

# Robot Commands Cheat Sheet

## send

```
call RoboScape / send 6278 beep-100-400
```

You can send various textual commands to a robot using the send command. The send command indicates the specific robot's identifier, then the command desired followed by any settings for the command. All "get" commands return a value (like the range), while "set" and "reset" commands return "true" if the command executed successfully. If the robot was not found or the command is not well formed, then the return value is false. The list of commands are:

Command	Description	Return value
beep <duration> <freq>	Beeps for <duration> milliseconds (0-1000) at <freq> frequency (0-32000) Hz.	True or false
set speed <left> <right>	Sets the speed of the left and right wheels (each is a number between -128 and 128).	True or false
get ticks	Returns the number of ticks each wheel has turned.	A pair of numbers or false
get range	Returns the distance in centimeters of the obstacle in front of the robot (up to approx 200 cm)	A number or false

## listen

```
call RoboScape / listen 6278-6275
```

You can listen (eavesdrop) to messages sent over the radio network. First you need to know the identifiers of the robots you are interested in and then execute the listen command with those identifiers. There are two types of message you will receive, the robot commands issued by others to the robot and robot messages sent by the robot in response to robot commands.

## robot command



The robot command contains the exact same text that you (or others) have sent to the robot. You need to separate the command into words and extract the information you are interested in. Of course if encryption is enabled, then the messages will be also encrypted.

## robot message



The robot acknowledges each command and returns extra information that can be overheard. Each message contains an extra time field, which measures the time in milliseconds since the robot was turned on. These message are also encrypted as usual. The list of robot messages are:

Message	Description
beep <time> <duration> <freq>	The beep command was executed at <time> for <duration> milliseconds at <freq> frequency in Hz.
speed <time> <left> <right>	The set speed command was executed at the given time and left and right speed settings.
range <time> <range>	The range was measured at <time> and the range is <range> centimeters.
ticks <time> <left> <right>	The number of ticks the wheels have turned was measured at <time>. Both <left> and <right> wheel numbers are returned.
whiskers <time> <left> <right>	The status of the whiskers have changed at <time>, the <left> and <right> values are either true or false indicating whether the whiskers are touching something or not.

# Advanced Send Commands

call RoboScape / send 6278 beep-100-400

You can send various textual commands to a robot using the send command. The send command indicates the specific robot's identifier, then the command desired followed by any settings for the command. All "set" and "reset" commands return "true" if the command executed successfully. If the robot was not found or the command is not well formed, then the return value is false. The list of commands are:

Command	Description	Return value
set total rate <rate>	Limits the number of commands accepted by the robot to <rate> per second.	True or false
set client rate <rate> <penalty>	Limits the number of commands accepted by the robot from each client to <rate> per second. If the client sends more messages, then for <penalty> seconds the robot will ignore incoming commands.	True or false
reset rates	Resets the total and client rates.	True or false
set key <numbers>	Sets the encryption key to the list of numbers. The list can be empty, which turns off encryption.	True or false
<seqno> <command>	Any command can be prepended by a <seqno> sequence number to prevent replay attacks.	True or false
reset seq	Resets the sequence numbering of commands.	True or false