

# Software Defined Direct Digital Synthesizer

## Coherent DDS with Exact Frequency Output

### The AVS-1012

*Setting a new standard for digital frequency Synthesis.*

#### APPLICATIONS:

Coherent Local Oscillator

Radar Simulator

Frequency Hop Follower

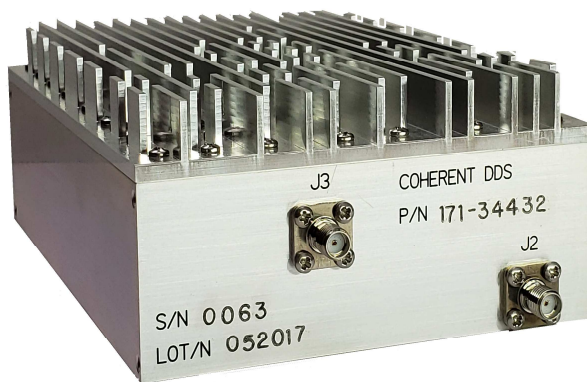
Microwave Synthesizers

Electronic Warfare

Electronic Countermeasures

Digital RF Memory

Waveform Generator



Avid Systems has designed the AVS-1012 to provide its customers with a Direct Digital Synthesizer that has the flexibility of an FPGA and the capability expected from a system using the most advanced digital signal processing techniques available.

The AVS-1012 is built using a modular hardware platform that includes an FPGA based DDS core, a separate RF output board and clocking module. This modular design approach allows Avid Systems to provide a DDS solution that matches the customer's requirements of output frequency range, output power and input clock rate.

The flexibility of an FPGA based "software defined" DDS allows Avid Systems to change the functionality of the AVS-1012 to meet a wide range of synthesizer requirements using the same hardware platform. The AVS-1012 can be programmed to provide specific output frequency and step sizes, provide coherent or phase continuous operation, provide user defined frequency tables, as well as, user defined frequency input word formats.

The AVS-1012 is designed to be the single DDS platform that can be adapted to all of our customers' synthesizer needs.

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Signal Processing & Communications Systems



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## Features and Benefits



- Exact Frequency Operation From A Non-power of 2 Input Clock
- Worst Case Spurious -75 dBc nominal.
- Switching Speeds To Any Frequency 160 ns
- Superior Phase Noise
- Input Clock 100 MHz
- Maximum Internal Clock Speed 2800 MHz

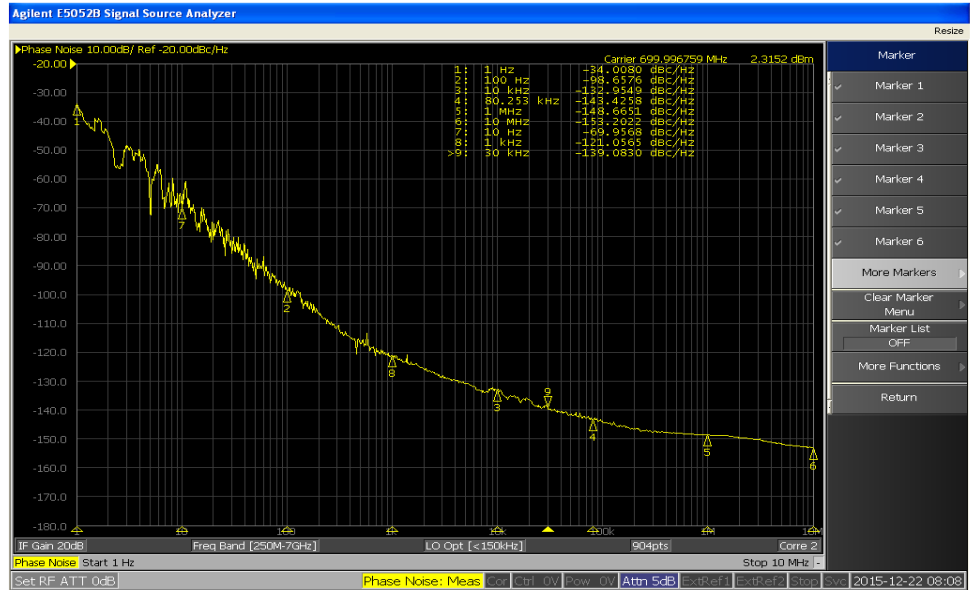
## Specifications

Frequency Range	610-910 MHz	Configurable to specs	Control and Power	50 Pin D Sub
Step Size	2.5 MHz	Configurable to specs	Connector	
Input Clock Rate	100 MHz	Configurable to specs	Power	-8 Volts @ 50 mA
Input Clock Power	10 dBm +/-3 dBm			+9 Volts @ 300 mA
Internal Clock Rate	2.5 GHz			+5 Volts @ 700mA
Maximum Internal Clock	2800 MHz		Phase Noise:	
Switching Speeds	160ns			-34 dBc @ 1Hz
Spurious Levels	-75 dBc nominal			-99 dBc @ 100 Hz
DDS Output Level	0 to +10 dBm			-133 @ 10 kHz
Dimensions	4" X 5.5" X 2"			-148 dBc @ 1MHz
DDS Output Connector	SMA			-153 dBc @ 10MHz
Clock Input Connector	SMA			

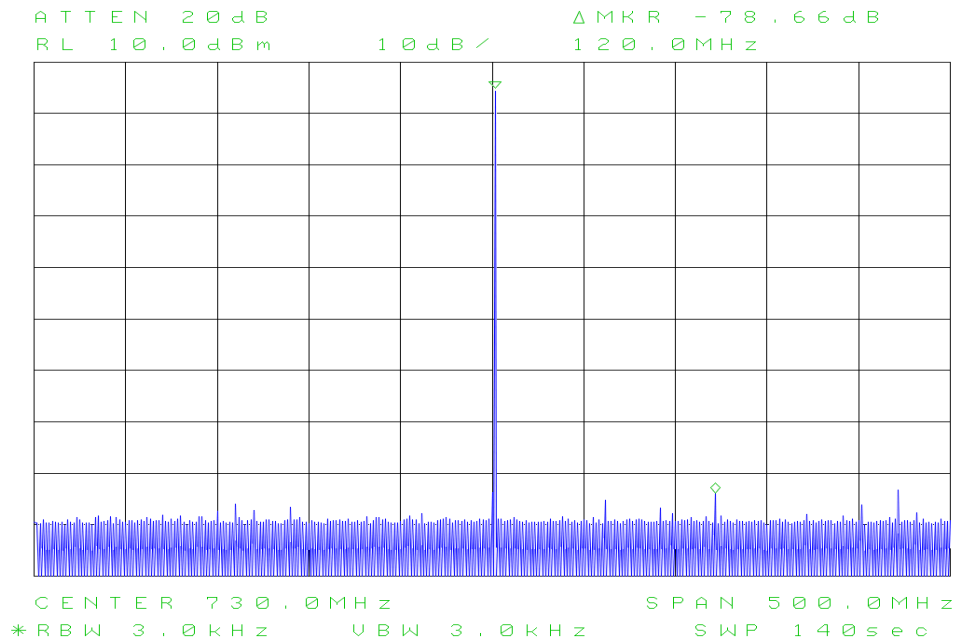
### Avid Systems, Inc

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# AVS-1012 Direct Digital Synthesizer



Phase Noise Plot 700 MHz Output



Spectral Plot @ 730 MHz +5 dBm Output Power

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