

MainBrain rev 1.4 Bill of Materials

Description	Function	QTY	Reference	Mfg. Part #	Source	Source/ Part #	Cost	Extended
PCB	Main Board	1	PCB	MiniBoard Plus (3 Boards)	ExpressPCB	MiniBoard Plus (3 Boards)	\$85.00	\$28.33
MIPS32@ M4K MCU 32-Bit 80MHz 512KB FLASH 100-TQFP (14x14)	Main Processor	1	U1	PIC32MX795F512L-80I/PF	Digikey	PIC32MX795F512L-80I/PF-ND	\$13.37	\$13.37
Dual Port SRAM - IC SRAM 8KBIT PARALLEL 64TQFP	I/O Port SRAM	1	U2	71V30L25TFG	Digikey	71V30L25TFG-ND	\$19.56	\$19.56
IC REG BUCK ADJUSTABLE 2A 8SOP	PS Buck Reg.	1	U3	RT8284NGS	Digikey	1028-1145-2-ND	\$0.91	\$0.91
IND 10 UH 2.80A SMT	PS Flyback	1	L1	SDCH1V6028-100M-R	Digikey	283-SDCH1V6028-100M-RCT-ND	\$0.46	\$0.46
P-Channel 20 V (D-S) MOSFET	Backlight PWM Drive	1	U4	SI2301CDS-T1-E3	Digikey	SI2301CDS-T1-E3TR-ND	\$0.49	\$0.49
IC BRIDGE USB TO UART QFN	Serial Port	1	U5	CP2102N-A02-CQFN20	Symmetry	CP2102N-A02-CQFN20	\$2.84	\$2.84
TVS DIODE 5.5VWM 8.5VC SOT23-3	USB ESD Protection	2	U6-7	SP0502BAHTG	Digikey	F2714DKR-ND	\$0.71	\$1.42
Supervisor Open Drain or Open Collector 1 Channel TO-23-3	POR, Voltage Monitor	1	U8	MCP120T-300I/TT	Digikey	MCP120T-300I/TTCT-ND	\$0.55	\$0.55
IC BUF NON-INVERT 5.5V SC70-5	Clock Drive	1	U9	SN74LVC1G17DCKR	Digikey	296-11934-2-ND	\$0.39	\$0.39
IC FLASH 4MBIT PARALLEL 32TSOP	System Flash Memory	1	U10	SST39VF040-70-4C-WHE-T	Digikey	SST39VF040-70-4C-WHE-TTR-ND	\$1.75	\$1.75
Current Monitor Regulator High-Side - SOT-23-3	Current Monitor	1	U11	ZXCT1107SA-7	Digikey	ZXCT1107SA-7DICT-ND	\$0.92	\$0.92
320x480 3.5" Touch Screen Color TFT	Display	1	DISPLAY	CFAF320480C5-035T-TS	Crystalfontz	CFAF320480C5-035T-TS	\$41.13	\$41.13
XTAL OSC XO 20.000MHZ CMOS SMD	MCU Oscillator	1	OSC1	ISM91	Digikey	ISM91	\$1.83	\$1.83
XTAL OSC XO 32.7680KHZ CMOS SMD	RTC Oscillator	1	OSC2	OCTGLJANF-0.032768	Digikey	1664-1053-1-ND	\$1.40	\$1.40
SMT LEDs 0805	LED Port Status	12	LED1-12	CMD17-21VRD/TR8	Digikey	L62501TR-ND	\$0.36	\$4.32
CONN PWR JACK 2.5X5.5MM SOLDER	Power Input	1	J1	PJ-102BH	Digikey	CP-102BH-ND	\$2.55	\$2.55
CONN FFC BOTTOM 50POS 0.50MM R/A	Display Connector	1	J2	FH12-50S-0.5SH(55)	Digikey	HFJ150TR-ND	\$3.28	\$3.28
CONN HDR 34POS 0.1 TIN PCB	I/O Port Connector	1	J3	PPTC172LFBN-RC	Digikey	S7085-ND	\$1.94	\$1.94
USB - mini B - Receptacle 5 Position Through Hole, Right Angle	USB Port	1	J4	54-00019	Digikey	54-00019T-ND	\$1.02	\$1.02
10 µF Tantalum 20 V 10% 1206	PS Input Cap	1	C1	T491A106K020AT	Digikey	399-18019-1-ND	\$0.70	\$0.70
22 µF Molded Tantalum Capacitors 6.3 V 1206	3.3V Bypass	2	C2, C21	TAJA226K006RNJ	Digikey	478-3865-1-ND	\$0.43	\$0.86
100 mOhms ±1% 0.125W, 1/8W Chip Resistor 0805	Vsense	1	R1	RL0805FR-070R1L	Digikey	311-10SCT-ND	\$0.65	\$0.65
10 kOhms ±1% 0.063W, 1/16W Chip Resistor 0402	I to V, Gain Set Divider	20	R2, R5-R22, R34	PFR05S-103-FNH	Digikey	2037-PFR05S-103-FNHCT-ND	\$0.10	\$2.00
RES 47.5K OHM 1% 1/16W 0402	V divider for VBUS Low Side	1	R3	RC0402FR-0747K5L	Digikey	311-47.5KLRCT-ND	\$0.10	\$0.10
RES SMD 22.1 KOHM 1% 1/16W 0402	V divider for VBUS High Side	1	R4	RT0402FRE0722K1L	Digikey	13-RT0402FRE0722K1LCT-ND	\$0.10	\$0.10
4.7 µF ±10% 6.3V Ceramic Capacitor X5R 0402	CP2109 Caps	2	C3, C4	04026D475KAT2A	Digikey	478-10669-1-ND	\$0.34	\$0.68
1 µF ±10% 6.3V Ceramic Capacitor X6S 0402	CP2109 Caps	1	C5	CL05X105KQ5NNNC	Digikey	1276-1754-1-ND	\$0.10	\$0.10
0.1 µF ±10% 6.3V Ceramic Capacitor X5R 0402	Bypass Caps	14	C6-C13, C15-C18, C20, C23-C25	0402X104K6R3CT	Digikey	1292-1367-1-ND	\$0.10	\$1.40
10 µF ±10% 10V Ceramic Capacitor X5R 0805	MCU CEFC Cap	1	C14	CL21A106KPLQNC	Digikey	1276-2402-1-ND	\$0.13	\$0.13
CAP CER 3300PF 50V X7R 0402	PS Comp pin	1	C22	04025C332KAT2A	Digikey	478-1107-1-ND	\$0.10	\$0.10
RES SMD 13K OHM 1% 1/16W 0402	PS Comp pin	1	R36	AF0402FR-0713KL	Digikey	13-AF0402FR-0713KLCT-ND	\$0.10	\$0.10
RES SMD 100K OHM 1% 1/16W 0402	PS Enable	1	R35	AC0402FR-07100KL	Digikey	YAG3434CT-ND	\$0.10	\$0.10
RES 26.1K OHM 1% 1/16W 0402	PS Flyback High Side	1	R33	RC0402FR-0726K1L	Digikey	311-26.1KLRCT-ND	\$0.10	\$0.10
CAP CER 10000PF 25V X7R 0402	PS Cboot	5	C19, C28-C31	VJ0402Y103KXXCW1BC	Digikey	720-1647-1-ND	\$0.10	\$0.50
RES 1K OHM 1% 1/4W 0805	LED Resistors	10	R24-R33	RNCP0805FTD1K00	Digikey	RNCP0805FTD1K00CT-ND	\$0.10	\$1.00
CONN HEADER SMD R/A 4POS 2.54MM	JTAG Header	1	J7	TSM-104-01-L-SH	Digikey	SAM15888-ND	\$1.19	\$1.19
SHUNT 2.54MM PITCH	Shunt for J6	1	N/A	MSB-G	Digikey	2057-MSB-G-ND	\$0.15	\$0.15
CONN HEADER R/A 5POS 2.54MM	ICSP Header	1	J5	PH1RB-05-UA	Digikey	2057-PH1RB-05-UA-ND	\$0.17	\$0.17
CONN HEADER R/A 2POS 2.54MM	Programming Header	1	J6	10129379-902001BLF	Digikey	10129379-902001BLF-ND	\$0.10	\$0.10

\$133.55