

열화상 포지셔닝 카메라

제품 사용 설명서

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열화상 포지셔닝 카메라

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- 시간 경과에 따른 제품의 변화 또는 사용 중 자연적 마모에 의한 이상

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안전하게 개인정보를 보호하고, 개인정보도용 피해를 예방하기 위해 3개월 마다 주기적으로 비밀번호를 변경하세요.

부주의한 비밀번호 관리로 인한 보안 및 기타 문제의 책임은 사용자에게 있으므로 각별히 주의하세요.

안전을 위한 주의사항

제품을 올바르게 사용하여 위험이나 재산상의 피해를 미리 막기 위한 내용으로 반드시 지켜 주시기 바랍니다.

 경고 지키지 않았을 경우 사용자가 사망하거나 중상을 입을 수 있습니다.	 주의 지키지 않았을 경우 사용자가 부상을 당하거나 재산상의 손해를 입을 수 있습니다.
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전원 관련		
 경고		
전원 및 신호선 연결 시 외부 연결 단자를 확인하고 연결하세요. 전원을 잘못 연결하면 화재, 감전, 고장의 원인이 됩니다.	연기가 나거나 이상한 냄새가 날 때는 사용을 중단하세요. 이때는 곧바로 전원을 분리 후 서비스 센터에 연락 해주세요. 그대로 계속 사용하면 화재, 감전의 원인이 됩니다.	전원이 인가되고 있는 상태에서는 분해하지 마세요.
 주의		
전원을 공급하기 전에 모든 전선이 올바르게 연결되었는지 한번 더 확인하세요. 접촉이 불완전한 경우는 화재의 원인이 됩니다.	제품이 고온이나 저온 환경에 설치되어 있었을 경우 표면의 고열이나 냉기로 인해 상해를 입을 수 있사오니 주의하시기 바랍니다.	기기에 전원을 공급하기 전에 전원이 24 V AC(50 또는 60 Hz) 최소 6 A를 지원하는지 확인하세요. 과도한 전원 입력은 화재 발생의 원인이 됩니다.
설치 관련		
 경고		
천둥, 번개가 치면 기기에 문제가 생길 수 있습니다. 설치 시 낙뢰에 의한 파손을 최소화 할 수 있도록 접지를 하시기 바랍니다.		
 주의		
제품 설치 전 매뉴얼을 충분히 읽은 후 지시에 따라 설치를 진행하여 주시기 바랍니다.	제품 설치 시, 강한 바람에 노출되었을 경우 등을 대비한 충분히 제품의 무게를 지탱할 수 있는 설치 표면에 고정되어야 합니다. 최소 제품 무게의 4배를 지탱할 수 있는 고정 방법과 고정 재질을 사용하여야 합니다.	이 장치는 원격으로 제어가 되며 어떤 때 이권 위치를 변화하는 관계로 장비의 움직이는 부분에 의해 가려져서 상해를 입는 유해한 환경을 조성하지 않도록 유의하여 설치해야 합니다.
제품 위에 다른 어떠한 것도 부착하지 마세요.	위험한 주변환경에서 설치 시 인화 발생 가능성을 감소시키기 위하여 전원으로부터 장비를 차단시켜 주시기 바랍니다.	히터나 모터 주위에 설치하지 마세요. 환기가 잘되는 곳에 설치하세요.
기술적인 서비스는 취급 권한을 가진 기술자를 통해서 지원 받으시기를 바랍니다.	방사능에 노출되는 곳에 설치하지 마십시오. 방사능 노출로 CMOS가 손상될 수 있습니다.	

참 고		
제품에 물건을 떨어뜨리거나 충격을 주지 마세요. 진동이 심한 곳이나 자석종류가 있는 곳으로부터 멀리해 주세요.	작동 온도를 초과하는 환경에는 설치하지 마세요.	설치된 제품을 이동하고자 할 때에는 반드시 전원을 끄고 옮기거나 재설치 하세요. 화재, 감전의 원인이 됩니다.
청소 관련		
 참 고		
제품을 청소하기 전에 전원 연결을 해제하세요.	제품 표면은 깨끗하고 부드러운 마른 헝겊으로 오염 부위를 닦거나 부드러운 마른 헝겊에 물을 적셔 물이 흐르지 않도록 꼭 짰 후에 오염 부분을 닦으세요. 알코올, 솔벤트가 함유되거나, 계면활성제가 함유된 세제, 화장품류, 기름 성분 등은 제품의 파손 및 변형을 유발할 수 있으니 사용하지 마세요.	

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설치 및 사용상의 주의

- 사용자 임의로 카메라를 분해하지 마세요.
- 카메라 취급 시 항상 주의하세요.
- 부주의한 보관이나 취급으로 카메라에 손상을 입히지 않도록 주의하세요.
- 제품 표면을 깨끗하고 부드러운 마른 헝겊으로 오염 부위를 닦거나 부드러운 마른 헝겊에 물을 적서 물이 흐르지 않도록 꼭 째 후에 오염 부분을 닦으세요.
(알코올, 솔벤트가 함유되거나, 계면활성제가 함유된 세제, 화장품류, 기름 성분 등은 제품의 파손 및 변형을 유발할 수 있으니 사용하지 마세요.)
- 무리한 힘을 가하여 역지로 제품을 설치 할 경우 오동작으로 인해 카메라에 손상을 줄 수 있습니다.
규격에 맞지 않는 도구를 사용하여 강제로 조립할 경우 제품이 파손될 수 있습니다.
- 제품이 설치되는 장소에 화학 물질 또는 유증기가 있거나 발생될 수 있을 경우 제품을 설치하지 마세요.
쿵기름과 같은 식용 기름 성분도 제품의 파손 및 변형을 유발할 수 있으므로, 주방 또는 조리대 근처에는 설치하지 마세요.
제품 손상의 원인이 될 수 있습니다.
- 제품 설치시 화학 물질이 제품 표면에 묻지 않도록 주의하세요.
일부 세척제나 접착 성분과 같은 화학 용제는 제품 표면에 치명적인 손상을 줄 수 있습니다.
- 제품을 물 속에서 설치 또는 사용할 경우 제품의 심각한 고장을 일으킬 수 있습니다.
- Micro SD 메모리 카드를 구부리거나 던지지 마세요.
- 온도가 높은 곳, 습기가 많은 곳, 먼지가 많은 곳에 Micro SD 메모리 카드를 보관하거나 사용하지 마세요.
- Micro SD 메모리 카드 단자에 이물질이 묻지 않도록 주의하세요.
이물질이 묻은 경우에는 부드러운 헝겊으로 닦아주세요.
- Micro SD 메모리 카드를 빼기 전 <저장>에서 장치를 <사용 안함>으로 설정하고 [적용] 버튼을 누른 후 카메라 전원을 끄세요.
- Micro SD 메모리 카드의 수명이 다하면 데이터가 저장되지 않습니다.
이러한 경우에는 Micro SD 메모리 카드를 새로 구입하세요.
- 본 제품을 설치하기 전 또는 사용 중에 한화비전 웹 사이트 <https://www.HanwhaVision.com> 을 방문하셔서 최신 S/W 버전을 확인하시고 다운로드하여 업데이트하세요.
- 보안강화를 위하여 특수문자, 숫자, 영문 대문자, 소문자 중 다양한 조합으로 비밀번호를 설정하여 사용하시기를 권장합니다.
- 카메라 CVBS 출력단자는 카메라 설치 편의성을 위한 단자이며 감시용으로 부적합합니다.
- 당사에서 권장하지 않는 방법으로 제품을 설치/분해하는 경우 제품의 기능/성능을 보장할 수 없습니다.
제품 사용 설명서의 “설치 및 연결”을 참조하여 설치하세요.

- 주변 온도 변화 혹은 일정 시간 간격으로 약 1~2초간 화면이 일시 정지 되는 현상은 화면 보정 동작을 위한 정상적인 동작입니다.
- 초기 전원투입의 경우 화면 안정화 시간이 필요합니다. 이를 위해 초기 전원 투입 시 화면 보정 동작을 연속 수행합니다.
- 특정한 설치 환경에서 무선 통신에 간섭이 발생할 수 있습니다. 제품과 주변 무선통신 장비 간 전자파 간섭이 발생하는 경우, 무선통신 장비와 거리를 넓히거나 통신용 안테나 방향을 조정하는 것을 권장합니다.



한화비전은 지구환경보전을 위하여 제품과 관련된 전 과정에서 환경을 고려하고 있으며, 고객에게 보다 친환경적인 제품을 제공하기 위하여 다양한 활동을 추진하고 있습니다.
에코(Eco)마크는 친환경제품을 만들기 위한 한화비전의 의지이며, 유럽의 환경규제(RoHS)에 만족하는 제품임을 의미합니다.

PC 시스템 권장 사양

- CPU : Intel(R) Core(TM) i7 3.4 GHz 이상
- RAM : 8G 이상
- 지원 OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12
- 웹뷰어
권장 브라우저: Google Chrome 63
지원 브라우저 : IE11, MS Edge 41, Mozilla Firefox 57(Windows 64bit only), Apple Safari 11 (Mac OS X only)

Micro SD/SDHC/SDXC 메모리 카드 권장 사양

- 권장 용량 : 16GB ~ 256GB (MLC타입)
- 본 카메라는 다음과 같은 제조사 제품군의 메모리 카드 사용을 권장합니다.
 - 제조사 : Sandisk, Transcend
 - 제품군 : High endurance

NAS 권장 사양

- 권장 용량 : 200GB 이상을 권장합니다.
- 동시접속 : NAS 1대당 최대 16대의 카메라 접속이 가능합니다.
- 본 카메라는 다음과 같은 제조사의 NAS 사용을 권장합니다.

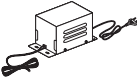
권장 제품	가능 크기
QNAP NAS	최대 16대 카메라 접속 가능
Synology NAS	최대 16대 카메라 접속 가능

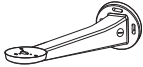


▪ NAS 장비를 영상 저장 이외의 용도로 사용할 경우 접속 가능한 카메라 최대 대수가 줄어들 수 있습니다.

구성품 확인하기

다음의 구성품이 모두 포함되어 있는지 확인하세요.
(부속 액세서리는 판매국에 따라 다를 수 있습니다.)

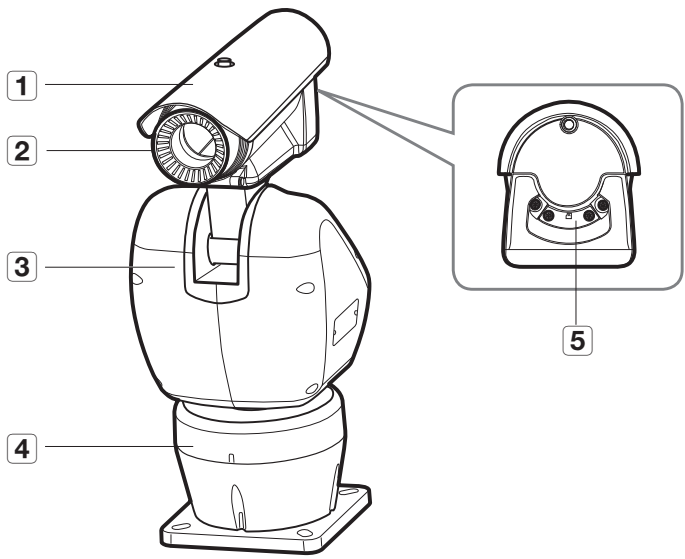
외관	품명	수량	용도
	카메라 본체	1	-
	퀵가이드	1	-
	전원 어댑터 (24Vac/6A)	1	전원 연결시 사용
	선설퉴드	1	직사광선을 차단
	선설텔드 홀드	1	선설텔드를 카메라에 고정
	별 렌치	1	메모리 슬롯 덮개 결합용
	RJ45 방수 액세서리	1	습기가 많은 곳에 설치시 사용

외관	품명	수량	용도
Wall Mount Bracket (별도 구매품)			
	벽 브라켓	1	카메라를 벽에 설치시 사용
	렌치볼트(M5 X 20)/평와서	3/3	본체와 월마운트 결합용
	볼트(M3 x 8)	8	케이블 배선 덮개 결합용
	오링	1	본체와 월마운트 결합용

개요

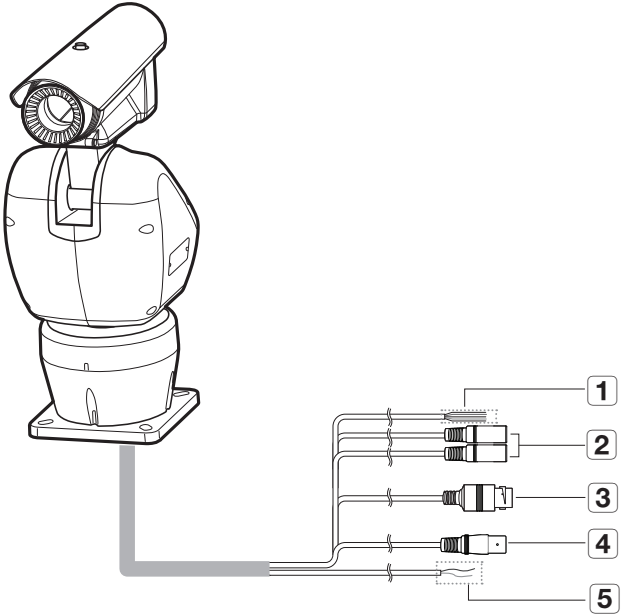
각 부분의 명칭 및 기능

외부



명칭	
1	선선평
2	카메라
3	본체
4	베이스 하우징
5	Micro SD 카드 삽입구

케이블



명칭	기능설명
1 알람 케이블	알람 입/출력 케이블입니다. (Black/Brown/Red/Yellow/Orange)
2 오디오 케이블	오디오 입/출력 케이블입니다.
3 이더넷	이더넷 케이블을 연결합니다.
4 영상 출력 케이블	영상을 출력합니다.
5 전원 케이블	메인 전원 케이블입니다. (Brown/Blue)

설치 및 연결

설치하기

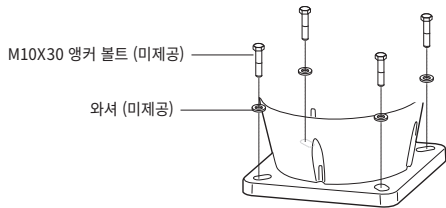
설치 전 유의사항

카메라를 설치하기 전, 아래의 주의 사항들을 반드시 숙지하세요.

- 다음 설명에 따라 이 기기를 설치할 수 있습니다. 다른 방법으로 설치하고자 하는 경우에는 제조업체에 먼저 문의하여 안전 권장사항을 확인해야 합니다.
- 본 기기의 총 중량은 11.7 kg입니다. 적절한 미끄럼 방지 글러브를 반드시 착용하시고 기기를 들어올릴 때 카메라를 잡지 마시고 본체를 잡고 올리세요.
- 설치 브라켓을 포함한 카메라 무게의 4배를 견딜 수 있는 장소에 설치하셔야 합니다.
- 케이블이 부적절한 곳에 끼이거나 전선의 피복이 손상될 경우 제품의 손상이나 화재로 이어질 수 있으므로 주의하세요.
- 카메라를 설치할 때, 다른 사람이 설치 장소에 접근하는 일이 없도록 해야 합니다.
그리고 귀중품이 아래에 놓여 있다면 즉시 치우세요.

기기를 바닥에 설치하기

1. 받침대를 바닥에 설치하세요.



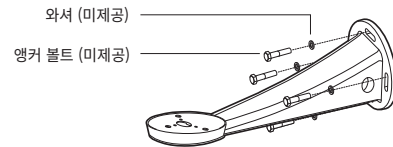
- ! ■ 콘크리트에 카메라를 설치하는 M10X30 이상의 앵커 볼트 사용을 권장합니다.
- 적어도 기기의 무게보다 4배를 견딜 수 있는 나사를 사용하세요.

설치 관련 별매 제품

설치의 편리성 및 설치장소에 따라 다음의 별매 제품을 구입하여 설치하면 편리합니다.

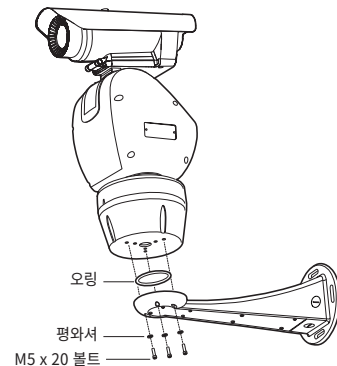
■ 브라켓을 이용하여 벽면에 설치하기

1. 4개의 앵커 볼트(미제공)를 사용하여 브라켓의 측면을 벽에 조립하세요.

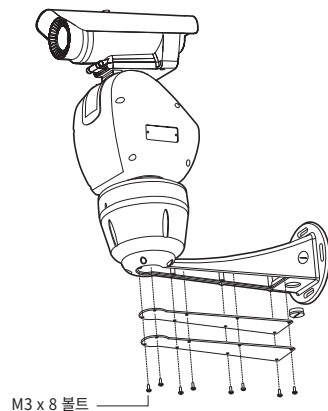


- ! ■ 콘크리트에 카메라를 설치하는 M10X30 이상의 앵커 볼트 사용을 권장합니다.
- 적어도 기기의 무게보다 4배를 견딜 수 있는 나사를 사용하세요.

2. 3개의 렌치볼트를 사용하여 본체와 브라켓을 조립하세요.



3. 그림과 같이 케이블 정리를 한후 덮개를 조립하세요.

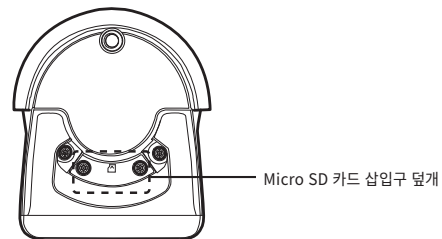


Micro SD 메모리 카드 넣기/빼기

- ! 카메라를 설치하기 전에 전원과 본체를 분리한 후 Micro SD 메모리 카드를 넣으세요.
- 역방향으로 무리하게 삽입하지 마세요. Micro SD 메모리 카드가 파손될 수 있습니다.
- 비가 오거나 습도가 높은 날씨에는 Micro SD 카드 탈착을 권장하지 않습니다.

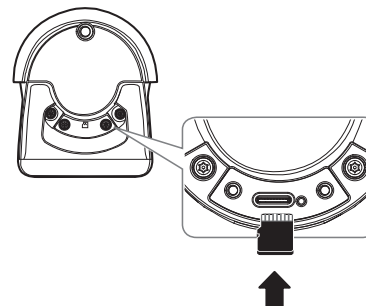
Micro SD 카드 삽입구 덮개 분리

별 렌치를 사용하여 Micro SD 카드 삽입구 덮개를 분리하세요.



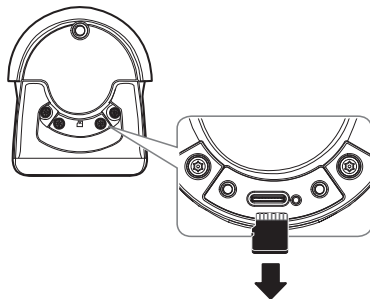
Micro SD 카드를 넣으려면

그림과 같이 Micro SD 카드를 화살표 방향으로 밀어 넣으세요.



Micro SD 카드를 빼려면

그림과 같이 화살표 방향으로 끼워진 Micro SD 카드의 끝을 살짝 누르면 자동으로 나옵니다.



- Micro SD 메모리 카드를 뺄 때 세게 눌렀다가 놓을 경우 Micro SD 메모리 카드가 튀어 나올 수 있으므로 주의하세요.
- Micro SD 메모리 카드를 빼기 전 <저장>에서 장치를 <사용 안함>으로 설정하고 [적용] 버튼을 누른 후 카메라 전원을 끄세요.
- Micro SD 메모리 카드에 데이터를 저장하고 있을 때 Micro SD 메모리 카드를 빼거나, 전원을 끄면 Micro SD 카드에 저장된 데이터가 손상될 수 있습니다.

메모리 카드 정보 (별매품)

메모리 카드란

메모리 카드란 각종 디지털 제품의 데이터(영상, 음성, 문자 등) 기록 및 상호 교환을 위해 개발된 새로운 개념의 외장형 카드입니다.

적합한 메모리 카드 선택하기

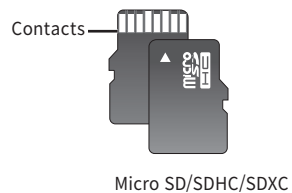
본 카메라는 Micro SD/SDHC/SDXC 메모리 카드를 사용할 수 있습니다.
단, 카드 제조사별/종류별 호환성은 차이가 날 수 있습니다.

본 카메라는 다음과 같은 제조사 제품군의 메모리 카드 사용을 권장합니다.

- 제조사 : Sandisk, Transcend
- 제품군 : High endurance

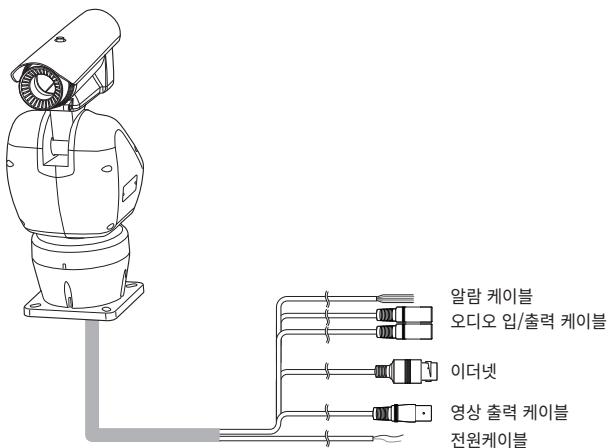
본 카메라는 16GB ~ 256GB (MLC 타입)의 메모리 카드 사용을 권장합니다.

재생 시에는 메모리 카드의 읽기/쓰기 성능에 따라 느려질 수 있습니다.

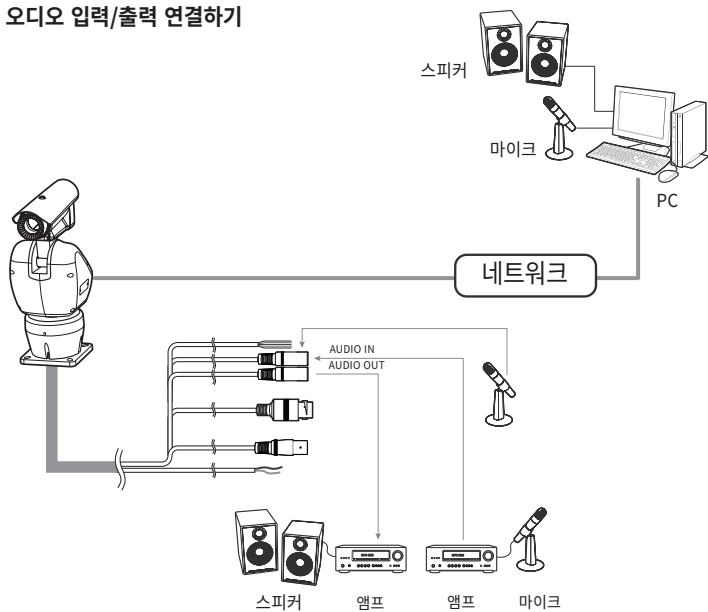


설치 및 연결

다른 기기와 연결하기

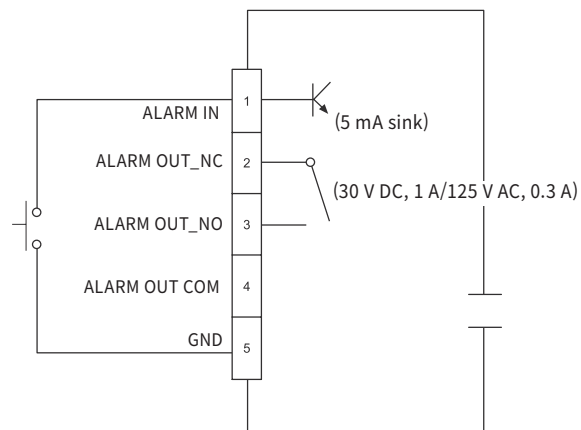


오디오 입력/출력 연결하기



1. 카메라의 AUDIO IN 단자에 마이크가 연결된 앰프의 LINE OUT 단자 또는 마이크에 직접 연결하세요.
2. 카메라의 AUDIO OUT 단자와 스피커의 LINE IN 단자를 연결하세요.
3. 오디오 입력 사양을 확인하세요.
 - 오디오 코덱 : G.711 PCM, μ -law 64kbps 8kHz 샘플링
 - Full duplex 오디오
 - 오디오 입력 : 모노신호 입력시 사용 (최대 2.4Vpp)
 - 오디오 출력 : 모노신호 출력시 사용 (최대 2.4Vpp)
 - 임피던스 : 600 Ω

알람 입/출력 연결도



외부 케이블 연결하기

아래의 표를 참고하여 외부 케이블을 연결하세요.

 알람 입출력 케이블은 단자별로 반드시 하나씩 연결하세요.

LABEL 인쇄	COLOR	설명	비고
ALARM_IN	BLACK	외부 Alarm 입력 신호를 연결하기 위한 단자	
GND	Brown	외부 Alarm 입력 신호를 연결하기 위한 공통단자(GND)	
ALARM OUT NO	Red	Relay 출력 신호를 연결하기 위한 단자(NO)	
ALARM OUT COM	Yellow	Relay 출력 신호를 연결하기 위한 단자(GND)	
ALARM OUT NC	Orange	Relay 출력 신호를 연결하기 위한 단자(NC)	

이더넷 연결하기

이더넷 케이블을 연결하여 로컬 네트워크나 인터넷에 연결하세요.

전원 연결하기

전원 어댑터의 선을 카메라의 전원 입력 단자에 연결하세요.

부분	색상
메인 전원	BROWN
	BLUE

 반드시 연결되는 기기의 전원을 끈 상태에서 AC24V 전원을 연결(무극성)하세요.

네트워크 케이블 규격

항목	내용	비고
Connector	RJ45	
Ethernet	10/100Base-T	10/100 Mbps
Cable	UTP Category 5e	
Max Distance	100M	

전원 Wire 규격

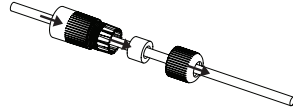
AC 24 V 입력일 때 :

Wire 종류 (AWG)	#16	#14
케이블 길이 (Max.)	15 m	24 m

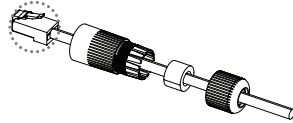
설치 및 연결

RJ45 방수 케이블과 LAN 케이블 연결하기

1. LAN 케이블을 화살표 방향으로 통과하세요.

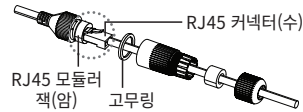


2. LAN 커넥터(수)와 케이블을 연결하세요.

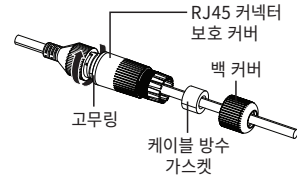


3. RJ45 모듈러 잭(암)과 RJ45 커넥터(수)를 연결하세요.

! ■ 각각의 부품들은 분리된 상태를 유지하세요.

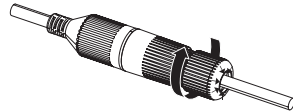


4. RJ45 모듈러 잭(암)과 RJ45 보호 커버를 시계방향(화살표)으로 회전시켜 조립하세요.



5. RJ45 커넥터 보호 커버와 백 커버를 시계방향(화살표)으로 회전시켜 조립하세요.
백 커버 조립 시 케이블 방수 가스켓이 케이블에 압착되어 방수 기능을 하게 됩니다.

! ■ RJ45 커넥터의 나사산 끝까지 백 커버를 회전시켜 완전히 조립해야 합니다.



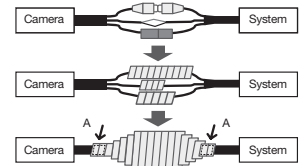
옥외 설치하기

건물 외부 설치시 외부에서 연결된 케이블의 틈으로 누수될 우려가 있으므로 다음과 같이 시중에 판매하는 방수 부틸 고무 테이프로 방수처리 바랍니다.

1. 전원, I/O, 오디오, LAN 등의 케이블을 연결하세요.

2. 검은색 케이블 자켓 (A부분)을 포함하여 케이블 연결부까지 부틸 고무 테이프의 반 이상이 겹치도록하여 방수 테이프를 감아주세요.

- ! ■ 연결된 케이블 자켓 부분의 방수처리가 미흡하면 직접적인 누수 원인이 되므로 특히 촘촘하게 테이핑하여 주시기 바랍니다.
- 방수용 부틸 고무 테이프는 원래 길이의 2배 이상 늘어나는 부틸 고무 소재입니다.
- LAN 커넥터 케이블은 방수 처리가 되어 있으나 별도의 부틸 고무 테이핑은 하지 않아도 됩니다.



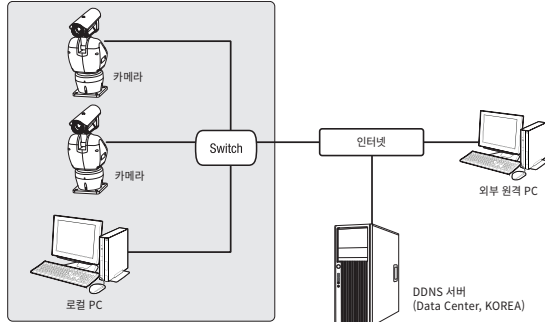
네트워크 연결 및 설정

사용자의 네트워크 연결 구성에 따라 카메라의 네트워크 환경을 설정할 수 있습니다.

LAN 환경에서 직접 카메라 설치하기

LAN 환경에 있는 로컬 PC에서 카메라 접속하기

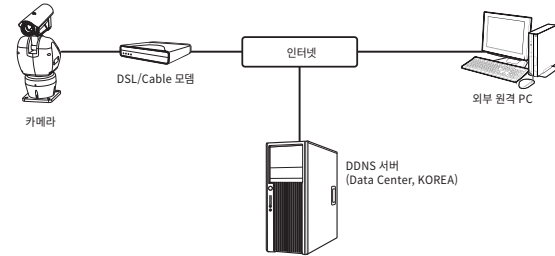
1. 로컬 PC의 인터넷 브라우저를 실행하세요.
2. 브라우저의 주소창에 접속하려는 카메라의 IP 주소를 입력하세요.



<로컬 네트워크>

- LAN 환경의 외부 인터넷에 있는 원격 PC에서 LAN 환경 안에 설치되어 있는 카메라에 접속할 경우 포트 포워딩이 되어 있지 않거나 방화벽이 설치되어 있으면 접속이 되지 않을 수 있습니다.
이때는 네트워크 관리자에게 문의하세요.
- 디바이스 매니저에서 초기 비밀번호인 "4321"로 IP Address, Subnet Mask, Gateway, HTTP Port, VNP Port, IP type이 설정 가능 합니다. 네트워크 인터페이스 변경 후 보안강화를 위하여 웹뷰어에 접속하여 비밀번호를 반드시 변경하세요.
- 제품 출하 시 IP 주소는 DHCP 서버로부터 자동으로 할당받도록 설정되어 있습니다.
DHCP 서버가 없는 경우, IP 주소는 192.168.1.100으로 설정됩니다.
IP 주소를 변경하려면, 디바이스 매니저를 이용하세요.
디바이스 매니저 사용방법은 "디바이스 매니저 사용하기"를 참고하세요. (17쪽)

DHCP 방식의 DSL/Cable 모뎀에 직접 카메라 설치하기

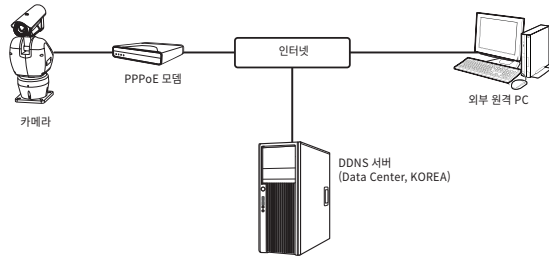


1. 사용자 컴퓨터와 네트워크 카메라를 직접 연결하세요.
2. 디바이스 매니저를 사용하여 해당 카메라의 IP 주소를 사용자 컴퓨터에서 인터넷 브라우저를 통하여 접속할 수 있는 IP 주소로 변경하세요.
3. 인터넷 브라우저를 이용하여 웹뷰어에 접속하세요.
4. [Setup] 페이지로 이동하세요.
5. [Network] - [DDNS] 설정 페이지로 이동하여, DDNS를 설정하세요.
6. [Basic] - [IP & 포트] 설정 페이지로 이동하여, IP 형식을 [DHCP]로 설정하세요.
7. 카메라를 사용자 컴퓨터에서 분리하여, 모뎀에 직접 연결하세요.
8. 카메라를 재부팅하세요.

- DDNS 설정 방법은 웹뷰어의 온라인 도움말을 참고하세요.
- IP 형식의 설정 방법은 웹뷰어의 온라인 도움말을 참고하세요.

네트워크 연결 및 설정

PPPoE 모뎀에 직접 카메라 설치하기

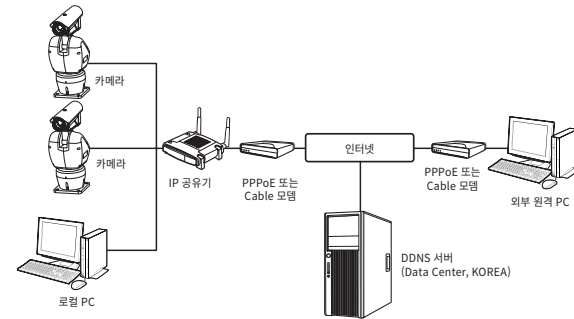


1. 사용자 컴퓨터와 네트워크 카메라를 직접 연결하세요.
2. 디바이스 매니저를 사용하여 해당 카메라의 IP 주소를 사용자 컴퓨터에서 인터넷 브라우저를 통하여 접속할 수 있는 IP 주소로 변경하세요.
3. 인터넷 브라우저를 이용하여 웹뷰어에 접속하세요.
4. [Setup] 페이지로 이동하세요.
5. [Network] - [DDNS] 설정 페이지로 이동하여, DDNS를 설정하세요.
6. [Basic] - [IP & 포트] 설정 페이지로 이동하여, IP 형식을 [PPPoE]로 설정한 후 네트워크 서비스의 ID와 암호를 입력하세요.
7. 카메라를 사용자 컴퓨터에서 분리하여, 모뎀에 직접 연결하세요.
8. 카메라를 재부팅하세요.

- DDNS 설정 방법은 웹뷰어의 온라인 도움말을 참고하세요.
- IP 형식의 설정 방법은 웹뷰어의 온라인 도움말을 참고하세요.

PPPoE/Cable 모뎀을 연결한 IP 공유기에 카메라 설치하기

일반 가정집, 소규모 사무실, 상점 등 간단한 네트워크 환경에서 사용 가능한 구성입니다.



IP 공유기에 연결된 로컬 PC의 네트워크 설정하기

IP 공유기에 설치된 로컬 PC의 네트워크 설정을 다음과 같이 맞춰 주세요.

- 로컬 PC의 <네트워크> → <속성> → <로컬 영역 연결> → <일반> → <속성> → <인터넷 프로토콜(TCP/IP) 선택> → <속성> → <자동으로 IP 주소 받기> 또는 <다음 IP 주소 사용>을 선택하세요.

- <다음 IP 주소 사용> 선택 시 다음과 같이 설정하세요.

예1) IP 공유기의 접속주소 (LAN IP)가 192.168.1.1 인 경우
IP 주소 : 192.168.1.100
서브넷 마스크 : 255.255.255.0
기본 게이트웨이 : 192.168.1.1

예2) IP 공유기의 접속주소 (LAN IP)가 192.168.0.1 인 경우
IP 주소 : 192.168.0.100
서브넷 마스크 : 255.255.255.0
기본 게이트웨이 : 192.168.0.1

예3) IP 공유기의 접속주소 (LAN IP)가 192.168.xxx.1 인 경우
IP 주소 : 192.168.xxx.100
서브넷 마스크 : 255.255.255.0
기본 게이트웨이 : 192.168.xxx.1

- IP 공유기의 접속주소는 각 IP 공유기의 사용설명서를 참고하세요.
- IP 공유기의 포트 포워딩 설정 방법은 “포트 포워딩 (포트 맵핑) 설정하기”를 참고하세요. (19쪽)

디바이스 매니저 사용하기

- 디바이스 매니저 프로그램은 한화비전 웹 사이트(<https://www.HanwhaVision.com>)로 접속하여 <지원> - <Online Tool>에서 다운로드 받을 수 있습니다.
- 디바이스 매니저의 자세한 사용 방법은 메인화면의 <도움말> 메뉴에서 확인할 수 있습니다.

자동으로 카메라 검색하기

디바이스 매니저가 설치된 PC와 동일한 네트워크에 카메라가 연결된 경우 검색 기능을 이용해 네트워크 카메라를 찾을 수 있습니다.

1. 디바이스 매니저의 메인화면에서 <검색>을 클릭하세요.
2. 검색목록에서 원하는 카메라가 검색되었는지 확인하세요.
 - 카메라에 부착된 스티커에서 MAC 주소를 확인하세요.

IP주소 설정하기

카메라의 네트워크 설정을 변경하려면 <상태> 항목에 <Login OK>로 표시되어 있어야 합니다. 디바이스 매니저의 메인화면에서 <인증>을 클릭하면 로그인 할 수 있습니다.

Static IP 설정하기

IP 주소 및 포트정보를 수동으로 입력하여 설정합니다.

1. 검색목록에서 IP 설정을 변경하려는 카메라를 클릭하세요.
2. 디바이스 매니저의 메인화면에서 <IP 할당>을 클릭하세요.
3. <해당 IP 주소 적용>을 선택하세요.
 - 카메라의 IP 정보가 기존에 설정되어 있는 값으로 표시됩니다.
4. IP 관련 항목 및 Port 관련 항목을 입력하세요.

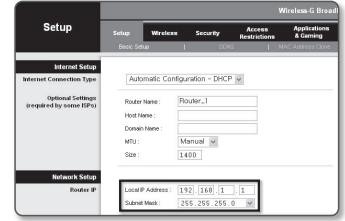
IP 공유기를 사용하지 않는 경우

네트워크 관리자에게 <IP주소>, <서브넷 마스크>, <게이트웨이> 설정값을 문의하세요.

- HTTP Port: 인터넷 브라우저를 사용하여 카메라에 접속할 때 사용되는 HTTP 포트이며, 초기값은 80입니다.
- VNP Port: 영상전송을 제어하는 포트이며, 초기값은 4520입니다.
- RTSP Port: 실시간 스트리밍을 제어하는 포트이며, 초기값은 554입니다.

IP 공유기를 사용하는 경우

- IP Address: IP 공유기가 제공하는 사실 IP 범위에 맞게 설정하세요.
예) 192.168.1.2~254, 192.168.0.2~254, 192.168.XXX.2~254
- Subnet Mask: IP 공유기의 <Subnet Mask>가 카메라의 <서브넷 마스크> 값이 됩니다.
- Gateway: IP 공유기의 <Local IP Address>가 카메라의 <게이트웨이> 값이 됩니다.



- 연결된 IP 공유기 모델에 따라 설정 방법이 다를 수 있습니다.
해당 공유기의 사용설명서를 참고하세요.
- IP 공유기의 포트 포워딩 설정 방법은 <포트 포워딩 (포트 맵핑) 설정하기>를 참고하세요. (19쪽)

IP 공유기에 카메라가 2대 이상 연결되어 있는 경우

카메라의 IP 관련 항목, Port 관련 항목을 각각 다르게 설정해 주세요.

예)

구분		1번 카메라	2번 카메라
IP 관련 항목	IP 주소	192.168.1.100	192.168.1.101
	서브넷 마스크	255.255.255.0	255.255.255.0
	게이트웨이	192.168.1.1	192.168.1.1
Port 관련 항목	HTTP 포트	8080	8081
	VNP 포트	4520	4521
	RTSP 포트	554	555

- <HTTP 포트>가 80 이외의 번호로 설정되어 있는 경우 인터넷 브라우저의 주소 입력란에 <Port> 번호도 함께 입력을 해야 카메라에 접속이 가능합니다.
예) http://IP주소 : HTTP Port
http://192.168.1.100:8080

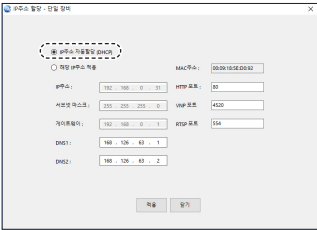
5. [적용] 버튼을 클릭하세요.
6. 성공 확인 메시지가 표시되면 [확인] 버튼을 클릭하세요.

네트워크 연결 및 설정

Dynamic IP 설정하기

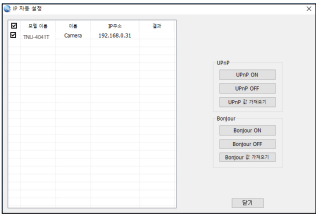
IP 주소를 DHCP를 통해 자동으로 할당받습니다

- Dynamic IP 사용 환경 예
 - IP 공유기에 카메라를 설치한 경우, DHCP를 이용하여 IP를 할당 받는 경우
 - DHCP 방식을 사용하는 모뎀에 카메라를 직접 설치한 경우
 - LAN 환경에서 내부 DHCP 서버로부터 IP를 할당 받는 경우
- 검색목록에서 IP 설정을 변경하려는 카메라를 클릭하세요.
 - 디바이스 매니저의 메인화면에서 <IP 할당>을 클릭하세요.
 - <IP주소 자동할당 (DHCP)>를 선택하세요.
 - [적용] 버튼을 클릭하세요.
 - 성공 확인 메시지가 표시되면 [확인] 버튼을 클릭하세요.



자동으로 IP 설정하기

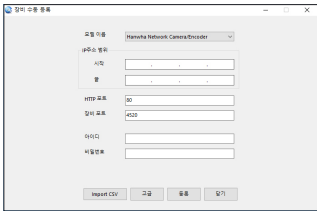
- 검색목록에서 IP를 자동으로 설정하려는 카메라를 클릭하세요.
- 디바이스 매니저의 메인화면에서 <+>를 클릭하세요.
 - 장비 설정 메뉴가 나타납니다.
- 장비 설정 메뉴에서 <IP 자동 설정>을 클릭하세요.
- [닫기] 버튼을 클릭하세요.



수동으로 카메라 등록하기

검색 기능으로 카메라를 찾지 못하거나, 외부 네트워크에 카메라가 연결된 경우 IP 정보를 수동으로 입력하여 원격으로 카메라를 찾아 등록할 수 있습니다.

- 디바이스 매니저의 메인화면에서 <장비 추가> - <장비 수동 등록>을 클릭하세요.
- 검색할 IP 주소의 범위를 입력하세요.
- 등록할 카메라의 <모델 이름>을 선택하고 HTTP 포트, VNP 포트, 아이디, 비밀번호를 입력하세요.
- [등록] 버튼을 클릭하세요.
- 목록에서 원하는 카메라가 등록되었는지 확인하세요.
 - 카메라에 부착된 스티커에서 MAC 주소를 확인하세요.

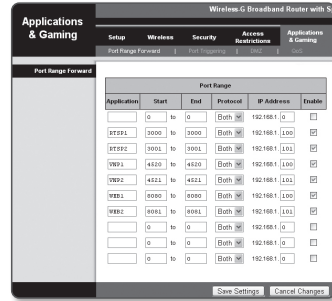


포트 포워딩 (포트 �핑) 설정하기

IP 공유기에 카메라가 설치된 경우, IP 공유기 외부 원격 PC에서 IP 공유기 내부의 카메라에 접속하기 위해서는 IP 공유기에 포트 포워딩을 설정해 주어야 합니다.

수동으로 포트 포워딩 설정하기

1. IP 공유기의 설정 메뉴에서 <Applications & Gaming> - <Port Range Forward>를 클릭하세요.
타사 IP 공유기의 포트 포워딩 메뉴 위치 및 설정 방법은 각 IP 공유기의 사용설명서를 참고하세요.
2. IP 공유기에 연결되어 있는 각 카메라에 대해 <TCP>와 <UDP Port>를 선택하세요.
IP 공유기에 설정할 각 포트 번호는 카메라 웹뷰어의 <설정> - <Basic> - <IP 및 포트>에서 지정한 포트 번호에 맞게 설정해야 합니다.
3. 설정이 완료되면 [Save Settings] 버튼을 클릭하세요.
설정이 저장됩니다.

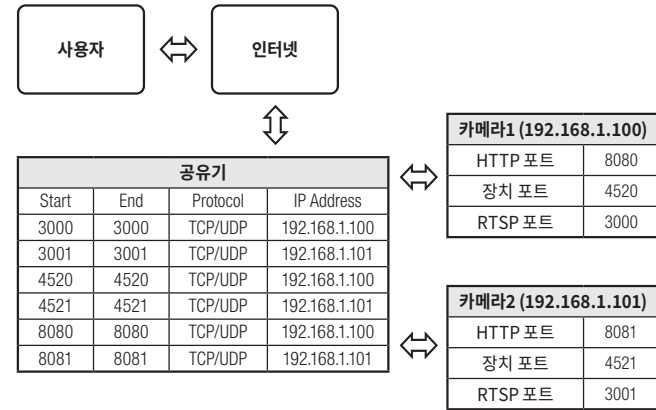


- 포트 포워딩 설정하기 설명은 CISCO IP 공유기로 설정한 예시입니다.
- 연결된 IP 공유기 모델에 따라 설정 방법이 다를 수 있습니다.
해당 공유기의 사용설명서를 참고하세요.

여러대의 카메라를 포트 포워딩 설정하기

- 공유기의 포트 포워딩 설정은 공유기의 설정 페이지를 통해서 변경할 수 있습니다.
- 각 포트는 사용자가 카메라의 설정 페이지에서 변경할 수 있습니다.

예) 공유기에 카메라1과 카메라2가 연결되어 있는 경우 :



- UPnP(Universal Plug and Play) 기능을 지원하는 공유기를 사용하면 공유기 설정 없이 포트 포워딩을 할 수 있습니다.
네트워크 카메라 접속 후 “설정 → 네트워크 → DDNS” 메뉴에서 <DDNS>의 <퀵 커넥트>의 체크박스를 선택하세요.

네트워크 연결 및 설정

공유된 로컬 PC에서 카메라 접속하기

1. 디바이스 매니저를 실행하세요.
연결된 카메라를 검색하여 리스트에 표시합니다.
2. 연결할 카메라를 더블 클릭하세요.
인터넷 브라우저가 시작되면서 카메라에 접속합니다.



■ 사용자가 직접 인터넷 브라우저를 실행시켜, 주소 창에 검색된 카메라의 IP 주소를 입력하여 접속할 수도 있습니다.

외부의 원격 PC에서 인터넷으로 카메라에 접속하기

IP 공유기 외부의 원격 PC에서 사용자는 카메라의 DDNS URL을 이용하여 IP 공유기 내부의 카메라에 접속할 수 있습니다.

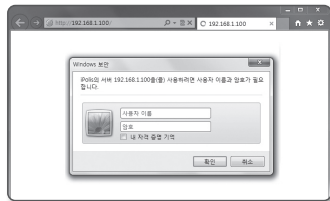
1. IP 공유기 내부에 설치되어 있는 카메라를 외부에서 접속하기 위해서는 반드시 IP 공유기에 포트 포워딩 설정을 하세요.
2. 외부 원격 PC에서 인터넷 브라우저를 실행하여 주소창에 카메라에 접속하기 위한 DDNS URL 주소, 또는 IP 공유기의 인터넷 IP 주소를 입력하세요.
예) <http://ddns.hanwha-security.com/ID>



■ DDNS를 사용하려면 DDNS 홈페이지(<http://ddns.hanwha-security.com>)에서 회원가입을 한 후, [My DDNS]> [제품등록]에서 제품을 먼저 등록해야 합니다.

일반적인 방법인 경우

1. 인터넷 브라우저를 실행하세요.
2. 주소 입력란에 카메라의 IP주소를 입력 하세요.
예) • IP주소 (IPv4) : 192.168.1.100인 경우 →
http://192.168.1.100
- 로그인 창이 나타납니다.
• IP주소 (IPv6) : 2001:230:abcd:ffff:0000:0000:ffff:1111인 경우
→ http://[2001:230:abcd:ffff:0000:0000:ffff:1111]
- 로그인 창이 나타납니다.



HTTP Port가 80이 아닌 경우

1. 인터넷 브라우저를 실행하세요.
2. 주소 입력란에 카메라의 IP주소와 HTTP 포트번호를 입력하세요.
예) IP 주소 : 192.168.1.100:HTTP 포트번호(8080)인 경우
→ http://192.168.1.100:8080 - 로그인 창이 나타납니다.

URL로 접속하기

1. 인터넷 브라우저를 실행하세요.
2. 주소 입력란에 카메라의 DDNS URL을 입력하세요.
예) URL 주소 : https://ddns.hanwha-security.com/제품아이디
- 로그인 창이 나타납니다.

Local 망으로만 구성된 환경에서는 접속할 수 없습니다.

UPnP를 이용하여 접속하기

1. UPnP 프로토콜을 지원하는 클라이언트나 운영체제를 실행하세요.
2. 검색되는 카메라의 이름을 클릭하세요.
Windows 운영체제 컴퓨터에서는 네트워크 메뉴에 검색되는 카메라 이름을 클릭하세요.
- 로그인 창이 나타납니다.

Bonjour를 이용하여 접속하기

1. Bonjour 프로토콜을 지원하는 클라이언트나 운영체제를 실행하세요.
2. 검색되는 카메라의 이름을 클릭하세요.
Mac 운영체제 컴퓨터에서는 Safari의 Bonjour 탭에 검색되는 카메라의 이름을 클릭하세요.
- 로그인 창이 나타납니다.

DDNS 주소를 확인하려면

카메라가 DHCP 방식의 케이블 모뎀이나 DSL 모뎀 혹은 PPPoE 모뎀에 직접 연결되어 있는 경우, ISP(사용자가 가입한 통신회사 서버)에 연결을 시도할 때마다 IP 주소가 변경됩니다.
이 경우 사용자는 변경된 IP 주소를 알 수 없습니다.

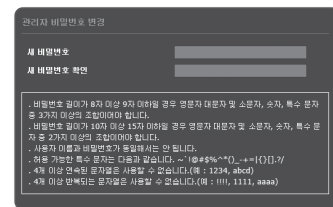
유동 IP를 사용하는 제품을 DDNS 서버에 등록해 놓으면 제품에 접속하고자 할 때 변경된 IP 주소를 쉽게 알 수 있습니다.

IP 주소를 <DDNS> 서버에 등록하기 위해서는 먼저 http://ddns.hanwha-security.com 페이지에서 제품을 등록한 후 카메라 웹뷰어의 <네트워크> - <DDNS> 항목을 <DDNS>로 설정하고, <제품 ID>에 DDNS 서버에서 등록한 제품 아이디를 입력하세요.

비밀번호 설정하기

최초 제품 접속 시 반드시 로그인 비밀번호를 등록해야 합니다.
“비밀번호 변경” 창이 나타나면 새로운 암호를 입력하세요.

- 새로운 비밀번호는 8자 이상 9자리 이하는 영 대/소문자, 숫자, 특수 문자 중 3종류 이상을 사용해야 하며, 10자 이상 15자리 이하는 2종류 이상을 사용해야 합니다.
- 사용 가능한 특수문자: ~`!@#\$%^&*()_+=[]{}|.?/
- 보안강화를 위하여 동일한 문자 반복 사용이나 연속된 키보드 배열을 비밀번호로 사용하지 않는 것을 권장합니다.
- 비밀번호 분실 시 카메라에 있는 [RESET] 버튼을 눌러 제품 초기화를 해야 하므로 반드시 메모 또는 기억하시길 바랍니다.

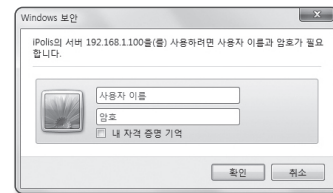


로그인하기

카메라에 접속할때마다 로그인 창이 뜹니다.
설정된 사용자 이름과 암호를 입력해야 카메라에 접속할 수 있습니다.

1. <사용자 이름> 입력란에 “admin”을 입력하세요.
관리자의 아이디 “admin”은 고정이며 변경할 수 없습니다.
2. <암호> 입력란에 설정한 암호를 입력하세요.
3. [확인] 버튼을 클릭하세요.
로그인이 완료되면 카메라 라이브 뷰어 화면이 나타납니다.

카메라 웹뷰어 접속시 영상정보가 암호화 되어있지 않으니 보안에 각별히 주의하시길 바랍니다.



- 사용자 이름과 암호를 입력한 후 “내 자격 증명 기억”에 체크표시를 할 경우 다음 접속 시 사용자 이름과 암호가 자동으로 설정됩니다.
- 화면비율이 100% 일 때 가장 좋은 화면을 볼 수 있습니다. 화면비율을 줄일 경우 화면이 잘려져서 보일 수 있습니다.

브라우저별 플러그인 지원 사양

웹뷰어는 기존의 플러그인 웹뷰어와 새로운 플러그인 프리 웹뷰어가 함께 내장되어 있습니다. 이로 인하여 Chrome, EDGE, FireFox(Windows 64bit only) 등 플러그인을 지원하지 않는 최신 브라우저 환경에서도 웹뷰어 사용이 가능합니다. 플러그인이 설치 가능한 IE, Safari 브라우저에서는 플러그인 설치를 권장합니다. 브라우저 환경에 따라 다음과 같이 차이가 발생합니다.

- **Chrome, FireFox(Windows 64bit only), EDGE 브라우저** : 플러그인을 사용 할 수 없는 브라우저 환경이지만 플러그인 프리 웹뷰어가 탑재되어 웹뷰어 사용이 가능합니다.
 - ! ■ 플러그인 프리 웹뷰어는 플러그인 웹뷰어보다 성능이 낮아 고화질 프로파일의 모니터링과 저장 영상 재생에 한계가 있습니다. 고화질 프로파일 모니터링과 저장 영상을 재생하려면 플러그인 웹뷰어나 SmartViewer 를 사용하세요.
 - 플러그인 프리 프로파일 생성 조건 : 선택된 프로파일이 MJPEG FullHD 10fps H.264 (Chrome : 전체 해상도 지원, Edge, Firefox, Safari : FullHD 30 fps 이상) H.265 FullHD 10fps 2Mbps 이상
 - 플러그인 프리 Playback 재생 조건 : MJPEG/H.264 전체 해상도, H.265 HD 이하
 - 플러그인 프리 기능은 Chrome 브라우저에 최적화 되어 있습니다.
 - Adaptive Streaming 기능 지원
 - 권장 H/W사양보다 저사양 H/W 환경에서의 영상 재생시 발생하는 이슈(Latency 증가, 브라우저 응답 없음)를 방지하기 위해 영상 재생 5초 이상의 지연이 발생되면 자동으로 Profile을 낮추어 재생하는 기능입니다. 1920x1080(20fps) -> 1280x720(20fps) -> 640x480(20fps) 단계로 재생됩니다.
- **IE, Safari 브라우저** : 기존의 플러그인 웹뷰어를 플러그인 설치를 완료하지 않아도 웹뷰어 사용이 가능합니다.
 - ! ■ 모니터링/저장 영상 재생의 기능을 원활히 사용 하려면 플러그인 설치가 필요합니다.

웹뷰어 플러그인 설치하기

플러그인 웹뷰어에 접속하여 동영상(H.264/H.265) 라이브나 녹화 영상 재생 등 기능을 사용하려 할 때 설치 메시지가 나타납니다. 이때 웹뷰어 플러그인을 설치해야 정상적으로 해당 기능들의 사용이 가능합니다.

1. 초기 모니터링 페이지 접근시 설치 페이지로 이동하고 [Download plugin]를 클릭하면 설치가 시작됩니다.

- ! ■ Internet Explorer 브라우저에서 플러그인 설치 파일의 다운로드 상태가 99%에서 장시간 멈춰있는 경우 “도구 → SmartScreen 필터”에서 “SmartScreen 필터 해제”를 선택한 후 재시도하세요.

2. 메시지 창에서 [실행(R)]을 클릭하세요.

3. 모든 브라우저 창이 닫힌다는 알림창이 나타나면 [예(Y)] 버튼을 클릭하세요.

- ☑ ■ 설치된 웹뷰어 플러그인이 없으면 4, 5번의 설치과정은 생략됩니다.

4. 웹뷰어 플러그인의 이전 버전이 설치되어있는 경우 이전버전을 삭제한다는 알림창이 발생합니다. 알림창이 나타나면 [예(Y)] 버튼을 클릭하세요.

5. [확인] 버튼을 클릭하세요.
이전 버전의 웹뷰어 플러그인이 삭제됩니다.

6. [Install] 버튼을 클릭하여 웹뷰어 플러그인을 설치하세요.

7. [Finish] 버튼을 클릭하세요.
웹뷰어 플러그인 설치가 완료됩니다.

- ! ■ Internet Explorer 브라우저에서 웹뷰어 플러그인 설치 후에도 설치 페이지로 이동하는 경우 “도구 → 추가 기능 관리”에서 “webviewer_activexplugin_lib Control”의 상태가 “사용 함”으로 선택되어 있는지 확인하세요. “사용 함”으로 선택되어 있는데 문제가 해결되지 않을 경우 “도구 → 인터넷 옵션 → 일반”에서 검색 기록을 모두 삭제하세요. 그래도 문제가 해결되지 않을 경우 “도구 → 인터넷 옵션 → 보안 → 신뢰할 수 있는 사이트”에 카메라의 IP 혹은 도메인을 등록하여 주세요.

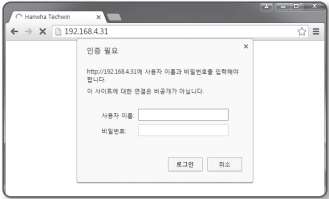
플러그인 프리(Plug-in Free) 웹뷰어 사용하기

Google Chrome이나 Mozilla Firefox, MS Edge 웹브라우저에서 카메라에 접속하면 별도 플러그인 설치가 불가능 하지만, 플러그인 설치 없이 카메라 영상을 실시간으로 확인 및 제어할 수 있습니다.

1. 사용자 이름과 비밀번호 입력 후 로그인하세요.
2. 로그인이 완료되면 카메라 라이브 뷰어 화면이 나타납니다.

카메라를 설정하려면

1. [설정 (⚙️)] 아이콘을 클릭하세요.
2. 설정 화면이 나타납니다.
3. 네트워크 상에서 카메라의 기본 정보, PTZ, 비디오 및 오디오, 네트워크, 이벤트, 분석, 시스템, 오픈 플랫폼 설정을 실행할 수 있습니다
4. <도움말 (?)>을 클릭하면 각 기능에 대한 상세한 설명을 확인할 수 있습니다.



문제 해결하기

문제	해결
Windows 10 사용자가 Chrome, Firefox에서 웹뷰어 접속 시 마이크의 볼륨 크기가 주기적으로 변동됩니다.	마이크 드라이버가 Realtek 드라이버로 설정된 경우에 나타나는 현상입니다. 마이크 드라이버를 High Definition Audio 장치(Windows Default 드라이버) 또는 타사의 드라이버로 변경 설치하세요.
Safari에서 https로 플러그인 프리 웹뷰어 접속 시 영상이 나오지 않아요.	- https 처음 접속 시 발생하는 웹사이트 신원 팝업에서 "인증서 보기" 클릭 후 "웹뷰어 설정 IP에 연결할 때 항상 신뢰" 항목의 체크박스를 선택하세요. - 만일 아래 메시지에서 "계속" 선택 후 로그인하여 영상이 나오지 않는 경우, command+Q 를 눌러 Safari 브라우저 종료 후 재접속하여 위의 절차를 따르세요.
기기를 제어할 수 없습니다.	- 전원을 확인하세요. 전원이 꺼져 있는지 확인하세요. - 통신 케이블 연결 상태를 확인하세요.
브라우저로 카메라에 접속되지 않아요.	- 카메라의 네트워크 설정값들이 올바르게 되어 있는지 확인하세요. - 네트워크 케이블은 연결이 올바르게 되어 있는지 확인하세요. - DHCP로 연결하는 경우 카메라가 정상적으로 유동 IP를 획득했는지 확인하세요. - 카메라가 공유기에 설치되어 있는 경우, 포트 포워딩 설정이 올바르게 되어 있는지 확인하세요.
영상을 모니터링 하고 있던 웹뷰어의 접속이 끊어졌어요.	- 다른 접속자가 카메라 설정값을 변경하거나, 네트워크 설정을 바꾸거나 하게 되면 접속되어 있던 웹뷰어는 접속이 끊어집니다. - 네트워크 연결이 잘 되어있는지 확인하세요. - 카메라가 PPPoE 네트워크에 연결된 경우, 네트워크 상황이 나빠지면 웹뷰어의 접속이 끊어질 수 있습니다.
Internet Explorer7.0에서 탭브라우저로는 접속이 되지 않아요.	새창열기나 탭으로 접속하는 경우 같은 쿠키 정보를 공유하기 때문에 탭으로 접속 시 오류가 납니다. 새창열기나 탭을 사용하지 말고 “파일 → 새 세션”으로 열어 사용하세요.
디바이스 매니저 프로그램에서 네트워크에 연결된 카메라가 검색되지 않아요.	PC의 방화벽 설정을 해제하신 후 다시 검색하시기 바랍니다.
영상이 겹쳐져 보여요.	두 대 이상의 카메라가 동일한 멀티캐스트 주소를 사용하지 않고 서로 다른 주소로 설정되어 있는지 확인하시기 바랍니다. 동일한 주소를 사용하면 영상이 겹쳐서 보일 수 있습니다.

문제	해결
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iproute2-3.1.0	GPL 2.0	
alsa-utils-1.0.24.2	GPL 2.0	
alsa-lib-1.0.24.1	GPL 2.0	
iptables-1.4.12.2	GPL 2.0	http://ftp.netfilter.org/pub/iptables
ethtool-3.2	GPL 2.0	
mtdd-1.4.1	GPL 2.0	ftp://ftp.infradead.org/pub/mtdd-utils
mi-diag-2.11	GPL 2.0	
rp-pppoe-3.10	GPL 2.0	http://www.roaringpenguin.com/pppoe/
wpa_supplicant-0.7.3	GPL 2.0	
bash-4.2	GPL 3.0	
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The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

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on January 23, 2004
revised on June 17, 2004
revised on December 21, 2006
revised on March 24, 2009

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1. The Source Code User and the System Developer may, whether with or without charge, distribute to any third party only the following parts of the Ported

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Julian Seward, jseward@bzip.org

bzip2/libbzip2 version 1.0.5 of 10 December 2007

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iperf performance test

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Jean-loup Gailly Mark Adler

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The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files http://www.ietf.org/rfc/rfc1950.txt (zlib format), rfc1951.txt (deflate format) and rfc1952.txt (gzip format).

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[1] 범죄예방, 시설안전, 화재예방 목적으로만 설치 가능

- 목욕실, 화장실, 발한실(發汗室), 탈의실 등 사생활 침해 장소에는 설치 금지

[2] CCTV 안내판을 알아보기 쉬운 장소에 부착

- 설치목적, 촬영장소 · 범위 관리책임자 연락처 안내

[3] 녹음 금지 및 임의조작 금지

- 당초 설치 목적을 벗어나 함부로 조작하거나 다른 곳을 비추는 행위 금지

[4] CCTV 영상정보의 무단 유출 · 공개금지

- 개인영상정보를 제공하는 경우 본인 확인 후 필요 최소한으로 제공, 타인영상은 모자이크 처리

[5] CCTV 운영관리 방침수립 · 공개

- 개인 영상정보관리책임자 지정, CCTV 운영관리 방침을 홈페이지 등에 공개

[6] CCTV 영상정보의 안전성 확보조치

- 관리자 외 접근 통제, 관리자별 개별 ID 발급, 잠금장치 마련 등

※ 법 위반 내용과 정도에 따라 과태료 또는 벌금 등이 부과될 수 있습니다.

