

PRELIMINARY

# SX8722 Evaluation Tools XE8000EV120

# **User's Guide**



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# 1 Introduction

## 1.1 Context

The tool context is to enable the user to create an engineering environment that enables him to evaluate the SX8722 chip performances.

The tool is intended to be the interface between the sensor and the PC in order to ease the handling of the SX8722.

The tool is made of 3 parts:

- SX8722 application board: Holds the SX8722 and its mandatory components and reproduces the chip pin out in a dual line SMD 1.27mm pitch.
- XE8000EV120: Gives access to all pins of the application board and provides all the hardware interfaces needed to evaluate the SX8722.
- "SX87xx Evaluation Tools" Graphical User Interface (GUI): Gives the user a clear view of the registers content and allows the using of all modes and commands described in the SX8722 datasheet.

## 1.2 Global function

The SX8722 evaluation board's main function is to give the user the possibility to develop its application by interfacing his sensor, choosing its power supply, finding the best configuration parameters via the GUI, etc. Once the ideal settings found, the corresponding configuration can be optionally saved in a 256 kBits EEPROM and the application board used in stand-alone real application environment.

## 2 Installation

### 2.1 Installing the GUI and required software

Put the SEMTECH CD ROM in your computer and if the installation does not start launch the file "setup.exe" located at your CD ROM root directory.

The Installer will propose you to install the "SX87xx Evaluation Tools" GUI and the software needed to make it work.

#### 2.1.1 .NET Framework 2.0

The GUI needs the .NET Framework 2.0 to work properly. The installer proposes to install it, if the installer is unable to detect it on your system.

#### 2.1.2 FTDI USB drivers

The XE8000EV120 board uses a USB to UART converter from FTDI-Chip thus to the board work properly the USB drivers must be installed.

If the USB drivers are not detected on your PC their installation will be proposed.



## 2.2 Connecting the board for the first time

Connect the board to your USB port, and then switch on the XE8000EV120 using the "power" switch (top left side of the board).

Note: Ensure that the jumper at the right of the power switch is either connected on 2.5V, 3.3V or 5V\_USB.

**Note**: The first time you connect the kit, the system will install your XE8000EV120 connection as a new Serial COM port device.

For more information on how to determine which Serial COM port has been assigned please refer to §2.3.

Once the board is connected launch the GUI from Windows "Start Menu->Programs->SX87xx->SX87xx" and the GUI main window will open.

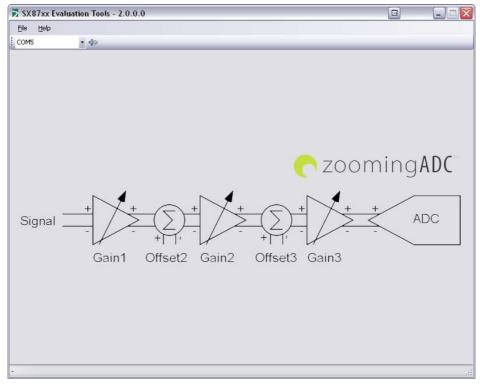
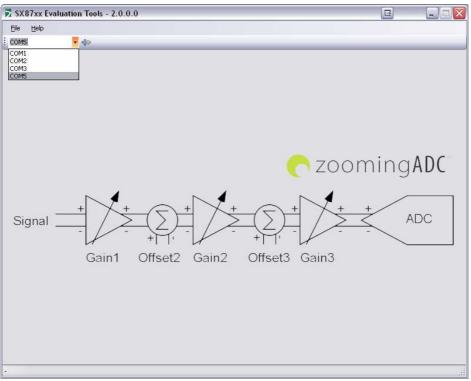


Figure 1 Main GUI window



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Select the Serial COM port corresponding to your XE8000EV120 board on the GUI toolbar.



#### Figure 2 Serial COM port selection

Click on "Open COM" button located on the GUI toolbar.

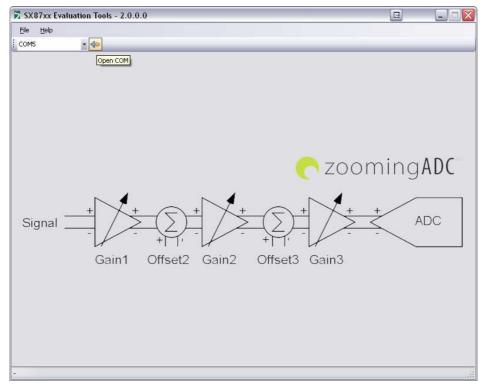


Figure 3 Open Serial COM port



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Once the Serial COM port is open the application will read all the SX8722 registers in order to update the GUI.

oms		C							
Commands		Config 1 [ON] Con	fig 2 [OFF]	Config 3 [	OFF] Con	fig 4 [OFF] Gene	ral		
Configurations		Overview Inputs	PGA	ADC A	arms Filte	1			
Read	Write	- Inputs				9	Register	Addr	Value
Conversion		ADC		Ref	erence		C1AdcReg1	OxOA	7C
	(	Vin P	Vin N		Vin P	Vin N	C1AdcReg2	OxOB	C1
Config 1:	Start	AC1	ACO		AR1P	AB1N	C1AdcReg3	OxOC	00
Config 2:	Start	PGA					C1AdcReg4	OxOD	00
		1 GA	PGA1	PGA2	PGA3	Total	C1AdcReg5	OxOE	00
Config 3:	Start	ON/OFF	OFF	OFF	OFF	iotai	C1AdcReg6	OxOF	22
Config 4:	Start	Gain	1.000	1.000	1.000	1.000	C1SXCfg	0x10	01
		Offset		0.000	0.000	0.000	C1FParam	0x11	00
Control		H. H.				·	C1Alrm10n	0x12	0000
SI	leep	ADC				1	C1Alrm10ff	0x14	0000
( n)		Number of eler				8	C1Alrm2On	0x16	0000
Shu	itdown	Frequency sam		ıl: ±50%) (kl	Hz]:	307.2	C1Alrm2Off	0x18	0000
B	eset	Over sampling ADC output (si		-0		1024 10599	C1DataOut	Ox1A	2967
CERRONIU		ADC output (si	grieu uecim	aij		10555			148000000
EEPROM		Alarms						0	
Load	Save	Alarm	Enable/	Disable	ON	OFF		( )	
Log		1	Disat	oled	0	0		11	1
1999 <del>-0</del>	1000	2	Disat	oled	0	0		1 \	- 1
Max samples:	1000	Filter						1	
		11000	Туре		N	o, samples		/	$\langle    $
Browse	Start		No filter			0		0550	V

Figure 4 GUI after Serial COM port is opened



### 2.3 How to determine which com port has been assigned to the XE8000EV120 board

There are two ways to determine which COM port your XE8000EV120 is using:

- 1. Using the GUI:
  - Click on the Serial COM port dropdown list as shown in Figure 2 and keep in mind the displayed Serial COM ports.
  - Select one of the Serial COM ports.
  - Switch off the XE8000EV120.
  - Click on the Serial COM port dropdown list as shown in Figure 2
  - The Serial COM port that has disappeared from the list the one assigned to your XE8000EV120 board.
- 2. Using the Windows Device manager
  - Open the Windows Device Manager by clicking on Windows "Start Menu->Settings->Control Panel->System->Hardware" and then click on "Device Manager" button.
  - Develop the "Ports (COM&LPT)" section
  - Switch ON and OFF the XE8000EV120 board
  - The Serial COM port assigned to the XE8000EV120 is the one that disappears and reappears each time.

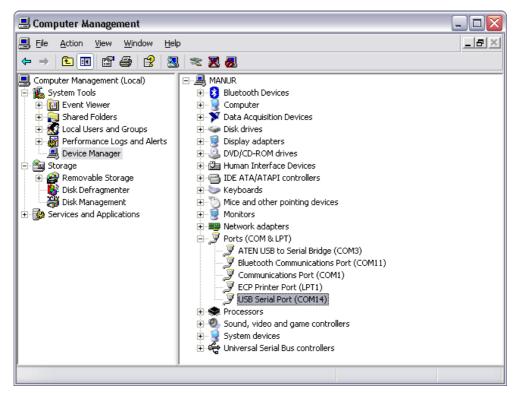


Figure 5 Windows Device manager



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# 3 Hardware description

The evaluation tool is composed of a main and an application board.

## 3.1 Boards features

- XE8000EV120:
  - Ease the access to every SX8722 pin.
  - o Dedicated interfaces for connection to the external world.
  - $\circ$   $\;$  USB interface for communication between the GUI and the chip.
  - Power supply flexibility (USB, battery, DC connector...).
  - User interface (LEDS, buttons...).
- Application:
  - Holds the SX8722 and its mandatory components.
  - Can be used as a drop-in module on another application.

## 3.2 Communication between PC, Gateway and SX8722

The communication protocol between the PC and the gateway is made of frame exchanges. A frame is composed of a type, a size and a customized data buffer. There are 3 different types of frame: command request frame, command response frame and data frame.

The command request frame is sent by the PC to the gateway. The command response frame is sent by the gateway to the PC as a response to a command request. There is a command response sent for every command request received.

The command request frame and command response frame are implied in the following procedure:

- 1- PC sends a command request to the gateway via the UART.
- 2- The gateway will execute the command (using I2C connection with SX87xx).
- 3- The gateway will send a command response frame with the command result to the PC via the UART.

The data frame is used to send the measured value from the SX87xx ADC to the PC.

The data frame is implied in the following procedure:

- 1- SX87xx validate its READY output.
- 2- The gateway fetches the ADC measured value (using I2C connection with SX87xx).
- 3- The gateway will send a data frame with the measured value to the PC via the UART.

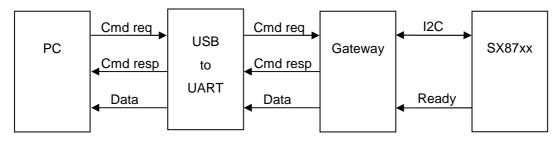


Figure 6 Hardware block diagram



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## 3.3 Power sources specification

Voltage range	Min	Тур	Max	Unit	Comments
1.3mm DC Plug	6	8	15	V	Regulated <sup>1</sup>
USB 5V	4.5	5	5.5	V	Regulated <sup>2</sup>
Battery	2.4	3	3.6	V	Unregulated
VDD Ext	2.4	-	5.5	V	Unregulated <sup>3</sup>
Consumption	Min	Тур	Max	Unit	Comments
	-	-	100	mA	4

#### **Table 1 Power sources specifications**

Note: The input analog voltages are specified in the SX8722 datasheet.

<sup>&</sup>lt;sup>1</sup> Can be regulated to 5.0, 3.3 and 2.4 V <sup>2</sup> Can be regulated to 3.3 and 2.4 Volts <sup>3</sup> When jumper EXT\_POW is connected

<sup>&</sup>lt;sup>4</sup> Max current, all LEDS on 5.5V, SX8722 full speed, GUI connected.

<sup>© 2007</sup> Semtech Corp.



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## 3.4 XE8000EV120 board overview

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The picture below describes the main zones and functions accessible on the XE8000EV120

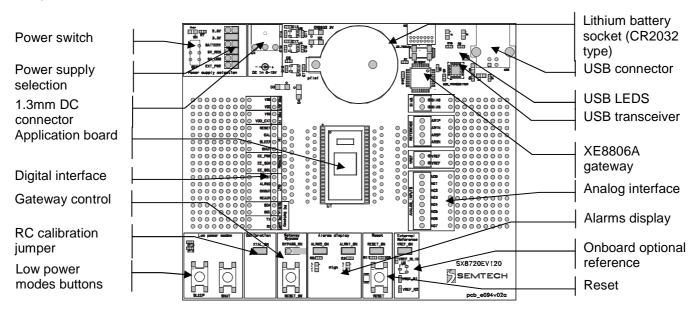


Figure 7 XE8000EV120 board overview

#### 3.4.1 Power supply

The XE8000EV120 board provides a lot power supply voltage possibilities; the following paragraphs describe how to configure and use them.

#### 3.4.1.1 Power sources

The board can be powered through four different power sources:

- 1. USB: USB power coming from the PC.
- 2. 1.3mm DC: Connection using a male 1.3mm DC connector<sup>5</sup>
- 3. Battery: 3.0VDC Lithium battery (CR2032 type)
- 4. VExt: External source applied on VDD\_EXT pin of the digital interface (see § 3.5.2)

<sup>&</sup>lt;sup>5</sup> Reference example: Manufacturer: Cliff Electronic Components PN: DCPP3 © 2007 Semtech Corp.



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#### 3.4.1.2 Power supply selection

Available supply voltages versus selected power source are described below:

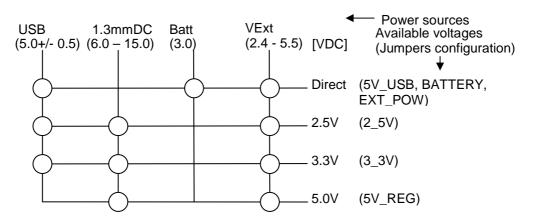


Figure 8 Power supply matrix

IMPORTANT: DO NEVER CONNECT EXT\_POW JUMPER IF VDD\_EXT IS HIGHER THAN 5.5VDC

The picture below shows the selector. User should place the jumper on the desired SX8722 supply voltage value.

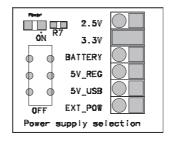


Figure 9 XE8000EV120 power supply selector

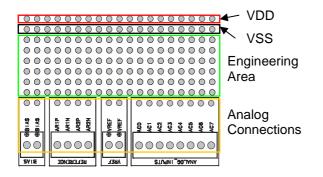
Note: Use only one jumper at the same time on the power supply selector.



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## 3.5 User interface

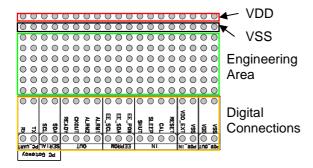
### 3.5.1 Analog interface



The analog interface gives access to the SX8722 analog pins, the BIAS pin and the external reference (see §3.5.8).

The connections points are available on industrial PCB terminal blocks and on the bare PCB next to the engineering area.

## 3.5.2 Digital interface



The digital interface gives access to the SX8722 digital pins, the PC gateway connections and the power supplies.

The connections are available on single row 2.54mm connectors and on the bare PCB next to the engineering area.

Using the engineering area, one can set its own application only using the SX8722 and bypassing the onboard gateway.

#### 3.5.3 Low power modes

The low power modes buttons allow the user to set the SX8722 in sleep or shutdown mode.



**Note:** Once the shutdown mode is set, only a RESET can wake up the SX8722.

### 3.5.4 RC calibration



The RC calibration jumper allows connecting the pin CAL of the SX8722 to ground (default). In this case, the CAL pin indicates to the chip the presence of an external 32kHz crystal on its XIN & XOUT pins.

When not connected, the SX8722 remains uncalibrated unless its calibration values were previously saved in the external EEPROM.

Note: The calibration can also be performed via an external 32kHz square wave signal applied on CAL pin (see "Frequency calibration process" section of SX8722 datasheet).

### 3.5.5 Gateway control



The gateway bypass jumper allows the user to bypass the onboard XE8806A. One can then set its own solution using the digital interface pins TX, RX, SDA&SCL (see §3.5.2). By default, the jumper is not connected.

The RESET\_GW button allows the user to reset the gateway.



#### 3.5.6 Alarms display



The jumpers ALRM1\_ON & ALRM2\_ON connect the corresponding pins of the SX8722 to LEDs. These can then be unconnected if needed.

#### 3.5.7 Reset



The RESET\_ON jumper connects the SX8722 RESET pin to an RC network and a push button, allowing the user to RESET manually the SX8722. The RC network ensures a clean startup.

### 3.5.8 Onboard optional reference



When connected the VREF\_ON jumper powers the onboard optional reference which is then present on the analog interface.

The reference chip is a Semtech SC431 shunt regulator adjustable from 2.5 to 5.5VDC

It is configured to provide a reference voltage of 2.5V. To set other voltages, please refer to

SC431 datasheet and adjust the reference with VREF\_R1 & VREF\_R2 resistors.



## 3.6 Application board overview

The picture below shows the SX8722 application board pin map. This board can be used as a drop in module in the user application (see §7)

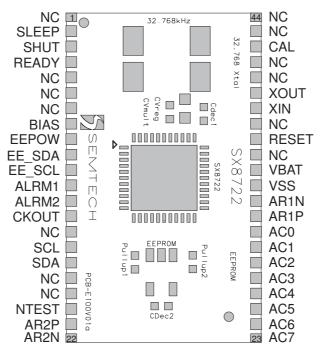


Figure 10 SX8722 Application board

**Note 1**: Application board GERBER files are available on request trough a request to our support team , these board are NOT sold without the XE8000EV120 evaluation kit.

**Note2**: Application board has been designed for a Zero Insertion Force socket (optional on the XE8000EV120 evaluation boards) which order information are described below:

Manufacturer:ENPLASPart No:OTS-44-1.27-03Distributor:MSC Vertrieb GMBHOrdering info:OTS-44-1.27-03





# 4 SX87xx Evaluation Tools Graphical user Interface (GUI)

The GUI enables the user to interact with the XE8000EV120 and the Application board.

## 4.1 Overview

The GUI gives a complete overview of the current SX8722 configuration plus the ability to control it. The GUI is mainly divided in 4 sections:

- 1. Menu and Tool bar.
- 2. Commands.
- 3. SX8722 Registers.
- 4. Status bar

COM5		-							
Commands		Config 1 [ON] Conf	ig 2 (OFF)	Config 3 [	OFF] Con	fig 4 (OFF) Gene	ral		
Configurations -	]	Overview Inputs	PGA	ADC A	arms Filte	4			
Read	Write	~ Inputs	-1 403754 IIS			*	Register	Addr	Value
Conversion		ADC		Bel	erence		C1AdcReg1	OxOA	70
			Vin N	110	Vin P	Vin N	C1AdcReg2	OxOB	C1
Config 1:	Start	AC1	AC0		AR1P	AB1N	C1AdcReg3	OxOC	00
Config 2:	Start	PGA					C1AdcReg4	OxOD	00
0.00		TUA	PGA1	PGA2	PGA3	Total	C1AdcReg5	OxOE	00
Config 3:	Start	ON/OFF	OFF	OFF	OFF	Total	C1AdcReg6	OxOF	22
Config 4:	Start	Gain	1.000	1.000	1.000	1.000	C1SXCfg	0x10	01
		Offset		0.000	0.000	0.000	C1FParam	0x11	00
Control		100		<i></i>			C1Alrm10n	0x12	0000
S.	40.	ADC		0~0 <b>0</b> -00-000			C1Alrm10ff	0x14	0000
Shut	num	Number of elem Frequency sam	65-52-65 53-56-52		Lal.	8 307.2	C1Alrm2On	0x16	0000
	50001	Over sampling r		I. ±30%) (K	HZJ.	1024	C1Alrm2Off	0x18	0000
Re	set	ADC output (sig		al)		8532	C1DataOut	Ox1A	2154
EEPROM		N							_
Load	Save	Alarms					~~~	$\wedge$	$\wedge$
LUau	Jave	Alarm	Enable/I		ON	OFF	$\square$	1	11
Log		1 2	Disat Disat		0	0		1	1
Max samples:	1000		Disat	bled	U	u j		1	1
		Filter						1	
			Туре		Nt	o. samples			1
Browse	Start		No filter			0	U .	532	

Figure 11 GUI Startup window

### 4.1.1 Menu and Tool bar (1)

The GUI menu is composed of 2 items:

- 1. The File menu gives the possibility to exit the application.
- 2. The Help menu gives the possibility to show the application "About box".

The GUI Toolbar is composed of 2 items:

- 1. A "Combo box" that lists the available Serial COM ports on the PC.
- 2. A button that opens or closes the Serial COM port selected in the "Combo box".



### 4.1.2 Commands (2)

The Commands section is composed of 5 items that enables the user to control the SX8722:

- 1. Configurations
  - a. Read button will read all the SX8722 registers and update the section 3 of the GUI.
  - b. Write button will write all the values from the section 3 to the SX8722.
- 2. Conversion
  - a. If the corresponding configuration ZoomingADC is set in single mode conversion the start button will be enabled. Each time you press this button a conversion is started. (please refer to chapter 5 troubleshooting §5)
- 3. Control
  - a. The Sleep button sends the Sleep command to the SX8722. (please refer to chapter 5 troubleshooting)
  - b. The Shutdown button sends the Shutdown command to the SX8722.
  - c. The Reset button sends a command to the gateway in order to reset the SX8722.
- 4. EEPROM
  - a. The Load button loads the registers values stored in the EEPROM to the SX8722.
  - b. The Save button stores the SX8722 registers values to the EEPROM.
- 5. Log
  - a. Max Samples input box indicates how many ZoomingADC samples are stored in the log file.
  - b. Browse button let the user choose where to store the log file and which name it will have.
  - c. Start button starts the logging process. While the logging process is running a progress bar will show the progress.



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#### 4.1.3 SX8722 Registers (3)

The SX8722 Registers section is composed of 5 tab pages that enable the user to modify or read the actual SX8722 settings.

There is 4 Configurations tab pages that are exactly the same excepting the registers addresses. The configuration tabs enables the user to see the ZoomingADC registers detailed by function and also the corresponding hexadecimal registers value.

Help								
45 -								
ommands	Config 1 [ON] Con	ia 2 (OFF)	Config 3 [	OFF1 Cor	ifig 4 (OFF) Gen	eral		
Configurations		CL						
Read Write		PGA	ADC AI	arms Filte	n I	Register	Addr	Value
	ADC		D-0	erence		C1AdcReg1	OxOA	70
Conversion		Vin N		Vin P	Vin N	C1AdcReg2	OxOB	C1
Config 1: Start	AC1	AC0		AR1P	AB1N	C1AdcReg3	OxOC	00
Config 2: Start					)	C1AdcReg4	OxOD	00
	PGA	Barrison		1	(	C1AdcReg5	OXOE	00
Config 3: Start		PGA1	PGA2	PGA3	Total	C1AdcReg6	OxOF	22
Config 4: Start	ON/OFF Gain	0FF 1.000	0FF 1.000	0FF 1.000	1.000	C1SXCfg	0x10	01
	Offset	1.000	0.000	0.000	0.000	C1FParam	0x11	00
Control	Gillout		0.000	0.000	0.000	C1Alrm10n	0x12	0000
Sleep	ADC					C1Alrm10ff	0x14	0000
	Number of elem	ASS/2010 - 2010 194			8	C1Alrm2On	0x16	0000
Shutdown	Frequency sam	Child and the second second	l: ±50%) (kl	Hz]:	307.2	C1Alrm2Off	0x18	0000
Reset	Over sampling ADC output (sid		-0		1024 8532	C1DataOut	Ox1A	2154
EPROM	-							Í
Load Save	Alarms				-		$\overline{)}$	$\wedge$
	Alarm 1	Enable/I Disat		0N 0	OFF 0		1	11
.og	2	Disat		0	0		1	1
Max samples: 1000		0.000		•			1	1
	Filter	30					/	
		Туре		N	o. samples			8
Browse Start		No filter			0	ν ε	532	

Figure 12 SX8722 Registers Tabs Configuration 1



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The sub tab named "Overview" gives an indication of the configuration current settings for the ZoomingADC. This tab is read-only.

Overview	Inputs	PGA	ADC A	larms	Filte	il i					
-Inputs-											
-ADC-				ference							
V	Vin P         Vin N           AC1         AC0										
	AC1	AB1N									
<u> </u>											
PGA-	-PGA										
		PGA1	PGA2	PG.	A3	Total					
ON	1/OFF	OFF	OFF	OF	F						
6	iain	1.000	1.000	1.0	00	1.000					
0	ffset		0.000	0.0	00	0.000	1				
Freque Over sa	ncy samp ampling r	entary con bling (Unca ate: ned decim	al: ±50%) [k	:Hz]:		1	8 17.2 024 313				
	larm	Enable/	Disable	ON		OFF					
	1	Disabled		0	-	0					
	2	Disabled		0		0					
-Filter-	Filter										
		Type Nofilter			THE .	o. sample O	-				

Figure 13 "Overview" sub tab

The sub tab named "Inputs" lets the user choose which inputs and which reference pins will be used to make the measurement. On this sub tab the user may also choose if the inputs are "Single-ended" or "Differential" as well as choosing which of the inputs is used as "Positive" or "Negative" input.

Overview Inputs PGA ADC	Alarms Filter
CADC	]
<ul> <li>Single-ended</li> </ul>	Sign inversion
<ul> <li>Differential</li> </ul>	
Positive input:	AC1 💌
Negative input:	ACO 😽
Reference	
Reference input:	AR1P - AR1N

Figure 14 "Inputs" sub tab



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The sub tab named "PGA" lets the user control the gain, offset and enabling disabling each PGA individually. The user has also the possibility to control the PGA's biasing.

	ts PGA A		ns Fil	ter	
Settings					
	PGA3	PG/	42	PGA	1
Enable:			]		
Gain:	0.000	✓ 1.000	×	1.000	~
Offset:	0.000	• 0.000	×		
Biasing:		-	25	~	%

#### Figure 15 "PGA" sub tab

The sub tab named "ADC" lets the user control the ADC parameters. Parameters like number of elementary conversions, the oversampling rate, the sampling frequency and the ADC biasing can be tuned.

The user has also the possibility to decide if the ADC will work in one shot or in continous mode.

When the Read button is pressed the last ADC converted value is also displayed in this sub tab.

Overview	Inputs	PGA	ADC	Alarms	Filter		
Settings							
Number of elementary convertions: 8							
Frequer	ncy samp	ling (Uno	307	.2		kHz	
Oversa	mpling rat	e:		102	4		
Biasing				100			%
							-
		<sup>Co</sup>	nversion I	Mode			
		0	Single				
		۲	Continuo	us			
Uutput (	decimal)-						
			14313				
<u> </u>							

Figure 16 "ADC" sub tab



PRELIMINARY

The sub tab named "Alarms" lets the user enable or disable the alarms on the current configuration. The users can also specify the "ON" and "OFF" alarm thresholds.

Settings       ON       OFF         1       I       0       0         2       0       0       0	verview	Inputs PGA AD	C Alarms Fi	lter
<b>1 V</b> 0 0	Settings			
	Alarm	Enable/Disable	ON	OFF
2	1	<b>V</b>	0	0
	2		0	0

#### Figure 17 "Alarms" sub tab

The sub tab named "Filter" lets the user enable or disable the integrated filtering options. The user can choose between two kinds of filters (Average and Moving Average) as well as choosing how much samples are used for the average calculation.

Overview Inputs PGA ADC	Alarms Filter	Overview Inputs PGA	ADC Alarms Filter	Overview Inputs PGA	ADC Alarms Filter
Settings		Settings		Settings	
Filter type:	No filter	Filter type:	Average 💌	Filter type:	Moving average 🛛 🗸
Number of samples:	0	Number of samples:	10	Number of samples:	10
	,				

Figure 18 "Filter" sub tab



Each configuration has its own Graphic representing the ADC output. The graphic is in auto-scale mode.

If the user double-clicks on the graphic it will expand until it fills the whole configuration space. (See Figure bellow).

Config 1 [ON] Config 2 (OFF) Config 3 (OFF) Config 4 (OFF) General Config 1 (ON) Config 1 (ON) Config 2: Start Config 2: Start Config 3: Start Config 4: Start	]
Read     Write     Back       Conversion     32767       Config 1:     Start       Config 2:     Start       Config 3:     Start       Config 4:     Start	]
Conversion Config 1: Start Config 2: Start Config 3: Start Config 4: Start	
Config 1: Start Config 2: Start Config 3: Start Config 4: Start	
Config 2: Start Config 3: Start Config 4: Start	
Conlig 3: Start Conlig 4: Start	
Config 4: Start	
	0
Control	চি
Sleep	
Shutdown	
Reset	
EEPROM	5
Load Save	
	6
Log	
1000	
Max samples: 1000	

Figure 19 Expanded ADC graphic

The "Back" button will reduce the Graphic and will show again the ZoomingADC configuration.

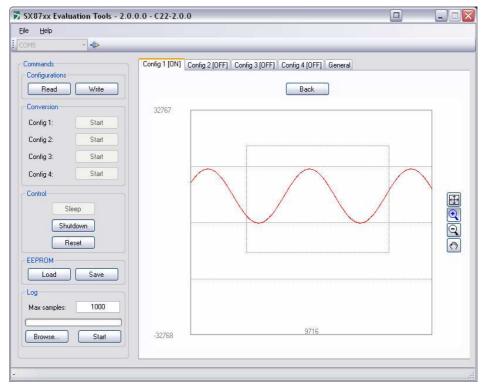


PRELIMINARY

#### **ADVANCED COMMUNICATIONS & SENSING**

The 4 small buttons on the Graphic give the user the possibility to:

- 1. Perform an auto scale of the graphic. If the button is double-clicked the auto scale is permanent until one of the buttons is pressed again.
- 2. Zoom +, If the user draws a rectangle in the graphic and then release the mouse button the graphic will zoom the signal inside the rectangle.



#### Figure 20 Zoom +

ile <u>H</u> elp	).0 - C22-2.0.0	
om5 - 🔹		
Configurations Read Write	Config 1 [ON] Config 2 [OFF] Config 3 [OFF] Config 4 [OFF] Gen	aral
Conversion Config 1: Start Config 2: Start Config 3: Start Config 4: Start Control	22357	
Shutdown Reset EEPROM Load Save		
Browse Start	-9388	

Figure 21 After zoom +



PRELIMINARY

3. Szoom –, Once the button is selected each time the user clicks on the graphic it will zoom out.

SX87xx Evaluation Tools - 2.0	.0.0 - C22-2.0.0	e 1
jile <u>H</u> elp		
COM5 - 🕫		
Commands	Config 1 [ON] Config 2 [OFF] Config 3 [OFF] Config 4 [OF	F] General
Configurations		
Read	Back	
Conversion	30293	
Config 1: Start	had	
Config 2: Start		
Config 3: Start		
Config 4: Start		
Control Sleep Shutdown Reset		
EEPROM Load Save		
Log		
Max samples: 1000		
Browse Start	-17325	9

#### Figure 22 After Zoom -

4. Move the zoomed window. To move the zoomed window the user must select the corresponding button and then click on the graphic without releasing the button and move the mouse.

M5				_
ommands Configurations Read	Write	Config 1 [ON]	Config 2 [OFF] Config 3 [OFF] Config 4 (OFF) General Back	
Conversion		17150		
Config 1:	Start	11.0990		
Config 2:	Start			
Config 3:	Start			
Config 4:	Start			
Control Sleep Shutdov Reset	wn			
EEPROM				
Load	Save			
Log Max samples:	1000			
Browse	Start	-30469	15669	





#### PRELIMINARY

The tab named "General" gives access to the SX8722 common features. The user can change the "Alarms" behavior as well as enabling or disabling the ZoomingADC configurations. The user can also see the SX722 status and the graphics of the 4 ZoomingADC configurations if they are enabled.

le <u>H</u> elp 0M5 → <b>⊰</b> D≥								
Commands Configurations	Config 1 [ON] Cor	nfig 2 (ON)	Config 3 [ON	I] Config 4	4 [ON] General	η		
Read Write	- Status					Register	Addr	Value
Conversion	EEPROM dete					SXCtrl1	0x00	88
	Desir Presidenti Andra		10.7.80			SXCtrl2	0x01	00
Config 1: Start	EEPROM load		(*))<			SXCfgEn	0x02	OF
Config 2: Start		XTAL oscillator detected at startup:		SXUpdated	0x03	F 1		
Config 3: Start	RC oscillator c	alibrated:					~	
	Alarms logical c		$\cap$					
Config 4: Start	Alarm	1 2			$\lambda / \lambda$		$\setminus$ /	
Control	ON state	C	OR		OR	$\bigvee_{1}$	334A	V
Sleep	OFF state	[	OR	[	OR	$\sim \sim$	$\wedge$	
Shutdown	Carller Chi	0						$\setminus \Lambda$
Reset	Config Ctrl	220				$\langle \rangle \rangle$	$\langle / \rangle$	$\backslash /  $
Heset	Config	1	2	3	4	1	3972	
EEPROM	Enable	<ul> <li>Image: A start of the start of</li></ul>	~	~		=	- ^	
Load Save	Config Updated						$\sqrt{1}$	
Log	Config	1	2	3	4	$\sim$	3278	$\mathcal{V}$
Max samples: 1000	Updated	۲	•		•		~	
	Overflow					$\nabla$	(1)	
Browse Start	L				L J			\ /
							3309	V.

Figure 24 SX8722 Registers General Tab

#### 4.1.4 Status bar (4)

The Status bar will display application errors that may happen while using the GUI. If there is no error the status bar shows a "-"sign.



# 5 Troubleshooting

The SX8722 chip has some issues that are described in the SX8722 errata document. In order to avoid problems we decided to block the access to some functionality.

- 1. The "Sleep" button has been disabled.
- 2. The ZoomingADC single mode has been disabled.
- 3. The "Reset" button has been disabled if a version "1.00" of the Gateway is detected.

The SX87xx Evaluation tools software has also some known issues. These are:

- 1. If Palm HotSync tool is running the GUI doesn't start correctly. Solution: When using the SX87xx tools please disable the HotSync application.
- 2. When using a SX8722 Evaluation board with a Gateway version "1.00" communication errors may happen.

Solution: If the user is no more able to communicate with the Evaluation board just reset the Gateway and the SX8722 chip and click on the Write button to send your configuration again.

 If the user disconnects the USB cable or shuts down the Evaluation board a Windows error message may appear when the GUI is closed or the user closes the Serial Port. Solution: None.



PRELIMINARY

# 6 XE8000EV120 board

## 6.1 Schematics

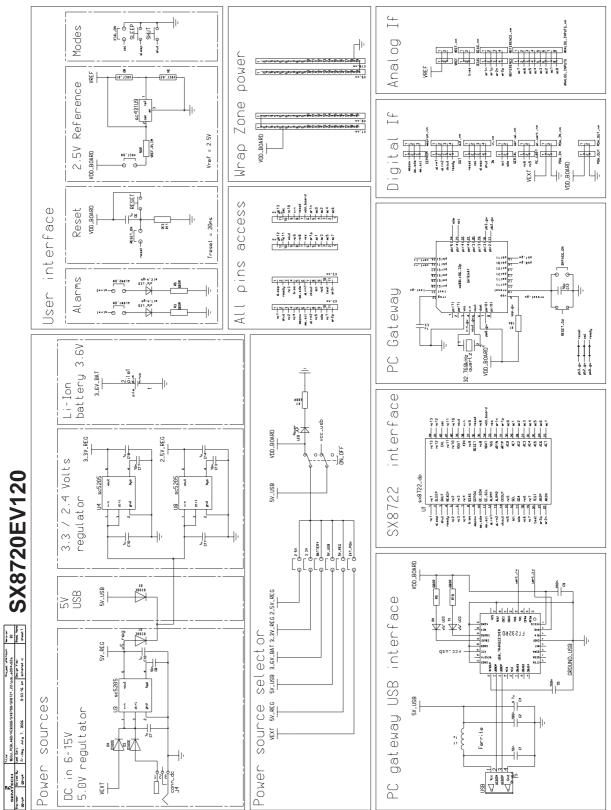


Figure 25 XE8000EV120 board schematic



PRELIMINARY

## 6.2 Physical dimensions

The XE8000EV120 is a 2 layers board.

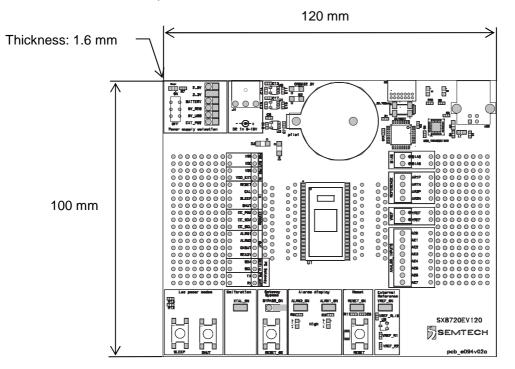
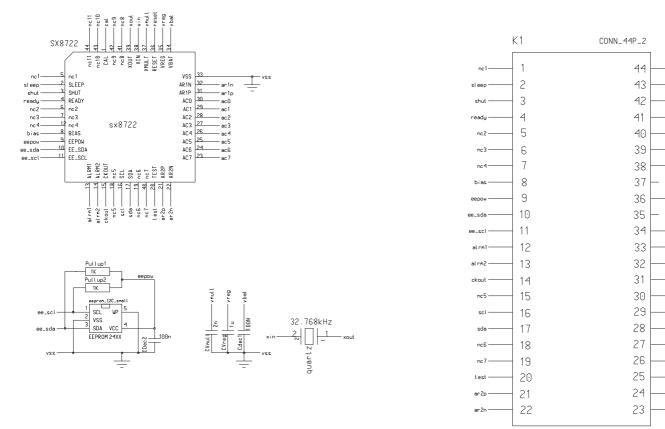


Figure 26 XE8000EV120 physical dimensions

MTECH

# 7 Application board

# 7.1 Schematics



-	¢.	Title:	Project : unknown	Version:
XEMICS		\$GGU_PCBLAB0/XE8000/SX8700/SX8721_22/	ocb_e100v02a	58
Engineer :	Edited By:	Lost Edit:	Design View:	Sheet Nome
gguye	gguye	Tuesday, August 15, 2006 4:46:24 p	n schematic	sheet 1

Figure 27 Application board schematic

nc11

nc10

cal

-nc9

-nc8

YOU

rese

vbal

224

ar1r

ar1p

acO

-ac1

-ac2

ar 3

-ac5

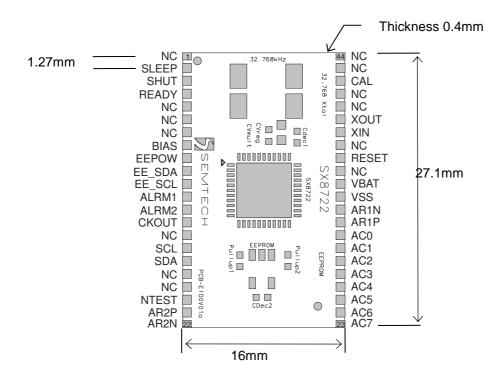
ac6

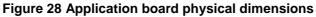
ac7



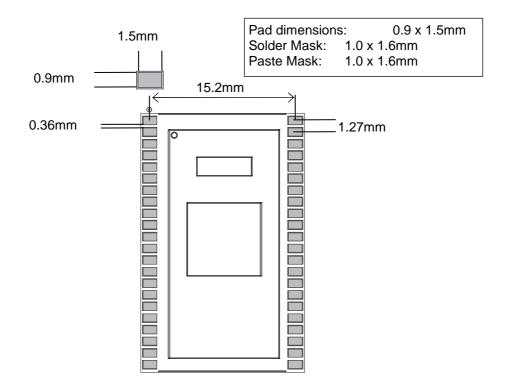
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## 7.2 Physical dimensions





## 7.3 Footprint







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