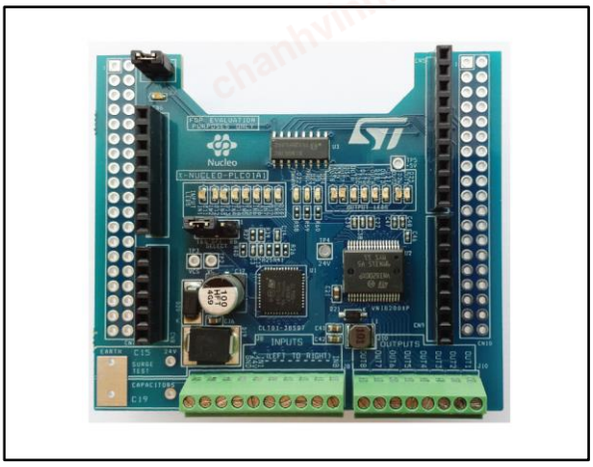
chanhvinh.com

X-NUCLEO-PLC01A1

Industrial input/output expansion board based on VNI8200XP and CLT01-38SQ7 for STM32 Nucleo



Features

- Enables a PLC (Programmable Logic Controller) function subset on STM32 Nucleo
- 8x input with CLT01-38SQ7 high-speed protected digital termination array
- 8x output with VNI8200XP high-side solid state relay
- Status LEDs: Fault, Thermal, Power
- IO (input/output) activity LEDs 24 V power supply
- Free comprehensive development firmware library and example compatible with STM32Cube firmware
- Compatible with STM32 Nucleo boards
- Compatible with Arduino UNO R3 connector
- RoHS compliant

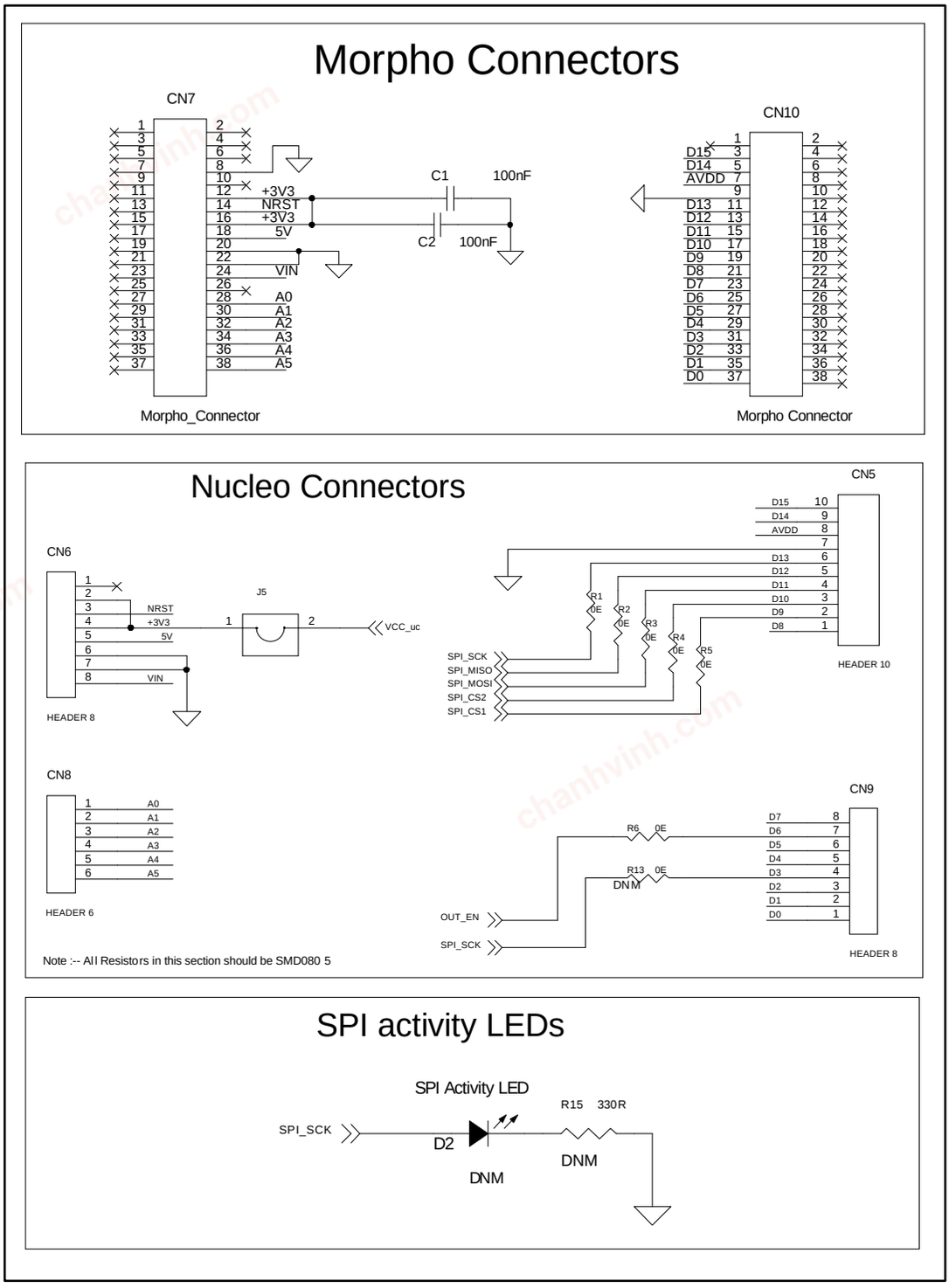
Description

The X-NUCLEO-PLC01A1 is an industrial input/output evaluation board which expands the STM32 Nucleo board functionality with a PLC (programmable logic controller) function subset. It is compatible with the Arduino UNO R3 connector layout and is designed around VNI8200XP (solid state relay) and CLT01-38SQ7 (octal digital termination array). The X-NUCLEO-PLC01A1 interfaces with the STM32 MCU via the SPI peripheral. Moreover, it is equipped with a set of diagnostic and activity LEDs to facilitate application debugging. It can accept other STM32 plug-on expansion boards to further extend the STM32 Nucleo board functionality. The X-NUCLEO-PLC01A1 allows the rapid evaluation of the ICs on board performing a basic set of PLC operations in conjunction with the X-CUBE-PLC1 software package. X-NUCLEO-PLC01A1 is not intended to evaluate the single devices at their full specifications. VNI8200XP includes advanced protection and fault detection features. CLT01-38SQ7 provides protection and isolation in industrial operating conditions as well as an 'energy-less' status indication for each of the eight input channels, featuring minimal power consumption; it is designed for situations that are required to pass the IEC61000-4-2 8 kV and 15 kV test standards. Both the CLT01-38SQ7 and the VNI8200XP are designed to meet the most common industrial requirements (i.e. IEC61000-4-2, IEC61000-4-4, IEC61000-4-5 or IEC61131-2); to eveluate them further, refer to the single-product evaluation boards, available at www.st.com.

chanhvinh.com

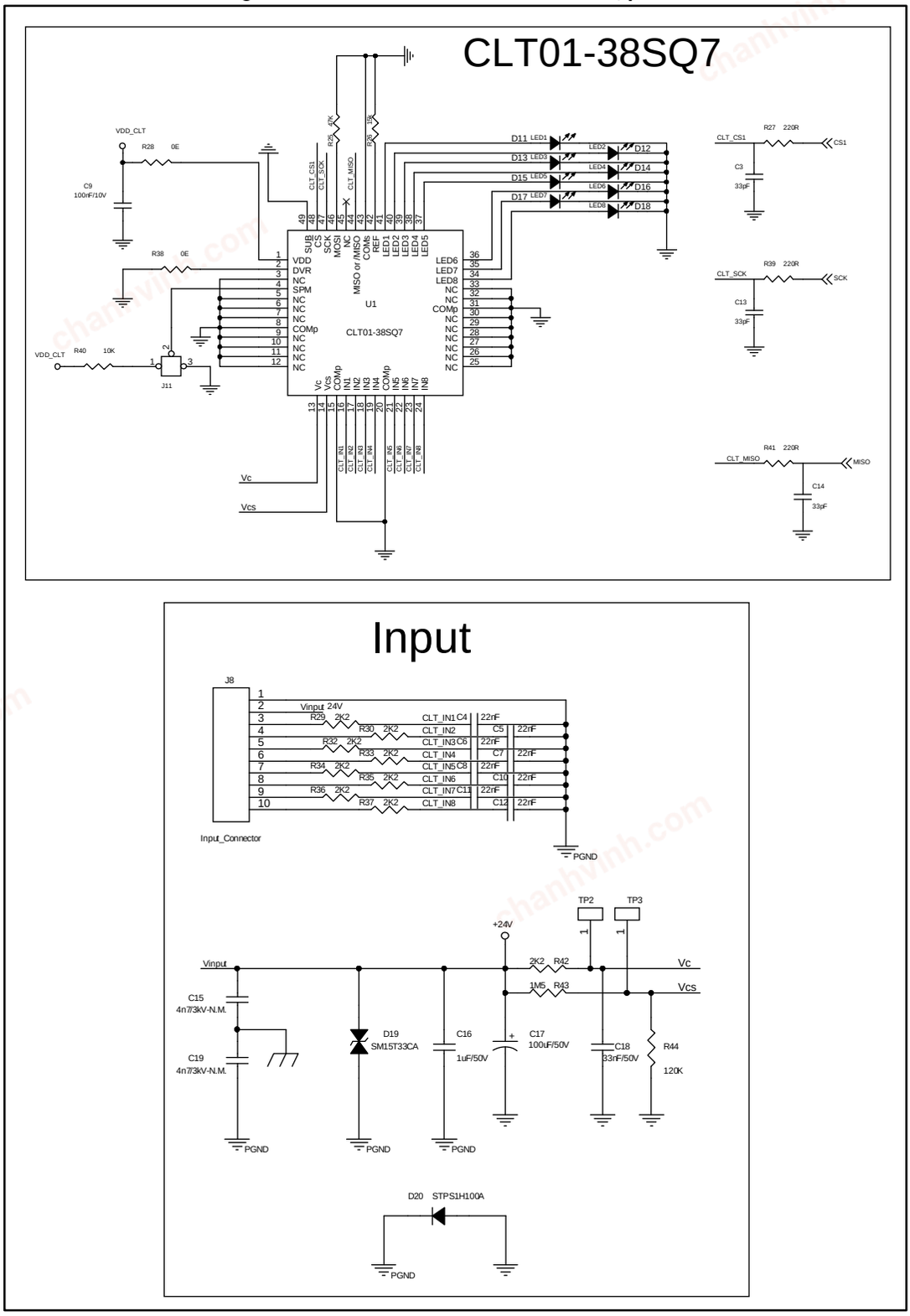
1 Schematic diagrams

Figure 1: X-NUCLEO-PLC01A1 schematic, part 1



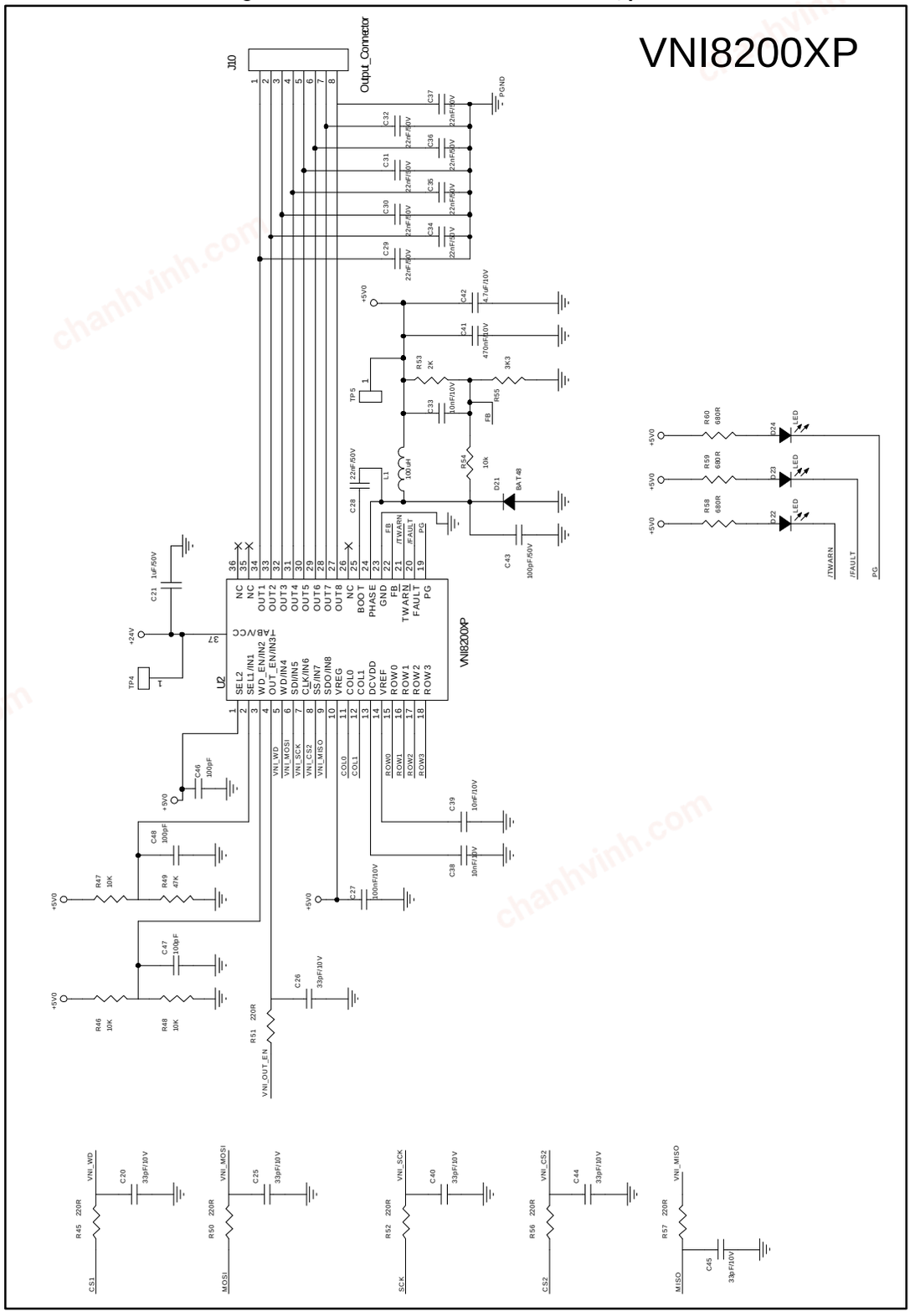
chanhvinh.com

Figure 2: X-NUCLEO-PLC01A1 schematic, part 2



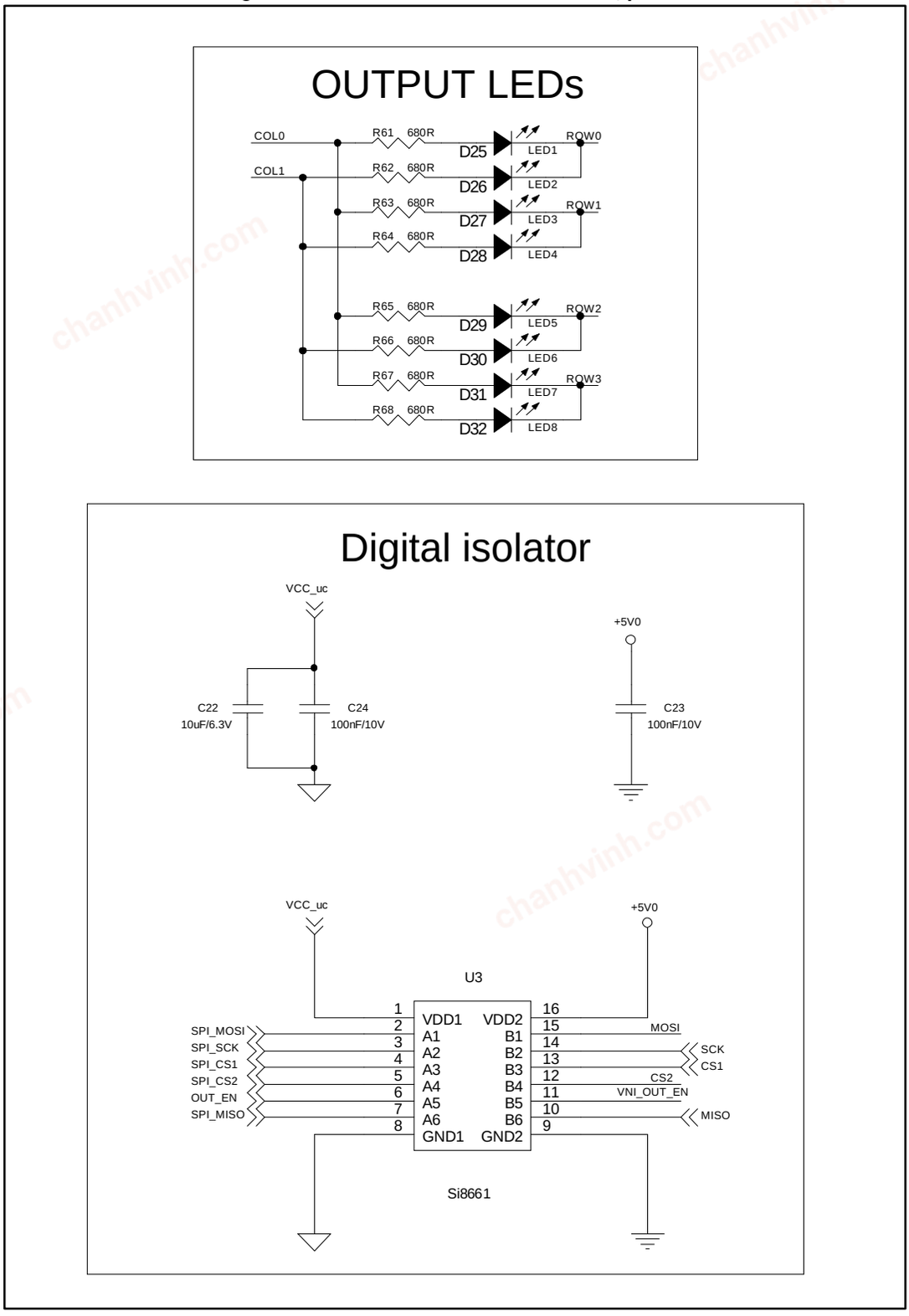
chanhvinh.com

Figure 3: X-NUCLEO-PLC01A1 schematic, part 3



chanhvinh.com

Figure 4: X-NUCLEO-PLC01A1 schematic, part 4



chanhvinh.com

2 Revision history

Table 1: Document revision history

Date	Version	Changes
17-Jul-2015	1	Initial release.

chanhvinh.com

chanhvinh.com

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2015 STMicroelectronics – All rights reserved