User's guide

Explanation of the User Interface

As you already know, the Monitor Client software of the Robot Monitoring Suite provides you with a User Interface (UI) as a substitute for the Teach Pendants connected to the robot controllers. Based on the information it gets from the Server on the robot, the Client chooses the Control Interface to display (different for each robot manufacturer). This section aims to explain the Client UI via pictures so that you can go ahead and start to use our software with ease.

Startup

First of all, please read the FAQ!

When you first launch the Client, you will be presented with a splash screen that waits for the initial setup to complete before launching the main window of the Monitor Client. Initially, the main window has a general UI common to all robots. The image below shows the Client UI, which is explained in some detail below.
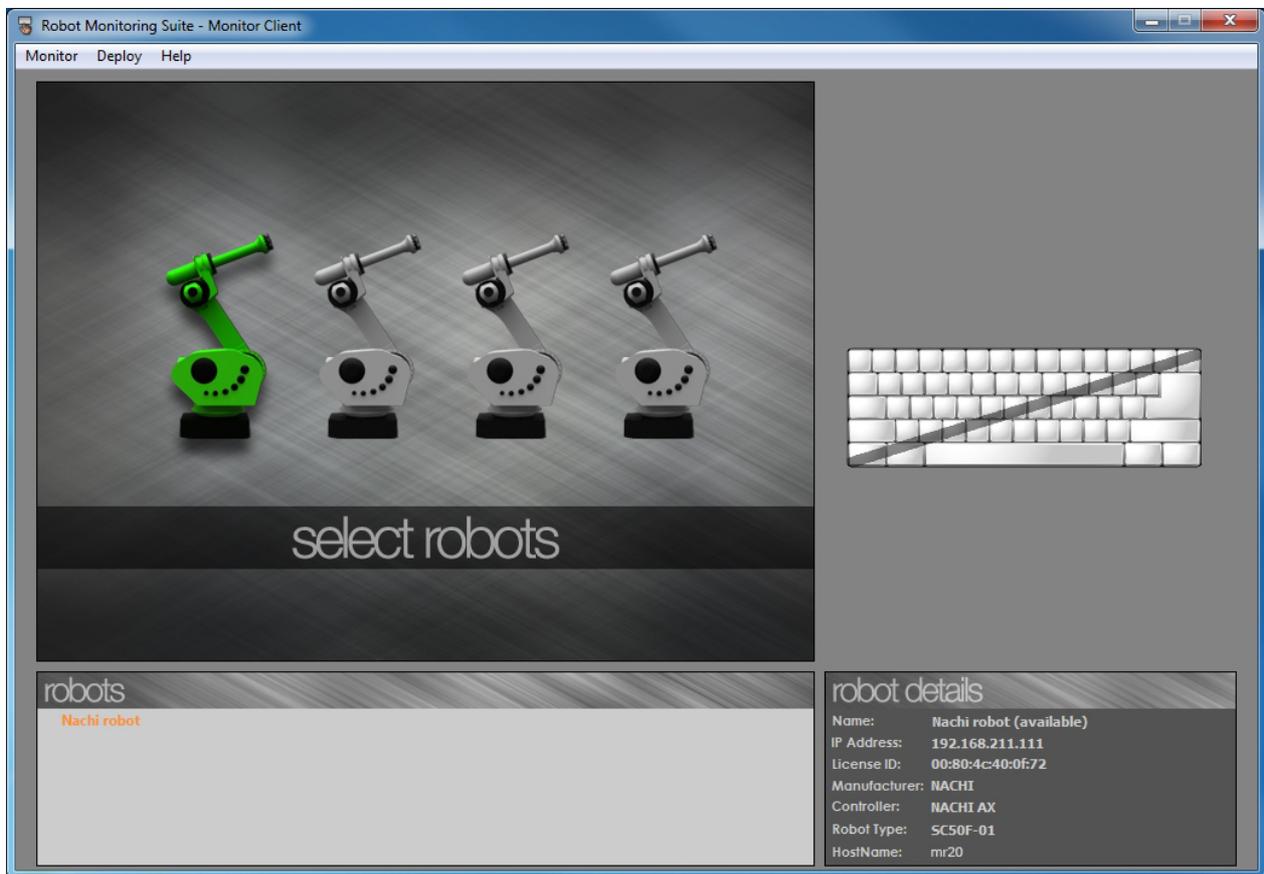
Components of the PC side Robot Monitoring Suite Client:

1. Robot List Widget
2. Robot Details Panel
3. Image Display Panel
4. Control Interface
5. Robot List Widget Right Click Context Menu

1. Robot List Widget

Double-click on the robot you want to control, and that's it!

The robot list widget gets populated over time with the robots that are detected on the network. The widget shows the robot's name as the item text in the list, and its description as the tool tip (you can see this when you hover the mouse over an item).

Making a robot the "Active Robot" by double-clicking starts the data

There are four types of robot states:

- Green - You are connected to the robot.
- Black (with a lock before the name of the robot) - Other client connected to that robot.
- Red - You are connected to that robot, but it is on Hold.
- Orange - Robot is available for incoming connections.

communication between the PC side client and the robot controller, and the UI gets updated with the Control Interface buttons, and the Teach Panel remote view.

You can right click on the active robot's item in the list which presents you with a menu with options to

- edit name and description of the robot
- hold/resume the data communication
- license the robot
- disconnect from the robot
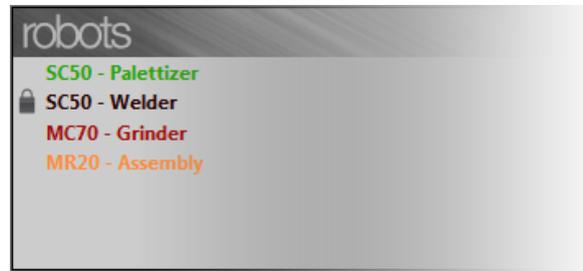
2. Robot Details Panel

The small frame at the bottom-right of the UI is the Robot Details Panel. It displays the relevant information of the robot on which the user clicked. The panel has fields for:

- Robot Name (robot state)
- IP address
- License ID
- Manufacturer
- Controller type (AX / FD)
- Robot mechanism type
- Host name (controller's network name)

Image of Robot Details Panel

3. Image Display Panel

4. Control Interface

5. Robot List Widget Right Click Context Menu

To activate a robot, double click on it with your mouse in the Robot List Panel ("Robots"), and the remote image will appear.

At startup, the panel contains a default image that informs you that the Client is listening for any available robots on the network. Once any robot(s) is found, the image changes and suggests you to connect to a robot from the list by double clicking.

Once connected to a robot, the image display panel provides a remote view of the Teach Pendant connected to the robot. You can now use your mouse to click on the image in the panel to remotely use the Teach Pendant. Apart from the mouse, the Robot Monitoring Suite also accepts input from the keyboard and from the buttons on the Control Interface.

The image display panel keeps getting updated with the current state of the Teach Pendant so you can always know what's going on.
The panel also updates itself if the robot is in hold state, or is unresponsive for some time.

Image Display Panel during operation with a Nachi AX Controller

The Control Interface on the right side of the UI is where all the buttons from the Teach Pendant are shown.

The control interface layouts has been designed to replicate the relevant buttons on the Teach Pendant so that you have a sense of familiarity while using the software. You can use these buttons just like on the Teach Pendant by clicking on them.

As an added feature, the RMS automatically visualizes a button press on the Teach Pendant

so that you are kept aware of any buttons pressed on the Teach Pendant in real time.
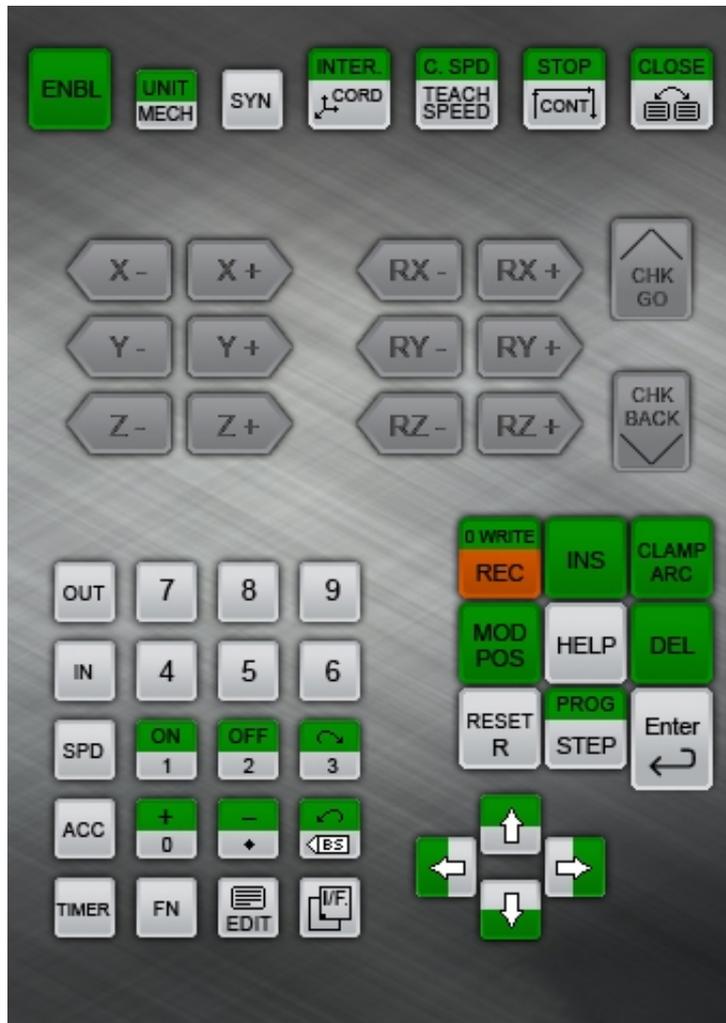
Control Interface

Right clicking on the active robot's item in the Robot List Widget pops up a menu with extra options that you can use to perform a number of functions. However, keep in mind that because these options can only be used with an active robot, you need to activate a robot beforehand by double clicking on it.

The different options on the context menu are:

EDIT PROPERTIES	Clicking on this option pops up a dialog box where you can edit the robot's name and description. The RMS automatically sends this information over to the robot controller to make the necessary changes in the robot as well.
DISABLE/HOLD OR ENABLE/RESUME	Depending on the current hold state of the robot, this option will either be Disable/Hold or Enable/Resume. "Holding" or "disabling" a robot essentially means that you're cutting all data communication between the robot and your PC, but you remain connected so that you can "enable" or "resume" it again and continue with the data communication and normal usage.
LICENSE	You can upload a license file (.lic) to the server by clicking on

		this option.
DISCONNECT		Clicking on this option disconnects the active robot.
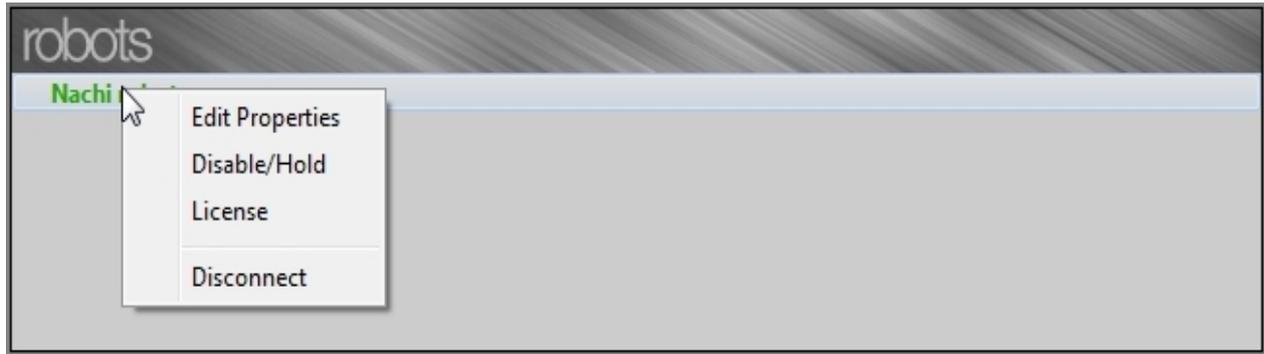
Right Click Menu in Robot List Widget

Standard Usage Scenario

This section will try to present you with a standard usage scenario for the Robot Monitoring Suite and try and guide you through all of its features so that you are able to use them effortlessly.

At the beginning, you will have to wait until the robot list gets populated with at least one robot that's on your network. Once that is done, you can go ahead and connect to that robot by double-clicking on its name in the list. Now you might see a very low-quality image of the Teach Pendant in the image display panel. This is because you're running a demo version of the software and haven't licensed it yet. You can right click on the robot name to License that particular robot server. After licensing, you get the best quality image and can freely use the Teach Pendant.

Also, immediately after connection you will see that the Control Interface updates itself with a button layout depending on the manufacturer of the robot you're connected to.

You can use your mouse to click on different parts of the image and use it as you would on a touchscreen touch panel, the only difference being that you're using a mouse instead of your fingers. With the mouse you can also press the buttons on the control interface and use them in exactly the same way as you do on the Teach Pendant.

You can also use the keyboard as an input device for the Teach Pendant with this Robot Monitoring Suite software, but you need to know the keys that correspond to the buttons on the UI or Teach Pendant. For this we've provided a map of the keys for you. You can look at it in the "Notes and Extra Info" section.

Another feature of this software is the visualizations of the touches and presses on the Teach Pendant. What that means is that while you're using the RMS, you will be able to see if and how anyone else is using the Teach Pendant. This is done in two ways: an animation on the image display panel indicates any mouse clicks or touches on the Teach Pendant screen, and the changing icons of the buttons on the control interface indicates that the same button was pressed on the Teach Pendant. This way you are aware at all times if anyone else is also using the robot from the Teach Pendant.

If you want to switch to another robot on the network, just double-click on that robot's name like you did with the first one and you'll automatically switch over to that robot.

At any point of time, if you wish to change some of the robot's information, you can use the right

click context menu on the robot list widget. Keep in mind that you're only allowed to change the active robot's name (Rename) and description (Edit Description) fields.

Another feature of the RMS is the ability to put a robot on hold. If you want to focus on some other window on your computer you can use the Disable/Hold option to put the robot on hold, go and do any other work you wish to, and come back to Enable/Resume the robot and continue working with that.

That's it as far as a standard usage scenario goes.

Licensing

If you wan to License your robot just follow the nex steps please:

1. Click on your robot in the Robot List Panel
2. After that the Robot Details Panel will show some information about your robot
   (Name, IP Address, License ID, Manufacturer, Controller, Robot Type)
3. Write an Email containing the License ID to us and we will send back to you your robot's license file
4. Then just right click on the robot (in the Robot List Panel) and select License item from the popup menu
5. Browse your license file and press Open in the FileBrowser Dialog
6. If your licensing method was successful you can see your teach pandent in good quality

robot details	
Name:	MR20 - Assembly (available)
IP Address:	192.168.211.109
License ID:	1C4BD67CD70D
Manufacturer:	NACHI
Controller:	NACHI AX
Robot Type:	SC50F-01
Host name:	mr20

Notes and Extra Information

The following are some things to keep in mind while using the Robot Monitoring Suite:

- You must be connected to the same network as the robot(s). It is not possible to control a robot connected to a different network, or to control one from behind a firewall.
- There can only be one instance of the Client running on a computer. The Client itself performs a check to see if any other instances are running and prompts you to quit all new instances.
- Some of the keys from the keyboard may not seem to do anything on the Teach Pendant. This is because the Teach Pendant doesn't use all the keys of the keyboard. So the RMS filters out the keys from the keyboard and only sends the necessary ones over to the server.
- There is very small delay between changes happening on the Teach Pendant and being seen on the RMS. This is due to network communication limitations and cannot be avoided. However, the delay is small enough to not affect your experience while using the RMS.
- If some of the robot's information, like name or manufacturer or controller, is very long, it may get truncated when being displayed in the Robot Details panel. This is only because of the panel's size limitation. The actual information stored within the Client does not get affected as can be seen with the name in the list widget.

- A shortcoming of the Robot Monitoring Suite is that it can't handle multiple robots having the exact same names and descriptions. To avoid any problems, it is better to keep each robot distinguishable from the rest by giving it a unique name and description.