



## Product Description

The rumel A2DR9-D is a 12-bit A/D module with a sampling rate up to 200MHz. The features for the A2DR9-D include multiple A/D clock options, and a variable gain 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 variable gain front end is software configurable for 0 to 20dB of gain. An anti-aliasing filter stage between the VGA and A/D provides for an analog bandwidth of 200Mhz, a 6dB "roll off" occurs at 300MHz bandwidth. The A2DR9-D was specifically designed to interface directly to 70 and 140 MHz receivers.

## DC Electrical Specifications

Parameter	Minimum	Typical	Maximum	Units
Power Supply				
Supply Voltages				
Avcc-VGA	4.75	5.0	5.25	V
Avcc-A/D	1.7	1.8	1.9	V
DVcc	3.0	3.3	3.6	V
Supply Current				
I Avcc-VGA (AVcc-VGA=5V)	120	125	130	mA
I Avcc-A/D (Avcc-A/D=1.8V)	174	185	195	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	Maximum	
Analog input		750mV p-p	1500mV p-p	
External clock input		AC coupled 1V p-p		
Analog input impedance		50		Ohms
Analog input bandwidth (AC Coupled)	1		200	Mhz (2)
Sample clock	40		200	MHz

Notes:

1. Operation below 40 MSPS is possible with oversampling and front end decimation internal to the GIGEXD.
2. A 6dB loss occurs at 300Mhz.

## 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.

## User Oscillator Location

### Notes:

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

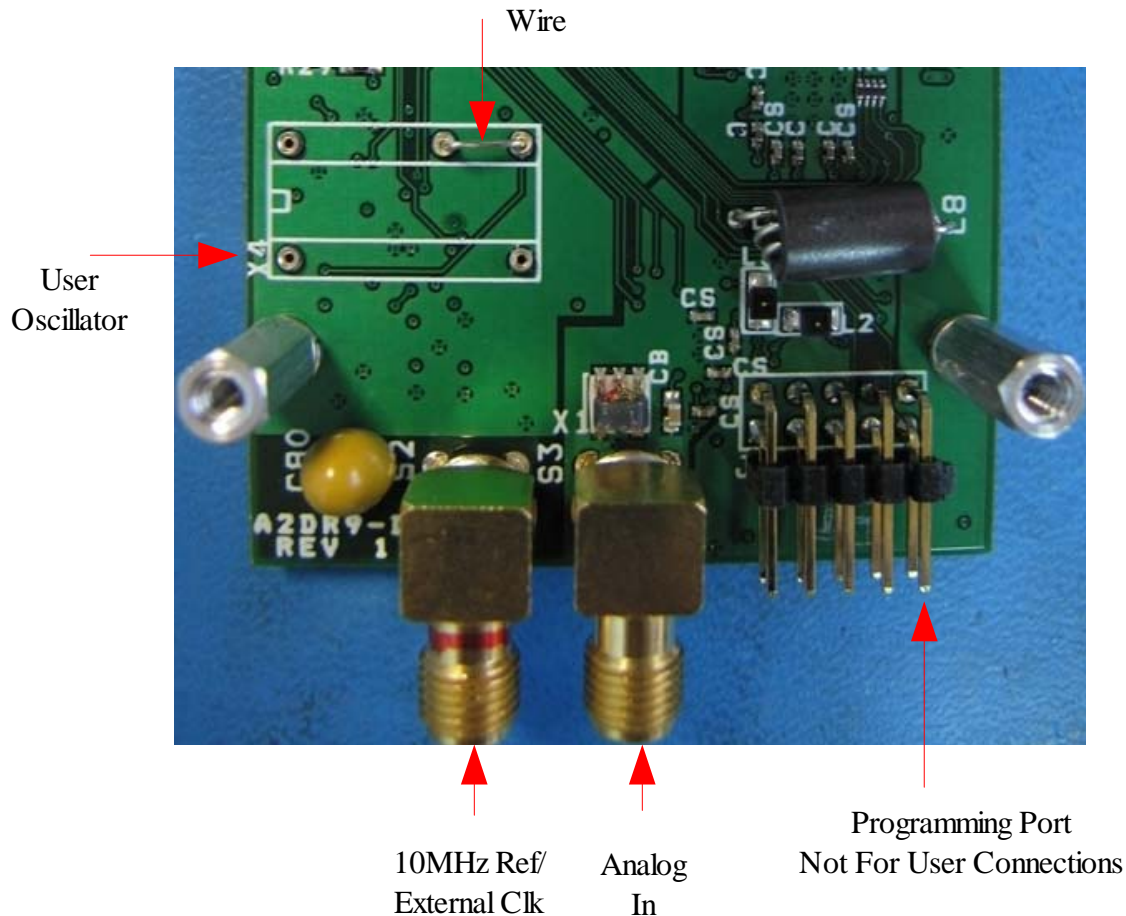
Examples:

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**



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)

