

7.3 USB Bus Powered and Self Powered Configuration

Figure 7
USB Bus Powered Configuration

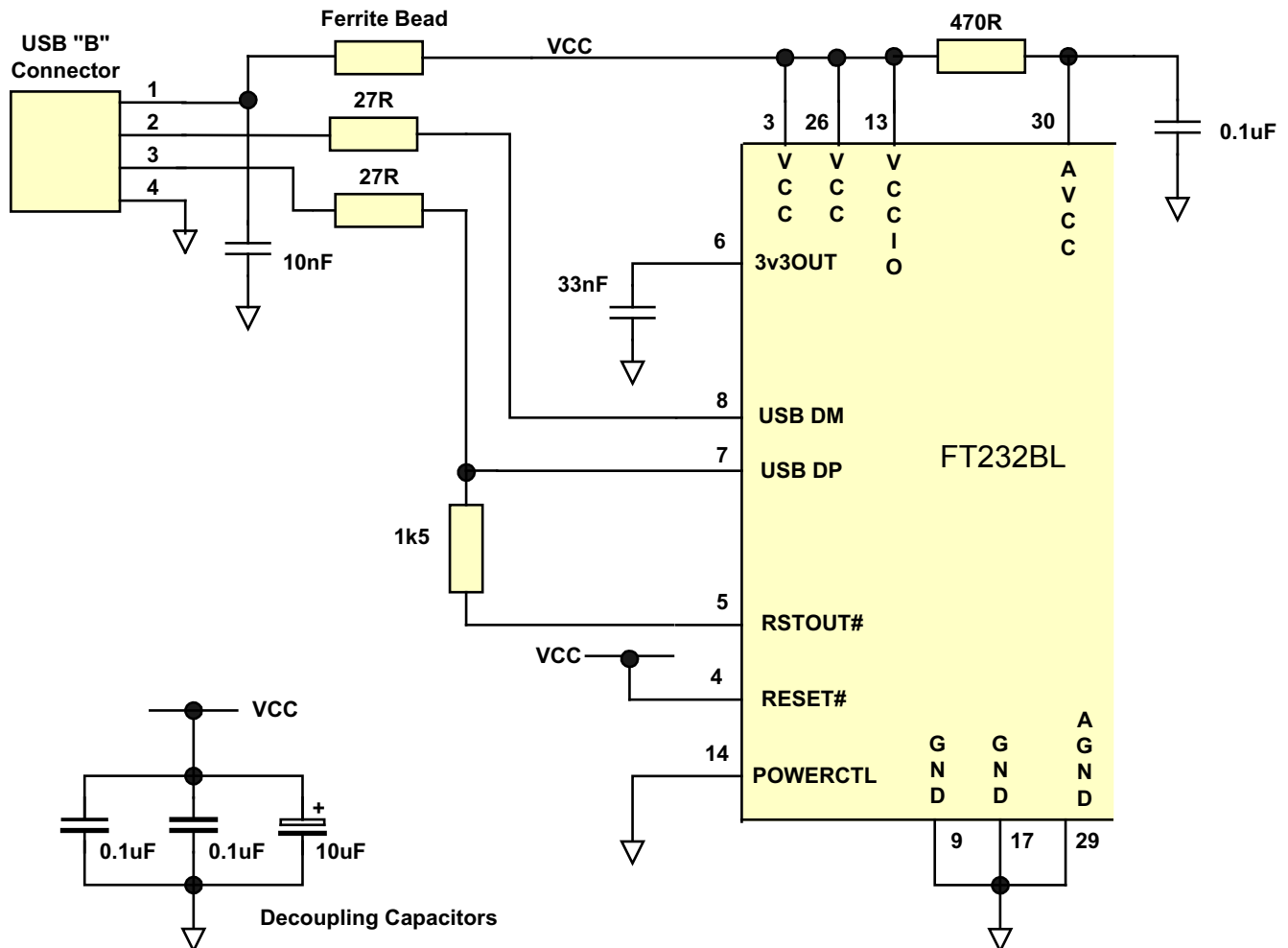


Figure 7 illustrates a typical USB bus powered configuration. A USB Bus Powered device gets its power from the USB bus. Basic rules for USB Bus power devices are as follows –

- On plug-in, the device must draw no more than 100mA
- On USB Suspend the device must draw no more than 500uA.
- A Bus Powered High Power Device (one that draws more than 100mA) should use the PWREN# pin to keep the current below 100mA on plug-in and 500uA on USB suspend.
- A device that consumes more than 100mA can not be plugged into a USB Bus Powered Hub
- No device can draw more that 500mA from the USB Bus.

PWRCTL (pin 14) is pulled low to tell the device to use a USB Bus Power descriptor. The power descriptor in the EEPROM should be programmed to match the current draw of the device.

A Ferrite Bead is connected in series with USB power to prevent noise from the device and associated circuitry (EMI) being radiated down the USB cable to the Host. The value of the Ferrite Bead depends on the total current required by the circuit – a suitable range of Ferrite Beads is available from Steward (www.steward.com) for example Steward Part # MI0805K400R-00 also available as DigiKey Part # 240-1035-1.