

## General Description

The 65W 2C PD 3.0 PPS Adaptor EVB1 is designed to support two main objectives. First, meet Energy Regulation for efficiency and standby power with acceptable thermal performance and Second, support smart dynamic power sharing scheme among two Type C PD charging ports.

The design is a two-stage flyback+DC/DC Buck power topology to support three independent charging ports - arranged as Stage 1, AC to-CV (Constant Voltage) input stage and Stage 2, CV-to-Charging DC output stage. The system configuration is organized as two main paths - dual Type C PD Paths for charging two PD capable devices. The AC-to-CV power stage is composed of three main PREMA parts -1) Primary side CCM/QR Flyback controller--PP5200, offers the DCM/CCM PWM switching, 2) 650V/200mohm GaN Transistor--PP6262 and 3)Secondary side SR controller--PP6008, supports Synchronous Rectification under DCM or CCM operation mode.

## Key Features

The 65W 2C PD GaN-based adapter reference design provides a cased turn-key solution with the following key features:

- Compact 58.3 x 29.3 x 23mm PCBA dimension size;
- High power density up to 27.1W/in<sup>3</sup> and high system efficiency above 91%;
- Dual Type-C ports and one Type-A port output with smart power distribution;
- USB Type-C1 Port support maximum output of 65W(20V/3.25A) with PD3 Function and PPS;
- USB Type-C2 Port support maximum output of 65W(20V/3.25A) with PD3 Function and PPS;
- Cost effective topologies with QR Flyback+DC/DC Buck;
- Pass EN55022 Class B standard for conduction and radiation EMI;
- Support most PD protocols including PD2.0/PD3.0, PPS, QC4.0+/QC4.0/QC3.0/QC2.0,AFC, FCP, SCP, SFCP;
- Comprehensive system protections such as OVP, OCP, SCP, OLP and OTP;
- Average efficiency meet CoC Ver5 requirement.

