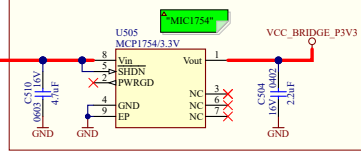


Power Supply

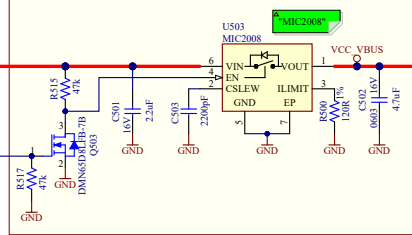
MCP1754/3.3V:
Vin: 3.6V to 16.0V
Vout: Fixed 3.3V
Imax: 150mA
Dropout: 30mV @ 150mA

USB BRIDGE 3.3V SUPPLY



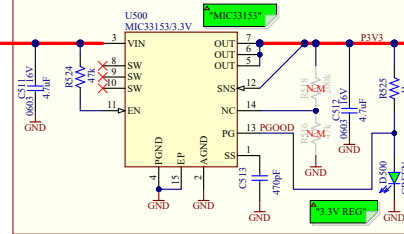
SLEW RATE LIMIT:
- With CS03 set to 2200pF, the slew rate of VCC_VBUS is limited to 2 V/ms by the power switch MIC2008.
CURRENT LIMIT:
- With R500 set to 120ohm, the current through the power switch MIC2008 is limited to 2A.

VBUS SLEW RATE- & CURRENT-LIMIT



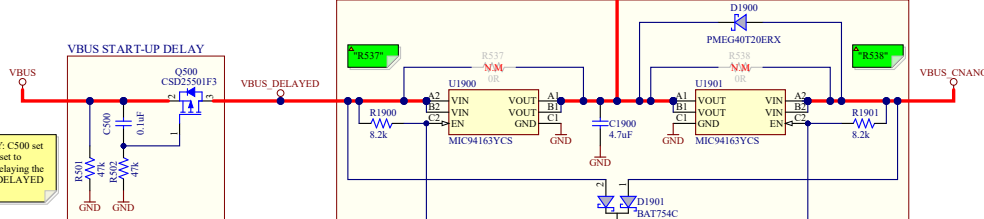
POWER_DISABLE
To turn power OFF, drive POWER_DISABLE to 2.0V or higher.

3.3V BUCK REGULATOR

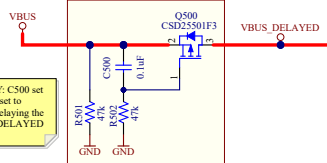


Diode D1900 is added to reduce voltage drop on VBUS_MUX_OUT when the priority supply USB-C is disconnected, switching power-mux to power from VBUS_CNANO.

VBUS MUX SWITCH

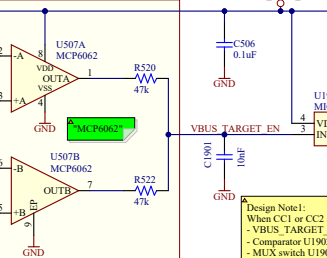


VBUS START-UP DELAY



START-UP DELAY: C500 set to 0.1µF and R502 set to 47kΩ. Q500 is delayed the turn-on of VBUS_DELAYED by ~1ms.

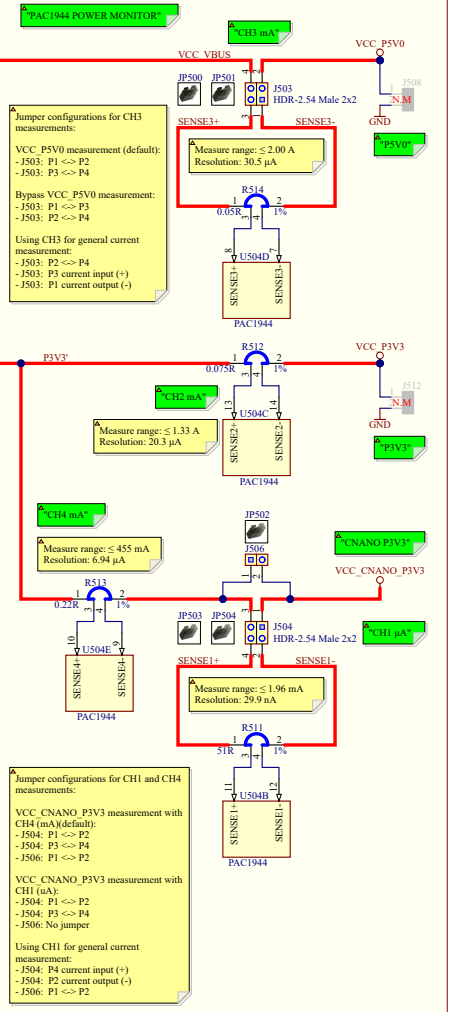
VBUS MUX CONTROL



Design Note 1:
When CC1 or CC2 are above VREF_P0V200 (~0.200V), i.e. VBUS connected to USB HUB:
- VBUS_TARGET_EN will be VBUS_MUX_VCC
- Comparator U1902 output will be VBUS_MUX_VCC
- MUX switch U1901 will be turned ON, connecting VBUS_DELAYED to VBUS_MUX_OUT
- MUX switch U1901 will be turned OFF through inverter MOSFET Q1900

Design Note 2:
When CC1/CC2 are below VREF_P0V200 (~0.200V), i.e. VBUS not connected to USB HUB:
- VBUS_TARGET_EN will be 0.00V
- Comparator U1902 output will be 0.00V
- MUX switch U1901 will be turned ON, connecting VBUS_CNANO to VBUS_MUX_OUT
- MUX switch U1901 will be turned OFF

POWER MONITOR CHANNELS



Jumper configurations for CH3 measurements:
VCC_P5V0 measurement (default):
- J503: P1 <=> P2
- J503: P3 <=> P4
Bypass VCC_P5V0 measurement:
- J503: P1 <=> P3
- J503: P2 <=> P4
Using CH3 for general current measurement:
- J503: P2 <=> P4
- J503: P3 current input (+)
- J503: P1 current output (-)

Jumper configurations for CH1 and CH4 measurements:
VCC_CNANO_P3V3 measurement with CH4 (mA) (default):
- J504: P1 <=> P2
- J504: P3 <=> P4
- J506: P1 <=> P2
VCC_CNANO_P3V3 measurement with CH1 (µA):
- J504: P1 <=> P2
- J504: P3 <=> P4
- J506: No jumper
Using CH1 for general current measurement:
- J504: P4 current input (+)
- J504: P2 current output (-)
- J506: P1 <=> P2