

Title:	Block Diagram	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.1.0
Date:	11/15/2019 9:01 AM	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

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

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

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

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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BI &lt;3A6&gt;

B

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## 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

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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

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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

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BI &lt;3B6&gt;

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

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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

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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

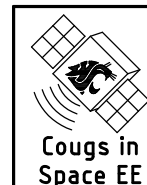
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BUS\_JTAG\_TMS  
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BUS\_JTAG\_EN-1  
BUS\_JTAG\_EN-2  
BUS\_JTAG\_EN-3

CougSat Socket  
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BI &lt;3C6&gt;

D

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Cougs in  
Space EE

Title:	Data Bus Slots 0 - 3	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.1.0
Date:	11/15/2019 9:01 AM	Page:	2/5

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A

A

B

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4

4

C

C

D

D

## J4DATA

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

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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## J3DATA

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

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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## J2DATA

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

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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## J1DATA

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

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 &lt;2A6&gt;

## J4GPIO

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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## J3GPIO

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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## J2GPIO

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

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## J1GPIO

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 &lt;2B6&gt;

## J4JTAG

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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## J3JTAG

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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## J2JTAG

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  
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BUS\_JTAG\_EN-3

CougSat Socket  
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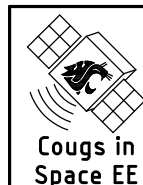
## J1JTAG

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BUS\_JTAG\_EN-0  
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BUS\_JTAG\_EN-2  
BUS\_JTAG\_EN-3

BUS\_JTAG\_TCK  
BUS\_JTAG\_TDI  
BUS\_JTAG\_TDO  
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BUS\_JTAG\_EN-0  
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BUS\_JTAG\_EN-3

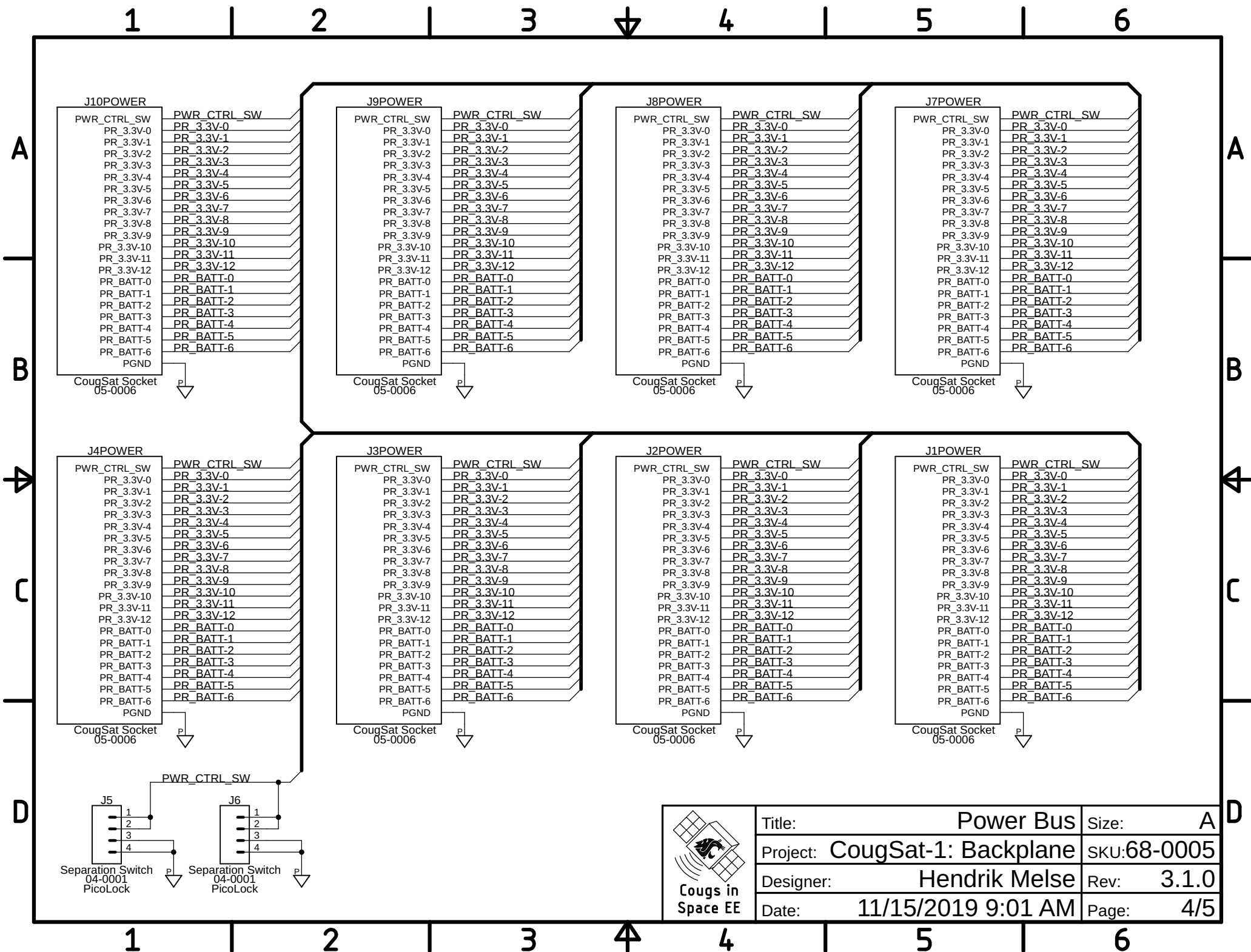
CougSat Socket  
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BI &lt;2C6&gt;



Cougs in  
Space EE

Title:	Data Bus Slots 4 - 7	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.1.0
Date:	11/15/2019 9:01 AM	Page:	3/5



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A

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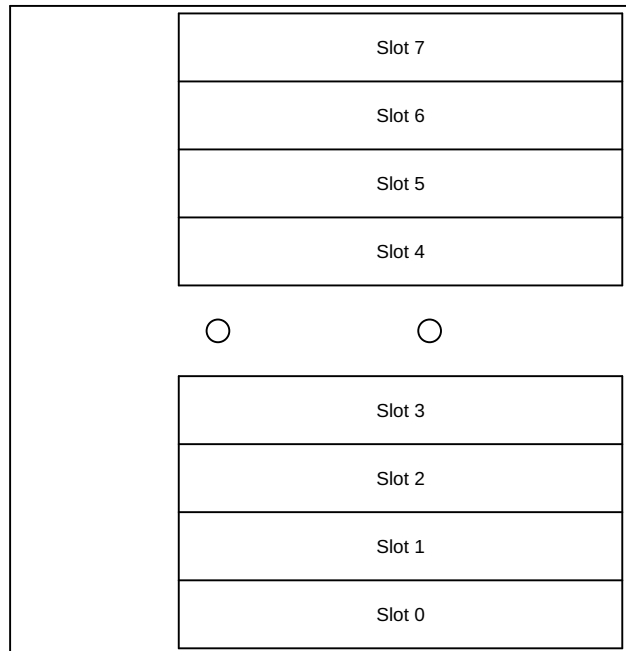
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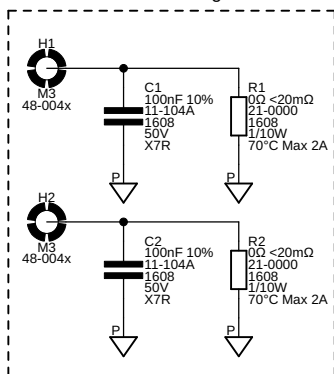
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CAD Note: Mounting Holes

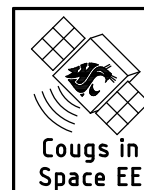


LOGO3  
Satellite 16mm  
**Cougs in  
Space**

LOGO100  
Satellite 16mm  
**Cougs in  
Space**

LOGO2  
Signature

LOGO1  
Text  
**Cougs in  
Space**



Title:	Mechanical	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.1.0
Date:	11/15/2019 9:01 AM	Page:	5/5