SV101

Left pins	Pin	Pin	Right pins
MCU_EN_G2/9.5B	1	2	MCU_EN_G1/9.5A
MCU_EN_G3/9.5B	3	4	MCU_EN_G4/9.5A
EN_OR_PWM/9.5C	5	6	LM311_PIN7
GND/2.2B	7	8	GND/2.2B
TR_SET/9.5C	9	10	DC++/2.2B
TR_EN/9.5C	11	12	+5V/2.3B
TR_RESET	13	14	CHARGE_RELAY/8.3D
SP_CURRENT/7.6B	15	16	BR/8.3C
AGND/2.5B	17	18	-15V/2.5B
|ANALOG_IN_AC|	19	20	+15V/2.5B
	21	22	
	23	24	
	25	26	
	27	28	
	29	30	
	31	32	
	33	34	
	35	36	
	37	38	
	39	40	

COM/3.1C — X101-1
ENABLE/10.1C — X101-2
DI_F/B/10.4C — X101-3
DI3 — X101-4
+15V/2.5B — X102-1
AGND/2.5B — X102-2
-15V/2.5B — X102-3
SP_SPEED/3.1B — X103-1
AGND/2.5B — X103-2
FB_TACHO/5.1A — X103-3
AGND/2.5B — X103-4
EXT_CURRENT_LIMIT/3.4A — X104-1
AGND/2.5B — X104-2

IO Connectors

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KK201
SK104-PAD
IN OUT
GND
IC201
+5V
DC++/1.4A
C203 + C204 C205 + C206
GND

V201
+VIN +VOUT 7
COM 6
-VIN -VOUT 5
AM1D-0515DZ
+5V
C202
GND
+15V
C201
C207
AGND
-15V
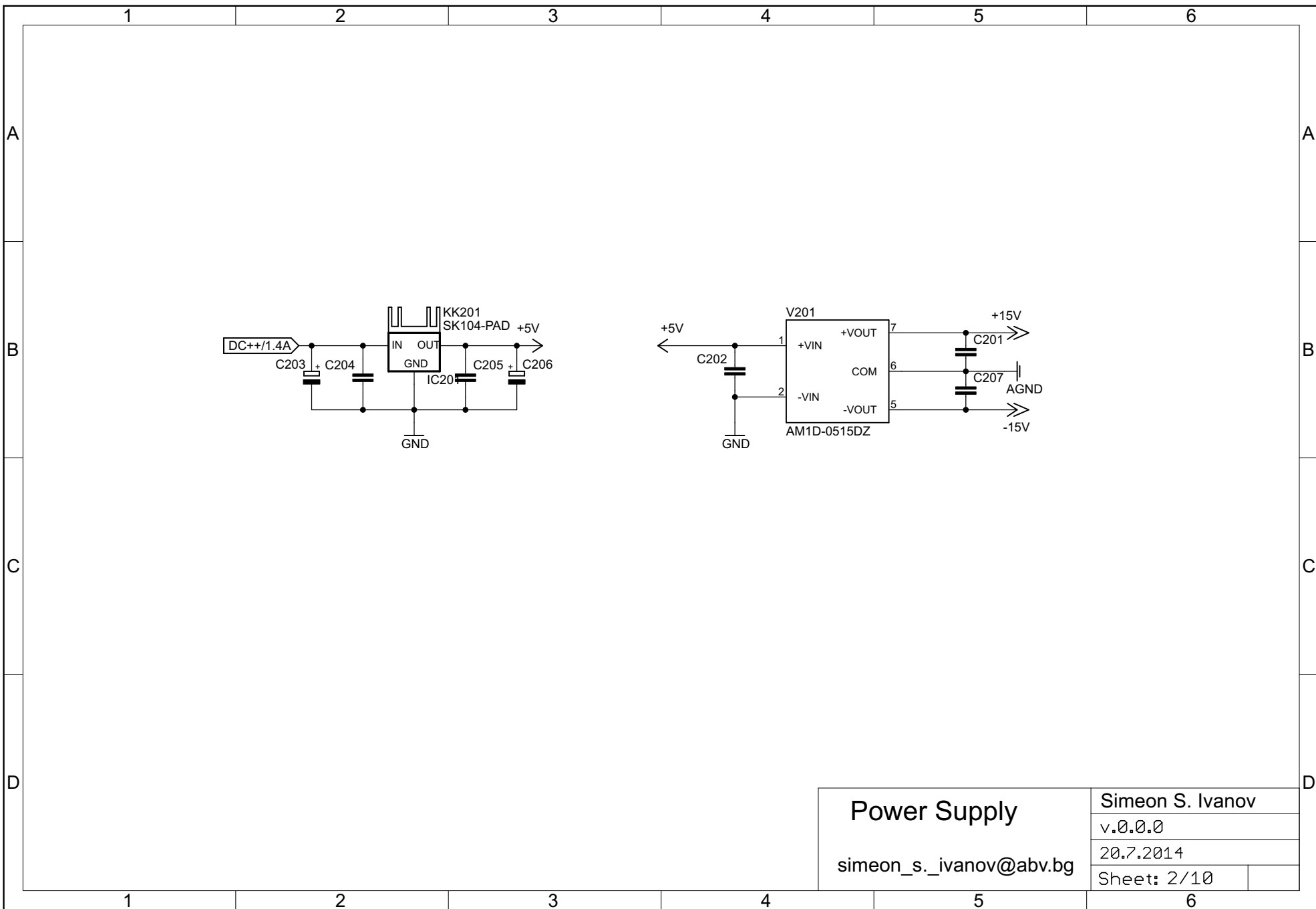
Power Supply

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Schematic sheet labels and components:

- +15V
- JP301
- R301 2.4K
- EXT_CURRENT_LIMIT/1.4C
- R302 51K
- R303 51K
- IC301A TL082P
- SP_SPEED/1.4C
- SPEED_SP/4.2B
- R304 51K
- R305 10K
- AGND
- RP301 5.7K
- IC301B TL082P
- CURRENT_LIMIT/6.2B
- R306 51K
- AGND
- AGND
- R307 560
- OK301 PC817
- F/B̄/10.5C
- OK302 PC817
- COM/1.3C
- AGND
- +15V
- C301 100nF
- C302 100nF
- -15V
- AGND

Title block:
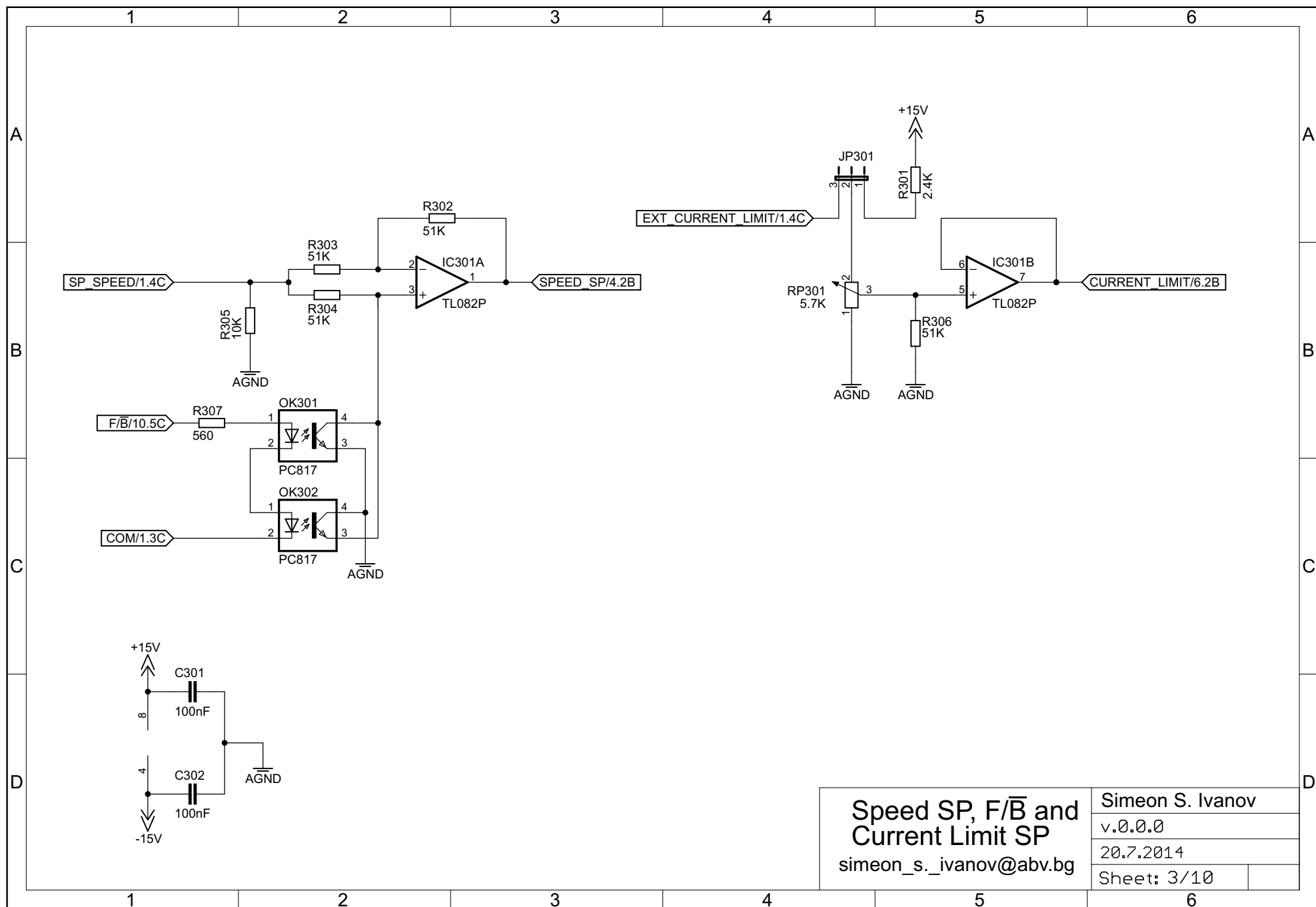
Speed SP, F/B̄ and Current Limit SP	Simeon S. Ivanov
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RAMP_DISABLE/10.1B

D401
1N4148

RP401
5.7K
1 2
3

R402
1.3K

R401
0R0

C401
1uF

SPEED_SP/3.3B

R403
1.3K

IC401A
2 −
3 +
1
TL082P

D402
1N4148

RP402
5.7K
3 2
1

R404
220K

IC401B
6 −
5 +
7
TL082P

SPEED_RAMP_OUT/5.2C

R405
10K

R406
10K

R407
1.3K

R408
10K

AGND AGND AGND AGND

+15V

C402
100nF

8

C403
100nF

4

AGND

-15V

Ramp Generator ACC/DCC Time	Simeon S. Ivanov
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Speed Regulator
Error Amp And Reg.

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R601
10K

R602
10K

R603
10K

R604
10K
CURRENT_LIMIT/3.5B

IC601A
2
3
1
TL082P

D601
1N4148

IC601B
6
5
7
TL082P

D602
1N4148

SPEED_REG_OUT/7.2B

R605
10K

R606
10K

R607
10K

R608
10K

D603
1N4148

D604
1N4148

AGND

AGND

AGND

AGND

CURRENT_LIMIT_IN/5.6D

R609
NA

+15V

C601
100nF

8

C602
100nF

4

AGND

-15V

Current Limit

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| 1 | 2 | 3 | 4 | 5 | 6 |

D701
10V1

R701 20K
R702 20K

TP701
TP702

R703 10K
R704 10K

IC701B
6 −
5 +
7
TL082P

R705 1.3K

SP_CURRENT/1.3B

D702 1N4148

IC701A
2 −
3 +
1
TL082P

D703 1N4148

SPEED_REG_OUT/6.5B

R706 10K

R707 10K

R708 10K

C701 220nF

Rin: CURRENT MODE PWM
1K

AGND

AGND

AGND

AGND

+15V
C702 100nF
8
4
C703 100nF
-15V
AGND

Current SP And
Abs.Value Circuit

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Osc. (PWM) And Direction Control

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SPEED_REG_OUT/7.2B
R805 1K
C802 100nF
AGND
+15V
+5V
R803 5.1K
IC802 LM311N
DIRECTION/9.2A
-15V
GND
AGND

R801 2K
R802 510
+5V
C801 100nF
GND
D802 SS14
D801 SS14
R804 2K
Fout: ~16 kHz
d: ~0.95
IC801 LM555
PWM/9.2B
C803 22nF
GND
C804 22nF
GND
GND

TP801
DC++/2.2B
R806 10K
TP802
R807 10K
R808 10K
+5V
+5V
IC803 LM311N
R809 5.1K TP803
2.????V
BR/1.4B
GND

R810 1.3K
+5V
+5V
IC804 LM311N
R811 5.1K TP804
2.???V
CHARGE_RELAY/1.4A
GND

R812 2.7K
R813 10K
GND
GND
GND

+15V
C805 100nF
AGND
C808 100nF
-15V
+5V
C806 100nF
GND
+5V
C807 100nF
GND

TP901

TP902

DIRECTION/8.3B

IC901A
6 S Q 1 — TP901 — MCU_EN_G4/1.4A
5 D
3 CLK
4 R Q̄ 2 — TP903 — MCU_EN_G1/1.4A
4013N

TP904

PWM/8.6B

IC902A
1
3
2
74HC00N

IC901B
8 S Q 13 — TP905 — MCU_EN_G3/1.3A
9 D
11 CLK
10 R Q̄ 12 — TP906 — MCU_EN_G2/1.3A
4013N

GND

TP908

PWM_ENABLE/10.3C

TP907

IC902B
5
6
4
74HC00N

IC902C
9
8
10
74HC00N

EN_OR_PWM/1.3A

R901
0R0
TR_SET/1.3A

R902
0R0
TR_EN/1.3A

+5V

IC901P
14 VDD
C901
100nF
7 VSS

IC902P
14 VCC
C902
100nF
7 GND

GND

IC902D
12
11
13
74HC00N

Gate Enable And
Dead Time Circuit
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Schematic labels and component annotations:

- SPEED_ENABLE_1/5.4B
- K1001 (pins 6, 4, 8)
- SPEED_REG_OUT/8.1B
- SPEED_ENABLE_2/5.6B
- RAMP_DISABLE/4.4B
- K1001 (pins 11, 13, 9)
- SPEED_RAMP_OUT/5.2C
- ENABLE/1.3C
- D1001 12V
- R1002 5.1K
- OK1001 (pins 1, 2, 4, 3) +5V
- PC817
- PWM_ENABLE/9.2C
- R1003 10K
- GND
- K1001 G5V-2 (pins 1, 16)
- D1002 1N4148
- COM/3.1C
- DI_F/B̄/1.3C
- R1001 470
- F/B̄/3.1B
- D1003 12V
- COM/3.1C