

XRM-CLINK-ADV

Full/Medium/Base Camera Link  
and Dual ADV212 Adaptor

User Guide

Version 1.0

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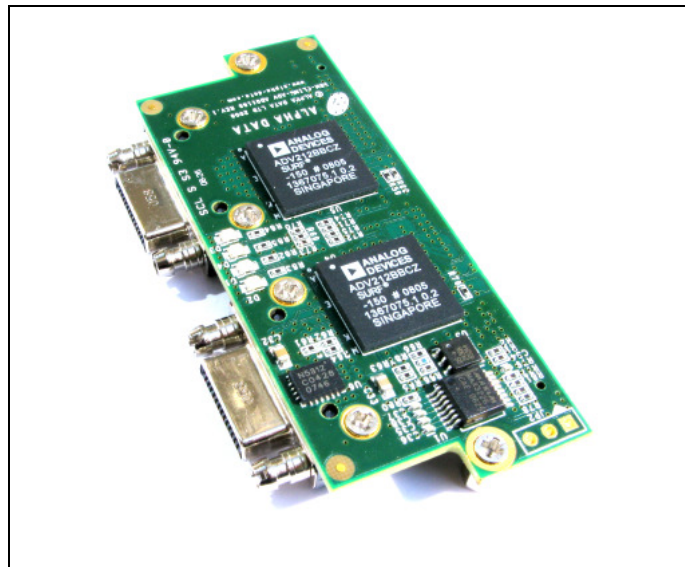
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### **EMI**

This equipment generates, uses and can radiate electromagnetic energy. It may cause or be susceptible to electromagnetic interference if not installed and used with adequate EMI protection for specific applications.

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**XRM-CLINK-ADV**

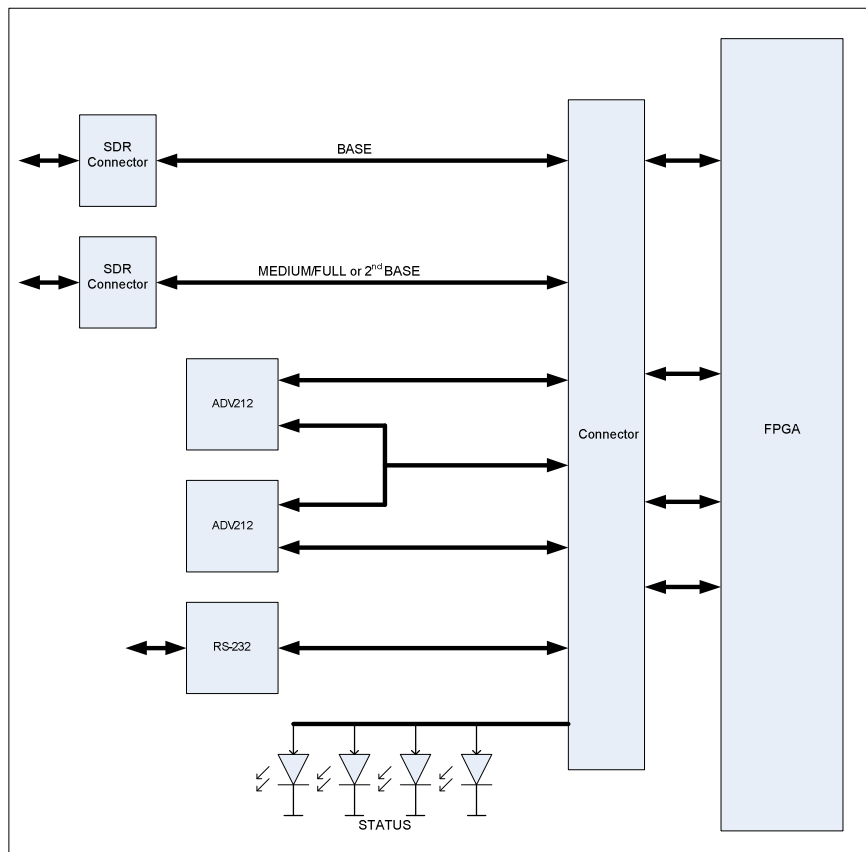
## 1. Introduction

The XRM-CLINK-ADV is a front panel adapter card designed for use with Alpha Data's ADM-XRC-5 FPGA-based PMC cards and provides the user with the ability to implement computationally-intensive applications such as frame grabbers, digital video communications and image processing systems in FPGA fabric.

The adapter provides the connectivity between the FPGA card and the industry standard "CameraLink" high-speed digital camera interface using the standard Shrink Delta Ribbon Connectors from 3M.

The XRM-CLINK-ADV provides support for FULL, MEDIUM and BASE configurations. When used with the example code, any of the formats specified by the BASE configuration may be implemented. Full user control of the standard camera control lines and serial interface is provided.

Four LEDs are provided for use as status indicators. An RS232 interface is provided for debug purposes.



The XRM-CLINK-ADV also provides two ADV212s, JPEG2000 codices targeted for video and high bandwidth image compression applications that can benefit from the enhanced quality and features provided by the JPEG2000 (J2K).

## **2. Installation**

The XRM-CLINK-ADV is designed to plug in to the front panel connector (SAMTEC QSH series) on an ADM-XRC-5 PMC card. The retaining screws should be tightened to secure the XRM-CLINK-ADV.

**Note: This operation should not be performed while the host PMC or PCI card is powered up.**

### **2.1. Handling instructions**

Observe precautions for preventing damage to components by electrostatic discharge. Personnel handling the board should take SSD precautions. Avoid flexing the board.

### **3. Specification**

#### **3.1. Connectors**

SDR connector 3M™ part number 12226-8250-00FR

#### **3.2. Mating Cable form**

SDR cable assembly 3M™ part number 1SF26-L120-00C-XXX,  
where XXX = length in centimetres.

SDR to MDR cable assembly 3M™ part number 1MF26-L560-00C-XXX,  
where XXX = length in centimetres.

#### **3.3. Misc.**

RS232 transceiver controlled from FPGA implementing 3-wire interface.  
Connection via 0.1" header.

**4. Order Code**  
XRM-CLINK-ADV

For further information please contact Alpha Data.

## **5. Related Documents**

ADM-XRC-5 User Manual

Camera Link Specification v1.1 (Automated Imaging Association)

Analog Devices: JPEG 2000 Video Codec: ADV212 Datasheet



## **6. Design Examples**

Example UCF, HDL files and Application software are available from Alpha Data for purchasers of this card.

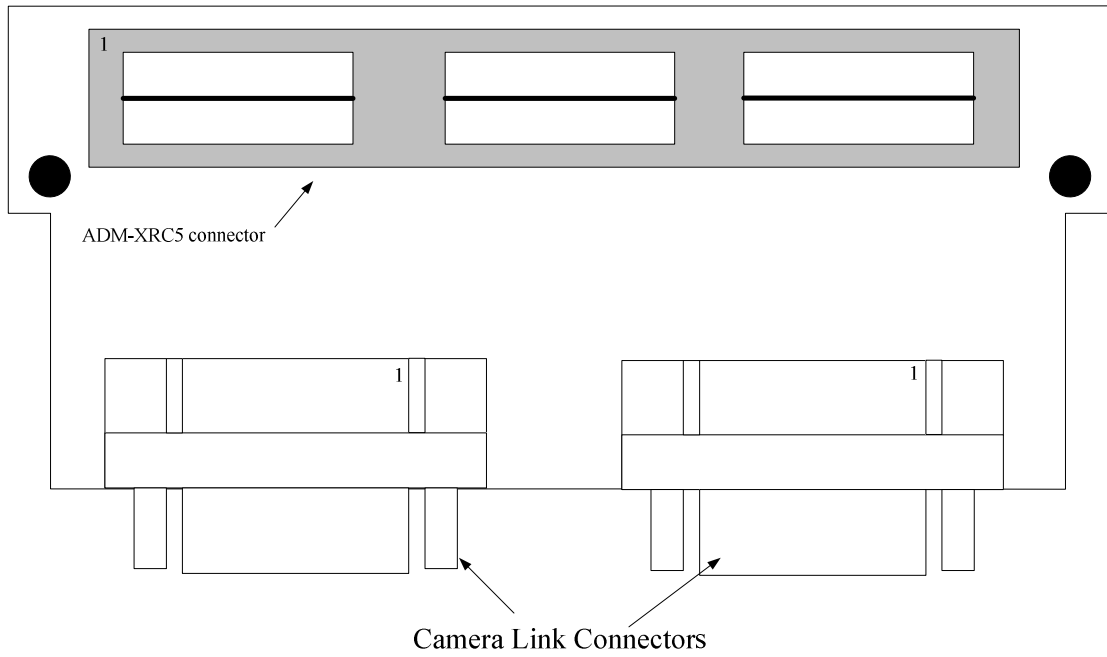
## 7. Pinout

Signal Name	XRC5T1	Samtec pin
clink_in<0>_dck_p<0>	AD10	38
clink_in<0>_dck_n<0>	AD11	40
clink_in<0>_d_p<0><0>	AB10	4
clink_in<0>_d_n<0><0>	AA10	2
clink_in<0>_d_p<0><1>	AM12	12
clink_in<0>_d_n<0><1>	AM11	10
clink_in<0>_d_p<0><2>	AL11	16
clink_in<0>_d_n<0><2>	AL10	14
clink_in<0>_d_p<0><3>	AJ9	24
clink_in<0>_d_n<0><3>	AJ10	22
clink_in<0>_ser_rx_p	AG10	30
clink_in<0>_ser_rx_n	AG11	32
clink_out<0>_ser_tx_p	AH9	26
clink_out<0>_ser_tx_n	AH10	28
clink_out<0>_cc_p<0>	AB6	36
clink_out<0>_cc_n<0>	AB7	34
clink_out<0>_cc_p<1>	AC4	35
clink_out<0>_cc_n<1>	AC5	33
clink_out<0>_cc_p<2>	AD4	67
clink_out<0>_cc_n<2>	AD5	65
clink_out<0>_cc_p<3>	AC7	64
clink_out<0>_cc_n<3>	AD7	62
clink_in<1>_dck_p<0>	AG5	89
clink_in<1>_dck_n<0>	AF5	91
clink_in<1>_d_p<0><0>	W6	72
clink_in<1>_d_n<0><0>	Y6	70
clink_in<1>_d_p<0><1>	W10	80
clink_in<1>_d_n<0><1>	W9	78
clink_in<1>_d_p<0><2>	V10	88
clink_in<1>_d_n<0><2>	V9	86
clink_in<1>_d_p<0><3>	F9	100
clink_in<1>_d_n<0><3>	F8	98
clink_in<1>_ser_rx_p	F11	140
clink_in<1>_ser_rx_n	E11	138
clink_out<1>_ser_tx_p	E9	101
clink_out<1>_ser_tx_n	E8	103
clink_out<1>_cc_p<0>	E12	144
clink_out<1>_cc_n<0>	E13	142
clink_out<1>_cc_p<1>	F13	152
clink_out<1>_cc_n<1>	G13	150
clink_out<1>_cc_p<2>	T8	102
clink_out<1>_cc_n<2>	U7	104
clink_out<1>_cc_p<3>	K7	160
clink_out<1>_cc_n<3>	K6	158
clinkLeds_out<0>	AE7	75
clinkLeds_out<1>	AJ6	81
clinkLeds_out<2>	AF6	73
clinkLeds_out<3>	AJ7	83

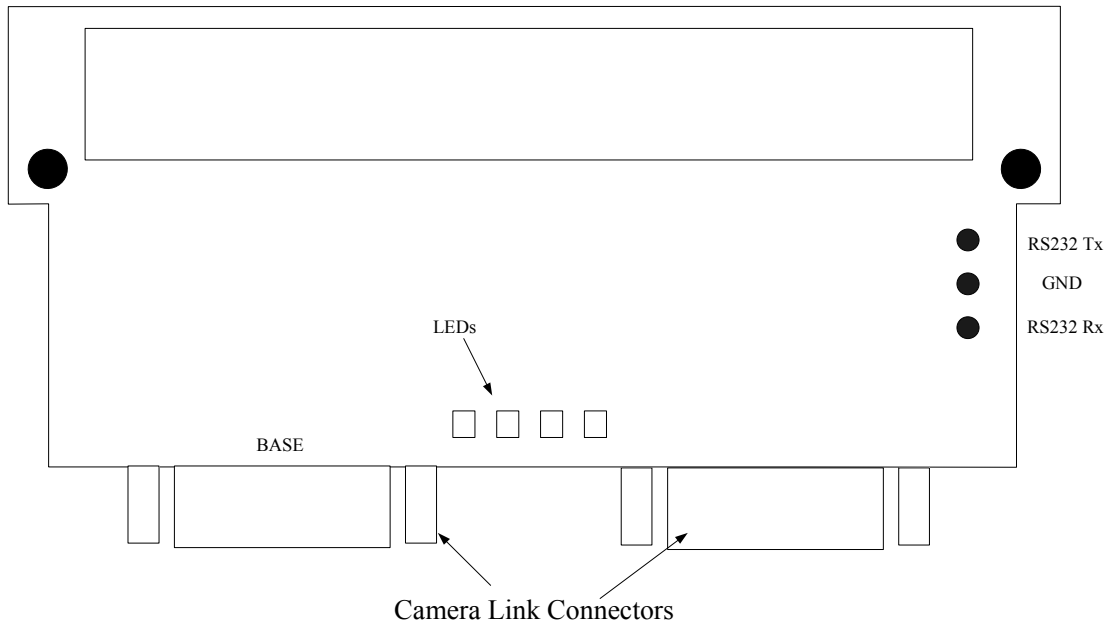
a_vdat_inout<0>	V7	76
a_vdat_inout<1>	AA6	68
a_vdat_inout<2>	Y7	66
a_vdat_inout<3>	AE6	69
a_vdat_inout<4>	AB5	61
a_vdat_inout<5>	W7	74
a_vdat_inout<6>	Y11	77
a_vdat_inout<7>	AD6	71
a_vdat_inout<8>	AA5	63
a_vdat_inout<9>	AK8	23
a_vdat_inout<10>	AK9	21
a_vdat_inout<11>	AB8	9
a_dack_l_out<0>	AC9	13
a_dack_l_out<1>	AJ11	20
a_irq_l_in	AA8	6
a_dreq_l_in<0>	AE11	25
a_dreq_l_in<1>	AM13	5
b_vdat_inout<0>	R8	165
b_vdat_inout<1>	P7	159
b_vdat_inout<2>	T6	163
b_vdat_inout<3>	R7	167
b_vdat_inout<4>	R6	161
b_vdat_inout<5>	P6	157
b_vdat_inout<6>	H5	171
b_vdat_inout<7>	G5	169
b_vdat_inout<8>	J10	135
b_vdat_inout<9>	T11	173
b_vdat_inout<10>	T10	175
b_vdat_inout<11>	K11	127
b_dack_l_out<0>	T9	179
b_dack_l_out<1>	M10	141
b_irq_l_in	L9	143
b_dreq_l_in<0>	U10	177
b_dreq_l_in<1>	G12	139
field_inout	V8	82
hsync_inout	AF9	93
vsync_inout	Y8	95
adv_hdata_inout<0>	B13	136
adv_hdata_inout<1>	N8	146
adv_hdata_inout<2>	E6	180
adv_hdata_inout<3>	J9	133
adv_hdata_inout<4>	E7	178
adv_hdata_inout<5>	G6	176
adv_hdata_inout<6>	H9	131
adv_hdata_inout<7>	G7	174
adv_hdata_inout<8>	F5	172
adv_hdata_inout<9>	A13	130
adv_hdata_inout<10>	F6	170
adv_hdata_inout<11>	H7	168
adv_hdata_inout<12>	B12	132
adv_hdata_inout<13>	J7	166
adv_hdata_inout<14>	J6	164
adv_hdata_inout<15>	C12	128

adv_hdata_inout<16>	D12	126
adv_hdata_inout<17>	H8	124
adv_hdata_inout<18>	N5	156
adv_hdata_inout<19>	H10	129
adv_hdata_inout<20>	C13	134
adv_hdata_inout<21>	J5	162
adv_hdata_inout<22>	N7	148
adv_hdata_inout<23>	G10	123
adv_hdata_inout<24>	G11	137
adv_hdata_inout<25>	G8	122
adv_hdata_inout<26>	P5	154
adv_hdata_inout<27>	J11	125
adv_hdata_inout<28>	H19	107
adv_hdata_inout<29>	H20	106
adv_hdata_inout<30>	R11	105
adv_hdata_inout<31>	L4	96
adv_mclk_out	K8	97
adv_vclk_out	K9	99
adv_addr_out<0>	AH7	90
adv_addr_out<1>	AK7	87
adv_addr_out<2>	AK6	85
adv_addr_out<3>	D11	92
adv_cs_l_out<0>	AF11	27
adv_cs_l_out<1>	M5	151
adv_rd_l_out<0>	AH8	29
adv_rd_l_out<1>	N10	147
adv_we_l_out<0>	AA9	8
adv_we_l_out<1>	N9	145
adv_ack_l_in<0>	AG8	31
adv_ack_l_in<1>	M6	149
jpeg_reset_l_out	M8	94
scom4a_in	AK11	18
scom4b_in	F10	121
scom5_out	U8	84
rs232_invalid	AN14	3
rs232_ready	AP14	1
rs232_tx	AN13	7
rs232_rx	AC8	11
rs232_force	AC10	15

### 7.1. Board Layout



Bottom View



### Revision History

Date	Revision	Nature of Change
August-2008	1.0	Preliminary issue