

# Orchid Technologies

## SC1B Hashing Board PCB Assembly – Revision D

### Build Instructions

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#### Revision History:

Revision	Date	Reason
1.0	September 19, 2018	Original
1.1	September 25, 2018	Update per ongoing checkout

This document contains the assembly-time instructions for the proper build of SC1B HASHING BOARD Revision D Printed Circuit Boards. These Instructions together with the following documents comprise the SC1B HASHING BOARD Revision D Circuit Board Fabrication and Assembly data base.

**Related Documentation:**

1. SC0052818 Revision D September 19, 2018 Schematic Data Base
2. SC1B\_091918.xls Bill of Materials – Base Bill
3. SC1B HASHING BOARD PCB, Revision D Data Base Assembly and Fabrication Artwork as released by Orchid Technologies using SC052818 Revision D schematic and the SC1B\_091918.xls BOM data base.

The documents listed above are considered finished documents and will not be modified by Orchid Technologies Engineering and Consulting, Inc. until Phase 2 of the project. All modifications to the documents listed above will take the form of notes and appear in this document as revised.

**Documentation Errata, Changes, Acceptable Procedures:**

All component stuffing and board options reference SC1B\_091918.xls. Please use SC1B\_091918.xls, as the basic guideline for board stuffing options.

**0. DO NOT POWER BOARDS**

1. Do Not Populate components with values “DNP”.
2. Do Not Populate components with values prefixed “DNP-“.
3. **Special Population Boards:** Note the following 32 ASIC BGA locations for special population options:

U201	U1001	U1801	U2601
U301	U1101	U1901	U2701
U401	U1201	U2001	U2801
U501	U1301	U2101	U2901
U601	U1401	U2201	U3001
U701	U1501	U2301	U3101
U801	U1601	U2401	U3201
U901	U1701	U2401	U3301

- 3a. Populate **two boards** with **BLAKE128X DCR 1** in the above ASIC locations
- 3b. Populate **two boards** with **BLAKE64X SC1** in the above ASIC locations

**4. Completed assemblies shall be free of any and all flux residues.**

**Known BOM Discrepancies and AVL issues:**

## BOM Updates:

Item No	Description
1	Item #14: Acceptable crosses TDK C3216X5R1H106K; Murata GRM319R6YA106
2	Item #17: Acceptable value cross to: - <b>0.01uF</b> : W2A45C103M - <b>0.047uF</b> : W2A4YC473K <b>If value crosses are used, the same value must be installed across an entire board assembly. Do not mix values within a board assembly.</b>
3	Item #58: Acceptable cross Micro Commercial MMBD4148SE-TP
4	Item #20: Acceptable crosses Panasonic ERJ-U1DJ5R1U; Yageo RC2010JK-075R1L
5	Item #50: Acceptable cross Infineon BSC014NE2LSI (Must have "I" suffix)
6	Item #57: Acceptable cross ON Semi SMUN5335DW
7	Item #62: Acceptable cross STM32F101VBT (128K Flash)
8	Item #41: Acceptable cross Panasonic EXB-38V330J (Assembler must validate PCB footprint)
9	Item #42: Acceptable cross Panasonic EXB-38V101J (Assembler must validate PCB footprint)
10	Item #43: Acceptable cross Panasonic EXB-38V105J (Assembler must validate PCB footprint)
11	Item #40: Acceptable cross Murata NCU18WF104F60xx. Replace <b>F</b> with D (0.5%), E (3%), or J (5%), all acceptable

## AVL Issues:

Item No	Description
	None

**Programmable Logic Instructions:**

This describes the programmable device data files and their uses.

**U3401 Must be pre-programmed. Program file TBS/**

**SC1B HASHING BOARD Revision D Rework Instructions:**

Perform the instructions listed below on all SC1B HASHING BOARD Revision D Circuit Boards.

Item	Action	Disposition
1	Power supply adjust: <ul style="list-style-type: none"> <li>- Remove and replace R3911 with a 4.22K Ohm 1% 0402 resistor</li> <li>- Remove and replace R3922 with a 23.7K Ohm 1% 0402 resistor</li> </ul>	All boards