

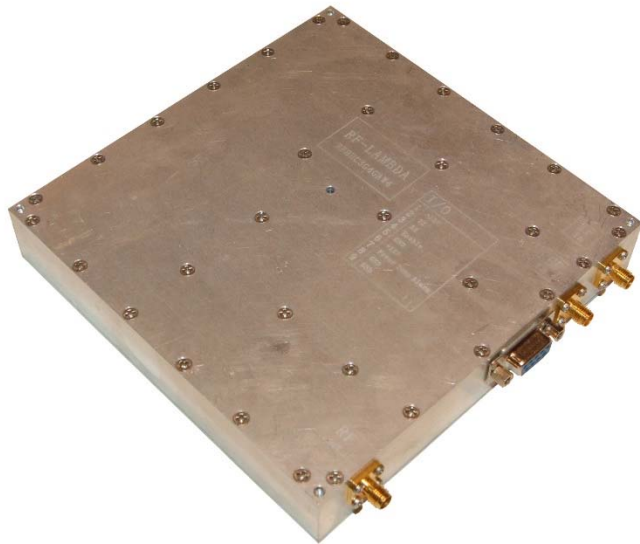


Flashing RF Hopping Synthesizer--- 0.625-10GHz

Fast Switching Speed Low Phase Noise Signal Source

Summary

RSYN01G10GA is a wide range tunable signal source. It uses the advanced VCO and DDS based phase lock technology to provide T&M instrument level of phase noise. The unit uses the internal temperature compensated crystal oscillator as the referenced signal of PLL. The unit can also be locked to an external 10MHz reference source. The output power will be calibrated and stabilized with good accuracy.



General Specification

- Output frequency: 0.625GHz~10.0GHz
- Output power range: -40dBm to 15dBm
- Frequency stability : +/- 0.5ppm
- Frequency tuning speed: <100us
- Tuning Step: 0.001Hz
- Phase Noise @10KHz offset -120dBc/Hz (10GHz)
- Control interface: USB USART and SPI
- Ideal for point to point radio station.
- Small package, high mobility.

Electrical Specifications

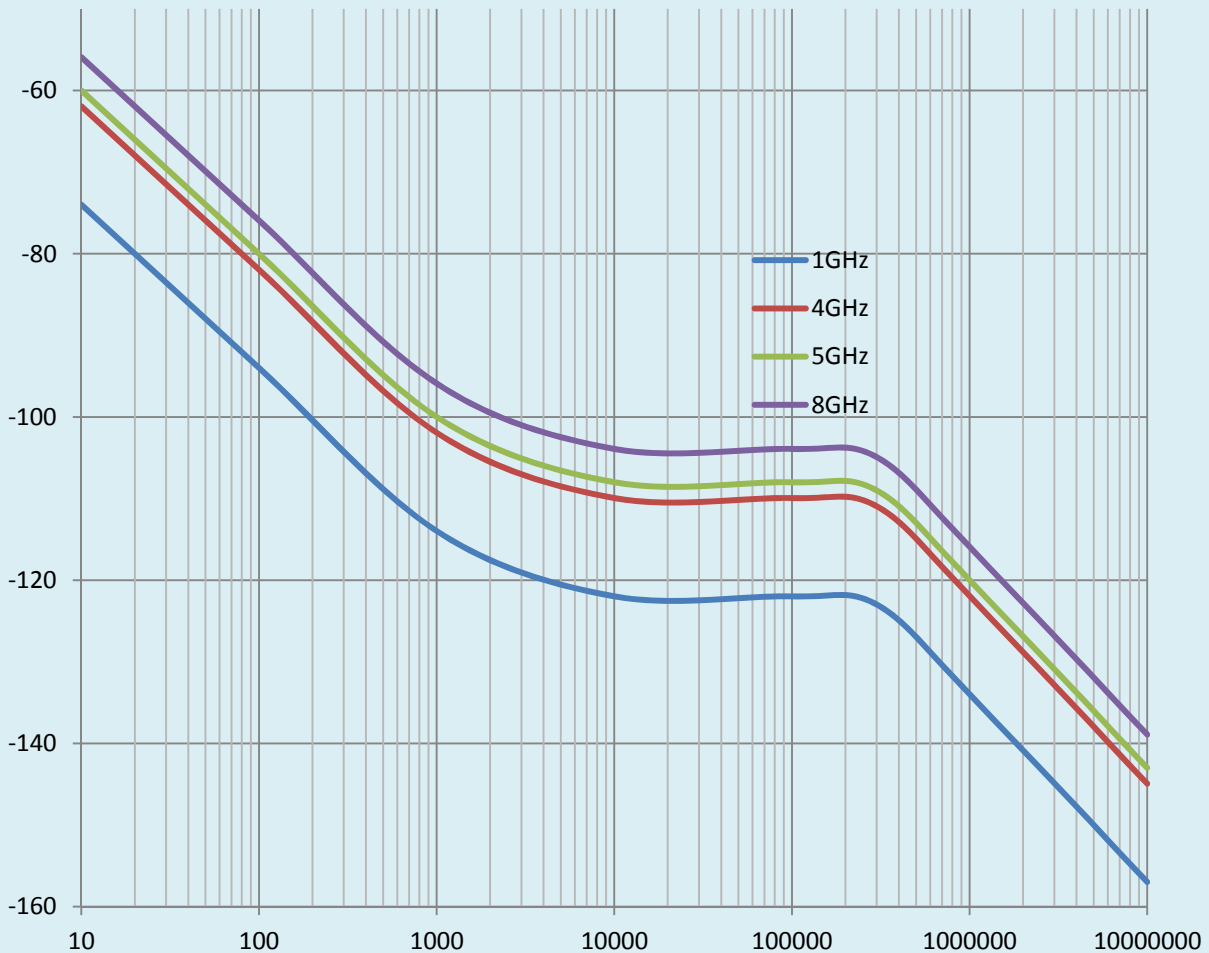
Frequency	0.625-10GHz	Output Power Range	-40~+15dBm
Frequency stability	+/-0.5ppm	Output Power Step	1dB
Frequency Aging	+/- 3ppm (10 years)	Output Power Linearity	+/- 0.5dB
Reference tuning range	+/-4.0ppm	Output Power Accuracy	+/- 1.5dB
Tuning Step	1MHz	SFDR 1MHz Tuning Step	70dBc
Phase Noise @ 8.0GHz	-101dBc/Hz (10KHz) -101dBc/Hz (100KHz) -120dBc/Hz (1MHz) -140dBc/Hz (10MHz)	2 nd Harmonic	-30dBc
DC Supply Voltage	12V	3 rd Harmonic	-35dBc
DC current (MAX)	2A	EXT Reference Power	-10dBm to 10dBm

Flashing Synthesizer--- 0.625-10GHz (Fast Speed Low Phase Noise)



Mechanical and Environmental Specifications			
Operation Temperature:	-40°C to 85°C base plate	Mechanical shock	30G, 11mSec half sin wave, 3 axis both directions
Vibration:	14.2g RMS (15-2000Hz) functional	Humidity	95% relative humidity, 65°C 96Hour
	16.2g RMS (15-2000Hz) endurance, 1 hour /axis	MTBF	50000 hour min
Connectors:	RF SMA-F / N-F Removable	Case:	Conductive no paint
	Supply RFI filter solder Pin (or 110V AC power plug)	Dimension Size (L x W x H):	4.92" x 3.35" x 0.63" (DC model) 7.87" X 4.72" X 1.00" (AC model)

Typical Phase Noise Plots

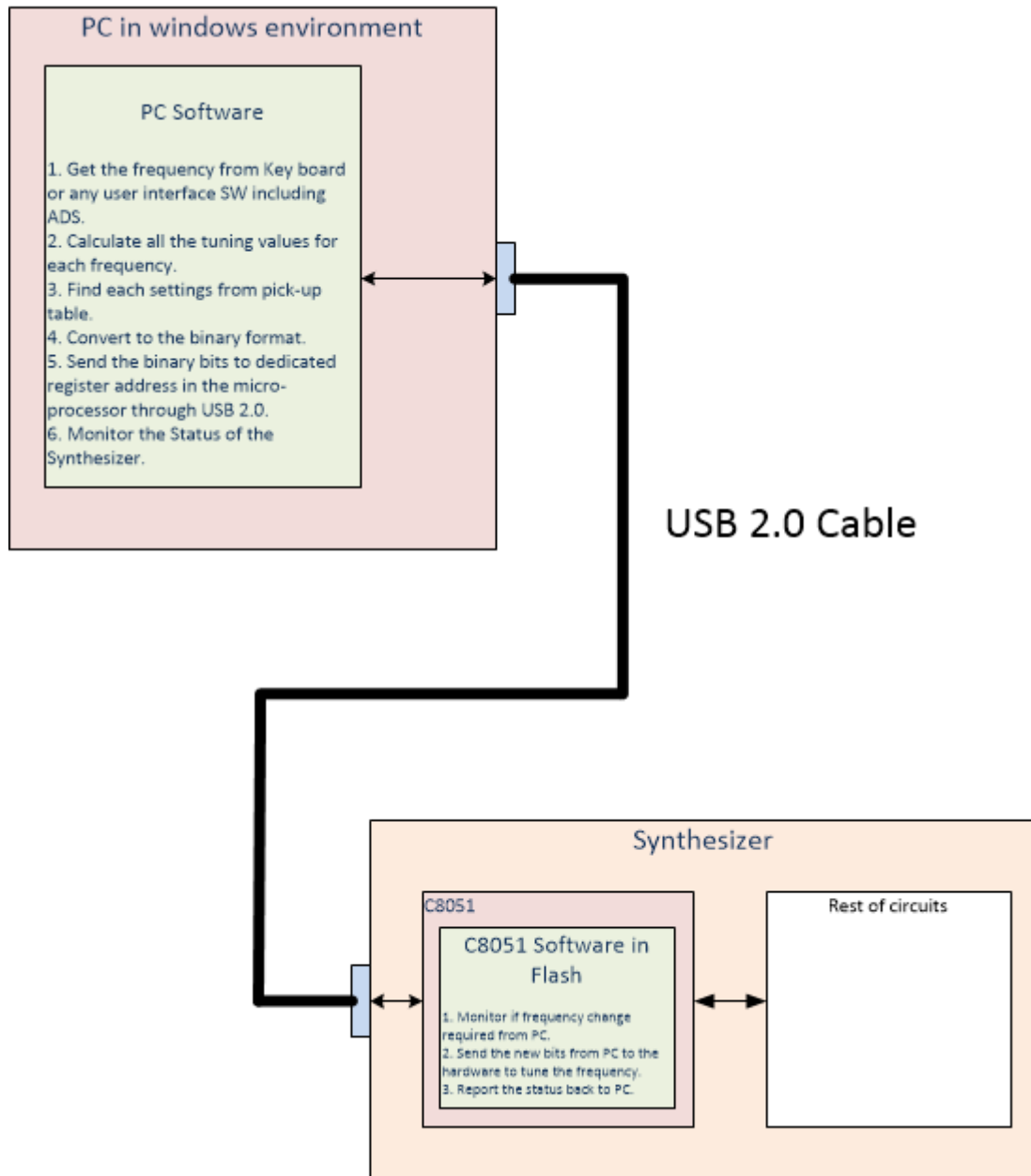




75MHz to 20GHz Synthesizer Software Architecture

1. Architecture

The PC will take command from user interface, calculate and generate all the tuning words and control words and send them to the micro processor through USB 2.0 connection.





2. The words and control bits generated from PC

- Tuning words for DDS (48 bits)
- Tuning word for two other PLLs (48 bits).
- Control bits for two dividers from look up table (16 bits).
- Control bits for 3 switches from lookup table (3 bits).
- Special channels from look up table for spur dodging .

3. Status monitoring

- Locking condition
- Temperature

4. Micro processor Software

- Micro processor is used to send the control words and bits from the PC to the hardware.
- Micro processor will report the status to the PC.

5. Alternative control scheme

- The calculated words and bits can be sent to the micro processor through standard or non-standard interfaces other than USB 2.0.
- For those requirements, both the existing hardware and software need to be modified.