

EZ-Tuner Parts List

rev.4/06/02

Notes:

(1) If no supplier is indicated in the lists, then parts that I purchased new should be readily available at one of the following:

Mouser (www.mouser.com or 1-800-346-6873)

Digikey (www.digikey.com or 1-800-DIGIKEY)

Jameco (www.jameco.com or 1-800-831-4242)

Allied Electronics (<http://www.allied.avnet.com> or 1-800-433-5700)

(2) Parts I obtained from surplus sources are identified as such in the lists. Mostly, these (or equivalent parts) are still available new, but you may have to scrounge if you want to save money. Refer to the FAQs page (<http://www.w8zr.net/eztuner/>) for suggestions about parts substitutions. I have also been trying to acquire some of the harder-to-find parts to make them available to prospective builders, and any I have for sale are also listed on the above website.

(3) I had some PC boards made up for builders, and these can be ordered from my website.

EZ-Tuner Chassis (Sheet 1):

K1—SPDT HV vacuum relay (surplus), 26.5V coil (Jennings RF3A or equiv.).

Contact Info: Jennings Technology

970 Mc Laughlin Ave.

San Jose, CA 95122, USA

Tel: 408-292-4205

<http://www.jenningstechnology.com/products/relay.cfm>

K2—DPDT HV vacuum relay (surplus), 26.5V coil (Kilovac H16/S1 or equiv.).

Contact Info: Kilovac Products

P.O. Box 4422

Santa Barbara, CA 93140, USA

Tel: 805-684-4560

http://www.ciitech.com/ciitech/documents/doc_1247.html

M1 (RS1 on Sheet 5)—Rotary solenoid (surplus), 12 steps/rev. , 24 VDC/3.11A, (Ledex series 50-L).

Contact Info: Ledex & Dormeyer Products

801 Scholz Drive

Vandalia, OH 45377

tel: 937-454-2345

<http://www.ledex.com>

Alternatives: see FAQs #6 and #14 on EZ-Tuner website.

M2, M3—Stepper motor, unipolar (6/8 wire), NEMA 23, dual shaft pref., 1.0A max (surplus).

Superior Electric Slo-Syn: M061-FD-6102 - 11.2V/.44A/dual shaft (Refer to the FAQs page (<http://www.w8zr.net/eztuner/>) for parts availability.)

Alternative models: M061-LS-301E - 7.5v/.44A/dual shaft
M061-LS02E - 5V/1A/dual shaft

Contact Info:

http://www.slosyn.com/ssstepmotors_stndrdnema23.html

<http://www.slosyn.com/wheretobuy.html#>

(Note: many other manufacturers make steppers that will work fine.
See FAQ #8 for more info.)

U1, U2—photo interrupter, w. mount. tabs (Digikey ON1023-ND @ \$1.39/ea)

Z1—MOV transient voltage suppressor, V130LA2, or equivalent.

Cabinet—Buckeye Shapeform 7"Hx17"Wx16"D, model DII-70-4-16, black vinyl trim (\$180)

Contact Info: Buckeye Stamping Co.

555 Marion Road

Columbus, OH 43207

tel: 1-800-728-0776

<http://www.buckeyeshapeform.com>

EZ-Tuner Controller Circuit Board (Sheet 2):

C101 - C106, C109, C112, C114, C118, C119—0.1 μ F disk ceramic capacitor, 100V.

C107, C108, C110, C111, C113, C115, C116, C117—1000 pF disk ceramic capacitor, 100V.

D101 - D105, D107, D109, D111-D112—1N914 diode.

D106, D108, D110—1N4005 diode, 1A @ 600PIV.

J101, J102, J104 - J107—SIP header, Molex .100", no. of pins as indicated.

J103, J108—SIP header, Molex .156", no. of pins as indicated.

Q101 - Q103—T1P125 PNP power transistor.

U101—74HC14 CMOS hex inverter.

U102, U103—74HC4017 CMOS high speed decade divider/counter.

U104—BASIC Stamp BS2sx microcontroller.

Contact Info: Parallax, Inc.

599 Menlo Drive #100

Rocklin, CA 95765

tel: 1-888-512-1024

<http://www.parallaxinc.com>

U105 - U107—H11G2 optocoupler.

Resistors are 1/4 Watt metal film, 5% tolerance, values as indicated.

EZ-Tuner Stepper Motor Driver Circuit Board (Sheet 3)

C201-C203, C210, C214, C216—0.1 μ F disk ceramic capacitor, 100V.

C204-C209, C211, C212—1000 pF disk ceramic capacitor, 100V.

C213—2.2 μ F electrolytic capacitor, 35V.

C215—4.7 μ F electrolytic capacitor, 35V.

D201—1N914 diode.

J201, J203—SIP header, Molex .156", no. of pins as indicated.
 J202, J204—SIP header, Molex .100", no. of pins as indicated.
 JP201— Wire jumper.
 Q201—2N4401 NPN transistor.
 R207, R215—Power resistor, 12 Ohm/5W,
 (Value shown is for 11.2V/0.44A stepper motor, with +24V power supply. For other
 stepper motors, select resistance to limit current through motor to max. rated value.)

SW201—DIP switch, 4PST.
 U201—ULN2068 quad 1.5A darlington switch w. protective diode.
 U202—74LS08 quad AND gate.
 U203, U206-U208—H11G2 optocoupler.
 U204—74LS86 exclusive OR gate.
 U205—74LS74 dual D flip-flop.
 U209—LM556 dual timer.
 U210—7805 +5V three-terminal voltage regulator.
 Other resistors are 1/4 Watt metal film, 5% tolerance, values as indicated.

EZ-Tuner Front Panel & Power Supplies (Sheet 4):

C1, C2—10,000 μ F electrolytic capacitor, 25V.
 C3—0.1 μ F disk ceramic capacitor, 100V.
 C401—1.0 μ F electrolytic capacitor, 35V.
 D1, D2—Diode bridge rectifier, 1.5A/200PIV.
 DS401—LED (red).
 E401, E402—Optical shaft encoder (surplus), 64-512 counts/rev., +5V, 1/4" shaft
 Suggested types: (these are expensive, new, but appear frequently on Ebay)
 Hew. Packard/Agilent HPRG-AS64#56R
 Hew. Packard/Agilent QRPB-A485
 Clarostat 600-128 CBL (Digikey Part No. 600CS-ND)
 Disk Instruments PC62N-250-5

LCD Display: 2-line serial display w. backlight. Suggested types & contact info:
 Scott Edwards Electronics BPI -216
 Contact info: Parallax, Inc. (<http://www.parallaxinc.com>)
 Wirz Electronics SLI -OEM
 Contact info: M.P. Jones & Assoc., (<http://www.mpja.com/>)

P106—Connector 0.100" Molex, 12 pin.
 R401—Resistor, 390 ohms, 1/4 Watt.
 S401-S404—Lighted pushbutton switch, momentary action, SPST.
 Spkr—speaker, 2 inch (surplus).
 T1—transformer 20VAC/2A, Hammond 166L20 (Digikey part no. HM543-ND)
 T2—transformer 12.6VAC/1.2A (surplus, from Radio Shack)
 U1—7805 +5V three-terminal voltage regulator.

EZ-Tuner RF Deck (Sheet 5):

C1—Variable capacitor, dual-section 19-202 pF/section @ 3500V (Cardwell-Johnson 153-503-1).

C2—Variable capacitor 36-496 pF @ 3500V (Cardwell-Johnson 153-6-1).

Contact info: Cardwell Condenser Corp.

80 East Montauk Highway

Lindenhurst, NY 11757

tel: 631 957-7200

<http://www.cardwellcondenser.com>

C3, C4—50 pF @ 5000V ceramic transmitting capacitor (Centralab 858 or equiv.).

C5—10 pF @ 3500V custom capacitor (2.5 in. RG-58/U braid over teflon insulated # 10 wire - see text of QST article for construction details).

K1—SPDT HV vacuum relay, 26.5V coil (Jennings RF3A or equiv.).

K2—DPDT HV vacuum relay, 26.5V coil (Kilovac H16/S1 or equiv.).

M1—Panel meter, 30 μ A full scale (Coaxial Dynamics 88953-A & bezel).

Contact info: Coaxial Dynamics

15210 Industrial Parkway

Cleveland, OH 44135

tel: 1-800-COAXIAL

<http://www.coaxial.com>

Alternative: Bird 30 μ A f.s. replacement panel meter

Contact info: Bird Electronics

tel: 440-248-1200

<http://www.bird-electronic.com/>

L1—1.1 μ H (4 turns on 1.5 in. dia, 3/16" copper tubing).

L2—20 μ H (25 turns #10 tinned copper, 3 in. dia, 4 tpi - B&W 2404TL (Lexan insul.), with B&W 3943 coil clips.

Contact info: Barker & Williamson

321-639-1510

<http://www.bwantennas.com/>

S1—2-pole 11 position HV ceramic rotary switch (Radio Switch #86 or equiv.).

Contact Info: Multi-Tech Industries

P.O. Box 159, 64 South Main St.

Marlboro, NJ. 07746

tel: 1-800-431-3223

<http://multi-tech-industries.com/>

Alt. source: Surplus Sales of Nebraska

http://www.surplussales.com/RF/rfcerrot_1.html

S2—1-pole 2 position rotary switch.

T1—Balun, 12 turns, #12 teflon-insulated wire, bifilar wound on 3 Amidon T-200-2 (red) toroid cores. Cores are insulated with fiberglass tape.

Wattmeter: Bird Electronics dual line section w. 100H or 250H & 2500H elements (surplus)