

All resistors are 1/8 watt unless otherwise noted.

Co.:	RCKARA
Title:	APRS Balloon CPU
CAD:	Zack Clobes, W0ZC
Author:	Zack Clobes, W0ZC
Date:	23 October, 2001
Revision:	1.2
Size:	A
Sheet	1 of 1

Component Values

Part	Value	Notes	Digi-Key #
C1	.01 μ F		1400PH-ND
C2	100 μ F / 25V		P5540-ND
C3	.01 μ F		1400PH-ND
C4	100 μ F / 25V		P5540-ND
C5	.01 μ F		1400PH-ND
C6	.01 μ F		1400PH-ND
C7	.01 μ F		1400PH-ND
C8	.01 μ F		1400PH-ND
C9	.01 μ F		1394PH-ND
D1	1N5401	Reverse current protection	1N5401DICT-ND
D2	1N4148		1N4148MSCT-ND
D3	1N4148		1N4148MSCT-ND
D4	SD103A		SD103ACT-ND
P1	2.5mm Barrel Jack		CP-002B-ND
	Mate to P1	Purchased molded cable/plug locally	Purchased locally
P2	5 pin plug right angle (Male)	Connects to transmitter	H2108-ND
	Mate to P2		H2086-ND
P3	24 pin SMT plug	Mates with various daughterboards	S2202-12-ND
P4	4 pin plug right angle (Male)	Data and power connection to GPS	H2107-ND
	Mate to P4		H2085-ND
	Pins for P2 and P4		????????????
Q1	2N3904	PTT transistor	2N3904-ND
R1	100k	1/8-1/4Watt	Radio Shack
R2	47k	1/8-1/4Watt	Radio Shack
R3	150k	1/8-1/4Watt	Radio Shack
R4	2.2k	1/8-1/4Watt	Radio Shack
R5	10k	1/8-1/4Watt	Radio Shack
R6	10k	1/8-1/4Watt	Radio Shack
R7	100k	1/8-1/4Watt	Radio Shack
R8	10k	1/8-1/4Watt	Radio Shack
R9	100k	1/8-1/4Watt	Radio Shack
R10	10k	1/8-1/4Watt	Radio Shack
R11	10k	1/8-1/4Watt	Radio Shack
R12	3.3k	1/8-1/4Watt	Radio Shack
R13	10k	1/8-1/4Watt	Radio Shack
U1	LM7805	Voltage Regulator	LM340T-5.0-ND
U2	LM35CZ	Temperature sensor	LM35CZ-ND
U3	PIC16F873/20	Must be programmed	PIC16F873-20/SO-ND
X1	3.58MHz Ceramic Resonator		X901-ND
X2	20MHz Ceramic Resonator		X909-ND

Plug Pinouts

PLUG P2

Pin	Function	Notes
1	V+	Either 5.0V from regulator or Vbatt
2	Gnd	
3	Rx Audio	
4	Tx Audio	Pin pulled low by R12 for mic audio keying
5	PTT	

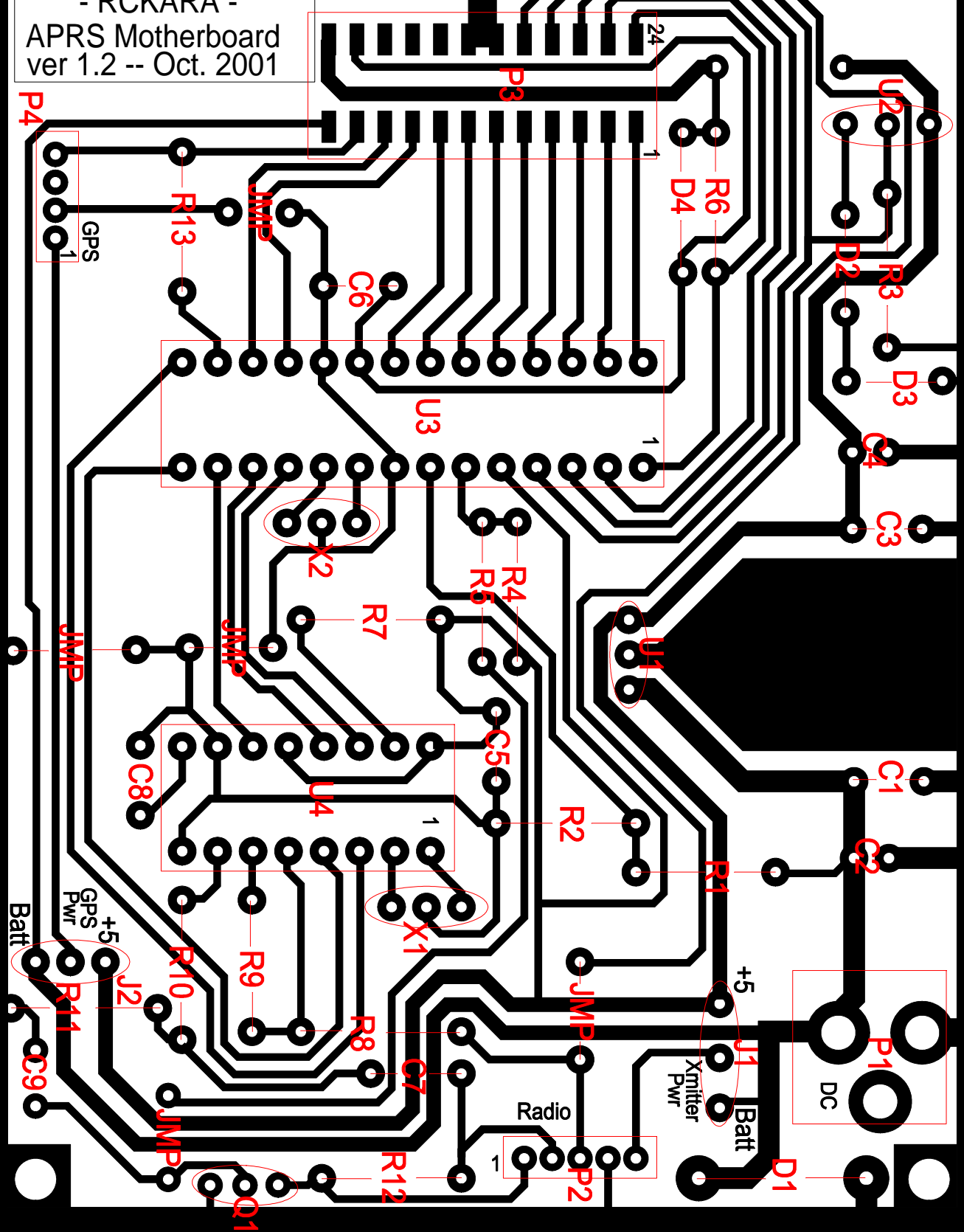
PLUG P3

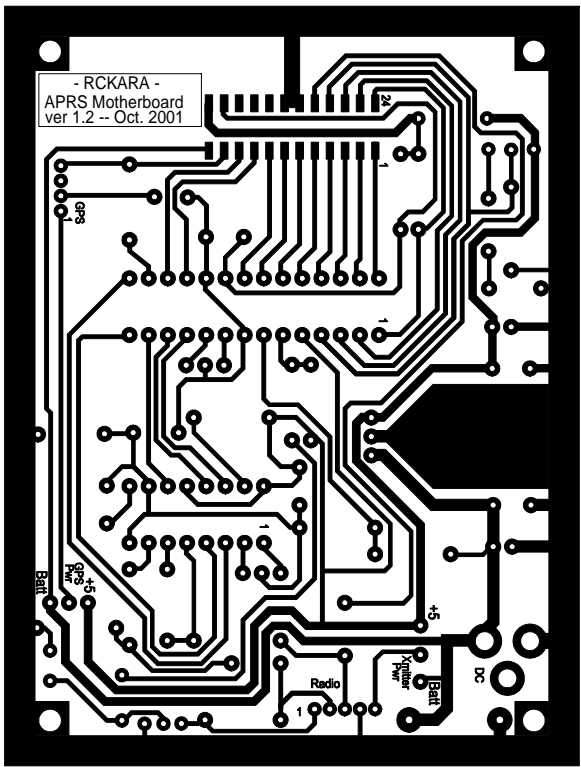
Pin	Function	Notes
1	RB7	Digital I/O (In-Circuit Programming RB7)
2	RB6	Digital I/O (In-Circuit Programming RB6)
3	RB5	Digital I/O
4	RB4	Digital I/O
5	RB3	Digital I/O
6	RB2	Digital I/O
7	RB1	Digital I/O
8	RB0	Digital I/O
9	RC7	RS-232 Receive UART on PIC
10	RC6	RS-232 Transmit UART on PIC
11	GPS Data	Raw NMEA sentences from GPS (RS-232 levels)
12	Vbatt	
13	5.0V	
14	Vdd	(In-Circuit Programming Vdd)
15	NC	
16	NC	
17	NC	
18	Gnd	(In-Circuit Programming Ground)
19	Gnd	
20	Rx Audio	Received audio from receiver
21	AN2	Analog Input – shared with IAT temp sensor
22	AN1	Analog Input
23	AN0	Analog Input
24	MCLR	Reset pin (In-Circuit Programming Vpp)

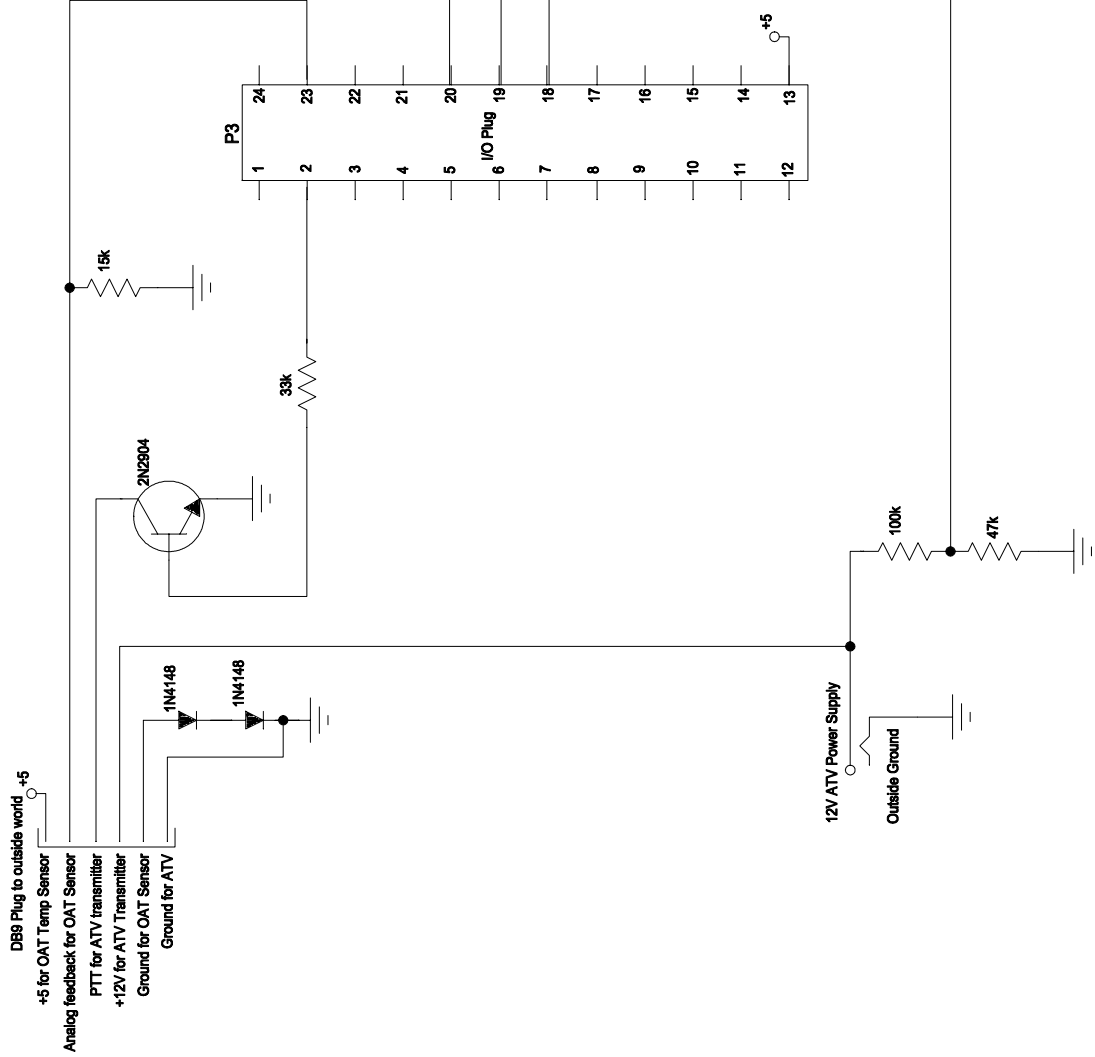
PLUG P4

Pin	Function	Notes
1	V+	Supply voltage – either +5 or Vbatt
2	Gnd	Ground
3	NC	Data to GPS - Could be used via a PC to configure the GPS
4	Data	Raw NMEA sentences from GPS (RS-232 levels or TTL)

- RCKARA -
APRS Motherboard
ver 1.2 -- Oct. 2001

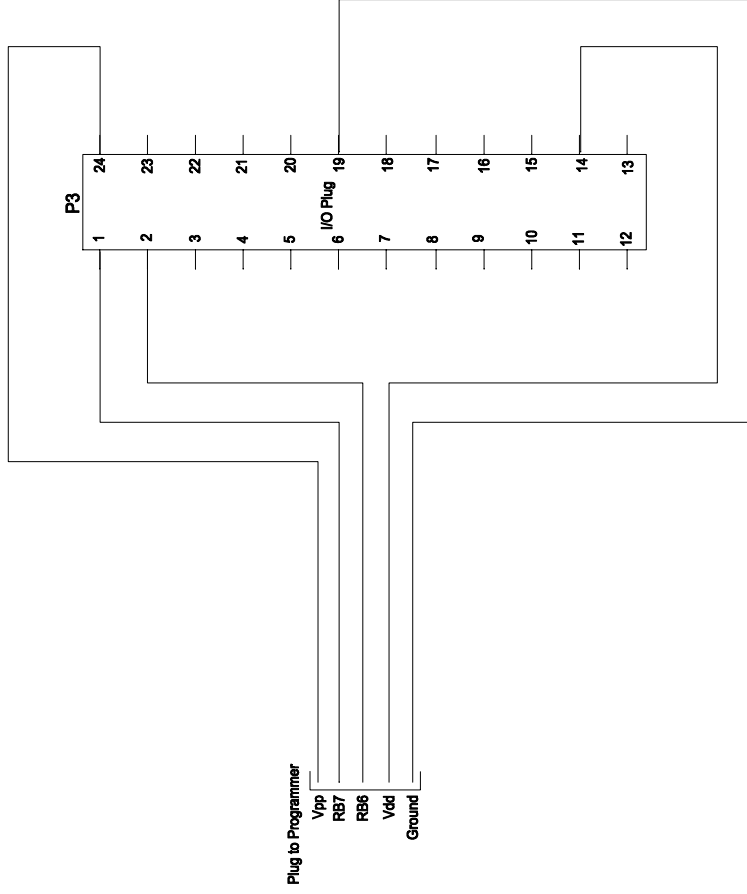






All resistors are 1/8 watt unless otherwise noted.

Co.:	RCKARA
Title:	Daughterboard 1
CAD:	Zack Clobes, W0ZC
Author:	Zack Clobes, W0ZC
Date:	2 November, 2001
Revision:	1.0
Size:	A
Sheet	1 of 1



Co.:	RCKARA		
Title:	In-Circuit Programming Adapter		
CAD:	Zack Clobes, W0ZC	Revision:	1.0
Author:	Zack Clobes, W0ZC	Size:	A
Date:	2 November, 2001	Sheet	1 of 1