



## Product Overview

### NB7HQ14M: 2.5 V, 7 GHz / 10 Gbps Differential Input to 1.8 V / 2.5 V 1:4 CML Clock / Data Fanout Buffer w/ Selectable Input Equalizer

For complete documentation, see the data sheet

#### Product Description

The NB7HQ14M is a high performance differential 1:4 CML fanout buffer with a selectable Equalizer receiver. When placed in series with a Clock /Data path operating up to 7GHz or 10Gb/s, respectively, the NB7HQ14M inputs will compensate the degraded signal transmitted across a FR4 PCB backplane or cable interconnect and output four identical CML copies of the input signal. Therefore, the serial data rate is increased by reducing Inter-Symbol Interference (ISI) caused by losses in copper interconnect or long cables. The Equalizer ENable pin (EQEN) allows the IN/IN inputs to either flow through or bypass the Equalizer section. Control of the Equalizer function is realized by setting EQEN; When EQEN is set Low, the IN/IN inputs bypass the Equalizer. When EQEN is set High, the IN/IN inputs flow through the Equalizer. The default state at start-up is LOW. As such, NB7HQ14M is ideal for SONET, GigE, Fiber Channel, Backplane and other Clock/Data distribution applications. The differential inputs incorporate internal 50-ohm termination resistors that are accessed through the VT pin. This feature allows the NB7HQ14M to accept various logic level standards, such as LVPECL, CML or LVDS. The outputs have the flexibility of being powered by either a 2.5 V or 1.8 V supply. The 1:4 fanout design was optimized for low output skew applications. The NB7HQ14M is a member of the GigaComm family of high performance clock products.

#### Features

- Input Data Rate > 10 Gbps
- Input Clock Frequency > 7 GHz
- Maximum Output Skew < 15 ps
- Maximum RMS Clock Jitter < 0.8 ps
- Maximum Data Dependent Jitter < 10 ps pk-pk
- Selectable Input Equalization
- Internal Input 50-ohm Termination Resistors
- 35 ps Typical Rise and Fall Times

#### Applications

- Routers, Switchers

#### Part Electrical Specifications

Product	Compliance	Status	Type	Channels	Input / Output Ratio	Input Level	Output Level	V <sub>CC</sub> Typ (V)	t <sub>Jitter</sub> RMS Typ (ps)	t <sub>skew(o-o)</sub> Max (ps)	t <sub>pd</sub> Typ (ns)	t <sub>R</sub> & t <sub>F</sub> Max (ps)	f <sub>max</sub> Clock Typ (MHz)	f <sub>max</sub> Data Typ (Mbps)	Package Type
NB7HQ14MMNG	Pb-free	Active	Buffer	1	1:4	CML	CML	2.5	0.2	15	0.17	45	10000	12000	QFN-16
	Halide free					ECL									
						LVDS									
NB7HQ14MMNHTBG	Pb-free	Active	Buffer	1	1:4	CML	CML	2.5	0.2	15	0.17	45	10000	12000	QFN-16
	Halide free					ECL									
						LVDS									
NB7HQ14MMNTXG	Pb-free	Active	Buffer	1	1:4	CML	CML	2.5	0.2	15	0.17	45	10000	12000	QFN-16
	Halide free					ECL									
						LVDS									

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