Dan: Coordinate with DDU and DCC design to avoid vias for Gigabit signals

Be careful about the TX, RX definition. For now, the TX means from DCC to DDU, RX means from DDU to DCC

D785H

CMS CSC DDU, DCC P3 Backplane Schematics

Version 1

MBRD_BLK

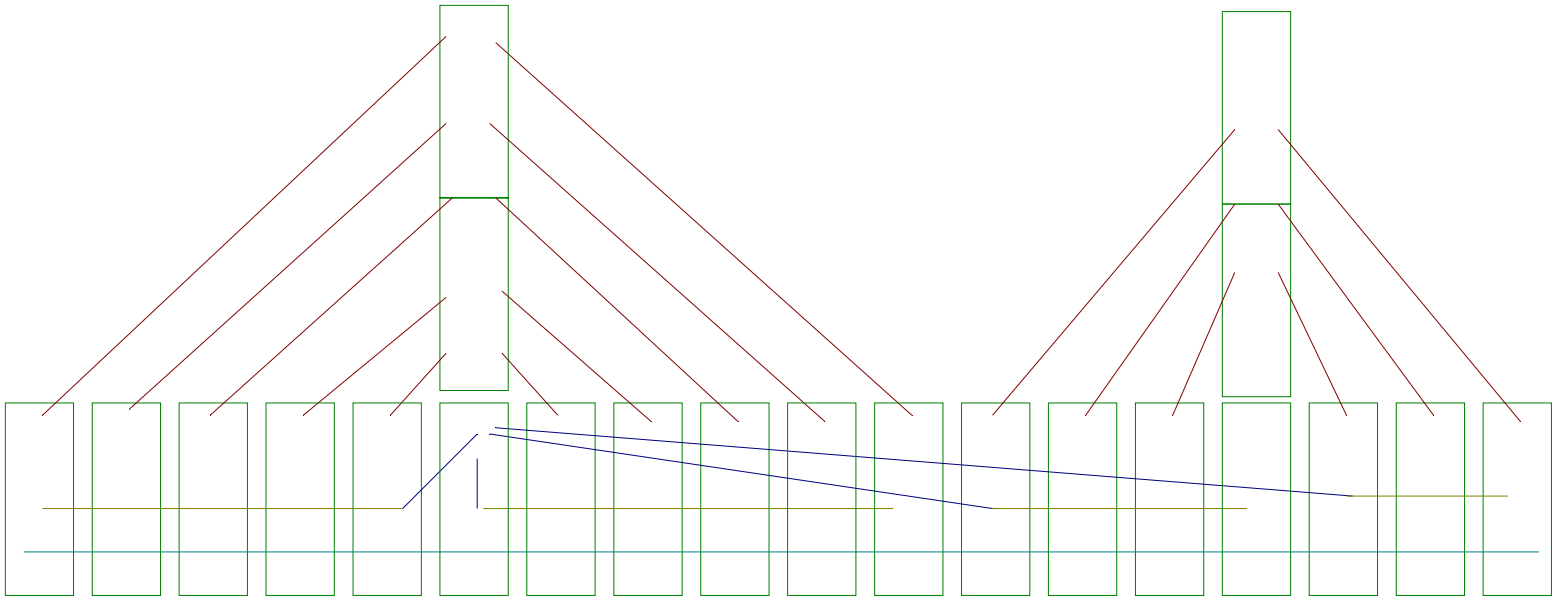
ELECTRONICS LAB
PHYSICS DEPARTMENT
THE OHIO STATE UNIVERSITY
174 WEST 18TH AVE
COLUMBUS OHIO 43210

mojo

DCCBP: The DDU/ DCC crate custom backplane design

The First 11 slots are used for 9 --> 1, 4/5 --> 1 configuration,
All the slots are used for 2/3 --> 1 configuration

July 30, 2003: Initial design
Aug. 8, 2003: Change the pin out on the connectors



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COLUMBUS OHIO 43210

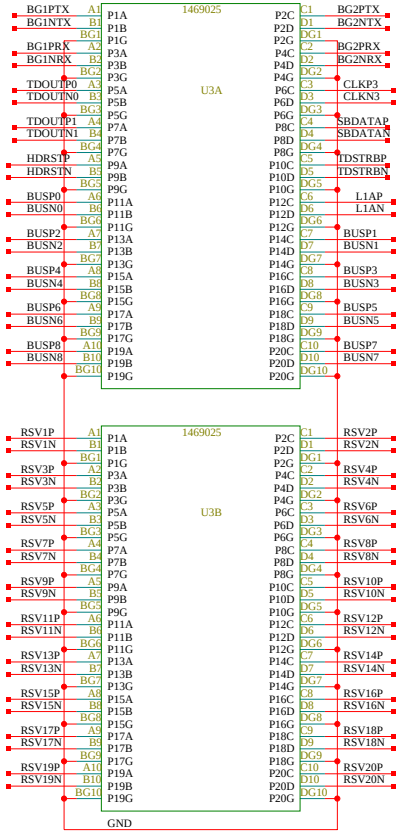
Slot# 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

Board CTRL
D D D D D D D D D D D D D D D D D D D
D D D D D C D D D D D D D C D D D
U U U U U C U U U U U U U U C U U U

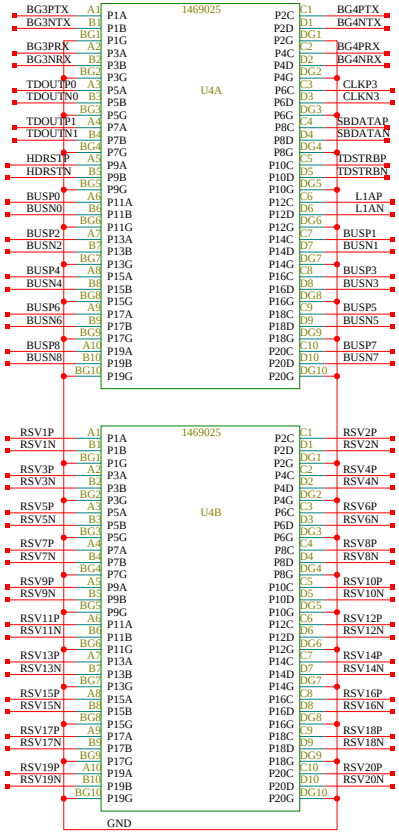
The bus signals are terminated on both ends of the backplane with 100 Ohm
The clock signals are terminated on this Slot 8 DCC and the backplane

clock3: slot 3, 4, 5, 6, 7

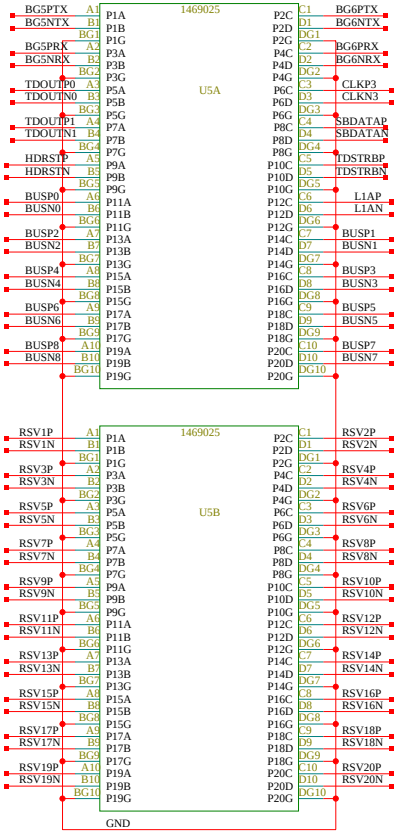
Slot 3 // DDU 1



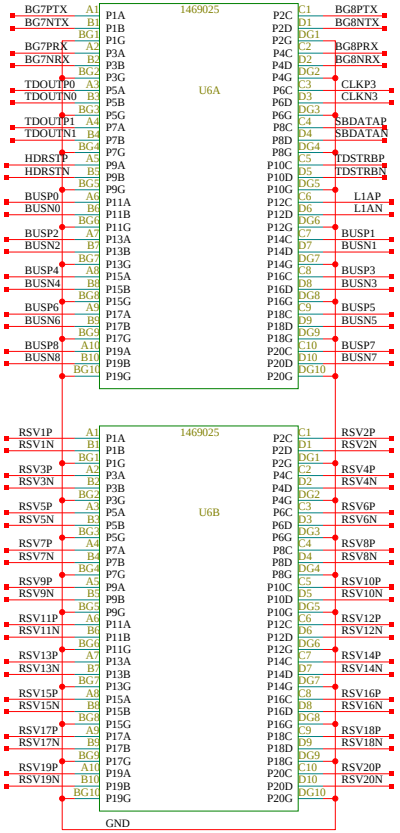
Slot 4 // DDU 2



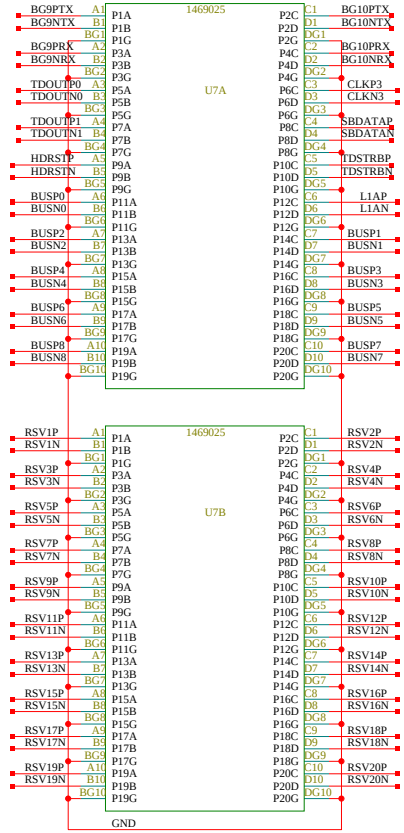
Slot 5 // DDU 3

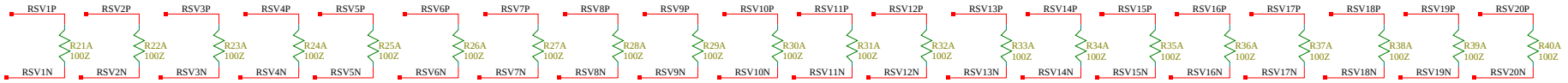


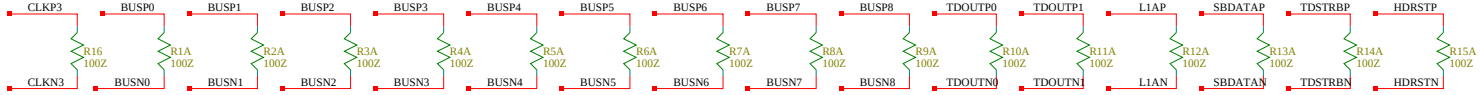
Slot 6 // DDU 4



Slot 7 // DDU 5







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174 WEST 18TH AVE, COLUMBUS OH 43210

TITLE: DDU/DCC crate custom backplane / Left five DDUs
CMS CSC DAQ Crate
CMS CSC ELECTRONICS

BY: GU
PARENT PAGE: 1
PROJECT: DCCBP
DATE: 8-14-2003_17:43
FILE: BLOCK . 1
PAGE: 10

BAP and BAN is connected, SENSEOUT will be high to indicate active DCC

The bus signals are terminated on both ends of the backplane with 100 Ohm

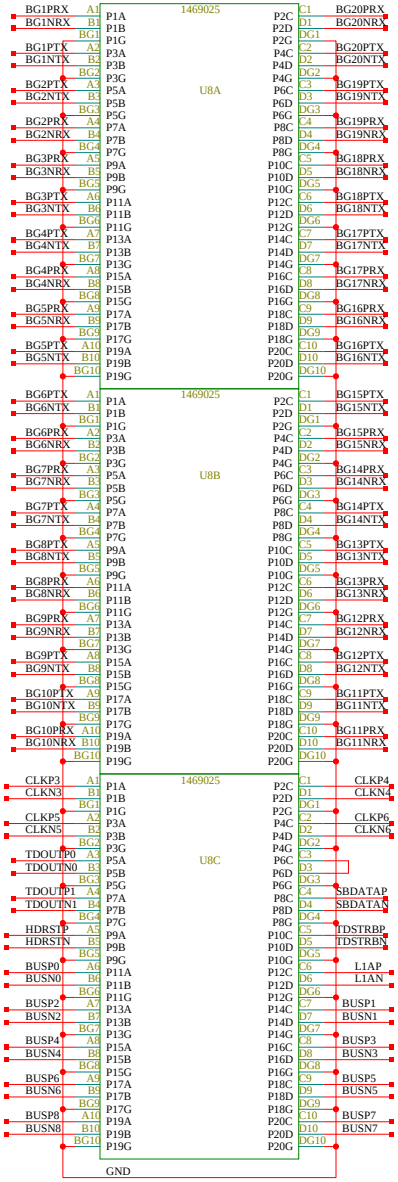
The clock signals are terminated on this board and the backplane, except the passive DCC slot

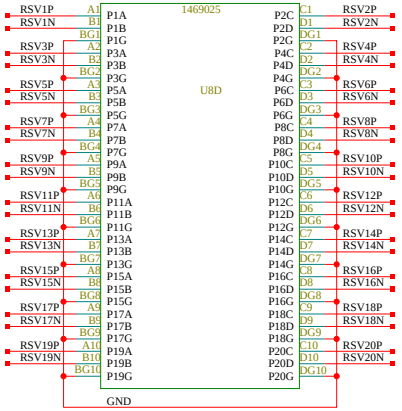
clock3: slot 3,4,5,6,7; clock5: 8,9,10,11,12,13; clock6: 14,15,16,17; clock4: 18,19,20

(clock 8 is the avtive DCC, clock 17 is the passive DCC)

Need add the Clock terminator on the DCC

Slot 8 // DCC 1





THE OHIO STATE UNIVERSITY
PHYSICS DEPARTMENT ELECTRONICS LAB
174 WEST 18TH AVE, COLUMBUS OH 43210

TITLE: DDU/DCC crate custom backplane / Main DCC
CMS CSC DAQ Crate
CMS CSC ELECTRONICS

BY: GU
PARENT PAGE: 1
PROJECT: DCCBP
DATE: 8-14-2003_17:43
FILE: BLOCK . 2
PAGE: 10A

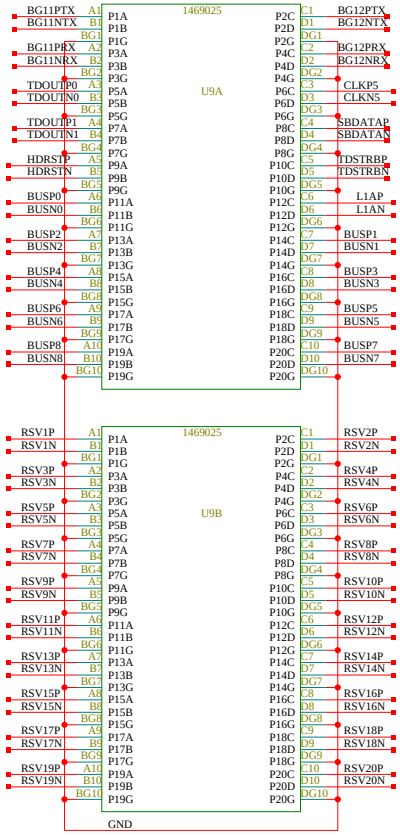
Slot#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Board	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	T	D	D	D	D	D	C	D	D	D	D	D	D	D	D	C	D	D	D		
	R	U	U	U	U	U	C	U	U	U	U	U	U	U	U	C	U	U	U		
	L																				

The bus signals are terminated on both ends of the backplane with 100 Ohm

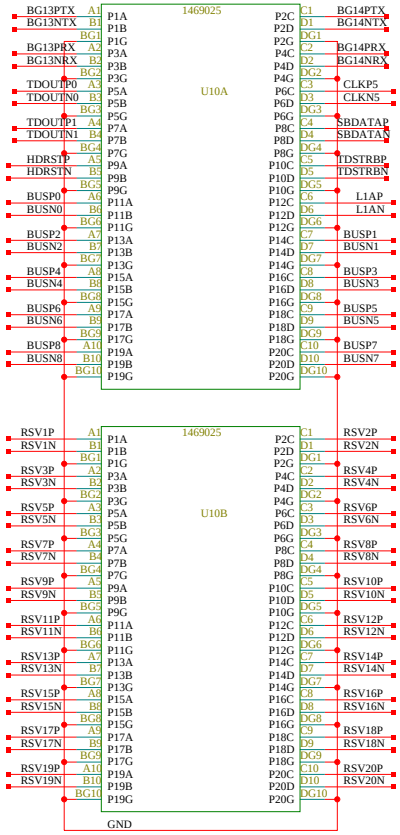
The clock signals are terminated on this Slot 8 DCC and the backplane

clock6: slot 9, 10, 11, 12; clock4: 13, 14, 15, 16

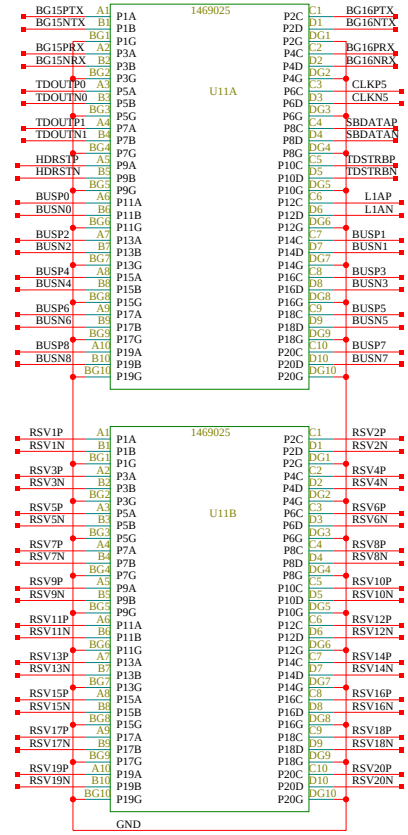
Slot 9 // DDU 6



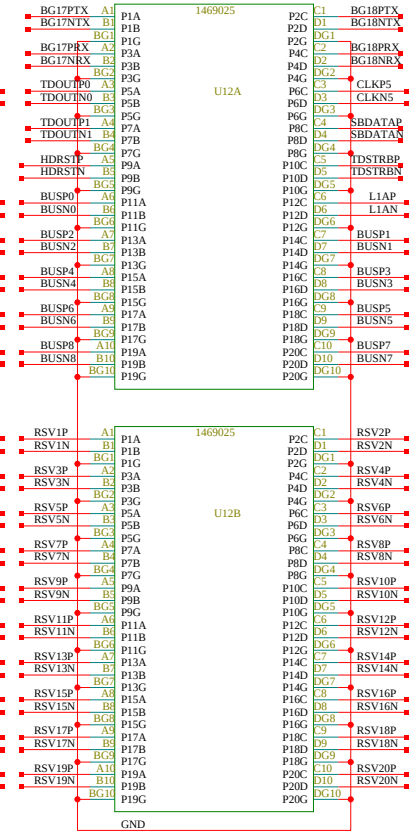
Slot 10 // DDU 7



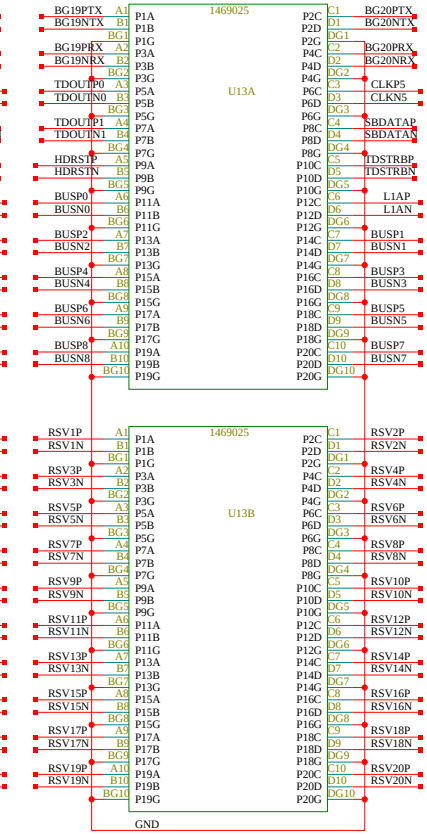
Slot 11 // DDU 8

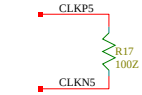


Slot 12 // DDU 9



Slot 13 // DDU 10





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174 WEST 18TH AVE, COLUMBUS OH 43210

TITLE: DDU/DCC crate custom backplane / Right five DDUs
CMS CSC DAQ Crate
CMS CSC ELECTRONICS

BY: GU
PARENT PAGE: 1
PROJECT: DCCBP
DATE: 8-13-2003_15:12
FILE: BLOCK . 3
PAGE: 10B

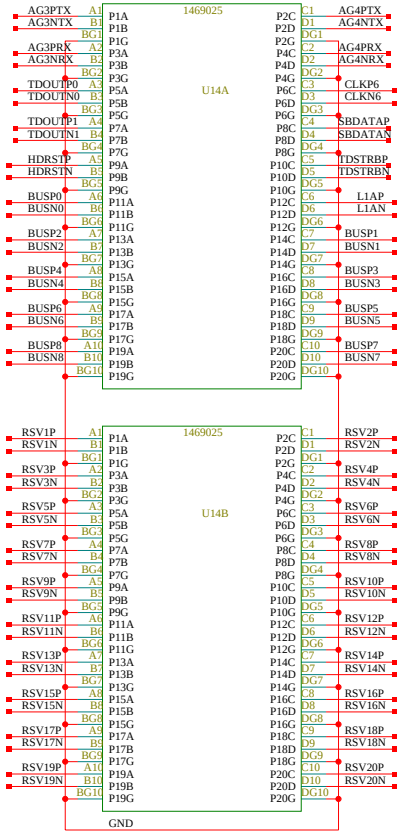
Slot#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Board CTRL	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	D	D	D	D	D	C	D	D	D	D	D	D	D	D	C	D	D	D			
	U	U	U	U	U	C	U	U	U	U	U	U	U	U	C	U	U	U			

The bus signals are terminated on both ends of the backplane with 100 Ohm

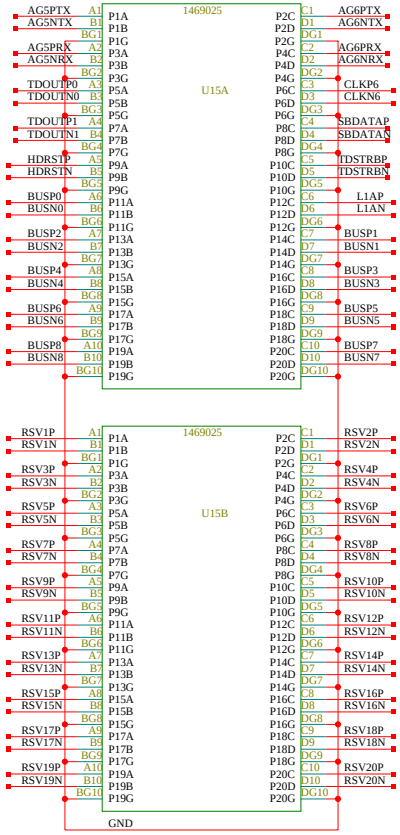
The clock signals are terminated on this Slot 8 DCC and the backplane

clock6: slot 14, 15, 16, 17

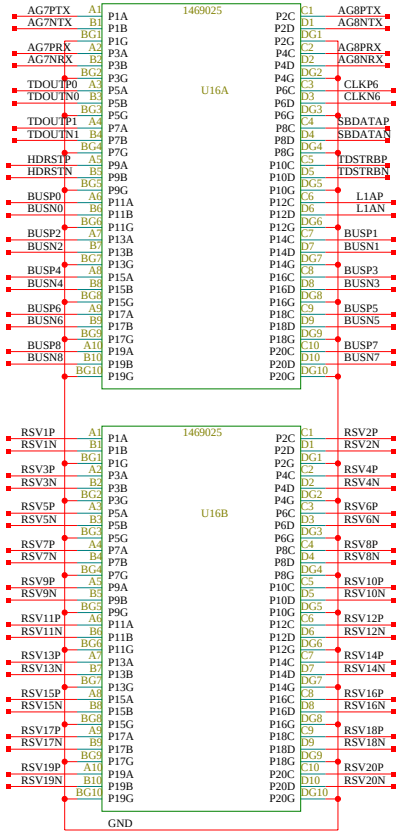
Slot 14 // DDU 11



Slot 15 // DDU 12



Slot 16 // DDU 13



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174 WEST 18TH AVE, COLUMBUS OH 43210

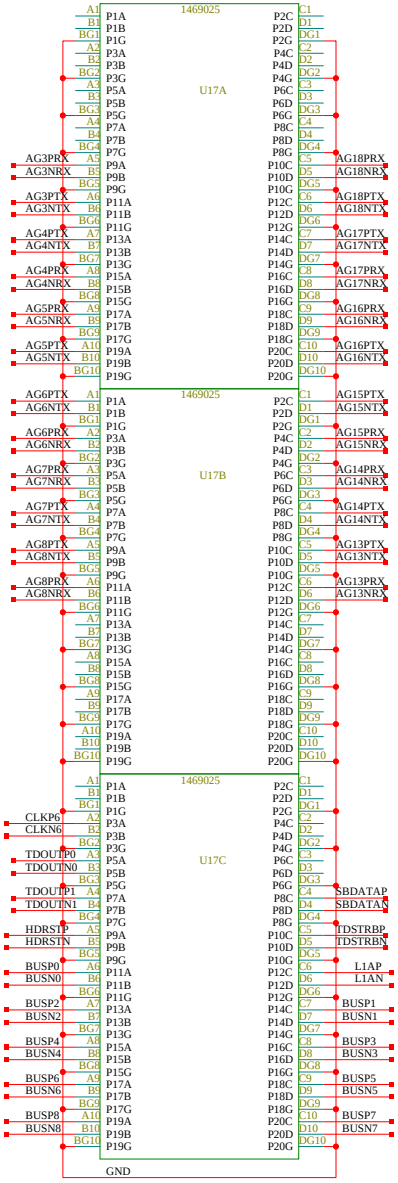
TITLE: DDU/DCC crate custom backplane / Left three DDUs of second set
CMS CSC DAQ Crate
CMS CSC ELECTRONICS

BY: GU
PARENT PAGE: 1
PROJECT: DCCBP
DATE: 8-13-2003_15:12
FILE: BLOCK . 4
PAGE: 10C

Slot 17 // DCC 2

BAP and BAN is open, SENSEOUT will be low to indicate passive DCC

The bus signals are terminated on both ends of the backplane with 100 Ohm
The clock signals are terminated on this board and the backplane, except the passive DCC slot
clock3: slot 3,4,5,6,7; clock5: 8,9,10,11,12,13; clock6: 14,15,16,17; clock4: 18,19,20
(clock 8 is the avtive DCC, clock 17 is the passive DCC)



Use the CLK5 termination on the passive DCC for active DCC CLK6 termination

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TITLE	DDU/DCC crate custom backplane / Passive DCC CMS CSC DAQ Crate CMS CSC ELECTRONICS	BY: GU	PARENT PAGE: 1
		DATE: 8-14-2003_10:44	PROJECT: DCCBP
		FILE: BLOCK . 5	PAGE: 10D

Slot#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Board	CTRL	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
		D	D	D	D	D	C	D	D	D	D	D	D	D	D	C	D	D	D		
		U	U	U	U	U	C	U	U	U	U	U	U	U	U	C	U	U	U		

The bus signals are terminated on both ends of the backplane with 100 Ohm

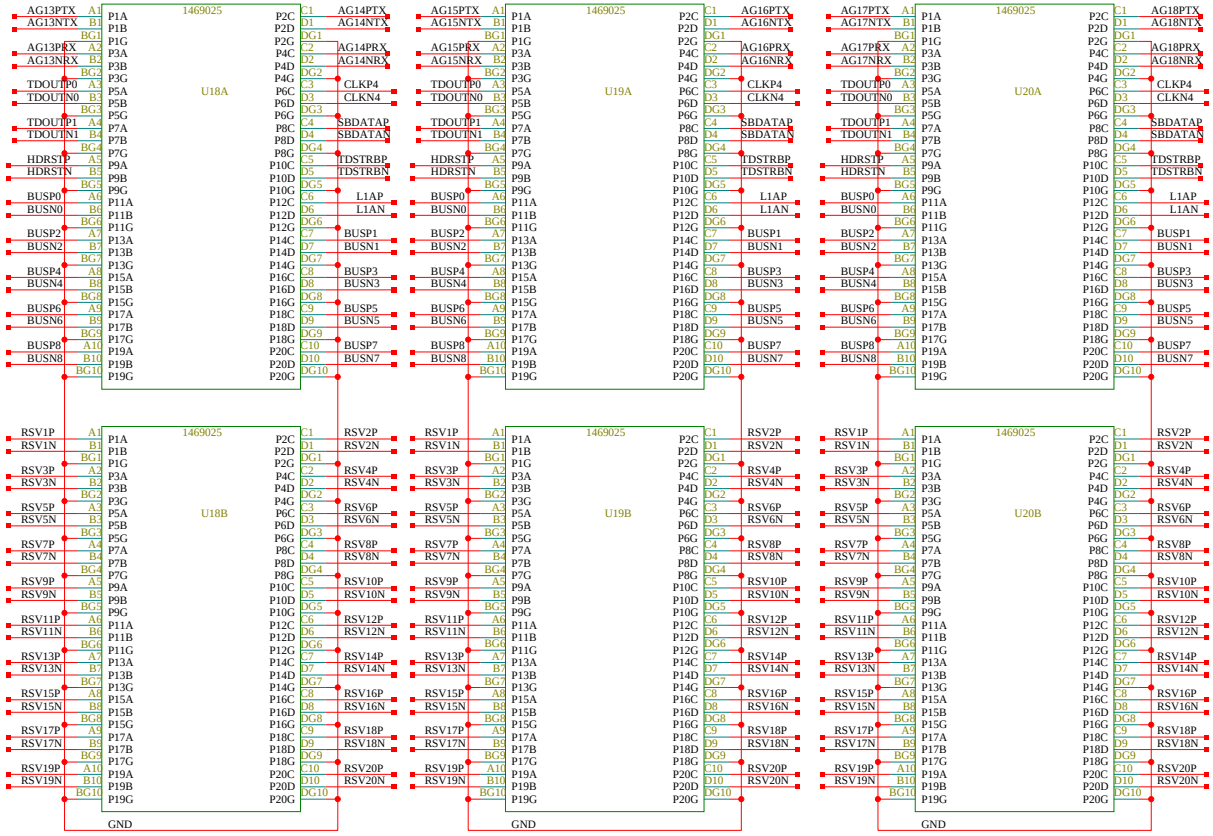
The clock signals are terminated on this Slot 8 DCC and the backplane

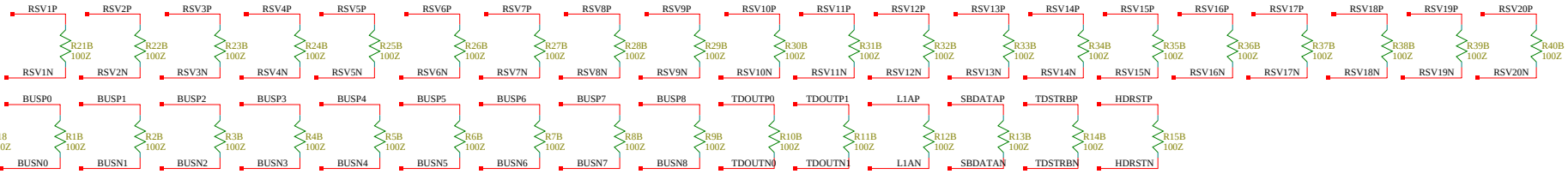
clock4: slot 18, 19, 20

Slot 18 // DDU 14

Slot 19 // DDU 15

Slot 20 // DDU 16





H1A H1B H2A H2B H3A H3B H4A H4B H5A H5B H6A H6B H7A H7B H8A H8B H9A H9B H10A H10B H11A H11B H12A H12B H13A H13B H14A H14B H15A H15B H16A H16B H17A H17B H18A H18B H19A H19B H20A H20B H21A H21B

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TITLE: DDU/DCC crate custom backplane / Right three DDUs of second set
CMS CSC DAQ Crate
CMS CSC ELECTRONICS

BY: GU
PARENT PAGE: 1
PROJECT: DCCBP
DATE: 8-13-2003_15:12
FILE: BLOCK . 6
PAGE: 10E