TI Spins Motors

Piccolo F28027F controlCARD
Hardware Guide

Version 1.0.1 *Motor Solutions*

Texas Instrument's **Piccolo F28027F controlCARD** can be used as a quick evaluation board with control, connectivity signals and ports to F2802xF MCU.

Switch Configuration for use with DRV8312, DRV8301, TMDSHVMTRINSPIN Kits:
SW2: DOWN-UP
SW3: UP-DOWN
SW4: DOWN-UP
BOOT SW1: UP-UP

Version: 1.0.1

Revision History:

1.0.1	**July 11, 2013**	**First release**

1. The controlCARD features: Rev1.0:

- DIMM100 compatible cards for C2000 system application boards
- All GPIO, ADC and other key signals routed to gold connector fingers
- Isolated RS-232 interface for communications
- Single 5V input supply to the controlCARD and external supply pin decoupling with L+C connected close to the device

Each controlCARD includes a “Hardware Developer’s Package” through the C2000 controlSUITE, a set of “soft collateral” files which makes deploying this technology very easy, these files include:

- Schematics
- Bill of materials (BOM)
- Gerber files

2. References

LEDs:

LD1	Turns on when controlCARD is powered on (Green)
LD2	Controlled by Mux-GPIO-12 (Red)
LD3	Controlled by GPIO-34 (Red)

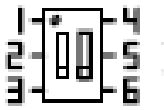
DIP Switches

Bold represents the configuration required for use with the InstaSPIN enabled motor kits. Orientation is same as image on page 1.

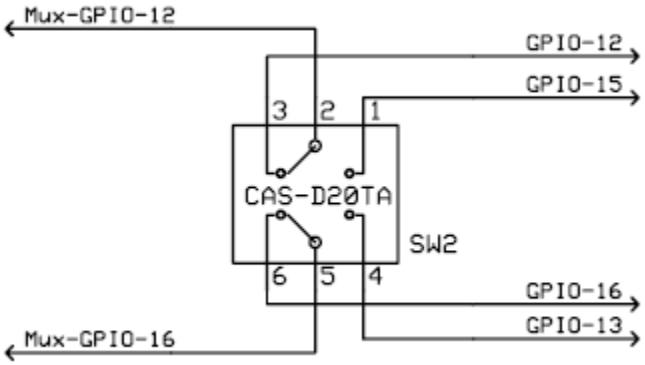
SW1: Controls the boot options of the F2802x device

Position 1 (GPIO-34)	Position 2 (TDO)	
0-DOWN-OFF	0-DOWN-OFF	Parallel I/O
0-DOWN-OFF	1-UP-ON	Wait mode
1-UP-ON	0-DOWN-OFF	SCI
1-UP-ON	**1-UP-ON**	(default) Get mode; the default get mode is boot from FLASH

Switches 2, 3, & 4: Controls the connection of the F28027F pin (Mux-XXXX-XX) to the DIMM pin (GPIO-XX). Switches are oriented in this fashion when viewing the card as in the picture on page 1.



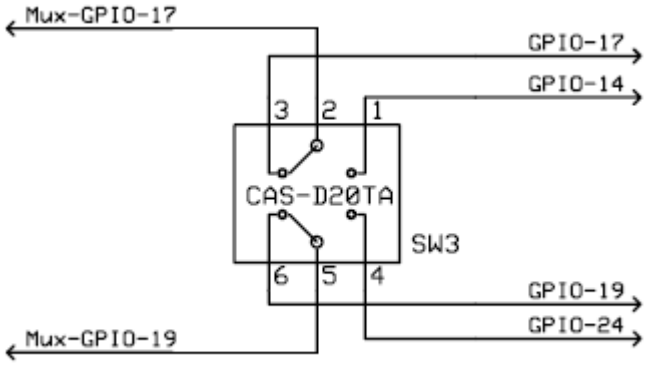
SW2: Mux-GPIO-12 and Mux-GPIO-16



Position1 (Left switch)
UP connects Mux-GPIO-12 to GPIO-15
DOWN connects Mux-GPIO-12 to GPIO-12

Position 2 (Right switch)
UP connects Mux-GPIO-16 to GPIO-13
DOWN connects Mux-GPIO-16 to GPIO-16

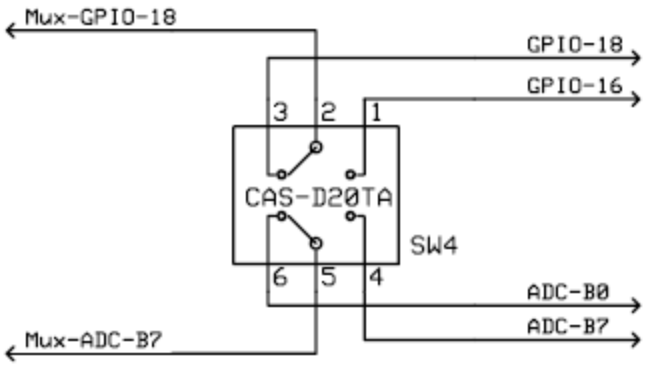
SW3: Mux-GPIO-17 and Mux-GPIO-19



Position1 (Left Switch)
UP connects Mux-GPIO-17 to GPIO-14
DOWN connects Mux-GPIO-17 to GPIO-17

Position 2 (Right Switch)
UP connects Mux-GPIO-19 to GPIO-24
DOWN connects Mux-GPIO-19 to GPIO-19

SW4: Mux-GPIO-18 and Mux-ADC-B7



Position1 (Left switch)
UP connects Mux-GPIO-18 to GPIO-16
DOWN connects Mux-GPIO-18 to GPIO-18

Position 2 (Right switch)
UP connects Mux-ADC-B7 to ADC-B0
DOWN connects Mux-ADC-B7 to ADC-B7

R10

Resistor R10 controls whether GPIO-28 is connected to the controlCARD SCI transceiver or not.

R10 populate with 0 Ohm resistor
The F28027F GPIO-28 pin is connected to the on-card transceiver and will be held high when the transceiver is not in use

R10 NOT Populated (default)
The F28027R GPIO-28 can be controlled by the baseboard. This is the preferred configuration for most baseboards.