

Technical Publication
SC-1108R13

Schematics

HF Series Generators

REVISION HISTORY

REVISION	DATE	REASON FOR CHANGE
<i>Refer to each schematic</i>		

This Document is the English original version, edited and supplied by the manufacturer.

The Revision state of this Document is indicated in the code number shown at the bottom of this page.

ADVISORY SYMBOLS

The following advisory symbols will be used throughout this manual. Their application and meaning are described below.



DANGERS ADVISE OF CONDITIONS OR SITUATIONS THAT IF NOT HEDED OR AVOIDED WILL CAUSE SERIOUS PERSONAL INJURY OR DEATH.



ADVISE OF CONDITIONS OR SITUATIONS THAT IF NOT HEDED OR AVOIDED COULD CAUSE SERIOUS PERSONAL INJURY, OR CATASTROPHIC DAMAGE OF EQUIPMENT OR DATA.



Advise of conditions or situations that if not heeded or avoided could cause personal injury or damage to equipment or data.

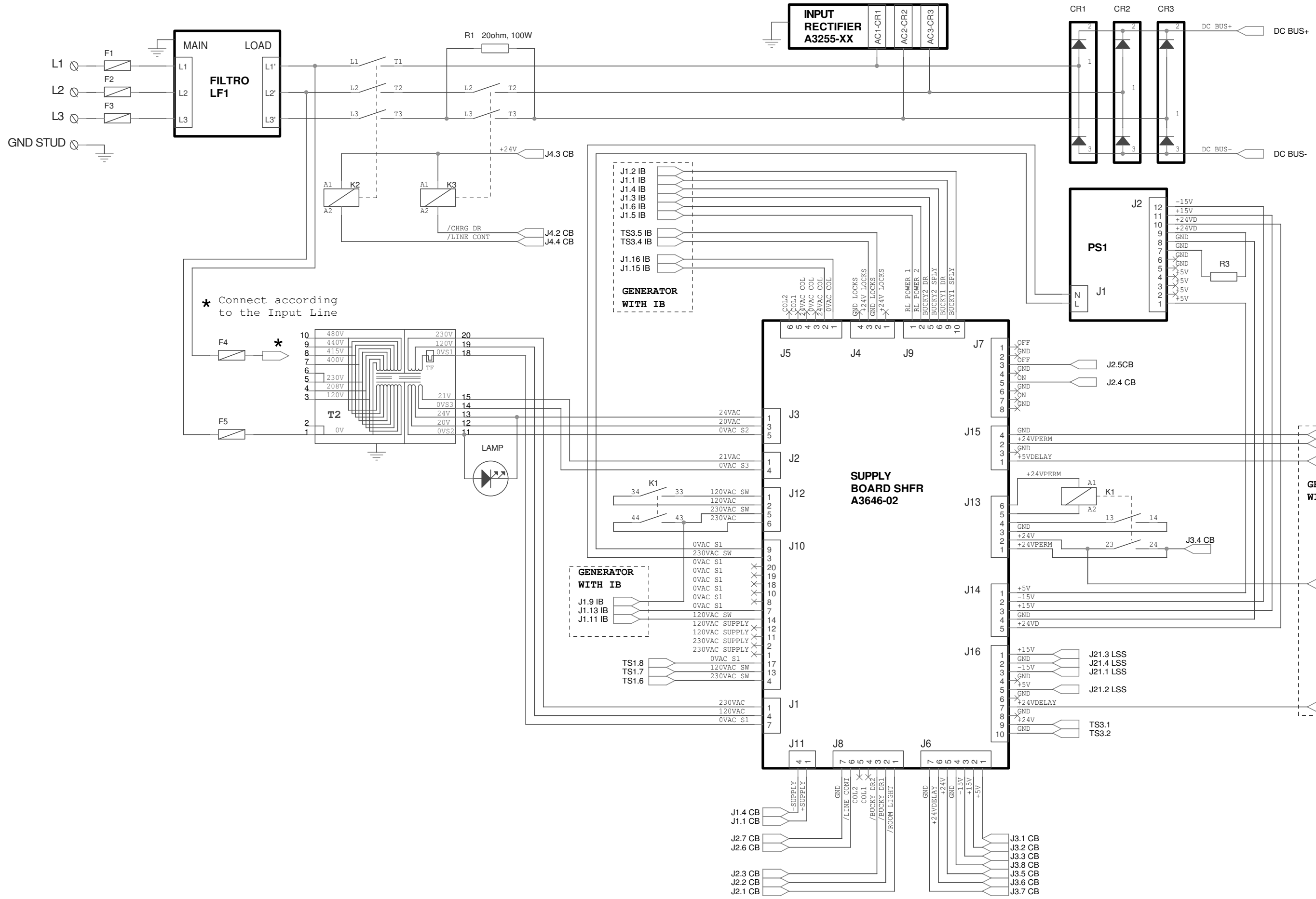
Note 

Alert readers to pertinent facts and conditions. Notes represent information that is important to know but which do not necessarily relate to possible injury or damage to equipment.

TABLE OF CONTENTS

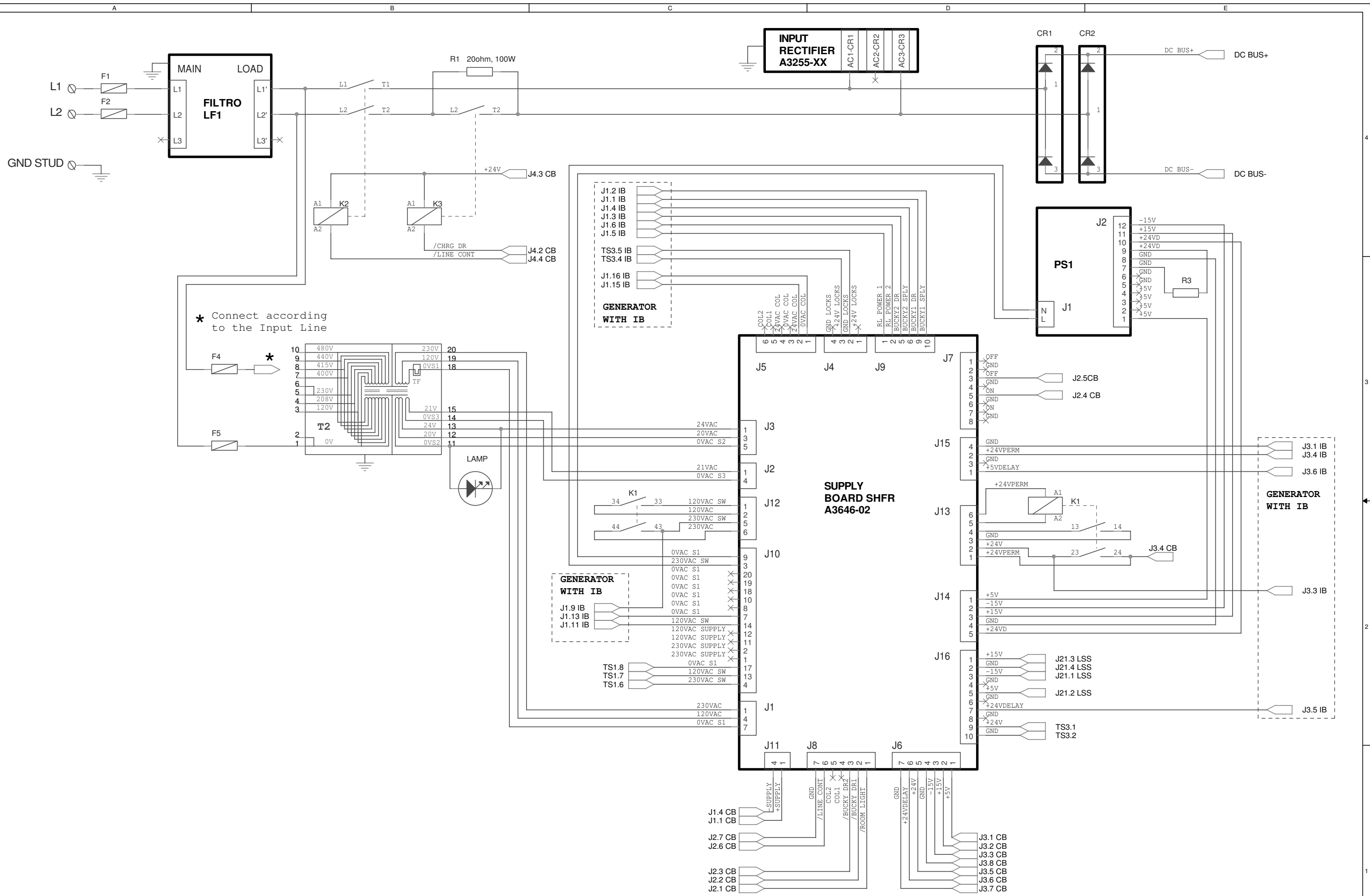
SCH. No.	SCHEMATIC	REMARKS
GENERATOR		
54302260	SHFR Generator	
A3063-16	IPM Driver Board	
A3212-03	Charge/Discharge Board	<i>Only for Generators of 208-230 VAC, Single-Phase and Three-Phase</i>
A3212-04	Charge/Discharge Board	<i>Only for Three-Phase Generators of 400-480 VAC</i>
A3255-03	Input Rectifier Board	
A3640-03	Control Board	
A3646-02	Supply Board	
A3674-02	Interface Board	<i>Only for Generators equipped with Interface Board</i>
S0008007	Booster Module	<i>Only for Generators that require Booster for High Speed operation</i>
S0008009	Dual Speed Starter	
CONTROL CONSOLES BOARDS		
A3179-02	Low Profile Auto ON/OFF	<i>Only used with PC</i>
A3179-09-10-11	Low Profile Auto ON/OFF	<i>Only used with Touch Screen Console (CTSC)</i>
A3553-03	Serial Console Control PCB	<i>Only used with RAD Push-button Console (ATBC-RAD)</i>
A3585-01	RAD MH2 Serial Console Display PCB	<i>Only used with RAD Push-button Console (ATBC-RAD)</i>
A3585-21	RAD MH2 Serial Console Display PCB	<i>Only used with RAD Push-button Console (ATBC-RAD)</i>

DEVICES INTERCONNECTIONS		
6005003	PC ON-OFF Box	<i>Used with Touch Screen Console (CTSC) or with PC</i>
6005006	Serial Console Interconnection	<i>Only used with RAD Push-button Console (ATBC-RAD)</i>
6005007	Vacudap Internal Dosemeter	<i>Optional</i>
6010000	Bucky Interconnection	
6011002	Ion Chamber	<i>Optional</i>




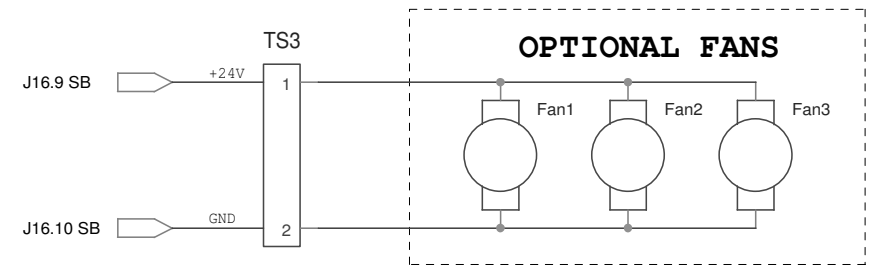
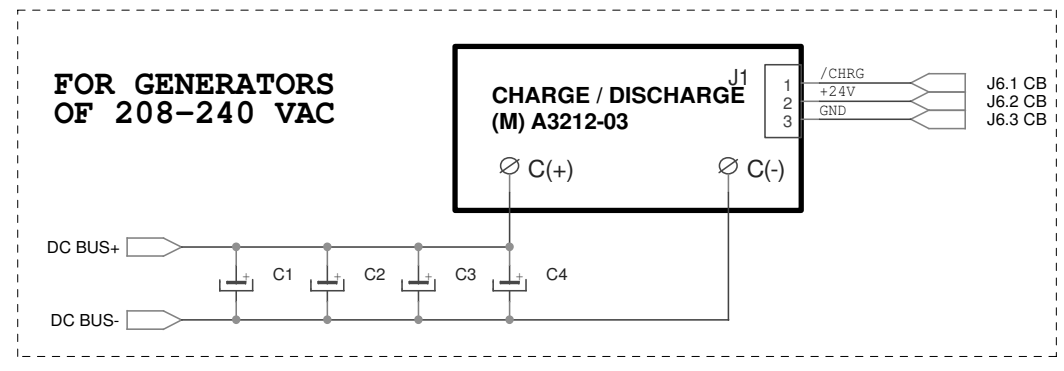
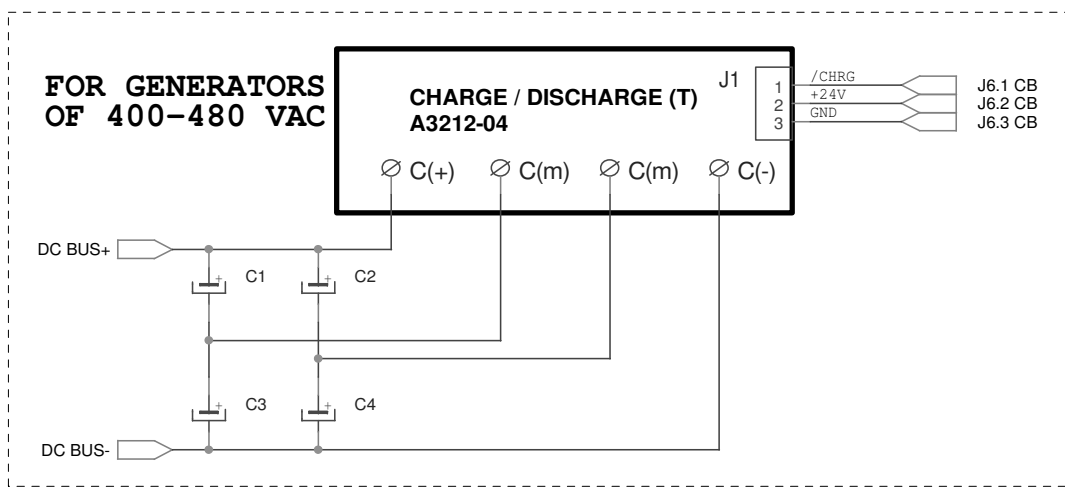
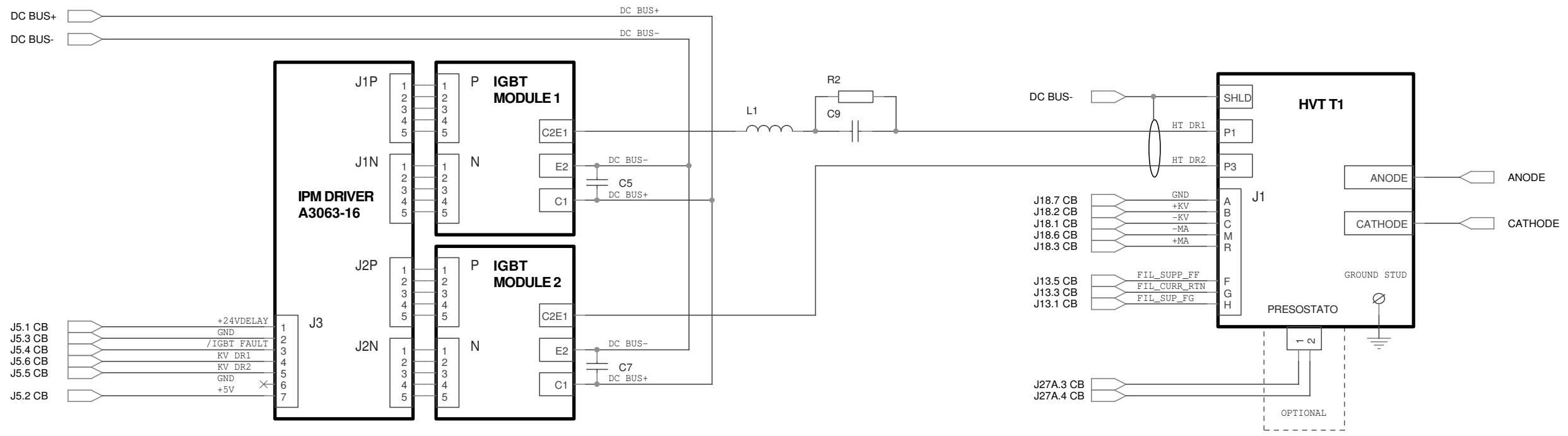
**THIS SHEET ONLY APPLIES TO
THREE PHASE GENERATORS**

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D	NC 14/344	R. Asenjo	25/11/14		REVISED	A. Diaz	03/03/14	F	E	D	C	B	A	← REV
C	NC 14/278	R. Asenjo	30/07/14											
B	NC 14/154	R. Asenjo	07/05/14											
A	NC 14/060	R. Asenjo	03/03/14											
REV	DESCRIPTION	ISSUED BY	DATE	GENERADOR SHFR										



THIS SHEET ONLY APPLIES TO SINGLE PHASE GENERATORS

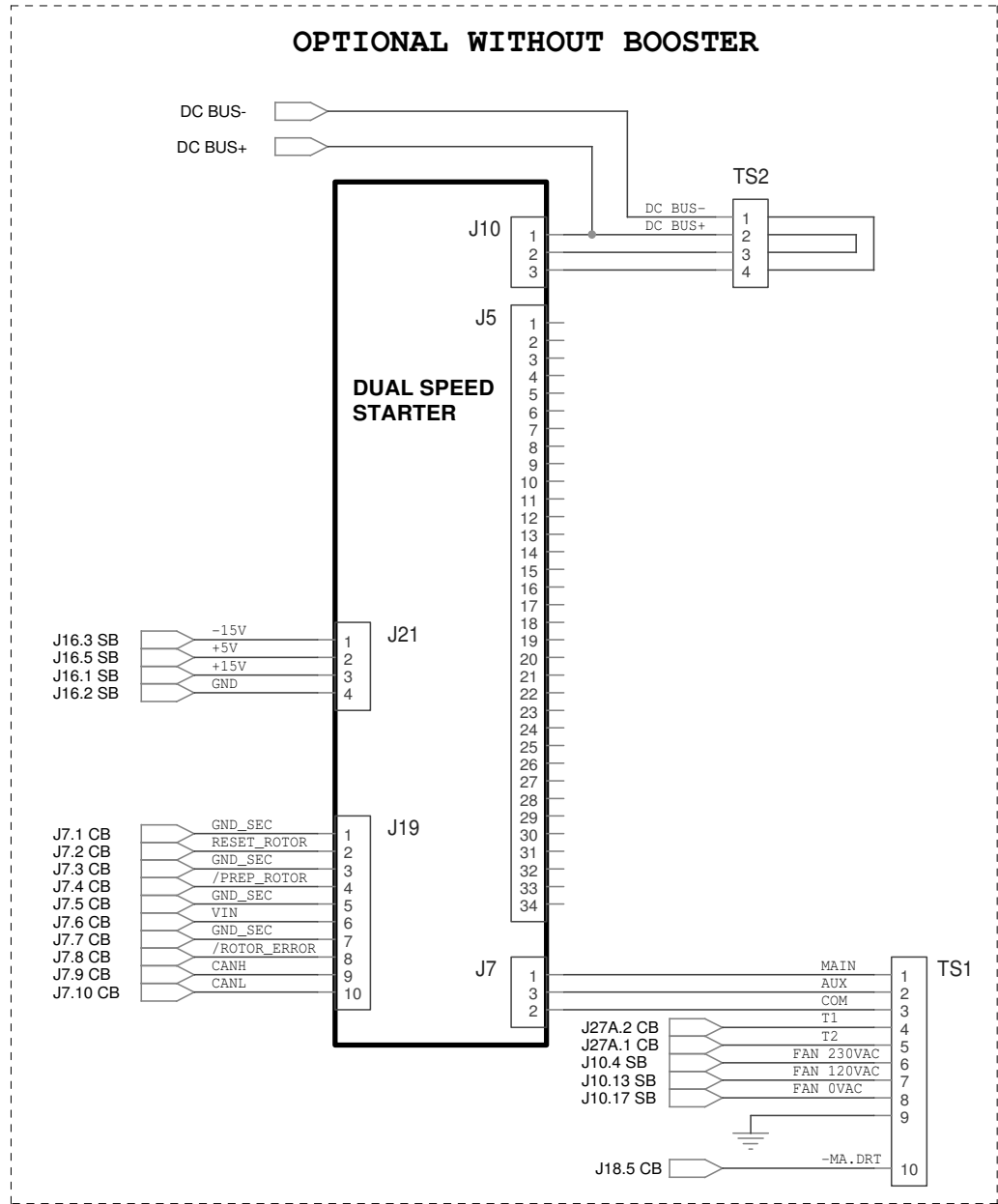
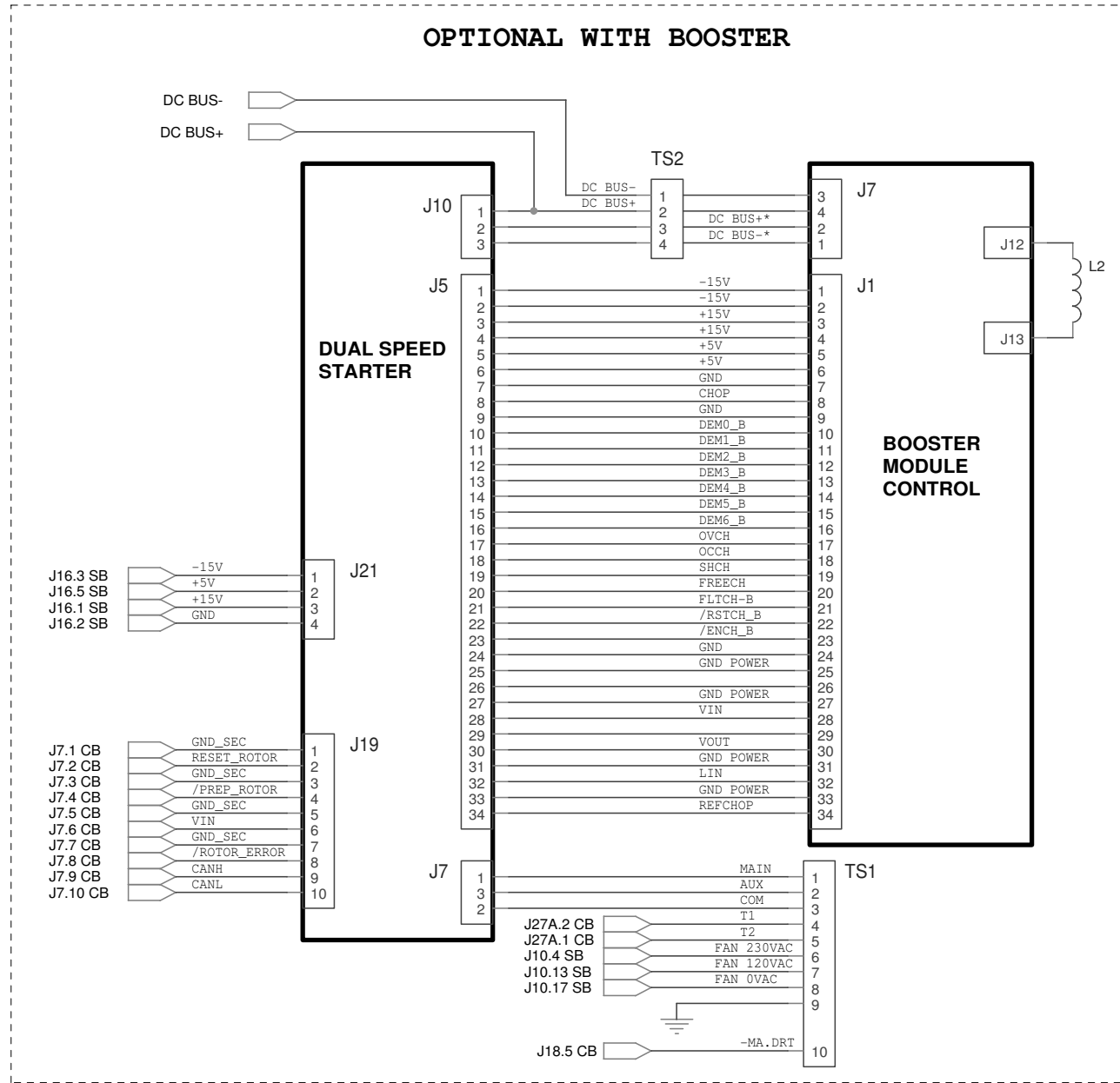
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D	NC 14/344	R. Asenjo	25/11/14	REVISED	A. Diaz	03/03/14	F	E	D	C	B	A	← REV								
C	NC 14/278	R. Asenjo	30/07/14	 SEDECAL																	
B	NC 14/154	R. Asenjo	07/05/14										GENERADOR SHFR								
A	NC 14/060	R. Asenjo	03/03/14																		
REV	DESCRIPTION	ISSUED BY	DATE																		



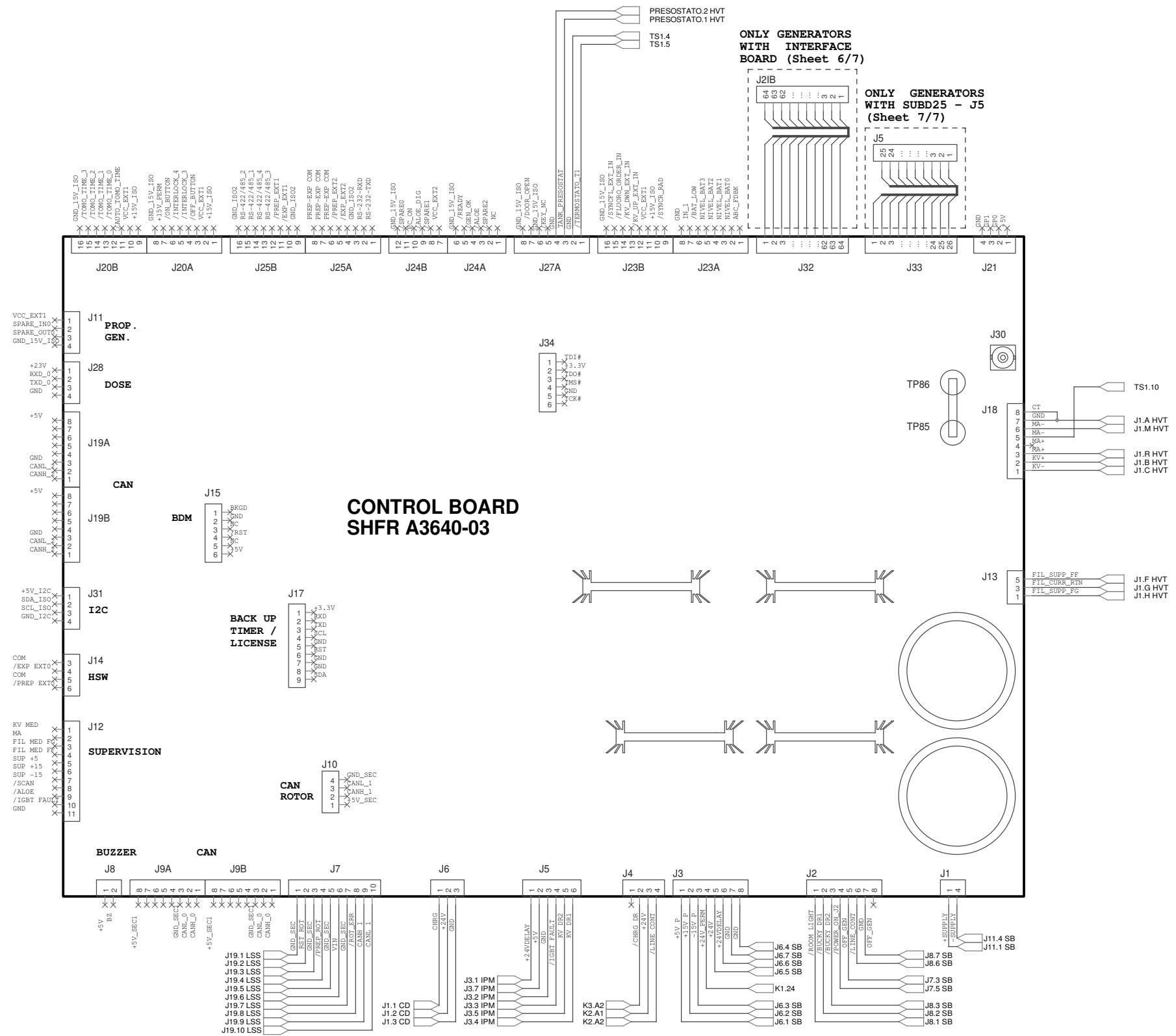
NOTE:

- CB: CONTROL BOARD SHFR
- CD: CHARGE/DISCHARGE
- HSM: BOOSTER MODULE CONTROL
- HVT: HV TRANSFORMER
- IB: INTERFACE BOARD
- IGBT1: IGBT MODULE 1
- IGBT2: IGBT MODULE 2
- IPM: IPM DRIVER
- IR: INPUT RECTIFIER
- DSS: DUAL SPEED STARTER
- PS1: POWER SUPPLY
- SB: SUPPLY BOARD SHFR

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	54302260				
F	NC 15/118	R. Asenjo	30/11/15								
E	NC 14/430	R. Asenjo	17/12/14	DRAWING	R. Asenjo	03/03/14					
D	NC 14/344	R. Asenjo	25/11/14	REVISED	A. Diaz	03/03/14					
C	NC 14/278	R. Asenjo	30/07/14								
B	NC 14/154	R. Asenjo	07/05/14								
A	NC 14/060	R. Asenjo	03/03/14								
									GENERADOR SHFR		



REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	54302260																	
F	NC 15/118	R. Asenjo	30/11/15																					
E	NC 14/430	R. Asenjo	17/12/14	DRAWING	R. Asenjo	03/03/14																		
D	NC 14/344	R. Asenjo	25/11/14	REVISED	A. Diaz	03/03/14																		
C	NC 14/278	R. Asenjo	30/07/14								F	E	D	C	B	A	← REV							
B	NC 14/154	R. Asenjo	07/05/14								SEDECAL							GENERADOR SHFR						
A	NC 14/060	R. Asenjo	03/03/14																					



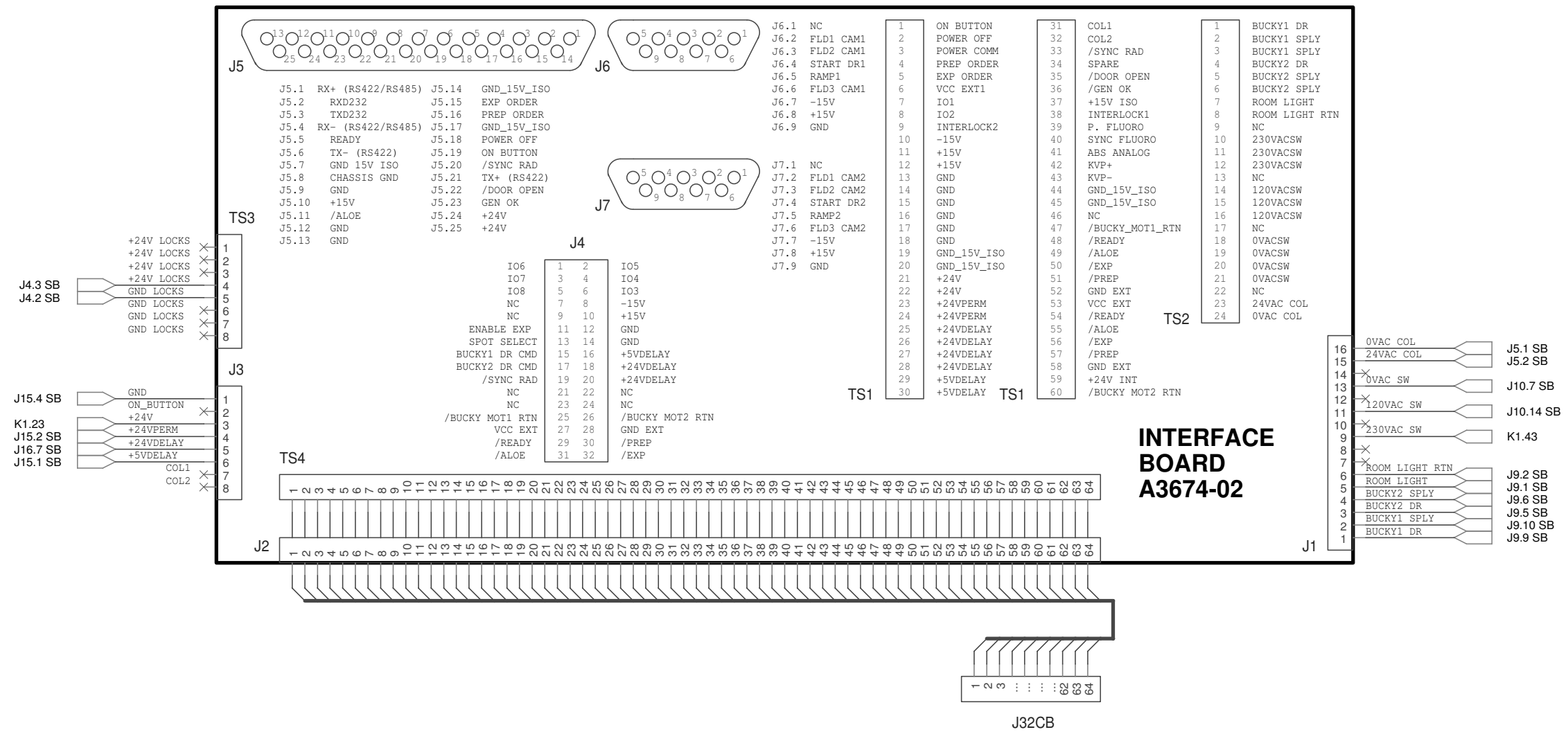
ONLY GENERATORS WITH INTERFACE BOARD (Sheet 6/7)

ONLY GENERATORS WITH SUBD25 - J5 (Sheet 7/7)

CONTROL BOARD SHFR A3640-03

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D	NC 14/344	R. Asenjo	25/11/14	REVISED	A. Diaz	03/03/14														
C	NC 14/278	R. Asenjo	30/07/14								F	E	D	C	B	A				
B	NC 14/154	R. Asenjo	07/05/14								SEDECAL						GENERADOR SHFR			
A	NC 14/060	R. Asenjo	03/03/14																	
REV	DESCRIPTION	ISSUED BY	DATE																	

NOTE J32CB - J2IB - TS4IB

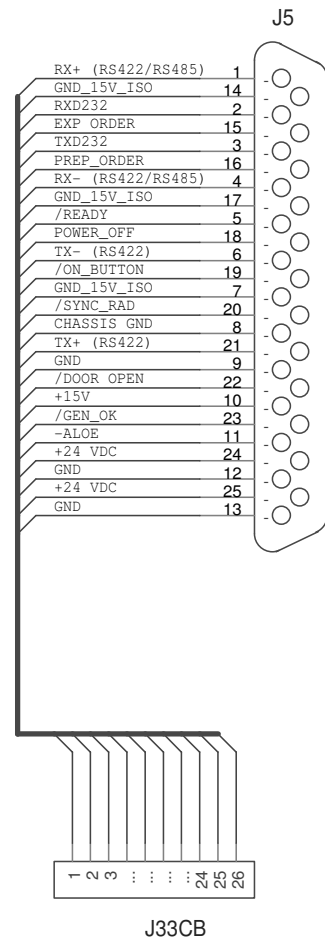


J32CB - J2IB - TS4IB

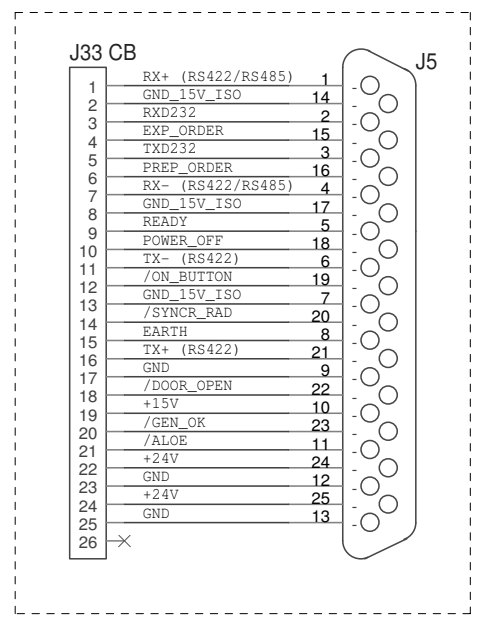
1	/ALOE
2	POWER_OFF
3	/SYNC_RAD
4	GND_15V_ISO
5	RX+ (RS422/RS485)
6	RX- (RS422/RS485)
7	TX- (RS422)
8	TX+ (RS422)
9	TXD232
10	RXD232
11	EXP_ORDER
12	PREP_ORDER
13	/ON_BUTTON
14	/GEN_OK
15	READY
16	/DOOR_OPEN
17	VCC_EXT1
18	FLD2_CAM1
19	FLD3_CAM1
20	START_DR1
21	RAMP1
22	FLD1_CAM1
23	-15V
24	FLD2_CAM2
25	+15V
26	FLD3_CAM2
27	GND
28	START_DR2
29	RAMP2
30	FLD1_CAM2
31	IO1
32	IO2
33	IO3
34	IO4
35	IO5
36	IO6
37	IO7
38	IO8
39	VCC_EXT2
40	+15V_ISO
41	IO11
42	IO12
43	ENABLE_EXP
44	SPOT_SELECT
45	BUCKY1_DR_CMD
46	BUCKY2_DR_CMD
47	P_FLUORO
48	SYNC_FLUORO
49	ABS_ANALOG
50	KVP+
51	KVP-
52	X
53	X
54	X
55	X
56	/BUCKY_MOT1_RTN
57	VCC_EXT
58	/READY_ISO
59	/ALOE_ISO
60	/EXP_ISO
61	/PREP_ISO
62	GND_EXT
63	+24V_INT
64	/BUCKY_MOT2_RTN

THIS SHEET ONLY APPLIES TO GENERATORS WITH INTERFACE BOARD A3674-02

F	NC 15/118	R. Asenjo	30/11/15		NAME	DATE	SHEET / OF	54302260											
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D	NC 14/344	R. Asenjo	25/11/14	REVISED	A. Diaz	03/03/14								GENERADOR SHFR					
C	NC 14/278	R. Asenjo	30/07/14																
B	NC 14/154	R. Asenjo	07/05/14																
A	NC 14/060	R. Asenjo	03/03/14																
REV	DESCRIPTION	ISSUED BY	DATE																

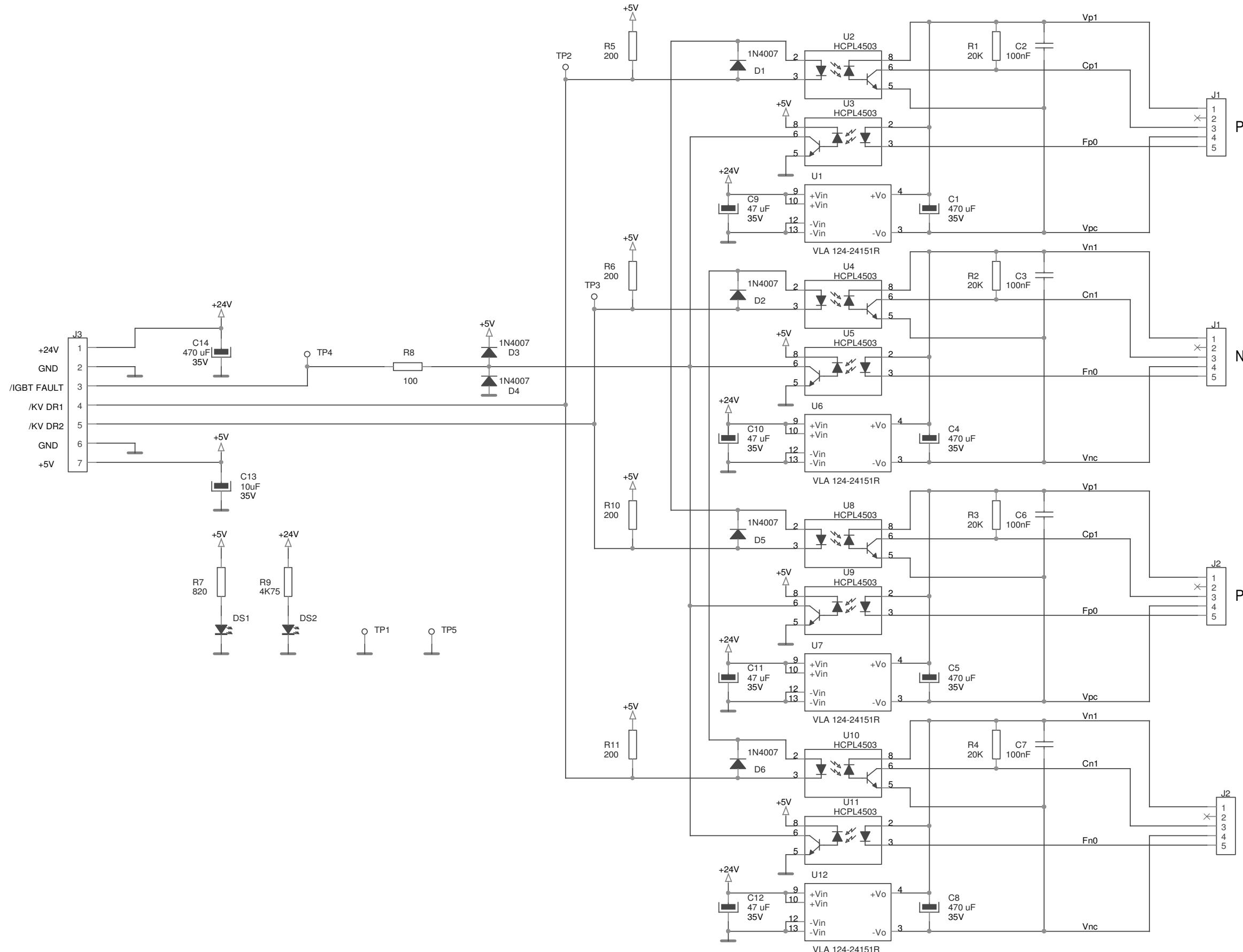


NOTE J5 - J33 CB



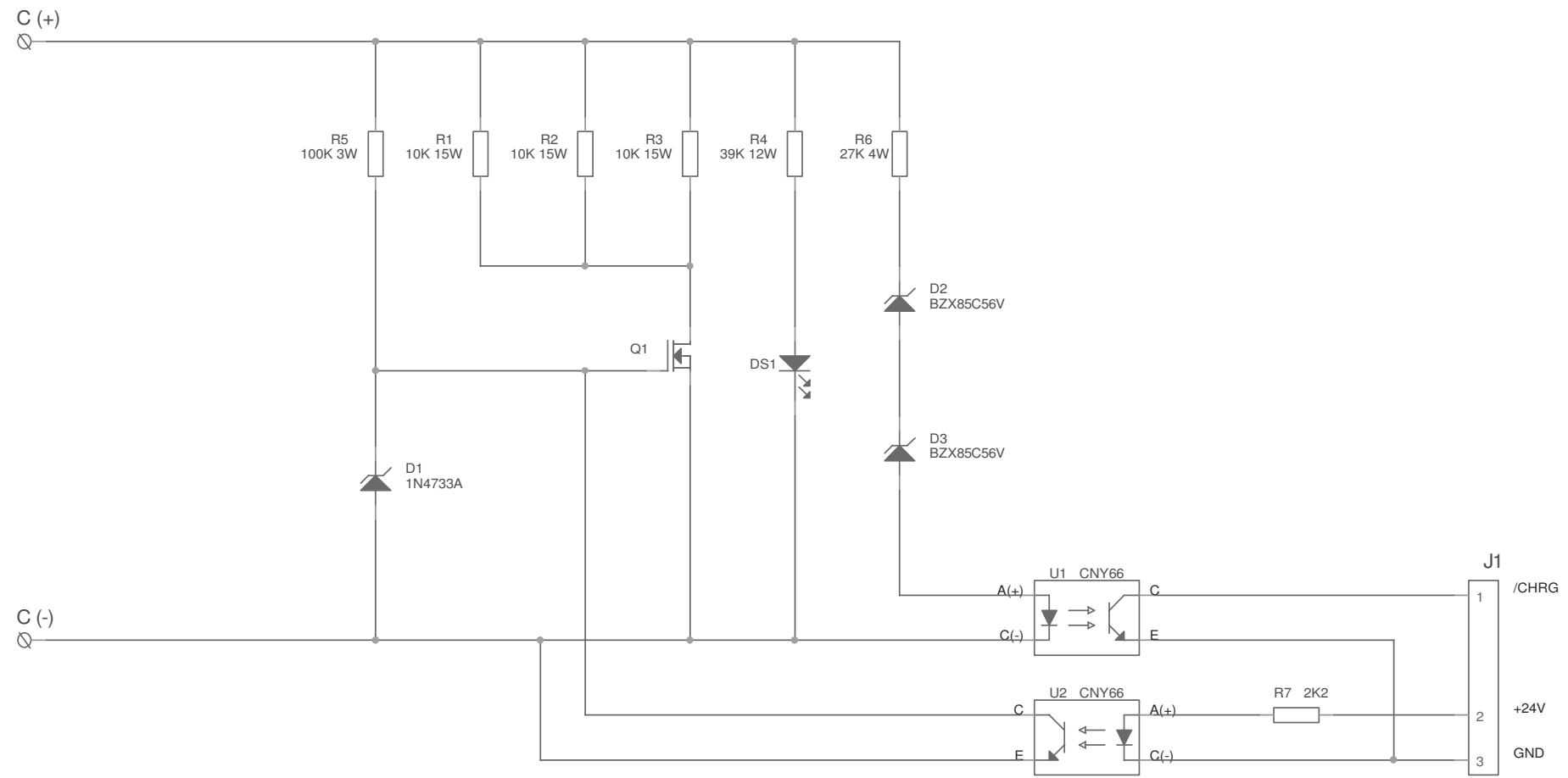
**THIS SHEET ONLY
APPLIES TO GENERATORS
WITH SUBD25 - J5**

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D	NC 14/344	R. Asenjo	25/11/14	REVISED	A. Diaz	03/03/14		SEDECAL						GENERADOR SHFR	
C	NC 14/278	R. Asenjo	30/07/14												
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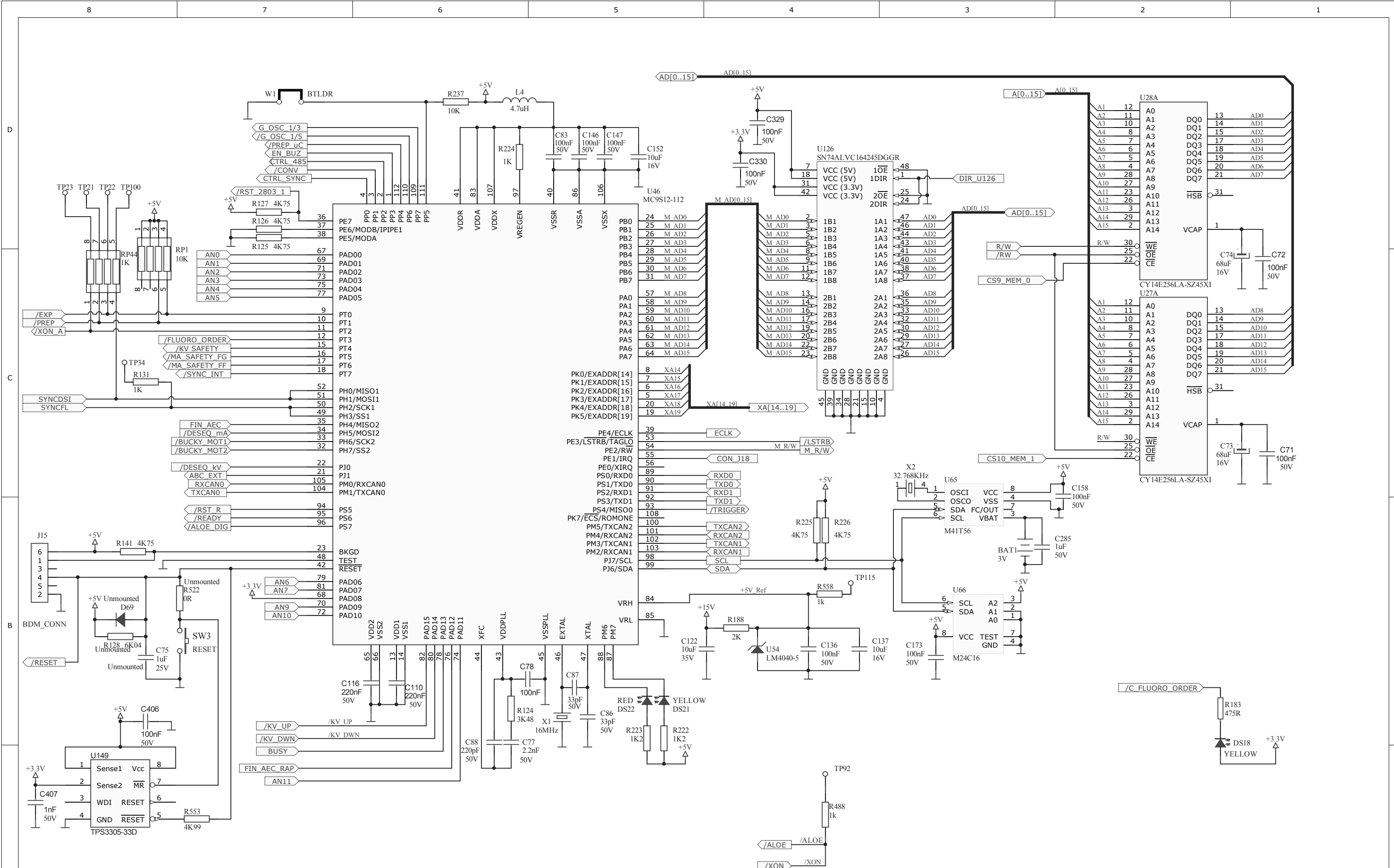


C.I. 90334-02

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET/OF	A3063-16				
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C	NC 13/190	R. Asenjo	27/05/13	A. Díaz	22/03/12						
B	NE 413/12	F. Díaz	11/10/12								
							IPM DRIVER				



				NAME	DATE	SHEET / OF	A3212-03				
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				REVISED	A. Díaz	22/08/10			A ← REV		
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A	First Used	R. Asenjo	05/06/12								



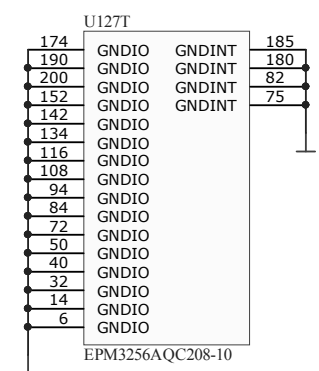
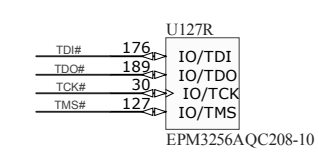
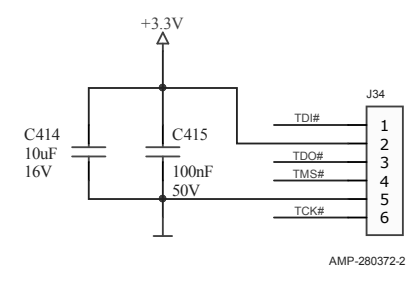
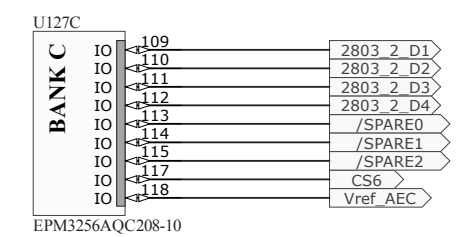
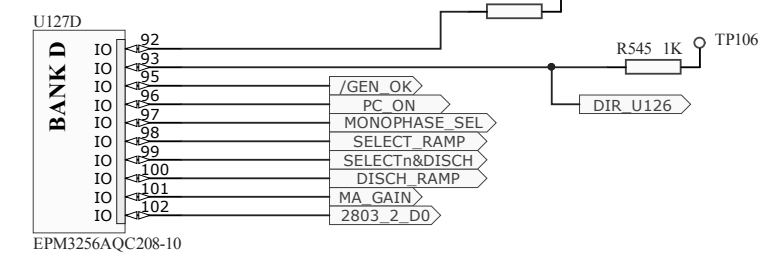
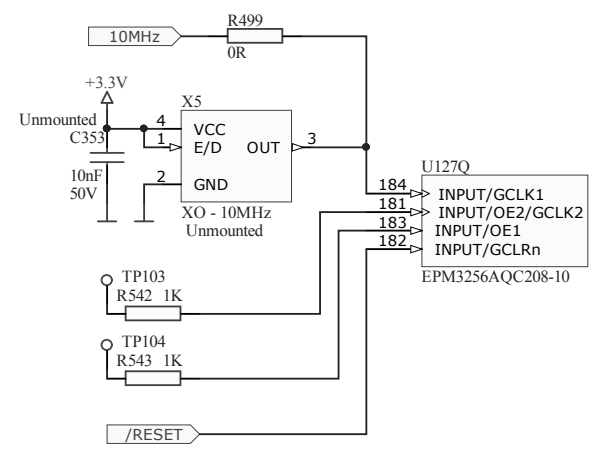
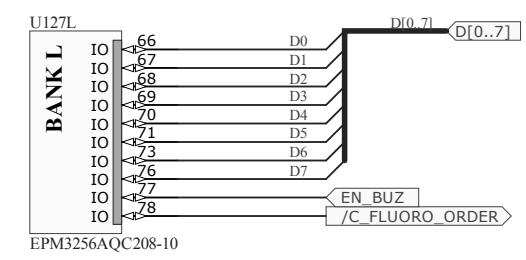
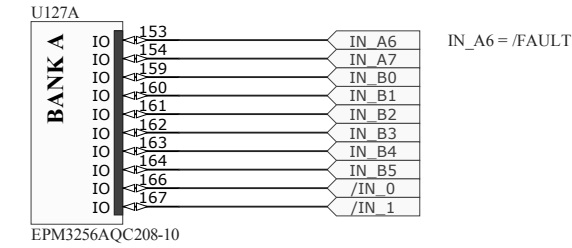
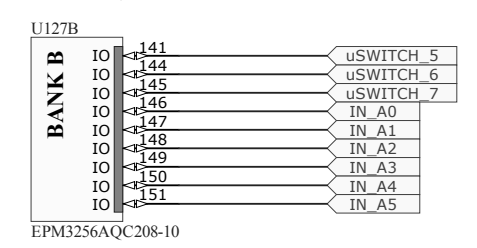
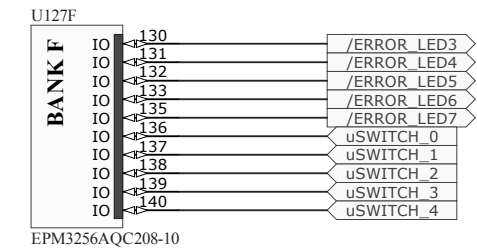
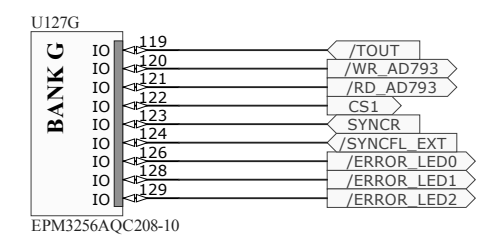
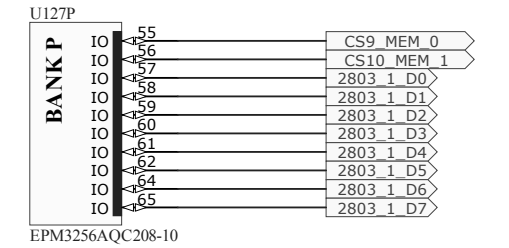
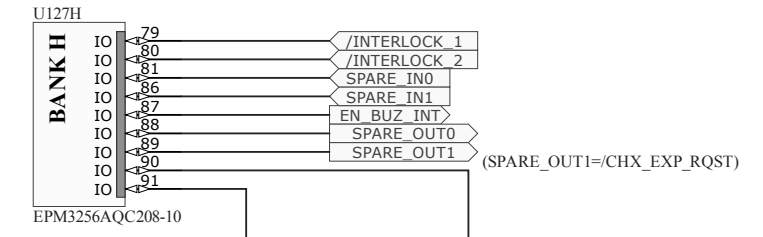
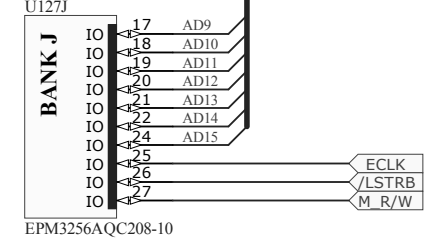
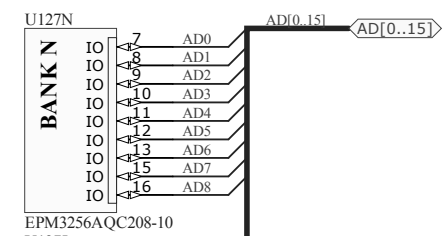
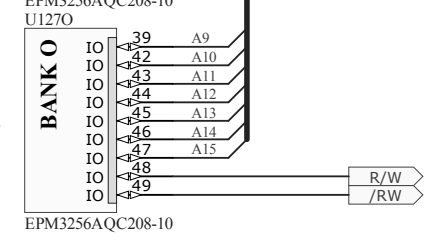
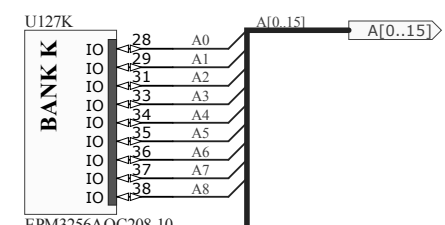
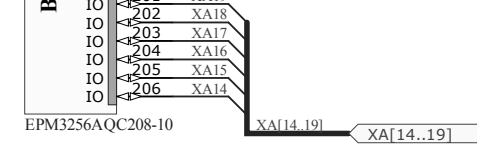
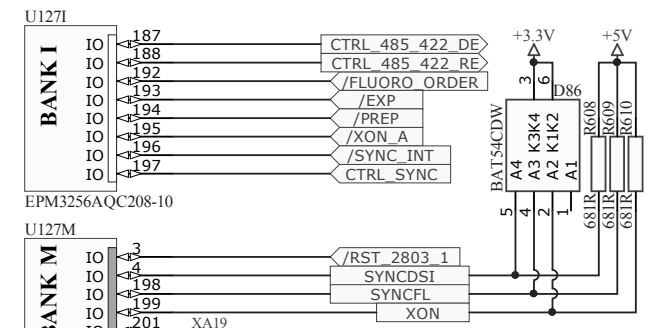
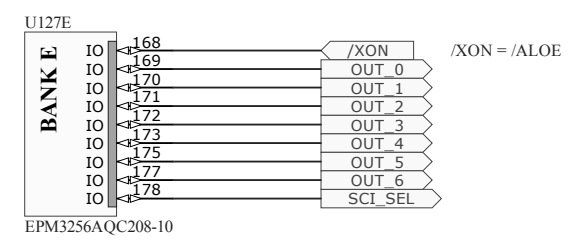
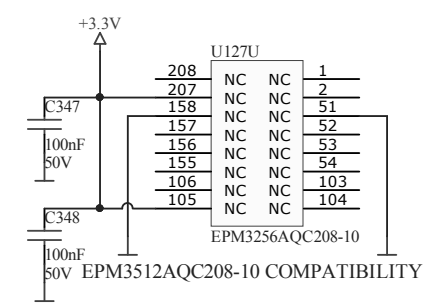
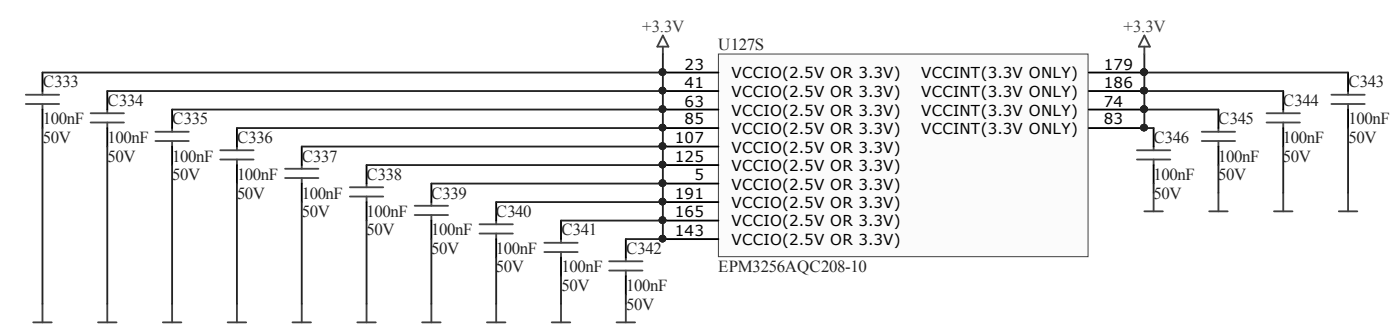
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I	NC 16/0157	J.Clemente	2016-06-28	F.Diaz	2013-09-29			
							J	I
								← REV

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CONTROL BOARD SHFR
01_PROCESSOR_HC12

D



C

C

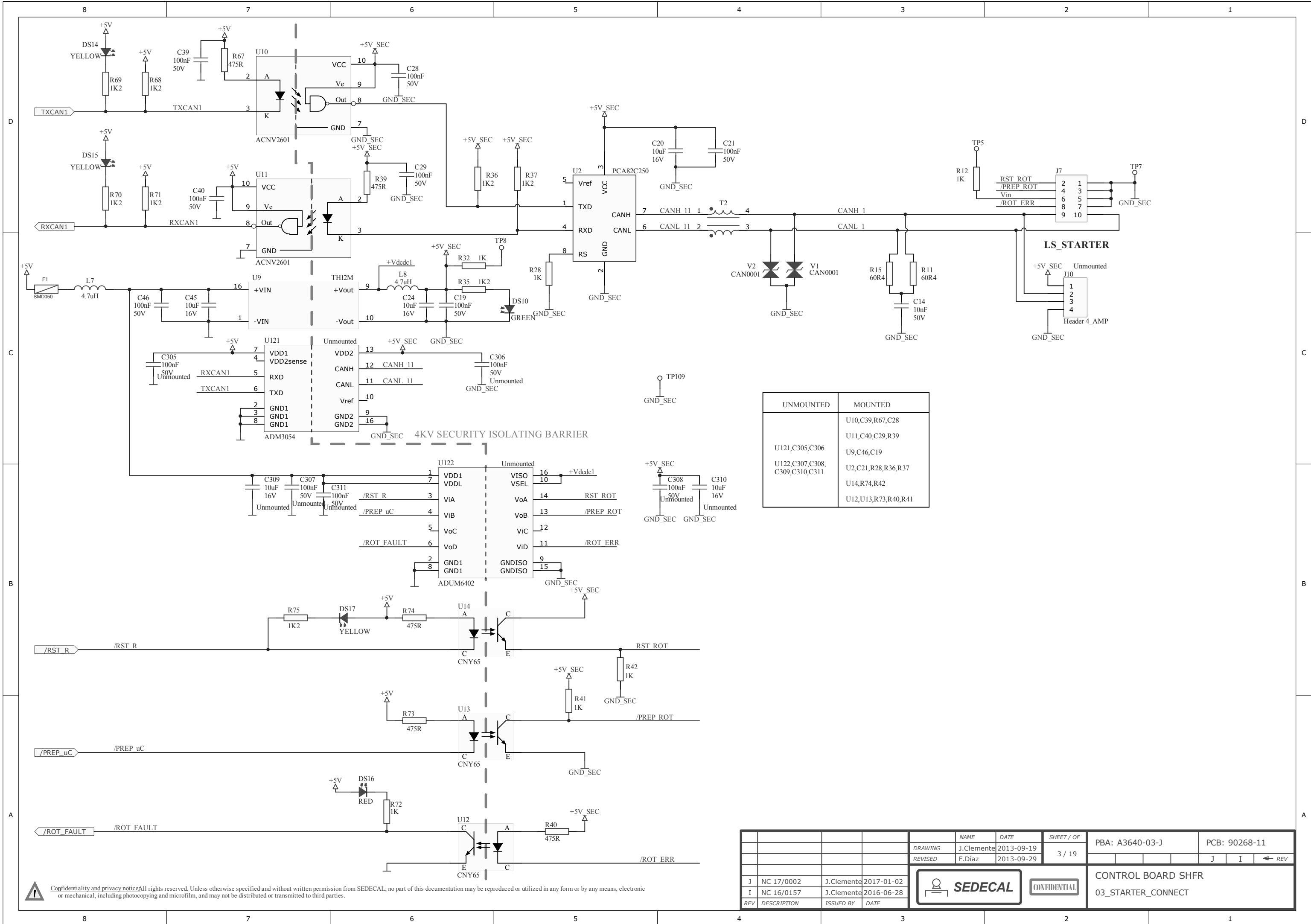
B

B

A

A

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
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I	NC 16/0157	J.Clemente	2016-06-28	F.Díaz	2013-09-29			
				SEDECAL		CONFIDENTIAL		CONTROL BOARD SHFR 02_CPLD_MAX3000A



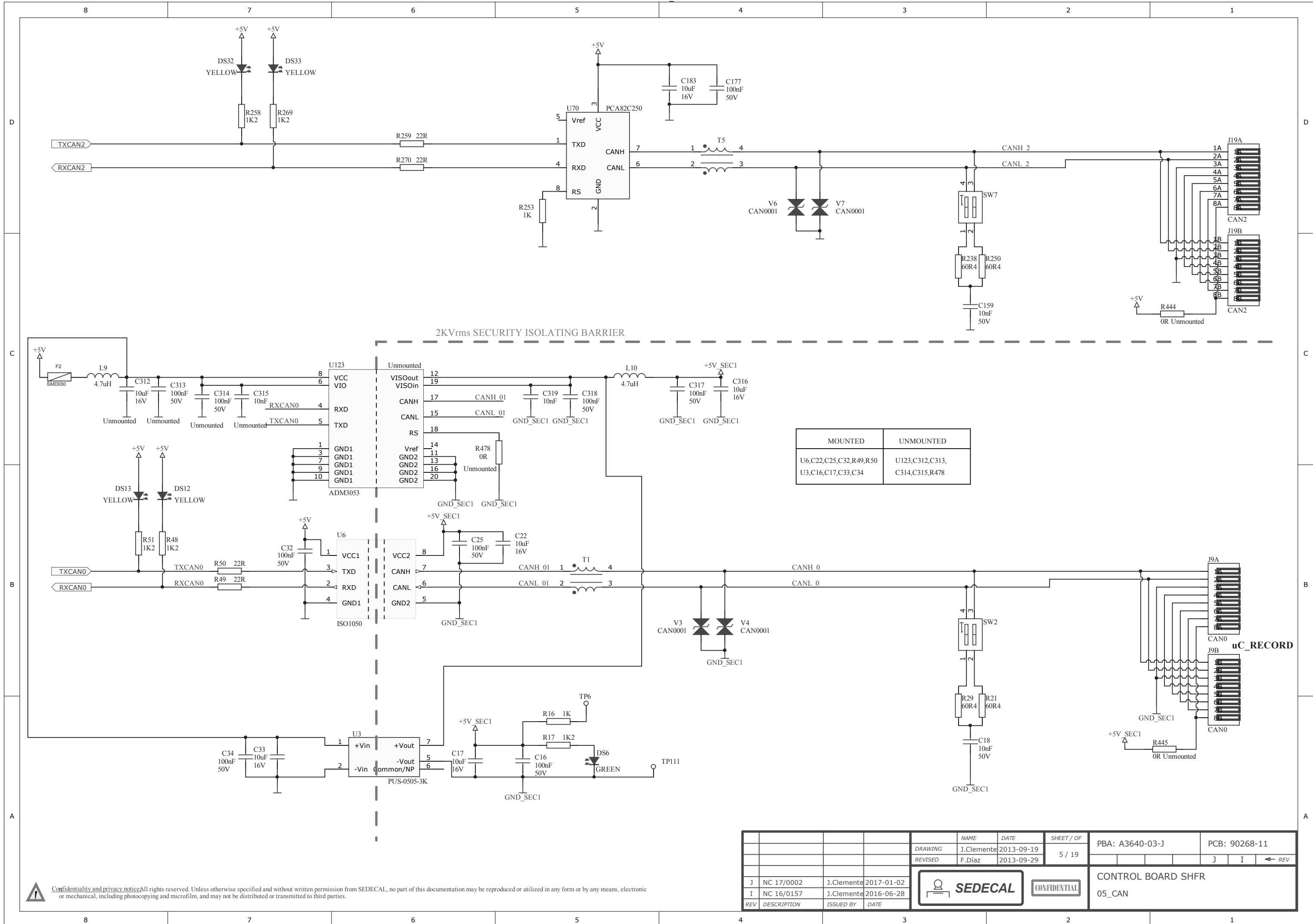
UNMOUNTED	MOUNTED
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U122, C307, C308, C309, C310, C311	U11, C40, C29, R39
	U9, C46, C19
	U2, C21, R28, R36, R37
	U14, R74, R42
	U12, U13, R73, R40, R41

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
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I	NC 16/0157	J.Clemente	2016-06-28	F.Díaz	2013-09-29			
							J	I

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CONTROL BOARD SHFR
03_STARTER_CONNECT



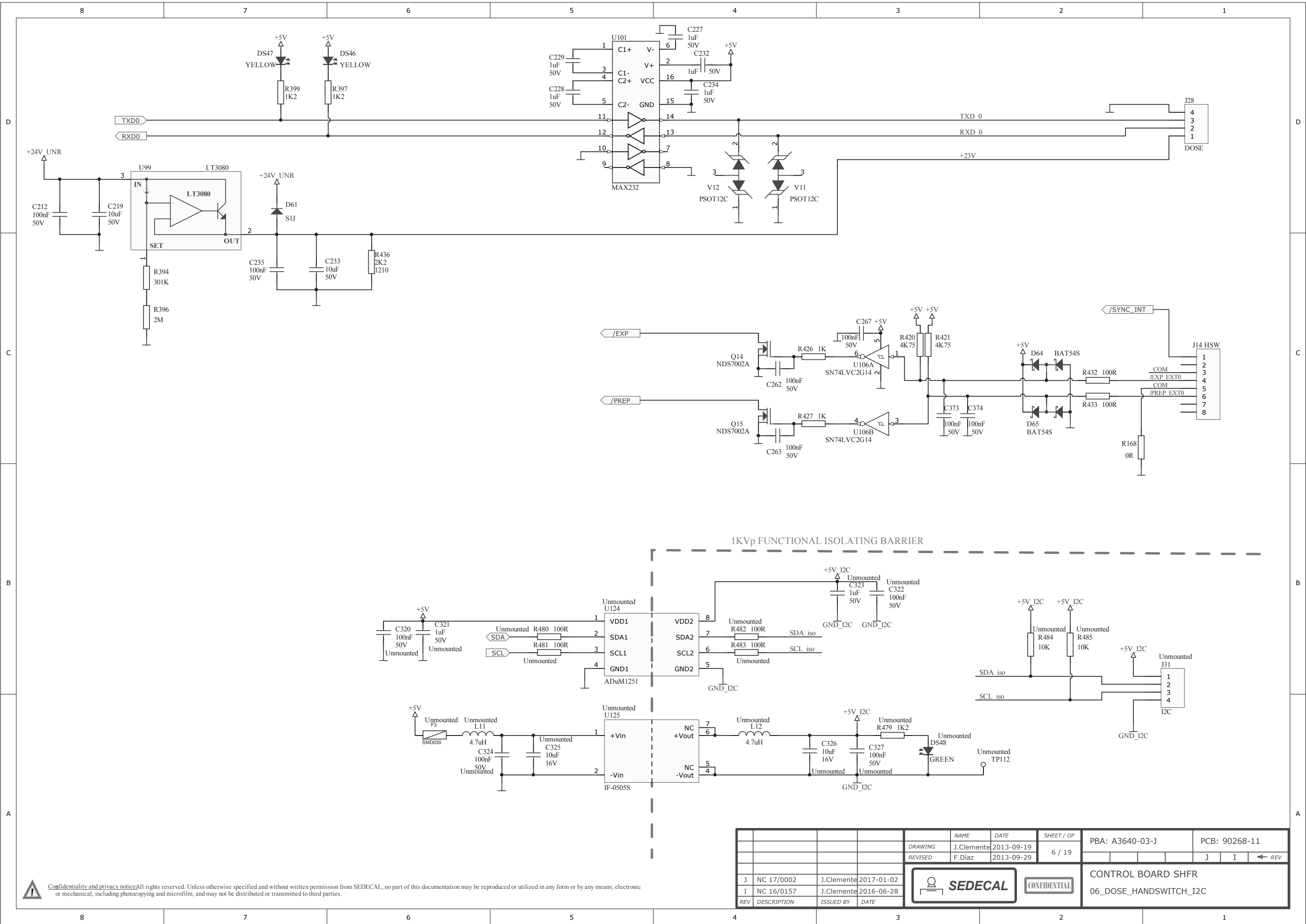
MOUNTED	UNMOUNTED
U6, C22, C25, C32, R49, R50	U123, C312, C313, C314, C315, R478

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
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I	NC 16/0157	J.Clemente	2016-06-28	F.Díaz	2013-09-29			

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CONTROL BOARD SHFR
05_CAN

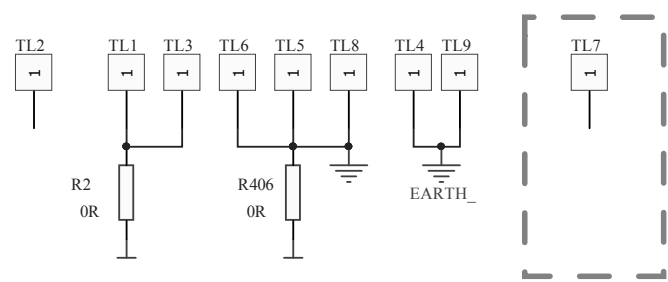
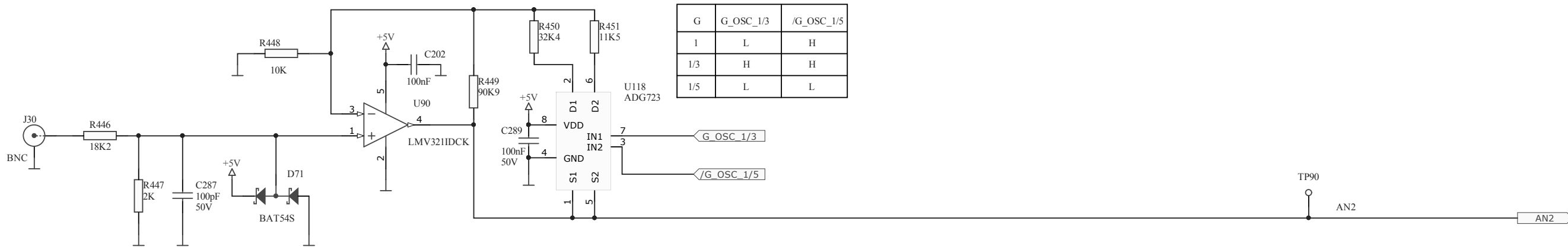
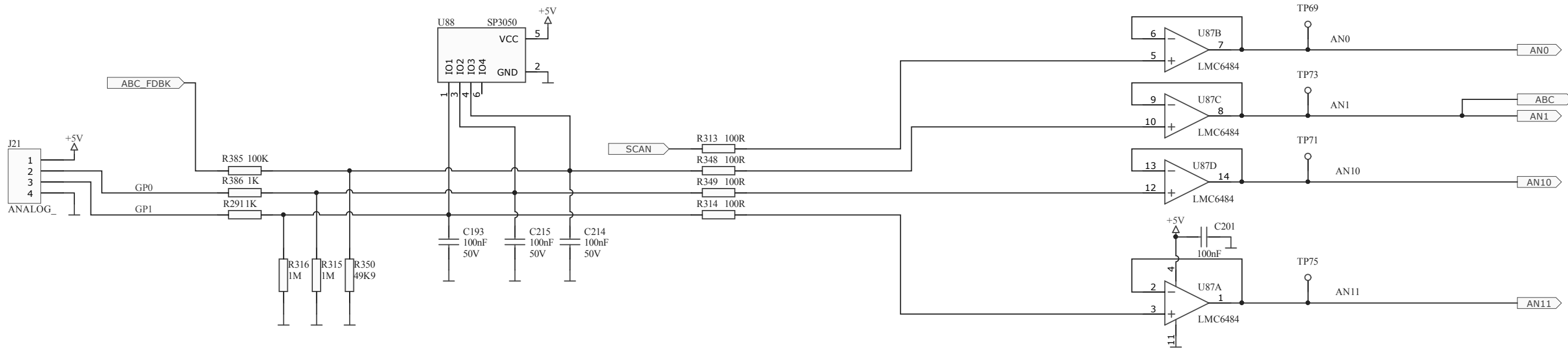


REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/0002	J.Clemente	2017-01-02					
I	NC 16/0157	J.Clemente	2016-06-28					
REV	DESCRIPTION	ISSUED BY	DATE					



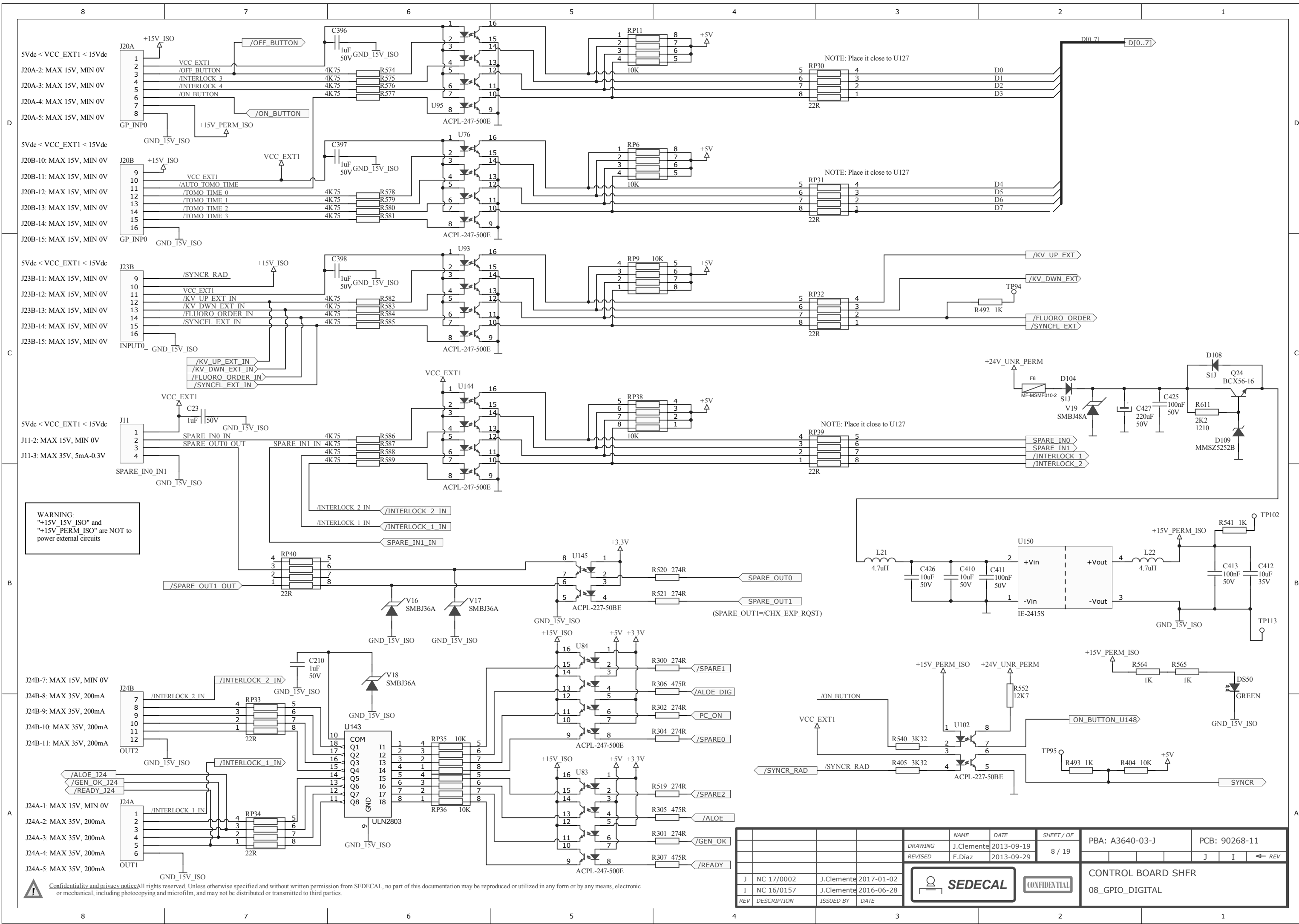
CONTROL BOARD SHFR
06_DOSE_HANDSWITCH_I2C

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REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/0002	J.Clemente	2017-01-02	J.Clemente	2013-09-19	7 / 19		
I	NC 16/0157	J.Clemente	2016-06-28	F.Díaz	2013-09-29			
							CONTROL BOARD SHFR 07_GP_ANALOG_INPUT_SCOPE	

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WARNING:
 "+15V_15V_ISO" and
 "+15V_PERM_ISO" are NOT to
 power external circuits

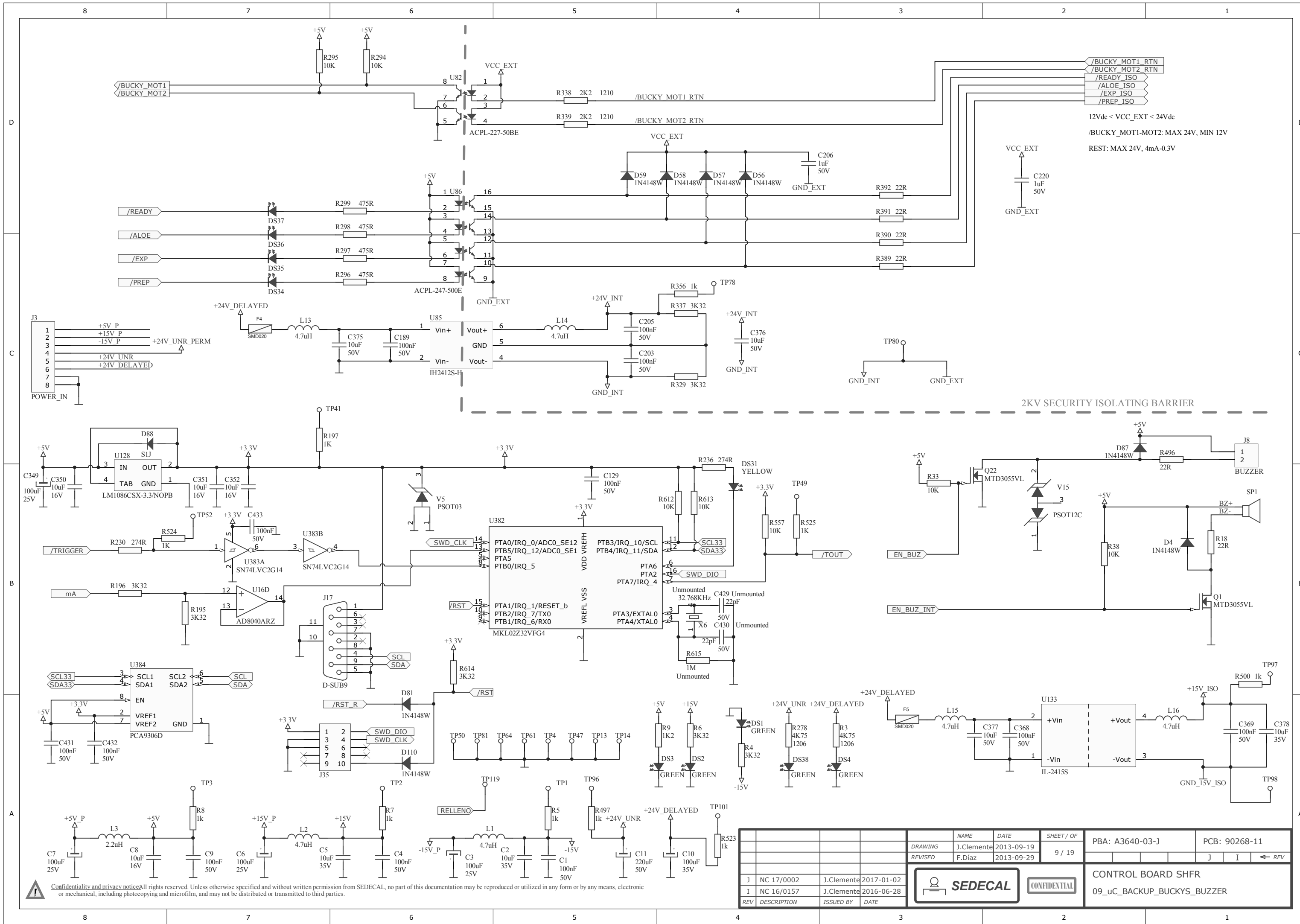
- J24B-7: MAX 15V, MIN 0V
- J24B-8: MAX 35V, 200mA
- J24B-9: MAX 35V, 200mA
- J24B-10: MAX 35V, 200mA
- J24B-11: MAX 35V, 200mA
- J24A-1: MAX 15V, MIN 0V
- J24A-2: MAX 35V, 200mA
- J24A-3: MAX 35V, 200mA
- J24A-4: MAX 35V, 200mA
- J24A-5: MAX 35V, 200mA

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/0002	J.Clemente	2017-01-02			8 / 19		
I	NC 16/0157	J.Clemente	2016-06-28					



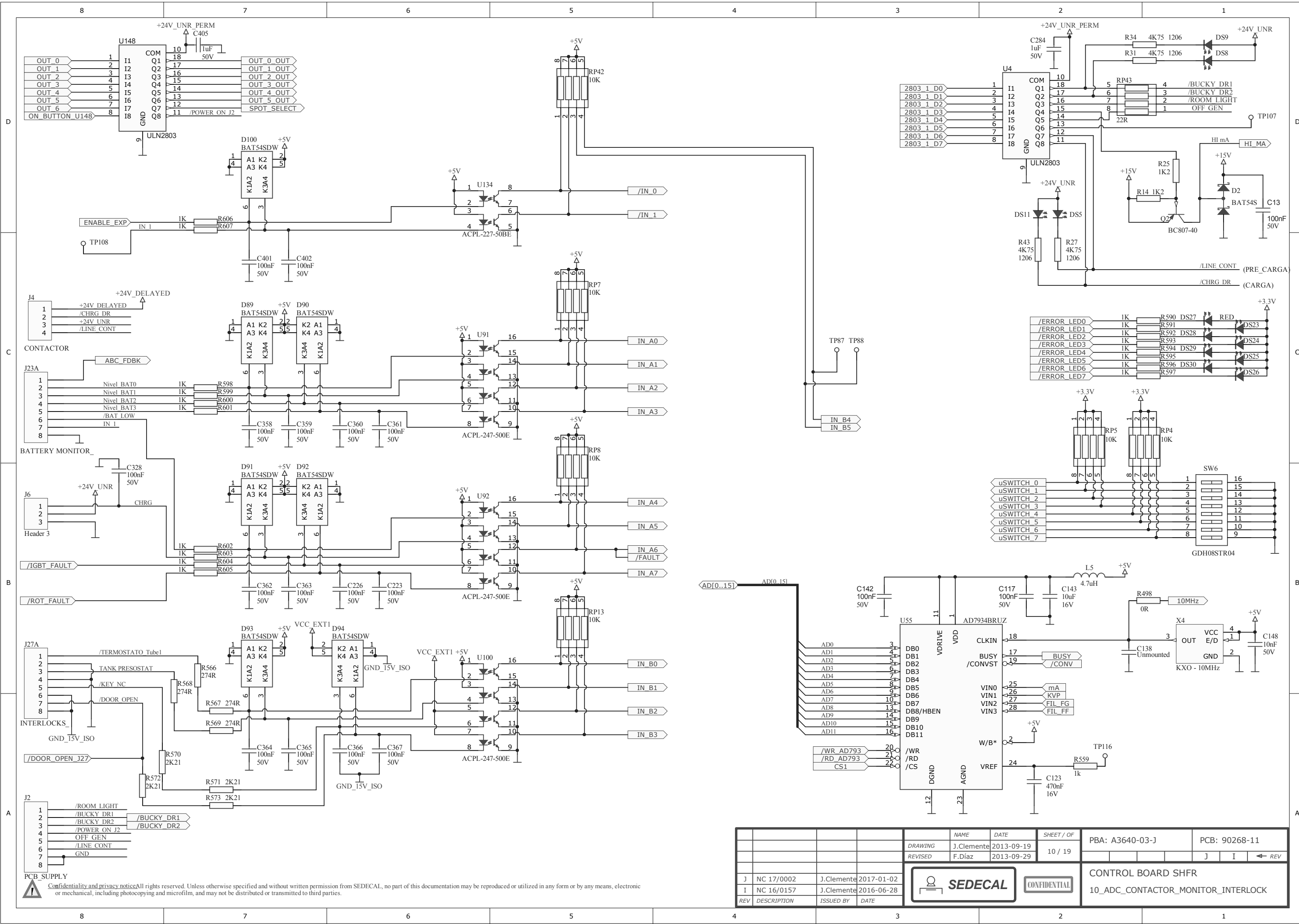
CONTROL BOARD SHFR
 08_GPIO_DIGITAL

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REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/0002	J.Clemente	2017-01-02	J.Clemente	2013-09-19	9 / 19		
I	NC 16/0157	J.Clemente	2016-06-28	F.Díaz	2013-09-29			
REV	DESCRIPTION	ISSUED BY	DATE	SEDECAL		CONFIDENTIAL	CONTROL BOARD SHFR 09_uC_BACKUP_BUCKYS_BUZZER	

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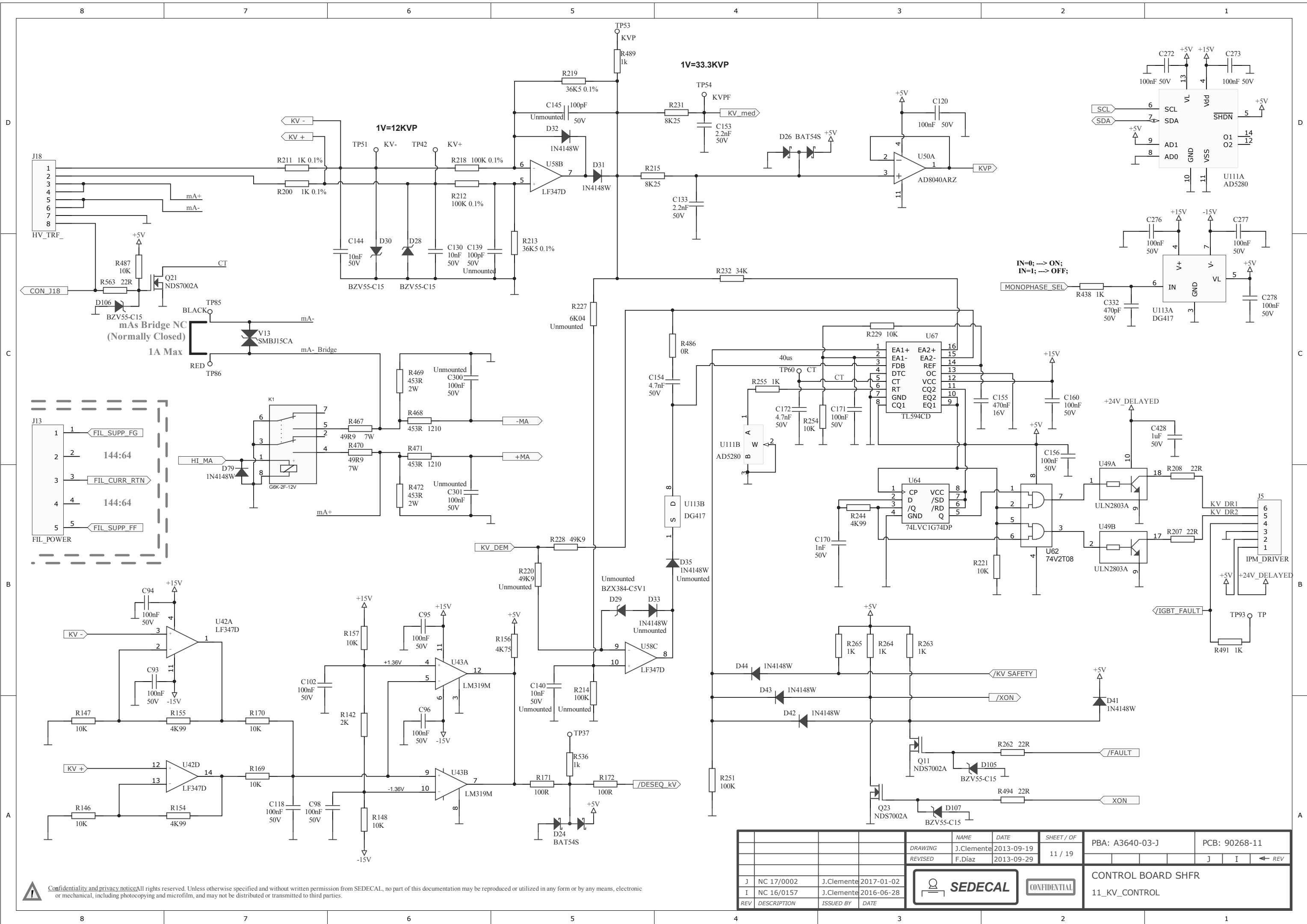


REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/0002	J.Clemente	2017-01-02					
I	NC 16/0157	J.Clemente	2016-06-28					



CONTROL BOARD SHFR
10_ADC_CONTACTOR_MONITOR_INTERLOCK

PCB SUPPLY
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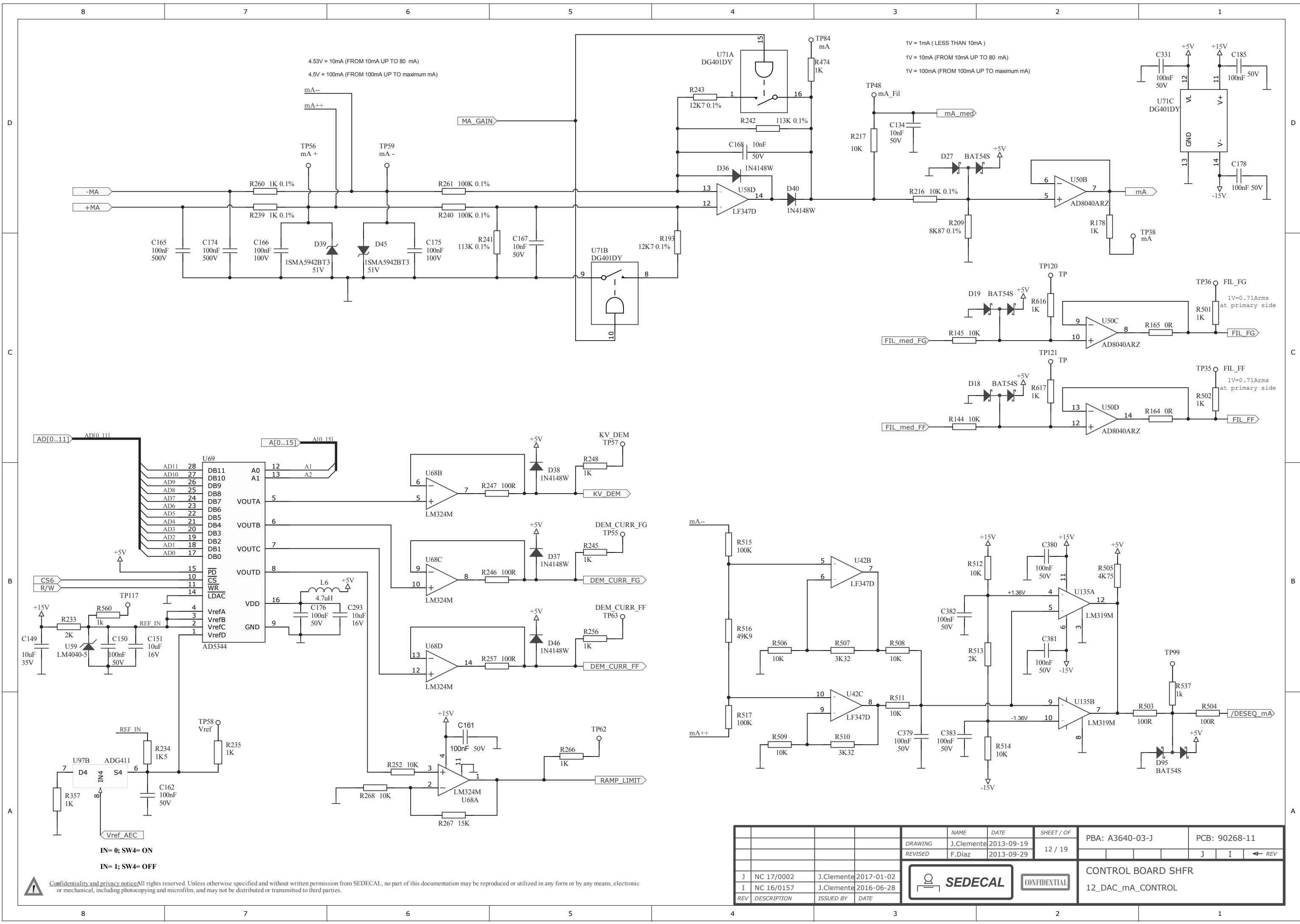


REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/002	J.Clemente	2017-01-02			11 / 19		
I	NC 16/0157	J.Clemente	2016-06-28					

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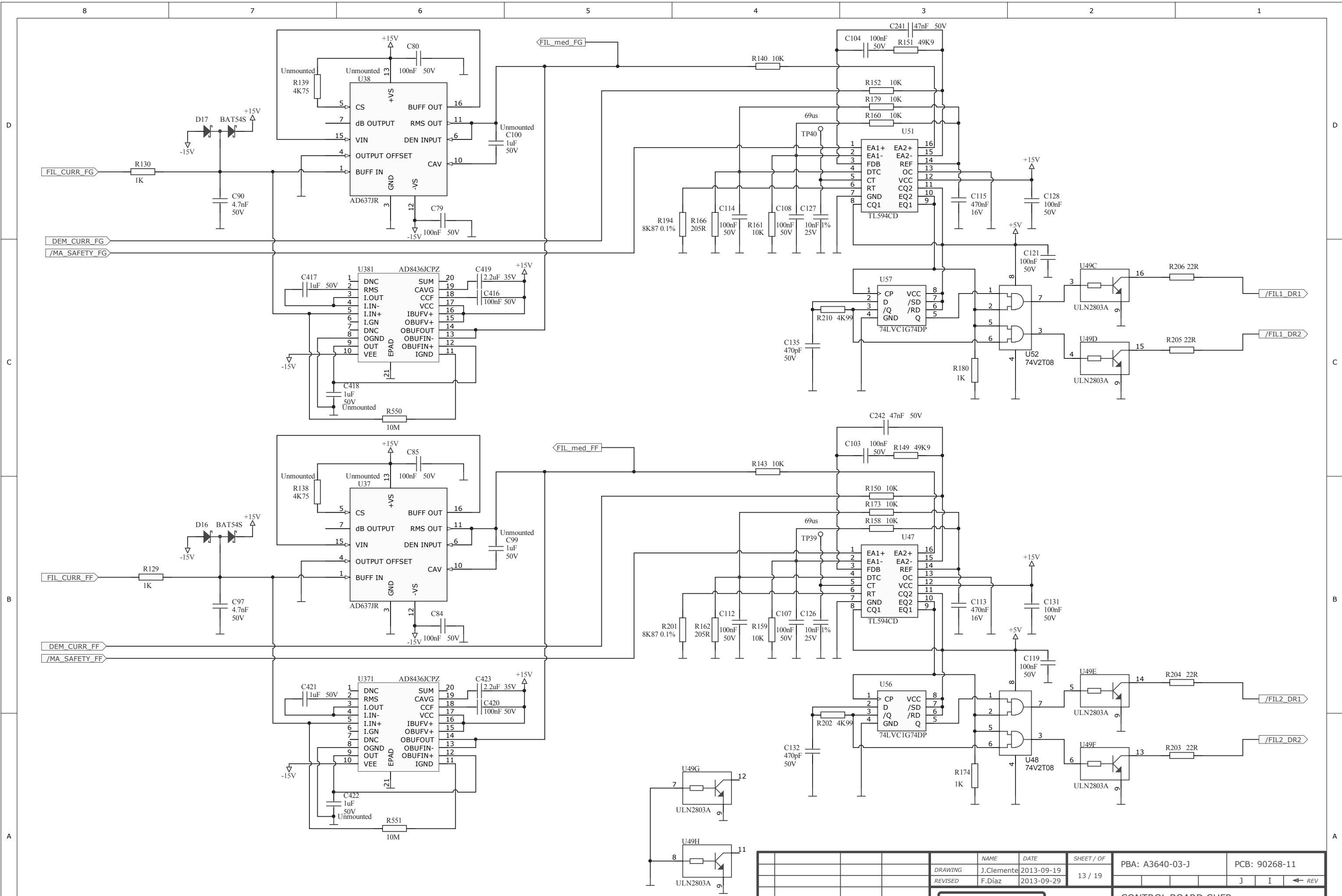


CONTROL BOARD SHFR
11_KV_CONTROL



REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/0002	J.Clemente	2017-01-02	J.Clemente	2013-09-19	12 / 19		
I	NC 16/0157	J.Clemente	2016-06-28	F.Díaz	2013-09-29			
				SEDECAL CONFIDENTIAL		CONTROL BOARD SHFR 12_DAC_ma_CONTROL		

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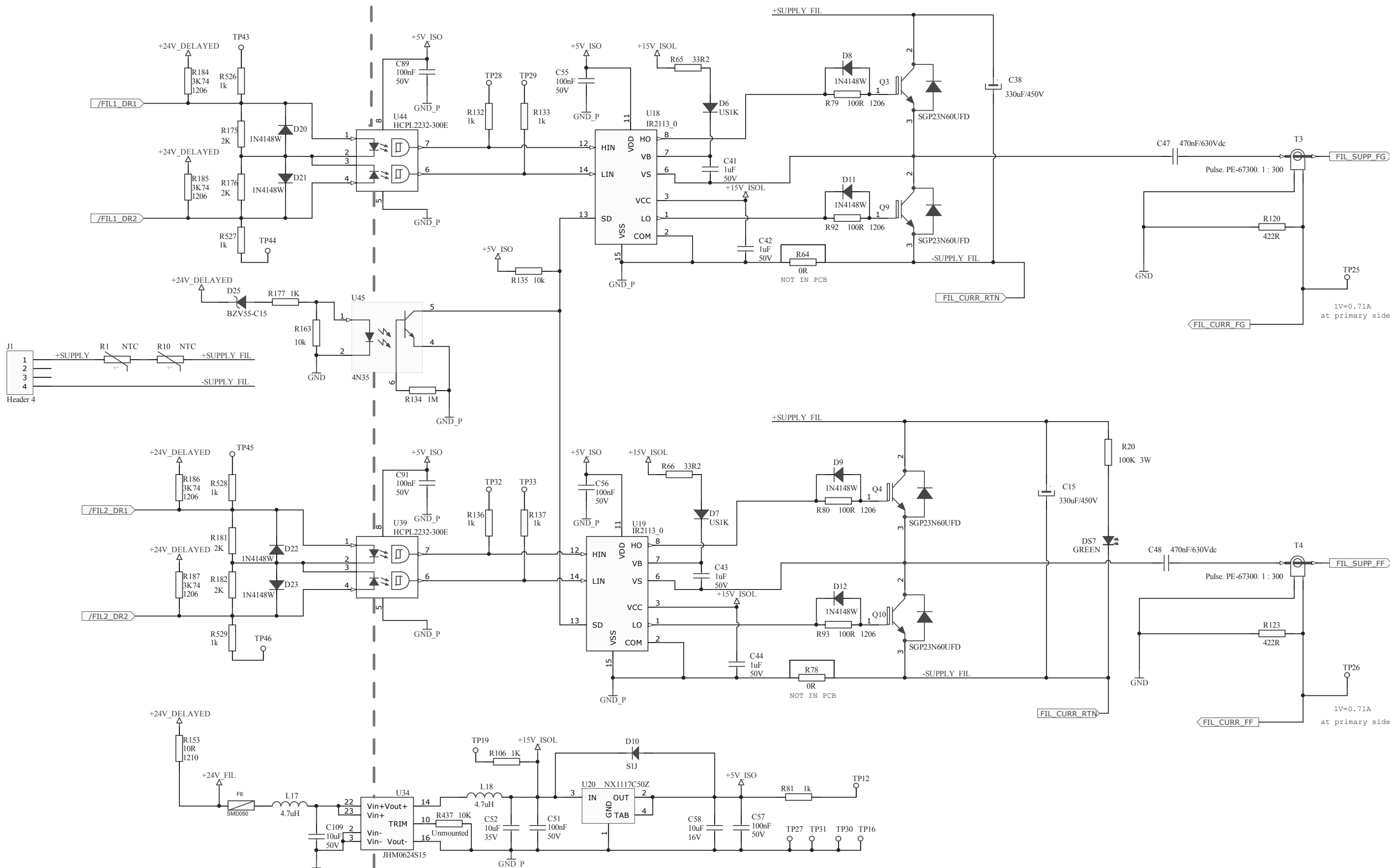


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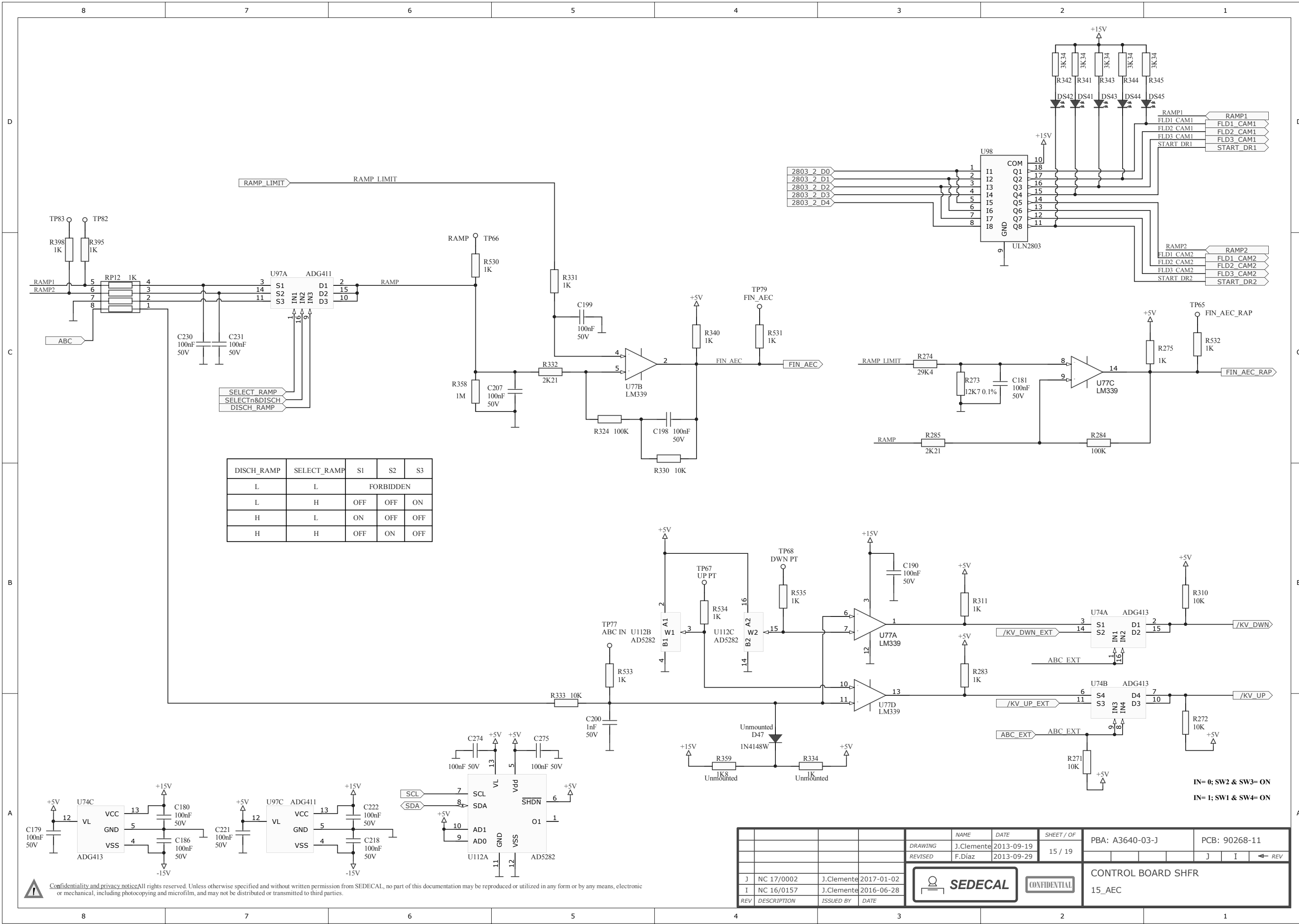
REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/0002	J.Clemente	2017-01-02	J.Clemente	2013-09-19	13 / 19		
I	NC 16/0157	J.Clemente	2016-06-28	F.Díaz	2013-09-29			
							J	I
							CONTROL BOARD SHFR	
							13_FIL_CONTROL	



2.5KVrms SECURITY ISOLATING BARRIER



	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
	DRAWING	J.Clemente	2013-09-19	14 / 19	
	REVISED	F.Díaz	2013-09-29		J I ← REV
J	NC 17/0002	J.Clemente	2017-01-02	SEDECAL CONFIDENTIAL CONTROL BOARD SHFR 14_FIL_DRIVER	
I	NC 16/0157	J.Clemente	2016-06-28		
REV	DESCRIPTION	ISSUED BY	DATE		

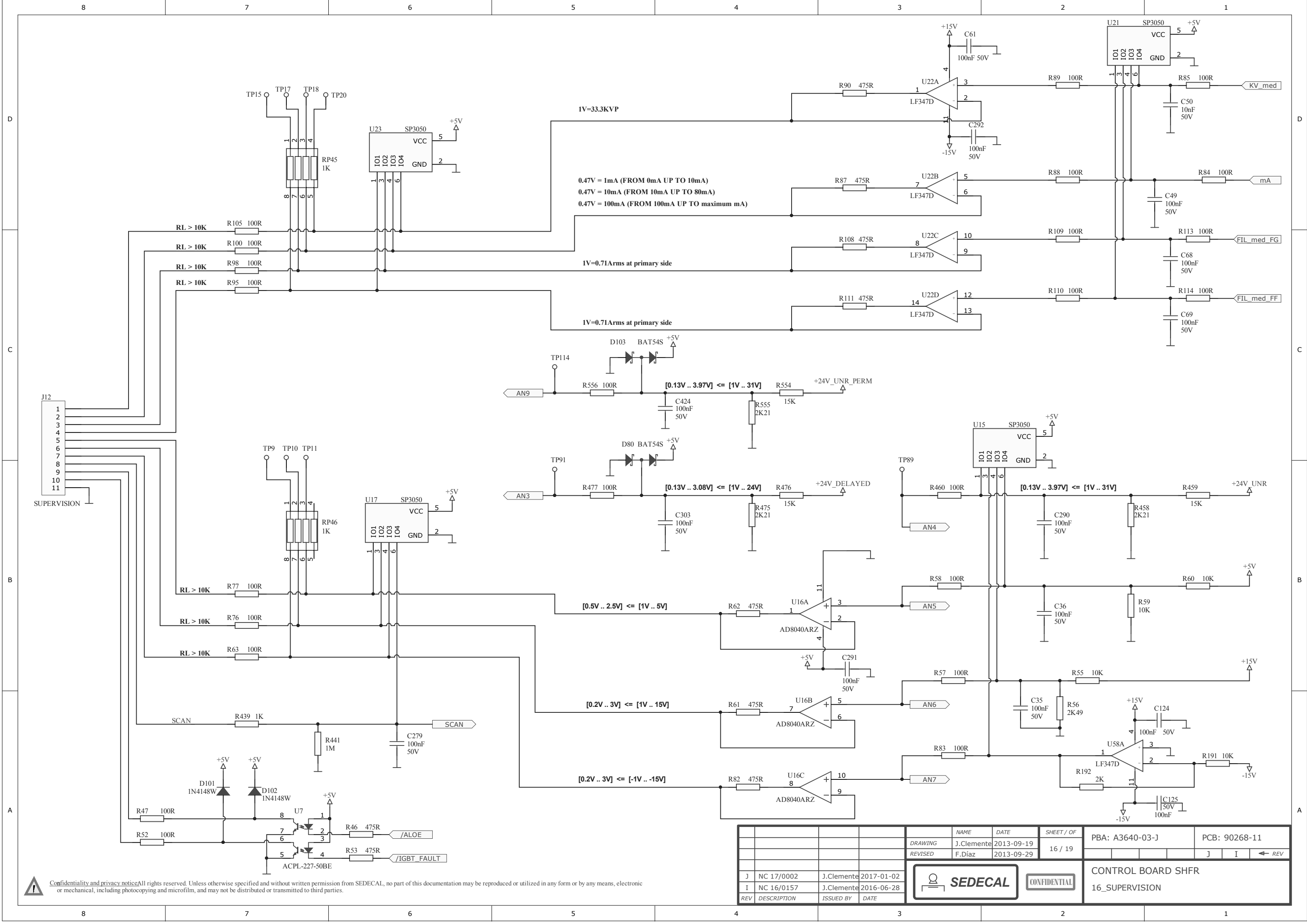


DISCH_RAMP	SELECT_RAMP	S1	S2	S3
L	L	FORBIDDEN		
L	H	OFF	OFF	ON
H	L	ON	OFF	OFF
H	H	OFF	ON	OFF

IN= 0; SW2 & SW3= ON
 IN= 1; SW1 & SW4= ON

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/0002	J.Clemente	2017-01-02	J.Clemente	2013-09-19	15 / 19		
I	NC 16/0157	J.Clemente	2016-06-28	F.Díaz	2013-09-29			
				SEDECAL CONFIDENTIAL		CONTROL BOARD SHFR 15_AEC		

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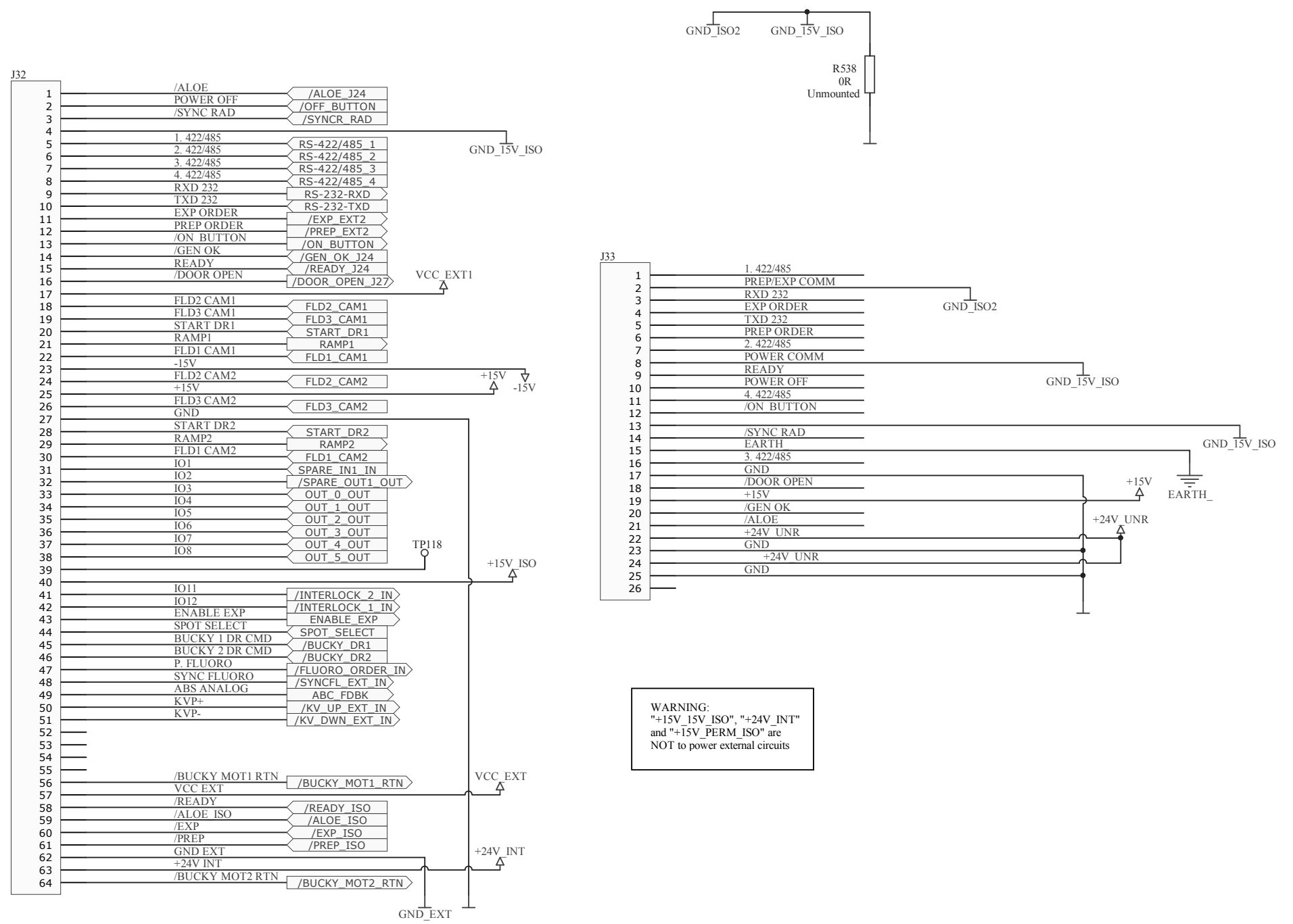
REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/0002	J.Clemente	2017-01-02			16 / 19		
I	NC 16/0157	J.Clemente	2016-06-28					
REV	DESCRIPTION	ISSUED BY	DATE					



CONTROL BOARD SHFR
16_SUPERVISION

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Cannot open file \\snap\Jesus.Clemente\SHFR850\A3640-xx_90268-xx_SHFR_CONTROL BOARD\A3640-03_FESQUEMA_PCB_ALTUMSIGNALS_J32_J33.JPG

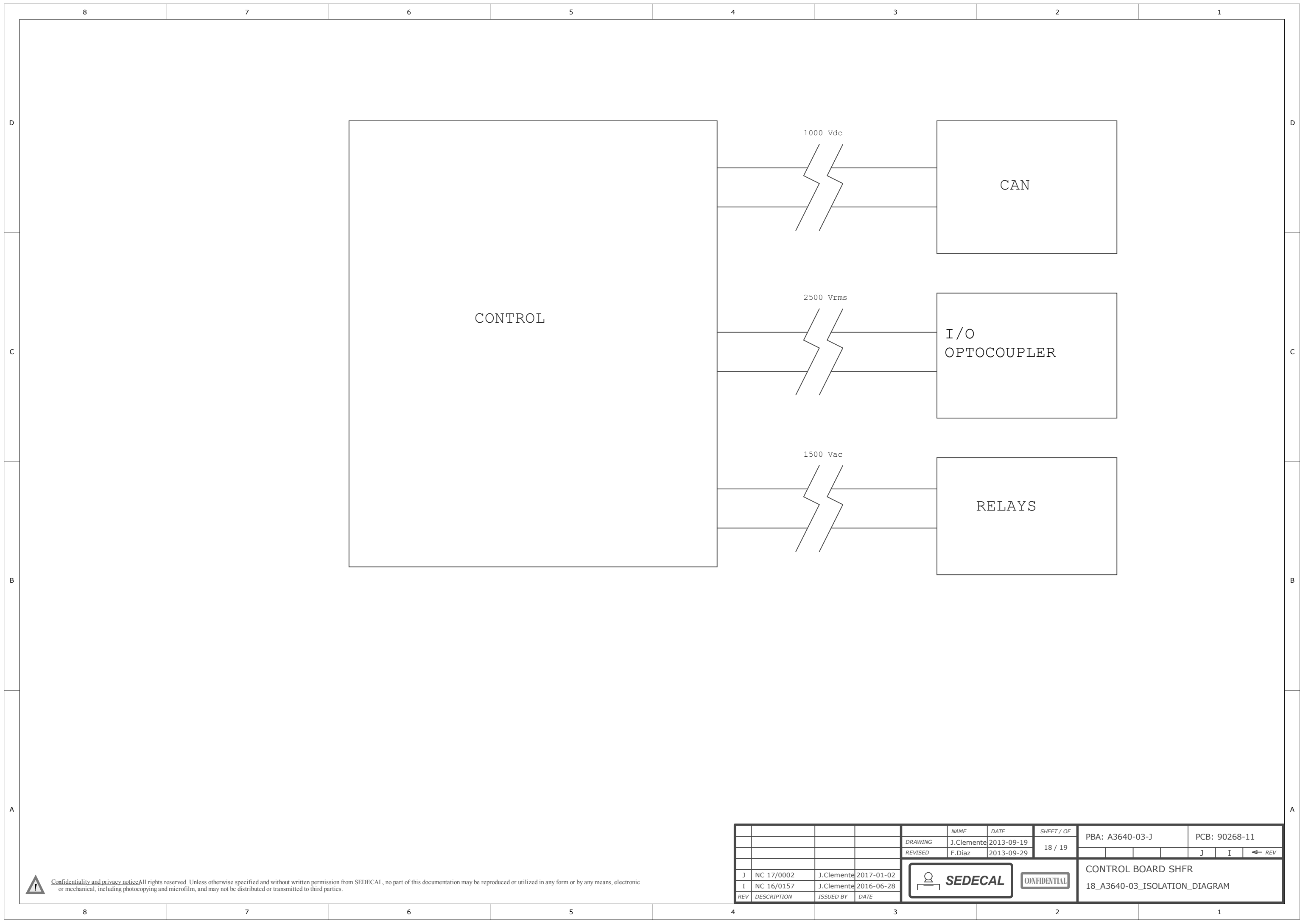


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REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
J	NC 17/0002	J.Clemente	2017-01-02	J.Clemente	2013-09-19	17 / 19		
I	NC 16/0157	J.Clemente	2016-06-28	F.Díaz	2013-09-29			
							CONTROL BOARD SHFR 17_INTERFACE	



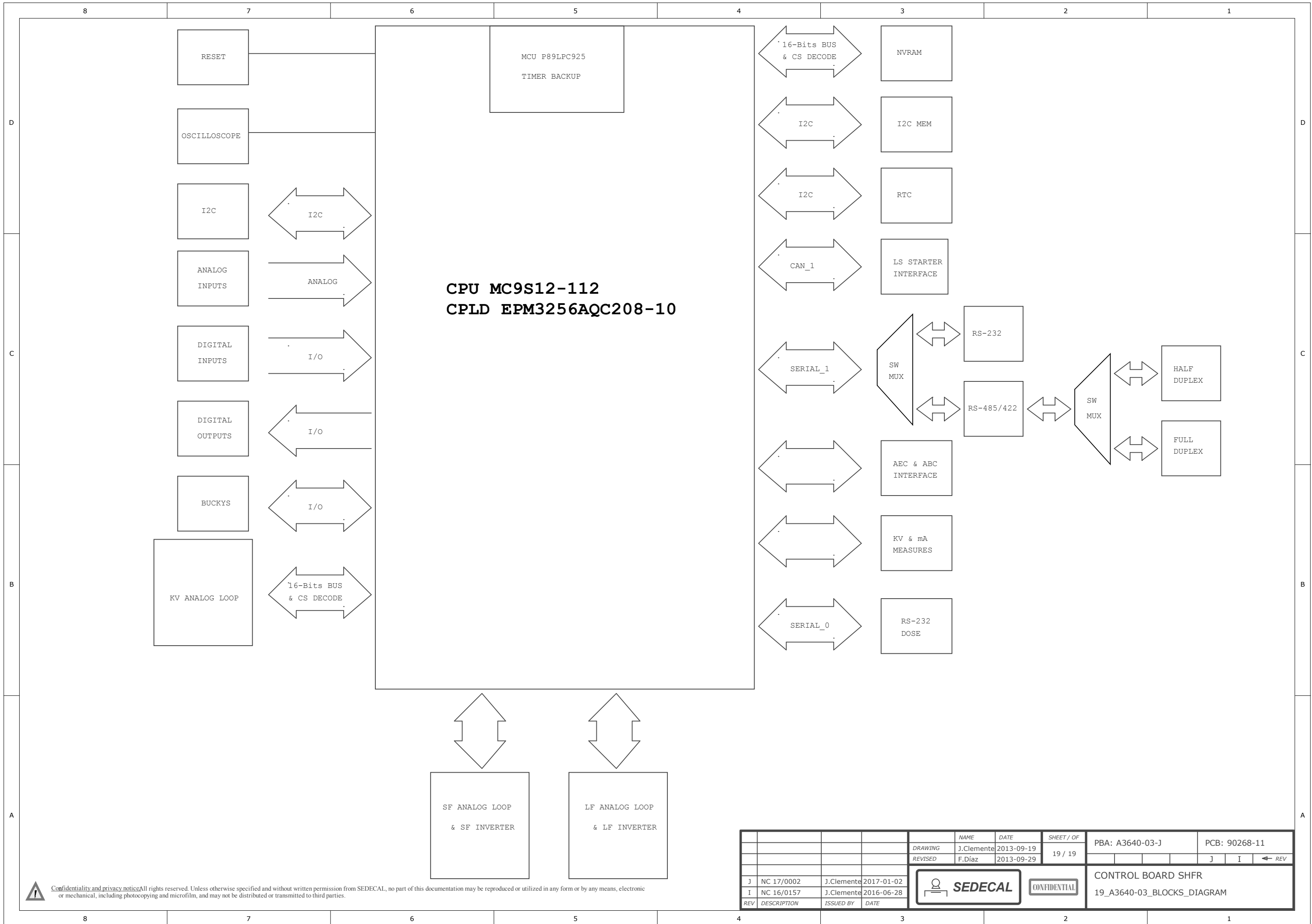
J I ← REV



				NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
			DRAWING	J.Clemente	2013-09-19	18 / 19		
			REVISED	F.Díaz	2013-09-29			J I ← REV
J	NC 17/0002	J.Clemente	2017-01-02			CONFIDENTIAL CONTROL BOARD SHFR 18_A3640-03_ISOLATION_DIAGRAM		
I	NC 16/0157	J.Clemente	2016-06-28					
REV	DESCRIPTION	ISSUED BY	DATE					

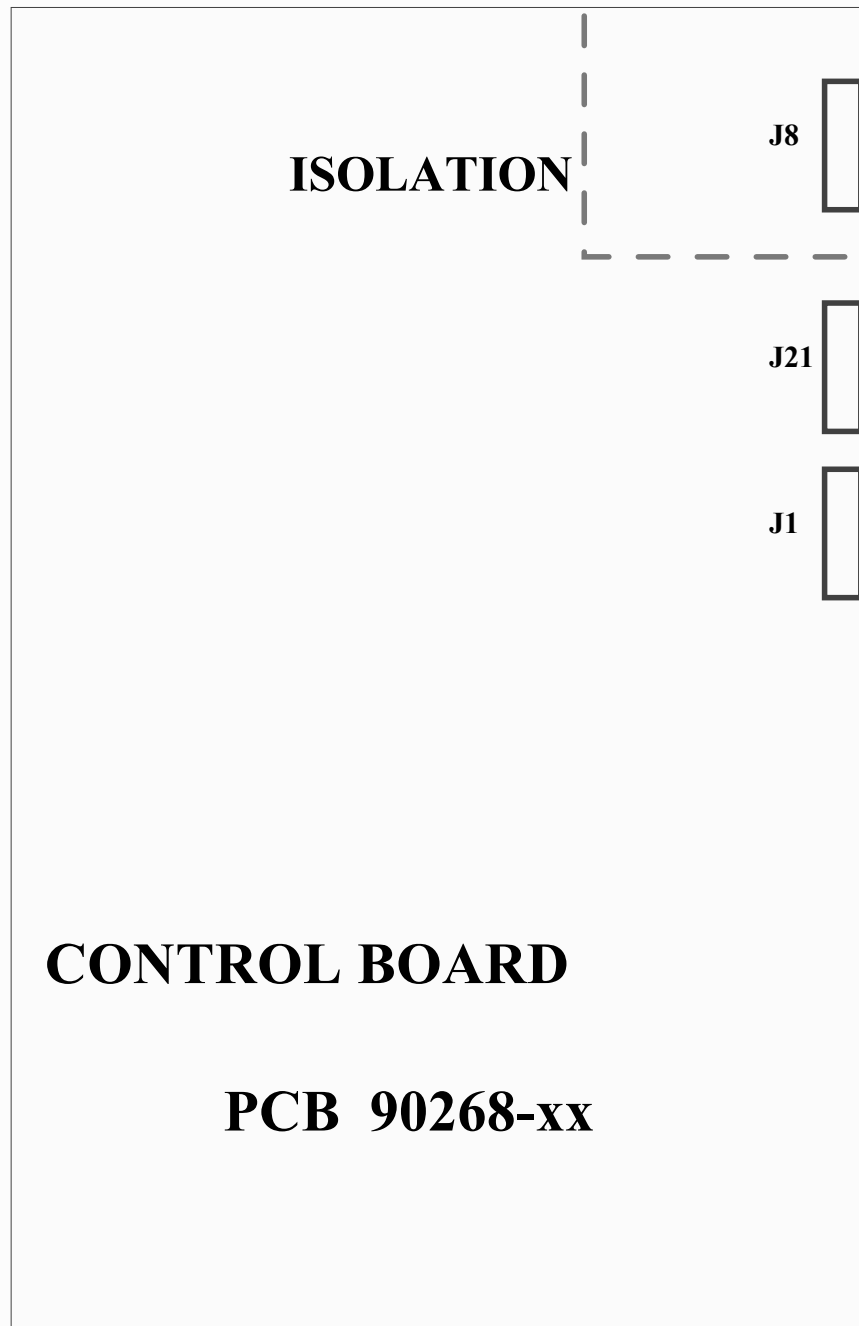


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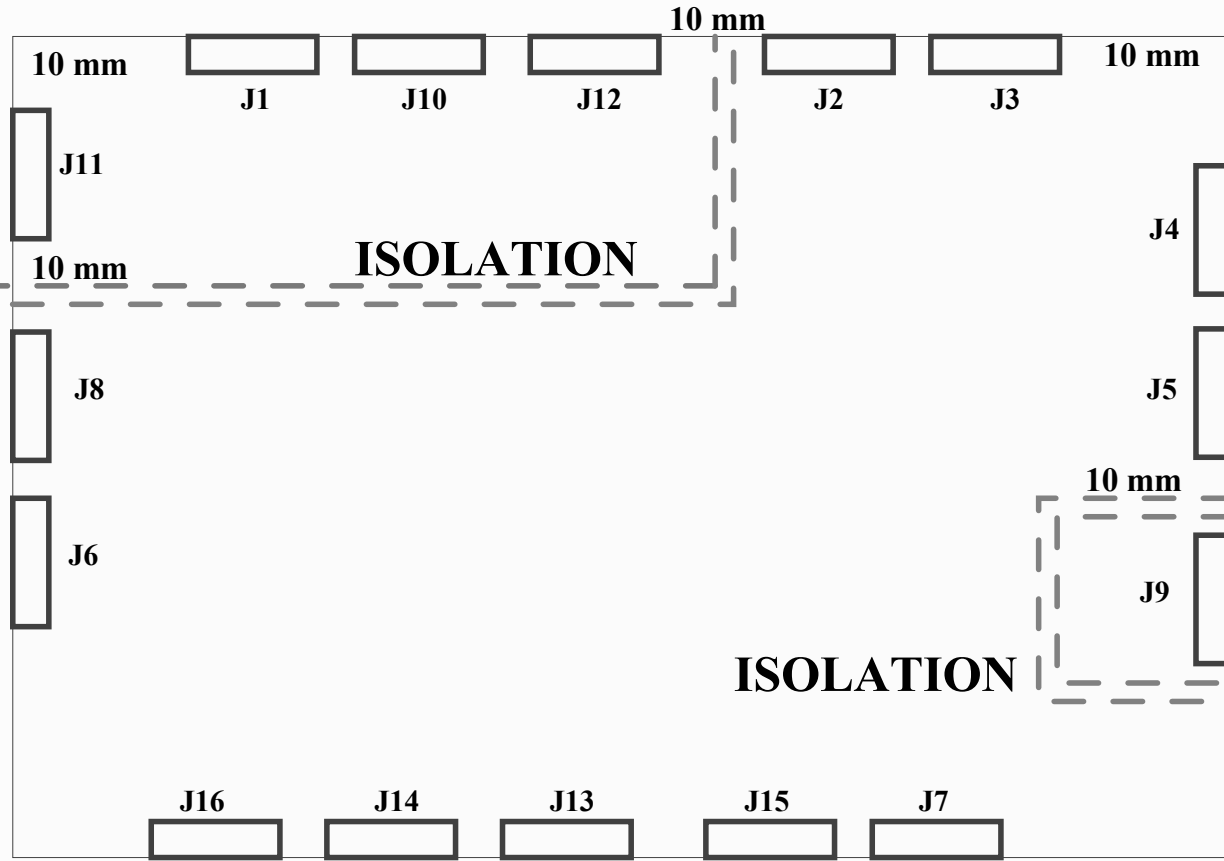


				NAME	DATE	SHEET / OF	PBA: A3640-03-J	PCB: 90268-11
				DRAWING	J.Clemente	2013-09-19		
				REVISED	F.Díaz	2013-09-29	19 / 19	
J	NC 17/0002	J.Clemente	2017-01-02			CONTROL BOARD SHFR 19_A3640-03_BLOCKS_DIAGRAM		
I	NC 16/0157	J.Clemente	2016-06-28					
REV	DESCRIPTION	ISSUED BY	DATE					

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CONTROL BOARD
PCB 90268-xx



SUPPLY BOARD
PCB 90304-xx

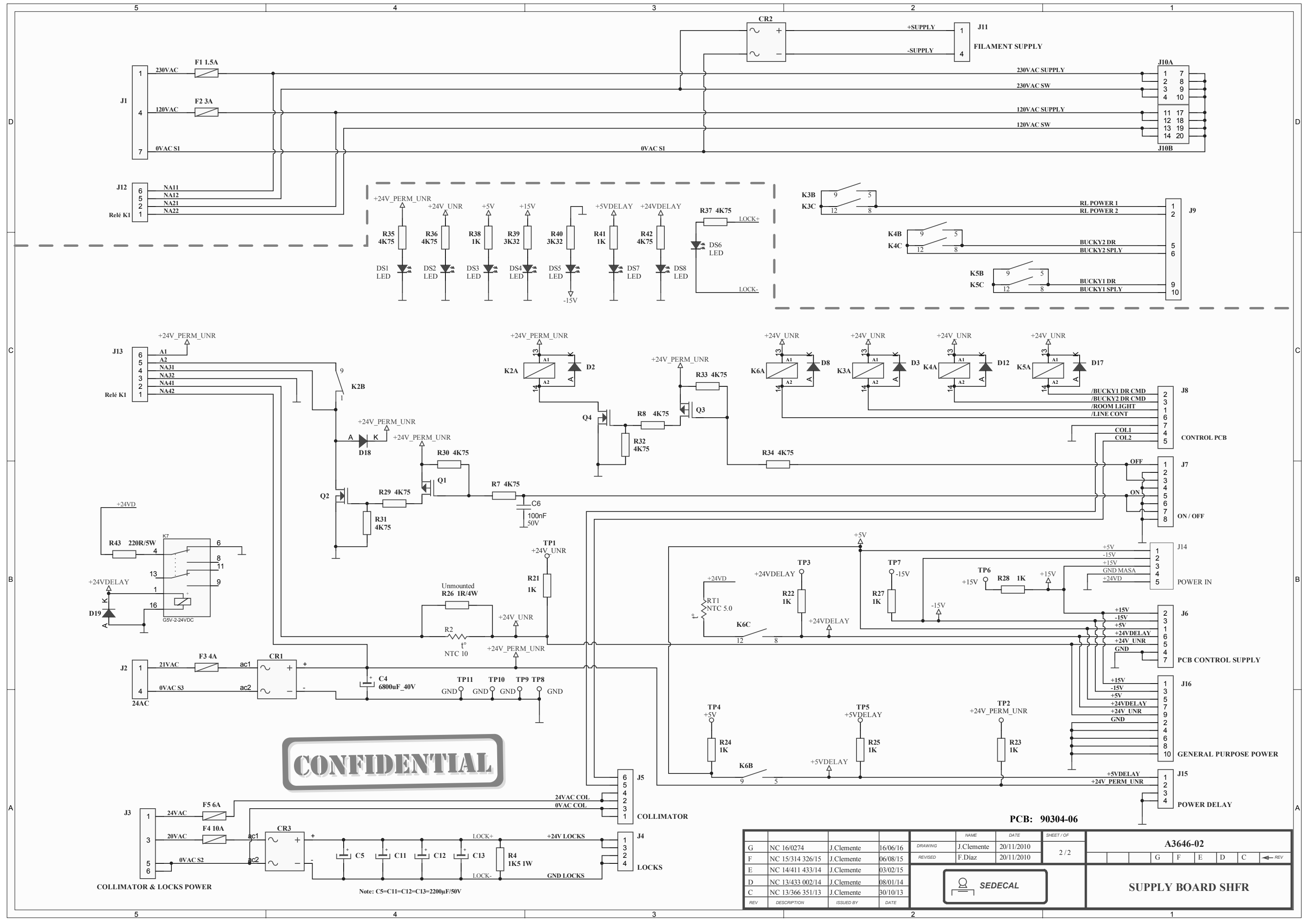
CONFIDENTIAL

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	A3646-02					
G	NC 16/0274	J.Clemente	16/06/16	DRAWING	J.Clemente	20/11/2010	1 / 2					
F	NC 15/314 326/15	J.Clemente	06/08/15	REVISED	F.Diaz	20/11/2010						
E	NC 14/411 433/14	J.Clemente	03/02/15									
D	NC 13/433 002/14	J.Clemente	08/01/14									
C	NC 13/366 351/13	J.Clemente	30/10/13									



SUPPLY BOARD SHFR

PCB: 90304-06



CONFIDENTIAL

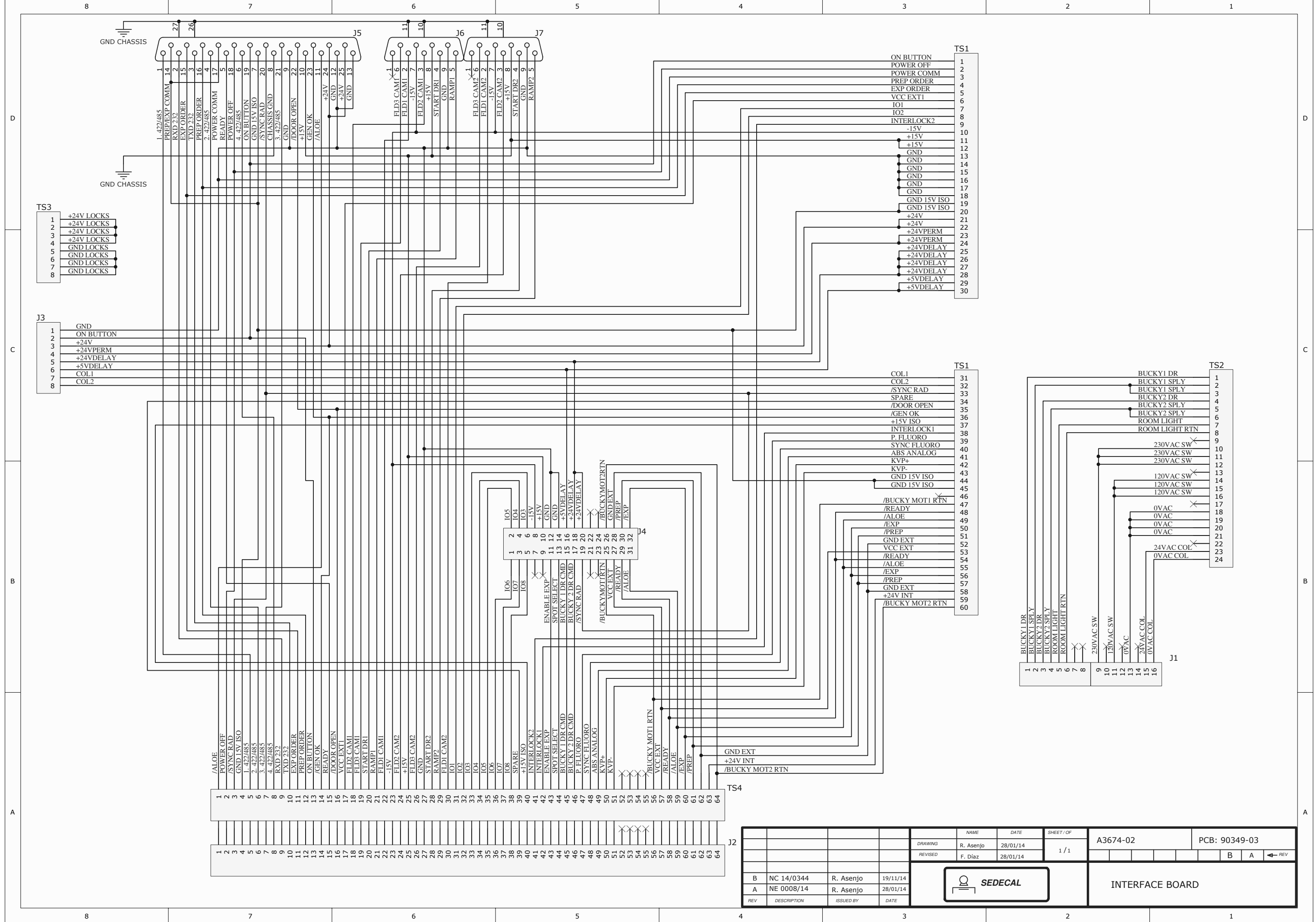
PCB: 90304-06

REV	DESCRIPTION	ISSUED BY	DATE	DRAWING	NAME	DATE	SHEET / OF	A3646-02					
G	NC 16/0274	J.Clemente	16/06/16	DRAWING	J.Clemente	20/11/2010	2 / 2	G	F	E	D	C	← REV
F	NC 15/314 326/15	J.Clemente	06/08/15	REVISED	F.Diaz	20/11/2010							
E	NC 14/411 433/14	J.Clemente	03/02/15										
D	NC 13/433 002/14	J.Clemente	08/01/14										
C	NC 13/366 351/13	J.Clemente	30/10/13										

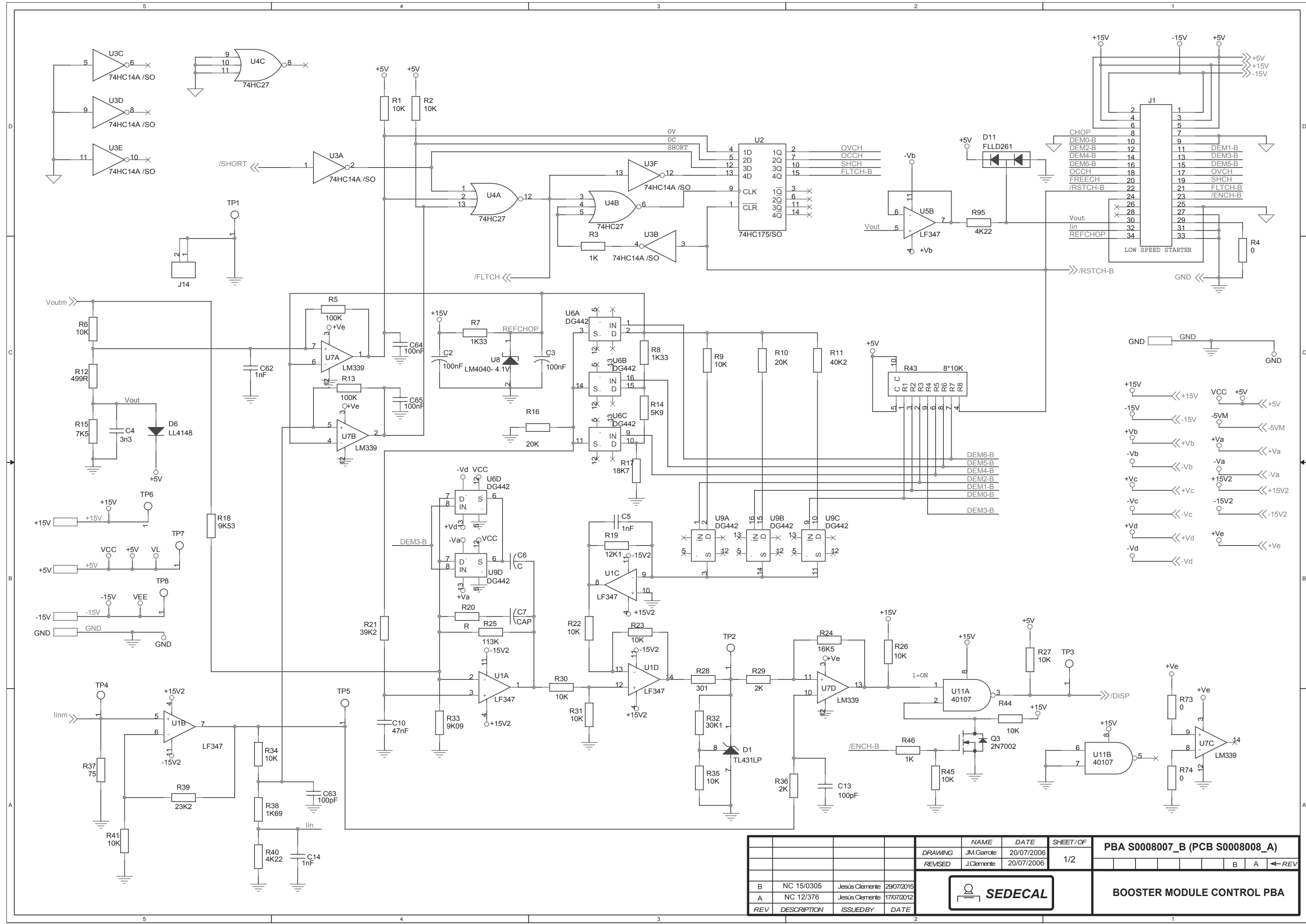
SEDECAL

SUPPLY BOARD SHFR

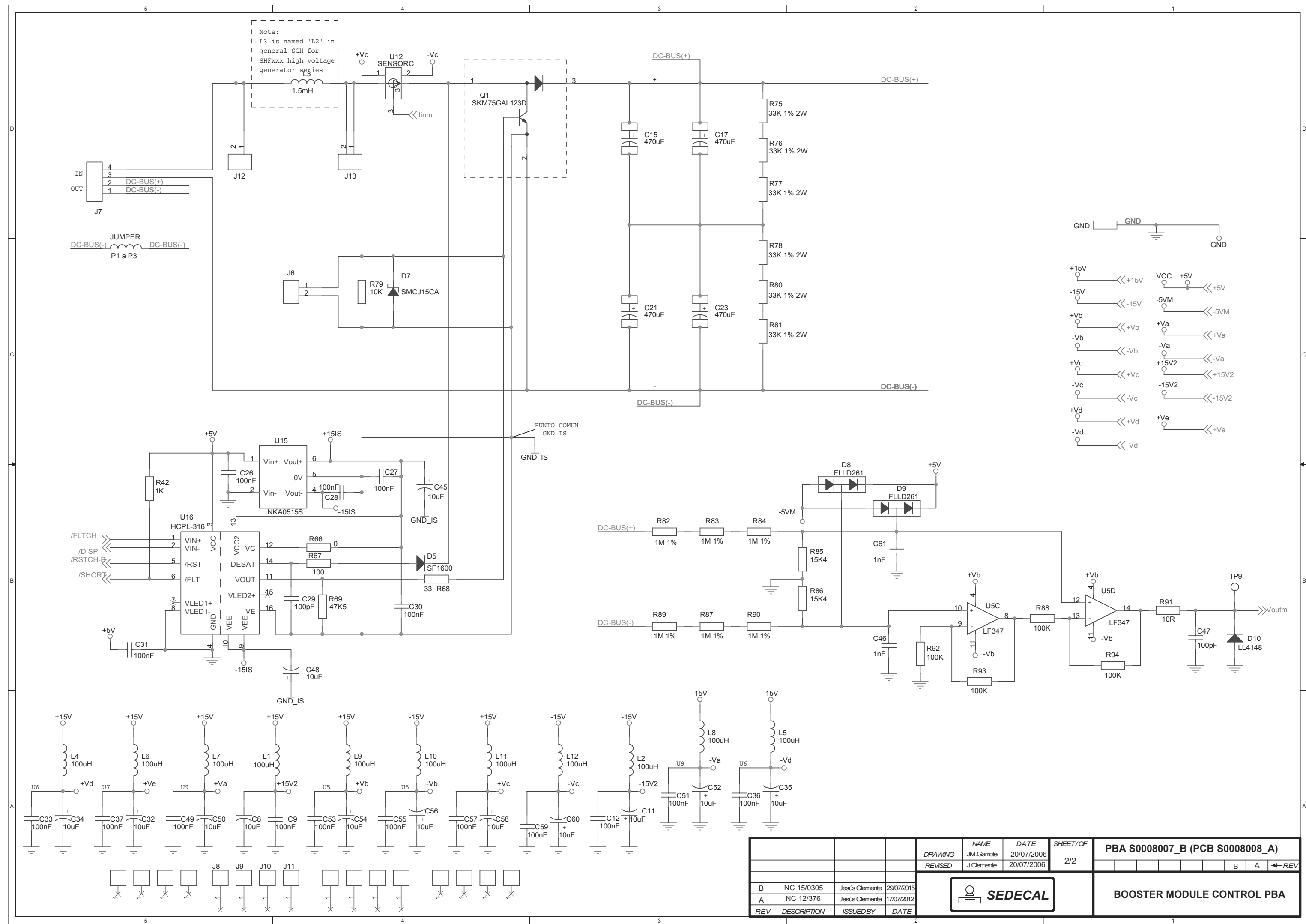
Note: C5=C11=C12=C13=2200µF/50V



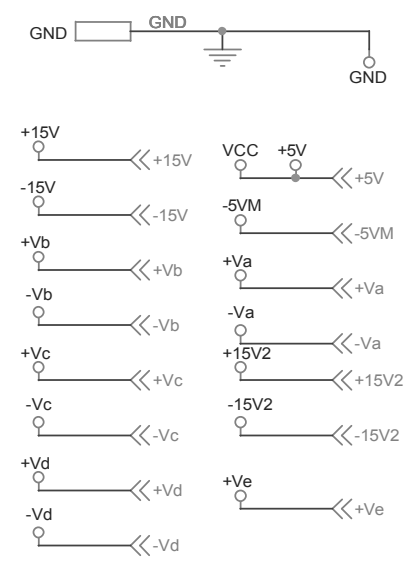
DRAWING		NAME	DATE	SHEET / OF	A3674-02		PCB: 90349-03			
REVISED		R. Asenjo	28/01/14	1 / 1						
		F. Diaz	28/01/14							
B	NC 14/0344	R. Asenjo	19/11/14						INTERFACE BOARD	
A	NE 0008/14	R. Asenjo	28/01/14							
REV	DESCRIPTION	ISSUED BY	DATE					B	A	← REV



REV	DESCRIPTION	ISSUEDBY	DATE	NAME	DATE	SHEET/OF	PBA S0008007_B (PCB S0008008_A)			
				DRAWING	J.M.Garrote	20/07/2006	1/2			
				REVISED	J.Clemente	20/07/2006	1/2			
B	NC 15/0305	Jesús Clemente	29/07/2015							
A	NC 12/376	Jesús Clemente	17/07/2012							
							BOOSTER MODULE CONTROL PBA			



Note:
L3 is named 'L2' in
general SCH for
SHFxxx high voltage
generator series

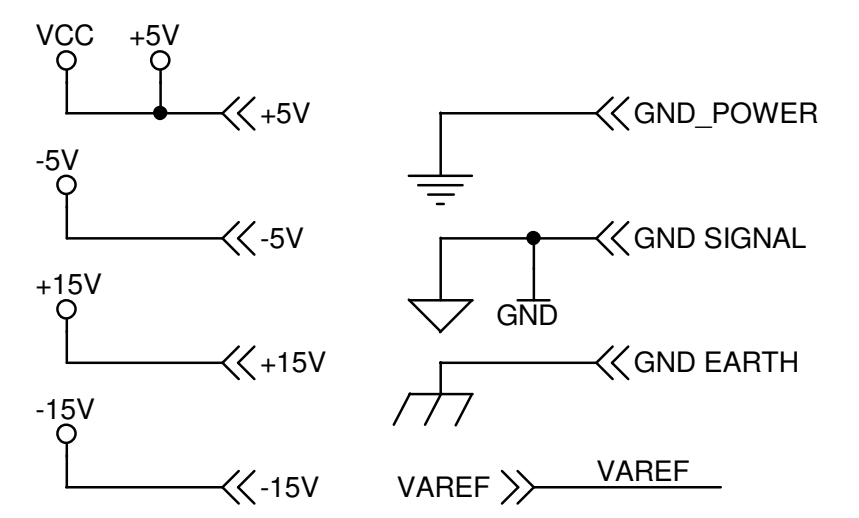
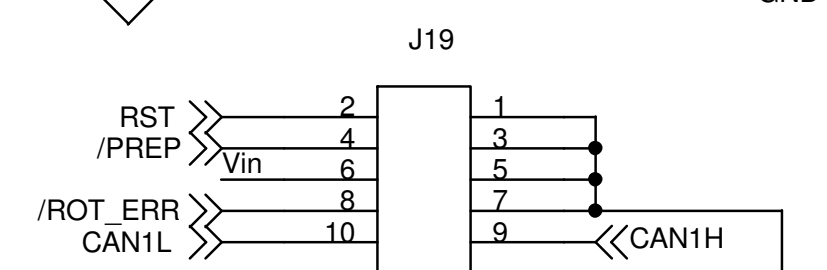
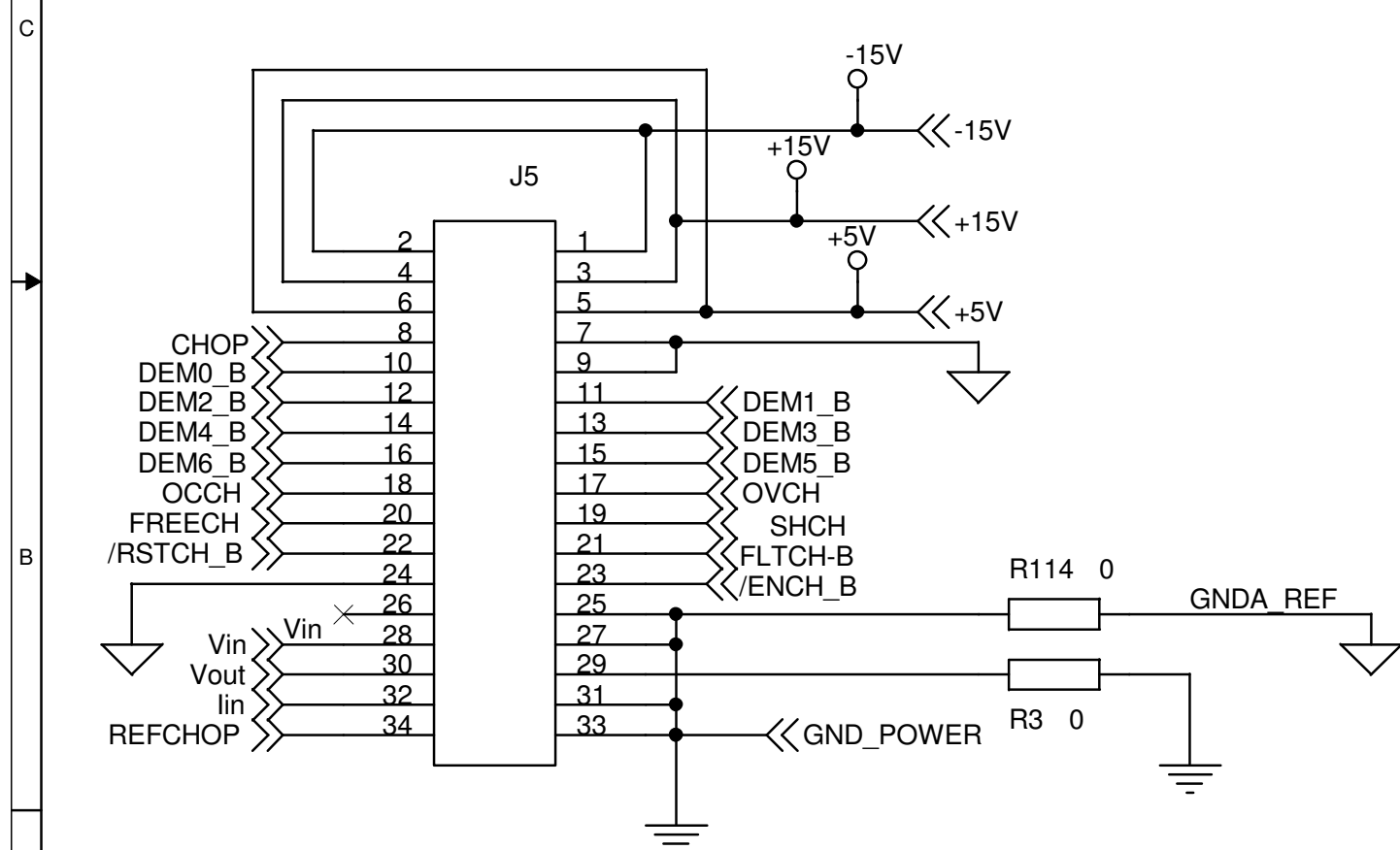
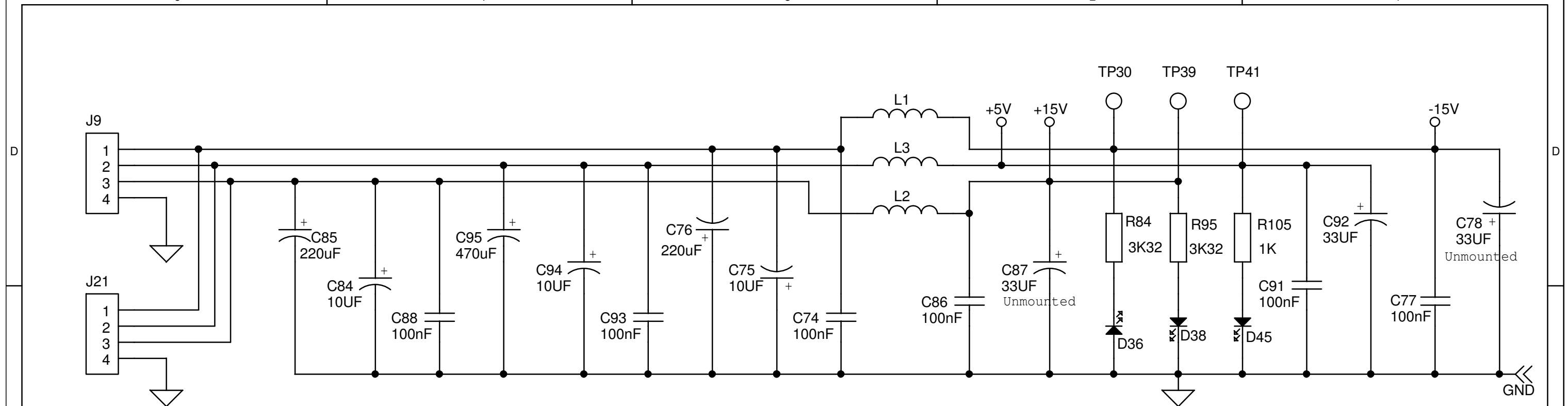


L4	100uH	+Vd	C33	100nF
L6	100uH	+Ve	C34	10uF
L7	100uH	+Va	C37	100nF
L1	100uH	+15V2	C32	10uF
L9	100uH	+Vb	C49	100nF
L10	100uH	-Vb	C50	10uF
L11	100uH	+Vc	C8	10uF
L12	100uH	-Vc	C9	100nF
L2	100uH	-15V2	C53	100nF
L8	100uH	-Va	C54	10uF
L5	100uH	-Vd	C55	100nF
			C56	10uF
			C57	100nF
			C58	10uF
			C59	100nF
			C60	10uF
			C12	100nF
			C11	10uF
			C51	100nF
			C52	10uF
			C36	100nF
			C35	10uF

NAME	DATE	SHEET/OF	PBA S0008007_B (PCB S0008008_A)
DRAWING	20/07/2006	2/2	
REVISED	J.Clemente	20/07/2006	B A ← REV
B	NC 15/0305	Jesus Clemente	29/07/2015
A	NC 12/376	Jesus Clemente	17/07/2012
REV	DESCRIPTION	ISSUEDBY	DATE

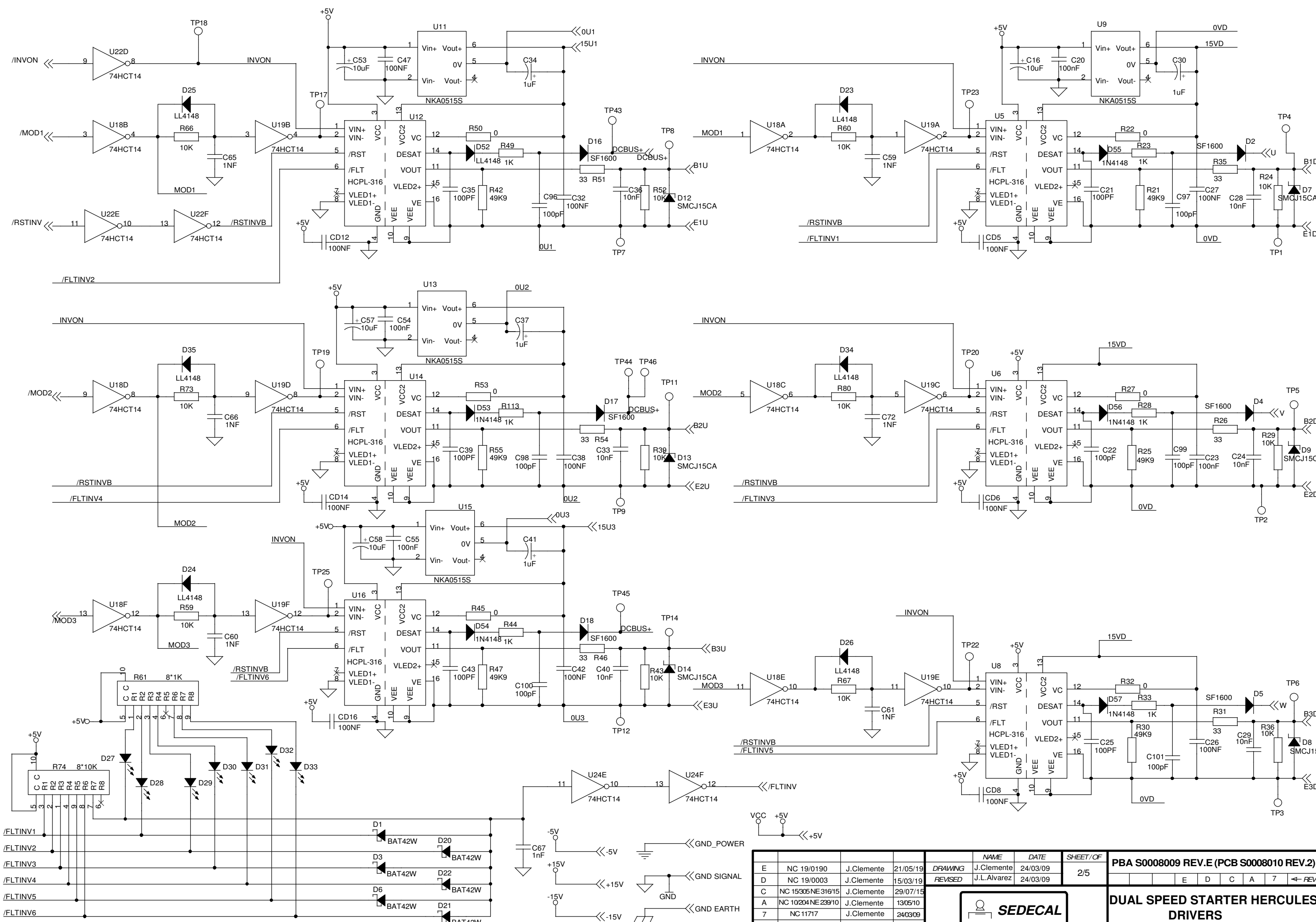


BOOSTER MODULE CONTROL PBA



REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA S0008009 REV.E (PCB S0008010 REV.2)						
E	NC 19/0190	J.Clemente	21/05/19	DRAWING	J.Clemente	24/03/09	1/5						
D	NC 19/0003	J.Clemente	15/03/19	REVISED	J.L.Alvarez	24/03/09							
C	NC 15/305 NE 316/15	J.Clemente	29/07/15										
A	NC 10/204 NE 239/10	J.Clemente	13/05/10										
7	NC 11717	J.Clemente	24/03/09										
REV	DESCRIPTION	ISSUED BY	DATE										

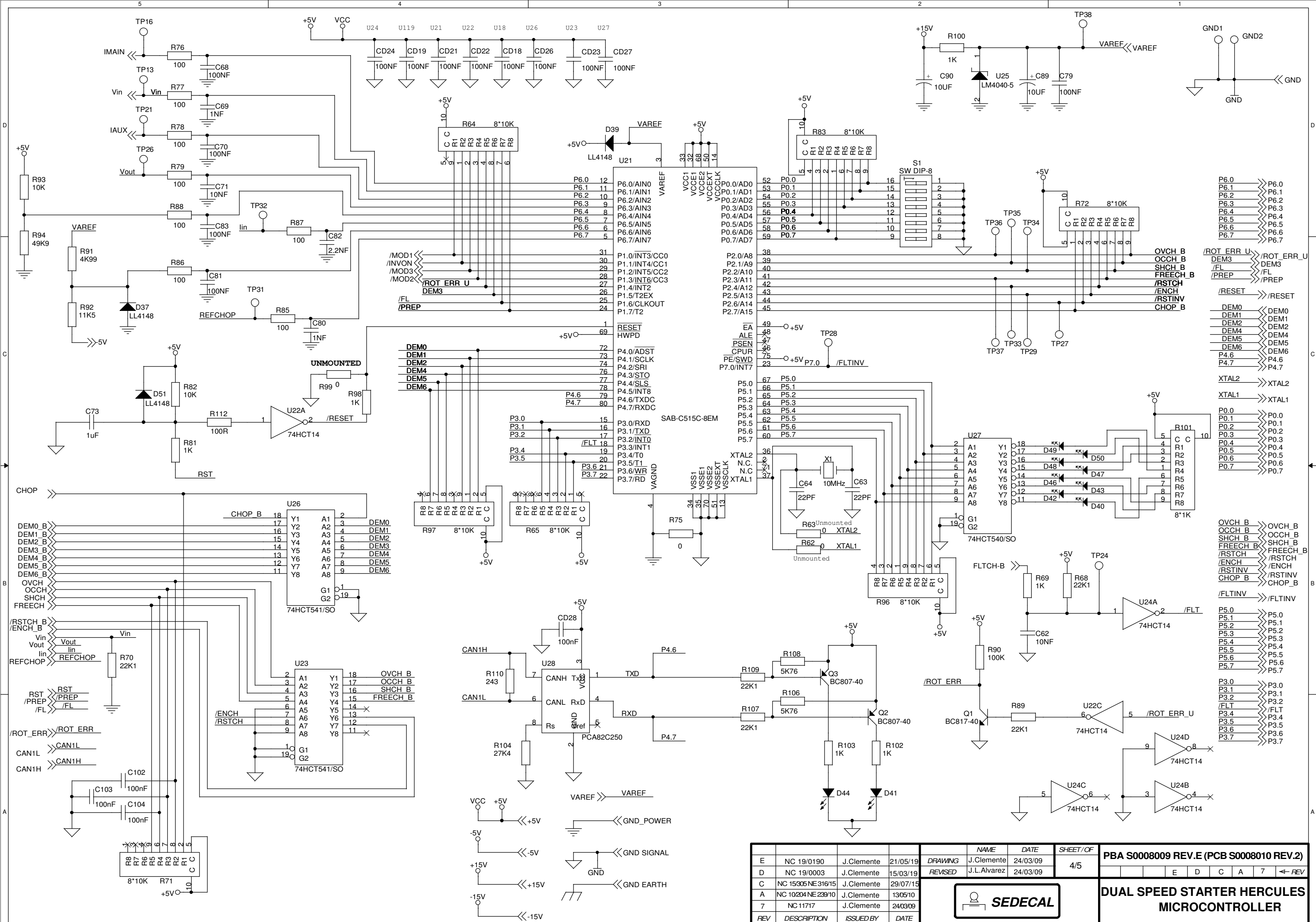
DUAL SPEED STARTER HERCULES CONNECTORS



REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA S0008009 REV.E (PCB S0008010 REV.2)			
E	NC 19/0190	J.Clemente	21/05/19	DRAWING	J.Clemente	24/03/09	E D C A 7 ← REV			
D	NC 19/0003	J.Clemente	15/03/19	REVISED	J.L.Alvarez	24/03/09				
C	NC 15305NE31615	J.Clemente	29/07/15							
A	NC 10204NE23910	J.Clemente	13/05/10							
7	NC 11717	J.Clemente	24/03/09							



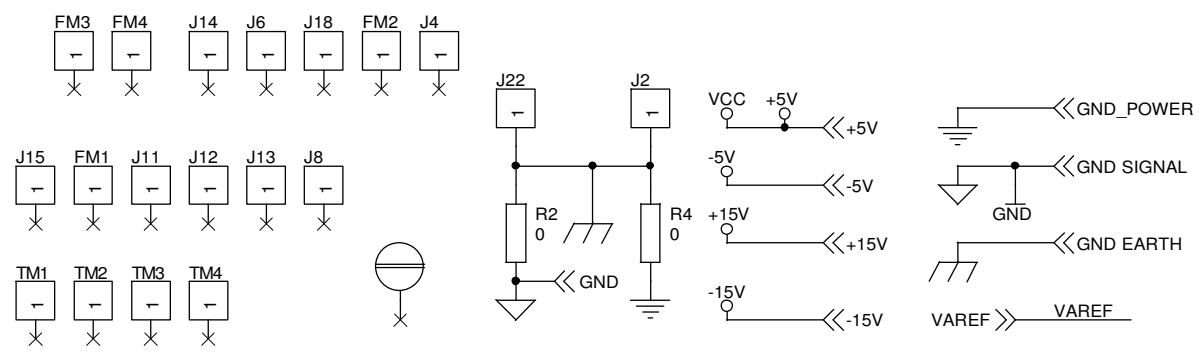
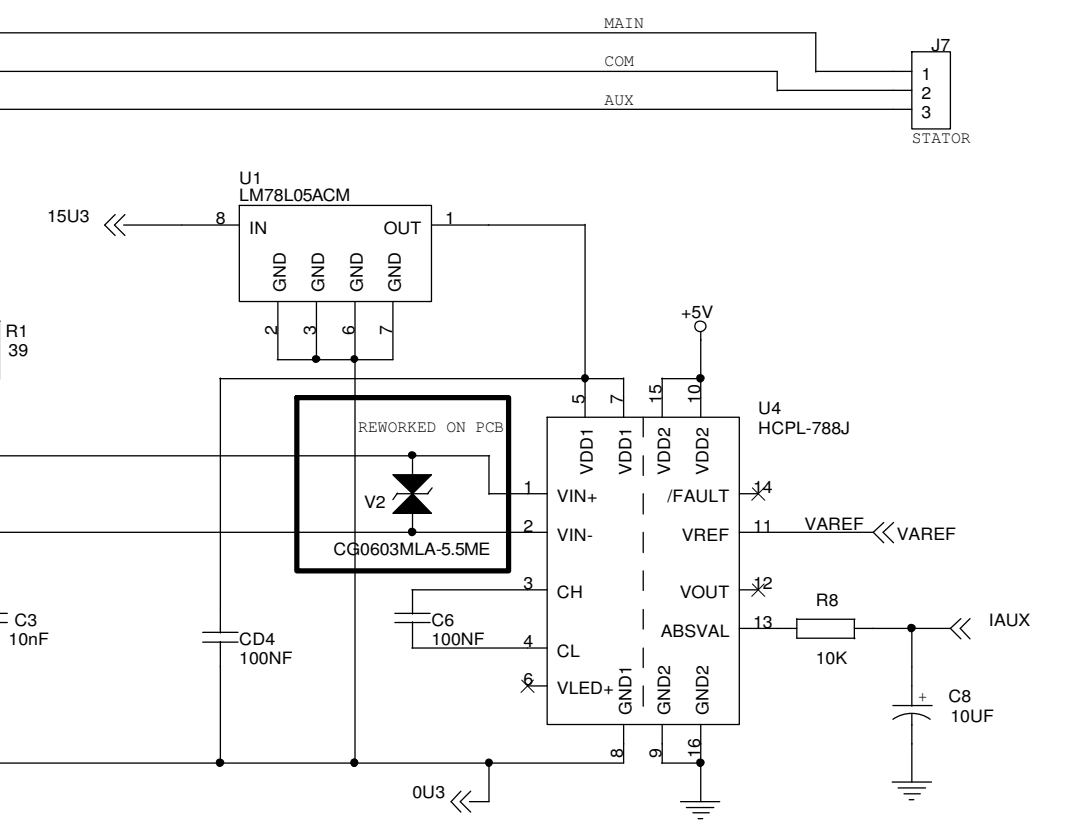
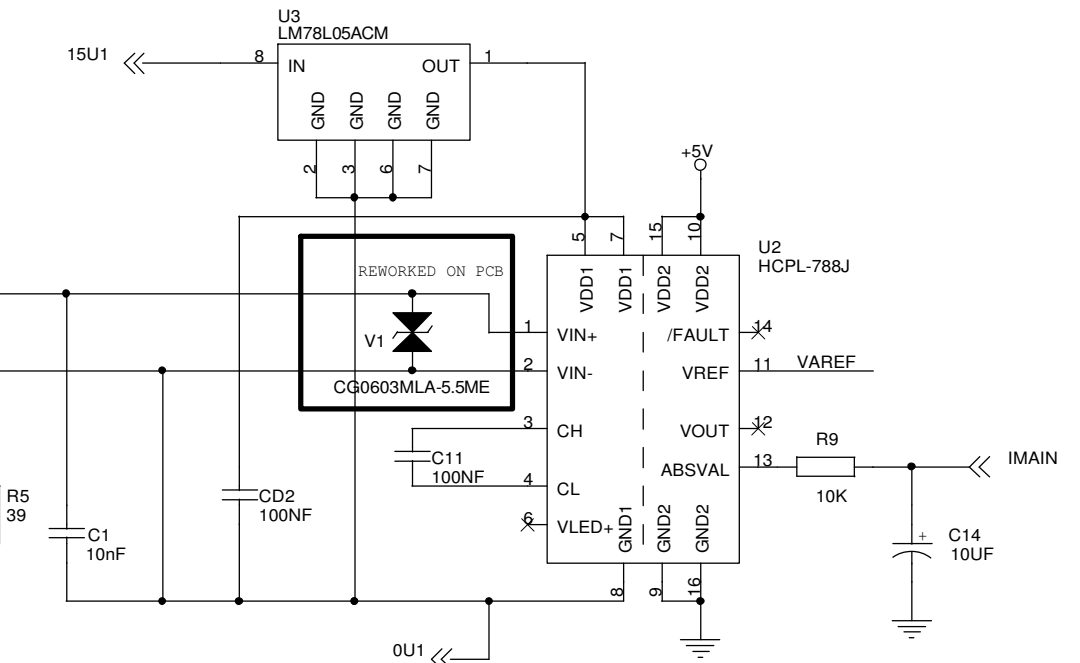
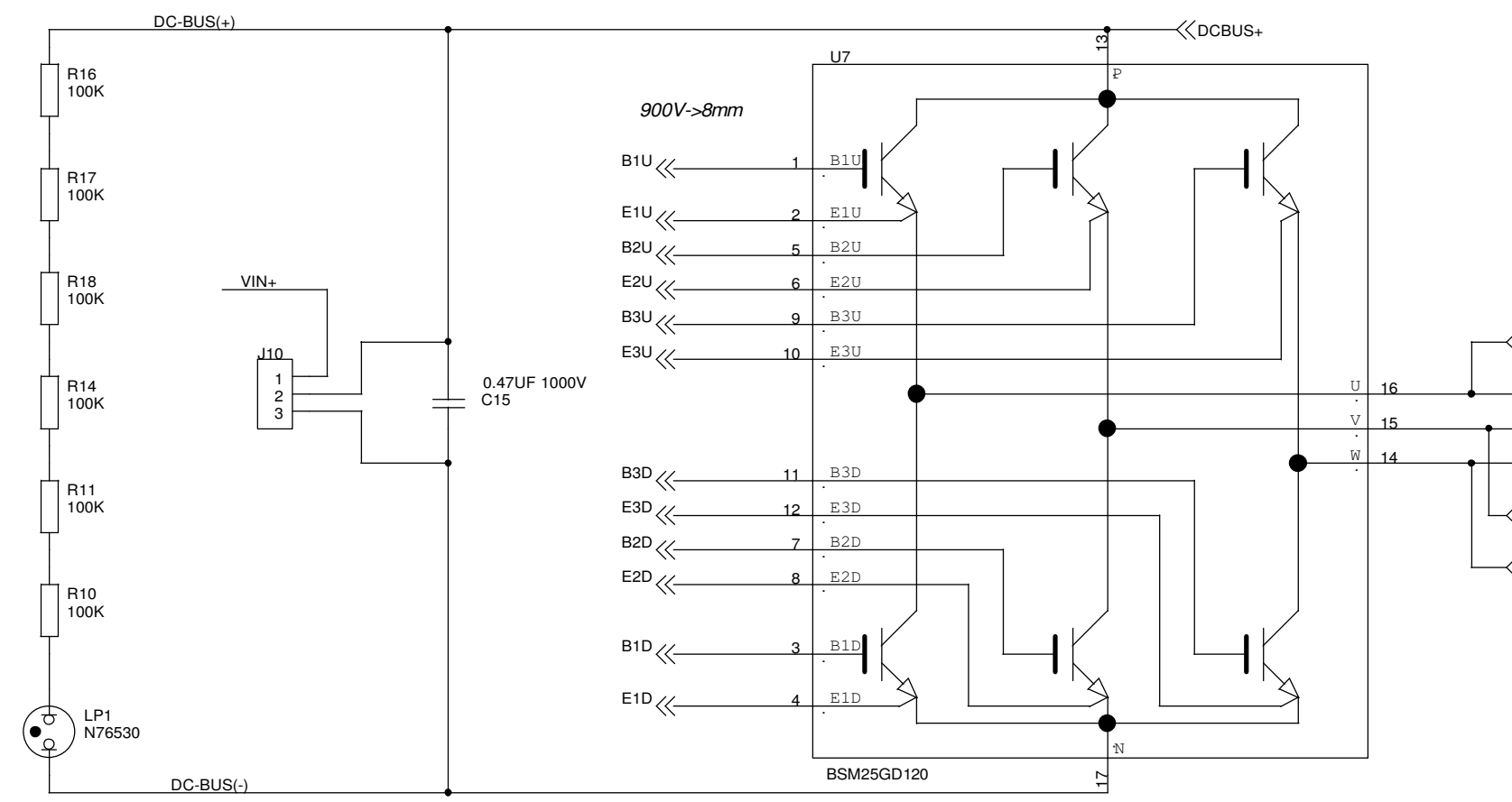
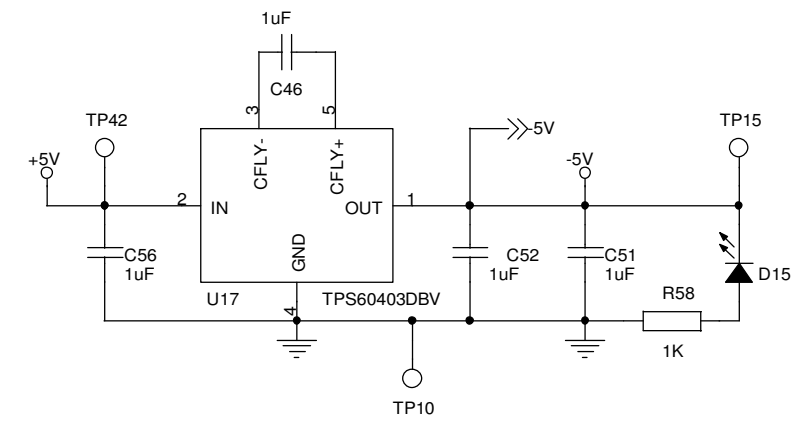
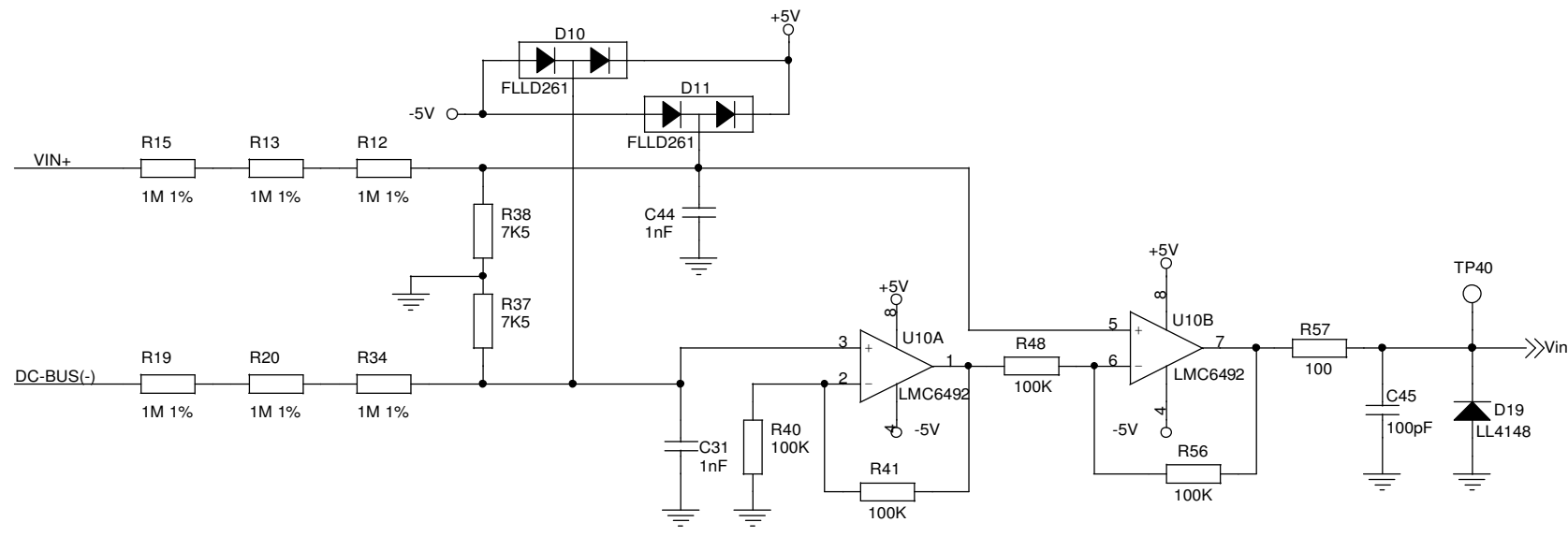
DUAL SPEED STARTER HERCULES DRIVERS



REV	DESCRIPTION	ISSUED BY	DATE	DRAWING	NAME	DATE	SHEET/OF	PBA S0008009 REV.E (PCB S0008010 REV.2)				
E	NC 19/0190	J.Clemente	21/05/19		J.Clemente	24/03/09	4/5					
D	NC 19/0003	J.Clemente	15/03/19	REVISED	J.L.Alvarez	24/03/09						
C	NC 15305 NE316/15	J.Clemente	29/07/15									
A	NC 10204 NE239/10	J.Clemente	13/05/10									
7	NC 11717	J.Clemente	24/03/09									



DUAL SPEED STARTER HERCULES MICROCONTROLLER



REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET/OF	
E	NC 19/0190	J.Clemente	21/05/19	DRAWING	J.Clemente	24/03/09	5/5
D	NC 19/0003	J.Clemente	15/03/19	REVISED	J.L.Alvarez	24/03/09	
C	NC 15305 NE316/15	J.Clemente	29/07/15				
A	NC 10204 NE239/10	J.Clemente	13/05/10				
7	NC 11717	J.Clemente	24/03/09				

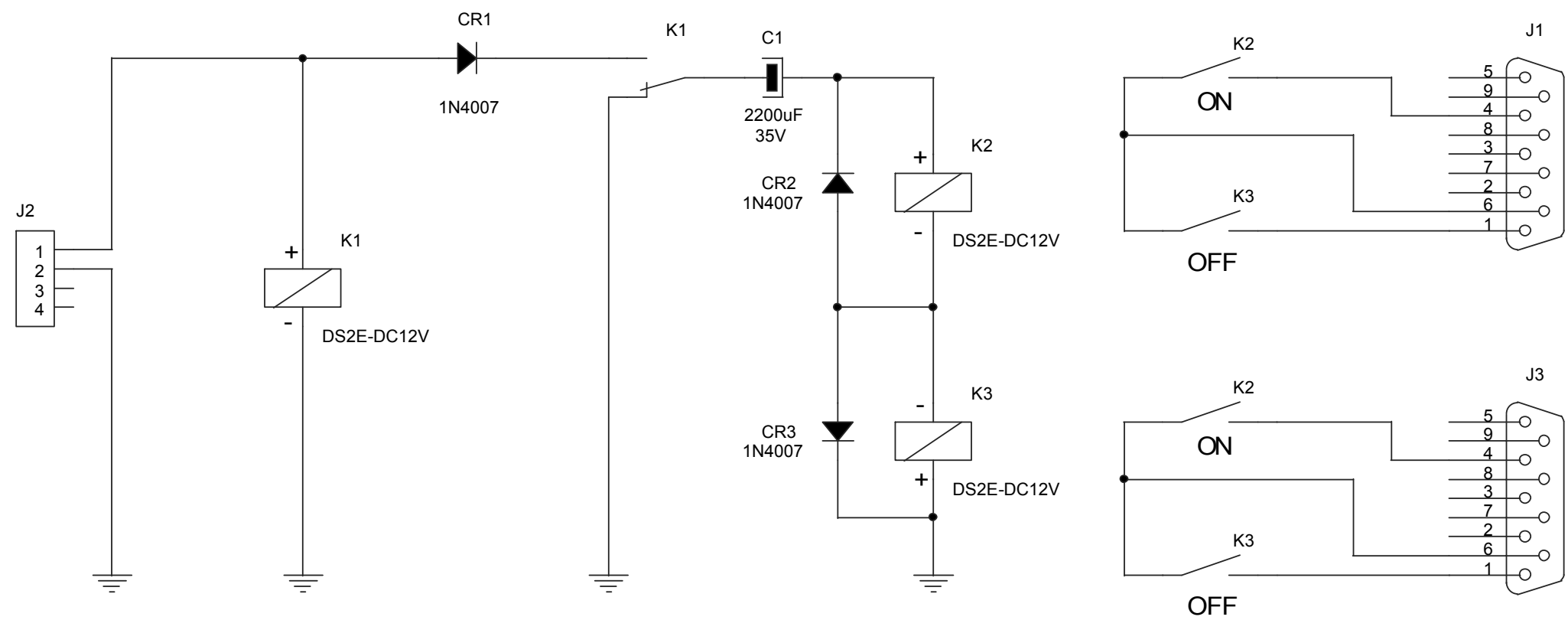
SEDECAL

PBA S0008009 REV.E (PCB S0008010 REV.2)

DUAL SPEED STARTER HERCULES POWER

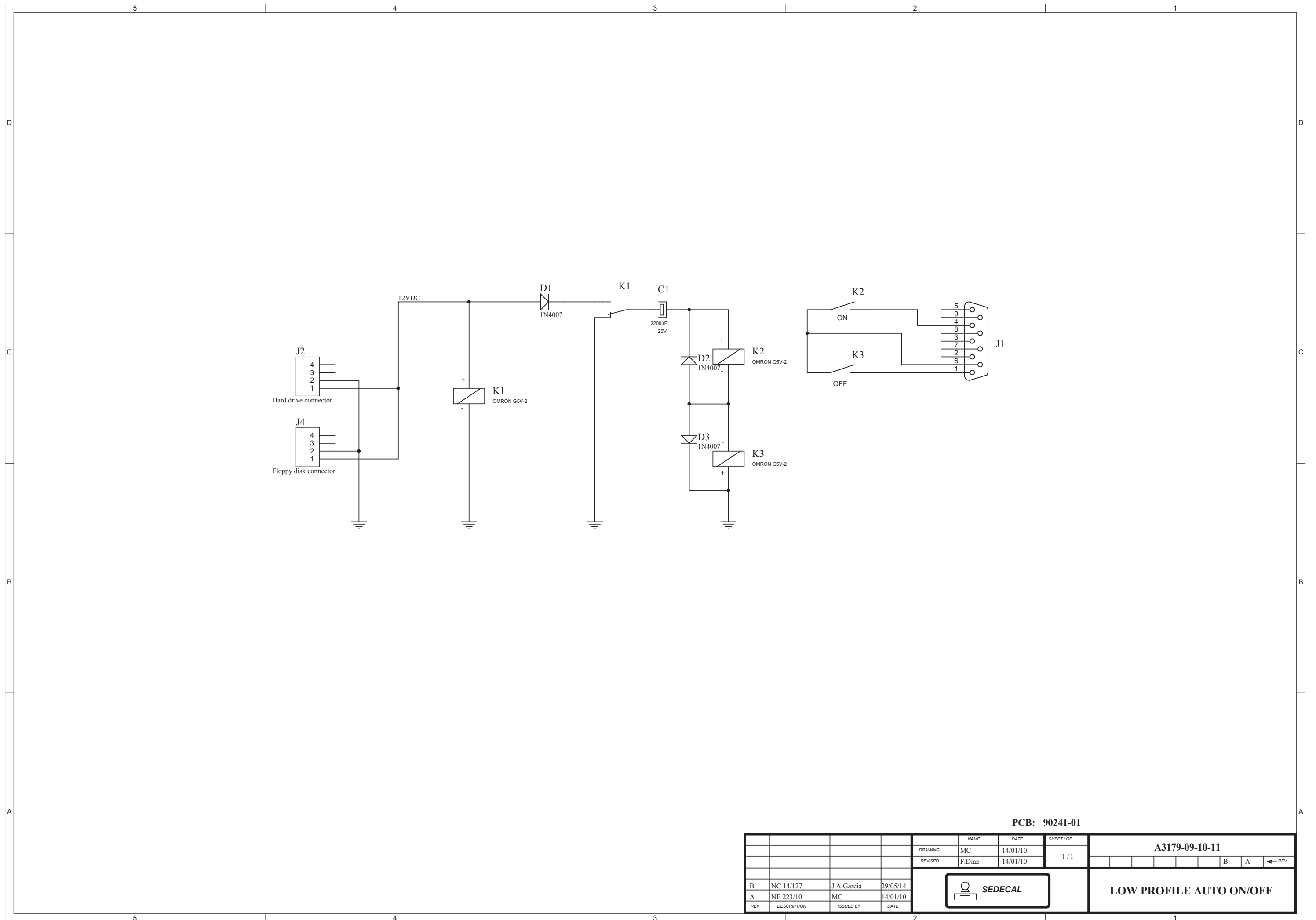
A B C D E

1
2
3
4



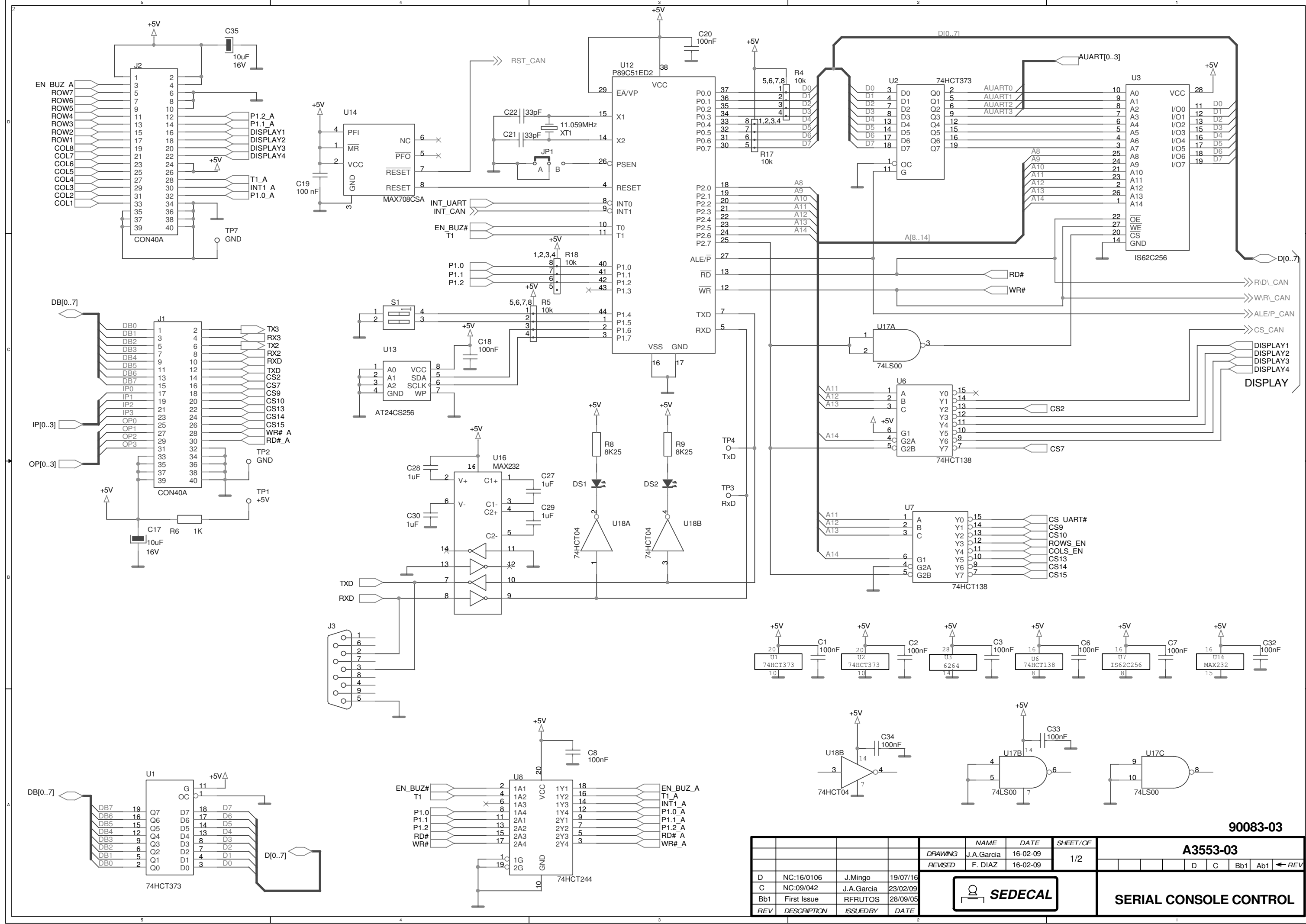
					NAME	DATE	SHEET/OF	A3179-02					
					DRAWING	F. Diaz	14/12/01	1/1					
					REVISED	F. Diaz	14/12/01						← REV
								AUTO ON/OFF					
REV	DESCRIPTION	ISSUEDBY	DATE										

A B C D E



PCB: 90241-01

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	A3179-09-10-11				
B	NC 14/127	J.A.Garcia	29/05/14	MC	14/01/10	1 / 1					
A	NE 223/10	MC	14/01/10	REVISED	F.Diaz	14/01/10					
							LOW PROFILE AUTO ON/OFF				

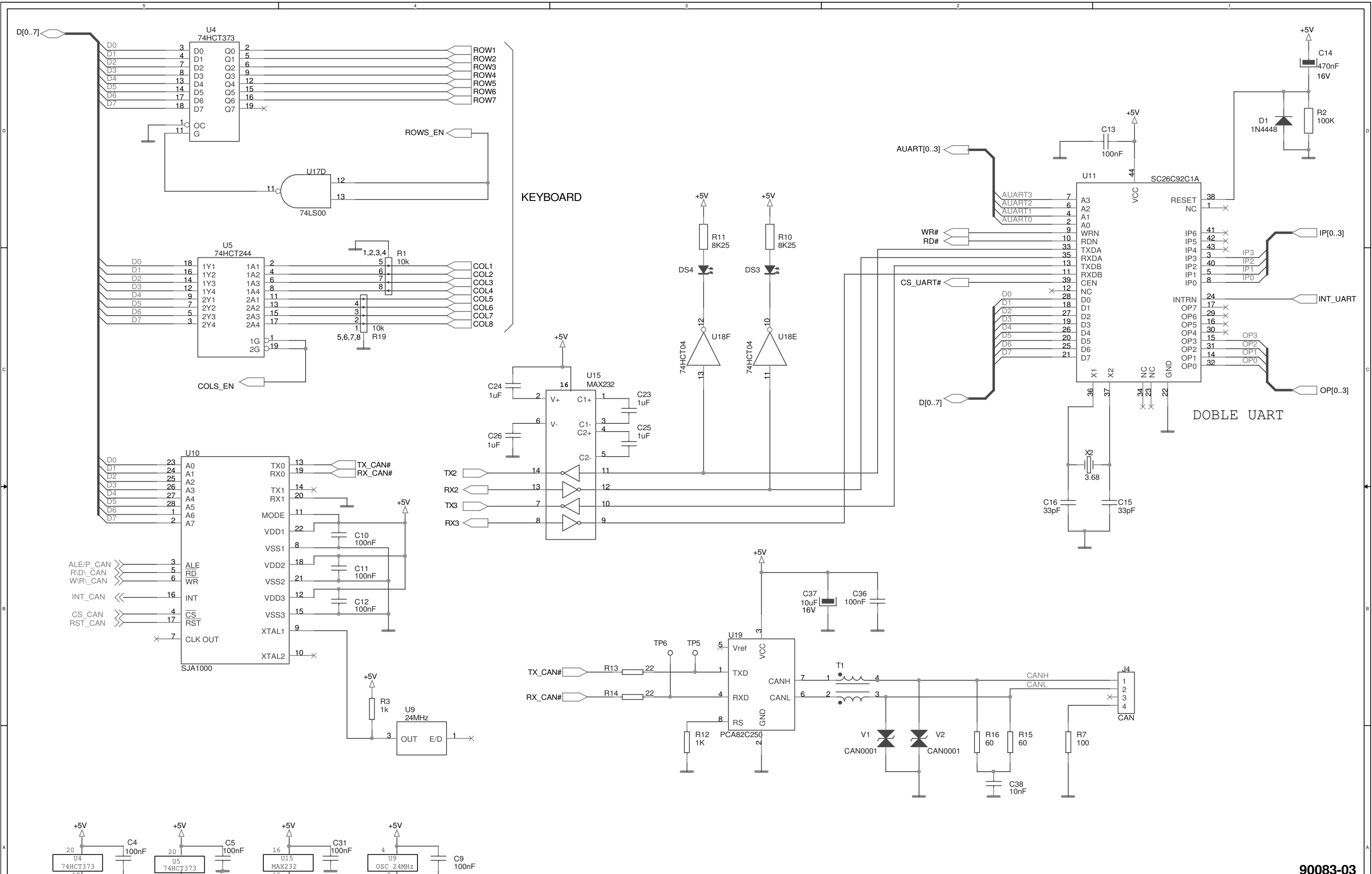


90083-03

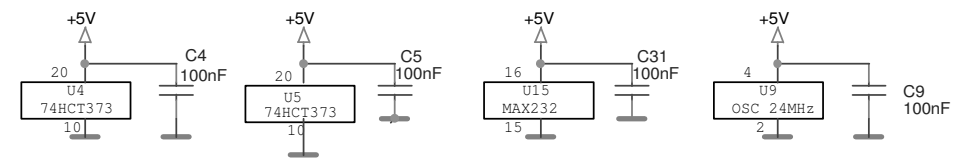
				NAME	DATE	SHEET/OF	A3553-03			
				DRAWING	J.A.Garcia	16-02-09	1/2			
				REVISED	F. DIAZ	16-02-09				
D	NC:16/0106	J.Mingo	19/07/16							
C	NC:09/042	J.A.Garcia	23/02/09							
Bb1	First Issue	RFRUTOS	28/09/05							
REV	DESCRIPTION	ISSUEDBY	DATE							



SERIAL CONSOLE CONTROL



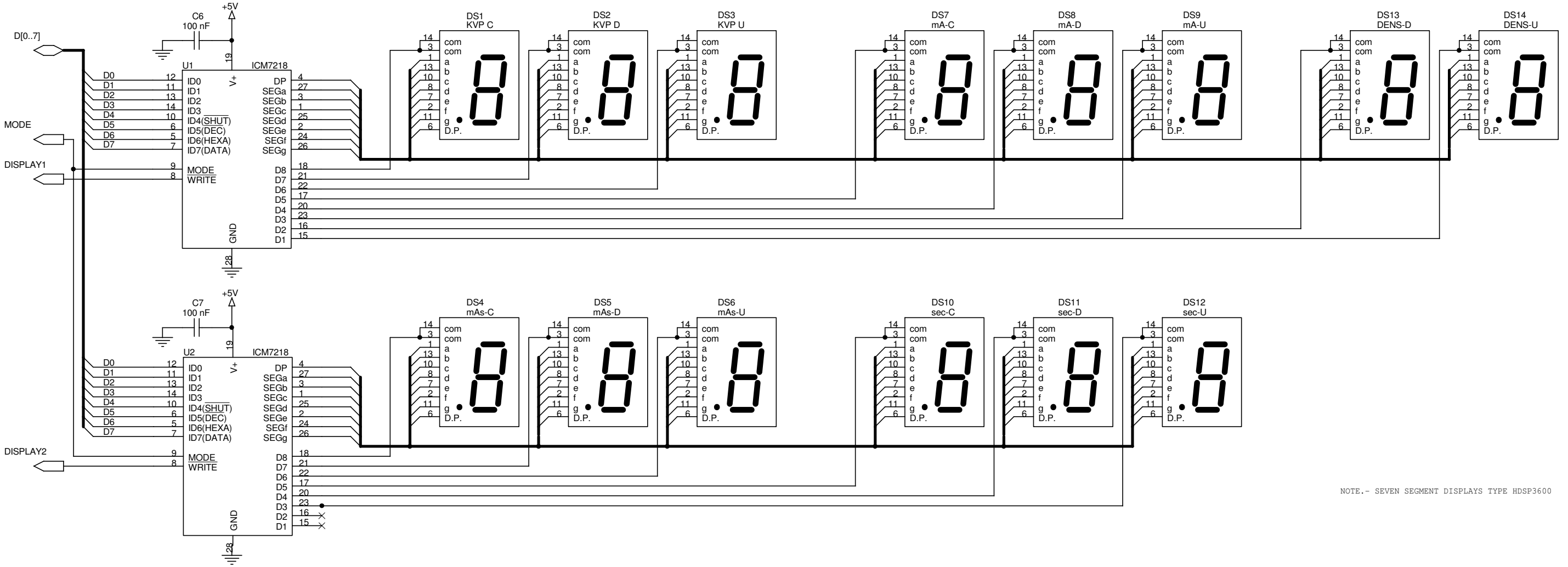
90083-03



				NAME	DATE	SHEET/OF	A3553-03						
				DRAWING	J.A.Garcia	16-02-09	2/2						
				REVISED	F. DIAZ	16-02-09			D	C	Bb1	Ab1	← REV
D	NC:16/0106	J.Mingo	19/07/16										
C	NC:09/042	J.A.Garcia	23/02/09										
Bb1	First Issue	RFRUTOS	28/09/05										
REV	DESCRIPTION	ISSUEDBY	DATE										



SERIAL CONSOLE CONTROL



NOTE.- SEVEN SEGMENT DISPLAYS TYPE HDSP3600

				NAME	DATE	SHEET / OF	A3585-01	
				DRAWING	E. Ojeda	11/11/03	1/3	
				REVISED	A. DIAZ	11/11/03		A ← REV
A	NC 11/226	J.A.Garcia	05/07/11			VI CONSOLE DISPLAY		
REV	DESCRIPTION	ISSUED BY	DATE					

5

4

3

2

1

D

D

C

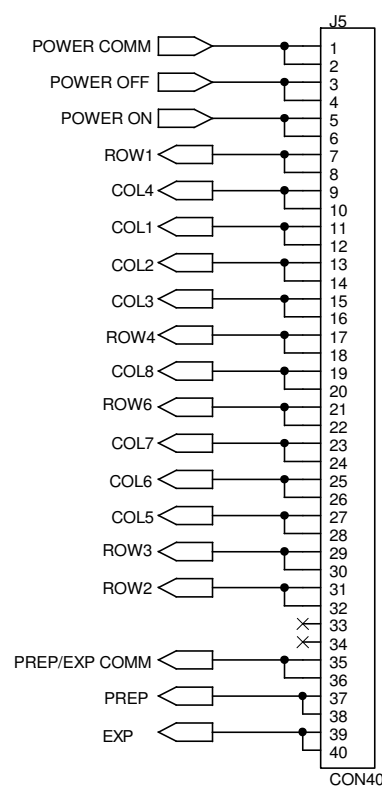
C

B

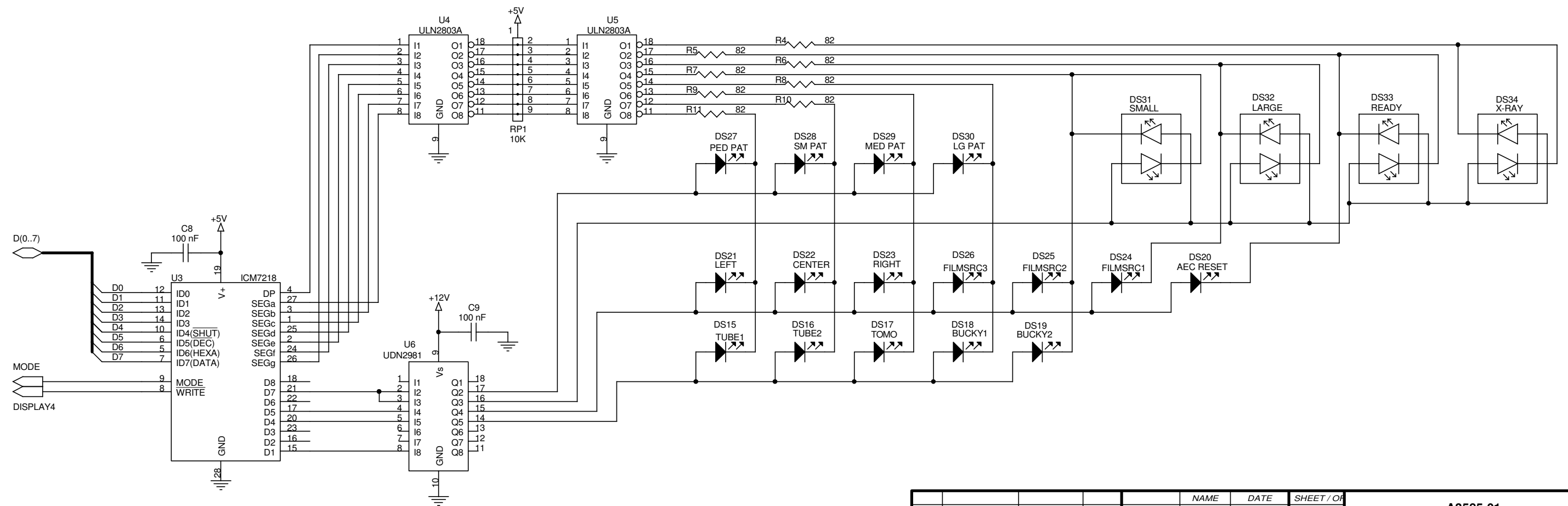
B

A

A

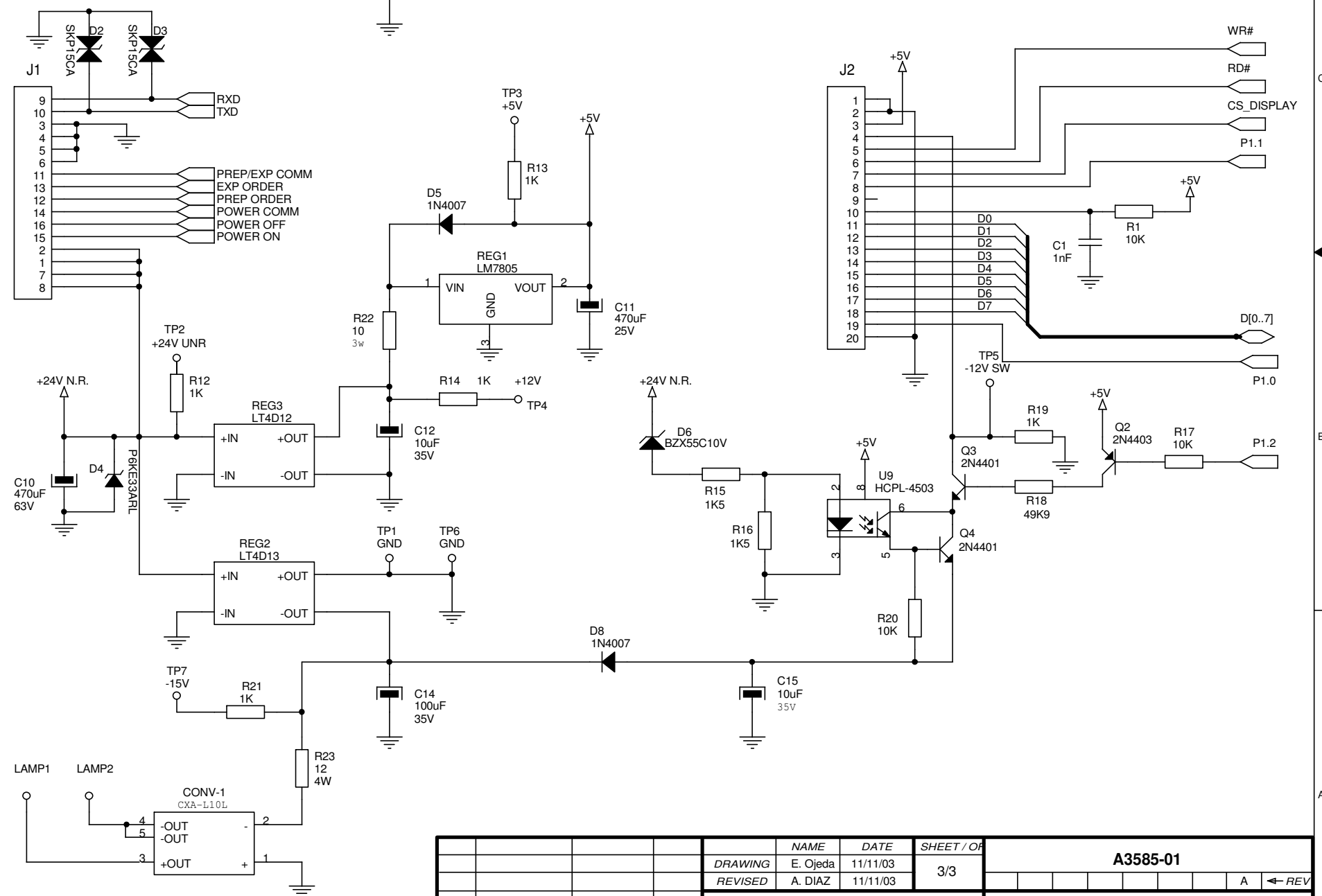
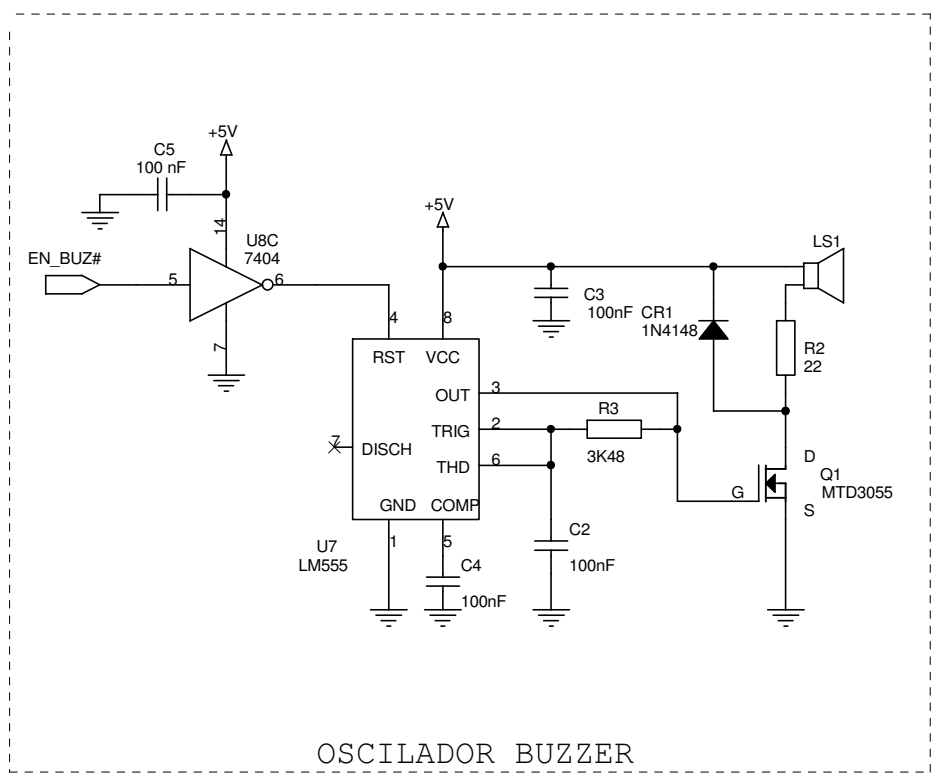
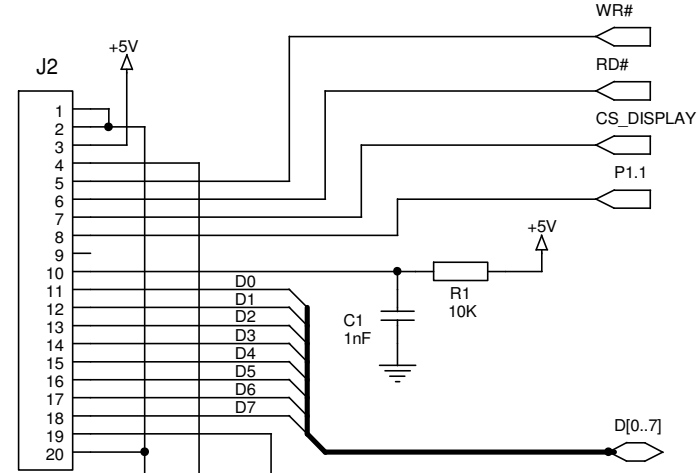
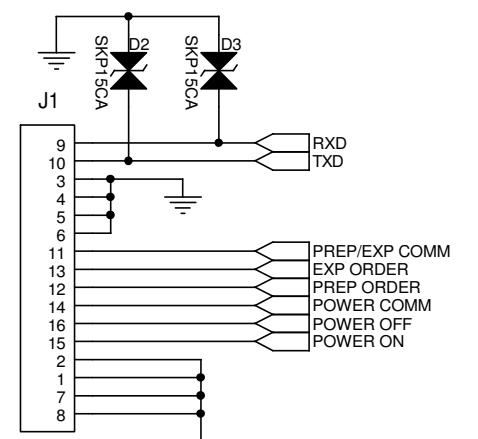
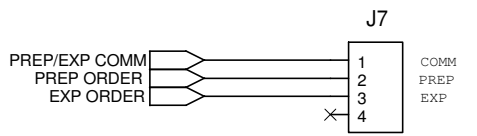
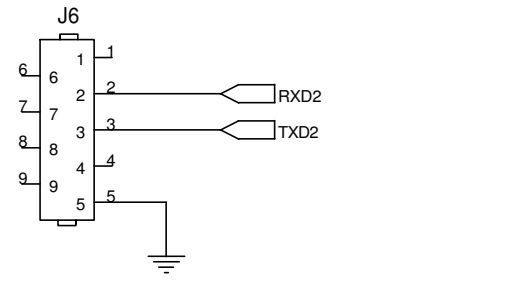
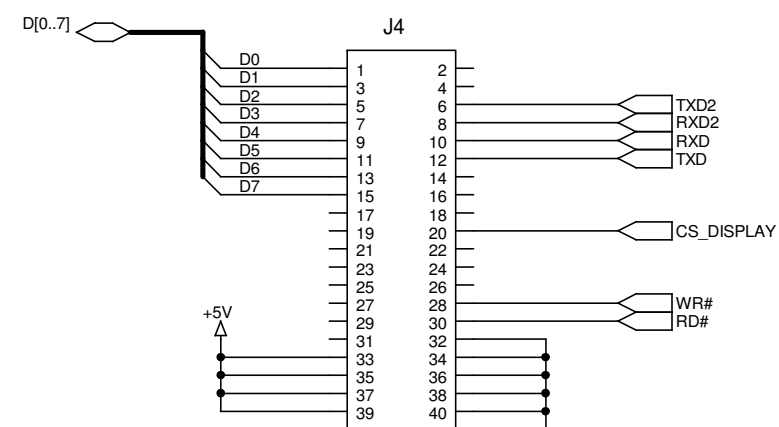
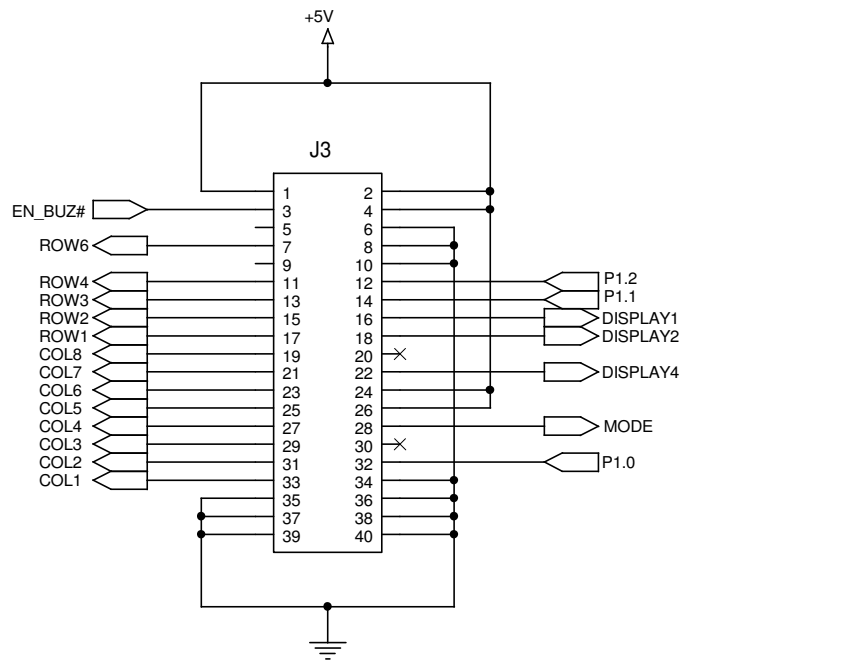


Conector OVERLAY

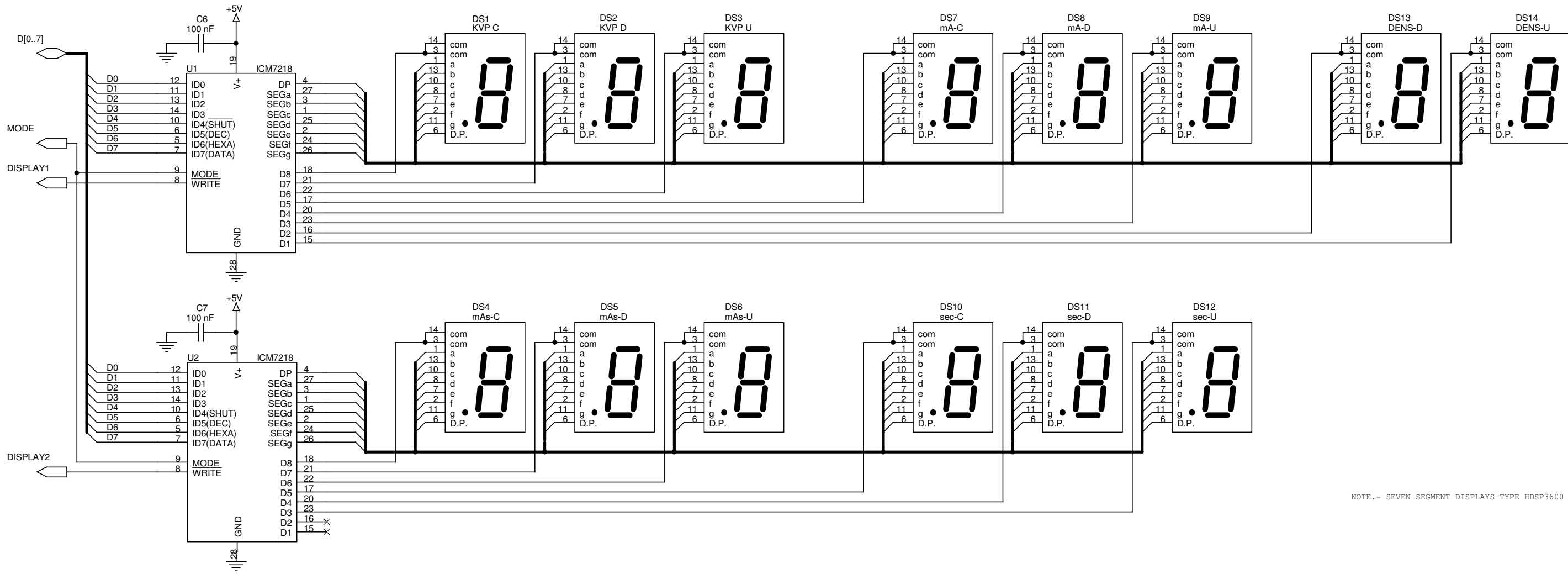


NOTE 1.- ALL LED's HLMP-0400 UNLESS SPECIFIED
 NOTE 2.- ALL DIODES 1N4148 UNLESS SPECIFIED

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	A3585-01	
				DRAWING	E. Ojeda	11/11/03	2/3	
				REVISED	A. DIAZ	11/11/03		
A	NC 11/226	J.A.Garcia	05/07/11	SEDECAL		VI CONSOLE DISPLAY		
REV								

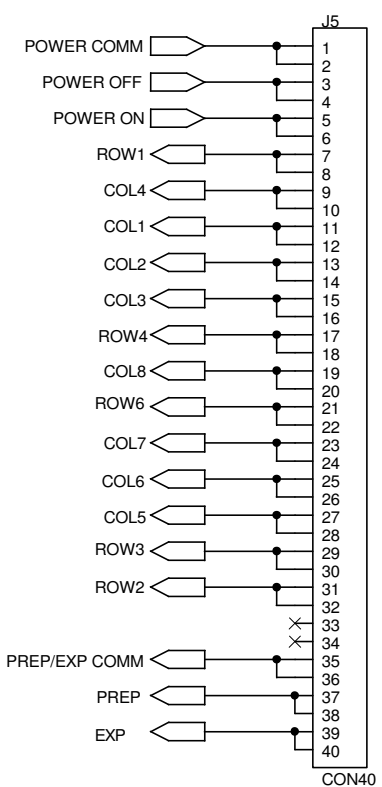


				NAME	DATE	SHEET / OF	A3585-01			
				DRAWING	E. Ojeda	11/11/03	3/3			
				REVISED	A. DIAZ	11/11/03				
A	NC 11/226	J.A.Garcia	05/07/11							VI CONSOLE DISPLAY
REV	DESCRIPTION	ISSUED BY	DATE							A ← REV

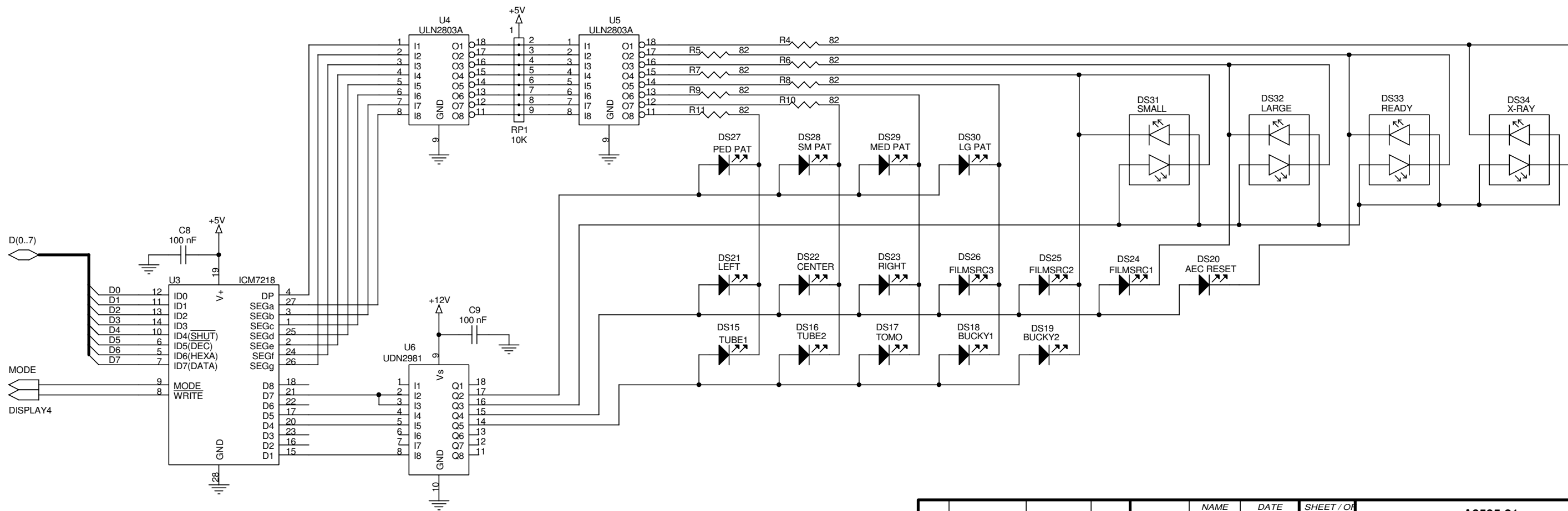


NOTE.- SEVEN SEGMENT DISPLAYS TYPE HDSP3600

				NAME	DATE	SHEET / OF	A3585-21			
				DRAWING	E.OJEDA	11/11/03	1/3			
				REVISED	A.DIAZ	11/11/03		B	A	← REV
B	NC:17/0032	J.A.Garcia	04/05/18				CONSOLE DISPLAY			
A	NC: 12/210	J.A.Garcia	25/05/12							
REV	DESCRIPTION	ISSUED BY	DATE							

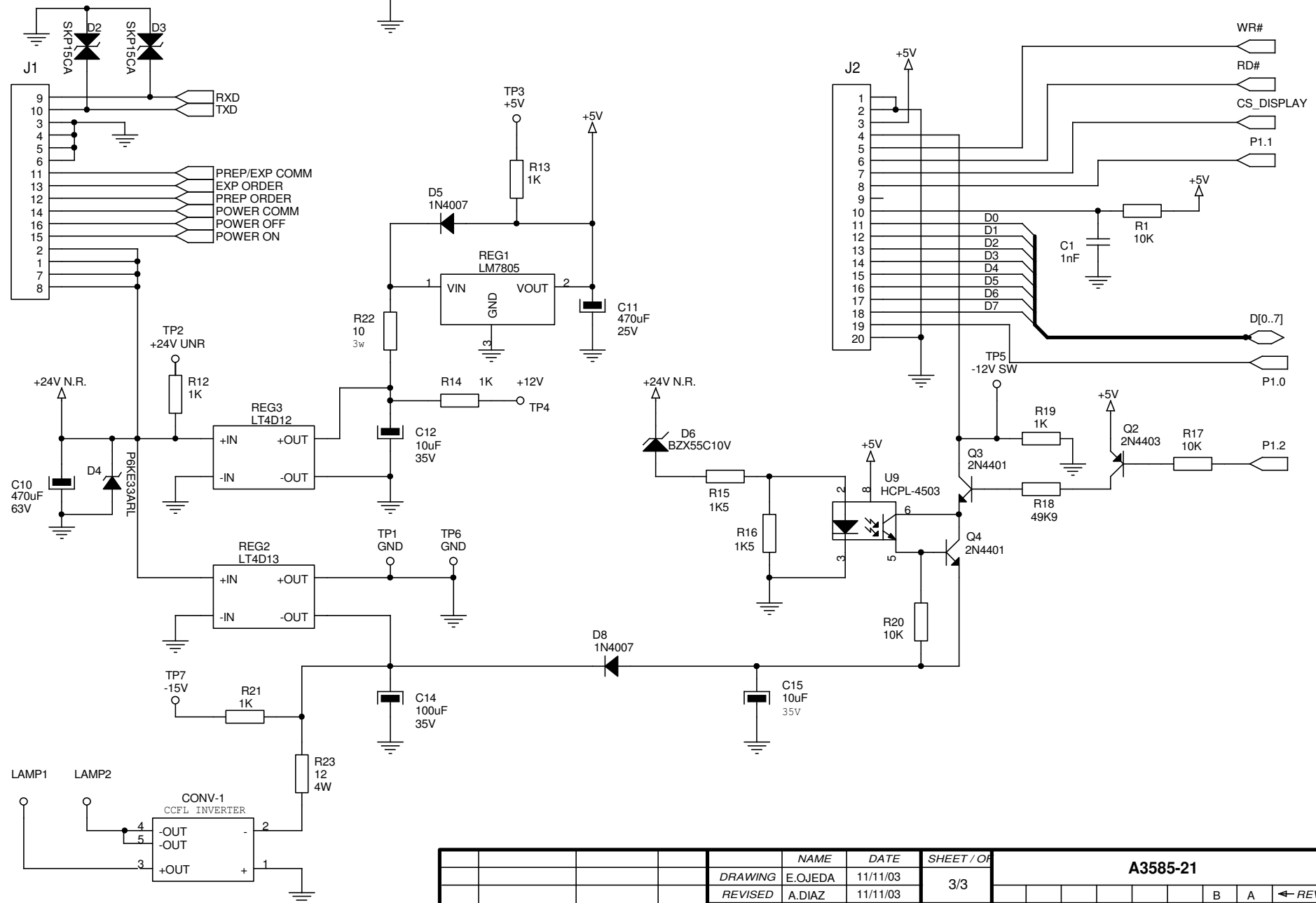
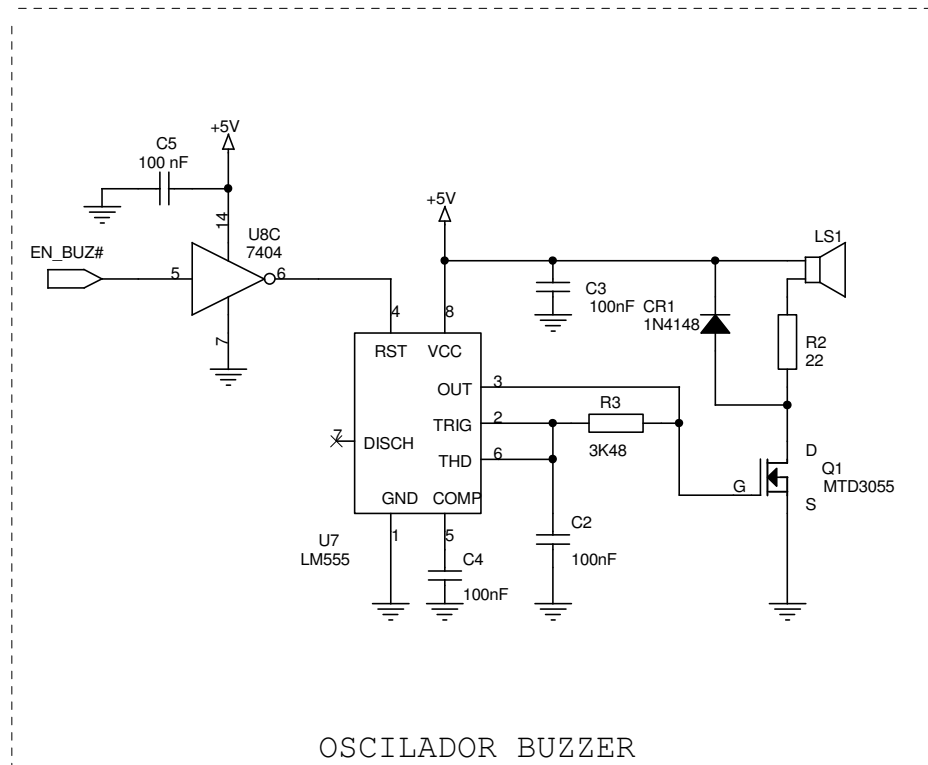
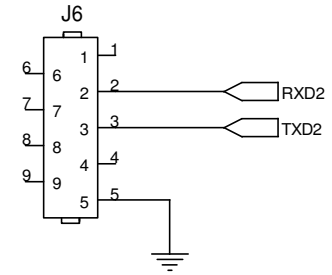
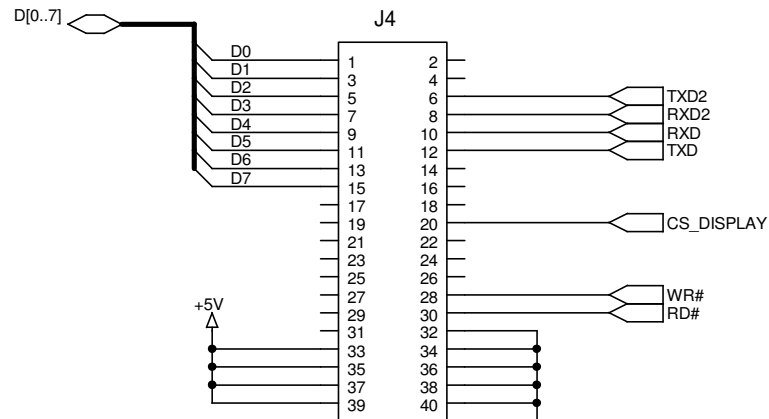
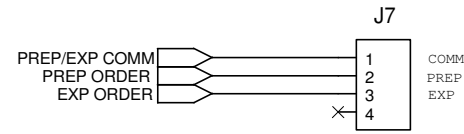
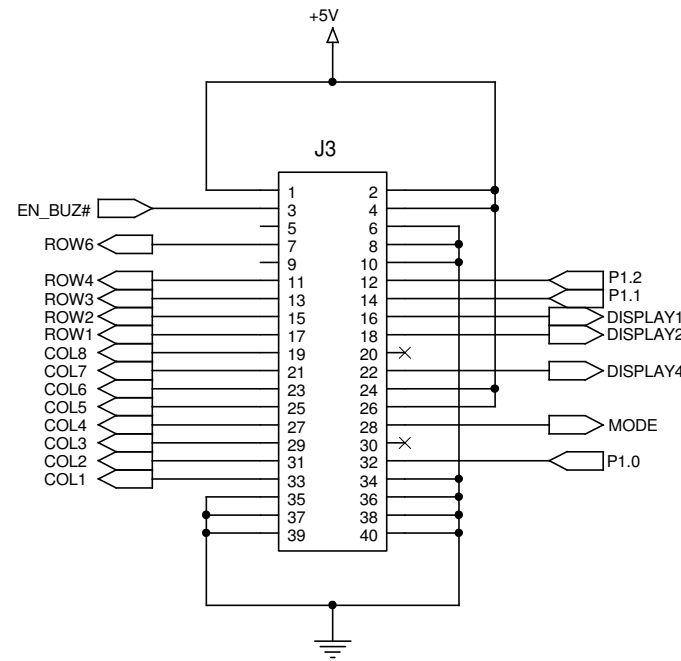


Conector OVERLAY

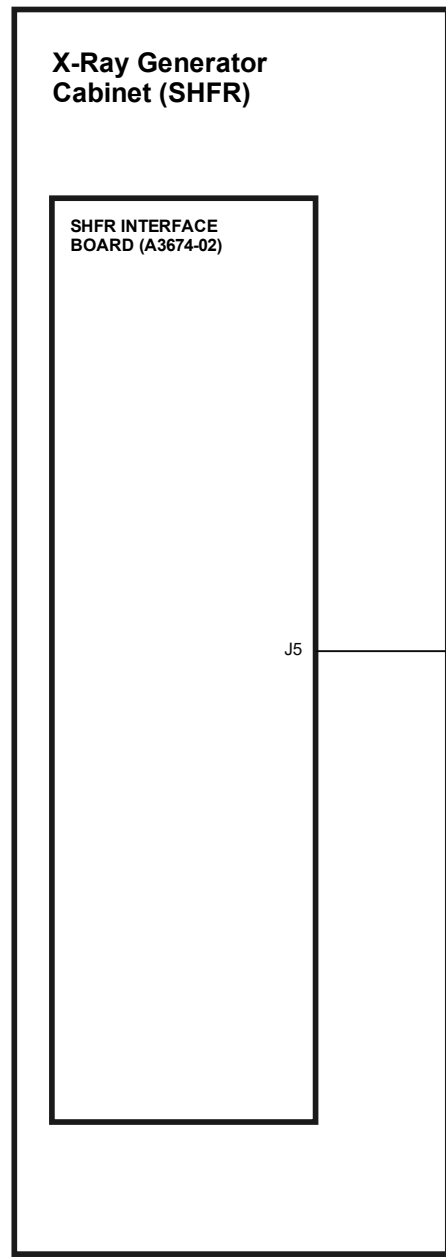


NOTE 1.- ALL LED'S HLMP-0400 UNLESS SPECIFIED
 NOTE 2.- ALL DIODES 1N4148 UNLESS SPECIFIED

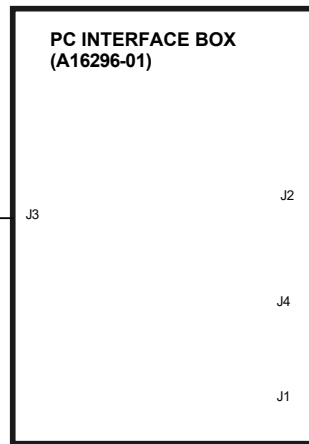
		NAME		DATE		SHEET / OF		A3585-21			
		DRAWING		E.OJEDA		11/11/03		2/3			
		REVISED		A.DIAZ		11/11/03				← REV	
B	NC:17/0032	J.A.Garcia	04/05/18			CONSOLE DISPLAY					
A	NC: 12/210	J.A.Garcia	25/05/12								
REV	DESCRIPTION	ISSUED BY	DATE								



REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	A3585-21				
				DRAWING	E.OJEDA	11/11/03	3/3				
				REVISED	A.DIAZ	11/11/03					
B	NC:17/0032	J.A.Garcia	04/05/18	SEDECAL							
A	NC: 12/210	J.A.Garcia	25/05/12								
							CONSOLE DISPLAY				



Interface Box Cable (A3352-01)



Handswitch (A6805-16)

Interface Box-Computer Cable (A21089-XX)

Handswitch

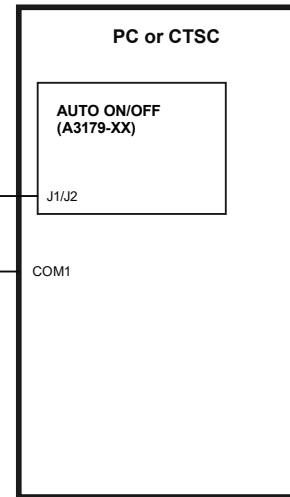
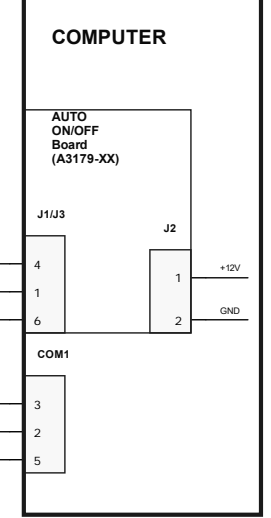
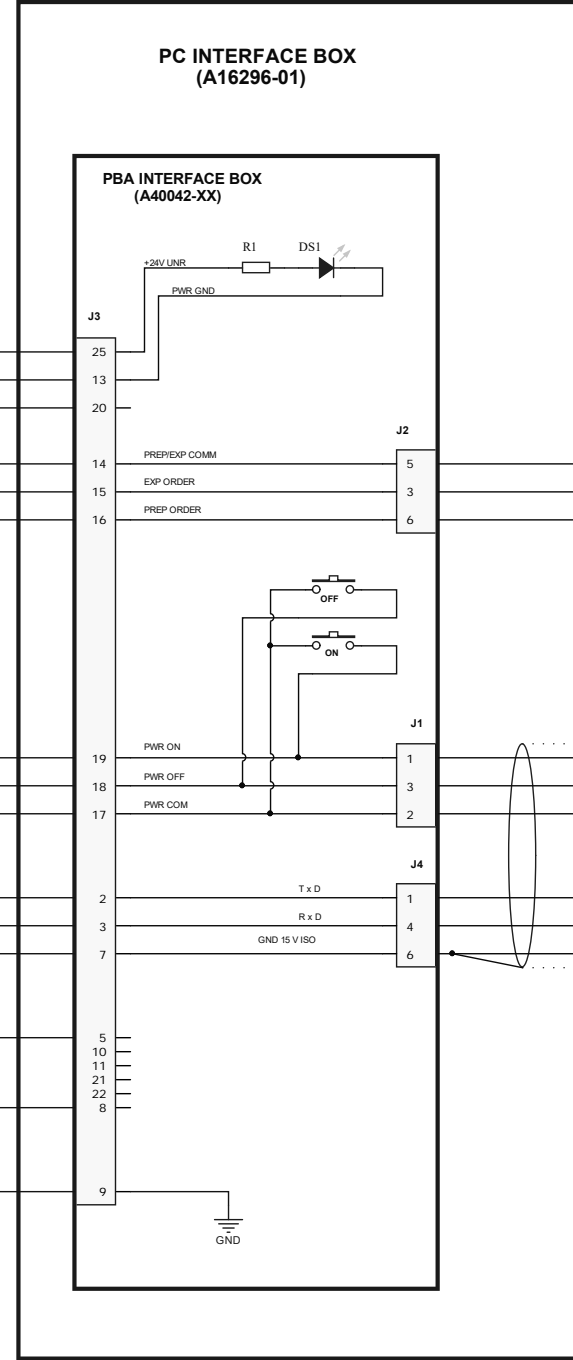
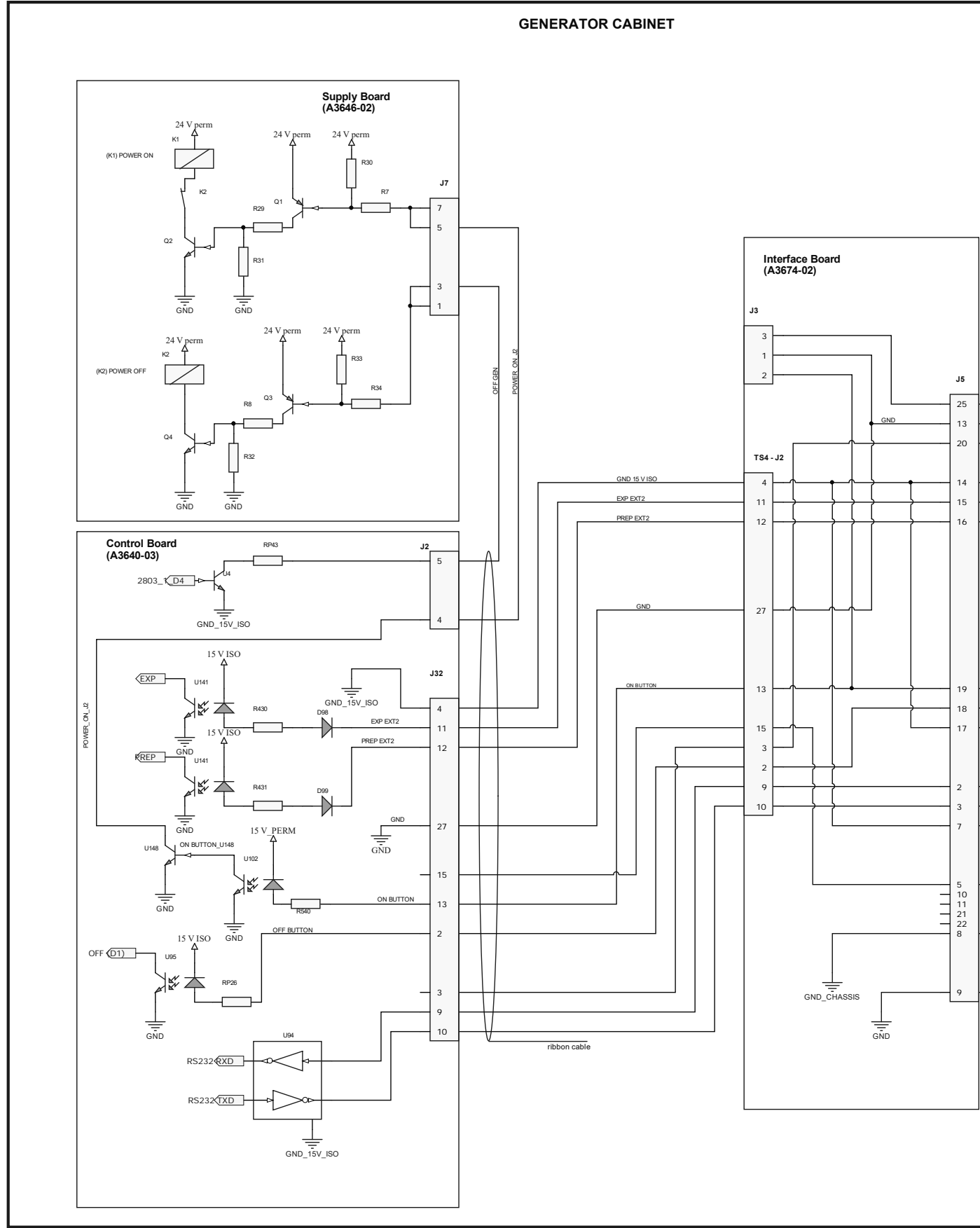


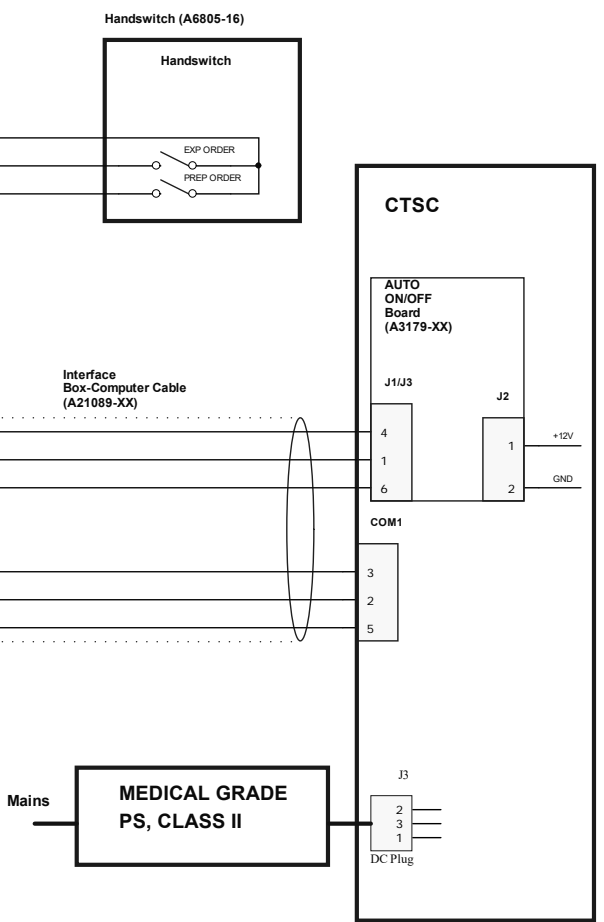
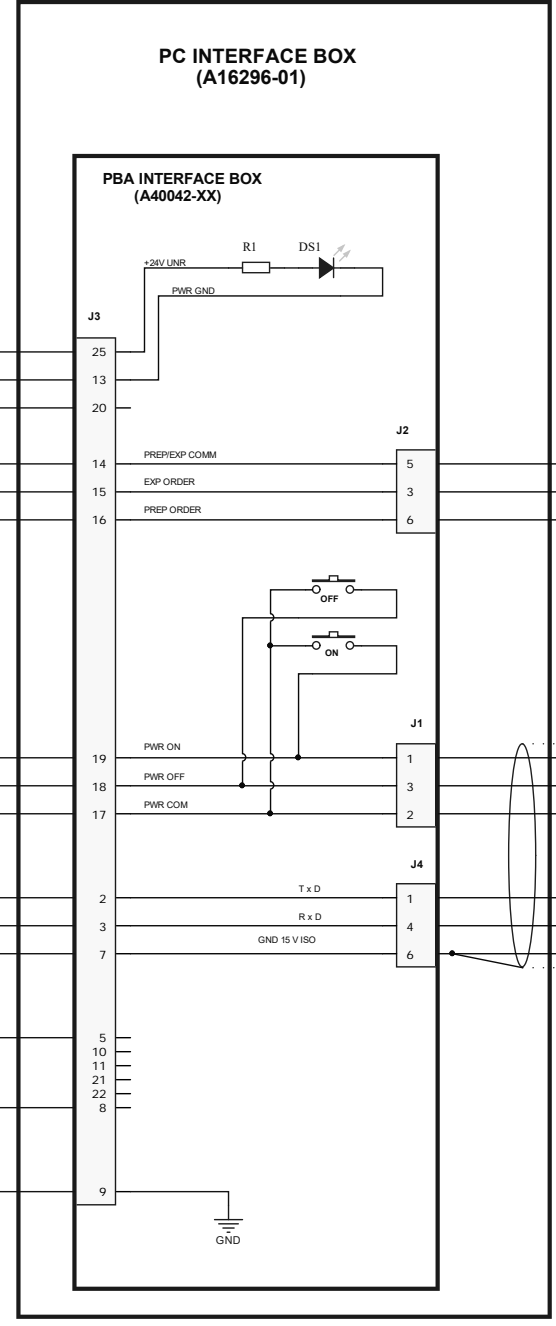
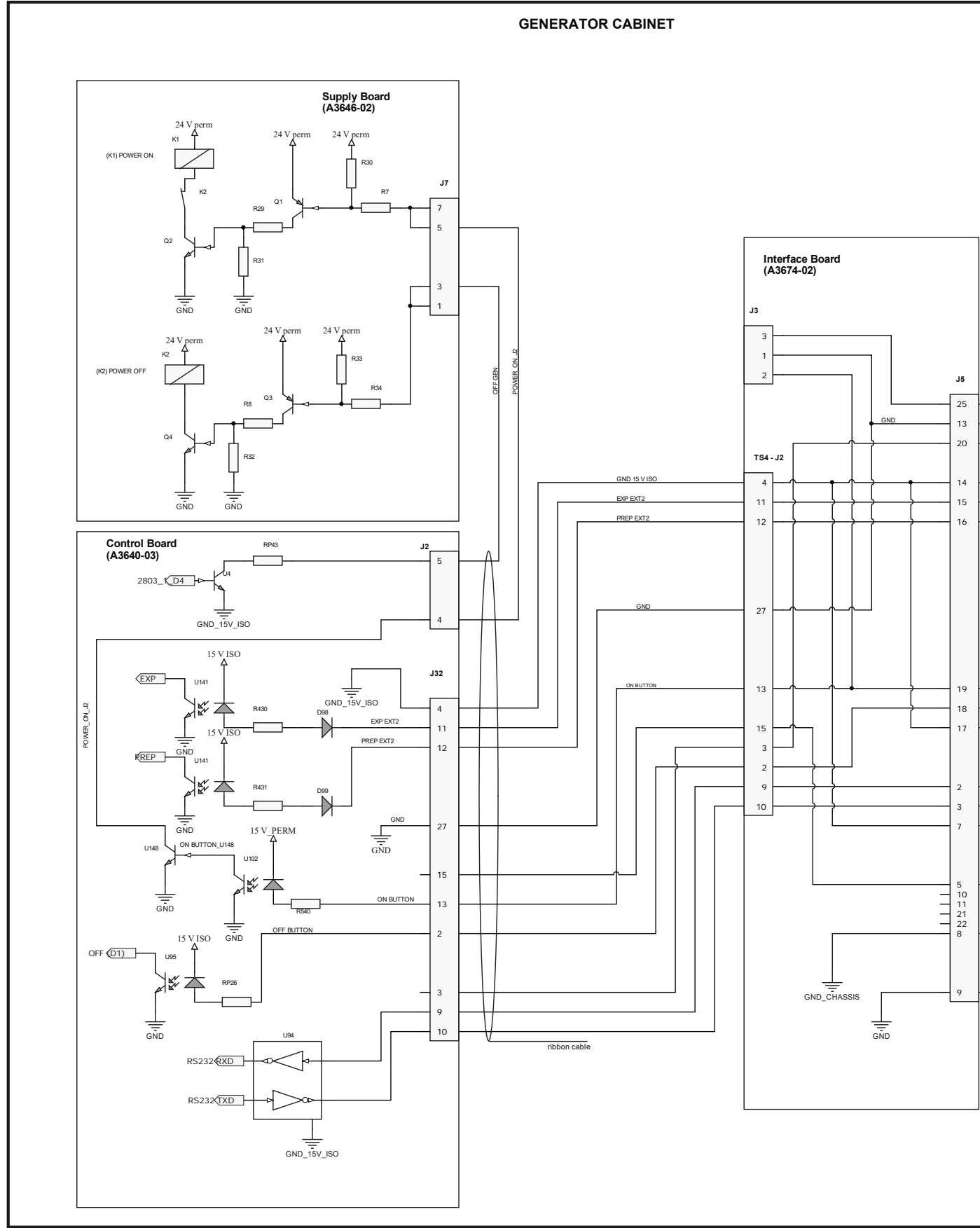
DIAGRAM INTERCONNECTION

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA:	PCB:
B	NC 19/0029	M.González	2019-08-27	M.González	2013-09-30	1 / 3		
A	Frist release	M.González	2013-09-30	Sonia Perez	2013-09-30			B A ← REV
								6005003 DI
								PC-CTSC - ON-OFF BOX - SHFR



WIRING INTERCONNECTION

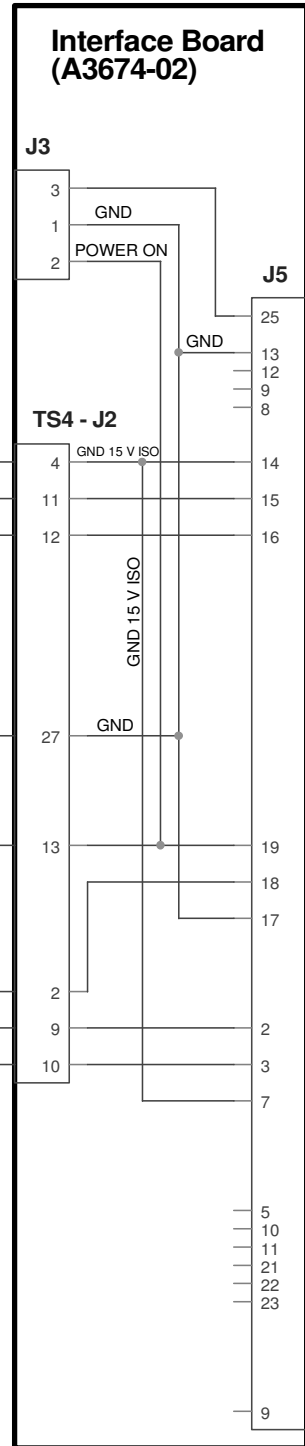
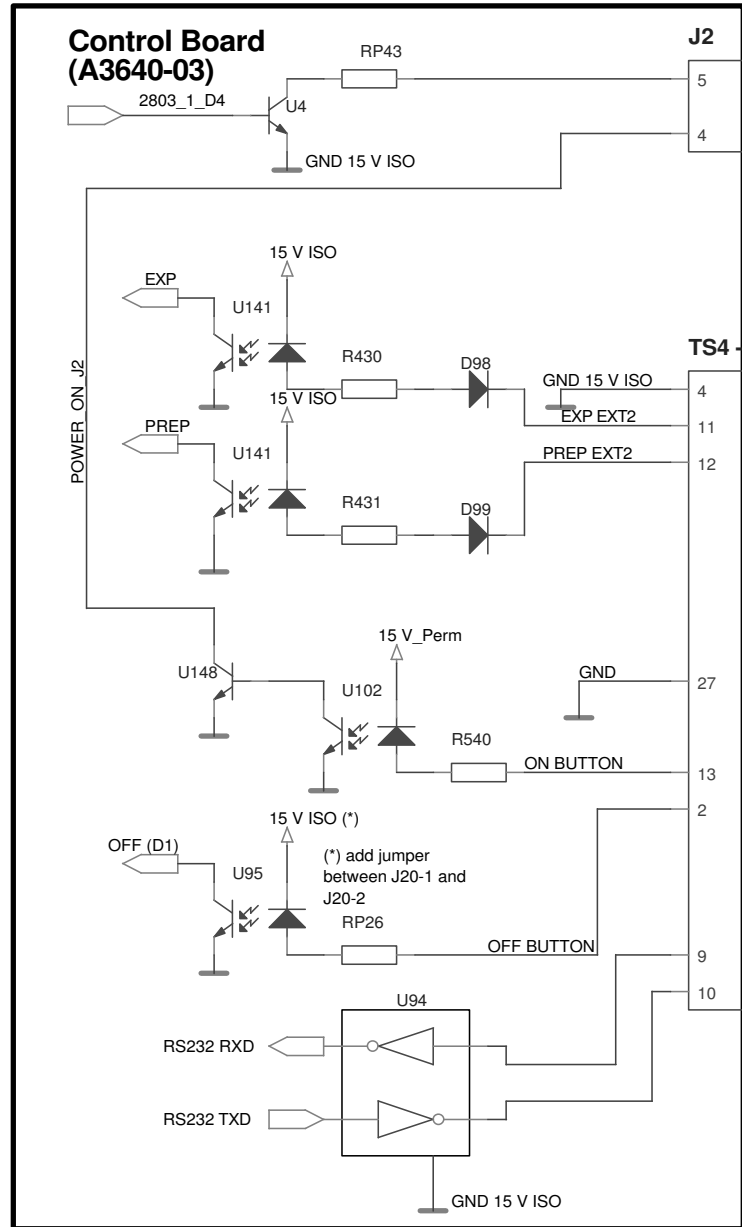
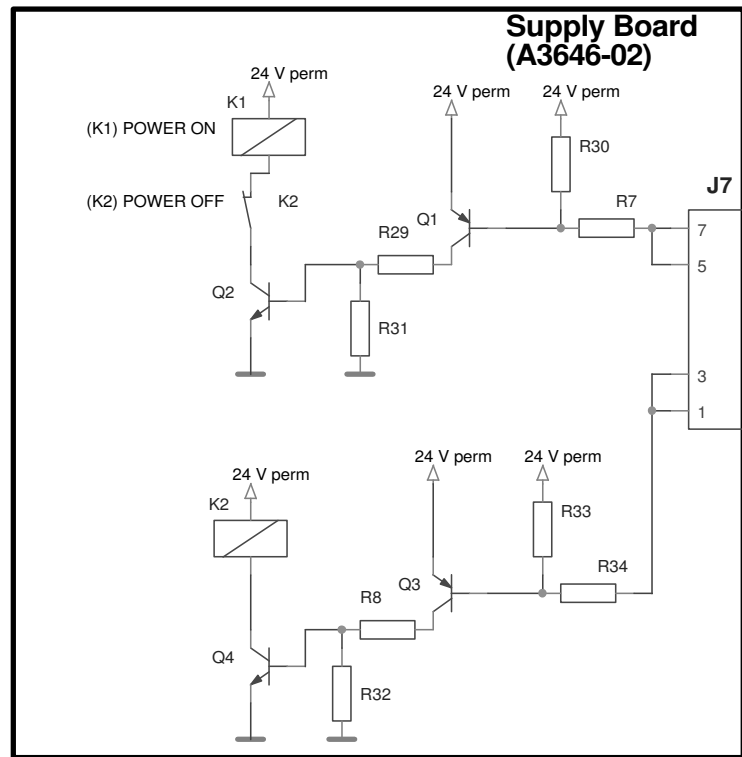
REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA:	PCB:
B	NC 19/0029	M. González	2019-08-27	M. González	2013-09-30	2 / 3		B A
A	Frist release	M. González	2013-09-30	Sonia Perez	2013-09-30		6005003	DI
							PC-CTSC - ON-OFF BOX - SHFR	



WIRING INTERCONNECTION

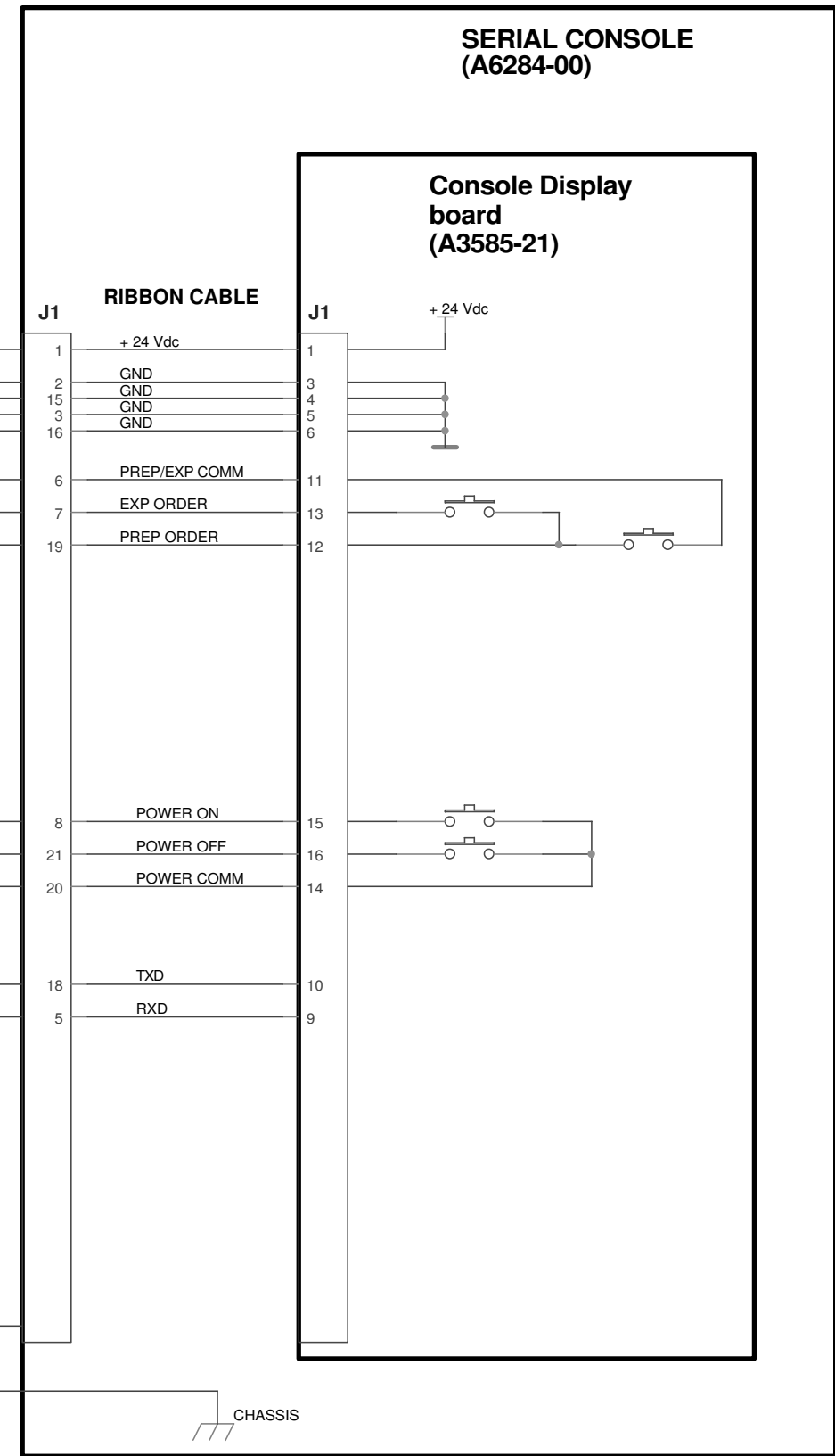
REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	PBA:	PCB:
B	NC 19/0029	M. González	2019-08-27	M. González	2013-09-30	3 / 3		B A ← REV
A	Frist release	M. González	2013-09-30	Sonia Perez	2013-09-30		6005003	DI
							PC-CTSC - ON-OFF BOX - SHFR	

GENERATOR CABINET



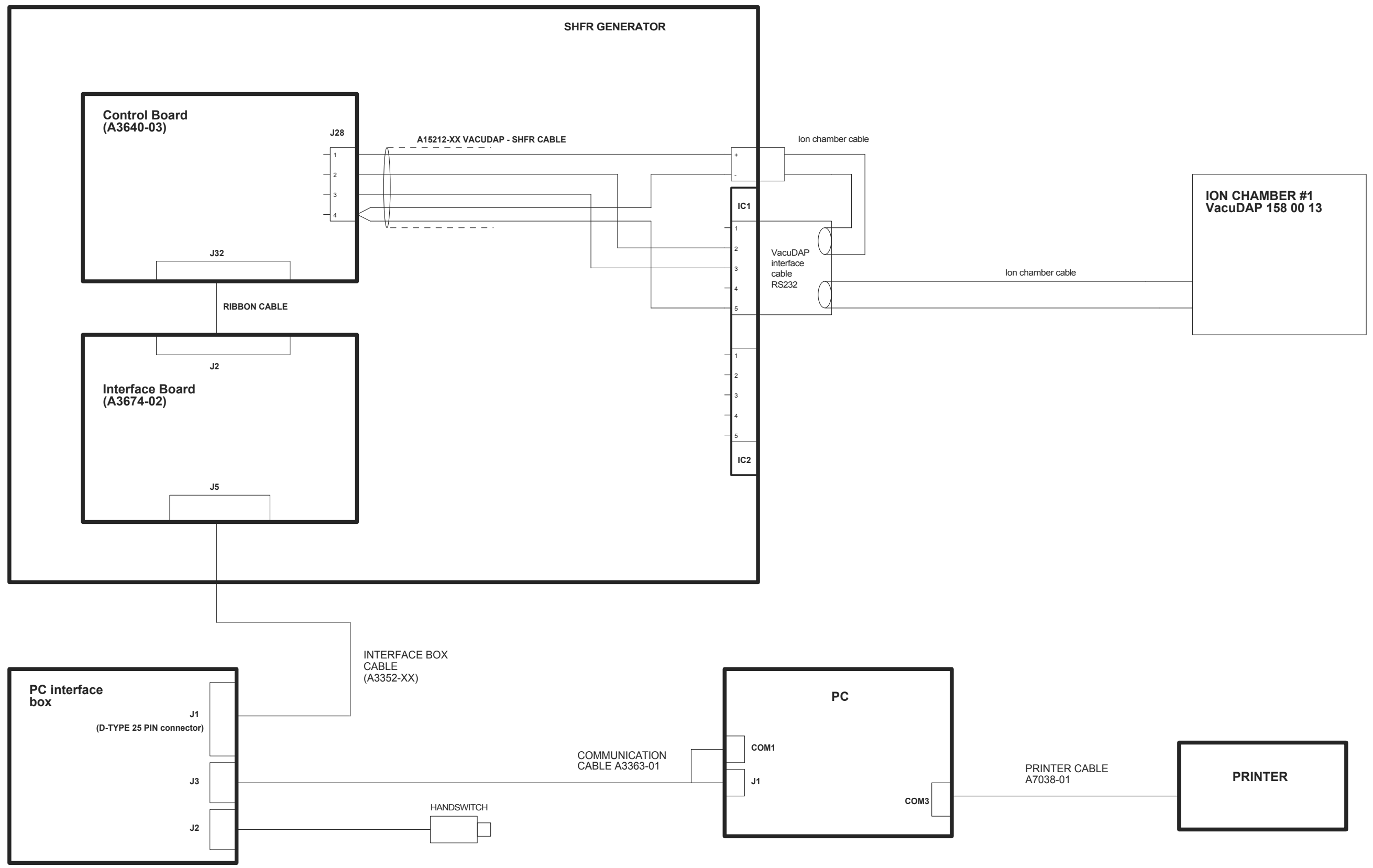
Serial console cable (A3149-XX)


Ground Cable (A6383-XX)

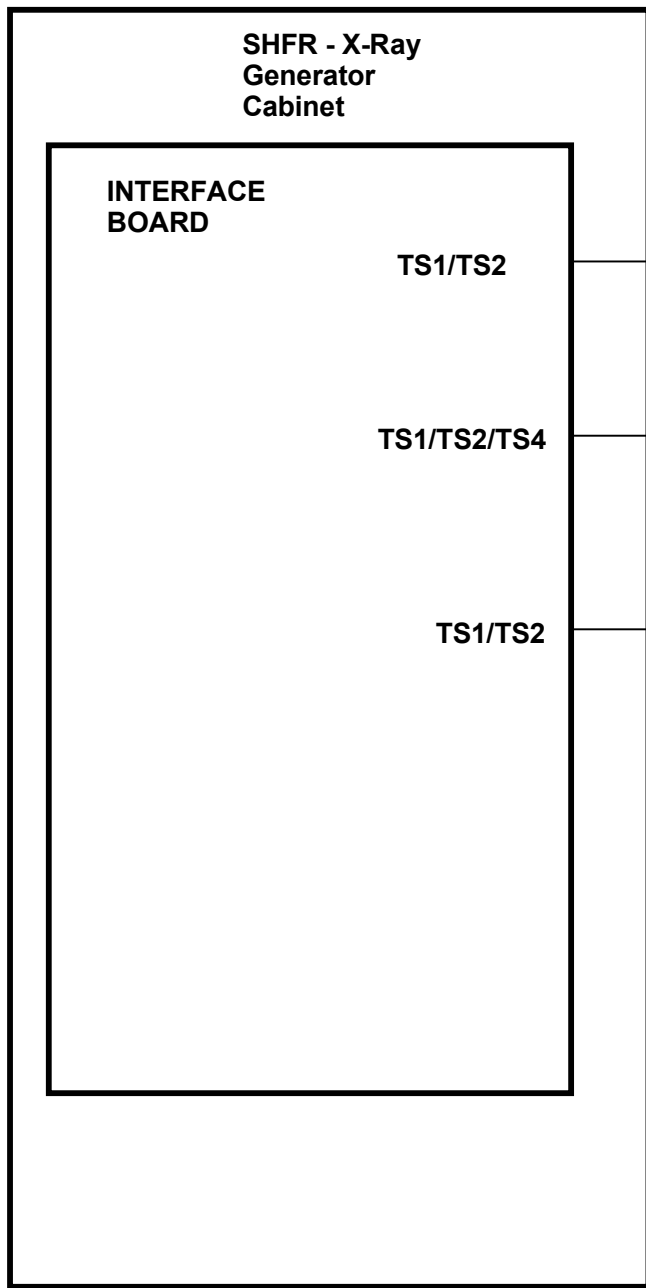


SERIAL LINK AND ON-OFF WIRING

REV	DESCRIPTION	ISSUED BY	DATE	NAME	DATE	SHEET / OF	6005006	
				DRAWING	M.González	29/10/13	2/2	
				REVISED	A.DIAZ	29/10/13		
A	First Release	M.González	29/10/13	SEDECAL		Device Interconnection (DI) SERIAL CONSOLE - SHFR INTERCONNECTION		



					NAME	DATE	SHEET / OF	6005007					
				DRAWING	M.González	21/05/14	1/1						
				REVISED	A.Díaz	21/05/14						A	← REV
								DEVICE INTERCONNECTION (DI) VACUDAP - SHFR Interconnection					
A	First release	M.González	21/05/14										
REV	DESCRIPTION	ISSUED BY	DATE										



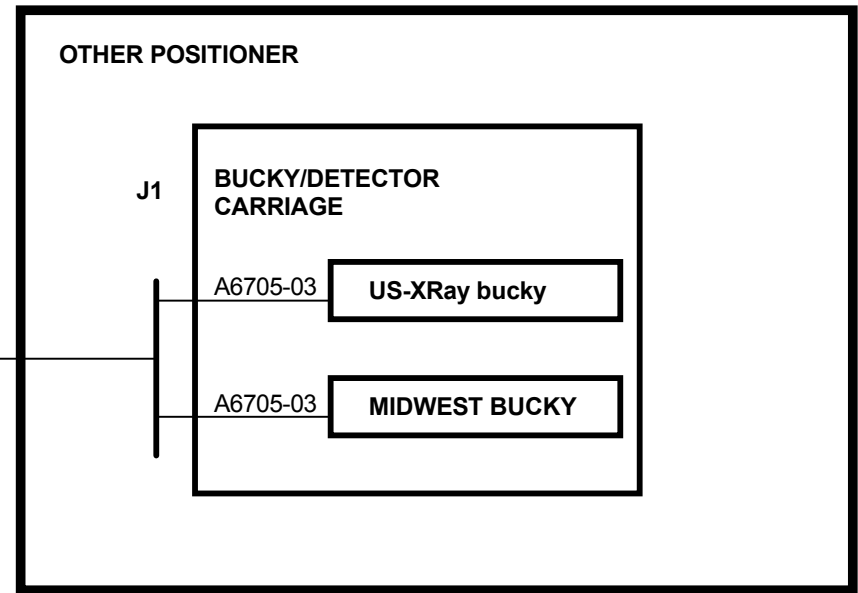
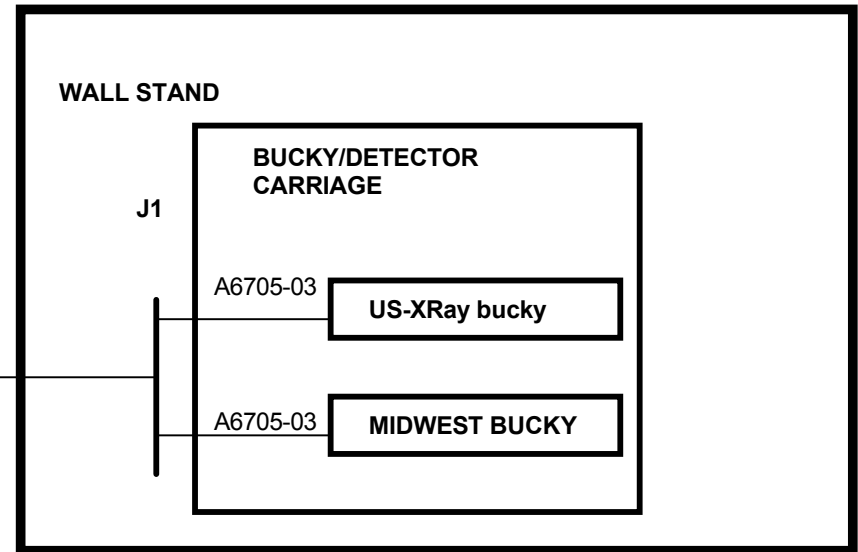
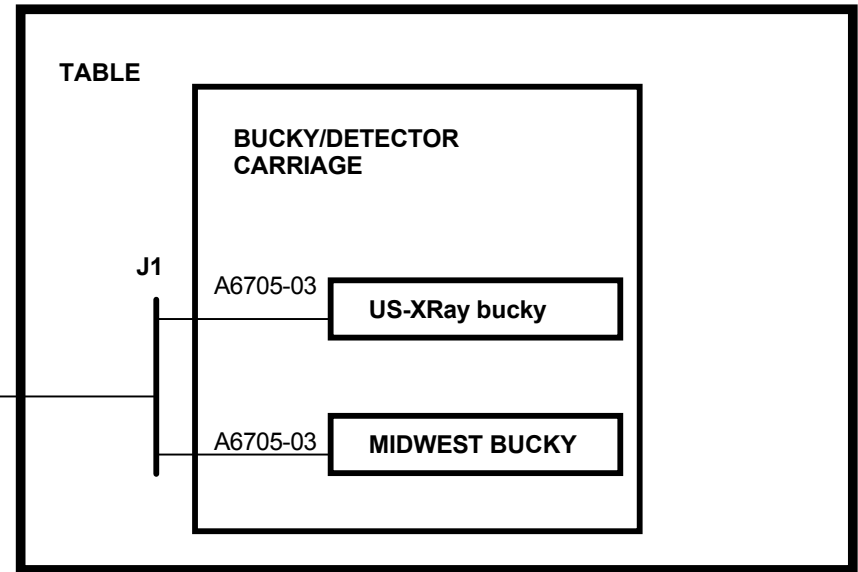
BUCKY TABLE-SHFR CABLE FOR US-X RAY BUCKY (A15154-XX)

BUCKY TABLE-SHFR CABLE FOR MIDWEST BUCKY (A15526-XX)

BUCKY WS-SHFR CABLE (A15155-XX)

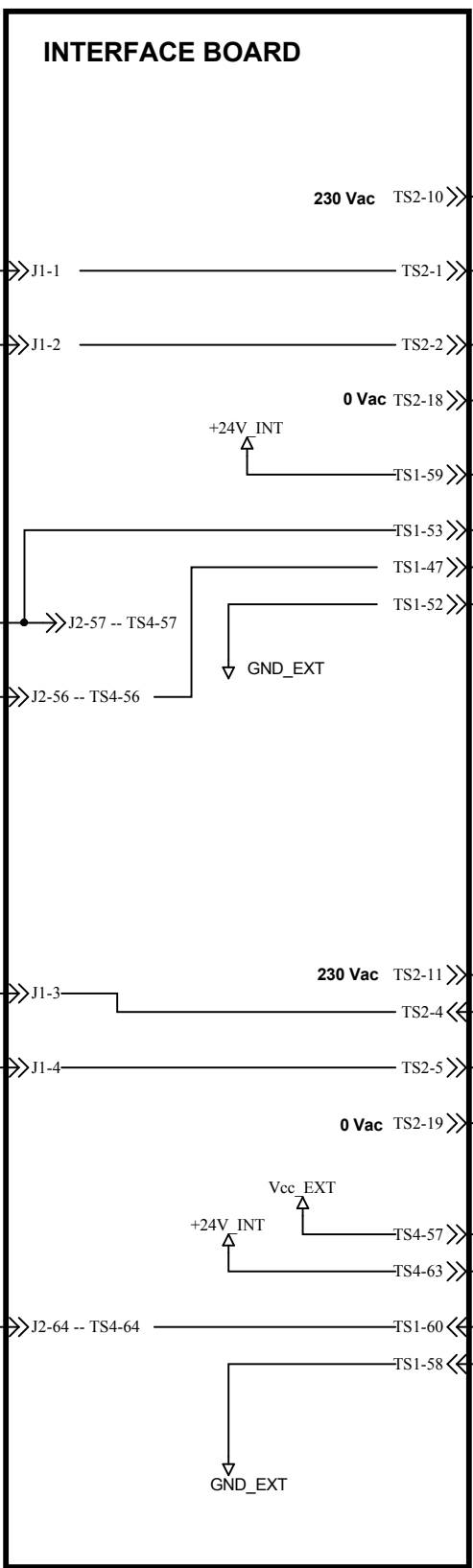
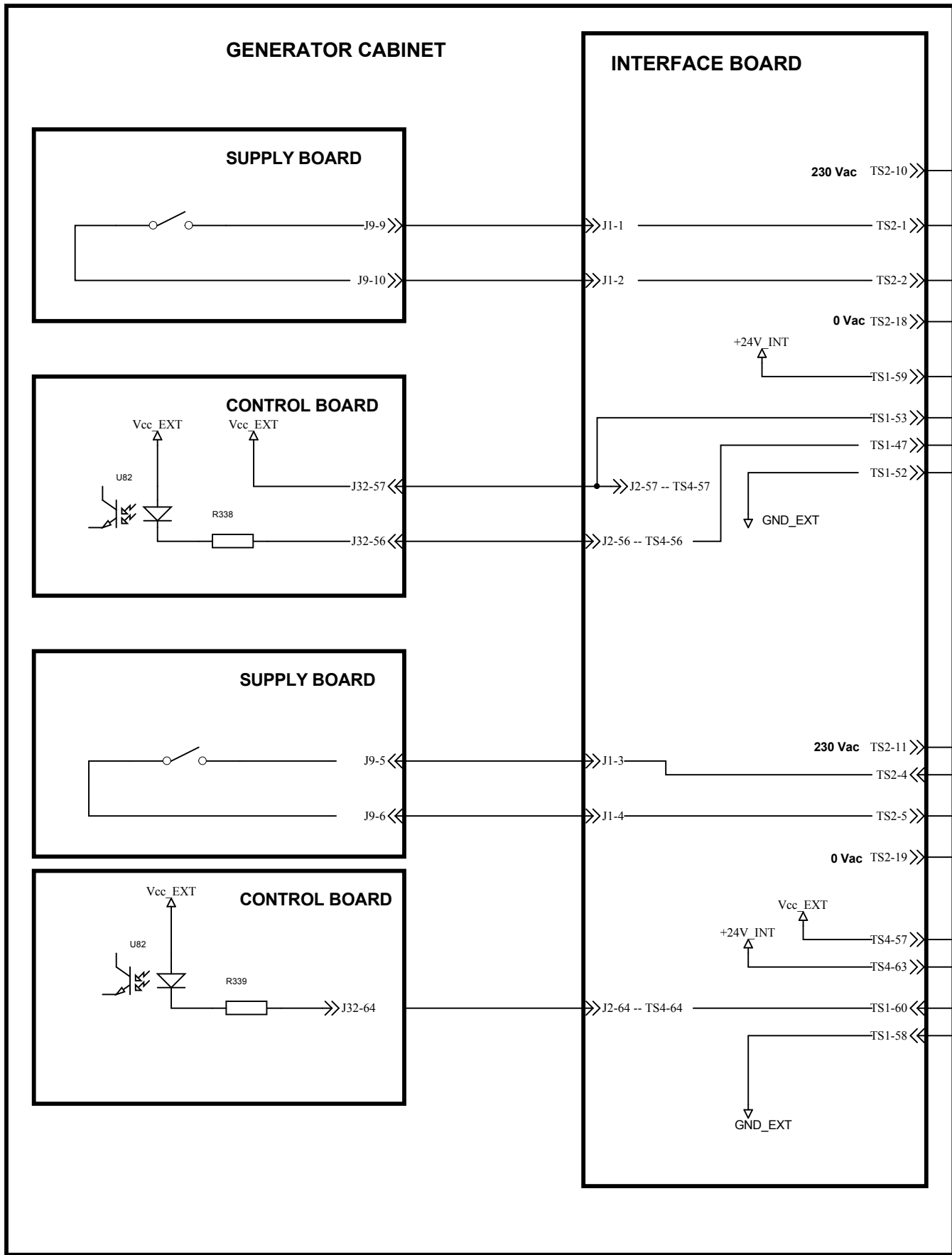
BUCKY TABLE-SHFR CABLE (A15154-XX OR A15526-XX)

BUCKY WS-SHFR CABLE (A15155-XX)

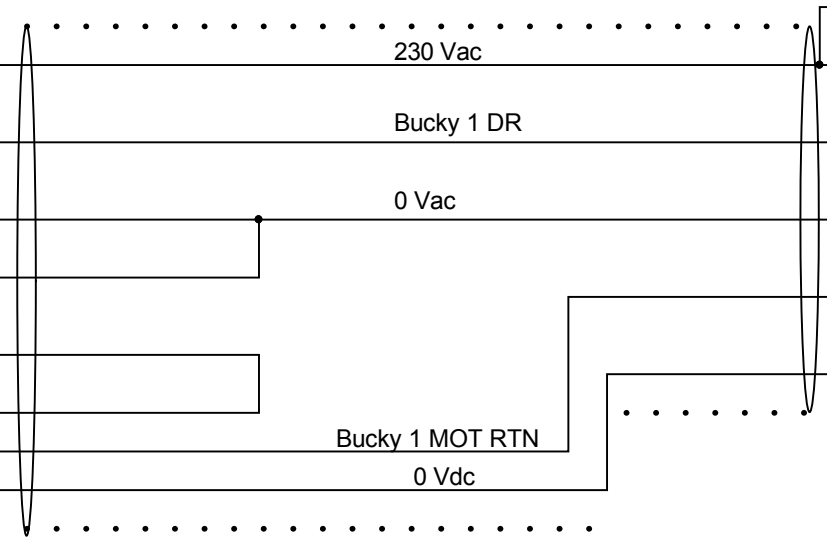


ROOM DIAGRAM

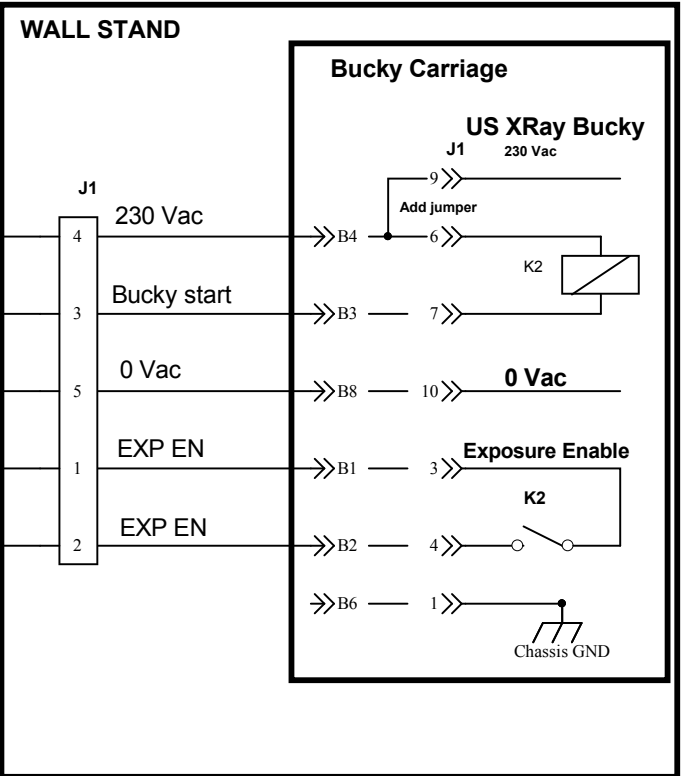
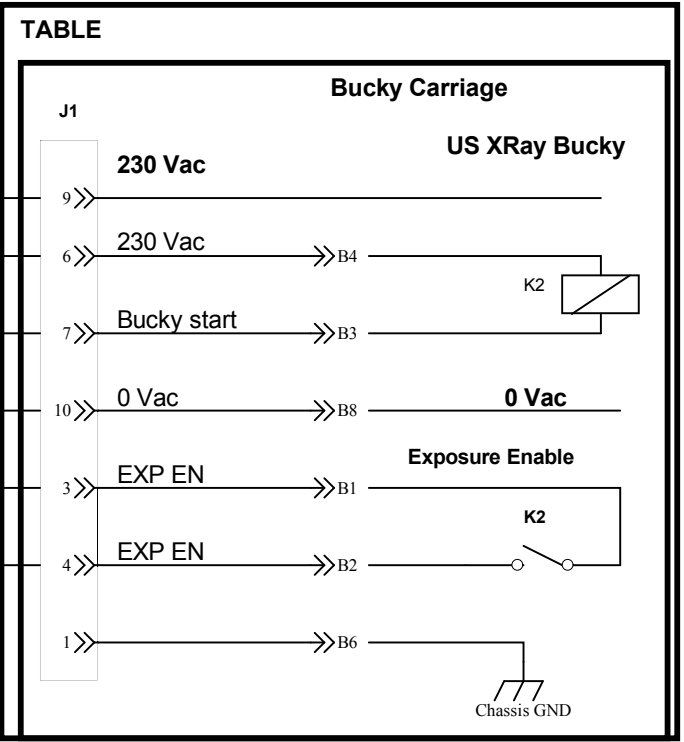
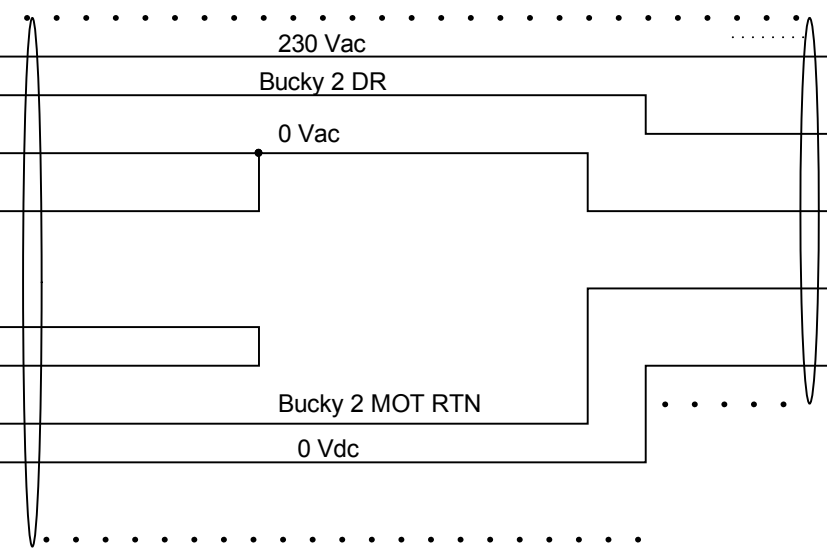
				NAME	DATE	SHEET / OF	601000				
				DRAWING	M.González	25/10/13	1/3				
				REVISED	A.Díaz	25/10/13			B	A	← REV
B	NC_15/421	MAAguado	11/11/15			SHFR Bucky Interconnection					
A	First release	M.González	25/10/13								
REV	DESCRIPTION	ISSUED BY	DATE								



BUCKY TABLE - SHFR CABLE (A15154-XX)



BUCKY WS - SHFR CABLE (A15155-XX)



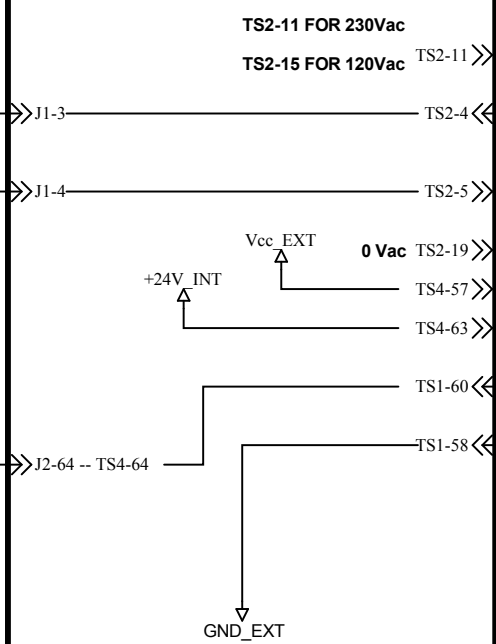
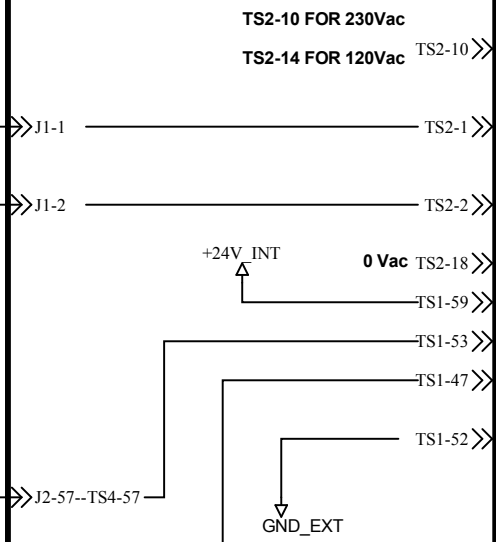
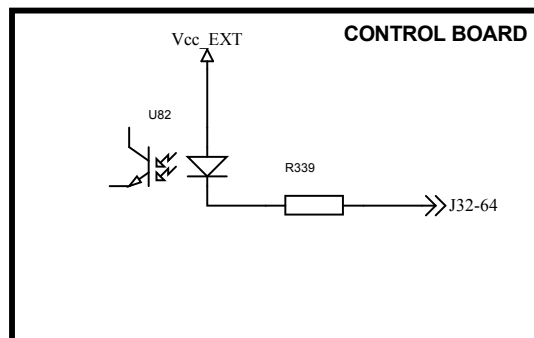
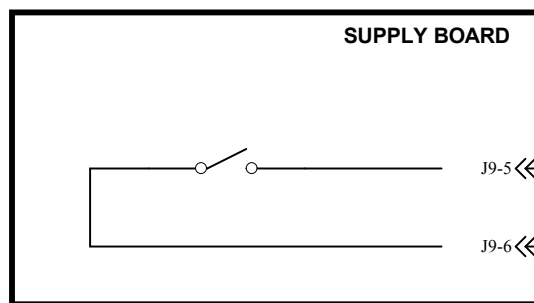
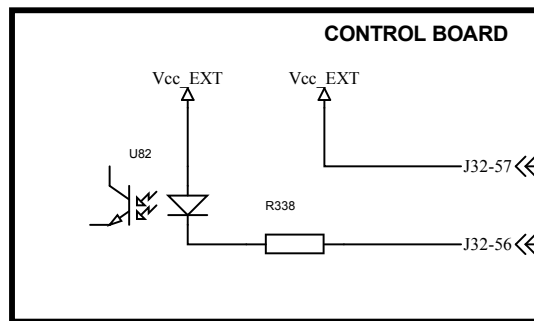
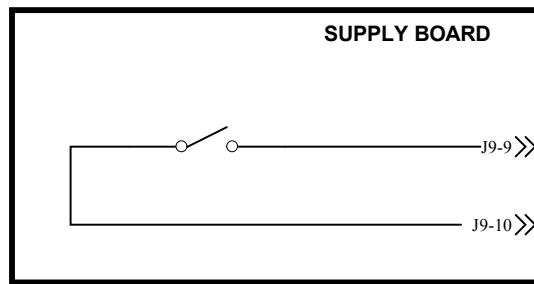
				NAME	DATE	SHEET / OF	6010000		
				DRAWING	M.González	25/10/13	2/3		
				REVISED	A.Díaz	25/10/13			B A ← REV
B	NC_15/421	MAAgudo	11/11/15	SEDECAL		SHFR Bucky Interconnection			
A	First release	M.González	25/10/13						
REV	DESCRIPTION	ISSUED BY	DATE						

GENERATOR CABINET

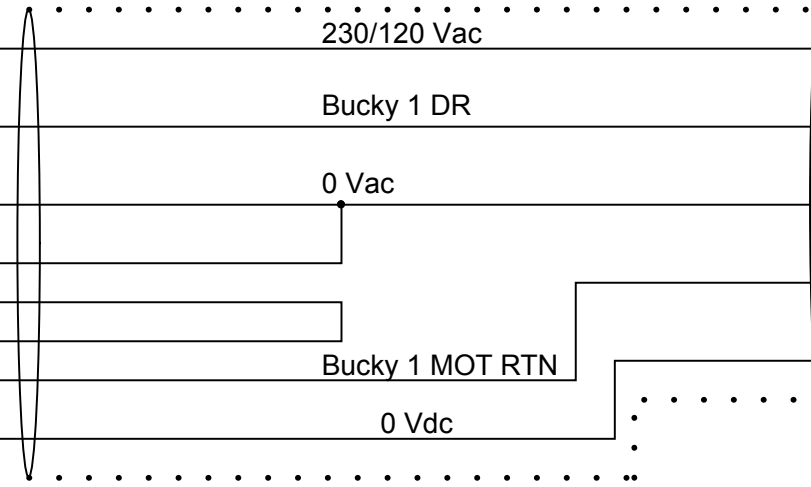
INTERFACE BOARD

TABLE

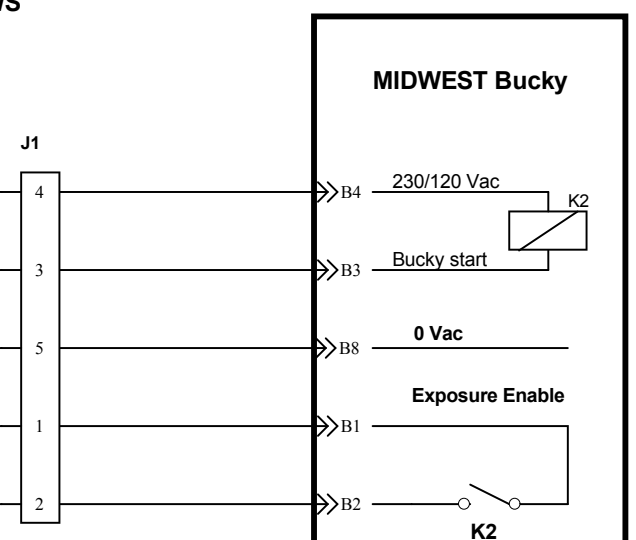
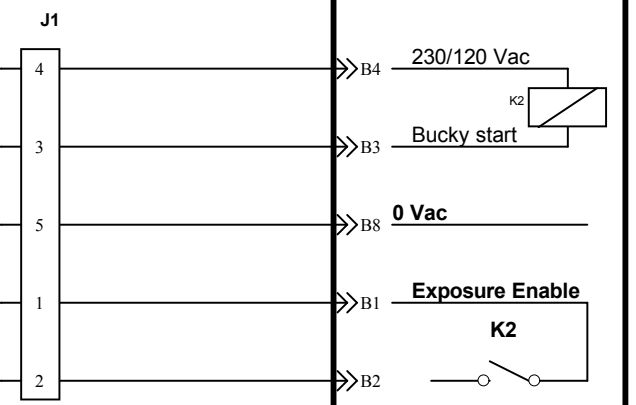
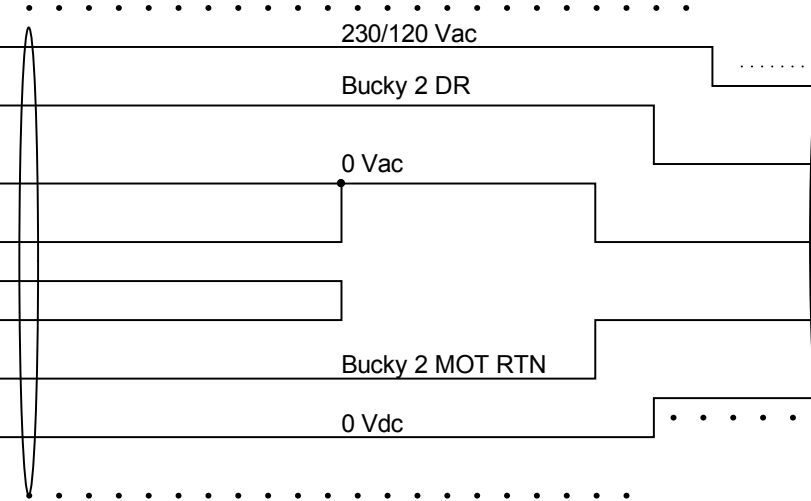
MIDWEST Bucky



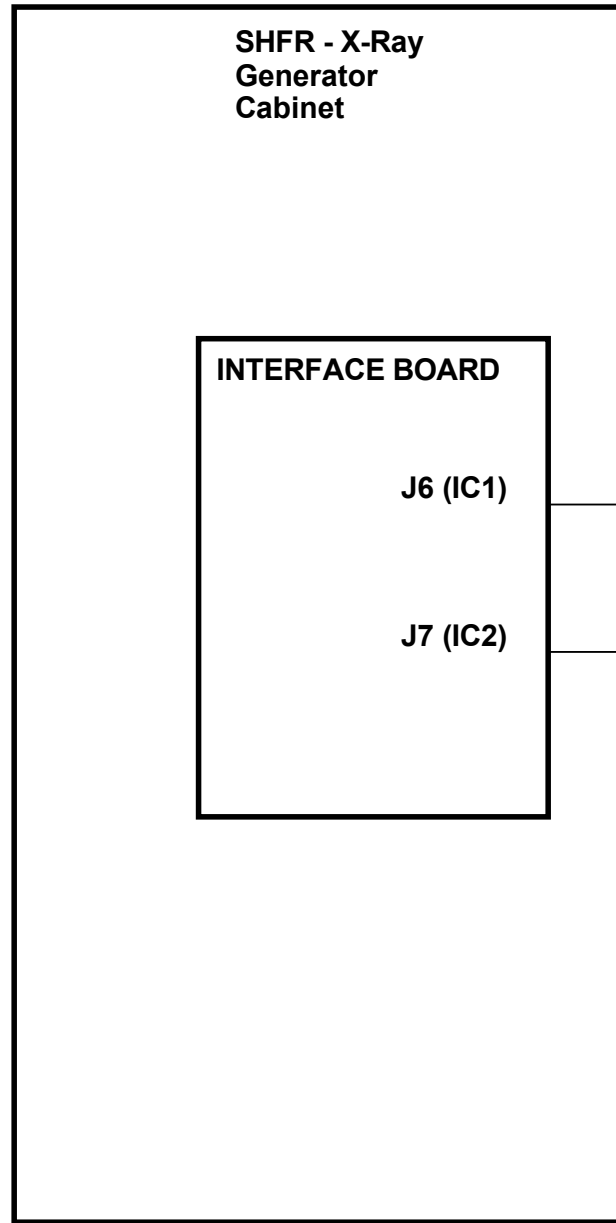
BUCKY TABLE-SHFR MIDWEST CABLE (A15526-XX)



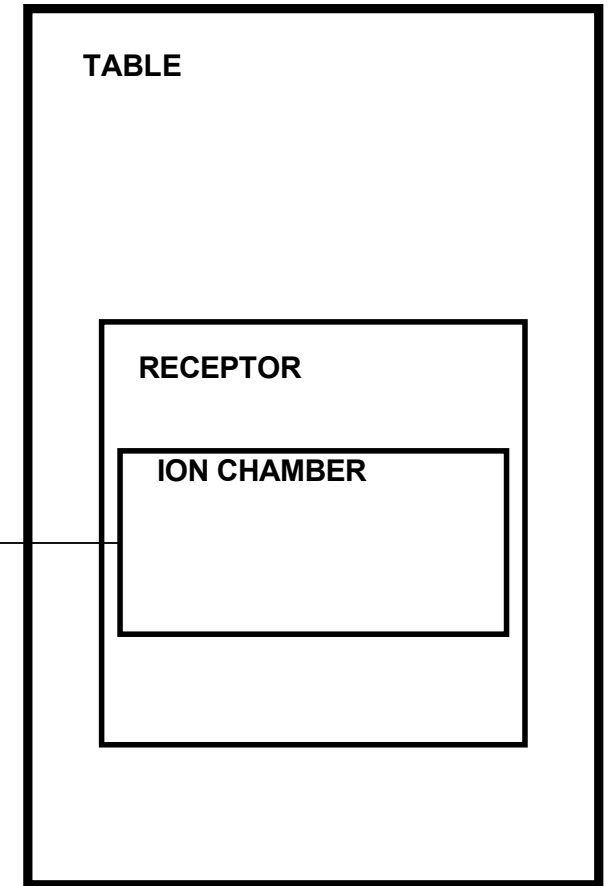
BUCKY WS - SHFR CABLE (A15155-XX)



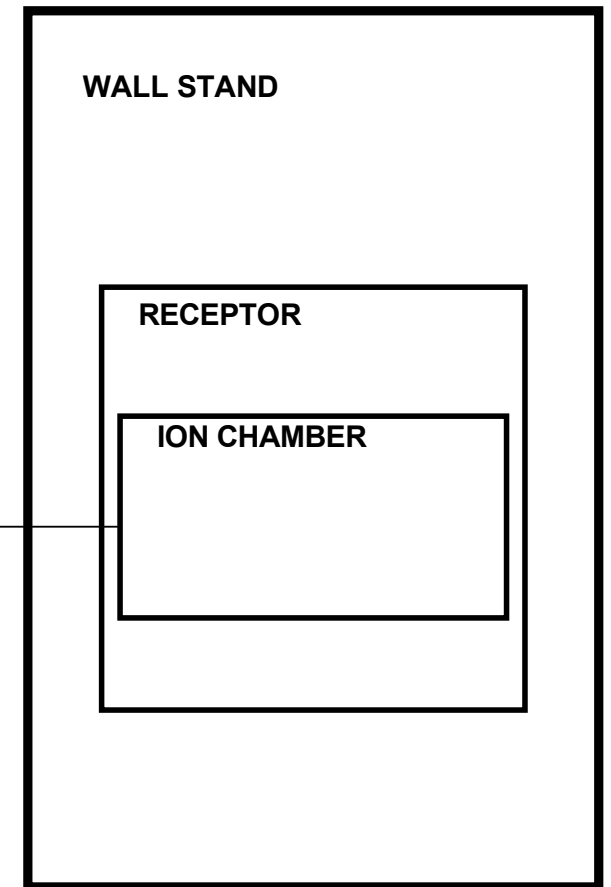
				NAME	DATE	SHEET / OF	6010000				
				DRAWING	M.González	25/10/13	3/3				
				REVISED	A.Díaz	25/10/13					
B	NC_15/421	MAAgudo	11/11/15								
A	First release	M.González	25/10/13								
REV	DESCRIPTION	ISSUED BY	DATE	SHFR Bucky Interconnection							



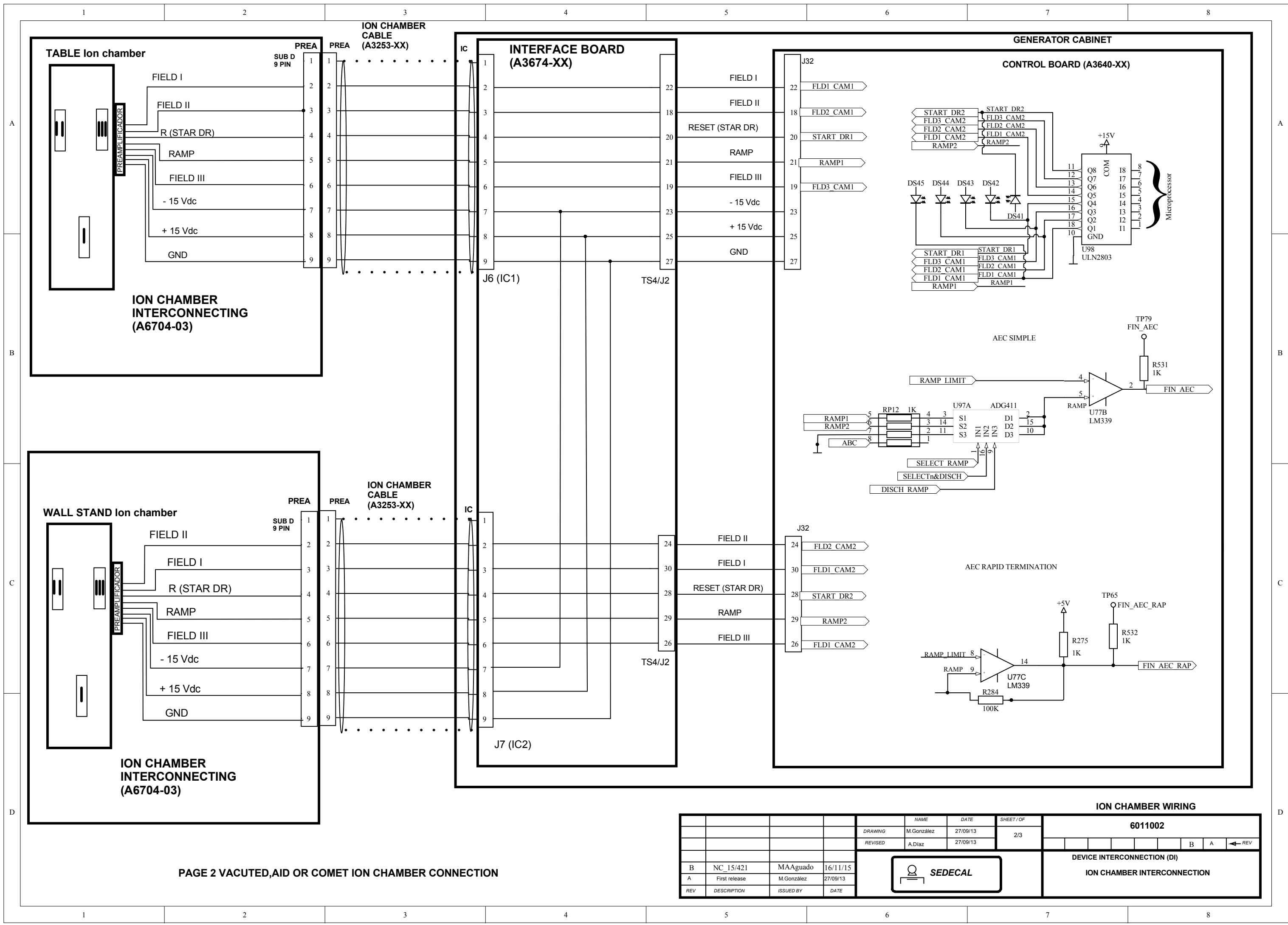
VACUTEC , AID OR CLAYMOUNT ION CHAMBER CABLE A3253-XX
OR
MEDYS ION CHAMBER CABLE A9779-XX



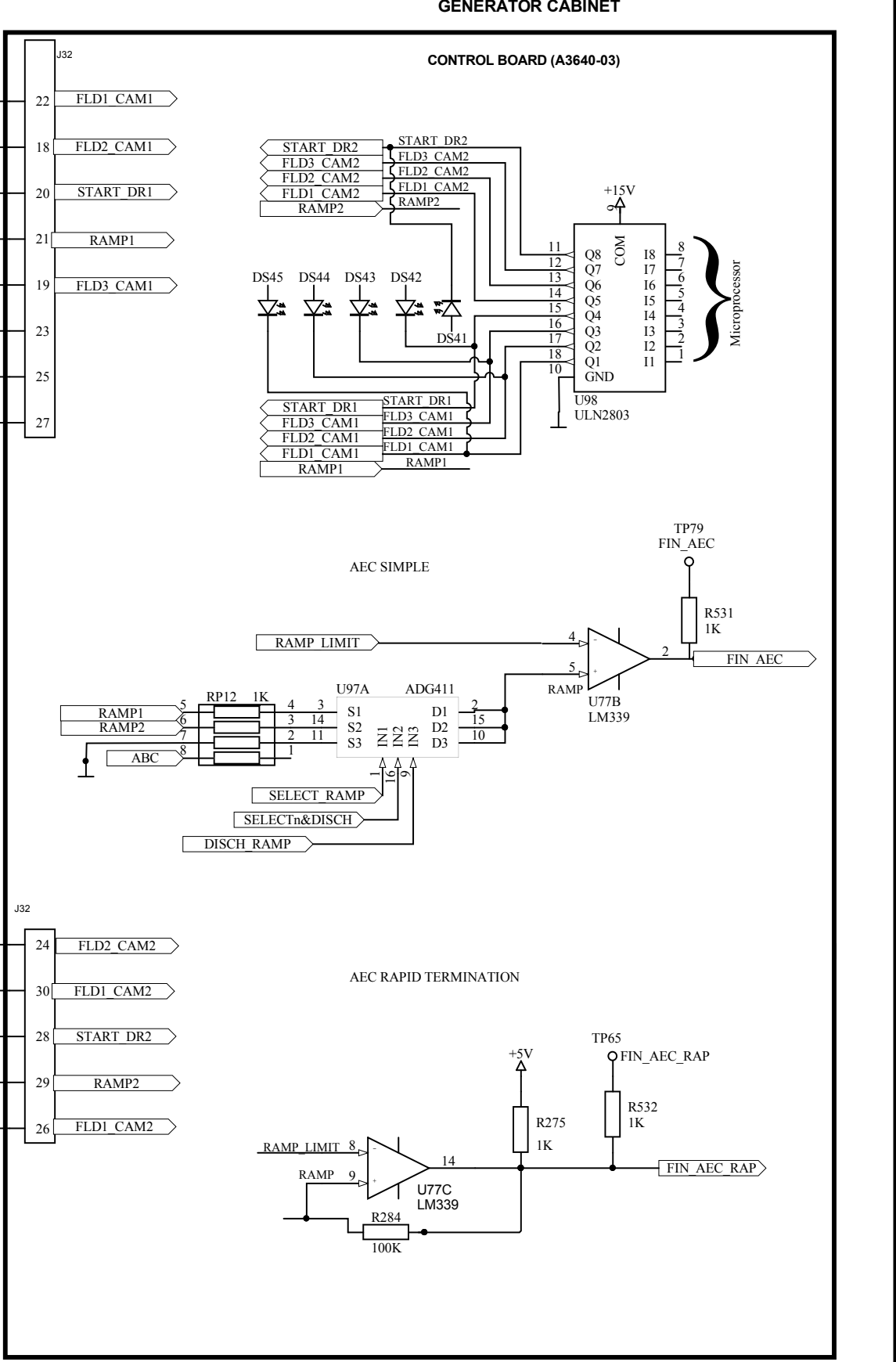
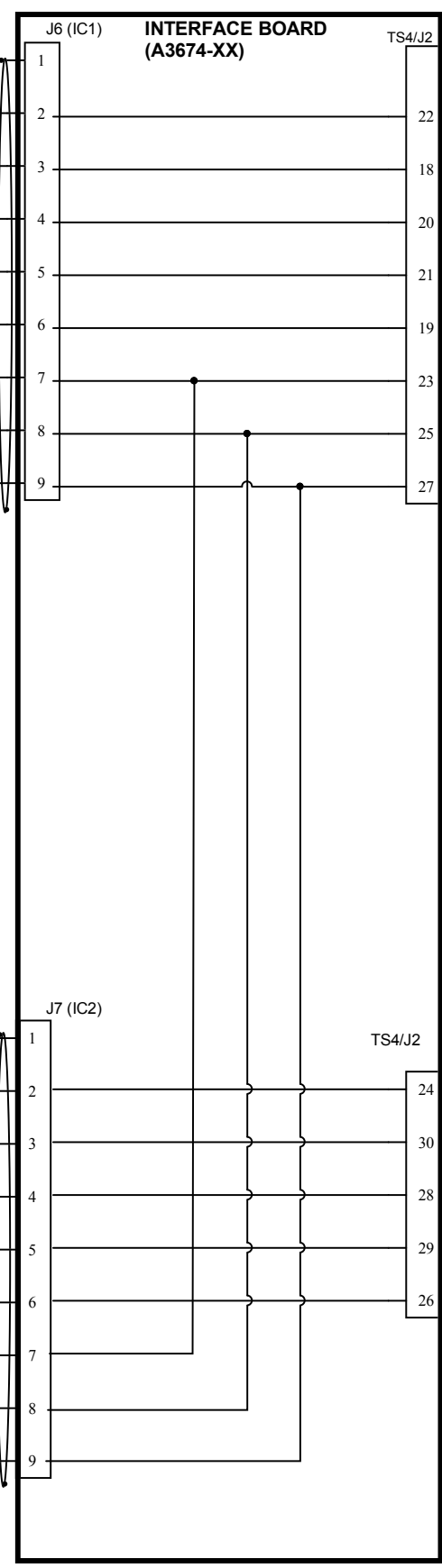
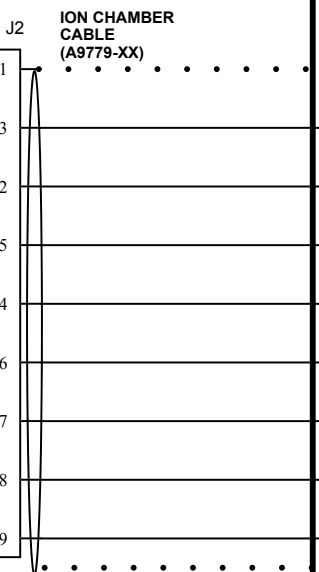
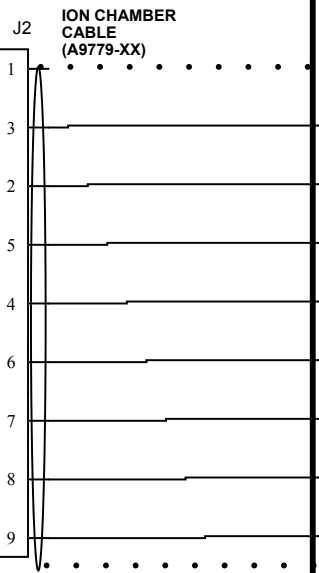
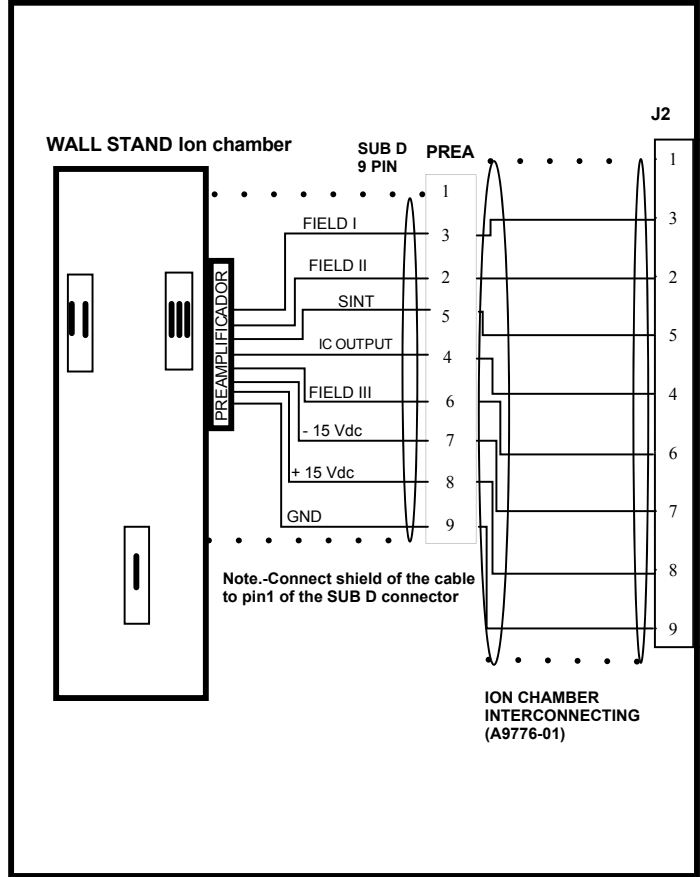
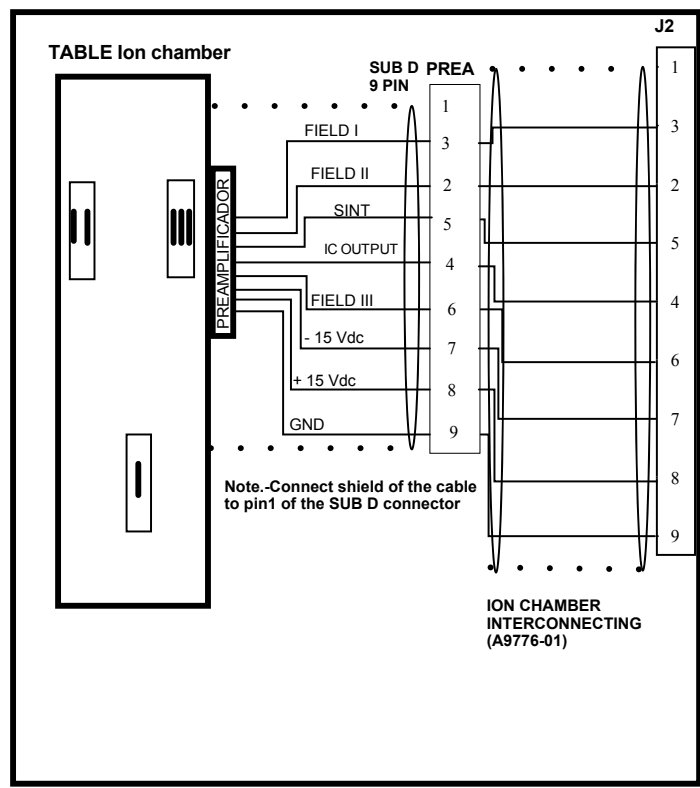
VACUTEC , AID OR CLAYMOUNT ION CHAMBER CABLE A3253-XX
OR
MEDYS ION CHAMBER CABLE A9779-XX



				NAME	DATE	SHEET / OF	6011002				
				DRAWING	M.González	27/09/13	1/3				
				REVISED	A.Díaz	27/09/13			← REV		
B	NC_15/421	MAAguado	16/11/15								
A	First release	M.González	27/09/13								
REV	DESCRIPTION	ISSUED BY	DATE	DEVICE INTERCONNECTION (DI) ION CHAMBER INTERCONNECTION							



ION CHAMBER WIRING			
NAME	DATE	SHEET / OF	
DRAWING M.González	27/09/13	2/3	
REVISED	A.Díaz	27/09/13	
SEDECAL			
6011002			
DEVICE INTERCONNECTION (DI)			
ION CHAMBER INTERCONNECTION			



ION CHAMBER WIRING

				NAME	DATE	SHEET / OF	6011002		
DRAWING				M.González	27/09/13	3/3			
REVISED				A.Díaz	27/09/13				
B	NC_15/421	MAAguado	16/11/15	SEDECAL					DEVICE INTERCONNECTION (DI)
A	First release	M.González	27/09/13						ION CHAMBER INTERCONNECTION
REV	DESCRIPTION	ISSUED BY	DATE						