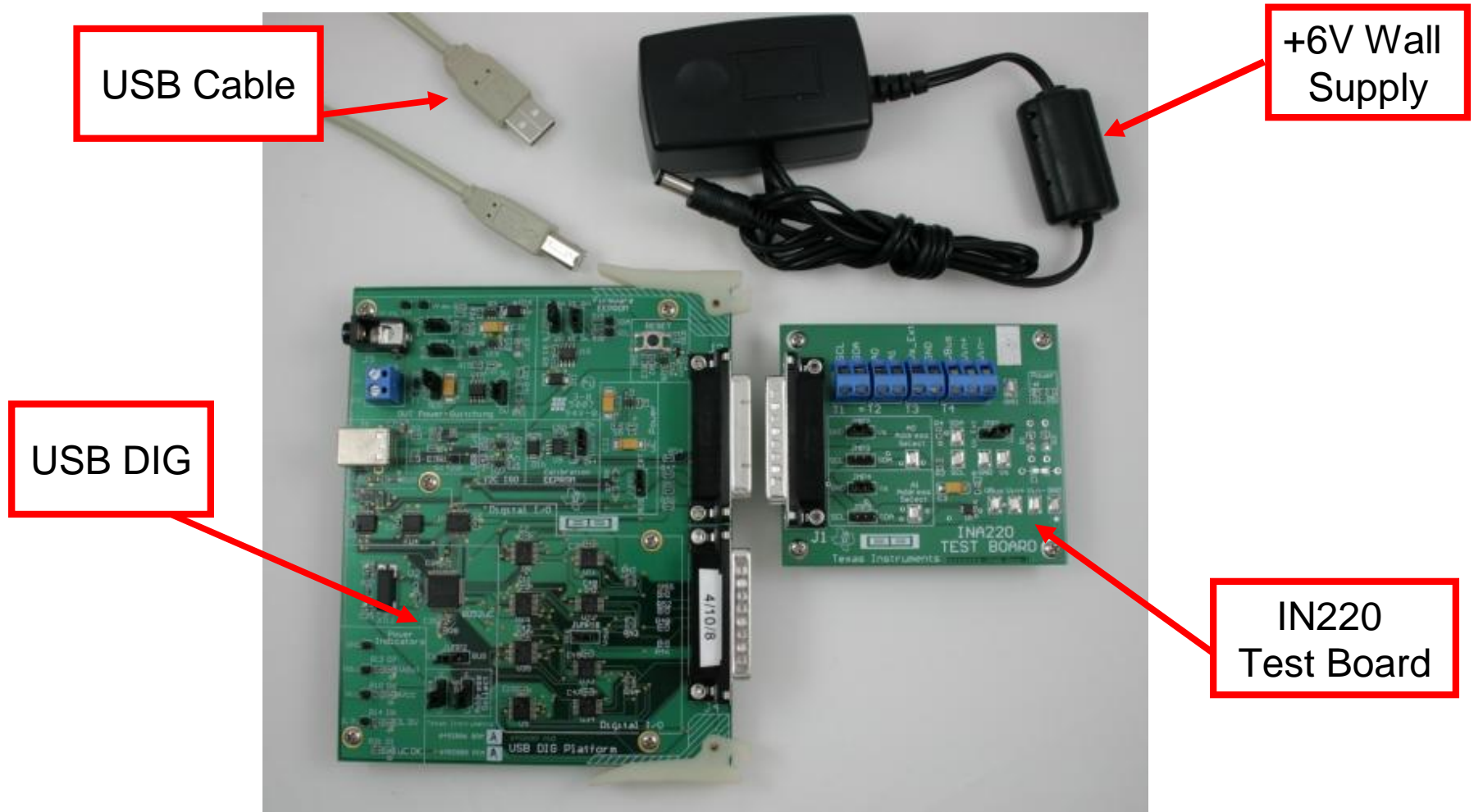
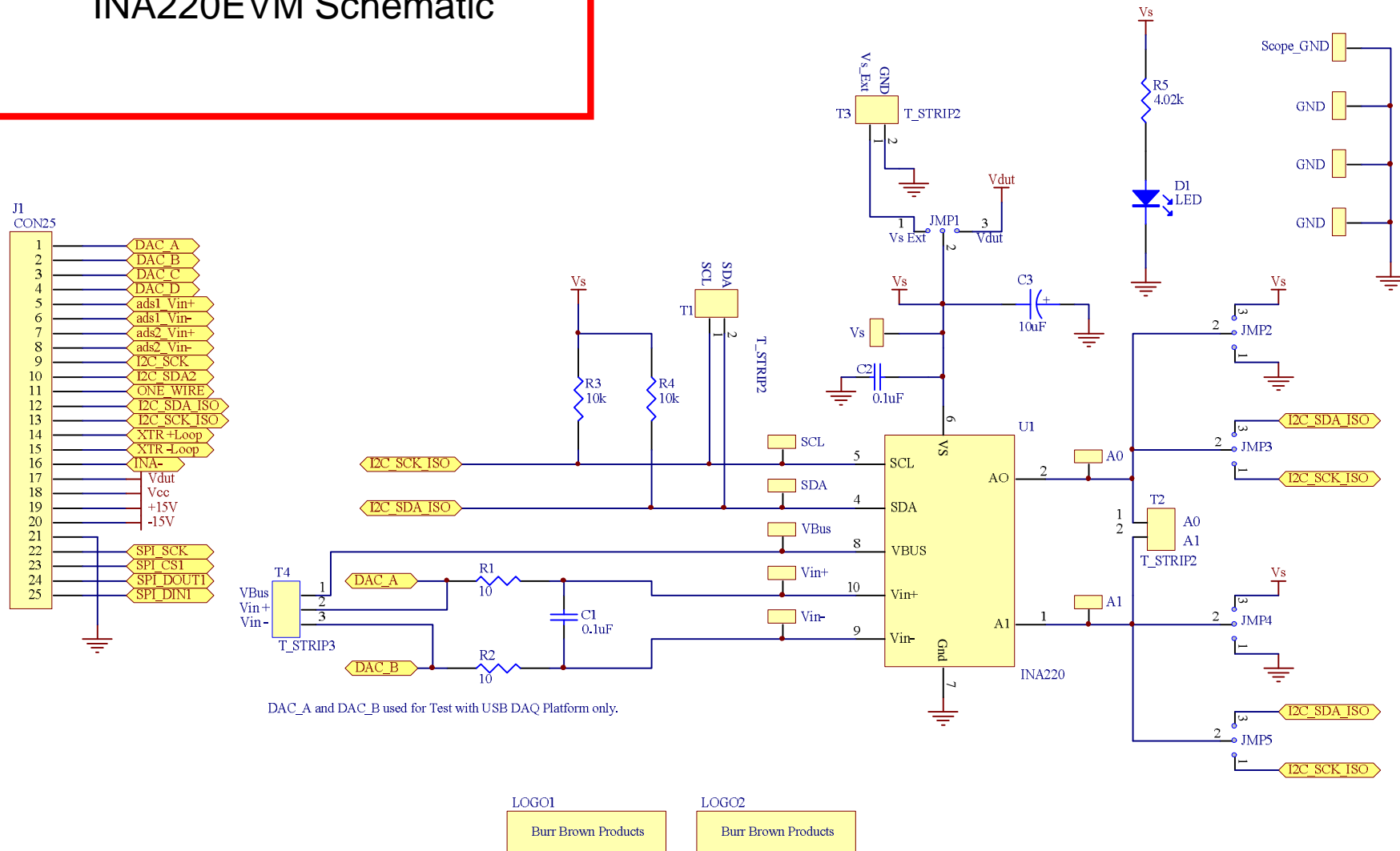


Hardware Documentation

Provided Hardware



INA220EVM Schematic

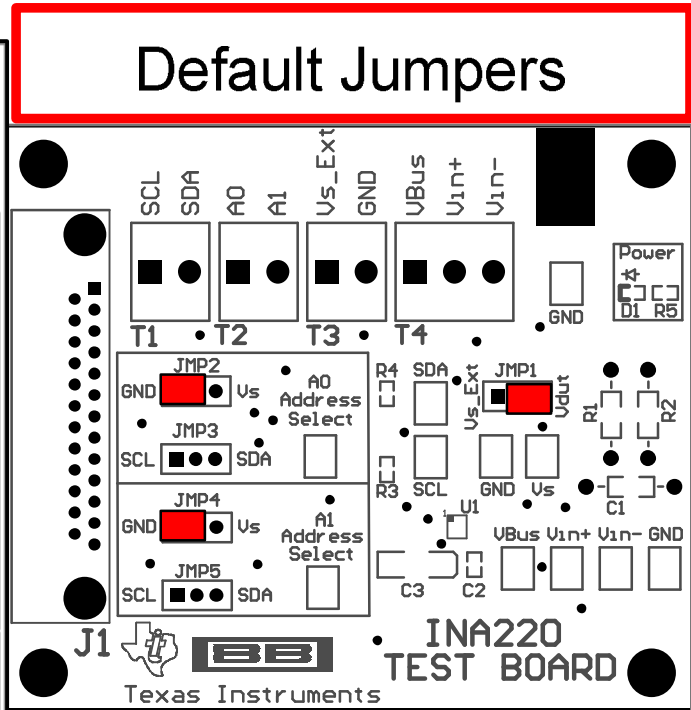
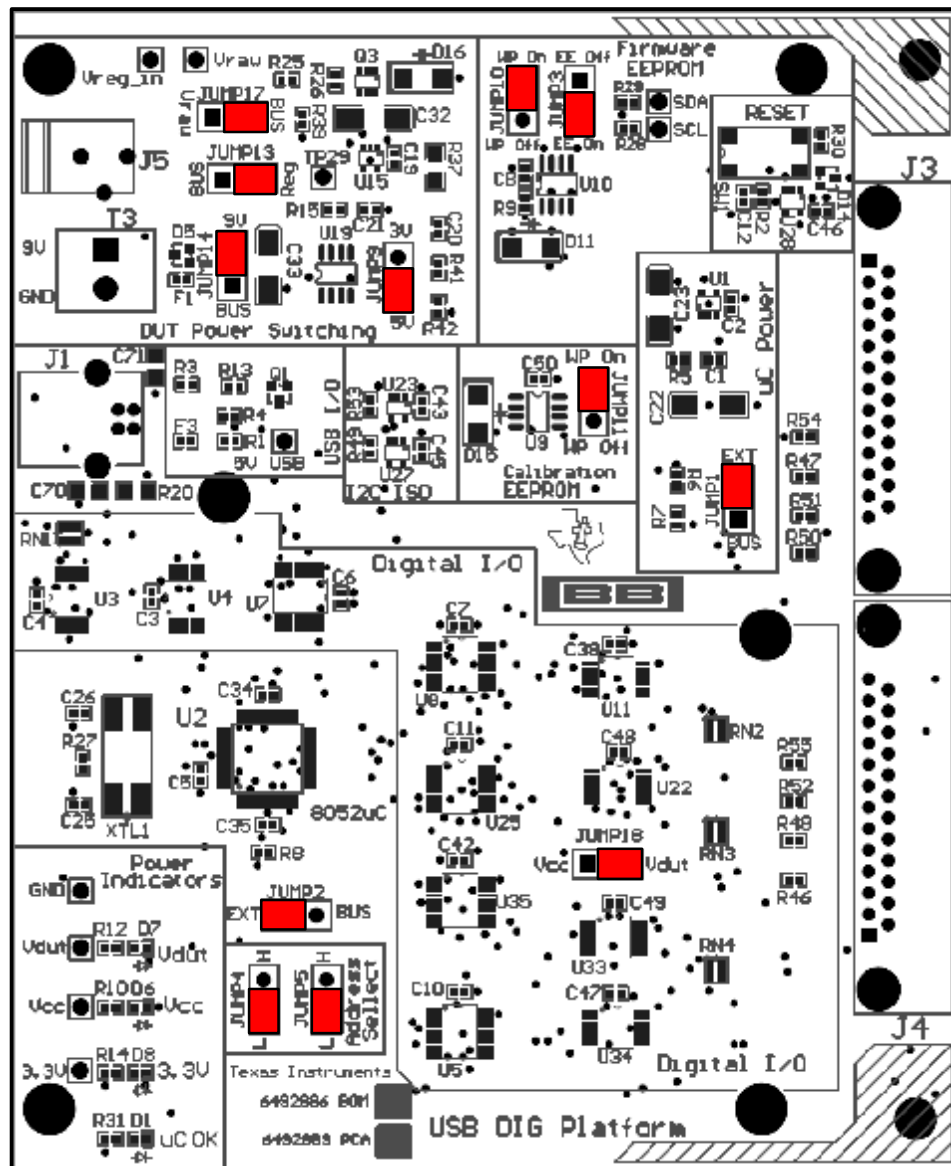


INA220 EVM Jumper Settings

Jumper	Default	Purpose
JMP1	VDUT	This jumper determines where the INA220 gets it's power supply. In the "Vdut" position the EVM provides power. In the Vs_Ext position, the power is applied by an externally connected power supply.
JMP2, JMP3	JMP2 (GND), JMP3 (OPEN)	A0 Address select input. These jumpers determine where the address select pin is connected. The default connects A0 to GND. There should be a jumper on either JMP2 or JMP3 but not on both.
JMP4, JMP5	JMP4 (GND), JMP5 (OPEN)	A1 Address select input. These jumpers determine where the address select pin is connected. The default connects A1 to GND. There should be a jumper on either JMP4 or JMP5 but not on both.

USB DIG Platform Jumper Settings

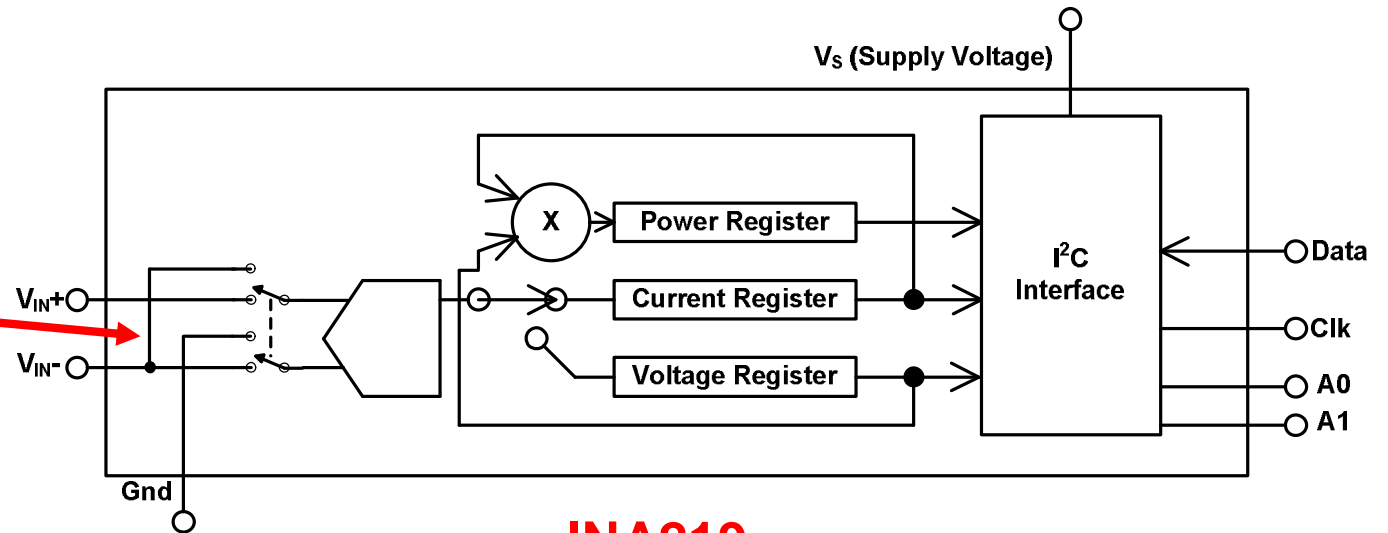
Jumper	Default	Purpose
JUMP1	EXT	This jumper selects external power or Bus power. External power is applied on J5 or T3 (9V dc). Bus power is 5V from the USB Bus. External power is typically used because the USB Bus power is noisy.
JUMP2	EXT	Same as JUMP1.
JUMP3	EE ON	This jumper determines where the INA220 gets it's power supply. In the "Vdut" position the EVM provide power. The default is the "Vdut" position. In the Vs_Ext position, the power is connected externally.
JUMP4, JUMP5	L, L	This sets the address for the USB board. The only reason to change from the default is if multiple boards are being used.
JUMP9	5V	This selects the voltage of the device under test supply (Vdut = 5V or 3V)
JUMP10	WP ON	This write protects the firmware EEPROM.
JUMP11	WP ON	This write protects the calibration EEPROM
JUMP13	Reg	Uses the regulator output to generate the Vdut supply. The USB bus can be used as the Vdut supply.
JUMP14	9V	Uses the external power (9V as apposed to the bus)
JUMP17	BUS	While in the BUS position Vdut operation is normal. While in the Vraw position the Vdut supply is connected to an external source. This allows for any value of Vdut between 3V and 5V. However, adjusting outside of this range will damage the EVM!
JUMP18	Vdut	Connects the pull-up on GPIO to the Vdut supply or the Vcc supply.



J1 (25 pin male DSUB): INA220 Connector Signals

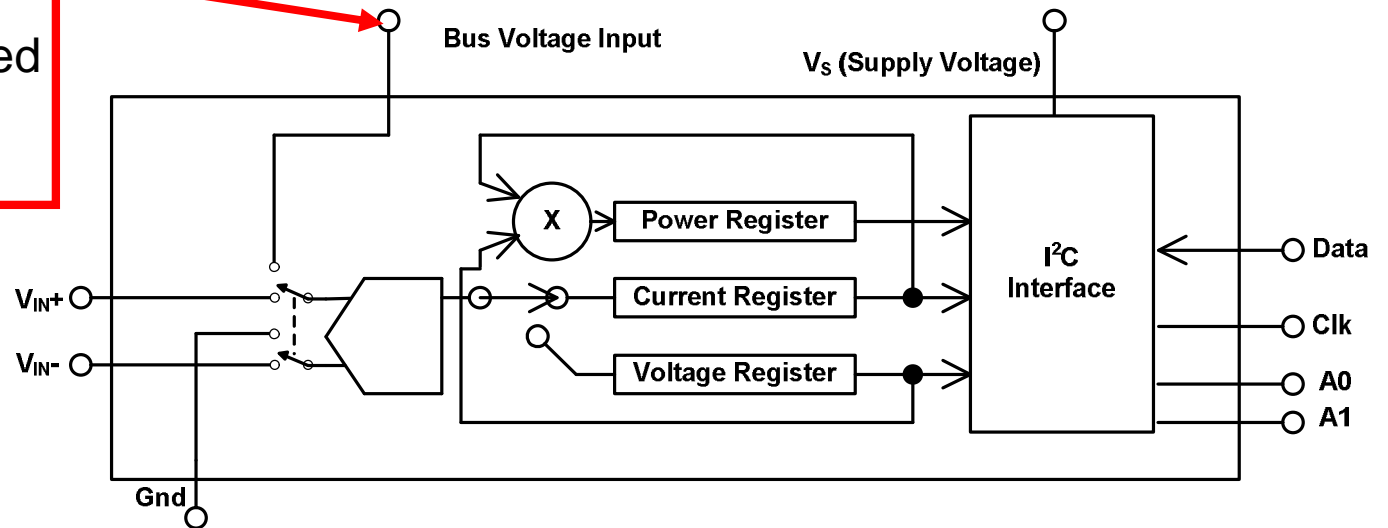
PIN	Signal	Used On This EVM	INA220 Pin
1	NC	NO	
2	NC	NO	
3	NC	NO	
4	NC	NO	
5	NC	NO	
6	NC	NO	
7	NC	NO	
8	NC	NO	
9	I2C_SCK	NO	
10	I2C_SDA2	NO	
11	NC	NO	
12	I2C_SCK_ISO	YES	SCL
13	I2C_SDA_ISO	YES	SDA
14	NC	NO	
15	NC	NO	
16	NC	NO	
17	Vdut	YES	Vs
18	Vcc	NO	
19	NC	NO	
20	NC	NO	
21	GND	YES	GND
22	SPI_SCK	NO	
23	SPI_CS1	NO	
24	SPI_DOUT	NO	
25	SPI_DIN1	NO	

VBus is measured at V_{IN-} pin for high side monitoring.



INA219

VBus is measured at external pin allowing power to be calculated on high or low side monitoring.



INA220

