

## NB3H63143G

# 3.3 V / 2.5 V One Time Programmable OmniClock Generator with Single-Ended (LVCMOS/LVTTL) and Differential (LVPECL/LVDS/HCSL/CML) Outputs with Individual Output Enable and Individual VDDO

## Product Overview

For complete documentation, see the data sheet.

The NB3H63143G, which is a member of the OmniClock family, is a one-time programmable (OTP), low power PLL-based clock generator that supports any output frequency from 8 kHz to 200 MHz. The device accepts fundamental mode parallel resonant crystal or a single ended (LVCMOS/LVTTL) reference clock as input. It generates either three single ended (LVCMOS/LVTTL) outputs, or one single ended output and one differential (LVPECL/LVDS/HCSL/CML) output. The output signals can be modulated using the spread spectrum feature of the PLL (programmable spread spectrum type, deviation and rate) for applications demanding low electro-magnetic interference (EMI). Individual output enable pins OE[2:0] are available to enable/disable the outputs. Individual output voltage pins VDDO[2:0] are available to independently set the output voltage of each output. Up to four different configurations can be written into the device memory. Two selection pins (SEL[1:0]) allow the user to select the configuration to use. Using the PLL bypass mode, it is possible to get a copy of the input clock on any or all of the outputs. The device can be powered down using the Power Down pin (PD#). It is possible to program the internal input crystal load capacitance and the output drive current provided by the device. The device also has automatic gain control (crystal power limiting) circuitry which avoids the device overdriving the external crystal.

## Features

- Member of the OmniClock Family of Programmable Clock Generators
- Operating Power Supply: 3.3 V  $\pm$ 10%, 2.5 V  $\pm$ 10%
- I/O Standards - Inputs: LVCMOS/LVTTL, Fundamental Mode Crystal - Outputs: 1.8 V to 3.3 V LVCMOS/LVTTL - Outputs: LVPECL, LVDS, HCSL and CML
- 3 Programmable Single Ended (LVCMOS/LVTTL) Outputs from 8 kHz to 200 MHz
- 1 Programmable Differential Clock Output up to 200 MHz
- Input Frequency Range - Crystal: 3 MHz to 50 MHz - Reference Clock: 3 MHz to 200 MHz
- Configurable Spread Spectrum Frequency Modulation Parameters (Type, Deviation, Rate)
- Individual Output Enable Pins
- Independent Output Voltage Pins
- Programmable Internal Crystal Load Capacitors

For more features, see the data sheet



## Applications

- Consumer
- Industrial Equipment
- Computing and Peripherals
- Portable equipment

## End Products

- Smart Wearables
- Smart Phones
- Digital Cameras
- Camcorders
- Set Top Boxes

## Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Input Level	Output Level	V <sub>s</sub> Typ (V)	f <sub>in</sub> Typ (MHz)	f <sub>out</sub> Typ (MHz)	t <sub>jitter</sub> (Cy-Cy) Typ (ps)	t <sub>jitter</sub> (Period) Typ (ps)	t <sub>jitter</sub> (Φ) Typ (ps)	t <sub>r</sub> & t <sub>f</sub> Typ (ps)	t <sub>r</sub> & t <sub>f</sub> Max (ps)	T <sub>A</sub> Min (°C)	T <sub>A</sub> Max (°C)	Package Type
NB3H63143G00 MNR2G	1.75	 	Active					0.008 to 200	100	100		1000	700	-40	85	QFN-16