



## FAQ'S

### POLLUX, CASTOR, GALAXY

**Q: Is there an alternative for programming the Scantech Pollux, Castor or Galaxy scanner instead of programming the scanner by programming bar codes?**

**A:** SCANTECH Electronic Programming Mode (EPM)

As an alternative to changing the scanner parameters with programming bar codes, the Scantech scanners P-4010, C-5010 and G-6010, all RS232+OCIA type, can also be electronically programmed from the host system via RS232 interface.

#### 1. INTRODUCTION

The basic operation is as follows:

1. The scanner is set in Local Command Mode (LCM) and in Electronic Programming Mode (EPM). See requirements and description below.
2. The essential part of the programming bar codes is transmitted from the host system to the scanner. Further explanation follows:

The Scantech programming bar codes are EAN13 codes.

The left half of this EAN13 contains the digits: 8712345.

The contents of the right half varies, depending on the programming purpose.

For instance: The programming bar code to alter the speaker frequency is: 8712345 15001 3 (See code 2.1.1 in the Configuration Guide). The last digit (in this case 3) is the regular EAN check digit. In instances when the speaker frequency must be altered; simply send the 5 digits 15001 to the scanner (which has already been set in LCM and in EPM) and that's it!

Below you find a complete description of:

1. How to use LCM and EPM.
2. Three examples of EPM.

#### 2. CONNECTION & basic communication:

1. The scanner is connected via RS232 interface, full duplex connection, to a host system. (E.g. at the H-3010, P-4010, C5010 or G-6010 using the Scantech PC cable A2017622).
2. The scanner must be switched ON.
3. Make sure the RS232 settings of the host system are similar to the scanners' settings.
  - Scanning a bar code can test Communication:  
The monitor should display the bar code contents.
  - In the event that no proper communication can be achieved and scanner settings are unknown, scan programming codes 1.1 and 1.3 from the Configuration Guide to set to Factory Default (= 9600 baud / 8 databits / 2 stopbits / No Parity / No protocol). E.g. this may be necessary in case some kind of RTS/CTS handshaking mode is set in the scanner, which is not supported by the host system.

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### 3. ENTERING LOCAL COMMAND MODE

1. Reset the scanner by sending a <Ctrl>E (= [ENQ] = 05hex) to the scanner. (The scanner will respond with a double beep).
2. Disable the scanner by sending a <Ctrl>O (= [SHIFT IN] = 0Fhex) to the scanner.
3. Enter Local Command Mode by sending "!" (exclamation mark).
4. The scanner will respond by sending "lcm>". lcm stands for Local Command Mode. The scanner is now in Local Command Mode, it no longer reads bar codes and the LED remains green permanently.

### 4. ENTERING AND LEAVING ELECTRONIC PROGRAMMING MODE

Once the scanner is in LCM, the Electronic Programming Mode can be entered by sending the string "PM␣" (standing for Programming Mode) to the scanner. The scanner is now ready to receive the (5-digit) message(s) as described above in 'Introduction'.

- After each received and recognised programming input, the scanner will acknowledge with a minus sign, or, alternatively, a # sign in case of a fixed programming sequence.
- In the event that the scanner receives an erroneous input, it will respond with a question mark.

To conclude a programming session:

- Leave EPM by sending "exit" to the scanner
- Send "Copy SCR cus␣" to the scanner in order to store the setting(s) in the scanners' EEPROM.

### 5. THREE EXAMPLES OF ELECTRONIC PROGRAMMING MODE

5.1 The following example will alter the scanner beep of the P-4010, C-5010 or G-6010:

Starting point: The scanner is in LCM already.

Input string to scanner:	Scanner acknowledges with:	Remark:
PM␣	- sign	Entering programming mode
15001␣	- sign	15001 is the right half of programming code 2.1.1 (See Configuration Guide) minus the last (check) digit.
Exit␣	lcm>	Leaving programming mode
Copy SCR cus␣	lcm>	Storing the setting in EEPROM
<ctrl> E	double beep	Resetting the scanner

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5.2 The following example will turn on the Interleaved 2/5 decoder of the P-4010, C-5010 or G-6010 and will set the minimum code length for Interleaved 2/5 to 10 digits.  
Starting point: The scanner is in LCM already.

Input string to scanner:	Scanner acknowledges with:	Remark:
PM↵	- sign	Entering programming mode
14202↵	- sign	Code 4.1.35 ITF ON
14411 ↵	# sign	Code 4.2.4 Set ITF minimum length
13110 ↵	- sign	Code 4.2.8 Minimum length = 10
Exit↵	lcm>	Leaving programming mode
Copy SCR cus↵	lcm>	Storing the setting in EEPROM
<ctrl> E	double beep	Resetting the scanner

5.3 The following example, for the P-4010, C-5010 or G-6010, will:

- Turn the Code ID transmission: ON
- Turn on the Code/EAN 128 decoder Programming code: 8712345 14310 7
- Alter the EAN128 Code Identifier to the # sign;  
Programming codes: Set EAN128 Identifier 8712345 14404 3  
Select character # (ASCII 35) 8712345 13135 7  
Close identifier programming 8712345 13100 5

Starting point: The scanner is in LCM already.

Input string to scanner:	Scanner acknowledges with:	Remark:
PM↵	- sign	Entering programming mode
11047↵	- sign	Code ID transmission: ON
14310↵	- sign	Turn Code/EAN 128 decoding ON
14404↵	# sign	Set ID for EAN128
13135↵	# sign	Character is #
13100↵	- sign	Close programming code identifier
Exit↵	lcm>	Leave programming mode
Copy SCR cus↵	lcm>	Store the settings in EEPROM
<ctrl> E	double beep	Resetting the scanner



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### 6. CLOSING LOCAL COMMAND MODE

Reset the scanner by sending a <Ctrl>E (= [ENQ] = 05hex) to the scanner.

The scanner must respond with a double beep and is ready for normal application again.

### 7. NOTES:

1. The commands used to electronically program the Scantech P-4010, C-5010 and G-6010 differ slightly from the commands used for the H-3010 and P-7010.
2. The scanner commands mentioned above (i.e. <Ctrl>E for Reset and <Ctrl>O for Disable) refer to the Scantech Default values (as described in the scanners' User's Manual under Chapter 'Controlling the Scanner from the POS'). In specific instances, when these commands have already been re-programmed, of course the alternative commands must be applied above in order to Disable or Reset the scanner.

#### Notes:

- More details available upon request.
- Subject to change without prior notice.

**Q: Is it possible to make a combination with the Scantech Pollux and Castor scanner?**

A: Gemini set-up instruction.  
Scantech Pollux & Castor combination (Gemini)

Installation instructions for the Pollux & Castor combination are given below. These instructions are complementary to the Pollux and Castor User's Manual.

There are two possible situations:

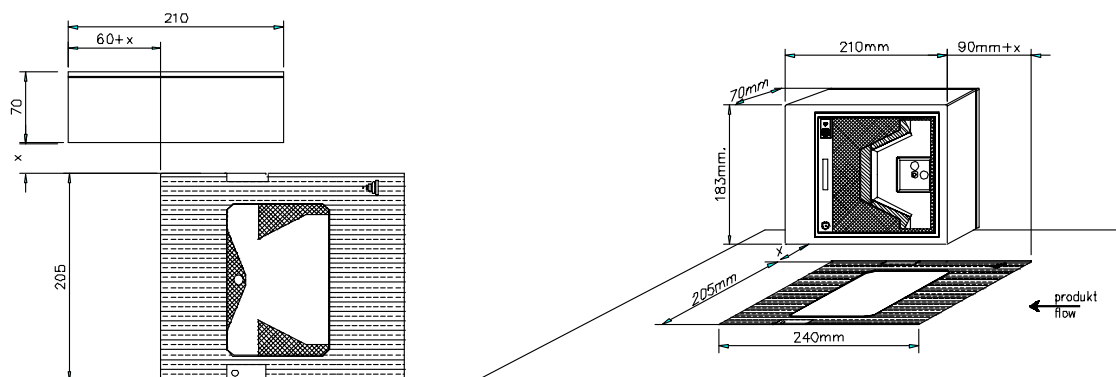
	<b>Configuration ordered at Scantech</b>	<b>Steps to follow</b>
❶	Pollux and Castor combination (Gemini) ordered as one unit for bi-optic scanning. The scanners are pre-configured.	1. → 7. <b>WARNING</b> ♦ After scanning "Return to factory default settings" from the Configuration Guide (code 1.3), all steps must be followed.
❷	Pollux and Castor ordered as separate units.	1. → 9.

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### INSTALLING THE POLLUX & CASTOR COMBINATION

Follow these steps to install the Pollux & Castor combination.

1. Locate the optimum scanner position. Pay attention to the product flow, distance to the counter edge and convenience for the operator.
2. Install the Pollux and the Castor following the instructions in the User's Manuals. Follow the illustration below (for scanning from Right to Left) to make sure the Pollux & Castor are optimal positioned.



$x \leq 50\text{mm}$ .

3. Plug the interface cable into the applicable Data port of the Pollux (Master) and connect the other end to the host system.
4. Plug the power cables in the power ports following the instructions in the User's Manuals.
5. Use the special Pollux & Castor connection cable (P/N: A201809) to connect the Pollux AUX port with the Castor AUX port.
6. Place the Pollux on the vertical stand and reposition the back cover of the Pollux. Place the Castor in the counter hole.
7. Power on both scanners by connecting the IEC power cord to the AC/DC power supply and plugging the AC power cord into an AC power outlet. Switch on the host system.
8. To program the Pollux as Master, the following codes must be scanned successively:  
1. → 2. → 1. \*
9. To program the Castor as Slave, the following codes must be scanned successively:  
1. → 3. → 1. \*

\* Cover the scan window of the other scanner with a blank sheet to avoid reading the programming codes with both scanners.

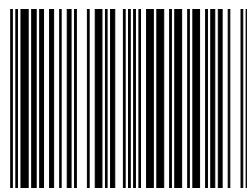
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### POLLUX & CASTOR PROGRAMMING CODES

**1. Open Programming Mode /  
Close Programming Mode with update**



**2. Master**



**3. Slave**  
(Programming Mode by sleep mode switch only)



**4. Stand alone**  
(sets the Master or Slave back to stand alone)



**NOTE:**

Once a scanner is programmed as Slave, opening Programming Mode is only possible by disconnecting the AUX cable and pressing the sleep mode switch for 3 - 8 seconds.

P/N: A172001



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- Q: Is it possible to make a connection between a Scantech Pollux, Castor or Galaxy scanner and a Hand Held Scanner?**  
**A:** Please refer to the multie3 HH connection.

### *Scantech Pollux/Castor/Galaxy Hand Held Scanner Connection*

The Scantech Pollux, Castor and Galaxy AUX port offer the feature to connect a hand held bar code scanner (RS232 type). This document describes all technical requirements. The Pollux and Castor and Galaxy accept the output from the hand held scanner and forward the bar code information to the Pollux or Castor host interface, independent from the host interface selected.

### **HARDWARE CONNECTION**

See Appendix A in the scanner User's Manual for the pin definition of the AUX port. All signals mentioned are scanner signals. There is an adapter cable available at Scantech (P/N: A201817) showing a sub D 9 pin female connector towards the hand held scanner. All described here is based upon the following hand held scanners plus matching cables:

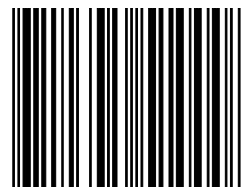
- MT-60 CCD scanner (P/N: A250402 plus cable P/N: A251703),
- LR-60 Distance scanner (P/N: A240203 plus cable P/N: A241701) and
- LG-300 Laser scanner (P/N: A245006 plus cable P/N: A241701)
- LR-2000 Laser scanner (P/N: A240206 plus cable P/N: A241701)

### **FIXED SCANNER SETTING**

The scanner requires firmware version SW: S70C1507 or higher (refer to the scanner labelling). The AUX port can be turned ON or OFF with the programming bar codes shown below.



Turning AUX port **ON**



Turning AUX port **OFF**

### **HAND HELD SCANNER SETTINGS**

The hand held scanner requires the following settings:



Open/Close Programming Mode  
P/N: A1720022

<u>Byte format :</u>		<u>Message format :</u>	
		<u>Code</u>	<u>Message Format</u>
Baud rate:	9600	EAN 13	F D1 - D13
Parity:	None	EAN 8	FF D1 - D8
Stop Bits:	2	UPC A	E D1 - D12
Data Bits:	8	UPC E	E Ø D1 - D6
RTS/CTS:		ITF	I D1 - Dx
	ON	Code 39	M D1 - Dx
Code ID:	ON	Codabar	N D1 - Dx
		Code 128   K	D1 - Dx



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**Q: Is it possible to download new software in the Scantech Pollux, Castor and Galaxy scanner?**

A: Please refer to the software download tool.

- Hardware requirements:
- Pollux, Castor or Galaxy scanner with power supply
  - PC/MSDOS
  - Floppy with Scantech download utility and firmware file
  - Scantech Programming Cable P/N A201810 (Note: this cable can be used only to program the scanner, not for normal RS232 Communication).

1. Connect PORT 1 of the Scanner to COM 1 of the PC with the Scantech Programming Cable and switch on the scanner and the PC.
2. Type: **VILOAD FROMLDR.S1 [FIRMWARE NUMBER].S 1 <ENTER>**  
(Example: VILOAD Fromldr.s1 S70C1509.s 1 <Enter>)
3. The screen replies with: "Pollux/Castor Software reload utility Version Oct 03 1996 GB (c) Scantech BV. " The program will instruct you to disconnect and reconnect the power to the scanner.
4. The actual programming commences. This takes around two minutes.  
**WARNING: Never disconnect the scanner power during downloading. The scanner must be returned to the factory in case this might happen.**
5. A double beep is heard as soon the programming is finished. It's possible to scan now; codes are shown on the PC screen.
6. Scan Programming Barcodes 1.1 Open Programming Mode and 1.3 Return to Factory Default.
7. Note the new firmware number on the Serial Number label of the scanner, replacing the old SW number.
8. The set-up is ready for the next program session now, by connecting the next scanner and turning on its power.
9. The program may be closed with ESC.
10. Disconnect both the power cable and the Scantech Programming Cable. For normal operation choose the proper interface cable and connect the power cable.

### Supplement:

It is possible to program two scanners simultaneously by:

- Connecting scanners to COM 1 and COM 2 at the same time and
- Start the downloading by typing: VILOAD FROMLDR.S1 [FIRMWARE NUMBER]. S <ENTER>



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- Hardware requirements:
- Pollux, Castor or Galaxy scanner with power supply
  - PC/WIN95
  - Floppy with Scantech download utility and firmware file Scantech Programming Cable P/N A201810 (Note: this cable can be used only to program the scanner, not for normal RS232 Communication).

1. First save the two firmware files **fromldr.s1** and **S70C1701.S** and the Download.exe to your hard drive.
2. Connect PORT 1 of the Scanner to COM 1 of the PC with the Scantech Programming Cable and switch on the scanner and the PC.
3. Launch the Scantech doweled utility by double clicking on the Download.exe.
4. A box appears called "Software Download Tool". Click on the box labelled "From Loader" and locate and select file **fromldr.s1** and click Open. Click on the box labelled "New Software" and locate and select file **S70C1701.S** and click Open. Now click in the box labelled "COM 1" to select it and if there is a checkmark in the box labelled "COM 2" click on it once to remove it.
5. Click on RUN and a box titled "Status COM 1" will appear. You will be prompted to connect the serial cable and the power cable at this time. Since they are already connected, you might have to disconnect and re-connect them.
6. The actual programming commences. The Scanner motor will stop and the software will be downloaded. This takes around two minutes. **WARNING: Never disconnect the scanner power during downloading. If this happens the scanner must be returned to the factory to repair any damages.**
7. A double beep is heard and a green sign reading "Successful" appears as soon the programming is finished. You are prompted to attach another scanner if you have more than one that you want to upgrade. If you connect another scanner it will begin downloading automatically. If you have no more scanners go to step 8.
8. Scan Programming Barcodes 1.1 Open Programming Mode and 1.3 Return to Factory Default.
9. In order to keep track of which software you have, it's advisable to write the new firmware number on the Serial Number label on the scanner, replacing the old SW number.
10. Disconnect both the power cable and the Scantech Programming Cable. For normal operation choose the proper interface cable and connect the power cable.



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- Q: Is there a tool available to determine the status of the Scantech Pollux, Castor and Galaxy scanner?**
- A:** Please refer to the Local command mode and diagnostics instruction sheet.

### *P-4010, C-5010 & G-6010 Local Command Mode & Diagnostics*

The Scantech Local Command Mode and diagnostics feature gives a powerful tool to determine the status of the P-4010, C-5010 or G-6010 RS232/OCIA scanner and offers the possibility to change some major RS232 interface parameters.

### **HARDWARE CONNECTION**

Condition:

1. Scanner is connected through RS232 interface, full duplex connection. (E.g. using Scantech Pollux<>PC cable A2017622 or equivalent).
2. The scanner must be switched ON.
3. Make sure the RS232 settings of the PC programme are similar to the scanner's settings.
  - Scanning a barcode can test Communication:  
The monitor should display the bar code contents.
  - In case there is no proper communication and the scanner's settings are not known, scan programming codes 1.1 and 1.3 from the Configuration Guide to set to Factory Default (= 9600 baud / 8 databits / 2 stopbits / No Parity / No protocol).

### **ENTERING LOCAL COMMAND MODE (LCM)**

1. Reset the scanner by sending [ENQ] (= 05 hex = <Ctrl>E)  
(The scanner responds with a double beep).
2. Disable the scanner by sending [SHIFT IN] (= 0F hex = <Ctrl>O).
3. Enter LCM by sending "!" (exclamation character)  
The scanner should respond:
  - with a low beep and
  - sending the string: "lcm>" The scanner is now in Local Command Mode.

### **CLOSING LOCAL COMMAND MODE**

Reset the scanner by sending [ENQ] (= 05 hex = <Ctrl>E)  
(The scanner responds with a double beep).  
The scanner is now ready for normal application.

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### CHECKING SCANNER STATUS:

Status and control commands in Local Command Mode:

Function	When sending [STRING+CR ] to the scanner	The scanner responds with : (EXAMPLE)
1. Software version	<b>VERSION</b>	Barcode Scanner (S70C1509 version: Generic) Copyright (c) Scantech BV, The Netherlands 28-11-1997. Serial nr = F7910286 Hardware nr = Software nr = S70C1509 lcm>
2. RS232 settings	<b>SCI</b>	BAUD=9600 PAR=N DATA=8 STOP=2 PROT=OFF ECHO=ON EOR= STAT=0 BAUD = baudrate PAR = Parity DATA = Number of databits STOP = number of stopbits PROT = RTS/CTS handshaking protocol ECHO = RS232 input echo from scanner to HOST EOR = End of record (not implemented) STAT = Statistics mode (No user function)
3. Laser current	<b>STAT LCR</b>	33 (milliamps)
4. Laser temperature	<b>STAT LTMP</b>	38 (degrees Celsius) (=ambient temperature + approx. 15 degrees)
5. Motor speed	<b>STAT MSPD</b>	5460 (rotations per minute)
6. Scanner timing	<b>TIME</b>	TSK=100 TID=600 TIN=50 TAD=0 TIC=0 TSL=30 where: TSK= sample period (ms) TID= Same code delay (ms) TIN=Inhibit time (ms) TAD=Extra sample time for Add ons TIC= Intercharacter delay TSL= Sleepmode time (minutes)
7. Barcode symbologies	<b>CODE</b>	EAN=ON C128=OFF C39=OFF CBAR=OFF I25=OFF where: EAN = EAN8, EAN13, UPCA & UPCE decoder C128 = Code128 & EAN128 decoder C39 = Code39 or Code39 full ASCII or Code32 decoder CBAR = Codabar decoder I25 = Interleaved 2 of 5 decoder
8. Speaker setting	<b>BEEP</b>	VOL=4 FREQ=4



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**CHANGING SCANNER SETTINGS:**  
 Changing scanner settings in Local Command Mode:

Parameter	Command string (+<CR> )	OPTIONS
Baudrate	<b>SCI BAUD=x</b>	xxxx= 38400, 19200, 9600, 4800, 2400, 1200, 600, 300, 75
Parity	<b>SCI PARITY=x</b>	xxxx= None, Odd, Even
Databits	<b>SCI DATA=x</b>	x= 7,8
Stopbits	<b>SCI STOP=x</b>	x= 1,2
RTS/CTS protocol	<b>SCI PROT=x</b>	x= ON,OFF (protocol definition depends on selected RS232 preset)
Postamble (End Of Record)	<b>SCI EOR=x</b>	x= CR,LF,CRLF (CRLF=<CR>+<LF>)

### SAVING CHANGES

SAVING CHANGES	<b>COPY SCR CUS</b>	This command the saves the changes made in the "scratch memory".
After saving changes, close Local command mode by resetting the scanner. (refer page 1)		

Notes:

- More details available upon request.
- Subject to change without prior notice.

**Q: I want to replace an Hand Held scanner by a Scantech Pollux, Castor, Hunter or Galaxy scanner on my IBM system. Do I have to change the interface settings?**

**A:** Program the Scantech scanner with the programming code 3.3.2 from the Scantech configuration guide and the scanner will act like a hand held scanner towards the IBM system. No alternations are necessary at the POS side.