

# MCS Application User's Manual

**SCREEN** Home Theater Systems  

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**RESEARCH**

<b>Action:</b> W: Written R: Page revised A: Page added D: Page deleted C: Rewritten completely					
Date	Rev. N°	Action	New Pages	Revised Pages	Cause of Revision
2008.20.04	A	W			New document



The MCS application is a tool to help you program, calibrate and test MCS control units in conjunction with Screen Research projection screens. The application is written in Java and is therefore cross-platform, running on any computer that can run the Java Runtime Environment.

The MCS application interfaces with the MCS control units via a DB9 serial connection using the RS-232 protocol. The application will automatically list the available serial ports (COM1, etc) and set its communication parameters (9600, n, 8, 1).

The MCS application will work with any Screen Research screen of any size and format, as long as the mask travel is factory standard. This means that the "shortest" attainable aspect ratio is 2.70:1, and the "narrowest" attainable aspect ratio is 1.33:1. This is applicable to 98% of the screens manufactured by Screen Research.

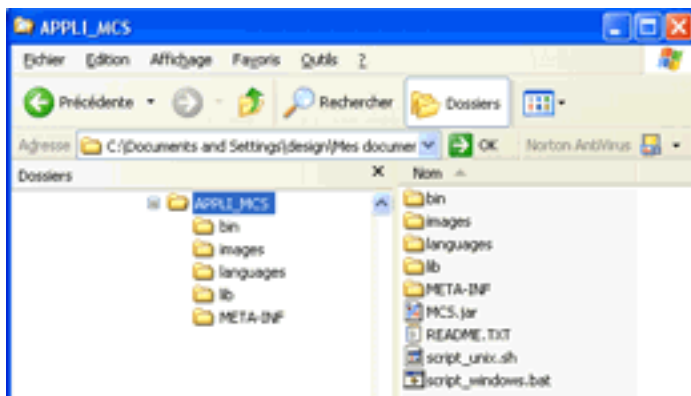
You can load a pre-existing configuration file into the application and download it into the controllers, or you can let the application guide you through the setup process for your particular screen.

The application will allow you to use standard aspect ratios, such as 1.78:1 and 1.33:1, or use custom formats of your own choosing. The MCS controller allows 4 formats in addition to the native aspect ratio of the screen.

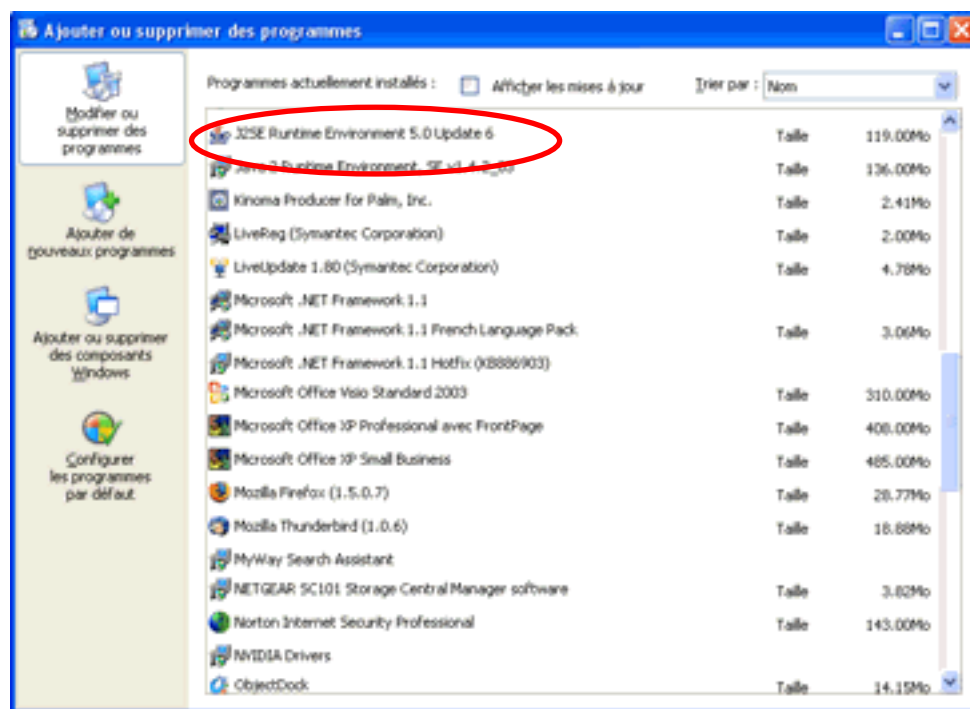
The application also allows you to test the various formats that you have programmed, and to adjust them for perfect positioning. And once everything is finished, you can save the settings into an XML file for future reference.

- A computer running either Windows, Mac OS X, or Linux
- A DB-9 serial port. Some USB-to-serial adapters have been known to work, but not all of them.
- The MCS.jar file and its associated files (available from the Screen Research Website at <http://www.screenresearch.com/documentation.html#MCS>)
- The Java Runtime Environment, version 1.5 (also called version 5.x - available from <http://www.java.com>)

The MCS files should be in a directory and subdirectories, as shown:



To determine if you need to obtain the Java Runtime Environment, for Windows, go to Start -> Control panel -> Add/Remove Programs . If you see an item called "J2SE Runtime Environment 5.0", or something similar, you already have the Java Runtime Environment.



Connect the DB9-RJ11 adapter to a serial port on the computer.



Connect the DB9-RJ11 adapter to the "RS-232" port on the MCS-BRS using an MCS jumper cable.



Connect one of the other RJ11 ports on the MCS-BRS (generally "SYS 1 MAIN") to an "EYE" port on an MCS-310 or MCS-320 using an MCS jumper cable.

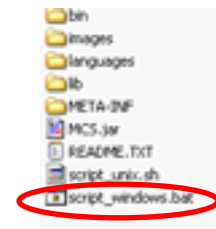


If you have a second MCS-310 or MCS-320, connect the "AUX" port on the first MCS-310 or MCS-320 to an "EYE" port on the second MCS-310 or MCS-320 using an MCS jumper cable.



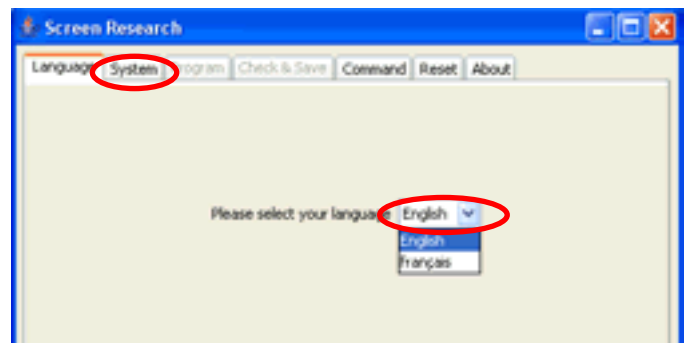
Connect power cords to the MCS-310 and MCS-320 units, and connect the motor connectors to the appropriate ports on the MCS-310 and MCS-320.

Double-click on the "script\_windows.bat" file. This will launch the application in the Java engine with the appropriate options turned on. (If you are using Linux, double-click on the "script\_unix.sh" file.)



Select the language that you would like to use.

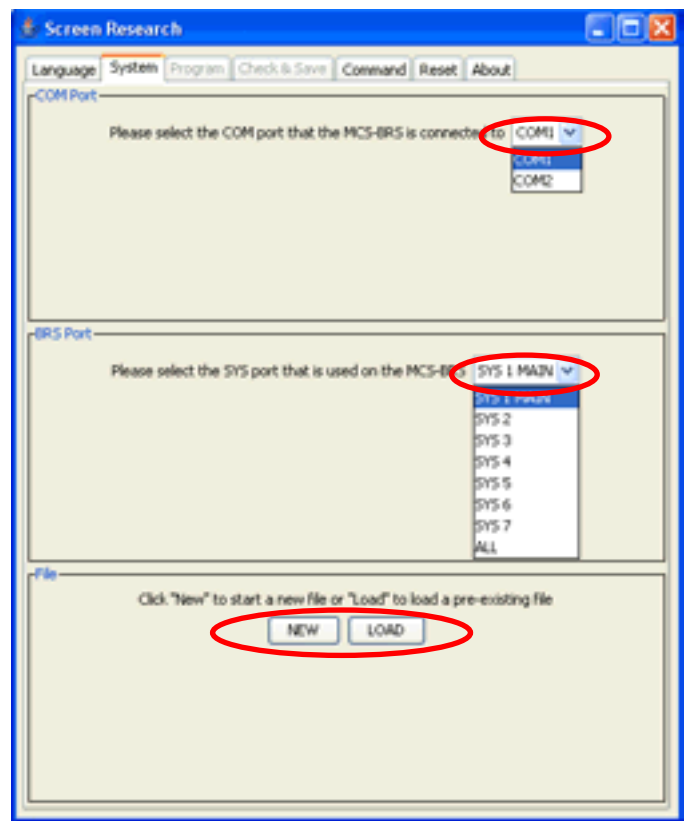
Click on the "System" tab.



Select the COM port on the computer that the MCS-BRS is connected to. The application will list all COM ports that it finds on the computer.

Select the System port that the MCS-310 or MCS-320 is connected to (generally SYS 1 MAIN)

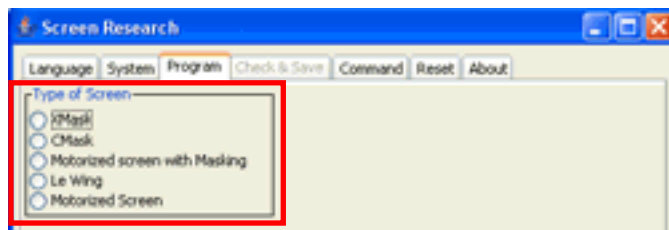
Either click on "New" to begin a new configuration file, or click on "Load" to load a preexisting configuration file.



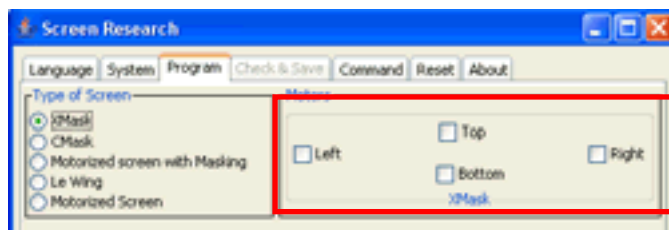
## Loading a pre-existing Configuration File

# Starting a new file: Entering the product parameters

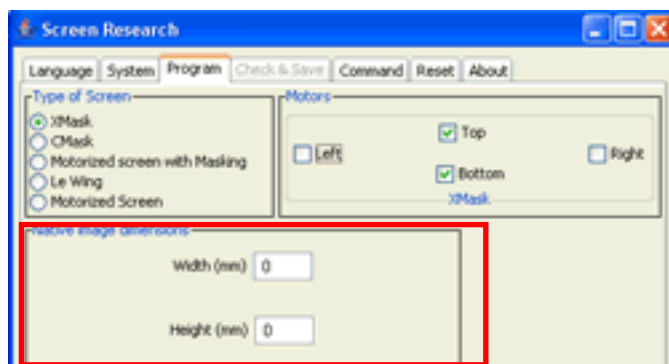
Select the type of screen to be used with these controllers.



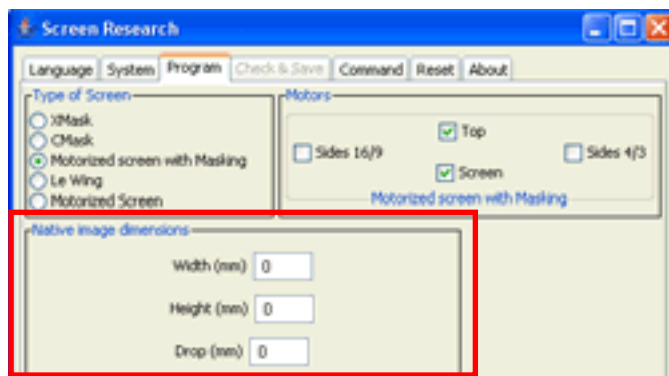
Select which masks are present on the screen.



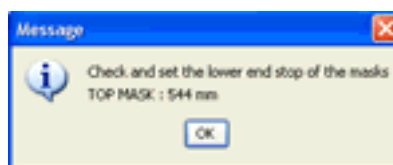
For an XMask or a CMask, enter the Image Width and Image Height and press the "Enter" key on the keyboard.



For a Motorized screen with Masking, first set the lower end stop of the screen as instructed in the screen's installation manual so that it is properly positioned in its native aspect ratio. Then enter the Image Width, Image Height, and Visible Drop (measured from the bottom of the casing to the top of the image area).



For a Motorized screen with Masking, the application will open a dialog box telling you at which position to set the lower end stops for the masks. Set the lower end stops for the masks at this time as instructed in the screen's installation manual.



## Selecting aspect ratios and sending the program

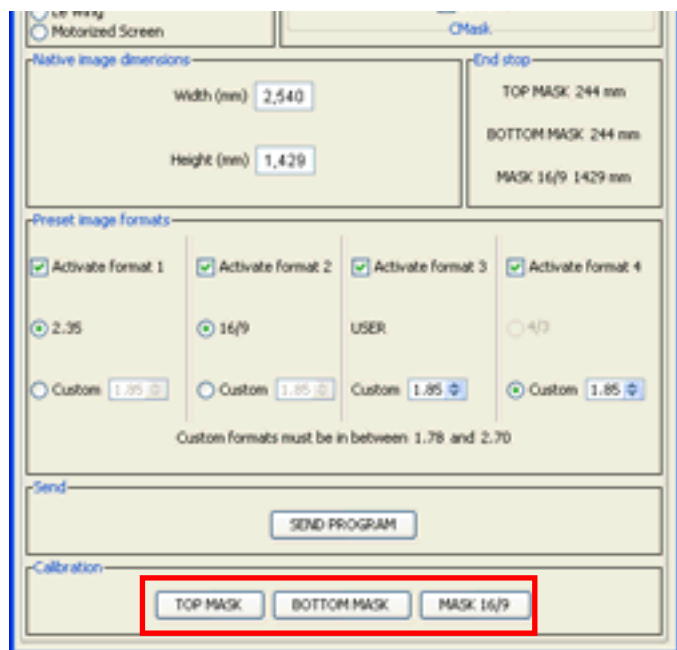
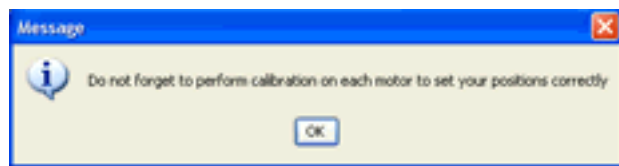
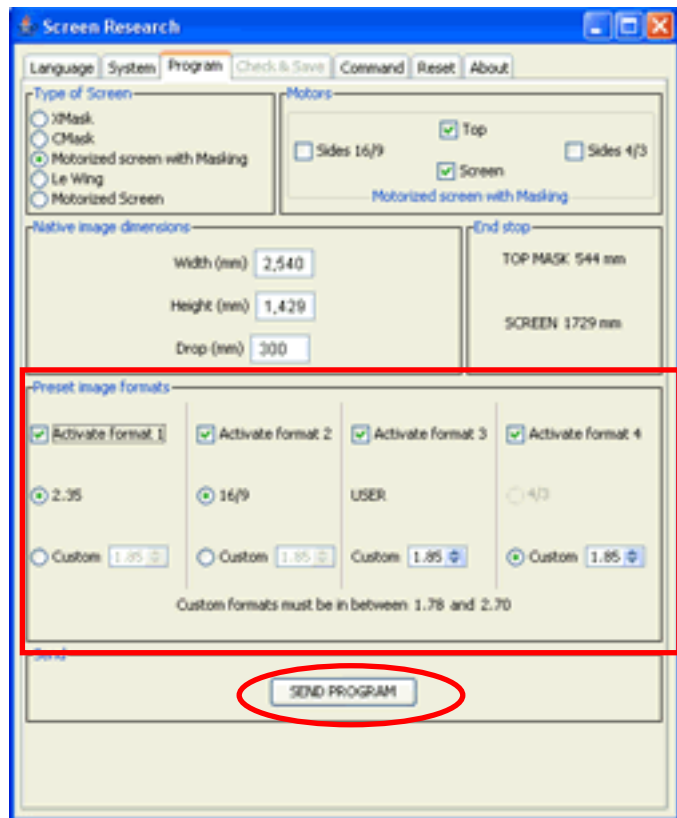
Select the aspect ratios that you would like to use. For each of the 4 available formats, you can either use the preset aspect ratios (2.35:1, 16:9, 1.85:1 and 1.33:1) or specify your own, custom aspect ratios. The application will limit you to the aspect ratios that are physically possible with your projection screen.

Once you are satisfied with the aspect ratios that you have selected, click on "SEND PROGRAM" to download this into the MCS units. This step may take a few minutes.

Once the program has been sent, the application will open a dialog box reminding you to calibrate the motors.

Calibration buttons will appear at the bottom of the window. Press them one at a time, waiting for the motor to finish its movement before pressing the next button.

When all of the motors have been calibrated, click on the "Check & Save" tab at the top of the window.



The "Check & Save" tab allows you to verify that each aspect ratio is indeed properly programmed and adjust it if necessary, and then to save these settings for future reference.

Select a format in the "Select a format" panel.

Click on "GO TO FORMAT". The masks should move; the correct dimensions of the exposed image area is listed to the right of the format.

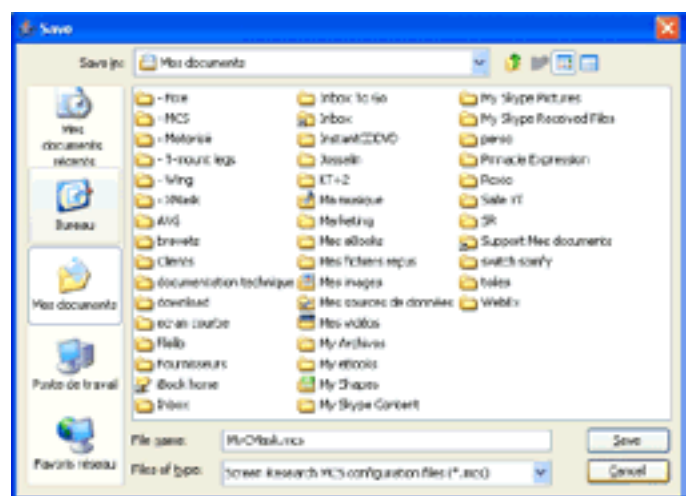
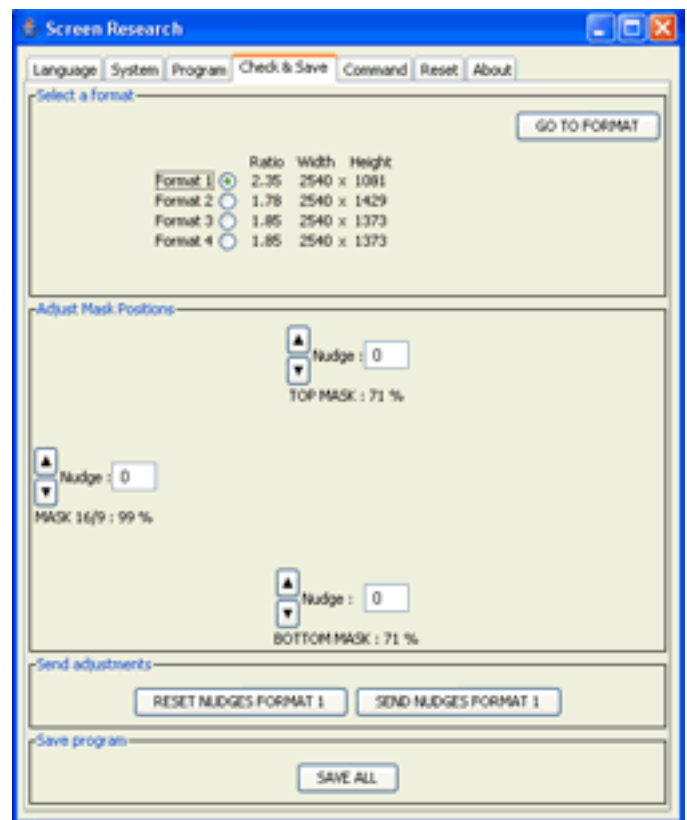
If the exposed image area does not correspond to the dimensions listed for that format, adjust the mask positions using the up and down arrows in the "Adjust Mask Positions" panel. The masks will not move until you click on the "Send Nudges Format X" button.

Click on the "Send Nudges Format X" button and remeasure the exposed image area. If it still needs to be adjusted, readjust the position in the "Adjust Mask Positions" panel and click on the "Send Nudges Format X" button again until it is correct.

If you get too far off of the mark, you can erase your modifications for this format by clicking on the "Reset Nudges Format X" button.

Once you are satisfied with the mask positions for that format, proceed to the next format by selecting the next format in the "Select a format" panel and repeat the procedure.

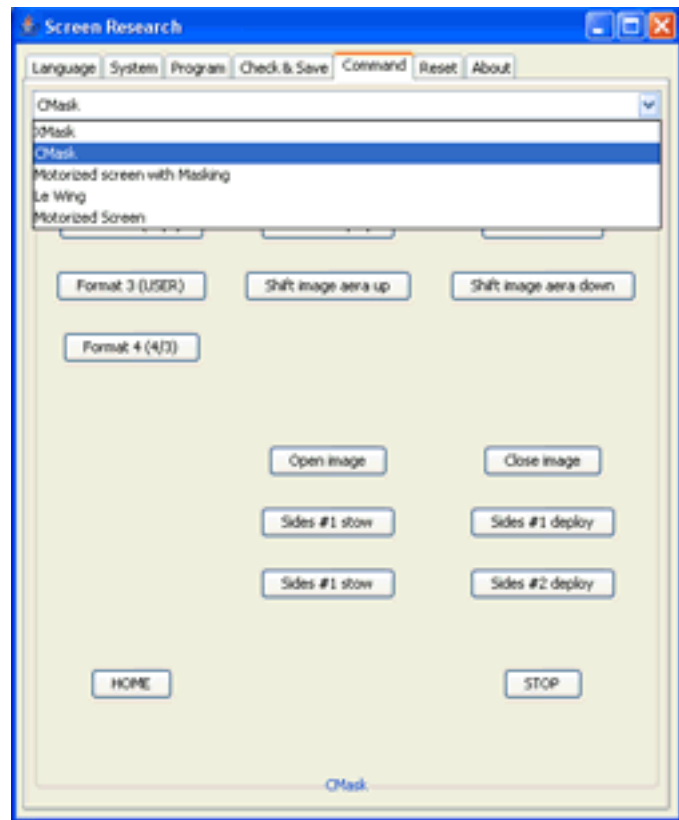
Once you are satisfied with all of the mask positions, you can save all of your settings by clicking on the "SAVE ALL" button. Save the file with a .mcs extension.



You can control your screen via the RS-232 interface using the onscreen buttons in the "Command" tab.

Select the type of screen you have from the pull-down menu (the screen you configured in the previous tabs is selected by default).

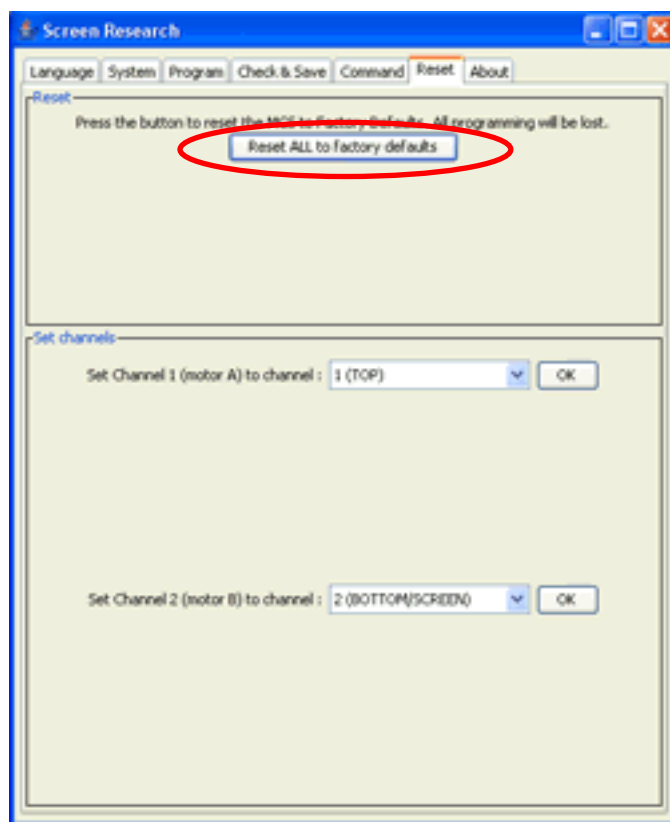
Click on the on-screen buttons to move the screen to different positions.



You can reset the controllers if you would like to start from the very beginning. This is not recommended, as the simple act of sending a new configuration file erases almost every setting in the controller anyway (every setting except for the controller's "Main Channels" - see below).

This is a drastic step as there is no way to upload the current settings from the MCS-310 or MCS-320 back into the computer for backup. Once you take this step, all previous programming and adjustments will be lost.

If you want to reset a controller, make sure that no other controllers are connected to the system and press the "Reset ALL to factory defaults" button. You will then likely need to reset its "Main Channels" (see below).



## Setting a controller's "Main Channels"

If your screen does not respond to direct commands sent to each motor (such as the "Top stow" or "Sides deploy" buttons on the "Command" tab), you might need to reset the Main Channels and reprogram the MCS system. If for some reason your controllers don't have the proper Main Channels set, you can reset them with the "Set channels" panel on the "Reset" tab.

Connect the MCS-310 or MCS-320 for which you would like to reset the Main Channels to the MCS-BRS. Disconnect all other MCS-310 or MCS-320 units from the system.

Perform a full reset of the MCS as described in the previous section.

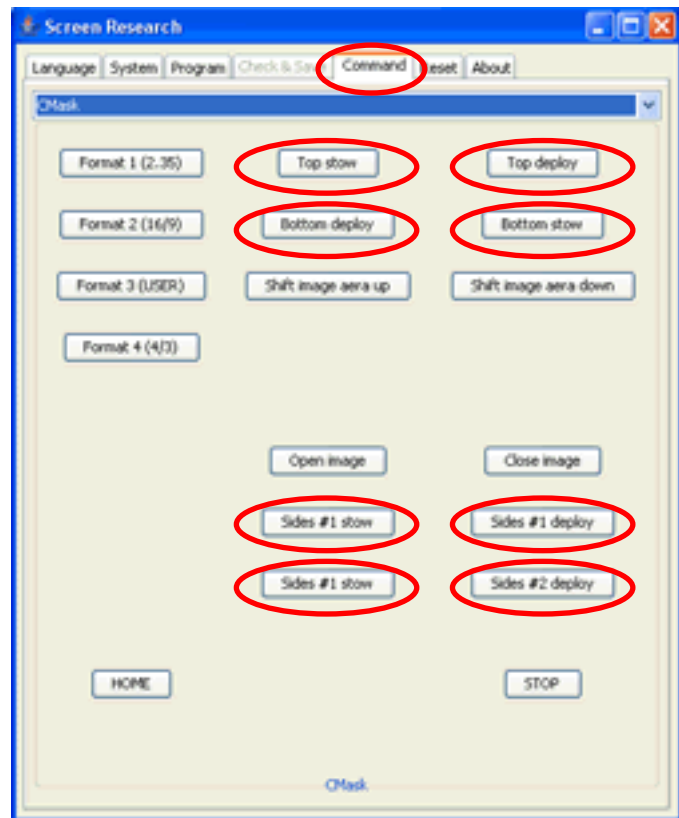
Select the new Main Channel for Motor A of the MCS-310 or MCS-320 (the output for an MCS-310 is Motor A), depending on which motor that will be connected to that output.

Click on "OK" to set the Main Channel.

Repeat with Motor B for an MCS-320 (an MCS-310 does not have a "Motor B" output).

You can then connect another MCS unit to set its Main Channel if you like (be sure to disconnect the first MCS unit first).

Once you have set the main channels, you can go back to the beginning of the programming procedure to program the system.



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