Manuals+ — User Manuals Simplified.

MICROCHIP SiC Gate Driver User Guide

User Guide
SiC Gate Driver
Quick Start Guide

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SiC Gate Driver

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Insert ASB-014 adapter board into PICkit™ 4 and connect programming cable from ASB-014 to driver board.

2 Connect
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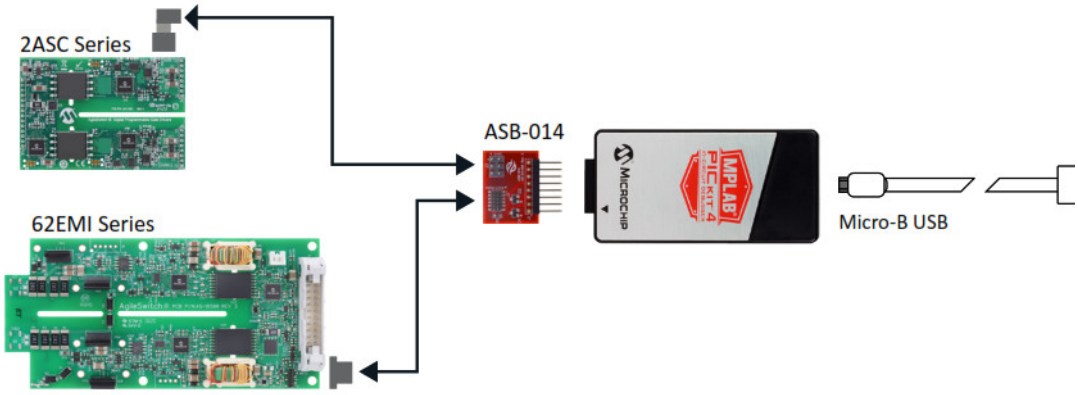
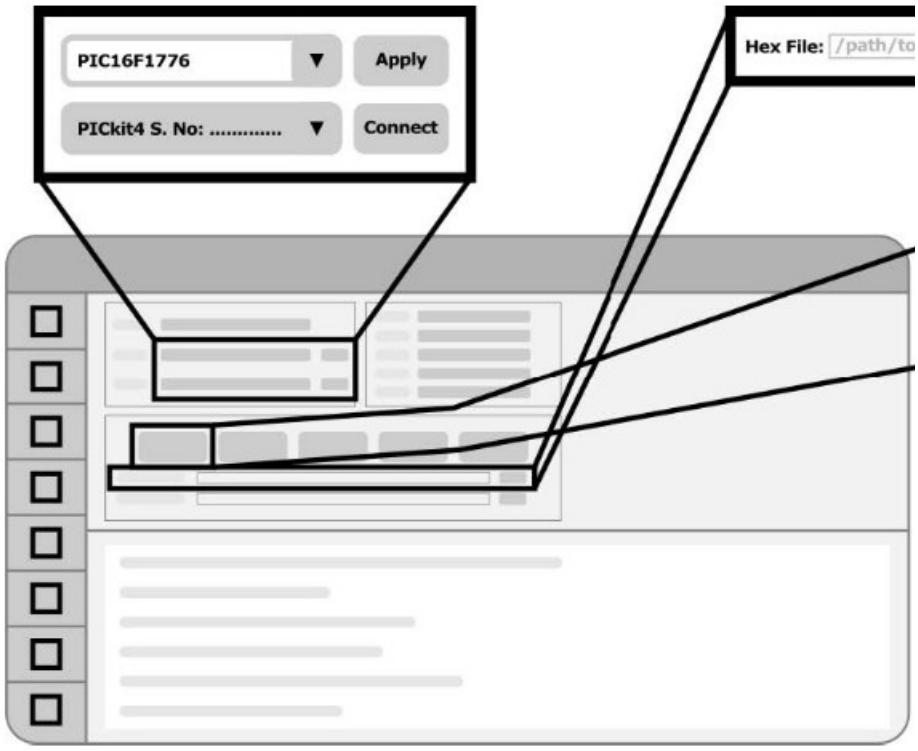


3 **Configure**
Open Intelligent Configuration Tool (ICT), select your board, and enter desired settings.

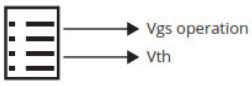
4 **Compile**
Click Compile to genera

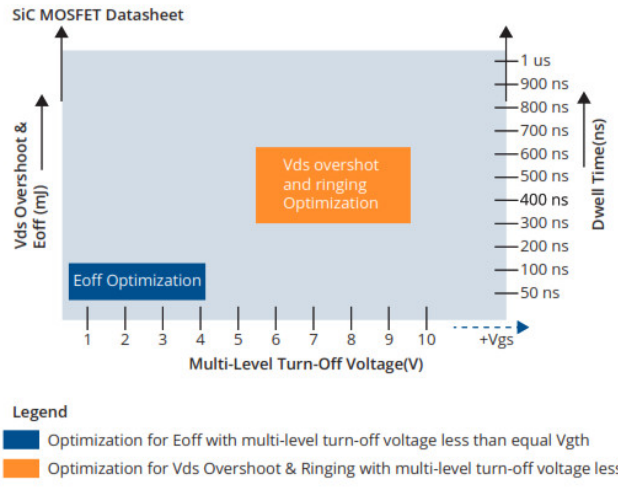
5 Open Open Integrated Programming Environment (IPE). Enter Device, Apply; select Tool, Connect.	6 **Browse** Browse and select conf

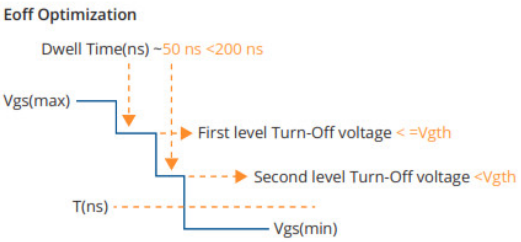


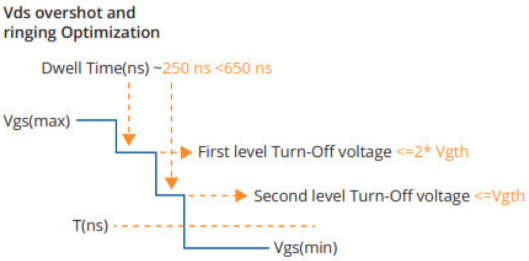
Optimize

Test configuration using double-pulse test. Look at overshoot and switching loss. For gate drivers with lesser number of turn off options, choose the lower limit.



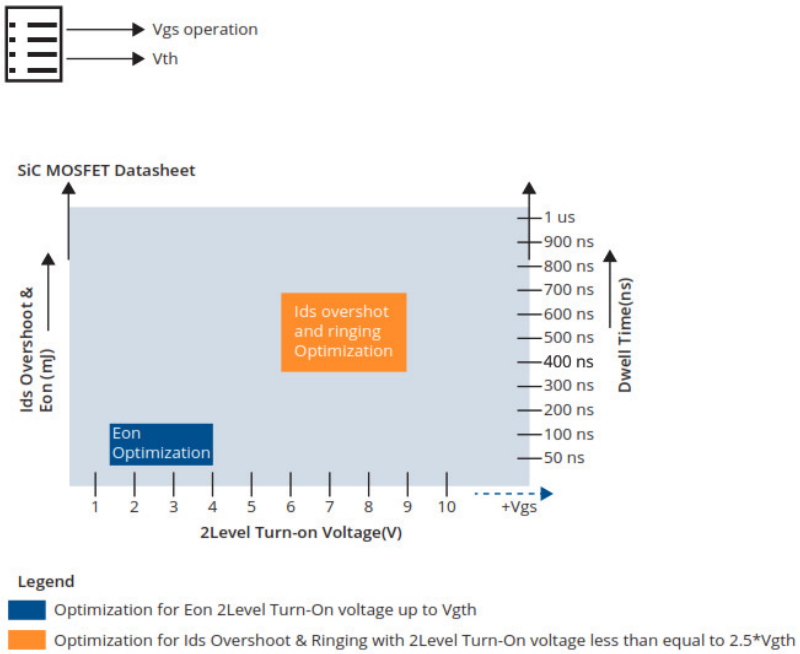


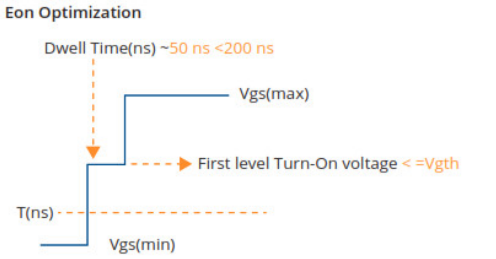


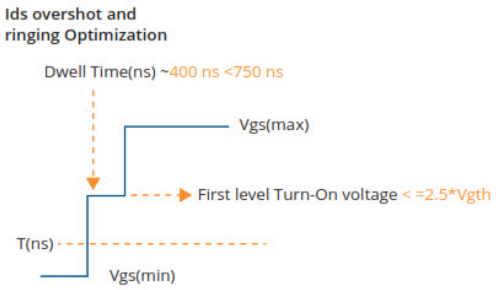


Repeat

Repeat steps 3, 4, 6, and 7 until desired operational parameters are met.

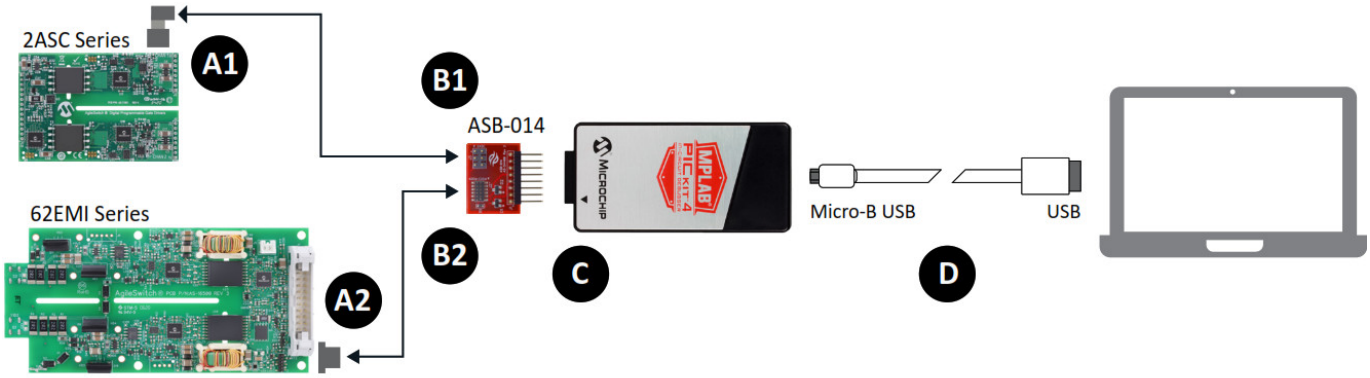




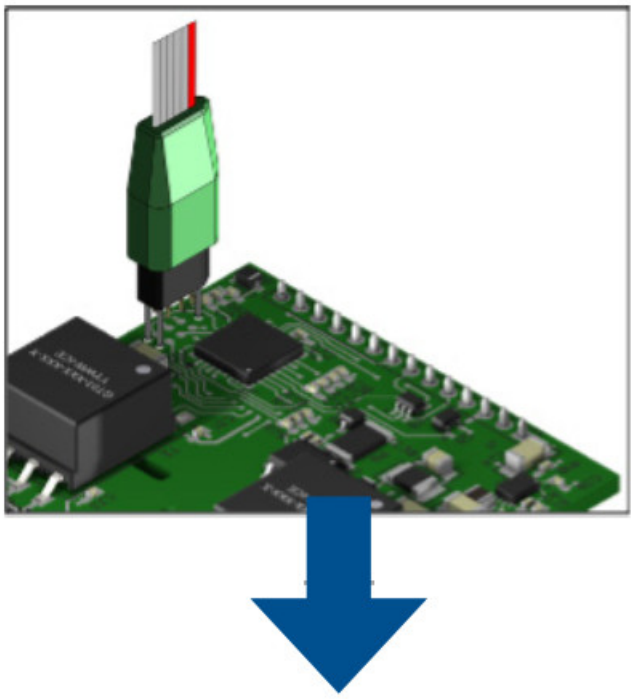


Set Up

Note: Diagrams and parts are not to scale.
If using 2ASC series core board, connect programming cable at A1 and B1.
If using 62EM1 series plug-and-play board, connect programming cable at A2 and B2.

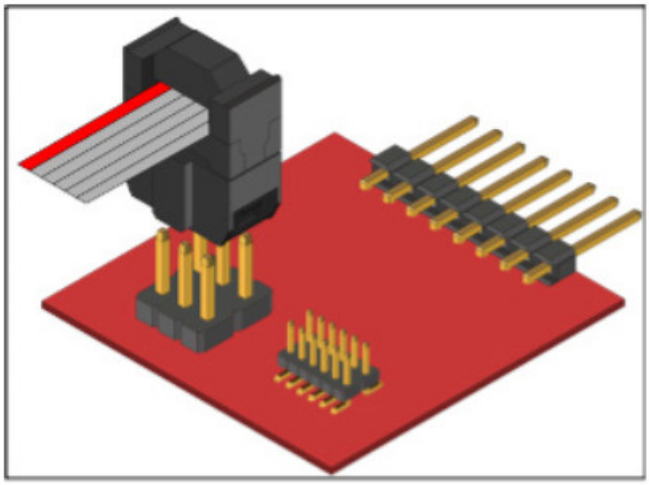


A1
(2ASC series only)
Connect 6-pin spring-loaded header to 2ASC (J4, near input connector).



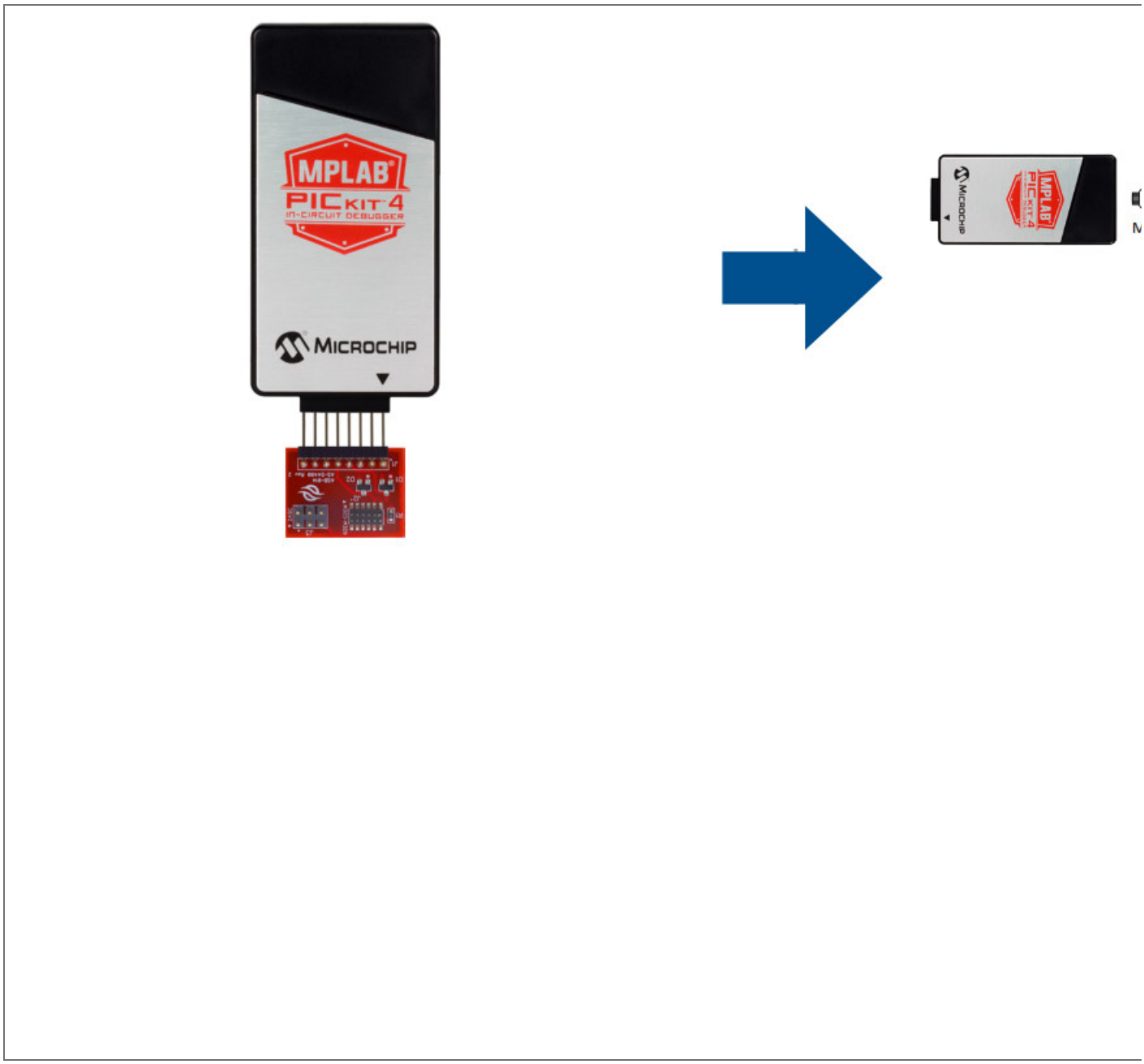
OR

B1
(2ASC series only)
Connect other end of programming cable to ASB-014 adapter board (J3, 3×2 pins).



OR

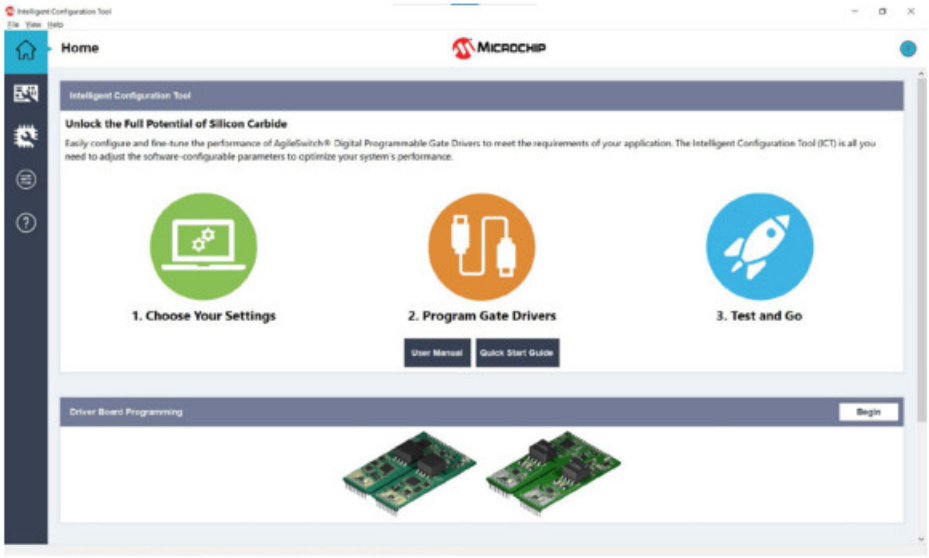
C
(All boards)
Insert 8-pin header from ASB-014 adapter board into PICkit 4, aligning the top side of the board with the top/logo side of the PICkit.



Configure

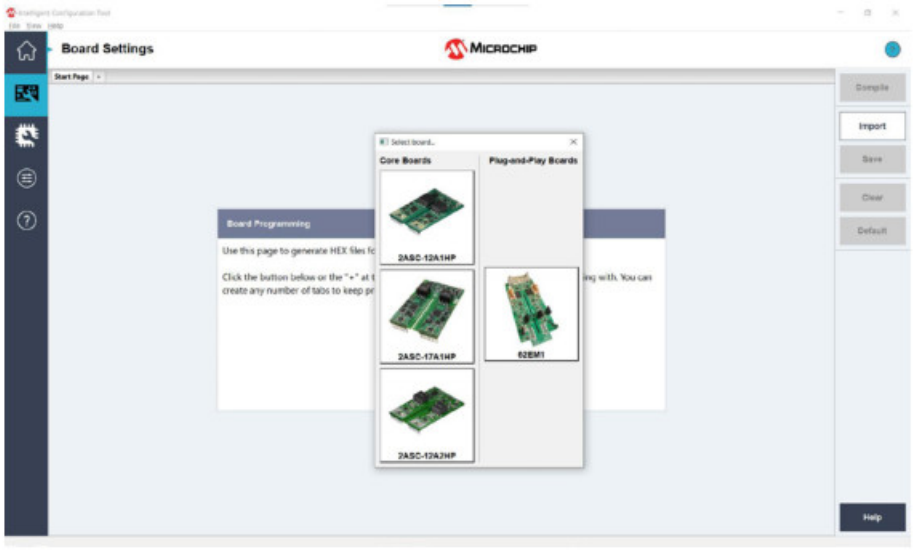
1. **Open ICT**

   Open the ICT by double-clicking the executable file (Intelligent Configuration Tool v2.X.X.exe). The ICT will open to the Home page



2. **Select Board**

   Click the Board Settings icon on the left navigation menu (by default the second item). Click the “Select Board” button in the center of the window, or click the “+” at the top next to the “Start Page” tab. Click the board you wish to configure.

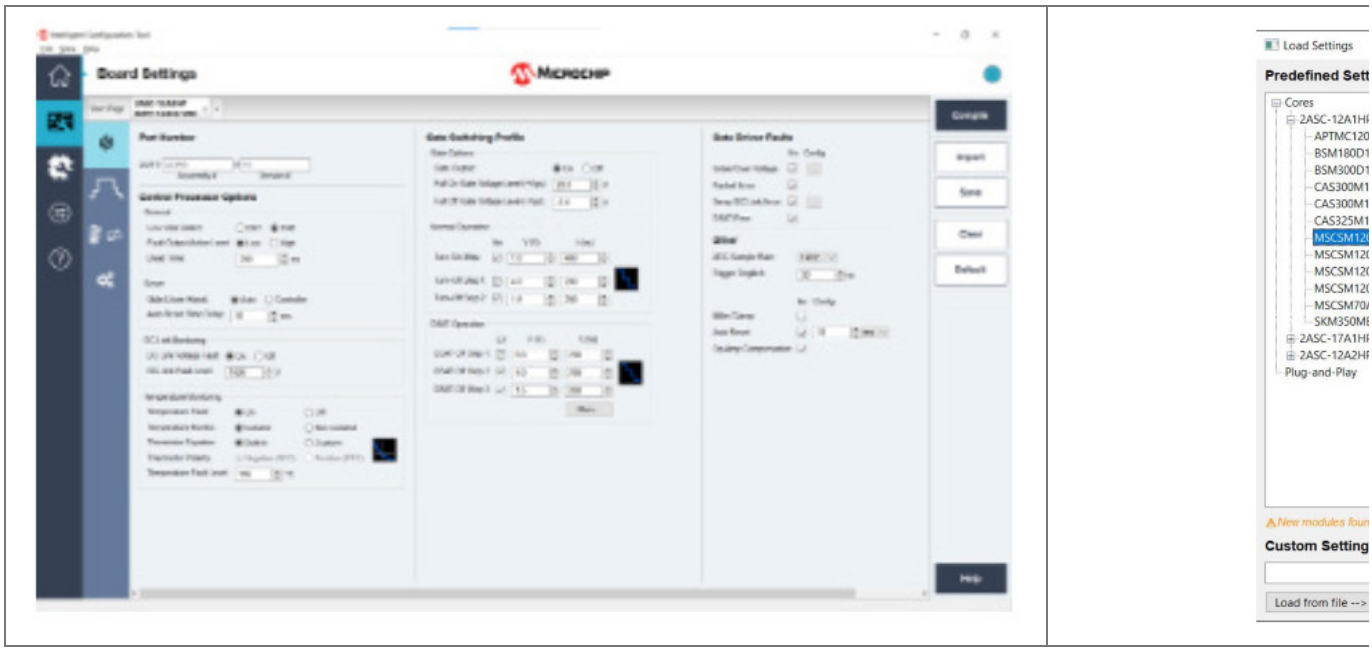


3. **Enter Settings**

   Enter all desired settings, or use one of the recommended configurations for your module by clicking “Import Board”.

   If the module you are using is listed under “Predefined Settings”, select it, then press “Import”. Otherwise, it is often a good starting point to select the module with characteristics closest to the one you are using.

   Microchip provides recommended settings for switching characteristics, including multi-level turn-on/ turn-off and desaturation waveforms. However, note that some features, such as temperature and voltage monitoring, are system-level considerations, and therefore these must be determined by the end user. You can also import a custom settings file by clicking the “…” button under “Custom Settings”. Navigate to the file, then press “Load from file” to preview the settings, and finally “Import” to load these settings into a new tab.

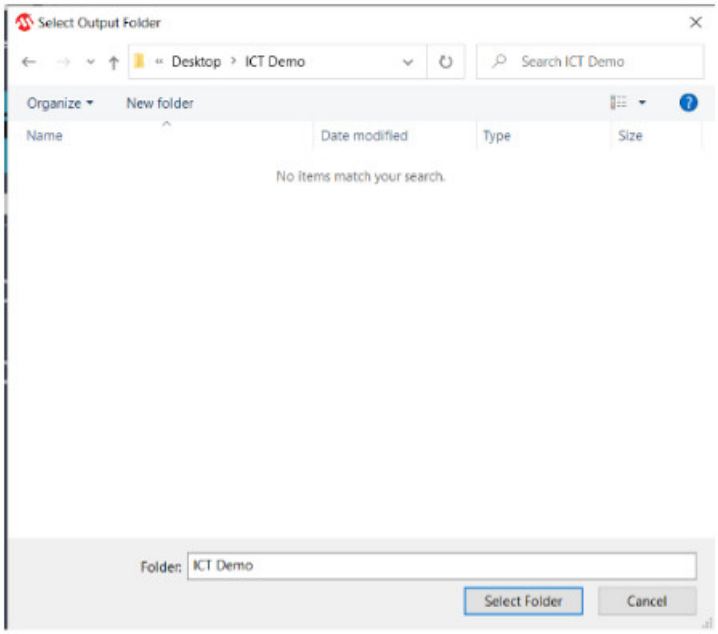


4. **Compile**

   Click the “Compile” button on the right. Enter any of the optional traceability information, then click “Compile!” to confirm.

   Select a location to save the output. The compilation process will create a new folder named SOFT-XXXXX-YY (depending on the entered Part Number) containing all output files. Click “Select Folder” to continue.

   A window displaying compilation progress will appear. Wait for the process to finish, then click “Close”.

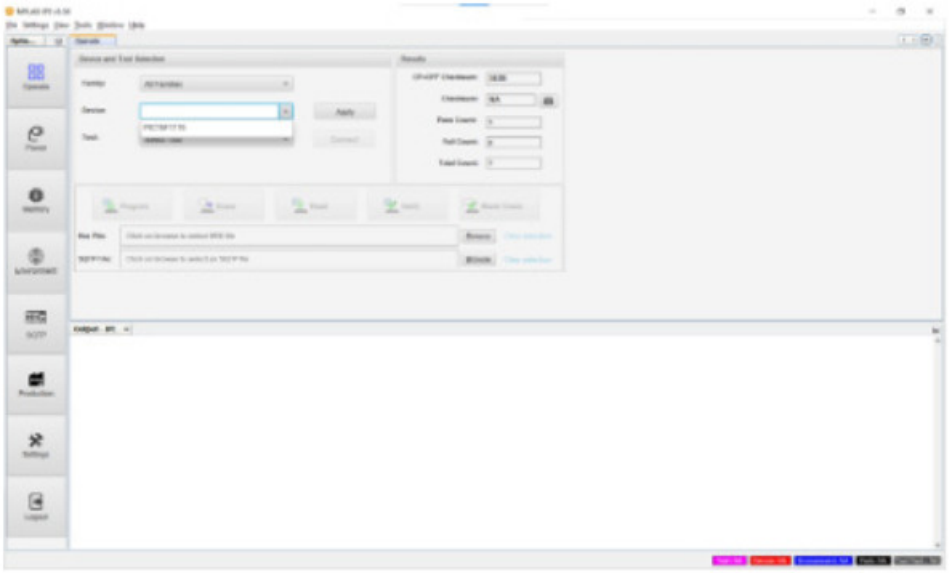


5. **Program**

   Open MPLAB X IPE. In the “Device” box, enter the corresponding device based on the board you are programming, using the table below.

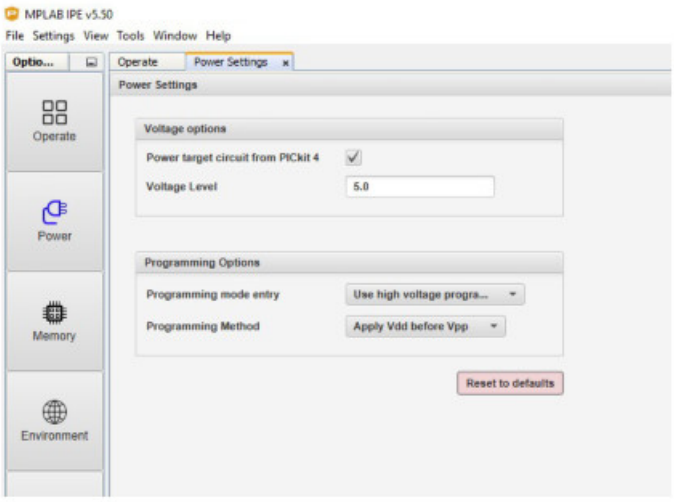
Board	Device
2ASC series	PIC16F1776
62EM1 series	PIC16F1773

   Click “Apply”. Make sure PICkit 4 is selected as the Tool, then click “Connect”.



Next to “Hex File”, click “Browse” and select the SOFT-XXXXXYY.hex file generated during compilation. Ensure the driver board is powered, then click “Program”.

Power to the driver board can be made available through the IPE software configuration by selecting Advanced Mode in the Settings Pulldown menu (see right) or from the hardware platform.



6. **Test**

   Your board is ready to test! If you wish to change any parameters, simply edit those values in the Board Settings page and repeat steps 4 and 5.

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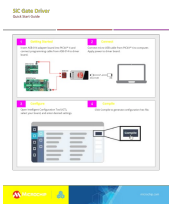
Documents / Resources

	MICROCHIP SiC Gate Driver [pdf] User Guide SiC, Gate Driver, SiC Gate Driver, Driver

References

- Empowering Innovation | Microchip Technology

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