



SERVICE BULLETIN

SUBJECT: ELECTRICAL POWER – Static Inverter AI² Part Number 1-002-0102-2173 – Modification.

TRANSMITTAL: Service Bulletin 1-002-0102-2173-24-41 Initial Release (Revision 0).

I. Planning Information

A. Effectivity

Applies to Static Inverters, AI² Part Number 1-002-0102-2173, serial numbers before KC001126. Existing units that are before serial number KC001126 and not labeled as “MOD F” shall require capacitor replacement on the EMI output assembly, with the exception of units listed in Appendix A, Table 1 that have been modified by anticipation. Even if the units are not labeled as “MOD F”, existing units that are after serial number KC001126 have been modified in production by anticipation and are not concerned by this Service Bulletin.

B. Concurrent Requirements

None.

C. Reason

Analysis conducted by Avionic Instruments has determined that specific capacitors used on the EMI output assembly of Static Inverter PN 1-002-0102-2173 may experience failure. Product improvement to the Static Inverter upgrades the unit from “MOD E” to “MOD F” which replaces capacitors C601 through C605 with new capacitors that have had additional quality screening (i.e. burn-in). All “MOD F” units will only include burned in C601 through C605 capacitors.

D. Description

Replacement of capacitors C601 through C605 will require partial disassembly of the Static Inverter Unit, including removal of the cover, transformer, and EMI output assembly.

E. Compliance Recommendation

Accomplish at the earliest opportunity when manpower and facilities are available.

F. Approval

The technical content of this document is approved under the authority of DOA Ref. EASA.21J.044.

G. Manpower

The estimated time required to accomplish the task of disassembly, inspection and/or rework, and reassembly of the unit in relation to this service bulletin is two (2) hours. Activity related to product return to service is included in this time estimate.

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H. Weight and Balance

Subject change has no significant impact on balance and weight.

I. Electrical Load Data

Subject change has no effect on electrical performance or connections.

J. Software Accomplishment Summary

Subject change has no effect on Software.

K. References

- Component Maintenance Manual 1-001-4901-0051 (24-20-A6)

L. Other Publications Affected

- Component Maintenance Manual 1-001-4901-0051 (24-20-A6) from Rev 1 to Rev 2

M. Interchangeability of Parts

Refer to Paragraph II.E, Existing Parts Accountability, for interchangeability information.

N. Classification of Change

The change detailed in this Service Bulletin is non-mandatory but recommended.



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II. Material Information

A. Material

Customers may contact Avionic Instruments customer service at 732-388-3500. Products upgraded by Avionic Instruments will be performed at no charge for an indefinite amount of time. Avionic Instruments will not perform any repair beyond that which is specified in this document without first notifying the customer of any associated charges and receiving customer consent.

<u>Part Number</u>	<u>Name</u>	<u>Date Available</u>	<u>Unit Price (Indefinite)</u>
1-001-0306-0136 Rev C	Capacitor	May 2, 2017	Free of Charge
1-001-0325-0003 Rev C	Capacitor	May 2, 2017	Free of Charge

Any units received in-house for service bulletin upgrade will be subjected to the ATP prior to the upgrade being completed. AI² will notify the airline customer of any out-of-specification condition noted during performance of the ATP. The unit would need to be repaired prior to the upgrade being initiated. The modification will be performed within the contractual Shop Processing Time (S.P.T).

B. Material Necessary for Each Component

<u>Quantity</u>	<u>Part Number</u>	<u>Nomenclature</u>
3	1-001-0306-0136	Capacitor C602, 603, 604
2	1-001-0325-0003	Capacitor C601, 605
1	-	Cover Label (MOD F)

C. Material Necessary for Each Spare

See Section II, Item C

D. Re-identified Parts/Existing Parts Accountability

The parts shown below are changed as shown in this Service Bulletin.

<u>New P/N</u>	<u>Keyword</u>	<u>Old P/N</u>	<u>Quantity</u>	<u>Disposition</u>
1-002-0108-0256 Rev D	EMI Ass'y	1-002-0108-0256 Rev C	1	Modification
1-002-0102-2173 Mod F	Static Inverter (End Item)	1-002-0102-2173 Mod E	1	Modification

E. Special Tooling

1. Standard Tools
2. Drill



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III. Accomplishment Instructions

NOTE:

Some screws may be different sizes or types. Note the sizes and locations of the screws and hardware (nuts, washers) when disassembling the unit. Upon reassembly, ensure all screws and hardware are put in the correct locations.

A. Instructions for Part Number 1-002-0102-2173

1. Remove 48 screws (51957-12) from the cover of the unit. (Figure 1).
2. Remove the cover from the unit. (Figure 2).
3. Disconnect the transformer from the base plate by removing (4) screws (24693-C2) from the base of the unit. (Figure 3, Figure 4).
4. Disconnect the connector from the AC connector/ alarm assembly. (Figure 5, Figure 6).
5. Disconnect the wires/cables by de-soldering at locations E602, E603, E605, E608, E609 and E610 on the EMI Output board assembly (Soldering Iron tip JBC C245-741). (Figure 7, Figure 8, Figure 9, Figure 10, Figure 11, Figure 12).
6. Remove EMI Output Assembly from EMI shield by removing (4) screws and washers. (Figure 13).
7. Remove capacitors by cutting leads with a cutter. (Figure 14).
8. Remove excess capacitor leads soldered to the PCB using solder wick and soldering iron set at 650F.
9. Remove excess solder in PCB holes using solder wick and soldering iron (tip JBC C245-741 or equivalent) set at 650F.
10. Manually clean the PCB holes with alcohol.
11. Apply thinner (1-001-2302-0019, T521-5L) over the old RTV and peel it off after 5 mins of dwell time. (Figure 15).
12. Sequentially (#1-5) install and solder the new capacitors (1-001-0325-0003 (2), 1-001-0306-0136 (3)). Solder top & bottom lead of capacitors using solder wire (1-001-2301-0002, CLEANLINE 7000, 0.032" DIA, 63 SN 37 PB 2% FLUX)) and soldering iron (tip JBC C245-906 or equivalent) set at 650F. Manually clean soldered areas with alcohol. (Figure 16).

NOTE:

- Make sure the capacitors have "Red" dot marking on top to indicate quality screening (burn-in).
- Make sure the capacitors are installed with correct orientation.



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13. Apply RTV (MIL-A-46146) around the capacitors. (Figure 17, Figure 18).
14. Manually brush capacitors (top surface & soldered areas) with conformal coating (MIL-I-46058).
15. Assemble the repaired EMI output assembly (1-002-01008-0256) onto the EMI shield using (4) screws/washers.
16. Solder wires/cables at locations E602, E603, E605, E608, E609 & E610 on the EMI Output board assembly using solder wire (1-001-2301-0002, CLEANLINE 7000, 0.032" DIA, 63 SN 37 PB 2% FLUX) and soldering iron (tip JBC C245-906 or equivalent). (Figure 7, Figure 8, Figure 9, Figure 10, Figure 11, Figure 12).

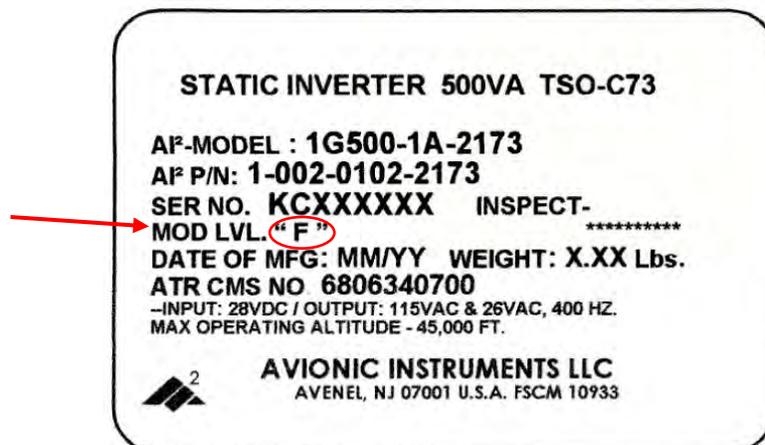
NOTE:

-Use caution when soldering the wires/cables to the board as to not damage any components.

17. Apply conformal coating (MIL-I-46058) to the soldered areas.
18. Assemble transformer (1-005-0701-0470) to the base plate (1-002-0117-0097) using (4) screws (24693-C2). (Figure 19).
19. Connect the connector from the AC connector/alarm assembly (1-002-0108-0255). (Figure 20).
20. Secure the wires with grommet (1-001-0204-0029, Type 6/6). Secure the cables with cable tie (MS3367-5-9). (Figure 21).
21. Attach cover on to the unit using (48) screws (51957-12). (Figure 1).

B. Completion

Upon completion of the modification, the label on the cover will be changed to indicate MOD Level "F". See figure below:



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Figure 1

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Figure 2

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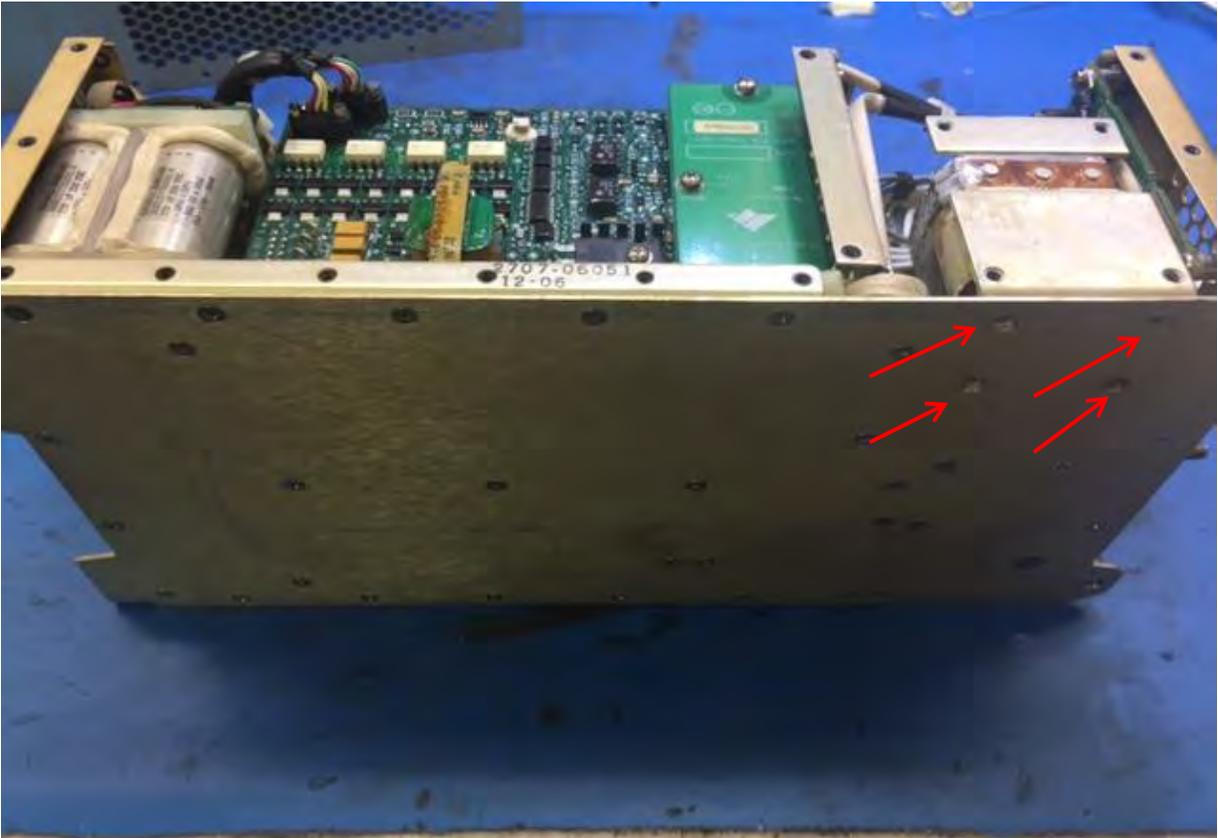


Figure 3

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Figure 4

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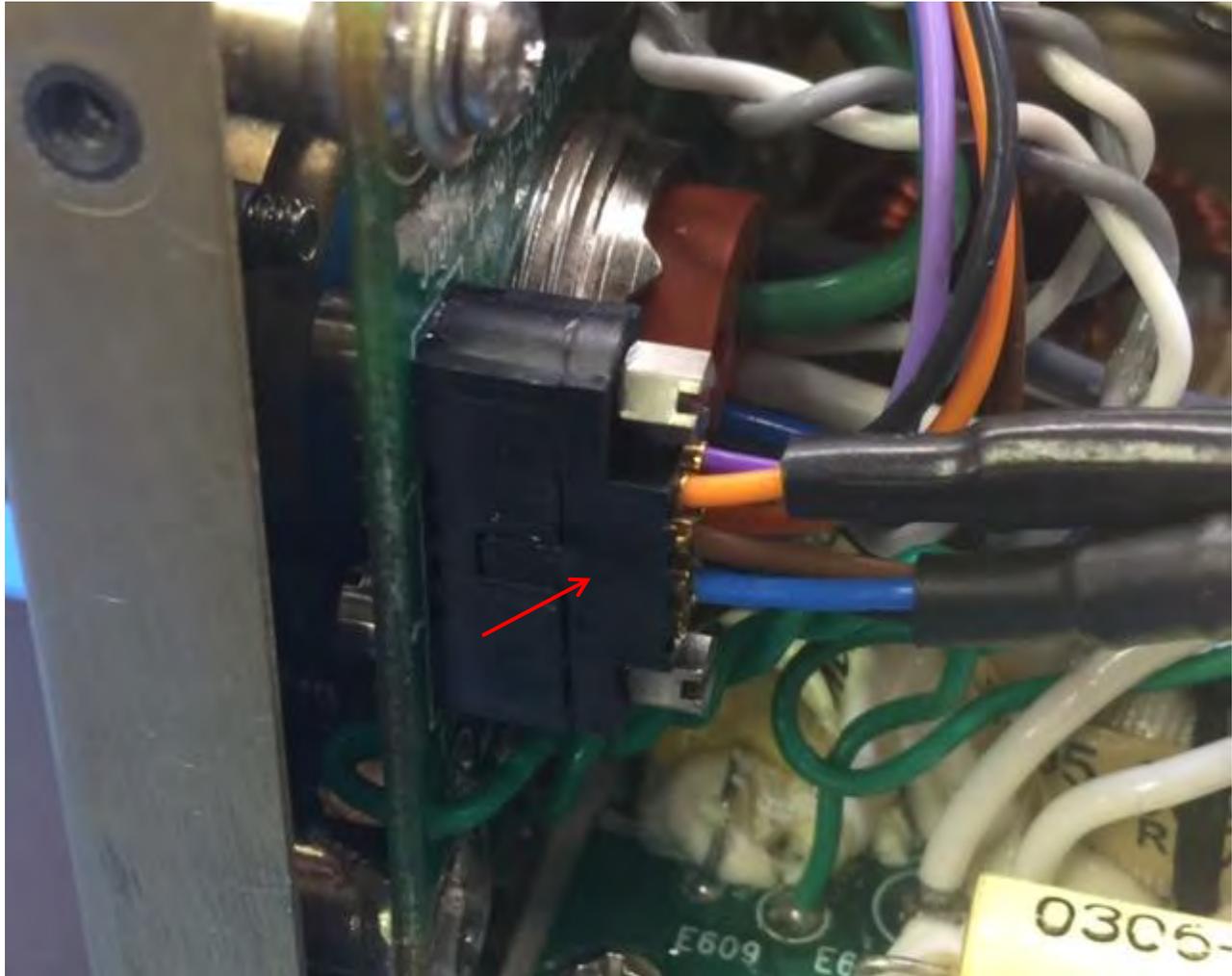


Figure 5

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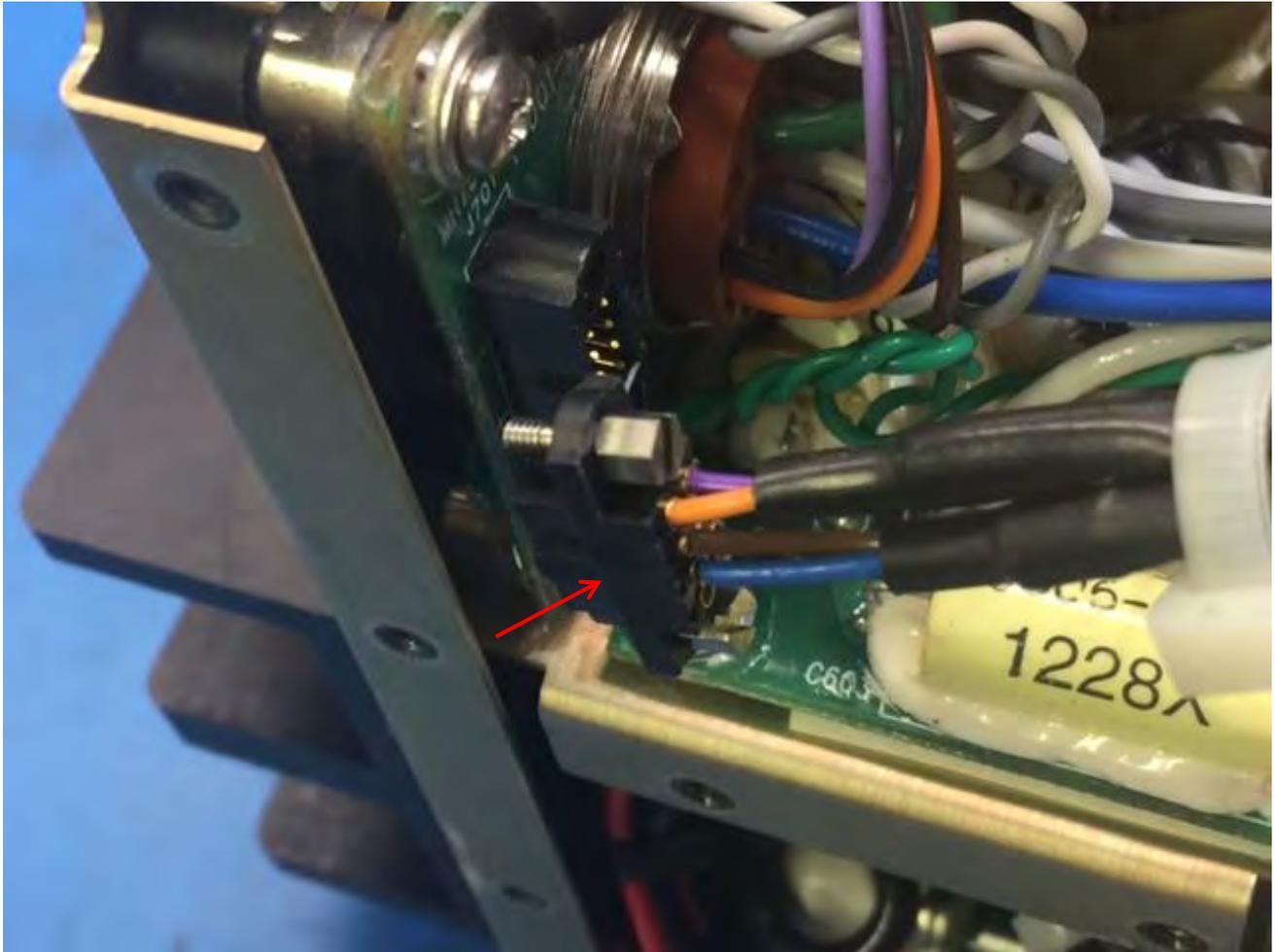


Figure 6

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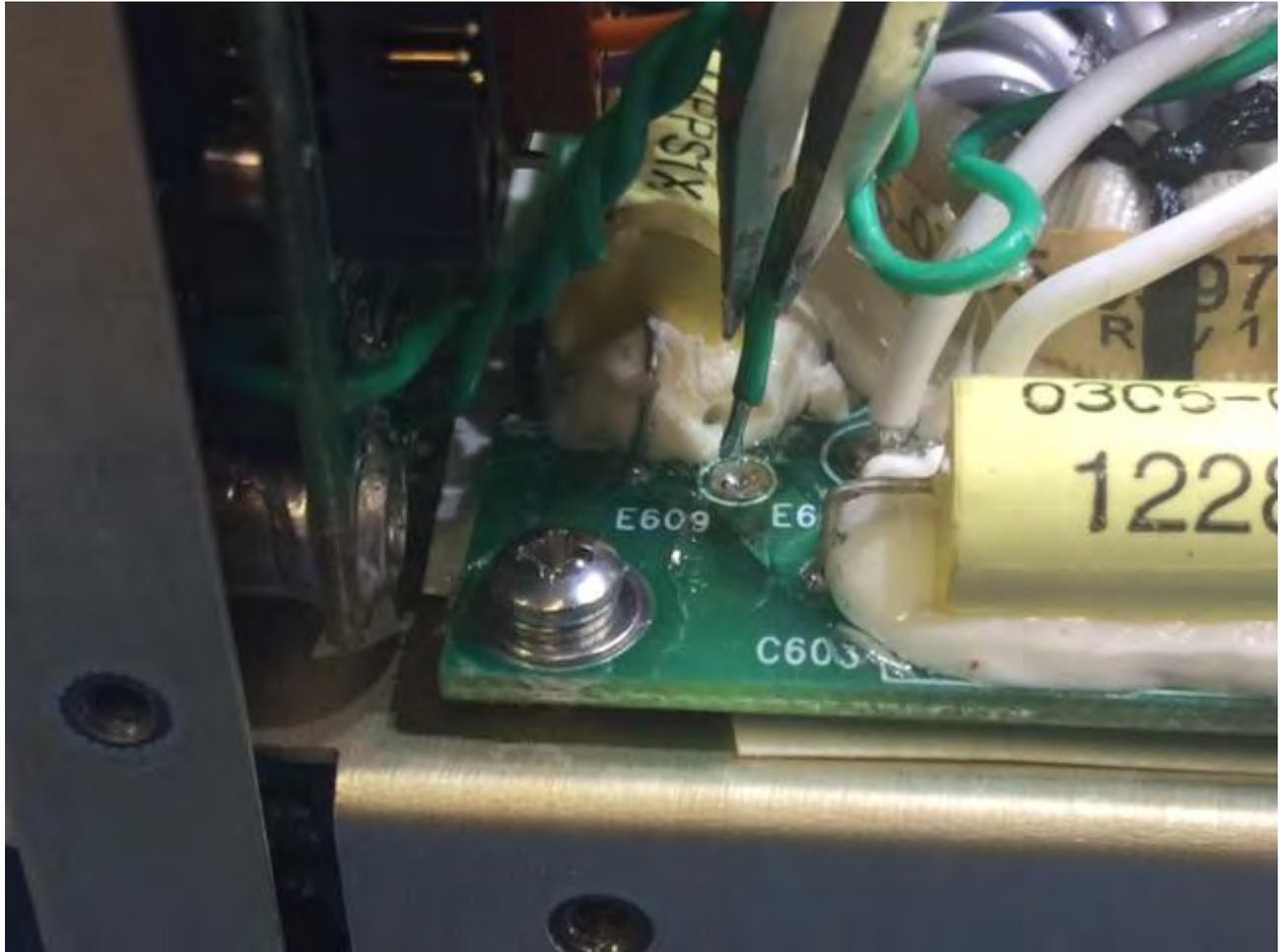


Figure 7

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Figure 8

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Figure 9

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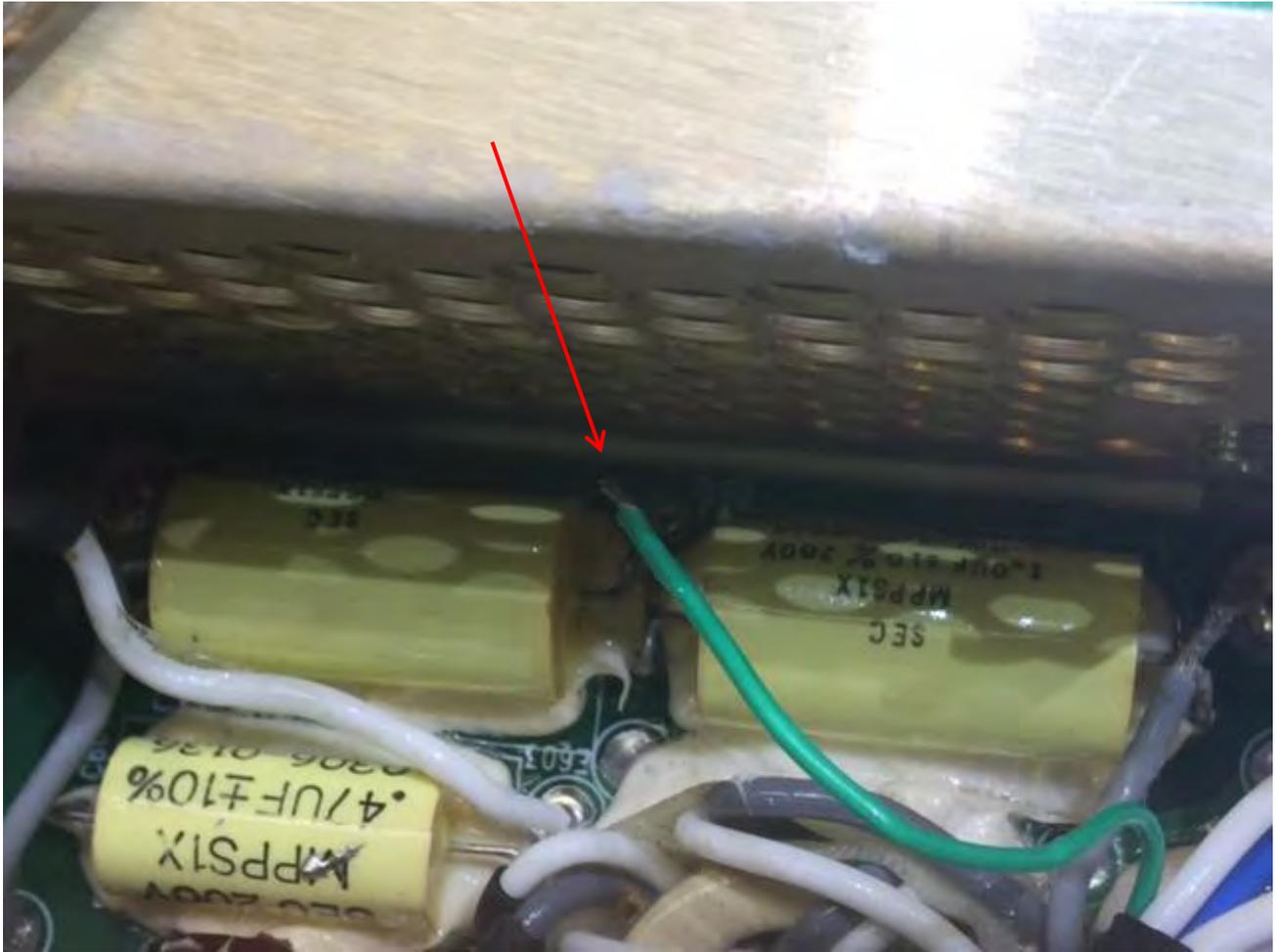


Figure 10

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Figure 11

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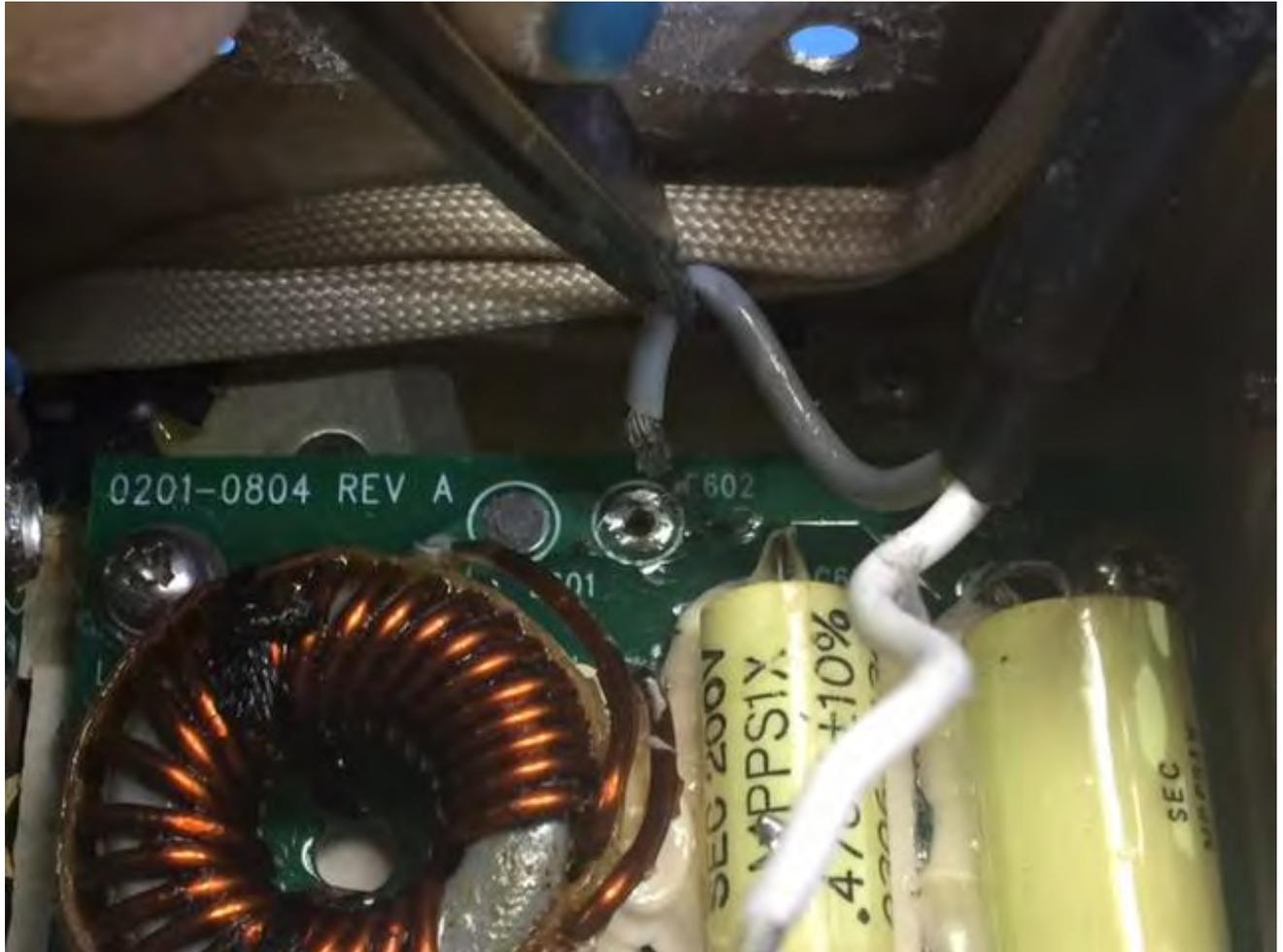


Figure 12

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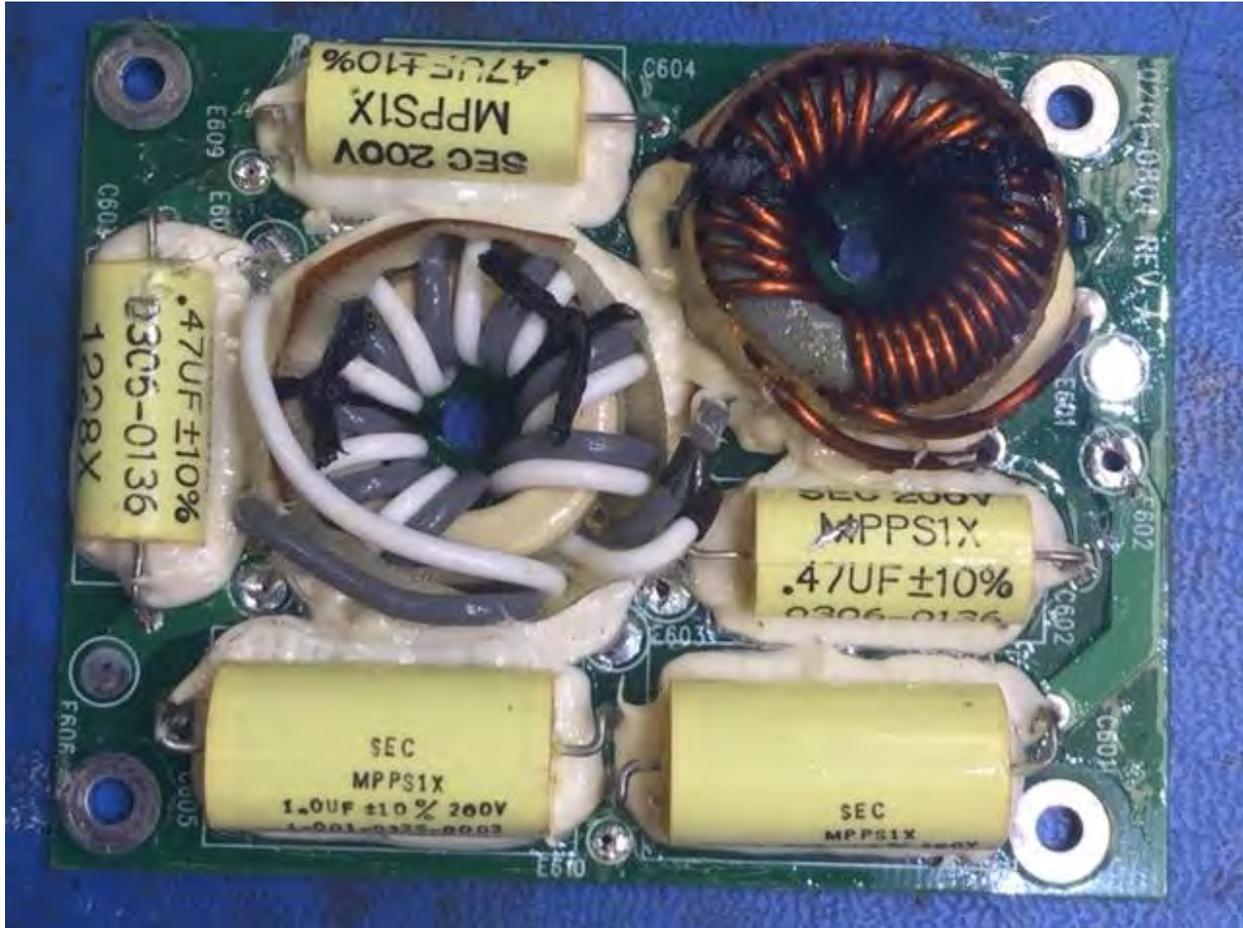


Figure 13

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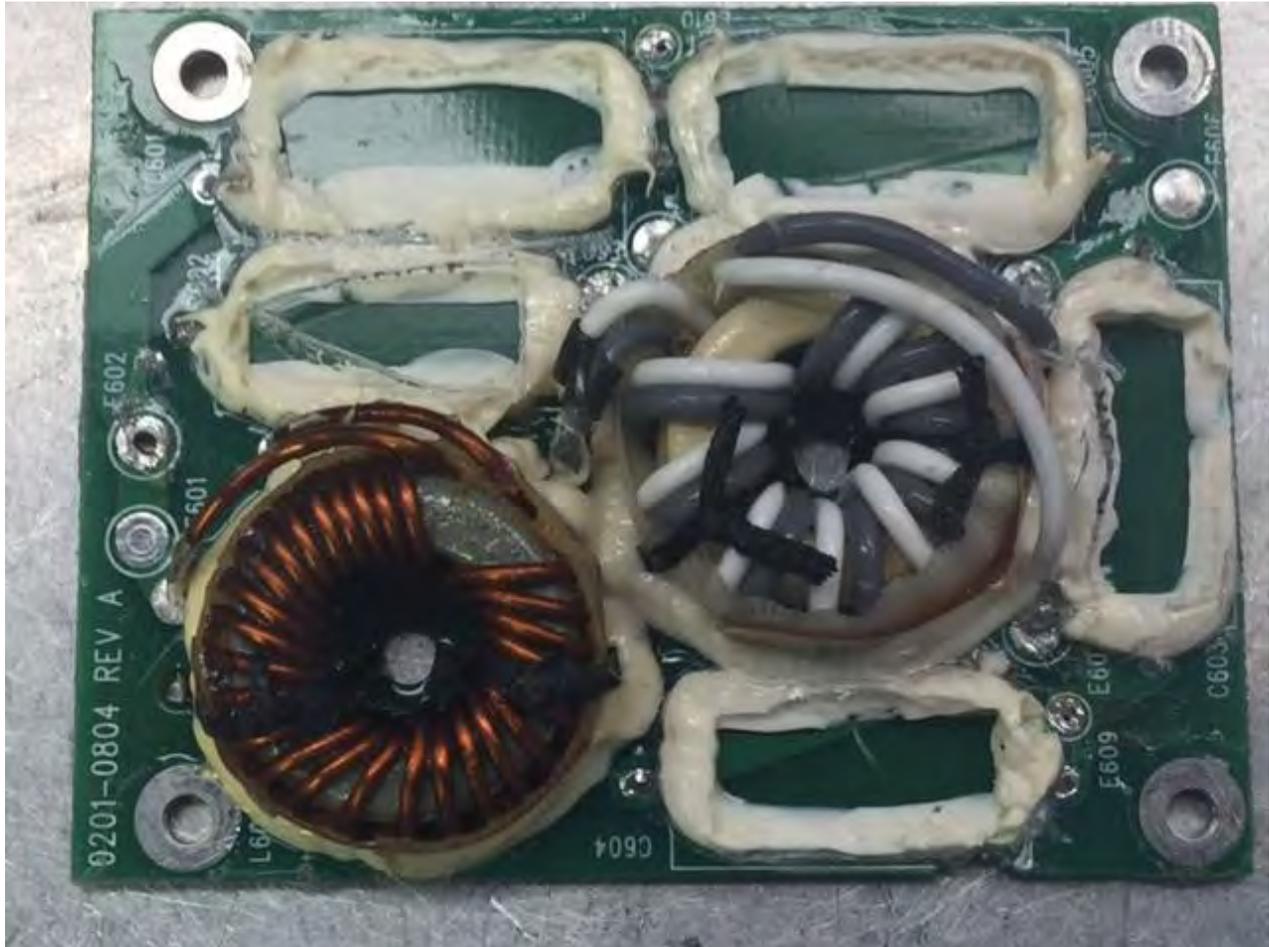


Figure 14

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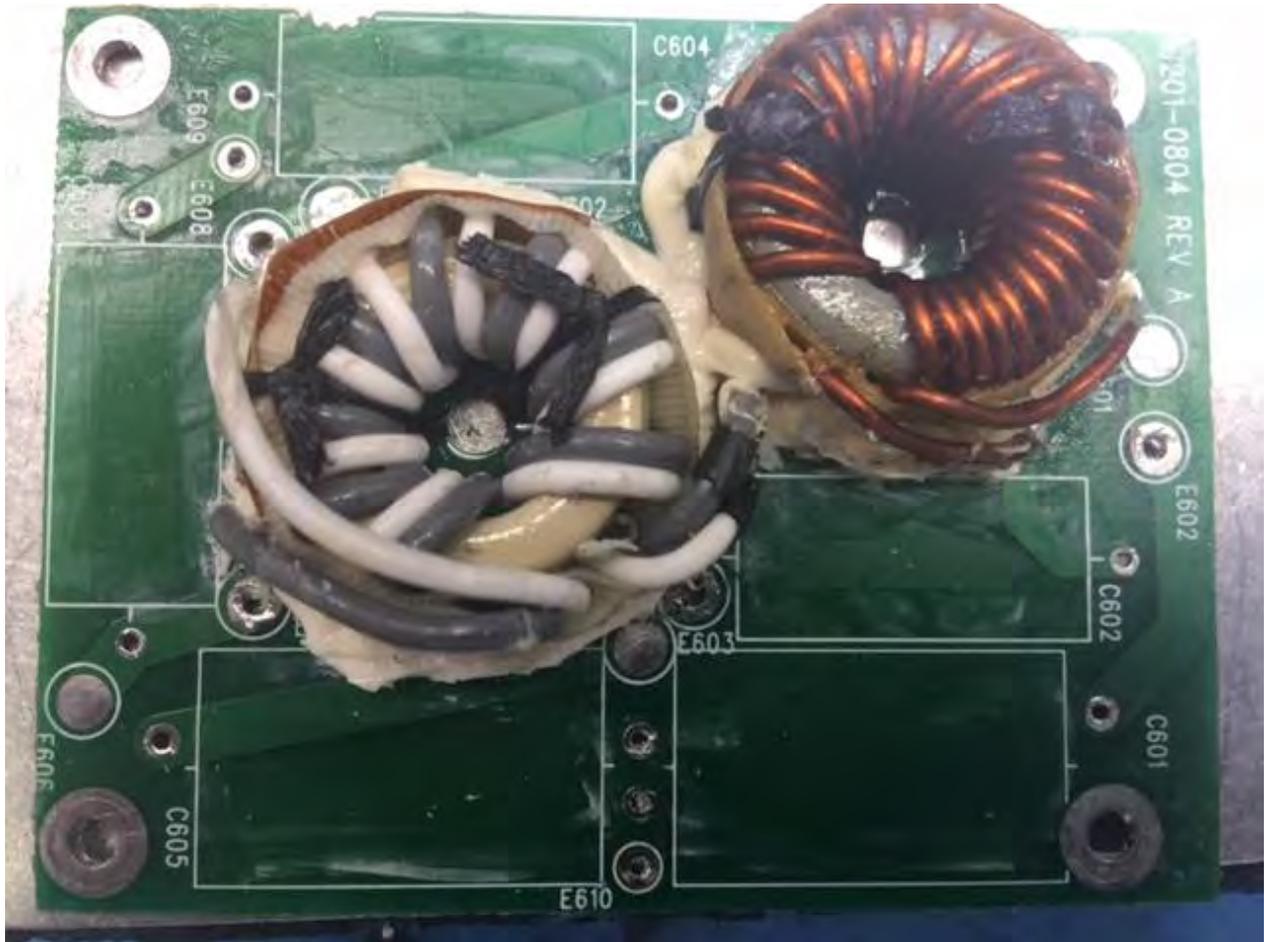


Figure 15

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Figure 16

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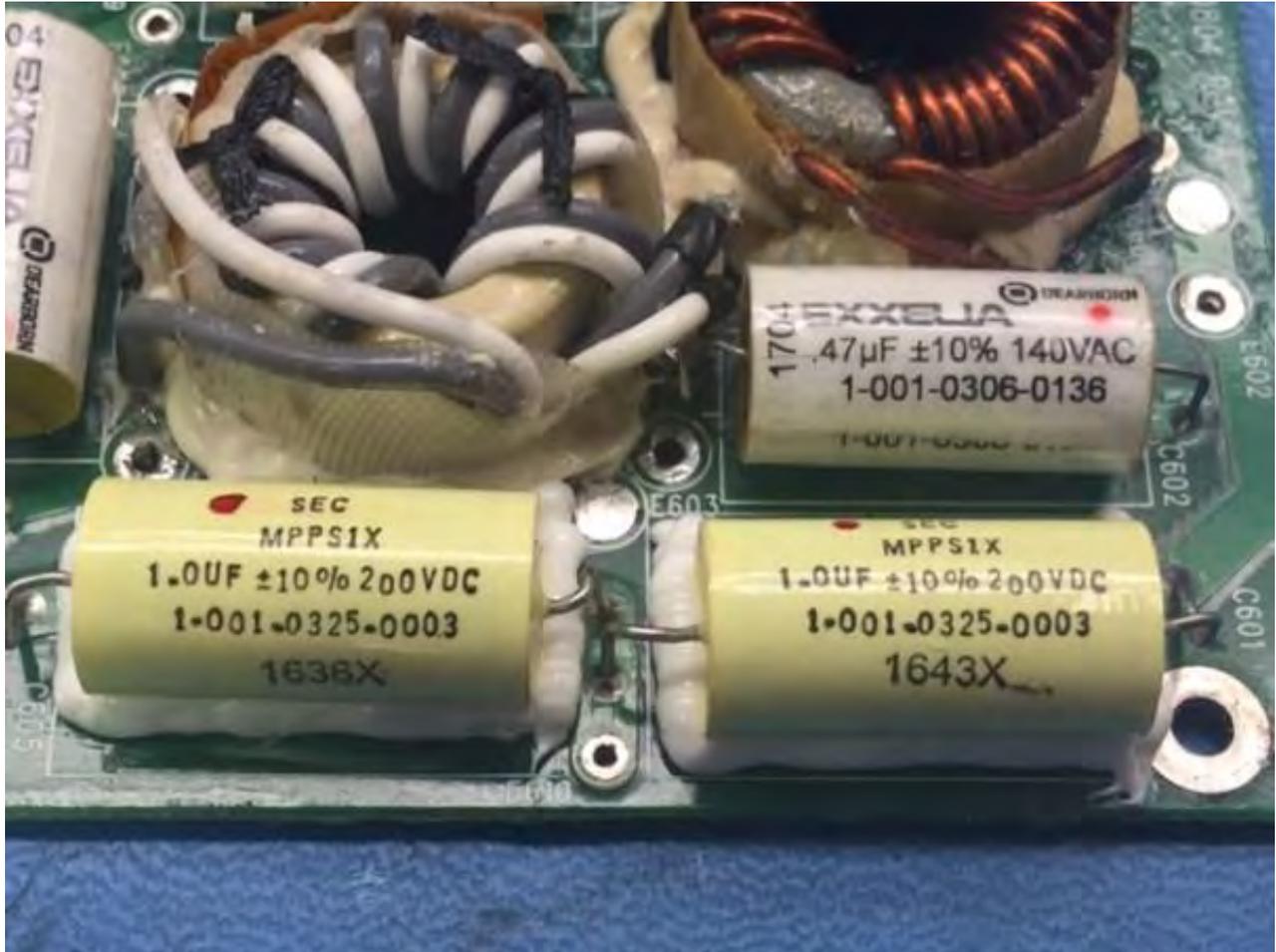


Figure 17

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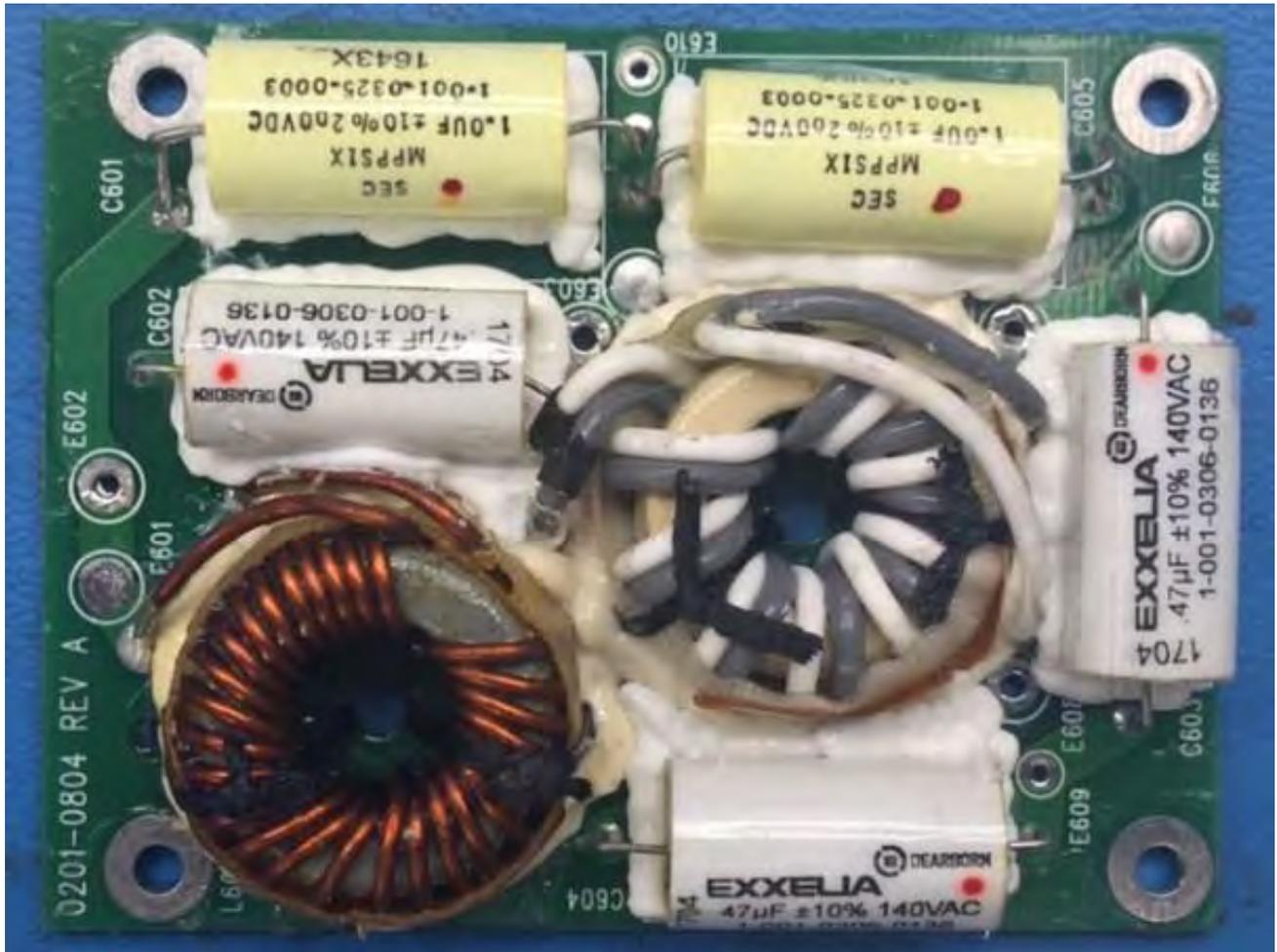


Figure 18

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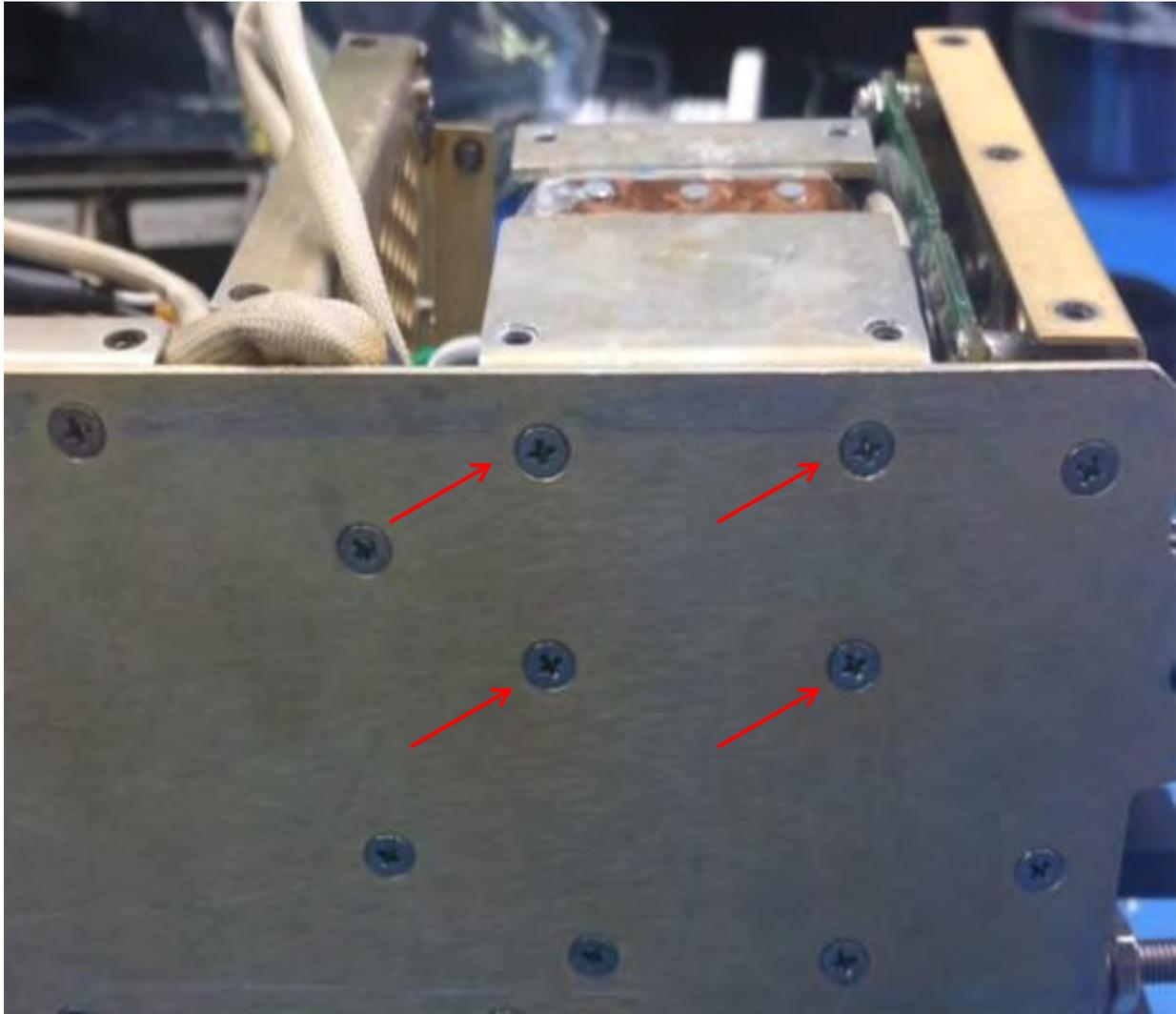


Figure 19

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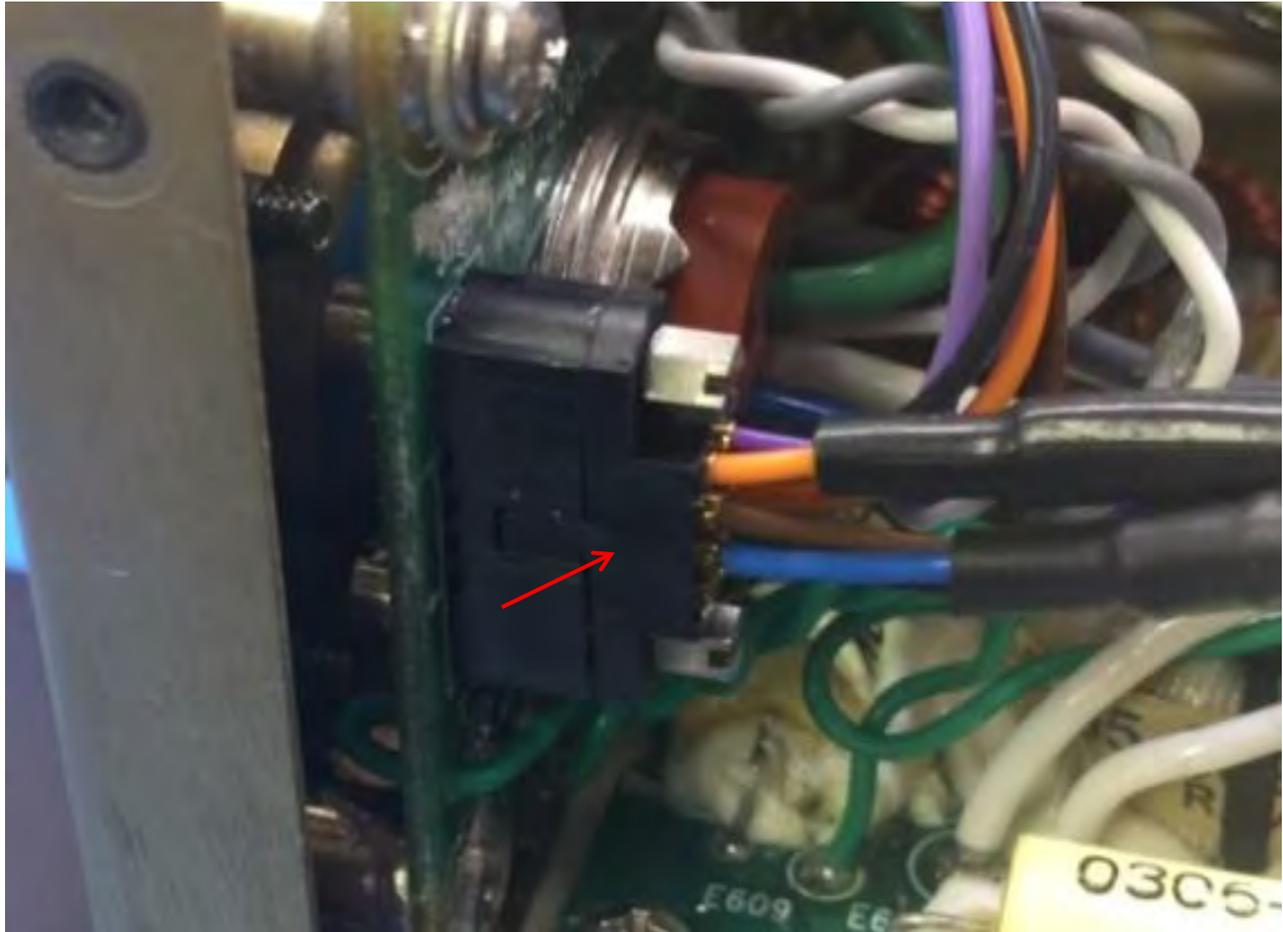


Figure 20

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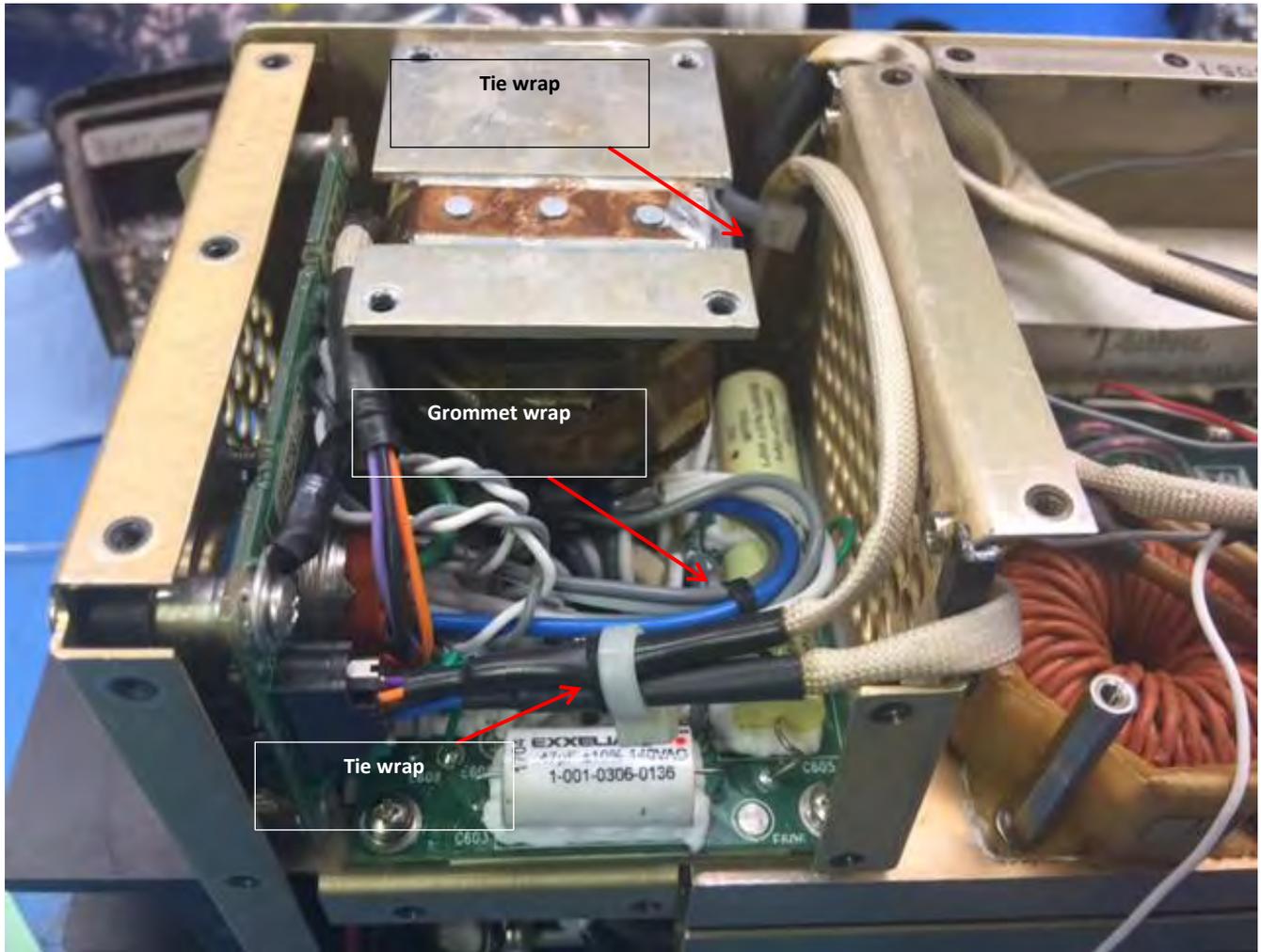


Figure 21

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APPENDIX A

This Service Bulletin does not apply to part number 1-002-0102-2173 serial numbers listed in Table 1, even if the units are not marked as “MOD F”. In addition, all serial numbers after serial number KC001126 have been modified in production by anticipation and are not subject to this Service Bulletin.

TABLE 1

1-002-0102-2173 Serial Numbers not subject to this Service Bulletin	
KC000012	KC000551
KC000061	KC000562
KC000073	KC000572
KC000078	KC000588
KC000112	KC000593
KC000132	KC000600
KC000137	KC000605
KC000228	KC000614
KC000250	KC000614
KC000257	KC000615
KC000267	KC000618
KC000292	KC000625
KC000325	KC000636
KC000356	KC000637
KC000374	KC000642
KC000404	KC000671
KC000418	KC000690
KC000441	KC000693
KC000451	KC000719
KC000456	KC000768
KC000466	KC000784
KC000488	KC000792
KC000489	KC000809
KC000490	KC000829
KC000499	KC000832
KC000501	KC000861
KC000512	KC000931
KC000513	KC000939
KC000521	KC000941
KC000526	KC000949
KC000532	KC000965
KC000533	KC000987
KC000539	KC000999
KC000547	KC001083
KC000549	

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