

SerialMagic Pro for PalmOS

SerialMagic Professional Edition - Version 2.7.5

PalmOS 3.5-5.4

(SerialMagic is also available on OS X, BlackBerry, Symbian, Windows, Pocket PC, Linux X11)

Introduction

SerialMagic Pro will take serial data from a Bluetooth port, or the built-in RS232 serial port of a Palm device and enter it directly into virtually any Palm application that can accept Keypad or Graffiti input. This document describes how to use SerialMagic Pro on Palm OS. It assumes only a very basic knowledge of using a Palm OS device.

Installation

SerialMagic can be installed using HotSync or by copying it to an SDIO card.

Install by HotSync

To install using HotSync, just install SerialMagic Pro as you would any Palm application. From the desktop double-click the SerialMagic PRC file and this should bring up the “PalmOne Quick Install” dialog with the SerialMagic application showing. Insure the proper “User” is selected from the Quick Install list, then HotSync the PalmOne device to install the SerialMagic software.

Install by SDIO

Copy the SerialMagic Pro PRC file to the PALM/Launcher folder of the SD card.

Registration

Start SerialMagic and enter your registration name and registration code. To open the registration dialog use the Palm Menu option from the SerialMagic main dialog, then select “Enter Registration Code” option. If the registration code is not entered, every few scans will display "UNLICENSED SerialMagic".

Register by HotSync ID

In the registration field, the HotSync ID should be displayed. To obtain a registration key, provide the HotSync ID to your supplier along with the registered user name. Enter the registered user name in “Reg Name:” field then enter the registration key provided by your supplier in the “Reg Code:” field.

Register by Device ID

In the registration field, the Device ID should be displayed. To obtain a registration key, provide the Device ID to your supplier along with the registered user name. Enter the registered user name in “Reg Name:” field then enter the registration key provided by your supplier in the “Reg Code:” field.

Main Dialog

Press the Home button (in the lower left hand corner) on the Palm device and go to Applications. In the upper right insure that “All” is selected. Then scroll down to find the SerialMagic icon, and tap it. The SerialMagic main dialog should display as shown below. Be sure the Bluetooth mode is selected as shown below left.

Here is where you set the port parameters to match that of the barcode scanner, scale, or other device that sends ASCII data. Once configured, tap Start, and data received on the serial port will go to the application that has input focus.

When using SerialMagic with devices connected to the Palm devices serial port insure “Serial port” mode is selected as shown below right. Note that the factory defaults for the LaserChamp and Flic 2122, and 2142 are Bit Rate of 4800, and Stop Bits 2.



For The LaserChamp or Flic Bluetooth scanner, insure “Bluetooth” is highlighted. Insure “LaserChamp BT” is checked, and “Choose new device” is checked.

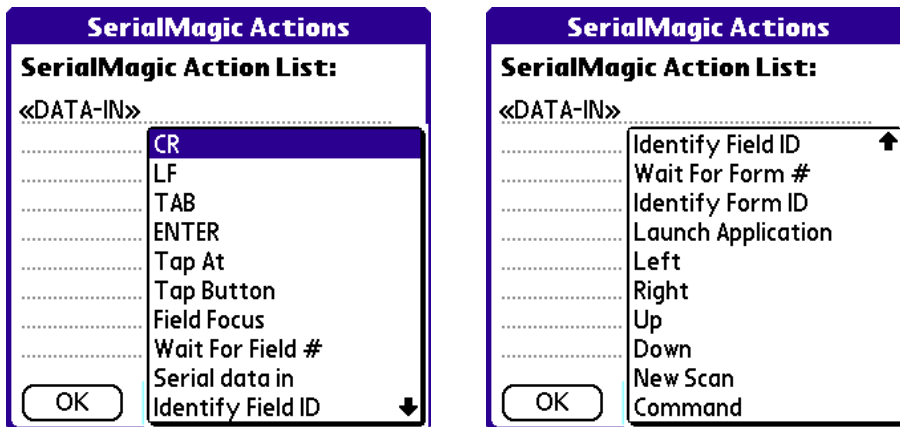
SerialMagic Actions (SMAs)

"SerialMagic Actions" are optional actions that can be performed based on the data received. For example after scanning in data, SerialMagic Actions can be defined to automatically 'tap' a button of the applications and perform a lookup on the data or some other processing function.

For Actions to work the input data must have a Carriage Return (CR) 'marker' to signify the end of the data packet. Virtually all barcode scanners (e.g. LaserChamp and Flic scanners) and scales that output ASCII data are designed with such a feature. Note: with some SerialMagic OEM developer options data packet end markers other than CR may be available.

Note that using "Tap Button" with the "Label Text" option only works for 'proper' application buttons. For some application buttons "Tap X,Y" will need to be used. If developer technical information is available for the "Control ID" of the button this may also be used. "SerialMagic Action". For more information on SMAs see Appendix A.

Important Note: In SerialMagic Pro the SMA “Serial data in” must be selected in order to get data into the target application.



Note: SerialMagic Actions are only supported for small packets of input data. (i.e. if a device like LaserChamp™ or Flic™ scanner are used, with many scans in memory, then Actions should not be used unless the device can be programmed with a sufficient delay between scans to perform the desired function.

Please see Appendix A for a description of SerialMagic Actions.

SerialMagic Action Examples for SheetToGo

This example shows how to configure SerialMagic so that an incoming data packet (e.g. barcode scan) will switch to the Palm SheetToGo application (Microsoft Excel compatible) and enter the data in the spreadsheet. When SerialMagic is installed, the default SMA is <<DATA-IN>>.

With SerialMagic Professional 2.6.8 and later, there are some default example SerialMagic Action Profiles (SMAPs). When SerialMagic Professional is installed it will create these SMAPs. If they have been deleted or don't show up due to a SerialMagic upgrade, then they can be restored with the "Restore Default Profiles" menu option from the SerialMagic Actions dialog.

To select a default SMAP, from the SerialMagic Actions dialog select "Load Action Profile" and select one of the profiles from the list.

"Sheet – 1 Column" will enter successive scans in one column in the spread sheet. The SheetToGo application must be active.

"Sheet with Auto-Launch" is the same as "Sheet – 1 Column" except it will switch to the SheetToGo application if another application has focus.

“Sheet – 2 Columns” will switch to the SheetToGo application (if another application has focus) and will enter successive scans in two columns.

Screen X,Y values for SerialMagic Action <<TAP X,Y>>

Function	X,Y	Hi-Res (for reference)
Check (Enter)	6,137	(12,274)
Enter Data Field	50,137	(100,274)
Page Left	58,151	(116,302)
Page Right	108,151	(216,302)
Cell Left	70,151	(140,302)
Cell Right	96,151	(192,302)
Cell Up	83,147	(166,294)
Cell Down	83,155	(166,310)
Go Button	150,153	(300,306)

Named and Default SerialMagic Action (SMA) Files

SerialMagic Action files can be created to allow a simple way for SerialMagic to work with different applications and device requirements. These files can be transferred to a new device using HotSync allowing SerialMagic to be quickly and easily configured for use on new Palm devices.

When the default SerialMagic Action file is present it will be automatically loaded.

To create the default SerialMagic Action file perform the following steps

- Create the desired SerialMagic Actions (SMAs)
- Open the Menu, select "Save Default Action File"
- HotSync the Palm
- Locate the file in the user's Palm Desktop directory – the file is named "SerialMagicDefaultAction.PDB"

The SerialMagic Action file can be loaded onto a new device as follows

- HotSync SerialMagic program PRC and the SerialMagicDefaultAction.PDB
- Start SerialMagic
- Tap "SerialMagic Actions"
- Open the menu and select "Load Default Action File" or tap the "Default" button. The "Default" button is only shown if there's a current default active.

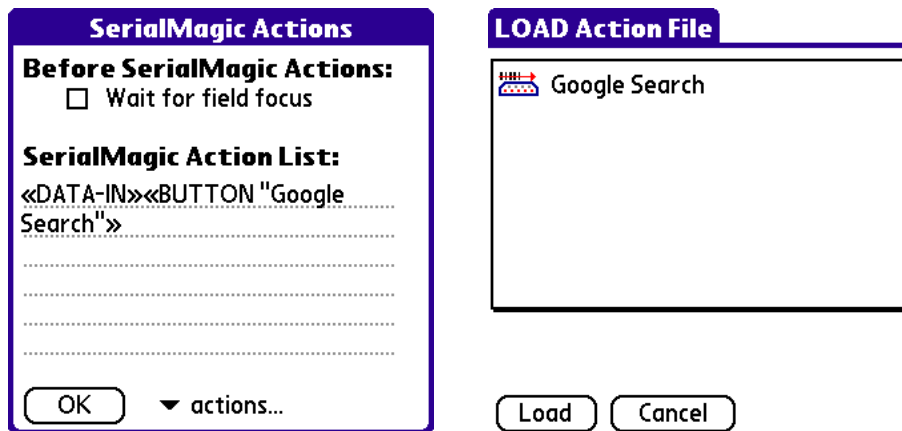
Here is one SerialMagic Pro Action file can be used to scan data into SheetsToGo and provide a timestamp in the column to the right of the scanned in data. (Note: The SMAs will appear on 2 lines when viewed in SerialMagic Pro).

```
<<DATA-IN>><<TAB>>=now()<<ENTER>><<LEFT>>
```

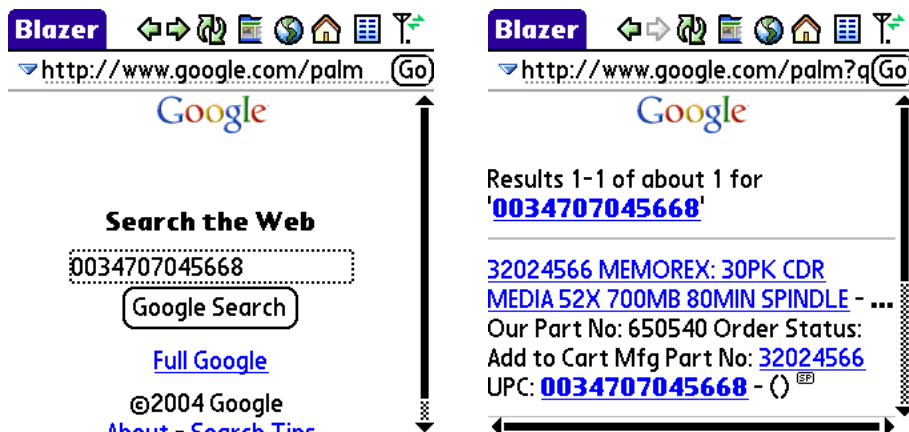
SerialMagic Actions (SMA) for Blazer Browser

SerialMagic Pro has a powerful set of SerialMagic Actions to allow solutions with virtually any Palm OS application. It's not surprising with over 30,000 available Palm OS applications that some applications would behave differently. For example Palm OS Memo application will go to the next line when a LF (line feed) character is received. Other applications will activate the form when a CR (carriage return) character is received. It's straightforward to determine what the application needs, and configure SerialMagic Actions to provide the required input.

One popular SerialMagic Actions example is the Blazer Browser included on many Palm OS devices. For example, if to scan data directly into the Blazer Browser and perform a search on Google, this requires a button push of the "Google Search" button displayed in the Blazer Browser. The images below show the proper SMA definition for a Google search, using the Blazer Browser running on a Treo 650. SerialMagic Pro also allows the SMA definition can be easily written to an SMA file to easily use at any future time.

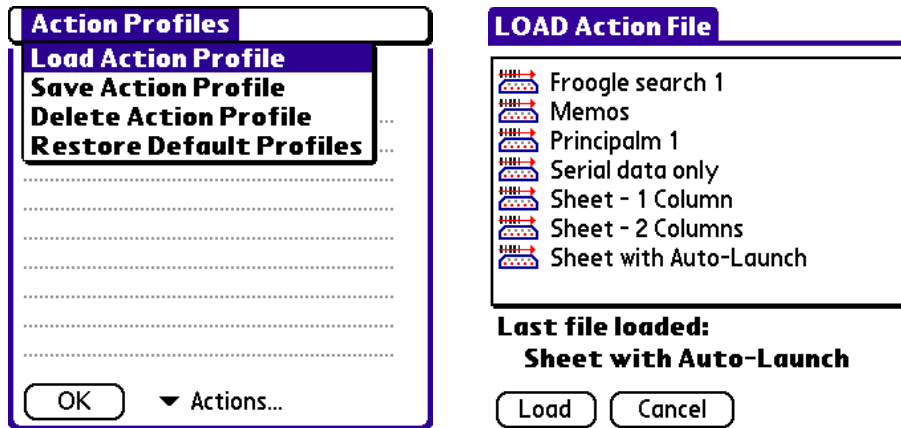


The images below show the results of the scan into the Google search field, and the subsequent lookup for the UPC code that was scanned into the search field.



Working with Named SerialMagic Action (SMA) Files

SerialMagic Pro allows SerialMagic Action files to be saved, loaded, and deleted using SerialMagic menu options. The image below-left shows the SMA menu options. The SMA Load Action File dialog is displayed below-right showing the “Sheet with Auto-Launch” SMA file was the last to be loaded.

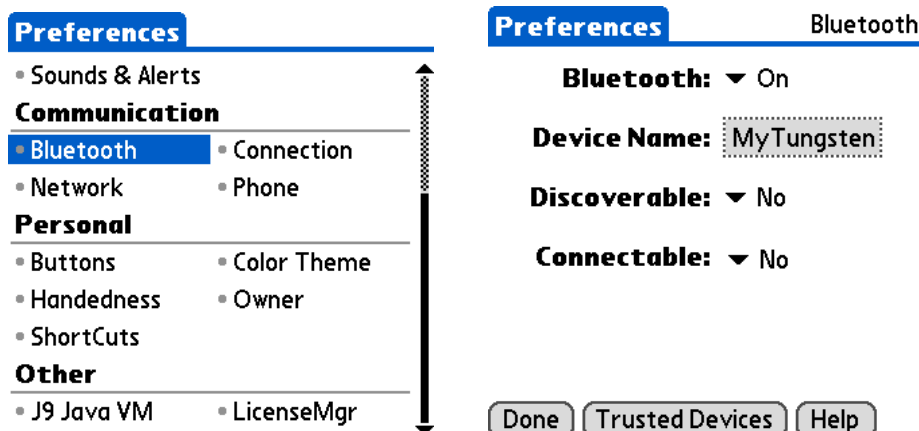


Pairing Trusted Devices

Note: The Palm Bluetooth Manager should only be used when SerialMagic is stopped.

The following shows how to add a Bluetooth device to the list of trusted devices for Palm OS. Launch Palm OS Prefs app from the System category then tap on the Bluetooth option as shown below-left, this will bring up the dialog as shown below-right with the name of your Palm device.

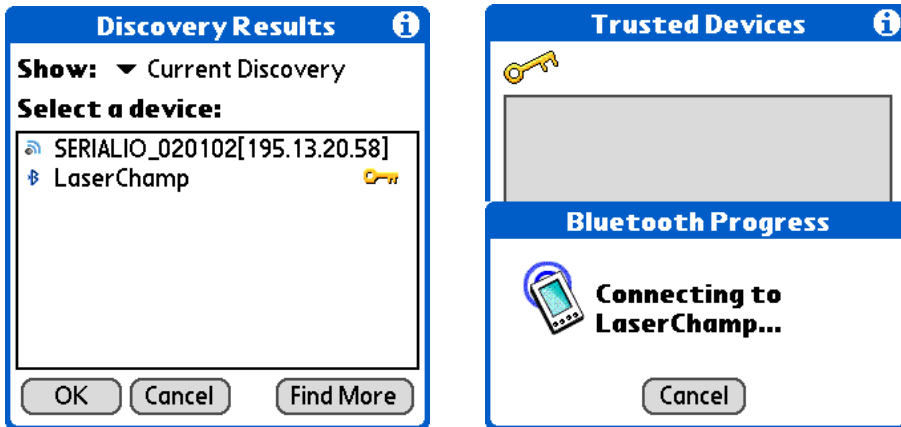
Note: On Tungsten T3 & T5 this is also available by tapping the Bluetooth icon from the Status Bar. On the Treo 650 tapping the Bluetooth icon near the battery at the top of the Palm display is also a shortcut.



The Trusted Devices dialog will be displayed, showing all trusted devices. When the Palm OS device is new, the list will be empty. Activate the Bluetooth device, and then tap on "Add Device". The image (below-left) shows adding a LaserChamp scanner as the first Bluetooth device to a Tungsten T3. Select the Bluetooth device from the list and tap OK. A dialog like the one shown below-right will appear briefly.

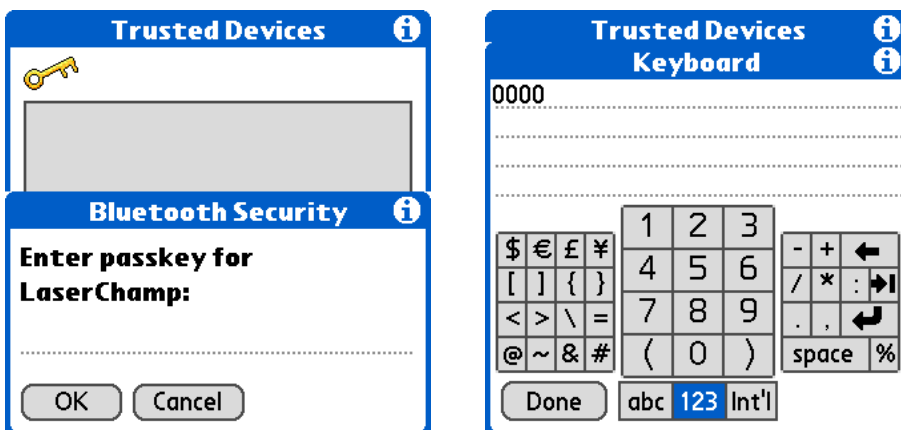
Note: When SerialMagic is active be sure that the Palm Bluetooth "Discoverable" option is set to "No" when used in the presence of a Bluetooth device that provides Bluetooth host side connectivity. For example a Bluetooth Access Point (BTAP). When the Palm Bluetooth "Discoverable" option is enabled the Palm may try to connect to the hosting device, preventing proper connection with the Bluetooth scanner.

Note on Palm TX, LifeDrive, Tungsten T5, Tungsten E2, and Treo 650 devices: "Nearby Devices" is the equivalent to "Current Discovery" on the T3.



After the Bluetooth device is connected, you will be prompted to enter the Passkey for the device as shown below-left. The Passkey can be entered using the soft keypad by tapping the menu option and choosing "Keyboard", then tap the "123" button and tap 0 four times to get "0000" as shown below-right.

Tap "Done", on the soft Keyboard, and "Done" on the Bluetooth Security dialog. You should then see some dialogs briefly as the Bluetooth device is paired. The Trusted Bluetooth Device can now be used with SerialMagic.



LaserChamp & Flic Note: The scanner has a default connect time of 60 seconds. If the Bluetooth scanner becomes inactive before the Passkey is entered, a dialog showing "Unable to connect to LaserChamp" will appear. Activate the Bluetooth scanner, Tap "Try Again" and enter the Passkey again to get the pairing connection to complete.

Using a Trusted Device with SerialMagic

Note: The Palm Bluetooth Manager should only be used when SerialMagic is stopped.

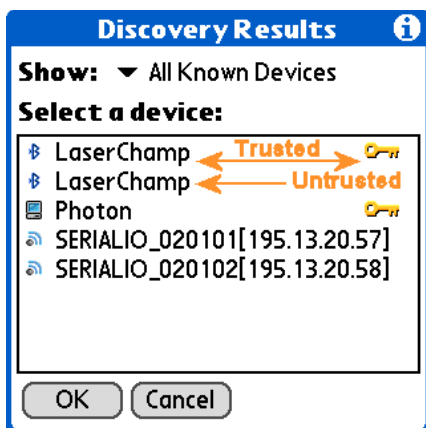
Once a device is trusted as described above, SerialMagic can now use the device. Run SerialMagic and insure “Bluetooth” mode is selected. Then tap "Start" and you will see the list of devices in the Discovery Results dialog, (select “Current Discovery” or “Nearby devices” to select from active devices) and select the trusted device to connect to as shown below-left. Tap "OK" you should then see the SerialMagic connecting message as shown below-right.



Bluetooth Trusted Devices Note

Note: The Palm Bluetooth Manager should only be used when SerialMagic is stopped.

Before a Bluetooth device can be used with Palm OS it must “paired” with Palm OS so the device is a “trusted device”. If the device is not trusted when SerialMagic starts, Palm OS will prompt for a passkey (shown below-right) however the pairing will fail. Note the “Enter passkey...” dialog can be misleading in that it seems to indicate that the device can be added to the trusted list from this prompt. This does not work due a bug in Palm OS (at least through version 5.4).



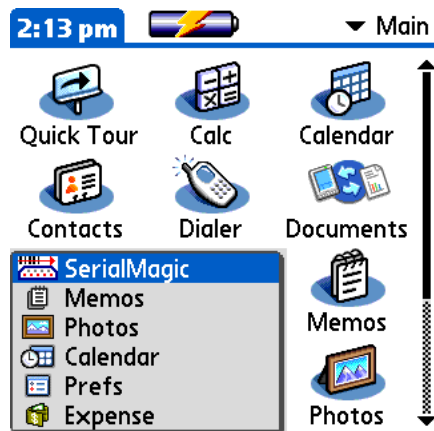
LaserChamp & Flic Note: When a scanner is paired to Palm as a trusted device, then later paired to another device, the trust relationship with the Palm will be broken. In this case the trusted device will have to be removed from list on the Palm, then added again. Please see the section on removing a trusted Bluetooth device.

After the SerialMagic connection is complete to the Bluetooth device, the SerialMagic "Start" button will change to "Stop". When the Bluetooth device goes inactive or out of range, the status message (to the right of the Start/Stop button) will read "(Disconnected)". As long as SerialMagic is active in Bluetooth mode, it will continually attempt to connect to the last Bluetooth device that it had a connection with. During each connection attempt the status message will read "Reconnecting".

Note: If the Bluetooth device goes inactive, or out of range during the time the Palm device attempts to connect, the error "Failed to connect Bluetooth port to other device." will be displayed.

Switching To Target Application

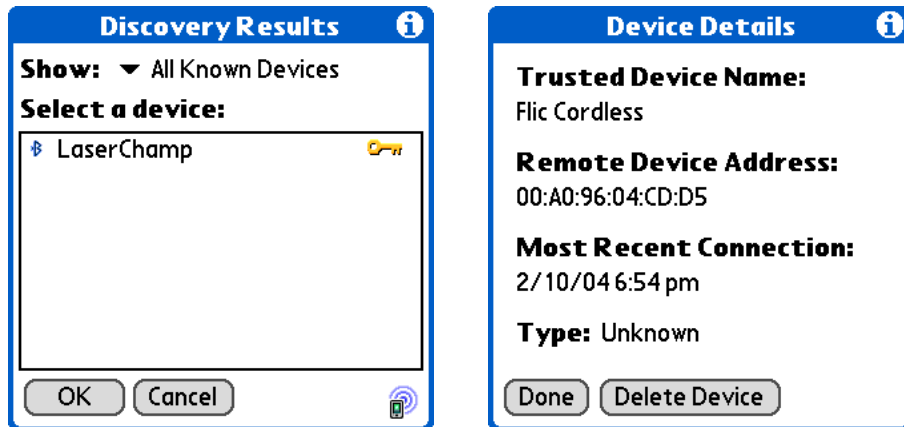
When SerialMagic is active and connected to the Bluetooth or tethered device, data sent by the device will go to the active field that has focus. Switch to the target application using the home button then selecting the application, or using the 'quick pick' menu if supported on the Palm device. The 'quick pick' menu from a Tungsten T3 is shown below. Once the target app is running, simply place the cursor in the desired field and scan the desired data into the application. If the proper SerialMagic Actions (SMA) are defined then you may not even need to place the cursor in the target field.



Remove Trusted Bluetooth Device

When a scanner is paired to Palm as a trusted device, and later paired to another device, the trust relationship with the Palm may be broken. In this case the trusted device will have to be removed from list on the Palm, then added again.

To remove trusted devices go to the Trusted Devices dialog as described in the section Pairing Trusted Devices. (Tap sequence: Prefs >> Bluetooth >> Trusted Devices). Select the Bluetooth device to delete as shown below-left, and tap "Details" to get the screen shown below-right.

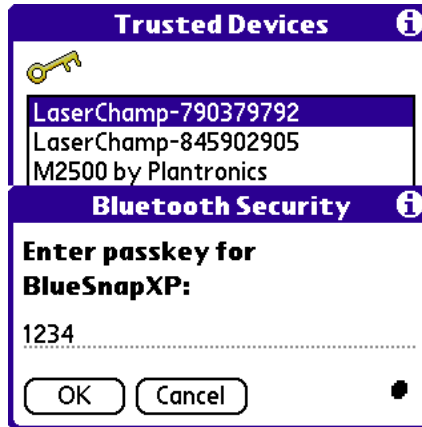


Tap "Delete Device", then tap "OK" when prompted "Are you sure you want to delete Flic Cordless from your trusted device list?" The device can then be added to the trusted devices list again as outlined in the "Pairing Trusted Devices" section of this document.

Caveat. When adding a new trusted Bluetooth device such as the LaserChamp or Flic to a Palm OS device that currently has SerialMagic running, **be sure SerialMagic is stopped.** Failure to do this may cause the Palm to need a reset, or prevent new devices from properly being discovered.

Using SerialMagic with BlueSnapXP™

SerialMagic Pro can be used in conjunction with the BlueSnapXP to connect the Palm device to RS-232 serial devices without a cable. When using the BlueSnapXP, there are two differences from the above instructions that outline using SerialMagic with the LaserChamp and Flic scanners. The first difference is the "LaserChamp BT" option in SerialMagic must not be checked (see image below-left). The second difference is when making a trusted device connection, the passkey to use is the number shown in the BlueSnapXP name (see image below-right).

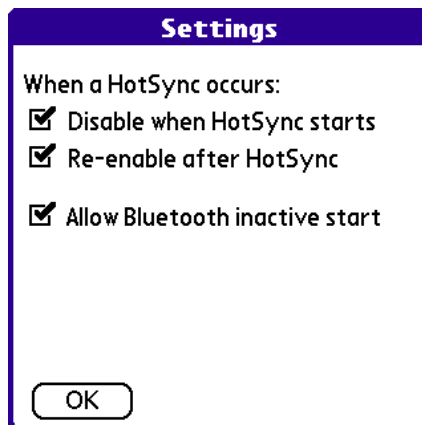
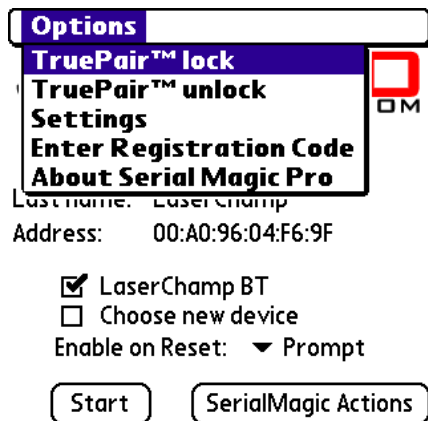


SerialMagic Pro and HotSync

SerialMagic is built to run sight unseen magically providing data to applications. This transparency can make it quite easy to forget SerialMagic is running.

Due to the way Palm OS is built, SerialMagic cannot run simultaneously with HotSync, and therefore must be disabled during HotSync. By default this is done automatically with SerialMagic Pro. If you want SerialMagic Pro to be automatically enabled after HotSync use the Settings dialog from the SerialMagic Options menu. The SerialMagic Pro Options menu is shown below-left and the SerialMagic Pro Settings dialog is shown below-right.

Remember that a default SerialMagic Pro installation will automatically disable SerialMagic Pro a HotSync is performed, but will not enable it unless that option is enabled.



SerialMagic Pro “Enable on Reset”

This option is used to control starting of SerialMagic after a reset of the Palm OS device. The 3 options are Off, On, and Prompt. Prompt is the default and will display a control dialog after reset allowing SerialMagic to be started. Note: Some Palm OS games that use a similar feature to restrict program functionality, can conflict with this feature of SerialMagic. If a problem occurs after a Palm OS program demo expires, be sure to contact the manufacture for instructions on how to **completely** remove their program.

SerialMagic Pro “Allow Bluetooth inactive start”

This option allows SerialMagic Pro to start when the last connected Bluetooth device is inactive or not in range. If this option is not checked, an error will occur if SerialMagic Pro does not find the last connected Bluetooth device after Start is selected. There are advantages to each setting, use the one that works best for you.

TruePair™ ‘Paired Locking’ with LaserChamp and Flic Bluetooth Scanners

The “Lock Scanner to Handheld” and “Unlock Scanner from Handheld” options allow strong pairing of LaserChamp and Flic Wireless Bluetooth Barcode Scanners to Palm OS devices using TruePair™ technology. This option can be used in an environment where Bluetooth Access Points that support the Bluetooth SerialPort Profile (Spp) are present. Some Bluetooth Access Points like the Serialio.com BtSnap (Bluetooth Scanner Network Access Point) can be configured to auto-connect with LaserChamp and Flic wireless Bluetooth bar code scanner. When this occurs, the pairing with the Palm device is broken; this requires the Bluetooth scanner to be re-paired with the Palm device. SerialMagic Pro uses TruePair™ technology to prevent ‘broken trust’ by ‘locking’ the scanner to the Palm device. Note: once a Bluetooth scanner is ‘locked’ it must be unlocked using the same device, or the scanner must be completely reset to remove the lock.

Input Device Notes

Some devices may send data too fast for slower versions of Palm devices to handle. This will typically only affect Palm devices with slower processors. It will generally not affect faster Palms like the Tungsten T2, and Tungsten C.

For example: If a LaserChamp™ (aka Flic™) barcode scanner with a *large number of scans in memory*, to a slower Palm device the Palm typically can't keep up with the data flow. In this case, configure the Flic with the *Delay* feature, and a small delay will occur between each scan, allowing the full contents of memory to download without problems.

LaserChamp is a trademark of Serialio, LLC

Flic is a trademark of Microvision, Inc.

AirCable is a trademark of Wireless Cables, Inc.

Contact US

If you have questions or comments please contact us.

support@serialio.com

Appendix A

SerialMagic Actions (SMAs)

SerialMagic Pro provides the following SMAs

Serial data in – This is required to get the data into the application. Serial data in has several options.

-As Scanned: Displays data as it comes directly from the scanner

-Hex: Displays data in hexadecimal format (useful for IDChamp RFID reader)

-Dec: Displays data in decimal format (useful for IDChamp RFID reader)

-ISBN-10: Displays ISBN-10 number when Bookland code is scanned. Note: LaserChamp MUST be configured as follows for this feature to work. LaserChamp can be configured using the scanner configuration codes (see support page of Serialio.com). Scan these two codes:

DISABLE SUPPLIMENTAL CODES

CR – Send Carriage Return character.

LF – Send Line Feed character. Use this in applications such as Memo to create a new line entry for each data packet.

TAB – Send Tab character. Use this in applications such SheetToGo, or Excel to move to the next cell.

ENTER – Send Enter character.

Tap At – Tap at a screen location. Note that this location is based on a 160 x 160 display. When using a high resolution display such as the 320 x 320 Tungsten T3 the bottom right of the display is 160,160. When using a high resolution display such as the 320 x 480 LifeDrive, Tungsten T5 (or the T3 in ‘DIA’ mode) the bottom right is 160,240.

Tap Button – Tap a button by name (Label Text) or by Control ID. Some applications do not properly respond to the name, so button Control ID is provided. Check with application provider if you wish to use the Control ID.

Field Focus – Wait for any Field to have focus before sending data. This can be used to specify which field gets the data. Example, in this case the desire is to have SerialMagic enter data into an ‘ITEM ID’ field, however the user must enter a password to get to that field. If <<FIELDFOCUS>> is used, AND the scanner has a pending scan, then the scan would be entered into the password field which is not where it is needed. Wait for Field # can be used to provide the data to the proper field.

Wait for Field # – Wait for the given Field # has focus before sending data. This can be used to specify which field gets the data. Example, in this case the desire is to have SerialMagic enter data into an ‘ITEM ID’ field, however the user must enter a password to get to that field. If <<FIELDFOCUS>> is

used, AND the scanner has a pending scan, then the scan would be entered into the password field which is not where it is needed. Wait for Field # can be used to provide the data to the proper field.

Identify Field ID – Can be used to find the Field ID for use with the Wait for Field # SMA.

Wait for Form # – Similar to Wait for Field # except that the Palm OS form # is used instead of the field number. Some palm applications use forms to place data into instead of fields.

Identify Form ID – Can be used to find the Form ID for use with the Wait for Form # SMA.

Launch Application – Launch the desired application.

Left – Left direction button. Can be used with SheetToGo or Excel to move focus to the cell to the left.

New Scan – This action will tell SerialMagic Pro to look for a new data packet from the Bluetooth device. This action is useful for putting data in columns in a spreadsheet or table.

Command – This action will tell SerialMagic Pro to perform the given Palm OS Command. For example <<COMMAND>>N when issued in FileMaker Mobile will create a new record.

If / Action – This action will allow you to filter the data input to SerialMagic. Options are

“If this condition is true:”

“Duplicate scan”

“Scan data length”

“is less than”

“is less than or equal to”

“is equal to”

“is greater than or equal to”

“is greater than”

“is equal to”

“Do this action:”

“Restart Action List”

“Get New Scan (until test false)”

Date / Time Stamp – This action will insert the current date & time. The format is *MM/DD/YY HH:MM:SS mm* e.g. 09/06/05 05:39:16 pm

Appendix B

Troubleshooting

Bluetooth connections

Sometimes there may be issues with setting up a Bluetooth connection. This section outlines the most common resolutions for Bluetooth connectivity. This section assumes the user is working with the LaserChamp Bluetooth wireless barcode scanner, but it applies equally to other device types that SerialMagic supports.

The most common reason a Bluetooth connection will occur is Bluetooth pairing with the LaserChamp has not been done per the instructions in the “**Pairing Trusted Devices**” section. This will most commonly be reflected when the SerialMagic “Start” button is tapped, and the Bluetooth dialog will prompt the user to “Enter Passkey...”. Please note there is a bug in Palm OS that prevents the passkey from working properly when entered from this dialog. For details see “**Bluetooth Trusted Devices Note**” section

The second most common Bluetooth connectivity issue is due to the LaserChamp having been paired to the Palm device, but then was paired with another computer after this. This will require the trusted device to be **first deleted** and then added again per the instructions in the “**Pairing Trusted Devices**” section.

The second most common problem is due to a Bluetooth radio configuration issue. Scanning RESET FACTORY DEFAULTS barcode will most frequently fix this problem. In some cases the trusted device may need to be removed and added again using the Palm Bluetooth Manager after scanning the RESET barcode.

On some occasions it may be required to soft reset the Palm device by pressing the Palm devices reset button.

On rare occasions it may be required to hard reset the Palm device per the device instructions to remove the offending configuration problem.

Also on rare occasions it may be required to hard reset the LaserChamp scanner. This can be done by holding down the scan button for about 10 seconds until 3 beeps are emitted from the scanner.

LaserChamp Bluetooth Scanner Batteries

Although not related to software, weak batteries in the LaserChamp Bluetooth wireless barcode scanner can affect connectivity. If the Bluetooth connection constantly connects and disconnects, put new batteries in the LaserChamp scanner this could well be the problem.

LaserChamp Bluetooth Radio Connection

The LaserChamp Bluetooth scanner connects to the Bluetooth radio using the metal conductors on the PCB (Printed Circuit Board) on the LaserChamp scanner battery door. There should be 8 of these metal ‘fingers’ to connect to the 8 metal ‘pads’ of the scanner. If the fingers or the pads are dirty, this can prevent proper connectivity. Caution should be taken when handling the battery door so as not to touch

the metal ‘fingers’ or ‘pads’ as oil and dirt from human contact can reduce the proper electrical connection between the LaserChamp scanner and the Bluetooth radio.

Common Bluetooth Symptoms with LaserChamp

The LaserChamp can be paired with Palm Bluetooth Manager but does not connect when starting SerialMagic, or connects and disconnects continuously.

- Check that batteries in LaserChamp are in good condition.
- Remove LaserChamp from trusted device list using Palm Bluetooth Manager.
- Scan RESET FACTORY DEFAULTS barcode.
- Be SURE that SerialMagic has been stopped then add LaserChamp to trusted device list using Palm Bluetooth Manager.

Note: After tapping the Stop button in SerialMagic it can take up to 20 seconds for SerialMagic to stop. You should see the “SerialMagic Actions” button to the right of the “Start” button when SerialMagic is stopped.

Note: The Palm Bluetooth Manager should only be used when SerialMagic is stopped.

- Add LaserChamp to trusted device list using Palm Bluetooth Manager.
- Start SerialMagic.

If the LaserChamp does not Bluetooth connect to the Palm device after performing the above sequence, using SerialMagic then soft reset the Palm device first then perform the above steps.

If the LaserChamp does not Bluetooth connect to the Palm device after performing the above sequence, using SerialMagic then perform the following:

Hard reset the Palm device, this will remove all data and programs from the Palm.

Add ONLY the SerialMagic application to the Palm device. This can be done by creating a temporary HotSync ID, if the same HotSync ID is used as previously, all the data and software will be loaded back onto the Palm device.

Follow the steps above. If the LaserChamp does not Bluetooth connect to the Palm device using SerialMagic after performing the above sequence, it is likely there is a faulty Bluetooth radio in the Palm device.