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# Document Control

## Title Box

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| --- | --- | --- |
| Title | | Manufacturing build requirements |
| Description | | Manufacturing build requirements, NPI / CE\_VA\_VE / PCB Up-issue |
| Location | | [NPD Build Docs](https://nmca.sharepoint.com/:f:/r/sites/CT/PMO/Processes/NPD%20Templates/NPD%20Build%20Docs?csf=1&web=1&e=wCqoju) |
| Document Revision | | 00.03 |
| Author | | Nick Cotton |
|  |  |  |

# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Rev** | **Author** | **Date** | **Description** |
| 00.01 | NC | 10/05/23 | Initial Draft |
| 00.02 | NC | 10/05/23 | Updated after feedback from RS |
| 00.03 | RS | 19/06/23 | Included software after feedback from NC |

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# Introduction

This document is designed to give detailed build requirements to the manufacturing team for any NPI, CE\_VA\_VE or PCB up-issue projects.

Its purpose is to ensure that all requirements are fully understood in terms of build Qty, process steps, Test Gates, and material/component instructions for all interested parties.

# Type of Manufacturing build

NPI - New Product Introduction

CE\_VA\_VE - Continuous engineering, Value add, Value Engineering

Up-Issue - Existing PCB design Up-Issue

NPI  CE\_VA\_VE  Up-Issue

# Purpose of Build & Allocation

High level summary of the reason for build & Allocation E.g. Prototype 1, Joe Bloggs, R&D UK

In the case of an up-issue to existing design, include part numbers of what has changed or any significant component changes.

**PCB Name and issue number: TEST141 Iss00.00  
Purpose of build: Test new board in board guides for Lithium and to try components (pitch, size) on various copper weights to check manufacturability.**

**No PBOM required, BOM will be available in a format compatible with SMT program.**

**SMT build will be done first due to pallet availability. No AOI, boards to be x-rayed then sent to R&D/Gro.**

**CNV build will commence sometime later when pallets arrive. No CNV parts fitted just board in board soldering.**

**NEW NOZZLES and build support are required (names below)**

# Build Quantities & Variants

Enter the amount of Bare, Populated, coated PCB’s or Qty of drives required (Including models/Variants) If the production variant is currently unknown, please leave blank and fill in when EBOM>PBOM conversion is complete. If you need multiple variants, add them in the table.

|  |  |  |  |
| --- | --- | --- | --- |
| Process | Part/Variant # | Qty | Comments |
| SMT > Gro > MI | TEST141 1Oz ENIG | 30 | This is 18 boards to test 9 board in board joints in 2 x 3 panel. |
| SMT > Gro > MI | TEST141 1Oz HASL | 30 |  |
| SMT > Gro > MI | TEST141 2Oz HASL | 30 |  |
| SMT > Gro > MI | TEST141 3Oz HASL | 30 |  |
| SMT > Gro > MI | TEST141 4Oz HASL | 30 |  |
| Total |  | 150 |  |

# Additional Information

|  |  |  |
| --- | --- | --- |
| Process | Required? | Details (Add any specific requirements) |
| Firmware | N | [enter revision number here] |
| Bootloader | N | [enter revision number here] |
| AOI | N |  |
| Software | N |  |
| In Circuit Test (ICT) | N |  |
| Functional Test | N |  |
| Button Test (If applicable) | N |  |
| Flash Test | N |  |
| Drives Test (DT) | N |  |
| Soak Test (inc # Cycles) | N |  |
| X-ray | Y | Send to Jon.A for x-ray |
| Label changes (Ratings) | N |  |
| Kitbags | N |  |
| Normal sales or back to R&D for testing? | | R&D |
| Other |  |  |

# Build Support

The following people should be present on the day to support the build:

|  |  |  |
| --- | --- | --- |
| Name | Title | Department/Site |
| Ed Peate | **Senior Power Electronics Engineer** | **R&D/ Engineering** |
| Andrew Georgiou | **NPI Process Engineer** | **PMO/NPI** |
| Kitty Farren | **Graduate Engineer** | **R&D/ Engineering** |
| Louis Chou | **Mechanical Engineer** | **R&D/ Engineering** |
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# Post build Report

Please indicate if a build report is required post build, who is responsible for the report and what the report should cover.

A BOS report is necessary. Arran Davies to assign.

Imaging process:

* Side 2 should be imaged after the first pass through the oven.
* Side 1 and 2 should be imaged after the second pass through the oven.

Report should cover:

* Success rate of component soldering on each copper weight and both finishes
* Aoi on all board types.
* USB-C legs and 1005 resistors are particularly important.
* X-ray results of the BGAs on both finishes at 1Oz and 2Oz copper HASL.
* Review of usability of the new board in board guides
* N.B: A matrix of copper weight and board finish containing component solder success rate, BGA success rate especially on a HASL finish and board-in-board success rate would be ideal.