

Title:	Block Diagram	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.0.4
Date:	6/23/2019 3:04 PM	Page:	1/5

1

2

3

4

5

6

A

A

B

B

C

C

D

D

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_RESET
CTRL_SYNC

CTRL_RESET
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_I2C0_IRQ
BUS_I2C1_SDA
BUS_I2C1_SCL
BUS_I2C1_IRQ
BUS_SPI_SCK
BUS_SPI_MISO
BUS_SPI_MOSI

CTRL_RESET
CTRL_SYNC

CTRL_RESET
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_RESET
CTRL_SYNC

CTRL_RESET
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_RESET
CTRL_SYNC

CTRL_RESET
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 <3A6>

J10GPIO

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

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

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J9GPIO

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

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

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J8GPIO

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

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

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J7GPIO

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

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

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BI <3B6>

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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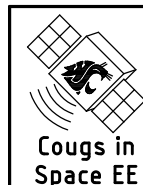
J7JTAG

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

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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BI <3C6>



Cougs in
Space EE

Title:	Data Bus Slots 0 - 3	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.0.4
Date:	6/23/2019 3:04 PM	Page:	2/5

1

2

3

4

5

6

A

A

B

B

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_RESET
CTRL_SYNC

CTRL_RESET
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_RESET
CTRL_SYNC

CTRL_RESET
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_RESET
CTRL_SYNC

CTRL_RESET
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_RESET
CTRL_SYNC

CTRL_RESET
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 <2A6>

J4GPIO

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

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

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J3GPIO

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

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

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J2GPIO

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

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

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J1GPIO

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

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

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BI <2B6>

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

CougSat Socket
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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
BUS_JTAG_EN-0
BUS_JTAG_EN-1
BUS_JTAG_EN-2
BUS_JTAG_EN-3

CougSat Socket
05-0006

J1JTAG

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
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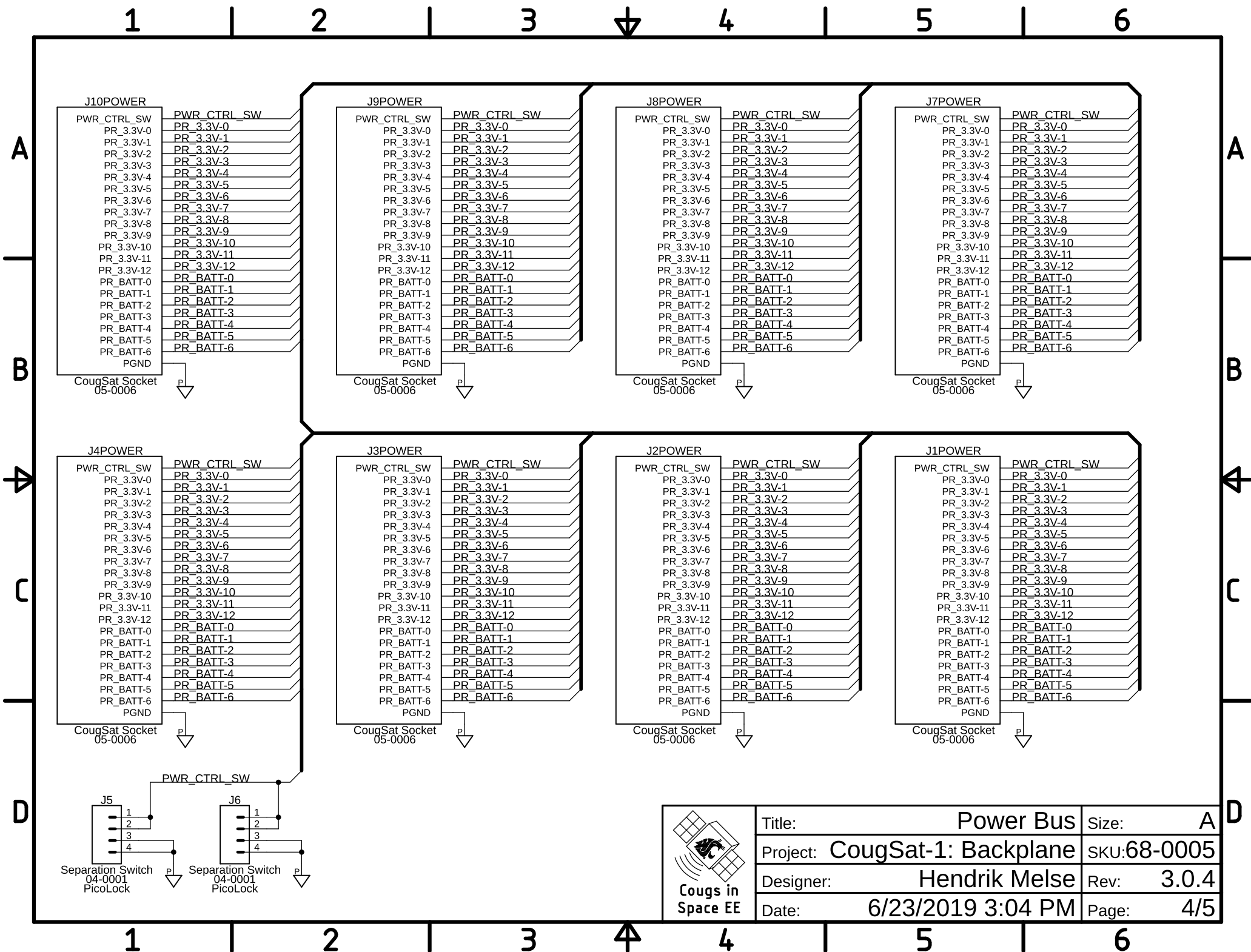
CougSat Socket
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BI <2C6>



Cougs in
Space EE

Title:	Data Bus Slots 4 - 7	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.0.4
Date:	6/23/2019 3:04 PM	Page:	3/5



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A

A

B

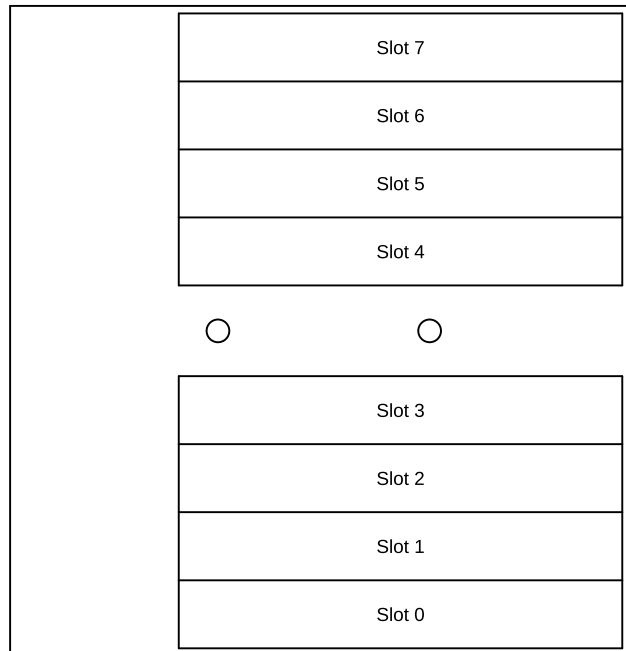
B

C

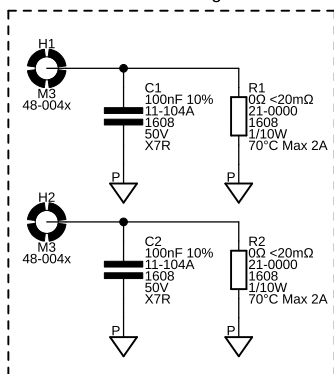
C

D

D



CAD Note: Mounting Holes



LOGO3
Satellite 16mm

**Cougs in
Space**

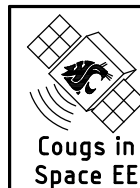
LOGO2
Signature

LOGO100
Satellite 16mm

**Cougs in
Space**

LOGO1
Text

**Cougs in
Space**



Title:	Mechanical	Size:	A
Project:	CougSat-1: Backplane	SKU:	68-0005
Designer:	Hendrik Melse	Rev:	3.0.4
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