Abstracts

A W-Band, Coherent, Pulse-Compression Radar Transceiver Using Linear Frequency Modulation

T. Kihm, M. Beebe, C. Brenneise and R.D. Weglein. "A W-Band, Coherent, Pulse-Compression Radar Transceiver Using Linear Frequency Modulation." 1981 MTT-S International Microwave Symposium Digest 81.1 (1981 [MWSYM]): 414-416.

A W-Band, solid state, coherent pulse-compression radar transceiver is described that has demonstrated 0.6m range resolution and 25 Hz doppler resolution. Passive pulse expansion and compression was implemented using two nearly identical microwave SAW filters with 0.47 GHz dispersive bandwidth and a time-bandwidth product of 220. Range (time) sidelobes of -18 dB were obtained in preliminary tests by taking advantage of the natural frequency-time slope inherent in the 94 GHz IMPATT oscillator with peak output power of +25 dBm.

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