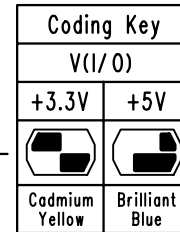
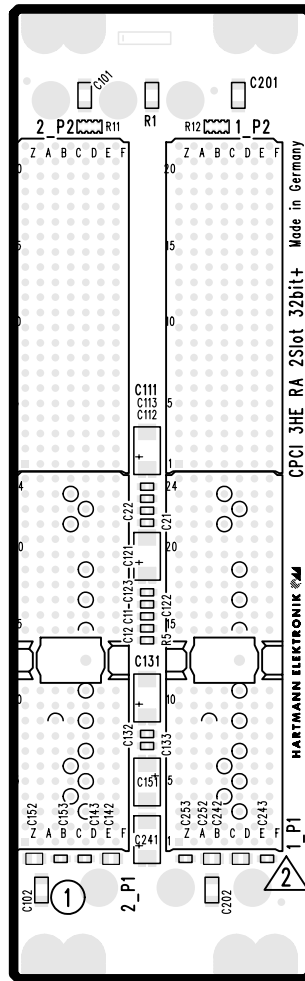


33RA024_14 with Rear I/O MTBF 1.180.000 h
 33RA023_14 without Rear I/O MTBF 1.200.000 h



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Hartmann Elektronik
 CPCI 3HE RA 2Slot 32bit+
 BUS676 Rev.BB

Silkscreen Top
 Pads Top

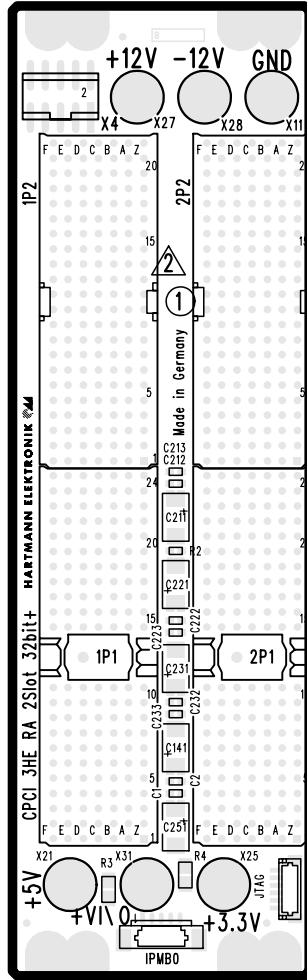
D	2007	Date	Name	Title	Hartmann Elektronik CPCI 3HE RA 2Slot 32bit+ BUS676 Rev.BB
	Author	01.03.	Wiedmann		
	Check	01.03.	Wiedmann		
			DIN A4 M 1:1		
			 HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART	Number	Sheet
				Device: HE-C33RA025--4	File: BUS676BB
Rev	Description	Date	Name		

Without geographic addressing on request

BOTTOM VIEW

X4 Pin Assignment

Pin	Signal	Pin	Signal
1	PRST-	2	FAL-
3	DEG-	4	+3.3V-Sense
5	+3.3V	6	GND-Sense (+3.3V)
7	+5V	8	+5V-Sense (+5V)
9	GND	10	GND-Sense (+5V)



Shrouds
1P1 - 2P1
on request

IPMBO Pin Assignment

Pin	Signal
1	IPMB_SCL
2	GND
3	IPMB_SDA
4	IPMB_PWR
5	SMB_RSV

JTAG Pin Assignment

Pin	Signal
1	GND
2	TCK
3	TMS
4	TRST-
5	TDI
6	TDO

Busbar V(I/O) = 5V

Busbar V(I/O) = 3.3V

Hartmann Elektronik
CPCI 3HE RA 2Slot 32bit+
Rev.BB

Silkscreen Bottom
Pads Bottom

				2007	Date	Name	Title Hartmann Elektronik CPCI 3HE RA 2Slot 32bit+ BUS676 Rev.BB	
				Author	01.03.	Wiedmann		
				Check	01.03.	Wiedmann		
						DIN A4 M 1:1		
				 HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART			Number	Sheet
Rev	Description	Date	Name	Device: HE-C33RA025--4		File: BUS676BB		

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1

2

3

A

A

B

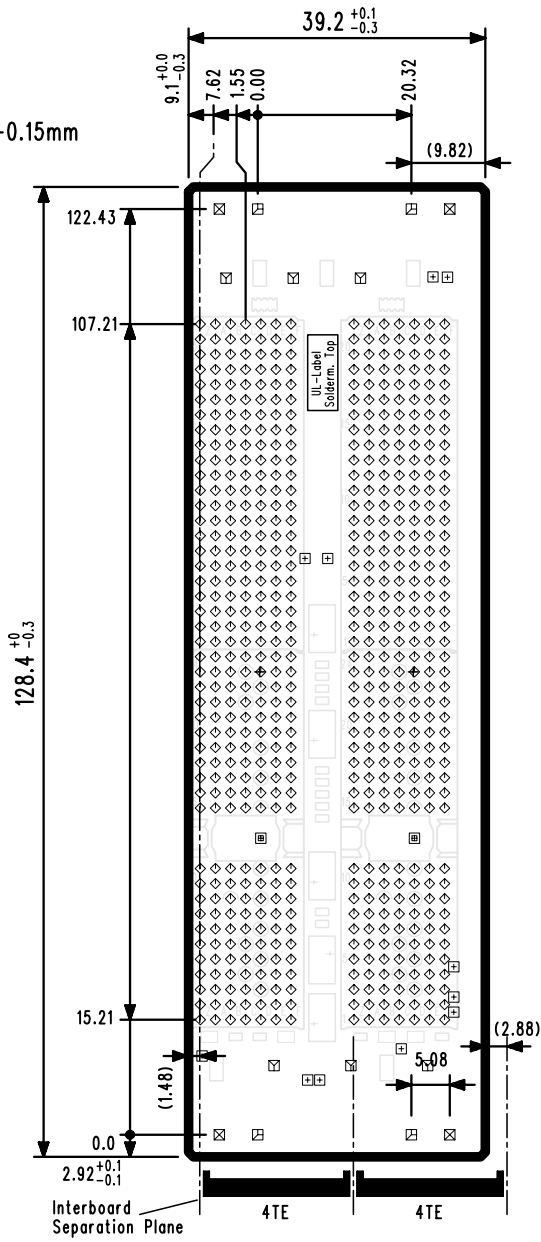
B

C

C

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Common tolerance: $\pm 0.15\text{mm}$



Hartmann Elektronik
 CPC1 3HE RA 2Slot 32bit+
 BUS676 Rev.BB

D

D



			2007	Date	Name	Title Hartmann Elektronik CPC1 3HE RA 2Slot 32bit+ BUS676 Rev.BB
			Author	01.03.	Wiedmann	
			Check	01.03.	Wiedmann	
					DIN A4 M 1:1	Number _____ Sheet _____ of _____
					HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART	
Rev	Description	Date	Name	Device: HE-C33RA025--4		File: BUS676BB

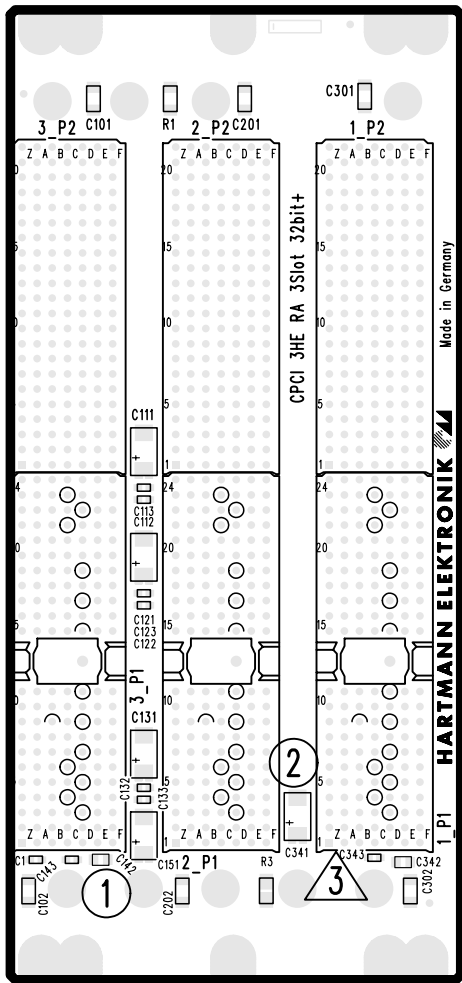
1

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All rights reserved

Coding Key	
V(I/O)	
+3.3V	+5V
	
Cadmium Yellow	Brilliant Blue



Hartmann Elektronik
 CPCI 3HE RA 3Slot 32bit+
 BUS675 Rev.BB

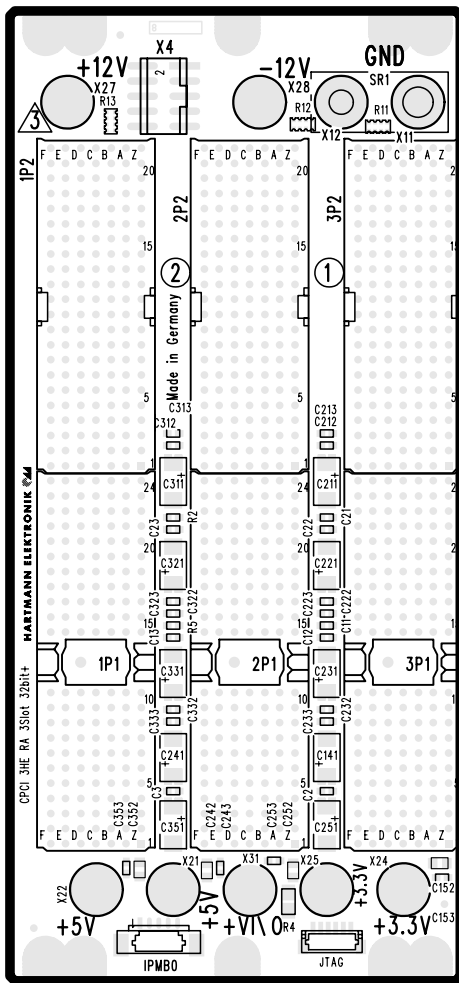
Silkscreen Top
 Pads Top

				2006	Date	Name	Title Hartmann Elektronik CPCI 3HE RA 3Slot 32bit+ BUS675 Rev.BB
				Author	12.09.	Wiedmann	
				Check	12.09.	Wiedmann	
						DIN A4 M 1:1	Number
				 HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART			
Rev	Description	Date	Name				Device: HE-C33RA03---4

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X4 Pin Assignment

Pin	Signal	Pin	Signal
1	PRST-	2	FAL-
3	DEG-	4	+3.3V-Sense
5	+3.3V	6	GND-Sense (+3.3V)
7	+5V	8	+5V-Sense
9	GND	10	GND-Sense (+5V)



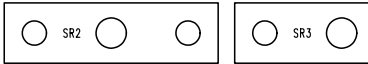
IPMB Pin Assignment

Pin	Signal
1	IPMB_SCL
2	GND
3	IPMB_SDA
4	IPMB_PWR
5	SMB_RSV

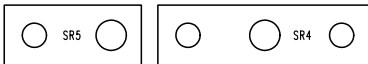
JTAG Pin Assignment

Pin	Signal
1	GND
2	TCK
3	TMS
4	TRST-
5	TDI
6	TDO

Busbar for +5V keying



Busbar for +3.3V keying

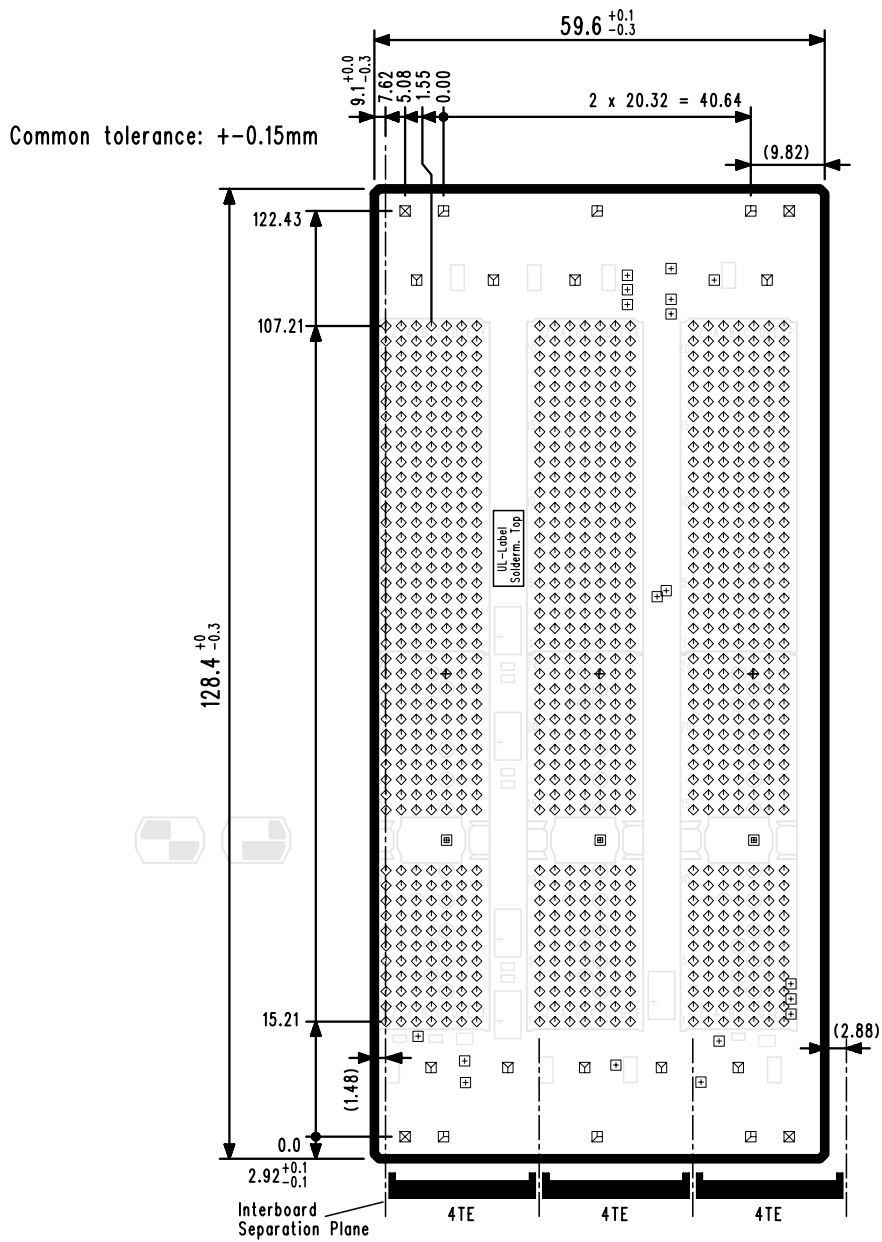


Hartmann Elektronik
 CPC1 3HE RA 3Slot 32bit+
 Rev.BB

Silkscreen Bottom
 Pads Bottom

			2006	Date	Name	Title Hartmann Elektronik CPC1 3HE RA 3Slot 32bit+ BUS675 Rev.BB
		Author	12.09.	Wiedmann		
		Check	12.09.	Wiedmann		
					DIN A4 M 1:1	Number Sheet of
					HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART	
Rev	Description	Date	Name			Device: HE-C33RA03---4 File: BUS675BB

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Hartmann Elektronik
 CPCI 3HE RA 3Slot 32bit+
 BUS675 Rev.BB

			2006	Date	Name	Title	Hartmann Elektronik CPCI 3HE RA 3Slot 32bit+ BUS675 Rev.BB
			Author	12.09.	Wiedmann		
			Check	12.09.	Wiedmann		
					DIN A4 M 1:1	Number	Sheet of
					HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART		
Rev	Description	Date	Name	Device: HE-C33RA03---4		File: BUS675BB	

1 2 3

A

TOP VIEW

Keying
 +5V +3.3V

 Brilliant Blue Cadmium Yellow

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B

C

Hartmann Elektronik
 CPCI 3HE RA 5Slot 32bit+
 BUS673 Rev.BA

Silkscreen Top
 Pads Top

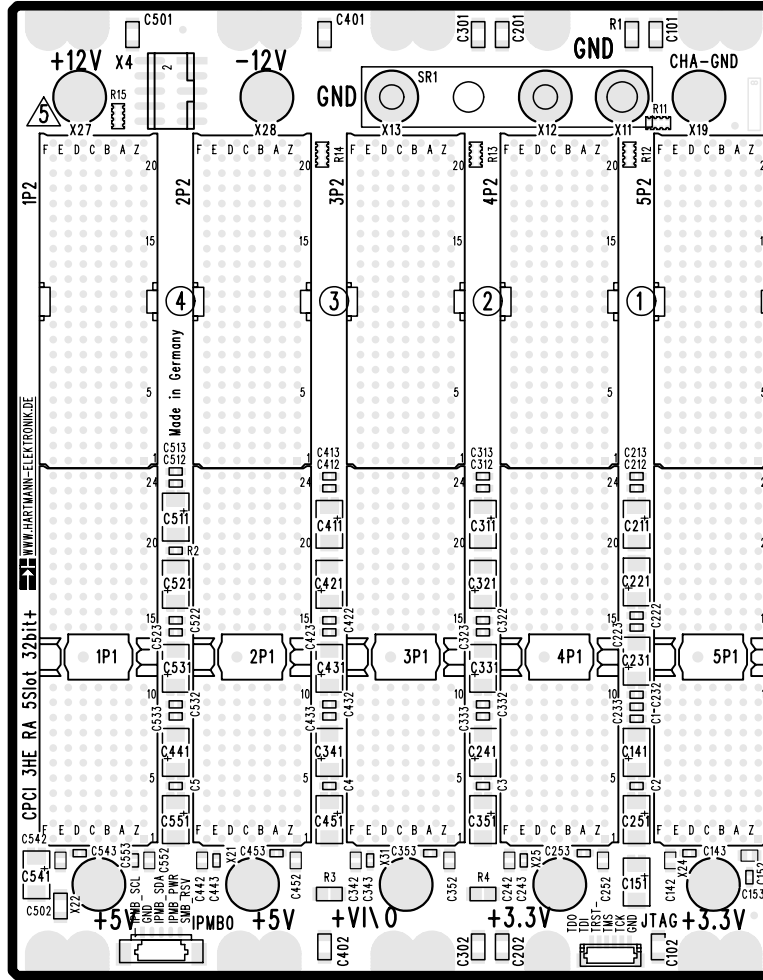
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			2000	Date	Name	Title Hartmann Elektronik CPCI 3HE RA 5Slot 32bit+ BUS673 Rev.BA	Sheet of		
			Author	10.11.	Ruthardt				
			Check	10.11.	Ruthardt				
			DIN A4 M 1:1			HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART	Number		
Rev	Description	Date	Name				Device:	HE-C33RA055--4	File:

1 2 3

Without geographic addressing on request

BOTTOM VIEW

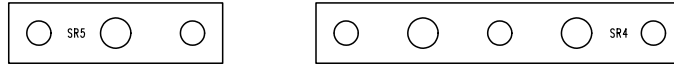


Shrouds
1P1 - 5P1
on request

Busbar for +5V keying



Busbar for +3.3V keying



Silkscreen Bottom
Pads Bottom

Hartmann Elektronik
CPCI 3HE RA 5Slot 32bit+
Rev.BA BUS673

				2000	Date	Name	Title	
				Author	10.11.	Ruthardt	Hartmann Elektronik	
				Check	10.11.	Ruthardt	CPCI 3HE RA 5Slot 32bit+	
				DIN A4			BUS673	
				M 1:1			Rev.BA	
				HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART			Number	Sheet
Rev	Description	Date	Name	Device: HE-C33RA055--4		File: BUS673BA		

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1

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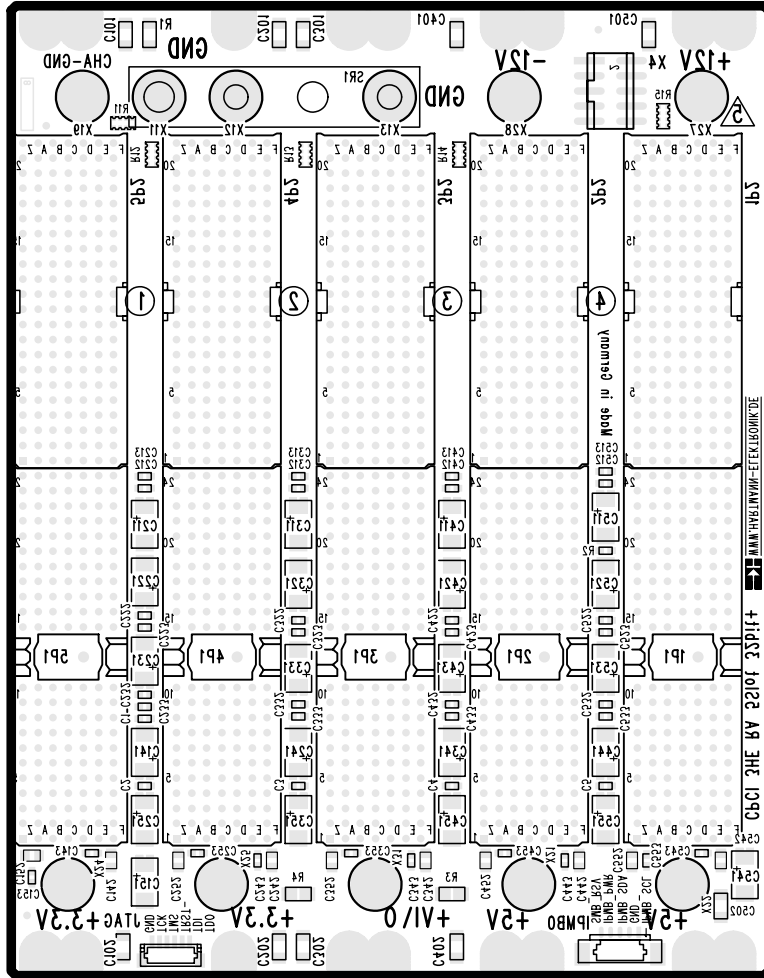
3

A

A

Without geographic addressing on request

BOTTOM VIEW



2Pinns
1P1 - 5P1
on request

Busbar for +5V keying

Busbar for +3.3V keying

Hartmann Elektronik
CPCI 3HE RA 5Slot 32bit+
BUS673 Rev.BA

Pods Bottom
Silkscreen Bottom

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B

B

C

C

D

D

			2000	Date	Name
			Author	10.11.	Ruthardt
			Check	10.11.	Ruthardt
			DIN A4		
			M 1:1		
			HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART		
Rev	Description	Date	Name		
		1			

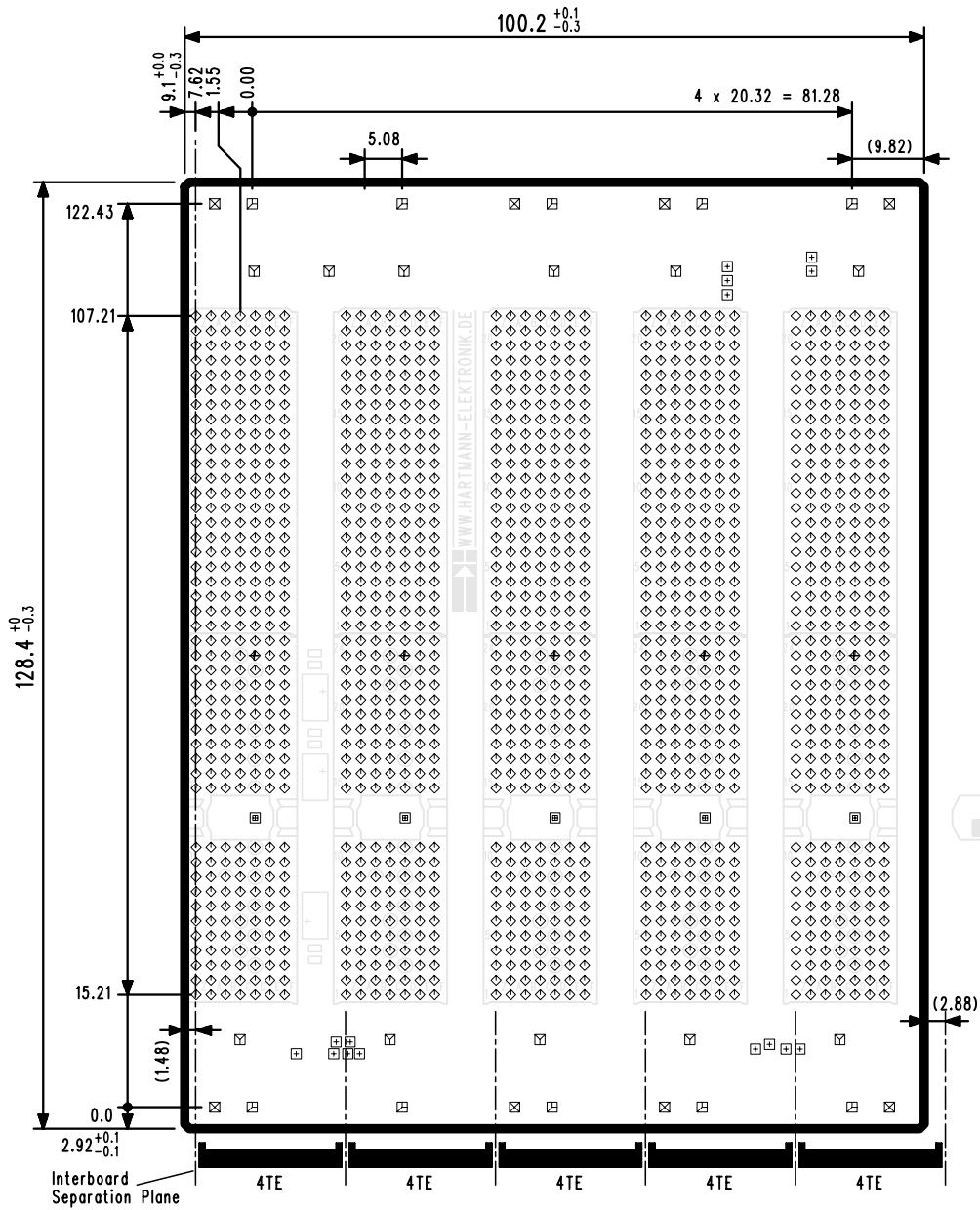
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Number			
Device:		HE-C33RA055--4	File: BUS673BA
		Sheet	
		of	

1


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3

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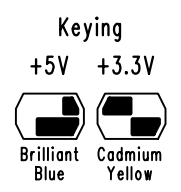
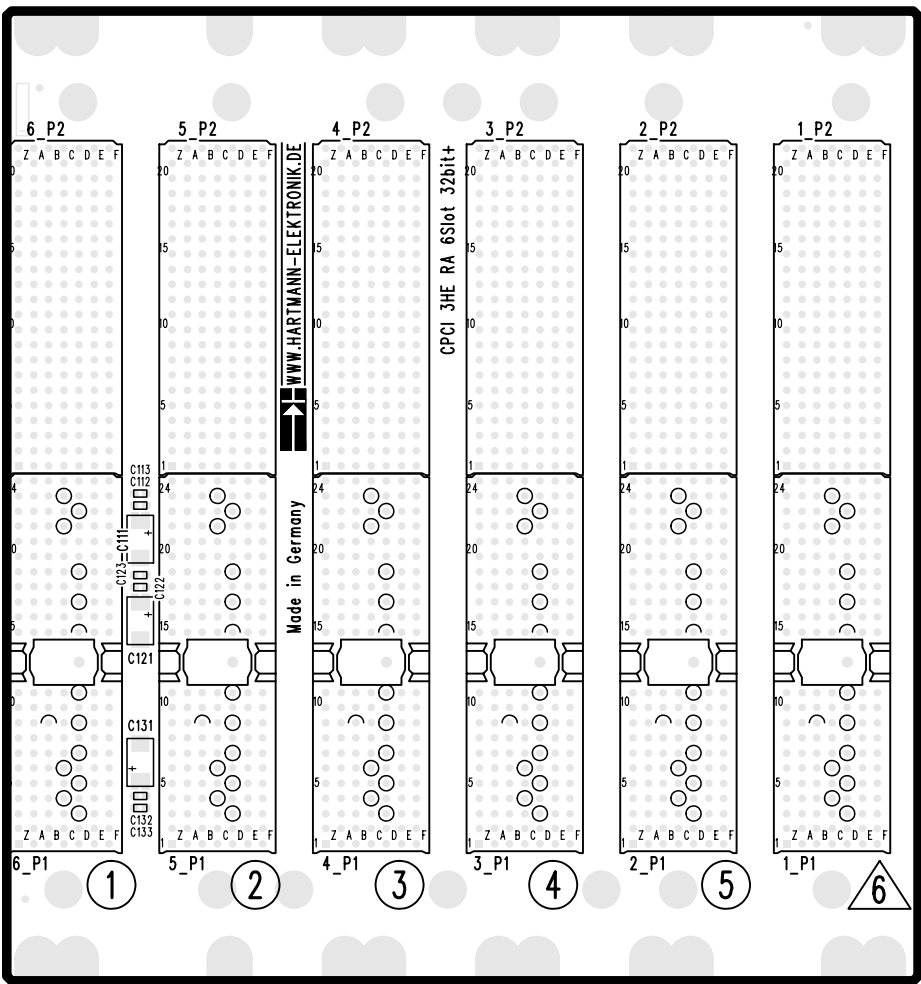
Hartmann Elektronik
 CPCI 3HE RA 5Slot 32bit+
 BUS673 Rev.BA

D				2000	Date	Name	Title Hartmann Elektronik CPCI 3HE RA 5Slot 32bit+ BUS673 Rev.BA	
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				Check	10.11.	Ruthardt		
				DIN A4 M 1:1				
				 HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTT GART			Number	Sheet
	Rev	Description	Date	Name			Device: HE-C33RA055--4	File: BUS673BA

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D C B A

TOP VIEW



1 2 3

Rev Description	Date	Name	2000	Date	Name	Title	Number	Device:	File:
			Author	08.11.	Ruthardt	Hartmann Elektronik		HE-C33RA065--4	BUS672BA
			Check	08.11.	Ruthardt	CPCI 3HE RA 6Slot 32bit+			
					DIN A4	BUS672			
					M 1:1	Rev.BA			

HARTMANN ELEKTRONIK
 MOTORSTRASSE 43
 D-70499 STUTTGART

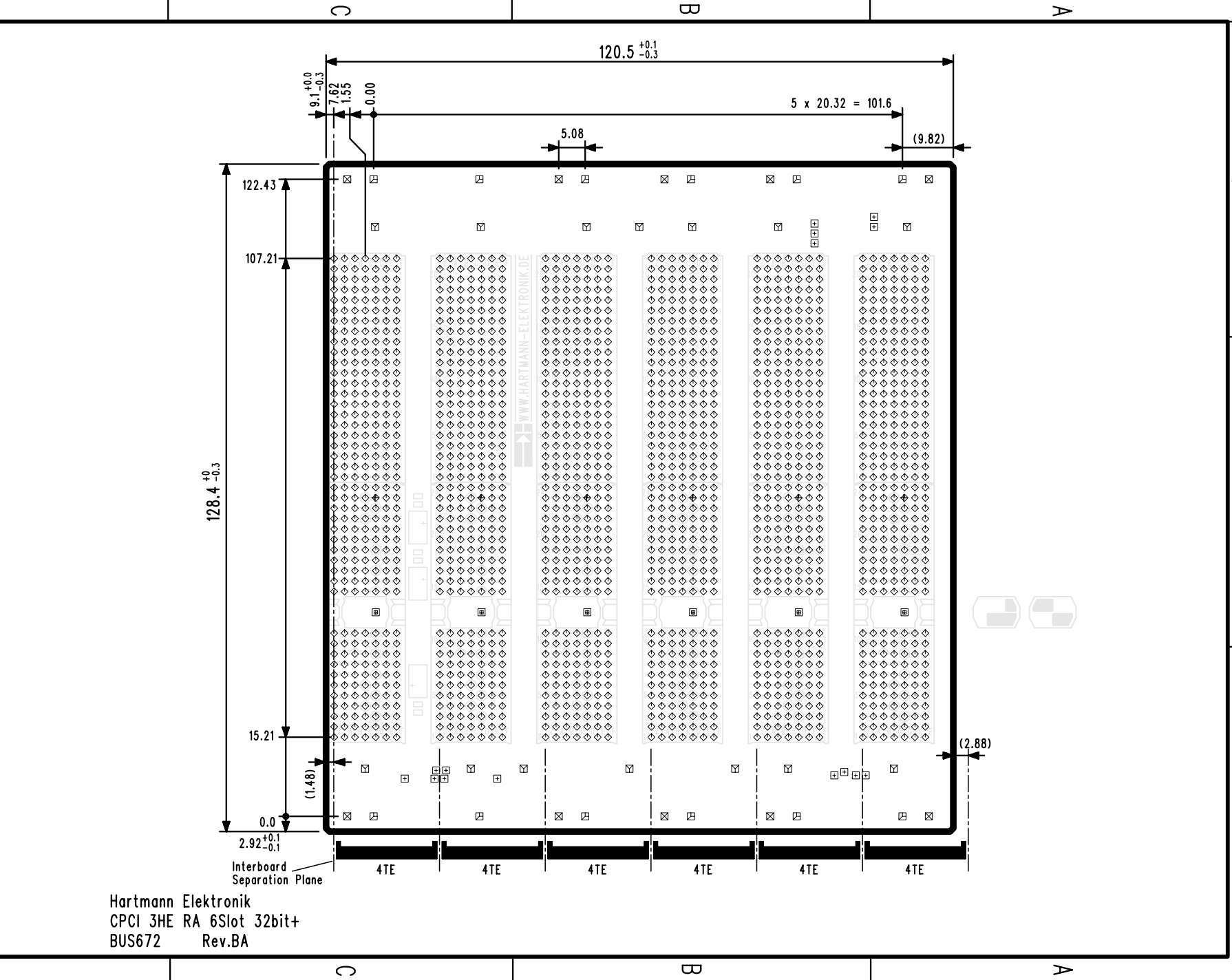
HE-C33RA065--4
 BUS672BA

Hartmann Elektronik
 CPCI 3HE RA 6Slot 32bit+
 BUS672
 Rev.BA

Hartmann Elektronik
 CPCI 3HE RA 6Slot 32bit+
 BUS672 Rev.BA

Silkscreen Top
 Pads Top

D C B A

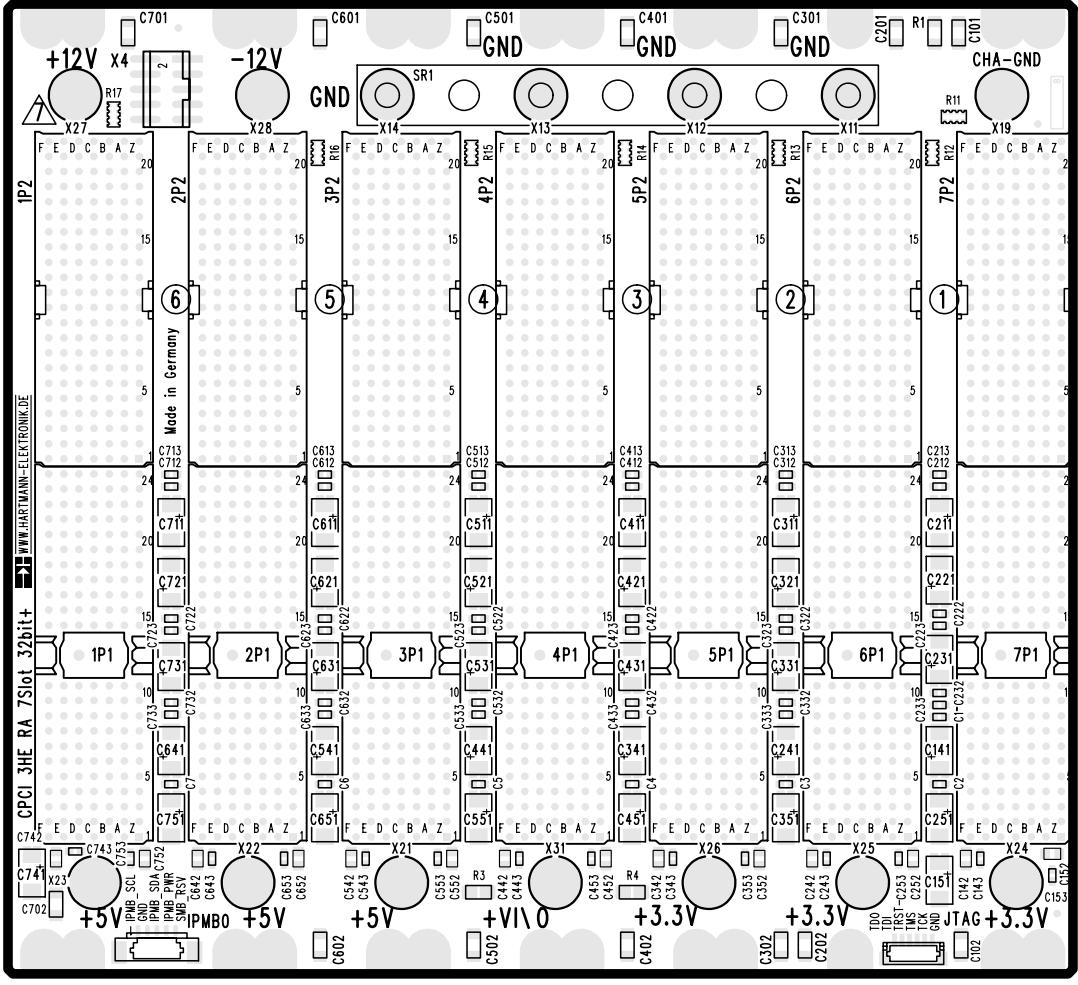


Rev Description	Date	Name	2000	Date	Name	Title	
			Author	08.11.	Ruthardt		
			Check	08.11.	Ruthardt	Hartmann Elektronik CPCI 3HE RA 6Slot 32bit+ BUS672 Rev.BA	
					DIN A4 M 1:1		
						Number	
						Sheet	
Rev Description			Date			of	
Date			Name				
Name			Device:			HE-C33RA065--4 File: BUS672BA	

Hartmann Elektronik
CPCI 3HE RA 6Slot 32bit+
BUS672 Rev.BA

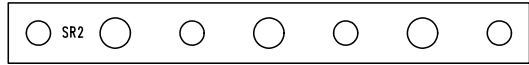
Without geographic addressing on request

BOTTOM VIEW

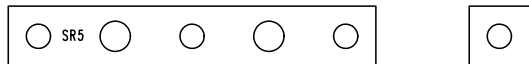


Shrouds
1P1 - 7P1
on request

Busbar for +5V keying



Busbar for +3.3V keying



Pads Bottom Silkscreen Bottom

Hartmann Elektronik
BUS671 Rev.BA
PCI 3HE RA 7Slot 32bit+

Rev	Description	Date	Name
1			
<p>HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART</p>		2000	Date
		08.11.	Author
		08.11.	Check
		Ruthardt	Name
<p>DIN A4 M 1:1</p>		Title	
		Hartmann Elektronik	
		PCI 3HE RA 7Slot 32bit+	
Number		BUS671	
Device:		HE-C33RA075--4	
File:		BUS67BA	
Sheet		Rev.BA	
of			

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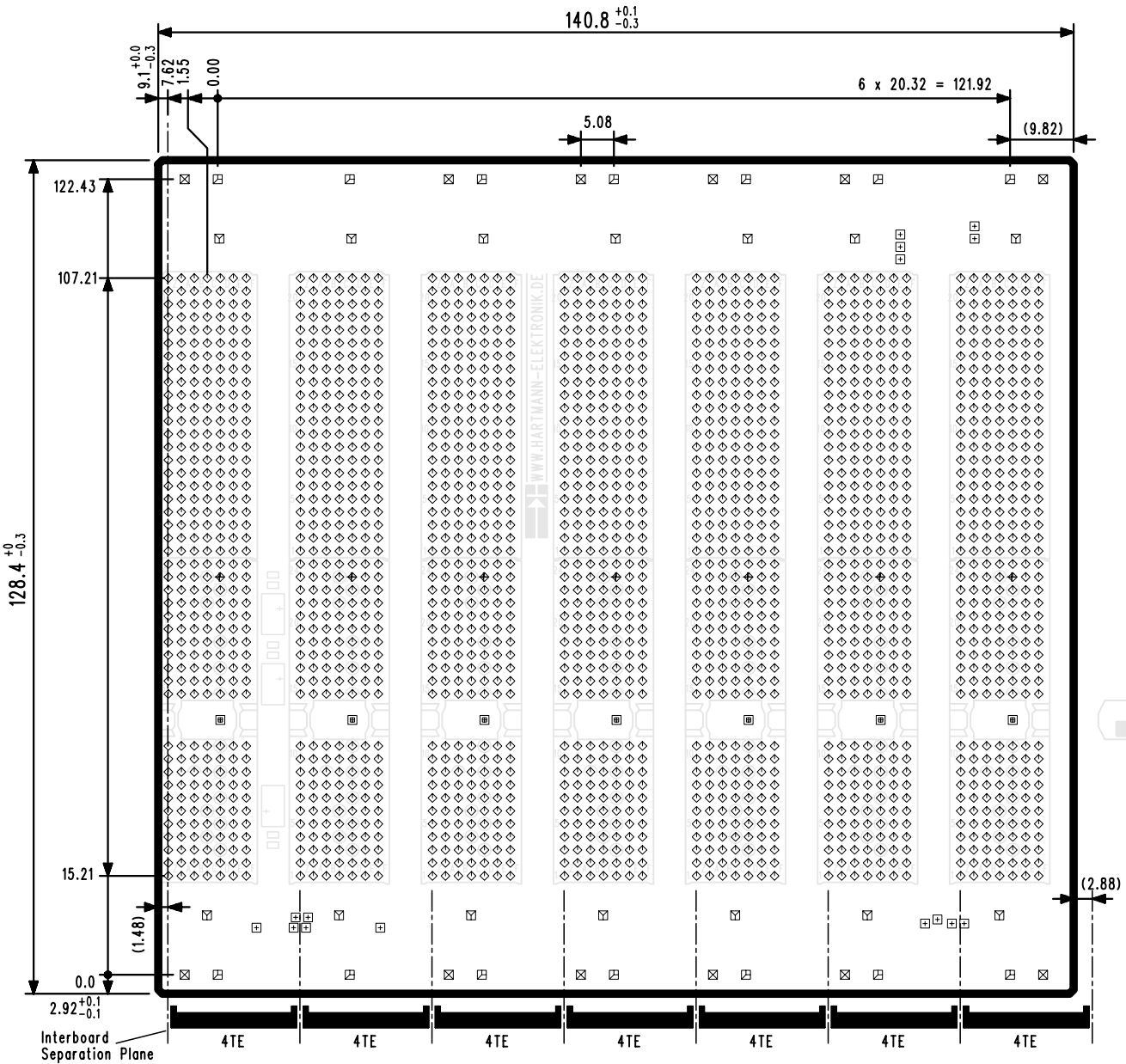
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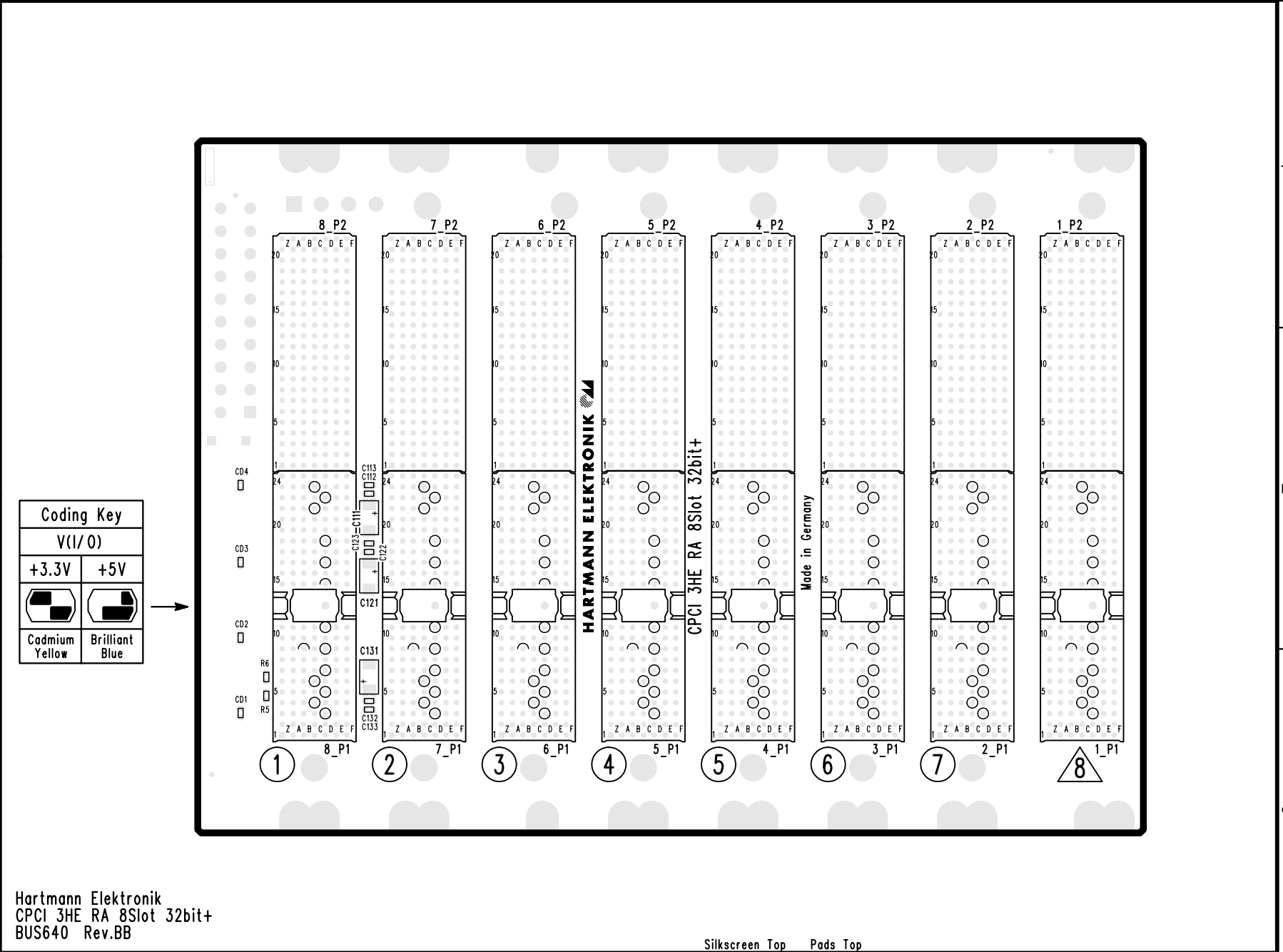
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3



Hartmann Elektronik
 CPCI 3HE RA 7Slot 32bit+
 BUS671 Rev.BA

Rev Description	Date	Name	2000	Date	Name	Title	Number	Sheet
			Author	08.11.	Ruthardt	Hartmann Elektronik CPCI 3HE RA 7Slot 32bit+ Rev.BA	HE-C33RA075--4	1
			Check	08.11.	Ruthardt			of
					DIN A4			
					M 1:1			
 HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART								



Coding Key	
V(I/O)	
+3.3V	+5V
Cadmium Yellow	Brilliant Blue

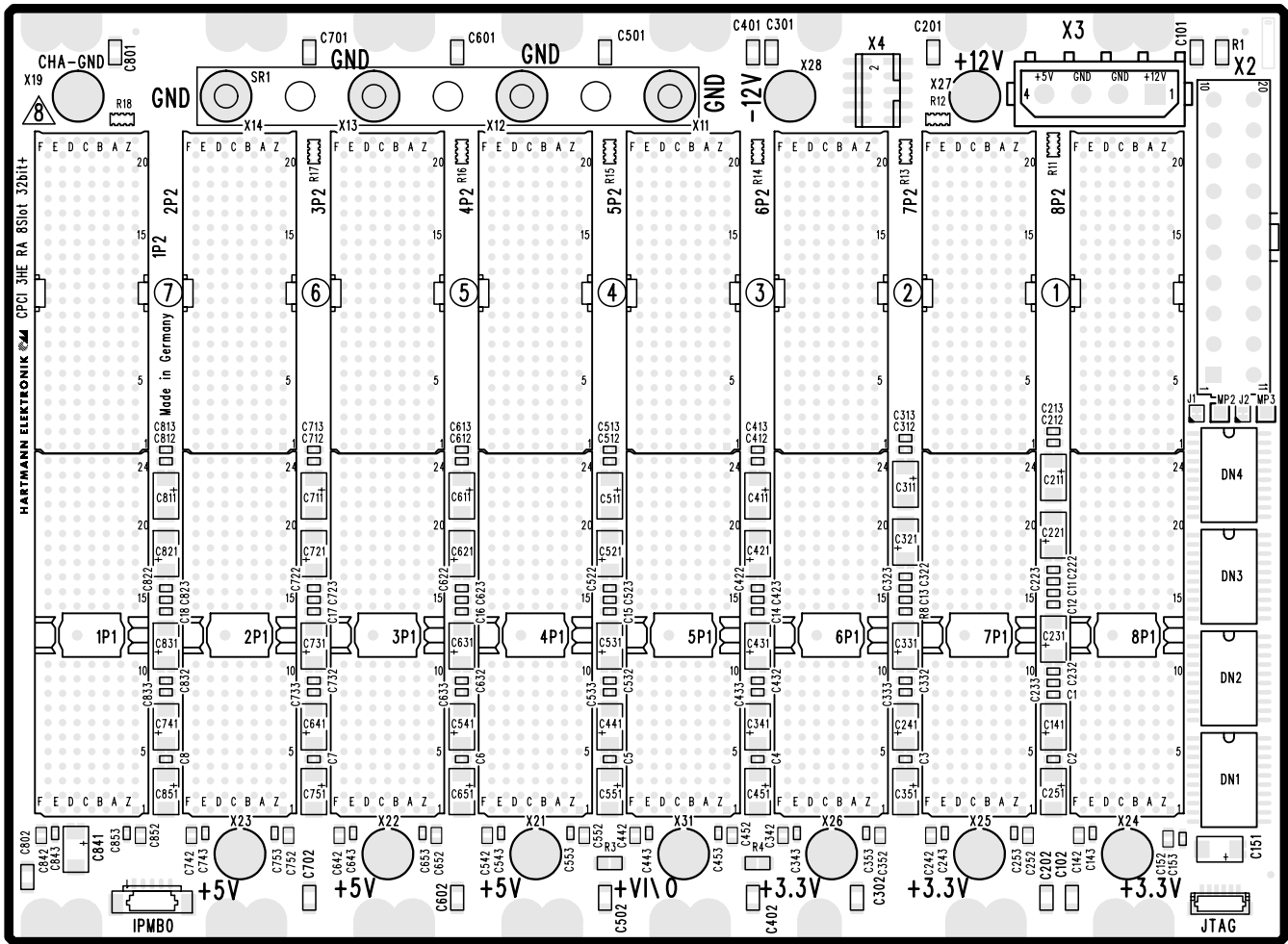
Hartmann Elektronik
 CPCI 3HE RA 8Slot 32bit+
 BUS640 Rev.BB

Rev	Description	Date	Name	2006	Date	Name	Title	Number	Device:	File:	Sheet
				Author	06.12.	Wiedmann	Hartmann Elektronik		HE-C33RA08--14	BUS640BB	of
				Check	06.12.	Wiedmann	CPCI 3HE RA 8Slot 32bit+				
						DIN A4	BUS640				
						M 1:1	Rev.BB				

HARTMANN ELEKTRONIK
 MOTORSTRASSE 43
 D-70499 STUTTGART

X4 Pin Assignment

Pin	Signal	Pin	Signal
1	PRST-	2	FAL-
3	DEG-	4	+3.3V-Sense
5	+3.3V	6	GND-Sense (+3.3V)
7	+5V	8	+5V-Sense
9	GND	10	GND-Sense (+5V)



IPMBO Pin Assignment

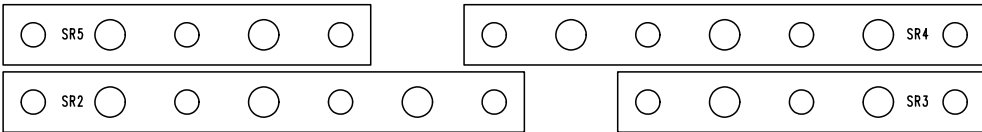
Pin	Signal
1	IPMB_SCL
2	GND
3	IPMB_SDA
4	IPMB_PWR
5	SMB_RSV

JTAG Pin Assignment

Pin	Signal
1	GND
2	TCK
3	TMS
4	TRST-
5	TDI
6	TDO

Busbar V(I/O) = 3.3V

Busbar V(I/O) = 5V



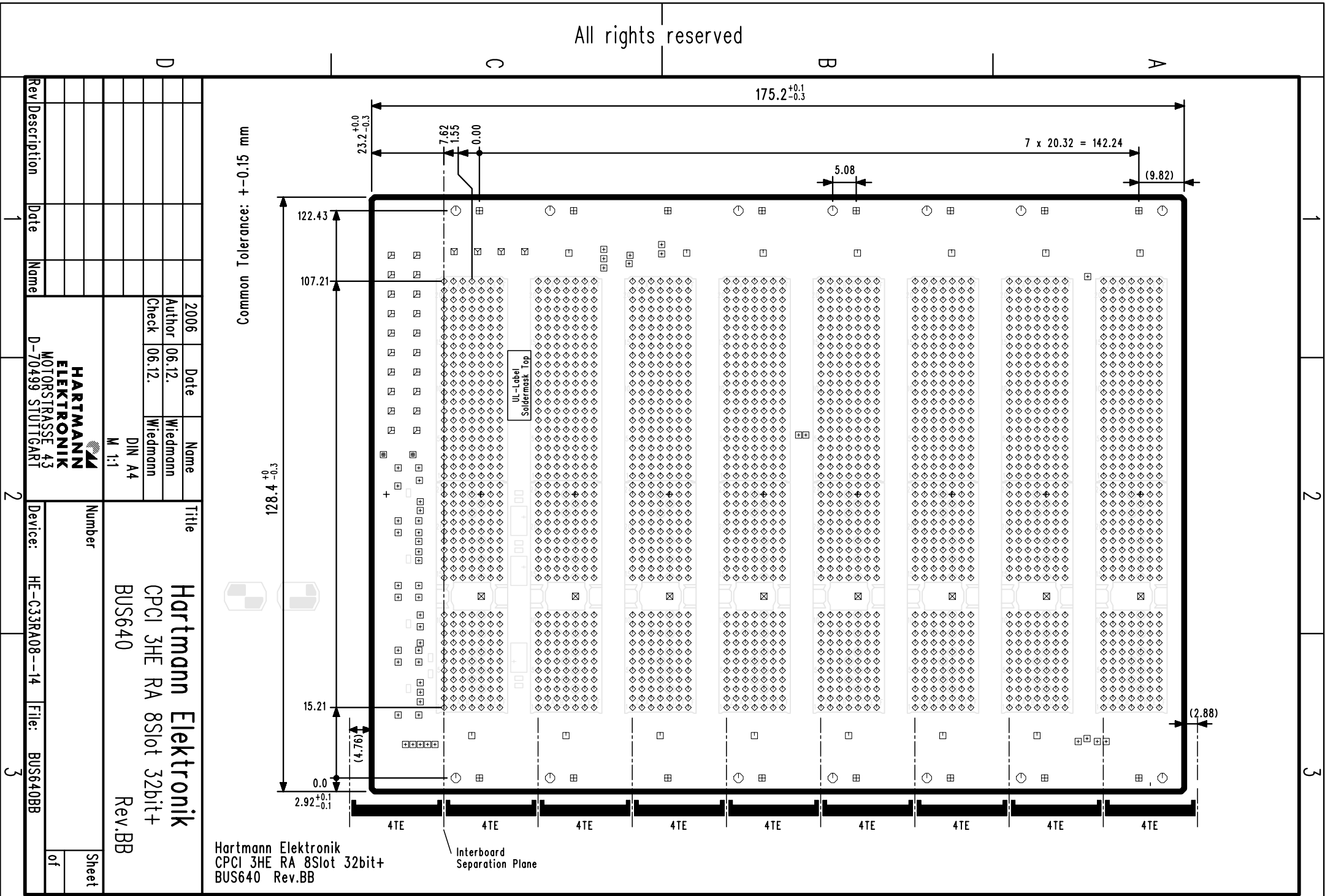
Silkscreen Bottom Pads Bottom

Hartmann Elektronik
CPCI 3HE RA 8Slot 32bit+
BUS640 Rev.BB

Rev	Description	Date	Name	2006	Date	Name	Title	Number	Device:	File:	Sheet	of
1				2006	06.12.	Wiedmann	Hartmann Elektronik		HE-C33RA08--14	BUS640BB		
					06.12.	Wiedmann	CPCI 3HE RA 8Slot 32bit+					
							BUS640					
							Rev.BB					

HARTMANN ELEKTRONIK
MOTORSTRASSE 43
D-70499 STUTTGART
DIN A4
M 1:1

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Common Tolerance: ± 0.15 mm

$128.4^{+0.3}_0$

$175.2^{+0.1}_{-0.3}$

$7 \times 20.32 = 142.24$

(9.82)

5.08

122.43

107.21

15.21

0.0

$2.92^{+0.1}_{-0.1}$

$23.2^{+0.0}_{-0.3}$

7.62

1.55

0.00

Soldermask Top

Interboard Separation Plane

(2.88)

Hartmann Elektronik
CPCI 3HE RA 8Slot 32bit+
BUS640 Rev.BB

Rev	Description	Date	Name	Title		Number	Sheet
				2006	Date	Name	of
				Author	06.12.	Wiedmann	
				Check	06.12.	Wiedmann	
				DIN A4		M 1:1	
				Hartmann Elektronik CPCI 3HE RA 8Slot 32bit+ BUS640 Rev.BB			
				HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART			
				Device: HE-C33RA08--14 File: BUS640BB			

D

D

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C

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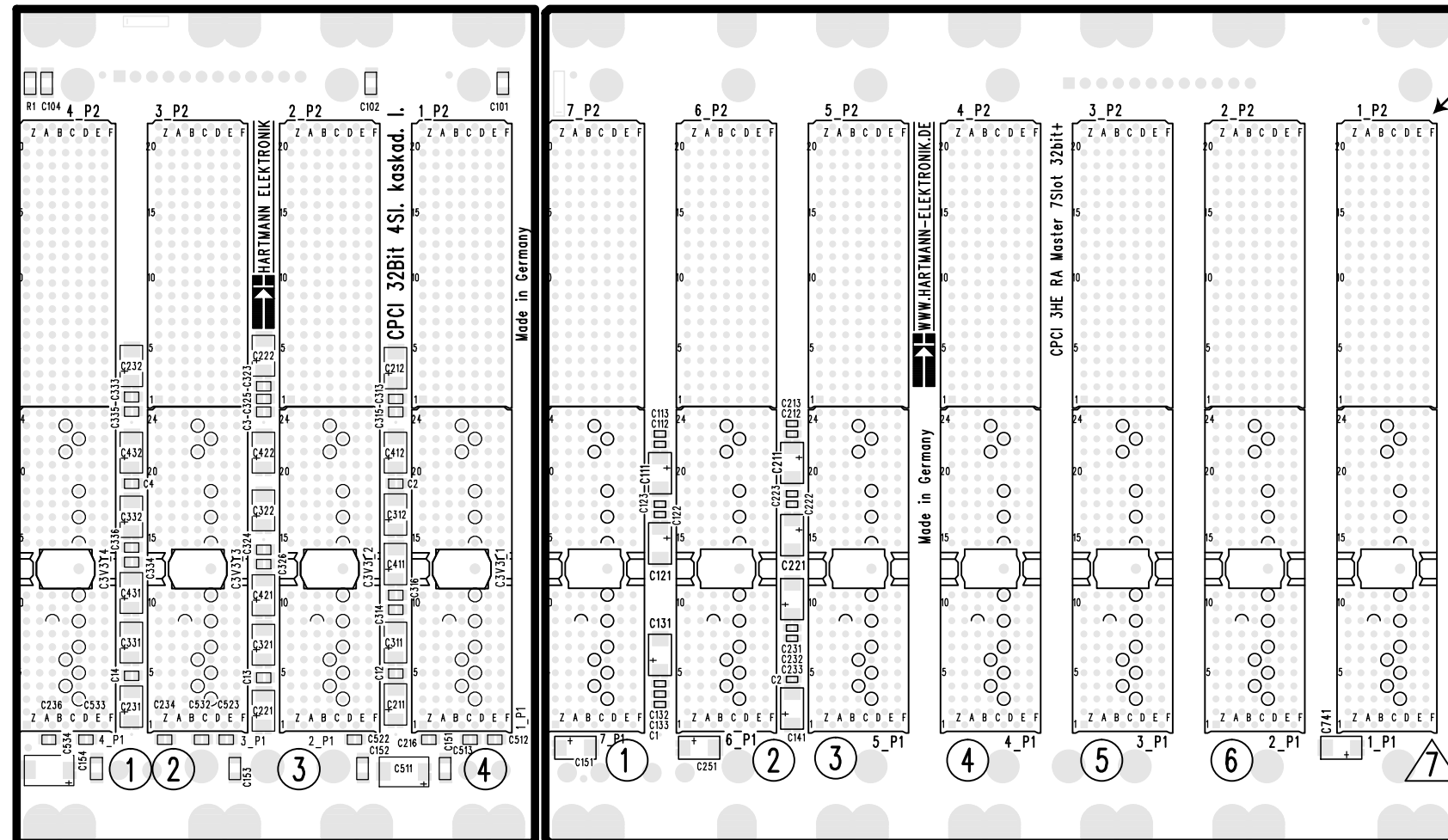
6

A

A

Top view

Systemslot



Coding Key	
V(I/O)	
3,3V	5V
Cadmium Yellow	Brilliant Blue

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B

B

C

C

D

D

		2000	Date	Name	CompactPCI® PICMG 2.0 R3.0 Backplane 3HE RA 11Slot 32bit 33MHz
		Author	18.12.	Wiedmann	
		Check	18.12.	Brosowski	
				DIN A3 M 1:1	
				HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART	Order No.: +5V: 33RA113514
Rev	Description	Date	Name		Device: BUS659BA+BUS654 File: HE-C33RA114-14

Sheet 1 of 2

1

2

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4

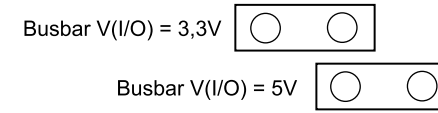
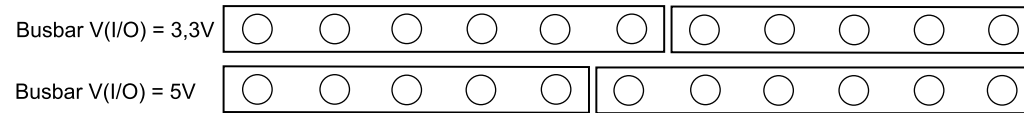
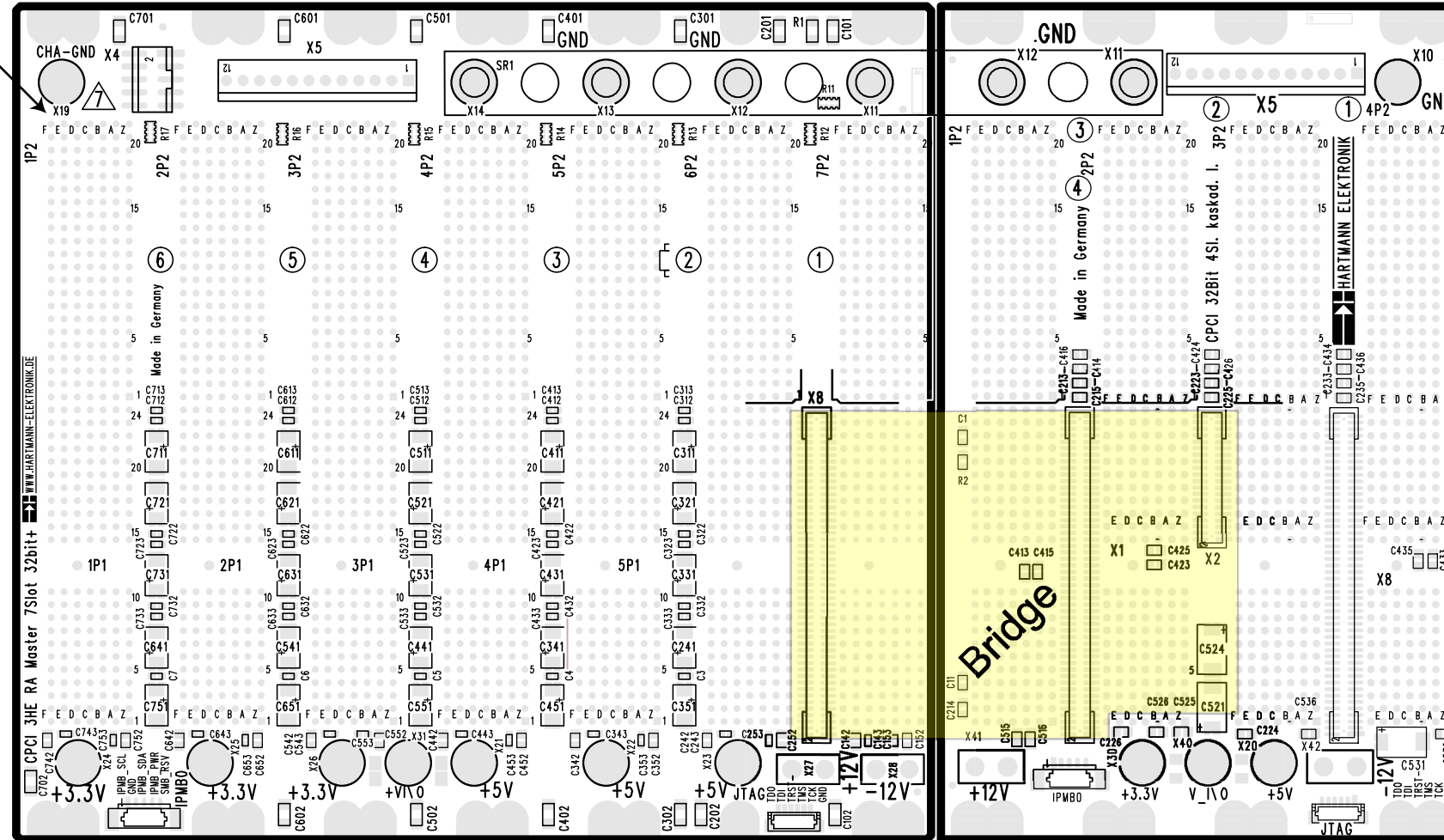
5

6

Bottom view

222.5

Systemslot



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2000	Date	Name
Author	18.12.	Wiedmann
Check	18.12.	Brosowski
DIN A3 M 1:1		
HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART		
Rev	Description	Date Name

CompactPCI® PICMG 2.0 R3.0
 Backplane 3HE RA 11Slot 32bit
 33MHz

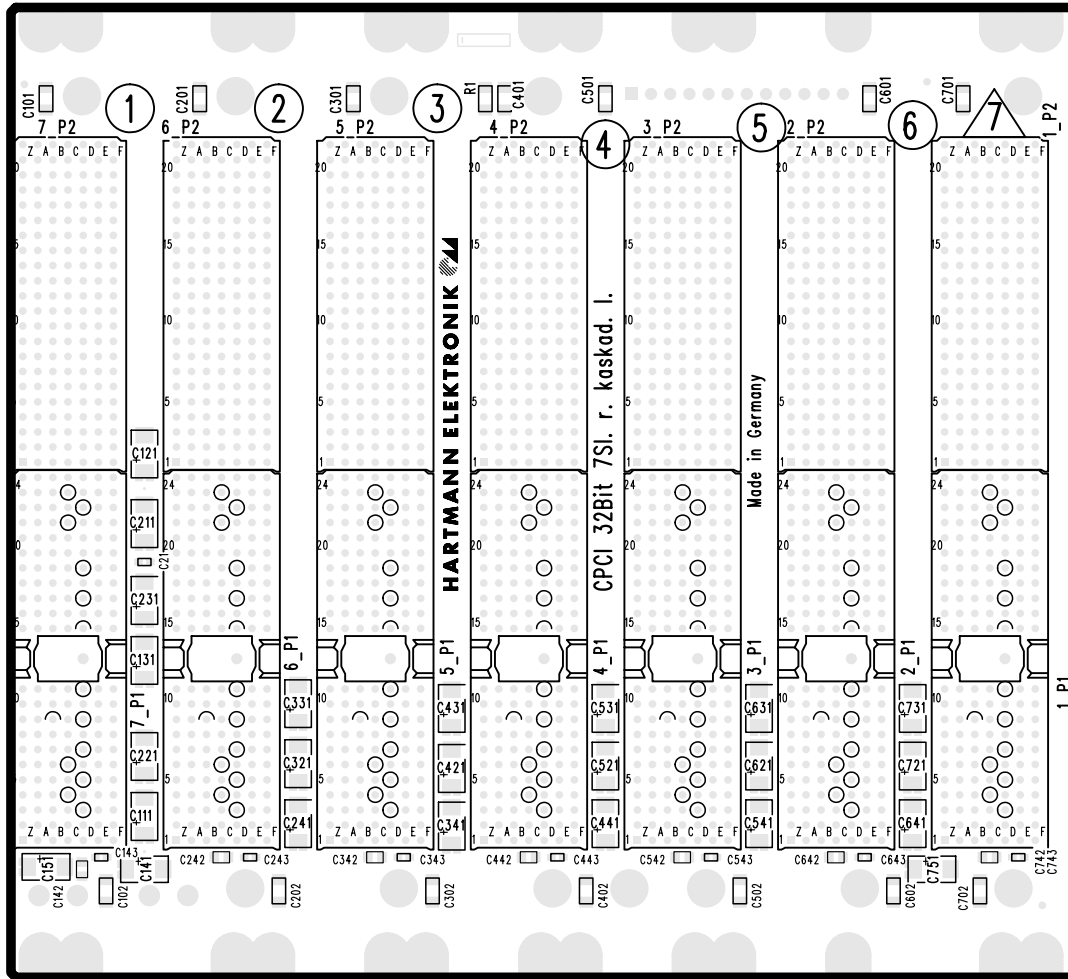
Order No.: +5V: 33RA113514

Device: BUS659BA+BUS654

Sheet 2 of 2

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TOP VIEW



Coding Key	
V(I/O)	
+3.3V	+5V
Cadmium Yellow	Brilliant Blue

Pads B-Seite
Beschriftungsdruck B-Seite

Hartmann Elektronik
CPCI 32Bit 7Sl. r. kaskad. I.
BUS659
Rev.BB

Rev	Description	Date	Name	2007	Date	Name	Title
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2				26.02.		Wiedmann	CPCI 32Bit 7Sl. r. kaskad. I.
3						DIN A4	BUS659
4						M 1:1	Rev.BB
5							
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HARTMANN ELEKTRONIK
MOTORSTRASSE 43
D-70499 STUTTGART

Number
Device: BUS659BB
File: BUS659BB

Sheet
of

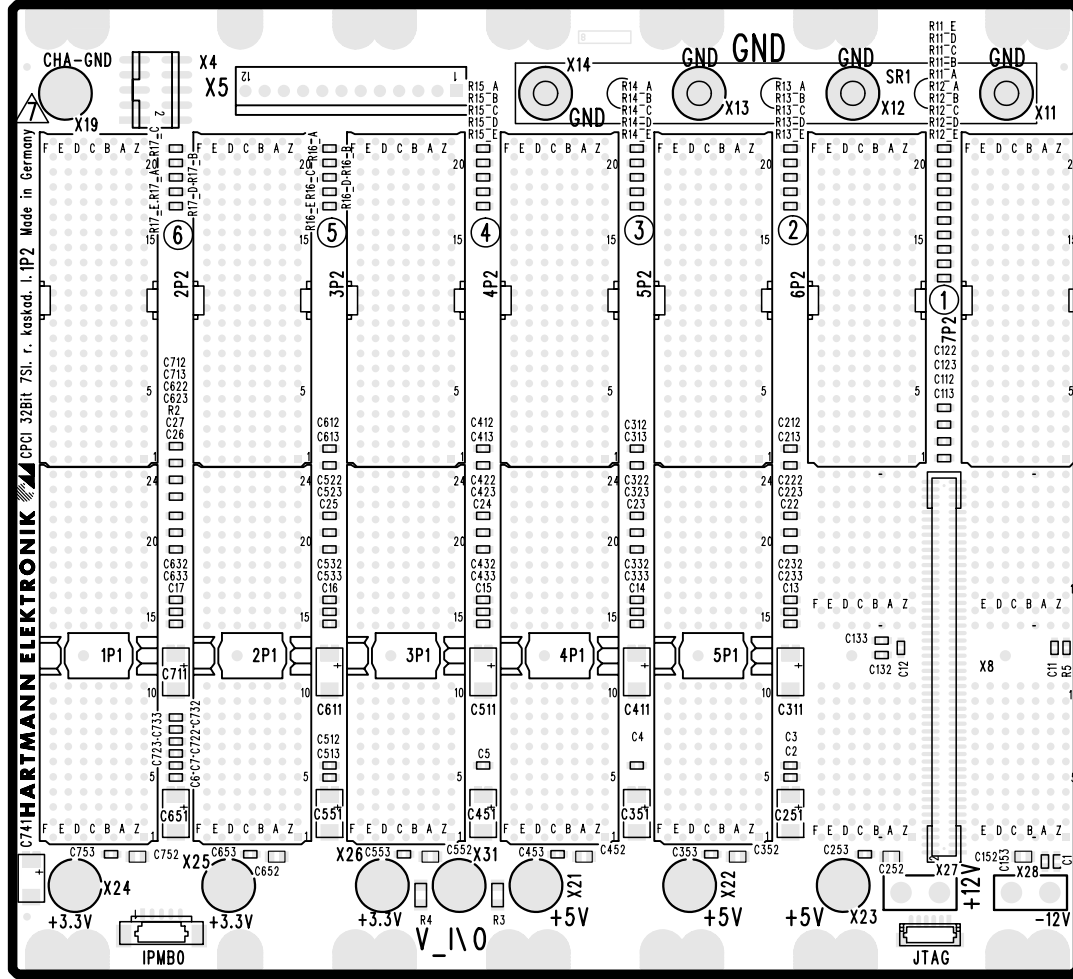
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Without geographic addressing on request

BOTTOM VIEW

X4 Pin Assignment

Pin	Signal	Pin	Signal
1	PRST-	2	FAL-
3	DEG-	4	+3.3V-Sense
5	+3.3V	6	GND-Sense (+3.3V)
7	+5V	8	+5V-Sense
9	GND	10	GND-Sense (+5V)



Shrouds
IP1 - 5P1
on request

JTAG Pin Assignment

Pin	Signal
1	GND
2	TCK
3	TMS
4	TRST-
5	TDI
6	TDO

IPWB0 Pin Assignment

Pin	Signal
1	IPWB_SCL
2	GND
3	IPWB_SDA
4	IPWB_PWR
5	SMB_RSV

Busbar V(I/O) = 3.3V

Busbar V(I/O) = 5V

Pods L-Seite
Beschriftungsdruck L-Seite

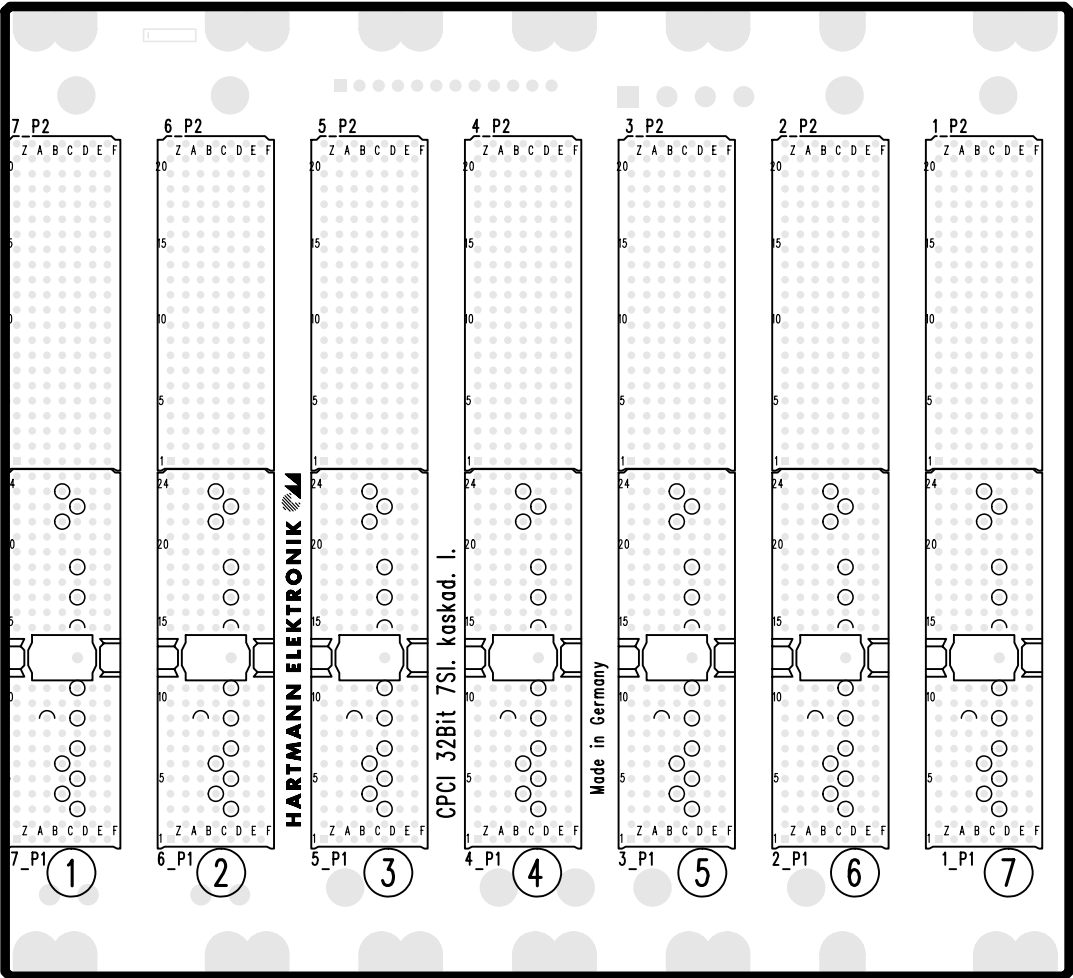
Rev.BB
BUS659
CPCI 32Bit 751. r. kaskad. I.
Hartmann Elektronik



Rev	Description	Date	Name	2007	Date	Name	Title
0				2007	26.02.	Wiedmann	Hartmann Elektronik
				2007	26.02.	Wiedmann	CPCI 32Bit 751. r. kaskad. I.
							BUS659
							Rev.BB

Device:	Number	File:	Sheet
		BUS659BB	of

HARTMANN ELEKTRONIK
MOTORSTRASSE 43
D-70499 STUTTGART

Hartmann Elektronik
CPCI 32Bit 751. r. kaskad. I.
BUS659
Rev.BB



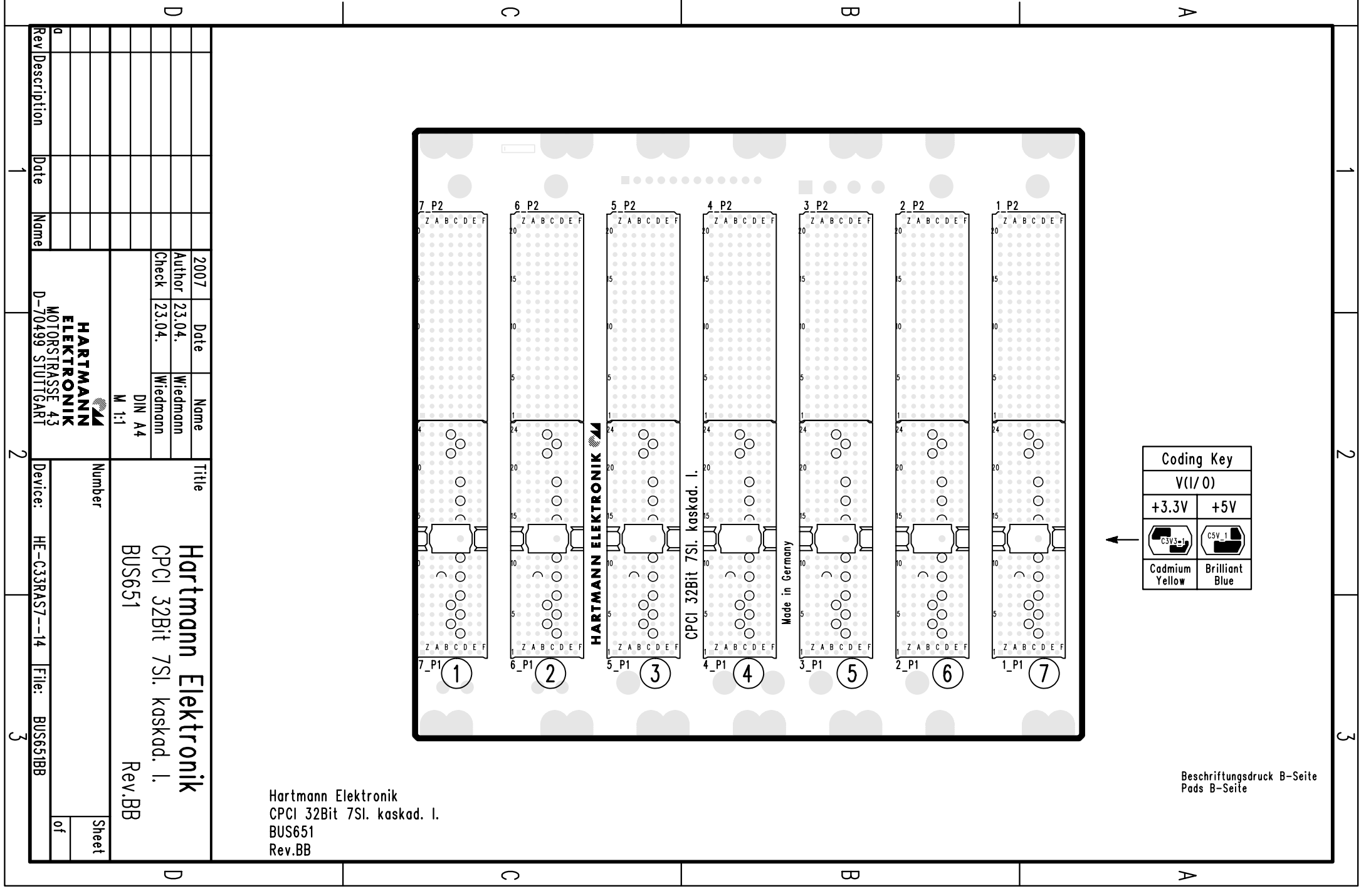
Coding Key	
V(I/O)	
+3.3V	+5V
	
Cadmium Yellow	Brilliant Blue

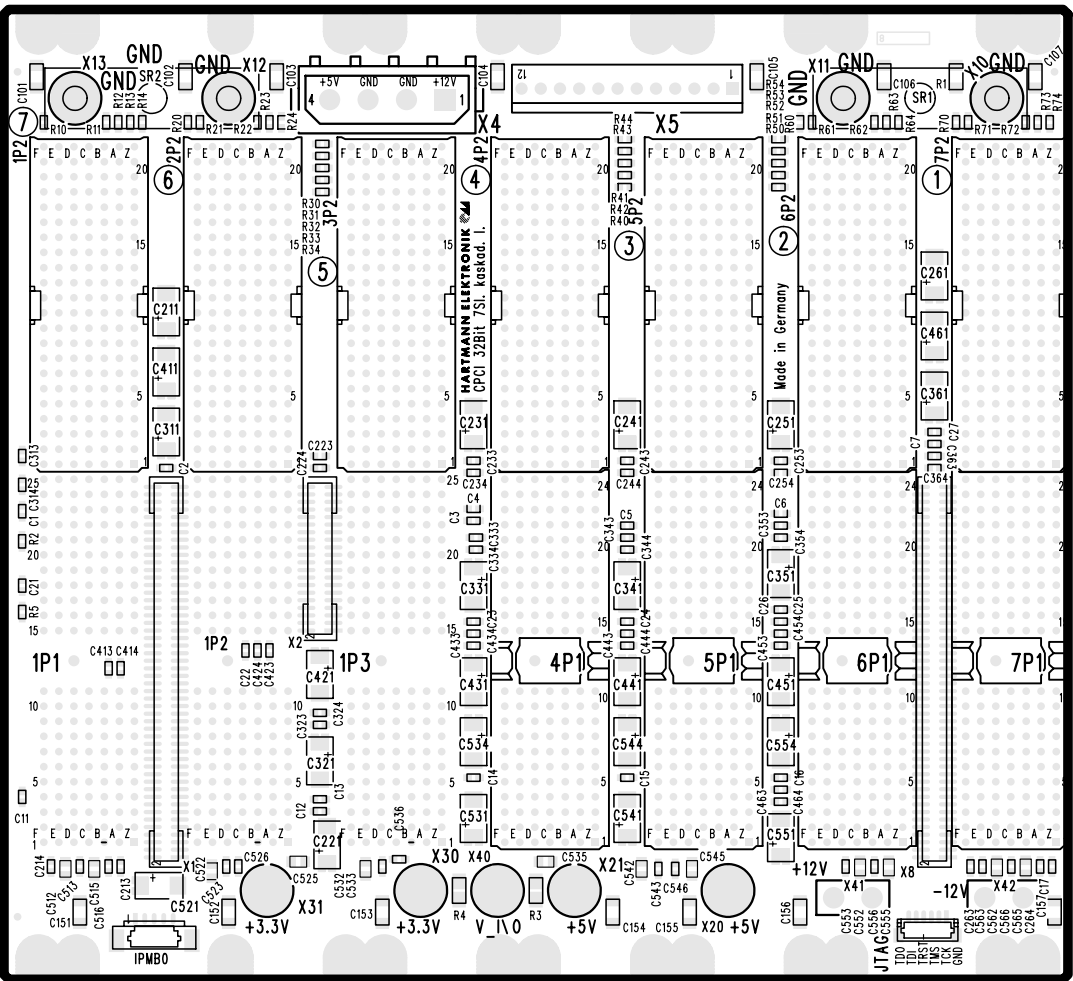


Rev	Description	Date	Name	2007	Date	Name	Title
D				Author	23.04.	Wiedmann	Hartmann Elektronik
				Check	23.04.	Wiedmann	CPCI 32Bit 7Sl. kaskad. I.
						DIN A4	BUS651
						M 1:1	Rev.BB
				HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART			
				Number HE-C33RAS7--14 File: BUS651BB			
		Sheet					
		of					

Hartmann Elektronik
 CPCI 32Bit 7Sl. kaskad. I.
 BUS651
 Rev.BB

Beschriftungsdruck B-Seite
 Pads B-Seite



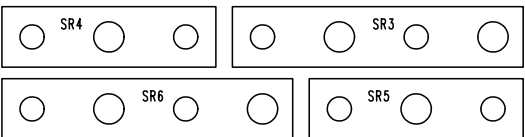


IPMBO
Pin Assignment

Pin	Signal
1	IPMB_SCL
2	GND
3	IPMB_SDA
4	IPMB_PWR
5	NC

JTAG
Pin Assignment

Pin	Signal
1	GND
2	TCK
3	TMS
4	TRST-
5	TDI
6	TD0



Busbar V(I/O) = 5V

Busbar V(I/O) = 3.3V I. I. V. 3. 0 (I/O) busbar
 Hartmann Elektronik
 CPCI 32Bit 7Sl. kaskod. I. V. 3. 0 (I/O) busbar
 BU2621
 Rev.BB

Beschriftungsdruck L-Seite
 Pads L-Seite

Rev	Description	Date	Name	2007	Date	Name	Title	Number	Device:	File:	Sheet
1				2007	23.04.	Wiedmann	Hartmann Elektronik		HE-C33RAS7--14	BUS651BB	1 of
					23.04.	Wiedmann	CPCI 32Bit 7Sl. kaskod. I.				
							BUS651				
							Rev.BB				

HARTMANN ELEKTRONIK
 MOTORSTRASSE 43
 D-70499 STUTTGART

Hartmann Elektronik
 CPCI 32Bit 7Sl. kaskod. I.
 BUS651
 Rev.BB

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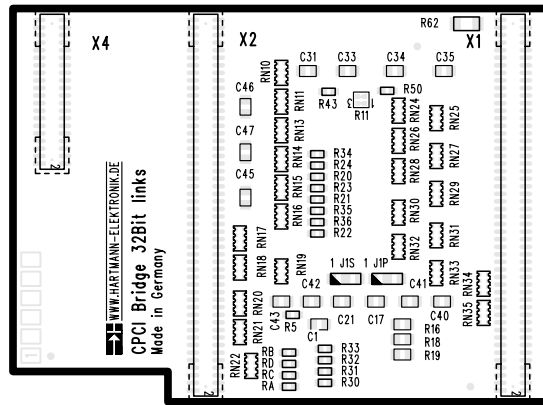
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Hartmann Elektronik
 CPCI Bridge 32Bit links
 BUS653
 Rev.01


Beschriftungsdruck B-Seite
 Pads B-Seite

C

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D

			2002	Tag	Name	Benennung	Hartmann Elektronik CPCI Bridge 32Bit links BUS653	Rev.01
			Bearb.	09.04.	Hamann			
			Gepr.	09.04.	Keko			
			UNTERLAGENSATZ		DIN A4 M 1:1	Zeich.-Nr.	Blatt	v.
			 HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART					
Rev	Änderungs-Nr	Tag	Name	zu Gerät:		Datei: BUS653A		

1

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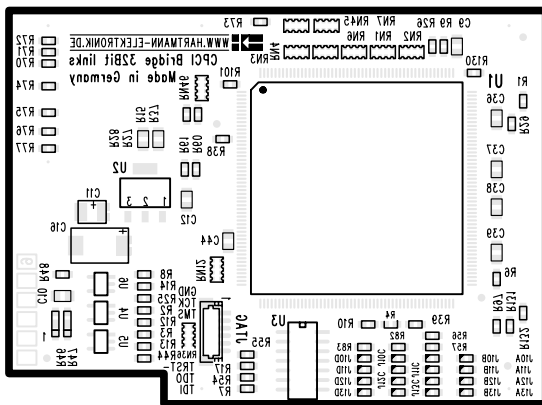
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Hartmann Elektronik
 CPCI Bridge 32Bit links
 BUS653
 Rev.01

C

C

D

D

			2002	Tag	Name	Benennung	Hartmann Elektronik CPCI Bridge 32Bit links BUS653	Rev.01
			Bearb.	09.04.	Hamann			
			Gepr.	09.04.	Keko			
			UNTERLAGENSATZ			DIN A4 M 1:1	Zeich.-Nr.	Blatt
			 HARTMANN ELEKTRONIK MOTORSTRASSE 43 D-70499 STUTTGART			zu Gerät:		
Rev	Änderungs-Nr	Tag	Name					

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