ROBOT MANUAL

INTORDUCTION

This Robot device can be controlled with a wireless remote system. Thus you can control it by supplied remote controller freely in your home. Moreover its user friendly design makes it easy for using by every family member.

1. WIRLESS SYSTEM
   This wireless system is multi-functional. It provides not only with control signal but also voice, audio and video signal. There are two frequencies for communication:
   a) 2.4 GHz for audio and video data transmission.
   b) 900 Mhz for data and voice transmission.

2. POWER SUPPLY
   The power of the robot is supplied by rechargeable batteries. You MUST fully charge the batteries in the robot for more than eight hours before using. It is easy to recharge the battery by plugging the supplied 110 V AC adapters to the robot when you need.
   When the power is low or you find the Robot can not work smoothly, you need to recharge the batteries.
   The remote control box is powered from the USB port of the computer and no need to connect to any power supply.

3. BASIC FUNCTION AND OPERATION

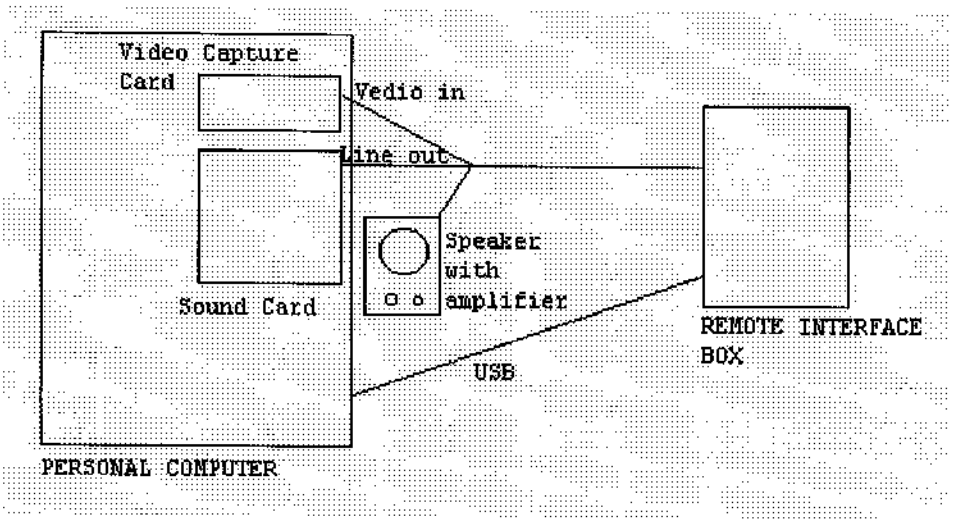
3.1 **Robot**

There are four buttons behind the robot:

Power On/Off button - Press and release to turn the Robot on, press and release to turn it off.
When the Robot is turned on, it will move its body, arms, head and hands to its home position.
MESSAGE button - When the Robot is turned on, press and hold this button can record a message after a beep. Release the button to end. The maximum length of the message is 15 seconds.
Press and release this button to playback.
Light button - When the Robot is set to Monitor mode (by the remote control), pressing this button toggles the light of the eyes between blue, blue + background, all LEDs off.
DEMO button - When the Robot is turned on and in Remote mode, press and release this button will put the Robot in Demo mode. The arms, hands and body will move in a sequency. Press this button again to exit demo mode and return to remote mode.

3.2 **Remote Control**

Most of the function are controlled by the remote controller. It is connected to the computer as the following drawing.



To install video capture card driver:
When Windows autodetects the device and asks for the driver, browse to the Video Driver folder on the CD. This will install "STL Video Capture" and "STL Audio Capture" under "Sound, video, and game controllers" in the Device Manager

To install USB control box driver:
When the control box is plugged into the USB port, Windows should detect the device and ask for the driver. Browse to the USB Driver folder on the CD.

To install/use the controller program:
Copy robot.exe to a temporary folder and double click it.

To install/use the text-to-speech program:
You may have to install the Microsoft Speech SDK in order to use this program. The SDK is included on the CD in the Speech SDK folder. Run setup.exe to install.

To use, simply type the text into the text box and click "Say It".

Copy rbtsp.exe to a temporary folder and double click it.

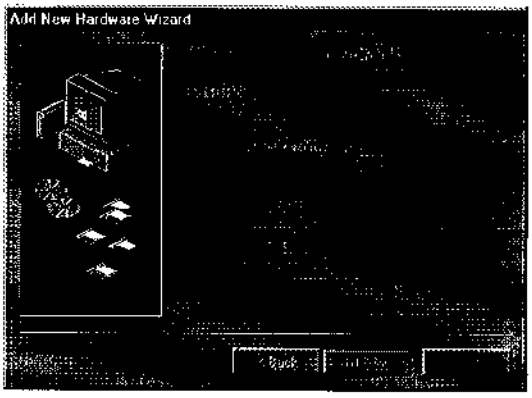
To install/use the capture program:
Right click on STL.reg on the CD, and select Merge. This will install some keys into the registry. Then copy rbtcap.exe to a temporary folder and double click to launch.

Make sure you select the correct devices under the Devices menu.

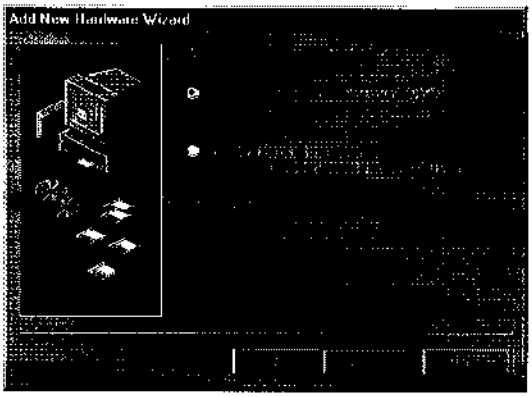
Installing the USB driver (Windows98SE)

If you use Windows98SE (Second Edition), follow the steps through.

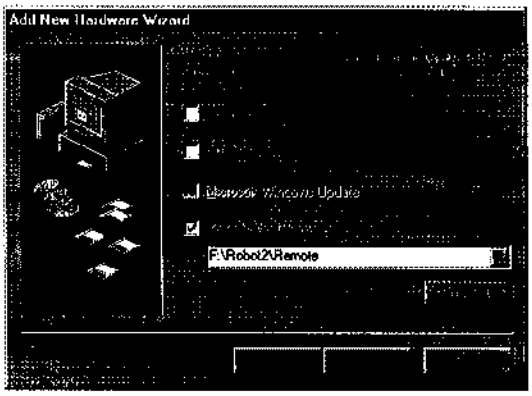
1. Turn on your computer. Insert the CD-R bundled in this package into the CD-ROM drive of your computer.



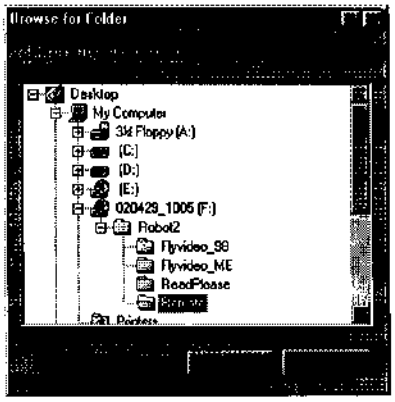
2. Make sure the power switch on the STL Robot Controller Board is turned off.
3. Connect one end of the USB cable to the connecter on the STL Robot Controller Board and the other end of the USB cable to a USB connector of your computer.
4. Turn on the power switch on the STL Robot Controller Board.
5. Your computer will detect new hardware installed and you will see the left screen. Click [Next].

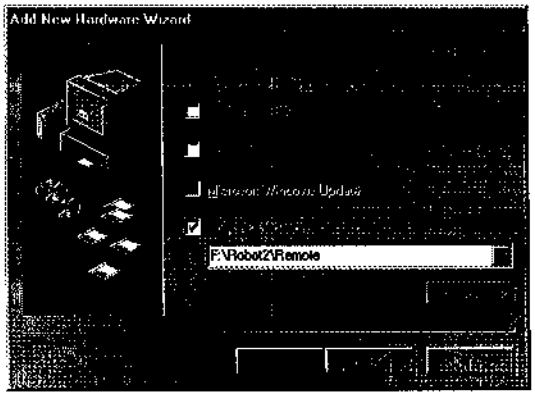


6. You will see the left screen. Select [Search for the best driver for you device (Recommended)] and click [Next].

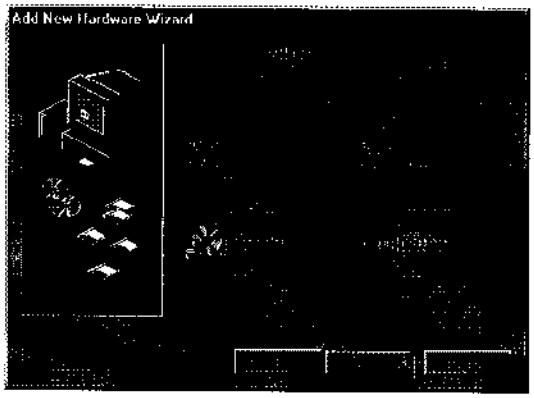


7. You will see a screen similar to the left screen. Check [Specify a location:] only and click [Browse].
8. Locate the folder of the device driver as the screen below and then click [OK].

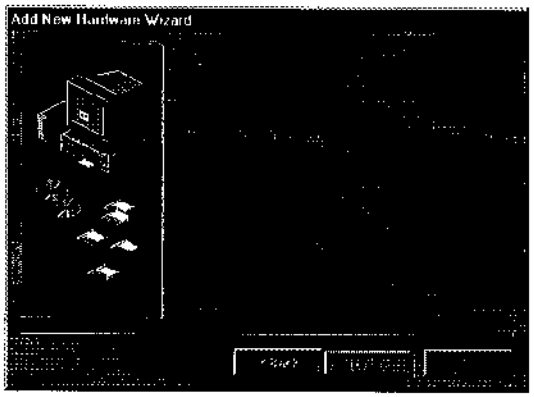




9. You will return to the left screen. Click [Next].



10. You will see the left screen. Click [Next].
11. If you are requested to insert the disk labelled Windows98 Second Edition , insert the Windows98 Second Edition CD-ROM and clicked [OK].

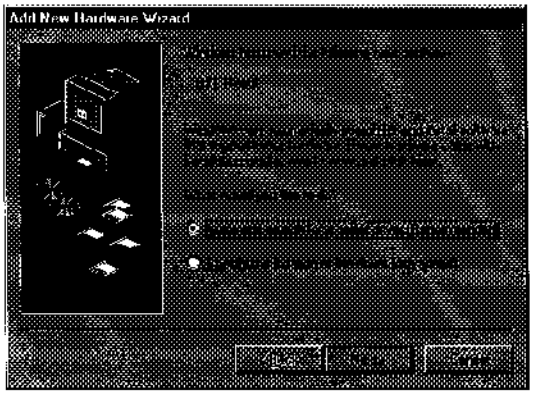


12. You will see the left screen. Click [Finish].

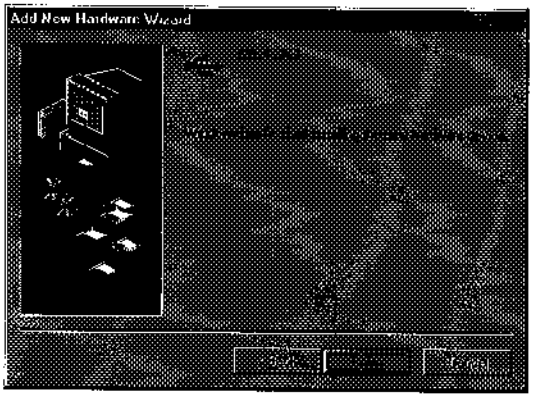
You have now completed the installation.

Installing the USB driver (Windows ME)

If you use Windows ME (Millennium Edition), follow the steps through.
1. Turn on your computer. Insert the CD-R bundled in this package into the CD-ROM drive of your computer.



2. Make sure the power switch on the STL Robot Controller Board is turned off.
3. Connect one end of the USB cable to the connecter on the STL Robot Controller Board and the other end of the USB cable to a USB connector of your computer.
4. Turn on the power switch on the STL Robot Controller Board.
5. Your computer will detect new hardware installed and you will see the left screen. Select [Automatic search for a better driver (Recommended)] and click [Next].

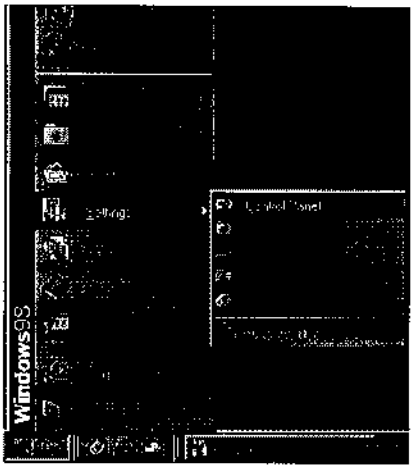


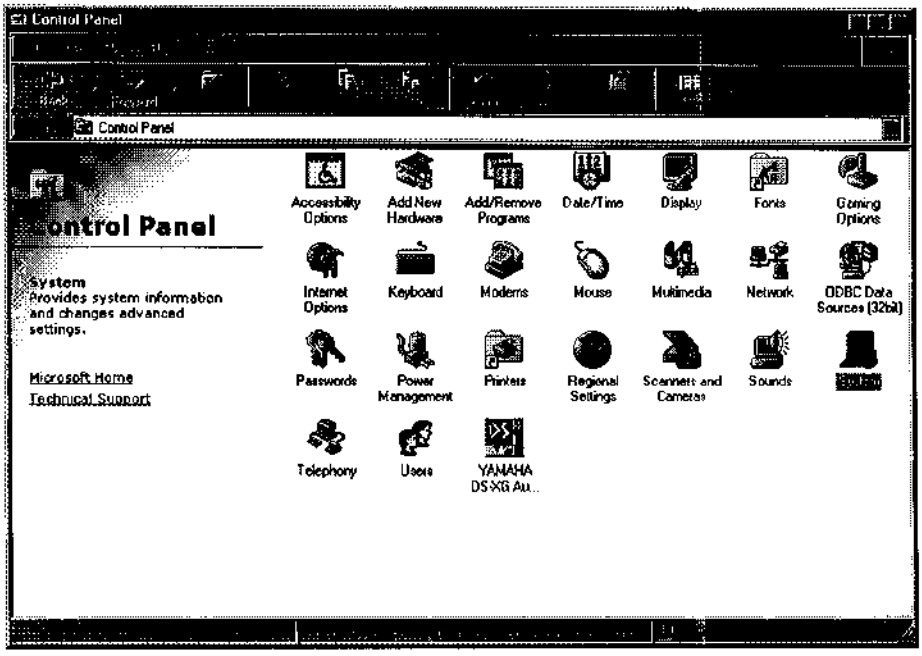
6. You will see the left screen. Click [Finish].

You have now completed the installation.

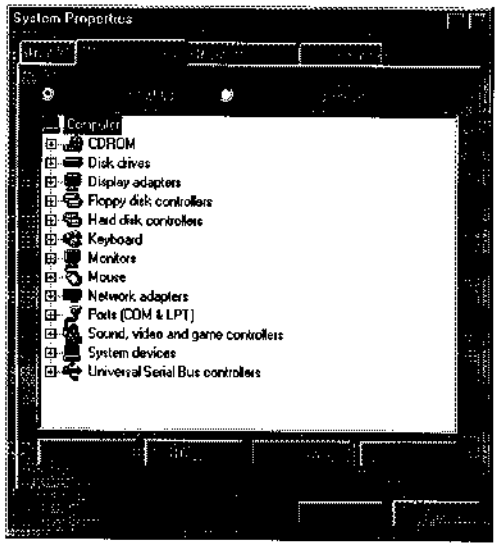
Follow the setps through to confirm the installation.

1. Select [Start]-[Settings]-[Control Panel].

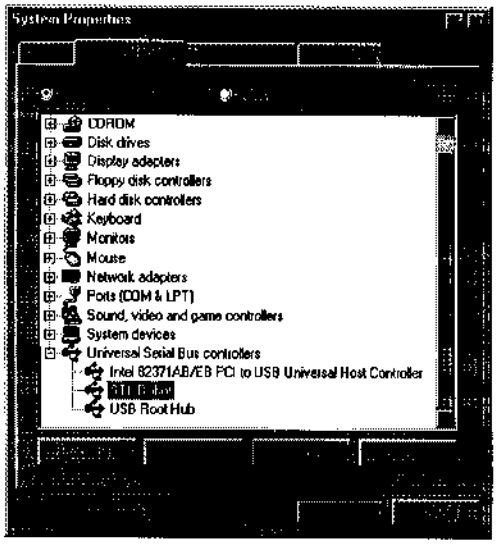




2. Double-click on the [System] icon.



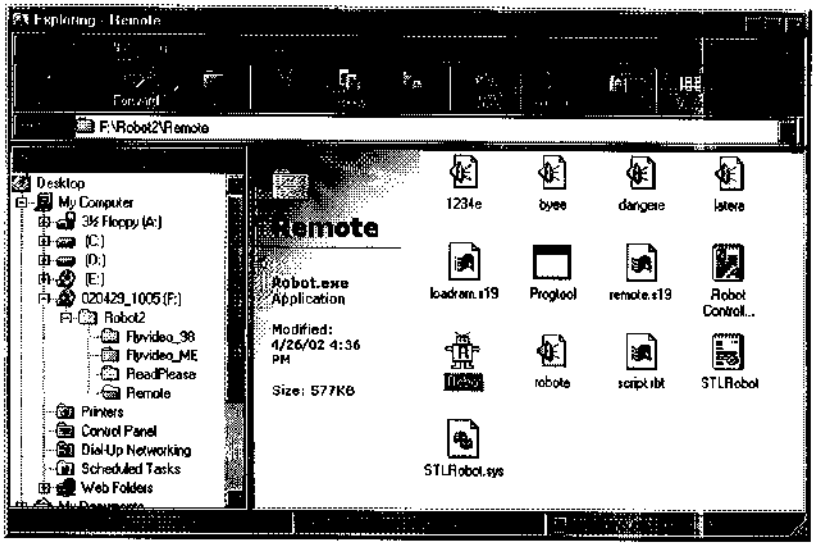
3. Select the [Device Manager] tab and click on the [USBIO controlled devices].



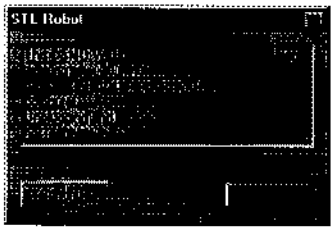
4. If you can find the [STL Robot], the installation is successful.

Controlling the Robot using the USB Robot Controller

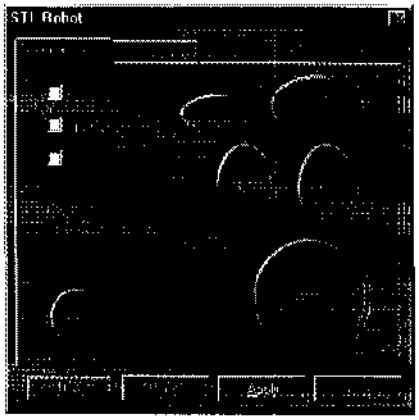
1. Without changing any cable connections and jumper settings on the USB Robot Controller Board. Reboot your computer once. At the same time, you can power on the Robot.
2. Make sure the boundled CD-R is inserted in the CD-ROM drive.



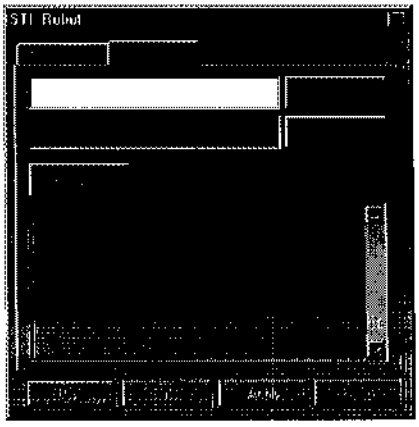
3. Use Explore to open the [F:\Robot2\Remote] folder on the CD-R, where F: is the CD-ROM drive.
4. Double click the [Robot] icon.



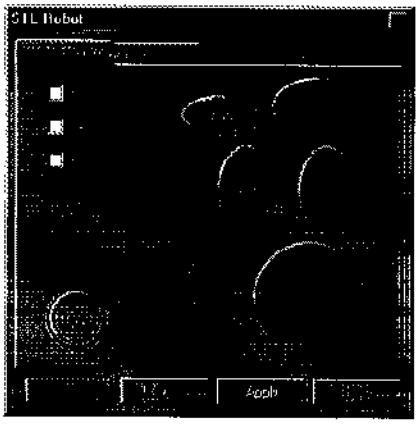
5. You will see the left screen. Click [Continue].



6. You will see the Button Control screen. You can control the Robot by clicking the buttons on the screen and/or moving the mouse.



7. Select the [Script Control] tab. You will see the Script Control screen. You can control the Robot by typing commands or by running a pre-written script file.



Button Control

Let's go back to the Button Control screen first by selecting the [Button Control] tab.

1. Move the mouse cursor over the [Hands] button.
2. Press and hold the left mouse button. The Robot's left hand will move.
3. Release the left mouse button. The Robot's left hand will stop.
4. Similarly, press and hold the right mouse button. The Robot's right hand will move until the right mouse button released.

5. Move the mouse cursor over the [Head] button.
6. Press and hold the left mouse button. Move the mouse a little bit left. The Robot's head will move to the left. Without releasing the left mouse button, move the mouse a little bit right. The Robot's head will move to the right.
7. Release the left mouse button. The Robot's head will stop.

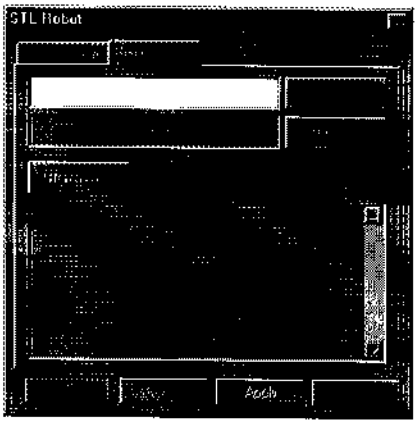
8. Move the mouse cursor over the [Arms] button.
9. Press and hold the left mouse button. Move the mouse a little bit forward. The Robot's left arm will move upward. Without releasing the left mouse button, move the mouse a little bit backward. The Robot's left arm will move downward.
10. Release the left mouse button. The Robot's left arm will stop.

11. Similarly, press and hold the right mouse button. Move the mouse a little bit forward. The Robot's right arm will move upward. Without releasing the right mouse button, move the mouse a little bit backward. The Robot's right arm will move downward.
12. Release the right mouse button. The Robot's right arm will stop.

13. Move the mouse cursor over the [Body] button.
14. Press and hold the left mouse button. Move the mouse a little bit forward. The Robot's body will tilt forward. Without releasing the left mouse button, move the mouse a little bit backward. The Robot's body will tilt backward.
15. Release the left mouse button. The Robot's body will stop.

16. Move the mouse cursor over the [Legs] button.
17. Press and hold the left mouse button. Move the mouse a little bit forward. The Robot will walk in the [north] direction. Without releasing the left mouse button, move the mouse a little bit backward. The Robot will walk in the [south] direction.
18. Similarly, move the mouse a little bit left. The Robot will walk in the [east] direction. Move the mouse a little bit right. The Robot will walk in the [west] direction.
19. Release the left mouse button. The Robot will stop walking.

20. Single click the [Light] button. The Robot's headlight will change to next level.
21. Check the [Video] box to turn on the Robot's carema; uncheck the [Video] box to turn off the Robot's carema.
22. Check the [Speak] box to turn on the Robot's speaker. The audio output from the sound card will be transmitted to the Robot's speaker. Uncheck the [Speak] box to turn off the Robot's speaker.
23. Check the [Arms Lock] box. The Robot will perform the arms lock movement. Uncheck the [Arms Lock] box. The Robot will perform the arms unlock movement.



Script Control

Select the Script Control screen by clicking the [Script Control] tab.

1. Click the area left to the [Exec Cmd] button.

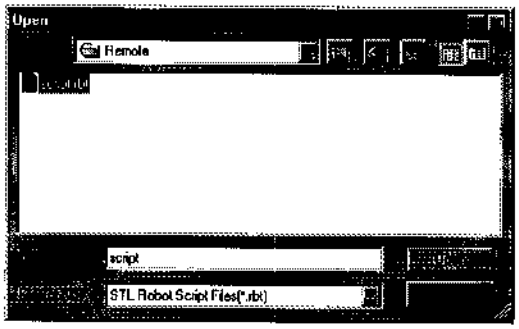
2. Type a command "Move LeftHand" and then click the [Exec Cmd] button.
3. The Robot's left hand will move.
4. Type another command "Stop LeftHand" and then click the [Exec Cmd] button. The Robot's left hand will stop.

The complete scripting language is list as follows. All commands are case insensitive.

Robot Controller Scripting Language

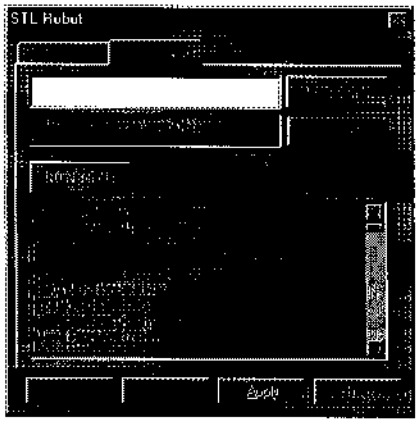
- Move [part] [direction]
  Moves the specified part of the robot in the specified direction.
  part = Head; direction = Left, Right
  part = LeftArm, RightArm; direction = Up, Down
  part = LeftHand, RightHand; no direction required
  part = Body; direction = Forward, Backward
  part = Legs; direction = North, NorthEast, East, SouthEast, South, SouthWest, West, NorthWest
- Stop [part]
  Stops the specified part of the robot.
  part = Head, LeftArm, RightArm, LeftHand, RightHand, Body, Legs
- Arms [Lock/Unlock]
  Arms lock or arms unlock.
- Mode [mode]
  Changes to the specified mode.
  mode = Remote, Monitor, Auto, Sentry, Greet
- Light Change
  Changes the head light level.
- Video [On/Off]
  Turns video transmission (robot to remote) on/off.
- Speaker [On/Off]
  Turns audio transmission (remote to robot) on/off.

- Play ["file.wav"]
  Starts to play the specified wave file. While the wave file is playing, you can continue to enter commands.
- PlayToEnd ["file.wav"]
  Plays of the specified wave file until the end.
- Use ["file.wav"]
  Loads the specified wave file into memory.
- Play [Sound]
  Starts to play the wave file already loaded in memory. While the wave file is playing, you can continue to enter commands.
- PlayToEnd [Sound]
  Plays the wave file already loaded in memory until the end.
- Play Stop
  Stops the sound.



Commands can be pre-written in a script file. There is a sample script file in the bundled CD-R.

1. Click the [Read File] button.
2. Open the file "F:\Robot2\Remote\script.rbt".



3. You will read the contents in the script file.
4. Click the [Run Scripts] button. The commands will be execute one by one until the [end] command.

Additional Commands for Script File

- Wait [n]
  Waits n/10 seconds.
- End
  End of the script file.

APPENDIX 1

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Fcc Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ☐ Reorient or relocate the receiving antenna.
- ☐ Increase the separation between the equipment and receiver.
- ☐ Connect the equipment into an outlet on a circuit different from that to which the
- ☐ receiver is connected.
- ☐ Consult the dealer or an experienced radio/TV technician for help.