NOTE:
The VDDSOC_CAP and VDDSOC_IN rails have been optimized for use with the i.MX 6 Quad and i.MX 6 DualLite processors.
To achieve the correct power domain, connect the ground trace from the ARD board to the VDDSOC_IN and VDDSOC_CAP rails.

Extra Bulk Capacitors

Table 4. VDDARMxx_xx Power Connections

<table>
<thead>
<tr>
<th></th>
<th>I.MX 6Quad</th>
<th>I.MX 6Dual</th>
<th>I.MX 6DualLite</th>
<th>I.MX 6Solo</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH1</td>
<td>Shorted</td>
<td>Open</td>
<td>Shorted</td>
<td>Shorted</td>
</tr>
<tr>
<td>SH2</td>
<td>Shorted</td>
<td>Open</td>
<td>Shorted</td>
<td>Shorted</td>
</tr>
<tr>
<td>R1</td>
<td>Open</td>
<td>Shorted</td>
<td>Open</td>
<td>Open</td>
</tr>
<tr>
<td>R2</td>
<td>Open</td>
<td>Shorted</td>
<td>Open</td>
<td>Open</td>
</tr>
</tbody>
</table>

NOTE:

In early designs of the Smart Device board, these bulk capacitors were used. After testing of the board, it was found that these capacitors could be removed with no effect. This reduces the capacitance loading on the internal power and ground rails. The capacitors/footprints have been left off in place of the pads that these capacitors were previously mounted on. The capacitors/footprints have been left off to maintain the original footprint sizes. The capacitors/footprints have been left off to maintain the original footprint sizes. The capacitors/footprints have been left off to maintain the original footprint sizes.
**SD CARD SOCKET**

**SATA CONNECTOR**

**Layout:**
1. Route diff pairs, length equal
2. Mount these capacitors very close to the connector J506.

- **hard drive standoff**
Layout: HDMI 100 ohm differential pairs

**NOTE:**

When using HDMI, 1282 uses is limited to 100 km.

- **Pin 5:** This pin is the Display Brightness pin. It is used to enable/disabled the brightness display.
- **Pin 6:** This pin is the Display Brightness control. It provides a PWM signal to the display to increase/decrease display brightness depending on PWM duty cycle. This signal is shared by all displays, so all displays will change brightness together.
Place R158 and R159 near U15.
Acts as source termination.

Place R180 close to connector J9 to in the event a reflected signal from camera needs to be suppressed.

CSI CMOS Sensor
OV5642 5M Pixel

Layout: 100 ohm differential pairs

NOTE:
The Camera Analog Power supply has been moved to VGEN3. Freescale SW will program VGEN3 to operate at 2.8V. L25 and L26 are populated and L10 and L17 are depopulated. See the Freescale HW User Guide for the Smart Device board for details (to be published 4Q12).
NOTE:
Due to placement requirements on the SAM6 SABRE board, layout routing for the USB_OTG_DP and USB_OTG_DN traces are sub-optimal. It is recommended that customers consider using 90Ω differential pairs for the USB_OTG_DP and USB_OTG_DN traces as a better example of proper USB trace routing.

See the USB layout on the Freescale i.MX6 SABRE AI board for placement requirements on the SAM6 SABRE board.
NOTE: The AUX SDIO CARD SOCKET and the BLUETOOTH CABLE CONNECTOR have been designed and tested specifically for use with the WIFI/BT combo card SX-SDCAN-2830BT developed and sold by Silex Technology. The developer may need to consult the datasheet of other WIFI solutions for compatibility with this card socket.
Note: Populate either
Option #1 for the Smart Device Board, or
Option #2 for the Smart Device Platform.
PMPF0100 Pass2.0 will correct this issue. For more details, see the PMPF0100 ERRATA, Issue #ER19.

PMPF0100 Pass1.0 through Pass1.2 are subject to boot issues if power is removed from the board and reapplied within ~2 minutes.

Note: PMIC Powered-ON program PMIC OTP fuses.

See the Freescale HW User Guide for the Smart Device for PMIC_5V power. The circuit has not yet been tested.
NOTE FOR VDDHIGH_IN LOADING ON VGEN5:

VDDHIGH was placed on VGEN5 early in the design as a compromise solution for a board designed primarily for software development. Validation of the i.MX6 processor has shown that operations at elevated temperatures may cause VDDHIGH_IN to require much more current than VGEN5 can supply. It is recommended for robust designs potentially operating at more extreme temperatures for VDDHIGH to be supplied from a power rail that can supply 250 mA or more.

This allows for the saturation current of 125 mA for internal VDDHIGH_IN loads plus 125 mA for external PHY IO loads.

The optional LDO U9 shown on this page could be reconfigured to supply both VDDHIGH_IN and VDD_SNVS_IN loads to meet the additional current requirements.

U9 is no longer required for PF0100 VSNVS loads, but may be desired for MDCU_SNVS_IN.

It is being left in a depopulated condition. If the LDO is needed, R34 and R35 should be populated as follows:

For VSNVS (3.0V):
R34 = 47K, R35 = 309K

For MDCU_SNVS (1.1V):
R34 = 47K, R35 = 82.5K

Vout = 0.4x(1+R2/R1)

3.0V@ 300mA max
PMIC) when the RESET button is pressed. This will cause a complete board reset (Processor &

On Rev B4 and later designs, the RESET button is

NOTE:

Boot Select Table

<table>
<thead>
<tr>
<th>BOOT SELECT</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Serial downloader</td>
<td>00 Boot from fuses</td>
</tr>
</tbody>
</table>

BOOT MODES:

1- TEST MODE
2- BOOT_MODE0
3- BOOT_MODE1

Place series resistors so as to minimize EIM portion of

NOTE:

U/I KEY

Revision History

Date: Wednesday, July 09, 2014

Document #: 

Sheet: 18 of 19

Source: SCH-27392

PDF: SPF-27392

FIUO:

1.1 Reserved
2. Boot from board settings
3. Serial downloader
4. Boot from fuses
5. Test mode

Notes:

- Use series resistors as close as possible to minimum EIM portion of board design. The layout parasitic can add some delay. Use close to processor as possible.
- Close to other components using GND signals.
NOTE: R183 and R189 were changed to bring I2C rise time from LOW to HIGH within electrical specification. If using a CODEC other than the one used in this design, it may be possible to switch pull up resistors back to 2.7K.

NOTE: In all three pad resistor options, resistors are to be initially populated on pads 1–2 (option A). Users may move resistors from their default locations as needed.