

BPS-BOM-(AVR1284-3U) Rev 1.00				Copyright 2011 BusBoard Prototype Systems Ltd.				
AVR1284-3U Dev Board (for ATmega1284P or ATmega644P DIP40 Microcontrollers)								
Update the document revision level (and file name) whenever changes are released to others.								
Rev.	Date	Who	Description					
1.00	11-Mar-2011	Scot Kornak	Released to customers.					
1.01	16-Dec-2011	Scot Kornak	ComBoard mounting screw length is now 1.00".					
Qty	Reference	BPS Part#	Value	Rating	Description (dimensions in mils, 0.001")	Manufacturer	Man. #	Notes
2	C9 C18	C1-1/102	1n	200V	Capacitor, 1nF, 200V, X7R, 10%, Radial, 100sp, TH	Kemet	C320C102K2R5TA	
7	C16 C17 C19 C20 C23-25	C1-1/104	100n	50V	Capacitor, 100nF, 50V, X7R, 10%, Radial, 100sp, TH	Kemet	C320C104K5R5TA	
2	C21-22	C1-2/220	22p	50V	Capacitor, 22pF, 5%, C0G, 50V, Radial 100sp, TH	Kemet	C315C220J2G5TA	XTAL caps.
1	C8	C1-3/221	220u	35V	Cap, Elec, 220uF, 35V, 20%, Radial, 400d, 200sp, 500h, TH	Panasonic	EEU-FC1V221	
1	C15	C1-7/681	680u	10V	Cap, Elec, 680uF, 10V, 20%, Radial, 400d, 200sp, TH	Panasonic	EEU-FC1A681	
2	D2 D4	D1-2	200mA	75V	Diode, 1N4148, Signal, DO35	Fairchild	1N4148	
1	D1	D1-37/50	1A	50V	Bridge Rectifier, 1A, 50V, DIP4	Fairchild	DF005M	
1	DS1	DS1-3/G	GREEN		LED, Green, , Diffused, T1-3/4 (5mm), TH	LiteOn	LTL-4233	Power LED
1	DS2	DS1-3/RH	RED		LED, Red, Hi-Efficiency, Diffused, T1-3/4 (5mm), TH	Lumex	SSL-LX5093HD	I'm Alive LED
1	F1	F1-2/050	0A5	72V	Fuse, PTC, 1.0A Trip, 0.50A Hold, TH	Tyco/Raychem	RXEF050	
1	J7	J1-62			Connector, DC Power Coaxial, 2.1mm pin, RA, TH	CUI Stack	PB-002A	Power In
2	JU13 JU22	J1-90/2			Jumper, 1x2 pin, 100sp, 330h, Gold Flash, TH	Tyco	103185-2	LED & Arduino Reset
2	JU13 JU22	P-42			Jumper Shunt, Black, With Handle, 100sp, Tin	Tyco	2-382811-1	
2	J19 J20	J1-91/10	10pin		Header, DIL, 2x5, 100sp, 330h, 15um Gold, TH	Tyco	4-103186-0-05	JTAG, SPI Expansion
1	J18	J1-91/6	6pin		Header, DIL, 2x3, 100sp, 330h, 15um Gold, TH	Tyco	4-103186-0-03	ISP (Programming)
2	J13 J14	J1-5/2			Connector, MTA-100, 2 pin, Male, Vertical, 100sp, TH	AMP	640456-2	+5V Power Out
1	J21	J1-5/5			Connector, MTA-100, Male, 5-pin, Vertical, 100sp, TH	AMP	640456-5	I2C Expansion
5	J16 J17 J22 J23 (JU1-JU8)	J1-91/16	16pin		Header, DIL, 2x8, 100sp, 330h, 15um Gold, TH	Tyco	4-103186-0-08	Port Expansion Header
2	J10 J11	J1-96/10	10pin	2A	Socket, SIL, 1x10, 100sp, 340h, Gold, TH	Tyco	5-534237-8	ComBoard Expansion
1	J10	PCA-7770			ComBoard, RS232 Adapter, DCE, DB9F, 2-Tx, 2-Rx, TH	BusBoard.us	CB232F	AVR Port 0
1	J11	PCA-7772			ComBoard, RS232 Adapter, DTE, DB9M, 2-Tx, 2-Rx, TH	BusBoard.us	CB232M	AVR Port 1
2	J10 J11	H1-410/1000	1.00"		Screw, Philips, #4-40, Pan Head, L=1.00", Steel-Zinc			
2	J10 J11	H1-416			Nut, #4-40, od=3/16", Steel-Zinc	Spanauer	HN-201	
2	J10 J11	H1-402			Washer, Flat, #4, id=1/8", od=5/16", thick=0.032", SS	Spanauer	W-2019	
2	J10 J11	H1-403			Split Washer, #4, od=0.040", thick=0.031", Steel-Zinc	Spanauer	W-309	
2	J10 J11	H-6/438			Spacer, Nylon, 478h (7/16"), #4 Unthreaded, 125id, 188od (3/16")	Bivar	9908-437	
1	PCB	PCB-(AVR1284)-1.00			PCB, AVR1284, 100x160mm, 2 Sided	BPS	PCB-(AVR1284)-1.00	
1	Q1	Q1-1	600mA	40V	Transistor, 2N4401, NPN, TO92, TH	On Semi	2N4401	For I'm Alive LED
1	R9	R1-1/101	100R	1/4W	Resistor, 5%, 1/4W, Axial, TH	KOA Speer	CF1/4C101J	
2	R11-12	R1-1/102	1K	1/4W	Resistor, 5%, 1/4W, Axial, TH	KOA Speer	CF1/4C102J	
1	R6	R1-1/103	10K	1/4W	Resistor, 5%, 1/4W, Axial, TH	KOA Speer	CF1/4C103J	
2	R5 R7	R1-1/331	330R	1/4W	Resistor, 5%, 1/4W, Axial, TH	KOA Speer	CF1/4C331J	
1	R8	R1-1/472	4K7	1/4W	Resistor, 5%, 1/4W, Axial, TH	KOA Speer	CF1/4C472J	
1	S1	S1-2		50mA, 24V	Switch, SPST, Momentary, Pushbutton, Ground Term, Vert, TH	Omron	B3F-1150	Reset switch.
1	U3	U1-31/5	+5V	1A	IC, +5V Linear Regulator, 5%, 0-70 C., TO-220	National	LM7805CT	Installed laying down.
1	U3				Heatsink Compound	NTE	NTE303	Apply to Back of U3
1	U3	H1-410/250	0.250"		Screw, Philips, #4-40, Pan Head, L=0.250", Steel-Zinc	Spanauer	385-257	
1	U3	H1-416			Nut, #4-40, od=3/16", Steel-Zinc	Spanauer	HN-201	
1	U3	H1-402			Washer, Flat, #4, id=1/8", od=5/16", thick=0.032", SS	Spanauer	W-2019	
1	U3	H1-403			Split Washer, #4, od=0.040", thick=0.031", Steel-Zinc	Spanauer	W-309	
1	U4	U1-77/128	128k		IC, ATmega MCU, 128k Flash, ISP, 2xUART, 20MHz, DIP40	Atmel	ATmega1284P-20PU	
1	U4	X-1/40			Socket, DIP 40, 0.600" Spacing, Tin, DIP40-600, TH	Tyco	2-641616-1	
1	Y1	Y-2/14M7456	14M7456		Crystal, 14.7456MHz, 20pF Load Cap, Low Profile, HC-49US	ECS	ECS-147.4-20-4	

Qty	Reference	BPS Part#	Value	Rating	Description (dimensions in mils. 0.001")	Manufacturer	Man. #	Notes
Parts Not Installed								
2	C7 C12	C1-2/NFIT	NO FIT	50V	Capacitor, Not Fitted, Radial 100sp, TH			Filter Capacitors
2	L1-2	L1-2		5A	Ferrite 6mm, 3 Turns, 500R@10MHz, 1000R@50MHz, Radial, TH	Fair-Rite	2944666631	Optional EMI Filter
1	J15	J1-25			Ground Bar, 2 pin, 300sp			
95	TP1-95	TP-TH			PCB Test Point			
1	J6	J1-88/2			Terminal Block, 1x2, Removable, Side Panels, 5mm, RA, Green, TH	Phoenix Contact	1757475	Alternate Power In
1	J6	P-88/2	300V	10A	Plug, Terminal Block, 1x2, Removable, 5mm-spacing, Green	Phoenix	1754449	Alternate Power In
2	J4 J12	J1-5/4			Connector, MTA-100, Male, 4-pin, Vertical, 100sp, TH	AMP	640456-4	Alternate Power In/Out
Optional LCD Interface								
1	DS3	DS1-20			LCD, 4x20 Character, LED Backlight, -20to70 C, +5V	Optrex	C-51847NFQJ-LW-AAN	
1	J24	J1-91/16	16pin		Header, DIL, 2x8, 100sp, 330h, 15um Gold, TH	Tyco	4-103186-0-08	LCD Header, Offset as Required.
2	R14-15	R1-5/101	100R	1W	Resistor, 100R, 5%, 1W, Axial, TH			Backlight series R
1	R10	R1-10/202	2k	1/2W	Trimmer, 1/4", Single Turn, 10%, -55+125 C, Horizontal	Bourns	3362P-1-202	
1	R13	R1-1/332	3K3	1/4W	Resistor, 5%, 1/4W, Axial, TH			
1	C26	C1-1/104	100n	50V	Capacitor, 100nF, 10%, X7R, 50V, Radial 100sp, TH	Kemet		
Optional On-board RS232 Interfaces (if ComBoard modules are not used)								
1	J3	J1-2/9			Connector, DB-9, Male, 0.318, R.Angle, Screwlocks, Boardlocks, TH	Tyco	1734351-1	
1	J1	J1-3/9			Connector, DB-9, Female, 0.318, R.Angle, Screwlocks, Boardlocks, TH	Tyco	1734354-1	
2	U1-2	U1-20			IC, RS232, 2 Tx, 2 Rx, ESD, 100n Caps, -40to85, DIP16	Exar	SP202EEP-L	
					Alternate Part	Analog Devices	ADM202EANZ	
					Alternate Part	Maxim	MAX202EPE+	
					Alternate Part	Texas Inst.	TRS202EIN	
2	R3-4	R1-1/103	10K	1/4W	Resistor, 5%, 1/4W, Axial, TH	KOA Speer	CF1/4C103J	
2	R1-2	R1-1/105	1M	1/4W	Resistor, 5%, 1/4W, Axial, TH	KOA Speer	CF1/4C105J	
10	C1-C6 C10 C11 C13 C14	C1-1/104	100n	50V	Capacitor, 100nF, 50V, X7R, 10%, Radial, 100sp, TH	Kemet	C320C104K5R5TA	
2	J8-J9	J1-91/10			Header, DIL, 2x5, 100sp, 330h, 15um Gold, TH	Tyco	103186-5	Alternate 2x5 connector for ComBoard Modules
2	J2 J5	J1-7/10			Connector, DIL, 2x5 pin, Male, Polarized, Vertical, TH			Not installed.
Optional Power Supply Heatsink								
1	HS1	MP1-100/10			Heatsink, TO-220, 1000h x 1380L x 500w, Black, Vert, Pins, TH	Aavid	531002B02500	1" tall.
1	HS1	MP1-100/15			Heatsink, TO-220, 1500h x 1380L x 500w, Black, Vert, Pins, TH	Aavid	531102B02500	1.5" tall.
Alternate Parts								
4	J16-17 J22-23	J1-7/16			Shrouded Header, DIL, 2x8 pin, Male, Polarized, Vertical			
2	J19-20	J1-7/10			Shrouded Header, DIL, 2x5 pin, Male, Polarized, Vertical			