



API GUIDE

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Poly EagleEye Cube USB Camera

UVC Extension

GETTING HELP

For more information about installing, configuring, and administering Poly products or services, go to [Poly Online Support Center](#).

Plantronics, Inc. (Poly – formerly Plantronics and Polycom)
345 Encinal Street
Santa Cruz, California
95060

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Contents

- Before You Begin..... 3**
 - Audience, Purpose, and Required Skills..... 3
 - Related Documentation 3
 - Terminology Used in This Guide..... 3
 - Getting Help 3
 - Related Poly and Partner Resources..... 3

- Getting Started 5**
 - Overview..... 5
 - Supported Platforms 5
 - Supported Extension Controls 5

- XU Control Specification..... 6**
 - UVC XU Descriptor 6
 - Vendor-Specific Feature Controls 6
 - Attendees Count Control*..... 7
 - Speaker Tracking Control*..... 8
 - Camera Preset Control* 9
 - Wide Dynamic Range (WDR) Control*..... 10
 - Skin Enhancement On/Off Control* 10
 - Far End Audio Playing On/Off Control*..... 11
 - OSD On/Off Control*..... 11
 - Sleep Status Control*..... 12

Before You Begin

This document is intended to provide developers with the information necessary to develop Poly EagleEye Cube USB Video Class Extension Unit (UVC XU) host applications to interoperate with Poly general camera features.

Audience, Purpose, and Required Skills

This document is intended for a technical audience.

Related Documentation

For additional information, refer to these other documents.

- [USB Specification Chapter 9](#)
- [Video Class v1.5 document set](#)
- [Introduction to USB Video Class Extension Units on Windows](#)

Terminology Used in This Guide

Refer to the following table for the definition of acronyms used in this guide.

Acronyms and Definitions

Acronym	Definition
UVC	USB Video Class
XU	Extension Unit
Speaker Tracking	Cameras zoom in and frame the people who are talking
Group Framing	Cameras zoom in and frame all people within the lens' FOV zoom
Host	Windows, Mac OS X or Linux platform

Getting Help

For more information about installing, configuring, and administering Poly products, see [Poly Online Support Center](#).

Related Poly and Partner Resources

See the following sites for information related to this release.

- The [Poly Online Support Center](#) is the entry point to online product, service, and solution support information including Licensing & Product Registration, Self-Service, Account Management, Product-Related Legal Notices, and Documents & Software downloads.
- The [Polycom Document Library](#) includes active product, service, and solution content in responsive HTML5 format, so that you can easily access and view installation, configuration, or administration content from any type of online device.
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- The [Polycom Partner Network](#) are industry leaders who natively integrate the Poly standards-based RealPresence Platform with its customers' current UC infrastructures making it easy for you to communicate face to face with the applications and devices you use every day.
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Getting Started

Before you develop UVC XU host applications, review the following overview and support information for Poly EagleEye Cube USB cameras.

Overview

The Poly EagleEye Cube USB camera UVC XU is a control interface that communicates between the camera and vendor-supplied client software using UVC standards. It detects and enables vendor-specific features, sends control requests from the client software, and receives statuses from the unit.

Supported Platforms

The Poly EagleEye Cube USB camera UVC XU supports the following platforms. These platforms are also referred to as the *host*.

- Windows
- Mac OS X 10.12 and later
- Linux

Supported Extension Controls

The following table shows the supported extension controls for EagleEye Cube USB and their default values.

Supported Extension Controls for EagleEye Cube

Extension Control	Default Value
Attendees Count Control	OFF
Speaker Tracking Control	Group framing Medium sensitivity Medium margin
Camera Preset Control	N/A
Wide Dynamic Range (WDR) Control	ON
Skin Enhancement Control	ON
Far End Audio Playing Control	OFF
OSD On/Off Control	OFF
Sleep Status Control	OFF

XU Control Specification

This section describes the EagleEye Cube USB camera UVC XU descriptor and vendor-specific feature controls.

UVC XU Descriptor

The following table outlines the EagleEye Cube USB camera's UVC XU descriptor.

EagleEye Cube USB camera UVC XU Descriptor

Offset	Field	Size	Value	Description
0	bLength	1	27	Size of this descriptor
1	bDescriptorType	1	36	CS_INTERFACE descriptor type
2	bDescriptorSubtype	1	6	VC_EXTENSION_UNIT descriptor subtype
3	bUnitID	1	7	The ID of the XU (this value varies in different cameras)
4	guidExtensionCode	16	71b15625-9cba-4eec-833b-5a72fb4c0fdd	Vendor-specific code to identify this XU
20	bNumControls	1	14	Number of controls in this extension unit
21	bNrInPins	1	1	One input pin
22	baSourceID(0)	1	3	Processing unit is the source unit
23	bControlSize	1	2	Size of the bmControls field
24	bmControls(0)	2	0xfe	Bitmap (this bitmap value may vary among different cameras, depending on the capabilities of the device)
25	bmControls(1)	1	0x3a	Bitmap (this bitmap value may vary among different cameras, depending on the capabilities of the device)
26	iExtension	1	0	Index of a string descriptor

Vendor-Specific Feature Controls

The EagleEye Cube USB camera supports the basic UVC class-specific control requests defined in “Chapter 4: Class-Specific Requests” of the [UVC 1.5 Class Specification](#).

The following sections illustrate the required control request values for each vendor-specific feature, with optional offset values.

Attendees Count Control

The attendees count control calculates the number of attendees through the face detect feature.

This control is reported as an AutoUpdate control. For the AutoUpdate capable control, see section 2.4.22 “Status Interrupt Endpoint” of the [UVC 1.5 Class Specification](#).

Attendees Count Control Request Values (Control Selector 2)

Category	Request Values
Mandatory Requests	GET_CUR, GET_INFO, GET_LEN, SET_CUR, AUTO_UPDATE
Preset index	4

Note: The GET_MIN and GET_MAX requests return the minimal and maximum report interval values supported by the camera device. Any value in the SET_CUR request that is out of the range is ignored.

Offset 0 Request Values

Category	Request Values
Offset	0
Field	bEnable
Size	1
Value	Boolean
Description	<ul style="list-style-type: none"> 0: Disable attendees count function 1: Enable attendees count function

Offset 1 Request Values

Category	Request Values
Offset	1
Field	bNumAttendees
Size	1
Value	Number

Description	The number of detected attendees in the conference. This field is read-only
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Speaker Tracking Control

The speaker tracking control enables or disables the group framing and speaker tracking feature.

To use this function properly, remember the following:

- **When someone mutes the microphone:** The USB host must disable speaker tracking and then re-enable it to the configured type (group framing, tracking) when someone unmutes the microphone.
- **When someone on the far end is speaking in a video call:** The USB host must disable the feature and then re-enable it to the configured type (group framing, tracking, tracing) when the person on the far end stops speaking.

Speaker Tracking Control Request Values (Control Selector 3)

Category	Request Values
Mandatory Requests	GET_CUR, GET_INFO, GET_LEN, SET_CUR, AUTO_UPDATE
wLength	3

Offset 0 Request Values

Category	Request Values
Offset	0
Field	bTalkerTrackingEnabled
Size	1
Value	Number
Description	The setting for the switch of Speaker Tracking Control: <ul style="list-style-type: none"> • 0: Disabled • 1: Enable group framing only • 2: Enable speaker tracking

Offset 1 Request Values

Category	Request Values
Offset	1
Field	bSensitivity

Size	1
Value	Number
Description	<ul style="list-style-type: none"> • 0: Low sensitivity • 1: Medium sensitivity • 2: High sensitivity

Offset 2 Request Values

Category	Request Values
Offset	1
Field	bFrameSize
Size	1
Value	Number
Description	<ul style="list-style-type: none"> • 0: Tight margin • 1: Medium margin • 2: Wide margin

Camera Preset Control

The camera preset control configures and restores the preset camera parameters.

Camera Preset Control Request Values (Control Selector 4)

Category	Request Values
Mandatory Requests	GET_LEN, SET_CUR, AUTO_UPDATE
wLength	2

Offset 0 Request Values

Category	Request Values
Offset	0
Field	bOperation
Size	1
Value	Number

Description	<ul style="list-style-type: none"> • 0: Do nothing • 1: Clear preset • 2: Save current camera settings to preset • 3: Apply selected preset to camera
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Offset 1 Request Values

Category	Request Values
Offset	1
Field	bPresetIndex
Size	1
Value	Number
Description	Preset index

Wide Dynamic Range (WDR) Control

The wide dynamic range control setting enables or disables exposure adjustment based on the cropped view instead of the full view.

Wide Dynamic Range Control Request Values (Control Selector 5)

Category	Request Values
Mandatory Requests	GET_CUR, GET_INFO, GET_LEN, SET_CUR, AUTO_UPDATE
wLength	1
Offset	0
Field	bEnable
Size	1
Value	Boolean
Description	<ul style="list-style-type: none"> • 0: Disable WDR • 1: Enable WDR

Skin Enhancement On/Off Control

The skin enhancement on/off control setting enables or disables face smoothing.

Skin Enhancement Control Request Values (Control Selector 6)

Category	Request Values
Mandatory Requests	GET_CUR, GET_INFO, GET_LEN, SET_CUR, AUTO_UPDATE
wLength	1
Offset	0
Field	bEnable
Size	1
Value	Boolean
Description	<ul style="list-style-type: none"> 0: Disable skin enhancement 1: Enable skin enhancement

Far End Audio Playing On/Off Control

The far end audio playing on/off control notifies the camera if audio is playing on the host. The camera can turn speaker tracking off or on to avoid an incorrectly cropped view.

Far End Audio Playing On/Off Control Request Values (Control Selector 7)

Category	Request Values
Mandatory Requests	GET_CUR, GET_INFO, GET_LEN, SET_CUR, AUTO_UPDATE
wLength	1
Offset	0
Field	bStatus
Size	1
Value	Boolean
Description	0: Far end audio playing is off 1: Far end audio playing is on

OSD On/Off Control

The on-screen display (OSD) on/off control turns the OSD video stream on or off. The OSD shows resolution, format and framerate of the current video stream.

OSD On/Off Control Request Values (Control Selector 7)

Category	Request Values
Mandatory Requests	GET_CUR, GET_INFO, GET_LEN, SET_CUR, AUTO_UPDATE
wLength	1
Offset	0
Field	bEnable
Size	1
Value	Boolean
Description	<ul style="list-style-type: none"> • 0: OSD is off • 1: OSD is on

Sleep Status Control

The sleep status control turns the camera sleep status on or off.

Sleep Status Control Request Values (Control Selector 10)

Category	Request Values
Mandatory Requests	GET_CUR, GET_INFO, GET_LEN, SET_CUR, AUTO_UPDATE
wLength	1
Offset	0
Field	bFlip
Size	1
Value	Boolean
Description	<ul style="list-style-type: none"> • 0: Sleep mode is off: The camera wakes up immediately • 1: Sleep mode is on: If the camera isn't in use and there are no other reasons to stop sleep mode (such as upgrade, error status, or mute), the camera goes to sleep mode immediately.