

► Blustream Multicast

ACM200 - Advanced Control Module

API Document

RevA4 23/04/2019

Introduction

Our UHD Multicast distribution platform allows distribution of HDMI video over a 1Gb Network switch. The ACM200 Control Module allows advanced third party control of the Multicast system using TCP / IP, RS-232 and IR.

The ACM200 includes a web interface module for control and configuration of the Multicast system and features 'drag and drop' source selection with video preview and independent routing of IR, RS-232, Audio and Video.

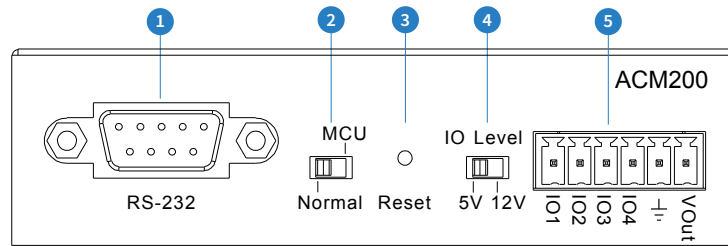
Pre-built Blustream product drivers simplify Multicast product installation and negate the need for an understanding of complex network infrastructures.

FEATURES:

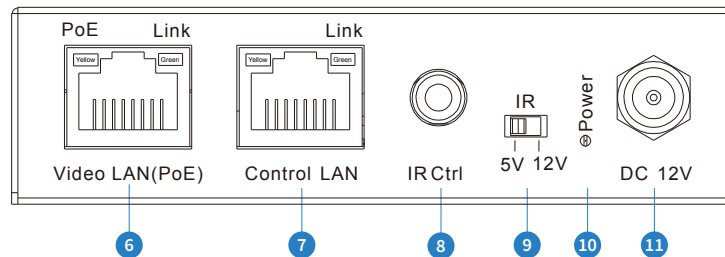
- Web interface module for configuration and control of the Blustream Multicast system
- Intuitive 'drag & drop' source selection with video preview feature for active monitoring of system status
- Advanced signal management for independent routing of IR, RS-232, USB/KVM, audio and video
- Auto system configuration
- 2x RJ45 LAN connections to bridge existing network to Multicast video distribution network, resulting in:
 - Better system performance as network traffic is separated
 - No advanced network setup required
 - Independent IP address per LAN connection
 - Allows simplified TCP / IP control of Multicast system
- RS-232 integration for control of Multicast system
- IR integration for control of Multicast system
- PoE (Power over Ethernet) to power Blustream product from PoE switch
- Local 12V power supply (optional) should Ethernet switch not support PoE
- Support for iOS and Android App control
- 3rd Party drivers available for major home control brands

Panel Descriptions - ACM200

ACM200 - Front Panel



ACM200 - Rear Panel



- 1 RS-232 control port – Connect to a third party control device for control of the Multicast system using RS-232.
- 2 MCU Upgrade toggle - for use when upgrading MCU firmware only.
- 3 Reset
- 4 Reserved for future use.
- 5 GPIO - Reserved for future use.
- 6 Video LAN (PoE) - Connect to the layer 3 network switch that the Blustream Multicast components are connected to.
- 7 Control LAN port - Connect to existing network that your third party control system resides on. The Control LAN port is used for Telnet/ IP control of the Multicast system. Not PoE.
- 8 IR Ctrl(IR input) – 3.5mm stereo jack. Connect to third party control system if you are using IR as your method of controlling the Multicast system. When using the Blustream IRCAB cable (optional) ensure cable direction is correct.
- 9 IR - adjust IR voltage level between 5V or 12V input for IR Ctrl.
- 10 Power LED indicator
- 11 Power port – Use 12V 1A DC adaptor (sold separately) if not using a PoE network switch.

RS-232 Control

The Blustream ACM200 can be controlled via serial using the serial DB9 connector.

For the full list of command protocols please see 'RS-232 & Telnet Commands' located at the rear of this manual.

Baud Rate: 57600

Data Bit: 8-bit

Parity: None

Stop Bit: 1-bit

Flow Control: None

The Baudrate for the ACM200 can be adjusted using the ACM200 built-in web-GUI or by issuing the following commands:

RSB x : Set RS-232 Baud Rate to X bps

Where x =

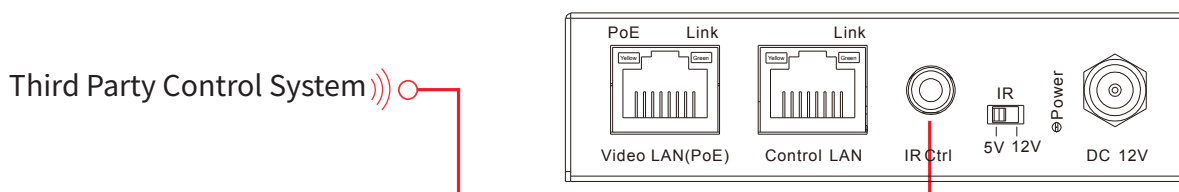
- 0 : 115200
- 1 : 57600
- 2 : 38400
- 3 : 19200
- 4 : 9600

Infrared Control

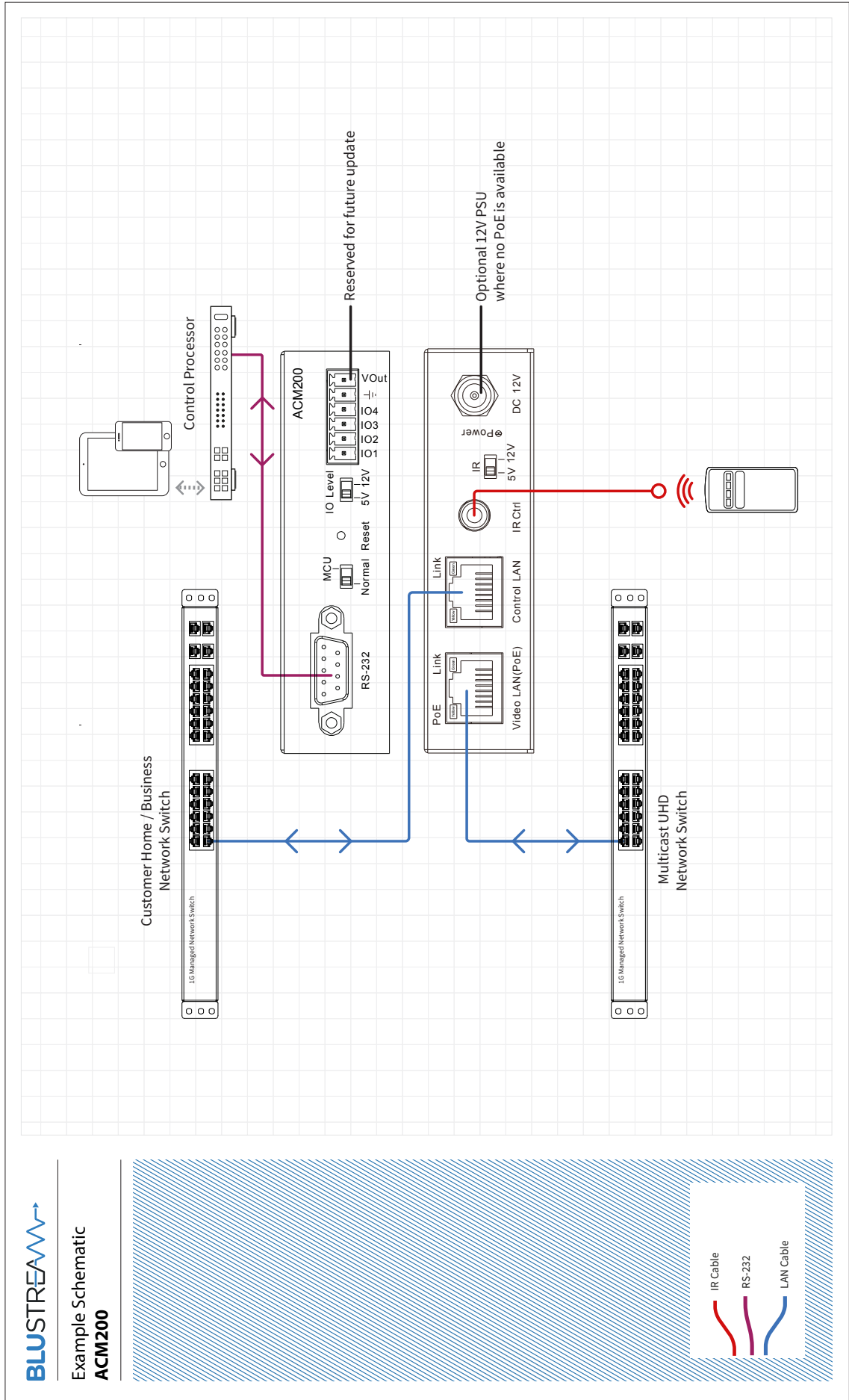
The Blustream Multicast system can be controlled using local InfraRed control from a third party control system.

Note: Only the source selection feature is available using local IR control. For advanced features such as video wall mode, audio embedding etc. you will need to use RS-232 or TCP/IP control.

Blustream have created 16x input & 16x output IR commands allowing source selection of up to 16x IPxxxUHD-TX Transmitters on up to 16x IPxxxUHD-RX Receivers. For systems larger than 16x source devices (IPxxxUHD-TX) it is recommended to use RS-232 or TCP/IP control.

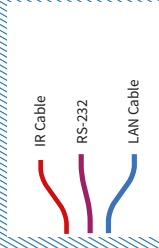


Application Diagram - RS-232 or TCP/IP Control



BLUSTREAM

Example Schematic
ACM200



RS-232 and Telnet Commands

The Blustream Multicast system can be controlled via serial and TCP/IP. The following pages list all available serial commands for the Multicast solution.

Common Mistakes

- Carriage return – Some programs do not require the carriage return where as other will not work unless sent directly after the string. In the case of some Terminal software the token <CR> is used to execute a carriage return. Depending on the program you are using this token maybe different. Some other examples that other control systems deploy include \r or 0D (in hex).
- Spaces – Blustream commands do not require space between commands unless specified. There may be some programs that require spacing in order to work.
 - How the string should look is as follows OUT001FR002
 - How the string may look if spaces are required: OUT{Space}001{Space}FR002
- Baudrate or other serial protocol settings not correct - please see below for Multicast settings

Blustream ACM200 commands and feedback

Pages 07-10 list the common API commands that will be required in a 3rd party control driver

For a full list of serial commands please see the 'HELP' feedback section at the rear of this document

Note: Max number of Transmitters (yyy) and Receivers (xxx) = 762 devices (001-762)

Receivers (outputs) = xxx

Transmitters (inputs) = yyy

Scaler output = rr

Edid input settings = zz

Baud rate = br

GPIO input/output ports = gg

Receiver (Output) Commands

COMMAND DESCRIPTION	COMMAND	RESPONSE
Set OUTPUT:xxx From INPUT:yyy (ALL signals routed)	OUTxxxFRyyy	Set output xxx From INPUT:yyy
Fix VIDEO OUTPUT:xxx From INPUT:yyy	OUTxxxVFRyyy	Set output video xxx From INPUT:yyy
Fix AUDIO OUTPUT:xxx From INPUT:yyy	OUTxxxAFRyyy	Set output audio xxx From INPUT:yyy
Fix IR OUTPUT:xxx From INPUT:yyy	OUTxxxRFRyyy	Set output IR xxx From INPUT:yyy
Fix RS232 OUTPUT:xxx From INPUT:yyy	OUTxxxSFRyyy	Set output RS232xxx From INPUT:yyy
Fix USB OUTPUT:xxx From INPUT:yyy	OUTxxxUFRyyy	Set output usb xxx From INPUT:yyy
Fix CEC OUTPUT:xxx From INPUT:yyy	OUTxxxCFRyyy	Set output cec xxx From INPUT:yyy
Set CEC OUTPUT:yyy ON or Off	OUTxxxCECON/OFF	Set output xxx cec mode ON/OFF
Set OUTPUT:xxx Fast Switching On or Off	OUTxxxFASTON/OFF	Set output xxx fast switching mode ON/OFF
Set OUTPUT:xxx HDR On or Off	OUTxxxHDRON/OFF	Set output xxx hdr mode ON/OFF
Reboot Receiver	OUTxxxRB	Set output xxx reboot and apply all the new config
Rotate Receiver Video Output tt=0: clockwise 0 degree rotate tt=90: clockwise 90 degree rotate tt=180: clockwise 180 degree rotate tt=270: clockwise 270 degree rotate	OUTxxxROTATEtt	output xxx rotate tt degree
Stretch video Output (keep aspect ratio stretch to fit)	OUTxxxSTRETCHON/OFF	Set output xxx stretch ON/OFF
Switch Receiver (Output) between Matrix and Video Wall mode	OUTxxxMODEMX/VW	Set output xxx to matrix/video wall mode
Receiver HDCP management mode	OUTxxxDBGON/OFF	Set output xxx debug mode ON/OFF
Set Scaler Output Resolution 0:Bypass 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	OUTxxxRESrr	Set output xxx resolution to bypass (=0) Set output xxx resolution to 2160p@30(=1) ETC
Single Receiver (output) status	OUTxxxSTATUS	(See status example at end of document)

Transmitter (Input) Commands

COMMAND DESCRIPTION	COMMAND	RESPONSE
Set CEC INPUT:yyy ON or Off	INyyyCECON/OFF	Set input xxx cec mode ON/OFF
Set TX Audio source to HDMI audio	INyyyAUDHDMI	Set Audio source:xxx to audio select hdmi
Set TX Audio source to Analog	INyyyAUDANA	Set Audio source:xxx audio select analog
Set TX Audio source to Auto	INyyyAUDAUTO	Set Audio source:xxx audio select auto
Reboot Transmitter	INyyyRB	Set output xxx reboot and apply all the new config
Copy EDID Input yyy from Output xxx	EDIDyyyCPxxx	Copy outputxxx edid to input yyy
Set Input: yyy EDID To EDID:zz zz=00: HDMI 1080p@60Hz, Audio 2CH PCM zz=01: HDMI 1080p@60Hz, Audio 5.1CH PCM/DTS/DOLBY zz=02: HDMI 1080p@60Hz, Audio 7.1CH PCM/DTS/DOLBY/HD zz=03: HDMI 1080i@60Hz, Audio 2CH PCM zz=04: HDMI 1080i@60Hz, Audio 5.1CH PCM/DTS/DOLBY zz=05: HDMI 1080i@60Hz, Audio 7.1CH PCM/DTS/DOLBY/HD zz=06: HDMI 1080p@60Hz/3D, Audio 2CH PCM zz=07: HDMI 1080p@60Hz/3D, Audio 5.1CH PCM/DTS/DOLBY zz=08: HDMI 1080p@60Hz/3D, Audio 7.1CH PCM/DTS/DOLBY/HD zz=09: HDMI 4K@30Hz 4:4:4, Audio 2CH PCM zz=10: HDMI 4K@30Hz 4:4:4, Audio 5.1CH DTS/DOLBY zz=11: HDMI 4K@30Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD zz=12: DVI 1280x1024@60Hz, Audio None zz=13: DVI 1920x1080@60Hz, Audio None zz=14: DVI 1920x1200@60Hz, Audio None zz=15: HDMI 4K@30Hz 4:4:4, Audio 7.1CH(Default) zz=16: HDMI 4K@60Hz 4:2:0, Audio 2CH PCM zz=17: HDMI 4K@60Hz 4:2:0, Audio 5.1CH DTS/DOLBY zz=18: HDMI 4K@60Hz 4:2:0, Audio 7.1CH DTS/DOLBY/HD	EDIDyyyDFzz	Set input yyy edid with default edid zz
Single Transmitter (input) status	INyyySTATUS	(See status example at end of document)

Video Wall Commands

Video wall configurations will be setup in the ACM200 Web GUI

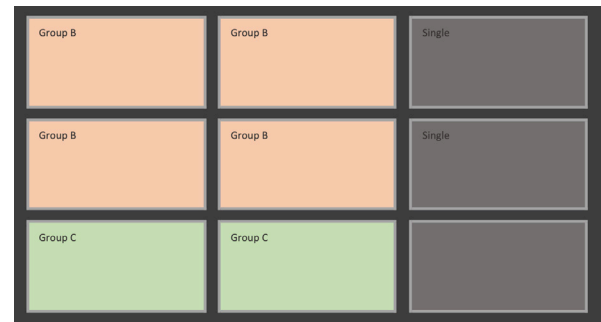
Each video wall setup will include the following:-

- Video wall creation = Each Multicast system can include up to 9x separate video walls (01-09)
- Configuration = Individual configurations of screens within a video wall. An example of a configuration would be all screens assigned as a single video wall, all screens configured as individual displays, multiple video walls configured within a larger video wall (video wall groups – see below) (01-09)
- Groups = A video wall group is the 'Grouping' of Multicast receivers within a video wall allowing simplified source selection and configuration recall of more than one Multicast Receiver at the same time (A-J)

Video Wall 1 Configuration 1



Video Wall 2 Configuration 2



Example of control commands

VW01C01APPLY (will apply video wall configuration 1 above to all Receivers)

VW01C02APPLY (will apply video wall configuration 2 above to all Receivers)

VW01C01GaFR002 (will apply video configuration 1 and switch all screens to Transmitter 002)

VW01C02GbFR006 (will apply video configuration 1 and switch group b screens [orange] to Transmitter 006)

When recalling video wall configurations the following applies:

Characters:

idx = [01...09] - Video Wall Index / Number

cidx = [01...09] - Config Index / Number

COMMAND DESCRIPTION	COMMAND	RESPONSE
Apply Config to Video Wall	VW idx C cidx APPLY	Apply config: Configuration cidx
Set Grouped Output from single Source INPUT:yyy	VW idx C cidx G gidx FR yyy	[SUCCESS] Done
Apply Single Screen Config to Video Wall HxV Location	VW idx C cidx S HhhVvv	[SUCCESS] Done
Set Single Screen HxV Output from single Source INPUT:yyy	VW idx C cidx S HhhVvv FR yyy	[SUCCESS] Done
ALL video wall status	VWSTATUS	(See status example at end of document)
Single Video Wall status	VWidxSTATUS	(See status example at end of document)

For full Video wall API commands including VW setup please see 'HELP COMMANDS' on page 17 of this manual.

Exporting Video Preview Images

The Blustream ACM shows previews of the Transmitter and Receiver signals being distributed allowing you to view what source is selected and that the sources are active. The preview feature takes an image every several seconds. The image can be exported via the ACM200 Control port which gives the ability to show video status on third party control products.

The image export feature requires the 3rd party control system to poll the blustream 'mxsta_Ver1.09.json' file (for a sample of this please contact Blustream technical support). the control system will poll this information using the following link (the below link is based on default control port IP address of 192.168.0.225):

<http://192.168.0.225/cgi-bin/getjson.cgi?json=mxsta>

The json file states which Transmitter and Receiver devices have a signal and their IP address. From this information we can then generate a poll to get the TX/RX image. The image return file is 'cap.bmp'

For example to get the source preview from a transmitter device:

```
"in": [{
  "id": 3,
  "name": "Transmitter 003",
  "ol": 1,
  "ver": "A1.4.9",
  "ip": "169.254.3.3",      //this transmitter IP
  "gw": "169.254.3.1",
  "sm": "255.255.0.0",
  "mac": "00:19:FA:00:59:4C",
  "em": 0,
  "ei": 15,
  "aud": 1,
  "sig": 1,              // 1: means have signal, 0:means no signal
  "conn": "HDMI:1",
  "discec": 0,
  "led": 3,
  "sgen": 0,
  "sgbr": 9,
  "sgbs": 3,
  "sgpa": 0,
  "sgsb": 0
}],
```

The polling request is: <http://192.168.0.225/cgi-bin/capture.cgi?hostip=169.254.3.3&capwidth=240?time=1547084198222>

“time=” is a random value because the browser will return the catch file if the link is the same.

Please note: recalling of the video preview is demanding on the Multicast hardware and may effect system performance. It is recommended that polling is completed every 5 seconds and that each TX/RX device is not polled at the same time.

General ACM200 Commands

COMMAND DESCRIPTION	COMMAND	RESPONSE
Print all available commands of ACM200	HELP	(See HELP summary at end)
Turn IR control port On or Off	IRON/OFF	Set IR ON/OFF
Turn On Serial Guest Mode to Receiver (output) (NOTE: This only puts the RX into Serial Guest mode but doesn't open the connection. Please use command below) br=0: 300 br=1: 600 br=2:1200 br=3: 2400 br=4: 4800 br=5: 9600 br=6: 19200 br=7: 38400 br=8: 57600 br=9: 115200 bit= Data Bits + Parity + Stop Bits Example: 8n1 Data Bits=[5...8], Parity=[n o e], Stop Bits=[1..2]	OUTxxxSGON/OFF[br][bit]	Set serial guest mode config done
Serial Guest Mode to Transmitter (input) (details as above)	INxxxSGON/OFF[br][bit]	Set serial guest mode config done
Start Serial Guest Mode To Output ooo	OUT ooo GUEST	(no feedback when in guest mode)
Start Serial Guest Mode To Input ooo	IN ooo GUEST	(no feedback when in guest mode)
Close Serial Guest Mode	CLOSEACMGUEST	[Success] Exit guest
Set IO ports for use as input or output port gg=0: select all ports gg=01...04: select single IO port	GPIOggDIRIN/OUT	Set GPIO gg as input/output port
Set IO port to low(0) or high(1) level	GPIOggSET0/1	
Get IO port real input level	GPIOggGET	Get GPIO gg real input level 0/1
IO port status	GPIOggSTATUS	(See status example at end of document)
System status summary	STATUS	(See status example at end of document)
When command fails		unknwn param. Type "HELP" for more reference Output xxx does not exist (RX has not been configured) Input yyy does not exist (TX has not been configured) Output xxx is offline Input yyy is offline Param range error (outside of given settings)

Status feedback samples

Command: STATUS

=====

IP Control Box ACM200 Status Info

FW Version: 1.14

Power IR Baud
On On 57600

In EDID IP NET/Sig
001 DF009 169.254.003.001 On /On
002 DF016 169.254.003.002 On /On

Out FromIn IP NET/HDMI Res Mode
001 001 169.254.006.001 On /Off 00 VW02
002 002 169.254.006.002 On /Off 00 VW02

LAN DHCP IP Gateway SubnetMask
01_POE Off 169.254.002.225 169.254.002.001 255.255.000.000
02_CTRL Off 010.000.000.225 010.000.000.001 255.255.000.000

Telnet LAN01 MAC LAN02 MAC
0023 34:D0:B8:20:4E:19 34:D0:B8:20:4E:1A

=====

Command: OUT 001 STATUS

=====

IP Control Box ACM200 Output Info

FW Version: 1.14

Out Net HPD Ver Mode Res Rotate Name
001 On Off A7.3.0 VW 00 0 Receiver 001

Fast Fr Vid/Aud/IR_/Ser/USB/CEC HDR MCas
On 001 001/004/000/000/002/000 On On

CEC DBG Stretch IR BTN LED SGen/Br/Bit
On On Off On On 3 Off /9/8n1

IM MAC
Static 00:19:FA:00:59:3F

IP GW SM
169.254.006.001 169.254.006.001 255.255.000.000

=====

Status feedback samples

Command: IN 001 STATUS

IP Control Box ACM200 Input Info

FW Version: 1.14

In	Net	Sig	Ver	EDID	Aud	MCast	Name
001	On	On	A7.3.0	DF015	HDMI	On	Transmitter 001

CEC	LED	SGen/Br/Bit
On	3	Off /9/8n1

IM	MAC
Static	00:19:FA:00:58:23

IP	GW	SM
169.254.003.001	169.254.003.001	255.255.000.000

ACM200> VW STATUS (will show ALL VW status)

IP Control Box ACM200 Video Wall Info

FW Version: 1.14

VW	Col	Row	CfgSel	Name
02	02	02	02	Video Wall 2

OutID
001 002 003 004

CFG	Name
01	Configuration 1

Group	FromIn	Screen
A	004	H01V01 H02V01 H01V02 H02V02

02	Configuration 2
----	-----------------

Group	FromIn	Screen
A	002	H02V01 H02V02
B	001	H01V01 H01V02

Status feedback samples

Command: VW 2 STATUS

=====

IP Control Box ACM200 Video Wall Info

FW Version: 1.14

VW	Col	Row	CfgSel	Name
02	02	02	02	Video Wall 2

OutID
001 002 003 004

CFG	Name
01	Configuration 1

Group	FromIn	Screen
A	004	H01V01 H02V01 H01V02 H02V02

02 Configuration 2

Group	FromIn	Screen
A	002	H02V01 H02V02
B	001	H01V01 H01V02

=====

ACM200> gpio00status

=====

IP Control Box ACM200 GPIO Info

FW Version: 1.14

GPIO	DIR	Set	Get
01	In	-	1
02	In	-	1
03	In	-	1
04	In	-	1

=====

Help Commands

```
=====
ACM200 Advanced Control Module Help
FW Version: 1.24
```

Note: Parameters In Brackets [] Are Optional

```
===== System Information Commands
```

? : Print Help Information

HELP : Print Help Information

STATUS : Print System Status And Port Status

```
===== System Control Commands
```

IR ON/OFF : Set ACM200 IR Control On Or Off

RSB x : Set RS232 Baud Rate to X bps

x=[0:115200 1:57600, 2:38400, 3:19200, 4:9600]

RESET : Reset ACM200 System To Default Settings, Excluding Network Settings

RESET NB : Reset ACM200 Network To Default Settings

RESET ALL : Reset ACM200 System And Network To Default Settings

(Type "Yes" To Confirm Reset, "No" To Discard)

```
===== Input And Output Port Control Commands
```

OUT ooo ID id : Set Output ooo To ID id, If New ID Exists Than Swap Them,

Note: DEVICE MUST BE ONLINE

OUT ooo FR yyy : Set Output ooo From Input yyy

OUT ooo VFR yyy : Fix Video Output ooo From Input yyy

OUT ooo AFR yyy : Fix Audio Output ooo From Input yyy

OUT ooo RFR yyy : Fix IR Output ooo From Input yyy

OUT ooo SFR yyy : Fix RS232 Output ooo From Input yyy

OUT ooo UFR yyy : Fix USB Output ooo From Input yyy

OUT ooo CFR yyy : Fix CEC Output ooo From Input yyy

OUT ooo FAST ON/OFF : Set Output ooo Fast Switching On Or Off

OUT ooo HDR ON/OFF : Set Output ooo HDR On Or Off

OUT ooo CEC ON/OFF : Set Output ooo CEC On Or Off

OUT ooo OSD ON [time] : Set Output ooo Show ID OSD On Display for time Seconds

OUT ooo OSD OFF : Set Output ooo Hide ID OSD

OUT ooo FLS ON [time] : Set Output ooo Flash Power LED for time Seconds

OUT ooo FLS OFF : Set Output ooo Disable Flash Power LED

OUT ooo DEL : Delete Output ooo From Current Project Config

OUT ooo RES rr : Set Output ooo Resolution To rr

OUT ooo ROTATE tt : Set Output ooo Rotation To tt

OUT ooo STRETCH ON/OFF : Set Output ooo Stretch On Or Off

OUT ooo NAME name : Set Output ooo Device Name To name

OUT ooo MODE MX/VW : Set Output ooo To Matrix Or Video Wall Mode

OUT ooo DBG ON/OFF : Set Output ooo Debug Mode On Or Off

OUT ooo BTN ON/OFF : Set Output ooo Front Panel Button Enable On Or Off

OUT ooo IR ON/OFF : Set Output ooo Front Panel IR Enable On Or Off

OUT ooo LED ee : Set Output ooo Front Panel LED Auto Off After ee*10 Seconds

OUT ooo SG [ON/OFF] [BR br] [BIT bit] : Set Output ooo Serial Guest Mode Config

OUT ooo GUEST: Start Serial Guest Mode To Output ooo

Note: To Close Guest Mode Use Command CLOSEACMGUEST

OUT [ooo] STATUS : Show Output ooo Detailed Status

OUT ooo RB : Reboot Output ooo And Apply New Config

Help Commands

OUT ooo RESET : Reset Output ooo To Factory Default Setting
ooo=000: Select All Output Ports
ooo=[001...n]: Select One Output Port
id=[001...767]: ID value
yyy=[001...n]: Select One Input Port
yyy=AUTO: V/A/R/S/U/C/P follow "OUT ooo FR yyy" command
rr=[0:Bypass 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]
tt=[0:Bypass 1:90 2:180 3:270]
ee=[0:Always On 1...9:10~90Seconds]
br=[0:300 1:600 2:1200 3:2400 4:4800 5:9600]
[6:19200 7:38400 8:57600 9:115200]
bit=Data Bits + Parity + Stop Bits, example: 8n1
Data Bits=[5...8], Parity=[n o e], Stop Bits=[1..2]
name: Max 16 Characters

IN iii ID id : Set Input iii To ID id, If New ID Exists Than Swap Them,
Note: DEVICE MUST BE ONLINE

IN iii DEL : Delete Input iii From Current Project Config

IN iii RB : Reboot Input iii And Apply New Config

IN iii RESET : Reset Input iii To Factory Default Setting

IN iii AUD AUTO : Set Input iii Audio To Auto

IN iii AUD HDMI : Set Input iii Audio To HDMI

IN iii AUD ANA : Set Input iii Audio To Embedded Analogue L/R

IN iii NAME name : Set Input iii Device Name To name

IN iii CEC ON/OFF : Set Input iii CEC On Or Off

IN iii FLS ON [time] : Set Input iii Flash Power LED time Seconds

IN iii FLS OFF : Set Input iii Disable Flash Power LED

IN iii LED ee : Set Input iii Front Panel LED Auto Off After ee*10 Seconds

IN iii SG [ON/OFF] [BR br] [BIT bit]: Set Input iii Serial Guest Mode Config

IN iii GUEST: Start Serial Guest Mode To Input iii
Note: To Close Guest Mode Use Command CLOSEACMGUEST

IN [iii] STATUS : Show Input iii Detailed Status
iii=000: Select All Input Ports
iii=[001...n]: Select One Input Port
id=[001...254]: ID value
name: Max 16 Characters

EDID iii CP ooo : Set Input iii EDID Copy From Output ooo

Help Commands

EDID iii DF zz : Set Input iii EDID To zz

zz=00: HDMI 1080p@60Hz, Audio 2CH PCM
 zz=01: HDMI 1080p@60Hz, Audio 5.1CH DTS/DOLBY
 zz=02: HDMI 1080p@60Hz, Audio 7.1CH DTS/DOLBY/HD
 zz=03: HDMI 1080i@60Hz, Audio 2CH PCM
 zz=04: HDMI 1080i@60Hz, Audio 5.1CH DTS/DOLBY
 zz=05: HDMI 1080i@60Hz, Audio 7.1CH DTS/DOLBY/HD
 zz=06: HDMI 1080p@60Hz/3D, Audio 2CH PCM
 zz=07: HDMI 1080p@60Hz/3D, Audio 5.1CH DTS/DOLBY
 zz=08: HDMI 1080p@60Hz/3D, Audio 7.1CH DTS/DOLBY/HD
 zz=09: HDMI 4K@30Hz 4:4:4, Audio 2CH PCM
 zz=10: HDMI 4K@30Hz 4:4:4, Audio 5.1CH DTS/DOLBY
 zz=11: HDMI 4K@30Hz 4:4:4, Audio 7.1CH DTS/DOLBY/HD
 zz=12: DVI 1280x1024@60Hz, Audio None
 zz=13: DVI 1920x1080@60Hz, Audio None
 zz=14: DVI 1920x1200@60Hz, Audio None
 zz=15: HDMI 4K@30Hz 4:4:4, Audio 7.1CH(Default)
 zz=16: HDMI 4K@60Hz 4:2:0, Audio 2CH PCM
 zz=17: HDMI 4K@60Hz 4:2:0, Audio 5.1CH DTS/DOLBY
 zz=18: HDMI 4K@60Hz 4:2:0, Audio 7.1CH DTS/DOLBY/HD

CLOSEACMGUEST : Close Input Or Output Guest Mode

===== Video Wall Control Commands

VW idx CREATE ccXrr [name] : Create Video Wall idx Of size Column cc X Row rr

VW idx NAME name : Set Video Wall idx Name To name

VW idx DEL: Delete Video Wall idx

VW idx OUT ooo HhhVvv : Video Wall idx Assign Receiver ooo To Position Horizontal hh
 And Vertical vv

VW idx C cidx CREATE [name] : Create Video Wall idx Config cidx

VW idx C cidx NAME name : Set Video Wall idx Config cidx Name To name

VW idx C cidx APPLY : Apply Video Wall idx Config cidx

VW idx C cidx DEL : Delete Video Wall idx Config cidx

VW idx C cidx G gidx HhhVvv : Set Video Wall idx Config cidx Position hh,vv To Group gidx

VW idx C cidx G gidx FR iii : Set Video Wall idx Config cidx Group gidx From Input iii

VW idx C cidx S HhhVvv : Set Video Wall idx Config cidx Position hh,vv To Single Mode

VW idx C cidx S HhhVvv FR iii : Set Video Wall idx Config cidx Group gidx From Input iii

VW idx HhhVvv OWaa VWww : Set Video Wall idx Position hh,vv Outer Width aa And View Width ww

VW idx HhhVvv OHaa VHww : Set Video Wall idx Position hh,vv Outer Height aa And View Height ww

aa=[100...1000]: Screen Outer Width/Height

ww=[100...1000]: Screen View Width/Height

Help Commands

VW [idx] STATUS : Print Video Wall Status

idx=[01...09]: Select Video Wall Index

cidx=[01...09]: Select Config Index

gidx=[A...J]: Select Group Index

cc=[01...09]: Number Of Columns In Video Wall

rr=[01...09]: Number Of Rows In Video Wall

hh=[01...09]: Horizontal Position In Video Wall

vv=[01...09]: Vertical Position In Video Wall

ooo=000: Remove Receiver From hhvv Position

ooo=[001...n]: Select One Output Port

iii=[001...n]: Select One Input Port

name: Max 16 Characters

aa=[100...1000]: Screen Outer Width/Height

ww=[100...1000]: Screen View Width/Height

===== Project Control Commands

SCAN : Scan Network For All Input And Output Devices

SCAN STATUS : Print Scan Results

SCAN RESET : Reset Scan Results

SCAN OSD ON/OFF : Show Scan Index On All Receiver Displays

ASSIGN RESET : Reset All Input/Output/Videowall/Scan Configurations

ASSIGN DF IN iii : Assign Device At Default IP To Input iii

ASSIGN DF IN iii REPLACE : Assign Device At Default IP To Replace Input iii

ASSIGN INDEX ddd IN iii : Assign New Device At Index ddd To Input iii

ASSIGN INDEX ddd IN iii REPLACE : Assign New Device At Index ddd To Replace Input iii

ASSIGN DF OUT ooo : Assign Device At Default IP To Output ooo

ASSIGN DF OUT ooo REPLACE : Assign Device At Default IP To Replace Output ooo

ASSIGN INDEX ddd OUT ooo : Assign New Device At Index ddd To Output ooo

ASSIGN INDEX ddd OUT ooo REPLACE : Assign New Device At Index ddd To Replace Output ooo

ASSIGN AUTO : Auto Assign All New Scanned Devices To Current Project

ddd=[01...n]: Scan List Index value

iii=[001...n]: Select One Input Port

ooo=[001...n]: Select One Output Port

===== General Purpose Input/Output Port Commands

GPIO gg DIR IN/OUT : Set IO Port gg As Input Or Output Port

GPIO gg SET 0/1 : Set IO Output gg To Low(0)/High(1) Level

GPIO gg GET : Get IO Port gg Real Input Level

GPIO [gg] STATUS : Print IO Port gg Status

gg=00: Select All IO Ports

gg=[01...04]: Select One IO Port

===== Network Control Commands

NET LAN2 DHCP ON/OFF : Set LAN2 (Control LAN) DHCP To On Or Off

NET aaaa IP xxx.xxx.xxx.xxx : Set IP Address To xxx.xxx.xxx.xxx

NET aaaa GW xxx.xxx.xxx.xxx : Set Gateway Address To xxx.xxx.xxx.xxx

NET aaaa SM xxx.xxx.xxx.xxx : Set Subnet Mask Address To xxx.xxx.xxx.xxx

aaaa=LAN1: Set Video LAN(POE) Config

aaaa=LAN2: Set Control LAN(Web GUI) Config

NET RB : Reboot Network And Apply New Config

Call This Command After LAN Config Is Changed To Reboot Network

NET TN xxxx : Set Telnet Port To xxxx



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