

CUSTOMER NOTIFICATION

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| SUD-TT-0217-2-E |
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CP(K), O

**IE-789488-NS-EM1
(Control Code: E)**

Operating Precautions

Be sure to read this document before using the product.

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Notes on Using IE-789488-NS-EM1

1. Product Version

Part number: IE-789488-NS-EM1

| Control Code ^{Note} | Remark |
|------------------------------|--------|
| A | |
| B | |
| C | |
| D | |
| E | |

Note The “control code” is the second digit from the left in the 10-digit serial number number starting with E in the warranty supplied with the product you purchased. If the product has been upgraded, a label indicating the new version is attached to the product and the x in V-UP LEVEL x on this label indicates the control code.

2. Product History

| No. | Bugs and Changes/Additions to Specifications | Control Code | | | | |
|-----|---|--------------|---|---|---|---|
| | | A | B | C | D | E |
| 1 | Bug when emulating μ PD78947x LCD function | × | √ | √ | √ | √ |
| 2 | Bug when emulating μ PD78948x A/D function | × | × | × | √ | √ |
| 3 | Contact bug between IE-78K0S-NS-A emulation board fixing stays (metal fittings) and test pin of the I/O board | × | × | √ | √ | √ |
| 4 | Addition of support for the μ PD789479, 78F9479, 789489, 78F9489 | - | - | - | - | √ |

×: Applicable, √: Not applicable (change of specification), -: Not relevant

3. Details of Bugs and Added Specifications

No.1 Bug when emulating μ PD78947x LCD function

[Description]

When emulating the LCD function of the μ PD78947x, if LIPS0 in the LCDM0 register is set to 0 (GND-level output at segment/common pins), the voltage from the segment and common pins will not stabilize.

(The voltage will not stabilize within the following range:

$$0\text{ V} \leq \text{Segment/common pin voltage} \leq V_{\text{LC2}}$$

[Workaround]

This bug has been corrected in control code B and later products.

No.2 Bug when emulating μ PD78948x A/D function

[Description]

Conversion is not performed normally if AVDD is 3 V or lower when emulating the A/D function of the μ PD78948x.

(Conversion will not be performed normally within the following range: $3\text{ V} \geq \text{AVDD}$)

[Workaround]

This bug has been corrected in control code D and later products.

No.3 Contact bug between IE-78K0S-NS-A emulation board fixing stays (metal fittings) and test pins of the I/O board

[Description]

When connecting the IE-789488-NS-EM1 to the IE-78K0S-NS-A control code A or B, test pins of the I/O board (CP8 and CP38) contact the IE-78K0S-NS-A emulation board fixing stays (metal fittings).

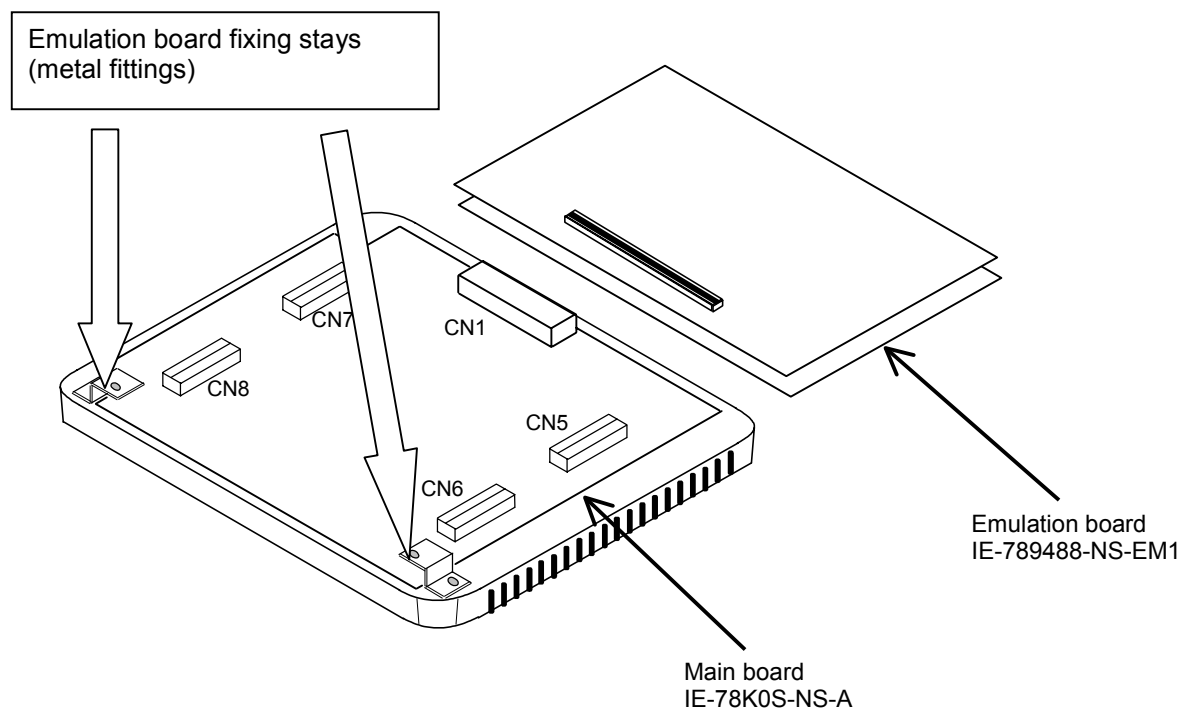
[Workaround]

This bug has been corrected in control code C and later products.

Customers who have not yet upgraded to the IE-789488-NS-EM1 control code C should retain the IE-78K0-NS-A emulation board fixing stays (metal fittings). Figure 3-1 illustrates the position of the IE-78K0-NS-A emulation board fixing stays (metal fittings).

Be sure not to lose the removed emulation board fixing stays because these are used when upgrading the product.

Figure 3-1. Position of Emulation Board Fixing Stays (Metal Fittings)



No.4 Addition of support for the μ PD789479, 78F9479, 789489, 78F9489

[Description]

The μ PD789479, 78F9479, 789489, 78F9489 are supported in IE-789488-NS-EM1 control code E or later.

[Caution]

When using IE-789488-NS-EM1 control code E, be sure to use the device file DF789488 (DF789488 (package version: E1.10c or later)).

Note When using IE-789488-NS-EM1 control code A to D, use the DF789488 (package version: V1.01).

| IE-789488-NS-EM1 Control Code | Device File (DF789488) Package Version | Supported CPU |
|-------------------------------|--|--|
| E | E1.10c or later | μ PD789477, 789478, 78F9478 μ PD789488, 78F9488 μ PD789479, 78F9479, 789489, 78F9489 |
| A to D | V1.01 | μ PD789477, 789478, 78F9478 μ PD789488, 78F9488 |

4. Other Cautions

This product has the following restrictions.

- Emulation specification when the x4 subsystem clock is selected (1)

When the x4 subsystem clock is selected, $f_{XTT/2}$ is fixed to 131.072 kHz and f_{XT} is fixed to 32.768 kHz, and these values cannot be changed. Therefore, “using the clock mounted by user” or “using the external clock” cannot be selected.

- Emulation specification when the x4 subsystem clock is selected (2)

The x4 subsystem clock cannot be stopped by HALT. As a result, the IE-789488-NS-EM1 starts operation one subsystem clock earlier after HALT is released.

- Emulation specification for the port/segment switching mask option

The port and segment cannot be switched even if the port function registers (PF7 and PF8) are set so.

In addition to the port function register settings, set SW8 to SW19 in the IE-789488-NS-EM1.

For details of the SW settings, refer to **3.7.2 Mask option for pin functions (1)**

Port/segment pin switching.

- LCD function specification when emulating the μ PD78948x (1)

It is possible to access bit 6 (VAON0) of LCD display mode register 0 (LCDM0), but the access is not valid. The voltage boost operation is enabled by setting the 9489 mode (J9: 2-3). For details of the jumper setting, refer to **3.3.1 Jumper setting for selecting subseries**.

- LCD function specification when emulating the μ PD78948x (2)

It is possible to access bit 0 (GAIN) of LCD voltage boost control register 0 (LCDVA0), but the access is not valid. The voltage selected by the SW4 setting (LCD panel voltage setting) is always used as the panel voltage. For details of the SW setting, refer to **3.3.2 LCD emulation setting for μ PD789489 Subseries**.