M853xx Known Issues

Products Affected: M85373G-13/M85374G-13/M85375G-13/M85376G-13

This document describes the known issues with the M853xx devices.

Sync Mode Issue

Background

- The Sync mode bootstrap is EXP_A_3 on the M853xx parts. Sync mode is enabled when this bootstrap is pulled high at boot. Async mode is enabled when the bootstrap is low.
- Sync mode controls the timing of the ARM interface to the internal bus and peripherals. In Sync mode, the bus and peripherals are clocked on a multiple of the system clock. In Async mode, the timing is controlled by handshake.

Issue description

The internal System Watchdog and Global and Functional Software Resets will no longer be supported for all M853xx devices when operating in Sync mode.

Workaround

An external Watchdog/Master Reset device (controlled via GPIOs, driving the Hardware Reset pin) is recommended.

GPIO Unknown Initial State After Device Power-Up

Description

The general purpose input output (GPIO) signals may not be in tri-state mode following power-up if the system clock does not toggle before the VCore power supply comes up.

GPIOs are expected to be pulled high by an internal pull-up resistor after reset is released, but if the system clock does not toggle before VCore rises, they may be driven low until they are initialized by software. If a GPIO is used to drive an external master reset device, the board may not come out of reset.

Workaround

Either design the board's power-up sequence so that the system clock toggles before VCore rises, or insert a DC-blocking capacitor followed by a pull-up resistor in series with a GPIO that is used to drive an external master reset part.

Once software has initialized the GPIO control registers, they will behave normally.
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