MCU Trainer – AXM0232
User Data Sheet

The MCU Target Board provides an application platform for many types of interfaces and simple control loops that almost any microcontroller can operate. Most of the device interfaces provide synchronous serial 2 or 3 wire type interfaces (SPI / QSPI) for control. Other devices on the MCU Target Board provide analog functions that can be applied to microcontroller control. All I/O to the supporting microcontroller is provided by four 20 pin connectors, J1 - J4.

MCU Target Board Features:

Power In: +12VDC 200ma Typical w/ On - Off Switch and 1A fuse.
Switched Power Output (EVB_PWR) to power Microcontroller Evaluation Board.
Regulated supplies: +5V / 1.2A, 3.3V / 500ma.
Indicators for Input Voltage, Fuse OK, and on-board supply voltages.

Application Features:

LCD Module, 2 x 16 character, w/ contrast adj.
Keypad, 3 x 4 matrix, 12 keys
Dual 10bit Digital to Analog Converter (DAC)
Rotary Encoder
Two 0 - +5V output potentiometers (POTs)
Variable Duty Cycle Timer (Duty Hi and Duty Lo adjust)
16 Indicator LED bank
DIP Switch, 8 position (SW1)
EEprom, Serial 2KByte
Stereo Audio Buffers
Temperature Detection / Measurement
2 Push Button Switches
Speaker w/ amplifier and volume adjustment
Fan Motor w/ PWM input and TACH output
COM1 DB9 RS232 Level Serial Connector for SCI conversion
COM2 DB9 RS232 Level Serial Connector for UART / IRDA conversion
SPI UART (MAX3100) provided
MON08 Interface Circuit
IRDA Transceiver (Optional, HSDL-3610)
Microcontroller logic level option 5V or 3.3V
5V Analog Filtered Supply

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Option Switches:

ON / OFF - Power On or Off
      OFF = DC Input voltage Off to EVB_PWR and Target Board
      ON = DC Input voltage On to EVB_PWR and Target Board

SW2 - COM1 Mode Select
      SCI Position = COM1 is SCI interface
      Monitor Position = COM1 is MON08 interface

SW3 - SPI UART (U13) I/O Select
      Serial Position = UART to COM2 Port
      IRDA Position = UART to IRDA Port

Option Jumpers:

PWR2 - Digital Interface Voltage Level
      +5V = +5_3V Digital Interface voltage is +5V level
      +3.3V = +5_3V Digital Interface voltage is +3.3V level

+VA and -VA - Enable +5VA and Analog Ground with on-board supplies.

JP1 - Speaker Amp input select
      PREAMP = source is from J1 Preamp connection
      DACA = source is from DAC channel A

JP2 - LCD Interface Enable, installed for LCD operation.

JP3 - PWM to Fan select
      PWM IN = Fan is driven from PWM-IN signal
      PWM OUT = PWM-IN signal to PWM-OUT, Fan off.

JP4 - Fan input voltage enable, installed for Fan driven from +12V input.

PWR1 - Power Connection:

PWR1 Power Jack is a standard 2mm center barrel jack compatible with many manufacturers standard wall power adapters. The center pin is positive voltage connection.

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CONNECTORS:

EVB_PWR - Two position terminal block provides switched power out to supporting development board. Terminal block can also be used for unswtiched power input.

COM1 and COM2 - RS232 level 9 pin serial interface ports. COM1 interface signals selected by SW2 and COM2 interface signals are selected by SW3.

J1 Analog / Timer - Provides connections for the Digital to Analog Converter ouputs, Encoder Outputs, Audio Outputs, Timer Output, POT outputs, Speaker Input, and FAN input and output. Refer to schematic sheet 1 for connections.

J2 Serial - Provides connections to supporting development board SPI and SCI ports to control LED banks, LCD module, DAC, UART, EEprom, COM ports, and IRDA interface. Refer to schematic sheet 2 for connections.

J3 and J4 Digital - Provide connections for Keypad / LCD Module and DIP Switch / LED Bank respectfully. Refer to schematic sheet 1 for connections.