Quick Start Guide
SDK0308QS001

Enabler IIIG
SDK Quick Start Guide

Revision 1.00

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The Enfora SDK (Software Developer's Kit) is designed to allow Enfora partners to evaluate the Enfora Enabler III module and develop their own applications that will use the Enfora Enabler module.

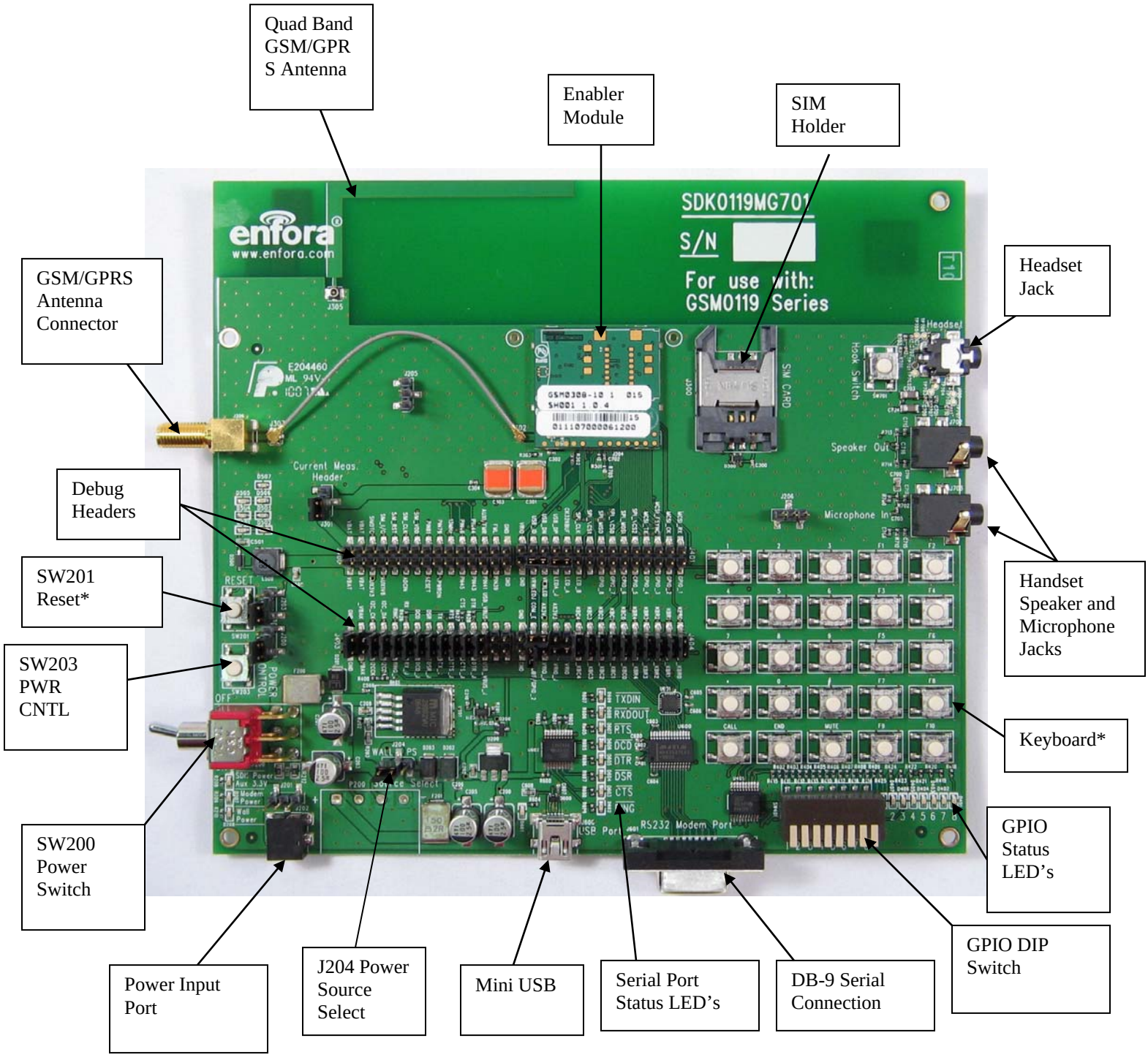


Figure 1 SDK0119 Development Board

*Implementation varies – see table

Switches and Jumpers

Switch	Functionality	Default Position
SW200	Turn modem power on from power connectors J202 or P200	Off - Once a power supply has been applied to J202 or P200 it may be placed in the on position to power on SDK and/or modem
SW201	Momentary switch: Temporarily applies ground to the ON_\OFF pin and resets the modem.	When using early versions of GSM0308 module (ID 061220 and prior), RESET is not supported
SW203	Momentary switch: temporarily applies ground to \PWR ON pin (pin 35 of modem)	N/A; J200 must be removed to manually control \PWR_ON (pin 35)
SW401	GPIO DIP Switch Up is open, down is closed	All switches open
J200	\PWR_ON jumper, if installed, ground will always be applied to Pin 35 of the modem, automatically powering on. To manually control \PWR_ON, remove jumper and control with SW203	Jumper installed
J203	Selects assertion level of reset function (SW201)	Default position of J203 shown. Alternate position is not supported.
J204	Switches main power source between J202 (to the left) and P200 (right)	To the left - using J202
J301	Current measurement header. Remove jumper to facilitate current measurement of modem	Jumper installed

NOTE: If using SDK0119MG700 and module marked PCBGSM0119MG902 or later, you must remove R200 located next to SW201 (RESET) else the module will be held in permanent reset. There is no reset supported with this combination of hardware.

RF connector
There are two RF cable assemblies. An SMA Connector has been provided to facilitate using an external antenna (or port to test equipment) as well as an RF cable assembly connecting an internal quad band antenna.

External SIM Connector
An external SIM connector is provided on the SDK. Users may use either the external SIM or a SIM connector on the module (if configured), but not both at the same time. The SIM CLOCK, control and data lines are physically the same lines that go to the on board SIM. SIM's cannot be installed both on the external SIM connector and the on board SIM connector. It must be one or the other.

Audio Section
The audio section has a 4-pole stereo headset connector (J700) and separate speaker and microphone handset connectors (J702 and J703). The audio path is configured with AT$VSELECT command. AT$VSELECT=0 selects handset and AT$VSELECT=1 selects headset. Please see the AT command manual for the audio level commands.

GPIO Section
DIP switches and LED's have been provided to help facilitate testing of GPIO and GPIO based events. Each GPIO is tied to a DIP switch (SW401) and pulled up high through a resistor. If the GPIO is configured as an input (See AT$IOCFG), a high or low can be applied to each GPIO line by setting the corresponding DIP switch to open or closed. If it is open, the line will be pulled high. If it is closed the line will be pulled low.

Each GPIO line also has a corresponding LED. These LED's show the current state of the GPIO. The opposite side of the LED is tied to ground. If the LED is illuminated, then the GPIO line is high. If it is not illuminated, then the GPIO line is low

Serial Ports
The SDK has a standard serial port and USB serial debug port. The RS232 modem port (J601) is the modem primary serial port. Prior to RS 232 conversion, each hardware line is tied to a status LED. On the opposite side of the LED, each is tied to ground. If the LED is illuminated the line is high, if it is not illuminated, the line is low.

The debug USB serial port (J600) is used for modem debugging and is for Enfora use only. There is no control of the modem through the debug serial port.

Power Input Port
J202 is the power input port. The connector is of size 1.3mm inner and 3.8mm outer. Centre pin is positive. Power supply input range is 4.5V – 9V maximum.

Debug headers
J400, J401, J403 and J404, located in the center of the board, bring each line from the 100-pin connector to a header pin, for ease of monitoring and troubleshooting.

To use some features on the SDK, jumpers must be placed on the debug headers to link in the feature. Removal of the jumper will isolate the SDK feature from the module to allow for external circuitry to be added via the headers without interference from the SDK.
The Factory Default for the Debug header jumper settings are: (all other pins are not jumpered)

J401:

LED_A	> LEDA_J
VRWLED	> VRWLEDJ

J403:

USB_VBUS	> USB_VBUS_J
DTR	> DTR_J
CTS	> CTS_J
RTS	> RTS_J
TX	> TX_J
DSR	> DSR_J
DCD	> DCD_J
RX	> RX_J
RING	> RING_J
I2C_DA	> I2CDA
I2C_CK	> I2CCK
_VBAK	> VBAK

J404:

KBR0	> _KBR0
KBR1	> _KBR1
KBR2	> _KBR2
KBR3	> _KBR3
KBR4	> _KBR4
KBC0	> _KBC0
KBC1	> _KBC1
KBC2	> _KBC2
KBC3	> _KBC3
KBC4	> _KBC4
VRIO	> VRIO_J
AX3V3	> COM_E
USBBT	> GND

Configuring the Enfora module

To communicate with, and configure the Enfora module, connect the serial connector of the SDK to the serial port of a PC. From a Windows PC, you can use HyperTerminal to configure the module. Please follow these instructions to correctly configure HyperTerminal:

a. Start **HyperTerminal**

On **Windows XP**, click on:

Start>Programs>Accessories>Communications>HyperTerminal

1. You should see the following screen.

2. Enter a name for the **Connection**. In this example, the **Name** is **Enfora Com1.**

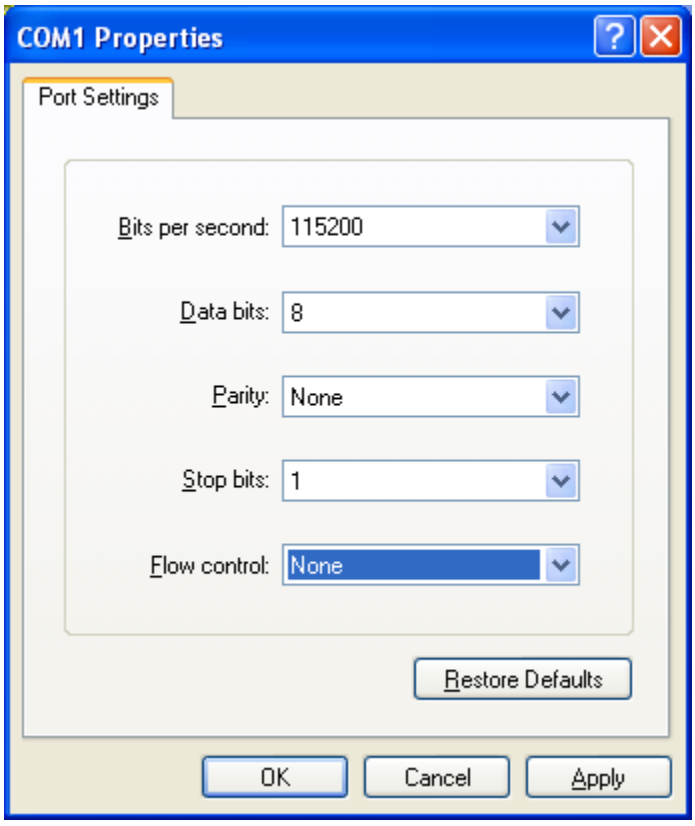
3. Click **OK**.

4. The next window that will appear is the **Connect To** window.

5. Change the **Connect Using** setting to the Com port that was determined in **Step 2**.

6. Click **OK**.

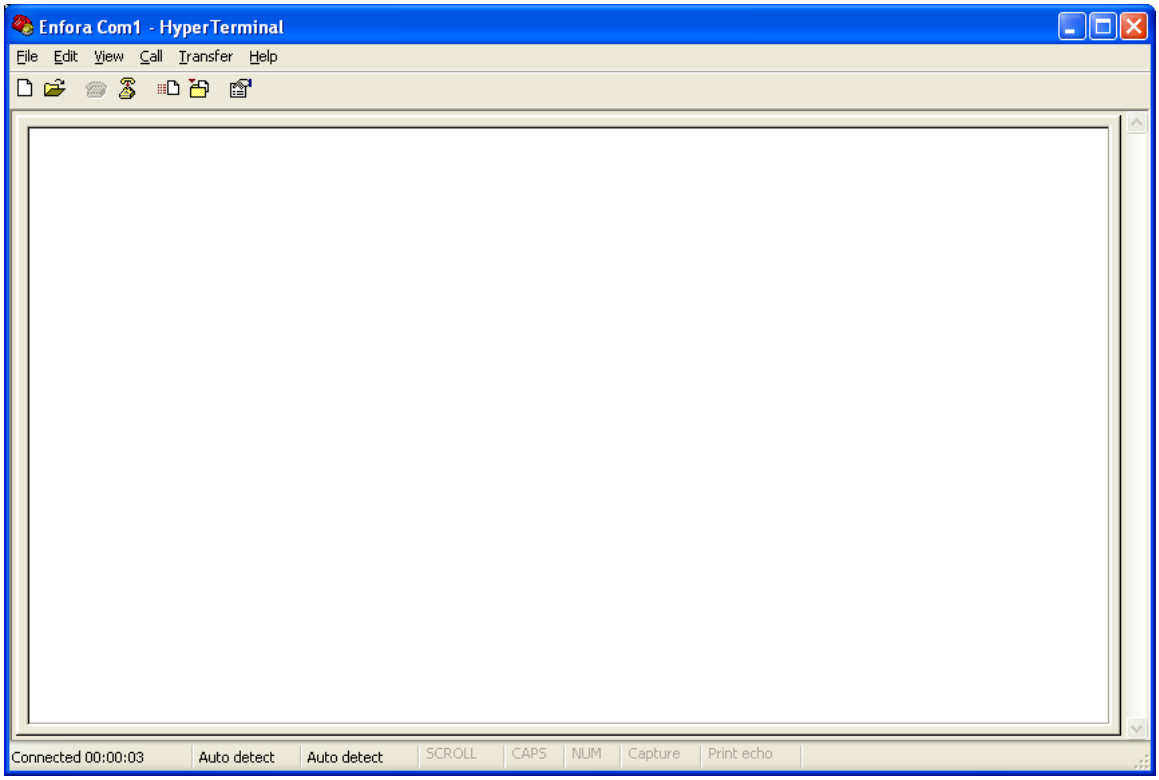
7. The next window is the **Port Settings** window.



8. Make sure the settings match the example.

9. Click **OK**.

10. Now the **Main Program Window** should appear.



11. Terminal Setup Testing.

    a. Make sure the cursor is in the main window.
    b. Type “AT” and press “Enter”
    c. You should see the modem respond back with “OK” in the Main Window
    d. If this happens, the COM port is configured correctly.
    e. At this point you are ready to start configuring your SDK with AT commands.

Modem Settings that Allow for Automated GSM and GPRS Network Connectivity

1. Open the HyperTerminal connection that you configured in the previous section.

2. Type **AT** and press **<ENTER>** the modem should respond with **OK**. This will verify that you are communicating with the modem. If you cannot see characters entered on the screen, enter **ATE1V1**.

3. To perform a PDP context activation on a network, the following commands need to be used:

AT&F	(Default configuration)
AT+CREG=2	(status GSM registration)
AT%CGREG=2	(Status GPRS attach)
AT+CGDCONT=1,"IP","APN","",0,0	(.***APN*** value will be provided by carrier.)
AT%CGPCO=1,"username,password",1	(Set Type of Authentication, Username and Password if is need it)
AT+CPIN="xxxx"	(xxx is a PIN number for SIM card if needed)
AT$AREG=2	(auto GPRS activation on power up of device)
AT&W	(save the configuration)

SDK Tips

Before using the SDK for the first time, please make sure you remove all packing material from the SDK (tape, etc.).

Enfora Parts

The SDK includes: The SDK Board and AC/DC "Wall-Pack" Power Supply. (Note: The AC/DC Adapter is only supplied in the United States.)

There are optional accessories that you may need in addition to the Enfora module. Some examples of these accessories are listed below. Please contact your Enfora sales representative for specific part information, and ordering information.

- Molex Connector
- SIM Card Holder

User Manuals

GSM0308AT001.pdf – Enabler IIIG AT Command Set
GSM0308IG001.pdf - Enabler IIIG Integration Guide

Schematic diagram

SDK0119MG801 - Enabler IIIG SDK Schematic Diagram