ArmadeuS

DATASHEET

LQ043_ADAPT

o.A

19. March 2008

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File name: LQ043_Adapt.odt
Last editing: 19 Mar 2008

1.1 - Introduction

The LQ043_Adapt board allows connecting an external TFT display to the development boards (DevLight or DevFull).

1.2 - Targeted TFT

The targeted TFT is the LQ043Txxx series from Sharp.

This product has the followings characteristics:

- 4.3" 480 x 272 pixels 24bits color matrix display
- white led backlight
- with or without touchscreen

1.3 - Features

The LQ043_Adapt provides the following features:

- backlight current controller digitally adjustable by means of a PWM
- generation of the 5Vdc power supply required by the display
- special connectors for the TFT panel
- pre-routed part for touchscreen controller manual assembly

1.4 - Electrical

Input power supply	3.3V dc+/- 10%
5V output	5Vdc +/- 20% @ 20mA max
Power consumption	100mW + 500mW (backlight)

1.5 - Environnemental

Temperature of use (depending on exact TFT type): most critical -10..+50 °C (LQ043T3DXxx)

Storage temperature (depending on exact TFT type): most critical -20..+60 °C (LQ043T3DXxx)

Humidity: 5..90%

1.6 - Mechanical

Size: 105.4 mm x 45 mm (4.15" x 1.78")

http://www.armadeus.com/downloads/lcd_adapt_LQ043/assembly.pdf

1.7 - Development Board Interfaces

Four connectors (2.54mm pitch) are present on the adapter board:

- Touchscreen (1x4 pins 2.54mm): used to gain access to the touchscreen analog signals of the LCD. The pin 1 is indicated on the PCB.

- LCD (dual row 2x15 pins): LCD signals and and power supply. The pin 1 indicated on the PCB (bottom right on the image)

- Audio Ctrl (1x5 pins 2,54mm): used to

- Audio Out (1x3 pins 2,54mm): stereo audio out analog signals which can directly drive a headphone.

1.7.1 - Touchscreen connector (X2)

Pin	Name	Description
1	X+	Touchscreen X+ axis
2	Y+	Touchscreen Y+ axis
3	X-	Touchscreen X- axis
4	Y-	Touchscreen Y- axis

1.7.2 - LCD connector (X5)

Pin	Name	Description	Pin	Name	Description
1	LSCLK	LCD clock	2	V3P3	+3.3V. Power supply
3	REV	SPI2_SCLK. Used by the touchscreen controller	4	V5P0	Not used
5	SPL_SPR	SPI2_MOSI. Used by the touchscreen controller	6	CNTRST	PWM input for backlight adjustment
7	PS	SPI2_MISO. Used by the touchscreen controller	8	OE_ACD	Output Enable LCD signal
9	CLS	TSC_IRQn. Used by the touchscreen controller. Active Low	10	HSYNC	Horizontal Sync
11	GND	Ground	12	VSYNC	Vertical Sync
13	B0	Blue bit 0 (LSB)	14	GND	Ground
15	B2	Blue bit 2	16	B1	Blue bit 1
17	B4	Blue bit 4	18	B3	Blue bit 3
19	G1	Green bit 1	20	G0	Green bit 0 (LSB)

21	G3	Green bit 3	22	G2	Green bit 2
23	G5	Green bit 5	24	G4	Green bit 4
25	R1	Red bit 1	26	R0	Red bit 0 (LSB)
27	R3	Red bit 3	28	R2	Red bit 2
29	R4	Red bit 4	30	GND	Ground

1.7.3 - Audio Ctrl connector (X7)

Pin	Name	Description
1	GND	
2	TSC_SSn	Chip select of the SPI interface of the TSC2102 controller. Active Low
3	TXCLK	Transmit clock of the SSI interface
4	TXDAT	Transmit data of the SSI interface
5	TXFS	Transmit Frame Sync of the SSI interface

1.7.4 - Audio Out connector (X642)

Pin	Name	Description
1	HPL	Audio out left
2	HPR	Audio out right
3	VGND	Virtual ground for the headphone

1.8 - Additional informations

More informations concerning the TFT and the adapter can be found here:

http://www.armadeus.com/wiki/index.php?title=LCD