

# Blustream ACM200 Installation and Usage Guide



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## Overview

The Blustream Crestron module allows for IP control over the Blustream ACM200 controller.



The module provides control over switching, video wall configuration, the transmitter audio setting, CEC settings, EDID settings, the scaler resolution, rotation and the ability to send RS232 commands to a remote unit. All of these controls are detailed in the sections below.

## Product Features

- Join an Encoder to a Decoder
- Join using...
  - All signals
  - video only
  - audio only
  - IR only
  - RS232 only
  - USB only
  - CEC only
- Control Receivers to...
  - Toggle using CEC
  - Toggle HDR
  - Toggle HDCP management
  - Toggle Stretch mode
- Set rotation to 0, 90,180 or 270
- Set scaler settings to one of 14 settings
- Control Transmitters to...
  - Toggle using CEC
  - Select HDMI
  - Select Analog
  - Select Auto
- Reboot Transmitter
- Video Wall control

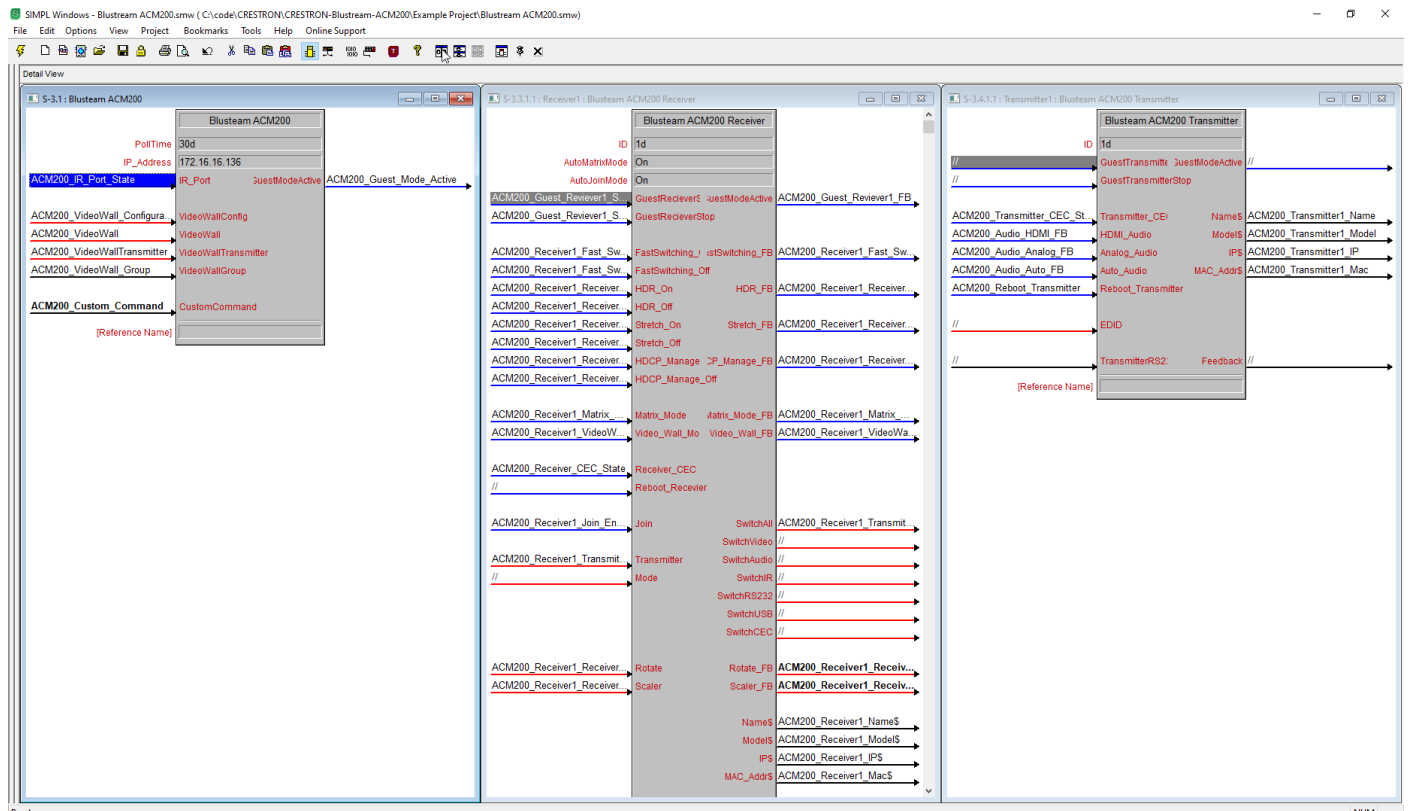
## Installation

The zip file that included this documentation has the simpl+ module and the Simpl# clz file that need to be copied in to your project folder. The files were built and tested on a Crestron 3-series processor.

The zip file also contains a SIMPL project and a VT-Pro touchscreen design that you can use for testing.

# Configuration

There are three modules that form this driver, the comms module, the receiver and the transmitter. Each module is detailed in the following pages. To correctly configure the driver you need to install one comms module, and a receiver module for each receiver you have and a transmitter module for each transmitter in your project.





## Guest Mode

Guest mode allows you to send RS232 command to a remote receiver or transmitter. It does this by opening up a channel to the specified device, and while it is open allows you to send any type of data and receive anything that comes back from the other end. While you are in this mode you won't have any control over the ACM200 and all Transmitter and Receiver modules. Everything entered into the serial join for guest mode will be sent to the remote end. Once you are finished you can close the connection and return to normal control.

### Notes about control signals

The control signals won't work while in guest mode as everything is sent to the remote end, but they are not disabled. If you try to use them the command will be sent to the remote RS232 port.

### Starting Guest Mode

The Receiver and Transmitter module both have the ability to start guest mode. Once you trigger this signal you will lose control of the ACM00 and anything you send will be directed to the remote end. The commands you wish to send need to go to the Transmitter RS232 or Receiver RS232 joins.

### Closing Guest Mode

The Receiver and Transmitter module both have the ability to close guest mode. Once you trigger this signal you will immediately regain control over the ACM200.

### Monitoring Guest Mode

Each module has a GuestModeActive feedback join. If this signal is high then guest mode is active and you should send any normal commands.

### Serial Port Settings

All of the RS232 serial port settings (baud rate, stop bits, parity, etc) need to be configured in the web interface of the ACM200. Please make sure to configure these first before attempting a connection.

## System Module

The system module is used to provide communication and video wall control. The transmitter and receiver functions rely on this module to work and will not work without it.

Video walls can be used in two ways. The first is to set the video wall number and configuration (as per the web interface). You will need to do this to enable the video wall. If you also have groups configured, you can set the video wall transmitter with the source you wish to set and finally the video wall group you wish to send that transmitter too.

Note once a receiver has been placed into its video wall state, you will need to set it back to matrix to have it run independently again, either by using the matrix mode join on the receiver, or setting the AutoMatrixMode parameter for that receiver.

## Parameters

### PollTime [analog]

The PollTime parameter is used to set the time between refreshing the current status of the transmitters and receivers

### IP Address [string]

The IP Address parameter is used to configure the IP address of the ACM 200.

## Inputs

### IR Port [digital]

The IR Port control can be used to turn IR control port on or off

### VideoWallConfig [analog]

The VideoWallConfig signal sets the new configuration for the currently selected Video Wall. The Video Wall signal should be set first before setting this signal

### Video Wall [analog]

The Video Wall signal sets the video wall to affect. This signal needs to be set before changing the configuration (using the VideoWallConfig signal)

### VideoWallTransmitter [analog]

The VideoWallTransmitter signal is used to set the source for the selected video wall

## **VideoWallGroup [string]**

The VideoWallGroup is used to set the  
Set Grouped Output from single Source INPUT

## **CustomCommand [string]**

The CustomCommand signal allows for entering a custom ACM200 command. Please note the command must be correctly formatted and complete. To allow for future command no validation is performed. If the command is in error it the error caused will be shown in the console.

## **Outputs**

### **GuestModeActive [digital]**

The GuestModeActive signal go high when any receiver or transmitter is currently has an active guest mode connection

# Receiver Module

## ID [string]

The ID parameter is used to set the numeric ID of the transmitter you are configuring

## Inputs

### GuestTransmitterStart [digital]

Triggering this signal will start guest mode to this device. Any strings sent to the Receiver RS232 serial input will be sent to the receivers serial port. While guest mode is active no commands can be sent to the ACM200. The guest mode needs to be closed to regain control using GuestReceiverStop. The GuestModeActive signal will go high when this signal goes high.

### GuestReceiverStop [digital]

Triggering this signal will close the guest mode connection and return control. The GuestModeActive signal will go low when this signal goes low.

### FastSwitching\_On [digital]

This enables stretch for the currently set receiver. Sending this signal high will enable fast switching. Note that when this signal is used the corresponding feedback signal will go high immediately, but it may reset of the next poll if there was an issue with setting the signal.

### FastSwitching\_Off [digital]

This disabled fast switching for the currently set receiver. Sending this signal high will disable fast switching. Note that when this signal is used the corresponding feedback signal will go low immediately, but it may reset of the next poll if there was an issue with setting the signal.

### HDR\_On [digital]

This enables HDR for the currently set receiver. Sending this signal high will enable HDR. Note that when this signal is used the corresponding feedback signal will go high immediately, but it may reset of the next poll if there was an issue with setting the signal.

### HDR\_Off [digital]

This disabled HDR for the currently set receiver. Sending this signal high will disable HDR. Note that when this signal is used the corresponding feedback signal will go low immediately, but it may reset of the next poll if there was an issue with setting the signal.

### **Stretch\_On [digital]**

This enables stretch for the currently set receiver. Sending this signal high will enable stretch. Note that when this signal is used the corresponding feedback signal will go high immediately, but it may reset of the next poll if there was an issue with setting the signal.

### **Stretch\_Off [digital]**

This disabled stretch for the currently set receiver. Sending this signal high will disable stretch. Note that when this signal is used the corresponding feedback signal will go low immediately, but it may reset of the next poll if there was an issue with setting the signal.

### **HDCP\_Manage\_On [digital]**

This enables HDCP management for the currently set receiver. Sending this signal high will enable HDCP management. Note that when this signal is used the corresponding feedback signal will go high immediately, but it may reset of the next poll if there was an issue with setting the signal.

### **HDCP\_Manage\_Off [digital]**

This disabled HDCP management for the currently set receiver. Sending this signal high will disable HDCP management. Note that when this signal is used the corresponding feedback signal will go low immediately, but it may reset of the next poll if there was an issue with setting the signal.

### **Matrix Mode [digital]**

This sets the currently selected receiver back to matrix switching mode (forcing the receiver back from video wall mode). This signal is edge triggered, a high signal will change mode and the low will be ignored. Using the join command will automatically trigger this mode change so there is no need to perform it during a join. Note that when this signal is used the corresponding feedback signal will go high immediately, but it may reset of the next poll if there was an issue with setting the signal.

### **Video Wall Mode [digital]**

This sets the currently selected receiver to video wall mode (forcing the receiver to change from matrix mode). This signal is edge triggered, a high signal will change mode and the low will be ignored. Using the video wall configuration command will automatically trigger this mode change so there is no need to perform it during a video wall change. Note that when this signal is used the corresponding feedback signal will go high immediately, but it may reset of the next poll if there was an issue with setting the signal.

### **Receiver\_CEC [digital]**

This signal turns the CEC mode on or off. This signal is level based, so latch it high to keep the CEC mode active. This would typically be done with a TOGGLE.

## Reboot Receiver [digital]

This signal will reboot the currently set receiver. This signal is edge triggered, a high signal will change mode and the low will be ignored.

## Join [digital]

The Join command will join the currently set receiver to the currently set transmitter using the currently set switching mode. You would typically set the receiver, transmitter and switching values first.

Please note this command is affected by the AutoMatrixMode setting. Please check that section for details.

## Transmitter [analog]

This signal sets the receiver that the next command will act on. This would be set before triggering a join or transmitter command. Valid values are between 1 and 99 and must match the value set on the transmitter itself.

## Mode [analog]

This signal sets the mode for the join command and should be set before sending the join command. Valid values are shown in the table below.

Value	Mode
0	SwitchAll fromtransmitter to receiver
1	Switch video only fromtransmitter to receiver
2	Switch audio only fromtransmitter to receiver
3	Switch IR only fromtransmitter to receiver
4	Switch RS232 only fromtransmitter to receiver
5	Switch USB only fromtransmitter to receiver
6	Switch CEC only fromtransmitter to receiver

## Rotate [analog]

This signal will set the rotation of the currently set receiver. Valid values are 0, 90, 180 and 270. Any other values will be ignored and will produce no change.

## Scaler [analog]

This signal will set the scaler resolution of the currently set receiver. Valid values are between 0 and 13. The resolutions are listed in the table below.

Value	Resolution
0	Bypass scaler
1	2160p@30
2	2160p@24
3	1080p@50
4	1080p@60
5	1080i@50
6	1080i@60
7	720p@60
8	720p@50
9	1280x1024@60
10	1024x768@60
11	1360x768@60
12	1440x900@60
13	1680x1050@60

## Receiver RS232 [string]

The Receiver RS232 signal can be used to send serial data to a receiver. The receiver should be set first using the Receiver analog join detailed above. To establish the connection you must use the GuestReceiverStart signal. Once you have triggered the GuestReceiverStart signal then any data you send to this signal will appear at the serial port on your selected receiver. Once you have finished you need to trigger the GuestReceiverStop signal to close the connection and return control of the ACM200 to the module.

## Outputs

### GuestModeActive [digital]

This signal will go high when guest mode is active for this Receiver. Guest mode can be started and stopped with the GuestReceiverStart and GuestReceiverStop signals

### **FastSwitching\_FB [digital]**

The FastSwitching\_FB signal will go high when the FastSwitching\_On signal is sent high and low when the FastSwitching\_Off signal goes high. Note that the signal will be updated on every iteration of the polling loop.

### **HDR\_FB [digital]**

The HDR\_FB signal will go high when the HDR\_On signal is sent high and low when the HDR\_Off signal goes high. Note that the signal will be updated on every iteration of the polling loop.

### **Stretch\_FB [digital]**

The Stretch\_FB signal will go high when the Stretch\_On signal is sent high and low when the Stretch\_Off signal goes high. Note that the signal will be updated on every iteration of the polling loop.

### **HDCP\_Manage\_FB [digital]**

The HDCP\_Manage\_FB signal will go high when the HDCP\_Manage\_On signal is sent high and low when the HDCP\_Manage\_Off signal goes high. Note that the signal will be updated on every iteration of the polling loop.

### **Matrix\_Mode\_FB [digital]**

The Matrix\_Mode\_FB signal will go high when this receiver is in matrix mode. If the receiver is in video wall mode it will be low. Note that the signal will be updated on every iteration of the polling loop.

### **Video\_Wall\_FB [digital]**

The Video\_Wall\_FB signal will go high when this receiver is in video wall mode. If the receiver is in matrix mode it will be low. Note that the signal will be updated on every iteration of the polling loop.

### **SwitchAll [analog]**

The SwitchAll signal contains the current transmitter this receiver has been commanded to receive for any call made to the SwitchAll. For commands sent to any of the other switching types this value will be 0. Note that the signal will be updated on every iteration of the polling loop.

### **SwitchVideo [analog]**

The SwitchVideo signal contains the current transmitter this receiver has been commanded to receive for any call made to the SwitchVideo. For commands sent to any of the other switching types this value will be 0. Note that the signal will be updated on every iteration of the polling loop.



## SwitchAudio [analog]

The SwitchAudio signal contains the current transmitter this receiver has been commanded to receive for any call made to the SwitchAudio. For commands sent to any of the other switching types this value will be 0. Note that the signal will be updated on every iteration of the polling loop.

## SwitchIR [analog]

The SwitchIR signal contains the current transmitter this receiver has been commanded to receive for any call made to the SwitchIR. For commands sent to any of the other switching types this value will be 0. Note that the signal will be updated on every iteration of the polling loop.

## SwitchRS232 [analog]

The SwitchRS232 signal contains the current transmitter this receiver has been commanded to receive for any call made to the SwitchRS232. For commands sent to any of the other switching types this value will be 0. Note that the signal will be updated on every iteration of the polling loop.

## SwitchUSB [analog]

The SwitchUSB signal contains the current transmitter this receiver has been commanded to receive for any call made to the SwitchUSB. For commands sent to any of the other switching types this value will be 0. Note that the signal will be updated on every iteration of the polling loop.

## SwitchCEC [analog]

The SwitchCEC signal contains the current transmitter this receiver has been commanded to receive for any call made to the SwitchCEC. For commands sent to any of the other switching types this value will be 0. Note that the signal will be updated on every iteration of the polling loop.

## Rotate\_FB [analog]

This signal will reflect the rotation of the currently set receiver. Valid values are 0, 90, 180 and 270. Any other values will be ignored and will produce no change. Note that the signal will be updated on every iteration of the polling loop.

## Scaler\_FB [analog]

This signal will reflect the current scaler resolution of this receiver. Valid values are between 0 and 13. The resolutions are listed in the table below. Note that the signal will be updated on every iteration of the polling loop.

Value	Resolution
0	Bypass scaler
1	2160p@30

Value	Resolution
-------	------------

2	2160p@24
3	1080p@50
4	1080p@60
5	1080i@50
6	1080i@60
7	720p@60
8	720p@50
9	1280x1024@60
10	1024x768@60
11	1360x768@60
12	1440x900@60
13	1680x1050@60

### **Name\$ [string]**

The Name\$ signal will contain the name of this receiver (configured by the ID field). The name comes are part of polled feedback and will update on a change in the name

### **Model\$ [string]**

The Model\$ signal will contain the model of this receiver (configured by the ID field). The model comes are part of polled feedback and will update on a change in the model

### **IP\$ [string]**

The IP\$ signal will contain the IP of this receiver (configured by the ID field). The IP comes are part of polled feedback and will update on a change in the IP

### **MAC\_Addr\$ [string]**

The MAC\_Address\$ signal will contain the mac address of this receiver (configured by the ID field). The mac address comes are part of polled feedback and will update on a change in the mac address

## **Feedback [string]**

The feedback join will contain any data sent back from an open guest mode connection for this receiver. Please note the data will come back in chunks so you may need to gather the response and stitch it back together.

# Transmitter Module

## Parameter

### ID

The ID parameter is used to set the numeric ID of the transmitter you are configuring

## Inputs

### GuestTransmitterStart

Triggering this signal will start guest mode to this device. Any strings sent to the Transmitter RS232 serial input will be sent to the transmitters serial port. While guest mode is active no commands can be sent to the ACM200. The guest mode needs to be closed to regain control using GuestTransmitterStop. The GuestModeActive signal will go high when this signal goes high.

### GuestTransmitterStop

Triggering this signal will close the guest mode connection and return control. The GuestModeActive signal will go low when this signal goes low.

### Transmitter CEC [digital]

This signal turns the CEC mode on or off. This signal is level based, so latch it high to keep the CEC mode active. This would typically be done with a TOGGLE.

### HDMI Audio [digital]

This signal sets the audio source to the HDMI signals audio. This signal is edge triggered, a high signal will change mode and the low will be ignored.

### Analog Audio [digital]

This signal sets the audio source to the analog input. This signal is edge triggered, a high signal will change mode and the low will be ignored.

### Auto Audio [digital]

This signal sets the audio source to automatically choose the correct audio. This signal is edge triggered, a high signal will change mode and the low will be ignored.

### Reboot Transmitter [digital]

This signal will reboot the currently set receiver. This signal is edge triggered, a high signal will change mode and the low will be ignored.

## EDID [analog]

This signal will set the EDID resolution of the currently set transmitter. Valid values are between 0 and 18. The resolutions are listed in the table below.

Value	Resolution
0	HDMI 1080p@60, Audio 2CH PCM
1	HDMI 1080p@60, Audio 5.1CH PCM/DTS/DOLBY
2	HDMI 1080p@60, Audio 7.1CH PCM/DTS/DOLBY
3	HDMI 1080i@60, Audio 2CH PCM
4	HDMI 1080i@60, Audio 5.1CH PCM/DTS/DOLBY
5	HDMI 1080i@60, Audio 7.1CH PCM/DTS/DOLBY
6	HDMI 1080p@60 3D, Audio 2CH PCM
7	HDMI 1080p@60 3D, Audio 5.1CH PCM/DTS/DOLBY
8	HDMI 1080p@60 3D, Audio 7.1CH PCM/DTS/DOLBY
9	HDMI 4K@30 4:4:4, Audio 2CH PCM
10	HDMI 4K@30 4:4:4, Audio 5.1CH PCM/DTS/DOLBY
11	HDMI 4K@30 4:4:4, Audio 7.1CH PCM/DTS/DOLBY
12	DVI 1280x1024@60, Audio None
13	DVI 1920x1080@60, Audio None
14	DVI 1920x1200@60, Audio None
15	HDMI 4K@30 4:4:4, Audio 7.1CH (Default)
16	HDMI 4K@60 4:2:0, Audio 2CH PCM
17	HDMI 4K@60 4:2:0, Audio 5.1CH PCM/DTS/DOLBY
18	HDMI 4K@60 4:2:0, Audio 7.1CH PCM/DTS/DOLBY

## Transmitter RS232 [string]

The Transmitter RS232 signal can be used to send serial data to a transmitter. The transmitter should be set first using the Transmitter analog join detailed above. To establish the connection you must use the GuestTransmitterStart signal. Once you have triggered the GuestTransmitterStart signal then any data you

send to this signal will appear at the serial port on your selected transmitter. Once you have finished you need to trigger the GuestTransmitterStop signal to close the connection and return control of the ACM200 to the module.

## Outputs

### GuestModeActive

This signal will go high when guest mode is active for this transmitter. Guest mode can be started and stopped with the GuestTransmitterStart and GuestTransmitterStop signals

### Name\$

The Name\$ signal will contain the name of this transmitter (configured by the ID field). The name comes are part of polled feedback and will update on a change in the name

### Model\$

The Model\$ signal will contain the model of this transmitter (configured by the ID field). The model comes are part of polled feedback and will update on a change in the model

### IP\$

The IP\$ signal will contain the IP of this transmitter (configured by the ID field). The IP comes are part of polled feedback and will update on a change in the IP

### MAC\_Addr\$

The MAC\_Address\$ signal will contain the mac address of this transmitter (configured by the ID field). The mac address comes are part of polled feedback and will update on a change in the mac address