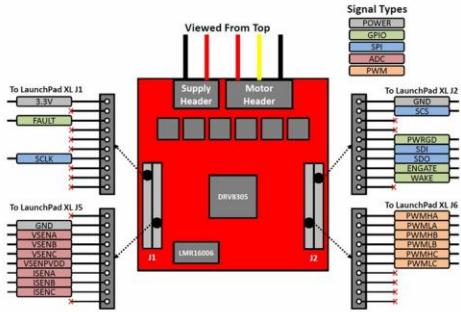


2026-02-03

Drv8305 + msp430f5529lp

The BOOSTXL-DRV8305EVM brings out a mixture of power, control, and feedback signals to the XL LaunchPad headers.

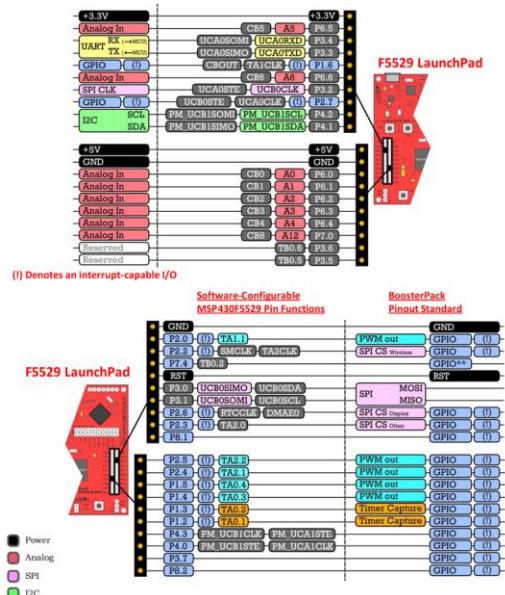


- Terminal block headers for the power supply and motor connections
- Onboard LM16006 step-down buck regulator to provide 3.3-V power to the LaunchPad
- Fault reporting through the nFAULT and PWRGD signals
- SPI to set device configuration, operating parameters, and read out diagnostic information
- Voltage sense for the voltage supply bus and each phase output (scaled for 4.4- to 45-V operation)
- Low-side current shunt sensing on each phase (scaled for 0- to 20-A peak current operation)

Operating Conditions

Table 1 lists the operating conditions.

Table 1. Operating Conditions



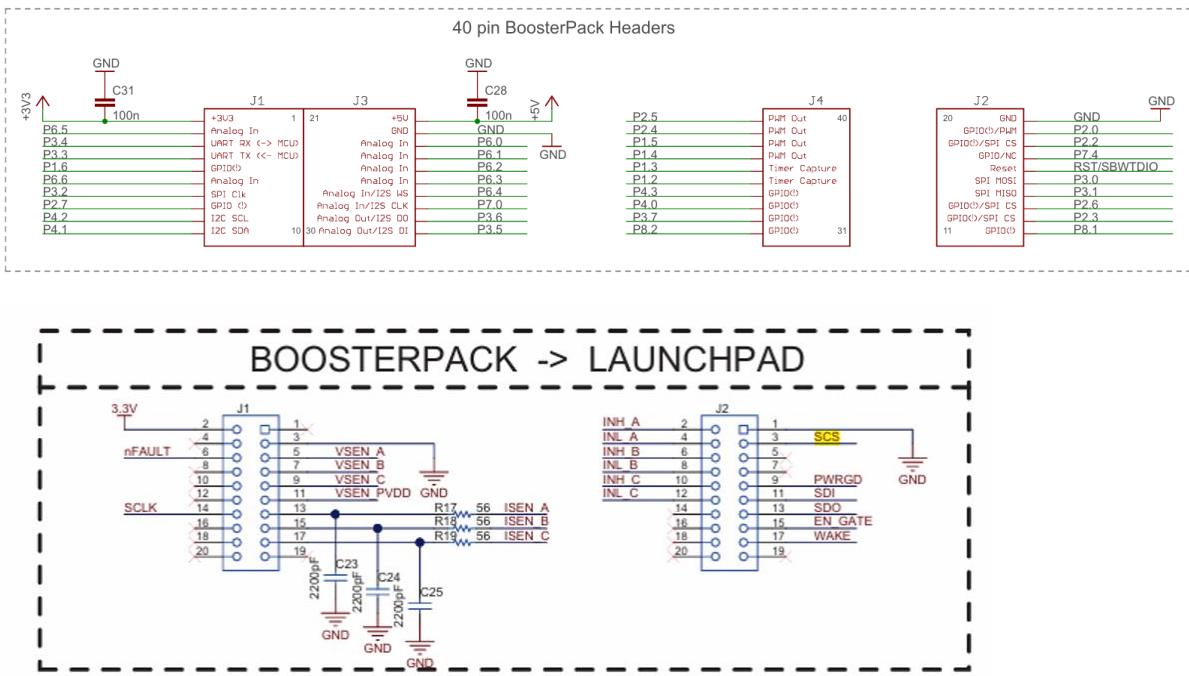


Figure 2. BoosterPack Header Signals

1. 최종 검증된 Encoder 핀맵 (A, B, I)

엔코더의 빠른 신호를 처리하기 위해 **포트 인터럽트가 가능(Port 1 또는 2)**하면서도 다른 기능과 겹치지 않는 핀을 확장 헤더 J4에서 선별했습니다.

Encoder 신호	런치페드 핀 번호	MSP430 포트	기능 및 할당 이유
Phase A	J4 Pin 31	P1.6	Free. 포트 인터럽트 가능. (Timer A1.CLK 병행 가능)
Phase B	J4 Pin 32	P6.6	Free. 방향 판별용 입력 (J4 하단 위치)
Index (I)	J4 Pin 38	P2.7	Free. 포트 인터럽트 가능. (J2.10과 중복되지 않는 확장 전용)
GND	J4 Pin 40	GND	공통 접지
VCC (5V)	J4 Pin 39	+5V	엔코더 전원 (5V 사용 시)

Sheets로 내보내기



1. 최종 확정된 PWM 핀 및 타이머 매핑

MCU 내부적으로 어떤 타이머 모듈이 작동하는지 정리해 드립니다.

모터 신호	핀 번호	MSP430 포트	타이머 모듈 (CCR)	비고
INH_A	J2.19	P2.5	TA2.2 (Timer_A2)	Phase A High
INL_A	J2.18	P2.4	TA2.1 (Timer_A2)	Phase A Low
INH_B	J2.12	P1.5	TA0.4 (Timer_A0)	Phase B High
INL_B	J2.13	P1.4	TA0.3 (Timer_A0)	Phase B Low
INH_C	J4.39	P7.4	TB0.2 (Timer_BO)	Phase C High
INL_C	J4.35	P3.5	TB0.5 (Timer_BO)	Phase C Low

	F5529 Launch Pad	BOOSTXL-DRV8305EVM	F5529 Launch Pad	BOOSTXL-DRV8305EVM
좌측핀	+3.3V	+3.3V	+5V	None
	P6.5	None	GND	GND
	P3.4	FAULT	P6.0	VSENA
	P3.3	None	P6.1	VSENFB
	P1.6	None	P6.2	VSENC
	P6.6	None	P6.3	VSENPVDD
	P3.2	SCLK	P6.4	ISENA
	P2.7	None	P7.0	ISENB
	P4.2	None	P3.6(P6.5)	ISENC
	P4.1	None	P3.5	None

	F5529 Launch Pad	BOOSTXL-DRV8305EVM	F5529 Launch Pad	BOOSTXL-DRV8305EVM
우측핀	P2.5	PWMHA	GND	GND
	P2.4	PWMLA	P2.0	SCS
	P1.5	PWMHB	P2.2	None
	P1.4	PWMLB	P7.4	None
	P1.3	PWMHC	RST	PWRGD
	P1.2	PWMLC	P3.0	SDI
	P4.3	None	P3.1	SDO
	P4.0	None	P2.6	ENGATE
	P3.7	None	P2.3	WAKE
	P8.2	None	P8.1	None

Defined Pins (F5529)	Function
P1.6	Encoder A
P6.6	Encoder B
P2.7	Encoder I
P2.5	INH_A
P2.4	INL_A
P1.5	INH_B
P1.4	INL_B
P7.4	INH_C
P3.5	INL_C
P4.4	TX
P4.5	RX