



Beam Labs B.V.  
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## Beam socket protocol

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The Beam Remote app on iOS and Android uses sockets to connect to a Beam on your home network. It searches for Beam devices with a port scan and then tries to connect the socket. The scan is performed in the same subnet that Beam is on. The same goes for the webinterface, but the difference is that the website [www.controlmybeam.com](http://www.controlmybeam.com) reconnects you to the local IP address of a Beam on your network and uses websockets. Beam uses port number 1346 and 1347 for the web interface. The Beam Remote uses 13456 and 13457 to connect to Beam.

If something is between<brackets>, replace the whole word with brackets with the relevant value. So **user;<username>;<macaddress>** becomes **user;Thomas;AA:BB:CC:00:22**

### App to beam

#### On connect:

user;<username>;<macaddress>

<username> should be a recognizable user name for that device  
<macaddress> should be the macaddress seperated by : (colon)

#### Mouse events:

mnr;<x>;<y> Mouse move relative (ex: 'mnr;10;-20' moves the pointer 10 px right, 20 px up)  
mdr;0;0 Mouse down relative, sends touch down event.  
mur;0;0 Mouse up relative, sends touch up event.  
mtr;0;0 Mouse touch relatvie, sends touch down+up event.

For dragging, first send "mdr;0;0", then "mnr;<x>;<y>" on drag, then "mur;0;0" when released

mw;0;<y> Mouse wheel, sends scroll event

pd;0;0 Pen down, needs to be sent before a series of absolute mouse events  
pu;0;0 Pen up, needs to be sent after last absolute mouse event

mma;<x>;<y> Mouse move absolute, moves the pointer to (<x>, <y>)  
mda;<x>;<y> Mouse down absolute, sends touch down event on position (<x>, <y>)  
mua;<x>;<y> Mouse up absolute, sends touch up event on position (<x>, <y>)  
mta;<x>;<y> Mouse touch absolute, sends touch down+up event on position (<x>, <y>)

#### Led brightness:

led;<level>;<mode> Changes led brightness.

if <mode> = -1, it sets the brightness one level lower than the current brightness level  
if <mode> = 1, it sets the brightness one level higher than the current brightness level  
if <mode> = 3, it sets the brightness level to <x> (<x> can be 0-3, where 0=off and 3=max)



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## Volume:

vol;<level>;<mode>                      Changes media volume.

if <mode> = -1, it sets the media volume one level lower than the current volume

if <mode> = 1, it sets the media volume one level higher than the current volume

if <mode> = 3, it sets the media volume level to <x> (<x> can be 0-15, where 0=off and 15=max)

## Navigation buttons:

b;2    Home button

b;3    Back button

## Screen controls:

rot;0;0                                      Rotates the screen 180 degrees

screen;0;0                                   Turn Screen on/off

## Navigating Beam:

sets;0;0                                    Opens the 'sets' interface

actions;0;0                                Opens the 'actions' (if/then) interface

apps;0;0                                    Opens the 'all apps' interface

settings;0;0                                Opens the 'settings' interface

## Input app:

kios;<x>;0                                 Sends key pressed event of key <x> (iOS keycode)

kand;<x>;0                                 Sends key pressed event of key <x> (Android keycode)

For enter, <x> = ENTER

for backspace, <x> = BACKSPACE

nav;up;0                                    Arrow up keypad

nav;down;0                                 Arrow down keypad

nav;left;0                                  Arrow left keypad

nav;right;0                                 Arrow right keypad

nav;ok;0                                    OK button keypad

## Input webinterface:

key;<x>;down                              Sends key down event of key <x>.

key;<x>;up                                 Sends key up event of key <x>.

## Renaming Beam:

name;<name>;0                              Sets <name> as new name for Beam



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## Beam to Remote app

Returned when one of these settings has been changed or when a connection is made.

nam;<name>	Sends (new) Beam name
led;<x>	Sends led brightness level
vol;<x>	Sends volume level