



EMI Reduction IC for Switching Power Supplies

Overview

AS80M1800 and **AS80M1801** are programmable spread spectrum frequency modulators designed for Switched Mode Power Supply (SMPS) applications. These devices work as companion ICs to the pulse width modulation (PWM) controller. As such, they can be used as a simple drop-in solution between the PWM controller and MOSFET to tackle most EMI problems in the SMPS.

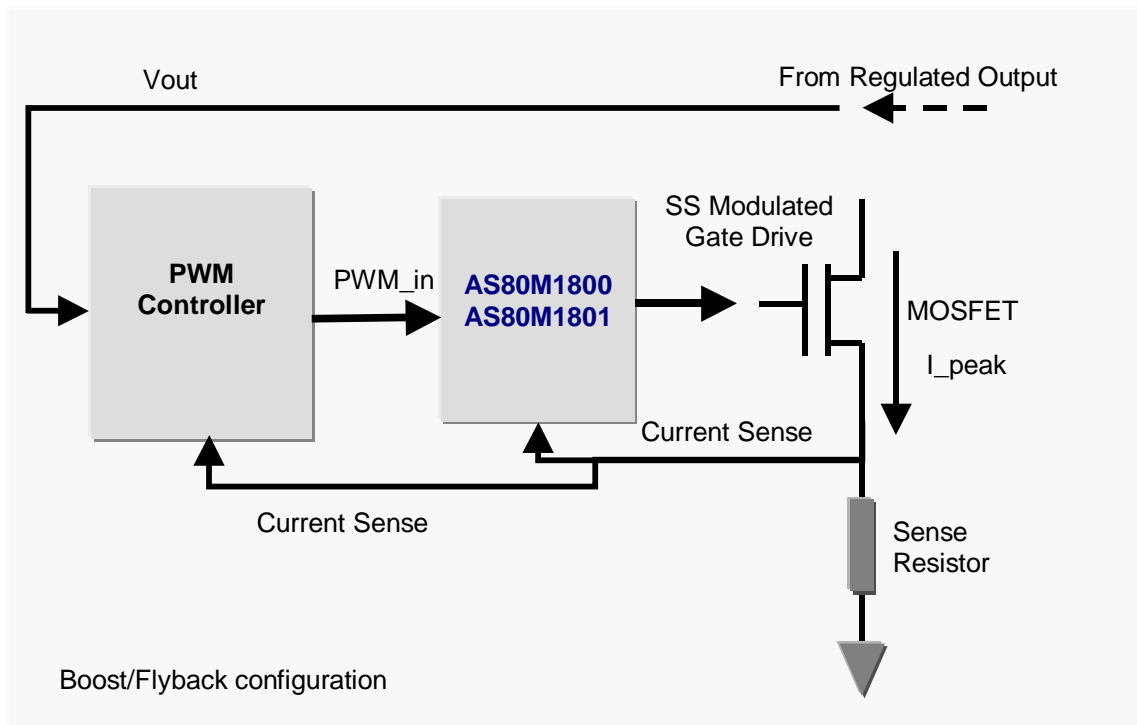
The **AS80M1800** and **AS80M1801** reduce electro-magnetic interference (EMI) by applying spread spectrum modulation to the PWM gate drive signal at the gate of the power MOSFET. Gate drive modulation significantly

reduces the conducted and radiated emissions usually generated by di/dt and dv/dt switching in a SMPS.

These are the first general purpose EMI reduction ICs specifically designed for use in SMPS systems. No other manufacturer to date has a device that can frequency modulate a PWM train and still maintain the input PWM content. They can be used in popular DC/DC converter, and AC/DC inverter and DC/AC inverters designs.

Besides providing EMI reduction functionality, the **AS80M1800** and **AS80M1801** provide additional features that extend the capabilities of the power system.

Simplified Application Diagram

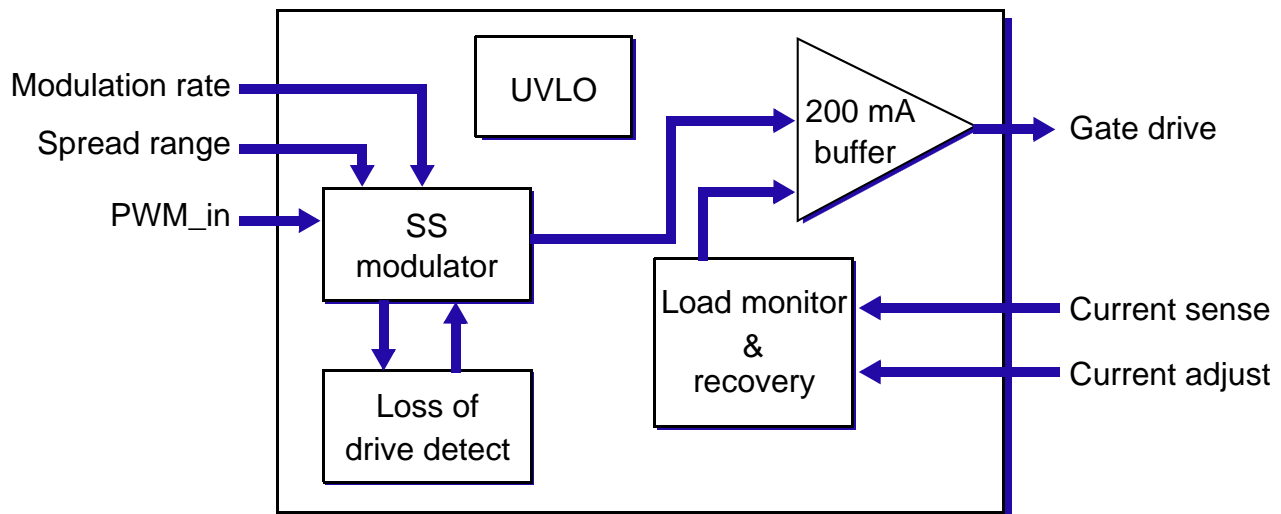




Key Features

- Compatible with most PWM controllers
Works with both current mode and voltage mode PWM controllers.
- Input frequency ranges:
50 KHz to 400 KHz (**AS80M1800**)
400 KHz to 1 MHz (**AS80M1801**)
This is the input frequency range the device can accommodate from the external PWM controller.
- Wide input PWM duty cycle range of 10% to 90%
Supports an extremely wide range of line and load regulation conditions.
- Output drive current of 200 mA
Drives most popular power MOSFETs used in SMPS designs.
- Supply voltage range of 7 V to 20 V
- Under voltage lockout
- Spread spectrum modulation with adjustable spread
- Output short circuit sense with adjustable level and automatic recovery
- No-load condition sense
- Power savings feature
Frequency skip at no-load allows implementation of Energy Star and other next generation power savings modes
- Loss of input detect
Protects SMPS from catastrophic failure by shutting off the output driver if the input PWM signal is lost
- Under voltage lock-out
Protects SMPS from catastrophic failure by shutting off the output drive if the supply voltage drops below input VCC range
- Available in 8-pin SOIC package

Device Block Diagram



AS80M1800: 50 KHz to 400 KHz

AS80M1801: 400 KHz to 1 MHz