

Broadband USB Controlled RF Synthesizer 18GHz - 40GHz



Note: Photo is for illustration purposes only.
Please refer to outline drawing.

Features

- TCXO Reference
- External Reference 10MHz.
- Low Phase Noise.
- USB 2.0 Interface

Product Description

RSYN18G40GA is a broadband USB controlled RF synthesizer with a frequency range of 18 to 40GHz.

The typical output power range of this radio frequency synthesizer is from -50dBm to +10dBm. The frequency stability is $\pm 0.5\text{ppm}$ using the onboard reference.

The RSYN18G40GA is an easy-to-use high frequency signal generator controlled through a standard USB port. Using advanced PLL based technology along with a temperature compensated crystal reference, it offers ultra-low phase noise and high frequency resolution.

Typical Applications

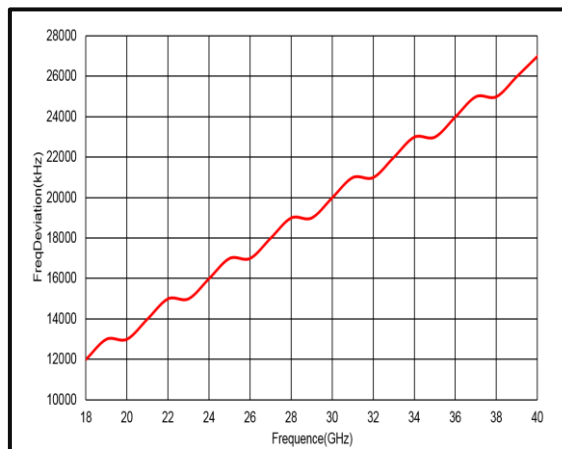
- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

Electrical Specifications (T_A=+25°C)

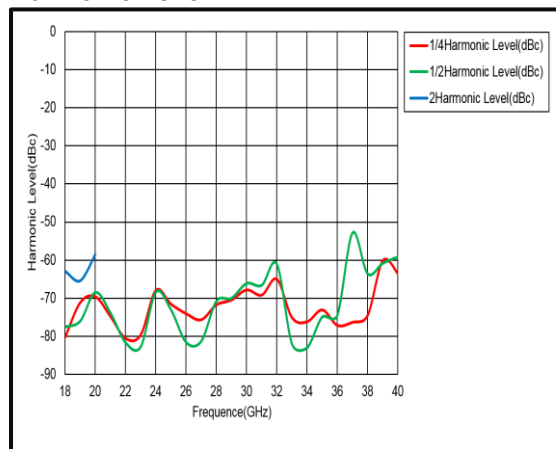
Parameter	Min	Typ	Max	Units
Frequency Range	18		40	GHz
Output Power	-50		+10	dBm
Frequency Stability		±0.5		ppm
Frequency Aging(10 years)		±3		ppm
Tuning Speed (Not including programming time)		2		ms
Tuning Step		1		MHz
Phase Noise@ 18GHz Typical		-80dBc/Hz(@10KHz)		
harmonics		-60		dBc
Spurious		-60		dBc
Power Supply Voltage		+28		V
Power Supply Current		300		mA
Control Interface		USB 2.0		
EXT Reference Input Level (10MHz)	-20		8	dBm
Weight		1		lbs
Input / Output Connectors		SMA-Female(Input)/2.92mm-Female(Output)		

Typical Performance Plots

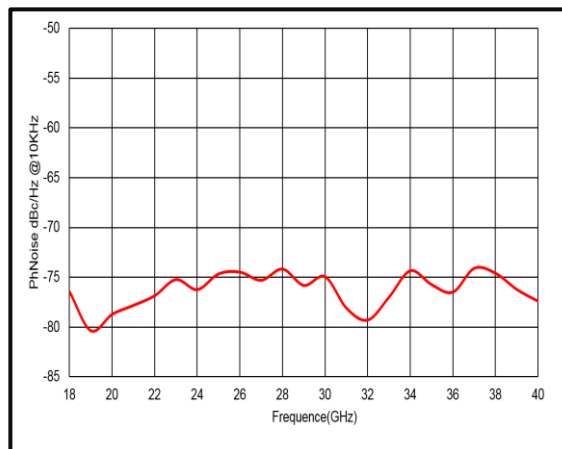
Freq Deviation



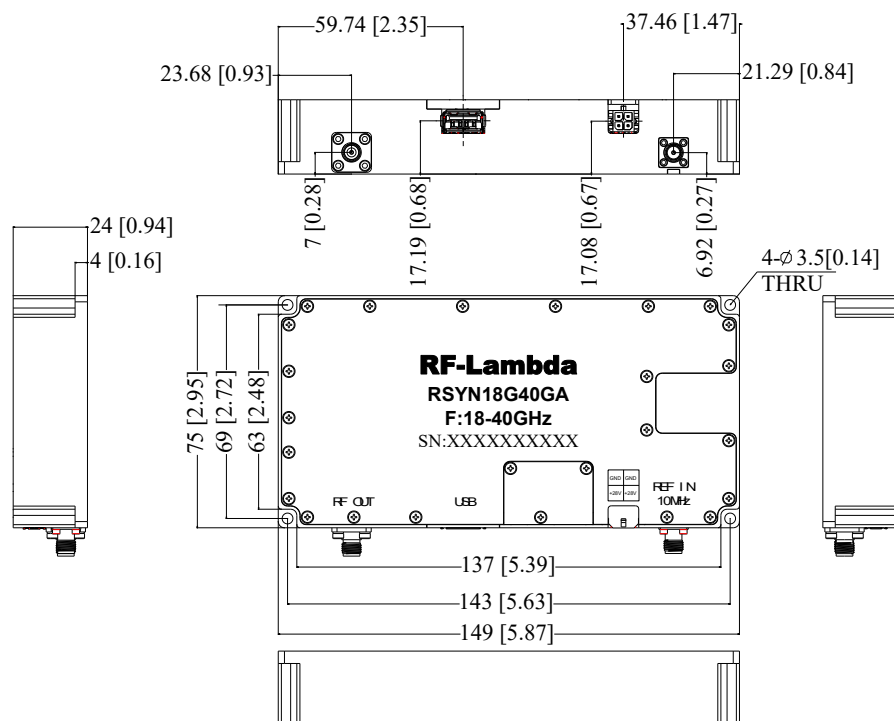
Harmonic Level



Phase Noise

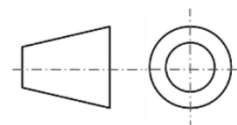


Outline Drawing



Notes:

1. Package Material: Aluminium or Copper
2. Finish: Nickel Plated
3. All dimensions are in millimeters [inches].
4. Housing Tolerances ± 0.2 [0.008] unless otherwise specified.
5. Standard torque wrench must be used to secure RF connectors.



Additional Information

Documentation

Webpage

ESD Policy

https://rflambda.com/pdf/rflambda_esd_control.pdf

Connector Torque Specifications

https://www.rflambda.com/pdf/Torque_Specifications.pdf

Random Vibration Test Standard

https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Ordering Information

Part Number	Modification	Description
RSYN18G40GA	Input connector SMA-Female and Output connector 2.92mm-Female	18GHz-40GHz Broadband USB Controlled RF Synthesizer

Amplifier Use

Ensure that the amplifier input and output ports are safely terminated into a proper 50 ohm load before turning on the power. Never operate the amplifier without a load. A proper 50 ohm load is defined as a load with impedance less than 1.9:1 or return loss larger than 10dB relative to 50 Ohm within the specified operating band width.

Power Supply Requirements

Power supply must be able to provide adequate current for the amplifier. Power supply should be able to provide 1.5 times the typical current or 1.2 times the maximum current (whichever is greater).

In most cases, RF - Lambda amplifiers will withstand severe mismatches without damage. However, operation with poor loads is discouraged. If prolonged operation with poor or unknown loads is expected, an external device such as an isolator or circulator should be used to protect the amplifier.

Ensure that the power is off when connecting or disconnecting the input or output of the amp.

Prevent overdriving the amplifier. Do not exceed the recommended input power level.

Adequate heat-sinking required for RF amplifier modules. Please inquire.

Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

Each RF - Lambda amplifier will go through power and temperature stress testing.

Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

Important Notice

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