

# Using the Ambient Orb Custom Data Channel

## 1. Introduction

Inserting custom data into the Ambient Devices platform is easy and fun! You've already completed the first step by changing to the Custom Channel.

To insert custom data, visit the page:

[http://www.myambient.com:8080/java/my\\_devices/submitdata.jsp?](http://www.myambient.com:8080/java/my_devices/submitdata.jsp?), followed by the appropriate query string. The query string is the portion of the ULS following the question mark (?). This part of the URL is not interpreted by the web server as a page address, but as special instructions to the selected page.

Query strings are a list of keyword/value pairs, separated by an ampersand (&). For instance, in the address:

<http://www.bigcompany.com?product=shoes&ship=overnight>, the query string is the portion after the "?". It consists of two values, "product" which equals "shoes," and "ship" which equals "overnight."

The query string determines how the device will respond to the data. There are four components to a well-formed query string for device data:

<b>Keyword</b>	<b>Required/Optional</b>	<b>Description</b>
devID	Required	Device Identification. This is the serial number printed on the bottom of the device. Be sure to include dashes.
Color	Required	Primary device color. The colors range from 0 (red) to deep magenta (35). 36 is white. Refer to the color guide below.
Animation	Optional (defaults to "none")	The type of animation. Valid selections are the numbers 0 – 9 according to the table below.

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## 2. Colors

Below are all the colors available to the device. Note that your screen may not exactly match the colors of your devices.

0	1	2	3	4	5
6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30	31	32	33	34	35
36					

Design Hint: When mapping linear data to color, it is tempting to take full advantage of all colors. However, color 35 is virtually indistinguishable from color 0 – the colors wrap around in a circle. So if linear data is mapped to the colors 0 – 35, it can be visually hard to tell if a red device is red because the data is closer to 0, or if the device is red because the data is closer to 35. For visual clarity, it's best to leave at least a gap of five or six colors. For example, stocks range from red to green, and our tests have shown that this is more than sufficient to express market performance.

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### 3. Animations

There are nine preset animations. If no animation is specified, it defaults to 'none.' Note the slower animations are very slow and barely perceptible, so it may appear at first like there is no animation. This is intentional to allow the device to transition from steady to pulsing animation without a discontinuous leap in animation rate. If you want the animation to be noticeable, use one of the faster animations.

“Crescendo” and “heartbeat” are special-effects animations for extreme situations where it is permissible for the device to attract attention.

<b>Index</b>	<b>Animation</b>
0	none
1	very slow
2	slow
3	medium slow
4	medium
5	medium fast
6	fast
7	very fast
8	crescendo
9	heartbeat

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#### **4. XML Response**

The server page responds with an XML stream containing feedback about the submission. The “response” node is the overall status of the submission. “OK” for the “type” attribute means the data was successfully inserted into our database “Warning” also means the data successfully inserted, but there were issues or ambiguities which you may wish to review. “Error” means the data was not accepted.

The response values are listed below:

<b>Attribute</b>	<b>Type</b>	<b>Message Body</b>
0	OK	Data inserted OK
1	error	‘Color’ term not defined. Must be number between 0 - 36.
2	error	Error parsing ‘color’ term. Must be number between 0 - 36.
3	error	‘Color’ value out of range. Must be number between 0 - 36.
4	warning	‘Anim’ term not defined. Assuming ‘none.’
5	error	Error parsing ‘anim’ term. Must be number between 0 – 9.
6	error	‘Anim’ value out of range. Must be number between 0 – 9.
7	error	The term ‘devID’ was not specified.
8	error	The specified devID is not a premium account.
9	warning	The specified devID is not set to the developer channel.
10	error	The specified devID is not in the Ambient database.
11	warning	Your query string contains invalid characters.
12	error	Unspecified error.

Note: Parsing of the XML stream can be done with home-brewed code that simply looks for the success message, or with publicly available XML parsers such as the one available for Java at <http://www.java.sun.com>. For many applications it isn't essential that the response code be parsed. We have made efforts to make the XML stream human readable.

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## 5. Examples:

Note that these examples are specific to an Ambient device with serial number = RBD-123-ABC. To send a message to another device, substitute that Ambient serial number.

Steady green:

`http://www.myambient.com:8080/java/my_devices/submitdata.jsp?devID=RBD-123-ABC&anim=0&color=12`

Medium Fast Blue:

`http://www.myambient.com:8080/java/my_devices/submitdata.jsp?devID=RBD-123-ABC&anim=0&color=12`

Note: There is latency of up to 20 minutes between submission of your data to our servers and actual transmission of that data to user devices. This latency can vary according to time of day and geographic location. If your device seems to be missing messages, you may need to move it to a location where it gets better reception.