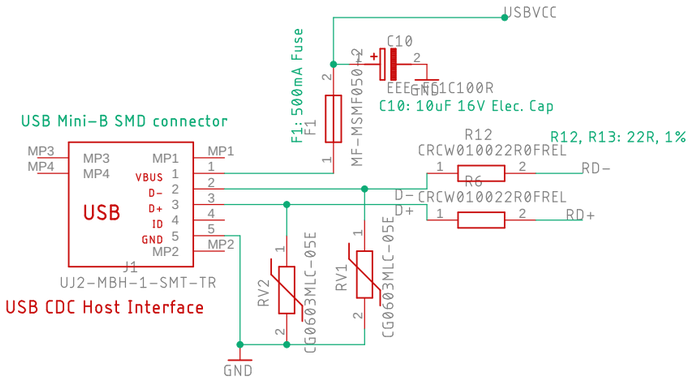
Mini PIC18F– USB Trainer board Reference Design

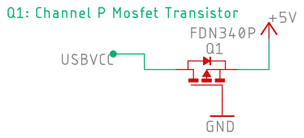
This reference design IS PROVIDED "AS IS"and "WITH ALL POSSIBLE FAULTS".So This free hardware has NO WARRANTY !!
The original Author may do any changes to this design at any time, without notice including the bill of materials and overall functionality

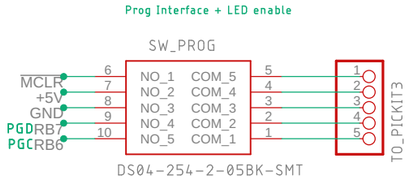
For more information, refer to git hub: https://github.com/SerCandio/Mini–PIC18F–USB–Trainer

Special features:

1.– Test basic Peripherals communications , mainly USB–CDC, UART, I2C/SPI –>Connect to slave sensors
2.– Read Analog Channels with an Anti–Aliasing filter(Chebyshev) of BW =15KHz up to 4 programmable–selectable channels
3.– Re–program with PCIKIT–3 in circuit or even with USB–Port (if appropiate firmware is uploaded)
4.– Manually RESET button integrated





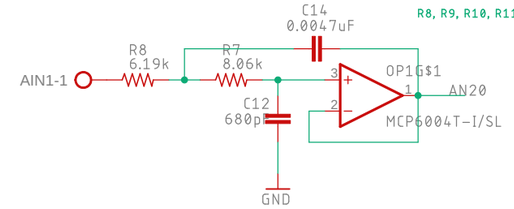


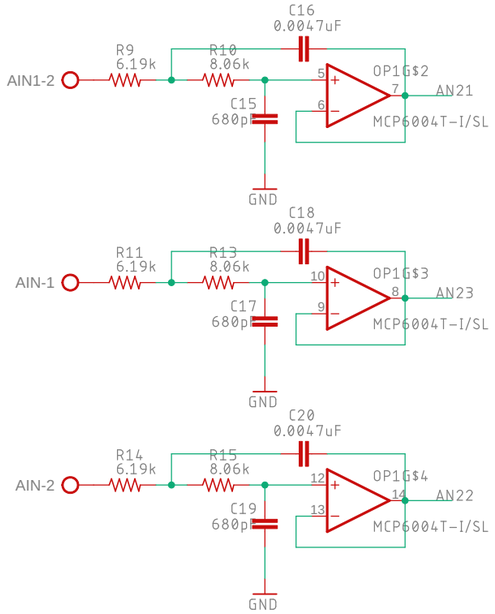
Anti–aliasing design criteria:

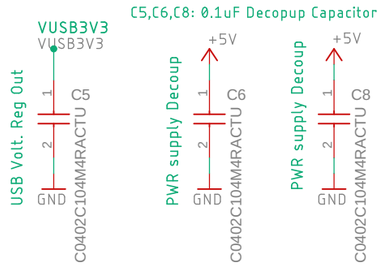
FRC (preferable) = 600kHz, TAD = 1.67uS (Min 1uS).
But TACQ should be upper than 7.45 uS so we choose ACQT = 6TAD = 10.02uS
So then our TACQ =10.02 uS

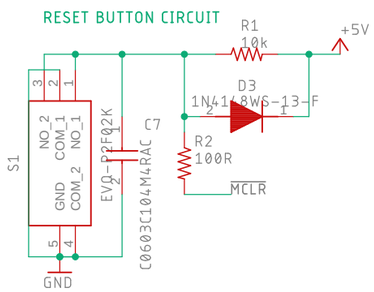
Word ADC conversion takes about 11TAD = 18.37uS and discharge capacitor takes 2TAD =3.34 uS so total is 31.73uS , giving a Fs=31.52Ksamples/sec

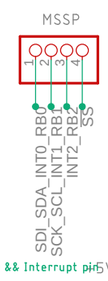
And BW = 15KHz aprox

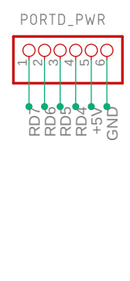


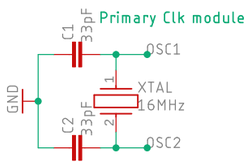


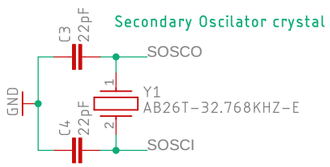


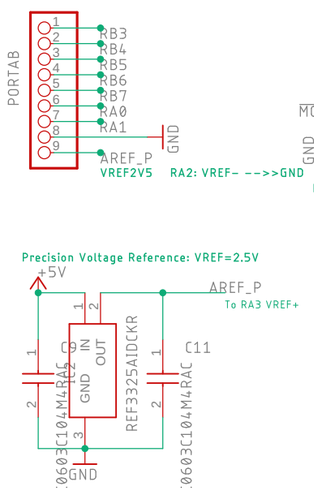


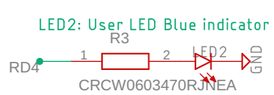


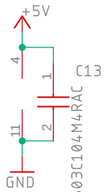












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