

# Lumens LC200 RS-232/RS-485/TCP-IP Command List

Revision: 1.7

2022/07/01

## History

Ver.	Issue Date	Description	Apply FW
1.0	2019/07/02	LC200 1 <sup>st</sup> release	NA
1.1	2020/02/20	<ul style="list-style-type: none"> <li>● Fix : get stream type : type "off" was return "sync"</li> </ul>	4.3.0.48
1.2	2020/06/30	<ul style="list-style-type: none"> <li>● New command: <ul style="list-style-type: none"> <li>○ Set Camera Save Preset</li> <li>○ Set / Get Switch Channel Source</li> <li>○ Set Marco (scene and camera preset )</li> <li>○ Get Video Source ID</li> </ul> </li> <li>● Modify: <ul style="list-style-type: none"> <li>○ Description of Set Stream ( command is same as before )</li> <li>○ Description of Macro ( It was wrong with Marco )</li> <li>○ Set Camera Move: <ul style="list-style-type: none"> <li>■ Parameter of speed revert to 0x01~0x18</li> </ul> </li> <li>○ Set Camera Zoom: <ul style="list-style-type: none"> <li>■ Parameter of speed revert to 0x01~0x07</li> </ul> </li> <li>○ Description of Set/Get Switch Channel Source command name modified to Set Video Source ID and Get Video Source Total Number</li> </ul> </li> </ul>	4.4.0.17
1.3	2020/07/16	<ul style="list-style-type: none"> <li>● New command <ul style="list-style-type: none"> <li>○ Set Standby / Wake up</li> </ul> </li> <li>● Remove command <ul style="list-style-type: none"> <li>○ Remove the Power on/off command. for User, power on/off replace by standby / wakeup command</li> </ul> </li> <li>● Modify: <ul style="list-style-type: none"> <li>○ TCP connection procedure in 2.1 Description</li> </ul> </li> </ul>	4.4.0.19
1.4	2020/09/28	<ul style="list-style-type: none"> <li>● New <ul style="list-style-type: none"> <li>○ Get State <ul style="list-style-type: none"> <li>■ support Standby state</li> </ul> </li> </ul> </li> <li>● Modify: <ul style="list-style-type: none"> <li>○ Description of Set Standby / Wake up Modify:</li> <li>○ Set Camera Move: <ul style="list-style-type: none"> <li>■ Parameter of speed revert to 0x01~0x18</li> </ul> </li> </ul> </li> </ul>	v4.5.0.13
1.5	2021/01/14	<ul style="list-style-type: none"> <li>● New <ul style="list-style-type: none"> <li>○ Set Backup to USB</li> </ul> </li> </ul>	V4.8.0.9

		<ul style="list-style-type: none"> <li>○ Ntfy Media State add standby and reboot state</li> <li>● Fix</li> <li>3.3.1 Ntfy Media State add Stopping state</li> <li>● Modify</li> <li>○ Set Audio Volume Output <ul style="list-style-type: none"> <li>■ Add Line &amp; HDMI Out in parameter 2</li> <li>■ Add PGM in parameter 2</li> </ul> </li> <li>○ Set Audio Mute Output <ul style="list-style-type: none"> <li>Add Line &amp; HDMI Out in parameter 2</li> <li>Add PGM in parameter 2</li> </ul> </li> <li>○ Set Audio Type Input <ul style="list-style-type: none"> <li>Add IP Audio in parameter 3</li> </ul> </li> <li>○ Set Audio Type Output <ul style="list-style-type: none"> <li>■ Change Line &amp; HDMI Out in parameter 2</li> </ul> </li> <li>○ Get Audio Volume Output <ul style="list-style-type: none"> <li>■ Add Line &amp; HDMI Out in parameter 2</li> <li>■ Add PGM in parameter 2</li> </ul> </li> <li>○ Get Audio Mute Output <ul style="list-style-type: none"> <li>■ Add Line &amp; HDMI Out in parameter 2</li> <li>■ Add PGM in parameter 2</li> </ul> </li> <li>○ Get Audio Type Input <ul style="list-style-type: none"> <li>■ Add IP Audio in parameter 3</li> </ul> </li> <li>○ Get Audio Type Output <ul style="list-style-type: none"> <li>■ Change Line &amp; HDMI Out in parameter</li> </ul> </li> <li>○ Set Overlay <ul style="list-style-type: none"> <li>■ parameter 1 : 0x00 ~ 0x1e</li> </ul> </li> <li>○ Set Theme <ul style="list-style-type: none"> <li>■ title name : Set Scene</li> <li>■ parameter 1 : 0x00 ~ 0x1e</li> </ul> </li> <li>○ Set Backup to USB <ul style="list-style-type: none"> <li>■ add parameter 1 : 0x30 ~ 0x31</li> </ul> </li> </ul>	
1.6	2021/06/28	<ul style="list-style-type: none"> <li>● New</li> <li>○ Set Intermission &amp; Live</li> <li>○ Set Camera Tracking On/Off</li> </ul>	V4.8.0.22
1.7	2022/07/01	<ul style="list-style-type: none"> <li>● Fix</li> <li>○ Set Backup to USB</li> <li>○ Set Intermission &amp; Live <ul style="list-style-type: none"> <li>■ Fix parameter ASCII value</li> </ul> </li> </ul>	NA

**\*Notice:**

1. The RS-232/RS-485/TCP-IP command list is for LC200.
2. The yellow highlight means the latest update.
3. The blue highlight means the deleted item.

# 1 Interface

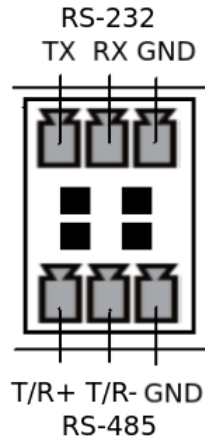
## 1.1 Hardware

### ■ RS-232 / RS-485

Connect the RS-232 cable to the RS-232 upper port of the media station.

Connect the RS-485 cable to the RS-485 lower port of the media station.

The pin definition of the RS-232 / RS-485 port :



### ■ GND : Ground

RX : Receive Data

TX : Transmit Data

T/R+ : D+

T/R- : D-

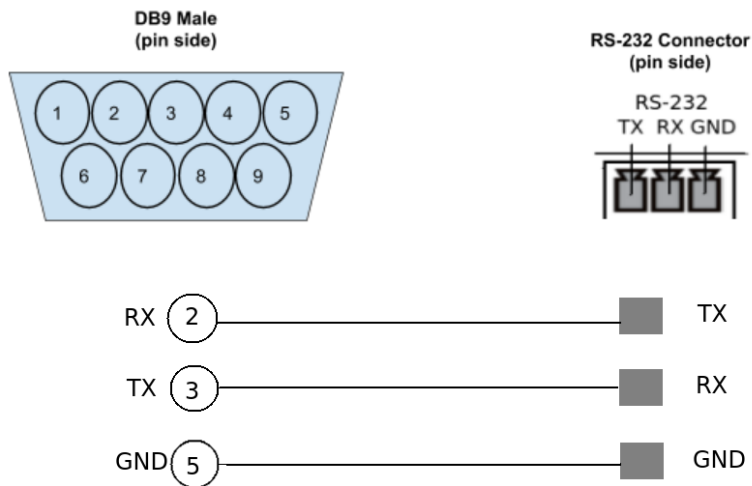
### ■ TCP

Connect the CAT-5 (or greater) cable to WAN (or LAN) RJ-45 port of Media Station.

## 1.2 Connection

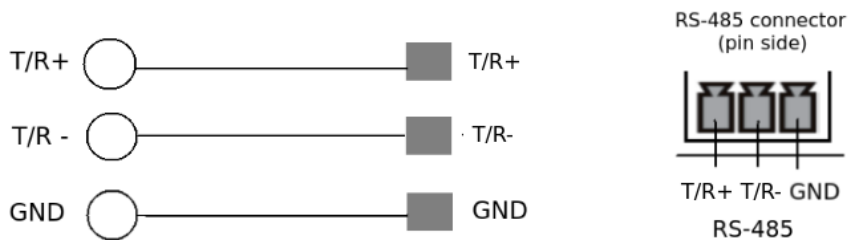
### ■ RS-232

Connect the GND, RX, TX pins of the RS-232 port with external control equipment. The media station will be controlled by RS-232 protocol. For example, use the standard 9 pin DB9 serial cable as follows :



### ■ RS-485

Connect the GND, T/R+, T/R- pins of the RS-485 port with external control equipment. The media station will be controlled by RS-485 protocol. For example:



### ■ TCP

Connect the Media Station's WAN port (or LAN port) and an external control equipment's ethernet port with a CAT-5 (or greater) cable.

## 1.3 Configuration

### ■ RS-232 / RS-485

Baud rate : 9600

Data length : 8

Parity : none

Stop bit : 1

Flow control : none

### ■ TCP

IP address : Media Station's WAN IP address

Port : 5080

# 2 Control Protocol

## 2.1 Description

### ■ RS-232 / RS-485

The media station can be controlled from an external controller through a serial RS-232 / RS-485 connection. Control protocol is used for the communication between the media station and controller.

### ■ TCP

When an external controller connects Media Station through networks connection, the Media Station can be controlled by command described in Control Protocol. If connection is not closed by client, connection will keep and get event notification until new connection established.

## 2.2 Format

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
Byte count	1	1	1	1	1	2	n	1

### Header

#### **0x55**

Protocol header.

### Extended header

#### **0xf0**

no checksum in format

### Length

Length is a byte counter from **address to Parameters** field.

Example:

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
Hex	0x55	0xf0	0x05	0x01	0x73	0x4c 0x4f	0x01	0x0d

Counter = address 1 byte+action 1 byte+command 2 bytes+parameter 1 byte

Total length = 5 bytes

### Address

Identification of device. Range is 0x01 ~ 0xff.(0 is reserved)

\*Address is reserved for future use. Don't care

### Action

#### **Get: 0x67**

"Query" operation for the media station.

#### **Set: 0x73**

"Set" operation for the media station.

#### **ACK: 0x06**

When the media station receives the protocol data correctly and executes the correspond command successfully. It replaces the action field with ACK in the received protocol format and return to controller.

#### **NAK: 0x15**

When the media station receives the protocol data correctly but there is something wrong while the media station executes the correspond command. It replaces the action field with NAK in the received protocol format and return to controller.

In addition, when the media station receives the invalid protocol data (ie. the protocol data that the media station can't understand), It returns NAK code and End code only.

### **Command**

Two bytes. Please refer to 2.3 Command Set and Parameters for more information.

### **Parameters**

Please refer to 2.3 Command Set and Parameters for more information.

Example:

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
Hex	0x55	0xf0	0x05	0x01	0x73	0x4c 0x4f	0x01	0x0d

### **End**

**0x0d**

Protocol end code

## 2.3 Command Set and Parameters

### 2.3.1 Set Power

	ASCII	Hex	Description
Command code	PW	0x50 0x57	
Parameter 1	0 1	0x30 0x31	Power off Power on(NOT supported. Hardware limitation)

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x05	0x01	0x73	0x50 0x57	0x30	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.2 Set Record Start

	ASCII	Hex	Description
Command code	RC	0x52 0x43	Start record process

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x04	0x01	0x73	0x52 0x43	None	0x0D
ACK					0x06			

FAILED					0x15			
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### 2.3.3 Set Stop Record

	ASCII	Hex	Description
Command code	SP	0x53 0x50	Stop record process

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x04	0x01	0x73	0x53 0x50	None	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.4 Set Snapshot

	ASCII	Hex	Description
Command code	SS	0x53 0x53	Insert snapshot

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x04	0x01	0x73	0x53 0x53	None	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.5 Set Layout

	ASCII	Hex	Description
Command code	LO	0x4C 0x4F	Set layout ID
Parameter 1		0x01~0x12	Layout ID

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x05	0x01	0x73	0x4C 0x4F	0x01	0x0D
ACK					0x06			
FAILED					0x15			



### 2.3.6 Set Background

	ASCII	Hex	Description
Command code	BG	0x42 0x47	Set background ID
Parameter 1		0x00~0x09	Background ID 0x00: Background off

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x05	0x01	0x73	0x42 0x47	0x01	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.7 Set Overlay

	ASCII	Hex	Description
Command code	OL	0x4F 0x4C	Set overlay ID
Parameter 1		0x00~0x1e	Overlay ID 0x00: Overlay off

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x05	0x01	0x73	0x4F 0x4C	0x01	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.8 Set Scene

	ASCII	Hex	Description
Command code	TE	0x54 0x45	Set scene ID
Parameter 1		0x01~0x1e	Scene ID

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x05	0x01	0x73	0x54 0x45	0x01	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.9 Set Audio Volume Input

	ASCII	Hex	Description
Command code	AV	0x41 0x56	Set audio volume
Parameter 1	I	0x49	Set input volume
Parameter 2	1 2 3 4	0x31 0x32 0x33 0x34	Audio channel 1 Audio channel 2 Audio channel 3 Audio channel 4
Parameter 3		0x00~0x7D	Audio volume(0~125)

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x07	0x01	0x73	0x41 0x56	0x49 0x31 0x00	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.10 Set Audio Volume Output

	ASCII	Hex	Description
Command code	AV	0x41 0x56	Set audio volume
Parameter 1	O	0x4F	Set output volume
Parameter 2	1 2	0x31 0x32	Line & HDMI output PGM output
Parameter 3		0x00~0x7D	Audio volume(0~125))

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x07	0x01	0x73	0x41 0x56	0x4F 0x31 0x00	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.11 Set Audio Mute Input

	ASCII	Hex	Description
Command code	AM	0x41 0x4D	Set audio mute/unmute
Parameter 1	I	0x49	Set input volume
Parameter 2	1 2 3 4	0x31 0x32 0x33 0x34	Audio channel 1 Audio channel 2 Audio channel 3 Audio channel 4
Parameter 3	0 1	0x30 0x31	Audio unmute Audio mute

**Example**

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x07	0x01	0x73	0x41 0x4D	0x49 0x31 0x30	0x0D
ACK					0x06			
FAILED					0x15			

## 2.3.12 Set Audio Mute Output

	ASCII	Hex	Description
Command code	AM	0x41 0x4D	Set audio mute/unmute
Parameter 1	O	0x4F	Set output volume
Parameter 2	1	0x31	Line & HDMI output
	2	0x32	PGM output
Parameter 3	0	0x30	Audio unmute
	1	0x31	Audio mute

**Example**

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x07	0x01	0x73	0x41 0x4D	0x4F 0x31 0x30	0x0D
ACK					0x06			
FAILED					0x15			

## 2.3.13 Set Audio Type Input

	ASCII	Hex	Description
Command code	AT	0x41 0x54	Set audio type
Parameter 1	I	0x49	Set input volume
Parameter 2	1	0x31	Audio channel 1
	2	0x32	Audio channel 2
	3	0x33	Audio channel 3
	4	0x34	Audio channel 4
Parameter 3	1	0x31	Line in
	2	0x32	Mic in
	3	0x33	HDMI in
	6	0x36	IP Audio

**Example**

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x07	0x01	0x73	0x41 0x54	0x49 0x31 0x31	0x0D
ACK					0x06			

FAILED					0x15			
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### 2.3.14 Set Audio Type Output

	ASCII	Hex	Description
Command code	AT	0x41 0x54	Set audio type
Parameter 1	O	0x4F	Set output volume
Parameter 2	1	0x31	Line & HDMI output
Parameter 3	1 2 3	0x31 0x32 0x33	ALL Line out + PGM MultiView

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x07	0x01	0x73	0x41 0x54	0x4F 0x31 0x31	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.15 Set Stream

	ASCII	Hex	Description
Command code	SC	0x53 0x43	Start/Stop stream
Parameter 1	1 2 3	0x31 0x32 0x33	Stream 1 Stream 2 Stream 3
Parameter 2		0x01 0x02	Stop Stream Start Stream

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x06	0x01	0x73	0x53 0x43	0x31 0x01	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.16 Set Camera Preset

	ASCII	Hex	Description
Command code	CP	0x43 0x50	Set camera of channel goto preset
Parameter 1	1 2 3 4	0x31 0x32 0x33 0x34	Channel 1 Channel 2 Channel 3 Channel 4
Parameter 2		0x01~0x09	Preset ID

**Example**

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x06	0x01	0x73	0x43 0x50	0x31 0x01	0x0D
ACK					0x06			
FAILED					0x15			

## 2.3.17 Set Camera Save Preset

	ASCII	Hex	Description
Command code	CS	0x43 0x53	Save preset of camera of channel by id
Parameter 1	1 2 3 4	0x31 0x32 0x33 0x34	Channel 1 Channel 2 Channel 3 Channel 4
Parameter 2		0x01~0x09	Preset ID

**Example**

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x06	0x01	0x73	0x43 0x53	0x31 0x01	0x0D
ACK					0x06			
FAILED					0x15			

## 2.3.18 Set Camera Move

	ASCII	Hex	Description
Command code	CM	0x43 0x4D	Set camera move
Parameter 1	S U D L R	0x53 0x55 0x44 0x4C 0x52	Camera stop move Camera move up Camera move down Camera move left Camera move right
Parameter 2	1 2 3 4	0x31 0x32 0x33 0x34	Channel 1 Channel 2 Channel 3 Channel 4
Parameter 3		0x01~0x18	The percentage of speed , this parameter in stop command is dispensable

**Example**

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x07	0x01	0x73	0x43 0x4D	0x55 0x31	0x0D

ACK					0x06		0x01	
FAILED					0x15			

### 2.3.19 Set Camera Zoom

	ASCII	Hex	Description
Command code	CZ	0x43 0x5A	Set camera zoom
Parameter 1	S I O	0x53 0x49 0x4F	Camera stop zoom Camera zoom in Camera zoom out
Parameter 2	1 2 3 4	0x31 0x32 0x33 0x34	Channel 1 Channel 2 Channel 3 Channel 4
Parameter 3		0x01~0x07	The percentage of speed , this parameter in stop command is dispensable

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET					0x73			
ACK	0x55	0xF0	0x07	0x01	0x06	0x43 0x5A	0x49 0x31 0x01	0x0D
FAILED					0x15			

### 2.3.20 Set Camera Tracking On/Off

	ASCII	Hex	Description
Command code	CR	0x43 0x52	Set camera of channel tracking on or off
Parameter 1	1 2 3 4	0x31 0x32 0x33 0x34	Channel 1 Channel 2 Channel 3 Channel 4
Parameter 2	0 1	0x30 0x31	ON OFF

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET					0x73			
ACK	0x55	0xF0	0x06	0x01	0x06	0x43 0x52	0x31 0x30	0x0D
FAILED					0x15			

### 2.3.21 Set Video Source ID

	ASCII	Hex	Description
Command code	CH	0x43 0x48	Set channel source to specific channel
Parameter 1	1 2 3 4	0x31 0x32 0x33 0x34	Channel 1 Channel 2 Channel 3 Channel 4
Parameter 2		0x01~0xFF	ID of channel source If parameter 2 greater than the ID which is maximum of stream source, will return success but no action on GUI

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x06	0x01	0x73	0x43 0x48	0x31 0x01	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.22 Set Macro

	ASCII	Hex	Description
Command code	MC	0x4D 0x43	scene and camera preset control
Parameter 1	1 2 3	0x31 0x32 0x33	Macro 1 Macro 2 Macro 3

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x05	0x01	0x73	0x4D 0x43	0x31	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.23 Set Standby / Wake up

	ASCII	Hex	Description
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Command code	SR	0x53 0x52	Set power mode to Standby or Wake up When get in Standby mode, only accept command including "Get state" and "Set Standby/Wakeup"
Parameter 1	1	0x31	Set power mode to Standby
	2	0x32	Wake up, active only power mode was Standby

### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x05	0x01	0x73	0x53 0x52	0x31	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.24 Set Backup to USB

	ASCII	Hex	Description
Command code	BU	0x42 0x55	Copy latest record folder to USB
Parameter 1	0 1	0x30 0x31	Start backup to USB Stop backup to USB

### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x05	0x01	0x73	0x42 0x55	0x31	0x0D
ACK					0x06			
FAILED					0x15			

### 2.3.25 Set Intermission & Live

	ASCII	Hex	Description
Command code	IL	0x49 0x4c	Set theme as intermission or live mode
Parameter 1	0 1	0x30 0x31	Live mode Intermission mode

### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
SET	0x55	0xF0	0x05	0x01	0x73	0x49 0x4c	0x31	0x0D



ACK					0x06			
FAILED					0x15			

## 2.4 Command Get and Parameters

### 2.4.1 Get State

	ASCII	Hex	Description
Command code	ST	0x53 0x54	Get system state
Response Parameter 1	0 1 2 3 4 5 6 7	0x30 0x31 0x32 0x33 0x34 0x35 0x36 0x37	Uninitialize Ready Stopped Recording Paused Waiting Stopping Standby

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x04	0x01	0x67	0x53 0x54	None	0x0D
ACK			0x05		0x06		0x31	
FAILED			0x04		0x15		None	

### 2.4.2 Get Layout

	ASCII	Hex	Description
Command code	LO	0x4C 0x4F	Get layout ID
Response Parameter 1		0x01~0x12	Layout ID

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x04	0x01	0x67	0x4C 0x4F	None	0x0D
ACK			0x05		0x06		0x01	
FAILED			0x04		0x15		None	

### 2.4.3 Get Background

	ASCII	Hex	Description
Command code	BG	0x42 0x47	Get background ID
Response Parameter 1		0x00~0x09	Background ID 0x00: Background off

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x04	0x01	0x67	0x42 0x47	None	0x0D
ACK			0x05		0x06		0x01	
FAILED			0x04		0x15		None	

### 2.4.4 Get Overlay

	ASCII	Hex	Description
Command code	OL	0x4F 0x4C	Get overlay ID
Response Parameter 1		0x00~0x09	Overlay ID 0x00: Overlay off

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x04	0x01	0x67	0x4F 0x4C	None	0x0D
ACK			0x05		0x06		0x01	
FAILED			0x04		0x15		None	

### 2.4.5 Get Audio Volume Input

	ASCII	Hex	Description
Command code	AV	0x41 0x56	Get audio volume
Command/Response Parameter 1	I	0x49	Set input volume
Command/Response	1	0x31	Audio channel 1

Parameter 2	2 3 4	0x32 0x33 0x34	Audio channel 2 Audio channel 3 Audio channel 4
Response Parameter 3		0x00~0x7D	Audio volume(0~125)

### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x06	0x01	0x67	0x41 0x56	0x49 0x31	0x0D
ACK			0x07		0x06		0x49 0x31 0x00	
FAILED			0x06		0x15		0x49 0x31	

## 2.4.6 Get Audio Volume Output

	ASCII	Hex	Description
Command code	AV	0x41 0x56	Get audio volume
Command/Response Parameter 1	O	0x4F	Set output volume
Command/Response Parameter 2	1 2	0x31 0x32	Line & HDMI output PGM output
Response Parameter 3		0x00~0x7D	Audio volume(0~125)

### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x06	0x01	0x67	0x41 0x56	0x4F 0x31	0x0D
ACK			0x07		0x06		0x4F 0x31 0x00	
FAILED			0x06		0x15		0x4F 0x31	

### 2.4.7 Get Audio Mute Input

	ASCII	Hex	Description
Command code	AM	0x41 0x4D	Get audio mute/unmute
Command/Response Parameter 1	I	0x49	Set input volume
Command/Response Parameter 2	1 2 3 4	0x31 0x32 0x33 0x34	Audio channel 1 Audio channel 2 Audio channel 3 Audio channel 4
Response Parameter 3	0 1	0x30 0x31	Audio unmute Audio mute

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x06	0x01	0x67	0x41 0x4D	0x49 0x31	0x0D
ACK			0x07		0x06		0x49 0x31 0x30	
FAILED			0x06		0x15		0x49 0x31	

### 2.4.8 Get Audio Mute Output

	ASCII	Hex	Description
Command code	AM	0x41 0x4D	Get audio mute/unmute
Command/Response Parameter 1	O	0x4F	Set output volume
Command/Response Parameter 2	1 2	0x31 0x32	Line & HDMI output PGM output
Response Parameter 3	0 1	0x30 0x31	Audio unmute Audio mute

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x06	0x01	0x67	0x41 0x4D	0x4F 0x31	0x0D
ACK			0x07		0x06		0x4F 0x31 0x30	
FAILED			0x06		0x15		0x4F 0x31	

### 2.4.9 Get Audio Type Input

	ASCII	Hex	Description
Command code	AT	0x41 0x54	Get audio input type
Command/Response Parameter 1	I	0x49	Set input volume
Command/Response Parameter 2	1 2 3	0x31 0x32 0x33	Audio channel 1 Audio channel 2 Audio channel 3

	4	0x34	Audio channel 4
Response Parameter 3	1	0x31	Line in
	2	0x32	Mic in
	3	0x33	HDMI in
	6	0x36	IP Audio

### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x06	0x01	0x67	0x41 0x54	0x49 0x31	0x0D
ACK			0x07		0x06		0x49 0x31 0x31	
FAILED			0x06		0x15		0x49 0x31	

## 2.4.10 Get Audio Type Output

	ASCII	Hex	Description
Command code	AT	0x41 0x54	Get audio input type
Command/Response Parameter 1	O	0x4F	Set output volume
Command/Response Parameter 2	1	0x31	Line & HDMI output
Response Parameter 3	1	0x31	ALL
	2	0x32	Line out + PGM
	3	0x33	MultiView

### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x06	0x01	0x67	0x41 0x54	0x4F 0x31	0x0D
ACK			0x07		0x06		0x4F 0x31 0x31	
FAILED			0x06		0x15		0x4F 0x31	

## 2.4.11 Get Stream

	ASCII	Hex	Description
Command code	SC	0x53 0x43	Get Stream type
Command/Response Parameter 1	1	0x31	Stream 1
	2	0x32	Stream 2
	3	0x33	Stream 3
Response Parameter 2		0x00	Sync
		0x01	Ready ( enable )
		0x02	Streaming ( enable )
		0x04	Off

### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x05	0x01	0x67	0x53 0x43	0x31	0x0D
ACK			0x06		0x06		0x31 0x01	
FAILED			0x05		0x15		0x31	

#### 2.4.12 Get Video Source Total Number

	ASCII	Hex	Description
Command code	CH	0x43 0x48	Get channel source total number
Command/Response Parameter 1	1	0x31	Channel 1
	2	0x32	Channel 2
	3	0x33	Channel 3
	4	0x34	Channel 4
Response Parameter 2		0x01~0xFF	Number of channel source could be used in specific channel

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x05	0x01	0x67	0x43 0x48	0x31	0x0D
ACK			0x06		0x06		0x31 0x01	
FAILED			0x05		0x15		0x31	

#### 2.4.13 Get Current Video Source ID

	ASCII	Hex	Description
Command code	CU	0x43 0x55	Get channel source current index
Command/Response Parameter 1	1	0x31	Channel 1
	2	0x32	Channel 2
	3	0x33	Channel 3
	4	0x34	Channel 4
Response Parameter 2		0x01~0xFF	Index of channel source

#### Example

Name	Header	Extended Header	Length	Address	Action	Command	Parameters	End
GET	0x55	0xF0	0x05	0x01	0x67	0x43 0x55	0x31	0x0D
ACK			0x06		0x06		0x31 0x01	
FAILED			0x05		0x15		0x31	

## 3 Event Notification

### 3.1 Description

The event message sent to an external controller from media station for notifying system state change such as entering recording state while recording. The system state is defined same as the “State” command in Get Action Command List. Please refer to 4.3 Event Code and Parameters for more information.

### 3.2 Format

Name	Header	Event Code	Parameters	End
Byte count	1	2	n	1

- **Header**  
**0x23 (ASCII code: #)**  
Protocol header.
- **Event Code**  
Two bytes event code. Please refer to 4.3 Event Code and Parameters for more information.
- **Parameters**  
Please refer to 4.3 Event Code and Parameters for more information.
- **End**  
**0x0d**  
End code of event.

### 3.3 Event Code and Parameters

#### 3.3.1 Ntfy Media State

	ASCII	Hex	Description
Event code	ST	0x53 0x54	System event
Event Parameter 1	0 1 2 3 4 5 6 7 8	0x30 0x31 0x32 0x33 0x34 0x35 0x36 0x37 0x38	Uninitialize Ready Stopped Recording Paused Waiting Stopping Standby Reboot, only available when state was standby

#### Example

Name	Header	Event Code	Parameters	End
NTFY	0x23	0x53 0x54	0x31	0x0D

## 4 Note

1. Commands are not accepted during media station boot-up.