

# **C2000 SysConfig PinMux** **GUI-Based Configuration Tool for C2000 MCUs**

Automated Pin Selection and Resource Management

# PinMux Automates Pin Selection Process

- For each pin-mapped peripheral, PinMux functionality automatically selects best available pin
  - Alternatively, select pin mapping from list of compatible pins, then lock that pin
- Unlocked pins are automatically reassigned as pins become constrained
- Lack of available pins will prompt an error
  - Mitigates mistakenly double-mapping pins

The screenshot displays the PinMux configuration window for a peripheral named 'myGPIO25'. The 'PinMux Peripheral and Pin Configuration' dropdown is open, showing a list of compatible pins. A red box highlights the dropdown menu, with a red arrow pointing to it from the text 'PinMux Pin Selection'. The list of pins includes: GPIO18\_X2/50, GPIO19\_X1/51, GPIO22/67, GPIO23/65, GPIO24/41, GPIO25/42 (highlighted), GPIO26/43, GPIO27/44, GPIO28/4, GPIO29/3, GPIO30/1, and GPIO31/2. A red bracket on the right side of the list is labeled 'List shows all compatible pins'. A red arrow points from the text 'Lock Pin' to a lock icon on the right side of the list. Another red arrow points from the text 'Show GPIO Number' to the 'Device Pin Label' field in the 'Preferences & Actions' panel, which is set to 'Device pin name, Device pin number'.

Show GPIO Number

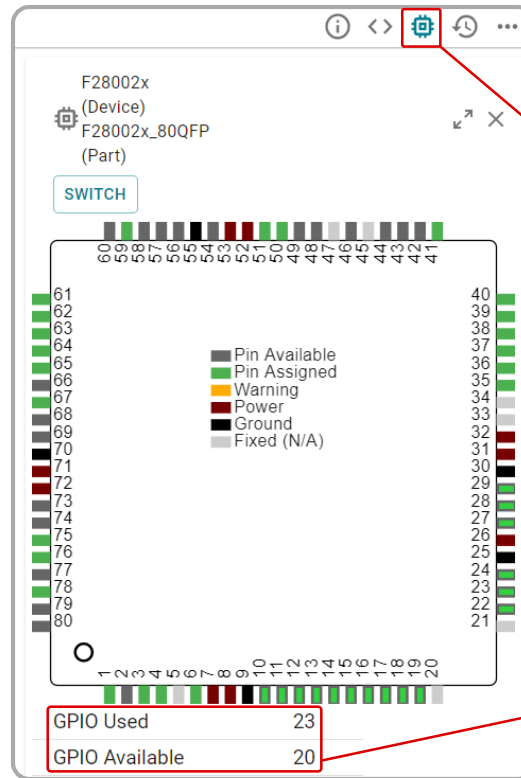
Lock Pin

List shows all compatible pins

PinMux Pin Selection

# PinMux Provides Useful Visualization

- On the right panel, a diagram of the current device's PinMux is shown
  - Keeps track of used pins, available pins, and any potential conflicts
  - Hovering over pin on visualization shows Mux configurations
- Useful for hardware development
- PinMux also contains summary of GPIO usage



Click for PinMux visualization

GPIO Usage Summary

# PinMux Documentation Outlines Mux Selections

- PinMux also generates a *pinmux.csv* file
  - Summary of PinMux configuration from SysConfig
- Contains all available PinMux for each pin
- Showcases current Mux configuration for each pin

Current Mux configuration for Pin

	A	B	C	D	E	F	G
1	All device pins and their pinmux options						
2	Pin	Name	Selected Mode	0	1	2	3
37	35	GPIO13	FSIRXA_CLK	GPIO13	EPWM7_B		
38	36	GPIO12	FSIRXA_D0	GPIO12	EPWM7_A		
39	37	GPIO11	FSIRXA_D1	GPIO11	EPWM6_B		OUTPUTXBAR7
40	38	GPIO33	LINA_RX	GPIO33	I2CA_SCL		SPIB_STE
41	39	GPIO16	EPWM5_A	GPIO16	SPIA_SIMO		OUTPUTXBAR7
42	40	GPIO17	CANA_TX	GPIO17	SPIA_SOMI		OUTPUTXBAR8
43	41	GPIO24	OUTPUTXBAR1	GPIO24	OUTPUTXBAR1	EQEP2_A	
44	42	GPIO25		GPIO25	OUTPUTXBAR2	EQEP2_B	
45	43	GPIO26		GPIO26	OUTPUTXBAR3	EQEP2_INDEX	
46	44	GPIO27		GPIO27	OUTPUTXBAR4	EQEP2_STROBE	
47	45	TCK	TCK				
48	46	GPIO37/TDO		GPIO37	OUTPUTXBAR2		I2CA_SCL
49	47	TMS	TMS				
50	48	GPIO35/TDI		GPIO35	SCIA_RX		I2CA_SDA
51	49	GPIO32		GPIO32	I2CA_SDA		SPIB_CLK

All possible Mux configurations

# Helpful SysConfig Resources

- Test out [SysConfig in the Cloud](#)
- Download [Standalone SysConfig Tool](#)
- Learning Material
  - Application Report: [C2000 SysConfig](#)
  - SysConfig Training Module and Hands-On Lab in [C2000 Academy](#)
  - [Speed Up Development With C2000™ Real-Time MCUs Using SysConfig](#)
  - [C2000 SysConfig Software Guide](#)

Check Video Description for Additional Resources