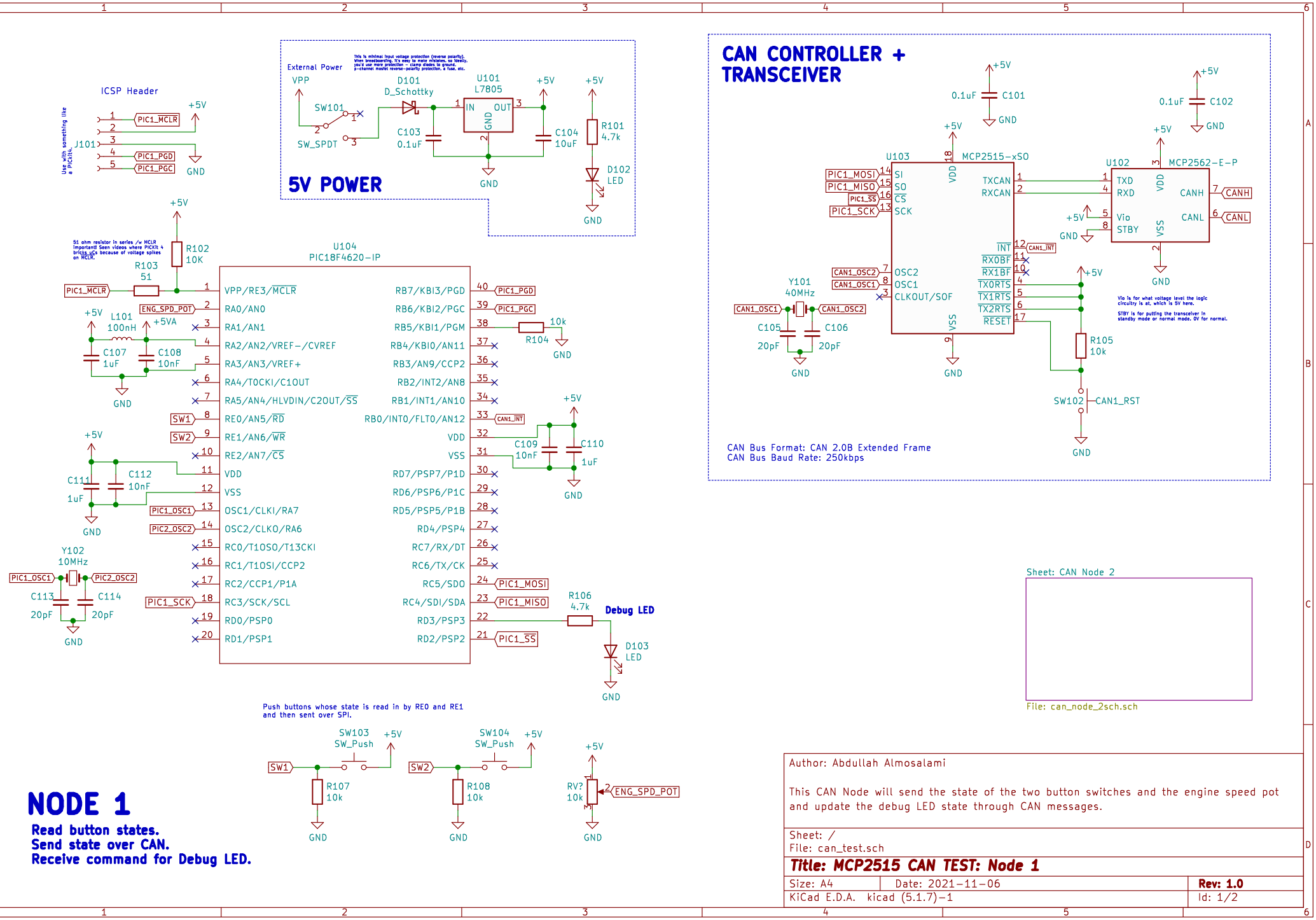
ICSP Header
Use with something like a PICkit.
J101
PIC1_MCLR
PIC1_PGD
PIC1_PGC
+5V
GND
External Power
VPP
SW101
SW_SPDT
D101
D_Schottky
U101
L7805
IN
OUT
GND
C103
0.1uF
C104
10uF
R101
4.7k
D102
LED
5V POWER
This is minimal input voltage protection (reverse polarity). When breadboarding, it's easy to make mistakes, so ideally, you'd use more protection - clamp diodes to ground, p-channel mosfet reverse-polarity protection, a fuse, etc.
51 ohm resistor in series /w MCLR important! Seen videos where PICkit 4 bricks uCs because of voltage spikes on MCLR.
R102
10K
R103
51
U104
PIC18F4620-IP
VPP/RE3/MCLR
RA0/AN0
RA1/AN1
RA2/AN2/VREF-/CVREF
RA3/AN3/VREF+
RA4/T0CKI/C1OUT
RA5/AN4/HLVDIN/C2OUT/SS
RE0/AN5/RD
RE1/AN6/WR
RE2/AN7/CS
VDD
VSS
OSC1/CLKI/RA7
OSC2/CLKO/RA6
RC0/T1OSO/T13CKI
RC1/T1OSI/CCP2
RC2/CCP1/P1A
RC3/SCK/SCL
RD0/PSP0
RD1/PSP1
RB7/KBI3/PGD
RB6/KBI2/PGC
RB5/KBI1/PGM
RB4/KBI0/AN11
RB3/AN9/CCP2
RB2/INT2/AN8
RB1/INT1/AN10
RB0/INT0/FLT0/AN12
RD7/PSP7/P1D
RD6/PSP6/P1C
RD5/PSP5/P1B
RD4/PSP4
RC7/RX/DT
RC6/TX/CK
RC5/SDO
RC4/SDI/SDA
RD3/PSP3
RD2/PSP2
L101
100nH
C107
1uF
C108
10nF
C111
1uF
C112
10nF
C109
10nF
C110
1uF
R104
10k
R106
4.7k
Debug LED
D103
LED
Y102
10MHz
C113
20pF
C114
20pF
Push buttons whose state is read in by RE0 and RE1 and then sent over SPI.
SW103
SW_Push
SW104
SW_Push
R107
10k
R108
10k
RV?
10k
CAN CONTROLLER + TRANSCEIVER
U103
MCP2515-xSO
U102
MCP2562-E-P
C101
0.1uF
C102
0.1uF
Y101
40MHz
C105
20pF
C106
20pF
R105
10k
SW102
CAN1_RST
CAN Bus Format: CAN 2.0B Extended Frame
CAN Bus Baud Rate: 250kbps
Vio is for what voltage level the logic circuitry is at, which is 5V here.
STBY is for putting the transceiver in standby mode or normal mode. 0V for normal.
Sheet: CAN Node 2
File: can_node_2sch.sch
NODE 1
Read button states.
Send state over CAN.
Receive command for Debug LED.
Author: Abdullah Almosalami
This CAN Node will send the state of the two button switches and the engine speed pot and update the debug LED state through CAN messages.
Sheet: /
File: can_test.sch
Title: MCP2515 CAN TEST: Node 1
Size: A4
Date: 2021-11-06
Rev: 1.0
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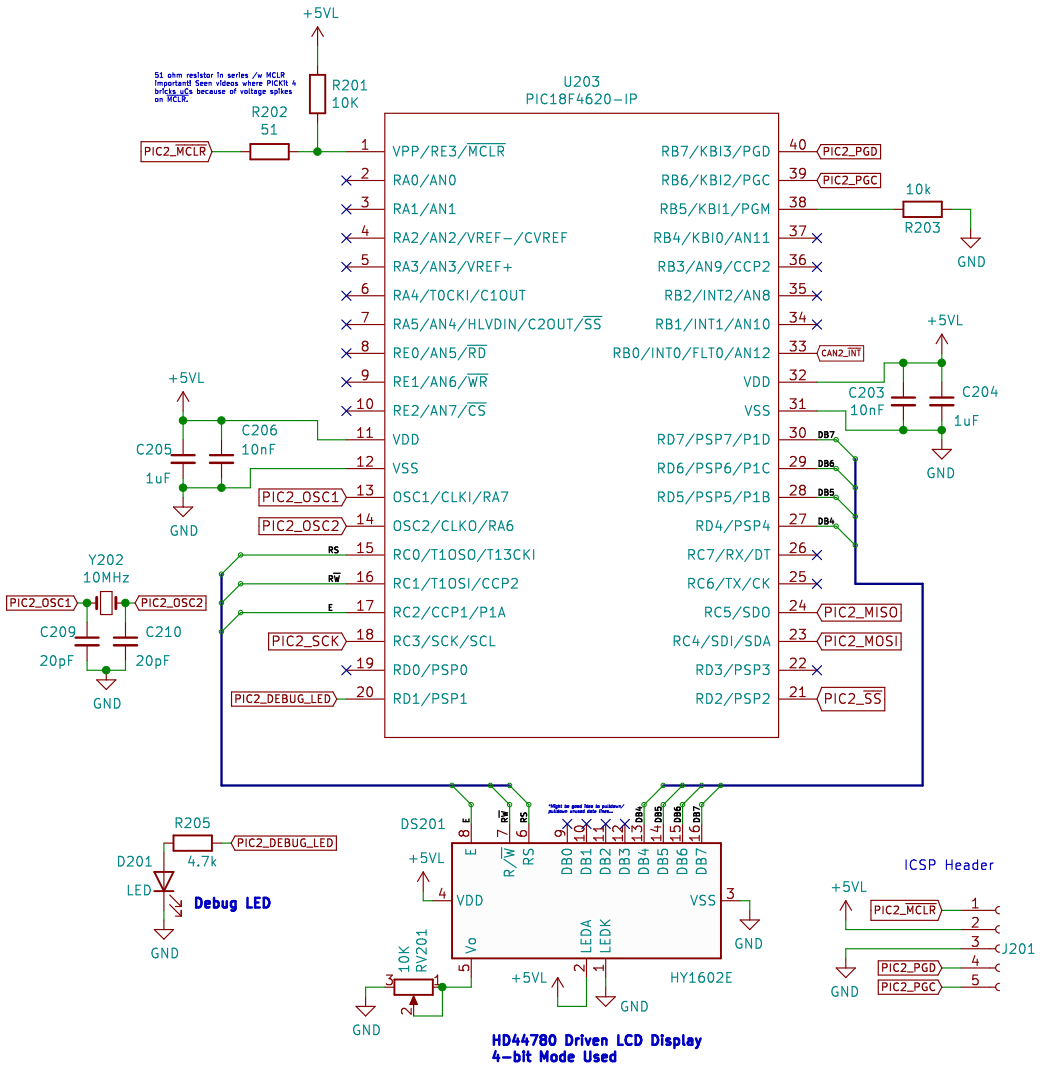
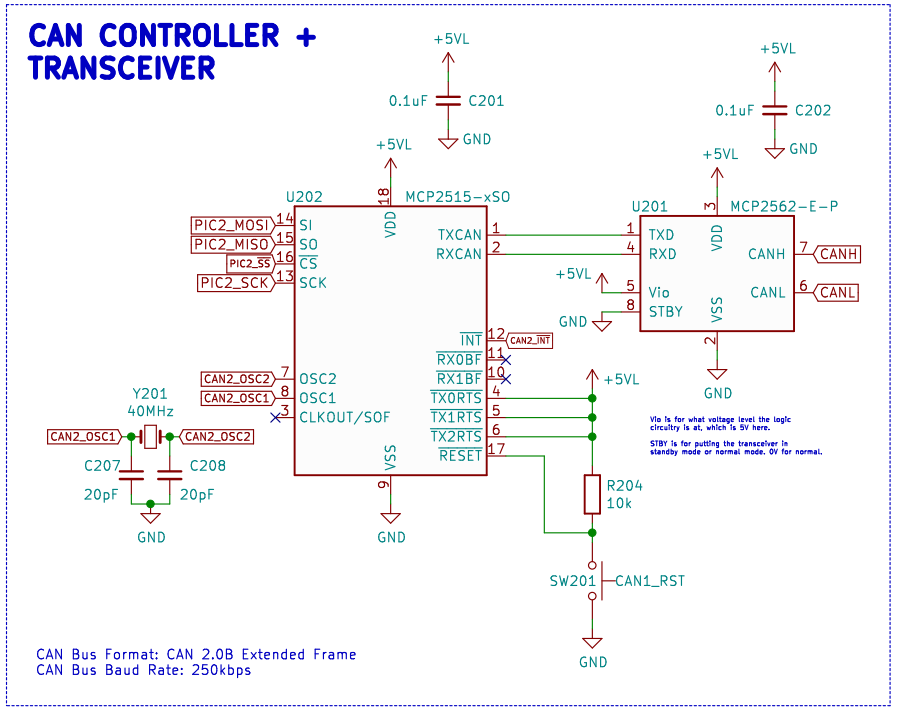
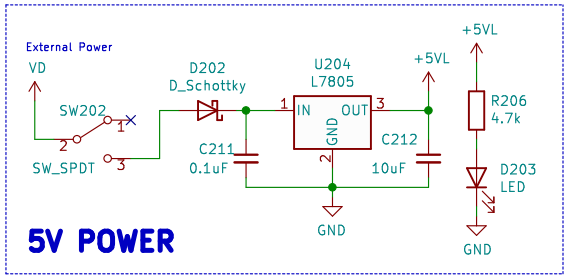
Id: 1/2



HD44780 Driven LCD Display
4-bit Mode Used





NODE 2

Update LCD with Node 1 button states.
Send debug LED command.

Author: Abdullah Almosalami

This node will update a display with the state of Node 1's buttons as well as the engine speed signal and also send commands for Node 1's Debug LED state.

Sheet: /CAN Node 2/
File: can_node_2sch.sch

Title: MCP2515 CAN TEST: Node 2

Size: A4	Date: 2021-11-06	**Rev: 1.0**
KiCad E.D.A. kicad (5.1.7)-1		Id: 2/2