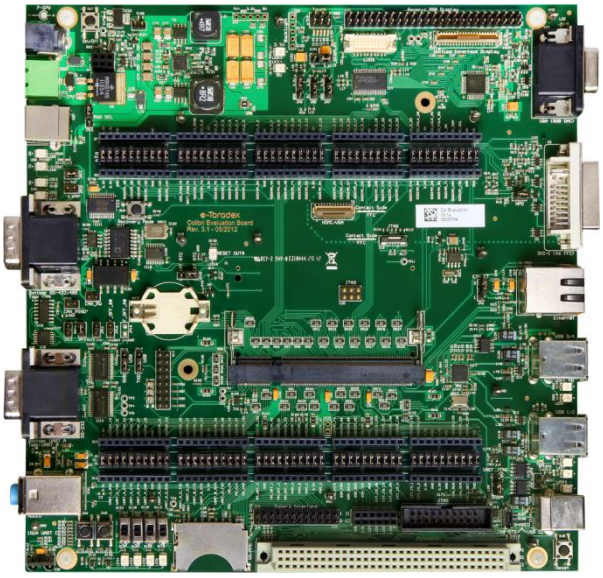
Toradex
Swiss. Embedded. Computing.

Colibri Evaluation Board

Datasheet



Revision History

Date	Doc. Rev.	Board Version	Changes
08-Oct-15	Rev. 1.0	V3.2	Initial Release: Datasheet has been updated to new format. Please note: FF UART has been renamed to UART-A, BT UART to UART-B and STD UART to UART-C.
05-Nov-15	Rev. 1.1	V3.2	Section 3.10.1 RTC Jumper (JP23), Minor correction.
20-June-16	Rev. 1.2	V3.2	Section 2.2. Hardware Architecture Block Diagram: Updated block diagram (fig. 1).
04-Aug-16	Rev. 1.3	V3.2	Section 2.2. Hardware Architecture Block Diagram: Updated block diagram (fig. 1).
30-Sept-16	Rev. 1.4	V3.2	Section 2.2. Hardware Architecture Block Diagram: Updated block diagram (fig. 1).
18-Jan-17	Rev. 1.5	V3.2	Section 3.2.2. Barrel Power Supply Connector (X35): Corrected input voltage range.
03-Feb-17	Rev. 1.6	V3.2	Section 1.1. Reference Documents: Updated web-links. Section 3.7.8. Unified TFT Interface (X34): Updated web-links. Section 3.9.1.4.2. CAN TX/RX (X38): Updated web-link. Section 6. Design data: Updated web-link.

Contents

1 Introduction

The Colibri Evaluation Board is designed to be a flexible development environment to explore the functionality and performance of the Colibri product family, and includes support for the additional/enhanced functionality on the latest Colibri module.

1.1 Reference Documents

For detailed technical information about suitable computer modules, please refer to the documents listed below.

1.1.1 Colibri Computer Modules

An overview of the Colibri product family:

https://www.toradex.com/computer-on-modules/colibri-arm-family

1.1.2 Colibri modules migration and compatibility guide

http://docs.toradex.com/100188-colibri-migration-and-design-guide.pdf

http://docs.toradex.com/102216-colibri-compatibility-guide.xlsx

1.1.3 Pushbutton On/Off controller

http://www.linear.com/product/LTC2954

1.1.4 USB Hub

http://www.microchip.com/wwwproducts/en/USB2514B

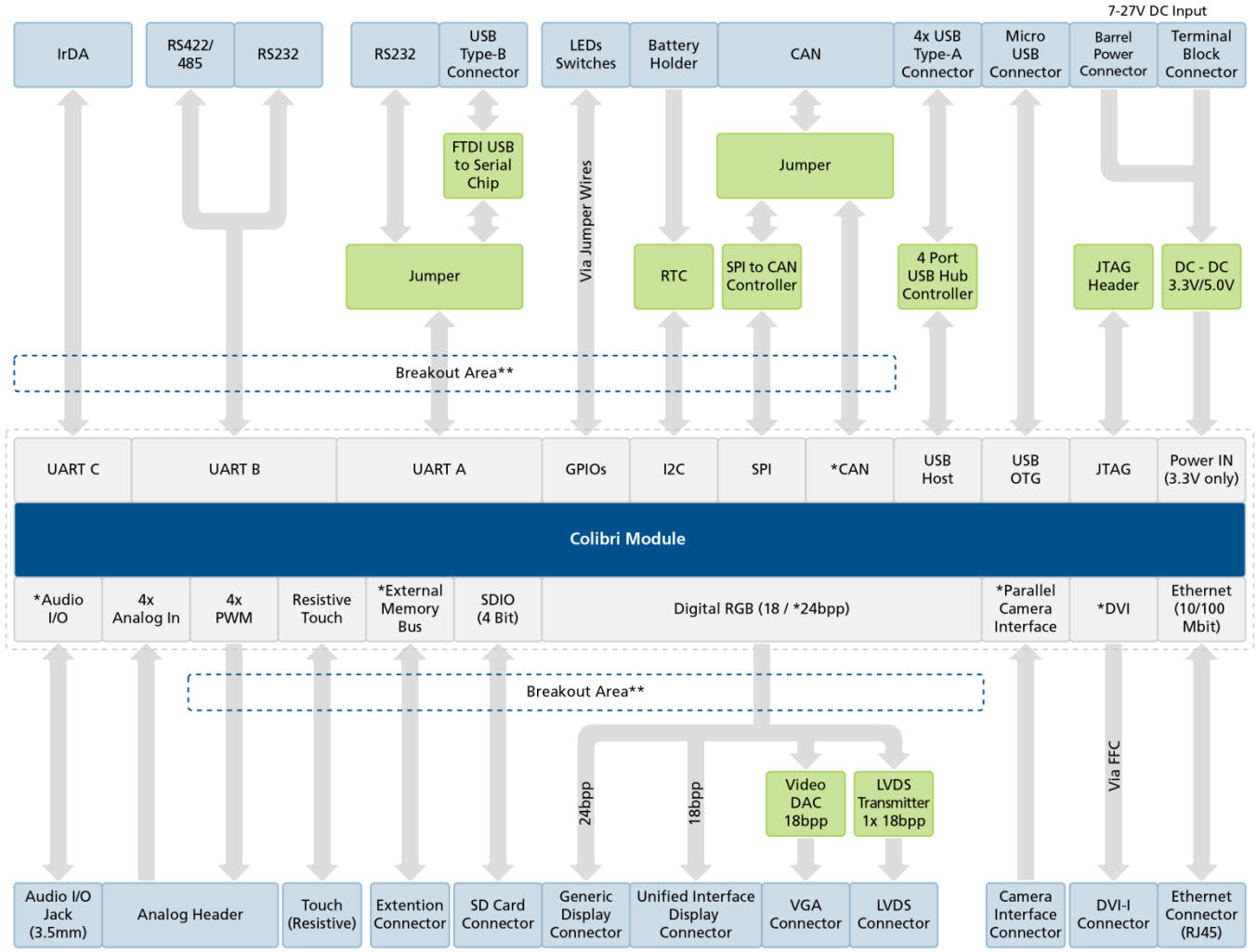
2 Features

2.1 Overview

The Colibri Evaluation Board provides the following features and communication interfaces:

- 4x USB 2.0 port through on board USB Hub
- USB 2.0 OTG Micro-AB connectors for host and host/client
- USB Client Type B port (shared with the OTG)
- USB Type B port (optionally connected to UART-A via USB to serial converter)
- RJ45 Ethernet (10/100 Mbit)
- SD/MMC 4 bit
- Digital (TDMS) and Analog (VGA) interfaces on a single DVI-I connector
- Analog VGA interface on a 15 way D-type connector
- Single channel LVDS interface (up to 24 bit colour)
- Digital RGB interface (up to 24 bit colour)
- Unified TFT Interface with built in resistive touch for direct LCD panel connection
- Audio I/O on 3.5mm stereo jacks
- 2x RS232 Serial Interfaces
- IrDA
- 1x RS422/485 Serial Interface
- I2C, SPI, PWM, Analog inputs
- 1x CAN 2.0B Interface (up to 1Mbit/s)
- Real-time clock with battery backup
- Resistive touch screen connector
- LEDs and Switches
- CPU Bus available on a connector
- Extremely Flexible and easy to use GPIO breakout and jumper area allowing easy signal re-routing, external connection and measurement/probing
- JTAG
- Parallel Camera Interface

2.2 Hardware Architecture Block Diagram



***** This is a module-specific feature and may not be supported by all the computer-on-modules in the Colibri family. For more details, refer to the datasheet of Colibri computer-on-modules.
** The breakout/jumper area provides a flexible mechanism for changing the hardware configuration or signal routing for any external circuit.

Fig.1 Colibri Evaluation Board Hardware Architecture

2.3 Physical Drawings

2.3.1 Top Side Connectors

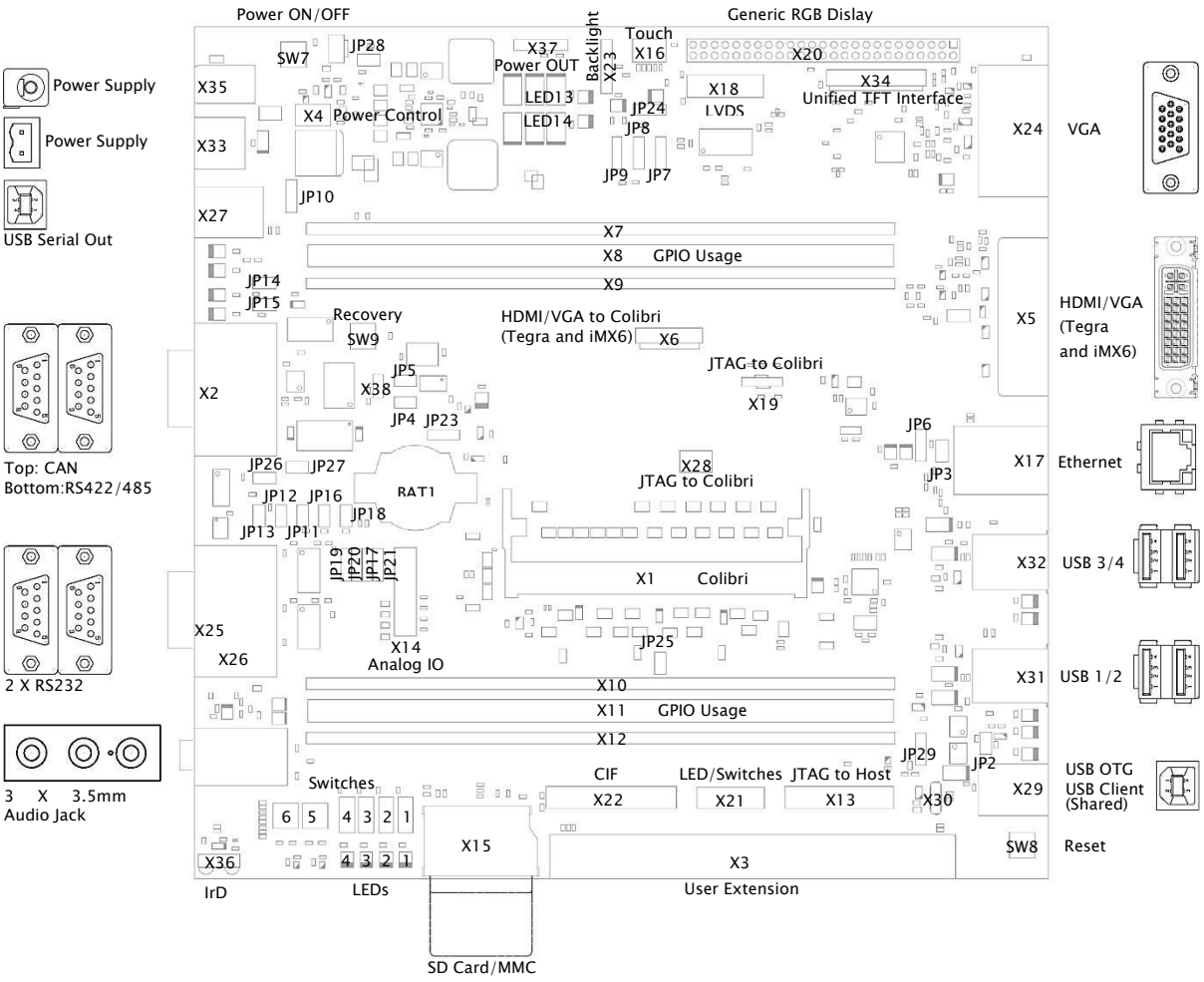


Fig.2 Colibri Evaluation Board Connectors – Top Side

Ref	Description	Remarks
X1	Colibri SODIMM	
X2	CAN – RS422/485	
X3	User Extension	
X4	Power Control Header	
X5	HDMI/VGA	Through DVI-I connector, only for modules which support this feature.
X6	HDMI/VGA to Colibri	Only for modules which support this feature
X7	Function Tap	
X8	Jumper Array	
X9	SODIMM breakout area	
X10	SODIMM breakout area	
X11	Jumper Array	
X12	Function Tap	

Ref	Description	Remarks
X13	JTAG to Host	
X14	Analog IO	
X15	SD Card/MMC	
X16	Generic Touch-Screen	
X17	Ethernet	
X18	LVDS	
X19	JTAG to Colibri	
X20	Generic Display	
X21	LED/Switches	
X22	Parallel Camera	
X23	LCD Inverter	
X24	VGA	
X25	2x RS232	
X26	3x Audio Jack	
X27	USB to Serial Connector	
X28	JTAG to Colibri	
X29	USB Client	Shared with the connector X30
X30	USB OTG	Shared with the connector X29
X31	2x USB HOST	Port 1 and 2
X32	2x USB HOST	Port 3 and 4
X33	Terminal Block Power Supply Connector	
X34	Unified TFT Interface	
X35	Barrel Power Supply Connector	
X36	IrDA	
X37	Power Out Header	
X38	CAN TX/RX	

3 Interface Description

3.1 Colibri Computer-On-Module

3.1.1 Colibri SODIMM Module (X1)

Connector type: SODIMM 200 Socket
Manufacturer: Tyco Electronics - 1473005-1
Refer to the *Colibri datasheets* for pin-out assignment details of the Colibri modules.

3.2 Power Supply

Colibri Evaluation Board has a wide input voltage range of 7-27V DC.

The on-board power supply provides the following supplies (maximum power).

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 solutions:

- 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!)

The Colibri Evaluation Board provides two methods of supplying power to the board. The first method is using connector X33 which is a pluggable, terminal block connector. The second method is using Barrel type connector X35 which is a standard 5.5mm power jack.

3.2.1 Terminal Block Power Supply Connector (X33)

Connector type: AUK TB5102PRB-H

Pin	Description	Voltage / range
1	GND_IN	
2	PWR_IN	7 – 27V

3.2.2 Barrel Power Supply Connector (X35)

Connector type: Amtek DCJ20-0014TB-L

Pin	Description	Voltage / range
1	PWR_IN	7 – 27V
2	GND_IN	

3.2.3 Power Out Header (X37)

Connector type: 1x5 Pin Header Male, 2.54mm, Not assembled

Pin	Description	Voltage / range
1	+5V	
2	GND	
3	+3.3V	
4	GND	
5	V_SUPPLY_FILT	Same as PWR_IN

Please note that the pin number 5 (five) is not regulated because it is directly connected to the Input Power Supply.

3.2.4 Power Control

Power control of the Colibri Evaluation Board is implemented using the Linear LTC2954 Pushbutton On/Off controller.

For further information about the signals provided by this controller please refer to the LTC2954 datasheet.

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

3.2.4.1 Power Control Header (X4)

Connector type: 2x3 Pin Header Female, 2.54mm

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
1	PWRBTN1		I		100K to +1.9V
2	GND		PWR		
3	PWR_CTRL		I	+3.3V max	100K to GND
4	INT#		I		10K to +3.3V
5	FORCE_OFF#		I		100K to +3.3V
6	RESET_EXT#		I/O	+3.3V	PU to +3.3V

The pin 3 of the Power Control Header X4 can be used to override the Pushbutton controller. The following table shows the behaviour of the board according to the level of the PWR_CTRL signal:

PWR_CTRL Level	Description
0V	The Pushbutton controller is working normally
3.3V	The Colibri Evaluation Board is Always On when power is applied

3.2.4.2 Always On Jumper (JP28)

Jumper JP28 can be used to obtain “Always On” behaviour.

Connector type: 1x2 Pin Header Male, 2.54 mm

Jumper position	Description
Open	Board power supply can be controlled via Power On/Off Switch.
Closed	Board power supply will be in the “Always On” state. Evaluation board will be powered-up as soon as external power is applied.

3.3 Indications

There are two LEDs on the top side of the PCB; they are tuned on if the power supply circuit is correctly providing 3.3 and 5V power rails.

Ref.	Description
LED13	3.3V
LED14	5V

3.4 Ethernet

3.4.1 Ethernet Connector (X17)

Connector type: RJ-45, Pulse J00-0065NL

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
1	ETH_TX0_P	189	O		
2	ETH_TX0_N	187	O		
3	ETH_RXI_P	195	I		
4	ETH_CT_TX		PWR		
5	ETH_CT_RX		PWR		
6	ETH_RXI_N	193	I		
7	NC				
8	SHIELD				
9	+3.3V		PWR	+3.3V	
10	ETH_LINK_ACT	183 (via R24)	I	+3.3V	
11	ETH_SPEED	185 (via R25)	I	+3.3V	
12	+3.3V		PWR	+3.3V	
S1	SHIELD				
S2	SHIELD				

3.4.2 Central Tab Jumper (JP6)

Jumper JP6 should be configured based upon the Ethernet controller which is present on the installed Colibri module.

Connector type: 1x3 Pin Header Male, 2.54 mm Pitch

Jumper position	Description
1-2	Use this configuration for DM9000E on PXA270
2-3	Use this configuration for DM9000A/ASIX on other modules

3.4.3 Ethernet Line Driver Jumper (JP3)

Ethernet PHY can use either current mode or voltage mode line driver technology. Current mode technology is legacy method used in 10/100 BASE-T PHY, whereas voltage mode technology has gained popularity in recent times.

In future, Jumper JP3 can be used to make Ethernet compatible with the voltage mode line drivers.

Connector type: 1x2 Pin Header Male, 2.54 mm Pitch

Jumper position	Description
Open	Voltage mode Ethernet PHY
Closed	Current mode Ethernet PHY (supported Colibri module PXAxxx / Txx / VFxx / iMX6)

3.5 USB Interface

3.5.1 USB Host/Client Interface

On Colibri Evaluation Board, USB Host/Client interface is shared between USB OTG Micro-AB (X30) shared with a USB Type B connector (X29).

The USB_ID pin of the USB OTG Micro-AB (X30) can be connected at the SODIMM_135 pin by inserting the Jumper JP2.

3.5.1.1 USB Client Connector (X29)

Connector type: USB Type B, FCI 61729-0010BLF

Pin	Description	SODIMM Pin Number	I/O Type	Voltage	Remarks
1	VCC_USB5		PWR	+5V	
2	USBC_B_N	145 (via R187)	I/O		Shared with connector X30
3	USBC_B_P	143 (via R188)	I/O		Shared with connector X30
4	GND		PWR		
S1	SHIELD				
S2	SHIELD				

3.5.1.2 USB OTG Connector (X30)

Connector type: Micro AB Type, GCT USB3105-30-A

Pin	Description	SODIMM Pin Number	I/O Type	Voltage	Remarks
1	VCC_USB5		PWR	+5V	
2	USBC_C_N	145	I/O		Shared with connector X29
3	USBC_C_P	143	I/O		Shared with connector X29
4	USB_ID		I		Connected to SODIMM_135 via Jumper JP2
5	GND		PWR		
S1	SHIELD				
S2	SHIELD				
S3	SHIELD				
S4	SHIELD				

3.5.1.3 USB ID Jumper (JP2)

Connector type: 1x2 Pin Header Male, 2.54 mm Pitch

Jumper position	Description
Open	USB_ID pin is not connected to SODIMM_135
Closed	USB_ID pin of the USB OTG Micro-AB (X30) is connected to SODIMM_135

3.5.2 USB Host Interface

Colibri Evaluation Board integrates a 4 port USB Hub (SMSC USB2514B-AEZC) to provide 4x USB 2.0 host interfaces.

For more information about the USB Hub please refer to the SMSC website and SMSC USB2514B-AEZC datasheet.

3.5.2.1 USB Host Connector (X31)

Connector type: USB Type-A Stacked (USB 1/2), Mill-Max 896-43-008-90-000000

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
U1	VCC_USB1	USB1 Power	PWR	+5V	
U2	USB1_C_N	USB1 differential signal - Positive	I/O		
U3	USB1_C_P	USB1 differential signal - Negative	I/O		
U4	GND_USB1	USB1 Ground	PWR		
L1	VCC_USB2	USB2 Power	PWR	+5V	
L2	USB2_C_N	USB2 differential signal - Positive	I/O		
L3	USB2_C_P	USB2 differential signal - Negative	I/O		
L4	GND_USB2	USB2 Ground	PWR		
S1	SHIELD				
S2	SHIELD				
S3	SHIELD				
S4	SHIELD				

3.5.2.2 USB Host Connector (X32)

Connector type: USB Type-A Stacked (USB 3/4), Mill-Max 896-43-008-90-000000

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
U1	VCC_USB3	USB3 Power	PWR	+5V	
U2	USB3_C_N	USB3 differential signal - Positive	I/O		
U3	USB3_C_P	USB3 differential signal - Negative	I/O		
U4	GND_USB3	USB3 Ground	PWR		
L1	VCC_USB4	USB4 Power	PWR	+5V	
L2	USB4_C_N	USB4 differential signal - Positive	I/O		
L3	USB4_C_P	USB4 differential signal - Negative	I/O		
L4	GND_USB4	USB4 Ground	PWR		
S1	SHIELD				
S2	SHIELD				
S3	SHIELD				
S4	SHIELD				

3.6 SD Card / MMC

The Colibri Evaluation board features an SDCard/MMC socket can be used to add storage devices or additional functions to the system. Please note that the hardware supported card detect function is implemented and hardware write protect feature is not available.

3.6.1 SD Card / MMC (X15)

Connector type: SDIO Socket, CENLINK M90-03011-09Y0

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
1	MM_DAT_3	53	I/O	+3.3V	68K to +3.3V
2	MM_CMD	190	I	+3.3V	33K to +3.3V
3	GND		PWR		
4	3.3V_SD		PWR	+3.3V	
5	MM_CLK	47	I	+3.3V	
6	GND		PWR		
7	MM_DAT_0	192	I/O	+3.3V	68K to +3.3V
8	MM_DAT_1	49	I/O	+3.3V	68K to +3.3V
9	MM_DAT_2	51	I/O	+3.3V	68K to +3.3V
10	MM_CD	43	I	+3.3V	
11	MM_WP	Connected to TP6			

3.7 Display Interface

The Colibri Evaluation Board provides many options for connecting LCD panels and monitors, with the following four interfaces supported:

- 18/24 bit digital RGB (depending on the installed Colibri module)
- Single channel LVDS
- DVI-I (Digital TDMS and Analog VGA, depending on the installed Colibri module)
- VGA

The following image shows the display interface architecture that has been implemented:

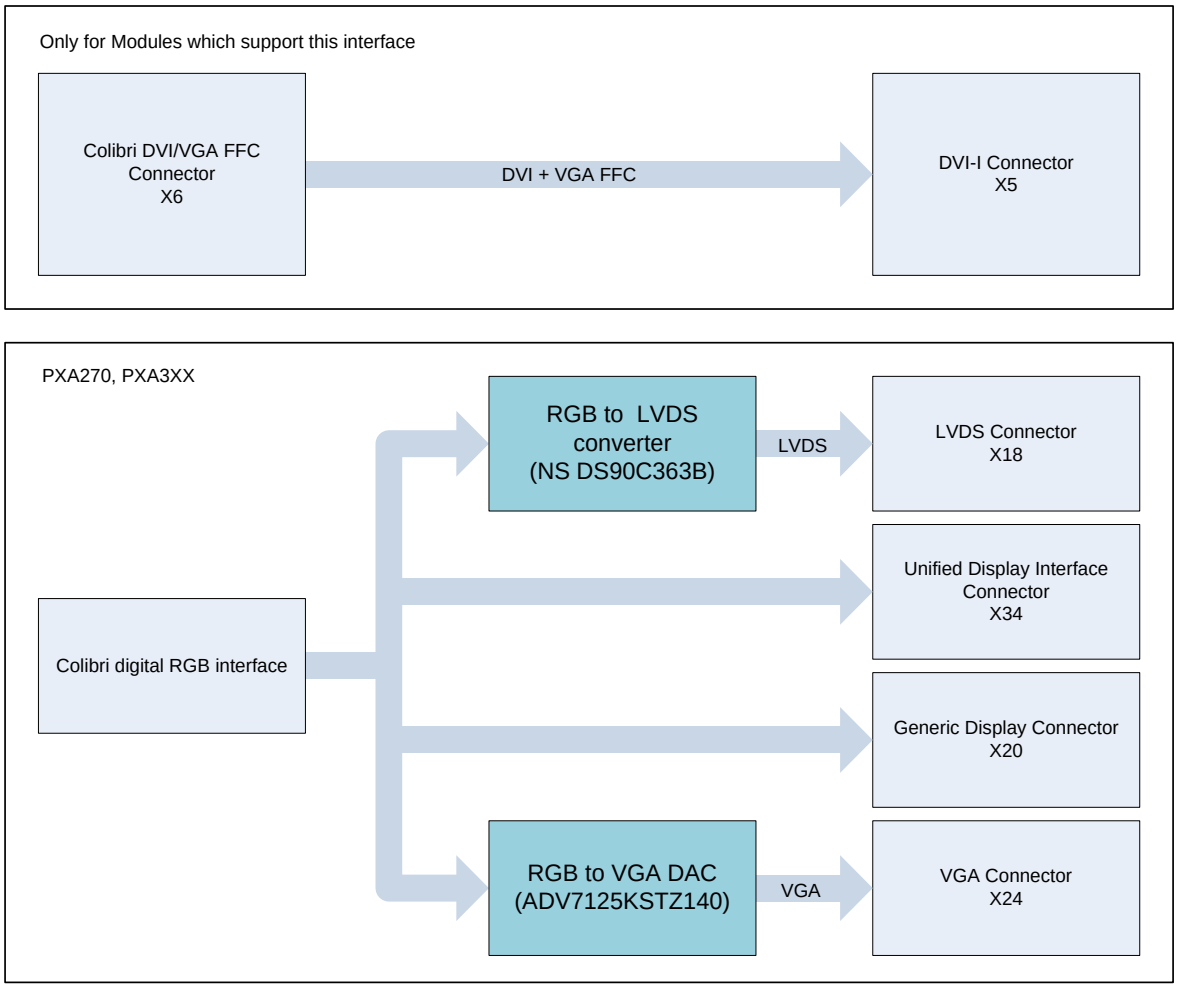


Fig.3 Colibri Evaluation Board Display Interface Architecture

Almost any TFT or STN display can be connected to the LCD port of the Colibri module by simply connecting the necessary signals from connectors X16 and X20 (which provide standard 2.54mm pitch) to the display.

Toradex provides a range of different tools and utilities to help with the easy configuration of different LCD panels. For details please refer to: http://developer.toradex.com

3.7.1 DVI-I Connector (X5)

Connector type: Molex 74320-1004

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
1	TMDS_DATA2_N	The negative DVI output number 2	O		
2	TMDS_DATA2_P	The positive DVI output number 2	O		
3	GND		PWR		
4	NC	Not connected			
5	NC	Not connected			
6	DDC_CLK	DVI EDID Clock signal	O	+5V	
7	DDC_DATA	DVI EDID Data signal	I/O	+5V	
8	CRT_VSYNC	VGA output - Vertical Sync	O	+5V	
9	TMDS_DATA1_N	The negative DVI output number 1	O		
10	TMDS_DATA1_P	The positive DVI output number 1	O		
11	GND		PWR		
12	NC	Not connected			
13	NC	Not connected			
14	DVI_5V		PWR	+5V	
15	GND		PWR		
16	HOTPLUG_DETECT_C	DVI Hot Plug signal	I		
17	TMDS_DATA0_N	The negative DVI output number 0	O		
18	TMDS_DATA0_P	The positive DVI output number 0	O		
19	GND		PWR		
20	NC	Not connected			
21	NC	Not connected			
22	GND		PWR		
23	TMDS_CLK_P	The positive DVI Clock signal	O		
24	TMDS_CLK_N	The negative DVI Clock signal	O		
C1	CRT_RED	VGA output - Red	O	+3.3V	
C2	CRT_GREEN	VGA output - Green	O	+3.3V	
C3	CRT_BLUE	VGA output - Blue	O	+3.3V	
C4	CRT_HSYNC	VGA output - Horizontal Sync	O	+5V	
C5	GND		PWR		

3.7.2 HDMI/VGA FFC(X6)

On Colibri Txx and iMX6 modules, HDMI/VGA signals are provided through a flex cable connector on the module. The HDMI/VGA FCC on the Colibri Evaluation Board connects directly to the Colibri module using as 24 way flex cable. This is a module-specific feature and may not be supported by all the computer-on-modules in the Colibri family.

Please note that Analog VGA signal are only available with the Colibri T20 module.

Connector type: Hirose FH12-24S-0.5SV(55)

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
1	GND		PWR		
2	TMDS_CLK_P	TMDS clock – Positive	O		
3	TMDS_CLK_N	TMDS clock – Negative	O		
4	GND		PWR		
5	TMDS_DATA0_P	TMDS output number 0 – Positive	O		

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
6	TMDS_DATA0_N	TMDS output number 0 – Negative	O		
7	GND		PWR		
8	TMDS_DATA1_P	TMDS output number 1 – Positive	O		
9	TMDS_DATA1_N	TMDS output number 1 – Negative	O		
10	GND		PWR		
11	TMDS_DATA2_P	TMDS output number 2 – Positive	O		
12	TMDS_DATA2_N	TMDS output number 2 – Negative	O		
13	NC				
14	HOTPLUG_DETECT	Display Hot Plug Detect	I	+3.3V	
15	DDC_CLK	TMDS EDID Clock signal	O	+5V	1.8K to +5V
16	DDC_DATA	TMDS EDID Data signal	I/O	+5V	1.8K to +5V
17	GND		PWR		
18	CRT_RED	VGA output - Red	O	+3.3V	
19	GND		PWR		
20	CRT_GREEN	VGA output – Green	O	+3.3V	
21	GND		PWR		
22	CRT_BLUE	VGA output - Blue	O	+3.3V	
23	CRT_VSYNC	VGA output - Horizontal Sync	O	+3.3V	
24	CRT_HSYNC	VGA output - Vertical Sync	O	+3.3V	

3.7.3 Generic Touch-Screen (X16)

Connector type: 2x3 Pin Header Male, 2.54 mm

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
1	GND		PWR		
2	TOUCH_TSMY	20	I	+3.3V	
3	TOUCH_TSMX	16	I	+3.3V	
4	TOUCH_TSPY	18	I	+3.3V	
5	TOUCH_TSPX	14	I	+3.3V	
6	TOUCH_WIPER	2 (via R95)	I	+3.3V	

3.7.4 LVDS Connector (X18)

The Colibri Evaluation Board also features a single channel LVDS interface for direct connection of LCD panels which support 18/24bit, single channel LVDS interfaces.

Connector type: Hirose DF13A-20DP-1.25V(56)

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
1	LVDS_5V	5V power supply pin	PWR	+5V	
2	LVDS_3.3V	3.3V power supply pin	PWR	+3.3V	
3	GND		PWR		
4	SEL1	Connected to LVDS_3.3V or GND via Jumper JP7. The default value is GND			
5	LVDS_OUT0_N	The negative LVDS output number 0	O		
6	GND		PWR		
7	LVDS_OUT0_P	The positive LVDS output number 0	O		
8	LVDS_OUT1_N	The negative LVDS output number 1	O		
9	GND		PWR		

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
10	LVDS_OUT1_P	The positive LVDS output number 1	O		
11	LVDS_OUT2_N	The negative LVDS output number 2	O		
12	GND		PWR		
13	LVDS_OUT2_P	The positive LVDS output number 2	O		
14	LVDS_CLK_N	The negative LVDS clock signal	O		
15	GND		PWR		
16	LVDS_CLK_P	The positive LVDS clock signal	O		
17	BL_ON	Back Light control signal	O	+3.3V	
18	GND		PWR		
19	SEL2	Connected to LVDS_5V, LVDS_3.3V or GND via Jumper JP8. The default value is 5V			
20	SEL3	Connected to LVDS_3.3V or GND via Jumper JP9. The default value is LVDS_3.3V			

3.7.5 Generic Display (X20)

Generic display connector X20 can support up-to 24 bit RGB interface, depending upon the Colibri module installed on the evaluation board. The 18 bit color mapping is compatible with all the computer-on-modules in the Colibri family. For more details please see the relevant Colibri module datasheet.

Connector type: 2x25 Pin Header Male, 2.54 mm

Pin	Signal Name	Color Mapping 18bpp	SODIMM Number	I/O Type	Voltage	Pull-up/ Pull-down
1	GND			PWR		
2	LCD_PCLK_WR	PCLK	56	OI	+3.3V	
3	LCD_LCLK_A0	HSYNC	68	O	+3.3V	
4	LCD_FCLK_RD	VSYNC	82	O	+3.3V	
5	GND			PWR	PWR	
6	LCD_D_12	**RED 0**	52	O	+3.3V	
7	LCD_D_13	**RED 1**	54	O	+3.3V	
8	LCD_D_14	**RED 2**	66	O	+3.3V	
9	LCD_D_15	**RED 3**	64	O	+3.3V	
10	LCD_D_16	**RED 4**	57	O	+3.3V	
11	LCD_D_17	**RED 5**	61	O	+3.3V	
12	GND			PWR		
13	LCD_D_6	**GREEN 0**	90	O	+3.3V	
14	LCD_D_7	**GREEN 1**	46	O	+3.3V	
15	LCD_D_8	**GREEN 2**	62	O	+3.3V	
16	LCD_D_9	**GREEN 3**	48	O	+3.3V	
17	LCD_D_10	**GREEN 4**	74	O	+3.3V	
18	LCD_D_11	**GREEN 5**	50	O	+3.3V	
19	GND			PWR		
20	LCD_D_0	**BLUE 0**	76	O	+3.3V	
21	LCD_D_1	**BLUE 1**	70	O	+3.3V	
22	LCD_D_2	**BLUE 2**	60	O	+3.3V	
23	LCD_D_3	**BLUE 3**	58	O	+3.3V	
24	LCD_D_4	**BLUE 4**	78	O	+3.3V	

Pin	Signal Name	Color Mapping 18bpp	SODIMM Number	I/O Type	Voltage	Pull-up/ Pull-down
25	LCD_D_5	BLUE 5	72	O	+3.3V	
26	GND			PWR		
27	LCD_BIAS	Data Enable		I	+3.3V	
28	+V_DISPLAY			PWR	JP4 selects +3.3V or +5V	
29	+V_DISPLAY			PWR	JP4 selects +3.3V or +5V	
30	TP9			I/O		
31	TP10			I/O		
32	GND			PWR		
33	TOUCH_TSMY		20	O		
34	TOUCH_TSMX		16	O		
35	TOUCH_TSPY		18	O		
36	TOUCH_TSPX		14	O		
37	BL_ON		71	O	+3.3V	100K to GND
38	GND_DISPINV			PWR		
39	5V_DISPINV			PWR	+5V	
40	GND_DISPINV			PWR		
41	GND			PWR		
42	GND			PWR		
43	LCD_D_22		144	O	+3.3V	
44	LCD_D_23		146	O	+3.3V	
45	LCD_D_20		140	O	+3.3V	
46	LCD_D_21		142	O	+3.3V	
47	LCD_D_18		136	O	+3.3V	
48	LCD_D_19		138	O	+3.3V	
49	3.3V_DISP			PWR	+3.3V	
50	TOUCH_WIPER		2 (via R95)	O		

3.7.6 LCD Inverter (X23)

Connector type: 1x5 Pin Header Male, 2.54 mm Pitch, Not assembled

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
1	5V_DISPINV		PWR	+5V	
2	GND_DISPINV		PWR		
3	BL_ON		O	+3.3V	100K to GND
4	GND_DISPINV		PWR		
5	NC				

3.7.7 VGA (X24)

Connector type: DSUB15 Female, AUK HDR15SN-H

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
1	EXT_RED		O		
2	EXT_GREEN		O		
3	EXT_BLUE		O		
4	NC				
5	GND		PWR		
6	GND		PWR		
7	GND		PWR		
8	GND		PWR		
9	GND		PWR		
10	GND		PWR		
11	NC				
12	NC				
13	EXT_HSYNC		O	+5V	
14	EXT_VSYNC		O	+5V	
15	NC				

3.7.8 Unified TFT Interface (X34)

This RGB display interface uses the EDT Unified TFT Display Interface pin out, for which there are a wide variety of displays of different sizes and resolutions available. These displays are connected to the Colibri Evaluation Board directly via a 40 way FFC.

The EDT Unified TFT Interface also features a resistive touch screen interface on the same FFC, providing support for displays which have integrated touch.

For further information about this interface and the available LCD panels, please refer to the Toradex developer website:

- http://developer.toradex.com/products/edt-display

For customers looking for capacitive touch display solution, Colibri Evaluation Boards are fully compatible with the Toradex Capacitive Multi-Touch Display solution. Please refer to the following developer page link for more details:

- http://developer.toradex.com/products/capacitive-multi-touch-display

For more TFT display solutions, refer to the following developer webpage articles:

- http://developer.toradex.com/knowledge-base/supported-displays
- http://developer.toradex.com/knowledge-base/tianma-rgb-display-adapter-board
- http://developer.toradex.com/knowledge-base/generic-rgb-display-adapter-board

Connector type: Hirose FH12-40S-0.5SV(55)

Pin	Signal Name	Color Mapping 18bpp	SODIMM Number	I/O Type	Voltage	Pull-up/ Pull-down
1	GND			PWR		
2	GND			PWR		
3	+3.3V			PWR	+3.3V	
4	+3.3V			PWR	+3.3V	
5	BL_ON		71	O	+3.3V	
6	PWM_A		59	O	+3.3V	
7	RESET_OUT#		87	O	+3.3V	
8	LCD_D_5	BLUE 5	72	O	+3.3V	
9	LCD_D_4	BLUE 4	78	O	+3.3V	
10	LCD_D_3	BLUE 3	58	O	+3.3V	
11	LCD_D_2	BLUE 2	60	O	+3.3V	
12	LCD_D_1	BLUE 1	70	O	+3.3V	
13	LCD_D_0	BLUE 0	76	O	+3.3V	
14	GND			PWR		
15	LCD_D_11	GREEN 5	50	O	+3.3V	
16	LCD_D_10	GREEN 4	74	O	+3.3V	
17	LCD_D_9	GREEN 3	48	O	+3.3V	
18	LCD_D_8	GREEN 2	62	O	+3.3V	
19	LCD_D_7	GREEN 1	46	O	+3.3V	
20	LCD_D_6	GREEN 0	80	O	+3.3V	
21	GND			PWR		
22	LCD_D_17	RED 5	61	O	+3.3V	
23	LCD_D_16	RED 4	57	O	+3.3V	
24	LCD_D_15	RED 3	64	O	+3.3V	
25	LCD_D_14	RED 2	66	O	+3.3V	
26	LCD_D_13	RED 1	54	O	+3.3V	
27	LCD_D_12	RED 0	52	O	+3.3V	
28	LCD_PCLK_WR	PCLK	56	O	+3.3V	
29	GND			PWR		
30	LCD_LCLK_A0	HSYNC	68	O	+3.3V	
31	LCD_FCLK_RD	VSYNC	82	O	+3.3V	
32	LCD_BIAS	Data Enable	44	O	+3.3V	
33	Connected to 3.3V or GND via assembly option. The default assembly is GND			O	+3.3V/GND	
34	Connected to 3.3V or GND via assembly option. The default assembly is GND			O	+3.3V/GND	
35	GND			PWR		
36	+3.3V			PWR	+3.3V	
37	TOUCH_TSPY			O	+3.3V	
38	TOUCH_TSMX			O	+3.3V	
39	TOUCH_TSMY			O	+3.3V	
40	TOUCH_TSPX			O	+3.3V	

3.8 Audio

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

3.8.1 Audio Jack (X26)

Connector type: 3 x 3.5mm Jack stacked, AUK PJ3X01RF04B-BGP-H

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
1	AUDIO_AGND		PWR		
2	AUDIO_AVCC		PWR	+3.3V	
3	AUDIO_AVCC		PWR	+3.3V	
4	MIC_IN	1	I	+3.3V	
5	MIC_IN	1	I	+3.3V	
22	HEADPHONE_AC_R	17	O	+3.3V	
23	HEADPHONE_AC_R	17	O	+3.3V	
24	HEADPHONE_AC_L	15	O	+3.3V	
25	HEADPHONE_AC_L	15	O	+3.3V	
32	LINEIN_R	7	I	+3.3V	
33	LINEIN_R	7	I	+3.3V	
34	LINEIN_L	5	I	+3.3V	
35	LINEIN_L	5	I	+3.3V	

3.9 Digital and Analog I/O Interface

3.9.1 Communication Interface

3.9.1.1 RS422/485 (X2 - Bottom)

The RS422/485 interface is implemented using the Analog Devices ADM3491ARZ transceiver.

The RS422/485 interface is connected to UART-B of the Colibri Module. This UART-B port is shared with the RS232 transceiver.

Connector type: DSUB9 Male, Norcomp 178-009-613R571

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
L1	GND		PWR		
L2	NC				
L3	NC				
L4	RXD+		I		
L5	RXD-		I		
L6	NC				
L7	NC				
L8	TXD+		O		
L9	TXD-		O		

The jumpers JP11, JP12, JP13, JP14, JP15, JP16 provide hardware configuration for this interface:

Connector type: 1x2 Pin Header Male, 2.54 mm

Jumper	Status	Function
JP11	CLOSED	ECHO disabled (the sender cannot read the message just sent)
JP12, JP14	CLOSED	Insert the 120ohm bus termination (for RS422)
JP13, JP15	OPEN	Full Duplex Configuration
JP16	CLOSED	The upper RS232 is disable

3.9.1.2 RS232 (X25- Top and Bottom)

Connector type: DSUB9 Male, Norcomp 178-009-613R571

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
U1	RS232_U_DCD				A dedicated pin is not available on the Colibri standard pin-out. Signal is only connected to test-point (TP3).
U2	RS232_U_RXD	36 (via IC10)	I		
U3	RS232_U_TXD	38 (via IC10)	O		
U4	RS232_U_DTR				A dedicated pin is not available on the Colibri standard pin-out. Signal is pulled-up to 3.3V using 100K resistor.
U5	GND		PWR		
U6	RS232_U_DSR				A dedicated pin is not available on the Colibri standard pin-out. Signal is only connected to test-point (TP5).
U7	RS232_U_RTS	34 (via IC10)	O		
U8	RS232_U_CTS	32 (via IC10)	I		
U9	RS232_U_RI				A dedicated pin is not available on the Colibri standard pin-out. Signal is only connected to test-point (TP4).
L1	RS232_L_DCD	31 (via IC11)	I		

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
L2	RS232_L_RXD	33 (via IC11)	I		Shared with USB to Serial using jumper JP19
L3	RS232_L_TXD	35 (via IC11)	O		Shared with USB to Serial using jumper JP17
L4	RS232_L_DTR	23 (via IC11)	O		
L5	GND		PWR		
L6	RS232_L_DSR	29 (via IC11)	I		
L7	RS232_L_RTS	27 (via IC11)	O		Shared with USB to Serial using jumper JP20
L8	RS232_L_CTS	25 (via IC11)	I		Shared with USB to Serial using jumper JP21
L9	RS232_L_RI	37 (via IC11)	I		

By changing the position of the Jumpers JP17, JP19, JP20 and JP21, it is possible to route the signals TXD, RXD, RTS and CTS of the UART-A interface to the connector X25 (bottom) instead of the connector X27.

Connector type: 1x3 Pin Header Male, 2.54 mm

JP17, JP19, JP20, JP21	Description
1 - 2	UART TXD / RXD / RTS /CTS of UART-A is routed to RS232 Interface. Connector X25 will be active.
2 - 3	UART TXD / RXD / RTS /CTS of UART-A is routed to USB to Serial Interface. Connector X27 will be active.

3.9.1.3 USB to Serial Connector (X27)

The Colibri Evaluation Board features a built in USB to Serial UART converter (FTDI FT232RL) which can be used to interface with the serial debug Full Function UART-A via the USB Type B connector X27.

Connector type: USB Type B, FCI 61729-0010BLF

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
1	5V_USB_D		PWR	+5V	
2	USBD_N		I/O		
3	USBD_P		I/O		
4	GND		PWR		
S1	SHIELD				
S2	SHIELD				

Please note that the UART-A signal are shared with RS232 interface.By changing the position of the Jumpers JP17, JP19, JP20 and JP21, it is possible to route the signals TXD, RXD, RTS and CTS of the UART-A interface to the connector X27 instead of the connector X25 (bottom) as mentioned in Section 3.9.1.2, RS232 (X25- Top and Bottom).

3.9.1.4 CAN

The Colibri Evaluation Board uses the Microchip MCP2515T-I/ST controller and the Microchip MCP2551T-I/SN CAN transceiver to implement the CAN 2.0b interface. The CAN port is electrically isolated from the system power supply.

The CAN interface is available on the top part of the connector X2.

3.9.1.4.1 CAN (X2 - Top)

Connector type: DSUB9 Male, Norcomp 178-009-613R571

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
U1	NC				
U2	CAN_L	CAN Low-Level Voltage Signal	I/O	+5V	
U3	CAN_GND		PWR		
U4	NC				
U5	NC				
U6	CAN_PGND		PWR		
U7	CAN_H	CAN High-Level Voltage Signal	I/O	+5V	
U8	NC				
U9	CAN_PW		PWR		

The CAN connector provides the ability to optionally connect the isolated power supply to connector pins in order to provide power to external CAN nodes.

Connector type: 1x2 Pin Header Male, 2.54 mm

Jumper	Status	Function
JP26	Open	Pin U6 of the connector X2 is left floating
JP26	Closed	Pin U6 of the connector X2 is connected to the signal GND_ISO

Connector type: 1x2 Pin Header Male, 2.54 mm

Jumper	Status	Function
JP27	Open	Pin U9 of the connector X2 is left floating.
JP27	Closed	Pin U9 of the connector X2 is connected to the signal VCC_ISO

3.9.1.4.2 CAN TX/RX (X38)

Colibri VFxx and Colibri iMX6 features on-module CAN interface. This is a module specific feature and may not be supported by all the computer-on-modules in the Colibri family. For more details, refer to the datasheet of Colibri computer-on-modules.

http://developer.toradex.com/knowledge-base/can-(controller-area-network)-on-colibri-module

Connector X38 along with jumpers JP4 and JP5, facilitates evaluation/testing of the on-module CAN interface. Jumper JP4 and JP5 are used to connect or disconnect the on-board CAN controller signals with the CAN transceiver.

Connector type: 1x2 Pin Header Female, 2.54 mm

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
1	CAN_TX		O	+3.3V	
2	CAN_RX		I	+3.3V	

Connector type: 1x2 Pin Header Male, 2.54 mm

Jumper	Status	Function
JP4	Open	TXCAN signal of the CAN controller MCP2515T is **not** connected to the CAN transceiver
JP4	Closed	TXCAN signal of the CAN controller MCP2515T is connected to the CAN transceiver

Connector type: 1x2 Pin Header Male, 2.54 mm

Jumper	Status	Function
JP5	Open	RXCAN signal of the CAN controller MCP2515T is **not** connected to the CAN transceiver
JP5	Closed	RXCAN signal of the CAN controller MCP2515T is connected to the CAN transceiver

In order to test the on-module CAN interface using Colibri Evaluation Board, please use the following hardware configurations:

a) Open circuit jumper JP4 & JP5.
b) Using jumper wires connect the CAN_TX & CAN_RX signals from Colibri module (using GPIO breakout connector) to the connector X38 respectively.
c) CAN transceiver output is available on the top part of the connector X2.

3.9.2 Digital Interface

3.9.2.1 Parallel Camera Interface (X22)

The Parallel Camera Interface (previously known as the Quick Capture Interface (CIF)) on connector X22 is intended for applications requiring image capture capability from CMOS or CDD image sensors. This interface supports a wide variety of operating modes, data widths, formats, and clocking schemes. For details please see the relevant Colibri module datasheet.

Please note that most of the signals for this interface which are available on the connector X22 are configured as alternate functions when using the factory settings (e.g. jumper settings and the Toradex supplied Windows CE/Embedded Compact image). The user is responsible for reconfiguring these default settings prior to using the interface, which may involve both hardware and software configuration.

On Colibri Evaluation Board V3.2, the pin-out of the connector X22 has been modified and a table with the new pin-out has been added to the datasheet. The modification has been done in-order to maintain the compatibility of the Parallel Camera Interface across Colibri and Apalis family carrier boards.

Connector type: 12x2 Pin Header Male, 2.54 mm

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
1	+3.3		PWR		
2	+3.3		PWR		
3	CIF_MCLK	75	I/O	+3.3V	
4	CIF_PCLK	96	I/O	+3.3V	
5	CIF_HSYNC	94	I/O	+3.3V	
6	CIF_VSYNC	81	I/O	+3.3V	100K to GND
7	CIF_D_2	101	I/O	+3.3V	
8	CIF_D_3	103	I/O	+3.3V	
9	CIF_D_4	79	I/O	+3.3V	
10	CIF_D_5	97	I/O	+3.3V	
11	CIF_D_6	67	I/O	+3.3V	
12	CIF_D_7	59	I/O	+3.3V	
13	CIF_D_8	85	I/O	+3.3V	
14	CIF_D_9	65	I/O	+3.3V	
15	I2C_SCL	196	I/O	+3.3V	4.7K to +3.3V
16	I2C_SDA	194	I/O	+3.3V	4.7K to +3.3V
17	CIF_D_0	71	I/O	+3.3V	
18	CIF_D_1	98	I/O	+3.3V	100K to +3.3V
19	GND		PWR		
20	GND		PWR		
21	CIF_D_10	69	I/O	+3.3V	100K to +3.3V
22	CIF_D_11	77	I/O	+3.3V	
23	+3.3V		PWR		
24	+5V		PWR		

For customers using ***Colibri Evaluation Board V3.1***, following table shows the connector X22 pin-out.

Connector type: 12x2 Pin Header Male, 2.54 mm

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
1	+3.3		PWR		
2	+3.3		PWR		
3	CIF_MCLK	75	I/O	+3.3V	
4	CIF_PCLK	96	I/O	+3.3V	
5	CIF_HSYNC	94	I/O	+3.3V	
6	CIF_VSYNC	81	I/O	+3.3V	100K to GND
7	CIF_D_0	71	I/O	+3.3V	
8	CIF_D_1	98	I/O	+3.3V	
9	CIF_D_2	101	I/O	+3.3V	
10	CIF_D_3	103	I/O	+3.3V	
11	CIF_D_4	79	I/O	+3.3V	
12	CIF_D_5	97	I/O	+3.3V	
13	CIF_D_6	67	I/O	+3.3V	
14	CIF_D_7	59	I/O	+3.3V	
15	I2C_SCL	196	I/O	+3.3V	4.7K to +3.3V
16	I2C_SDA	194	I/O	+3.3V	4.7K to +3.3V
17	CIF_D_8	85	I/O	+3.3V	
18	CIF_D_9	65	I/O	+3.3V	100K to +3.3V
19	GND		PWR		
20	GND		PWR		
21	CIF_D_10	69	I/O	+3.3V	100K to +3.3V
22	CIF_D_11	77	I/O	+3.3V	
23	+3.3V		PWR		
24	+5V		PWR		

3.9.2.2 User Extension (X3)

The User extension connector provides the CPU bus and a power supply for additional external Hardware.

The entire 16-/32-Bit bus of Colibri modules that support the external system bus is accessible through an extension connector. This offers to the user the possibility to interface custom hardware, such as FPGAs, directly to the system bus. The extension connector also provides both 3.3V and 5V power supplies.

Connector type: DIN41612 96Pin Female, AUK UC3X32SD-H

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
A1	DATA_0	149	I/O	+3.3V	
A2	DATA_3	155	I/O	+3.3V	
A3	DATA_5	159	I/O	+3.3V	
A4	DATA_8	165	I/O	+3.3V	
A5	DATA_11	171	I/O	+3.3V	
A6	DATA_13	175	I/O	+3.3V	
A7	DATA_16	150	I/O	+3.3V	
A8	DATA_19	156	I/O	+3.3V	
A9	DATA_21	160	I/O	+3.3V	
A10	DATA_24	166	I/O	+3.3V	
A11	DATA_27	172	I/O	+3.3V	
A12	DATA_29	176	I/O	+3.3V	
A13	+3.3V		PWR	+3.3V	
A14	ADDR_0	111	O	+3.3V	
A15	ADDR_3	117	O	+3.3V	
A16	ADDR_6	123	O	+3.3V	
A17	ADDR_8	110	O	+3.3V	
A18	ADDR_11	116	O	+3.3V	
A19	ADDR_14	122	O	+3.3V	
A20	ADDR_16	188	O	+3.3V	
A21	ADDR_19	146	O	+3.3V	
A22	ADDR_22	140	O	+3.3V	
A23	ADDR_24	136	O	+3.3V	
A24	DQM1	128	O	+3.3V	
A25	+5V		PWR	+5V	
A26	WE#	89	I	+3.3V	
A27	EXT_CS_0#	105	I	+3.3V	100K to +3.3V
A28	RD_WR#	93	I	+3.3V	
A29	I2C_SDA	194	I/O	+3.3V	4.7K to +3.3V
A30	SSP_FRM	86	I/O	+3.3V	
A31	PWE#	99	I	+3.3V	
A32	EXT_IO_1	133	I	+3.3V	
B1	DATA_1	151	I/O	+3.3V	
B2	GND		PWR		
B3	DATA_6	161	I/O	+3.3V	
B4	DATA_9	167	I/O	+3.3V	
B5	+3.3V		PWR		

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
B6	DATA_14	177	I/O	+3.3V	
B7	DATA_17	152	I/O	+3.3V	
B8	+3.3V		PWR		
B9	DATA_22	162	I/O	+3.3V	
B10	DATA_25	168	I/O	+3.3V	
B11	+3.3V		PWR		
B12	DATA_30	178	I/O	+3.3V	
B13	GND		PWR		
B14	ADDR_1	111	O	+3.3V	
B15	ADDR_4	119	O	+3.3V	
B16	GND		PWR		
B17	ADDR_9	112	O	+3.3V	
B18	ADDR_12	118	O	+3.3V	
B19	+5V		PWR		
B20	ADDR_17	186	O	+3.3V	
B21	ADDR_20	144	O	+3.3V	
B22	GND		PWR		
B23	ADDR_25	134	O	+3.3V	
B24	DQM_2	130	O	+3.3V	
B25	GND		PWR		
B26	EXT_CS_1#	107	I/O	+3.3V	100K to +3.3V
B27	GND		PWR		
B28	RDY	95	I/O	+3.3V	
B29	+5V		PWR		
B30	SSP_TXD	92	O	+3.3V	
B31	GND		PWR		
B32	RESET_OUT#	87	O	+3.3V	
C1	DATA_2	153	I/O	+3.3V	
C2	DATA_4	157	I/O	+3.3V	
C3	DATA_7	163	I/O	+3.3V	
C4	DATA_10	169	I/O	+3.3V	
C5	DATA_12	173	I/O	+3.3V	
C6	DATA_15	179	I/O	+3.3V	
C7	DATA_18	154	I/O	+3.3V	
C8	DATA_20	158	I/O	+3.3V	
C9	DATA_23	164	I/O	+3.3V	
C10	DATA_26	170	I/O	+3.3V	
C11	DATA_28	174	I/O	+3.3V	
C12	DATA_31	180	I/O	+3.3V	
C13	+3.3V		PWR		
C14	ADDR_2	115	O	+3.3V	
C15	ADDR_5	121	O	+3.3V	
C16	ADDR_7	125	O	+3.3V	
C17	ADDR_10	114	O	+3.3V	

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Pull-up/Pull-down
C18	ADDR_13	120	O	+3.3V	
C19	ADDR_15	124	O	+3.3V	
C20	ADDR_18	184	O	+3.3V	
C21	ADDR_21	142	O	+3.3V	
C22	ADDR_23	138	O	+3.3V	
C23	DQM_0	126	O	+3.3V	
C24	DQM_3	132	O	+3.3V	
C25	+5V		PWR		
C26	OE#	91	O	+3.3V	
C27	EXT_CS_2#	106	I/O	+3.3V	100K to +3.3V
C28	I2C_SCL	196	I/O	+3.3V	4.7K to +3.3V
C29	SSP_SCLK	88	I/O	+3.3V	
C30	SSP_RXD	90	I	+3.3V	
C31	EXT_IO_0	135	I/O	+3.3V	
C32	EXT_IO_2	127	I/O	+3.3V	

3.9.2.3 LED / Switches (X21)

These signals are available on connector X21. They can be directly connected to the GPIO breakout connectors or to additional custom specific hardware.

Please note that the buttons and switches are not debounced.

Connector type: 6x2 Pin Header Female, 2.54 mm

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
1	SWITCH_1	Slide Switch SW1 Signal	I	+3.3V	100K to GND
2	LED_1	Signal to LED1	O	+3.3V	100K to GND
3	SWITCH_2	Slide Switch SW2 Signal	I	+3.3V	100K to GND
4	LED_2	Signal to LED2	O	+3.3V	100K to GND
5	SWITCH_3	Slide Switch SW3 Signal	I	+3.3V	100K to GND
6	LED_3	Signal to LED3	O	+3.3V	100K to GND
7	SWITCH_4	Slide Switch SW4 Signal	I	+3.3V	100K to GND
8	LED_4	Signal to LED4	O	+3.3V	100K to GND
9	BUTTON_1	Tactile Switch SW5 Signal	I		10K to GND
10	+3.3V		PWR	+3.3V	
11	BUTTON_2	Tactile Switch SW6 Signal	I		10K to GND
12	GND		PWR	+3.3V	

3.9.3 Analog Interface

3.9.3.1 Analog IO (X14)

The Analog outputs are implemented as Pulse Width Modulate (PWM) signals feeding discrete RC filters with a time constant of 3.3ms.

The Analog inputs are directly connected to the GPIO breakout area.

Type: 2x8Pin Header Male, 2.54mm

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
1	ANALOG_IN0	8	I	+3.3V	
2	AUDIO_AGND		PWR		
3	ANALOG_IN1	6	I	+3.3V	
4	AUDIO_AGND		PWR		
5	ANALOG_IN2	4	I	+3.3V	
6	AUDIO_AGND		PWR		
7	ANALOG_IN3	2	I	+3.3V	
8	AUDIO_AGND		PWR		
9	ANALOG_OUT_D		O	+3.3V	RC-filter (3.3ms)
10	GND		PWR		
11	ANALOG_OUT[1]		O	+3.3V	RC-filter (3.3ms)
12	GND		PWR		
13	ANALOG_OUT_B		O	+3.3V	RC-filter (3.3ms)
14	GND		PWR		
15	ANALOG_OUT_A		O	+3.3V	
16	GND		PWR		

3.10 Real-Time Clock (RTC)

The Colibri Evaluation Board uses the STMicroelectronics, M41T0M6 chip as external RTC. A battery holder (BAT1) is available on the Colibri Evaluation Board for RTC power backup.

Supported batteries: CR2032 or similar coin cells.

3.10.1 RTC Jumper (JP23)

Jumper JP23 is used for selection of the internal (on module) or external RTC.

Connector type: 1x3 Pin Header Male, 2.54 mm Pitch

Jumper position	Description
1 - 2	Internal RTC (available on Colibri Module)
2 - 3	External RTC (available on Evaluation Board)

For more details about internal RTC, please refer Colibri computer-on-module datasheet.

3.11 JTAG

The Colibri Evaluation Board provides a JTAG interface to the JTAG port available on Colibri modules.

Connector X19 is used to connect to the Colibri module JTAG connector with a flexible flat cable, and X13 provides an interface to an external JTAG device via a standard 2.54mm shrouded and keyed header.

In addition, the Colibri evaluation Board features a spring loaded Pogo-pin connector X28 which is positioned directly underneath the installed Colibri module, allowing direct connection with the Colibri module JTAG test points, removing the need for the JTAG FFC connector.

Different Colibri modules support JTAG interfaces with different voltage levels, and therefore Jumper JP29 must be used to set the correct JTAG voltage reference:

JP29	Active
1 - 2	VREF_JTAG = +1.8V
2 - 3	VREF_JTAG = +3.3V

Please note that, if the voltage is wrong, the module will be damaged!

3.11.1 JTAG to Host (X13)

Connector type: 10x2 Pin Header Male, 2.54 mm

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
1	VREF_JTAG		PWR		
2	VREF_JTAG		PWR		
3	JTAG_TRST#		I	+3.3V	
4	GND		PWR		
5	JTAG_TDI		I	+3.3V	
6	GND		PWR		
7	JTAG_TMS		I	+3.3V	
8	GND		PWR		
9	JTAG_TCK		I	+3.3V	
10	GND		PWR		
11	NC		Not connected		
12	GND		PWR		
13	JTAG_TDO_R		I	+3.3V	
14	GND		PWR		
15	JTAG_SYSRESET#		I	+3.3V	
16	GND		PWR		
17	NC		Not connected		
18	GND		PWR		
19	NC		Not connected		
20	GND		PWR		

3.11.2 JTAG to Colibri (X19)

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

First plug in FCC cable into connector X2 of Colibri module (so the blue coloured supporting tape of the FCC cable is opposite to the Colibri PCB). Secondly, plug the Colibri module into the Colibri Evaluation Board. Finally, plug the FCC cable into connector X19 of Colibri Evaluation Board (the blue coloured supporting tape of the FCC cable is facing towards the Colibri module)

Connector type: GCT FFC2A30-08-T-L

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
1	JTAG_SYSRESET#		O	+3.3V	
2	JTAG_TDI		O	+3.3V	
3	JTAG_TDO		I	+3.3V	
4	JTAG_TCK		O	+3.3V	
5	JTAG_TRST#		O	+3.3V	
6	JTAG_TMS		O	+3.3V	
7	GND		PWR		
8	+3.3V		PWR		

3.11.3 JTAG to Colibri (X28)

Connector type: Pogo Pins, Mill-Max 823-22-006-10-000101

Pin	Signal Name	Description	I/O Type	Voltage	Pull-up/Pull-down
1	JTAG_TDI		I	+3.3V	
2	JTAG_TDO		I	+3.3V	
3	JTAG_TCK		I	+3.3V	
4	JTAG_TRST#		O	+3.3V	
5	JTAG_TMS		I	+3.3V	
6	TP11				

3.12 GPIO Usage

The GPIO breakout and jumper area provides a flexible mechanism for changing the hardware configuration and signal routing for a large number of SODIMM pins, including all of those which are GPIO capable. All the SODIMM pins and the standard function signals are described on the silkscreen in order to allow the user to identify required signals on the connector, without having to reference the board schematics.

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 interface or device.

The factory setting is a straight through jumper setting, meaning that the X8-A row is connected straight to the X8-B row. This is also true for the connector X11.

To allowing easy measurement, probing, and re-routing, all signals residing on the male header are also available on a female connector in parallel.

To map SODIMM ping with the corresponding GPIO numbers which are specific to individual Colibri modules, please refer to the Migration Guide.

3.12.1 GPIO 1 Male (X8 Row A)

Connector type: 50x2 Pin Header Male, 2.54 mm

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
A1	+3.3V		PWR	+3.3V	
A2	+3.3V		PWR	+3.3V	
A3	GND		PWR		
A4	SODIMM_45	45	I/O	+3.3V	
A5	SODIMM_55	55	I/O	+3.3V	
A6	SODIMM_63	63	I/O	+3.3V	
A7	SODIMM_100	100	I/O	+3.3V	
A8	GND		PWR		
A9	SODIMM_102	102	I/O	+3.3V	
A10	SODIMM_104	104	I/O	+3.3V	
A11	VDD_FAULT#	22	I/O	+3.3V	
A12	BATT_FAULT#	24	I/O	+3.3V	
A13	SODIMM_44	44	I/O	+3.3V	
A14	SODIMM_76	76	I/O	+3.3V	
A15	+3.3V		PWR		
A16	SODIMM_70	70	I/O	+3.3V	
A17	SODIMM_60	60	I/O	+3.3V	
A18	SODIMM_58	58	I/O	+3.3V	
A19	SODIMM_78	78	I/O	+3.3V	
A20	SODIMM_72	72	I/O	+3.3V	
A21	SODIMM_80	80	I/O	+3.3V	
A22	GND		PWR		
A23	SODIMM_46	46	I/O	+3.3V	
A24	SODIMM_62	62	I/O	+3.3V	
A25	SODIMM_48	48	I/O	+3.3V	
A26	SODIMM_74	74	I/O	+3.3V	

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
A27	SODIMM_50	50	I/O	+3.3V	
A28	SODIMM_52	52	I/O	+3.3V	
A29	+3.3V		PWR		
A30	SODIMM_54	54	I/O	+3.3V	
A31	SODIMM_66	66	I/O	+3.3V	
A32	SODIMM_64	64	I/O	+3.3V	
A33	SODIMM_57	57	I/O	+3.3V	
A34	SODIMM_61	61	I/O	+3.3V	
A35	SODIMM_136	136	I/O	+3.3V	
A36	GND		PWR		
A37	SODIMM_138	138	I/O	+3.3V	
A38	SODIMM_140	140	I/O	+3.3V	
A39	SODIMM_142	142	I/O	+3.3V	
A40	SODIMM_144	144	I/O	+3.3V	
A41	SODIMM_146	146	I/O	+3.3V	
A42	SODIMM_56	56	I/O	+3.3V	
A43	+3.3V		PWR		
A44	SODIMM_68	68	I/O	+3.3V	
A45	SODIMM_82	82	I/O	+3.3V	
A46	SODIMM_71	71	I/O	+3.3V	
A47	SODIMM_194	194	I/O	+3.3V	
A48	SODIMM_196	196	I/O	+3.3V	
A49	GND		PWR		
A50	GND		PWR		

3.12.2 GPIO 1 Female (X9)

Type: 1x50Pin Female, 2.54mm

Pin-out identical to X8 Pins A1 to A50.

3.12.3 Function 1 Male (X8 Row B)

Connector type: 50x2 Pin Header Male, 2.54 mm

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
B1	+3.3V		PWR		
B2	+3.3V		PWR		
B3	GND		PWR		
B4	SODIMM_45		I/O	+3.3V	
B5	SODIMM_55		I/O	+3.3V	
B6	SODIMM_63		I/O	+3.3V	
B7	SODIMM_100		I/O	+3.3V	
B8	GND		PWR		
B9	SODIMM_102		I/O	+3.3V	
B10	SODIMM_104		I/O	+3.3V	
B11	VDD_FAULT#		I/O	+3.3V	
B12	BATT_FAULT#		I/O	+3.3V	

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
B13	LCD_BIAS		O	+3.3V	
B14	LCD_D_0		O	OLV	
B15	+3.3V		PWR		
B16	LCD_D_1		O	+3.3V	
B17	LCD_D_2		O	+3.3V	
B18	LCD_D_3		O	+3.3V	
B19	LCD_D_4		O	+3.3V	
B20	LCD_D_5		O	+3.3V	
B21	LCD_D_6		O	+3.3V	
B22	GND		PWR		
B23	LCD_D_7		O	+3.3V	
B24	LCD_D_8		O	+3.3V	
B25	LCD_D_9		O	+3.3V	
B26	LCD_D_10		O	+3.3V	
B27	LCD_D_11		O	+3.3V	
B28	LCD_D_12		O	+3.3V	
B29	+3.3V		PWR		
B30	LCD_D_13		O	+3.3V	
B31	LCD_D_14		O	+3.3V	
B32	LCD_D_15		I/O	+3.3V	
B33	LCD_D_16		I/O	+3.3V	
B34	LCD_D_17		I	+3.3V	
B35	LCD_D_18		O	+3.3V	
B36	GND		PWR		
B37	LCD_D_19		O	+3.3V	
B38	LCD_D_20		O	+3.3V	
B39	LCD_D_21		O	+3.3V	
B40	LCD_D_22		I	+3.3V	100k to +3.3V
B41	LCD_D_23		I	+3.3V	100k to +3.3V
B42	LCD_PCLK_WR		I	+3.3V	100k to +3.3V
B43	+3.3V		PWR		
B44	LCD_LCLK_AO		O	+3.3V	100k to +3.3V
B45	LCD_FCLK_RD		I/O	+3.3V	33k to +3.3V
B46	BL_ON		I/O	+3.3V	68k to +3.3V
B47	I2C_SDA		I/O	+3.3V	4k7 to +3.3V
B48	I2C_SCL		I/O	+3.3V	4k7 to +3.3V
B49	GND		PWR		
B50	GND		PWR		

3.12.4 Function 1 Female (X7)

Type: 1x50Pin Female, 2.54mm

Pin-out identical to X8 Pins B1 to B50

3.12.5 Function 2 Male (X11 Row A)

Connector type: 50x2 Pin Header Male, 2.54 mm

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
A1	+3.3V		PWR		
A2	UART_C_RXD		I	+3.3V	
A3	UART_C_TXD		O	+3.3V	
A4	UART_A_DTR		O	+3.3V	
A5	UART_A _CTS		I	+3.3V	
A6	UART_A _RTS		O	+3.3V	
A7	UART_A _DSR		I	+3.3V	
A8	GND		PWR		
A9	UART_A _DCD		I	+3.3V	
A10	UART_A _D_RXD		I	+3.3V	
A11	UART_A _D_TXD		O	+3.3V	
A12	UART_A _RI		I	+3.3V	
A13	UART_B_CTS		I	+3.3V	
A14	UART_B_RTS		O	+3.3V	
A15	+3.3V		PWR		
A16	UART_B_RXD		I	+3.3V	
A17	UART_B_TXD		O	+3.3V	
A18	MM_CD		I	+3.3V	
A19	MM_CLK		O	+3.3V	
A20	MM_CMD		I	+3.3V	33k to +3.3V
A21	MM_DAT_0		I/O	+3.3V	68k to +3.3V
A22	GND		PWR		
A23	MM_DAT_1		I/O	+3.3V	68k to +3.3V
A24	MM_DAT_2		I/O	+3.3V	68k to +3.3V
A25	MM_DAT_3		I/O	+3.3V	68k to +3.3V
A26	PWM_A		O	+3.3V	
A27	PWM_B		O	+3.3V	RC-filter (3.3ms)
A28	PWM_C		O	+3.3V	RC-filter (3.3ms)
A29	+3.3V		PWR		
A30	PWM_D		O	+3.3V	RC-filter (3.3ms)
A31	CAN_INT#		I/O	+3.3V	4k7 to +3.3V
A32	SSP_FRM		I/O	+3.3V	
A33	SSP_SCLK		I/O	+3.3V	
A34	SSP_RXD		I	+3.3V	
A35	SSP_TXD		O	+3.3V	
A36	GND		PWR		
A37	EXT_CS_0#		O	+3.3V	100k to +3.3V
A38	EXT_CS_1#		O	+3.3V	100k to +3.3V
A39	EXT_CS_2#		O	+3.3V	100k to +3.3V
A40	EXT_IO_0		I/O	+3.3V	
A41	EXT_IO_1		I/O	+3.3V	

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
A42	EXT_IO_2		I/O	+3.3V	
A43	+3.3V		PWR		
A44	GND		PWR		
A45	+3.3V		PWR		
A46	GND		PWR		
A47	USB_PE#		O	+3.3V	100k to GND
A48	USB_OC#		O	+3.3V	100k to +3.3V
A49	USBC_DET		I	+3.3V	
A50	GND		PWR		

3.12.6 Function 2 Female (X12)

Type: 1x50Pin Female, 2.54mm

Pin-out identical to X11 Pins A1 to A50

3.12.7 GPIO 2 Male (X11 Row B)

Connector type: 50x2 Pin Header Male, 2.54 mm

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
B1	+3.3V		PWR		
B2	SODIMM_19	19	I/O	+3.3V	
B3	SODIMM_21	21	I/O	+3.3V	
B4	SODIMM_23	23	I/O	+3.3V	
B5	SODIMM_25	25	I/O	+3.3V	
B6	SODIMM_27	27	I/O	+3.3V	
B7	SODIMM_29	29	I/O	+3.3V	
B8	GND		PWR		
B9	SODIMM_31	31	I/O	+3.3V	
B10	SODIMM_33	33	I/O	+3.3V	
B11	SODIMM_35	35	I/O	+3.3V	
B12	SODIMM_37	37	I/O	+3.3V	
B13	SODIMM_32	32	I/O	+3.3V	
B14	SODIMM_34	34	I/O	+3.3V	
B15	+3.3V		PWR		
B16	SODIMM_36	36	I/O	+3.3V	
B17	SODIMM_38	38	I/O	+3.3V	
B18	SODIMM_43	43	I/O	+3.3V	
B19	SODIMM_47	47	I/O	+3.3V	
B20	SODIMM_190	190	I/O	+3.3V	
B21	SODIMM_192	192	I/O	+3.3V	
B22	GND		PWR		
B23	SODIMM_49	49	I/O	+3.3V	
B24	SODIMM_51	51	I/O	+3.3V	
B25	SODIMM_53	53	I/O	+3.3V	
B26	SODIMM_59	59	I/O	+3.3V	
B27	SODIMM_28	28	I/O	+3.3V	

Pin	Signal Name	SODIMM Pin Number	I/O Type	Voltage	Remarks
B28	SODIMM_30	30	I/O	+3.3V	
B29	+3.3V		PWR		
B30	SODIMM_67	67	I/O	+3.3V	
B31	SODIMM_73	73	I/O	+3.3V	
B32	SODIMM_86	86	I/O	+3.3V	
B33	SODIMM_88	88	I/O	+3.3V	
B34	SODIMM_90	90	I/O	+3.3V	
B35	SODIMM_92	92	I/O	+3.3V	
B36	GND		PWR		
B37	SODIMM_105	105	I/O	+3.3V	
B38	SODIMM_107	107	I/O	+3.3V	
B39	SODIMM_106	106	I/O	+3.3V	
B40	SODIMM_135	135	I/O	+3.3V	
B41	SODIMM_133	133	I/O	+3.3V	
B42	SODIMM_127	127	I/O	+3.3V	
B43	+3.3V		PWR		
B44	GND		PWR		
B45	+3.3V		PWR		
B46	GND		PWR		
B47	SODIMM_129	129	I/O	+3.3V	
B48	SODIMM_131	131	I/O	+3.3V	
B49	SODIMM_137	137	I/O	+3.3V	
B50	GND		PWR		

3.12.8 GPIO 2 Female (X10)

Type: 1x50Pin Female, 2.54mm

Pin-out identical to X11 Pins B1 to B50

4 Default Signal Mapping

The table below lists the default signal 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 details please refer to the schematics of the Evaluation Board.
Function	Description of the signal

4.1 Default Signal 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_44	13	13		VGA	X34-32 / X20-27	LCD_BIAS
SODIMM_46	23	23		VGA	X34-19 / X20-14	LCD_Green3 / LCD_D_7
SODIMM_48	25	25		VGA	X34-17 / X20-16	LCD_Green5 / LDC_D_9
SODIMM_50	27	27		VGA	X34-15 / X20-18	LCD_Green7 / /LCD_D_11
SODIMM_52	28	28		VGA	X34-27 / X20-6	LCD_Red2 / LDC_D_12
SODIMM_54	30	30		VGA	X34-26 / X20-7	LCD_Red3 / LCD_D_13
SODIMM_56	42	42		VGA	X34-28 / X20-2	LCD_PCLK_WR
SODIMM_57	33	33		VGA	X34-23 / X20-10	LCD_Red6 / LDD_D_16
SODIMM_58	18	18		VGA	X34-10 / X20-23	LCD_Blue5 / LDC_D_3
SODIMM_60	17	17		VGA	X34-11 / X20-22	LCD_Blue4 / LDC_D_2
SODIMM_61	34	34		VGA	X34-22 / X20-11	LCD_Red7 / LCD_D_17
SODIMM_62	24	24		VGA	X34-18 / X20-15	LCD_Green4 / LCD_D_8
SODIMM_64	32	32		VGA	X34-32 / X20-9	LCD_Red5 / LCD_D_15
SODIMM_66	31	31		VGA	X34-32 / X20-8	LCD_Red4 / LCD_D_14
SODIMM_68	44	44		VGA	X34-32 / X20-3	LCD_LCLK_A0
SODIMM_70	16	16		VGA	X34-32 / X20-21	LCD_Blue3 / LCD_D_1
SODIMM_71	46	46			X23-3	BL_ON
SODIMM_72	20	20		VGA	X34-8 / X20-25	LCD_Blue7 / LDC_D_5
SODIMM_74	26	26		VGA	X34-16 / X20-17	LCD_Green6 / LCD_D_10
SODIMM_76	14	14		VGA	X34-13 / X20-20	LCD_Blue2 / LCD_D_0
SODIMM_78	19	19		VGA	X34-9 / X20-24	LCD_Blue6 / LCD_D_4

Colibri Side of the Patch Panel			Evaluation Board Side of the Patch Panel		
SODIMM_80	21	21	VGA	X34-20 / X20-13	LCD_Green2 / LCD_D_6
SODIMM_82	45	45	VGA	X34-31 / X20-4	LCD_FCLK_RD
SODIMM_136	35	35	VGA	X20-47	LCD_Green2 / LCD_D_18
SODIMM_138	37	37	VGA	X20-48	LCD_Green2 / LCD_D_19
SODIMM_140	38	38	VGA	X20-45	LCD_Green2 / LCD_D_20
SODIMM_142	39	39	VGA	X20-46	LCD_Green2 / LCD_D_21
SODIMM_144	40	40	VGA	X20-43	LCD_Green2 / LCD_D_22
SODIMM_146	41	41	VGA	X20-44	LCD_Green2 / LCD_D_23
SODIMM_194	47	47		X3-A29	I2C_SDA
SODIMM_196	48	48		X3-C28	I2C_SCL

4.2 Default Signal 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			X36-4	UART_C_RXD
SODIMM_21	3	3			X36-3	UART_C_TXD
SODIMM_23	4	4	Level shifted		X25-L4	UART_A_DTR
SODIMM_25	5	5	Level shifted		X25-L8	UART_A_CTS
SODIMM_27	6	6	Level shifted		X25-L7	UART_A_RTS
SODIMM_28	27	27		Analog I/O		Analog Out B
SODIMM_29	7	7	Level shifted		X25-L6	UART_A_DSR
SODIMM_30	28	28		Analog I/O		Analog Out C
SODIMM_31	9	9	Level shifted		X25-L1	UART_A_DCD
SODIMM_32	13	13	Level shifted		X25-U8	UART_B_CTS
SODIMM_33	10	10	Level shifted		X25-L2	UART_A_D_RXD
SODIMM_34	14	14	Level shifted		X25-U7	UART_B_RTS
SODIMM_35	11	11	Level shifted		X25-L3	UART_A_D_TXD
SODIMM_36	16	16	Level shifted		X25-U2	UART_B_RXD
SODIMM_37	12	12	Level shifted		X25-L9	UART_A_RI
SODIMM_38	17	17	Level shifted		X25-U3	UART_B_TXD
SODIMM_43	18	18			X15-10	MM_CD
SODIMM_47	19	19			X15-5	MM_CLK
SODIMM_49	23	23			X15-8	MM_DAT_1
SODIMM_51	24	24			X15-9	MM_DAT_2
SODIMM_53	25	25			X15-1	MM_DAT_3
SODIMM_59	26	26		Analog I/O		Analog Out A
SODIMM_67	30	30		Analog I/O		Analog Out D
SODIMM_73	31	31		CAN		CAN_INT#
SODIMM_86	32	32			X3-A30	SSP_FRM
SODIMM_88	3	3			X3-C29	SSP_SCLK
SODIMM_90	34	34			X3-C30	SSP_RXD

Colibri Side of the Patch Panel			Evaluation Board Side of the Patch Panel			
SODIMM_92	35	35			X3-B30	SSP_TXD
SODIMM_105	37	37			X3-A27	EXT_CS_0#
SODIMM_106	39	39			X3-C27	EXT_CS_2#
SODIMM_107	38	38			X3-B26	EXT_CS_1#
SODIMM_127	42	42			X3-C32	EXT_IO_2
SODIMM_129	47	47		USB Host		USB_PE#
SODIMM_131	48	48		USB Host		USB_OC#
SODIMM_133	41	41			X3-A32	EXT_IO_1
SODIMM_135	40	40			X3-C31	EXT_IO_0
SODIMM_137	49	49	Level shifted		X29-1	USB_C_DET
SODIMM_190	20	20			X15-2	MM_CMD
SODIMM_192	21	21			X15-7	MM_DAT_0

5 Mechanical Data

5.1 Colibri Evaluation Board Dimensions –Top Side

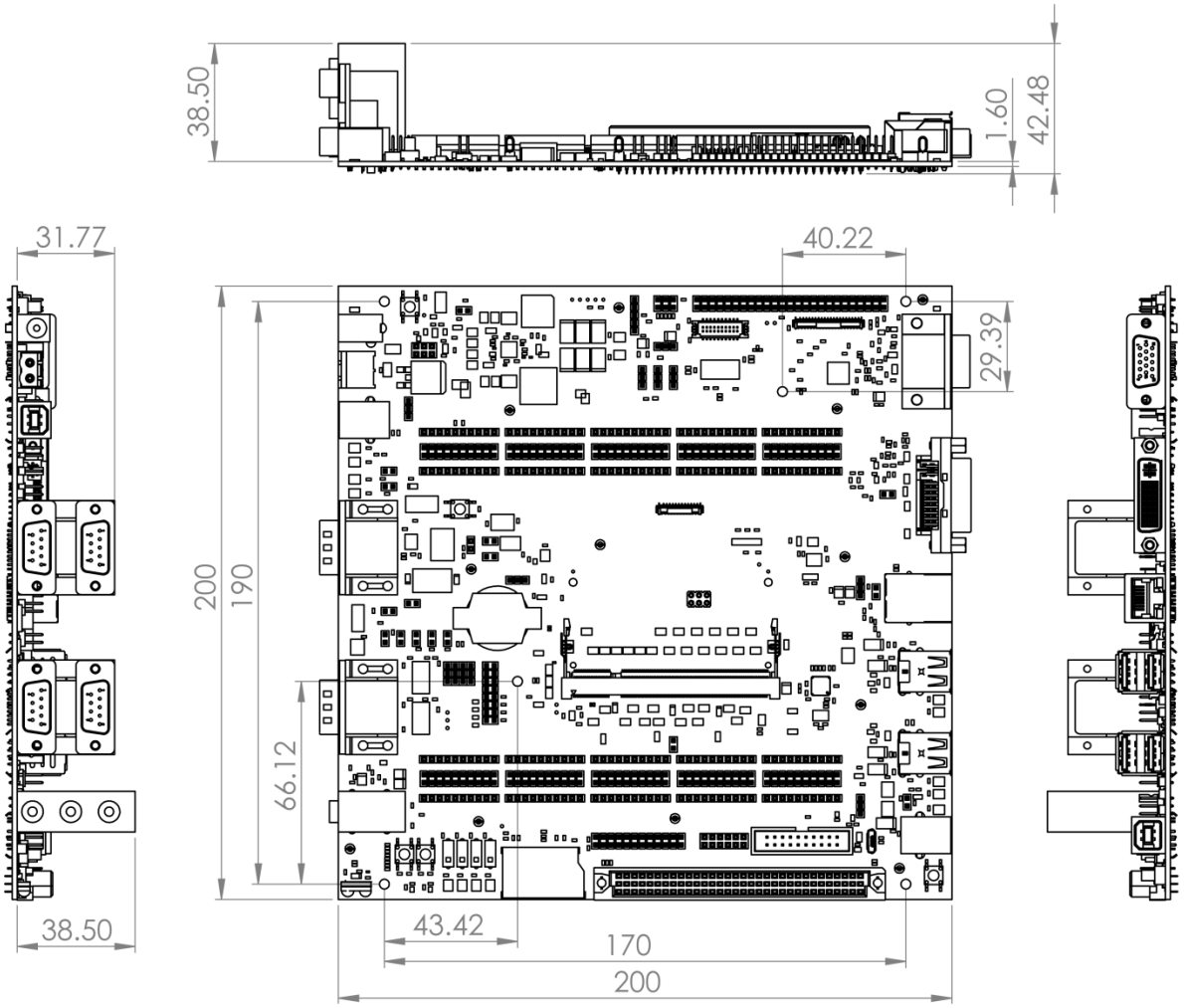


Fig.4 Colibri Evaluation Board Mechanical Drawing – Top Side

6 Design Data

The design data for Toradex carrier boards are freely available in the Altium Designer format. The design data includes schematics, layout, and component libraries.

To download the carrier board design data, please use the web-link below:

http://developer.toradex.com/carrier-board-design

7 Product Compliance

Up-to-date information about product compliance such as RoHS, CE, UL-94, Conflict Mineral, REACH etc. can be found on our website at: http://www.toradex.com/support/product-compliance