



Quick Start Guide

SNAP FX Development Kit

Revision 1.6

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1. Kit contents

Your kit should contain the following items:

- SNAP FX reference module
- IM3000 socket board S20
- USB Trace Adapter
- Imsys Developer 7.2 on CDROM
- Two USB cables

2. Kit documentation

The following documents come with your kit in printed form:

- SNAP FX Development Kit Quick Start Guide (this document)

Additional documentation in electronic form is available on the website:

- IM3910 Product Brief
- IM3910 Microcontroller Datasheet
- IM3000 Family Microcontrollers Data Book
- M20 Microcontroller Module Hardware Reference
- S20 Socket Board Hardware Reference

You can download them from <http://www.imsystech.com>

Note: Complete documentation for Imsys Developer and for IM3910 profile, including Java API, C API Reference and Assembler Instructions, can be found inside the Imsys Developer Help system.

3. Before you begin

Prepare a PC for use together with the SNAP FX Development Kit. In order to be used with this product, the PC should be equipped with Windows 2000, XP, 7, 8 or 8.1 operating system* and have at least two free USB ports.

4. Installing Imsys Developer

Imsys Developer is a powerful integrated development environment for the IM3000 microcontroller family platform. A unique serial number is required for installing Imsys Developer. You will find this number on a sticker attached to the Imsys Developer CD pocket.

- Insert the Imsys Developer CD supplied with the kit into the PC and run the enclosed file "setup_imdev72.exe".
- Follow the on-screen instructions during the installation procedure.
- After the installation has completed, you will be asked to reboot your computer.

5. Installing the IM3910 profile

Imsys Developer can be used with any IM3000-based hardware. The individualization of the hardware is handled via software "profiles". These packages contain files and settings specific to each application class. In order to develop software for the SNAP FX system, you first need to install its profile.

* Antivirus protection software may need to be configured to tolerate Imsys Developer, in order to allow its full functionality.

- If you want download the profile installation package, please mail us at info@imsystech.com.
- Unzip and run the file "setup_im3910m210_v144.exe".
- Follow the on-screen instructions during the installation.
- If Imsys Developer was running during the installation, it must be restarted before you can use the new profile.

6. Installing the Java compiler

If you are planning to develop Java applications for SNAP FX you will need to install the Java Development Kit. You can find it on the Oracle Java website.

7. Connecting the socket-board

Before you can develop, run and debug any program on the SNAP FX system, you have to connect it to the PC. To do that, follow the steps below:

- Attach the Trace Adapter's flat cable to the socket-board's red "Debug" connector. This connection is used by Imsys Developer to communicate with the SNAP FX hardware. The S20 socket board has a 10-pole connector, while the flat cable of the trace adapter may have a 14-pole connector. In this case, make sure that the connector is plugged in such that pin 1 (red edge of the cable connects to pin 1 in the socket board connector, i.e. such that the key at the end of the cable connector fits in the depression at the end of the board connector).
- Connect the Trace Adapter to the PC through one of the USB cables supplied with the kit. After connecting, the "Found New Hardware Wizard" will appear on the PC.
- Locate the drivers for the USB Trace Adapter on the Imsys Developer CD.
- Proceed with the "Found New Hardware Wizard", specifying the path to the driver files. After the drivers are installed, a USB Trace Adapter Serial Port device should appear on your PC.
- Optionally connect the socket-board to the network via a hub or a switch. You can also connect it directly to the PC, using a crossover Ethernet cable.
- Finally, connect the socket-board to the PC through the second USB cable supplied with the kit. This cable powers the kit, and also provides serial port communication. After connecting the "Found New Hardware Wizard" will appear on the PC.
- Proceed with the "Found New Hardware Wizard", again specifying the path to the stored driver files. After the drivers are installed, a USB Serial Port device should appear on your PC.
- Open the Device Manager from the hardware tab of the System Properties applet (Control Panel / System) and find this device under Ports (COM & LPT) node. Remember its name (e.g. COM3). You will have to use this port to interact with the on-board software, such as the command shell, either through the Imsys Developer's terminal window or through any other terminal emulation software.

You may connect several USB Trace Adapters to your PC and debug several SNAP FX systems simultaneously. Each USB Trace Adapter is labeled with its own serial number that uniquely identifies this particular Trace Adapter within Imsys Developer.

8. Configure Imsys Developer

Now, you are ready to start using the Imsys Developer together with the SNAP FX Development Kit.

- Start Imsys Developer.
- If you are planning to use Java, select Edit/Options from the Imsys Developer's menu, go to the Java tab and specify the path to the Java compiler.
- Then go to the Debug tab and specify "USB" as the Target Interface.
- The list of available USB Trace Adapters identified by their serial numbers will appear in the drop-down box. Select the Trace Adapter you are going to use with this instance of Imsys Developer and press OK.
- Open the Terminal window by selecting View/Debug Windows/Terminal from the Imsys Developer's menu. Press the "Select Serial Port" button in the Terminal Window toolbar and specify the serial port you want to use (e.g. COM3). This should not be the port belonging to the USB Trace Adapter, but the one that appeared when you connected the USB cable directly from the socket-board to the PC. Then press the "Connect" button.
- Press the "Reset" button on the on the socket-board or on the USB Trace Adapter.
- Your SNAP FX module is delivered with the IM3910 firmware preflashed, so you should be able to see an output from the socket-board in the Terminal window:

```
IM3910M-210 restarting @ wed Sep 02 16:40:48 2009
Reading a:/system/ish.ini:           [OK]
Reading a:/system/system.ini:       [OK]
Serial server:                       [OK]
JVM startup:                         [OK]
Setting host name:                   [OK]
TCP/IP startup:                      [OK]
Registering hostname in DNS:         [FAILED]
FTP server:                          [OK]
Telnet server:                       [OK]
Setting timezone to:                 GMT (DST)
Reading a:/system/startup.ini:       [OK]
```

```
localhost.localdomain (IM3910-M210, v1.4)
```

```
Login:
```

- To logon to the system type "root" as the username and "root" as the password.

The IM3910 profile is configured to use a DHCP server for obtaining an IP configuration for its network interface. If the board is not connected to the network, or if you do not have access to a DHCP server, it may take a longer time to start-up.

You can also configure the network interface manually, by using the "ipconfig" command. Type the "help ipconfig" from the command shell to see the detailed command description. Type "help" from the command shell to see the complete list of commands supported.

9. Building a sample project

If you have configured your Imsys Developer, and your SNAP FX system boots successfully, you can now start the application development. Below is a short description of how to build and run a sample project within a profile:

- Start Imsys Developer.
- Select File/Open Sample Project/<profile name> from the Imsys Developer's menu. The Open File dialog will appear. Choose the "HelloWorld.prj" file, from the HelloWorld folder, and open it.
- If you do not have a Java Development Kit installed, remove the "HelloWorld.java" file from the project tree (Menu/View/Project View). Remove also the "HelloWorld.class" file from the RAM Disk (Menu/Project/RAM Disk).
- Press "Build" button in the Imsys Developer toolbox (or press SHIFT+F6 key). You will then see the build process output in the Build Output window (Menu/View/Other Windows/Build Output). If the project was build without errors, you can boot the SNAP FX system with the output file.
- Press the "Boot" button in Imsys Developer toolbox (or press F6 key). You will then see the boot process output in the Debug Output window (Menu/View/Other Windows/Build Output):

```
--- Configuration: Standard, Profile: IM3910-M210 v1.4 ---
Booting target
Trace Adapter: TAFB63F3
Reset done
Detected processor model: IM3000 (A)
Loading testmicroprogram: Tmpgm.mp (v0.0.268.0)
Detected memory type 97, size 32MB, mode 102
Loading microprogram: im3910m210.mp (v0.1.31.1)
Loading application: HelloWorld.gpx (address 00000000-000C65BB)
Program arguments: "HelloWorld.gpx -1"
Creating EDFS RAM disk...
RAM disk created, 512KB
c0start version: 2.0.1.0
Target successfully booted!
-----
[ClassLoader] Background loaded
```

10. Re-flashing the SNAP FX module with a new profile

You can flash your SNAP FX system using Imsys Developer and the "FlashIt" project, which can be found under <IM3910_Profile_Path>\Tools\FlashIt.

Open FlashIt project in Imsys Developer and boot the SNAP FX module with the IM3910 profile. The flashing process will start automatically.

The detailed description of the functionality and parameters of this project can be found in its "Readme.txt" file. Study it carefully before starting to flash anything onto the SNAP FX module.