RENESAS

Setup Manual

QB−V850MINIL

On-Chip Debug Emulator

1 Preface

Thank you for purchasing QB-V850MINIL.
QB-V850MINIL is an on-chip debug emulator that connects V850 microcontrollers equipped with on-chip debug unit, and debugs hardware and software efficiently.
Please entirely read this document first; you will obtain an overview of information on preparation for using QB-V850MINIL, startup, support, and so on.

<1> Checking the package contents
Check the package contents in accordance with the packing list supplied with QB-V850MINIL.
If there are any missing or damaged items, consult an Renesas Electronics sales representative or distributor.

<2> QB-V850MINIL product information and documents
For information on QB-V850MINIL, access following Renesas Electronics website, which is hereinafter referred as "QB-V850MINIL information site".

http://www.renesas.com/minicube

Documents related to QB-V850MINIL hardware are available at above website. "QB-V850MINIL user's manual" which is referred to inside leaflet is also available at the website.

<3> QB-V850MINIL software
Software for QB-V850MINIL must be installed on host machine to use QB-V850MINIL.
This document shows the setup procedure to use Renesas Electronics integrated development environment (IDE) CubeSuite+.

It is recommended to use the latest version of software. If you use CubeSuite+, updating is automatically executed.

If you use other software provided by Renesas Electronics partners, refer to the documents prepared by them.

2 Software installation

QB-V850MINIL software must be installed before using QB-V850MINIL. The following explains how to install Renesas Electronics CubeSuite+.
Caution: Do not connect QB-V850MINIL to the host machine until Installation of software is completed.

<1> Runtime libraries provided by Microsoft
To use CubeSuite+, Microsoft .NET Framework, its language pack, and the runtime library of Microsoft Visual C++, which are provided by Microsoft Corporation, are necessary.
CubeSuite+ V2.00.00 or later requires the following tool versions; please upgrade your tools according to your CubeSuite+ version if necessary.
 -Microsoft .NET Framework 4+ language pack
 -Runtime library of Microsoft Visual C++ 2010 SP1

The free evaluation version downloaded from our website include the processing for installing the above tools.

When downloading that Runtime library, please access the Microsoft Download Center and install Microsoft .NET Framework 4 before starting the setup procedure.

<2> IDE (CubeSuite+)
If you have a CubeSuite+ installation DVD, insert the DVD in host machine.
If you do not have the DVD, download CubeSuite+ from the following website and run the downloaded executable.

http://www.renesas.com/cubesuite+_download

The installation wizard starts (Figure 1), so install CubeSuite+ following the directions on the screen.

Figure 1 - CubeSuite+ Install Wizard

<3> USB driver recognition
After installation of software is completed, connect QB-V850MINIL to the host machine. The USB driver is then recognized.
With Windows XP, the "Found New Hardware" wizard starts. Select "Install the software automatically (Recommended) ", and then proceed to the subsequent procedures.

About other software tools

When using PM+ (conventional IDE), the debugger ID850QB and device file can be downloaded on the following website.

http://www.renesas.com/pm+

When using software tools of Green Hills software (GHS), refer to "Information" in this manual.

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3 Self-testing of QB-V850MINIL

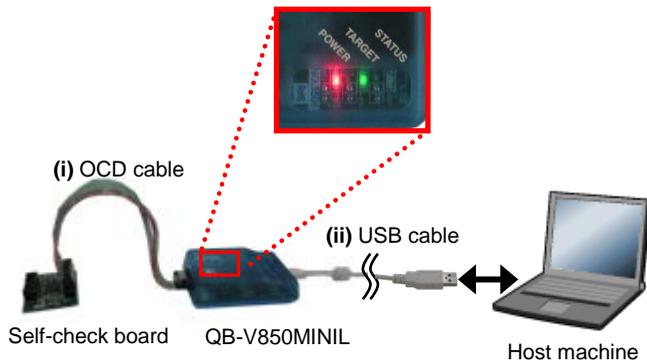Check if QB-V850MINIL has an initial failure.

<1> Connection
Connect cables in the order shown below.
(i) Connect to self-check board using OCD cable
(ii) Connect to host machine using USB cable

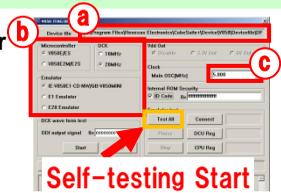After connection, POWER LED and TARGET LED on
QB-V850MINIL are lit (see Figure 1).

Figure 1 - Connection

(i) OCD cable

(ii) USB cable

Self-check board   QB-V850MINIL

Host machine

<2> Execution of V850 JTAG OCD Checker
Start the V850 JTAG OCD Checker from
the Start menu as below.
[Renesas Electronics CubeSuite+] →
[Emulator Utilities] →
[V850] → [V850 JTAG OCD Checker]

Self-testing Start

**Figure 2 –
V850 JTAG OCD Checker Setup**

Setup following 3 point
  (ref. Figure 2)

(a) [Device file] : C: Program Files¥Renesas Electronics CubeSuite+¥Device¥
    V850¥Devicefile¥DF3736.800
    (When CubeSuite+ was installed in drive C.)

(b) Microcontroller :V850E/ES
    Emulator   : IE-V850E1-CD-NW/QB-V850MINI
    DCK   : 20MHz

(c) Clock   : 5.000

Click the Test All button on the initial screen
of the V850 JTAG OCD Checker.
Self-testing then starts.
If "OK" is displayed for Emulator test,
your QB-V850MINIL is normal (Figure 3)
If not, consult an Renesas Electronics sales
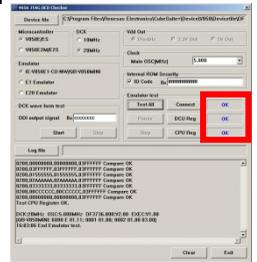representative or distributor.

After self-testing are completed, disconnect
QB-V850MINIL and the host machine once.

**Figure 3 –
V850 JTAG OCD Checker
Confirmation**

4 Setting and Connecting Hardware

Perform settings on QB-V850MINIL and then connect QB-V850MINIL
to the target system. The following description assumes that the target
system circuits have already been connected. For information on
target system circuit design, refer to the QB-V850MINIL user's manual.
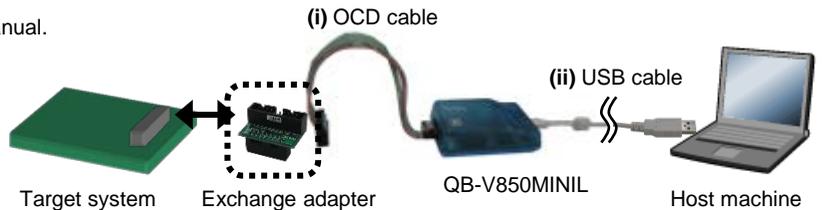
<1> Switch setting
Setting of the switch in QB-V850MINIL is unnecessary
basically. Make it the state at shipment (All OFF).
Only when a Mictor connector is used on the target,
the setting is necessary (ref. QB-V850MINIL user's manual).

(i) Connect to target system using OCD cable
(ii) Connect to host machine using USB cable

(i) OCD cable

(ii) USB cable

Target system   Exchange adapter   QB-V850MINIL   Host machine

Note. Use an exchange adapter accommodate to the connector
on the target system. Refer to a user's manual for details.

<2> Connection
* Do not turn on power to the target system before connection.
Connect hardware in the order shown right.
After connection, POWER LED on
QB-V850MINIL is lit red (see figure
right-hand).

<3> Power application to target system
Turn power on to the target system.
After connection, TARGET LED on QB-V850MINIL
is lit green (see figure right-hand).

5 Start debugging

Start CubeSuite+ from the Start menu. For the operation after startup,
refer to user's manual of CubeSuite+.

Information

<1> Trouble shooting
 If there seems to be any problem with QB-V850MINIL operation, use V850
JTAG OCD Checker to discover the problem.
If the above tool cannot resolve the problem, see the
FAQ on the website, or access the following URL for consulting.
 http://www.renesas.com/contact/contact_tech.html

<2> About GHS software (MULTI)
 The IE control program EXEC library for the V850 ICE server (850eserv),
 which is used to connect the MULTI debugger, is available on the Renesas
 Electronics website as below. Download and use the latest version.
 http://www.renesas.com/ghs_debug_if

For where to inquire, access the following
Renesas Electronics website.
 http://www.renesas.com/contact/contact_tech.html