

USER'S GUIDE
PROTONE
HANDHELD SCANNER
IMS-3190



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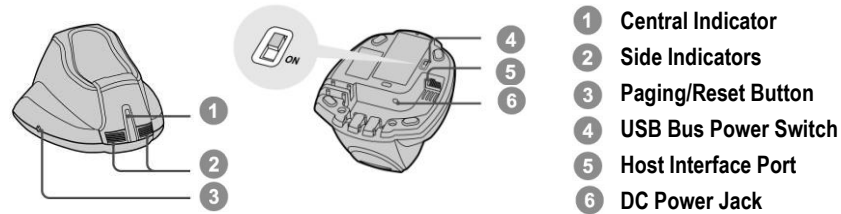
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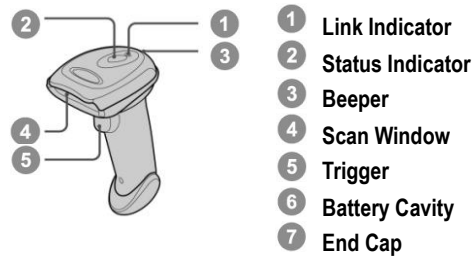
Getting Familiar with Your Proton IMS 3190

Thank you for choosing Proton IMS 3190 Bluetooth Cordless Image Scanner. Powered by the combination of cutting-edge Proton IMS 3190 Imaging Technology and Bluetooth wireless technology, it not only provides outstanding reading performance, but also delivers the convenience and freedom of mobility. It's ideal for a broad range of applications to unleash your productivity with ease. This document provides a quick reference for installation and operation.

Smart Cradle

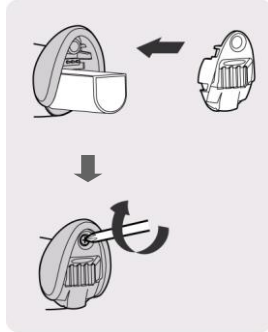



Proton IMS 3190



Preparation before Using - Gun type Scanners

Install the Battery



- 1 Ensure the battery contacts of the battery pack are facing the charging contacts inside the battery cavity. 
- 2 Slide the battery pack into the battery cavity until hearing a click sound before locking it with the end cap. The scanner will give 4 beeps when the battery pack is installed properly if the battery pack still has power.
- 3 Secure the end cap with the screw provided.

Charging the Battery

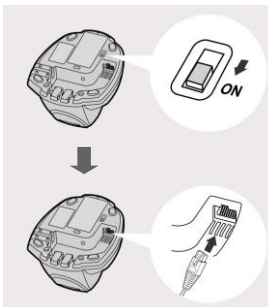


- 1 Choose an appropriate plug and slot it into the power adapter cavity until it is locked. Then plug the AC power plug into the AC wall socket.
- 2 Plug the DC power cord of power supply unit into the DC Jack of the cradle. The smart cradle emits the power-on beeps and the central indicator gives **one blue blink**. If you use the charging cradle, the central power indicator turns **steady blue**.
- 3 Place the scanner on the cradle. The status indicator of scanner turns **steady red** if the battery is not fully charged. When the battery is fully charged, the status indicator of scanner turns **steady green**.



Please charge the new battery pack for 8 hours before its first use.

Use USB Bus Power



- 1 If **USB 3.0** is available in your host device, both battery charging and regular operation can be supported by the USB Bus Power without using external power supply.
- 2 If only **USB 2.0** is available in your host device, we recommend using external power supply as power source, because the power supplied from USB2.0 is not enough to support both battery charging and regular operation simultaneously.
- 3 If you want to use this feature, please slide the USB bus power switch to "**ON**". Then connect the cradle to the host device via USB cable.

Decide Your Radio Link Mode

Proton IMS 3190 Bluetooth image scanner provides several radio link modes to communicate with most host devices. When the Bluetooth-enabled host device is not available, it can work with the smart cradle in PAIR mode (peer-to-peer connection) or PICO mode (multiple connections) to provide a **plug-and-play** cordless migration of your existing non-Bluetooth-enabled devices. Moreover, you are also able to use the scanner to work with Bluetooth-enabled host devices via SPP mode or HID mode.

When the radio link is disconnected, the scanner is capable of reconnecting the radio link automatically when it returns to the communication coverage. But please note that this feature is not available in SPP slave mode. If you would like to change the radio link mode, please scan the “**Uninstall**” command to reset the scanner to uninstall state.

PAIR Mode

If the Bluetooth device is not available in your existing system, PAIR mode is the simplest plug-and-play solution. In this mode, a smart cradle can only work with one scanner. The smart cradle not only provides the Bluetooth radio link with the scanner, but also offers the legacy cabled interfaces to the host device, including USB HID, USB COM, PS/2(DOS/V) Keyboard Wedge and RS232 Serial.

PICO Mode

For the requirement of multiple connections, up to 7 scanners can be connected to one smart cradle concurrently. If you would like to un-pair all scanners paired with the smart cradle, please press and hold the paging/reset button of the smart cradle for more than 5 seconds. If you just want to un-pair part of the paired scanners, please take those paired scanners to scan the “Uninstall” command one by one.

HID Mode

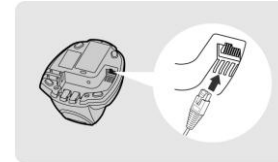
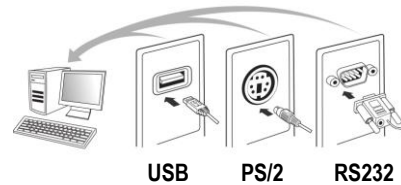
Through the most useful HID service, the scanner can work as a **Bluetooth Keyboard**. In this mode, the scanner will be discoverable by the radio connection request issued by the remote host device. For some cases, you may be requested to enter the Passkey (PIN) to establish the Bluetooth connection for security purpose.

SPP Master/Slave Mode

Through the standard SPP service, the scanner can work as a **Bluetooth Serial Device**. In SPP master mode, the scanner initiates the radio connection request to the remote slave device. In SPP slave mode, the scanner will be discoverable by the radio connection request issued by the remote host device.

Use Proton IMS 3190 in PAIR Mode

- 1 Ensure the battery is fully charged. You may refer to the section of **Preparations before Using** for details.
- 2 Please choose your desired interface cable, then plug it into the host interface port of the smart cradle and connect it to the host device.



- 3 Turn on the power of your host device.
- 4 Power on or wake up the scanner by pressing the **Trigger** key if the scanner is power-off.
- 5 This scanner is pre-paired with the shipped smart cradle, so you will see the link indicators of scanner **blink blue per 2.5 seconds**, and the central indicator of the smart cradle **light blue**. If the scanner and smart cradle are not paired, the status indicator of scanner and the side indicators of smart cradle **blink red and green alternatively** (in “Uninstall” state). Please follow step 6 to establish the connection.
- 6 Scan “PAIR mode” command. The status indicator of scanner will turn steady red immediately.



Place the scanner on the smart cradle, then you will hear one short beep to indicate the pairing process is activated. The scanner will emit continuous short clicks and the link indicator of scanner will flash blue quickly during the pairing process. When you hear 4 beeps in ascending tone, the pairing process is completed. You will see that the link indicator of scanner gives **1 blue blink per 2.5 seconds** and the central indicator of the smart cradle **lights blue**.

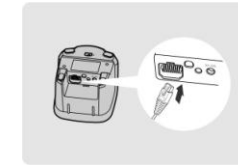
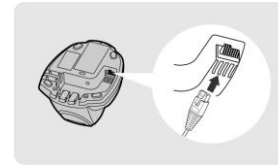
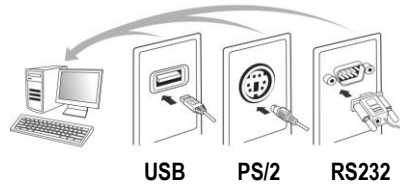
If the scanner pairing process failed or it's not placed on the smart cradle within 20 seconds, you will hear 2 “Di-do Di-do” beeps to warn the failure of pairing, the scanner will return to uninstall state automatically.

- 7 Scan the corresponding host interface quick set command to complete the installation.

 The default host interface of smart cradle is preset to **USB HID**. If you want to set the host interface to **USB COM**, you have to install the USB virtual COM driver into your host device before using the scanner.

Use Proton IMS 3190 in PICO Mode

- 1 Ensure the battery is fully charged and choose your desired interface cable, then plug it into the host interface port of the smart cradle and connect it to the host device.



- 2 Turn on the power of your host device.
- 3 Ensure the side indicators of the smart cradle **blink red and green alternatively** (in “Uninstall” state). If the smart cradle is paired with other scanners, please press and hold the paging/reset button for **more than 5 seconds** to un-pair all paired scanners. Then the smart cradle will return to uninstall state automatically.
- 4 Prepare the scanners you desire to pair with smart cradle. Power or wake up the scanner by pressing the **Trigger** key if the scanner is power-off. Ensure the status indicator of each scanner **blinks red and green alternatively** (in “Uninstall” state). If the scanner is not in uninstall state, please scan the “Uninstall” command to un-pair the scanner, then scan the “**PICO mode**” command, and the status indicator of scanner will light red.



Uninstall



PICO Mode

Place the scanner onto the smart cradle, then you will hear one short beep to indicate the pairing process is activated. The scanner will emit continuous short clicks and the link indicator of scanner will flash blue quickly during the pairing process. When you hear 4 beeps in ascending tone, the pairing process is completed. You will see that the link indicator of scanner **blinks blue once per 2.5 seconds**; the central indicator of the smart cradle **lights blue** and its side indicators **light green**.

If the scanner pairing process failed or it's not placed on the smart cradle within 20 seconds, you will hear 2 “Di-do Di-do” beeps to warn the failure of pairing, the scanner will return to uninstall state automatically.

- 5 Please scan the corresponding host interface quick set command to complete the installation. Then repeat the same procedure to pair other scanners with the smart cradle.



For user's convenience, the smart cradle will automatically assign the ID numbers to each scanner. Please scan the **System Information** command to check the assigned ID number of each scanner.

Clone Function

For the user's convenience, the clone function will help you to clone the host interface related parameters (please refer to following table for details) from one of the paired scanners to the rest of paired scanners under PICO mode. You can use one of the paired scanners to set the host interface related parameters first and then scan "Save Configuration" command. After that, please take the other paired scanners to scan "Clone" command one by one to clone the host interface related parameters.



Please ensure to keep those paired scanners in connected status when you use the **Clone** function. Because the host interface related parameters can't be cloned to the paired scanner in disconnected status.



Save Configuration



Clone

The below host interface related parameters will be impacted by clone function:

Data Transmission Parameter	Serial Interface Control
Field Delimiter	Handshaking Protocol
Data Transmission Format	Intermessage Delay
Host Interface Control	Interfunction Delay
Host interface Selection	Intercharacter Delay
Keyboard Interface Control	Baud Rate
Keyboard Layout	Data Frame
Intermessage Delay	Time Out Control
Interfunction Delay	Wand Emulation Control
Intercharacter Delay	Output Polarity
Caps Lock Control	Initial Signal State
Caps Lock Release Control	Margin Time
Function Key Emulation	Module Time
Key Pad Emulation	Narrow/Wide Ratio
Upper/Lower Case	Code39 Emulation

Use Proton IMS 3190 in HID Mode

- 1 Ensure the battery is fully charged. Power on the scanner by pressing the Trigger key within radio range if the scanner is power-off, and ensure the status indicator of scanner gives **alternative red and green blinks** (in “Uninstall” state). If the scanner is not in uninstall state, please scan the “Uninstall” command first.



Uninstall

If your remote host is equipped with latest Bluetooth drivers, or it's an iOS or Android device, you are recommended to use “**HID Mode**” for quick pairing. If necessary, you may use “**HID Mode with Passkey**” to establish a more secure connection, If you frequently experienced the problem in using HID mode, please try “**HID Legacy Mode**” instead.



HID Mode



HID Legacy Mode



HID Mode with Passkey

Once you scan one of above commands, the link indicator of scanner will **blink blue 3 times per 2 seconds** during searching process. You have to execute the Bluetooth Discovery procedure to find available Bluetooth device, then select Proton IMS 3190

- 2 If you use “**HID Mode**”, please go to step 5.
- 3 If you use “**HID Mode with Passkey**”, you will be requested to enter the Passkey (PIN) on the remote host. Please enter the Passkey (PIN) accordingly by scanning the “**Option Code**” (Page 97), and then scan the “**FIN (Finish)**” to end the Passkey entry, then go to step 5.
- 4 If you scan “**HID Legacy Mode**”, the Passkey (PIN) may be requested. Please enter “**00000000**” (default setting). You will see “Keyboard on Proton IMS 3190 Please double click this HID service to establish the connection between scanner and remote host device.”
- 5 The scanner will emit 4 beeps in ascending tone to indicate the connection is established. At the same time, the link indicator of scanner will **blink blue once per 2.5 seconds** to indicate the scanner is in radio-connected state.

Please note that if the scanner is not connected to the host device within 1 minute after scanning the above command, the scanner will enter radio-off status automatically. You can just press the trigger to wake up the scanner to continue the installation.



The installation procedure may vary depending on different remote host devices, operating systems and the Bluetooth drivers. Please consult your professional IT consultant to obtain necessary support.

Use Proton IMS 3190 in SPP Mode

Establish SPP Master Connection

- 1 Ensure the battery is fully charged. Please go to the folder “**Hardware**” located in Bluetooth Advanced Setting of the remote host device to check its device **MAC address**. Then prepare a 12-character Code 128 barcode of the remote host device MAC address, or follow the step 4 to input MAC address by scanning 12 option codes.
- 2 Ensure a virtual COM port is available in your remote host for connecting the scanner. If not, please go to the folder “**Local Services**” located in Bluetooth Advanced Setting. Click the “**Add Serial Services**” to add one more Bluetooth COM port.
- 3 Power on or wake up the scanner by pressing the **Trigger** key within radio coverage if the scanner is power-off, and ensure the status indicator of scanner **blinks red and green blinks alternatively** (in “**Uninstall**” state). If the scanner is not in uninstall state, please scan the “Uninstall” command first, then scan the “SPP Master Mode” command. The status indicator of scanner will turn steady red immediately.



Uninstall



SPP Master Mode

- 4 Scan a 12-character MAC address barcode, or scan 12 option codes and “FIN” command to confirm your inputs. The scanner will emit continuous short clicks and the link indicator of the scanner will **blink blue** quickly during the radio connecting process. If the PIN Code or Passkey is requested, please enter “**0000000**” (default setting).
- 5 The scanner will emit 4 beeps in ascending tone to indicate the radio is connected. At the same time, the link indicator of scanner will **blink blue once per 2.5 seconds** to indicate the scanner is in radio-connected state.

Please note that if the scanner failed to connect to the host device within 30 seconds, the link indicator will **blink blue 3 times per 2 seconds**. But the scanner is still continuing to discover the host device for another 30 seconds before go off. In the interim, you still can scan “Uninstall” command to revert the scanner to uninstall state. If the scanner entered radio-off status already, you just need to press the trigger to wake up the scanner to continue the installation.



The above procedures are based on popular Windows environment. But the installation procedure may vary depending on different remote host devices, operating systems and the Bluetooth drivers. Please consult your professional IT consultant to obtain necessary support if any problem has been encountered during the installation processes.

Establish SPP Slave Connection

- 1 Ensure the battery is fully charged and a virtual COM port is available in your remote host for connecting the scanner. If not, please go to the folder “**Client Applications**” located in Bluetooth Advanced Setting. Click the “**Add COM Port**” to add one more Bluetooth COM port.
- 2 Power on or wake up the scanner by pressing the **Trigger** key within radio coverage if the scanner is power-off state, and ensure the status indicator of scanner **blinks red and green alternatively** (in “**Uninstall**” state). If the scanner is not in uninstall state, please scan the “Uninstall” command first. Then scan the “SPP Slave Mode” command, and the link indicator of scanner will **blink blue 3 times per 2 seconds** during searching process.



Uninstall



SPP Slave Mode

- 3 You have to execute the Bluetooth Discovery procedure to find all available Bluetooth device list in your remote host. You will see Proton IMS 3190 is shown in the list if the scanner is successfully discovered.
- 4 Double click the Proton IMS 3190 on the discovered Bluetooth devices. If the PIN Code or Passkey is requested for security connection, please enter “**00000000**” (default setting). You will see “Serial Port on Proton IMS 3190”
Please double click this SPP service to establish the connection between scanner and remote host device.
- 5 The scanner will emit 4 beeps in ascending tone to indicate the connection is established. At the same time, the link indicator of scanner will **blink blue once per 2.5 seconds** to indicate the scanner is in radio-connected state.

Please note that if the scanner is not connected to the host device within 1 minute after scanning the “**SPP Slave Mode**” command, the scanner will enter radio-off status automatically. You can just press the trigger to wake up the scanner to continue the installation.



The above procedures are based on popular Windows environment. But the installation procedures may vary depending on different remote host devices, operating systems and the Bluetooth software drivers. Please consult your professional IT consultant to obtain necessary support if any problem has been encountered during the installation processes.

Enter Bluetooth Discoverable Mode (only available for pocket scanners)

If you use pocket scanner, you can have the scanner entered into Bluetooth discoverable mode for pairing with any remote host easily. When you press and hold the **FN1** for more than 3 seconds, the scanner will enter into preset Bluetooth discoverable mode. You have to carry out the Bluetooth discovery procedure to find the scanner for pairing. The preset Bluetooth profile for discoverable mode is “HID Mode”. You can change the Bluetooth profile to “HID Mode with Passkey” or “SPP Slave Mode”.

Out-of-range Scanning

When the radio connection is established between scanner and remote host device, the scanner will transmit each scanned data right after scanning the barcode. However, the scanner is preset not to scan any barcode data when it loses the radio connection with the remote host device.

If you enable the out-of-range scanning function, the scanner is able to continue scanning barcode data while it is out of radio coverage. All scanned data will be temporarily stored into the memory buffer until radio link resumed.



Enable Out-of-range Scanning



Disable Out-of-range Scanning ◆

In case of the scanner is out of radio coverage, you will hear 4 beeps in descending tone to indicate the radio connection lost. The link indicator of scanner will **blink blue 3 times per 2 seconds**. Once the scanner is back to radio coverage, you will hear 4 beeps in ascending tone to indicate the radio connection rebuilt and the scanner will **blink blue once per 2.5 seconds**. At the same time, all stored scanned data will be transmitted automatically right after the radio link is resumed.

Power Off

By default, the scanner goes off if the scanner is not used during the user-defined time out duration. If you want your scanner powered off immediately, you can scan the “Power Off” command. For pocket scanner user, you also can power off the scanner by long pressing and holding **Right Key** for more than three seconds. If you would like to activate the scanner, please press the trigger key.



Power Off

Batch Scanning (Inventory Mode)

Thanks to the specially designed Batch Scanning function, the scanner is capable of storing the barcode data. It is an ideal cost-saving solution for inventory applications.

Once you scan the “Enter Batch Scanning” command to activate this function, all scanned barcode data will be stored into the memory storage, and the status indicator of scanner will give **green blink** at regular interval during batch scanning. You can scan and store the barcode data till the memory storage is full. If the storage is full, you will hear 2 long beeps and the status indicator will give 2 red blinks to indicate **out of storage**.

If you use pocket scanner, you can also press and hold the **Function Key 2** for more than 3 seconds to enter Batch Scanning, by which 3 beeps will be heard and the status indicator of the scanner will **blink green** at regular interval during batch scanning.

To exit the batch scanning, please scan the “Exit Batch Scanning” command. If you use pocket scanner, you can also exit the batch scanning by pressing and holding **Function Key 2** for more than 3 seconds.



Enter Batch Scanning



Exit Batch Scanning

Using Quantity Feature

The scanner supports quantity feature when it enters batch scanning. When you use quantity feature, the quantity information and scanned barcode data will be stored into the memory storage together. You can enter the quantity information from 1 to 9999 by scanning the following quantity commands right after you scanned the barcode data.



Quantity 0



Quantity 3



Quantity 5



Quantity 8



Quantity 1



Quantity 4



Quantity 6



Quantity 9



Quantity 2



Quantity 7

There are three ways to output the stored barcode data and quantity information. The preset output format is to transmit stored data as many times as the quantity indicated. But you still can set the scanner to output stored barcode data together with quantity information in two fields, and a preset delimiter” , ” will be output in between. To fulfill different application requirements, both the delimiter and output sequency can be changed as well.



As many times as the quantity indicates ◆



<Quantity><Field Delimiter><Scanned Data>



<Scanned Data><Field Delimiter><Quantity>

How to Transmit Stored Data

The scanner is preset to transmit all the stored data by scanning the “Transmit Stored Data” command. If you use pocket scanner, you can also transmit the stored data by pressing and holding **Left Key** for more than 3 seconds. During the transmission, the scanner will emit continuous short clicks and the link indicator will **blink blue**. Then the scanner will emit two short beeps after data transmission is completed.



Transmit Stored Data

But you are able to transmit the stored data by placing the scanner onto the cradle as well.



Scan Barcode Command ◆



Place Scanner onto the Cradle



Scan command or Place Scanner onto theCradle

How to Delete Scanned Data

The scanner is preset to keep all the stored data until you scan the “Clear All Stored Data” command. But you are still able to change the setting to “Auto Delete Stored Data after Transmission” as well.



Clear All Stored Data



Auto Delete Stored Data
after Transmission



Keep Stored Data after
Transmission ◆

How to Delete Last Scanned Data

If you scanned a wrong barcode, the last scanned data can be deleted by scanning the „Delete Last Scanned Data” command. If you use pocket scanner, you can also delete the last scanned data by short pressing the **FN2**.



Delete Last Scanned Data

Toggle between Barcode Scanning and On-screen Keyboard Input

You can toggle between use barcode scanning and on-screen keyboard input of the mobile device. To activate the on-screen keyboard input function; you can turn off the radio by scanning “**Switch On-screen Keyboard**” command. If you use pocket scanner, you can turn off the radio to activate the on-screen keyboard input by short pressing the **FN1** Once you finished the keyboard input, pressing the trigger once to turn on the radio, the on-screen keyboard input function will be inactivated.

The scanner is preset to use “General Approach” by controlling the radio to toggle between barcode scanning and on-screen keyboard input of most popular mobile devices. To work with iOS devices, please scan “iOS Approach” command. If you use pocket scanner, the **FN1** can be set to “iOS Approach” to quickly toggle iOS on-screen keyboard input, and you can also toggle the iOS on-screen keyboard input by short pressing the **FN1**.



General Approach ◆



iOS Approach



Switch On-screen Keyboard

Proton IMS 3190 : Rev. 4.00.05 and above

Presentation Scanning (Gun type only)

The Presentation Scanning is designed for hand-free applications for user's convenience. If the "Presentation Scanning Auto-sense" function is enabled, the scanner is capable of automatically switching to presentation mode as soon as you place it onto the SmartStand or cradle.



Enable Auto-sense



Disable Auto-sense ◆

Check Battery Status

You can check battery status of the scanner by short pressing the Left Key or scanning "Check Battery Status" command. Please refer to the "Battery Status Indication" shown on page 1 for details.



Check Battery Status

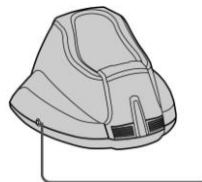
Battery Status Indication

The following corresponding flashes of the LED indicators present the current battery status of the scanner.

LED Indication	Battery Status
3 green and blue flashes	More than 75%
3 green flashes	More than 50%
3 orange flashes	More than 25%
3 red flashes	Less than 25%

Paging Function

The Paging function is helpful for you to locate the paired smart cradle or scanner. If you would like to page the paired smart cradle, you can scan "Paging" command. If you would like to page the paired scanner, you can press the paging/reset button of the smart cradle **no longer** than 3 seconds.



Paging/Reset Button



Paging

Bar Code Programming Menu

The bar code commands are specially designed **Proprietary** bar code labels which allow you to set the Proton IMS 3190 internal programming parameters. There are **System Command**, **Family Code** and **Option Code** for programming purpose.

Each programmable family and bar code command label is listed on the same page with major system commands. The detailed explanations and special programming flowchart are printed on facing or following pages. You can read the explanation and set the Proton IMS 3190 concurrently.

A supplemental bar code command menu incorporates the bar code command labels of System Command and Option Code. As you set the Proton IMS 3190, open the bar code command menu to find the option code page. You may scan the desired family code and option code to set Proton IMS 3190. If you want to change the programming family for multiple settings, you need only turn over the programming page to find next desired programming family.

System Command

The System Command is the highest level bar code command which directs Proton IMS 3190 to perform immediate operations, such as entering programming mode (**PROGRAM**), exiting programming mode (**EXIT**), listing system information (**SYSLIST**), recovering to factory preset configurations (**M_DEFAULT**), and so on. Please note that all system commands will take a few seconds to complete the operations. User must wait for the completion beeps before scanning another bar code.

Family Code

The Family Code is scanned to select the user desired programming family. Proton IMS 3190 has already provided more than one hundred programming families to meet any specific requirements.

Option Code

The Option Codes is a set of bar code commands represented by “**0–9**”, “**A–F**” and finishing selection (**FIN**). For most setting, you must select at least one option code following the family code selection to set the desired parameter for the selected programming family.

Programming Procedures

As you scan the bar code command to select the desired parameters, information about the final selected parameters represented by the bar code commands are stored in the Proton IMS 3190's internal Flash Memory ASIC or non-volatile memory. If you turn off the unit, the Flash Memory ASIC or non-volatile memory retains all programming options. You need not re-program the Proton IMS 3190 if you want to keep the existing configurations in the next power on.

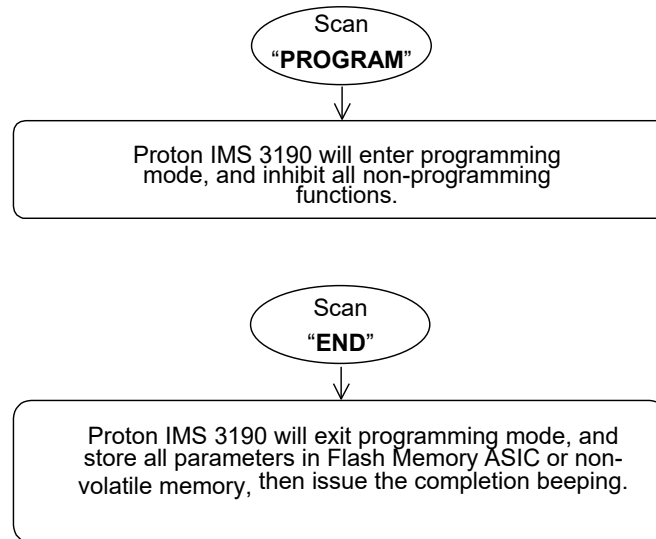
The programming procedures of Proton IMS 3190 are designed as simple as possible for ease of setting. Most programming families take the **Single Scan Selection** programming procedure. But several programming families have more complex and flexible programmable options, and you must take **Multiple Scans Selection, Cycling Scan Selection or Dual Level Selection** to complete their programming procedures. Each kind of programming procedure is listed in the following pages for your reference. Please give careful attention to become familiar with each programming procedure.

If the programming family must take multiple scans selection, cycling scan selection, or dual level selection procedures, the family of the programming menu will be marked with the matched representing symbol of **Programming Category** (P.C.) in bold font listed in the following table. You can easily find the bold mark in the programming menu, and refer to their flowcharts for details. Before setting the Proton IMS 3190, please also refer to the "Beeping Indications" listed in Appendix to understand the details of programming beeping indications. It will be very helpful for you to know the existing status while you are programming the Proton IMS 3190.

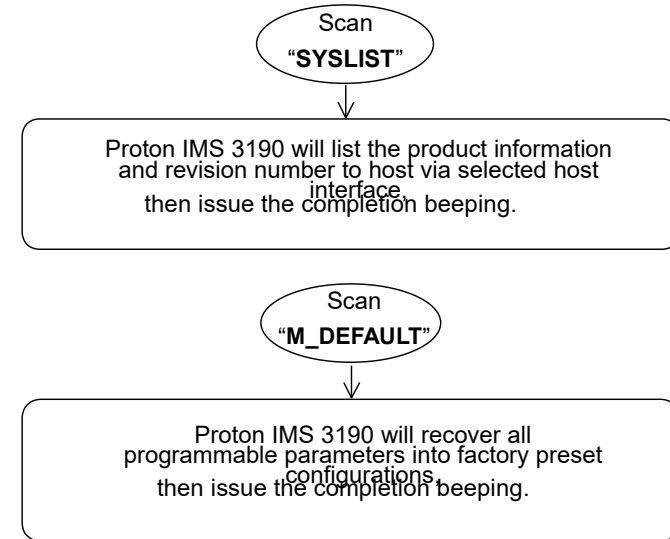
Conventions of Programming Menu


Conventions	Descriptions
◆	Factory Default Value
P.C.	Programming Category SS : Single scan selection MS : Multiple scans selection CS : Cycling scan selection DS : Dual level scan selection
()	Necessary Option Code
[]	Selectable Option Code

Program & End

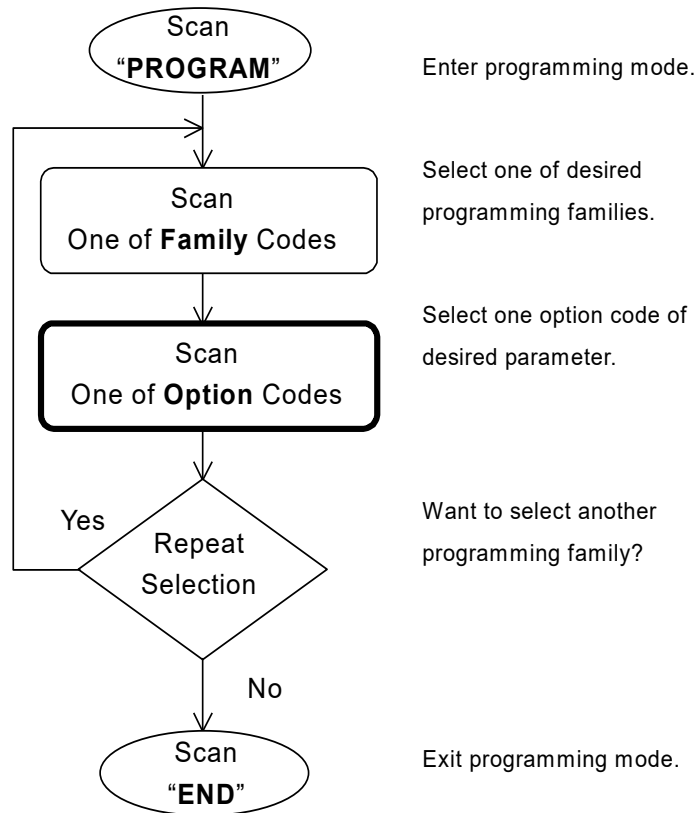


System List, Group & Master Default

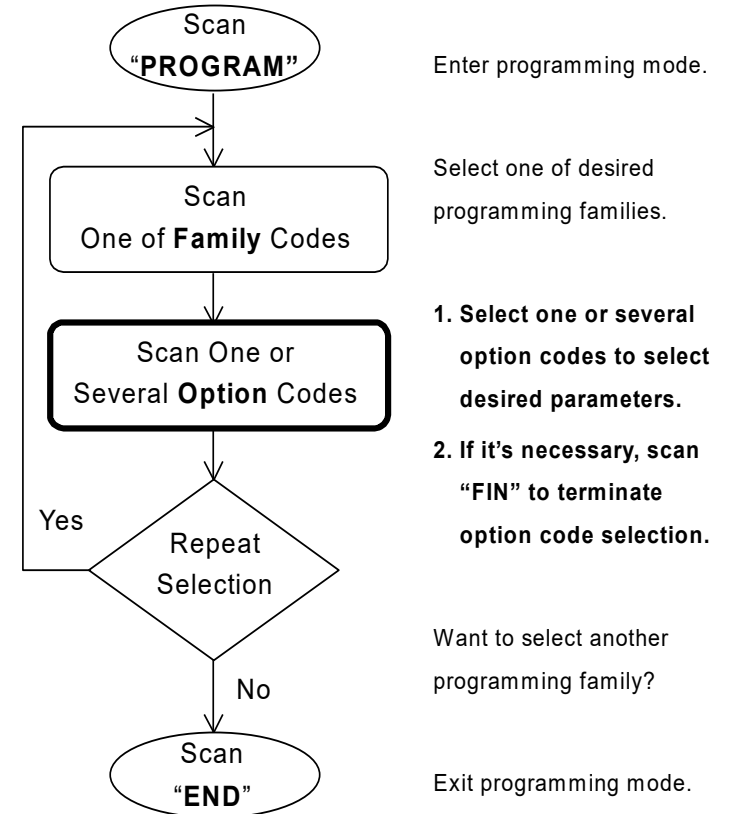


 Please note that the Proton IMS 3190 will take 3-4 seconds to store parameters in internal Flash Memory ASIC or non-volatile memory after you scan the "END". Please **don't** turn off the power before the completion

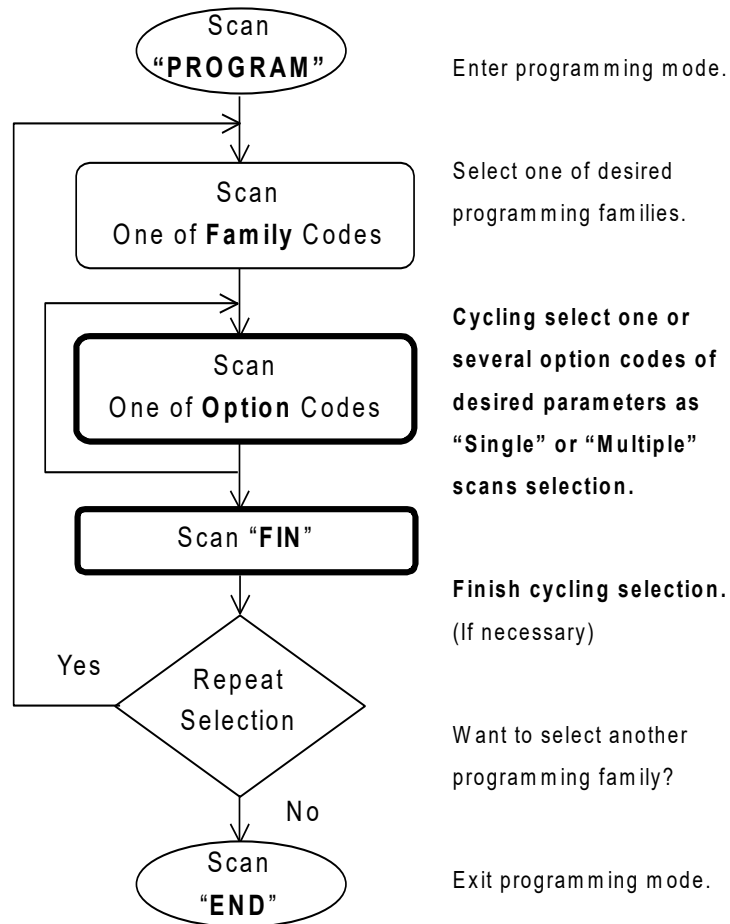
Single scan selection



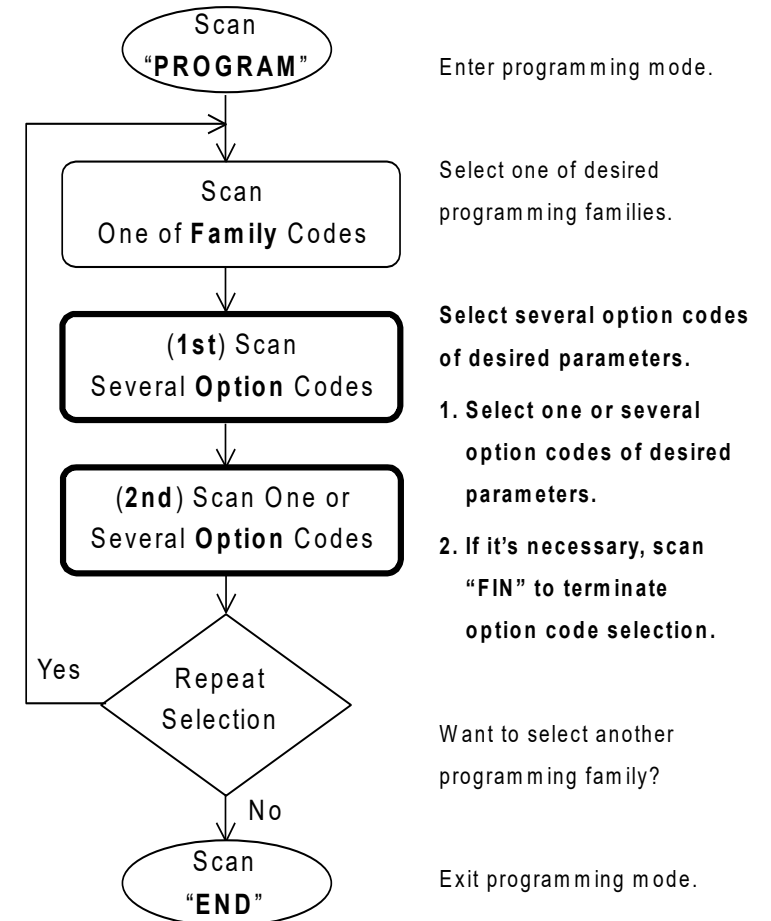
Multiple scans selection



Cycling scan selection



Dual level selection






PROGRAM

Host Interface Selection



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Host Interface Selection 	MS	IBM PS/2, 25-30 series keyboard wedge interface	02
	MS	Standard/TTL RS-232 peer-to-peer serial	06
	MS	Wand emulation	08
	MS	USB Com Port Emulation	09
	MS	PS/2 (DOS/V) direct link (keyboard replacement)	10
	MS	PS/2 (DOS/V) keyboard wedge turbo mode	13
	MS	PS/2 (DOS/V) keyboard wedge standard mode	14
	MS	Laser emulation	17
	MS	USB HID standard mode ◆	18
	MS	USB HID turbo mode	19
	MS	USB HID Legacy	20
	MS	USB EFT Terminal Mode	21

▪ **A series** doesn't support Wand emulation, Laser emulation, USB HID Legacy and USB EFT Terminal Mode.




PROGRAM

Symbology Reading Control

◆ User Defined Symbol ID ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Symbol ID : 1 character 	DS	Code 128 (default= B)	00	(1 character)
		GS1-128 (default= C)	01	(1 character)
		UPC-A (default= A)	02	(1 character)
		EAN-13 (default= F)	03	(1 character)
		Codabar/NW-7 (default= D)	04	(1 character)
		Code 39/Code 32 (default= G)	05	(1 character)
		Code 93 (default= H)	06	(1 character)
		Standard/Industrial 2 of 5 (default= I)	07	(1 character)
		Interleaved 2 of 5 (default= J)	08	(1 character)
		Matrix 2 of 5 (default= K)	09	(1 character)
		China Postal Code (default= L)	10	(1 character)
		German Postal Code (default= M)	11	(1 character)
		IATA (default= O)	12	(1 character)
		Code 11 (default= P)	13	(1 character)
		MSI/Plessey (default= R)	14	(1 character)
		UK/Plessey (default= S)	15	(1 character)
		Telepen (default= T)	16	(1 character)
		GS1 DataBar (default= X)	17	(1 character)
		UPC-E (default= E)	18	(1 character)
		EAN-8 (default= N)	19	(1 character)
		Trioptic Code 39 (default= W)	20	(1 character)
		UCC Coupon Extended Code (default= Z)	21	(1 character)
		PDF417/Micro PDF417 (default= V)	22	(1 character)
		Codablock F (default= Y)	23	(1 character)
		Code 16K (default= Q)	24	(1 character)
		Code 49 (default= U)	25	(1 character)
		Korea Post Code (default= a)	26	(1 character)
		QR & Micro QR Code (default= b)	28	(1 character)
		Data Matrix (default= c)	29	(1 character)
		Maxi Code (default= d)	30	(1 character)




PROGRAM

Symbology Reading Control

◆ User Defined Symbol ID ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Symbol ID : 1 character 	DS	Aztec Code (default= e) Chinese Sensible (default= f) Australian Post (default= g) British Post (default= h) Intelligent Mail (USPS 4CB/One Code) (default= j) Japan Post (default= k) Netherlands KIX Post (default= l) US Planet (default= m) US Postnet (default= o)	31 32 33 34 36 37 38 39 41	(1 character) (1 character) (1 character) (1 character) (1 character) (1 character) (1 character) (1 character) (1 character)




PROGRAM

Symbology Reading Control

◆ Symbology ID Transmission ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
 Symbology ID Transmission	SS	Disable symbology ID transmission ◆	0
	SS	Enable prefix Proton IMS 3190 symbology ID transmission	1
	SS	Enable suffix Proton IMS 3190 symbology ID transmission	2
	SS	Enable both prefix and suffix Proton IMS 3190 symbology ID transmission	3
	SS	Enable prefix AIM symbology ID transmission	4
	SS	Enable suffix AIM symbology ID transmission	5
	SS	Enable both prefix and suffix AIM symbology ID transmission	6




PROGRAM

Symbology Reading Control

◆ Readable Bar Code Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Readable Symbology Setting  <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Remember to scan "FIN" to terminate this selection. But if you select the "Auto", Proton IMS 3190 will terminate this selection automatically. </div>	SS	Auto ◆	00
	CS	Code 128 *	01
	CS	GS1-128 *	31
	CS	UPC-A *	02
	CS	UPC-E *	03
	CS	EAN-13 *	04
	CS	EAN-8 *	05
	CS	Codabar/NW-7 *	06
	CS	Code 39 *	07
	CS	Trioptic Code 39	47
	CS	Standard/Industrial 2 of 5	08
	CS	Matrix 2 of 5	38
	CS	Interleaved 2 of 5 *	48
	CS	China Postal Code	58
	CS	Germany Postal Code	68
	CS	Code 93 *	09
	CS	Code 11	10
	CS	MSI/Plessey	11
	CS	UK/Plessey	12
	CS	Telepen	13
	CS	GS1 DataBar (RSS-14) *	14
	CS	IATA	15
	CS	PDF417 * /Micro PDF417	17
	CS	Codablock F	18
	CS	Code 16K	19
	CS	Code 49	20
	CS	Korea Post Code	21
CS	QR Code * / Micro QR Code *	A0	
CS	Data Matrix *	A1	
CS	MaxiCode	A2	
CS	Aztec Code *	A3	
CS	Chinese Sensible (Han Xin) Code	A4	




PROGRAM

Symbology Reading Control

◆ Readable Bar Code Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Readable Symbology Setting 	CS	Australian Post	B0
	CS	British Post	B1
	CS	Intelligent Mail barcode	B3
	CS	Japanese Post	B4
	CS	KIX Post	B5
	CS	Planet Code	B6
	CS	Postnet	B8

- If your application is known, you may select those known symbologies only to increase the reading speed and decrease the possibility of reading error. Furthermore, to add the "Symbology ID" into the transmitted data is also helpful to identify the specific symbology.
- Above symbologies marketed with * are enabled as default. When you select "Auto", the scanner only reads those symbologies marked with *.
- When you set the minimum and maximum length of each symbology, please note the data length of scanned bar code doesn't include start/stop characters.







PROGRAM

Symbology Reading Control

◆ Code 39/Code 32 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 39 Family Setting 	SS	Disable Code 39	0
	SS	Enable Code 39 ◆	1
	SS	Select Standard Code 39 as primary format ◆	2
	SS	Select Full ASCII Code 39 as primary format	3
	SS	Select Code 32 (PARAF, Italian Pharmaceutical) as primary format	4
	SS	Disable start/stop symbol transmission ◆	5
	SS	Enable start/stop symbol transmission	6
	SS	Disable Code 32 leading A transmission ◆	7
	SS	Enable Code 32 leading A transmission	8
	SS	Disable MOD 43 check digit verification ◆	9
	SS	Enable MOD 43 check digit verification	A
	SS	Disable check digit transmission ◆	B
	SS	Enable check digit transmission	C
	SS	Disable Code 39 buffering ◆	D
SS	Enable Code 39 buffering	E	
Trioptic Code 39 Setting 	SS	Disable Trioptic Code 39 ◆	0
	SS	Enable Trioptic Code 39	1
Code 39 Min. Length 	SS	Default (01) ◆	FIN (2 digits)
	MS	01-Maximum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	
Code 39 Max. Length 	SS	Default (98) ◆	FIN (2 digits)
	MS	98-Minimum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	

▪ Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously.



PROGRAM

Symbology Reading Control

◆ Code 39 Setting ◆



F_DEFAULT

PROGRAM		F_DEFAULT	
Code 39 Security Level	SS	Level 0	0
	SS	Level 1	1
	SS	Level 2 ◆	2
	SS	Level 3	3

■ Code 39 Security Level

The scanner offers four levels of decode security for Code39 bar codes:

Level 0: If you are experiencing misread of poorly-printed or serious out-of-spec. bar codes in level 1, please select level 0.

Level 1: If you are experiencing misread of poorly-printed or out-of-spec. bar codes in level 2, please select level 1.

Level 2: This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding "in-spec" Code39 bar codes.

Level 3: If you failed to read poorly-printed or out-of-spec. bar codes in level 2, please select level 3. This is the most aggressive setting and may increase the misread.






PROGRAM

Symbology Reading Control

◆ Codabar/NW-7 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Codabar Setting 	SS	Disable Codabar	0
	SS	Enable Codabar ◆	1
	SS	Select Codabar standard format ◆	2
	SS	Select Codabar ABC format	3
	SS	Select Codabar CLSI format	4
	SS	Select Codabar CX format	5
	SS	Disable start/stop symbol transmission ◆	6
	SS	Enable ABCD/ABCD start/stop symbol transmission	7
	SS	Enable abcd/abcd start/stop symbol transmission	8
	SS	Enable ABCD/TN*E start/stop symbol transmission	9
	SS	Enable abcd/tn*e start/stop symbol transmission	A
	SS	Disable check digit verification ◆	B
	SS	Enable check digit verification	C
	SS	Disable check digit transmission ◆	D
SS	Enable check digit transmission	E	
Codabar Check Digit Settings 	SS	Modulus 16 ◆	0
	SS	Modulus 10/weight 3	1
	SS	Modulus 11	2
	SS	Modulus 10/weight 2	3
	SS	7 check DR	4
	SS	Weight Modulus 11	5
	SS	Runes (Modulus 10/weight 2)	6
	Codabar Min. Length 	SS	Default (04) ◆	FIN (2 digits)
MS		01-Maximum	
		Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	




PROGRAM

Symbology Reading Control

◆ Codabar/NW-7 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
<p data-bbox="495 392 743 421">Codabar Max. Length</p> 	<p data-bbox="853 387 884 410">SS</p> <p data-bbox="853 422 884 445">MS</p>	<p data-bbox="927 387 1070 410">Default (98) ◆</p> <p data-bbox="927 422 1048 445">98-Minimum</p> <p data-bbox="927 467 1693 525">Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.</p>	<p data-bbox="1861 387 1933 410">FIN</p> <p data-bbox="1861 422 1960 445">(2 digits)</p>




PROGRAM

Symbology Reading Control

◆ UPC-A & UPC-E Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UPC Family Setting 	SS	Disable UPC-A	0
	SS	Enable UPC-A ◆	1
	SS	Disable UPC-E	2
	SS	Enable UPC-E ◆	3
	SS	Disable UPC-E expansion ◆	4
	SS	Enable UPC-E expansion	5
	SS	Disable UPC standardization ◆	6
	SS	Enable UPC standardization	7
	SS	Disable UPC numeric system	8
	SS	Enable UPC numeric system ◆	9
	SS	Disable UPC-A check digit transmission	A
	SS	Enable UPC-A check digit transmission ◆	B
	SS	Disable UPC-E check digit transmission	C
	SS	Enable UPC-E check digit transmission ◆	D
	SS	Disable UPC "leading 1" portion ◆	E
SS	Enable UPC "leading 1" portion	F	

▪ When enable UPC-E expansion, the UPC-E decoded data will be converted to UPC-A format and affected by related setting, such as UPC standardization, UPC numeric system, UPC-A check digit transmission.

- **UPC-E & EAN-8 Expansion** : Expand the 8-digit UPC-E and 8-digit ENA-8 to 12-digit UPC-A and 13-digit EAN-13.
- **UPC-A/E Standardization** : Expand the 12-digit UPC-A to 13-digit EAN-13 with 1 zero insertion.
- **UPC Lead 1 Numeric System** : Enable to read UPC leading with the 1 numeric system, you must enable this option.

WPC Selection (UPC/EAN/CAN)	Basic Length	Disable Check Digit	Disable Numeric System	With 2-digit Addendum	With 5-digit Addendum	Enable Standardization	Enable Expansion
UPC-A	12	- 1	- 1	+ 2	+ 5	+ 1	0
UPC-E	8	- 1	- 1	+ 2	+ 5	+ 1	+ 4
EAN-13	13	- 1	NC	+ 2	+ 5	NC	0
EAN-8	8	- 1	NC	+ 2	+ 5	NC	+ 5






PROGRAM

Symbology Reading Control

◆ UPC-A & UPC-E Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection		Option Code	
UPC Supplement Setting 	SS	Select UPC without supplement digits ◆		0	
	SS	Select UPC with only 2 supplement digits		1	
	SS	Select UPC with only 5 supplement digits		2	
	SS	Select UPC with 2/5 supplement digits		3	
	SS	Disable force supplement digits output ◆		4	
	SS	Enable force supplement digits output		5	
	SS	UPC Family Addenda Separator Off ◆		6	
	SS	UPC Family Addenda Separator On		7	
UPC/EAN Security Level 	SS	Level 0		0	
	SS	Level 1 ◆		1	
	SS	Level 2		2	
		Only available for UPC-A & EAN-13			
Supplement Scan Voting 	SS	None	Level 7	0	7
	SS	Level 1	Level 8	1	8
	SS	Level 2	Level 9	2	9
	SS	Level 3 ◆	Level 10	3	A
	SS	Level 4	Level 11	4	B
	SS	Level 5	Level 12	5	C
	SS	Level 6	Level 13	6	D

- **UPC/EAN Security Level**
 The scanner offers three levels of decode security for UPC/EAN bar codes:
 - Level 0: If you are experiencing misread of poorly-printed or out-of-spec. bar codes, especially in characters 1, 2, 7, and 8 in level 1, please select level 0. Selection of this security level may significantly impair the decoding ability of the scanner.
 - Level 1: This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding "in-spec" UPC/EAN bar codes.
 - Level 2: If you are experiencing misread of poorly-printed, soiled or damage bar codes in level 1, please select level 2. This is the most aggressive setting and may increase the misread.
- The **Supplement Scan Voting** is the number of times the same UPC/EAN with 2/5 supplement digits has to be decoded before it is transmitted. It is helpful when decoding a mix of UPC/EAN symbols with and without supplement digits. This function is effective when you select UPC/EAN with only 2 supplement digits, UPC/EAN with only 5 supplement digits or UPC/EAN with 2/5 supplement digits. The default value is Level 3. When you select higher level, it may impact the reading speed on poorly-printed, low contrast or damage barcode labels.






PROGRAM

Symbology Reading Control

◆ EAN Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection		Option Code	
EAN Setting 	SS	Disable EAN-13		0	
	SS	Enable EAN-13 ◆		1	
	SS	Disable EAN-8		2	
	SS	Enable EAN-8 ◆		3	
	SS	Disable EAN-8 expansion ◆		4	
	SS	Enable EAN-8 expansion		5	
	SS	Disable EAN-13 check digit transmission		6	
	SS	Enable EAN-13 check digit transmission ◆		7	
	SS	Disable EAN-8 check digit transmission		8	
	SS	Enable EAN-8 check digit transmission ◆		9	
	SS	Disable ISBN/ISSN Conversion reading check ◆		A	
	SS	Enable ISBN/ISSN Conversion reading check		B	
EAN Supplement Setting 	SS	Select EAN without supplement digits ◆		0	
	SS	Select EAN with only 2 supplement digits		1	
	SS	Select EAN with only 5 supplement digits		2	
	SS	Select EAN with 2/5 supplement digits		3	
	SS	Disable force supplement digits output ◆		4	
	SS	Enable force supplement digits output		5	
	SS	EAN Addenda Separator Off ◆		6	
	SS	EAN Addenda Separator On		7	
Supplement Scan Voting 	SS	None	Level 7	0	7
	SS	Level 1	Level 8	1	8
	SS	Level 2	Level 9	2	9
	SS	Level 3 ◆ □	Level 10	3	A
	SS	Level 4	Level 11	4	B
	SS	Level 5	Level 12	5	C
	SS	Level 6	Level 13	6	D

▪ The **Supplement Scan Voting** is the number of times the same UPC/EAN with 2/5 supplement digits has to be decoded before it is transmitted. It is helpful when decoding a mix of UPC/EAN symbols with and without supplement digits. This function is effective when you select UPC/EAN with only 2 supplement digits, UPC/EAN with only 5 supplement digits or UPC/EAN with 2/5 supplement digits. The default value is Level 3. When you select higher level, it may impact the reading speed on poorly-printed, low contrast or damage barcode labels.





PROGRAM

Symbology Reading Control

◆ EAN Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UPC/EAN Security Level 	SS SS SS	Level 0 Level 1 ◆ Level 2 Only available for UPC-A & EAN-13	0 1 2
EAN Supplement Control 	SS SS SS SS SS SS SS SS	Disable all specific prefix supplement digital output ◆ Enable all specific prefix supplement digital output Enable 491 Supplement Digit Output Enable 978/979 Supplement Digit Output Enable 977 Supplement Digit Output Enable 378/379 Supplement Digit Output Enable 414/419 Supplement Digit Output Enable 434/439 Supplement Digit Output	0 1 2 3 4 5 6 7

■ UPC/EAN Security Level

The scanner offers three levels of decode security for UPC/EAN bar codes:

Level 0: If you are experiencing misread of poorly-printed or out-of-spec. bar codes, especially in characters 1, 2, 7, and 8 in level 1, please select level 0. Selection of this security level may significantly impair the decoding ability of the scanner.

Level 1: This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding "in-spec" UPC/EAN bar codes.

Level 2: If you are experiencing misread of poorly-printed, soiled or damage bar codes in level 1, please select level 2. This is the most aggressive setting and may increase the misread.

■ EAN Supplement Control

If you select EAN with only 2, or 5 or 2/5 supplement digits and enable 491 prefix supplement digit output, the scanner will transmit EAN with 2, or 5 or 2/5 supplement digits bar codes starting with 491 prefix. The EAN without supplement digit **will not** be transmitted.

If you select EAN with only 2, or 5 or 2/5 supplement digits and enable the other except 491 prefix supplement digit output, the scanner will transmit EAN with 2, or 5, or 2/5 supplement digits bar codes starting with specific prefix. The EAN without supplement digit **will** be transmitted.




PROGRAM

Symbology Reading Control

◆ UCC Coupon Extended Code Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UCC Coupon Extended Code 	SS SS	Disable UCC Coupon Extended Code ◆ Enable UCC Coupon Extended Code	0 1

▪ UCC Coupon Extended Code

When UCC coupon extended code function is enabled, scanner decodes UPC-A barcodes starting with digit “5”, EAN-13 barcodes starting with digit “99” and GS1-128 Coupon Codes. UPC-A, EAN-13 and EAN-128 must be enabled to scan all types of Coupon Codes.





PROGRAM

Symbology Reading Control

◆ IATA & Interleaved 2 of 5 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
IATA Setting 	SS	Disable IATA ◆	0
	SS	Enable IATA	1
	SS	Select 15-digit fixed length IATA checking ◆	2
	SS	Select variable length IATA	3
	SS	Disable check digit verification ◆	4
	SS	Enable check digit automatic verification	5
	SS	Enable S/N checking digit verification only	6
	SS	Enable CPN checking digit verification only	7
	SS	Enable CPN, Airline and S/N check digit verification	8
	SS	Disable check digit transmission ◆	9
	SS	Enable check digit transmission	A
	SS	Disable start/stop symbol transmission ◆	B
SS	Enable start/stop symbol transmission	C	
Interleaved 2 of 5 Setting 	SS	Disable Interleaved 2 of 5	0
	SS	Enable Interleaved 2 of 5 ◆	1
	SS	Select Interleaved 2 of 5 as primary format ◆	2
	SS	Select German Postal Code as primary format	3
	SS	No check character ◆	4
	SS	Validate USS check digit	5
	SS	Validate OPCC check digit	6
	SS	Disable check digit transmission ◆	7
SS	Enable check digit transmission	8	






PROGRAM

Symbology Reading Control

◆ Code 25 Family Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 25 Setting 	SS	Disable Standard/Industrial 2 of 5 ◆	0
	SS	Enable Standard/Industrial 2 of 5	1
	SS	Disable Matrix 2 of 5 ◆	2
	SS	Enable Matrix 2 of 5	3
	SS	Disable China Postal Code ◆	4
	SS	Enable China Postal Code	5
	SS	Disable check digit verification ◆	6
	SS	Enable check digit verification	7
	SS	Disable check digit transmission ◆	8
	SS	Enable check digit transmission	9
Code 25 Family Min. Length 	SS MS	Default (04) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Code 25 Family Max. Length 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)

- For Code25 setting, we recommend you to select **only one** type of Code 25 or set the **maximum/minimum bar code length**. To decode all types of Code 25 or to variable length of Code 25 will increase the possibility of reading error.









PROGRAM

Symbology Reading Control

◆ Code 11 & Code 93 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 11 Setting 	SS SS SS SS SS SS SS	Disable Code 11 ◆ Enable Code 11 Disable check digit verification ◆ Select 1-check digit verification Select 2-check digit verification Disable check digit transmission ◆ Enable check digit transmission	0 1 2 3 4 5 6
Code 11 Min. Length 	SS MS	Default (04) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Code 11 Max. Length 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Code 93 Setting 	SS SS SS SS	Disable Code 93 Enable Code 93 ◆ Disable check digit transmission ◆ Enable check digit transmission	0 1 2 3
Code 93 Min. Length 	SS MS	Default (01) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Code 93 Max. Length 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)






PROGRAM

Symbology Reading Control

◆ MSI/Plessey Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
MSI/Plessey Setting 	SS	Disable MSI/Plessey ◆	0
	SS	Enable MSI/Plessey	1
	SS	Select MOD 10 check digit ◆	2
	SS	Select MOD 10-10 check digit	3
	SS	Select MOD 11-10 check digit	4
	SS	Disable check digit transmission ◆	5
	SS	Enable check digit transmission	6
MSI/Plessey Min. Length 	SS	Default (04) ◆	FIN (2 digits)
	MS	01-Maximum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	
MSI/Plessey Max. Length 	SS	Default (98) ◆	FIN (2 digits)
	MS	98-Minimum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	







PROGRAM

Symbology Reading Control

◆ Code 128 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 128 Setting 	SS SS SS SS	Disable Code 128 and GS1-128 Enable Code 128 and GS1-128 ◆ ISBT Concatenation Off ◆ ISBT Concatenation On	0 1 2 3
Code 128 Min. Length 	SS MS	Default (01) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Code 128 Max. Length 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Code 128 Security Level 	SS SS	Level 0 Level 1 ◆	0 1

▪ Code 128 Security Level

The scanner offers two levels of decode security for Code128 bar codes:

Level 0: If you are experiencing misread of poor-printed or out-of-spec. bar code in level1, please select level 0.

Level 1: This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding "in-spec." Code128 bar codes.






PROGRAM

Symbology Reading Control

◆ GS1-128 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
GS1-128 Setting 	SS SS	Disable GS1-128 Enable GS1-128 ◆	0 1
GS1-128 Min. Length 	SS MS	Default (01) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
GS1-128 Max. Length 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)






PROGRAM

Symbology Reading Control

◆ UK/Plessey Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
UK/Plessey Setting 	SS	Disable UK/Plessey ◆	0
	SS	Enable UK/Plessey	1
	SS	Select UK/Plessey Standard Format ◆	2
	SS	Select UK/Plessey CLSI Format	3
	SS	Disable Convert X to A-F ◆	4
	SS	Enable Convert X to A-F	5
	SS	Disable check digit transmission ◆	6
	SS	Enable check digit transmission	7
UK/Plessey Min. Length 	SS MS	Default (04) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
UK/Plessey Max. Length 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)




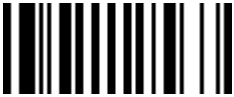

PROGRAM

Symbology Reading Control

◆ Telepen Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Telepen Setting 	SS SS SS SS SS SS	Disable Telepen ◆ Enable Telepen Select Telepen Numeric mode ◆ Select Telepen Full ASCII mode Disable check digit transmission ◆ Enable check digit transmission	0 1 2 3 4 5
Telepen Min. Length 	SS MS	Default (04) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Telepen Max. Length 	SS MS	Default (98) ◆ 98-Minimum Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)






PROGRAM

Symbology Reading Control

◆ GS1 DataBar Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
GS1 DataBar Setting 	SS SS SS SS SS SS	Disable GS1 DataBar (RSS-14) Enable GS1 DataBar (RSS-14) ◆ Disable GS1 DataBar Limited Enable GS1 DataBar Limited ◆ Disable GS1 DataBar Expanded Enable GS1 DataBar Expanded ◆	0 1 2 3 4 5
GS1 DataBar Min. Length 	SS MS	Default (04) ◆ 01- Maximum Only available for Expanded GS1 Databar. Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
GS1 DataBar Max. Length 	SS MS	Default (74) ◆ 74-Minimum Only available for Expanded GS1 Databar. Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)






PROGRAM

Symbology Reading Control

◆ Composite Codes, Codablock F PDF417/MicroPDF417 & Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Composite Codes Setting 	SS SS SS SS	Disable composite codes ◆ Enable composite codes UPC Composite Mode: UPC never linked ◆ UPC Composite Mode: UPC always linked If UPC Composite Mode: UPC never linked is selected, UPC barcodes are transmitted whether MicroPDF417 symbol is detected or not. If UPC Composite Mode: UPC always linked is selected, UPC barcodes are only transmitted when the MicroPDF417 is detected.	0 1 2 3
Codablock F Setting 	SS SS	Disable ◆ Enable	0 1
PDF417/Micro PDF417 Setting 	SS SS SS SS	Disable PDF417 Enable PDF417 ◆ Disable MicroPDF417 ◆ Enable MicroPDF417	0 1 2 3









PROGRAM

Symbology Reading Control

◆ Code 16K & Code 49 Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Code 16K Setting 	SS SS	Disable Code 16K ◆ Enable Code 16K	0 1
Code 16K Min. Length 	SS MS	Default (01) ◆ 01-Maximum Scan 3 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	FIN (3 digits)
Code 16K Max. Length 	SS MS	Default (160) ◆ 160-Minimum Scan 3 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	FIN (3 digits)
Code 49 Setting 	SS SS	Disable Code 49 ◆ Enable Code 49	0 1
Code 49 Min. Length 	SS MS	Default (01) ◆ 01-Maximum Scan 2 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Code 49 Max. Length 	SS MS	Default (81) ◆ 81-Minimum Scan 2 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)






PROGRAM

Symbology Reading Control

◆ QR Code Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
QR Code Setting 	SS	Disable QR Code	0
	SS	Enable QR Code ◆	1
		Disable MicroQR Code	2
		Enable MicroQR Code ◆	3
		Disable QR Code Append	4
		Enable QR Code Append ◆	5
		Disable QR Code Inverse Reading ◆	6
		Enable QR Code Inverse Reading	7
		Auto detect QR Code Inverse Reading	8
QR Code Min. Length 	SS	Default (01) ◆	FIN (4 digits)
	MS	01-Maximum Scan 4 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	
QR Code Max. Length 	SS	Default (7089) ◆	FIN (4 digits)
	MS	7089-Minimum Scan 4 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	







PROGRAM

Symbology Reading Control

◆ Data Matrix Setting ◆



F_DEFAULT

11Family Code Selection	P.C	Parameter Selection	Option Code
Data Matrix Setting 	SS SS SS SS SS SS SS SS	Disable Data Matrix Enable Data Matrix ◆ Disable Data Matrix Inverse Reading Enable Data Matrix Inverse Reading Auto Detect Data Matrix Inverse Reading ◆ Disable Data Matrix Mirror Images Enable Data Matrix Mirror Images Auto Detect Data Matrix Mirror Images ◆	0 1 4 5 6 7 8 9
Data Matrix Min. Length 	SS MS	Default (01) ◆ 01-Maximum Scan 4 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	FIN (4 digits)
Data Matrix Max. Length 	SS MS	Default (3116) ◆ 3116-Minimum Scan 4 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	FIN (4 digits)
Small DM Code Reading 	SS SS SS	Standard ◆ Level 1 Level 2	0 1 2

▪ **Small DM Code Reading:**

When small DataMatrix code can't be read by 2D scanner, you can select "Level 1" or "Level 2" to improve the scanner's ability to read small DataMatrix code. The scanner's snappiness decreased when you select "Level 1" or "Level 2". The higher level will take longer time to read the small DataMatrix barcode.






PROGRAM

Symbology Reading Control

◆ MaxiCode Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
MaxiCode Setting 	SS SS	Disable MaxiCode ◆ Enable MaxiCode	0 1
MaxiCode Min. Length 	SS MS	Default (01) ◆ 01-Maximum Scan 3 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (3 digits)
MaxiCode Max. Length 	SS MS	Default (150) ◆ 150-Minimum Scan 3 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (3 digits)






PROGRAM

Symbology Reading Control

◆ Aztec Code Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Aztec Code Setting 	SS SS	Disable Aztec Code Enable Aztec Code ◆	0 1
Aztec Code Min. Length 	SS MS	Default (01) ◆ 01-Maximum Scan 4 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	FIN (4 digits)
Aztec Code Max. Length 	SS MS	Default (3832) ◆ 3832-Minimum Scan 4 digits from the option code chart in Appendix; then Proton IMS 3190 will terminate this selection automatically.	FIN (4 digits)








PROGRAM

Symbology Reading Control

◆ Australian Post, US Planet, US Postnet,
British Post & Japan Post Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Australian Post Setting 	SS	Disable Australian Post ◆	0
	SS	Enable Australian Post	1
	SS	Raw format Output ◆	2
	SS	Numeric Encoding Output (N Encoding Table)	3
	SS	Alphanumeric Encoding Output (C Encoding Table)	4
	SS	Auto-discriminate Output (Combination C & N Encoding Table)	5
US Planet Setting 	SS	Disable US Planet ◆	0
	SS	Enable US Planet	1
	SS	Disable Check Digit Transmission ◆	2
	SS	Enable Check Digit Transmission	3
US Postnet Setting 	SS	Disable US Postnet ◆	0
	SS	Enable US Postnet	1
	SS	Disable Check Digit Transmission ◆	2
	SS	Enable Check Digit Transmission	3
British Post Setting 	SS	Disable British Post ◆	0
	SS	Enable British Post	1
	SS	Disable Check Digit Transmission ◆	2
	SS	Enable Check Digit Transmission	3
Japan Post Setting 	SS	Disable Japan Post ◆	0
	SS	Enable Japan Post	1

■ **Australian Post Setting:** Auto-discriminate output option increase the risk of misread because the encoded data format does not specify the Encoding Table used for encoding.






PROGRAM

Symbology Reading Control

◆ Netherlands KIX Code, Intelligent Mail & Korea Post Code Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Netherlands KIX Code Setting 	SS SS	Disable Netherlands KIX Code ◆ Enable Netherlands KIX Code	0 1
Intelligent Mail Setting (USPS 4CB/One Code) 	SS SS	Disable Intelligent Mail ◆ Enable Intelligent Mail	0 1
Korea Post Code Setting 	SS SS	Disable ◆ Enable Length fixed in 6 characters.	0 1




PROGRAM

Keyboard Interface Control

◆ Keyboard Layout (Language) Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Keyboard Layout 	SS	USA (QWERTY) ◆	00
	SS	France (AZERTY)	01
	SS	Germany (QWERTZ)	02
	SS	United Kingdom - UK (QWERTY)	03
	SS	Canadian French (QWERTY)	04
	SS	Spain (Spanish, QWERTY)	05
	SS	Sweden/Finland (QWERTY)	06
	SS	Portugal (QWERTY)	07
	SS	Norway (QWERTY)	08
	SS	Spain (Latin America, QWERTY)	09
	SS	Italy (QWERTY)	10
	SS	Netherlands (QWERTY)	11
	SS	Denmark (QWERTY)	12
	SS	Belgium (AZERTY)	13
	SS	Switzerland-Germany (QWERTZ)	14
	SS	Iceland (QWERTY)	15
	SS	Japan (DOS/V)	16
SS	Czech (QWERTY)	17	

- Please refer to the **ASCII/HEX Table** listed in the Appendix to determine HEX codes for characters, symbols, and functions to be used as preamble or postamble.
- To set preamble or postamble as function key output, you must enable the “**Function Key Emulation**” feature as listed in page 3-25 first.
- **Keyboard Interface Message String :**

Preamble	Data Length	Prefix Symbol ID	Scanned Data	Suffix Symbol ID	Postamble	Record Suffix
1-15 characters	2-4 digits	1 or 3 characters	Variable length	1 or 3 characters	1-15 characters	1 character









PROGRAM

Keyboard Interface Control

◆ Record Suffix, Preamble, Postamble,
FNC1 Transmit & Caps Lock ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Record Suffix 	SS SS SS SS SS SS	None RETURN ◆ TAB SPACE ENTER (Numeric Key Pad) User defined character (1 character)	0 1 2 3 4 5, (00-7F)
Preamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
Postamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
FNC1 Symbol Char. Transmit 	SS SS	Disable Enable ◆	0 1
Caps Lock Control 	SS SS SS	"Caps Lock Off" State ◆ "Caps Lock On" State Auto Detect (PC/AT, PS/2, Keyboard Replacement and DOS/V Machines only)	0 1 2
Caps Lock Release Control 	SS SS	"Caps Lock On, Caps Off" ◆ "Caps Lock On, Shift Off"	0 1



- **FNC1 Symbol Char. Transmit:** When this function is enabled and the FNC1 is contained in scanned data, the scanner transmits the FNC1 to the host. Chart of the FNC1 is provided in Appendix- Keyboard Function Code Table. When the scanner interface is set to keyboard, the scan code is converted to corresponding key function before it is transmitted.
- The function of “**Caps Lock Control**” and “**Key Pad Emulation**” are **only** available for IBM PC/AT, PS/VP, PS/2 series personal computers and compatible machines. While selecting the other host interfaces, these selections don't perform the above functions for you.
- Please check the **actual** Caps Lock state in use while software application is running. If the Caps Lock state is off, select “**Caps Lock Off**” state, then Proton IMS 3190 will perform normal data transmission. If the Caps Lock state is on, select “**Caps Lock On**” state. Select “**Auto Detect**”, Proton IMS 3190 will perform special transmission handshaking without changing the status of Caps Lock switch.



PROGRAM

Keyboard Interface Control

◆ Delay Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Intermessage Delay 	SS MS	None ◆ 1-99 (x10) msec. Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Intercharacter Delay 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Interfunction Delay 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)

- **Intermessage Delay** is a time delay between messages output by Proton IMS 3190. Increasing this delay will help host applications process the incoming data on time.
- **Intercharacter Delay** is a time delay between data characters output by Proton IMS 3190. This parameter is used to synchronize data communication when : 1) the data transmission speed is too fast, characters may be skipped; 2) multitasking operation system or host computers in a network may slow down the keyboard handling; 3) various notebook or desktop PC systems require different timing parameter settings. Please always add one extra unit as safety margin when adjusting this parameter
- **Interfunction Delay** is a time delay between the transmissions of each segment of the message string.
- **Intermessage Delay, Intercharacter Delay and Interfunction Delay** are unconfigurable under SPP and HID modes.







PROGRAM

Keyboard Interface Control

◆ Emulation Setting, Key Pad Emulation & Upper/Lower Case Setting, Dollar Sign Control ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Function Key Emulation 	SS SS	Enable ASCII 00-31 code as keyboard function code output ◆ Ctrl-Output Refer to Appendix – Keyboard Function Code Table for details.	0 1
Key Pad Emulation 	SS SS	Disable key pad emulation ◆ Enable numeric output as key pad (Num Lock On) output	0 1
Upper/Lower Case 	SS SS SS SS	Normal case (neglect the upper/lower case control) ◆ Inverse case (change all characters output to inverse case) Upper case (force all characters output as upper case) Lower case (force all characters output as lower case)	0 1 2 3
Dollar Sign Control 	SS SS SS SS SS	Dollar sign output as "\$" ◆ Dollar sign output as "¥" Dollar sign output as "€" Dollar sign output as "£" Dollar sign output as "¢"	0 1 2 3 4








PROGRAM

Serial Interface Control

◆ Record Suffix, Preamble ,Postamble Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
STX/ETX Control 	SS SS	Disable STX/ETX transmission ◆ Enable STX/ETX transmission STX/ETX are two characters used to indicate the starting and ending of the total data frame transmitted via serial interface.	0 1
Record Suffix 	SS SS SS SS SS SS MS	None CR (0DH) ◆ LF (0AH) CRLF (0D0AH) TAB (09H) SPACE (20H) User defined character (1 character)	0 1 2 3 4 5 6, (00-7F)
Preamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
Postamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
FNC1 Symbol Char. Transmit 	SS SS	Disable Enable ◆ When this function is enabled and the FNC1 is contained in scanned data, the scanner transmits the FNC1 to the host. Chart of the FNC1 is provided in Appendix – Keyboard Function Code Table. When the scanner interface is set to keyboard, the scan code is converted to corresponding key function before it is transmitted	0 1

▪ Serial Interface Message String (RS232, USB COM) :

STX	Preamble	Data Length	Prefix Symbol ID	Scanned Data	Suffix Symbol ID	Postamble	ETX	Record Suffix
1 character	1-15 characters	2-4 digits	1 or 3 characters	Variable length	1 or 3 characters	1-15 characters	1 character	1 character






PROGRAM

Serial Interface Control

◆ Delay Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Intermessage Delay 	SS MS	None ◆ 1-99 (x10) msec. Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Intercharacter Delay 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)
Interfunction Delay 	SS MS	None ◆ 1-99 (x5) msec. Scan 2 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (2 digits)

- **Intermessage Delay** is a time delay between messages output by Proton IMS 3190. Increasing this delay will help host applications process the incoming data on time.
- **Intercharacter Delay** is a time delay between data characters output by Proton IMS 3190. These two parameters are used to synchronize data communication when : 1) the data transmission speed is too fast, characters may be skipped; 2) multitasking operation system or host computers in a network may slow down the keyboard handling; 3) various notebook or desktop PC systems require different timing parameter settings. Please always add one extra unit as safety margin when adjusting these two parameters.
- **Interfunction Delay** is a time delay between the transmissions of each segment of the message string.
- **Intermessage Delay, Intercharacter Delay and Interfunction Delay** are unconfigurable under SPP and HID modes.






PROGRAM

Serial Interface Control

◆ Protocol, ACK/NAK Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Handshaking Protocol 	SS SS SS SS	None (free running mode) ◆ RTS/CTS (hardware handshaking) ACK/NAK (software handshaking) Xon/Xoff (software handshaking)	0 1 2 3
NAK Retry Count 	SS SS	3 times ◆ 0~255 times	FIN (3 digits)
ACK Indication 	SS SS SS SS	Disable ACK Time-out Indication Enable ACK Time-out Indication ◆ Disable ACK Indication ◆ Enable ACK Indication	0 1 2 3

- USB COM doesn't support RTS/CTS handshaking protocol.

- When the **ACK/NAK Software Handshaking** option is selected, the Proton IMS 3190 waits for an **ACK** (acknowledge) or **NAK** (not acknowledge) from the host computer after each data transmission. If the NAK is received, Proton IMS 3190 will re-send the data until receiving ACK.

ACK/NAK handshaking protocol is workable under following conditions:

- 1) Pair mode by using RS232 or USB COM interface.
- 2) SPP master or slave mode.

- **NAK Retry Count**

After transmitting data, the scanner expects a NAK response from the host up to the preset "Serial Response Time-out". If the scanner doesn't get a response, the scanner will issue an error indication and discard the data. When a NAK is received, the scanner transmits the same data again and waits for either an ACK or NAK. The scanner issues an error indication and discards the data under following two conditions:

- 1) After preset NAK retry counts is received within the preset serial response time-out.
- 2) If the preset time-out is up but the preset NAK retry counts haven't come to the end.

The default retry counts are three times. If you program "0 time", the scanner won't resend the data to the host when the scanner receives a NAK. The scanner will discard the data. If you program "255 times", the scanner can receive unlimited NAKs from the host within the pre-set serial response time-out.

This function is not available for batch mode. When you enable this function in on-line mode, the out-of-range function will be disable automatically.

- **ACK Indication:**

Disable: There's neither LED nor beeping indication for this setting.

Enable: There's a specific LED and beeping indication for this setting.



PROGRAM

Serial Interface Control

◆ Time Out Setting, Baud Rate, Data Frame ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection		Option Code	
Serial Response Time-out 	SS	None	3 seconds	0	6
	SS	200 mseconds	4 seconds	1	7
	SS	500 mseconds ◆	5 seconds	2	8
	SS	800 mseconds	8 seconds	3	9
	SS	1 second	10 seconds	4	A
	SS	2 seconds	15 seconds	5	B
	Baud Rate (BPS) 	SS	38.4K BPS	2400 BPS	0	4
SS		19.2K BPS	1200 BPS	1	5
SS		9600 BPS ◆	57.6K BPS	2	8
SS		4800 BPS	115.2K BPS	3	9
Data Frame 	SS	8, None, 1 ◆	7, Space, 1	0	8
	SS	8, Odd, 1	7, Mark, 1	1	9
	SS	8, Even, 1	7, None, 2	2	A
	SS	8, Space, 1	7, Odd, 2	3	B
	SS	8, Mark, 1	7, Even, 2	4	C
	SS	8, None, 2	7, Space, 2	5	D
	SS	7, Odd, 1	7, Mark, 2	6	E
	SS	7, Even, 1		7	

▪ When the **RTS/CTS Hardware Handshaking** option is selected, the **RTS** (request to send) and **CTS** (clear to send) signals will be issued before normal data communication. This option is very helpful to ensure the reliability of data communication.

The **Serial Response Time-out** is a pre-defined delay time for Proton IMS 3190 to wait for handshaking, acknowledgment or non-acknowledgment from the host computer.



PROGRAM

Wand/Laser Emulation Control



F_DEFAULT

◆ Output Polarity, Signal State, Margin/Module Time ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Output Polarity 	SS SS	High level (5Vdc) on Bar (low level on Space) ◆ Low level (0Vdc) on Bar (high level on Space) Determine the output voltage level for both bar and space.	0 1
Initial Signal State 	SS SS	High Level (5Vdc) ◆ Low Level (0Vdc) Determine the initial state of output voltage level.	0 1
Margin Time 	SS SS SS SS SS	10 msec. 15 msec. 20 msec. ◆ 25 msec. 30 msec.	0 1 2 3 4
Module Time 	SS SS SS SS	Extremely short Short Medium ◆ Long	0 1 2 3
Narrow/Wide Ratio 	SS SS SS	1:2 ◆ 1:2.5 1:3	0 1 2




PROGRAM

Wand/Laser Emulation Control



F_DEFAULT

◆ Output Polarity, Signal State, Margin/Module Time ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Code 39/Code 128 Emulation 	SS	Disable standard Code 39 emulation ◆	0
	SS	Enable standard Code 39 skip emulation	1
	SS	Enable standard Code 39 replace emulation	2
	SS	Enable Full ASCII Code 39 emulation	3
	SS	Enable Code 128 emulation	4

- [**Code 39 Skip**] : When this option is selected, all scanned data will be translated as Standard Code 39 wand/laser emulation output. If any lower case characters are read, they will be translated to upper case characters. Any other characters that are not available in Code 39 symbology set will be **skipped**.
- [**Code 39 Replace**] : Any character not normally available in the standard Code 39 symbology set, will be translated as **Space**.




PROGRAM

Operation Control

◆ Operation Mode ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Operation Mode 	SS SS	Trigger mode ◆ Presentation mode	1 2

- **Trigger Mode (Low Power Triggering)** the scanner goes into standby state after scanning the bar code. You must press the trigger to turn on the light source of the scanner before scanning the bar code.
- **Presentation Mode (Auto Detection)** Presentation mode uses ambient light to detect the bar codes. The light source is off until the scanner detects an image which is similar to a barcode. Then the light source turns on automatically to read the bar code. If the light level in the room is not high enough, Presentation Mode may not work properly. You can choose different level of "Presentation Sensitivity" to meet your application (Please refer to the setting of "**Presentation Sensitivity**").
- **PF / PL/ PA series do not support "Presentation Mode".**








PROGRAM

Operation Control



F_DEFAULT

◆ Buzzer, Indicator, Vibrator, 1D Code Inverse Reading ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Buzzer Tone Adjust 	SS SS SS SS SS SS SS	Buzzer tone – mute Buzzer tone – low (Frequency 1.20 kHz) Buzzer tone – medium (Frequency 2.70 kHz)◆ Buzzer tone – high (Frequency 2.81 kHz) Buzzer tone - extremely high (Frequency 2.93 kHz) Power-on / power-off beep ◆ No power-on / power-off beep	0 1 2 3 4 5 6
Power On Indicator 	SS SS SS	Disable (LED off) LED steady on ◆ LED flash	0 1 2
Good Read Indicator 	SS SS	Disable Enable ◆	0 1
Vibrator Control 	SS SS	Disable Enable ◆ Optional function, only available for vibrator model.	0 1
1D Barcode Inverse Reading 	SS SS	Disable ◆ Enable	0 1





PROGRAM

Operation Control



F_DEFAULT

◆ Beeping Control, Radio connection Beeps ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Beeping Control 	SS SS SS SS	Radio Connected/ Disconnected Beep On ◆ Radio Connected/ Disconnected Beep Off Battery Power Low Beep On ◆ Battery Power Low Beep Off	0 1 2 3
Radio Connection Beeps 	SS SS	Four ascending tone / Four descending tone ◆ Low-high two beeps / High-low two beeps	0 1




PROGRAM

Operation Control



F_DEFAULT

◆ Redundancy ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Redundancy 	SS	None	0
	SS	Level 1 ◆	1
	SS	Level 2	2
	SS	Level 3	3
	SS	Level 4	4
	SS	Level 5	5
To prevent potential miss reading.			

- The **Redundancy** is the number of times the same bar code label has to be decoded before it is transmitted.






PROGRAM

Operation Control



F_DEFAULT

◆ Delay Setting ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Reread Delay (Double Scan Verification) 	SS SS SS SS SS SS	Disable Immediate time out ◆ Short time out Medium time out Long time out Force verification	0 1 2 3 4 5
Good Read Delay 	SS SS SS SS SS SS SS	None ◆ 200 msec. 500 msec. 1 sec. 1.5 sec. 2 sec. 3 sec.	0 1 2 3 4 5 6
HID Mode Transmit Delay 	SS MS	None ◆ 1-250 msec. Scan 3 digits from the option code chart in Appendix, then Proton IMS 3190 will terminate this selection automatically.	FIN (3 digits)

- The **Reread Delay (Double Scan Verification)** is designed to inhibit Proton IMS 3190 from reading the same bar code label twice in pre-defined short duration. Force Verification will not allow reading of the same bar code twice.
- This **Good Read Delay** is the minimum amount of time before the scanner can read another bar code.
- This **HID Mode Transmit Delay** will affect HID mode; When the scanner pairs with the Android, set this to 70ms to avoid data loss.








PROGRAM

Operation Control



F_DEFAULT

◆ Time-out Setting, Good Read Duration ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Light Source On Time 	SS SS SS SS	Short Medium Long ◆ Extremely long	0 1 2 3
Hands Free Time-out 	SS SS SS SS SS	Short ◆ Medium Long Extremely long Disable	0 1 2 3 4
Good Read Duration 	SS SS SS SS SS	Short Medium ◆ Long Extremely long Extremely short	0 1 2 3 4
Time Delay to Low Power Standby Mode 	SS SS SS SS SS SS	1 sec 3 secs 5 secs ◆ 7 secs 9 secs Immediate	0 1 2 3 4 5
Low Power Standby mode Link Indication 	SS SS SS	Turn off immediately Last for 1 minute ◆ Keep on till power-off	0 1 2

- The **Light Source On Time** is a pre-defined light source time out counter for Alternative Mode, Presentation Mode and Level Mode. The scanner keeps the light source on till the pre-defined light source on time is up. You can adjust this parameter to meet your own application requirement.
- The Presentation Mode is referred to as "hands free" mode. The hands free mode will be automatically changed to manual trigger mode when you press the trigger. You can remain the scanner in manual trigger mode by setting the **Hands Free Time-Out**. Once the time-out duration is up (if there's no any trigger operation), the imager will revert to the original hands free mode.



- The **Time Delay to Low Power Standby Mode** sets the time for scanner to enter low power trigger mode after any scanning activity.
- Use **Good Read Duration (Good Read Beep and Vibration Duration)** to define beeps and vibration according to operator preference and work environment.





PROGRAM

Operation Control



F_DEFAULT

◆ Presentation Scanning Setting ◆

Family Code Selection	P.C	Parameter Selection		Option Code	
Presentation Auto-sense 	SS SS	Disable ◆ Enable		0 1	
Presentation Sensitivity 	SS SS SS SS SS	Level 1 Level 2 Level 3 Level 4 Level 5 ◆	Level 6 Level 7	0 1 2 3 4	5 6

- When enable the **Presentation Auto-sense**, the scanner can be switched between hands free scanning and hand-held scanning automatically when working with the SmartStand or cradle.
- The **Presentation Sensitivity** is used to configure the sensitivity level when the scanner is set as presentation mode. The higher lever means higher sensitivity for detecting the barcode.




PROGRAM

Operation Control



F_DEFAULT

◆ Scan Rate Control, ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Scan Rate Control 	SS SS	Dynamic ◆ Fixed	0 1

- **Scan Rate Control:** The scanner will have better motion tolerance when you select “Fixed” scan rate. It’s suitable for application which needs higher motion tolerance on the move. But this may impact to the reading distance.





PROGRAM

Operation Control



F_DEFAULT

◆ Center Alignment, Unique Bar Code Reporting ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Center Alignment 	SS	Disable in Hand-Held Mode ◆	0
	SS	Enable in Hand-Held Mode	1
	SS	Disable in Hand-Free Mode ◆	2
	SS	Enable in Hand-free Mode	3
Unique Bar Code Reporting 	SS	Disable ◆	0
	SS	Enable	1

▪ **Center Alignment:** When this function is enabled, the scanner only decodes barcode(s) around aiming line.

▪ **Unique Bar Code Reporting:** When this function is enabled, the scanner only outputs unique barcode when the trigger is pressed. This function is workable when **Multiple Read mode** is selected.




PROGRAM

Operation Control



F_DEFAULT

◆ Out-of-range Scanning, Link Supervision Time-out ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Out-of-range Scanning 	SS SS	Disable ◆ Enable	0 1

- **Out-of-range Scanning** - When radio link is built between the scanner and remote host device, the scanner will transmit each scanned data right after scanning the barcode data. However, the scanner is preset for unable to scan any barcode data when it loses the radio connection. You can enable the Out-of-range Scanning function to continue scanning barcode data into memory buffer until radio link resumed.






PROGRAM

Operation Control



F_DEFAULT

◆ Radio-off Time-out Control, Power Off Time-out Control ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Radio-off Time-out - Connect State 	SS MS	12 (x5) minutes ◆ 0-99 (x5) minutes If you don't want the scanner to enter power-off, please set time-out to "0"	FIN (2 digits)
Radio-off Time-out - Disconnect State 	SS MS	5 (x1) minute ◆ 0-99 (x1) minutes If you don't want the scanner to enter power-off, please set time-out to "0"	FIN (2 digits)
Power Off Time-out 	SS MS	1 (x5) minutes ◆ 0-99 (x5) minutes If you want the scanner to enter power off mode immediately, please set time-out to "0"	FIN (2 digits)

- The **Radio-off Time-out Control** can be set under radio connection or disconnection state. If the scanner is not used within the preset time-out duration, it will automatically enter "Power Off" for power saving purpose. You are able to disable this function by setting the time-out duration to "0".
- The **Power Off Time-out**: When the scanner is under radio-off, it is preset to enter Power Off automatically if the radio is not on after the time-out duration. If you would like to power on the scanner, please press the trigger button. You can have the scanner enter this function immediately by setting the time-out duration to "0"
- Above behavior (revised from Programming Manual rev. C7) is available for firmware






PROGRAM

Operation Control



F_DEFAULT

◆ Batch Scanning Setting ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Batch Scanning Link Control 	SS SS	Radio disable Radio enable ◆	0 1
Stored Data Transmission 	SS SS SS	All On cradle Scan barcode ◆	0 1 2
Delete Stored Data after Transmission 	SS SS	Disable ◆ Enable	0 1

- The **Batch Scanning Link Control** is a pre-defined radio option to control the radio-on or radio-off status under batch scanning operation. Please note that if the radio disable is activated, the radio link will be disconnected once you enter batching scanning. The radio link will be resumed when you transmit the stored data or exit batch scanning.
- The **Stored Data Transmission** is a pre-defined approach when you want to transmit the scanned data under batch scanning operation. You can transmit the scanned data by placing the scanner onto the cradle or scanning “Transmit Stored Data” command, or by either one of both methods.
- In batching scanning, the default setting of **Delete Stored Data after Transmission** is disable. The scanner will keep all stored data after transmission until you scan the “Clear All Stored Data” command. You are also able to delete all stored data after transmission automatically by enabling this function.






PROGRAM

Operation Control



F_DEFAULT

◆ Batch Scanning Data Transmission Setting ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Field Delimiter 	SS SS SS SS SS SS	None , ◆ SPACE — . User define	0 1 2 3 4 5, [00-7F]
Stored Data Output Format 	SS SS SS	As many times as the quantity indicates ◆ <Quantity><Field Delimiter><Scanned Data> <Scanned Data><Field Delimiter><Quantity>	0 1 2
Data Transmission Format 	SS SS SS	Disable (scanned data only) ◆ Leading with MAC address (MAC address and scanned data) Leading with ID No. (scanner ID and scanned data) <small>Only available for RS232, USB HID and USB COM interface in PAIR & PICO modes</small>	0 1 2

- The **Field Delimiter** is used to separate the specific information and scanned data into two fields. You can choose desired delimiter format.
- The **Stored Data Output Format** If you want to input the quantity information of barcode data, you can enter the quantity from 1 to 9999 by scanning the quantity barcodes right after you scanned the barcode data. The quantity information will be stored into the memory storage together with the barcode data. There are three ways to output the stored barcode data and quantity information.
- In PICO mode, up to 7 scanners can be connected with one smart cradle. The **Data Transmission Format** can help user to identify the source of the transmitted data. You can choose to transmit the scanned data leading with MAC address or pre-assigned ID.
Example format: <MAC address><Field Delimiter><Data> or <ID><Field Delimiter><Data>.






PROGRAM

Operation Control



F_DEFAULT

◆ Bluetooth Device Name & Security Setting ◆

Family Code Selection	P.C	Parameter Selection	Option Code
Bluetooth Device Name 	SS MS	Default device name ◆ User define; F/L series: 1-16 characters A series: 1-32 characters	FIN [00-7F], FIN
Bluetooth PIN Code 	SS MS	Default Bluetooth PIN Code ◆ User define, 1-8 numbers	FIN [30-39], FIN
Bluetooth Authentication 	SS SS	Disable Enable ◆	0 1

- The default **Bluetooth Device Name** Proton IMS 3190, you will be able to change the device name by scanning HEX values (1-16 characters).
-
- The default **Bluetooth PIN Code** is "00000000", you will be able to change the PIN Code by scanning HEX values (1-8 numbers).
- The **Bluetooth Authentication** You can enable or disable the Bluetooth Authentication between the scanner and remote host device. If this function is enabled, when the scanner wants to connect itself and sends the data to the host device, the host device has to return a link key shared between the scanner and the host device.





PROGRAM

Operation Control

◆ Bluetooth Other Settings ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Bluetooth Sniff Control 	SS SS	Disable Enable ◆	0 1
Link Quality Control 	SS SS SS SS SS	Disable ◆ Level 1 Level 2 Level 3 Level 4	0 1 2 3 4

- The **Bluetooth Sniff Control** Bluetooth module will enter low power consumption mode when you enable this function.
- **Link Quality Control**: This function is only available for SPP and HID mode. When you use the scanner in the boundary of radio signal, you can enable this function to increase the reliability of data transmission. But this function will affect the communication distance. The level is higher, the communication distance is shorter.




PROGRAM

Operation Control



F_DEFAULT

◆On-screen Keyboard Control ◆

Family Code Selection	P.C	Parameter Selection	Option Code
On-screen Keyboard Control 	SS SS	Disable Enable ◆	0 1

- When On-screen Keyboard Control is **enabled**, the scanner is preset to switch between barcode scanning and on-screen keyboard of **most popular devices**; you also can have the scanner entered this setting by scanning “**General Approach**” quick set command. Then you can turn off the radio to activate the on-screen keyboard by scanning “Switch On-screen Keyboard” quick set command. If you use pocket scanner, you can activate the on-screen keyboard toggle by short pressing the **FN1**.
- To work with **iOS device**, please change On-screen Keyboard Control to **disable**, or scan the “**iOS Approach**” quick set command to activate this function. Then you can scan “Switch On-screen Keyboard” quick set command to toggle the iOS on-screen keyboard. If you use pocket scanner, you can also activate the iOS on-screen keyboard toggle by short pressing the **FN1**.
- When you finished the keyboard input, please press the trigger once to turn on the radio, and the on-screen keyboard will be inactivated.







PROGRAM

Condensed DataWizard

◆ Preamble, Postamble, Data Length & Symbol ID Trans. ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code
Preamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
Postamble 	SS MS	None ◆ 1-15 characters Maximum 15-character input; scan "FIN" to terminate this selection.	FIN [00-7F], [FIN]
Data Length Transmission 	SS SS	Disable ◆ Enable 2 digits data length transmission If data length exceeds 99, 3-digit data length will be transmitted.	0 1
Symbology ID Transmission 	SS SS SS SS SS SS SS	Disable symbology ID transmission ◆ Enable prefix symbology ID transmission Enable suffix symbology ID transmission Enable both prefix and suffix symbology ID transmission Enable prefix AIM symbology ID transmission Enable suffix AIM symbology ID transmission Enable both prefix and suffix AIM symbology ID transmission	0 1 2 3 4 5 6

- **DataWizard** is the most powerful, Artificial-Intelligence based data editing expert system provided specially for the Proton IMS 3190 family bar code readers. Through DataWizard, you can process the scanned data prior the transmissions in many ways as: **Insert Delete, Match, Verify, Replace, Reorganize, and Repeat Transmission**. It will help you to arrange the transmission of scanned data to any specific format without software modification.
- Due to the resources used by this system, **Full-feature DataWizard** is only supported by **PowerTool**. Through the PowerTool, all settings and configurations can be done on-screen, under Windows 95/98/NT/2000/XP environment.
- A **Condensed Version DataWizard** is provided by each Proton IMS 3190 series. Through this menu, the condensed DataWizard can be utilized via bar code menu readings with ease.
- Please note that all "**Character**" input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.
- If you have any problem to use DataWizard, please refer to following pages for details and consult your local Proton IMS 3190 vendor or our web site for any assistance.








PROGRAM

Condensed DataWizard

◆ Data Formatter Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Formatter Control 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	FIN (2 digits) 00	automatic termination automatic termination
1st Insertion 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]
2nd Insertion 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]
3rd Insertion 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]
4th Insertion 	SS DS	Disable ◆ Enable 2-digits identified position; max. 3 insertion characters	FIN (2 digits) position	[1-3 characters], [FIN]

- The **Data Formatter** is used to edit the scanned raw data prior to transmitting the data to the host computers or terminals. It allows you to select desired bar code symbologies for formatter control, and provides **Multiple Position Insertion** and **Multiple Character Insertion** (max three characters) in the identified position.
- While the Data Formatter is enabled, it arranges only scanned data without **Preamble**, **Postamble**, **STX**, **ETX**, **Data Length**, **Prefix/Suffix Symbology ID** or **Record Suffix**. All of the above programmable parameters perform the same function depending on your setting.
- Regarding the “**Bar Code Selection**” and “**Position Calculation**” of data formatter, please refer to page 60 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.








PROGRAM

Condensed DataWizard

◆ Data Verifier Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Verifier Control 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	FIN (2 digits) 00	automatic termination automatic termination
Identified Data Length 	SS MS	Disable ◆ Enable Determine the identified data length for verification.	FIN (2 digits)	
1st Identified Character 	SS DS	Disable ◆ Enable 2-digits checking position; 1 identified character	FIN (2 digits) position	[00-7F]
2nd Identified Character 	SS DS	Disable ◆ Enable 2-digits checking position; 1 identified character	FIN (2 digits) position	[00-7F]
3rd Identified Character 	SS DS	Disable ◆ Enable 2-digits checking position; 1 identified character	FIN (2 digits) position	[00-7F]

- The **Data Verifier** is used to provide advanced verification for error-free scanning and to work as an **Embedded Data Transmitting Filter**.
- All data must conform to the **Identified Bar Code Symbologies**, **Identified Data Length**, and one to three **Identified Characters** in the checking position. Otherwise, the scan will not transmit the data to the host computers or terminals, but will instead issue **3 long beeps** for verification error and **skip** the scanned data.
- The Data Verifier checks only scanned data without **Preamble**, **Postamble**, **STX**, **ETX**, **Data Length**, **Prefix/Suffix Symbology ID** or **Record Suffix**.
- Regarding the “**Bar Code Selection**” and “**Position Calculation**” of **Data Verifier**, please refer to page 60 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.







PROGRAM

Condensed DataWizard

◆ Data Replacer Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Replacer Control 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	FIN (2 digits) 00	automatic termination automatic termination
1st Replacement 	SS DS	Disable ◆ Enable 2-digits identified position; 1 replacement character	FIN (2 digits) position	[00-7F]
2nd Replacement 	SS DS	Disable ◆ Enable 2-digits identified position; 1 replacement character	FIN (2 digits) position	[00-7F]
3rd Replacement 	SS DS	Disable ◆ Enable 2-digits identified position; 1 replacement character	FIN (2 digits) position	[00-7F]

- The **Data Replacer** is used to edit the scanned raw data prior to transmitting the data to the host computers or terminals. It allows you to select desired bar code symbologies for replacer control, and provides **Multiple Position Replacement** in the identified position.
- All data must conform to the **Identified Bar Code Symbologies**, and one to three **Identified Characters** in the identified position while the Data Replacer is enabled, it arranges only scanned data without **Preamble, Postamble, STX, ETX, Data Length, Prefix/Suffix Symbology ID** or **Record Suffix**.
- Regarding the “**Bar Code Selection**” and “**Position Calculation**” of Data Replacer, please refer to page 60 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table** listed in Appendix to find matched HEX value.







PROGRAM

Condensed DataWizard

◆ Data Organizer Setting ◆



F_DEFAULT

Family Code Selection	P.C	Parameter Selection	Option Code	2nd Option Code
Organizer Control 	SS MS MS	Disable ◆ Select one bar code symbology Select all bar code symbologies	FIN (2 digits) 00	automatic termination automatic termination
1st Organization 	SS DS	Disable ◆ Enable 2-digits identified position; Forward/backward data transmission setting	FIN (2 digits) position direction	0 (Forward) ◆ 1 (Backward)
2nd Organization 	SS DS	Disable ◆ Enable 2-digits identified position; Forward/backward data transmission setting	FIN (2 digits) position direction	0 (Forward) ◆ 1 (Backward)
Include/Exclude Control 	SS DS	Transmitted data excluded the data of identified position ◆ Transmitted data included the data of identified position	0 1	

- The **Data Organizer** is used to edit the scanned raw data prior to transmitting the data to the host computers or terminals. It allows you to select desired bar code symbologies for organizer control, and provides maximum two identified positions to send the data **forward** or **backward**. It also allows you to control the transmitted data **including** or **excluding** the data of identification position. Please refer to the application example listed in page 60 for details.
- While the Data Organizer is enabled, it arranges only scanned data without **Preamble**, **Postamble**, **STX**, **ETX**, **Data Length**, **Prefix/Suffix Symbology ID** or **Record Suffix**.
- Regarding the “**Bar Code Selection**” and “**Position Calculation**” of Data Organizer, please refer to page 60 for details.
- Please note that all “**Character**” input should be referred to the **ASCII/HEX Table**.

Select a Bar Code Symbology

You can select one or all types of bar code symbologies to use Condensed DataWizard for advanced transmission arrangement. If you scan "00" to select all types, the Proton IMS 3190 will arrange all incoming data to meet your pre-defined format. If you want to select only one type bar code, please select one of the option code listed below.

1D Bar Code Symbology			
Code 128	01	Matrix 2 of 5	38
GS1-128	31	Interleaved 2 of 5	48
UPC-A	02	China Postal Code	58
UPC-A with 2 supplement	32	German Postal Code	68
UPC-A with 5 supplement	42	Standard/Industrial 2 of 5	08
UPC-E	03	Code 93	09
UPC-E with 2 supplement	33	Code 11	10
UPC-E with 5 supplement	43	MSI/Plessey	11
EAN-13	04	UK/Plessey	12
EAN-13 with 2 supplement	34	Telepen	13
EAN-13 with 5 supplement	44	GS1 DataBar	14
EAN-8	05	IATA	15
EAN-8 with 2 supplement	35	Coupon Code	16
EAN-8 with 5 supplement	45	PDF417	17
Codabar/NW-7	06	Codablock F	18
Code 39	07	Code 16K	19
Code 32	37	Code 49	20
Trioptic Code 39	47	GS1 DataBar Limited	22
		GS1 DataBar Expanded	23
		Composite Codes	24
		Micro PDF417	25

2D Bar Code Symbology			
QR Code	A0	MaxiCode	A2
MicroQR Code	A0	Aztec Code	A3
DataMatrix	A1	Chinese Sensible Code	A4
GS1 DataMatrix	A5		

Postal Code			
Korea Post Code	21	Japanese Post	B4
Australian Post	B0	KIX Post	B5
British Post	B1	Planet Code	B6
Intelligent Mail barcode	B3	Postnet	B8

Position Calculation

[Data Formatter]

If there is a 5-character input data string, refer to the following to calculate the actual position for insertion:

	X		X		X		X		X
00		01		02		03		04	05

[Data Verifier, Data Replacer, Data Organizer]

If there is a 11-character data string, please refer to the following to calculate the actual position for identification.

X	X	X	X	X	X	X	X	X	X	X
00	01	02	03	04	05	06	07	08	09	10

Application Example

If your bar code label is a 16-digit Interleaved 2 of 5 which includes the information of 6-digit date code, 6-digit serial number and 4-digit unit price, you want the Proton IMS 3190 do the following for you without software modification:

- Apply only Interleaved 2 of 5 to the condensed DataWizard.
- Check bar code is actually with 16-digit length.
- Allow bar code output whose date code is leading with "9".
- Three outputs with "TAB" suffix.
- The date code output should skip "9" and replaced it by "A".
- The serial number output should be led with "SN".
- The unit price output should be skipped the first 2 digits.
- Test Bar Code : 9 8 1 0 2 5 1 2 3 4 5 6 9 8 7 6

Actual Output : A81025[TAB]SN123456[TAB]76[TAB]

Programming Procedure

[Data Verifier]

- Scan "Program" to enter the programming mode.
- Scan "Verifier Control" and set bar code symbology to "48" (Interleaved 2 of 5).
- Scan "Identified Data Length" and set the length to "16".
- Scan "1st Identified Character" and set the identified position to "00", then set the identified character to "39" (Hex Code of 9).

[Data Formatter]

- Scan "Formatter Control" and set bar code symbology to "48".
- Scan "1st Insertion" and set the identified position to "06", then inserted characters to "09" (Hex Code of TAB), "53" (Hex Code of S), "4E" (Hex Code of N).
- Scan "2nd Insertion" and set the identified position to "12", then inserted character to "09". In the final, you must scan "FIN" (Finish) code to terminate this selection.
- Scan "3rd Insertion" and set the identified position to "16", then inserted character to "09". In the final, you must scan "FIN" (Finish) code to terminate this selection.

[Data Replacer]

- Scan “Replacer Control” and set bar code symbology to “48”.
- Scan “1st Replacement” and set the identified position to “00”, then replaced character to “41” (Hex Code of A).

[Data Organizer]

- Scan “Organizer Control” and set bar code symbology to “48”.
- Scan “1st Organization” and set the identified position to “16”, then set the data transmission to “0” (forward).
- Scan “2nd Organization” and set the identified position to “17”, then set the data transmission to “1” (backward).
- Scan “END” (Exit) to terminate the programming.

[Important Notice]

Please note that Condensed DataWizard will follow the preset working flow as below:

Verifier » Formatter » Replacer » Organizer

So when you set the identified position in Data Organizer, you must consider the inserted data which you already set via Data Formatter.

Symbology ID Table

Each AIM Code Identifier contains the three-character string **Jcm** where:

J = Flag Character, **c** = Code Character, **m** = Modifier Character


Code Family	Primary Format	Proton IMS 3190ID		AIM ID		Code Family	Primary Format	Proton IMS 3190 ID		AIM ID		
		Hex value	Code Character	Code Character	Modified Character			Code Character	Code Character	Code Character	Modified Character	
UPC	UPC-A	2	A	E	0	EAN/JAN	EAN/JAN-8	05	N	E	4	
	UPC-A with 2 suppl.	32			1		EAN/JAN-8 with 2 suppl.	35			1	
	UPC-A with 5 suppl.	42			2		EAN/JAN-8 with 5 suppl.	45			2	
	UPC-E	3	E		0		EAN/JAN-13	04	F	E	0	
	UPC-E with 2 suppl.	33			1		EAN/JAN-13 with 2 suppl.	34			1	
	UPC-E with 5 suppl.	43			2		EAN/JAN-13 with 5 suppl.	44			2	
	Example: A UPC-A bar code 012345678950 with 2 supplement 12 is transmitted as J E0012345678950 J E112						Example: A EAN/JAN-8 bar code 49123562 with 5 supplement 12345 is transmitted as J E449123562 J E212345					
Code 128	Code 128	01	B	C	m	Code 93	Code 93	09	H	G	m	
	GS1-128	31	C		1	Code 11	Code 11	10	P	H	m	
Codabar	Codabar/NW-7	06	D	F	m	MSI/Plessey	MSI/Plessey	11	R	M	m	
Code 25	Standard/Industrial 2 of 5	08	I	S	0	UK/Plessey	UK/Plessey	12	S	P	0	
	Matrix 2 of 5	38	K	X	0	Telepen	Telepen	13	T	B	m	
	Interleaved 2 of 5	48	J	I	m	GS1 DataBar	GS1 Databar	14	X	e	m	
							GS1 DataBar Limited	22				
							GS1 DataBar Expanded	23				
	China Postal Code	58	L	X	0	Compoite	Composite Code	24				
German Postal Code	68	M	I	m	Code 39	Code 39	07	G	A	m		
IATA	IATA	15	O	R		m	Code 39 Trioptic	47	W	X	0	
					Code 32		37	G	A	0		
UCC Coupon	UCC Coupon Code	Z				PDF417	PDF417	17	V	L	m	
						Micro PDF417	25					
	Example : A UPC-A 512345678900 + GS1-128 81010123451297 bar code is transmitted as J E0512345678900 J C181010123451297 Example: A EAN-13 9923456789019 + GS1-128 81010123451297 bar code is transmitted as J E09923456789019 J C181010123451297						Codablock	Codablock F	18	Y	O	m
							Korea Post	Korea Post Code	21	a	X	0
Remark: Above examples are given for the transmission of AIM ID.												


Appendix

2D Symbology ID Table											
Code Family	Primary Format	Proton IMS 3190 ID		AIM ID		Code Family	Primary Format	Proton IMS 3190 ID		AIM ID	
		Hex Value	Char.	Code Char.	Modified Char.			Hex Value	Char.	Code Char.	Modified Char.
QR Code	QR Code	A0	b	Q	m	British Post	British Post	B1	h	X	0
Micro QR Code	Micro QR Code					Intelligent Mail barcode	Intelligent Mail barcode	B3	j		0
Data Matrix	Data Matrix	A1	c	d	m	Japanese Post	Japanese Post	B4	k		0
	GS1 Data Matrix	A5									0
MaxiCode	MaxiCode	A2	d	U	m	KIX Post	KIX Post	B5	l		0
Aztec Code	Aztec Code	A3	e	z	m	Planet Code	Planet Code	B6	m		0
Chinese Sensible	Chinese Sensible	A4	f	X	0	Postnet	Postnet	B8	o		0
Australian Post	Australian Post	B0	g		0						

Keyboard Function Code Table

No.	ANSI	ASCII	Key Function	Ctrl Output	No.	ANSI	ASCII	Key Function	Ctrl Output
00	NUL	00H	RESERVED	Ctrl + @	16	DLE	10H	F7	Ctrl + P
01	SOH	01H	CTRL (Left)	Ctrl + A	17	DC1	11H	F8	Ctrl + Q
02	STX	02H	ALT (Left)	Ctrl + B	18	DC2	12H	F9	Ctrl + R
03	ETX	03H	SHIFT	Ctrl + C	19	DC3	13H	F10	Ctrl + S
04	EOT	04H	CAPS LOCK	Ctrl + D	20	DC4	14H	F11	Ctrl + T
05	ENQ	05H	NUM LOCK	Ctrl + E	21	NAK	15H	F12	Ctrl + U
06	ACK	06H	ESC	Ctrl + F	22	SYN	16H	INS (Insert) (Edit)	Ctrl + V
07	BEL	07H	F1	Ctrl + G	23	ETB	17H	DEL (Delete) (Edit)	Ctrl + W
08	BS	08H	BACK SPACE	Ctrl + H	24	CAN	18H	HOME (Edit)	Ctrl + X
09	HT	09H	TAB	Ctrl + I	25	EM	19H	END (Edit)	Ctrl + Y
10	LF	0AH	F2	Ctrl + J	26	SUB	1AH	PAGE UP (Edit)	Ctrl + Z
11	VT	0BH	F3	Ctrl + K	27	ESC	1BH	PAGE DOWN (Edit)	Ctrl + [
12	FF	0CH	F4	Ctrl + L	28	FS	1CH	UP (Edit)	Ctrl + \
13	CR	0DH	ENTER (CR)	Ctrl + M	29	GS	1DH	DOWN (Edit)	Ctrl +]
14	SO	0EH	F5	Ctrl + N	30	RS	1EH	LEFT (Edit)	Ctrl + 6
15	SI	0FH	F6	Ctrl + O	31	US	1FH	RIGHT (Edit)	*see below note

 To emulate the keyboard function key input for user definable parameters, user must configure actual content using the **Reserved ASCII 0 – 31** characters, and also **Enable** the “Function Key Emulation”. Otherwise, the Ctrl output will be done by the scanner. Please refer to the above Keyboard Function Code Table which is for IBM PC/XT/AT, PS/2, PS/VP, COMPAQ PC, HP Vectra PC, Notebook PC, APPLE and PowerMac, and WYSE PC Enhanced or fully compatible machines.

 The last character in the Ctrl Output column is varied for different countries.

Country (refer to Keyboard Layout) & Character					
United State	-	Switzerland	-	France	=
Belgium	-	UK	-	Germany	-
Sweden	-	Denmark	-	Norway	-
Spain	-	Italy	-		

ASCII Input Shortcut

To configure the user definable parameters of Proton IMS 3190 via programming menu, Proton IMS 3190 will ask you to scan your desired ASCII value in **HEX** form. You have to refer to the “**HEX/ASCII Table**” for details.


Example:

If you want the scanned data output leading with a Dollar Sign, you have to set the “Preamble” to “\$”. The configuration procedure is listed below for reference.

- Scan the system command – **PROGRAM** listed on page 3-24 to enter programming mode.
- Scan family code – **PREAMBLE** to select this family.
- Refer to the **Hex/ASCII Table**, you will find the HEX value of “\$” is **24**.
- Scan the option code – **2** listed on the fold out back cover.
- Scan the option code – **4** listed on the fold out back cover.
- Scan the system command – **FIN (Finish)** to terminate Preamble setting.
- Scan the system command – **End** to exit the programming mode for normal operation.

HEX/ASCII Reference Table

H L	0	1	2	3	4	5	6	7
0	NUL	DLE	SPACE	0	@	P	`	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	\$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	'	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	|
D	CR	GS	-	=	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	_	o	DEL

 Example: ASCII “A” → HEX “41”; ASCII “a” → “61”

 : High Byte of HEX Value

 : Low Byte of HEX Value

Link Mode Quick Set



PAIR Mode



SPP Master Mode



HID Legacy Mode



Uninstall



HID Mode



PICO Mode



SPP Slave Mode



HID Mode with Passkey

Host Interface Quick Set

(Work with Smart Cradle only)



USB HID Standard Mode ◆



USB HID Turbo Mode



USB HID Legacy Mode



RS232 Serial



USB Com Port Emulation



PS/2 (DOS/V) KBW Standard Mode



PS/2 (DOS/V) KBW Turbo Mode



PS/2 (DOS/V) Keyboard Replacement

Option Codes



0



1



2



3



4



5



6



7



8



9



A



B



C



D



E



F



FIN (Finish)



Abort



END (Exit)

Toggle between Barcode scanning and On-screen keyboard of mobile devices



General Approach ◆



iOS Approach



Switch On-screen Keyboard


Available for Proton IMS 3190 Bluetooth Cordless Scanner:

One of following Bluetooth scanners with proper firmware preload:

λ Bluetooth Image Scanners

Proton IMS 3190 Rev. 4.00.05 and above

λ

 Please refer to P.20 “Toggle between Barcode Scanning and On-screen Keyboard Input” for more details.

System Commands



PROGRAM
(Enter Programming Mode)



FIN (Finish)



END
(Exit Programming Mode)



System Information List
(SYSLIST)



Paging



PowerTool Host Link



Power Off



Save Configuration



Clone



Factory Default



Master Default



- **Factory Default:** After scanning "Factory Default" command, all parameters will be returned to factory default value (The radio link will be disconnected and the scanner will revert to uninstall state).
- **Master Default:** After scanning "Master Default" command, the scanner will remain the pre-set parameters of **Host Interface Selection**, **Keyboard Interface Control** (except Record Suffix; Preamble; Postamble), **Serial Interface Control** (except Record Suffix; Preamble; Postamble), **Wand/Laser Emulation Control**, **Bluetooth Device Name**, **Bluetooth PIN Code**, and **Out-of-range Scanning**, the rest of parameters will be returned to default value (The radio link is still keep on).



Save User Default



User Default

- **User Default:** After scanning "Save User Default" command, all current parameters will be stored to the flash memory. Once you change the parameter and would like to return to previous setting, please scan "User Default".

Indications

Scanner Indication

Items	Link Indicator	Beeping
Radio connection	1 blue blink per 2.5 sec.	Off
Radio disconnection	3 blue blinks per 2 sec.	Off
During connection	Quick blue blinks	Short clicks
Radio connection built	1 blue blink per 2.5 sec.	4 beeps in ascending tone
Radio connection lost	3 blue blinks per 2 sec.	4 beeps in descending tone
Data Transmission	Quick blue blink	Short clicks
Items	Status Indicator	Beeping
Under charging (on cradle)	Steady red	Off
Fully charged (on cradle)	Steady green	Off
Under batch scanning	1 green blink per 2.5 sec.	Off
Pair failure	Steady red	2 Di-do Di-do beeps
Out of memory	2 red blinks	2 long beeps
Battery power low	1 red blink at regular interval	1 beep at regular interval
Battery power extremely low	1 red blinks	8 beeps
Good read	1 green blink	1 good read beep
Under Configuration	Steady red	Off
Uninstall state	Alternative red and green blinks	Off
Upgrade state	Steady red	Short click
Time out warning	Off	3 long beeps
Paged by smart cradle	Off	6 page beeps
Battery no power	Off	Off
Power Off	Off	Off



Smart Cradle Indications

Items		Indicators		Beeping
		Central	Side	
Power on		blue blink once	Off	Power on beeps
Smart Cradle Upgrade State		Off	Steady red	Short clicks
Uninstall state		Off	Alternative red-green blinks	Off
PICO Mode	Radio Connected	Steady blue	Steady Green	Off
	Radio Disconnected	Off	Steady red	Off
PAIR Mode	Radio Connected	Steady blue	Off	Off
	Radio Disconnected	Off	Steady red	Off
Smart cradle paged by scanner	PICO Mode	Steady blue	Steady green	6 page beeps
	PAIR Mode	Steady blue	Off	6 page beeps

PROTON 