

The MotionMonitor xGen Software Guide: **(AI Assist – A Client Guide)**

Overview:

AI Assist is a ChatGPT-based bot trained on The MotionMonitor xGen Knowledge Base, enabling it to answer technical questions regarding the configuration and use of The MotionMonitor xGen software. In many cases, AI Assist can provide direct answers to your questions. In other cases, it may offer more general guidance but will always provide links to the documents it used to formulate the response.

Instructions to the Bot:

The bot is trained with a description of your hardware system. However, on occasion, the bot may reference hardware not included in your setup. If this happens, please remind the bot to stay on topic and follow the provided instructions.

Accessing AI Assist:

You can access AI Assist from the **Help** menu in The MotionMonitor software. A window will appear with a brief description of its functionality and a text field to enter your questions. To make your interactions with AI Assist more productive, consider the following tips for formulating your prompts.

Suggestions for Formulating Prompts:

- 1. Be Clear and Specific**

The more specific your prompt, the more tailored and accurate the response will be. Avoid vague or overly broad requests. See examples following this section.

- 2. Use Context**

When appropriate, provide context for the bot. If the conversation spans multiple topics or requires prior knowledge, referencing key details will improve the bot's responses. For example, if you've already shared data or instructions in a previous prompt, include that information to refine the response.

- 3. Break Complex Requests into Smaller Parts**

For more complicated questions, break them down into smaller, more manageable prompts. The example "Help with Biofeedback Protocol" is a good guide

- 4. Be Open to Iteration**

If you don't get the answer you were expecting, refine your prompt based on the response. Adding more details or rephrasing your question can improve the quality of the answers.

- 5. Use Examples**

Including examples in your prompt can help the bot understand what type of response you're looking for. For example, instead of asking, "Can you write a script?"

say, "Can you write a script that calculates the average of a list of numbers? For instance, if the list is [1, 2, 3], the script should return 2."

6. Experiment

Don't hesitate to experiment with how you phrase your questions. If the first approach doesn't yield the desired result, try rewording the prompt to see if it results in a better answer.

7. Avoid Overloading the Prompt

While context is helpful, try not to overload your prompt with too many details at once. This can make the request difficult for the bot to process and may result in less focused responses. Focus on the key points of your question.

Final Thoughts:

We hope you enjoy using AI Assist and that it makes your work with The MotionMonitor xGen more efficient and productive!

Example Prompts & Responses

Explaining a built-in function

Hello! I am an AI assistant designed to help users with The MotionMonitor xGen. Feel free to ask any questions you have in the box below.

Prompt: What does `int()` do?

The `int()` function calculates the integral of a variable over a specified time period. For a scalar variable `X`, you need to provide `BaseTime`, which is the starting point for performing the integration, and `Interval`, which is the sampling interval for performing the calculation [1]. For a vector variable `V`, the same parameters are used: `BaseTime` and `Interval` [2].

Citations:

[1] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Scripting-Operators-and-Script-Functions-Examples.pdf>

[2] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Scripting-Operators-and-Script-Functions-Examples.pdf>

Prompt: What is the syntax of the `int()` function?

The syntax of the `int()` function depends on the type of variable you are working with. For a scalar variable `X`, the syntax is `int(X, BaseTime, Interval)`, where `BaseTime` is the starting point for performing the integration and `Interval` is the sampling interval for the calculation [1]. For a vector variable `V`, the syntax is similar: `int(V, BaseTime, Interval)`, with `BaseTime` and `Interval` serving the same purposes [2].

Citations:

[1] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Scripting-Operators-and-Script-Functions-Examples.pdf>

[2] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Scripting-Operators-and-Script-Functions-Examples.pdf>

Prompt: What would be a practical use of the `int()` function in xGen?

A practical use of the `int()` function in The MotionMonitor xGen is to calculate the integral of force data collected from a force plate over a specific time period. For example, you can use the function to determine the impulse by integrating the vertical force component, such as `Forceplate0.Force.Z`, starting from the initial time of data collection with a specified sampling interval. This can be particularly useful in biomechanics to analyze the total force exerted during a specific activity or movement phase [1][3].

Citations:

[1] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Scripting-Operators-and-Script-Functions-Examples.pdf>

[3] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Scripting-Operators-and-Script-Functions-Examples.pdf>

Help Writing a Script

Prompt: How would I write a script to toggle the activation of hardware?

To write a script that toggles the activation of hardware in The MotionMonitor xGen, you can utilize the `Activate()` and `Deactivate()` functions. Here's a step-by-step guide to creating such a script:

1. ****Define the Hardware Component Name**:** Start by specifying the name of the hardware component you want to toggle. You will use this name in your script to identify the hardware.
2. ****Create a Boolean Variable**:** Use a Boolean variable to check the current state of the hardware device (activated or deactivated).
3. ****Write the Script**:** Here is a simple script that toggles the activation state of a hardware component:

```
```plaintext
// Define the hardware name
string hardwareName = "YourHardwareName";

// Boolean variable to check activation state
bool IsAllActivated;

// Check if the hardware is already activated
AllActivated(IsAllActivated);

// Toggle the activation state
if (IsAllActivated)
{
```

```
// If activated, then deactivate
DeactivateAll();
}
else
{
// If not activated, activate
ActivateAll();
}
...
```

4. **\*\*Compile and Run the Script\*\***: Use the "Compile" button to compile your script, which will also be compiled automatically when you first execute it. Then, click the "Run" button to execute the script [5].

This script checks if all hardware components are activated using the `AllActivated` function. If they are activated, it will deactivate them. If they are not, it will activate them .

Citations:

[5] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TheMotionMonitor-xGen-Elements.pdf>

NOTE TO THE USER: AI Assist makes mistakes. In the first two lines of the script, it attempted to define two variables **within** the script. That would raise an error as the variables need to be defined in the Components page on the node Script Variables.

**Prompt**: Why do I need a hardware name in step 1 if I am activating all hardware?

If you are using the `ActivateAll()` function, you do not need to specify a hardware name because this function activates all hardware devices listed in the Components Setup tab without requiring individual names [2][5]. Specifying a hardware name is necessary only when you want to activate or deactivate a specific hardware component using the `Activate(Name)` or `Deactivate(Name)` functions [3][5].

Citations:

[2] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TheMotionMonitor-xGen-Elements.pdf>

[3] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TheMotionMonitor-xGen-Elements.pdf>

[5] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Scripting-Operators-and-Script-Functions-Examples.pdf>

### **Help Setting up a Protocol**

**Prompt**: I want to have small circles appear on the screen in a biofeedback exercise. As my finger gets close to the circle on the screen i want the circle to jump to another location. Can I do that in xGen?

Yes, you can create a biofeedback exercise in The MotionMonitor xGen that involves having circles appear on the screen and move to another location as your finger gets close. The

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software provides a clean, easy-to-configure interface for creating biofeedback exercises, ranging from simple to complex tasks. You can add a Biofeedback to the Biofeedbacks node and configure its parameters, such as the name and characteristics of the feedback tone. You have the option to control axes independently or use an Axes variable to manage the cursors and targets. The target motion can be set to move in a discrete or randomized manner, which would allow you to have the circle jump to another location when your finger approaches it [5]. If you need further assistance on setting this up, feel free to ask for step-by-step instructions!

Citations:

[5] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TheMotionMonitor-xGen-Elements.pdf>

**Prompt:** Yes please list the step-by-step procedure

To set up a biofeedback exercise in The MotionMonitor xGen where circles appear on the screen and jump to a new location as your finger gets close, follow these steps:

1. **\*\*Add Biofeedback:\*\***

- Right-click on the Biofeedbacks node and select "Add Biofeedback" to create a new biofeedback exercise [4].

2. **\*\*Configure Biofeedback Parameters:\*\***

- In the parameter panel, provide a name for your biofeedback session.
- If desired, set up a commencement tone to signal the start of the session. This can be configured in the tone options [1].

3. **\*\*Set Target and Cursor:\*\***

- Decide if you want the target to move in a discrete or random manner. You can configure this in the target motion settings [1].
- For a random target, set the initial XYZ coordinates and specify max velocity and acceleration for target movement [5].

4. **\*\*Control Axes Independently:\*\***

- If you want finer control over the target and cursor, enable the "Control axes independently" option. This lets you define variables for each axis separately [3].

5. **\*\*Adjust Target Parameters:\*\***

- Set the target model, color, opacity, and scale. You can also define spatial constraints for how the target will move by setting minimum and maximum XYZ limits [5].

6. **\*\*Run the Biofeedback:\*\***

- Click the "Run" button to start the biofeedback session. This will execute the display and begin recording the session [3].

7. **\*\*Monitor and Adjust:\*\***

- During the session, monitor how the circles behave and make any necessary adjustments to the parameters to ensure the desired interaction with the finger movement.

By following these steps, you should be able to set up a dynamic biofeedback exercise where circles move to new locations based on finger proximity. If you need further details on

any of the steps, feel free to ask!

Citations:

[1] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TheMotionMonitor-xGen-Elements.pdf>

[3] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Biofeedback.pdf>

[4] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Biofeedback.pdf>

[5] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Biofeedback.pdf>

**Prompt:** In step 3 what is the Cursor?

In the context of The MotionMonitor xGen, a "Cursor" is a visual representation that acts as the chasing object in a biofeedback exercise. It is configured to follow or track a target. You can add a cursor by right-clicking on the Biofeedback1|Cursors node or by clicking the "Add Cursor" button [1]. Once added, you can modify its properties such as the model (e.g., sphere, cube), color, and opacity. The cursors movement can be controlled by defining variables for its XYZ position and rotations, which can be linked to the subject's movements, such as a fingertip position in space [1]. This setup allows for real-time interaction and feedback based on how the cursor tracks or follows the target.

Citations:

[1] <https://themotionmonitor.com/wp-content/uploads/knowledge-base/software/TMM-SW-Biofeedback.pdf>