

Statement of Work

Background

The Radio Frequency Technology Division (Div. 672), in accordance with the National Institute of Standards and Technology (NIST) is developing channel sounding instruments that characterize the radio propagation environment at millimeter-wave frequencies. The channel sounders utilize a battery operated mobile positioning system. All electronic components on the positioning system must be as small and lightweight as possible to maximize battery life.

Deliverable

Two (2) light-weight, compact, frequency-agile, continuous-wave 0.65 GHz to 10 GHz analog signal generators with low phase noise.

Objectives

NIST requires two light-weight, compact, frequency-agile, continuous-wave 0.65 GHz to 10 GHz analog signal generators with low phase noise. These signal generators are used to create timing signals that synchronize the transmitter and receiver sections of the channel sounders. The units must operate off of battery power and be controllable by SPI or USB interface.

Delivery

The contractor shall deliver no later than five (5) weeks after receipt of order.

Line Item 1: Microwave Frequency Synthesizer with USB & SPI Control Interface Electrical, Performance, and Physical Specifications

Parameter	Conditions	Min	Typ	Max	Units
Minimum Frequency of operation		n/a	10 MHz	650	MHz
Maximum Frequency of operation		10	10	n/a	GHz
Frequency resolution		n/a	0.01	0.1	Hz
Switching speed		n/a	100	200	uS
Maximum RF Output Power		+14	+15	n/a	dBm
Phase Noise at 10 GHz	at 10 kHz offset	n/a	-115	-110	dBc/Hz @ 10 GHz
Spurious		n/a	-70	-60	dBc
Battery Operation	nominal	+12	+12	+12	V
Physical dimensions	w x l x h	n/a	4x4x1	6x6x1	in
Weight		n/a	0.8	1.0	lb