Introduction
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Welcome to the incredible combination of Schmartboard's easy to solder boards
and the flexible and easy to use Cypress PSoC. Your project is the most
important thing to you so we want you to get up to speed as quickly as possible.
To that end, we are providing these projects as a launching point for your designs.

Before You Start
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The BootLoader3 and BootLoader5 directories each contain a PSoC Creator workspace
that are basically the same but differ in being targeted for a CY8C3866LTI-030 and
CY8C5868LTI-LP039 respectively. Within each workspace there are two projects, a
USB BootLoader and a simple example BootLoadable payload that toggles an LED. To
program a board using PSoC Programmer with the combination of these projects you
can use the BootLoadable3.hex and BootLoadable5.hex files respectively. If you are
using a different part than the above, then start with the appropriate PSoC3/5
workspace, use the device selector to change the target device for both the
BootLoader and BootLoadable projects and rebuilt both to generate a new combined
HEX file that you can find within the BootLoadable project. Alternatively, you
can use the Bootloader Host program to download just your new BootLoadable project
via the USB interface.

In the workspace and project directories are files with .Default extensions. These
files can be used to allow you to open the PSoC Creator workspace and have it
appear in a format that you may prefer. They also set the device selector to show
more device information columns and filter out parts not usable on the Schmartboard.
The CopyDefault.bat script is provided to copy the .Default files to your user
specific files before entering PSoC Creator or to replace your user specific files
with the .Default files. To replace the .Default files with your user specific
files you can use the MakeDefault.bat script. And finally, to erase your user
specific files you can use the EraseSpecific.bat script.

In each .cydsn subdirectory resides the PC_cleanup.bat script that you can use to
remove all the files that are generated when you compile your design. This will
allow you to archive your project with only what you need to save.

The Schmartboard PSoC Module
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You can power your Schmartboard module externally through the USB port or via either
the 1x5 I2C or the 1x5 programming headers. For internal power, you can apply a
source to the 1x2 VIN/GND header and use the on board +5 volt linear regulator.
Finally, you can connect a battery to the 1x2 VBAT+/VBAT- header and use the boost
converter module contained within the PSoC. In all cases, remember to set the
boost converter jumpers properly.

Additional non-volatile storage can be added to your board via an I2C EEPROM in a
TSSOP-8 package at U3.

The red power LED D3 located near the regulator will be illuminated while power is applied to your Schmartboard module. For the first five seconds after power up the Bootloader will run, allowing you to start downloading a new Bootloadable payload application over the USB connection with the Bootloader Host program. By shorting the SCL header pin to ground before applying power, the five second timer will be disabled and the Bootloader will run forever. Alternatively, the Bootloader time out period can be lowered or eliminated by modifying the Bootloader project. If a valid Bootloadable application is saved in memory then it will launch after the five second timer expires.

While the Bootloader is running, the bi-colored LED D5 located near the USB connector will be illuminated red. The preloaded example Bootloadable application continuously cycles the bi-colored through the following sequence of colors: off, green, red and yellow.

Your Design
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You can modify the BootLoadable project to configure the Schmartboard PSoC for your design. All the pins and I/Os that are on your Schmartboard are already entered into the IDE but may need to be reconfigured to suit your design requirements.

Now it's time to add your desired modules, write your source code, compile and download your design to the most versatile platform available. You now have access to the fastest turn around time from start to go or from iteration to iteration. All without having to wait for a board layout or source and replace components.

Requirements
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PSoC Creator V3.0 - http://www.cypress.com/psoccreator/
Schmartboard module 710-0008-01R2 - http://www.schmartboard.com/index.asp?page=products_dev

Helpful Links
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Cypress PSoC page - http://www.cypress.com/psoc/
Cypress Developer Community - http://www.cypress.com/?id=2203
Cypress PSoC Today video series - http://video.cypress.com/video-library/video/Web-Series
Cypress Support - http://www.cypress.com/?id=4
SnoopyPro USB sniffer - http://sourceforge.net/projects/usbsnoop/
USB 2.0 Type A to Mini Type B 6' Cable -
http://www.schmartboard.com/index.asp?page=products_hcb&id=102
Schmartboard products page - http://www.schmartboard.com/index.asp?page=products
On Semiconductor I2C EEPROM page -
http://www.onsemi.com/PowerSolutions/parametrics.do?id=2311