

CUSTOMER NOTIFICATION

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# IE-178098-NS-EM1 (Control Code: A, B, C, D)

## Operating Precautions

**Be sure to read this document before using the product.**

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## Notes on Using IE-178098-NS-EM1

### 1. Product Version

Control Code	Board Name	Board Version	Remark
A	IE-178098-NS-EM1	1.A	IC8: $\mu$ PD178F098 ES1.0
B	IE-178098-NS-EM1	1.B	IC8: $\mu$ PD178F098 ES2.0
C	IE-178098-NS-EM1	1.B	IC8: $\mu$ PD178F098 ES3.0
D	IE-178098-NS-EM1	1.B	IC8: $\mu$ PD178F098 ES3.0 or rank P

### 2. Product History

No.	Bugs and Changes/Additions to Specifications	Control Code <sup>Note</sup>			
		A	B	C	D
1	Bugs in $\mu$ PD178F098 V1.0 or equivalent	×	√	√	√
2	Bugs in IEBus (up to $\mu$ PD178F098 V2.0 or equivalent)	×	×	√	√
3	Bugs in IEBus (up to $\mu$ PD178F098 V3.0 or equivalent)	×	×	×	√

√: Bug does not apply or already corrected

×: Corresponding bug exists

**Note** The “control code” is the second digit from the left in the 10-digit serial number in the warranty supplied with the product you purchased (if it has not been upgraded). 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.

### 3. Details of Bugs and Additions to Specifications

#### No.1 Bugs in $\mu$ PD178F098 V1.0 or equivalent

##### [Description]

- POC bug
- IFC bug
- UART bug

##### [Workaround]

There is no workaround. These bugs have been corrected in control code B or later.

#### No.2 Bugs in IEBus (up to $\mu$ PD178F098 V2.0 or equivalent)

##### [Description]

- (1) The broadcasting communication flag is not cleared even if individual communication is executed after broadcasting reception, and ACK/NACK cannot be detected even during individual communication.
- (2) If a unit has lost in a conflict for broadcasting communication and if it is specified as a slave unit by the winning unit, the slave request flag is not set.
- (3) If a frame has ended with control data after receiving 0AH and 0BH during broadcast communication, the device enters the lock status.
- (4) If a unit has lost in a conflict for individual transmission after broadcasting transmission/reception, and if the winning unit specifies another unit in the group to which this product belongs as a slave unit, the slave request flag of this product is set even though the  $\mu$ PD178F098 is specified as a slave unit.

##### [Workaround]

There is no workaround. These bugs have been corrected in control code C or later.

#### No.3 Bug in IEBus (up to $\mu$ PD178F098 V3.0 or equivalent)

##### [Description]

The following bugs exist in the IEBus.

The description is the same as that in the document "IEBus Macro Bugs" (SBG-T-0843-E).

- (1) When the local unit issues a broadcasting mastership request while the other unit is performing an individual communication with another slave unit in the local unit group, the local unit may mistakenly receive the individual communication as a broadcasting communication (ALLTRANS = 1).

This error occurs only when the local unit issues a broadcasting mastership request during the period between the broadcasting field and bit 8 of the slave address field in individual communication between slave units (T2 in the figure below).

- (2) When the local unit issues a broadcasting mastership request while receiving an individual communication, ACK is not returned in the slave address field and no start interrupt is generated. However, ACK is returned and a start interrupt is generated if the local unit issues a broadcasting mastership request during individual communication with a unit in the same group and whose lower address is FFH.

This error occurs only when the local unit issues a broadcasting mastership request during the

period from bits 7 to 0 in the slave address field (T3 in the figure below).

- (3) After the broadcasting mastership request is issued, if the local unit lost in arbitration and is specified as a slave, no error interrupt is generated even when a parity error occurs in the data field.

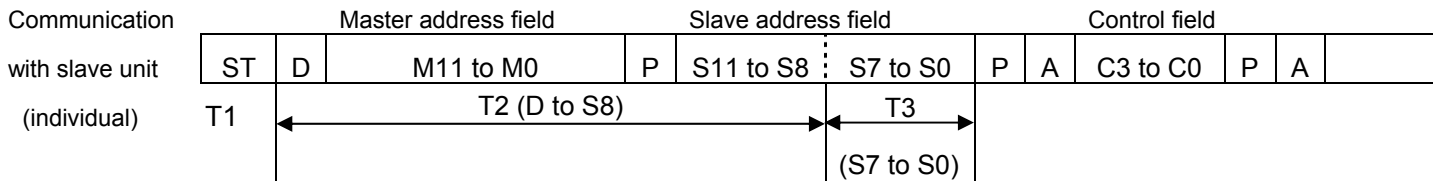


Table 1. Relationship Between Communication Status and Master Request Timing

	Communication Status	Master Request Timing	Start Interrupt	Error Interrupt	Remark
1	Individual communication to the local unit is received	–	Generated	–	
2	Broadcasting communication to the local G is received	–	Generated	–	
3	Arbitration loss to individual mastership request, individual communication is received	–	Generated	–	
4	Arbitration loss to individual mastership request, broadcasting communication is received	–	Generated	–	
5	Arbitration loss to broadcasting mastership request, broadcasting communication is received	–	Generated	–	<b>(3) Parity error does not occur in data field</b>
6	Broadcasting communication is requested during broadcasting communication with slave unit in the local G	Between D and S8	Generated	–	
		Between S7 and S0			
7	Individual communication is requested during broadcasting communication with the local unit	Between D and S8	Generated	–	
		Between S7 and S0	Generated	–	
8	Broadcasting communication is requested during individual communication with the local unit	Between D and S8	Generated	Generated	NACK transmitted from control field (due to workaround ENSLVRQ = 0)
		Between S7 and S0	<b>(2) Not generated</b>	Generated	NACK transmitted from slave address field
9	Individual communication is requested during individual communication with the local unit	Between D and S8	Generated	–	
		Between S7 and S0		–	
10	Broadcasting communication is requested during individual communication with slave unit in the local G	Between D and S8	<b>(1) Generated</b>	–	Misreception, can be avoided by implementing workaround.
		Between S7 and S0	<b>(2) Generated if lower address = FFH; otherwise not generated.</b>	–	If generated, data can be made invalid by implementing workaround for (1)

## [Workaround]

- (1) • Disable slave reception when the broadcasting mastership request is issued (BCR = #E0H)
- If a slave request is detected (SLVRQ = 1) in the start interrupt servicing after a broadcasting mastership request is issued, clear the broadcasting mastership request flag. At this time, the subsequent data can be made invalid if the broadcasting communication flag (ALLTRANS) has been cleared to 0.

The communication enable flag (ENIEBUS) can also be reset when the broadcasting communication flag (ALLTRANS) is 0-judged. This method, however, can be used only when a lock request or slave status request does not exist in any part of the system.

See the document "IEBus Macro Bugs" (SBG-T-0843-E).

- (2) There is no software workaround on the local unit side.

At that time, a communication error occurs on the master side by NACK reception. A timing error occurs in the local unit because the master stops communication. Therefore, it is possible to avoid this restriction if the master side performs re-transmission processing.

- (3) In the reception complete interrupt servicing, confirm a match between the received telegraph length data (DLR) and the number of data actually received, by checking the reception interrupt count (INTE1) generated in the period from reception start to end.

These bugs have been corrected in control code D or later.

#### 4. Caution

##### No.1 IE-178098-NS-EM1 User's Manual

###### [Description]

The following contents will be added to IE-178098-NS-EM1 User's Manual (1st edition, document number: U14013\*J1V0UM00). These contents have been added to the 2nd edition (document number: U14013\*J2V0UM00).

<Contents of addition>

###### **Jumper setting of IE-78K0-NS(-A)**

When using the IE-178098-NS-EM1, set each jumper of the IE-78K0-NS(-A) as follows.

See the IE-78K0-NS(-A) user's manual for the position of each jumper.

	JP2	JP3	JP4	JP6	JP7	JP8
Short	2-3	1-2	1-2	3-4	1-2	1-2