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User's Manual

QB-78K0RFX3

In-Circuit Emulator

User's Manual

Target Devices:
78K0R/FB3
78K0R/FC3
78K0R/FE3
78K0R/FF3
78K0R/FG3
78K0R/HC3
78K0R/HE3
78K0R/HF3
78K0R/HG3

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1. Circumstances not covered by product guarantee

- If the product was disassembled, altered, or repaired by the customer
- If it was dropped, broken, or given another strong shock
- Use at overvoltage, use outside guaranteed temperature range, storing outside guaranteed temperature range
- If power was turned on while connection to the AC adapter, USB interface cable, or target system was in an unsatisfactory state
- If the cable of the AC adapter, the USB interface cable, the emulation probe, or the like was bent or pulled excessively
- If an AC adapter other than the supplied product was used
- If the product got wet
- If this product is connected to the target system when there is a potential difference between the GND of this product and GND of the target system.
- If the connectors or cables are plugged/unplugged while this product is in the power-on state.
- If excessive load is applied to the connectors or sockets (As for handling, please see **2.3 Mounting and Connecting Connectors**).
- If a metal part of the power switch, cooling fan, or another such part comes in contact with an electrostatic charge.
- If the product is used or stored in an environment where an electrostatic or electrical noise is likely to occur.

2. Safety precautions

- If used for a long time, the product may become hot (50°C to 60°C). Be careful of low temperature burns and other dangers due to the product becoming hot.
- Be careful of electrical shock. There is a danger of electrical shock if the product is used as described above in **1. Circumstances not covered by product guarantee**.

How to Use This Manual

Readers

This manual is intended for users who wish to perform debugging using the QB-78K0RFX3. The readers of this manual are assumed to be familiar with the device functions and usage, and to have knowledge of debuggers.

Purpose

This manual is intended to give users an understanding of the basic specifications and correct usage of the QB-78K0RFX3.

Organization

This manual is divided into the following sections.

- General
- Setup procedure
- Settings at product shipment
- Cautions

How to Read This Manual

It is assumed that the readers of this manual have general knowledge in the fields of electrical engineering, logic circuits, and microcontrollers.
This manual describes the basic setup procedures and how to set switches.

To understand the overall functions and usages of the QB-78K0RFX3
→ Read this manual in the order of the **CONTENTS**. The mark <R> shows major revised points. The revised points can be easily searched by copying an "<R>" in the PDF file and specifying it in the "Find what:" field.

To know the manipulations, command functions, and other software-related settings of the QB-78K0RFX3
→ See the user's manual of the debugger (supplied with the QB-78K0RFX3) to be used.

Conventions

Note:	Footnote for item marked with **Note** in the text
Caution:	Information requiring particular attention
Remark:	Supplementary information
Numeric representation:	Binary ... xxxx or xxxxB
	Decimal ... xxxx
	Hexadecimal ... xxxxH
Prefix indicating power of 2 (address space, memory capacity):	K (kilo): $2^{10} = 1,024$
	M (mega): $2^{20} = 1,024^2$

Terminology The meanings of the terms used in this manual are described in the table below.

Term	Meaning
Target device	This is the device to be emulated.
Target system	This is the system to be debugged. This includes the target program and the hardware provided by the user.
IECUBE ™	Generic name for Renesas Electronics' high-performance / compact in-circuit emulator.

Related Documents Please use the following documents in conjunction with this manual.
The related documents listed below may include preliminary versions. However, preliminary versions are not marked as such.

Documents Related to Development Tools (User's Manuals)

Document Name		Document Number
QB-78K0RFX3 In-Circuit Emulator		This manual
CubeSuite+ Integrated Development Environment User's Manual	Start	R20UT0727E
	78K0R Design	R20UT0547E
	RL78,78K0R Cording	R20UT0729E
	RL78,78K0R Build	R20UT0730E
	78K0R Debug	R20UT0732E
	Analysis	R20UT0735E
	Message	R20UT0736E

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CHAPTER 1 GENERAL

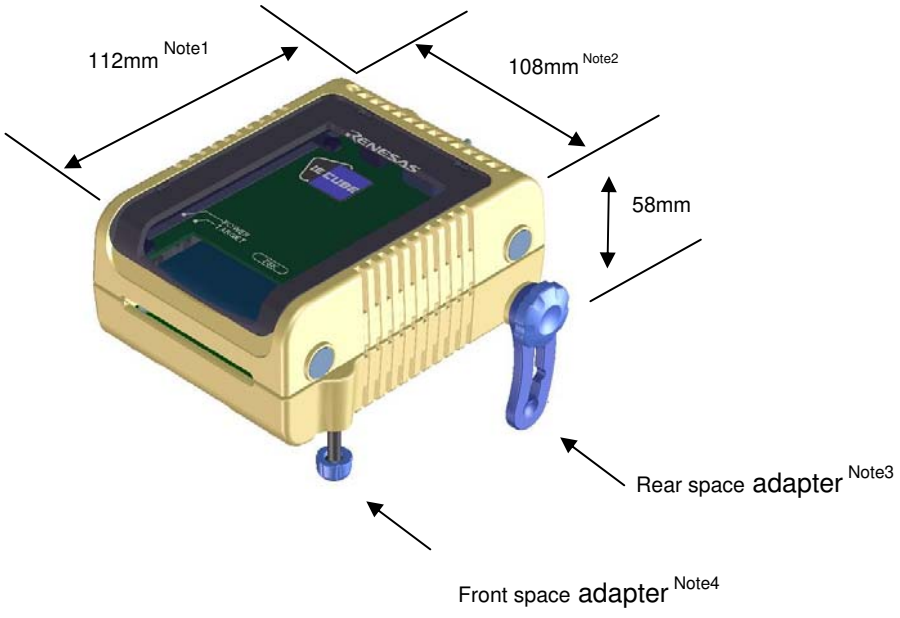
The QB-78K0RFX3 is an in-circuit emulator for emulating the 78K0R/FX3 or 78K0R/Hx3.
Hardware and software can be debugged efficiently in the development of systems in which the 78K0R/FX3 or 78K0R/Hx3 is used. This manual descries basic setup procedures, hardware specifications, system specifications, and how to set switches.

1.1 Hardware Specifications

Table 1-1. QB-78K0RFX3 Hardware Specifications

Parameter		Specification
Target device		78K0R/FB3, 78K0R/FC3, 78K0R/FE3, 78K0R/FF3, 78K0R/FG3, 78K0R/HC3, 78K0R/HE3, 78K0R/HF3, 78K0R/HG3
Operating voltage		2.7 to 5.5V
Operating frequency[Note1]	High-speed system clock	2.7 V ≤ V_{DD} ≤ 5.5 V :2 to 24 MHz
	Internal high-speed oscillation clock	2.7 V ≤ V_{DD} ≤ 5.5V :4 MHz, 8 MHz
Operating temperature range		0 to 40°C (No condensation)
Storage temperature range		−15 to 60°C (No condensation)
External dimensions		See figure below
Power consumption	Target system power supply	Voltage: 2.7 to 5.5 V Current: approx. 3.3 mA MAX
Weight		Approx. 300 g
Host interface		USB interface (1.1, 2.0)

Note1 Errors are within ±0.5%. However, this does not apply to errors of the oscillator or clock system on the target board.



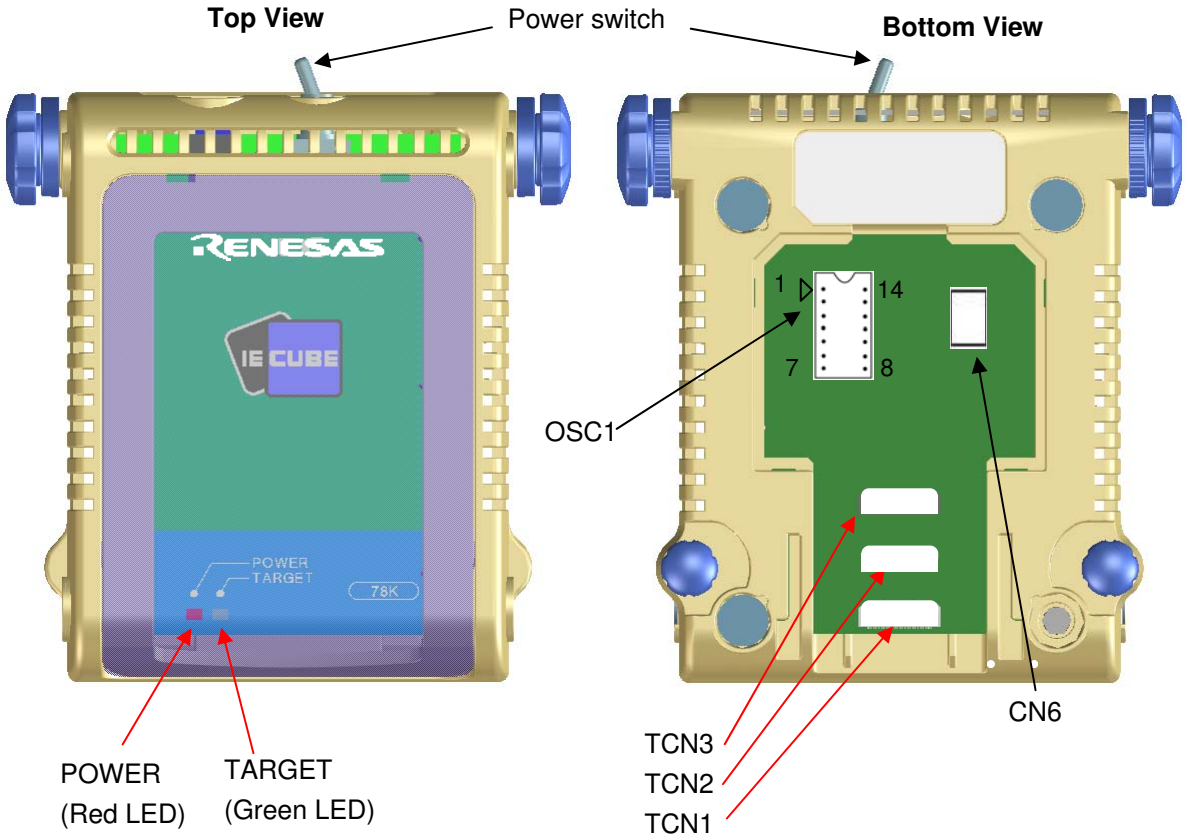
Notes 1. Does not include projection of power switch

2. Includes projection of screw that fixes rear space adapter

3. Rear space adapter can adjust the height from 30 mm (longest) to 0 mm (shortest)

4. Front space adapter can adjust the height from 20 mm (longest) to 5 mm (shortest)

1.2 Names and Functions of Hardware



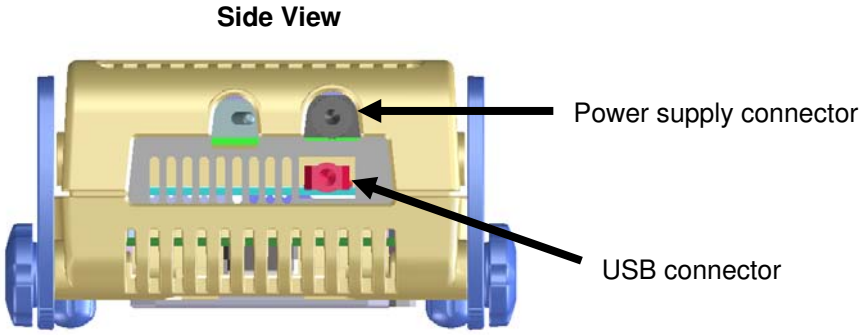


Figure 1-1. Names of Parts of QB-78K0RFX3

(1) TCN1, TCN2, TCN3

These are connectors for connecting a check pin adapter or emulation probe.

(2) OSC1

This is a socket for mounting the oscillator.

(3) CN6

This is a connector for the shipment inspection. It is not something that the user will need.

(4) POWER (Red LED)

This is an LED that shows whether the power supply of the QB-78K0RFX3 is switched on.

LED State	QB-78K0RFX3 State
Lit	Power switch ON
Not lit	Power switch OFF or AC adapter not connected to QB-78K0RFX3
Blinking	Internal error occurred (Contact an Renesas Electronics sales representative or distributor)

(5) TARGET (Green LED)

This is an LED that shows whether the power supply of the target system is switched on.

LED State	Target System State
Lit	Target system power supply ON
Not lit	Target system power supply OFF or target system not connected

(6) Power switch

This is the power switch of the QB-78K0RFX3.

It is OFF at shipment.

1.3 System Specifications

This section shows the QB-78K0RFX3 system specifications.

Table 1-2. QB-78K0RFX3 System Specifications

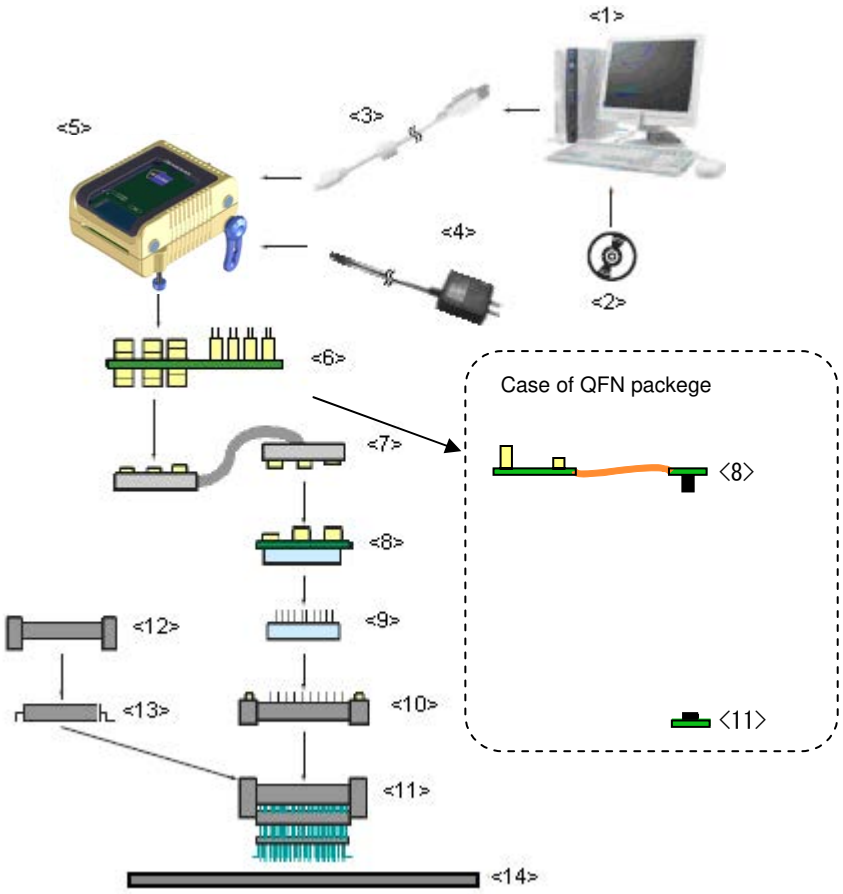
Parameter		Specification
Emulation memory capacity	Internal ROM	512 KB (MAX.)
	Internal RAM	61.75 KB (MAX.)
Program execution functions	Real-time execution function	Go, Start from Here, Come Here, Restart, Return Out, Ignore break points and Go
	Non-real-time execution function	Step In, Next Over, Slowmotion, Go & Go
Memory manipulation		Available (initialize, copy, compare)
Register manipulation		Available (general-purpose registers, control registers, SFRs)
Disassemble function		Available
Local variable view		Local variables
Watch data view		Local variables, global variables, or else
Stack trace view		Available
Break functions	Event break	Execution: 8 points Access: 8 points
	Software break	2000 points
	Pre-execution break	4 to 8 points[Note]
	Fail-safe break	Non-map, write protect, SFR illegal access, stack overflow, or else
	Other	Forcible break, trace full break, trace delay break, timeout break, timer overflow break
Trace functions	Trace data types	Program address, program data, access address, access data, status, time tag
	Trace modes	Unconditional trace, section trace, qualify trace, delay trigger trace
	Trace functions	Non-stop, full stop, full break, delay trigger stop, delay trigger break
	Memory capacity	128K frames
Real-time RAM monitoring function		All internal RAM spaces
Time measurement functions	Measurement clock	120 MHz
	Measurement objects	Start through end of program execution Start event through end event
	Maximum measurement time	Approx. 40 hours and 43 minutes
	Minimum resolution	8ns
	Number of timers for measurement	Start through end of program execution: 1 Start event through end event: 2
	Measurement results	Execution time (start through end of execution) Maximum, minimum, average, total, pass count (between events)
	Other	Timer overflow break function, timeout break function
Other functions		Command functions set in the console, mapping function, event function, coverage function, snapshot function, DMM function, power-off emulation function, pin mask function, flash self programming emulation function

Note The number of breaks that can be set varies depending on the location where the break is set.

1.4 System Configuration

This section shows the system configuration when using the QB-78K0RFX3 connected to a PC (Windows™ PC, PC/AT™ compatible). Connection is possible even without optional products.

Figure 1-2. System Configuration



<1> Host machine : Windows PC, IBM PC/AT compatible can be used
<2> Accessory Disk : Manual, etc.
<3> USB interface cable : Cable connecting QB-78K0RFX3 to host machine
<4> AC adapter : AC adapters classified by region
<5> QB-78K0RFX3 : This product
<6> Check pin adapter (optional) : Adapter used for monitoring waveforms with oscilloscope
<7> Emulation probe : High-characteristic FPC type emulation probe
<8> Exchange adapter : Adapter that performs pin conversion
<9> Space adapter (optional) : Adapter used for height adjustment
<10> YQ connector : Connector that connects exchange adapter to target connector
<11> Target connector : Connector soldered to target system
<12> Mount adapter (optional) : Adapter used for mounting target device into socket
<13> Device : Target device
<14> Target system

Remarks 1. Refer to **1.6 Package Contents** for the purchase forms of the above products.

2. As for handling of connectors, refer to **2.3 Mounting and Connecting Connectors**.

3. The part number of <4> differs depending on the region of use. See **Table 1-5 Part Numbers of AC Adapter for IECUBE Classified by Region** for the part numbers. The IECUBE requires an AC adapter that must be purchased separately.

4. See **Table 1-4 Common Probe and Adapter** for the part numbers of <6> and <7>.

5. The combination of <8>, <9>, <10>, <11>, and <12> varies depending on the emulation device. See **Table 1-3 Adapters and Connectors for Each Target Device** for the combinations.

1.5 System Configuration for Each Target Device

The following table lists the system configuration for each target device of the QB-78K0RFX3.
The adapter and connector for each device, and common probe and adapter are sold separately. An exchange adapter, a YQ connector, a target connector, and an emulation probe are included, depending on the order product name. For details, refer to **1.6 Package Contents.**

Remark For the package drawings of the connector, adapter, and probe, refer to the following URL.
http://www.renesas.com/iecube/78k0r

Table 1-3. Adapters and Connectors for Each Target Device

Target Device	Package	Exchange Adaptor	Space Adaptor	YQ Connector	Target Connector	Emulation Probe	Mount Adaptor
78K0R/FB3	30MC	QB-30MC-EA-06T	QB-30MC-YS-01T	QB-30MC-YQ-01T	QB-30MC-NQ-01T	QB-80-EP-01T	QB-30MC-HQ-01T
	32K8	QB-32K8-EA-01T	-	-	QB-32K8-NQ-02T	QB-80-EP-01T	-
78K0R/FC3	40K8	QB-40K8-EA-01T	-	-	QB-40K8-NQ-01T	QB-80-EP-01T	-
	48GA	QB-48GA-EA-05T	QB-48GA-YS-01T	QB-48GA-YQ-01T	QB-48GA-NQ-01T	QB-80-EP-01T	QB-48GA-HQ-01T
	48K8	QB-48K8-EA-01T	-	-	QB-48K8-NQ-01T	QB-80-EP-01T	-
78K0R/FE3	64GB	QB-64GB-EA-09T	QB-64GB-YS-01T	QB-64GB-YQ-01T	QB-64GB-NQ-01T	QB-80-EP-01T	QB-64GB-HQ-01T
78K0R/FF3	80GK	QB-80GK-EA-10T	QB-80GK-YS-01T	QB-80GK-YQ-01T	QB-80GK-NQ-01T	QB-80-EP-01T	QB-80GK-HQ-01T
78K0R/FG3	100GC	QB-100GC-EA-09T	QB-100GC-YS-01T	QB-100GC-YQ-01T	QB-100GC-NQ-01T	QB-144-EP-02S	QB-100GC-HQ-01T
78K0R/HC3	48GA	QB-48GA-EA-05T	QB-48GA-YS-01T	QB-48GA-YQ-01T	QB-48GA-NQ-01T	QB-80-EP-01T	QB-48GA-HQ-01T
78K0R/HE3	64GB	QB-64GB-EA-09T	QB-64GB-YS-01T	QB-64GB-YQ-01T	QB-64GB-NQ-01T	QB-80-EP-01T	QB-64GB-HQ-01T
78K0R/HF3	80GK	QB-80GK-EA-10T	QB-80GK-YS-01T	QB-80GK-YQ-01T	QB-80GK-NQ-01T	QB-80-EP-01T	QB-80GK-HQ-01T
78K0R/HG3	100GC	QB-100GC-EA-09T	QB-100GC-YS-01T	QB-100GC-YQ-01T	QB-100GC-NQ-01T	QB-144-EP-02S	QB-100GC-HQ-01T

Table 1-4. Common Probe and Adapter

Name	Part Number	Target Device
Check pin adapter	QB-144-CA-01	78K0R/Fx3, 78K0R/Hx3
Emulation probe	QB-80-EP-01T	Under 80pin of 78K0R/Fx3 and 78K0R/Hx3
	QB-144-EP-02S	Over 100pin of 78K0R/Fx3 and 78K0R/Hx3

1.6 Package Contents

The included products are described for each order product name.

Products supplied with QB-78K0RFX3-ZZZ

1: QB-78K0RFX3
2: USB interface cable (2 meters)
3: Probe holder
4: Online user registration card (warranty card and software contract in one)
5: Packing list

Products supplied with QB-78K0RFX3-T30MC

1 to 5
6: Emulation probe QB-80-EP-01T
7: Exchange adapter QB-30MC-EA-06T
8: YQ connector QB-30MC-YQ-01T
9: Target connector QB-30MC-NQ-01T

Products supplied with QB-78K0RFX3-T32K8

1 to 5
6: Emulation probe QB-80-EP-01T
7: Exchange adapter QB-32K8-EA-01T
8: Target connector QB-32K8-NQ-02T

Products supplied with QB-78K0RFX3-T40K8

1 to 5
6: Emulation probe QB-80-EP-01T
7: Exchange adapter QB-40K8-EA-01T
8: Target connector QB-40K8-NQ-01T

Products supplied with QB-78K0RFX3-T48GA

1 to 5
6: Emulation probe QB-80-EP-01T
7: Exchange adapter QB-48GA-EA-05T
8: YQ connector QB-48GA-YQ-01T
9: Target connector QB-48GA-NQ-01T

Products supplied with QB-78K0RFX3-T48K8

1 to 5
6: Emulation probe QB-80-EP-01T
7: Exchange adapter QB-48K8-EA-01T
8: Target connector QB-48K8-NQ-01T

Products supplied with QB-78K0RFX3-T64GB

1 to 5

6: Emulation probe QB-80-EP-01T

7: Exchange adapter QB-64GB-EA-09T

8: YQ connector QB-64GB-YQ-01T

9: Target connector QB-64GB-NQ-01T

Products supplied with QB-78K0RFX3-T80GK

1 to 5

6: Emulation probe QB-80-EP-01T

7: Exchange adapter QB-80GK-EA-10T

8: YQ connector QB-80GK-YQ-01T

9: Target connector QB-80GK-NQ-01T

Products supplied with QB-78K0RFX3-T100GC

1 to 5

6: Emulation probe QB-144-EP-01T

7: Exchange adapter QB-100GC-EA-09T

8: YQ connector QB-100GC-YQ-01T

9: Target connector QB-100GC-NQ-01T

1.7 AC Adapter for IECUBE

The specifications of the AC adapter for IECUBE differ depending on the region of use. Be sure to use an AC adapter corresponding to the region of use.

Table 1-5. Part Numbers of AC Adapter for IECUBE Classified by Region

Product	Destination (Region)Notes 1, 2	Part NumberNote 3
AC adapter (sold separately)	Japan	QB-COMMON-PW-JP
	USA	QB-COMMON-PW-EA
	China	QB-COMMON-PW-CN
	Hong Kong	QB-COMMON-PW-HK
	South Korea	QB-COMMON-PW-KR
	Singapore	QB-COMMON-PW-SG
	Taiwan	QB-COMMON-PW-TW

Notes 1. Products are shipped only on order from each region.

2. Contact a distributor or a Renesas Electronics sales representative for information on regions other than the above.

3. Only the AC adapter usable in each region can be ordered

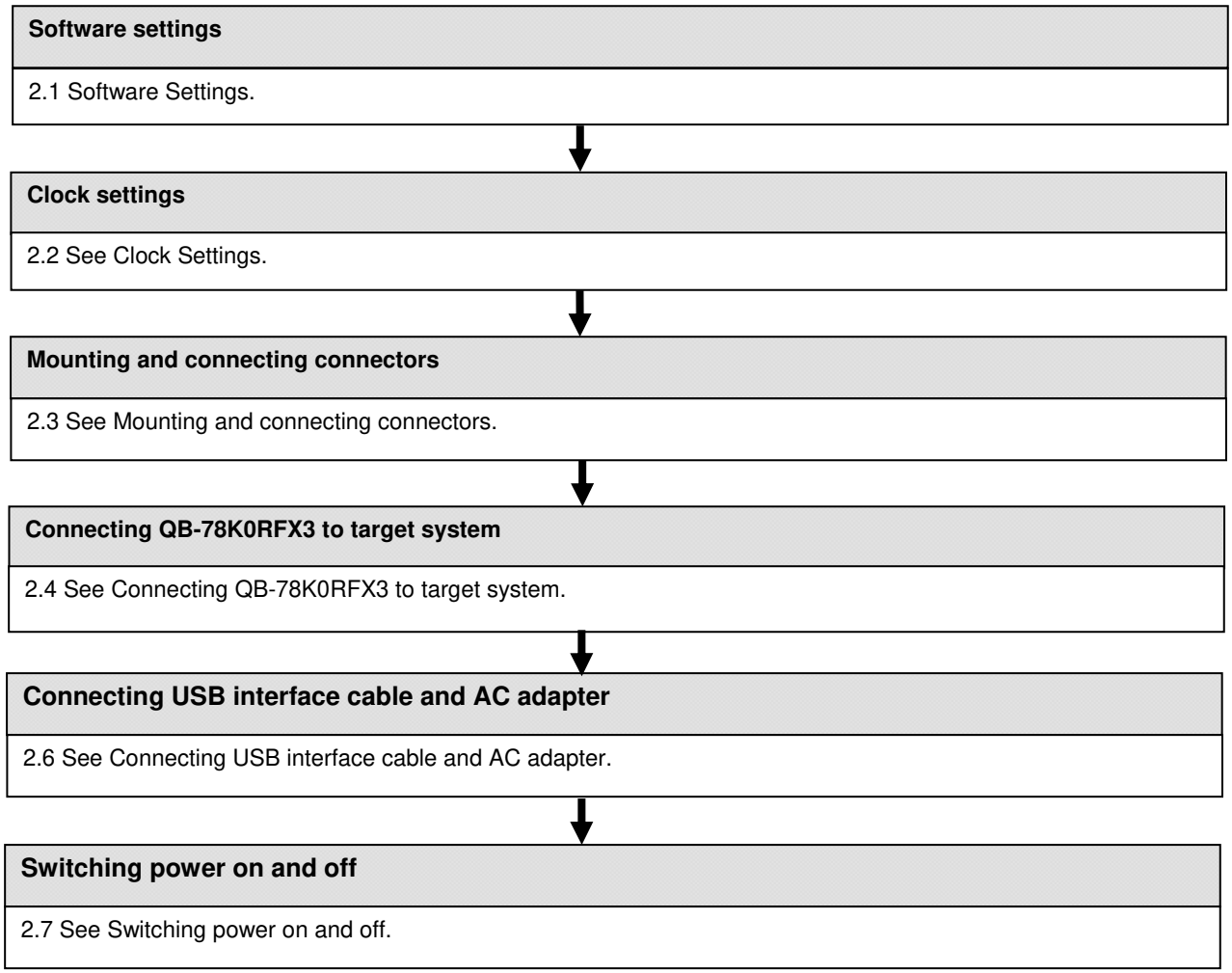
CHAPTER 2 SETUP PROCEDURE

This chapter explains the QB-78K0RFX3 setup procedure.

Setup can be completed by performing installation setup in the order in which it appears in this chapter.

Perform setup along the lines of the following procedure.

See 1.2 Names and Functions of Hardware for clock positions.



2.1 Software Settings

Check the user's manual for the debugger that will be used.

2.2 Clock Settings

The IECUBE clock must be set to the clock used by the target device. For details about how to set the clock, check the user's manual for the debugger that will be used.
IECUBE clock settings for the clock used by the target device are shown below.
Oscillation with the resonator on the target system is not supported. Therefore, the in-circuit emulator cannot emulate the oscillation operation of the clock on the target system.

Table 2-1. List of clock settings

Clock Used	Clock Supply
(1) High-speed system clock (X1 oscillator or External input)	(a) When the clock generated within the emulator is used
	(b) When the clock (a square wave) is supplied from the target system
	(c) When the oscillator (OSC1) mounted onto the emulator is used
(2) Internal high-speed oscillation clock	Uses the clock internally generated from the emulator
(3) Internal low-speed oscillation clock	Uses the clock internally generated from the emulator

(1) High-speed system clock

The clock settings are listed below.

Table 2-2. Settings for High-Speed System Clock

Type of Clock to Be Used	OSC1
(a) When the clock generated within the emulator is used	–
(b) When the clock (a square wave) is supplied from the target system[Note]	–
(c) When the oscillator (OSC1) mounted onto the emulator is used	Oscillator mounted

Note This setting is not possible when TARGET LED is not lit.

Remarks 1. Settings other than the above are prohibited.

2. Selection of (a) or (b) is possible regardless of whether the oscillator is not mounted in the OSC1socket.

(a) When the clock generated within the emulator is used

This method uses the clock generated inside the emulator.

The oscillation frequency that will be used must be set in the debugger. For details about how to set the oscillation frequency, check the user's manual for the debugger that will be used.

(b) When the clock (a square wave) is supplied from the target system

The clock input from the target system is then used.

To input a clock from the target system, input to the clock pin (X2) the square-wave signal with the same voltage potential as that of the target device supply voltage (VDD). Inputting the inverted signal to X1 is not necessary.

The selectable frequencies are same as those of the target device.

For debugger settings, check the user's manual for the debugger that will be used. Oscillation by a resonator in the target system is not supported.

(c) When the oscillator (OSC1) mounted onto the emulator is used

Mount an oscillator in the OSC1 socket in the emulator and then select the “Clock socket” in the debugger.

The clock generated from the oscillator mounted on the emulator is used.

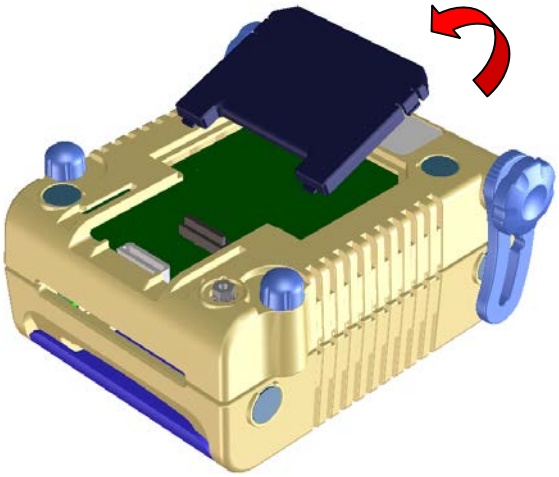
The selectable frequencies are same as those of the target device.

To modify the clock setting, the acrylic board on the bottom of the QB-78K0RFX3 must be removed.

The acrylic board can be removed by lifting it up.

For debugger settings, check the user's manual for the debugger that will be used.

Figure 2-1. Acrylic Board Removal Method

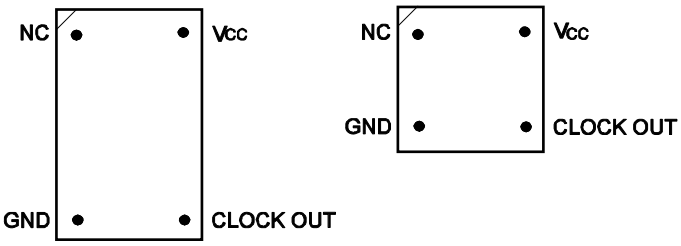


As an oscillator[Note] to be mounted in the OSC1 socket in the emulator, use the one that satisfies the following specifications.

- Supply voltage: 5 .0V
- Output level: CMOS

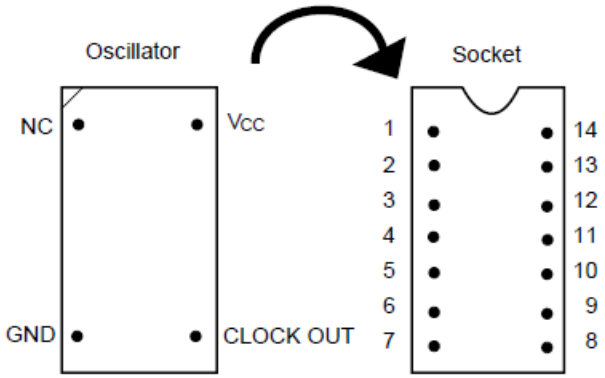
Note An oscillator that uses a resonator cannot be used.

Figure 2-2. Oscillator Shape



Top View

Figure 2-3. Mapping of Oscillator to Socket



Oscillator	OSC1 Pin Number
NC	1
GND	4
	7
CLOCK OUT	8
	11
Vcc	14

Remark Insert the oscillator into the socket, take care for the pin 1 position.

(2) Internal high-speed oscillation clock

This method uses the clock inside the emulator by configuring the use of the high-speed oscillation clock in the user program.

(3) Internal low-speed oscillation clock

This method uses the clock inside the emulator by configuring the use of the low-speed oscillation clock in the user program.

2.3 Mounting and Connecting Connectors

This section describes the methods of connecting the QB-78K0RFX3 and target system.
Make connections with both the QB-78K0RFX3 and target system powered OFF.
The following abbreviations are used in this section:

- NQ: Target connector
- YQ: YQ connector
- EA: Exchange adapter
- MA: Mount adapter
- CA: Check pin adapter
- SA: Space adapter

2.3.1 Mounting NQ to target system

(1) Thinly apply a two-component epoxy adhesive (hardening time at least 30 minutes) to the ends of the four projections on the base of the NQ and adhere the NQ to the user board (clean the surface of the target system board using alcohol or the like). If alignment of target system pads to NQ leads is difficult, align them as in (2).

(2) Align by inserting the guide pins for alignment for the NQ (NQGUIDE) through the pin holes on the top of the NQ. Accessory holes are ϕ1.0 mm non-through holes in two or three places.
(For hole positions, see the particular NQ drawing.)

(3) Solder after fitting the MA to the NQ. This is to prevent troubles such as flux or solder splashing and adhering to the NQ contact pins when soldering.

- Soldering conditions	Solder reflow	260°C × 10 seconds or less
	Manual soldering	350°C × 5 seconds or less (1 pin)

Caution Do not perform washing by flux immersion or vapor.

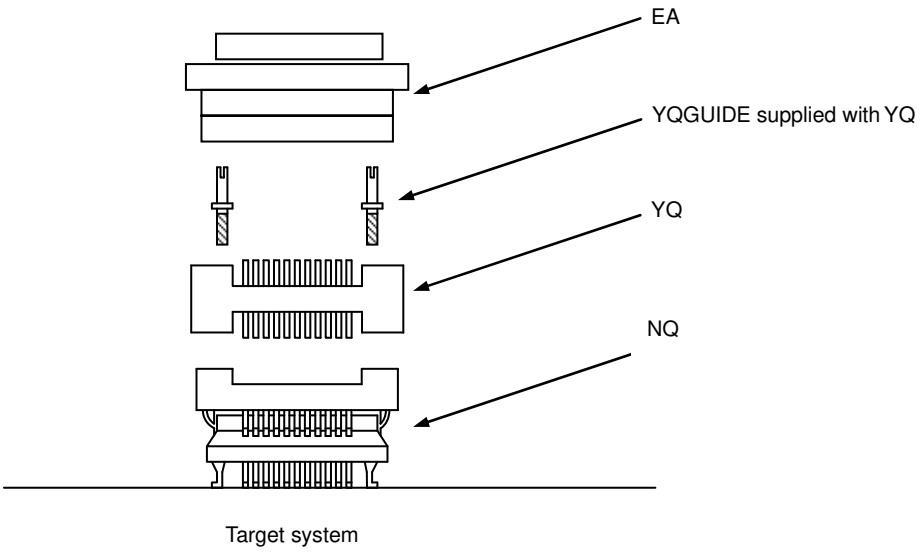
(4) Take away the guide pins.

2.3.2 Mounting YQ to NQ

(1) After confirming that there are no broken or bent YQ contact pins, fit the YQ in the NQ and fasten it using the supplied YQGUIDE (for the fastening method, see the next step, (2)). If repeatedly inserting and removing, be sure to inspect the YQ pins before fitting. If pins are bent, correct them using something thin and flat such as the edge of a knife.

(2) Fasten YQ to the NQ on the target system using the supplied YQGUIDE. Fasten the screws equally in the four corners using the supplied flat-blade screwdriver or a torque driver. The tightening torque of the YQGUIDE is 0.054 Nm (MAX.). Too great tightening causes bad connections.
However, four screws for fitting to the NQ (M2 x 10 mm / 4 units) are included with the YQ.

Figure 2-4. Mounting of EA, YQ and NQ



2.3.3 Plugging EA into YQ

Match the pin 1 position of the YQ or SA (corner cuts match in both) to the pin 1 position of the EA and plug in.

- When plugging or unplugging, press on the NQ, YQ, and SA with a finger so that there is no force on the NQ.
- When plugging or unplugging, be careful of the direction of wiggling.

As a tool when unplugging, insert some kind of thin non-conductive material such as a wooden stick between the YQ (SA) and EA and wiggle while slowly unplugging. Be careful since the connector will be damaged if this is done in the wrong direction.

2.3.4 Precautions for handling NQ, YQ, SA, and CA

(1) When taking the NQ from the box, press down on the body and take out the sponge first.

(2) Since the pins of the YQ are thin and easily bent, be careful. When inserting it in the NQ, confirm that there are no bent pins.

(3) When screwing a YQ soldered to a board to the NQ, fasten the screws in four places in turn using a #0 or #1 Phillips precision screwdriver or torque driver after tentatively tightening them. Fix the torque at 0.054 Nm (MAX.).

If just one place is over tightened, it may cause poor contact. Moreover, a board being connected to the YQ must have accessory holes in prescribed positions (four places: ϕ2.3 mm or ϕ3.3 mm). The ϕ3.8 mm or ϕ4.3 mm that is the screw head size is an area where wiring is prohibited.

(4) In YQ and SA removal, since there is a danger of YQ pins being bent or broken when prying and wiggling, remove them gradually using a flat bladed screwdriver from four directions. Moreover, to connect and use the YQ and SA, screw the YQ to the NQ according to the YQGUIDE (included with the YQ) using a 2.3 mm flat bladed screwdriver and then connect it to the SA. Fix the torque at 0.054 Nm (MAX.). If even one place is over tightened, it may cause poor contact.

(5) For the NQ, YQ, and SA, since there is a danger that washing fluid on the structure will remain in the connector, do not perform washing.

(6) NQ, IC, and YQ cannot be used in combination.

(7) A NQ/YQ system cannot be used in an environment of vibrations or shocks.

(8) It is assumed that this product will be used in system development and evaluation. Moreover, when used in Japan, Electrical Appliance and Material Control Law and electromagnetic disturbance countermeasures have not been applied.

(9) Since there are rare cases of shape change if the box is left for a long time in a place where it is 50°C or higher, for safekeeping, store it in a place where it is no higher than 40°C and direct sunlight does not hit it.

(10) For details about handling the NQ, YQ, and SA, see the NQPACK series technical materials at the website of Tokyo Eletech Corporation.

URL: http://www.tetc.co.jp/

(11) CA

The CA is an optional product for IECUBE, and can be used to measure the waveform between IECUBE and the target system.

Since the pins on the CA do not correspond to the pin layout in each device, the pin header cover must be mounted according to the device to be used. For mounting methods of the pin header cover, refer to URL.
http://www.renesas.com/qb_144_ca_01