

Product Overview

NB7VQ14M: Clock / Data CML Fanout Buffer, 1:4 Differential, 1.8 V / 2.5 V / 3.3 V, 8 GHz, 14 Gbps, with Selectable Input Equalizer

For complete documentation, see the data sheet.

The NB7VQ14M 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 8 GHz or 14 Gb/s, respectively, the NB7VQ14M 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 with a 1.8 V, 2.5 V or 3.3 V power supply. 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/INb 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/INb inputs flow through the Equalizer. The default state at start-up is LOW. As such, NB7VQ14M 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 NB7VQ14M to accept various logic level standards, such as LVPECL, CML or LVDS. The 1:4 fanout design was optimized for low output skew applications. The NB7VQ14M is a member of the GigaComm™ family of high performance clock products.

Features

- Input Data Rate > 14 Gb/s, Typical
- Input Clock Frequency > 8 GHz, Typical
- 165 ps Typical Propagation Delay
- 30 ps Typical Rise and Fall Times
- < 15 ps Maximum Output Skew
- < 0.8 ps Maximum RMS Clock Jitter
- < 10 ps pp of Data Dependent Jitter
- Differential CML Outputs, 400 mV Peak-to-Peak, Typical
- Selectable Input Equalization
- Operating Range: $V_{CC} = 1.71 \text{ V}$ to 3.6 V with GND = 0 V

For more features, see the data sheet

Applications

- Clock and Data Fanout in Routers, Switchers

End Products

- Routers, Switchers

Part Electrical Specifications

Product	Compliance	Status	Type	Channels	Input / Output Ratio	Input Level	Output Level	V_{CC} Typ (V)	$t_{jitter, RMS}$ Typ (ps)	$t_{skew, o-ol}$ Max (ps)	t_{pd} Typ (ns)	t_R & t_F Max (ps)	$f_{max, Clock}$ Typ (MHz)	$f_{max, Data}$ Typ (Mbps)	Package Type
NB7VQ14MMNG	Pb-free	Active	Buffer	1	1:4	ECL	CML	3.3	0.2	15	0.175	45	8500	14000	QFN-16
	Halide free					CML		1.8							
						LVDS									
NB7VQ14MMNHTBG	Pb-free	Active	Buffer	1	1:4	CML	CML	1.8	0.2	15	0.175	45	8500	14000	QFN-16
	Halide free					ECL		3.3							
						LVDS									

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