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A

A

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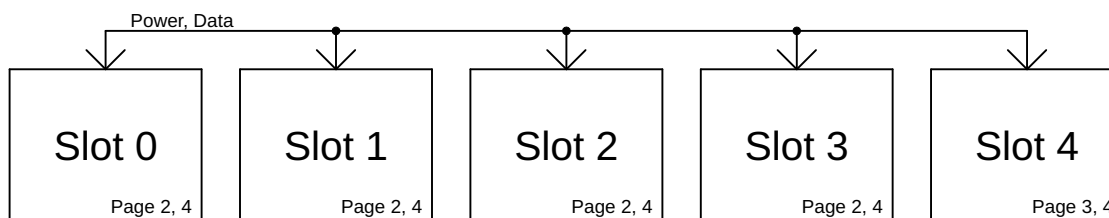
B

C

C

D

D



Page 1: Block Diagram
Page 2: Data Bus Slots 0 - 3
Page 3: Data Bus Slots 4 - 7
Page 4: Power Bus
Page 5: Mechanical



Title:	Block Diagram	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.2.0
Date:	2/11/2020 5:15 PM	Page:	1/5

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A

A

J10DATA

BUS_I2C0_SDA
BUS_I2C0_SCL
BUS_I2C0_IRQ
BUS_I2C1_SDA
BUS_I2C1_SCL
BUS_I2C1_IRQ
BUS_SPI_SCK
BUS_SPI_MISO
BUS_SPI_MOSI

BUS_I2C0_SDA
BUS_I2C0_SCL
BUS_I2C0_IRQ
BUS_I2C1_SDA
BUS_I2C1_SCL
BUS_I2C1_IRQ
BUS_SPI_SCK
BUS_SPI_MISO
BUS_SPI_MOSI

CTRL_SYNC

COM_SPI_SCK
COM_SPI_MISO
COM_SPI_MOSI
COM_SPI_CS

COM_SPI_SCK
COM_SPI_MISO
COM_SPI_MOSI
COM_SPI_CS

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J9DATA

BUS_I2C0_SDA
BUS_I2C0_SCL
BUS_I2C0_IRQ
BUS_I2C1_SDA
BUS_I2C1_SCL
BUS_I2C1_IRQ
BUS_SPI_SCK
BUS_SPI_MISO
BUS_SPI_MOSI

BUS_I2C0_SDA
BUS_I2C0_SCL
BUS_I2C1_SDA
BUS_I2C1_SCL
BUS_I2C1_IRQ
BUS_SPI_SCK
BUS_SPI_MISO
BUS_SPI_MOSI

CTRL_SYNC

COM_SPI_SCK
COM_SPI_MISO
COM_SPI_MOSI
COM_SPI_CS

COM_SPI_SCK
COM_SPI_MISO
COM_SPI_MOSI
COM_SPI_CS

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J8DATA

BUS_I2C0_SDA
BUS_I2C0_SCL
BUS_I2C0_IRQ
BUS_I2C1_SDA
BUS_I2C1_SCL
BUS_I2C1_IRQ
BUS_SPI_SCK
BUS_SPI_MISO
BUS_SPI_MOSI

BUS_I2C0_SDA
BUS_I2C0_SCL
BUS_I2C0_IRQ
BUS_I2C1_SDA
BUS_I2C1_SCL
BUS_I2C1_IRQ
BUS_SPI_SCK
BUS_SPI_MISO
BUS_SPI_MOSI

CTRL_SYNC

COM_SPI_SCK
COM_SPI_MISO
COM_SPI_MOSI
COM_SPI_CS

COM_SPI_SCK
COM_SPI_MISO
COM_SPI_MOSI
COM_SPI_CS

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J7DATA

BUS_I2C0_SDA
BUS_I2C0_SCL
BUS_I2C0_IRQ
BUS_I2C1_SDA
BUS_I2C1_SCL
BUS_I2C1_IRQ
BUS_SPI_SCK
BUS_SPI_MISO
BUS_SPI_MOSI

BUS_I2C0_SDA
BUS_I2C0_SCL
BUS_I2C0_IRQ
BUS_I2C1_SDA
BUS_I2C1_SCL
BUS_I2C1_IRQ
BUS_SPI_SCK
BUS_SPI_MISO
BUS_SPI_MOSI

CTRL_SYNC

COM_SPI_SCK
COM_SPI_MISO
COM_SPI_MOSI
COM_SPI_CS

COM_SPI_SCK
COM_SPI_MISO
COM_SPI_MOSI
COM_SPI_CS

CougSat Socket
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BI <3A4>

B

B

J10GPIO

GPIO-0
GPIO-1
GPIO-2
GPIO-3
GPIO-4
GPIO-5
GPIO-6
GPIO-7

GPIO-0
GPIO-1
GPIO-2
GPIO-3
GPIO-4
GPIO-5
GPIO-6
GPIO-7

CougSat Socket
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J9GPIO

GPIO-0
GPIO-1
GPIO-2
GPIO-3
GPIO-4
GPIO-5
GPIO-6
GPIO-7

GPIO-0
GPIO-1
GPIO-2
GPIO-3
GPIO-4
GPIO-5
GPIO-6
GPIO-7

CougSat Socket
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J8GPIO

GPIO-0
GPIO-1
GPIO-2
GPIO-3
GPIO-4
GPIO-5
GPIO-6
GPIO-7

GPIO-0
GPIO-1
GPIO-2
GPIO-3
GPIO-4
GPIO-5
GPIO-6
GPIO-7

CougSat Socket
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J7GPIO

GPIO-0
GPIO-1
GPIO-2
GPIO-3
GPIO-4
GPIO-5
GPIO-6
GPIO-7

GPIO-0
GPIO-1
GPIO-2
GPIO-3
GPIO-4
GPIO-5
GPIO-6
GPIO-7

CougSat Socket
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BI <3B4>

C

C

J10JTAG

BUS_JTAG_TCK
BUS_JTAG_TDI
BUS_JTAG_TDO
BUS_JTAG_TMS
BUS_JTAG_EN-0
BUS_JTAG_EN-1
BUS_JTAG_EN-2
BUS_JTAG_EN-3

BUS_JTAG_TCK
BUS_JTAG_TDI
BUS_JTAG_TDO
BUS_JTAG_TMS
BUS_JTAG_EN-0
BUS_JTAG_EN-1
BUS_JTAG_EN-2
BUS_JTAG_EN-3

CougSat Socket
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J9JTAG

BUS_JTAG_TCK
BUS_JTAG_TDI
BUS_JTAG_TDO
BUS_JTAG_TMS
BUS_JTAG_EN-0
BUS_JTAG_EN-1
BUS_JTAG_EN-2
BUS_JTAG_EN-3

BUS_JTAG_TCK
BUS_JTAG_TDI
BUS_JTAG_TDO
BUS_JTAG_TMS
BUS_JTAG_EN-0
BUS_JTAG_EN-1
BUS_JTAG_EN-2
BUS_JTAG_EN-3

CougSat Socket
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J8JTAG

BUS_JTAG_TCK
BUS_JTAG_TDI
BUS_JTAG_TDO
BUS_JTAG_TMS
BUS_JTAG_EN-0
BUS_JTAG_EN-1
BUS_JTAG_EN-2
BUS_JTAG_EN-3

BUS_JTAG_TCK
BUS_JTAG_TDI
BUS_JTAG_TDO
BUS_JTAG_TMS
BUS_JTAG_EN-0
BUS_JTAG_EN-1
BUS_JTAG_EN-2
BUS_JTAG_EN-3

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J7JTAG

BUS_JTAG_TCK
BUS_JTAG_TDI
BUS_JTAG_TDO
BUS_JTAG_TMS
BUS_JTAG_EN-0
BUS_JTAG_EN-1
BUS_JTAG_EN-2
BUS_JTAG_EN-3

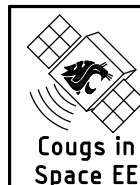
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BUS_JTAG_EN-0
BUS_JTAG_EN-1
BUS_JTAG_EN-2
BUS_JTAG_EN-3

CougSat Socket
05-0006

BI <3C4>

D

D

Cougs in
Space EE

Title:	Data Bus Slots 0 - 3	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.2.0
Date:	2/11/2020 5:15 PM	Page:	2/5

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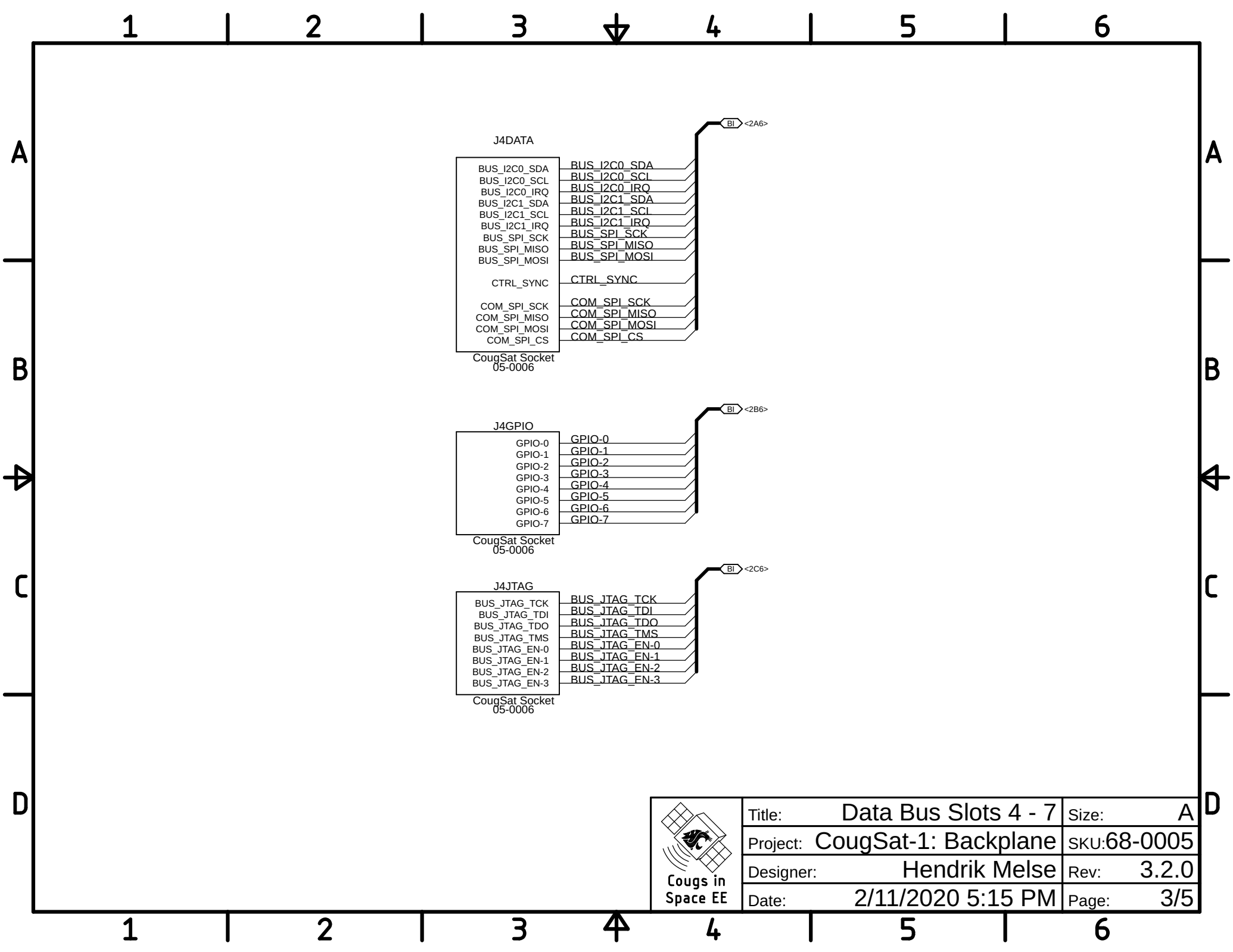
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Title:	Data Bus Slots 4 - 7	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.2.0
Date:	2/11/2020 5:15 PM	Page:	3/5

1

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A

B

C

D

A

B

C

D

J10POWER

PWR_CTRL_SW	PWR_CTRL_SW
PR_3.3V-0	PR_3.3V-0
PR_3.3V-1	PR_3.3V-1
PR_3.3V-2	PR_3.3V-2
PR_3.3V-3	PR_3.3V-3
PR_3.3V-4	PR_3.3V-4
PR_3.3V-5	PR_3.3V-5
PR_3.3V-6	PR_3.3V-6
PR_3.3V-7	PR_3.3V-7
PR_3.3V-8	PR_3.3V-8
PR_3.3V-9	PR_3.3V-9
PR_3.3V-10	PR_3.3V-10
PR_3.3V-11	PR_3.3V-11
PR_3.3V-12	PR_3.3V-12
PR_BATT-0	PR_BATT-0
PR_BATT-1	PR_BATT-1
PR_BATT-2	PR_BATT-2
PR_BATT-3	PR_BATT-3
PR_BATT-4	PR_BATT-4
PR_BATT-5	PR_BATT-5
PR_BATT-6	PR_BATT-6
PGND	

CougSat Socket
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J9POWER

PWR_CTRL_SW	PWR_CTRL_SW
PR_3.3V-0	PR_3.3V-0
PR_3.3V-1	PR_3.3V-1
PR_3.3V-2	PR_3.3V-2
PR_3.3V-3	PR_3.3V-3
PR_3.3V-4	PR_3.3V-4
PR_3.3V-5	PR_3.3V-5
PR_3.3V-6	PR_3.3V-6
PR_3.3V-7	PR_3.3V-7
PR_3.3V-8	PR_3.3V-8
PR_3.3V-9	PR_3.3V-9
PR_3.3V-10	PR_3.3V-10
PR_3.3V-11	PR_3.3V-11
PR_3.3V-12	PR_3.3V-12
PR_BATT-0	PR_BATT-0
PR_BATT-1	PR_BATT-1
PR_BATT-2	PR_BATT-2
PR_BATT-3	PR_BATT-3
PR_BATT-4	PR_BATT-4
PR_BATT-5	PR_BATT-5
PR_BATT-6	PR_BATT-6
PGND	

CougSat Socket
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J8POWER

PWR_CTRL_SW	PWR_CTRL_SW
PR_3.3V-0	PR_3.3V-0
PR_3.3V-1	PR_3.3V-1
PR_3.3V-2	PR_3.3V-2
PR_3.3V-3	PR_3.3V-3
PR_3.3V-4	PR_3.3V-4
PR_3.3V-5	PR_3.3V-5
PR_3.3V-6	PR_3.3V-6
PR_3.3V-7	PR_3.3V-7
PR_3.3V-8	PR_3.3V-8
PR_3.3V-9	PR_3.3V-9
PR_3.3V-10	PR_3.3V-10
PR_3.3V-11	PR_3.3V-11
PR_3.3V-12	PR_3.3V-12
PR_BATT-0	PR_BATT-0
PR_BATT-1	PR_BATT-1
PR_BATT-2	PR_BATT-2
PR_BATT-3	PR_BATT-3
PR_BATT-4	PR_BATT-4
PR_BATT-5	PR_BATT-5
PR_BATT-6	PR_BATT-6
PGND	

CougSat Socket
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J7POWER

PWR_CTRL_SW	PWR_CTRL_SW
PR_3.3V-0	PR_3.3V-0
PR_3.3V-1	PR_3.3V-1
PR_3.3V-2	PR_3.3V-2
PR_3.3V-3	PR_3.3V-3
PR_3.3V-4	PR_3.3V-4
PR_3.3V-5	PR_3.3V-5
PR_3.3V-6	PR_3.3V-6
PR_3.3V-7	PR_3.3V-7
PR_3.3V-8	PR_3.3V-8
PR_3.3V-9	PR_3.3V-9
PR_3.3V-10	PR_3.3V-10
PR_3.3V-11	PR_3.3V-11
PR_3.3V-12	PR_3.3V-12
PR_BATT-0	PR_BATT-0
PR_BATT-1	PR_BATT-1
PR_BATT-2	PR_BATT-2
PR_BATT-3	PR_BATT-3
PR_BATT-4	PR_BATT-4
PR_BATT-5	PR_BATT-5
PR_BATT-6	PR_BATT-6
PGND	

CougSat Socket
05-0006

J4POWER

PWR_CTRL_SW	PWR_CTRL_SW
PR_3.3V-0	PR_3.3V-0
PR_3.3V-1	PR_3.3V-1
PR_3.3V-2	PR_3.3V-2
PR_3.3V-3	PR_3.3V-3
PR_3.3V-4	PR_3.3V-4
PR_3.3V-5	PR_3.3V-5
PR_3.3V-6	PR_3.3V-6
PR_3.3V-7	PR_3.3V-7
PR_3.3V-8	PR_3.3V-8
PR_3.3V-9	PR_3.3V-9
PR_3.3V-10	PR_3.3V-10
PR_3.3V-11	PR_3.3V-11
PR_3.3V-12	PR_3.3V-12
PR_BATT-0	PR_BATT-0
PR_BATT-1	PR_BATT-1
PR_BATT-2	PR_BATT-2
PR_BATT-3	PR_BATT-3
PR_BATT-4	PR_BATT-4
PR_BATT-5	PR_BATT-5
PR_BATT-6	PR_BATT-6
PGND	

CougSat Socket
05-0006Cougs in
Space EE

Title:	Power Bus	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.2.0
Date:	2/11/2020 5:15 PM	Page:	4/5

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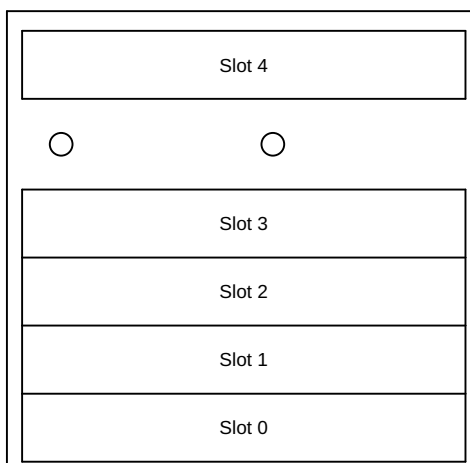
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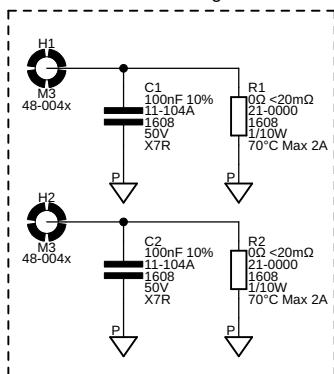
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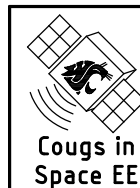


CAD Note: Mounting Holes



LOGO2

Signature



Title:	Mechanical	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.2.0
Date:	2/11/2020 5:15 PM	Page:	5/5