comma.ai

panda
dev-kit

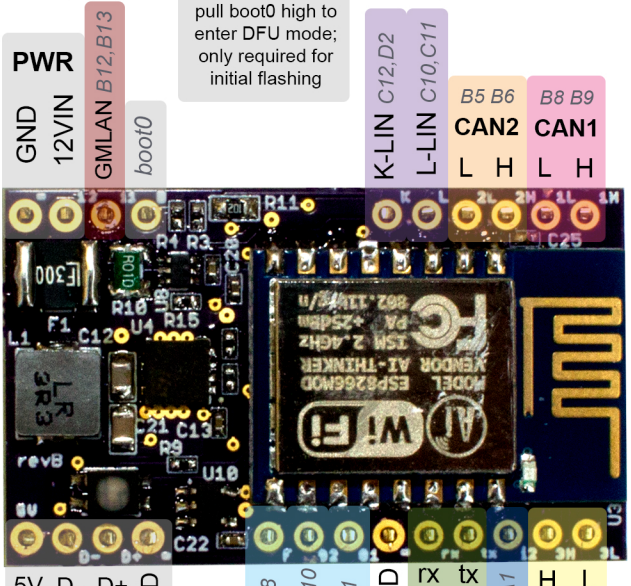
github.com/commaai/panda

12VIN rated from 5.5-18V

GMLAN shares the CAN2 port of the STM32F, cannot have both enabed; must enable PU on B12

Both LIN buses are connected thru a transceiver; L is on USART3, K is on UART5

pull boot0 high to enter DFU mode; only required for initial flashing

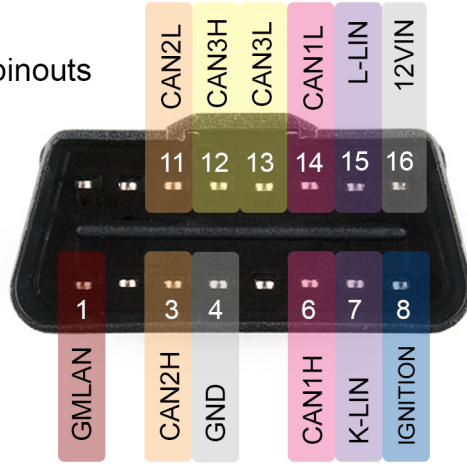


these pins are directly connected

connected thru a prebiased npn transistor; use internal PU resistor on A1 to sense when 12V signal is high

STM32F pin conections

OBDII pinouts



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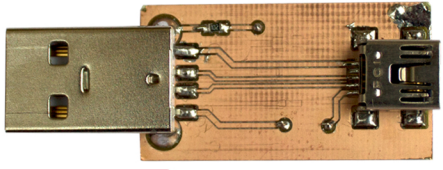
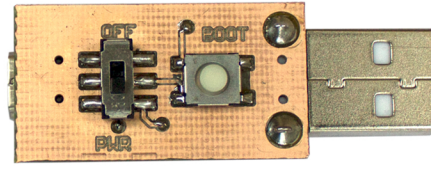
panda paw



USB mini-b port for easy PC interfacing

boot button for DFU mode makes your panda unbrickable!



keep USB power switch off when connected to OBDII

Function	Pin
CAN1 enable	C1
CAN2 enable	C13
CAN3 enable	A0
K-LIN enable	B4
L-LIN enable	A14
red LED	C9
green LED	C7
blue LED	C6
12V sense	C2 (ADC12)
12V current sense	C3 (ADC13)
GMLAN mode 0	B15
GMLAN mode 1	B14
ESP IO	B0
ESP enable	C14
ESP bootmode	C5
ESP RX	A9 (USART1)
ESP TX	A10 (USART1)
SPI1 CS	A4 (ESP GPIO5)
SPI1 CLK	A5 (ESP GPIO14)
SPI1 MISO	A6 (ESP GPIO12)
SPI1 MOSI	A7 (ESP GPIO13)
STM reset	ESP GPIO16