Minrray NDI | HX PTZ Camera Quick Installation Guide



Notes: This is only quick installation for NDI Usage. For more information about this camera, pls find it from Manual from Camera Box or contact us to have PDF format manual.

1. Equipment Installation

1) Connect camera to your network via a CAT5 or CAT6 patch cable or directly to your PC via a CAT5 or CAT6 crossover cable.

2) Turn on camera power.

3) If successful, the orange network light will illuminate and the green light will start flashing. If unsuccessful, the patch cable is bad, you are using the wrong cable (patch aka "straight-thru" cable for connection through a LAN; crossover for a direct PC connection) or you have connected to an inactive network jack.

2. Network Connection

Connection method between network camera and computer, as in pictures 1.1 and 1.2, below:



Picture 1.1 Direct connections via "cross-over" network cable



Picture 1.2 Connections to LAN via patch cable to LAN wall jack or LAN switch(For POE, you need to use PoE Switch 802.3af)

3. Setting Computer Networking.

1) open the window of Local Area Connection Properties on computer, select the "Internet protocol version 4(TCP/IPv4)" as shown by picture as below.

Uccal Area Connection Properties									
Networking									
Connect using:									
Intel(R) 82579LM Gigabit Network Connection									
Configure									
This connection uses the following items:									
Install Uninstall Properties									
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.									
OK Cancel									

2) Double click or click the property "Internet protocol version 4 (TCP/IPv4) "to enter into the Internet Protocol Version 4(TCP/IPv4) Properties window, select "Advanced" to enter into the Advanced TCP/IP Setting.

Seneral	
You can get IP settings assigned this capability. Otherwise, you r for the appropriate IP settings.	d automatically if your network supports need to ask your network administrator
Obtain an IP address auto	matically
O Use the following IP addres	ss:
IP address:	192 . 168 . 0 . 26
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192.168.1.1
Obtain DNS server address	s automatically
Output the following DNS served as a served of the serv	ver addresses:
Preferred DNS server:	8.8.8.8
Alternate DNS server:	8.8.4.4
Validate settings upon exi	t Advanced

3) Add IP and subnet mask in the IP browser as picture shown below

IP addresses		
IP address	Subnet mask	
192.168.0.26	255.255.255.0	TCP/IP 地址
A	dd Edit Remove	IP 地址(<u>I</u>): 192 .168 . 5 .10 子网掩码(<u>S</u>): 255 .255 .255 . 0
Gateway 192, 168, 1, 1	Metric	添加(A) 取消
A	dd Edit Remove	
Automatic metric		

4) Click the "Confirm" to have adding Camera to the same segment of computer network.

高级 TCP/IP 设置		? ×
IP 设置 DNS WINS		
IP 地址(R)		
IP 地址	子网掩码	
192.168.5.10	255. 255. 255. 0	
添力	Δ(A) 编辑(E)	删除(∀)
默认网关(F):		
网关	跃点数	
192.168.1.1	自动	
添力	<mark>D(D))</mark> 编辑(T)	删除(M)
□ 目动跃点(U)		
接口跃点数(N):		
	确定	

4. IE Login

1) Open IE or Google Chrome Brower, enter IP address of NDI camera: 192.168.5.163. Login with user name or password: admin. Pls select English before you login.



2) The next thing you would want to do is change your cameras IP address to be in the same range as your network. The camera comes with a default static IP address of 192.168.5.163. You will need to update that to be in the same range as your network: make sure IP range, subnet Mask and Gateway is same.

				Preview	Configuration
Configurations E	thernet				1
Audio Configure Video Configure Video Encode Stream Publish RTP Multicast Video Parameters Video OSD OSD Font Size OSD Font Size NetWork Configure Network Port Ethernet ODNS GB28181 System Configure SystAttr SysTime SysUser Update Default Reboot	DHCP IP Address Subnet Mask Default Gateway MAC Address	I 192.168.5.115 255.255.255.0 0.0.0.0 E4:77:D4:05:E8:9A	3		I

3) Extras: Discovering your Network IP range. NOTE: Changing your IP address without talking to your network admin could lead to conflicts with your network. If you change your address to one that is already in use it will cause communication problems.

A. If you need to discover the IP address range of your network you can do so by using command prompt for Windows or Terminal for Macs.

B. To do this on a PC, you would type "CMD" into your search bar in the Windows menu. You should see a black box pop up with the ability to type in the box.

C. If you type "ipconfig" and hit "Enter" on your keyboard you will see a bunch of information

pop up in your command prompt.

D. When you see "IPv4 Address" that is your computers IP address on your current network. So you would use the first 3 sets of numbers from this as your IP range.

```
C:\Windows\system32\cmd.exe
C:\Users\ANDY>ipconfig
Windows IP Configuration
Wireless LAN adapter Wireless Network Connection 3:
                        . . . . . : Media disconnected
  Media State . . .
  Connection-specific DNS Suffix
Wireless LAN adapter Wireless Network Connection 2:
                             : . : Media disconnected
  Media State . .
  Connection-specific DNS Suffix
Wireless LAN adapter Wireless Network Connection:
  Connection-specific DNS Suffix . :
  Link-local IPu6 Address . . . . : fe80::9c74:bc95:7829:96c%15
  Default Gateway . . . . . . . . . . . 192.168.111.1
Ethernet adapter Bluetooth Network Connection:
```

If you need to find the IP range of your MAC computer, you would first open a new finder window and then go to Applications, and then Utilities. You should see the program "Terminal" in that menu, select that program.

Now, you would type in "IP config get if addr en0" Once you type this string and click "Enter" on your keyboard you will receive back an IP address.

So the IP range of my network, according to my MAC is 192.168.111.xxx, you can use this to figure out the IP range in which your camera needs to be set.



5. Enable NDI | HX on Admin Webpage Login on the webpage by NEW camera IP address

2	Configuration	× +							T	-	ø	×
	< > Configuration	192.168.4.9/pages/main.asp#	18 C V	⑧• 樹	援索	Q 🞮	6	$\underline{\vee}$	% •	۶·	+	=
7					Preview	Playback	Co	onfigura	ation	L	ogout	
	Configurations Classic Configure Classic Configure Classic Configure Classic Configure Classic Configure Classic Classi	NDI Enable 🔀 NDI Name NDI-123456 NDI Group public Save										

6. Test NDI|HX Camera with NDI Studio Monitor (the software is available on NewTek website)



8. NDI | HX Camera Video Encode and Audio Configuration

• Video Encode

く 🔿 🖒 🏠 🛱 192.168.4.9/pages/main.asp#

e C ~ 😒・在此渡家 🔍 🕰 💪 坐 品・ウ・十	Ξ
----------------------------	---

Preview Playback Configuration Logout

Configurations	Video Encode		
Cal Configure	Stream	Main Stream	Sub Stream
Video Configure	Compressed Format	H.264	H.264 ~
Video Encode Stream Publish RTP Multicast	Profile	HP 💙	(HP V
 Video Parameters Video OSD 	Image Size	1920*1080	320*180
OSD Font Size	Rate Control	CBR	CBR
Video Out Network Configure Network Port	Image Quality	Best	Better
 Ethernet 	Bit Rate(Kb/S)	4096	512
O DNS O GB28181	Frame Rate(F/S)	25	25
NDI System Configure	I Frame interval	75	75
SystAttr SD Card Store	I Frame Min QP	20	20
 SysTime SysUser Update Default 	Stream Name	live/av0	live/av1
Reboot		Save	

High bandwidth mode: Main Stream Low bandwidth mode: Sub Stream

Recommended video encode settings: . 1920 * 1080: 4096 kb/s 1280 * 720: 2048 kb/s 640 * 480: 1024 kb/s 640 * 360: 1024 kb/s 320 * 180: 512 kb/s 320 * 240: 512 kb/s Notes: The higher the Bitrates, the better the image quality

9. Audio Configure

	ourst hadest mannash-		10 C ~ 🔗 · En	σ 🐱 🤄 不 努・シ・+			
				Preview	Playback	Configuration	Logou
figurations Audi	o Configure						
Local Configure Enab	sle 🗹						
Video Configure Enco	de Type AAC	·					
Stream Publish Sam	ple Rate 48000	~					
Video Parameters Sam	ple Bits 16	~					
O OSD Font Size Bit R	ate 64Kbps						
NetWork Configure Char	inel Stereo						
Network Port Input Input	Volume 🖉 🛞	2					
NO System Configure System Configure System Sto Carl Store System System System Default Default Reboot							

Recommended audio settings: AAC 48000KHz / 64kbps NDI | HX supports AAC format only

10 Notes:

- High and low bandwidth mode are open at the same time, customers can switch according to different occasions.
- The frame rate will affect the video latency. With the same resolution, the higher the frame rate, the smaller the delay of the video.
- The HEVC (H.265) format will be supported by NDI|HX 4.5. The current version NDI|HX 4.0 only supports H.264.
- The video frame rate is up to 60 frames. Open two streams at the same time at most.
- To make sure NDI video smooth, please do not open other stream when NDI streaming is on.
- SDI and HDMI video out are turned on by default. It's recommended to adjust the Video Out Format to 720PX when you don't need SDI/HDMI video. "X" represents the frame rate in 720PX.
- To configure 60fps Video, Video Out Format must be set as 1080P60 or 720P60. Otherwise the frame rate of the Video encode part of 60 cannot be configured successfully.
- Keep the frame rate of the video encoding part is consistent or multiple with the video out.
- Such as: Video encoding frame rate is 25, then set the video out format as 1080P25, 1080P50 or 720P25, 720P 50
- Video encoding frame rate is 30, then set the video out format as 1080P30 or 720P30
- Video encoding frame rate is 60, then set the video out format as 1080P60 or 720P60

10. NDI | HX Camera & vMix

Firmware requirement: vMix23 and above

1) Open vMix23, add NDI source

vMix Basic - 23.0.0.46 x64			- 0
Preset New Open - Save La	Γuliscreen •	Pause Inputs Bas	ic Settings
Blank	📕 🖸 💠 🛛 Quick Play 🛛 Blank		٠
Input Select		×	
Video		~	
	NDI Local Desidop Capture		
	NDI" 🖱	http://NDI.NewTek.com/	
	AFOIA-804281340	^	
And Charles (198			
A Stream / Ski			
R Instant Replay	Studio Menitor 1		
Inage Sequence / Stinger			
Video Dalay	NDI-HX		
In age	3		
Flotox			
PowerPoint			
Colour	X0I-123466		
🖳 Audio	NDI HX		
🖳 Audio Inpet			dill Andro I
1 Black			
կլըդ քեսոհ		ų.	
Fa Virtual Set	Low Bandwidth Mode Audio Only 1287 Increase Buffer Size	1	
Web Browzer			
(Video Call	Sunber 1 V 4 OK	Cancel	
Class Ouisk Blass Out Loss Class Ouisk Blass Out			
Cless Class Play Cut			
Add Input - 🌣 Record	🔅 External 🔅 Stream - 🏶 MultiCorder 🄅 PlayList	Overlay	= 💶 📰 🚳
480p.29.97 EX FPS 30 Render Time: 0 ms GPU Hem: 0 % 0	PU vHto: 1% Totak 52%		



2) Select Low Bandwidth Mode

																- 0	2
vMix	Basic - 23.0	0.0.46 x64													-	0	×
Prese	Ne	w	Open	Save Last	ດ			Fullso	reen				Pause Inputs	Basic		Settings	
	NDI NDI-	HX (NDI-12	23456)			📘 🗆 💠		Quick	Play		NDI NDI-H	IX (NDI-123456)					
	the second second	1	1000	1				a	4		100 m 1	Constant of the local division of the		1	1.12		
				1		1		Fade						1			
			-	Low Bandwidth Mode				Merr									
				Configure Source	- 1					ç.							
				AFOIA-804281340	- /			Wip	e •								
				Studio Monitor 1				CubeZ	oom -	6							
				NDI-HX NDI-123456				-									
				NDI_HX	1			F	ь				 				
				NDI-430450	1-												
					1												
					1					-							
<																	
																(II) Audio	o Miz
1 NDI	NDI-HX (ND	1-123456>		2 Blank													
		-															
1	1																
			-1														
E.	1																
Close Q	uick Play	Cut Loop		Close Quick Play Cut Loop													
AH	loout 4		Baco	ed .	*	External	Stream		*	MultiConder		Playlist		Overlay		1 II 6	
100		-	1000	77.637		and the second se	orrecom		ALC: NO			Contraction of the local division of the loc		ortenay			

3) Latency setting: the frames numbers are related to frame rate.

For example, the frame rate is 25fps, then the frame data is 40ms, set the frames number as 5, so the network latency is about 200ms.

vMix Basi	c - 23.0.0.46 >	:64												- a ×
Preset	New	Open -	Save	Last 🞧		1	Fulls	creen				Pause Inputs	Basic	Settings
ND	i ndi-hx (nd	I-123456)				📘 🖂 🔅	Quic	k Play	Blan	k				٠
						10000	Input: 1 NDI	NDI-HX ((NDI-123456)					
			_				General		Deray					
							Colour Adjust		0 3 fra	ames	Apply 0 MB a	located		
							Colour Key	l	Hiters					
				1			Colour Correcti							
							Position.							
							Multi View							
							Triggers							
							Tally Lights							
							PTZ	_	Propertie	45				
						L	Avgy allowed	2						
1 NOT NOT-	NT (NDT-12348	. 2	ilank											
	+	····.												
1		1												
1													T	
	1	1												
Close Quick	Play Cut 1	.cop II Close		ut Loop			Copy From							
Add Input	• •	Record		•	External	٠	Stream +	٠	MultiCorder	٠	PlayList		Overlay	i 🖬 🖬 📾 🕯

4) PTZ – Device type: Sony VISCA over IP – IP Address: camera IP - connect

vMix Tria	al - 23.0.0.46 x64		
Preset	New Open - Save	Last	Fullscreen ·
NDI NDI-HX	(NDI-123456)		NDI NDI-HX (NDI-123456)
		Input: 1 NDI NDI-HX (N	DI-123456)
		General	
		Colour Adjust	Device Type Sony VISCA over IP 🗸
		Colour Key	IP Address 192.168.4.9
		Colour Correction	(Franke, www.v)
		Position	Connect 3
		Multi View	Tocus
		Triggers	E A A F A
		Tally Lights	
		PTZ	2 4 3 -
		Advanced	Speed
			Always sh
	and the second		

11. NDI | HX Camera & OBS

1) Using OBS, pls download OBS-NDI plug-in via the link below, and install. https://github.com/Palakis/obs-ndi/releases/tag/4.7.0

2) Add NDI source

O 1955 X1.8 Hildshir uludarini i Junifia Beller - Connect Beller	-		×
Die 164 Wene Dublie Scene Collection Inch Help			
Eine faßt View Bydie Space Golection Soch Hole			
Search Se			t,
	15.30	w (j.	



3) Enable Audio



9	S Advanced Audio Properties X																
F		Name	Status	¥olume		Lono	Balance	Sync Offset		Audio Monitoring		Trac	ks				
	3	NDI ¹⁸ Source		0.0 dB	¢			0 ms	¢	Monitor and Output		⊻ 1	<mark>⊻</mark> 2	Z 3 🛛	4 🗸	15 🗸	6
	()	桌面音频		0.0 dB	$\stackrel{\frown}{\sim}$		L	R Oms	Ş	Monitor Off		⊻ 1	<mark>⊻</mark> 2	Z 3 🛛	4	15 🗸	6
	Ŷ	麦克风/Aux		0.0 dB	\Rightarrow			0 ms	¢			⊻ 1	<mark>⊻</mark> 2 -	Z 3 🛛	4 🗸	15 🗸	16
Active Sources Only																	

5. Q&A (Trouble Shooting)

- Problem: Big latency with vMix and NDI | HX camera.
 - A: 1. Latency is increased due to the cache configured on client.
 - 2. Set the frame rate to 60 to decrease video latency.
- Q: NDI | HX camera latency

A: The tested average latency is about 130ms, the lowest delay is about 80ms.

- With the following settings:
- NDI|HX setting: 1920* 1080 | 4096kbs | 60fps;
- Video out setting: 720P60
- Testing software: NDI Studio Monitor (select low latency mode)
- Q: How to modify network video and audio parameters on NDI | HX camera?
 A: Please refer to the No.2 part (NDI | HX Camera Video Encode and Audio Configuration) on page 4.
- Problem: NDI | HX is able to search the source, but can't get the image?

A: Please refer to the No1. Part on page 2.

• Problem: Can't get video out with vMix.

A: vMix23 and above firmware is able to output NDI | HX video.

• Q: Minrray NDI camera is NDI | HX or FULL NDI?

A: NDI | HX (H264, H265)

H.265 is only supported by the latest version of NDI 4.5.2. If you need NDI 4.5.2, pls contact us for having new firmware.

• Q: Video is freezed when I use NDI stream.

A: NDI signal transmitting is over IP/network, pls make sure your network is good and stable. Decent network will give you good performance.

• How much Bandwidth does NDI HX use?

Bitrate: 0Mbps	Bitrate(mbps)	Resolution
Lowest	0-6	640×360
Low	7-8	1280×720
Medium	9-12	1920×1080
High	13-22	1920×1080

Minrray International Saels Team Your best NDI Camera Supplier