Proper CRT Setup Technique

Purpose: To ensure that the UUT is properly setup and adjusted before testing begins.

Description: Proper setup of the UUT is critical when making measurements. If a monitor is not setup properly, errors or erratic behavior may result and cause unnecessary delays in the testing procedure. Common symptoms of misalignment are: tests aborting unexpectedly, raster not seen errors, poor auto-focusing, unusually large or small measurement errors. It is well worth taking the time to ensure proper setup before any testing is done. Please utilize the following set of guide lines before making measurements on any UUT.

1. *Select a proper stand to set the monitor on.* The monitor will most likely need to be raised 150-300 mm prior to testing. This is mainly due to the size of the monitor base and the height of the camera above the work surface. In some instances it may be desirable to remove the swiveling base of the monitor. If the base is too "unstable" and vibrates during testing, erroneous result will occur and it should be removed or supported. It is important that the camera is able to travel the entire viewable area of the UUT. Make sure that in addition to setting the right height, that the stage can also drive to each end and top of the viewable area. Functions that traverse the edges of the display like pincushion and geometry will fail if the edges can not be reached.

2. *Set the monitor perpendicular as possible to the line of sight of the camera.* Although the system will automatically compensate for any slight inaccuracies, large errors cannot be accounted for. In general, the operators visual inspection and alignment of the UUT will satisfy the requirement.

3. *Set the proper working distance.* One of the most important alignment steps is setting the working distance. When the software is started and an "Initialization" is performed, the camera will automatically be driven to the full forward position and then the UUT is positioned in front of the camera. This has two effects. The first is to guarantee that the camera will never make contact with the monitor by limiting its travel to a known safe position. The second, is to also establish the limit of the cameras focal range which can have some negative consequences. For example, if a monitor with a large degree of curvature was not brought close enough to the camera during initialization, it is possible that the camera will not be able to properly focus around the edge of the display. The curvature of the monitor is so large that the focus axis cannot drive the camera far enough forward to achieve focus. In extreme cases it may be necessary be necessary to remove the photopic filter in order to initialize closer to the monitor.

4. *Adjust the raster such that all of the viewable area can be seen.* If any portion of the raster is hidden behind the bezel, the system will not be able to locate the beam at that location. Using a grid pattern, adjust the raster size until all portions of the grid are viewable. Keep in mind that changing the timing resolution cam also effect this adjustment and it may need to be redone.