명광 INNOVATION

PTZ CAMERA

네트워크카메라

제품사용설명서

A급 기기(업무용 방송통신기자재)

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Information & Communication Technology

네트워크 카메라
제품 사용 설명서

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

❖ **제품의 외관, 사양등은 성능 개선을 위해 예고 없이 변경될 수 있습니다.**

❖ **최초 관리자 ID는 “admin”이며, 비밀번호는 최초 로그인 시 설정해야 합니다.**
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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 내용이므로 반드시 지켜 주시기 바랍니다.

⚠ 경 고	지키지 않았을 경우 사용자가 사망하거나 중상을 입을 수 있습니다.	⚠ 주 의	지키지 않았을 경우 사용자가 부상을 당하거나 재산상의 손해를 입을 수 있습니다.

전원 관련

⚠ 경 고

전원 및 신호선 연결 시 외부 연결 단자를 확인하고 연결하세요. **알람 단자에는 알람 신호선을 연결하고, AC 전원 입력 단자에 AC 어댑터를 올바르게 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.	

⚠ 주 의

전원 연결단자에 전원선을 확실히 고정 후 사용하세요. 접속이 불완전한 경우는 화재의 원인이 됩니다.		

설치 관련

⚠ 경 고

반드시 본 제품 구입 시 제공된 어댑터를 사용하세요. 화재, 감전, 고장의 원인이 됩니다.	**천둥, 번개가 치면 카메라에 문제가 생길 수 있습니다.** 설치 시 접지 등 낙뢰에 의한 파손이 최소화될 수 있도록 주의하세요.	**카메라와 인스톨베이스 구성품은 동일 모델의 제품으로 체결하여 설치해 주세요.** **두 부품 체결전 반드시 제품 모델명을 확인해 주세요.** 다른 모델의 구성품과 혼용시 제품 파손의 위험이 있습니다.

⚠ 주 의

카메라를 벽이나 천장 등에 설치 시 안전하고 확실하게 고정하세요. 낙하로 인한 부상의 원인이 됩니다.	**카메라 위에 전도성 물질(드라이버, 동전, 쇠붙이 등) 및 물이 차있는 용기 등을 놓지 마세요.** 화재, 감전, 낙하로 인한 상해의 원인이 됩니다.	**하나의 어댑터에 여러대의 카메라를 연결해서 사용하지 마세요.** 용량 초과 시 이상 발열 및 화재의 원인이 됩니다.
카메라 설치/분리시 보호용 장갑을 착용하세요. 제품 표면의 고온에 의한 화상의 원인이 됩니다.	**무리한 힘을 가하여 억지로 제품을 설치할 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.** **콩기름과 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.	**당사에서 권장하지 않는 방법으로 제품을 설치/분해하는 경우 제품의 기능/성능을 보장할수 없습니다.** **제품 사용 설명서의 "설치 및 연결"을 참조하여 설치하세요.**	**제품을 물 속에서 설치 또는 사용할 경우 제품의 심각한 고장을 일으킬 수 있습니다.**
Pan / Tilt / Zoom 모터 및 Slip ring은 연속 동작할 경우 부품수명은 1년을 보증합니다.		

참 고

습기 먼지나 그을음 등이 많은 장소에 설치하지 마세요. 화재, 감전의 원인이 됩니다.	**제품에 물건을 떨어뜨리거나 충격을 주지 마세요. 진동이 심한 곳이나 자석종류가 있는 곳으로부터 멀리해 주세요.**	**온도가 너무 높은 곳(55°C 이상) 이나 낮은 곳, 습도가 높은 곳에 설치하지 마세요.** 화재, 감전의 원인이 됩니다.
직사광선이 들어오는 곳이나 난방기구 등 열이 나는 곳을 피해주세요. 화재, 감전의 원인이 됩니다.	**설치된 제품을 이동하고자 할 때에는 반드시 전원을 끄고 옮기거나 재설치 하세요.** 화재, 감전의 원인이 됩니다.	**바람이 잘 통하는 곳에 설치하세요.** 화재 및 고장의 원인이 될 수 있습니다.

청소 관련

참 고

청소 시 제품의 각 부분에 직접 물을 뿌리지 마세요. 화재, 감전의 원인이 됩니다.	**제품 표면은 깨끗하고 부드러운 마른 헝겊으로 오염 부위를 닦거나 부드러운 마른 헝겊에 물을 적셔 물이 흐르지 않도록 꼭 짠 후에 오염 부분을 닦으세요.** 알코올, 솔벤트가 함유되거나, 계면활성제가 함유된 세제, 화장품류, 기름 성분등은 제품의 파손 및 변형을 유발할수 있으니 사용하지 마세요.	

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설치 및 사용상의 주의

- 배터리(배터리 팩 또는 장착된 배터리)가 햇빛, 불 등과 같은 과도한 열에 노출 되어서는 안됩니다.
- 배터리는 교체가 불가능합니다.
- 사용자 임의로 카메라를 분해하지 마세요.
- 카메라 취급 시 항상 주의하세요.
- 카메라를 주먹으로 치거나 흔들지 않도록 하고 부주의한 보관이나 오동작으로 카메라에 손상을 입히지 않도록 주의하세요.
- 카메라를 비가 오는 장소나 습기가 많은 장소에 설치하지 않도록 주의하고 젖은 장소에 두고 동작하지 마세요.
- 제품 표면은 깨끗하고 부드러운 마른 헝겊으로 오염 부위를 닦거나 부드러운 마른 헝겊에 물을 적셔 물이 흐르지 않도록 꼭 짠 후에 오염 부분을 닦으세요.
  (알코올, 솔벤트가 함유되거나, 계면활성제가 함유된 세제, 화장품류, 기름 성분등은 제품의 파손 및 변형을 유발할수 있으니 사용하지 마세요.)
- 카메라를 직사광선이 비치지 않는 서늘한 곳에 설치하세요. 직사광선이 비치는 곳에 두면 제품에 좋지 않은 영향을 줄 수 있습니다.
- SD 메모리 카드를 구부리거나 던지지 마세요.
- 온도가 높은 곳, 습기가 많은 곳, 먼지가 많은 곳에 SD 메모리 카드를 보관하거나 사용하지 마세요.
- SD 메모리 카드 단자에 이물질이 묻지 않도록 주의하세요.
  이물질이 묻은 경우에는 부드러운 헝겊으로 닦아주세요.
- SD 메모리 카드를 빼기 전 <**저장**>에서 장치를 <**사용 안함**>으로 설정하고 [**적용**] 버튼을 누른 후 카메라 전원을 끄세요.
- SD 메모리 카드의 수명이 다하면 데이터가 저장되지 않습니다.
  이러한 경우에는 SD 메모리 카드를 새로 구입하세요.
- 본 제품을 설치하기 전 또는 사용 중에 한화테크윈 웹 사이트 http://www.hanwha-security.com 을 방문하셔서 최신 S/W 버전을 확인하시고 다운로드하여 업데이트하세요.
- 제품 CVBS 출력단자는 카메라 설치 편의성을 위한 단자이며 감시용으로 부적합합니다.
- 제품에 강한 충격을 가할 경우, 카메라 파손 또는 우천시 침수의 원인이 될 수 있습니다.
- 렌즈 커버 및 조광기 커버가 이물로 인해 오염된 경우에는 화상 및 화질에 영향을 미치므로 정기적으로 청소를 하여 주십시오.
- 렌즈 전면부의 보호시트는 설치공사 완료 후에 제거하세요.
- 주위온도가 -50°C 이하의 환경에서는 사용할 수 없습니다.
- -50°C 환경에서 제품 설치 장소에 따라 해동되지 않을 수 있습니다.
- 저온 환경에 제품이 방치된 경우, 정상 동작하는데 최대 2시간이 소요됩니다.
- -20°C 이하 환경에 제품 방치 후 전원을 켠 경우, 필요에 따라 시간을 재설정하세요.
- 보안강화를 위하여 특수문자, 숫자, 영문 대문자, 소문자 중 다양한 조합으로 비밀번호를 설정하여 사용하시기를 권장합니다.
- 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.

eco
RoHS compliant

한화테크윈은 지구환경보전을 위하여 제품과 관련된 전 과정에서 환경을 고려하고 있으며, 고객에게 보다 친환경적인 제품을 제공하기 위하여 다양한 활동을 추진하고 있습니다.
에코(Eco)마크는 친 환경제품을 만들기 위한 한화테크윈의 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 : MS Windows, Mac OS X
- **플러그인 프리 웹뷰어**
  지원 브라우저 : Google Chrome, MS Edge, Mozilla Firefox(Windows 64bit only), Apple Safari (Mac OS X only)
- **플러그인 웹뷰어**
  지원 브라우저 : MS Explorer, Apple Safari (Mac OS X only)

※ 검증된 OS 및 브라우저 상세 버전 정보는 부록을 참고하세요.

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

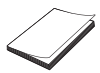
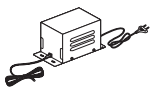
- 권장 용량 : 200GB 이상을 권장합니다.
- 동시접속 : NAS 1대당 최대 16대의 카메라 접속이 가능합니다.
- 본 카메라는 다음과 같은 제조사의 NAS 사용을 권장합니다.

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

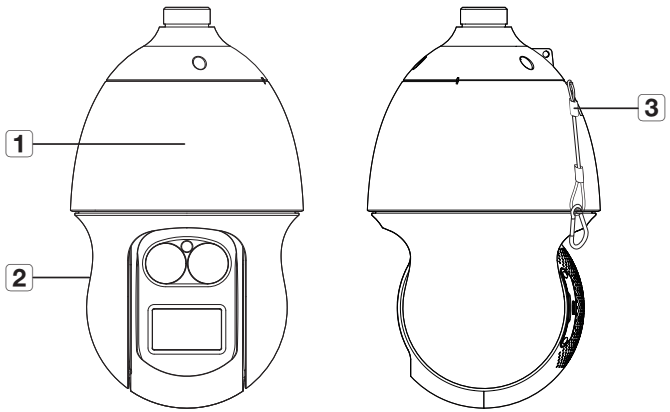
다음의 구성품이 모두 포함되어 있는지 확인하세요.
(부속 액세서리는 판매국에 따라 다를 수 있습니다.)

외관	품명	수량	용도
	본체	1	
	퀵가이드	1	
	전원 어댑터 (AC 24V, 6A)	1	전원 연결시 사용
	BNC 케이블	1	휴대용 디스플레이에 연결하여 카메라 테스트
	육각나사	3	인스톨 베이스와 카메라 본체 결합에 사용
	L 렌치	1	인스톨 베이스와 카메라 본체 결합 후 고정시 사용

외관	품명	수량	용도
	인스톨 베이스	1	실외 설치를 위한 브라켓
	방수 악세서리	1	습기가 많은 곳에 설치시 사용

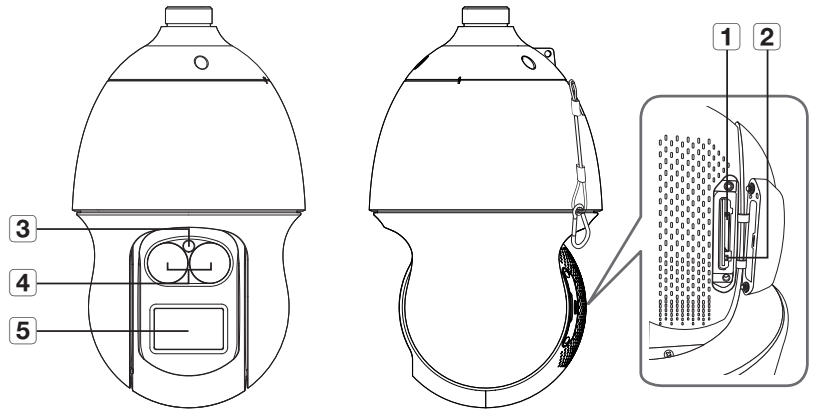
각 부분의 명칭 및 기능

외부



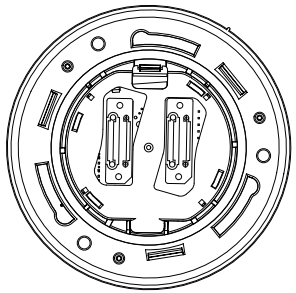
명칭	기능설명
1 본체	내부 PTZ 메커니즘을 직사광선과 빗물, 외부 충격으로부터 보호합니다.
2 쉴드 커버	렌즈 및 본체를 보호하기 위해 씌우는 뚜껑입니다.
3 안전케이블	설치시 제품의 추락을 방지하는 케이블입니다.

내부 구성

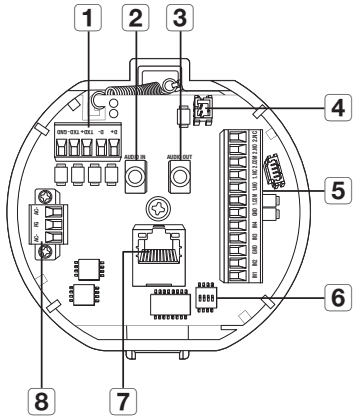


명칭	기능설명
1 SD 메모리 카드 삽입구	SD 메모리 카드를 삽입하기 위한 단자입니다. SD 메모리 카드 삽입구의 위치는 <**SD 메모리 카드 넣기/빼기**>를 참고하세요. (14쪽)
2 초기화 버튼	카메라의 설정을 공장 값으로 초기화하는 버튼입니다. 약 5초간 누르면 재부팅됩니다. 카메라를 초기화하면 네트워크 설정은 DHCP를 사용하도록 변경됩니다. 네트워크 내에 DHCP 서버가 없는 경우는, 디바이스 매니저 프로그램을 이용해 기본적인 네트워크 설정(IP Address, Subnet Mask, Gateway 등)을 다시 해야 접속이 가능합니다.
3 조도 센서	수신되는 빛을 감지하여 IR LED를 제어합니다.
4 IR LED	조도 센서에 의해 제어되는 적외선 LED입니다.
5 렌즈	카메라 렌즈입니다.

설치면



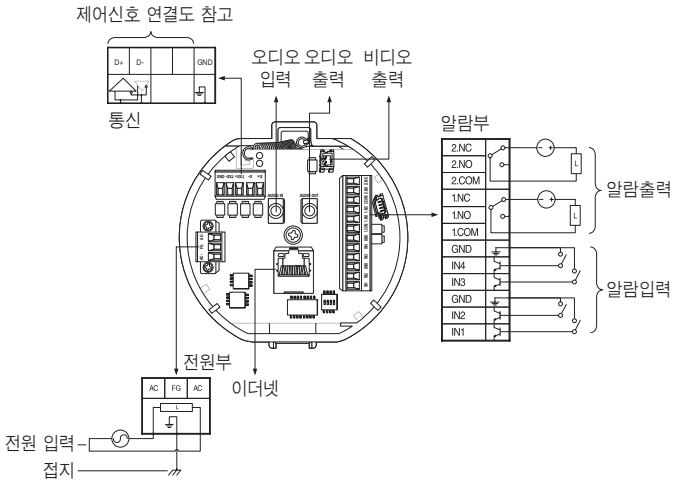
인스톨 베이스 내부



명칭	기능설명
1 **통신 연결단자**	RS-485 통신을 연결하는 단자입니다.
2 **오디오 입력 단자**	오디오 입력 케이블을 연결하는 단자입니다.
3 **오디오 출력 단자**	오디오 출력 케이블을 연결하는 단자입니다.
4 **비디오 출력 단자**	아날로그 비디오 신호 출력 단자입니다. (설치용)
5 **알람 입출력 단자**	알람 입출력 케이블을 연결하는 단자입니다.
6 **통신 설정 스위치**	RS-485 통신 방식 및 종단 유무를 설정합니다.
7 **네트워크 연결부**	이더넷 케이블을 통하여 네트워크와 연결하는 단자입니다.
8 **전원 연결 단자**	전원을 연결하는 단자입니다.

카메라 배선부

제품의 배선은 아래의 그림을 참고하세요.

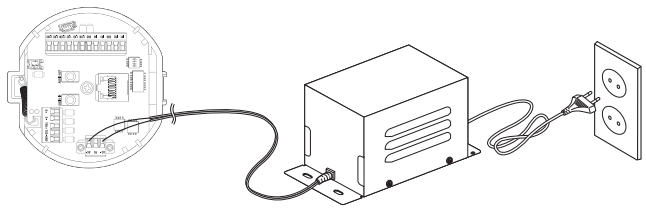


- 셋업 메뉴에서 Normal Open을 선택
  - 접점 방식인 경우 쇼트, 능동 방식인 경우 "LOW" 레벨일 때 센서 입력이 동작합니다.
- 셋업 메뉴에서 Normal Close를 선택
  - 접점 방식인 경우 오픈, 능동 방식인 경우 하이임피던스 상태(오픈 콜렉터)일 때 센서 입력이 동작합니다.
- 알람출력 단자의 최대용량은 30V DC/2A, 125V AC/0.5A, 250V AC/0.25A 입니다.
- 알람 입출력 케이블은 단자별로 반드시 하나씩 연결해주세요.
- 정격을 초과하는 제품을 연결하여 사용할 때에는 별도의 릴레이 구동 장치를 사용하세요.
- 전원과 GND를 NC/NO 포트와 COM 포트에 잘못 연결할 경우 화재 및 제품 파손이 발생할 수 있습니다.

다른 기기와 연결하기

어댑터와 케이블 준비하기

- 카메라와 전원 어댑터를 연결한 후 전원 어댑터의 플러그를 콘센트에 연결하세요.



정격 전압 및 전류를 정확히 확인하세요.

정격 전력	입력 전압 범위	전류 소비
AC 24V	AC 22V ~ 26V	6 A

- 주위온도가 -50°C 이하의 환경에서는 사용할 수 없습니다.
- -50°C 환경에서 제품 설치 장소에 따라 해동되지 않을 수 있습니다.
- 저온 환경에 제품이 방치된 경우, 정상 동작하는데 최대 2시간이 소요됩니다.
- -40°C 이하 환경에서 IR 조광기의 줌 연동속도가 느려질 수 있습니다.
- -20°C 이하 환경에 제품 방치 후 전원을 켠 경우, 시간을 재설정하세요.

구리선의 저항치 [20°C] 일 때

구리선 사이즈(AWG)	#18	#17	#16	#15
저항치 (Ω/m)	0.021	0.0166	0.0132	0.0104
권장길이 (m)	15 이내	20 이내	25 이내	30 이내

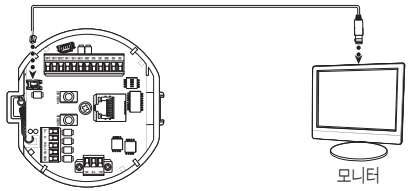
- 위의 표와 같이 전선의 길이에 따라 전압 강하 현상이 생기므로 어댑터 출력선의 길이를 과도하게 길게하여 카메라와 연결할 경우 카메라의 성능에 문제가 생길 수 있습니다.
  - 카메라 작동 보증 전압 : AC 24V±10%
  - 위의 표에 나타난 전선의 종류 및 제조사에 따라 편차가 있을 수 있습니다.

이더넷 연결하기

이더넷 케이블을 연결하여 로컬 네트워크나 인터넷에 연결하세요.

설치용 모니터 연결하기

본 제품 뒷면의 영상출력단자를 설치용 모니터 영상입력단자에 연결합니다.



- 사용되는 모니터와 주변기기에 따라 접속 방법이 다르므로 각 기기의 사용 설명서를 참고하세요.
- 반드시 연결되는 기기의 전원을 끈 상태에서 연결하세요.

- 본 제품은 네트워크를 통해 영상을 전송하는 네트워크 카메라로서, 영상출력단자는 제품 설치 시 카메라의 촬상범위를 정하는데 사용되는 설치용 단자입니다.
- 모니터링 용으로 사용 시 화질 저하 등의 문제가 발생할 수 있습니다.
- TFT/LCD 휴대모니터 외 전문 CRT 등을 이용한 24시간 감시용에는 부적합합니다.
- 24시간 감시 및 저장은 네트워크를 통한 전송화면을 이용하세요.

설치하기

카메라 브라켓 준비 및 설치하기

브라켓 및 하우징 설치 방법에 관한 사항은 각 브라켓, 하우징에 동봉된 설치메뉴얼을 참고하세요.

▪ 설치 가능한 브라켓 모델 및 기능

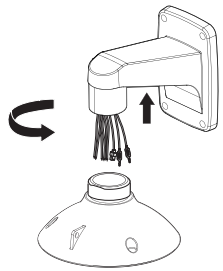
모델	명칭
SBP-300WM1	벽부형 마운트
SBP-300WM	
SBP-300CM	천장형 마운트
SBP-300LM	파라펫 마운트
SBP-300KM	코너 마운트
SBP-300PM	폴 마운트

- 각 별매 브라켓의 외관은 "**설치 관련 별매 제품**"을 참고하세요. (12쪽)

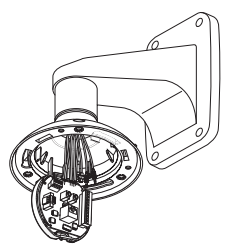
벽부 부착 방식으로 설치하기

▪ 브라켓에 인스톨 베이스 고정

1. 브라켓에 인스톨 베이스를 시계방향으로 회전하면서 결합하세요.



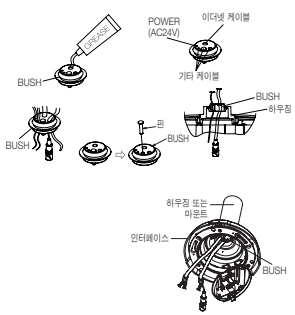
2. 그림과 같이 인스톨 베이스의 하단부에 있는 힌지도어의 손잡이 부분을 가볍게 누르고 아래로 내려주세요. 9쪽의 "**카메라 배선부**"를 참고하여 배선을 연결하세요.



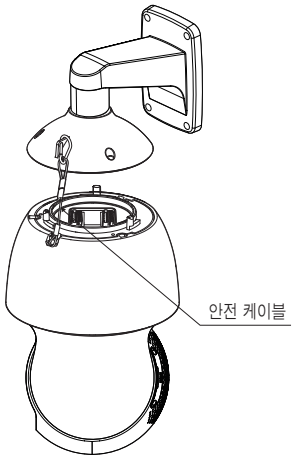
- 제품의 전원은 최종 단계에서 인가하세요. 설치 도중에 전원을 투입할 경우 제품의 파손 및 화재의 위험이 있습니다.

케이블 연결방법을 확인하고 장착하세요.

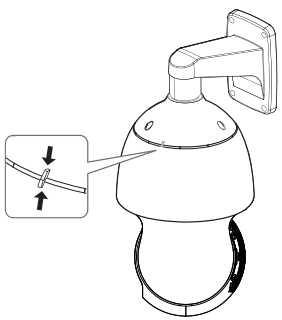
- "**파이프 또는 마운트**"들을 통해서 외부의 습기가 유입될 수 있는 장소에 "**하우징**"을 설치할 때에는 악세서리로 포함된 BUSH를 사용하여, 외부 습기의 유입을 차단해주세요.
  - BUSH에 그리스를 적당량 도포한후, 케이블들을 BUSH의 각홀에 맞추에 체결합니다. 케이블이 체결되지 않는 홀에는 PIN을 사용하여 홀을 막습니다.
  - BUSH를 아래 그림처럼 하우징 내측 상단에 체결해 줍니다. 이때, BUSH를 전체적으로 눌러주어서 BUSH가 단면도에서 같이 "**하우징**"에 정확히 체결되도록 합니다.



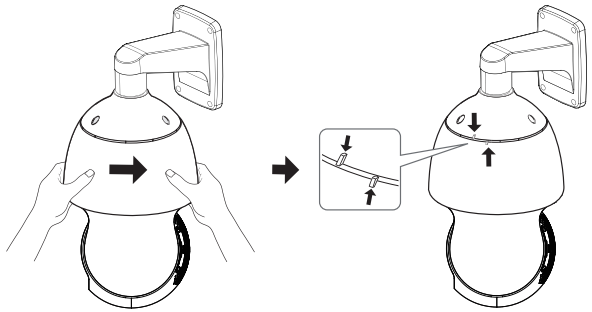
3. 카메라 본체의 안전케이블을 인스톨 베이스에 장착하세요.



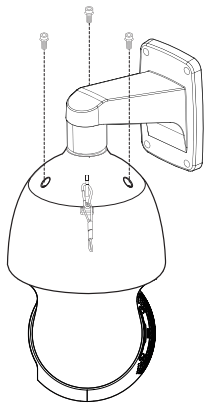
4. 카메라와 인스톨 베이스 결합
인스톨 베이스와 카메라 본체의 방향 참고 표시가 들어맞도록 결합하세요.



5. 카메라 장착
카메라 본체를 시계 방향으로 돌려서 위, 아래의 참고 표시부가 그림과 같이 되도록 회전시키세요.



6. 카메라와 인스톨 베이스 고정
그림과 같이 육각나사를 이용하여 인스톨 베이스와 카메라를 고정시키세요.



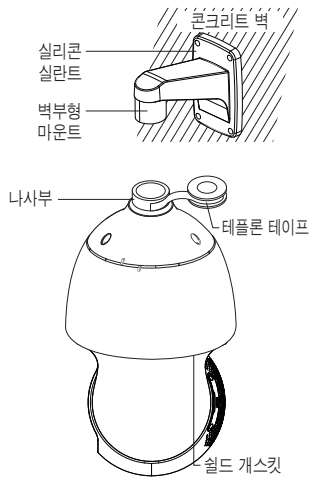
방수를 위한 유의사항

본 모델은 실외 설치용 하우징 일체형 제품입니다.

▪ 본체와 벽부형 마운트를 조합하여 벽에 설치할 경우

1. 수직인 벽에 벽부형 마운트를 설치하세요. 경사가 있는 벽면에 설치할 경우, 외부 케이블을 통해서 습기가 본체 내부로 유입될 수 있습니다.
2. 하우징 몸체의 나사부에 테플론 테이프를 충분히 감아 조립하세요.
3. 쉴드 커버를 분리하여 하우징 몸체에 체결시 쉴드 커버에서 개스킷이 빠지지 않도록 주의하세요.
4. 방수를 위하여 벽부형 마운트 어댑터를 설치한 후 벽과 벽부형 마운트 사이 및 테두리에 실리콘 실란트로 밀폐 처리를 하세요.

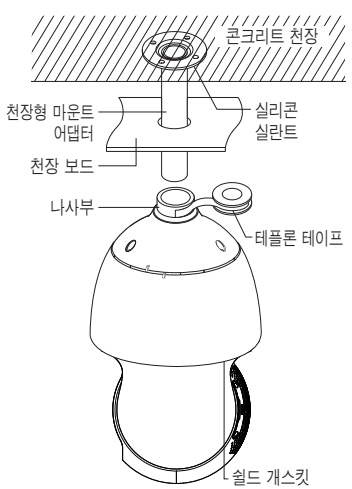
▪ 설치면이 평탄하지 않을 경우 모든 틈이 밀폐될 수 있도록 특히 주의하세요.



▪ 본체와 천장형 마운트 어댑터를 조합하여 벽에 설치할 경우

1. 하우징 몸체의 나사부에 테플론 테이프를 충분히 감아 조립하세요.
2. 쉴드 커버를 분리하여 하우징 몸체에 체결시 쉴드 커버에서 개스킷이 빠지지 않도록 주의하세요.
3. 방수를 위하여 천장형 마운트 어댑터를 설치한 후 벽과 천장형 마운트 사이 및 테두리에 실리콘 실란트로 밀폐 처리를 하세요.

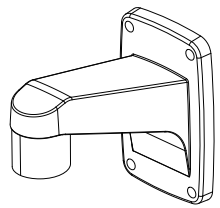
▪ 설치면이 평탄하지 않을 경우 모든 틈이 밀폐될 수 있도록 특히 주의하세요.



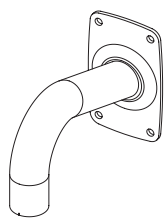
설치 관련 별매 제품

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

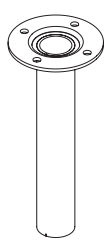
1. 카메라를 벽에 설치할 경우
   - 벽부형 마운트 (SBP-300WM1)



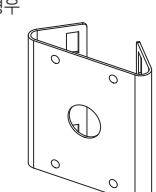
   - 벽부형 마운트 (SBP-300WM)



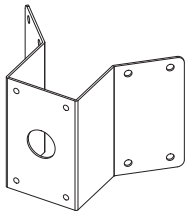
2. 카메라를 천장에 설치할 경우
   - 천장형 마운트 (SBP-300CM)



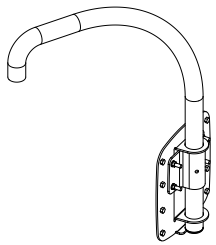
3. 80mm이상의 원기둥에 벽부형 마운트 (SBP-300WM/SBP-300WM1)를 설치할 경우
   - 폴 마운트 (SBP-300PM)



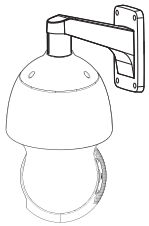
4. 벽의 모서리부에 벽부형 마운트 (SBP-300WM/SBP-300WM1)를 설치할 경우
   - 코너 마운트 (SBP-300KM)



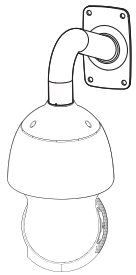
5. 건물 옥상에 설치할 경우
   - 파라펫 마운트 (SBP-300LM)



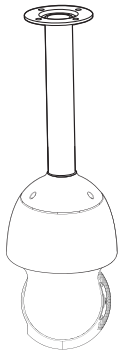
▪ **마운트 결합**



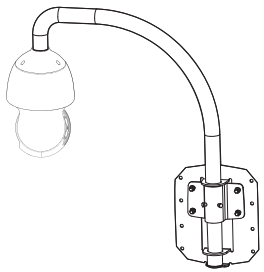
벽부형 마운트 (SBP-300WM1)



벽부형 마운트 (SBP-300WM)



천장형 마운트 (SBP-300CM)



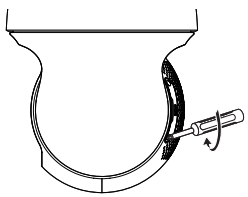
파라펫 마운트 (SBP-300LM)

SD 메모리 카드 넣기/빼기

- 카메라를 설치하기 전에 전원과 본체를 분리한 후 SD 메모리 카드를 넣으세요.
- 비가 오거나 습도가 높은 날씨에는 SD 메모리 카드 탈착을 권장하지 않습니다.
- 방수에 문제가 없도록 카메라 본체, 쉴드 커버, SD 홀더 브라켓 조립 시 나사를 단단히 조이세요.
- SD 메모리 카드 장착/제거 시에는 부품 유실 및 낙하사고를 방지하기 위해, 반드시 제품 본체를 평지에 내려놓으신 후 작업하세요.

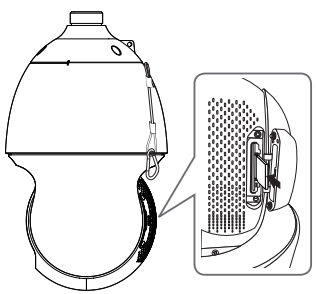
SD 메모리 카드를 넣으려면

1. 드라이버를 이용하여 SD 홀더 브라켓에 있는 2개의 나사를 반시계 방향으로 풀어주세요.



- 나사를 완전히 제거하지 마세요.

2. SD 홀더 브라켓을 위쪽으로 빼낸 후 그림과 같이 SD 메모리 카드를 화살표 방향으로 밀어 넣으세요.



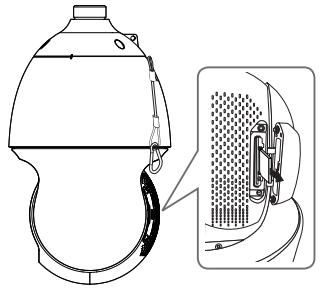
- 역방향으로 무리하게 삽입하지 마세요. SD 메모리 카드가 파손될 수 있습니다.

3. SD 메모리 카드를 넣은 후 분리한 순서의 역순으로 조립하세요.

- 조립시 방수에 문제가 없도록 나사를 단단히 조이세요.

SD 메모리 카드를 빼려면

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



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

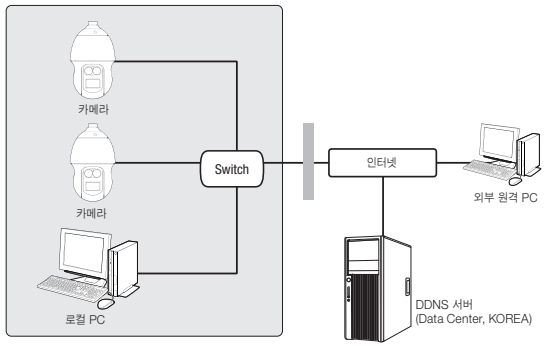
네트워크 연결 및 설정

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

LAN 환경에서 직접 카메라 설치하기

LAN 환경에 있는 로컬 PC에서 카메라 접속하기

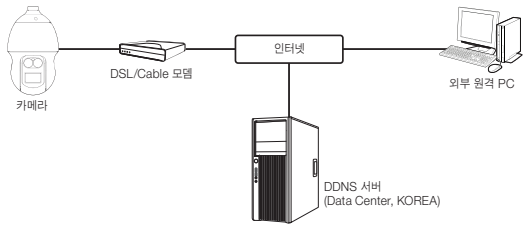
1. 로컬 PC의 인터넷 브라우저를 실행하세요.
2. 브라우저의 주소창에 접속하려는 카메라의 IP 주소를 입력하세요.



<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)

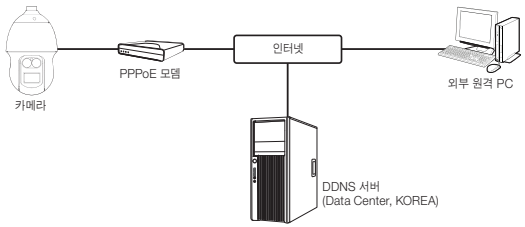
DHCP 방식의 DSL/Cable 모뎀에 직접 카메라 설치하기



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. [**설정**] 페이지로 이동하세요.
5. [**네트워크**] - [**DDNS**] 설정 페이지로 이동하여 DDNS를 설정하세요.
6. [**Basic**] - [**IP 및 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.

PPPoE 모뎀에 직접 카메라 설치하기

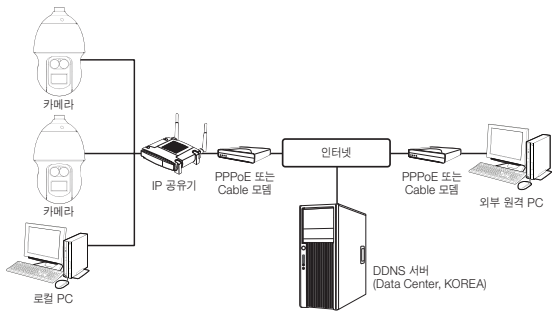


1. 사용자 컴퓨터와 네트워크 카메라를 직접 연결하세요.
2. 디바이스 매니저를 사용하여 해당 카메라의 IP 주소를 사용자 컴퓨터에서 인터넷 브라우저를 통하여 접속할 수 있는 IP 주소로 변경하세요.
3. 인터넷 브라우저를 이용하여 웹뷰어에 접속하세요.
4. [**설정**] 페이지로 이동하세요.
5. [**네트워크**] - [**DDNS**] 설정 페이지로 이동하여 DDNS를 설정하세요.
6. [**Basic**] - [**IP 및 포트**] 설정 페이지로 이동하여 IP 형식을 [**PPPoE**]로 설정한 후 네트워크 서비스의 ID와 비밀번호를 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 한화테크윈 웹 사이트(http://www.hanwha-security.com)로 접속하여 <**기술가이드**> - <**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.

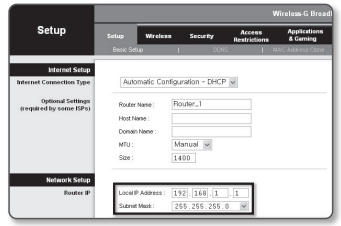
IP 공유기를 사용하지 않는 경우

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 사설 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 서브넷 마스크 게이트웨이	192.168.1.100 255.255.255.0 192.168.1.1	192.168.1.101 255.255.255.0 192.168.1.1
Port 관련 항목	HTTP 포트 VNP 포트 RTSP 포트	8080 4520 554	8081 4521 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

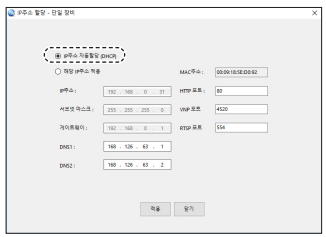
5. [**적용**] 버튼을 클릭하세요.
6. 성공 확인 메세지가 표시되면 [**확인**] 버튼을 클릭하세요.

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

1. 검색목록에서 IP 설정을 변경하려는 카메라를 클릭하세요.
2. 디바이스 매니저의 메인화면에서 <**IP 할당**>을 클릭하세요.
3. <**IP주소 자동할당 (DHCP)**>를 선택하세요.
4. [**적용**] 버튼을 클릭하세요.
5. 성공 확인 메세지가 표시되면 [**확인**] 버튼을 클릭하세요.



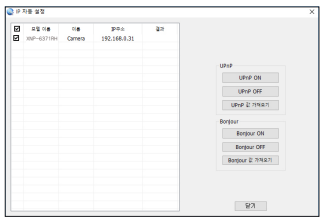
수동으로 카메라 등록하기

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

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

자동으로 IP 설정하기

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

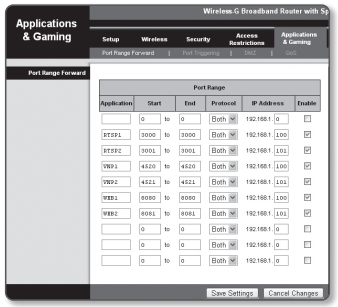


포트 포워딩 (포트 맵핑) 설정하기

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.

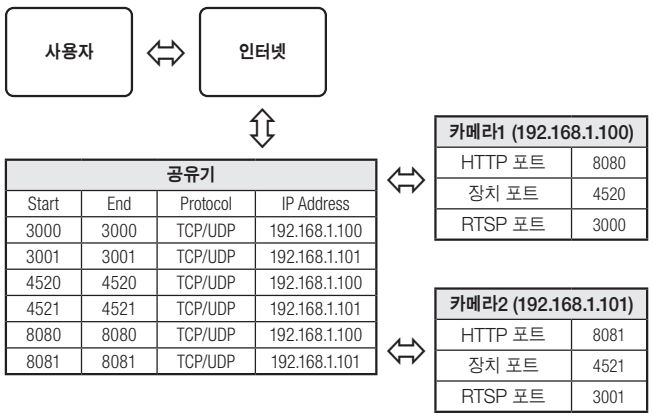


- 포트 포워딩 설정하기 설명은 CISCO IP 공유기로 설정한 예시입니다.
- 연결된 IP 공유기 모델에 따라 설정 방법이 다를 수 있습니다.
  해당 공유기의 사용설명서를 참고하세요.

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 :



공유기			
Start	End	Protocol	IP Address
3000	3000	TCP/UDP	192.168.1.100
3001	3001	TCP/UDP	192.168.1.101
4520	4520	TCP/UDP	192.168.1.100
4521	4521	TCP/UDP	192.168.1.101
8080	8080	TCP/UDP	192.168.1.100
8081	8081	TCP/UDP	192.168.1.101

카메라1 (192.168.1.100)	
HTTP 포트	8080
장치 포트	4520
RTSP 포트	3000

카메라2 (192.168.1.101)	
HTTP 포트	8081
장치 포트	4521
RTSP 포트	3001

- 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 <**와이즈넷 DDNS**>의 <**퀵 커넥트**>의 체크박스를 선택하세요.

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.

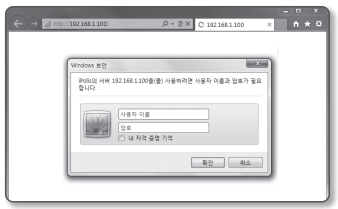
1. IP 공유기 내부에 설치되어 있는 카메라를 외부에서 접속하기 위해서는 반드시 IP 공유기에 포트 포워딩 설정을 하세요.
2. 외부 원격 PC에서 인터넷 브라우저를 실행하여 주소창에 카메라에 접속하기 위한 DDNS URL 주소, 또는 IP 공유기의 인터넷 IP 주소를 입력하세요.
   예) http://ddns.hanwha-security.com/ID

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

카메라에 접속하기

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 : http://ddns.hanwha-security.com/ID
   - 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

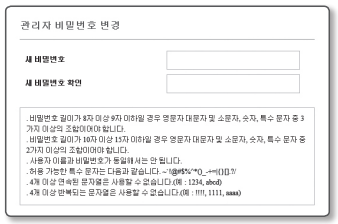
DDNS 주소를 확인하려면

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 알수 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 <**와이즈넷 DDNS**>로 설정하고, <**제품 ID**>에 DDNS 서버에서 등록한 제품 아이디를 입력하세요.

비밀번호 설정하기

최초 제품 접속 시 반드시 로그인 비밀번호를 등록해야합니다.
"**비밀번호 변경**" 창이 나타나면 새로운 비밀번호를 입력하세요.

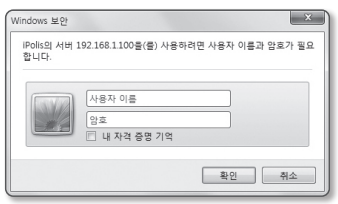


- 새로운 비밀번호는 8자 이상 9자리 이하는 영어 대/소문자, 숫자 특수 문자 중 3종류 이상을 사용해야 하며, 10자 이상 15자리 이하는 2종류 이상을 사용해야 합니다.
  - 사용 가능한 특수문자 : ~`!@#$%^*()_-+=|{}[].?/
- 보안강화를 위하여 동일한 문자 반복 사용이나 연속된 키보드 배열을 비밀번호로 사용하지 않는 것을 권장합니다.
- 비밀번호 분실 시 카메라에 있는 [**RESET**] 버튼을 눌러 제품 초기화를 해야 하므로 반드시 메모 또는 기억하시길 바랍니다.

로그인하기

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

1. <**사용자 이름**> 입력란에 "**admin**"을 입력하세요.
   관리자의 아이디 "**admin**"은 고정이며 변경할 수 없습니다.
2. <**암호**> 입력란에 설정한 비밀번호를 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 비밀번호를 입력한 후 "**내 자격 증명 기억**"에 체크표시를 할 경우 다음 접속 시 사용자 이름과 비밀번호가 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, Safari 브라우저** : 플러그인을 사용 할 수 없는 브라우저 환경이지만 플러그인 프리 웹뷰어가 탑재되어 웹뷰어 사용이 가능합니다.

- 플러그인 프리 웹뷰어는 영상 코덱 및 해상도에 따라 플러그인 웹뷰어보다 성능이 낮을 수 있습니다.
  - 라이브 영상에 지연이 있을시 플러그인 프리 프로파일(H.264의 HD(1280x720) 20FPS)을 자동 생성합니다.
  - Playback 재생의 경우 코덱 및 해상도에 따라 지연이 발생할 수 있습니다.
- 플러그인 프리 기능은 Chrome 브라우저에 최적화 되어 있습니다.

- **IE, Safari 브라우저** : 기존의 플러그인 웹뷰어에서 플러그인 설치를 완료하지 않아도 제한된 기능으로 웹뷰어 사용이 가능합니다.

- 모니터링/저장 영상 재생의 기능을 원활히 사용 하려면 플러그인 설치가 필요합니다.

웹뷰어 플러그인 설치하기

IE 브라우저에서 플러그인 프리 웹뷰어에 접속하여 현재 재생되고 있는 동영상 이외의 다른 코텍으로 라이브 요청하거나 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 [**Click Here**]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.

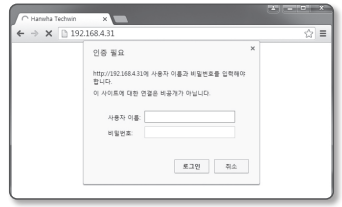
4. 웹뷰어 플러그인의 이전 버전이 설치되어있는 경우 이전버전을 삭제한다는 알림창이 발생합니다. 알림창이 나타나면 [**예(Y)**] 버튼을 클릭하세요.
5. [**확인**] 버튼을 클릭하세요.
   이전 버전의 웹뷰어 플러그인이 삭제됩니다.
6. [**Install**] 버튼을 클릭하여 웹뷰어 플러그인을 설치하세요.
7. [**Finish**] 버튼을 클릭하세요.
   웹뷰어 플러그인 설치가 완료됩니다.

▪ 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 불가능하지만, 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.



카메라 웹뷰어 설정하기

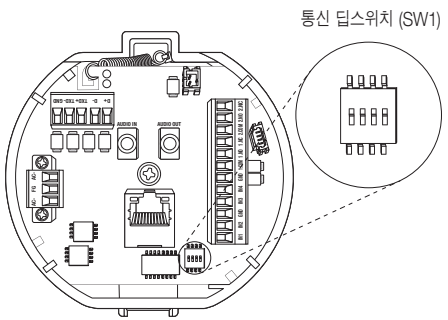
1. [**설정 ( )**] 아이콘을 클릭하세요.
2. 설정 화면이 나타납니다.
3. 네트워크 상에서 카메라의 기본 정보, PTZ, 비디오 및 오디오, 네트워크, 이벤트, 분석, 시스템, 오픈 플랫폼 설정을 실행할 수 있습니다.
4. <**도움말 ( )**>을 클릭하면 각 기능에 대한 상세한 설명을 확인할 수 있습니다.

딥스위치 설정하기

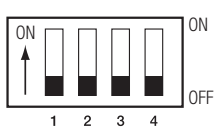
프로토콜 및 ID 딥스위치 설정방법

카메라 본체 하단에는 그림과 같이 통신 설정용 딥스위치와 아이디 설정용 딥스위치가 있습니다.
통신 및 ID 딥스위치를 이용하여 카메라 시스템의 여러가지 설정을 제어할 수 있습니다.
제품 설치 전에 반드시 제품환경에 맞춰서 딥스위치를 설정하세요.

1. 각각의 환경에 맞게 스위치를 셋팅하시면 됩니다. 설정방법은 이어지는 표를 참고하세요.
2. 스위치가 완전히 On/Off 되지 않으면 제품이 오동작할 수 있으니 셋팅이 완료되면 다시 확인하세요.
3. 끝이 날카로운 도구를 이용하여 스위치 조작할 경우, 스위치가 파손될 수 있으니 주의하세요.
4. 무리한 힘으로 스위치를 조작할 경우, 스위치가 파손될 수 있으므로 주의하세요.



통신 딥스위치 설정 (SW1)



SW1

SW1 핀번호	용도
1	Reserved
2	종단(Termination) 설정1
3	종단(Termination) 설정2
4	Reserved

• **종단 설정**
컨트롤러와 카메라 통신 신호의 감쇠를 방지하기 위해서는, 카메라/컨트롤러의 통신 루프에서 가장 먼 경로에 있는 카메라에 대하여 종단설정이 필요합니다.

카메라 접속위치	SW1-#2	SW1-#3
최장경로종단	ON	ON
경로도중	OFF	OFF

- 초기값은 각 설정표에 음영 처리 되어있습니다.
- 본 제품에 타사의 컨트롤러를 사용하여 제어하고자 하는 경우에는, 당사의 서비스부서 또는 기술부서로 문의하세요.

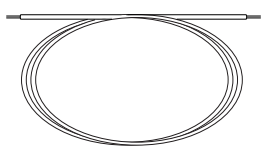
카메라 배선하기

제어신호 연결도

• RS-485 통신

통신용 케이블

카메라와 컨트롤러가 통신하기 위해서는 RS-485 통신선로가 필요합니다.



- 연결된 길이는 30M이내를 권장합니다.
- 통신용 케이블은 당사에서 제공하지 않습니다.

사양

항 목		내용
영상	촬상 소자	1/2" 2.17M CMOS
	총 화소수	1952(H) x 1113(V), 2.17M
	유효 화소수	1937(H) x 1097(V), 2.12M
	주사 방식	프로그레시브 스캔
	최저조도	컬러 : 0.01 Lux (1/30sec, F1.5) 흑백 : 0 Lux (IR LED On)
	S / N 비	50dB
	영상 출력	CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N) (설치용)
렌즈	초점거리	6mm ~ 222mm (광학 37X)
	구경비	F1.5 (Wide) ~ F4.6 (Tele)
	화각	H : 59.3°(Wide) ~ 1.9°(Tele) / V : 35.8°(Wide) ~ 1.1°(Tele)
	최소 지근 거리	Wide 1.5m, Tele 2m
	포커스 제어	Auto / Manual / One shot AF
	렌즈 타입	DC Auto Iris
	마운트 타입	Board-in type
팬/틸트/회전	팬 범위	360° Endless
	팬 속도	프리셋 : 400°/초, 수동 : 0.024°/초 ~250°/초
	틸트 범위	190° (-5° ~185°)
	틸트 속도	프리셋 : 300°/초, 수동 : 0.024°/초 ~250°/초
	시퀀스	프리셋 (300개), 스윙, 그룹 (6개), 추적, 투어, 오토런, 스케줄
	프리셋 정확도	±0.2°
	방위각	지원 (동/서/남/북/북서/남서/북동/남동 OSD)
	자동 추적	Off / On

항 목		내용
카메라 기능	카메라 타이틀	Off / On (영/한/숫자/기호, 최대 85 자) - 최대 5행, 색상 (회색/녹색/빨강/파랑/검정/흰색), 투명도, 해상도별 자동크기조정
	Day & Night	Auto (ICR) / Color / B/W / 스케줄
	역광보정	Off / BLC / WDR / HLC
	Wide Dynamic Range	150dB
	콘트라스트 개선	SSDR (Off / On)
	노이즈 제거	SSNR5 (2D+3D Noise Filter) (Off / On)
	영상 흔들림 보정	Off / On (자이로센서 탑재)
	안개보정	Auto / Manual / Off
	동작탐지	지원 (8개, 사각형 영역 설정 가능)
	프라이버시 기능	Off / On (4개의 점으로 24개 사각형 프라이버시 영역설정 가능) - 색상 : 회색/녹색/빨강색/파랑색/검정색/흰색 - 줌 배율 제한 설정 모드 가능 - 모자이크 옵션
	Gain Control	Off / Low / Middle / High
	화이트발란스	ATW / AWC / Manual / Indoor / Outdoor (Mercury & Sodium 포함)
	전자셔터	Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)
	디지털줌	32x
	이미지 회전	상하/좌우 반전 : On/Off
	비디오&오디오 분석	템퍼링(화면 전환), 배회, 오디오 감지, 가상선, 음원분류, 출/입 감지, 발생/소멸 감지, 얼굴감지, 움직임감지, 안개감지
	시리얼 인터페이스	RS-485 - Samsung-T, Pelco-D/P, Panasonic, Bosch, AD, GE, Vicon, Honeywell
	알람 입출력	입력 4개 / 출력 2개 (Relay 지원)
	알람 트리거	알람 입력, 동작 탐지, 비디오&오디오 분석, 네트워크 단절

부록

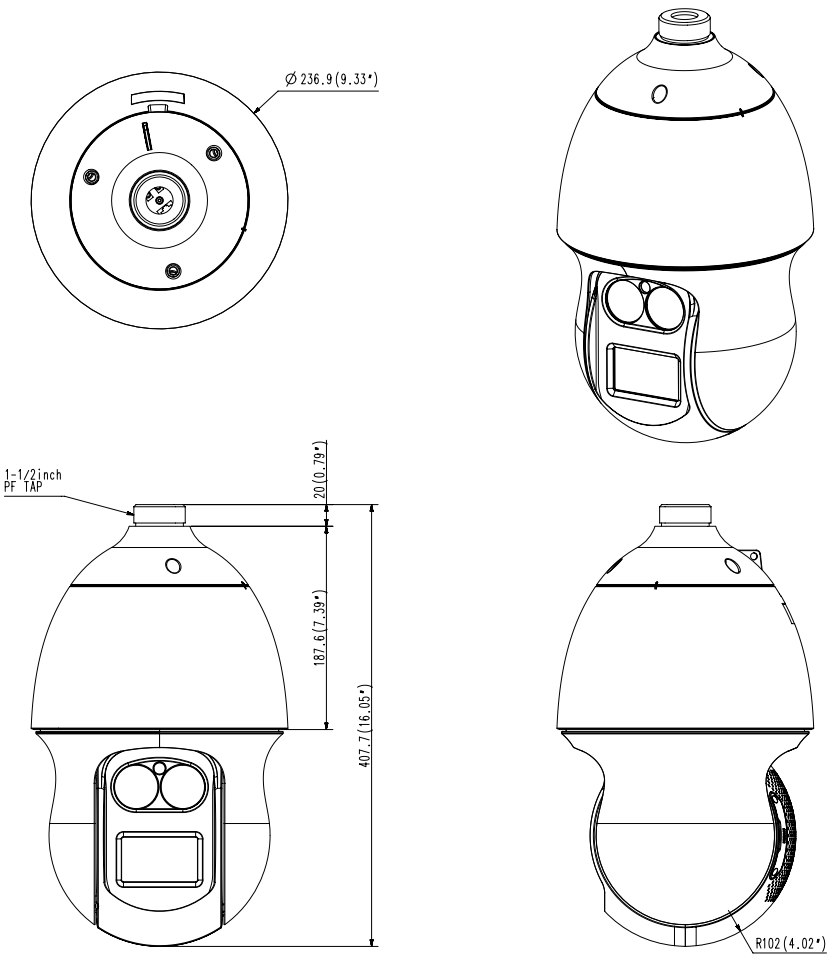
항 목		내용
카메라 기능	이벤트 대응 동작	• FTP와 E-Mail을 통해서 파일 전송 및 업로드 • E-Mail, TCP, HTTP를 통한 알림 • 알람트리거 발생 시 SD/SDHC/SDXC 메모리 카드 또는 NAS에 녹화 • 외부 알람 출력 • PTZ 프리셋
	오디오 입력	선택가능 (마이크/라인 입력) 지원 전압 : 2.5VDC(4mA) 입력, 임피던스 : 2K Ohm
	오디오 출력	라인 출력 (3.5mm mono jack), 최대 출력 레벨 : 1 Vrms
	픽셀 카운터	지원
네트워크	이더넷	RJ-45 (10/100BASE-T)
	비디오 압축 방식	H.264 (MPEG-4 Part 10/AVC), H.265, Motion JPEG
	해상도	1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
	최대 프레임레이트	H.264/H.265 : 모든 해상도 - 최대 60fps Motion JPEG : 모든 해상도 - 최대 30fps
	스마트압축	수동 모드 (영역 : 5개)
	WiseStream II	지원
	화질 제어	H.264/H.265/MJPEG : 비트레이트 레벨 제어
	비트레이트 제어	H.264/H.265 : CBR 또는 VBR Motion JPEG : VBR
	동시 전송 능력	멀티 스트리밍 (10개 프로파일)
	오디오 압축 방식	G.711 μ-law /G.726 Selectable G.726 (ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC : 48Kbps at 16KHz
	오디오 통신	양방향

항 목		내용
네트워크	IP	IPv4, IPv6
	프로토콜	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour
	보안	HTTPS(SSL) 인증 방식 다이제스트 인증 방식 IP 주소 필터링 사용자 접속 로그 기록 802.1x 인증 방식 (EAP-TLS, EAP-LEAP)
	전송 방식	유니캐스트 / 멀티캐스트
	최대 동시접속자	20명 (유니캐스트 모드)
	메모리 슬롯	SD/SDHC/SDXC (up to 128GB) - SD/SDHC/SDXC 메모리카드에 저장된 영상/이미지 다운로드 가능 - camera can detect automatically when the memory is connected - memory status display (ready/error/recording/formatting/lock) NAS(Network Attached Storage) 로컬 PC에 수동 영상 저장 지원 (플러그인 뷰어)
	S/W 응용 인터페이스	ONVIF Profile S/G SUNAPI 2.0(HTTP API) WiseNet Open Platform
	웹페이지 언어	한국어
	웹뷰어	지원 OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12 **플러그인 프리 웹뷰어** 지원 브라우저 : Google Chrome, MS Edge, Mozilla Firefox (Window 64bit only), Apple Safari 10 (Mac OS X only) **플러그인 웹뷰어** 지원 브라우저 : MS Internet Explorer 11, Apple Safari 10 (Mac OS X only)
	통합 관리 소프트웨어	SmartViewer

항 목		내용
동작 환경	동작 온/습도	-50°C ~ +55°C / 90% RH 이하
	보관 온/습도	-50°C ~ +60°C / 90% RH 이하
	방진/방수 대응	IP66
	내충격 대응	IK10
전원	사용전원/소비전류	AC24V±10%
	소비 전력	90W(Heater On, IR On), 60W(Heater Off, IR On)
외관	색상 / 재질	검정(head) + 아이보리(body) / Plastic+Metal
	외형 치수 (ØxH)	Ø236.9 x 407.7 mm
	무게	7.1kg

외관도

단위: mm (인치)



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.
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.
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.
영상이 보이지 않아요.	• 영상 전송방식이 멀티캐스트로 설정되어 있는 경우, 카메라가 접속한 로컬망에 멀티캐스트를 지원하는 라우터가 존재하는지 확인하세요.

문제	해결
오디오 입력 설정이 되어 있는데 음성 녹음이 되지 않아요.	• <Basic>-<비디오 프로파일>에서 <오디오 입력> 체크박스를 선택하세요.
<분석>에서 <움직임 감지>를 <사용>으로 설정한 후, 카메라에서 영상 분석 이벤트가 발생해도 이메일로 파일이 전달되지 않아요.	• 다음과 같은 순서로 설정값을 확인하세요. 가. <날짜 및 시간> 설정을 확인하세요. 나. <움직임 감지>를 <사용>으로 설정해야 합니다. 다. <이벤트 설정>에서 <이메일>을 사용한다고 체크해야 합니다.
영상 분석 이벤트가 발생했는데 알람 출력으로 출력이 발생하지 않아요.	• 알람 출력 포트를 올바로 설정했는지 확인하세요.
SD 메모리 카드에 녹화가 되지 않아요.	• 메모리 카드가 불량인지 확인하세요.
SD 메모리 카드를 삽입하였으나 메모리 카드를 인식하지 못해요.	• 메모리 카드가 올바른 방향으로 정확히 삽입되어 있는지 확인하세요. 다른 기기에서 포맷한 메모리 카드는 본 카메라에서의 사용을 보증할 수 없습니다. • <설정> → <이벤트> → <저장>에서 메모리카드를 다시 포맷하세요.
NAS에 녹화되지 않아요.	• NAS에 등록한 정보가 올바른지 확인하세요.
NAS 설정이 실패라고 뜹니다.	• NAS IP주소가 유효한지 확인하세요. • NAS의 ID/비밀번호가 유효한지 확인하세요. • NAS의 ID에서 기본 폴더로 설정한 폴더에 접속할 수 있는지 확인하세요. • NAS에서 SMB/CIFS항목의 체크가 해제되었는지 확인하세요. • NAS IP 주소와 카메라 IP주소의 형식이 동일한지 확인하세요. 예) NAS 및 카메라 서브넷마스크 초기값은 255.255.255.0 입니다. IP 주소가 192.168.20.32라면 NAS IP 주소는 192.168.20.1~192.168.20.255사이여야 합니다. • 이미 저장 중이거나 사용했던 기본 폴더를 포맷하지 않고 다른 사용자로 접속하려고 하는지 확인하세요. • 권장하는 NAS 장비인지 확인하세요.

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GPL SW

Component Name	License	URL
Base Kernel	GPL 2.0	
Busybox	GPL 2.0	http://www.busybox.net/downloads/snapshots
iproute2-4.3.0	GPL 2.0	
iptables-1.4.21	GPL 2.0	http://ftp.netfilter.org/pub/iptables
ethtool-4.2	GPL 2.0	
mtd-1.5.2	GPL 2.0	ftp://ftp.infradead.org/pub/mtd-utils
mii-diag-2.11	GPL 2.0	
rp-pppoe-3.11	GPL 2.0	http://www.roaringpenguin.com/pppoe/
wpa_supplicant-2.5	GPL 2.0	
bash-4.3.30	GPL 3.0	
zeroconf	GPL 2.0	

LGPL SW

Component Name	License	URL
gLibc	LGPL 2.0	
Inetutils	LGPL 3.0	
neon-0.29.6	LGPL 2.0	http://www.webdav.org/neon/

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This package is an SSL implementation written by Eric Young (eay@cryptsoft.com).

The implementation was written so as to conform with Netscapes SSL.

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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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established by T-Engine Forum
on January 23, 2004
revised on June 17, 2004
revised on December 21, 2006
revised on March 24, 2009

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1. This License Agreement sets forth copyrights and the terms and conditions of use applicable to the source code of T-Kernel distributed by T-Engine Forum and any derivative work created therefrom.

Article 2. Definition

1. "T-Kernel" means a real-time operating system controlled and distributed by T-Engine Forum on behalf of the copyright holder thereof.

2. "Source Code" means a source program, including related comments and documentations, for the T-Kernel and the Ported Source Code defined in Article 2.8 which is registered with T-Engine Forum.

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6. "T-Engine Hardware" means the hardware which is manufactured in accordance with the T-Engine Hardware specifications or the µT-Engine Hardware specifications issued by T-Engine Forum, and registered with T-Engine Forum.

7. "Similar Hardware to T-Engine Hardware" means any hardware (including software which emulates hardware) other than that defined in Article 2.6 above, on which the T-Kernel can be operated.

8. "Ported Source Code" means a source program produced from the Source Code by modifying only its Hardwaredependent Part and/or Compiler-dependent Part to enable it to be operated on the T-Engine Hardware or the Similar Hardware to T-Engine Hardware. The Ported Source Code which is registered with T-Engine Forum shall be included in the Source Code.

9. "Modified Source Code" means a source program modified from the Source Code for the purpose of improving its performance, increasing or decreasing its function, and the like. The Ported Source Code shall not be included in the Modified Source Code.

10. "Binary Code" means an executable code form which is created by compiling programs, which include all or part of the Source Code or the Modified Source Code.

11. "Derivative Work" means the Modified Source Code or the Binary Code.

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16. "Patch for Modification" means a difference, program, system, or the like in order to create the Modified Source Code from the Source Code or the Binary Code thereof.

17. "Vicarious Execution of Patch Processing" means vicarious execution service to create the Modified Source Code applying the Patch for Modification to the Source Code or the Binary Code thereof.

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2. to transmit a work to the general public through the Internet communication, broadcasting, and the like automatically in response to a request from the public; and

3. to distribute a copy of a work to the general public or a large number of specific persons.

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2. to run the Source Code provided by T-Engine Forum hereunder for its own research, development and the like.

3. to run the Source Code modified in accordance with the provision of Article 4.3 (1) above for its own research, development and the like.

4. to distribute the Binary Code created from the Source Code provided by T-Engine Forum hereunder or from the Source Code modified in accordance with the provision of Article 4.3 (1) above.

4. In accordance with the license granted under Article 4.1 above, the System Developer may perform the following acts:

1. to perform any and all acts set forth in the Article 4.3 above.

2. to develop and manufacture the Embedded Product containing the Binary Code, and, whether with or without payment, provide the End User with the same and make the Binary Code available to the End User on the Embedded Product.

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2. The Distributor of Modification may create the Modified Source Code based on the Source Code provided by T-Engine Forum and the Patch for Modification to be applied to create such Modified Source Code from the Source Code.

3. The Distributor of Modification shall, prior to the distribution, inform T-Engine Forum of and register a name and description of the Modified Source Code in such a way as specified by T-Engine Forum.

4. The Distributor of Modification shall determine the name of the Modified Source Code subject to the rules separately established by T-Engine Forum and publish an appropriate notice as required by the rules on the Patch for Modification and the Modified Source Code.

5. The Distributor of Modification may distribute the Modified Source Code to a third party, whether with or without payment, provided that the Distributor of Modification shall take the necessary measures to prohibit the third party from making the re-Distribution of the Modified Source Code.

6. Developer with the Patch for Modification. Provided, however, that the Distributor of Modification shall be obligated to confirm that the System Developer is the Source Code User duly licensed under Article 4.1.

7. The Distributor of Modification may perform the Vicarious Execution of Patch Processing for the System Developer.

8. The System Developer shall not distribute the Modified Source Code in further modified form to any third party as a stand-alone software product.

9. The System Developer may, under the same obligation as imposed in Article 4.5, make the Embedded Product available for the End User through use of the Patch for Modification distributed by the Distributor of Modification or the Derivative Works obtained through the Vicarious Execution of Patch Processing.

Article 6. Distribution and Registration of the Ported Source Code

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 Source Code on the T-Engine Hardware or the Similar Hardware to T-Engine Hardware:

1. The Hardware-dependent Part and/or Compiler-dependent Part; provided that the Source Code User and the System Developer shall inform T-Engine Forum of, and T-Engine Forum may publish, a method for distributing said Part(s) to third parties.

2. The Header File; provided that the Header File shall be distributed together with the Binary Code of the Ported Source Code.

2. Any member of T-Engine Forum may request T-Engine Forum to register and distribute, as an original source code for T-Kernel, the Ported Source Code on the T-Engine Hardware or the Similar Hardware to T-Engine Hardware.

3. Any member of T-Engine Forum who requests the distribution mentioned in the preceding paragraph shall accede to the following conditions:

1. The member shall confirm that the object hardware is the T-Engine Hardware or the Similar Hardware to T-Engine Hardware.

2. The member shall provide T-Engine Forum with a complete set of operational environment for the object hardware and T-Kernel free of charge when requesting the distribution.

3. The member shall submit test results of the Ported Source Code to T-Engine Forum when requesting the distribution.

4. In the event that T-Engine Forum accepts the request mentioned in Article 6.2, T-Engine Forum shall register and distribute the Ported Source Code as the Source Code for T-Kernel. Provided, however, that the Ported Source Code may be treated in the same way as the Modified Source Code until the time of registration hereunder.

5. The provision set forth in Article 3 shall apply to the Ported Source Code registered in accordance with this Article.

Article 7. Use for Other Purpose

1. Any use of the Source Code, the Modified Source Code or the Ported Source Code other than those stipulated in Articles 4, 5 and 6 shall be subject to the prior approval of T-Engine Forum.

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3. Any legal dispute which may arise in relation to any breach of this License Agreement shall be subject to the exclusive jurisdiction of the Tokyo District Court.

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Iperf performance test

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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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[3] 단순 분해조립, 간단조정, S/W 업그레이드 등으로 서비스 요청한 경우

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