

网络摄像机

用户手册

XNP-6120H



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用户手册

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商标

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- ❖ 设计和规格可能会随时更改，恕不提前通知。
- ❖ 初始管理员ID为“admin”，而密码则应在首次登录时设置。
请每三个月更改一次密码，以妥善保护个人信息并防止信息泄露造成的损害。
请注意，由于没有妥善管理密码而造成安全或其他方面的问题，由用户自行承担。

重要的安全说明

1. 请阅读这些说明。
2. 请您妥善保存这些说明。
3. 请您遵守所有的操作说明。
4. 请您注意所有的警告说明。
5. 请您不要在水源附近运行本机器。
6. 使用柔软干布或湿布清洁产品表面的污染区域。
(请勿使用含有酒精、有机溶剂或表面活性剂、或含油成分的清洁剂或化妆品, 此类物质可能使产品变形或受损。)
7. 请您不要堵塞通风口, 在装入机器时, 请您注意制造商的说明。
8. 请您不要将此机器放置在热源附近, 如散热器, 炉子或其它发热设备。
9. 请您绝对不要移去双线插头或有接地插头的安全装置, 双线插头有两个不同宽度的插塞接点, 接地插头有两个插塞接点和第三个接地接点。较宽的插塞接点或附加的接地接点是用来确保您的安全的, 如果随同供货的插头规格不适合您的插座, 请您委托电工更换适当的插座。
10. 请您正确铺设电源线, 使其不会被踩踏和尖角损坏。请您尤其注意插头处, 加长电缆和电线延伸到机器处必须具备充分的保护。
11. 请您使用制造商推荐的附加设备或配件。
12. 仅可使用厂商指定或随设备出售的运载车、支脚、三脚架、支架或工作台。使用运载车时, 请小心避免在移动运载车/设备组合时翻覆。
13. 在雷雨天气或长时间不用的情况下, 请拔下本设备的插头。
14. 请您委托具备资格的售后服务人员进行保养工作。出现以下情况时, 有必要进行保养, 例如当机器被损坏时 (如电线或插头损坏), 有物体或液体进入到机器内部时机器受到雨淋或潮湿后, 机器运行不正常或摔落在地上时。
15. 本产品应由经认证的、带“2类”或“LPS”且额定电压为 12Vdc、1.1A 或 PoE(37-57 Vdc), 0.35 A 的电源装置供电。
16. 请勿将摄像机竖直安装在墙壁上。此操作将导致倾斜失步现象。
17. 如安装产品时用力过大, 摄像机可能损坏并出现故障。
如使用不符合规定的工具强行安装产品, 产品可能损坏。
18. 请勿将产品安装在存在或可能生成化学物质或油雾的地方。大豆油等食用油可能导致产品损坏或变形, 因此请勿将产品安装在厨房或厨房柜台附近。
这可能导致产品损坏。
19. 安装产品时, 请注意不要使产品表面接触到化学物质。
某些化学溶剂, 如清洁剂或粘合剂可能导致产品表面严重受损。
20. 如未按照建议方法安装/组装产品, 产品功能/性能可能受到影响。
安装产品时请参阅用户手册中的“安装与连接”部分。
21. 在水下安装或使用本产品可能导致产品严重损坏。



警告

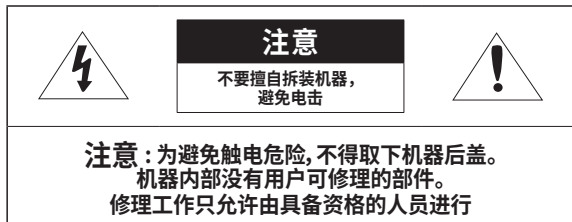
为防止火灾或电击等引起的破坏, 不要把产品暴露于水中或潮湿处。请勿穿过设备上的通风栅格或其他开口插入任何金属物体。

请勿将设备放置于滴水或溅水的地方, 且勿将装有水的物体 (如花瓶) 放在设备上面。

为了避免造成人身伤害, 必须按照安装说明牢固地把本设备固定在墙壁/天花板上。

Pan/Tilt/Zoom电动机和Slip ring可确保连续运行1年的部件寿命。

注意



图形符号说明



等边三角形内带箭头的闪电符号用于警告用户: 产品机壳内存在“危险电压”, 其电压量足以对人员构成电击危险。



等边三角形内的感叹号用于警告用户: 产品附带的文字中包含重要的操作和维护 (维修) 说明。

概述

CLASS I 构造

具有 CLASS I 构造的设备应连接到具有保护接地连接的电源插座。

电池

电池 (安装的电池组或电池) 不得暴露在过多的热量下 (如阳光、火焰或类似物体)。

断开设备

如果设备出现故障, 请拔下其电源插头。并请致电当地的维修人员。

当在美国以外使用时, 可以利用所用的 HAR 代码和许可代理机构的接待处。

注意

如更换的电池类型不正确, 可能发生爆炸。
按照说明妥善处理废旧电池。

这些维修说明仅供合格的维修人员使用。
为减少电击的危险, 除了操作说明中所描述的之外, 请勿执行其他任何维修工作, 除非您合格这么做。

本产品提供的 CVBS 输出端子是为了便于安装, 建议不要用于监视目的。

请将输入电源仅用于一部摄像机, 并且不能连接其他设备。

ITE 只能连接到 PoE 网络, 无需路由到外部工厂。

产品内有害物质信息

部件名称	有毒有害物质元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 Cr (VI)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印制电路板组件	×	○	○	○	○	○
金属部品	×	○	○	○	○	○
电缆	×	○	○	○	○	○
塑料部品	○	○	○	○	○	○

○：部品中有毒有害物质含量在<含量标准>的标准值内。

×：部品中有毒有害物质含量超出<含量标准>的标准值。

本表格表明机器内部含有有害物质, 数据是根据部件类型, 由部件制造商提供并在Hanwha Vision内部验证后做成的。
某些部品包含的有害物质, 按照现在的技术基准不能替代, Hanwha Vision一直在为改善此项而努力。

请仔细阅读以下建议的安全预防措施。

- 请勿将本设备放置于不平的表面上。
- 请勿安装在暴露在直射阳光下、靠近供暖设备或非常寒冷区域的表面上。
- 请勿将本设备放置在传导物体附近。
- 请勿自行维修本设备。
- 请勿将一杯水放在产品上。
- 请勿安装在任何磁源附近。
- 请勿堵塞任何通风口。
- 请勿在产品上放置任何重物。
- 在安装/拆卸摄像机时, 请佩戴防护手套。
产品表面温度较高, 可能有烫伤的危险。

用户手册是如何使用产品的指导书。

书中所用符号的含义如下。

- 参考：用于提供产品用法的帮助信息
- 注意：如果不遵照说明是否有可能对物品和人员造成任何损害
- ※ 在使用物品之前请阅读本手册以保证安全, 并将它保存在安全的地方。

在某些安装环境下, 可能会发生无线通信干扰。
如果产品和附近的无线通信设备之间发生电磁干扰, 建议增加与无线通信设备的距离或调整通信天线的方向。

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概述

推荐 PC 技术规格

- CPU：Intel(R) Core(TM) i7 3.4 GHz 或更高版本
- RAM：8G 或更高
- 支持的操作系统：Windows 7、8.1、10、Mac OS X 10.10、10.11、10.12
- 无插件 web 查看器
支持的 web 浏览器：Google Chrome, MS Edge, Mozilla Firefox (Windows 64bit 仅支持) , Apple Safari 10 (Mac OS X 仅支持)
- 有插件 Web 查看器
支持的 web 浏览器：MS Explore, Apple Safari 10 (Mac OS X 仅支持)

建议的 MICRO SD/SDHC/SDXC 存储卡规格

- 建议容量：16GB 至 256GB（MLC 类）
- 建议本摄像机搭配使用以下生产商制造的以下类型的存储卡。
 - 生产商:SanDisk (闪迪)、Transcend (创见)
 - 产品系列:高耐用度

NAS 建议规格

- 建议容量：200GB 或更高
- 同时访问：一套 NAS 可以同时接受最多十六个摄像机访问。
- 对于本摄像机，建议使用符合以下制造商规格的 NAS。

建议产品	可用尺寸
QNAP NAS	最多 16 个摄像机可同时访问。
Synology NAS	最多 16 个摄像机可同时访问。



▪ 如果使用 NAS 设备的目的不是为了保存视频，可以减少可访问摄像机的数量。

随机提供的物品

请检查产品包装内是否已包括摄像机和所有附件。
(配件因销售国家/地区而异。)

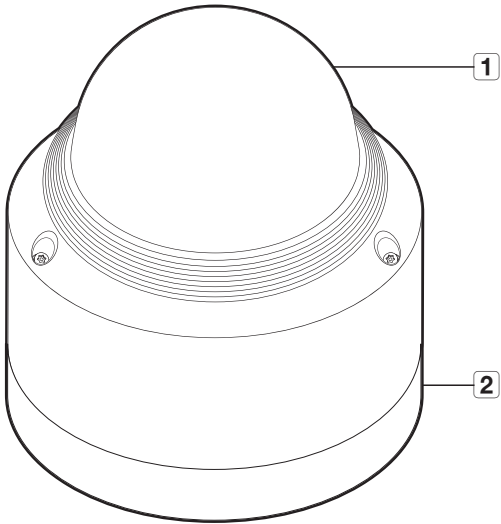
外观	品名	数量	功能
	摄像机	1	
	简介(可选)	1	
	保修卡(可选)	1	
	用于测试显示器的电缆	1	用于测试摄像机至便携式显示设备的连接
	模板	1	产品安装指南
	电源接线板	1	插入电源插头
	L型扳手	1	用于拆装圆顶盖
	电源线	1	用于插入电源插座

外观	品名	数量	功能
	音频/RS-485 电缆	1	用于连接音频和 RS-485
	警报器电缆	1	用于连接警报器
	线缆保护衬套	1	用于连接直径为7到8.5毫米的局域网线缆。
	支架螺钉	3	用于墙壁或天花板上的安装
	塑料固定器	3	用于固定螺钉, 已插入孔中 (增强固定力量)

概述

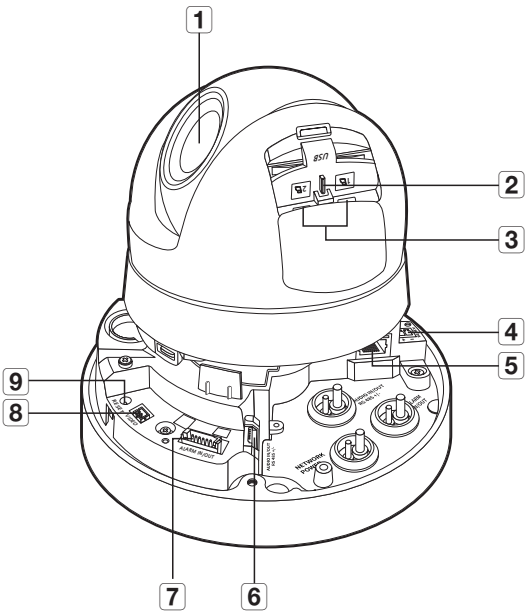
简图

外观



名称	功能
1 球罩	用于保护镜头和机身的护盖。
2 摄像机外壳	盖住摄像机机身的外壳部分。

组件



名称	功能
1 镜头	摄像机的镜头。
2 MICRO USB 端口	连接 WiFi 接收器的端口。 可通过安装在智能手机中的应用程序查看安装视频。 请参阅第 14 页“连接至 WiFi 接收器”。 WiFi 接收器和 OTG 适配器单独出售。
3 Micro SD 存储卡插入口	用于插入 Micro SD 存储卡的端子。
4 电源端口	用于电源接线板的端口。
5 网络端口	用于连接 PoE 或网络连接的以太网电缆。
6 音频/RS-485 连接器	此连接器是用于连接音频和 RS-485 电缆的端子。
7 警报器电缆连接器	此连接器是用于连接警报输入/输出电缆的端子。
8 CVBS 视频输出	用于方便摄像机安装的 CVBS 视频输出端口。使用连接线缆连接至便携式显示器，方便摄像机的安装。
9 重置按钮	该按钮会将所有摄像机设置恢复为出厂默认值。 按住约 5 秒钟可重启系统。 ■ 摄像机被重置后，其网络设置会变为 DHCP。如果网络中没有 DHCP 服务器，则要使用“Device Manager”程序重新配置基本网络设置才可以从新接入网络 (IP 地址, 子网掩码, 网关等)

安装与连接

安装

! 此摄像机防水并且符合 IP66 规格，但连接到外部电缆的插孔不防水。建议您将本产品安装在屋檐下，防止电缆因暴露在户外而受损。

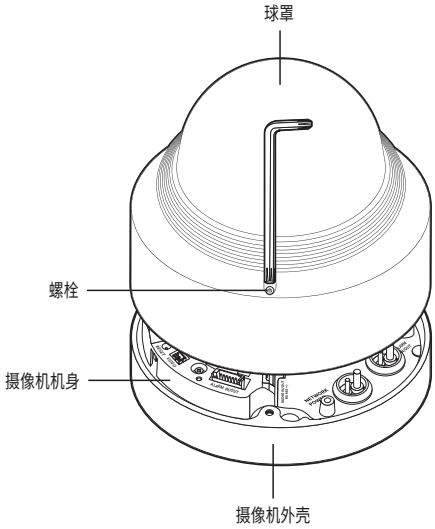
安装前注意事项

安装之前，请确保阅读下列说明：

- 用于安装它的区域 (天花板或墙壁) 的可承受重量必须至少 5 倍于包括安装支架在内的摄像机重量。
- 注意电缆夹在不适当的地点或电缆皮受损，以免发生火灾或产品破损。
- 为安全起见，让其他人远离安装地点。
请立刻收拾放在安装地点下面的贵重品。
- 如安装产品时用力过大，摄像机可能损坏并出现故障。
如使用不符合规定的工具强行安装产品，产品可能损坏。

拆解

1. 使用随附提供的 L 型扳手，按照逆时针方向拧松 3 颗紧固螺栓，即可卸下顶盖。



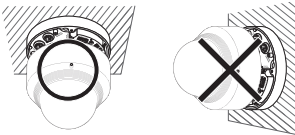
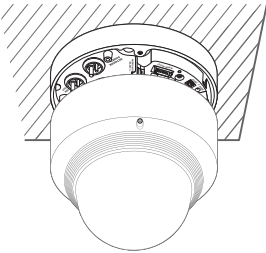
安装

1. 钻出一个用于安装壳体底座的孔 (直径：6mm，深度：最小 55mm)，并将本产品随附的膨胀塑胶螺丝插到底端。
2. 将摄像机的安装孔对齐塑料胀管要插入的孔，然后使用自攻螺钉固定摄像机。
 - 确保摄像机上的<FRONT>标识朝向摄像机监视的方向。
3. 将必要的电缆和摄像机内部端子连接起来。

! 将电缆和 PTZ 旋转装置连接起来，以使要旋转的电缆不会受损或卡住。

4. 闭合球罩。
 - 使用 L 型扳手拧紧固定螺栓可防止渗水。

! 请勿将摄像机竖直安装在墙壁上。
此操作将导致倾斜失步现象。

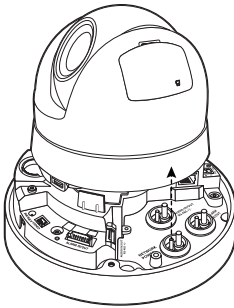


连接防水电源线和 LAN 电缆

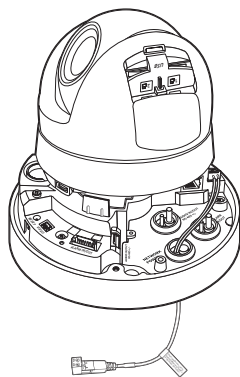
1. 卸下球罩和壳体。
2. 拉出底座上橡皮塞的长突出部，然后如图所示将其取下。

! 将适当的线缆保护衬套用于要连接的局域网线缆。

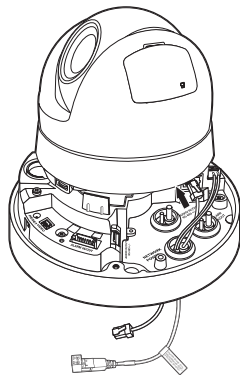
- 基础摄像机: 使用直径为 5 到 6.5 毫米的线缆。
- 所提供组件: 使用直径为 7 到 8.5 毫米的线缆。



3. 将电源线插入在上述步骤 2 中取下橡皮塞突出部后出现的小孔，然后在长凹槽中布置电缆。
4. 将电源线连接到电源接线板。

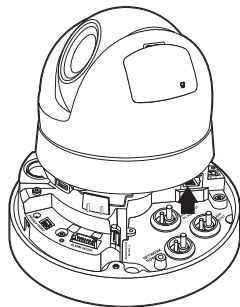


5. 将 LAN 电缆插入在上述步骤 2 中取下橡皮塞突出部后出现的大孔。
6. 使用电缆剪剥除护皮，然后对齐电缆。
7. 为 LAN 电缆接上一个 LAN 接头，然后插入 LAN 工具。
8. 将准备就绪的 LAN 电缆连接到以太网端口。



连接音频/RS-485 和警报器线缆的步骤

1. 卸下球罩和壳体。
2. 如图所示，拉出底座上的橡皮塞。



3. 在第 2 步中卸下橡胶塞后会出现一个孔，将音频/RS-485 和警报器电缆插入此孔中，并将该电缆连接至 PCB 警报器端子。
4. 对齐电缆，以便在安装摄像机时不会损坏或挤压电缆。
5. 将音频/RS-485、警报器线缆上的橡胶塞插入到孔中。
6. 联接球罩。



连接至非捆绑销售的适配器

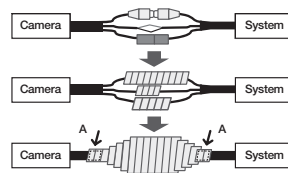
选择并购买下列其中一个必要的选件（非捆绑销售），它应该适合您的安装位置或为您提供方便。

1. 从壳体取下球罩，参考“拆解”部分。（第 10 页）
2. 使用随附选用的机器螺钉将摄像机壳固定到选配的适配器上。
3. 连接和排放必要的电缆，以免在安装摄像机时损坏或缠绕它们。
4. 以“拆解”的相反顺序安装摄像机机身。
5. 闭合球罩。
 - 使用 L 型扳手拧紧固定螺栓可防止渗水。

室外安装

当您本产品安装在建筑外部时，请用防水丁基橡胶带对其进行防水处理（商店有售），防止水从连接到外部的电缆缝隙中渗入。

1. 连接电源、I/O 和 LAN 电缆。
 2. 用防水带（丁基橡胶），包裹住黑色电缆套管（区域 A）和电缆连接区域，确保一半以上的丁基橡胶带重叠。
- ❗
- 如未对电缆套管进行适当的防水操作，它可能直接导致漏水。确保使用橡胶带保护电缆。
 - 防水丁基橡胶带由丁基橡胶制成，可拉伸为正常长度的 2 倍。

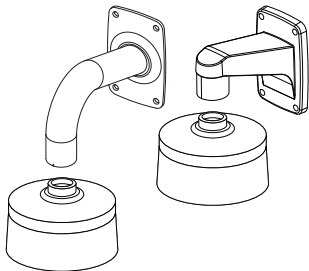


安装与连接

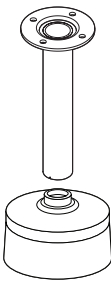
可选的安装附件

为了方便安装，您可以购买可选的附件。

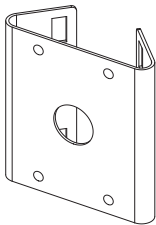
1. 墙上安装适配器 (SBP-300WM 或 SBP-300WM1) / 悬挂安装适配器 (SBP-168HM)
将圆顶摄像机安装到墙上时使用该适配器。



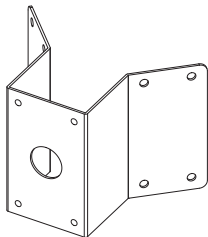
2. 天花板安装适配器 (SBP-300CM) / 悬挂安装适配器 (SBP-168HM)
将圆顶摄像机安装到混凝土天花板上时使用该适配器。



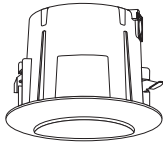
3. 杆挂式适配器 (SBP-300PM) 是将壁挂式适配器 (SBP-300WM 或 SBP-300WM1) 安装至 80mm 或更粗圆柱上使用的一款适配器。



4. 角落安装适配器 (SBP-300KM)
这是在墙角安装墙上安装适配器 (SBP-300WM 或 SBP-300WM1) 时使用的适配器。



5. 如果将 XNP-6120H 作为内嵌组件安装在天花板上
圆顶摄像机的平齐安装室内机盒 (SHP-1680F)

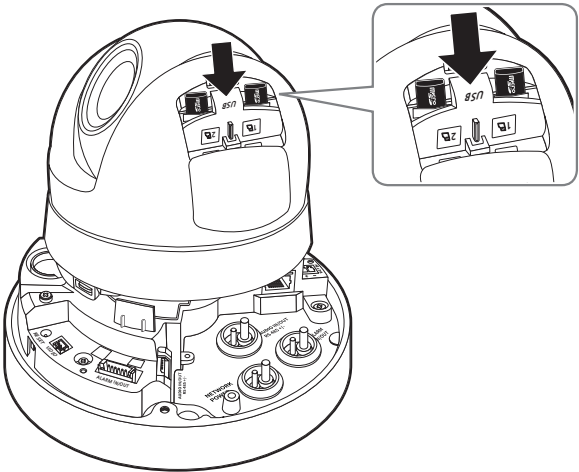


插入/取出 MICRO SD 存储卡

- ! ■ 安装摄像机前，请先从摄像机拔下电源线后，插入 Micro SD 保存卡。
- 请不要将 Micro SD 存储卡往逆方向强行插入，以免存储卡破损。
- 下雨或湿度较高时，不建议插拔内存卡。
- 产品盖子的拆卸应该在5分钟之内完成，否则会有内部结露的风险。

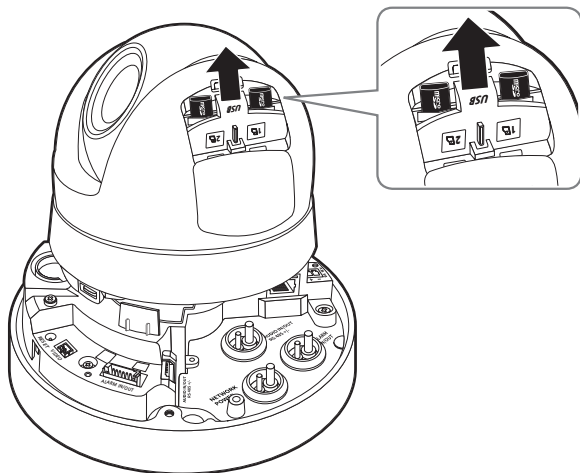
插入 Micro SD 存储卡

1. 将摄像机的圆顶盖分开。
2. 打开 Micro SD 卡盖。
3. 按照图中箭头所示方向插入内存卡。



取出 Micro SD 存储卡

轻轻地按压存储卡露在外面的一端，依图示的方式从拆槽中弹出存储卡。



- 过度用力按Micro SD存储卡，可能会导致存储卡从卡槽中猛然弹出。
- 在移除 Micro SD 存储卡前，请在 <存储器> 中将设备设置为 <关>，然后按下 [应用] 按钮并关闭摄影机。（第 49 页）
- 将数据保存在Micro SD存储卡时，若取出存储卡或关掉电源，会导致已存数据的损失。

存储卡信息(未包含)

什么是存储卡？

存储卡是一种外部数据储存设备，它的开发为使用数字设备进行录制和共享音频、视频和文本数据提供了崭新的方式。

选择一款适合您的存储卡

本摄像机支持 Micro SD/SDHC/SDXC 存储卡。
根据存储卡的型号和制作材料不同，您可能会遇到兼容性的问题。

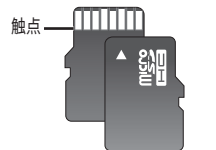
建议本摄像机搭配使用以下生产商制造的以下类型的存储卡。

- 生产商: SanDisk (闪迪)、Transcend (创见)
- 产品系列: 高耐用度

建立将 16GB 至 256GB (MLC 类) 的存储卡与本摄像机配合使用。

播放性能会受到内存卡速度的影响。

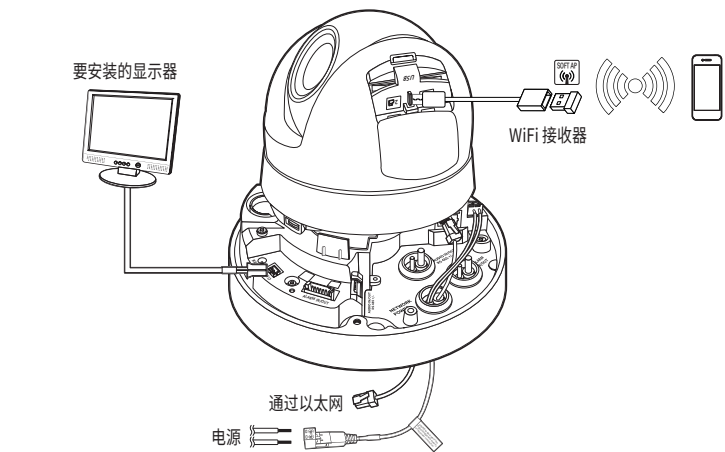
记忆卡组件



Micro SD/SDHC/SDXC

安装与连接

与其他设备连接



- 本产品提供的 CVBS 输出端子是为了便于安装，建议不要用于监视目的。
- 本产品提供的 Micro USB 输出端子是为了便于安装，建议不要用于监视目的。

以太网连接

将以太网电缆连接到本地网络或互联网。

连接 WiFi 的步骤

摄像机设置

1. 将 OTG 适配器（5 针）和 WiFi 接收器连接至 micro USB 终端。

智能手机设置

1. 安装 Wisenet Installation 应用程序。
2. 打开 WiFi 后选择摄像机 SSID。
3. 运行 Wisenet Installation 应用程序。
4. 登录至摄像机即可连接视频（初始密码：4321）
 - 首次连接时无需登录即可播放视频。
5. 可通过智能手机观看视频的同时调整视角。

推荐的接收器生产商

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

电源

使用螺丝刀将每股电源线 (+, -) 连接至摄像机的相应电源端口。

- 如同时以 DC 12V 和 PoE 电源供电，装置将会使用外部电源 (DC 12V) 工作。
 - 您也可以使用具有 PoE 功能的路由器为摄像机供电。
 - 使用符合 IEEE 802.3af 协议的 PoE。
 - 建议单独使用 PoE 或 DC 12V 供电，而不是同时使用。
- 在连接电源线时，切勿弄反极性。
- 如果要连接外部设备，则必须先关闭外部设备再继续进行。
- 先连接设备和适配器电源线，然后将电源线连接至墙上的电源插座。

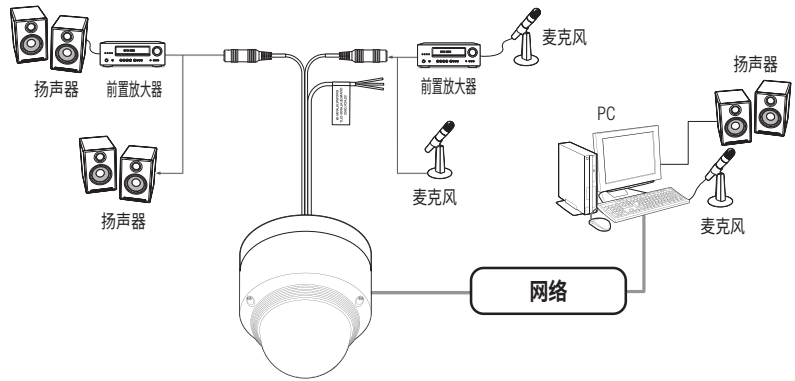
每个型号的电源电缆规格

输入功率	股线类型 (AWG)	电缆长度(最大)
DC 12V	#18	19m
	#16	30m
AC 24V	#20	26m
	#18	40m

网线规格

名称	内含物	备注
连接器	RJ45	
以太网	10/100BASE-T	10/100 Mbps
电缆	UTP 超5e类	
最大距离	100米	
PoE 支持	IEEE 802.3af	

连接音频输入/输出



1. 将摄像机的音频输入端口连接至麦克风或麦克风连接至的扩音器的线性输出端口。
2. 将摄像机的音频输出端口连接至扬声器或扬声器连接至的扩音器的线性输入端口。
3. 检查音频输入的规格。

• 音频编解码器

- 音频输入：G.711 PCM (比特率：64kbps/采样频率：8kHz), G.726 ADPCM (比特率：16Kbps, 24Kbps, 32Kbps, 40Kbps/采样频率：8kHz), AAC (比特率：48Kbps / 采样频率：16kHz)
- 音频输出：G.711 PCM (比特率：64kbps/采样频率：8kHz)

• 全双工音频

- 音频输入：可选 (麦克风/线路输入)，支持的电压：2.5VDC (4mA)，输入电阻：2K 欧姆
- 音频输出：线路输出 (3.5mm 单声道插孔)，最大输出：1Vrms
- 线路输出阻抗：600Ω

安装与连接

RS-485 通信

- 控制信号连接图



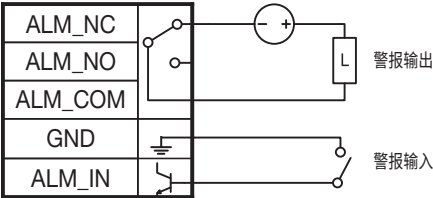
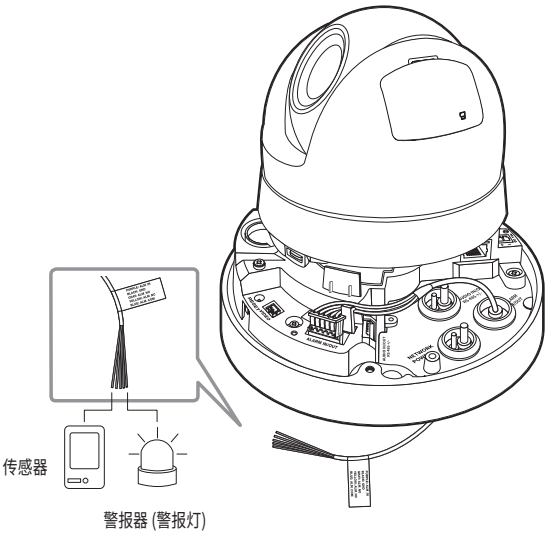
通信电缆

摄像机和控制器进行通信时需要使用 RS-485 通信线。

- 建议电缆长度少于 30 米。
- 不包含通信电缆。
- 请参阅“RS-485”了解端子设置方法。（第 37~38 页）

连接到 I/O 端口

将警报输入/输出电缆连接到端口盒的相应端口。





- 在设置菜单中选择正常打开。
 - 如使用接触类型,当传感器输入较短时,将激活传感器输入,此外,如使用活动类型,当传感器输入处于“LOW”值时,也将激活传感器输入。
- 在设置菜单中选择正常关闭。
 - 如使用接触类型,当传感器输入打开时,将激活传感器输入,此外,如使用活动类型且传感器输入处于高阻抗状态时,也将激活传感器输入。
- 警报输出端子的最大负荷量是 30VDC、1A / 125VAC、0.3A。
- 务必逐一连接各端子的警报输入/输出电缆。
- 当连接超出额定值的产品时,使用单独的继电器驱动设备。
- 将不正确的电源和 GND 连接至 NC/NO 端口和 COM 端口可能导致产品着火或受损。

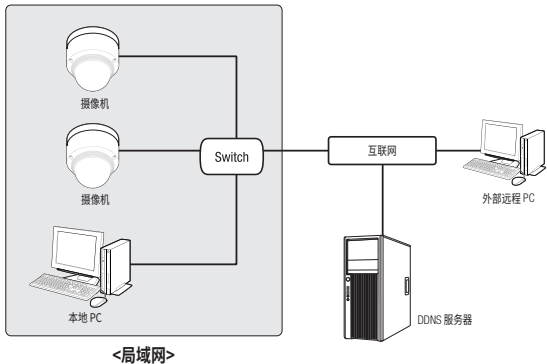
网络连接和设置

可根据您的网络配置来设置网络的设定。

在LAN环境下直接安装摄像机

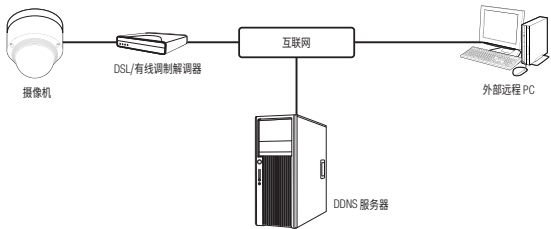
连接局域网内的本地 PC 和摄像机

- 1. 启动本地 PC 上的Web浏览器。
- 2. 在浏览器地址栏中输入要访问的摄像机IP地址。



- 在正确设置防火墙或端口转发前，局域网外部的远程互联网 PC 可能无法连接安装于内部网的摄像机。在此情况下，联系网络管理员解决问题。
- 可以使用“Device Manager”中的初始密码“4321”设置IP地址，子网掩码，网关，HTTP端口，VNP端口和IP类型。更改网络接口后，请通过连接到Web界面来更改密码以增强安全性。
- 出货时，摄像机被设置为DHCP服务器自动分配IP地址。如果没有可用的 DHCP 服务器，则会将 IP 地址设置为 192.168.1.100。要更改IP地址，请使用“Device Manager”。有关如何使用Device Manager，请参阅“使用Device Manager”。（第 20 页）

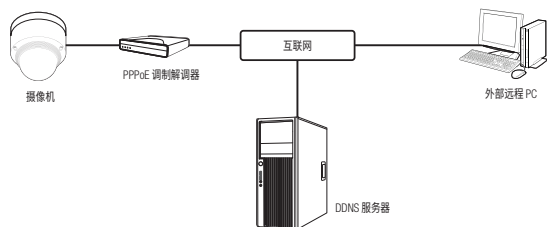
将摄像机直接连接至基于 DHCP 的 DSL/有线电视网调制解调器



- 1. 直接将用户 PC 与网络摄像机连接。
- 2. 使用“Device Manager”将摄像机的IP地址更改为可通过用户计算机从Internet浏览器从访问的IP地址。
- 3. 使用Web浏览器连接至 Web Viewer。
- 4. 移至 [设置] 页面。
- 5. 移至 [网络] – [DDNS] 并配置 DDNS 设置。
- 6. 移至 [Basic] – [IP & 端口]，并将网络类型设置为 [DHCP]。
- 7. 将摄像机与用户PC分开，并直接连接到调制解调器。
- 8. 重新启动摄像机。

- 有关配置 DDNS 设置，请参阅“DDNS”。（第 44 页）
- 有关注册 DDNS 设置，请参阅“注册 DDNS”。（第 45 页）
- 有关配置IP类型设置，请参阅“IP & 端口”。（第 34 页）

直接将摄像机连接到 PPPoE 调制解调器

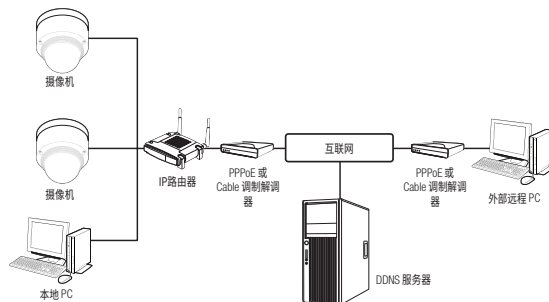


1. 直接将用户 PC 与网络摄像机连接。
2. 使用“Device Manager”将摄像机的IP地址更改为可通过用户计算机从Internet浏览器访问的IP地址。
3. 使用Web浏览器连接至 Web Viewer。
4. 移至 [设置] 页面。
5. 移至 [网络] - [DDNS] 并配置 DDNS 设置。
6. 移动到 [Basic] - [IP & 端口] 设置页面，将“IP 类型”设置为 [PPPoE]，然后输入网络服务的 ID 和密码。
7. 将摄像机与用户PC分开，并直接连接到调制解调器。
8. 重新启动摄像机。

- 有关配置 DDNS 设置，请参阅“DDNS”。(第 44 页)
- 有关注册 DDNS 设置，请参阅“注册 DDNS”。(第 45 页)
- 有关配置IP类型设置，请参阅“IP & 端口”。(第 34 页)

将摄像机与使用 PPPoE/CABLE 调制解调器的IP路由器连接

适用于小型网络环境，如家庭、SOHO 以及普通的商店。



配置与IP路由器连接的本地PC的网络设置

在配置连接到IP路由器的本地 PC 的网络设置时，遵循以下说明。

- 选择：<网上> → <属性> → <本地连接> → <常规> → <属性> → <Internet 协议 (TCP/IP)> → <属性> → <自动获得 IP 地址> 或 <使用下面的 IP 地址>。
- 若您选择的是 <使用下面的 IP 地址>，遵照以下说明操作：

例1) 若IP路由器的地址 (LAN IP) 为 192.168.1.1

IP 地址：192.168.1.100
子网掩码：255.255.255.0
默认网关：192.168.1.1

例2) 若IP路由器的地址 (LAN IP) 为 192.168.0.1

IP 地址：192.168.0.100
子网掩码：255.255.255.0
默认网关：192.168.0.1

例3) 若IP路由器的地址 (LAN IP) 为 192.168.xxx.1

IP 地址：192.168.xxx.100
子网掩码：255.255.255.0
默认网关：192.168.xxx.1

- 关于IP路由器的地址，请参见产品文档。
- 如需IP路由器的正向端口的更多信息，请参阅“路由器端口设置”。(第 22 页)

网络连接和设置

如何使用“DEVICE MANAGER”

- 
- “Device Manager”可以访问Hanwha Vision网站的（<https://www.HanwhaVision.com>）<Support>-<Online Tool>进行下载。
 - 您可以在主页的<帮助>菜单中查看如何使用“Device Manager”。

自动搜寻摄像机

如果摄像机连接到安装了“Device Manager”的PC相同的网络,则可以使用搜索功能查找网络摄像机。

- 请在“Device Manager”主界面上点击<搜索>。
- 确保在搜索列表中搜索到了要连接的摄像机。
 - 请在摄像机附带标签上确认MAC地址。

设置IP地址

若要更改摄像机的网络设置, < 状态 > 项目应标有 <Login OK>。您可以通过单击“Device Manager”主界面 上的 < 验证 > 来登录。

设置 Static IP

手动输入并设置IP地址和端口信息。

- 在搜索列表中, 单击要更改IP设置的摄像机。
- 在“Device Manager”主界面上单击<IP分配>。
- 选择<分配IP地址>。
 - 摄像机的IP信息将显示为先前设置的值。
- 输入IP相关项目和端口相关项目。



如果不使用IP路由器

有关<IP地址>、<子网掩码>和<网关>设置, 请与网络管理员联系。

- HTTP端口：用于使用Web浏览器访问摄像机, 默认值为 80。
- VNP端口：用于控制视频信号传输, 默认值为 4520。
- RTSP端口：此端口为控制实时流媒体的端口, 默认值为554。

如果使用IP路由器

- IP Address：输入IP路由器提供的 IP 范围内的地址。
例) 192.168.1.2~254, 192.168.0.2~254, 192.168.XXX.2~254
- Subnet Mask：IP路由器的<子网掩码> 将是摄像机的 <子网掩码>。
- Gateway：IP路由器的 <本地 IP 地址> 将是摄像机的 <Gateway>。



- 
- 设置可能因连接的IP路由器型号而异。
有关详细信息, 请参阅适用路由器的用户手册。
 - 如需IP路由器的正向端口的更多信息, 请参阅“[路由器端口设置](#)”。(第 22 页)

如果IP路由器连接了多个摄像机

分别设置摄像机的IP相关项目和Port相关项目。

例)

类别	摄像机 1	摄像机 2
IP 相关设置	IP地址 子网掩码 网关	192.168.1.100 255.255.255.0 192.168.1.1
端口相关设置	HTTP端口 VNP端口 RTSP端口	8080 4520 554

- 
- 如果 <HTTP端口> 设置为除 80 以外的值, 您必须在Web浏览器的地址栏中提供 <Port> 号, 才能访问摄像机。
例) <http://IP address: HTTP Port>
<http://192.168.1.100:8080>

- 单击<应用>按钮。
- 显示成功确认信息时请点击<确定>按钮。

设置 Dynamic IP

通过DHCP自动分配IP地址

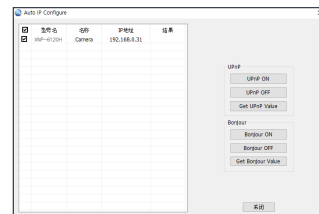
- 动态 IP 环境示例
 - 如果连接了摄像机的IP路由由 DHCP 服务器分配了 IP 地址
 - 将摄像机直接连接到使用DHCP方式的调制解调器时
 - 在LAN环境下, 从内部DHCP服务器获取IP时

1. 在搜索列表中单击要更改IP设置的摄像机。
2. 在“Device Manager”主界面上单击<IP分配>。
3. 请选择<自动获取一个IP地址 (DHCP)>。
4. 请点击[适用]按钮。
5. 请在显示成功确认消息时点击[确定]按钮。



自动设置 IP

1. 在搜索列表中, 单击要自动设置IP的摄像机。
2. 在“Device Manager”主界面上单击<+>。
 - 将会出现设备设置菜单。
3. 单击设备设置菜单中的<Auto IP Configure (IP自动设置)>。
4. 单击[关闭]按钮。



手动注册摄像机

如果通过搜索功能找不到摄像机, 或者摄像机连接到外部网络, 则可以手动输入 IP 信息以远程查找摄像机并进行注册。

1. 在“Device Manager”主界面上单击<添加设备>-<手动注册设备>。
2. 请输入要搜索的IP地址范围。
3. 请选择要注册的摄像机的<型号名>并输入HTTP端口、VNP端口、用户ID和密码。
4. 单击[注册]按钮。
5. 确保在列表中注册了所需的摄像机。
 - 检查相机附带标签上的MAC地址。



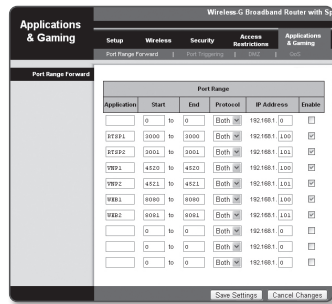
网络连接和设置

路由器端口设置

如果您安装了连接摄像机的IP路由器,就必须设置在IP路由器上前移的端口范围,以便远程 PC 可以其中的摄像机。

手动端口设置

- 1. 从IP路由器的 Setup 菜单中, 选择 <Applications & Gaming> - <Port Range Forward>。
关于第三方IP路由器端口转发的菜单位置和设置方法, 请参阅各个IP路由器制造商提供的用户手册。
- 2. 对连接到IP路由器的每个摄像机选择 <TCP> 和 <UDP Port>。
应当按照摄像机 web 查看器<设置> - <Basic> - <IP & 端口>中指定的端口数量设置要配置给 IP 路由器的各端口数量。
- 3. 完成后, 单击 [Save Settings]。
将保存设置。

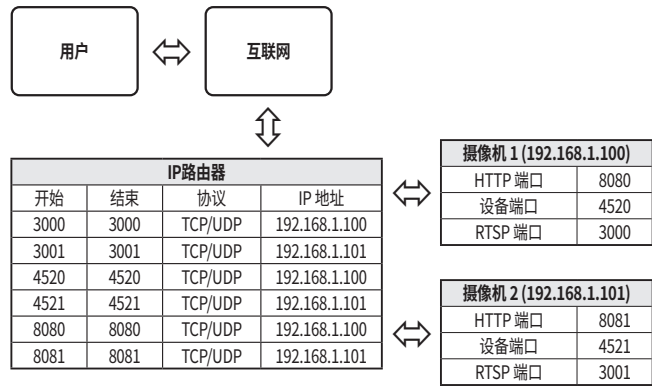


- 设置端口转发说明是CISCO IP路由器设置的示例。
- 设置可能因连接的IP路由器型号而异。
有关详细信息, 请参阅适用路由器的用户手册。

设置多个网络摄像机的端口范围前移

- 在路由器的设置页面, 可设置路由器的端口转发。
- 用户可以使用摄像机设置屏幕更改每个端口。

当摄像机 1和摄像机 2连接至同一路由器时:



- 如果路由器支持 UPnP (通用即插即用) 功能, 无需额外路由器设置即可实现端口转发。
连接好网络摄像机之后, 选择 “设置 -> 网络 -> DDNS” 下<DDNS>中<快速连接>菜单中的复选框。

从共享的本地 PC 连接到摄像机

1. 运行“Device Manager”。
它将扫描连接的摄像机，并显示摄像机列表。
2. 双击要访问的摄像机。
Web浏览器将启动，并连接到摄像机。



■ 您也可以在Web浏览器的地址栏中键入所发现摄像机的 IP 地址的方式访问摄像机。

从远程 PC 通过互联网连接到摄像机

在IP路由器的网络集群外部的远程计算机上,用户可以使用摄像机的DDNS URL访问IP路由器网络内的摄像机。

1. 您应该设置IP路由器端口范围前移, 然后才能访问IP路由器网络中的摄像机。
2. 为了从外部的远程PC访问摄像机, 启动浏览器后, 在地址栏上输入DDNS URL地址或IP路由器的IP地址。
例) <http://ddns.hanwha-security.com/ID>



■ 有关注册 DDNS 设置, 请参阅“注册 DDNS”。(第 45 页)

web 查看器

连接到摄像机

通常, 您应该

1. 启动Web浏览器。
2. 在地址栏中键入摄像机的 IP 地址。
例) • IP 地址 (IPv4) : 192.168.1.100 → http://192.168.1.100
- 将会出现登录对话框。
• IP 地址 (IPv6) : 2001:230:abcd:ffff:0000:0000:ffff:1111 → http://[2001:230:abcd:ffff:0000:0000:ffff:1111] - 将会出现登录对话框。

如果 HTTP 端口为除 80 以外的值

1. 启动Web浏览器。
2. 在地址栏中键入摄像机的 IP 地址和 HTTP 端口号。
例) IP 地址 : 192.168.1.100:HTTP 端口号(8080)
→ http://192.168.1.100:8080 - 将会出现登录对话框。

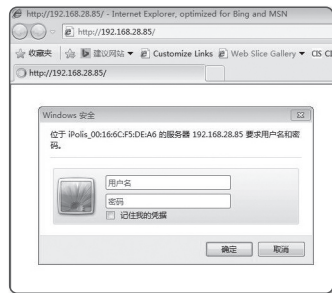
使用 URL

1. 启动Web浏览器。
2. 在地址栏中键入摄像机的 DDNS URL。
例) URL 地址 : http://ddns.hanwha-security.com/ID
- 将会出现登录对话框。

❗ 在只有Local网的环境下, 无法访问摄像机。

通过 UPnP 连接

1. 运行支持 UPnP 协议的客户端或操作系统。
2. 单击搜索到的摄像机名称。
若是Windows操作系统, 单击在网络菜单上被搜索到的摄像机名称。
- 登录窗口即显示出来。



通过 Bonjour 连接

1. 运行支持 Bonjour 协议的客户端或操作系统。
2. 单击搜索到的摄像机名称。
若是Mac操作系统, 在Safari的Bonjour选项卡上, 单击被搜索到的摄像机名称。
- 登录窗口即显示出来。

检查 DDNS 地址

如果摄像机直接连接到 DHCP 有线电视网调制解调器、DSL 调制解调器或 PPPoE 调制解调器, 每当您尝试连接到 ISP (互联网服务提供商) 服务器时, 您的网络 IP 地址都会更改。

在这种情况下, 将不会通知您 IP 地址已被 DDNS 更改。

一旦您向 DDNS 服务器注册了基于动态 IP 的设备, 当尝试访问该设备时, 就可以轻松检查更改的 IP。

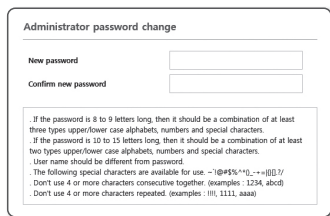
要向 <DDNS> 服务器注册您的设备, 请访问 <http://ddns.hanwha-security.com> 并先注册您的设备, 然后将 Web Viewer 的 <网络> - <DDNS> 设置为 <DDNS>, 在<产品ID>上输入已在DDNS服务器上所注册的产品ID。

密码设置

首次访问产品时,必须先注册登录密码。
出现“密码更改”窗口时,输入新密码。



- 对于 8 到 9 位的新密码,必须至少使用下列 3 种类型:大写字母/小写字母、数字和特殊字符。对于 10 到 15 位的密码,必须至少使用上述两种类型。
 - 允许使用的特殊字符为:~`!@#\$%^&*()_+=|[]{}?/
- 为了获得较高的安全性,建议您不要重复使用相同的字符作为密码,也不要使用连续的键盘输入作为密码。
- 如果您丢失了密码,可按住[RESET]按钮初始化该产品。因此请使用记事簿写下或记住您的密码以防丢失。



登录

每当访问摄像机时,登录窗口都会出现。
输入用户 ID 和密码以访问摄像机。

- 在 <用户名> 输入框中输入“**admin**”。
管理员 ID,即“**admin**”是固定的,无法更改。
- 在 <密码> 输入字段中输入密码。
- 单击 [确定]。
如果已成功登录,您将会看到 Live Viewer 屏幕。



- 因视频数据没加密,访问摄像机网络查看器时应格外注意。



- 如果您在完成输入之后选中“记住我的密码”选项,则从下次起将自动登录,而不会提示输入登录信息。
- 如果屏幕大小是 100%,则您可以体验最佳视频质量。降低该比率可能会切掉边框上的图像。



各浏览器插件支持规格

现有插件 web 查看器和新的无插件 web 查看器已嵌入一起。
如此可允许您在不支持插件的较新浏览器中使用 web 查看器,例如 Chrome、EDGE 和 FireFox (仅 Windows 64 位)。
对于 IE 和 Safari 等允许安装插件的浏览器而言,建议安装插件。
由于浏览器环境不同,可能会出现以下区别。



- Chrome、FireFox(Windows 64bit 仅支持)、EDGE 浏览器:**虽然上述浏览器不支持插件,但嵌入无插件 web 查看器时,您依然可以使用 web 查看器。
 - 由于无插件 web 查看器的性能不如插件 web 查看器,其在监控高品质配置文件和播放保存的视频时可能会受到限制。使用有插件 web 查看器或智能查看器 (SmartViewer) 均可监控高品质配置文件及播放保存的视频。
 - 无插件 web 查看器创建条件: 选中的配置文件超过 MJPEG 全高清 10fps H.264 (Chrome: 支持全屏分辨率 / Edge、Firefox、Safari: 全高清 30 fps 或更高) H.265 全高清 10fps 2Mbps 或更高
 - 无插件播放条件: MJPEG/H.264 全屏分辨率, H.265 高清或更低
 - Chrome 浏览器的无插件功能已得到优化。
 - 支持自适应流
 - 该功能在延迟超过 5 秒的情况下自动降低配置文件分辨率。其用于防止在使用低于建议的硬件规格的系统播放视频时出现等待时间延长和浏览器无响应的问题。
视频配置文件分辨率将按照以下顺序减小: 1920*1080(20fps) -> 1280*720(20fps) -> 640*480(20fps)。

- IE、Safari 浏览器:**即使您未安装现有的有插件 web 查看器,也可以使用 web 查看器。



- 如要流畅地监控/播放已保存的视频,必须安装插件。

web 查看器

安装 WEBVIEWER 插件

如要访问有插件 web 查看器并播放实时视频 (H.264/H.265) 或录制的视频, 将弹出一条安装消息。此时, 您需要安装 web 查看器插件, 才能恰当使用该功能。

1. 在第一次访问监控页面时, 屏幕会显示安装页面。 单击 [Download plugin] 以开始安装。
- !

- 如果 Internet Explorer 浏览器中的插件安装文件下载状态停留在 99%, 请在“工具 → SmartScreen 筛选器”中选择“释放 SmartScreen 筛选器”。
2. 在消息窗口中单击 [Run]。
3. 当通知窗口指示将关闭所有浏览器窗口时, 单击 [Yes]。
- ✔

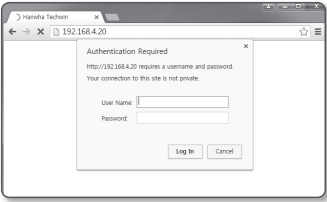
- 如果尚未安装任何 Web 浏览器插件, 将跳过步骤 4 和 5。
4. 如果已安装了旧版本的 Web 浏览器插件, 屏幕会显示一个通知窗口以指示旧版本将被删除。 在该通知窗口中单击 [Yes]。
5. 单击 [OK]。
旧版本的 Web 浏览器插件即被删除。
6. 单击 [Install], 开始安装 Web 浏览器插件。
7. 单击 [Finish]。
Web 浏览器插件即完成安装。
- !

- 在您的 Internet 浏览器中, 如果在安装 webviewer 插件后移到安装屏幕, 请检查“工具 → 其他功能管理”菜单中的 webviewer_activeplugin_lib.control 是否“已启用”。如果未启用且一直有问题, 请选择“工具 → Internet 选项 → 常规”并删除所有搜索记录。 如仍有问题, 请在“工具 → Internet 选项 → 安全 → 受信任的站点”下注册摄像机的 IP 或域名。

使用无插件 WEB 查看器

如通过 Google Chrome、Mozilla Firefox 或 MS Edge web 浏览器访问摄像机, 您可能无法单独安装插件, 但您仍可在不安装插件的情况下查看和控制摄像机视频。

1. 输入用户名和密码登录。
2. 成功登录后即显示摄像机实时视图屏幕。



使用现场屏幕



名称	功能
1 实时	移动至实时屏幕。
2 播放	移动到您可以搜索 Micro SD 存储卡或 NAS 中保存的视频录制的屏幕。
3 设置	移至设置屏幕。
4 查看器屏幕	显示屏幕上的现场视频。 在 Viewer 屏幕中, 可以使用鼠标滚轮来激活数码缩放。
5 Web 查看器插件安装	安装 web 查看器插件即可播放实时或录制的视频 (仅在 IE 和 Safari 浏览器中可用)。
6 在线帮助	在线帮助您提供关于各项功能的详细描述。

名称	功能	
7 配置文件类型	可以在 <Basic> 设置菜单下的 <视频配置文件> 中选择配置文件类型。 ■ 点击图标即可显示当前配置文件的名称。 ■ 如果在监视页面中播放视频，以下情况可能会发生残影。 - 由于配置文件变化，分辨率发生变化。 - 配置文件变化时，由于网络延迟，传入数据变慢。 - Web 浏览器窗口大小和位置发生变化。	
8 PTZ	控制摄像机的平移/倾斜/缩放操作。 放大 () 提升 UI 右侧的滚动条高度或按 [] 按钮可以放大屏幕。滚动条的位置距离中心越远，放大速度越快。 缩小 () 降低 UI 右侧的滚动条高度或按 [] 按钮可以缩小屏幕。滚动条的位置距离中心越远，缩小速度越快。 近景对焦 () 在近景物体上对焦。 远景对焦 () 在远景物体上对焦。 自动跟踪 () 点击此图标并且此图标变为开启时，将自动跟踪物体/人体。 自动对焦 () 自动调整屏幕对焦。	
9 配置文件访问信息	您可以读取配置文件信息。	
10 切换视图模式	全屏 () 双击视频屏幕，当前播放的视频将按照显示器大小全屏播放。 适应屏幕 () 一种视图模式，摄像机视频尺寸将自动适应 web 浏览器尺寸。 原始文件的大小 () 以实际分辨率播放视频的视图模式。 保持画面比率 () 调整纵横比以最适合分辨率的视图模式。	
11 捕捉	将当前图像另存为图像文件。	
12 录制	用户可将视频保存在计算机中。	
13 像素计数器	检查视频画面选定区域的图像像素。	
14 麦克风控制	激活麦克风。	

名称	功能
15 警报输出	激活警报输出口。
16 音频控制	激活音频并调整音量。

! ■ 特定浏览器或编解码器可能无法使用部分功能。

捕捉快照

1. 在场景上单击 [捕捉 ()] 进行捕捉。
2. 保存捕捉到的视频时，会显示通知信息。
捕捉到的图像将按照浏览器类型保存在指定文件夹中。

 ■ 如在 Windows 7 或更高版本操作系统中使用 IE 浏览器无法捕捉屏幕，请使用管理员权限运行 IE 浏览器。

保存步骤

1. 点击[录制 ()]图标。
2. 要结束录制，再次按[录制 ()]。

 ■ 将录制文件以 avi 文件格式保存在计算机中。指定路径然后保存视频。

使用全屏

1. 点击[全屏 ()]图标。
2. 这将使查看器使用全屏。
3. 要离开全屏模式，再次点击[全屏 ()]按钮或键盘上的[ESC]键。

使用音频

1. 单击 [音频 ()] 图标以激活音频通信。
2. 使用 [] 滑块控制音量。

 ■ 如果设备运行中插入和拔出音频插头时没有声音，单击 [音频 ()] 图标以将其再次启用。
 ■ 要使用音频，需要将“视频配置文件”中的<音频输入>设置为<启用>（第 31 页）。

使用麦克风

单击 **麦克风** () 图标以激活麦克风。

 ■ 如要使用 IE 或 Safari 浏览器。您需要安装插件。

计算图像像素的步骤

1. 单击 **像素统计** () 图标激活该功能。
2. 在视频画面拖动鼠标以选择区域。
3. 检查视频画面选定区域的图像像素。

控制 PTZ 的步骤：

1. 单击  图标。
2. 移动滚动面板上的滚轮按钮 () 即可移动摄像机方向，或者向上或向下移动 UI 右侧的工具条也可调整变焦。
3. 选择屏幕对焦上的 [  ] 调整焦点。

要运行序列

- 预设：执行已保存的预设位。
如需详细的预设位设置信息，请参阅“**创建自定义摄像机设置**”。(page 35)
 - 始位：启动已保存的始位。
 - 设置：指定预设位。
- 摆动：运行保存的摆动。
请参阅“**配置摆动设置**”部分，了解摆动设置的详细信息。（第 36 页）
- 组：运行保存的组。
请参阅“**配置组设置**”部分，了解组设置的详细信息。（第 36 页）
- 浏览：运行保存的浏览。
请参阅“**配置浏览设置**”部分，了解浏览设置的详细信息。（第 36 页）
- 跟踪：运行保存的跟踪。
请参阅“**设置跟踪功能**”部分，了解跟踪设置的详细信息。（第 36 页）

启用区域缩放模式

- ：若要实现缩放移动，请单击并拖动到屏幕上您要移动到的位置。
- ：将当前缩放系数更改为 x1。
- ：返回之前的区域和设置。
- ：如果通过“上一步”进行导航，则会切换到导航之前的区域和设置。

要使用锁定功能

右键单击某个视频，手动选择自动跟踪的物体。

查看配置文件状态的步骤

您可以检查配置文件信息。

1. 单击 **状态** () 图标激活该功能。
2. 每次启用屏幕时均将更新配置文件访问信息屏幕。
 - 配置文件访问：显示新添加的配置文件的信息。
 - 配置文件：显示新添加的编解码器的信息。
 - 比特率(kbps)：显示实际比特率和设置的比特率。
 - 帧率(fps)：显示实际帧速率和设置的帧速率。
 - ATC(%)：显示 ATC 状态。
 - 并行用户计数：显示访问配置文件的并行用户数。
 - 当前用户：显示有关用户访问 Web Viewer 的信息并显示监视视频。
 - 配置文件：显示用户访问的配置文件的名称。
 - 比特率(kbps)：显示当前比特率。
 - 网络连接状态：它表明网络是否工作正常。
 - IP 地址：显示当前用户的 IP 地址。

播放录制的视频



■ 在播放视频之前，必须配置录制设置。有关录制设置的详细信息，请参阅“存储器”。(第 49 页)

播放屏幕名称和功能



名称	功能	
1 时间条	移动时间条可播放所需时间的视频。	
2 隐藏上下文菜单	底部的关联菜单屏幕将消失, 仅显示菜单图标。	
3 搜索事件设置	在搜索期间内, 设置要搜索的事件类型。	
4 切换视图模式	全屏 ()	双击视频屏幕, 当前播放的视频将按照显示器大小全屏播放。
	适应屏幕 ()	一种视图模式, 摄像机视频尺寸将自动适应 web 浏览器尺寸。
	原始文件的大小 ()	以实际分辨率播放视频的视图模式。
	保持画面比率 ()	调整纵横比以最适合分辨率的视图模式。

名称	功能
5 搜索范围设置	对保存在 Micro SD 储存卡或 NAS 的数据, 进行搜索日期和时间范围设置。
6 切换视图模式	以图像文件格式 (使用不同浏览器时, 具体格式可能有所不同) 保存当前视频画面。
7 导出	指定时间段后, 备份保存在 Micro SD 储存卡或 NAS 的视频。 ■ 创建已保存视频的备份时, 最多可以设置为 5 分钟。
8 音频	若要收听录制视频中的语音信号 (如果有), 则需要在播放时激活语音信号图标。
9 查看器屏幕	将出现录制的视频。

在按事件搜索后播放内容

1. 在播放 屏幕上, 点击[显示 ()]按钮。
2. 如搜索日期当天录制了视频, 则时间条上将显示相应的视频。
3. 如要按照事件类型执行搜索, 点击时间条底部的[全部]按钮, 选择事件类型。
4. 完成后, 请单击 [应用]。
时间条上将显示搜索到的事件。
5. 点击[播放 ()]按钮。
6. 如要暂停播放视频, 点击[暂停 ()]按钮。

在按时间搜索后播放

- 1. 点击[🕒 2016-12-15 🕒]图标。
- 2. 在日历中，设置搜索日期、开始时间和结束时间。
时间条上将显示搜索到的事件。
- 3. 点击[播放 (>)]按钮。
将从选定时间开始播放视频。
- 4. 视频在播放时，屏幕将显示当前播放视频的录制时间。
- 5. 向前和向后搜索视频和调整播放速度。
 - 如何移动播放间隔
选择了 [⏮ ⏭] 按钮时，可快进 1 帧/快退 i 帧。
 - 如何控制播放速度
点击 [⏮ ⏭] 按钮即可选择 1x、2x、4x 和 8x 或 -1x、-2x、-4x 和 -8x 速率，按照需要设置播放速度。
- 6. 移动[时间条 (🕒)]的位置可播放选定时间的视频。

备份搜索到的视频

- 1. 在播放期间，在场景上单击 [导出] 进行备份。
适用部分的数据将予以备份。
- 2. 单击 [应用] 按钮。
另存为窗口将会出现。
- 3. 确认保存路径，然后单击 [保存(S)] 按钮。
备份的视频数据将备份到指定的路径中。

播放备份视频

备份的视频数据保存为 .avi 格式。建议安装用户 PC 支持格式的媒体播放器。

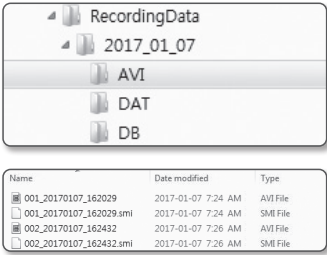
- 🔗 如因用户环境导致播放不流畅，需要安装最新版本的编解码器和其他方法进行优化。

播放 AVI 文件

(1) Micro SD 存储卡

- 1. 从摄像机取出 Micro SD 存储卡。
- ! 在取出 Micro SD 存储卡前，将“设置 → 事件 → 存储器”菜单中的 <设备> 设置为 <关>。
- 2. 将 Micro SD 存储卡插入 PC。
- 3. 使用媒体播放器播放 “\RecordingData\YYYY-mm-DD\WAVI” 目录中的 AVI 文件。

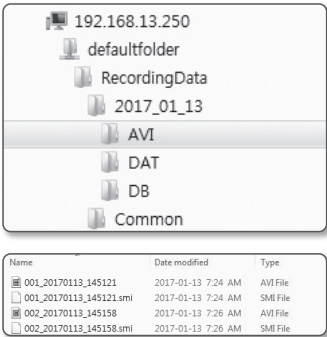
- 🔗 文件名以 “001_YYYYMMDD_HHMMSS.avi” 的格式开始，其中文件编号逐一递增。
YYYYMMDD_HHMMSS 表示数据保存的开始时间。
- “001_YYYYMMDD_HHMMSS.smi” 文件是一个字幕文件，只与 AVI 文件在同一个目录时，才能看到它。
- 如果受损，Micro SD 存储卡中的数据将无法在 Web Viewer 的 [Playback] 中播放。



(2) NAS（网络连接存储器）

- 1. 在 Windows 浏览器中，使用 \\<ip address>\ 来访问。
ex) \\192.168.13.250\defaultfolder\2017_01_13\WAVI
- 2. 转到 <Computer> → <Network drive connection> → 输入 1。
- 3. 已连接到 NAS。
该目录结构与 Micro SD 存储卡使用的目录结构相同。

- 🔗 文件名以 “001_YYYYMMDD_HHMMSS.avi” 的格式开始，其中文件编号逐一递增。
YYYYMMDD_HHMMSS 表示数据保存的开始时间。
- “001_YYYYMMDD_HHMMSS.smi” 文件是一个字幕文件，只与 AVI 文件在同一个目录时，才能看到它。
- 如果自行更改或损坏所保存数据，它将无法正常播放或保存。



设置屏幕

设置

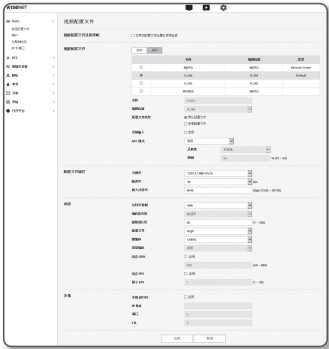
可配置基本的摄像机信息、PTZ、视频和音频、网络、事件、分析、系统和打开平台设置。

- 1. 在实时屏幕上，点击[菜单 (⚙️)]按钮。
- 2. 设置屏幕将会出现。

基础设置

视频配置文件

- 1. 从设置菜单，选择 <Basic (Basic)> 选项卡。
- 2. 单击 <视频配置文件>。
- 3. 设置 <视频配置文件连接策略>。
 - 在更改配置文件设置时，保持已连接的视频：即使已连接的配置文件设置发生变化，也会输出预设值。如果未选中，已连接的配置文件设置发生变化，会重新进行连接。
- 4. 选择每个配置文件属性。
如需更多信息，请参阅“添加/更改视频配置文件”。(第 32 页)
- 5. 选择配置文件的类型。
 - 上下文菜单可能因所选的编解码器类型而异。
 - 默认配置文件：如果在使用 Web Viewer 时未选择配置文件，则会应用默认视频配置文件。
 - 电子邮件/FTP 配置文件：将传送至指定的电子邮件或 FTP 站点的视频配置文件。
 - 只能将 MJPEG 编解码器设置为电子邮件/FTP 配置文件。
 - 录制配置文件：对 Micro SD 卡或 NAS 进行视频录制时所使用的配置文件。
- 6. 选择是否在视频中输入音频。
选择<音频输入> 复选框即可在视频中输入音频。



7. 根据您的情况，设置 ATC（自动传输控制）模式。

- ATC 模式：它可以根据网络带宽的变化调整视频属性，以控制比特率。
根据 ATC 模式调整比特率。
 - 控制帧速率：如果网络带宽下降，则降低帧速率。
 - 控制压缩：如果网络带宽下降，则控制压缩率。压缩调整可能会导致图像质量下降。
 - 事件(MD)：设定移动探测 (MD) 事件时被激活。事件发生时，帧速率将发生调整。如在周围区域未检测到任何移动，将输出最小帧数，节省带宽的使用。
- 如果 <比特率控制> 设置为 <CBR>，则根据 ATC 模式，按如下所示固定编码优先级：



比特率控制/ATC 模式	控制帧速率	控制压缩	事件(MD)
CBR	压缩	帧速率	帧速率

- 灵敏度：根据网络带宽的变化影响传输速率。
如果带宽为 <非常高>，传输速率将调整为最高，如果带宽为 <非常低>，则调整为最慢。
- 限制：如果调整帧速率的质量，此属性将更改为针对上一设置值 (100%) 的应用值 (%)。
请注意，如果您将此属性值降低太多，屏幕上可能会闪烁。因此，建议在阈值范围内调整该值。



- 建议您仅对支持 ATC 的摄像机应用 ATC 控制。
- 在网络带宽变化较大的网络环境中，将 ATC 灵敏度设置为 <非常低>。
- 如果网络连接不稳定，屏幕可能会闪烁。

8. 完成后，请单击 [应用]。

设置屏幕

添加/更改视频配置文件

根据录制条件，可以添加或修改配置文件设置来适应不同的配置文件。

- 1. 在<视频配置文件>中，点击<添加>按钮。
- 2. 提供名称并选择编解码器。
- 3. 指定将应用编解码器的条件。
- 4. 指定所选编解码器的详细信息，包括分辨率和帧率。
 - 分辨率：设置 H.264/H.265 和 MJPEG 文件的视频大小。
 - 帧率：设置每秒的最大视频帧数。



由于摄像机值和传感器模式设置不同，可设置的最大帧率也有所不同。

传感器	25 fps	30 fps	50 fps	60 fps
帧率	1~25 fps	1~30 fps	1~50 fps	1~60 fps

- 最大比特率：当比特率控制设置为 VBR 时设置视频的最大比特率。
 - ! 由于比特率可以根据清晰度、帧频和屏幕复杂性进行有限的调整，所以实际比特率可能比最大比特率要大。所以在设定值时必须考虑使用环境。
- 目标比特率：当比特率控制设置为 CBR 时设置目标比特率。
- 比特率控制：您可从恒定比特率和可变比特率中选择一种方式进行压缩。恒定比特率意味着改变视频质量或帧速率时网络传输的比特率是固定的，可变比特率意味着改变比特率时优先考虑视频质量。
 - ! 为比特控制设置恒定比特率之后，如果选择视频质量优先模式，则为了保证对于给定的比特率获得最佳的视频质量，实际传输的帧速率可能会与帧速率设置有所不同（取决于屏幕的复杂程度）。
- 编码优先权：可以将视频传输的优先级设置为帧速率或压缩。
- 视频组长度：选择H.264/H.265编解码器时，设置从一个I-Frame到下个I-Frame间分配的帧数。(一个I-Frame+0~多个P-Frame)
- 配置文件：选择 H.264 编解码器的配置文件。
- 熵编码：此编码是使用句法统计构建的长度可变的编码。使用无损压缩技术。可设置熵编码方法。CABAC 压缩方法优于 CAVLC。
- 智能编码：指定使用智能编解码器。



当比特率控制值为恒定比特率时，可使用此项。详细的设置项可在音频和视频选项卡中智能编码中配置。(第 44 页)

- 动态 GOV：当 H.264/H.265 编解码器比特率控制为 VBR 时，视频组长度将自动变为最大动态视频组的设定值。
- 动态 FPS：当比特率控制为 H.264/H.265 编解码器之间的 VBR 时，将 FPS 值设置为“自动将 FPS 值的设置更改为最大动态值”。
- 最小 FPS：设置动态 FPS 的最小值。
- 多播(RTSP)：设置是否使用RTSP协议。
 - IP地址: 输入可连接IPv4网络的IPv4地址。
 - 端口: 设置控制视频传送的端口。
 - TTL: 可设置RTP数据包的TTL。



若您将多播地址设置为224.0.0.0~224.0.0.255,多播功能有时在特定环境下无法正常启动。发生时，请变更多播地址。

什么是视频组长度？

GOV(Group of Video object planes、视频组)是用于 H.264/H.265 压缩的视频帧，表示从初始图像帧（关键帧）到下一个图像帧的帧集合。视频组由 2 类帧组成：I 帧和 P 帧。

I-帧是压缩的基础框架，其中包括一个完整图像的数据。

P-Frame仅包含与I-Frame相比发生变化(移动)的数据。

H.264/H.265 编解码器可设置GOV长度。

若用H.264/H.265编解码器设置录制配置文件，GOV长度将变为framerate/2。

什么是动态视频组 (GOV)?

动态视频组功能可使视频组按照视频情况在最小视频组长度设定值和最大动态视频组长度设定值之间自动变化。

在几乎没有移动事件的视频中，视频组以动态视频组设置值运行，此时整个视频的比特率将有所降低。检测到移动后会立即输出 I 帧，在移动消失之前，视频组均以视频组长度设置运行。

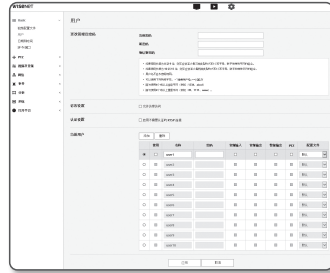
如使用该功能，视频的视频组将以最小视频组长度设置值运行。

用户

1. 从设置菜单，选择 <Basic (■)> 选项卡。
2. 单击 <用户>。
3. 提供必要的用户信息。
 - 管理员密码更改：更改管理员的密码。



- 出于安全考虑，建议您的密码使用数字、大小写字母以及特殊字符的组合。
 - 建议每三个月更改密码一次。
 - 密码长度和限制如下所示。
 - 大写、小写、数字和特殊字符中至少选3种类型。：8 到 9 个字符。
 - 大写、小写、数字和特殊字符中至少选2种类型。：10 到 15 个字符。
 - 密码应与 ID 不同。
 - 不得使用 4 个或 4 个以上连续的字符。（例如：1234、abcd）
 - 不得重复使用字符 4 次或 4 次以上。（例如：!!!!、1111、aaaa）
 - 允许使用的特殊字符为：~!@#\$%^&*()-+=|[]_.?/
 - 进行出厂设置之后，会初始化管理员和用户密码。您需要重置密码。
 - 在首次或者初始化后访问摄像机网页时，您将转到管理员密码设置菜单。
 - 在此菜单中，您先要重置密码后再次登录，才能使用摄像机网页菜单。
 - 如果现有密码不匹配，则更改管理员密码时，无法更改该密码。
 - 在更改密码后，如果有摄像机连接到 CMS 或 NVR 客户端，则需要使用新更改的密码重新注册。如果仍使用相同的密码连接摄像机，则帐户可能被锁定，因为客户端使用的是以前的密码。
 - 如果您尝试使用注册的帐户登录，5 次或更多次连续密码验证失败，则帐户可能会被锁定三十秒钟。
 - 在更改密码时，如果从 PC 发出多个活动状态连接，则浏览器可能功能不正常。在此情况下，请重新连接到服务器。
- 访客设置：如果选择了 <允许访客访问>，则访客帐户可以访问 Web Viewer 屏幕，但是只能查看 Live Viewer 屏幕。
- 访客帐户的 ID/密码是 <guest/guest>，无法更改。
- 认证设置：如果您选择了 <启用不需要认证的 RTSP 连接>，则您不需要登录就可以访问 RTSP 并查看视频。



- 当前用户：如果您选择了 <使用>，则您可以设置或更改用户权限。
 - 管理员可以设置音频输入、音频输出、警报输出和 PTZ 权限。
 - 音频输入/音频输出/警报输出/PTZ：可设置当前用户帐户是否可以使用实时音频输入/音频输出/警报输出/PTZ 控制。
 - 配置文件：如果您选择了 <默认>，则您只能查看默认配置文件视频；如果选择了 <全部>，则您可以查看全部配置文件视频。



- 若授权用户中有人要设置可用 ONVIF 的账户，其功能将根据已设置的权限受到限制。

4. 完成后，请单击 [应用]。

日期和时间

1. 从设置菜单，选择 <Basic (■)> 选项卡。
2. 单击 <日期和时间>。
3. 指定将应用于摄像机的时间和日期。

- 当前系统时间：显示系统的当前时间设置。
- 时区：设置以标准时间(GMT)为基准的本地时区。
- 使用夏令时：如果选中将在指定的时间段内将时间设置成比当地时区早一小时。
 - 仅在应用夏令时的地区显示此选项。
- 系统时间设置：指定将应用于您的系统的时间和日期。
 - 手动：手动设置摄像机的当前时间。
 - 选择<与 PC 查看器同步>复选框，web 查看器时间将被设置为运行此 web 查看器的计算机所显示的时间。
 - 与 NTP 服务器同步：与指定的服务器地址的时间同步。



4. 完成后，请单击 [应用]。



- 如果您选择 <与 PC 查看器同步>，应该分别设置 PC 和摄像机的标准时区。

设置屏幕

IP & 端口

1. 从设置菜单，选择 <Basic (Basic)> 选项卡。
 2. 单击 <IP & 端口>。
 3. 单击 <IP 地址>。
 4. 配置 <IPv4 设置>。
 - IP 类型：选择 IP 连接类型。默认值为 80(TCP)。
 - 手动：指定 IP 地址、子网掩码、网关、DNS1 和 DNS2。
 - DHCP：指定 DNS1 和 DNS2。
 - PPPoE：指定 DNS1、DNS2、ID 和密码。
 - 如果将其设置为 <手动>，则应手动指定 IP、子网掩码、网关和 DNS 1 和 2。
 - MAC 地址：显示 MAC 地址。
 - IP 地址：显示当前 IP 地址。
 - 子网掩码：显示所设 IP 的 <子网掩码>。
 - 网关：显示所设 IP 的 <网关>。
 - DNS1/DNS2：显示 DNS（域名服务）服务器地址。
 - 主机名称：显示主机名称。
 5. 配置 <IPv6 设置>。
 - 设置为 <使用> 以使用 IPv6 地址。
 - 默认：使用默认 IPv6 地址。
 - DHCP：显示并使用从 DHCP 服务器获取的 IPv6 地址。
 - 手动：输入并使用用户临时设置的 IPv6 地址和网关。
- 
 - IP 寻址系统将默认为 DHCP。如果未找到 DHCP 服务器，将自动恢复之前的设置。
 - 完成编辑之后，单击 [应用] 以应用更改，并且浏览器将会退出。一小会之后，使用更改后的 IP 再次连接。



6. 单击 <端口>。
7. 在端口菜单的每个项目中键入所需信息。
 - 设置端口时，不可使用端口 0~1023 和 3702。

- HTTP：用于通过 Web 浏览器访问摄像机的 HTTP 端口。默认值是 80(TCP)。
 - 安全策略不允许将 Safari 和 Google Chrome 浏览器的 HTTP 端口设置为 65535。
 - HTTPS：在这个版本中，加强了 Web 通信协议 HTTP 的安全性。在 SSL 中设置 HTTPS 模式时可以使用该端口。初始值设置为 443(TCP)。
 - 可用的设置范围为 1024-65535。(为了安全起见，Safari 和 Google Chrome 浏览器上，不应将 HTTPS 端口设置为 65535。)
 - RTSP：用于以 RTSP 模式传输视频，默认值为 554。
 - 超时：连接到 RTSP 时，如果一段时间内没有响应，此功能会重置连接。
- 
 - 如果更改了 HTTP 端口，则浏览器会退出。重新连接时，将重置的 HTTP 端口写在 IP 地址后面。
例) IP 地址：192.168.1.100，HTTP 端口：分配了 8080 → http://192.168.1.100:8080
(如果将 HTTP 端口设置为 80，则不需要指定端口号)
■ 建议使用 RTSP 和 HTTPS，以便防止图像信息被还原。
8. 完成后，请单击 [应用]。



PTZ 设置

预设位设置

可以更改镜头的方向，并且可以激活缩放。

1. 从设置菜单，选择 <PTZ (+)> 选项卡。
2. 单击 <PTZ 设置>。

设置预设位的步骤

1. 点击[预设]选项卡。
2. 单击屏幕移动垫上的光标[]，可控制屏幕移动。
 - 移动屏幕：朝期望方向滚动光标。
 - 控制屏幕移动速度：光标距离中心越远，在屏幕上的移动速度越快。
3. 控制缩放移动。
 - 放大：上移UI右侧的栏，或按[]按钮。栏距离中心越远，屏幕放大得越快。
 - 缩小：下移UI右侧的栏，或按[]按钮。栏距离中心越远，屏幕缩小得越快。
4. 调整对焦。
 - 手动对焦(/): 调整屏幕对焦，以适应短距离或长距离需要。
 - 自动对焦(): 由系统自动设置对焦。

-  在高温或低温情况下执行序列操作时，系统的反应速度可能低于精准序列操作的设置速度。
- 必须在预设位编辑的操作后模式中设置自动跟踪和移动探测/IVA 功能叠加。

5. 完成后，请单击[应用]。

添加初始位置

1. 移至所需起始屏幕点并按[Set home]。
该点将设置为返回位置。
2. 单击返回位置中的[Go home] 您将移至预先确定的返回位置
3. 完成设置并重启摄像机后，屏幕位于起始位置。（如果摄像机之前在进行另一个序列操作，将执行该序列。）



添加预设

1. 单击[Set preset] 按钮。
2. 选择要添加的预设编号。
3. 设置预设名称并单击[确认] 按钮。

删除预设

1. 选择要删除的预设编号。
2. 按下[删除] 按钮。

移动到所需预设

1. 在预设设置中单击您要移动的预设编号。

配置预设位的详细设置

1. 选择想要配置的预设位的编号。
 - 连续动作：在<连续动作>模式下，您可以在激活预设位之后启用或禁用自动运行/跟踪/视频分析操作。（此设置不适用于摆动功能。）
 - 自动运行：执行自动运行的序列设置。如果关闭此功能或没有自动执行操作，将保持预设操作状态。（如果预设与组或浏览功能一起运行，则此设置不适用。）
 - 自动跟踪：在跟踪时间下设置的时段执行自动跟踪操作。
 - 视频分析：将执行移动探测/IVA 操作。
 - 摄像机设置：您可以将摄像机设置更改为选定预设的环境。请参阅“摄像机设置”部分，了解如何设置摄像机。（第 39 页）
 - 移动探测：当在预设位处检测到移动探测事件时，可设置要生成的事件信号。如需了解更多信息，请参阅“移动探测”。（第 53 页）
 - IVA：当预设中探测到移动或探测到智能视频分析事件时，可将系统设置为生成事件信号。有关详细信息，请参阅“IVA”。（第 56 页）
2. 完成后，请单击[应用]。

-  在保存预设位设置后确保要执行序列设置或预设位。如未执行相应的操作，可能出现意外的预设位设置更改等故障。
- 设置预设编辑时，无法使用某些功能，如预设设置、起始位置设置和移到起始位置。

设置屏幕

设置最后一次位置的步骤

1. 设置是否使用最后一次位置和时间。
使用最后一次位置时，如将时间设置在 1-600 秒，当前位置值将在设置时间之后予以保存。
2. 设置完成后，重启摄像机，屏幕将显示最后一次位置。

配置摆动设置

摆动是在两个预置点之间移动并让您跟踪移动的监控功能。

1. 点击[摆动]选项卡。
菜单屏幕将切换到摆动设置屏幕。
2. 选择摆动设置模式。
 - 平移：可使用平移功能设置摆动监视。
 - 倾斜：可使用倾斜功能设置摆动监视。
 - 平移及倾斜：可设置同时使用平移和倾斜功能的摆动监控。
3. 设置 <自 预设编号> 和 <至 预设编号> 以指定摆动范围。

 在从开始时间预设位移动至结束时间预设位期间，此内容移动至屏幕右侧。
如果在视频设置中将 <翻转/镜像> 设置为 <开>，它将朝相反方向移动。(第 38 页)

4. 设置移动速度和切换间隔。
5. 按下 [应用] 按钮。
将按照模式来存储第一预设位、第二预设位、移动速度和切换间隔。
6. 按下 [开始] 按钮。
它执行摆动操作。
7. 按下 [停止] 按钮。
正在运行的摆动将停止。

 如果您想设置摆动,则至少需要两个已经设置的预设。

配置组设置

组功能让您可以为各种预置分组，然后可以按顺序调用它们。
6 个组中的每个组共可以保存 128 个预设。

1. 点击[组]选项卡。
菜单屏幕将切换到组设置屏幕。
2. 选择组设置模式。
 - 编号：选择组编号。
 - 预设编号：选择预置编号。
 - 速度：指定移动的速度。
 - 停顿时间：指定操作在预置位置保持的持续时间。

3. 按下 [应用] 按钮。
已保存在底部列表中。
4. 按下 [开始] 按钮。
它执行分组操作。
5. 按下 [停止] 按钮。
正在运行的分组将停止。
6. 按下 [删除] 按钮。
将删除所选的组数据。

配置浏览设置

浏览功能让您按顺序调用预置的组。

1. 点击[浏览]选项卡。
菜单屏幕将切换到浏览设置屏幕。
2. 详细配置浏览设置。
 - 组编号：选择组编号。
 - 停顿时间：指定调用新组之前的等待时间。
3. 按下 [应用] 按钮。
已保存在底部列表中。
4. 按下 [开始] 按钮。
它执行浏览操作。
5. 按下 [停止] 按钮。
正在运行的浏览将停止。
6. 按下 [删除] 按钮。
将删除所选的浏览数据。

设置跟踪功能

跟踪会记住使用方向按钮指示的移动踪迹并重现它供您参考。

1. 点击[跟踪]选项卡。
更改至跟踪设置菜单屏幕。
2. 选择跟踪编号。
将会保存该操作，并显示存储卡使用情况。
保存时间会因 PTZ 操作的级别而异。
如内存已达到 100% 或录制结束配置从保存开始的 2 分钟内未完成，它将自动终止。
3. 按下 [设置] 按钮。
4. 使用平移/倾斜/缩放移动保存的导航路径。
5. 按下 [停止] 按钮。
将保存所选跟踪编号。
6. 按下 [开始] 按钮。
将按设置激活所选跟踪编号。

设置自动运行

如果用户在特定时间内未在产品上执行任何操作，此功能将激活预先定义的顺序功能。

1. 点击[跟踪]选项卡。
更改至自动运行设置菜单屏幕。
2. 选择自动运行模式。
 - 始位：它移到始位。
 - 预设：它移到选定预设位编号。
 - 摆动：自动在摆动模式下执行操作。
 - 组：自动在组模式下执行操作。
 - 浏览：自动在浏览模式下执行操作。
 - 跟踪：自动在跟踪模式下执行操作。
 - 自动平移：自动沿水平方向执行 360° 旋转。
您可以指定倾斜角度和速度。
 - 计划：可以根据天/时间设置自动运行功能。您能以分钟为单位设置操作，默认设置是起始位置。
3. 设置自动运行的开始时间。选择模式后，选择时间（5秒/10秒/20秒/30秒/1分/2分/3分/4分/5分）。
4. 按 [应用] 按钮。
将自动执行所选操作。

PT限制

可以对平移或倾斜功能指定限制。

1. 从设置菜单，选择 <PTZ (+)> 选项卡。
2. 单击 <PT限制>。
3. 指定是否要限制 PT 操作。如果要限制，请指定详细信息。
 - 模式：选择要设置在平移限制和倾斜限制之间的模式。
 - 动作：设置 PT 限制操作。
 - [开始]：开始限制设置。
 - [进入]：提供开始和结束点。
 - [退出]：如果要更改点设置，请单击此项以返回到输入对话框。
4. 设置平移/倾斜速度。
滚轮调速可从指数和线性方式中选择。
 - Exponential：以曲线速率控制平移/倾斜速度。
 - Linear：以线性速率控制平移/倾斜速度。

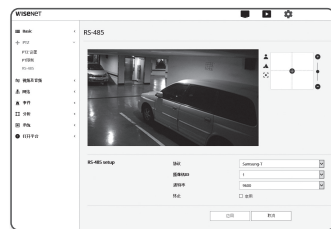


5. 设置云台转速与镜头倍数关联开关模式。
平移和倾斜会根据缩放情况进行调整。缩放量增加时，平移和倾斜速度会下降。
 - 关：关闭缩放互通模式。
 - 慢：手动平移和倾斜控制速度将根据缩放情况而变。它按20%的幅度放慢。
 - 中：手动平移和倾斜控制速度将根据缩放情况而变。
 - 快：手动平移和倾斜控制速度将根据缩放情况而变。它按20%的幅度加快。

RS-485

配置控制器连接以便可以使用连接到摄像机 RS-485/422 终端的控制器来控制摄像机的 PTZ。

1. 从设置菜单，选择 <PTZ (+)> 选项卡。
2. 单击 <RS-485>。
3. 设置 RS-485 串行端口。您可以对连接至网络摄像机的控制器的 RS-485 通信模式进行设置。
 - 协议：选择与控制器相同的协议版本，从 SAMSUNG-T/ SAMSUNG-E/PELCO-D/PELCO-P/PANASONIC/ HONEYWELL/AD/VICON/GE/BOSCH 之中进行选择。
 - 摄像机 ID：设置摄像机 ID (1-255)。
 - 波特率：设置 RS-485 通信速度。
 - 终止：设置结束状态。
4. 完成后，请单击 [应用]。



- 对于该操作，网络摄像机和控制器必须正确连接。此外，控制器还必须设置一个串行端口来控制摄像机。
- 根据控制器或协议规范，可能会有不支持的功能。有关详细信息，请参阅下表。

设置屏幕

每种协议支持的功能

协议	P 控制	T 控制	缩放控制	焦点控制	预设	备注
SAMSUNG-T	0	0	0	0	0	
SAMSUNG-E	0	0	0	0	0	
PELCO-D	0	0	0	0	0	
PELCO-P	0	0	0	0	0	
PANASONIC	0	0	0	0	0	
HONEYWELL	0	0	0	0	0	
AD	0	0	0	0	0	
VICON	0	0	0	0	0	
GE	0	0	0	0	0	
BOSCH	0	0	0	0	X	

公司	协议名称	版本
AD	RS-422/RS-485 通信	修订版 B
BOSCH	AutoDome 协议	5/30/11
GE	Calibur ImpacNet (S485 协议)	修订版 4.01(05/21/2004)
HONEYWELL	ScanDomell 协议	V1.05(02/11/2004)
PANASONIC	WV-CS950 协议	版本 4.0
PELCO-D	“D”协议	版本 4, 修订版 1(4/7/2004)
PELCO-P	“P”协议	
SAMSUNG-E	Samsung 协议	版本2.3(2006/09)
VICON	RS-422 接收器通信协议	修订版 404(4/08/04)

界限调定

为防止控制器和摄像机之间的控制器和摄像机通信信号的衰减，必须从摄像机/控制器的通信环路最远距离处进行界限调定。

视频及音频设置

视频设置

- 从设置菜单，选择 <视频及音频 (三)> 选项卡。
- 单击 <视频设置>。
- 调整 PTZ。
- 选择 <视频源> 模式。
 - 翻转/镜像：水平或垂直方向掉转摄像机捕捉到的图像。
 - 数字翻转：限制摄像机镜头的屏幕垂直移动范围。
- 指定是否使用模拟视频输出功能。
 - 要减少性能降低的程度，安装之后不应锁定其使用功能。
- 选择视频类型。
- 指定隐私区域。
 - 可将隐私区域类型设置为不透明 (Opaque) 或马赛克 (Mosaic)。
- 完成后，请单击 [应用]。



设置加密区域

为了保护隐私，您可以设置摄视频中要隐藏的部分。

- 将其设置为 <启用隐私区域>。
- 单击 [应用]。
- 在图像上拖动鼠标以选择区域。
- 输入名称然后选择颜色。
- 确保屏幕上的区域是您想要设置的区域，然后输入名称。如不想使用缩放显示限制功能，选择<关>，然后按[确认]按钮。如显示的区域和设置区域不同，按[取消]按钮，然后再次设置。
- 如想使用缩放显示限制功能，选择<开>，然后按[确认]按钮。隐私区域设置完成后将显示一个弹出窗口。此时，移动缩放至想要的缩放位置，然后按[确认]按钮。要取消隐私区域的设置，按[取消]按钮，然后再次设置。

7. 如果想删除列表中的某个名称，请将其选中并单击 [删除]。
8. 若要更改配置隐私区域的模式，从模式列表选择模式并单击 [应用] 按钮。

- 对于隐私区域而言，隐私设置仅在未使用 DIS 功能、12x 缩放时启用。
- 在应用了缩放显示限制功能的隐私区域中，[缩放]将在设置名称后面显示。

音频设置

可以配置摄像机的音频源的 I/O 设置。

1. 从设置菜单，选择 <视频及音频 (三)> 选项卡。
2. 单击 <音频设置>。
3. 设置音频输入值。

- 来源：设置音频输入。
 - 线：将电缆连接到音频设备。
 - 外部麦克风：使用外部麦克风。
- 为外部麦克风供电：当外部麦克风未接通电源时，选中此复选框后，将通过摄像机为麦克风供电。在选择<外部麦克风>时，可对设置项进行配置。
- 编解码器：指定音频编解码器。
 - G.711：使用64Kbps脉冲编码调制(PCM)音频编码法的音频编解码器标准。这是可用PSTN或PBX传输数码音频的格式，属于ITU标准音频编解码器。
 - G.726：ITU 标准音频编解码器，将可变比特率 40/32/24/16 Kbps 的 ADPCM(自适应差分脉冲编码调制)应用于 64 Kbps PCM 编码。
 - AAC：高级音频编码的缩写，是继 MP3 格式之后的一项国际标准。使用当前的 G.711 或 G.726 编解码器时，可以使用采样率更高的音频。
- 采样率：是指对模拟声道进行数字化处理时取样的次数。此值越高，音质越出色。
- 比特率：如果使用 G.726 编解码器，则设置比特率以区分压缩比。
- 增益：指定音频输入放大倍数。

- 如果声源的音量或增益值设置过度，可能会发生音质下降或振荡。

4. 设置音频输出级别。
 - 启用：设置是否使用音频输出。
 - 增益：指定音频输出放大倍数。
5. 完成后，请单击 [应用]。



摄像机设置

可以根据摄像机所在的环境更改摄像机设置。

1. 从设置菜单，选择 <视频及音频 (三)> 选项卡。
2. 单击 <摄像机设置>。
3. 根据需要配置以下各项的设置：图像预设、传感器、SSDR、白平衡、背光、曝光、日夜、附加菜单、OSD、对焦、对焦、风扇
4. 完成后，请单击 [应用]。
 - 如果在更改设置之后经过一定的时间未按 [应用] 按钮 (超时：240 秒) 设定值将回到变更前。



如果希望设置图像预设

用户可以轻松设置预设。

在配置的时间段内将运行所选择的图像预设模式，但在其他时间则反映在用户预设模式中配置的值。

1. 从图像预设中选择所需的模式。
 - 定义焦点：这是摄像机的出厂设置。选择此项来录制视频，着重于再现性。
 - 移动焦点：清晰录制移动物体。如果存在许多移动物体（例如在道路上或者博物馆等人多场所），应选择此项。



- 在低照度环境中，噪音级别会增大，灵敏度会降低。
- 降噪：如果需要在低照度环境中录制低噪音视频，应选择此项。
- 调亮视频：此项可使整个视频中的黑暗区域变得更亮。

- 但同时会降低视频对比度效果。

- 移动焦点 & 降噪：当存在许多移动物体（例如在道路上或者博物馆等人多场所），或者需要在低照度环境中录制低噪音视频时，应选择此项。
- 移动焦点 & 调亮视频：当存在许多移动物体（例如在道路上或者博物馆等人多场所），或者需要使整个视频中的黑暗区域变得更亮时，应选择此项。
- Vivid（多媒体异步传输模式）视频：整个视频将以生动色彩显示。

- 视频对比度降低，同时色彩再现性能有所下降。

- 用户预设：如果您想用自己选择的设置来显示视频，则选择该选项。

- 选择预设模式之外的其他模式时，无法设置快门速度、AGC、SSDR、SSNR 和色彩。

设置屏幕

- 2. 为每个图像预设模式设置摄像机项目。
- 3. 完成后，请单击 [应用]。

每种图像预设模式的初始设置

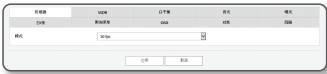
图像预设	最小快门	最大快门	推荐快门	自动增益	SSDR	SSNR 2D	SSNR 3D	COLOR
定义焦点	1/5	1/12000	1/60(1/50)	默认(高)	默认(12)	默认(12)	默认(12)	默认(50)
移动焦点	1/30	1/12000	1/200	默认(高)	默认(12)	4	4	默认(50)
降噪	1/15	1/12000	1/60(1/50)	中	默认(12)	默认(12)	默认(12)	默认(50)
调亮视频	1/5	1/12000	1/60(1/50)	默认(高)	18	默认(12)	默认(12)	默认(50)
移动焦点 & 降噪	1/30	1/12000	1/200	中	默认(12)	4	4	默认(50)
移动焦点 & 调亮视频	1/30	1/12000	1/200	默认(高)	18	4	4	默认(50)
Vivid(多媒体异步传输模式) 视频	1/5	1/12000	1/60(1/50)	默认(高)	18	默认(12)	默认(12)	90
用户预设	手动	手动	手动	手动	手动	手动	手动	手动

- 预设设置功能可帮助用户配置设置。如果您不想使用预设功能，请在使用前将其停用。
- 如图像预设发生变化，仅快门/AGC/SSDR/SSNR/色彩将重置为各型号对应的默认值。
- 在预设之间“**摄像机设置**”值不会改变。

设置传感器

指定摄像机 CMOS 传感器每秒钟将捕捉多少帧。

1. 选择 <传感器>。
2. 选择 <模式>。



- 请参考“**视频配置文件**”，了解基于模式设置的 <视频配置文件> 的帧率设置范围。(第 31 页)

设置 SSDR

在明暗差异非常大的场景中，您可以单独增加黑暗区域的亮度以调整总亮度。

1. 选择 <SSDR>。
2. 将 SSDR 使用选项设置为<启用>。
3. 配置必要的 <级别> 和 <范围> 设置。
 - 级别：调整动态范围的级别。
 - 范围：选择动态范围的幅度区域。



设置白平衡

在任何照明条件下，可以基于白色校正图像颜色。

1. 选择 <白平衡>。
2. 选择 <模式>。
 - 自动追踪白平衡：自动校正摄像机视频的颜色。
 - 手动：可以手动调整摄像机视频的红色和蓝色增益。
 - 室外：根据室外环境进行优化，自动校正摄像机的视频颜色。
 - 室内：根据室内环境进行优化，自动校正摄像机的视频颜色。
 - 自动白平衡：根据当前照明条件和屏幕模式进行优化，校正摄像机视频的颜色。要获得当前照明的最佳条件，请将摄像机的焦点对准白纸，然后按 [设置] 按钮。若环境变，应重新调整。
 - 汞：自动校正摄像机颜色，使其完美适应汞灯照明环境。
 - 钠：自动校正摄像机颜色，使其完美适应钠灯等照明条件。



- 在自动白平衡模式中，如果要保留当前图像的白平衡级别，请单击 [设置] 按钮。

- 在下列情况下，白平衡可能无法正常工作：在这种情况下，请切换到“自动白平衡”模式。
 - 如果物体周围环境条件超出色温校正范围
示例) 清澈的蓝天，日落
 - 如果物体的周围环境黑暗
 - 如果摄像机的焦点直接面对荧光灯照明，或者如果将摄像机安装在照明变化的位置，白平衡操作可能会不稳定。

设置BLC

用户可在视频上指定自己要的区域，并将此显得更加鲜明。

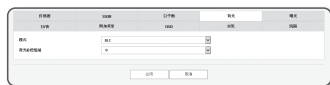
1. 选择<背光>。

2. 将<模式>设置为<BLC>。

如果选择BLC，PTZ控制屏上将显示盒调整屏幕和盒盒设置。

3. 选择各项并进行正确设置。

- 背光补偿级别：可以更改级别以调整监视区域的亮度。
- 黑盒调整：使用箭头按钮调节背光补偿框的大小和位置。
- 黑盒设置：指定移动的像素单位。您可以使用<黑盒调整>以增加或减少像素。



强光抑制设置

如路灯或车辆头灯等强光照向摄像机，可将区域设置为切除以避免显示器上出现饱和区域。

1. 选择<背光>。

2. 将<模式>设置为<HLC>。

- HLC 级别：这里可调整亮度级别以切除高亮区域。
- 遮挡
 - 关：不会遮挡具有特定亮度值或更高亮度值的区域。
 - 开：始终遮挡具有特定亮度值或更高亮度值的区域。
 - 仅夜间：如周围环境变暗至特定水平，不产生被遮挡区域。
 - 整日：如周围环境变暗或变亮至特定水平，不产生被遮挡区域。
- 遮挡颜色：选择被遮挡区域的颜色。
- 色调：调整被遮挡区域的颜色亮度。
- 调光中：通过强光检测屏幕上的一个区域，然后调整亮度并减少饱和区域。



- 设置 HLC（背光补偿）时，屏幕上将显示一个绿色对话框，该对话框将显示 15 秒。
- 为了避免在 HLC（背光补偿）时出现异常动作，HLC 区域的上下间隔限为最大 60/最小 40，左右间隔限为最大 60/最小 30。

- 在晚上操作时，仅当在低照度环境中进入高光越过区域时，才会激活此功能。
- 在晚上工作时，强光抑制将不会在太亮或太暗场景中工作。
- 在日间使用过程中，HLC 在黑暗环境下不工作。

设置WDR

将在同时存在明亮和阴暗区域的场景中显示尖锐的物件图像。

1. 选择<背光>。

2. 将<模式>设置为<WDR>。

3. 设置各个项目。

- 宽动态级别：调整背光补偿的强度。
- 自动：检测周围环境并自动使用背光补偿。
- 低光关闭：检测到黑暗环境时不使用自动背光补偿。
- 红外关闭：切换至黑白 (B/W) 模式时不使用背光补偿。



- 建议在室内环境中使用宽动态。
- 在宽动态模式下，黑暗区域和明亮区域之间可能存在噪音。
- 开启或关闭 WDR 模式时，将重置最小、最大和用户首选的快门值。
- 如果在手动模式下使用光圈优先镜头或防抖快门，WDR（宽动态）的部分性能可能受到限制。
- 在 WDR 模式下，移动区域可能产生噪点。

设置曝光

可以调整摄像机的曝光级别。

1. 选择<曝光>。

2. 设置各个项目。

- 亮度：调整屏幕亮度。
- 最小快门：最长曝光时间的限值。
 - 快门是用于设置传感器曝光时间范围的模式，该范围指定了电子快门移动的上限和下限。
 - 如果快门值低于传感器模式中指定的值，在黑暗条件下可以降低帧率。
- 最大快门：最短曝光时间的限值。
- 推荐快门：在曝光时长范围内设置适合的的首选应用的曝光时长。
- 防闪烁：用于防止周围光线和频率之间不协调引起的屏幕闪烁。
- SSNR
 - 开：视频噪点已消除。
 - 智慧 NR：当视频中出现移动物体时自动调整降噪级别，以提高可识别性。



设置屏幕

- SSNR 2D 级别：调整 2DNR 级别。
 - 2DNR：此方法使用单一视频帧的相邻像素信息来降低噪点。如调高此级别，噪点虽被降低，但视频可能变模糊。
- SSNR 3D 级别：调整 3DNR 级别。
 - 3DNR：此方法使用多个视频帧来降低噪点。如调高此级别，噪点虽被降低，但视频可能出现拖尾现象。
- 光圈：选择该选项可将摄像机镜头设置为自动或手动。
 - DC(自动)：光圈自动根据周围光线强度进行调整。
 - 手动：将“光圈 F 值”设置为手动。
- 光圈 F-No：设置光圈 F 值。
- 自动增益：选择自动增益控制模式。
因在低照度环境下摄影而视频亮度低于特定值时，通过调整视频增益的控制感度，调整整个亮度。

- 根据快门的设置范围，图像曝光有可能饱和。
- 从启用 WiseNR 模式到应用/释放实际效果可能需要一段时间。
- WiseNR 模式启用后，视频的可识别性将提高，同时噪音可能会增加。
- 在噪点较少的明亮环境中，WiseNR 效果可能不明显。
- 启用智能 NR 后，由于移动探测使用的是内部移动探测功能，因此将按照移动探测事件的操作条件执行视频中的移动探测。如需了解更多信息，请参阅“移动探测”（第 53 页）。

设置日夜

- 选择 <日夜>。
- 设置各个项目。
 - 模式：“模式”用于将颜色调整为彩色或黑白。
 - 彩色：始终以彩色输出视频。
 - 黑白：始终以黑白输出视频。
 - 自动：通常设置为彩色，但在夜晚亮度较低时使用黑白。
 - 如果 <曝光> 菜单中的 AGC 设置为 <关>，无法将日/夜模式设置为 <自动>。
 - 定时：设置彩色模式下摄像机运行的时间。
 - 等待时间：为启动日夜切换模式，设置各个亮度条件的维持时间。
 - 持续时间：指定光照模式转换的时间间隔。
 - 激活时间（彩色）：指定彩色模式工作的时间计划。
 - 如果设置此项，从开始时间 00 秒 到结束时间 59 秒 会保持彩色模式。

- 切换至日间/夜间模式时，无法使用移动探测模式。



设置附加菜单

- 选择 <附加菜单>。
- 设置各个项目。
 - 数字稳定：当稳定图像输入看起来存在晃动时自动补偿图像。

- 降低当摄像机由于外部因素（如风）晃动时导致的图像抖动程度。

- DIS 在以下情形中无法使用。

- 在使用篡改事件的情况下
- 在使用移动探测事件的情况下
- 在使用 IVA 事件的情况下

- 锐利度：调整图像的锐利度。如果选择了<开>，您可以调整图像的锐利级别。
- 锐利度级别：级别越高，图像轮廓变得越清晰和越清楚。
- 伽玛值：调整图像的对比度。
- 对比度：调整视频中最暗区域和最亮区域的差异。
- 色调级别：调整视频颜色的强度。
- 透雾：在有雾或多云天气时补偿视频。
默认设置为 <关>。当视频在有雾天气看起来模糊时使用附加菜单。
 - 关：禁用去雾功能。
 - 自动：调整 <透雾级别> 以增强效果。
 - 手动：用户手动设置每个图像的补偿量。

- 如果去雾模式设置为 <自动>，其去雾级别与模糊程度成正比。如需保持去雾级别不变而不考虑模糊程度，可将去雾模式设置为 <手动>。

- 如果在薄雾中手动去雾级别较高，图像可能变得过于黑暗。

- 透雾级别：控制去雾级别。



设置 OSD

1. 选择 <OSD>。

2. 设置各个项目。

- 摄像机名称：指定要显示在屏幕上的摄像机名称。
选择<启用>复选框即可添加摄像机名称。
 - 添加：点击<添加>按钮，共可添加 5 行内容，每行 17 个字符，共可添加 85 个字符。
 - 预览：点击<预览>按钮查看屏幕上将显示的摄像机名称。
- 摄像机名称 X、Y 位置：指定显示在屏幕上的摄像机名称的位置。
- 日期和时间：设置屏幕上的时间显示和日期格式。
- 日期和时间 X、Y 位置：指定在屏幕上显示时间的位置。
- 工作日显示：设置在屏幕上是否显示星期信息。
- 大小：将 OSD 大小设置为小/中/大。
- 颜色：将 OSD 颜色设置为白色/红色/蓝色/绿色/黑色/灰色。
- 透明：将 OSD 的透明度设置为不透明/低/中/高。
- 覆盖
 - PTZ 位置：在屏幕上显示 PTZ 位置。
 - 预设名称：指定是否在屏幕上显示预设名称。
 - 摄像机 ID：指定是否在屏幕上显示摄像机的 ID 号。
 - 方位：该功能允许您指出在当前屏幕中所能看到的区域的方位。
在屏幕的右下方会显示八个反映当前方向的罗盘方向：E/W/S/N/NE/NW/SE/SW。



- ! 若可调整位置的项目(摄像机名称、日期&时间)被固定的其他 OSD 项目所覆盖，有可能无法显示在屏幕上。
- 屏幕左上方显示的是摄像机 ID，屏幕左下方显示的是 PTZ 坐标，且位置无法更改。
请参阅此内容设置其他项的位置。
 - 除英语外的多种语言：仅可输入选定的语言。

对焦设置

1. 选择 <对焦>。

2. 选择各项并进行正确设置。

- 模式
 - 手动：将根据变焦系数手动调整焦点。
 - 自动：将根据变焦系数自动调整焦点。
 - 一次性自动聚焦：将在执行变焦操作之后执行自动聚焦一次。
- 数字缩放：指定使用数字变焦。
 - 如使用数字变焦，则无法使用数字稳定。
- 数字变焦的最大范围：指定数字变焦的限制。
- 缩放模式：使用缩放功能时，该项设置焦点互连的方式。
 - 自动：它将控制(探测并校正)缩放操作以保持适合焦点。
 - 手动：缩放操作将由焦点跟踪指导。
- 缩放速度：调整变焦跟踪速度。
- 镜头初始化：重设镜头以防止在变焦模式中失去同步。



- ! 以下任何情况下，自动对焦功能可能无法正常使用：
- 明亮灯光或闪光灯（如，霓虹灯）
 - 目标区域照度不足
 - 快门速度较慢
 - 物体较暗
 - 目标区域照度过高
 - 如果目标区域中有一个近距离物体和一个远距离物体
 - 如果没有触点间隙（天空、墙壁等）
 - 如果摄像机拍摄的是水平细线
 - 在自动对焦模式中，因为摄像机聚焦在区域中央的物体上，不在中央位置的其他物体可能会变模糊。

设置屏幕

配置风扇的步骤

1. 选择 <风扇>。
使用风扇可除去由于外界温度突然变化而产生的内部湿气。

■ 按照用户设置要求，风扇在低温和高温时一直运行且不能关闭。



智能编码

设置来自摄像机的所需视频进入区域作为 ROI 区域，并指定该区域的探测灵敏度。

1. 从设置菜单，选择 <视频及音频 (三)> 选项卡。
2. 单击 <智能编码>。
3. 调整 PTZ。
4. 设置图像质量。
ROI 区域将以指定的质量显示。
5. 指定要手动监控的相关区域。
6. 用鼠标指针选择所需区域，然后按照您的需要进行拖曳。
■ 最多可以指定 5 个独立的区域。
7. 要取消区域的所有设置，请单击 [清除] 按钮。
8. 完成后，请单击 [应用]。



■ 如果在 <视频配置文件> 中将智能编解码器设置为 <关>，则它不活动。(第 31 页)

WiseStream

该功能将在检测到图像复杂度之后提高无移动部分的压缩率来降低比特率，从而对视频数据大小进行优化。

1. 从设置菜单，选择 <视频及音频 (三)> 选项卡。
2. 单击 <WideStream>。
3. 选择智能流模式。
 - 关：将禁用智能流功能。
 - 低 - 高：使用智能流选择比特率降低级别。
4. 完成后，请单击 [应用]。



■ 出现以下情况时，智能流 (WiseStream) 功能可能出现故障。

- 突然进行屏幕切换可能导致视频失真。
- 不宜用于屏幕上显示过多移动和运动事件的环境下。

网络设置

DDNS

DDNS(动态域名服务)是Dynamic Domain Name Service的缩写，该服务将摄像机的 IP 地址转换成一般主机名，以便用户可以轻松记住它。

■ 您只有在接通互联网时才能使用 DDNS 服务。

1. 从设置菜单，选择 <网络 (品)> 选项卡。
2. 单击 <DDNS>。
3. 选择 <DDNS> 连接类型。
4. 根据所选类型键入 DDNS 项目。
 - DDNS：如果使用 Hanwha Vision 提供的 DDNS 服务器，请选择此项。
 - 产品 ID：输入向 DDNS 服务注册的产品 ID。
 - Quick connect：当与支持 UPnP（通用即插即用）的路由器配合使用时，它会自动设置端口转发。



■ 如果不使用支持 UPnP 功能的路由器、或不使用 Quick connect 而要使用 DDNS 的话，在路由器上手动设置端口转发。
有关如何设置端口转发，请参阅“[路由器端口设置](#)”。(第 22 页)

- 公共 DDNS：在提供的公开网站中，使用公共 DDNS 服务器时，选择此项。
 - 服务：选择要使用的公共 DDNS 服务器。
 - 主机名：输入向 DDNS 服务器注册的主机的名称。
 - 用户名：输入 DDNS 服务器的用户名。
 - 密码：输入 DDNS 服务器的密码。
5. 完成后，请单击 [应用]。

■ 如果选择了 <Quick connect>，请确保选择 DDNS 服务。

注册 DDNS

向 DDNS 注册您的产品

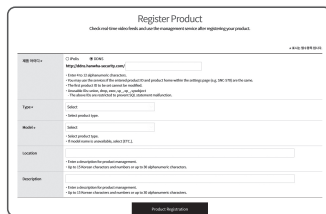
1. 访问DDNS网站(<http://ddns.hanwha-security.com>)并注册会员。



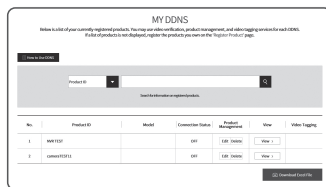
2. 从顶部的菜单栏, 选择 <MY DDNS>。



3. 点击[Register Product]选项卡。



5. 指定<Type>和<Model>。
6. 指定产品位置及说明 (如有必要)。
7. 单击 [Product Registration]。
您可在列表中看到新注册的产品信息。



No.	Product ID	Model	Connection Status	Registration Date	Value Tagging
1	WIS-1001	WIS-1001	OK	2023-10-10	OK
2	WIS-1002	WIS-1002	OK	2023-10-10	OK

在摄像机设置中连接至 DDNS

1. 从 DDNS 设置页面, 将 <DDNS> 设置为 <DDNS>。
2. 提供向 DDNS 网站注册产品 ID 时指定的 <产品 ID>。
3. 单击 [应用]。
成功进行连接后, 屏幕上将显示消息 <(成功)>。



在摄像机设置中配置公共 DDNS

1. 在DDNS设置页面, 将<DDNS>项目设置为<公共DDNS>。
2. 输入相应站点的主机名、用户名和密码。
3. 单击 [应用] 按钮。
如果正确建立连接, <(成功)> 将会出现。
4. 完成后, 请单击 [应用]。

■ 要正确使用 DDNS 服务, 需要 DDNS 设置和路由器的端口转发设置。
对于端口转发设置, 请参阅“路由器端口设置”。(第 22 页)

IP 过滤

对于特定IP, 可创建允许或拒绝它的IP列表。

1. 从设置菜单, 选择 <网络> 选项卡。
2. 单击 <IP 过滤>。
3. 选择 <过滤类型>。
 - 拒绝: 如果选择此项, 将限制过滤列表的那些 IP 进行的访问。
 - 允许: 如果选择此项, 将只接受过滤列表的那些 IP 进行的访问。
4. 单击 [添加] 按钮。
将会创建 IP 列表。
5. 输入要允许或拒绝的IP。
输入 IP 地址和前缀时, 可用的 IP 地址列表将出现在右侧过滤范围列中。



设置屏幕



- 如果为 IP 过滤 选择了 <允许> 并且 <IP & 端口> 的 <IPv6 设置> 设为 <使用>，则应该分配当前计算机配置的 IPv4 和 IPv6 地址。
- 不能将用于当前设置的计算机的 IP 地址添加至 <拒绝>，应该将它添加至 <允许>。
- 只有设置为 <使用> 的 IP 地址才会显示在过滤器列表中。

- 从列表中选择要删除的 IP。
单击 [删除] 按钮。
- 完成后，请单击 [应用]。

HTTPS

可以选择安全连接系统或安装公共证书用于此目的。

- 从设置菜单，选择 <网络 (品)> 选项卡。
- 单击 <HTTPS>。
- 选择安全连接系统。
 - 若要使用 HTTPS 模式访问摄像机，您必须以 https://<Camera_IP> 形式键入摄像机的 IP 地址。
如果未在 Internet Explorer 中以 HTTPS 模式配置 Web Viewer 设置，请按如下所示编辑 Internet 选项：<菜单 → 工具 → Internet 选项 → 高级 → 安全 → 取消选择 TLS 1.0 并选择 TLS 1.1、TLS 1.2>
- 搜索要安装在摄像机上的公共证书。
要将证书安装在摄像机上，需要提供证书名称（可由用户随意分配）、认证机构颁发的证书文件以及密钥文件。
 - 仅当安装了公共证书，<HTTPS (使用公共证书的安全连接模式)> 项目才会活动。
- 完成后，请单击 [应用]。



安装证书

- 输入证书名称。
- 单击 [浏览 ()] 按钮，选择要安装的公共证书文件和密钥文件，然后单击 [安装] 按钮。

删除证书

- 单击 [删除] 按钮。
- 要删除公共证书，应该在 <HTTP (不使用安全连接)> 或 <HTTPS (使用自用证书的安全连接模式)> 模式下访问网络视频解码器。

802.1x

连接网络时，您可以选择是否使用 802.1x 协议，然后安装证书。

- 从设置菜单，选择 <网络 (品)> 选项卡。
- 单击 <802.1x>。
- 设置 <IEEE 802.1x 设置>。
 - IEEE 802.1x：指定使用 802.1x 协议。
 - EAP 类型：选择 EAP-TLS 或 LEAP。
 - EAPOL 版本：选择版本 1 或 2。
 - ID：在 EAP-TLS 中输入客户端证书 ID，在 LEAP 中输入用户 ID。
 - 密码：在 EAP-TLS 中输入客户端私钥密码，在 LEAP 中输入用户密码。如果它使用未加密的密钥文件，则无需在 EAP-TLS 中输入密码。



- 如果连接的网络设备不支持 802.1x 协议，那么即使您设置了该协议，它也不会正常执行。
- LEAP 是一种安全性较差的身份验证方法。仅在 EAP-TLS 不可用的情况下使用。

- 安装/移除证书。
只有 EAP-TLS 需要证书。
 - CA 证书：选择包含公共密钥的公共证书。
 - 客户端证书：选择包含客户端证书密钥的公共证书。
 - 客户端私钥：选择包含客户端私钥的公共证书。
- 完成后，请单击 [应用]。

安装/删除与 802.1x 相关的证书

- 按每个项目的 [浏览 ()] 按钮并选择要安装的证书。
- 如果未安装任何证书，则会看到“不可用”出现在所选项目旁边。
- 按 [安装] 按钮以开始安装，并在项目旁边显示消息“已安装”。
- 按 [删除] 按钮以删除证书。

QoS

您可以指定优先级以确保特定 IP 的传输率稳定。

1. 从设置菜单，选择 **<网络 (品)>** 选项卡。
2. 单击 **<QoS>**。
3. 单击 **[添加]** 按钮。
将会创建 IP 列表。
4. 输入将应用 QoS 的 IP 地址。

- 默认前缀对于 IPv4 是 32；
对于 DSCP，默认值设置为 63。
- 只能为设置为 **<使用>** 的 IP 地址设置优先级。

5. 从列表中选择要删除的 IP。
单击 **[删除]** 按钮。
6. 完成后，请单击 **[应用]**。



SNMP

通过 SNMP 协议，系统或网络管理员可以监视远程站点上的网络设备，以及配置环境设置。

1. 从设置菜单，选择 **<网络 (品)>** 选项卡。
2. 单击 **<SNMP>**。
3. 指定 **<SNMP>**。
 - 启用 SNMP v1：SNMP V1 将处于活动状态。
 - 启用 SNMP v2c：SNMP V2c 将处于活动状态。
 - 读取社区：为访问 SNMP 信息，输入只读社区名称。
默认名称为 **<public>**。
 - 写入社区：为访问 SNMP 信息，输入只写社区名称。
默认名称为 **<write>**。
 - 启用 SNMP v3：SNMP V3 将处于活动状态。
 - 密码：指定 SNMP V3 的默认密码。

- 默认密码有被泄露的风险，建议安装产品后立即更改密码。
请注意，未更改密码导致的安全和其他相关问题，用户自己承担责任。
- 密码长度应该为 8 - 16 个字符。



- 启用 SNMP Trap：SNMP Trap 用于将重要事件和情况发送到管理系统。
 - 社区：输入用于接收消息的 Trap 社区名称。
 - IP 地址：输入消息将发送到的 IP 地址。
 - 认证失败通知：指定当社区信息无效时是否生成事件。
 - 网络连接通知：指定当网络断开后恢复连接时是否生成事件。

4. 完成后，请单击 **[应用]**。

- 仅当安全连接模式是 HTTPS 时，才能设置 SNMP v3。
请参阅 **“HTTPS”**。(第 46 页)
- 如果您不使用 SNMP v3，则可能出现安全问题。

自动 IP 配置

自动设置既能访问摄像机又能搜索的 IP。

1. 从设置菜单，选择 **<网络 (品)>** 选项卡。
2. 单击 **<自动 IP 配置>**。
3. 设置 **<链路-本地 IPv4 地址>**。
可以分配一个额外的 IP 地址以从链路本地网络访问摄像机。
 - 自动配置：指定“启用”或“禁用”链路本地 IPv4 地址。
 - IP 地址：显示所分配的 IP 地址。
 - 子网掩码：显示所分配 IP 的子网掩码。
4. 设置 **<UPnP discovery>**。
可以在支持 UPnP 协议的客户端和操作系统中自动搜索摄像机。
 - UPnP discovery：指定“启用”或“禁用”UPnP 发现。
 - 友好名称：显示摄像机名称。
友好名称的显示格式为 WISENET- <型号名称>-<MAC 地址>。



- 在基本支持 UPnP 的 Windows 操作系统中，连接到网络的摄像机会显示出来。

5. 设置 **<Bonjour>**。
可以在支持 Bonjour 协议的客户端和操作系统中自动搜索摄像机。
 - Bonjour：指定“启用”或“禁用”Bonjour 发现。
 - 友好名称：显示摄像机名称。
友好名称的显示格式为 WISENET- <型号名称>-<MAC 地址>。

- 在默认支持 Bonjour 的 Mac 操作系统中，已连接的摄像机会自动显示在 Safari Web 浏览器的 Bonjour 书签中。
如果 Bonjour 书签没有显示出来，请在“首选项”菜单中检查书签设置。

6. 完成后，请单击 **[应用]**。

设置屏幕

事件设置

事件设置

您可以轻松设置事件探测项，并移到具体设置。

1. 从设置菜单，选择 <事件 ()> 选项卡。
2. 单击 <事件设置>。
3. 激活“事件列表”中的所需项。
4. 完成后，请单击 [应用]。



■ 如要配置详细的事件设置，点击所需类型即可。将重定向至详细设置。



交接

事件探测功能可联合其他具备 PTZ 预设功能的网络摄像机使用。探测到事件时，联网的 PTZ 摄像机将移动至预设位位置并执行监视功能。

1. 从设置菜单，选择 <事件 ()> 选项卡。
2. 点击<交接>。
 - 接收器摄像机：注册与事件探测互联的摄像机。探测事件时，点击菜单顶部的[添加]处输入要连网的摄像机的 IP、端口、ID、密码和要移动至的预设编号。
 - 切换功能可用于移动探测/篡改检测/声音分类/IVA 事件探测。
 - 仅当接收器摄像机预设位设置已指定时可正常运行。
 - 切换功能仅支持一个预设位/区域。
3. 完成后，请单击 [应用]。



FTP / 电子邮件

可以配置 FTP/电子邮件服务器设置，以便在事件发生时可以将使用摄像机拍摄的图像传输到您的计算机。

1. 从设置菜单，选择 <事件 ()> 选项卡。
2. 单击 <FTP / 电子邮件>。
3. 选择 <FTP 配置> 或 <E-mail 配置> 并输入/选择所需的值。

● FTP 配置

- 服务器地址：输入您将警报或事件图像传输到的 FTP 服务器的 IP 地址。
- ID：输入用于登录 FTP 服务器的用户 ID。
- 密码：输入用于登录 FTP 服务器的用户帐户密码。
- 上传目录：指定警报或事件图像将传输到的 FTP 路径。
- 端口：FTP 服务器的默认端口为 21；但是，可以根据 FTP 服务器设置使用不同的端口号。
- 被动方式：如果由于防火墙或 FTP 服务器设置需要以被动模式连接，请选择 <开>。

● E-mail 配置

- 服务器地址：输入您将警报或事件图像传输到的电子邮件服务器的 SMTP 地址。
- 认证：选择是否使用身份验证。
- TLS 使用：指定使用 TLS。
- ID：输入用于登录电子邮件服务器的用户 ID。
- 密码：输入用于登录电子邮件服务器的用户帐户密码。
- 端口：电子邮件服务器的默认端口为 25；但是，可以根据电子邮件服务器设置使用不同的端口号。
- 收件人：输入电子邮件收件人的地址。
- 发件人：输入电子邮件发件人的地址。如果发件人地址不正确，来自发件人的电子邮件可能会被电子邮件服务器分类为垃圾邮件，这样可能不发送。
- 主题：输入电子邮件的主题。
- 正文：为邮件提供文本。将警报或事件图像附加至准备的电子邮件。

4. 完成后，请单击 [应用]。



存储器

您可以在设备上激活录制，选择录制条件，检查已保存数据占用的容量，对设备自身进行格式化。

1. 从设置菜单，选择 <事件 (查)> 选项卡。
2. 单击 <存储器>。
3. 选择用来保存数据的设备。



- 如果设备正在正确录制数据，将显示“录制”。
- 如果显示“错误”信息，请检查以下各项：
 - 检查存储器，确认它已连接到设备。
 - 检查存储器中的文件，确认它们是否受损。
 - 检查存储器，确认它们是否受到物理损伤。
- 如果按照上面指示操作之后“错误”消仍未消失，请格式化 Micro SD 卡。格式化之后，如果错误消息仍然存在，请更换 Micro SD 卡。
- 如果您不在设置中将按钮移到“关”位置就移除 Micro SD 卡或者如果您将摄像机连接到不稳定的电源，那么 Micro SD 卡可能会受损。



在 Micro SD 存储卡上进行录制

1. 将 SD 卡录制设置为 <开>。
2. 单击 [应用] 按钮。
3. 检查存储卡的 <可用大小> 和 <总大小>。
您可以通过单击 <格式化> 按钮来格式化 Micro SD 卡。
 - 如果 Micro SD 存储卡以低于建议值的速度运行，可能会跳过某些帧。
如需更多信息，请参阅“建议的 Micro SD/SDHC/SDXC 存储卡规格”。(第 6 页)
 - 对于大容量的 Micro SD 存储卡，格式化将相应变慢。
 - 将摄像机设置为较高分辨率、较高位速率或较高帧率时，数据流量会增大。
如果数据流量较大，可能会跳过某个帧，但仍会将其全帧存储。
 - 发生跳帧时，将以最低每秒一幅图像的速度保存图像。
4. 指定存储操作。

- 覆盖：如果 Micro SD 存储卡已满，将删除旧数据后保存新数据。
- 自动删除：删除指定时间段的数据，不删除其他数据。
可以设置的范围是 1 到 180 天。



- 如果超出保留时间段，将自动删除相应数据并录制新数据。数据一旦删除即无法恢复。

5. 设置<SD文件系统>。

- 类型：摄像机支持 VFAT 和 ext4 作为 SD 卡文件系统，用户可对其进行配置。
(但为使 ext4 文件系统与 Window o/s 交互，需要额外的应用程序。)



- 如上述设置发生变化，现有数据将被格式化。
- 对 ext4 文件格式的 SD 卡进行格式化可能需要长达 10 分钟的时间。

6. 设置要存储的项。

- 录制配置文件：显示要录制的配置文件名称。
- 正常录制：以特定帧速率进行录制。
- 事件录制：设置发生的特定事件的录制类型。
- 事件前持续时间：指定警报发出之前的时间点；从该时间点开始，将传输图像。最多可以指定警报发出之前 5 秒。
- 事件后持续时间：指定事件发生后图像的传输时间。最长可保存事件发生 120 秒后的图像。
- 录制文件类型：指定所录制图像的文件格式。
 - STW：Hanwha Vision 独有的文件格式。
 - AVI：传统的 avi 格式。



- 如果存储文件类型改变，那么现有数据将被格式化。

7. 指定 <标准录制设置>。

- 始终：始终将录制的视频保存在 Micro SD 存储卡中。
 - 如果设置为始终，则激活时间无法更改。
- 仅预约时间：仅在指定星期几的指定时间录制。

8. 完成后，请单击 [应用]。

设置屏幕

如果希望录制到 NAS 中

1. 设置保存操作和基本录制。

只有 NAS 符合建议规格，才能支持自动删除。

2. 输入在 NAS 中注册的信息。

- IP 地址：为 NAS 分配的固有的 IP 地址。
- ID：这是 NAS 中注册的一个 ID。
- 密码：NAS 中注册的密码。
- 默认文件夹：指定用来保存数据的 NAS 用户文件夹。

3. 单击 [测试] 按钮来查看是否可以成功连接到 NAS。

如果显示成功消息，则意味着您可以成功地将数据保存到 NAS 中。

如果显示失败消息，请检查以下方面。

- 确认 NAS 的 IP 地址有效。
- 确认 NAS 的 ID/密码有效。
- 确认您可以访问使用 NAS 的 ID 指定为基本文件夹的文件夹。
- 确认 NAS 的 SMB/CIFS 项已被取消选中。
- 确认 NAS IP 地址和摄像机 IP 地址的格式正确。
Ex) NAS 和摄像机子网掩码的初始值是 255.255.255.0。
如果 IP 地址是 192.168.20.32，NAS IP 地址的范围应该是 192.168.20.1~192.168.20.255。
- 检查在未对已存或使用过的默认文件夹进行格式化前，是否以其他用户进行连接。
- 确认使用了建议的 NAS 设备。

4. 设置结束后，将 NAS 装置设置为 <开>。

5. 单击 [应用] 按钮。

6. 登录 NAS 并检查 <可用大小> 和 <总大小>。

您可以通过单击 <格式化> 按钮来格式化在 NAS 连接设置中指定的默认文件夹。

- 将摄像机设置为较高分辨率、较高位速率或较高帧率时，数据流量会增大。
如果数据流量较大，可能会跳过某个帧，但仍会将其全帧存储。
- 发生跳帧时，将以最低每秒一幅图像的速度保存图像。

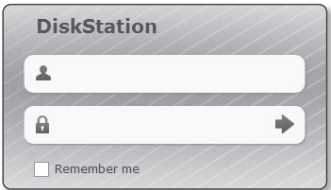


NAS(网络连接存储器)指南

- 由于使用 NAS 时临时网络中断之后可能没有保存数据，因此我们建议您同时使用 SD 防止录制的图像丢失。
- 如果设置允许同时连接和使用 Micro SD 存储卡和 NAS，NAS 享有较高录制优先级。
- 如果 NAS 的覆盖设置为 <关>，并可用容量低于 20%，视频将保存在 Micro SD 卡上。
- 如果正将数据保存到 NAS，在插入其他摄像机使用的 Micro SD 存储卡时，可能无法保存数据。
- NAS 建议规格：请参阅“**NAS 建议规格**”。(第 6 页)
- 如果在数据保存到 NAS 期间更改 NAS 保存设置，该更改将不会立即在系统中反映出来。
- 如果在数据保存期间移除 NAS 设备，或者网络断开，NAS 保存操作将异常终止。
- NAS 保存只允许一台摄像机访问一个文件夹。不允许使用另一台摄像机登录，图像将不会保存。

下面描述了如何按照 Synology NAS（建议产品之一）方法使用 NAS 保存数据。

- 以管理员(Admin)账户访问 Synology NAS。
在本例中，NAS IP 地址设置为 [192.168.20.253]。



- 如果作为管理员访问，将显示以下屏幕。单击 [Control Panel]。

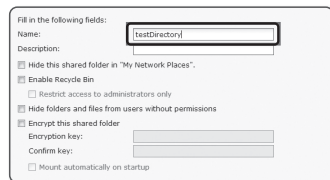


- 在文件共享和权限菜单中单击 <Shared Folder>。

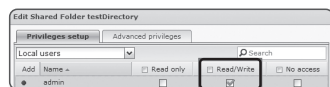


4. 单击 **[Create]** 按钮。

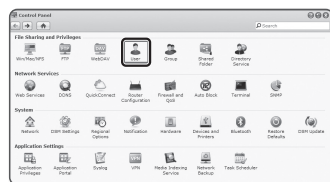
5. 在输入共享文件夹名称 (ID) 后, 单击 **[OK]** 按钮来创建共享文件夹。
在本例中, 共享文件夹名称是 **[testDirectory]**。



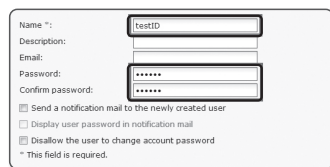
6. 在 Windows 中, 针对 NAS 访问, 如下设置共享文件夹的权限。
选中管理员的 **[Read/Write]** 权限。



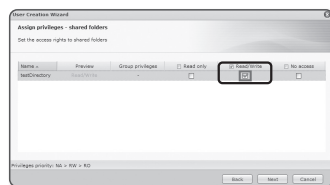
7. 在文件共享和权限菜单中单击 **<User>**。



8. 单击 **[Create]** 按钮后, 输入名称 (ID) 和密码。
在本例中, 名称 (ID) 设置为 **[testID]**, 密码设置为 **[testID]**。



9. 在 Windows 中, 设置 NAS 访问的权限。
选中在第4阶段所创建的共享文件夹” testDirectory” 的 **[Read/Write]**权限。

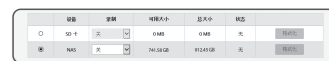


10. 至此 NAS 中的基本设置已完成。
将摄像机连接到实际 NAS。
如下所示, 输入 NAS 连接设置项。



11. 在输入项目 10 后, 选中 **<开>**。

12. 单击 **[应用]** 按钮。
通过使用 NAS 来完成保存。



警报输出

1. 从设置菜单, 选择 **<事件 (查)>** 选项卡。

2. 单击 **<警报输出>**。

3. 配置摄像机警报输出设置。

■ 如果您更改警报输出类型, 监视页面上的警报输出按钮和事件设置页面上显示的警报输出类型会相应地更改。

• 类型

- 常开: 如果将警报输出设备“开路”状态视为正常, 当触发警报事件时, 则变成“闭路”状态。
- 常闭: 如果将警报输出设备“闭路”状态视为正常, 当触发警报事件时, 则变成“开路”状态。

• 模式: 设置警报输出方式。

■ 以下是在禁用时单击警报输出按钮时操作之间的差异。

- 脉冲: 在持续时间 (切换间隔) 指定的时间段内激活, 然后自动变成不活动。
- 活动/不活动: 它保持为已激活, 直到用户再次单击按钮以使它不活动为止。

• 转换条件: 如果模式设置为脉冲, 则设置保持激活的警报持续时间: 1 到 15 秒。

4. 完成后, 请单击 **[应用]**。



设置屏幕

警报输入

可以设置警报输入类型、激活时间和工作模式。

1. 从设置菜单，选择 <事件 (查)> 选项卡。
2. 单击 <警报输入>。
3. 设置是否 <启用>。
4. 选择类型。
 - 常开：它通常是打开的，但是如果关闭，将触发警报。
 - 常闭：它通常是关闭的，但是如果打开，将触发警报。
5. 指定 <激活时间>。
 - 始终：当警报发出时，将始终检查。当警报发出时，它将在运行的模式下激活。
 - 如果设置为 <始终>，激活时间将无法更改。
 - 仅预约时间：警报发出时，在一周指定的一天检查指定的时间长度。当警报发出时，它将在运行的模式下激活。
 - [1 min 30 min 1 h]：设置纵轴上的时间显示格式。
 - [重置]：重置全部设置。
6. 指定警报发出时将执行的操作。
 - FTP：在警报输入设置中指定使用 FTP 传输。
 - 有关详细信息，请参阅“FTP/电子邮件”。(第 48 页)
 - 电子邮件：在警报输入设置中指定电子邮件传输的使用。
 - 有关详细信息，请参阅“FTP/电子邮件”。(第 48 页)
 - 录制：在使用时，您可以将警报记录设置至 Micro SD 卡或 NAS。
 - 在 <存储器> 中将 <设备> 设置为 <开>。(第 49 页)
 - 警报输出 1：选择如果警报进入是否设置警报输出，并指定警报输出时间。
 - 转至预设位：入警报时，将其移动至指定的预设位处。
7. 完成后，请单击 [应用]。



时间计划

无论是否发生事件，均可在计划操作时间以固定时间间隔配置的传输图像设置。

1. 从设置菜单，选择 <事件 (查)> 选项卡。
2. 单击 <时间计划>。
3. 设置是否 <启用>。
4. 指定 <传输时间间隔>。
5. 指定 <激活时间>。
 - 始终：始终启动已设置的模式。
 - 仅预约时间：仅在指定的星期和时间启动已设置的模式。
6. 指定激活条件。
 - FTP：指定事件发生时 FTP 传输的使用。
 - 有关详细信息，请参阅“FTP/电子邮件”。(第 48 页)
7. 完成后，请单击 [应用]。



■ 传输间隔设置值必须小于预设激活间隔才能成功进行图像传输。



网络断开连接

断开网络连接时，将视作保存事件。

1. 从设置菜单，选择 <事件 (⌘)> 选项卡。
2. 单击 <网络断开连接>。
3. 设置是否 <启用>。
4. 配置事件移动计划和事件移动条件。
 - 有关 <事件操作设置> 和 <激活时间> 的详细信息，请参阅“警报输入”。（第 52 页）
5. 完成后，请单击 [应用]。



应用事件

可以将系统设置为发生应用中已定义事件时生成信号。提供的事件信号因应用功能不同而异。

1. 从设置菜单，选择 <事件 (⌘)> 选项卡。
2. 单击 <应用事件>。
3. 设置是否 <启用>。
4. 配置事件移动计划和事件移动条件。
 - 有关 <事件操作设置> 和 <激活时间> 的详细信息，请参阅“警报输入”。（第 52 页）
5. 完成后，请单击 [应用]。



配置分析设置项

移动探测

可以配置设置，以在探测到移动时生成事件信号。

1. 从设置菜单，选择 <分析 (⌘)> 选项卡。
2. 单击 <移动探测>。
3. 设置是否 <启用移动探测>。
4. 设置 <包含区域> 和 <非测试区域>。
 - 包含区域：如在设置的多边形区域未检测到任何移动，可生成事件信号。
 - 非测试区域：如在设置的多边形区域外未检测到任何移动，可生成事件信号。
 - 一个区域支持最多具有 8 个顶点的形状。
使用鼠标在视频中选择 4 个顶点，创建一个矩形，然后选择矩形的各边，最多可再添加 4 个点来创建所需的形状。
 - 最多可以设置 8 个区域。
可以单独针对各区域指定级别和灵敏度设置。
5. 配置具体每一项的设置项。
 - 探测级别：如移动级别高于所配置的级别，则会生成移动探测事件。即使在图表中，如果移动级别大于所配置的级别界限，将显示不同的颜色。
 - 灵敏度：针对各区域设置移动探测的灵敏度。在可清晰分辨出背景和物体的环境下降低灵敏度，而在无法清晰分辨出背景和物体的环境下提高灵敏度。
6. 选择是否想要使用切换功能。
设置的探测区域探测到移动时，指定的摄像机将移动至指定的 PTZ 预设位置。
 - 可按照探测区域指定摄像机。



设置屏幕

7. 配置事件移动计划和事件移动条件。
- 有关<事件操作设置>和<激活时间>的详细信息,请参阅“警报输入”。(第 52 页)
8. 完成后, 请单击 [应用]。

- !
- 物体的探测到大小与实际大小可能会有差异, 视其形状而定。
 - 出现以下情况时, 移动探测性能可能受损或出现故障。
 - 拍摄对象的颜色或亮度与背景类似。
 - 摄像机视野边界区域周围的小活动。
 - 由于场景变化、照明快速变化或其他原因, 多次移动随机连续发生。
 - 固定的对象在一个位置连续不断地移动。
 - 位置变化不大的移动, 例如逐渐靠近摄像机或从摄像机中慢慢消失。
 - 移动的对象离摄像机太近
 - 对象隐藏在其他对象后面。
 - 对象速度太快 (若要探测, 一个对象应该在邻近的帧之间重叠)。
 - 由于太阳直射、照明或头灯等强光而出现反射 / 视线模糊 / 阴影。
 - 在大雪、大雨、大风或黎明 / 黄昏环境中。

防拆检测

可将摄像机设置为在侦测篡改时(例如,视频被遮挡或移动), 发出事件信号。

1. 从设置菜单, 选择<分析 (□)> 选项卡。
2. 单击<防拆检测>。
3. 设置是否<启用篡改探测>。
4. 图表显示的是篡改度。设置要探测的篡改的级别灵敏度 (范围: 1 至 100) 。
5. 设置灵敏度。
设定值越高, 摄像机反应越灵敏 (范围: 1 至 100) 。
6. 指定最短监控时长。
针对所配置的最短监控时长而言, 如高于探测级别的状态仍然持续, 则生成事件信号 (单位: 秒) 。
7. 指定是否不包括黑暗区域。
由于被物体遮挡而出现对黑暗环境去光照的现象, 导致此功能难以识别黑暗环境。 即便如此, 如果您想要排除屏幕亮度突然出现变化的警报 (如去光照), 那么应启用该功能。
8. 选择是否想要使用切换功能。
9. 配置事件移动计划和事件移动条件。
 - 有关<事件操作设置>和<激活时间>的详细信息, 请参阅“警报输入”。(第 52 页)
10. 完成后, 请单击 [应用]。



- !
- 该检测将在稳定特定时间段 (约 5 秒) 后重新启动。在稳定期间, 无法使用检测功能。
 - 如频繁生成错误警报, 您应当逐渐降低灵敏度, 将错误警报频率降至最低。
 - 如果使用较低灵敏度, 即使是屏幕上出现极小的变化, 也可能会生成警报, 但也可能会因移动的物体或亮度发生变化而出现错误检测。
 - 出现以下情况时, 篡改探测功能可能出现故障。
 - 背景简单的监控环境、夜间和低光度环境。
 - 摄像机剧烈震动或光线突然发生变化

烟雾检测

可以配置设置，以在检测到烟雾时生成事件信号。

1. 从设置菜单，选择 <分析 (□)> 选项卡。
2. 单击 <烟雾检测>。
3. 设置是否 <启用烟雾检测>。
4. 配置具体每一项的设置项。
 - 探测级别：如当前级别高于所配置的探测级别，则生成警报。
 - 灵敏度：强度越大，同一视频输出的图表级别越高。
 - 最短持续时间 (秒)：针对所配置的最短监控时长而言，如高于探测级别的级别状态仍然持续，则生成警报。
5. 配置事件移动计划和事件移动条件。
 - 有关 <事件操作设置> 和 <激活时间> 的详细信息，请参阅“警报输入”。(第 52 页)
6. 完成后，请单击 [应用]。



- ! ■ 生成了烟雾检测警报后，如您想要再次接收到烟雾检测警报，将需要返回至稳定状态至少一次。除雾后视频质量有所提高不被视为稳定状态。返回至稳定状态的示例如下所示。
- 已取消选定使用烟雾检测 复选框。
 - 当烟雾或烟消失时，视频是可识别的。
- 出现以下情况时，烟雾检测性能可能减弱或出现故障。
- 单调的监控环境、夜间或低照明度环境
 - 光线突然变化（即关闭室内光源）
 - 镜头被大体积物体遮挡，覆盖几乎整个屏幕画面
 - 更改摄像机位置可以变更聚焦对象。

面部探测

可以配置设置，以在检测到特定区域出现面部时生成事件信号。

1. 从设置菜单，选择 <分析 (□)> 选项卡。
2. 单击 <面部探测>。
3. 设置是否 <启用面部探测>。
4. 设置 <包含区域> 和 <非测试区域>。
 - 包含区域：如在设置的多边形区域检测到人脸，可生成事件信号。
 - 非测试区域：如在设置的多边形区域外检测到人脸，可生成事件信号。
5. 设置灵敏度级别。
 - 灵敏度越高，即可使用更详细、更精确的面部探测功能。
6. 如使用 <基于动作的动态区域> ROI 区域的位置和大小将按照监视屏幕中移动动作发生的位置进行自动调整。
7. 配置事件移动计划和事件移动条件。
 - 有关 <事件操作设置> 和 <激活时间> 的详细信息，请参阅“警报输入”。(第 52 页)
8. 完成后，请单击 [应用]。



- ! ■ 在以下情况中，面部探测性能可能受到影响，或无法正常运行。
- 面部角度或斜度与成像方向（例如倒立）不同
 - 监测对象佩戴了眼镜、太阳镜、帽子或面罩等配饰，遮住了面部
 - 由于摄影机未对焦，面部模糊不清
 - 处于夜晚或黑暗环境
 - 由于背光等光线原因，面部亮度异常

设置屏幕

IVA(智能视频分析)

可以配置设置，以在探测到符合特定事件规则的移动或环境时生成事件信号。

- 1. 从设置菜单，选择 <分析 (I I)> 选项卡。
- 2. 单击 <IVA>。
- 3. 设置是否 <启用 IVA>。

4. 配置探测规则。

如需关于设置的更多信息，请参阅“配置分析规则”。可配置的规则如下所示。

- 通过:可探测到按照选定方向越过某指定虚拟线的物体。
- 侵入中:探测某一虚拟区域内移动物体的出现情况。
- 输入:探测从虚拟区域外部进入其内部的物体。
- 出去:探测从虚拟区域内部移动到外部的物体。
- 出现 (消失):探测在位置固定后的特定时段内受到监控的虚拟区域中出现的新物体,或探测未在监控时段内受到监控且消失的固定物体。
- 滞留中:探测在虚拟区域内徘徊时间长于监控时长的物体。

- 5. 选择是否想要使用切换功能。
- 6. 选择在分析中您不想纳入的区域和除外区域。
- 7. 设置灵敏度级别和相关大小 (如必要)。
如需关于设置的更多信息，请参阅“通用设置”。
- 8. 配置事件移动计划和事件移动条件。
 - 有关 <事件操作设置> 和 <激活时间> 的详细信息，请参阅“警报输入”。(第 52 页)
- 9. 完成后，请单击 [应用]。



配置分析规则

可以配置如下所示的个人分析规则。

• 通过

- 1. 选择<虚拟线>选项卡。
- 2. 左键单击屏幕即可在需要检测的位置指定线条的起点和终点。
- 3. 选择相关方向。
- 4. 完成后，请单击 [应用]。
- 5. 要移除已配置的规则，右键单击这条线，然后点击弹出窗口中的[OK]按钮。

• 侵入中, 输入, 出去, 出现 (消失), 滞留中

- 1. 点击<虚拟区域>选项卡。
- 2. 一个区域支持最多具有 8 个顶点的多边形。在图像上选择 4 个顶点即可创建一个多边形，然后选择已建好的多边形的每一条边，可最多再添加 4 个顶点，创建出所需的多边形。
- 3. 从已配置的虚拟区域中选择分析类别。
- 4. 完成后，请单击 [应用]。
- 5. 要移除已配置的规则，右键单击这条线，然后点击弹出窗口中的[OK]按钮。

通用设置

通用设置是指基于使用环境，提高探测精确度和将误报情况降至最低程度的设置。

• 灵敏度

1. 选择<通用>选项卡。

- 可以更改区别屏幕背景和移动的灵敏度。
当可清晰分辨出物体和背景时，将此项设置为低灵敏度级别。相反，当无法清晰分辨出物体和背景时，如低照度环境下，将此项设置为高灵敏度级别。

2. 完成后，请单击 [应用]。

• 大小

1. 选择<通用>选项卡。

2. 在分别代表最小和最大尺寸的矩形中右键单击右下方要移动的顶点，调整其大小。

- 小于指定最小尺寸的移动或大于最大尺寸的移动均不会被探测到。要避免较大和较小噪点引起的不必要探测，按照您所在的环境恰当设置最小/最大移动尺寸即可。请注意，同一位置的相同移动由于探测尺寸的不同可能会被探测视为不同的移动；建议在设置最小/最大探测尺寸时考虑并包含容差。

3. 完成后，请单击 [应用]。

自动跟踪

可按照安装环境设置自动跟踪操作，也可在摄像机执行自动跟踪操作时生成事件信号。

1. 从设置菜单，选择<分析 [I] > 选项卡。

2. 单击<自动跟踪>。

3. 设置摄像机自动跟踪操作。

- 摄像机高度：尽可能精确地设置高度可以实现正确的操作。（范围：2.5 米 - 30 米）
- 缩放：选择是否在自动跟踪时包含缩放。
- 保持目标大小：选择“缩放”时，它指定您希望跟踪物体在屏幕中保持的大小。
- 指示灯显示：设置是否显示方形指示灯，它用于表示视频中跟踪的对象。
- 非测试区域：选择已设置好的域的激活状态。要设置域，请参阅“[设置域的步骤](#)”。（第 57 页）
- 自动退出：无限制：开始自动跟踪，没有时间限制。当跟踪一个物体跟丢时，它会在原地待命，然后在探测到移动物体时重新开始跟踪。

4. 配置事件移动计划和事件移动条件。

- 有关<事件操作设置>和<激活时间>的详细信息，请参阅“[警报输入](#)”。（第 52 页）

5. 完成后，请单击 [应用]。



设置域的步骤

在指定域中，即使检测到移动，也无法启动自动跟踪功能。

进行域设置时，最多可保存 8 个预设位。

1. 鼠标单击图像，拖动即可设置所需区域。

2. 输入名称，单击 [确认]。

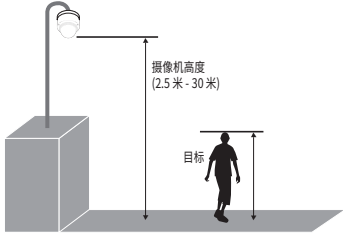


- 即使正在跟踪的物体进入域范围内，设置好的域也不会停止跟踪。



- 自动跟踪一般可用于以下情况。
 - 安装高度：大于等于 2.5 米，小于等于 30 米
 - 安装类型：室内水平安装并且不倾斜，或者室外吸顶式
 - 跟踪物体：直立行走、在水平面上移动的人（高度约为 170 厘米）

设置屏幕



- 以下情况下，可能无法跟踪目标或导致错误操作。
 - 当拍摄区域有多个移动物体时
 - 当其他移动物体或设备将它隐藏起来或与之重叠时
 - 当移动物体与背景之间几乎没有差异时
 - 物体太小或太大
 - 物体移动太快或太慢
 - 当移动物体从安装的摄像机正下方通过时
 - 当移动物体的移动路线未以安装高度为标准时
 - 恶劣天气，如大风、下雪和下雨
 - 拍摄区域较暗时
 - 光线突然发生变化时
 - 摄像机方向或拍摄区域出现闪光时
 - 摄像机方向出现光线或反光时
 - 摄像机晃动造成视频抖动时
 - 当镜头盖和调光器盖被弄脏或潮湿时
 - 摄像机镜头轴发生变化时

音频检测

可以设置为探测超过指定音量的声音并相应地触发事件。

1. 从设置菜单，选择 <分析 (□)> 选项卡。
2. 单击 <音频检测>。
3. 设置是否 <启用音频探测>。
4. 选择音频探测的音量。
音量越低，可探测到的声音变化越小。

■ 设计了自动探测级别，为的是将输入数据规格为介于 1 和 100 之间的值，并且探测大于该阈值级别的信号。它与 分贝 (dB) 级别无关。

5. 配置事件移动计划和事件移动条件。
 - 有关 <事件操作设置> 和 <激活时间> 的详细信息，请参阅“警报输入”。(第 52 页)
6. 完成后，请单击 [应用]。

- 选择 <视频及音频> - <音频设置> 并为麦克风设置适当的音量作为音频输入源，以便音频探测功能能够正常工作。
- 如果探测到的音量太低，请在 <音频设置> 中将音频输入增益设置为较高级别。
- 当摄像机连接到音频输入设备时，可使用音频探测功能。



声音分类

可以配置设置，以在检测到特定声源时生成事件信号。

1. 从设置菜单，选择 <分析 (I)]> 选项卡。
2. 单击 <声音分类>。
3. 设置是否 <启用声音分类>。
4. 按照声源设置音频能量级别进行分类。输入音频的能量级别值将从右至左周期性地进行更新，并在区域内画出。声源分类仅适用于高于指定值级别的音频。
5. 配置具体每一项的设置项。
 - 降噪：指定<启用>状态。
 - 如周围环境噪音过大，超过 55 至 60dB，要使用降噪功能。如使用了降噪功能，由于降低了原始声源，则视具体环境的不同，声音分类功能可能降级或出现故障。如在安静环境下使用了降噪功能，声源分类功能可能减弱。
 - 类别：选择要分类的声源。
 - 声源的定义
 - 尖叫声：由人类发出的响声，例如男性/女性成年人或儿童发出的尖叫声或喊叫声
 - 枪击声：枪击声（不包括快速发出、连续的枪击声）
 - 爆炸声：由于破坏性行为突然爆炸的声音
 - 玻璃破碎声：玻璃破碎声
6. 选择是否想要使用切换功能。
7. 配置事件移动计划和事件移动条件。
 - 有关<事件操作设置>和<激活时间>的详细信息，请参阅“警报输入”。(第 52 页)
8. 完成后，请单击 [应用]。



- 在<视频及音频>-<音频设置>中，建议将音频输入增益的值设置为 4 至 6。
- 在<视频及音频>-<音频设置>中，如将音频输入源设置为外部麦克风，建议使用符合以下规范的麦克风。
 - 频率范围：40 至 16,000Hz
 - 电阻：1,500Ω
 - 灵敏度：-40±3 dB (7.1~14.1 mV)
- 出现以下情况时，声源分类性能可能减弱或出现故障。
 - 连续产生枪击声，如机关枪的声音，而不是一发子弹枪击的声音。
 - 噪音过大，无法分辨出目标声源。
 - 同时输入 2 个或更多声源。
 - 声源分类适用于使用去噪功能的安静环境条件
 - 听见距离摄像机较近（1 米范围内）的鼓掌声或尖叫声
 - 突然产生不属于飞机声或警笛声等任何声源类别的较响声源
 - 外部麦克风不符合建议规范

系统设置

产品信息

1. 从设置菜单，选择<系统 (G)]> 选项卡。
2. 单击<产品信息>。
3. 检查摄像机信息，或根据网络环境提供详细信息。
 - 型号：产品的型号名称。
 - 序列号：产品序列号。
 - 设备名称：提供将在现场屏幕上显示的设备名称。
 - 位置：指定安装摄像机的位置。
 - 描述：提供有关摄像机位置的详细信息。
 - 备忘录：提供有关摄像机的说明以便更好地理解。
 - 语言：选择 Web 查看器 OSD 的首选语言。



- 默认语言设置为<中文>。

4. 完成后，请单击 [应用]。

升级/重启

1. 从设置菜单，选择<系统 (G)]> 选项卡。
2. 单击<升级/重启>。
3. 选择所需的项目并进行适当设置。
 - 升级：执行系统升级。重新连接时，如浏览器缓存未彻底清除，web 查看器无法正常运行。
 - 出厂默认设置：重置为出厂默认值：对所有设置信息进行初始化，包括将摄像机设置为出厂重置状态。（但不日志进行初始化。）
 - 选择<网络参数和 Open SDK 除外>复选框，网络设置和打开平台设置以外的设置项将重置。
 - 如果重置摄像机，IP 寻址系统将默认为 DHCP。如果未找到 DHCP 服务器，将自动恢复之前的设置。
 - 配置备份与恢复：在执行恢复流程之前，备份当前的系统设置。备份或恢复之后，系统会自动重新启动。
 - 重新启动：重新启动系统。



设置屏幕

执行升级

1. 单击 [浏览 ()] 并指定要升级的文件。
2. 单击 [升级]。
3. 将弹出显示升级状态的”升级”进度条。
4. 完成升级之后，浏览器将会退出，并且摄像机机会重新启动。

- 升级过程大约需要 10 分钟。
如果强行终止升级流程，升级将无法正确完成。
- 在重启系统期间, 无法访问Web Viewer。
- 可以从 Hanwha Vision 网站下载最新版本。

备份当前设置

1. 单击 [备份]。
2. “.bin” 文件格式的文件的存储路径是 “Library” -> “Document” -> “Downloads”。

恢复备份设置

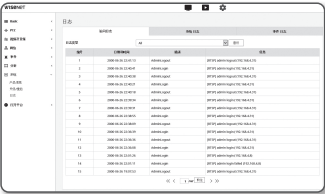
1. 要恢复备份设置，请单击 [恢复]。
2. 选择所需的备份文件。

- 如果执行备份或恢复，Web 浏览器将关闭，且摄像机将重新启动。
- 如果您试图恢复其它型号上备份的配置文件，有些功能可能会失去作用，您需要手动更改设置。

日志

可以检查系统日志或事件日志。

1. 从设置菜单，选择 <系统 ()> 选项卡。
2. 单击 <日志>。
3. 选择日志类型。
 - 访问日志：查看含有用户访问和访问时间的日志信息。
 - 系统日志：您可以检查系统日志，其中记录了所有系统更改，包括时间信息。
 - 事件日志：可以检查事件日志，包括时间信息。
4. 从右边的日志列表，选择要搜索的项目。
 - 如果在左上角的下拉列表中选择了 <All>，将显示适用日志类型的所有日志。
5. 如果一页无法显示所有可用的日志，请使用底部按钮以移至前一个、下一个或最后项目。
6. 单击 <备份> 按钮可将当前所选模式的所有日志数据保存在浏览器 download 文件夹的 “摄像机在型号名称-模式-摄像机中创建的时间戳值.txt” 文件中。



- 每页显示 15 个日志，最新的日志显示在顶部。
- 每一日志包含最多 1,000 条记录，当保存记录达 1,000 条之后，生成最新记录时将删除最早的日志。

打开平台设置

打开平台

用户可以在摄像机上安装应用程序来执行更多功能。

1. 从设置菜单，选择 **<打开平台 (P)>** 选项卡。
2. 单击 **<打开平台>**。
3. 单击 **[浏览 ()]** 按钮从用户文件夹中选择 *.cap 文件。
4. 单击 **[安装]** 按钮可安装应用程序。
5. 列表中显示所安装应用程序的信息。
 - 卸载：删除已安装或运行中的应用程序。
 - 转至应用程序：将重定向至每一应用程序的应用页面。
 - 启动：执行已安装的应用程序
 - 停止：终止正在运行的应用程序。
 - 健康：显示当前运行的应用程序的资源占用率、线程数和执行时间等。
 - 优先级：设置运行中应用程序的优先级。
如果摄像机（包括主任务和应用程序）的总资源利用率超出 80%，将强制终止某个正在运行的应用程序。此时将使用用户设置的优先级，确定应首先停止哪个应用程序。
 - 自动启动：当摄像机的电源或主任务开始运行时，已经激活自动执行的指定应用程序将自动运行。
 - 任务管理器：显示摄像机中当前运行的应用程序的资源占用率。
 - 内存使用情况 (%)：这是每个应用程序的内存使用率。
 - CPU 使用情况 (%)：这是每个应用程序的 CPU 使用率。
 - 线程计数：这是每个应用程序创建的线程计数。
 - 持续时间：这是每个应用程序的总执行时间。
 - 终止任务：终止应用程序。
 - 使用情况总计：这是摄像机 (包括主要任务和应用程序) 的总资源占用率。



■ 有关应用程序使用或安装的问题，请参阅 Hanwha Vision 开发人员网站。



故障排除

故障	解决方法
当 Windows 10 用户通过 Chrome 或 Firefox 浏览器访问 web 查看器时，麦克风音量将做周期性变化。	当 Realtek 驱动程序被设置为麦克风驱动程序时出现此现象。安装高清音频设备 (Windows 默认驱动程序) 或第三方驱动程序作为麦克风驱动程序。
在 Safari 上通过 HTTPS 访问无插件 web 浏览器时，将不会播放任何视频。	- 在初次访问 https 时出现的验证演出窗口中，点击“查看验证证书”然后选择“连接至指定 web 查看器 IP 时始终信任”复选框。 - 如在下列消息窗口中选择“下一步”之后，web 查看器依然无法播放视频，请按命令键 + Q 退出 Safari 浏览器，再次访问并执行上述步骤。
无法使用Web浏览器访问摄像机。	- 检查摄像机的网络设置 是否正确。 - 检查网络缆线是否正确 连接。 - 若使用 DHCP 连接、检查摄像机是否能够 无故障地获得动态 IP 地址。 - 若摄像机与IP路由器连接、确认是否 正确设置了端口转发。
查看器在监视期间断开。	- 已连接的查看器在摄像机或网络配置发生更改时会断开。 - 检查所有的网络连接。 - 若摄像机通过 PPPoE 网络进行连接，查看器在网络状况不佳的情况下可能会断开。
在“Device Manager”中找不到连接到网络的摄像机。	关闭 PC 上的防火墙设置、再次搜索摄像机。
图像重叠。	检查是否将多个摄像机应当设置的不同地址设为了同一多播地址。多个摄像机共享同一地址可能会导致图像的重叠。
无图像出现。	如果传输方法设置为多播，请检查摄像机所连接的 LAN 中是否有路由器支持多播。

故障	解决方法
即使配置了音频输入设置,也不会录音。	您必须在 <Basic> - <视频配置文件> 中启用 <音频输入> 复选框。
<分析> 的 <移动探测> 设置为 <启用> 但我未收到任何电子邮件通知，甚至发生了分析事件也是如此。	- 按以下顺序验证设置： A. 检查 <日期和时间> 设置。 B. <移动探测> 应设置为 <启用>。 C. 检查 <事件设置> 菜单的 <电子邮件> 选项是否选择为使用。
即使在产生智能视频分析事件时，在报警输出端口也找不到信号。	检查警报输出端口设置。
无法录制到 Micro SD 内存卡。	检查内存卡是否有缺陷。
插入了 Micro SD 内存卡，但摄像机操作不正常。	- 检查是否以正确的方向插入内存卡。不能保证本摄像机装置能正常使用由其他设备格式化的内存卡 - 在 <设置> → <事件> → <存储器> 菜单中，再次格式化内存卡。
无法录制到 NAS。	确认 NAS 中注册的信息正确无误。
系统报告 NAS 设置失败。	- 确认 NAS 的 IP 地址有效。 - 确认 NAS 的 ID/密码有效。 - 确认您可以访问使用 NAS 的 ID 指定为基本文件夹的文件夹。 - 确认 NAS 的 SMB/CIFS 项已被取消选中。 - 确认 NAS IP 地址和摄像机 IP 地址的格式正确。 Ex) NAS 和摄像机子网掩码的初始值是 255.255.255.0。 如果 IP 地址是 192.168.20.32, NAS IP 地址的范围应该是 192.168.20.1~192.168.20.255。 - 检查在未对已存或使用过的默认文件夹进行格式化前，是否以其他用户进行连接。 - 确认使用了建议的 NAS 设备。

OPEN SOURCE ANNOUNCEMENT

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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	
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	
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neon-0.29.6	LGPL 2.0	http://www.webdav.org/neon/

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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.
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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.
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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

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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.
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 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.
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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

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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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