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April 1st, 2010
Renesas Electronics Corporation

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

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M32171T-PTC

Converter Board for M32171FxxFP (for In-circuit Connection)

User's Manual

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CAUTION

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Renesas Tools Homepage <http://www.renesas.com/en/tools>

1. Outline

The M32171T-PTC is a converter board to feature debugging functions such as real-time tracing when using the M32171FxxFP with the emulator M32170T-SDI, M32100T-SDI-E or M32100T2-SDI-E.

2. Package Components

- (1) M32171T-PTC converter board
- (2) YQPACK144SD (made by Tokyo Eletech Corporation)
- (3) NQPACK144SD (made by Tokyo Eletech Corporation)
- (4) YQ-GUIDE (x4)
- (5) Phillips screwdriver (made by Tokyo Eletech Corporation)
- (6) M32171T-PTC User's Manual (this manual)

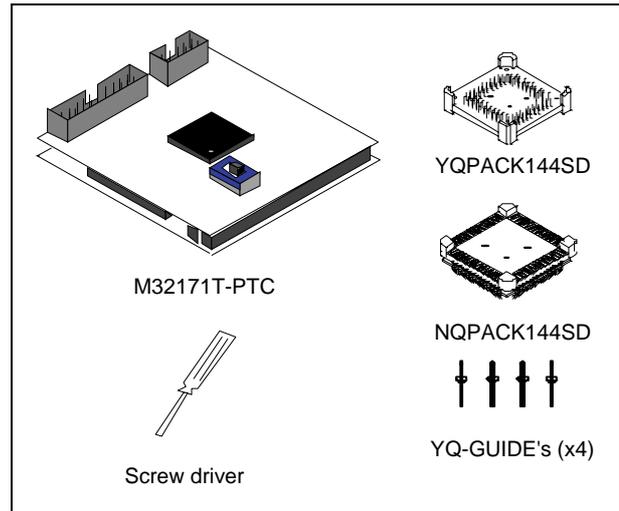


Figure 1 Package components

3. Specifications

Table 1 Specifications

Applicable package	144P6Q-A (144-pin 0.5-mm-pitch QFP)
Applicable MCU	M32171FxxFP
Applicable emulators	M32170T-SDI-E M32100T-SDI-E M32100T2-SDI-E
Mounted MCU	M32170F6VWG
Mounted clock	10 MHz
Power supply	Supplied from target board

4. Usage

The M32171T-PTC can be used for debugging and onboard evaluation in common by mounting the NQPACK144SD on the target board.

- (1) For debugging
Mount the NQPACK144SD (included with the M32171T-PTC) on the 144QFP foot pattern of the target board. And connect the M32171T-PTC via the YQPACK144SD to the NQPACK144SD. As the M32170F6VWG is mounted on the M32171T-PTC, you can fully use the emulator's functions such as real-time tracing.
- (2) For onboard evaluation
Mount the M32171FxxFP and HQPACK144SD (not included) on the NQPACK144SD of the target system in this order.

Before using the M32171T-PTC, be sure to read "7. Precautions" on page 4.

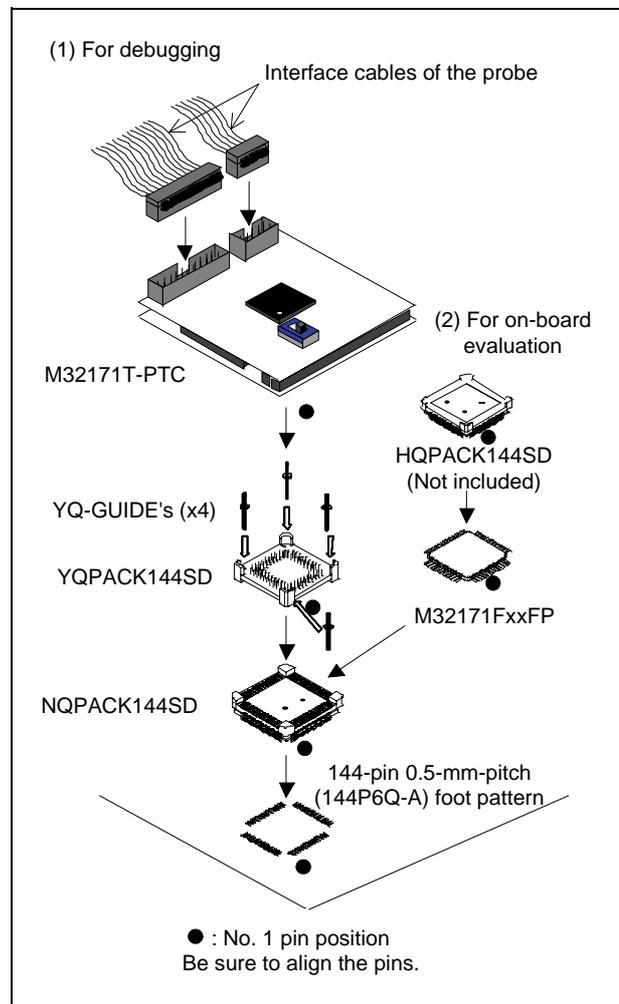


Figure 2 Usage of the M32171T-PTC

5. Attaching Procedure

How to attaching the M32171T-PTC is shown below. (see Figure 3)

- (1) Mount the NQPACK144SD on the foot pattern of the target system
- (2) Attach the YQPACK144SD to the NQPACK144SD.
- (3) Secure the four corners of the YQPACK144SD with the YQ-GUIDE's.
- (4) Set the clock selection switch.
- EXT*¹: The clock of pin XIN of the target board is supplied to the MCU on the M32171T-PTC.
- INT: The clock (10 MHz) on the M32171T-PTC is supplied to the MCU.
- (5) Connect the SDI MCU control interface cable and the SDI trace interface cable of the emulator probe to the M32171T-PTC.
- (6) Attach the M32171T-PTC to the YQPACK144SD.

*1: When "EXT" is selected, take notice that the automatic oscillation does not occur. Connect the output of the oscillator to pin XIN.

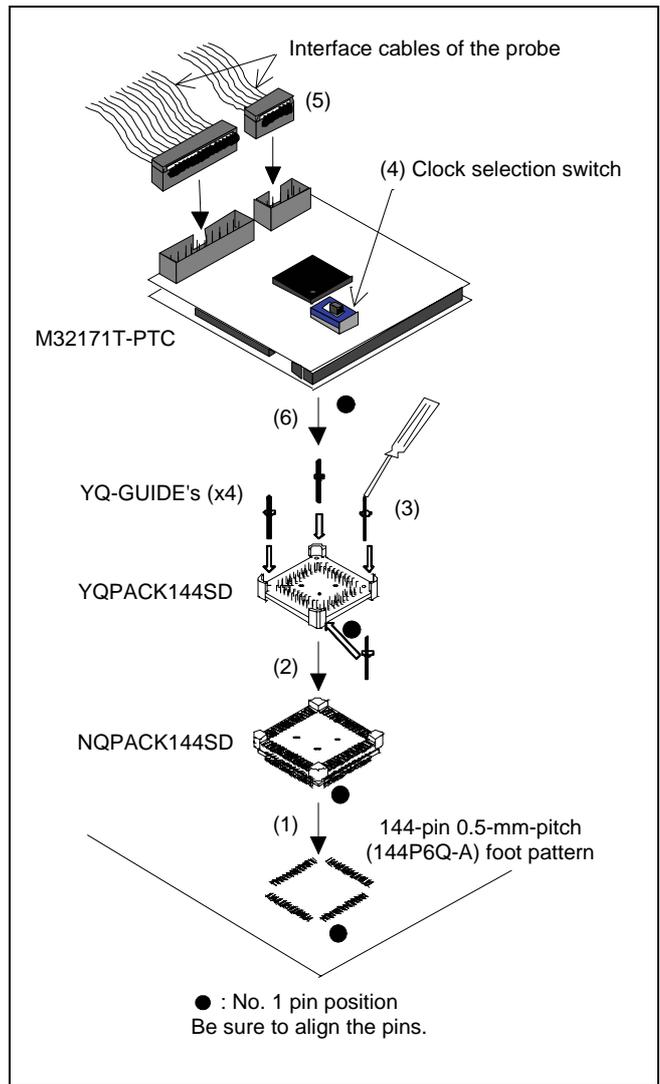


Figure 3 Attaching procedure of the M32171T-PTC

6. External Dimensions and Sample Foot Pattern of the M32171T-PTC

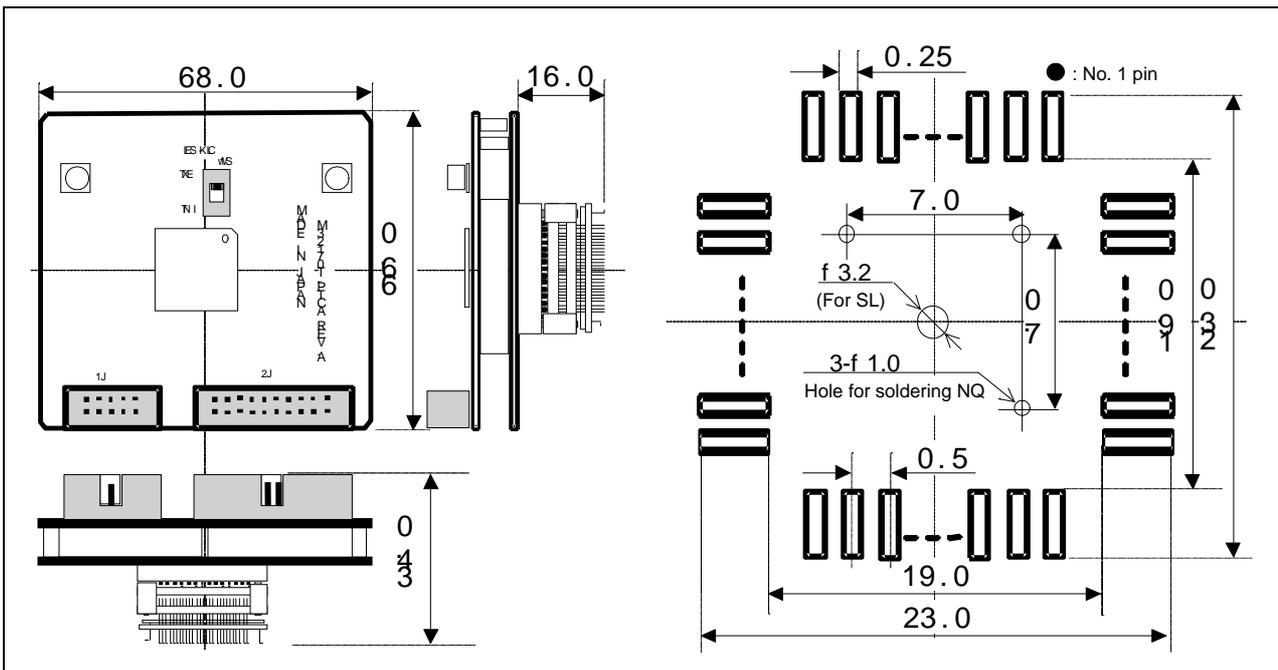


Figure 4 External dimensions and sample foot pattern of the M32171T-PTC

7. Precautions

CAUTION

Cautions for the emulator:



- For debugging, be sure to use this product in a combination with the emulator M32100T2-SDI-E, M32170T-SDI or M32100T-SDI-E.
- When starting up the PD32R, select an MCU file according to an MCU and operation mode. For selecting an MCU file, refer to the release notes of the debugger.
- Connect both the SDI MCU control interface cable (10-conductor) and SDI trace interface cable (20-conductor) to the emulator.
- For the precautions for a combination with an emulator, refer to the user's manual of each emulator.

Cautions for Differences Between the Emulator and an actual MCU:



- The M32170F6VWG (768 KB of internal flash ROM and 40 KB of internal RAM) on the M32171T-PTC is used for debugging. Take care of differences of internal memory sizes.
- When setting the clock selection switch to "EXT", connect the clock generated by an oscillator of the target system to pin XIN. The automatic oscillation between XIN and XOUT does not occur.
- Load capacity of all the signal lines of the MCU becomes greater than that of the actual signal lines on the MCU. Therefore, for a part where timing is critical, Give due consideration to its connection

Cautions to Be Taken for This Product:



- When attaching the YQPACK144SD, be sure to use the included YQ-GUIDE's.

IMPORTANT

Notes on This Product:

- We cannot accept any request for repair.
- To purchase NQPACK144SD and HQPACK144SD, contact the following.
Tokyo Eletech Corporation <http://www.tetc.co.jp/>
- For inquiries about this product or the contents of this manual, contact your local distributor.
Renesas Tools Homepage <http://www.renesas.com/en/tools>