

# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20171127-E214100  
**Report Reference** E214100-20110305  
**Issue Date** 2017-NOVEMBER-27


**Issued to:** ANALOG DEVICES INC  
804 WOBURN ST  
WILMINGTON MA 01887-3494

**This is to certify that representative samples of** COMPONENT - NONOPTICAL ISOLATING DEVICES  
See Addendum Page

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

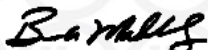
**Standard(s) for Safety:** UL 1577, Optical Isolators  
**Additional Information:** See the UL Online Certifications Directory at [www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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# CERTIFICATE OF COMPLIANCE

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**Report Reference** E214100-20110305  
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This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Single Protection Non-Optical Isolator,  
Models ADuM148xARSZ, ADuM148xBRSZ, ADuM148xCRSZ, ADuM228x, ADuM347x,  
ADuM347xARWZ, ADuM347xCRWZ, ADuM348x, ADuM447x, ADuM521x, ADuM621x, ADuM764x,  
ADuM3070, ADuM3220, ADuM3221, ADuM3223, ADuM4070, ADuM4223, ADuM5010, ADuM6010,  
ADuM541x, ADuM641x, ADuM7440xRQZ, ADuM7441xRQZ, ADuM7442xRQZ, ADuM7640,  
ADuM7641, ADuM7642, ADuM7643 where "x" in the model number may be any alpha/numeric  
designation. All models may have additional suffixes.



Bruce Mahrenholz, Director North American Certification Program

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File E214100  
Project 10CA22556

March 5, 2011

REPORT

On

COMPONENT - NON-OPTICAL ISOLATING DEVICES

ANALOG DEVICES INC  
Wilmington ma 01887

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## DESCRIPTION

## PRODUCT COVERED:

USR - Single Protection Non-Optical Isolator, Models ADuM148xARSZ, ADuM148xBRSZ, ADuM148xCRSZ, ADuM228x, ADuM347x, ADuM347xARWZ, ADuM347xCRWZ, ADuM348x, ADuM447x, ADuM521x, ADuM621x, ADuM764x, ADuM3070, ADuM3220, ADuM3221, ADuM3223, ADuM4070, ADuM4223, ADuM5010, ADuM6010, ADuM541x, ADuM641x, **ADuM7440xRQZ**, **ADuM7441xRQZ**, **ADuM7442xRQZ**, **ADuM7640**, **ADuM7641**, **ADuM7642**, **ADuM7643** where "x" in the model number may be any alpha/numeric designation. All models may have additional suffixes.

## ELECTRICAL RATINGS (at 25°C ambient) (\$):

Model	Current (mA)		Power (mW)		Isolation Voltage (AC)	Max Operating Temp (T <sub>moa</sub> ) (°C)	Max Junction Temp (T <sub>j</sub> ) (°C)	Max Storage Temp (T <sub>s</sub> ) (°C)
	Encoder	Decoder	Encoder	Decoder				
AduM148xARSZ	5.5	1.6	27	8	2500	105	150	150
BRSZ	5.8	5.4	29	27	2500	105	150	150
CRSZ	25.4	7.3	127	36.5	2500	105	150	150
ADuM228x	12	17	84	119 @100Mbps	5000	125	150	150
ADuM348x	3	14	21	98 @25Mbps	3750	125	150	150
ADuM447x	8.75	11	61	77 @25Mbps	5000	105	150	150
ADuM521x (power)	104	3.6	728	25	2500	105	150	150
ADuM521x (data)	20	20	100	100 @100Mbps	2500	105	150	150
ADuM621x (power)	104	3.6	728	25	3750	105	150	150

Model	Current (mA)		Power (mW)		Isolation Voltage (AC)	Max Operating Temp (T <sub>moa</sub> ) (°C)	Max Junction Temp (T <sub>j</sub> ) (°C)	Max Storage Temp (T <sub>s</sub> ) (°C)
	Encoder	Decoder	Encoder	Decoder				
ADuM621x (data)	20	20	100	100 @100Mbps	3750	105	150	150
ADuM541x (power)	104	3.6	728	25	2500	105	150	150
ADuM541x (data)	11.8	11	59 @100Mbps	55 @100Mbps	2500	105	150	150
ADuM641x (power)	104	3.6	728	25	3750	105	150	150
ADuM641x (data)	11.8	11	59 @100Mbps	55 @100Mbps	3750	105	150	150

Model	Current (mA)		Power (mW)		Isolation Voltage (AC)	Max Operating Temp (T <sub>moa</sub> ) (°C)	Max Junction Temp (T <sub>j</sub> ) (°C)	Max Storage Temp (T <sub>s</sub> ) (°C)
	Encoder	Decoder	Encoder	Decoder				
ADuM764x	<b>28</b>	<b>22</b>	<b>140</b>	<b>110 @25Mbps</b>	1000	105	150	150
<b>ADuM7440xRQZ</b>	<b>28</b>	<b>6</b>	<b>140</b>	<b>30 @25Mbps</b>	<b>1000</b>	<b>105</b>	<b>150</b>	<b>150</b>
<b>ADuM7441xRQZ</b>	<b>18</b>	<b>8.5</b>	<b>90</b>	<b>42 @25Mbps</b>	<b>1000</b>	<b>105</b>	<b>150</b>	<b>150</b>
<b>ADuM7442xRQZ</b>	<b>15</b>	<b>12</b>	<b>60</b>	<b>60 @25Mbps</b>	<b>1000</b>	<b>105</b>	<b>150</b>	<b>150</b>
<b>ADuM7640</b>	<b>44</b>	<b>11</b>	<b>220</b>	<b>55 @25Mbps</b>	<b>1000</b>	<b>105</b>	<b>150</b>	<b>150</b>
<b>ADuM7641</b>	<b>38</b>	<b>15</b>	<b>190</b>	<b>60 @25Mbps</b>	<b>1000</b>	<b>105</b>	<b>150</b>	<b>150</b>
<b>ADuM7642</b>	<b>31</b>	<b>19</b>	<b>155</b>	<b>95 @25Mbps</b>	<b>1000</b>	<b>105</b>	<b>150</b>	<b>150</b>
<b>ADuM7643</b>	<b>24</b>	<b>22</b>	<b>120</b>	<b>110 @25Mbps</b>	<b>1000</b>	<b>105</b>	<b>150</b>	<b>150</b>
ADuM347x (Power)	570	4	489	20	2500	105	150	150
ARWZ	0.9	11	5	9 @ 1Mbps	5000	105	150	150
CRWZ	6	12	30	16 @ 25Mbps	5000	105	150	150
ADuM3070 CTRL	3	84	21	60	2500	125	150	150
(switches)	1400	84	980	60	2500	125	150	150
ADuM3220	1.7	17	8.5	306 @ 2Mbps	2500	105	150	150
ADuM3221	1.7	17	8.5	306	2500	105	150	150

\*

Model	Current (mA)		Power (mW)		Isolation Voltage (AC)	Max Operating Temp (T <sub>moa</sub> ) (°C)	Max Junction Temp (T <sub>j</sub> ) (°C)	Max Storage Temp (T <sub>s</sub> ) (°C)
	Encoder	Decoder	Encoder	Decoder				
ADuM3223	3	84	21 @ 1.7Mbps	1680 @ 1.7Mbps	3000	125	150	150
ADuM4070	5	8.5	35	60	5000	105	150	150
ADuM4223	3	84	21 @ 1.7Mbps	1680 @ 1.7Mbps	5000	125	150	150
ADuM5010	104	3.6	728	25	2500	105	150	150
ADuM6010	104	3.6	728	25	3750	105	150	150

(§) - For ambient temperatures higher than 25°C and up to T<sub>moa</sub>, refer to manufacturer's specifications and/or thermal derating curve data for complete electrical ratings.

## GENERAL:

These devices are non-optical isolators consisting of an encoder and decoder. The encoder and decoder are separated by a transformer. Internal "chips" are connected to lead frames that are molded into the enclosure.

## ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

\* USR indicates this product was investigated under the UL Standard for Safety for Optical Isolators, UL **1577, Fifth Edition**.

CNR indicates this product was investigated under the Canadian Certification Notice, CSA Component Acceptance Service No. 5A.

CONDITIONS OF ACCEPTABILITY - Each device shall be reviewed with respect to the following conditions of acceptability:

1. The capability of the device to control a load has not been investigated.
2. These devices should be installed in a suitable end product enclosure.
3. If the maximum operating (ambient) temperature exceeds the rating noted in the ratings table, additional means should be used to determine if the maximum junction temperature of the device is exceeded.
4. For single protection devices, the insulation to the case has not been evaluated. For double protection devices, the insulation to the case has been evaluated to the isolation voltage specified in the ratings table.

## CONSTRUCTION DETAILS:

General - The product shall be constructed in accordance with the following description. All dimensions are approximate, unless specified as "max" or "min".