



November 25, 2016
Nihon Dempa Kogyo Co., Ltd.
Representative Director &
Chairman of the Board,
President and CEO
Toshiaki Takeuchi

**World's smallest^(*1) Model(3225 size) and High Precision Model(7050 size)
of high frequency multimode crystal oscillator^(*2) developed**

Nihon Dempa Kogyo Co., Ltd. (NDK) has developed 3225 size compact multimode crystal oscillator (3.2 x 2.5 x 0.9 mm) and high precision multimode crystal oscillator (7.0 x 5.0 x 1.6 mm) with overall frequency tolerance^(*3) of Max. +/- 4.6 x 10⁻⁶ as per Stratum 3 and ITU-T TR-G8262 specifications.

Both models offer frequencies up to 2,100 MHz and low jitter of 130 fs as with their conventional counterparts.

Recent years have seen a boom in 4G/5G/LTE high speed data transmission and the proliferation of gigabit Ethernet and high speed optical networks. Combined with the increasing volumes of data being handled today (e.g., in real time data processing for high definition imaging), this creates the need for network equipment to support high speed processing with precision. Such equipment is now installed in a wide variety of environments, giving rise to considerations regarding size and space.

In response to these needs, NDK has developed compact model of its conventional multimode crystal oscillators (5.0 x 3.2 x 1.2 mm), reducing volume by 37 percent and high precision model with frequency temperature characteristics have also been enhanced for high-precision performance (Frequency Temperature Characteristics : Max. +/- 0.28 x 10⁻⁶). These models will support users' development of more compact network equipment, serving as high precision oscillation sources with low jitter.

(*1) : Based on NDK research as of November 2016

(*2) : A type of crystal oscillator providing Frequency Selection Function (including settable desired frequency by I²C) and allowing customization of specifications (e.g., output level, supply voltage)

(*3) : Stability with frequency/temperature characteristics, initial tolerance, frequency/voltage coefficient, and long-term frequency stability(10 years)

[Appearance]

Compact Model



High Precision Model



[Samples and Mass Production]

Compact Model

Sample delivery is scheduled to begin in January 2017 and mass production in April 2017.

High Precision Model

Sample delivery is scheduled to begin in February 2017 and mass production in April 2017.

[Price]

Compact Model

Samples are priced at 3,000 yen per piece.

High Precision Model

Samples are priced at 4,000 yen per piece.

[Product specifications]

Compact Model

Model ^(*4)	NV3225S[]
Dimensions	3.2 x 2.5 x 0.9 mm
Nominal Frequency Range	15 MHz to 2100 MHz
Frequency Selection Function	None, Two-frequency Selectable, Four-frequency Selectable, Any Rate ^(*5)
Output Level	LVPECL (15 MHz to 2100 MHz) LVDS (15 MHz to 2100 MHz) CML (15 MHz to 2100 MHz) HCSL (15 MHz to 700 MHz) CMOS (15 MHz to 200 MHz)
Operating Temperature Range	-40 deg C to +85 deg C
Overall Frequency Tolerance	Max. +/-50 x 10 ⁻⁶
Phase Jitter (12 kHz to 20 MHz)	Typ. 130fs (Max. 200 fs) (Fout=622.08 MHz)
Supply Voltage [V _{CC}]	+1.8V, +2.5V, +3.3V
Current Consumption	Typ. 80 mA (LVPECL +3.3V)
International Environmental Certification	Pb-free, RoHS compliant, MSL1

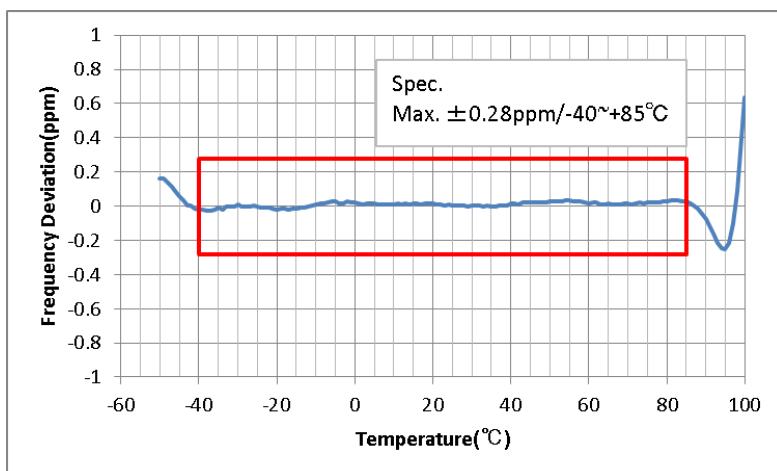
(*4) : [] is alphabetic character based on specifications.

(*5) : Setable desired frequency by I²C

High Precision Model

Model	NT7050S[]
Dimensions	7.0 x 5.0 x 1.6 mm
Nominal Frequency Range	15 MHz to 2100 MHz
Frequency Selection Function	None, Two-frequency Selectable, Four-frequency Selectable, Any Rate
Output Level	LVPECL (15 MHz to 2100 MHz) LVDS (15 MHz to 2100 MHz) CML (15 MHz to 2100 MHz) HCSL (15 MHz to 700 MHz) CMOS (15 MHz to 200 MHz)
Operating Temperature Range	-40 deg C to +85 deg C
Overall Frequency Tolerance	Max. +/-4.6 x 10 ⁻⁶
Frequency Temperature Characteristics	Max. +/-0.28 x 10 ⁻⁶
Phase Jitter (12kHz to 20MHz)	Typ. 250fs (Max. 300 fs) (Fout=622.08 MHz)
Supply Voltage [V _{CC}]	+1.8V, +2.5V, +3.3V
Current Consumption	Typ. 80 mA (LVPECL +3.3V)
International Environmental Certification	Pb-free, RoHS compliant, MSL1

[Example of Frequency Temperature Characteristics (High Precision Model)]



For more information on the product, contact:

[Contact Info]

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