

#	RefDes	Name	Digikey part no.	Value	Type	Pattern	Quantity	Notes
1	C1, C3, C5, C9, C10	CAP_0603	CL10F104ZB8NNNC	100nF 6.3V+	Ceramic	CAP_0603	5	General purpose decoupling capacitor
2	C2	CAP_1206	718-1126-1-ND	10uF 6.3V	Tant	CAP_1206	1	Needs to be a tantalum - ceramic types cause the Vreg to oscillate
3	Q1	BC817-25-TP	BC817-25-TPMSCT-ND	45V 0.8A	NPN	SOT23V2	1	
4	R1, R5	RES_0603	P8.2KBZCT-ND	8K2	5%	RES_0603	2	NB. 1% would be better
5	R2, R4, R6, R8, R44	RES_0603	P1KBZCT-ND	1K0	5%	RES_0603	5	NB. 1% would be better
6	R3	RES_0603	P390BZCT-ND	390R	5%	RES_0603	1	NB. 1% would be better
7	R7	RES_0603	P20.0KHCT-ND	20K	1%	RES_0603	1	
8	R13, R14, R15	RES_0603	P68.0HCT-ND	68R	1%	RES_0603	3	NB. 5% would be ok
9	R17	RES_0603	P150BZCT-ND	150R	5%	RES_0603	1	
10	U1	TS393CDT	497-6613-1-ND			SOIC-8/150mil	1	Comparator for tape input
11	U2	NB3N502DG	NB3N502DGOS-ND			SOIC-8/150mil	1	Clock doubler PLL chip
12	U3	XC95144XL-10TQ100C	122-1372-ND	10ns		QFP-100/16x16x0.5	1	Xilinx 9500XL series CPLD, 3.3V, 5V tolerant IO. The design is tuned to work in a 10ns part with minimum power draw (= heat) - it could be compiled to run faster (I get a couple of timing warnings in the clock divider part of the circuit) but in practice it seems to work and if I compiled it that way it would get hotter in use.
13	U4	SPEC128 ULA HybridPlug	1175-1524-5-ND			DIP48 Hybrid *	2	* Note: 2x 24pin double ended turned pin headers for cost reasons. Upper part of header pins 1, 24, 25, 48 left on for location during assembly, other upper pins cut off with dremel (better than side cutters because less risk of sharp ends penetrating solder mask and causing short - although in v3 pads and vias have been repositioned to minimise that risk). Possible to use 24/48pin surface mount header, eg. 1175-1534-5-ND, but cost/stock/min-qty/height issues, and may need change of pads 1,24,25,48 from through hole to surface mount like the other pads (otherwise solder paste may get drawn down the hole away from the header pin when reflowing).
14	U5	TLV2217-33KVURG3	296-19786-1-ND	3.3V		TO252-3/10x6.6x2.28	1	3.3V regulator - is over spec'd - cheaper to use lower current capable U7
	U7	ZLDO1117G33TA	ZLDO1117G33DICT-ND	3.3V		SOT223-4		Optional Fit - cheaper alternative to U5 and fits on topside of board - but extra height
	C4	CAP_1206	718-1126-1-ND	10uF		CAP_1206		Optional Fit - alternative to C2, fitted on topside instead of underside but extra height
	C6	CAP_0603	CL10F104ZB8NNNC	100nF		CAP_0603		Do Not Fit - not required
	R9	RES_0603	P1KBZCT-ND	1K0		RES_0603		Optional Fit - optional pullup for clock o/p (some toastracks lack R73 on the motherboard)
	R10	RES_0603				RES_0603		Do Not Fit - unused option to cut track between pads and fit series resistance in clk o/p
	J1	644456-6				HDR-1x6T/2.54/15x2		Do Not Fit - Configuration header - see schematic for pinout
	TPO, TP1, TP2	TESTPOINT				TESTPOINT		Do Not Fit - Unused IOs for future option potential