ON Semiconductor®

Strata Enabled FUSB3307 EVB User Guide

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Introduction

The Strata enabled FUSB3307 EVB offers an easy to use User Interface (UI) within the Strata Developer Studio. Through the Strata UI, the developer can control some of the parts features as well as access the most up to date datasheets, BOMs, schematics and other collateral. This document will explain how to get the EVB up and running with Strata.

Device Features

- PD 3.0 v1.2 and Type-C r1.4 Compliant
- Constant Voltage (CV) and Constant Current Limit (CL) Regulation
- Small Current Sensing Resistor (5 m) for High Efficiency
- Gate Driver for N−Channel MOSFET as a Load Switch
- CC1/CC2 Pin Protection up to 26 V
- Built−in Cable−Drop Compensation
- Selectable Resistor Divider or Battery Charging (BC1.2) Modes
- Built−in Output Capacitor Bleeding Function for Fast Discharge
- Adaptive UVP, Adaptive OVP, OTP and VBUS Fault Detection

Applications

- Battery Wall Chargers for Tablet PC’s and Laptops
- AC-DC PD3.0 Compliant Adapters
- DC-DC Car Chargers for Individual Port Power Control

Installation

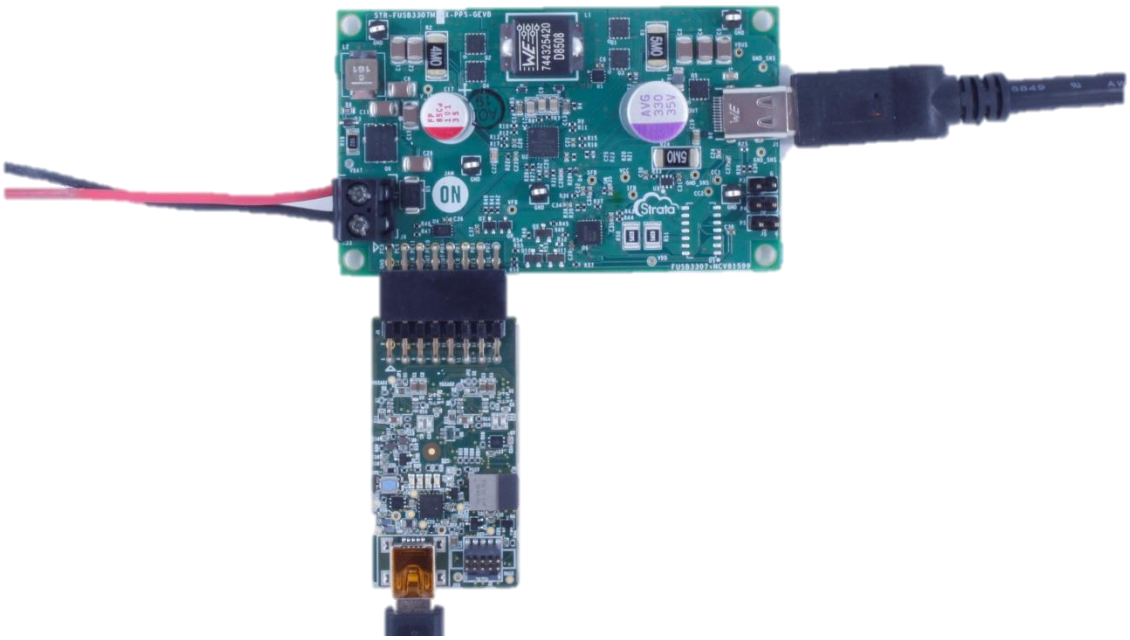
Go to www.onsemi.com/strata to download the most recent version of Strata and follow the installation prompts.

Included with Evaluation Kit

1. PCB with Strata Linked Board
2. USB Mini-B cable

Startup Procedure

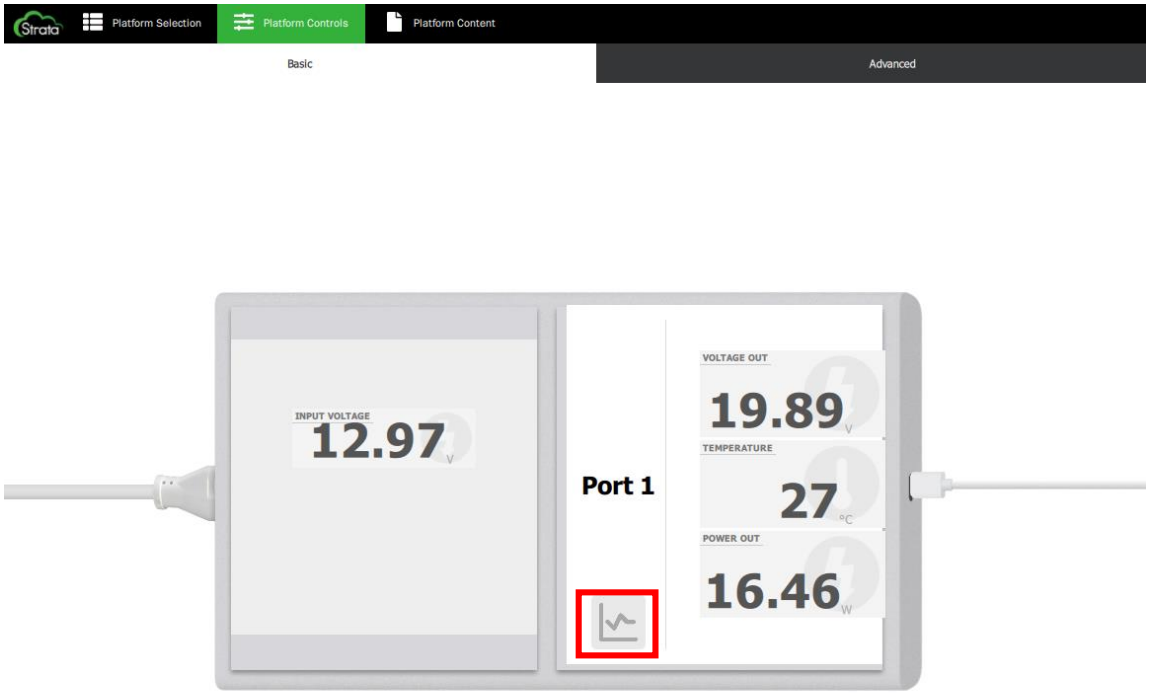
1. Connect a power supply to the 2 pin screw terminal
    a. 4.5V to 32V can be used
        i. Depending on the load a current limit will be seen if the input voltage is too low
2. Connect your computer to the board using a USB Mini-B cable
3. Login with your credentials
4. Your board will be detected, UI will appear, and relevant collateral will be downloaded to your computer



FUSB3307 EVB with Strata Linked EVB

Type C Connection

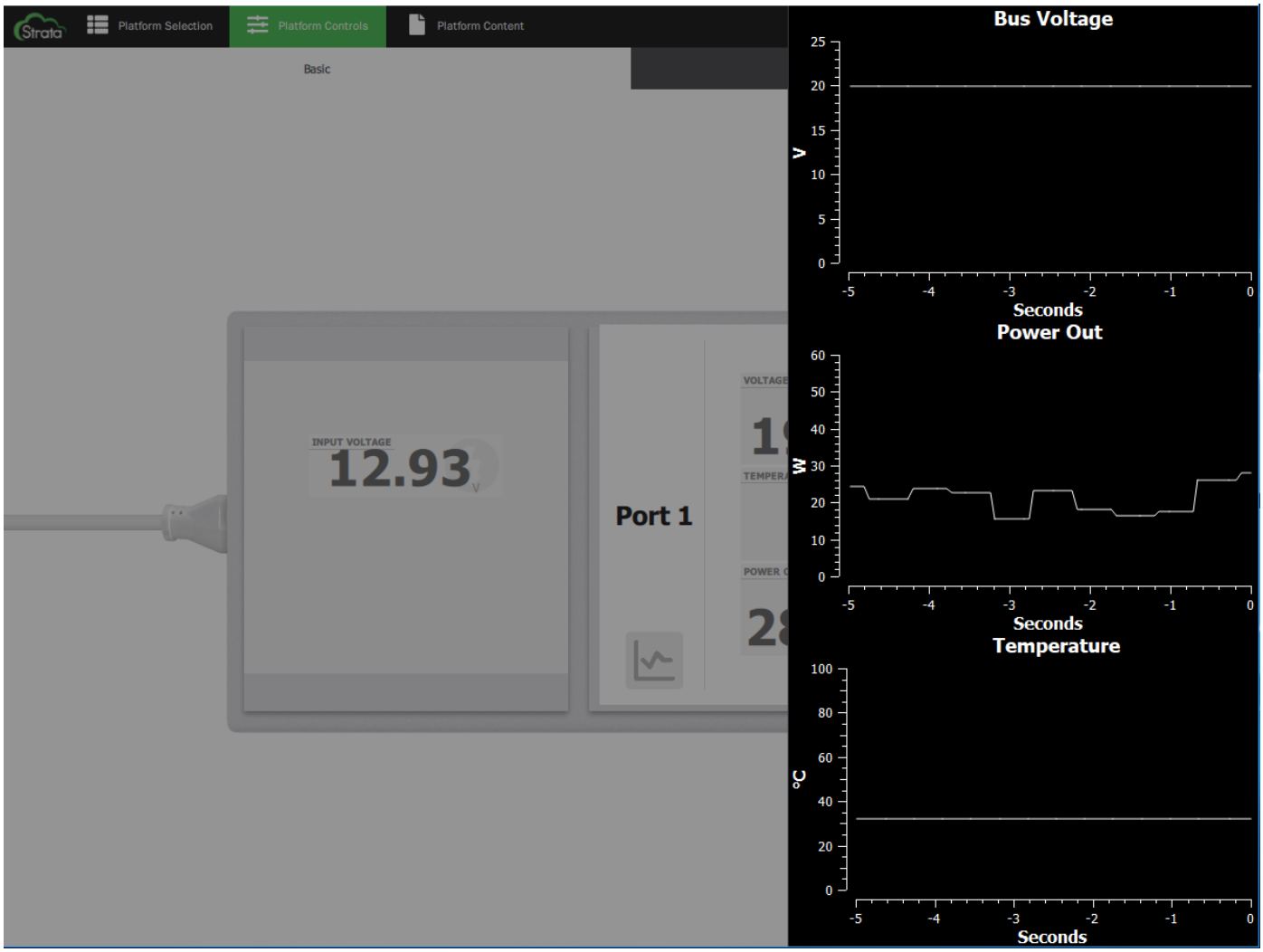
1. Connect a type C cable to the EVB and connect the other end to a type-C device
    a. If a non-PD device is used a maximum VBUS voltage of 5V is available
2. The device should show up as seen below



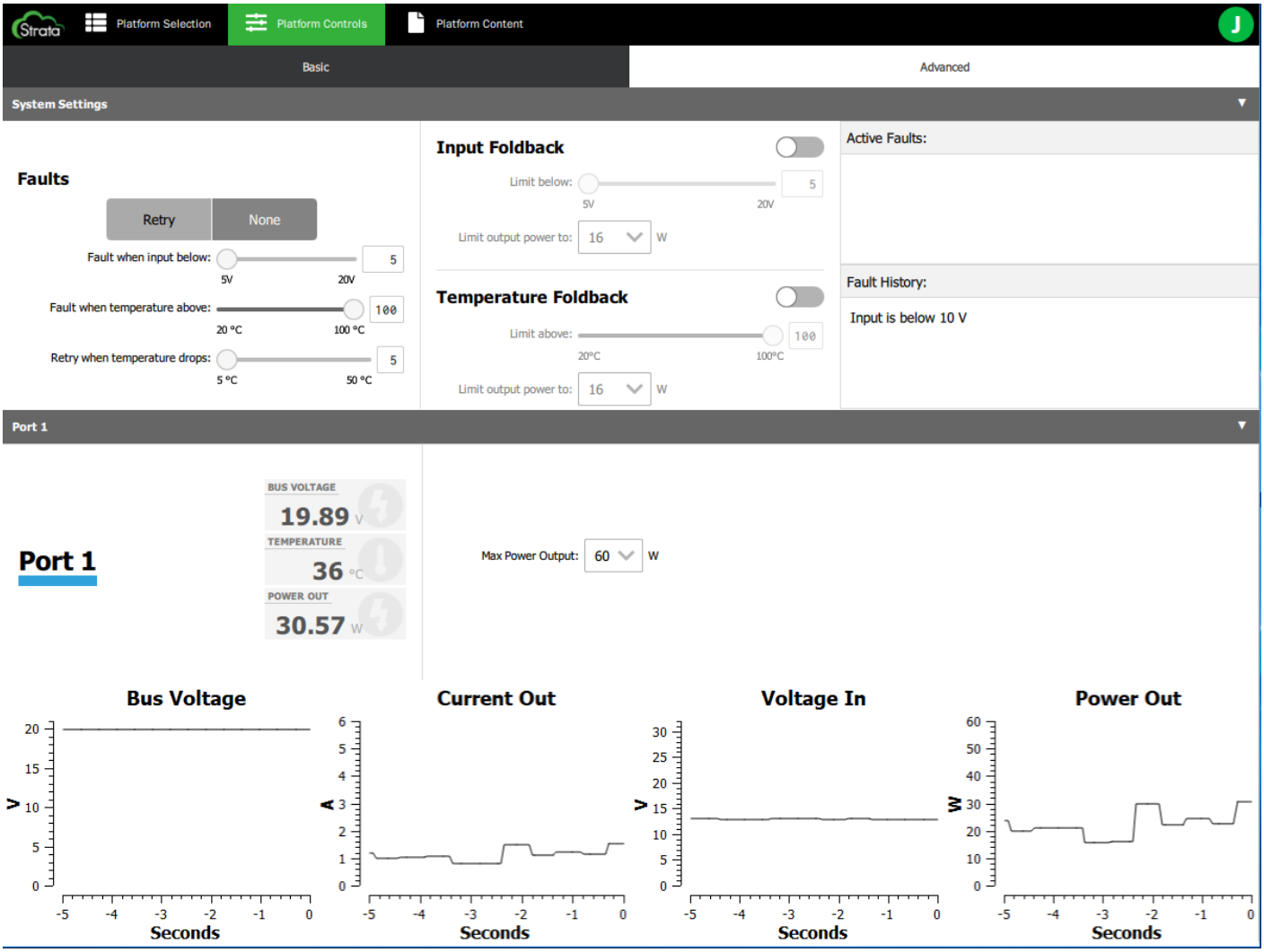
Basic Page

The basic page is the first page that shows up when a device is connected. It will include the basic parameters Vin, VBUS, Board Temperature and Power Out.

Graphs for VBUS, Power out and temperature are available by clicking the graph button. See red square in image above. The graphs are live data and can be seen in the image below.



Advanced Page



Among the live telemetry the advanced page includes output power control as well as protection features. These include the following:

a. **Bus Voltage** – Voltage measured on the Type C connector
b. **Current Out** – Current that is through the Type-C connector
c. **Power Out –** Calculated output power using the Bus voltage and output current
d. **Voltage In** – Input voltage to from the screw terminal
e. **Temperature** – Temperature in °C of the EVB
    i. It is measured close to the boost high side MOSFET
    ii. Usually the hottest part of the board
f. **Input Fault –** Range is 5V and 20V
g. **Temperature Fault** – Range is 20°C to 100°C
h. **Input Foldback** – Range of 5V to 20V
    i. **Power limits** – [30, 60]W
i. **Temperature Foldback** – Range of 20°C to 100°C
j. **Active Faults –** Shows current faults
k. **Fault History** – Shows all faults while board is connected
l. **Max Power Output** – Limits of [30, 60]W are available

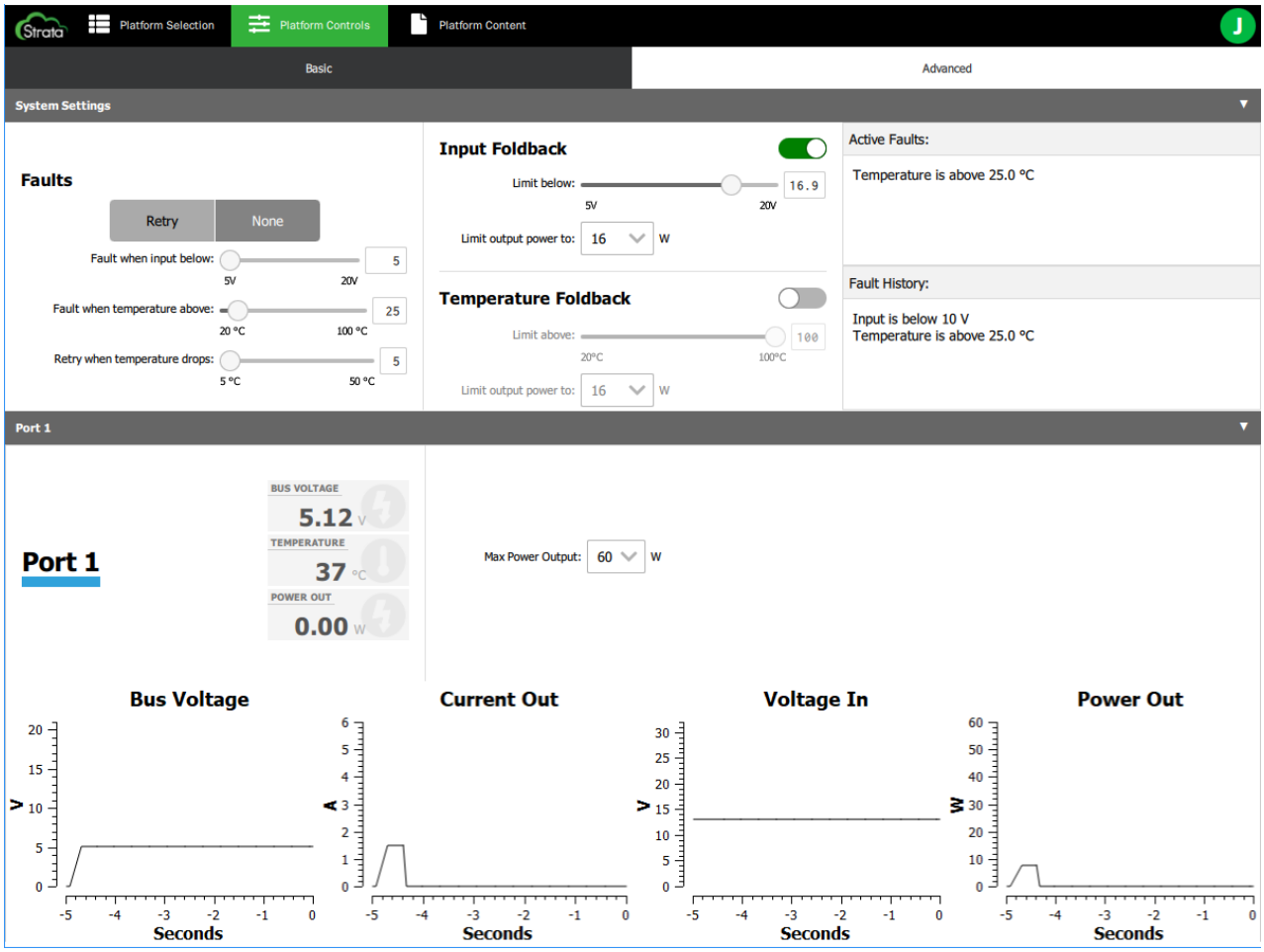
Faults

In the faults section allows the user to set fault protection for exceeding high temperatures, or low input voltages. There are two actions that will be taken.

1. **None** – Will not enable any protection, but will still show up in the active faults when tripped
2. **Retry** - Activates the protection feature
    a. Sets the maximum output power to 30W
    b. Input fault – Once the voltage rises above the set value the power setting will return to the original state
    c. Temperature fault – Once the temperature falls below the value by the hysteresis value the power will return to its original setting
    d. Temperature Hysteresis – Range of 5°C to 50°C in 5°C increments

Foldback

1. **Input -** Allows the user to set a minimum input voltage for normal operation. The range is from 5V to 20V in increments of 100mV. Power settings are [30, 60]W
2. **Temperature –** Limits the power when the board temperature is above the threshold. Range is from 20°C to 100°C in increments of 5°. There is a non-adjustable hysteresis of 5°C



Port Section

The lower section of the advanced page is where the normal operation can be configured. The Max Power Output drop down box has 2 settings: [30, 60] W. All of the live telemetry is also visible in this section.

Please note that the output voltage cannot be selected. Selecting a different power setting may not have an effect on the output voltage.

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