

VME CRATE

POWER SUPPLY (Corr. Bd's & Pwr Cntr's)

POWER COUNTERS

CH1 HALFBAND FILTERS

CH2 HALFBAND FILTERS

HALFBAND FILTERS 1,2 POWER SUPPLY

CH3 HALFBAND FILTERS

CH4 HALFBAND FILTERS

HALFBAND FILTERS 3,4 POWER SUPPLY

LOCAL OSCILLATOR DISTRIBUTION

SQUARE-LAW DETECTORS

CH1 & CH2 260MHZ TO 25MHZ CONVERTERS

CH3 & CH4 260MHZ TO 25MHZ CONVERTERS

PROGRAMMABLE ATTENUATORS

POWER SUPPLY (+15V,-15V,+5V)

260MHZ NOISE SOURCE

UPS

VME Crate (turned sideways)

Motorola MVME167 (System Controller)

P1 : Motorola MVME162FX
(IPack Slot B) : SBS IPAltera

P6 : Motorola MVME162FX
(IPack Slot A) : SBS IP-Digital 24
(IPack Slot C,D) : Sub-Correlator 1

P7 : Motorola MVME162FX
(IPack Slot A) : SBS IP-Digital 24
(IPack Slot C,D) : Sub-Correlator 2

P8 : Motorola MVME162FX
(IPack Slot A) : SBS IP-Digital 24
(IPack Slot C,D) : Sub-Correlator 3

P9 : Motorola MVME162FX
(IPack Slot A) : SBS IP-Digital 24
(IPack Slot C,D) : Sub-Correlator 4

ScramNet Board

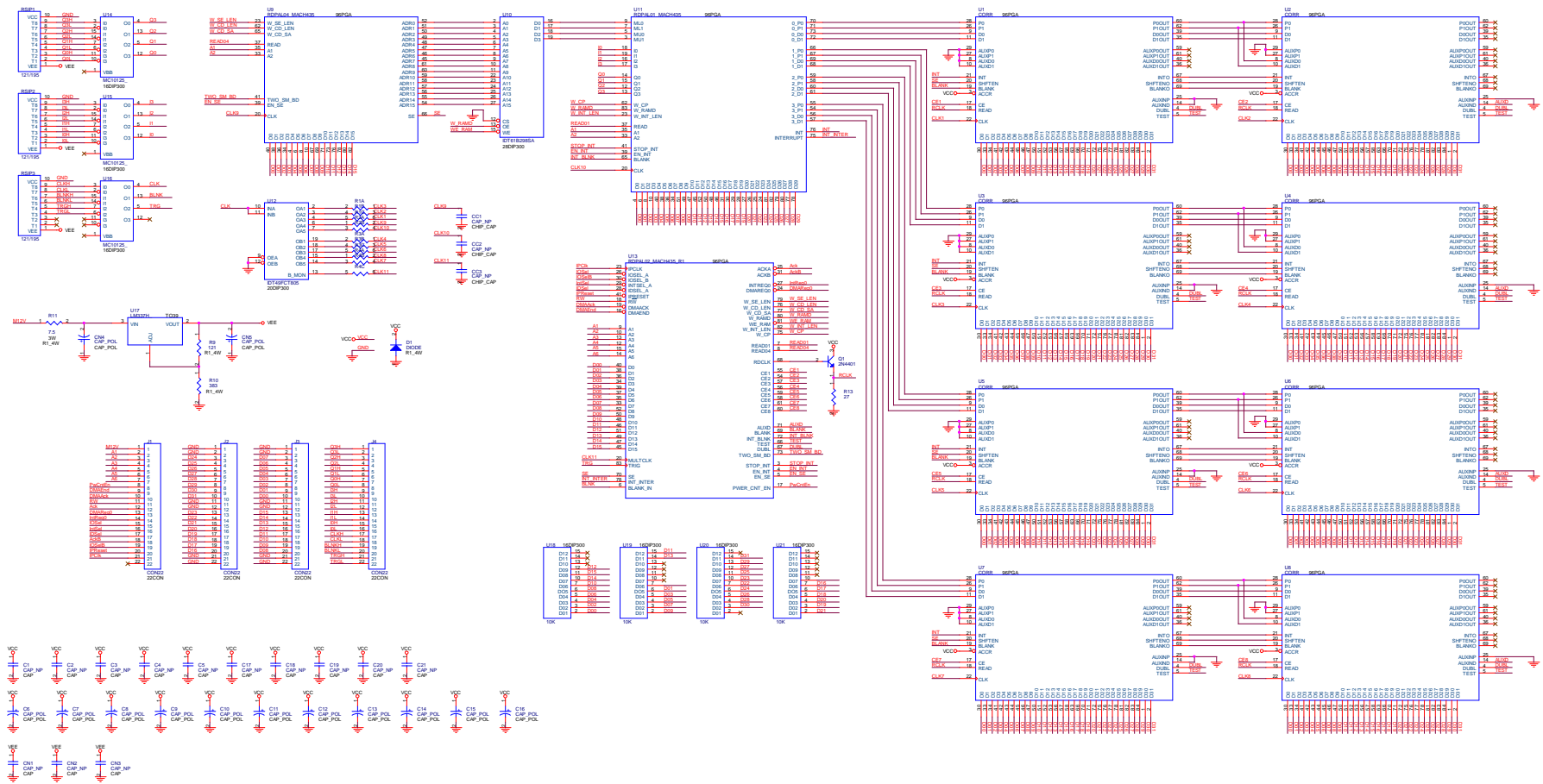
ARECIBO OBSERVATORY

BY : BILL SISK
FILE : InterimCorr.dsn

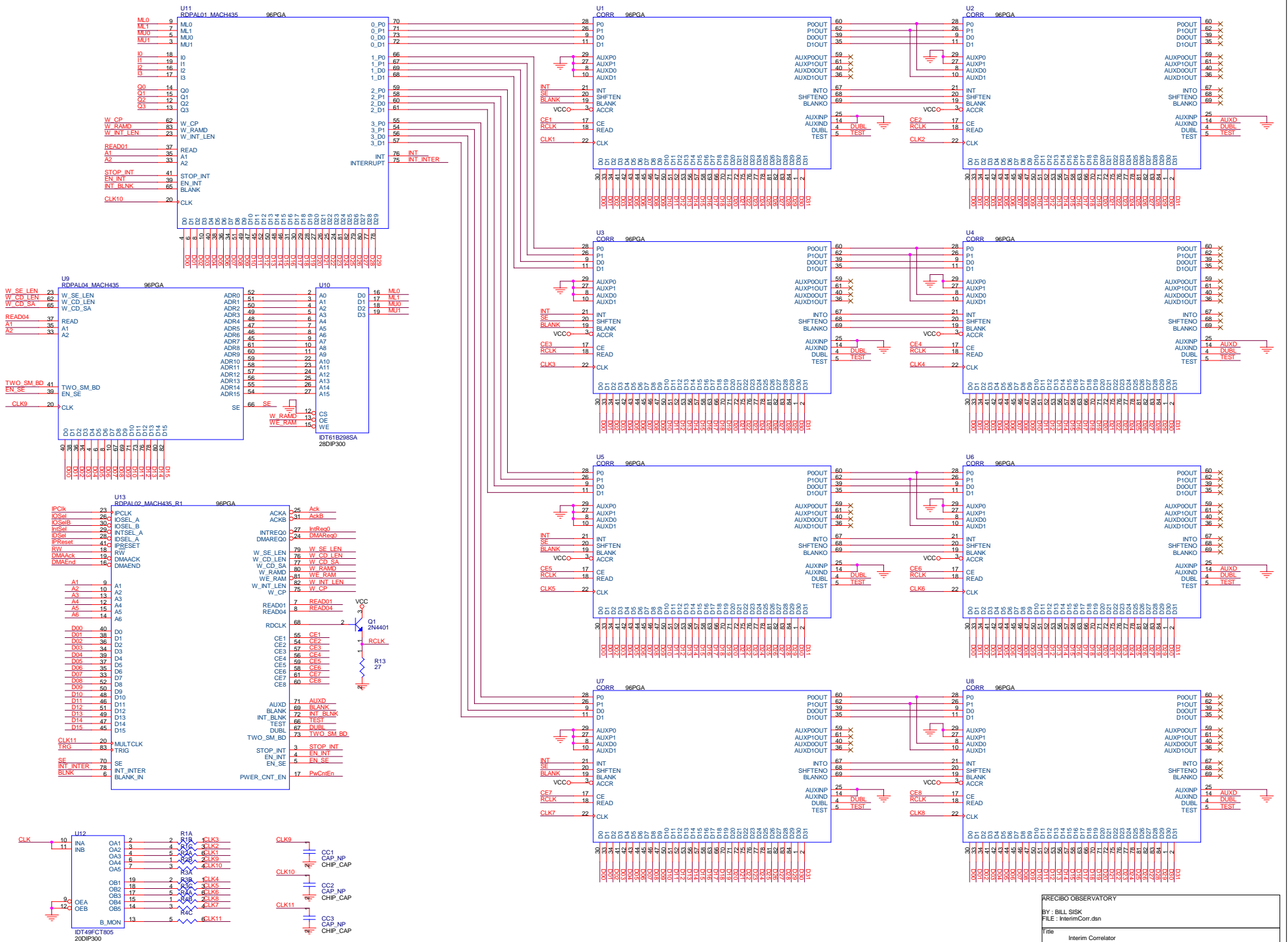
Title
Interim Correlator

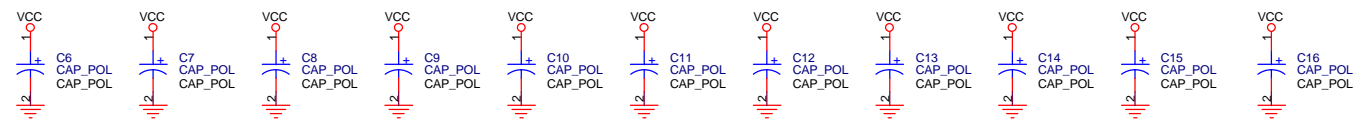
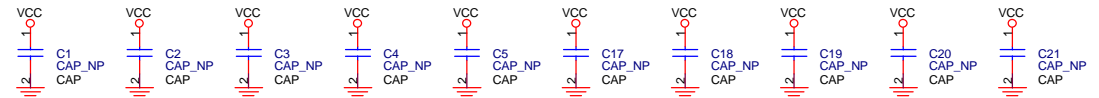
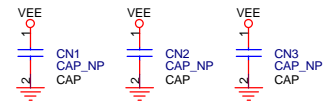
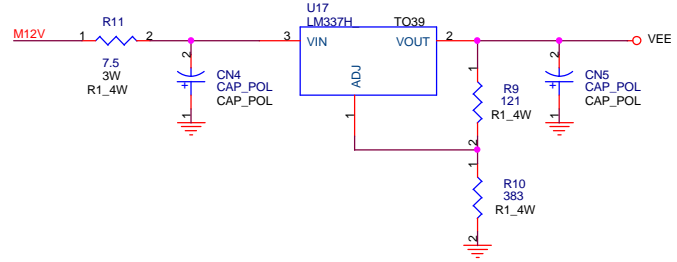
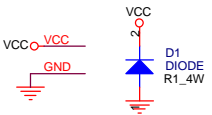
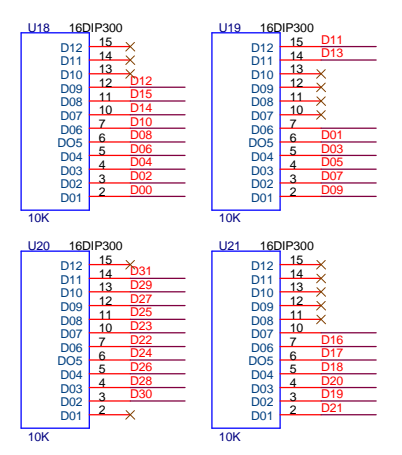
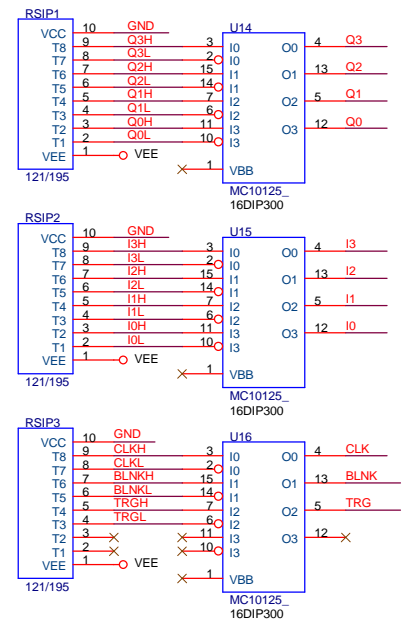
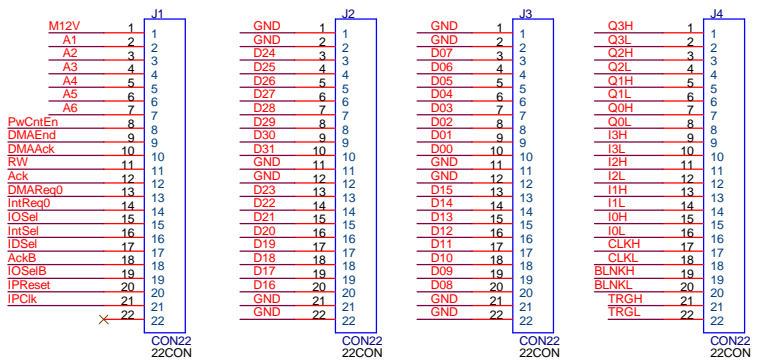
Size A	Document Number RACK STACKUP	Rev
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Date: Thursday, April 11, 2002 Sheet 1 of 1

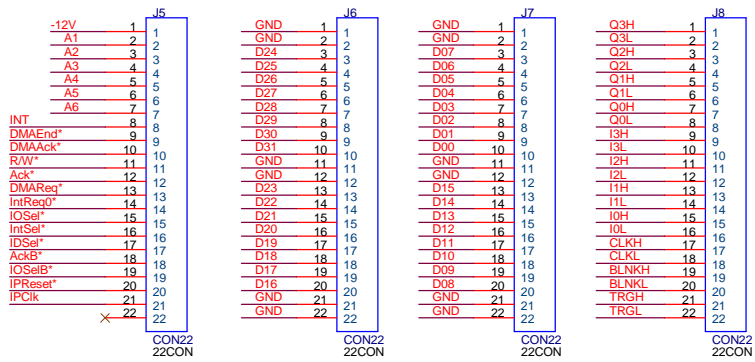


PRECISO OBSERVATORY	
P.F. BELL SISK	
P.E. BROWN/CAR. SM.	
REV.	Revision Number
DATE	Entered Number
BY	Entered Name
DATE	Entered Date



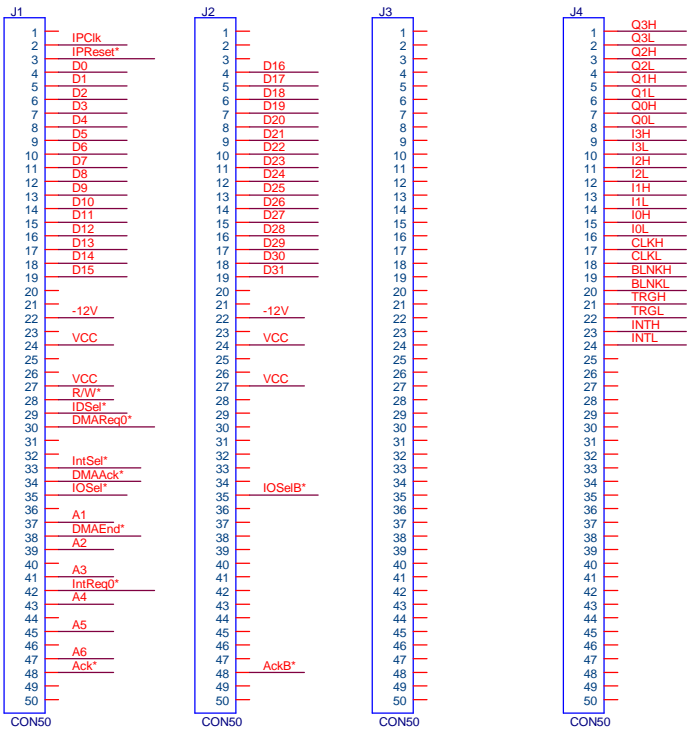
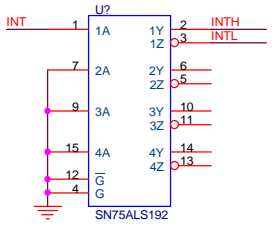
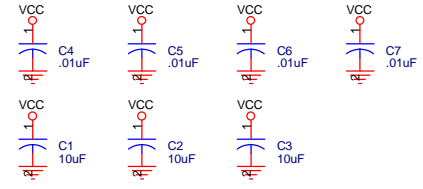


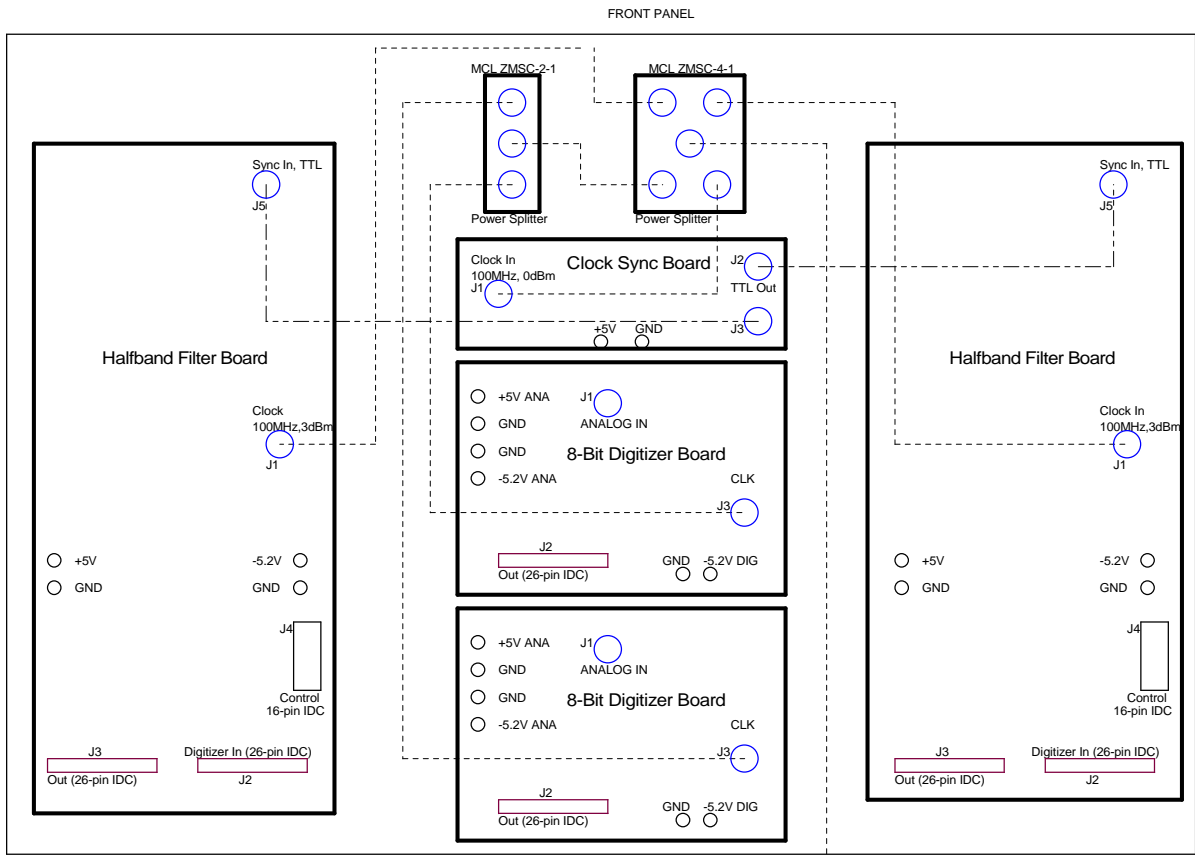
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BY : BILL SISK		
FILE : InterimCorr.dsn		
Title Interim Correlator		
Size B	Document Number Correlator Board	Rev
Date: Monday, April 29, 2002	Sheet 2	of 2



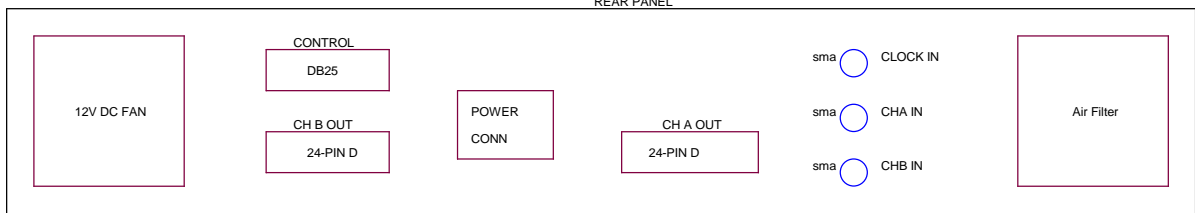
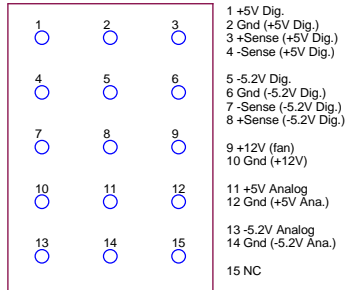
Twisted Pairs

Q3H	I3H	CLKH	IPCLK
Q3L	I3L	CLKL	GND
Q2H	I2H	BLNKH	
Q2L	I2L	BLNKL	
Q1H	I1H	TRGH	
Q1L	I1L	TRGL	
Q0H	I0H	INTH	
Q0L	I0L	INTL	

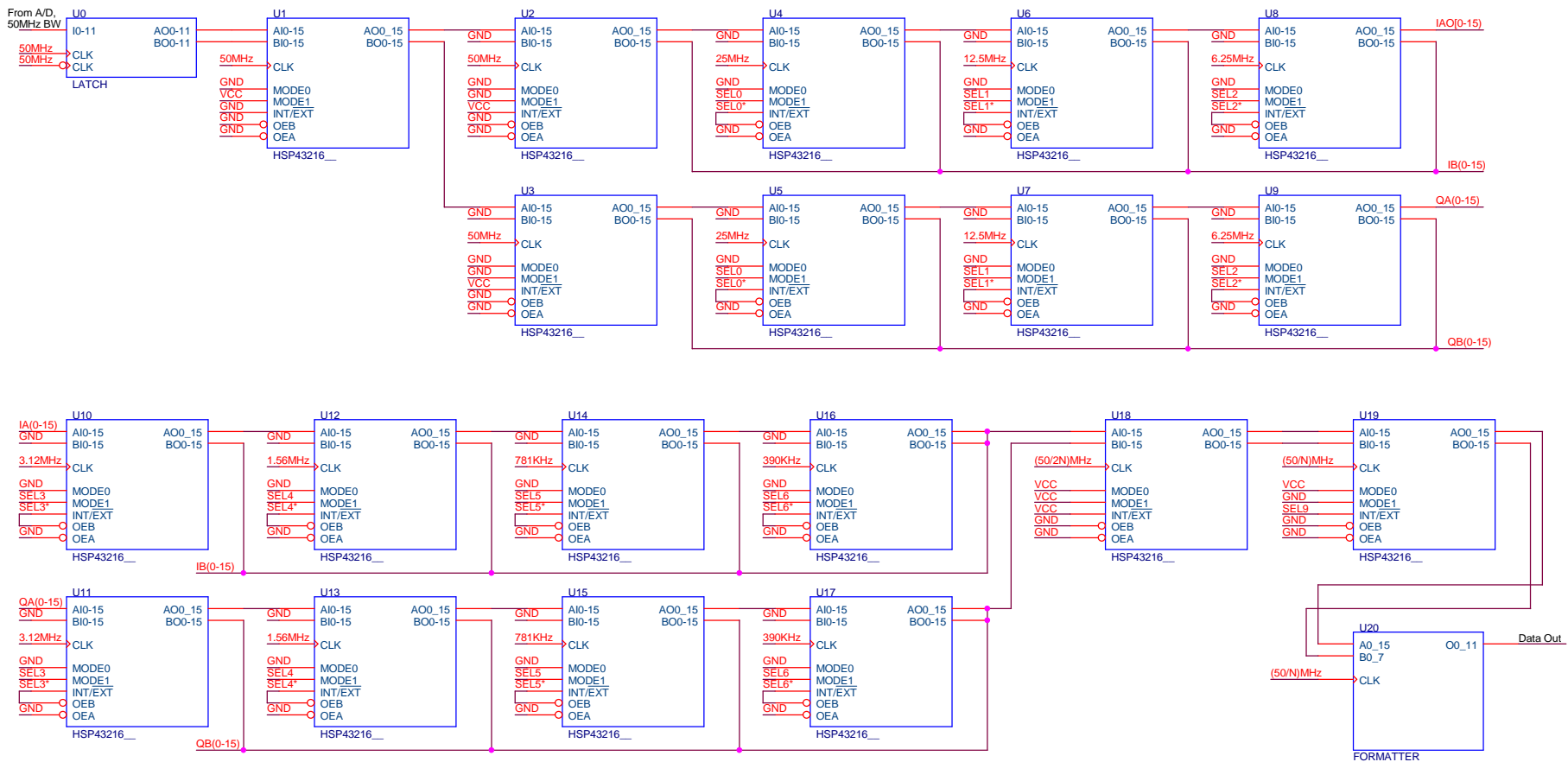




AMP MATE-N-LOK II



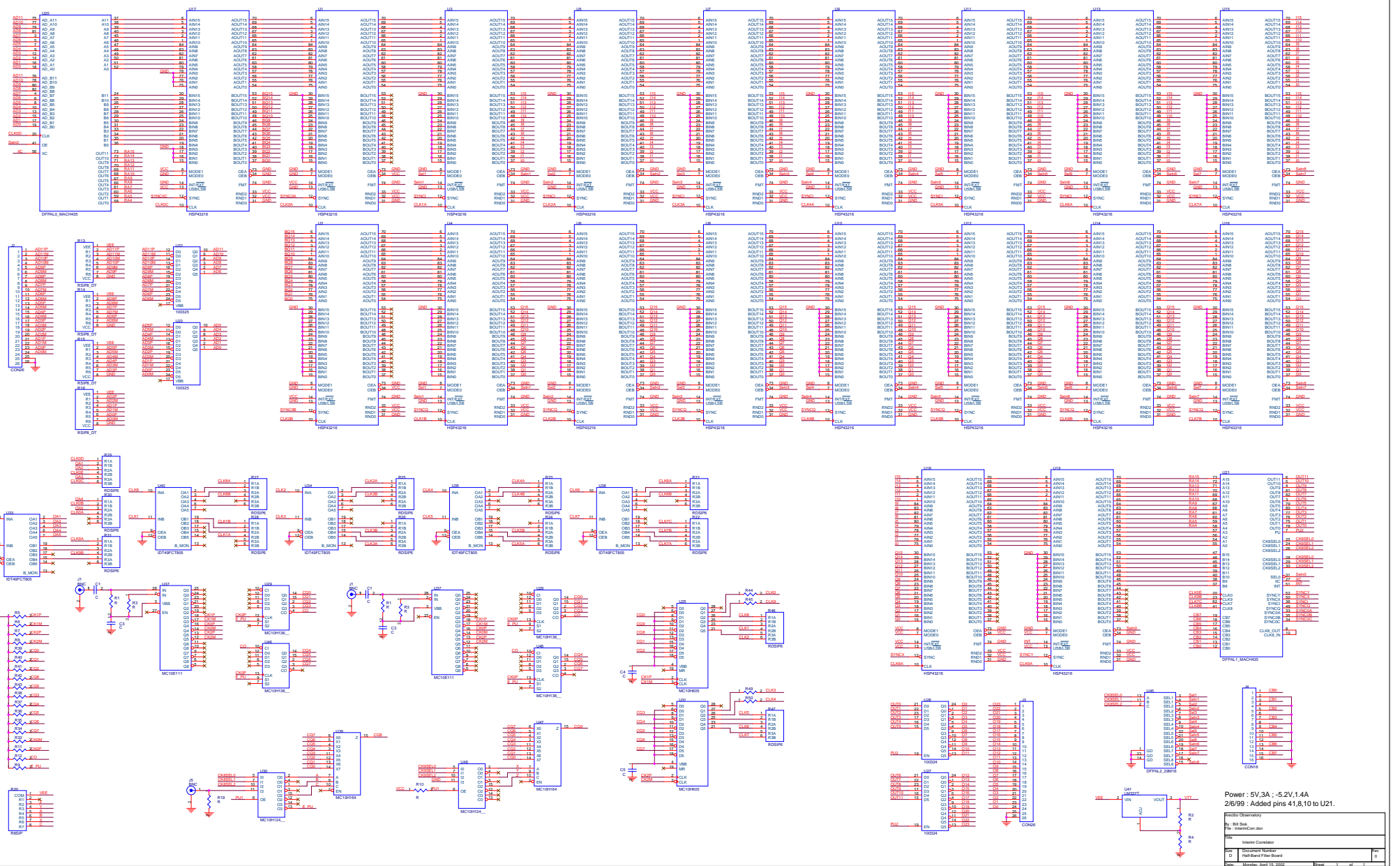
ARECIBO OBSERVATORY		
BY : BILL SISK		
FILE : InterimCorr.dsn		
Title		Interim Correlator
Size B	Document Number	Rev
	Layout for Halfband Filter Chassis	
Date:	Monday, April 15, 2002	Sheet 1 of 1



U0 converts the output of a 100MHz digitizer into even and odd samples at a 50MHz rate.
 U1 downconverts the data into I and Q data samples and decimates by two.
 There are a set of 8 half-band filters in each I and Q leg. Each filter halves the bandwidth and decimates by two.
 U18 converts the I and Q data back into real samples using the upconvert and interpolate mode.
 U19 interpolates the real data samples to generate an oversampled data rate for the double nyquist mode.
 U20 formats the data to maintain a constant RMS as the bandwidth is reduced.

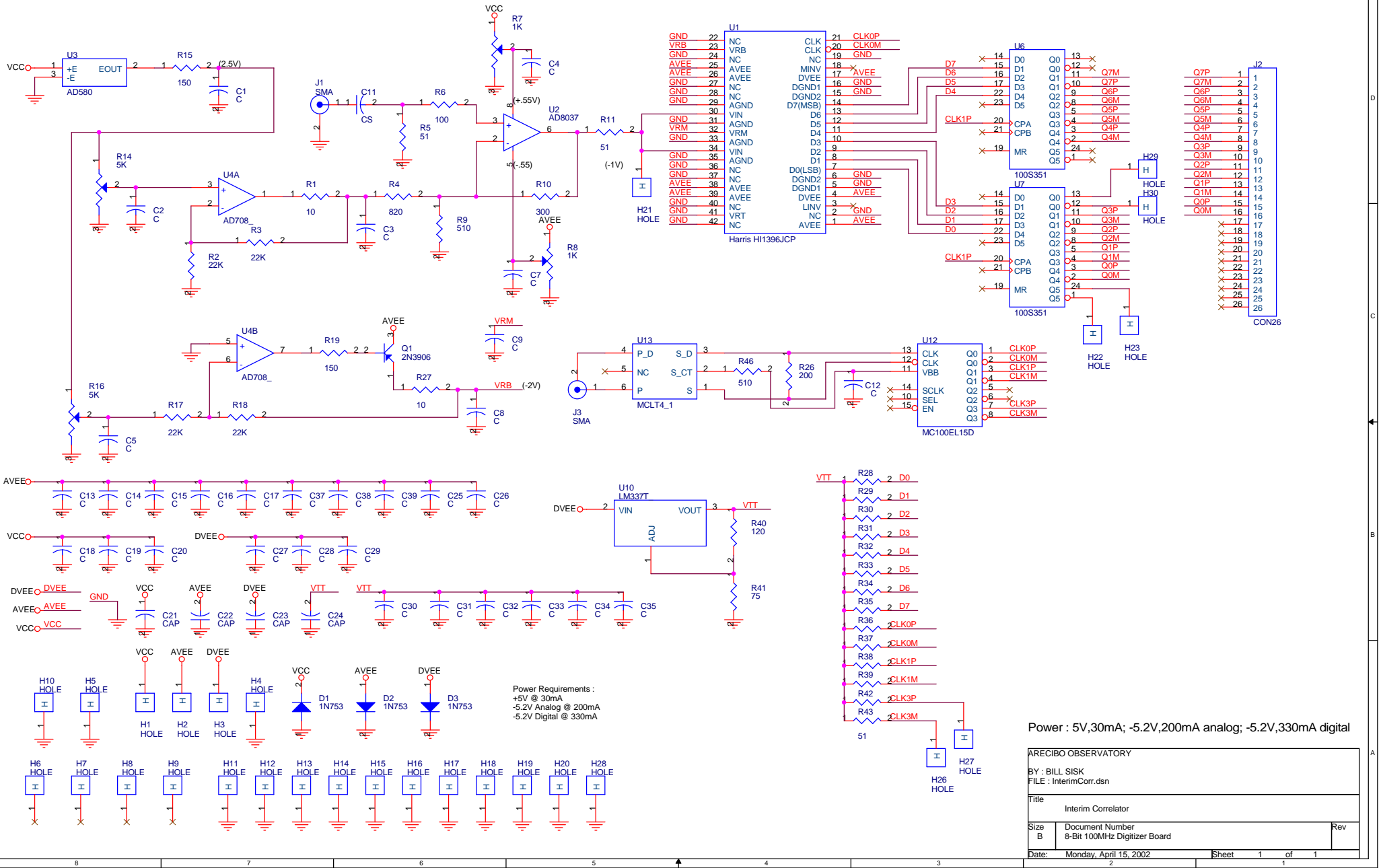
The data is bussed by making use of a feature of the half-band filter chips.
 In the external interpolate mode, the data on the A input is reproduced on the B output.
 For example, for a 25MHz bandwidth, output A of U2 (I) and U3 (Q) are used.
 U4 and U5 are in external interpolate mode and their B outputs are tristate enabled.

ARECIBO OBSERVATORY		
BY : BILL SISK		
FILE : InterimCorr.dsn		
Title		
Interim Correlator		
Size	Document Number	Rev
B	Functional Block Diagram for the Half-Band Filter Board	
Date:	Monday, April 15, 2002	Sheet 1 of 1



Power: 5V,3A ; -5.2V,1.4A
2/6/99 ; Added pins 41,8,10 to U21.

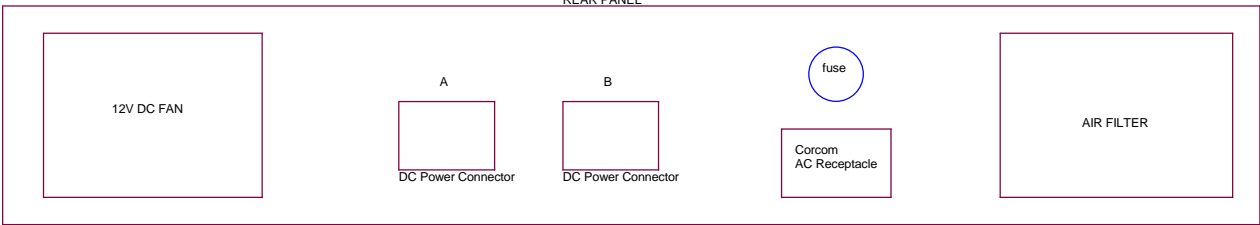
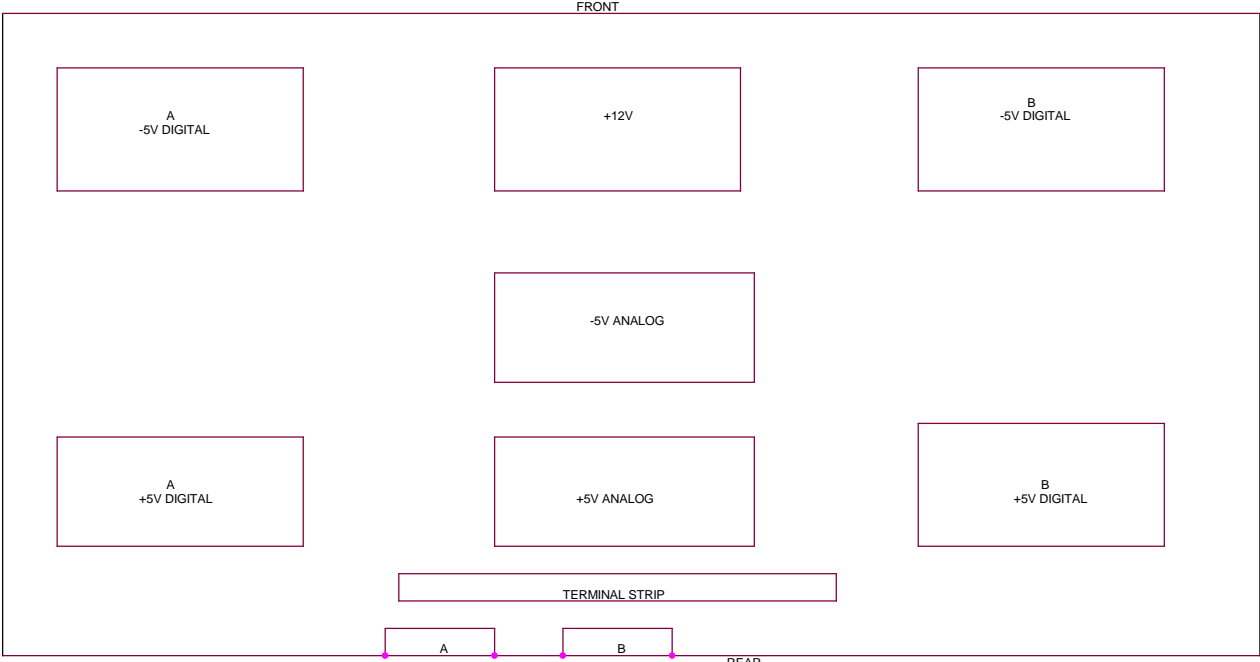
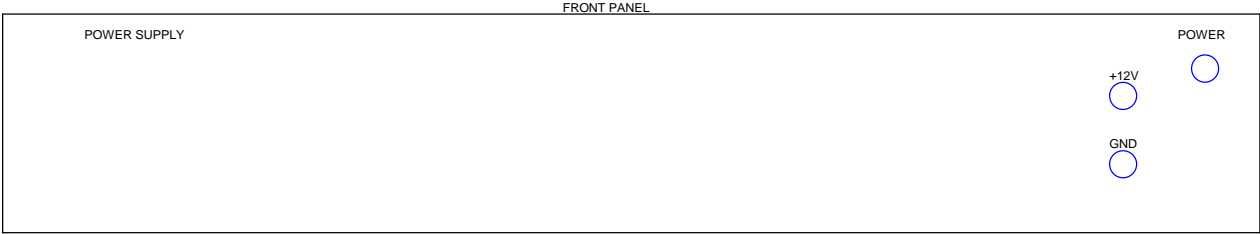
Rev	Version Comment	1
By	By: M. Sak	
Drawn	Drawn: M. Sak	
Checked	Checked: M. Sak	
Approved	Approved: M. Sak	
Date	Date: 2/6/99	



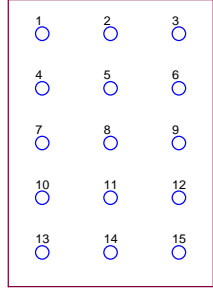
Power Requirements :
 +5V @ 30mA
 -5.2V Analog @ 200mA
 -5.2V Digital @ 330mA

Power : 5V,30mA; -5.2V,200mA analog; -5.2V,330mA digital

ARECIBO OBSERVATORY		
BY : BILL SISK		
FILE : InterimCorr.dsn		
Title Interim Correlator		
Size B	Document Number 8-Bit 100MHz Digitizer Board	Rev
Date: Monday, April 15, 2002	Sheet 1	of 1

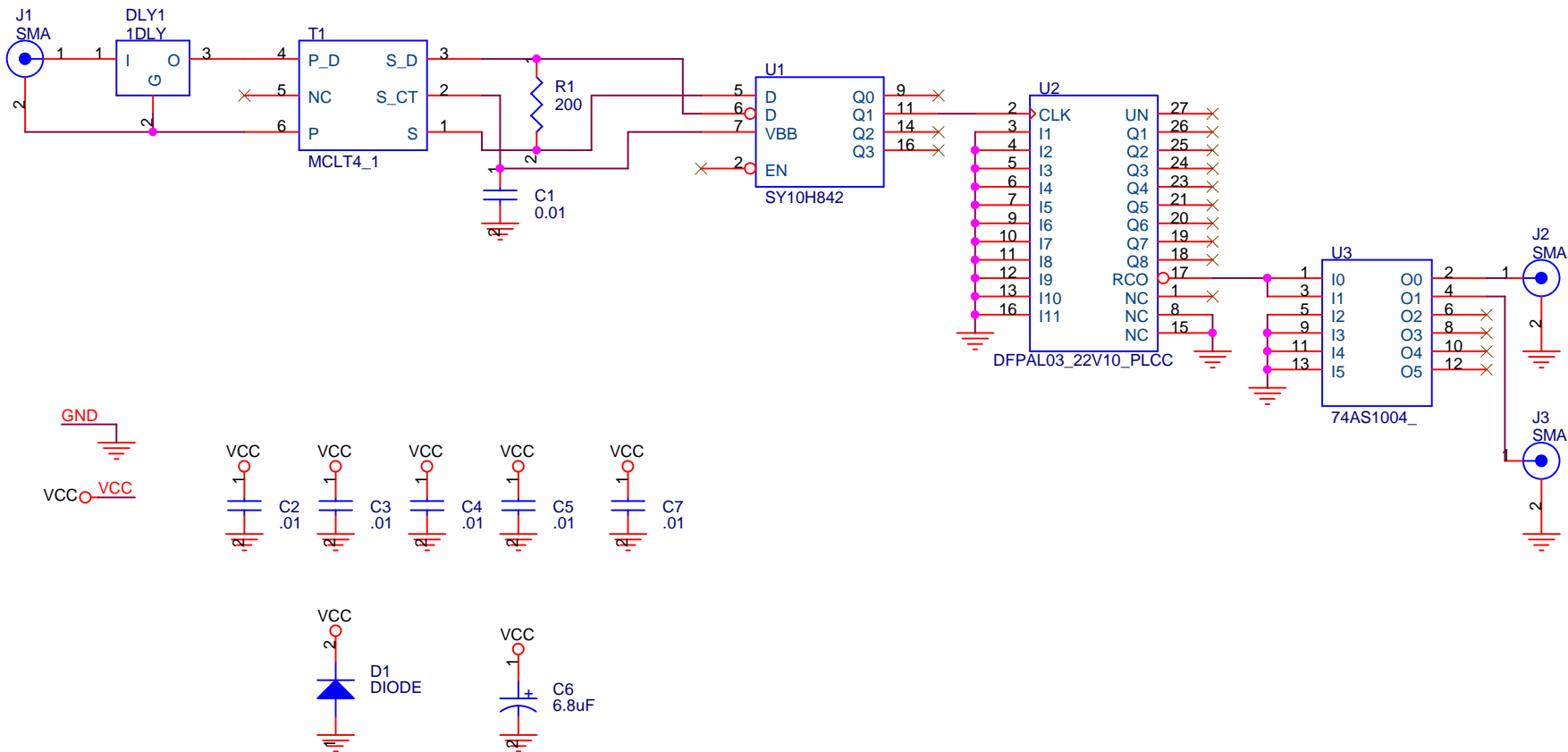


AMP MATE-N-LOK II

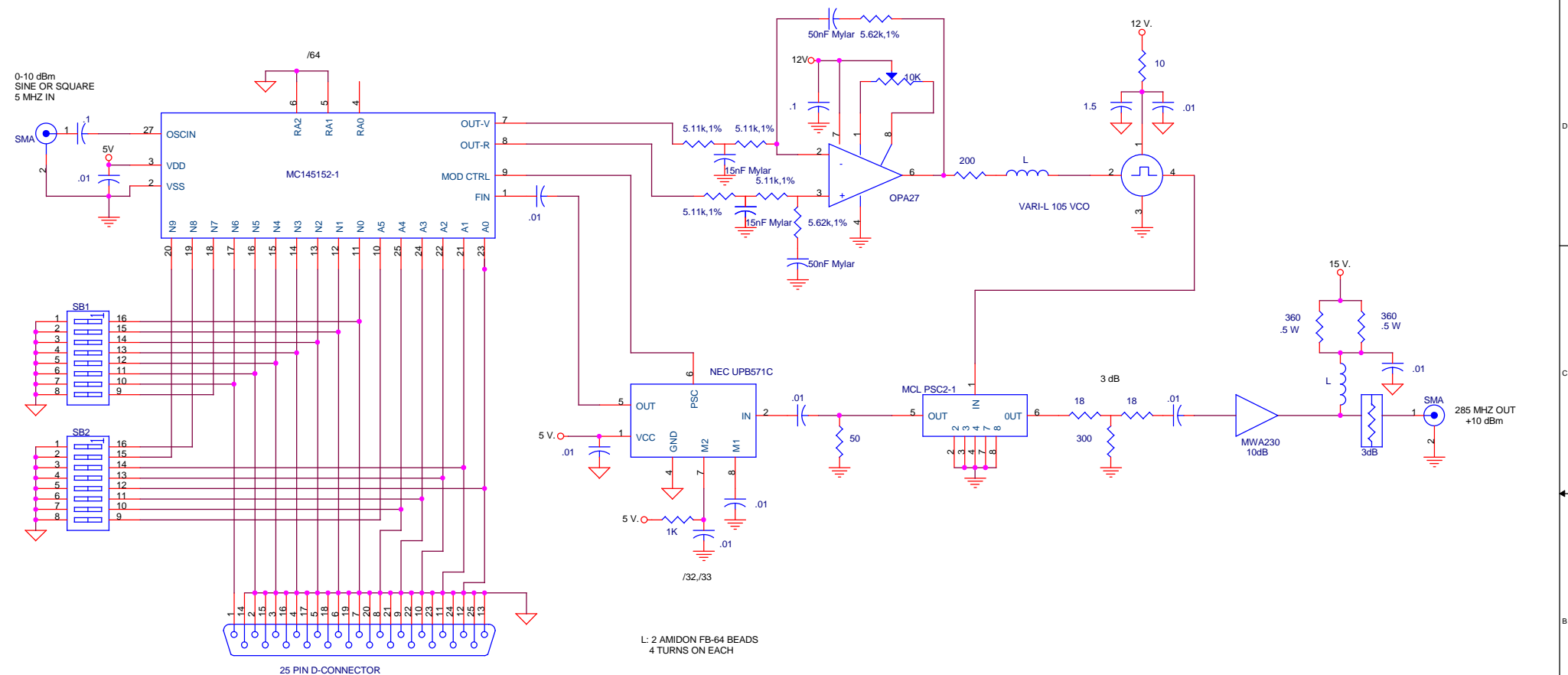


- 1 +5V Dig.
- 2 Gnd (+5V Dig.)
- 3 +Sense (+5V Dig.)
- 4 -Sense (+5V Dig.)
- 5 -5.2V Dig.
- 6 Gnd (-5.2V Dig.)
- 7 -Sense (-5.2V Dig.)
- 8 +Sense (-5.2V Dig.)
- 9 +12V (fan)
- 10 Gnd (+12V)
- 11 +5V Analog
- 12 Gnd (+5V Ana.)
- 13 -5.2V Analog
- 14 Gnd (-5.2V Ana.)
- 15 NC

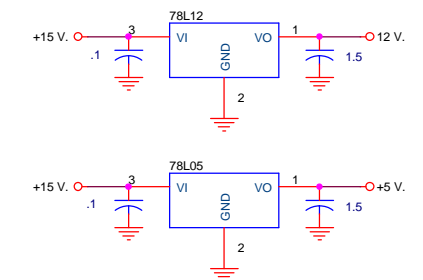
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BY : BILL SISK		
FILE : InterimCorr.dsn		
Title		
Interim Correlator		
Size	Document Number	Rev
B	Layout of Power Supply Chassis for Halfband Filters	
Date:	Monday, April 15, 2002	Sheet 0 of 0
	2	1



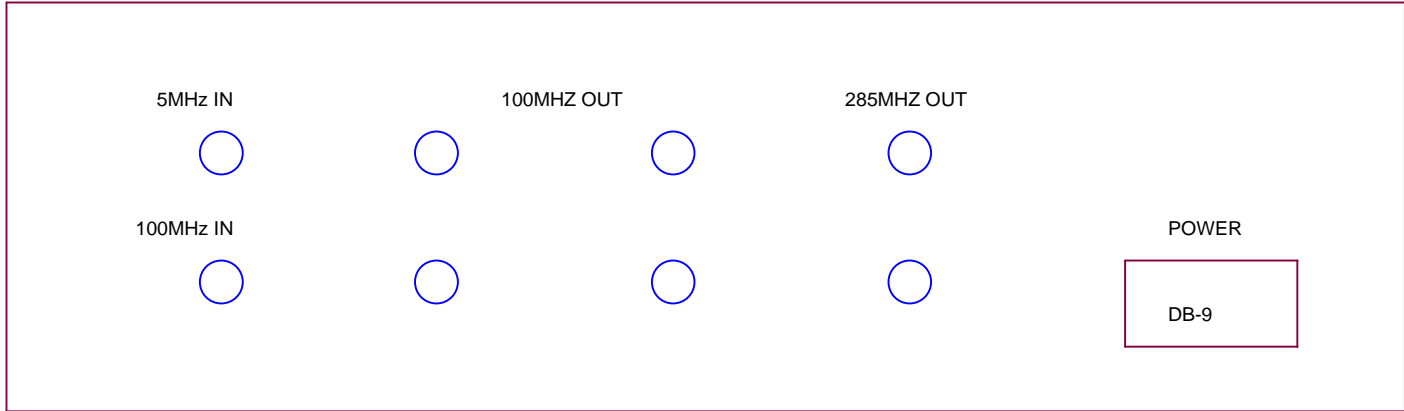
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BY : BILL SISK		
FILE : InterimCorr.dsn		
Title		
Interim Correlator		
Size	Document Number	Rev
A	Clock Synchronization Board for Half-Band Filters	0
Date:	Monday, April 15, 2002	Sheet 1 of 1



L: 2 AMIDON FB-64 BEADS
4 TURNS ON EACH



ARECIBO OBSERVATORY		
BY : BILL SISK		
FILE : InterimCorr.dsn		
Title Interim Correlator		
Size B	Document Number 285MHz Synthesizer Board	Rev
Date: Friday, April 12, 2002	Sheet 1	of 1

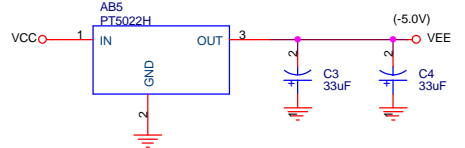
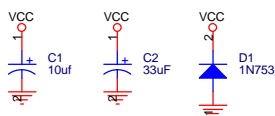
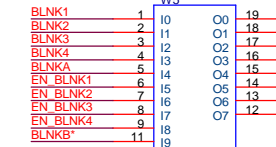
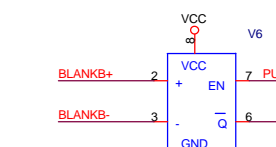
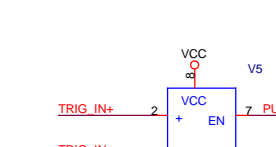
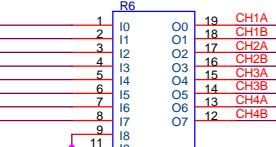
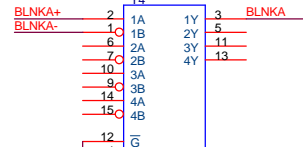
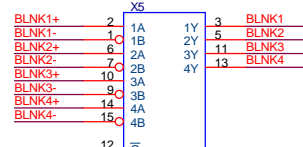
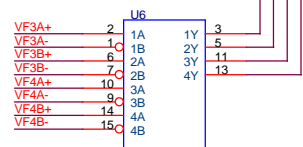
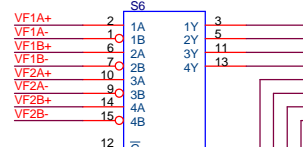
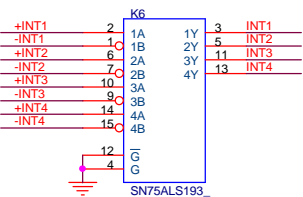
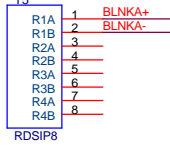
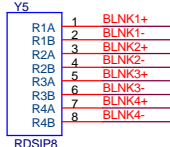
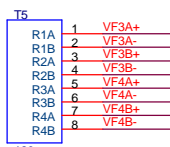
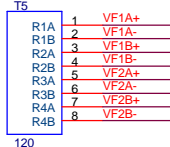
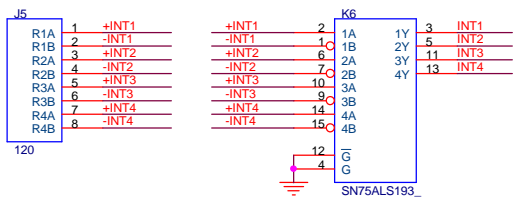


DB9 POWER CONNECTOR PINOUT

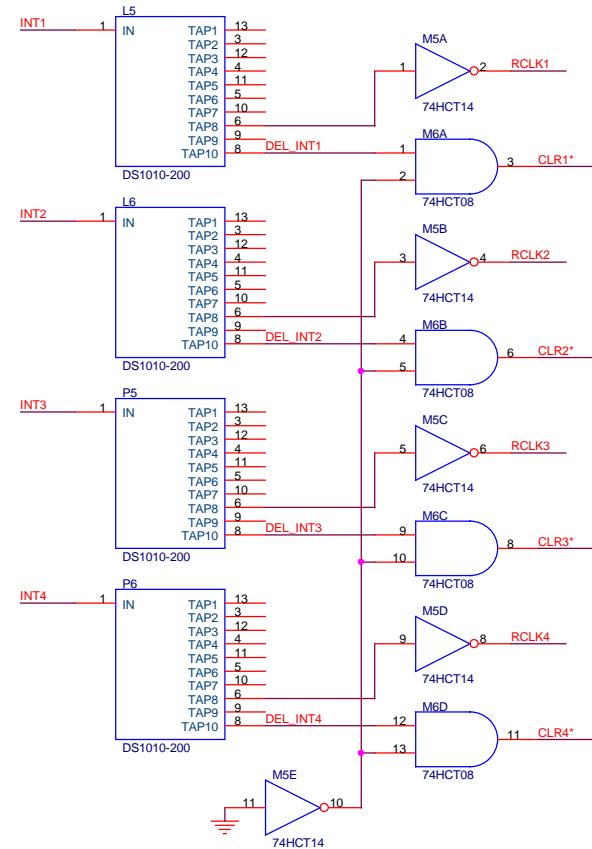
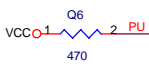
- 1 -5V YELLOW
- 2 +5V RED/WHITE
- 3 -15V ORANGE
- 4 +15V RED
- 5 +15V RED
- 6 GND BLACK
- 7 GND BLACK
- 8 GND BLACK
- 9 GND BLACK

1 AMP. MAX. / PIN

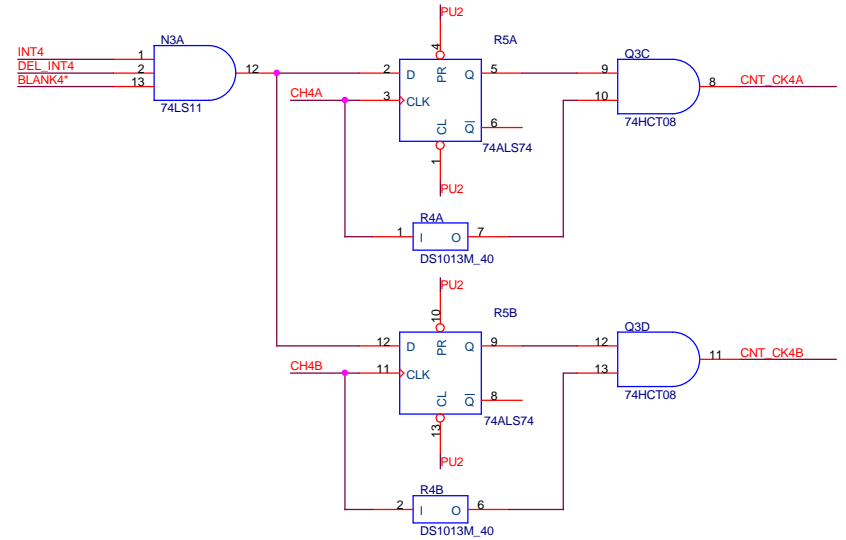
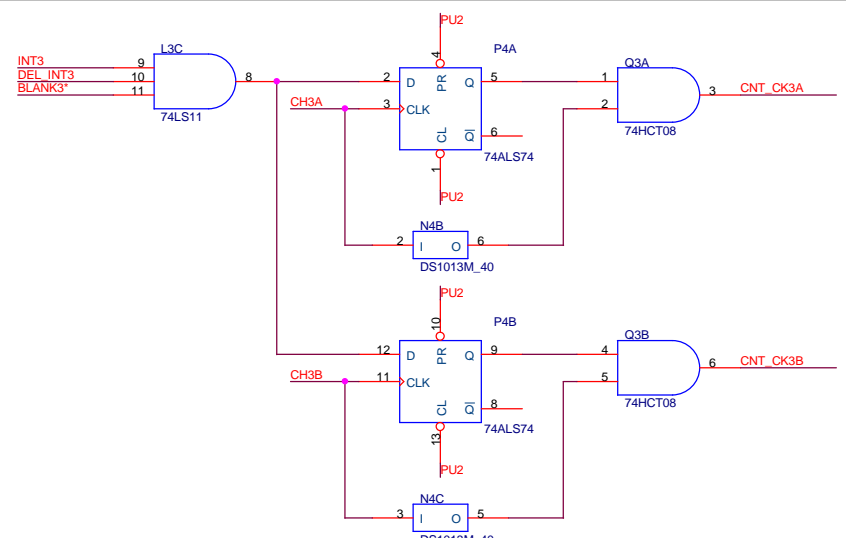
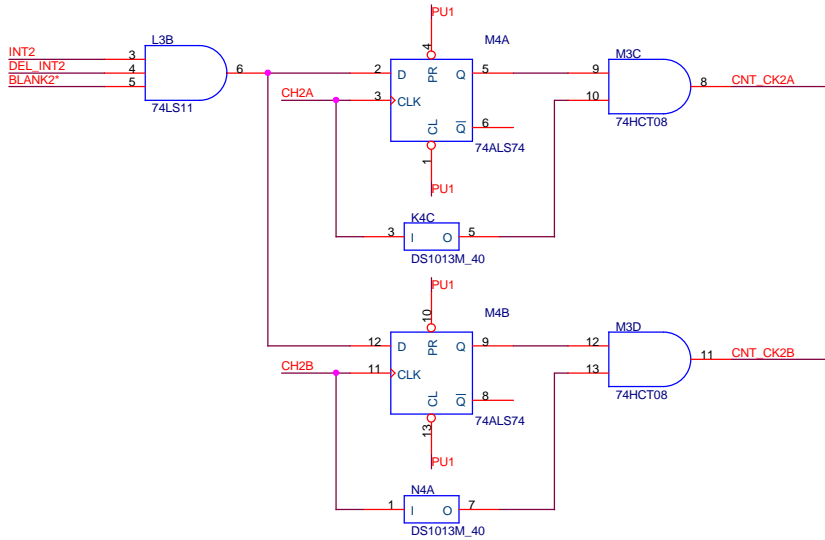
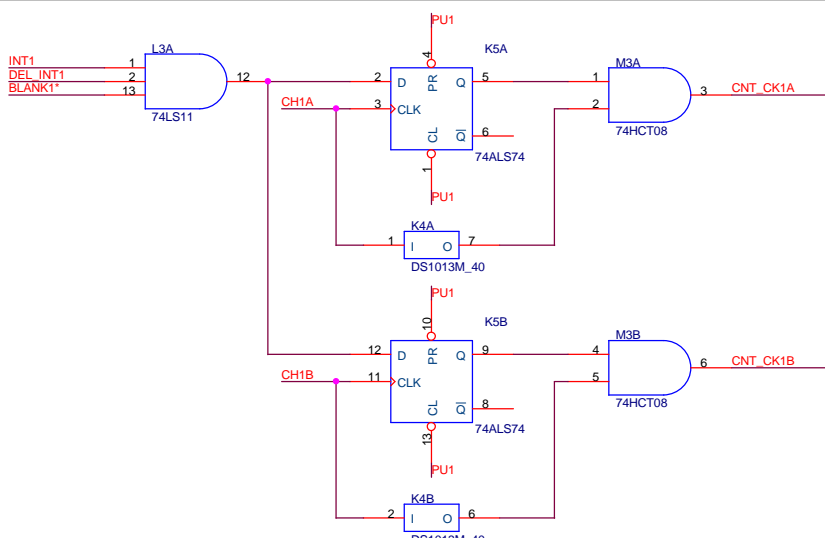
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BY : BILL SISK FILE : InterimCorr.dsn		
Title Interim Correlator		
Size A	Document Number Layout of Local Oscillator Distribution Chassis	Rev
Date:	Friday, April 12, 2002	Sheet 1 of 1



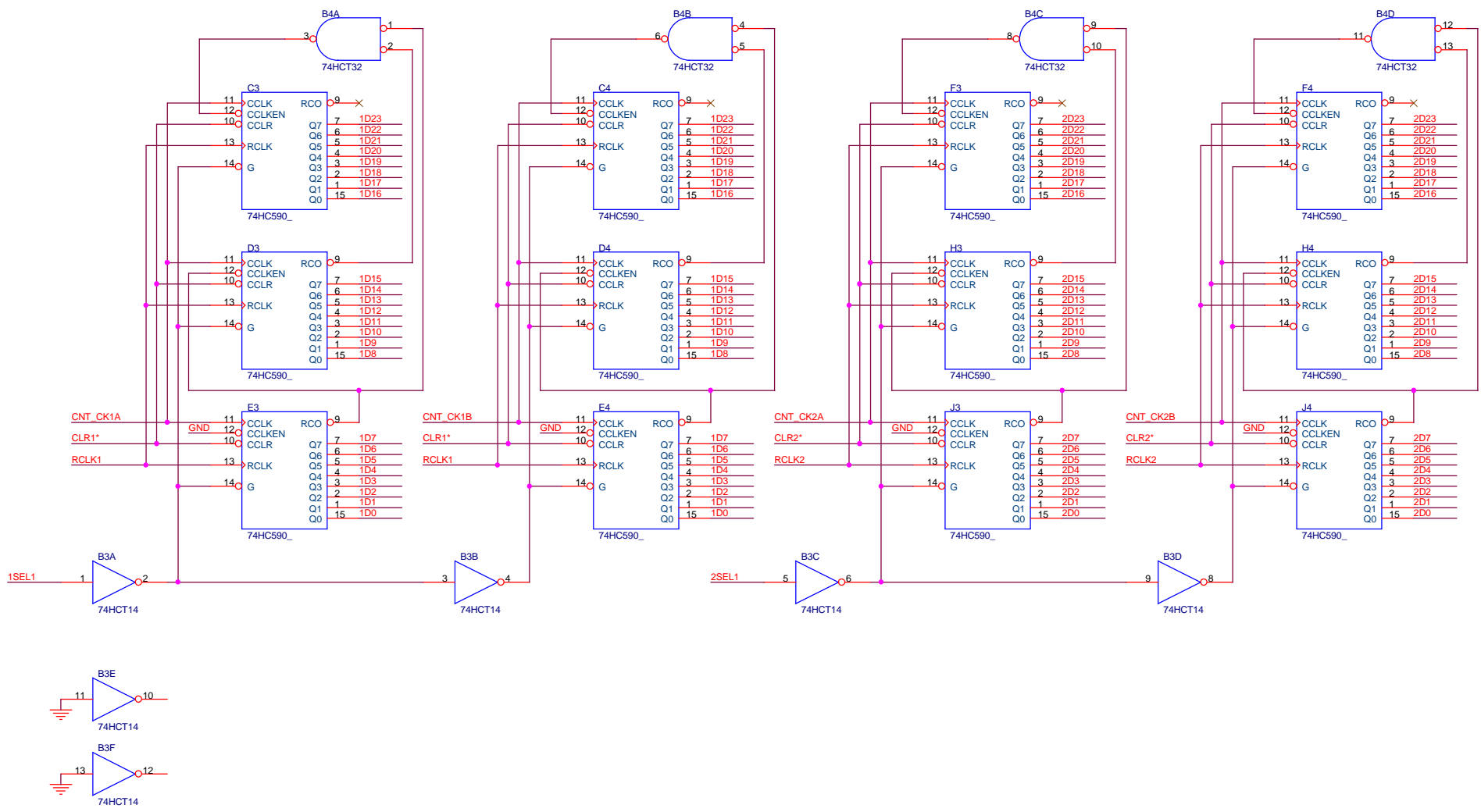
MC10124 : VCC = PIN 9 VEE = PIN 8

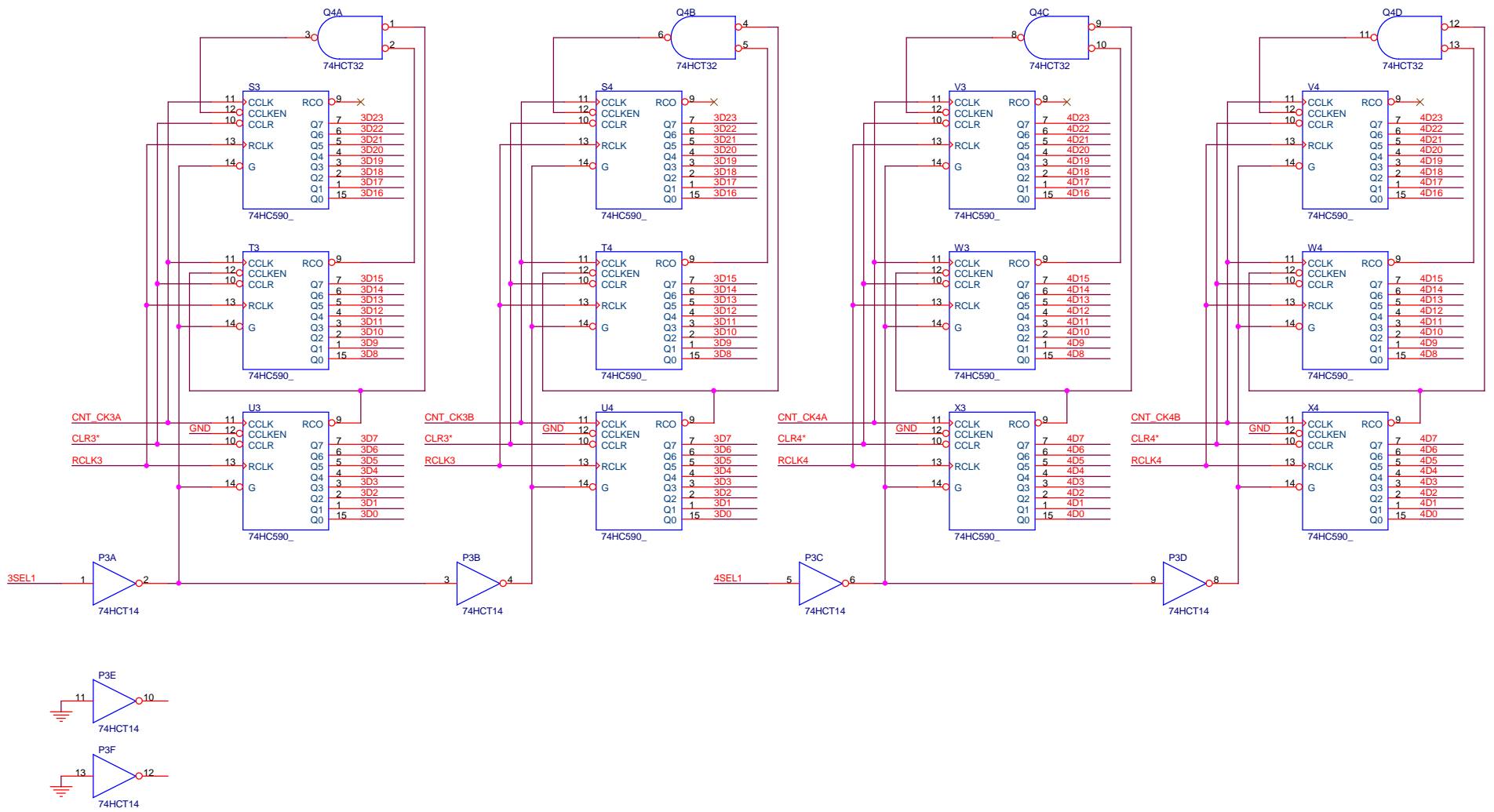


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BY : BILL SISK	
FILE : InterimCor.dsn	
Title Interim Correlator	
Size B	Document Number Power Counter
Date: Thursday, April 11, 2002	Sheet 1 of 8
	Rev 0

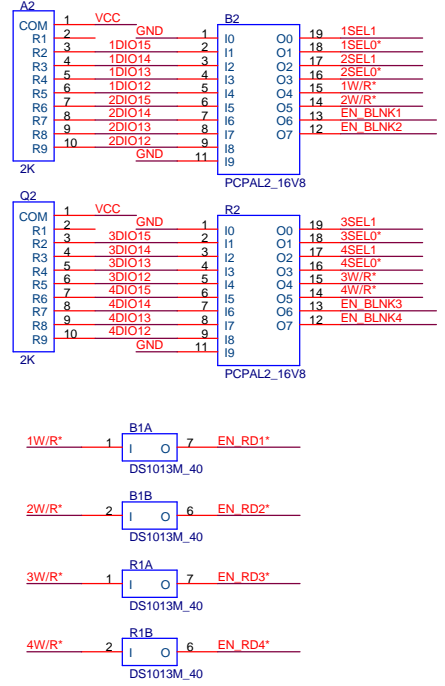
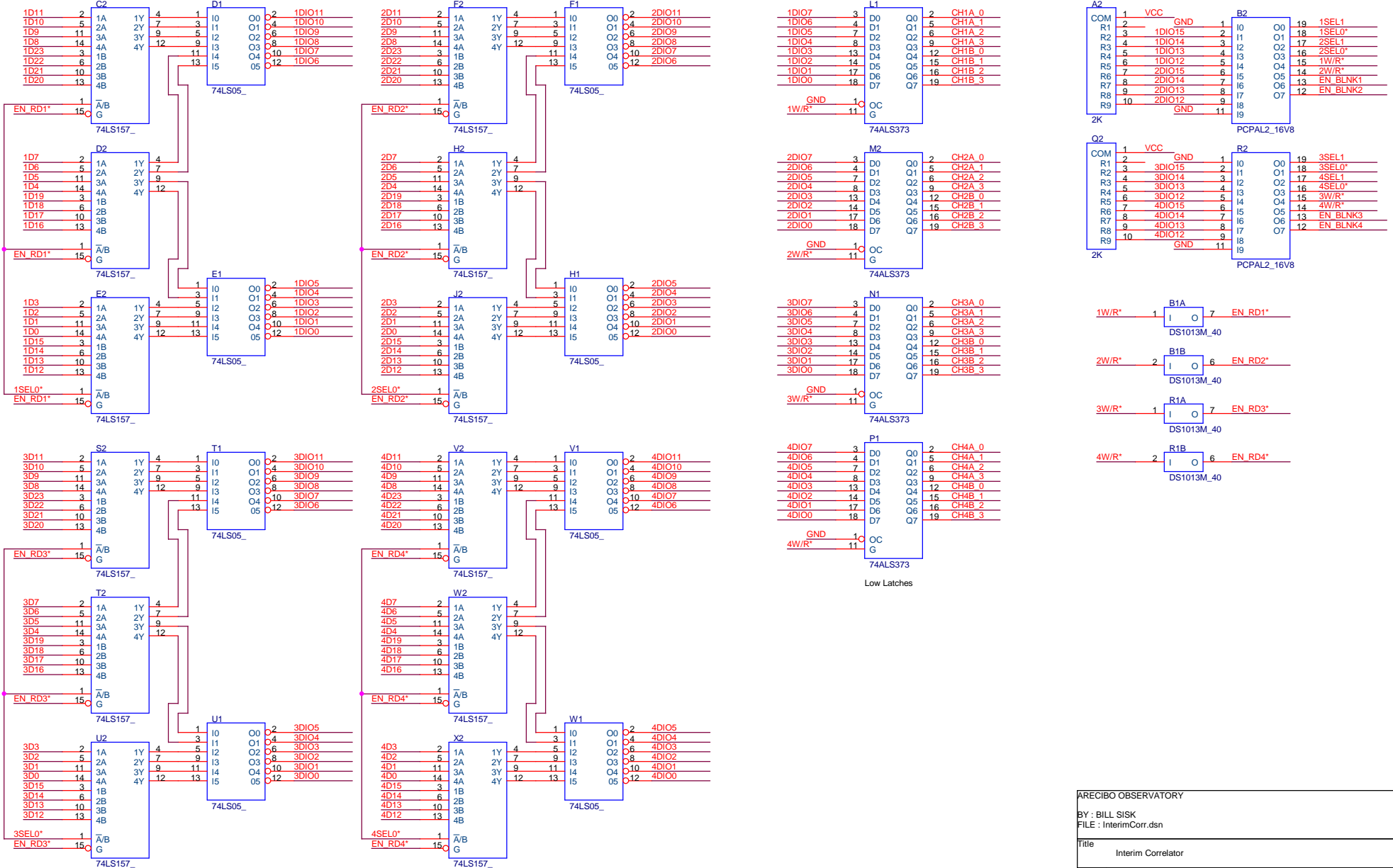


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BY : BILL SISK		
FILE : InterimCorr.dsn		
Title		
Interim Correlator		
Size	Document Number	Rev
B	Power Counter	0
Date:	Thursday, April 11, 2002	Sheet 2 of 8



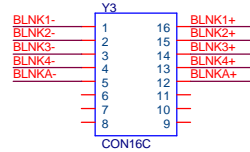
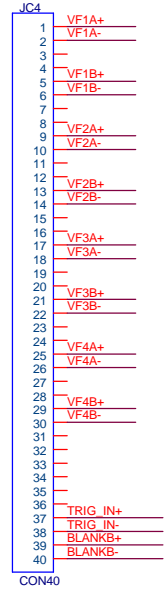
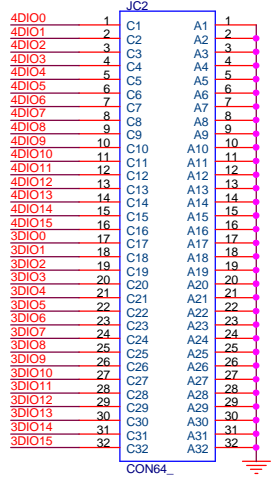
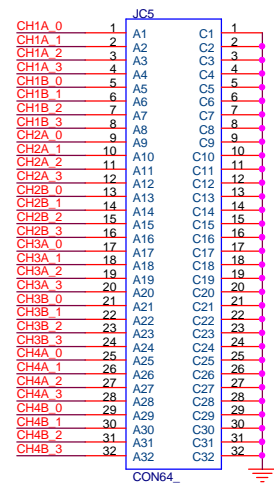
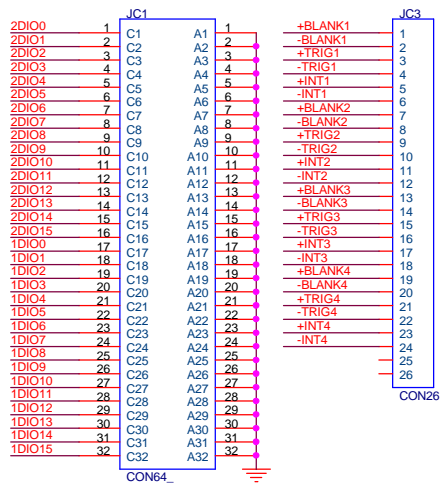


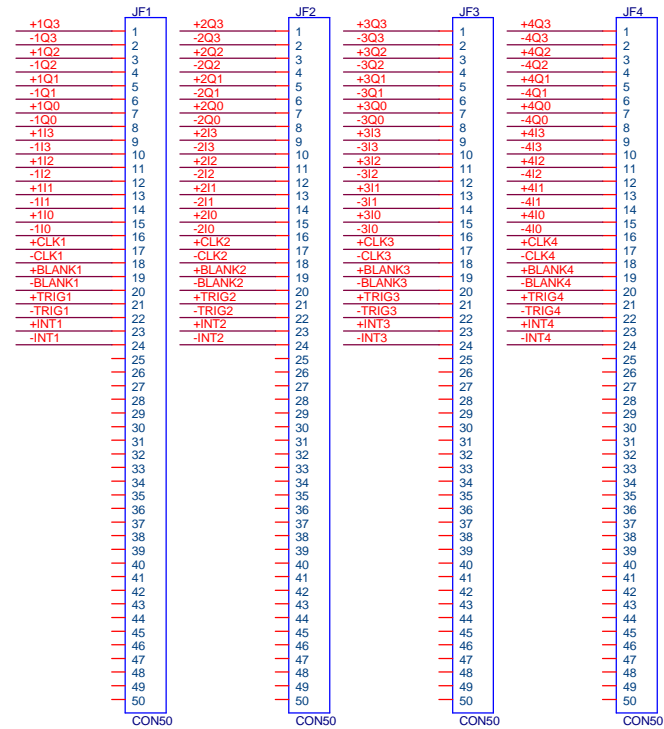
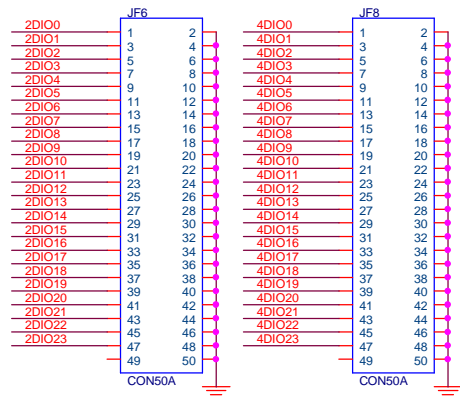
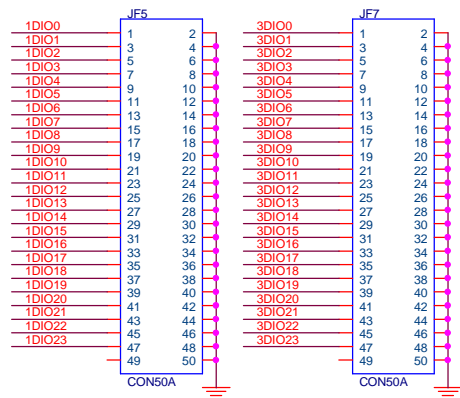
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BY : BILL SISK	
FILE : InterimCorr.dsn	
Title	
Interim Correlator	
Size	Document Number
B	Power Counter
Date:	Thursday, April 11, 2002
Sheet	4 of 8
Rev	0



ARECIBO OBSERVATORY
 BY : BILL SISK
 FILE : InterimCorr.dsn

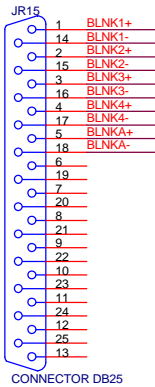
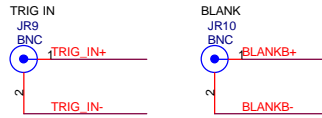
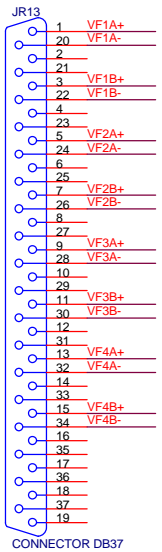
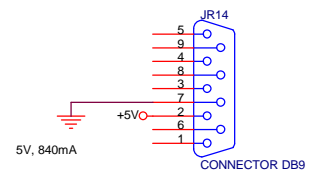
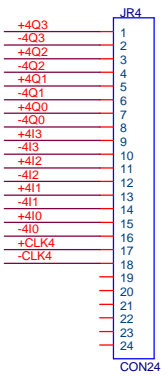
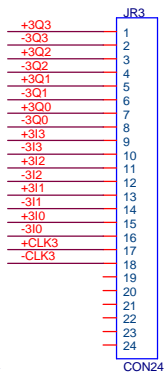
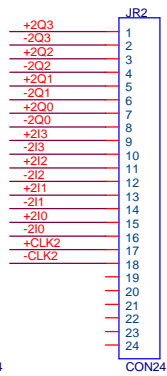
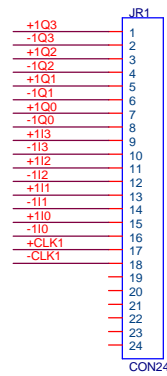
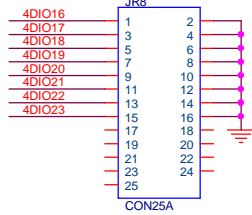
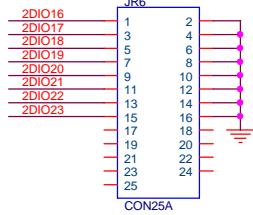
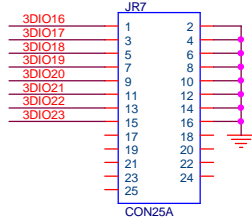
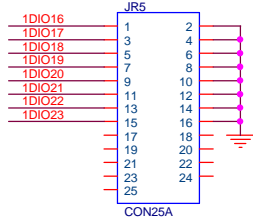
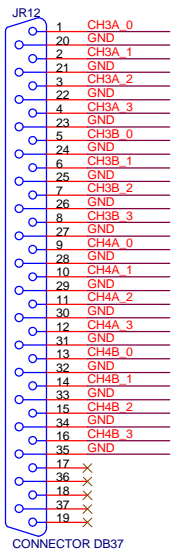
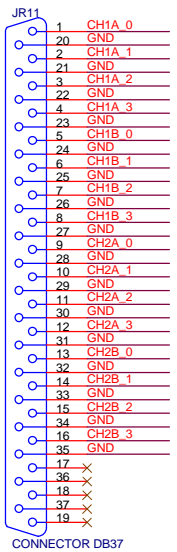
Title		Interim Correlator	
Size B	Document Number	Rev 0	
Date:	Thursday, April 11, 2002	Sheet	5 of 8





Front Panel Connectors

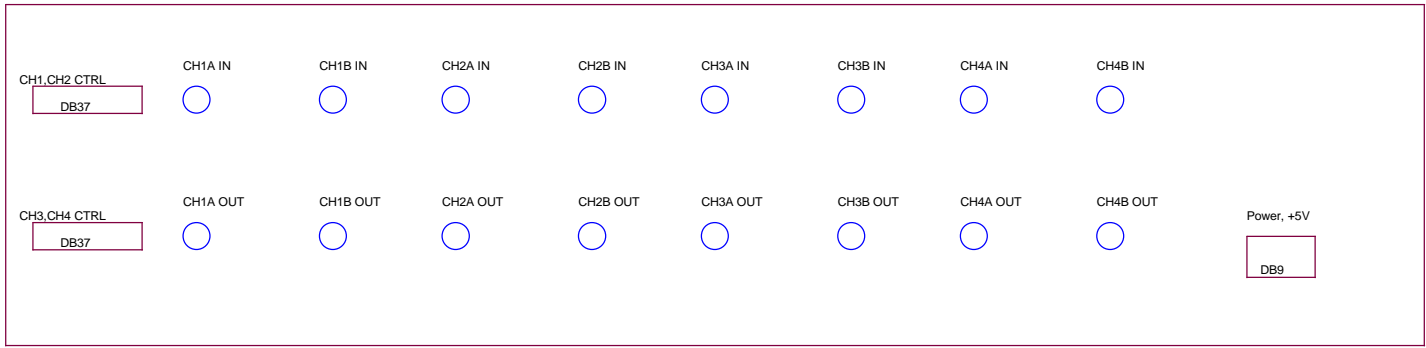
ARECIBO OBSERVATORY			
BY : BILL SISK			
FILE : InterimCorr.dsn			
Title			
Interim Correlator			
Size	Document Number		Rev
B	Power Counter		0
Date:	Thursday, April 11, 2002	Sheet	7 of 8



Rear Panel Connectors

ARECIBO OBSERVATORY			
BY : BILL SISK			
FILE : InterimCorr.dsn			
Title			
Interim Correlator			
Size	Document Number	Rev	
B	Power Counter	0	
Date:	Thursday, April 11, 2002	Sheet	8 of 8

REAR PANEL

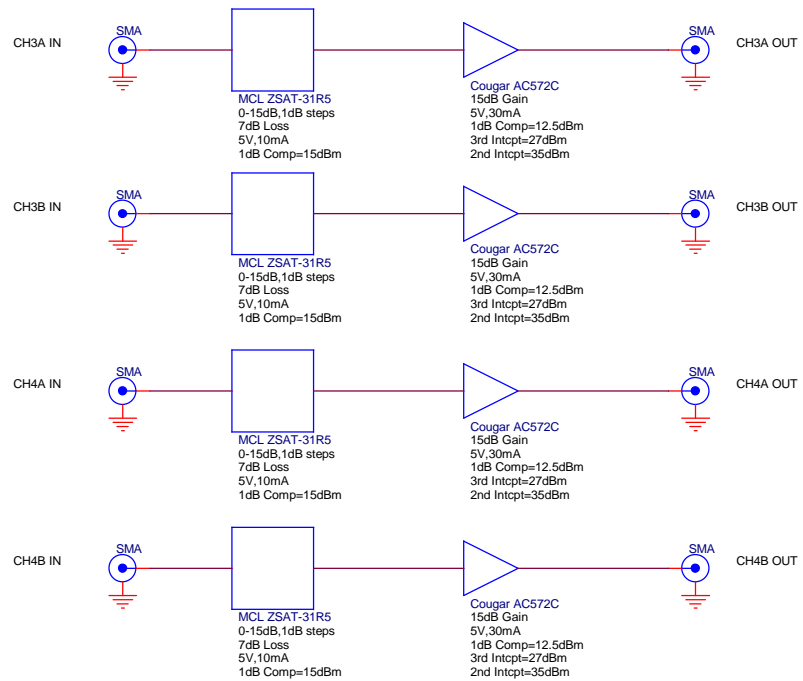
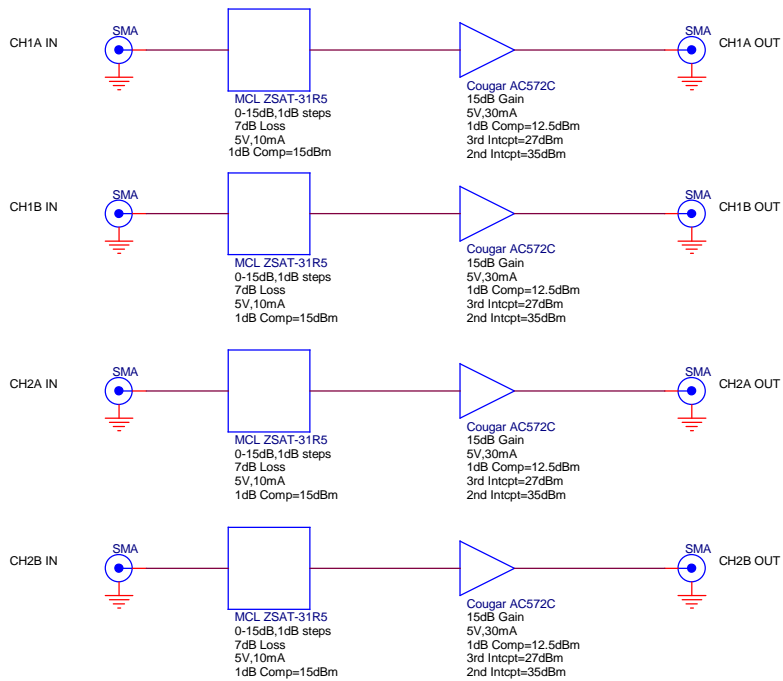


FRONT PANEL

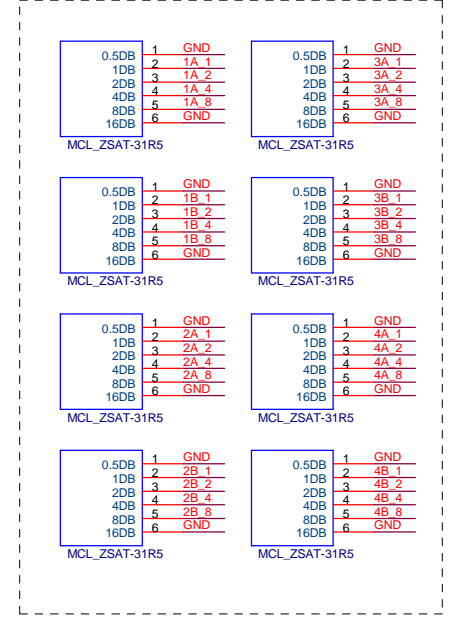
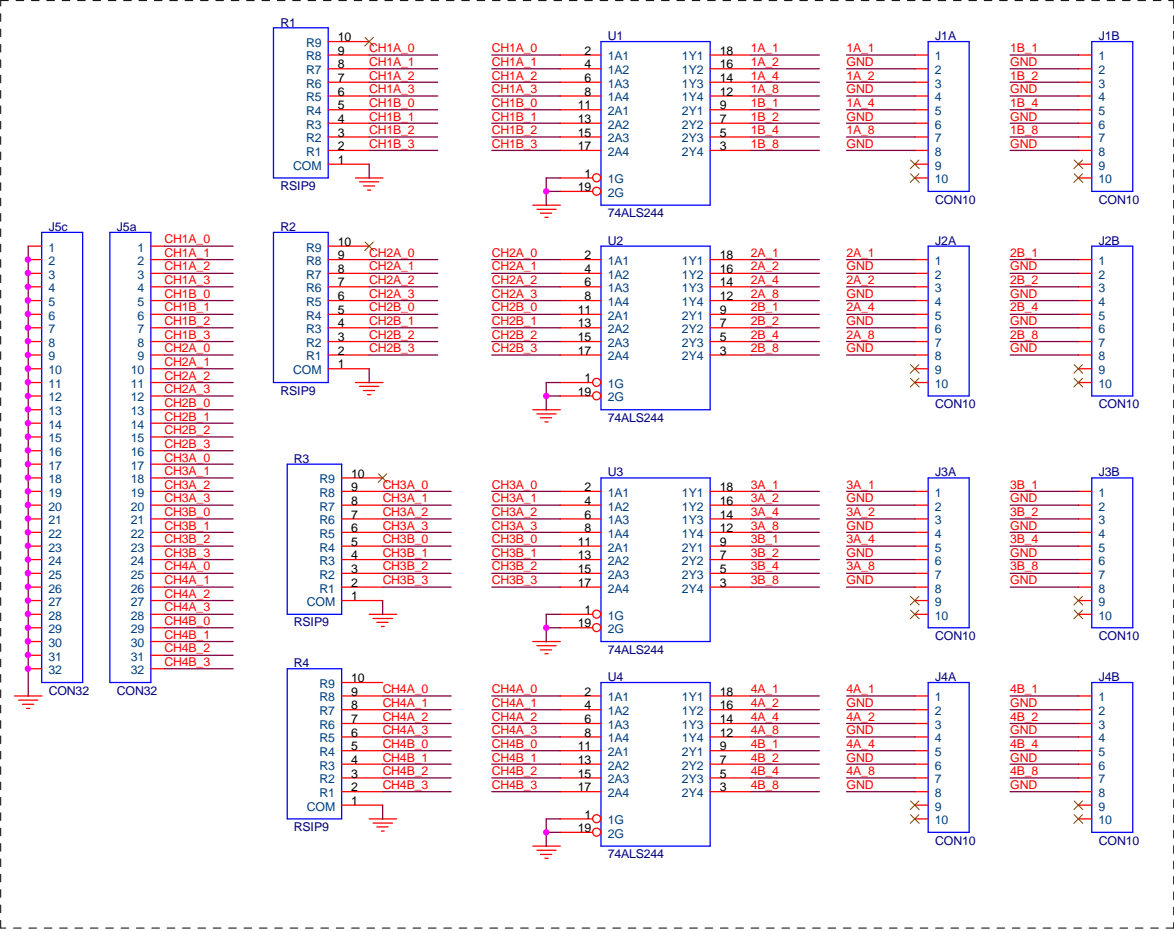
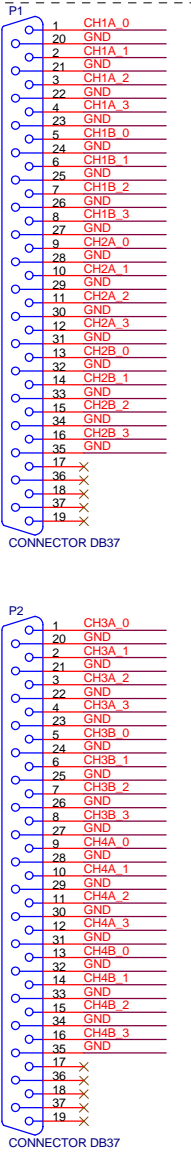


Power 5V, 370mA

Arecibo Observatory			
By : Bill Sisk			
File : InterimCorr.dsn			
Title Interim Correlator			
Size B	Document Number Layout for Programmable Attenuator Chassis	Rev 0	
Date:	Friday, April 12, 2002	Sheet	1 of 1



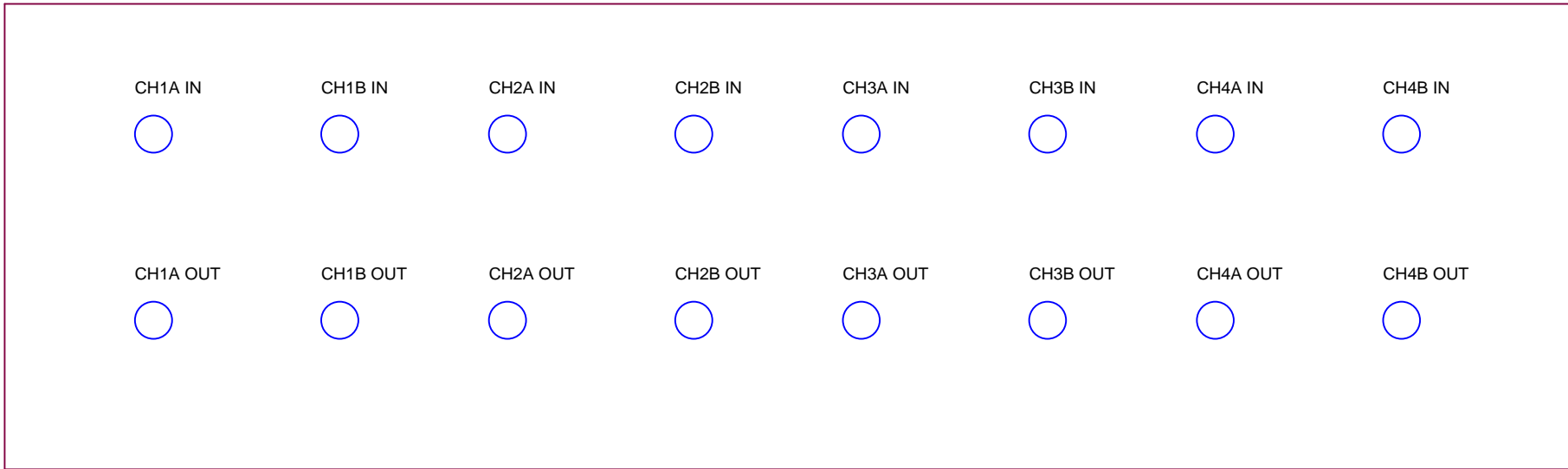
Arecibo Observatory			
By : Bill Sisk			
File : InterimCorr.dsn			
Title			
Interim Correlator			
Size	Document Number	Rev	
B	RF Schematic Programmable Attenuators	0	
Date:	Friday, April 12, 2002	Sheet	1 of 1



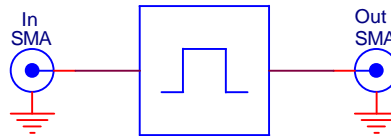
MCL_ZSAT-31R5 Programmable Attenuators

Logic Card

REAR PANEL



CH1A : TEXSCAN X8BE260/100-3-KK
 CH1B : TEXSCAN 8BE260/100-3-KK
 CH2A : K&L 11B340-260/X100-0/0
 CH2B : K&L 11B340-260/X100-0/0
 CH3A : CIRQTEL FBT/2-270/100-8/50-28A/28A
 CH3B : CIRQTEL FBT/2-270/100-8/50-28A/28A
 CH4A : TEXSCAN 8BE260/100-3-KK
 CH4B : CIRQTEL FBT/2-260/100-8/50-28A/28A



100MHz BW Bandpass Filter
 Centered on 260MHz or 270MHz

ARECIBO OBSERVATORY		
BY : BILL SISK FILE : InterimCorr.dsn		
Title Interim Correlator		
Size A	Document Number 260MHz Filters, 100MHz BW	Rev 0
Date:	Friday, April 12, 2002	Sheet 1 of 1

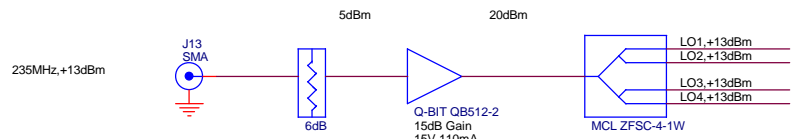
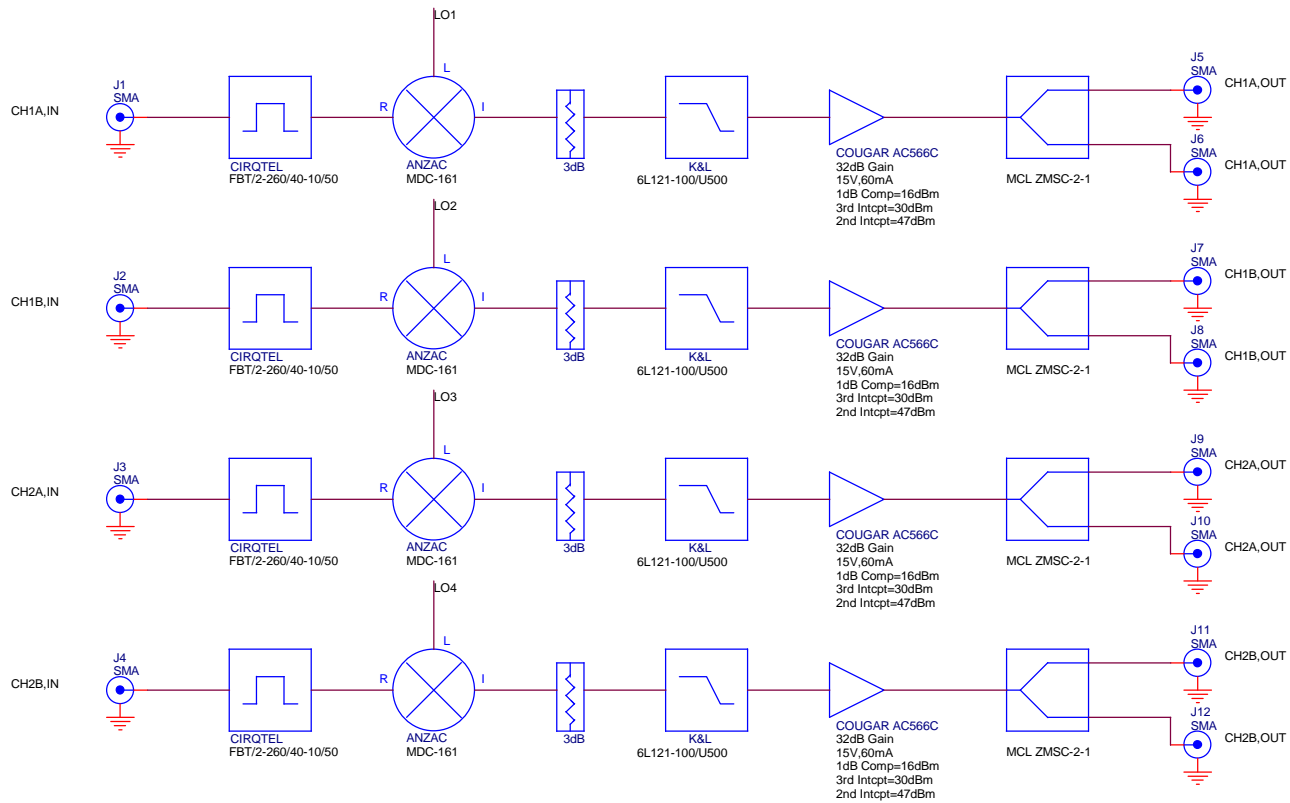
-11dBm/500MHz

-21dBm/40MHz

-31dBm

+4dBm

0dBm



ARECIBO OBSERVATORY	
BY : BILL SISK	
FILE : InterimCorr.dsn	
Title Interim Correlator	
Size B	Document Number 260MHz to 25MHz Converter, CH1 & CH2
Date: Friday, April 12, 2002	Sheet 1 of 1

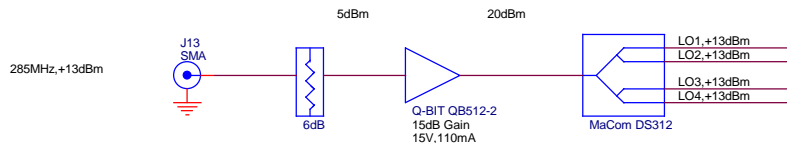
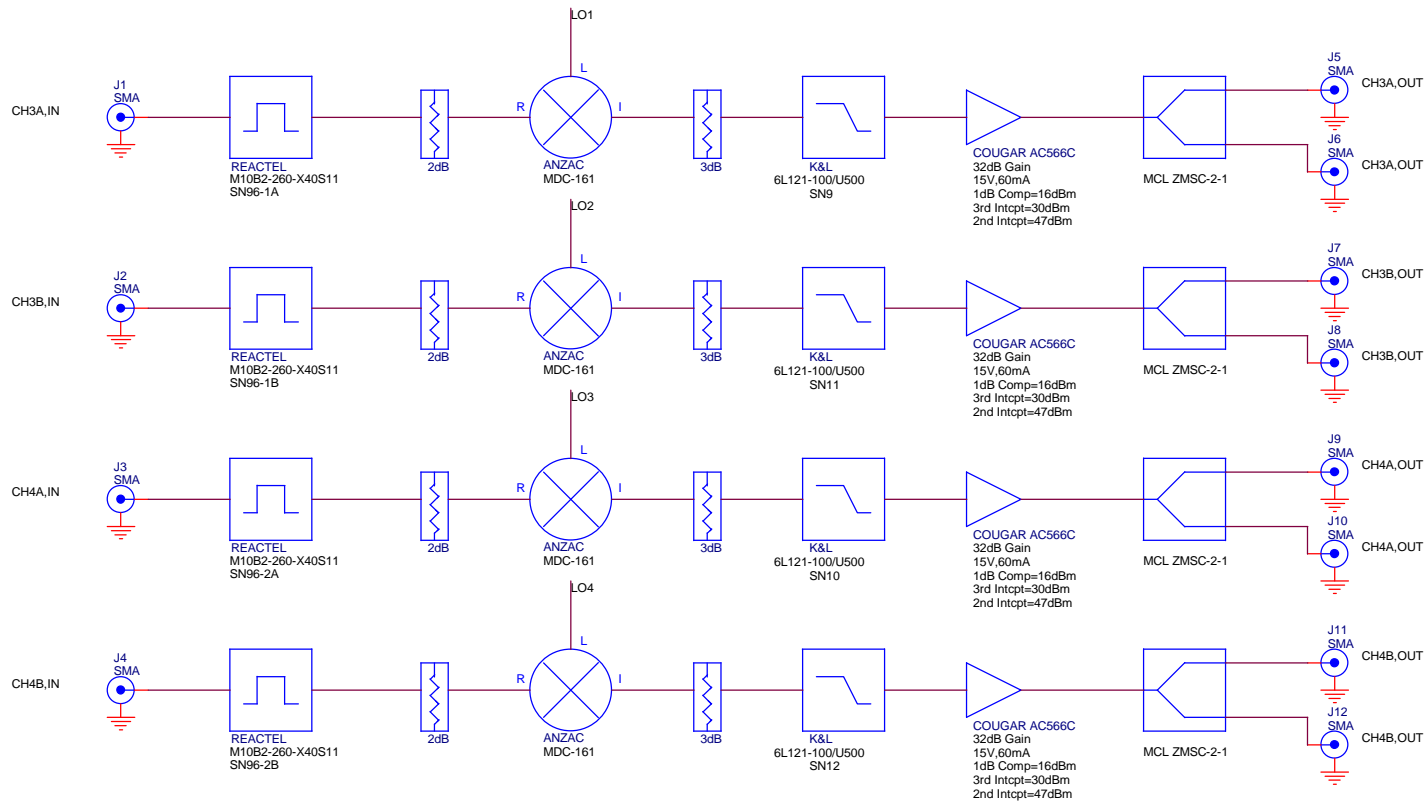
-11dBm/500MHz

-21dBm/40MHz

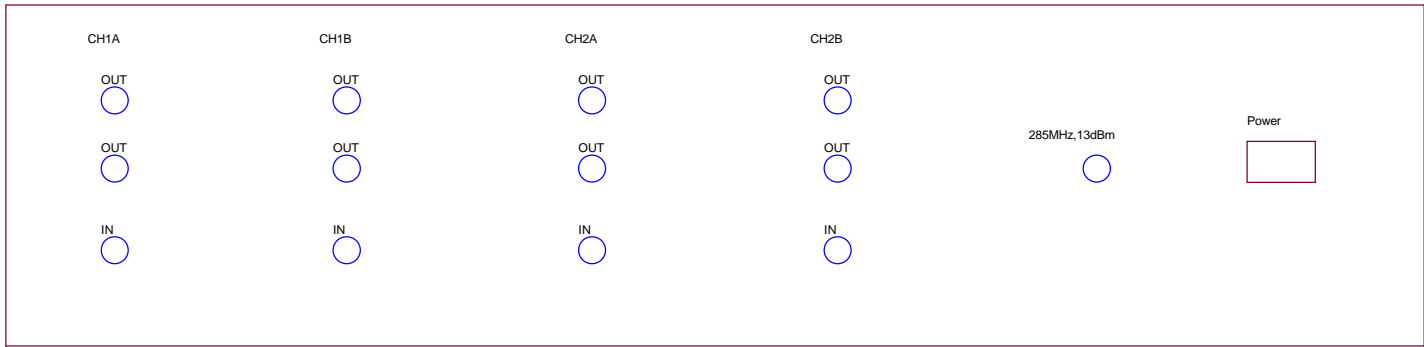
-31dBm

+4dBm

0dBm



ARECIBO OBSERVATORY	
BY : BILL SISK	
FILE : InterimCorr.dsn	
Title Interim Correlator	
Size B	Document Number 260MHz to 25MHz Converter, CH1 & CH2
Date: Friday, April 12, 2002	Sheet 1 of 1
	Rev



ARECIBO OBSERVATORY			
BY : BILL SISK			
FILE : InterimCorr.dsn			
Title Interim Correlator			
Size B	Document Number Layout for 260MHz to 25MHz Converter	Rev	
Date:	Friday, April 12, 2002	Sheet	1 of 1

Power Supply Chassis

LOS-Y-15-1, 15V, 2.8A SQUARE-LAW DETECTOR CHASSIS, BOTH RF CHASSIS'S

LZS-33, -15V, 400mA SQUARE-LAW DETECTOR CHASSIS

LZS-30, 5V, 900mA SQUARE-LAW DETECTOR CHASSIS

LZS-10, 5V, 450mA ATTENUATOR CHASSIS (Uses 370mA)

SQUARE-LAW DETECTOR CHASSIS

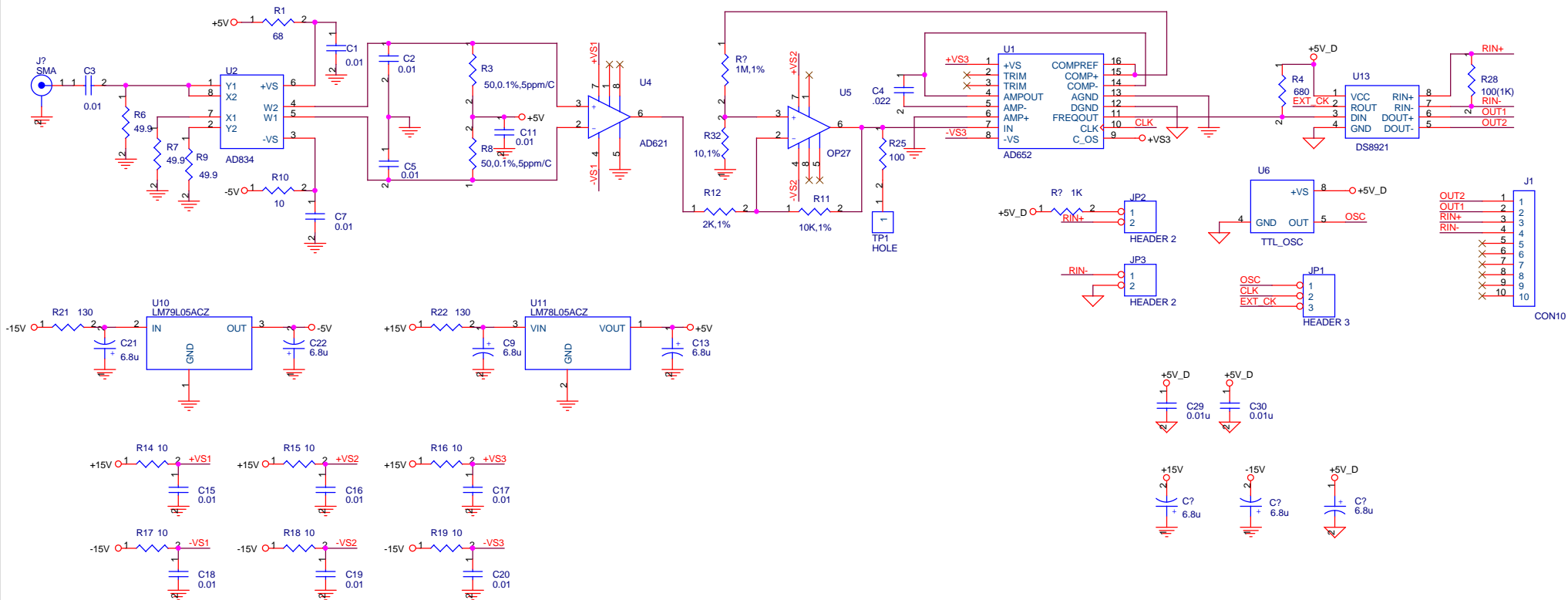
+15V, 610mA
-15V, 350mA
+5V, 650mA

DB9 POWER CONNECTOR PINOUT

1 -5V YELLOW
2 +5V RED/WHITE
3 -15V ORANGE
4 +15V RED
5 +15V RED
6 GND BLACK
7 GND BLACK
8 GND BLACK
9 GND BLACK

1 AMP. MAX. / PIN

ARECIBO OBSERVATORY		
BY : BILL SISK FILE : InterimCorr.dsn		
Title Interim Correlator		
Size A	Document Number RF Power Supply Chassis	Rev
Date:	Friday, April 12, 2002	Sheet 1 of 1

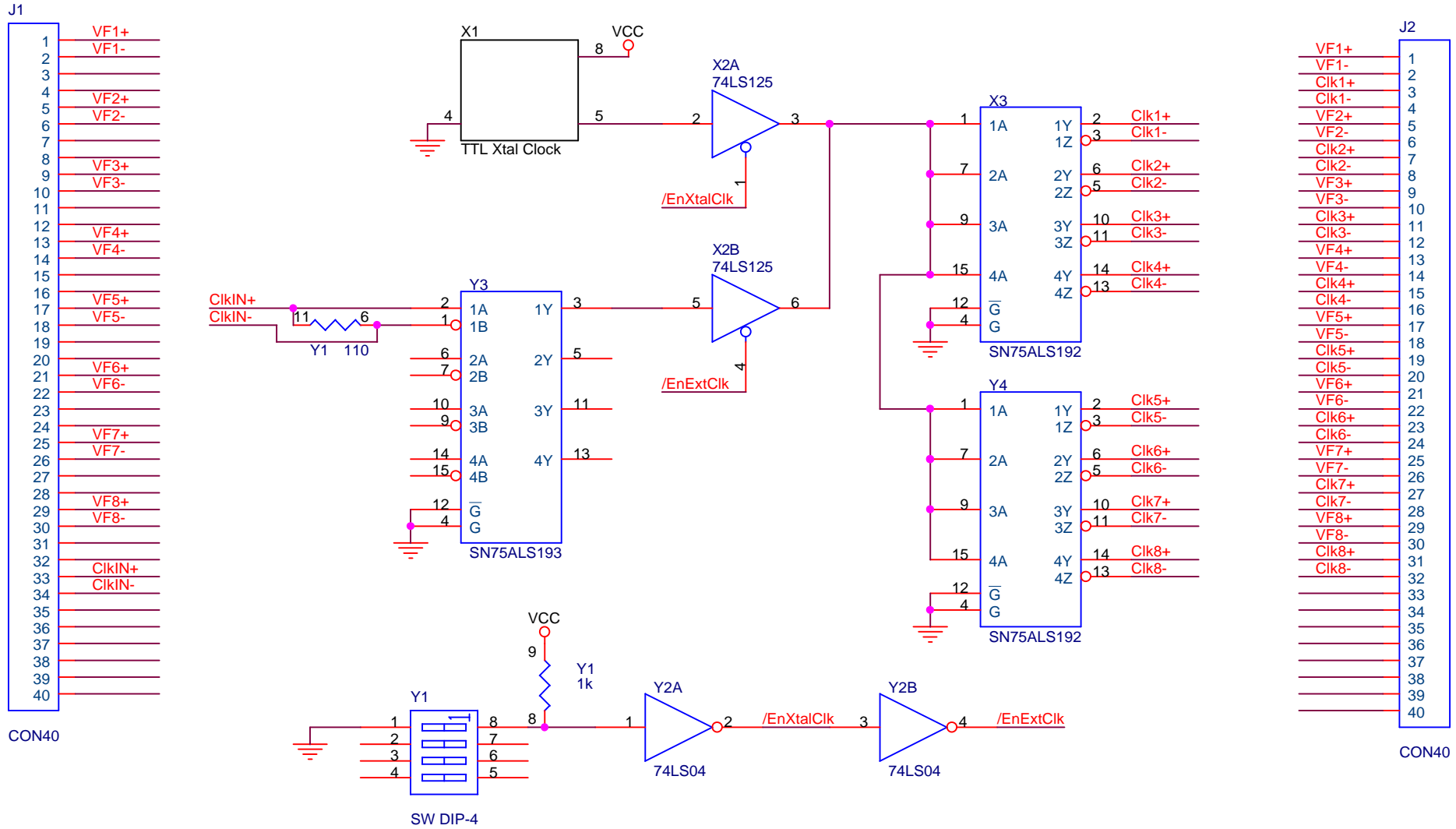


Note 1 : R6,R7, and R9 are 49.9ohm, 1%, 0.1W, 100ppm/C, precision thick film (Digikey PN P49.9CCT-ND, Panasonic PN ERJ-6ENFxxxx)

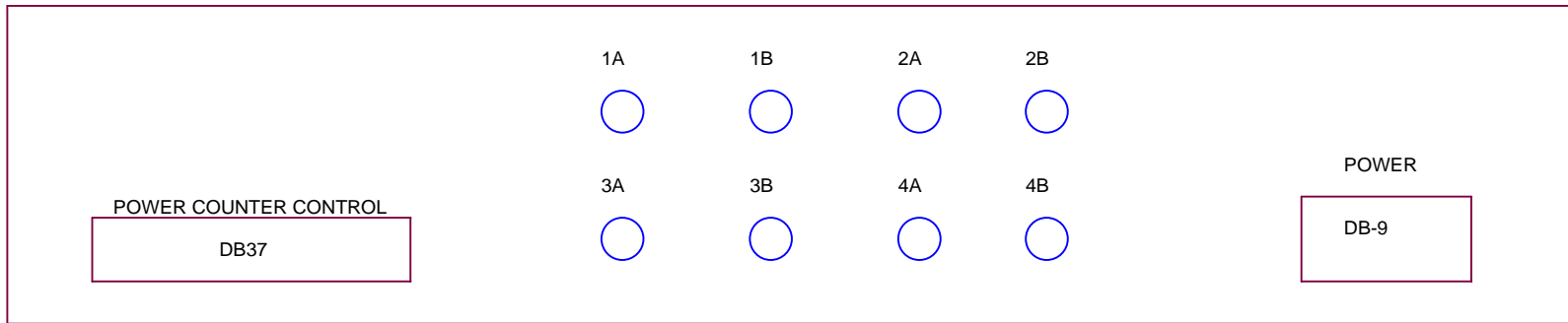
Note 2 : R3 and R8 are 50ohm, 0.1%, 5ppm/C precision metal film (Dale PTF 56 50R B T-13)

Note 3 : C4 is a 0.022uF metallized polypropylene film capacitor (Vishay Roederstein MKP1845 Series Type 845322254, Newark PN 96F3292)

Arecibo Observatory			
By : Bill Sisk			
File : InterimCorr.dsn			
Title			
Interim Correlator			
Size	Document Number		Rev
B	Square-Law Detector Board		0
Date:	Friday, April 12, 2002	Sheet	1 of 1



Arecibo Observatory		
By : Bill Sisk		
File : InterimCorr.dsn		
Title		
Interim Correlator		
Size	Document Number	Rev
A	Clock Distribution Board for Square-Law Detector Chassis	0
Date:	Monday, April 29, 2002	Sheet 1 of 1



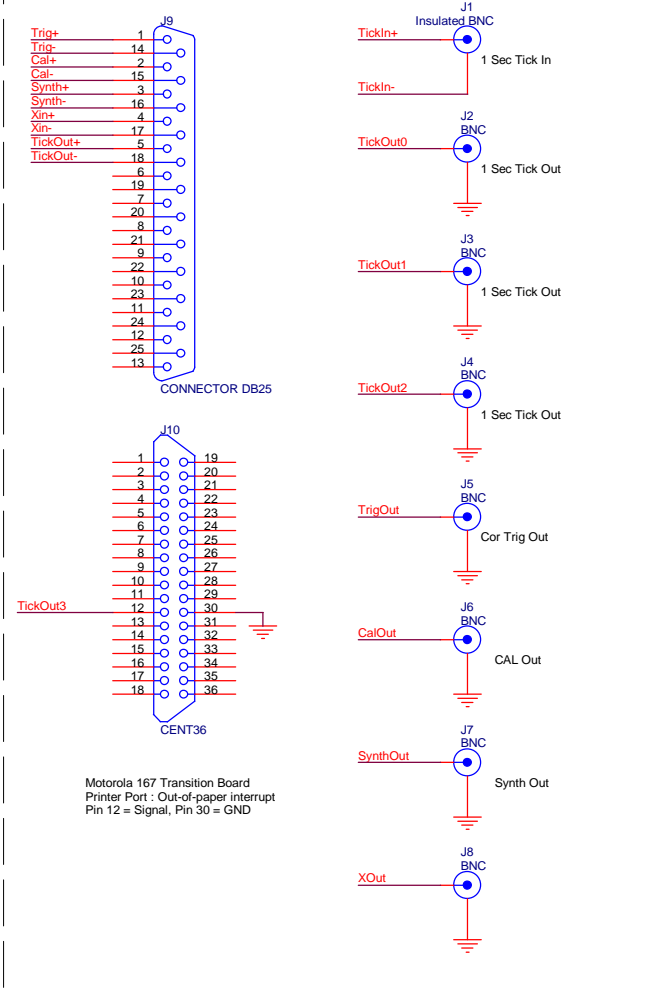
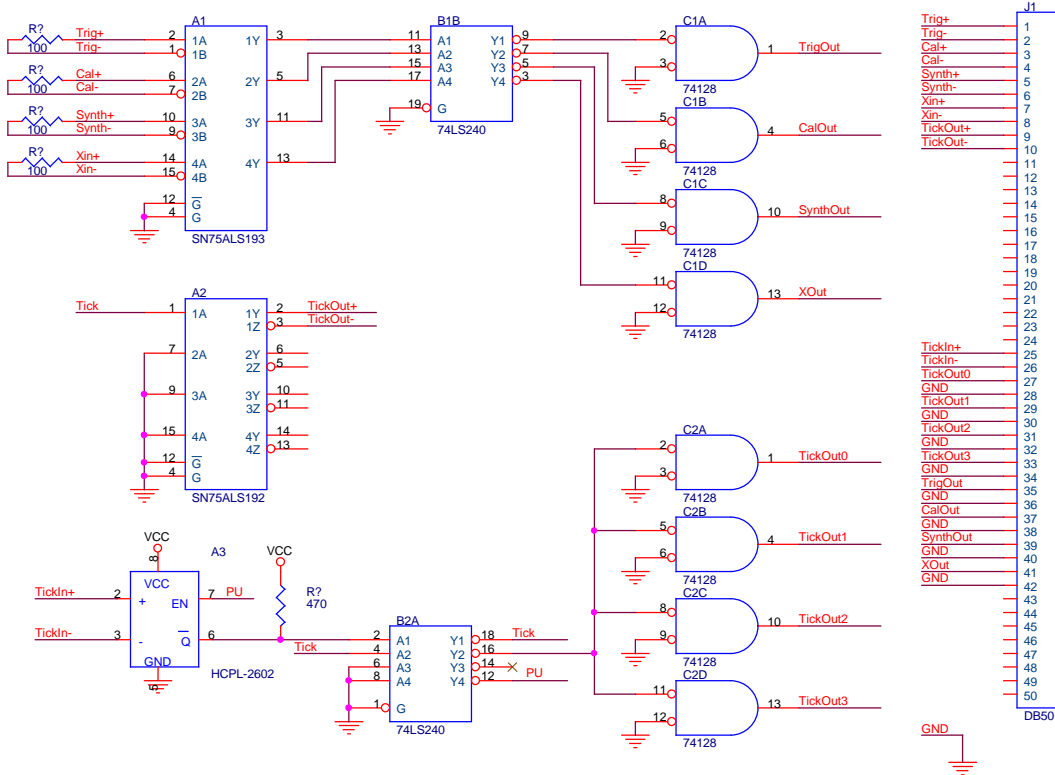
DB9 POWER CONNECTOR PINOUT

- 1 -5V YELLOW
- 2 +5V RED/WHITE
- 3 -15V ORANGE
- 4 +15V RED
- 5 +15V RED
- 6 GND BLACK
- 7 GND BLACK
- 8 GND BLACK
- 9 GND BLACK

1 AMP. MAX. / PIN

SQUARE-LAW DETECTOR CHASSIS
 +15V, 610mA
 -15V, 350mA
 +5V, 650mA

ARECIBO OBSERVATORY		
BY : BILL SISK FILE : InterimCorr.dsn		
Title Interim Correlator		
Size A	Document Number Layout of Square-Law Detector Chassis	Rev
Date:	Friday, April 12, 2002	Sheet 1 of 1



ARECIBO OBSERVATORY	
BY : BILL SISK	
FILE : InterimCorr.dsn	
Title Interim Correlator	
Size B	Document Number VME Crate Tick Buffer & Correlator Trigger
Date: Monday, April 29, 2002	Sheet 1 of 1

