



Customer Service Bulletin SD80001 Upgrade to SLP45000 SPA PCB

Continual Improvement is a cornerstone of the Southern Avionics Company Quality Management System. We issue Customer Service Bulletins to inform our valued customers of product upgrades and/or helpful technical information that may enhance the reliability of your equipment.

We have recently made improvements to our SLP45000 SPA PCB assembly to eliminate potential failure modes and/or increase long-term performance and reliability of your SE125 Transmitter systems.

Application: This bulletin applies to **SLP45000 SPA PCB, Revision D or earlier**. This applies to SE transmitters purchased before 14 February, 2013. SLP45000 is used in the SLE45000 SPA Modules in SE series Transmitters.

The SLE45000 module is used in transmitter model SE125 IP66 Single with part numbers SLF33300 and SLF33001, and in transmitter model SE125 IP66 Dual with part numbers SLF33400, SLF33401, and SLF33402.

Identifying Transmitter part numbers listed above:

Locate the serial tag on your transmitter enclosure. The prefix "SLF" plus the first five (5) characters of your serial number indicate the SAC Transmitter Part Number as detailed below. The specific transmitters affected are referenced by the last four (4) characters in your serial number.

For example: A Serial Number of 33010XX0L0024 represents a SAC Transmitter part number of SLF33010.

SLP45000 SPA PCB upgrade details: We have identified the potential for a SPA over-current fault in the SLP45000 to damage the SPA power FETs Q2 and Q3, and possibly also damage the SLP45100 Power Control Modulator. On SLP45000 Rev E, we removed transistor Q1 and resistor R7 from the circuit to provide a softer over-current shutdown.



Tools needed:

- Phillips Head Screwdriver #2
- Phillips Head Screwdriver #1
- Soldering iron (25 Watt)

Time required:

0.25 Manhours

Equipment needed:

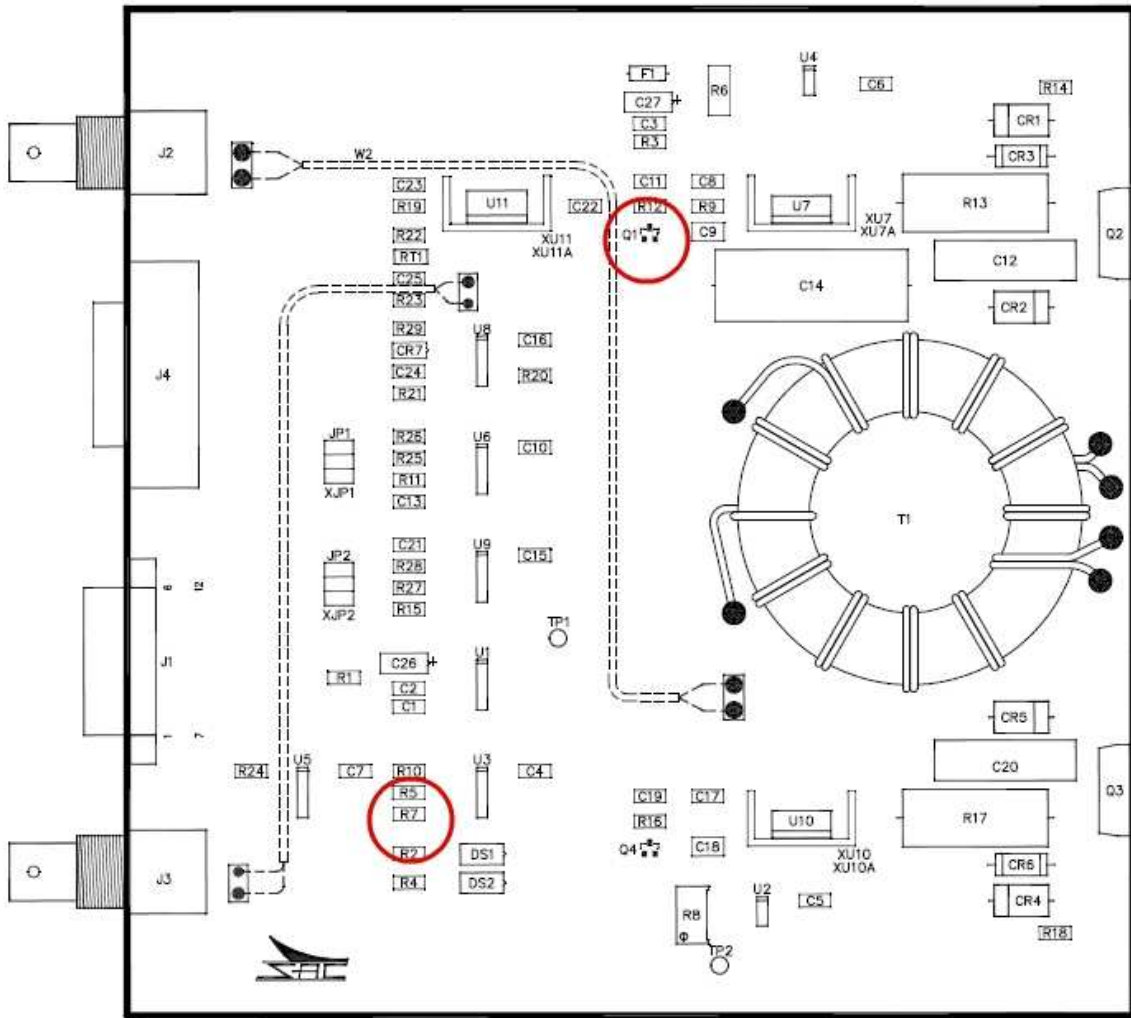
None

Field update instructions for SLP45000 SPA PCB:

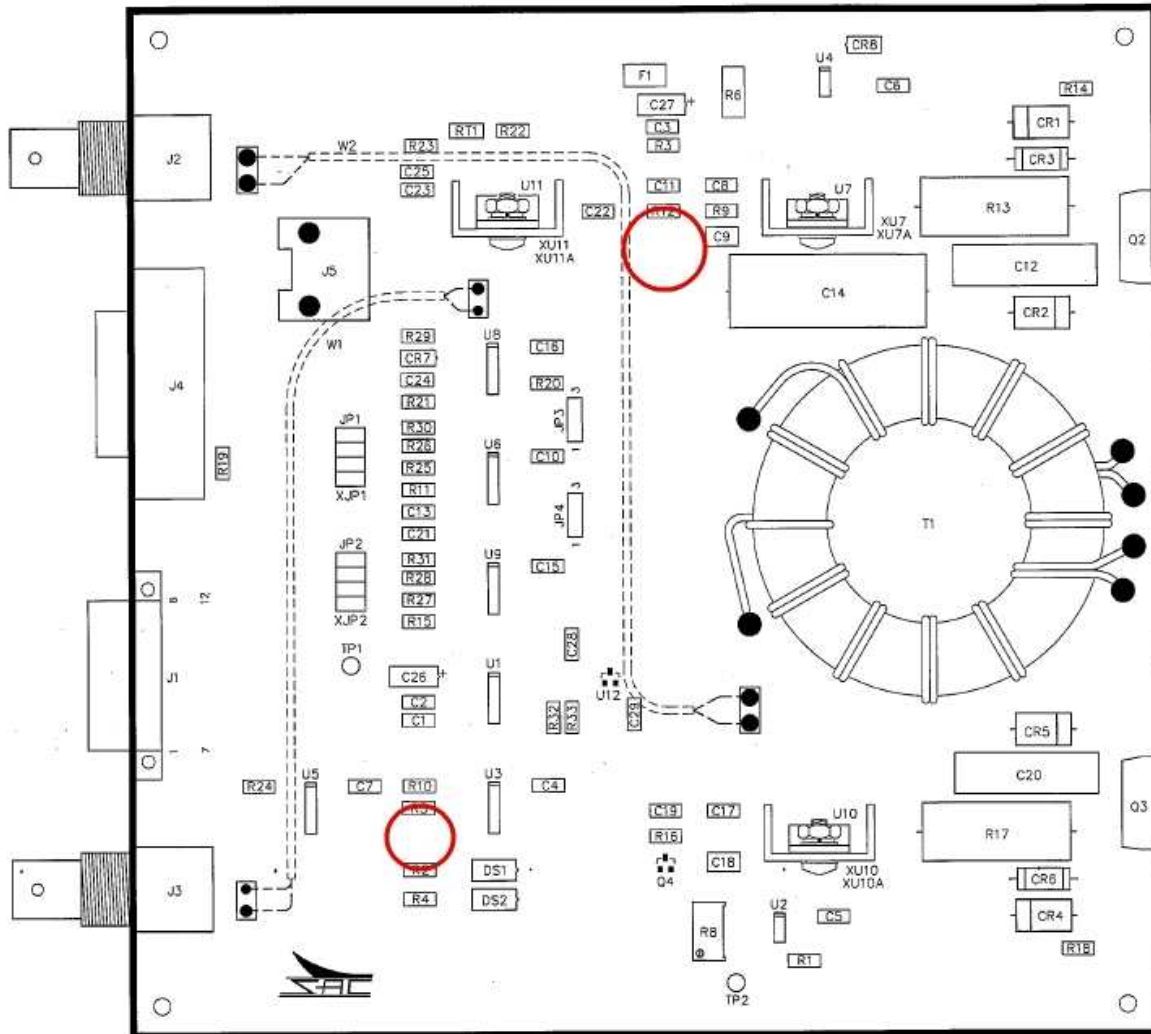
1. Disconnect and remove the SLE45000 SPA Module assembly from the transmitter drawer(s).
2. Remove the aluminum cover on the SLE45000 SPA Module assembly.
3. De-solder and remove transistor Q1 and resistor R7.
4. Reinstall the aluminum cover on the SLE45000 SPA Module assembly and reconnect the SPA assembly into the transmitter drawer(s).

Diagrams and/or photographs are included for your assistance. Please insert this bulletin, including documents below, in your manual. Thank you for choosing Southern Avionics Company for your NDB needs. We appreciate your business.

This Customer Service Bulletin and others may be found at <http://www.southernavionics.com/customer-service-bulletins/>.



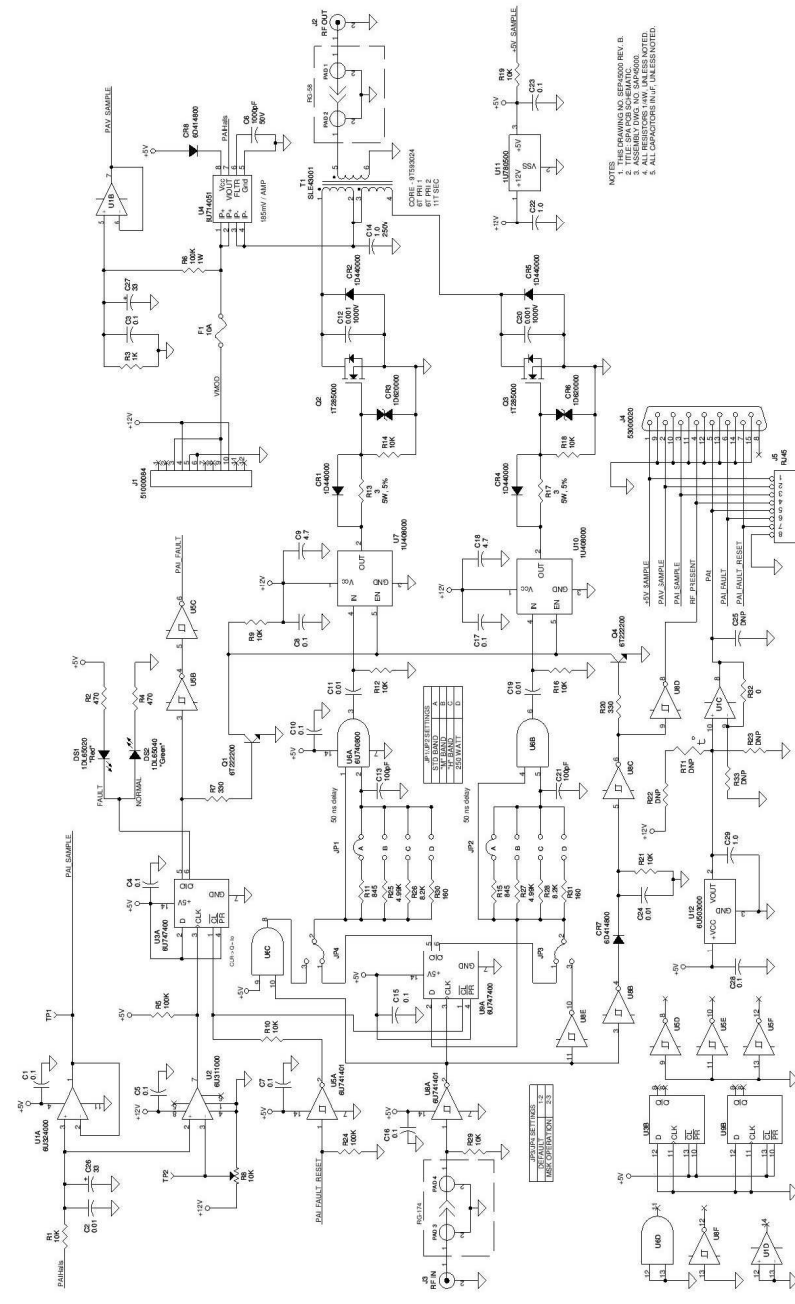
SLP45000 - BEFORE



SLP45000 - AFTER



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SEP45000 - SPA SCHEMATIC

**Assembly, SPA PCB - SLP45000****Assembly, SPA PCB - SLP45000**

REFERENCE DESIGNATOR	COMPONENT	DESCRIPTION
C1	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C2	6C441010	CAPACITOR; .01UF, 50V, CERAMIC CHIP 1206
C3	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C4	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C5	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C6	6C541010	CAPACITOR; 1000PF, 50V, CERAMIC CHIP 1206 (AUX)
C7	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C8	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C9	6C564700	CAPACITOR; 4.7UF, 25V, CERAMIC, 1210
C10	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C11	6C441010	CAPACITOR; .01UF, 50V, CERAMIC CHIP 1206
C12	1C940171	CAPACITOR; 0.001UF, 2000VDC, 500VAC, POLY FILM
C13	6C521010	CAPACITOR; 100PF, 50V, CERAMIC CHIP 1206
C14	1C261050	CAPACITOR; 1UF, 250V, METAL FILM
C15	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C16	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C17	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C18	6C564700	CAPACITOR; 4.7UF, 25V, CERAMIC, 1210
C19	6C441010	CAPACITOR; .01UF, 50V, CERAMIC CHIP 1206
C20	1C940171	CAPACITOR; 0.001UF, 2000VDC, 500VAC, POLY FILM
C21	6C521010	CAPACITOR; 100PF, 50V, CERAMIC CHIP 1206
C22	6C410000	CAPACITOR; 1.0UF, 25V, CERAMIC 1206
C23	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C24	6C441010	CAPACITOR; .01UF, 50V, CERAMIC CHIP 1206
C25	6C451010	CAPACITOR; .1UF, 50V, CERAMIC CHIP 1206
C26	6C373300	CAPACITOR; 33 UF, 16V, TANTALUM CHIP
C27	6C373300	CAPACITOR; 33 UF, 16V, TANTALUM CHIP
C29	6C410000	CAPACITOR; 1.0UF, 25V, CERAMIC 1206
CR1	1D440000	DIODE, ULTRAFast RECOV RCT, 600V,4A



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Assembly, SPA PCB - SLP45000

REFERENCE DESIGNATOR	COMPONENT	DESCRIPTION
CR2	1D440000	DIODE, ULTRAFAST RECOV RCT, 600V,4A
CR3	1D620000	DIODE, TVS, 20V BIDIRECTIONAL
CR4	1D440000	DIODE, ULTRAFAST RECOV RCT, 600V,4A
CR5	1D440000	DIODE, ULTRAFAST RECOV RCT, 600V,4A
CR6	1D620000	DIODE, TVS, 20V BIDIRECTIONAL
CR7	6D414800	DIODE; SMALL SIGNAL, 100V, 300MA, SMT SOD80
CR8	6R100020	RESISTOR; 0 OHM, 1/4W, JUMPER, 1206
DS1	1DL65020	LED, RED, SMT 1206
DS2	1DL65040	LED, GREEN, SMT 1206
F1	9F830105	FUSE, 10 AMP, 125V, VERY FAST
J1	51000084	CONNECTOR; R/A HEADER, 12 POS (2X6), 0.165 PITCH, NYLON, WH
J2	56000027	CONNECTOR; R/A BNC RECEPTACLE JACK, PCB MT METAL BODY
J3	56000027	CONNECTOR; R/A BNC RECEPTACLE JACK, PCB MT METAL BODY
J4	53000020	CONNECTOR; R/A DB15 FEMALE, PCB MOUNT
JP1	51000093	CONNECTOR; DB15 FEMALE PCB MOUNT
JP2	51000093	CONNECTOR; DB15 FEMALE PCB MOUNT
Q1	6T222200	TRANSISTOR; NPN, GEN, PURP SOT-23, SMT
Q2	1T285000	TRANSISTOR, N-CHANNEL MOSFET, 600V, 36A, TO 247
Q3	1T285000	TRANSISTOR, N-CHANNEL MOSFET, 600V, 36A, TO 247
Q4	6T222200	TRANSISTOR; NPN, GEN, PURP SOT-23, SMT
R1	6R141020	RESISTOR; 10K OHM, 1/4W, 1% , SMT 1206
R2	6R124720	RESISTOR; 470 OHM, 1/4W, 1%, 1206
R3	6R131020	RESISTOR; 1K OHM, 1/4W, 1%, 1206
R4	6R124720	RESISTOR; 470 OHM, 1/4W, 1%, 1206
R5	6R151020	RESISTOR; 100K OHM, 1/4W, 1%, THICK FILM, 1206
R6	6R151050	RESISTOR; 100K OHM, 1W, 1%, THICK FILM, 2512
R7	6R123300	RESISTOR; 330 OHM, 1/4W, 1%, THICK FILM, 1206
R8	1RV41041	POT; 10K OHM, 0.5W, CERMET
R9	6R141020	RESISTOR; 10K OHM, 1/4W, 1% , SMT 1206

**Assembly, SPA PCB - SLP45000**

REFERENCE DESIGNATOR	COMPONENT	DESCRIPTION
R10	6R141020	RESISTOR; 10K OHM, 1/4W, 1% , SMT 1206
R11	6R128420	RESISTOR; 845 OHM, 1/4W, 1%, THICK FILM, 1206
R12	6R141020	RESISTOR; 10K OHM, 1/4W, 1% , SMT 1206
R13	1RA03380	RESISTOR; 3 OHM, 5W, 5%, METAL OXIDE, AXIAL
R14	6R141020	RESISTOR; 10K OHM, 1/4W, 1% , SMT 1206
R15	6R128420	RESISTOR; 845 OHM, 1/4W, 1%, THICK FILM, 1206
R16	6R141020	RESISTOR; 10K OHM, 1/4W, 1% , SMT 1206
R17	1RA03380	RESISTOR; 3 OHM, 5W, 5%, METAL OXIDE, AXIAL
R18	6R141020	RESISTOR; 10K OHM, 1/4W, 1% , SMT 1206
R19	6R141020	RESISTOR; 10K OHM, 1/4W, 1% , SMT 1206
R20	6R123300	RESISTOR; 330 OHM, 1/4W, 1%, THICK FILM, 1206
R21	6R141020	RESISTOR; 10K OHM, 1/4W, 1% , SMT 1206
R22	6R131520	RESISTOR; 1.5K OHM, 1/4W, 1%, THICK FILM, 1206
R23	6R131020	RESISTOR; 1K OHM, 1/4W, 1%, 1206
R24	6R151020	RESISTOR; 100K OHM, 1/4W, 1%, THICK FILM, 1206
R25	6R134920	RESISTOR; 4.99K OHM, 1/4W, 1%, THICK FILM, 1206
R26	6R138220	RESISTOR; 8.2K OHM, 1/4W, 1% ,THICK FILM, 1206
R27	6R134920	RESISTOR; 4.99K OHM, 1/4W, 1%, THICK FILM, 1206
R28	6R138220	RESISTOR; 8.2K OHM, 1/4W, 1% ,THICK FILM, 1206
R29	6R141020	RESISTOR; 10K OHM, 1/4W, 1% , SMT 1206
R30	6R121620	RESISTOR; 160 OHM, 1/4W, 1% THICK FILM
R31	6R121620	RESISTOR; 160 OHM, 1/4W, 1% THICK FILM
R32	6R100020	RESISITOR, 0 OHM 1/4W JUMPER 1206
RT1	9T300002	THMS 1K DISC
T1	SLE43001	ASSEMBLY, RF TRANSFORMER SE SPA 125W
TP1	9T200028	TEST POINT, P.C., MULTIPURPOSE RED
U1	6U324000	IC; OP AMP, QUAD 1.8-5V RAIL TO RAIL IO, 14PIN SOIC
U2	6U311000	IC; VOLTAGE COMPARATOR
U3	6U747400	IC; FLIP FLOP D TYPE DUAL 14 PIN SOIC, SMT
U04	6U714051	IC; HALL EFFECT SENSOR, 20A 8-PIN SOIC
U5	6U741401	IC; HEX SCHMITT TRIGGER INVERTER 14 PIN



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Assembly, SPA PCB - SLP45000

REFERENCE DESIGNATOR	COMPONENT	DESCRIPTION
U6	6U740800	IC; QUAD 2-INPUT AND GATE, 14-PIN SOIC
U7	1U408000	IC, MOSFET DRIVER, LOW SIDE, 8A, TO220-5
U8	6U741401	IC; HEX SCHMITT TRIGGER INVERTER 14 PIN
U9	6U747400	IC; FLIP FLOP D TYPE DUAL 14 PIN SOIC, SMT
U10	1U408000	IC, MOSFET DRIVER, LOW SIDE, 8A, TO220-5
U11	1U780500	IC, +5VR 1.5A 35V T0220
W1	32200000	COAX CABLE; 26/7 1C SHLD PVC RG-174
W2	32500000	COAX CABLE; 20 1C SOL SHLD PVC RG58/U
XJP1	9S320001	SHUNT STAND PROFILE GOLD
XJP2	9S320001	SHUNT STAND PROFILE GOLD
XU10	9H180003	HEATSINK; TO-220, LOW PROFILE CH. STYLE 0.75
XU10A	9I550000	INSULATOR, THERMALSIL, FOR T0-220
XU11	9H180003	HEATSINK; TO-220, LOW PROFILE CH. STYLE 0.75
XU11A	9I550000	INSULATOR, THERMALSIL, FOR T0-220
XU7	9H180003	HEATSINK; TO-220, LOW PROFILE CH. STYLE 0.75
XU7A	9I550000	INSULATOR, THERMALSIL, FOR T0-220