

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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# V850 series

## Tool Letter

## In-Circuit Emulator IECUBE

**QB-V850ESKX1H-ZZZ-EE**

### Description

The QB-V850ESKX1H-ZZZ-EE is a member of NEC's new in-circuit emulator series: IECUBE. This IECUBE member is used to emulate devices of the K\_Line: V850ES/KE1+, V850ES/KF1+, V850ES/KG1+ and V850ES/KJ1+.

### In-Circuit Emulator



#### USB Host Interface

- Rev. 2.0 supported

#### Device Emulation

- Frequency and voltage:  
Same as the target device
  - max. up to 20 MHz
  - min. 2.7 V up to max. 5.5 V
- Memory capacity:  
Same as the target device
  - up to 1 MB internal ROM
  - up to 60 KB internal RAM

#### Break Function

- Hardware - Execution: 10 points  
Access: 6 points
- Software: 2000 points

#### Trace Functions

- Trace memory capacity of 256 K frames x 160 bit
- Trace modes are:  
Speed priority or trace priority
- Trace events can be: Section, qualify, execution event and access event

### Program Execution Function in Real Time

#### Real Time RAM Monitor Function

- 256 Kbytes x 8 points

#### Time Measurement

Clock: CPU clock or other dedicated clock  
Maximum measurement: 195 hours  
Maximum resolution: 20 ns  
Timers used for measurement: 8  
Minimum, maximum and average

### Attachments

#### Software:

- Full IAR Embedded Workbench™  
(size limited to 64 Kbyte hex code)

#### Hardware:

- Power supply
- USB interface cable
- USB Flash programmer (PG-FPL)

### In-Circuit Emulator



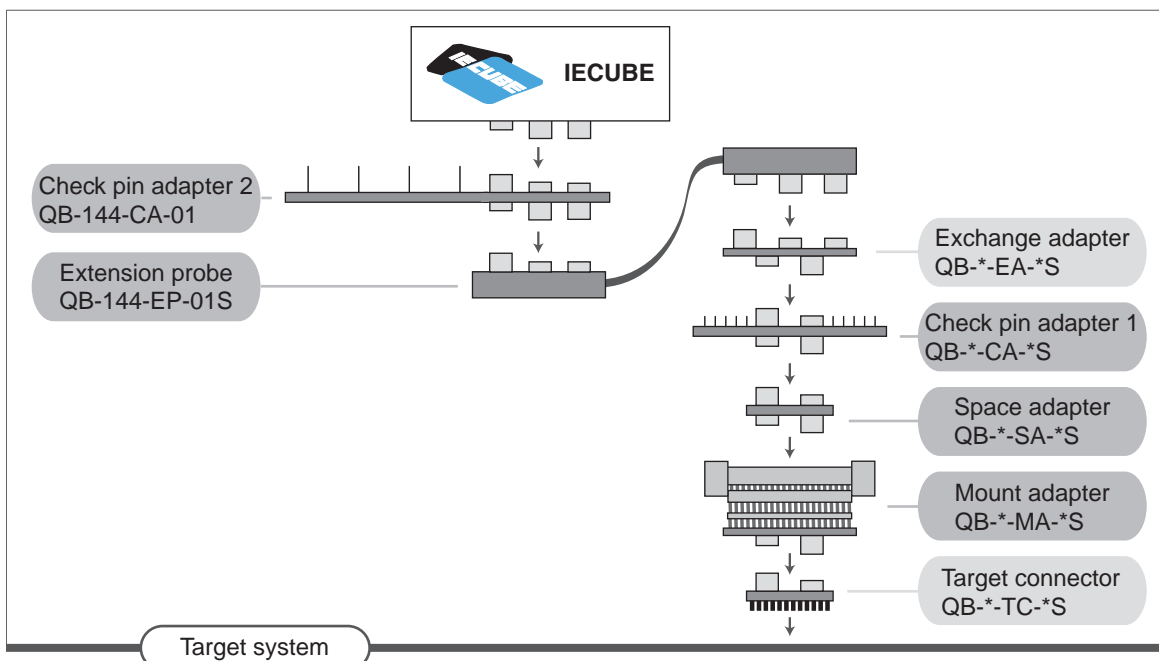
# In-Circuit Emulator IECUBE QB-V850ESKX1H-ZZZ-EE

## Socket Tool Configuration

	144GJ	100GC	100GF	
Exchange Adapter	QB-144GJ-EA-03S	QB-100GC-EA-01S	QB-100GF-EA-01S	Mandatory
Target Connector	QB-144GJ-TC-01S	QB-100GC-TC-01S	QB-100GF-TC-01S	
Mount Adapter	QB-144GJ-MA-01S	QB-100GC-MA-01S	QB-100GF-MA-01S	
Space Adapter	QB-144-SA-01S	QB-100-SA-01S		Optional
Check Pin Adapter 1	QB-144-CA-01S	QB-100-CA-01S		
Check Pin Adapter 2	QB-144-CA-01			
Extension Probe	QB-144-EP-01S			

	80GK	80GC	64GK	
Exchange Adapter	QB-80GK-EA-02S	QB-80GC-EA-02S	QB-64-EA-01S	Mandatory
Target Connector	QB-80GK-TC-01S	QB-80GC-TC-01S	QB-64GK-TC-01S	
Mount Adapter	QB-80GK-MA-01S	QB-80GC-MA-01S	QB-64GK-MA-01S	
Space Adapter	QB-80-SA-01S		QB-64-SA-01S	Optional
Check Pin Adapter 1	QB-80-CA-01S		QB-64-CA-01S	
Check Pin Adapter 2	QB-144-CA-01			
Extension Probe	QB-144-EP-01S			

**Order Number** IECUBE In-Circuit Emulator: QB-V850ESKX1H-ZZZ-EE



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