

CaMonEx II - Interface

Kamerasignale und Steuerleitungen Zweizeilen - Kamera

Name	Richtung vom FPGA	Pin - Stecker	FPGA Pin #
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Gemeinsame Enable Signale für alle LVDS Treiber			
Cam1_EN	OUT	66 / X11 - P2	C16
Cam1_nEN	OUT	69 / X12 - P3	F15

Byte A der 1. Digital-Kamera			
Cam1_Byte_A(0)	IN	77 / X13 - P4	AG14
Cam1_Byte_A(1)	IN	79 / X13 - P4	AC14
Cam1_Byte_A(2)	IN	80 / X13 - P4	AD13
Cam1_Byte_A(3)	IN	82 / X13 - P4	AC13
Cam1_Byte_A(4)	IN	83 / X13 - P4	AH12
Cam1_Byte_A(5)	IN	85 / X13 - P4	AG12
Cam1_Byte_A(6)	IN	86 / X13 - P4	AK11
Cam1_Byte_A(7)	IN	88 / X13 - P4	AK10

Byte B der 1. Digital-Kamera			
Cam1_Byte_B(0)	IN	89 / X13 - P4	AH11
Cam1_Byte_B(1)	IN	91 / X13 - P4	AG11
Cam1_Byte_B(2)	IN	92 / X13 - P4	AD12
Cam1_Byte_B(3)	IN	94 / X13 - P4	AC12
Cam1_Byte_B(4)	IN	100 / X13 - P4	AE18
Cam1_Byte_B(5)	IN	101 / X13 - P4	AF18
Cam1_Byte_B(6)	IN	103 / X13 - P4	AJ19
Cam1_Byte_B(7)	IN	104 / X13 - P4	AG18

Synchronisationssignale der 1. Digital-Kamera			
Cam1_CLK	IN	106 / X13 - P4	AE17
Cam1_LDV	IN	107 / X13 - P4	AB17
Cam1_FDV	IN	109 / X13 - P4	AB15
Cam1_EXP	IN	110 / X13 - P4	AF15

Steuersignale zur 1. Digital-Kamera			
Cam1_EXT_HD	OUT	134 / X13 - P4	AK26
Cam1_EVINIT	OUT	133 / X13 - P4	AC21
Cam1_INTEG	OUT	131 / X13 - P4	AG25
Cam1_LPULSE	OUT	130 / X13 - P4	AJ24

Anschlüsse LED oder I²C

Signale über Jumper LED oder I2C			
LED1_I2C_SDA	OUT oder IN	62 / X13 - P4	AG24
LED2_I2C_SDC	OUT oder IN	63 / X13 - P4	AC20

Signale über Transistor für I2C			
I2C_SDA	OUT	66 / X13 - P4	AH15
I2C_SCL	OUT	136 / X13 - P4	AE15

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Kamerasignale und Steuerleitungen Einzeilen - Kamera

Byte B der 2. Digital-Kamera (LVDS bis zum FPGA)			
Cam2_Byte_Bp(0)	IN	3 / X12 - P3	F10
Cam2_Byte_Bn(0)	IN	2 / X12 - P3	F11
Cam2_Byte_Bp(1)	IN	6 / X12 - P3	D10
Cam2_Byte_Bn(1)	IN	5 / X12 - P3	D9
Cam2_Byte_Bp(2)	IN	9 / X12 - P3	H11
Cam2_Byte_Bn(2)	IN	8 / X12 - P3	H12
Cam2_Byte_Bp(3)	IN	12 / X12 - P3	E11
Cam2_Byte_Bn(3)	IN	11 / X12 - P3	E10
Cam2_Byte_Bp(4)	IN	15 / X12 - P3	A10
Cam2_Byte_Bn(4)	IN	14 / X12 - P3	A9
Cam2_Byte_Bp(5)	IN	18 / X12 - P3	G12
Cam2_Byte_Bn(5)	IN	17 / X12 - P3	G13
Cam2_Byte_Bp(6)	IN	21 / X12 - P3	B11
Cam2_Byte_Bn(6)	IN	20 / X12 - P3	B10
Cam2_Byte_Bp(7)	IN	24 / X12 - P3	F12
Cam2_Byte_Bn(7)	IN	23 / X12 - P3	F13

Synchronisationssignale der 2. Digital-Kamera (LVDS bis zum FPGA)			
Cam2_CLKp	IN	27 / X12 - P3	C12
Cam2_CLKn	IN	26 / X12 - P3	C11
Cam2_LDVp	IN	30 / X12 - P3	H15
Cam2_LDVn	IN	29 / X12 - P3	G15
Cam2_FDVP	IN	33 / X12 - P3	D15
Cam2_FDvn	IN	32 / X12 - P3	D14
Cam2_EXPp	IN	Meßpunkt MP9	---
Cam2_EXPn	IN	Meßpunkt MP10	---

Steuersignale zur 2. Digital-Kamera			
Cam2_EXT_HD	OUT	71 / X14 - P5	AJ15
Cam2_EVINIT	OUT	73 / X14 - P5	AK15
Cam2_INTEG	OUT	74 / X14 - P5	AJ14
Cam2_LPULSE	OUT	76 / X14 - P5	AK14

Anschlüsse Lichtsensor

Signale für Lichtsensor			
LFC_Sen(0)	OUT	39 / X12 - P3	E13
LFC_Sen(1)	OUT	38 / X12 - P3	C8
LFC_Sca(0)	OUT	36 / X12 - P3	D11
LFC_Sca(1)	OUT	35 / X12 - P3	A14
LFC_Freq	IN	71 / X12 - P3	B15

CaMonEx II - Interface

VGA Anschluß mit DAC Ansteuerung und Synchronisation

Steuereingänge des DAC			
DAC_M1	OUT	101 / X11 - P2	D24
DAC_M2	OUT	103 / X11 - P2	C25
DAC_CLK	OUT	36 / X11 - P2	E24
DAC_SYNC T	OUT	35 / X11 - P2	C26
DAC_nSYNC	OUT	33 / X11 - P2	D25
DAC_nBLANK	OUT	104 / X11 - P2	E23

Digitalfarbwert für Rot			
DAC_RPr(0)	OUT	86 / X11 - P2	G21
DAC_RPr(1)	OUT	88 / X11 - P2	A21
DAC_RPr(2)	OUT	89 / X11 - P2	E21
DAC_RPr(3)	OUT	91 / X11 - P2	H21
DAC_RPr(4)	OUT	92 / X11 - P2	B22
DAC_RPr(5)	OUT	94 / X11 - P2	G22
DAC_RPr(6)	OUT	95 / X11 - P2	C23
DAC_RPr(7)	OUT	97 / X11 - P2	F23
DAC_RPr(8)	OUT	98 / X11 - P2	A25
DAC_RPr(9)	OUT	100 / X11 - P2	C24

Digitalfarbwert für Grün			
DAC_GY(0)	OUT	45 / X11 - P2	J17
DAC_GY(1)	OUT	44 / X11 - P2	E17
DAC_GY(2)	OUT	42 / X11 - P2	B18
DAC_GY(3)	OUT	41 / X11 - P2	B19
DAC_GY(4)	OUT	39 / X11 - P2	J16
DAC_GY(5)	OUT	38 / X11 - P2	B27
DAC_GY(6)	OUT	32 / X11 - P2	B25
DAC_GY(7)	OUT	30 / X11 - P2	F22
DAC_GY(8)	OUT	29 / X11 - P2	A24
DAC_GY(9)	OUT	27 / X11 - P2	B24

Digitalfarbwert für Blau			
DAC_BPb(0)	OUT	85 / X11 - P2	B20
DAC_BPb(1)	OUT	83 / X11 - P2	C20
DAC_BPb(2)	OUT	82 / X11 - P2	C19
DAC_BPb(3)	OUT	80 / X11 - P2	F20
DAC_BPb(4)	OUT	79 / X11 - P2	G20
DAC_BPb(5)	OUT	77 / X11 - P2	F18
DAC_BPb(6)	OUT	76 / X11 - P2	F17
DAC_BPb(7)	OUT	74 / X11 - P2	D17
DAC_BPb(8)	OUT	73 / X11 - P2	D16
DAC_BPb(9)	OUT	71 / X11 - P2	B16

Synchronisationssignale des Monitors			
Mon_H_Sync	OUT	106 / X12 - P3	E7
Mon_V_Sync	OUT	107 / X12 - P3	B6

CaMonEx II - Interface

Expansion Input / Output - Logikanalysator kompatibel

Taktsignale für A,B,C Expansion			
EXABC_CLK1	IN/OUT	26 / X11 - P2	B23
EXABC_CLK2	IN/OUT	136 / X11 - P2	G16

A-Expansion-Stecker			
EXA_Data(0)	IN/OUT	24 / X11 - P2	D22
EXA_Data(1)	IN/OUT	23 / X11 - P2	E22
EXA_Data(2)	IN/OUT	21 / X11 - P2	A22
EXA_Data(3)	IN/OUT	20 / X11 - P2	F21
EXA_Data(4)	IN/OUT	18 / X11 - P2	B21
EXA_Data(5)	IN/OUT	17 / X11 - P2	D21
EXA_Data(6)	IN/OUT	15 / X11 - P2	A20
EXA_Data(7)	IN/OUT	14 / X11 - P2	D20
EXA_Data(8)	IN/OUT	12 / X11 - P2	E20
EXA_Data(9)	IN/OUT	11 / X11 - P2	F19
EXA_Data(10)	IN/OUT	9 / X11 - P2	H20
EXA_Data(11)	IN/OUT	8 / X11 - P2	H19
EXA_Data(12)	IN/OUT	6 / X11 - P2	G19
EXA_Data(13)	IN/OUT	5 / X11 - P2	A16
EXA_Data(14)	IN/OUT	3 / X11 - P2	H18
EXA_Data(15)	IN/OUT	2 / X11 - P2	F16

B-Expansion-Stecker			
EXB_Data(0)	IN/OUT	24 / X14 - P5	AK27
EXB_Data(1)	IN/OUT	23 / X14 - P5	AG15
EXB_Data(2)	IN/OUT	21 / X14 - P5	AK17
EXB_Data(3)	IN/OUT	20 / X14 - P5	AJ17
EXB_Data(4)	IN/OUT	18 / X14 - P5	AK18
EXB_Data(5)	IN/OUT	17 / X14 - P5	AG16
EXB_Data(6)	IN/OUT	15 / X14 - P5	AH19
EXB_Data(7)	IN/OUT	14 / X14 - P5	AH20
EXB_Data(8)	IN/OUT	12 / X14 - P5	AG17
EXB_Data(9)	IN/OUT	11 / X14 - P5	AD15
EXB_Data(10)	IN/OUT	9 / X14 - P5	AC15
EXB_Data(11)	IN/OUT	8 / X14 - P5	AJ16
EXB_Data(12)	IN/OUT	6 / X14 - P5	AD16
EXB_Data(13)	IN/OUT	5 / X14 - P5	AC16
EXB_Data(14)	IN/OUT	3 / X14 - P5	AD18
EXB_Data(15)	IN/OUT	2 / X14 - P5	AC17

CaMonEx II - Interface

Expansion Input / Output - Logikanalysator kompatibel

C-Expansion-Stecker			
EXC_Data(0)	IN/OUT	47 / X14 - P5	AF13
EXC_Data(1)	IN/OUT	116 / X14 - P5	AJ12
EXC_Data(2)	IN/OUT	115 / X14 - P5	AJ13
EXC_Data(3)	IN/OUT	45 / X14 - P5	AK12
EXC_Data(4)	IN/OUT	44 / X14 - P5	AK13
EXC_Data(5)	IN/OUT	113 / X14 - P5	AG13
EXC_Data(6)	IN/OUT	112 / X14 - P5	AF14
EXC_Data(7)	IN/OUT	42 / X14 - P5	AE14
EXC_Data(8)	IN/OUT	41 / X14 - P5	AB14
EXC_Data(9)	IN/OUT	39 / X14 - P5	AE13
EXC_Data(10)	IN/OUT	38 / X14 - P5	AB16
EXC_Data(11)	IN/OUT	36 / X14 - P5	AF17
EXC_Data(12)	IN/OUT	35 / X14 - P5	AJ18
EXC_Data(13)	IN/OUT	33 / X14 - P5	AK19
EXC_Data(14)	IN/OUT	32 / X14 - P5	AK20
EXC_Data(15)	IN/OUT	30 / X14 - P5	AF16

Taktsignale für D,E Expansion			
EXDE_CLK1	IN/OUT	94 / X13 - P4	AC18
EXDE_CLK2	IN/OUT	136 / X12 - P3	C15

D-Expansion-Stecker			
EXD_Data(0)	IN/OUT	106 / X11 - P2	A27
EXD_Data(1)	IN/OUT	107 / X11 - P2	F24
EXD_Data(2)	IN/OUT	109 / X11 - P2	G18
EXD_Data(3)	IN/OUT	110 / X11 - P2	E18
EXD_Data(4)	IN/OUT	112 / X11 - P2	A19
EXD_Data(5)	IN/OUT	113 / X11 - P2	A18
EXD_Data(6)	IN/OUT	115 / X11 - P2	H17
EXD_Data(7)	IN/OUT	116 / X11 - P2	E16
EXD_Data(8)	IN/OUT	88 / X13 - P4	AJ21
EXD_Data(9)	IN/OUT	89 / X13 - P4	AF20
EXD_Data(10)	IN/OUT	20 / X13 - P4	AD20
EXD_Data(11)	IN/OUT	21 / X13 - P4	AE20
EXD_Data(12)	IN/OUT	91 / X13 - P4	AE19
EXD_Data(13)	IN/OUT	92 / X13 - P4	AD19
EXD_Data(14)	IN/OUT	23 / X13 - P4	AG19
EXD_Data(15)	IN/OUT	24 / X13 - P4	AC19

CaMonEx II - Interface

Expansion Input / Output - Logikanalysator kompatibel

E-Expansion-Stecker			
EXE_Data(0)	IN/OUT	107 / X13 - P4	AH8
EXE_Data(1)	IN/OUT	38 / X13 - P4	AH9
EXE_Data(2)	IN/OUT	39 / X13 - P4	AJ8
EXE_Data(3)	IN/OUT	109 / X13 - P4	AF8
EXE_Data(4)	IN/OUT	110 / X13 - P4	AG8
EXE_Data(5)	IN/OUT	41 / X13 - P4	AJ7
EXE_Data(6)	IN/OUT	42 / X13 - P4	AK7
EXE_Data(7)	IN/OUT	112 / X13 - P4	AG7
EXE_Data(8)	IN/OUT	113 / X13 - P4	AH7
EXE_Data(9)	IN/OUT	44 / X13 - P4	AJ6
EXE_Data(10)	IN/OUT	45 / X13 - P4	AF7
EXE_Data(11)	IN/OUT	115 / X13 - P4	AG6
EXE_Data(12)	IN/OUT	116 / X13 - P4	AK6
EXE_Data(13)	IN/OUT	47 / X13 - P4	AK5
EXE_Data(14)	IN/OUT	48 / X13 - P4	AJ4
EXE_Data(15)	IN/OUT	118 / X13 - P4	AK4

Spannungsversorgung CaMonEx II Karte

Spannung	Stecker CaMonEx II	Stecker Avnet	Pins
Vcc 5V	X11 / X12 / X13 / X14	P2 / P3 / P4 / P5	1 13 25 37 49 61
GND	X11 / X12 / X13 / X14	P2 / P3 / P4 / P5	4 7 10 16 19 22 28 31 34 40 43 46 52 55 58 64 67 70 72 75 81 84 87 93 96 99 105 108 111 117 120 123 129 132 135
3,3V	X11 / X12 / X13 / X14	P2 / P3 / P4 / P5	78 90 102 114 126 138