

Product Overview

NB7NPQ7021M: USB 3.1 Dual Channel Linear Redriver, 3.3 V

For complete documentation, see the data sheet.

The NB7NPQ7021M is a 3.3 V dual channel redriver for USB 3.1 Gen 1 and USB 3.1 Gen 2 applications that supports both 5 Gbps and 10 Gbps data rates. Signal integrity degrades from PCB traces, transmission cables, and inter-symbol interference (ISI). The NB7NPQ7021M compensates for these losses by engaging varying levels of equalization at the input receiver, and flat gain amplification on the output transmitter.

After power up, the NB7NPQ7021M periodically checks both of the TX output pairs for a receiver connection. When the receiver is detected on both channels the RX termination becomes enabled and the NB7NPQ7021M is set to perform the redriver function. The NB7NPQ7021M comes in a small 3 x 3 mm UQFN16 package and is specified to operate across the entire industrial temperature range, -40°C to 85°C.

Features

- 3.3 V \pm 5% Power Supply
- Device Supports USB 3.1 Gen 1 and USB 3.1 Gen 2 Data Rates
- Automatic Receiver Termination Detection
- Integrated Input and Output Termination
- Selectable Equalization and Flat Gain
- Hot-Plug Capable
- ESD Protection \pm 4 kV HBM
- Small 3 x 3 x 0.5 mm UQFN16 Package

Applications

- USB3.1 Type-C Signal Routing
- Mobile Phone and Tablet
- Computer and Laptop
- Docking Station and Dongle
- Active Cable, Back Planes

End Products

- Mobile Phone and Tablet
- Computer and Laptop
- Docking Station and Dongle
- Active Cable, Back Planes
- Gaming Console, Smart T.V.

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) Max (ps)	t _{pd} Typ (ns)	t _R & t _F Max (ps)	f _{max} Clock Typ (MHz)	f _{max} Data Typ (Mbps)	Package Type
NB7NPQ7021MMUTX G	Pb-free Halide free	Active	Signal Driver	2	1:1	CML	CML	3.3	N/A	N/A	0.11	35	N/A	10000	UQFN -16

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

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