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Colibri Evaluation Board

Datasheet

Revision History

Date	Doc. Rev.	Colibri Evalboard Version	Changes
13-05-05	Rev. 1.0	V1.00b / V1.10	Initial release
18-05-05	Rev. 1.1	V1.00b / V1.10	Added dimension-drawing Added power supply chapter
11-04-06	Rev. 2.0	V2.1b	Changed references, New pinout for the JTAG connector, New connectors for CIF, generic display, spare and generic touch screen, Reset.
07-03-07	Rev.2.1	V2.1b	CAN connector type corrected
29-03-10	Rev.2.2	V2.1b	Renamed GPIOs with SODIMM
24-10-11	Rev.2.3	V2.1b	Added Jumper description to connector locations picture Added new disclaimer
05-10-12	Rev. 2.4	All V2.1 versions	Corrected Male to Female for X21

Contents

1. Introduction

The Colibri Evaluation Board is designed to be a flexible development environment to explore the functionality and performance of the Intel XScale® based Colibri modules.

Besides the user interfaces it provides numerous communication channels as well as a configurable jumper area to hook up the Colibri GPIOs to the desired function. To facilitate interfacing to custom hardware the Colibri EvalBoard provides the buffered CPU bus on a separate connector.

1.1. Features

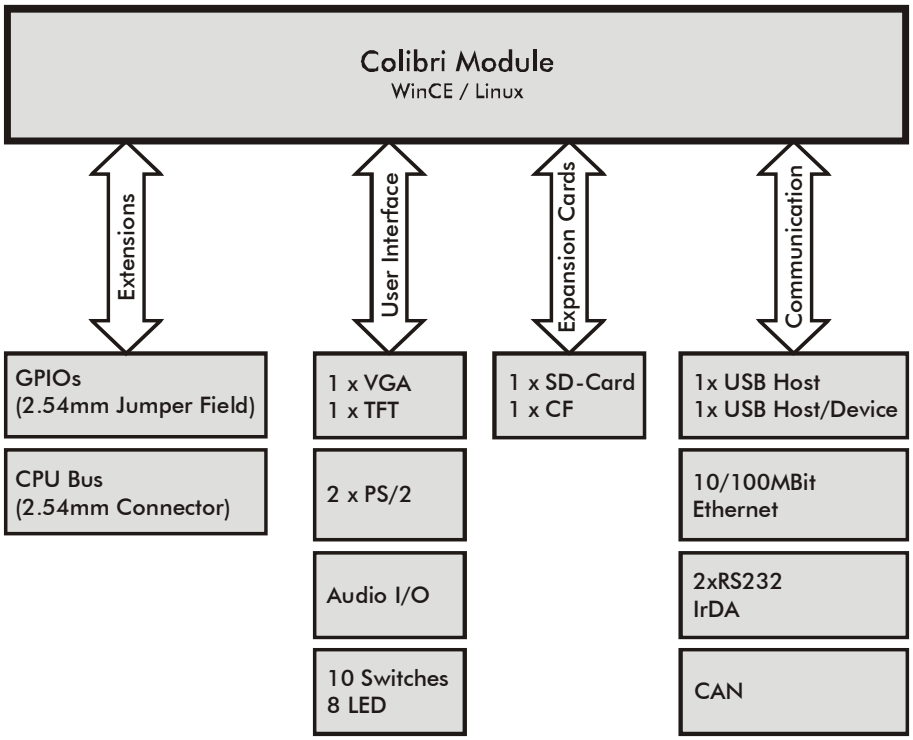

Fig. 1: Evaluation Board Block Diagram

1.1.1 User Interface

The Colibri Evaluation Board provides an analog VGA connector to attach a standard computer monitor.

LCDs can also be connected through the digital LCD port. Since there is no standard connector for LCD panels, users usually need to build their own connector interface which attaches to the generic display header provided by the Evaluation Board. But there is also a dedicated connector for the LG.Philips LB064V02-A1 TFT (6.4“, 640x480, 6 Bit) integrated on the board.

Keyboard and mouse can be attached through PS/2 connectors or the USB port.

Furthermore the Colibri EvalBoard provides switches, buttons and LEDs for simple user interaction.

Audio input and output is available on standard jacks.

1.1.2 Communication

The most commonly used communication functions are fully implemented on the Evaluation Board: 10/100Mb Ethernet, USB Host and Client, two RS232 channels, one IrDA serial port and a CAN interface. For all these communication channels the industry standard connectors are provided on-board.
The Camera Interface provides a easy way for interfacing CMOS and CCD sensors.

A CompactFlash and a SDCard/MMC socket can be used to add storage devices or additional functions to the system.

1.1.3 GPIO Usage Area

The GPIO Usage connectors build a patch panel that offers the flexibility to map the Colibri's GPIOs to the desired function.

This enables the user to

- change the factory set mapping of Colibri GPIOs to Evaluation Board functions.
- disconnect a Colibri GPIO from the standard function on the Evaluation Board, and instead connect it to an external extension hardware

1.1.4 CPU Bus

The entire 16-/32-Bit bus of the Colibri PXAxxx is buffered with 5V tolerant inputs and accessible through an extension connector. This offers the user the possibility to add custom hardware directly to the CPU bus. The extension connector also provides a supply on both the 3.3V and 5V rails.

1.1.5 Power Supply

The Evaluation Board has a wide input voltage range of 7-24V DC.

The on-board power supply is capable of providing the following supply rails.

5V / 5A (25W)
3.3V / 5A (16.5W)

The supply is protected against reverse input voltage polarity and short circuits, limiting the maximum current to about 5A . However the protection diode in the input voltage path is thermally not designed to carry that high current, especially at low input voltages. If your application dissipates more than 20W, please consider one of the following:

- Work with a high input voltage, close to 24V
- Add a heat-sink to the polarity protection diode
- Short the polarity protection diode with a wire (removes the reverse polarity protection!)

1.2. Reference Documents

1.2.1 Colibri

- Marvell PXAxxx based Single Board Computer Colibri Datasheet and Migration Guide: http://www.toradex.com

1.2.2 SJA1000 CAN Controller

- NXP SJA1000 Datasheet and Application Note AN97076: http://www.nxp.com

2. Installation

Follow these steps for a jump start with the EvalBoard:

1. If not already done, insert a Colibri Module in the SODIMM socket M2 on the EvalBoard
2. Plug in a VGA monitor on the corresponding connector X24, a keyboard and a mouse on the PS/2 interfaces X27
3. Connect an external power supply to the board by the X1 connector (7-24V, 3W min, depending on your peripherals)
4. Turn on the external power supply

5. Push down the power button S1 on the EvalBoard

Now the preinstalled operating system will boot.

For a detailed documentation of the software as well as for the newest bootloader and software images please refer to the Colibri Web site:
www.toradex.com

3. Evaluation Board Physical Drawings

3.1. Connector Locations

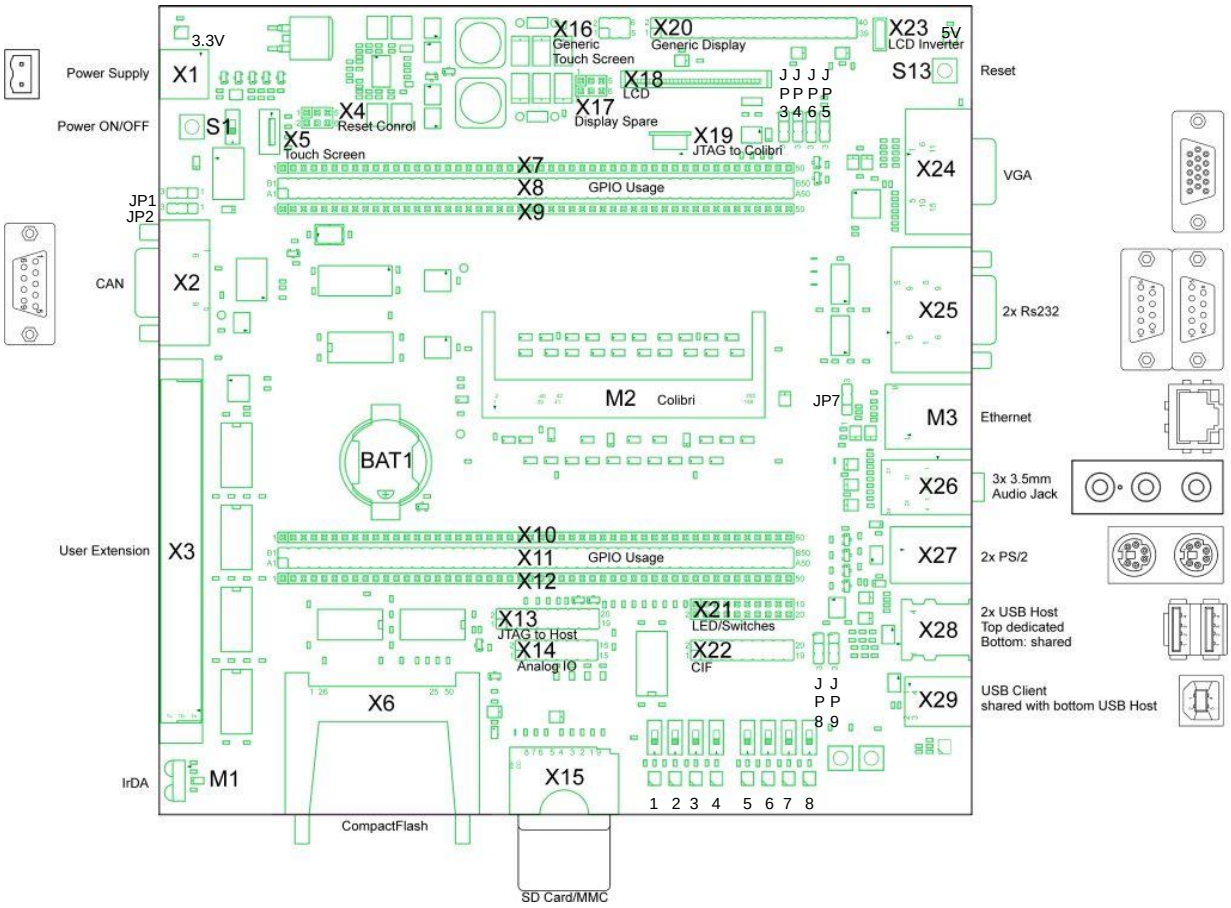

Fig. 2: Evaluation Board Layout: Top View

The following list details the connector and their functions:

Reference Designator	Name
X1	Power Supply
X2	CAN
X3	User Extension
X4	Reset Control
X5	Touch Screen
X6	CompactFlash
X7	Function Tap
X8	Jumper Array
X9	SODIMM Usage
X10	SODIMM Usage
X11	Jumper Array
X12	Function Tap
X13	JTAG to Host
X14	Analog IO
X15	SDCard/MMC
X16	Generic Touch Screen
X17	Display Spare
X18	LCD (LG.Philips LB064V02-A1)
X19	JTAG to Colibri
X20	Generic Display
X21	LED/Switches
X22	CIF
X23	LCD Inverter
X24	VGA
X25	2x RS232
X26	3x Audio Jack
X27	2x PS/2 stacked
X28	2x USB Host (bottom: shared)
X29	USB Client (shared)
M1	IrDA
M2	Colibri SODIMM
M3	Ethernet

List of the connectors

3.2. Mechanical Drawing

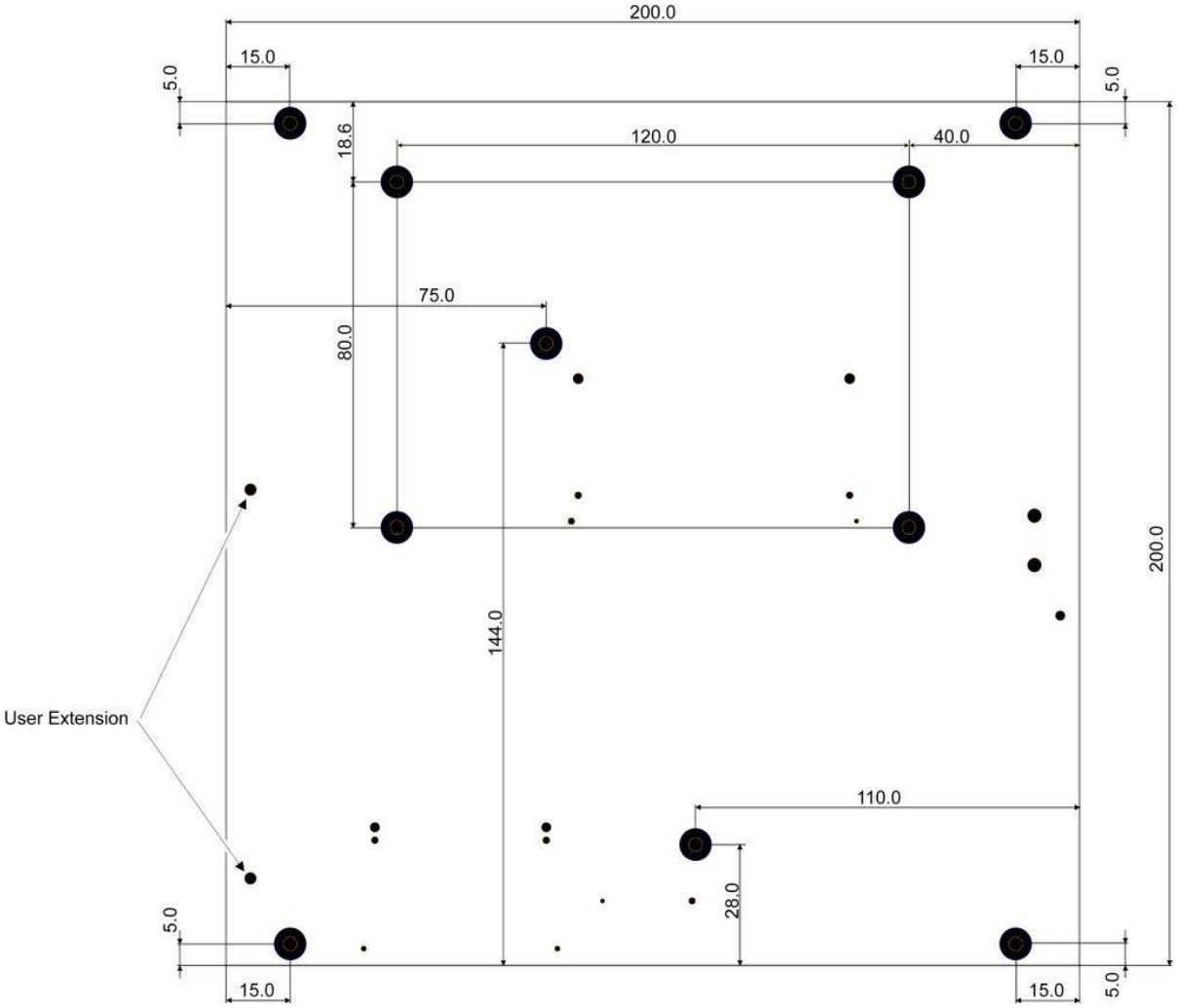

Fig. 3: Mounting Hole Positions

4. Evaluation Board Connectors

4.1. Colibri Module

4.1.1 Colibri Module (M2)

Type: SODIMM 200 Socket

Manufacturer tyco electronics-1473005-1

For the pinout of the Colibri modules please refer to the Colibri Datasheets and Migration Guide for which a link is listed in chapter 1.2.1.

Please note, that not all Colibri modules provide the same features (e.g.: the PXA300 does not have audio and touch-screen functionality).

4.2. Display

The connectors X23 and X18 are implemented to directly support the TFT LCD LB064V02-A1 manufactured by LG.Philips (6.4“, 640x480, 6 Bit).

Almost any TFT or STN display can be connected to the LCD port of the Colibri module by simply wiring the necessary signals from connectors X16 and X20 (which provide standard 2.54mm pitch) to the Display.
The generic display connector X20 provides four spare signals which are connected one-to-one to the Display Spare connector X17. Depending on the display utilized they may be used to implement an SPI channel to the LCD or functions like horizontal / vertical display mode switching.

Display parameters can be set by using WinCE utilities provided by Toradex. For details please refer to: http://www.toradex.com

4.2.1 LCD Inverter (X23)

Part number: Molex 53047-0510 FFC or AUK FH05D

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	BL_+5V	PWR	+5V	
2	BL_GND	PWR		
3	BL_ON	O	+3V3	100k to GND
4	BL_GND	PWR		
5	NC	Not connected		

4.2.2 LCD LG.Philips LB064V02-A1 (X18)

Part number: Molex 52030-3010 or AUK FPA30DZAL

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	GND	PWR		
2	LCD_+3V3	PWR		
3	LCD_+3V3	PWR		
4	GND	PWR		
5	L_PCLK	O	+3V3	
6	L_BIAS	O	+3V3	
7	L_FCLK	O	+3V3	
8	L_LCLK	O	+3V3	
9	GND	PWR	PWR	

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
10	LDD[12]	O	+3V3	
11	LDD[13]	O	+3V3	
12	LDD[14]	O	+3V3	
13	LDD[15]	O	+3V3	
14	LDD[16]	O	+3V3	
15	LDD[17]	O	+3V3	
16	GND	PWR		
17	LDD[6]	O	+3V3	
18	LDD[7]	O	+3V3	
19	LDD[8]	O	+3V3	
20	LDD[9]	O	+3V3	
21	LDD[10]	O	+3V3	
22	LDD[11]	O	+3V3	
23	GND	PWR		
24	LDD[0]	O	+3V3	
25	LDD[1]	O	+3V3	
26	LDD[2]	O	+3V3	
27	LDD[3]	O	+3V3	
28	LDD[4]	O	+3V3	
29	LDD[5]	O	+3V3	
30	GND	PWR		

4.2.3 Generic Display (X20)

Part number: JVE 21B22564-40S10B-01G

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	GND	PWR		
2	L_PCLK	OI	+3V3	
3	L_LCLK	O	+3V3	
4	L_FCLK	O	+3V3	
5	GND	PWR	PWR	
6	LDD[12]	O	+3V3	
7	LDD[13]	O	+3V3	
8	LDD[14]	O	+3V3	
9	LDD[15]	O	+3V3	
10	LDD[16]	O	+3V3	
11	LDD[17]	O	+3V3	
12	GND	PWR		
13	LDD[6]	O	+3V3	
14	LDD[7]	O	+3V3	
15	LDD[8]	O	+3V3	
16	LDD[9]	O	+3V3	
17	LDD[10]	O	+3V3	
18	LDD[11]	O	+3V3	

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
19	GND	PWR		
20	LDD[0]	O	+3V3	
21	LDD[1]	O	+3V3	
22	LDD[2]	O	+3V3	
23	LDD[3]	O	+3V3	
24	LDD[4]	O	+3V3	
25	LDD[5]	O	+3V3	
26	GND	PWR		
27	L_BIAS	I	+3V3	
28	+V_DISPLAY	PWR	JP4 selects +3V3 or +5V	
29	+V_DISPLAY	PWR	JP4 selects +3V3 or +5V	
30	R/L	O	JP6 selects +3V3 or GND	100k to +3V3
31	U/D	O	JP5 selects +3V3 or GND	100k to +3V3
32	GND	PWR		
33	DISP_SPARE1	IO		
34	DISP_SPARE2	IO		
35	DISP_SPARE3	IO		
36	DISP_SPARE4	IO		
37	BL_ON	O	+3V3	
38	BL_GND	PWR		
39	BL_+5V	PWR	+5V	
40	BL_GND	PWR		

4.2.4 Display Spare (X17)

Part number: JVE P8562-06S10-01G

Pin Nr.	Signal Name	IO Type	IO Type	Pullup/Pulldown
1	DISP_SPARE1	IO		DISP_SPARE1
2	DISP_SPARE2	IO		DISP_SPARE2
3	DISP_SPARE3	IO		DISP_SPARE3
4	DISP_SPARE4	IO		DISP_SPARE4
5	GND	PWR		
6	GND	PWR		

4.2.5 Touch-Screen (X5)

Part number: Molex 3951-3043/44 or AUK FPB04DZAR

Pin Nr.	Signal Name	IO Type	IO Type	Pullup/Pulldown
1	TSPX	O	+3V3	
2	TSPY	O	+3V3	
3	TSMX	O	+3V3	
4	TSMY	O	+3V3	

4.2.6 Generic Touch-Screen (X16)

Part number: JVE 21B22564-06S10B-01G

Pin Nr.	Signal Name	IO Type	IO Type	Pullup/Pulldown
1	GND	PWR		
2	TSMY	O	+3V3	
3	TSMX	O	+3V3	
4	TSPY	O	+3V3	
5	TSPX	O	+3V3	
6	GND	PWR		

4.2.7 VGA (X24)

Type: High Density DSUB15

Pin Nr.	Signal Name
1	VGA_RED
2	VGA_GREEN
3	VGA_BLUE
4	NC
5	VGA_AGND
6	VGA_AGND
7	VGA_AGND
8	VGA_AGND
9	VGA_AGND
10	VGA_AGND
11	NC
12	NC
13	L_LCLK
14	L_FCLK
15	NC

4.3. PS/2

4.3.1 2xPS/2 (X27)

Type: 2xPS/2 stacked

Pin Nr.	Signal Name
A1	5V_DDCSDA2
A2	NC
A3	GND
A5	VCC_PS2
A6	5V_DDCSCL2
A8	NC
B1	5V_DDCSDA1
B2	NC
B3	GND
B5	VCC_PS2
B6	5V_DDCSCL1
B8	NC

4.4. LEDs / Switches

The signals of these functions are soley mapped to the connector X21. There they can be hooked up to the GPIO Usage connectors or to additional custom specific hardware.

Please note that the buttons and switches are not debounced.

4.4.1 LED/Switches (X21)

Type: 2x10Pin Header Female, 2.54mm

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	SWITCH1	O	+3V3	100k to GND
2	LED1	I	+3V3	100k to GND
3	SWITCH2	O	+3V3	100k to GND
4	LED2	I	+3V3	100k to GND
5	SWITCH3	O	+3V3	100k to GND
6	LED3	I	+3V3	100k to GND
7	SWITCH5	O	+3V3	100k to GND
8	LED4	I	+3V3	100k to GND
9	SWITCH5	O	+3V3	100k to GND
10	LED5	I	+3V3	100k to GND
11	SWITCH6	O	+3V3	100k to GND
12	LED6	I	+3V3	100k to GND
13	SWITCH7	O	+3V3	100k to GND
14	LED7	I	+3V3	100k to GND
15	SWITCH8	O	+3V3	100k to GND
16	LED8	I	+3V3	100k to GND
17	BUTTON1	O		100k to GND
18	+3V3	PWR	+3V3	
19	BUTTON2	O		100k to GND
20	GND	PWR	+3V3	

4.5. Audio

The stacked connector offers standard jacks for active loudspeakers or headphones, for line-in and microphone input.

4.5.1 3xAudio Jack (X26)

Type: 3 x 3.5mm Jack stacked

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	NC	Not connected		
2	NC	Not connected		
3	MIC_IN	I	+3V3	
4	MIC_IN	I	+3V3	
5	AUDIO_AGND	PWR		
21	HEADPHONE_R	O	+3V3	
22	HEADPHONE_R	O	+3V3	
23	HEADPHONE_L	O	+3V3	
24	HEADPHONE_L	O	+3V3	
31	LINEIN_R	I	+3V3	
32	LINEIN_R	I	+3V3	
33	LINEIN_L	I	+3V3	
34	LINEIN_L	I	+3V3	

4.6. USB

The EvalBoard offers a dedicated USB Host as well as a shared USB Host / Client. The configuration of the shared USB channel is selected through the Jumpers setting JP8 and JP9:

JP8, 9	Active
1 - 2	USB Host
2 - 3	USB Client
1-2-3	Detection by Software

4.6.1 2xUSB Host (X28)

Type: 2 x USB-Host stacked

Pin Nr.	Signal Name
A1	USB_AVCC
A2	USBH1_NEXT
A3	USBH1_PEXT
A4	GND
B1	USB_AVCC
B2	USBH2_NEXT
B3	USBH2_PEXT
B4	GND

4.6.2 USB Client (X29)

Type: USB Client

Pin Nr.	Signal Name
1	EXT_USB_AVCC
2	USBC_NEXT
3	USBC_PEXT
4	GND

4.7. RS232

4.7.1 2xRS232 (X25)

Type: 2 x DSUB9 Male stacked

Pin Nr.	Signal Name
A1	UART_BT_U_DCD
A2	UART_BT_U_RXD
A3	UART_BT_U_TXD
A4	UART_BT_U_DTR
A5	GND
A6	UART_BT_U_DSR
A7	UART_BT_U_RTS
A8	UART_BT_U_CTS
A9	UART_BT_U_RI
B1	UART_FF_L_DCD
B2	UART FF_L_RXD
B3	UART_FF_LTXD
B4	UART_FF_L_DTR
B5	GND
B6	UART_FF_L_DSR
B7	UART_FF_L_RTS
B8	UART_FF_L_CTS
B9	UART_FF_L_RI

4.8. Ethernet

On the EvalBoard there is an RJ45 connector with integrated magnetic for 10/100Mb assembled. With Jumper JP7 different Ethernet controllers can be configured:

JP7	Active
1 - 2	DM9000E
2 - 3	DM9000A

4.8.1 Ethernet (M3)

Type: RJ-45

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	TXO+	O	+3V3	50R to ETH_AVCC
2	TX0-	O	+3V3	50R to ETH_AVCC
3	ETH_AVCC	PWR		
4	NC	Not connected		
5	NC	Not connected		
6	ETH_AGND	PWR		
7	RXI+	I	+3V3	
8	RXI-	I	+3V3	
9	+3V3	PWR		
10	LINK_AKT	I	+3V3	
11	SPEED100	I	+3V3	
12	+3V3	PWR		
13	SHIELD			
14	SHIELD			

4.9. CIF

The quick capture interface (CIF) on connector X22 is intended for applications requiring image capture capability from CMOS or CDD image sensors. The Colibri CIF supports a wide variety of operating modes, data widths, formats, and clocking schemes. For details please see the PXAxxx datasheet.

Please note that most of the signals available on the CIF connector X22 are configured as alternate functions when using the factory settings (e.g. jumper settings and the Toradex supplied WinCE image). Therefore the user is responsible to first remap these default functions to other pins (by changing the default jumper settings as well as modifying the driver configuration in Software).

Type: 2x10Pin Header Male, 2.54mm

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	+3V3	PWR		
2	+3V3	PWR		
3	CIF_MCLK / SODIMM[75]	IO	+3V3	
4	CIF_PCLK / SODIMM[96]	IO	+3V3	
5	CIF_LV / SODIMM[94]	IO	+3V3	
6	CIF_FV / SODIMM[81]	IO	+3V3	
7	CIF_DD0 / SODIMM[71]	IO	+3V3	
8	CIF_DD1 / SODIMM[98]	IO	+3V3	
9	CIF_DD2 / SODIMM[101]	IO	+3V3	
10	CIF_DD3 / SODIMM[103]	IO	+3V3	
11	CIF_DD4 / SODIMM[79]	IO	+3V3	
12	CIF_DD5 / SODIMM[97]	IO	+3V3	
13	CIF_DD6 / SODIMM[67]	IO	+3V3	
14	CIF_DD7 / SODIMM[59]	IO	+3V3	
15	I2C_CLK / SODIMM[196]	IO	+3V3	4k7 to +3V3
16	I2C_DATA / SODIMM[194]	IO	+3V3	4k7 to +3V3
17	CIF_DD8 / SODIMM[85]	IO	+3V3	
18	CIF_DD9 / SODIMM[65]	IO	+3V3	
19	GND	PWR		
20	GND	PWR		

4.10. CAN

In order to implement CAN the Colibri EvalBoard uses the Philips SAJ1000 controller. Its CAN port is electrically isolated from the system power supply.

The CAN connector provides an additional feature: the user can optionally connect the isolated power supply to connector pins in order to provide power to external CAN nodes.

JP1, 2.	Power on X2
1 - 2	No
2 - 3	Yes

4.10.1 CAN (X2)

Type: DSUB9 Male

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	NC	Not connected		
2	CAN_L	IO	+5V	
3	CAN_GND	PWR		
4	NC	Not connected		
5	NC	Not connected		
6	CAN_PGND	PWR		
7	CAN_H	IO	+5V	
8	NC	Not connected		
9	CAN_V+	PWR	+5V	

4.11. Card slots

The hardware supported card detect function is implemented, but not the write protect feature.

4.11.1 CompactFlash (X6)

Type: CF-Socket

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	GND	PWR		
2	CF_D[3]	IO	+3V3	
3	CF_D[4]	IO	+3V3	
4	CF_D[5]	IO	+3V3	
5	CF_D[6]	IO	+3V3	
6	CF_D[7]	IO	+3V3	
7	PCE1	O	+3V3	
8	CF_A[10]	O	+3V3	
9	POE	O	+3V3	
10	CF_A[9]	O	+3V3	
11	CF_A[8]	O	+3V3	
12	CF_A[7]	O	+3V3	
13	+3V3S	PWR		
14	CF_A[6]	O	+3V3	
15	CF_A[5]	O	+3V3	
16	CF_A[4]	O	+3V3	
17	CF_A[3]	O	+3V3	
18	CF_A[2]	O	+3V3	
19	CF_A[1]	O	+3V3	
20	CF_A[0]	O	+3V3	
21	CF_D[0]	IO	+3V3	
22	CF_D[1]	IO	+3V3	
23	CF_D[2]	IO	+3V3	
24	PIOIS16	I	+3V3	100k to +3V3
25	CD1	I	+3V3	100k to +3V3

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
26	CD2	I	+3V3	100k to +3V3
27	CF_D[11]	IO	+3V3	
28	DF_D[12]	IO	+3V3	
29	CF_D[13]	IO	+3V3	
30	CF_D[14]	IO	+3V3	
31	CF_D[15]	IO	+3V3	
32	PCE2	I	+3V3	
33	NC	Not connected		
34	PIOR	O	+3V3	
35	PIOW	O	+3V3	
36	CF_WE	O	+3V3	
37	PRDY	I	+3V3	100k to +3V3
38	+3V3S	PWR		
39	NC	Not connected		
40	NC	Not connected		
41	PRST	O	+3V3	
42	PWAIT	I	+3V3	100k to +3V3
43	NC	Not connected		
44	PREG	O	+3V3	
45	PBVD2	I	+3V3	100k to +3V3
46	PBVD1	I	+3V3	100k to +3V3
47	CF_D[8]	IO	+3V3	
48	CF_D[9]	IO	+3V3	
49	CF_D[10]	IO	+3V3	
50	GND	PWR		

4.11.2 SD Card / MMC (X15)

Type: SDIO-Socket

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	MMDAT[3]	IO	+3V3	68k to +3V3
2	MMCMD	I	+3V3	33k to +3V3
3	GND	PWR		
4	+3V3	PWR		
5	MMCLK	I	+3V3	
6	GND	PWR		
7	MMDAT[0]	IO	+3V3	68k to +3V3
8	MMDAT[1]	IO	+3V3	68k to +3V3
9	MMDAT[[2]	IO	+3V3	68k to +3V3

4.12. GPIO Usage

The GPIO Usage connectors offer the flexibility to map the GPIOs of the Colibri module to either the on-board function or to additional external hardware.

The factory setting is a straight through jumper setting, meaning that the X8-A row is connected straight to the X8-B row. The same setting is set up for the other connector X11.

In order to allow easy wiring other than the factory settings all these signals residing on a male header are available on a female connector in parallel.

To allocate the SODIMM with the referring GPIOs please refer to the Migration Guide for which a link is listed in chapter 1.2.1

4.12.1 GPIO 1 Male (X8 Row A)

Type: 2x50Pin Male, 2.54mm

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
A1	+3V3	PWR	+3V3	
A2	SODIMM[28]	IO	+3V3	
A3	SODIMM[30]	IO	+3V3	
A4	SODIMM[32]	IO	+3V3	
A5	SODIMM[34]	IO	+3V3	
A6	SODIMM[36]	IO	+3V3	
A7	SODIMM[38]	IO	+3V3	
A8	GND	PWR	+3V3	
A9	SODIMM[44]	IO	+3V3	
A10	SODIMM[46]	IO	+3V3	
A11	SODIMM[48]	IO	+3V3	
A12	SODIMM[50]	IO	+3V3	
A13	SODIMM[52]	IO	+3V3	
A14	SODIMM[54]	IO	+3V3	
A15	+3V3	PWR	+3V3	
A16	SODIMM[56]	IO	+3V3	
A17	SODIMM[58]	IO	+3V3	
A18	SODIMM[60]	IO	+3V3	
A19	SODIMM[62]	IO	+3V3	
A20	SODIMM[64]	IO	+3V3	
A21	SODIMM[66]	IO	+3V3	
A22	GND	PWR	+3V3	
A23	SODIMM[68]	IO	+3V3	
A24	SODIMM[70]	IO	+3V3	
A25	SODIMM[72]	IO	+3V3	
A26	SODIMM[74]	IO	+3V3	
A27	SODIMM[76]	IO	+3V3	
A28	SODIMM[78]	IO	+3V3	
A29	+3V3	PWR	+3V3	
A30	SODIMM[80]	IO	+3V3	
A31	SODIMM[82]	IO	+3V3	
A32	SODIMM[86]	IO	+3V3	
A33	SODIMM[88]	IO	+3V3	
A34	SODIMM[90]	IO	+3V3	
A35	SODIMM[92]	IO	+3V3	
A36	GND	PWR	+3V3	
A37	SODIMM[94]	IO	+3V3	

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
A38	SODIMM[96]	IO	+3V3	
A39	SODIMM[98]	IO	+3V3	
A40	SODIMM[100]	IO	+3V3	
A41	SODIMM[102]	IO	+3V3	
A42	SODIMM[104]	IO	+3V3	
A43	+3V3	PWR	+3V3	
A44	SODIMM[106]	IO	+3V3	
A45	SODIMM[190]	IO	+3V3	
A46	SODIMM[192]	IO	+3V3	
A47	SODIMM[194]	IO	+3V3	
A48	SODIMM[196]	IO	+3V3	
A49	GND	PWR	+3V3	
A50	GND	PWR	+3V3	

4.12.2 GPIO 1 Female (X9)

Type: 1x50Pin Female, 2.54mm

Pinout identical to X8 Pins A1 to A50

4.12.3 Function 1 Male (X8 Row B)

Type: 2x50Pin Male, 2.54mm

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
B1	+3V3	PWR		
B2	PWM[2]	O	+3V3	RC-filter (3.3ms)
B3	PWM[0]	O	+3V3	RC-filter (3.3ms)
B4	BT_CTS	I	+3V3	
B5	BT_RTS	O	+3V3	
B6	BT_RXD	I	+3V3	
B7	BT_TXD	O	+3V3	
B8	GND	PWR		
B9	L_BIAS	O	+3V3	
B10	LDD[7]	O	+3V3	
B11	LDD[9]	O	+3V3	
B12	LDD[11]	O	+3V3	
B13	LDD[12]	O	+3V3	
B14	LDD[13]	O	OLV	
B15	+3V3	PWR		
B16	L_PCLK	O	+3V3	
B17	LDD[3]	O	+3V3	
B18	LDD[2]	O	+3V3	
B19	LDD[8]	O	+3V3	
B20	LDD[15]	O	+3V3	
B21	LDD[14]	O	+3V3	
B22	GND	PWR		

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
B23	L-LCLK	O	+3V3	
B24	LDD[1]	O	+3V3	
B25	LDD[5]	O	+3V3	
B26	LDD[10]	O	+3V3	
B27	LDD[0]	O	+3V3	
B28	LDD[4]	O	+3V3	
B29	+3V3	PWR		
B30	LDD[6]	O	+3V3	
B31	L_FCLK	O	+3V3	
B32	SSPFRM	IO	+3V3	
B33	SSPCLK	IO	+3V3	
B34	SSPRXD	I	+3V3	
B35	SSPTXD	O	+3V3	
B36	GND	PWR		
B37	PCE1	O	+3V3	
B38	PCE2	O	+3V3	
B39	PREG	O	+3V3	
B40	PSKTSEL	I	+3V3	100k to +3V3
B41	PWAIT	I	+3V3	100k to +3V3
B42	PIOIS16	I	+3V3	100k to +3V3
B43	+3V3	PWR		
B44	nEXT_CS[2]	O	+3V3	100k to +3V3
B45	MMCMD	IO	+3V3	33k to +3V3
B46	MMDAT[0]	IO	+3V3	68k to +3V3
B47	I2C_DATA	IO	+3V3	4k7 to +3V3
B48	I2C_CLK	IO	+3V3	4k7 to +3V3
B49	GND	PWR		
B50	GND	PWR		

4.12.4 Function 1 Female (X7)

Type: 1x50Pin Female, 2.54mm

Pinout identical to X8 Pins B1 to B50

4.12.5 Function 2 Male (X11 Row A)

Type: 2x50Pin Male

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
A1	+3V3	PWR		
A2	STD_RXD	I	+3V3	
A3	STD_TXD	O	+3V3	
A4	FF_DTR	O	+3V3	
A5	FF_CTS	I	+3V3	
A6	FF_RTS	O	+3V3	
A7	FF_DSR	I	+3V3	
A8	GND	PWR		
A9	FF_DCD	I	+3V3	
A10	FF_RXD	I	+3V3	
A11	FF_TXD	O	+3V3	
A12	FF_RI	I	+3V3	
A13	MMCD	I	+3V3	10k to +3V3
A14	PRDY	I	+3V3	100k to +3V3
A15	+3V3	PWR		
A16	MMCLK	O	+3V3	
A17	MMDAT[1]	IO	+3V3	68k to +3V3
A18	MMDAT[2]	IO	+3V3	68k to +3V3
A19	MMDAT[3]	IO	+3V3	68k to +3V3
A20	SDA1	IO	+3V3	4k7 to +3V3p
A21	LDD[16]	O	+3V3	
A22	GND	PWR		
A23	PWM[3]	O	+3V3	RC-filter (3.3ms)
A24	LDD[17]	O	+3V3	
A25	SCL1	IO	+3V3	4k7 to +3V3
A26	SDA2	IO	+3V3	4k7 to +3V3
A27	PWM[1]	O	+3V3	RC-filter (3.3ms)
A28	SCL2	IO	+3V3	4k7 to +3V3
A29	+3V3	PWR		
A30	BL_ON	O	+3V3	100k to GND
A31	CAN_INT	IO	+3V3	4k7 to +3V3
A32	PRST	O	+3V3	
A33	PBVD2	I	+3V3	100k to +3V3
A34	PBVD1	I	+3V3	100k to +3V3
A35	PCD	I	+3V3	
A36	GND	PWR		
A37	nPPEN	O	+3V3	2k2 to +3V3
A38	POE	O	+3V3	
A39	PIOW	O	+3V3	
A40	PIOR	O	+3V3	
A41	nCAN_CS	O	+3V3	100k to +3V3

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
A42	nEXT_CS[1]	O	+3V3	100k to +3V3
A43	nEXT_CS[0]	O	+3V3	100k to +3V3
A44	EXT_IO[2]	IO	+3V3	
A45	USBH_PEN	O	+3V3	100k to +3V3
A46	USBH_OC	I	+3V3	100k to +3V3
A47	EXT_IO[1]	IO	+3V3	
A48	EXT_IO[0]	IO	+3V3	
A49	USBC_DET	I	+3V3	320k to GND
A50	GND	PWR		

4.12.6 Function 2 Female (X12)

Type: 1x50Pin Female, 2.54mm

Pinout identical to X11 Pins A1 to A50

4.12.7 GPIO 2 Male (X11 Row B)

Type: 2x50Pin Male, 2.54mm

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
B1	+3V3	PWR		
B2	SODIMM[19]	IO	+3V3	
B3	SODIMM[21]	IO	+3V3	
B4	SODIMM[23]	IO	+3V3	
B5	SODIMM[25]	IO	+3V3	
B6	SODIMM[27]	IO	+3V3	
B7	SODIMM[29]	IO	+3V3	
B8	GND	PWR		
B9	SODIMM[31]	IO	+3V3	
B10	SODIMM[33]	IO	+3V3	
B11	SODIMM[35]	IO	+3V3	
B12	SODIMM[37]	IO	+3V3	
B13	SODIMM[43]	IO	+3V3	
B14	SODIMM[45]	IO	+3V3	
B15	+3V3	PWR		
B16	SODIMM[47]	IO	+3V3	
B17	SODIMM[49]	IO	+3V3	
B18	SODIMM[51]	IO	+3V3	
B19	SODIMM[53]	IO	+3V3	
B20	SODIMM[55]	IO	+3V3	
B21	SODIMM[57]	IO	+3V3	
B22	GND	PWR		
B23	SODIMM[59]	IO	+3V3	
B24	SODIMM[61]	IO	+3V3	
B25	SODIMM[63]	IO	+3V3	
B26	SODIMM[65]	IO	+3V3	

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
B27	SODIMM[67]	IO	+3V3	
B28	SODIMM[69]	IO	+3V3	
B29	+3V3	PWR		
B30	SODIMM[71]	IO	+3V3	
B31	SODIMM[73]	IO	+3V3	
B32	SODIMM[75]	IO	+3V3	
B33	SODIMM[77]	IO	+3V3	
B34	SODIMM[79]	IO	+3V3	
B35	SODIMM[81]	IO	+3V3	
B36	GND	PWR		
B37	SODIMM[85]	IO	+3V3	
B38	SODIMM[97]	IO	+3V3	
B39	SODIMM[101]	IO	+3V3	
B40	SODIMM[103]	IO	+3V3	
B41	SODIMM[105]	IO	+3V3	
B42	SODIMM[107]	IO	+3V3	
B43	+3V3	PWR		
B44	SODIMM[127]	IO	+3V3	
B45	SODIMM[129]	IO	+3V3	
B46	SODIMM[131]	IO	+3V3	
B47	SODIMM[133]	IO	+3V3	
B48	SODIMM[135]	IO	+3V3	
B49	SODIMM[137]	IO	+3V3	
B50	GND	PWR		

4.12.8 GPIO 2 Female (X10)

Type: 1x50Pin Female, 2.54mm

Pinout identical to X11 Pins B1 to B50

4.13. User Extension

The User extension connector provides the buffered CPU bus (5V tolerant) and a power supply for additional external Hardware.

4.13.1 User Extension (X3)

Type: DIN41612 96Pin Female

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
A1	B_D[0]	IO	+3V3	
A2	B_D[3]	IO	+3V3	
A3	B_D[5]	IO	+3V3	
A4	B_D[8]	IO	+3V3	
A5	B_D[11]	IO	+3V3	
A6	B_D[13]	IO	+3V3	
A7	B_D[16]	IO	+3V3	
A8	B_D[19]	IO	+3V3	

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
A9	B_D[21]	IO	+3V3	
A10	B_D[24]	IO	+3V3	
A11	B_D[27]	IO	+3V3	
A12	B_D[29]	IO	+3V3	
A13	+3V3	PWR	+3V3	
A14	B_A[0]	O	+3V3	
A15	B_A[3]	O	+3V3	
A16	B_A[6]	O	+3V3	
A17	B_A[8]	O	+3V3	
A18	B_A[11]	O	+3V3	
A19	B_A[14]	O	+3V3	
A20	B_A[16]	O	+3V3	
A21	B_A[19]	O	+3V3	
A22	B_A[22]	O	+3V3	
A23	B_A[24]	O	+3V3	
A24	B_DQM1	O	+3V3	
A25	+5V	PWR	+5V	
A26	B_nWE	I	+3V3	
A27	nEXT_CS[0]	I	+3V3	100k to +3V3
A28	RDnWR	I	+3V3	
A29	I2C_DATA	IO	+3V3	4k7 to +3V3
A30	SSPFRM	IO	+3V3	
A31	nPWE	I	+3V3	
A32	EXT_IO[1]	I	+3V3	
B1	B_D[1]	IO	+3V3	
B2	GND	PWR		
B3	B_D[6]	IO	+3V3	
B4	B_D[9]	IO	+3V3	
B5	+3V3	PWR		
B6	B_D[14]	IO	+3V3	
B7	B_D[17]	IO	+3V3	
B8	+3V3	PWR		
B9	B_D[22]	IO	+3V3	
B10	B_D[25]	IO	+3V3	
B11	+3V3	PWR		
B12	B_D[30]	IO	+3V3	
B13	GND	PWR		
B14	B_A[1]	O	+3V3	
B15	B_A[4]	O	+3V3	
B16	GND	PWR		
B17	B_A[9]	O	+3V3	
B18	B_A[12	O	+3V3	
B19	+5V	PWR		

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
B20	B_A[17]	O	+3V3	
B21	B_A[20]	O	+3V3	
B22	GND	PWR		
B23	B_A[25]	O	+3V3	
B24	B_DQM2	O	+3V3	
B25	GND	PWR		
B26	nEXT_CS[1]	IO	+3V3	100k to +3V3
B27	GND	PWR		
B28	RDY	IO	+3V3	
B29	+5V	PWR		
B30	SSPTXD	O	+3V3	
B31	GND	PWR		
B32	nRESET_OUT	O	+3V3	
C1	B_D[2	IO	+3V3	
C2	B_D[4]	IO	+3V3	
C3	B_D[7]	IO	+3V3	
C4	B_D[10]	IO	+3V3	
C5	B_D[12]	IO	+3V3	
C6	B_D[15]	IO	+3V3	
C7	B_D[18]	IO	+3V3	
C8	B_D[20]	IO	+3V3	
C9	B_D[23]	IO	+3V3	
C10	B_D[26]	IO	+3V3	
C11	B_D[28]	IO	+3V3	
C12	B_D[31]	IO	+3V3	
C13	+3V3	PWR		
C14	B_A[2]	O	+3V3	
C15	B_A[5]	O	+3V3	
C16	B_A[7]	O	+3V3	
C17	B_A[10]	O	+3V3	
C18	B_A[13]	O	+3V3	
C19	B_A[15]	O	+3V3	
C20	B_A[18]	O	+3V3	
C21	B_A[21]	O	+3V3	
C22	B_A[23]	O	+3V3	
C23	B_DQM0	O	+3V3	
C24	B_DQM3	O	+3V3	
C25	+5V	PWR		
C26	B_nOE	O	+3V3	
C27	nEXT_CS[2]	IO	+3V3	100k to +3V3
C28	I2C_CLK	IO	+3V3	4k7 to +3V3
C29	SSPCLK	IO	+3V3	
C30	SSPRXD	I	+3V3	

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
C31	EXT_IO[0]	IO	+3V3	
C32	EXT_IO[2]	IO	+3V3	

4.14. Analog IO

The analog outputs are implemented as pulse width modulate signals feeding a discrete RC filters with a time constant of 3.3ms.

The analog inputs are directly connected to the GPIO Usage area.

4.14.1 Analog IO (X14)

Type: 2x8Pin Header Male, 2.54mm

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	ANALOG_IN[0]	I	+3V3	
2	AUDIO_AGND	PWR		
3	ANALOG_IN[1]	I	+3V3	
4	AUDIO_AGND	PWR		
5	ANALOG_IN[2]	I	+3V3	
6	AUDIO_AGND	PWR		
7	ANALOG_IN[3]	I	+3V3	
8	AUDIO_AGND	PWR		
9	ANALOG_OUT[0]	O	+3V3	RC-filter (3.3ms)
10	GND	PWR		
11	ANALOG_OUT[1]	O	+3V3	RC-filter (3.3ms)
12	GND	PWR		
13	ANALOG_OUT[2]	O	+3V3	RC-filter (3.3ms)
14	GND	PWR		
15	ANALOG_OUT[3]	O	+3V3	RC-filter (3.3ms)
16	GND	PWR		

4.15. Reset

The Reset connector X4 provides the Reset and Power Button control signals to be accessed by external logic.

Type: 2 x 3Pin Header Male, 2.54mm

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	PWRBTN1	IO	+Vin	PU to Vin
2	PWRBTN1	IO	+Vin	PU to Vin
3	GND	PWR		
4	GND	PWR		
5	FORCE_OFF	I	20V max	100k auf GND
6	ResetN	IO	+3V3	Pu to +3V3

4.16. JTAG

The EvalBoard provides a buffering function of the JTAG signals running from the development platform to the Colibri Module. Connector X19 is used to interface with a flexible flat cable to the identical Colibri JTAG connector, X13 interfaces to the development platform.

4.16.1 JTAG to Colibri (X19)

While inserting the Colibri module into the EvalBoard please pay attention how you connect the 8 pin FCC cable which is used for the JTAG connection between the EvalBoard and the Colibri:

First plug in FCC cable into connector X2 of Colibri module (so the blue colored supporting tape of the FCC cable is opposite to the Colibri PCB), second plug the Colibri module into the Evalboard, and finally plug the FCC cable into connector X19 of EvalBoard (the blue colored supporting tape of the FCC cable is facing towards the Evalboard PCB).
When you are done the FCC cable is twisted by 180° when plugged in on both sides.

Part number: Molex 52745-0896

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	+3V3	PWR		-
2	GND	PWR		-
3	BUFJTAG_TMS	O	+3V3	-
4	BUFJTAG_nTRST	O	+3V3	-
5	BUFJTAG_TCK	O	+3V3	-
6	BUFFJTAG_TDO	I	+3V3	-
7	BUFFJTAG_TDI	O	+3V3	-
8	JTAG_RSTOUT#	O	+3V3	-

4.16.2 JTAG to Host (X13)

Type: 2x10Pin Header Male, 2.54mm

Pin Nr.	Signal Name	IO Type	Voltage	Pullup/Pulldown
1	+3V3	PWR		
2	+3V3	PWR		
3	JTAG_nTRST	I	+3V3	100k to GND
4	GND	PWR		
5	JTAG_TDI	I	+3V3	100k to GND
6	GND	PWR		
7	JTAG_TMS	I	+3V3	100k to GND
8	GND	PWR		
9	JTAG_TCK	I	+3V3	100k to GND
10	GND	PWR		
11	NC	Not connected		
12	GND	PWR		
13	BUFJTAG_TDO	I	+3V3	
14	GND	PWR		
15	JTAG_SYSRESET#	I	+3V3	
16	GND	PWR		
17	NC	Not connected		
18	GND	PWR		
19	NC	Not connected		
20	GND	PWR		

5. Default signal mapping

The table below lists the default mapping (factory setting). Every row of the table shows the mapping of a Colibri pin to the function or connector on the Evaluation Board.

Legend:

Signal name:	GPIO number on the Colibri module
X8 Row A, X11 Row B	Pin number on the patch panel connector X7/X16, Colibri side (one end of the jumper)
X8 Row B, X11 Row A	Pin number on the patch panel connector X7/X16, Evaluation Board side (the other end of the jumper)
External Connector	if the signal is available on an external connector the Connector's pin number is listed here
Conn. Type	lists, if a signal is level shifted between the patch panel connector X8/X11 and the external connector
Internal Function	if a signal is not directly accessible on an external connector, but is used to control an on-board function, the function is listed here. For any details please refer to the schematics of the Evaluation Board.
Function	Description of the signal

5.1. GPIO 1 mapping

Colibri Side of the Patch Panel			Evaluation Board Side of the Patch Panel			
Signal Name	X8 Row A	X8 Row B	Conn. Type	Internal function	External Connector	Function
SODIMM[28]	2	2		Analog I/O		Analog Out2
SODIMM[30]	3	3		Analog I/O		Analog Out0
SODIMM[32]	4	4	Level shifted		X25-A8	UART_BT_CTS
SODIMM[34]	5	5	Level shifted		X25-A7	UART_BT_RTS
SODIMM[36]	6	6	Level shifted		X25-A2	UART_BT_RXD
SODIMM[38]	7	7	Level shifted		X25-A3	UART_BT_TXD
SODIMM[44]	9	9		VGA	X18-6	L_BIAS
SODIMM[46]	10	10		VGA	X18-18	LCD_Green3 / LDD[7]
SODIMM[48]	11	11		VGA	X18-20	LCD_Green5 / LDD[9]
SODIMM[50]	12	12		VGA	X18-22	LCD_Green7 / /LDD[11]
SODIMM[52]	13	13		VGA	X18-10	LCD_Red2 / LDD[12]
SODIMM[54]	14	14		VGA	X18-11	LCD_Red3 / LDD[13]
SODIMM[56]	16	16		VGA	X18-5	LCD_L_PCLK
SODIMM[58]	17	17		VGA	X18-27	LCD_Blue5 / LDD[3]
SODIMM[60]	18	18		VGA	X18-26	LCD_Blue4 / LDD[2]
SODIMM[62]	19	19		VGA	X18-19	LCD_Green4 / LDD[8]
SODIMM[64]	20	20		VGA	X18-13	LCD_Red5 / LDD[15]
SODIMM[66]	21	21		VGA	X18-12	LCD_Red4 / LDD[14]
SODIMM[68]	23	23		VGA	X18-8	LCD_L-LCLK
SODIMM[70]	24	24		VGA	X18-25	LCD_Blue3 / LDD[1]
SODIMM[72]	25	25		VGA	X18-29	LCD_Blue7 / LDD[5]

Colibri Side of the Patch Panel			Evaluation Board Side of the Patch Panel		
SODIMM[74]	26	26	VGA	X18-21	LCD_Green6 / LDD[10]
SODIMM[76]	27	27	VGA	X18-24	LCD_Blue2 / LDD[0]
SODIMM[78]	28	28	VGA	X18-28	LCD_Blue6 / LDD[4]
SODIMM[80]	30	30	VGA	X18-17	LCD_Green2 / LDD[6]
SODIMM[82]	31	31	VGA	X18-7	LCD_L_FCLK
SODIMM[86]	32	32		X3-A30	SSPFRM
SODIMM[88]	33	33		X3-C29	SSPCLK
SODIMM[90]	34	34		X3-C30	SSPRXD
SODIMM[92]	35	35		X3-B30	SSPTXD
SODIMM[94]	37	37		X6-7	CF_PCE1
SODIMM[96]	38	38		X6-32	CF_PCE2
SODIMM[98]	39	39		X6-44	CF_PREG
SODIMM[100]	40	40	CF		CF_PSKTSEL
SODIMM[102]	41	41		X6-42	CF_PWAIT
SODIMM[104]	42	42		X6-24	CF_PIOIS16
SODIMM[106]	44	44		X3-C27	External Chip Select 2
SODIMM[190]	45	45		X15-2	MMCMD
SODIMM[192]	46	46		X15-7	MMDAT[0]
SODIMM[194]	47	47		X3-A29	I2C_Data
SODIMM[196]	48	48		X3-C28	I2C_Clock

5.2. GPIO 2 mapping

Colibri Side of the Patch Panel				Evaluation Board Side of the Patch Panel		
Signal Name	X11 Row B	X11 Row A	Conn. Type	Internal function	External Connector	Function
SODIMM[19]	2	2			M1-4	IrDA-RXD
SODIMM[21]	3	3			M1-3	IrDA-TXD
SODIMM[23]	4	4	Level shifted		X25-B4	UART_FF_DTR
SODIMM[25]	5	5	Level shifted		X25-B8	UART_FF_CTS
SODIMM[27]	6	6	Level shifted		X25-B7	UART_FF_RTS
SODIMM[29]	7	7	Level shifted		X25-B6	UART_FF_DSR
SODIMM[31]	9	9	Level shifted		X25-B1	UART_FF_DCD
SODIMM[33]	10	10	Level shifted		X25-B2	UART_FF_RXD
SODIMM[35]	11	11	Level shifted		X25-B3	UART_FF_TXD
SODIMM[37]	12	12	Level shifted		X25-B9	UART_FF_RI
SODIMM[43]	13	13			X15-10	SDIO-Card Detect
SODIMM[45]	14	14			X6-37	CF_Ready
SODIMM[47]	16	16			X15-5	SDIO-Clock
SODIMM[49]	17	17			X15-8	SDIO-DAT[1]
SODIMM[51]	18	18			X15-9	SDIO-DAT[2]
SODIMM[53]	19	19			X15-1	SDIO-DAT[3]
SODIMM[55]	20	20	Level shifted		X27-B1	PS2Top-Data

Colibri Side of the Patch Panel				Evaluation Board Side of the Patch Panel		
SODIMM[57]	21	21		VGA	X18-14	LCD_Red6 / LDD[16]
SODIMM[59]	23	23		Analog I/O		Analog Out3
SODIMM[61]	24	24		VGA	X18-15	LCD_Red7 / LDD[17]
SODIMM[63]	25	25	Level shifted		X27-B6	PS2Top-Clock
SODIMM[65]	26	26	Level shifted		X27-A1	PS2Bottom-Data
SODIMM[67]	27	27		Analog I/O		Analog Out 1
SODIMM[69]	28	28	Level shifted		X27-A6	PS2Bottom-Clock
SODIMM[71]	30	30			X23-3	LCD Backlight On
SODIMM[73]	31	31		CAN		CAN_Interrupt
SODIMM[75]	32	32			X6-41	CF_Reset
SODIMM[77]	33	33			X6-45	CF Battery Voltage Detect 2
SODIMM[79]	34	34			X6-46	CF Battery Voltage Detect 1
SODIMM[81]	35	35		CF		CF-Card Detect
SODIMM[85]	37	37		CF		CF_Power Enable
SODIMM[97]	38	38			X6-9	CF Output enable
SODIMM[101]	39	39			X6-35	CF IO Write Strobe
SODIMM[103]	40	40			X6-34	CF IO Read Strobe
SODIMM[105]	41	41		CAN		CAN_Chip Select
SODIMM[107]	42	42			X3-B26	External Chip Select 1
+3V3	43	43			X3-A27	External Chip Select 0(*)
SODIMM[127]	44	44			X3-C32	External IO 2
SODIMM[129]	45	45		USB Host		USB Host Power Enable
SODIMM[131]	46	46		USB Host		USB Host Overcurrent Control
SODIMM[133]	47	47			X3-A32	External IO 1
SODIMM[135]	48	48			X3-C31	External IO 0
SODIMM[137]	49	49	Level shifted		X29-1	USB Client Detect

(*)Please note that if X11 pin 43 is jumpered then pin X3-A27 on the extension connector is not available as the external chip select function, but just static high insted. For details, please refer to the schematics.

Disclaimer: