

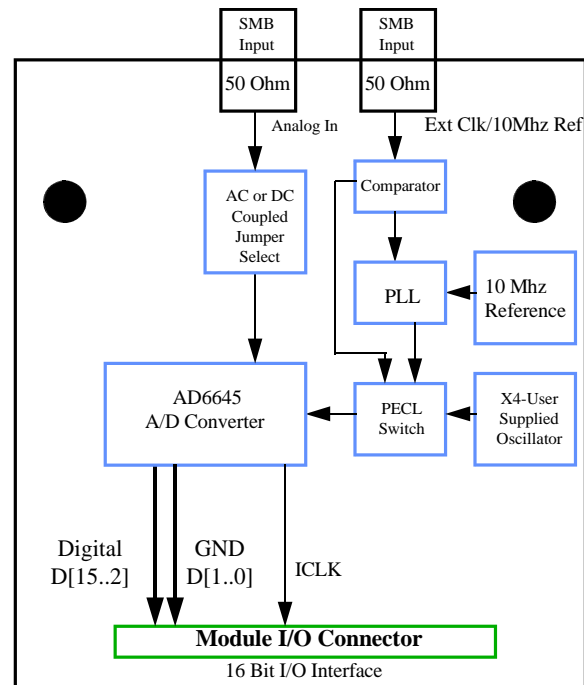
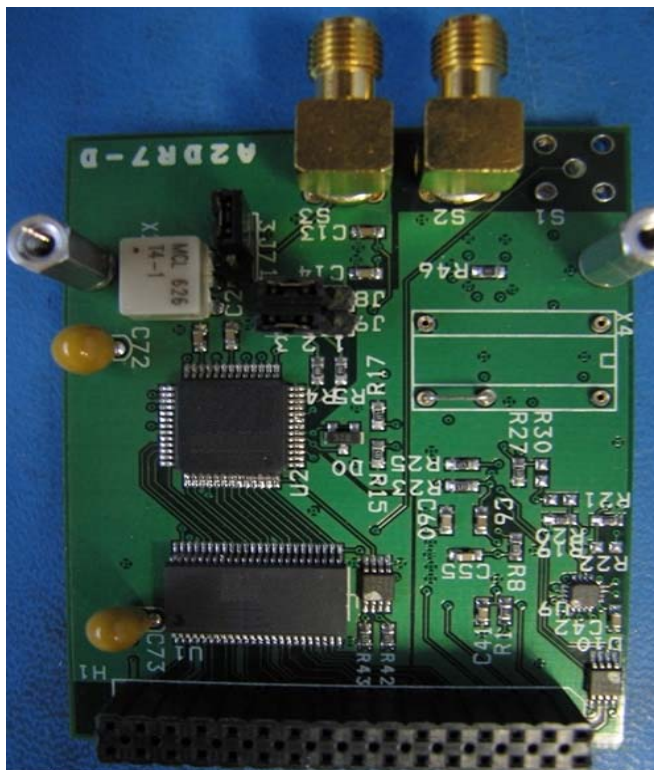
## 14 Bit A/D Converter rumel, Inc. GIGEXD Input Module

### Features

- Uses Analog Devices AD6645 A/D Converter
- 14-bit resolution
- Up to 100 MSPS
- 1V p-p, AC or DC coupled input, jumper selectable
- Multiple Clock Sources
  1. Direct External Clock Drive Using 1Vp-p Input Signal
  2. User Supplied On Board 14 Pin Socketed Oscillator
  3. PLL Clock From External 10Mhz Reference
  4. PLL Clock From On-Board 10MHz Reference

### Applications

Multichannel, multimode receivers  
 Base station infrastructure  
 AMPS, IS-136, CDMA, GSM, WCDMA  
 Single channel digital receivers  
 Antenna array processing  
 Communications instrumentation  
 Radar, infrared imaging  
 Instrumentation



**A2DR7-D**

Component Side View

## Product Description

The rumel A2DR7-D is a 14-bit A/D module that is a variant of the A2DR7 I/O module used with ICEPIC3 and ICEPIC4 PCI cards. The features for the A2DR7-D include multiple A/D clock options, and a jumper selectable AC or DC coupled analog front end.

The A/D clocking options include the use of a high speed, low jitter clock synthesizer that can generate A/D sampling frequencies from either external or on-board 10MHz references. Two other clocking options allow for the use of a user supplied oscillator or a direct clocking option from a user supplied external clock (sinewave) signal. All 4 clock options are user selectable via software configuration.

The A/D front end can be configured for AC or DC coupled operation. AC coupled input provides for an analog input bandwidth of 270MHz. DC coupled mode allows for 180MHz bandwidth. Three jumpers manually select between AC or DC coupled operation. When delivered, the A2DR7-D module is configured for AC coupled input.

## DC Electrical Specifications

Parameter	Minimum	Typical	Maximum	Units
Power Supply				
Supply Voltages				
AVcc	4.75	5.0	5.25	V
DVcc	3.0	3.3	3.6	V
Supply Current				
I AVcc (AVcc=5V)	300	325	350	mA
I DVcc (DVcc=3.3V)	100	125	150	mA
Output logic level 0	0		0.8	V
Output logic level 1	DVcc-0.8		DVcc	V

## AC Electrical Specifications

		Typical		
Analog input		1V p-p		
External clock input		AC coupled 1V p-p		
Analog input impedance		50		Ohms
Analog input bandwidth (AC Coupled)	0.300		270	MHz
Analog input bandwidth (DC Coupled)	DC		180	MHz
Sample clock	30		105	MHz

Notes:

1. Operation below 30 MSPS is possible, with degraded performance

## Absolute Maximum Ratings

Parameter	Value	Units	Conditions
Electrical			
AVcc	0 to 7	V	
Dvcc	0 to 7	V	
PPS input	0 to 7	V	
External clock input	0 to 7	V	
Analog input voltage	0 to AVcc	V	When DC coupled
Analog input current	25	mA	When DC coupled
Analog input power	26	dBm	When AC coupled
Environmental			
Operating Temperature	-10 to +65	Degrees C	
Storage Temperature	-40 to +85	Degrees C	

Note: Operation of this module beyond any of these parameters may cause permanent damage. Exposure to absolute maximum ratings for extended periods may affect module reliability.

## Jumper Settings

Jumper(s)	Configurable Item	Settings
J7,J8,J9	Analog input coupling	J7,J8,J9 1&2 Short – DC coupled J7,J8,J9 2&3 Short – AC coupled (default)

### Notes:

1. On-board oscillator (X4), 3.3V CMOS output.

Examples:

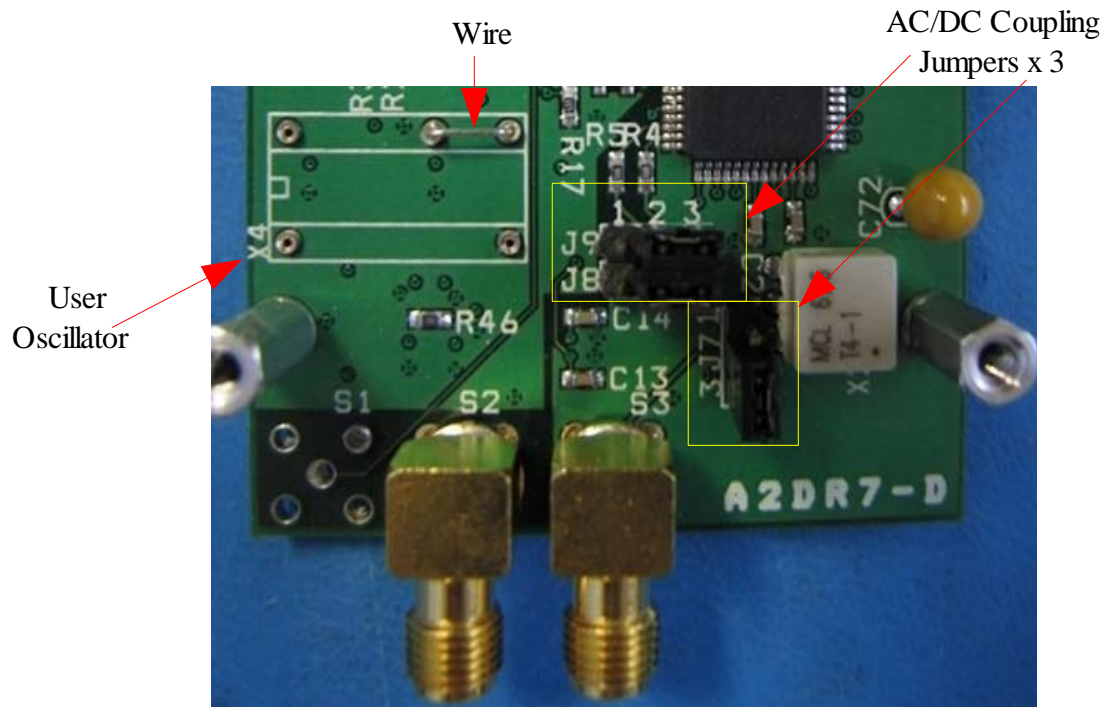
Digi-Key PN: ECS-P143-B-ND

Fox Electronics ([www.foxonline.com](http://www.foxonline.com)) Model F8C-2E3LF, PN: 567-Frequency

**NOTE-REMOVE WIRE JUMPER FOR OSCILLATOR PLACEMENT**

**REPLACE WIRE FOR USE OF ON-BOARD 10MHz Ref WITH CLOCK SYNTHESIZER**

2. DC coupling should be used for sample rates below 2MSPS.



### PCB Connectors

SMA Connectors : Johnson Components P/N: 142-0701-301 Digi-Key P/N: J501-ND (S2, S3 Pictured Above)

### Mating Connectors

SMA Connectors: Johnson Components P/N: 142-0694-011 Digi-Key P/N: J485-ND (Cable End)

