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# Introduction

## Purpose

## Scope

This document describes a mini investigation regarding welding the connection from solar cell to PCB. “different components are included in the investigation Cesi-taps and Kovi-taps. Both types are used today in flying designs.

The purpose for the mini investigation is to verify if the today used methods for electric connection is affected in a negative direction if it is decided to go to a welding method instead as soldering as of today.

The connection taps are planned to be soldered in a process in the production,

# Measurement method

The taps are Welded directly on the PCB, the number of wending points is varied to see where the optimal numbers are, more welding’s is expected to lower the total impedance.

## The setup

The measurement point is located in between the current inserting point is located away from the voltage point as far as possible (it is a kind off kelvin connection, this is done to eliminate eventual influence from the power supply.

## Cesi taps

Measured data:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Current |  |  |  |  |  |  |
| Amp | 1 | 2 | 3 | 4 | 6 | Solder |
| 0,1 | 0,196 | 0,174 |  | 0,084 | 0,069 | 0,081 |
| 0,2 | 0,379 | 0,317 |  | 0,126 | 0,116 | 0,138 |
| 0,3 | 0,557 | 0,459 |  | 0,171 | 0,162 | 0,187 |
| 0,4 | 0,735 | 0,603 |  | 0,216 | 0,206 | 0,236 |
| 0,5 | 0,913 | 0,747 |  | 0,261 | 0,255 | 0,284 |
| 0,6 | 1,089 | 0,889 |  | 0,307 | 0,300 | 0,333 |
| 0,7 | 1,265 | 1,035 |  | 0,352 | 0,346 | 0,38 |
| 0,8 | 1,441 | 1,175 |  | 0,399 | 0,393 | 0,427 |
| 0,9 | 1,617 | 1,319 |  | 0,445 | 0,440 | 0,476 |
| 1 | 1,793 | 1,464 |  | 0,495 | 0,485 | 0,525 |

## Azura taps:

Measured data:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Current |  |  |  |  |  |
| Amp. | 1 | 2 | 3 | 4 | Solder |
| 0,1 | 0,589 | 0,349 | 0,233 | 0,185 | 0,081 |
| 0,2 | 1,166 | 0,681 | 0,451 | 0,346 | 0,138 |
| 0,3 | 1,740 | 1,012 | 0,661 | 0,505 | 0,187 |
| 0,4 | 2,313 | 1,337 | 0,873 | 0,665 | 0,236 |
| 0,5 | 2,887 | 1,664 | 1,087 | 0,824 | 0,284 |
| 0,6 | 3,460 | 1,990 | 1,299 | 0,983 | 0,333 |
| 0,7 | 4,032 | 2,315 | 1,517 | 1,143 | 0,380 |
| 0,8 | 4,604 | 2,640 | 1,725 | 1,302 | 0,427 |
| 0,9 | 5,177 | 2,968 | 1,941 | 1,460 | 0,476 |
| 1 | 5,749 | 3,292 | 2,150 | 1,618 | 0,525 |