

RF99 Wireless Thermometer

Feb 23, 1999



Revision: 05

RECEIVER Component List

Quantity Part Description

Rx - Mechanical:

See Mechanical Receiver Component Lists

Rx - Circuit Boards:

1 Digital board, double sided FR4, 1.0 mm thick, 0.5 -1.0 ounce copper (62 x 80 mm)
1 RF board, double sided FR4, 1.0 mm thick, must be 1.0 ounce copper (26.2 x 41.7 mm)

Rx - Electro-Mechanical:

1 LCD glass panel (66 x 70 mm glass size)
1 Piezo beeper plate (PZ-1)
7 Metal snap domes for keys, 185 gm normal force (SW1, SW2, SW3, SW4, SW5, SW6, SW7)
1 LCD elastomeric connector (approx 75mm long)
1+1+2 Battery contacts for 3 AA cells (+ve, -ve, 3 jumpers) plus two wires to digital board
1 3 wire ribbon cable connecting RF board to digital board
13 Screws for assembly

Rx - Digital Board Electrical:

1 MSM64164C 3 volt, CMOS microcontroller (1C1)
1 S80233P(Seiko) 3.3V regulator (1C2)
1 32768 Hz quartz watch crystal (X1)
1 MMBT3904LT1 NPN transistor, thru hole or SMT (Q2)
1 608 KHz Ceramic resonator (murata) (X2)
4 MMBT3906LT1 PNP transistor, thru hole or SMT (Q1, Q3, Q4, Q5)
1 Korean supplied thermistor, equivalent to 103AT-2B thermistor(TH-1)
1 1 K-ohm 1% resistor, SMT or thru hole (R3)
1 10 K-ohm 1% resistor, SMT or thru hole (R4)
3 47 K-ohm 5% resistor, SMT (R2, R6, R12)
1 1 K-ohm 5% resistor, SMT or thru hole (R9)
1 470 ohm 5% resistor, SMT (R7)
1 22 microfarad, minimum 16 volt, aluminum electrolytic capacitor, radial lead (C1)
5 0.1 microfarad, minimum 16 volt, ceramic capacitor, SMT (C3,C4,C5,C6,C7)
1 0.02 microfarad, minimum 16 volt, ceramic capacitor, SMT (C8)
1 3300 picofarad NPO or COG ceramic capacitor, SMT (C2)
2 1 microhenry inductor, axial lead RF choke (L1, L2)
1 1.5 millihenry inductor, radial lead RF choke (L3)
1 LED, red (for Brookstone only)
1 LED, green backlight (for Brookstone only)
1 Do not Install (R10, R11, R13, C10)
1 IN4001 Diode (D1)
1 22 ohm 1watt resistor (R14)

FCC APPROVAL BOM

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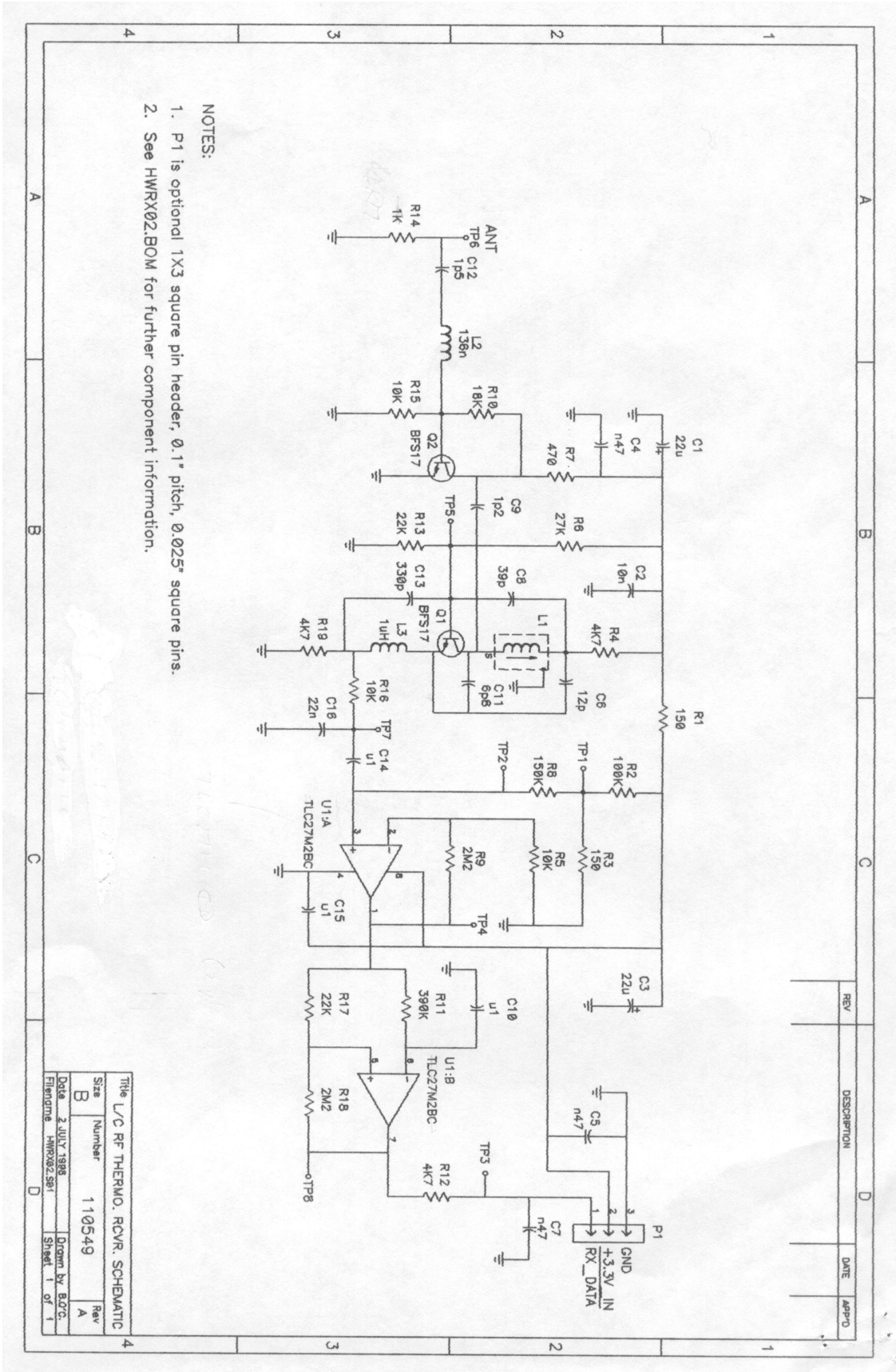
RECEIVER Component List (cont'd)

Quantity Part Description

Rx - RF Board:

1	OP AMP - dual, TLC27M7CD U1
1	32-41 nH Variable Inductor shielded 5mm, CoilCraft 164-03A06S L1
1	8.5 turn, air wound inductor L2 (Fig Rx-RF1)
1	1 uH inductor, 1008, 10%, (Matsuta as supplied Saitek SMT sample) L3
2	BFS17 NPN RF transistor Q1, Q2
2	22 microfarad, minimum 10 volt, aluminum electrolytic capacitor, radial lead C1, C3
1	1.2 picofarad, 0805, +/-0.25p NPO ceramic capacitor C9
1	1.8 picofarad, 0805, +/-0.25p NPO ceramic capacitor C12
1	6.8 picofarad, 0805, +/-0.25p NPO ceramic capacitor C11
1	12 picofarad, 0805, 5% 50V NPO, capacitor C6
1	39 picofarad, 0805, 5% 50V NPO, capacitor C8
1	330 picofarad, 0805, 5% 50V NPO, capacitor C13
3	470 picofarad, 0805, 5% 50V NPO, capacitor C4,C5,C7
1	10 nanofarad, 0805, 10% 50V X7R, capacitor C2
1	22 nanofarad, 0805, 10% 50V X7R, capacitor C16
3	100 nanofarad, 0805, 10% 50V Z5U, capacitor C10,C14,C15
2	150 ohm 5% resistor, 0805, 1/10th watt R1, R3
1	470 ohm 5% resistor, 0805, 1/10th watt R7
4	4.7 K-ohm 5% resistor, 0805, 1/10th watt R4, R12, R14, R19
3	10 K-ohm 5% resistor, 0805, 1/10th watt R5, R15, R16
1	18 K-ohm 5% resistor, 0805, 1/10th watt R10
2	22 K-ohm 5% resistor, 0805, 1/10th watt R13, R17
1	27 K-ohm 5% resistor, 0805, 1/10th watt R6 (subject to change between 22K to 33K)
1	100 K-ohm 5% resistor, 0805, 1/10th watt R2
1	150 K-ohm 5% resistor, 0805, 1/10th watt R8
1	390 K-ohm 5% resistor, 0805, 1/10th watt R11
2	2.2 Meg-ohm 5% resistor, 0805, 1/10th watt R9, R18
1	Antenna Wire, enamel coated, close wound, slides over a 2.1mm diam plastic core (Figure RF-Rx-50)

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- NOTES:
1. P1 is optional 1X3 square pin header, 0.1" pitch, 0.025" square pins.
 2. See HWRX02.BOM for further component information.

Title		L/C RF THERMO. RCVR. SCHEMATIC	
Size	Number	110549	Rev
B			A
Date	2 JULY 1998		Drawn by
Flattor	HWRX02.S91		BGC.
			Sheet 1 of 1

REV	DESCRIPTION	DATE	APP'D