

REPLACE EV2300 WITH MKS USB ADAPTER

An excellent alternative to EV2300

A case study

CONTENTS

Introduction	2
Environment	2
Hardware	2
Software	2
Wiring modifications	2
Tabular list	2
Diagram	3
Software Updates.....	4
Summary	4
Disclaimer.....	5
Contents	5
General.....	5

Note: MKS USB Adapter is electrostatic-sensitive. Do not expose I2C or SMBus pins to voltages exceeding 3.3V. To avoid possibility of damage, use I2C isolator circuit between MKS USB Adapter and ADVANCED-BQMTESER.

INTRODUCTION

There are a number of programs and tools that are dependent on the EV2300 from Texas Instruments. The EV2300 was replaced with the EV2400. EV2400 does not support older programs like ADVANCED-BQMTESTER. This study shows how easily the MKS USB Adapter can replace the EV2300.

ENVIRONMENT

HARDWARE

- MKS USB Adapter board (Model SAI-1) from mkstechnology.com
- ADVANCED-BQMTESTER hardware board
- Cables connecting USB adapter to target board
- Computer/ PC with USB ports running Windows
- LDO based 3.3V/150mA power supply

SOFTWARE

- Operating systems: Windows XP SP3, Windows 7, Windows Vista, Windows 10
- May also be compatible with other Windows operating systems

WIRING MODIFICATIONS

This section shows the wiring modifications in order to use MKS USB Adapter.

TABULAR LIST

The modification changes are summarized in the table below.

Location	Change Description
EV2300	Replace with MKS USB Adapter(Model SAI-1)
SMBus/I2C cable	Cut the VOUT line. Connect from MKSAdapter to ADVANCED-BQMTESTER
ADVANCED-BQMTESTER	Connect DUT to I2C (Even if DUT is SMBus product)
ADVANCED-BQMTESTER	Apply 3.3V power to +5V pin of ADVANCED-BQMTESTER. Use a 3.3V/150mA LDO. * ¹

*¹ Exceeding 3.5V on this pin may cause damage to MKS USB Adapter

DIAGRAM

The red boxes highlight the wiring changes to use MKS USB Adapter in place of EV2300.

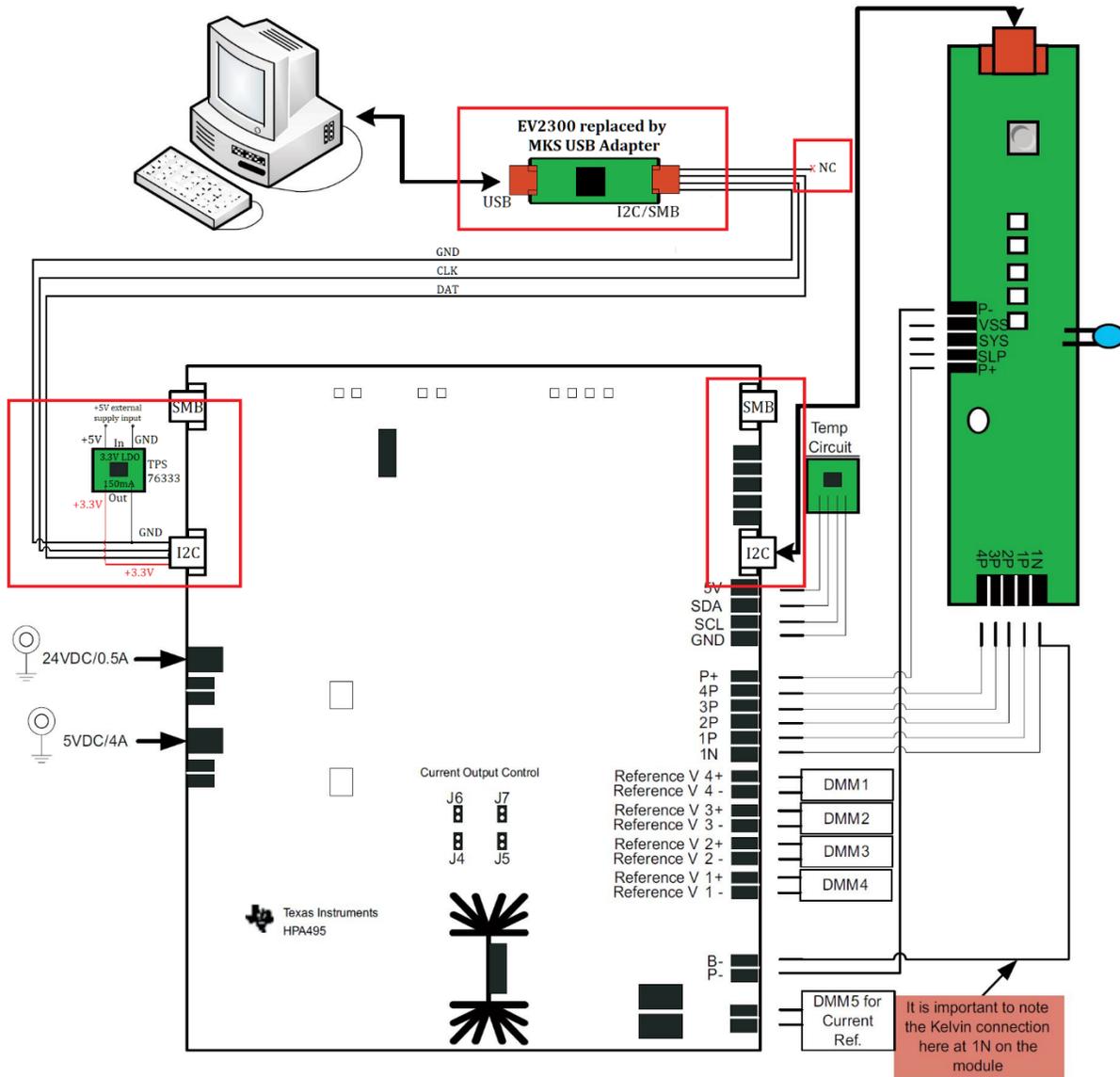


Figure 1: Wiring modifications

SOFTWARE UPDATES

The steps below assume that ADVANCED-BQMTESTER software is installed.

ADVANCED-BQMTESTER page reference <https://www.ti.com/tool/ADVANCED-BQMTESTER>

1. Run EV2300_Alterative_BQMTESTER_Update.exe (Requires administrator access)
2. Allow administrator access when prompted
3. Select “Enable Alternative” and click Next
4. Agree to the terms and conditions
5. Follow the prompts to Install/Repair Microsoft Visual Studio C++ 2010 x86 Redistributable
6. Successful installation message is shown

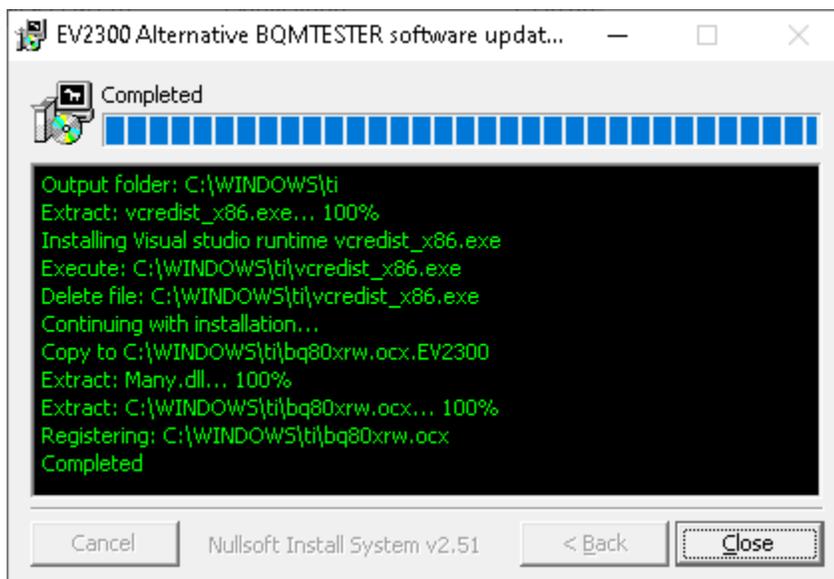


Figure 2: Successful installation

7. Run ADVANCED-BQMTESTER software normally - start with ‘bq Tester StationSetup’ and then run ‘bq MultiStation Tester’.

SUMMARY

MKS USB Adapter is a practical replacement for EV2300. The switch was made with minimal changes to an existing setup. The end-user experience remains unchanged.

DISCLAIMER

CONTENTS

Although every effort has been made to ensure that the information contained in this document is accurate, changes to the hardware and software can occur over time. As a result users are encouraged to verify actual operation and not rely solely on the documentation.

GENERAL

MKS Technology shall in no event be liable to any party for direct, indirect, special, general, incidental, or consequential damages arising from the use of the hardware, software or documentation, or any derivative works thereof, even if MKS Technology has been advised of the possibility of such damage. The hardware, software, its documentation, and any derivative works are provided on an "as-is" basis, and thus come with absolutely no warranty, either express or implied. This disclaimer includes, but is not limited to, implied warranties of merchantability, fitness for any particular purpose, and non-infringement. MKS Technology has no obligation to provide maintenance, support, or updates.

Information in this document is subject to change without notice and should not be construed as a commitment. While the information contained herein is believed to be accurate, MKS Technology assumes no responsibility for any errors and/or omissions that may appear in this document.