Serial control and preset states in an XAP system

Description
Serial control systems are commonly used to change presets in an XAP system configuration to support changing room layouts or dividable room configurations. This document describes the protocol for properly calling preset states.

Preset States
Preset states or "flags" are used by the XAP system to track which presets have been run and should not be run again and which are available to run. Presets have three states:

  0 – sets the preset state to off, making it available to run again.
  1 – executes the preset and sets its state to on, making it unavailable to run again until it is set to off.
  2 – executes the preset and sets its state to off, allowing it to run again.

Running Presets via RS-232
Presets can be run serially using a control system via the RS-232 port.

When executing a preset using a control system connected to the RS232 port, a serial string of this structure will be sent: **#50 PRESET 1 1**. This particular command will cause a XAP 800 (**5**) with a device ID of **0** to execute **PRESET 1** and set its flag to high (**1**). When the command is received, the XAP system will first check to see if the preset flag is high. If the flag is high the preset will not run again. If the flag is not high, the XAP will then execute the preset and set the flag to high to keep it from being run again until the preset state is set to off.

To set the preset state to off, the command **#50 PRESET 1 0** is sent. The preset does not run but its state is set to off which makes the preset available to run again. This does not undo the changes the preset made, it only sets the state off.

When the serial command **#50 PRESET 1 2** is sent, the XAP system acts like two commands — **#50 PRESET 1 1** and **#50 PRESET 1 0** — were sent in order. When the command is received, the XAP system will check to see if the preset flag is high. If the flag is high, the preset will not run again but the flag is set to the off state. If the flag is not high, the XAP will execute the preset and set the flag to off.

Running Presets via RS-485
XAP systems have two RS-485 ports designed to support one or more push button preset select control panels for executing presets. When using the RS-485 port, the serial control is programmed into the firmware of the XAP unit using the G-Ware software and the presets are executed using the control panel.

Preset Overlays
Presets in the XAP systems are designed to overlay each other. This allows for presets to be run without affecting any other preset that may be active. This makes the preset changes seamless to the user with no disruption of an already active preset. For example, in a room combining application there may be 4 presets created to support 4 different room configurations. Only one preset needs to be active to support a particular room layout and the other three have their state set to off. Once a preset is run it applies the programmed changes and sets its flag based on the command sent.