

Author: Brent Lukasik
Block Diagram

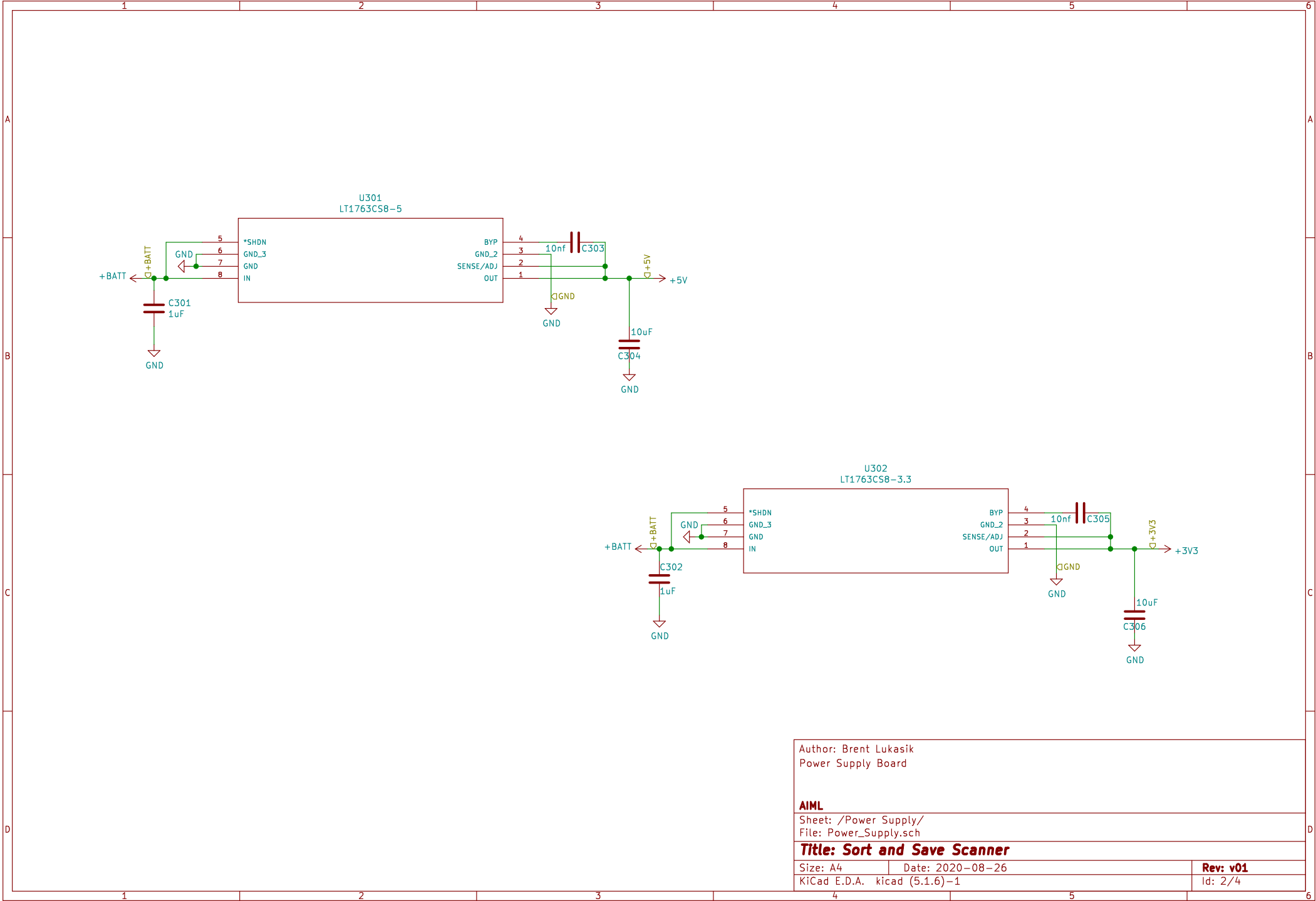
AIML

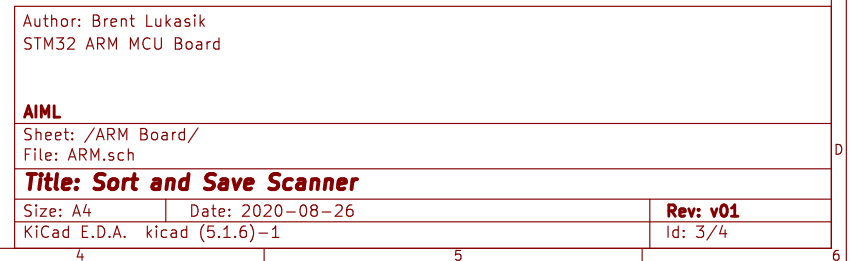
Sheet: /
File: Sort and Save Scanner.sch

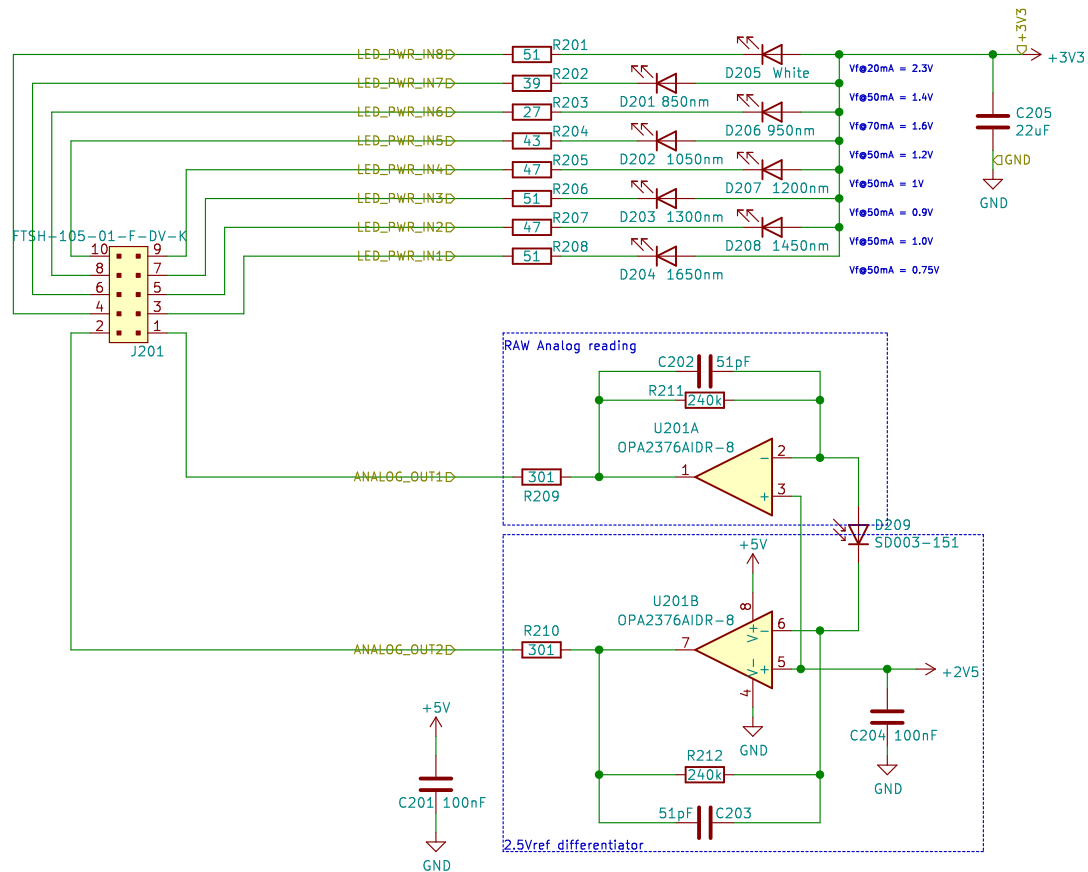
Title: Sort and Save Scanner

Size: A4
Date: 2020-08-26
KiCad E.D.A. kicad (5.1.6)-1

Rev: v01
Id: 1/4







Author: Brent Lukasik
Sensor and Emitter Board

AIML

Sheet: /Sensor/
File: Sensor.sch

Title: Sort and Save Scanner

Size: A4 Date: 2020-08-26

KiCad E.D.A. kicad (5.1.6)-1

Rev: v01

Id: 4/4

Eeschema (5.1.6)-1

Component Count:56

Ref	Qty	Value	Part	Datasheet	Description
C201, C204, C402, C403, C405	5	100nF	Device:C	https://media.digikey.com/pdf/Data%20Sheets/Samsung%20PDFs/CL_Series_MLCC_datas.pdf	Unpolarized capacitor
C202, C203	2	51pF	Device:C	https://media.digikey.com/pdf/Data%20Sheets/TDK%20PDFs/C_Series_GeneralAppl_B11.pdf	Unpolarized capacitor
C205	1	22uF	Device:C	https://media.digikey.com/pdf/Data%20Sheets/Samsung%20PDFs/CL10A226MPCNUB_E_Spec.pdf	Unpolarized capacitor
C206, C207, C208, C301, C302, C401	6	1uF	Device:C	https://product.tdk.com/info/en/catalog/datasheets/mlcc_commercial_lowprofile_en.pdf	Unpolarized capacitor
C303, C305	2	10nf	Device:C	https://content.kemet.com/datasheets/KEM_C1090_X7R_ESD.pdf	Unpolarized capacitor
C304, C306	2	10uF	Device:C	https://search.murata.co.jp/Ceramy/image/img/A01X/G101/ENG/GRM188R61A106KE69-01.pdf	Unpolarized capacitor
C404, C406	2	10pF	Device:C	https://content.kemet.com/datasheets/KEM_C1003_C0G_SMD.pdf	Unpolarized capacitor
C407	1	100pF	Device:C	https://content.kemet.com/datasheets/KEM_C1002_X7R_SMD.pdf	Unpolarized capacitor
C408	1	47nF	Device:C	https://content.kemet.com/datasheets/KEM_C1090_X7R_ESD.pdf	Unpolarized capacitor
D201	1	850nm	Device:LED	http://www.qt-brightek.com/datasheet/QBLP650-IR3.pdf	Light emitting diode

D202	1	1050nm	Device:LED	https://www.marktechopto.com/pdf/products/datasheet/MTSM5010-843-IR.pdf	Light emitting diode
D203	1	1300nm	Device:LED	https://www.marktechopto.com/pdf/products/datasheet/MTSM0013-843-IR.pdf	Light emitting diode
D204	1	1650nm	Device:LED	https://www.marktechopto.com/pdf/products/datasheet/MTSM5016-843-IR.pdf	Light emitting diode
D205	1	White	Device:LED	http://www.farnell.com/datasheets/2699708.pdf	Light emitting diode
D206	1	950nm	Device:LED	http://www.farnell.com/datasheets/2711871.pdf	Light emitting diode
D207	1	1200nm	Device:LED	https://www.marktechopto.com/pdf/products/datasheet/MTSM0012-843-IR.pdf	Light emitting diode
D208	1	1450nm	Device:LED	https://www.marktechopto.com/pdf/products/datasheet/MTSM5014-843-IR.pdf	Light emitting diode
D209	1	SD003-151	Device:D_Photo	https://media.digikey.com/pdf/Data%20Sheets/Photonic%20Detectors%20Inc%20PDFs/SD003-151-001.pdf	Photodiode
D401	1	Green	Device:LED	https://www.kingbrightusa.com/images/catalog/SPEC/APHHS1005CGCK.pdf	Light emitting diode
J201, J401, J402	3	FTSH-105-01-F-DV-K	dk_Rectangular-Connectors-Headers-Male-Pins:FTSH-105-01-F-DV-K	http://suddendocs.samtec.com/prints/ftsh-1xx-xx-xxx-dv-xxx-xxx-mkt.pdf	CONN HEADER SMD 10POS 1.27MM
R201, R206, R208	3	51	Device:R	https://www.yageo.com/upload/media/product/productsearch/datasheet/rchip/PYu-RC_Group_51_RoHS_L_11.pdf	Resistor
R202	1	39	Device:R	https://www.yageo.com/upload/media/product/productsearch/datasheet/rchip/PYu-RC_Group_51_RoHS_L_11.pdf	Resistor

R203	1	27	Device:R	https://www.yageo.com/upload/media/product/productsearch/datasheet/rchip/PYu-RC_Group_51_RoHS_L_11.pdf	Resistor
R204	1	43	Device:R	https://www.yageo.com/upload/media/product/productsearch/datasheet/rchip/PYu-RC_Group_51_RoHS_L_11.pdf	Resistor
R205, R207	2	47	Device:R	https://www.yageo.com/upload/media/product/productsearch/datasheet/rchip/PYu-RC_Group_51_RoHS_L_11.pdf	Resistor
R209, R210	2	301	Device:R	https://www.yageo.com/upload/media/product/productsearch/datasheet/rchip/PYu-RC_Group_51_RoHS_L_11.pdf	Resistor
R211, R212	2	240k	Device:R	https://www.yageo.com/upload/media/product/productsearch/datasheet/rchip/PYu-RC_Group_51_RoHS_L_11.pdf	Resistor
R401	1	100k	Device:R	https://www.yageo.com/upload/media/product/productsearch/datasheet/rchip/PYu-RC_Group_51_RoHS_L_11.pdf	Resistor
R402	1	10k	Device:R	https://www.yageo.com/upload/media/product/productsearch/datasheet/rchip/PYu-RC_Group_51_RoHS_L_11.pdf	Resistor
R403	1	1K	Device:R	https://www.yageo.com/upload/media/product/productsearch/datasheet/rchip/PYu-RC_Group_51_RoHS_L_11.pdf	Resistor
U201	1	OPA2376AIDR-8	Amplifier_Operational:OPA2376xxD	http://www.ti.com/lit/ds/symlink/opa376.pdf	Dual Low-Noise, Low Quiescent Current, Precision Operational Amplifier e-trim Series, SOIC-8
U202	1	REF5025AD	Reference_Voltage:REF5025AD	http://www.ti.com/lit/ds/symlink/ref5030.pdf	2.5V 0.1% 10mA Low Noise Precision Voltage Reference, SO-8
U301	1	LT1763CS8-5	LT1763CS8TR:LT1763CS8TR	https://www.analog.com/media/en/technical-documentation/data-sheets/1763fh.pdf	

U302	1	LT1763 CS8- 3.3	LT1763CS8TR:LT 1763CS8TR	https://www.analog.com/media/en/technical-documentation/data-sheets/1763fh.pdf	
U401	1	STM32 F051R8 Tx	MCU_ST_STM32F 0:STM32F051R8T x	http://www.st.com/st-web- ui/static/active/en/resource/technical/document/datasheet/DM00039193.pdf	ARM Cortex-M0 MCU, 64KB flash, 8KB RAM, 48MHz, 2- 3.6V, 55 GPIO, LQFP-64
Y401	1	8MHz	Device:Crystal_GN D24	https://www.raltron.com/wp-content/uploads/2019/07/RH100_SERIES-July-2019.pdf	Four pin crystal, GND on pins 2 and 4