## TDINV3000W050 Firmware Guide

Please note: the control card is programmed with the default settings listed in the TDINV3000W050 user guide:

To modify the firmware, follow the steps below.

- 1. Download Code Composer Studio and create workspace folder.
- 2. Download the TDINV3000W050 firmware from the TRANSPHORMUSA.COM website and save the unzipped folder in the workspace folder you created.
- 3. Open up CCS program.
- 4. Under the FILE menu, select Import. See below.



5. On the Import window, select Code Composer Studio and CCS Projects

🐨 Import					×
Select Choose import wizard.				2	5
Select an import wizard:					
type filter text					
<ul> <li>&gt; Sectoreal</li> <li>&gt; Secto</li></ul>	Studio 8 3 Projects				
?	< Back	Next >	Finish	Cancel	

6. Search for the unzipped folder containing the TDINV3000W050 firmware and click finish.

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	ects			— 🗆 ×
elect CCS Projects to				
Select a directory to sear				
Select search-directory	:			Browse
) Select archive file:				Browse
iscovered projects:				
				Select All
				Deselect All
				Refresh
]Automatically import re ]Copy projects into wor	eferenced projects fo kspace	und in same search	n-directory	
Automatically import rr Copy projects into wor pen <u>Resource Explorer</u> te	eferenced projects fo kspace o browse a wide sele	und in same search	n-directory ojects	

7. The project window should show sometime similar to this below.

😚 cc9 - FullBridgeInv\_28035/main\_Demo\_OCP\_A.c - Code Composer Studio

File Edit View Navigate Project Run Scripts Window Help



8. Scroll down to select main\_Demo\_OCP\_A.c (See below)

陷 Project Explorer 🛛

- ✓ ₩ FullBridgeInv\_28035 [Active Debug]
  - > 🕌 Binaries
  - Includes
  - > 🗁 Debug
  - > 🗁 include
  - > 🗁 Release
  - > 🗁 targetConfigs
  - > C DSP2803x\_Adc.c
  - DSP2803x\_CodeStartBranch.asm
  - DSP2803x\_CpuTimers.c
  - DSP2803x\_DefaultIsr.c
  - DSP2803x\_GlobalVariableDefs.c
  - DSP2803x\_Headers\_nonBIOS.cmd
  - DSP2803x\_MemCopy.c
  - DSP2803x\_PieCtrl.c
  - DSP2803x\_PieVect.c
  - > C DSP2803x\_SysCtrl.c
  - DSP2803x\_usDelay.asm
  - > 📝 F28035.cmd
  - > 💼 main\_Demo\_OCP\_A.c
- 9. The default switching frequency is 50kHz. It can be set at line 36. See below.

🖻 main\_Demo\_OCP\_A.c 🛛



10. The default line frequency is set to 60Hz. It can be modified in line 39. See below.

```
🖻 main_Demo_OCP_A.c 🛛
  24 /* Customer settings Begin
  25 /* FSS_SETTING: 50, 66 OR 100 for 50kHz, 66kHz or 100kHz switching frequency
  26/* For 50kHz or 66kHz, choose 500uH inductor
  27 /*
  28 /* FLINE_SETTING: Set 50 or 60 for 50Hz or 60Hz Line frequency
  29 /*
  30 /* MOD_INDEX: Modulation index 0~0.95
  31/*
  32 /* OCP_LV_UP, 100 for 1A, 2000 for 20A
              33 /****
  35// Set switching frequency, //50 or 100 ,66,133kHz
  36 #define FSW_SETTING 50
  37
  _{\rm 38}\,// Set line frequency, 50, or 60 Hz
 39 #define FLINE_SETTING 60 //60 or 50
  40
```

11. The default PWM modulation index is set to 0.98. It can be modified at line 42. See below.



12. The OCP (over current protection) default limit is set to 50A. It can be modified at line 45. See below.



13. After changes have been made, select Build Project item under the Project Menu. See Below.



14. Verify 0 errors in the Problems window. See below.

Problems 🛛 🎧 Advice 0 errors, 2 warnings, 0 others

- 15. To program the control card, connect the control card on the evaluation board and verify the appropriate USB is connected.
- 16. Select the debug option on CCS.