

# PRONGHORN 8300H

Handheld Synthesizer 10 MHz – 18.0 GHz



The 8300H Hand Held Synthesizer is part of Pronghorn's 8300 family of microwave synthesizers which cover the frequency range of 10 MHz to 18 GHz. The 8300H is the world's smallest and lightest handheld instrument grade 18 GHz synthesizer. In addition to the Hand Held solution, the family includes a Bench Top model (8300B) and Systems Module (8300M) which is controlled via USB or SPI. Any programs written to control the Hand Held solution are 100% compatible with both the System Module which can be used for automated manufacturing test and the Bench Top version which is often used in lab test environments. The 8300 series can be ordered with an upper frequency of 6 GHz, 9 GHz, or 18 GHz.

## FEATURES

- Frequency Range 10 MHz to 18 GHz
- Power output > 5 dBm
- 2 Hz Frequency Resolution
- Synthesized Frequency Sweep
- Digital Power Sweep
- Excellent Phase Noise, Spurious & Stability
- Excellent Harmonics and Subharmonics
- Lab Instrument Class performance
- USB and Front Panel Control
- Labview®, IVI compatibility
- Battery option, with 2+ hours of operation
- Weight < 1 lb
- Economical
- Digital Level Control

## APPLICATIONS

- Field Test
- Wireless Infrastructure
- Automatic Test Systems
- Laboratory Applications
- Amplifier and other Component Testing
- Multi-Tone Tests
- Power Amplifier Testing
- Production Testing



# PHS - 8300H

## Handheld Synthesizer 10 MHz – 18.0 GHz

The 8300H has been designed to handle a multiplicity of user applications at the lowest cost with no sacrifice in performance. Its size and weight allow it to excel in the field test environment. The built in TCXO provides excellent stability and will satisfy the most stringent test applications.

The external reference option allows the test engineer additional frequency accuracy and to be able to run multiple units with the same reference. The phase noise, spurious, and harmonic output performance are comparable to instrument synthesizers that are 10 times heavier and cost many times as much. The 8300B can be controlled from the front panel or from a computer via USB or SPI. The instrument is Labview® and IVI compatible.

### KEY SPECIFICATIONS

Frequency Related		Power Output				
Frequency Range	150 MHz – 18 GHz	Power Output				
Optional	10 MHz – 18 GHz	10 MHz - 6.0 GHz	7 dBm min			
Frequency Resolution		6.0 GHz - 18.0 GHz	5 dBm min			
Front Panel Controlled	100 kHz	Output Power Adjustability Range	20 dB Typical, Minimum 10 dB			
USB / Computer Controlled	5 kHz (2 Hz optional)	Power Adjustment Step Size	0.5 dB (USB), 1 dB Manual			
Internal Frequency Reference	20 MHz	Power Accuracy	+ 2 dB (typical)			
Temp Stability	+/- 2.5 PPM (Higher stability options available)					
Internal Reference Output	Provided	Power Sweep				
External Frequency Reference	20 MHz	Power Sweep Function	1 dB steps from Start to Stop 0.25 dB specifiable in USB			
Reference Level	10 dBm	Sweep Direction				
Connector	SMA	Manual	Low to High			
Switching Speed, USB Control	<200 µs (typical, no power control)	USB Controlled	Either Direction			
Frequency Sweep		Dwell Time at each Power Level				
Frequency Sweep Function	Synthesized from Start to Stop Frequency	Manual	50 msec at each power level			
Sweep Steps		USB Controlled	Programmable from 10 µs			
Manual	100	Sweep Mode				
USB	10 to 10,000	Manual and USB Control	Continuous Digital sweep between any two power levels			
Sweep Direction		Phase Noise				
Manual	Low to High	at dBc/Hz Offset				
USB Controlled	Any Direction	Carrier Frequency	1 kHz	10 kHz	100 kHz	1 MHz
Dwell time at each frequency		500 MHz	-102	-101	-124	-149
Manual	Fixed at 50 ms at each frequency	2 GHz	-90	-90	-112	-137
USB Controlled	Programmable from 10 µs	9 GHz	-70	-75	-96	-123
Sweep Mode	Anywhere within output frequency range Continuous Digital Sweep	18 GHz	-70	-70	-93	-120

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## Harmonics and Sub-harmonics - Typical

Frequency	Harmonics (dBc) Typ	Sub-harmonics (dBc)
0.2 GHz	30 dBc	-
0.5 GHz	30 dBc	-
1.0 GHz	40 dBc	-
2.0 GHz	60 dBc	-
4.0 GHz	40 dBc	-
6.0 GHz	30 dBc	20 dBc
8.0 GHz	30 dBc	15 dBc
12.0 GHz	30 dBc	20 dBc
18.0 GHz	30 dBc	15 dBc

## Power Output

Size	5.75 " X 3.55 " X 1.0 "
Weight	< 1 lb Non-battery Option
Storage Temperature	-20° C to +70° C
Operating Temperature	0° C - 50° C Extended Range Available
Power Dissipation	7 Watts

## Electrical

Input Power	+7.4 Volts DC , 900 mA, 110 V AC Power Plug w Dongle
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## Spurious

@ > 100 KHz offset	> 60 dB Typical
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## Modulation

Pulse Modulation Optional

## Ordering Information

8300H	Handheld Synthesizer	(Please choose a frequency option: 006, 009, 018)
Opt 006	150 MHz to 6 GHz	
Opt 009	150 MHz to 9 GHz	
Opt 018	150 MHz to 18 GHz	
Opt 100	1 PPM Reference	
Opt 101	1 Hz step size to 9 GHz/2 Hz Steps to 18 GHz	
Opt 102	Ext Ref In	
Opt 131	Rechargeable Battery -- 2 hours	
Opt 140	Pulse Modulation	
Opt 150	Digital Sweep Pulse Out	
Opt 151	Sweep Trigger Input	
Opt 210	Extended Low end Freq (10 MHz)	
Opt 250	Extended Low end Freq (50 MHz)	

Note: Can order only order one of the following options: 102, 150, 151.

## CONTACT US



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