# 8 FUNCTIONAL TEST PROCEDURE FOR ANALYST C/MAESTRO C MODULE

## 8.1 Functional test with SW6/SW6.1/SW7

| PURPOSE | PROCEDURE | OBSERVATION | DISPLAY (for M6M only) |
|---|---|---|---|
| 1. Preset SW6/SW6.1/SW7 | - Power up SW6/SW6.1/SW7 (by pressing ACL) | - "Module" LED is OFF. | - |
| | - Press LEVEL | - Red solid "A1" LEDs come on. | |
| | - Press STOP | - All LEDs come off. | |
| 2. Check M6D/M connection | - Install M6D/M into SW6/SW6.1/SW7 | - "Module" LED is ON. | |
| | - Press GO | | 1/0:01 |
| 3. Check M6D/M level E1 | - Press LEVEL, COLOR, COLOR, COLOR, COLOR | - Red solid "E1" LEDs come on. | 1/0:05 |
| | - Press NORMAL | | 0:XX ◻ ◻ 0:00 with left side timer counting up |
| 4. Check book | - Move E2, E4 | - SW6/SW6.1/SW7 should response immediately with a book move. | |
| | - Move E4, E2 | - You should hear the "beep-boom" sound | Same as above |
| 5. Check CHECKMATE | - Press ANALYSIS | | A 1. |
| | - Move F2, F4, E7, E5, G2, G4 | | A 2. ⌂ g2-g4 |
| | - Press PLAY | | Play.....d8-h4 |
| | - Move D8, H4 | - "Check, end" LEDs come on. | 0:XX ◻ ◻ 0:00 with left side timer counting up |
| 6. Remove M6D/M | - Press STOP | - All LEDs come off. | |
| | - Remove M6D/M | | |
| | - Press GO | | |
| | - Press LEVEL | - Red solid "A1" LEDs come on. | |
| 7. Reinstall M6D/M | - Press STOP | - All LEDs come off | |
| | - Reinstall M6D/M onto SW6/SW6.1/SW7 | | |
| | - Wait for 10 seconds | | |
| | - Press GO/LEVEL | - Red solid "E1" LEDs come on | 1/0:05 |
| 8. Finish | - Press STOP | - All LEDs come off | |
| | - Remove M6D/M | | |

8.2 QC test mode on M6D/M

Objective: To check LCD segments.
To check expansion socket U4.
Will check data/address/CE/DE/V+/GND lines.

Procedure:

1. Plug in EGR II program (EGR II A20)
2. Connect an electronic device (No. M6A-PE-011) to M6D/M to enable QC test mode.
   The M6D/M program will execute the internal RAM/ROM, LCD and PID check.
3. Switch on the tester via a +9V DC 300mA adapter.

Result:

1. DATA LINE LEDs 1-8 : Scanning one by one in cycle (2-3 sec. per second) then all.

   Cycle LEDs A & B : Change one state after data line LEDs having completed one scanning cycle.

   NMI LED V+, GND : Normally off, lights up if the pin is shorted to either V+ or ground.

2. After scanning DATA LINE LEDs,

   LED 1,2,3,4,5,6,7,8 should light up simultaneously for 1 second if there is an EGR II in U4.

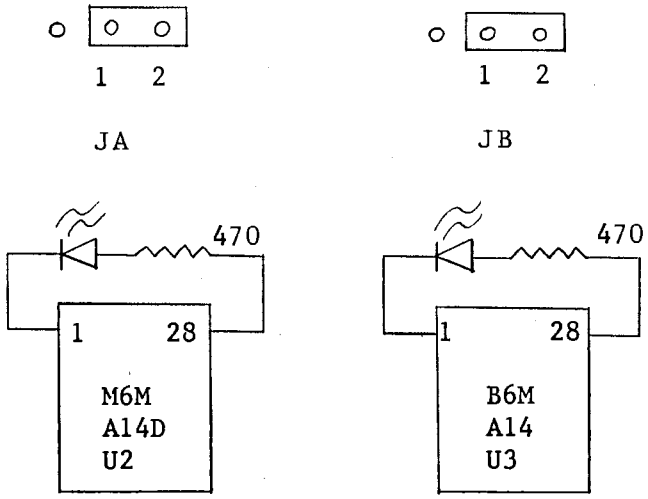
   LED 1,2, 4,5,6, 8 should light up simultaneously for 1 second if there is no EGR II in U4.

3. LCD scanning in groups (for M6M only)
   - vertical column dot matrix scrolling
   - horizontal column dot matrix scrolling
   - white pieces
   - black pieces
   - clock symbols
   - ! " # $ % & ' ( ) * + , - . /
   - 0 1 2 3 4 5 6 7 8 9 : ; < = > ?
   - @ A B C D E F G H I J K L M N O
   - P Q R S T U V W X Y Z [ Y ] ^ _
   - ` a b c d e f g h i j k l m n o
   - p q r s t u v w x y z { | }→←
   - OK

   If something goes wrong, "ERROR" will be shown instead of "OK"

8.3 Check U2, U3 pin 1 Bank switching (for future 27C512 expansion)

Procedure : 1. Connect jumper selector JA, JB to "position 2".
2. Replace test EPROMs at socket U2, U3 as follows:




3. Switch on the tester via a +9V DC 300mA adapter

Result : 1. DATA LINE LEDs 1-8 : Scanning one by one in cycle (2-3 sec. per cycle)
Cycle LEDs A & B : Change one state after data line LEDs having completed one scanning cycle.
NMI LED V+, GND : Normally off, lights up if the pin is shorted to either V+ or ground.
After scanning DATA LINE LEDs, LED 1,2,4,8 should light up simultaneously for 1 second.
(LED 5,6 may light up also, it depends on the EPROM characteristic but LED 1,2 must light up)

2. The two LEDs on the EPROMs should flash briefly for every 4 seconds.

Note : DATA LINE LED & PROGRAM relationship

| Position | U2 | U3 | U4 | U5 | U6 |
|---|---|---|---|---|---|
| LED | 1 | 2 | 3 | 4 | 8 |
| | 5 | 6 | 7 | | |
| Function | Program | Book | Expansion | RAM1 | RAM2 |

Note : The physical location of RAM1 & RAM2 is reversed for those logic PCB made later than M6C-PE-002 Rev. 1

8.4 Burn-in test for production line.

This test is mainly an actual functional test on the module that execute automatically with SW6/SW6.1/SW7 connected together.

| Procedure | M6D/M display |
|---|---|
| 1. Connect the module (after casing) to the SW6/SW6.1/SW7 installed with a special self play ROM. (OSA1.4 H0317.B auto play function) | - |
| 2. Power up the unit | - Module LED turns on<br>- The left hand side clock start counting up (for M6M) |
| 3. Press LEVEL, COLOR, COLOR, COLOR, COLOR | - Red solid "E1" LEDs come on<br>- M6M display shows 1/0:05 |
| 4. Press NORMAL | - For M6M, the left hand side clock is running |
| 5. Press FUNCTION, SETUP, NEW GAME<br>- The computer will start playing for both sides automatically.<br>- Watch for any hang up or LCD malfunction after 4 hours burn-in test. | |
| 6. Press STOP to exit the test | |
| 7. Remove the module | |