



## LipSync Mouse Command List

Command	Success Response	Failure Response	Description
<b>SETTINGS</b>	SUCCESS,0:SETTINGS	FAIL,{N}: Command	Enter Settings mode
<b>EXIT</b>	SUCCESS,0:EXIT	FAIL,{N}: Command	Exit Settings mode
<b>MN,0:0</b>	SUCCESS,0:MN,0:1	FAIL,{N}:Command	Get Model number (1=Mouse)
<b>VN,0:0</b>	SUCCESS,0:VN,0:V{N.NN}	FAIL,{N}:Command	Get version number (V{N.NN})
<b>SS,0:0</b>	SUCCESS,0:SS,0:{Cursor Speed Level}	FAIL,{N}:Command	Get the mouse cursor speed value (Level)
<b>SS,1:{Cursor Speed Level:0-10}</b>	SUCCESS,0:SS,1:{Cursor Speed Level}	FAIL,{N}:Command	Set the mouse cursor speed value (Level)
	MANUAL,0:SS,1:{Cursor Speed Level}		Set the mouse cursor speed value (Level)
<b>PT,0:0</b>	SUCCESS,0:PT,0:{Threshold 5% to 50%}:{Nominal Pressure V*100}	FAIL,{N}:Command	Get pressure threshold (threshold 5% to 50%) (Nominal Pressure V*100)
<b>PT,1:{threshold 5% to 50%}</b>	SUCCESS,0:PT,1:{Threshold 5% to 50%}:{Nominal Pressure V*100}	FAIL,{N}:Command	Set pressure threshold (threshold 5% to 50%) (Nominal Pressure V*100)
<b>PV,0:0</b>	SUCCESS,0:PV,0:{Nominal Pressure V*100}	FAIL,{N}:Command	Get pressure value (Nominal Pressure V*100)
<b>RA,0:0</b>	SUCCESS,0:RA,0:{Rotation Angle}	FAIL,{N}:Command	Get rotation angle (deg)
<b>RA,1:{Angle: 0-359}</b>	SUCCESS,0:RA,1:{Rotation Angle}	FAIL,{N}:Command	Set rotation angle (0,90,180,270 deg)
<b>DM,0:0</b>	SUCCESS,0:DM,0:{Debug Mode}	FAIL,{N}:Command	Get debug mode value ( 0=debug mode disabled,1=debug mode enabled)
<b>DM,1:0</b>	SUCCESS,0:DM,1:0	FAIL,{N}:Command	Set debug mode value to 0 (Disabled)
<b>DM,1:1</b>	SUCCESS,0:DM,1:1	FAIL,{N}:Command	Set debug mode value to 1 (Enabled)
	LOG,1:{xHighNeutral,xLowNeutral,yHighNeutral,yLowNeutral}		Log initialization values once if debug mode is enabled
	LOG,2:{xHighMax,xLowMax,yHighMax,yLowMax}		Log calibration values once if debug mode is enabled
	LOG,3:{xHigh,xLow,yHigh,yLow}		Log FSR values if debug mode is enabled until debug mode is disabled
<b>RM,0:0</b>	SUCCESS,0:RM,0:{Raw Mode}	FAIL,{N}:Command	Get Raw mode value ( 0=raw mode disabled,1=raw mode enabled)
<b>RM,1:0</b>	SUCCESS,0:RM,1:0	FAIL,{N}:Command	Set Raw mode value to 0 (Disabled)
<b>RM,1:1</b>	SUCCESS,0:RM,1:1	FAIL,{N}:Command	Set Raw mode value to 1 (Enabled)
	RAW,1:{x,y,action,xHigh,xLow,yHigh,yLow}	FAIL,{N}:Command	Log raw values if raw mode is enabled until raw mode is disabled



## Makers Making Change LipSync Mouse Command List

<b>IN,0:0</b>	SUCCESS,0:IN,0:{xHighNeutral,xLowNeutral,yHighNeutral,yLowNeutral}	FAIL,{N}:Command	Get joystick initialization values (xHighNeutral,xLowNeutral,yHighNeutral,yLowNeutral)
<b>IN,1:1</b>	SUCCESS,0:IN,1:{xHighNeutral,xLowNeutral,yHighNeutral,yLowNeutral}	FAIL,{N}:Command	Perform joystick initialization using command (xHighNeutral,xLowNeutral,yHighNeutral,yLowNeutral)
	MANUAL,0:IN,1:{xHighNeutral,xLowNeutral,yHighNeutral,yLowNeutral}		Perform joystick initialization using push button or sip/puff (xHighNeutral,xLowNeutral,yHighNeutral,yLowNeutral)
<b>JV,0:0</b>	SUCCESS,0:JV,0:{xHigh,xLow,yHigh,yLow}	FAIL,{N}:Command	Get joystick FSR values: {xHigh,xLow,yHigh,yLow}
<b>CA,0:0</b>	SUCCESS,0:CA,0:{xHighMax,xLowMax,yHighMax,yLowMax}	FAIL,{N}:Command	Get joystick calibration values (xHighMax,xLowMax,yHighMax,yLowMax)
<b>CA,1:1</b>	SUCCESS,0:CA,1:0	FAIL,{N}:Command	Perform joystick calibration using command
	SUCCESS,0:CA,1:1	FAIL,{N}:Command	Perform joystick calibration using command (Step 1)
	SUCCESS,0:CA,1:2	FAIL,{N}:Command	Perform joystick calibration using command (Step 2)
	SUCCESS,0:CA,1:3	FAIL,{N}:Command	Perform joystick calibration using command (Step 3)
	SUCCESS,0:CA,1:4	FAIL,{N}:Command	Perform joystick calibration using command (Step 4)
	SUCCESS,0:CA,1:5:{xHighMax,xLowMax,yHighMax,yLowMax}	FAIL,{N}:Command	Perform joystick calibration using command (Step 5) (xHighMax,xLowMax,yHighMax,yLowMax)
	MANUAL,0:CA,1:0		Perform joystick calibration using push button
	MANUAL,0:CA,1:1		Perform joystick calibration using push button (Step 1)
	MANUAL,0:CA,1:2		Perform joystick calibration using push button (Step 2)
	MANUAL,0:CA,1:3		Perform joystick calibration using push button (Step 3)
	MANUAL,0:CA,1:4		Perform joystick calibration using push button (Step 4)
	MANUAL,0:CA,1:5:{xHighMax,xLowMax,yHighMax,yLowMax}		Perform joystick calibration using push button (Step 5) (xHighMax,xLowMax,yHighMax,yLowMax)
<b>CT,0:0</b>	SUCCESS,0:CT,0:{changeTolerance}	FAIL,{N}:Command	Get change tolerance value
<b>CT,1: {Change Tolerance: 0- 30}</b>	SUCCESS,0:CT,1:{changeTolerance}	FAIL,{N}:Command	Set change tolerance value
<b>MP,0:0</b>	SUCCESS,0:MP,0:{NNNNNN}	FAIL,{N}:Command	Get Button mapping ( Example: SUCCESS,0:MP,0:123465)
<b>MP,1: {NNNNNN}</b>	SUCCESS,0:MP,1:{NNNNNN}	FAIL,{N}:Command	Set Button mapping ( Example: MP,1:123465)



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<b>SL,0:0</b>	SUCCESS,0:SL,0:{Scroll Speed Level}	FAIL,{N}:Command	Get the mouse scroll speed value (Level)
<b>SL,1:{Scroll Speed Level:0-10}</b>	SUCCESS,0:SL,1:{Scroll Speed Level}	FAIL,{N}:Command	Set the mouse scroll speed value (Level)
<b>FR,1:{Reset Type: 0-1}</b>	SUCCESS,0:FR,1:{Reset Type: 0-1}	FAIL,{N}:Command	Perform factory reset (0 = Hard Rest , 1 = Soft Reset)

## Response Code

Response Status	Response Code	Description
<b>SUCCESS</b>	<b>0</b>	The command has successfully performed.
<b>FAIL</b>	<b>0</b>	The serial API mode is not enabled. Please enter the serial API mode.
<b>FAIL</b>	<b>1</b>	The requested command does not exist.
<b>FAIL</b>	<b>2</b>	The requested command exists, but the entered parameter is incorrect.

## Input Actions

Input Action	Description
<b>Short Puff</b>	< 3 seconds
<b>Short Sip</b>	< 3 seconds
<b>Long Puff</b>	3-5 seconds
<b>Long Sip</b>	3-5 seconds
<b>Very Long Puff</b>	> 5 seconds
<b>Very Long Sip</b>	> 5 seconds

## Output Actions Options

Action Number	Output Action	Description
<b>0</b>	(No action)	No action
<b>1</b>	Left Click	Presses and immediately releases a left click.
<b>2</b>	Right Click	Presses and immediately releases a right click.
<b>3</b>	Drag Mode	Initiates drag mode. Left click is pressed and held down. Cancelled with short puff or short sip.



<b>4</b>	Scroll Mode	Initiates Scroll mode. Vertical motion of joystick generates mouse scroll wheel movements. Cancelled with short puff or short sip.
<b>5</b>	Middle Click	Presses and immediately releases a middle click.
<b>6</b>	Center Reset	Initiates center reset routine to set joystick center position.
<b>7</b>	Calibration	Initiates joystick calibration routine to set joystick limits and reset joystick center.
<b>8</b>	Secondary Scroll Mode	Initiates Secondary Scroll mode. Middle click is pressed and held down. Cancelled with short puff or short sip.

## Action Mapping

Input Action	LipSync Mouse Action
<b>Short Puff</b>	1 : Left Click
<b>Short Sip</b>	2 : Right Click
<b>Long Puff</b>	3: Drag Mode
<b>Long Sip</b>	4 : Scroll Mode
<b>Very Long Puff</b>	6: Center Reset
<b>Very Long Sip</b>	5: No Action

## Example

INPUT	RESPONSE	ACTION
<b>SETTINGS</b>	SUCCESS,0:SETTINGS	LipSync Ready for API Command
<b>VN,0:0</b>	SUCCESS,0:VN,0:30	LipSync return firmware version 3.0

INPUT	RESPONSE	ACTION
<b>SETTINGS</b>	SUCCESS,0:SETTINGS	LipSync Ready for API Command
<b>PT,0:0</b>	SUCCESS,0:PT,0:10	LipSync return current pressure threshold of 10%
<b>PT,1:20</b>	FAIL,2:PT,1:20	(Attempt to set pressure threshold failed – need to resend SETTINGS for each command)
<b>SETTINGS</b>	SUCCESS,0:SETTINGS	LipSync Ready for API Command
<b>PT,1:20</b>	SUCCESS,0:PT,1:20:50	LipSync set new pressure threshold of 20% and returned current nominal pressure of