

A 20 Watt HF Amplifier

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Parts List:

Amplifier (Figure 2)

C1 - C8 0.1 μ F 1206 surface mount

C9 470 μ F 35 V electrolytic

C10, C11 0.1 μ F 1206 surface mount

C12, C13 200 pF 500 V silver mica

L1 1 turn #22 bifilar twisted pair wired as 2 turns on Amidon BN-43-202 core (See Figure 3 for construction details.)

Q1, Q2 RD16HHF1 Mosfet

R1 300 Ω $\frac{1}{2}$ W

R2 18 Ω 1 W

R3 300 Ω $\frac{1}{2}$ W

R4, R5 10 k Ω potentiometer

R6, R7 25 Ω non inductive

T1 Primary: 2 turns #24 wire on Amidon BN-43-302 core

Secondary: 1 turn #24 bifilar twisted pair wired as 2 turns (See Figure 3 for construction details.)

T2 Primary: RG58 braid on Amidon BN-43-3312 core

Secondary: 2 turns of #22 teflon coated wire threaded through braid (See Figure 4 for construction details.)

Bias and RF Switching (Figure 5)

C14 0.001 μ F

C15 0.01 μ F

C16 0.001 μ F

D1, D2 1N4148

D3 1N4001

D4 1N4734A

Q3 2N3904

Q4 2N3906

R8 1 k Ω

R9 4.7 k Ω

R10 10 k Ω

R11 100 k Ω

R12 470 Ω

RLY1 DPDT 12 V

Bandswitching (Figure 8)

C17 0,33 μ F

C18 0.1 μ F

C19 - C24 0.1 μ F

D5, D8, D11, D14, D17, D20 LED

D6, D7, D9, D10, D12, D13, D15, D16, D18, D19, D21, D22 1N4148

Q5 – Q10 2N3906

R13 3.3 k Ω

R14 3.9 k Ω

R15 – R20 150 Ω (or use a 150 Ω resistor network)

RLY2 – RLY13 SPDT 5 V

U1 LM78L05

U2 LM3914

Low Pass Filters (Figures 9 and 10)

See data presented in Table 1 and Figure 10

Power Measurement Circuitry (Figure 11)

C25 – C28 0.01 μ F

D23, D24 1N4148

M1 100 μ A meter movement – but other meters would be suitable with changes to R27 and R28

R21, R22 51 Ω $\frac{1}{2}$ W

R23, R24 33 k Ω

R25, R26 100 k Ω

R27 56 k Ω

R28 10 k Ω potentiometer

SW1 SPDT switch

T3 Primary: 1 turn (wire just threaded through core)

Secondary: 8 turns #24 wire on Amidon FT-37-43 core

T4 Made with two Amidon FT-37-43 cores. Primary: 1 turn (wire threaded through both cores,
Secondary: 8 turns #24 wire