

	STRATUS AUTOMATION SDN BHD	DOC. NO.	SA-SOP-035
		REV. NO.	00
	MATERIAL PROCUREMENT SPECIFICATION FOR PCB	EFF. DATE	10/12/2024
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**AUTHORIZATION**

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## 1.0 Purpose

- 1.1 This specification defines the quality requirements that apply to the procurement of PCB material.
- 1.2 The detailed requirements specified on the applicable PCB circuit diagram form a complete Procurement and Incoming Inspection Specification.

## 2.0 Scope

- 2.1 This specification covers Stratus Automation's PCB used for PCBA assembly in Stratus Automation.
- 2.2 This specification is applicable to the tooling aspects of all finished (plated), etched PCBs, including applicable tooling owned by Stratus Automation.

## 3.0 Definition

- 3.1 PCB: Printed Circuit Board
- 3.2 PCBA: Printed Circuit Board Assembly
- 3.3 ECN: Engineering Change Notice
- 3.4 MRB: Materials Review Board
- 3.5 CofC: Certificate of Compliance
- 3.6 SQE: Supplier Quality Engineering
- 3.7 HASL: Hot Air Solder Leveling
- 3.8 SA: Stratus Automation
- 3.9 QA: Quality Assurance
- 3.10 IQC: Incoming Quality Control
- 3.11 RnD: Research and Development


## 4.0 Responsibilities

### 4.1 Stratus Automation Responsibility

- 4.1.1 Responsible for ensuring this document is updated as requirements change
- 4.1.2 Ensure the latest revision is communicated and available to PCB suppliers
- 4.1.3 Provide all required PCB fabrication prints/drawings, Gerber files, etc. to the PCB supplier

### 4.2 Supplier Responsibility

- 4.2.1 Responsible for conforming to all requirements defined by this document or any other notification from Stratus Automation Purchasing team
- 4.2.2 Comply to the requirements called out in Stratus Supplier Quality Manual (SA-SOP-032)
- 4.2.3 Supplier shall furnish First Article Inspection report for applicable PO or when triggered by SA purchaser and a regular CofC (certificate of conformity) for each batch of shipment to Stratus soonest possible through email whenever data collected is completed or as soon as the shipment is out from supplier facilities.
- 4.2.4 Supplier need to inform Status Automation of any shipment with X-out panels through email with details on how the segregation is done for those panels prior to goods receipt in Stratus.

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## 5.0 Specification Details

### 5.1 Order of document precedence

In the event of conflict between the requirements of this specification and those of other applicable Procurement Documents, the order in which requirements shall govern, in descending order, is as follows:

- Purchase order
- Gerber file
- This specification

### 5.2 General Requirement

5.2.1 PCBs for Stratus Automation will be built in accordance to IPC 6012B and IPC-A-600 (latest revisions) Class 2 requirements, unless otherwise specified in this document or other specifications from SA according to the order of precedence (5.1)

5.2.2 All PCB's supplied to Stratus Automation must be electrically tested prior to shipping

5.2.3 A maximum of 3% X-out is allowed per shipment with max 1 X-out per panel. All the panels with X-out should be grouped together and separated from the packing with 100% good units.

5.2.4 The supplier's standard Outgoing Inspection Reports are required to be provided by the PCB manufacturer for each lot produced and shipped, in the form of CofC (Certificate of Compliance)

5.2.5 CofC shall include reference to laminate manufacturer/type, solder mask manufacturer/type, date code of manufacture, and critical to function parameters measurement results including but not limited to the below:

- Materials declaration
- Board dimensions and thickness
- Copper thickness (PTH and copper plane)
- Minimum line/trace width and spacing
- Surface Finish thickness
- Through hole diameter
- V-cut angle and remnant thickness
- Micro section/cross section data
- Other inspection/measurement

5.2.6 If Stratus Automation has not defined the location of the cross-section in the print/drawing, the section location should be done on a group of the representative smallest diameter plated through holes. The location where the measurement is taken shall be indicated on the drawing and furnished to Stratus Automation.

5.2.7 PCB is by default FR4 materials and must meet ROHS 3 2015/836/EU directives and UL-94-V-0 compliant

5.2.8 Supplier must demonstrate the PCB passes Solderability (J-STD-003) and Thermal Stress test (IPC-TM-650 Standard)

5.2.9 A maximum of 0.75% allowed for PCB Bow and twist


### 5.3 Solder mask and surface finish requirements:

5.3.1 Solder mask shall be in dark green color unless otherwise specified, with white silk screen

5.3.2 Surface finish shall be lead free HASL unless otherwise specified

### 5.4 Packaging Requirements:

5.4.1 PCBs shall be vacuum sealed in clean, dry, sulfur-free, and ESD dissipative packaging material.

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5.4.2 All boards shall be oriented in the same direction within the vacuum package

5.4.3 Each package shall be labeled with Stratus part number, date code/date of manufacture, supplier name, Purchase Order, and quantity, Supplier identification, supplier batch/lot number, manufacturing and expiry date.


5.4.4 Outer packaging used for transportation or storage shall be designed to provide maximum protection against any form of mechanical and environmental damage. These containers shall afford protection against contamination by exposure to moisture, gases or other contaminating elements.

## 6.0 Reference Documents


- |     |            |  |
|-----|------------|--|
| 6.1 | SA-SOP-011 | Vendor Selection and Monitoring                            |
| 6.2 | SA-SOP-012 | Purchasing Process   |
| 6.3 | SA-SOP-018 | Nonconformity, corrective action and continue improvement. |
| 6.4 | SA-SOP-032 | Supplier Quality Manual                                    |

## 7.0 Reference Records

- 7.1 NA

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REVISION CHANGE HISTORY				
REV NO.	DCN NO.	DESCRIPTION OF CHANGE	AUTHOR	EFFECTIVE DATE
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## Approvals

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Approved

### Please approve: SA-SOP-035 Material Procurement Specification PCB\_00

The item 'SA-SOP-035 Material Procurement Specification PCB\_00' is submitted for approval by .

The message with the request:

Please help to approve.

Reminder set to 1 day

Please review, and then approve or reject the request.

#### ▼ Attachments



SA-SOP-035 Material Procurer

<https://stratusautomation.sharepoint>

#### ▼ Final status: Approved



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12-Dec-24 8:40:46 AM



Approved by  
Azahar Bin Mat Elias

11-Dec-24 9:48:20 AM



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