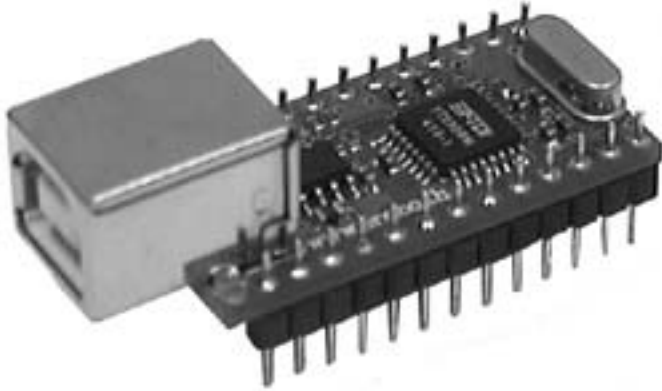


DIP232BM

USB FT232BM MODULE

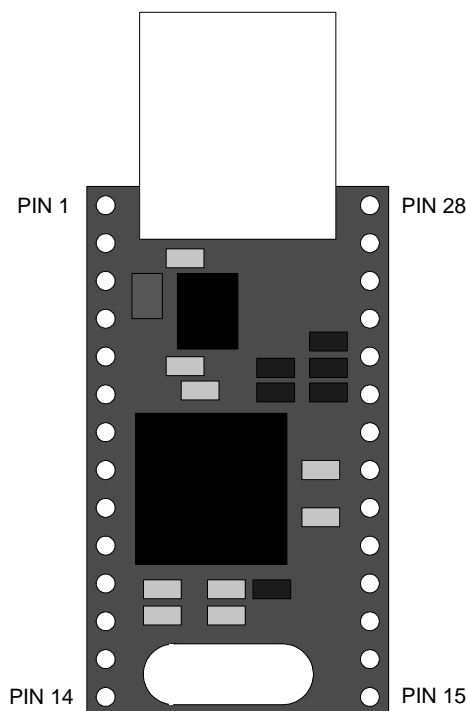


FEATURES

- Single Chip USB - Asynchronous Serial Data Transfer
- Full Handshaking & Modem Interface Signals
- UART I/F Supports 7,8 Bit Data 1,2 Stop Bits
- 3M(TTL),1M(RS232),3M(RS422/485) Data Rate
- 384 Byte Receive Buffer,128 Byte Transmit Buffer for high data throughput
- Adjustable RX buffer timeout
- Full hardware assisted hardware handshaking
- In-built support for event characters and line break condition
- Auto Transmit Buffer control for RS485
- Support for USB Suspend/Resume
- Support for high power USB Bus
- USB 1.1 and USB 2.0 complatible
- USB VID,PID,Serial Number and Product Description string

The DIP232BM is USB to Asynchronous serial data transfer module. It use FT232BM chip from FTDI Chip for USB UART. Also DIP232BM has 93C66 on board for recording USB serial number and product description strings that are written via USB. The DIP232BM is a complete plug and play solution. Module is mounted in a standard 28 pin DIP socket for easy mounting on a pcb board.

BOARD LAYOUT



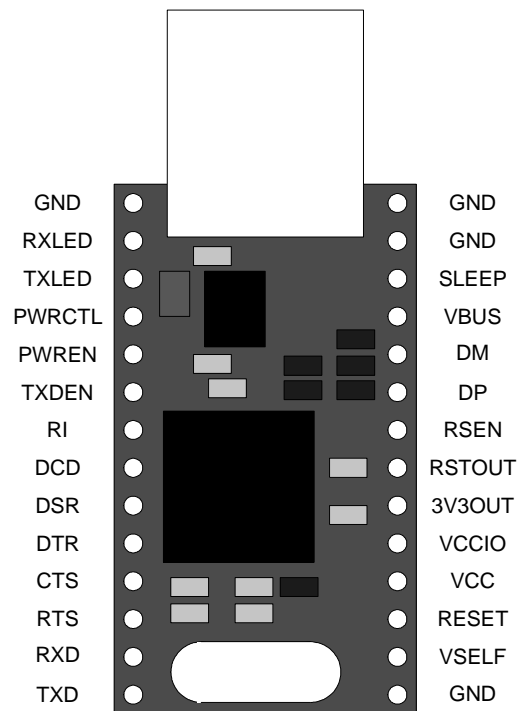
HARDWARE FEATURES

Single Chip USB - Asynchronous Serial Data Transfer
Full Handshaking & Modem Interface Signals
UART I/F Supports 7,8 Bit Data 1,2 Stop Bits and Odd/Even/Mark/Space/No Parity
Data rate 300 to 3M Baud (TLL)
Data rate 300 to 1M Baud (RS232)
Data rate 300 to 3M Baud (RS422/RS485)
384 Byte Receive Buffer / 128 Byte Transmit Buffer for high data throughput
Adjustable RX buffer timeout
Full hardware assisted hardware or X-On / X-Off handshaking
In-built support for event characters and line break condition
Auto Transmit Buffer control for RS485
Support for USB Suspend / Resume through SLEEP and RI pins
Support for high power USB Bus powered devices through PWREN pin
Integrated level converter on UART and control signals for interfacing to 5v and 3.3v logic
Integrated 3.3v regulator for USB IO
Integrated Power-On-Reset circuit
Integrated 6MHz - 48MHz clock multiplier PLL
USB Bulk or Isocronous data transfer modes
4.4v to 5.25v single supply operation
UHCI / OHCI / EHCI host controller compatible
USB 1.1 and USB 2.0 compatible
USB VID, PID, Serial Number and Product Description strings in external EEPROM
EEPROM programmable on-board via USB

APPLICATION AREAS

USB - RS232 Converters
USB - RS422/RS485 Converters
Upgrading RS232 Legacy Peripherals to USB
Cellular and Cordless Phone USB data transfer cables and interfaces
Interfacing MCU based designs to USB
USB Audio and Low Bandwidth Video data transfer
PDA - USB data transfer
USB Smart Card Readers
Set Top Box (S.T.B) PC-USB interface
USB Hardware Modems
USB Wireless Modems
USB Instrumentation
USB Bar Code Readers

PIN SIGNALS

**PIN 1 [GND]**

Ground Supply Pin.

PIN 2 [RXLED]

LED Drive-Pulses Low when Receiving Data via USB.

PIN 3 [TXLED]

LED Drive-Pulses Low when Transmitting Data via USB.

PIN 4 [PWRCTL]

Bus Powered-Tie Low / Self Powered - Tie High.

PIN 5 [PWREN]

Goes Low after the device is configured via USB, then high during USB suspend. Can be used to control power to external logic using a P-Channel Logic Level MOSFET switch. Enable the Interface Pull-Down Option in EEPROM when using the PWREN pin in this way.

PIN 6 [TXDEN]

Enable Transmit Data for RS485.

PIN 7 [RI]

Ring Indicator Control Input. When the Remote Wakeup option is enabled in the EEPROM, taking RI low can be used to resume the PC USB Host controller from suspend.

PIN 8 [DCD]

Data Carrier Detect Control Input.

PIN 9 [DSR]

Data Set Ready Control Input / Handshake signal.

PIN 10 [DTR]

Data Terminal Ready Control Output / Handshake signal.

PIN 11 [CTS]

Clear To Send Control Output / Handshake signal.

PIN 12 [RTS]

Request To Send Control Output / Handshake signal.

PIN 13 [RXD]

Receive Asynchronous Data Input.

PIN 14 [TXD]

Transmit Asynchronous Data Output.

PIN 15 [GND]

Ground Supply Pin.

PIN 16 [VSELF]

Filtered USB bus power.

PIN 17 [RESET]

Can be used by an external device to reset the FT232BM. If not required, tie to VCC.

PIN 18 [VCC]

+4.4 volt to +5.25 volt VCC to the device core, LDO and none-UART interface pins.

PIN 19 [VCCIO]

+3.0 volt to +5.25 volt VCC to the UART interface pins 10..12, 14..16 and 18..25 of FT232BM. When interfacing with 3.3v external logic connect VCCIO to the 3.3v supply of the external logic, otherwise connect to VCC to drive out at 5V CMOS level.

PIN 20 [3V3OUT]

3.3 volt Output from the integrated L.D.O. regulator. This pin should be decoupled to GND using a 33pF ceramic capacitor in close proximity to the device pin. It's prime purpose is to provide the internal 3.3V supply to the USB transceiver cell and the RSTOUT pin. A small amount of current ($\leq 5\text{mA}$) can be drawn from this pin to power external 3.3V logic if required.

PIN 21 [RSTOUT]

Output of the internal Reset Generator. Stays high impedance for ~2ms after VCC > 3.5V and the internal clock start up, then clamps it's output to 3.3V output of the internal regulator. Taking RESET low will also force RSTOUT to go high impedance. RSTOUT is not affected by a USB Bus Reset.

PIN 22 [RSEN]

Enumeration Power connect to RSTOUT for bus powered operation.

PIN 23 [DP]

USB Data Signal Plus.

PIN 24 [DM]

USB Data Signal Minus.

PIN 25 [VBUS]

USB bus power.

PIN 26 [SLEEP]

Goes Low during USB Suspend Mode. Typically used to power-down an external TTL to RS232 level converter i.c. in USB -> RS232 converter designs.

PIN 27 [GND]

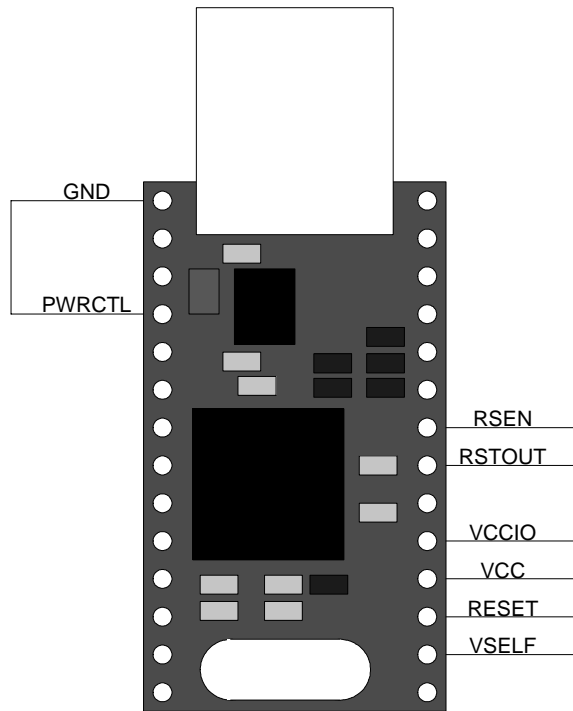
Device-Ground Supply Pin.

PIN 28 [GND]

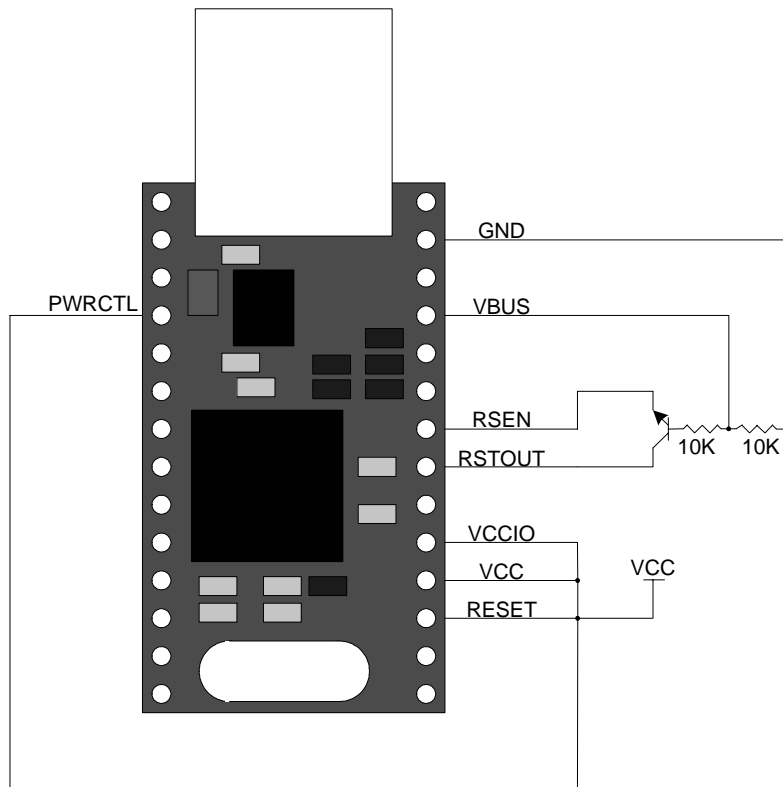
Device-Ground Supply Pin.

APPLICATIONS

USB Bus Powered Configuration

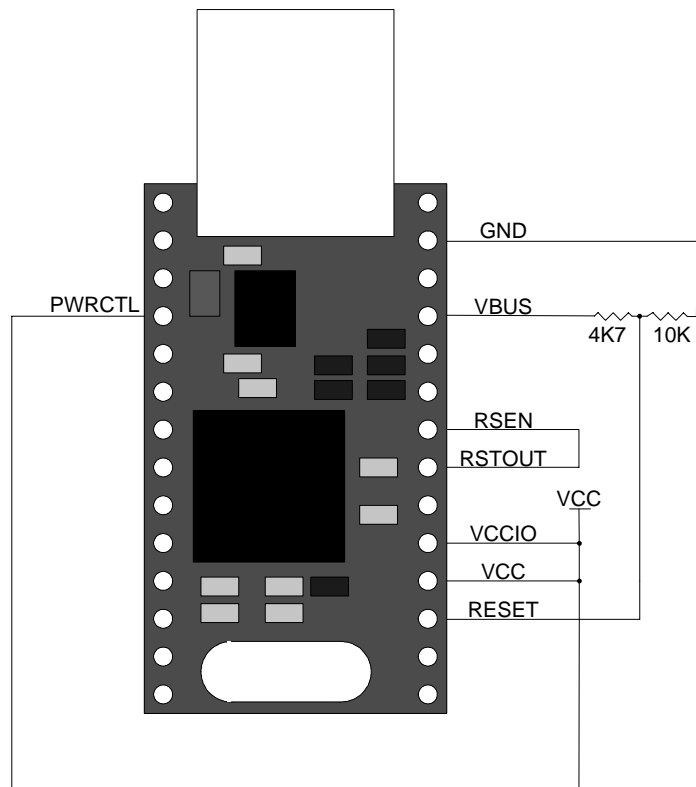


USB Self Powered Configuration (1)



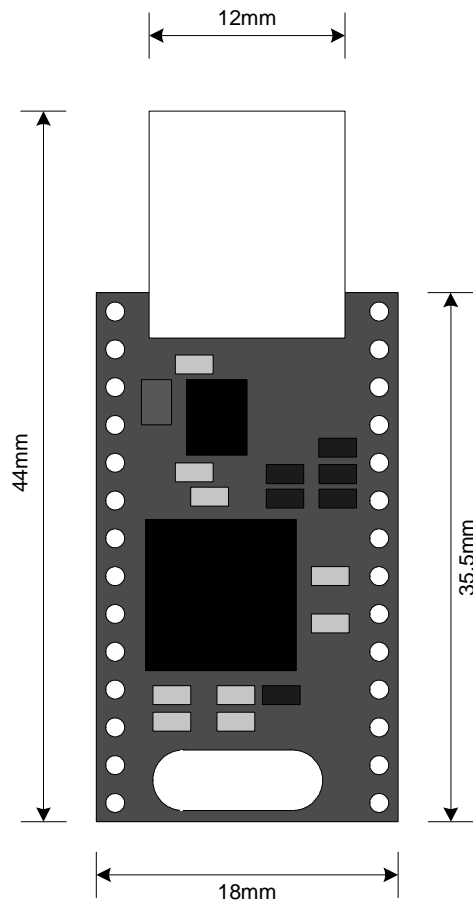
ERE050711A

USB Self Powered Configuration (2)



ERE050711A

BOARD DIMENSION



ERE050711A