TICKER Wiring Chart

LED MATRIX LEFT COLUMN PIN	WIRE	LEVEL SHIFTER #1 PIN	COMMENTS
R1		B8	*Red signal 1*
B1		B7	*Blue signal 1*
R2		B6	*Red signal 2*
B2		B5	*Blue signal 2*
A		B4	*Select A*
C		B3	*Select C*
CLK		B2	*Clock*
OE		B1	*Output enable*
–	–	VA	*Voltage A*; no conn to LED MATRIX
–	–	OE	*Output enable*; no conn to LED MATRIX
–	–	VB	*Voltage B*; no conn to LED MATRIX
–	–	GND	*Ground*; no conn to LED MATRIX

LED MATRIX RIGHT COLUMN PIN	WIRE	LEVEL SHIFTER #2 PIN	COMMENTS
G1		B8	*Green signal 1*
GND		GND	*Ground*; conn via rail
G2		B6	*Green signal 2*
GND		GND	*Ground*; conn via rail
B		B4	*Select B*
D		B3	*Select D*
LAT		B2	*Latch*
GND		GND	*Ground*; conn via rail
–	–	VA	*Voltage A*; no conn to LED MATRIX
–	–	OE	*Output enable*; no conn to LED MATRIX
–	–	VB	*Voltage B*; no conn to LED MATRIX
–	–	GND	*Ground*; conn to LED MATRIX GND pins via rail

USB BREAKOUT PIN	WIRE COLOR	POCKET BEAGLE PIN		COMMENTS
VCC		VIN (5V)	**P1.7**	*Input voltage*
D–		DN	**P1.9**	*Negative data*
D+		DP	**P1.11**	*Positive data*
GND		GND	**P1.15**	*Ground*
–	–	ID	**P1.13**	Conn to POCKET BEAGLE GND pin (i.e., solder)
–	–	VBUS	**P1.5**	Conn to POCKET BEAGLE VIN pin (i.e., solder)

BUTTON PIN	WIRE COLOR OR RESISTOR	POCKET BEAGLE PIN		COMMENTS
1+		3.3V	P2.23	Conn via rail
1–	1k	GND	P2.21	*Ground*; conn via rail
1–		GPIO 87	**P1.2**	*Widget cycling backward button "<"*
2+		3.3V	P2.23	Conn via rail
2–	1k	GND	P2.21	*Ground*; conn via rail
2–		GPIO 89	**P1.4**	*Action button "•"*
3+		3.3V	P2.23	Conn via rail
3–	1k	GND	P2.21	*Ground*; conn via rail
3–		GPIO 5	**P1.6**	*Widget cycling forward button ">"*
4+		3.3V	P2.23	Conn via rail
4–	1k	GND	P2.15	*Ground*; conn via rail
4–		GPIO 2	**P1.8**	*Brightness decrease button "-"*
5+		3.3V	P2.23	Conn via rail
5–	1k	GND	P2.15	*Ground*; conn via rail
5–		GPIO 3	**P1.10**	*Brightness increase button "+"*

LEVEL SHIFTER #1 PIN	WIRE	POCKET BEAGLE PIN		COMMENTS
A8		GPIO 57	**P2.6**	*Red signal 1*
A7		GPIO 59	**P2.2**	*Blue signal 1*
A6		GPIO 20	**P1.20**	*Red signal 2*; note this is on P1
A5		GPIO 23	**P2.3**	*Blue signal 2*
A4		GPIO 44	**P2.24**	*Select A*
A3		GPIO 46	**P2.22**	*Select C*
A2		GPIO 52	**P2.10**	*Clock*
A1		GPIO 50	**P2.1**	*Output enable*
VA		3.3V	**P2.23**	*Voltage A*; conn via rail
OE		3.3V	P2.23	*Output enable*; conn to LEVEL SHIFTER #1 VA
VB		VOUT (5V)	**P2.13**	*Voltage B*; conn via rail
GND		GND	**P2.15**	*Ground*; conn via rail

LEVEL SHIFTER #2 PIN	WIRE	POCKET BEAGLE PIN		COMMENTS
A8		GPIO 58	**P2.4**	*Green signal 1*
–	–	–	–	No conn
A6		GPIO 26	**P1.34**	*Green signal 2*; note this is on P1
–	–	–	–	No conn
A4		GPIO 45	**P2.33**	*Select B*
A3		GPIO 47	**P2.18**	*Select D*
A2		GPIO 60	**P2.8**	*Latch*
–	–	–	–	No conn
VA		3.3V	**P2.23**	*Voltage A*; conn via rail
OE		3.3V	P2.23	*Output enable*; conn to LEVEL SHIFTER #2 VA
VB		VOUT (5V)	**P2.13**	*Voltage B*; conn via rail
GND		GND	**P2.15**	*Ground*; conn via rail

POWER SOURCE PIN	WIRE	POCKET BEAGLE PIN OR LED MATRIX PIN		COMMENTS
5V		VIN (5V)	**P1.7**	*Input voltage*; conn from 5V/4A DC adapter to VIN on POCKET BEAGLE via VCC on USB BREAKOUT
5V		VCC		*Input voltage*; conn from 5V/4A DC adapter to VCC on LED MATRIX power pins
GND		GND	**P1.15**	*Ground*; conn from 5V/4A DC adapter to VIN on POCKET BEAGLE via GND on USB BREAKOUT
GND		GND		*Ground*; conn from 5V/4A DC adapter to GND on LED MATRIX power pins

AHT10 TEMP/HUMID SENSOR PIN	WIRE COLOR OR RESISTOR	POCKET BEAGLE PIN		COMMENTS
VIN		3.3V	P1.14	*Input voltage*; conn via breadboard
GND		GND	P1.16	*Ground*
SCL	1k	3.3V	P1.14	
SCL		I2C2	**P1.28**	*Serial clock*; conn via breadboard
SDA	1k	3.3V	P1.14	
SDA		I2C2	**P1.26**	*Serial data*; conn via breadboard

KEY		
Conn	"Connected"	

NOTES

Be careful about the wiring for the LED MATRIX and ensure it is in the upright orientation. The wiring for the LEVEL SHIFTERs should correspond across A and B pins; for example, the LED MATRIX pin R1 connects to LEVEL SHIFTER 1 pin B8, which internally connects to LEVEL SHIFTER 1 pin A8, which then connects to POCKET BEAGLE pin P2.6 (GPIO 57). See the documentation for wiring diagrams of the BUTTONs and AHT10 TEMP/HUMID SENSOR. A power switch can be added in series with the positive 5V wire from the 5V/4A DC source.