

# Sony Visca Camera Control

**SonyVisca.exe**

Driver version 3.1

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# 1 Overview

## 1.1 Description

Sony created the VISCA protocol to support the range of Pan Tilt Zoom (PTZ) cameras used for video conferencing and surveillance. As the cameras gained extra capabilities, the command set increased to support those features.

This driver has been developed to operate in V3 and later BNCS systems, and is compatible with the Infodriver slots used in an earlier V2 Visca driver enabling existing control panels to be used. A few extra slots have been activated to support red and blue gain controls available on some of the newer camera units.

Visca protocol supports a control network that has a controller and up to 7 devices connected in a daisy chain. This driver does not support the daisy chain connection; it only works with single camera. To control multiple cameras run multiple instances of the driver.

Older cameras used serial communications running at 9600 baud, 8-bits per character, no parity, and one stop bit. These are the default values installed in the device INI file when the driver is initially run. The baud rate can be increased to work with newer cameras that support 38400 baud.

This driver is an infodriver external, and communicates with the host infodriver using BNCS 32-bit messaging via a DLL.

Operation has been tested on Windows XP and Windows 7. The driver was compiled using Visual Studio Express 2013, and requires the run-time support for 2013. This is normally installed when using a current V4.5 host system. Otherwise download and install the run time libraries available from the Microsoft web site.

Version 3.1 of the SonyVisca driver adds to the control capabilities provided by version 3.0. Both versions are valid, and the user may choose the one best suited to their application. Version 3.1 supports the reporting and direct setting of pan, tilt, zoom and focus values. Basic VISCA controlled cameras have 6 shotbox memories with the ability to smoothly transition between settings. The ability to read and set pan, tilt, zoom and focus properties allows a user to create a BNCS panel that stores many more shotbox settings that can be downloaded into the available memories. The absolute position commands move to the new value at the maximum speed supported by the servos.

The position data can have a forced update by writing a '1' to slot 60, but the data stores are also updated when the user sends a stop command for the pan, tilt, zoom, and focus commands.

The size of the pan value has been increased over the years. Older camera models had a 16-bit pan position value, new cameras have a 20-bit pan position value. An extra parameter, ***ptz\_set***, has been added to the INI file in section [Visca]. If this is set to a zero the driver uses the 16-bit messages, if it is set to 1 the driver uses the 20-bit messages.

## 1.2 Required CSI Version

The driver is a 32-bit application and uses CSI 32-bit messaging. The driver operation has been proved on V3CSI and CSI32.

Tested with:	V3CSI	version 3.05.09
	CSI32	version 1.2.56

## 1.3 Host Infodriver Version

This driver has been proven with both V3infdrv and Infodriver32.

## 1.4 Resilience and Redundancy

This driver does NOT support Tx/Rx switching, as there is only a single serial connection to the camera.

## 2 Driver Configuration

The host infodriver should be started before the Visca driver. Both drivers must be given the same BNCS driver number on their startup command lines.

The driver looks for a configuration file dev\_XXX.ini where XXX is the driver ID passed on the command line. If the ini file is not found, a file with default settings is created.

The driver tests the host environment to establish if it is operating in a V3 or a V4.5 installation, and hence locates the folder for the INI file.

### 2.1 Ini file settings

There is only data section used by the driver – **Visca**.

#### 2.1.1 [Visca] section

This section holds values relating to basic operations.

Item	Values and Defaults	Comment
Debug	0 or 1 Default is 0	1 to send debug data to the windows debug display and the list box in the driver dialog.
Port	1 to nn Default is 1	Windows com port number used to communicate with Visca camera.
Speed	9600 (Default)	Some cameras offer 19200 or 38400 baud.
DataBits	8 (Default)	
StopBits	1 (Default)	
Parity	N (Default)	
ptz_set	0 or 1 (Default 1)	Use 0 for older cameras with 16-bit pan position. Use 1 for cameras that have a 20-bit pan position.

## Infodriver Slot Use

The Infodriver slots and parameters are defined in the table below. There are many gaps in the table, as the original BNCS V2 driver also supported a JVC 55 camera, and that unit supported more commands. Slots 50 to 55 are only available on some models of camera.

Slot	R/W	Slot Name	Parameters
1	W	Reset Comms	1 = Reset serial comms to camera
2		---	
3	W	Iris & Gain	0 = Auto      1 = Manual
4	W	White Balance	0 = Auto      1 = Indoor      2 = Outdoor
5	W	Auto White	1 = Set white balance and hold
6	W	Gain	-3 0 3 6 9 12 15 18 dB. IRIS MUST be set to Manual. -3dB is not available on older cameras such as the D30/D31.
7		Shutter	Not implemented (Too much dependency on exact camera)
8	W	Zoom	0=Stop 1=Tele_Slow    2=Wide_Slow 3=Tele_Fast    4=Wide_Fast
9	W	Focus	0=Stop      1=Near_Slow    2=Far_Slow    3=Near_Fast 4=Far_Fast                      6=Auto      7=Manual
10-20			Were used by JVC 55
21	W	Iris Level	0=Closed 1=F28      2=F22      3=F19      4=F16 5=F14      6=F11      7=F9.6      8=F8 9=F6.8      10=F5.6      11=F4.8      12=F4 13=F3.4      14=F2.8      15=F2.4      16=F2 17=F1.6
22		Black Level	
23-30			
31	W	Pan Speed	1=Slowest    24=Fastest
32	W	Tilt Speed	1=Slowest    20=Fastest (D30/D31 Camera) 24=Fastest (BRC-300 Camera)
33	W	Pan Command	0=Stop 1=Up      2=Down      3=Left      4=Right 5=UpLeft    6=UpRight    7=DownLeft    8=DownRight 9=Home
34-39			
40	W	Shot Box Set	1, 2, 3, 4, 5, 6.    Some later camera models support 1 to 16
41	W	Shot Box Recall	1, 2, 3, 4, 5, 6.
42	W	Shot Box Reset	1, 2, 3, 4, 5, 6.
43-50		---	

Slot	R/W	Slot Name	Parameters
50	W	Manual White Balance	1=Manual (See slots 4 and 5 for other options)
51	W	Reset Red Gain	1=Reset
52	W	Red Gain	0 – 255
53	W	Reset Blue Gain	1=Reset
54	W	Blue Gain	0 – 255
55	W	Camera Tally	0=Off 1=On
56-59		---	
60	W	Report Positions	Write a 1 to force the driver to read the pan, tilt, zoom and focus values and report them in slots 61 through 64.
61	R	Pan position	Signed value.
62	R	Tilt position	Signed value
63	R	Zoom position	Unsigned value
64	R	Focus position	Unsigned value
65		---	
66	W	Set pan position	Panel writer is expected to keep the values in the supported range.
67	W	Set tilt position	Panel writer is expected to keep the values in the supported range.
68	W	Set zoom position	Panel writer is expected to keep the values in the supported range.
69	W	Set focus position	Panel writer is expected to keep the values in the supported range.
---			
4095	R/W	Toggle 1	Data written to this slot is copied to slot 4096
4096	R/W	Toggle 2	Data written to this slot is copied to slot 4095

## 3 Version History

### 3.1 Driver Version

Version No	Date	Details	Name
V3.1.0	11/03/2017	Initial release	Andy Woodhouse

### 3.2 Document Version

Version No	Date	Details	Name
V1.0	11/03/2017	First release	Andy Woodhouse

