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.

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