

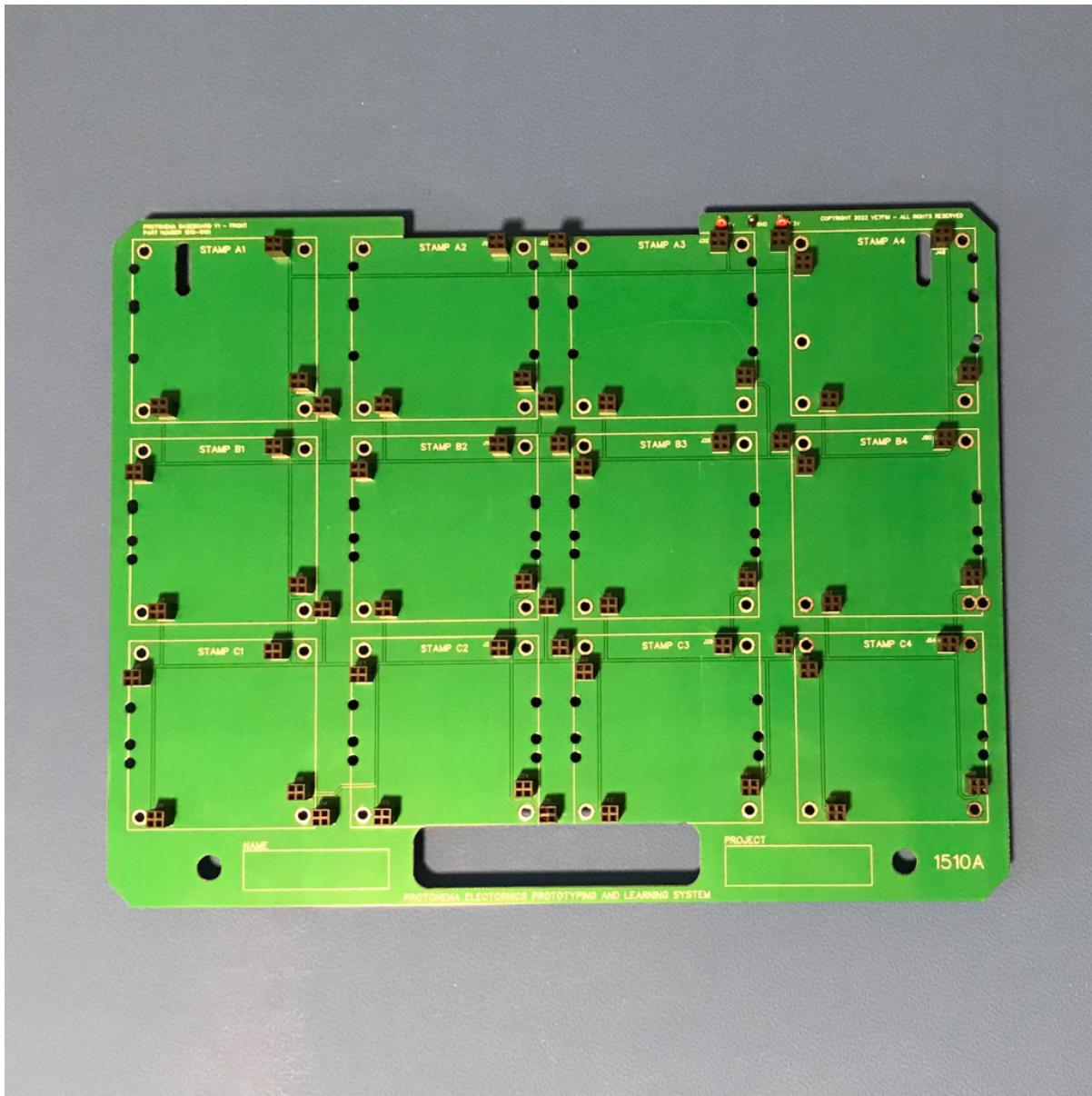
1

# ASSEMBLY INSTRUCTIONS

2

3

## 1510A Protonema Baseboard



5 Document control number: 1510-8010

6 Document date: 2022-12-21

7 Document revision: 1.0.0

8 ABSTRACT: This document provides instructions on how to assemble and test a 1510A Protonema baseboard. A  
9 complete bill of materials is included as an annex.

10 Suggestions and corrections should be directed to <http://www.github.com/dslik/protonema/issues>

11 Serial number: Assembly date: Assembled by:

12 USAGE

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21 Source location: <https://github.com/dslik/protonema/tree/main/stamps/1510A>

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51 Revision history

Table 1: Document Revisions

Version	Date	Change	Approver
1.0.0-draft.1	2022-07-04	Initial draft for internal review	D. Slik
1.0.0-draft.2	2022-09-04	Added RoHS declarations	D. Slik
1.0.0-draft.3	2022-10-27	Upgrade of document build environment	D. Slik
1.0.0	2022-12-21	Updated to use new template.	D. Slik

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169

## **Part I**

170

# **1510A assembly instructions**

171 **Section 1**

172 **Overview**

173 This document describes the materials, processes, outcomes and verifications required to successfully assemble  
174 and test a 1510A Protonema baseboard, a sub-component of the Protonema electronics prototyping and learning  
175 system.

176 A first-time reader should carefully review section 2 - prerequisites, and section 3 - preparation before beginning  
177 the assembly process.

178 This document serves both as instructions and as a record of the assembly of the product. When you finish each  
179 step in this document, sign your name (or apply your stamp) in the "Signature/Stamp" box on the right to provide a  
180 record of completion.

181 When things go wrong, this document provides guidance for common issues that have been encountered in the  
182 past. When this document does not provide guidance, please contact your quality management representative,  
183 who will help you fill out an exception report. These reports help improve process quality and product quality, and  
184 these reports are incorporated into future revisions of this document.

185 Always remember: If you are unable to successfully complete these instructions, that means the processes sup-  
186 porting you (including this document) have failed you. Our processes are built for your success, and by improving  
187 our processes, we help everyone succeed.

188

## Section 2

189

# Prerequisites

190

### 2.1 Required safety training

- 191 The following safety training units must be completed before assembling this product.
- 192 By signing (or applying your stamp) on the right, you indicate that you have completed the following training:

Table 2: Safety training

Item #	Description	Signature/Stamp
2.1.1	0102-0100 - Safety reporting policies and procedures training  Key topics: Understanding policies and procedures around how to identify, contain and report a safety-related issue in the workplace, including damaged or malfunctioning equipment, leaks, spills, and other occupational hazards.	Stamp or sign here
2.1.2	0102-0101 - Material safety data sheets training  Key topics: Understanding how to read material safety data sheets (MSDS) for materials you will be handling during product assembly, how they can affect your health and the health of the environment, how to safely handle and dispose of them, and what to do if there is a spill or accidental exposure.	Stamp or sign here
2.1.3	0102-0102 - Solder handling and disposal policies and procedures training  Key topics: Understanding policies and procedures related to handling solder and solder paste, stencil cleaning, and solder disposal.	Stamp or sign here
2.1.4	0102-0105 - Electro-static discharge controls policies and procedures training  Key topics: Understanding policies and procedures related to protecting equipment and components from electro-static discharge, including clothing, protective equipment, material handling and labelling.	Stamp or sign here

## 193 2.2 Required skills training

- 194 The following skills training units must be completed before assembling this product.
- 195 By signing (or applying your stamp) on the right, you indicate that you have completed the following training:

Table 3: Skills training

Item #	Description	Signature/Stamp
2.2.1	0103-0202 - ANSI/ESD S20.20 Electro-static discharge controls  Key topics: Understanding of ESD safety, the ESD control program, equipment and personnel grounding, EPAs, packaging and marking.	Stamp or sign here
2.2.2	0103-0203 - General components handling  Key topics: Understanding of safe component handling, including reeled components, components in JEDEC trays, and loose components. Includes avoiding contamination, moisture control, and component inventory management.	Stamp or sign here
2.2.3	0103-0414 - 5040-XTS reflow station  Key topics: Safe and effective use of the 5040-XTS reflow station, including use of the pre-heater, the hot air system, and the soldering iron. Covers inspection and verification, cleaning, preferred settings and best practice techniques.	Stamp or sign here
2.2.4	0103-0301 - IPC-A-610G - Acceptability of electronic assemblies  Key topics: Covers visual acceptability requirements for electronic assemblies, including handling considerations, hardware installation, component placement, soldering, terminal connections, wiring, marking and cleanliness.	Stamp or sign here
2.2.5	0103-0302 - IPC-J-STD-001F - Soldered electrical connections  Key topics: Covers soldering materials, general soldering and assembly requirements, wire and terminal connections, through-hole mounting, surface mounting of components, cleaning process requirements, PCB requirements, coatings and product assurance.	Stamp or sign here

## 196 Section 3

# 197 Preparation

### 198 3.1 Workspace

199 Before starting assembly, check out an assembly desk for a minimum of one hour. A single unit can be assembled  
 200 in half an hour, with an additional ten minutes per additional unit.

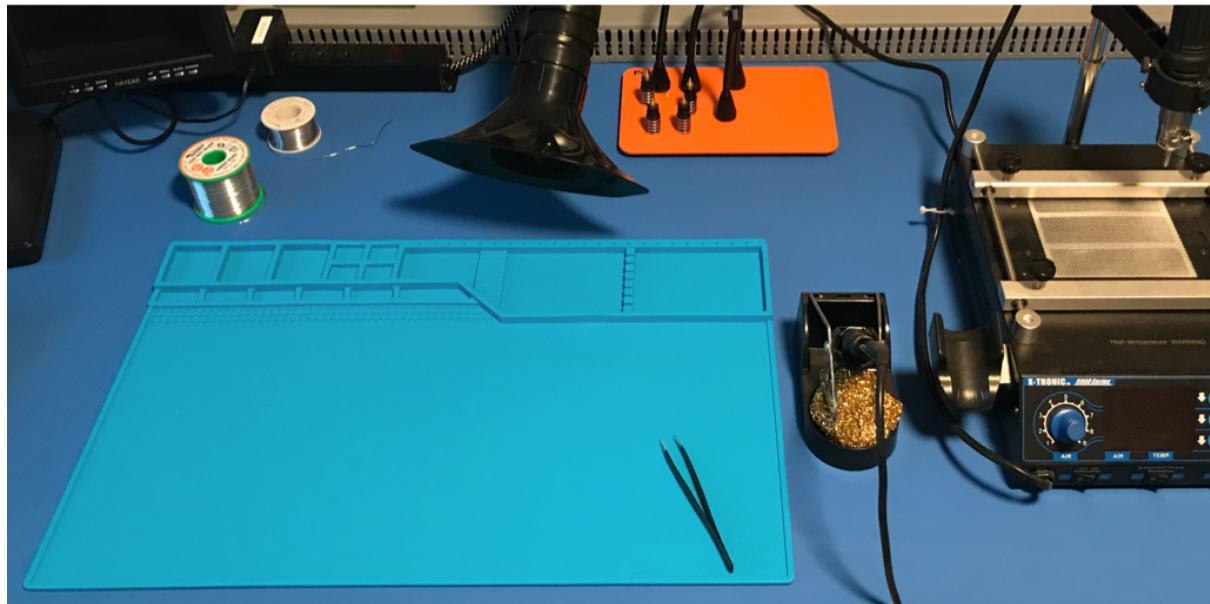


Fig. 1: Assembly Desk

Table 4: Prepare workspace

Step	Description	Signature/Stamp
3.1.1	Verify that the workspace has a clean assembly mat and anti-static mat, and that the cleaning record has been signed since last use.	Stamp or sign here
3.1.2	Verify that the HEPA fume extractor turns on, and you can feel air suction from the nozzle.	Stamp or sign here

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Table 4 – continued from previous page

Step	Description	Signature/Stamp
3.1.3	Verify that the 5040-XTS rework station soldering iron tip is not worn down. If it is worn down, obtain a new 900M-T-I tip from the stores department.	Stamp or sign here

## 201 3.2 Project consumables

- 202 Obtain each of the below consumable items from the stores department:

Table 5: Assembly consumables

Item #	Description	Signature/Stamp
3.2.1	 <p>Fig. 2: 1 pair ESD gloves If you prefer to use your own pair of ESD gloves, make sure they are tested before use.</p>	Stamp or sign here
3.2.2	 <p>Fig. 3: 1 spool MG Chemicals 4900 Lead Free No-Clean Wire Solder Sn96.2Ag2.8Cu0.4 (96.2/2.8/0.4) 20 AWG</p>	Stamp or sign here

### 203 3.3 Project tools

- 204 Obtain a tools container labelled "1XXX Assembly Tools" from the 1XXX section of the stores supply shelf. At your assembly desk, use [Table 6](#) to verify that all the required tools are present.
- 205 If any required tools are missing, return all tools and the tools container to the stores department, and obtain another tools container.



Fig. 4: Tools Container

- 208 Remove each of the following tools from the tools container, and place them on the anti-static mat of the assembly desk:

Table 6: Assembly tools

Item #	Description	Signature/Stamp
3.3.1		<div style="text-align: center; border: 1px solid gray; border-radius: 50%; width: 50px; height: 50px; margin: auto;"> <span style="font-size: 10px;">Stamp or sign here</span> </div>

Fig. 5: Hozan F-23 components tray

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Table 6 – continued from previous page

Item #	Description	Signature/Stamp
3.3.2	 Fig. 6: Digital multimeter	 Stamp or sign here
3.3.3	 Fig. 7: Fine-tipped Sharpie marker	 Stamp or sign here
3.3.4	 Fig. 8: 1510-0111 v0.3 fixture	 Stamp or sign here

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Table 6 – continued from previous page

Item #	Description	Signature/Stamp
3.3.5	 Fig. 9: Scissors	Stamp or sign here

## 210 3.4 Parts preparation

### 211 3.4.1 PCBs and PCBAs

- 212 NOTICE: All PCBs and PCBAs must be handled with gloves to prevent marking with skin oils.
- 213 NOTICE: PCBs are removed from manufacturer packaging only when needed.

Table 7: PCBs and PCBAs

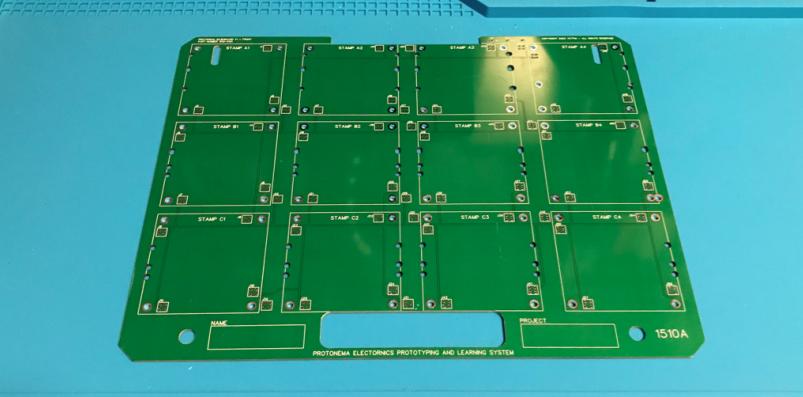
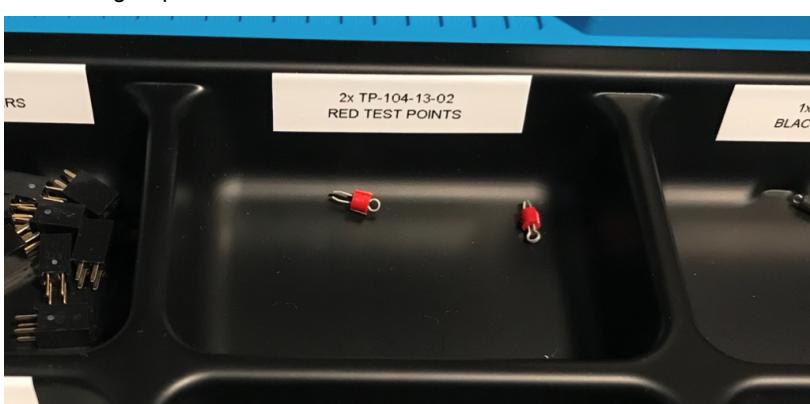
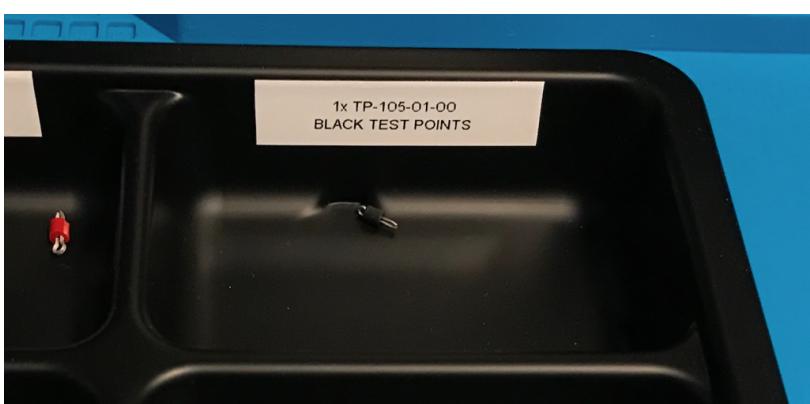
Item #	Description	Signature/Stamp
3.4.1.1	No marking required 	Stamp or sign here

Fig. 10: 1x 1510-0101 v0.4 - Baseboard PCB

### 214 3.4.2 Loose components

- 215 All loose components are stored on the shelf labelled "1XXX Components". Take the components tray and obtain the following quantities of the following parts:

Table 8: Loose components

Item #	Description	Signature/Stamp
3.4.2.1	No marking required    Fig. 11: 57x DS1023-2*2SF11 - 2.54mm by 2.54mm Straight 2x2P Female Headers	Stamp or sign here
3.4.2.2	No marking required    Fig. 12: 2x TP-104-13-02 - Red Test Points	Stamp or sign here
3.4.2.3	No marking required    Fig. 13: 1x TP-105-01-00 - Black Test Point	Stamp or sign here

continues on next page

Table 8 – continued from previous page

Item #	Description	Signature/Stamp
3.4.2.4	No marking required  Fig. 14: 6x VSQBC35 - Clear Rubber Feet	Stamp or sign here

### 217 3.4.3 Packaging materials

- 218 All packaging materials are stored on the shelf labelled "15XX Components". Take the packaging box and obtain  
 219 the following quantities of the following materials:

Table 9: Packaging materials

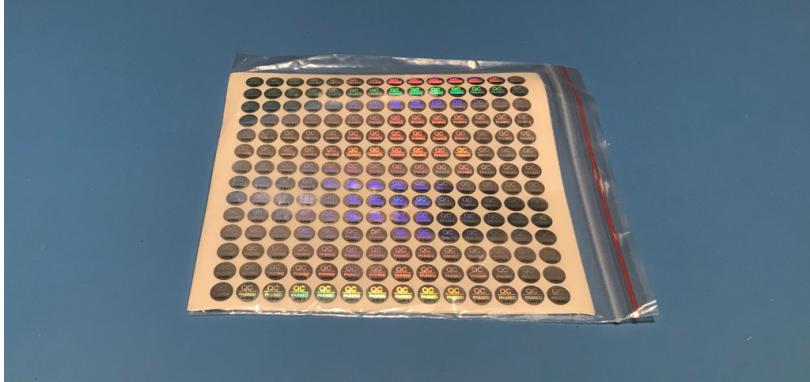
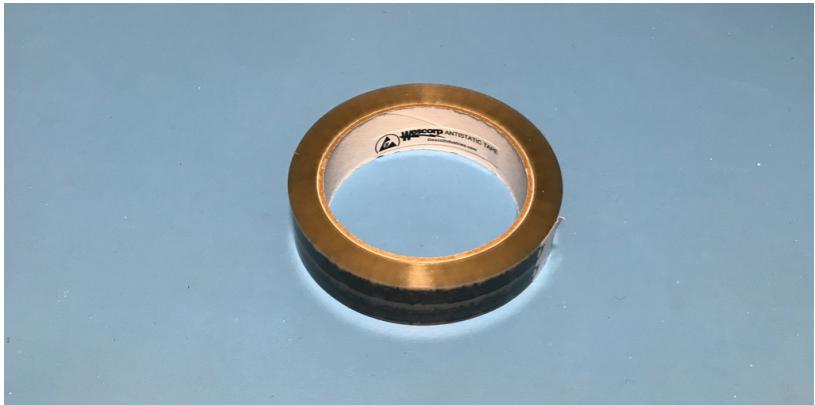
Item #	Description	Signature/Stamp
3.4.3.1	No marking required  	Stamp or sign here
3.4.3.2	No marking required  	Stamp or sign here
3.4.3.3	No marking required  	Stamp or sign here

Fig. 15: 1x QC Sticker

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Table 9 – continued from previous page

Item #	Description	Signature/Stamp
3.4.3.4	<p>No marking required</p> 	<div style="text-align: center; margin-top: 100px;"> <span>Stamp or sign here</span> </div>
3.4.3.5	<p>No marking required</p> 	<div style="text-align: center; margin-top: 100px;"> <span>Stamp or sign here</span> </div>

220 **Section 4**

221 **Assembly**

222 **4.1 1510A assembly**

223 This assembly step takes 20 minutes.

Table 10: 1510A assembly steps

Step #	Description	Signature/Stamp
4.1.1	<p>Take the 1510-0111 v0.3 fixture and align it on the assembly mat</p> 	<input type="text"/> <small>Stamp or sign here</small>
4.1.2	<p>Place 2x2 female sockets pins-up in the slots in the fixture labelled J1 - J57. All rectangular holes should be filled.</p> 	<input type="text"/> <small>Stamp or sign here</small>

Fig. 20: Aligned 1510-0111 fixture

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Table 10 – continued from previous page

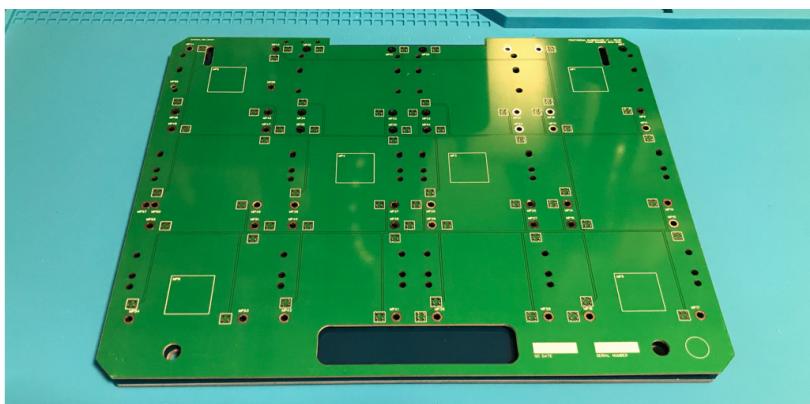
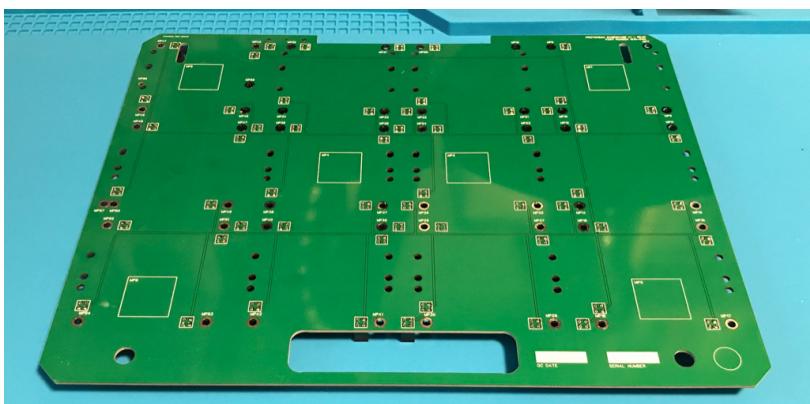
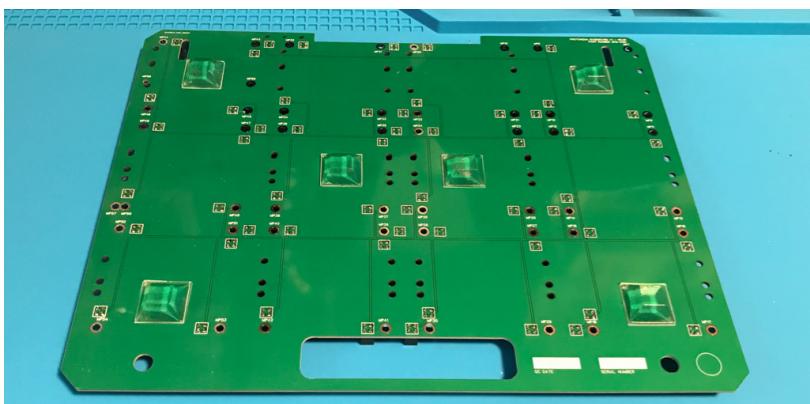
Step #	Description	Signature/Stamp
4.1.3	<p>Take the 1510-0101 PCB and rotate it upside-down, with the handle facing you. Carefully align and lower the PCB onto the upwards-facing pins of the 2x2 female sockets.</p> 	Stamp or sign here
4.1.4	<p>Solder the 57 sockets to the 1510-0101 PCB.</p> <p>CAUTION: The 1510-0101 PCB will often have a slight warp. To ensure that the 2x2 female sockets are aligned flush with the PCB, it is necessary to push down on the PCB while soldering the sockets.</p> 	Stamp or sign here
4.1.5	<p>Remove the protective paper from the clear rubber feet, and attach them to positions MP1 - MP6</p> 	Stamp or sign here

Fig. 22: Rear of 1510-0101 PCB aligned with sockets

Fig. 23: Rear of 1510-0101 PCB with sockets soldered down

Fig. 24: Rear of 1510-0101 PCB with feet mounted

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Table 10 – continued from previous page

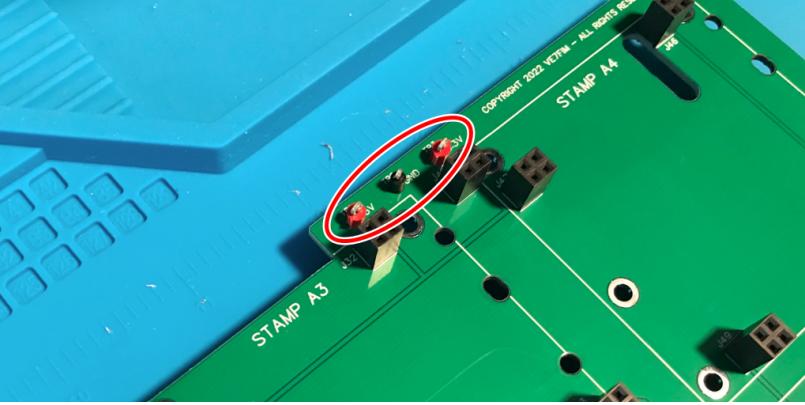
Step #	Description	Signature/Stamp
4.1.6	<p>Remove the 1510-0101 PCB from fixture, and move the fixture to the side.</p> <p>Flip the 1510-0101 PCB over to the front. Insert the three test points into TP1 - TP3 at the top-right, making sure that the black test point is used for GND.</p> 	Stamp or sign here
4.1.7	Solder the three test points to the 1510-0101 PCB.	Stamp or sign here

Fig. 25: Front of 1510-0101 PCB with test points inserted

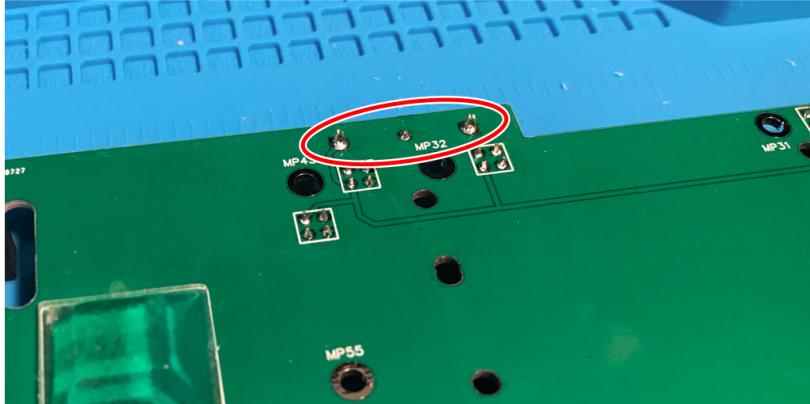


Fig. 26: 1510-0101 PCB with test points soldered down

## <sup>224</sup> Section 5

### <sup>225</sup> Test

#### <sup>226</sup> 5.1 Visual inspection

<sup>227</sup> This test process takes 2 minutes.

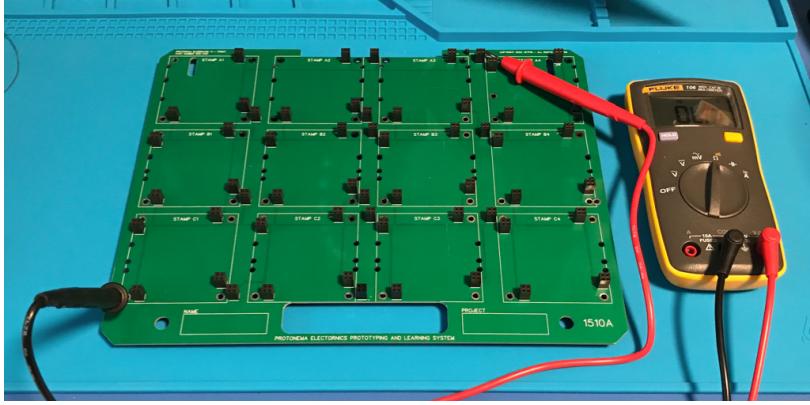
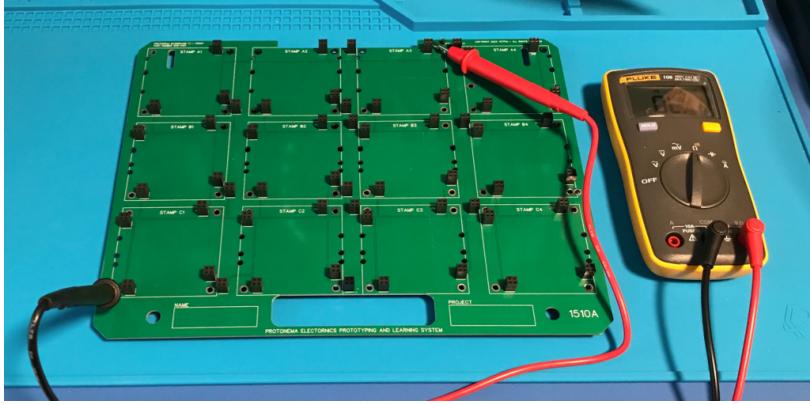
Table 11: 1510A visual inspection

Step #	Description	Signature/Stamp
5.1.1	Verify that there are no loose parts.	Stamp or sign here
5.1.2	Verify that there are no visible fingerprints.	Stamp or sign here

## 228 5.2 QC final check

229 This test process takes 2 minutes.

Table 12: 1510A QC final check

Step #	Description	Signature/Stamp
5.2.1	<p>Using the multimeter, verify that there are no shorts between ground and the 3.3 power rail.</p> <p>If test does not pass, write down the unexpected behaviour in the "Signature/Stamp" column on the right.</p> 	Stamp or sign here
5.2.2	<p>Using the multimeter, verify that there are no shorts between ground and the 5V power rail.</p> <p>If test does not pass, write down the unexpected behaviour in the "Signature/Stamp" column on the right.</p> 	Stamp or sign here

continues on next page

Table 12 – continued from previous page

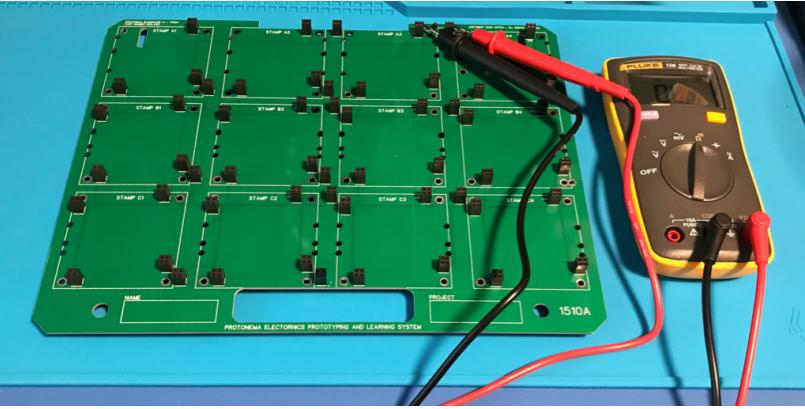
Step #	Description	Signature/Stamp
5.2.3	<p>Using the multimeter, verify that there are no shorts between the 3.3 and 5V power rails.</p> <p>If test does not pass, write down the unexpected behaviour in the "Signature/Stamp" column on the right.</p> 	<p>Stamp or sign here</p>

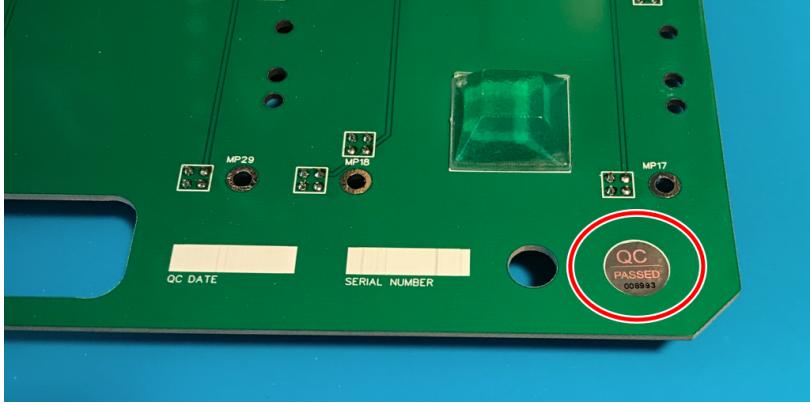
Fig. 29: Resistance measurement

## 230 5.3 QC PASS

231 Only perform these steps if all QC checks have passed.

232 This test process takes 1 minutes.

Table 13: 1510A QC approval

Step #	Description	Signature/Stamp
5.3.1	<p>Using the tweezers, affix QC Passed sticker in location shown below, then write down the serial number from the QC sticker below the "Signature/Stamp" in the column to the right.</p> 	<div style="text-align: center;">Stamp or sign here</div>
5.3.2	<p>Using the sharpie pen, write down the serial number from the QC sticker, and QC date, on the rear of the PCB. Wait for five minutes for the ink to dry.</p> 	<div style="text-align: center;">Stamp or sign here</div>
5.3.3	<p>Take two photographs, one of the front of the 1510A, and one of the back of the 1510A.</p>	<div style="text-align: center;">Stamp or sign here</div>

## 233 5.4 QC FAIL

234 Only perform these steps if any QC check have failed.

235 This test process takes 2 minutes.

Table 14: 1510A QC fail

Step #	Description	Signature/Stamp
5.4.1	Place the 1510A module in the anti-static bag.  	Stamp or sign here
5.4.2	Take an A4 plastic bag, and place the 1510A, along with this document, in the "QC Fail" bin  	Stamp or sign here

Fig. 32: 1510A in anti-static bag.

Fig. 33: 1510A in QC Fail bin.

## 236 Section 6

# 237 Packaging

### 238 6.1 1510A packing

239 This packaging process takes 3 minutes.

Table 15: 1510A packaging

Step #	Description	Signature/Stamp
6.1.1	<p>Place the 1510A module in the anti-static bag.</p> 	<div style="text-align: center; border: 1px solid black; border-radius: 50%; padding: 10px; width: fit-content;"> <span>Stamp or sign here</span> </div>
6.1.2	<p>Seal the anti-static bag with a 1510A sticker.</p> 	<div style="text-align: center; border: 1px solid black; border-radius: 50%; padding: 10px; width: fit-content;"> <span>Stamp or sign here</span> </div>

Fig. 34: 1510A in anti-static bag.

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Table 15 – continued from previous page

Step #	Description	Signature/Stamp
6.1.3	Using the Sharpie pen, Write down the serial number of the 1510A on the sticker, at the end of the line listing the 1510A.	Stamp or sign here
	 A photograph of a black plastic bag containing a green printed circuit board (PCB) labeled "1510A". The bag is sealed and placed on top of a blue foam padded box. A yellow sticker on the bag has the text "1510A" and "PACKAGE CONTENTS: 1x 1510 PROTONEEMA BASEBOARD". A red circle highlights the serial number "008913" at the bottom of the sticker.	
6.1.4	Place 1510A bag in the box on top of the bottom foam padding.	Stamp or sign here
	 A photograph of the same black plastic bag with the "1510A" PCB inside, now placed on top of the blue foam padding inside a cardboard box.	
6.1.5	Take a photograph of the 1510A in the box.	Stamp or sign here
6.1.6	Close the box and Affix a 1510A sticker to the lid of the box.	Stamp or sign here
	 A photograph of the closed cardboard box with the "1510A" PCB inside. A yellow sticker on the front of the box has the text "ATTENTION GENTLY HANDLING FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES" and "1510A PACKAGE CONTENTS: 1x 1510 PROTONEEMA BASEBOARD".	

Fig. 36: Example photographs of the sealed box

continues on next page

Table 15 – continued from previous page

Step #	Description	Signature/Stamp
6.1.7	<p>Using the Sharpie pen, Write down the serial number of the 1510A on the sticker, at the end of the line listing the 1510A.</p> 	<div style="text-align: center; border: 1px solid gray; border-radius: 50%; width: 100px; height: 100px; margin: auto;"> <span>Stamp or sign here</span> </div>
6.1.8	<p>Using the ESD tape, seal the lid of the box.</p> 	<div style="text-align: center; border: 1px solid gray; border-radius: 50%; width: 100px; height: 100px; margin: auto;"> <span>Stamp or sign here</span> </div>
6.1.9	<p>Take a photograph of the sealed 1510A box.</p>	<div style="text-align: center; border: 1px solid gray; border-radius: 50%; width: 100px; height: 100px; margin: auto;"> <span>Stamp or sign here</span> </div>

## <sup>240</sup> Section 7

### <sup>241</sup> Clean-up

#### <sup>242</sup> 7.1 Consumables

<sup>243</sup> This packaging process takes 5 minutes.

Table 16: Consumables cleanup

Step #	Description	Signature/Stamp
7.1.1	If the ESD gloves have contacted solder paste, or are soiled, they shall be disposed of in the standard waste bin.	Stamp or sign here
7.1.2	If there is unused solder wire on the spool, it shall be returned to stores.	Stamp or sign here
7.1.3	Loose component packaging shall be disposed of in the standard waste bin.	Stamp or sign here

#### <sup>244</sup> 7.2 Tools

<sup>245</sup> This cleanup process takes 5 minutes.

Table 17: Tools cleanup

Step #	Description	Signature/Stamp
7.2.1	All tools shall be returned to the assembly tools container, and returned to the stores supply shelf.  If any tools are damaged or worn, return the container to stores, and let the manager know which tool is damaged or worn.	Stamp or sign here

continues on next page

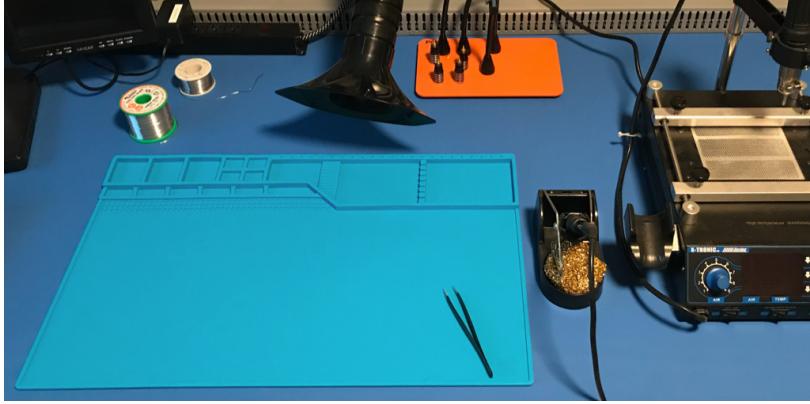
Table 17 – continued from previous page

Step #	Description	Signature/Stamp
7.2.2	Remove this document from the springback binder.	Stamp or sign here
7.2.3	Print a new copy of this document, and insert it into the springback binder that this document was originally in.	Stamp or sign here
7.2.4	Return the springback binder with the newly printed document to the 1510A section of the store supply shelf.	Stamp or sign here

## 246 7.3 Workspace

247 This packaging process takes 5 minutes.

Table 18: Workspace cleanup

Step #	Description	Signature/Stamp
7.3.1	Make sure that the workspace is clean and as it was when you started the assembly.   Fig. 41: Clean assembly workstation	Stamp or sign here

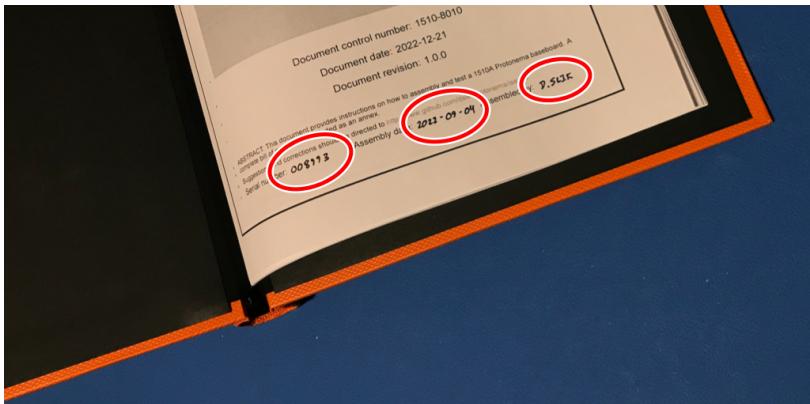
## 248 Section 8

# 249 Record keeping

### 250 8.1 1510A record keeping

- 251 This packaging process takes 5 minutes.

Table 19: 1510A record keeping

Step #	Description	Signature/Stamp
8.1.1	<p>Write the serial number, the date, and your first and last name in large print on the bottom of the front cover of this document.</p> 	<span style="border: 1px solid gray; border-radius: 50%; padding: 10px; text-align: center;">Stamp or sign here</span>
8.1.2	Create a new folder under the 1510A folder, named with the serial number.	<span style="border: 1px solid gray; border-radius: 50%; padding: 10px; text-align: center;">Stamp or sign here</span>
8.1.3	Copy all photos taken during the assembly process into the newly created folder in step #2.	<span style="border: 1px solid gray; border-radius: 50%; padding: 10px; text-align: center;">Stamp or sign here</span>
8.1.4	Remove this document from the binding clamps, scan the document, and save the scanned PDF into the newly created folder in step #2, with the name "1510A-SNAAAAAA.pdf", where AAAAAA is replaced with the serial number.	<span style="border: 1px solid gray; border-radius: 50%; padding: 10px; text-align: center;">Stamp or sign here</span>

continues on next page

Table 19 – continued from previous page

Step #	Description	Signature/Stamp
8.1.5	Three-hole punch the document, then file it at the end of the current month's assembly records binder.	Stamp or sign here
8.1.6	Add an entry to the assembly records binder, "<Date> - 1510A - SN# AAAAAAA - <Your Name>", where <Date> is replaced with today's date in ISO-8601 YYYY-MM-DD, where AAAAAAA is replaced with the serial number of the 1510A, and where <Your Name> is replaced with your first and last name.	Stamp or sign here

252 **Section 9**

253 **Process improvement**

254 **9.1 Feedback**

255 Please submit an issue to the [Protonema Issue Repository](http://www.github.com/dslik/protonema/issues) (<http://www.github.com/dslik/protonema/issues>) if you  
256 encounter any of the below situations:

- 257 • Error in this document
- 258 • Unclear directions
- 259 • Suggested process improvements
- 260 • Results of QC failure investigations
- 261 • Tool change suggestions

262 Qualtiy processes and documentation is a team effort. This document would not exist without the participation and  
263 contributions of the entire assebly team.

264 Thank you for reading this assembly instructions document.

265 End of document.

266

## **Part II**

267

# **1510A Annexes**

## 268 Section 10

### 269 Printed Circuit Boards

#### 270 10.1 1510-0101 PCB

Table 20: 1510-0101 PCB

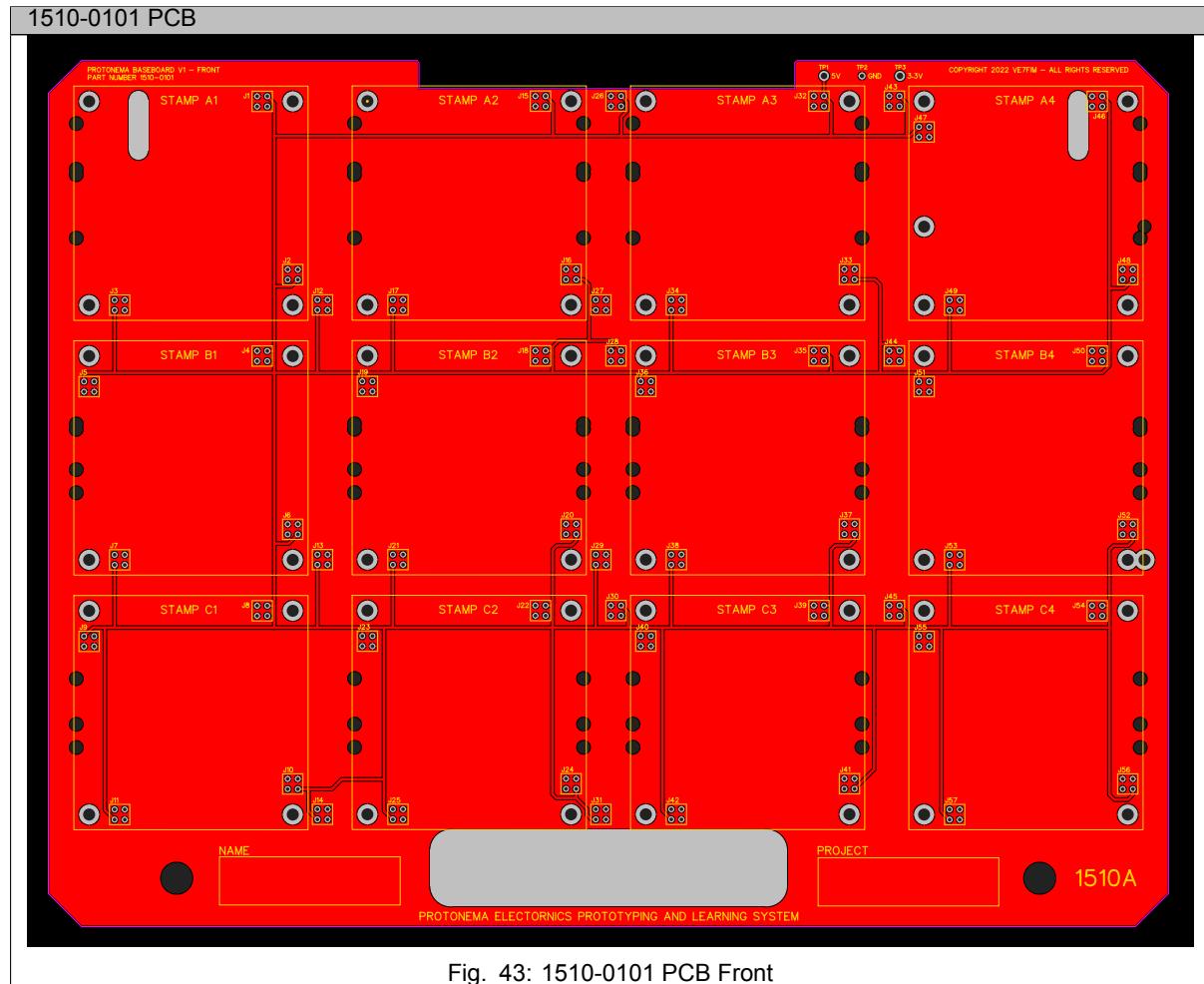


Fig. 43: 1510-0101 PCB Front

continues on next page

Table 20 – continued from previous page

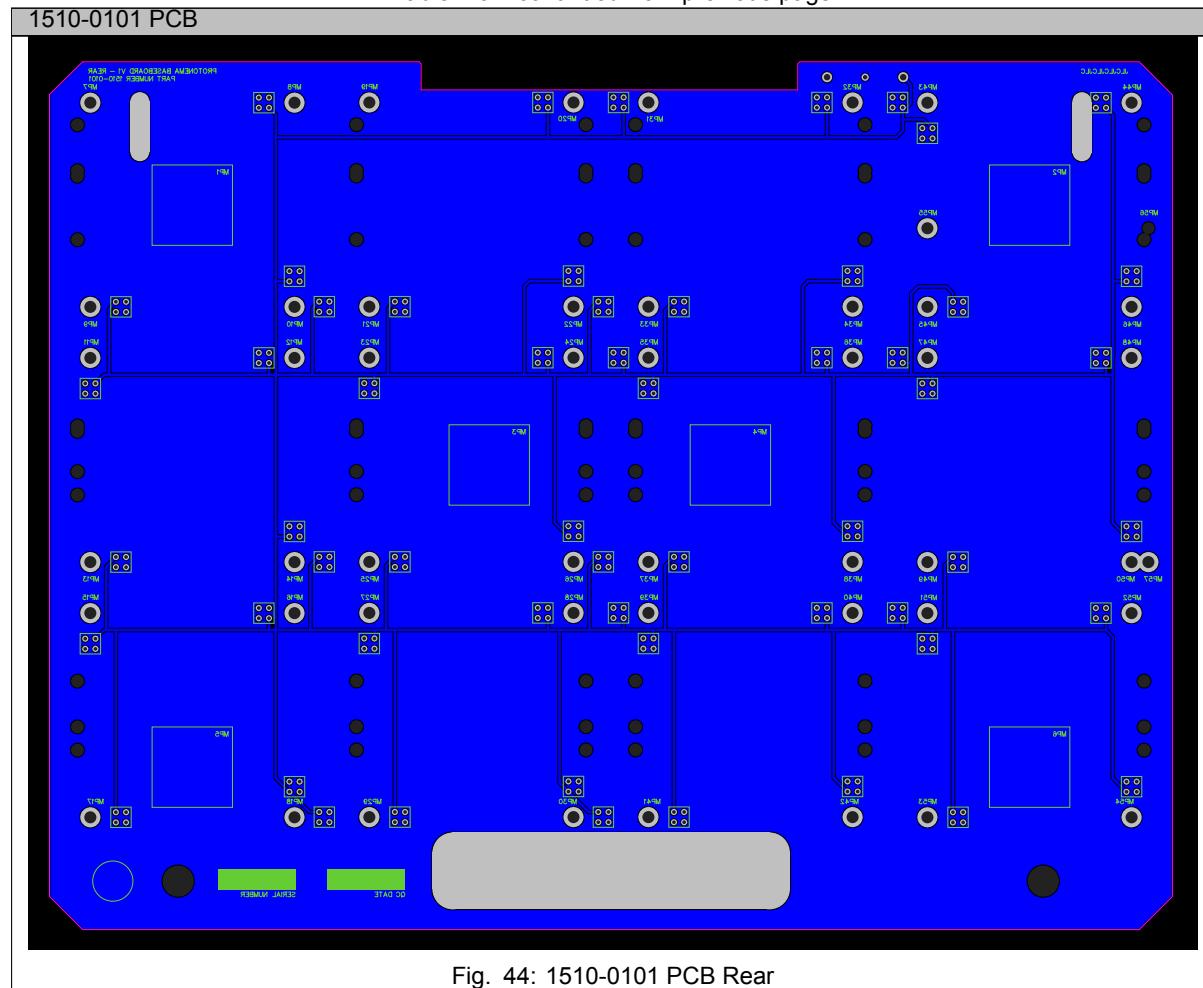


Fig. 44: 1510-0101 PCB Rear

## <sup>271</sup> Section 11

### <sup>272</sup> Bill of materials

#### <sup>273</sup> 11.1 1510A Protonema Baseboard

<sup>274</sup> The parts required to assemble a 1510A are listed in Table 21.

Table 21: 1510A parts

Reference Designation	Qty	Description	Manufacturer	Manufacturer Part Number	Supplier	Cost
1510-0101	1	Baseboard PCB	JLCPCB	Y234-2154951A	JLCPCB	\$7.97 CAD
J1 - J57	57	2.54mm by 2.54mm Straight 2x2P Female Header	CONNFLY Elec	DS1023-2*2SF11	LCSC	\$6.65 CAD
TP1, TP3	2	Red Test Point	Bisco Industries	TP-104-13-02	Bisco	\$0.32 CAD
TP2	1	Black Test Point	Bisco Industries	TP-105-01-00	Bisco	\$0.21 CAD
MP1 - MP6	6	Clear Rubber Feet	Cloverdale Supply	VSQBC35	Amazon	\$2.41 CAD
SK1	1	QC Sticker	Order by Description			\$0.0094 CAD
Total						\$17.57 CAD

275 **Section 12**

276 **Reduction of Hazardous Materials**

277 Compliance declarations, in BOM order.

278 **12.1 MG Chemicals 4900**

Table 22: MG Chemicals 4900 RoHS Compliance

Declaration for MG Chemicals 4900 -  
<https://www.mgchemicals.com/downloads/msds/01%20English%20Can-USA%20SDS/sds-4900-4917.pdf>



**ISO 9001:2015 Quality Management System**  
 SAI Global File #004008  
 Burlington, Ontario, Canada

**SAC305 NO CLEAN SOLDER WIRE**

**4900-4917**

**California Proposition 65** (Chemicals known to cause cancer or reproductive toxicity, USA)

This product does not contain any of the listed substances.

**Europe**

**RoHS** (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, PBDE's, DEHP, BBP, DBP, or DIBP and complies with European RoHS regulations.

**WEEE** (Waste Electrical and Electronic Equipment Directive)

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

**Section 16: Other Information**

**SDS Prepared by** MG Chemical's Regulatory Department

**Date of Review** 06 March 2020

**Supersedes** 09 July 2019

**Reason for Changes:** Update to the emergency phone number information.

**Reference**

1) ACGIH 2017 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2017).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

*Section continued on the next page*

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Date of Revision: 06 March 2020 / Ver. 3.01

## 279 12.2 JLC lead-free PCB

Table 23: JLC PCB RoHS Compliance

Declaration for JLCPBCB lead-free PCBs - <https://s3.amazonaws.com/helpscout.net/docs/assets/59f1de7804286313cffbb22c/images/5d4d09562c7d3a036965d6a3/ROHS-Certificate-of-Compliance.jpg>

ROHS-Certificate-of-Compliance.jpg 566x800 pixels

2022-08-16, 23:45



<https://s3.amazonaws.com/helpscout.net/docs/assets/59f1de7804286313cffbb22c/images/5d4d09562c7d3a036965d6a3/ROHS-Certificate-of-Compliance.jpg>

Page 1 of 1

280 **12.3 Connfly DS1023-2\*2SF11**

Table 24: Connfly DS1023-2\*2SF11 Compliance

Declaration for Connfly DS1023-2\*2SF11 -  
<http://en.connfly.group/static/upload/image/ico/RoHS□□□Connectors□.jpg>



## 281 12.4 Bisco TP-104-13-02

Table 25: Bisco TP-104-13-02 RoHS Compliance

Declaration for Bisco TP-104-13-02 - <https://www.toby.co.uk/uploads/publications/1500.pdf>

### Ordering Information

#### Example:

**TP-104 - 30 - 01**

<b>Series Designation:</b>	TP-104
<b>Number of Positions:</b>	1 through 30
<b>Color:</b>	00 = Black      05 = Green 01 = Brown     06 = Blue 02 = Red        07 = Purple 03 = Orange    08 = Gray 04 = Yellow    09 = White

### Product Description

The new TP-104 Series takes Components Corporations highly-efficient and economical loop configured test point design one step further, by adding a plastic standoff that boosts visibility and allows for easy polarization and identification. The TP-104 incorporates all of the design features of all Component's test points - solid non-slip grip of test clips and probes, low profile, single hole wave-solderable mounting, and the elimination of skin punctures suffered by users of wrap posts as substitute test points.

The TP-104 is furnished in 30-position breakaway strips with 0.125" centers that make storage, handling and even tandem installations a snap. Component's special hand tool #1040 further enhances board mounting with test point separating, gripping and positioning functions accomplished in one easy motion. Standard TP-104 colors are red and black, with special colors available on order.

The TP-104 can be ordered pre-cut to any number of positions up to 30. Individual and tandem units hold securely when inserted in .062" diameter holes for soldering operation. The rectangular passage in the TP-104's molded standoff maintains wire form alignment, important in tandem installations.

#### Certificate of Compliance with Directive 2011/65/EU RoHS and EU Regulation EC 1907/2006

This is to certify that Components Corporation designs, manufactures and supplies products to our customers that are in compliance with Directive 2011/65/EU RoHS and EU Regulation EC 1907/2006. This also pertains to procurement of raw material, component parts and processes.

the vital  
component

## 282 12.5 Bisco TP-105-01-00

Table 26: Bisco TP-105-01-00 RoHS Compliance

Declaration for Bisco TP-105-01-00 - <https://www.toby.co.uk/uploads/publications/1502.pdf>

### Ordering Information

#### Example:

TP-105 - 40 - 02

<input checked="" type="radio"/>	<b>Series Designation:</b>	TP-105
<input checked="" type="radio"/>	<b>Number of Positions:</b>	01 through 40
<input checked="" type="radio"/>	<b>Color:</b>	00 = Black      05 = Green 01 = Brown      06 = Blue 02 = Red      07 = Purple 03 = Orange      08 = Gray 04 = Yellow      09 = White

### Product Description

The TP-105 series test point offers a functionally superior alternative to other means of board level trouble shooting, particularly .025" square header posts. While featuring a loop profile for positive test probe retention, this product is available in any combination of positions, from one to forty, at .100" centers and fits in the popular .035" diameter hole size. The above board profile is substantially below that of headers and other devices used as test points. Thus, a re-fit can be accomplished without any printed circuit board layout re-design costs, while significantly reducing test point height and improving function.

Visibility and identification are significantly enhanced by the choice of ten standard colors for the TP-105 series, representing all of the variations of the industry color code. The TP-105 may be purchased pre-cut to any specified number of positions from one to forty. Mounting leg design insures positive retention in the circuit board during soldering operations.

### Certificate of Compliance with Directive 2011/65/EU RoHS and EU Regulation EC 1907/2006

This is to certify that Components Corporation designs, manufactures and supplies products to our customers that are in compliance with Directive 2011/65/EU RoHS and EU Regulation EC 1907/2006, 84 SVH. This also pertains to procurement of raw material, component parts and processes.

the **vital**  
component

**283 12.6 Cloverdale VSQBC35**

Table 27: Cloverdale VSQBC35 Compliance

Declaration for Cloverdale VSQBC35 - N/A



1607 Imperial Way, West Deptford, New Jersey 08066, USA

Phone: (856) 345-7650 • Fax: (856) 345-7690

Website: [www.bumperspecialties.com](http://www.bumperspecialties.com) • Email: [info@bumperspecialties.com](mailto:info@bumperspecialties.com)

March 10, 2022

**Compliance - EU Directive 2015/863 (RoHS 3), PAH, Phthalates and Nonylphenol**

Please be advised that based on the information available to us from our raw material suppliers, the products manufactured by us do not contain, as intentional additives, any of the below referenced materials as referenced in the subject EU directive.

Further note that none of these materials are generated during production. We have confirmed this through a Certified Independent Laboratory who tested a representative sample of our bumper products.

- Hexavalent chromium compounds
- Cadmium and its compounds
- Mercury and its compounds
- Lead and its compounds
- Polybrominated diphenyl ethers (PBDEs)
- Polybrominated biphenyls (PBBs)
- Polycyclic Aromatic Hydrocarbons (PAH)
- Phthalates (DEHP, DBP, DINP, DIDP, DIBP, DNOP, BBP)
- Nonylphenol

Best Regards,

**Joseph Ribinsky**

Joseph Ribinsky  
Director of Manufacturing  
Bumper Specialties, Inc.