

DIRECT DIGITAL SYNTHESIZER



dimensions and connections

6.0" W x 5.9" L x 0.525" H

PIN CONNECTIONS

RF OUT SMA	J5
Reference Input SMA	J4
USB Connector	J3
Control Bit Output	J2
Parallel Data	J1
Input/Power Connector	

description

The DDS driver/controller is fast tuning direct digital synthesizer combine with a controller and latched output drivers. The DDS driver/controller accepts a 15-bit parallel frequency word and outputs a new DDS generated frequency along with user defined control bits in less then 800nSec. To achieve this high processing rate, the input frequency word is mapped in flash memory to the required outputs. A built in harmonic filter typically reduces harmonic spurs below -75dBc . The DDS driver/controller is an ideal signal source for direct and other wideband synthesizer applications.

typical specifications

RF Out Freq (MHz)	
Ref Osc (MHz)	External 300MHz
Freq Step Size (Hz)	0.0698
Pout (dBm over freq)	0.0 +/- 1.5
Spurious (dBc)	-60
Frequency Stability (ppm)	+/- 2.5
SSB Phase Noise	dBc/Hz
100 Hz offset	-100^1
Switching Speed (nSec)	800^2
Output Bits (user defined)	24

DC Power: +12.0V @ 500 mA maximum

absolute maximum ratings

Temp, Case Operating:	0 to 70°C
Temp, Storage:	-55 to 150°C
DC Volts:	+15.0V

features

- Programmable Output
 - Frequency Tuning Range 1kHz to 120MHz
 - Amplitude
 - Phase
- Modulations Supported
 - Frequency
 - Amplitude
 - Phase
 - Frequency Shift Keying
 - Phase Shift Keying
 - Amplitude Shift Keying

¹ Phase noise performance will be determined by the phase noise of the externally supplied reference oscillator.

² Switching speed measured from the rising edge of the frequency word latch pulse to the time that all outputs are stable at the new frequency. These measurements were made with an externally supplied 300MHz reference oscillator.