

openQRP Transceiver Parts List By Functional Section - 9-28-2010
Using openQRP PC Board Rev C, 40M Version

Power Supply

Section 1 - AGND

Schematic Page 2

R37, R38	10K 1/8W	Resistor (Brown Black Orange)
C80	22Uf	Tantalum Capacitor
C79	.1uF	Ceramic Capacitor

Section 2 - 12 V Power Input

Schematic Page 3

J3	Power Connector	
D2	1N4001	Power Diode
C92	220uF	Electrolytic Capacitor
C56	100uF	Electrolytic Capacitor
C51, C85	.1uF	Ceramic Capacitor

Section 3 - Digital 5V

Schematic Page 3

VR2	LM78L05	5 volt Regulator (TO-220)
C50	100uF	Electrolytic Capacitor

Section 4 - Analog 6V

Schematic Page 2

VR3	LM78L06	6 volt Regulator (TO-92)
C91, C93	.1uF	Ceramic Capacitor
C88	100uF	Electrolytic Capacitor

Section 5 - Analog 8V (VFO)

Schematic Page 4

VR1	LM78L08	TO92 8 volt Regulator (TO-92)
C31, C33	.1uF	Ceramic Capacitor (104)
C30	33 uF	Electrolytic Capacitor

Section 6 - Arduino CPU Schematic Page 8 & 9

R3, R5, R14, R24	4.7K 1/8W	Resistor (Yellow Violet Red)
R53, R48		
R16	10K 1/8W	Resistor (Brown Black Orange)
R29	1K 1/8W	Resistor (Brown Black Red)
R54, R55, R56, R57	2.2K 1/8W	Resistor (Red Red Red)
R2	22K 1/8W	Resistor (Red Red Orange)
R6	10K 1/8W	Resistor (Brown Black Orange)
C46, C47	22pF	Ceramic capacitor (blue)
C46A, C55	.1uF	Ceramic Capacitor (104)
C52, C54, C86, C87	.001uF	Ceramic Disc Capacitor (102)
U2	ATmega168 CPU	28 pin DIP (IC packaging)
U2S1, U2S2	14 pin DIP sockets	Socket for CPU (In IC package)
Y2	16.384 MHz	Crystal
D3	LED	Red LED
J1	2x3 Header	ICSP Connector 6 pin dual header
J4	Stereo 1/8	Paddle connector
S1, S2, S3, S4, S5, S6	SPST	Pushbutton Switch

Section 7 - VFO

Q9	2N4401
R25	47K 1/8W
R31	22K 1/8W
R32	2.2K 1/8W
R30	1M 1/8W
C16	10pF
C43	.01 uF
C36, C38	1000pF
C37	2700pF
C34, C41	220pF
C35, C40	150pF
CT3	8-70pF
VC1	MVAM109
L5	T50-6 Toroid Core

Schematic Page 4

NPN Transistor (TO-92)
Resistor (Yellow Violet Orange)
Resistor (Red Red Orange)
Resistor (Red Red Red)
Resistor (Brown Black Blue)
Multilayer Ceramic Capacitor
Ceramic Capacitor (103)
Polystyrene Capacitor
Polystyrene Capacitor
Multilayer Ceramic Capacitor
Multilayer Ceramic Capacitor
Trimmer Capacitor
Varactor Diode
6.5uH XX turns

Section 8 - VFO Buffer Schematic Page 5

R26, R27	100K 1/8W
R15	1.5K 1/8W
R28	1K 1/8W
C32	.01 uF
C39	22pF
C42, C44	10pF
Q10, Q11	2N4401

Resistor (Brown Black Yellow)
Resistor (Brown Green Red)
Resistor (Brown Black Red)
Ceramic Disk Capacitor (103)
Ceramic Capacitor (Blue)
Ceramic Disk Capacitor (10)
NPN Transistor (TO-92)

Section 9 - Tune/RIT Controls

R52	1.5K 1/8W
R47	2.2K 1/8W
R49	3.9K 1/8W
R50	7.5K 1/8W
R51	33K 1/8W
RP1	10K
RP2	10K
C45	.01uF
U4	CD4066

Schematic Page 5

Resistor (Brown Green Red)
Resistor (Red Red Red)
Resistor (Orange White Red)
Resistor (Violet Green Red)
Resistor (Orange Orange Orange)
10 Turn 10K Potentiometer (TUNE)
10K Potentiometer (RIT)
Ceramic Disk Cap (103) .2" spacing
14 pin DIP (In IC Package)

Section 10 - TX Keyed 12V

R4	4.7K 1/8W
R12	15K 1/8W
R13	10K 1/8W
C3	.1uF
C15	4.7uF
Q3	2N7000
Q4	2N4403
R8	150 1/4W
ZD1	7.5V

Schematic Page 6

Resistor (Yellow Violet Red)
Resistor (Brown Green Orange)
Resistor (Brown Black Orange)
Ceramic Capacitor (104)
Electrolytic Capacitor
MOSFET transistor (TO-92)
PNP transistor (TO-92)
Resistor (Brown Green Brown)
1N5236 Zener Diode

Section 11 - TX Mixer/1st Driver

R11	100 1/4W
R7	150 1/8W
R10	5.6K 1/8W
R9	10K 1/8W
RX1	5K
C7	2.2pF
C1	150pF
C2	47pF
C6, C8	56pF COG
C10	120pf NPO
C11	220pF
C4	680 pF
C5	.01uF
C9	.1uF
CT1	8-70pF
L1	47uH
U1	NE602A
Q1	2N2222A
Y1	4.9152 MHz
T1, T2	42IF123

Section 12 - Tx 2nd Driver/Final

R19	4.7K 1/8W
R20	10K 1/8W
R18	1K 1/8W
R21	22 1/4W
R22	10 1/8W
C12	.01uF
C15	56pF NPO
C13, C18, C19, C22, C28	.1uF
C17	220uF
Q2	2N2219A
Q5	IRF510
D1	1N751A
L4	FT50-43
T2	42IF123

Section 13 - Rx Antenna Switch

R23	22k 1/8W
C21, C27	220pF
C20,C23,C26,C24	680pF
C25, C29	.001uF
L2, L3	T37-2
Q7, Q8	2N7000
Q6	ZVNL110A
RP3	5K

Schematic Page 6

Resistor (Brown Black Brown)
Resistor (Brown Green Brown)
Resistor (Green Blue Red)
Resistor (Brown Black Orange)
Trimmer Pot (Transmit Level)
Ceramic Disk Capacitor (2.2)
Ceramic Disk Capacitor (151)
Ceramic Disk Capacitor (47)
Multilayer Ceramic Capacitor
Ceramic Disk Capacitor (120)
Multilayer Ceramic
Ceramic Disk Capacitor (NPO)
Ceramic Disk Capacitor (103)
Ceramic Capacitor (104)
Trimmer Capacitor
Inductor (SEE SECTION 20 !!)
Mixer (DIP8) (IC packaging)
NPN Transistor (TO-18)
Crystal
IF Transformer (10.7 MHz)

Schematic Page 7

Resistor (Yellow Violet Red)
Resistor (Brown Black Orange)
Resistor (Brown Black Red)
Resistor (Red Red Black)
Resistor (Brown Black Black)
Ceramic Disk Capacitor (103)
Multilayer Ceramic Capacitor
Ceramic Capacitor (104)
Electrolytic Capacitor
NPN Transistor (TO-39)
Power MOSFET (TO-220)
5V Zener Diode
Bifilar Wound Toroid
IF Transformer (10.7 MHz)

Schematic Page 7

Resistor (Red Red Orange)
Multilayer Ceramic 200V
Multilayer Ceramic 200V
Ceramic Disc Capacitor (102)
20T Toroid - 1.2uH
MOSFET transistor (TO-92)
MOSFET transistor (TO-92E)
Potentiometer (RF Gain)

Section 14 - Audio Amplifier

C81, C82, C83	.1 uF
C84	100 uF
R33	2.2 1/4W
RX3	5K
J5	Stereo 1/8
U8	TDA7052A

Section 15 - LCD Display

DP1	LCD Display
RX2	10K
C53	.1 uF

Section 16 - Active Filter Schematic Page 2

U7	TS922A
R36	66.5K 1/8W
R42	16.5K 1/8W
R35	8.26K 1/8W
R46	1M 1/8W
C89, C90	.012uF

Section 17 - Receiver Input Filter, 1st Rx Mixer, and Crystal Filter

C60	.1uF
C61	47pF
C57, C59	56pF
C58	2.2pF
C66,	39pF
C67, C69, C71	220pF
C68, C70	150pF
L6, L7	10uH
U5	NE602A
Y4, Y5, Y6, Y7	4.9152 MHz
T3, T4	42IF123

Section 18 - 2nd Rx Mixer and Differential Amplifier

R44	470 1/8W
R40, R43	4.7K 1/8W
R39, R41	470K 1/8W
C72	.01uF
C73	.01uF
C74, C75	.1uF
C62	47pF
C63	220pF
C78, C77	150pF
C64, C76	.1uF
C65	22uF
CT2	8-70pF
D4, D5	1N4148
L8	xxuH
U6	NE602A
Y3	4.9152 MHz

Schematic Page 3

Ceramic Capacitor (104)
Electrolytic Capacitor
Resistor (Red Red Black)
Trimmer Potentiometer (AF Gain)
Speaker connector
Audio Amp (DIP8) (In IC package)

Schematic Page 7

Lumex
Trimmer Potentiometer (Contrast)
Ceramic Capacitor (104)

Dual Op Amp (DIP8) (In IC package)
1% Resistor
1% Resistor
1% Resistor
Resistor (Brown Black Blue)
Mylar Capacitor (Yellow Box)

Schematic Page 1

Ceramic Capacitor (104)
Ceramic Disk Capacitor (47)
Multilayer Ceramic Capacitor (56)
Multilayer Ceramic Capacitor (2.5)
Multilayer Ceramic Capacitor (39)
Multilayer Ceramic Capacitor (220)
Multilayer Ceramic Capacitor (150)
Inductor
Mixer (DIP8) (In IC package)
Crystal
IF Transformer (10.7 MHz)

Schematic Page 1

Resistor (Yellow Violet Brown)
Resistor (Yellow Violet Red)
Resistor (Yellow Violet Yellow)
Ceramic Disk Capacitor (103)
Mylar Capacitor (103) Brown
Mylar Capacitor (104) Brown
Ceramic Disk Capacitor (47)
Ceramic Disk Capacitor (100)
Multilayer Ceramic Capacitor (150)
Ceramic Capacitor (104)
Tantalum Capacitor
Trimmer Capacitor
Silicon Diode
Inductor not used, install jumper
Mixer (DIP8) (In IC package)
Crystal

Section 19 - PSoC Controller

R45	22K 1/8W
C49	.1uF
C48	.1uF
U3	CY8C27143
U3S	8 pin socket

Schematic Page 3

Resistor (Red Red Orange)
Ceramic Capacitor (104)
Mylar Capacitor (104) Brown
PSoC (DIP8) (IC packaging)
DIP8 (In IC package)

Section 20

Copper Wire #24	33 inches
Copper Wire #28	21 inches

Low pass filter and final toroids
VFO toroid

47 uH Inductor

Use in Section 11

Miscellaneous

J2	BNC
Knob	Qty 3
Enclosure	Qty 1
Heat Sink Bracket	Qty 1
Rubber Feet	Qty 4
4-40 x 1/4 Screws Black	Qty 4
4-40 x 3/8 Screws	Qty 4
TO220 Insulator	Qty 1
TO220 Shoulder Washer	Qty 1
4-40 x 1/4 Screw	Qty 2
4-40 Nut	Qty 1
Insulated Wire	20 inches

PC Mount BNC Connector
Tuning, RIT, RF Gain

For enclosure cover

For PCB mounting

For heat sink

For heat sink

For heat sink bracket

For heat sink bracket

Control Wiring

IC Pack

NE602/610	Qty 3
TS922A	Qty 1
CD4066	Qty 1
TD7052A	Qty 1
Atmega68	Qty 1
CY8C27143 (PsoC)	Qty 1

8 pin DIP

8 pin DIP

14 pin DIP

8 pin DIP

28 pin DIP

8 pin DIP

14 pin sockets	Qty 2
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8 pin socket	Qty 1
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