



PowerQUICC™ FlexATX Baseboard 12V Power Supply vs. ATX Power Supply Usage

Application Note 356

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Abstract

This Application Note describes when it is necessary to use an ATX power supply with the Zoom™ PowerQUICC™ Development Kit instead of the included 12V modular supply.

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REVISION HISTORY

REV	EDITOR	DESCRIPTION	APPROVAL	DATE
A	Nathan Kro	Initial Release	NJK	11/16/07

1 Introduction

The FlexATX baseboard used with the Zoom™ PowerQUICC™ Development Kit has connectors for both a 12V modular supply and an ATX power supply. The default power supply is the 12V modular supply and is included with the development kit. However, some peripheral operations require more power than the 12V modular supply can support, which requires the use of a separate ATX power supply.

2 Power Supply Requirements

The included 12V modular supply is a 3 Amp supply, so it can provide a maximum of 36 Watts. There are a few scenarios when more power might be required, therefore an ATX supply must be used.

Important Note: The 12V modular supply and ATX supply must never be plugged in at the same time. Doing so may cause harm to the power supplies and the connected hardware.

2.1 High Power Consumption Peripherals

PCI, Mini-PCI, PCI Express, and USB are peripherals that could have high power requirements. Depending on the PowerQUICC SOM configuration, it is expected to use less than 1 Amp at 12V (or 12 Watts). The FlexATX baseboard is expected to use less than 0.3 Amps at 12V (or 4 Watts). That leaves about 20 Watts to be shared among all other peripherals connected to the FlexATX baseboard. If the connected peripherals are expected to draw more than 20 Watts, an ATX power supply must be used.

2.2 PCI requires -12V

When using the included 12V modular supply, -12V (negative 12V) is not provided to the PCI slot. Some PCI cards might require the use of -12V. If using a PCI card that requires -12V, an ATX supply must be used.

2.3 SATA use

SATA drives require power to be supplied from an external source. To supply this power, an ATX supply must be used.

3 Summary

Under normal use scenarios, the included 12V modular supply provides enough power to supply the PowerQUICC Development Kit. If many high power peripherals must be used at one time, an ATX power supply must be used to power these peripherals.