Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

HMC-T2270

70,000,000,000
+02.0dBm
ON

70 GHz

RF OUTPUT

FUNCTION

POWER

Hittite
MICROWAVE CORPORATION

HMC-T2270
10 MHz - 70 GHz Signal Generator

RF STANDBY

**ANALOG
DEVICES**

HMC-T2270* PRODUCT PAGE QUICK LINKS

Last Content Update: 02/23/2017

COMPARABLE PARTS 🗔

View a parametric search of comparable parts.

DOCUMENTATION 🗔

Application Notes

- Pulsed Modulation

Data Sheet

- HMC-T2270: Synthesized Signal Generator, 10 MHz to 70 GHz Data Sheet

User Guides

- Programmer's Manual Installation, Operation & Maintenance Guide for HMC-T2220, HMC-T2220B, HMC-T2240, and HMC-T2270
- User Manual - Synthesized Signal Generator Family - HMC-T2220/40/70, HMC-T2220B

DESIGN RESOURCES 🗔

- HMC-T2270 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

DISCUSSIONS 🗔

View all HMC-T2270 EngineerZone Discussions.

SAMPLE AND BUY 🗔

Visit the product page to see pricing options.

TECHNICAL SUPPORT 🗔

Submit a technical question or find your regional support number.

DOCUMENT FEEDBACK 🗔

Submit feedback for this data sheet.

HMC-T2270

SYNTHESIZED SIGNAL GENERATOR, 10 MHz to 70 GHz

v05.0216

Wide Frequency Range, 10 MHz to 70 GHz Signal Generator!

The HMC-T2270 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-T2270 provides high output power, low harmonic levels and broad frequency range.

This compact and light weight signal generator also features USB, GPIB and Ethernet interfaces ensuring carefree integration within various test environments while improving overall productivity and equipment utilization.

Applications

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

Advantages

- ♦ Versatile: Simplifies Test Set-Ups
- ♦ Efficient: 500 µs Frequency Switching
- ♦ Reliable: Incorporates Hittite MMICs
- ♦ Flexible: Manual or Software Control
    Via USB, GPIB or Ethernet

Performance

- ♦ High Output Power:
    +26 dBm @ 1 GHz
    +3.0 dBm @ 70 GHz
- ♦ Wide Frequency Range:
    10 MHz to 70 GHz
- ♦ Excellent Phase Noise Performance:
    -118 dBc/Hz @ 10 kHz Offset @ 1 GHz
    -79 dBc/Hz @ 100 kHz Offset @ 67 GHz
- ♦ Integer Spurious:
    < -65 dBc
- ♦ Power Resolution: 0.1 dB
- ♦ Frequency Resolution: 1 Hz

For price, delivery, and to place orders: Analog Devices, Inc., One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106
Phone: 781-329-4700 • Order online at www.analog.com
Application Support: Phone: 1-800-ANALOG-D

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HMC-T2270
SYNTHESIZED SIGNAL GENERATOR, 10 MHz to 70 GHz

v05.0216

Output Power Range

| Max. Pout | Min. Pout |

Dynamic Range: > 60 dB
Resolution: 0.1 dB
Power Accuracy:
                          ± 1 dB > 500 MHz
                          ± 2 dB ≤ 500 MHz
                          ± 2 dB < -20 dBm (All Frequencies)
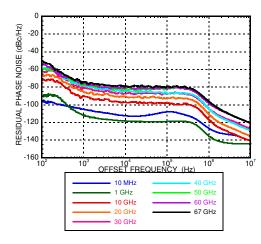RF OFF   < -90 dBm

Harmonics

Frequency (GHz)	Sub-Harmonics (dBc)	2nd Harmonics (dBc)	3rd Harmonics (dBc)
0.01	-77	-38	-44
0.5	-78	-34	-55
1	-78	-39	-50
2	-78	-32	-40
5	-74	-37	-59
10	-58	-33	-64
15	-41	-40	-60
25	-71	-29	-
30	-70	-40	-
40	-50	-	-
50	-46	-	-
60	-50	-	-
70	-58	-	-

Output Power = +10 dBm

Output Power:
  +10 dBm at or below 40 GHz
  See Max. Power above 40 GHz

SSB Phase Noise vs. Frequency

10 MHz	40 GHz
1 GHz	50 GHz
10 GHz	60 GHz
20 GHz	67 GHz
30 GHz	

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	-86	-95	-104	-112	-107	-126	-140
1	-80	-90	-111	-118	-118	-134	-143
10	-63	-72	-90	-97	-98	-117	-141
20	-62	-66	-85	-90	-92	-111	-136
30	-54	-62	-80	-87	-87	-105	-127
40	-51	-60	-78	-84	-87	-105	-129
50	-45	-55	-75	-81	-80	-96	-120
60	-41	-54	-76	-81	-81	-98	-121
67	-46	-51	-74	-79	-79	-96	-120

Spurious

< -65 dBc @ Integer Frequencies (See Table)
< -63 dBc @ Fractional Frequencies <10 GHz
< -57 dBc @ Fractional Frequencies 10-20 GHz
< -52 dBc @ Fractional Frequencies 20-40 GHz
< -46 dBc @ Fractional Frequencies > 40 GHz

Integer Frequencies *

Frequency Band (MHz)	Frequency Step Size (MHz)
25 - 450	25
450 - 625	6.25
625 - 1250	12.5
1250 - 2500	25
2500 - 5000	50
5000 - 10000	100
10000 - 20000	200
20000 - 40000	400
40000 - 70000	800

* All other frequencies are fractional.

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

SYNTHESIZED SIGNAL GENERATOR

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General Specifications

Frequency:

Accuracy:

For < 2.5 GHz, Reference +0/-90 nHz

For > 2.5 GHz, Reference +0/-2.88 uHz

Internal Reference: ±1.5 ppm

Resolution: 1 Hz

Aging Rate: <1 ppm/yr

External Reference Input: 10 MHz (Sine Wave)

Internal Reference Output: 10 MHz (Square Wave)

Frequency Switching Speed: 500 µs

RF Output Power Change Versus Temperature:

10 MHz to 5 GHz	0.10 dB/°C
5 GHz to 15 GHz	0.125 dB/°C
15 GHz to 20 GHz	0.20 dB/°C
20 GHz to 70 GHz	0.10 dB/°C

Input / Output:

10 MHz REFOUT [1]

10 MHz REFIN [2]

TRIGGER IN [3]: TTL

TRIGGER OUT [3]: TTL

RS-232 (used for field upgrades)

Ethernet

GPIB

USB 2.0

RF Output 1.85mm Female

Maximum DC voltage applied to RF Output: 5 Volts

Power - AC:

100 to 240 VAC @ 50 to 60 Hz

Operating Temperature: (For indoor use only)

0 to 35 °C

Storage Temperature: -20 to 70 °C

Cooling: 2 Internal Fans

Fan Noise: < 50 dBa

Mechanical Vibration & Shock:

MIL PRF-288000 Class 4, non operating

Compliance:

CSA & CE

ECCN:

3A002.d.3.f

General Mechanical Characteristics

H: 76.2 mm (3 in)

W: 203 mm (8 in)

D: 305 mm (12 in)

Weight 3.7 kg (8.25 lbs)

Warranty: 1 Year Parts and Labor

[1] +10 dBm typ. into 50 Ohms; BNC Connector
[2] +5 dBm max., -5 dBm min., 50 Ohms; BNC Connector
[3] The trigger input can be driven from either 3.3V or 5V sources for direct interface with TTL signal levels; BNC Connector

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HMC-T2270

SYNTHESIZED SIGNAL GENERATOR, 10 MHz to 70 GHz

v05.0216

HMC-T2270 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 GUI interface (right) compatible with a Windows XP®, Windows Vista® or Windows 7® or operating system. User control is facilitated via pull down menus that allow programming of single or swept modes in frequency or power. Integration of multiple units within a production test environment is easy, and affordable.
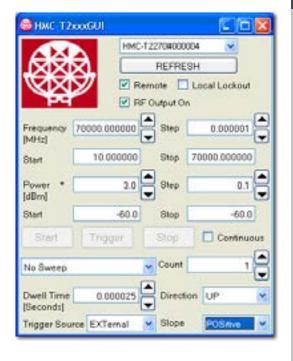

Remote Interface
 Hardware: USB (Windows XP®, Windows Vista®,
  Windows 7® Drivers Supplied), GPIB or Ethernet
 Software: LabVIEW 2009 Driver
 Frequency Switching Speed:
  500 us Typ.
Local Interface
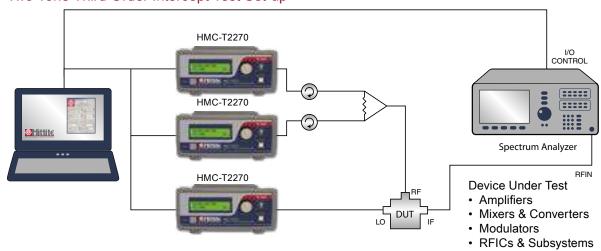 Front Panel Rotary Knob & Display
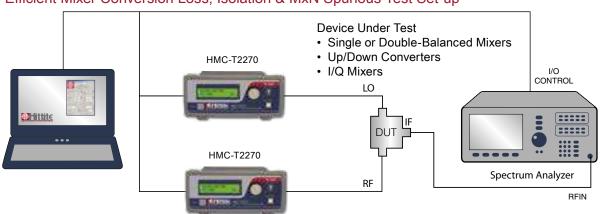
HMC-T2100 Compatibility

To facilitate integration into existing HMC-T2100 applications, the HMC-T2270 has a HMC-T2100 compatibility mode. In this mode, the HMC-T2270 identifies itself as a HMC-T2100 so that the HMC-T2100 USB drivers will work for a HMC-T2270, and programs which use the *IDN? string will recognize a HMC-T2270 as a HMC-T2100. Frequency resolution, maximum and minimum values for power, and minimum sweep dwell time also change to match the HMC-T2100.

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SYNTHESIZED SIGNAL GENERATOR

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HMC-T2270

SYNTHESIZED SIGNAL GENERATOR, 10 MHz to 70 GHz

v05.0216

Two Tone Third Order Intercept Test Set-up

HMC-T2270

HMC-T2270

HMC-T2270

I/O CONTROL

Spectrum Analyzer

RFIN

RF

DUT

LO   IF

Device Under Test
- Amplifiers
- Mixers & Converters
- Modulators
- RFICs & Subsystems

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

Device Under Test
- Single or Double-Balanced Mixers
- Up/Down Converters
- I/Q Mixers

HMC-T2270

HMC-T2270

LO

RF

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I/O CONTROL

Spectrum Analyzer

RFIN

SYNTHESIZED SIGNAL GENERATOR

HMC-T2270

SYNTHESIZED SIGNAL GENERATOR, 10 MHz to 70 GHz

HMC-T2270

Ordering Information

Model Number	Description	Price
HMC-T2270	Synthesized Signal Generator 10 MHz to 70 GHz	

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 "Power Cord" table)

Test Rack Mount Kit

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

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	

SYNTHESIZED SIGNAL GENERATOR

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

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