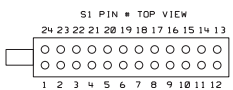
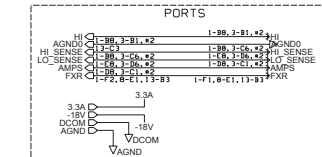
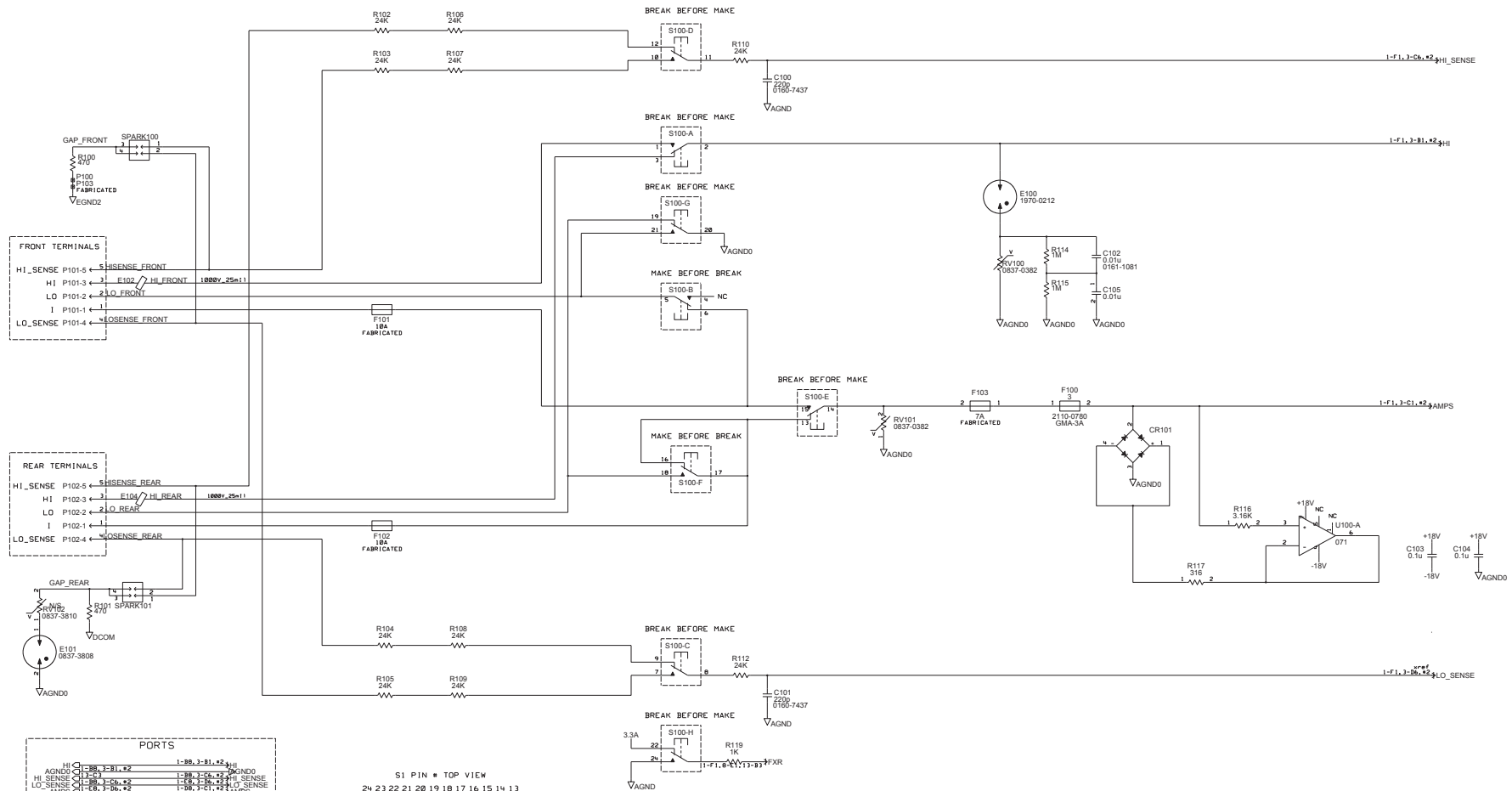


FRONT/REAR SELECTION

C-34410-66521-1

REV	INFORMATION	APPROVED	DATE
D			



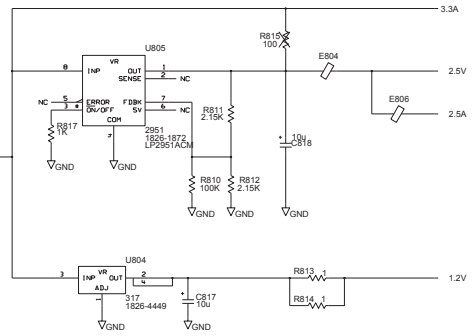
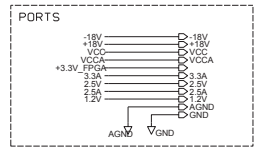
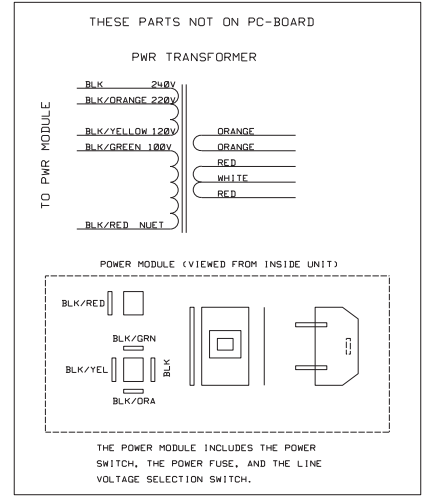
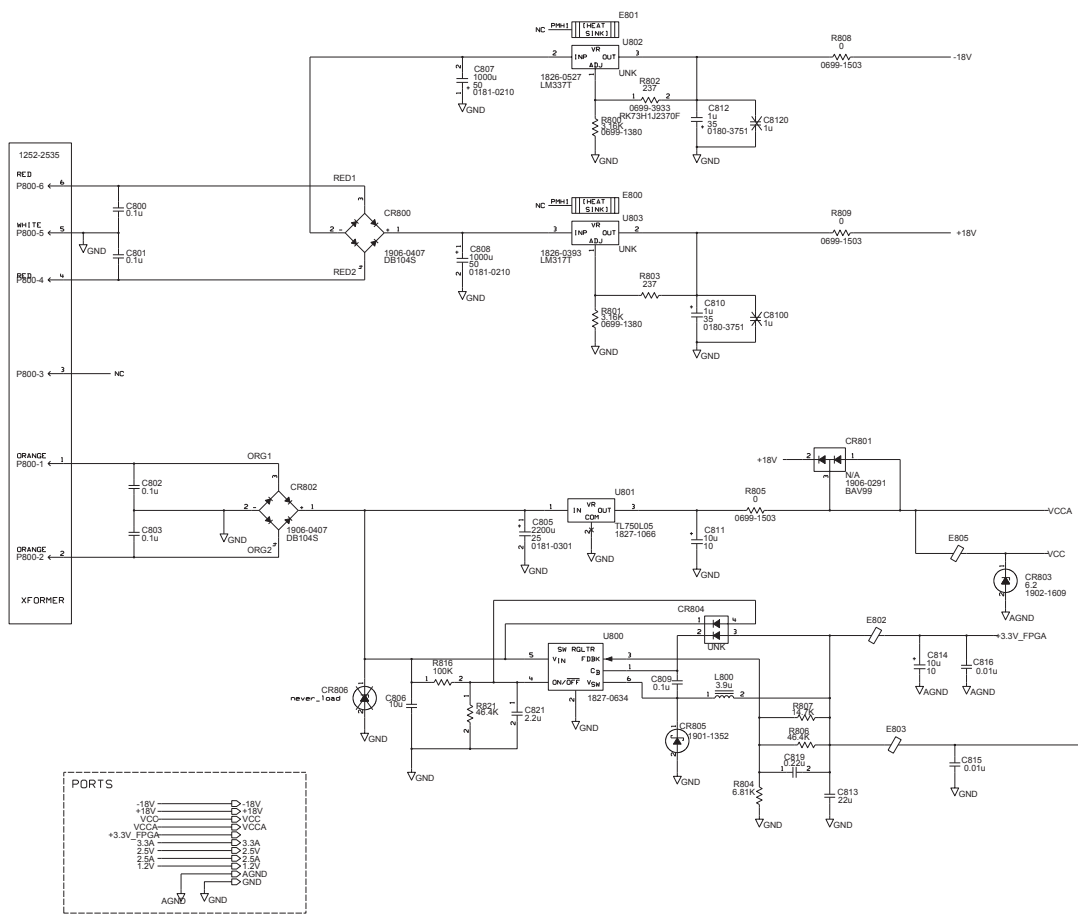
ALL SWITCHES ARE BREAK BEFORE MAKE
S1 SHOWN IN REAR POSITION

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4/13/2006 16:09:20 LAST CHECKED	10/04/05 DATE	SCHMATIC, PHA 34410A	
Mark Jur Jovec ENGINEER	SHEET 1 OF 1	FRONT / REAR SELECTION PAGE DESCRIPTION 2	
Mark Jur Jovec DRAWN BY	SIZE C	TITLE #LVL0/gdsdml/34410-66521/circuit/ front_rear_sheet1	34410-66521 PART NUMBER
ASSY. REV	BRD. REV	PAGE 1 OF 1.3	C-34410-66521-1 DWG. NO.

ISOLATED POWER SUPPLY

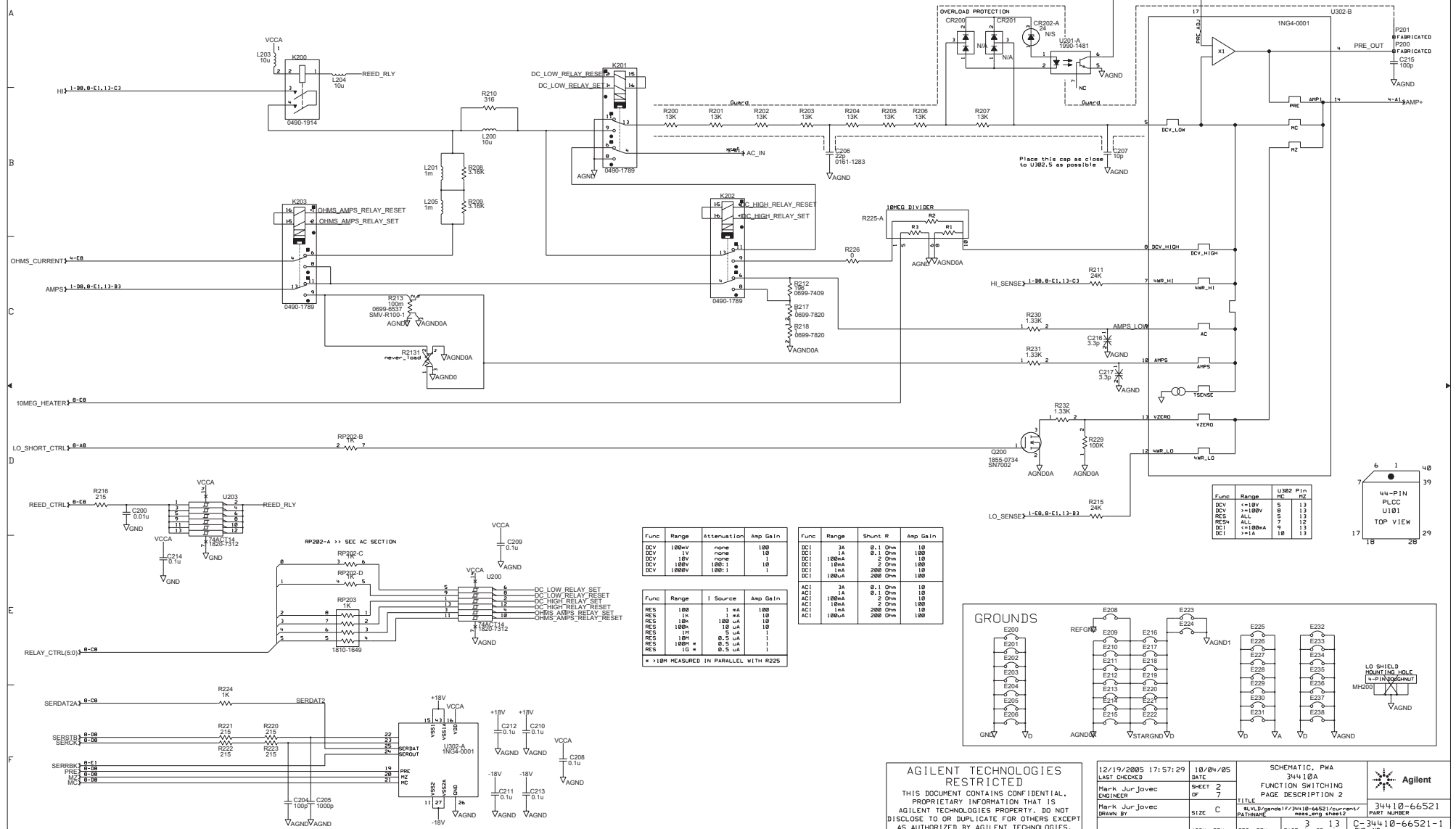
REVISIONS
SEE PAGE 1 FOR REVISION HISTORY



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---	--	---	--	--	---	--

FUNCTION SWITCHING

REVISIONS
SEE PAGE 1 FOR REVISION HISTORY



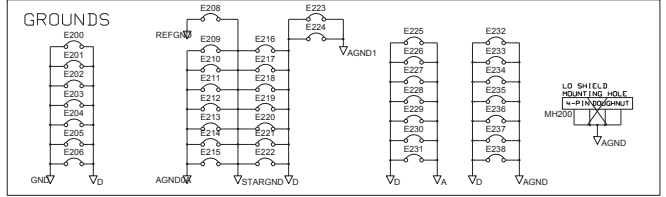
Func	Range	Attenuation	Amp Gain
DCV	100mV	none	100
DCV	1V	none	10
DCV	10V	none	1
DCV	100V	100:1	10
DCV	1000V	1000:1	1

Func	Range	Shunt R	Amp Gain
DCI	3A	0.1 Ohm	10
DCI	1A	0.1 Ohm	100
DCI	100mA	2 Ohm	10
DCI	10mA	200 Ohm	10
DCI	100uA	200 Ohm	100

Func	Range	I Source	Amp Gain
RES	100	1 mA	100
RES	1k	1 mA	10
RES	10k	100 uA	10
RES	100k	10 uA	10
RES	1M	0.5 uA	1
RES	10M	0.5 uA	1
RES	100M	0.5 uA	1
RES	1G	0.5 uA	1

* 10M MEASURED IN PARALLEL WITH R225

Func	Range	MC	P1#	P2#
DCV	<=10V	5	13	
DCV	>=100V	8	13	
RES	ALL	5	13	
RES	ALL	7	12	
DCI	<=100mA	9	13	
DCI	>=1A	10	13	



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TITLE 34410-66521 current sense amp driver		34410-66521-1 PART NUMBER	3 OF 13 PAGE	C-34410-66521-1 DWG. NO.	

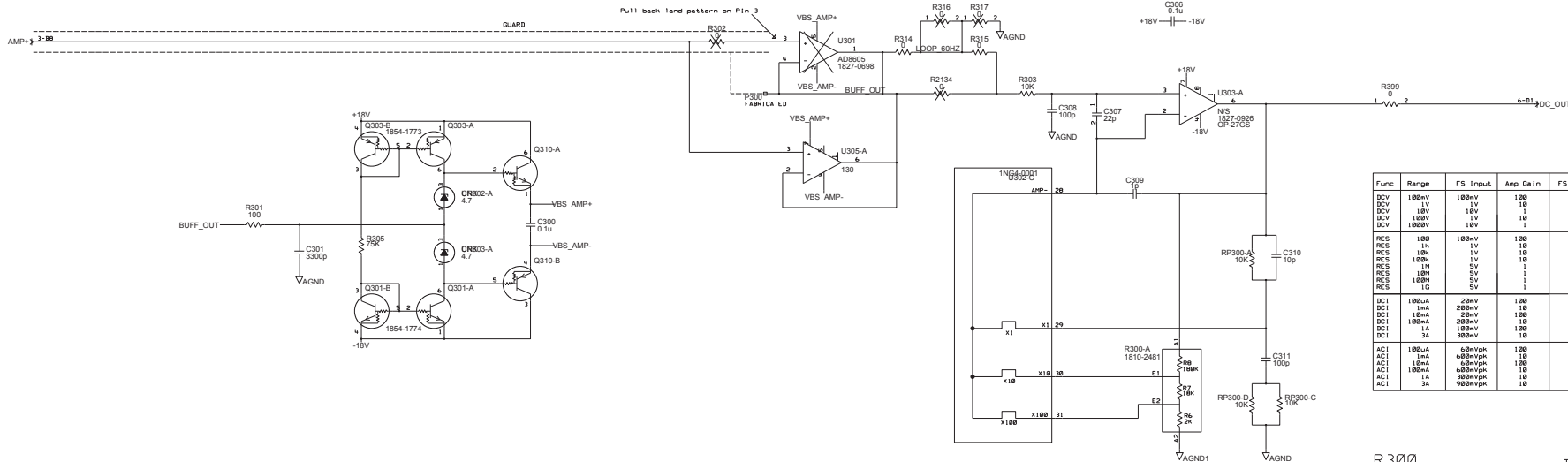
INPUT AMPLIFIER/OHMS

REVISIONS
SEE PAGE 1 FOR REVISION HISTORY

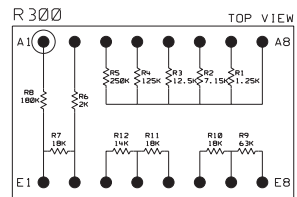
AMP LOOP COMPENSATION

BIG 60HZ LOOP	R2130	R310	R315	R316	R317
SMALL 60HZ LOOP	U030	U030	U030	U030	U030
NO 60HZ LOOP	LOAD	LOAD	LOAD	LOAD	LOAD

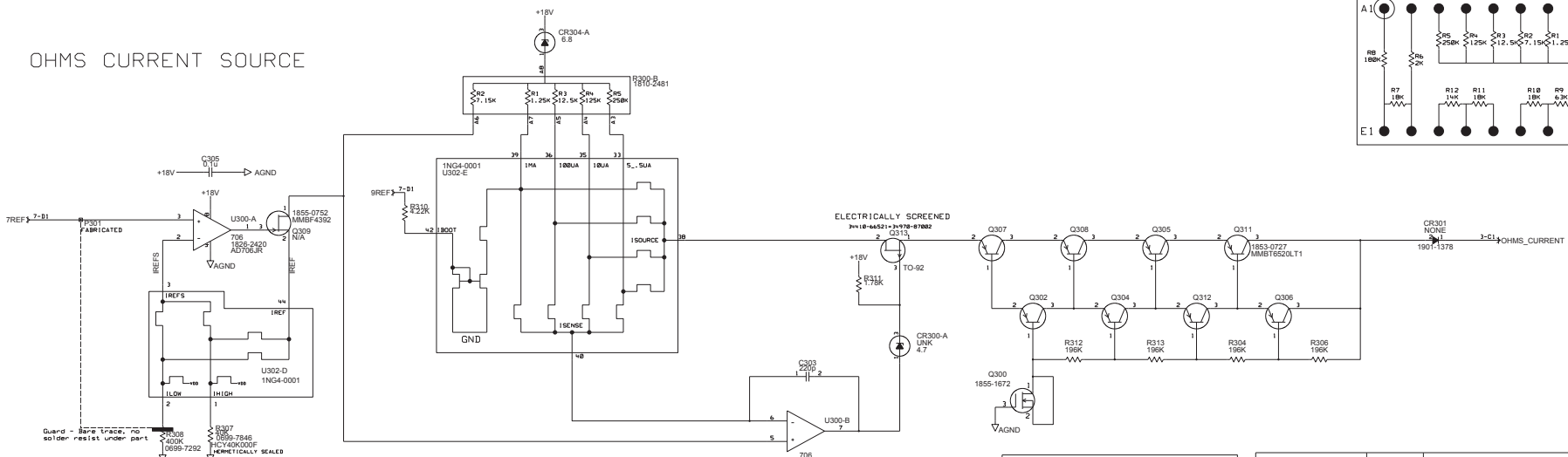
RESISTORS ARE NO-LOAD UNLESS SPECIFIED



Func	Range	FS Input	Amp Gain	FS Output
DCV	100mV	100mV	100	10V
DCV	1V	1V	10	10V
DCV	10V	1V	10	10V
DCV	100mV	10V	1	10V
RES	100	100mV	1000	10V
RES	1k	1V	10	10V
RES	10k	1V	10	10V
RES	100k	1V	10	10V
RES	1M	5V	1	5V
RES	10M	5V	1	5V
RES	100M	5V	1	5V
DCI	100uA	20mV	100	2V
DCI	1mA	200mV	10	2V
DCI	10mA	20mV	100	2V
DCI	100mA	200mV	10	2V
DCI	1A	100mV	100	10V
DCI	2A	200mV	10	2V
ACI	100uA	60mVpk	100	6Vpk
ACI	1mA	600mVpk	10	6Vpk
ACI	10mA	60mVpk	100	6Vpk
ACI	1A	100mVpk	10	3Vpk
ACI	3A	100mVpk	10	9Vpk



OHMS CURRENT SOURCE

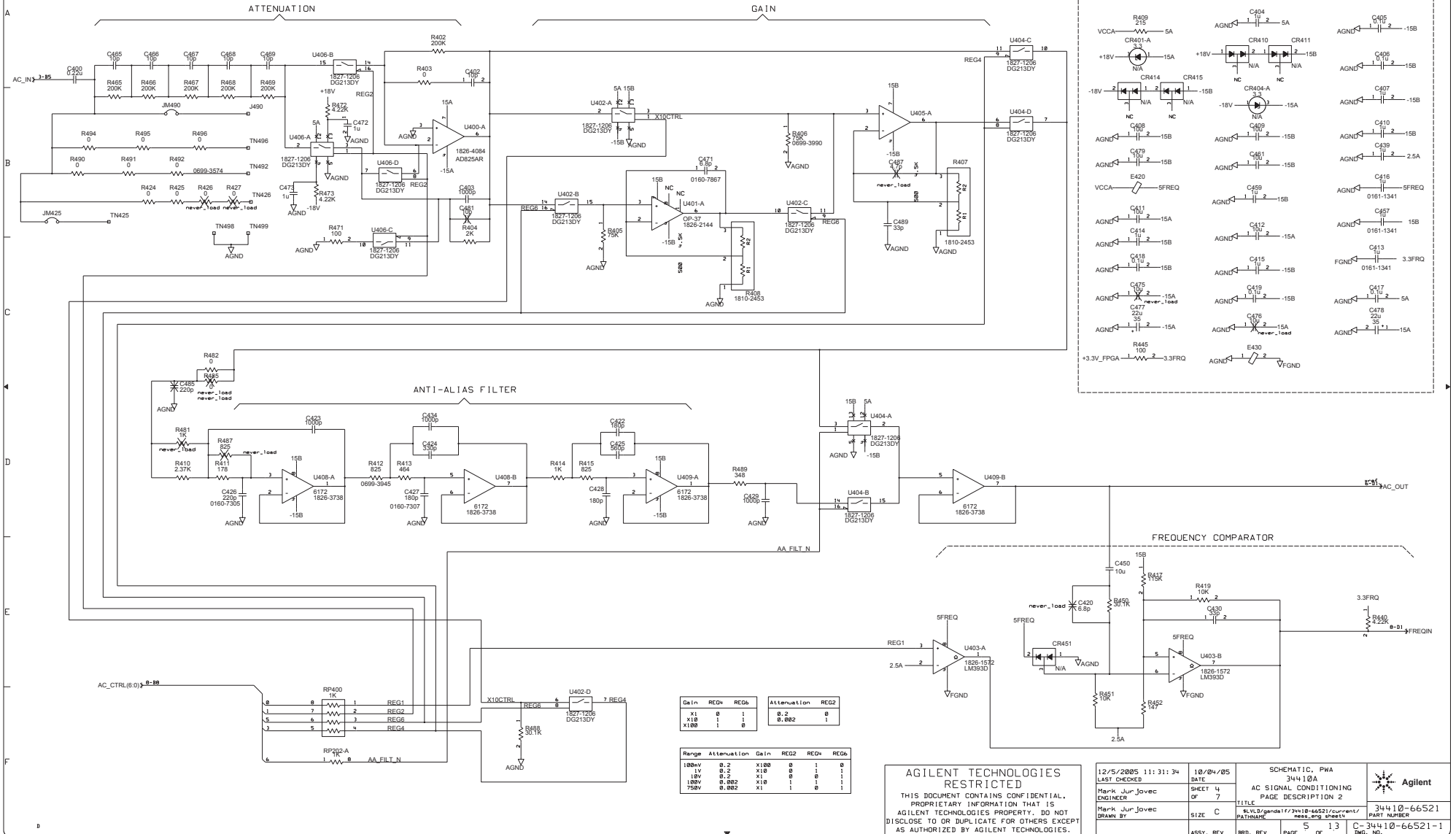


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12/20/2005 14:33:14 DATE	10/04/05 DATE	SHEMATIC, PHA 34410A	Agilent
Mark Jurjovec ENGINEER	SHEET 3 OF 7	INPUT AMPLIFIER OHMS CURRENT SOURCE	
Mark Jurjovec DRAWN BY	SIZE C	34410-66521 PART NUMBER	34410-66521-1 PART NUMBER
ASSY. REV	BRD. REV	PAGE 4 OF 13	C-34410-66521-1 DWG. NO.

AC SIGNAL CONDITIONING

REVISIONS
SEE PAGE 1 FOR REVISION HISTORY



Gain	REG1	REG2	REG3	REG4
x1	0	1	1	0
x10	1	1	0	0
x100	1	0	0	0

Attenuation	REG1	REG2	REG3	REG4
0.2	0	0	0	1
0.002	0	0	0	1

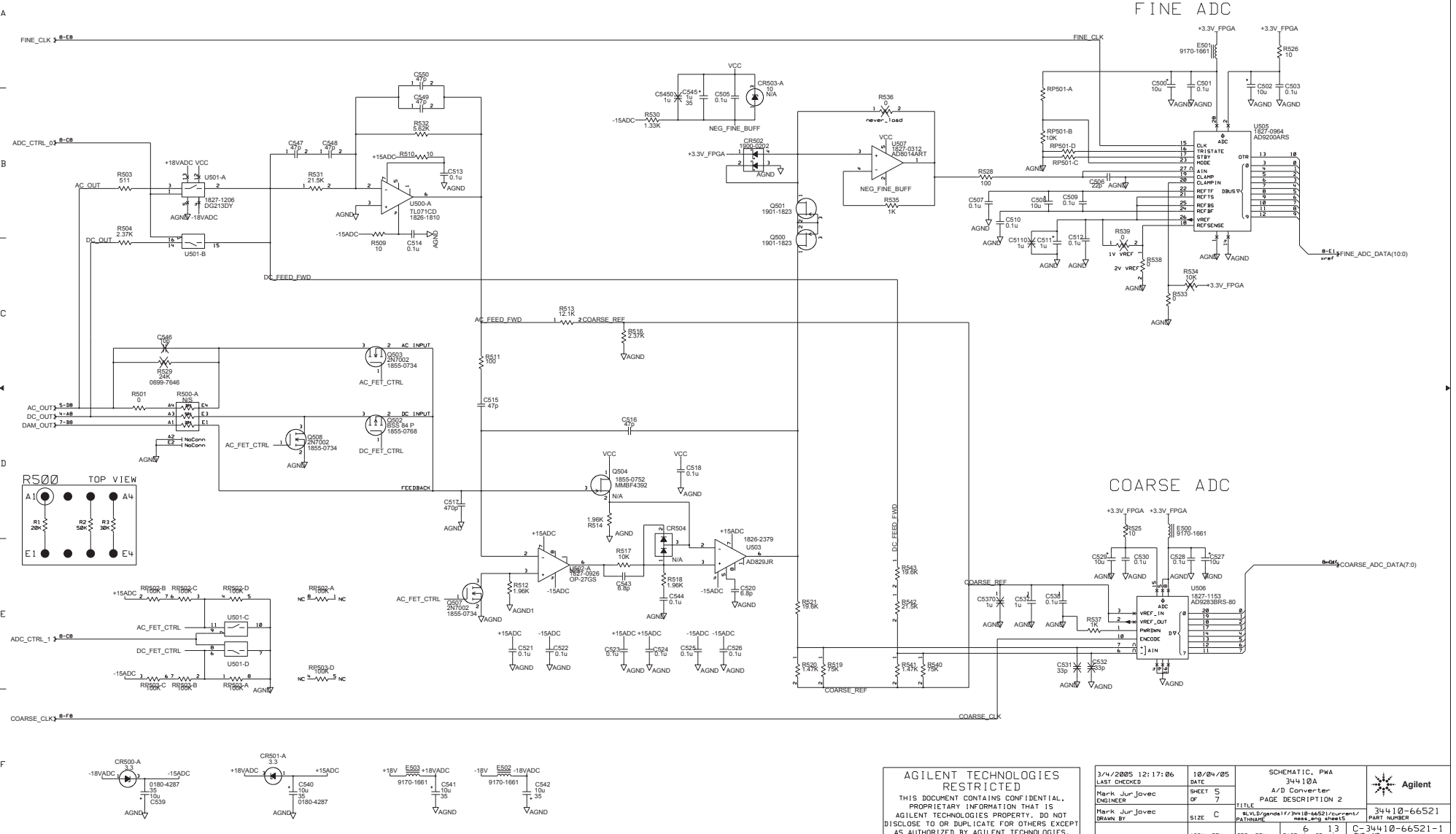
Range	Attenuation	Gain	REG1	REG2	REG3	REG4
100mV	0.2	x100	0	1	0	0
1V	0.2	x10	0	1	0	1
10V	0.002	x10	1	0	0	1
750V	0.002	x1	1	0	0	1

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12/5/2005 11:31:34	10/04/05	SCHMATIC, PWA	34410A	Agilent
DATE	DATE	PAGE DESCRIPTION 2		
Mark Jurjovec	SHEET 4	AC SIGNAL CONDITIONING	34410-66521	PART NUMBER
ENGINEER	OF 7	PAGE DESCRIPTION 2		
Mark Jurjovec	SIZE C	TITLE	34410-66521	REV. NO.
DRN BY	ASSY. REV	BRD. REV	5	13
		PAGE	5	13

A/D CONVERTER

REVISIONS
SEE PAGE 1 FOR REVISION HISTORY



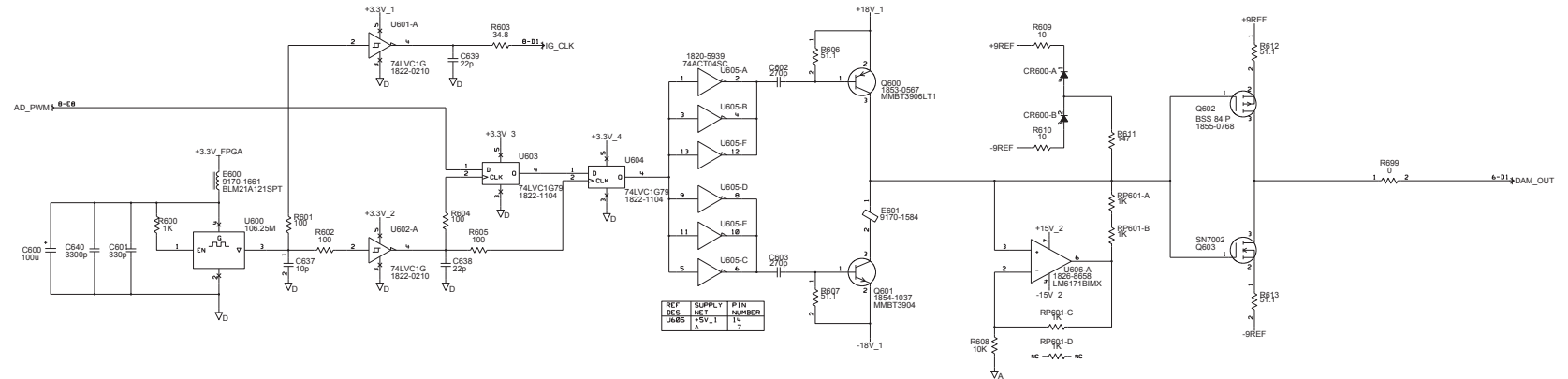
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3/1/2005 12:17:06
LAST CHECKED
DATE
Mark Jurjavec
ENGINEER
SHEET 5
OF 7
SIZE C
DRAWN BY

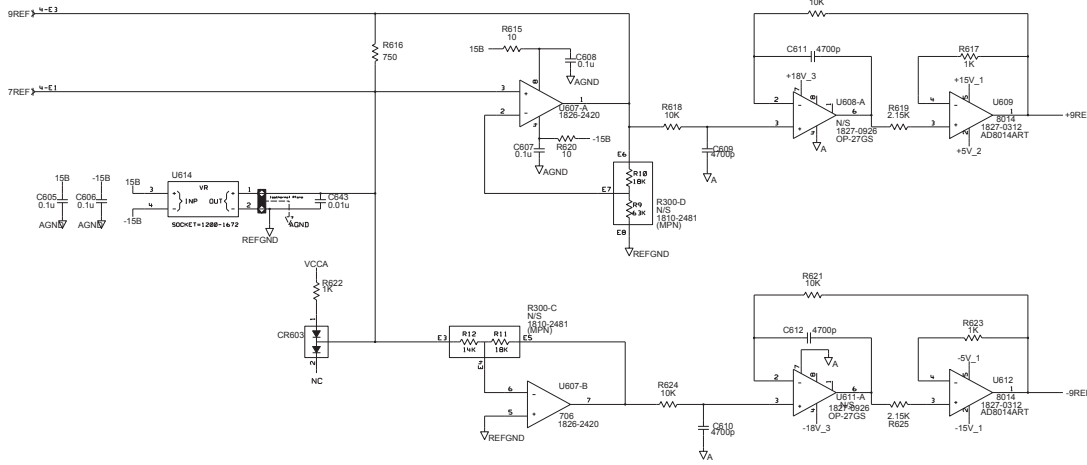
SCHEMATIC, PHA 34410A A/D Converter PAGE DESCRIPTION 2	Agilent
TITLE 34410-66521 PART NUMBER	34410-66521 PART NUMBER
ASSY. REV BRD. REV PAGE OF	6 13 C-34410-66521-1 DWG. NO.

DAM SWITCH

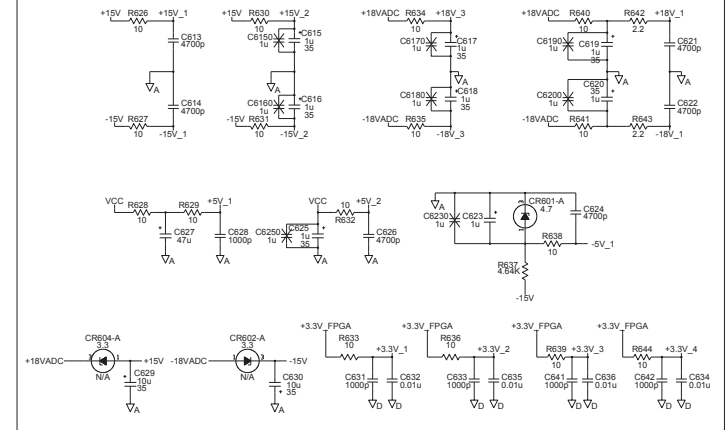
REVISIONS
SEE PAGE 1 FOR REVISION HISTORY



REFERENCES



POWER SUPPLIES

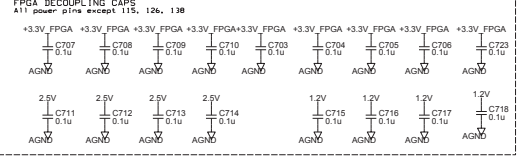
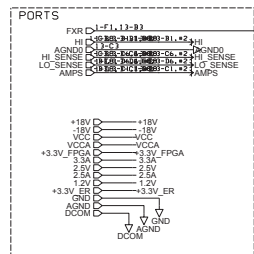
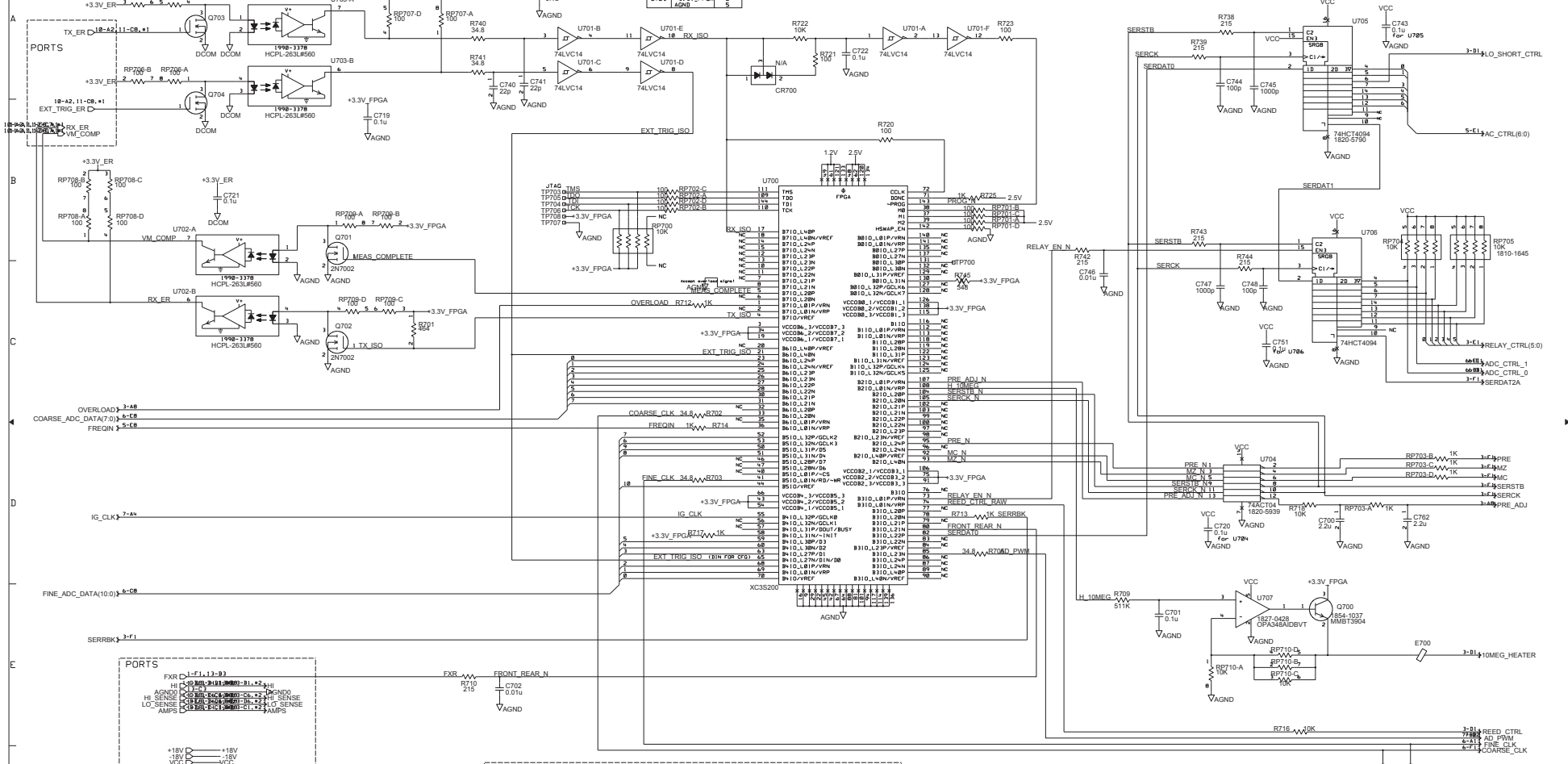


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---	--	---	--	--	--------------------------------------

FPGA

REVISONS
SEE PAGE 1 FOR REVISION HISTORY

REF DES	SUPPLY NET	PIN NUMBERS
U781	+3.3V_FPGA	15
U782	+3.3V_ER	8
U783	+3.3V_FPGA	8

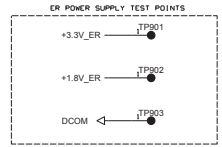
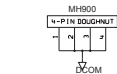
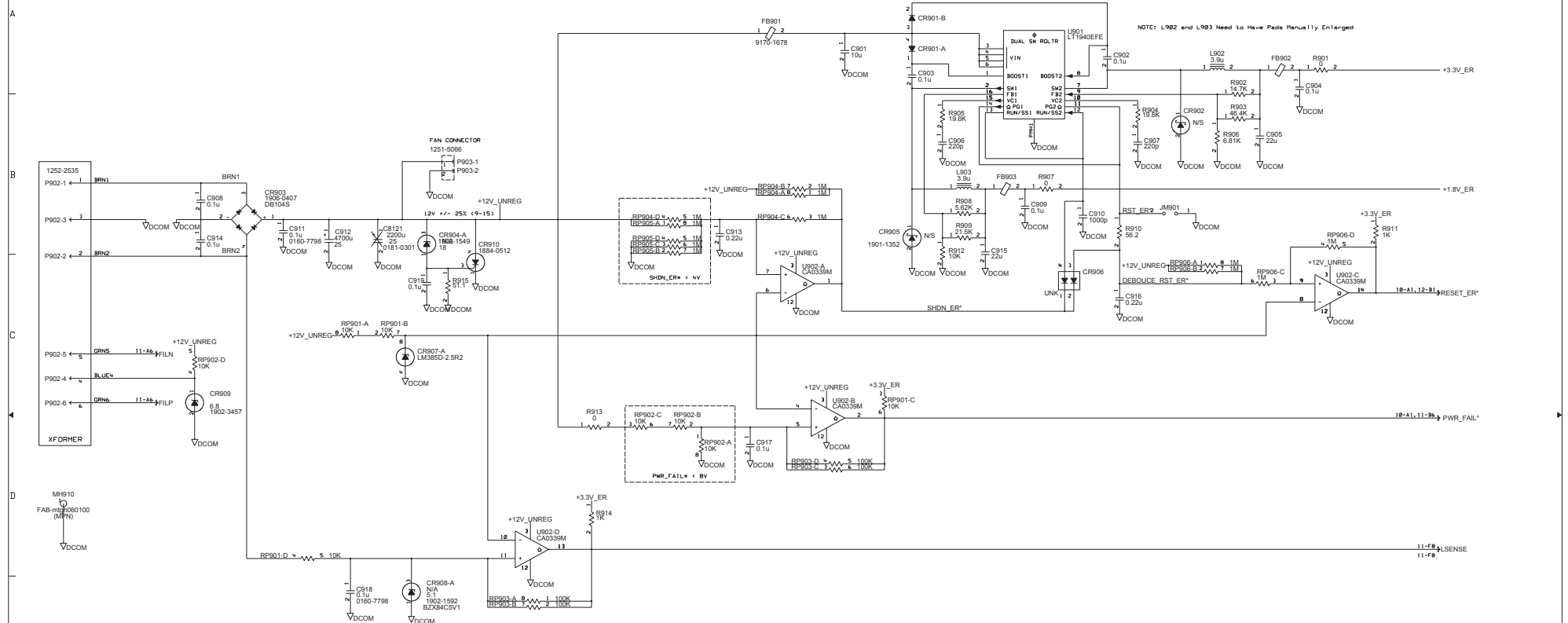


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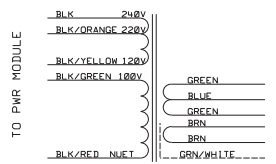
5/8/2006 16:59:27 LAST CHECKED	18/09/05 DATE	SCHMATIC, PHA 34410A	Agilent
Mark Jur Jovec ENGINEER	SHEET 7 OF 7	INGUARD LOGIC PAGE DESCRIPTION 2	
Mark Jur Jovec DRAWN BY	S12C C	TITLE NLY-Digamma11/Pw10-66521/current1/ meas_prog sheet1	34410-66521 PART NUMBER
ASSY. REV	BRD. REV	PAGE 8 OF 13	C-34410-66521-1 DWG. NO.

EARTH-REFERENCED POWER SUPPLY

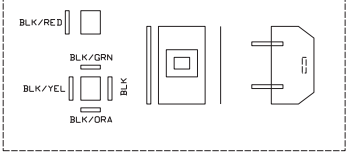
REVISIONS
SEE PAGE 1 FOR REVISION HISTORY



THESE PARTS NOT ON PC-BOARD
PWR TRANSFORMER



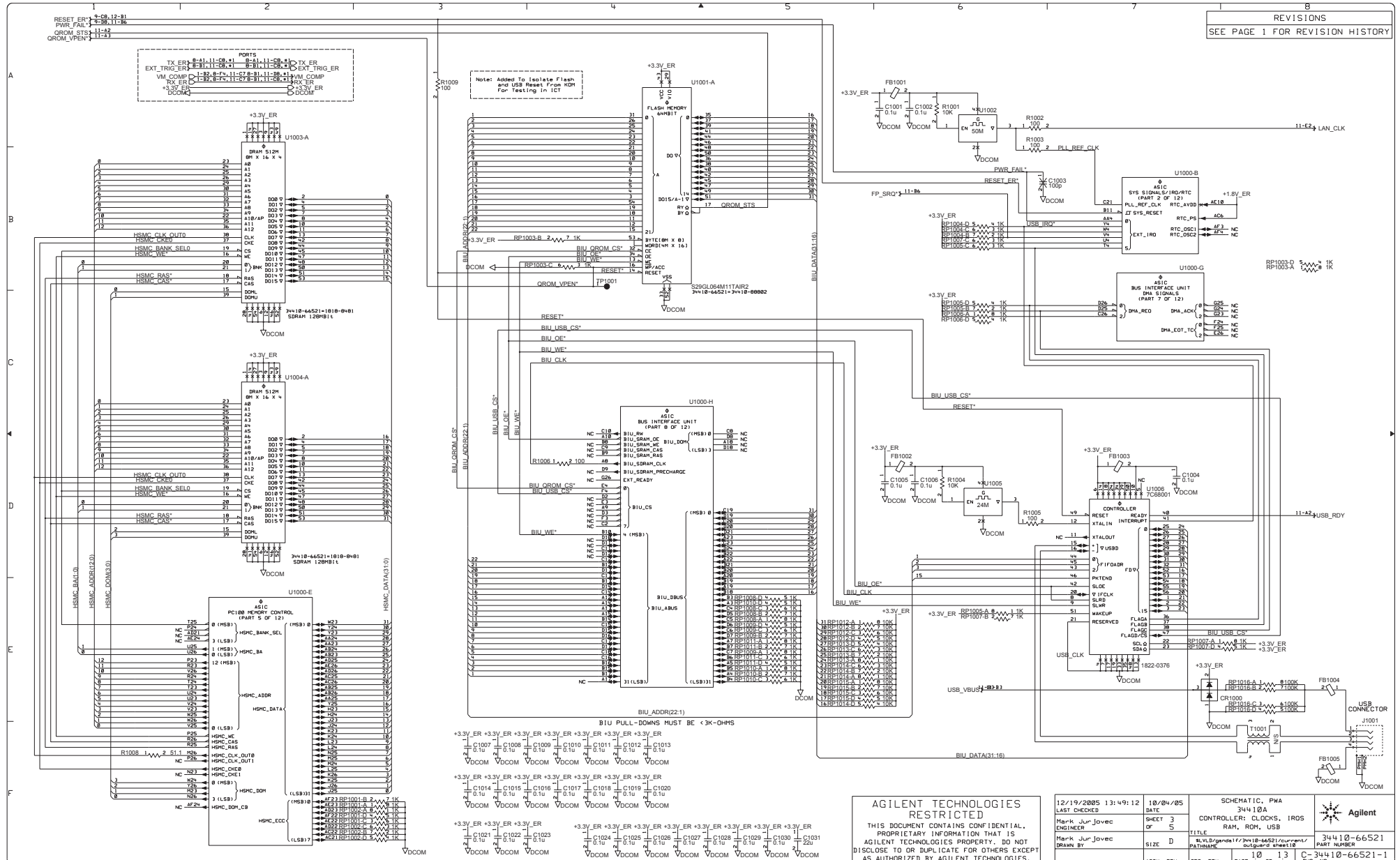
POWER MODULE (VIEWED FROM INSIDE UNIT)



THE POWER MODULE INCLUDES THE POWER SWITCH, THE POWER FUSE, AND THE LINE VOLTAGE SELECTION SWITCH.

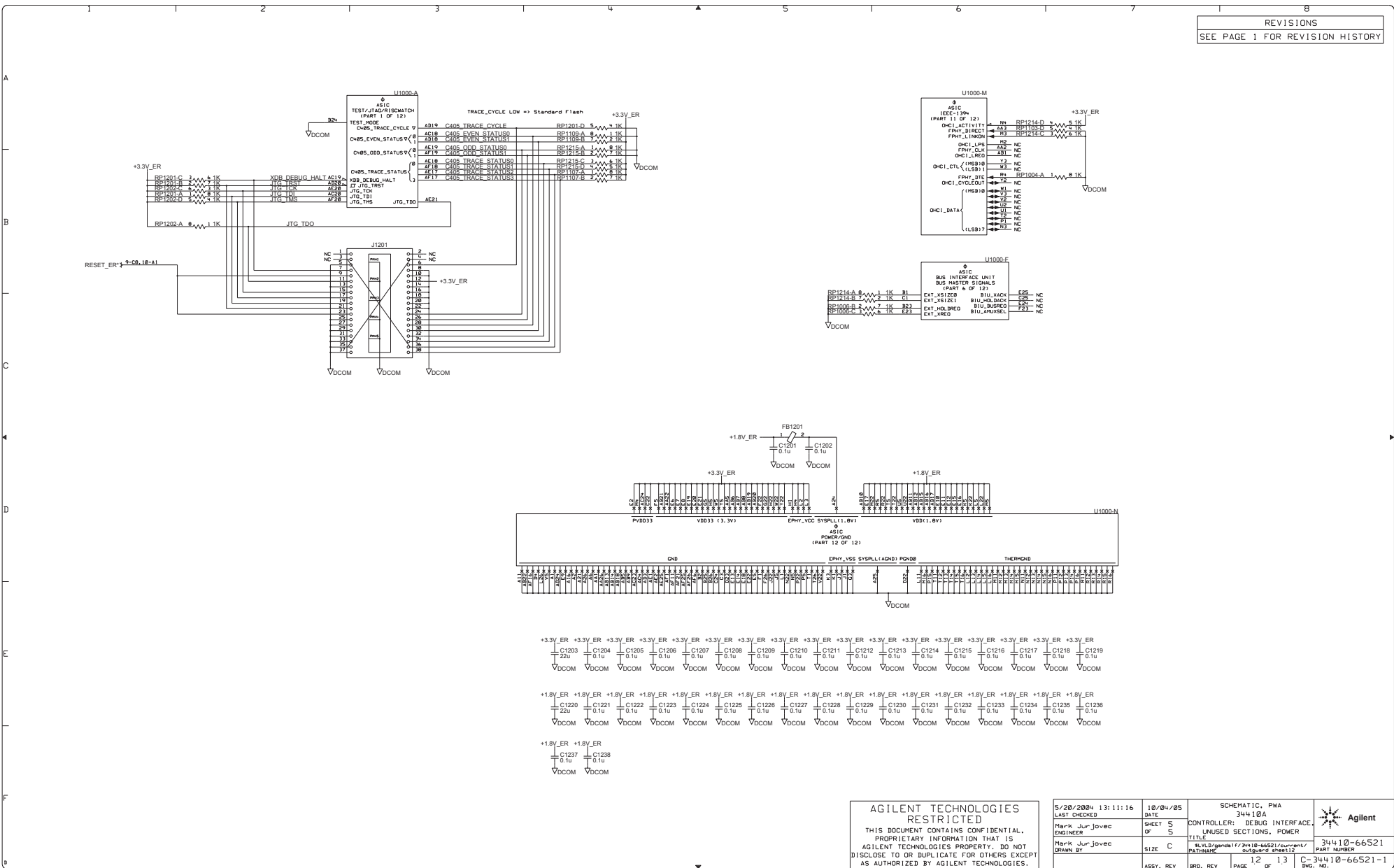
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2/14/2005 12:09:33	10/04/05	SCHMATIC, PWA	34410A	Agilent
LAST CHECKED	DATE	EARTH-REFERENCED		
Mark Juvencio	SHEET 2	POWER SUPPLY	TITLE	
ENGINEER	OF 5		34410-66521	
Mark Juvencio	SIZE C		PART NUMBER	
DRAWN BY			34410-66521-1	
ASSY. REV	BRD. REV	PAGE 9	OF 13	Doc. No.



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12/19/2005 13:49:12 DATE	10/04/05 DATE	SCHMATIC, PHA 34410A	Agilent
Mark Jurjavec ENGINEER	Mark Jurjavec DRAWN BY	CONTROLLER: CLOCKS, IRDS RAM, ROM, USB	34410-66521 PART NUMBER
SIZE D	ASSY. REV	BRD. REV	C-34410-66521-1 DWG. NO.
SHEET 3 OF 5	10	13	OF



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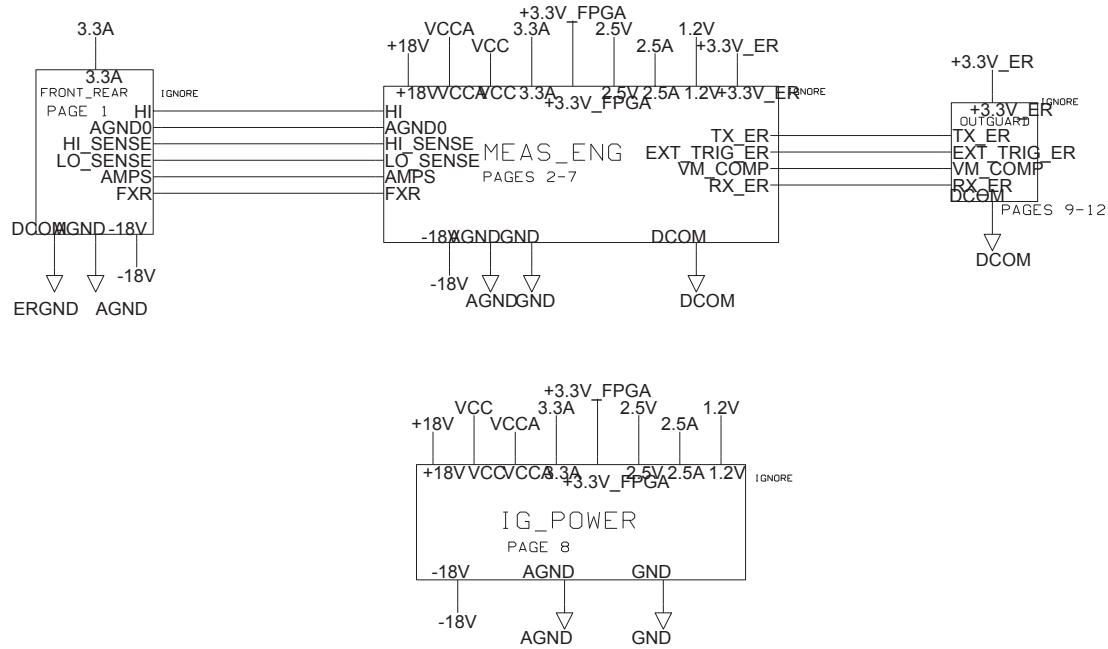
5/28/2004 13:11:16 LAST CHECKED	10/04/05 DATE	SCHMATIC, PHA 34410A	
Mark Jurjovec ENGINEER	SHEET 5 OF 5	CONTROLLER: DEBUG INTERFACE, UNUSED SECTIONS, POWER	
Mark Jurjovec DRAWN BY	SIZE C	TITLE MVL06gndel17/34410-66521/courtnt/ PARTNAME outgndel17	34410-66521 PART NUMBER
	ASSY. REV	BRD. REV	C-34410-66521-1 DWG. NO.

1

2

A-34410-66521-1

REV	INFORMATION	APPROVED	DATE
D			




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6/5/2006 14:45:15 LAST CHECKED	10/04/05 DATE
Mark Jurjovec ENGINEER	SHEET 1 OF 1
Mark Jurjovec DRAWN BY	SIZE A
	ASSY. REV

SCHEMATIC, PWA 34410A Gandalf TOP-LEVEL BLOCK DIAGRAM TITLE	
\$LVL/D/gandalf/34410-66521/current/top PATHNAME sheet1	
PAGE 13	OF 13
BRD. REV	DWG. NO.



Agilent

34410-66521
PART NUMBER

A-34410-66521-1
DWG. NO.

OROM_STS 18-41
USB_HDVY 18-58

CAL_UNSCURE JUMPER
JM1101

NOTE: PLACE JM1101 ON TOPSIDE
PLACE JM1102 & JM1103 ON BOTTOM

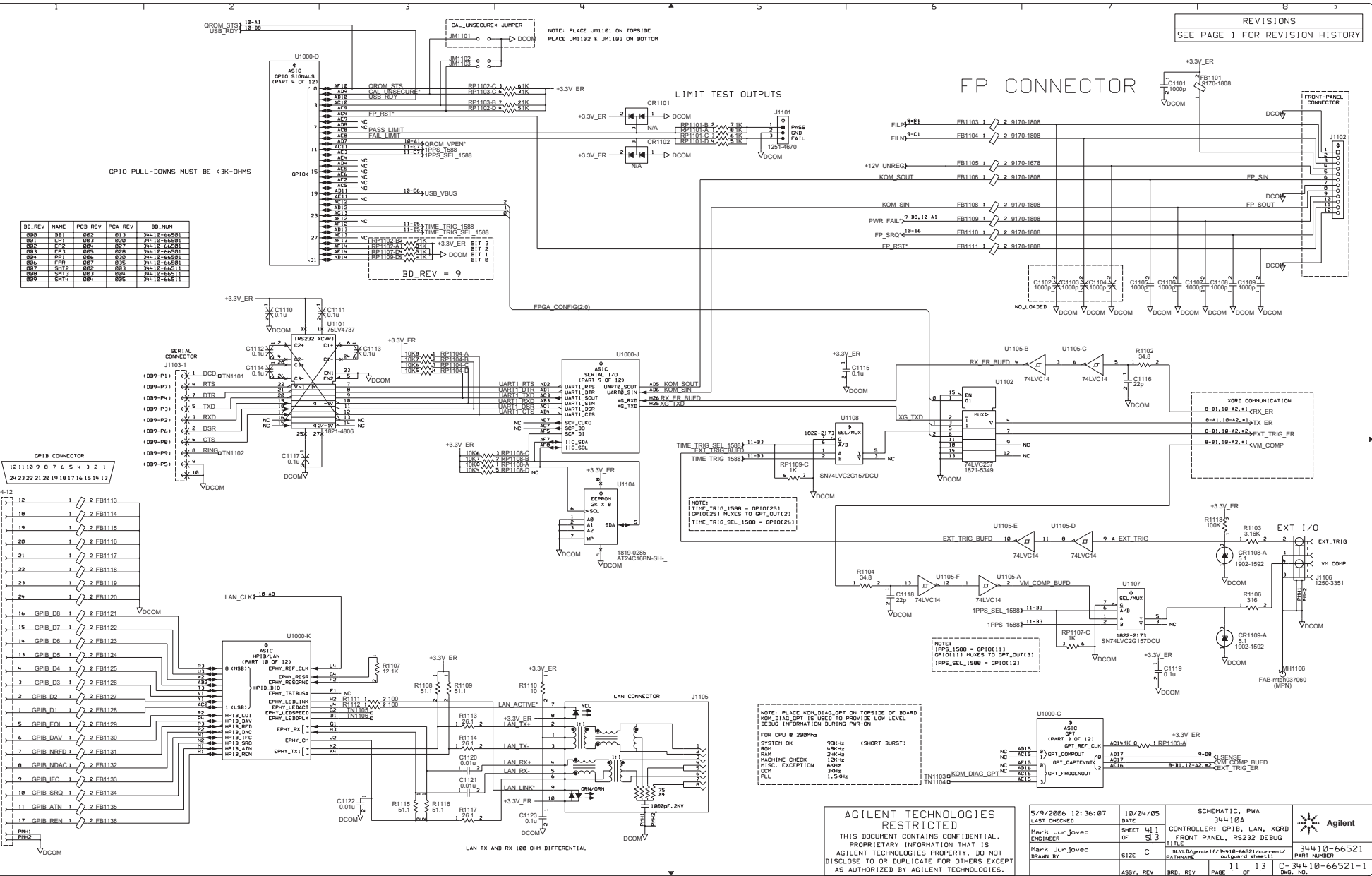
REVISIONS
SEE PAGE 1 FOR REVISION HISTORY

FP CONNECTOR

BD_REV	NAME	PCB REV	PCA REV	BD_NUM
001	BI	001	013	34410-66520
002	EP	002	038	34410-66520
003	EP	003	038	34410-66520
004	EP	004	038	34410-66520
005	EP	005	038	34410-66520
006	EP	006	038	34410-66520
007	EP	007	035	34410-66520
008	SH2	008	083	34410-66511
009	SH3	009	086	34410-66511
010	SH4	010	085	34410-66511

GPIO PULL-DOWNS MUST BE <3K-OHMS

LIMIT TEST OUTPUTS



GPIB CONNECTOR

12	1	2	FBI113
11	1	2	FBI114
10	1	2	FBI115
9	1	2	FBI116
8	1	2	FBI117
7	1	2	FBI118
6	1	2	FBI119
5	1	2	FBI120
4	1	2	FBI121
3	1	2	FBI122
2	1	2	FBI123
1	1	2	FBI124
16	1	2	FBI125
15	1	2	FBI126
14	1	2	FBI127
13	1	2	FBI128
12	1	2	FBI129
11	1	2	FBI130
10	1	2	FBI131
9	1	2	FBI132
8	1	2	FBI133
7	1	2	FBI134
6	1	2	FBI135
5	1	2	FBI136

J1104-12

12	1	2	FBI113
11	1	2	FBI114
10	1	2	FBI115
9	1	2	FBI116
8	1	2	FBI117
7	1	2	FBI118
6	1	2	FBI119
5	1	2	FBI120
4	1	2	FBI121
3	1	2	FBI122
2	1	2	FBI123
1	1	2	FBI124

NOTE: PLACE KHM DIAG OPT ON TOPSIDE OF BOARD
KHM_DIAG_OPT IS USED TO PROVIDE LOW LEVEL
DEBUG INFORMATION DURING PWR-ON

FOR CPU @ 200MHz
SYSTEM CLK 98MHz (SHORT BURST)
RSM 48MHz
RSM 24MHz
MACHINE CHECK 12MHz
MISC. EXCEPTION 6MHz
DCH 3MHz
PLL 1.5MHz

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5/9/2006 12:36:07	10/04/05	SCHEMATIC, PHA	Agilent
LAST CHECKED	DATE	34410A	
Mark Juvavec ENGINEER	SHEET 41 OF 53	CONTROLLER: GPIB, LAN, XGRD FRONT PANEL, RS232 DEBUG	34410-66521 PART NUMBER
Mark Juvavec DRAWN BY	SIZE C	FILE: \\gdsnet11\34410-66521\current\c-34410-66521-11-13.dwg	
ASSY. REV	BRD. REV	PAGE 11 OF 13	C-34410-66521-1 DWG. NO.

+18V \square^{xref}

VCC \square^{xref}

VCCA \square^{xref}

3.3A \square^{xref} +3.3V_FPGA \square^{xref}

2.5V \square^{xref}

2.5A \square^{xref}

1.2V \square^{xref}

-18V \square^{xref}

AGND \square^{xref}

GND \square^{xref}