

MVREMOTE FOR WINDOWS

Microvision MVREMOTE -
Remote Pattern Generator Utility for Windows
Version 1.2 (and beta version)

Please report any problems with operation or documentation to Microvision, and download the release version from our FTP site as soon as it is available.

This program uses a Windows PC as a remote RS232 controlled pattern generator for the Microvision SS200 series Display Analysis System, thus allowing testing of native Windows 98,NT display modes. This program does not set display modes - instead, it uses the currently selected display mode, to allow testing of the display timings that will be seen by the end user.

To use this program:

Connect the COM1 serial port on the SS200 to the COM1 serial port on the test computer using a null modem serial cable.(COM1 is the default port. Version 1.2 or better allows for port selection.) This is the same serial cable used by LapLink and Interlink. If you wish, you can test to see if the computers are correctly connected by using the Start : Programs : Accessories : HyperTerminal program to send messages between the two computers.

Disable all screen savers and pop up menus on the test computer. Otherwise, these programs may display during MVREMOTE operation, affecting test results.

Select the screen mode to test using Start : Settings : Control Panel : Display Settings. Also, confirm that the correct monitor is selected in Change Display Type.

Run and install MVRemoteSetupxxx.exe into a folder of your choice.
The program will install and place a desktop ICON to run the software.

Execute the MVREMOTE program. A dialog box will be display the current resolution and an edit field for the refresh rate, as well as buttons for Help (this text), Cancel, and Go Remote.

Enter the EXACT refresh rate for the selected mode (see Refresh Rates Background below). If unknown, enter an approximate refresh rate and see the Measuring Refresh Rate section below. The value entered (one per resolution) will be saved in the Windows registry and redisplayed the next time MVREMWIN is used.

Press the Go Remote button. MVREMWIN will display an initial screen and wait for the SS200 to come up. You can also control the program manually with the keyboard. (see Keyboard Commands below).

Bring up the SS200, go to the main setup at the Supervisor access level, and set the Pattern Generator Hardware Version to 200.

Exit the main setup, and the SS200 system will restart. The test computer screen will now be used to automatically display all SS200 test patterns.

To terminate the MVREMWIN program, press the Space key or the Escape key.

Keyboard Commands:

'PgUp' Decreases the size of the displayed box.

'PgDn'	Increases the size of the displayed box.
'C'	Changes the color.
'B'	Blinks the displayed box.
'Home'	Increases the blink rate.
'End'	Decreases the blink rate.
'space-bar' or 'esc'	Terminates the program.

Refresh Rates Background:

The SS200 CCD camera must be operated in synchronization with the vertical refresh of the UUT. When the internal pattern generator is used, the sync signal is automatically derived from the pattern generator hardware. It is also possible to feed connect the UUT vertical sync signal to an external sync BNC connector on the back of the SS200 - contact Microvision for additional details.

In cases where a hardware sync signal is not available, an SS200 internal timer is programmed to generate a sync pulse for camera synchronization. For this to work, the EXACT vertical frame rate in Hertz must be known. Unfortunately, Windows has no mechanism (as far as I know) for returning the current refresh rate. Some ways to acquire this information are:

Ask the Test System vendor. Not likely to work, and the supplied information is likely to be incorrect.

Ask the Test System software: Some systems include utilities to set the resolution and refresh rate.

For #1 and #2 above, please be aware that the refresh rates commonly quoted, such as "640x480 60Hz" are NOT exact, but only accurate to within +/- 1.0 Hz, which is not accurate enough for proper SS200 operation. IF the timing mode given is a standard VESA timing, the EXACT refresh rate may be read from the VESA timing tables. Please contact Microvision if you need this information. Note that the EXACT refresh rate is only needed for CRT displays: LCD can use the approximate value.

Ask the Monitor: Most monitors display the refresh rate somewhere in their on-screen programming menus. This information may or may not be sufficiently accurate for SS200 operation: however, IF the timing mode is a standard VESA timing, the Monitor refresh rate and resolution may be used to determine the EXACT refresh rate.

Use the SS200 system to determine the refresh rate. (see below)

Measuring Refresh Rate:

The SS210 does not currently include an automatic refresh rate measurement, but the SS210 spectrometer can be used to determine the refresh rate as follows:

Bring up the SS210 system, and go to Color Analysis : Spectrometer, with a full screen white pattern. (no System Init is required),

In the Spectrometer Plugin window, select samples=1, frames=1, and set the approximate frame rate. If the refresh rate is completely unknown, try the standard rates 56, 60, 70, 72, 75, 80 and 85 Hz.

Watch the 7-segment luminance display. If an occasional high value is displayed, the refresh rate is too slow: increase the refresh rate. If an occasional low value is displayed, the refresh rate is too fast: decrease the refresh rate

Adjust the refresh rate until the displayed luminance is (nearly) constant. Record the refresh rate in the Spectrometer window for use in the MVREMWIN program.