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April 1st, 2010
Renesas Electronics Corporation

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

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M3T-FLX-144NSE

Converter Board for Connecting 160-core Flexible Board FLX160 to 144-pin 0.4-mm-pitch TQFP

User's Manual

Keep safety first in your circuit designs!

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CAUTION

If the requirements shown in the "CAUTION" sentences are ignored, the equipment may cause personal injury or damage to the products.

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

1. Outline

The M3T-FLX-144NSE is a converter board for connecting the 160-core flexible cable FLX160 to a foot pattern for 144-pin 0.4-mm-pitch TQFP (144PFB-A).

2. Package Components (See Figure 1)

- (1) M3T-FLX-144NSE converter board
- (2) YQPACK144SE (made by Tokyo Eletech Corporation)
- (3) NQPACK144SE (made by Tokyo Eletech Corporation)
- (4) YQ-GUIDE (4 pieces) (made by Tokyo Eletech Corporation)
- (5) M3T-FLX-144NSE User's Manual (This manual)

3. Specifications

Table 1 Specifications

Applicable package	144PFB-A (144-pin 0.4-mm-pitch TQFP)
Insertion/removal iterations of connector	50 times guaranteed

4. Usage (See Figure 2)

The M3T-FLX-144NSE can be used for debugging and board mounted evaluation in common by mounting the NQPACK144SE on the target system.

- (1) For debugging
Mount the NQPACK144SE and YQPACK144SE on the foot pattern of the target system in that order. And connect the probe of the emulation pod to the upper connector of the M3T-FLX-144NSE. Then connect the YQPACK144SE and the M3T-FLX-144NSE.
- (2) For onboard evaluation
Mount an MCU with on-chip flash memory or one-time PROM and the HQPACK144SE (separately available) in that order on the NQPACK144SE on the target system.

Before using the M3T-FLX-144NSE, be sure to read "7. Precautions" on page 4.

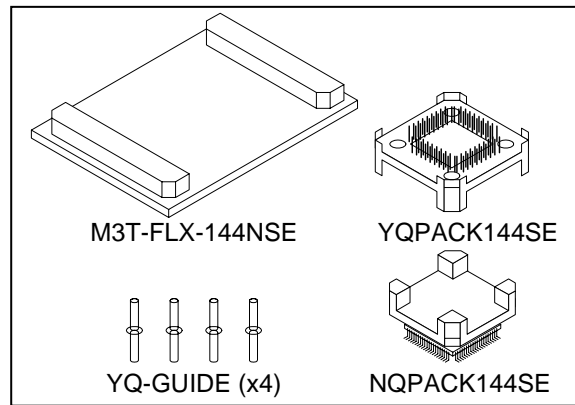


Figure 1 Package components of the M3T-FLX-144NSE

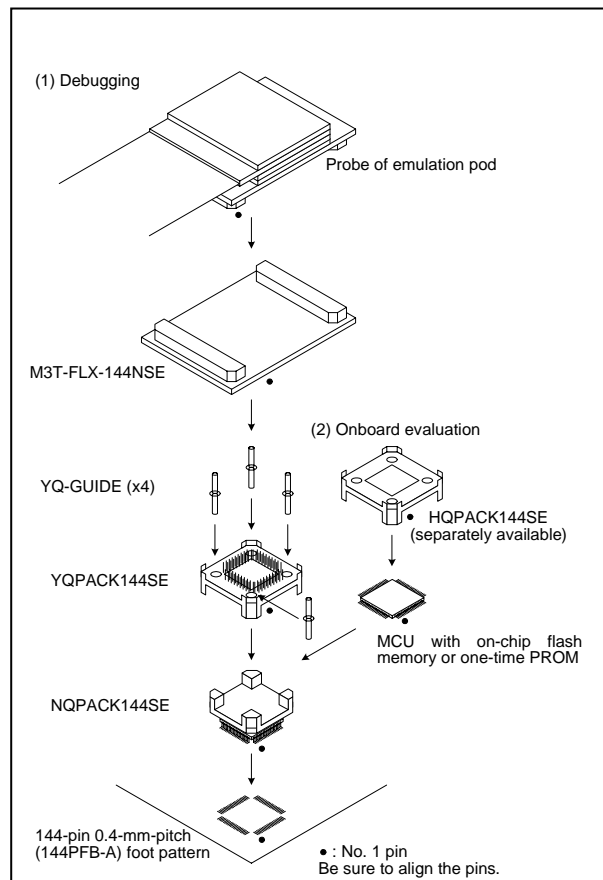


Figure 2 Usage of the M3T-FLX-144NSE

5. Connection Procedure (See Figure 3)

The procedure for connecting the M3T-FLX-144NSE is shown below.

- (1) Mount the NQPACK144SE on the target board.
- (2) Attach the YQPACK144SE on the NQPACK144SE.
- (3) Secure the four corners of the YQPACK144SE with the YQ-GUIDE's.

- Do not use the screws included with the YQPACK144SE for fixing the YQPACK144SE.
- The screwdriver included with the NQPACK144SE is used for fixing the HQPACK144SE. Do not use it for fixing the YQ-GUIDE's.

- (4) Connect the probe of the emulation pod to the M3T-FLX-144NSE.
- (5) Attach the M3T-FLX-144NSE on the YQPACK144SE.

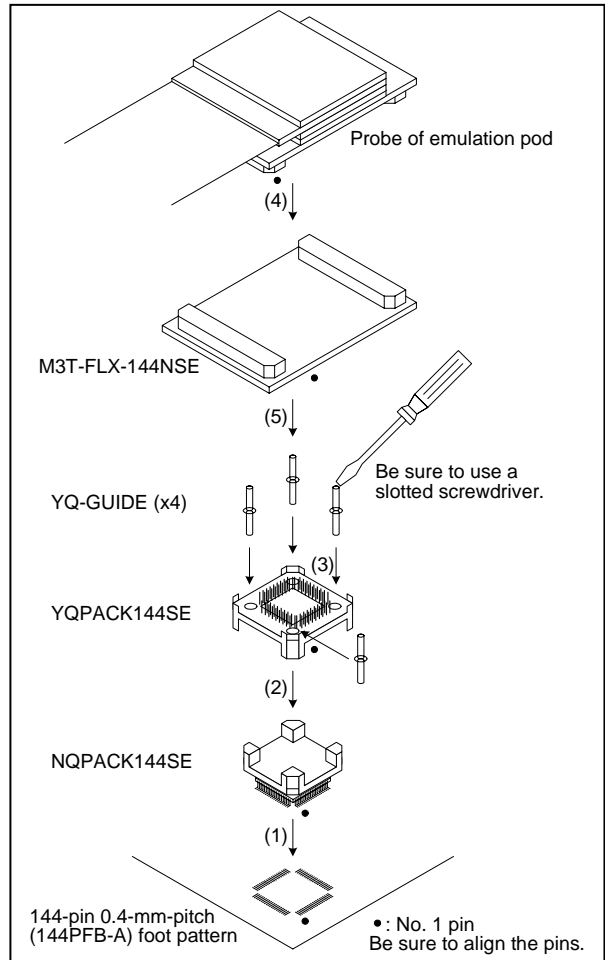


Figure 3 Connection procedure of the M3T-FLX-144NSE

6. External Dimensions and a Sample Foot Pattern

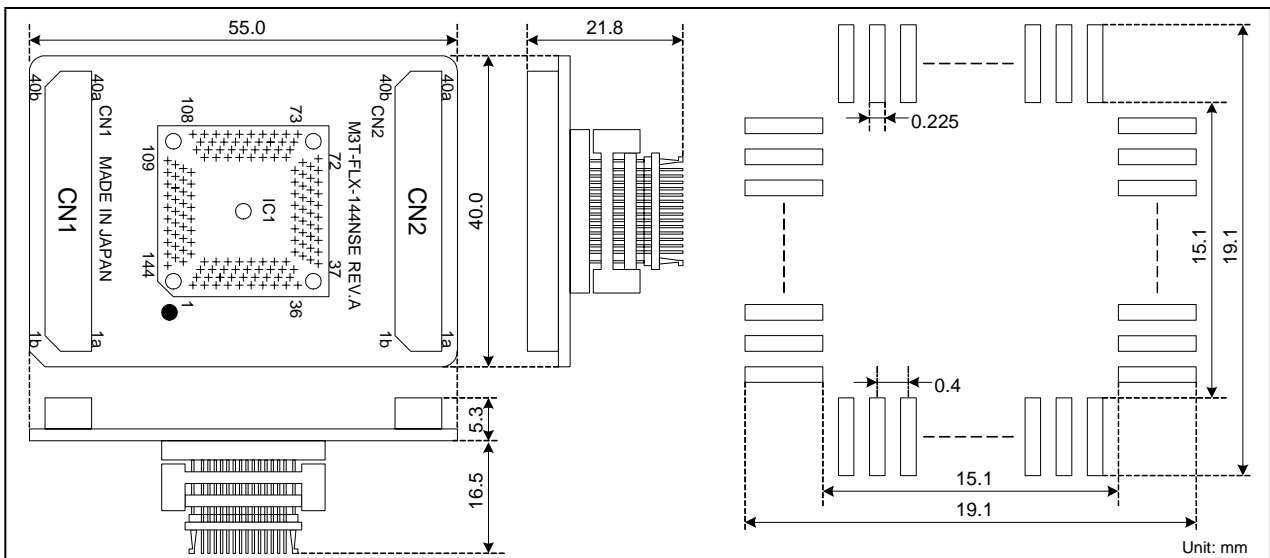


Figure 4 External dimensions and a sample foot pattern of the M3T-FLX-144NSE

7. Precautions

⚠ CAUTION

Caution to Be Taken for This Product:



- When connecting the YQPACK144SE, be sure to use the included YQ-GUIDE's.
- Do not use the screws included with the YQPACK144SE to fix it.

IMPORTANT

Notes on This Product:

- We cannot accept any request for repair.
- For purchasing the NQPACK144SE, YQPACK144SE and HQPACK144SE, contact the following:

Daimaru Kogyo Ltd.	http://www.daimarukogyo.co.jp/
Tokyo Eletech Corporation	http://www.tetc.co.jp/e_tet.htm
- For inquiries about the product or the contents of this manual, contact your local distributor.

Renesas Tools Homepage	http://www.renesas.com/en/tools
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8. Correspondence of Connectors CN1 and CN2

Table 2 Correspondence of the Connectors

CN1	IC1	CN1	IC1	CN2	IC1	CN2	IC1
1a	GND	1b	18	1a	GND	1b	19
2a	17	2b	16	2a	20	2b	21
3a	15	3b	14	3a	22	3b	23
4a	13	4b	12	4a	24	4b	25
5a	11	5b	10	5a	26	5b	27
6a	9	6b	8	6a	28	6b	29
7a	7	7b	6	7a	30	7b	31
8a	5	8b	4	8a	32	8b	33
9a	3	9b	2	9a	34	9b	35
10a	1	10b	GND	10a	36	10b	GND
11a	GND	11b	144	11a	GND	11b	37
12a	143	12b	142	12a	38	12b	39
13a	141	13b	140	13a	40	13b	41
14a	139	14b	138	14a	42	14b	43
15a	137	15b	136	15a	44	15b	45
16a	135	16b	134	16a	46	16b	47
17a	133	17b	132	17a	48	17b	49
18a	131	18b	130	18a	50	18b	51
19a	129	19b	128	19a	52	19b	53
20a	127	20b	GND	20a	54	20b	GND
21a	GND	21b	126	21a	GND	21b	55
22a	125	22b	124	22a	56	22b	57
23a	123	23b	122	23a	58	23b	59
24a	121	24b	120	24a	60	24b	61
25a	119	25b	118	25a	62	25b	63
26a	117	26b	116	26a	64	26b	65
27a	115	27b	114	27a	66	27b	67
28a	113	28b	112	28a	68	28b	69
29a	111	29b	110	29a	70	29b	71
30a	109	30b	GND	30a	72	30b	GND
31a	GND	31b	108	31a	GND	31b	73
32a	107	32b	106	32a	74	32b	75
33a	105	33b	104	33a	76	33b	77
34a	103	34b	102	34a	78	34b	79
35a	101	35b	100	35a	80	35b	81
36a	99	36b	98	36a	82	36b	83
37a	97	37b	96	37a	84	37b	85
38a	95	38b	94	38a	86	38b	87
39a	93	39b	92	39a	88	39b	89
40a	91	40b	GND	40a	90	40b	GND

(NC: No connection)