



EI Labs India Pvt. Ltd.

Embedded Devices



LinSeedV1 Eval Board

Product Technical Information

Doc Name : LinEvalV1 version 1.0

Dated : Feb 2008

The contents of this document are confidential information and the sole property of
EI LABS INDIA Pvt Ltd. Not to be distributed or divulged without prior written permission

NOTE

The LinSeed series of SoftChips is a tight system integration of third party semiconductor devices. EILABS India has tried to provide accurate information to the best of its knowledge. However, no responsibility is assumed for its use and such information is provided “as is” without any warranty of any kind, implied or otherwise. The device specification is subject to change as per the continuous improvement policy of EILABS India.

EILABS, LinSeed and Softchip are trademarks filed in India. All other company and/or product names appearing in the document may be filed or registered trademarks or copyrights of their respective owners.

CONTENTS

1. Overview 4

2. Functional Connector Pin Out..... 6

3. Placement and Layout 11

4. Environmental 12

5. Schematic 12

1. Overview

LinSeedV1 is a state of the art, 60 pin Integrated SoftChip and is the first in a series of LinSeed modules. The SoftChip concept encapsulates the hardware completely from a user perspective and provides them with a very high level software API for configuration, control and data processing. The LinSeedV1 is a 32 bit processing module with standard Linux API for the user. The hardware details are required only to the extent of the external interfaces on the user board for the purposes of further system development. Traditional SoC programming information like internal registers, peripherals etc are not required for the system designer of LinSeedV1. All peripherals are accessed through appropriate Linux drivers. This fundamentally is a big value proposition of the offering. Please refer the LinSeedV1 product technical information for more information.

LinEvalV1 is designed to be an evaluation platform for the LinSeedV1 module, especially for industrial product designers. This board is an evaluation board for LinSeed V1. This is a two layer carrier board on which the LinSeed V1 is plugged in. This board can be used to acquire familiarity and expertise in handling the LinSeed module from the software development perspective, and the peripherals that it can support.

This Evaluation board supports the following peripherals, features and Input/Outputs..

a.	Isolated Digital Inputs	8
b.	Isolated Digital Outputs	4
c.	Non- isolated Digital Outputs	3
d.	10 base T Ethernet (on SPI)	1
e.	Interface to drive 128x64 Graphics LCD	1
f.	32 keys(4x8) Keypad Interface	1
g.	ADC on I2C (12 Single Ended /6 Differential)	1
h.	USB 2.0 Full Speed Host ports	2.
i.	USB 2.0 Full Speed Device Port	1.
j.	Full function UART Port	1.
k.	Half Function UART Port	1.
l.	Debug Port	1.
m.	RTC with battery back up	

BLOCK DIAGRAM

The block schematic of the LinEvalV1 board is given in Figure 1. The actual realization is shown in Figure 2.

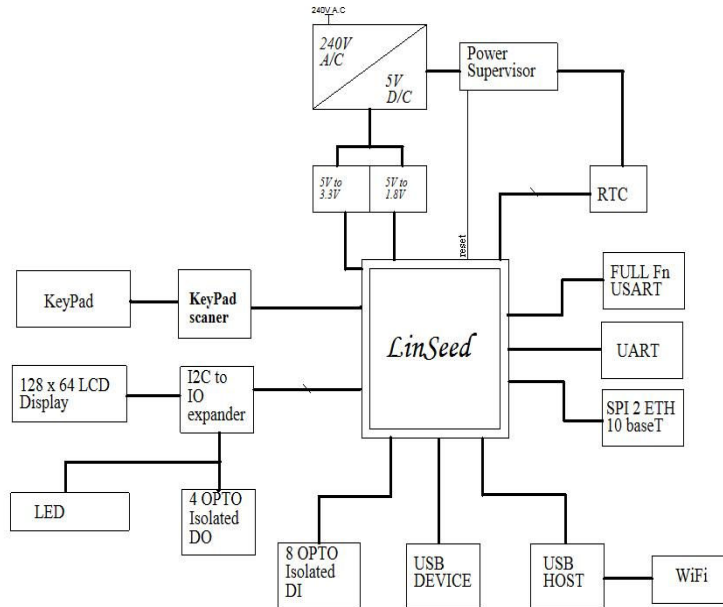


Figure 1 LinEvalV1 functional block diagram

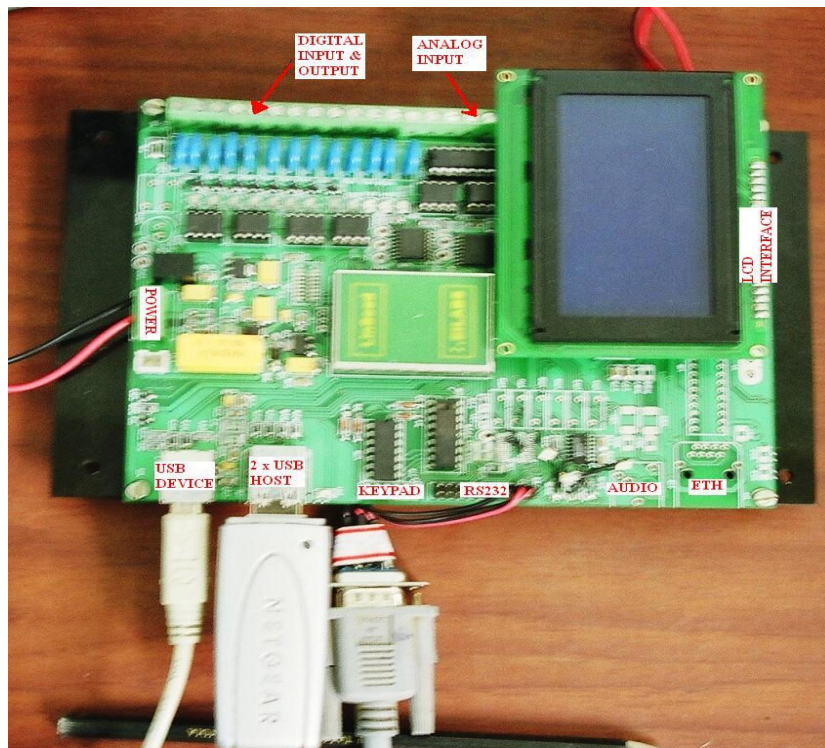


Figure 2 Picture of the LinEvalV1 board

2. Functional Connector Pin Out

J1 – Power Connector:

Pin No	Name	Pin Description
1	5V_IN	5 Volts power input
2	12V_IN	12 Volts power input
3	GND	Power Ground

J19 – 5V Power Output:

Pin No	Name	Pin Description
1	VCC_5	5 Volts power output
2	GND	Power Ground

J22 – RS232 Connector:

Full function RS232, UART and Debug UART are connected to this connector. All the signals are in RS232 level.

Pin No	Name	Pin Description
1	DCD	FF USART – DCD
2	TDX	Debug Transmit Data
3	DSR	FF USART – Data Send Ready
4	RDX	Debug Receive Data
5	TXD	FF USART – Transmit Data
6	GND	Ground
7	RTS	FF USART – Request To Send
8	TX0	UART Transmit data
9	RXD	FF USART – Receive Data
10	RX0	UART Receive Data
11	CTS	FF USART – Clear to Send
12	GND	Ground
13	DTR	FF USART – Data Terminal Ready
14	TWD	I2C Data signal
15	RI	FF USART - Ring Indicator
16	TWCK	I2C Clock signal
17	GND	FF USART – Ground
18	GND	Ground

19	GND	FF USART – Ground
20	GND	Ground

J20 – UART Interface (COMS) Level:

This Interface is for connecting the device thro serial port in CMOS level

Pin No	Name	Pin Description
1	TX0	Transmit Data
2	RX0	Receive Data

J21 – FF UART Interface (COMS) Level:

Pin No	Name	Pin Description
1	TXD1	Transmit Data
2	RXD1	Receive Data

J14 – Key Interface:

4 col x 8 rows (32 keys) can be interface in J14 connector.

Pin No	Name	Pin Description
1	COL 1	Key pad col 1
2	ROW 1	Key pad row 1
3	COL 2	Key pad col 2
4	ROW 2	Key pad row 3
5	COL 3	Key pad col 3
6	ROW 3	Key pad row 3
7	COL 4	Key pad col 4
8	ROW 4	Key pad row 4
9	ROW 8	Key pad row 8
10	ROW 5	Key pad row 5
11	ROW 7	Key pad row 7
12	ROW 6	Key pad row 6

J15 – SPI LCD interface:

This connector is to interface Displaytech 64x128 graphics LCD

1	SPICK	SPI Clock Signal
2	SPI_LCD_CS	SPI Chip Select
3	MOSI	Master Out Slave Input
4	SPI_LCD_RS	LCD Register Select(C/D)
5	GND	Ground
6	SPI_LCD_BLC	LCD Back Light Control
7	NC	-
8	VCC33	3.3V input to LCD
9	NC	-
10	VCC33	3.3V input to LCD
11	NC	-
12	VCC33	3.3V input to LCD
13	GND	Ground
14	GND	Ground
15	GND	Ground
16	GND	Ground

J16 - LCD Interface thro IO Expander:

Pin No	Name	Pin Description
1	VSS	GROUND
2	VDD	POWER SUPPLY FOR LOGIC CIRCUIT
3	VO	BRIGHTNESS CONTROL
4	RS	H : DATA INPUT L : INSTRUCTION CODE INPUT
5	R/W	H : DATA READ (LCD MODULE → MPU) L : DATA WRITE (LCD MODULE ← MPU)
6	E	ENABLE
7	DB0	DATA BUS LINE 0
8	DB1	DATA BUS LINE 1
9	DB2	DATA BUS LINE 2
10	DB3	DATA BUS LINE 3
11	DB4	DATA BUS LINE 4
12	DB5	DATA BUS LINE 5
13	DB6	DATA BUS LINE 6

14	DB7	DATA BUS LINE 7
15	CS1	CHIP SELECT FOR IC1
16	CS2	CHIP SELECT FOR IC2
17	RSTB	RESET
18	VOUT	NEGATIVE VOLTAGE OUTPUT(-10V)
19	BCK_L_A	Backlight Anode
20	BCK_L_K	BACKLIGHT Cathode

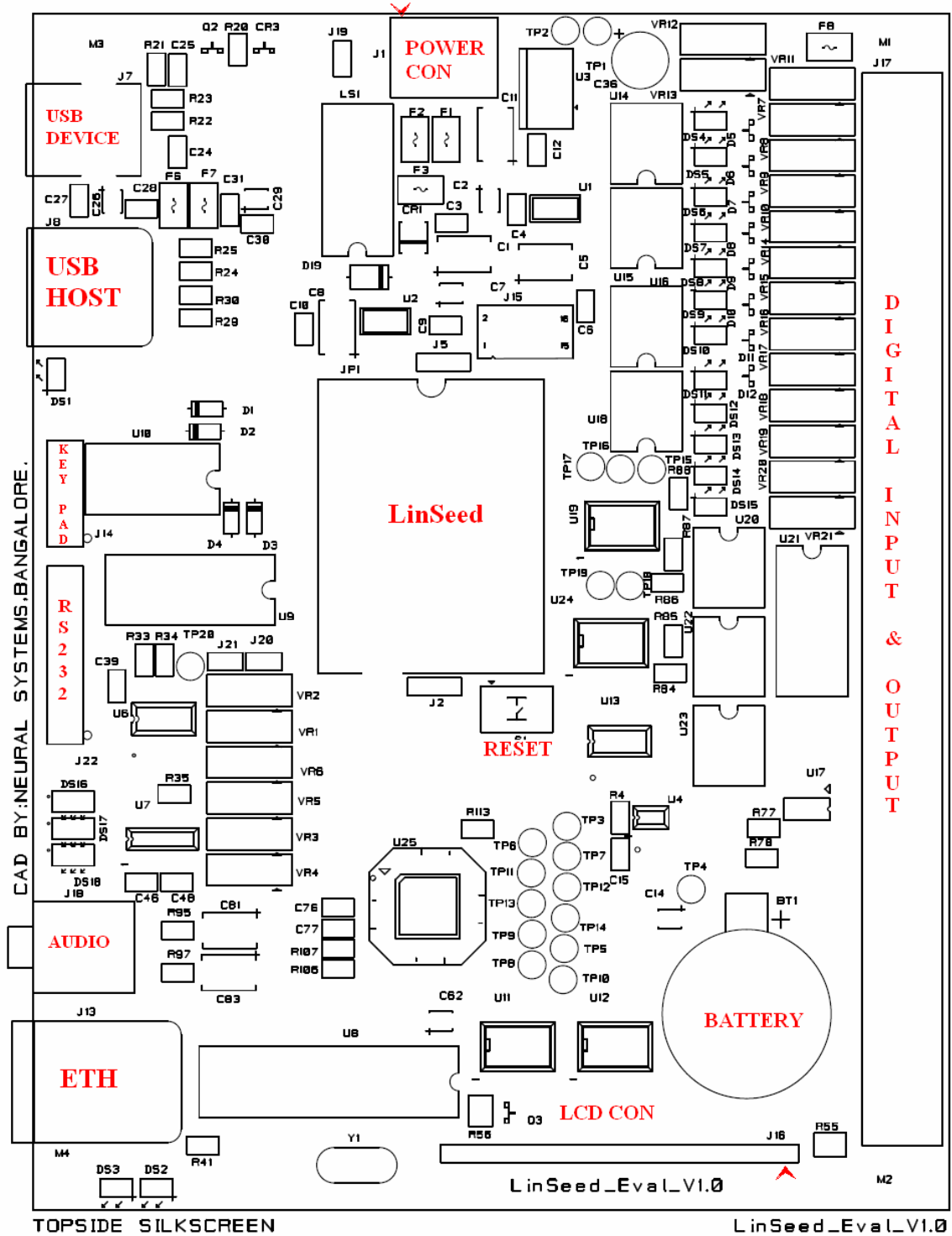
J17 - Digital Input and Output Interface:

Pin No	Name	Pin Description
1	24V_DI	24 Volts Digital input sourcing(output)
2	DI_1	Digital Input 1
3	DI_2	Digital Input 2
4	DI_3	Digital Input 3
5	DI_4	Digital Input 4
6	DI_5	Digital Input 5
7	DI_6	Digital Input 6
8	DI_7	Digital Input 7
9	DI_8	Digital Input 8
10	DO_1	Digital Output 1
11	DO_2	Digital Output 2
12	DO_3	Digital Output 3
13	DO_4	Digital Output 4
14	BUZZ	Buzzer output
15	AIN0	Analog input 1 / - AIN 1
16	AIN1	Analog input 2 / + AIN 1
17	AIN2	Analog input 3 / - AIN 2
18	AIN3	Analog input 4 / + AIN 2
19	AIN4	Analog input 5 / - AIN 3
20	AIN5	Analog input 6 / + AIN 3

LinEvalV1 Product Technical Information

21	AIN6	Analog input 7 / - AIN 4
22	AIN7	Analog input 8 / + AIN 4
23	AIN8	Analog input 9 / - AIN 5
24	AIN9	Analog input 10 / + AIN 5
25	AIN10	Analog input 11 / - AIN 6
26	AIN11/REF	Analog input 12 / + AIN6 Reference voltage
27	GND_AUDIO	Analog Ground
28	24V_S	24 Volts Input Power supply
29	I_GND	Isolated Ground
30	EARTH	Earth connection

3. Placement and Layout



4. Environmental

Operating Temperature: **0 Degrees Celsius to + 50 Degrees Celsius**

5. Schematic

[Available on purchase of the board.](#)