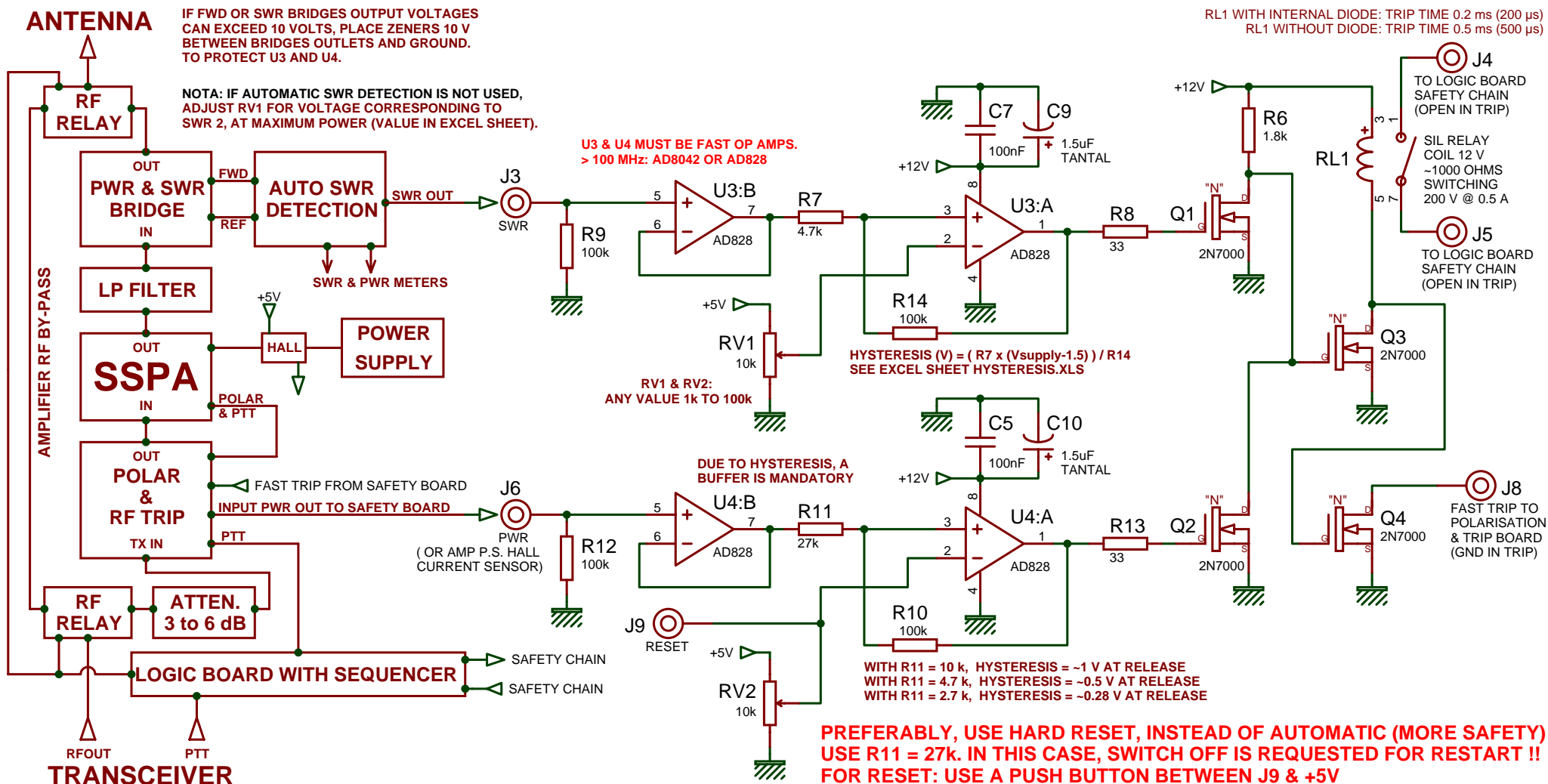


**FOR LD-MOS, PROTECTION AGAINST EXCESS OF INPUT POWER (OR DRAIN CURRENT) IS MANDATORY.  
PROTECTION AGAINST EXCESS OF OUTPUT SWR IS OPTIONAL, BUT RECOMMENDED.**



FOR POWER AND SWR BRIDGES, SEE: [http://f1frv.free.fr/main3h\\_SWR\\_Bridges.html](http://f1frv.free.fr/main3h_SWR_Bridges.html)

FOR AUTOMATIC SWR DETECTION, SEE: [http://f1frv.free.fr/main3i\\_Auto\\_SWR.html](http://f1frv.free.fr/main3i_Auto_SWR.html)

FOR OUTPUT SWR BRIDGE, SEE EXAMPLE EXCEL SHEET: SWR\_bridge\_1200\_Wats.xls

FOR POLARISATION, SEE: [http://f1frv.free.fr/main1c\\_Polarisation\\_Transistors.html](http://f1frv.free.fr/main1c_Polarisation_Transistors.html)

Rev1: Updated wirings between boards  
Added optional HALL sensor  
Rev2: Added J9 for hard reset

**THIS SAFETY BOARD IS TO BE USED WITH LOGIC BOARD  
USE PREFERABLY SHIELDED WIRES FOR ALL BOARD INPUTS & OUTPUTS**

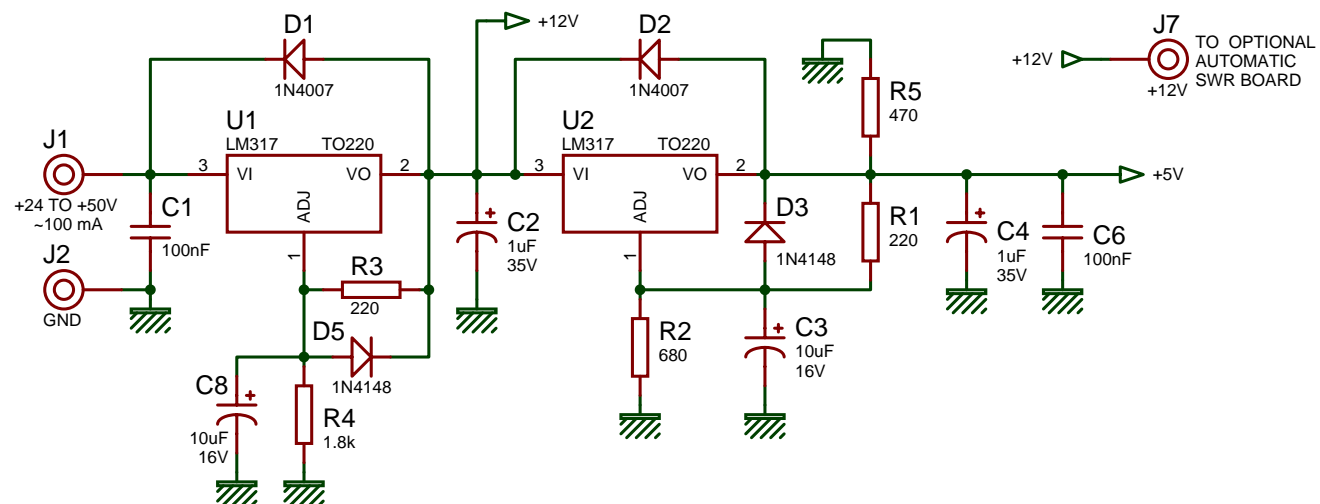
**SAFETY BOARD FOR SSPA  
PROTECTION MAX PWR AND MAX SWR**

DATE: 15/01/15 REV: 2 PAGE: 1/2  
BY: f1frv@sfr.fr  
DOC N°: Amateur Radio

FOR DIFFERENT VOLTAGES, IF NEEDED, SEE EXCEL SHEET LM317.XLS

LM317: 40 V MAXI & 3 V MINIMUM  
DIFFERENTIAL INPUT / OUTPUT  
 NOTA: SOME LM317 ACCEPT 60 V

FOR A GOOD REGULATION,  
 OUTPUT CURRENT MUST BE  
 MORE THAN 5 mA >> R5 = 470



SAFETY FOR SSPA  
 POWER SUPPLY 24 TO 50 V

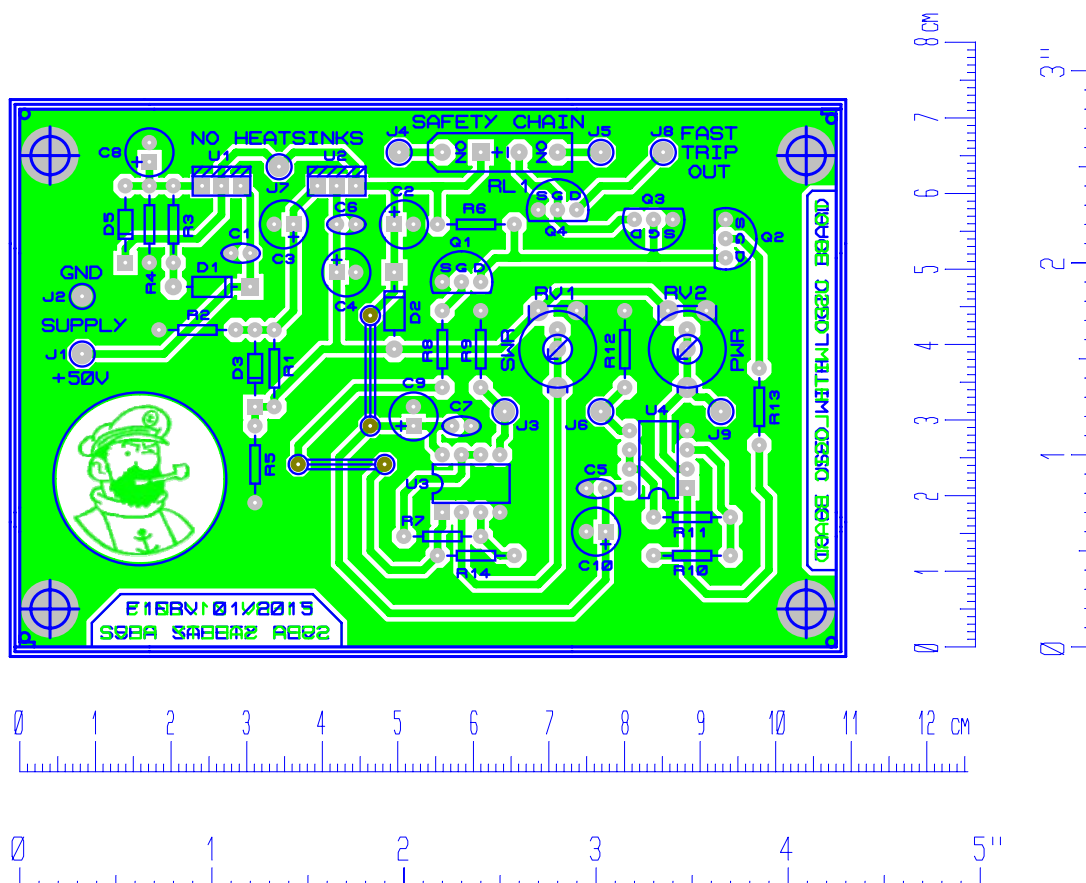
DATE: 26/09/14 REV: 0 PAGE: 2/2  
 BY: f1frv@sfr.fr  
 DOC N°: Amateur Radio

SAFETY FOR SSPA: SUPPLY 24 TO 50 VOLTS,  
PROTECTION MAX INPUT PWR, MAX OUTPUT SWR

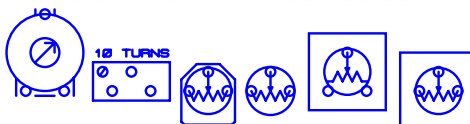
DATE: 01/2015 REV: 2  
BY: F1FRV@SFR.FR  
DOC N°: AMATEUR RADIO

FIT INTO SCHUBERT TINY BOX 74 × 111 × 40 mm  
NE PAS OUBLIER LES 2 STRAPS / DON'T FORGET THE 2 STRAPS  
CIRCUIT SIMPLE FACE DIMENSIONS 71 × 108 mm 121 TROUS  
PCB SINGLE SIDE DIMENSIONS 2.8" × 4.25" 121 HOLES  
FIXATION 4 VIS M3 ENTRAXES 60 × 100 mm  
FIXATION 4 × M3 SCREWS 60 × 100 mm BETWEEN AXYS

THIS BOARD IS TO BE USED WITH F1FRV LOGIC BOARD  
ORIGINALLY DESIGNED FOR TRIODE OR TETRODE AMPLIFIERS.  
IT INCLUDES A SEQUENCER, PTT, SAFETY CHAIN, ETC.



ALL THESE TYPES OF VARIABLE  
RESISTORS CAN BE USED

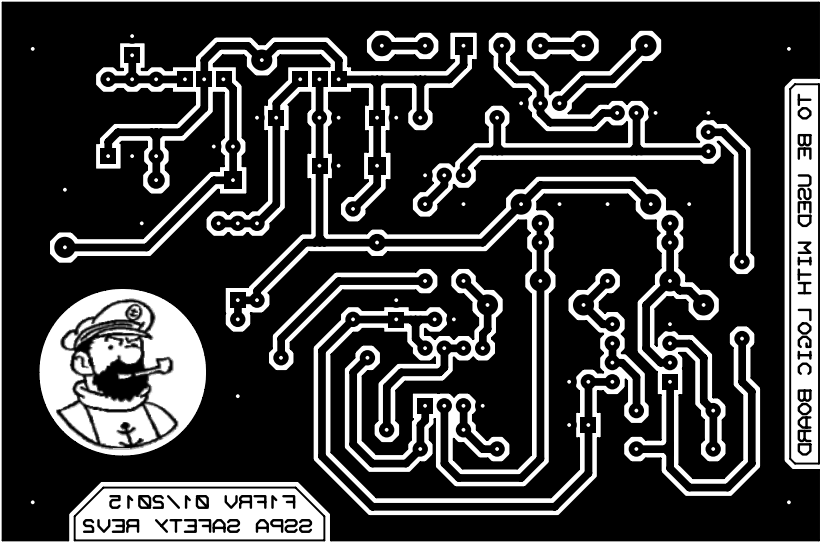


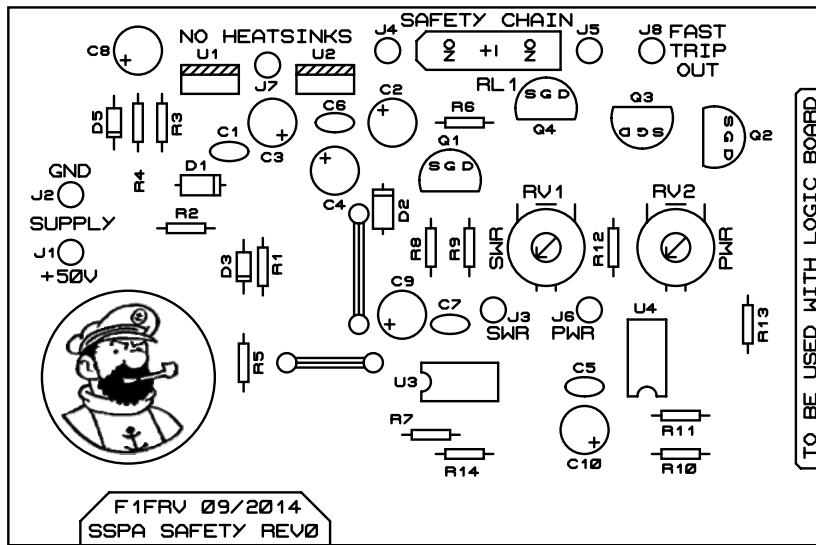
# BILL OF MATERIALS

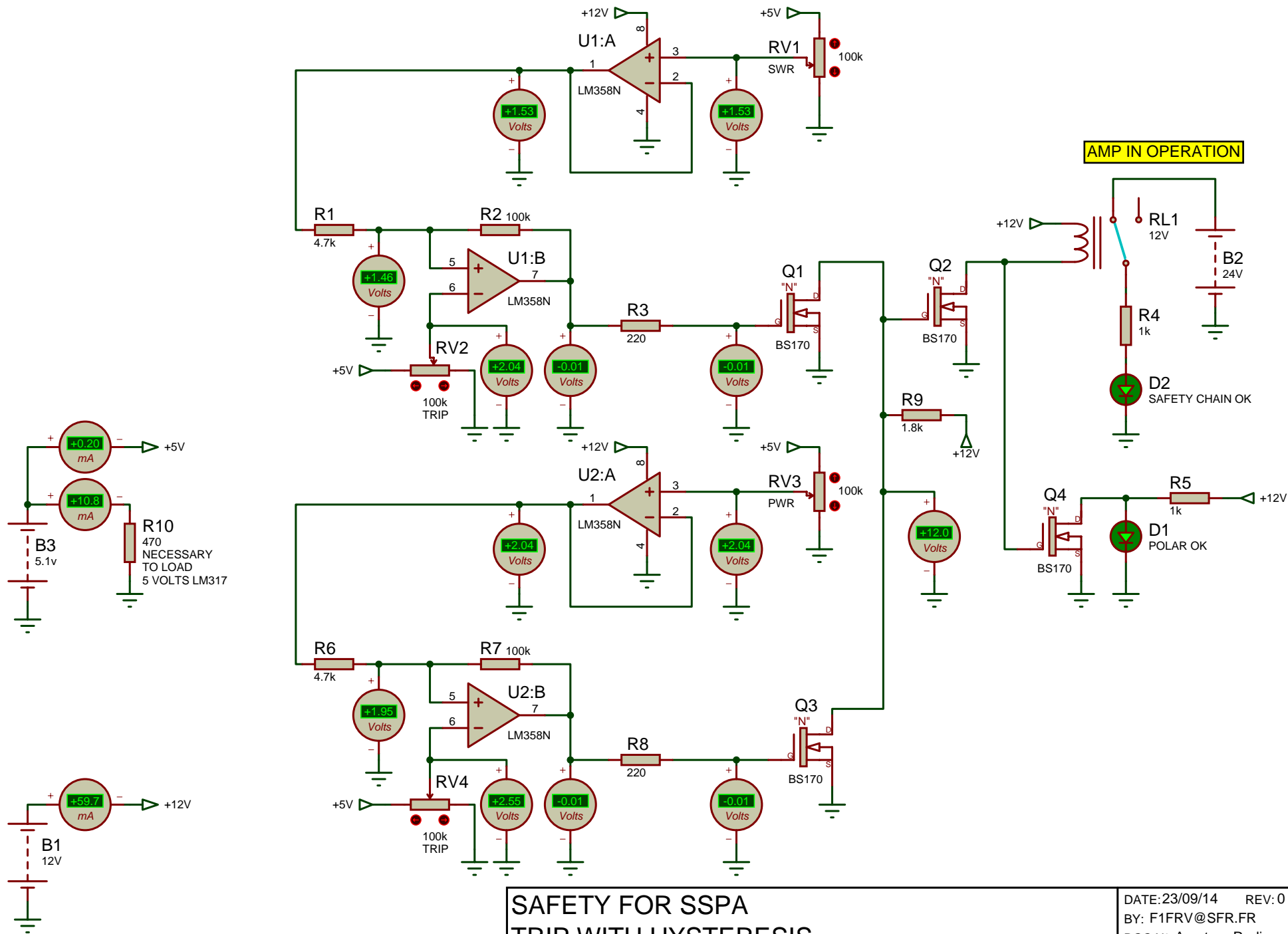
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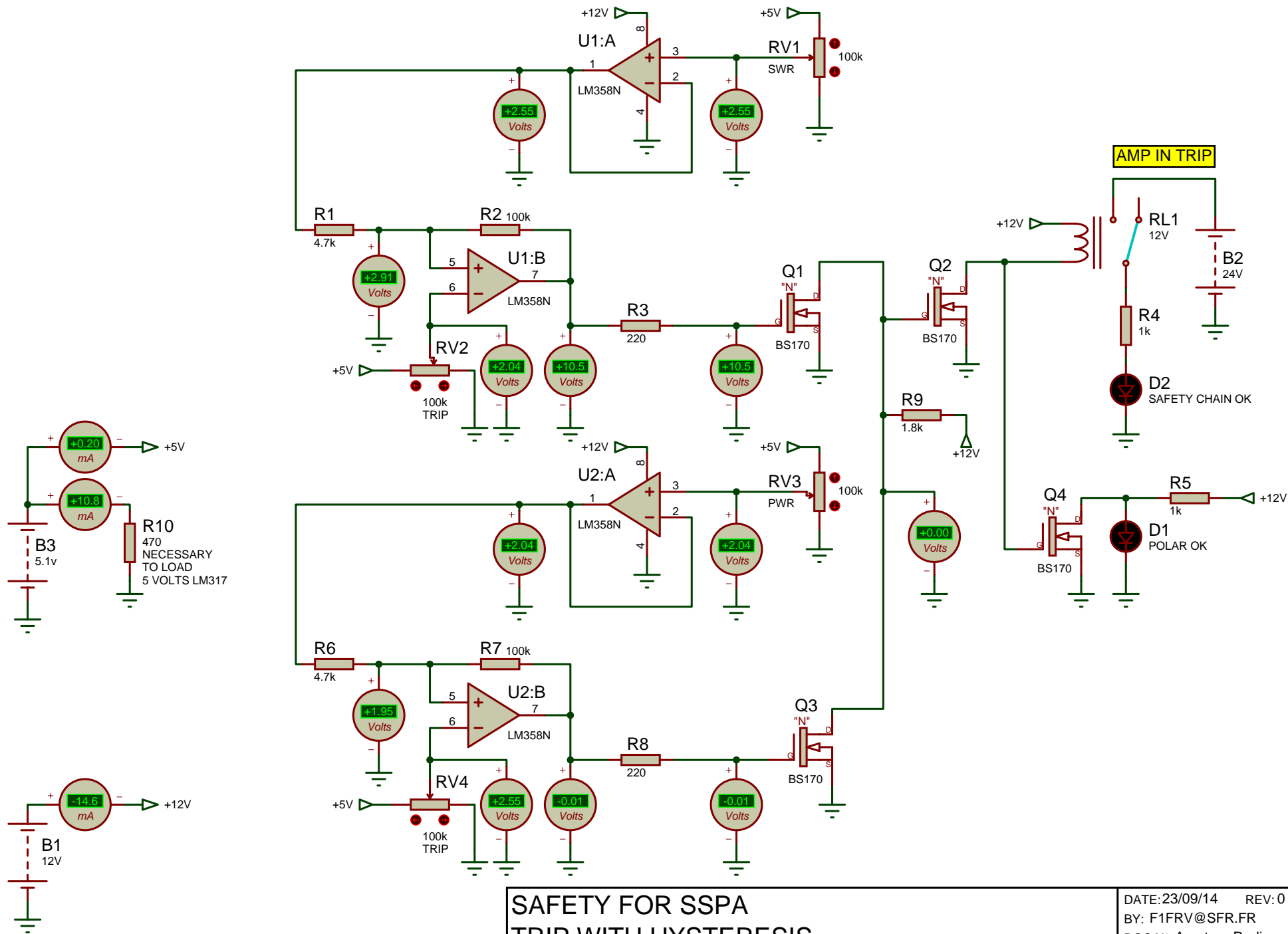
Design: SAFETY FOR SSPA  
 Doc. no.: Amateur Radio  
 Revision: 0  
 Author: flfrv@sfr.fr  
 Modified: 24/09/14

QTY	PART-REFS	VALUE	PACKAGE
---	-----	-----	-----
Resistors			
-----			
2	R1,R3	220	0.25 W
1	R2	680	0.25 W
2	R4,R6	1.8k	0.25 W
1	R5	470	0.25 W
2	R7,R11	4.7k	0.25 W
2	R8,R13	33	0.25 W
4	R9,R10,R12,R14	100k	0.25 W
Capacitors			
-----			
4	C1,C5,C6,C7	100nF	PITCH 2.54
2	C2,C4	1uF	30 V
2	C3,C8	10uF	16 V
2	C9,C10	1.5uF	TANTAL 25V
Integrated Circuits			
-----			
2	U1,U2	LM317	TO220
2	U3,U4	AD8042	DIL08
Transistors			
-----			
4	Q1,Q2,Q3,Q4	<del>BS170</del> 2N7000	TO92
Diodes			
-----			
2	D1,D2	1N4007	DO41
2	D3,D5	1N4148	DO35
Variable Resistors			
-----			
2	RV1,RV2	10k	POT 1 TURN
Miscellaneous			
-----			
1	RL1	SIL RELAY	COIL 12 V









SAFETY FOR SSPA  
TRIP WITH HYSTERESIS

DATE: 23/09/14 REV: 0 PAGE: 1/1  
BY: F1FRV@SFR.FR  
DOC N°: Amateur Radio