

Carnegie robotics

M.A.R.S.U.P.I.A.1.

Operation Manual

11/9/2014

Toughbook:

User: daddy

password: password

sudo password: password

ip: 10.1.0.201

Server (Marsupial):

User: marsupial

Password: password

Sudo password: password

ip: 10.1.0.50

Power Up

1. Turn the Toughbook on
2. Turn the robot on (red power switch). Give 2 minutes for full system start
3. Connect Toughbook to bathoc network using network manager
4. Run batmesh.sh script in the command line
5. Ssh into robot
Ssh marsupial@10.1.0.50
6. Run screen
Screen
7. Ros roscore
roscore
8. Create new screen
Ctrl+A, 'c'
9. Launch camera stream
roslaunch marsupial/src/gscam/examples/v4l.launch
10. New screen
11. Start motor node (handles velocity commands to controllers)
roslaunch marsupial/src/motor_node/motor_node.launch
12. New screen
13. Launch puck dropper node
roslaunch marsupial/src/puckdropper/puckdropper.launch
14. New Screen
15. Launch ROS serial node to communicate with the power board (current / voltage streaming)
roslaunch marsupial/src/serial_node/serial_node.py _port:=/dev/ttyS3
16. New Screen
17. Launch accelerometer node
roslaunch marsupial/src/razor_imu_9dof/launch/razor-pub-and-display.launch
18. New terminal **ON TOUGHBOOK**
19. Start the joystick node
roslaunch marsupial/src/joystick/joystick.launch
20. New tab in terminal

21. Start the joystick reader node
`roslaunch joy_control joy_control`
22. New tab in terminal
23. Start Rviz
`roslaunch rviz rviz`

**** After E-stop has been disengaged, motor_node needs to be restarted prior to operation. (See step 11 of power up sequence)**

Normal Operation:

Use the touch book and joystick to maneuver MARSUPIAL through its environment. Data streaming should remain stable up to 75m. Once the video feed is degraded, drop a puck by entering `puckdrop_command` in the workspace terminal. (The same terminal window using in power up step 5)

Power Down

1. Return to ssh session on Marsupial
2. Run poweroff sequence
`sudo poweroff`
3. Wait 1 minute for complete hardware shutdown, kill power to robot via switch
4. Power off Toughbook

Faulty Operation:

MARSUPIAL is equipped with safety loops that protects from permanently damaging vital components in its system. If MARSUPIAL malfunctions:

1. Run poweroff sequence
2. Check all fuses (See Fuse Table)
3. Reset system by switching the main power back on and following the power up section

Fuse	Rating
CPU-1	5A
PWR-1	5A
MOTR-1	30A
MOTR-2	30A