

# TK954 – DIGITALLY CONTROLLED CRYSTAL OSCILLATOR

## TECHNICAL FEATURE

### FEATURES

- Very Low Phase Noise
- High Resolution
- Superior Temperature Stability



### PERFORMANCE

Output frequency .....	70 MHz
Frequency deviation .....	+/- 140 KHz
Frequency control .....	16 bit binary word
Frequency increment.....	~4 Hz
Frequency change .....	<30s
Phase noise.....	1 KHz offset - 140 dBc/Hz
	.....10 KHz offset - 153 dBc/Hz
Total spurious power (Integrated).....	-84 dBc
Harmonic levels.....	-80 dBc min.
Output power.....	+9 dBm
Mechanical frequency adjustment... ..	± 5 ppm min.
Long Term Stability .....	± 1.5x10-6/yr
Operating Temperature Range....	-20° to +60° C

### DESCRIPTION

The digitally controlled oscillator (DCXO) provides variations in the output frequency without the degradation in frequency stability and phase noise is typical of a wide deviation voltage controlled oscillator.

The output frequency stability is a function of the internal reference signal. This highly stable reference is generated from a fixed frequency crystal oscillator in a temperature-controlled environment

A DDS frequency synthesizer chip generates the desired output frequency. A microprocessor is used to control the DDS chip and translate the digital command word to the appropriate output frequency.

The unit was designed for applications such as Doppler radar where a low phase noise stable reference is required.