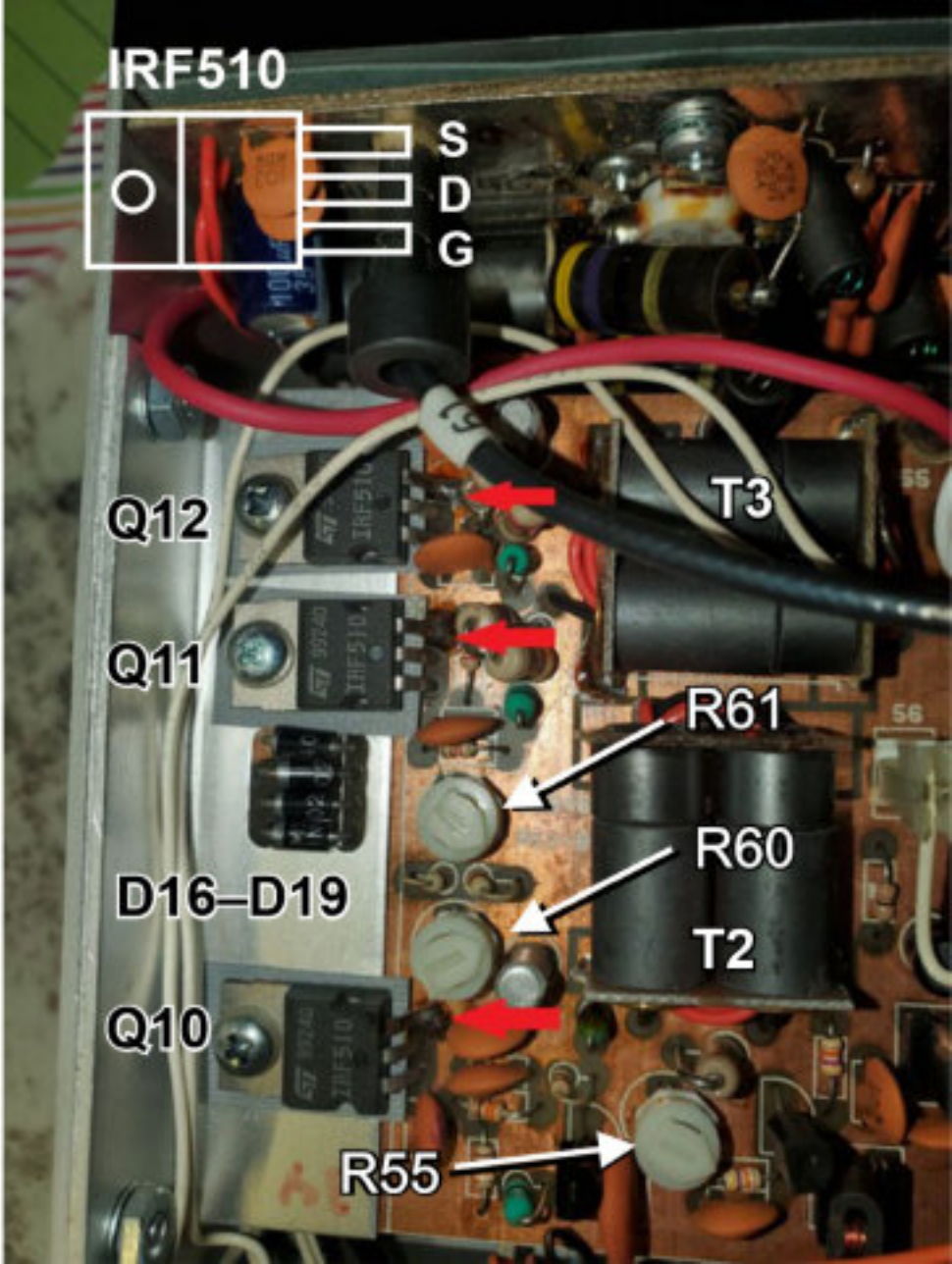
3-3 LLD/ALC (81645)

The LLD/ALC module amplifies the transmit signal, provides ALC, an SWR bridge and a circuit to determine if the RIT control is being used so that the frequency lock circuit can be disabled. Forward power and SWR are also available at connector 41.

LOW LEVEL TRANSMIT: Low level transmit signal from the transmit mixer/amplifier is applied to connector 54. Pin Diodes D13,D14 form an ALC attenuator. Transistors Q7,Q10,Q11 and Q12 amplify the transmit signal to approximately 3 watts. Transistors Q8 and Q9 provide active bias to Q10. As the current through Q10 increases due to heat, the drop across R57 turns off Q9 reducing the bias to Q10. Transistor Q8 is a switch to apply bias to Q10 during transmit. Diodes D16 through D19 provide bias compensation for transistors Q11 and Q12.

ALIGNMENT: Remove connector 56 and connect a 0 to 1 Amp meter across the 2 pins. Place the SCOUT in transmit and rotate potentiometers R55, R60, R61 for a minimum reading. This reading should be close to zero. Adjust potentiometer R55 for a reading of 300 ma., adjust R60 for an increase of 150 ma. and R61 for an additional increase of 150 ma. This should give a total reading of 600 ma. Be sure and replace the jumper plug in connector 56.


IRF510
S
D
G
Q12
Q11
D16–D19
Q10
R55
T3
R61
R60
T2

D1,D2,D6,D7,D8,D11,D12,D20,D21,D23-IN4148
D3,D4,D5-IN4007
D16,D17,D18,D19-IN4002
D9,D10-BA482
D13,D14-ISV80
D15-IN751A
D22-BAT41

Q1-2N6519
Q2,Q3,Q4,Q5,Q6,Q8,Q13,Q14-MPS6514
Q7-2N4124
Q9,Q15-2N5087
Q10,Q11,Q12-IRF510

U1,U3-LM358
U2

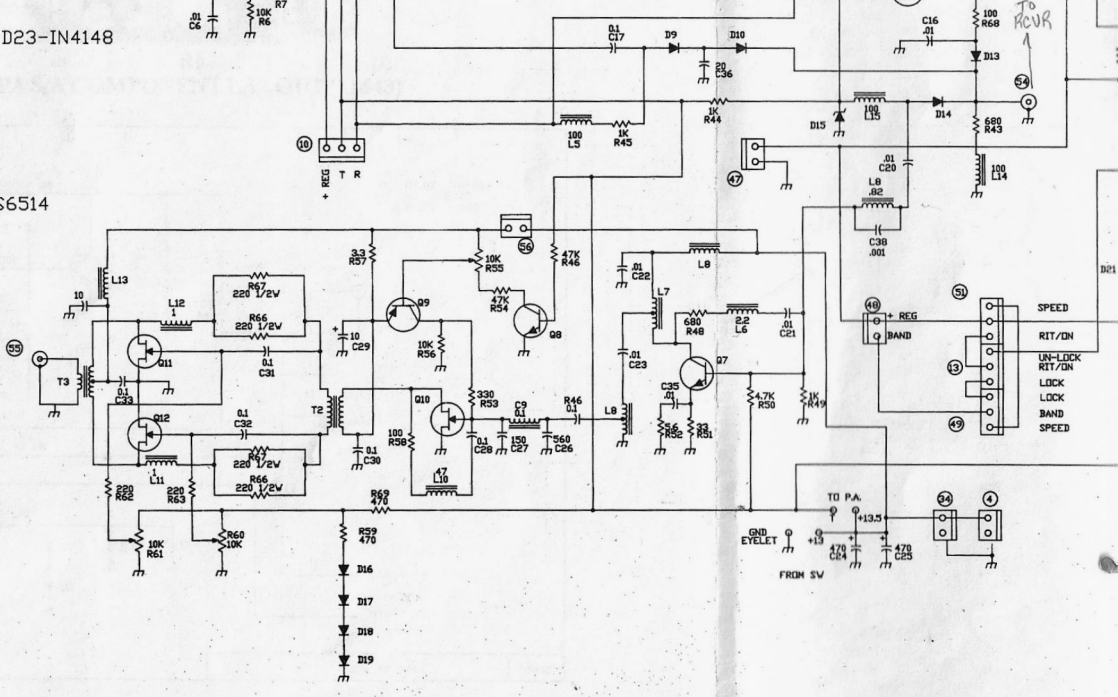


FIGURE 3-8 LLD/ALC SCHEMATIC (81645)