AMPS EVALH1 Interface Training Board

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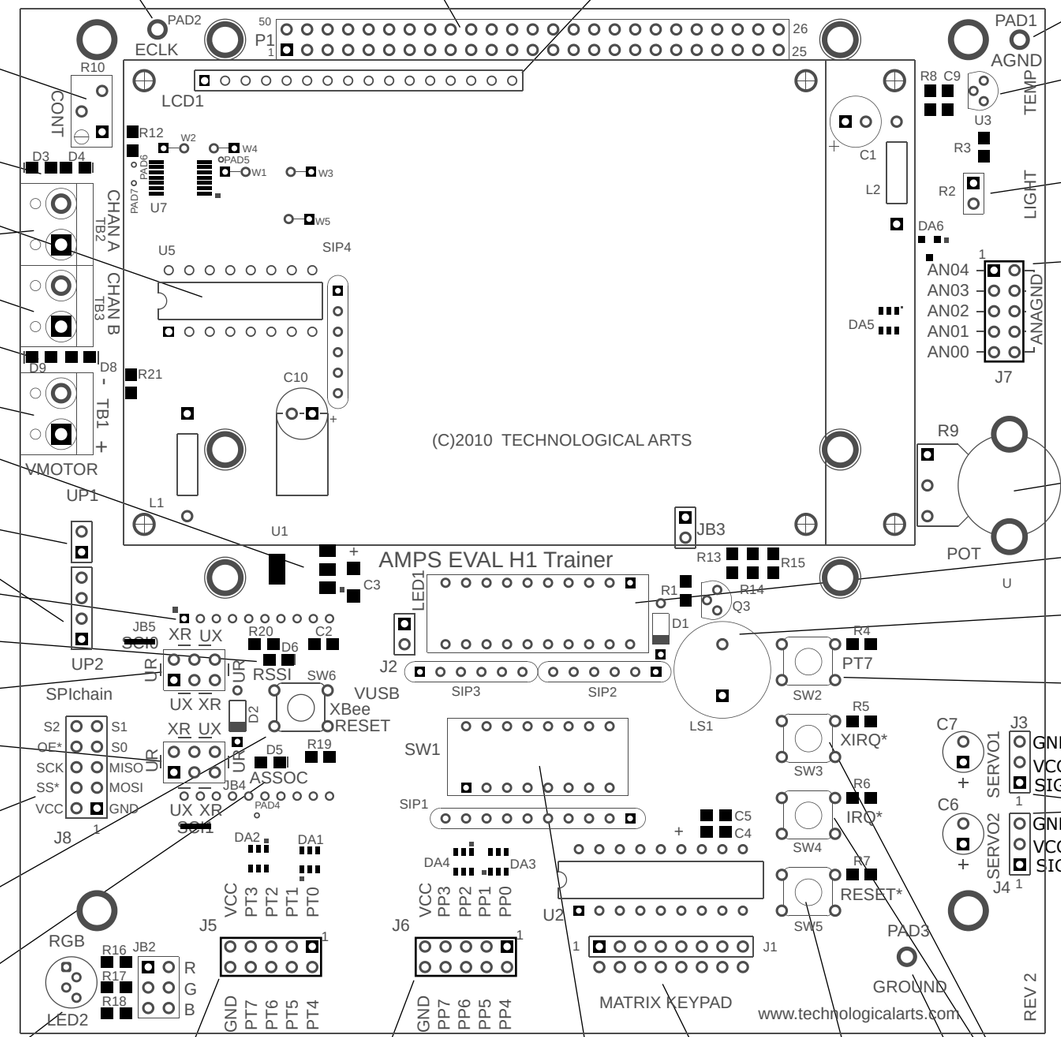

[LCD1]: connector for character LCD (accepts 16- or 20-character 4-line displays)

[P1]: 50-pin header pattern connects to H1 on MCU card

[PAD2]: ECLK Test Point (enable ECLK in software)

[PAD1]: Scope grounding point for analog measurements

[R10]: Contrast Control for LCD1

[U3] Linear temperature sensor connected to AN07. Output is 19.5mV per degree C (i.e. 4 counts on the 10-bit A/D)

[D3, D4]: LEDs indicate direction of Channel A motor current

[U5]: dual H-bridge chip (L293D or compatible)

[R2] Light-dependent resistor connected to AN06 as part of a voltage divider

[TB2][TB3]: Pluggable terminal block connections for Motor Channels A and B

[J7] AN0 - AN4: five Analog Inputs brought out for user, via ESD protection circuit. Any of these may alternatively be used as digital inputs. AGND connection points provided adjacent to each channel.

[D8,D9]: LEDs indicate direction of Channel B motor current

[TB1]: Pluggable terminal block connection for Motor Voltage (24DC max.)

[U1]: 3.3V regulator (800 mA max.)

[XP1][XP2]: optional USB2MCU Module goes here, to provide USB Interface with host PC

[POT1]: 10K linear taper potentiometer connected to AN05 as a voltage divider

[U4]: [Xbee Option]
Two socket strips beneath the board accept XBee and XBeePro modules to provide wireless capability (3V/5V compatible).

[LED1]: 10-segment LED bargraph (8 center segments connected to PortH; outside 2 segments brought out to J2)

[D6]: RSSI LED indicates relative signal strength of XBee connection

[LS1] Audio transducer driven by Q3 off PP7. (Can be disabled by removing W1.)

[JB4,JB5] Router blockS for SCI0 and SCI1*:
Place two shunts:
SCI-to-XBEE: 2,4 and 3,5
SCI-to-USB: 1,2 and 5,6
USB-to-Xbee (SCI not used): 1,3 and 4,6
Xbee loop-back test: single shunt vertically on center pins (3,4)

[SW2]: pushbutton wired in parallel with SW1 MSB (i.e. PT7)

[J3,J4]: connections for two R/C hobby servos; driver code must be implemented by user

[J8]: SPIchain connector. SPI signals, OE (PT3), VCC, and GND are all brought out to this convenient connector for easy interfacing to SPI peripherals

Order Codes:
#EVALH1MIN-x (no options, no LCDs, no keypad)
* note: keypad and cables for all connectors NOT included
X replace "x" in order code with desired connector option code
Accessories:
Keypad, 4x4: #MK4X4
Keypad, 3x4: #MK3X4
LCD, 16x4, non-backlit: #LCD16X4
LCD, 20x4, LED-backlit: #LCD20X4-LB
XBee ZigBee radio module with chip antenna: #XB24-Z7CIT-004
USB-to-Xbee host adapter: #USB2X
USB-to-MCU interface adapter: #USB2MCU

[SW6]: XBee Reset button (used during firmware update)

[D5]: ASSOC LED indicates XBee RF network connection established

[D8]: Red/Green/Blue LED with connector JB2 for PWM dimming (via PortP pins)

[SW1]: 8-position DIP switch on PortT

[SW5]: MCU Reset button

[SW3,SW4]: XIRQ and IRQ interrupt buttons

[J5]: PortT pins brought out for user, via ESD protection circuit. PortT is connected to the MCU's EnhancedCaptureTimer subsystem. VCC and GND pins are provided, for convenience.

[J6]: PortP pins brought out for user, via ESD protection circuit. PortP is connected to the MCU's Pulse Width Modulator subsystem. VCC and GND pins are provided, for convenience.

[J1]: Connector for matrix keypad (up to 16-keys). U2 provides hardware encoding of keypad, providing 4-bit binary output

[PAD3]: Scope grounding point

*NOTE: When SCIs are used, the corresponding RXD pin (i.e. RXD0 or RXD1) must be isolated from the RS232 driver chip on the MCU card by removing the related jumper wire on the MCU card. See schematics for details.

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