MPLAB® PICkit™ Basic In-Circuit Debugger

Quick Start Guide

1 Install the Latest Software

Download the MPLAB X IDE software from microchip.com/mplabx and install onto your computer. The installer automatically loads the USB drivers. Launch MPLAB X IDE.

2 Connect to Target Device

1. Connect the MPLAB PICkit Basic to the computer using the supplied USB Type-C® cable.

2. Plug the 8-pin connector or connector wires on the bottom of the PICkit Basic into the target. For more on target connections, see "Additional Information".

3. Connect external power* to target board.

Typical Debugger System

USB Cable to Computer   *8-pin SIL Connector*   *External Power*
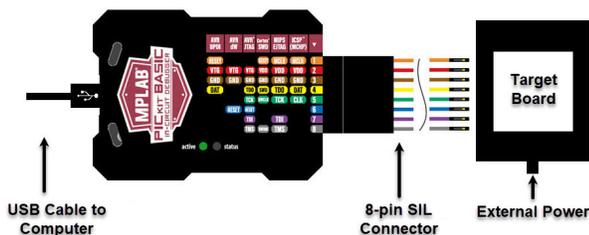
*External target board power supply to be provided by user.

3 Create, Build and Run Project

1. Refer to the MPLAB X IDE User's Guide or online help for instructions to install language tools, create or open a project, and configure project properties.

2. Check that the configuration bits in your code match the Recommended Settings below.

3. To execute your code in Debug mode, click the Debug icon in the toolbar. To execute your code in non-debug (release) mode, click the Run icon. To hold a device in Reset after programming, use the Hold in Reset icon.

Recommended Settings

Component	Setting
Oscillator	• OSC bits set properly • Running
Power	Supplied by target
WDT	Disabled (device dependent)
Code-Protect	Disabled
Table Read Protect	Disabled
LVP	Disabled
BOD	V_{DD} > BOD V_{DD} min.
JTAG	Disabled
AVDD and AVSS	Must be connected
PGCx/PGDx	Proper channel selected, if applicable
Programming	V_{DD} voltage levels meet programming spec

Note: See MPLAB PICkit Basic Debugger online help for more information.

Reserved Resources

For information on reserved resources used by the debugger, see the MPLAB X IDE Help > Release Notes, Reserved Resources links.

Pinouts for Debug Interfaces

MPLAB® PICkit™ Basic		DEBUG									Target[4]	
8-pin SIL Connector[1]	Pin Name	ICSP™ (MCHP)	MIPS EJTAG	Cortex® SWD	AVR® JTAG	AVR debugWIRE	AVR UPDI	AVR PDI	AVR ISP	AVR TPI	8-pin SIL Connector	6-Pin SIL Connector
1	TVPP	$\overline{\text{MCLR}}$/VPP	$\overline{\text{MCLR}}$	$\overline{\text{RESET}}$			$\overline{\text{RESET}}$[3]				1	1
2	TVDD	VDD	VDD/VDDIO	VDD	VTG	VTG	VTG	VTG	VTG	VTG	2	2
3	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	3	3
4	PGD	DAT	TDO	SWO[2]	TDO		DAT[3]	DAT	MISO	DAT	4	4
5	PGC	CLK	TCK	SWCLK	TCK				SCK	CLK	5	5
6	TAUX				$\overline{\text{RESET}}$	RESET/dW			CLK	$\overline{\text{RESET}}$	$\overline{\text{RESET}}$	6	6
7	TTDI		TDI		TDI				MOSI		7	
8	TTMS		TMS	SWDIO[2]	TMS						8	

1. Use of a 6-pin header will result in the loss of funtions on Pins 7 and 8 affecting, EJTAG, JTAG, SWD and ISP.

2. SWO is used for trace. SWDIO is for debug.

3. These are example target connectors that are assumed similar to the debug unit (SIL).

For details on how to connect with the debug connectors mentioned in the table above, refer to the Connections chapter in the user's guide.

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