

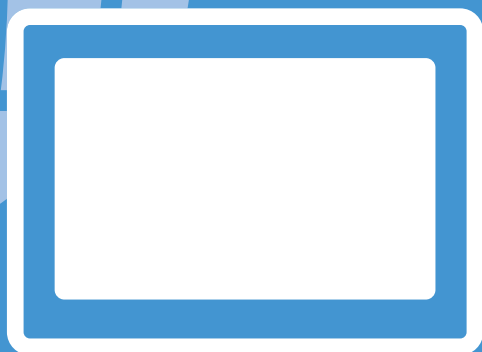


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Evaluation Report

The Performance Comparison of the
MT8000iE Series & the MT8000i Series



■ Executive Summary

This evaluation report compares the performance difference between the WEINTEK MT8000iE Series and its predecessor, the MT8000i Series. The evaluation testing items include the display speed of the text window and the graphic window, and the speed of PLC Data Read/Write from the HMI.

The test results show that the MT8000iE Series is much better than the MT8000i Series in every aspect : i.e. 1. Faster display speed, 2. Faster PLC data Read/Write speed.

It is concluded that, compared with the MT8000i Series, the MT8000iE Series shows much higher performance in a window which contains many complicated objects.



MT8070iE



MT8070iH

The Performance Comparison of the MT8000iE Series & the MT8000i Series

■ Evaluation Description

1. Background

The MT8000i Series has been released for 4 years since 2009 and successfully gained a large market share in the worldwide automation market. However, due to the competitive market, we believe that the keys to success in market are both continuous innovation and improvement. Thus, a new version of the MT8000i Series called MT8000iE Series has been developed and released in 2013.

2. Goals and Objectives

The MT8000iE Series is powered by 32 bits RISC Cortex-A8 600Mhz processor, whereas the MT8000i Series is powered by only 400MHz processor. Therefore, in this evaluation report, we will compare with the MT8070iE (MT8000iE Series) and the MT8070iH (MT8000i Series) in 6 different testing items to evaluate their performance differences. The test results will show that the MT8000iE Series has greatly exceeded the performance of MT8000i Series.

3. Testing Environment

- ▶ MT8070iH (MT8000i Series) - Resolution : 800x480
- ▶ MT8070iE (MT8000iE Series) - Resolution : 800x480

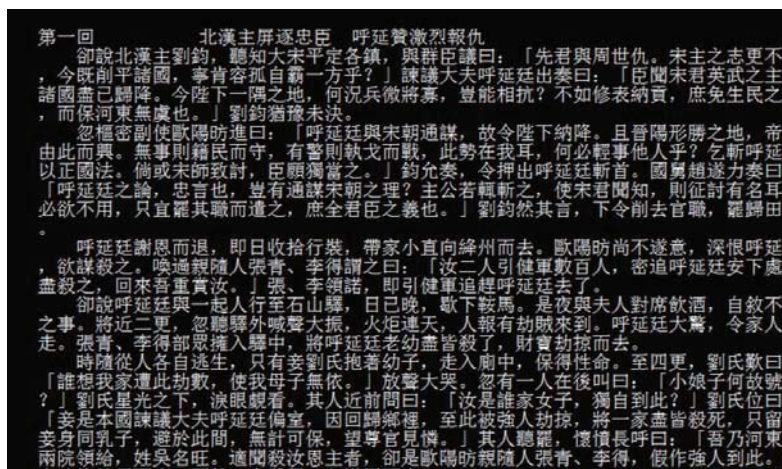
■ Evaluation Testing Items

There are 6 different evaluation testing items derived from the object common attributes (label \ shape \ picture) and its speed of PLC Data Read/Write from the HMI.

Each testing item contains 10 windows and the window is changing from Window 1 to 10. We use the Macro to estimate the window change time to ensure the accuracy. Furthermore, the total execution time is estimated by the word address register, LW-9030 : System Tick (0.1s per tick).

1.Text Display Test

Estimate the display speed of changing the Text-Window below for 10 times.

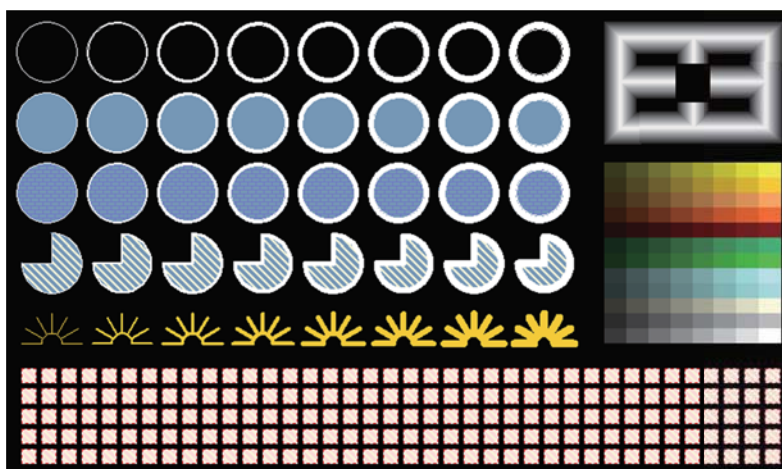


Text-Window

*Note : Each window contains different texts in order to avoid the cache access.

2.Shape Display Test

Estimate the display speed of changing the Shape-Window below for 10 times.



Shape-Window

*Note : There are many different built-in icons in each window.

■ Evaluation Testing Items

3. JPEG Display Test

Estimate the display speed of changing the JPEG-Window below for 10 times.

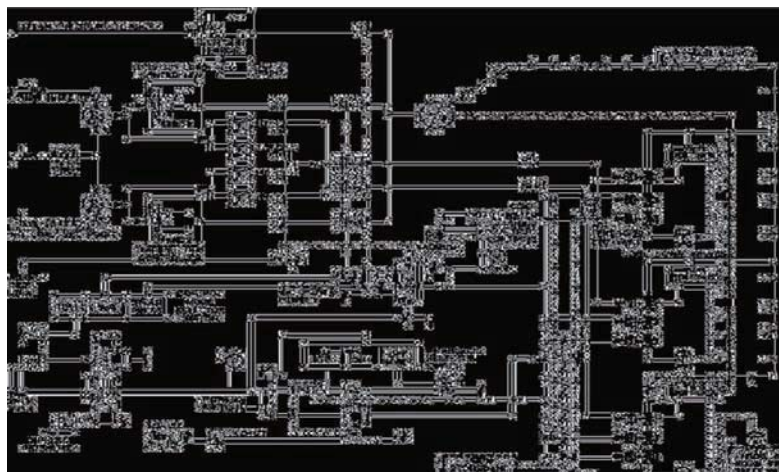


JPEG-Window

*Note : Each window contains one original dimension (800x480) JPEG file and its 1/4 size of the JPEG file.

4. Piping Diagram Display Test

Estimate the display speed of changing the Piping Diagram-Window below for 10 times.



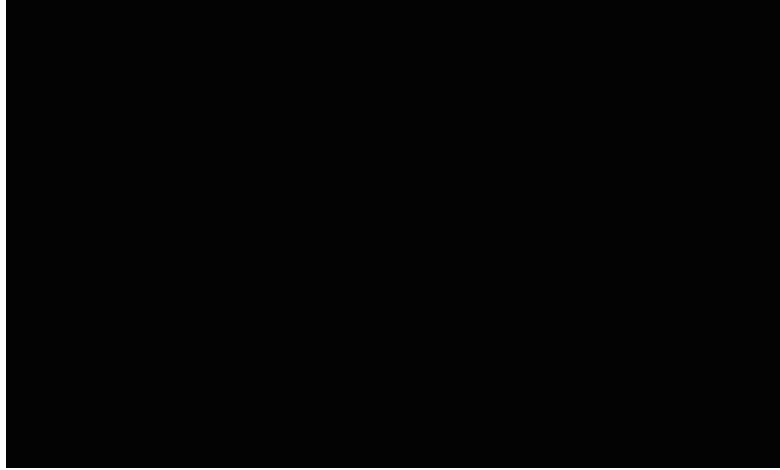
Piping Diagram-Window

*Note : Piping diagram is commonly used at engineering work.

■ Evaluation Testing Items

5. Empty Display Test

Estimate the display speed of changing the Empty-Window below for 10 times.



Empty-Window

*Note : Due to no objects shown in the window, the window change time should be the fastest.

6. PLC Data Read / Write Test

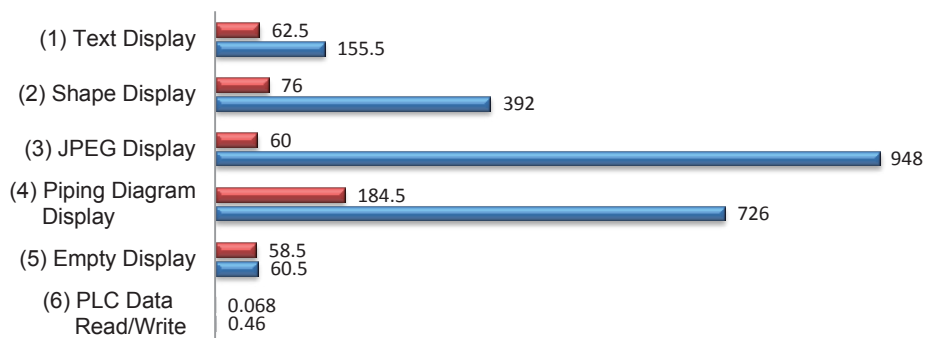
Estimate the speed of PLC data Read/Write from the HMI in random LW addresses in 300,000 times, respectively.

*Note : In this test, we do not consider For-loop and Random that result in deviation.

■ Test Results

MT8000iE Series vs. MT8000i Series

■ MT8070iE (600MHz) ■ MT8070iH (400MHz)



Evaluation Testing Items	MT8070iE (ms)	MT8070iH (ms)
(1) Text Display	62.5	155.5
(2) Shape Display	76	392
(3) JPEG Display	60	948
(4) Piping Diagram Display	184.5	726
(5) Empty Display	58.5	60.5
(6) PLC Data Read/Write	0.068	0.46

*Note : Time (ms) shorter is better.

■ Test Results

The above pictures show the test results of the MT8070iE and the MT8070iH in 6 different evaluation testing items.

The MT8070iE are 5.1 times and 3.9 times faster than the MT8070iH in the Shape Display test and the Piping Diagram Display test, respectively. In the Text Display test, the MT8070iH is 155.5ms, whereas the MT8070iE is 2.5 times faster at 62.5ms. Moreover, in the JPEG Display test, the MT8070iE is even 16 times faster than the MT8070iH. Likewise, in the PLC Data Read/Write test, the MT8070iE is 10 times faster than the MT8070iH. The former is 0.068ms and the latter is 0.46ms.

It is interesting to note that even the MT8070iE is faster than the MT8070iH in those testing items, however, in the Empty Display test, both speeds are almost the same as IPC (Inter-Process Communication time), 60ms.

According to the test results, the more complicated objects in a widow, the faster display speed and data operation in the MT8070iE. Thus, it can be concluded that the MT8000iE Series offers more excellent performance than the MT8000i Series.