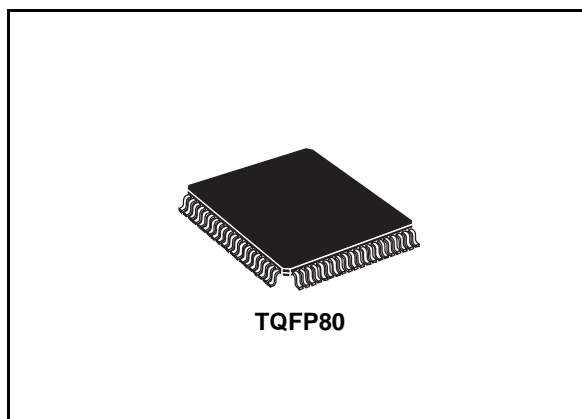


3:1 TMDS / HDMI signal equalizer

Data Brief

Features

- Compatible with HDMI v1.3 digital interface
- Conforms to the TMDS voltage standard on input and output channels
- 340 MHz maximum clock speed operation enabling up to 3.4 Gbps data rate per channel
- Integrated open-drain I²C buffer for DDC lines
- 5.3 V tolerant I²C I/O with 0 to 400 kHz frequency
- Ultra low capacitance of the channels
- Equalizer regenerates the incoming attenuated TMDS signal
- Buffer drives the TMDS outputs over long PCB track lengths
- Very low output skew and jitter
- Tight input thresholds reduce bit error rates
- On-chip 50 Ω input termination
- Integrated fail-safe feature sets outputs to known state for un-driven inputs
- Available in TQFP80 package footprint with flow-through pin-out
- -40°C to 85°C operating temperature range
- Evaluation kit and samples are available



Description

The STDVE003A integrates a 4-channel 3.4 Gbps TMDS equalizer and a 3:1 switch to select one of the three HDMI ports. The three input HDMI ports can be either external ports or internal sources. High-speed data paths and flow-through pin-out minimize internal device jitter and simplify board layout. The equalizer overcomes ISI jitter effects from lossy cables. The buffer/driver on the output can drive the TMDS output signals over long distances. In addition to this, STDVE003A integrates the 50 Ω termination resistor on all input channels to improve performance and reduce board space. The device can be put in a low-power mode by disabling the output current drivers.

The STDVE003A is ideal for advanced HDTV applications demanding HDMI deep colour (16-bit) superior image quality. The switch preserves the signal integrity to pass the stringent HDMI compliance requirements.

Table 1. Device summary

| Order code | Operating temperature | Package | Packaging |
|------------|-----------------------|---------|---------------|
| STDEV003A | -40°C to 85°C | TQFP80 | Tape and Reel |

1 Revision history

Table 2. Document revision history

| Date | Revision | Changes |
|-------------|----------|------------------|
| 3-Sept-2007 | 1 | Initial release. |

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS EXPRESSLY APPROVED IN WRITING BY AN AUTHORIZED ST REPRESENTATIVE, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER'S OWN RISK.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2007 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com