

TECHNICAL NOTE

> XAP GWARE 128

Controlling the GPIO Port on a XAP with the Tabletop Controller

Description

This document explains how to program the Tabletop Controller to use a XAP product to control a 3rd party device through a contact closure on the GPIO port.

The XAP Product Line can provide a contact closure (ground / low) through the even numbered pins of the Control/Status A port on the back of the XAP unit. This General Purpose Input Output port (GPIO) has even and odd numbered pins; the odd pins 1, 3, 5...15 are control pins and won't be used in this document. The even pins 2, 4, 6...16 are status pins and can be used (Note: Pins 17-24 are not used). In this example we use status pin 12. Pin 25 is the common ground. The port is configured using G Ware GPIO builder. This kind of contact closure is useful in controlling devices in the room such as projectors, screens, lighting, and more.

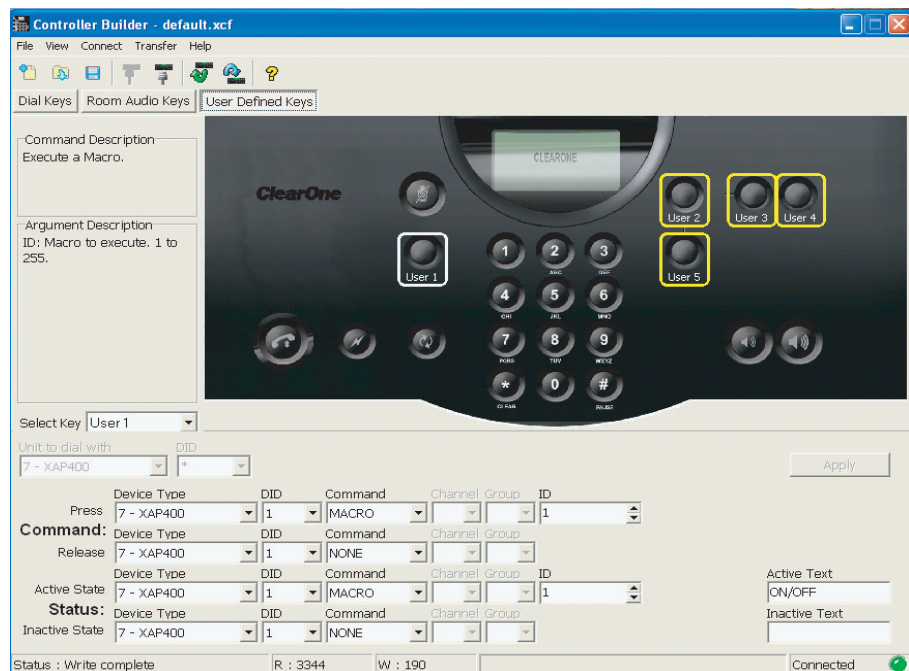
Procedure

Perform the following procedure to configure the GPIO Port to control the XAP using the Tabletop Controller:

1. Follow the instructions in the Tabletop Controller User's Manual to install the Controller Builder software and connect the Tabletop Controller to your computer.
2. Select a user button that you want to configure to send the command to the XAP unit. In this example, the User 1 button on the controller will be used to execute macro #1 on the XAP 400 DID 1 (see Figure 1).

> **Figure 1**

User-defined Key 1 Set Up to Execute Macro #1 on the XAP 400 DID 1

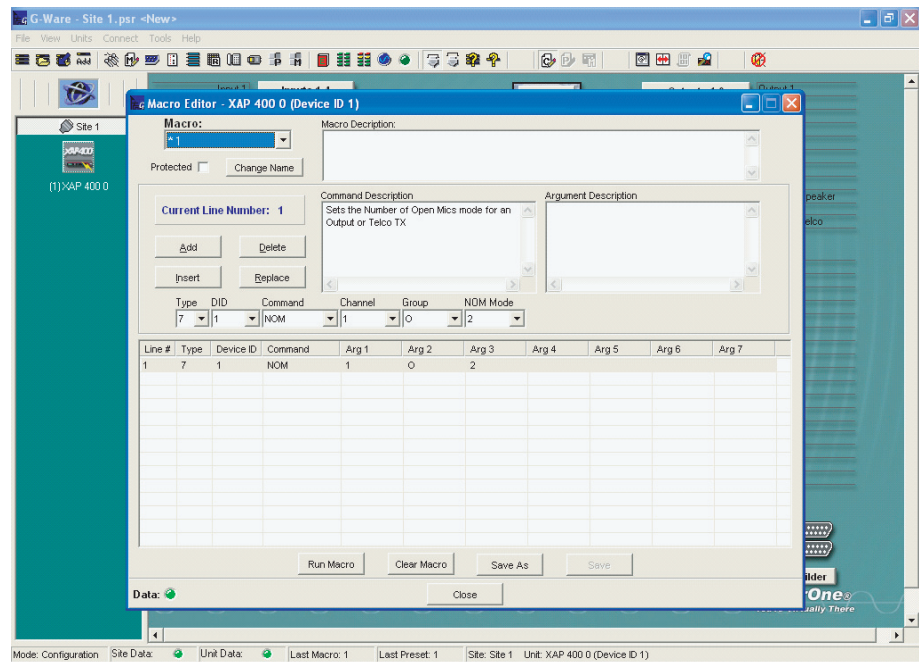


3. When you have entered the commands that you want the controller to send, click on the **Apply** button. This will download the commands to the controller. At this point you can disconnect from the controller and disconnect the controller from your computer.
4. Connect your computer to the XAP 400 using the G-Ware software. See **Technical Note 106** if you have connection problems.

Once connected to the XAP, open **Macro Editor**. In this example, we are going to configure Macro 1 to toggle the NOM (on / off) of output 1 on XAP 400 DID 1 (see Figure 2). An unused output should be used in this macro so as to not affect the audio quality. NOM does not need to be used as many other commands in the XAP can be toggled and used for this purpose. Please refer to your specific *XAP Installation and Operation Manual* for more information on macros and commands.

> **Figure 2**

User-defined Key 1, Macro #1 Configured to Toggle NOM of Output 1 on XAP 400 DID 1

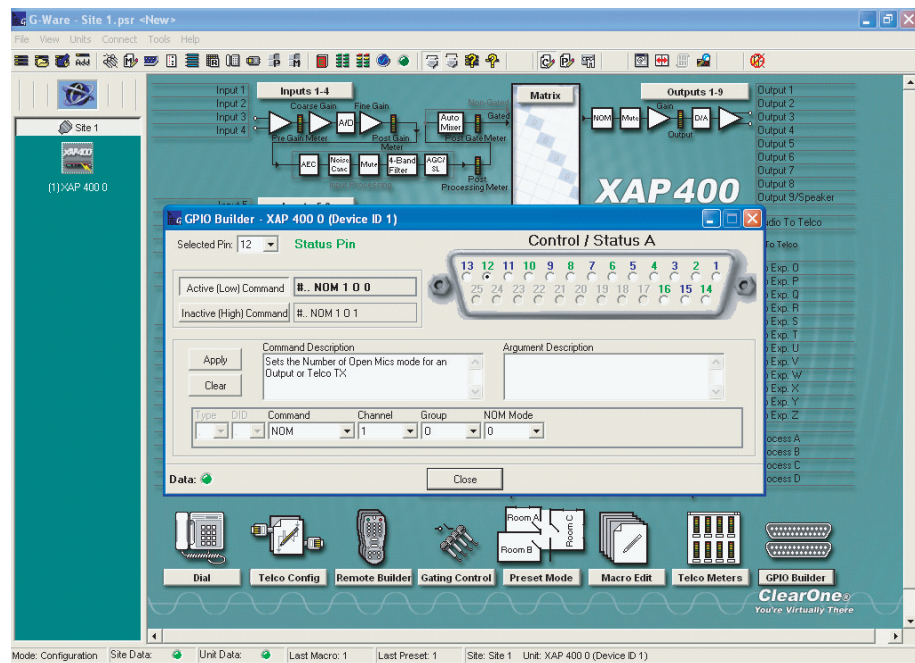


- Using G-Ware, program the GPIO status pin to reflect the status of NOM on the selected channel--in this case, channel 1 of the XAP 400.

Open the GPIO builder in G-Ware for the XAP 400 used in this example. Pick an unused status pin to assign to the NOM status. In this example, we are using pin 12. Configure pin 12 active low command to reflect a status of NOM being OFF or 0 on the channel used in the Macro. Configure the inactive high command to reflect a NOM status of being ON or 1 (see Figure 3).

> **Figure 3**

Programming GPIO Status Pin to Reflect Status of NOM on Channel 1 of XAP 400



- Connect the Tabletop Controller to the RS 232 port on the back of the XAP 400 DID 1 unit where you have configured the GPIO port. The projector is connected to the XAP 400 DID 1 with a DB 25 connector connected to Control/Status A port. Pin 12 is the contact closure pin and pin 25 is the ground. Please see your 3rd party device manual for wiring instructions.

Summary

In this example, the Tabletop Controller sends the command to execute a macro on the XAP 400. The macro toggles NOM on and off on output 1 because it is an unused output. The GPIO port status pin follows the NOM state on output 1. This pin will pull to ground when NOM is off and return to a high when NOM is on. This creates the contact closure for the 3rd party device.

Conclusion

3rd party devices that have contact closure circuits can be controlled by using this method. As stated, it is not required to use NOM--mute and many other commands can be used in the macro, refer to your specific *XAP 400 Installation and Operation Manual* for more information. It is recommended that an unused channel be used so that the audio is not affected..

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