

June 25, 2015
Nihon Dempa Kogyo Co., Ltd.
Representative Director &
Chairman of the Board,
President and CEO
Toshiaki Takeuchi

Development of DuCULoN® – an ultra-low-phase-noise crystal oscillator for high-end digital audio device master clocks

Nihon Dempa Kogyo Co., Ltd. (NDK) has developed DuCULoN®*1 – an oven-controlled crystal oscillator with ultra-low-phase-noise characteristics that dramatically improves the sound quality of high-resolution digital audio devices.

*1 : Dual Crystal Ultra Low Noise OCXO – a crystal oscillator in which ultra-low-phase noise is achieved using a high-accuracy crystal devices

Based on high-purity signal technology acquired over the years through R&D on crystal unit for Space and Reliability markets and crystal oscillators for Mobile Communication base stations, NDK has achieved the world's best*2 low-phase noise characteristics for high-end digital audio device master clocks.

*2 : Internal data, June 2015

【Characteristics】

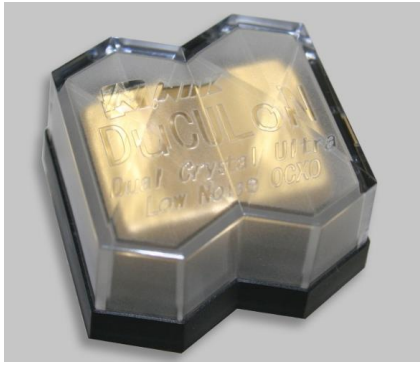
- Incorporation of novel noise reduction technology involving the use of a high-precision crystal unit for Satellite Communications
- Ultra-low-phase noise characteristics: neighborhood noise (Typ.): -165 dBc/Hz at 1 kHz; floor noise: -175 dBc/Hz at 10 kHz (measurement limit level)
- Incorporation of a new temperature fluctuation-resistant dual structure package (reduced low-frequency fluctuation noise)

With the advent of high-resolution sound, digital audio devices now have a resolution 1,000 times higher than that of conventional compact discs. This has led to dramatically improved expression in areas such as audio detail, atmosphere and realism, thereby allowing much higher fidelity.

Reproduction of high-resolution audio requires improved precision of high-resolution data processed using digital/analogue converters (DAC) to mitigate sound deterioration, and DAC precision depends on the characteristics of the master clock used. For high-resolution audio, oscillators with low-phase noise characteristics are needed to provide the signal source of the master clock.

NDK supplies crystal oscillators to a variety of audio device makers. This new product, which dramatically improves audio fidelity, is expected to help realize the full potential of high-end digital audio devices.

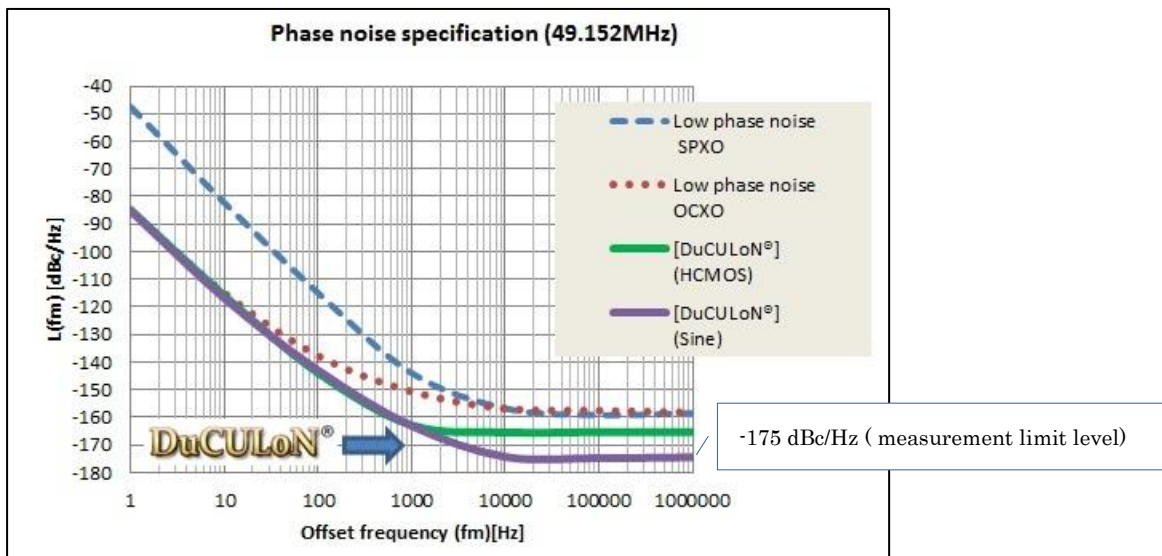
【Appearance】



【Sample shipment and mass production】 Sample shipment and the commencement of mass production are scheduled for July 2015 and December 2015, respectively.

【Product outline】

- ◆ Brand name: DuCULoN®
- ◆ Product: oven-controlled crystal oscillator (OCXO) for high-end digital audio devices
- ◆ Model: NH47M47LA
- ◆ Characteristics: ultra-low-phase noise characteristics



【Product characteristics】

Dimensions	47.2 x 47.0 x 28.5 mm
Nominal Frequency	45.1584 MHz, 49.152 MHz
Supply Voltage [Vcc]	+5 V ± 5%
Current Consumption	Max.800 mA
Operating Temperature Range	0 to +50°C
Output Level	HCMOS/sine

* Email (details below) for more information on the product.

【Contact info】

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