

# HMC-T2100

SYNTHESIZED SIGNAL GENERATOR, 10 MHz to 20 GHz

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The HMC-T2100 is an easy to implement test equipment solution designed to fulfill your signal generation needs. Built on a foundation of high quality and market leading Hittite MMICs, the HMC-T2100 provides the highest output power, lowest harmonic levels and broadest frequency range amongst signal generators of its size and cost.

This compact and lightweight signal generator also features a choice between a USB, GPIB\* or Ethernet\* interface and innovative control software ensuring carefree integration within various test environments while improving overall productivity and equipment utilization.

## Applications

- ◆ ATE
- ◆ Test & Measurement
- ◆ R&D Laboratories

## Advantages

- ◆ Versatile: Higher Drive Simplifies Test Set-Ups
- ◆ Efficient: 300  $\mu$ s Frequency Switching
- ◆ Reliable: Incorporates Hittite MMICs
- ◆ Flexible: Manual or Software Control  
Via USB, GPIB\* or Ethernet\*

## Performance

- ◆ 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

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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	27
0.5	27
1	27
2	27
5	26
10	25
15	23
20	21

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

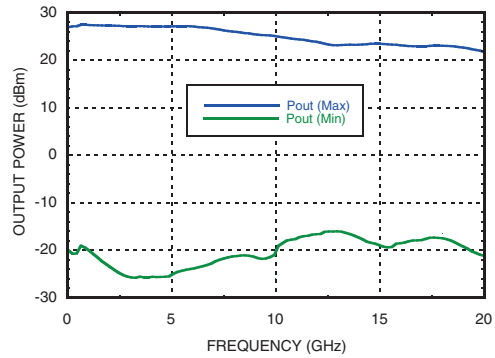
### Spectral Purity\*

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

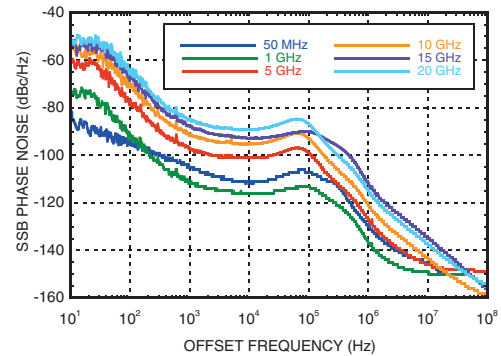
Output Power = +10 dBm

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

### Output Power Range @ 25°C



### SSB Phase Noise vs. Frequency



### 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

All specifications apply over +15°C to +35°C ambient temperature range after 30 minutes of warm-up time unless otherwise stated.



20 Alpha Road Chelmsford, MA 01824  
 Phone: 978-250-3343 Fax: 978-250-3373  
 Order Online at [www.hittite.com](http://www.hittite.com)

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### General Specifications

**Power:** 100 to 240 VAC, 50 to 60 Hz, 264 VA Max.

**Calibration:** 1 Year

**Environment** (for indoor use only): 0 to 35 °C

**Cooling:** 2 Internal Fans

**Input / Output:** 10 MHz REFOUT: BNC Connector  
10 MHz REFIN: BNC Connector  
RS-232 (factory use only)  
Ethernet (not part of initial release)  
GPIB (not part of initial release)  
USB 1.1/2.0

### Mechanical Vibration & Shock:

MIL-STD 810 Table 415.5 C-VII;  
MIL-STD 202 MTD 214 1.5G

### Compliance:

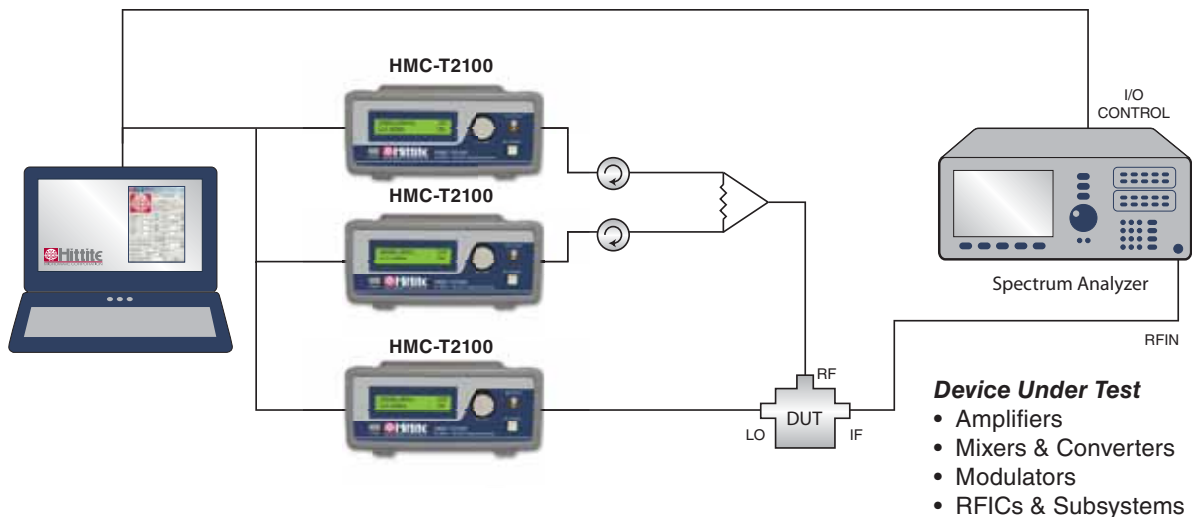
CSA, CE

### General Mechanical Characteristics

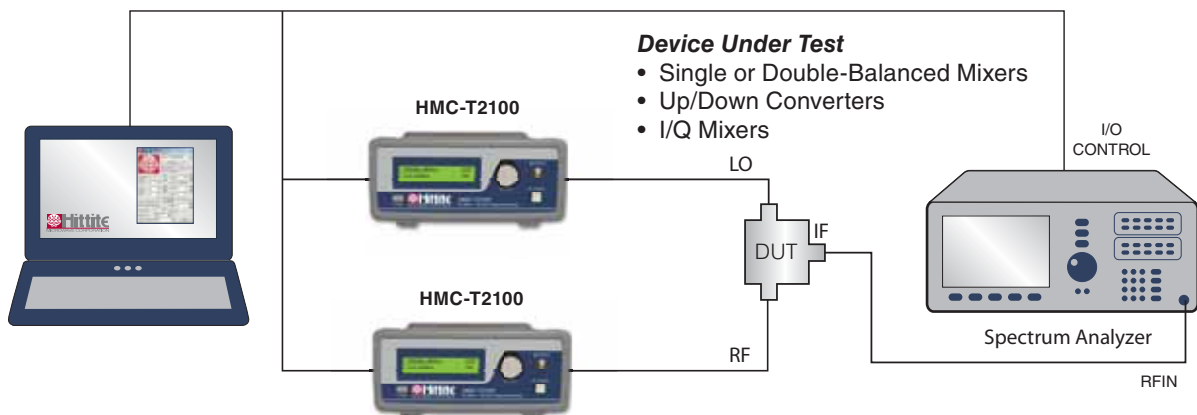
H: 3" [76.2mm], W: 8" [203mm],  
D: 12" [305mm]  
Weight 7 lbs [3.2 kg]

**Warranty:** 1 Year parts and labor

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



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



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### HMC-T2100 Rear Panel I/O Connections



### Connectivity & Control

Its 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 LabWindows™ based GUI interface (right) compatible with a Windows XP® or Windows Vista® operating system. 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®, Windows Vista® Drivers Supplied), GPIB\* or Ethernet\*

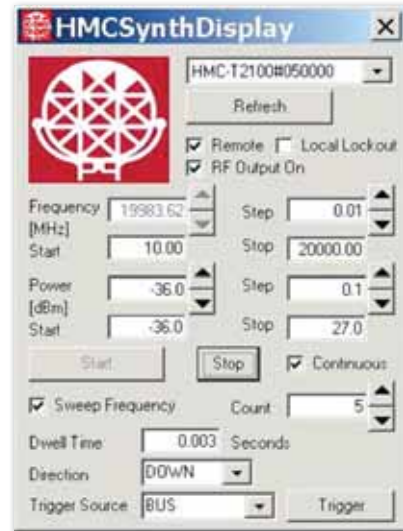
\* GPIB and Ethernet software control capability planned for September 2009

**Software:** LabVIEW / LabWindows™ Driver (XP)

**Frequency Switching Speed:**  
300 us Typ.

#### Local Interface

Front Panel Rotary Knob & Display



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### HMC-T2100



### HMC-T2100DRM



#### Ordering Information

Model Number	Description	Price
HMC-T2100	Synthesized Signal Generator 10 MHz to 20 GHz	\$7,998.00

Includes 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)

#### Ordering Information

Model Number	Description	Price
HMC-T2100DRM	Synthesized Signal Generator 10 MHz to 20 GHz, Dual Rack Mountable	\$7,998.00

Includes 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)

#### Optional Power Cord

Part Number	Region		Price
HMC-PC01	Continental Europe		\$9.25
HMC-PC02	United Kingdom		\$20.50
HMC-PC03	China		\$15.50
HMC-PC04	Australia, New Zealand		\$9.25
HMC-PC05	North America		\$9.25
HMC-PC06	South Africa / India		\$20.50
HMC-PC07	Switzerland		\$15.50
HMC-PC08	Denmark		\$15.50
HMC-PC09	Israel		\$15.50
HMC-PC10	Italy		\$9.25
HMC-PC11	Japan		\$9.25

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

#### Test Rack Mount Kit

Part Number	Description	Price
HMC-RM02	Dual Rack Mounting Plate 19" 2u Chassis	\$385.00



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**Notes:**

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