INSTALLATION GUIDE **AVT MANTA**

For Swing Catalyst Studio Installations







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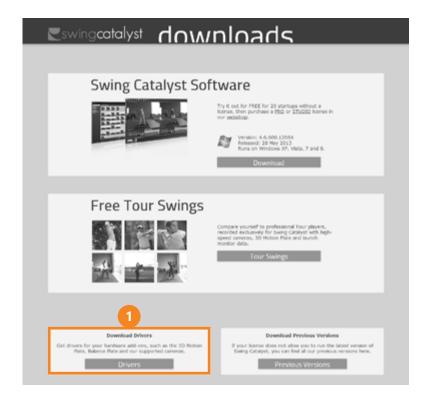
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Installation guide AVT Manta 2013

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DOWNLOAD DRIVERS



- Download the drivers from: http://downloads.swingcatalyst.com/drivers.html *
- Install the drivers, and make sure to accept installation of the "AVT GigE Vision Filter Driver".

If you are unsure on how to do any of these steps please see the manufacturer guide linked underneath, which contains a comprehensive guide explaining all the steps in detail.

* For Allied Vision Tech (AVT) cameras, please see the additional manufacturer documentation: AVT Manta Hardware Installation.

DRIVER CONFIGURATION

Ethernet 2 Properties	×
Networking Sharing	
Connect using:	
Intel(R) PRO/1000 GT Desktop Adapter	
Configure This connection uses the following items:	1
I <u>n</u> stall <u>U</u> ninstall Properties	
Description Allows your computer to access resources on a Microsoft network.	
OK Cance	I



General Advanced Driver Details Events Power Management The following properties are available for this network adapter. Click the property you want to change on the left, and then select its value on the right. Property: Value: Property: Value: 9014 Bytes (Alteon) < 2 9014 Bytes (Alteon) < 2 Interrupt Moderation Breve Checksum Ottload 9014 Bytes (Alteon) < 2 2 Interrupt Moderation Breve Checksum Ottload 9014 Bytes (Alteon) < 2 2 Interrupt Moderation Breve Checksum Ottload (IPv4) 1 1 Locally Administered Address Number of Coalesce Buffers 4 1 Profity & VI AN 4 7 1 1 Receive Buffers 4 7 1 1 Transmit Buffers 4 7 1 1 OK Cancel 1 1 1	Intel(R) P1/10)00 GT	Deskt	op Ada	pter Prop	erties	×
the property you want to change on the left, and then select its value on the right. Property: Value: Adaptive Inter-Frame Spacing Flow Control Interrupt Moderation Interrupt Moderation Rate Umbo Packet Large Send Offload (IPV4) Link Speed & Duplex Locally Administered Address Number of Coalesce Buffers Priority & VI AN Receive Buffers Priority & VI AN Receive Buffers Priority & VI AN Transmit Buffers	General	Advanced	Driver	Details	Events	Power Mana	agement	
Adaptive Inter-Frame Spacing Row Control Internupt Moderation Rate Understion Rate Units Speed & Duplex Locally Administered Address Number of Coalesce Buffers Priority & VI AN Receive Buffers Priority & VI AN Transmit Buffers V	the pro	perty you war						
Flow Control Interrupt Moderation Interrupt Moderation Rate 3 IPV4 Checksum Offload Jumbo Packet Large Send Offload (IPv4) Link Speed & Duplex Locally Administered Address Number of Coalesce Buffers Priority & VI AN Receive Buffers 4 TCP Checksum Offload (IPv4) Transmit Buffers	Propert	y:			<u>V</u> a	lue:		
OK Cancel	Flow (Internut Internut Internut Jumbo Large Link S Locall Numb Priorith Recei	Control of Moderation becksum Off Packet Send Offload peed & Duple y Administered er of Coalesco & VI AN ve Buffers hecksum Offl	(IPv4) x d Address Buffers	3		1014 Bytes (Al	teon)	2
						OK	Cano	el

- Set Jumbo Packet to 9014 Bytes.
- Set Interrupt Moderation Rate to Extreme.
- Set Receive Buffers to maximum. The maximum value depends on the network card. (Minimum recommended value is 512, some cards can go up to 2048).

INSTALL DRIVERS

ů	GigE 3 Properties		×
Networking Sharing			_
Connect using:			
Intel(R) PRO/10	000 GT Desktop Adapter		
This c <u>o</u> nnection uses t	he following items:	<u>C</u> onfigure	
AVT & Prosilic GoS Packet File and Printe AVT & Microsoft Net	daed Networking Driver a GigE Vision Filter Drive	letworks	
l <u>n</u> stall	<u>U</u> ninstall	P <u>r</u> operties	
Description			
	ОК	Cance	I

Disable all network modules on the network card, except the AVT filter and IPv4.

2 Now you are done. Press OK.

It is recommended to set a static IPv4 address for each network interface used with the AVT Manta cameras. Please make sure you uncheck everything but the filter driver and IPv4. Depending on how many cameras you're

Û.	Gig	gE 3 Properties		×
Networking	Sharing			
Connect us	ing:			
👰 Intel(R) PRO/1000	GT Desktop Adapte	er	
This conne	ction uses the	following items:	<u>C</u> onfigure	
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l <u>n</u> sta Descriptio		<u>U</u> ninstall	Properties	
		2		

installing you may need additional network cards, or a network switch. Remember to set up each network card you plan to use with the AVT Manta camera. You can use up to two Manta cameras on one gigabit ethernet switch for each network card.

For more details on how to configure and set up the AVT Manta cameras for the best performance, please see the included documentation from AVT.

INITIAL SETUP

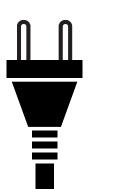


For each Manta camera you should have a power supply and lens. Depending on how many cameras you plan to use, you may need a network switch, or a network card(s).

For more information visit http://support.swingcatalyst.com







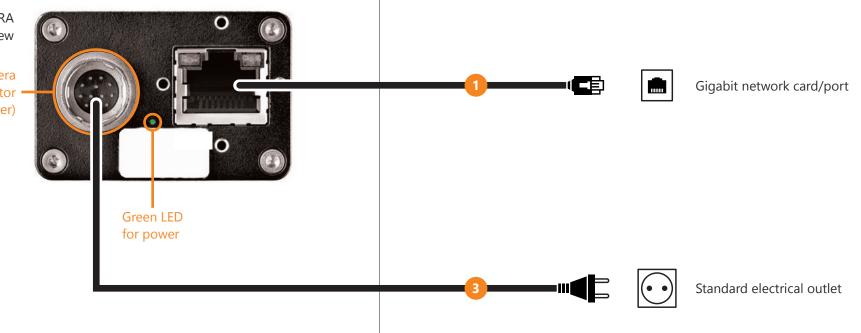


- 1 Mount cameras in their positions, such as *face on*, *down the line* and *overhead*.
- 2 Attach the lens, the power cable and the ethernet cable to the camera.
- 3 Connect each camera to power, and the ethernet cable(s) to the PC. See cabling schema on **page 12**.

CONNECTING THE CAMERAS

MANTA CAMERA rear view

12-pin camera I/0 connector (+ external power)



- 1 Connect a CAT5 or CAT6 / RJ45 network cable to the camera, and to the gigabit network card/port on your computer.
- 2 If you wish to connect more than one camera you may use multiple network cards, network switch to connect multiple cameras to a single card.

Using a network switch is only possible when the total

bandwidth of all cameras used do not exceed 1 gigabit per second. Please contact us if you are unsure if this is possible in your case.

Cameras that can be used with a network switch: - AVT Manta G-033/G-034/G-046 - AVT Prosilica GC650



Plug the power cable(s) into the outlet(s).

CONFIGURE CAMERAS

Camera	Configuration Mode		Subnet Mask	Gateway	Status
02-20210-06280	Fixed	10.0.0.8	255.255.255.0	10.0.0.1	-1

By default the AVT Manta cameras are set to Auto IP, which assigns an IP address automatically to each camera. We recommend static IP's for each camera, to improve overall stability. For a 1-2 camera setup this is not necessary, but recommended.

To assign a static IP address to your camera(s), run the GigE IPConfig program (bundled with the AVT camera driver).

	Edit IP Configuration	×				
Set the IP configuration for your camera. When you click DK, the configuration is saved as the camera's power-up settings.						
C Obta	in an IP address automatically using DHCP (Fallback to AutolF	ŋ				
O Obta	in an IP address automatically using Auto-IP (169.254.xxx.xxx)	- 1				
Use	the following IP address: 3					
	IP address: 10 . 0 . 8					
	Subnet mask: 255 . 255 . 255 . 0					
	Default gateway: 10 . 0 . 0 . 1					
	OK Cancel					

Select the camera you want to edit.

Click Change.

Set an IP address of 10.0.0.2 or higher, on the first camera and 10.0.0.1 on the respective network port. Repeat these steps for the other camera(s) but for the second camera use the IP 10.0.1.2, and 10.0.1.1 on the second network port.

CAMERA SETTINGS

🔒 🔒 Main	Menu	>	Settings	
Swing	Analysis			
			General	
			1	
Sett	ings		Cameras	
Ab	out		Hardware	
			Screen	
E	kit			

After having installed and configured the cameras they will be available in the Swing Catalyst Software.

- To access the available cameras go to Main Menu Settings - Cameras.
- Click the "preview" button to see what angle the camera has.



- Select the corresponding angle, for example "Down the line".
- Click "Advanced" to open the camera configuration dialog.

2

EXPOSURE

Advance	ed Cam	era Settings	
General	Video	Region of Interest	Color
Frame R	late		
91,73			-
Exposur	e (µs)	1	
Auto			*
275	1		2
✓ Auto	o Paramet	ters	
Gain			
Auto			•
9			- 1
✓ Auto	o Paramet	ters	

Setting the correct camera parameters is very important to ensure good image quality, but the usable camera parameters depend a lot on the amount of lighting available.

If the lighting conditions change a lot it is recommended to set the Exposure mode to Auto and use the "auto parameters" minimum/maximum exposure time to set the range of acceptable exposure values.

If the lighting does not change use Manual mode.

3 Ideally the exposure time should be a low as possible to eliminate motion blurring of the club shaft, but a lower exposure will also result in a darker image.

Recommended values for exposure time is 500 microseconds (μ s) to 2000 microseconds (μ s), this the same as 1/2000th and 1/500th shutter.

GAIN/ISO

Advanced Camera Settings	
General Video Region of Interest	Color
Frame Rate 91,73	
Exposure (µs)	
Auto	•
275 ✓ Auto Parameters	
Gain	
Auto	•
9	
✓ Auto Parameters	

Higher gain values will "boost" the image brightness, but will also cause more noise in the image. If the image is too noisy try lowering the gain value, if it is too dark try increasing it.

LENS OVERVIEW



The provided lens has 3 rings for adjustments*



* The lenses may differ from this example.

ZOOM AND FOCUS





On a varifocal (zoom) lens the Zoom and Focus rings work together, so it may help to tweak both adjustment rings for good focus/zoom.



More light. Smaller depth of field. Less light. Larger depth of field.

The Iris adjustment ring determines the amount of light let onto the film (the "opening").

Closing the iris will result in a darker image but will help give better focus by increasing the focus depth.

If the image is over-exposed (e.g. on a very sunny day) closing the Iris is recommended.

Step 4 Lens Adjustment

Step 4 Lens Adjustment

ADDITIONAL CONFIGURATION

	S	wing cat	alyst	
Camera Settings				
Videum 1.1 Standard VidC	4 9			
Down the line	Use Camera ON Advanced	lacksquare	L	
Videum 1.2 Standard VidC				
Top down	Use Camera ON Advanced	lacksquare	1	
Videum 1.3 Standard VidC	•p			
Face on right	Use Camera ON Advanced	lacksquare	1	
Videum 1.4 Standard VidC	• 9			
Face on left	Use Camera ON Advanced.	\mathbf{igstar}		
You are licensed to use 4 cameras. You are currently using 4 cameras.				

This concludes the configuration of one Manta camera.



A. Select angle in Swing Catalyst to show live stream of another camera.

B. Navigate the menus and set shutter speed.

C. Adjust zoom, focus and iris.

SUPPORT



By now you should have successfully configured one or more Manta cameras for use with Swing Catalyst.

If you have any questions, please contact support:

support@swingcatalyst.com

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