



# APPLICATION NOTE

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**Product Family: C-more**

**Number: AN-EA-010**

**Subject: Factors that affect C-more Screen update performance**

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**Revision: Original**

There are 2 major factors that will affect the update performance of the objects on the screen in C-more: Communications and Graphics.

## **Communications:**

- **Wire speed:** Serial communications at lower baud rates will delay updates as compared to 100Mbps Ethernet. This is not true in all systems but, in general, will greatly affect the updates on the display.
- **PLC/Device scan time or communications service update rate:** In most PLCs, the communications are serviced in between scans, therefore the scan time of the PLC will have a major impact on how often objects on the display can be updated. If possible, reduce the scan time or increase the communications service update in order to provide faster updates to the display.
- **Protocol efficiency:** Most protocols require that PLC addresses requested within 1 request be consecutive addresses (or almost consecutive) of the same memory type. If the addresses requested (assigned to objects) have large gaps or are of different memory types, multiple requests will be required and therefore cause update delays. Whenever possible, use the same memory type and group together addresses assigned to objects on a screen. The display also requests Alarm and Event PLC addresses no matter what screen is showing so grouping together addresses in those categories will also increase the efficiency of the protocol.

## **Graphics:**

- **General philosophy:** Keep it simple. Use standard objects and keep the images and enhanced graphics to a minimum. Fancy graphics and effects force the display to spend more time working on these than with the normal functions of the panel.
- **Overlapping and/or stacking objects:** Overlapping objects causes the display to refresh objects with less efficiency. Whenever possible, avoid this.
- **Animation:** While this enhances the aesthetic appeal to a project, it starves a great deal of performance from the display that could be used to service communications and update regular objects.
- **Rotation:** A better choice with regard to panel performance is to use a graphics program to save the image in the correct orientation. This way, the C-more panel processor does not need to compute the changes to the image.



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- **Bitmap properties:** When using bitmaps, deselect the 'Transparent', 'Lock Aspect Ratio' and 'Stretch to Fit' options. These all require the re-rendering of images to take longer and starve performance in the display. There is also a 'Bitmap Option(less memory)' in the Panel Manager screen that will compress the images sent over in order to preserve project memory. But there is a performance cost when using this option. The CPU has to constantly 'de compress' the bitmap when using this feature.
- **Number of objects on a screen:** Use less objects when possible, especially on the larger displays. The more objects you have on a screen, the more work the display has to do just to refresh the screen 1 time.
- **Visibility:** Use the visibility option sparingly. It also costs in performance.
- **Popup windows:** Also incur a performance hit.
- **Blink:** Requires the display to have to refresh the screen and objects more often than necessary.

### **Technical**

**Assistance:** If you have questions regarding this Application Note, please contact us at 770-844-4200 for further assistance.