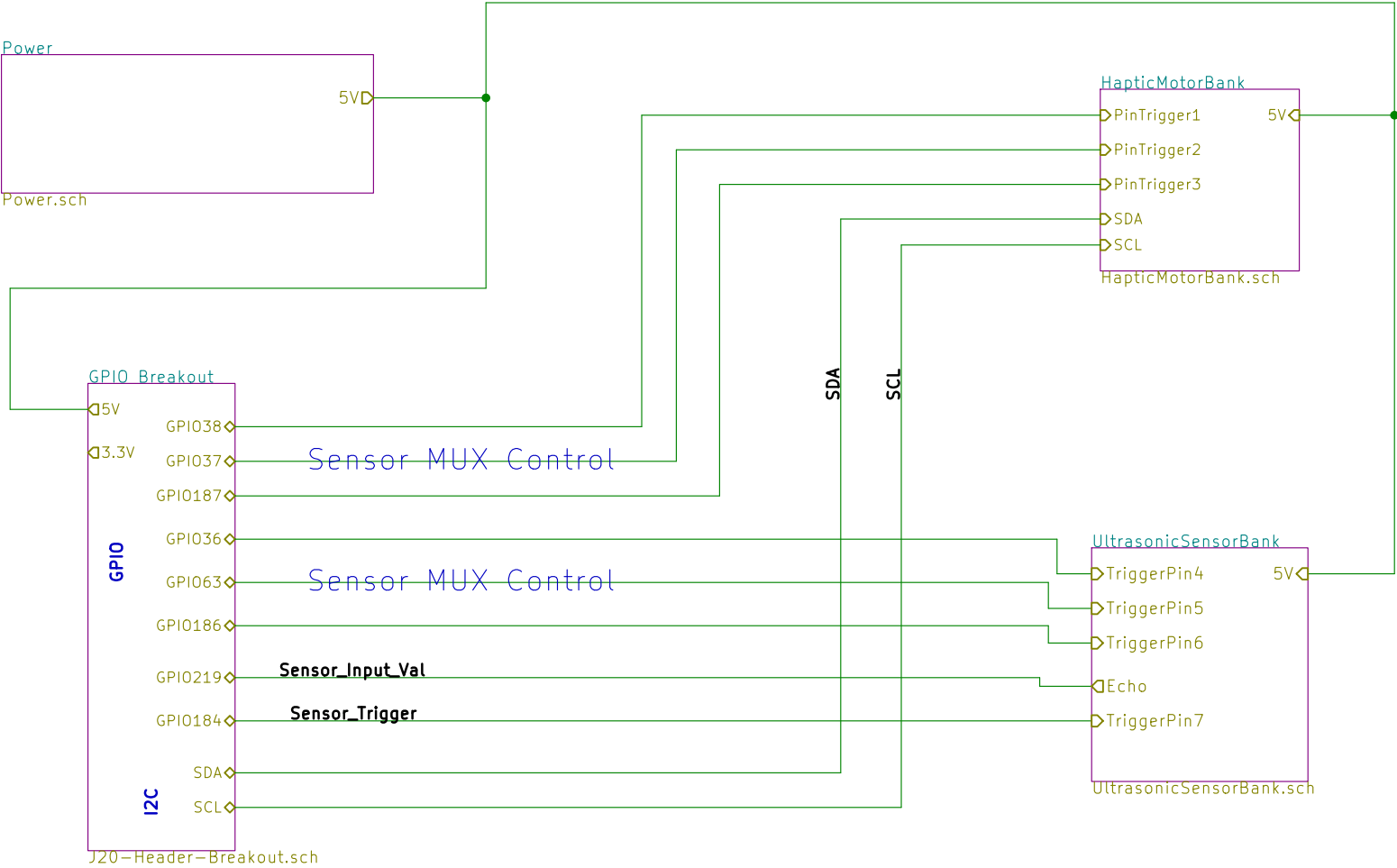


Top Level Design



Designer: Christian Aguilar  
Advanced Visual Electronics  
Sheet: /  
File: AVE-NvidiaTX1-ISight360.sch

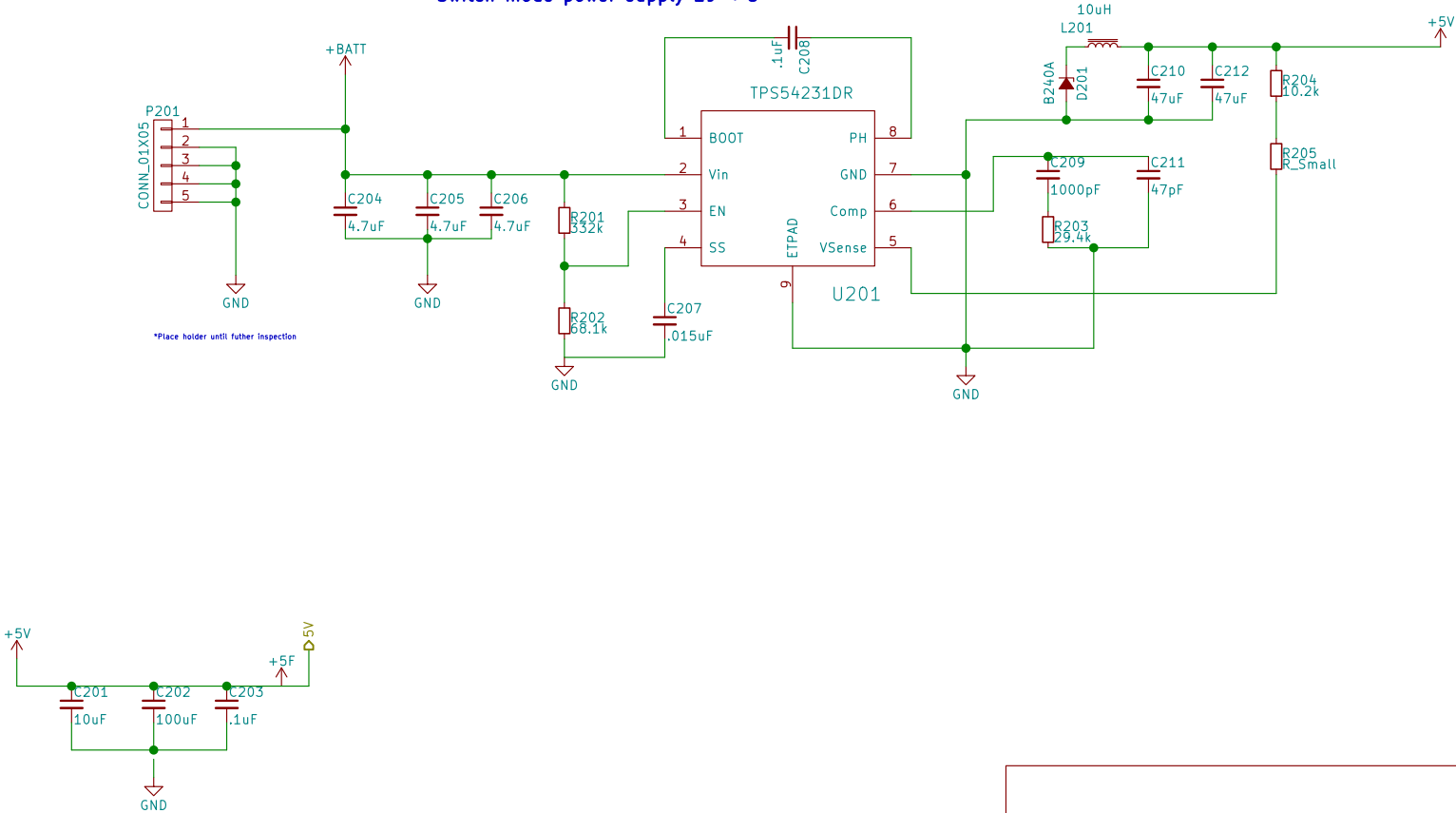
Title: iSight360

Size: A Date: 2017-03-17  
KiCad E.D.A. kicad 4.0.5

Rev: A  
Id: 1/5

# Power

## Switch mode power supply 19-->5



Designer: Christian Aguilar  
**Advanced Visual Electronics**

Sheet: /Power/  
File: Power.sch

### Title: Power

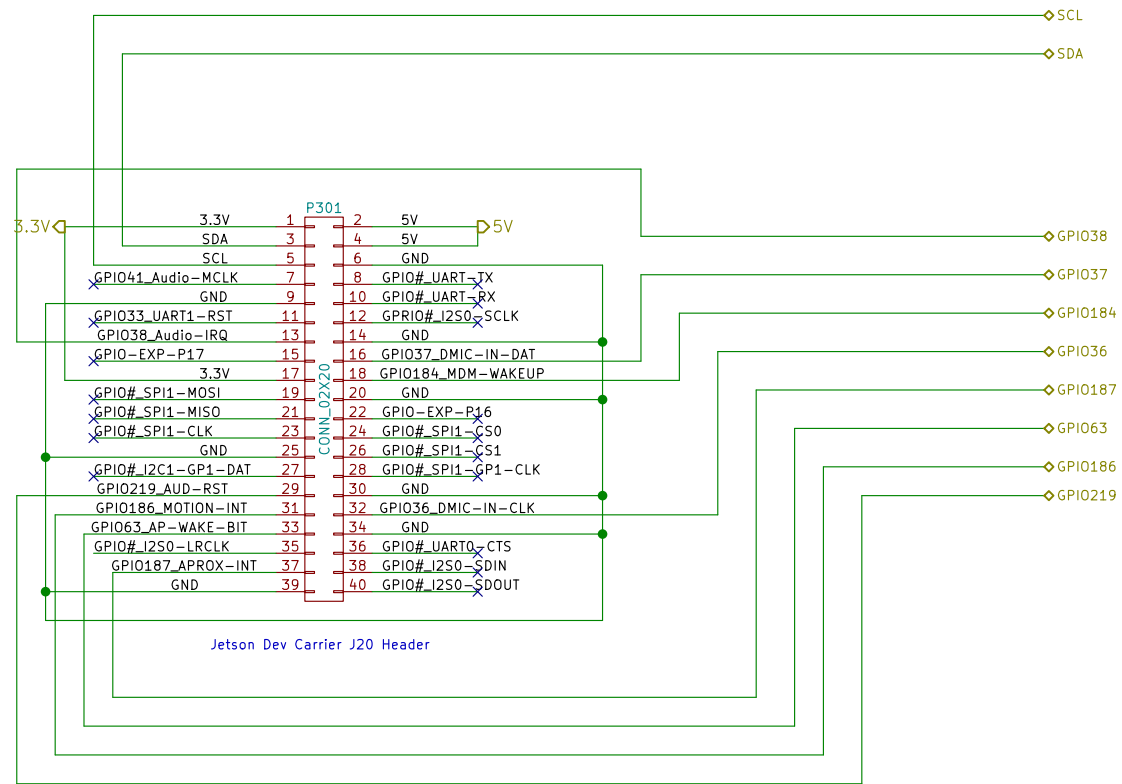
Size: A4  
KiCad E.D.A. kicad 4.0.5

Date: 2017-03-17

Rev: A

Id: 2/5

# GPIO PINOUT



Designer: Christian Aguilar

Advanced Visual Electronics

Sheet: /GPIO Breakout/  
File: J20-Header-Breakout.sch

**Title: GPIO Breakout**

Size: A4 Date: 2017-03-17  
KiCad E.D.A. kicad 4.0.5

Rev: A  
Id: 3/5

# Haptic Motor Bank

CD4051B

U404

Selectable Inputs

JP401  
CTRL Jump1

JP402  
CTRL Jump2

JP403  
CTRL Jump3

74LVC1T45

U401

74LVC1T45

U403

74LVC1T45

U402

Level Shifters -> Reverse Direction

PinTrigger1

PinTrigger2

PinTrigger3

SDA  
SCL

P401  
CONN\_01X04

Bus start

P402  
CONN\_01X04

Bus end

U405

U406

U407

U408

U409

U410

DRV2605L(breakout)

DRV2605L(breakout)

DRV2605L(breakout)

DRV2605L(breakout)

DRV2605L(breakout)

DRV2605L(breakout)

DRV2605L(breakout)

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DRV2605L(breakout)

DRV2605L(breakout)

Output Triggers

Designer: Christian Aguilar  
Advanced Visual Electronics

Sheet: /HapticMotorBank/  
File: HapticMotorBank.sch

Title: Haptic Motor Bank

Size: A4 Date: 2017-03-17  
KiCad E.D.A. kicad 4.0.5

Rev: A  
Id: 4/5

**Ultrasonic Sensor Bank**

The schematic illustrates an Ultrasonic Sensor Bank circuit. It consists of six ultrasonic sensors (P501-P506) connected to a 74LS251 (U502) decoder. A 74LVC1T45 (U501) level shifter manages the TriggerPin7 signal. Power is supplied by +5V and +1V2 sources with decoupling capacitors. Echo signals are buffered by 10K resistors (R501, R502) and connected to a common bus. The diagram includes labels for components, pins, and signal paths, with a title 'Ultrasonic Sensor Bank' at the top.

**Components and Connections:**

- U501 (74LVC1T45):** Bidirectional Level Shifter. Vcc(a) is connected to +1V2, Vcc(b) to +5V, GND to GND, DIR to TriggerPin7, and A/B to TriggerPin7.
- U502 (74LS251):** 3-to-8 Line Decoder. S0, S1, S2 are connected to TriggerPin4, TriggerPin5, and TriggerPin6 respectively. Y0-Y7 are connected to Echo1-Echo6. Y0-Y7 are also connected to a common bus through 10K resistors (R501, R502).
- P501-P506:** Ultrasonic sensors. Each has a +5V supply, GND, and a Trigger pin connected to the common bus.
- Resistors:** R501 (10K) and R502 (10K) are used for signal buffering.
- Capacitors:** +5F capacitors are used for decoupling.

**Signal Paths:**

- Trigger:** TriggerPin7 is connected to the Trigger pin of all sensors.
- Echo:** Echo1-Echo6 are connected to the Y0-Y7 outputs of U502.
- Power:** +5V and +1V2 are connected to the power pins of the sensors and the level shifter.

**Labels and Annotations:**

- Set Vcc(a) "HIG" for A=>B Transmission:** A note indicating the configuration of the level shifter.
- TriggerPin7:** The signal pin for the level shifter.
- Trigger:** The common trigger signal for all sensors.
- Echo1-Echo6:** The output signals from the sensors.
- Y0-Y7:** The outputs of the 74LS251 decoder.
- Y0-Y7:** The outputs of the 74LS251 decoder.
- Y0-Y7:** The outputs of the 74LS251 decoder.

Id: 5/5