LAUNCHXL-F28379D Overview

User's Guide

Literature Number: SPRUI77
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LAUNCHXL-F28379D Overview

1 Introduction

The C2000™ Delfino™ LaunchPad™, LAUNCHXL-F28379D, is a complete low-cost development board for the Texas Instruments Delfino F2837xD devices. The LAUNCHXL-F28379D kit features all the hardware and software necessary to develop applications based on the F2837xD microcontrollers. The LaunchPad is based on the superset F28379D device, and easily allows users to migrate to lower feature set and/or lower pin count F2837x devices once the design needs are known. It offers an on-board JTAG emulation tool allowing direct interface to a PC for easy programming, debugging, and evaluation. In addition to JTAG emulation, the USB interface provides a UART serial connection from the F28379D device to the host PC.

Users can download an unrestricted copy of the latest version of Code Composer Studio™ IDE version 6 to write, download, and debug applications on the LAUNCHXL-F28379D board. The debugger is unobtrusive, allowing the user to run an application at full speed with hardware breakpoints and single stepping available while consuming no extra hardware resources.

As shown in Figure 1, the LAUNCHXL-F28379D C2000 LaunchPad features include:

- USB debugging and programming interface via a high-speed galvanically isolated XDS100v2 emulator featuring a USB/UART connection
- Superset F28379D device
- Two user LEDs
- Device reset pushbutton
- Easily accessible device pins for debugging purposes or as sockets for adding customized extension boards
- Dual 5 V quadrature encoder interfaces
- CAN Interface with integrated transceiver
- Boot selection switches
- Differential Amplifier to provide buffered signals to ADC D for 16-bit mode
- Optional SMA connection points P/N:SMA-J-P-H-ST-EM1
- 4 Sigma Delta demodulator inputs brought to the BP headers

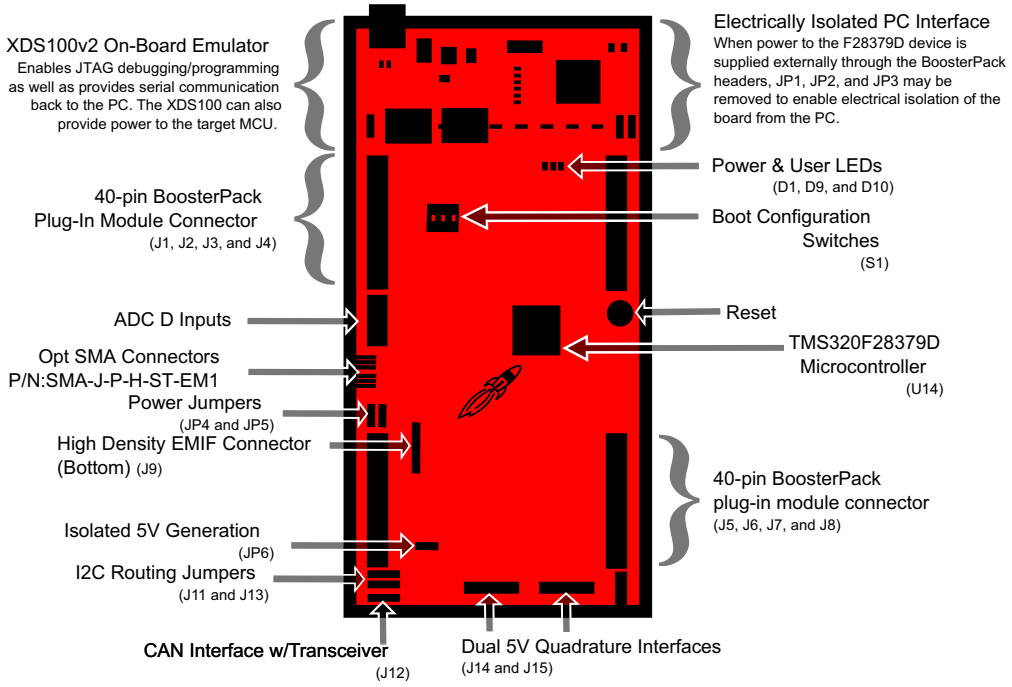

Figure 1. LAUNCHXL-F28379D Board Overview

2 Kit Contents

The LAUNCHXL-F28379D LaunchPad experimenter kit includes the following items:

- C2000 Delfino LaunchPad Board (LAUNCHXL-F28379D)
- Mini USB-B Cable, 0.5m
- Quick Start Guide

3 Installation

The F28379D LaunchPad is supported in Code Composer Studio.

3.1 Code Composer Studio

3.1.1 Download the Required Software

Code Composer Studio IDE is available for free without any restriction when used with the XDS100 emulator on the C2000 LaunchPad. The software can be downloaded from the C2000 LaunchPad page at ti.com/launchpad. At this site, you can also download a copy of controlSUITE that includes drivers, examples, and other support software needed to get started.

3.1.2 Install the Software

Once downloaded, install Code Composer Studio and the controlSUITE package.

3.1.3 Install the Hardware

After Code Composer Studio is installed, plug the supplied USB cable into the C2000 LaunchPad board and into an available USB port on your computer.

Windows® will automatically detect the hardware and ask you to install software drivers. Let Windows run a search for the drivers and automatically install them. After Windows successfully installs the drivers for the integrated XDS100v2 emulator, your LaunchPad is now ready for use.

4 Getting Started with the LAUNCHXL-F28379D

4.1 Getting Started

The first time the LAUNCHXL-F28379D is used, a demo application automatically starts when the board is powered from a USB host. If your board does not start the demo application, try placing S1 in the following positions and resetting the board: UP - UP - DOWN. To start the demo, connect the LAUNCHXL-F28379D with the included mini-USB cable to a free USB port. The demo application starts with the LEDs flashing to show the device is active.

4.2 Demo Application, ADC Sampling

The LAUNCHXL-F28379D includes a pre-programmed TMS320F28379D device. When the LaunchPad is connected via USB, the demo starts with an LED flash sequence. After a few seconds the device switches into an ADC sample mode.

Every 1 second the ADC samples pin ADCIN14 and the sampled data is represented as follows: If the sample is above mid-scale (2048), the red LED D9 will light. If the sample is below mid-scale, the blue LED D10 will light.

In addition to the LED display, sample information is also displayed on your PC through the USB/UART connection. To view the UART information on your PC, first figure out the COM port associated with the LaunchPad. To do this in Windows, right click on *My Computer* and click on *Properties*. In the dialog box that appears, click on the Hardware tab and open *Device Manager*. Look for an entry under Ports (COM & LPT) titled "USB Serial Port (COMX)", where X is a number. Remember this number for when you open a serial terminal. The demo applications UART data was written and debugged using PuTTY, and for the best user experience we recommend you use PuTTY to view the UART data. PuTTY can be downloaded from the following URL:

http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

Open your serial terminal program and open the COM port you found previously in device manager with the following settings: 115200 Baud, 8 data bits, no parity, 1 stop bit. After opening the serial port in your serial terminal, reset the Launchpad with the reset push button and observe the serial terminal for a surprise.

4.3 Program and Debug the ADC Sample Demo Application

The project and associated source code for the C2000 Delfino LaunchPad demo is included in the controlSUITE software package and should automatically be found by the TI Resource Explorer in Code Composer Studio v6. In the resource explorer, open the controlSUITE folder and then the Development Tools entry and look for the C2000 LaunchPad line item. Expand this item and LAUNCHXL-F28379D, then select the LaunchPad Demo Application. Follow the steps in the main pane of the resource explorer to import, build, debug, and run this application.

5 Hardware Configuration

The F28379D LaunchPad provides users with several options on how to configure the board.

5.1 ADC Resolution

The F28379D had 4 independent 16-bit/12-bit ADCs. The resolution of each ADC is SW selectable. ADCA, ADCB, and ADCC are all brough to the BP headers for use with different booster packs. Most BP will use the ADC in 12-bit mode which supports Single Ended (SE) inputs. ADC D has been brought to a special side connector with ability to drive through a differential amplifier to support 16-bit mode with Differential Ended (DE) inputs.

5.2 Power Domain

The F28379D LaunchPad has several different power domains to enable JTAG isolation. Jumpers JP1, JP2, JP4, and JP5 configure where power is passed.

Jumper	Power Domain
JP1	Enable 3.3 V from USB (disables isolation)
JP2	Enable GND from USB (disables isolation)
JP3	Enable 5 V from USB(disables isolation) ensure JP6 is left open when this jumper is populated
JP4	Connects target MCU 3.3 V to second set of BoosterPack headers
JP5	Connects target MCU 5 V to second set of BoosterPack headers
JP6	Enables 5 V supply from isolated 3.3 V. Only populate this jumper if JP3 is open.

5.3 Boot Mode Selection

The LaunchPad's F28379D device includes a boot ROM that performs some basic start-up checks and allows for the device to boot in many different ways. Most users will either want to perform an emulation boot or a boot to flash (if they are running the application standalone). S1 has been provided to allow users to easily configure the pins that the bootROM checks to make this decision. The switches on S1 correspond to:

Switch	Function
1	GPIO84
2	GPIO72
3	TRSTn

Keep in mind that the debugger does not connect if the device is not in the emulation boot mode (TRST switch in the up position). More information about boot mode selection can be found in the *Boot ROM* section of the *TMS320F2837xD Dual-Core Delfino Microcontrollers Technical Reference Manual* (SPRUHM8).

5.4 Connecting a BoosterPack

The F2837xD LaunchPad is the perfect experimenter board to start hardware development with the F2837xD devices. All of the connectors are aligned in a 0.1-in (2.54-mm) grid to allow easy and inexpensive development of add on boards called BoosterPacks. These satellite boards can access all of the GPIO and analog signals. The the pin out of the connectors can be found in Section 5.

6 LAUNCHXL-F28379D Hardware

6.1 Device Pin Out

.Table 1 through Table 4 lists the pin out and pin mux options for the C2000 LaunchPad. Additional muxing options are available and can be found in the *TMS320F2837xD Dual-Core Delfino™ Microcontrollers Data Manual* (SPRS880).

Table 1. F28379D LaunchPad Pin Out and Pin Mux Options - J1, J3

Mux Value				J1 Pin	J3 Pin	Mux Value			
X	2	1	0			0	Alt Function	2	X
			3.3V	1	21	5V			
			GPIO32	2	22	GND			
	SCIRXDB		GPIO19	3	23	ADCIN14	CMPIN4P		
	SCITXDB		GPIO18	4	24	ADCINC3	CMPIN6N		
			GPIO67	5	25	ADCINB3	CMPIN3N		
			GPIO111	6	26	ADCINA3	CMPIN1N		
SPICLKA(1)			GPIO60	7	27	ADCINC2	CMPIN6P		
			GPIO22	8	28	ADCINB2	CMPIN3P		
		SCLA	GPIO105	9	29	ADCINA2	CMPIN1P		
		SDAA	GPIO104	10	30	ADCINA0	DACOUTA		

(1) For full pin muxing table for functions shown here and additional mux options, see the TMS320F2837xD Dual-Core Delfino™ Microcontrollers Data Manual.

Table 2. F28379D LaunchPad Pin Out and Pin Mux Options - J4, J2

Mux Value				J4 Pin	J2 Pin	Mux Value			
X	2	1	0			0	1	2	X
		EPWM1A	GPIO0	40	20	GND			
		EPWM1B	GPIO1	39	19	GPIO61			
		EPWM2A	GPIO2	38	18	GPIO123			SD1_C1(1)
		EPWM2B	GPIO3	37	17	GPIO122			SD1_D1(1)
		EPWM3A	GPIO4	36	16	RST			
		EPWM3B	GPIO5	35	15	GPIO58			SPISIMOA(1)
		OUTPUTXBAR1	GPIO24	34	14	GPIO59			SPISOMIA(1)
OUTPUTXBAR7(1)			GPIO16	33	13	GPIO124			SD1_D2(1)
			DAC1	32	12	GPIO125			SD1_C2(1)
			DAC2	31	11	GPIO29			OUTPUTXBAR6(1)

(1) For full pin muxing table for functions shown here and additional mux options, see the TMS320F2837xD Dual-Core Delfino™ Microcontrollers Data Manual.

Table 3. F28379D LaunchPad Pin Out and Pin Mux Options - J5, J7

Mux Value				J5 Pin	J7 Pin	Mux Value			
X	2	1	0			0	Alt Function	2	X
			3.3V	41	61	5V			
			GPIO95	42	62	GND			
SCIRXDC[1]			GPIO139	43	63	ADCIN15	CMPIN4N		
SCITXDC[1]			GPIO56	44	64	ADCINC5	CMPIN5N		
			GPIO97	45	65	ADCINB5			
			GPIO94	46	66	ADCINA5	CMPIN2N		
SPICLKB			GPIO65	47	67	ADCINC4	CMPIN5P		
			GPIO52	48	68	ADCINB4			
SCLB[1]			GPIO41	49	69	ADCINA4	CMPIN2P		
SDAB[1]			GPIO40	50	70	ADCINA1	DACOUTB		

(1) For full pin muxing table for functions shown here and additional mux options, see the TMS320F2837xD Dual-Core Delfino™ Microcontrollers Data Manual.

Table 4. F28379D LaunchPad Pin Out and Pin Mux Options - J8, J6

Mux Value				J8 Pin	J6 Pin	Mux Value			
X	2	1	0			0	1	2	X
		EPWM4A	GPIO6	80	60	GND			
		EPWM4B	GPIO7	79	59	GPIO66			
		EPWM5A	GPIO8	78	58	GPIO131			SD2_C1*
		EPWM5B	GPIO9	77	57	GPIO130			SD2_D1*
		EPWM6A	GPIO10	76	56	RST			
		EPWM6B	GPIO11	75	55	GPIO63			SPISIMOB*
OUTPUTXBAR3			GPIO14	74	54	GPIO64			SPISOMIB*
OUTPUTXBAR4			GPIO15	73	53	GPIO26			SD2_D2*
			DAC3	72	52	GPIO27			SD2_C2*
			DAC4	71	51	GPIO25			OUTPUTXBAR2*

6.2 Schematics

Figure 2 shows the F28379D LaunchPad schematic.

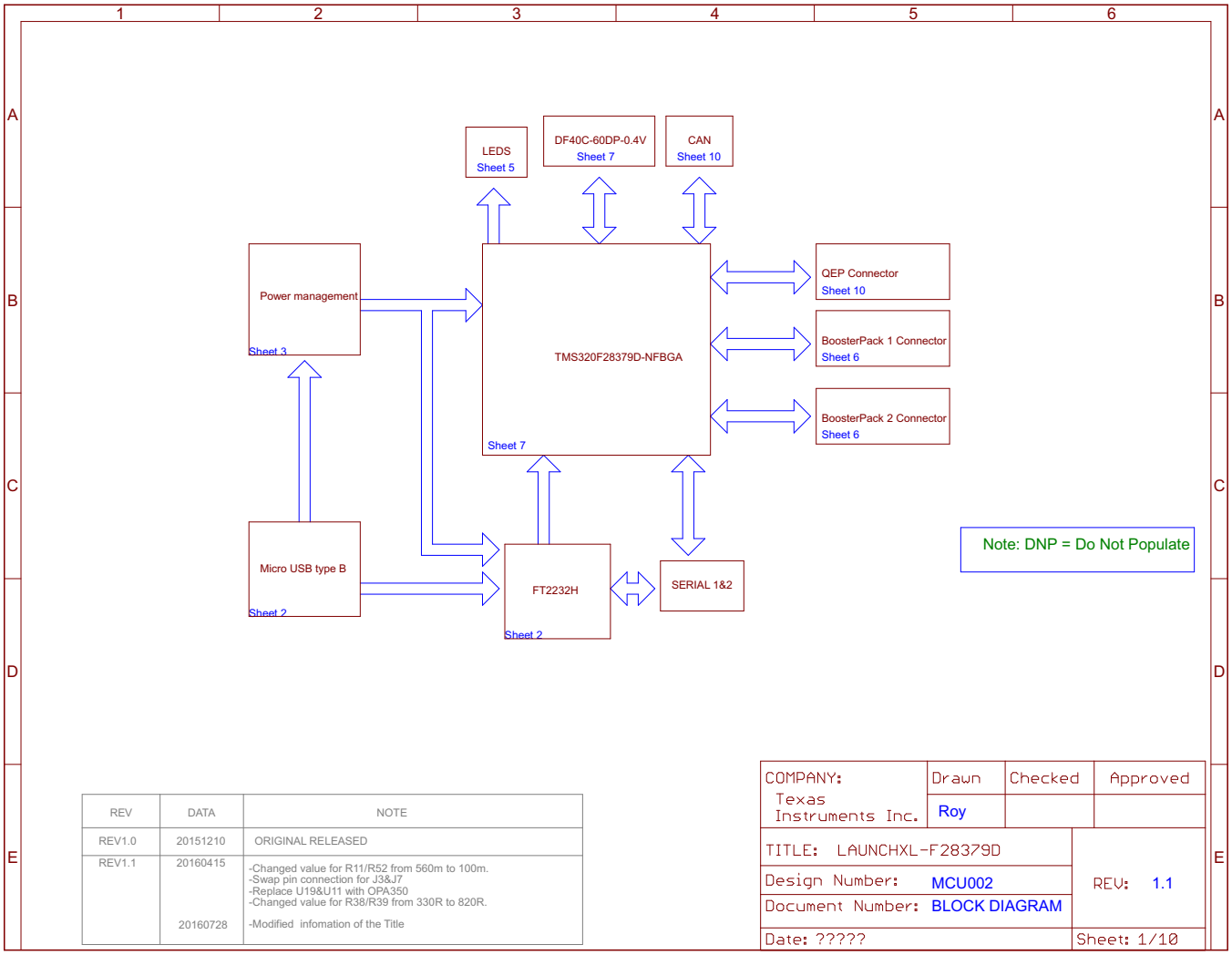

Figure 2. LAUNCHXL-F28379D_B Block Diagram Schematic

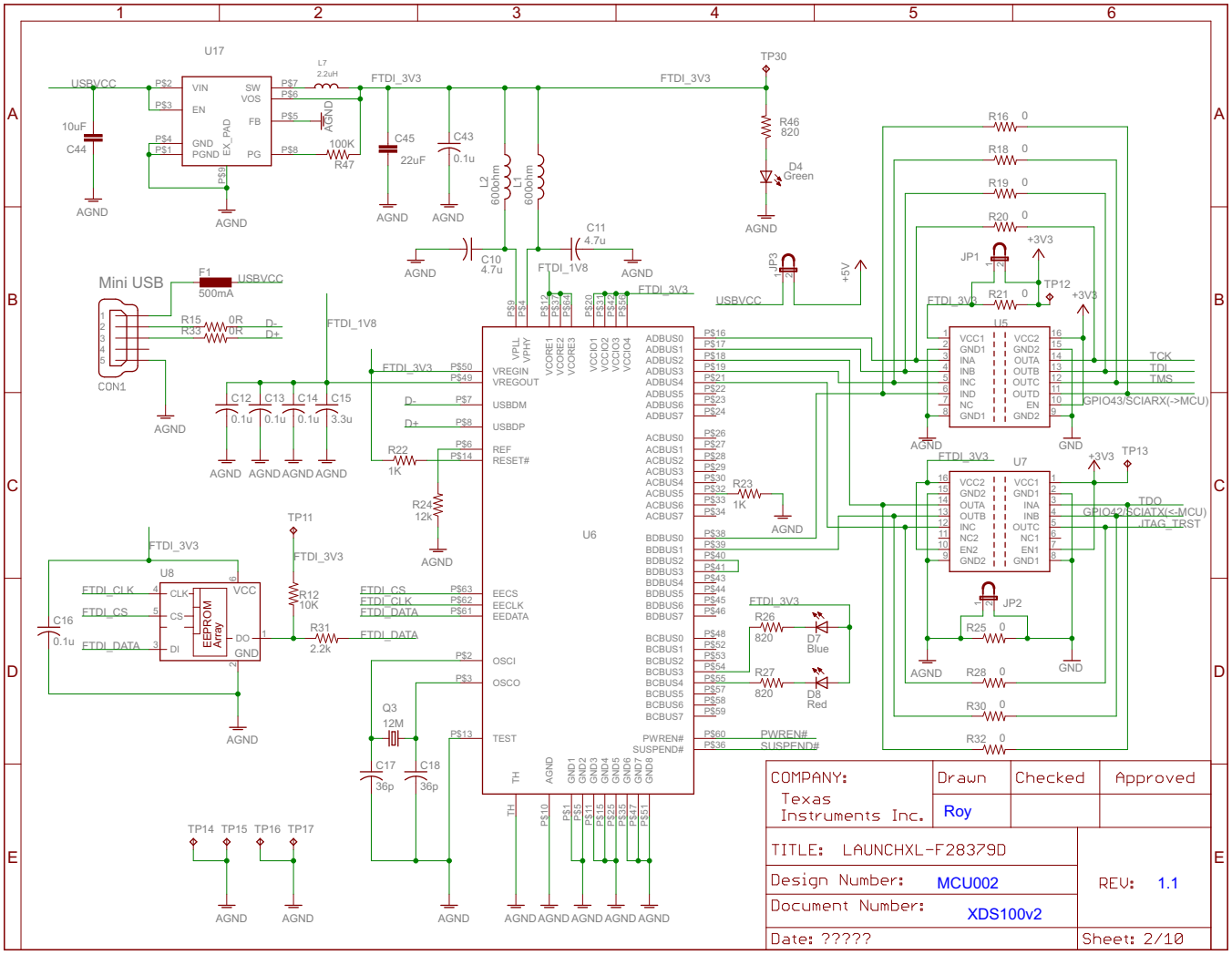

Figure 3. LAUNCHXL-F28379D XDS100v2 Schematic

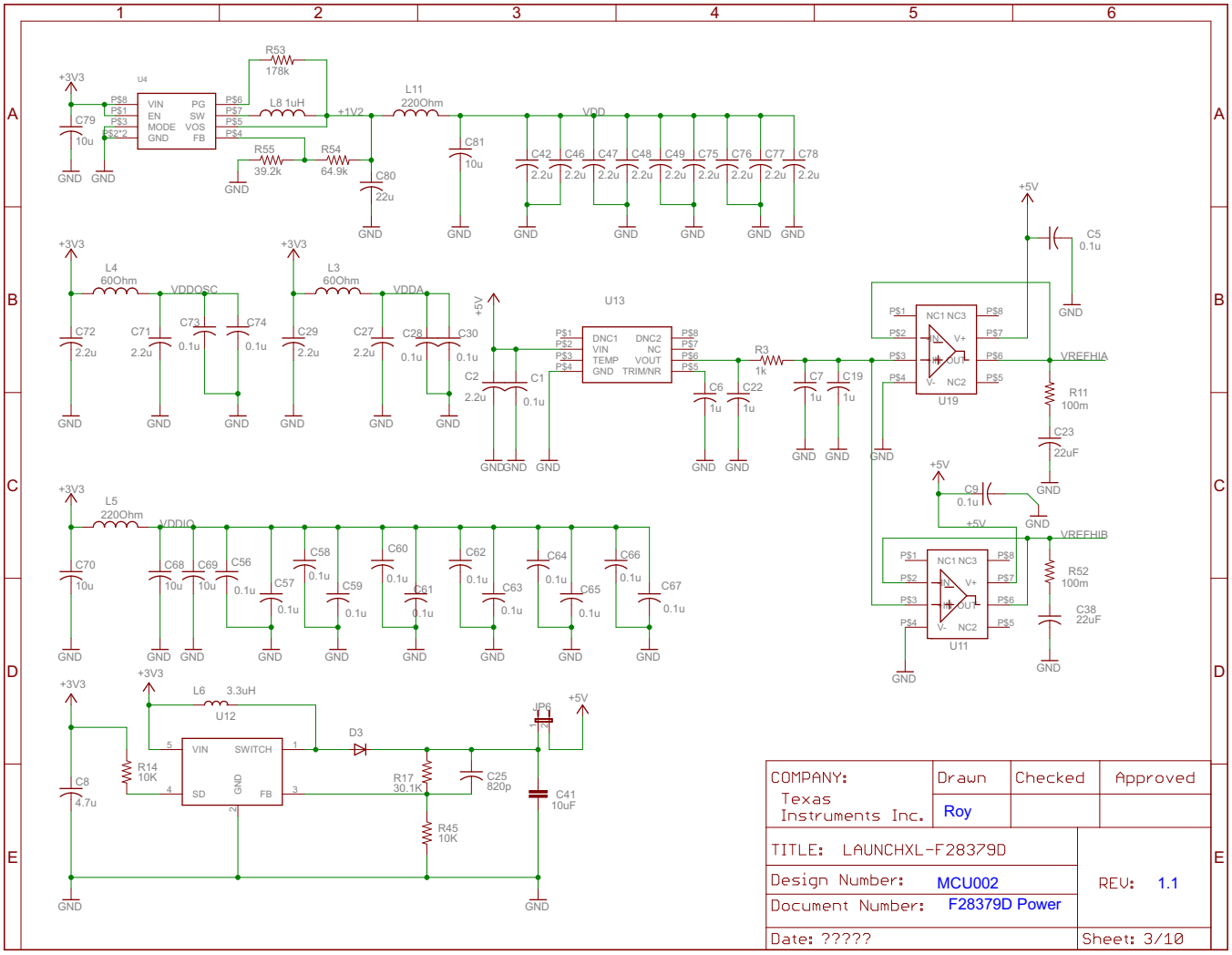

Figure 4. LAUNCHXL-F28379D Power Schematic

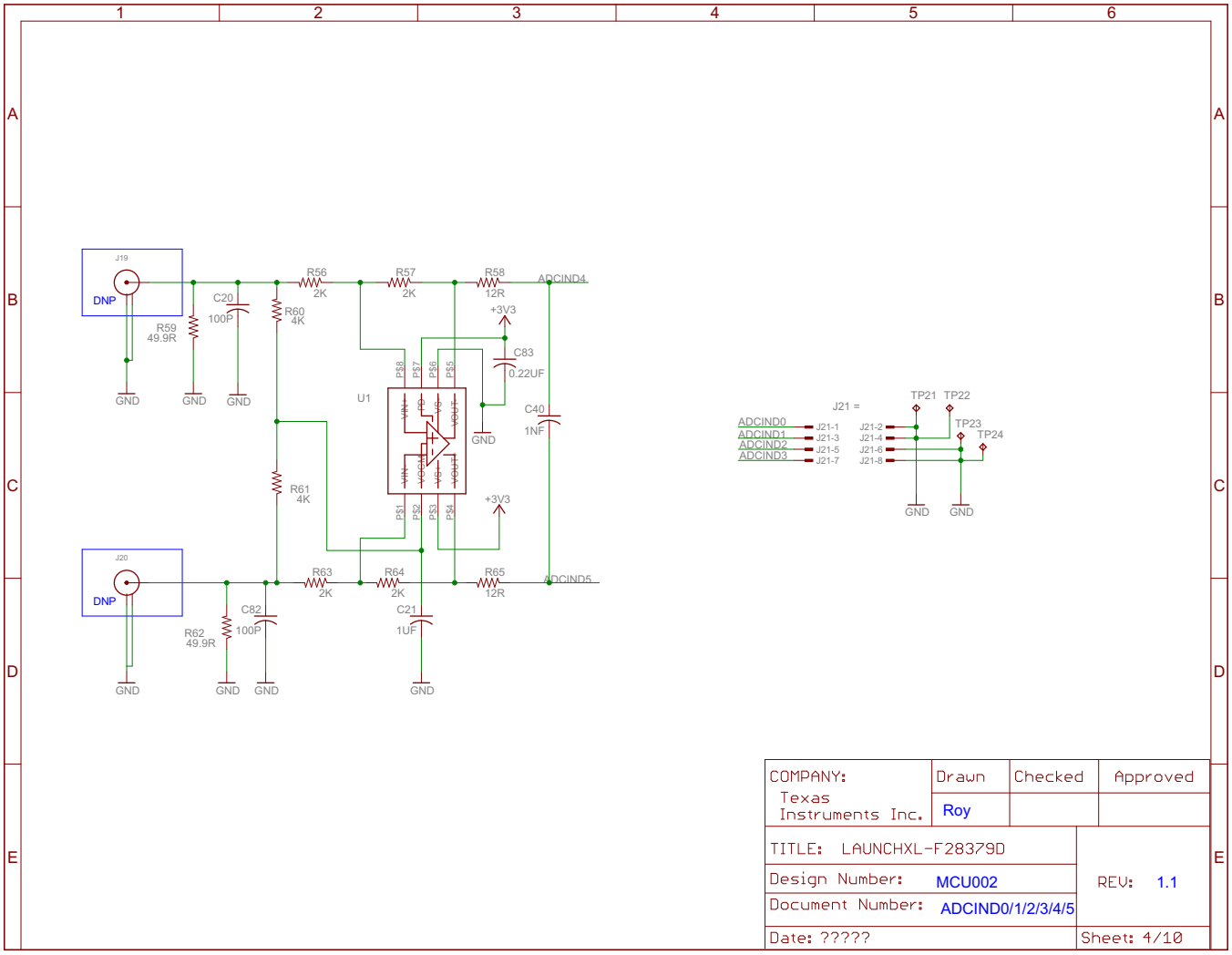

Figure 5. LAUNCHXL-F28379D ADCIMND0/1/2/3/4/5/ Schematic

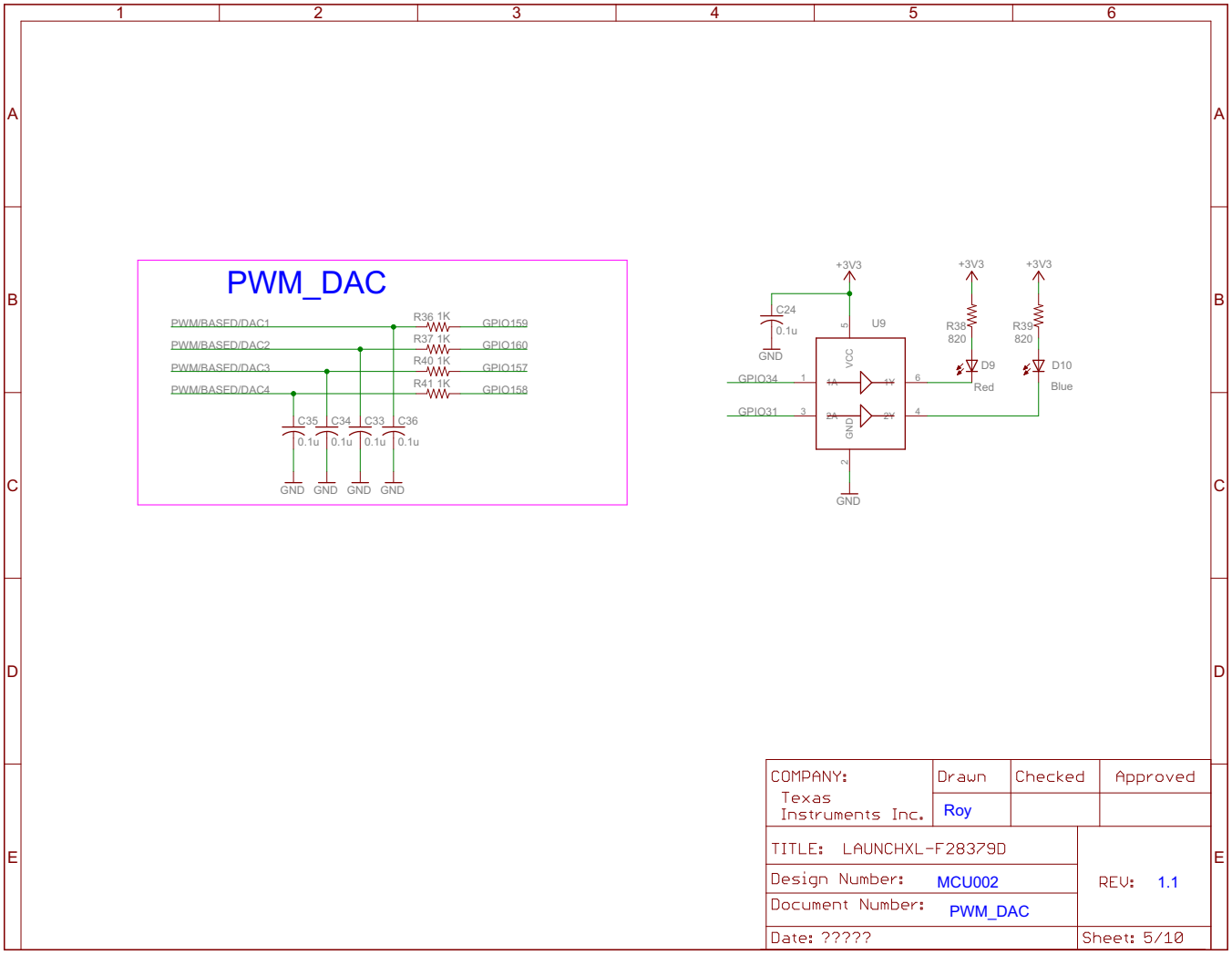

Figure 6. LAUNCHXL-F28379D PWC_DAC Schematic

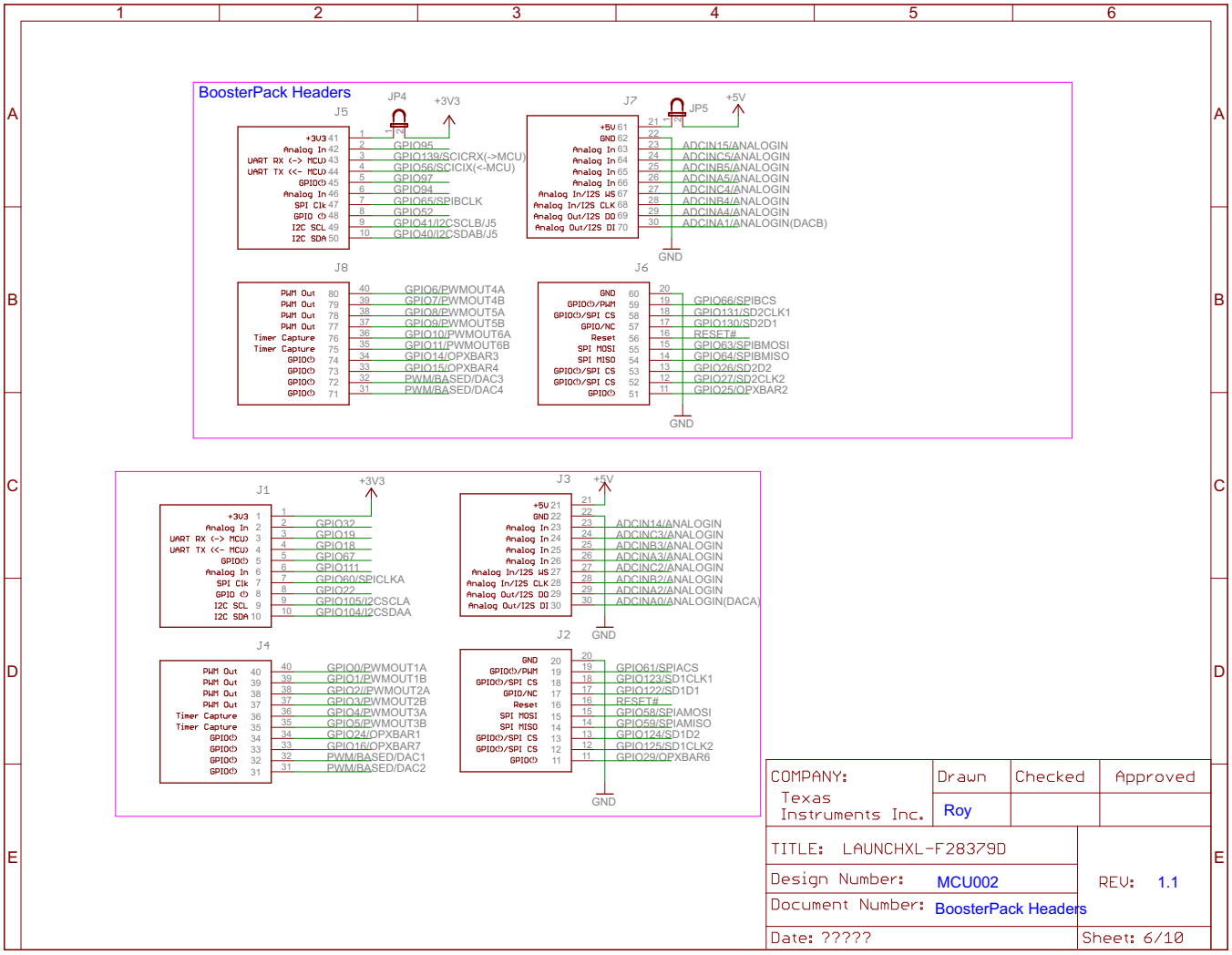

Figure 7. LAUNCHXL-F28379D BoosterPack Headers Schematic

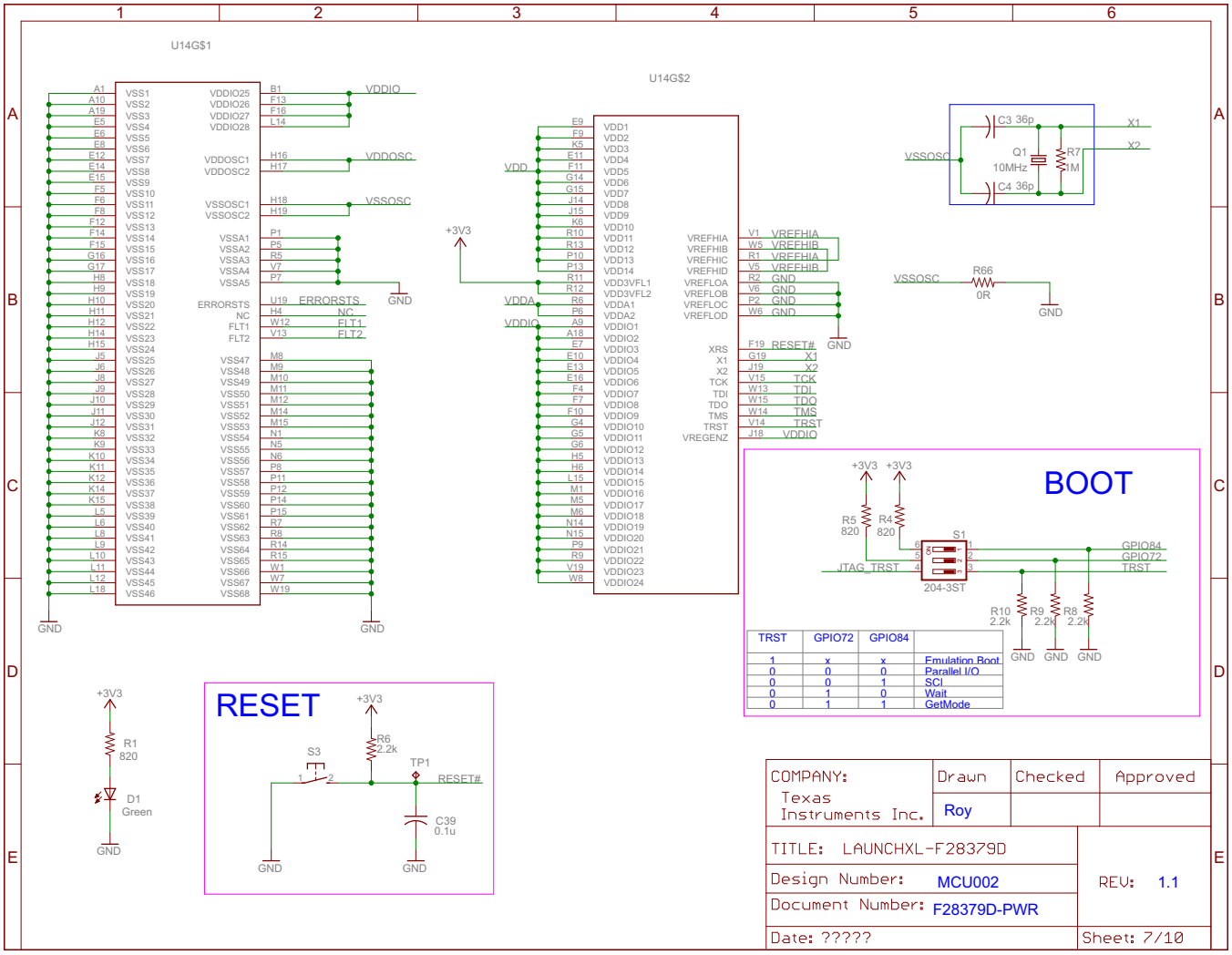

Figure 8. LAUNCHXL-F28379D PWR Schematic

Figure 9. LAUNCHXL-F28379D_IO1 Schematic

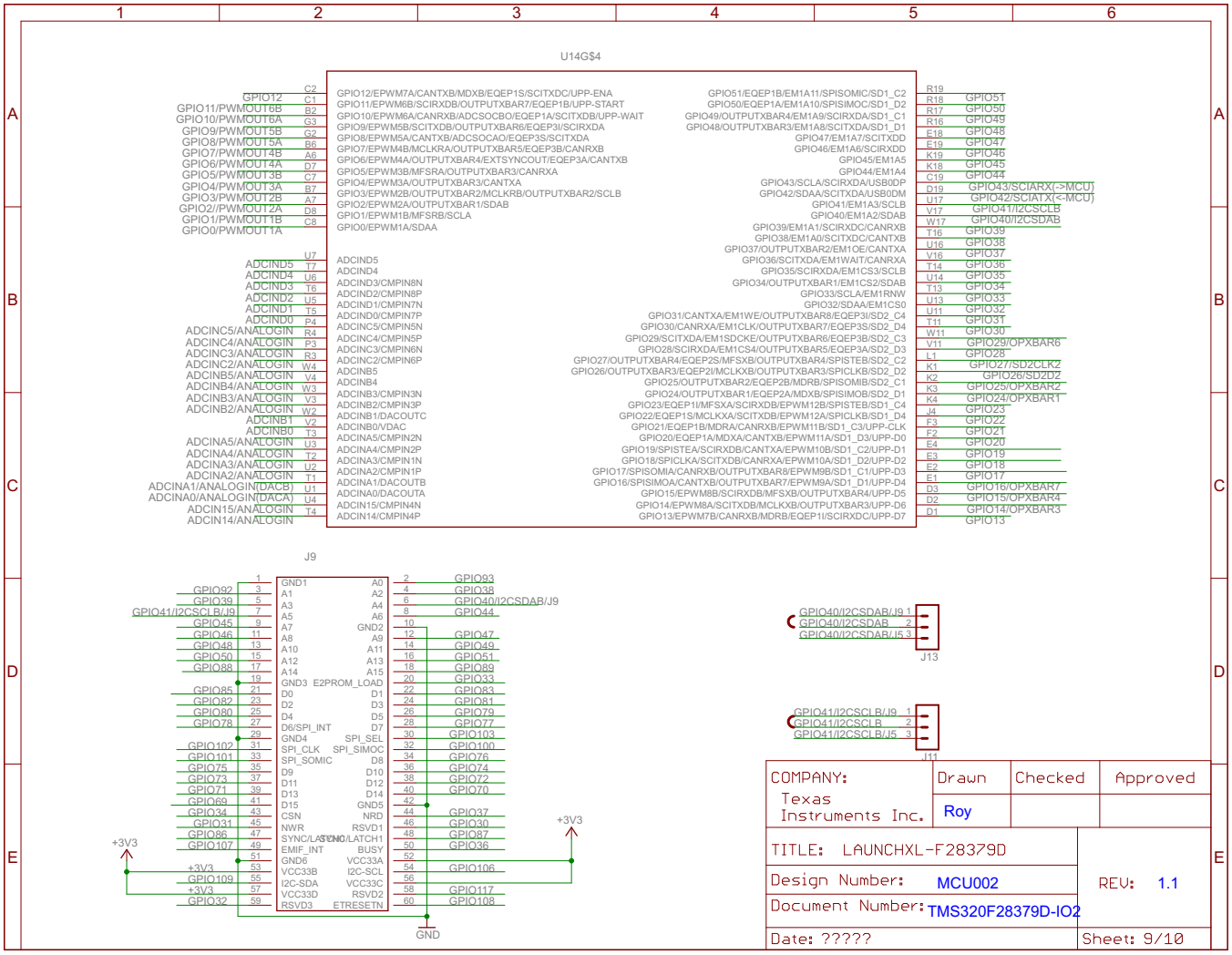

Figure 10. LAUNCHXL-F28379D_B Schematic

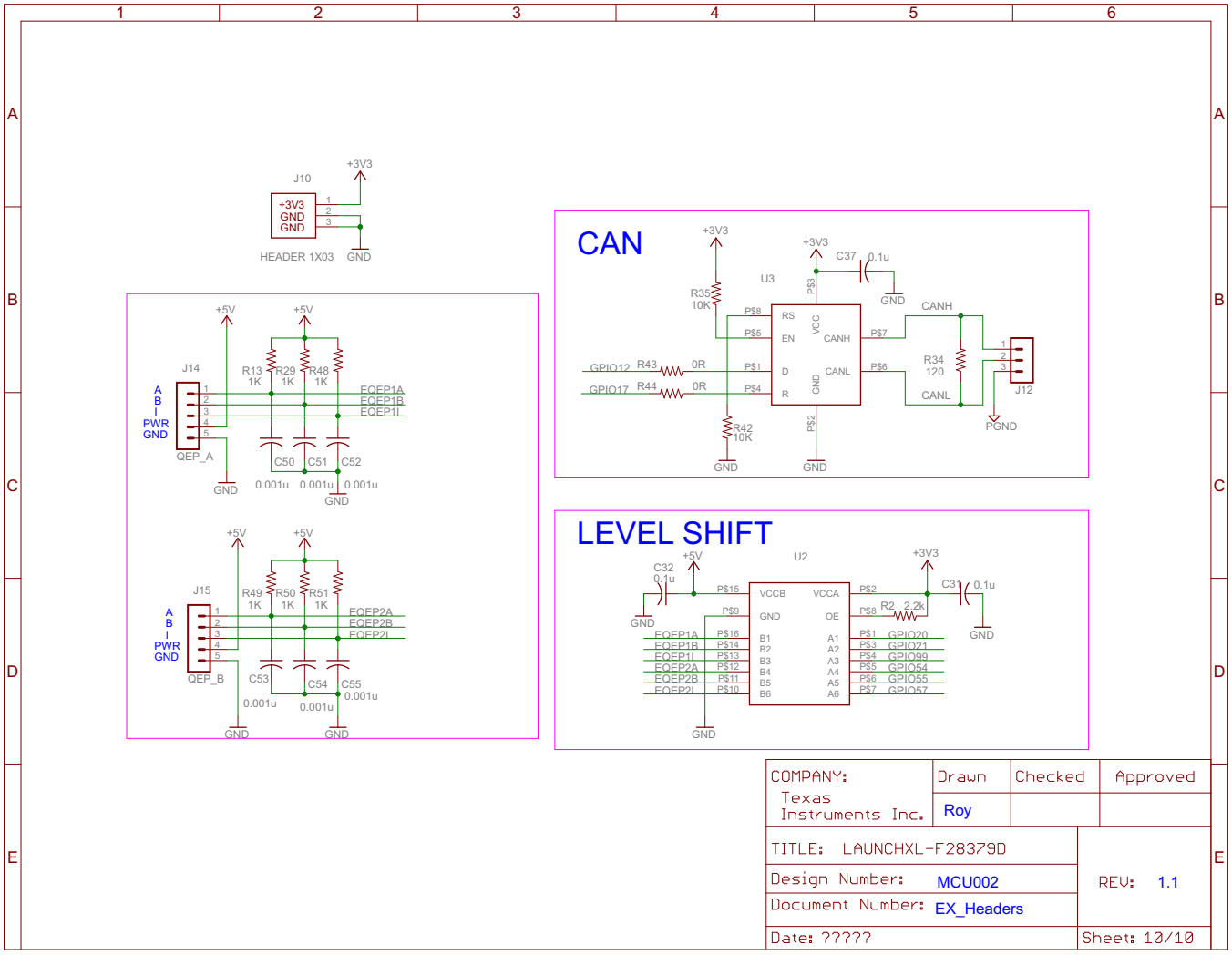

Figure 11. LAUNCHXL-F28379D Ex_Headers Schematic

6.3 PCB Layout

Figure 12 through Figure 22 shows the LAUNCHXL-F28379D PCB layout.

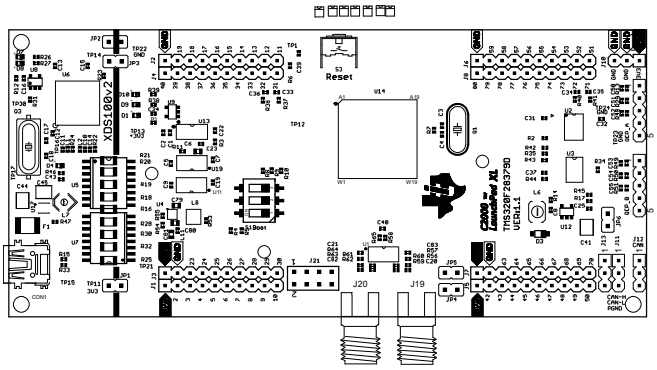

Figure 12. Top Silk

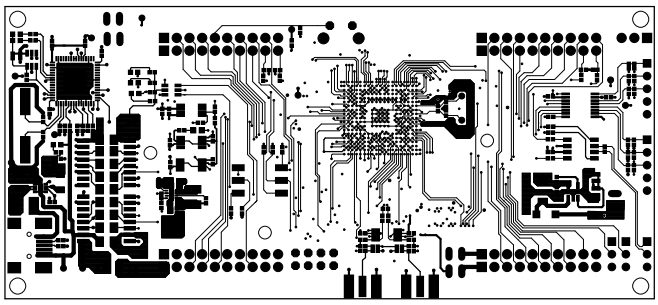

Figure 13. Top Layer

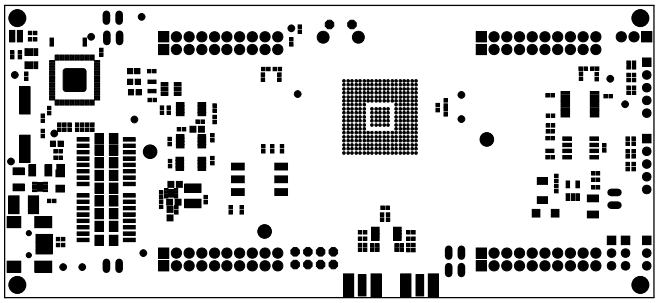

Figure 14. Top Copper

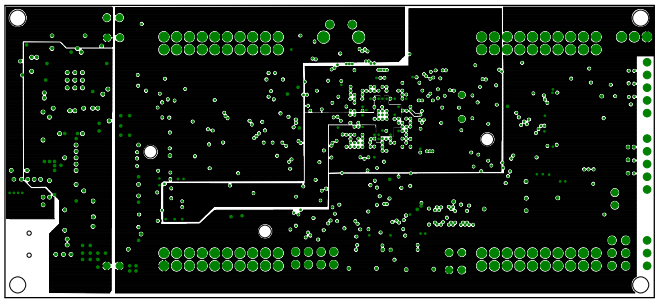

Figure 15. Inner Copper 1

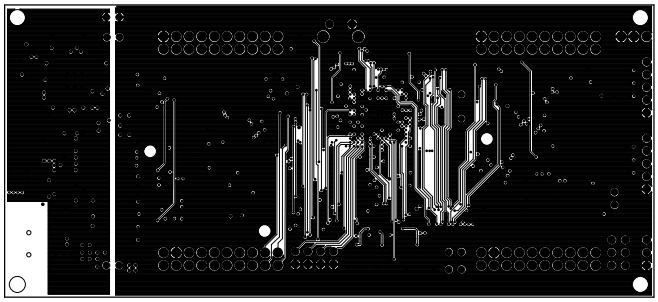

Figure 16. Inner Copper 2

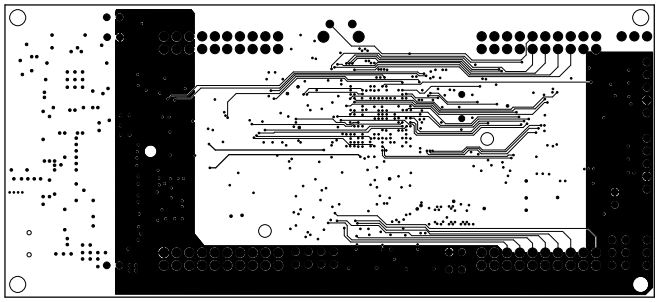

Figure 17. Inner Copper 3

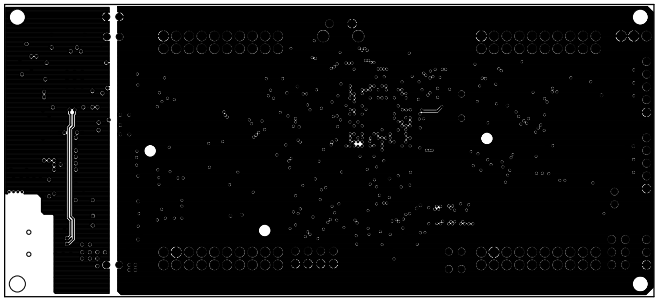

Figure 18. Inner Copper 4

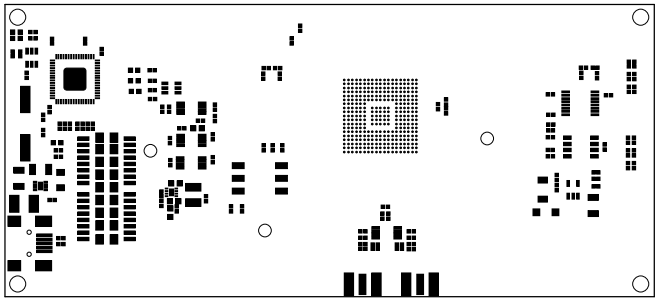

Figure 19. SMT

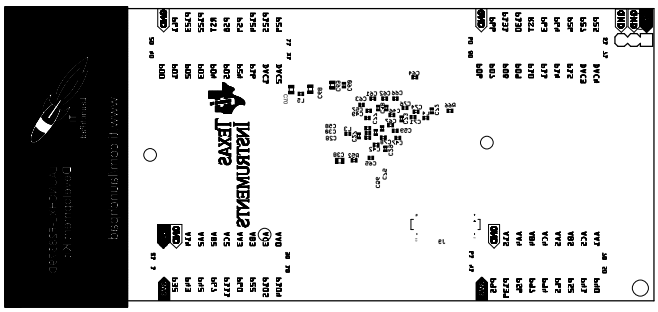

Figure 20. Bottom Silk

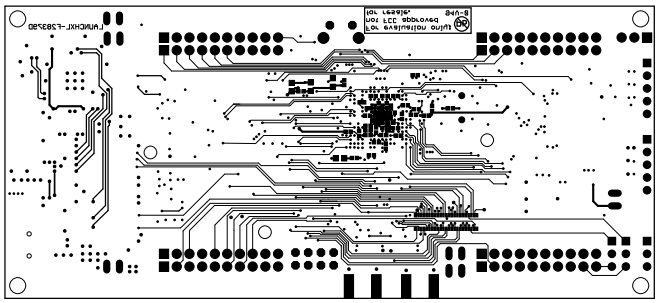

Figure 21. Bottom Layer

Figure 22. Bottom Copper

6.4 Bill of Materials (BOM)

Table 5 lists the LAUNCHXL-F28379D bill of materials.

Table 5. LAUNCHXL-F28379D Bill of Materials

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
1	Tactile Switch	B3F-3152	1	S3	OMRON	SWITCH TACTILE SPST-NO 0.05A 24V	YES	Active	LEAD FREE			SW410-ND	SW410-ND	YES	Active		LEAD FREE		SWITCH TACTILE SPST-NO 0.05A 24V	Omron Electronics Inc-EMC Div	B3F-3152
2	Pin Header	61300211121	6	JP1, JP2, JP3, JP4, JP5, JP6	WURTH	Connector Pin Header,2.54pitch,1X2Pin,6,2.54,3,black,Dip,PBT	YES	Active	LEAD FREE	REACH NOT AFFECTED	Jun-2015	732-5315-ND	732-5315-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Jun-2015	CONN HEADER 2 POS 2.54	Wurth Electronics Inc	61300211121
3	Pin Header	61300511121	2	QEP_A, QEP_B	WURTH	Connector Pin Header,2.54pitch,1X5Pin,6,2.54,3,black,Dip,PBT	YES	Active	LEAD FREE	REACH NOT AFFECTED	Jun-2015	732-5318-ND	732-5318-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Jun-2015	CONN HEADER 5 POS 2.54	Wurth Electronics Inc	61300511121
4	Thick film Resistor	RC1206JR-7W0RL	9	R16, R18, R19, R20, R21, R25, R28, R30, R32	YAGEO	RES,0R,5%,1/2W,SMD1206															
5	Ceramic Capacitor	GRM155R71H102KA01D	7	C40,C50, C51, C52, C53, C54, C55	MURATA	CAP,1NF,±10%,X7R,50V,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-1303-1-ND	490-1303-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 1000PF 50V X7R 0402	Murata Electronics North America	GRM155R71H102KA01D

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
6	Ceramic Capacitor	GRM155R61A104KA01D	33	C1, C5, C9, C12, C13, C14, C16, C24, C28, C30, C31, C32, C33, C34, C35, C36, C37, C39, C43, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C73, C74	MURATA	CAP,100NF(0.1×µf),±10%,X5R,10V,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-1318-1-ND	490-1318-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 0.1µF 10V X5R 0402	Murata Electronics North America	GRM155R61A104KA01D
7	Ceramic Capacitor	GRM155R61A224KE19D	1	C83	MURATA	CAP,220NF,±10%,X5R,10V,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-3910-1-ND	490-3910-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 0.22µF 10V X5R 0402	Murata Electronics North America	GRM155R61A224KE19D
8	Thick film Resistor	ERJ-2GE0R00X	4	R15, R33, R43, R44	PANASONIC	RES,0R,±5%,1/10W,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P0.0JCT-ND	P0.0JCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 0.0OHM JUMPER 1/10W 0402	Panasonic Electronic Components	ERJ-2GE0R00X
9	Thick film Resistor	ERJ-2RKF1003X	1	R47	PANASONIC	RES,100K Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P100KLCT-ND	P100KLCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 100K Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF1003X
10	Ceramic Capacitor	GRM1555C1H101JA01D	2	C20, C82	MURATA	CAP,100PF,±5%,C0G,50V,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-5922-1-ND	490-5922-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 100PF 50V NP0 0402	Murata Electronics North America	GRM1555C1H101JA01D

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
11	Thick film Resistor	ERJ-2RKF1002X	5	R12, R14, R35, R42, R45	PANASONIC	RES,10K,±1%,1/10W,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P10.0KLCT-ND	P10.0KLCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 10K Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF1002X
12	Crystal	ATS100B-E	1	Q1	CTS	Crystal 10.0000MHz 30ppm 18pF 60Ω -40°C - 85°C Through Hole HC49/US	YES	Active	LEAD FREE			CTX919-ND	CTX919-ND	YES	Active		LEAD FREE		CRYSTAL 10.0000MHZ 18PF T/H	CTS-Frequency Controls	ATS100B-E
13	Ceramic Capacitor	GRM188C80G106ME47D	5	C68, C69, C70, C79, C81	MURATA	CAP CER 10µF 4V 20% X6S 0603	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-10470-1-ND	490-10470-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 10µF 4V X6S 0603	Murata Electronics North America	GRM188C80G106ME47D
14	Ceramic Capacitor	GRM32NF51E106ZA01L	2	C41, C44	MURATA	CAP CER 10µF 25V Y5V 1210	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-1893-1-ND	490-1893-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 10µF 25V Y5V 1210	Murata Electronics North America	GRM32NF51E106ZA01L
15	Thick film Resistor	ERJ-2RKF1200X	1	R34	PANASONIC	RES, 120 µ, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P120LCT-ND	P120LCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 120 Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF1200X
16	Crystal	ABLS2-12.000MHZ-D4Y-T	1	Q3	ABRACON	Crystal 12MHz ±30ppm (Tol) ±30ppm (Stability) 18pF FUND 50Ohm 2-Pin HC-49/US SMD T/R	YES	Active	LEAD FREE	REACH AFFECTED	Dec-2015	535-9869-1-ND	535-9869-1-ND	YES	Active	REACH AFFECTED	LEAD FREE	Dec-2015	CRYSTAL 12.0000MHZ 18PF SMD	Abracon LLC	ABLS2-12.000MHZ-D4Y-T
17	Thick film Resistor	CRCW040212R0JNED	2	R58, R65	VISHAY	RES SMD 12 Ω 5% 1/16W 0402 TR	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2011	541-12JCT-ND	541-12JCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2011	RES SMD 12 Ω 5% 1/16W 0402	Vishay Dale	CRCW040212R0JNED

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
18	Thick film Resistor	ERJ-2RKF1202X	1	R24	PANASONIC	RES,12K Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P12.0KLCT-ND	P12.0KLCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 12K Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF1202X
19	Thick film Resistor	ERJ-2RKF1783X	1	R53	PANASONIC	RES, 178K Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P178KLCT-ND	P178KLCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 178K Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF1783X
20	Thick film Resistor	ERJ-2RKF1001X	13	R3,R13, R22, R23, R29, R36, R37, R40, R41, R48, R49, R50, R51	PANASONIC	RES, 1K Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P1.00KLCT-ND	P1.00KLCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 1K Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF1001X
21	Thick film Resistor	ERJ-2RKF1004X	1	R7	PANASONIC	RES, 1M Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P1.00MLCT-ND	P1.00MLCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 1M Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF1004X
22	Diode	1N5819HW-7-F	1	D3	DIODES	Diode,Schottky Diode,1N5819HW-7-F,40V,1A,SOD-123,SMD,-65~125,TR	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	1N5819HW-FDICT-ND	1N5819HW-FDICT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	DIODE SCHOTTKY 40V 1A SOD123	Diodes Incorporated	1N5819HW-7-F
23	Ceramic Capacitor	GRM155R60J105KE19D	5	C6, C7, C19, C21,C22	MURATA	CAP,1UF,±10%,X5R,6.3V,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-1320-1-ND	490-1320-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 1UF 6.3V X5R 0402	Murata Electronics North America	GRM155R60J105KE19D
24	Inductor	LQH3NPN1R0NJ0L	1	L8	MURATA	FIXED IND 1µH 1.62A 40 MΩ SMD,±30%	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-5342-1-ND	490-5342-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	FIXED IND 1µH 1.62A 40 MΩ SMD	Murata Electronics North America	LQH3NPN1R0NJ0L

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
25	Thick film Resistor	ERJ-2RKF2201X	6	R2, R6, R8, R9, R10, R31	PANASONIC	RES, 2.2K Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P2.20KLCT-ND	P2.20KLCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 2.2K Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF2201X
26	Ceramic Capacitor	GRM155R60G225ME15D	14	C2, C27, C29, C42, C46, C47, C48, C49, C71, C72, C75, C76, C77, C78	MURATA	CAP CER 2.2µF 4V 20% X5R 0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-4518-1-ND	490-4518-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 2.2µF 4V X5R 0402	Murata Electronics North America	GRM155R60G225ME15D
27	Inductor	CDRH2D18/HPNP-2R2NC	1	L7	SUMIDA	Power Inductor, Magnetic shielded, 2.2uH,1.6A,0.06ohm,3.0X3.0X1.8mm,SMD	YES	Active	LEAD FREE			308-2295-2-ND	308-2295-2-ND	YES	Active		LEAD FREE		FIXED IND 2.2µH 1.9A 60 MΩ SMD	Sumida America Components Inc.	CDRH2D18/HPNP-2R2NC
28	DIP Switch	219-3MST	1	S1	CTS	Switch, DIP Switches,3 Position, 2.54MM Pitch,black housing, white plunger, SMD	YES	Active	LEAD FREE	REACH NOT AFFECTED	Jul-2011	CT2193MST-ND	CT2193MST-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Jul-2011	SWITCH TAPE SEAL 3 POS SMD 50V	CTS Electrocomponents	219-3MST
29	Ferrite Bead	BKP1005EM221-T	2	L5, L11	Taiyo Yuden	FERRITE BEAD 220 Ω 0402,±25%	YES	Active	LEAD FREE			587-3290-1-ND	587-3290-1-ND	YES	Active		LEAD FREE		FERRITE BEAD 220 Ω 0402 1LN	Taiyo Yuden	BKP1005EM221-T
30	Ceramic Capacitor	GRM188C80G226MEA0D	3	C23, C38, C80	MURATA	CAP CER 22µF 4V 20% X6S 0603	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-7196-1-ND	490-7196-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 22µF 4V X6S 0603	Murata Electronics North America	GRM188C80G226MEA0D

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
31	Ceramic Capacitor	GRM32ER71A226KE20L	1	C45	MURATA	CAP CER 22µF 10V 10% X7R 1210	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-1876-1-ND	490-1876-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 22µF 10V X7R 1210	Murata Electronics North America	GRM32ER71A226KE20L
32	Thick film Resistor	RC0402FR-072KL	4	R56, R57, R63, R64	YAGEO	RES,2K, ±1%,1/16W,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	311-2KLRCT-ND	311-2KLRCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	RES SMD 2K Ω 1% 1/16W 0402	Yageo	RC0402FR-072KL
33	Ceramic Capacitor	C1005X5R0G335M050BB	1	C15	TDK	CAP CER 3.3µF 4V 20% X5R 0402 ?PN?C1005X5R0G335MTJ00F	YES	Active	LEAD FREE	REACH NOT AFFECTED	Jun-2015	445-7397-1-ND	445-7397-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Jun-2015	CAP CER 3.3UF 4V X5R 0402	TDK Corporation	C1005X5R0G335M050BB
34	Inductor	CDRH3D16/HPNP-3R3NC	1	L6	SUMIDA	Power Inductor, Magnetic shielded, 3.3uH,1.4A,0.085 ohm,3.8X3.8X1.6mm,SMD	YES	Non-Stock	LEAD FREE			308-1981-1-ND	308-1981-1-ND	YES	Non-Stock		LEAD FREE		FIXED IND 3.3µH 1.8A 85 MOHM SMD	Sumida America Components Inc.	CDRH3D16/HPNP-3R3NC
35	Thick film Resistor	ERJ-2RKF3012X	1	R17	PANASONIC	RES, 30.1K Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P30.1KLCT-ND	P30.1KLCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 30.1K Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF3012X
36	Thick film Resistor	ERJ-2RKF3300X	4	R26, R27, R38, R39	PANASONIC	RES ,330 Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P330LCT-ND	P330LCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 330 Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF3300X
37	Ceramic Capacitor	C1005C0G1H360J	4	C3, C4, C17, C18	TDK	CAP CER 36PF 50V C0G 0402	YES	Obsolete	LEAD FREE	REACH NOT AFFECTED	Apr-2011	445-4903-1-ND	445-4903-1-ND	YES	Obsolete	REACH NOT AFFECTED	LEAD FREE	Apr-2011	CAP CER 36PF 50V C0G 0402	TDK Corporation	C1005C0G1H360J
38	Thick film Resistor	ERJ-2RKF3922X	1	R55	PANASONIC	RES, 39.2K Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P39.2KLCT-ND	P39.2KLCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 39.2K Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF3922X

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
39	Ceramic Capacitor	GRM155R60J475ME47D	3	C8, C10, C11	MURATA	CAP,4.7UF,±20%,X5R,6.3V,SMD0402 fix PN add D?20151023?	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-5915-1-ND	490-5915-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 4.7µF 6.3V X5R 0402	Murata Electronics North America	GRM155R60J475ME47D
40	Thick film Resistor	RC0402FR-0749R9L	2	R59, R62	YAGEO	RES,49R9,±1%,1/16W,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	311-49.9LRCT-ND	311-49.9LRCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	RES SMD 49.9 Ω 1% 1/16W 0402	Yageo	RC0402FR-0749R9L
41	Thick film Resistor	RC0402FR-074K02L	2	R60, R61	YAGEO	RES,4K02,±1%,1/16W,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	311-4.02KLRCT-ND	311-4.02KLRCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	RES SMD 4.02K Ω 1% 1/16W 0402	Yageo	RC0402FR-074K02L
42	Polyswitch	MF-MSMF050-2	1	F1	BOURNS	PTC RESETTABLE .50A 15V 1812	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	MF-MSMF050-2CT-ND	MF-MSMF050-2CT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	PTC RESETTABLE .50A 15V 1812	Bourns Inc.	MF-MSMF050-2
43	Thick film Resistor	ERJ-2BQFR56X	2	R11, R52	PANASONIC	RES,0.56 Ω, 1%, 1/6W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P.56AKCT-ND	P.56AKCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 0.56 Ω 1% 1/6W 0402	Panasonic Electronic Components	ERJ-2BQFR56X
44	Ferrite Bead	BLM15PD600SN1D	2	L3, L4	MURATA	Ferrite Bead,60 ohm@100MHz,±25%,1700mA,0.06 ohm,SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Jun-2015	490-5201-1-ND	490-5201-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Jun-2015	FERRITE BEAD 60 Ω 0402 1LN	Murata Electronics North America	BLM15PD600SN1D
45	Thick film Resistor	ERJ-2RKF6492X	1	R54	PANASONIC	RES, 64.9K Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P64.9KLCT-ND	P64.9KLCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 64.9K Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF6492X
46	Thick film Resistor	ERJ-2RKF8200X	4	R1, R4, R5, R46	PANASONIC	RES, 820 Ω, 1%, 1/10W, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2014	P820LCT-ND	P820LCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2014	RES SMD 820 Ω 1% 1/10W 0402	Panasonic Electronic Components	ERJ-2RKF8200X

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
47	Ceramic Capacitor	GRM155R71H821KA01D	1	C25	MURATA	CAP CER 820PF 50V 10% X7R 0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-3250-1-ND	490-3250-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 820PF 50V X7R 0402	Murata Electronics North America	GRM155R71H821KA01D
48	Memory	93LC56BT-I/OT	1	U8	MICROCHIP	IC,EEPROM Serial-Microwire 2K-Bit 128 x 16 2MHz,93LC56BT-I/OT,SOT-23-6,SMD	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	93LC56BT-I/OTCT-ND	93LC56BT-I/OTCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	IC EEPROM 2KBIT 2MHZ SOT23-6	Microchip Technology	93LC56BT-I/OT
49	Ferrite Bead	BLM15AG601SN1D	2	L1, L2	MURATA	Ferrite Bead,600ohm@100MHz,±25%,300mA,0.6ohm,SMD 0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Jun-2015	490-1006-1-ND	490-1006-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Jun-2015	FERRITE BEAD 600 Ω 0402 1LN	Murata Electronics North America	BLM15AG601SN1D
50	Pin Socket	CRD-081413-G-A	4	J1,J2?J3?J4?J5?J6?J7?J8	MAJOR LEAGUE	Connector,Pin Socket,Straight,Female,2x10Pin,2.54MM pitch,8.51,9.91,Gold Flash 1u, black,DIP															
51	LED	APHHS1005QBC/D	2	D7, D10	KINGBRIGHT	LED 1X0.5mm 470NM Blue WTR CLEAR SMD	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	754-1504-1-ND	754-1504-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	LED BLUE CLEAR 0402 SMD	Kingbright	APHHS1005QBC/D
52	BTB Connector	DF40C-60DP-0.4V(51)	1	J9	HIROSE	CONN HDR 60POS 0.4MM SMD GOLD TR	YES	Active	LEAD FREE			H11628CT-ND	H11628CT-ND	YES	Active		LEAD FREE		CONN HDR 60POS 0.4MM SMD GOLD	Hirose Electric Co Ltd	DF40C-60DP-0.4V(51)

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
53	Interface	FT2232HQ-REEL	1	U6	FTDI	IC,Dual High Speed USB to Multipurpose UART/FIFO IC,FT2232HQ-REEL,QFN-64,SMD	YES	Active	LEAD FREE	REACH NOT AFFECTED	Jun-2015	768-1025-1-ND	768-1025-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Jun-2015	IC USB HS DUAL UART/FIFO 64-QFN	FTDI, Future Technology Devices International Ltd	FT2232HQ-REEL
54	LED	APHHS1005CGCK	2	D1, D4	KINGBRIGHT	LED 1X0.5MM 570NM Green WTR CLR SMD	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	754-1101-1-ND	754-1101-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	LED GREEN CLEAR 0402 SMD	Kingbright	APHHS1005CGCK
55	Pin Header	61300311121	4	J10,J11, J12,J13	WURTH	Connector Pin Header,2.54pitch, 1X3Pin,6,2.54,3,black,Dip, PBT,Gold	YES	Active	LEAD FREE	REACH NOT AFFECTED	Jun-2015	732-5316-ND	732-5316-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Jun-2015	CONN HEADER 3 POS 2.54	Wurth Electronics Inc	61300311121
56	Isolator	ISO7231CDWR	1	U7	TI	IC DGTL ISO 3CH CMOS 16SOIC, CUSTOMER SUPPLY	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	296-38966-1-ND	296-38966-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	DGTL ISO 2.5KV GEN PURP 16SOIC	Texas Instruments	ISO7231CDWR
57	Isolator	ISO7240CDWR	1	U5	TI	IC DGTL ISO 4CH CMOS 16SOIC, CUSTOMER SUPPLY	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	296-38555-1-ND	296-38555-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	DGTL ISO 2.5KV GEN PURP 16SOIC	Texas Instruments	ISO7240CDWR
58	DC-DC	LMR62421XMFE/NOPB	1	U12	TI	Conv DC-DC Single Step Up 2.7V to 5.5V 5-Pin SOT-23 T/R ,CUSTOMER SUPPLY	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	LMR62421XMFE/NOPBCT-ND	LMR62421XMFE/NOPBCT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	IC REG BST SEPIC ADJ 2.1A SOT23	Texas Instruments	LMR62421XMFE/NOPB

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
60	Shunt	MJ501-EOGF-B-K	7	U$2, U$10, U$11, U$12, U$13?U$14,U$17	TOWNES	Connector,Shunt, 2Pin,2.54 MM Pitch,6M M Height,Gold Flash 1µ,black, Bulk															
61	LED	APHHS1005SURCK	2	D8, D9	KINGBRIGHT	LED 1X0.5MM 630NM Red WTR CLR SMD	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	754-1104-1-ND	754-1104-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	LED RED CLEAR 0402 SMD	Kingbright	APHHS1005SURCK
62	RF Connector	152123	2	J19,J20	Amphenol	RF Connectors / Coaxial Connectors SMC RIGHT ANGLE JCK PCB GOLD TH BULK	YES	Active	LEAD FREE			ACX1509-ND	ACX1509-ND	YES	Active		LEAD FREE		CONN SMC JACK R/A 50 OHM PCB	Amphenol-RF Division	152123
63	Interface	SN65HVD234DR	1	U3	TI	IC CAN TRANSCEIVER 3.3V 8-SOIC	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	296-27991-1-ND	296-27991-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	IC CAN TRANSCEIVER 3.3V 8-SOIC	Texas Instruments	SN65HVD234DR
64	Logic	SN74LVC2G07DBVR	1	U9	TI	Buffer/Driver 2-CH Non-Inverting Open Drain CMOS 6-Pin SOT-23 T/R,CUSTOMER SUPPLY	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	296-13494-1-ND	296-13494-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	IC BUFF/DVR DL NON-INV SOT23-6	Texas Instruments	SN74LVC2G07DBVR
65	Amplifier	THS4531IDGKR	1	U$9	TI	IC OPAMP DIFF 27MHZ RRO 8VSSOP TR	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	296-30342-1-ND	296-30342-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	IC OPAMP DIFF 27MHZ RRO 8VSSOP	Texas Instruments	THS4531IDGKR

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
66	MCU	TMS320F28379DZWTT	1	U14	TI	IC, MCU 32BIT 1024KB, TMS320F28379DZWTT,BGA-337,SMD,customer supply	YES	Non-Stock	LEAD FREE	REACH NOT AFFECTED	Dec-2015	TMS320F28379DZWTT-ND	TMS320F28379DZWTT-ND	YES	Non-Stock	REACH NOT AFFECTED	LEAD FREE	Dec-2015	IC MCU 32BIT 1MB FLASH 337NFBGA	Texas Instruments	TMS320F28379DZWTT
67	DC-DC	TPS62080ADSGT	1	U4	TI	IC REG BUCK SYNC ADJ 1.2A 8WSON	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	296-30360-1-ND	296-30360-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	IC REG BUCK ADJ 1.2A SYNC 8WSON	Texas Instruments	TPS62080ADSGT
68	DC-DC	TPS62162DSGT	1	U17	TI	IC REG BUCK SYNC 3.3V 1A 8WSON	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	296-29897-1-ND	296-29897-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	IC REG BUCK 3.3V 1A SYNC 8WSON	Texas Instruments	TPS62162DSGT
69	Logic	TXB0106PWR	1	U2	TI	IC, 6-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR WITH AUTO-DIRECTION SENSING AND ±15-kV ESD PROTECTION, TXB0106PWR, TSSOP-16, SMD,Cusomer Supply	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	296-23759-1-ND	296-23759-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	IC 6BIT NON-INV TRANSLTR 16TSSOP	Texas Instruments	TXB0106PWR
70	USB Connector	897-43-005-00-100001	1	CON1	MILL-MAX	Connector,MiniUSB B port,5 position, Right Angle,Gold flash 30µ,black,SMD	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	ED90341CT-ND	ED90341CT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CONN RECEPT MINI-USB TYPE B SMT	Mill-Max Manufacturing Corp.	897-43-005-00-100001

Table 5. LAUNCHXL-F28379D Bill of Materials (continued)

ITEM NO	NOTE	Part Number	Quantity	REF Designator	Manufacturer	Description	ROHS	AVAILABILITY	LEAD FREE STATUS	REACH STATUS	Reach Effective Date	Digi-Key Part Number (from Digi-Key system)	DK Part Number SP	ROHS SP	Availability SP	Reach SP	Lead Free Status SP	Reach Effective Date SP	DK Description SP	DK Manufacturer SP	DK Manufacturer Part Number SP
71	Pin Header	TSW-104-07-G-D	1	J21	SAMTEC	Connector,Pin Header,Straight,Male,2x4Pin,2.54MM pitch,5.84,2.54,Gold Flash 10µ, black,DIP	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	SAM1028-04-ND	SAM1028-04-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CONN HEADER 8POS .100" DUAL GOLD	Samtec Inc.	TSW-104-07-G-D
72	Ceramic Capcitor	GRM1555C1H360JA01D	4	C3,C4,C17,C18	MURATA	CAP 36pF, ±5%, COG, 50V, SMD0402	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	490-5937-1-ND	490-5937-1-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CAP CER 36PF 50V NP0 0402	Murata Electronics North America	GRM1555C1H360JA01D
73	RF Connector	SMA-J-P-H-ST-EM1	2	J19, J20	SAMTEC	RF Connector, SMA Jack, Edge Mount, Gold, Straight, 50 Ω, SMD, Tray	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	SAM8857-ND	SAM8857-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	CONN SMA JACK 50 Ω EDGE MNT	Samtec Inc.	SMA-J-P-H-ST-EM1
74	Amplifier	OPA350EA/250	2	U11,U19	TI	IC OPAMP GP 38MHZ RRO 8VSSOP TR	YES	Active	LEAD FREE	REACH NOT AFFECTED	Dec-2015	OPA350EACT-ND	OPA350EACT-ND	YES	Active	REACH NOT AFFECTED	LEAD FREE	Dec-2015	IC OPAMP GP 38MHZ RRO 8VSSOP	Texas Instruments	OPA350EA/250

7 References

The following documents describe the C2000 devices. Copies of these documents are available on the Internet at http://www.ti.com/c2000 and www.ti.com/c2000-launchpad, or click on the links below:

1. *TMS320F2837xD Dual-Core Delfino™ Microcontrollers Data Manual* (SPRS880)
2. *TMS320F28379D, TMS320F28377D, TMS320F28376D, TMS320F28375D, TMS320F28374D Delfino Microcontrollers Silicon Errata* (SPRZ412)
3. *TMS320F2837xD Dual-Core Delfino Microcontrollers Technical Reference Guide* (SPRUHM8)
4. *TMS320C28x Extended Instruction Sets Technical Reference Manual* (SPRUHS1)
5. *TMS320C28x Instruction Set Simulator Technical Overview* (SPRU608)
6. *TMS320C28x Optimizing C/C++ Compiler v6.1 User's Guide* (SPRU514)
7. *TMS320C28x Assembly Language Tools v6.1 User's Guide* (SPRU513)

8 Frequently Asked Questions (FAQ)

1. Can other programming and debug tools (such as an XDS510 emulator) be used with the C2000 LaunchPad?

   While a user could potentially connect an external emulator to the F28379D device present on the LaunchPad, it would require some rework of the board. It is recommended that users who want to use an external emulator purchase a controlCard and docking station that includes an external JTAG connector.

2. What versions of Code Composer Studio can be used to develop software for the C2000 LaunchPad?

   It is highly recommend that novice users develop applications with Code Composer Studio v6. The drivers, examples, and other associated software are tailored to make the user experience as smooth as possible in Code Composer Studio v6.

3. Why can't I connect to the LaunchPad in Code Composer Studio?

   There are a number of things that could cause this and they all have an easy fix.

   - Is S1 switch 3 in the down position?

     This is the TRST pin that enables and disables JTAG functionality on the chip. This switch must be in the up position for the emulator to be able to connect.

   - Are both power LEDs lit?

     The board has two power domains because of the isolated JTAG interface. For low-voltage application development, JTAG isolation is not needed and the power domains can be combined to allow for convenience (that is, the board can be powered completely through the USB). Ensure that jumpers are placed on the posts of JP1 and JP2.

   - Are drivers correctly installed for the XDS100v2 present on the LaunchPad?

     Right click on *My Computer* and select properties. Navigate to the *Hardware* tab in the dialog box and open the device manager. Scroll to the bottom of the list and expand the *USB Serial Bus controllers* item. Are there two entries for *TI XDS100 Channel A/B*? If not, try unplugging and replugging in the board. Does Windows give you any messages in the system tray? In Device Manger, do either of the entries have a yellow exclamation mark over their icon? If so, try reinstalling the drivers.

4. Why is the serial connection not working?

- Are you using the correct COM port?

  Right click on *My Computer* and select properties. Navigate to the *Hardware* tab in the dialog box and open the device manager. Scroll to *Ports (COM & LPT)* and expand this entry. Is there a USB Serial Port listed? If so, read the COM number to the right of the entry; this is the COM number you should be using.

- Are you using the correct baud rate?

  Most, if not all, of the examples are configured for a baud rate of 115200 when the CPU is running at 200 MHz. If you have changed the PLL settings or written your own application you may have to recalculate the baud rate for your specific application. For information on how to do this, see the *TMS320F2837xD Delfino Microcontrollers Technical Reference Guide* (SPRUHM8).

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