TIDA-01027 Block Diagram

TIDA-01022 hardware is used to measure impact of power supply (TIDA-01027 board) on the AFE performance. This is a high-speed multi-channel data capture board, capable of capturing data at maximum 12.8 GSPS speed.

Following changes will be required in the TIDA-01022 hardware to disable on-board power supply and use TIDA-01027 power board:
- Install: Connect TIDA-01027 board to J60, J59 and J63 connectors.

Please refer to TIDA-01022 Schematic.
In this design, Filter is the combination of a feedthrough capacitor and a PI filter. Feedthrough capacitor is on this board, while PI filter is placed near the ADC (not on this board). PI filter consist of a ferrite bead (BLM14PG102SN1) and two 0.1μF capacitors. If required, ferrite bead can placed on the TIDA-01027 board. In that case, resistors R14, R16, R36, R51 and R54 are replaced with 74279252 WURTH ELEKTRONIK ferrite beads.

10mΩ resistors R14, R16, R36, R51 and R54, are used to measure output current of the DC/DC converters.
Changes Required to Enable Frequency Synchronization Schemes for +3.3-V, +1.9-V and +1.1-V power rails

<table>
<thead>
<tr>
<th>FREQUENCY SYNCHRONIZATION SCHEMES</th>
<th>INSTALL</th>
<th>REMOVE</th>
<th>DC/DC FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Running (Default), No external frequency sync is required</td>
<td>R9, R49, R74, R91, R93 and R95</td>
<td>Make sure R9, R49 and R74 are not populated</td>
<td>3.3 V at 1000 kHz, 1.9 V and 1.1 V at 550 kHz</td>
</tr>
<tr>
<td>Phase-Aligned</td>
<td>L3, L5, R109, R91, R93, R95, R96, R98, R102, R103, R104, R105, R114 and R116</td>
<td>Switching frequency in this mode will be (external sync frequency)/3</td>
<td></td>
</tr>
<tr>
<td>Phase-Shifted</td>
<td>L3, L5, R109, R91, R93, R95, R96, R98, R102, R103, R104, R105, R114 and R116</td>
<td>Switching frequency in this mode will be (external sync frequency)/3</td>
<td></td>
</tr>
</tbody>
</table>

The changes listed above are required to enable frequency synchronization schemes for +3.3-V, +1.9-V and +1.1-V power rails.
### Variant/Label Table

<table>
<thead>
<tr>
<th>Variant Label</th>
<th>Label Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC/DC Only DC/DC</td>
<td></td>
</tr>
<tr>
<td>LDO DC/DC-LDO</td>
<td></td>
</tr>
</tbody>
</table>

**Assembly Notes**

- **Variant/Label Note**: The information provided is for PCB labels only.
- **Variant Note**: These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

### Plant Notes

- **PCB Label**: Size 6/8\" x 3/8\"

- **Variant Note**: These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

- **Variant Note**: These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.
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