AVer-Box-USB-API
Version 1.3

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Revision History

Version Number	Date	Author(s)	Remark
1.0	Oct 14, 2026	Alan Huang	Preliminary version for MT500
1.1	Oct 14, 2026	Alan Huang	Add Extension Unit – AVer XU4 (CGI transform) Add MT300(N) and MT100/MT100S
1.2	Oct 15, 2026	Alan Huang	Add NC30
1.3	Oct 15, 2026	Alan Huang	Add UE1 Add Video Formats Add Extension Unit – AVer XU4 commands for UE1 (UE1 only) Add Extension Unit – AVer XU1 / XU5 commands used by UE1

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1. Introduction

This document contains information about the AVer USB API of the MT500, MT300(N), MT100/MT100S, NC30 and UE1. It describes the USB Video Class (UVC) and USB Audio Class (UAC) controls a host can use to operate the camera.

2. Vendor Id & Product Id

The MT500 has two USB device ports. Each port enumerates as a composite device with one UVC function and one UAC function under the same Vendor Id and Product Id. The MT300(N) has two USB device ports, Port A and Port B, but only one port is active at a time. The active port enumerates as a composite device with one UVC function and one UAC function under the same Vendor Id and Product Id. The MT100/MT100S has the same USB port design as the MT300(N), with its own Product Id. The NC30 enumerates as a composite device with one UVC function and one UAC function under the same Vendor Id and Product Id. The UE1 enumerates as a composite device with one UVC function, one UAC function and one HID function under the same Vendor Id and Product Id.

Model	**Function**	**Vendor Id**	**Product Id**
MT500	UVC (Port 1)	0x2574	0x0738
	UAC (Port 1)	0x2574	0x0738
	UVC (Port 2)	0x2574	0x0739
	UAC (Port 2)	0x2574	0x0739
MT300(N)	UVC	0x2574	0x0732
	UAC	0x2574	0x0732
MT100	UVC	0x2574	0x0736
	UAC	0x2574	0x0736
MT100S	UVC	0x2574	0x073A
	UAC	0x2574	0x073A
NC30	UVC	0x2574	0x073B
	UAC	0x2574	0x073B
UE1	UVC	0x2574	0x0734
	UAC	0x2574	0x0734
	HID	0x2574	0x0734

● MT500: Manufacturer string: "AVer Information Inc."; Product string: "AVer MT500". Port 1: "AVer MT500 UCam1" / "AVer MT500 Audio1"; Port 2: "AVer MT500 UCam2" / "AVer MT500 Audio2". The UAC function is not present when USB audio is disabled in the camera settings, or when the camera runs in Zoom or Teams mode.

● MT300(N): Manufacturer string: "AVer Inc."; Product string: "AVer MT300" / "AVer MT300N". The active port is selected in the camera settings: Auto (the port connected to a host; Port A when both are connected), Port A, or Port B. The UAC function is not present when USB audio is disabled in the camera settings. Switching to Teams mode disables USB audio until it is enabled again in the camera settings.

● MT100: Manufacturer string: "AVer Inc."; Product string: "AVer MT100". Port selection and the UAC function work the same as on the MT300(N).

● MT100S: Manufacturer string: "AVer Inc."; Product string: "AVer MT100S". Port selection and the UAC function work the same as on the MT300(N).

● NC30: Manufacturer string: "AVer Inc."; Product string: "AVer NC30". The UAC function is not present when USB audio is disabled in the camera settings, or when the camera runs in Teams mode (switching back to Standard mode enables USB audio again).

● UE1: Manufacturer string: "AVer Inc."; Product string: "AVer UE1" while no camera is connected.

When the UE1 is connected to an AVer camera, it enumerates with the Product Id and Product string ("AVer <model>") of that camera, e.g. MT300(N) 0x0732, TR315 0x0566, CAM550 0x0A90. The UAC function is always present.

3. Video

(1) USB Video Class

(a) Video Formats

Model	Format	Resolution	Frame Rate (fps)
MT500 (USB 3.x)	YUY2	1920x1080	30, 15
		1600x900	30, 15
		1280x960	30, 15
		1280x720	30, 15
		864x480	30, 15
	MJPEG	3840x2160	30, 15
		1920x1080	60, 30, 15
		1280x720	60, 30, 15
MT500 (USB 2.0)	YUY2	1920x1080	5
		1280x720	10, 5
		864x480	15, 10
	MJPEG	1920x1080	30, 15
		1280x720	30, 15
MT300(N)	MJPEG	3840x2160	30, 15
		1920x1080	60, 30
		1280x720	60, 30, 15
	YUY2	1920x1080	30, 15
		1280x720	30, 15
		640x360	30, 15
MT100/MT100S	MJPEG	3840x2160	30, 15
		1920x1080	60, 30
		1280x720	60, 30, 15
	YUY2	1920x1080	30, 15
		1280x720	30, 15
		640x360	30, 15
NC30	MJPEG	3840x2160	60, 30, 15
		1920x1080	60, 30, 15
		1280x720	60, 30, 15
	YUY2	1920x1080	30, 15
		1280x720	30, 15
		640x360	30, 15
UE1 (USB 3.x)	MJPEG	3840x2160	60, 30
		1920x1080	60, 30
		1280x720	60, 30, 15
	YUY2	1920x1080	30, 15
UE1 (USB 2.0)	MJPEG	1920x1080	60, 30

		1280x720	60, 30
	YUY2	1920x1080	30, 15

● YUY2: uncompressed YUV 4:2:2, 16 bits per pixel. MJPEG: Motion JPEG.

● MT300(N) / MT100/MT100S / NC30: the same formats are offered on USB 3.x and USB 2.0. UE1: 3840x2160 is not offered on USB 2.0.

● MT500: the list above is the default (Standard mode, 60 Hz power line frequency, lens distortion correction off), the same on both ports. With 50 Hz power line frequency, 30 fps becomes 25 fps (USB 2.0 YUY2 is unchanged). The MJPEG list also depends on the mode: HDMI mode has no 3840x2160 (Port 2 up to 1920x1080 60 fps, Port 1 up to 1920x1080 30 fps); in USB mode Port 2 adds 3840x2160 60 fps and Port 1 offers YUY2 only; in NDI mode both ports offer YUY2 only.

(b) Extension Unit – AVer XU1 (Used by UE1)

(i) GUID

{366966CB-266E-47A0-8451-96ECF60330D6}

(ii) AVer XU1 Selectors

Control Selector	**Value**
UVCX_UCAM_ISP_START (Used by UE1)	0x05

(iii) ISP Start (Used by UE1)

Control Selector		UVCX_UCAM_ISP_START		
Mandatory Requests		GET_CUR, GET_MIN, GET_MAX, GET_DEF, GET_RES, GET_INFO, GET_LEN		
wLength		2		
Offset	Field	Size	Value	Description
0	wStatus	2	Number	GET_CUR: Switches the UE1 to USB firmware update mode and returns 0x0000.
● After GET_CUR, the UE1 re-enumerates as a USB CDC (ACM) device for the firmware update. The UVC, UAC and HID functions are not present until the update is finished.				

(c) Extension Unit – AVer XU4

(i) GUID

{3669827A-C026-11EA-B3DE-0242AC130004}

(ii) AVer XU4 Selectors

Control Selector	**Value**
UVCX_UCAM4_IDENTIFY_UEBOX (UE1 only)	0x0E
UVCX_UCAM4_FW_VERSION_UE1 (UE1 only)	0x0F
UVCX_UCAM4_UEBOX_STATUS (UE1 only)	0x10
UVCX_UCAM4_TRK_SMART_SHOT (UE1 only)	0x11
UVCX_UCAM4_TRK_SMART_FRAMING (UE1 only)	0x12
UVCX_UCAM4_CGI_SET_TRANSFORM (not supported on UE1)	0x13
UVCX_UCAM4_CGI_GET_TRANSFORM (not supported on UE1)	0x14

(iii) Identify UE Box (UE1 only)

Control Selector		UVCX_UCAM4_IDENTIFY_UEBOX		
Mandatory Requests		GET_CUR, GET_MIN, GET_MAX, GET_DEF, GET_RES, GET_INFO, GET_LEN		
wLength		8		
Offset	Field	Size	Value	Description
0	dwUebox	4	Number	Identifier of the UE1: the last two bytes of its Ethernet MAC address (MAC[4] << 8 | MAC[5]).
4	dwRemoteUpdate	4	Number	Remote update support of the connected camera: 0: Not supported (DL30, SIU, SIU Pro3) 1: Supported

(iv) Firmware Version of the Connected Camera (UE1 only)

Control Selector		UVCX_UCAM4_FW_VERSION_UE1		
Mandatory Requests		GET_CUR, GET_INFO, GET_LEN		
wLength		32		
Offset	Field	Size	Value	Description
0	Ver	32	String	Firmware version of the camera connected to the UE1, null-terminated.

(v) UE Box Status (UE1 only)

Control Selector		UVCX_UCAM4_UEBOX_STATUS		
Mandatory Requests		SET_CUR, GET_CUR, GET_MIN, GET_MAX, GET_DEF, GET_RES, GET_INFO, GET_LEN		
wLength		12		
Offset	Field	Size	Value	Description
0	dwProhibitAutoSet	4	Boolean	0: When connecting, the UE1 sets the camera to output video on all interfaces and to Standard mode (default) 1: The UE1 does not change the camera settings
4	dwAutoSleep	4	Boolean	0: Off (default) 1: When the host stops the video stream, the UE1 stops the camera network stream so that the camera can enter sleep mode
8	dwReserved	4	Number	Reserved, 0
● SET_CUR writes both dwProhibitAutoSet and dwAutoSleep.				

(vi) Smart Shot (UE1 only)

Control Selector		UVCX_UCAM4_TRK_SMART_SHOT		
Mandatory Requests		SET_CUR, GET_CUR, GET_MIN, GET_MAX, GET_DEF, GET_RES, GET_INFO, GET_LEN		
wLength		1		
Offset	Field	Size	Value	Description
0	bSmartShot	1	Boolean	0: Off 1: On
● The setting is read from and written to the connected camera.				

(vii) Smart Framing (UE1 only)

Control Selector		UVCX_UCAM4_TRK_SMART_FRAMING		
Mandatory Requests		SET_CUR, GET_CUR, GET_MIN, GET_MAX, GET_DEF, GET_RES, GET_INFO, GET_LEN		
wLength		1		
Offset	Field	Size	Value	Description
0	bSmartFraming	1	Boolean	0: Off 1: On
● The setting is read from and written to the connected camera. ● While no camera is connected, only selectors 0x0E - 0x10 are available.				

(viii) CGI Set Transform

Control Selector		UVCX_UCAM4_CGI_SET_TRANSFORM		
Mandatory Requests		SET_CUR, GET_CUR, GET_INFO, GET_LEN		
wLength		62		
Offset	Field	Size	Value	Description
0	bType	1	ASCII	SET_CUR: 0x30 ('0'): Get command (the response is kept for reading) 0x31 ('1'): Set command GET_CUR: always 0x30.
1	bAck	1	ASCII	SET_CUR with bType = 0x31: 0x30 ('0'): Complete command in this block 0x31 ('1'): More command blocks follow 0x32 ('2'): Last command block GET_CUR: 0x30 ('0'): Last response block 0x31 ('1'): More response blocks follow
2	bData	60	String	SET_CUR: Command string, null-terminated (up to 58 characters per block; MT300(N) / MT100/MT100S / NC30: 59). GET_CUR: Next block of the response, up to 60 bytes.

● The command string is the CGI request path and query, relative to the camera's HTTP root (without "http://" and host). The camera executes it on its local web server with the administrator account (MT300(N) / MT100/MT100S / NC30: the web login account). Refer to the CGI command document of each model for the available commands.

● A Get command (bType = 0x30) must fit in one block. A Set command longer than one block is split into blocks: send 0x31 for every block except the last, and 0x32 for the last block. The command runs after the block marked 0x30 or 0x32.

● Only a Get command keeps the response. Each SET_CUR with a non-empty command clears the previous response. MT300(N) / MT100/MT100S / NC30: the response is the HTTP response body, without the HTTP headers.

● The response is limited to 10 KB.

(ix) CGI Get Transform

Control Selector		UVCX_UCAM4_CGI_GET_TRANSFORM		
Mandatory Requests		GET_CUR, GET_INFO, GET_LEN		
wLength		256		
Offset	Field	Size	Value	Description
0	bAck	1	ASCII	0x30 ('0'): Last response block 0x31 ('1'): More response blocks follow
1	bData	255	String	Next block of the response of the last Get command, up to 255 bytes.
● Use this selector to read large responses with fewer requests. ● CGI Set Transform (GET_CUR) and CGI Get Transform share one read position. Read a response with only one of the two selectors.				

(x) CGI Transform Sequence

Step	**Request**	**Description**
1	SET_CUR CGI_SET_TRANSFORM (bType = 0x30, bAck = 0x30, bData = command)	Send a Get command. The camera runs it and keeps the response.
2	GET_CUR CGI_GET_TRANSFORM (repeat)	Read the response in 255-byte blocks until bAck = 0x30.
3	SET_CUR CGI_SET_TRANSFORM (bType = 0x31, bAck = 0x30 / 0x31 / 0x32)	Send a Set command, in one or more blocks.

(d) Extension Unit – AVer XU5 (Used by UE1)

(i) GUID

{36694F5D-E1EE-4A73-9B9C-08393E01FBFD}

(ii) AVer XU5 Selectors

Control Selector	**Value**
UVCX_UCAM5_UVC_SERIAL_NUM (Used by UE1)	0x19

(iii) Serial Number (Used by UE1)

Control Selector		UVCX_UCAM5_UVC_SERIAL_NUM		
Mandatory Requests		GET_CUR, GET_MIN, GET_MAX, GET_DEF, GET_RES, GET_INFO, GET_LEN		
wLength		60		
Offset	Field	Size	Value	Description
0	baSerialNum	60	String	Serial number, null-terminated: Camera connected: serial number of the connected camera No camera connected: serial number of the UE1

4. Audio

(1) USB Audio Class

The MT500, MT300(N) and MT100/MT100S provide a USB Audio Class 1.0 microphone (device to host) and speaker (host to device). Both use 48 kHz, 2 channels, 16-bit PCM (MT300(N) / MT100/MT100S speaker: 1 channel). The NC30 and UE1 provide the same microphone only, without a speaker. Each direction has one Feature Unit with Mute and Volume controls on the master channel.

(a) Feature Unit

(i) Mute Control

Control Selector		MUTE_CONTROL		
Mandatory Requests		SET_CUR, GET_CUR, GET_MIN, GET_MAX, GET_RES		
wLength		1		
Offset	Field	Size	Value	Description
0	bMute	1	Boolean	The setting for the addressed Mute Control's CUR attribute. Muted when TRUE, not muted when FALSE.
● Speaker: the Mute setting is applied to the audio output. ● Microphone: the Mute setting is stored and can be read back with GET_CUR, but it does not affect the audio sent to the host.				

(ii) Volume Control

Control Selector		VOLUME_CONTROL		
Mandatory Requests		SET_CUR, GET_CUR, GET_MIN, GET_MAX, GET_RES		
wLength		2		
Offset	Field	Size	Value	Description
0	wVolume	2	Number	The setting for the attribute of the addressed Volume Control, in 1/256 dB steps: 0x7FFF: 127.9961 dB … 0x0100: 1.0000 dB … 0x0000: 0.0000 dB 0xFFFF: -0.0039 dB … 0xFE00: -1.0000 dB … 0x8001: -127.9961 dB 0x8000: -∞ dB (CUR attribute only)

Feature Unit	Default	MIN	MAX
MT500 Microphone	0x0200 (+2 dB)	0xF400 (-12 dB)	0x0600 (+6 dB)
MT500 Speaker	0xE200 (-30 dB)	0xC400 (-60 dB)	0x0000 (0 dB)
MT300(N) / MT100/MT100S / NC30 / UE1 Microphone	0x0600 (+6 dB)	0x0180 (+1.5 dB)	0x0D80 (+13.5 dB)
MT300(N) / MT100/MT100S Speaker	0x0680 (+6.5 dB)	0xE100 (-31 dB)	0x0680 (+6.5 dB)
● Speaker: the Volume setting is applied to the audio output (MT300(N) / MT100/MT100S: in 10% steps, MIN = 0%, MAX = 100%; host audio is played only when two-way audio is enabled, off by default). ● Microphone: the Volume setting is stored and can be read back with GET_CUR, but it does not affect the audio sent to the host. ● Changes made on the camera are not reported to the host. GET_RES: MT300(N) / MT100/MT100S / NC30 / UE1 Microphone 0x0180 (1.5 dB), MT300(N) / MT100/MT100S Speaker 0x0080 (0.5 dB).			

5. Reference

(1) USB Video Class v1.1

https://usb.org/document-library/video-class-v11-document-set

(2) Audio Device Class Spec for Basic Audio Devices v1.0

https://usb.org/document-library/audio-device-class-spec-basic-audio-devices-v10-and-adopters-agreement