

## Component List for Powercom BNT-1500AP UPS

Code for Component Locations:

**Blue** Not fitted.

**Red** Safety critical – MUST be replaced with same type and ratings.

### Main Logic Board

<b>Capacitors</b>		R2	50K 1% ¼W Metal Film
C1	22uF 50V Electrolytic	R3	10K 5% ¼W Carbon Film
C2	0.1uF 50V Disc Ceramic	R4	1K5 5% 5W Wirewound
C3	<b>0.0047uF 250V Y1</b>	R5	47K 5% ¼W Carbon Film
C4	<b>0.22uF 275V X2</b>	R6	10K 5% ¼W Carbon Film
C5	0.1uF 50V Disc Ceramic	R7	1M0 5% ¼W Carbon Film
C6	0.1uF 50V Disc Ceramic	R8	10K 5% ¼W Carbon Film
C7	0.1uF 50V Disc Ceramic	R9	1K0 1% ¼W Metal Film
C8	680uF 63V Electrolytic	R10	10K 5% ¼W Carbon Film
C9	<b>0.1uF 275V X2</b>	R11	47K 5% ¼W Carbon Film
C10	0.1uF 50V Disc Ceramic	R12	47K 5% ¼W Carbon Film
C11	22uF 25V Electrolytic	R13	10K 5% ¼W Carbon Film
C12	100uF 25V Electrolytic	R14	10K 5% ¼W Carbon Film
C13	0.1uF 50V Disc Ceramic	R15	10K 5% ¼W Carbon Film
C14	22uF 25V Electrolytic	R16	10K 5% ¼W Carbon Film
C15	0.1uF 50V Disc Ceramic	R17	10K 5% ¼W Carbon Film
C16	0.1uF 50V Polystyrene	R18	120K 1% ¼W Metal Film
C17	0.1uF 50V Disc Ceramic	R19	20K5 1% ¼W Metal Film
C18	4.7uF 50V Electrolytic	R20	10K 1% ¼W Metal Film
C19	0.001uF 50V Polyester	R21	1R2 5% 3W Carbon Film
C20	47uF 50V Electrolytic	R22	100K 5% ¼W Carbon Film
C21	2.2uF 50V Electrolytic	R23	10K 5% ¼W Carbon Film
C22	470uF 63V Electrolytic	R24	240R 1% ¼W Metal Film
C23	0.1uF 50V Disc Ceramic	R25	10K5 1% ¼W Metal Film
C24	0.001uF 50V Polyester	R26	4K87 1% ¼W Metal Film
C25	0.001uF 50V Polyester	R27	1M2 5% ¼W Carbon Film
C26	47uF 50V Electrolytic	R28	2K0 5% ¼W Carbon Film
C27	20pF 50V Disc Ceramic	R29	2K0 5% ¼W Carbon Film
C28	20pF 50V Disc Ceramic	R30	2K0 5% ¼W Carbon Film
C29	0.1uF 50V Disc Ceramic	R31	200K 1% ¼W Metal Film
C30	10uF 100V Electrolytic	R32	2K0 5% ¼W Carbon Film
C31	0.001uF 50V Polyester	R33	10K 5% ¼W Carbon Film
C32	470uF 63V Electrolytic	R34	100K 5% ¼W Carbon Film
C33	0.1uF 50V Polystyrene	R35	100R 5% ¼W Carbon Film
C34	20pF 50V Disc Ceramic	R36	10K 5% ¼W Carbon Film
C35	Unknown	R37	1K0 5% ¼W Carbon Film
C36	Unknown	R38	1K0 5% 3W Carbon Film
C37	Unknown	R39	4K99 1% ¼W Metal Film
		R40	10K 5% ¼W Carbon Film
<b>Resistors</b>		R41	3K3 5% ¼W Carbon Film
R1	10K 5% ¼W Carbon Film	R42	84K5 1% ¼W Metal Film
R43	200K 1% ¼W Metal Film	<b>Transistors</b>	
R44	47K 5% ¼W Carbon Film	Q1	PNP BIPOLAR 2SA733
R45	10K 5% ¼W Carbon Film	Q2	PNP BIPOLAR 2SB647
R46	84K5 1% ¼W Metal Film	Q3	NPN BIPOLAR 2SC945
R47	5K6 5% ¼W Carbon Film	Q4	NPN BIPOLAR 2SC945
R48	12K 5% ¼W Carbon Film	Q5	NPN BIPOLAR 2SC945
R49	120R 5% ¼W Carbon Film	Q6	N-CH MOSFET IRF540

R50	10K 1% ¼W Metal Film	Q7	NPN BIPOLAR 2SA733
R51	120R 5% ¼W Carbon Film	Q8	NPN BIPOLAR 2SC945
R52	200K 1% ¼W Metal Film	Q9	LM317T
R53	10K 5% ¼W Carbon Film	Q10	NPN BIPOLAR 2SC945
R54	47K 5% ¼W Carbon Film	Q11	NPN BIPOLAR 2SC945
R55	10M 5% ¼W Carbon Film	Q12	N-CH MOSFET IRF1010E
R56	10K 5% ¼W Carbon Film	Q13	NPN BIPOLAR TIP31C
R57	27K 5% ¼W Carbon Film	Q14	NPN BIPOLAR 2SC945
R58	27K 5% ¼W Carbon Film	Q15	N-CH MOSFET IRF1010E
R59	Unknown	Q16	NPN BIPOLAR 2SC945
R60	200K 1% ¼W Metal Film	Q17	NPN BIPOLAR 2SC945
R61	10K 1% ¼W Metal Film	Q18	N-CH MOSFET IRF1010E
R62	200K 1% ¼W Metal Film	Q19	NPN BIPOLAR 2SC945
R63	200K 1% ¼W Metal Film	Q20	NPN BIPOLAR 2SC945
R64	47K 5% ¼W Carbon Film	Q21	NPN BIPOLAR 2SC945
R65	10K 5% ¼W Carbon Film	Q22	NPN BIPOLAR 2SC945
R66	10K 5% ¼W Carbon Film	Q23	NPN BIPOLAR 2SC945
R67	120R 5% ¼W Carbon Film	Q24	NPN BIPOLAR 2SC945
R68	12K 5% ¼W Carbon Film	Q25	NPN BIPOLAR 2SC945
R69	1M0 5% ¼W Carbon Film	Q26	NPN BIPOLAR 2SC945
R70	200K 5% ¼W Carbon Film	Q27	Unknown
R71	47K 5% ¼W Carbon Film		
R72	47K 5% ¼W Carbon Film	<b>Diodes</b>	
R73	5K6 5% ¼W Carbon Film	D1	PS204
R74	120R 5% ¼W Carbon Film	D2	PS204
R75	1K0 5% 3W Carbon Film	D3	PS204
R76	10K 5% ¼W Carbon Film	D4	PS204
R77	10K 5% ¼W Carbon Film	D5	1N4007
R78	2K0 5% ¼W Carbon Film	D6	1N5404
R79	2R2 1% ¼W Metal Film	D7	1N5404
R80	Unknown	D8	1N4148
R81	10K 1% ¼W Metal Film	D9	1N4148
R82	309K 1% ¼W Metal Film	D10	1N4148
R83	1K51% ¼W Metal Film	D11	1N4148
R84	200K 1% ¼W Metal Film	D12	1N4007
R85	10K 1% ¼W Metal Film	D13	Cannot locate
R86	200K 1% ¼W Metal Film	D14	1N4148
R87	Unknown	D15	1N4148
R88	Unknown	D16	1N4007
R89	Unknown	D17	1N4148
		D18	1N4007
D19	1N4007	RY7	10A 250VAC SPDT
D20	1N4007	F3	250V 10A Fast
D21	1N4007	<b>FRONT PANEL CONTROLS</b>	
D22	1N4007	SW1	SPST Momentary
D23	Unknown	LED1	5mm Green
D24	1N4007		
D25	1N4007	<b>TELEPHONE LINE PROTECTOR &amp; COMMUNICATIONS</b>	
D26	1N4148		
D27	1N4148	C1	Unknown
D28	1N4148	C2	22uF 25V Electrolytic
D29	1N4148	D1	1N4148
D30	1N4148	D1A	1N4007
D31	1N4148	D2	Unknown
D32	1N4148	D2A	1N4007
DB1	Unknown	D3	Unknown

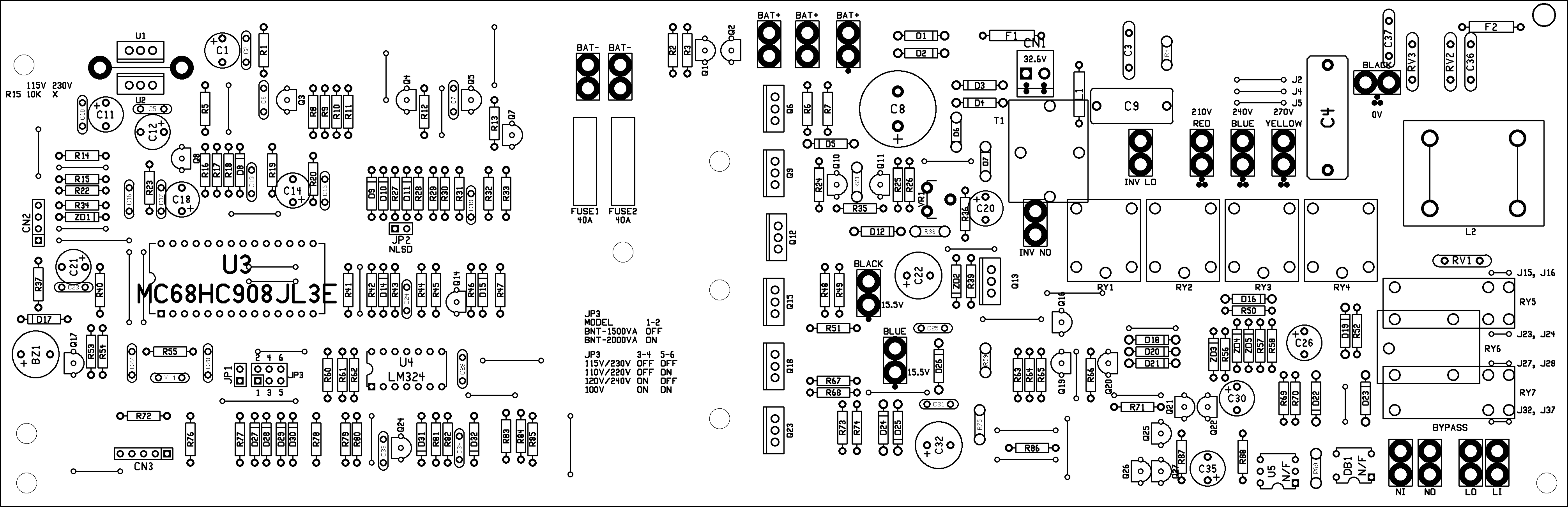
ZD1	Unknown	D3A	1N4007
ZD2	Unknown	D4	Unknown
ZD3	Unknown	D4A	1N4007
ZD4	Unknown	D5A	1N4007
ZD5	Unknown	D6A	1N4007
		FU1A	Shunted
<b>Integrated Circuits</b>		FU2A	Shunted
U1	7812	MOV1A	<b>MOV DNR 7D21K</b>
U2	7805	Q1	NPN BIPOLAR 2SC945
U3	MC68HC908JL3 $\mu$ C	Q2	NPN BIPOLAR 2SC945
U4	LM324 Quad Op-Amp	R1	10K 5% 1/4W Carbon Film
U5	Unknown	R1A	<b>10R 1/4W Fusible</b>
		R2	10K 5% 1/4W Carbon Film
<b>Transformers &amp; Inductors</b>		R2A	<b>10R 1/4W Fusible</b>
T1	Power Output RT-2001BN	R3	Unknown
CT1	Current Sensor	R4	330R 5% 1/4W Carbon Film
L1	220uH	R5	1K0 5% 1/4W Carbon Film
L2	Common Mode Choke	R6	1K0 5% 1/4W Carbon Film
<b>Miscellaneous Components</b>		R7	1K0 5% 1/4W Carbon Film
BZ1	Buzzer AC-121H-P	R8	Unknown
F1	<b>0R01 1/2W</b>	R9	1K0 5% 1/4W Carbon Film
F2	Unknown	U1	<b>PC817 Optocoupler</b>
RV1	<b>MOV DNR 14D471K</b>	U2	Unknown optocoupler
RV2	MOV DNR 14D471K	U3	<b>PC817 Optocoupler</b>
RV3	MOV DNR 14D471K	U4	<b>PC817 Optocoupler</b>
XL1	16MHz	U5	<b>PC817 Optocoupler</b>
VR1	500R Trimpot		
RY1	<b>10A 250VAC DPST</b>		
RY2	<b>10A 250VAC DPST</b>		
RY3	<b>10A 250VAC DPST</b>		
RY4	<b>10A 250VAC DPST</b>		
RY5	10A 250VAC SPDT		
RY6	10A 250VAC DPST		

Notes:

Transformer T1 (**Entire circuit is at mains potential, so use an isolating transformer**):

- Black/Blue: 240VAC
- Black/Red: 210VAC
- Black/Yellow: 270VAC
- Blue/Red: 30VAC
- Blue/Yellow: 30VAC
- Black/Green pair: 32.6VAC
- Thick Red/Black: 15.5VAC
- Thick Red/Blue: 15.5VAC
- Thick Blue/Black: 31VAC

R15 is fitted on 115V versions and is removed on 230V versions.



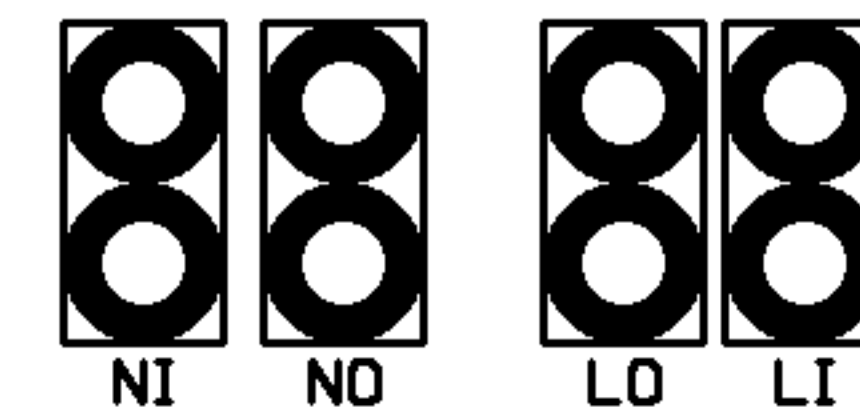
115V 230V  
R15 10K X

**MC68HC908JL3E**

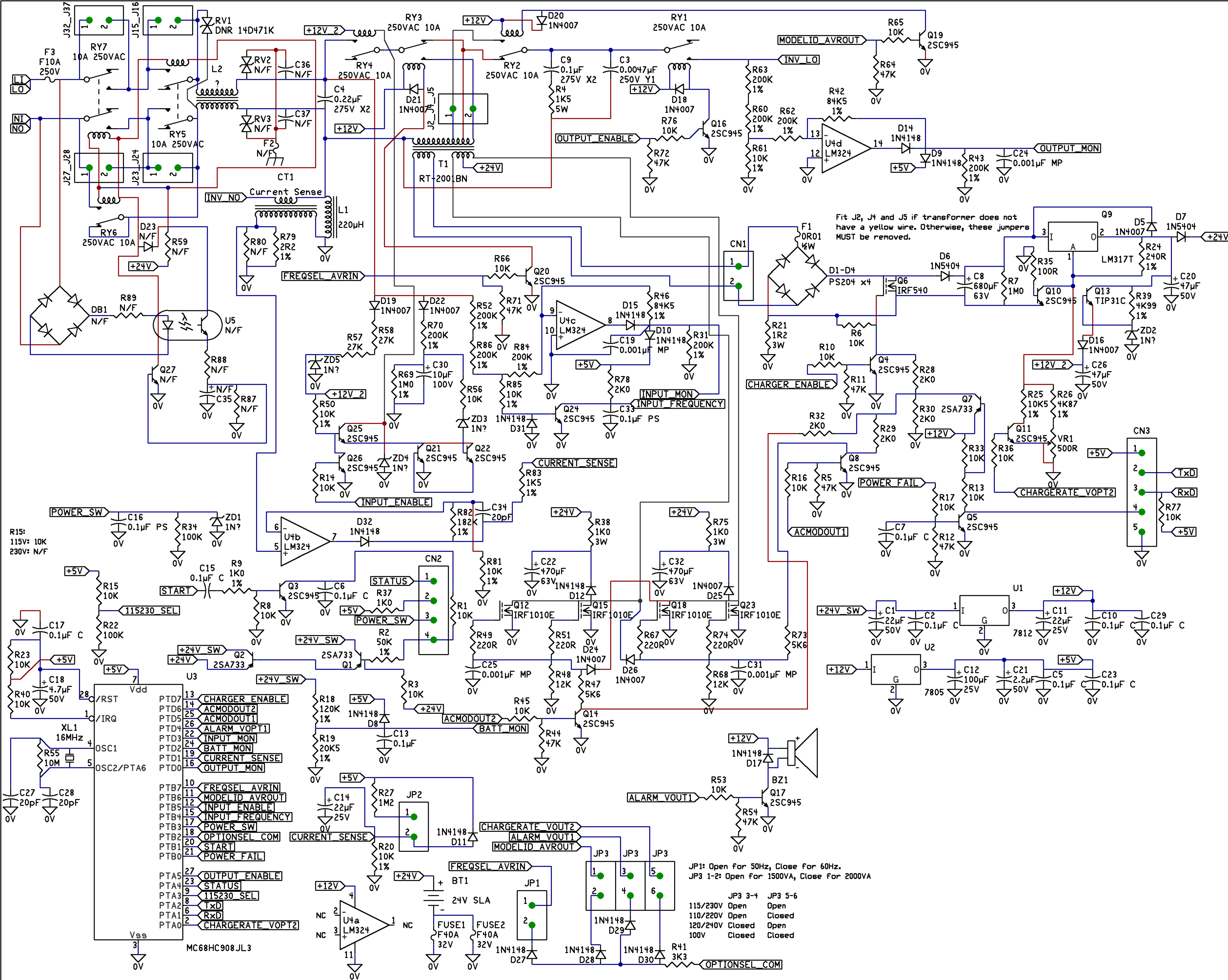
JP3  
MODEL 1-2  
BNT-1500VA OFF  
BNT-2000VA ON

JP3 3-4 5-6  
115V/230V OFF OFF  
110V/220V OFF ON  
120V/240V ON OFF  
100V ON ON

BYPASS



NI NO LO LI



Fit J2, J4 and J5 if transformer does not have a yellow wire. Otherwise, these jumpers MUST be removed.

PTD7	13	CHARGER ENABLE
PTD6	14	ACMODOUT2
PTD5	25	ACMODOUT1
PTD4	26	ALARM_VOPT1
PTD3	22	INPUT_MON
PTD2	24	BATT_MON
PTD1	19	CURRENT SENSE
PTD0	16	OUTPUT_MON
PTB7	10	FREQSEL AVRIN
PTB6	12	MODELID AVROUT
PTB5	15	INPUT_ENABLE
PTB4	17	INPUT_FREQUENCY
PTB3	18	POWER_SW
PTB2	20	OPTIONSEL_COM
PTB1	21	START
PTB0	21	POWER_FAIL
PTA5	27	OUTPUT_ENABLE
PTA4	23	STATUS
PTA3	9	115230_SEL
PTA2	8	TxD
PTA1	6	RxD
PTA0	2	CHARGERATE_VOPT2

JP1:	Open for 50Hz, Close for 60Hz.
JP3 1-2:	Open for 1500VA, Close For 2000VA
JP3 3-4	115/230V Open
JP3 5-6	Open
	110/220V Open
	Closed
	120/240V Closed
	Open
	100V Closed
	Closed

Co:	?
Title:	?
Board:	?
Author:	?
Date:	?
Revision:	A
Size:	B
Sheet	1 of 1