



Features

- 50 MHz to 30 GHz synthesizer
- USB Type-C interface
- Low phase noise
- GUI and API control

Applications

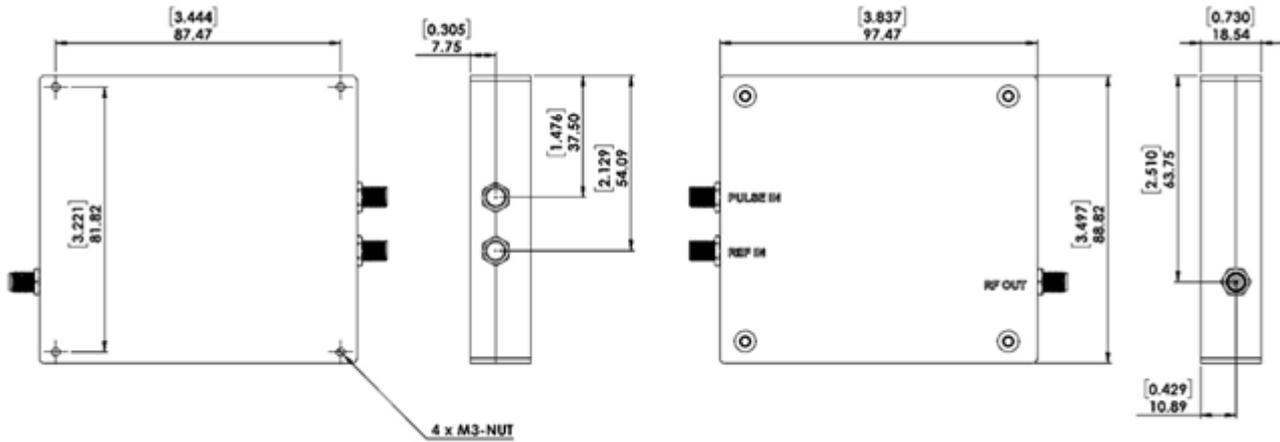
- Wireless infrastructure design
- Up-converting and down-converting
- Educational / university lab use
- Production verification and test setups
- Automated Test Equipment (ATE)
- General RF lab use
- Flexible and portable LO sourcing

Electrical Specifications

Parameter	Min	Typical	Max
Frequency Range	50 MHz		30 GHz
Frequency Resolution		1 Hz	
Frequency Stability ¹		± 0.5 ppm	

¹ Measured after 10 minutes of operation.

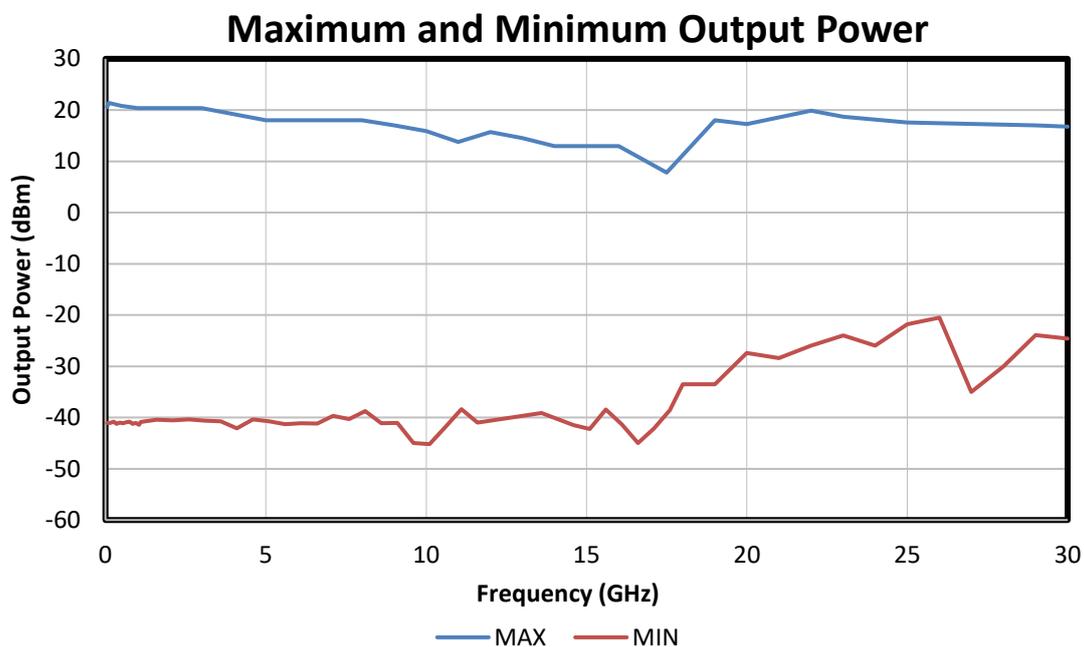
Outline Drawing



Output Power Level ²

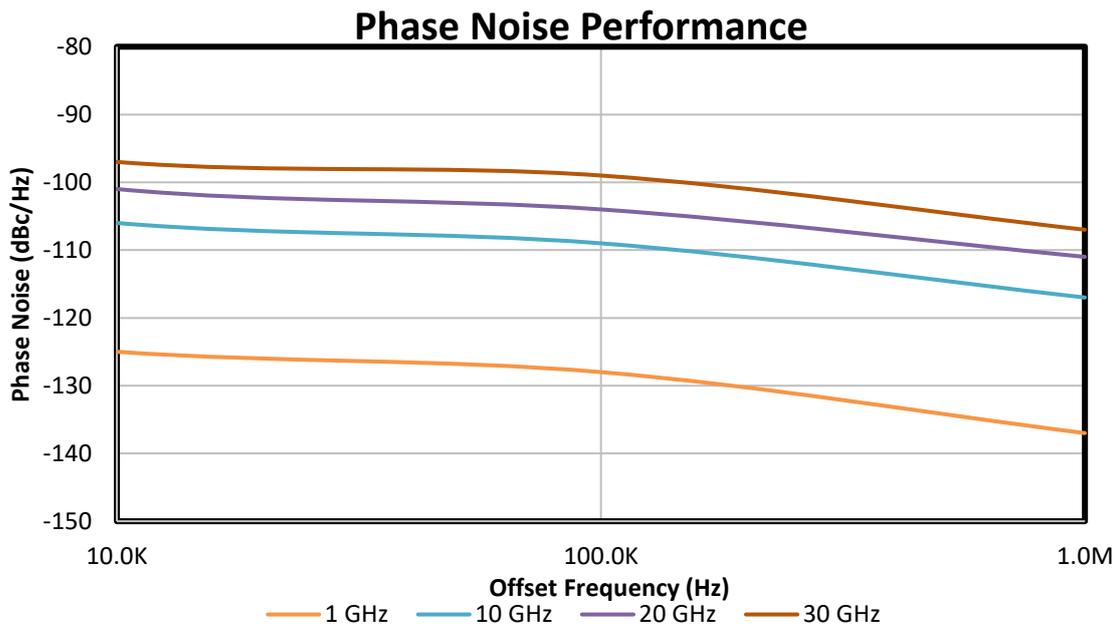
Parameter	Typical
RF Maximum Output Power	
50 MHz - 8 GHz	19 dBm
8 GHz - 13 GHz	15 dBm
13 GHz - 17 GHz	13 dBm
17 GHz - 30 GHz	16 dBm
RF Minimum Output Power	
50 MHz - 17 GHz	-40 dBm
17 GHz - 19 GHz	-30 dBm
19 GHz - 30 GHz	-20 dBm
RF Off Output Power	-80 dBm
RF Output Power Resolution	0.5 dB
RF Output Power Accuracy (Pout ≥ -20 dBm)	± 1.5 dBm

² Measured at room temperature and after 10 minutes of operation.



Phase Noise

Frequency	Typical
1 GHz Offset 10 kHz Offset 100 kHz Offset 1 MHz	-125 dBc/Hz -130 dBc/Hz -137 dBc/Hz
10 GHz Offset 10 kHz Offset 100 kHz Offset 1 MHz	-107 dBc/Hz -109 dBc/Hz -117 dBc/Hz
20 GHz Offset 10 kHz Offset 100 kHz Offset 1 MHz	-101 dBc/Hz -104 dBc/Hz -111 dBc/Hz
30 GHz Offset 10 kHz Offset 100 kHz Offset 1 MHz	-97 dBc/Hz -99 dBc/Hz -107 dBc/Hz



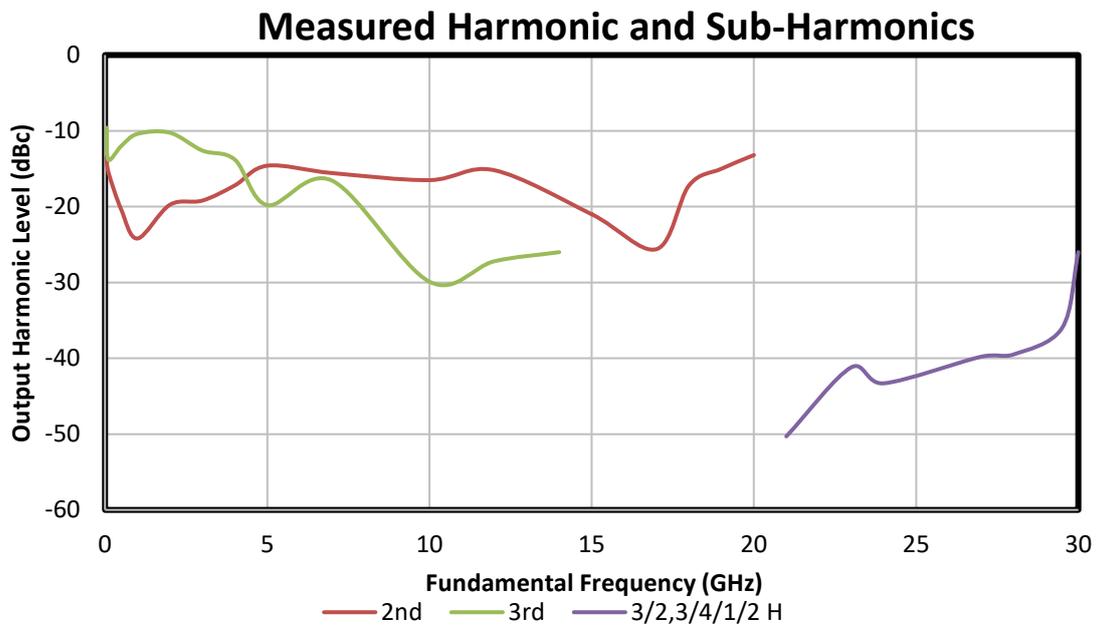
Spectral Purity

Parameter	Typical
3/2、3/4、1/2 Harmonic 20 - 28 GHz 28 - 30 GHz	-40 dBc -30 dBc
2nd Harmonic 50 MHz - 20 GHz	-15 dBc
3rd Harmonic 50 MHz - 5 GHz 5 - 8 GHz 8 - 14 GHz	-10 dBc -20 dBc -25 dBc
Non-Harmonic Spurious Close-in ³ at output step size 10 MHz ⁴ Far-out ⁷	-40 dBc -50 dBc

³ Close-in is measurement of spur within bandwidth ± 10 MHz from the center output frequency.

⁴ Output frequency ranges from 50 MHz to 30 GHz, with step size of 5 MHz.

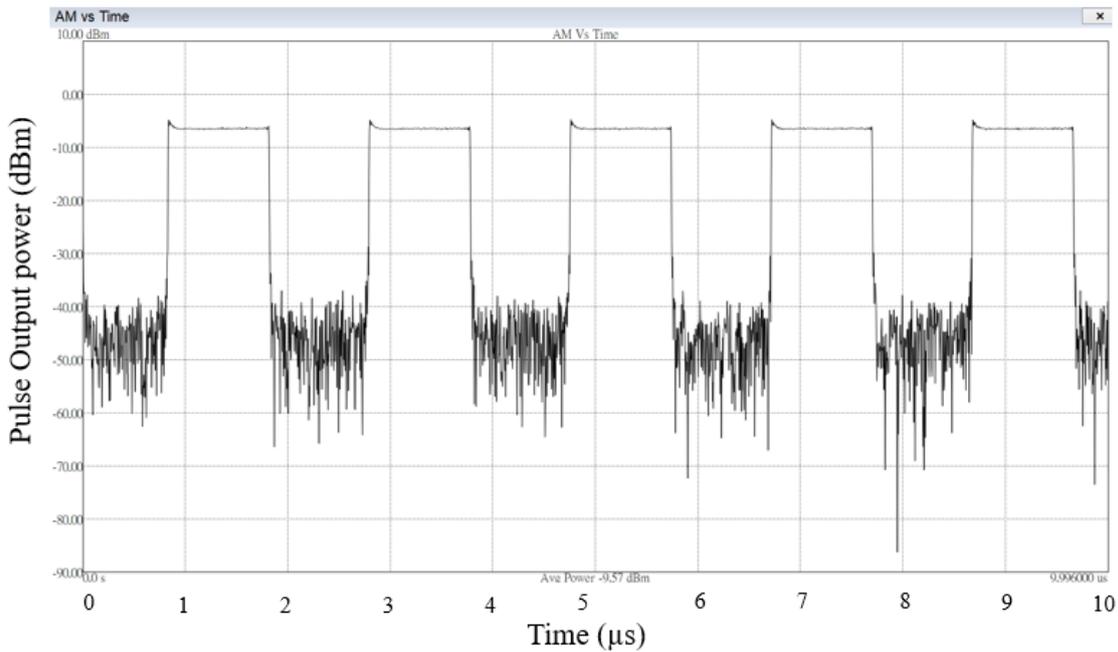
Ex. Output frequency = 50, 55, 60 MHz ... 30 GHz



Pulse Modulation

Parameter	Min	Typical	Max
Pulse Modulation Source		Internal/External	
On/Off Ratio		35 dB	
Rise/Fall time		30 ns	
Minimum Pulse Width		100 ns	
Duty Cycle	10 %		90 %
Repetition Frequency (Internal source)	2 kHz		5 MHz
High-Level Trigger Voltage	1.7 V		3.3 V
Low-Level Trigger Voltage	0 V		0.7 V

Pulse Modulation⁵



⁵ Pulse width 1 μs and Repetition Frequency 500 kHz when Output Frequency is 6 GHz at Zero Span

List Mode (Frequency/Power List)

Parameter	Min	Typical	Max
Frequency List Switching Time ⁸		1 ms	
Power List Switching Time ⁸		0.5 ms	
Dwell Time	1 ms		

⁸The switching time is defined as the time interval from the previous output signal falling to 10% to the next output signal rising to 90%.

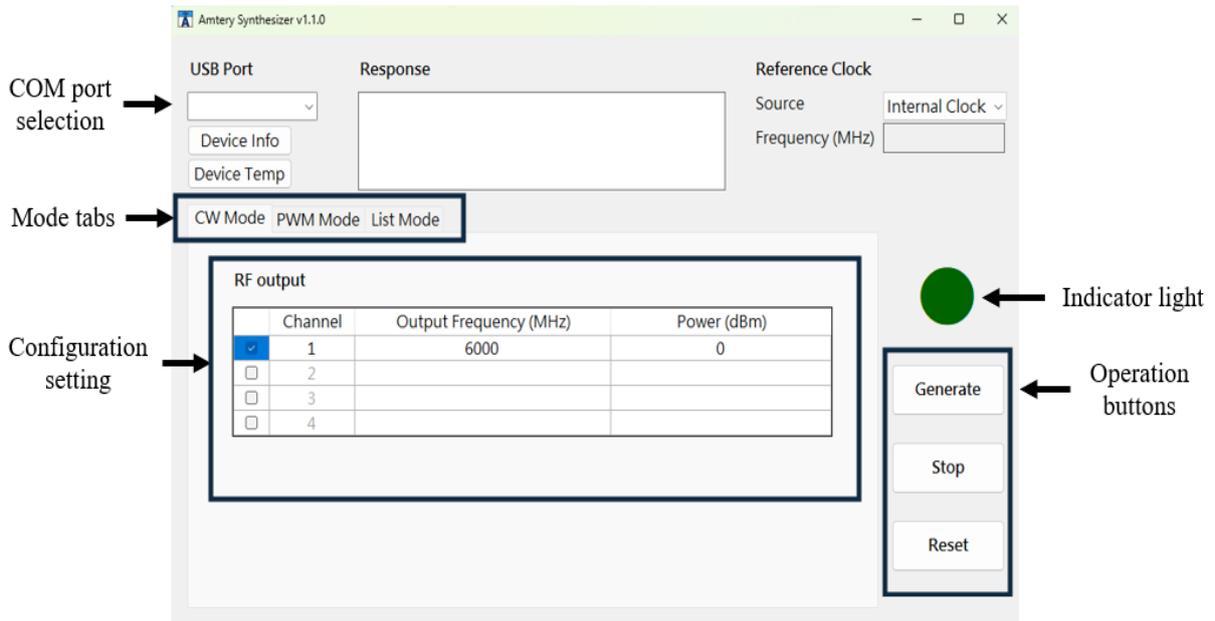
External Input Reference Clock

Parameter	Min	Typical	Max
Frequency	10 MHz	100 MHz	110 MHz
Single-ended Input Power	3 dBm	10 dBm	15 dBm
Single-ended Input Voltage	0.3 Vpp	2 Vpp	3.6 Vpp

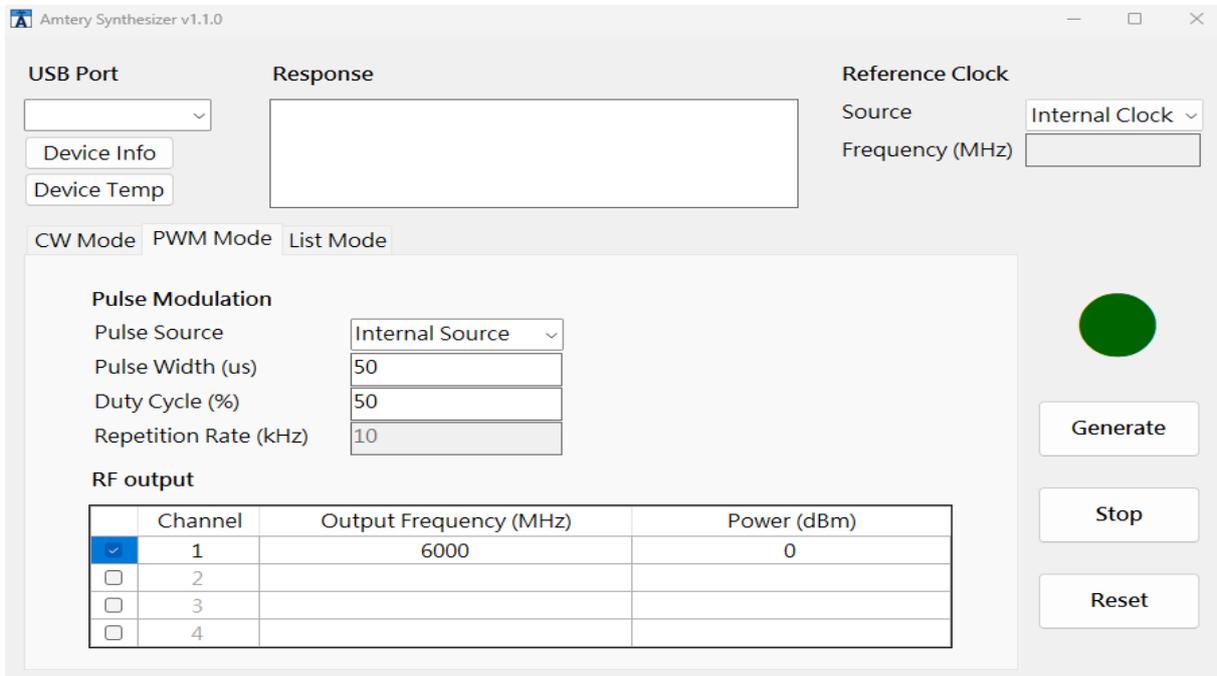
Connector

Parameter	Description
RF Output	2.92 mm female
External Pulse In	SMA female
Reference Clock In	SMA female
USB	USB 3.2 Gen1, Type-C connector. (Recommendation: Connect to the host via Type-C port.)

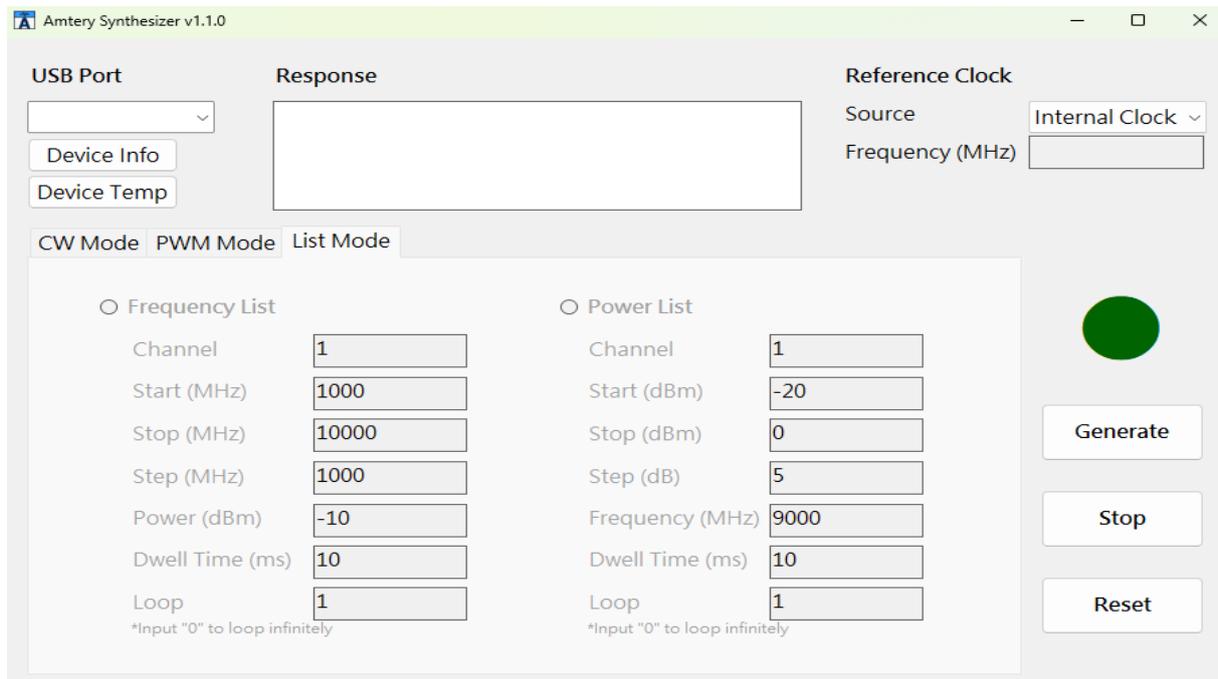
Graphical User Interface (GUI)



GUI - Continuous Wave (CW) Mode



GUI - Pulse Width Modulation (PWM) Mode



GUI - Frequency/Power List Mode

Note: Specifications are subject to change without notice.

Typical performance file: <https://www.amtery.com/en/goods-101>