

MODIFICATION RECOMMENDED

81133A-01A

# S E R V I C E N O T E

Supersedes:  
81133A-01

## 81133A- High Speed Pulse Generator

Serial Numbers: DE42800001-DE42800314

1. Control Knob does not work properly.
2. Display starts flickering.

**Parts Required:**

| P/N       | Description         | Qty. |
|-----------|---------------------|------|
| 0180-4758 | Tantalium Capacitor | 3    |

### ADMINISTRATIVE INFORMATION

|                                 |  |  |  |
|---------------------------------|--|--|--|
| SERVICE NOTE CLASSIFICATION:    |  |  |  |
| <b>MODIFICATION RECOMMENDED</b> |  |  |  |
| ACTION                          | <input type="checkbox"/> ON SPECIFIED FAILURE      | STANDARDS  |  |
| CATEGORY:                       | <input checked="" type="checkbox"/> AGREEABLE TIME | LABOR: 1.5 Hours                                     |  |
| LOCATION                        | <input type="checkbox"/> CUSTOMER INSTALLABLE      | SERVICE <input type="checkbox"/> RETURN              | USED <input type="checkbox"/> RETURN             |
| CATEGORY:                       | <input type="checkbox"/> ON-SITE                   | INVENTORY: <input checked="" type="checkbox"/> SCRAP | PARTS: <input checked="" type="checkbox"/> SCRAP |
|                                 | <input checked="" type="checkbox"/> SERVICE CENTER | <input type="checkbox"/> SEE TEXT                    | <input type="checkbox"/> SEE TEXT                |
|                                 | <input type="checkbox"/> CHANNEL PARTNER           |  |  |
| AVAILABILITY:                   | PRODUCT'S SUPPORT LIFE                             | NO CHARGE AVAILABLE UNTIL: Dec 2013                  |  |
| AUTHOR:                         | MF   | PRODUCT LINE: PL24                                   |  |
| ADDITIONAL INFORMATION:         |  |  |  |

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**Situation:**

This Service Note describes preventive fixes for 2 potential failures which occur occasionally.

1. The Control Knob does not work properly.

The rotary encoder (APN 0960-1055) has failed in some cases due to incorrect pull up resistance of the encoder. The pull-up resistance of this encoder as specified by the manufacturer is minimum 2.2 K Ohms. According the schematic of the front panel in the 81134A, the pull-up resistance used was 1.5 K Ohms. The lesser resistance value had possibly led to the flow of more currents into the encoder and had degraded the performance of it over a period of time.

By removing a few parallel resistors the resistance can be increased, preventing failures of the rotary encoder in the future.

2. The display begins to flicker after some hours and completely goes out with black and white stripes. The problem is sometimes intermittent and has mainly occurred with units older than 18 months.

Three polarized tantalum capacitors on the motherboard are connected with the wrong polarity. The polarized tantalum capacitors are normally more sensitive than others, so they tend to fail after some months. Due to this, wrong voltages were delivered to the front panel board which in turn affected the display.

By applying new capacitors and mounting them with the right polarity failures can be prevented for the future.

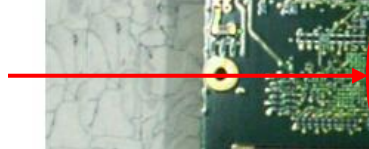
**Solution/Action:**

The preventive maintenance to avoid flickering display failures requires removing the 3 capacitors shown in the following picture. And replacing them with new capacitors (part number 0180-4758) while mounting them with the correct polarity.

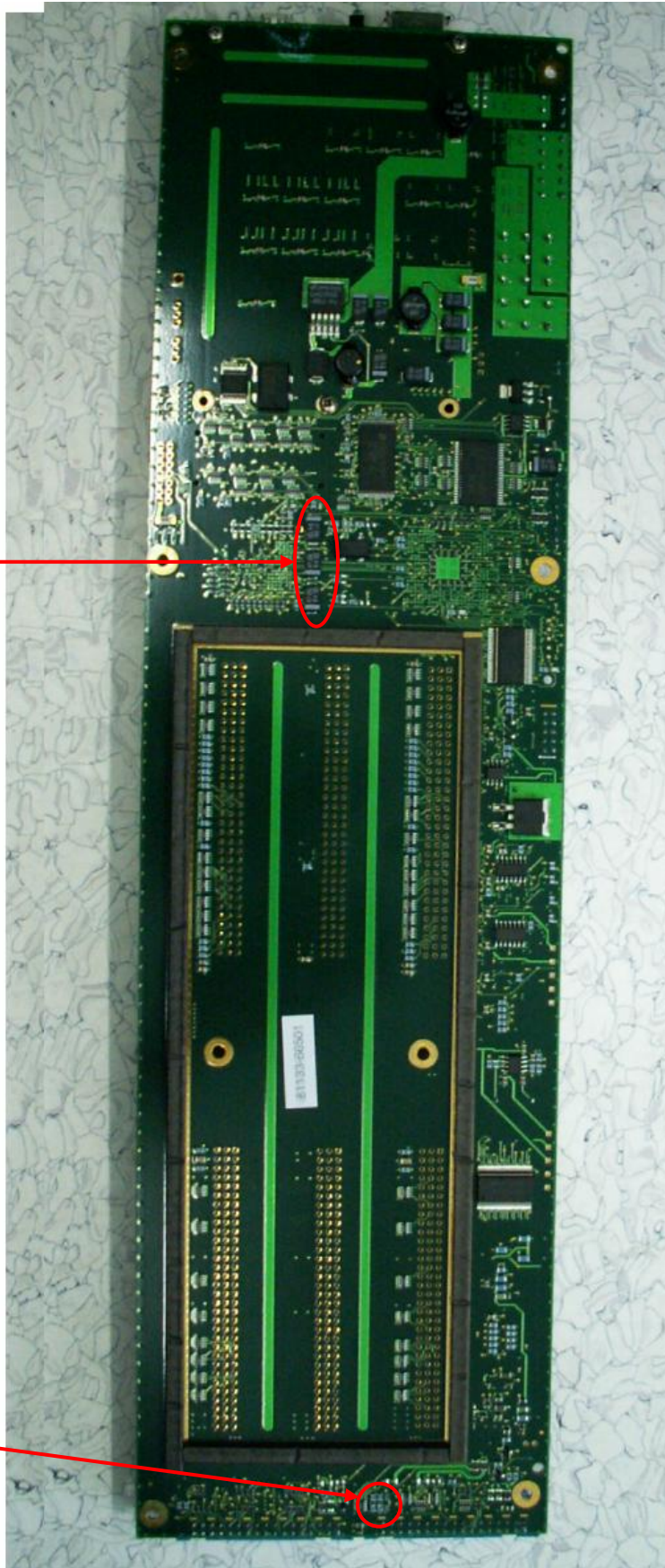
The capacitors are best removed using hot air. The new capacitors need to be mounted using standard soldering equipment.

MOTHERBOARD  
BACK SIDE VIEW

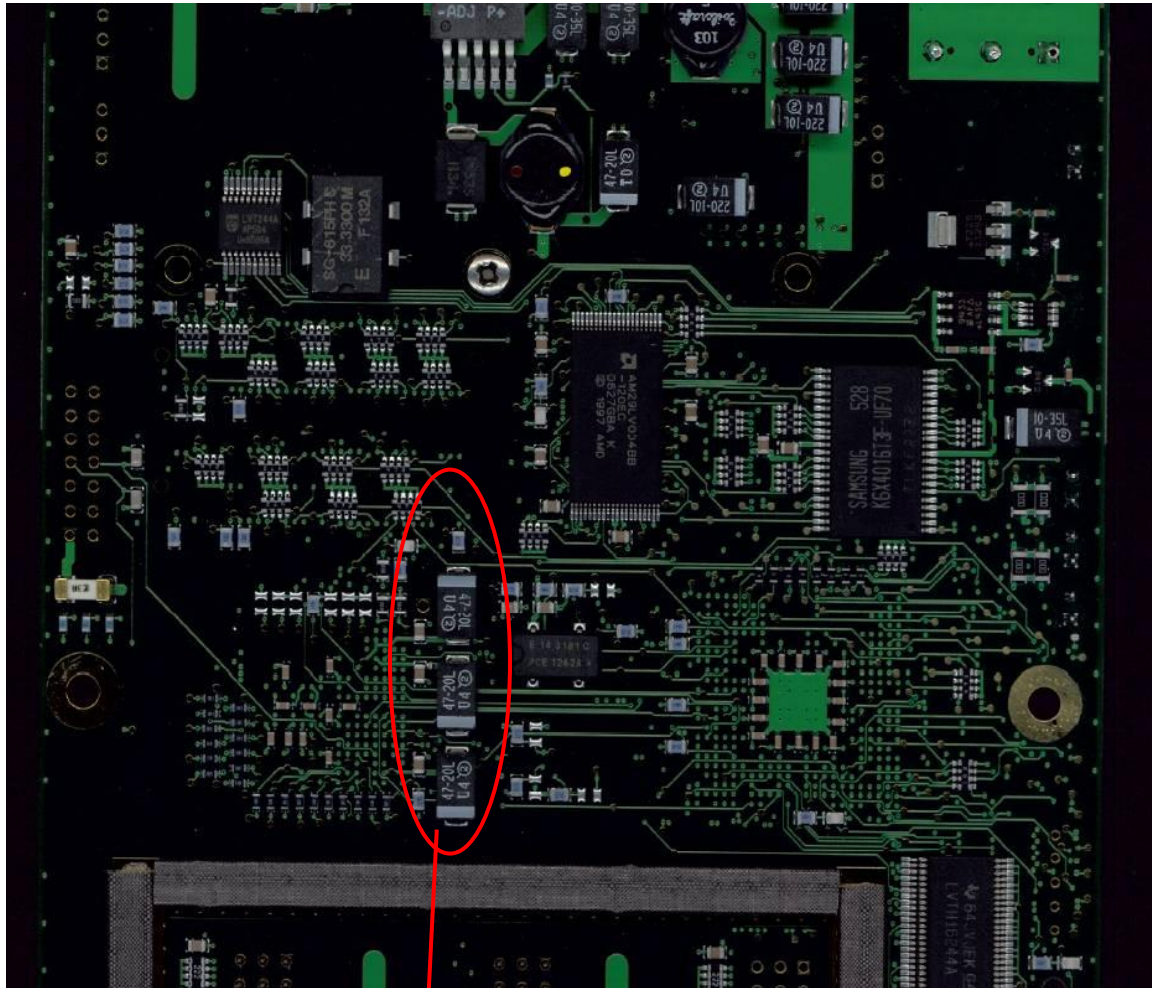
Polarized Capacitors



Extra Resistors



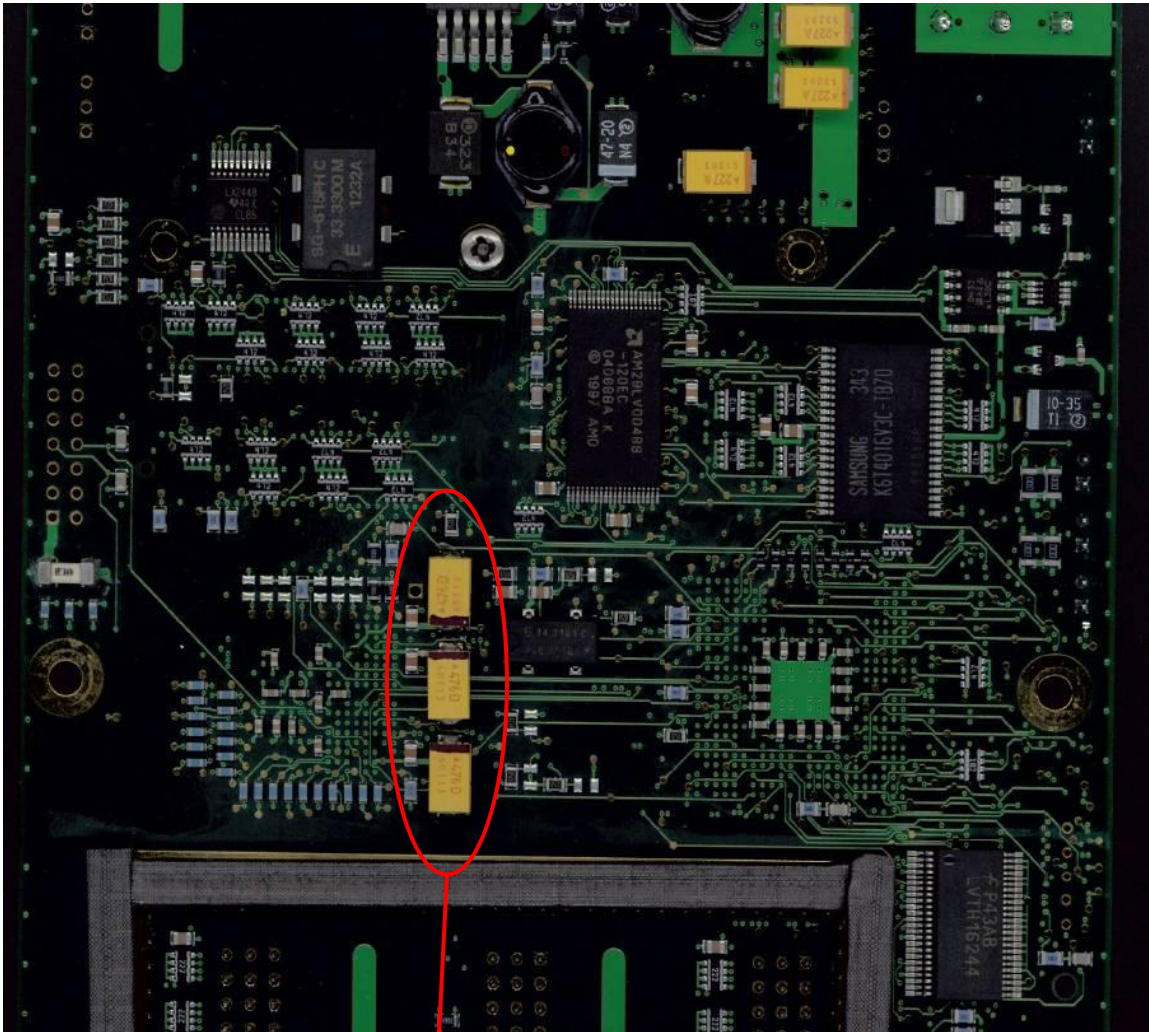
CLOSE UP VIEW WHERE THE CAPACITORS ARE LOCATED



Capacitors mounted with the wrong polarity. The positive side is shown with the white/grey stripe. These 3 capacitors need to be removed.



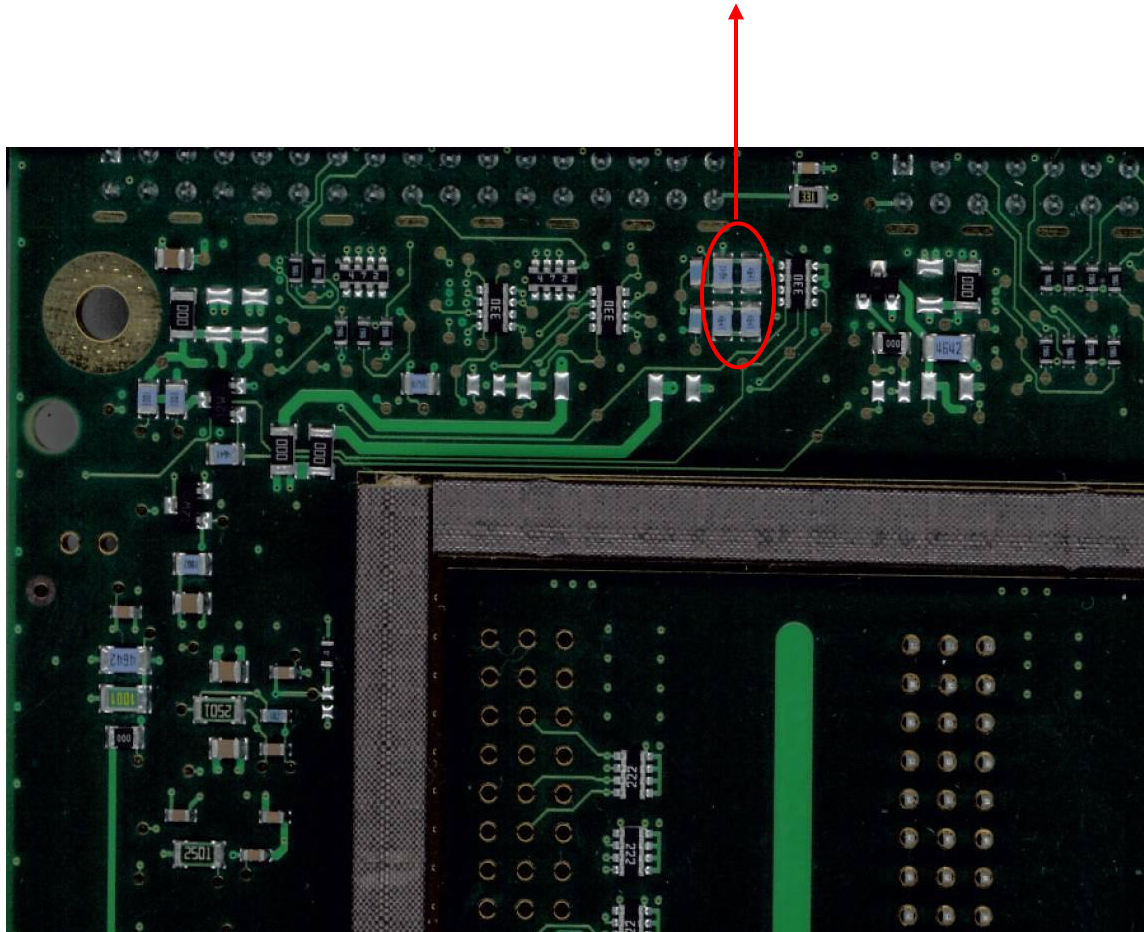
CLOSE UP VIEW WHERE THE CAPACITORS ARE LOCATED



This photo shows the capacitors mounted with the right polarity. The positive side is shown with the black stripe. The colors might vary.

For the preventive maintenance of the know problem the following 4 resistors need to be removed. They are best removed using hot air.

Resistors to be removed ( The colours can be different)



CLOSE UP VIEW – THE RESISTORS ARE REMOVED

The place where the 4 resistors are removed

