

# CCHD-957

## Ultra-Low Phase Noise Oscillator with Standby Mode

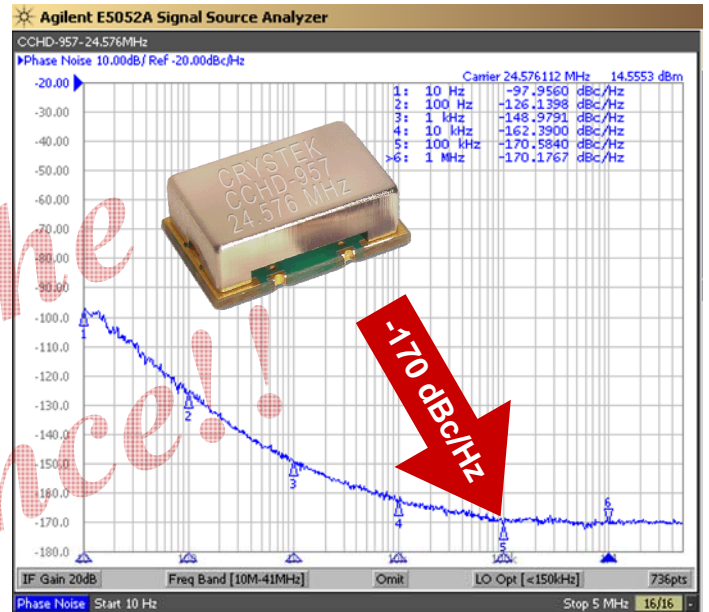


**CCHD-957 Model**  
9x14 mm SMD, 3.3V, HCMOS

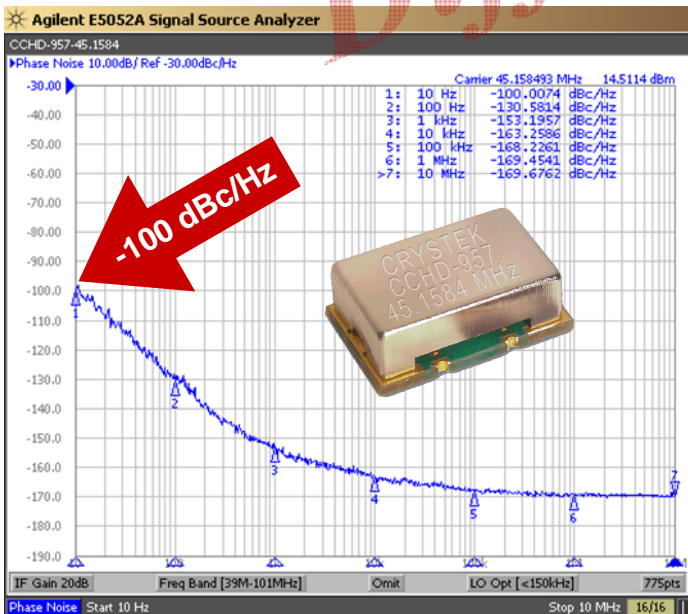
**22.5792 MHz HCMOS 3.3V**



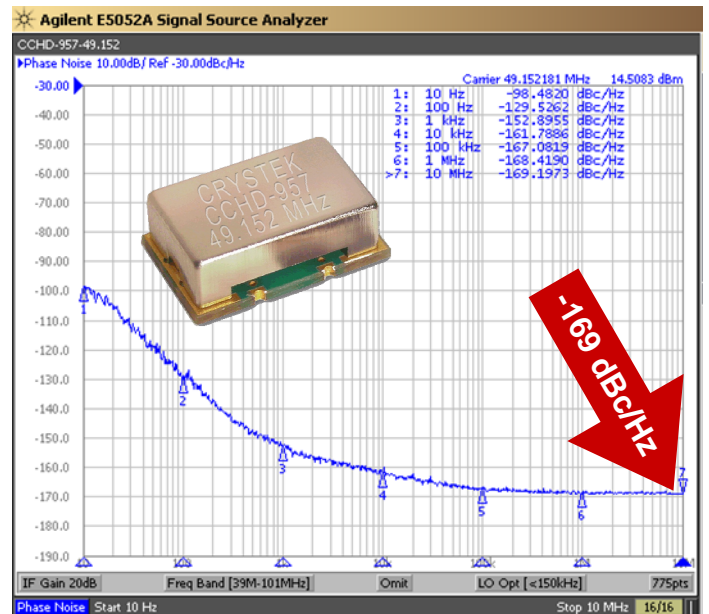
**24.576 MHz HCMOS 3.3V**



**45.1584 MHz HCMOS 3.3V**



**49.152 MHz HCMOS 3.3V**



Crystek's Model CCHD-957 HCMOS CLOCK oscillator family has been designed specifically for High Definition Audio (HD Audio). It features a typical low close-in phase noise of -100 dBc/Hz @ 10 Hz offset, and a noise floor of -169 dBc/Hz. With this extreme low phase noise performance, you will "Hear the Difference". It also features a "Standby Function", that is, when placed in disable mode, the internal oscillator is completely shut down in addition to its output buffer being placed in Tri-State. This family is housed in a 9x14 mm SMT package and operates with a +3.3V power supply.

Applications include: **Digital Audio Broadcasting (DAB)**  
**Professional CD audio equipment**  
**DACs and ADCs for HD audio**

Rev: D  
Date: 22-Jan-12  
Page 1 of 2

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9x14 mm SMD, 3.3V, HCMOS

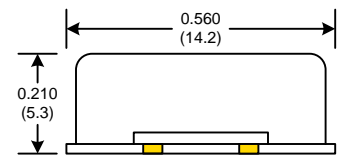
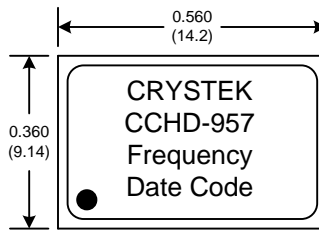
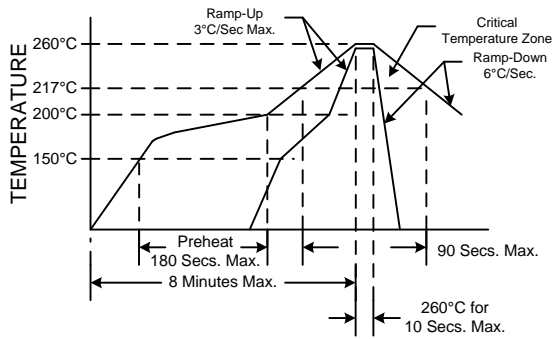


<b>Frequency Range:</b>	10 MHz to 50 MHz
<b>Temperature Range:</b>	0°C to +70°C
<b>(Option M)</b>	-20°C to +70°C
<b>(Option X)</b>	-40°C to +85°C
<b>Storage:</b>	-45°C to 90°C
<b>Input Voltage:</b>	3.3V ±0.3V
<b>Input Current:</b>	15mA Typ., 25mA Max
<b>Input Current (Disabled Mode):</b>	1.5mA Max
<b>Output:</b>	HCMOS
<b>Symmetry:</b>	45/55% Max @ 50% Vcc
<b>Rise/Fall Time:</b>	3nsec Max @ 20% to 80% Vcc
<b>Logic:</b>	“0” = 10% Vcc Max “1” = 90% Vcc Min
<b>Load:</b>	15pF
<b>Output Current:</b>	±24mA Max
<b>Disable Time:</b>	200ns Max
<b>Start-up Time:</b>	1ms typ., 2ms Max
<b>Pin 1 Disable Current:</b>	-350µA Max
<b>Phase Noise:</b>	-100 dBc/Hz Typ., -95 dBc/Hz Max at 10Hz offset
<b>Phase Noise Floor:</b>	-169 dBc/Hz Typ., -165 dBc/Hz Max
<b>Sub-harmonics:</b>	None
<b>Aging:</b>	<3ppm 1 <sup>st</sup> /yr, <1ppm thereafter
<b>CCHD-957 Options:</b>	
<b>Temperature Range:</b>	0°C to +70°C (±20ppm, ±25ppm, ±50ppm) -20°C to +70°C (±25ppm, ±50ppm) -40°C to +85°C (±25ppm, ±50ppm)

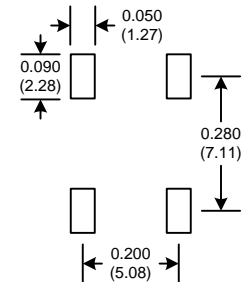
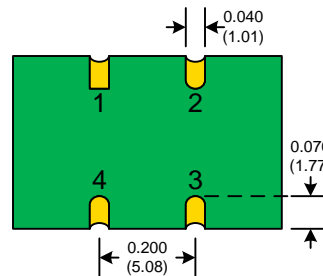
Developed Frequencies
22.5792 MHz
24.576 MHz
45.1584 MHz
49.152 MHz

**Part Number Example:**  
CCHD-957X-25-49.152 = 3.3V, 45/55, -40°C to +85°C (±25ppm), 49.152 MHz

### RECOMMENDED REFLOW SOLDERING PROFILE



### SUGGESTED PAD LAYOUT



Tri-State/Standby Function	
Function pin 1	Output pin
Open	Active
"1" level 0.7xVcc Min	Active
"0" level 0.3xVcc Max	High Z

Pad	Connection
1	E/D
2	GND
3	OUT
4	Vcc

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Page 2 of 2