

# HMC-T2100B

Portable Synthesized Signal Generator, 10 MHz to 20 GHz



***Portable & Battery  
Operated!***

# HMC-T2100B

## PORTABLE SYNTHESIZED SIGNAL GENERATOR, 10 MHz to 20 GHz

v03.0411

### Industry's First Battery Operated 20 GHz Signal Generator!

The HMC-T2100B is a battery powered, portable test equipment solution designed to fulfill your signal generation needs in the field or on the bench. The HMC-T2100B provides the highest output power, lowest harmonic levels and broadest frequency range amongst portable signal generators of its size and cost.

Internal rechargeable batteries allow for 4 hours of continuous operation, making the HMC-T2100B a portable and versatile instrument, which is particularly attractive for wireless/wired service installation, field testing, or remote on-site maintenance applications. The HMC-T2100B also features USB, GPIB and Ethernet interfaces with innovative control software ensuring carefree integration within various test environments while improving overall productivity and equipment utilization.

#### Applications

- ◆ Field Testing
- ◆ Service Installation
- ◆ ATE, Test & Measurement
- ◆ R&D Laboratories

#### Advantages

- ◆ Portable: 5 kg (11 lbs) <sup>[1]</sup>
- ◆ Versatile: High Power Simplifies Test Set-Ups
- ◆ Efficient: 300  $\mu$ s Frequency Switching
- ◆ Flexible: Manual or Software Control  
Via USB, GPIB or Ethernet

#### Performance

- ◆ Battery Operation: 4 Hours <sup>[2]</sup>
- ◆ High Output Power: +27 dBm
- ◆ Wide Frequency Range:  
10 MHz to 20 GHz
- ◆ Excellent Phase Noise Performance:  
-113 dBc/Hz @ 100 kHz Offset @ 1 GHz
- ◆ Spurious Rejection: -65 dBc @ 10 GHz
- ◆ Power Resolution: 0.1 dB
- ◆ Frequency Resolution: 10 kHz



**Four Hours  
Continuous Operation!**

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### Frequency

Accuracy: As Per Internal Ref.  $\pm 1.5$  ppm  
Resolution: 10 kHz  
Internal Reference: 10 MHz  
Aging Rate: <1 ppm/yr  
External Reference Input: 10 MHz (Sine)  
Internal Reference Output: 10 MHz (Sine)

### Output Power (Maximum Leveled)

Frequency (GHz)	Power Output (dBm)
0.01	22
0.05	26
0.1	26
0.5	25
1	25
2	26
4	27
10	25
15	24
20	22

Minimum Settable: -15 dBm (all frequencies)

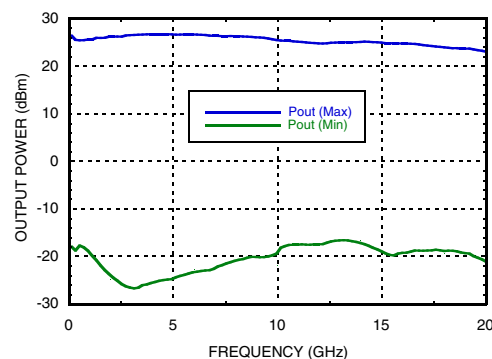
Dynamic Range: >40 dB @ 10 GHz

Resolution: 0.1 dB

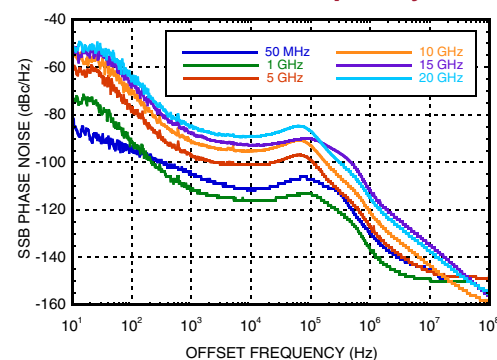
Output Source Match: < 2.0:1

Power Accuracy:  $\pm 1$  dB for leveled outputs

### Output Power Range @ 25°C



### SSB Phase Noise vs. Frequency



### Spectral Purity\*

Frequency (GHz)	2nd Harmonics (dBc)	3rd Harmonics (dBc)	Spurious (dBc)
0.01	-20	-36	-78
0.05	-36	-41	-52
0.1	-21	-31	-80
0.5	-27	-38	-80
1	-39	-49	-80
2	-32	-52	-89
5	-38	-56	-75
10	-29	-55	-65
15	-27	-44	-51
20	-42	-	-55

Output Power = +10 dBm

\*Spurious at integer mode frequencies shown above.  
Spurious at fractional mode frequencies may be higher.

### SSB Phase Noise (dBc/Hz)

Frequency (GHz)	Offset From Carrier						
	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz	10 MHz
0.01	-79	-89	-97	-105	-104	-126	n/a
0.05	-89	-95	-105	-111	-107	-130	-145
0.1	-83	-94	-105	-112	-107	-129	-145
0.5	-80	-96	-117	-122	-119	-142	-150
1	-73	-91	-111	-116	-113	-137	-149
2	-67	-83	-106	-110	-107	-131	-147
5	-59	-77	-98	-101	-99	-127	-146
10	-55	-69	-92	-95	-93	-121	-143
15	-51	-67	-87	-93	-90	-112	-135
20	-53	-66	-85	-89	-87	-115	-137

Output Noise: Floor < -155 dBc/Hz

Above data is typical performance at +25°C after 30 minutes of warm-up time unless otherwise stated.



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Instrumentation Product Support at [TE@hittite.com](mailto:TE@hittite.com)

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### General Specifications

**Power - AC:**

100 to 240 VAC @ 50 to 60 Hz

**Power - Battery:**

Type: Lithium Ion, Capacity: 6750 mAh (73Wh)

Rated Voltage: 10.8V

**Calibration:** 1 Year**Environment:** 0 to 35 °C**Cooling:** 2 Internal Fans
**Input / Output:**
10 MHz REFOUT <sup>[1]</sup>10 MHz REFIN <sup>[2]</sup>TRIGGER IN <sup>[3]</sup>: LVTTTL

RS-232 (factory use only)

Ethernet

GPIB

USB 1.1/2.0

**Mechanical Vibration & Shock:**

MIL PRF-288000 Class 4

**Compliance:**

CSA, CE

**General Mechanical Characteristics**

H: 76 mm (3 in)

W: 203 mm (8 in)

D: 305 mm (12 in)

Weight: 5 kg (11 lbs)

**Warranty:** 1 Year Parts and Labor<sup>[1]</sup> +10 dBm max into 50 Ohms; BNC Connector<sup>[2]</sup> -5 dBm max, 50 Ohms; BNC Connector<sup>[3]</sup> The trigger input can be driven from either 3.3V or 5V sources for direct interface with TTL signal levels; BNC Connector

### Battery Operation

The HMC-T2100B contains two removable batteries, plus an internal battery charger that automatically recharges the batteries when the HMC-T2100B is powered from an AC source. The HMC-T2100B can continuously operate with one (2 hours) or two (4 hours) batteries. The recharge time for either one or two batteries is 6.5 hours during which the unit can be operated.



Remove both batteries  
during transport

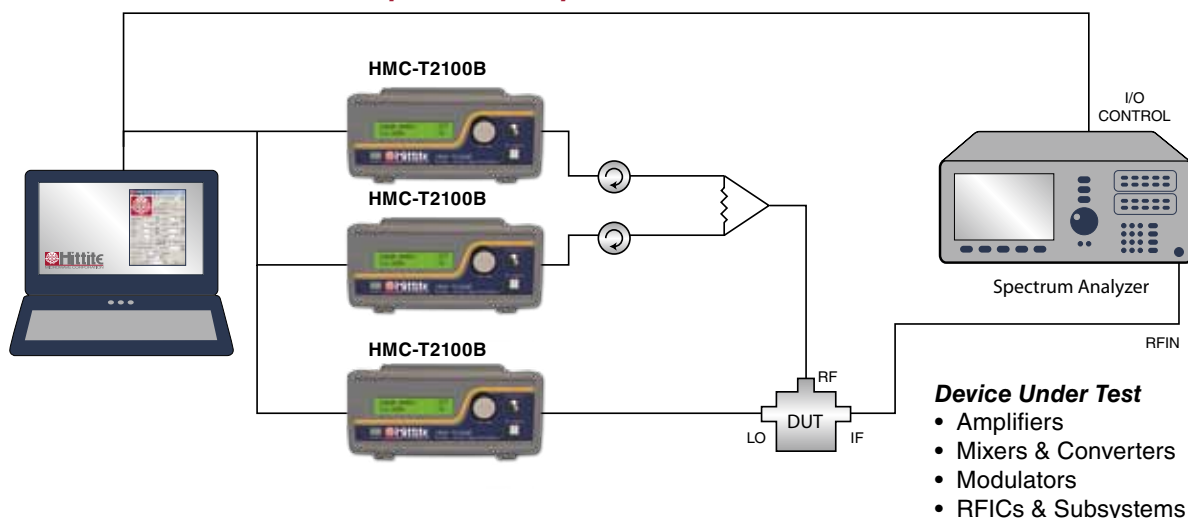
For proper battery use and storage please see the "Safety" section of the *HMC-T2100 / HMC-T2100B User Manual*. To view the *HMC-T2100 / HMC-T2100B User Manual*, please visit [www.hittite.com](http://www.hittite.com) and choose HMC-T2100 or HMC-T2100B from the "Search by Part Number" pull down menu.

# HMC-T2100B

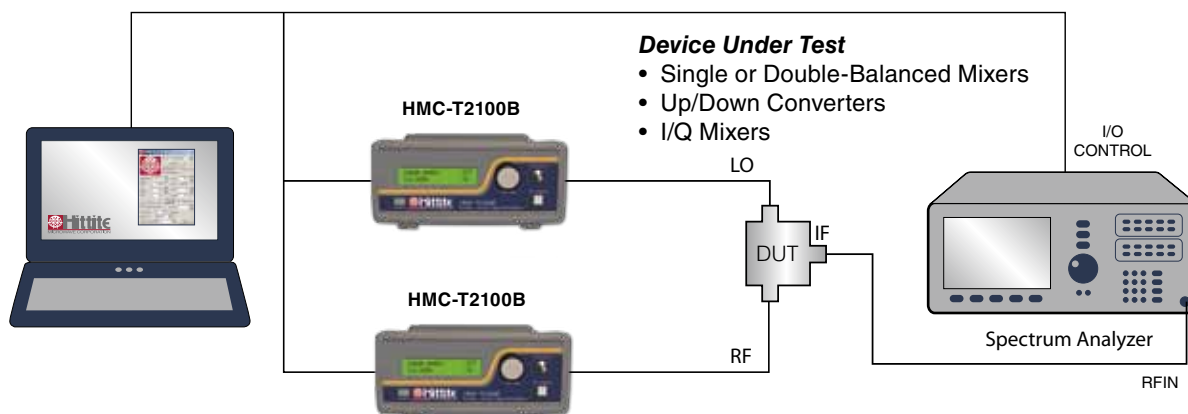
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### Two Tone Third Order Intercept Test Set-up



### Efficient Mixer Conversion Loss, Isolation & MxN Spurious Test Set-up





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### Rear Panel I/O Connections



### Connectivity & Control

The compact size, light weight, fast switching speed and USB, GBIP and Ethernet control interfaces support the standard SCPI command set ensuring smooth integration within all test environments, particularly those associated with automated test. An installation disk that accompanies each unit includes all the drivers required to remotely control the device as well as a user friendly GUI interface (right) compatible with a Windows XP® or Windows Vista® operating system. This GUI interface is identical for both HMC-T2100 and HMC-T2100B models. User control is facilitated via pull down menus that allow programming of single or swept modes in frequency and/or power. Integration of multiple units within a production test environment is easy, and affordable.

#### Remote Interface

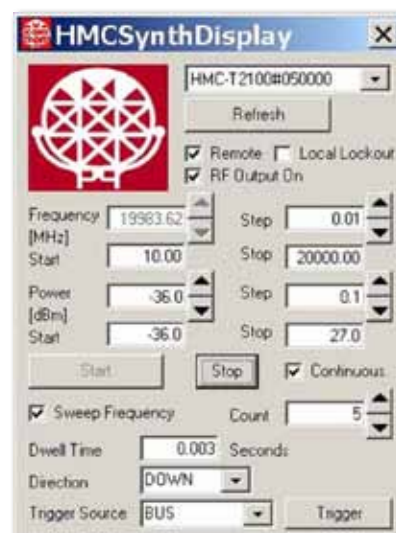
**Hardware:** USB (Windows XP® and Windows Vista® Drivers Supplied), GPIB or Ethernet

**Software:** LabVIEW Driver (XP)

**Frequency Switching Speed:**  
300  $\mu$ s Typical

#### Local Interface

Front Panel Rotary Knob & Display



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### Ordering Information



### HMC-T2100B

Model Number	Description	Price
<b>HMC-T2100B</b>	Synthesized Signal Generator 10 MHz to 20 GHz	\$14,998.00

Includes two rechargeable batteries, 100 - 240V AC Power Supply and one Power Cord at no cost. Please specify your preferred power cord part number at time of ordering. (see "Optional Power Cord" table)

### HMC-T2100B Battery

Model Number	Description	Price
<b>HMC-T2100B-BATTERY</b>	Lithium-Ion Battery Pack 10.8V, 6900mAh	\$179.00

### Power Cord

Part Number	Region	
HMC-PC01	Continental Europe	
HMC-PC02	United Kingdom	
HMC-PC03	China	
HMC-PC04	Australia, New Zealand	
HMC-PC05	North America	
HMC-PC06	South Africa / India	
HMC-PC07	Switzerland	
HMC-PC08	Denmark	
HMC-PC09	Israel	
HMC-PC10	Italy	
HMC-PC11	Japan	

All pricing is in U.S. Dollars and is subject to change without notice.

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**Notes:**