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Strata Enabled NCP45560 ecoSWITCH EVB User Guide

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Introduction

The Strata Enabled NCP45560 ecoSWITCH EVB provides an easy to use evaluation board within the Strata Developer Studio for the NCP45560 ecoSWITCH from ON Semiconductor. Through the Strata User Interface, the developer can access datasheets, BOMs, schematics, and other collateral they may need. This document will explain how to get the EVB up and running with Strata.

Features

- Advanced Controller with Charge Pump
- Integrated N-Channel MOSFET with Ultra Low RON
- Input Voltage Range 0.5 V to 13.5 V
- Soft-Start via Controlled Slew Rate
- Adjustable Slew Rate Control
- Power Good Signal
- Thermal Shutdown
- Undervoltage Lockout
- Short-Circuit Protection
- Extremely Low Standby Current
- Load Bleed (Quick Discharge)

Applications

- Portable Electronics and Systems
- Notebook and Tablet Computers
- Telecom, Networking, Medical, and Industrial Equipment
- Set−Top Boxes, Servers, and Gateways
- Hot−Swap Devices and Peripheral Ports

User Guide

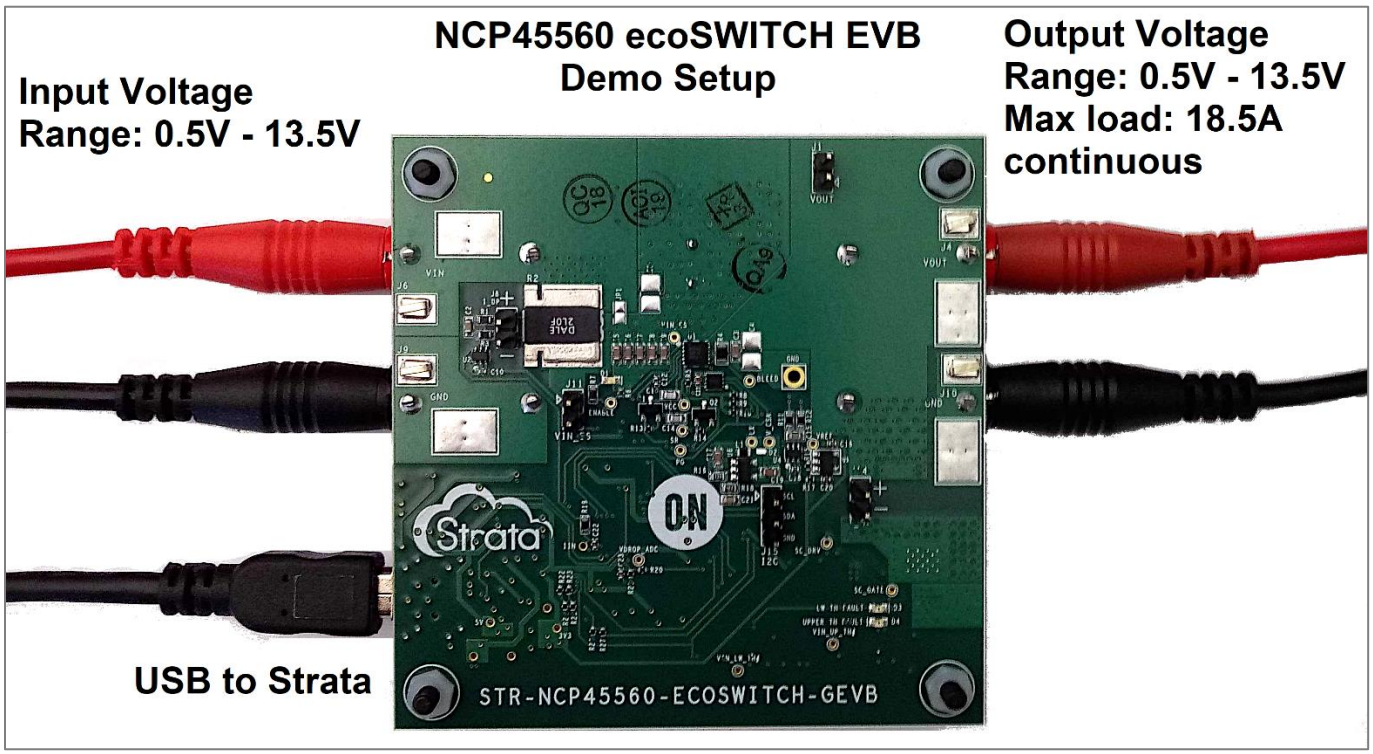
This section will explain how to use the Strata Enabled NCP45560 ecoSWITCH EVB in a step by step manner, and will cover both the hardware required as well as how to use the User Interface in Strata.

Hardware Setup

The hardware required for using the Strata Enabled NCP45560 ecoSWITCH EVB are a computer (with Windows), a power supply, and a load. Follow the steps below.

1. Plug the power supply into the input of the board using the banana plugs J21 (positive terminal) and J23 (negative terminal). Do not apply over 18V (the ecoSWITCH's absolute maximum voltage on its VIN pin) to the input because this may damage circuitry on the board. The recommended input voltage range is 0.5V to 13.5V for normal operation.
2. Connect the computer to the EVB using the mini USB connector J25 on the bottom of the board.
3. Plug the load into the output using the banana plugs J20 (positive terminal) and J22 (negative terminal).

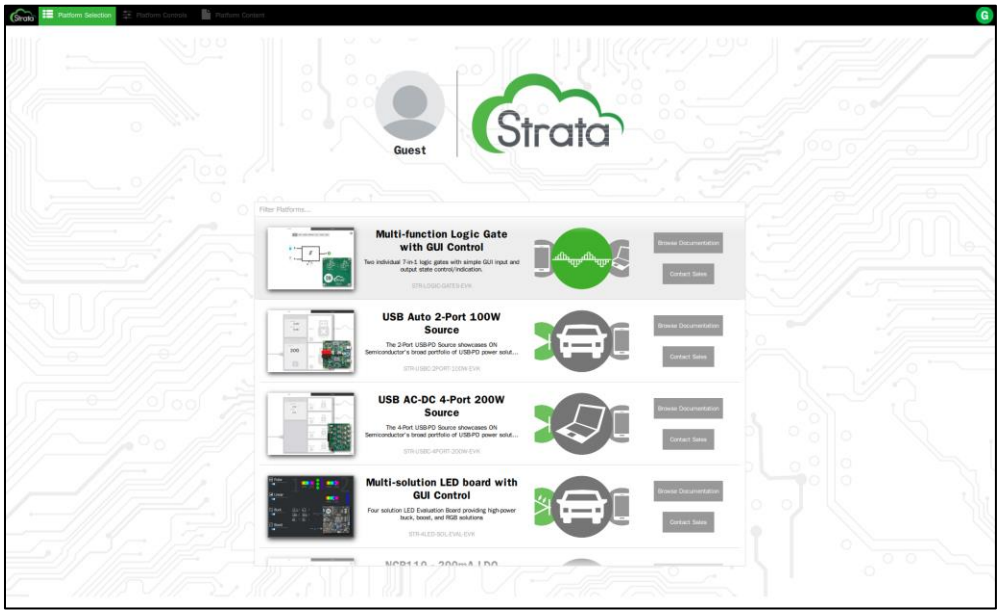
A picture of the setup can be found below. Red power cables denote positive polarity with respect to the black power cables, which are both connected to the board's common ground:



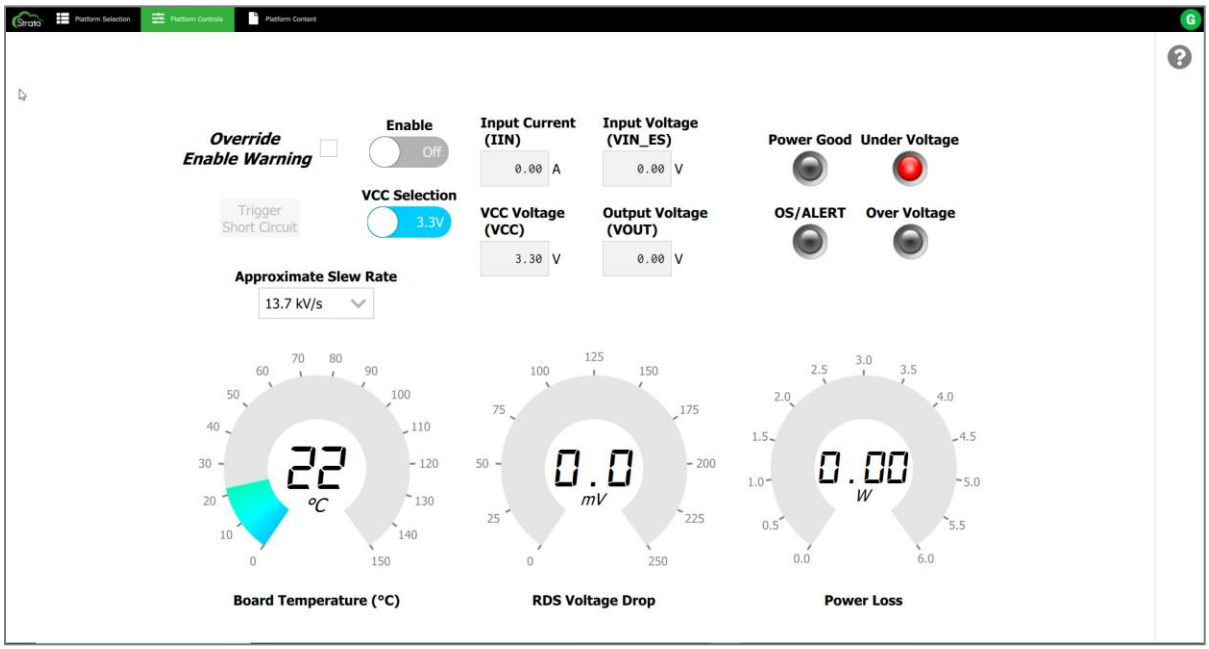
User Interface

The UI within the Strata app will allow the user to control the ecoSWITCH and monitor its telemetry without needing other lab equipment or training to do so. The steps below cover what is in the UI.

1. First, open the Strata app. Login and the home screen will appear.



2. Once logged in, the app will automatically detect the device that is plugged in and will bring up the UI for the board that is plugged in.
3. The main view that comes up offers basic telemetry, an enable switch for enabling/disabling the ecoSWITCH, a VCC selection switch, a drop-down box for selecting the output voltage slew rate, and a button to trigger the onboard short circuit load when the ecoSWITCH is enabled. Due to potentially harmful inrush current, when the user tries to enable the device with the “Enable” switch, a warning popup will alert the user of the maximum recommended load current that can be pulled during startup. Click the “Override Enable Warning” if you want to disable this popup when you enable the ecoSWITCH. Refer to the test report for this EVB for more information regarding the inrush current limitation. The “VCC Selection” switch and “Approximate Slew Rate” drop-down box can only be altered when the ecoSWITCH is disabled.



4. The round button with a question mark in the top right corner is the Help button, and will show the user what everything on the UI is doing.
5. To look at the collateral provided with the EVB, click on the “Platform Content” tab at the top of the screen.

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