

whiteRhino industrial SBC Revised: 10/03/2015
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Bill Of Materials October 4,2015 16:53:55

Item	Qty	Reference	Description	Manufacturer	Part Number
1	1	BT1	Battery, Lithium Coin Cell, 120mAh, 16mm Dia, PCB Mount	Panasonic	BR-1632A/HAN
2	5	C1, C5, C7, C10, C11	Capacitor, Ceramic, 10uF 25V 10% X7R, SMD 1210	Samsung	CL32B106KAULNNE
3	130	C2, C3, C4, C6, C9, C15, C65, C106, C107, C108, C109, C110, C111, C112, C113, C115, C119, C120, C121, C122, C123, C124, C132, C133, C136, C138, C150, C152, C153, C157, C158, C160, C161, C162, C163, C164, C165, C167, C168, C169, C171, C172, C174, C176, C177, C178, C179, C181, C183, C184, C186, C188, C189, C190, C192, C194, C196, C202, C203, C204, C205, C206, C207, C209, C212, C215, C218, C224, C225, C227, C229, C233, C236, C239, C242, C245, C248, C251, C254, C257, C260, C263, C266, C271, C274, C276, C277, C278, C281, C284, C286, C287, C288, C289, C290, C291, C293, C296, C298, C300, C302, C304, C305, C306, C307, C309, C311, C312, C313, C315, C316, C317, C318, C319, C321, C322, C323, C325, C326, C327, C328, C329, C310, C314, C320	Capacitor, Ceramic, 0.1uF 25V 10% X7R, SMD 0603	Samsung	CL10B104KA8NNNC
4	38	C8, C18, C22, C31, C32, C42, C46, C54, C56, C67, C71, C79, C80, C90, C99, C114, C125, C126, C127, C131, C134, C139, C141, C142, C144, C145, C149, C191, C197, C269, C279, C283, C285, C292, C308, C310, C314, C320	Capacitor, Ceramic, 1.0uF 25V 10% X5R, SMD 0603	Samsung	CL10A105KA8NNNC
5	1	C12	Capacitor, Ceramic, 1500pF 50V 5% NPO, SMD 0603	Murata	GRM1885C1H152JA01D
6	7	C13, C116, C117, C118, C135, C137, C182	Capacitor, Ceramic, 0.01uF 25V 10% X7R, SMD 0603	Samsung	CL10B103KA8NNNC
7	1	C14	Capacitor, Ceramic, 0.068uF 16V 10% X7R, SMD 0603	Samsung	CL10B683KO8NNNC
8	1	C16	Capacitor, Ceramic, 0.12uF 16V 10% X7R, SMD 0603	Samsung	CL10B124KO8NNNC
9	28	C17, C21, C41, C45, C66, C70, C89, C98, C128, C129, C130, C140, C151, C154, C159, C166, C170, C173, C175, C180, C185, C187, C193, C198, C199, C201, C272, C324	Capacitor, Ceramic, 10uF 6.3V 10% X5R, SMD 0805	Samsung	CL21A106KQJNNNE
10	14	C19, C23, C27, C28, C43, C47, C50, C55, C68, C72, C74, C77, C91, C97	Capacitor, Ceramic, 0.47uF 16V 10% X5R, SMD 0603	Samsung	CL10B474KO8NNNC
11	14	C20, C24, C25, C29, C44, C48, C49, C51, C69, C73, C75, C78, C92, C94	Capacitor, Ceramic, 0.022uF 50V 10% X7R, SMD 0603	Samsung	CL10B223KB8NNNC
12	4	C26, C52, C280, C282	Capacitor, Ceramic, 33pF 50V 5% NPO, SMD 0603	Samsung	CL10C330JB8NNNC
13	3	C30, C53, C76	Capacitor, Ceramic, 22pF 50V 5% NPO, SMD 0603	Samsung	CL10C220JB8NNNC
14	9	C33, C34, C57, C58, C81, C82, C100, C101, C103	Capacitor, Ceramic, 47uF 10V 10% X5R, SMD 1210	Samsung	CL32A476KPJNNNE
15	7	C35, C36, C59, C60, C83, C84, C102	Capacitor, Ceramic, 0.047uF 50V 10% X7R, SMD 0603	Samsung	CL10B473KB8NNNC
16	10	C37, C38, C61, C62, C85, C86, C96, C104, C270, C273	Capacitor, Ceramic, 4.7uF 6.3V 10% X5R, SMD 0805	Samsung	CL21A475KQFNNNE
17	8	C39, C40, C63, C64, C87, C88, C105, C275	Capacitor, Ceramic, 2.2uF 10V 10% X5R, SMD 0603	Samsung	CL10A225KP8NNNC
18	1	C93	Capacitor, Ceramic, 10pF 50V 5% NPO, SMD 0603	Samsung	CL10C100JB8NNNC
19	1	C95	Capacitor, Ceramic, 100pF 50V 5% NPO, SMD 0603	Kemet	C0603C101J5GAC7411
20	3	C143, C148, C156	Capacitor, Ceramic, 47pF 50V 5% NPO, SMD 0603	Samsung	CL10C470JB8NNNC
21	3	C146, C147, C155	Capacitor, Ceramic, 100uF 10V 20% X5R, SMD 1210	Kemet	C1210C107M8PACTU
22	2	C195, C200	Capacitor, Ceramic, 27pF 50V 5% NPO, SMD 0603	Samsung	CL10C270JB8NNNC
23	1	C208	Capacitor, Ceramic, 470pF 50V 5% NPO, SMD 0603	Samsung	CL10C471JB8NNNC
24	20	C210, C213, C216, C219, C221, C228, C230, C231, C234, C237, C240, C243, C246, C249, C252, C255, C258, C261, C264, C267	Capacitor, Ceramic, 0.01uF 25V 5% NPO, SMD 0603	Samsung	CL10C103JA8NNNC
25	20	C211, C214, C217, C220, C222, C223, C226, C232, C235, C238, C241, C244, C247, C250, C253, C256, C259, C262, C265, C268	Capacitor, Ceramic, 1000pF 50V 5% NPO, SMD 0603	Samsung	CL10C102JB8NNNC
26	6	C294, C295, C297, C299, C301, C303	Capacitor, Ceramic, 150uF 6.3V 20% X5R, SMD 1210	Samsung	CL32A157MQVNNNE
27	1	D1	Diode, Schottky, Dual Common Cathode, 35V 25A, D2PAK	ON Semiconductor	MBRB2535CTLG

28	15	D2, D6, D7, D8, D9, D10, D11, D12, D17, D19, D21, D23, D25, D27, D29	LED, Green 0603	Lumex	SML-LX0603SUGW-TR
29	4	D3, D4, D5, D15	Diode, Schottky, 40V 1A, SOD123	Diodes Inc	1N5819HW-7-F
30	1	D13	Diode, Schottky, 30V 30mA, SOD323	ON Semiconductor	RB751V40T1G
31	8	D14, D16, D31, D32, D33, D34, D35, D36	LED, Red 0603	Lumex	SML-LX0603SIW-TR
32	7	D18, D20, D22, D24, D26, D28, D30	LED, Yellow 0603	Lumex	SML-LX0603SYW-TR
33	3	FB1, FB3, FB7	Ferrite Bead, 120 ohms 25% @ 100MHz, 2A max, SMD 0603	Vishay Dale	ILHB0603ER121V
34	4	FB2, FB4, FB5, FB6	Ferrite Bead, 220 ohms 25% @ 100MHz, 0.6A max, SMD 0603	Laird	HZ0603A222R-10
35	10	FB8, FB9, FB10, FB11, FB12, FB13, FB14, FB15, FB16, FB17	Ferrite Bead, 4x Array, 470 ohms 25% @100MHz, 500mohm DCR max, 100mA max, SMD 1206	Taiyo Yuden	BK32164M471-T
36	8	PC1, PB1, PA1, JC1, PB2, PA2, JB2, P3	Conn, Header, 40-pin, 20-posx2-row, 0.05" Vert Shrouded, TH	Samtec	TFM-120-01-F-D-A
37	4	JP1, JP2, JP3, JP4	Conn, Header, 6pin, 3posx2row, 0.05" Vert TH	Samtec	TSW-103-07-F-D
38	1	J1	Conn, Jack, 2-pos, 5.5mm OD x 2.5mm ID DC Power, 8A T/H RA	CUI Inc	PJ-063BH
39	1	J4	Conn, Header, 5-pos, Single Row R/A MiniFit Jr Gold	Molex	39-30-3058
40	1	J5	Conn, Header, 14-pos, 2MM VERT Gold SHRD	Molex Inc.	87831-1420
41	1	J6	Conn, Header, 10-pos, 0.1" STR Gold SHRD	3M	N2510-6002-RB
42	1	J11	Conn, Recept, HDMI 19-pos, SMT, RA Horizontal	Molex	47151-1001
43	3	J14, J15, J16	Conn, Recept, USB Type A, 2-port, RA Horizontal	TE Connectivity	6-1565589-2
44	3	J17, J18, J19	Conn, D-Sub Plug, Male Pins, 9-pos, T/H, RA	Norcomp, Inc.	183-009-113R561
45	4	J20, J21, J22, J23	Conn, Header, 40-pos, 0.1", STR Long Latch	3M	N3432-6302RB
46	1	J24	Conn, Header, 14-pos, 0.1", STR Long Latch	3M	N3314-6302RB
47	1	J25	Conn, Header, 5-pos, 0.1" Vert, Gold Flash	Samtec	TSW-105-07-L-S
48	1	L1	Inductor, 15uH 20% 40mohm 4.5Arms, Shielded, SMD 6.36mmx6.56mmx6.1mm	Coilcraft	XAL6060-153MEC
49	4	L2, L3, L4, L6	Inductor, 3.3uH 20% 29.7mohm 6.8A, Shielded, SMD 7.1mmx6.5mmx3.0mm	TDK	SPM6530T-3R3M
50	1	L5	Inductor, 6.8uH 20% 31mohm 3.0A, Shielded, SMD	Abracon	ASPI-6045S-6R8M-T
51	2	L7, L8	Inductor, 4.7uH 20% 35mohm 2.6A, Shielded, SMD 4.9mmx4.9mmx3.0mm	Taiyo Yuden	NRS5030T4R7MMGJ
52	4	L9, L10, L11, L12	Inductor, 10uH 20% 700mohm 470mA, Shielded, SMD 2mmx2mmx1.2mm	Abracon	ASPI-2012-100M-T
53	1	P2	Conn, Header, 30-pin, 15-posx2-row, 0.05" Vert Shrouded, TH	Samtec	TFM-115-01-F-D-A
54	1	P7	Conn, Jack, Stereo 4-pos, 3.5MM SMD Blue	CUI Inc	SJ-3524-SMT-TR-BE
55	1	P8	Conn, Jack, Stereo 4-pos, 3.5MM SMD Pink	CUI Inc	SJ-3524-SMT-TR-PI
56	1	P9	Conn, Jack, Stereo 4-pos, 3.5MM SMD Green	CUI Inc	SJ-3524-SMT-TR-GR
57	1	P10	Conn, Jack, Stereo 4-pos, 3.5MM SMD Black	CUI Inc	SJ-3524-SMT-TR
58	1	P12	Conn, Magjack, 1-port 1000	Bel Fuse	0826-1X1T-43-F
59	1	P13	Conn, Magjack, 4-port 1000	Bel Fuse	0826-1X4T-43-F
60	1	Q1	MOSFET, Dual P-Channel, 30V 8A, SOIC-8	Vishay Siliconix	SI4925DDY-T1-GE3
61	1	Q2	MOSFET, P-Channel, 30V 5.7A, SOIC-8	Vishay Siliconix	SI4431BDY-T1-E3
62	1	Q3	MOSFET, N-Channel, 30V 8.4A, SOIC-8	Fairchild Semiconductor	FDS6612A
63	1	Q4	Transistor, Dual PNP Matched, 40V 200mA, SOT363	NXP Semiconductors	BCM856BS,115
64	5	RP1, RP2, RP3, RP5, RP6	Resistor Pack, 2.0K ohm 5% x4 Individual, 1/16W per resistor, Convex, SMD 1206	Yageo	YC164-JR-072KL
65	6	RP4, RP15, RP16, RP17, RP18, RP19	Resistor Pack, 10K ohm 5% x4 Individual, 1/16W per resistor, Convex, SMD 1206	Yageo	YC164-JR-0710KL
66	4	RP7, RP8, RP9, RP10	Resistor Pack, 22 ohm 1% x4 Individual, 1/16W per resistor, Convex, SMD 1206	Vishay	CRA06S08322R0FTA
67	4	RP11, RP12, RP13, RP14	Resistor Pack, 330 ohm 5% x4 Individual, 1/16W per resistor, Convex, SMD 1206	Yageo	YC164-JR-07330RL

68	2	R1, R12	Resistor, 1.13K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F1131CS
69	10	R2, R14, R17, R48, R50, R52, R80, R81, R83, R87	Resistor, 10.0K ohm 0.1% 25ppm 1/10W, SMD 0603	Yageo	AT0603BRD0710KL
70	1	R3	Resistor, 0.020 ohm 1% 1W, SMD 1206	TT Electronics/Welwyn	LRMAM1206-R02FT5
71	1	R4	Resistor, 1.30K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F132CS
72	7	R5, R8, R93, R94, R98, R100, R116	Resistor, 4.99K ohm 1% 1/10W, SMD 0603	Yageo	RC0603FR-074K99L
73	22	R6, R7, R9, R30, R31, R44, R45, R46, R60, R62, R63, R66, R71, R73, R74, R77, R96, R99, R101,	Resistor, 100K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F104CS
74	1	R10	Resistor, 0.025 ohm 1% 1W, SMD 1206	Panasonic	ERJ-8CWF025V
75	1	R11	Resistor, 54.9K ohm 1% 1/10W, SMD 0603	Yageo	RC0603FR-0754K9L
76	1	R13	Resistor, 33.2K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F3322CS
77	1	R15	Resistor, 6.04K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F6041CS
78	3	R16, R110, R113	Resistor, 100 ohm 1% 1/10W, SMD 0603	Samsung	RC1608F101CS
79	16	R18, R19, R32, R33, R53, R54, R64, R109, R129, R131, R132, R134, R135, R136, R137, R138	Resistor, 330 ohm 1% 1/10W, SMD 0603	Samsung	RC1608F331CS
80	6	R20, R23, R34, R37, R56, R67	Resistor, 590K ohm 1% 1/10W, SMD 0603	Yageo	RC0603FR-07590KL
81	6	R21, R22, R35, R36, R59, R69	Resistor, 1.00M ohm 0.1% 1/8W, SMD 0805	Yageo	RT0805BRD071ML
82	7	R24, R25, R38, R39, R57, R68, R133	Resistor, 1.00M ohm 1% 1/10W, SMD 0603	Samsung	RC1608F105CS
83	2	R26, R41	Resistor, 249K ohm 0.1% 1/8W, SMD 0805	Yageo	RT0805BRD07249KL
84	1	R27	Resistor, 432K ohm 0.1% 1/8W, SMD 0805	Panasonic	ERA-6AEB4323V
85	7	R28, R29, R40, R43, R58, R61, R72	Resistor, 39.2 ohm 1% 1/10W, SMD 0603	Yageo	RC0603FR-0739R2L
86	1	R42	Resistor, 680K ohm 0.1% 1/8W, SMD 0805	Panasonic	ERA-6AEB684V
87	2	R47, R49	Resistor, 100K ohm 0.1% 1/8W, SMD 0805	Yageo	RT0805BRD07100KL
88	1	R51	Resistor, 45.3K ohm 0.1% 1/8W, SMD 0805	Panasonic	ERA-6AEB4532V
89	1	R55	Resistor, 806K ohm 0.1% 1/8W, SMD 0805	Yageo	RT0805BRD07806KL
90	1	R65	Resistor, 187K ohm 0.1% 1/8W, SMD 0805	Panasonic	ERA-6AEB1873V
91	1	R70	Resistor, 105K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F1053CS
92	2	R75, R76	Resistor, 19.1K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F1912CS
93	2	R78, R79	Resistor, 24.9K ohm 0.1% 1/8W, SMD 0805	Yageo	RT0805BRD0729K4L
94	1	R82	Resistor, 16.2K ohm 0.1% 1/8W, SMD 0805	Yageo	RT0805BRD0716K2L
95	1	R84	Resistor, 24.9K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F2492CS
96	1	R85	Resistor, 3.74K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F3741CS
97	5	R86, R147, R150, R151, R153	Resistor, 12.0K ohm 0.1% 25ppm 1/10W, SMD 0603	Yageo	RT0603BRD0712KL
98	3	R88, R168, R169	Resistor, 422 ohm 0.1% 1/8W, SMD 0805	Yageo	RT0805BRD07422RL
99	24	R89, R90, R105, R114, R124, R125, R126, R127, R141, R142, R145, R146, R149, R154, R155, R156, R157, R158, R159, R160, R161, R162, R165, R166	Resistor, 10.0K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F103CS
100	1	R91	Resistor, 49.9 ohm 1% 1/10W, SMD 0603	Samsung	RC1608F49R9CS
101	5	R92, R95, R97, R103, R121	Resistor, 0ohms 1/10W, SMD	Samsung	RC1608J000CS
102	1	R104	Resistor, 2.20K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F222CS
103	1	R106	Resistor, 27.0K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F273CS
104	2	R107, R108	Resistor, 2.00K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F202CS
105	1	R111	Resistor, 4.70K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F472CS
106	1	R112	Resistor, 887 ohm 1% 1/10W, SMD 0603	Samsung	RC1608F8870CS
107	4	R115, R118, R119, R120	Resistor, 150 ohm 1% 1/10W, SMD 0603	Samsung	RC1608F151CS
108	1	R117	Resistor, 1.00K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F102CS
109	1	R122	Resistor, 8.06K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F8061CS
110	1	R130	Resistor, 12.0K ohm 1% 1/10W, SMD 0603	Samsung	RC1608F123CS
111	4	R139, R140, R143, R144	Resistor, 120 ohm 5% 1/2W, SMD 1210	Panasonic	ERJ-14YJ121U

112	2	R148, R152	Resistor, 3.00K ohm 0.1% 25ppm 1/10W, SMD 0603	Yageo	RT0603BRD073KL
113	2	R163, R167	Resistor, 1.24K ohm 0.1% 1/8W, SMD 0805	Yageo	RT0805BRD071K24L
114	1	R164	Resistor, 845 ohm 0.1% 1/8W, SMD 0805	Panasonic	ERA-6AEB8450V
115	1	SW1	Switch, Slide SPDT, 0.4VA @ 28V or 6A @ 125V	NKK Switches	MS12ANA03
116	1	TVS1	TVS DIODE 3.3VWM SOD523	NXP Semiconductors	PESD3V3U1UB,115
117	2	TVS2, TVS3	Diode Array, Quint 3.3V ESD Prot., SOT363	NXP Semiconductor	PESD3V3L5UY,115
118	7	TVS4, TVS5, TVS6, TVS7, TVS8, TVS9, TVS13	Diode Array, Single USB 2.0 ESD Protector, SOT457	NXP Semiconductor	IP4234CZ6,125
119	2	TVS10, TVS11	TVS Diode, Dual, 5.0VWM, 1.5pF max, 200W peak, SOT-23	NXP Semiconductors	PESD5V0U1UT,215
120	1	TVS12	Diode Array, Quad 3.3V ESD Prot., SOT353	NXP Semiconductor	PESD3V3L4UG
121	1	U1	IC, Voltage Regulator, LDO, 4.5V to 30V Input, 3.3V 0.1Amax Output, SOT23-3	Texas Instruments	LM3480IM3-3.3/NOPB
122	1	U2	IC, Smart Battery Charger Controller, 24-SSOP	Linear Technology	LTC4100EG#PBF
123	3	U3, U4, U5	IC, Regulator, Buck, Sync, Adj Vout 3A, 16-TSSOP	Texas Instruments	LM43603PWPT
124	3	U6, U9, U10	IC, Regulator, Buck, Sync, Adj Vout 1A, 16-TSSOP	Texas Instruments	LM43601PWPT
125	3	U7, U13, U14	IC, Quad Voltage Supervisor with Manual Reset Input, VSSOP-8	Texas Instruments	TPS386596L33DGKR
126	1	U8	IC, Regulator, Buck, Sync, Adj Vout 2A, 16-TSSOP	Texas Instruments	LM43602PWPT
127	1	U11	IC, Low Dropout Regulator, 3.3V/Adjustable Output, 0.2A max, 8SOIC	Texas Instruments	LP2986IMX-3.3/NOPB
128	1	U12	IC, Switched Capacitor Inverter/Doubler, 2.5V to 5.0V Input, 0.2Amax Output, 8SOIC	Texas Instruments	LM2662MX/NOPB
129	4	U15, U41, U43, U44	IC, Power Dist Switch, Single, Adjustable Current Limit, 8-SOIC	Micrel Inc.	MIC2040-1YMM
130	1	U16	IC, EEPROM, 256x8bit, I2C 400KHz, TSOT23-5	ON Semiconductor	CAT24AA02TDI-GT3
131	1	U17	IC, I2C Switch, 8 Channel, TSSOP-24	NXP Semiconductors	PCA9548APW,118
132	1	U18	IC, RTC, Clock/Calendar I2C, 16-SOIC	Maxim Integrated	DS3231S#T&R
133	1	U19	IC, CPLD, 6864 LUTs, 6.72ns, 144TOFP	Lattice Semiconductor	LCMX02-7000HC-6TG144C
134	1	U21	IC, Stereo Audio CODEC, 28- TSSOP	Texas Instruments	TLV320AIC23BIPW
135	1	U22	TVS Diode Array, 13 Channel HDMI, 5.5VWM 15VC 1pF Cio 0.05pF diff Cio, 5V Load	Texas Instruments	TPD13S523PWR
136	1	U23	IC, Transmitter, HDMI 165MHZ, 64-LOFP	Analog Devices	ADV7513BSWZ
137	1	U24	IC, Gigabit Ethernet Switch, 7 Port, QFP-128	Marvell	88E6352-A1-TFJ2C000
138	1	U25	IC, USB PHY, Host/Dev/OTG, ULPI I/F, 24-QFN	Microchip Technology	USB3315C-CP-TR
139	1	U26	IC, USB 2.0 7-port Hub Controller, 64-QFN	Microchip	USB2517-JZX
140	1	U27	IC, Power Dist Switch, Quad, 0.9A Limit, 16-SOIC	Micrel Inc.	MIC2077-1YM
141	1	U28	IC, Power Dist Switch, Dual, 0.7A Limit, 8-SOIC	Micrel Inc.	MIC2076-1YM
142	4	U29, U31, U38, U40	IC, 8bit Bi-directional Voltage-Level Translator, TSSOP-20	Texas Instruments	TXS0108EPWR
143	1	U30	IC, Transceiver, Dual CAN High Speed, 14-SOIC	Freescale Semiconductor	MC34CM0902WEF
144	1	U32	IC, Transceiver, RS485/422, 14-SOIC	Maxim Integrated	MAX3079EESD+T
145	1	U33	IC, Multiplexer, Analog, 32x1, 48-TOFP	Analog Devices	ADG731BSUZ
146	3	U34, U35, U36	IC, Op-Amp, Dual, GP 24MHz RRO, 8-MSOP	Analog Devices	AD8616ARMZ
147	1	U37	IC, DAC, 12Bit Octal, 5V Ref, 16-TSSOP	Analog Devices	AD5628BRUZ-2
148	1	U39	IC, Power Dist Switch, Single, 0.7A Limit, 8-SOIC	Micrel Inc.	MIC2075-1YM
149	2	U42, U45	IC, Power Dist Switch, Single, Adjustable Current Limit, 8-SOIC	Micrel Inc.	MIC2544-1YM
150	1	X1	Crystal, 25.0000MHz, 20ppm, 18pF, 50 Ohm, -40C - 85C, 3.2mm x 2.5mm DFN4 SMD	AVX Corp/Kyocera Corp	CX3225GB25000P0HPQCC

151	1	X2	Crystal, 24.0000MHz, 10ppm, 18pF, 60 Ohm, -40C - 85C,	Abracon	ABM8-24.000MHZ-R60-D-1-W-T
152	1	Y1	IC, Crystal Oscillator, 12.0MHz +/-25ppm, 3.2mm x 2.5mm SMD	Abracon	ASE-12.000MHZ-LR-T
153	1	Y2	Oscillator, MEMS, 24.000MHz +/-50ppm, 1.8V-3.3V, SMD 3.2mmx2.5mm	Abracon LLC	ASEMB-24.000MHZ-LC-T
154	1	Z1	Diode, Zener, 15.0V 200mW, SOD-323	ON Semiconductor	MM3Z15VT1G