



June 22<sup>th</sup>, 2021  
Nihon Dempa Kogyo Co., Ltd.  
Representative Director and President  
Hiromi Katoh

**Development of NX1210AC 76.8MHz crystal -unit with built-in thermistor**

We are pleased to inform you that Nihon Dempa Kogyo Co., Ltd. has developed a crystal unit (76.8MHz) with a built-in thermistor for NX1210AC (1.2×1.0×0.55mm-size) and has started sample shipment.

With the shift to 5G of mobile communications, the increasing frequency of clock sources used in chipsets has resulted in an increasing demand for low phase noise.

In particular, in order to accommodate carrier frequencies such as millimeter waves, it is necessary to increase the internal multiplication number. However, increasing the multiplication number increases the noise component, which may lead to reduce the reception sensitivity and communication efficiency due to degradation of modulation accuracy (signal phase and amplitude shift).

To improve phase noise by reducing the number of multiplications, it is required to increase the frequency of the crystal resonator as the reference oscillator from 38.4MHz to 76.8MHz. In order to achieve further noise reduction, it is also necessary to increase the drive level and maintain high stable temperature characteristics in addition to high-frequency operation.

To meet these difficult demands, we have realized a compact, high-frequency products by using high-quality synthetic quartz grown in-house and processing crystal blank with high precision using our won photolithography processing technology.

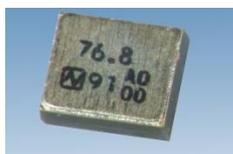
This product has the same characteristic as the NX1612SD\_76.8MHz, which has obtained the first certification for Qualcomm Technologies smartphone chipset (Qualcomm® Snapdragon™690, 750G and 480) which is under mass production, and it is a miniaturized product with a mounting area reduced to 38%.

Began supplying samples in May 2021. (NDK part number: EXS00A-CS10506)

The smartphone market for 5G is rapidly expanding, and we plan to work to ensure stable supplies of this product while expanding sales.

We will continue to contribute to the realization of a safe, secure and comfortable society through our quartz device and crystal application equipment businesses.

**[Product appearance]**



**[Sample and mass production]**

Sample shipment: Started in May 2021, mass production: Scheduled for January 2022.

**【Specifications / Characteristics】**

Model	NX1210AC
Dimensions	1.2 x 1.0 x 0.55mm

**ELECTRICAL CHARACTERISTICS**

Frequency Range	38.4MHz to 96MHz
Typical Frequency	76.8MHz
Frequency Tolerance (+25 degC +/-3 degC)	-10 to +22 x 10 <sup>-6</sup>
Frequency/Temperature Characteristics (-30~+85 degC)	+/-12 x 10 <sup>-6</sup>
Operable Temperature Range/Storage Temperature Range	-30 to +105 degC /-40 to +105 degC
Equivalent Series Resistance	Max. 30Ω
Load Capacitance	7pF
Temperature Resistance (at +25 degC)	100KΩ±1%
Temperature Resistance (+25/+50 degC)	4250K±1%

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