



CRYSTEK
CRYSTALS
A DIVISION OF CRYSTEK CORPORATION

CCHD-957 Model
9×14 mm SMD, 3.3V, HCMOS

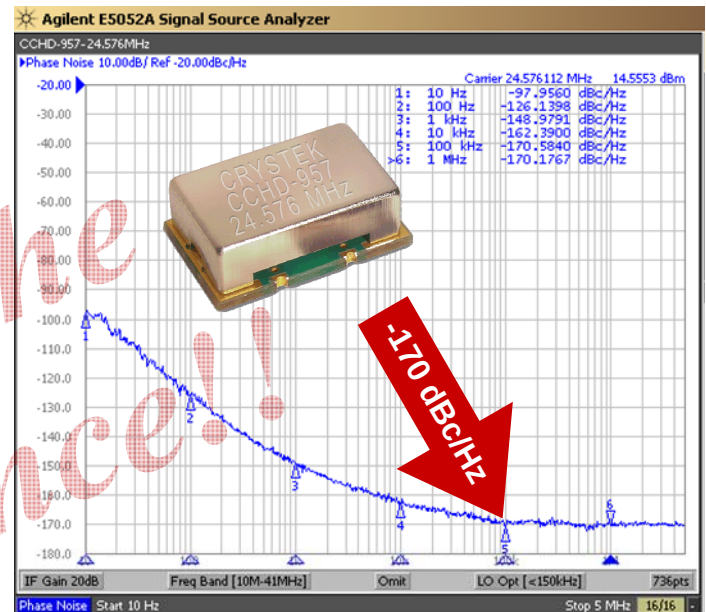
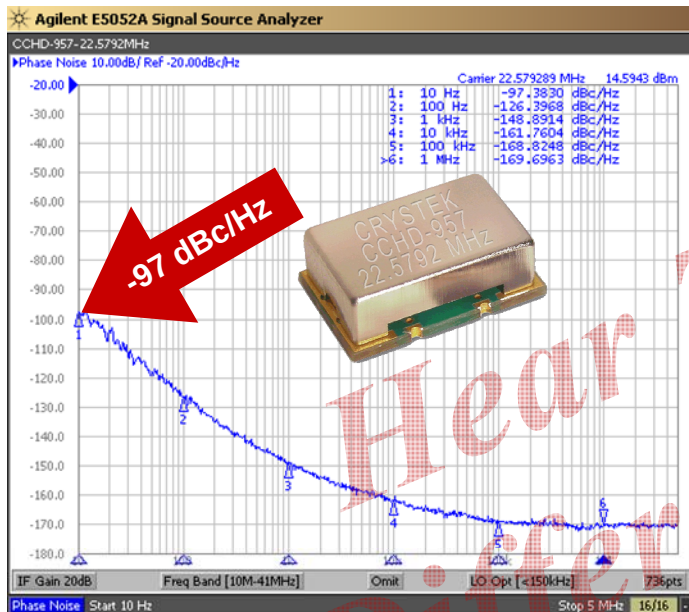
22.5792 MHz HCMOS 3.3V



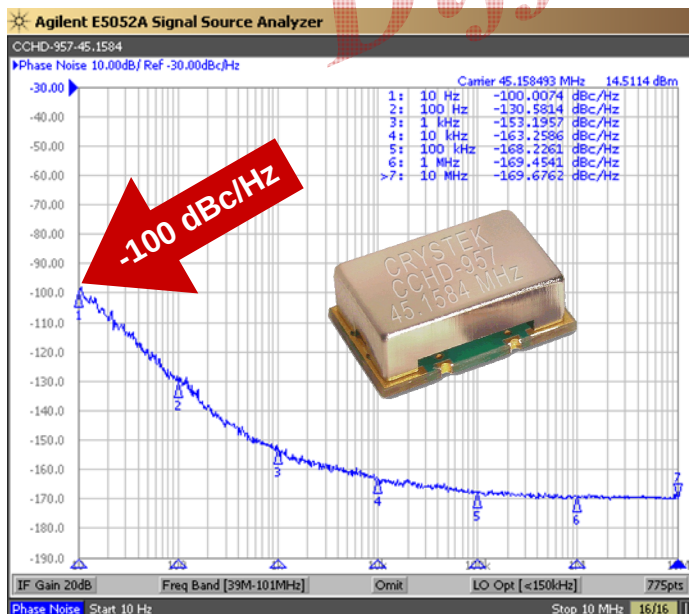
CCHD-957

Ultra-Low Phase Noise Oscillator with Standby Mode

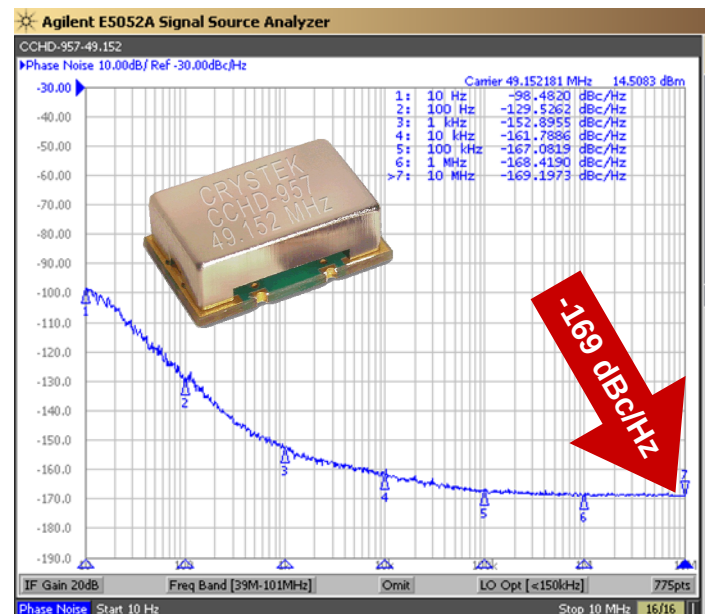
24.576 MHz HCMOS 3.3V



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 9×14 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: F
Date: 27-Nov-12
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CRYSTEK
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CCHD-957

Ultra-Low Phase Noise Oscillator with Standby Mode

CCHD-957 Model

9x14 mm SMD, 3.3V, HCMOS

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

Part Number Example:

CCHD-957X-25-49.152 = 3.3V, 45/55, -40°C to +85°C ($\pm$ 25ppm), 49.152 MHz

Mechanical:

Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Vibration:	MIL-STD-883, Method 2007, Condition A
Solvent Resistance:	MIL-STD-202, Method 215
Resistance to Soldering Heat:	MIL-STD-202, Method 210, Condition I or J

Environmental:

Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004

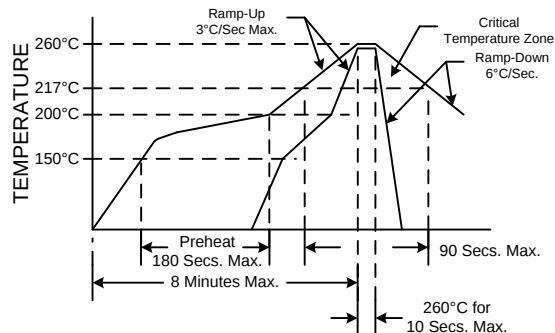


Developed Frequencies

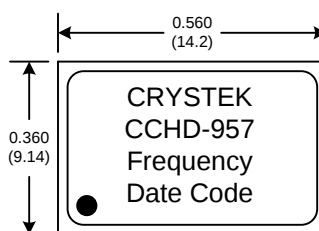
22.5792 MHz
24.576 MHz
45.1584 MHz
49.152 MHz



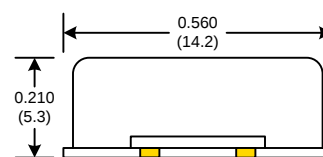
RECOMMENDED REFLOW SOLDERING PROFILE



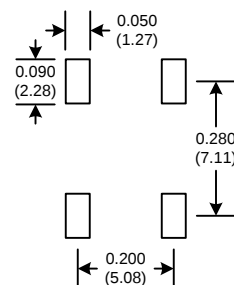
Top View



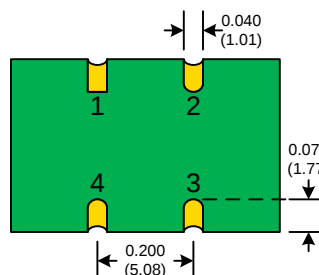
Side View



SUGGESTED PAD LAYOUT



Bottom View



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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