SUMMIT
MICROELECTRONICS

Programmable Power Managers with Digital Power Control

FEATURES & APPLICATIONS

Features

- **Digital Power Control via 2-wire serial interface and non-volatile memory**
- **Current-mode control**
- **Input voltage range: +4.5V to +13.5V**
- **More than 15A output current**
- **Output voltage accuracy: ±1.0%**
- **Static or dynamically programmable output voltage**
  - o **+0.5V to +2.5V, 10mV steps**
  - o **+1V to +5.0V, 20mV steps**
- **Cycle-by-cycle current limit**
- **Output voltage margining**
- **Output UV/OV monitoring**
- **Internal over-temperature protection**
- **PWM or PFM operation**
- **Programmable system power control**
  - o **Digital soft-start control**
  - o **Power-on delay**
  - o **Switching frequency**
  - o **PGOOD/RESET/SMB_ALERT output**
  - o **Enable/disable control**
  - o **Serial-interface slave addresses**
  - o **Output voltage**

Applications

- **Printers**
- **Digital Set-Top Boxes**
- **Digital TVs**
- **Modems**
- **Datacom/Telecom Equipment**

INTRODUCTION

The SMB211/212 are highly integrated and flexible power manager designed for use in a wide range of applications from printers and set-top boxes to servers and network equipment. The built-in non-volatile digital programmability allows system designers to custom tailor the device to suit almost any power supply application.

The SMB211/212 feature a synchronous high current step-down "buck" controller that can provide an output current of more than 15A. They can operate with an input voltage of +4.5V to +13.5V and provide programmable output voltages that are typically accurate to 1.0%. The SMB211 is available with a switching frequency of 250, 500, 750 and 1000kHz, while the SMB212 is available with a switching frequency of 250, 375, 500 and 625kHz.

Additional sophisticated power control/monitoring functions required by complex systems are built-in and programmed via an industry-standard 2-wire serial interface. These include digitally programmable output voltage set-point and margining, power-on delay, soft-start, switching frequency and UV/OV output voltage monitoring.

The integration of features and built-in flexibility of the SMB211/212 allows the system designer to create a "platform solution" that can be easily modified via software without major hardware changes. This facilitates rapid design cycles and proliferation from a base design to future generations of product.

Communication is accomplished via an industry standard 2-wire serial bus. All non-volatile programmed settings are stored in non-volatile memory and reset during power-up. The operating temperature range is –30C to +85C and the available package is a 3mm x 3mm QFN-20.

SYSTEM APPLICATION
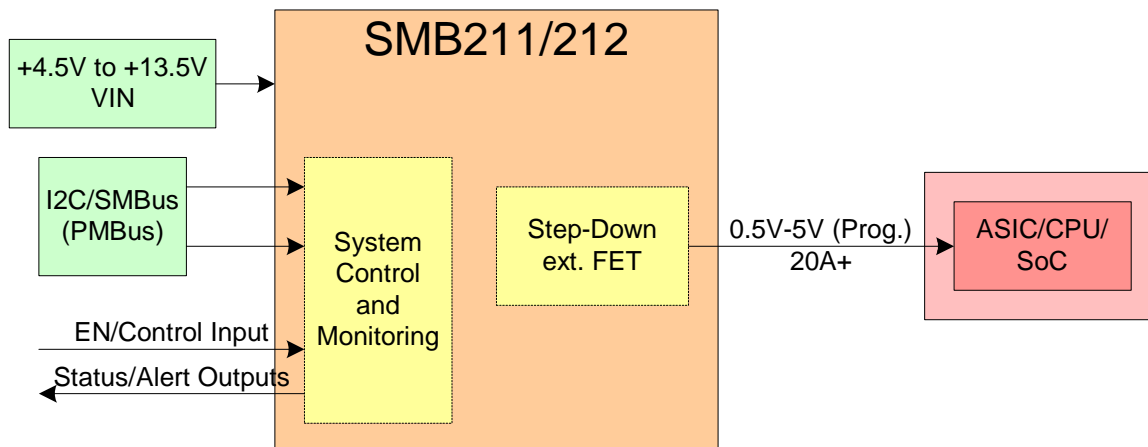
Figure 1 – Typical SMB211/212 System Diagram