USER MANUAL

HTTP API for CM70-IP series

CM70-IP • CM71-IP • CM73-IP

AVONIC

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Symbols Used in This Manual

Symbol	Meaning	Description
⚠	Danger	Not following the instructions associated with this symbol may lead to personal injury and / or serious damage to the Product.
⚡	Electrical Shock	Not following the instructions associated with this symbol may lead to life-threatening situations and / or serious damage to the Product.
⚠	Important	The information associated with this symbol requires special attention.
❗	Information	The information associated with symbol refers to a general remark or a reference to other documentation.
👆	Instruction	This symbol refers to one or more user instructions.
♻	Recycling	Specific parts of the Product can be re-used.

Contents

INTRODUCTION

Purpose of This Manual

This Manual describes the instructions and programming codes of the HTTP API functionality of the CM70 camera, which you could use to control the camera over IP.

Target Audience

This manual is developed for IT professionals who are responsible for operating the Product.

Document Structure

The Manual is subdivided into the following **Chapters**:

1. Introduction
2. Appendix C - HTTP API

APPENDIX C - HTTP API

With the HTTP API you can control the camera by using a web browser like Microsoft Edge or Google Chrome. It is possible to change multiple settings at once using this feature. This document is available as an Appendix in the CM70 series manual and as a separate document that can be downloaded on the product website.

How to use HTTP API

All codes in the HTTP API code list are clickable. Do **NOT** click **left** on these codes!

Follow instructions below:

1. **Click right** and click (left) to COPY the link.

2. Paste the link in your browser like this (Note that all the brackets are replaced by percentages. This is normal, ignore it):

http://192.168.5.126/ajaxcom?szCmd=%7B%22SysCtrl%22:%7B%22PtzCtrl%22:%7B%22nChanel%22:0,%22szPtzCmd%22:%22left_start%22,%22byValue%22:50%7D%7D%7D

3. Note that the IP Address in this link is an **example of an IP address**. Change this IP Address to the one you use for your camera. See Network > Ethernet > IP Address.

4. Change the settings in the link. In this case:

http://192.168.5.126/ajaxcom?szCmd=%7B%22SysCtrl%22:%7B%22PtzCtrl%22:%7B%22nChanel%22:0,%22szPtzCmd%22:%22left_start%22,%22byValue%22:50%7D%7D%7D

5. Press **ENTER**. If **correct,** you get in return:

http://192.168.5.126/ajaxcom?szCmd=%7B%22SysCtrl%22:%7B%22PtzCtrl%22:%7B%22nChanel%22:0,%22szPtzCmd%22:%22left_start%22,%22byValue%22:50%7D%7D%7D

{"nRetVal":0, "szError":""}

If **failed**, you get in return.

http://192.168.5.126/ajaxcom?szCmd=%7B%22SysCtrl%22:%7B%22PtzCtrl%22:%7B%22nChanel%22:0,%22szPtzCmd%22:%22left_start%22,%22byValue%22:50%7D%7D%7D

{"nRetVal":-1879048185, "szError":""}

6. In case of a failed return, check the following:
   - Syntax errors in the code/ correct numbers in the key values. Some camera settings are having a specific range. The SRT key for example has a range of 0 - 32. If you have typed 33 it would exceed the range of this key.
   - No long white spaces between the key values of the code. For example this " code " is error and this "code" is right.
   - If you have entered the correct IP address of the camera.

7. If you have done it correct, you can check the settings you have changed in the WebGUI of the camera.

Curl

It is also possible to change the camera settings at once by using the **Command Prompt** from Windows.

Follow instructions below:

1. Click on **Start** in the left corner of your screen in Windows.
2. Type **Notepad** and open this application.
3. Copy and paste the following http link from the HTTP API code list (for example: http://192.168.5.126/ajaxcom?szCmd={'GetEnv':{'VideoParam':{'nChannel':-1}}}
4. Type **curl**, change the default IP address in the IP Address of your camera, and surround it by quotation marks.
5. Add **--data-raw** between the http link and the code.
6. Type **szCmd** and surround it by quotation marks.
7. **Double** the quotation marks between the brackets! See the example below.
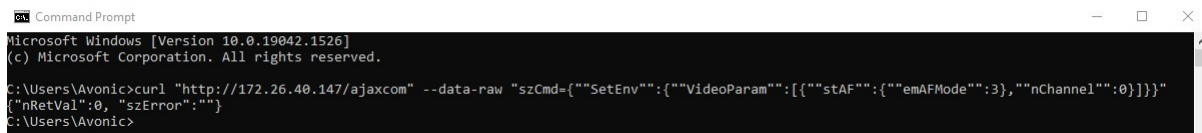
④ ⑤ ⑥ ⑦

curl "http://172.26.40.147/ajaxcom" --data-raw "szCmd={""SetEnv"":{""VideoParam"":[{""stAF"":{""emAFMode"":3},""nChannel"":0}]}}"

Changed link (IP address camera)   Code from the HTTP API code list

8. Modify the parameters in the code. In the example above **EmAFmode:3** and **nChannel:0** See the HTTP API code list.
9. Click on **Start** in Windows again, type **CMD** and press **Enter**.
10. Copy and paste the link/ code from notepad in **Command Prompt** and press **Enter**. If correct it returns: {'nRetVal':0, "szError':"}

```
Command Prompt                                                    —    □    ✕
Microsoft Windows [Version 10.0.19042.1526]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Avonic>curl "http://172.26.40.147/ajaxcom" --data-raw "szCmd={""SetEnv"":{""VideoParam"":[{""stAF"":{""emAFMode"":3},""nChannel"":0}]}}"
{"nRetVal":0, "szError":""}
C:\Users\Avonic>
```

{"GetEnv"}

You can use the HTTP API to **display the current settings** of the camera in your browser or in the **Command Prompt** application. You need the {'GetEnv'} codes from the HTTP API code list to do this. If correct you see the following in your webbrowser, or in Command Prompt:

```
←  →  C   ⚠ Not secure  |  172.26.40.147/ajaxcom?szCmd={"GetEnv":{"StreamPublish":{"nChannel":-1}}}
```

```
{
    "nRetVal": 0,
    "stValue": [
        {
            "stSlave": {
                "wHostPort": 1935,
                "szHostUrl": "172.40.26.147",
                "nProtolType": 2,
                "szStreamName": "live/av1",
                "bEnable": 0,
                "nAbProtolMask": 1,
                "szSrtKey": "",
                "wSrtKeyLen": 0,
                "szUserName": "",
                "szPassword": ""
            },
            "stMaster": {
                "wHostPort": 1935,
                "szHostUrl": "172.40.26.147",
                "nProtolType": 3,
                "szStreamName": "live/av0",
                "bEnable": 0,
                "nAbProtolMask": 1,
                "szSrtKey": "1111111111",
                "wSrtKeyLen": 0,
                "szUserName": "",
                "szPassword": ""
            },
            "nChannel": 0
        }
    ]
}
```

```
Command Prompt                                                    —   □   ×

Microsoft Windows [Version 10.0.19044.1526]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Avonic>curl "http://172.26.40.147/ajaxcom" --data-raw "szCmd={""GetEnv"":{""StreamPublish"":{""nChannel"":-1}}}"
{
    "nRetVal": 0,
    "stValue": [
        {
            "stSlave": {
                "wHostPort": 1935,
                "szHostUrl": "172.40.26.147",
                "nProtolType": 2,
                "szStreamName": "live/av1",
                "bEnable": 0,
                "nAbProtolMask": 1,
                "szSrtKey": "",
                "wSrtKeyLen": 0,
                "szUserName": "",
                "szPassword": ""
            },
            "stMaster": {
                "wHostPort": 1935,
                "szHostUrl": "172.40.26.147",
                "nProtolType": 3,
                "szStreamName": "live/av0",
                "bEnable": 0,
                "nAbProtolMask": 1,
                "szSrtKey": "1111111111",
                "wSrtKeyLen": 0,
                "szUserName": "",
                "szPassword": ""
            },
            "nChannel": 0
        }
    ]
}
C:\Users\Avonic>
```

HTTP API code list

IR Remote Control

IR Enable/Disable			
Command	Code	Command	Setting
szCmd	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"ArmPtz":{"blrCtrlEnable":0}}}	blrCtrlEnable	0: ON
			1: OFF

PTZ

PTZControl			
Code: http://192.168.5.126/ajaxcom?szCmd={"SysCtrl":{"PtzCtrl":{"nChanel":0,"szPtzCmd":"left_start","byValue":50}}}			
Command	Setting	Function	Command
nChanel	0		
byValue	0,100 used to control the speed of ptz		
szPtzCmd			
		left start	left_start
		left stop	left_stop
		leftup start	leftup_start
		leftup stop	leftup_stop
		leftdown start	leftdown_start
		leftdown stop	leftdown_stop
		rightstart	right_start
		rightstop	right_stop
		rigtup start	rightup_start
		rightdown start	rightdown_start
		rightdown stop	rightdown_stop
		upstart	up_start
		upstop	up_stop

PTZControl				
		downstart	down_start	
		downstop	down_stop	

PTZ speed

Set PTZ Speed				
Command	Code	Command	Setting	
szCmd	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"PTZSpeed":{"nPTZSpeed":1}}}	nPTZSpeed	0: Slow 1: High	

Speed by Zoom

Set Speed By Zoom				
Command	Code	Command	Setting	
szCmd	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"ArmPtz":{"bSpeedByZoom":0}}}	bSpeedByZoom	1: on	0: off

Image Freezing

Set Image Freezing				
Command	Code	Command	Setting	
szCmd	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"ArmPtz": {"bImageFreezing":0}}}	bImageFreezing	1: on 0: off	

Low power mode

Set Low Power Mode				
Command	Code	Command	Setting	
szCmd	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"ArmPtz":{"emLowPowerMode":0}}}	emLowPowerMode	2: on	3: off

Zoom Speed

Set Zoom Speed			
Command	Code	Command	Setting
szCmd	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"ArmPtz": {"nZoomSpeed":0}}}	nZoomSpeed	0 - 7

Preset Pan Speed

Set Preset Pan Speed			
Command	Code	Command	Setting
szCmd	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"ArmPtz": {"nPresetPanSpeed":0}}}	nPresetPanSpeed	0 - 24

Preset Tilt Speed

Set Preset Tilt Speed			
Command	Code	Command	Setting
szCmd	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"ArmPtz": {"nPresetTiltSpeed":0}}}	nPresetTiltSpeed	0 - 20

Preset Zoom Speed

Set Preset Zoom Speed			
Command	**Code**	**Command**	**Setting**
szCmd	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"ArmPtz": {"nPresetZoomSpeed":0}}}	nPresetZoomSpeed	0 - 7

Focus Mode

Focus Mode Commands			
Focus Mode			
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stAF": {"emAFMode":3},"nChannel":0}]}}		
Command	**Setting**		
nChanel	0		
emAFMode	2: Auto		
	3: Manual		
	4 OnePush		
Zoom and focus			
Code	http://192.168.5.126/ajaxcom?szCmd={"SysCtrl":{"PtzCtrl": {"nChanel":0,"szPtzCmd":"zoomdec_start","byValue":0}}}		
Command	**Setting**	**Function**	**Command**
nChanel	0		
byValue	0		
szPtzCmd			
		Zoom add start	zoomadd_start
		Zoom add stop	zoomadd_stop
		Zoom decrease stop	zoomdec_start
		Zoom decrease stop	zoomdec_stop
		Focus add start	focusadd_start
		Focus add stop	focusadd_stop
		Focus decrease start	focusdec_start
		Focus decrease stop	focusdec_stop

Preset

Preset Commands			
Code	http://192.168.5.126/ajaxcom?szCmd={"SysCtrl":{"PtzCtrl": {"nChanel":0,"szPtzCmd":"preset_set","byValue":0}}}		
Command	**Setting**	**Function**	**Command**
nChanel	0s		
ByValue	0, 254		
szPtzCmd			
		Set preset	preset_set
		Call preset	preset_call

Preset Commands			
		Clean preset	preset_clean

Audio

Audio Configure			
Get audio configure			
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"Audio":{}}}		
Set audio configure			
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"Audio":{"nSampleBits":16,"nAudioSmstMask": [33554888,33554888,33554433],"bEnable":0,"nInpVolume":4,"nBitRate":64,"nAEncType":7,"byAudioCodecList": [6,7,2],"nSampleRate":44100,"nChannel":1}}}		

Function	Code	Command	Setting		
Enable	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"Audio": {"bEnable":1}}}	bEnable	0: off 1: on		
Encode Type	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"Audio": {"nAEncType":7}}}	nAEncType	6: Mp3AAC 7: G.711A 2:		
Sample Rate	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"Audio": {"nSampleRate":32000}}}	nSampleRate (Only supporting these sample rates and gy11a can only be 8000.)	16000 32000 44100 48000		
Sample Bits	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"Audio": {"nSampleBits":16}}}	nSampleBits	16		
Bit Rate	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"Audio": {"nBitRate":96}}}	nBitRate	32 48	64 96	128
Channel	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"Audio": {"nChannel":2}}}	nChannel	1: Mono		2: Stereo
Input Volume	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"Audio": {"nInpVolume":5}}}	nInpVolume (range 1 to 10)	Exp:[1, 10]		

Video

Video encoder

Video Encode	
Get video encode parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"VideoEncode":{"nChannel":-1}}}
Set video encode parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoEncode":[{"**stSlave**":{"byIFrameMinQP":20,"byImageQuality":1, "szStreamName":"live/av1","dwVideoCodecMask":160,"emBitRateCtrl":0, "byImageSizeList": [26,7,9,27,4,5],"dwMaxBitRate":40960,"nFrameRate":25,"nMaxFrameRate":30, "emVideoCodec":5,"nIFrameInterval":75,"emImageSize":27,"nBitRate":512,"byProfile":2, "**stMaster**":{"byIFrameMinQP":20,"byImageQuality":0,"szStreamName":"live/av0", "dwVideoCodecMask":160,"emBitRateCtrl":0,"byImageSizeList":[5,4,9],"dwMaxBitRate":40960, "nFrameRate":25,"nMaxFrameRate":60,"emVideoCodec":5,"nIFrameInterval":75,"emImageSize":5, "nBitRate":4096,"byProfile":2},"nChannel":0}]}}

Video encode settings

Video Encode Settings			
Function	**Code**	**Command**	**Setting**
Compressed Format	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoEncode":[{"stMaster": {"emVideoCodec":5},"nChannel":0}]}}	emVideoCodec	5: H.264 7: H.265 (BP profile only)
Profile	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoEncode":[{"stMaster": {"byProfile":0},"nChannel":0}]}}	byProfile	0: BP 1: MP 2: HP
	http://192.168.5.126/ajaxcom?szCmd={"GetEnv": {"VideoEncode":{"nChannel":-1}}} and receive its returning value. Compared to webpage and this, you can know the different value meaning different image size.	byImageSizeList (Lists all imagesize, different products have different image size)	
Image Size	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoEncode":[{"stMaster": {"emImageSize":4},"nChannel":0}]}}	emImageSize	5: 1920*1080 4: 1280*720 9: 640*480 27: 320*180 26: 640*360
Rate Control	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoEncode":[{"stMaster": {"emBitRateCtrl":1},"nChannel":0}]}}	emBitRateCtrl	0: CBR 1: VBR

Video Encode Settings			
Function	**Code**	**Command**	**Setting**
Image Quality	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoEncode":[{"stMaster": {"byImageQuality":5},"nChannel":0}]}}	byImageQuality	0: worst quality 1: between 2: between 3: between 4: between 5: Best quality
Bit Rate (kb/s)	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoEncode":[{"stMaster": {"dwMaxBitRate":200},"nChannel":0}]}}	dwMaxBitRate	[64, 40960]
Frame Rate (F/S)	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoEncode":[{"stMaster": {"nFrameRate":25},"nChannel":0}]}}	nFrameRate	[5, 60]
Frame Interval	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoEncode":[{"stMaster": {"nIFrameInterval":70},"nChannel":0}]}}	nIFrameInterval	[1, 300]
Frame Min QP	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoEncode":[{"stMaster": {"byIFrameMinQP":70},"nChannel":0}]}}	byIFrameMinQP	[10, 51]
Stream Name	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"VideoEncode": [{"stMaster":{"szStreamName":"live/ av01"},"nChannel":0}]}}	szStreamName	user-defined

Video Streaming

Stream Publish	
Get stream publish parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"StreamPublish":{"nChannel":-1}}}
Set stream publish parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"StreamPublish":[{"stSlave": {"wHostPort":1935,"szHostUrl":"192.168.5.11", "nProtolType":2,szStreamName":"live/av1","bEnable":0,"nAbProtolMask":1,"szSrtKey":"","wSrtKeyLen":0,"szUserName":"","szPassword":""},"stMaster": {"wHostPort":1935, "szHostUrl":"192.168.5.11","nProtolType":3,"szStreamName":"live/av0","bEnable":0, "nAbProtolMask":1,"szSrtKey":"1111111111","wSrtKeyLen":0,"szUserName":"", "szPassword":""},"nChannel":0}]}}
NOTE: When modifying one param, you should take along wHostPort. Otherwise, the host port will be zero.	

Function	Code	Command	Setting
Enable	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"StreamPublish":[{"stMaster": {"wHostPort":1935,"bEnable":1,"nProtolType":3,"nChannel":0}]}}	bEnable	0: off 1: on
Protol Type		nProtolType	2: srt 3: rtmp
Host Address	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"StreamPublish": [{"stMaster":{"wHostPort":1935,"nProtolType":3,szHostUrl": "192.168.5.12"},"nChannel":0}]}}	szHostUrl	user-defined
Host Port	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"StreamPublish": [{"stMaster":{"wHostPort":19355,"nProtolType":3},"nChannel":0}]}}	wHostPort	[0,65535]
Stream Name	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"StreamPublish":[{"stMaster": {"wHostPort":19355,"nProtolType":3,"szStreamName":"live/1213"}, "nChannel":0}]}}	szStreamName	user-defined
User Name	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"StreamPublish":[{"stMaster": {"wHostPort":19355,"nProtolType":3,"szUserName":"123"},"nChannel":0}]}}	szUserName	user-defined
Password	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"StreamPublish":[{"stMaster": {"wHostPort":19355,"nProtolType":3,"szPassword":"123"},"nChannel":0}]}}	szPassword	user-defined
SrtKey (SRT Effectie)	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"StreamPublish":[{"stMaster": {"wHostPort":19355,"nProtolType":3,"szSrtKey":"0123456789"},"nChannel":0}]}}	szSrtKey	user-defined
SrtKeyLen (SRTEffectie)	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"StreamPublish":[{"stMaster": {"wHostPort":19355,"nProtolType":3,"wSrtKeyLen":"0"},"nChannel":0}]}}	wSrtKeyLen	[0-32]

(RTP) Multicast Streaming

RTP Multicast	
Get rtp multicast parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"StreamRTPMulticast": {"nChannel":-1}}}
Set rtp multicast parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"StreamRTPMulticast": [{"stSlave":{"nProtolType":0,"bEnable":0,"wMultiCastPort":4002, "szMultiCastUrl":"224.1.2.3"},"stMaster":{"nProtolType":1,"bEnable":0,"wMultiCastPort":4000, "szMultiCastUrl":"224.1.2.3"},"nChannel":0}]}}

RTP Multicast

RTP Multicast
NOTE: When modifying one param you should take along bEnable and awMultiCastPort. Otherwise, it will be set to 0. Suggesting that when setting env, you can distinguish the stMaster and stSlave.

RTP Multicast Settings

RTP Multicast Settings			
Function	**Code**	**Command**	**Setting**
Enable	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"StreamRTPMulticast":[{"stMaster": {"bEnable":1,'wMultiCastPort":4004},"nChannel":0}]}}	bEnable	0: off 1: on
Protol Type	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"StreamRTPMulticast":[{"stMaster": {"bEnable":1,"nProtolType":1,"wMultiCastPort":4004},"nChannel":0}]}}	nProtolType	0: RTP 1: TS
Multicast Address	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"StreamRTPMulticast":[{"stMaster": {"bEnable":0,"szMultiCastUrl":"224.1.2.23","wMultiCastPort":4004},"nChannel":0}]}}	SzMultiCastUrl	224.0.0.0~ 255.255.255.0
Multicast Port	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"StreamRTPMulticast":[{"stMaster": {"bEnable":1,"wMultiCastPort":4004},"nChannel":0}]}}	wMultiCastPort	Even [0, 65535]

Camera Settings

Video Parameters			
Get video parameters			
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"VideoParam":{"nChannel":-1}}}		
Set video parameters			
Focus			
Function	**Code**	**Command**	**Setting**
Focus Mode	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"VideoParam":[{"stAF": {"emAFMode":2},"nChannel":0}]}}	emAFMode	2: Auto 3: Manual 4: OnePush
AF-Zone	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"VideoParam":[{"stAF": {"emAFZone":1},"nChannel":0}]}}	emAFZone	0: Front Focus 1: Back Focus 2: Meeting 3: Education Tracking 4: Moving Objects 5: Center Focus
AF-Sensitivity	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"VideoParam":[{"stAF": {"nSensitivity":1},"nChannel":0}]}}	nSensitivity	1: High 2: Middle 3: Low

Exposure

Camera Settings
Exposure

Camera Settings

Mode	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"stExpMode":{"emExpMode":0}},"nChannel":0}]}}	emExpMode	0: 3: 10: 11: 13:	Auto Manual SAE AAE Bright

Exposure: Auto

EV	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"expcomp_mode":2},"nChannel":0}]}}	expcomp_mode	2: 3:	ON OFF
EV Level	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"expcomp":8},"nChannel":0}]}}	expcomp	[0, 14]	
BLC	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"backlight":2},"nChannel":0}]}}	backlight	2: 3:	ON OFF

Camera Settings

Exposure: Auto

Function	Code	Command	Setting	
Flicker	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"antiflicker":0},"nChannel":0}]}}	antiflicker	0: 1: 2:	OFF 50HZ 60HZ
G.Limit	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"gainLimit":5},"nChannel":0}]}}	gainLimit	[0, 15]	
DRC	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"drc":6},"nChannel":0}]}}	drc	[0, 8]	

Exposure: Manual

shutter	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"stShutter":{"nShutter":16}},"nChannel":0}]}}	nShutter	[0, 16]	
Iris	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"stIris":{"nIris":12}},"nChannel":0}]}}	nIris	[0, 12]	
DRC	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"drc":8},"nChannel":0}]}}	drc	[0, 8]	

Exposure: SAE

shutter	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"stShutter":{"nShutter":16}},"nChannel":0}]}}	nShutter	[0, 16]	
DRC	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stExp":{"drc":7},"nChannel":0}]}}	drc	[0, 8]	

Camera Settings

Exposure: AEE

Flicker	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoParam":[{"stExp": {"antiflicker":0},"nChannel":0}]}}	Antiflicker	0: 1: 2:	OFF 50HZ 60HZ
G.Limit	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoParam":[{"stExp": {"gainLimit":5},"nChannel":0}]}}	gainLimit	[0, 15]	
Iris	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoParam":[{"stExp": {"stIris":{"nIris":12}},"nChannel":0}]}}	nIris	[0, 12]	
DRC	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoParam":[{"stExp": {"drc":6},"nChannel":0}]}}	drc	[0, 8]	

Exposure: Bright

Bright	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoParam":[{"stExp": {"bright":0},"nChannel":0}]}}	bright	[0, 23]	
Flicker, G.Limit, DRC	You can find the same configure at AAE			

Color and Image

Camera Settings

Color

Function	Code	Command	Setting			
WB Mode	http://192.168.5.126/ajaxcom?szCmd={"SetEnv": {"VideoParam":[{"stColor":{"stWbMode": {"emWbMode":0}},"nChannel":0}]}}	emWbMode	0: 1: 7: 2: 8: 4:	Auto 3000K 3500K 4000K 4500K 5000K	9: 10: 6: 11: 5: 3:	5500K 6000K 6500K 7000K Manual OnePush
RG Tuning	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoParam":[{"stColor": {"rgaintuning":0},"nChannel":0}]}}	rgaintuning	[0, 20]			
BG Tuning	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoParam":[{"stColor": {"bgaintuning":20},"nChannel":0}]}}	bgaintuning	[0, 20]			
Saturation	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoParam":[{"stColor": {"saturation":0},"nChannel":0}]}}	saturation	[0, 14]			
Hue	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoParam":[{"stColor": {"hue":14},"nChannel":0}]}}	hue	[0, 14]			
AWB Sensitivity	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"VideoParam":[{"stColor": {"awbsens":0},"nChannel":0}]}}	awbsens	0: 1: 2:	Low Middle High		

Image

Camera Settings

Bright	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stImg":{"luminance":0},"nChannel":0}]}}	luminance	[0, 4]		
Contrast	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stImg":{"contrast":0},"nChannel":0}]}}	contrast	[0, 14]		
Sharpness	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stImg":{"sharpness":1},"nChannel":0}]}}	sharpness	[0, 15]		
Gamma	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stImg":{"gamma":0},"nChannel":0}]}}	gamma	[0, 4]	0: Default 1: 0.45 2: 0.50	3: 0.55 4: 0.63
DCI	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stImg":{"dci":0},"nChannel":0}]}}	dci	[0, 8] 0:	OFF	
B&W Mode	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stImg":{"nBWMode":0},"nChannel":0}]}}	nBWMode	0: 4:	Color B & W	
Flip-H	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stImg":{"nFlipH":3},"nChannel":0}]}}	nFlipH	2: 3:	ON OFF	

Camera Settings

Image

Function	Code	Command	Setting		
Flip-V	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stImg":{"nFlipV":2},"nChannel":0}]}}	nFlipV	2: 3:	ON OFF	
AutoFlip	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stImg":{"nAutoFlipV":2},"nChannel":0}]}}	nAutoFlipV		ON OFF	
DZoom	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stImg":{"nEZoom":3},"nChannel":0}]}}	nEZoom	2: 3:	ON OFF	

Noise Reduction

Camera Settings

Function	Code	Command	Setting		
NR-2D	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stNR":{"noise2D":0},"nChannel":0}]}}	noise2D	[0, 8]		
NR-3D	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stNR":{"noise3D":0},"nChannel":0}]}}	noise3D	[0, 8]	0: OFF 8: Auto	
Dynamic Hot Pixel	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stNR":{"dhotpixel":3},"nChannel":0}]}}	dhotpixel	[0, 5]	0: OFF	
Style	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoParam":[{"stColor":{"nStyleInx":0},"nChannel":0}]}}	nStyleInx	[0, 4]	0: Default 1: Normal 2: Clarity	3: Bright 4: Soft

Video OSD

Video OSD	
Get video parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"VideoOsd":{"nChannel":-1}}}
Set set video parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoOsd":[{"stTime": {"bEnable":1,"nIndex":0,"nXPos":0,"szText":"","nYPos":10000, "stFtColor": {"byAlpha":128,"byRed":255,"byGreen":255,"byBlue":255},"stBkColor": {"byAlpha":0,"byRed":0,"byGreen":0,"byBlue":0}},"stTitle": {"bEnable":0,"nIndex":0,"nXPos":0,"szText":"","nYPos":0,"stFtColor": {"byAlpha":128,"byRed":255,"byGreen":255,"byBlue":255},"stBkColor": {"byAlpha":0,"byRed":0,"byGreen":0,"byBlue":0}},"nChannel":0}]}}
NOTE: All params can be saved by this command and also you can set one param alone.	

Function	Code	Command	Setting
Show Time	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoOsd": [{"stTime":{"bEnable":1},"nChannel":0}]}}	bEnable	0: Not show 1: Show
Show Title	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoOsd": [{"stTitle":{"bEnable":1},"nChannel":0}]}}	bEnable	0: Not Show 1: Show

Video OSD			
Set video parameters			
Function	**Code**	**Command**	**Setting**
Time FontColor	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoOsd":[{"stTime": {"stFtColor":{"byAlpha":128,"byRed":255,"byGreen":255,"byBlue":0}}, "nChannel":0}]}}	byAlpha	128
		white	rgb (255,255,255)
		black	rgb (0,0,0)
		yellow	rgb (255,255,0)
		red	rgb (255,0,0)
		blue	rgb (0,0,255)
Title FontColor	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoOsd":[{"stTitle": {"stFtColor":{"byAlpha":128,"byRed":255,"byGreen":255,"byBlue":0}}, "nChannel":0}]}}	byAlpha	128
		white	rgb (255,255,255)
		black	rgb (0,0,0)
		yellow	rgb (255,255,0)
		red	rgb (255,0,0)
		blue	rgb (0,0,255)
OSD Offsetx pos	Time: http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoOsd": [{"stTime":{"nXPos":9200},"nChannel":0}]}}	nXPos	[0, 10000]
OSD Offsetx pos	Title: http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoOsd":[{"stTitle": {"nXPos":9200},"nChannel":0}]}}	nXPos	[0, 10000]
OSD Offsety pos	Time: http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoOsd": [{"stTime":{"nYPos":1200},"nChannel":0}]}}	nYPos	[0, 10000]
	Title: http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoOsd":[{"stTitle": {"nYPos":1200},"nChannel":0}]}}		

OSD Font Size

OSD Font Size	
Get OSD font size parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"TTFFontSize":{"nChannel":-1}}}
Set video parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"TTFFontSize":{"nFontSize":[48,48],"bAutoSize":1}}}

Function	Code	Command	Setting
		bAutoSize	0: off, 1: on
		nFontSize	[8,200]

Output Format

(Video) Output Format			
Get video out parameters			
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"VideoOut":{"nChannel":-1}}}		
Set video out parameters			
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"VideoOut": {"nNetMode":2,"emVoutFormat":9,"byFormatList":[10,9,4,3,8,7,6,5,26,25,20,21,22,23,24]}}}		

Function	Code	Command	Setting	
		nNetMode: default value 2, do not modify it	– HD output – HD output + SD network – SD output + HD network	
		emVoutFormat: Setting the current video out format.	10: 9: 4: 3:	1080P60 1080P50 1080P30 1080P25
			8:	1080I60
			7:	1080I50
			6:	720P60
			5:	720P50
			26:	720P30
			25:	720P25
			20:	1080P59.94
			21:	1080I59.94
			22:	1080P29.97
			23:	720P59.94
			24:	720P29.97

SRT

SRT
Get network SRT parameters

SRT	
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"NetWork":{"nChannel":-1}}}
Set network SRT parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork":{"stSrt": {"wSrtLen":0,"wSrtPort":9000,"szSrtPin":"xxxxxxxxxx"}}}}

Function	Code	Command	Setting
crypto key length in bytes		wSrtLen	[0-32]
Port SRT		wSrtPort	Default 9000
Password stream encryption		szSrtPin	user-defined

Network

Network configure and port settings

Network Configure	
Get network port parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"NetWork":{"nChannel":-1}}}
Set network port parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork":{"stNetPort": {"wPortSoap":1936,"wPortData":3000,"wPortWeb":80,"wPortRtsp":554,"wPortVisca": 1259,"wPortOnvif":2000,"wPortRtmp":1935}}}}
	You can also set one of these parameters like this:
	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork":{"stNetPort":{"wPortSoap":1936}}}}

Port Settings			
Function	Code	Command	Setting
Port Data		wPortData	[0, 65535]
Port Web		wPortWeb	[0, 65535]
Port Onvif		wPortOnvif	[0, 65535]
Port Soap		wPortSoap	[0, 65535]
Port Rtmp		wPortRtmp	[0, 65535]
Port Rtsp		wPortRtsp	[0, 65535]
Port Visca		wPortVisca	[0, 65535]

Ethernet

Ethernet	
Get Ethernet parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"NetWork":{"nChannel":-1}}}
Set Ethernet parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork": {"stEth":[{"byValid":5,"szIPAddr":"192.168.5.126","szSubMask": "255.255.255.0","szMacAddr":"E4:77:D4:01:8A:49","szGateway":"192.168.5.1","bDefault":1}]}}}

Function	Code	Command	Setting

Ethernet				
DHCP	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork":{"stEth": [{"byValid":5}]}}}	byValid	5:off	7:on
IP Address	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork":{"stEth": [{"szIPAddr":"192.168.5.127"}]}}}			
Subnet Mask	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork":{"stEth": [{"szSubMask":"255.255.255.0"}]}}}			
Default Gateway	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork":{"stEth": [{"szGateway":"192.168.5.1"}]}}}			

DNS

DNS			
Get dns parameters			
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"NetWork":{"nChannel":-1}}}		
Set dns parameters			
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork":{"stDns":{"szDns1":"8.8.8.8","szDns2":"0.0.0.0"}}}}		
Function	**Code**	**Command**	**Setting**
Preferred DNS Server	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork":{"stDns": {"szDns1":"8.8.8.8"}}}}		
Alternative DNS Server	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"NetWork":{"stDns": {"szDns2":"8.8.8.8"}}}}		

System

System Configure			
Get sysattr parameters			
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"SysAttr":{"nChannel":-1}}}		
Set sysattr parameters			
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"SysAttr": {"nLanguage":0,"szDeviceID":"1","emVideoStandard":1,"szDevName":"testname"}}}		
Function	**Code**	**Command**	**Setting**
Device Name		szDevName	user-defined, cannot use white space
Device ID		szDeviceID	cannot modify
Language		nLanguage	0: Simplified Chinese / 2: English

License

License	
Get License parameters	
Code	http://192.168.5.126/ajaxcom?szCmd=:{"QueryState":{"QueryLicenseState":{}}}
Set License parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"LicenseKey":{"bLicenseEnable":0,"szKeyText":"483B4EB1D0"}}}

Time

SysTime
Get system time parameters

SysTime	
Code	http://192.168.5.126/ajaxcom?szCmd={"QueryState":{"QuerySysTime":{}}}
Set system time parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"SysTime":{"nDateSprtr":2,"nDateFormat":0,"nZone":1,"nHourType":0,"stNtp": {"bEnable":1,"nHostPort":123,"nUpdateInterval":2,"szHostUrl":"ntp4.aliyun.com"}}}}

Function	Code	Command	Setting
Date Format	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"SysTime": {"nDateFormat":0}}}	nDateFormat	0: YYYY-MM-DD 1: MM-DD-YYYY 2: DD-MM-YYYY
Date Sprtr	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"SysTime": {"nDateSprtr":0}}}	nDateSprtr	0: . 1: - 2: /

SysTime			
Function	**Code**	**Command**	**Setting**
Zone	http://192.168.5.126/ajaxcom? szCmd={"SetEnv":{"SysTime":{"nZone":0}}}	nZone	[0, 32] 5: GMT+04:00 0: GMT 6: GMT+04:30 1: GMT+01:00 7: GMT+05:00 …… 2: GMT+02:00 13: GMT+08:00 …… 3: GMT+03:00 20: GMT-01:00 …… 4: GMT+03:30 31: GMT-11:00 32: GMT-12:00

SysTime			
Hour Type	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"SysTime": {"nHourType":0}}}	nHourType	0: 24 Hours 1: 12 Hours
NTP Enable	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"SysTime":{"stNtp": {"bEnable":1}}}}	bEnable	0: off 1: on
Update Interval	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"SysTime":{"stNtp": {"nUpdateInterval":2}}}}	nUpdateInterval	[1, 10]
Host URL	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"SysTime":{"stNtp": {"szHostUrl":"time.nist.gov"}}}}	szHostUrl	user-defined, ntp server address
Host Port	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"SysTime":{"stNtp": {"nHostPort":123}}}}	nHostPort	user-defined: [0, 65535]
Time Settings	http://192.168.5.126/ajaxcom?szCmd={"SysCtrl": {"SetTime":{"bTimeType":1,"nZone":19,"stDateTime": {"dwYear":2018,"byHour":15,"byMinute":38,"byDay":1, "byMonth":11,"bySecond":2}}}}		Synchronize with computer time or set manual:
Synchronize NTP Server	http://192.168.5.126/ajaxcom?szCmd={"SysCtrl":{"SyncNtp":""}}		

User

SysUser
Get sysuser parameters

SysUser

SysUser	
Code	http://192.168.5.126/ajaxcom?szCmd={"GetEnv":{"SysUser":{}}}
Set sysuser parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"SetEnv":{"SysUser":{"stUsers": [{"nUserType":0,"szUserName":"admin","szPassword":"admin"},{"nUserType":1,"szUserName":"user1","szPassword":"user1"}, {"nUserType":1,"szUserName":"user2","szPassword":"user2"}]}}}

Function	Code	Command	Setting	
Authority		nUserType	0: admin	1: user1 or user 2
User Name		szUserName	user-defined: no white space	
Password		szPassword	user-defined, no white space. This command must set three users at the same time.	

Update

Update	
Get update parameters	
Code	http://192.168.5.126/ajaxcom?szCmd={"QueryState":{"QueryVersion":{}}}
Code	Get the return value and split it like this: szText.Format("%d.%d.%d%d-%d-%d",(stVersion.dwCamVersion>>16)&0xFF,(stVersion.dwCamVersion>>8)&0xFF, (stVersion.dwCamVersion0xFF),(stVersion.dwCamDate>>16)&0xFFFF,(stVersion.dwCamDate>>8)&0xFF, (stVersion.dwCamDate&0xFF));
Set update parameters	Not supported update with API, you can do this through webpage.

Default and Reboot

Default	
Code	http://192.168.5.126/ajaxcom?szCmd={"SysCtrl":{"Default":{}}}

Reboot	
Code	http://192.168.5.126/ajaxcom?szCmd={"SysCtrl":{"Reboot":{}}}

> **The URL supports to set all params at one time and also can set one of them through split URL into one other command. Different commands can be found at different settings.**

AVONIC

HTTP API for CM70-IP series
CM70-IP • CM71-IP • CM73-IP

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