

# RENESAS TECHNICAL UPDATE

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|                    |  |         |                      |  |      |      |
|--------------------|--|---------|----------------------|--|------|------|
| Product Category   | MPU/MCU  |         | Document No.         | TN-RX*-A0260A/E  | Rev. | 1.00 |
| Title              | Addition of New Package (0.5-mm pitch 48-pin LQFP) Products to RX66T Group |         | Information Category | Technical Notification   |      |      |
| Applicable Product | RX66T Group  | Lot No. | Reference Document   | RX66T Group User's Manual: Hardware Rev.1.10 (R01UN0749EJ0110) |      |      |
|                    |  | All     |                      |  |      |      |

New package products (0.5-mm pitch 48-pin LQFP package) are added to the RX66T group MCU lineup. This document contains a list, a pin assignment, and package dimensions of products to be added. For detailed specifications, please refer to the latest manual that will be released soon.

## 1. List of New Products

Eight products listed in Table 1 are added to RX66T group.

**Table 1. List of RX66T Group New Package Products**

| Group             | Part No.     | Package      | Code Flash Memory Capacity | RAM Capacity | Data Flash Memory Capacity | PGA pseudo-differential input | TSIP-Lite     | USB           | Operating temperature |
|-------------------|--------------|--------------|----------------------------|--------------|----------------------------|-------------------------------|---------------|---------------|-----------------------|
| RX66T (D-version) | R5F566TEBDFL | PLQP0048KB-B | 512 Kbytes                 | 64 Kbytes    | 32 Kbytes                  | Not available                 | Not available | Not available | -40 to 85°C           |
|                   | R5F566TEFDFL | PLQP0048KB-B | 512 Kbytes                 | 64 Kbytes    | 32 Kbytes                  | Not available                 | Available     | Not available | -40 to 85°C           |
|                   | R5F566TABDFL | PLQP0048KB-B | 256 Kbytes                 | 64 Kbytes    | 32 Kbytes                  | Not available                 | Not available | Not available | -40 to 85°C           |
|                   | R5F566TAFDFL | PLQP0048KB-B | 256 Kbytes                 | 64 Kbytes    | 32 Kbytes                  | Not available                 | Available     | Not available | -40 to 85°C           |
| RX66T (G-version) | R5F566TEBGFL | PLQP0048KB-B | 512 Kbytes                 | 64 Kbytes    | 32 Kbytes                  | Not available                 | Not available | Not available | -40 to 105°C          |
|                   | R5F566TEFGFL | PLQP0048KB-B | 512 Kbytes                 | 64 Kbytes    | 32 Kbytes                  | Not available                 | Available     | Not available | -40 to 105°C          |
|                   | R5F566TABGFL | PLQP0048KB-B | 256 Kbytes                 | 64 Kbytes    | 32 Kbytes                  | Not available                 | Not available | Not available | -40 to 105°C          |
|                   | R5F566TAFGFL | PLQP0048KB-B | 256 Kbytes                 | 64 Kbytes    | 32 Kbytes                  | Not available                 | Available     | Not available | -40 to 105°C          |

## 2. Pin Assignment

Pin assignment and list of pin and pin functions for the products with 0.5-mm pitch 48-pin LFQFP package are shown in Figure 1 and Table 2, respectively.

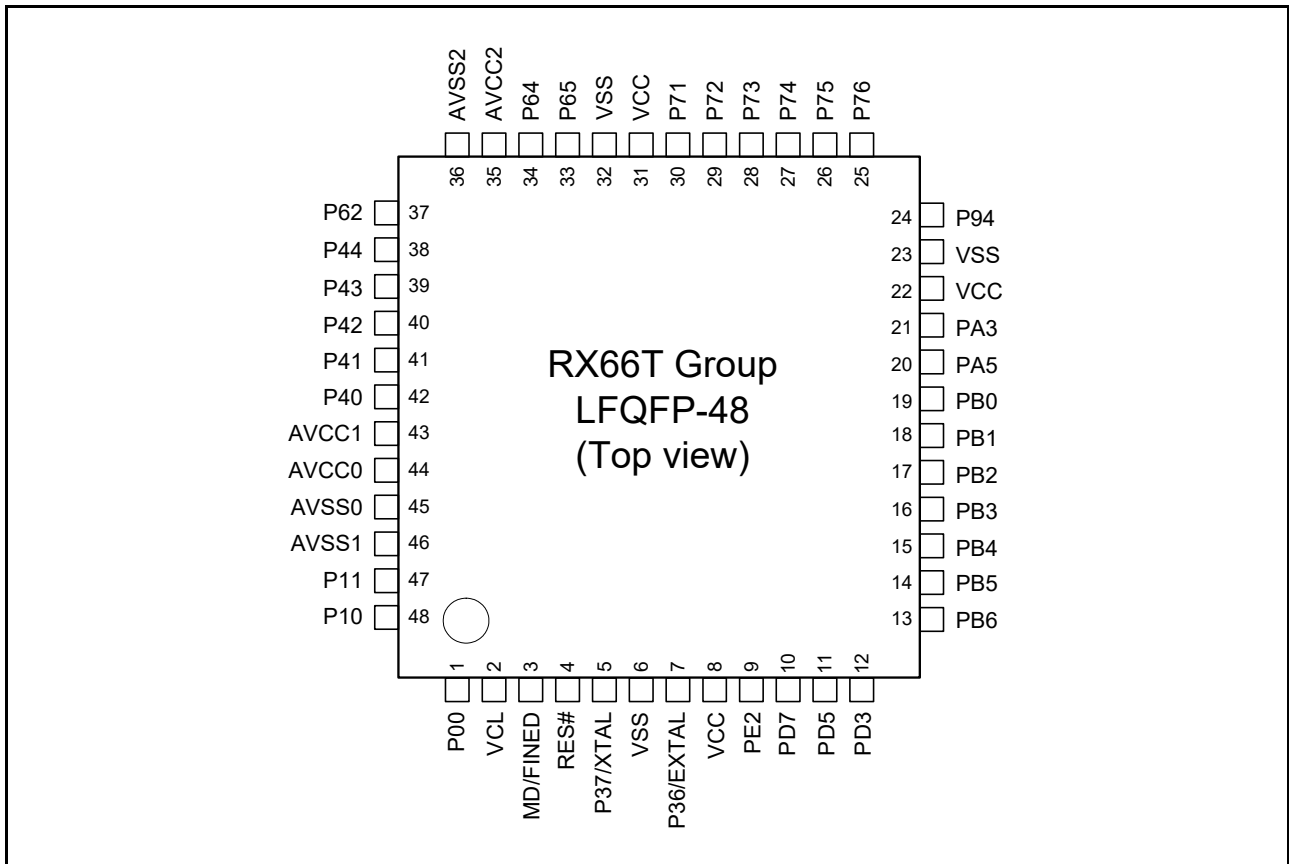


Figure 1. Pin Assignment (48-pin LFQFP)

**Table 2. List of Pin and Pin Functions (48-pin)(1 / 2)**

| Pin Number<br>48-Pin<br>LFQFP | Power Supply<br>Clock<br>System<br>Control | I/O Port | Timer<br>(MTU, GPTW, TMR,<br>POE, POEG, CAC)                               | Communications<br>(SCI, RSPI, RIIC, CAN)   | Interrupt<br>(IRQ, NMI) | Analog | Others          |
|-------------------------------|--|----------|--|--|-------------------------|--------|-----------------|
| 1                             | UB   | P00      | MTIOC9A/MTIOC9A#/<br>CACREF  | RXD9/SMISO9/SSCL9/<br>RXD12/SMISO12/<br>SSCL12/RXD12   | IRQ2                    |        | ADST1/<br>COMP0 |
| 2                             | VCL  |          |  |  |                         |        |                 |
| 3                             | MD/FINED                                   |          |  |  |                         |        |                 |
| 4                             | RES#                                       |          |  |  |                         |        |                 |
| 5                             | XTAL                                       | P37      |  |  |                         |        |                 |
| 6                             | VSS  |          |  |  |                         |        |                 |
| 7                             | EXTAL                                      | P36      |  |  |                         |        |                 |
| 8                             | VCC  |          |  |  |                         |        |                 |
| 9                             |  | PE2      | POE10#   |  | NMI                     |        |                 |
| 10                            |  | PD7      | MTIOC9A/MTIOC9A#/<br>GTIOC0A/GTIOC3A/<br>GTIOC0A#/GTIOC3A#/<br>TMR11/TMR15 | TXD5/SMOSI5/SSDA5/<br>SSLA1/CTX0   | IRQ8                    |        |                 |
| 11                            |  | PD5      | GTIOC1A/GTETRGA/<br>GTIOC1A#/TMR10/<br>TMR16                               | RXD1/SMISO1/SSCL1/<br>RXD11/SMISO11/<br>SSCL11   | IRQ6                    |        |                 |
| 12                            |  | PD3      | GTIOC2A/GTETRGC/<br>GTIOC2A#/TMO0  | TXD1/SMOSI1/SSDA1/<br>TXD11/SMOSI11/<br>SSDA11   |                         |        |                 |
| 13                            |  | PB6      | GTIOC2A/GTIOC2A#   | RXD5/SMISO5/SSCL5/<br>RXD11/SMISO11/<br>SSCL11/RXD12/<br>SMISO12/SSCL12/<br>RXDX12/CRX0        | IRQ2                    |        |                 |
| 14                            |  | PB5      | GTIOC2B/GTIOC2B#   | TXD5/SMOSI5/SSDA5/<br>TXD11/SMOSI11/<br>SSDA11/TXD12/<br>SMOSI12/SSDA12/<br>TXDX12/SIOX12/CTX0 |                         |        |                 |
| 15                            |  | PB4      | GTETRGA/GTETRGA#/<br>GTETRGC/GTETRGC#/<br>POE8#                            | CTS5#/RTS5#/SS5#/<br>SCK11/CTS11#/<br>RTS11#/SS11#   | IRQ3-DS                 |        |                 |
| 16                            |  | PB3      | MTIOC0A/MTIOC0A#/<br>CACREF  | SCK6/RSPCKA  | IRQ9                    |        |                 |
| 17                            |  | PB2      | MTIOC0B/MTIOC0B#/<br>GTADSM0/TMR10   | TXD6/SMOSI6/SSDA6/<br>SDA  |                         |        | ADSM0           |
| 18                            |  | PB1      | MTIOC0C/MTIOC0C#/<br>GTADSM1/TMCI0   | RXD6/SMISO6/SSCL6/<br>SCL  | IRQ4                    |        | ADSM1           |
| 19                            |  | PB0      | MTIOC0D/MTIOC0D#/<br>TMO0  | TXD6/SMOSI6/SSDA6/<br>CTS11#/RTS11#/<br>SS11#/MOSIA  | IRQ8                    |        | ADTRG2#         |
| 20                            |  | PA5      | MTIOC1A/MTIOC1A#/<br>TMCI3   | RXD6/SMISO6/SSCL6/<br>MISOA  | IRQ1                    |        | ADTRG1#         |
| 21                            |  | PA3      | MTIOC2A/MTIOC2A#/<br>GTADSM0/TMR17   | TXD9/SMOSI9/SSDA9/<br>SSLA0  |                         |        |                 |
| 22                            | VCC  |          |  |  |                         |        |                 |
| 23                            | VSS  |          |  |  |                         |        |                 |
| 24                            |  | P94      | MTIOC7A/MTIOC7A#/<br>GTIOC5A/GTIOC8A/<br>GTIOC5A#/GTIOC8A#                 |  |                         |        |                 |
| 25                            |  | P76      | MTIOC4D/MTIOC4D#/<br>GTIOC2B/GTIOC6B/<br>GTIOC2B#/GTIOC6B#                 |  |                         |        |                 |

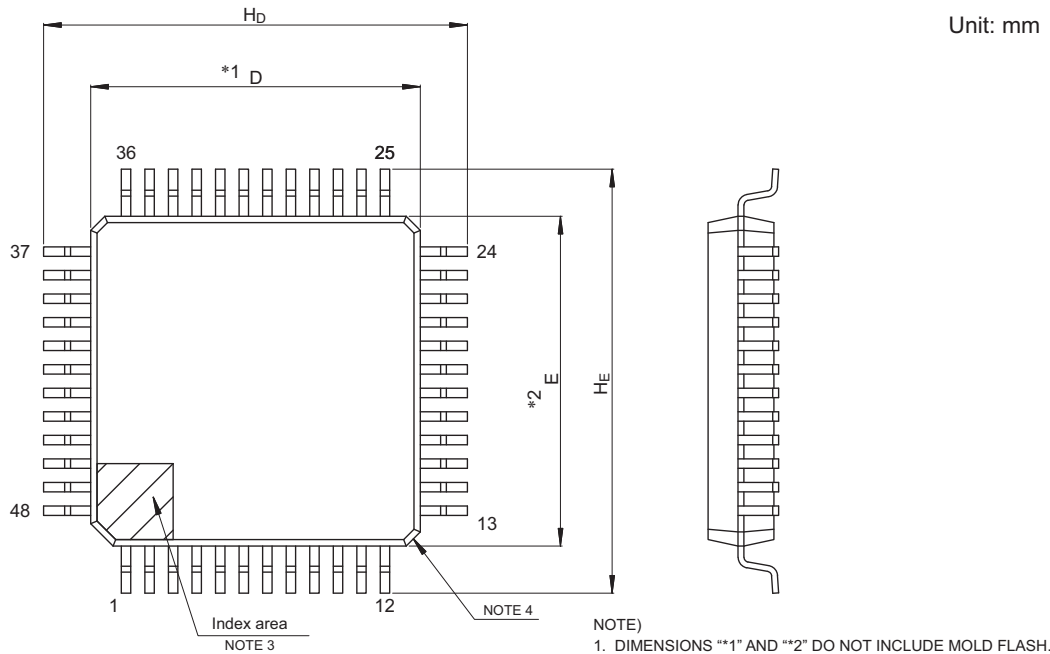
**Table 2. List of Pin and Pin Functions (48-pin)(2 / 2)**

| Pin Number<br>48-Pin<br>LFQFP | Power Supply<br>Clock<br>System<br>Control | I/O Port | Timer<br>(MTU, GPTW, TMR,<br>POE, POEG, CAC)  | Communications<br>(SCI, RSPI, RIIC, CAN) | Interrupt<br>(IRQ, NMI) | Analog                      | Others |
|-------------------------------|--|----------|---|--|-------------------------|-----------------------------|--------|
| 26                            |  | P75      | MTIOC4C/MTIOC4C#/<br>GTIOC1B/GTIOC5B/<br>GTIOC1B#/GTIOC5B#  |  |                         |                             |        |
| 27                            |  | P74      | MTIOC3D/MTIOC3D#/<br>GTIOC0B/GTIOC4B/<br>GTIOC0B#/GTIOC4B#  |  |                         |                             |        |
| 28                            |  | P73      | MTIOC4B/MTIOC4B#/<br>GTIOC2A/GTIOC6A/<br>GTIOC2A#/GTIOC6A#  |  |                         |                             |        |
| 29                            |  | P72      | MTIOC4A/MTIOC4A#/<br>GTIOC1A/GTIOC5A/<br>GTIOC1A#/GTIOC5A#  |  |                         |                             |        |
| 30                            |  | P71      | MTIOC3B/MTIOC3B#/<br>GTIOC0A/GTIOC4A/<br>GTIOC0A#/GTIOC4A#  |  |                         |                             |        |
| 31                            | VCC  |          |   |  |                         |                             |        |
| 32                            | VSS  |          |   |  |                         |                             |        |
| 33                            |  | P65      |   |  | IRQ9                    | AN211/<br>CMPC53/DA1        |        |
| 34                            |  | P64      |   |  | IRQ8                    | AN210/<br>CMPC33/DA0        |        |
| 35                            | AVCC2                                      |          |   |  |                         |                             |        |
| 36                            | AVSS2                                      |          |   |  |                         |                             |        |
| 37                            |  | P62      |   |  | IRQ6                    | AN208/<br>CMPC43            |        |
| 38                            |  | P44      |   |  |                         | AN100/<br>CMPC30/<br>CMPC31 |        |
| 39                            |  | P43      |   |  |                         | AN003                       |        |
| 40                            |  | P42      |   |  |                         | AN002/<br>CMPC20/<br>CMPC21 |        |
| 41                            |  | P41      |   |  |                         | AN001/<br>CMPC10/<br>CMPC11 |        |
| 42                            |  | P40      |   |  |                         | AN000/<br>CMPC00/<br>CMPC01 |        |
| 43                            | AVCC1                                      |          |   |  |                         |                             |        |
| 44                            | AVCC0                                      |          |   |  |                         |                             |        |
| 45                            | AVSS0                                      |          |   |  |                         |                             |        |
| 46                            | AVSS1                                      |          |   |  |                         |                             |        |
| 47                            |  | P11      | MTIOC3A/MTCLKC/<br>MTIOC3A#/MTCLKC#/<br>MTIOC9D/GTIOC3B/<br>GTETRGA/GTIOC3B#/<br>GTETRGC/TMO3/<br>POE9# |  | IRQ1-DS                 |                             |        |
| 48                            |  | P10      | MTIOC9B/MTCLKD/<br>MTIOC9B#/MTCLKD#/<br>GTETRGB/GTETRGD/<br>TMRI3/POE12#                                | CTS6#/RTS6#/SS6#                         | IRQ0-DS                 |                             |        |

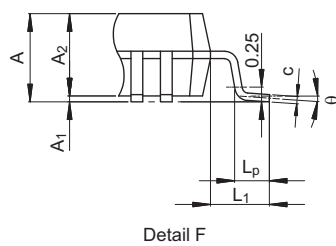
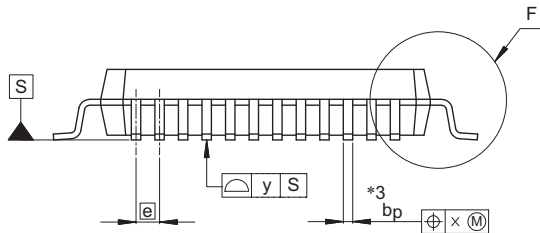
### 3. Package Dimensions

The package dimensions for the 0.5-mm pitch 48-pin LFQFP package (PLQP0048KB-B) are as follows.

| JEITA Package Code | RENESAS Code | Previous Code | MASS (Typ) [g] |
|--------------------|--------------|---------------|----------------|
| P-LFQFP48-7x7-0.50 | PLQP0048KB-B | —             | 0.2            |



- NOTE)
1. DIMENSIONS "\*\*1" AND "\*\*2" DO NOT INCLUDE MOLD FLASH.
  2. DIMENSION "\*\*3" DOES NOT INCLUDE TRIM OFFSET.
  3. PIN 1 VISUAL INDEX FEATURE MAY VARY, BUT MUST BE LOCATED WITHIN THE HATCHED AREA.
  4. CHAMFERS AT CORNERS ARE OPTIONAL, SIZE MAY VARY.



| Reference Symbol | Dimensions in millimeters |      |      |
|------------------|---------------------------|------|------|
|                  | Min                       | Nom  | Max  |
| D                | 6.9                       | 7.0  | 7.1  |
| E                | 6.9                       | 7.0  | 7.1  |
| A <sub>2</sub>   | —                         | 1.4  | —    |
| H <sub>D</sub>   | 8.8                       | 9.0  | 9.2  |
| H <sub>E</sub>   | 8.8                       | 9.0  | 9.2  |
| A                | —                         | —    | 1.7  |
| A <sub>1</sub>   | 0.05                      | —    | 0.15 |
| b <sub>p</sub>   | 0.17                      | 0.20 | 0.27 |
| c                | 0.09                      | —    | 0.20 |
| θ                | 0°                        | 3.5° | 8°   |
| e                | —                         | 0.5  | —    |
| x                | —                         | —    | 0.08 |
| y                | —                         | —    | 0.08 |
| L <sub>p</sub>   | 0.45                      | 0.6  | 0.75 |
| L <sub>1</sub>   | —                         | 1.0  | —    |

Figure 1. 48-pin LFQFP (PLQP0048KB-B)