

Converting SUSB123 and SUSH34 into SUSB13 and SUSB2H34

An update to [G2301306 Part II](#)
Inclusive of A+ O5, QOSEMs on BBSS, and 32 CH DACs

J. Kissel

Picking up where G2301306 Left Off

This set of slides takes us from

- [D1100022-v13](#); the susb123 system, including the (BSFM) BS and (QUADs) ITMX and ITMY
- [D1000599-v8](#); sush34, including (HSTSs) MC2, PR2, and SR2

to

- [D2300401-v1](#); the reduced susb13 system, including only (QUADs) ITMX and ITMY
- [D2300383-v5](#) ***; the susb2h34 system, including the (BBSS) BS, (HRTSs) LO1, LO2, and (HSTSs) MC2, PR2, and SR2.

This presentation is assuming everything in D2300383-v5 and is inclusive of the stuff that will be added in -v5 – namely

- ECR [E2200324](#) (Re-organizing which DAC output channels are assigned to which SUS)
- ECR [E2500178](#) (QOSEMs on BS M1 stage) and
- ECR [E2500296](#) (Upgrade and Consolidate IO Chassis with 32CH DACs)

But described in stages, due to part availability (DAC Cards and QOSEMs)

Table of Contents

1. CER Work:

- a. [Control Chassis DACs/AIs](#)
- b. [Control Chassis ADCs/AAs](#)
- c. [Control Chassis BIOs/BO/BIs](#)
- d. [Monitor Chassis ADCs/AAs](#)
- e. [Rack Layouts](#)

2.

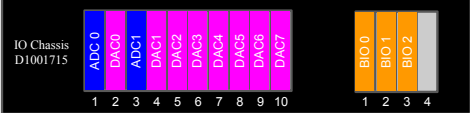
CER Work: “Control” IO Chassis DACs, AI Chasses, Cable Routing

SUSB123 & SUS-C5/-C6

(DACs – O4 Config)

D1100022-v13

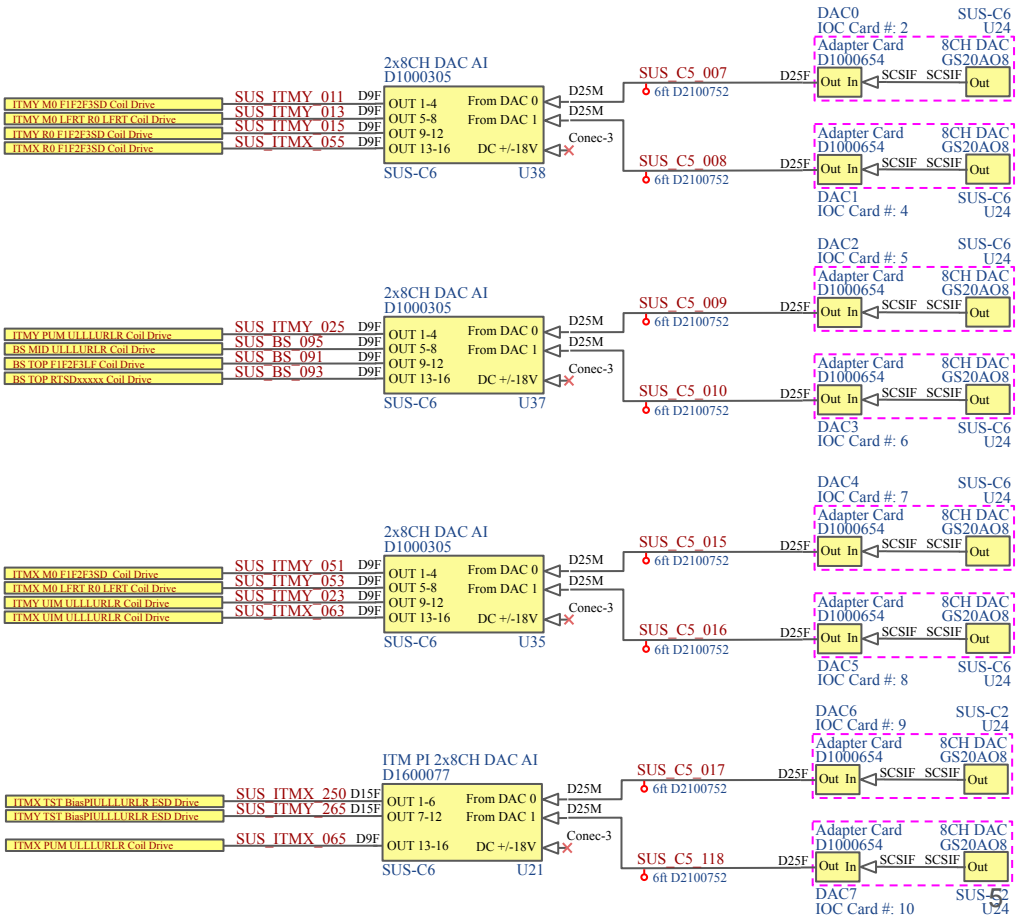
susb123



Note, this cable arrangement starts from changes made in ECR E2200324, which LLO did not do (see [IJET:24632](#)), and includes redlines of version D1100022-v13

Obnoxious, unconventional order of channels inside the ITM PI AI chassis, only discernible if you look at page 2 of D1600095 Front Interface Board

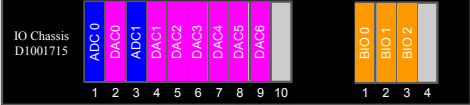
	Chan	DAC6	DAC7
OUT1	IX Bias		CH1
OUT2	IX UR PI	CH1	
OUT3	IX LR PI	CH2	
OUT4	IX UL PI	CH3	
OUT5	IX LL PI	CH4	
OUT6	IX QSUM		CH2
OUT7	IY Bias		CH3
OUT8	IY UR PI	CH5	
OUT9	IY LR PI	CH6	
OUT10	IY ULPI	CH7	
OUT11	IY LL PI	CH8	
OUT12	IY QSUM		CH4



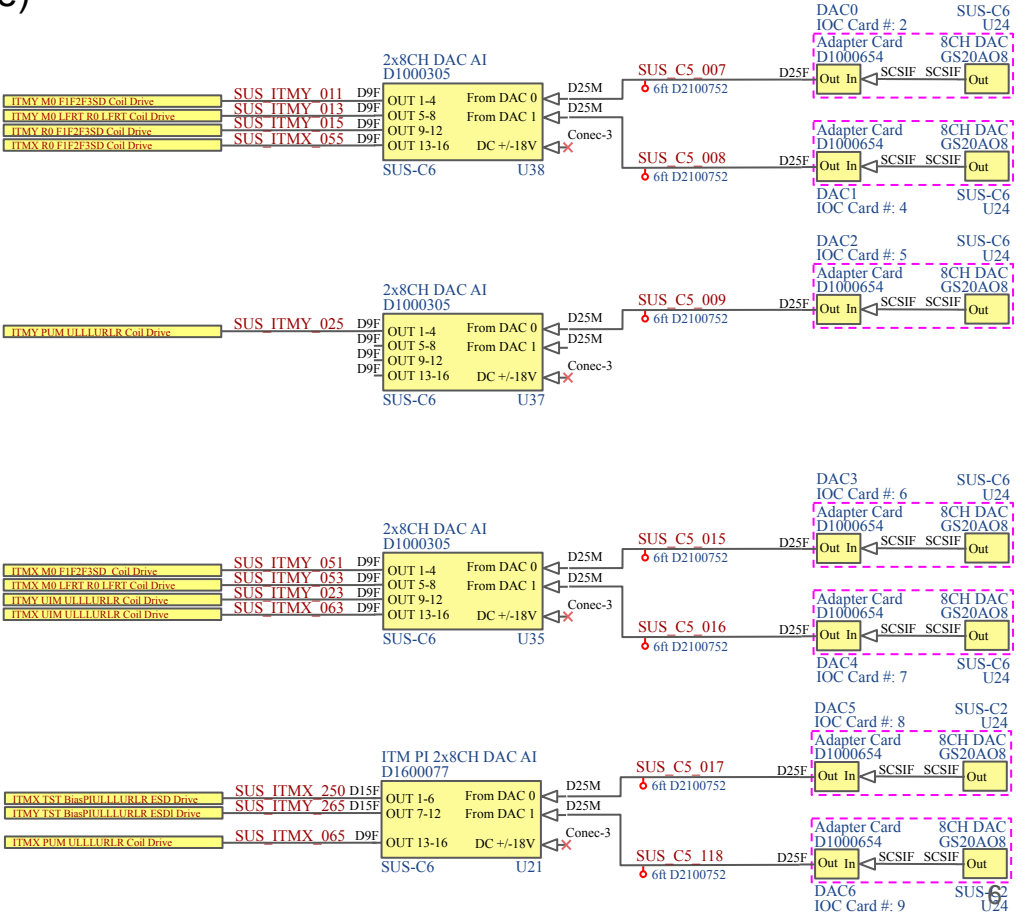
SUSB13 & SUS-C5/-C6

(DACs – LLO Interim Config, no 32CH DAC Upgrade)

susb13



- (1) Disconnect BS cables from SUS-C6 U37 D1000305 AI chassis, re-route to SUS-C1.
- (2) If desired, 8CH 20-bit DAC (and adapter) in Slot 7 can be extracted and put into spares supply.



SUSB13 & SUS-C5/-C6

(DACs – O5 Final Config)

D2300401-v2

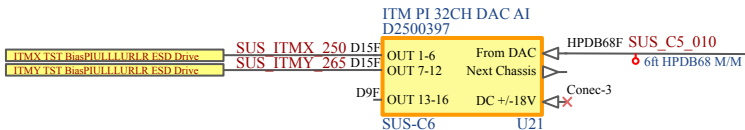
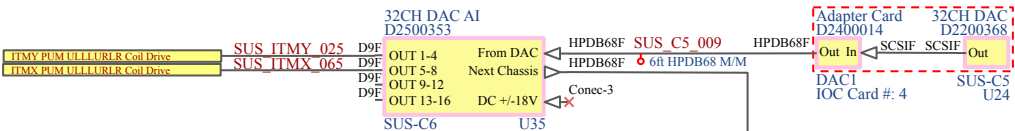
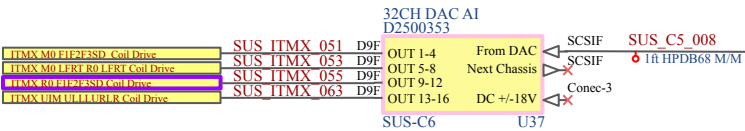
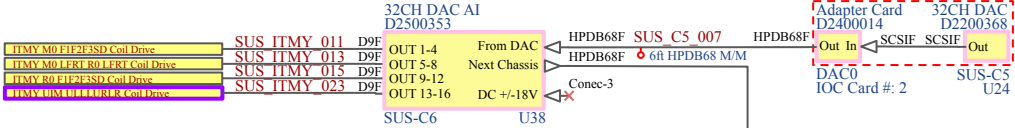
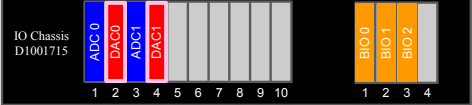
- (1) Disconnect BS cables from SUS-C6 U37 D1000305 AI chassis, re-route to SUS-C1.
- (2) Upgrade ITM coils to use 32CH DAC Chain
 - (a) Disconnect ITM cables from SUS-C6 U38, U37, and

Obnoxious, unconventional order of channels inside the ITM PI AI chassis, only discernible if you look at page 2 of D1600095 Front Interface Board

	Chan	OLD DAC6	OLD DAC7	16CH DAC	Upper 16CH on 32CH DAC +16	Digital Representation -1
OUT1	IX Bias		CH1	CH9	CH25	CH24
OUT2	IX UR PI	CH1		CH1	CH17	CH16
OUT3	IX LR PI	CH2		CH2	CH18	CH17
OUT4	IX UL PI	CH3		CH3	CH19	CH18
OUT5	IX LL PI	CH4		CH4	CH20	CH19
OUT6	IX QSUM		CH2	CH10	CH26	CH25
OUT7	IY Bias		CH3	CH11	CH27	CH26
OUT8	IY UR PI	CH5		CH5	CH21	CH20
OUT9	IY LR PI	CH6		CH6	CH22	CH21
OUT10	IY UL PI	CH7		CH7	CH23	CH22
OUT11	IY LL PI	CH8		CH8	CH24	CH23
OUT12	IY QSUM		CH4	CH12	CH28	CH27

- Needs:
- Re-routing of BS coil driver cables from SUS-C6 to SUS-C2
 - 2x new 32 CH 28-bit DAC Cards
 - 2x new 32CH DAC Adapter Cards
 - 3x new D2500353 AI chassis
 - Modification of D1600077 ITM PI AI chassis to use new
- Bought with ECR E2400409*

susb13

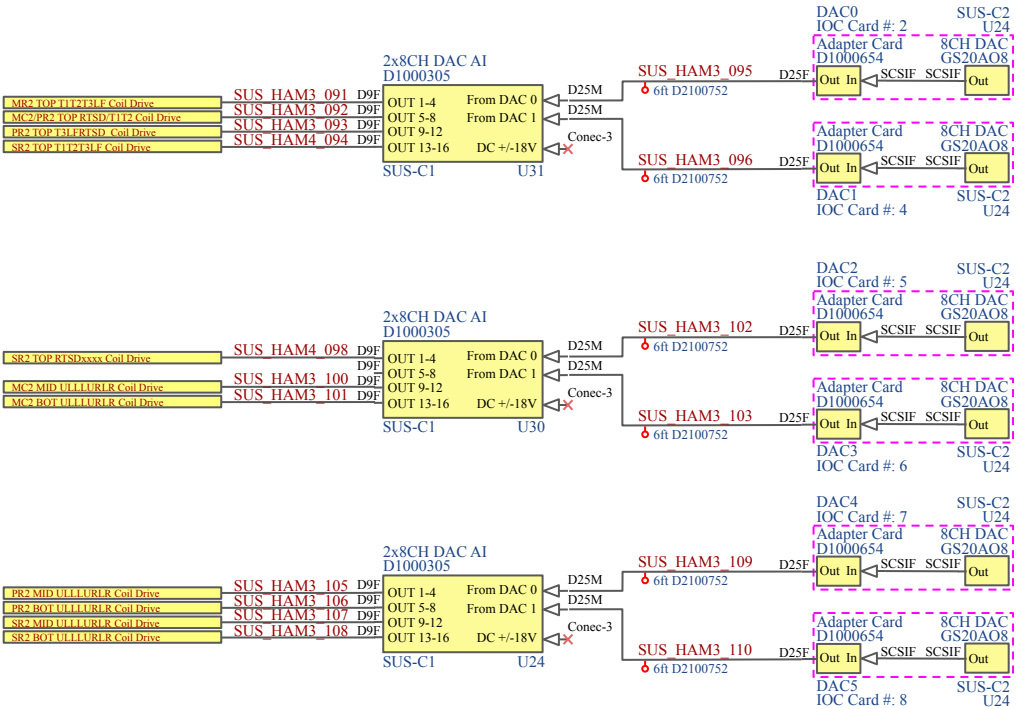
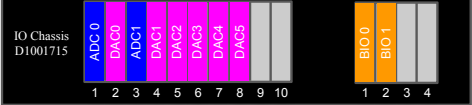


SUSH34 & SUS-C1/-C2

(DACs – O4 Config)

[D1000599-v8](#)

sush34

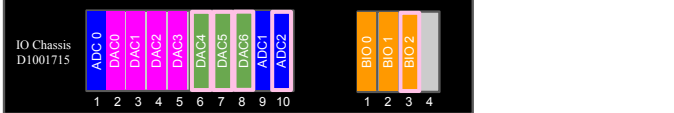


SUSB2H34 & SUS-C1/-C2

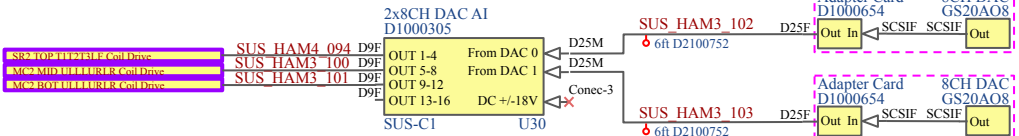
susb2h34

(DACs – LLO Interim Config, no 32CH DAC Upgrade)

D2300383-v4

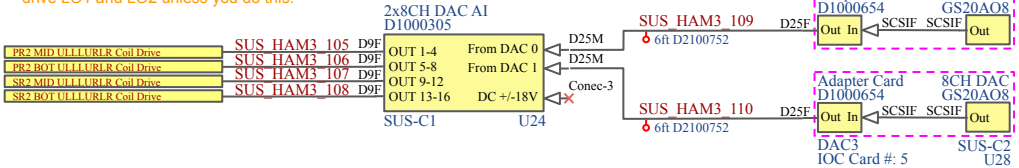


- (1) Re-arrange and install ADCs, DACs, and BIOs, creating new susb2h34 arrangement
 - (a) Disconnect existing input/output cables of sush34 (079, 089, 095, 096, 102, 103, 109, 110).
 - (b) Move **existing** ADC1 in Slot 3 to Slot 9.
 - (c) Install **new** ADC2 in Slot 10.
 - (d) Consolidate 8 CH 20-bit DACs 0, 1, 2, and 3 (in Slots 2, 4, 5, and 6) to Slots 2, 3, 4, and 5.
 - (e) Install 3x **new** 16CH 16-bit DACs into slots 6, 7, and 8; 1x **new** ADC into slot 10; 1x **new** BIO card in slot BIO 3.
 - (f) Reconnect all cables from ADC/DAC/BIO to AA/AI/BIO as shown

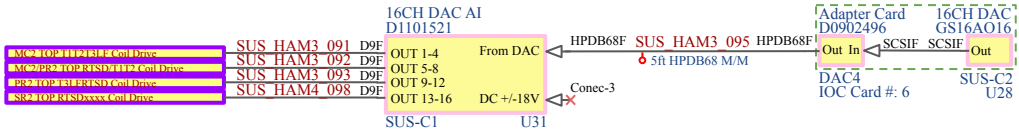


Remember: this interim config worsens noise performance of top masses from 20- to 26- bit DAC noise to increase channel density. (Hence the superficially nonsense cable output grouping). But w/o 32 CH DAC, don't have the channel count vs. card space in either sus123 or sush34 to drive LO1 and LO2 unless you do this.

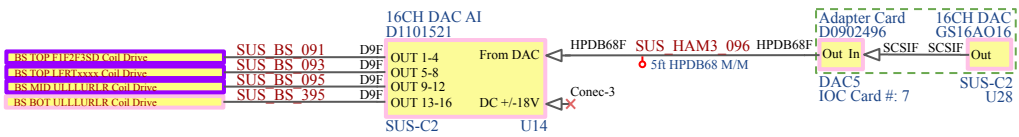
- (2) Existing MC2/PR2/SR2 TOP Channels
 - (a) Disconnect **existing** MC2/PR2/SR2 7x DB9 output cables (091, 092, 093, 094, 098, 100, 101) from D1000305 AI chassis in SUS-C1 U31 and U30 shown on Slide 3
 - (b) Replace D1000305 U31 20-bit AI Chassis with **new** D1101521 16-bit AI chassis
 - (c) Reconnect 7x DB9 outputs to U31 and U30 AI chassis as shown



- (3) Existing and new BS channels
 - (a) Disconnect **existing** BS cables (BS_091, BS_093, BS_095) from SUS-C6 U37, **reroute** to SUS-C1.
 - (b) Install **new** D1101521 AI chassis into SUS-C1 U14
 - (c) Reconnect **existing** BS_091, BS_093, BS_095 and **new** BS_395 to SUS-C2 U14 AI chassis as shown

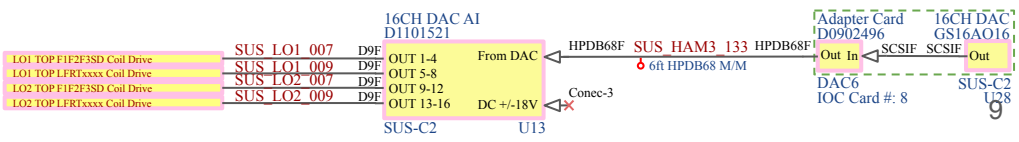


- (4) New LO1/LO2 TOP channels
 - (a) Install **new** D1101521 AI chassis into SUS-C2 U13
 - (b) Connect **new** LO1_007, LO1_009, LO2_007, and LO2_009 as shown



Needs:

- Re-routing of BS coil driver cables from SUS-C6 to SUS-C2
 - 3x new 16-bit DAC chains
 - New cables from LO1, LO2, and BS BOT.
- Bought with A+ Bought with A+*



SUSB2H34 & SUS-C1/-C2

(DACs – 2026 LHO Config; “limited 32 CH DACs”)

- (1) Re-arrange and install ADCs, DACs, and BIOS, creating new sub2h34 arrangement
 - (a) Disconnect existing input/output cables of sub2h34 (079, 089, 095, 096, 102, 103, 109, 110).
 - (b) Move ADC1 in Slot 3 to Slot 6.
 - (c) Install **new** ADC2 in Slot 7.
 - (d) Consolidate 8 CH 20-bit DACs 0, 1 (in Slots 2, 4) to Slots 2, 3.
 - (e) Install 3x **new** 32CH 28-bit DACs into slots 4, 5, and 8; 1x **new** ADC into slot 10; 1x **new** BIO card in slot BIO 3.
 - (f) Reconnect all cables from ADC/DAC/BIO to AA/AI/BIO as shown
- (2) Disconnect all existing D9 cables from SUS-C1 U31, U30 D1000305 AI Chassis (leave PR2/SR2 U24 AI chassis output cables chassis alone)
- (3) Upgrade SUS-C1 to 1x **32CH 28-bit DAC** chain.
 - (a) Replace 2x SUS-C1 U31, U30 D1000305 AI chassis with 2x **new** D2500353 AI chassis
 - (b) Reconnect MC2, PR2 and SR2 output cables to U31 and U30 AI chassis as shown.
- (4) Install **new** 1x **32CH 28-bit DAC** DAC chains for BS, LO1, and LO2
 - (a) Disconnect **existing** BS cables (BS_091, BS_093, BS_095) from SUS-C6 U37, **reroute to SUS-C1**.
 - (b) Install **new** D2500353 AI chassis into SUS-C1 U14 and U13
 - (c) Connect re-routed **existing** BS cables and **new** BS BOT cable to SUS-C2 U14 AI chassis as shown
 - (d) Connect **new** LO1 and LO2 cables to SUS-C2 U13 AI chassis as shown.

Needs:

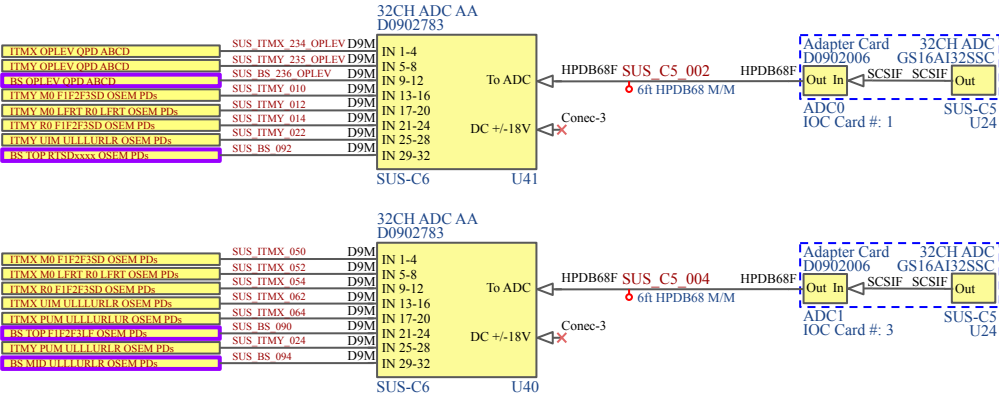
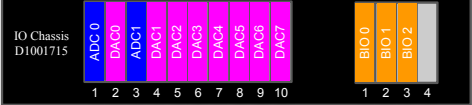
CER Work: “Control” IO Chasses
ADCs, AA Chasses, Cable Routing

SUSB123 & SUS-C5/-C6

(ADCs – O4 Config)

D1100022-v13

susb123

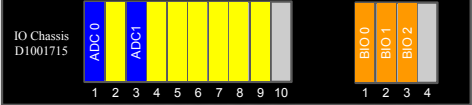


SUSB13 & SUS-C5/-C6

(ADCs – O5 Config)

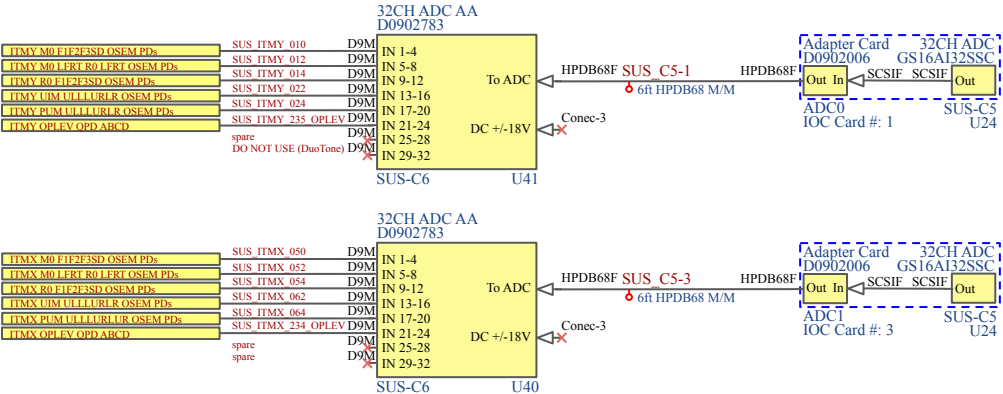
D2300401-v2

susb13



(DAC cards are site-dependent – see DAC pages above)

- (1) BS Top Mass
 - (a) If QOSEMs are ready: Disconnect and deprecate BS TOP OSEM PD cables (BS_090 and BS_092) – they're being replaced by QOSEMs.
 - (b) If QOSEMs are not ready : Re-route **existing** BS TOP OSEM PD cables (BS_090 and BS_092) over to SUS-C1 U33 AA chassis.
- (2) Disconnect **existing** BS MID and Optical lever sensor Cables; re-route to SUS-C1
- (3) Re-organize **existing** ITMX and ITMY cables as shown so that each ADC card serves one QUAD.
- (4) Re-route BS Optical lever (SUS_BS_236_OPLEV) to SUS-C1
 - (a) If QOSEMs are ready: connect to SUS-C1 U33 Port 5 (CH 17-20)
 - (b) If QOSEMs aren't ready: connect to SUS-C1 U33 Prt 8 (CH29-32)



Needs:

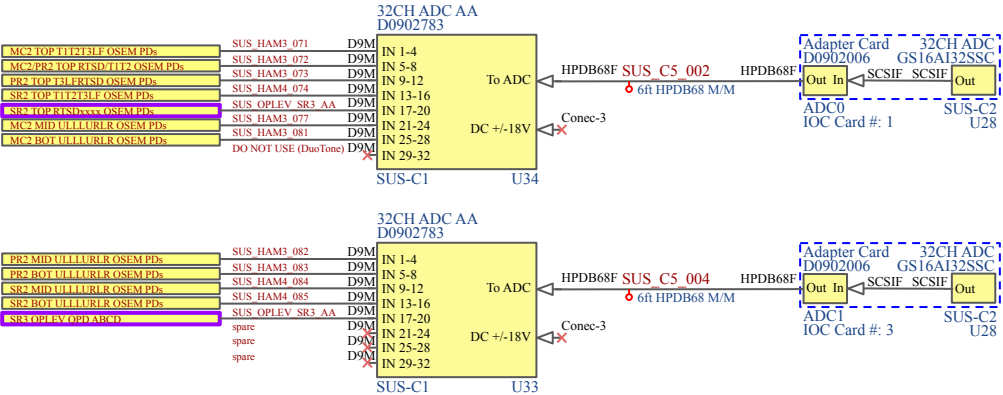
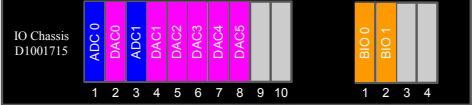
- Re-routing of BS MID and OL cables from SUS-C6 to SUS-C1

SUSH34 & SUS-C1/-C2

(ADCs – O4 Config)

[D1000599-v8](#)

sush34



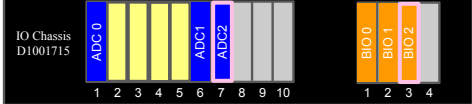
SUSB2H34 & SUS-C1/-C2

susb2h34

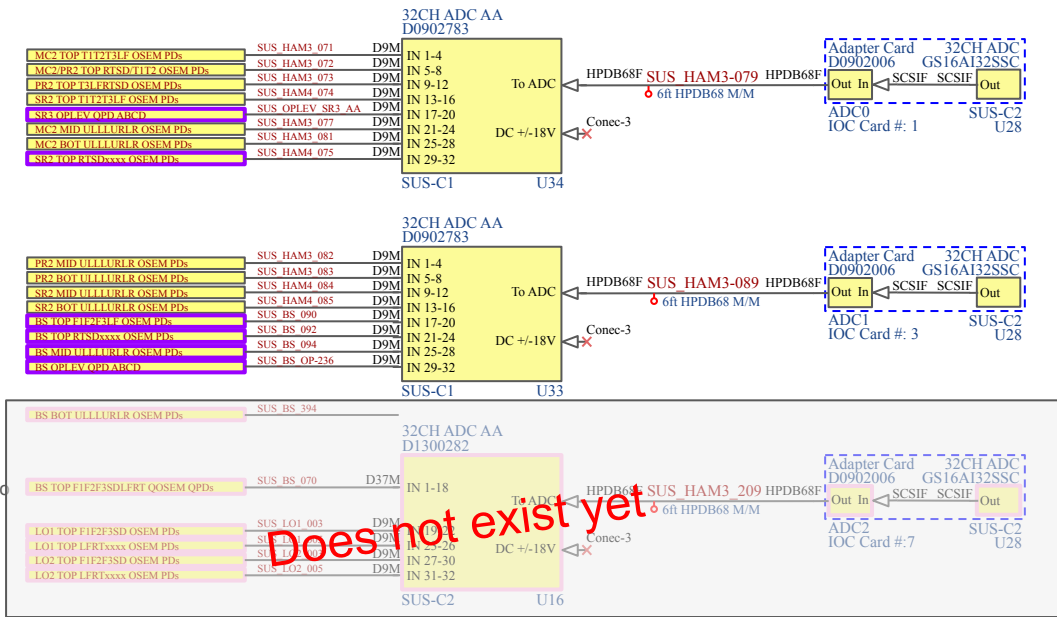
(ADCs – LHO “No QOSEMs/BBSS” Config)

D2300383-v5

- (1) Re-arrange and install ADCs, DACs, and BIOs, creating new susb2h34 arrangement
 - (a) Disconnect existing input/output cables of sush34 (079, 089, 095, 096, 102, 103, 109, 110).
 - (b) Move ADC1 in Slot 3 to Slot 9.
 - (c) Install **new** ADC2 in Slot 10.
- (2) Rearrange **existing** DB9 input cables to maximize existing ADC channel usage
 - (a) Disconnect SR2 TOP RTSDxxxx (HAM4_075) from Port 5 (CH17-20) of SUS-C1 U34 AA chassis, and move to Port 8 (CH29-32).
 - (b) Move SR3 Oplev (OPLEV_SR3_AA) from SUS-C1 U33 AA Port 5 (CH17-20) to SUS-C1 U34 AA chassis Port 5 (CH17-20)
- (3) Move in BS and PR3 optical levers from disparate racks
 - (a) [Do not reroute PR3 optical lever]
 - (b) Reroute **existing** BS oplev cable from SUS-C6 U41 3rd Port (CH9-12) to SUS-C1 U33 Port 8 (CH29-32)
- (4) Land all remaining BS sensors
 - (a) Reroute **existing** BS TOP (SUS_BS_90 and SUS_BS_092) to SUS-C1 U33 Port 5 and 6 (CH17-20 and CH21-24)
 - (b) Reroute **existing** BS MID (SUS_BS_094) OSEMs from SUS-C6 U40 Port 8 (CH29-32) to SUS-C1 U33 Port 7 (CH25-28)



(DAC cards and thus where ADC cards are are site-dependent – see DAC pages above)



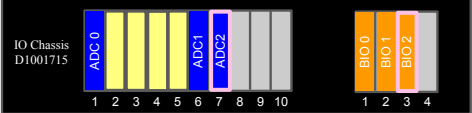
- Needs:
- Re-arrangement of existing ADC cards in IO chassis
 - Re-routing of BS TOP cables from SUS-C6 to SUS-C1
 - Re-routing of BS MID and OL cables from SUS-C6 to SUS-C1

SUSB2H34 & SUS-C1/-C2

(ADCs – O5 Config)

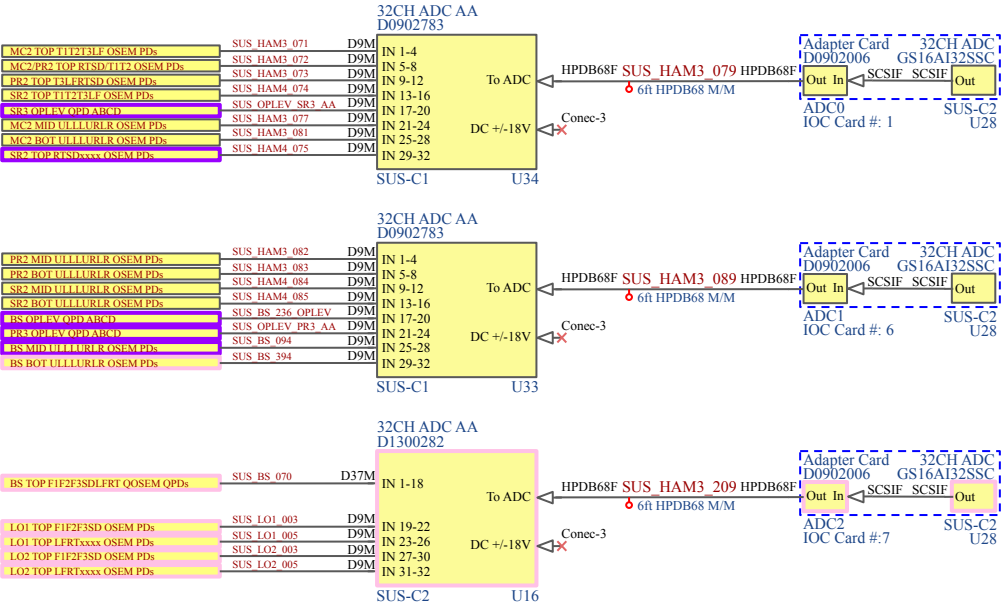
D2300383-v5

susb2h34



(DAC cards and thus where ADC cards are are site-dependent – see DAC pages above)

- (1) Re-arrange and install ADCs, DACs, and BIOs, creating new susb2h34 arrangement
 - (a) Disconnect existing input/output cables of sush34 (079, 089, 095, 096, 102, 103, 109, 110).
 - (b) Move ADC1 in Slot 3 to Slot 9.
 - (c) Install **new** ADC2 in Slot 10.
- (2) Rearrange **existing** DB9 input cables to maximize existing ADC channel usage
 - (a) Disconnect SR2 TOP RTSDxxxx (HAM4_075) from Port 5 (CH17-20) of SUS-C1 U34 AA chassis, and move to Port 8 (CH29-32).
 - (b) Move SR3 Oplev (OPLEV_SR3_AA) from SUS-C1 U33 AA Port 5 (CH17-20) to SUS-C1 U34 AA chassis Port 5 (CH17-20)
- (3) Move in BS and PR3 optical levers from disparate racks
 - (a) Reroute **existing** PR3 optical lever QPD from SUS-C4 U32 8th port (CH29-32) into SUS-C1 U33 6th port (CH21-24)
 - (b) Reroute **existing** BS oplev cable from SUS-C6 U41 3rd Port (CH9-12) to SUS-C1 U33 Port 5 (CH17-20)
- (4) Land all remaining BS, LO1, and LO2 sensors
 - (a) Reroute **existing** BS MID (SUS_BS_094) OSEMs from SUS-C6 U40 Port 8 (CH29-32) to SUS-C1 U33 Port 7 (CH25-28)
 - (b) Land new BS BOT (SUS_BS_394) OSEMs in SUS-C1 U33 Port 8 (CH29-32)
 - (c) Install **new** D1300282 AA chassis into SUS-C2 U16.
 - (d) Land **new** BS TOP QOSEM cable (SUS_BS_???) into SUS-C2 U16 Port 1 (CH1-18).
 - (e) Land **new** LO1 and LO2 TOP cables (LO1_003, LO1_005, LO2_003, LO2_005) as shown.



Needs:

- Re-arrangement of existing ADC cards in IO chassis
- Re-routing of BS MID and OL cables from SUS-C6 to SUS-C1
- Re-routing of PR3 OL cable from SUS-C4 to SUS-C1
- 1x 32CH ADC Cards
- 1x 32CH ADC Adapter Cards
- 1x D1300282 AA chassis
- New cables from LO1, LO2, and BS TOP and BOT.

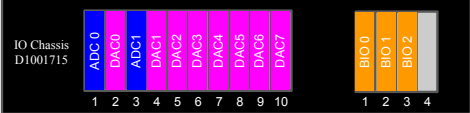
CER Work: “Control” IO Chasses BIO Cards, BI/BO Chasses, Cable Routing

SUSB123 & SUS-C5/-C6

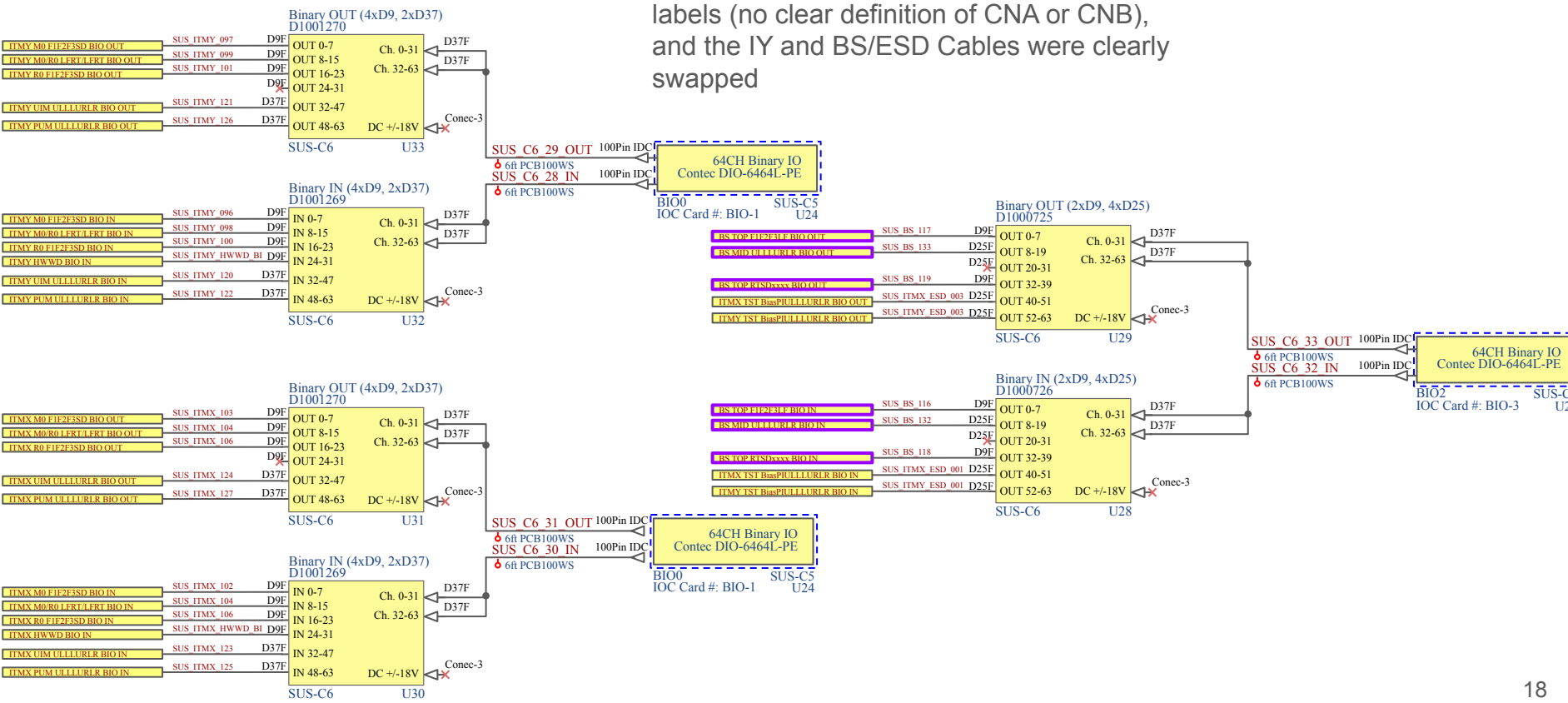
susb123

(Binary Inputs/Outputs – O4 Config)

D1100022-v13



** the BIO cables never have had complete labels (no clear definition of CNA or CNB), and the IY and BS/ESD Cables were clearly swapped

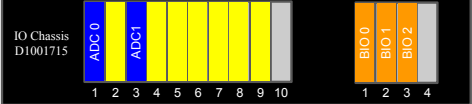


SUSB13 & SUS-C5/-C6

susb13

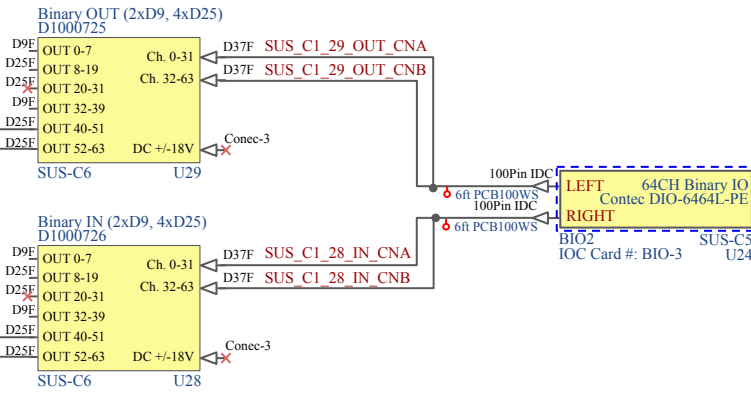
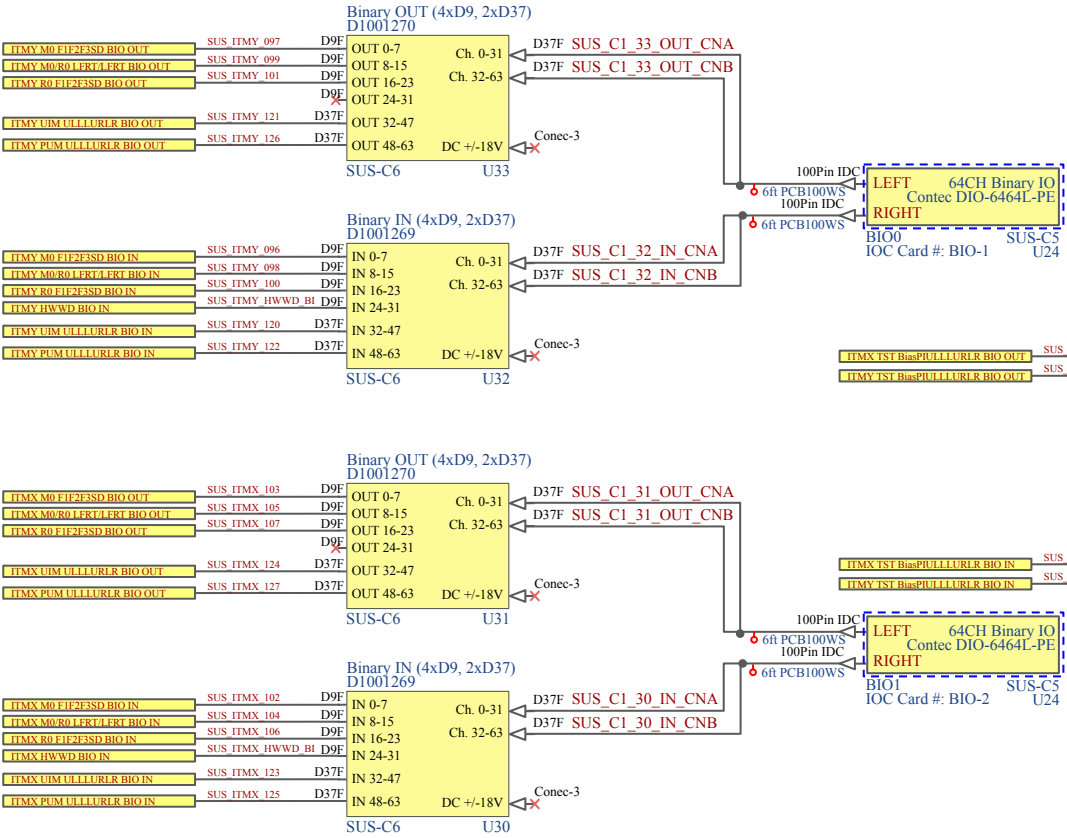
(Binary Inputs/Outputs – O5 Config)

D2300401-v2



(DAC cards are site-dependent – see DAC pages above)

(1) Re-route **existing** BS cabling to SUS-C1

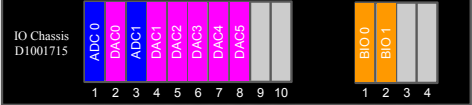


SUSH34 & SUS-C1/-C2

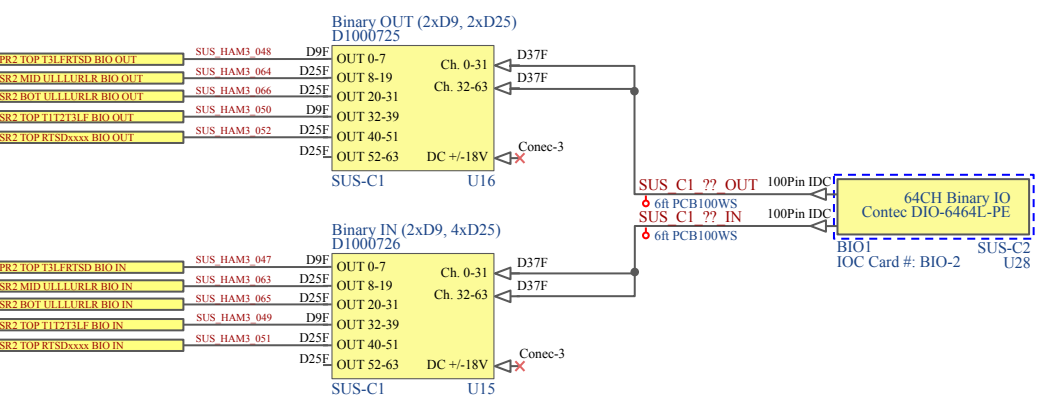
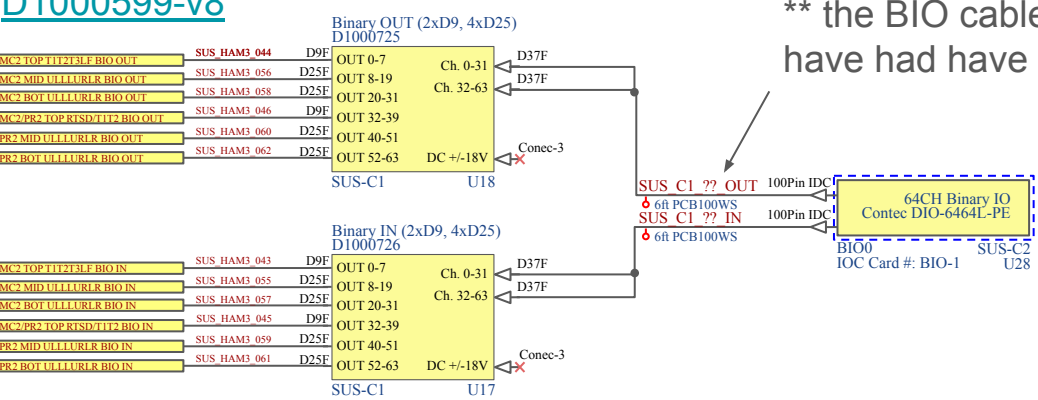
sush34

(Binary Inputs/Outputs – O4 Config)

D1000599-v8



** the BIO cables never have had have labels

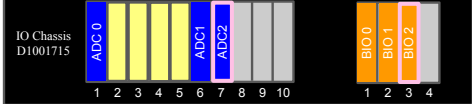


SUSB2H34 & SUS-C1/-C2

susb2h34

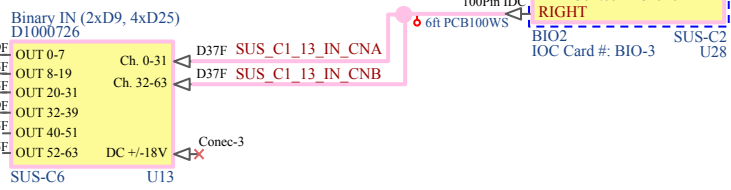
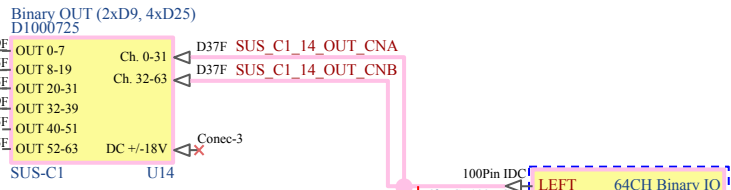
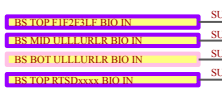
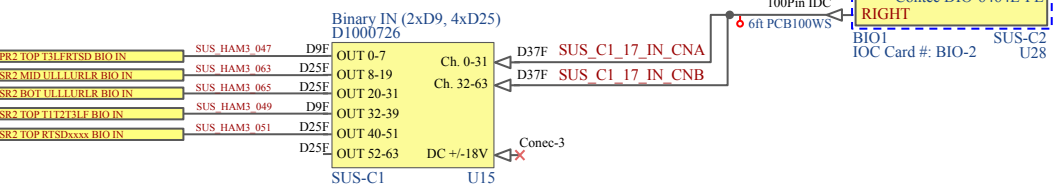
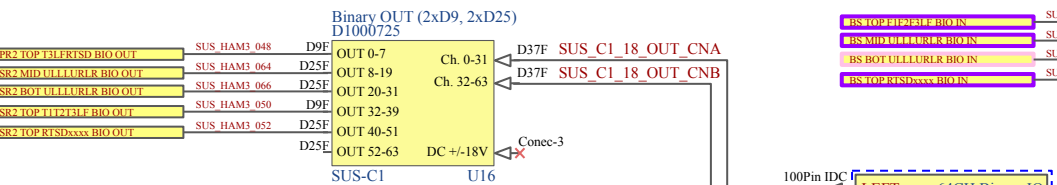
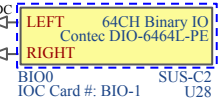
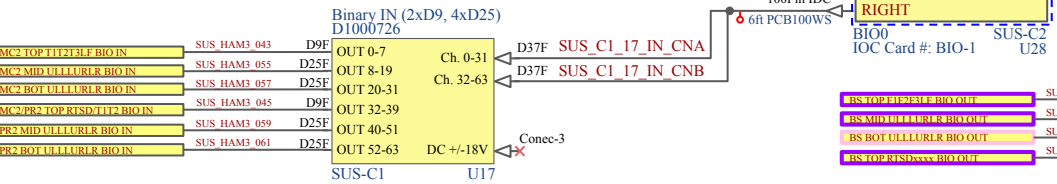
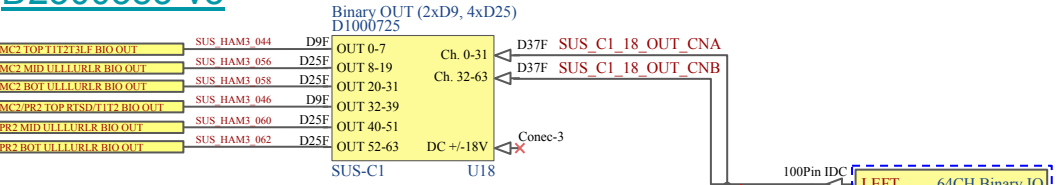
(Binary Inputs/Outputs – O5 Config)

D2300383-v5



(DAC cards and thus where ADC cards are are site-dependent – see DAC pages above)

- (1) Install **new** BIO card, BI chassis, BO chassis, and associated cabling as shown below
- (2) Re-route **existing** BS cabling into SUS-C1
- (3) Plug in **new** BS M3 coil driver switching

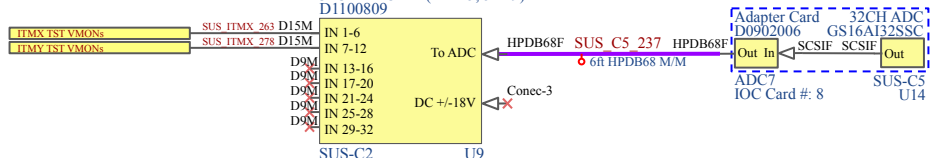
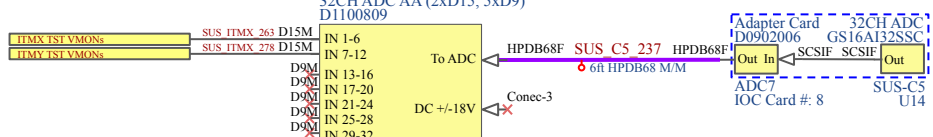
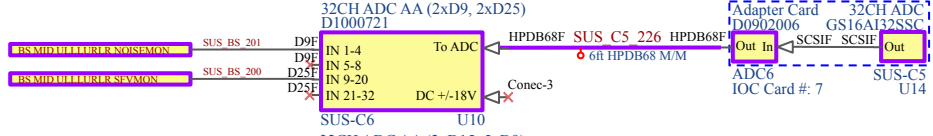
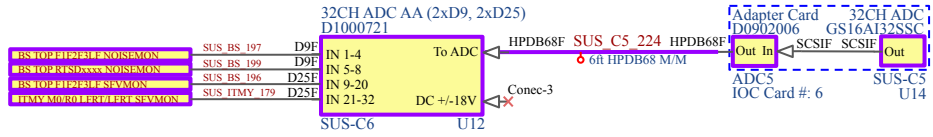
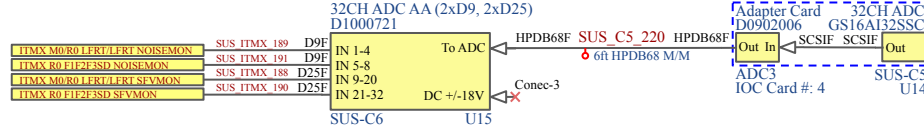
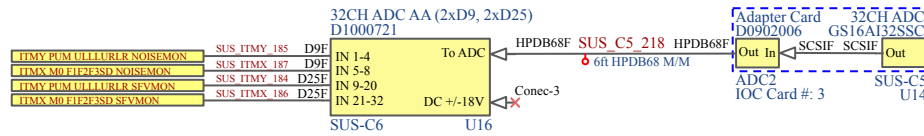
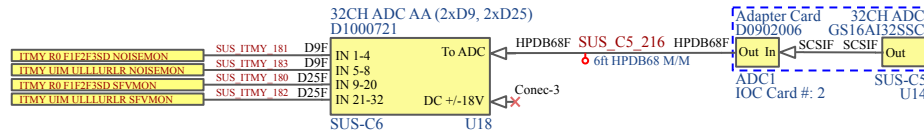
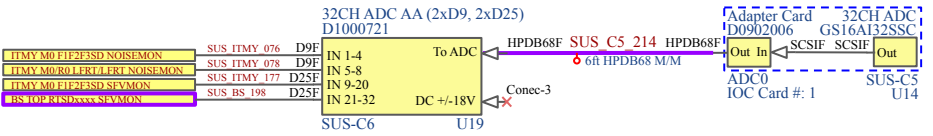
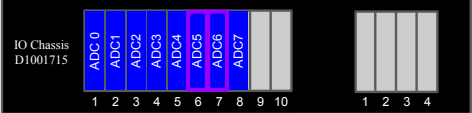


CER Work: “Monitor” IO Chasses
ADCs, AA Chasses, Cable Routing

SUSAUXB123 & SUS-C5/-C6 susauxb123

(ADCs – O4 Config)

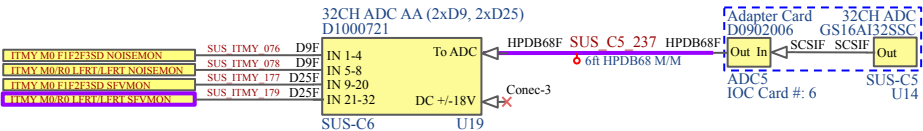
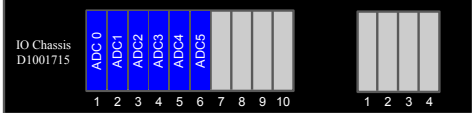
D1100022-v13



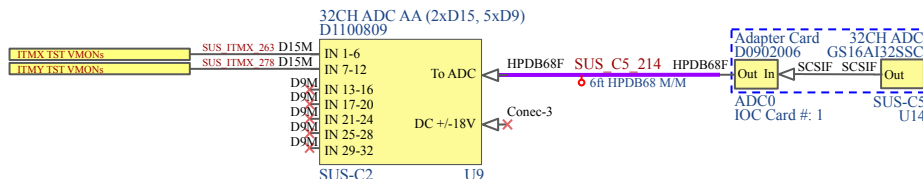
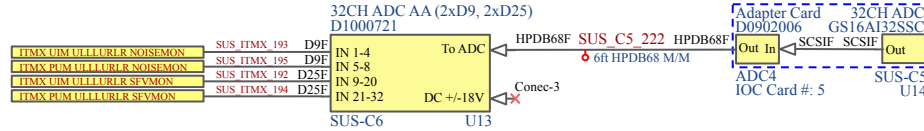
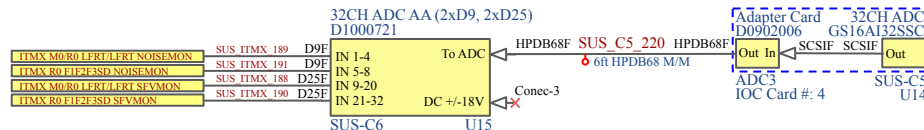
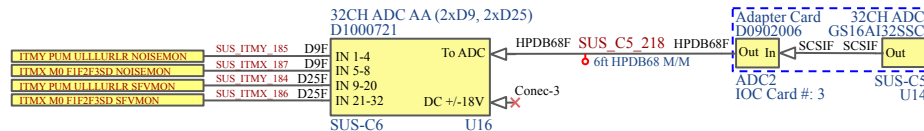
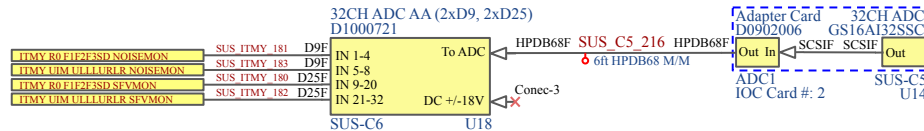
SUSAUXB13 & SUS-C5/-C6

(ADCs – O5 Config)

susauxb13



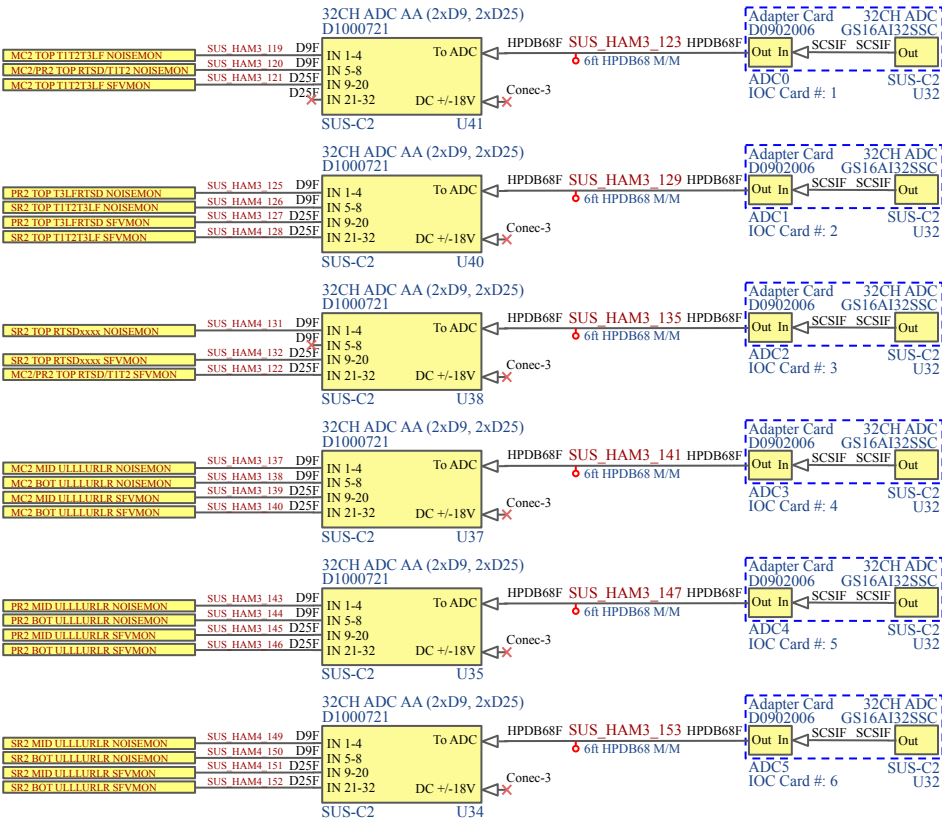
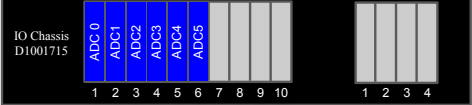
- (1) Re-organize ITM cabling
 - (a) Disconnect BS TOP RTSD SFVMON (SUS_BS_198) from SUS-C6 U19 Port 4, re-route to SUS-C2 U23.
 - (b) Move ITMY M0/R0 LFR/LFR SFVMON (SUS_ITMY_179) from SUS-C6 U12 to SUS-C6 U19
 - (c) Swap ADC0 and (now) ADC5 SCSI Cables such that TST ESD VMONs are read out by ADC0, and ITMY M0/R0 Coil MONs are read out by ADC5
- (2) Move entire BS signal chain to SUS-C2
 - (a) Disconnect remaining **existing** BS monitor input cables from SUS-C6 U12 and U10, re-route to SUS-C2
 - (b) Move **existing** U12 and U10 AA chassis to SUS-C2 U23 and U22
 - (c) Move **existing** ADCs cards and cables in slots 7 and 8 of (former) susauxb123 into (new) susauxb2h34



SUSAUXH34 & SUS-C1/-C2 susauxh34

(ADCs – O4 Config)

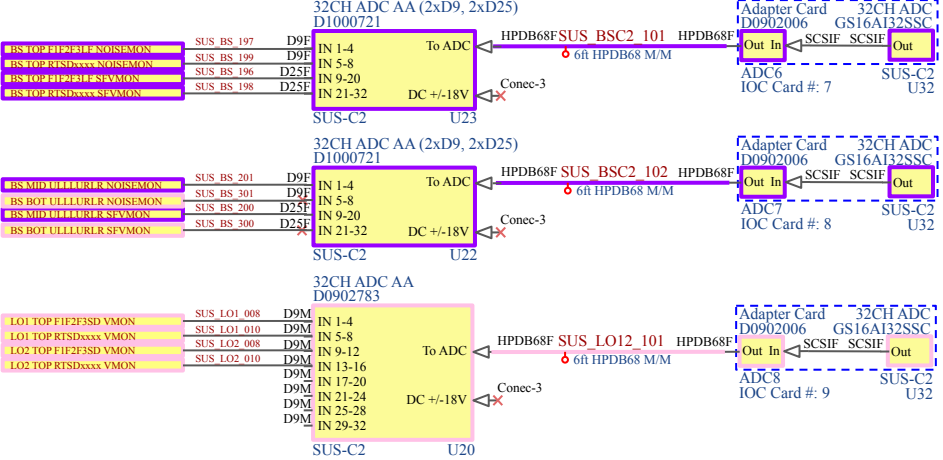
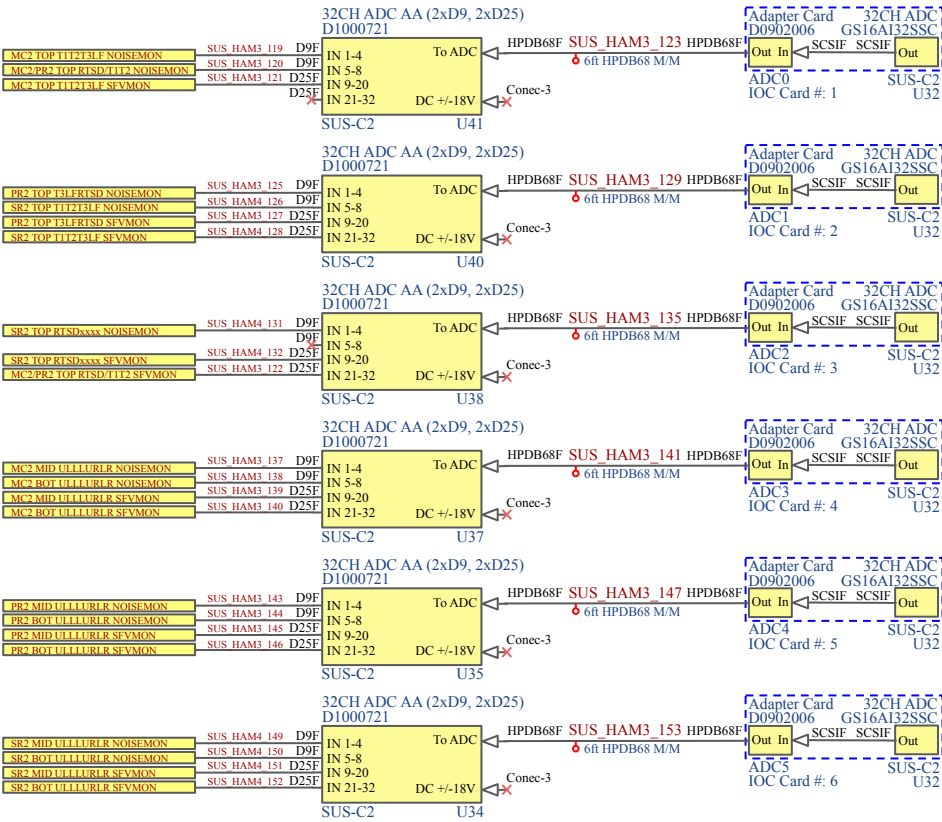
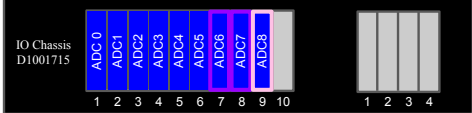
D1000599-v8



SUSAUXB2H34 & SUS-C1/-C2

(ADCs – O5 Config)

D2300383-v5



- (1) Install **existing** BS coil driver Monitor Chain
 - Install 2x ADC and adapter cards from (former) susauxb123 as ADC5 and ADC6 in (now) susauxb2h34
 - Install 2x25, 2x15 AA chassis into SUS-C2 U23 and U22
 - Connect cabling from re-routed from SUS-C6 as shown above
- (2) Install new BS M3 stage, LO1 M1, and LO2 M1 stages coil driver monitors
 - Connect **new** US_BS_300 and SUS_BS_301 cables into ports 2 and 4 of **existing** SUS-C2 U22 AA chassis migrated from SUS-C6.
 - Build entirely **new** LO1 and LO2 monitor chain as shown.

CER Work: Rack Layouts

SUSB123

& SUS-C5/-C6

(O4 Config)

D1100022-v13

16-BIT
20-BIT
DAC

		SUS - C5										
	42											42
ITMY MO F1F2F3SD	41	QUAD Top Coil Driver D1001782										41
ITMX MO/RO LFRT/LFRT	40	QUAD Top Coil Driver D1001782										40
ITMY RO F1F2F3SD	39	QUAD Top Coil Driver D1001782										39
	38											38
ITMX MO F1F2F3SD	37	QUAD Top Coil Driver D1001782										37
ITMX MO/RO LFRT/LFRT	36	QUAD Top Coil Driver D1001782										36
ITMX RO F1F2F3SD	35	QUAD Top Coil Driver D1001782										35
	34											34
ITMY UIM	33	UIM Coil Driver D0902668										33
ITMX UIM	32	UIM Coil Driver D0902668										32
ITMY PUM	31	PUM Coil Driver D1100303										31
ITMX PUM	30	PUM Coil Driver D1100303										30
	29											29
BS TOP F1F2F3LF	28	Triple Top Coil Driver D1001242										28
BS TOP RTSxxxx	27	Triple Top Coil Driver D1001242										27
BS MID	26	Triple Acq Coil Driver D090006										26
	25											25
	24											24
SUS B123	23	RO Chassis D1001715 AOC 9 AOC 1 AOC 2 DAG 1 DAG 2 DAG 3 DAG 4 DAG 5 DAG 6 DAG 7 BO 2 BO 1 BO 2										23
	22											22
	21											21
	20											20
	19											19
	18											18
	17											17
	16											16
	15											15
	14											14
SUS AUX B123	13	RO Chassis D1001715 AOC 8 AOC 1 AOC 2 AOC 3 AOC 4 AOC 5 AOC 6 AOC 7										13
	12											12
	11											11
	10											10
	9											9
	8											8
	7											7
	6											6
	5											5
	4											4
	3											3
	2											2
	1											1

SUS - C6		
42		42
41	AA Chassis D0902783	41
40	AA Chassis D0902783	40
39		39
38	AI Chassis D1000305	38
37	AI Chassis D1000305	37
36		36
35	AI Chassis D1000305	35
34		34
33	Binary Output D1001270	33
32	Binary Input D1001269	32
31	Binary Output D1001270	31
30	Binary Input D1001269	30
29	Binary Output D1000725	29
28	Binary Input D1000726	28
27		27
26	SUS Independant WD D1300642	26
25		25
24	SUS Independant WD D1300642	24
23		23
22		22
21	AI Chassis D1600077	21
20		20
19	AA Chassis D1000721	19
18	AA Chassis D1000721	18
17		17
16	AA Chassis D1000721	16
15	AA Chassis D1000721	15
14		14
13	AA Chassis D1000721	13
12	AA Chassis D1000721	12
11		11
10	AA Chassis D1000721	10
9	AA Chassis D1100809	9
8		8
7		7
6		6
5		5
4		4
3		3
2		2
1		1

42		42
41	IX OL, IY OL, BS OL, IY MO, IY MO/RO, IY RO, IY UIM, BS TOP RTSxxxx	41
40	IX MO, IX MO/RO, IX RO, IX UIM, IX PUM, BS TOP F1F2F3LF, IY PUM, BS MID	40
39		39
38	IY MO, IY MO/RO, IY RO, IX RO	38
37	IX MO, IX MO/RO, IY UIM, IX UIM	37
36		36
35	IY PUM, BS MID, BS TOP F1F2F3LF, BS TOP RTSxxxx	35
34		34
33	IY MO, IY MO/RO, IY RO, IX HWMO, IY UIM, IY PUM	33
32		32
31	IX MO, IX MO/RO, IX RO, IX UIM, IX PUM	31
30		30
29		29
28	BS TOP F1F2F3LF, BS MID, BS TOP RTSxxxx, IX TST, IY TST	28
27		27
26	IY HWMO	26
25		25
24	IX HWMO	24
23		23
22		22
21	IX TST, IY TST, IX PUM	21
20		20
19	IY MO Noise, IY MO/RO Noise, IY MO SFV, BS TOP RTSxxxx SFV	19
18	IY RO Noise, IY UIM Noise, IY RO SFV, IY UIM SFV	18
17		17
16	IY PUM Noise, IX MO Noise, IY PUM SFV, IY MO SFV	16
15	IX MO/RO Noise, IX RO Noise, IX MO/RO SFV, IX RO SFV	15
14		14
13	IX UIM Noise, IX PUM Noise, IX UIM SFV, IX PUM SFV	13
12	BS TOP Noise, BS TOP Noise, BS TOP F1F2F3LF SFV, IY MO SFV	12
11		11
10	BS MID Noise, unused, BS MID SFV, unused	10
9	IX TST Vmon, IY TST Vmon, unused, unused, unused, unused, unused	9
8		8
7		7
6		6
5		5
4		4
3		3
2		2
1		1

2

IX OL, IY OL, BS OL, IY MO, IY MO/RO, IY RO, IY UIM, BS TOP RTSxxxx

IX MO, IX MO/RO, IX RO, IX UIM, IX PUM, BS TOP F1F2F3LF, IY PUM, BS MID

IY MO, IY MO/RO, IY RO, IX RO

IX MO, IX MO/RO, IY UIM, IX UIM

IY PUM, BS MID, BS TOP F1F2F3LF, BS TOP RTSxxxx

IY MO, IY MO/RO, IY RO, IX HWD, IY UIM, IY PUM

IX MO, IX MO/RO, IX RO, IX UIM, IX PUM

BS TOP F1F2F3LF, BS MID, BS TOP RTSxxxx, IX TST, IY TST

IY HWD

IX HWD

IX TST, IY TST, IX PUM

IY MO Noise, IY MO/RO Noise, IY MO SFV, BS TOP RTSxxxx SFV

IY RO Noise, IY UIM Noise, IY RO SFV, IY UIM SFV

IY PUM Noise, IX MO Noise, IY PUM SFV, IX MO SFV

IX MO/RO Noise, IX RO Noise, IX MO/RO SFV, IX RO SFV

IX UIM Noise, IX PUM Noise, IX UIM SFV, IX PUM SFV

BS TOP Noise, BS TOP Noise, BS TOP F1F2F3LF SFV, IY MO SFV

BS MID Noise, unused, BS MID SFV, unused

IX TST Vmon, IY TST Vmon, unused, unused, unused, unused

SUSB13

& SUS-C5/-C6

(O5 Config)

[D2300401-v2](#)

16-BIT

24-BIT

24-BIT

DAC

	SUS - C5		SUS - C6	
	42		42	
ITWY MO FIF2P3SD	41	QUAD Top Coil Driver D1001782	41	ITWY_010, ITWY_012, ITWY_014, ITWY_022, ITWY_024, ITWY_235_OPLEV
ITMX MO/RO LFRT/LFRT	40	QUAD Top Coil Driver D1001782	40	ITMX_050, ITMX_052, ITMX_054, ITMX_062, ITMX_064, ITMX_234_OPLEV
ITWY RO FIF2P3SD	39	QUAD Top Coil Driver D1001782	39	
	38		38	AI Chassis D2500353
ITMX MO FIF2P3SD	37	QUAD Top Coil Driver D1001782	37	AI Chassis D2500353
ITMX MO/RO LFRT/LFRT	36	QUAD Top Coil Driver D1001782	36	
ITMX RO FIF2P3SD	35	QUAD Top Coil Driver D1001782	35	AI Chassis D2500353
	34		34	
ITWY UIM	33	UIM Coil Driver D0902668	33	Binary Output D1001270
ITMX UIM	32	UIM Coil Driver D0902668	32	Binary Input D1001269
ITWY PUM	31	PUM Coil Driver D1100303	31	Binary Output D1001270
ITMX PUM	30	PUM Coil Driver D1100303	30	Binary Input D1001269
	29		29	Binary Output D1000725
	28		28	Binary Input D1000726
	27		27	
	26		26	SUS Independant WD D1300642
	25		25	
SUS B13	24		24	SUS Independant WD D1300642
	23	RO Chassis D1001715	23	
	22		22	
	21		21	AI Chassis D2500397
	20		20	
	19		19	AA Chassis D1000721
	18		18	AA Chassis D1000721
	17		17	
	16		16	AA Chassis D1000721
	15		15	AA Chassis D1000721
SUS AUX B13	14		14	AA Chassis D1000721
	13	RO Chassis D1001715	13	
	12		12	
	11		11	
	10		10	
	9		9	AA Chassis D1100809
	8		8	
	7		7	
	6		6	
	5		5	
	4		4	
	3		3	
	2		2	
	1		1	

SUSH34

& SUS-C1/-C2

(O4 Config)

[D1000599-v8](#)

SUS - C1			SUS - C2		
42		42	42		42
41	MC2 TOP T1T2T3LF	Triple Top Coil Driver D1001242	41	AA Chassis D1000721	MC2 TOP Noise, MC2/PR2 TOP Noise, MC2 TOP SFV, Spare
40	MC2/PR2 TOP RTSD/T1T2	Triple Top Coil Driver D1001242	40	AA Chassis D1000721	PR2 TOP Noise, SR2 TOP Noise, PR2 TOP SFV, SR2 TOP SFV
39	PR2 TOP T3LFRTSD	Triple Top Coil Driver D1001242	39		
38			38	AA Chassis D1000721	SR2 TOP Noise, Spare, SR2 TOP SFV, MC2/PR2 TOP SFV
37	SR2 TOP T1T2T3LF	Triple Top Coil Driver D1001242	37	AA Chassis D1000721	MC2 MID Noise, MC2 BOT Noise, MC2 MID SFV, MC2 BOT SFV
36	SR2 TOP RTSDxxxx	Triple Top Coil Driver D1001242	36		
35			35	AA Chassis D1000721	PR2 MID Noise, PR2 BOT Noise, PR2 MID SFV, PR2 BOT SFV
34	MC2 TOP, MC2/PR2 TOP, PR2 TOP, SR2 TOP, MC2 MID, MC2 BOT, Spare	AA Chassis D0902783	34	AA Chassis D1000721	SR2 MID Noise, SR2 BOT Noise, SR2 MID SFV, SR2 BOT SFV
33		AA Chassis D0902783	33		
32			32		
31	MC2 TOP, MC2/PR2 TOP, PR2 TOP, SR2 TOP	AI Chassis D1000305	31		SUS AUX H34
30	SR2 TOP, MC2 MID, MC2 BOT, Spare	AI Chassis D1000305	30		
29			29		
28	MC2 MID	Triple Acq Coil Driver D090006	28		
27	MC2 BOT	Triple Acq Coil Driver D090006	27		
26	PR2 MID	Triple Acq Coil Driver D090006	26		
25			25		
24	PR2 MID, PR2 BOT, SR2 MID, SR2 BOT	AI Chassis D1000305	24		
23			23		
22	PR2 BOT	Triple Acq Coil Driver D090006	22		
21	SR2 MID	Triple Acq Coil Driver D090006	21		
20	SR2 BOT	Triple Acq Coil Driver D090006	20		
19			19		
18	MC2 TOP, MC2 MID, MC2 BOT, MC2/PR2 TOP, PR2 MID, PR2 BOT	Binary Output D1000725	18		
17		Binary Input D1000726	17		
16	PR2 TOP, SR2 MID, SR2 BOT, SR2 TOP, SR2 BOT, Spare	Binary Output D1000725	16		
15		Binary Input D1000726	15		
14			14		
13			13		
12			12		
11			11		
10			10		
9			9		
8			8		
7			7		
6			6		
5			5		
4			4		
3			3		
2			2		
1			1		

16-BIT ADC

20-BIT DAC

IO Chassis D1001715

ADC-9
ADC-1
ADC-2
ADC-3
ADC-4
ADC-5

1 2 3 4 5 6 7 8 9 10

1 2 3 4

IO Chassis D1001715

ADC-9
DAC-1
DAC-2
DAC-3
DAC-4
DAC-5

1 2 3 4 5 6 7 8 9 10

SD-9
SD-1

1 2 3 4

D2300383-v5

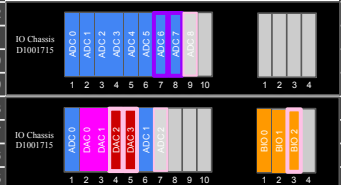
HAM3_082, HAM3_083, HAM4_084, HAM4_085, BS_090, BS_092, BS_094, BS_236_OPLEV

SR2 TOP, MC2 MID, MC2 BOT, Spare

PR2 MID, PR2 BOT, SR2 MID, SR2 BOTGPO: 1975-0-255-300PR2 TOP, SR2 MID, SR2 BOT, SR2 TOP, SR2 TOP, SpareBS_116, BS_132, BS_332, BS_118, N/A, N/ABS 087BS 083
BS MID

SUS - C1	
42	
41	Triple Top Coil Driver D1001242
40	Triple Top Coil Driver D1001242
39	Triple Top Coil Driver D1001242
38	
37	Triple Top Coil Driver D1001242
36	Triple Top Coil Driver D1001242
35	
34	AA Chassis D0902783
33	AA Chassis D0902783
32	
31	AI Chassis D2500353
30	AI Chassis D2500353
29	
28	Triple Acq Coil Driver D090006
27	Triple Acq Coil Driver D090006
26	Triple Acq Coil Driver D090006
25	
24	AI Chassis D1000305
23	
22	Triple Acq Coil Driver D090006
21	Triple Acq Coil Driver D090006
20	Triple Acq Coil Driver D090006
19	
18	Binary Output D1000725
17	Binary Input D1000726
16	Binary Output D1000725
15	Binary Input D1000726
14	Binary Output D1000725
13	Binary Input D1000726
12	
11	
10	
9	Triple Top Coil Driver D1001242
8	Triple Top Coil Driver D1001242
7	
6	Triple Acq Coil Driver D090006
5	Triple Acq Coil Driver D090006
4	
3	
2	
1	

SUS - C2

[illegible]

16-BIT ADC
28-BIT DAC
20-BIT DAC

BS 197, BS 199, BS 196, BS 198
BS TOP Noise, BS TOP Noise, BS TOP SFV, BS TOP SFV
BS 201, BS 301, BS 200, BS 300

LO1 008, LO1 010, LO2 008, LO2 010, N/A x4

BS_070, LO1_004, LO1_006, LO2_004, LO2_006

BS 091, BS 093, BS 095, BS 395
BS TOP, BS TOP, BS MID, BS BOT
LO1 007, LO1 009, LO2 007, LO2 009

LO1 003
LO1 TOP FIF2F3SD
LO1 005
LO1 WITH 1000

LO2 003
LO2 TOP F1F2F3SD
LO2 005

D2300383-v5

HAM3_071, HAM3_072, HAM3_073, HAM4_074, OPLEV_SR3_AA, HAM3_077, HAM3_081, HAM4_075											
MC2 TOP,	MC2/PR2 TOP,	PR2 TOP,	SR2 TOP,	SR3 CL,	MC2 MID,	MC2 BOT,	SR2 TOP				
HAM3_082, HAM3_083, HAM4_084, HAM4_085, BS_236_OPLEV, OPLEV_FR3_AA, BS_094, BS_394											
PR2 MID,	PR2 BOT,	SR2 MID,	SR2 BOT,	BS CL,	FR3 CL,	BS MID,	BS BOT				

MC2 TOP, MC2/PR2 TOP, PR2 TOP, SR2 TOP
SR2 TOP, MC2 MID, MC2 BOT, Spare

MC2 MID
MC2 BOT
PR2 MID

PR2 MID, PR2 BOT, SR2 MID, SR2 BOTPR2 BOT
SR2 MID
SR2 BOT

MC2 TOP, MC2 MID, MC2 BOT, MC2/PR2 TOP, PR2 MID, PR2 BOT

PR2 TOP, SR2 MID, SR2 BOT, SR2 TOP, SR2 TOP, Spare

BS 117, BS TOP,	BS 133, BS MID,	BS 333, BS BOT,	BS 119, BS TOP,	N/A, Spare,	N/A, Spare
BS 116, BS TOP,	BS 132, BS MID,	BS 332, BS BOT,	BS 118, BS TOP,	N/A, Spare,	N/A, Spare

BS_085BS 087BS 089BS 389

SUS - C1		
42		42
41	Triple Top Coil Driver D1001242	41
40	Triple Top Coil Driver D1001242	40
39	Triple Top Coil Driver D1001242	39
38		38
37	Triple Top Coil Driver D1001242	37
36	Triple Top Coil Driver D1001242	36
35		35
34	AA Chassis D0902783	34
33	AA Chassis D0902783	33
32		32
31	AI Chassis D2500353	31
30	AI Chassis D2500353	30
29		29
28	Triple Acq Coil Driver D090006	28
27	Triple Acq Coil Driver D090006	27
26	Triple Acq Coil Driver D090006	26
25		25
24	AI Chassis D1000305	24
23		23
22	Triple Acq Coil Driver D090006	22
21	Triple Acq Coil Driver D090006	21
20	Triple Acq Coil Driver D090006	20
19		19
18	Binary Output D1000725	18
17	Binary Input D1000726	17
16	Binary Output D1000725	16
15	Binary Input D1000726	15
14	Binary Output D1000725	14
13	Binary Input D1000726	13
12		12
11		11
10		10
9	Triple Top Coil Driver D1001242	9
8	Triple Top Coil Driver D1001242	8
7		7
6	Triple Acq Coil Driver D090006	6
5	Triple Acq Coil Driver D090006	5
4		4
3		3
2		2
1		1

IO Class

1

1

IO Class:
D100171

1

1

1

[illegible]

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11

[illegible]

1

10

1

HAM-HAM-

1

HAM-HAM-

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