

CySuiteUSB.Net Control Center User's Guide

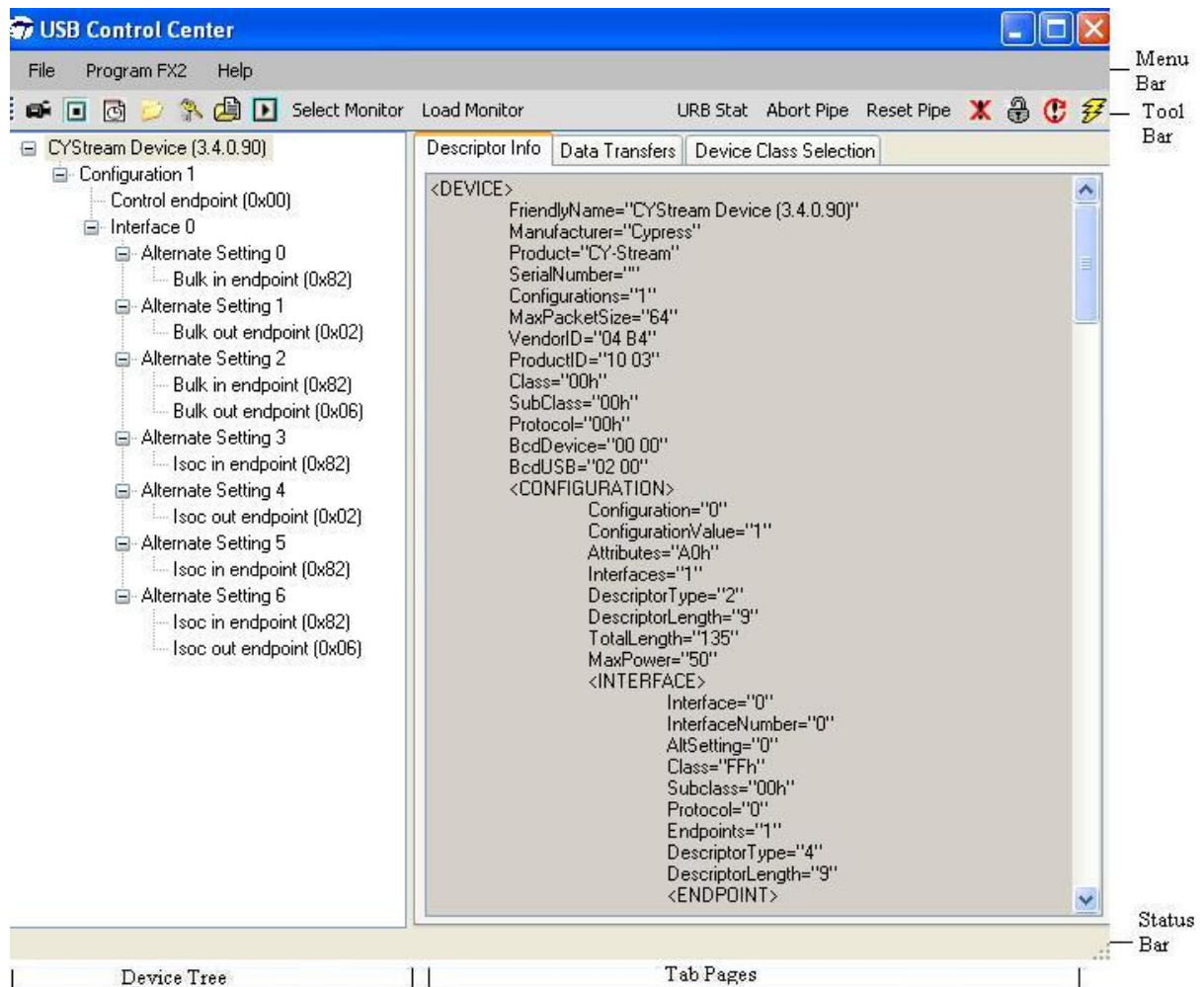
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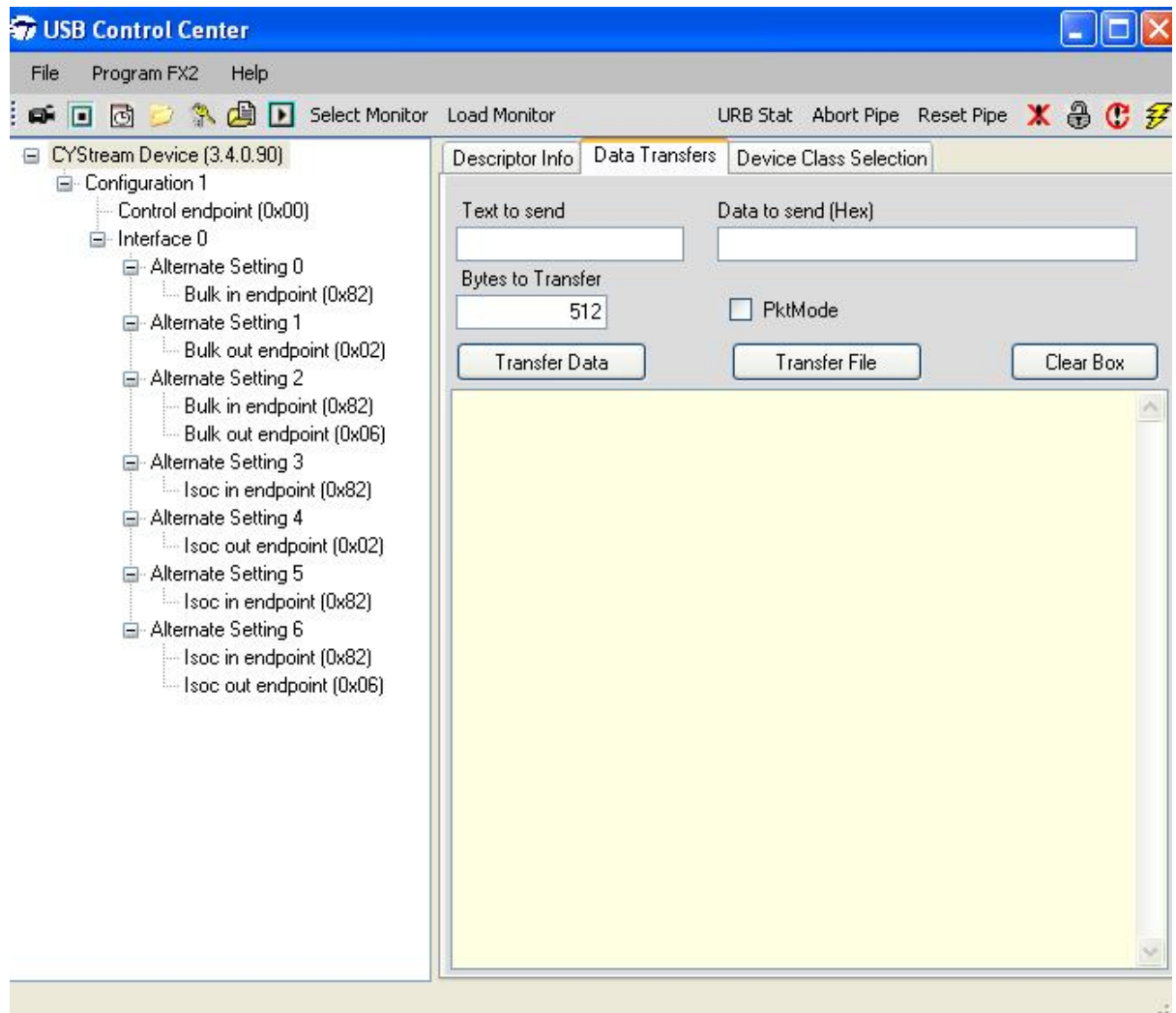
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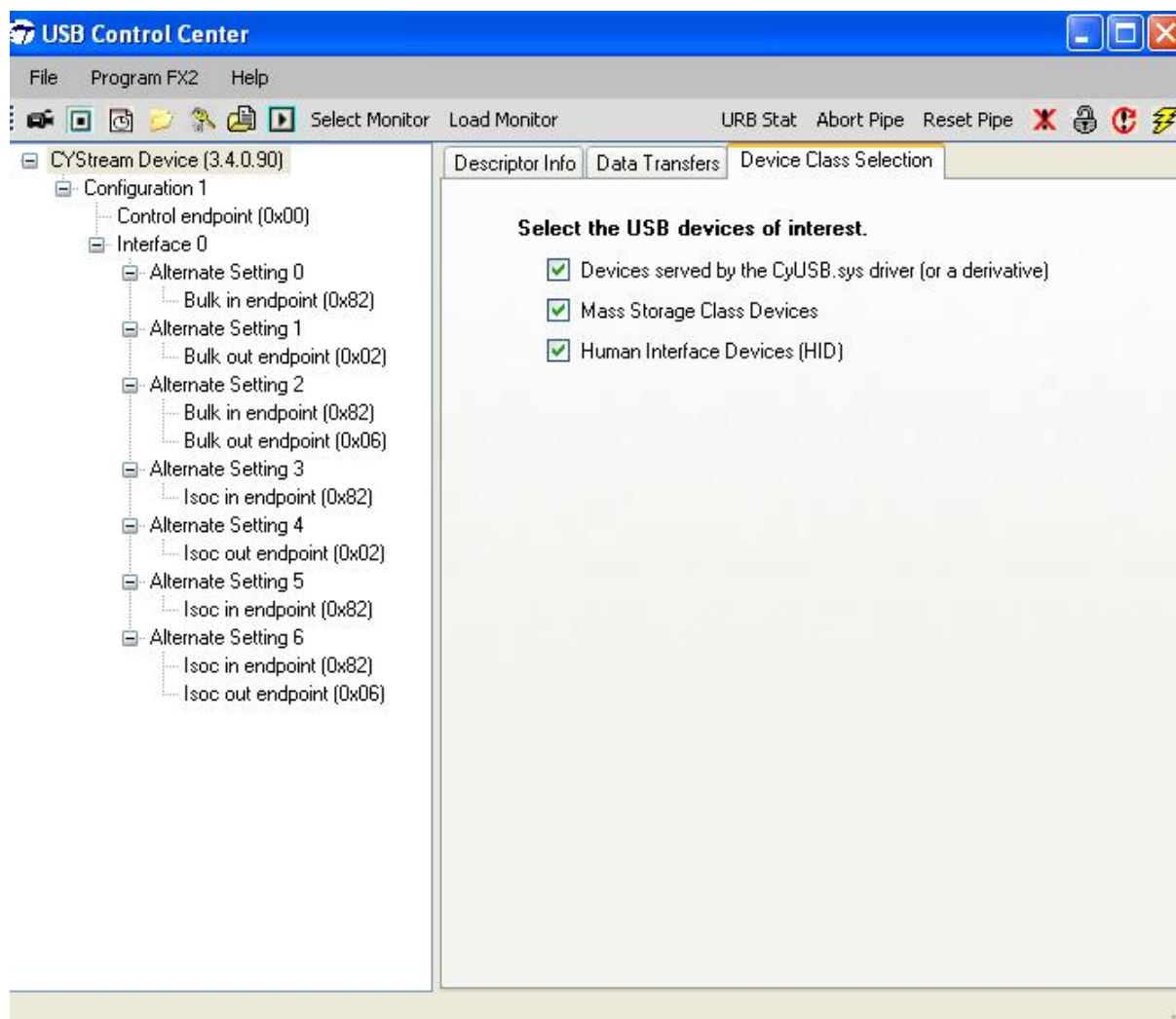
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1 ControlCenter

USB Control Center is used to communicate with USB devices that are served by CyUSB.sys device driver, Microsoft's usbstor.sys and Microsoft's hidusb.sys. We can also select any of the above drivers and view only the devices served by those drivers using check boxes in [Device class selection](#) Tab page.







1.1 Menu Bar



1. [File](#)
2. [Program FX2](#)
3. [Help](#)

1.1.1 File



File -> Exit – used to exit the control center application.

1.1.2 Program FX2



Program FX2 -> RAM – used to load the selected FX2’s RAM with firmware (.hex).

Program FX2 -> Small EEPROM – used to program 256-byte EEPROMs. When this is selected, the user is prompted to select a (.iic) file to load into the EEPROM.

Program FX2 -> 64KB EEPROM – used to program 64-Kbyte EEPROMs. When this is selected, the user is prompted to select a (.iic) file to load into the EEPROM.

Program FX2 -> Halt – performs a CPU Reset of the selected FX2.

Program FX2 -> Run – releases the CPU Reset of the selected FX2.

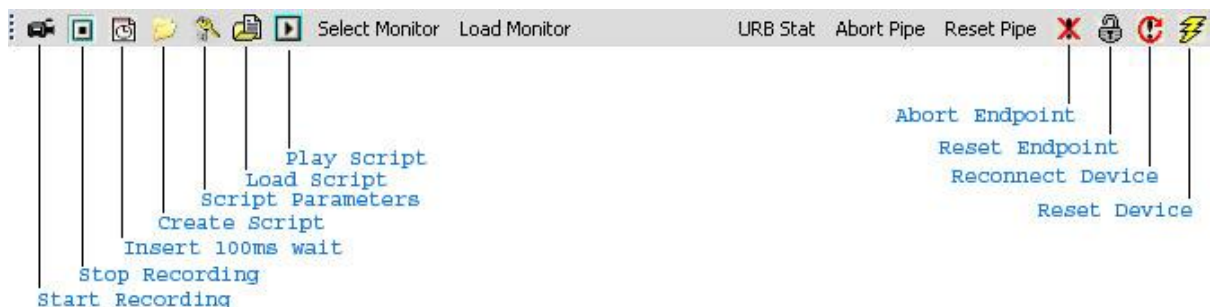
1.1.3 Help



Help -> Help Topics - Opens the ControlCenter User guide.

Help -> About – displays the Assembly version and ControlCenter version.

1.2 Tool Bar

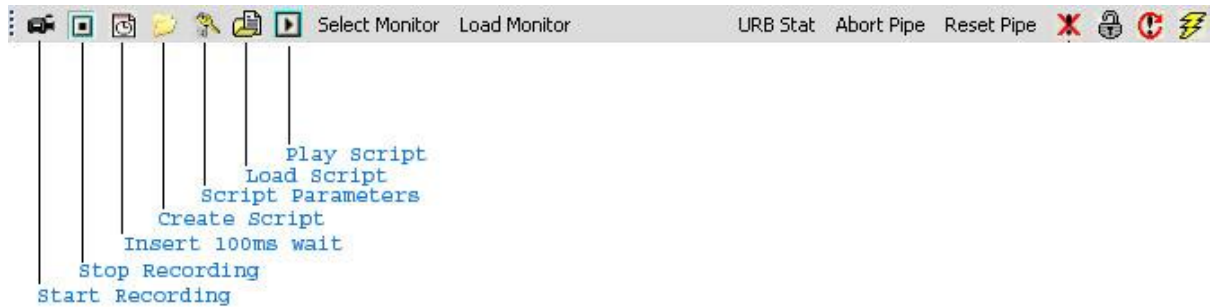


1. [Scripts.](#)
2. [Monitor.](#)
3. [URB Stat.](#)
4. [Pipe.](#)

5. [Endpoint](#).
6. [Device](#).

1.2.1 Scripts

Control Center provides a mechanism for creating and re-playing a sequence of data transactions. The Scripts can be loaded into a particular device while installation by specifying it in the .inf.



Start Recording - Used to begin the script recording. Records the transactions done using [Transfer Data](#) button and [Transfer File](#) button. This won't record the transactions done using RAM download.

Stop Recording - Used to stop the recording initiated by Start Recording button. Asks to save the script file.

NOTE : Start/Stop Recording does not record firmware download operation.

Insert 100ms wait - Writes a 100ms delay in the script.

Create Script – Used to create a script from a .hex file only. Parses the hex file and generates script file.

Steps,

1. Select a hex file.
2. Save the script file as.

Result is displayed in Status bar.

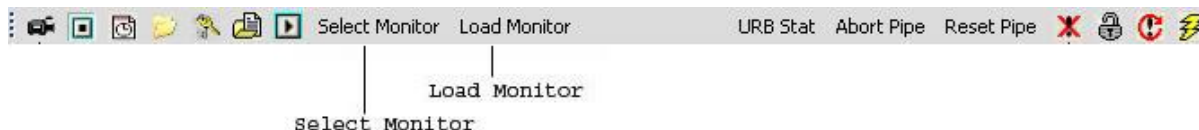


Script Parameters – Used to change the Location of CPUCS register and Maximum internal Address before creating script.

Load Script – Used to get the name and location of the script file to be played.

Play Script – Plays the loaded script using vendor commands onto the selected FX2 device.

1.2.2 Monitor

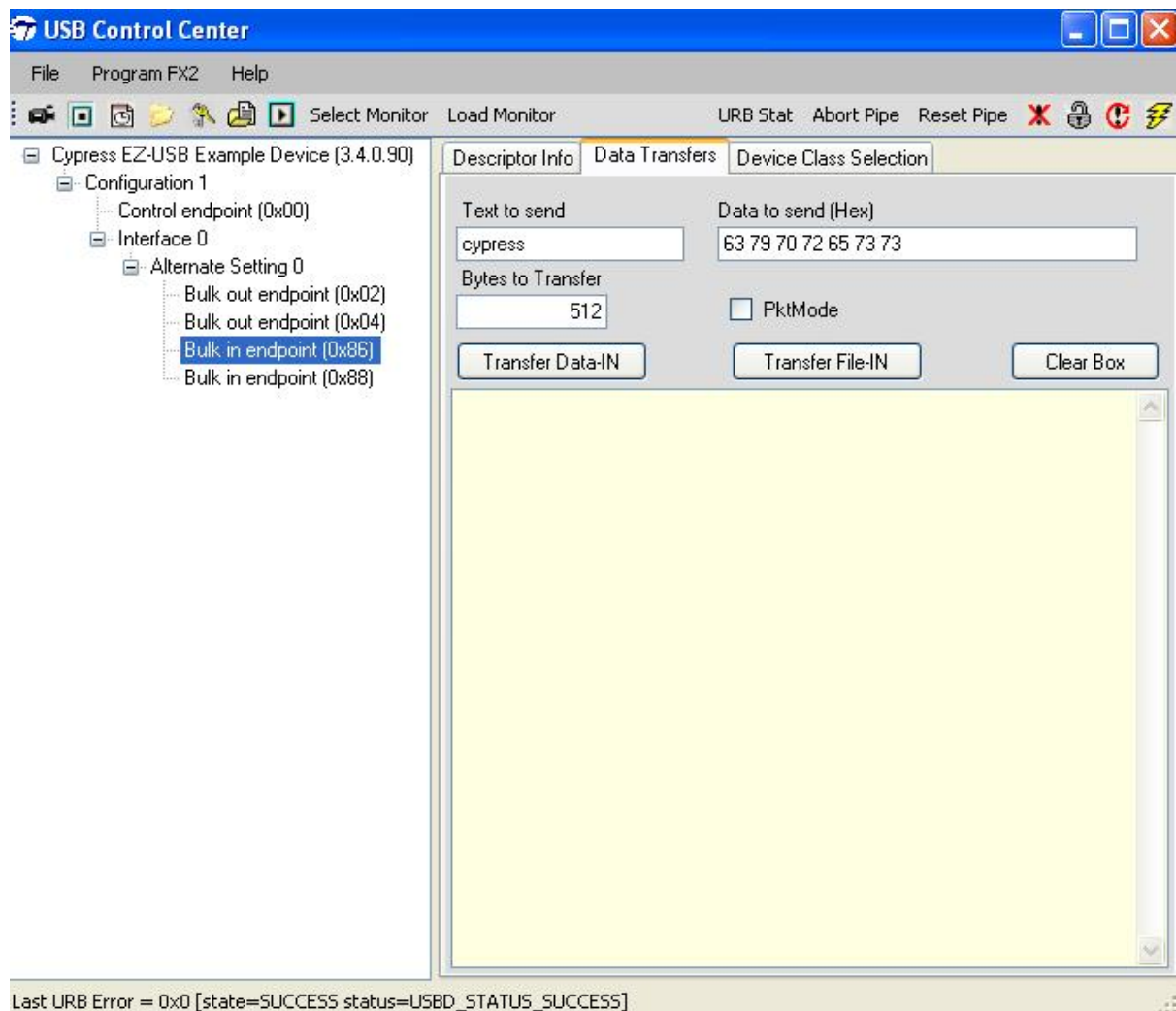


Select Monitor – used to get the name and location of the monitor file to be loaded.

Load Monitor – used to load the selected monitor to the selected FX2's RAM.

1.2.3 URB Stat

Displays the state and status of last URB(USB Request block) to the client driver in the Status bar.

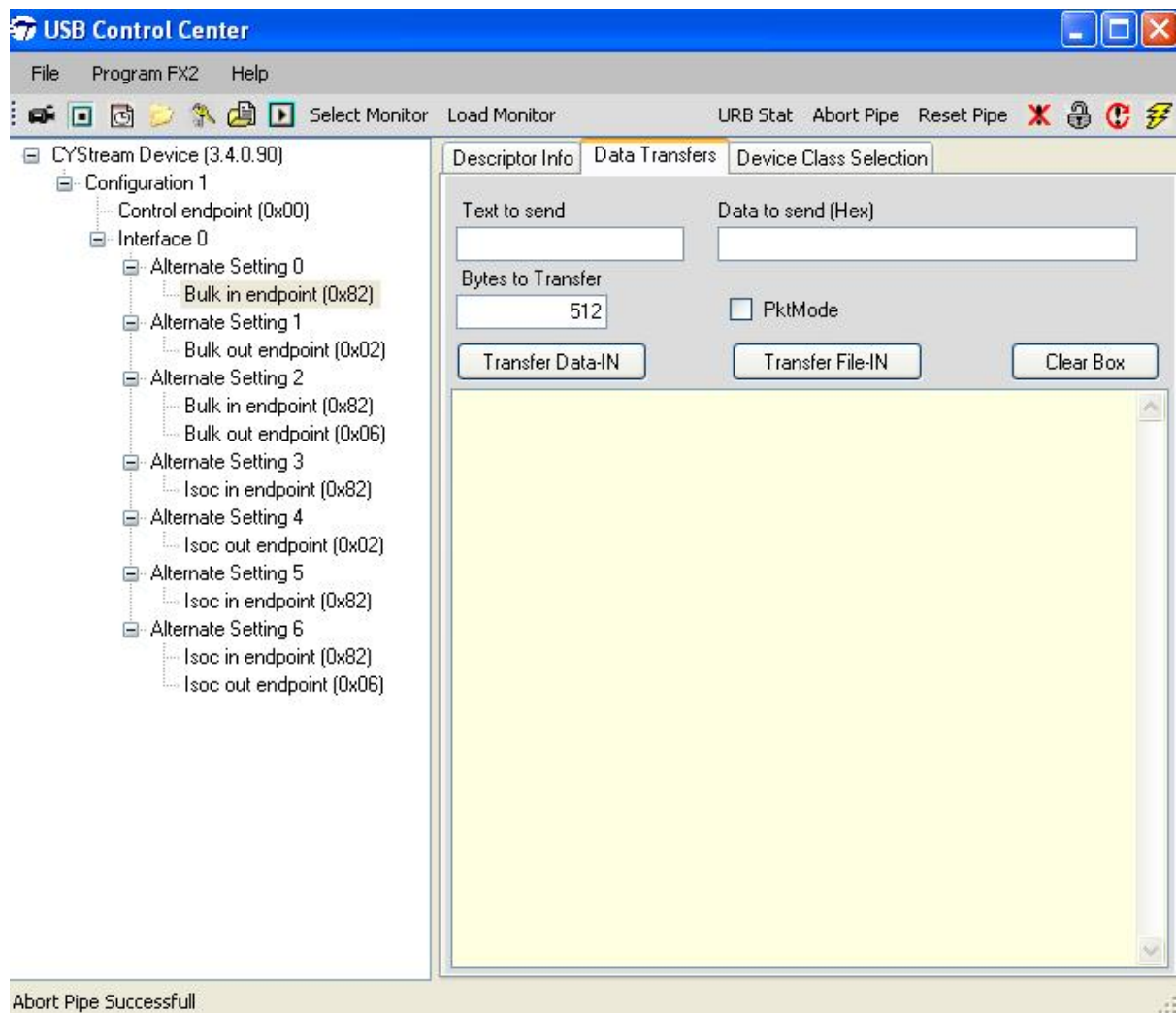


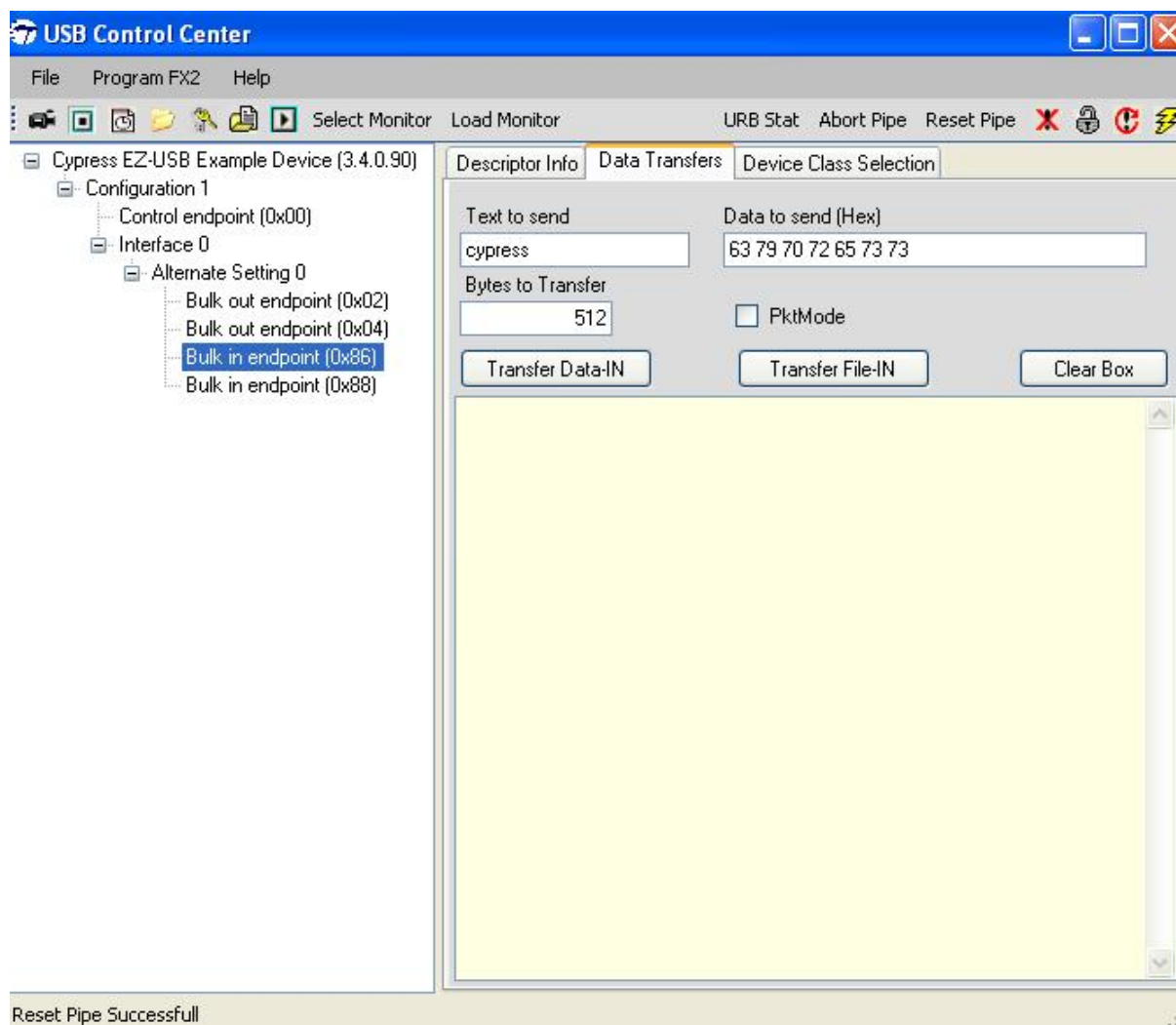
1.2.4 Pipe

Abort Pipe – used to clear pending data transfers on the endpoint.

Reset Pipe – used to reset the selected endpoint.

Result displayed in Status bar.





1.2.5 Endpoint

Abort Endpoint – used to clear pending data transfers on the endpoint. Same as Abort pipe.

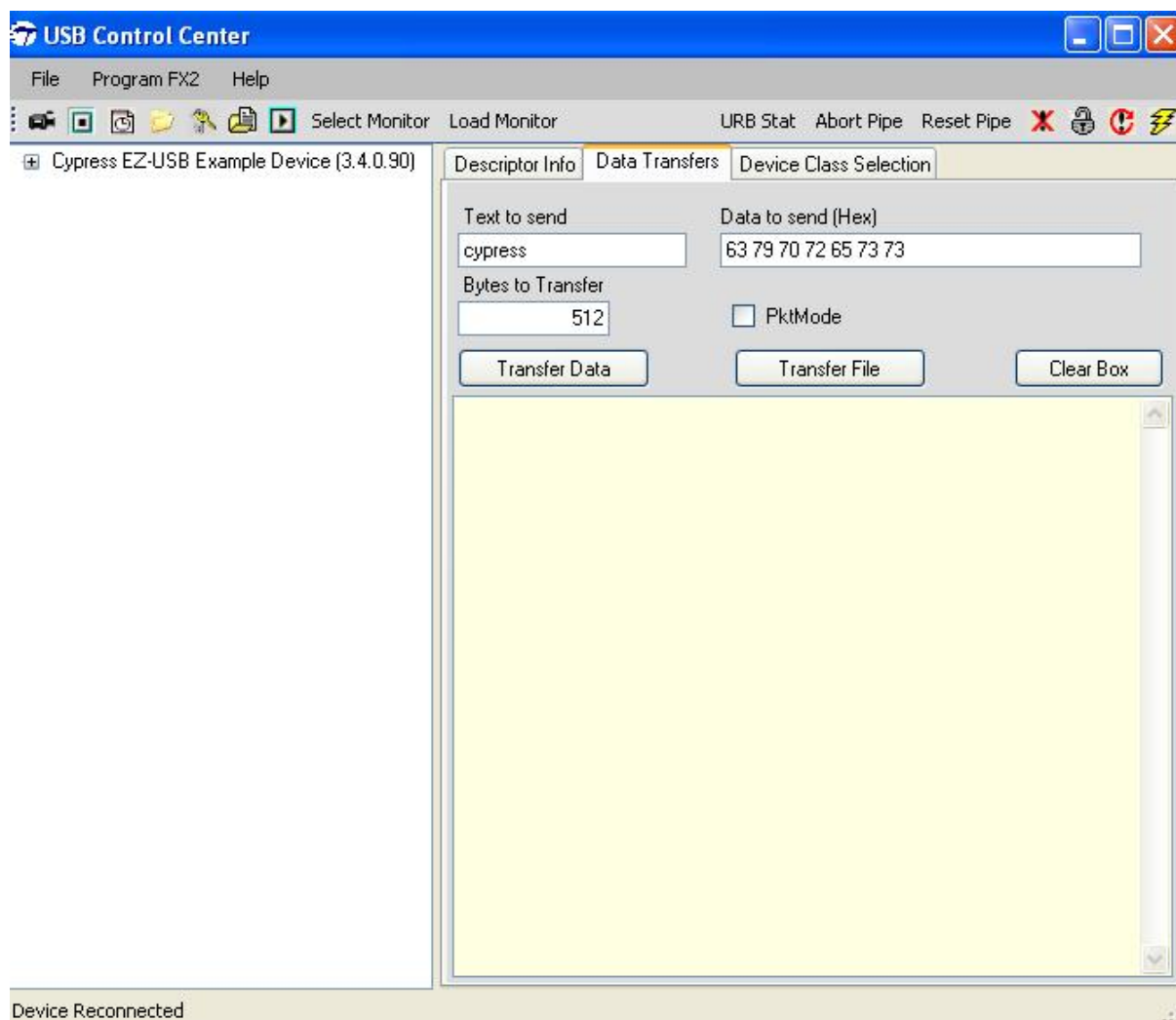
Reset Endpoint – used to reset the selected endpoint. Same as Reset pipe.

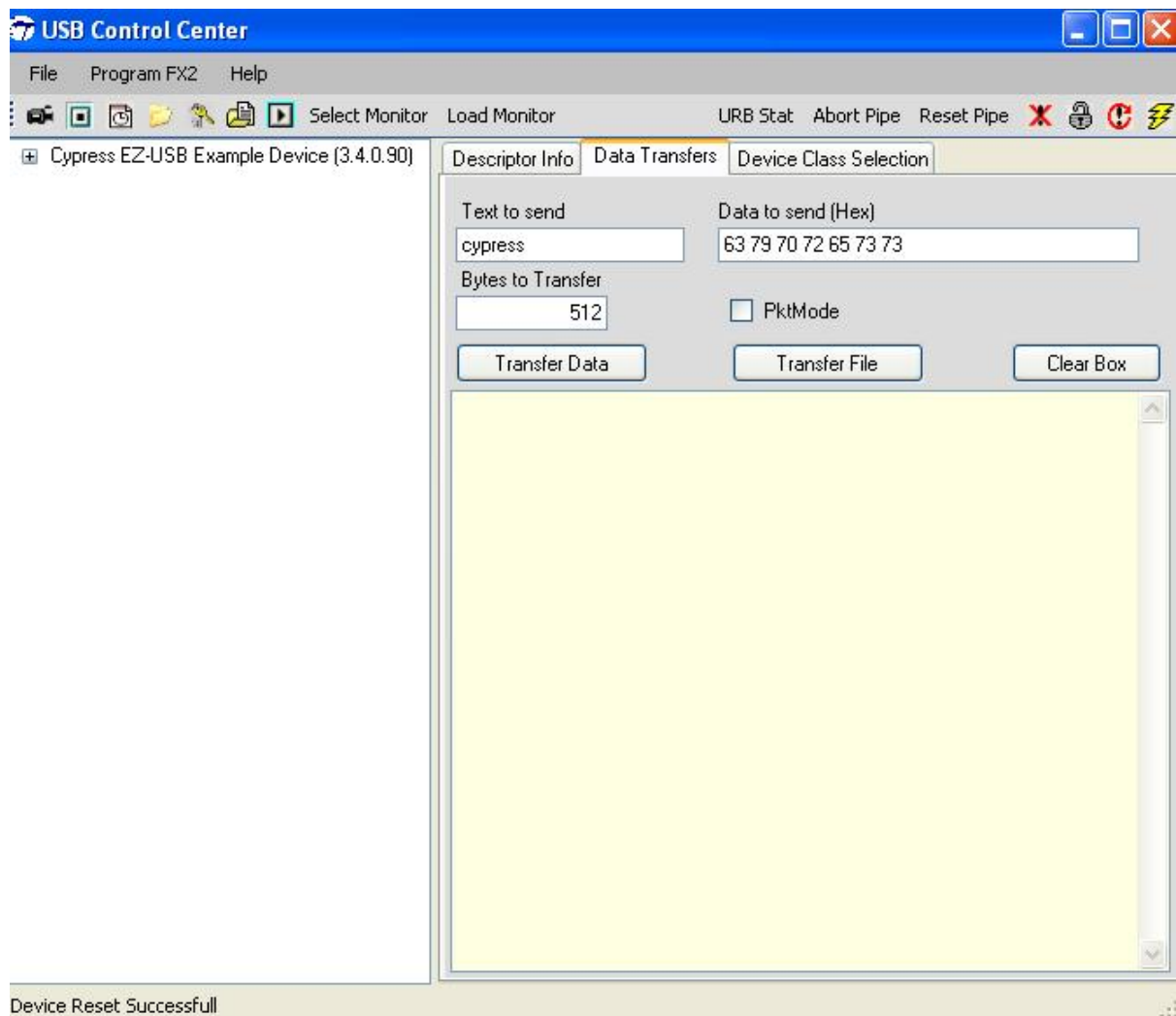
Result displayed in Status bar.

1.2.6 Device

Reconnect Device – used to reconnect the selected FX2 device.

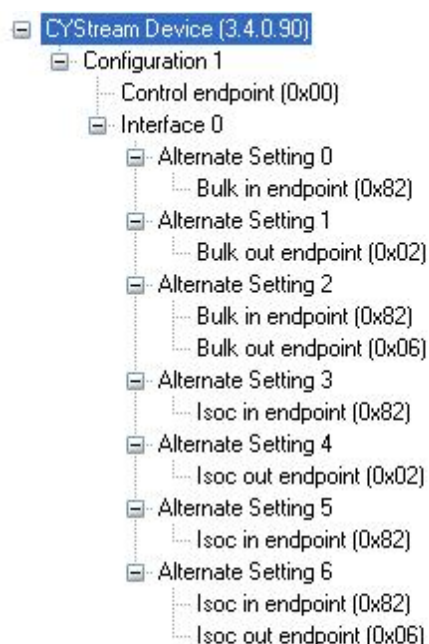
Reset Device – used to reset the selected FX2 device.





1.3 Device Tree View

Displays all the USB devices connected and served by the device drivers which are enabled using Device Class Selection.



Hot-plugging of USB devices is supported in Control Center. When a device that matches to the specified driver is plugged-in to the PC it will automatically appear in the Device tree view. Similarly unplugging a device will also be updated in the device tree.

User can expand the devices in the device tree by clicking on the + sign to the left end of the device and can select appropriately.

If the selected device is a FX2 device, user can view the configurations which on expanding shows the control endpoint and interfaces. Each interface on expanding shows the Alternate Settings which in turn contains endpoints. While selecting Alternate Setting in device tree, a set Interface request will be sent to the device. Similarly selecting an endpoint in any other Alternate Setting also sends a set Interface request to the device.

If the selected device is a HID device, user can view features or inputs or outputs of the device which in turn will contain buttons or values on expanding.

1.4 Tab Pages

1. [Descriptor Info](#)
2. [Data Transfers](#)
3. [Device Class Selection](#)

1.4.1 Descriptor Info

Displays the descriptor information of the device selected in the device tree.



1.4.2 Data Transfers

1. [Transfer Data](#)
2. [PktMode](#)
3. [Transfer File](#)
4. [Clear Box](#)

When the device selected has multiple configurations this Page will be disabled.

1.4.2.1 Transfer Data

If the device selected using device tree is R/W accessible, this button will be enabled.

Data entered in “Text to send” field will be automatically converted to byte and displayed in “Data to send” field and vice versa. Value of “Bytes to Transfer” field is also automatically updated.

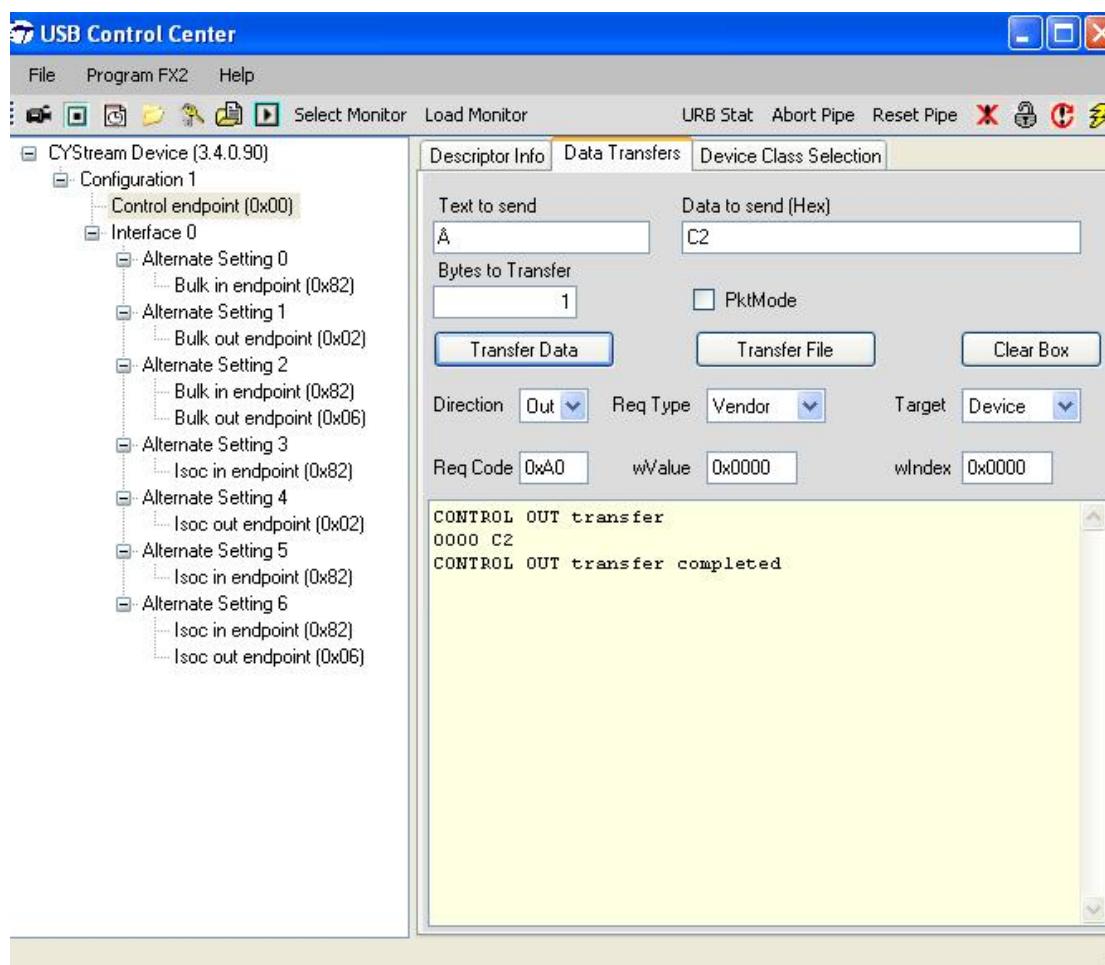
Incase of HID devices this button will be changed to get/set + input/output and Get Feature if Feature is selected.

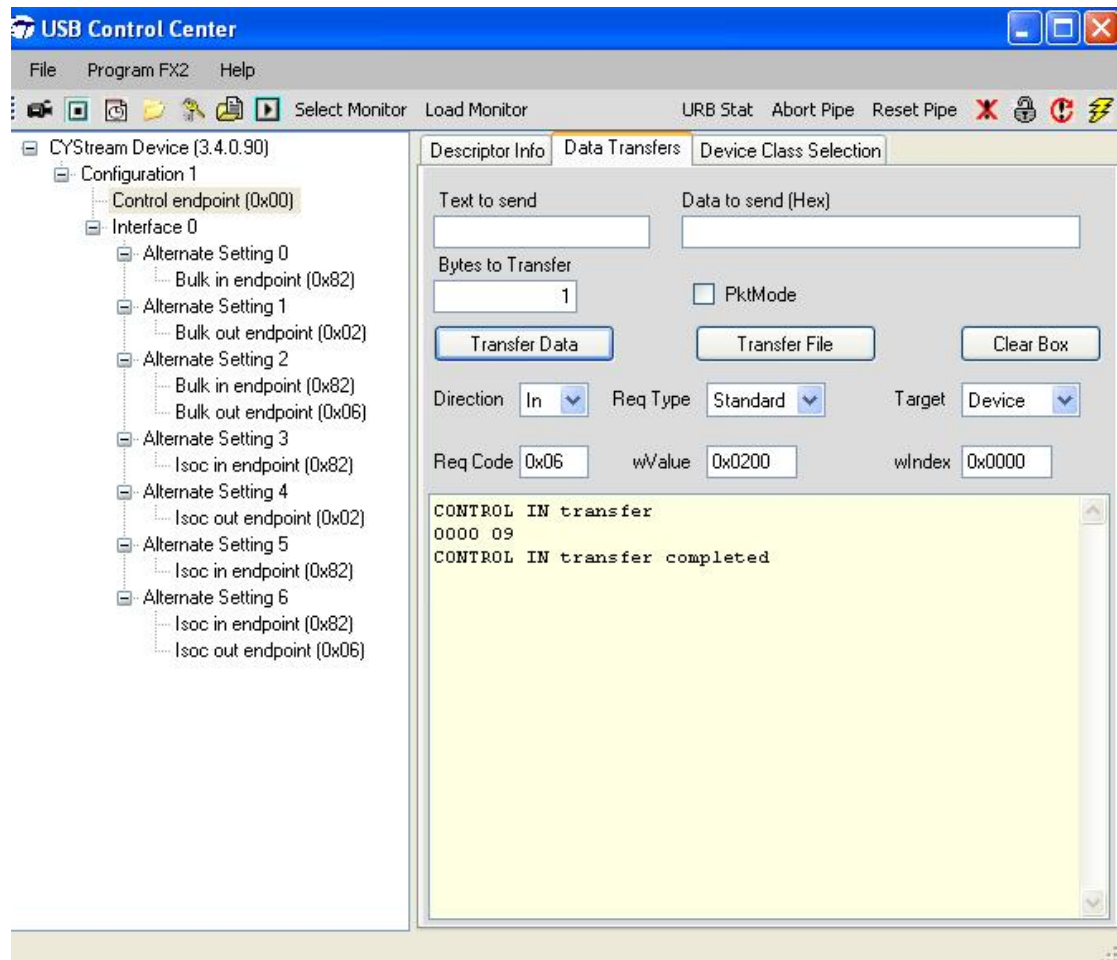
1.4.2.1.1 Control Transfer

Steps for Control Transfer,

1. Select the control endpoint using the [device tree](#).
2. Indicate whether the data is to be sent to the device (OUT) or read from the device (IN) using the Direction Combo box.
3. Indicate the type of request (Standard or Class or Vendor) using the Req Type Combo

- box.
4. Indicate the target (Device or interface or endpoint or others) of transfer using Target Combo box.
 5. Enter the byte representing the vendor request command code in the Req code field.
 6. Enter the two-byte hexadecimal value for the vendor request's wValue parameter in the wValue field.
 7. Enter the two-byte hexadecimal value for the vendor request's wIndex parameter in the wIndex field.
 8. If the direction is OUT, fill the data to be sent in "Text to send" field or if the direction is IN, fill the "Bytes to Transfer" field with the size of data expected from device and initiate the transfer using [Transfer Data](#) button.

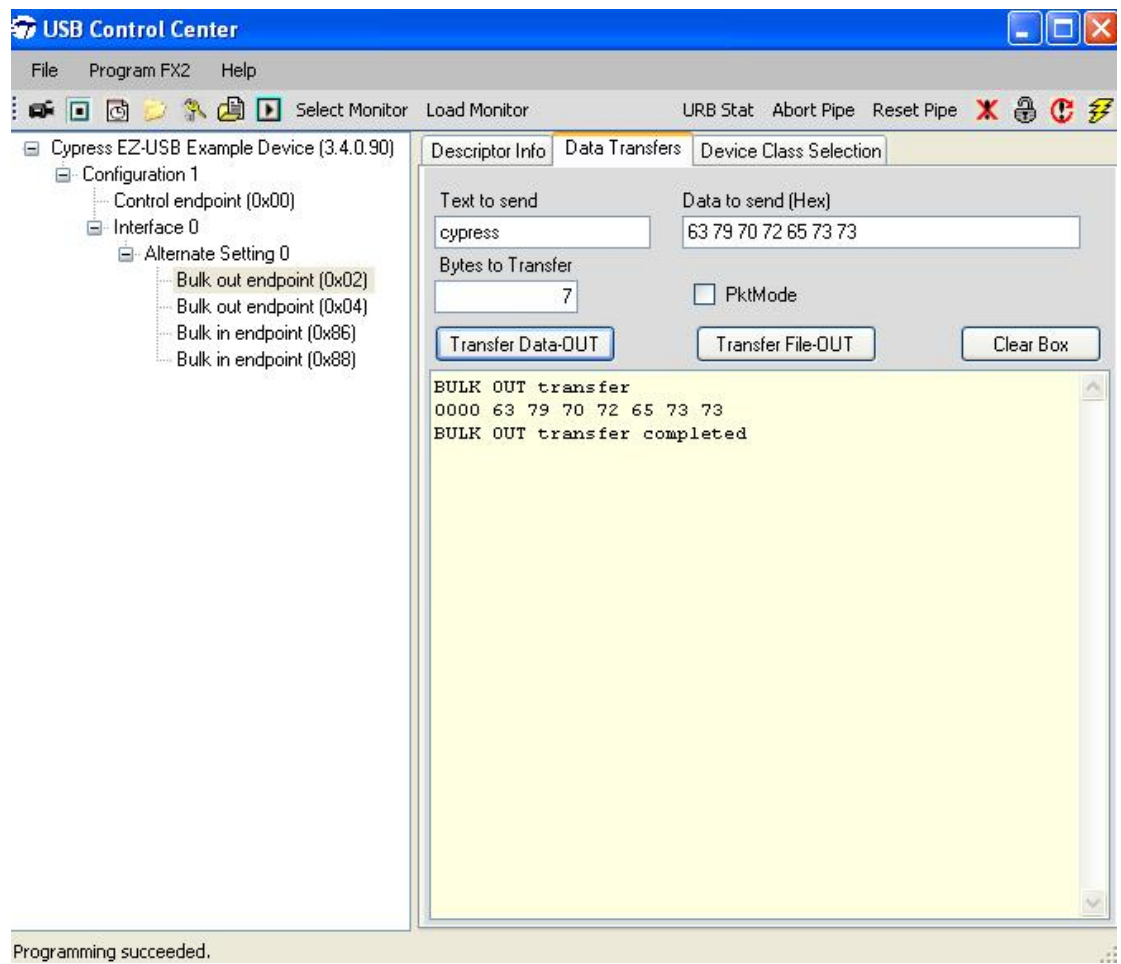


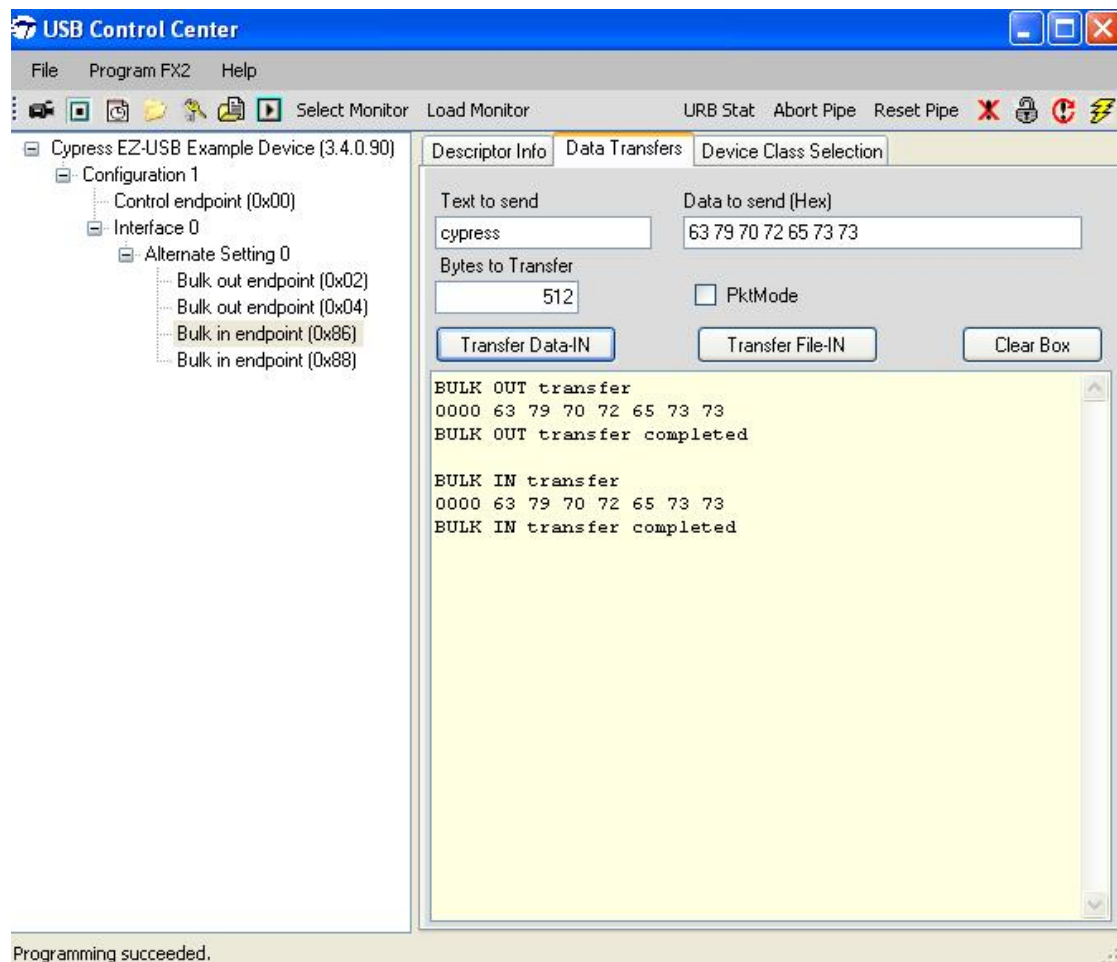


1.4.2.1.2 Non Control Transfer

Steps for Non-Control Transfer,

1. Select the endpoint using the [device tree](#).
2. Since the endpoints are already configured to be IN or OUT clicking the [Transfer Data](#) button will receive specified number of bytes (if IN endpoint) or sends the data filled in “Text to send” field (if OUT endpoint).





1.4.2.2 PktMode

This check box can be used to receive the Partial data during Bulk/Interrupt IN transfer.

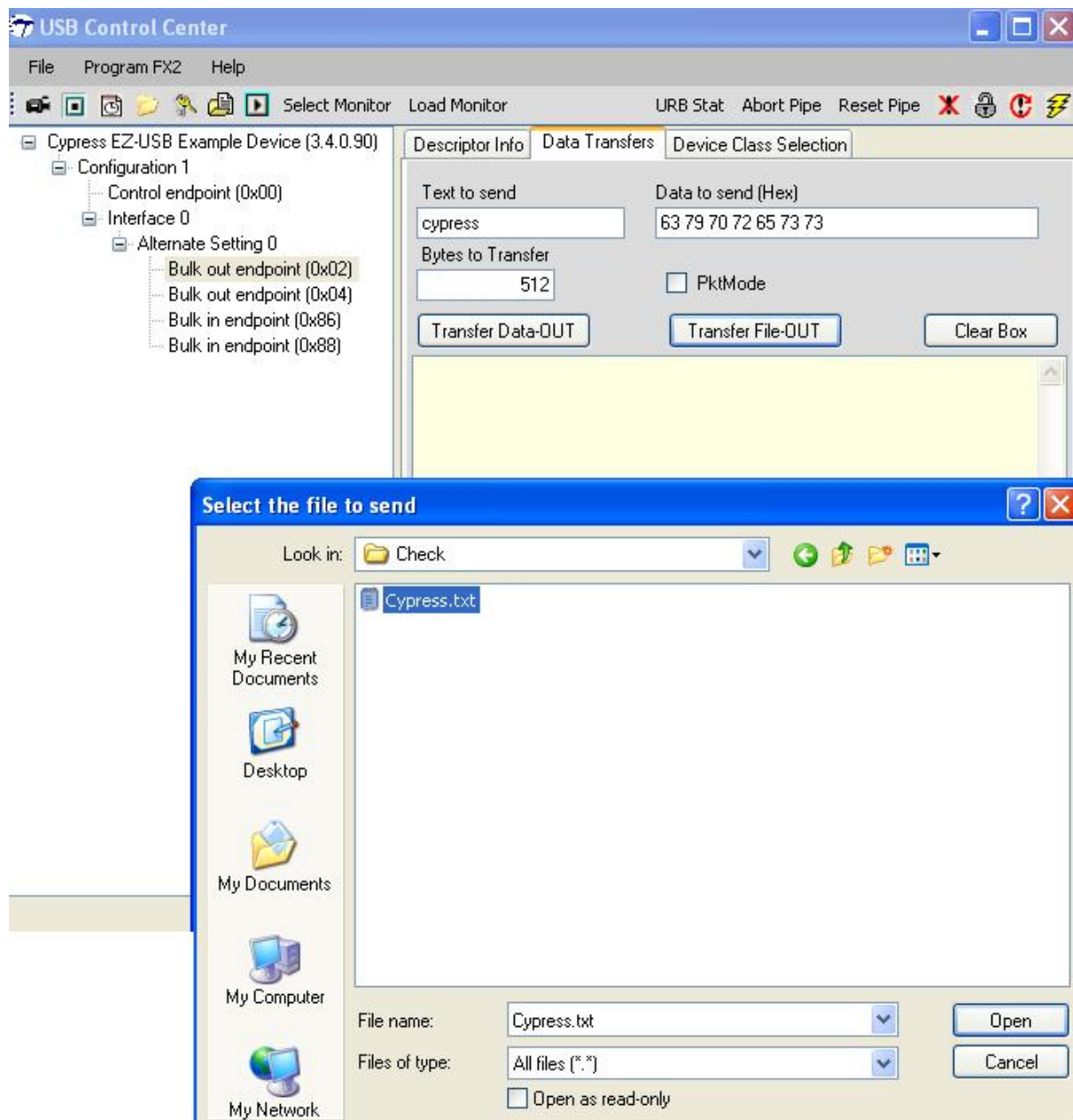
1.4.2.3 Transfer File

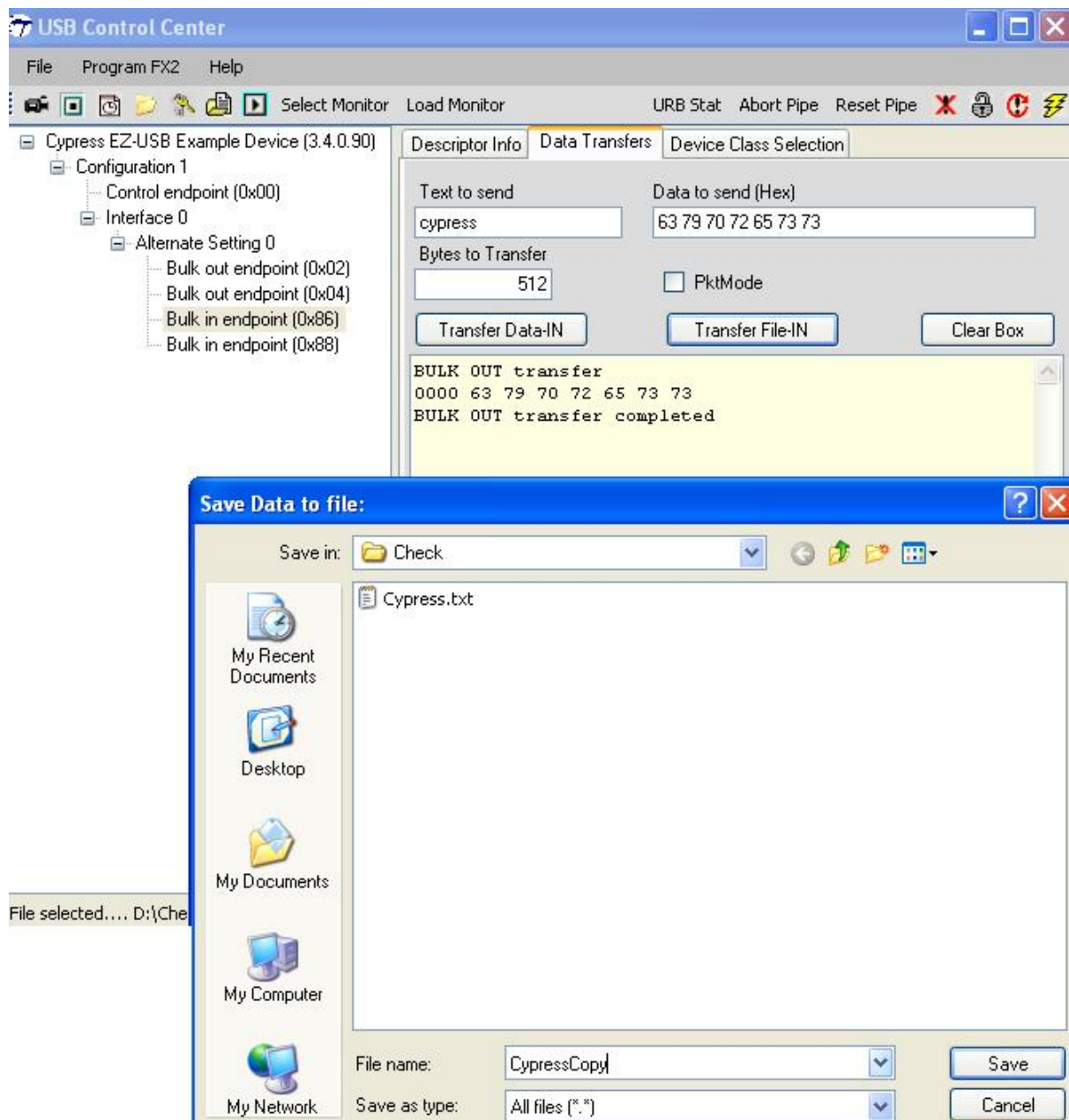
This button is visible only if the selected node is a device served by "CyUSB.sys" or a "Feature".

If the selected node is a device served by CyUSB.sys,
Steps,

1. Select an OUT endpoint using the device tree.
2. Click the "Transfer File-OUT" button. Select the file to send(here it will send the number of bytes available in the file), contents will be displayed in the output box.
3. Select the IN endpoint.
4. Specify the number of bytes to be written into the file in the "Bytes to Transfer" field .
5. Click the "Transfer File-IN" button.
6. Save the file.

If the selected node is a Feature of HID device, "Transfer file" button will be changed to "Set Feature" button.





1.4.2.4 Clear Box


Clear Box clears the Output box and Status bar below.

1.4.3 Device Class Selection

It is used to select the devices of our interest. Control Center supports USB devices of the following 3 classes.

1. Devices served by CyUSB.sys driver.
2. Mass storage device class.
3. Human interface device class.

User can enable or disable a class which will reflect in the device tree.



Descriptor Info Data Transfers **Device Class Selection**

Select the USB devices of interest.

- ☒ Devices served by the CyUSB.sys driver (or a derivative)
- ☒ Mass Storage Class Devices
- ☒ Human Interface Devices (HID)