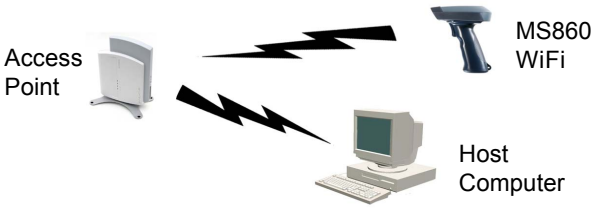
The MS860 WiFi is designed to connect to your computer(s) via the existing wireless network through one of its Access Points (APs), thereby eliminating the dedicated wireless receiving unit required by other types of wireless scanners.

Integrating the MS860 into the wireless network is the same as integrating any other piece of wireless hardware, requiring that you give it its own unique IP address, which can be obtained from your network administrator. The MS860 WiFi's default settings and explanations are shown below and described on the following pages.

Item	Default Setting
IP Address	192.168.1.250
IP Subnet Mask	255.255.255.0
Gateway IP Address	192.168.1.254
SSID	wlandemo
RF Channel	6
WEP	Disabled
Authentication Type	Auto

Note: The default settings must be changed to allow the MS860 and the AP start communicating, and default settings are provided merely as a starting point.

How the MS860 WiFi actually works:



Scanners normally communicate directly with host computers via keyboard or RS232 interface. The MS860 WiFi instead communicates over your wireless network with the nearest Access Point (AP), which then communicates with the host computer.
The host computer uses the VCOM utility to convert the WiFi signal to a Virtual Com Port (RS232) signal, which the host computer recognizes as one of the standard scanner interfaces.

NETWORK SETTINGS

So, two things must be configured: the MS860's Wireless Network settings, and the host computer's Virtual Com Port settings.
Consult your network administrator for the appropriate network wireless settings for your MS860 which must be manually configured via Scanner Configuration Manager or bar codes (see below and pages 12 to 19).

VCOM should automatically create a "virtual com port" for the Access Point to communicate data through. If this doesn't happen automatically, then refer to the Troubleshooting section (page 78).

VCOM

The VCOM utility's function is to convert incoming wireless data into Virtual Com Port data that your computer expects from a scanning device.
Unlike SCM or Bar Code Scanning (below) VCOM cannot modify the MS860's configuration. VCOM simply pairs the MS860's existing IP address, configured via SCM or bar code scanning (see below) with it's host computer(s) virtual com port.
Detailed instructions for VCOM start on page 20.

Modifying the WiFi settings:

If the MS860's settings need to be manually modified, this can be accomplished via the two different methods below, each described in full starting on page 12.

SCM

Scanner Configuration Manager (SCM) is a proven and powerful utility for scanner configuration. Easy to use, it is probably the most straightforward method of modifying your MS860's wireless settings.
Because of the wireless communication between the MS860 and the host computer, SCM settings cannot be directly downloaded to the MS860. Instead, SCM provides for printing a series of bar codes derived from SCM's configuration, and these bar codes are then scanned by the MS860.
Detailed instructions for SCM start on page 12.

Bar Codes

Direct bar code scanning is the simplest, most direct, but most tedious method of configuring the MS860 scanner. Once mastered, however, it allows the user full "hands-on" control over the MS860's wireless settings.
Detailed instructions for bar code scanning start on page 16.

Glossary

IP Address

IP Address (short for Internet Protocol) is simply four numbers (like 192.168.1.250) separated by periods that is used to identify a particular device within a network, just as an employee number is used to identify an individual person within a company.

The IP Address can either be automatically assigned by the wireless network or manually assigned by the user. The automatically assigned IP Address is available via your AP software, or you can assign your own IP Address (pages 12 to 19) and see if it's accepted by the network.

IP Subnet Mask

IP Subnet Mask is like the IP Address for the entire network. Every device within a network shares the same IP Subnet Mask. The IP Subnet Mask number is available via your AP software.

Gateway IP Address

The Gateway IP Address is only necessary if your network has outside access, as in a WAN (Wide Area Network). Because of the security issues involved in outside access, the Gateway IP Address is only available from your Network Administrator or Service Provider.

SSID

SSID (Service Set ID) is the name of the wireless Access Point you choose for your MS860 to communicate with. Available via your AP software.

RF Channel

There are 11 potential RF (Radio Frequency) Channels, numbered 1 through 11, to communicate over, and your MS860 and the nearest Access Point will use one of them. Because the MS860 and the AP will sort this out for themselves, it is not necessary for the user to specify a channel, however, a default RF Channel is provided by the MS860 as a starting point.

Glossary, continued

WEP

WEP (Wireless Encryption Protocol) is a security key for communicating with an access point. If the correct key is not presented, communication is denied. Because WEP is used for security reasons, it must be obtained from your Network Administrator.

Authentification Type

If WEP (see above) is used, then the security key can be presented to the AP in three different ways:

- **Disabled** - means communication with the AP is not possible if WEP is on because the security key will not be presented.
- **Auto** - means the MS860 will automatically present the security key when requested by the Access Point.
- **On** - means that the security key is always presented by the MS860, whether it is requested or not.

You might want to note the following information for future reference. This information is not strictly necessary, but might be useful in order to maintain order over several MS860 units.

Alias

Alias is merely a name for the scanner that would be more easily recognizable than an IP Address. For instance: “Fred’s MS860”, “S103”, or “Warehouse-23”.

Contact

Contact is the name of the IT person or Network Administrator that you would go to in case of trouble.

Location

Location is the usual location of the scanner, be it the “Warehouse”, “Virginia’s Office”, or wherever.

SNMP Community

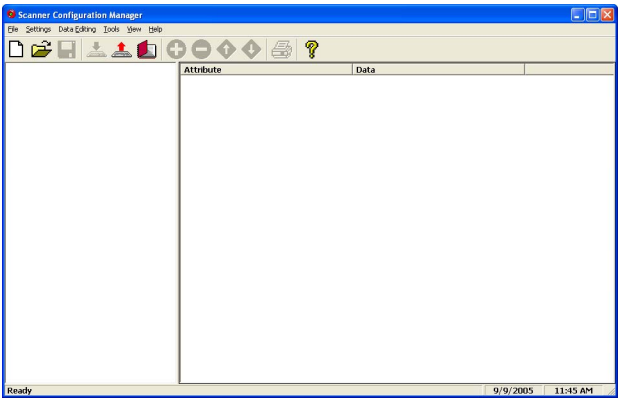
SNMP (Simple Network Management Protocol) is a software tool to manage wireless networks. If your Network Administrator is using SNMP, then they will be able to give you your SNMP Community name.

NETWORK SETTINGS

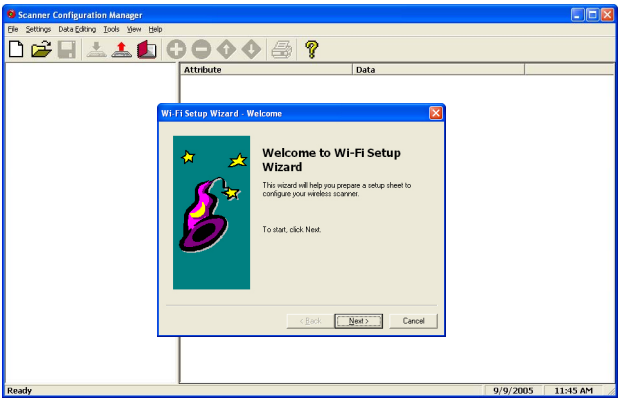
There are two methods to configure your scanner to its IP settings (obtained from your Network Administrator) - via Scanner Configuration Manager (SCM) and via manual bar code scanning. SCM has the advantage in that it's quick and easy, and works for most situations. Direct bar code scanning (starting on page 16) offers full "hands on" control over your MS860's IP settings, but can be tedious.

Using SCM To Set Scanner Network

Step 1: Install Scanner Configuration Manager (SCM) from the User Guide CD and double click the SCM icon on the desktop.



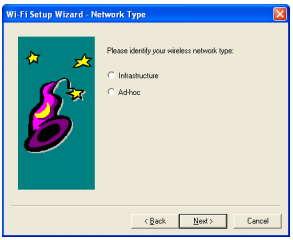
Step 2: Click "Tools" / "Wi-Fi Setup", and the "Welcome to WiFi Setup Wizard" screen appears.



Using SCM To Set Scanner Network, continued

Step 3: Fill in the SSID name of the Access Point (AP). Click “Next”.

Step 4: Select wireless network type.



Step 5: Select “Yes” for DHCP on, “No” for DHCP off.

Step 6: If DHCP “Off” is selected, fill in the IP Address, Subnet Mask, and Gateway. Click “Next”.

Step 7: Select whether your wireless network is using WEP encryption for data security. Click “Next”.

Using SCM To Set Scanner Network, continued

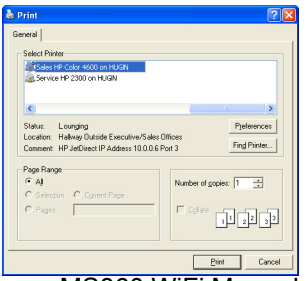
Step 8: If “Yes” was selected in Step 7, fill in the WEP parameters and type a passwork in the Key 1 field.
Click “Next”.

Step 9: Select “Yes” or “No” for Power Saving Mode.

Step 10: Verify the information is correct. Click “Back” to modify the configuration if necessary.
Click “Next” when finished.

Step 11: Setup is complete.
Clicking “Finish” will pop up a printer selection box.

Step 12: Select an appropriate printer to produce a setup sheet containing bar codes produced from the Setup Wizard info. Scan the barcodes on the setup sheet sequentially (top to bottom) with your MS860 scanner to configure the scanner’s WiFi settings.
Save this sheet for future reference.



Using SCM To Set Scanner Network, continued

IMPORTANT:

Once you have completed the network configuration for the scanner, VCOM will be required to configure the virtual com port, which means the VCOM utility must run in the background. This is detailed on pages 20 to 23.

Some Access Points may not be able to re-connect to the MS860 after it's been out of range. In this case the scanner will need to be powered off and powered on again, and the VCOM communication must be re-started.

VCOM Utility supports Windows2000 and XP.
Unfortunately, Windows98 and NT are not currently supported.

NETWORK SETTINGS

Using Bar Codes To Set Scanner Network

The WLAN default settings are shown below.

WLAN Default Settings:

Item	Default Setting
IP Address	192.168.1.250
IP Subnet Mask	255.255.255.0
Gateway IP Address	192.168.1.254
SSID	Wlandemo
RF Channel	6
WEP	Disabled
Authentication Type	Auto

Use the TCP/IP barcode chart on page 70 and the ASCII Chart on pages 72 to 75 to configure your scanner to your own network settings, as the example below:

SSID: MySSID
IP: 192.168.1.100
Mask: 255.255.255.0

Please follow the steps below:

Scan the **Enter Group 10** bar code
Then scan: **SSID Space M y S S I D CR**
Then scan: **IP Space 1 9 2 . 1 6 8 . 1 . 1 0 0 CR**
Then scan: **MASK Space 2 5 5 . 2 5 5 . 2 5 5 . 0 CR**
Lastly, scan: **SE CR EE**

Other than that last line, it's pretty self-explanatory. Several parameters can be modified together in one session, as above. Or, only one parameter can be modified per session, as below. The last commands - **SE**, **CR**, **EE** - are simply a sequence to end the programming mode, and along with **Enter Group 10** must be included whenever programming network settings via bar code.

To turn DHCP on, scan the following sequence:

Scan the **Enter Group 10** bar code
Then scan: **DHCP Space 1 CR**
Lastly, scan: **SE CR EE**

Using Bar Codes To Set Scanner Network, cont.

General Command List:

MODE	<B(SS) / A(d-hoc) / P(seudo / BSS)>, Set network mode
SSID	<SSID>, Set SSID
CHAN	<1 - 14>, Set channel
PSMODE	<1 / 0>, PS mode ON/OFF
WEP	<1 / 0>, WEP ON/OFF
DEFAULT	Restore configuration to factory default
SAVE	Save configuration to flash
EXIT	Save configuration to flash
SE	Save and exit configuration
BAUD	<0 / 1 / 2 / 3>, Set RS232 Baudrate
AA	<O(pen) / S(hare) / A(uto)>, Set Authentication Algorithm
WK	<1 - 4> <Key in Hex>
WKID	<1 - 4>, Set WEP Key ID
IP	<IP address>, Set IP
MASK	<IP address>, Set IP Mask
GW	<IP address>, Set Gateway IP
DHCP	<1 / 0>, Set DHCP client ON or OFF

1. IP
   Set IP address
   Example: **IP Space 192.168.1.250 CR**

2. GW
   Set gateway IP address
   Example: **IP Space 192.168.1.1 CR**

3. MASK
   Set network MASK IP address
   Example: **MASK Space 255.255.255.0 CR**

4. DHCP
   Turn DHCP client on or off
   Example: **DHCP Space 1 CR** (turn on DHCP client)
   Example: **DHCP Space 0 CR** (turn off DHCP client)

5. SSID
   Set SSID
   Example: **SSID Space wlandemo CR** (set SSID to “wlandemo”)

Using Bar Codes To Set Scanner Network, cont.

6. MODE

Set mode to infrastructure or ad-hoc
Example: **MODE Space B CR** (set mode to infrastructure)
Example: **MODE Space A CR** (set mode to ad-hoc)

7. WEP

Turn WEP on or off
Example: **WEP Space 1 CR** (turn on WEP)
Example: **WEP Space 0 CR** (turn off WEP)

8. WKID

Set which WEP key that you want to use, of which you have four.
Example: **WKID Space 1 CR** (use WEP key number 1)
Example: **WKID Space 2 CR** (use WEP key number 2)
Example: **WKID**, **Space 3 CR** (use WEP key number 3)
Example: **WKID Space 4 CR** (use WEP key number 4)

9. WK

Set WEP key association with a WEP key number.
Following examples set 64 bit encryption keys:
Example: **WK Space 1 2002031105 CR**
(WEP key number 1 - 2002031105)
Example: **WK Space 2 2002031106 CR**
(WEP key number 2 - 2002031106)
Example: **WK Space 3 2002031107 CR**
(WEP key number 3 2002031107)
Example: **WK Space 4 2002031108 CR**
(WEP key number 4 2002031108)

10. AA

Set Authentication Algorithm to OPEN, SHARE, or AUTO
Example: **AA Space O CR**
(set authentication algorithm to OPEN)
Example: **AA Space S CR**
(set authentication algorithm to SHARE)
Example: **AA Space A CR**
(set authentication algorithm to AUTO)

11. PSMODE

Turn power saving mode on or off
Example: **PSMODE Space 1 CR** (turn power saving mode on)
Example: **PSMODE Space 0 CR** (turn power saving mode off)

Using Bar Codes To Set Scanner Network, cont.

12. CHAN

Set channel 1~14 when under ad-hoc mode
Example: **CHAN Space 1 CR** (set to channel 1)
Example: **CHAN Space 2 CR** (set to channel 2)
Example: **CHAN Space 14 CR** (set to channel 14)

13. SAVE

Save the configuration settings
Example: **SAVE CR**

14. SE

Save the configuration settings and reboot
Example: **SE CR**

15. DEFAULT

Restore configuration settings to factory default, and automatically reboot the module
Example: **DEFAULT CR**

16. EXIT

Reboot the module without saving any configuration changes
Example: **EXIT CR**

IMPORTANT:

Once you have completed the network configuration for the scanner, VCOM will be required to configure the virtual com port, which means the VCOM utility must run in the background. This is detailed on pages 20 to 23.

Some Access Points may not be able to re-connect the MS860 and its cradle after it's been out of range. In this case the scanner will need to be powered off and powered on again, and the VCOM communication must be re-started.

VCOM Utility supports Windows2000 and XP.
Unfortunately, Windows98 and NT are not currently supported.

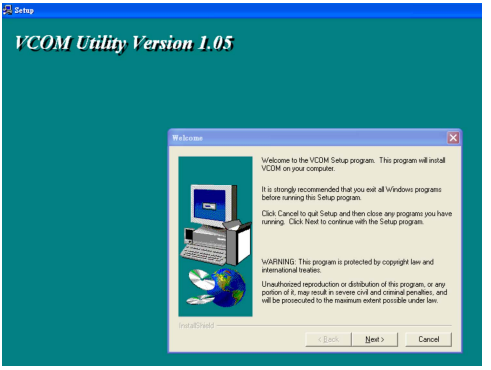
Before entering into Command Mode, power off the scanner and then scan "Enter Group 10" on page 70 within 5 seconds after powering the scanner back on.

Install Virtual COM

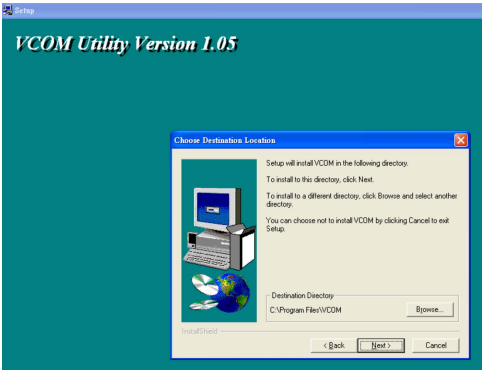
After you have configured your MS860's IP settings, follow the steps below and on the next page to install and start VCOM. VCOM establishes a "virtual com port" on your host computer that coordinates with your MS860's IP address.

INSTALLING VIRTUAL COM

Step 1: Install VCOM utility from the User Guide CD, or use your CD browser and double-click Setup.exe to install VCOM.

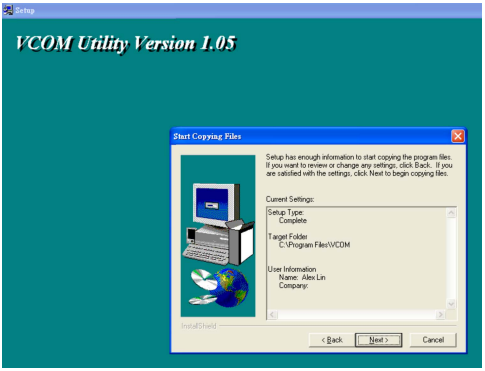


Step 2: Click "Next", and then select the directory into which you would like VCOM installed. Default is C:\Program Files\VCOM

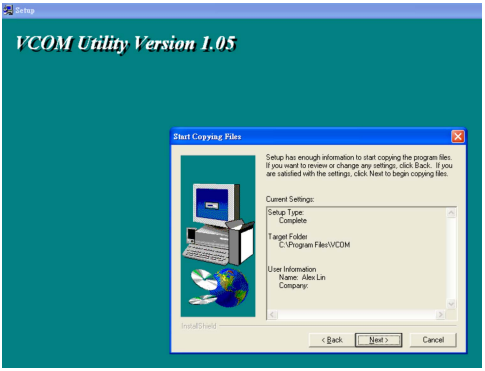


Install Virtual COM, continued

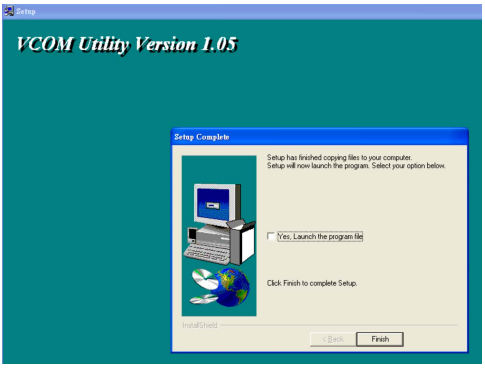
Step 3: Click “Next” and select the program folder you want added to the Start menu.



Step 4: Click “Next” and confirm information. The installation procedure will start automatically.

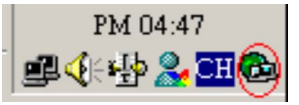


Step 5: Click “Finish” to complete the installation process.

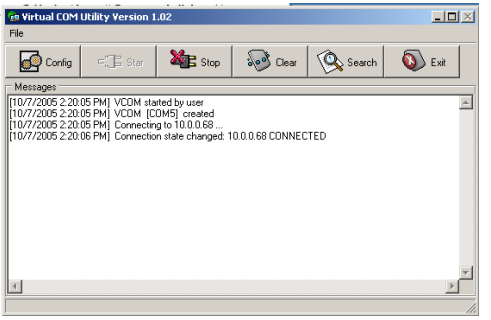


Start Virtual COM

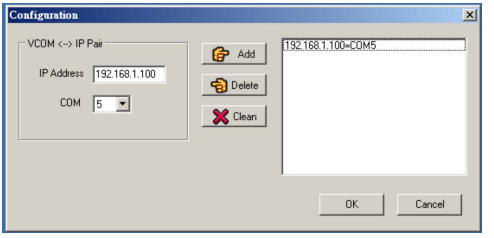
Step 1: Start the Virtual Com utility from the Icon Tray.



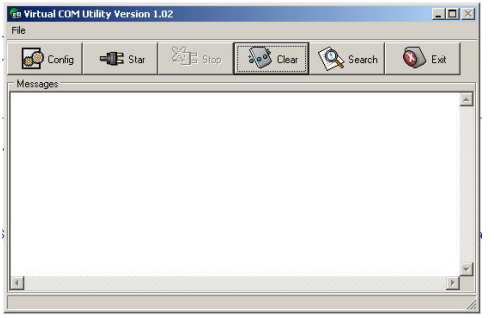
Click the “Config” button.



Step 2: Set the virtual com port associated with the corresponding IP address to your wireless module.
Click the “Add” button to add a VCOM = IP pair to the list on the right.
Click the “OK” button.

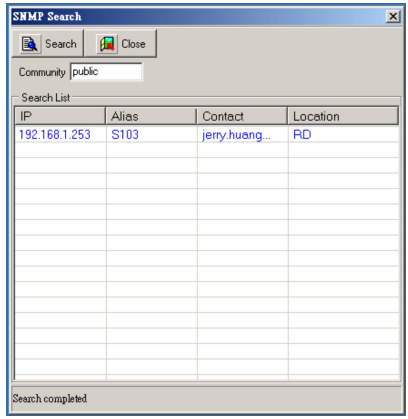


Step 3: Click the Start (“Star”) button to start the virtual com communication with your wireless module.



Start Virtual COM, continued

Step 4: Click the “Search” button. The found wireless device will be added to the IP List panel.



IMPORTANT:

Once you have completed the network configuration for the scanner (pages 12 to 19), VCOM will be required to configure the virtual com port, which means the VCOM utility must run in the background.

Some Access Points may not be able to re-connect to the MS860 after it’s been out of range. In this case the scanner will need to be powered off and power on again, and the VCOM communication must be re-started.

VCOM Utility supports Windows2000 and XP.
Unfortunately, Windows98 and NT are not currently supported.

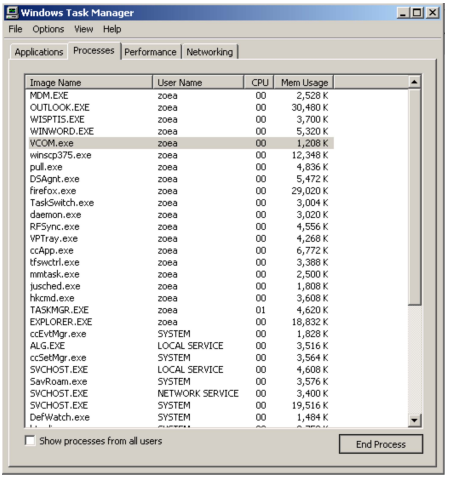
NETWORK SETTINGS

Switching Host Computers

In order to change the PC to which the MS860 is connected , please follow the steps below:

1. On the original PC, press “Ctrl – Alt – Delete” to access the “Task Manager.”

2. Under the “Processes” tab select “VCOM.exe” and press “End Process” at the bottom of the window.



3. You will need to repeat the above steps each time the original PC is restarted, unless you remove the IP address of your MS860 from the original PC’s VCOM configuration (see next page).

4. Reset the MS860 by using a paper clip to turn the device off, then back on (see page 2). The button to do so is located near the back of the scanner underneath the yellow label (see page 4).

5. You can now start a new VCOM session on a second PC without interference.

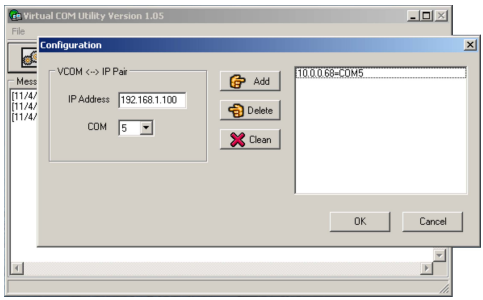
Switching Host Computers, continued

Removing your MS860 WiFi's IP address from VCOM

1. Double click the VCOM icon in your computer's system tray.

2. Click configure in the resulting window to get the Configuration Settings

3. Select the IP address that matches your scanner and then "Delete"



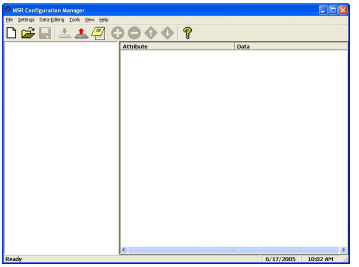
SCANNER CONFIGURATION MANAGER

Scanner Configuration Manager software is the simplest and most foolproof way to configure your scanner settings.

Start It Up

After loading and starting SCMSetup.exe, the icon to the right will appear on your desktop:

Click on the SCM icon and the screen to the right appears:



As you can see, you are presented with a blank work area and a row of icons across the top. Following is an explanation of each of the icons:

Above, from left to right, are the standard Windows icons for “New Document”, “Open File”, and “Save File”.
Reader Configuration Manager saves configuration settings in .cfg files, so you can have access to a variety of different reader configurations that you’ve set up.
To reset the reader back to **factory default**, click on the “New Document” icon, click the “Print” icon (see next page), and scan the resulting bar codes with your MS860.

The above icon furthest to the right opens a Test Pad (Notepad) where you can view the actual reader output. The other two icons are **non-functional** in the MS860 WiFi because of its wireless nature, but they represent download settings to scanner and upload settings to computer for other scanner models. Downloading to the MS860 can otherwise be accomplished by clicking the Print icon (see next page) and scanning the resulting configuration bar codes.

The above four icons are used in the “Data Editing” feature of SCM.
From left to right they are the “Add a Formula” icon, the “Remove a Formula” icon, and the right-hand two are the “Move Formula” icons that move selected formulas up or down in relation to each other.
For information on data editing, see page 46.

SCANNER CONFIGURATION MANAGER

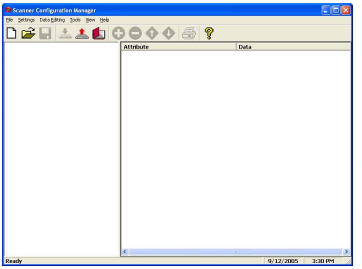
Click this icon to print a series of bar codes that you can scan in order to configure your scanner to the current SCM settings.
If you can produce PDF files via Acrobat, your SCM configuration can be sent via e-mail to remote locations where they can be scanned from a printed PDF file (without having to run SCM).

Help is just a click away.

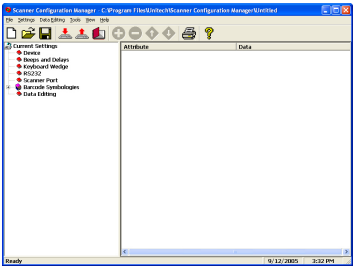
Try It!

Click the SCM Icon, if you haven't already done so.

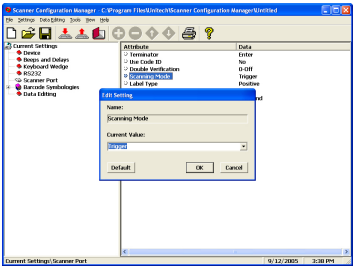
Two work areas appear with a row of icons along the top. Click the icon furthest to the left (new file).



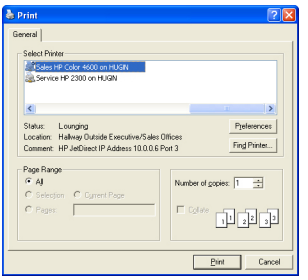
The screen to the right appears. Click on any of the selections under "Current Settings" to view its "Attributes".



Double-click on any of the "Attributes" to edit that attribute. This is done via a drop-down menu.



After selecting your configuration settings, click on the Print icon (second icon from the right) to print a series of bar codes that you can scan in sequentially to program your scanner.



That's all there is to it.

Settings

Following is a detailed discussion of each of the settings, their attributes, and the effects each of these will have on data output from your MS860.

Beeps and Delays

The three attributes for “Beeps and Delays” are: “Beep Tone”, “Interblock Delay”, and “Intercharacter Delay”.

Beep Tone

Select a value from “None” to “High” to set the loudness of the tone, or select “Low to High” or “High to Low” to set the characteristic of the tone.
Default is “Medium”.

Interblock Delay

Interblock delay is the time duration that can be inserted between one block of data and another. This function is analogous to the time duration required between dialing a phone number’s country code and the phone number itself. The interblock delay can be inserted via SCM’s Data Editing function (see page 47).
Default is “10 ms”.

Intercharacter Delay

Intercharacter delay is the time duration between data characters sent from the scanner to the computer. Intercharacter delay is usually inserted when the data flow must be slowed down to accommodate a slower computer.
Default is “1 ms”.

Keyboard Wedge

Your Unitech reader contains a built-in data decoder that translates raw bar code input into Keyboard Scan Code, or ASCII Code in the case of RS232 interface readers, with the result that scanned data exits the reader as if you had typed the text.
The four keyboard wedge parameters are listed on the following page.

Keyboard Wedge, continued

Function Code

Function Code determines how function code characters from the MS860 are output.

- If **Yes** is selected, then scanned function codes will output as if their corresponding function keys were pressed. For instance - scanning an F1 label will display a “Help” pop-up box, F3 will display a “Find” pop-up box, etc.
- If No is selected, the scanned function codes will output special character strings defined by Unitech for non-print character output.

Default is “Yes”.

Caps-Lock

The Caps-Lock function determines how the Caps Lock key controls the case of alphabetical characters. The three options below are available:

- **Auto Trace** automatically determines the Caps Lock key status and informs the decoder accordingly.
- **Lower Case** manually coordinates the physical state of the Caps Lock key with the Caps Lock state of the decoder. For example, if the Caps Lock LED is not lit, then “Lower Case” should be selected.
- **Upper Case** is the same as Lower Case (above) except that it applies to the upper case state. If the Caps Lock LED is lit, then “Upper Case” should be selected.

Default is “Auto Trace”.

Language

Your MS860 can output characters using eleven different language sets, including:

Danish	French	Norwegian	Swiss
U.S. English	German	Swedish	
U.K. English	Italian	Spanish	Alt Key Mode

Default is “U.S.”

Use Numeric Keypad

The ASCII Code for numeric input from the keypad part of the keyboard is different from that of the upper row of the keyboard proper. Some accounting programs specifically require keypad input, and for that reason, the MS860’s decoder can output read data as either keypad or keyboard (upper row) output.

Default is “No”

RS232

The RS232 input characteristics of the MS860 can be modified according to the following nine parameters:

Baud Rate

Baud Rate (bits per second) refers to the speed of the data from the MS860. Normally, the baud rate of the host RS232 port should match that of the input device.
Default is “9600 Baud”.

Parity

Parity is an archaic technique used to detect data transmission errors by adding an extra bit to each character. This scheme has been supplanted in modern communication devices by “Error Correction”.
Default (and the current universal standard) is “No Parity”.

Data Bit

Data bit refers to the number of bits per byte that are dedicated to data (minus start/stop bits).
Default (and the current universal standard) is “8 Data Bits”.

Handshaking

Handshaking is the mechanism that controls the speed of data flow so that a slower receiver of data is not overwhelmed by a faster sender of data.
Selections are:

- Ignore
- RTS (request to send)
- Enabled at Power Up
- RTS Enabled in Communication

Default is “Ignore”.

ACK/NAK

Data characters that are sent from the receiver to the sender in order to “acknowlege” or “not acknowlege” the receipt of the data without error. Rarely used these days.
Default (and the current universal standard) is “No”.

RS232, continued

BCC Character

Block Check Character. An error checking character added for data integrity.
Default is “No”.

Time Out

The ACK/NAK function (see previous page) can be given a limited time (from 1 to 10 seconds) or an unlimited time to operate.
Default is “1 Second”.

Data Direction

Three options are available for data direction:

Send to Host
Send to Host & Terminal
Send to Terminal

Default is “Send to Host”.

Receive Terminator

A user-definable Receive Terminator can be inserted at the end of input data.
Pre-defined receive terminators include:

- <t> Tab
- <r> Carriage Return
- <n> Line Feed
- <d> Any Digit (data editing)
- <a> Any Letter (data editing)
- <*> Interblock Delay (data editing)
- <“> (quotation marks)
- <dd> Character in hexadeximal notation
- <<> < (less than)
- <>> > (greater than)

The above special characters must be bracketed by < > symbols as shown.
Function codes (F keys, cursor up, Enter, etc.) can also be inserted via hexadecimal code (accessable in a linked menu) and must include surrounding brackets (<>).
Letters and numbers should be entered directly by keyboard input without surrounding brackets (<>).
Default is “None”.

Scanner Port

Scanner Port parameters refer to scanner functions (such as Double Verification, Scanning Mode, etc.) and some simple data editing features. For more powerful data editing, refer to the Data Editing section starting on page 46.

Terminator

The Terminator is a command that follows the input of bar code data. Four different terminators can be selected here:

"Enter"
"Return (on numeric keypad)"
"Field Exit or Right Control"
"None"

Alternative terminators (such as Tab) can be configured via the Postamble function (see page 36).
Default is "Enter".

Scanner Port, continued

Use Code ID

The Code ID function can be used to identify the type of bar code that is being scanned by inserting an identifying letter (refer to the chart at right) at the beginning of the bar code input. For example: if the Code ID function is on, and a bar code string of “54321” was output as “M54321”, the bar code would thus be identified as type Code 39.
Default is “No”.

Codabar	N
Code 11 / Telpen	J
Code 32	T
Code 39	M
Code 93	L
Code 128	K
Delta Code	D
EAN-8	FF
EAN-13	F
I 2 of 5	I
Label Code IV or V	B
MSI	O
Plessey Code	P
S 2 of 5	H
Toshiba Code	C
UCC / EAN 128	]C1
UPC-A	A
UPC-E	E

Double Verification

Double Verification enables the MS860 to verify the accuracy of the output by outputting only after a specified number (from 0 to 7) of identical results. For instance, if 3 is selected, the MS860 will not output the bar code data until it’s obtained 4 identical scan results (the original scan plus 3 verifying scans). Because the MS860 normally scans at a rate of 33 scans per second, this process should take less than a fraction of a second, even for higher values, for good quality bar code labels.
Default is “0-Off”.

Scanner Port, continued

Scanning Mode

Scanning mode refers to the method by which scans are initiated, whether by pressing a trigger, or simply presenting a bar code to a continuously reading scanner. Scanning can occur in seven different ways:

- ***Trigger*** scan causes the scanner light to remain on as long as the trigger is depressed, whether the bar code is recognized or not.
- ***Flashing*** causes the scanner to flash continuously after the trigger is briefly pressed until it detects a bar code and outputs the data. The scanner light will then remain on in anticipation of another bar code for approximately 12 seconds, after which it will begin flashing again. A second trigger press stops the scanning.
- ***Multiscan*** allows multiple scans while holding down the trigger.
- ***One Press One Scan*** causes the scannerlight to remain on after the trigger is briefly depressed until a bar code is recognized and output.
- ***Test*** is similar to the Flash setting except that the scanner outputs bar code data in a rapid-fire manner as long as a bar code is presented to the scanner. Normally, the MS860 will not output the same bar code twice in a row (in order to prevent double-scans), but in test mode this feature is turned off.
- ***Old Laser Flash*** causes the scanner to flash continuously after the trigger is pressed and will scan each bar code only once per presentation. A second trigger press stops the scanning. This mode is to accommodate old style laser scanners which could be damaged by continuous scanning.
- ***Continuous*** causes the scanner light to remain on and scan bar codes as they are presented. Bar Codes can only be “double scanned” after a brief interval.

Default is “Trigger”.

Label Type

Toggle between reading only Positive and both Positive and Negative (with the black and white areas reversed) bar codes. Reading both positive and negative bar codes can be useful in the graphics industry when negative images must be proofed.
Default is “Positive”

Scanner Port, continued

Aim Function for Long Range Engine

The Aim function causes a laser scanner to output a “pin-point” aiming aid for a specified period of time (see below) to enable a user to more easily scan distant bar code labels.
Default is “No”.

Aiming Time for Long Range Engine

The Aiming Time function specifies the duration of the Aim Function (see above) The length of duration can be specified from 500ms to 2 seconds, in half-second increments.
Default is “1 second”.

Preamble

Insert a string of characters prior to the actual scanned data.
Pre-defined characters include:

- <t> Tab
- <r> Carriage Return
- <n> Line Feed
- <d> Any Digit (data editing)
- <a> Any Letter (data editing)
- <*> Interblock Delay (data editing)
- <“> (quotation marks)
- <dd> Character in hexadeximal notation
- <<> < (less than)
- <>> > (greater than)

The above special characters must be bracketed by < > symbols as shown.
Function codes (F keys, cursor up, Enter, etc.) can also be inserted via hexadecimal code (accessable in a linked menu) and must include surrounding brackets (<>).
Letters and numbers should be entered directly by keyboard input without surrounding brackets (<>).
Default is “None”.

Postamble

Identical to Preamble (above), but characters are inserted after scanned data. A common postamble would be to insert a “Tab” in lieu of an “Enter” terminator (see page 33).
Default is “None”.

Bar Code Symbologies

Modify the output characteristics of 16 of the most popular bar code symbologies in current use. Following are the bar code symbologies and their modifiable parameters.

Code 39

- ***Enabled*** toggles the ability for the scanner to read Code 39 on or off.
  Default is “Yes”.
- ***Code ID (Standard)*** is a user-definable identification letter for Standard Code 39, which is referred to in the “Use Code ID” function on page 32.
  Default is letter “M”.
- ***Code ID (Full ASCII)*** is the same as Code ID (Standard), above, except that the symbology is Full ASCII Code 39.
  Default is also letter “M”.
- ***Type*** toggles Code 39 between Standard and Full ASCII.
  Default is “Full ASCII”.
- ***Check Digit*** defines whether or not a check digit (to insure data accuracy) is calculated, and if so, whether it should be sent or not.
  Default is “Not Calculate”.
- ***Send Start/Stop*** toggles sending or not sending start/stop sentinels (* in the case of Code 39).
  Default is “No Send”.
- ***Minimum Length*** defines the minimum length the user will accept for a valid bar code.
  Default is “0”.
- ***Maximum Length*** defines the maximum length the user will accept for a valid bar code.
  Default is “48”.

Bar Code Symbologies, continued

Interleaved 2 of 5

- ***Enabled*** toggles the ability for the scanner to read I 2 of 5 on or off.
  Default is “Yes”.
- ***Code ID*** is a user-definable identification letter for I 2 of 5, which is referred to in the “Use Code ID” function on page 34.
  Default is letter “I”.
- ***Fix Length (by first 3 reads)*** fixes the length of acceptable subsequent bar code reads from the first three bar codes read. Useful as a data verification if all bar codes are of a consistent length.
  Default is “No”.
- ***Check Digit*** defines whether or not a check digit (to insure data accuracy) is calculated, and if so, whether it should be sent or not.
  Default is “Not Calculate”.
- ***Supress Digit*** suppresses the output of the first or last bar code digit.
  Default is “Not Suppressed”.
- ***Minimum Length*** defines the minimum length the user will accept for a valid bar code.
  Default is “10”.
- ***Maximum Length*** defines the maximum length the user will accept for a valid bar code.
  Default is “64”.

Bar Code Symbologies, continued

Standard 2 of 5 / Toshiba Code (China Postal Code)

- ***Enabled*** toggles the ability for the scanner to read Standard 2 of 5 / Toshiba Code on or off.
  Default is “No”.
- ***S25 Code ID*** is a user-definable identification letter for Standard 2 of 5, which is referred to in the “Use Code ID” function on page 34.
  Default is letter “H”.
- ***Toshiba Code ID*** is the same as Standard 2 of 5 Code ID (above) but instead applicable to Toshiba Code.
  Default is letter “C”.
- ***Fix Length (by first 3 reads)*** fixes the length of acceptable subsequent bar code reads from the first three bar codes read. Useful as a data verification if all bar codes are of a consistent length.
  Default is “No”.
- ***Check Digit*** defines whether or not a check digit (to insure data accuracy) is calculated, and if so, whether it should be sent or not.
  Default is “Not Calculate”.
- ***Minimum Length*** defines the minimum length the user will accept for a valid bar code.
  Default is “10”.
- ***Maximum Length*** defines the maximum length the user will accept for a valid bar code.
  Default is “64”.

Bar Code Symbologies, continued

Code 32

- ***Enabled*** toggles the ability for the scanner to read Code 32 on or off.
  Default is “No”.
- ***Code ID*** is a user-definable identification letter for Code 32, which is referred to in the “Use Code ID” function on page 34.
  Default is letter “T”.
- ***Send Leading Character*** toggles sending or not sending a leading (‘start bar code’) character.
  Default is “Send”.
- ***Send Tailing Character*** toggles sending or not sending a tailing (‘stop bar code’) character.
  Default is “Send”.

EAN 128

- ***Enabled*** toggles the ability for the scanner to read EAN 128 on or off.
  Default is “No”.
- ***Code ID*** is a user-definable identification letter for EAN 128, which is referred to in the “Use Code ID” function on page 34.
  Default is letter “None”.
- ***Enable Code ID*** determines whether or not to assign a Code ID.
  Default is “No”.
- ***Field Separator*** is a user-definable character to insert between fields.
  Default is “None”.

Code 128

- ***Enabled*** toggles the ability for the scanner to read Code 128 on or off.
  Default is “No”.
- ***Code ID*** is a user-definable identification letter for Code 128, which is referred to in the “Use Code ID” function on page 34.
  Default is letter “None”.
- ***Minimum Length*** defines the minimum length the user will accept for a valid bar code.
  Default is “1”.
- ***Maximum Length*** defines the maximum length the user will accept for a valid bar code.
  Default is “64”.

Bar Code Symbologies, continued

MSI / Plessey Code

- ***Enabled*** toggles the ability for the scanner to read MSI / Plessey Code on or off.
  Default is “Yes”.
- ***MSI Code ID*** is a user-definable identification letter for MSI Code, which is referred to in the “Use Code ID” function on page 34.
  Default is letter “O”.
- ***Plessey Code ID*** is the same as MSI Code ID (above) but instead applicable to Plessey Code.
  Default is letter “P”.
- ***Send Check Digit*** toggles whether or not to send a check digit.
  Default is “No Send”.
- ***Check Digit Formula*** defines the formula to calculate the check digit.
  Options are:
  Double Module 10
  Module 11 Plus 10
  Single Module 10
  Default is “Double Module 10”.
- ***Minimum Length*** defines the minimum length the user will accept for a valid bar code.
  Default is “10”.
- ***Maximum Length*** defines the maximum length the user will accept for a valid bar code.
  Default is “64”.

Code 93

- ***Enabled*** toggles the ability for the scanner to read Code 93 on or off.
  Default is “Yes”.
- ***Code ID*** is a user-definable identification letter for Code 93, which is referred to in the “Use Code ID” function on page 34.
  Default is letter “L”.
- ***Minimum Length*** defines the minimum length the user will accept for a valid bar code.
  Default is “1”.
- ***Maximum Length*** defines the maximum length the user will accept for a valid bar code.
  Default is “48”.

Bar Code Symbologies, continued

Codabar

- ***Enabled*** toggles the ability for the scanner to read Codabar on or off.
  Default is “Yes”.
- ***Code ID*** is a user-definable identification letter for Codabar, which is referred to in the “Use Code ID” function on page 32.
  Default is letter “N”.
- ***Send Start/Stop*** toggles sending or not sending start/stop sentinels.
  Default is “No Send”.
- ***Check Digit*** defines whether or not a check digit (to insure data accuracy) is calculated, and if so, whether it should be sent or not.
  Default is “Not Calculate”.
- ***CLSI Format*** deletes the start and stop sentinels, and outputs the data with spaces inserted after the 1st, 5th, and 10th characters.
  Default is “No”.
- ***Minimum Length*** defines the minimum length the user will accept for a valid bar code.
  Default is “3”.
- ***Maximum Length*** defines the maximum length the user will accept for a valid bar code.
  Default is “48”.

UPC-A

- ***Enabled*** toggles the ability for the scanner to read UPC-A on or off.
  Default is “Yes”.
- ***Code ID*** is a user-definable identification letter for UPC-A, which is referred to in the “Use Code ID” function on page 32.
  Default is letter “A”.
- ***Send Leading Digit*** toggles sending or not sending a leading (‘start bar code’) digit.
  Default is “Send”.
- ***Send Check Digit*** toggles sending or not sending a check digit.
  Default is “Send”.

Bar Code Symbologies, continued

UPC-E

- ***Enabled*** toggles the ability for the scanner to read UPC-E on or off.
  Default is “Yes”.
- ***Code ID*** is a user-definable identification letter for UPC-E, which is referred to in the “Use Code ID” function on page 32.
  Default is letter “E”.
- ***Send Leading Digit*** toggles sending or not sending a leading (‘start bar code’) digit.
  Default is “Send”.
- ***Send Check Digit*** toggles sending or not sending a check digit.
  Default is “Send”.
- ***Zero Expansion*** adds 0s to the bar code output to change the UPC-E output format (8 digits) to UPC-A format (12 digits).
  Default is “No”.
- ***Enable NSC=1*** allows the output of a UPC-E bar code containing a first digit (Number System Character) of “1”.
  Default is “No”.

EAN-13

- ***Enabled*** toggles the ability for the scanner to read EAN-13 on or off.
  Default is “Yes”.
- ***Code ID*** is a user-definable identification letter for EAN-13, which is referred to in the “Use Code ID” function on page 32.
  Default is letter “F”.
- ***Send Leading Digit*** toggles sending or not sending a leading (‘start bar code’) digit.
  Default is “Send”.
- ***Send Check Digit*** toggles sending or not sending a check digit.
  Default is “Send”.
- ***Bookland EAN*** toggles whether or not to send the EAN-13 bar code data in Bookland EAN (ISBN) format.
  Default is “No”.

Bar Code Symbologies, continued

EAN-8

- ***Enabled*** toggles the ability for the scanner to read EAN-8 on or off.
  Default is “Yes”.
- ***Code ID*** is a user-definable identification letter for EAN-8, which is referred to in the “Use Code ID” function on page 32.
  Default is letter “FF”.
- ***Send Leading Digit*** toggles sending or not sending a leading (‘start bar code’) digit.
  Default is “Send”.
- ***Send Check Digit*** toggles sending or not sending a check digit.
  Default is “Send”.

Code 11

- ***Enabled*** toggles the ability for the scanner to read Code 11 on or off.
  Default is “Yes”.
- ***Code ID*** is a user-definable identification letter for Code 11, which is referred to in the “Use Code ID” function on page 32.
  Default is letter “J”.
- ***Send Check Digit Number*** defines the check digit .
  Default is “Send”.
- ***Send Check Digit*** toggles sending or not sending a check digit.
  Default is “Send”.
- ***Minimum Length*** defines the minimum length the user will accept for a valid bar code.
  Default is “3”.
- ***Maximum Length*** defines the maximum length the user will accept for a valid bar code.
  Default is “48”.

Delta Code

- ***Enabled*** toggles the ability for the scanner to read Delta Code on or off.
  Default is “No”.
- ***Code ID*** is a user-definable identification letter for Delta Code, which is referred to in the “Use Code ID” function on page 32.
  Default is letter “D”.
- ***Calculate Check Digit*** toggles whether or not to calculate a check digit.
  Default is “Yes”.
- ***Send Check Digit*** toggles sending or not sending a check digit.
  Default is “Send”.

Bar Code Symbologies, continued

Supplement Code (for UPC-E, ISBN, EAN-13)

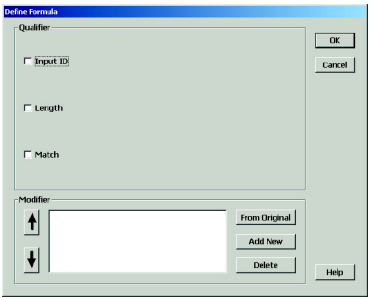
- ***Two Supplement Code*** toggles whether the two digit supplemental bar code is to be recognized.
  Default is “No”.
- ***Five Supplement Code*** toggles whether the five digit supplemental bar code is to be recognized.
  Default is “No”.
- ***Must Present*** toggles whether or not the supplemental bar code must be present in order to output data.
  Default is “Yes”.
- ***Insert Space Separator*** toggles whether or not to output a space betwen the main and supplemental bar codes.
  Default is “No”.

Label Code IV and V

- ***Enabled*** toggles the ability for the scanner to read Label Code IV and V on or off.
  Default is “No”.
- ***Code ID*** is a user-definable identification letter for Label Code IV and V, which is referred to in the “Use Code ID” function on page 32.
  Default is letter “B”.
- ***Send Check Digit*** toggles sending or not sending a check digit.
  Default is “Send”.

Data Editing

Data Editing is a powerful function that can give you tremendous control over how data is exported from the MS860.
After clicking on “Data Editing” the data editing icons become active.
Click on the icon with the blue circle and white plus sign.
The “Define Formula” pop-up box to the right appears, which is divided into two sections: “Qualifier” and “Modifier”.

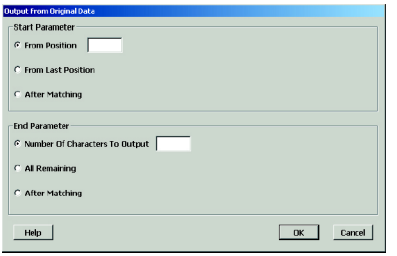


Qualifier

The Qualifier section defines the conditions that must be present for the scanned data to be modified, such as which symbology it must be (Codabar, Code 39, etc.), its specfic length, or what characters (defined by a match string) the scanned data must contain.
When the conditions of the Qualifier are met, the data is then modified according to the rules defined in the “Modifier”, below.

Modifier

The Modifier section contains three selections: “**From Original**”, “**Add New**”, and “**Delete**”.



From Original extracts the desired data from the scan.

The **Start Parameter** defines the beginning of the string of data that is to be output. The start parameter can either be defined by position starting from the beginning (“From Position”), or a specific number of characters from the end of the string (“From Last Position”), or a specified number of characters before or after a user-defined character string (“After Matching”).

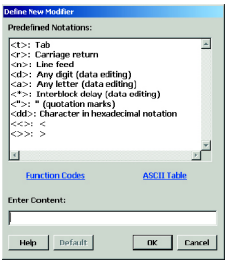
The **End Parameter** defines the end of the string of data that is to be output. Three options are available: “Number Of Characters To Be Output”, “All Remaining”, and “After Matching”. The first two are self-explanatory. “After Matching” defines the end as a specified number of characters before or after a user-defined character string.

Data Editing, continued

Note:

Even if the original bar code data is not modified, if additional characters are to be added (see “Add New” below) the original Start Parameter must be defined as From Position “1” and the End Parameter defined as “All Remaining”, otherwise, none of the original data will be output.

Add New adds characters (printing and non-printing) to the data output from the MS860. These characters can be added before, after, and within the actual scanned data. Pre-defined characters include:



- <t> Tab
- <r> Carriage Return
- <n> Line Feed
- <d> Any Digit (data editing)
- <a> Any Letter (data editing)
- <*> Interblock Delay (data editing)
- <“> (quotation marks)
- <dd> Character in hexadeximal notation
- <<> < (less than)
- <>> > (greater than)

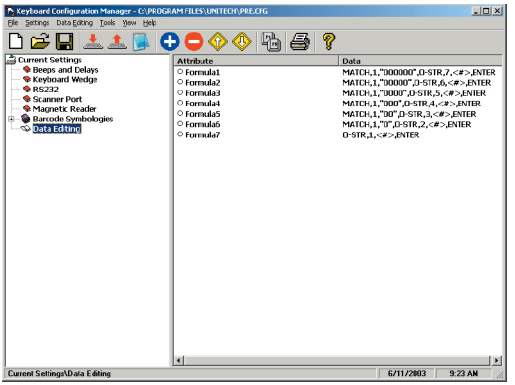
Characters must be bracketed by <> symbols.
Letters and numbers should be represented in hexadecimal format (accessable in a linked menu) to avoid confusion. For instance, the lower-case letter “t” should be entered as <74> and the numeral “5” should be entered as <35>.
Function codes (F keys, Cursor Up, Enter, etc.) can also be inserted via hexadecimal code (accessable in a linked menu).

Delete removes existing modifier strings.

Move Up / Move Down (pictured to the right) moves the modifiers up and down in relation to each other. The top modifier will be performed first and each one down the list will be performed in sequence. The original data (modified or unmodified, part or whole) will be output according to its position in the modifier sequence.

Data Editing, continued

Arrange Formulas



After the formulas have been created, they must be arranged in the optimum sequence by selecting formulas and using the “Move Formula” icons (see page 26). This sequence is usually according to their qualifier - from least likely to occur to most likely to occur.
In the example pictured above, a series of formulas are designed to output all the data in a bar code that follows a series of “0”s. For instance, if the actual bar code data is “000045678”, the desired output would be “45678” (the original minus all the 0s at the beginning of the string). If there are six 0s (Formula 1 - pictured above), then Formula 1 specifies the output begins at the seventh position. If there are five 0s, then Formula 2 dictates that output begins at the sixth position, etc.
If, instead, we were to place the qualifier for two 0s above (before) the qualifier for six 0s, then Formula 2 stipulating two 0s would activate even if there were six 0s because the qualifier would stop looking for 0s after it had found two. In this case, all qualifiers with three or more 0s would be disregarded, which would not be a desirable result.

The “Everything Else” Formula

If a formula is entered into the Data Editing Area, then all scanned bar codes will be evaluated according to this formula. If the scanned bar code does not satisfy the requirements of the Qualifier(s) (see page 46), then no data is output. Practically speaking, the scanner has been set up to scan only bar codes that are defined by the Qualifier(s). No other types of bar codes can be scanned.
The answer to this problem is to end the sequence of formulas with a formula that has no Qualifier and whose modifier includes all the scanned data (starts at position 1 and outputs “all remaining”). An example of this can be seen as Formula 7, pictured above.

PROGRAMMING VIA SCANNER INPUT

Introduction

In addition to the Scanner Configuration Manager software, your MS860 scanner can also be configured via bar code input by scanning in the bar codes on the following pages.

The concept (for Groups 2 through 8) is fairly simple: Parameters are associated together into groups. For instance, on page 52, “Beep Tone”, “Interblock Delay”, and “Intercharacter Delay” form a group called “Beeps and Delays”.

In order to modify a particular parameter, first you must scan an “Enter Group X” bar code to start the procedure. For instance, to change the beep tone, first you must scan the “Enter Group 2” bar code. The scanner will emit a triple beep which indicates that the scanner has entered configuration mode. Also, the LED on the back of the scanner will start flashing green. The scanner will remain in configuration mode until the “Exit” bar code has been scanned.

Next, you must scan the bar code of the parameter (along the right-hand side of the page) you’d like to modify. To modify the beep tone, scan the “A1” label.

Then select a number along the left side of the page that corresponds with the modification you wish to make. To set the Beep Tone to “High”, scan the “3” bar code. Please note that factory default settings are printed in **bold face**.

If you’d like to modify another parameter within the same group, scan another parameter label now. To change “Intercharacter Delay”, scan the “A3” bar code. then scan the number that corresponds with your requirements.

After you’re finished modifying your selected parameters in “Beeps and Delays”, scan the “Exit” bar code at the bottom of the page to end the modification session. The scanner will emit a double beep to indicate that it is no longer in configuration mode.

An easy alternative programming method is to simply scan the bar codes in the Quick Setup section starting on the next page, if appropriate.

The MS860 can always be reset back to “Factory Default” by scanning that particular bar code on page 51.

Note: Groups 9 and 10 (Data Editing and TCP/IP) do not follow the same steps as described above, but have their own sets of instructions in their respective sections.

PROGRAMMING VIA SCANNER INPUT

Quick Setup Bar Codes

Device Type


AT Keyboard Wedge


USB


Wand Emulation


PS/2 Keyboard Wedge


IBM Terminal


Serial Interface


Macintosh


Keyboardless Wedge


Terminal Wedge

Inter-Character Delay


1 millisecond


20 milliseconds

Code ID


No


Yes

Scan Code


U.S.


Alt Key

Scanner Mode


Trigger


Flash

Beep


None


Medium

Terminator


Enter


Field Exit

Quick Setup Bar Codes, continued

EAN-8


Default


Cut Leading Digit


Cut Check Digit

UPC-A


Default


Cut Leading Digit


Cut Check Digit

Menu Setup


Enable / Disable

EAN-13


Default


Cut Leading Digit


Cut Check Digit


ISBN Conversion

UPC-E


Default


Cut Leading Digit


Send Check Digit


UPC-A Conversion

Supplemental Code


No


Yes

Display Version


Display Version

Factory Default


Factory Default

Beeps and Delays

Enter Group 2

Group Default

0

1

2

3

4

5

6

7

8

9

Beep Tone:
(see page 29)
- 0 - None
- 1 - Low
- **2 - Medium**
- 3 - High
- 4 - Low to High
- 5 - High to Low

A1

Interblock Delay:
(see page 29)
- **0 - 0 ms**
- 1 - 10 ms
- 2 - 50 ms
- 3 - 100 ms
- 4 - 500 ms
- 5 - 1 second
- 6 - 3 seconds
- 7 - 5 seconds

A2

Intercharacter Delay:
(see page 29)
- **0 - 0 ms**
- 1 - 1 ms
- 2 - 2 ms
- 3 - 5 ms
- 4 - 10 ms
- 5 - 30 ms
- 6 - 50 ms
- 7 - 100 ms

A3

Exit

Keyboard Interface


Enter Group 3


Group Default


0


1


2


3


4


5


6


7


8


9


:

Function Code:
(see page 30)
0 - Off
1 - On


B1

Caps-Lock:
(see page 30)
0 - Auto Trace (PC/AT)
1 - Lower Case
2 - Upper Case


B2

Language for PC/AT:
(see page 30)
0 - U.S.
1 - U.K.
2 - Swiss
3 - Swedish
4 - Spanish
5 - Norwegian
6 - Italian
7 - German
8 - French
9 - Alt Key Mode
: - Danish


B3

Use Number Keypad Digits:
(see page 30)
0 - Disable
1 - Enable


B8


Exit

RS232

Enter Group 4

Group Default

0

1

2

3

4

5

6

7

8

9

Baud Rate:
(see page 31)

0 - 300	4 - 4800
1 - 600	**5 - 9600**
2 - 1200	6 - 19200
3 - 2400	7 - 38400

C1

Parity:
(see page 31)

0 - Even	3 - Space
1 - Odd	**4 - None**
2 - Mark	

C2

Data Bit:
(see page 31)
0 - 7
1 - 8

C3

Handshaking: (for serial wedge)
(see page 31)
0 - Ignore
1 - RTS enabled at Power Up
2 - RTS enabled in Communication

C4

ACK/NAK: (for serial wedge)
(see page 31)
0 - Off
1 - On

C5

Exit

RS232, continued

BCC Character: (for serial wedge)
(see page 32)
0 - Off
1 - On


C6

Time Out: (for serial wedge)
(see page 32)
0 - 1 second
1 - 3 seconds
2 - 10 seconds
3 - Unlimited


C7

Data Direction: (for terminal wedge)
(see page 32)
0 - Send to Host
1 - Send to Host and Terminal
2 - Send to Terminal


C8


0


1


2


3


4


5


6


7


8


9


Exit

Scanner Port


Enter Group 5


Group Default


0


1


2


3


4


5


6


7


8


9

Terminator:
(see page 33)
0 - Enter
1 - Return (on keypad
2 - Field Exit or Right Ctrl
3 - None


D1

Code ID:
(see page 34)
0 - Disable
1 - Enable
Note: This setting does not affect EAN 128 Code ID. EAN 128 has its own Code ID setting (see page 40).


D2

Define Code ID:
(see page 34)
00 - Code 39 Full ASCII
01 - Code 39 Standard
02 - EAN-13
03 - UPC-A
04 - EAN-8
05 - UPC-E
06 - Interleaved 2 of 5
07 - Codabar
08 - Code 128
09 - Code 93
10 - Standard 2 of 5
11 - MSI Code
12 - EAN 128
13 - Code 32 (Italian Pharmacy)
14 - Delta Code
15 - Label Code
16 - Plessey Code
17 - Code 11 (Special)
18 - China Postal Code (Toshiba Code)


D3


Exit

Scanner Port, continued


0


1


2


3


4


5


6


7


8


9

Double Verification:
(see page 34)
0 - Off
1 ~ 7 - On (verify 1 to 7 times)


D4

Scanning Mode:
(see page 35)
0 - Trigger
1 - Flashing
2 - Multiscan
3 - One Press One Scan
4 - Test Mode
5 - Old Laser Flash Mode
6 - Continuous


D5

Label Type:
(see page 35)
0 - Positive
1 - Positive and Negative


D6

Aim Function for Long Range Laser Engine:
(see page 36)
0 - Disable
1 - Enable


D7

Data Length (two digits) Send:
(see page 36)
0 - Disable
1 - Enable


D8


Exit

Scanner Port, continued

A **Preamble** can be inserted before, or a **Postamble** can be inserted after the scanned bar code data (inserting a Tab, for instance).

To insert a postamble, scan the “Postamble” (OO) bar code, scan your selected postamble from the Function Code (page 71) or ASCII Code (pages 72 to 75) Charts, and then scan the “Postamble” (OO) bar code once again.

To insert a preamble, follow the same procedure, but using the “Preamble” (PP) bar code.

Preamble

PP

Postamble

OO

Exit

Symbologies - Group 6


Enter Group 6


Group Default


0


1


2


3


4


5


6


7


8


9


:

Code 39:
(see page 37)
- 0/**1** - Disable / **Enable**
- **2**/3 - **Full ASCII** / Standard
- 4 - Check Digit Calculate and Send
- 5 - Check Digit Calculate, Not Send
- **6 - Check Digit Not Calculate**
- 7/**8** - Send / **No Send** Start/Stop Sentinel
- **9**/: - Double Labels Decoding **Off** / On
- 0 ~ 48 - Min. Length **0** / Max. Length **48**
- (see page 61 for Min./Max. Length procedure)


F1

Interleaved 2 of 5 (ITF):
(see page 38)
- 0/**1** - Disable / **Enable**
- 2/**3** - Fix Length On / **Off**
  (by first three reads)
- 4 - Check Digit Calculate and Send
- 5 - Check Digit Calculate, Not Send
- **6 - Check Digit Not Calculate**
- 7 - Supress First Digit
- 8 - Supress Last Digit
- **9 - Last Digit Not Supressed**
- 2 ~ 64 - Min. Length **10** / Max. Length **64**
- (see page 61 for Min./Max. Length procedure)


F2


Exit

Symbologies - Group 6, continued

0

1

2

3

4

5

6

7

8

9

Standard 2 of 5 /
China Postal Code /
Toshiba Code:
(see page 39)

F3

0/1 - **Disable** / Enable
2/3 - Fix Length **On** / Off (by first three reads)
4 - Check Digit Calculate and Send
5 - Check Digit Calculate, Not Send
6 - Check Digit Not Calculate
1 ~ 48 - Min. Length **4** / Max. Length **48**
(see pext page for Min./Max. Length procedure)

Code 32 (Italian Pharmacy):
(see page 40)

F4

0/1 - **Disable** / Enable
2/3 - Leading Character **Send** / No Send
4/5 - Tailing Character **Send** / No Send

Telepen:

F5

0/1 - **Disable** / Enable
2/3 - **Standard** / Numeric Set

UCC/EAN 128:
(see page 40)

F6

0/**1** - Disable / **Enable**
2/3 - Code ID **Disable** / Enable
Note: If EAN 128 is disabled, EAN 128 labels will be decoded as Code 128

Exit

Symbologies - Group 6, continued

Define the EAN 128 Fields Separator:
(see page 40)
Scan from the ASCII Code Chart (pages 72 to 75) to define a new fields separator.


F7

Define a Separator for Double Labels:
Scan from the ASCII Code Chart (pages 72 to 75) to define a new separator for Double Labels.


F8

Define Minimum and Maximum Length:
To define minimum or maximum acceptable bar code data length, after scanning the parameter code (F1, F2, or F3), scan the “MM” or “NN” bar codes below, scan the number(s) to the left, and then scan the “MM” or “NN” bar code again. Then scan “Exit” as usual.

Min. Length


MM

Max. Length


NN


0


1


2


3


4


5


6


7


8


9


Exit

Symbologies - Group 7

Enter Group 7

Group Default

0

1

2

3

4

5

6

7

8

9

Code 128:
(see page 40)
0/**1** - Disable / **Enable**
1 ~ 64 - Min. Length **1** / Max. Length **64**
(see page 64 for Min./Max. Length procedure)

G1

MSI / Plessey Code:
(see page 41)
0/1 - **Disable** / Enable
2/**3** - Check Digit Send / **No Send**
4 - **Check Digit Double Module 10**
5 - Check Digit Module 11 Plus 10
6 - Check Digit Single Module 10
1 ~ 16 - Min. Length **1** / Max. Length **16**
(see page 64 for Min./Max. Length procedure)

G2

Code 93:
(see page 41)
0/**1** - Disable / **Enable**
1 ~ 48 - Min. Length **1** / Max. Length **48**
(see page 64 for Min./Max. Length procedure)

G3

Exit

Symbologies - Group 7, continued

0

1

2

3

4

5

6

7

8

9

Code 11 (Special):
(see page 44)
0/1 - **Disable** / Enable
2/**3** - One / **Two** Check Digit
4/**5** - Check Send / **No Send**
1 ~ 48 - Min. Length **1** / Max. Length **48**
(see next page for Min./Max. Length procedure)

G4

Codabar:
(see page 42)
0/1 - **Disable** / Enable
2/**3** - Start & Stop Send / **No Send**
4 - Check Digit Calculate and Send
5 - Check Digit Calculate but Not Send
6 - Check Digit Not Calculate
7/**8** - CLSI Format On / **Off**
3 ~ 48 - Min. Length **3** / Max. Length **48**
(see next page for Min./Max. Length procedure)

G5

Label Code IV and V:
(see page 45)
0/1 - **Disable** / Enable
2/3 - Checksum **Send** / No Send

G6

Exit

Symbologies - Group 7, continued

Define Minimum and Maximum Length:
To define minimum or maximum acceptable bar code data length, after scanning the parameter code (G1 to G5), scan the “MM” or “NN” bar codes below, scan the number(s) to the left, and then scan the “MM” or “NN” bar code again. Then scan “Exit” as usual.

Min. Length

MM

Max. Length

NN

0

1

2

3

4

5

6

7

8

9

Exit

Symbologies - Group 8


Enter Group 8


Group Default


0


1


2


3


4


5


6


7


8


9

UPC-A:
(see page 42)
- 0/**1** - Disable / **Enable**
- **2**/3 - Leading Digit **Send** / No Send
- **4**/5 - Check Digit **Send** / No Send


H1

UPC-E:
(see page 43)
- 0/**1** - Disable / **Enable**
- **2**/3 - Leading Digit **Send** / No Send
- 4/**5** - Check Digit Send / **No Send**
- 6/**7** - Zero Expansion On / **Off**
- **8**/9 - **Disable** / Enable NSC=1


H2

EAN-13:
(see page 43)
- 0/**1** - Disable / **Enable**
- **2**/3 - Leading Digit **Send** / No Send
- **4**/5 - Check Digit **Send** / No Send
- 6/**7** - Bookland EAN (ISBN) Enable / **Disable**


H3

EAN-8:
(see page 44)
- 0/**1** - Disable / **Enable**
- **2**/3 - Leading Digit **Send** / No Send
- **4**/5 - Check Digit **Send** / No Send


H4


Exit

Symbologies - Group 8, continued

Supplement Code:
(see page 45)


H5

0/1 - Two Supplement Code **Off** / On
2/3 - Five Supplement Code **Off** / On
4 - Transmit if Supplement Code is present (even if Two/Five Supplement Code is on)
5 - Transmit only if Supplement Code is present (if Two/Five Supplement Code is on)
6/**7** - Insert Space Separator / **Not Insert**

Delta Distance Code:
(see page 44)


H6

0/1 - **Disable** / Enable
2/3 - Leading Digit **Calculate** / Not Calculate
4/5 - Check Digit **Send** / No Send


0


1


2


3


4


5


6


7


8


9


Exit

Data Editing

Data Editing allows you to manipulate the bar code data output into the format that you require by scanning the bar codes on page 69 in addition to Function Codes and ASCII Codes on pages 71 to 75.

After scanning the "Enter Group 9" bar code, all the subsequent bar code input (except character string units) beginning with "*IN_ID*" must be separated by scanning comma bar codes, until you scan the final "*Enter*" followed by the "Exit" bar code. The "Enter Group 9" and the "*Enter*" bar codes are not followed by commas.

Parameters are grouped into **Qualifiers** and **Modifiers**.
Qualifiers specify the conditions that must be met in order for data editing to occur, be it minimum or maximum data length, specific symbologies, or specific character strings present.
Modifiers modify the data output according to pre-set rules by either removing specified parts of the data or adding user-defined data.
When programming the scanner, qualifiers must precede modifiers.

Each programming parameter is output according to the following patterns:

Qualifiers:

Input ID - Specific bar code symbologies can be selected for special treatment. The programming bar codes must be entered in the following sequence: ***IN_ID*,ID1, ID2,...IDX,** - where "*IN_ID*" announces that the next bar code inputs refer to the various bar code symbologies according to their "Code Type" on page 69. For example, if UPC-A and Code 32 bar codes are to be singled out for data editing, the bar code scanning sequence should be "*IN_ID*,3,13,".

Length - Bar codes of specific length can be selected. The programming bar codes must be entered in the following sequence: ***LEN*,MIN,MAX,** - where "*LEN*" announces that the next bar code inputs refer to the minimum and maximum length bar codes allowable. For example, if we only want data editing to apply to bar codes between 9 and 12 characters long, then the bar code scanning sequence should be "*LEN*,9,12,".

Match - Bar codes with specific character strings can be selected. The programming bar codes must be entered in the following sequence: ***MATCH*,P1,"S1",P2,"S2",...PX,"SX",** - where "*MATCH*" announces that the next bar code inputs will define where in the data a specific string will be located, and what characters (surrounded by quotation marks) the string consists of,. For example, if the bar code to be selected requires the string "efgh" beginning at the 3rd position, the bar code scanning sequence should be ***MATCH*,3,"efgh",**. If we're looking for "efgh" anywhere within the bar code, the sequence should be ***MATCH*,*,"efgh",**, with the "*" character signifying that it could be anywhere in the string.

Data Editing, continued

Note: Once a Qualifier is specified, other bar codes that do not meet the requirements of the Qualifier will be disregarded.
If you would like bar codes not specified by the Qualifier to output normally, simply add another qualifier that specifies all bar codes (19), starting at position 1, and outputting all remaining (#). (See example at the bottom of this page.)

Modifiers:

Original Data - Part or all of the original data string can be selected. The programming bar codes must be entered in the following sequence: ***O-STR*,P,N,** - where "*O-STR*" announces that the next bar code inputs refer to where the output should begin and how many characters should be output. For example, if 7 characters are to be output beginning with the 4th character, the bar code scanning sequence should be ***O-STR*, 4,7,**. If we want all the characters after the 4th character to be output, the sequence should be ***O-STR*,4,#,**, with the "#" character signifying that the entire string (after the 4th character) should be output. Should you decide that the last two characters should not be output, the sequence would be ***O-STR*,4,#-2,**, with the "#-2" specifying all remaining minus 2.

Special Characters

, Comma - Used as a separator between formula parameters, beginning with the *IN_ID* parameter and ending with the *Enter* parameter.

" Quotation Mark - Used to begin and end a character string. A character string bounded by quotation marks is treated as a single unit, and would be written as "abcd".

* Asterisk - Wild-card character used to specify any digit or position.

\# Hash sign - Wild-card character used to specify any letter or last position.

Finally, end the programming sequence with the "*Enter*" bar code. Do not follow it with a comma. If you need to add another formula, do so now by scanning the "*IN_ID*" bar code directly, followed by the rest of the second formula's parameters, and then "*Enter*" again. Lastly, scan the "Exit" bar code.

Thus, if we want to output only the first five characters from UPC-A input and then follow it with three "0"s, the scanning sequence should be as follows:

Enter Group 9 *IN_ID* , 3 , *O-STR* , 1 , 5 , " 0 0 0 " , *Enter* Exit

If we only want to treat UPC-A this way, but still want other symbologies to output normally, the scanning sequence would be as follows:

Enter Group 9 *IN_ID* , 3 , *O-STR* , 1 , 5 , " 0 0 0 " , *Enter*
IN_ID , 19 , *O-STR* , 1 , # , *Enter* Exit

Data Editing, continued


Enter Group 9


Group Default


0


1


2


3


4


5


6


7


8


9


+


-

Code Type:

0- Code 39 Full	10 - S 2 of 5
1 - Code 39 Std.	11 - MSI Code
2 - EAN-13	12 - EAN 128
3 - UPC-A	13 - Code 32
4 - EAN-8	14 - Delta Code
5 - UPC-E	15 - Label Code
6 - I 2 of 5	16 - Plessey Code
7 - Codabar	17 - Code 11 (Special)
8 - Code 128	18 - China Postal Code
9 - Code 93	19 - All Inputs

Formula Format:

Input ID: ***IN_ID***,ID1,ID2,...IDX,
Length: ***LEN***,MIN,MAX,
Match: ***MATCH***,P1,S1,P2,S2,...PX,SX,
A-String: “abc...”,
O-String: ***O-STR***,P,N,

ID1, ID2, etc. = number for Code ID
P1, P2, etc. = position
S1, S2, etc. = string “abc...”
P = number or string for start position
N = number of characters or string to end position

Special Characters in this section:

, - delimiter to separate parameters
“ - string specifier
***** - specifies any digit or any position
# - specifies any letter or all input


IN_ID


LEN


MATCH


O-STR


“

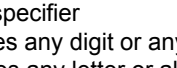

#


Enter


Backspace


,


Exit


Review

TCP/IP

For TCP/IP instructions, see page 16.

Before configuring TCP/IP, stop the VCOM connection, power off the scanner, and then scan "Enter Group 10" within the first 5 seconds after switching the scanner back on.


Enter Group 10


0


1


2


3


4


5


6


7


8


9


. (Period)


AA


CHAN


CR ($M)


DD


DEFAULT


DEL (%T)


DHCP


EE


EXIT


GW


Space


IP


MASK


MODE


PS MODE


RATE


SAVE


SE


SSID


WEP


WK


WKID

Function Codes for PC

(Characters in parentheses represent Code 39 bar code printing.)


F1 (%VA)


F2 (%VB)


F3 (%VC)


F4 (%VD)


F5 (%VE)


F6 (%VF)


F7 (%VG)


F8 (%VH)


F9 (%VI)


F10 (%VJ)


F11 (%VK)


F12 (%VL)


Cursor Right (/FC)


Cursor Left (/FD)


Cursor Up (/FE)


Cursor Down (/FF)


Page Up (/FG)


Page Down (/FH)


Tab (/FI)


Back Tab (/FJ)


Esc (/FK)


Left Enter (/FL)


Right Enter (/FM)


Right Ctrl (/FO)


Shift Make (/FP)


Ctrl Make (/FQ)


Alt Make (/FR)


Shift Break (/FS)


Ctrl Break (/FT)


Alt Break (/FU)


Insert (/FW)


Delete (/FX)

ASCII Chart

(Characters in parentheses represent Extended Code 39.)


SOH ($A)


STX ($B)


ETX ($C)


EOT ($D)


ENQ ($E)


ACK ($F)


BEL ($G)


BS ($H)


HT ($I)


LF ($J)


VT ($K)


FF ($L)


CR ($M)


SO ($N)


SI ($O)


DLE ($P)


DC1 ($Q)


DC2 ($R)


DC3 ($S)


DC4 ($T)


NAK ($U)


SYN ($V)


ETB ($W)


CAN ($Y)


EM ($Y)


SUB ($Z)


Escape (%A)


FS (%B)


GS (%C)


RS (%D)


US (%E)


; (%F)

ASCII Chart, continued

(Characters in parentheses represent Extended Code 39.)


< (%G)


= (%H)


> (%I)


? (%J)


[(%K)


\ (%L)


] (%M)


^ (%N)


_ (%O)


{ (%P)


| (%Q)


} (%R)


~ (%S)


Delete (%T)


NUL (%U)


@ (%V)


`(%W)


! (/A)


“ (/B)


(/C)


$ (/D)


% (/E)


& (/F)


' (/G)


((/H)


) (/I)


* (/J)


+ (/K)


, (/L)


- (/M)


. (/N)


/ (/O)

ASCII Chart, continued

(Characters in parentheses represent Extended Code 39.)


0 (/P)


1 (/Q)


2 (/R)


3 (/S)


4 (/T)


5 (/U)


6 (/V)


7 (/W)


8 (/X)


9 (/Y)


: (/Z)


A


B


C


D


E


F


G


H


I


J


K


L


M


N


O


P


Q


R


S


T


U

ASCII Chart, continued

(Characters in parentheses represent Extended Code 39.)

V

W

X

Y

Z

a (+A)

b (+B)

c (+C)

d (+D)

e (+E)

f (+F)

g (+G)

h (+H)

i (+I)

j (+J)

k (+K)

l (+L)

m (+M)

n (+N)

o (+O)

p (+P)

q (+Q)

r (+R)

s (+S)

t (+T)

u (+U)

v (+V)

w (+W)

x (+X)

y (+Y)

z (+Z)

SP (Space)

SPECIFICATIONS

Performance

Receiving Device:	SE 1200WA Scan Engine
Light Source:	Visible Laser Diode - 650nm
Resolution:	4 mils (.01mm) min.
Scan Rate:	30 to 40 scans per second
Skew Angle:	±55°
Pitch Angle:	±65°
Printing Contrast Scale:	20% minimum
Maximum Width of Field:	9” (230mm) (PCS=90%, 40mil code)
Reading Distance: (DoF PCS=90%)	Code 39 - 5mil 40 to 130mm (±10mm) Code 39 - 6mil 35 to 150mm (±10mm) JAN - 15.6mil 50 to 330mm (±30mm) Code 39 - 40mil 30 to 760mm (±50mm)

Decoder

Symbologies:	China Postal Code, Codabar, Code 11, Code 32, Code 39 (Standard and Full ASCII), Code 93, Code 128, Delta Code, EAN-8, EAN-13, EAN 128, Interleaved 2 of 5, Italian Pharmacy, Label Code IV and V, MSI Code, Plessey Code, Standard 2 of 5, UPC-A, UPC-E
Operation Mode:	Trigger, Flash, Multiscan, and One Press-One Scan
Interfaces:	PS/2, RS232, TCP/IP
Configuration:	Via Scanner Configuration Manager software (downloadable from www.ute.com) or bar code setup menus in manual
Data Editing:	Almost unlimited

Electrical

Battery Type:	Lithium-ion
Battery Capacity:	1900mAh - charged via cradle
Battery Charging Time:	Fully charged (4.2V) in 4 to 5 hours
Operating Time:	16 hours
Cradle Power:	Via a separate 9VDC / 2A power supply

SPECIFICATIONS

Mechanical

Scanner Dimensions: Length - 5” (126mm)
Width = 3.25” (83mm)
Height = 5.625” (143mm)

Cradle Dimensions: Length - 8.125” (206mm)
Width = 3.8125” (97mm)
Height = 2.25” (57mm)

Scanner Weight: 11 oz. (312 grams)

Cradle Weight: 14.5 oz. (410 grams)

Environmental

Temperature: Operating: 32° to 122° F (0° to 50° C)
Storage: -4° to 140° F (-20° to 60° C)

Humidity: 5% to 95% RH non-condensing

Mechanical Shock: 5 foot (1.5M) drop to concrete

ESD Protection: 8K Contact and 12K Air

Communication

Radio Frequency: 2.4GHz compliant 802.11b protocol

Scalability: Point to point, multi point

Range: 30M line of sight

WLAN Default Settings:

Item	Default Setting
IP Address	192.168.1.250
IP Subnet Mask	255.255.255.0
Gateway IP Address	192.168.1.254
SSID	Wlandemo
RF Channel	6
WEP	Disabled
Authentication Type	Auto

RS232 Default Settings:

Item	Default Setting
Baud Rate	38400
Data Length	8 (fixed)
Parity	None (fixed)
Stop Bit	1 (fixed)
Flow Control	None

TROUBLESHOOTING

Generic Scanner Troubleshooting Tips

Most problems that you might encounter with your scanner can be solved using the following procedures:

- **Try scanning other bar codes.** If your scanner can scan other types of bar code symbologies, but cannot scan your bar codes, first check to see if your particular bar code symbology is enabled. If it is, try the scanner on the same bar code type in the Bar Code Test Chart in the back of this manual. Then, insure that your bar codes are crisp and clear.

- **Reset to Factory Default.** Scan the "Factory Default" bar code on page 52 to reset your scanner back to factory default.
  Caution: This procedure will erase special configurations that you would have created.

- **Test the scanner on other ports.** Unitech scanners are built to the highest standards, and a perceived scanner malfunction may actually be a malfunction in the host computer.
  Test the scanner on the host's other ports if possible or, in necessary, on other systems to verify that the problem is actually in the scanner and not in the host computer.

TROUBLESHOOTING

Problems and Solutions

Problem: Scanner doesn't light up.

If the scanner does not emit a light when the trigger is pressed, make sure the scanner is switched on (see page 4), and/or that the battery is charged (see page 7).

Problem: Scanner lights up but doesn't beep.

If the scanner emits a light, but doesn't beep when scanning a bar code, try bar codes of different symbologies. If other types of bar codes scan properly, then it might be that the scanner is not configured to scan your particular symbology.

If the scanner can scan other bar codes of the same symbology, then other parameters (such as minimum/maximum length, etc.) may have to be adjusted.

Insure that your bar code has been created properly, with crisp edges and start/stop sentinels. For instance, Code 39 bar codes require asterisk (*) start/stop sentinels at the beginning and end of the data string (*123ABC*).

Avoid glossy surfaces or glossy inks for your bar codes. A glossy black surface may be indistinguishable from a white surface to your scanner because of the reflected light. Try photocopying your bar code and scanning the copy to determine if glossiness may be a factor.

Problem: Scanner makes four high-low beeps when attempting to scan.

The scanner has not been properly configured. A full reset is required by scanning the "Factory Default" bar code (see page 51), and switching the scanner off and back on again (see page 2, item 4).

Problems and Solutions, continued

Problem: No output from scanner.

Try the scanner on other com ports (if available) or other computers to see if it's a hardware problem.
If the scanner appears to scan (emits a light and beeps), but does not output data, try scanning into a HyperTerminal session to see if it's an application problem.

When testing your scanner in HyperTerminal, make sure that:

Bits per second = 9600
Data bits = 8
Parity = None
Stop bits = 1
Flow control = None

Problem: VCOM cannot connect to the MS860.

Step 1: Make sure the Access Point's "Data" LED is flashing green. Test the AP with input from other sources.

Step 2: Triple-check that all network settings match.

Step 3: To verify that the COM# you are trying to use isn't already taken, do the following:
Click Control Panel / System / Hardware / Device Manager.
Click the ⊞ next to "Ports (COM & LPT).
You should see Communications Port (COM1) at least. Make sure that the com port number that you're trying to use in VCOM isn't already listed.

Step 4: Make sure ComtoKey is off or set to "Disable Com Port" before clicking "Start" in VCOM. Likewise, disable any other program that accesses a com port (like POS software, database input programs, etc.) because these will cause VCOM to fail by locking up the com port.

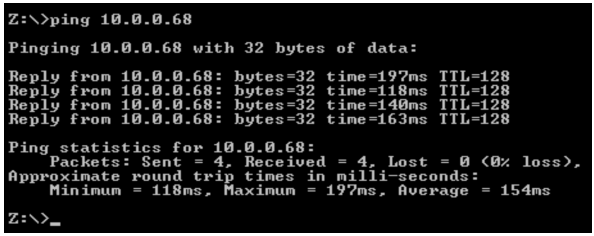
Step 5: Close VCOM and test the MS860's network connection as follows:

Open a DOS session (Start / Run / type "cmd").

Type "ping ##.##.##.##" (replacing # symbols with your MS860's actual IP address).

Problems and Solutions, continued

The results should be similar to that below:



If no packets are found, try a few more times.

If the ping “times out” consistently, then the MS860 is not connected to the network and you need to start your setup over.

If 1 to 3 packets are received, then you are too far from the Access Point and have a weak connection. Steps to resolve this include:

- Get closer to the Access Point.
- If the AP has an antenna, get it as high in the air as possible.
- Disable the AP’s Power Saving option (if it has one). Set the AP for maximum power usage (if possible).
- Set the MS860’s Power Saving mode to “off”.
- Concrete walls, large metal objects, etc. can impede the WiFi signal and should be accounted for and avoided.

WARRANTY

Limited Hardware Warranty

The Limited Warranty terms described below are solely applicable to the Customer of Unitech America, Inc's (afterwards simply referred to as Unitech) products. This warranty applies to equipment only. All consumables and accessories are exempted.

Unitech warranties its products to be delivered free from defects in material and workmanship, from the date of purchase. All equipment except for cables, batteries, power supplies, and RF cards are warranted for a period of twelve months (beginning from the date of delivery). Some products may have longer warranties, but all products (except for cables, batteries, power supplies, and RF cards) carry at least a one year warranty. All cables, batteries, power supplies, and RF cards external to dedicated Unitech products carry a ninety day warranty.

During this warranty period Unitech will, at its sole discretion, replace or repair free of charge any product(s) which, in it's opinion, is/are defective. Any merchandise that is to be returned must have a valid Return Merchandise Authorization (RMA) number clearly indicated on the outside of the returned package and on the accompanying packing list. Unitech cannot be held responsible for any package returned without an RMA number. To obtain an RMA number, please contact Unitech's Customer Service Department or a Sale Representative, by telephone (562) 490-9550 or by facsimile (562) 490-0320.

The customer is responsible for packing the defective product properly, and for the cost of shipping the defective product to Unitech. Unitech is responsible for the cost of shipping back the product which is repaired or replaced. If any charges are borne by the Customer, the invoice for the repaired or replaced product(s) will be sent to the Customer based on the Customer's payment terms.

In the event that the product has been modified without Unitech's consent, or if the product failure is the result of misuse, abuse, willful neglect, or misapplication, Unitech has no obligation to repair or replace the product.

Except as expressly mentioned above, the hardware and accompanying written materials (including the user's manual) are provided "as is" without warranty of any kind, including the implied warranties of merchant ability and fitness for a particular purpose, even if Unitech has been advised of that purpose. In no event will Unitech be liable for any direct, indirect, consequential, or incidental damages arising out of the use of or inability to use such product(s), even if Unitech has been advised of the possibility of such damages.

BAR CODE TEST CHART

A22357000599876B

Codabar

123456789-0

Code 11

OQB2M5

Code 32

WEDGE

Code 39

UNITECHE

Code 39 with Check Digit

123ABC

Code 93

Unitech128

Code 128

012345678 + checkdigit (2)

Delta Code

EAN-8

EAN-13

BAR CODE TEST CHART

(01)054123456789(01)659344

EAN 128

0987654321

Interleaved 2 of 5

957-630-239-0

ISBN

10017

Label Code IV

12345

MSI Code

1122334455

Standard 2 of 5

ABC123

Telepen

20132000400

Toshiba Code

UPC-A

UPC-E