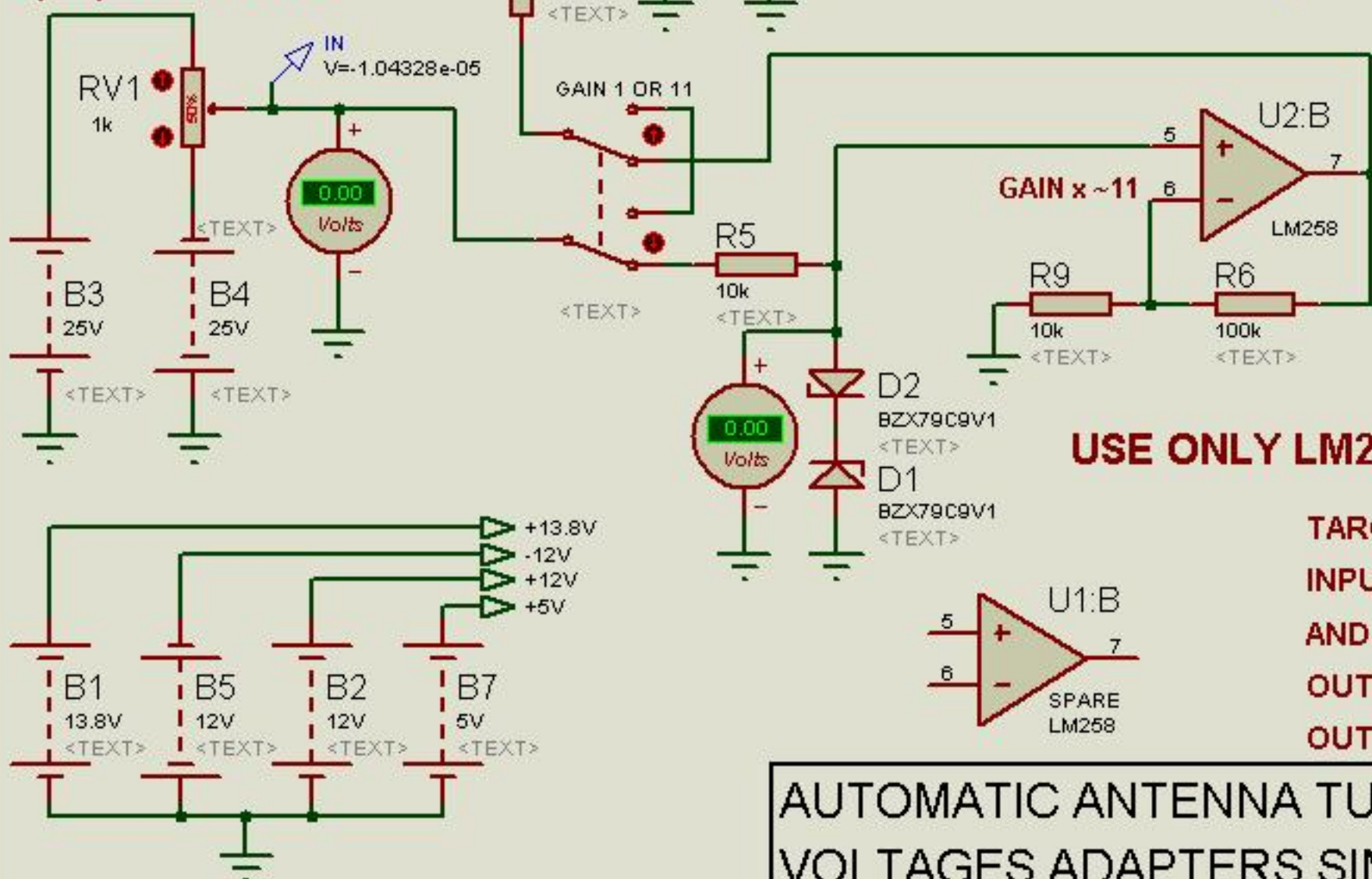
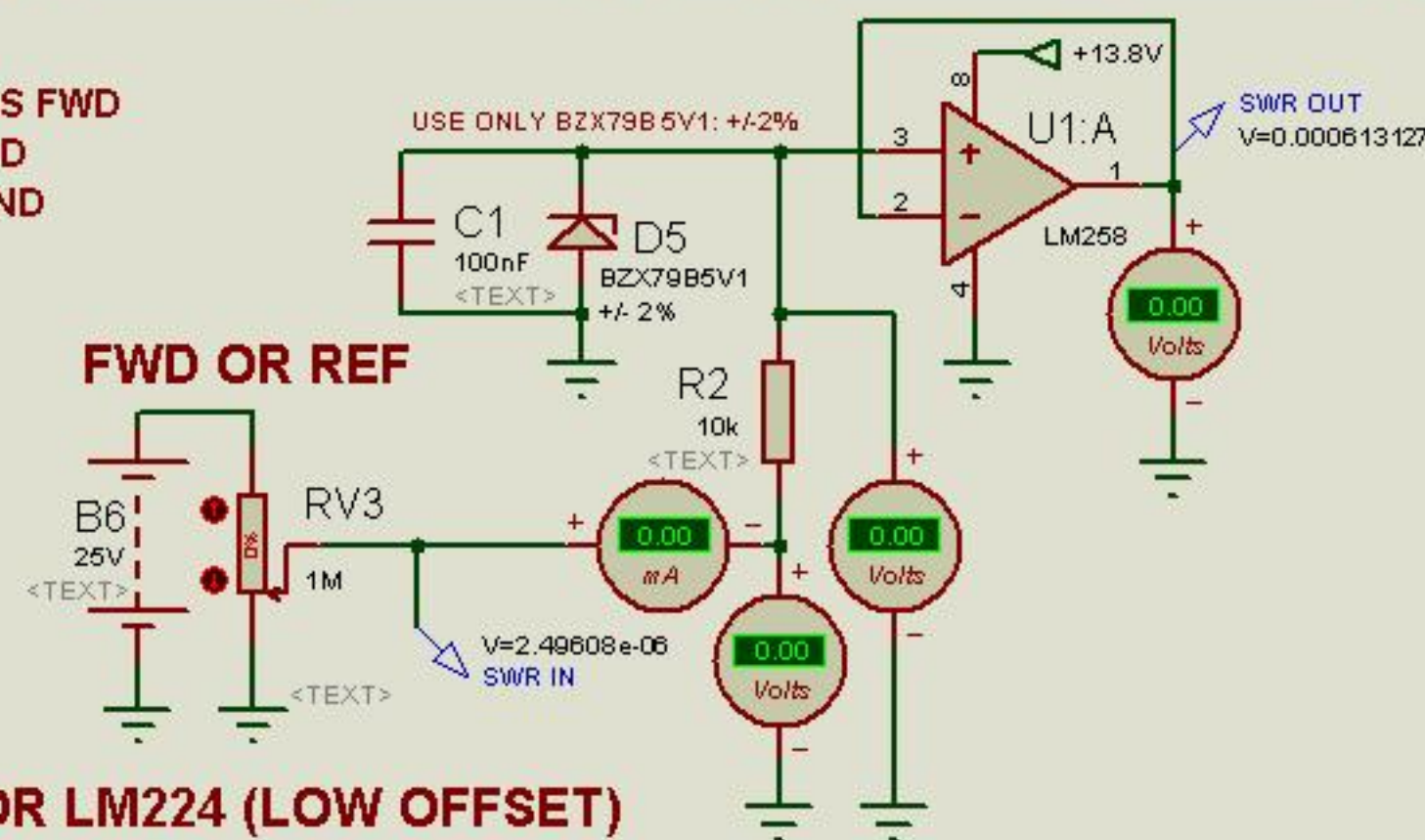


USE 2 ZENERS BACK TO BACK, AS FWD VOLTAGE OF THE FIRST IS ADDED TO REV VOLTAGE OF THE SECOND

R, G, OR PHASE

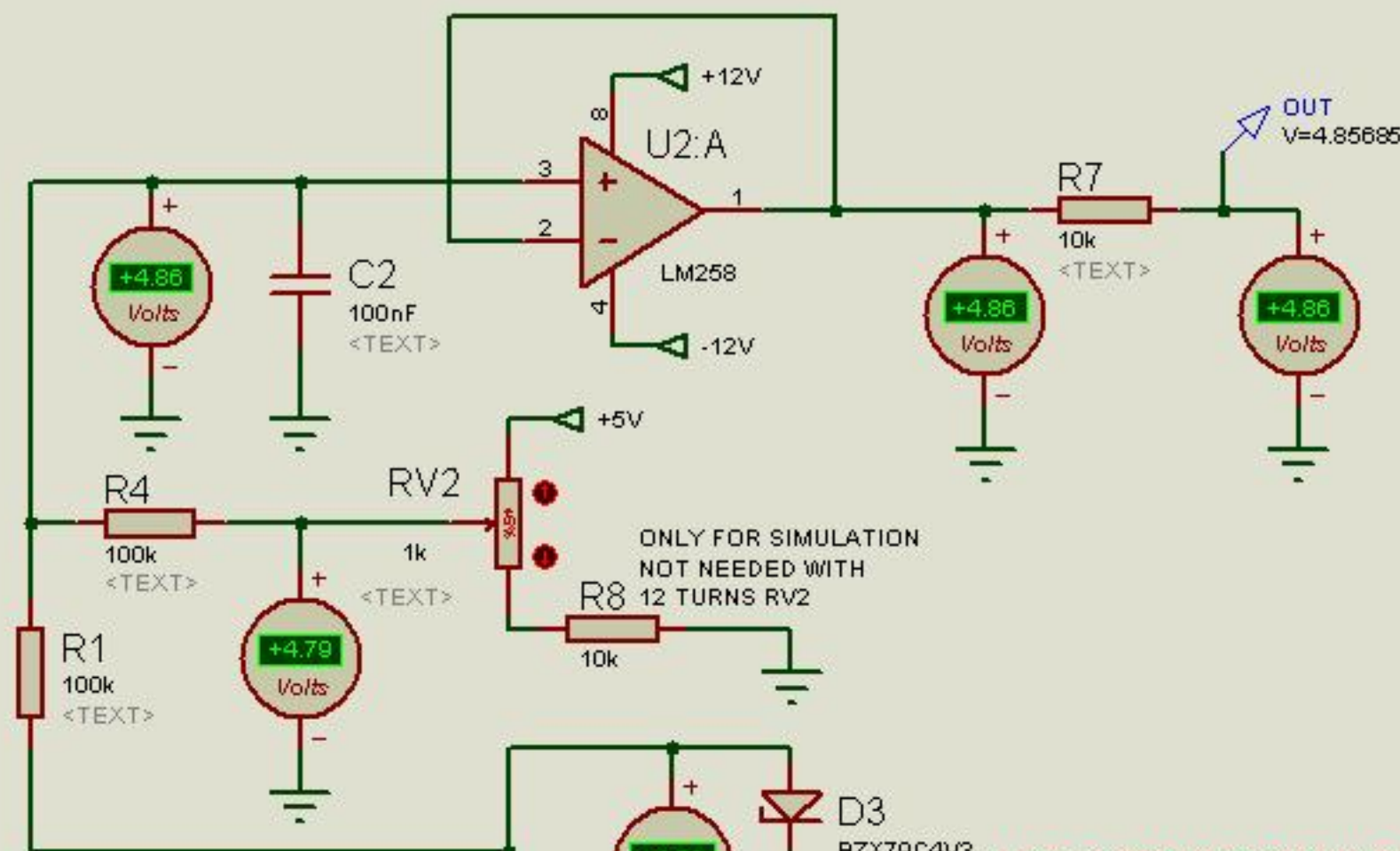


FWD OR REF



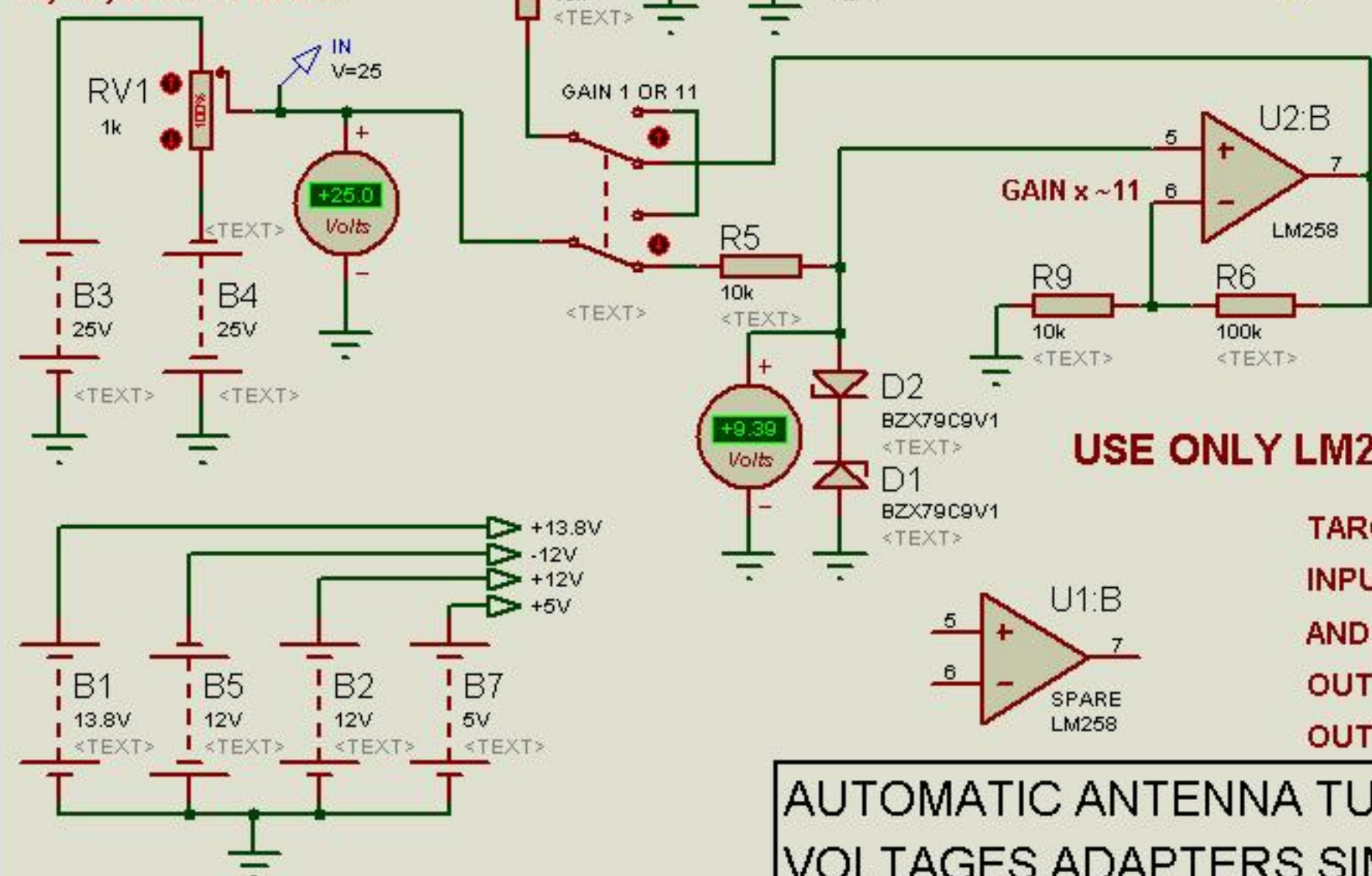
USE ONLY LM258 OR LM224 (LOW OFFSET)

TARGET IS TO OBTAIN 0 TO + 5 V AT OUTPUTS (PIC INPUTS), EVEN IF INPUT IS +/- 25 V FOR FORWARD AND REFLECTED VOLTAGES. AND TO OBTAIN +2.5 V WHEN INPUT IS 0 V FOR R, G, AND PHASE. OUTPUT WILL BE ~0 V FOR NEGATIVE INPUT, AND ~+5 V FOR POSITIVE INPUT OUTPUT WILL NEVER EXCEED +5.1 V, EVEN WITH +/- 25 V AT INPUT.

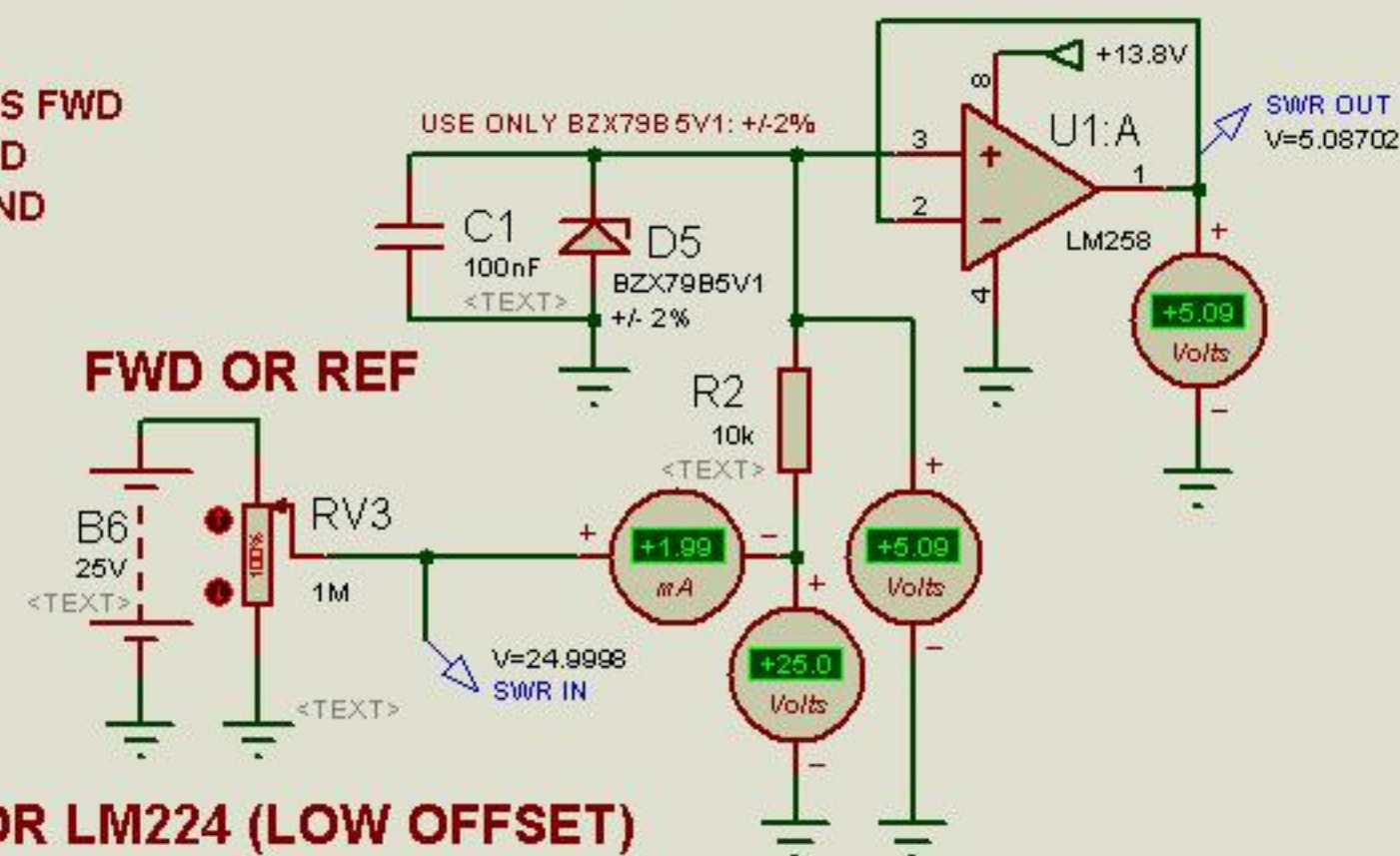


USE 2 ZENERS BACK TO BACK, AS FWD VOLTAGE OF THE FIRST IS ADDED TO REV VOLTAGE OF THE SECOND

R, G, OR PHASE

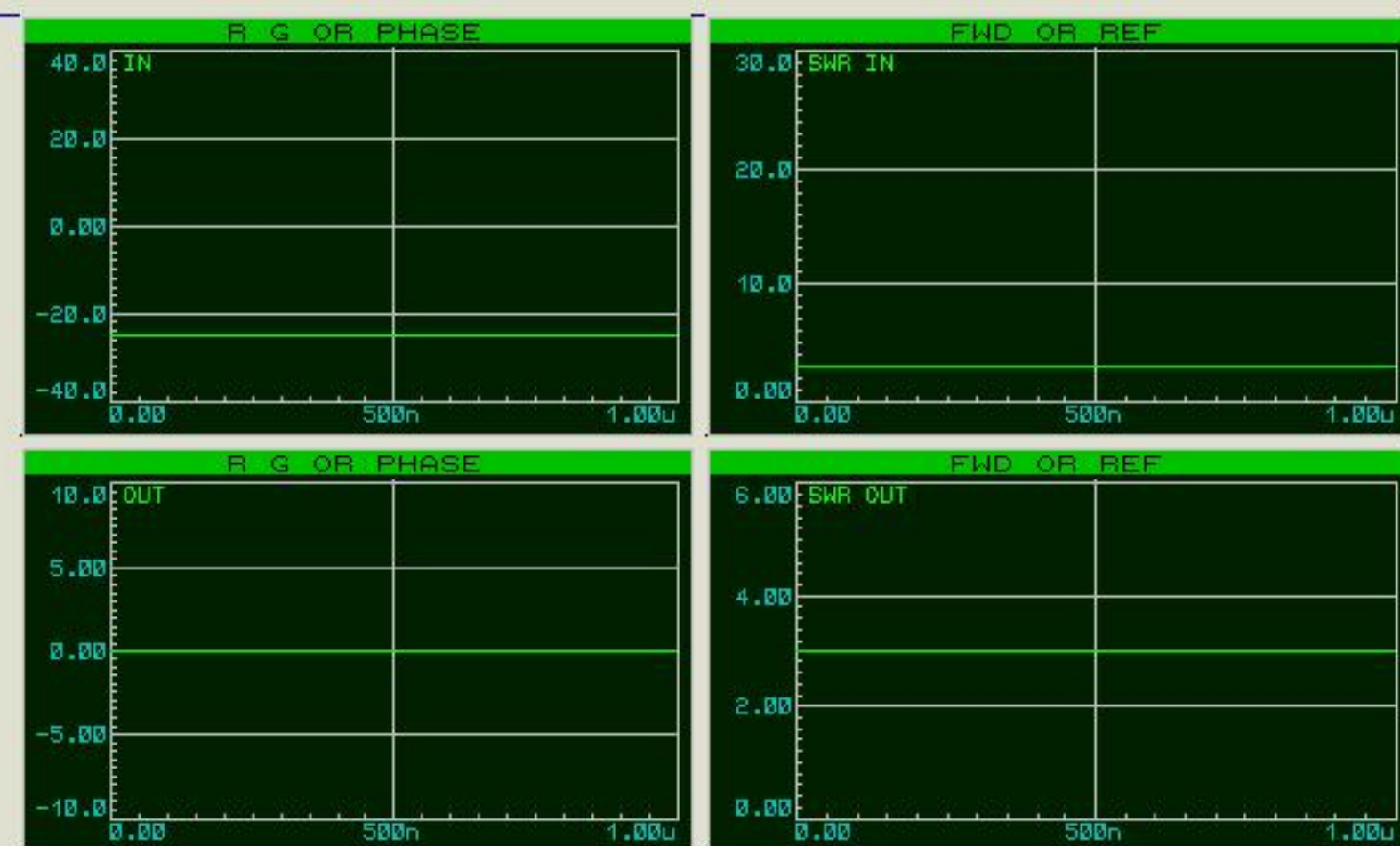


FWD OR REF



USE ONLY LM258 OR LM224 (LOW OFFSET)

TARGET IS TO OBTAIN 0 TO + 5 V AT OUTPUTS (PIC INPUTS), EVEN IF INPUT IS +/- 25 V FOR FORWARD AND REFLECTED VOLTAGES. AND TO OBTAIN +2.5 V WHEN INPUT IS 0 V FOR R, G, AND PHASE. OUTPUT WILL BE ~0 V FOR NEGATIVE INPUT, AND ~+5 V FOR POSITIVE INPUT OUTPUT WILL NEVER EXCEED +5.1 V, EVEN WITH +/- 25 V AT INPUT.



FWD OR REF

LM224 (LOW OFFSET)

USE ONLY BZX79B5V1: $\pm 2\%$

C1 100nF

D5 BZX79B5V1 $\pm 2\%$

R2 10k

RV3 1M

B6 25V

U1:A LM224

+13.8V

SWR OUT $V=2.98853$

SWR IN $V=2.98841$

0.00 mA

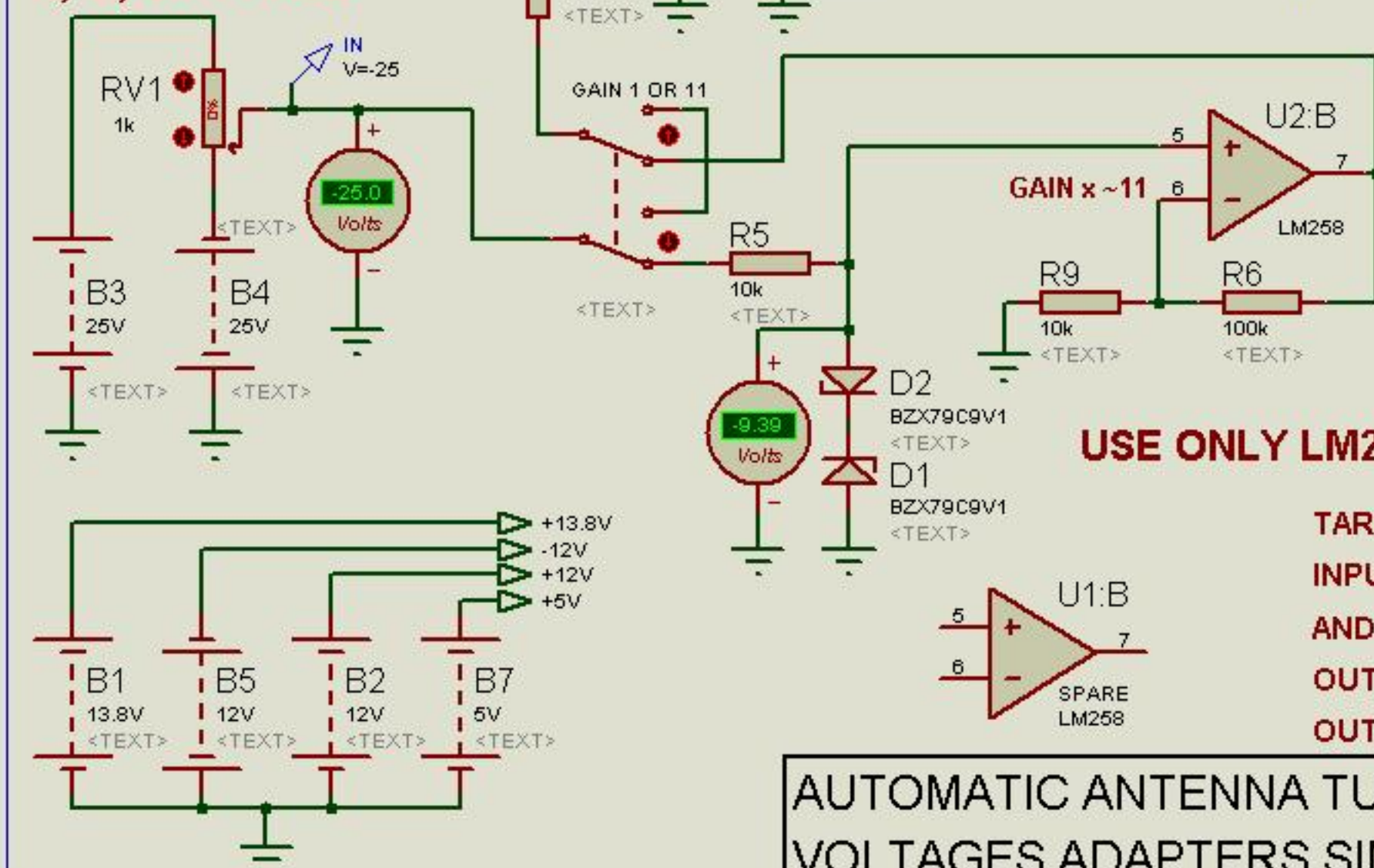
+2.99 Volts

+2.99 Volts

+2.99 Volts

USE ONLY LM258 OR LM224 (LOW OFFSET)

TARGET IS TO OBTAIN 0 TO + 5 V AT OUTPUTS (PIC INPUTS), EVEN IF INPUT IS +/- 25 V FOR FORWARD AND REFLECTED VOLTAGES.
AND TO OBTAIN +2.5 V WHEN INPUT IS 0 V FOR R, G, AND PHASE.
OUTPUT WILL BE ~0 V FOR NEGATIVE INPUT, AND ~+5 V FOR POSITIVE INPUT
OUTPUT WILL NEVER EXCEED +5.1 V, EVEN WITH +/- 25 V AT INPUT.



AUTOMATIC ANTENNA TUNER PIC INPUTS
VOLTAGES ADAPTERS SIMULATIONS