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Patent Number(s): US2012139586-A1; JP2012120178-A; CN102487280-A

Title: Frequency synthesizer i.e. millimeter wave/sub-terahertz frequency synthesizer, for use in e.g. electronic microwave device, has frequency selection unit selecting desired frequency range from mixer signal and outputting synthesizer signal

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Abstract: NOVELTY - The synthesizer has a reference signal source for providing a reference signal (40), and a frequency signal generation unit (24b) for generating a synthesized frequency output signal (42) at predetermined frequency. A mixing unit mixes the synthesized signal with a frequency tuning signal from a frequency tuning unit, and outputs a mixer signal. The frequency tuning unit comprises two frequency tuning sub-units for alternately providing the frequency tuning signals. A frequency selection unit selects desired frequency range from the mixer signal and outputs frequency synthesizer output signal.

USE - Frequency synthesizer i.e. millimeter wave/sub-terahertz frequency synthesizer, for use in an electronic microwave device. Uses include but are not limited to a radio receiver, a mobile telephone, a satellite receiver, a global positioning system (GPS) and radar.

ADVANTAGE - The synthesizer can generate ultra-broadband signals with fine frequency resolution, high linearity, high chirp rate and low phase noise by performing additional frequency multiplication. The synthesizer can continuously utilize different frequency bands the mixer signal with smooth transition and a high linearity during frequency sweep. The frequency selection unit filters, amplifies and multiplies the signal from the selected frequency band, so that continuous, linear, ultra-broadband frequency sweep in a desired frequency range can be realized.

DESCRIPTION DRAWING(S) - The drawing shows a block diagram a frequency signal generation unit a frequency synthesizer.

Frequency signal generation unit (24b)

Reference signal (40)

Synthesized frequency output signal (42)

Output unit (93)

Switches (94a, 94b)

Drawing:

Derwent Class Code(s): U23 (Oscillation and Modulation); W02 (Broadcasting, Radio and Line Transmission Systems)

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