

Product Overview

NB3H5150: Clock Generator, Multi-Rate, Low Noise 2.5V / 3.3V

For complete documentation, see the data sheet.

The NB3H5150 is a high performance Multi-Rate Clock generator which simultaneously synthesizes up to four different frequencies from a single PLL using a 25 MHz input reference. The reference frequency can be provided by a crystal, LVCMOS/LVTTL, LVPECL, HCSL or LVDS differential signals. The REFMODE pin will select the reference source.

Three output banks (CLK1A/CLK1B to CLK3A/CLK3B) produce user selectable frequencies of: 25 MHz, 33.33 MHz, 50 MHz, 100 MHz, 125 MHz, or 156.25 MHz and have ultra-low noise/jitter performance of less than 0.3 ps.

The fourth output bank (CLK4A/CLK4B) can produce the following integer and FRAC-N frequencies in pin-strap mode: 33.33 MHz, 66.66 MHz, 100 MHz, 106.25 MHz, 125 MHz, 133.33 MHz, 155.52 MHz, 156.25 MHz or 161.1328 MHz.

More programmable frequencies are available via the I2C interface with jitter performance of less than 1 ps. Detailed registered descriptions will be available in a future application note.

Each output block can create two single-ended in-phase LVCMOS outputs or one differential pair of LVPECL outputs.

Each of the four output blocks is independently powered by a separate VDDO, 2.5 V/3.3 V for LVPECL, 1.8 V/2.5 V/3.3 V for LVCMOS.

The serial (I2C and SMBUS) interface can program a variety of functions including the frequencies and output levels of each divider block which can be individually enabled and disabled.

Features

- Flexible Input Reference - 25 MHz Crystal, Oscillator, Single-Ended or Differential
- Four Independent User-Programmable Clock Frequencies from 25 MHz to 250 MHz
- Independently Configurable Outputs:
 - Up to Eight LVCMOS Single Ended outputs or,
 - Up to Four Differential LVPECL Outputs or any combination of LVCMOS and LVPECL
- Flexible Input/Core and Output Power Supply Combinations:
 - VDD (Core) = 3.3 V \pm 5% or 2.5 V \pm 5%
 - VDDOn (Outputs) = 3.3 V \pm 5% or 2.5 V \pm 5% or 1.8 V \pm 5% (LVCMOS Only)
- Independent Power Supply per Output Bank
- 300 ps max Output Rise and Fall Times, LVPECL

For more features, see the data sheet

Applications

- Telecom
- Networking
- Ethernet
- SONET

End Products

- Solid State Hard Drive

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Input Level	Output Level	V _S Typ (V)	f _{in} Typ (MHz)	f _{out} Typ (MHz)	t _{jitter} (Cy-Cy) Typ (ps)	t _{jitter} (Period) Typ (ps)	t _{jitter} (Φ) Typ (ps)	t _R & t _F Typ (ps)	t _R & t _F Max (ps)	T _A Min (°C)	T _A Max (°C)	Package Type
NB3H5150MNTXG		Pb-free Halide free	Active	Crystal	LVCMOS	3.3	25	25-250			0.5	200	100	-40	85	QFN-32
				TTL	LVP ECL	2.5				0.22	800	300				
				LVP ECL	LVP ECL											
				HCSL												
				LVDS												

For more information please contact your local sales support at www.onsemi.com.

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