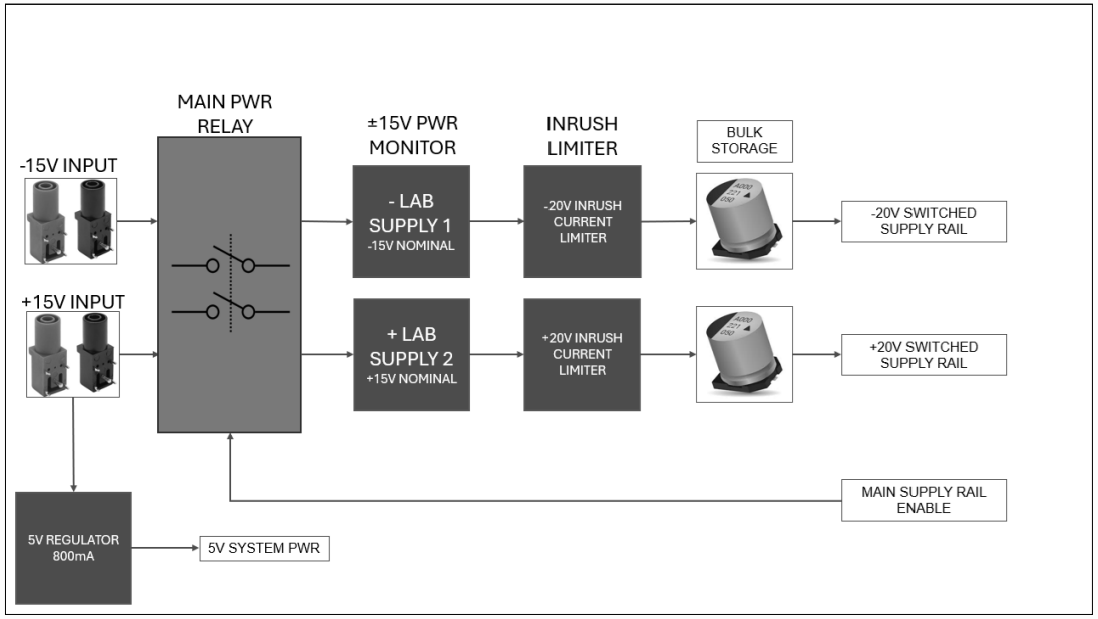
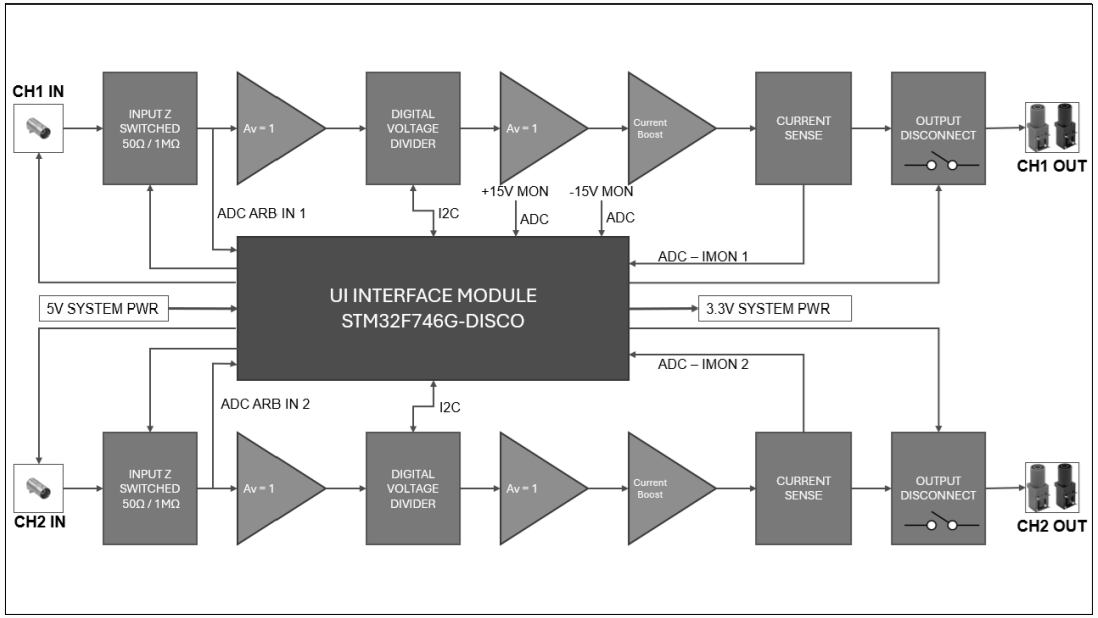
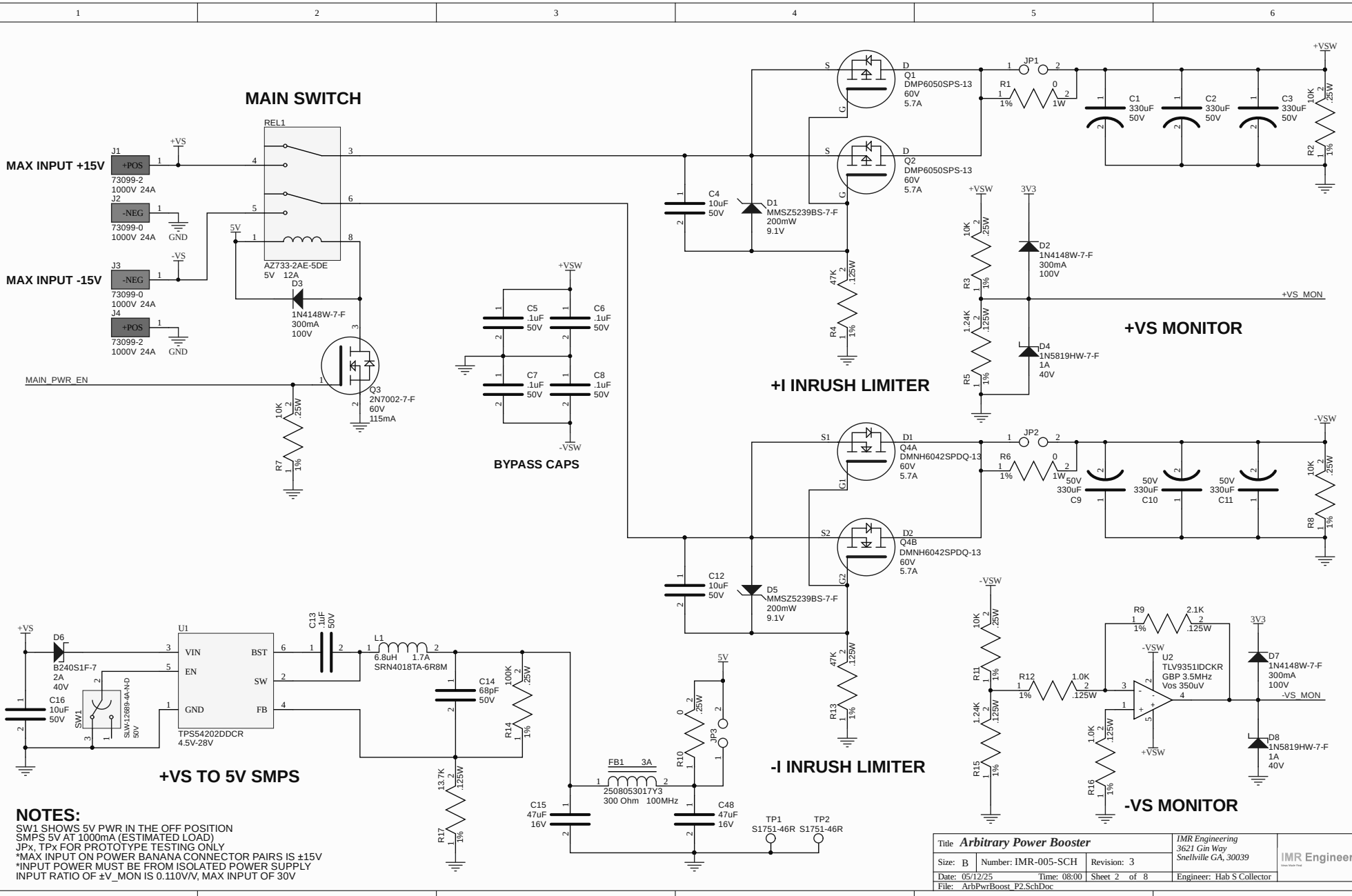


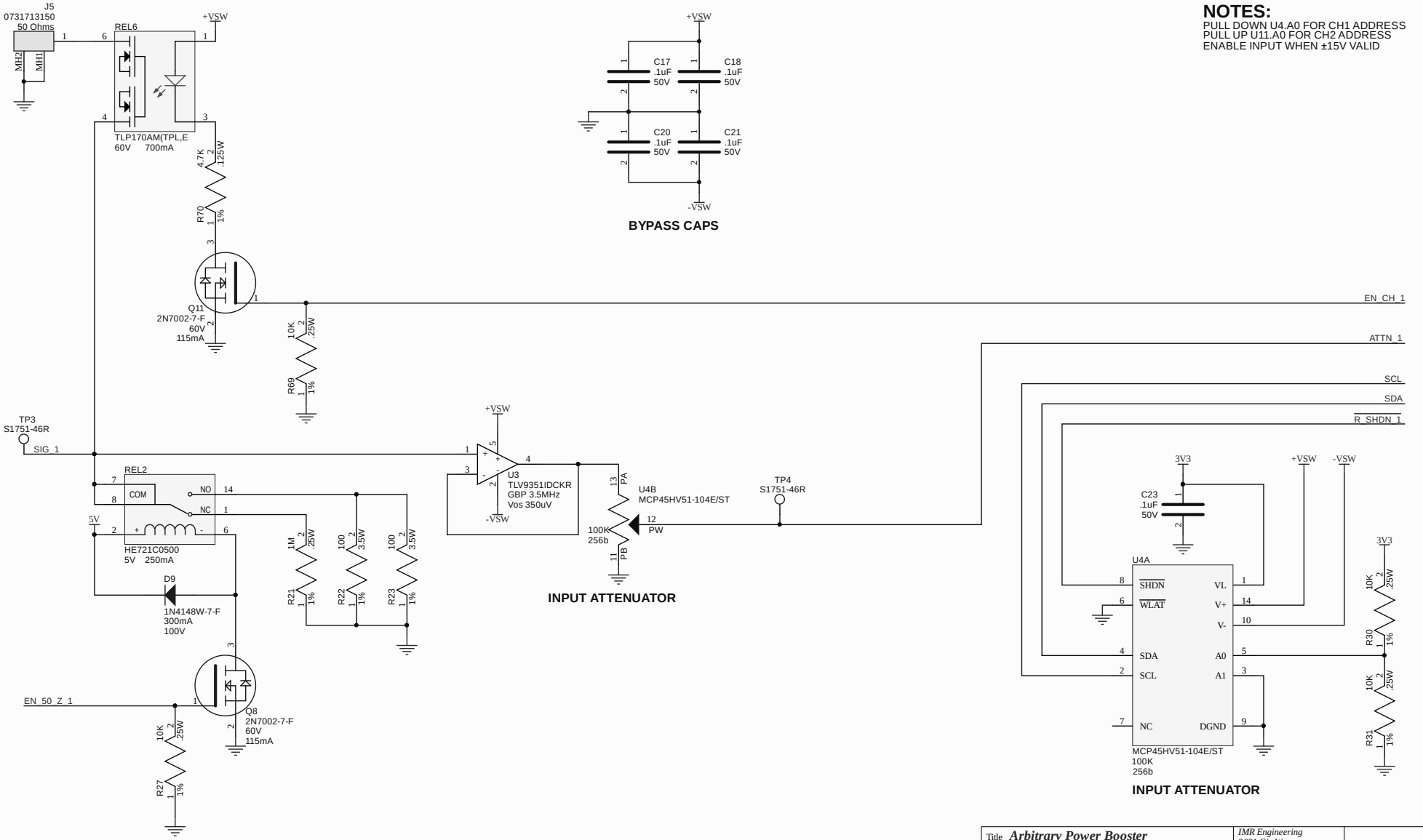


REVISION HISTORY:

REV	ECO	CHANGE DESCRIPTION
1	NA	Initial design
2	NA	Multiple changes to pin-out, circuit protection, Current Boost, and misc.
3	NA	Correction in ABS divider, change in Current Boost, Cooling and misc.

Title	***Arbitrary Power Booster***		*IMR Engineering* *3621 Gin Way* *Snellville GA, 30039*
Size: B	Number: IMR-005-SCH	Revision: 3	IMR Engineering
Date: 05/12/25	Time: 08:00	Sheet 1 of 8	Engineer: Hab S Collector
File: ArbPwrBoost_P1.SchDoc			

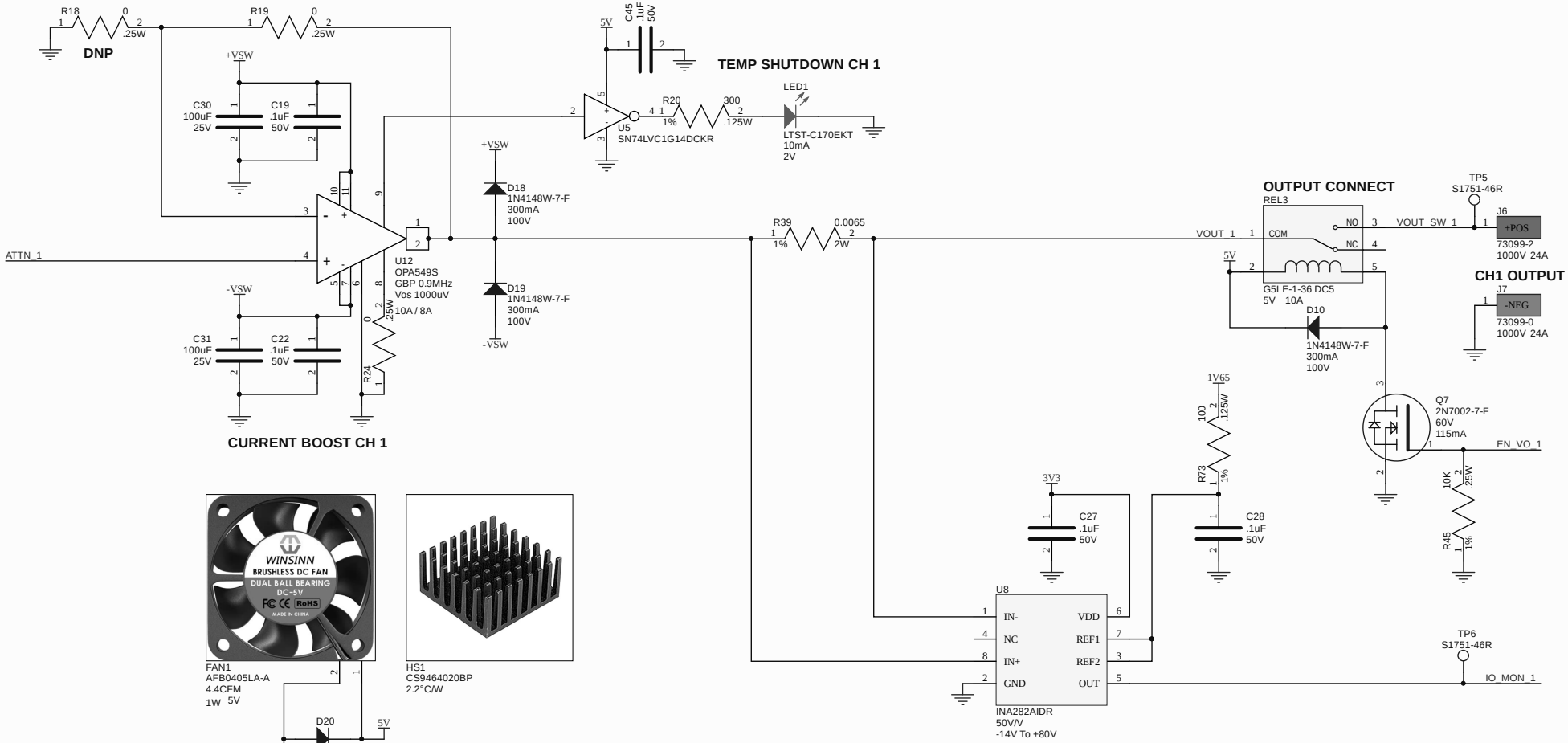

MAIN SWITCH
MAX INPUT +15V
MAX INPUT -15V
J1
+POS
73099-2
1000V 24A
J2
-NEG
73099-0
1000V 24A
GND
J3
-NEG
73099-0
1000V 24A
J4
+POS
73099-2
1000V 24A
GND
+VS
-VS
5V
REL1
AZ733-2AE-5DE
5V 12A
D3
1N4148W-7-F
300mA
100V
MAIN_PWR_EN
Q3
2N7002-7-F
60V
115mA
10K .25W
R7 1%
+I INRUSH LIMITER
Q1
DMP6050SPS-13
60V
5.7A
Q2
DMP6050SPS-13
60V
5.7A
JP1
R1 1%
0 1W
C1 330uF 50V
C2 330uF 50V
C3 330uF 50V
10K .25W
R2 1%
+VSW
C4 10uF 50V
D1
MMSZ5239BS-7-F
200mW
9.1V
47K .125W
R4 1%
3V3
10K .25W
R3 1%
1.24K .125W
R5 1%
D2
1N4148W-7-F
300mA
100V
+VS_MON
+VS MONITOR
D4
1N5819HW-7-F
1A
40V
C5 .1uF 50V
C6 .1uF 50V
C7 .1uF 50V
C8 .1uF 50V
BYPASS CAPS
-VSW
Q4A
DMNH6042SPDQ-13
60V
5.7A
Q4B
DMNH6042SPDQ-13
60V
5.7A
JP2
R6 1%
0 1W
C9 50V 330uF
C10 50V 330uF
C11 50V 330uF
10K .25W
R8 1%
C12 10uF 50V
D5
MMSZ5239BS-7-F
200mW
9.1V
47K .125W
R13 1%
-I INRUSH LIMITER
D6
B240S1F-7
2A
40V
C16 10uF 50V
SW1
SLW-12689-4A-N-D
50V
U1
VIN
EN
GND
BST
SW
FB
TPS54202DDCR
4.5V-28V
C13 .1uF 50V
L1
6.8uH 1.7A
SRN4018TA-6R8M
C14 68pF 50V
100K .25W
R14 1%
+VS TO 5V SMPS
FB1 3A
2508053017Y3
300 Ohm 100MHz
0 .25W
JP3
R10
13.7K .125W
R17 1%
C15 47uF 16V
C48 47uF 16V
TP1 S1751-46R
TP2 S1751-46R
R9 2.1K .125W 1%
R12 1.0K .125W 1%
U2
TLV9351IDCKR
GBP 3.5MHz
Vos 350uV
1.24K .125W
R15 1%
1.0K .125W
R16 1%
D7
1N4148W-7-F
300mA
100V
-VS_MON
D8
1N5819HW-7-F
1A
40V
-VS MONITOR
NOTES:
SW1 SHOWS 5V PWR IN THE OFF POSITION
SMPS 5V AT 1000mA (ESTIMATED LOAD)
JPx, TPx FOR PROTOTYPE TESTING ONLY
*MAX INPUT ON POWER BANANA CONNECTOR PAIRS IS ±15V
*INPUT POWER MUST BE FROM ISOLATED POWER SUPPLY
INPUT RATIO OF ±V_MON IS 0.110V/V, MAX INPUT OF 30V
Title Arbitrary Power Booster
Size: B
Number: IMR-005-SCH
Revision: 3
Date: 05/12/25
Time: 08:00
Sheet 2 of 8
File: ArbPwrBoost_P2.SchDoc
IMR Engineering
3621 Gin Way
Snellville GA, 30039
Engineer: Hab S Collector



NOTES:

PULL DOWN U4.A0 FOR CH1 ADDRESS
PULL UP U11.A0 FOR CH2 ADDRESS
ENABLE INPUT WHEN ±15V VALID

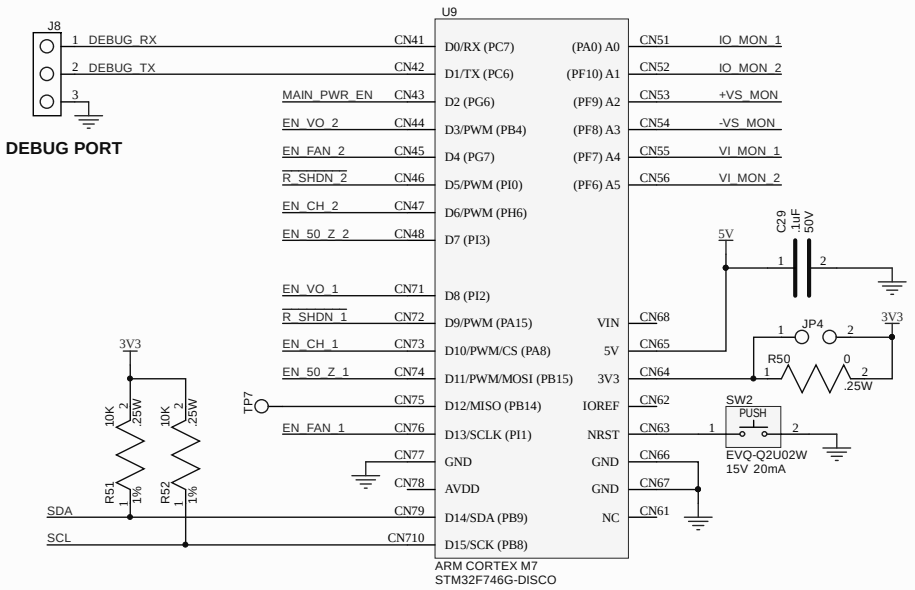
Title	*Arbitrary Power Booster*		*IMR Engineering*
Size: B	Number: IMR-005-SCH	Revision: 3	*3621 Gin Way*
Date: 05/12/25	Time: 08:00	Sheet 3 of 8	*Snellville, GA 30039*
File: ArbPwrBoost_P3.SchDoc		Engineer: Hab Collector	IMR Engineering



NOTES:

1V65 AVAILABLE WITH 5V
3V3 AVAILABLE WITH 5V AND MODULE INSTALLED
DEVICE SHUT DOWN AND LED TURNS ON WHEN JUNCTION TEMP REACHES 160°C
DEVICE TURNS BACK ON WHEN JUNCTION TEMP COOLS TO 140°C
OP AMP BOOST GAIN TO BE UNITY

Title *Arbitrary Power Booster*			*IMR Engineering* *3621 Gin Way* *Snellville, GA 30039*
Size: B	Number: IMR-005-SCH	Revision: 3	IMR Engineering
Date: 05/12/25	Time: 08:00	Sheet 4 of 8	Engineer: Hab Collector
File: ArbPwrBoost_P4.SchDoc			



CONTROLLER MODULE WITH GUI INTERFACE

A0 TO A5 ADC INPUTS

INPUT IMPEDANCE IO_MON1 ESTIMATED < 10 OHMS - OP AMP OUTPUT
INPUT IMPEDANCE IO_MON2 ESTIMATED < 10 OHMS - OP AMP OUTPUT
INPUT IMPEDANCE +VS_MON 1.1K OHM
INPUT IMPEDANCE -VS_MON_2 ESTIMATED < 10 OHMS - OP AMP OUTPUT
INPUT IMPEDANCE VI_MON_1 2.3K OHM
INPUT IMPEDANCE VI_MON_2 2.3K OHM

MOUNTING HARDWARE

MECH1 M3X6 MECH2 M3X6 MECH3 M3X6 MECH4 M3X6
MECH5 M3X20 MECH6 M3X20 MECH7 M3X20 MECH8 M3X20

MOUNTING HOLES

MTN1 3.3mm MTN2 3.3mm MTN3 3.3mm MTN4 3.3mm

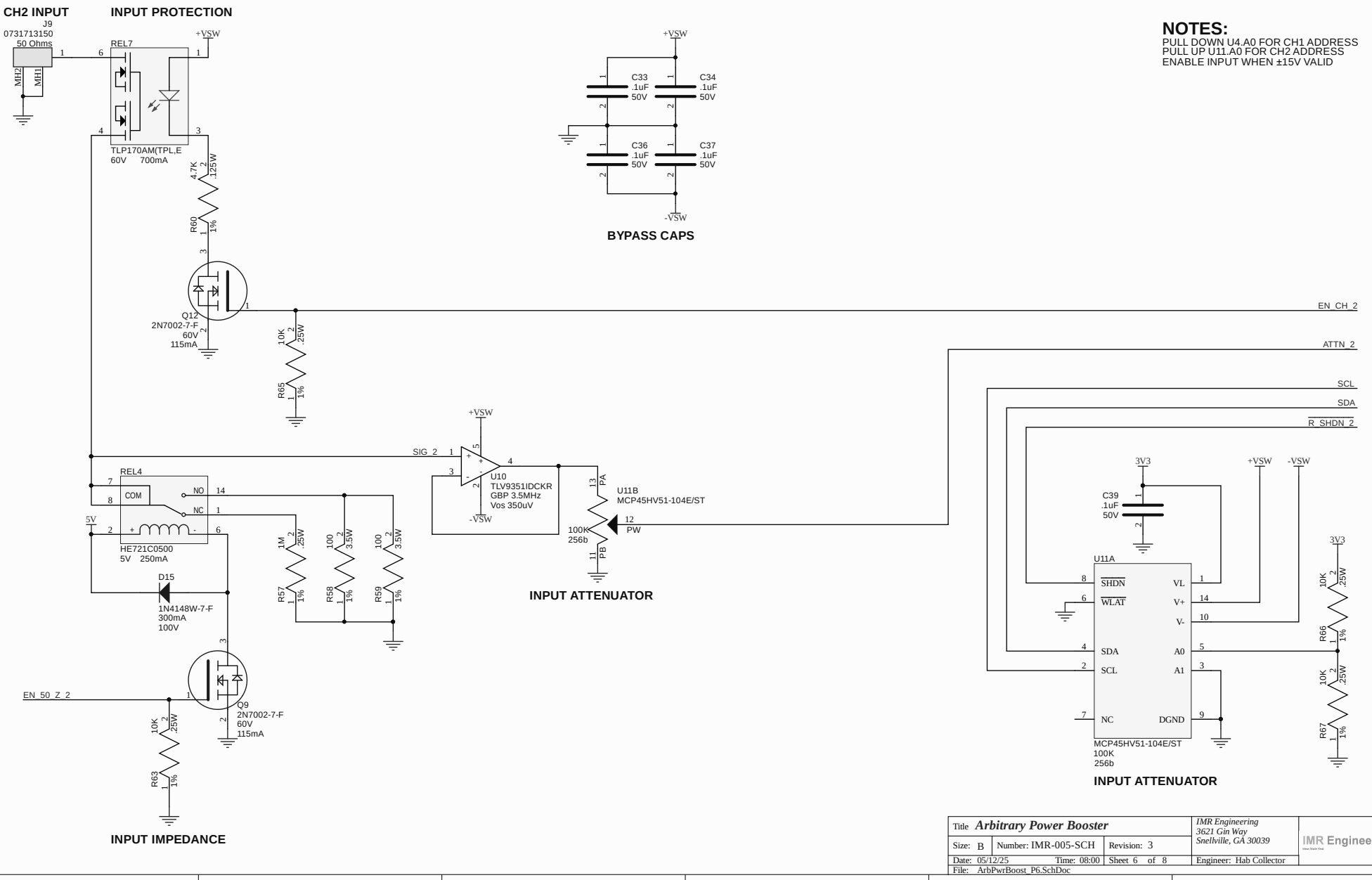
MODULE HARDWARE

MECH9 M3X6 MECH10 M3X6 MECH11 M3X6 MECH12 M3X6

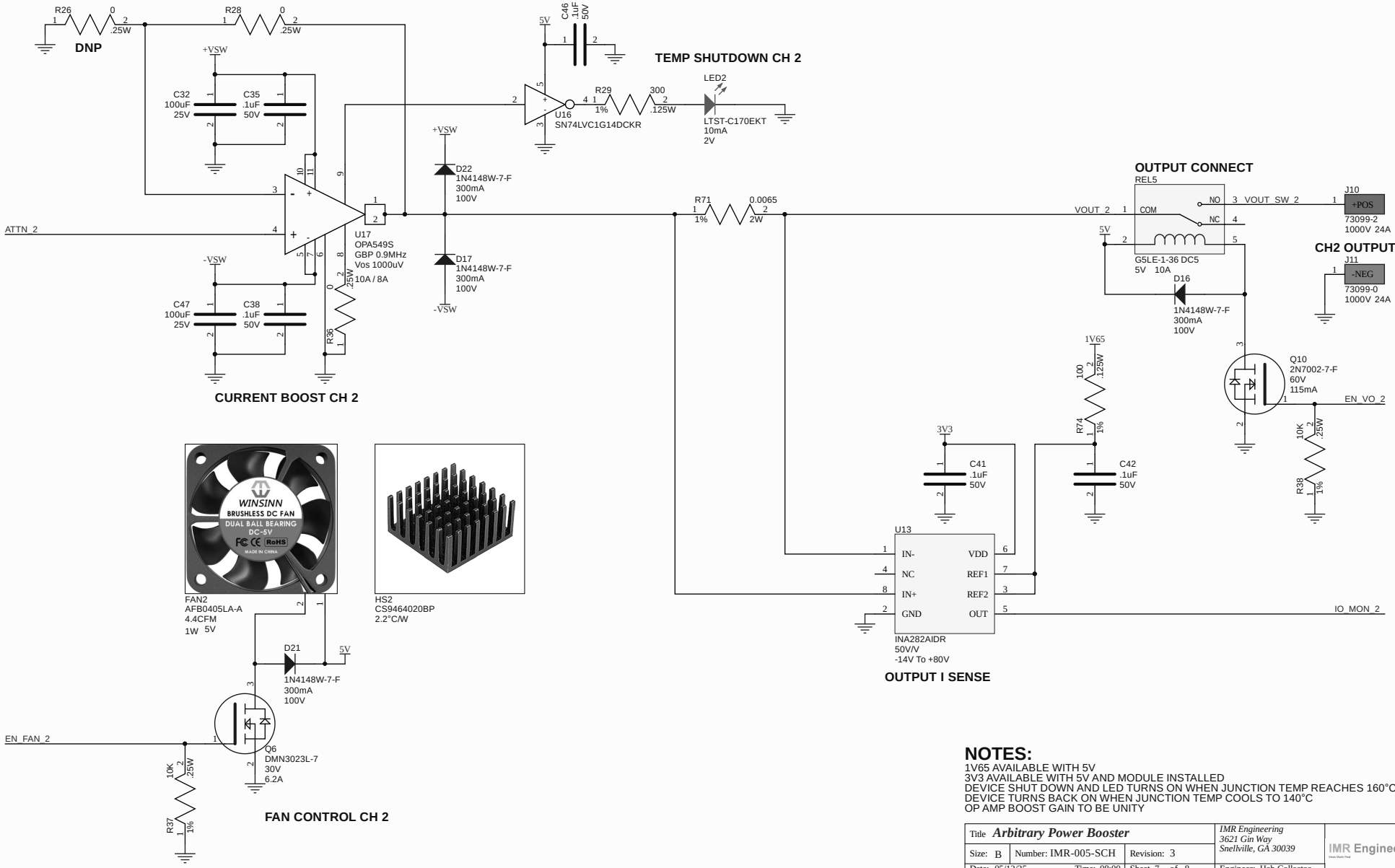
NOTES:

I2C PULL UP ON MODULE - ADDED HERE JUST IN CASE - DNP
5V IS POWER INPUT TO MODULE
3V3 IS REGULATED POWER OUTPUT FROM MODULE
JPx, TPx FOR PROTOTYPE TESTING ONLY
CHANNEL 1 AND CHANNEL 2 OPERATE INDEPENDENTLY OF EACH OTHER

Title: *Arbitrary Power Booster*			*IMR Engineering* *3621 Gin Way* *Snellville, GA 30039*
Size: B	Number: IMR-005-SCH	Revision: 3	IMR Engineering
Date: 05/12/25 Time: 08:00	Sheet 5 of 8		Engineer: Hab Collector
File: ArbPwrBoost_P5.SchDoc			



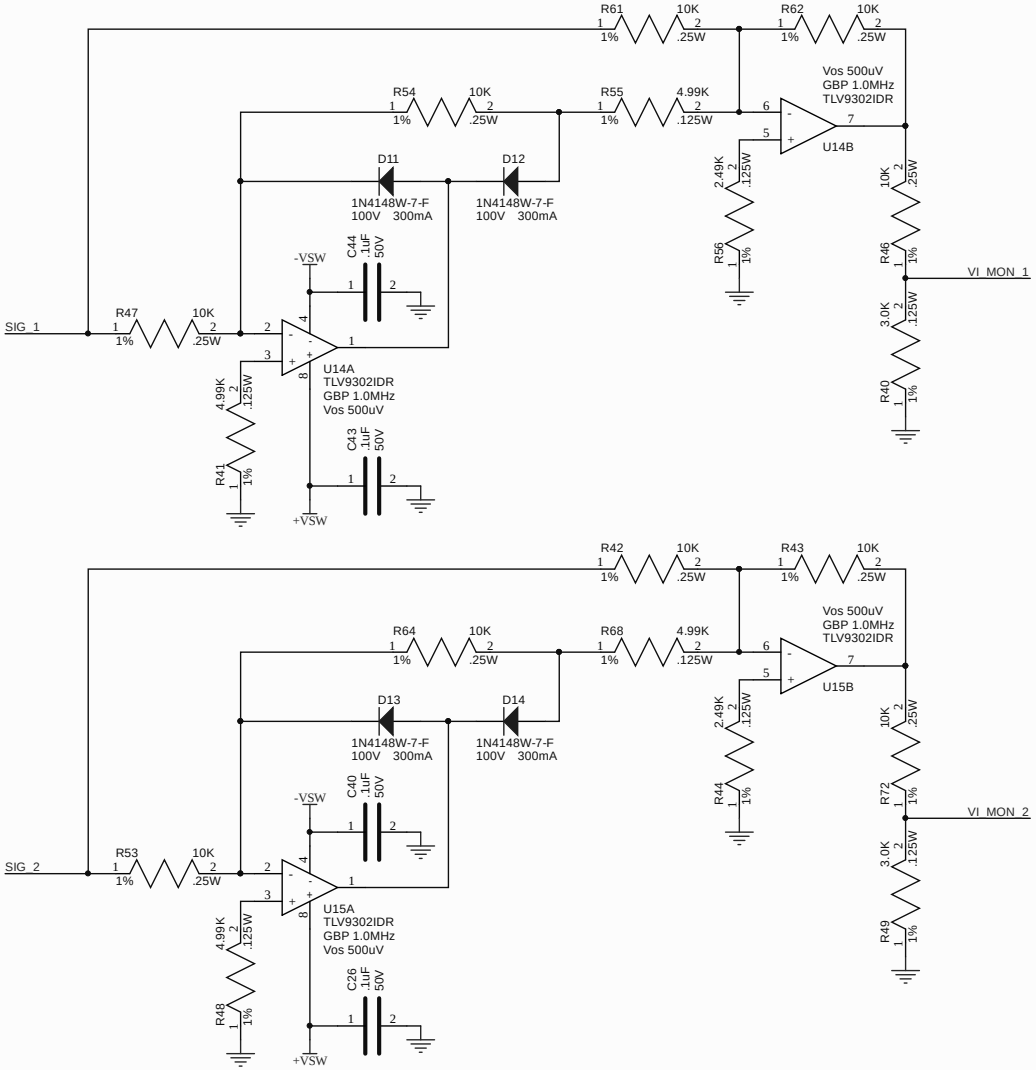
Title	*Arbitrary Power Booster*		*IMR Engineering*
Size: B	Number: IMR-005-SCH	Revision: 3	*3621 Gin Way*
Date: 05/12/25	Time: 08:00	Sheet 6 of 8	*Snellville, GA 30039*
File: ArbPwrBoost_P6.SchDoc		Engineer: Hab Collector	IMR Engineering



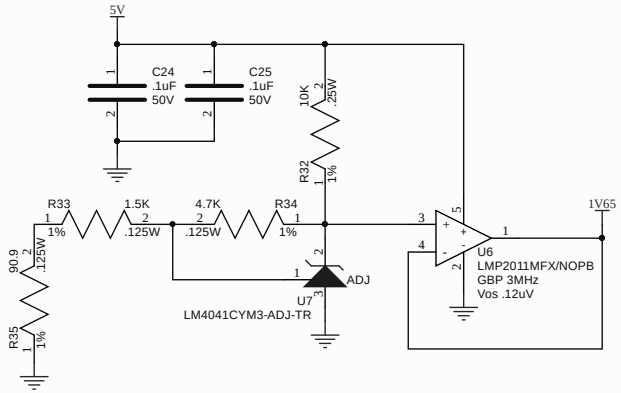
NOTES:

1V65 AVAILABLE WITH 5V
3V3 AVAILABLE WITH 5V AND MODULE INSTALLED
DEVICE SHUT DOWN AND LED TURNS ON WHEN JUNCTION TEMP REACHES 160°C
DEVICE TURNS BACK ON WHEN JUNCTION TEMP COOLS TO 140°C
OP AMP BOOST GAIN TO BE UNITY

Title *Arbitrary Power Booster*			*IMR Engineering 3621 Gin Way Snellville, GA 30039*
Size: B	Number: IMR-005-SCH	Revision: 3	IMR Engineering
Date: 05/12/25	Time: 08:00	Sheet 7 of 8	Engineer: Hab Collector
File: ArbPwrBoost_P7.SchDoc			



ABSOLUTE VALUE DIVIDER

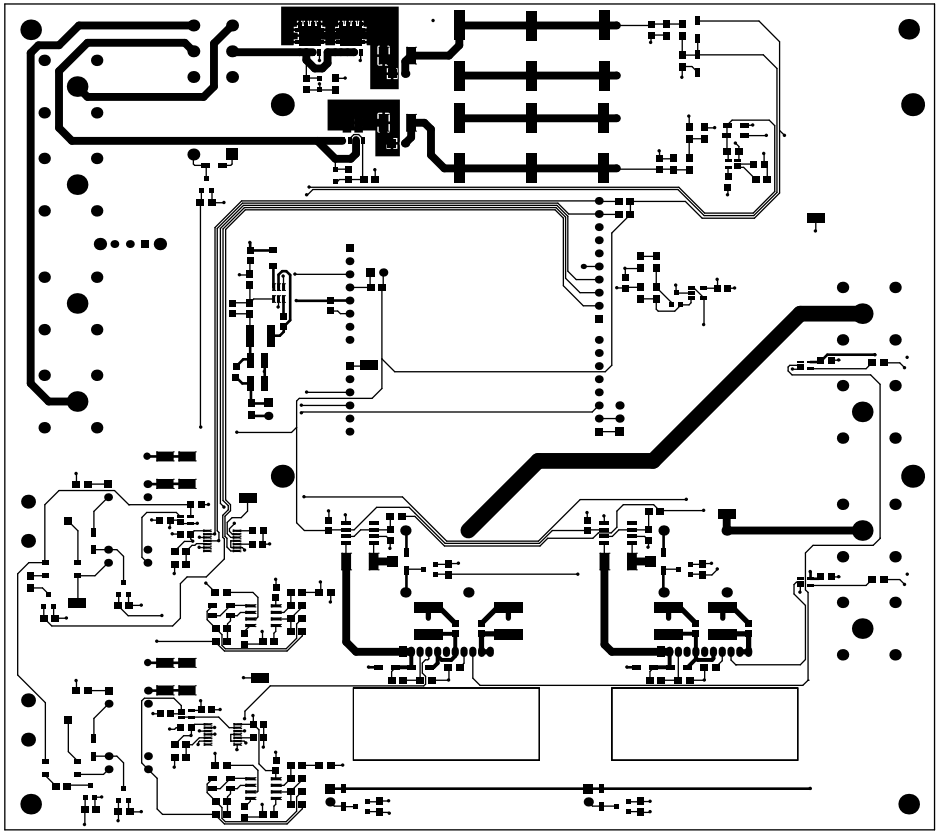


1.650V PRECISION REFERENCE

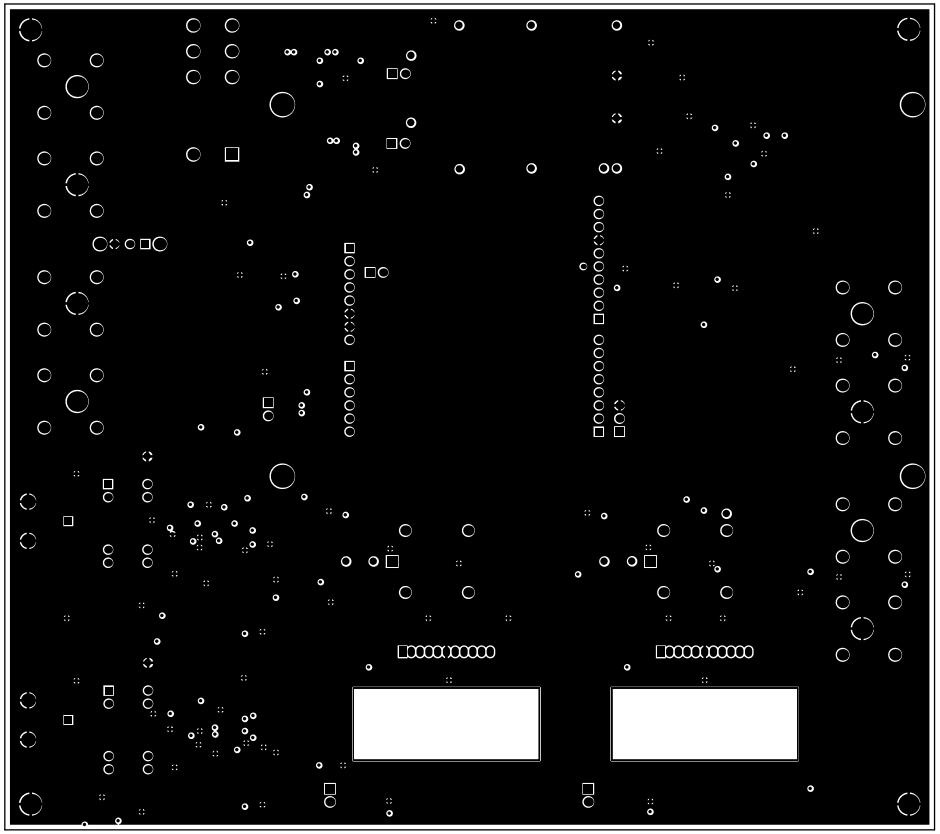
NOTES:

1V65 ARE BOTH AVAILABLE WITH 5V
3V3 REQUIRES MODULE TO BE INSERTED
ABSOLUTE VALUE DIVIDER RATIO 0.2308V/V

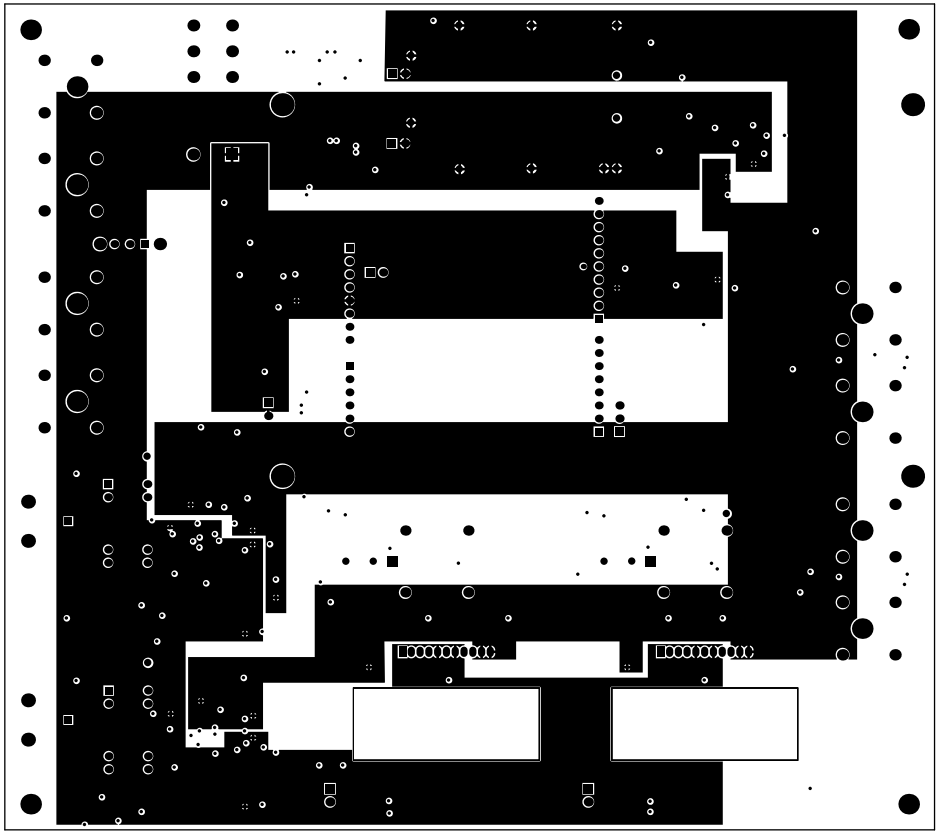
Title *Arbitrary Power Booster*			*IMR Engineering* *3621 Gin Way* *Snellville, GA 30039*
Size: B	Number: IMR-005-SCH	Revision: 3	IMR Engineering
Date: 05/12/25	Time: 08:00	Sheet 8 of 8	Engineer: Hab Collector
File: ArbPwrBoost_P8.SchDoc			



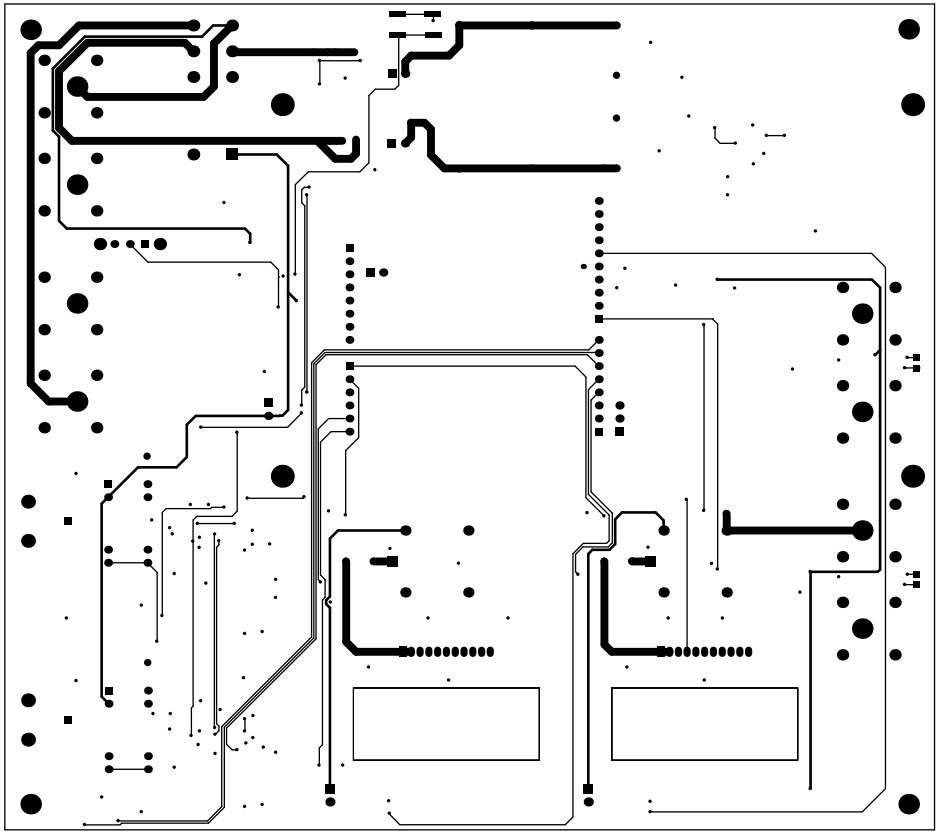
TOP



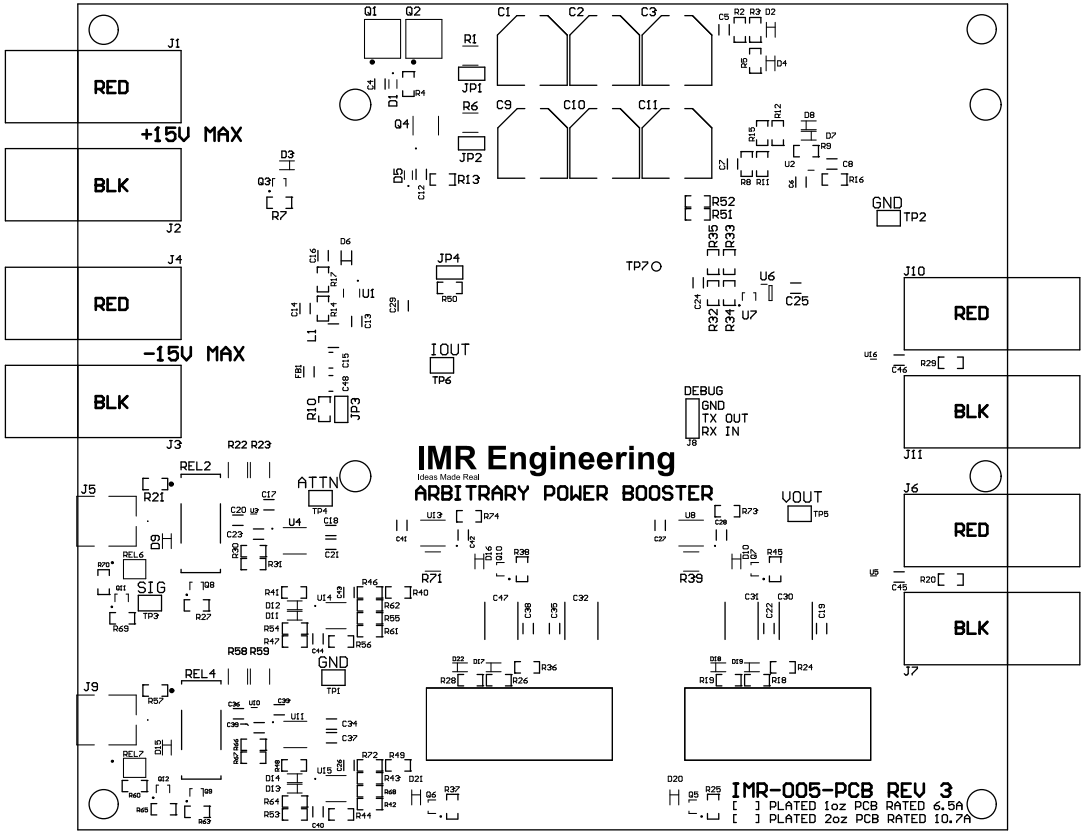
SIGNAL LAYER 1



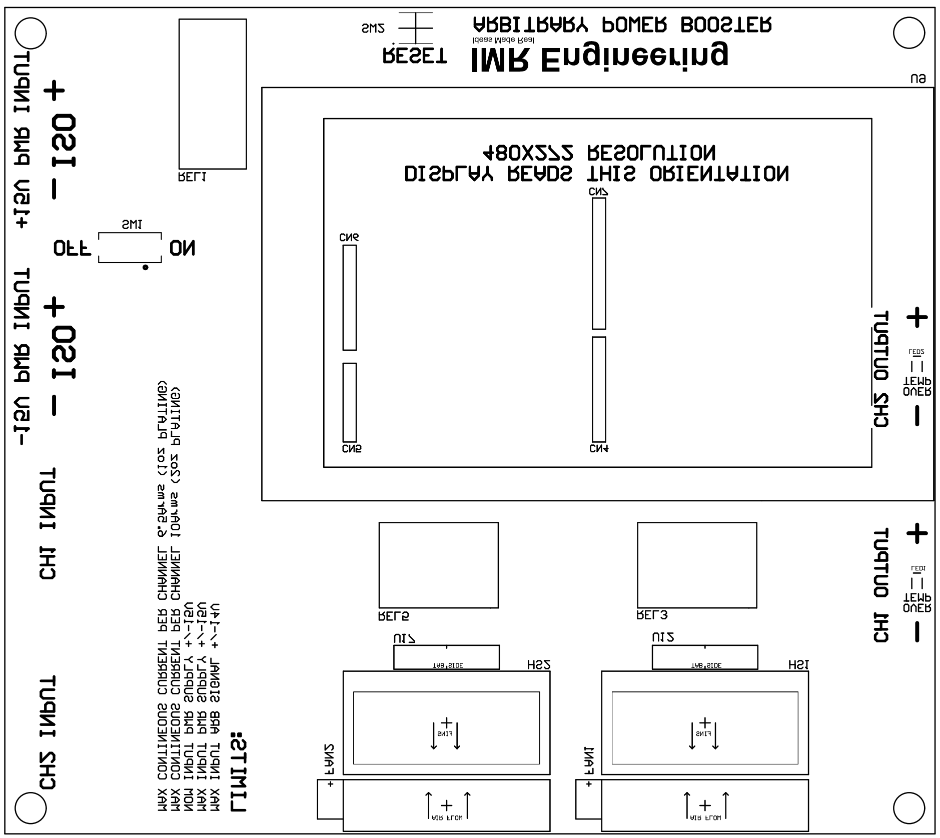
SIGNAL LAYER 2



BOTTOM

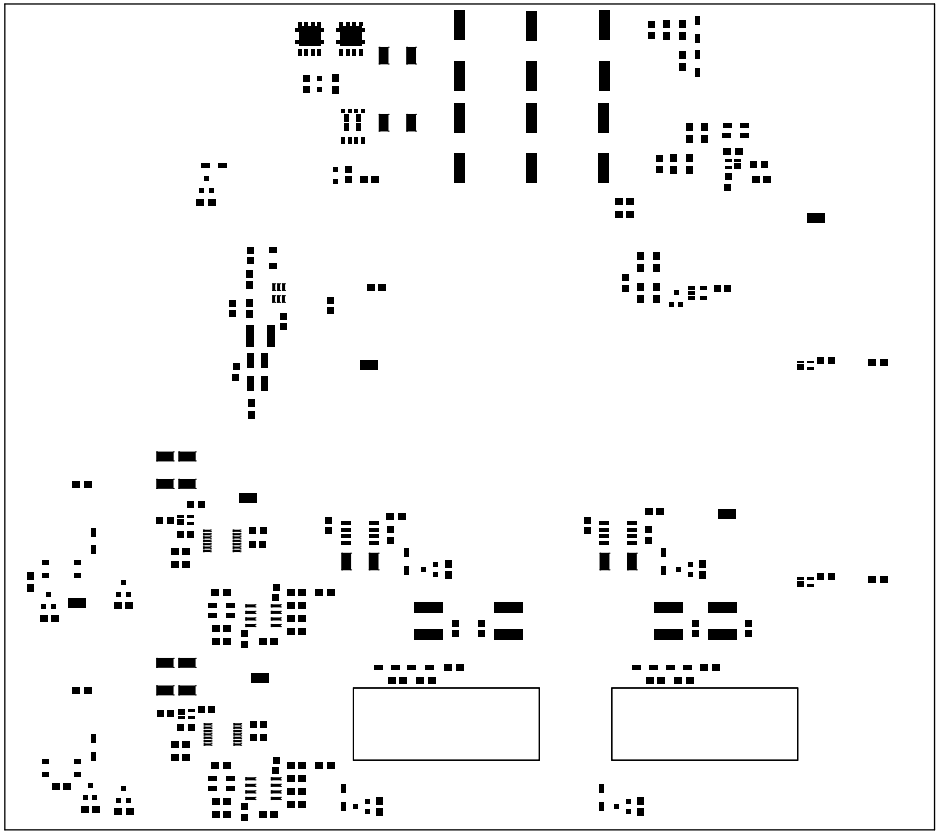

RED
+15V MAX
BLK
RED
-15V MAX
BLK
IMR Engineering
Ideas Made Real
ARBITRARY POWER BOOSTER
IOUT
DEBUG
GND
TX OUT
RX IN
ATTN
VOUT
SIG
GND
RED
BLK
RED
BLK
IMR-005-PCB REV 3
[ ] PLATED 1oz PCB RATED 6.5A
[ ] PLATED 2oz PCB RATED 10.7A

TOP SILK

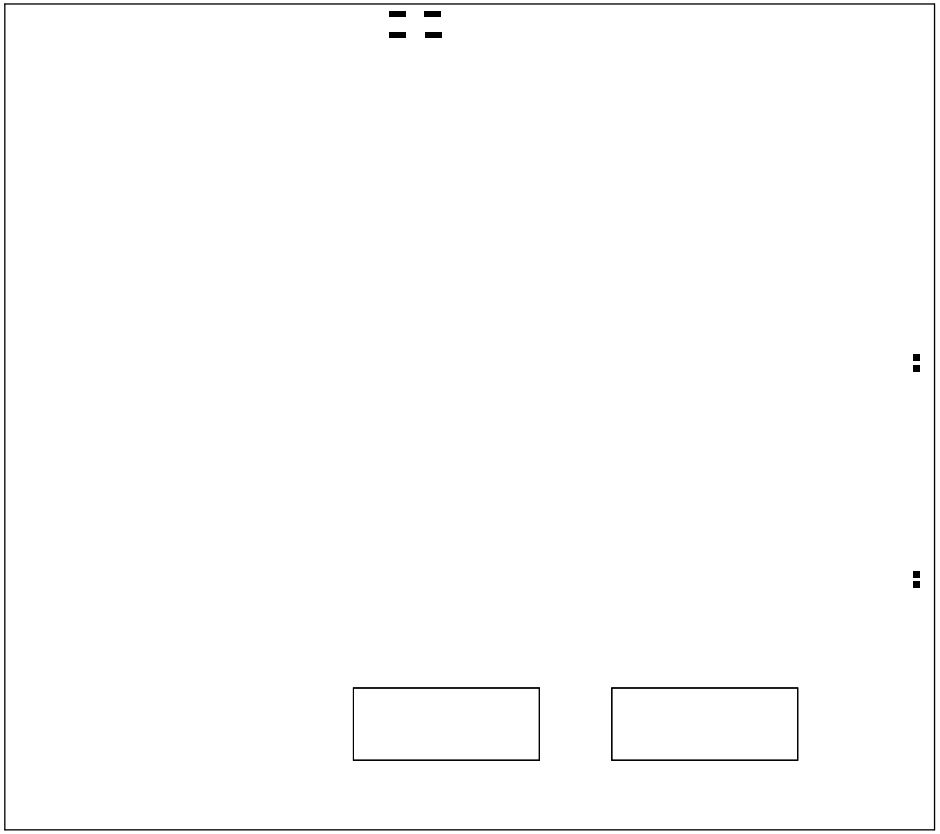


ARBITRARY POWER BOOSTER
IMR Engineering
Ideas Made Real
RESET
480X272 RESOLUTION
DISPLAY READS THIS ORIENTATION
+15V PWR INPUT
-15V PWR INPUT
ISO
OFF
ON
CH1 INPUT
CH2 INPUT
CH1 OUTPUT
CH2 OUTPUT
LIMITS:

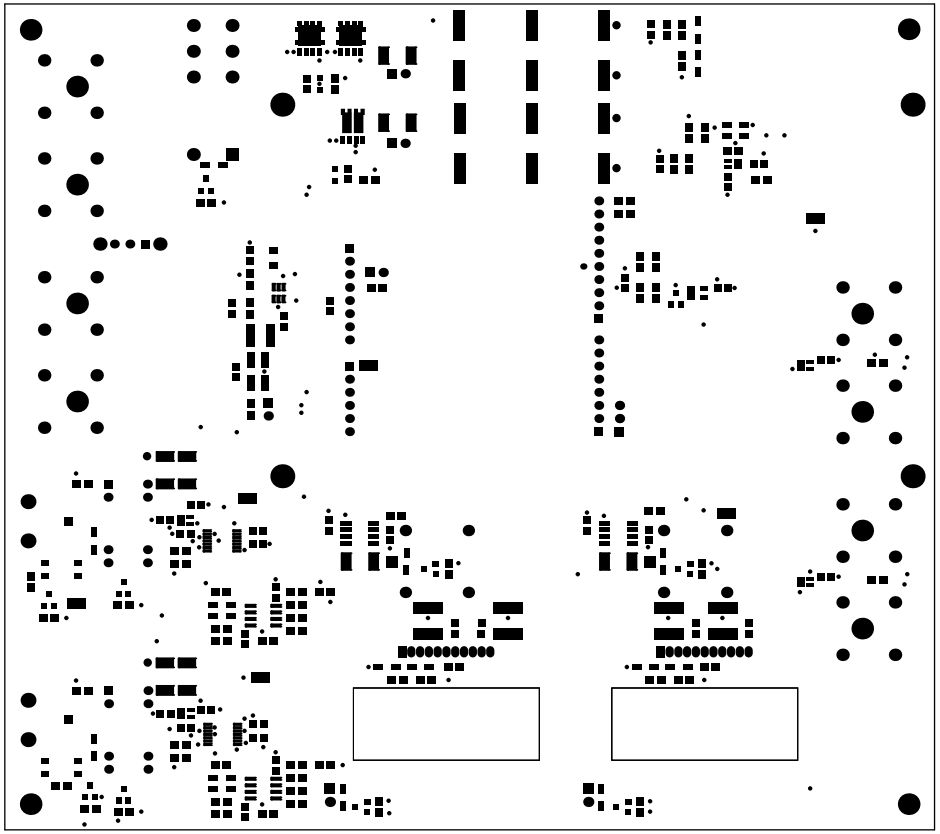
BOTTOM SILK



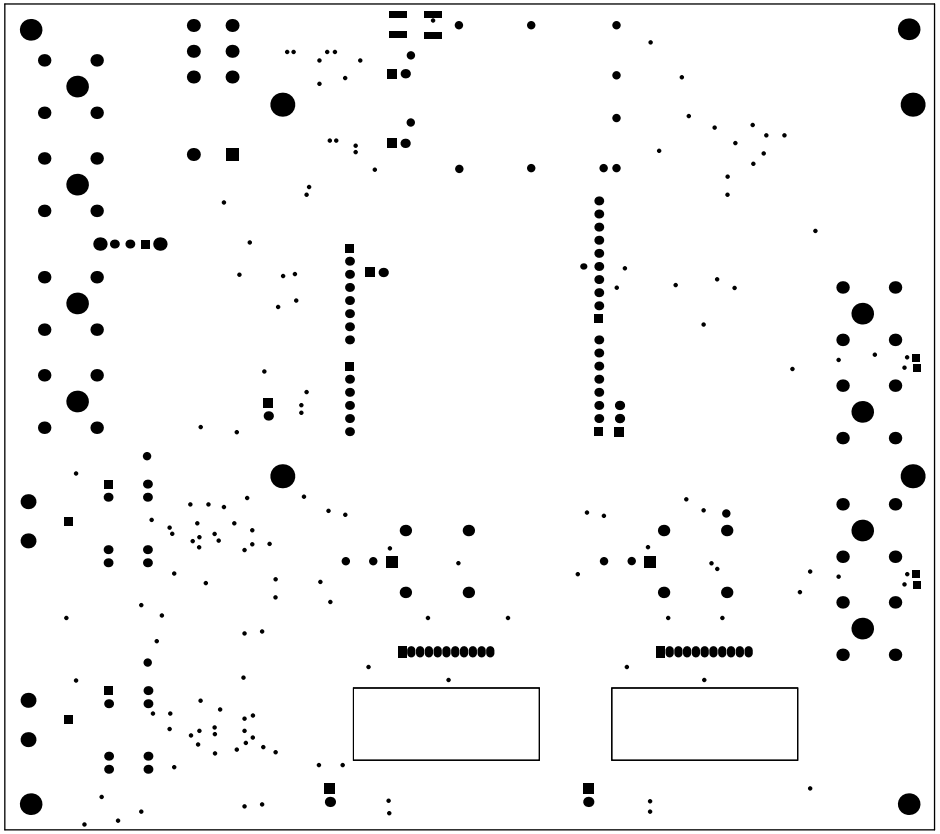
TOP PM



BOTTOM PM



TOP SM

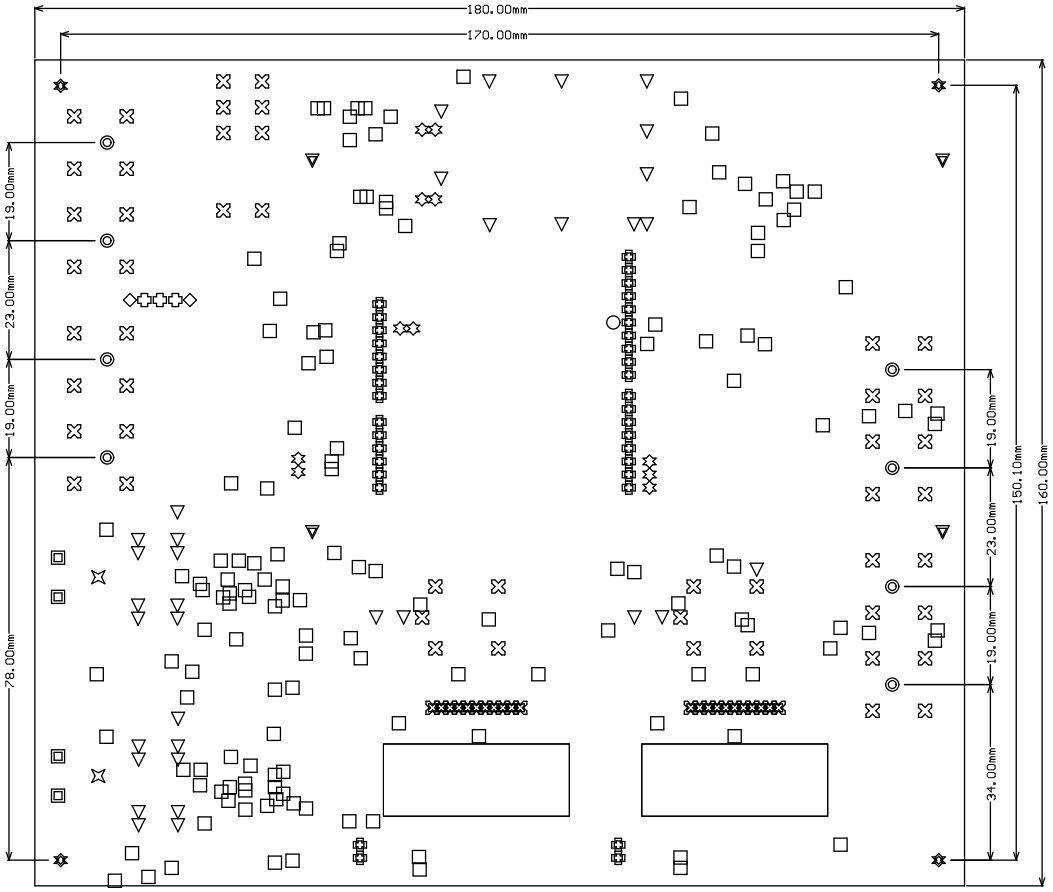


BOTTOM SM

Symbol	Hit Count	Finished Hole Size	Plated	Hole Type
○	1	0.508mm (20.00mil)	PTH	Round
⊠	2	0.920mm (36.22mil)	PTH	Round
◇	2	1.590mm (62.60mil)	PTH	Round
✪	3	1.010mm (39.76mil)	PTH	Round
⊡	4	1.800mm (70.87mil)	PTH	Round
▼	4	3.175mm (125.00mil)	PTH	Round
✱	4	3.300mm (129.92mil)	PTH	Round
⊙	8	2.200mm (86.61mil)	PTH	Round
✲	11	0.900mm (35.43mil)	PTH	Round
✖	22	1.200mm (47.24mil)	PTH	Round
▽	34	0.762mm (30.00mil)	PTH	Round
⊕	36	0.889mm (35.00mil)	PTH	Round
⊠	50	1.300mm (51.18mil)	PTH	Round
□	146	0.381mm (15.00mil)	PTH	Round
	327 Total			

LAYER STACK:
Top Layer
Signal Layer 1
Signal Layer 2
Bottom Layer

+/- VS TRACE:
MAX BOARD CURRENT 1oz PLATING: 6.50A RMS
MAX BOARD CURRENT 2oz PLATING: 10.70A RMS



DRILL & FAB

PCB FABRICATION NOTES:

MATERIAL:
FR4 (GF per MIL-P-13949) MIN UL 94V0

Cu WEIGHT:
OUTER LAYER: 1oz or 2oz PER (PO TO CLARIFY)
INNER LAYER: 1oz

SOLDER MASK:
TYPE: LPI (LIQUID PHOTO-IMAGE)
COVER: SMOBC (SOLDER MASK OVER BARE Cu)
COLOR: RED (PROTOTYPE) OR GREEN (PRODUCTION) GLOSS

OVERALL PCB THICKNESS:
PCB: 1.6mm (63MIL)
TOLERANCE: 0.178mm (7MIL)

PCB ELECTRICAL TEST
TESTED TO GERBER DATA
PURCHASE ORDER TO OVERRIDE

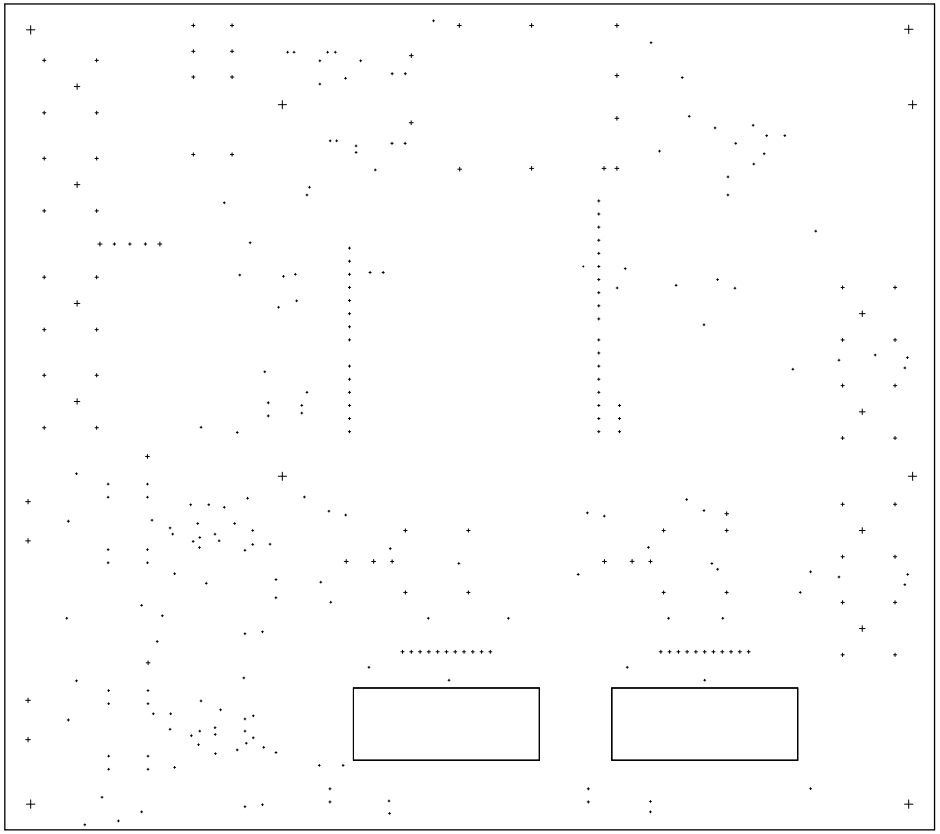
HOLE DIAMETER TOLERANCE:
PLATED HOLE TOLERANCE: 0.076mm (3MIL)
NON PLATED HOLE TOLERANCE: 0.076mm (3MIL)

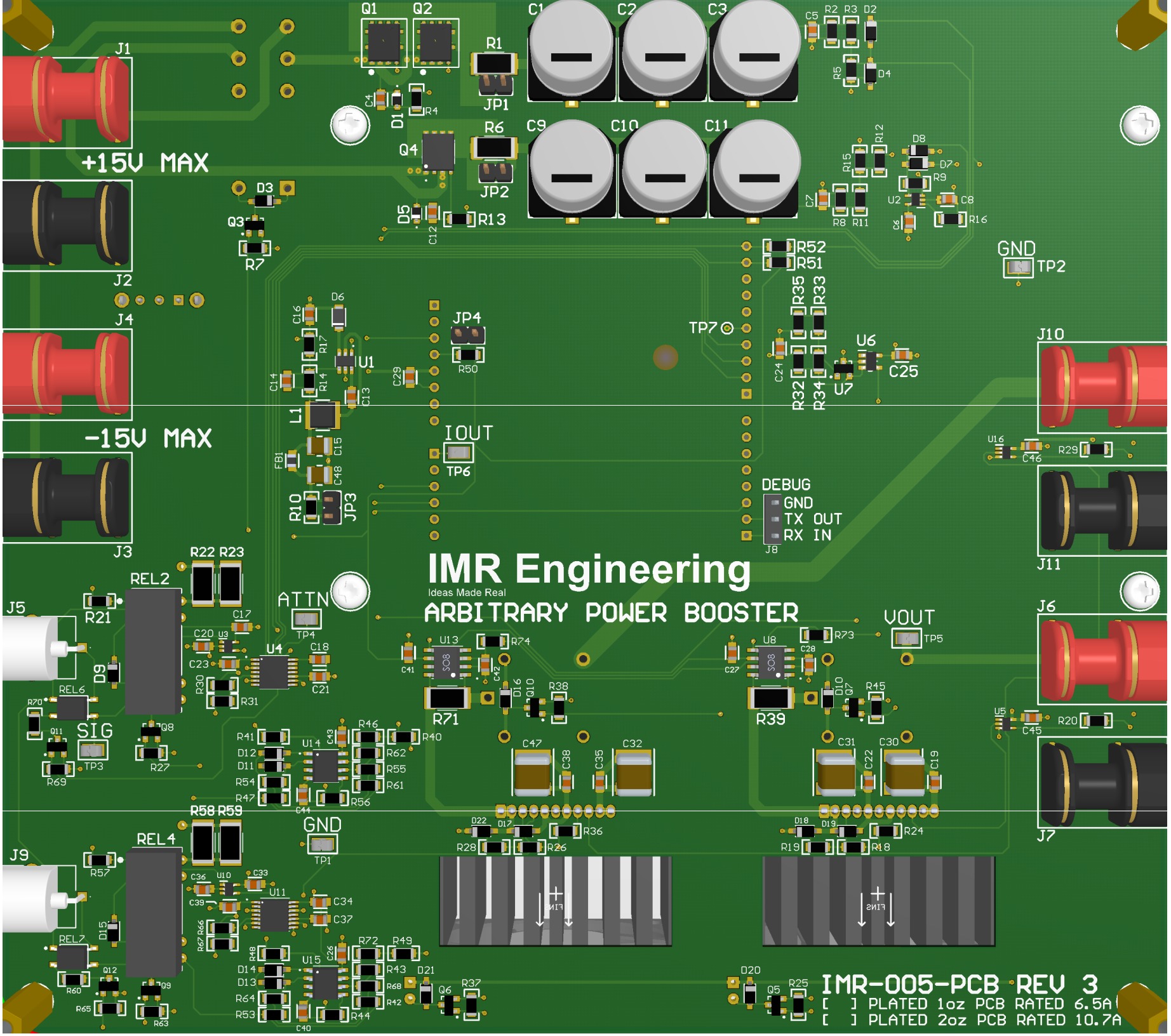
SILK SCREEN
SIDES: TOP
COLOR: WHITE
TYPE: LPI (PREFERRED)

SURFACE FINSIH:
PROTOTYPE: HASL OR ENIG
PRODUCTION: ENIG (ONLY IF SPEC ON PURCHASE ORDER)

ACCEPTABILITY:
STANDARD: IPC-A-600 (LATEST REV)
MFG TO ADD: DATE CODE, UL FLAME CODE

IMR Engineering	REV 3	ENGG: IMR-005-PCB
Arb Power Booster	05/12/2025	Hab Collector




IMR Engineering
Ideas Made Real
ARBITRARY POWER BOOSTER
+15V MAX
-15V MAX
IOUT
VOUT
ATTN
SIG
GND
DEBUG
GND
TX OUT
RX IN
IMR-005-PCB REV 3
[ ] PLATED 1oz PCB RATED 6.5A
[ ] PLATED 2oz PCB RATED 10.7A

PROTOTYPE BOM

Arbitrary Power Booster

Source Data From:	**Arb_Power_Booster.PrjPcb**	**Company Part Number:**	**IMR-005-SCH**
Project:	**Arb_Power_Booster.PrjPcb**	**PCB Revision:**	**3**
Variant:	**None**	**Engineer:**	**Hab S Collector**

IMR Engineering
Ideas Made Real

Report Date:	5/12/2025	8:53:00 AM
Print Date:	12-May-25	8:53:48 AM

#	Quantity	LibRef	Description	Designator	MFG	MFG_PN	Supplier 1	Supplier Part Number 1	Unit Price	TOTAL
1	6	CAP_330UF_50V_ALE	CAP ALE 330UF 20% 50V SMD	C1, C2, C3, C9, C10, C11	EEV-FK1H331Q	Panasonic Electronic	DigiKey	PCE3475CT-ND	1.41	$8.46
2	3	CAP_SMD_10UF_50V_0805	CAP CER 10UF 50V X5R 0805	C4, C12, C16	Murata Electronics	GRM21BR61H106KE43L	DigiKey	490-18663-1-ND	.28	$0.84
3	32	CAP_SMD_0.1UF_50V_0805	CAP CER 0.1UF 50V X7R 0805	C5, C6, C7, C8, C13, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46	KYOCERA AVX	KGM21NR71H104KT	DigiKey	478-KGM21NR71H104KTCT-ND	.1	$3.20
4	1	CAP_SMD_68PF_50V_0805	CAP CER 68PF 50V X7R 0805	C14	KEMET	C0805C680K5RACAUTO	DigiKey	399-C0805C680K5RACAUTOCT-ND	.24	$0.24
5	2	CAP_SMD_47UF_16V_1210	CAP CER 47UF 50V X5R 1210	C15, C48	Murata Electronics	GRM32ER60J476ME20L	DigiKey	490-1887-1-ND	.28	$0.56
6	4	CAP_SMD_100UF_25V_SMD	CAP CER 100UF 25V X7S SMD	C30, C31, C32, C47	Murata Electronics	KCM55WC71E107MH13L	DigiKey	490-KCM55WC71E107MH13LCT-ND	5.68	$22.72
7	2	DIODE_ZENER_MMSZ5239BS-7-F	DIODE ZENER 9.1V 200MW SOD323	D1, D5	Diodes Inc	MMSZ5239BS-7-F	DigiKey	MMSZ5239BS-FDICT-ND	.18	$0.36
8	17	DIODE_1N4148W-7-F	RELAY REED SPDT 250MA 5V	D2, D3, D7, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22	Diodes Inc	1N4148W-7-F	DigiKey	1N4148W-FDICT-ND	.16	$2.72
9	2	DIODE_SCHOTTKY_1N5819HW-7-F	DIODE SCHOTTKY 40V 1A SOD123	D4, D8	Diodes Inc	1N5819HW-7-F	DigiKey	1N5819HW-FDICT-ND	.25	$0.50
10	1	DIODE_SCHOTTKY_B240S1F-7	DIODE SCHOTTKY 40V 2A SOD123F	D6	Diodes Inc	B240S1F-7	DigiKey	B240S1F-7DICT-ND	.25	$0.25
11	2	FAN_AFB0405LA-A	FAN AXIAL 40X10MM BALL 5VDC WIRE	FAN1, FAN2	Delta Electronicis	AFB0405LA-A	DigiKey	603-2014-ND	7.31	$14.62
12	1	FERRITE_2508053017Y3	FERRITE BEAD 300 OHM 0805 1LN	FB1	Fair-Rite	2508053017Y3	DigiKey	1934-1474-1-ND	.10	$0.10
13	2	HEATSINK_CS9464020BP	Heat Sink Aluminum Top Mount	HS1, HS2	Cooling Source	CS9464020BP	DigiKey	4165-CS9464020BP-ND	3.41	$6.82
14	4	CONN_PANOMA_73099-2	CONN 4mm Banana Socket Right Angle PCB RED	J1, J4, J6, J10	Pomona	73099-2	DigiKey	501-73099-2-ND	10.39	$41.56
15	4	CONN_PANOMA_73099-0	CONN 4mm Banana Socket Right Angle PCB BLK	J2, J3, J7, J11	Pomona	73099-0	DigiKey	501-73099-0-ND	10.39	$41.56
16	2	CONN_MOLEX_0731713150	CONN BNC RCPT R/A 50 OHM PCB	J5, J9	Molex	0731713150	DigiKey	WM20430-ND	1.40	$2.80
17	1	CONN_HEADER_3P_100MIL_VERT	CONN HEADER VERT 3POS 2.54MM	J8	Sullins Connector Solutions	PREC003SFAN-RC	Digi-Key	S1212EC-03-ND	.07	$0.07
18	4	CONN_JUMPER_2P_100MIL_VERT	CONN HEADER VERT 2POS 2.54MM	JP1, JP2, JP3, JP4	Sullins Connector Solutions	PREC002SFAN-RC	Digi-Key	S1212EC-02-ND	.07	$0.28
19	1	INDUCTOR_SRN4018TA-6R8M	FIXED IND 6.8UH 1.7A 98 MOHM SMD	L1	Bourns Inc.	SRN4018TA-6R8M	DigiKey	SRN4018TA-6R8MCT-ND	.48	$0.48
20	2	LED_RED_LTST-C170EKT	LED RED CLEAR SMD	LED1, LED2	Diodes Inc	LTST-C170EKT	DigiKey	160-1178-1-ND	.18	$0.36
21	8	MECHANICAL_SCREW_M3X6_PAN_HEAD	SCREW M3X6 PAN HEAD SS	MECH1, MECH2, MECH3, MECH4, MECH9, MECH10, MECH11, MECH12	APM Hexseal	RM3X6MM 2701	DigiKey	335-1156-ND	.58	$4.64
22	4	MECHANICAL_STANDOFF_M3X20	HEX STANDOFF M3 BRASS 20MM	MECH5, MECH6, MECH7, MECH8	Keystone Electronics	24407	DigiKey	36-24407-ND	1.36	$5.44
23	2	MOSFET_PCH_DMP6050SPS-13	MOSFET P-CH 60V 5.7A PWRDI5060-8	Q1, Q2	Diodes Inc	DMP6050SPS-13	DigiKey	DMP6050SPS-13DICT-ND	1.07	$2.14
24	7	MOSFET_NCH_2N7002-7-F	MOSFET N-CH 60V 115MA SOT23-3	Q3, Q7, Q8, Q9, Q10, Q11, Q12	Diodes Inc	2N7002-7-F	DigiKey	2N7002-FDICT-ND	.20	$1.40
25	1	MOSFET_NCH_DMNH6042SPDQ-13	MOSFET NCH 60V 5.7A POWERDI	Q4	Diodes Inc	DMNH6042SPDQ-13	DigiKey	DMNH6042SPDQ-13DICT-ND	1.36	$1.36
26	2	MOSFET_NCH_DMN3023L-7	MOSFET N-CH 30V 6.2A SOT23-3	Q5, Q6	Diodes Inc	DMN3023L-7	DigiKey	DMN3023L-7DICT-ND	.48	$0.96
27	2	RES_SMD_0_2512_1W_1%	RES SMD 0 OHM 1% 1W 2512	R1, R6	Yageo	RC2512JK-070RL	DigiKey	YAG1232CT-ND	.2	$0.40
28	30	RES_SMD_10K_0805_1/4W_1%	RES SMD 10K OHM 1% 1/4W 0805	R2, R3, R7, R8, R11, R25, R27, R30, R31, R32, R37, R38, R42, R43, R45, R46, R47, R51, R52, R53, R54, R61, R62, R63, R64, R65, R66, R67, R69, R72	Yageo	RC0805FR-7W10KL	DigiKey	13-RC0805FR-7W10KLCT-ND	.10	$3.00
29	2	RES_SMD_47K_0805_1/8W_1%	RES SMD 47K OHM 1% 1/8W 0805	R4, R13	Yageo	RC0805FR-1347KL	DigiKey	13-RC0805FR-1347KLCT-ND	.1	$0.20
30	2	RES_SMD_1.24K_0805_1/8W_1%	RES SMD 1.24K OHM 1% 1/8W 0805	R5, R15	Yageo	RC0805FR-071K24L	DigiKey	311-1.24KCRCT-ND	.1	$0.20
31	1	RES_SMD_2.1K_0805_1/8W_1%	RES SMD 2.1K OHM 1% 1/8W 0805	R9	Yageo	RC0805FR-072K1L	DigiKey	311-2.10KCRCT-ND	.1	$0.10
32	8	RES_SMD_0_0805_1/8W_1%	RES SMD 0 OHM 1% 1/8W 0805	R10, R18, R19, R24, R26, R28, R36, R50	Yageo	RC0805JR-070RL	DigiKey	311-0.0ARCT-ND	.1	$0.80
33	2	RES_SMD_1.0K_0805_1/8W_1%	RES SMD 1.0K OHM 1% 1/8W 0805	R12, R16	Yageo	RC0805FR-071KL	DigiKey	311-1.00KCRCT-ND	.1	$0.20
34	1	RES_SMD_100K_0805_1/4W_1%	RES SMD 100K OHM 1% 1/4W 0805	R14	Yageo	RC0805FR-07100KL	DigiKey	311-100KCRCT-ND	.13	$0.13
35	1	RES_SMD_13.7K_0805_1/8W_1%	RES SMD 13.7K OHM 1% 1/8W 0805	R17	Yageo	RC0805FR-0713K7L	DigiKey	311-13.7KCRCT-ND	.10	$0.10
36	2	RES_SMD_300_0805_1/8W_1%	RES SMD 300 OHM 1% 1/8W 0805	R20, R29	Yageo	RC0805FR-07300RL	DigiKey	311-300CRCT-ND	.1	$0.20
37	2	RES_SMD_1M_0805_1/4W_1%	RES SMD 1K OHM 1% 1/4W 0805	R21, R57	Yageo	RC0805FR-7W1ML	DigiKey	13-RC0805FR-7W1MLCT-ND	.10	$0.20
38	4	RES_SMD_100_0805_3.5W_1%	RES SMD 100 OHM 1% 3.5W 2512	R22, R23, R58, R59	Ohmite	ALN2512F100RE-1	DigiKey	273-ALN2512F100RE-1CT-ND	1.50	$6.00
39	1	RES_SMD_1.5K_0805_1/8W_1%	RES SMD 1.5K OHM 1% 1/8W 0805	R33	Yageo	RC0805FR-071K5L	DigiKey	311-1.50KCRCT-ND	.1	$0.10
40	3	RES_SMD_4.7K_0805_1/8W_1%	RES SMD 4.7K OHM 1% 1/8W 0805	R34, R60, R70	Yageo	RC0805FR-134K7L	DigiKey	13-RC0805FR-134K7LCT-ND	.1	$0.30
41	1	RES_SMD_90.9_0805_1/8W_1%	RES SMD 90.9 OHM 1% 1/8W 0805	R35	Yageo	RC0805FR-0790R9L	DigiKey	311-90.9CRCT-ND	.1	$0.10
42	2	RES_SMD_0.0065_2512_2W_1%	RES SMD 0.0065 OHM 1% 2W 2512	R39, R71	Vishay Dale	WSL25126L500FEA18	DigiKey	541-WSL25126L500FEA18CT-ND	1.76	$3.52
43	2	RES_SMD_3.0K_0805_1/8W_1%	RES SMD 3.0K OHM 1% 1/8W 0805	R40, R49	Yageo	RC0805FR-133KL	DigiKey	13-RC0805FR-133KLCT-ND	.1	$0.20
44	4	RES_SMD_4.99K_0805_1/8W_1%	RES SMD 4.99K OHM 1% 1/8W 0805	R41, R48, R55, R68	Yageo	RC0805FR-134K99L	DigiKey	13-RC0805FR-134K99LCT-ND	.1	$0.40
45	2	RES_SMD_2.49K_0805_1/8W_1%	RES SMD 2.49K OHM 1% 1/8W 0805	R44, R56	Yageo	RC0805FR-132K49L	DigiKey	13-RC0805FR-132K49LCT-ND	.1	$0.20
46	2	RES_SMD_100_0805_1/8W_1%	RES SMD 100 OHM 1% 1/8W 0805	R73, R74	Yageo	RC0805FR-07100RL	DigiKey	311-100CRCT-ND	.1	$0.20
47	1	RELAY_AZ733-2AE-5DE	RELAY REED SPDT 250MA 5V	REL1	American Zettler	AZ733-2AE-5DE	DigiKey	3385-AZ733-2AE-5DE-nd	2.18	$2.18
48	2	RELAY_HE721C0500	RELAY REED SPDT 250MA 5V	REL2, REL4	Littlefuse	HE721C0500	DigiKey	HE112-ND	3.77	$7.54
49	2	RELAY_G5LE-1-36 DC5	RELAY GEN PURPOSE SPDT 10A 5V	REL3, REL5	Omron	G5LE-1-36 DC5	DigiKey	G5LE-1-36DC5-ND	1.24	$2.48
50	2	RELAY_TLP170AM(TPL,E	SSR RELAY SPST-NO 700MA 0-60V	REL6, REL7	Toshiba	TLP170AM(TPL,E	DigiKey	264-TLP170AM(TPLECT-ND	1.33	$2.66
51	1	SWITCH_SLW-12689-4A-N-D	SWITCH SLIDE SPDT 300MA 50V	SW1	Same Sky	SLW-12689-4A-N-D	DigiKey	2223-SLW-12689-4A-N-D-ND	.48	$0.48
52	1	SWITCH_EVQ-Q2U02W	SWITCH TACTILE SPST-NO 0.02A 15V	SW2	American Zettler	EVQ-Q2U02W	DigiKey	P12954SCT-ND	.25	$0.25
53	6	CONN_TEST_POINT_S1751-46R	PCB TEST POINT CONNECT	TP1, TP2, TP3, TP4, TP5, TP6	Harwin Inc	S1751-46R	Digi-Key	952-1478-1-ND	.28	$1.68
54	1	IC_TPS54202DDCR	IC REG BUCK ADJ 2A SOT23	U1	Texas Instruments	TPS54202DDCR	Digi-Key	296-TPS54202DDCRCT-ND	.97	$0.97
55	3	OPAMP_TLV9351IDCKR	IC OPAMP GP 3.5MHZ 350uV C70-5	U2, U3, U10	Texas Instruments	TLV9351IDCKR	DigiKey	296-TLV9351IDCKRCT-ND	.49	$1.47
56	2	IC_MCP45HV51-104E/ST	IC DGT POT 100KOHM 256TP 14TSSOP	U4, U11	Microchip	MCP45HV51-104E/ST	DigiKey	MCP45HV51-104E/ST-ND	2.00	$4.00
57	2	IC_SN74LVC1G14DCKR	IC INVERT SCHMITT 1CH 1IN SC70-5	U5, U16	Texas Instruments	SN74LVC1G14DCKR	DigiKey	296-11608-1-ND	.10	$0.20
58	1	OPAMP_LMP2011MFX/NOPB	IC OPAMP GP 3MHZ .12uV CIRCUIT SOT23-5	U6	Texas Instruments	LMP2011MFX/NOPB	DigiKey	LMP2011MFX/NOPBCT-ND	2.33	$2.33
59	1	IC_LM4041CYM3-ADJ-TR	IC VREF SHUNT ADJ 0.5% SOT23-3	U7	Microchip	LM4041CYM3-ADJ-TR	DigiKey	576-1049-1-ND	.39	$0.39
60	2	IC_INA282AIDR	IC CURRENT SENSE 0.4% 50V/V SOIC-8	U8, U13	Texas Instruments	INA282AIDR	DigiKey	296-27820-1-ND	4.13	$8.26
61	1	MODULE_STM32F746G-DISCO	DISCOVERY STM32 F7 EVAL BRD	U9	ST Microlectronics	STM32F746G-DISCO	DigiKey	497-15680-5-ND	57.50	$57.50
62	2	OPAMP_OPA549S	IC OPAMP POWER 1 CIRC 11PWRPACK	U12, U17	Texas Instruments	OPA549S	DigiKey	OPA549S-ND	26.94	$53.88
63	2	OPAMP_TLV9302IDR	IC OPAMP GP 2 CIRCUIT 8SOIC	U14, U15	Texas Instruments	TLV9302IDR	DigiKey	296-53513-1-ND	.66	$1.32
Approved					**Notes**			**Bill of Cost (Unit Buy):**		**$328.58**