

## Talking To The Module

Now your first user interface is created, the Stamp needs to talk to it. Create the following program in *BASIC Stamp Editor*:

```
cdata VAR BYTE
nval VAR BYTE

nval = 10

loop:
  ' Check for Up button
  serout 2\6, 110, [1, 1]
  serin 4\8, 110, [cdata]
  if cdata = $00 then NotUp:
    nval = nval + 1
NotUp:
  ' Check for Down button
  serout 2\6, 110, [1, 2]
  serin 4\8, 110, [cdata]
  if cdata = $00 then NotDown:
    nval = nval - 1
NotDown:
  ' Write result to display
  serout 2\6, 110, [2,3,nval,0,0,0]
  ' Wait and continue
  pause 100
  goto loop
```

The program checks each button control, increments or decrements the number variable as needed and writes the result to the number control.

You will need to insert a stamp directive (e.g. '{ \$STAMP BS2p }') and, if you are using a BS2 or BS2e, specify 32 in place of 110 in the SERIN and SEROUT statements.

The program shown uses numbers in the SERIN and SEROUT statements to save space. It is clearer and more flexible to use constants instead. See the sample code generated by FlexiPanel Designer to see how to do this.

## Next Steps

Now you are ready to experiment with *FlexiPanel Designer* to create the user interfaces you want. Use the sample code it generates to communicate with the module. Use the following steps:

1. Create the user interface in *FlexiPanel Designer*.
2. Program the interface into the FlexiPanel module.
3. Write the BASIC program to talk to the module using the sample code generated by FlexiPanel Designer.

## Further Information

For support on the FlexiPanel Module contact [support@parallax.com](mailto:support@parallax.com).

For support on FlexiPanel client devices, contact [technical.support@FlexiPanel.com](mailto:technical.support@FlexiPanel.com)

FlexiPanel Ltd provides a range of hardware and software for creating user interfaces on remote devices. For more information, visit [www.FlexiPanel.com](http://www.FlexiPanel.com)



# FlexiPanel Stamp Edition Quick Start Guide

This guide is intended to get you started with FlexiPanel Stamp Edition. Once you are up to speed with the module, you can learn more by reading the detailed data sheet available from either [www.parallax.com](http://www.parallax.com) or [www.flexipanel.com](http://www.flexipanel.com).

## What FlexiPanel Does

The FlexiPanel module is a remote user interface adapter. Instead of having to add controls such as a keypad and a display to the BASIC Stamp, the module connects to a PDA or a cell phone and creates a user interface there instead. (See diagram.)

## How FlexiPanel Works

The FlexiPanel module stores user interface controls in its memory. The BASIC Stamp can read and write the control values stored in the module using SERIN and SEROUT commands.

Remote devices such as PDAs and cell phones can connect to the module and show the control panel on their local display. As the user modifies the controls they are updated on the FlexiPanel module.

The remote device must have FlexiPanel Client software loaded. This is available free from [www.flexipanel.com](http://www.flexipanel.com). The following platforms are supported:

- **Pocket PC PDAs** (e.g. *iPaq*, *Toshiba*, *Dell*)
- **Pocket PC Phone Edition** (*Samsung i700*, *O2 XDA*)
- **Microsoft Smartphone** (*Motorola MPx200*, *Orange SPV*, *Samsung i600*)
- **Java Phones** running *JABWT Java AIP for Bluetooth* (*Nokia 6600 / 7700*, *Sony Ericsson P900*, *Sendo X*) from *Summer 04*
- **Palm OS** (*Palm Pilot*, *Sony Clié*, *Treo phones*) from *Summer 04*
- **Microsoft Windows** (*desktop & laptop computers*)

The remote device must be Bluetooth enabled. Bluetooth adapters are available for many devices. Try to get a Class I adapter because it has 330ft range.

**Create User Interfaces Anywhere!**

FlexiPanel™ lets Windows apps, embedded systems and microcontrollers create real-time GUIs remotely on a wide range of popular devices using Bluetooth.

No development outside your native environment!

[www.flexipanel.com](http://www.flexipanel.com)

Patents pending.

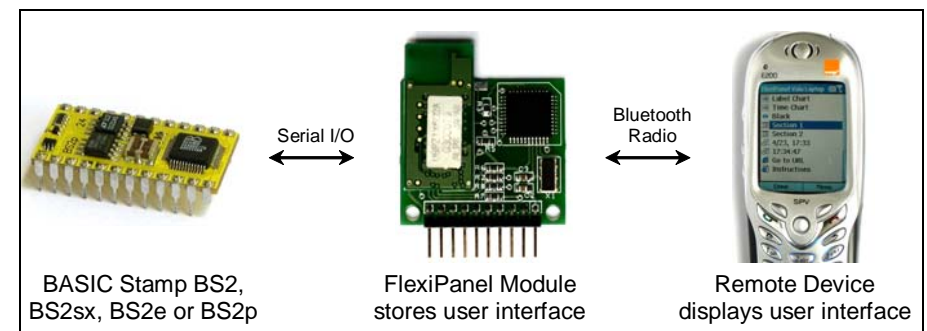
create GUIs on PocketPC

make Palm sing & dance

click away on Smartphones

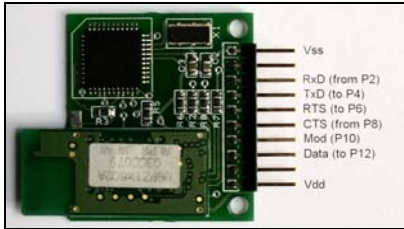
put controls on Java phones

connect to Windows



## Setting Up FlexiPanel

The FlexiPanel module is composed of two boards which need to be clipped together as shown in the following photo, which also shows the pin connections:



The best way to learn about the FlexiPanel module is to use the BASIC Stamp Board of Education or Demo Board because you can plug the module into the AppMod slot. It is important to insert it the right way round, so follow this picture:



The module must be inserted in the Stamp-side row of the AppMod slot with the components facing away from the Stamp. If the module gets hot or the power LED goes out, it is being inserted incorrectly and must be unplugged immediately.

The second and ninth pins are unconnected so you may use P0 and P14 (as well as all odd-numbered I/O pin) as you wish. For normal use, leave the MOD pin unconnected.

Serial I/O pin names can get confusing. In FlexiPanel documentation, TxD and RTS are always outputs and RxD and CTS pins are always inputs. Connect RxD on one device to TxD on the other, *etc.*

## Software Installation

Download and install the following software available from [www.parallax.com](http://www.parallax.com) and [www.flexipanel.com](http://www.flexipanel.com):

**FlexiPanel Designer** Use this software to design and program the user interface displayed by the FlexiPanel module. You can learn more about this software by reading the data sheet that comes with it.

**FlexiPanel Client** Load this software onto the Remote Device you intend to use. Each type of remote device has its own software and documentation.

## Creating User Interfaces

The user interface may consist of up to around 20 or 30 controls, depending on the amount of memory they take up. The types of controls available are:

<b>Button</b>	Registers a button press.
<b>Latch</b>	An on/off switch or check box.
<b>Text</b>	Text for display or keyboard entry.
<b>Number</b>	An integer or fixed point number.
<b>Section</b>	Groups controls together.
<b>Password</b>	Access control and security.
<b>Matrix</b>	Numerical table or graphical chart.
<b>DateTime</b>	A date and/or time value
<b>List</b>	Selects one item from a list.
<b>Message</b>	Display an alert message.
<b>Blob</b>	Goes to a URL in a web browser.

## Your First FlexiPanel Project

This simple project will get you started using the FlexiPanel module. The user interface has two buttons (*Up* and *Down*) and a number control. When *Up* is pressed, the Stamp adds one to the number. When *Down* is pressed, it subtracts one.

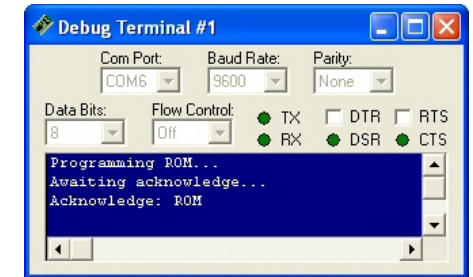
Follow these steps to design the user interface:

- Start *FlexiPanel Designer*.
- Select *Edit > Insert Button* from the menu. A button control is created and placed in the controls list. In the properties list to the right, set the title to *Up*. The number next to the control is the *Control ID* that the Stamp will use to refer to it.
- Create another button, this time with the title *Down*.
- Create a number control by selecting *Edit > Insert Number*. In the properties list to the right, set the title to *Number*.
- Select *View > FlexiPanel Server Properties* from the menu and select the *Ping Client every 3 seconds* from the properties list.
- Select *Target Device > BASIC Stamp Edition* from the menu.
- In the properties list, set *Stamp type* the type of BASIC Stamp you intend to use.
- Select *Target Device > Create BASIC programming code...* from the menu to save the user interface information as a BASIC file.

To program the user interface into the FlexiPanel module, we will run the BASIC program on the Stamp and the Stamp will program the module.

Follow these steps to program the module:

- Start *BASIC Stamp Editor* and open the file you just saved in *FlexiPanel Designer*.
- Insert FlexiPanel in the AppMod slot.
- Run the program. If programming was successful, the line *Acknowledge: ROM* will be displayed in the debug terminal:



- If programming failed, disconnect and reconnect the board power and try again.
- Start up your remote device and connect to the FlexiPanel module. The user interface you created will be displayed. (You can improve the appearance later.)



