

CÁMARA DE RED

Manual del usuario

TNB-9000



Cámara de Red

Manual del usuario

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❖ El diseño y las especificaciones están sujetos a cambio sin aviso.

❖ El ID inicial del administrador es “admin” y la contraseña debe establecerse al iniciar sesión por primera vez. Por favor, cambie su contraseña cada tres meses para proteger de forma segura la información personal y evitar daños por el robo de información.
Por favor, tenga en cuenta que es responsabilidad del usuario la seguridad y otros problemas causados por el mal manejo de una contraseña.

INSTRUCCIONES DE SEGURIDAD IMPORTANTES

1. Lea estas instrucciones.
2. Consérvelas.
3. Atente para todas las advertencias.
4. Siga todas las instrucciones.
5. No utilice este aparato cerca del agua.
6. Limpie el área contaminada en la superficie del producto con un paño seco y suave o un paño húmedo. (No utilice detergente o productos cosméticos que contengan alcohol, disolventes o tensioactivos o constituyentes de aceites, ya que pueden deformar o dañar el producto).
7. No obstruya ninguna apertura de ventilación. Instale el aparato siguiendo las instrucciones del fabricante.
8. No lo instale cerca de ninguna fuente de calor como radiadores, focos de calor o cualquier otro aparato (incluidos los amplificadores) que emita calor.
9. No olvide que la finalidad de los enchufes polarizados o de toma a tierra es proporcionarle seguridad. Un enchufe polarizado tiene dos clavijas, una más ancha que la otra. Un enchufe con toma a tierra tiene dos clavijas y una tercera de toma a tierra. Tanto la clavija más ancha, en el caso del enchufe polarizado, como la clavija adicional, en el caso del enchufe con toma a tierra, tienen como objetivo aportarle seguridad. Si el enchufe del aparato no encaja en su toma de corriente, póngase en contacto con un electricista para cambiar la toma de corriente obsoleta.
10. Evite pisar o doblar el cable de alimentación. Ponga especial cuidado para no hacerlo en enchufes, tomas de corriente y en los puntos en los que salen desde el aparato.
11. Utilice únicamente los dispositivos y accesorios especificados por el fabricante.
12. Utilice sólo las mesitas con ruedas, soportes, tripodes o mesas recomendadas por el fabricante o vendidas con el aparato. Cuando se utilice una mesita con ruedas, tenga cuidado al mover la mesita con ruedas junto con el aparato para evitar daños por vuelco.
13. Desenchufe este aparato durante tormentas eléctricas o cuando no se utilice durante largos períodos de tiempo.
14. Remita todas las reparaciones a personal de mantenimiento cualificado. Es necesario enviar el aparato para su reparación cuando ha sufrido cualquier tipo de daño, como, por ejemplo, que el cable o el enchufe de la alimentación está dañado, se han derramado líquidos sobre el aparato o algún objeto ha caído sobre él, el aparato ha sido expuesto a la lluvia o a humedad, no funciona correctamente o se ha caído al suelo.
15. Este producto está destinado a ser suministrado por una Unidad de Alimentación de la Lista con la marca "Clase 2" o "LPS" y clasificado de 12 Vdc, 2,2 A o PoE(55 Vdc), 0,55 A.
16. Este producto se ha diseñado para recibir alimentación con aislamiento.
17. Si utiliza una fuerza excesiva al instalar el producto, es posible que la cámara pueda sufrir daños y funcione de forma incorrecta. Si instala el producto de forma forzada utilizando herramientas no compatibles, es posible que el producto pueda sufrir daños.
18. No instale el producto en un lugar donde exista o pueda generarse sustancias químicas o niebla de aceite. Los aceites comestibles como el aceite de soja pueden dañar o deformar el producto, por lo que no debe instalar el producto en la cocina o cerca de la mesa de la cocina. Esto podría causar daños al producto.
19. Al instalar el producto, tenga cuidado y no permita que la superficie del producto se manche con sustancias químicas. Algunos disolventes químicos como limpiadores o adhesivos pueden causar daños graves a la superficie del producto.
20. Si instala o desmonta el producto de una manera que no se ha recomendado, es posible que las funciones/ rendimiento de producción no estén garantizados. Instale el producto consultando "Instalación y conexión" en el manual del usuario.
21. La instalación o uso del producto en el agua puede causar daños graves al producto.



ADVERTENCIA

PARA REDUCIR EL RIESGO DE INCENDIO O DESCARGA ELÉCTRICA, MANTENGA ESTE DISPOSITIVO LEJOS DE LLUVIA Y/O LA HUMEDAD. NO INSERTE NINGÚN OBJETO METÁLICO EN LAS REJILLAS DE VENTILACIÓN NI EN NINGUNA ABERTURA DEL EQUIPO.

No debe exponer el aparato a gotas ni salpicaduras de agua ni a objetos con líquido, como jarrones, evitando colocarlos sobre el aparato.

Para evitar daños, este aparato debe instalarse de forma adecuada en el techo o la pared de acuerdo con las instrucciones de instalación.

PRECAUCIÓN

	PRECAUCIÓN NO ABRIR RIESGO DE SUFRIR UNA DESCARGA ELÉCTRICA	
PRECAUCIÓN : PARA REDUCIR EL RIESGO DE SUFRIR UNA DESCARGA ELÉCTRICA, NO RETIRE LA CUBIERTA (NI LA PARTE POSTERIOR). DENTRO NO HAY PIEZAS QUE PUEDAN SER REPARADAS POR EL USUARIO. REMITA EL APARATO A PERSONAL DE MANTENIMIENTO CUALIFICADO.		

EXPLICACIÓN DE LOS SÍMBOLOS GRÁFICOS



Un triángulo con un rayo y una punta de flecha es un símbolo de advertencia para avisar al usuario de la presencia de "voltajes peligrosos" dentro de la carcasa del producto que pueden ser lo suficientemente intensas como para constituir un peligro de descarga eléctrica.



Un triángulo con un signo de exclamación es un símbolo de advertencia para avisar al usuario de que hay instrucciones importantes de funcionamiento y mantenimiento (reparaciones) en la documentación que acompaña al aparato.

Construcción de clase I

Un aparato con construcción de CLASE I se conectará a una toma de corriente con la conexión de protección de tierra.

Batería

No debe exponer las baterías (paquete de batería o pilas instalados) a calor excesivo, a la luz directa del sol ni al fuego, etc.

No es posible sustituir la batería.

Desconexión del dispositivo

Desconecte el enchufe de corriente del aparato si está defectuoso. Y llame a un servicio de reparaciones.

Cuando lo utilice fuera de EE.UU., se puede utilizar el código HAR con acoplamientos de una agencia aprobada.

PRECAUCIÓN

Existe un riesgo de explosión si la batería se sustituye por otra que no sea adecuada. Tire las baterías usadas como se indica en las instrucciones.

Estas instrucciones de servicio están destinadas únicamente a personal de servicio técnico cualificado.

Para reducir el riesgo de descarga eléctrica no realice ninguna operación de servicio que no sean las indicadas en las instrucciones de funcionamiento a menos que esté cualificado para hacerlo.

Se suministra el terminal de salida CVBS del producto para facilitar la instalación, aunque no se recomienda utilizarlo con fines de gestión.

Utilice la alimentación de entrada con sólo una cámara y sin que estén conectados otros dispositivos.

El ITE solo se debe conectar a redes PoE sin enviarlo a la red externa.

Lea detenidamente las precauciones de seguridad recomendadas que se incluyen a continuación.

- No coloque este aparato sobre una superficie desigual.
- No lo instale en una superficie expuesta a la luz directa del sol, cerca de equipos de calefacción ni cerca de áreas frías.
- No coloque este aparato cerca de material conductivo.
- No intente reparar este aparato por sí solo.
- No coloque jarrones sobre el producto.
- No lo instale cerca de fuentes magnéticas.
- No bloquee las aberturas de ventilación.
- No coloque objetos pesados sobre el producto.
- Use guantes protectores cuando instale/desinstale la cámara.
La alta temperatura de la superficie del producto puede causar quemaduras.

El Manual del usuario es una guía sobre cómo utilizar los productos.

El significado de los signos que se utilizan en el manual es el siguiente.

- Referencia : en caso de que se facilite información de ayuda sobre el uso del producto
 - Aviso : si existe alguna posibilidad de que se produzcan daños en bienes o lesiones en personas causadas por no seguir las instrucciones
- ✕ Lea este manual por razones de seguridad antes de utilizar los productos y guárdelo en un lugar seguro.

No garantizamos la calidad de los productos de terceros (por ejemplo, lentes, accesorios) que usted compre por separado.

En determinados entornos de instalación, pueden producirse interferencias en las comunicaciones de radio.

Cuando se producen interferencias de ondas electromagnéticas entre el producto y el dispositivo de radiocomunicación, se recomienda mantener cierta distancia entre ambos o cambiar la dirección de la antena receptora.

ÍNDICE GENERAL

DESCRIPCIÓN

3

- 3 Instrucciones de Seguridad Importantes
- 6 Características Recomendadas del Ordenador
- 6 Especificaciones de la Tarjeta de Memoria Micro SD/SDHC/SDXC Recomendada
- 6 Especificaciones recomendadas para NAS
- 6 Componentes
- 7 Montura de lente: opcional
- 7 Vista

INSTALACIÓN Y CONEXIÓN

9

- 9 Montaje del Objetivo
- 10 Inserción/Extracción de una Tarjeta de Memoria Micro SD
- 11 Conexión con otros Dispositivos

CONEXIÓN Y CONFIGURACIÓN DE LA RED

16

- 16 Conectar la Cámara Directamente a la Red de Área Local
- 16 Conexión Directa de la Cámara a un Módem DSL/Cable Basado en DHCP
- 17 Cómo usar el Device Manager
- 17 Búsqueda automática de la cámara
- 17 Cómo configurar la dirección IP
- 18 Cómo registrar la cámara manualmente
- 18 Configuración automática de la IP
- 19 Configuración de Reenvío del Rango de Puertos (Asignación de Puertos)
- 20 Conexión a la Cámara desde un PC local Compartido
- 20 Conexión a la Cámara desde un PC remoto a Través de Internet

WEB VIEWER

21

- 21 Conexión a la Cámara
- 22 Configuración de contraseña
- 22 Inicio de Sesión
- 22 Configuración del visor web de la cámara

APÉNDICE

23

- 23 Solución de Problemas
- 24 Open Source Announcement

CARACTERÍSTICAS RECOMENDADAS DEL ORDENADOR

- CPU : Intel (R) Core (TM) i9-7920X 2,9 GHz o superior
- RAM : 64G o superior
- SO admitido : Windows 8.1, 10, Mac OS X 10.12, 10.13, 10.14
- Navegador recomendado: Google Chrome
- Navegadores compatibles: MS Explorer11, MS Edge, Mozilla Firefox (solo Windows 64bit), Apple Safari (solo Mac OSX)
- VGA: GTX 1080, tarjeta gráfica de 11 GB o superior

✂ Consulte el anexo para información detallada sobre los sistemas operativos y navegadores verificados.

ESPECIFICACIONES DE LA TARJETA DE MEMORIA MICRO SD/SDHC/SDXC RECOMENDADA

- Capacidad recomendada : De 16 GB a 256 GB (tipo MLC)
- Fabricantes recomendados : SanDisk, Transcend
- Tipo de producto: Alta resistencia
- La compatibilidad varía en función de los fabricantes y tipos de tarjeta.
- Para la grabación de MJPEG SD, recomendamos que la resolución de grabación de MJPEG sea 4K o menor.
- En lo que respecta a las especificaciones de perfiles múltiples, el TNB-9000 soporta un total de tres perfiles. CH1 soporta dos perfiles, DPTZ CH2 soporta un perfil. Por lo tanto, si usted usa los tres perfiles, no podrá definir y usar adicionalmente un perfil de grabación, como una tarjeta SD. En este caso, para seguir utilizando la función de grabación, configure el perfil de grabación exactamente igual que el perfil que se esté usando en ese momento.

ESPECIFICACIONES RECOMENDADAS PARA NAS

- Capacidad recomendada : Se recomienda que sea de 200 GB o superior.
- Para esta cámara, se recomienda utilizar una unidad NAS con las siguientes especificaciones del fabricante. Productos recomendados : QNAP NAS, Synology NAS



- Al utilizar la grabación automática NAS, si reinicia la cámara, es posible que la conexión N/W pueda ser diferida y que el comportamiento de la grabación automática NAS falle dependiendo de los atributos de los dispositivos N/W externos.

COMPONENTES

Compruebe si la cámara y los accesorios se incluyen en el paquete del producto.
(Debido a los diferentes países de venta, los accesorios no son los mismos.)

Aspecto	Nombre de elemento	Cantidad	Descripción
	Cámara	1	
	Manual de consulta rápida (Opcional)	1	
	inyector HPoE	1	Conecta el suministro eléctrico y la red
	Cable eléctrico	1	Conecta a HPoE
	Bloque de terminales de 6 posiciones	1	Se utiliza para los terminales de entrada/salida de alarma
	Bloque de terminales de energía	1	Conectado al enchufe



- Los módulos SFP y los convertidores de fibra óptica se venden por separado. Seleccione y compre un SFP de 100/1000 Base-FX y un convertidor de fibra óptica.

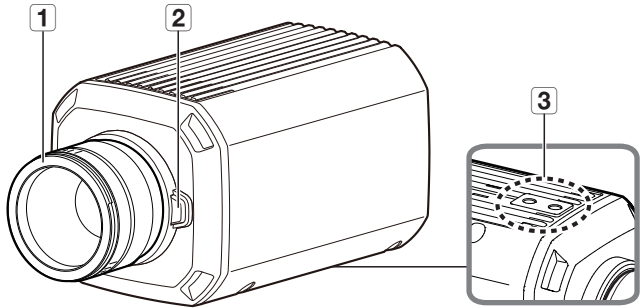
MONTURA DE LENTE: OPCIONAL

Aspecto	Nombre de elemento	Descripción	Nombre del modelo
	Montura de lente	Objetivo opcional para su inserción en una cámara	Canon 24 mm f1.4L, Auto-Iris (EF 24 mm f/1.4L II USM) Canon 35 mm f1.4L, Auto-Iris (EF 35 mm f/1.4L II USM) Canon 50 mm f1.4, Auto-Iris (EF 50 mm f/1.4 USM) Canon 85 mm f1.2L, Auto-Iris (EF 85 mm f/1.2L II USM) Canon 100 mm f2.0, Auto-Iris (EF 100 mm f/2 USM) Canon 70–200 mm f2.8L, Auto-Iris, Vari Focal (EF 70–200 mm f/2.8L USM)

- 
- la imagen del producto es diferente para cada modelo de lente.
 - Al utilizar las monturas de lente Canon 70–200 mm f2.8L, Auto-Iris, o Vari Focal (EF 70–200 mm f/2.8L USM), se deberán utilizar los componentes accesorios de la carcasa.

VISTA

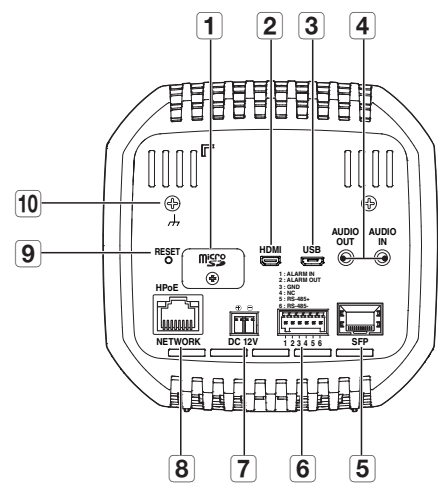
Lado frontal



Elemento	Descripción
1 Montura de lente	Esta lente debe ser instalada en una cámara que se vende por separado.
2 Botón liberador de la lente	Se usa para liberar una lente montada.
3 Orificio del tornillo para la instalación	Se utiliza para fijar la cámara a la carcasa. ■ Tamaño de tornillo: Es la especificación de los tornillos utilizados para fijar la cámara al soporte. ¼ pulg. - 20 UNC L: 4,5 mm ± 0,2 mm (norma ISO), o 0,197 pulg.(norma ASA)

- 
- La carcasa no está incluida. Para más información sobre el uso de la carcasa, consulte la documentación del producto.

Lado trasero



Elemento		Descripción
1	Compartimento de la tarjeta de memoria Micro SD	Compartimento de la tarjeta de memoria Micro SD.
2	Puerto micro HDMI	Conéctela a un monitor mediante un cable HDMI para ver los datos de la cámara.
3	Puerto USB MICRO	Puerto para conectar el dongle Wi-Fi. Puede comprobar el vídeo de instalación a través de las aplicaciones instaladas en el teléfono inteligente. Consulte "Conectar al dongle WiFi" en la página 11. ■ Wifi dongle y adaptador OTG se venden por separado.
4	Terminal de audio	AUDIO OUT Se utiliza para conectar altavoces. AUDIO IN Se utiliza para conectar un micrófono.
5	Ranura de módulo SFP	El terminal que realiza la conexión de fibra óptica a través del módulo SFP (tipo LC). (100/1000Base-FX)
6	Puerto E/S de alarma	ALARM IN Se utiliza para conectar el sensor de entrada de la alarma o el sensor externo de día/noche. ALARM OUT Se utiliza para conectar la señal de salida de alarma. GND Se utiliza para la toma de tierra. RS-485+ Línea de datos RS-485 RS-485- Línea de datos RS-485

Elemento		Descripción
7	Puerto de alimentación	Se utiliza para enchufar el cable de alimentación.
8	Puerto de conexión HPoE	Terminal que conecta la fuente de alimentación y la red a través de un inyector HPoE.
9	Botón de reinicialización	ste botón restaura los valores predeterminados de la cámara. Manténgalo pulsado durante unos 5 segundos para reiniciar el sistema. ■ Si reinicia la cámara, los ajustes de red se ajustarán de forma que se pueda habilitar DHCP. Si no hay ningún servidor DHCP en la red, debe ejecutar el programa del Device Manager para cambiar los ajustes básicos de la red tales como la dirección IP, la máscara de subred, la puerta de enlace, etc., antes de poder conectarse a la red.
10	Puerto de toma de tierra de protección contra relámpagos	Se utiliza para descargar con seguridad la corriente procedente de relámpagos para proteger la cámara.

! ■ No se admite el puerto RS-485 sólo admite la conexión directa con el controlador de panorámica/inclinación y las conexiones externas del controlador RS-485.

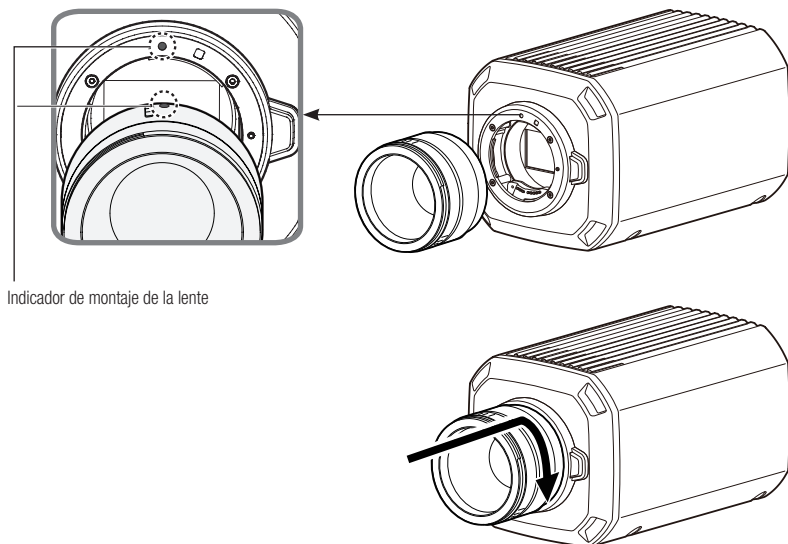
MONTAJE DEL OBJETIVO

Desconecte la alimentación antes de continuar.

- Las monturas de lente se venden por separado. Para ver la lista de lentes compatibles, consulte la página 7.
- La alimentación de la cámara debe estar apagada cuando instale o retire una lente compatible.

Montaje de la lente en una cámara

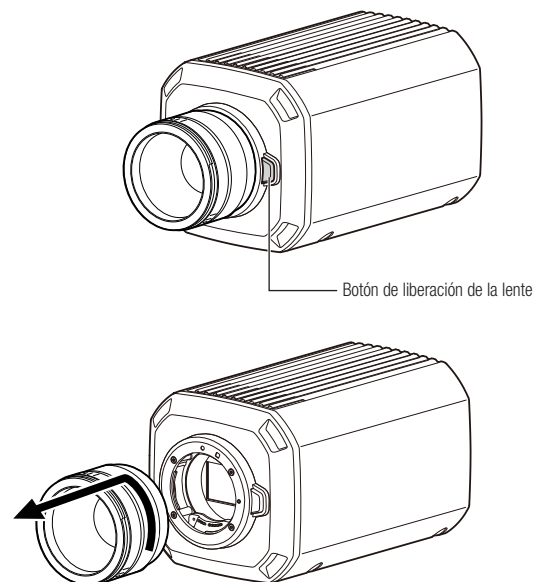
Después de alinear e insertar el indicador de montaje de la lente, gírela en sentido horario para montarla.



- El índice de color de la montura de lente varía dependiendo del modelo de montura de lente.
- Para obtener más información sobre la lente a montar, consulte el manual de usuario de la lente.

Liberación de la lente

Mientras presiona y mantiene presionado el botón liberador de la lente en la cámara, gire la lente en sentido horario para liberarla de la cámara.

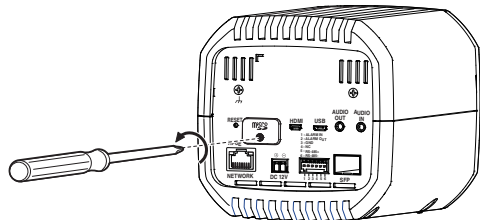


INSERCIÓN/EXTRACCIÓN DE UNA TARJETA DE MEMORIA MICRO SD

- Desconecte el cable de alimentación de la cámara antes de insertar la tarjeta de memoria Micro SD.
- No inserte al revés la tarjeta de memoria Micro SD forzándola. Si lo hace, podría dañar la tarjeta de memoria Micro SD.

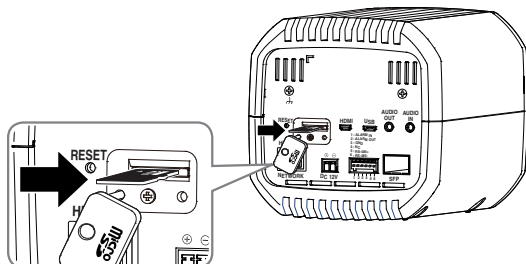
Retire la cubierta de la ranura de memoria

Con ayuda de un destornillador, retire los tornillos que sujetan la cubierta resistente al polvo de la ranura de memoria y, seguidamente, retire la cubierta para poder insertar la tarjeta de memoria.



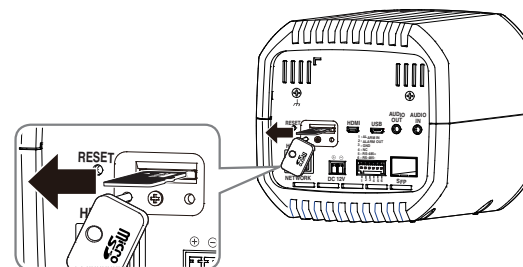
Inserción de una tarjeta de memoria Micro SD

Introduzca la tarjeta de memoria Micro SD en la dirección de la flecha como se muestra en el diagrama.



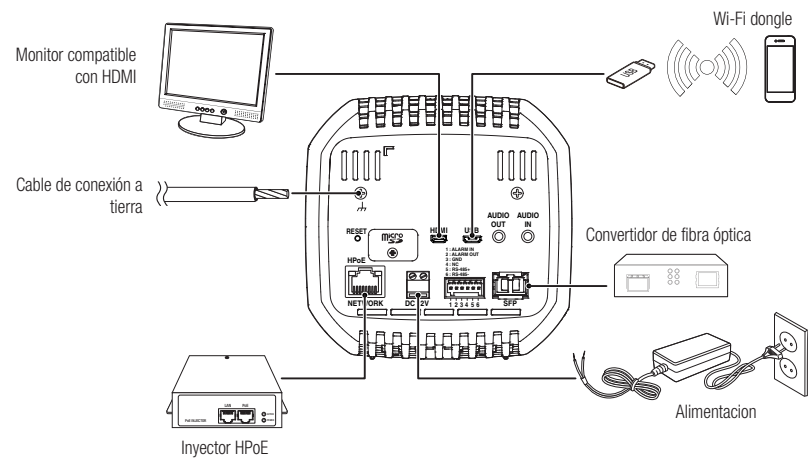
Extracción de una tarjeta de memoria Micro SD

Presione suavemente hacia abajo en el extremo expuesto de la tarjeta de memoria como se muestra en el esquema para sacarla de la ranura.



- Si se presiona demasiado fuerte la tarjeta de memoria Micro SD, al liberarla es posible que salga despedida sin control de la ranura.
- Antes de retirar la tarjeta de memoria Micro SD, en <Configuración (⚙️)>-<Evento>-<Almacenamiento>, seleccione <Des> y pulse el botón **[Aplicar]** para apagar la cámara.
- Si apaga la cámara o retira la tarjeta de memoria SD que contiene datos, puede perderlos o dañarlos.

CONEXIÓN CON OTROS DISPOSITIVOS



- Conecte y use un router con HPoE habilitado.
- Se suministra el terminal de salida Micro USB del producto para facilitar la instalación, aunque no se recomienda utilizarlo con fines de gestión.

Conexión de Wi-Fi

Configuración de la cámara

1. Conecte el adaptador OTG (5 pines) y el dongle WiFi al terminal micro USB.

Configuración del smartphone

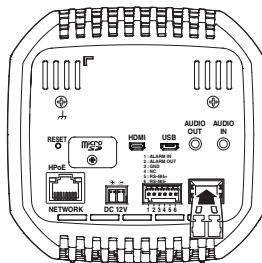
1. Instale la aplicación de instalación de Wisenet.
2. Seleccione el SSID de la cámara después de encender el WiFi.
3. Ejecute la aplicación de instalación de Wisenet.
4. Cuando inicie sesión en la cámara, el vídeo se conectará
 - El vídeo se reproducirá sin estar conectado durante la conexión inicial.
5. Puede ajustar el ángulo de visión mientras ve el vídeo a través del smartphone.

Recommended dongle manufacturer

Fabricante	Modelo
NETIS	WF2123 n300
EDIMAX	EW-7811Un
IP Time	N100mini
TP-LINK	TL-WN823N V1
ASUS	USB-N13
NETGEAR	WNA3100M

Conexión del módulo SFP

1. Inserte el módulo SFP.

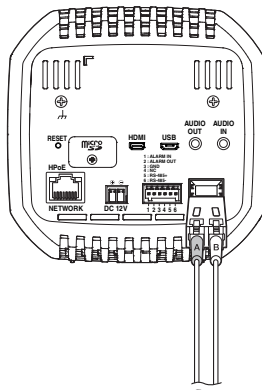


2. Conecte el cable óptico (AB) de tipo LC al módulo SFP.

3. Conecte el otro extremo del cable óptico (BA) al convertidor de fibra óptica emparejado con el módulo SFP.

- Los módulos SFP y los convertidores de fibra óptica se venden por separado.
- Se recomiendan los módulos SFP de los siguientes fabricantes:
 - Comnet, IFS, Skylane, AVAGO, CISCO
- Conecte el módulo SFP y el convertidor de fibra óptica mediante la conexión cruzada del cable óptico (AB/BA).

- ! La conexión del módulo SFP debe realizarse después de apagar la cámara conectada.
- No instale/retire el módulo SFP mientras la cámara esté encendida.
- Una doblez en el cable óptico puede interrumpir la conexión de comunicación.
- No mire directamente al cable óptico para evitar daños en los ojos.



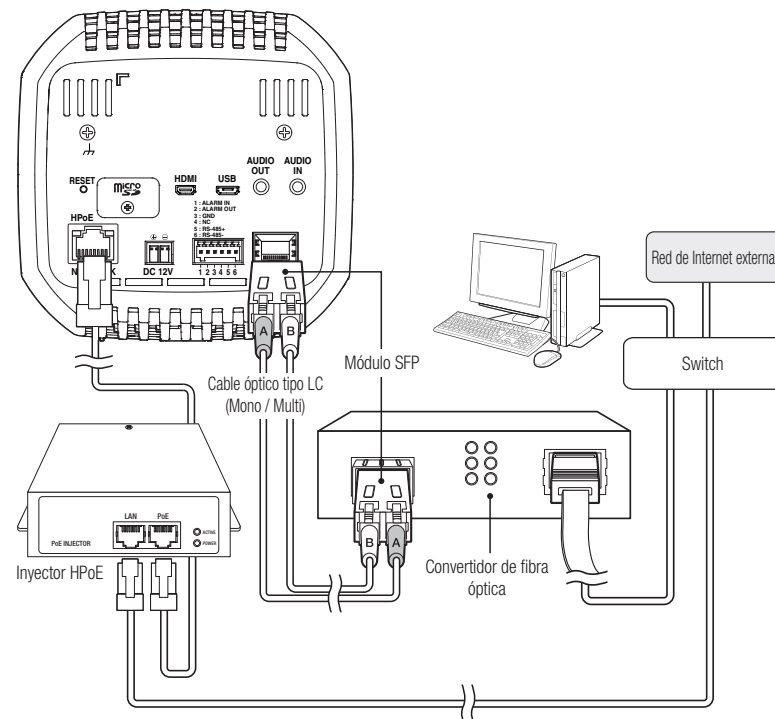
Conexión Ethernet

Conéctese a su red local o Internet mediante el cable Ethernet o el enlace óptico SFP.

El enlace Ethernet de este producto permite establecer un enlace redundante entre RJ-45 y SFP; SFP es el enlace prioritario.

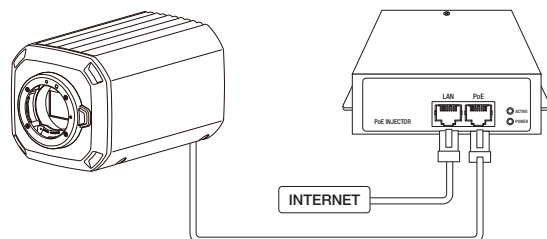
Ejemplo de comportamiento:

- Si se conecta el puerto SFP durante el uso de RJ-45, SFP se activa para el enlace Ethernet, mientras que RJ-45 se desactiva.
- Si el enlace SFP se interrumpe de forma imprevista durante el uso de SFP, el enlace RJ-45 se activa automáticamente.



Alimentación y conexión en red

Conecte el dispositivo HPoE con la terminal HPoE de la cámara.



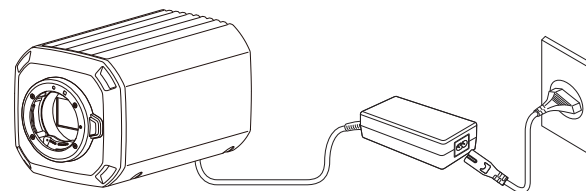
- Conecte y use un router con HPoE habilitado.
- Use un dispositivo HPoE que cumpla con el estándar IEEE802.3bt (PSE TYPE 3 o 4).
- Si se conecta utilizando un enrutador habilitado para HPoE, no necesita un cable de alimentación independiente para encenderlo.

Características del cable de red

Elemento	Contenido	Observaciones
Conector	RJ45 (10/100/1000BASE-T)	
Ethernet	10/100/1000BASE-T	Para operar con 1000BASE-T, se debe utilizar un cable de SFTP-categoría 7 o superior para el concentrador Giga.
Cable	SFTP-Categoría 7	
Distancia máx.	100M	Resistencia de CC $\leq 0,188 \Omega / m$
HPoE	HPoE	

Alimentación eléctrica

Utilice el destornillador para conectar cada línea (+, -) del cable de alimentación al puerto de alimentación correspondiente de la cámara.



- Si las fuentes de alimentación para PoE y 12 V CD se encienden simultáneamente, el dispositivo recibirá alimentación de ambos.
- Se recomienda utilizar una sola fuente para la alimentación del equipo, una de las dos, PoE o 12 V CD.
- Se recomienda un adaptador de CD 12V 3A o de características superiores.
- Recomendamos el uso de inyectores de HPoE para alimentar la unidad.
- Tenga cuidado de no invertir la polaridad al conectar el cable de alimentación.
- Si desea conectar un dispositivo externo, debe apagar el dispositivo externo antes de continuar.
- El producto debe conectarse utilizando un cable de red blindado (STP) que esté debidamente conectado a tierra.

Características del cable de alimentación para cada modelo

En caso de una entrada de CC 12V:

Tipo de cable (AWG)	#14	#16
Longitud del cable (Máx.)	24m	15m

Comunicación óptica, estándar Ethernet

Elemento	Contenido
Ethernet: comunicación óptica	SFP (LC Type)
Comunicación óptica: capa física de Ethernet	10/100/1000BASE-T
Comunicación óptica: velocidad predeterminada	100/1000Mbps
Comunicación óptica: estándar Ethernet	IEEE 802.3ab, IEEE 802.3z

Conexión a tierra del producto

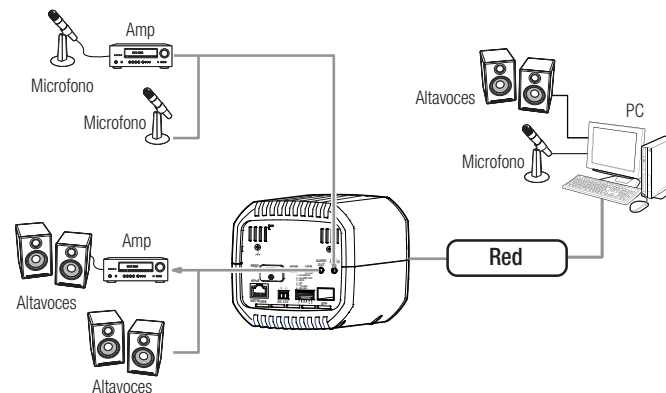
Con la ayuda de un destornillador, conecte el cable de tierra al terminal de tierra situado sobre el terminal de entrada de alimentación eléctrica.

- La conexión a tierra protege el producto contra una sobretensión o un rayo.
- Al realizar la conexión a tierra, asegúrese de desconectar el producto.

Cable de conexión a tierra recomendado

- Longitud: menos de 3M
- Calibre: 18 AWG o mayor
Ej.: UL1007 AWG 18/16, UL1015 AWG18/16/14/12, UL2468 AWG18/16/14

Conectar la Entrada/Salida de Audio



1. Conecte el puerto AUDIO IN de la cámara con el micrófono o al puerto LINE OUT del amplificador al que está conectado el micrófono.
2. Conecte el puerto AUDIO OUT de la cámara con el micrófono o al puerto LINE IN del amplificador al que está conectado el altavoz.
3. Compruebe las especificaciones de entrada de audio.

• Códec de Audio

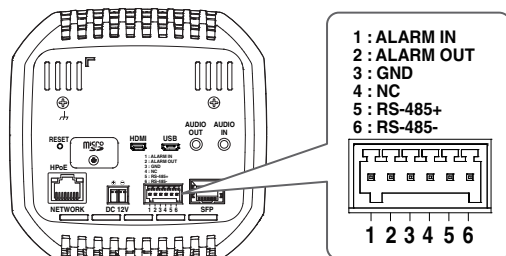
- Entrada de audio : G.711 PCM (Velocidad en bits: 64 kbps / Frecuencia de muestreo: 8 kHz), G.726 ADPCM (Velocidad en bits: 16 Kbps, 24 Kbps, 32 Kbps, 40 Kbps / Frecuencia de muestreo: 8 kHz), AAC (Bit Rate: 48Kbps / Frecuencia de muestreo: 16kHz)
- Salida de audio : G.711 PCM (Velocidad en bits: 64 kbps / Frecuencia de muestreo: 8 kHz)

• Audio Full dúplex

- **Entrada de Audio** : Entrada de línea con señal mono (Máx. 2,4 Vpp)
- **Salida de audio** : Salida de línea con señal mono (Máx. 2,4 Vpp)
- **Impedancia de salida de línea** : 600Ω

Conexión al cuadro del puerto de E/S

Conecte la señal de E/S de alarma al puerto correspondiente del cuadro de puertos trasero.



- **ALARM IN** : Se utiliza para conectar el sensor de entrada de la alarma o el sensor externo de día/noche.
- **ALARM OUT** : Se utiliza para conectar la señal de salida de alarma.
- **GND** : Se utiliza para la toma de tierra.
- **RS-485+** : Puerto de comunicaciones para el receptor RS-485 (+).
- **RS-485-** : Puerto de comunicaciones para el receptor RS-485 (-).

Conexión a un dispositivo externo RS-485

Conecte la cámara con un dispositivo externo utilizando los puertos **[RS-485 +, -]**.

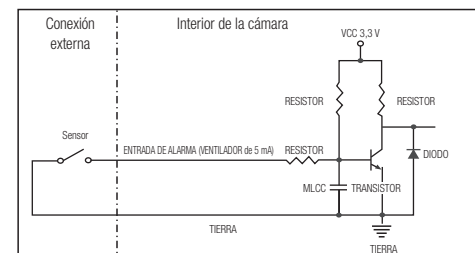
Puede controlar las operaciones de panorámica/inclinación de la cámara a través de las comunicaciones RS-485.

- Se recomienda una conexión de toma de tierra (GND) para las comunicaciones RS-485. Si se detecta un fallo de comunicación, conecte la clavija de puesta a tierra (GND) de forma apropiada para corregir el nivel de GND entre la cámara y el dispositivo externo.

Para conectar el sensor externo

Conecte un filamento de cada línea de señal (2 filamentos) de los sensores al puerto **[ALARM IN]**, y conecte el otro filamento en el puerto **[GND]**.

Diagrama de cableado de entrada de alarma

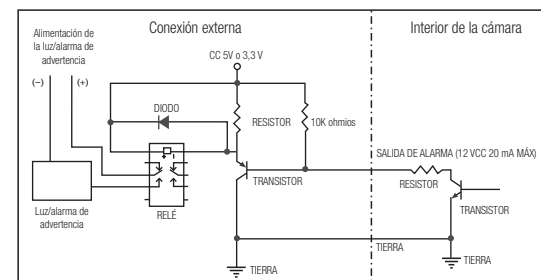


Para conectar la salida de alarma

Si los dispositivos (por ejemplo, luz parpadeante, alarma) que superan los límites de voltaje y potencia se conectan con el método de colector abierto, puede producirse un error de funcionamiento.

Consulte el diagrama de conexión de salida de alarma inferior cuando conecte dispositivos que superen las condiciones de tensión y corriente.

Diagrama de cableado de salida de alarma



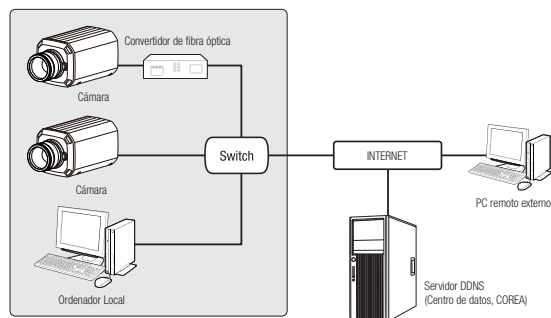
conexión y configuración de la red

Puede fijar la configuración de red de acuerdo con sus configuraciones de red.

CONECTAR LA CÁMARA DIRECTAMENTE A LA RED DE ÁREA LOCAL

Conectar con la cámara desde un ordenador local en la LAN

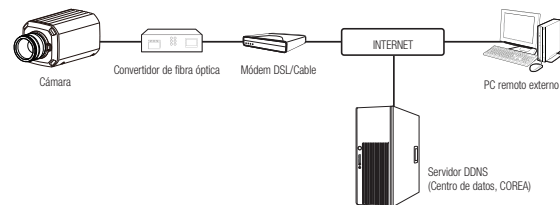
1. Abrir un navegador de Internet en su ordenador local.
2. Introduzca la dirección IP de la cámara en la barra de direcciones del navegador.



<Red local>

- Un ordenador remoto con una Internet externa fuera de la red LAN podría no poder conectarse a la cámara instalada en la intranet, en caso de que el reenvío de puertos no esté correctamente configurado o se haya instalado un cortafuegos. En este caso, para solucionar el problema, póngase en contacto con su administrador de red.
- Como valor predeterminado de fábrica, la dirección IP se asignará automáticamente desde el servidor DHCP. Si no hay ningún servidor DHCP disponible, la dirección IP se definirá en 192.168.1.100. Para cambiar la dirección IP, utilice el Device Manager. Para obtener más información sobre el uso del Device Manager, consulte "Cómo usar el Device Manager". (página 17)

CONEXIÓN DIRECTA DE LA CÁMARA A UN MÓDEM DSL/CABLE BASADO EN DHCP



1. Conectar el PC del usuario directamente a la cámara de red.
2. Ejecute el Device Manager y cambie la dirección IP de la cámara de tal manera que pueda usar el navegador web en su ordenador de sobremesa para conectarse a Internet.
3. Utilice el navegador de Internet para conectar a Web Viewer.
4. Vaya a la página [Config.].
5. Vaya a [Red] – [DDNS] y configure los ajustes de DDNS.
6. Vaya a [Basic] – [IP & Puerto] y establezca el tipo de IP para [DHCP].
7. Conecte la cámara, retirada del PC, directamente en el módem.
8. Reinicie la cámara.

- Para obtener información sobre cómo configurar el DDNS, consulte la ayuda en línea de Web Viewer.
- Para obtener información sobre cómo configurar el formato de IP, consulte la ayuda en línea de Web Viewer.

CÓMO USAR EL DEVICE MANAGER



- Puede descargar el programa del Device Manager desde el menú <Support> – <Online Tool> en el sitio web de Hanwha Vision (<https://www.HanwhaVision.com>).
- Asimismo, puede encontrar más instrucciones sobre el Device Manager en el menú <Ayuda> de la página principal.

BÚSQUEDA AUTOMÁTICA DE LA CÁMARA

Si hay una cámara conectada a la misma red del ordenador en donde está instalado el Device Manager, puede encontrar esa cámara de la red usando la función de buscar.

1. Haga clic en <Buscar> en la página principal del Device Manager.
2. Marque la cámara de la lista.
 - Compruebe la dirección MAC en el adhesivo de la cámara.

CÓMO CONFIGURAR LA DIRECCIÓN IP

Si desea cambiar el ajuste de la red de la cámara, el signo <Inicio de sesión Aceptar> debe aparecer en el campo <Estado>. Haga clic en el campo <Autenticación> de la página principal para iniciar sesión.

Configuración de la IP estática

Inserte y configure manualmente la dirección IP y la información del puerto.

1. Haga clic en la cámara de la lista para la que desea cambiar el ajuste de la IP.
2. Haga clic en <IP Assign (Asignación de la IP)> en la página principal del Device Manager.
3. Seleccione <Asignar la siguiente dirección IP>.
 - La información IP de la cámara de mostrará según se ha configurado previamente.
4. Complete las categorías relacionadas con el campo IP & Puerto.

Si no se utiliza un Enrutador de banda ancha

Pida al administrador de la red que establezca el valor de la <Dirección IP>, la <Máscara subred> y la <Gateway(Puerta de enlace)>.

- HTTP Puerto : se utiliza para acceder a la cámara utilizando el explorador de Internet, por defecto en 80.
- RTSP Puerto : este puerto controla la transmisión de datos en tiempo real. Su valor inicial es 554.

Si se utiliza un Enrutador de banda ancha

- IP Address : introduzca una dirección que se encuentre en el rango de IP facilitado por el enrutador de banda ancha.
ej.) 192.168.1.2~254, 192.168.0.2~254, 192.168.XXX.2~254
- Subnet Mask : La <Subnet Mask> del enrutador de banda ancha será la <Subnet Mask> de la cámara.
- Gateway : La <Local IP Address> del enrutador de banda ancha será la <Gateway> de la cámara.



- Es posible que los ajustes difieran dependiendo del modelo de enrutador de banda ancha conectado. Para obtener información adicional, consulte el manual de usuario del enrutador aplicable.
- Para obtener información adicional sobre el reenvío de puertos del enrutador de banda ancha, consulte "Configuración de Reenvío del Rango de Puertos (Asignación de Puertos)". (Página 19)

Si el Enrutador de banda ancha tiene más de una cámara conectada

Configure los ajustes relacionados con IP y los ajustes relacionados con Port de forma distinta entre sí.
ej.)

Categoría		Cámara 1	Cámara 2
Ajustes relacionados con IP	Dirección IP	192.168.1.100	192.168.1.101
	Máscara subred	255.255.255.0	255.255.255.0
	Gateway	192.168.1.1	192.168.1.1
Ajustes relacionados con el puerto	HTTP Puerto	8080	8081
	RTSP Puerto	554	555



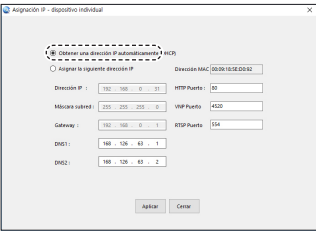
- Si <HTTP Puerto> se define con un valor distinto a 80, debe facilitar el número de <Port> en la barra de direcciones del explorador de Internet antes de poder acceder a la cámara.
ej.) `http://Dirección IP : HTTP Port`
`http://192.168.1.100:8080`
5. Haga clic en el botón [Aplicar].
 6. Si aparece el mensaje de que la acción se ha realizado correctamente, haga clic en [Aceptar].

Configuración de la IP dinámica

Reciba la dirección IP desde DHCP

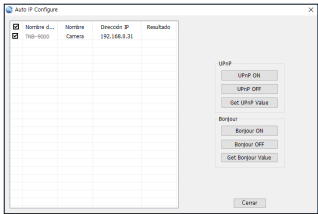
- Ejemplo de entorno de IP dinámica
 - Si a un enrutador de banda ancha, con cámaras conectadas, se le asigna una dirección IP mediante el servidor DHCP
 - Si se conecta la cámara directamente al módem utilizando los protocolos DHCP
 - Si las IP se asignan mediante el servidor DHCP interno a través de la LAN

1. Haga clic en la cámara de la lista para la que quiera cambiar la configuración de la IP.
2. Haga clic en <IP Assign (Asignación de la IP)> en la página principal del Device Manager.
3. Seleccione <Obtener una dirección IP automáticamente (DHCP)>.
4. Haga clic en botón [Aplicar].
5. Si se muestra el mensaje de acción realizada correctamente, haga clic en [Aceptar].



CONFIGURACIÓN AUTOMÁTICA DE LA IP

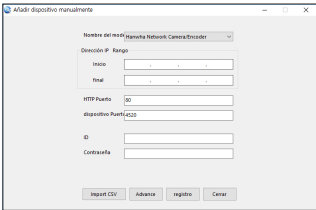
1. Haga clic en la cámara de la lista para la que quiera configurar automáticamente la IP.
2. En la página principal del Device Manager, haga clic en < + >.
 - Aparecerá el menú de configuración del equipo.
3. En el menú, haga clic en <Auto IP Configure (Configuración IP automática)>.
4. Haga clic en el botón [Cerrar].



CÓMO REGISTRAR LA CÁMARA MANUALMENTE

Si la cámara no puede encontrarse usando la función de buscar, puede registrarla remotamente insertando manualmente la información de la IP si la cámara está conectada a la red externa.

1. Haga clic en <Add Devices (Agregar dispositivos)> – <Añadir dispositivo manualmente> de la página principal del Device Manager.
2. Inserte el intervalo de la dirección IP que está buscando.
3. Seleccione el <Nombre del modelo> de la cámara que ha registrado e inserte el puerto HTTP, la ID y la contraseña.
4. Haga clic en el botón [Registro].
5. Compruebe que la cámara esté registrada.
 - Verifique la dirección MAC en el adhesivo de la cámara.

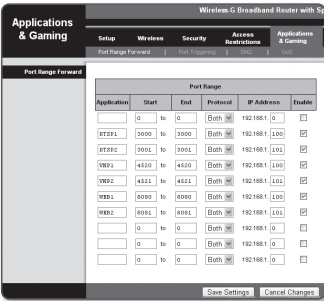


CONFIGURACIÓN DE REENVÍO DEL RANGO DE PUERTOS (ASIGNACIÓN DE PUERTOS)

Si ha instalado un enrutador de banda ancha con una cámara conectada, debe definir el reenvío del rango de puertos en el enrutador de banda ancha de forma que un PC remoto pueda acceder a la cámara en él.

Reenvío manual del rango de puertos

1. En el menú de configuración del enrutador de banda ancha, seleccione **<Applications & Gaming>** - **<Port Range Forward>**.
Para definir el reenvío del rango de puertos para un enrutador de banda ancha de terceros, consulte el manual del usuario de dicho enrutador de banda ancha.
2. Seleccione **<TCP>** y **<UDP Port>** por cada cámara conectada al enrutador de banda ancha.
El número de cada puerto que se configura para el router IP debe establecerse de acuerdo con el número de puerto designado en **<Config.>** - **<Basic>** - **<IP & Puerto>** en el visor web de la cámara.viewer.
3. Una vez hecho, haga clic en **[Save Settings]**.
Se guardarán los ajustes.

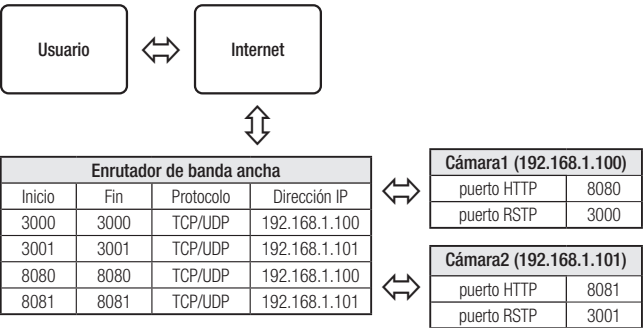


- El ajuste del reenvío del puerto es un ejemplo de configuración del router de la IP de CISCO.
- Es posible que los ajustes difieran dependiendo del modelo de enrutador de banda ancha conectado.
Para obtener información adicional, consulte el manual de usuario del enrutador aplicable.

Configuración del reenvío del rango de puertos de varias cámaras de red

- Puede definir una regla de reenvío de puertos en el dispositivo enrutador de banda ancha a través de su página Web de configuración.
- Un usuario puede cambiar los puertos usando la pantalla de configuración de la cámara.

Cuando la Cámara 1 y la Cámara 2 estén conectadas a un enrutador :



- El enrutamiento de puerto se puede hacer sin una configuración adicional del router si este está adaptado para la función UPnP (Universal Plug and Play).
Después de conectar la cámara de red, seleccione la casilla de verificación del menú **<Conexión rápida>** en **<DDNS>** en **"Configuración -> Red -> DDNS"**.

CONEXIÓN A LA CÁMARA DESDE UN PC LOCAL COMPARTIDO

1. Ejecute el Device Manager.
Rastreará las cámaras conectadas y mostrará una lista de ellas.
2. Haga doble clic en una cámara para acceder a ella.
Se inicia el explorador de Internet y se conecta a la cámara.



- También puede acceder a la cámara introduciendo la dirección IP de la cámara encontrada en la barra de direcciones del explorador de Internet.

CONEXIÓN A LA CÁMARA DESDE UN PC REMOTO A TRAVÉS DE INTERNET

En un ordenador remoto que no esté en el clúster de la red del router de banda ancha no está permitido, por lo que los usuarios pueden acceder a las cámaras dentro de la red de un router de banda ancha mediante el uso de la URL del DDNS de la cámara.

1. Antes de poder acceder a una cámara de una red de enrutador de banda ancha, debe haber definido el reenvío del rango de puertos para el enrutador de banda ancha.
2. Desde el PC remoto, inicie el explorador de Internet e introduzca la dirección URL de DDNS de la cámara, o la dirección IP del enrutador de banda ancha en la barra de direcciones.
ej.) <http://ddns.hanwha-security.com/ID>

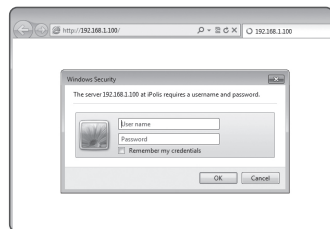


- Para utilizar DDNS, regístrese en la página de inicio de DDNS (<http://ddns.hanwha-security.com>) y registre el producto en **[Mi DDNS]>[Registrar producto]**.

CONEXIÓN A LA CÁMARA

Procedimiento normal

1. Inicie el explorador de Internet.
2. Introduzca la dirección IP de la cámara en la barra de direcciones.
ej.) • Dirección IP (IPv4) : 192.168.1.100 → http://192.168.1.100
- Debe aparecer el diálogo de inicio de sesión.
• Dirección IP (IPv6) : 2001:230:abcd:ffff:0000:0000:ffff:1111 → http://[2001:230:abcd:ffff:0000:0000:ffff:1111] - Debe aparecer el diálogo de inicio de sesión.



Si el número de puerto HTTP no es 80

1. Inicie el explorador de Internet.
2. Introduzca la dirección IP y el número de puerto HTTP de la cámara en la barra de direcciones.
ej.) Dirección IP : 192.168.1.100:HTTP Port number(8080)
→ http://192.168.1.100:8080 - Debe aparecer el diálogo de inicio de sesión.

Utilización del URL

1. Inicie el explorador de Internet.
2. Introduzca el URL de DDNS de la cámara en la barra de direcciones.
ej.) Dirección URL : http://ddns.hanwha-security.com/ID
- Debe aparecer el diálogo de inicio de sesión.

 La conexión de red está desactivada en el entorno LAN.

Conexión a través de UPnP

1. Ejecute el sistema cliente o sistema operativo para el protocolo UPnP.
2. Haga clic en el nombre de la cámara para realizar la búsqueda.
En el sistema operativo Windows, haga clic en el nombre de la cámara de búsqueda en el menú de red.
- Aparece la ventana de inicio de sesión.

Conexión a través de Bonjour

1. Ejecute el sistema cliente o el sistema operativo para el protocolo Bonjour.
2. Haga clic en el nombre de la cámara para realizar la búsqueda.
En el sistema operativo Mac, haga clic en el nombre de la cámara buscada desde la pestaña Bonjour de Safari.
- Aparece la ventana de inicio de sesión.

Para comprobar la dirección de DDNS

Si la cámara está conectada directamente al módem de cable DHCP, al módem DSL, la dirección IP de la red cambiará cada vez que intente conectar al servidor del proveedor de servicios de Internet. Si este es el caso, no se le informará de la dirección IP modificada por el DDNS.

Una vez que registre el dispositivo con IP dinámica en el servidor DDNS, puede fácilmente cambiar la IP modificada cuando intente acceder al dispositivo.

Para registrar el dispositivo en el servidor de <DDNS>, entre en http://ddns.hanwha-security.com y registre primero el dispositivo y, a continuación, establezca <Red> - <DDNS> de Web Viewer en <DDNS>, y facilite el <ID de producto> utilizado durante el registro de DDNS.

CONFIGURACIÓN DE CONTRASEÑA

Al acceder al producto por primera vez, debe registrar la contraseña de inicio de sesión.



- Para una nueva contraseña que tenga entre 8 y 9 dígitos, debe utilizar por lo menos 3 mayúsculas/ minúsculas, 3 números y 3 caracteres especiales. Para una contraseña que tenga entre 10 y 15 dígitos, debe utilizar por lo menos 2 de los tipos mencionados.
 - Caracteres especiales que se permiten. : ~!@#%^(*)_+=[{}?/
- Para mayor seguridad, no se recomienda repetir los mismos caracteres ni entradas consecutivas de teclado en las contraseñas.
- Si ha perdido su contraseña, puede pulsar el botón **[RESET]** para iniciar el producto. Así pues, no pierda la contraseña utilizando un bloc de notas o memoricela.

Administrator password change

New password

Confirm new password

. If the password is 8 to 9 letters long, then it should be a combination of at least three types: upper/lower case alphabets, numbers and special characters.
 . If the password is 10 to 15 letters long, then it should be a combination of at least two types: upper/lower case alphabets, numbers and special characters.
 . User name should be different from password.
 . The following special characters are available for use. ~!@#%^(*)_+=[{}?/
 . Don't use 4 or more characters consecutive together. (examples: 1234, abcd)
 . Don't use 4 or more characters repeated. (examples: 1111, aaaa)

INICIO DE SESIÓN

Siempre que acceda a la cámara, aparecerá la ventana de inicio de sesión. Introduzca el ID de usuario y la contraseña para acceder a la cámara.

1. Introduzca **"admin"** en el cuadro de entrada **<User name>**. La ID del administrador, **"admin"**, es fija y no es posible cambiarla.
2. Introduzca la contraseña en el campo de entrada **<Password>**.
3. Haga clic en **[OK]**. Si ha iniciado sesión correctamente, verá la pantalla de Live Viewer.



- Al acceder al visor de la cámara web, preste especial atención a la seguridad comprobando que los datos de imagen estén encriptados.



- Si marca la opción **"Remember my credentials"** una vez realizada la entrada, la próxima vez se iniciará sesión automáticamente sin que se le pida introducir la información de inicio de sesión.
- Podrá disfrutar de la mejor calidad de video si el tamaño de pantalla es del 100%. Si se reduce la relación existe el riesgo de cortar la imagen en los bordes.

Windows Security

The server 192.168.1.100 at iPolis requires a username and password.

☐ Remember my credentials

OK Cancel

CONFIGURACIÓN DEL VISOR WEB DE LA CÁMARA

1. Haga clic en el icono **[Configurar (⚙️)]**.
2. Aparece la ventana de Ajustes.
3. Puede configurar a través de la red los ajustes de información básica de la cámara, vídeo, audio, red, evento, análisis y sistema.
4. Haga clic en **<Ayuda (🔍)>** para ver descripciones detalladas de cada función.



- Debido a problemas de rendimiento del PC, cualquier vídeo de alta resolución (superior a 4K) pasará a un perfil sin plugin en el webviewer. Para un óptimo monitoreo en vivo, use un servicio de monitoreo de alto rendimiento, como SSM.

SOLUCIÓN DE PROBLEMAS

PROBLEMA	SOLUCIÓN
Quando un usuario de Windows 10 accede al visor web a través de Chrome o Firefox, el volumen de sonido del micrófono cambia periódicamente.	Esto es lo que sucede cuando el controlador del micrófono se ha configurado en el controlador Realtek. Instale el dispositivo de audio de alta definición (controlador predeterminado de Windows) o el controlador de terceros como el controlador de micrófono.
No se visualiza ningún vídeo al acceder al visor web sin plug-in en Safari a través de HTTPS.	- En la ventana emergente de autenticación que aparece cuando se accede inicialmente a https, haga clic en "Ver certificado de autenticación" y seleccione la casilla "Confiar siempre al conectar con la IP del visor web designado". - Si el visor web continúa sin mostrar un vídeo después de seleccionar "Siguiente" en la ventana de mensaje siguiente, pulse la tecla de Comando + Q para salir del navegador Safari, obtenga acceso de nuevo y siga los procedimientos indicados anteriormente.
No se puede acceder a la cámara desde un navegador web.	- Compruebe para asegurarse de que las configuraciones de Red de la cámara son las apropiadas. - Compruebe para asegurarse de que todos los cables de red se han conectado bien. - Si está conectado mediante DHCP, compruebe que la cámara puede admitir direcciones IP dinámicas sin problemas. - Si la cámara está conectada al Enrutador de banda ancha, compruebe que el reenvío de puertos está configurado adecuadamente.
El Visualizador se desconecta durante el control.	- Los Visualizadores conectados se desconectan debido a cualquier cambio en las configuraciones de cámara o de red. - Compruebe todas las conexiones de red.
La cámara conectada a la red no se detecta en el programa del Device Manager.	Apague las configuraciones de cortafuegos en su ordenador, y luego vuelva a buscar la cámara.
Se superponen imágenes.	Compruebe si dos o más cámaras están configuradas en una única dirección multicast en lugar de diferentes direcciones. Si se utiliza una única dirección para varias cámaras, las imágenes se pueden superponer.
No aparece imagen.	Si el método de transmisión está configurado como multicast, compruebe si hay un router que admita multicast en el LAN al que esté conectado la cámara.
La voz no se graba aunque se configuren los ajustes de entrada de audio.	Debe activar la casilla <Entrada de audio> en <Básico> - <Perfil de vídeo>.

PROBLEMA	SOLUCIÓN
<Detección de movimiento> de <Analítica> está ajustado en <Activar>, pero no me llega una notificación por correo electrónico, ni siquiera cuando se ha producido un evento de análisis.	- Verifique los ajustes en la secuencia siguiente: - Compruebe los ajustes de <Fecha y hora>. <Detección de movimiento> debe definirse en <Activar>. - Compruebe si la opción <E-mail> del menú <Config. de evento> está marcada para ser utilizada.
No se encuentra ninguna señal en el puerto de salida de alarma cuando se genera un evento de análisis de vídeo inteligente.	Compruebe los ajustes del puerto de salida de alarma.
No se puede grabar en la tarjeta de memoria Micro SD.	Compruebe si la tarjeta de memoria está defectuosa.
La tarjeta de memoria Micro SD está insertada pero no funciona correctamente.	- Compruebe si la tarjeta de memoria se ha insertado en la dirección correcta. En esta cámara, no se garantiza el funcionamiento de una tarjeta de memoria formateada con otros dispositivos - Formatee de nuevo la tarjeta de memoria en el menú <Config.> → <Evento> → <Almacenamiento>.
No se puede grabar en la NAS.	Compruebe que la información registrada en la NAS es correcta.
Se está indicando que la configuración de la NAS ha fallado.	- Compruebe que la dirección IP de NAS sea válida. - Compruebe que el ID / contraseña de NAS sea válido - Compruebe que puede acceder a la carpeta designada como la carpeta básica utilizando el ID de la NAS. - Asegúrese de que los elementos SMB / CIFS de NAS estén sin marcar. - Compruebe que la dirección IP de NAS y la dirección IP de la cámara tengan el mismo formato. Ejemplo) el valor inicial de la NAS y de la máscara de subred de la cámara es 255.255.255.0. Si la dirección IP es 192.168.20.32 entonces la dirección IP de NAS debe estar entre 192.168.20.1 y 192.168.20.255. - Verifique si ha intentado acceder como otro usuario sin formatear la carpeta básica almacenada o usada. - Compruebe que utilizó las unidades NAS recomendadas.

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iproute2-4.3.0	GPL 2.0	
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ethtool-4.2	GPL 2.0	
mtdd-1.5.2	GPL 2.0	ftp://ftp.infradead.org/pub/mtdd-utils
mi-diag-2.11	GPL 2.0	
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bash-4.3.30	GPL 3.0	
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revised on December 21, 2006
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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](http://www.ietf.org/rfc/rfc1951.txt) (deflate format) and [rfc1952.txt](http://www.ietf.org/rfc/rfc1952.txt) (gzip format).

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Hanwha Vision respeta el medio ambiente durante todo el proceso de fabricación de sus productos y realiza una serie de procedimientos orientados a ofrecer productos ecológicos.

El símbolo Eco representa el compromiso de Hanwha Vision de fabricar productos que respeten el medio ambiente e indica a la vez que este equipo cumple con la Directiva de la Unión Europea EU RoHS.



Eliminación correcta de este producto (Residuos de aparatos eléctricos y electrónicos)

(Aplicable en la Unión Europea y en países europeos con sistemas de recogida selectiva de residuos)
La presencia de este símbolo en el producto, accesorios o material informativo que lo acompañan, indica que al finalizar su vida útil ni el producto ni sus accesorios electrónicos (como el cargador, cascos, cable USB) deberán eliminarse junto con otros residuos domésticos. Para evitar los posibles daños al medio ambiente o a la salud humana que representa la eliminación incontrolada de residuos, separe estos productos de otros tipos de residuos y reciclelos correctamente. De esta forma se promueve la reutilización sostenible de recursos materiales. Los usuarios particulares pueden contactar con el establecimiento donde adquirieron el producto o con las autoridades locales pertinentes para informarse sobre cómo y dónde pueden llevarlo para que sea sometido a un reciclaje ecológico y seguro. Los usuarios comerciales pueden contactar con su proveedor y consultar las condiciones del contrato de compra. Este producto y sus accesorios electrónicos no deben eliminarse junto a otros residuos comerciales.



Eliminación correcta de las baterías de este producto

(Aplicable en la Unión Europea y en otros países europeos con sistemas de recogida selectiva de baterías.)

La presencia de esta marca en las baterías, el manual o el paquete del producto indica que cuando haya finalizado la vida útil de las baterías no deberán eliminarse junto con otros residuos domésticos. Los símbolos químicos Hg, Cd o Pb, si aparecen, indican que la batería contiene mercurio, cadmio o plomo en niveles superiores a los valores de referencia admitidos por la Directiva 2006/66 de la Unión Europea. Si las baterías no se desechan convenientemente, estas sustancias podrían provocar lesiones personales o dañar el medioambiente.

Para proteger los recursos naturales y promover el reciclaje, separe las baterías de los demás residuos y reciclelas mediante el sistema de recogida gratuito de su localidad.

