

网络摄像机

用户手册

用影像记录一切可能

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符合RoHS标准

我们的产品符合“在电子电气设备禁用某些有害物质的指令”。该指令规定产品中不含有6种有害物质即镉 (Cd)、铅 (Pb)、汞 (Hg)、六价铬 (Cr⁶⁺)、聚合溴化联苯 (PBBs)、聚合溴化联苯乙醚 (PBDEs)。



概述

	注意 不要擅自拆装机器， 避免电击	
注意： 为避免触电危险，不得取下机器后盖。机器内部没有用户可修理的部件。 修理工作只允许由具备资格的人员进行		



此符号表示在机壳内部存在未绝缘的危险电压，有触电的危险。



此符号提醒注意随同资料中重要的操作和保养说明。

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。

警告

1. 请使用符合产品规格的适配器。使用其它任何适配器都可能造成火灾、触电事故或产品损坏。
2. 电源接错时可能引发火灾，触电事故或产品故障。
3. 禁止同一个适配器上同时连接多台摄像机使用，适配器容量超载可能引起异常发热及火灾。
4. 电源线应该牢固插入电源插座中（连接不牢固时可能造成火灾）。
5. 将摄像机安装于墙壁或天花板上时，应安全牢固地固定。摄像机坠落可能造成人身伤害。
6. 请勿将导体（如：螺丝刀、硬币或金属物）或盛满水的容器置于摄像机之上。
7. 请勿将本装置安装在潮湿、多尘或多烟的地方否则可能造成火灾或触电。
8. 如果装置中发出异常气味或烟雾请停止使用本产品。此时应立即拔出电源与服务中心联系。
此时如果继续使用可能造成火灾或触电

2_ 概述



9. 如果本产品工作异常, 请与经销商或最近的服务中心联系。请勿以任何方式拆解或更改本产品。
(因未授权用户拆解或维修造成的问题不在保修范围之内)。
10. 清洁时, 请勿将水滴直接溅在产品部件上。(否则可能造成火灾或触电)。
11. 不要将产品置于正对着空调气流的位置。
否则, 由于圆顶摄像机内外的温度差异, 会在清澈的圆顶内产生湿气凝结。
12. 如果您在低温区域(例如冷库内)安装本产品, 则必须用硅密封电线导管, 使得外面的空气不能流入机盒中。
否则, 外面湿度很高的空气可能会流入机盒中, 由于内外温度差异而导致产品内部潮湿或有水蒸汽。

注意

1. 请勿将物体掉落在产品上或使产品受到冲击。或有磁场干扰的地方。
2. 请勿将产品安装在高温(超过 50°C), 低温(低于 -10°C), 或湿度高的地方, 如果这样做就会导致火灾电击。
3. 如果移动已经安装好的产品时, 在移动或重新安装前, 请务必关掉电源。
4. 出现雷电时, 请从插座拔出电源插头, 如果疏忽, 可能导致火灾或损坏产品。
5. 避免有阳光直射的地方或热源, 如果疏忽可能带来火灾。
6. 安装在通风良好的地方。
7. 避免将摄像机直接暴露在有阳光的地方, 否则会破坏 CCD 的传感器。
8. 要防止机器淋雨或溅水。不要在机器上放置诸如花瓶一类的液体容器。
9. 电源插头需要经常插拔, 请安装在可方便拆卸的场所。用户对机器操作时, 要保证插头牢固插入到电源插座中, 以确保稳定操作。
10. 在户外使用摄像机时, 由于户内外存在温差, 可能导致摄像机内部出现湿气。因此, 我们建议您将摄像机安装在户内。当需要将摄像机安装在户外时, 请使用内嵌有风扇和加热装置的摄像机。

安全预防措施

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。
 X: 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三星内部验证后做成的。
 某些部品包含的有害物质, 按照现在的技术标准不能替代, 三星一直在为改善此项而努力。



概述

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. 请您用干布清洁本机器。
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是必须的具备充分的保护。
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。



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产品特色

- **支持各种通信协议**

支持 TCP/IP、UDP、RTP/RTSP、SMTP（用于邮件）和 FTP 协议，以及多种因特网协议，例如 ARP、HTTP、HTTPS 和 DHCP。

- **基于 Web 浏览器的监视**

使用互联网 Web 浏览器在本地网络环境中显示图像

- **自动本地 IP 设置**

即使网络新手也可以用最少的操作进行安装。

- **警报**

如果配备了警报感应器的摄像机感应到任何移动，它就会向用户 FTP/电子邮件帐户 (SMTP) 发送通知，或将相应的信号发送到警报输出终端。

- **移动探测**

如果指定移动区域的摄像机检测在该区域有移动，它就会向用户 FTP/电子邮件帐户 (SMTP) 发送通知，或将相应的信号发送到警报输出终端。

推荐 PC 技术规格

- CPU : Pentium4 / 2.4GHz 或更高
- 操作系统 : Windows XP (SP2, SP3) / Windows Vista / Windows 7
- 分辨率 : 1024X768 像素或更高
- RAM : 512MB 或更大
- 网络浏览器 : IE 6.0 或更高版本
- 显卡 : Radeon 或 Nvidia
- 显存 : 128MB
- DirectX8.1 或更高版本

兼容 IP 路由器

- Linksys
- D-Link
- Netgear

兼容 POE 交换机

- Linksys SRW224G4P
- D-Link DES-1316
- SMC SMC PWR-INJ3

概述

附带提供的物品

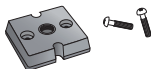
请检查产品包装内是否已包括摄像机和所有附件。



摄像机



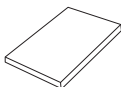
角落底座适配器
自动变光镜头连接器



摄像机座（安装）和螺钉（2EA）



用户手册/IP INSTALLER DVD



用户手册

镜头选择



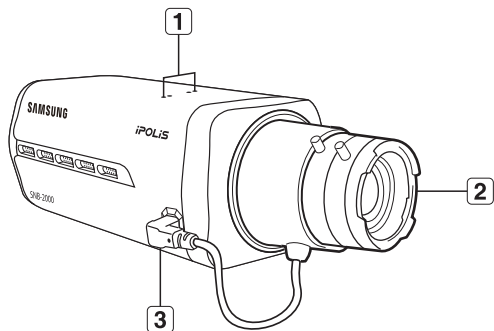
CS 镜头



C 镜头

简图

前面



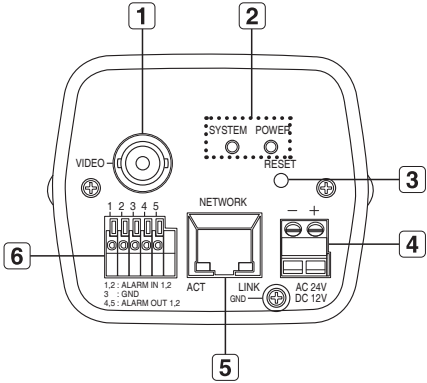
项目	说明
1 摄像机座(安装)孔	通过使用支架固定摄像机座(安装)适配器将摄像机安装到支架上时使用。
2 自动光圈镜头(可选)	安装在镜头适配器上。
3 自动光圈镜头连接器	用于电源和输出信号控制镜头光圈。



- 用擦镜布或蘸有乙醇的布块轻轻擦拭透镜去除表面脏污。

概述

背面



项目	说明	
1 视频输出口	连接到监视器的视频信号输出口。	
2 系统/电源指示灯	SYSTEM	开 摄像机已打开并且正确连接到网络。 闪烁 在 DDNS 设置过程中,或出现设置故障,或不稳定的网络连接状态 关 系统正在重新启动或关闭
	POWER	开 电源已打开 关 电源已关闭
3 重置按钮	将摄像机设置重置为默认值。按住该按钮大约 3 秒钟即可关闭系统指示灯,并重新启动系统。	
4 电源端口	用于插入电源线。	
5 网络端口	用于连接网络电缆。	
6 I/O 端口	ALARM IN 1,2	用于连接警报输入信号。
	GND	用于连接地线。
	ALARM OUT 1,2	用于连接警报输出信号。

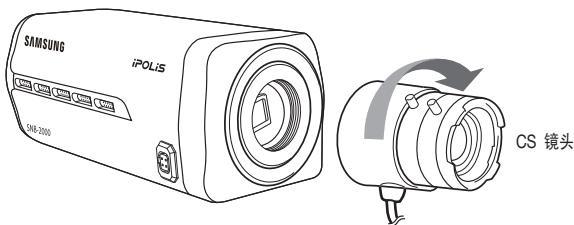
安装与连接

安装镜头

在安装前要断开电源。

安装 CS 镜头

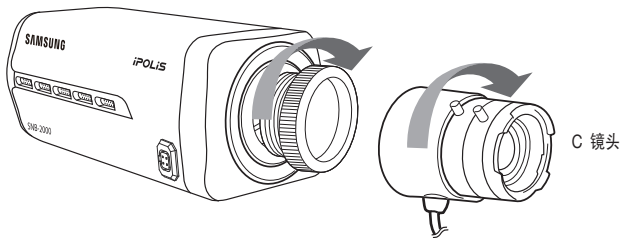
顺时针旋转可选的 CS 镜头将其插入。



附录A

安装 C 镜头

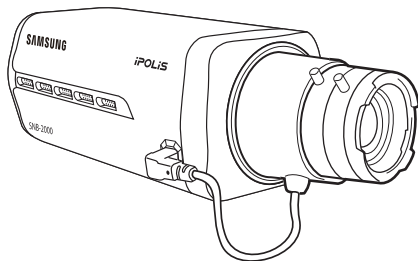
顺时针旋转角落底座适配器将其插入,然后对 C 镜头进行相同的操作。



安装与连接

连接自动光圈镜头连接器

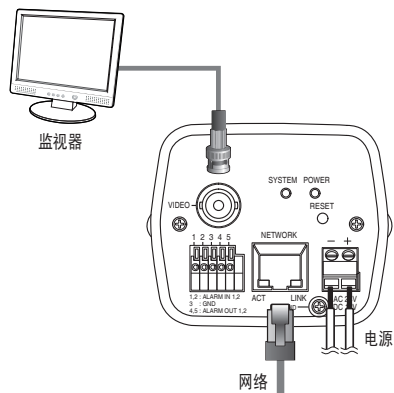
将镜头连接器插入摄像机的相应孔中。



对焦

左右旋转镜头可以控制缩放和镜头对焦,这样可以观看清晰的对象。

与其他设备连接



连接至监视器

将摄像机的 [VIDEO] 端口连接至监视器的视频输入端口。

网络连接

将网络电缆连接到本地网络或互联网。

电源

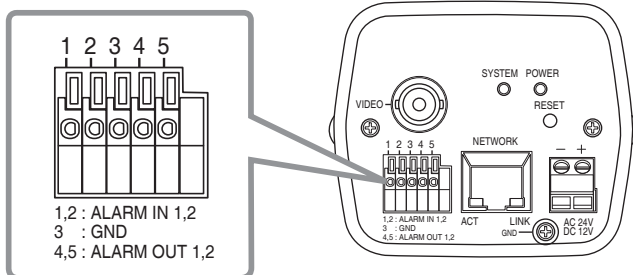
使用螺丝刀将每股电源线连接到摄像机的相应端口。

- 在连接电源线时，一定不要弄反极性。
您也可以使用具有 PoE（以太网供电）功能的路由器为摄像机供电。

安装与连接

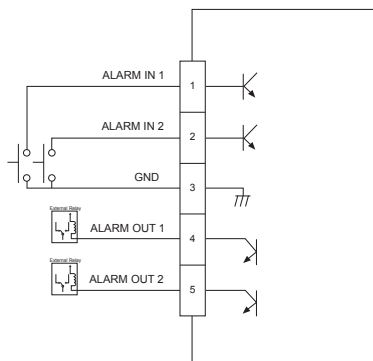
连接到 I/O 端口盒

将警报 I/O 信号连接到后面端口盒的相应端口。



- ALARM IN 1,2: 用于连接警报输入信号。
- GND: 用于连接地线。
- ALARM OUT 1,2: 用于连接警报输出信号。

警报 I/O 接线图



摄像机设置

您可以使用 Web 查看器配置摄像机设置。



■ 有关访问 Web 查看器的信息，请参阅“网络连接和设置”。（第 24 页）

如何使用键盘控制器

如果您运行 Web 查看器设置菜单，请按照以下步骤操作。

1. 启动 Web 查看器。
2. 在左侧窗格的 [摄像机 OSD] 菜单中，单击 [菜单]。
 <菜单> 屏幕将会出现。
3. 单击上/下按钮 (▲▼) 移至所需的项目。
4. 单击四向按钮 (▲▼◀▶) 在菜单项之间导航。
5. 若要更改所选项目的值，请单击左/右按钮 (◀▶)。
6. 单击 [↵]。
 将会应用您的更改。



- ：退出菜单设置屏幕。
 在退出设置屏幕前，选择 <保存> 以保存设置，或选择 <放弃> 取消设置。
- ：保存设置并返回前一个屏幕。
- ：返回到主菜单。
- ：如果要在指定遮挡区域和加密区域等项目后保存设置，请使用此图标。
 一旦保存设置后，即使您在退出时选择 [放弃]，更改也将保留。
- ：如果要删除遮挡区域或加密区域等，请使用此图标。
 一旦删除设置后，即使您在退出时选择 [放弃]，删除仍有效。
- ：此箭头会出现在包子子项的菜单旁。

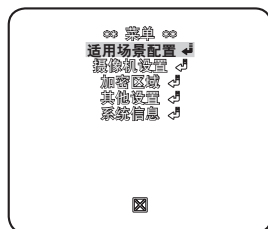
对于右边有“*”标记的项目，您可以从“术语”获得帮助。（第 58 页）

摄像机设置

主菜单

您可以根据需要配置摄像机设置。

- **适用场景配置**
您可以选择适合摄像机安装环境的模式。
- **摄像机设置**
配置摄像机功能和设置。
- **加密区域**
您可以配置隐私设置。
- **其他设置**
您可以配置包括出厂默认设置在内的更多设置。
- **系统信息**
显示摄像机版本和类型。



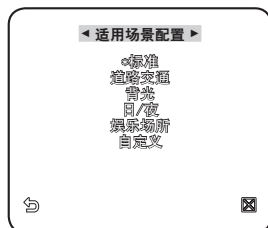
概图

您可从预置模式中选择一个适合您的特定安装环境的模式。

在 适用场景配置中选择的每一个项目将影响摄像机的其他所有设置。对于设置，请参阅“适用场景配置”。(第 57 页)

有关选择和保存各菜单项的信息，请参阅“如何使用键盘控制器”。(第 15 页)

- **标准**
自动针对正常环境优化摄像机设置。
- **道路交通**
此设置让您分析道路交通情况并一目了然地了解交通信息。
- **背光**
此设置让您在背光强烈的场景中仍可看到鲜明的背景和对象。
- **日/夜**
自动针对白天和夜晚场景优化摄像机设置。
- **娱乐场所**
自动配置设置使您可在稳定的照明环境（比如室内）工作。
- **自定义**
更改任意适用场景配置设置均将使显示切换至自定义。





摄像机设置

您可以配置摄像机模块的一般设置。

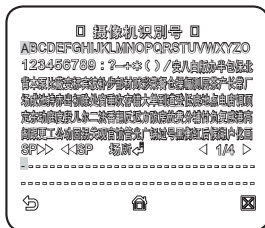
使用四向按钮 (▲▼◀▶) 选择所需的项目。

摄像机识别号

提供在屏幕上显示的摄像机识别号和位置。

有关选择和保存各菜单项的信息,请参阅“如何使用键盘控制器”。(第 15 页)

1. 选择 **<摄像机设置>** - **<摄像机识别号>**。
2. 使用四向按钮 (▲▼◀▶) 选择所需的字符。
所选字符将输入到屏幕下方的输入框中。
 - 您最多可以输入 54 个字符,包括字母、数字和特殊字符。
3. 完成后,继续选择 **<场所>** 以指定摄像机识别号的显示位置。

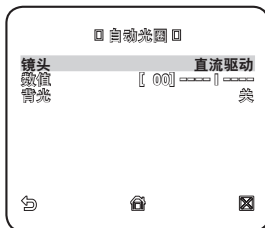


光圈

您可以设置光圈以控制进入摄像机的光线强度。

有关选择和保存各菜单项的信息,请参阅“如何使用键盘控制器”。(第 15 页)

1. 选择 **<摄像机设置>** - **<光圈>**。
 2. 使用左/右按钮 (◀▶) 选择 **<自动光圈>** 或 **<电子光圈>**。
 - 自动光圈: 自动控制照明。
 - 镜头: 选择要使用的镜头。
 - 电子光圈: 以电子方式控制水平。
 - 数值: 选择整体亮度水平。
 - 背光: 指定补偿背光的区域。
- 如果将 **<区域>** 设置为 **<用户>**, 可指定位置 and 大小。



- 如果将光圈设置为 **<自动光圈>**, 在调节 AE 和快门速度时固定光圈是您的优先选择。



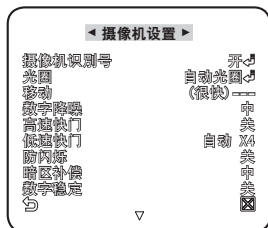
摄像机设置

移动

可指定 自动增益水平以控制摄像机移动。

如果要监视在低对比度场景中快速移动的对象,请选择 很快,如果要在同样条件下监视移动缓慢的无生命对象可选择 很慢。

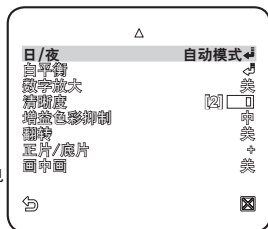
当日/夜设置为自动时,<移动> 菜单将不可用。



数字降噪

降低屏幕上的噪点。此功能在出现杂乱线条的屏幕上尤其有用。

将其设置为 <用户> 可指定水平。



高速快门

高速快门菜单用于设定固定快速电子快门或自动快速电子快门。

低速快门

如果视频信号的亮度太低,将激活低速快门功能。

低速快门可以收集单个最大帧率以调节设置。

防闪烁

如果设置为 <开>,则快门速度将固定为 1/100 秒。这可防止可能会由垂直同步频率与光源的闪烁频率不相符而引起的屏幕变形。

- 如果光圈设置为电子光圈/速度快门设置为自动、固定、外部模式/低速快门设置为 固定/自动增益设置为固定,则将禁用 <数字稳定> 菜单。

暗区补偿

这可纠正不同场景的亮度差异以得到最佳可见度。此值越高,纠正效果越明显。

数字稳定

自动补偿屏幕上发生的闪烁。

如果设置为 <开>,图像将使用数字变焦放大到补偿区域大小。

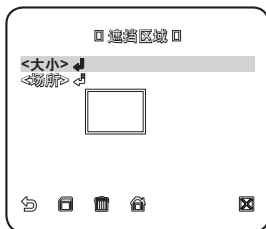
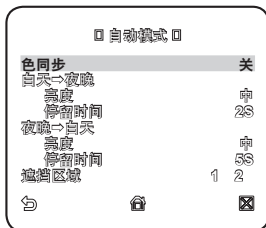


日/夜

可根据场景指定录像模式。

有关选择和保存各菜单项的信息，请参阅“如何使用键盘控制器”。(第 15 页)

1. 选择 **<摄像机设置>** - **<日/夜>**。
2. 根据照明环境选择一种屏幕过渡模式并设置适当的选项。
 - 白天：固定为白天模式，无论场景。
 - 夜晚：固定为夜晚模式，无论场景。
如果“色同步”设置为 **<开>**，色同步信号将会输出。
 - 自动：根据照明环境，将自动从白天切换至夜晚模式，或反之。
 - 白天→夜晚/夜晚→白天：如果设置为 **<自动>**，您即可指定在“白天”与“夜晚”之间触发模式切换的亮度水平，以及时间间隔。
 - 遮挡区域：如果在夜晚场景中存在一个高亮点光源，可按需要指定大小和位置。
夜晚场景中的任何过亮区域将被遮挡。

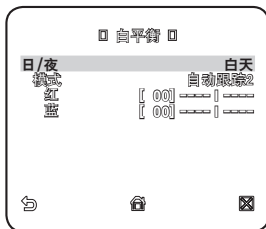


白平衡

如果需要调整屏幕亮度，请使用白平衡功能。

有关选择和保存各菜单项的信息，请参阅“如何使用键盘控制器”。(第 15 页)

1. 选择 **<摄像机设置>** - **<白平衡>**。
2. 选择设置平衡的一种模式。
 - 白天：可设置白天模式下的红和蓝值。
 - 夜晚：可根据环境照明调整 **<白平衡>**。

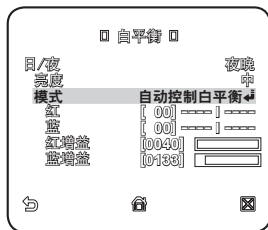


摄像机设置

3. 根据制定的录像模式，选择一种白平衡模式并选择必要的选项。

- 亮度：指定触发从白天模式切换到夜晚模式的亮度水平。
- 模式：根据选择的模式，您可以调整红和蓝颜色值。
 - 红：调整红色的强度。
 - 蓝：调整蓝色的强度。
 - 红增益/蓝增益：手动自动当前色温。

■ 只能在自动控制白平衡模式中设置红增益和蓝增益的值。



数字放大

可以设置数字缩放因数和位置。
定义缩放因数和位置后，数字放大功能将开始工作。

- 如果数字变焦系数大于实际补偿放大系数，数字稳定功能将被禁用。

清晰度

您可以分别调节垂直和水平清晰度。

增益色彩抑制

这将会根据自动增益值调整颜色方案。

翻转

这会将信号从左向右、从上到下或操作组合进行翻转。

正片/底片

这可将视频亮度信号显示为普通或翻转。

画中画

可在同一个屏幕上与主图像一起显示子图像。

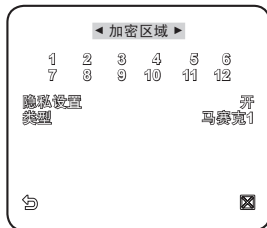
加密区域

可设置最多 12 个加密区域,为保护某些对象的隐私在录像时将隐藏这些区域。

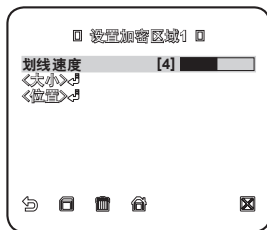
有关选择和保存各菜单项的信息,请参阅“[如何使用键盘控制器](#)”。(第 15 页)


区域设置

1. 选择 <主菜单> - <加密区域>。
2. 使用四向按钮 (▲▼◀▶) 选择所需的号码。
区域设置屏幕将会出现。



3. 选择 <划线速度>。
指定位置设置的像素单位水平。
4. 选择 <大小>。
您将会在屏幕上看到点。
5. 使用四向按钮 (▲▼◀▶) 指定四个点中每个点的位置。
6. 选择 <位置>, 并使用四向按钮 (▲▼◀▶) 指定四个点中每个点的位置。
7. 保存更改, 移至下一个屏幕, 选择 <类型>。
选择 <颜色>, 然后选取所需的颜色。



-  ■ 设置一个或多个加密区域并启用隐私功能将禁用画中画功能。

摄像机设置

其他

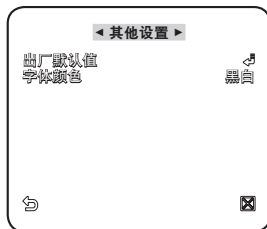
您可以重置摄像机或选择 OSD 字体颜色以适合您的偏好。

有关选择和保存各菜单项的信息，请参阅“[如何使用键盘控制器](#)”。(第 15 页)

出厂默认设置

1. 选择 **<主菜单>** - **<其他设置>** - **<出厂默认值>**。

出厂默认值设置屏幕将会出现。



2. 选择 **<成功>**。

所有设置均将还原为出厂默认设置。

但是，将不会恢复语言设置。



字体颜色

您可以设置用户界面的字体颜色。

系统信息

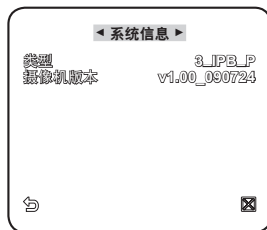
您可以检查系统信息。

有关选择和保存各菜单项的信息，请参阅“[如何使用键盘控制器](#)”。(第 15 页)

1. 选择 <主菜单> - <系统信息>
2. 此时将显示当前系统信息。



■ 摄像机类型可能会有不同，取决于视频信号。



网络连接和设置

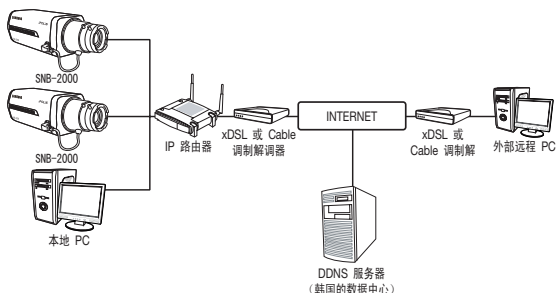
可根据您的网络配置来设置网络的设定。



- 在安装此程序之前或者使用此程序时, 请访问 Samsung 网站 www.samsungsecurity.com 并下载和升级所提供的最新软件版本。

将摄像机与使用 XDSL/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。



配置连接到 IP 路由器

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 : <Network Neighborhood> → <Properties> → <Local Area Connection> → <Properties> → <General> → <Internet Protocol (TCP/IP)> → <Properties> → <Obtain an IP address automatically> 或 <Use the following IP address>.
- 若您选择的是<Use the following IP address>, 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

子掩网码 : 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

子掩网码 : 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
 子掩网码: 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。

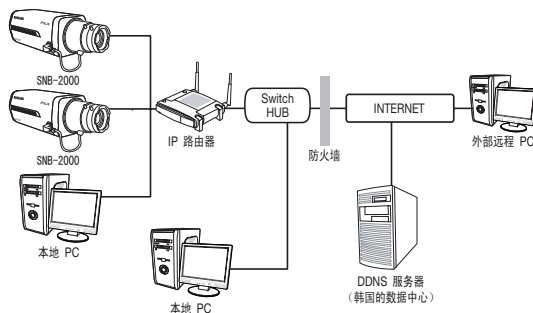
检查 IP 路由器是否正确地与 xDSL/Cable 调制解调器连接

在 IP 路由器的设置菜单中选择 <Status>

- 若正确连接, 会显示 ISP 提供的 <IP Address>、<Subnet Mask>和<Gateway>。
 请记住这些值, 因为外部远程计算机的 IP 路由器需要这些值来连接摄像机。 但请注意 ISP 对 <IP Address>、<Subnet Mask>和<Gateway>的设置进行定期更改
- 若 IP 路由器未正确连接, 按 [Connect] 按钮以尝试连接, 或检查 IP 路由器的设置是否正确。

将摄像机与局域网的 IP 路由器连接

用于如企业办公室、建筑、公共写字楼和工厂等大型网络环境。



配置连接到 IP 路由器

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: <Network Neighborhood> → <Properties> → <Local Area Connection> → <Properties> → <General> → <Internet Protocol (TCP/IP)> → <Properties> → <Obtain an IP address automatically> 或 <Use the following IP address>.
- 若您选择的是 <Use the following IP address>, 遵照以下说明操作:



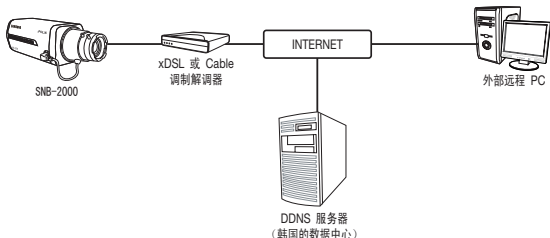
网络连接和设置

- 例 1) 若 IP 路由器的地址 (LAN IP) 为 192.168.1.1
IP 地址: 192.168.1.100
子掩网码: 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
子掩网码: 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
子掩网码: 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。

将摄像机与基于 DHCP 的 XDSL/CABLE 调制解调器直接连接



设置 IP 路由器

即可启用使用 DHCP 的调制解调器。

1. 设置静态或动态 IP 地址。(第 29~34 页)
2. 启动与 IP 路由器连接的本地 PC 上的浏览器。
3. 在浏览器的地址栏中输入 IP 路由器的地址。

例) <http://192.168.1.1>, <http://192.168.0.1>
或 <http://192.168.xxx.1>

■ 对于 DDNS URL 地址, 请参阅“检查 DDNS 地址”。(第 36 页)

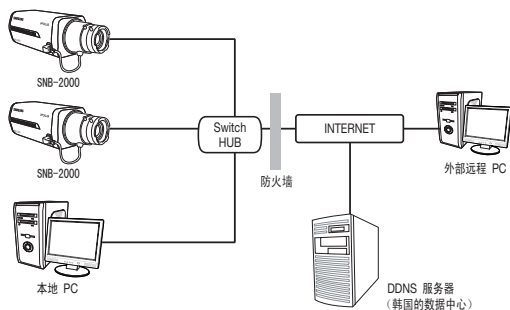


4. 当 IP 路由器连接后会出现登录窗口并提示输入密码。
 - 登录 IP 和密码请参见 IP 路由器的文档。
5. 在完成后可看到 IP 路由器的设置窗口。 在设置菜单 Internet 连接类型, 选择“自动配置 DHCP”
 - 有关或 Internet 连接类型 DHCP 选择, 参见 IP 路由器的文档。
6. 完成后, 单击[Save]或[Apply]按钮保存设置。

将摄像机与局域网直接连接

连接局域网内的本地 PC 和摄像机

1. 启动本地 PC 上的网络浏览器。
2. 在浏览器的地址栏中输入 IP 地址。

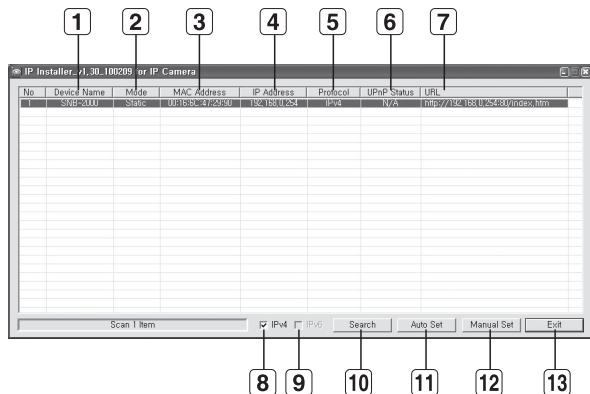


- 在正确设置防火墙或端口转发前, 局域网外部的远程互联网 PC 可能无法连接安装于内部网的摄像机。
在此情况下, 联系网络管理员解决问题。



网络连接和设置

IP 地址设置



在 IP Installer 中使用的按钮

项目	说明
1 Device Name	已连接摄像机的型号名称。 单击此列可以按型号名称对列表进行排序。 但是,如果在搜索时单击将会停止搜索。
2 Mode	对当前网络连接状态显示 <Static> 或 <Dynamic>。
3 MAC(Ethernet) Address	已连接摄像机的以太网地址。 单击此列可以按以太网对列表进行排序。 但是,如果在搜索时单击将会停止搜索。
4 IP Address	IP 地址。 单击此列可以按 IP 地址对列表进行排序。 但是,如果在搜索时单击将会停止搜索。 出厂默认设置为“192.168.1.200”。
5 Protocol	摄像机的网络设置。 出厂默认设置为“IPv4”。 使用 IPv6 设置的摄像机将显示“IPv6”。
6 UPnP Status	此功能当前不可用。



7	URL	DDNS URL 地址可以从外部互联网访问。 但是, 如果 DDNS 注册失败, 此按钮将被摄像机的 <IP Address> 代替。
8	IPv4	扫描使用 IPv4 设置的摄像机。
9	IPv6	扫描使用 IPv6 设置的摄像机。
10	Search	扫描当前连接到网络的摄像机。 但是, 如果没有选取 IPv4 也没有选取 IPv6, 该按钮将呈灰色。
11	Auto Set	<IP Installer> 将自动为您配置网络设置。
12	Manual Set	您应该手动配置网络设置。
13	Exit	退出 IP Installer 程序。

静态 IP 设置

手动网络设置

运行 <IP Installer.exe> 以显示摄像机搜索列表。

在初始启动时, [Auto Set] 和 [Manual Set] 将呈灰色。

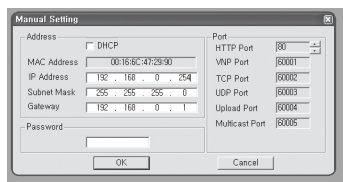
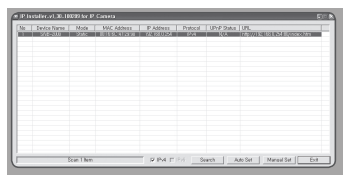


■ 对于以 IPv6 设置为基础的摄像机, 这些按钮将呈灰色, 因为摄像机不支持此功能。

1. 从搜索列表选择一个摄像机。
找到摄像机后面标签上的 MAC
(以太网) 地址。
将激活 [Auto Set] 和 [Manual Set]
按钮。

2. 单击 [Manual Set]。
MANUAL SET 对话框将会出现。
将显示摄像机 <IP Address>、
<Subnet Mask>、<Gateway> 和 <HTTP Port> 的默认值。
默认 <PASSWORD> 为 “4321”。

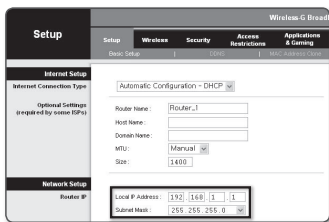
3. 在 <ADDRESS> 窗格中, 提供必需的信息。
MAC (Ethernet) Address: 将自动设置
适用摄像机的 MAC (以太网) 地址,
因此您无需手动输入。



网络连接和设置

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 <Subnet Mask> 将是摄像机的 <Subnet Mask>。
- Gateway: IP 路由器的 <Local IP Address> 将是摄像机的 <Gateway>。



如果不使用 IP 路由器:

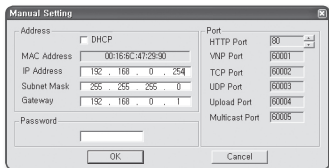
若要设置 <IP Address>、<Subnet Mask> 和 <Gateway>, 请联系网络管理员。



- Device、TCP、UDP、Upload 和 Multicast 的端口值可以手动更改, 并将根据 HTTP 端口值调整。

4. 在 <PORT> 窗格中, 提供必需的信息。

- HTTP Port: 用于使用互联网浏览器访问摄像机, 默认值为 80。
使用旋钮更改 HTTP 端口值。
端口的起始值是 80, 并以 6 为基数增加, 如 10000、10006、10012。
 - Device Port: 用于控制视频信号传输, 默认值为 60001(TCP)。
 - TCP Port: 使用 TCP 协议的信号传输, 默认值为 60002(TCP)。
 - UDP Port: 使用 UDP 单播方式的信号传输端口, 默认值为 60003(UDP)。
 - Upload Port: 用于升级软件固件, 默认值为 60004(TCP)。
 - Multicast Port: 使用 UDP 多播方式的信号传输端口, 默认值为 60005(UDP)。
5. 输入密码。
这是访问摄像机的“admin”用户的登录密码。
默认密码为“4321”。



- 单击 **[成功]**。
将完成手动网络设置。
- 在完成包括 **<IP>** 的手动设置后，摄像机将重新启动。

如果 IP 路由器连接了多个摄像机

彼此清楚地配置 IP 相关设置和端口相关设置。

类别		摄像机 1	摄像机 2
IP 相关设置	IP Address	192.168.1.200	192.168.1.201
	Subnet Mask	255.255.255.0	255.255.255.0
	Gateway	192.168.1.1	192.168.1.1
端口相关设置	HTTP Port	80	10000
	Device Port	60001	10001
	TCP Port	60002	10002
	UDP Port	60003	10003
	Upload Port	60004	10004
	Multicast Port	60005	10005

- 如果 **<HTTP Port>** 设置为除 80 以外的值，您必须在互联网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://192.168.1.201:10000

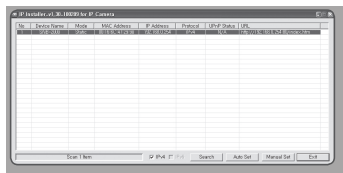
自动网络设置

运行 **<IP Installer.exe>** 以显示摄像机搜索列表。

在初始启动时，**[Auto Set]** 和 **[Manual Set]** 将呈灰色。

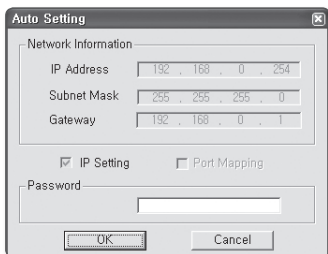
- 对于以 IPv6 设置为基础的摄像机，这些按钮将呈灰色，因为摄像机不支持此功能。

- 从搜索列表选择一个摄像机。
找到摄像机后面标签上的 MAC（以太网）地址。
将激活 **[Auto Set]** 和 **[Manual Set]** 按钮。
- 单击 **[Auto Set]**。
AUTO SET 对话框将会出现。
将自动设置 **<IP Address>**、**<Subnet Mask>** 和 **<Gateway>**。



网络连接和设置

3. 输入密码。
这是访问摄像机的“admin”用户的登录密码。
默认密码为“4321”。
4. 单击 [OK]。
将完成自动网络设置。
5. 摄像机将自动完成网络设置，然后重新启动。



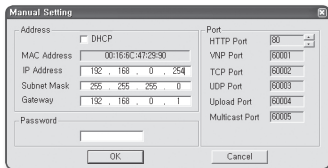
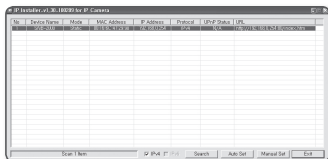
动态 IP 设置

动态 IP 环境设置

- 动态 IP 环境示例
 - 如果连接了摄像机的 IP 路由器由 DHCP 服务器分配了 IP 地址
 - 如果使用 DHCP 协议将摄像机直接连接到 xDSL 或有线电视网调制解调器
 - 如果 IP 由内部 DHCP 服务器通过 LAN 分配

检查动态 IP

1. 从本地 PC，运行 <IP Installer> 以显示分配了 <Dynamic IP> 的摄像机列表。
2. 从列表中选择摄像机，然后单击 [Manual Set] 检查摄像机的 <Dynamic IP>。
如果取消选取 <DHCP>，您即将 <IP> 或 <PORT> 更改为 <STATIC>。

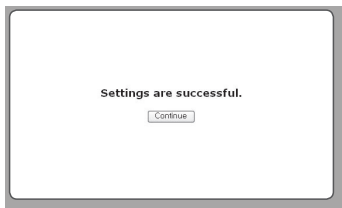
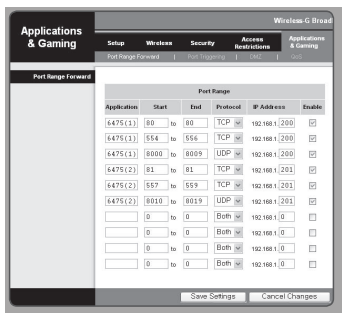


端口范围前移（端口映射）设置

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。

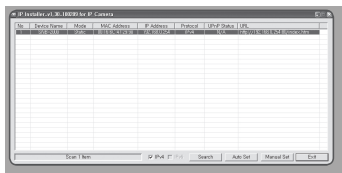
手动端口范围前移

1. 从 IP 路由器的 Setup 菜单中，选择 **<Applications & Gaming>** - **<Port Range Forward>**。
对于第三方 IP 路由器端口范围前移设置，请参阅该 IP 路由器的用户手册。
2. 对连接到 IP 路由器的每个摄像机选择 **<TCP>** 和 **<UDP Port>**。
IP 路由器的每个端口号都应该与在摄像机设置菜单的 **<基本>** - **<IP>** 中指定的端口号相符。
3. 完成后，单击 **[Save Settings]**。
将保存设置。



从共享的本地 PC 连接到摄像机

1. 启动 **<IP Installer>**。
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。
互联网浏览器将启动，并连接到摄像机。



您也可以在互联网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



网络连接和设置

从远程 PC 通过互联网连接到摄像机

由于远程 PC 无法直接访问 <IP Installer>, 您应该使用摄像机的 DDNS URL 访问 IP 路由器网络中的摄像机。

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. 从远程 PC 启动互联网浏览器, 并在地址栏中键入摄像机的 DDNS URL 地址, 或 IP 路由器的 IP 地址。

例) <http://mfffe42.websamsung.net>

- 对于 DDNS URL 地址, 请参阅“**检查 DDNS 地址**”。(第 36 页)



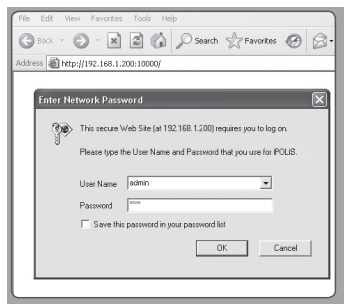


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连接到摄像机

通常,您应该

1. 启动互联网浏览器。
2. 在地址栏中键入摄像机的 IP 地址。
 - 例 • IP 地址 (IPv4) : 192.168.1.200
→ http://192.168.1.200
 - 应该会出现登录对话框。
 - IP 地址 (IPv6) : 2001:230:abcd:ffff:0000:0000:ffff:1111
→ http://[2001:230:abcd:ffff:0000:0000:ffff:1111]



如果 HTTP 端口为除 80 以外的值

1. 启动互联网浏览器。
2. 在地址栏中键入摄像机的 IP 地址和 HTTP 端口号。
 - 例) IP 地址 : 192.168.1.200:Port number(10000) → http://192.168.1.200:10000
 - 应该会出现登录对话框。

使用 URL

1. 启动互联网浏览器。
2. 在地址栏中键入摄像机的 DDNS URL。
 - 例) URL 地址 : http://mfffe42.websamsung.net
 - 应该会出现登录对话框。

通过 URL 连接(如果 HTTP 端口为除 80 以外的值)

1. 启动互联网浏览器。
2. 在地址栏中键入摄像机的 DDNS URL 和 HTTP 端口号。
 - 例) URL 地址 : http://mfffe42.websamsung.net:Port number(10000)
→ http://mfffe42.websamsung.net:10000
 - 应该会出现登录对话框。



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检查 DDNS 地址

DDNS 地址包括 <以下其中一个小写字母 c、m、p> + <MAC(以太网)地址后 6 位> + <websamsung.net>

如果 MAC(以太网)地址前 6 位是 <00:00:f0>, 小写字母将是 <c>, 或者如果 MAC(以太网)地址前 6 位是 <00:16:6c> 或 <00:68:36>, 则小写字母将分别是 <m> 或 <p>。

例) - 如果 MAC(以太网)地址是 00:00:f0:ff:fe:42: c + ffe42 + websamsung.net = cffe42.websamsung.net

- 如果 MAC(以太网)地址是 00:16:6c:ff:fe:42: m + ffe42 + websamsung.net = mffe42.websamsung.net

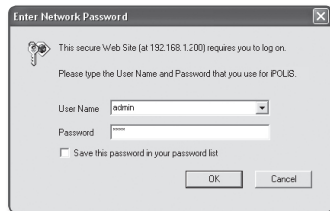
- 如果 MAC(以太网)地址是 00:68:36:ff:fe:42: p + ffe42 + websamsung.net = pffe42.websamsung.net

! ■ 上述地址只是示例; 不要使用上述任何地址进行连接。

登录

默认的用户 ID 是“admin”, 默认密码是“4321”。

1. 在 <User Name> 输入框中输入“admin”。
2. 在 <Password> 输入框中输入“4321”。如果更改了密码, 请输入更改的密码。
3. 单击 [OK]。如果已成功登录, 您将会看到 Live Viewer 屏幕。



- ✍ ■ 为安全起见, 请确保在 <基本> - <用户> 中更改了密码。管理员 ID, 即“admin”被固定, 无法更改。
- 如果您在完成输入之后选取“Save this password in your password list”选项, 则从下次起在不提示输入登录信息时即可自动登录。

- ! ■ 为此, 您的电脑需要安装 DirectX 8.1 或更高版本。
您可从 <http://www.microsoft.com/download> 免费下载最新的 DirectX。
如果您使用 Internet Explorer 7.0 或 8.0 作为默认的 Web 浏览器, 就可以使用 100% 的屏幕比查看最佳图像质量。降低比率可能会切掉边框中的图像。

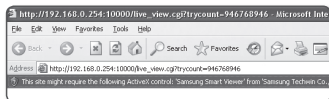


安装 ACTIVEX

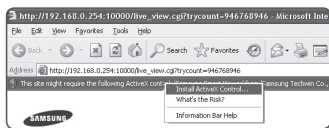
如果首次连接到摄像机,您将会看到安装消息。然后,安装所需的 ActiveX 以访问摄像机并在摄像机内实时控制视频。

对于 Windows XP Service Pack 2 用户

1. 单击在首次访问摄像机时弹出的安装消息。



2. 单击 <Install ActiveX control...>。



3. 安全性警告弹出窗口将会出现, 单击 [Install]。



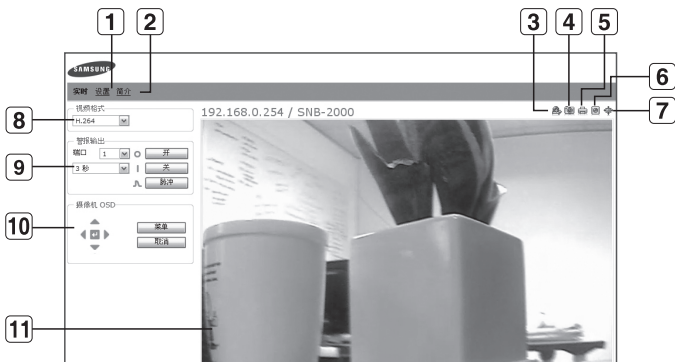
4. 访问摄像机后如果已正确安装了所需的 ActiveX, 应该会出现现场屏幕。

- 对于正常安装, 请按以下方式设置拦截弹出窗口设置:
Internet Explorer → 工具 → 拦截弹出窗口 → 总是允许从当前网站弹出窗口 (A)



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使用现场屏幕




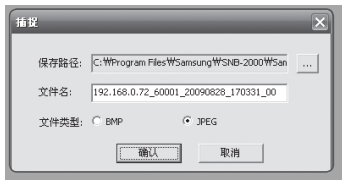
项目	说明
1 设置	移至设置屏幕。
2 简介	您可以检查固件版本、序列号和制造商信息。
3 重置警报	重置警报图标。(警报和移动图标消失。)
4 捕捉	以 .jpeg 或 .bmp 格式将快照另存为图像文件。
5 打印	打印输出当前图像。
6 录制	以 .avi 格式将快照另存为视频文件。
7 全屏	全屏显示现场屏幕。
8 视频格式	您可以设置视频文件的视频格式 (MJPEG, H.264/MPEG4)。上下文菜单因在活动查看器 <选择 H.264 & MPEG4 视频> 中的编解码器而有不同。
9 警报输出	开: 激活指定的警报输出端口。 关: 关闭指定的警报输出端口。 脉冲: 以取消激活之前指定的同样多时间激活警报输出端口。
10 摄像机 OSD	用于检索和自定义摄像机设置菜单。有关选择和保存各菜单项的信息, 请参阅“如何使用键盘控制器”。(第 15 页)
11 查看器屏幕	显示屏幕上的现场视频。

备份


您可以捕捉、打印输出和保存指定路径中的快照。

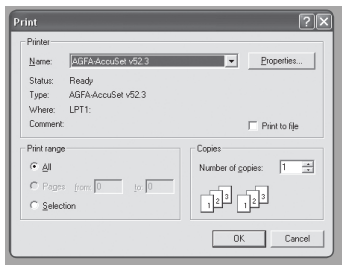
捕捉快照

1. 在场景上单击  进行捕捉。
捕捉对话框应该会出现。
 2. 单击 **确认**。屏幕截图会保存在指定的路径中。
- 默认的文件路径
 - Windows XP: C:\Program Files\Samsung\SNB-2000\Snapshot\Live
如果您想更改路径, 请单击 **设置路径(...)** 并指定路径。
 - Windows Vista, Windows 7: C:\users\[UserID]\Documents\Samsung\SNB-2000\Snapshot\Live
在 Windows Vista, Windows 7 系统中, 要保存的路径将被固定。
 - 屏幕截图文件将会自动命名, 格式为 <IP address_Port number_YYYYMMDD_hhmmss_index>。
例) 192.168.0.72_60001_20090828_170331_00



打印输出屏幕截图

1. 在场景上单击  进行打印。
打印设置对话框将会出现。
2. 指定已连接的打印机名称, 然后单击 **[OK]**。



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录制视频

1. 在场景上单击 [REC] 进行录制。
2. 您将会看到保存为 AVI 对话框：提供必需的信息。

- 保存路径：您可以更改默认的保存路径。
- 文件名：您可以更改默认的文件名。
- 硬盘最小剩余空间：如果硬盘上的可用空间小于录制的空间，录制将被强行结束。

3. 单击 [确认]。

录制将会从在查看器屏幕上显示 <REC> 开始。视频文件将保存在指定的路径中。

4. 如果您想退出录制，可再次单击 [REC]。

- 默认的文件路径
 - Windows XP: C:\Program Files\Samsung\SNB-2000\VideoClip\Live
 - 如果您想更改路径，请单击 [设置路径 (...)] 并指定路径。
 - Windows Vista, Windows 7: C:\users\[UserID]\Documents\Samsung\SNB-2000\VideoClip\Live
 - 在 Windows Vista, Windows 7 系统中，要保存的路径将被固定。
- 屏幕截图文件将会自动命名，格式为 <IP address_Port number_YYYYMMDD_hhmmss_index>。
例) 192.168.0.72_60001_20090828_170404_00
- 如果您想播放 .avi 文件，则必须在系统上安装相应的 DivX 编解码器。您可从 <http://sourceforge.net/projects/ffdshow/> 免费下载 DivX。
- 必须具有用于 MPEG4 的特定编解码器才能播放 MPEG4 格式的视频。可从以下网址下载用于 MPEG4 视频的编解码器 www.samsungsecurity.com。

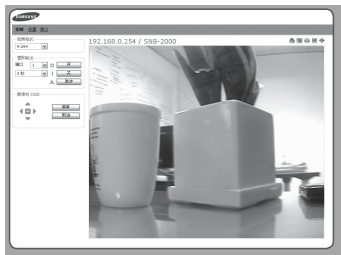


设置屏幕

访问设置屏幕

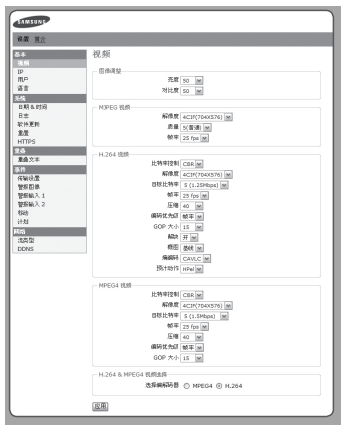
您可以配置默认的设置、系统、重叠、事件及网络相关设置，并根据需要进行更改。

1. 在现场屏幕中，单击 <设置>选项卡。



● 设置屏幕

2. 设置屏幕将会出现。



设置屏幕

默认设置

配置视频设置

您可以设置视频分辨率和质量,并选择所需的编解码器。

1. 选择〈基本〉-〈视频〉。

视频设置屏幕将会出现。

- 亮度: 在 1 与 100 之间调整屏幕亮度。
- 对比度: 在 1 与 100 之间调整对比度。
- 解像度: 设置 MPEG4、H.264 和 MPEG 文件的视频大小。
 - NTSC : 4CIF(704x480), VGA(640X480), CIF(352X240)
 - PAL : 4CIF(704x576), VGA(640X480), CIF(352X288)
- 质量: 在 1 与 10 之间调整图片质量。
- 帧率: 从 30 fps、15 fps、8 fps、3 fps 和 1 fps 中选择一项。
- 比特率控制*: 为压缩方式选择 CBR (恒定比特率) 或 VBR (可变比特率)。

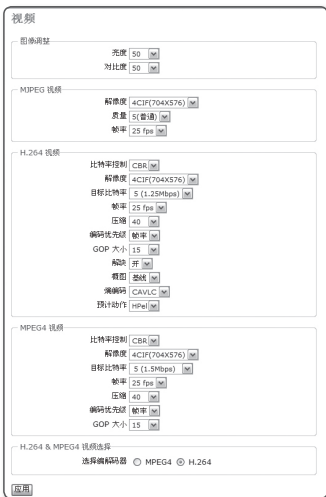
- 如果选择 VBR, 您就无法设置目标比特率。

- 目标比特率: 以指定的比特率传输视频信号。
- 压缩: 以 5 为基准从 5 到 100 调整压缩率。
- 编码优先级: 将视频传输方法设置为帧率或质量。
- GOP* 大小: 在 5 至 15 之间选择 GOP 大小。
- 解决: 这将软化微距块之间的边缘。
- 概图: 为 H.264 靠模方法选择基线或主。
- 熵编码: 减少因编码引起的压缩损失。
- 预计动作: 通过判断移动向量估计像素的移动。

- ! ■ 如果您将配置文件设置为基线, 则熵编码仅限 CAVLC* 可用; 如果将其设置为主, 则熵编码对 CAVLC* 和 CABAC* 均可用。

2. 完成后, 单击 [应用]。

将保存设置。





配置 IP 设置

1. 选择 <基本> - <IP>。

IP 设置窗口将会出现。

- IP 配置: 为摄像机设置 IP 和端口设置。

- IP 类型: 在 <静态 IP>、<动态 IP> 和 <PPPoE IP> 中选择一个。

- 如果选择 <PPPoE IP>, 您可以提供可选 ADSL IP 和密码。但是, VNP 和 RTP 的多播项目 (多点广播地址、端口、TTL) 将会消失。

- MAC 地址: 显示以太网 MAC 地址。这常用来创建 DDNS 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>。

- DNS 服务器: 显示 DNS (域名服务) 服务器地址。

- HTTP Web 服务器端口: 用于通过 Web 浏览器访问摄像机的 HTTP 端口。默认值是 80(TCP)。

- 上传端口 (TCP): 用于升级软件固件, 默认值为 60004(TCP)。

- IPv6 配置: 获取访问 IPv6 网络的 IPv6 地址。

- VNP 配置: 设置用于根据 Samsung 协议传输视频信号的端口。

- 设备端口 (TCP): 用于控制视频信号传输, 默认值为 60001(TCP)。

- TCP 流端口: 使用 TCP 协议的传输视频信号, 默认值为 60002(TCP)。

- UDP 流端口: 用于根据 UDP 单播协议传输视频信号的 UDP 端口。默认值是 60003(UDP)。

- 组播地址: 用于根据 UDP 多播协议传输视频信号的 IP 地址。默认值为 225.128.1.128, 但是, 如果您想更改此地址, 可在 224.0.0.0 到 239.255.255.255 范围内指定。

- 组播端口: 用于根据 UDP 多播协议传输视频信号的 UDP 端口。默认值是 60005(UDP)。

- TTL*: 为 VNP 数据包设置 TTL。

默认值为 63, 但是, 如果您想更改此值, 可在 0 到 255 范围内指定。

The screenshot shows the 'IP' configuration window. It has several sections: 'IP 配置' (IP Configuration) with fields for IP type (Static IP selected), MAC address, IP address, subnet mask, gateway, DNS server, HTTP web server port, and upload port (TCP). 'IPv6 配置' (IPv6 Configuration) has a checkbox for 'IPv6 启用' (IPv6 Enable). 'VNP 配置' (VNP Configuration) has fields for device port (TCP), TCP stream port, UDP stream port, multicast address, multicast port, and TTL. 'RTP 配置' (RTP Configuration) has fields for RTP port, stream port, multicast address, multicast port, and TTL. An '应用' (Apply) button is at the bottom left.



设置屏幕

- RTP 配置：您可以设置 RTP 协议。
 - RTSP 端口：您可设置 RTSP 端口。
 - 流端口：用于根据 RTP 协议传输视频信号。默认范围是 61000 到 61999。
 - 组播地址：用于根据 RTP 协议传输视频信号的 IP 地址。
 - 组播端口：用于根据 RTP 协议多播传输视频信号。
 - TTL*：可为 RTP 数据包设置 TTL。
- 2. 完成后，单击 [应用]。
将保存您的设置并重新启动系统。
将关闭当前打开的 Web 浏览器。

 ■ 如果 IP 路由器已连接多台摄像机，您应为每台分别配置不同的 IP 和端口设置。

设置用户帐户

1. 单击 <基本> - <用户>。
用户设置窗口将会出现。
 - 登录验证：您可以设置用户验证的登录。
 - 如果您选择 <启用>，用户应该完成登录验证；如果选择 <禁用>，每个用户都可以无需验证访问系统，只要有普通用户权限即可。
 - 完成后，单击 [应用]。
 - 用户登录 ID/密码列表：显示可访问的用户 ID、密码及分级列表。
 - 您最多可以添加 10 个用户。
 - 管理员 ID 是“admin”。
 - 管理员 ID 的密码可以更改，但是无法添加或删除。
2. 完成后，单击 [应用]。
将保存设置。
将关闭当前打开的 Web 浏览器。



用户注册

1. 在用户设置窗口中，单击 [插入]。
注册用户窗口将会出现。
2. 分别提供 <用户 ID>、<密码> 和 <确认密码>。您可以分别对用户 ID 和密码最多输入 9 个字母数字字符或特殊字符（要排除一些）。
3. 选择用户级别。
对新用户的权限选择 <操作员> 或 <用户>。
4. 单击 [应用]。
即完成用户注册。



- 现有的用户 ID 无法重复新增。
- 无法注册 admin ID 或 guest ID。

编辑注册的用户账户

1. 在“用户”设置窗口中，选择要更改的用户 ID。
2. 在用户设置窗口中，单击 [修改]。
修改用户窗口将会出现。
3. 根据需要更改 <用户 ID>、<密码>、<确认密码> 和 <级别>。
4. 单击 [应用]。
将更改选择的用户 ID。

删除用户 ID

1. 在用户设置窗口中，选择要删除的用户 ID。
2. 在用户设置窗口中，单击 [删除]。将删除选择的用户 ID。



■ 关于用户权限

- 管理员：可以使用所有功能（更改/控制设置）。
- 操作员：只能使用在 Live Viewer 中可用的功能。
- 用户：只能在 Live Viewer 中查看视频。



添加用户

用户 ID

密码

确认密码

级别 操作员 ▼

应用 取消



修改用户

用户 ID admin

密码

确认密码

级别 管理员 ▼

应用 取消

设置屏幕

设置显示语言

1. 单击 <基本> - <语言>。

语言设置窗口将会出现。您可以从 7 种语言（英语/韩语/中文/法语/意大利语/西班牙语/德语）中选择一种。

2. 完成后，单击 [应用]。

将会应用选择的语言。



系统设置

设置日期/时间

您可以从 NTP 服务器或 PC 获得当前系统时间,用于时间设置。

1. 选择 <系统> - <日期&时间>。

日期&时间设置窗口将会出现。

2. 如果您选择手动，请手动输入日期和时间。

将保存设置。

- 当前系统时间：将应用在系统时间设置中指定的时间。
- 系统时间设置：您可以与 NTP 服务器（时间服务器）或 PC 同步系统时间，或者手动指定。



■ 您可以指定介于 2000 年 1 月 1 日与 2037 年 12 月 31 日之间的时间。

设置系统时间

1. 在 <地址> 中选择所需的地址，或选择 <与 PC 查看器同步>。

2. 如果您选择手动，请手动输入日期和时间。

3. 单击 [应用]。将会应用指定的系统。





- <NTP 服务器 IP> 由公共机构提供，是随时更改的列表。
- 在本地网络中，必须手动定义独立的 NTP 服务器。



- 当前时间可能因计算机区域（GMT 和 DST）和国家（PC 时间配置）设置而有同。

检查日志信息

选择 <系统> - <日志>。日志信息列表将会出现。

- **系统日志列表**：显示关于系统更改的日志信息以及时间与 IP 地址。
 - 用户登录：显示目前登录到摄像机的用户。
 - 视频配置更改：显示视频设置更改。
 - 系统时间更改：显示时间更改。
 - 系统已启动：显示打开摄像机的时间。



- 最多可记录 2000 条日志。
如果日志数目大于 2000，则日志列表最下面的日志将被新日志取代。

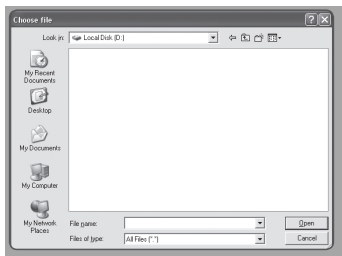
更新软件

选择 <系统> - <软件更新>。
软件更新窗口将会出现。



如何更新软件

1. 在软件更新窗口中，单击 [Browse...].
打开对话框将会出现。
2. 选择可更新的文件，并单击 [Open].
3. 在软件更新窗口中，单击 [安装].
选择的文件将被解压缩以便开始更新。
完成更新可能需要几分钟时间。
4. 完成软件更新后，将提示您重新启动系统。
5. 单击 [确定] 以重新启动系统。
由于当前连接断开，因此您必须再次连接到系统。



- 如果网络断开、电源供应失败或在更新期间 PC 强行操作，则系统根本不会工作。



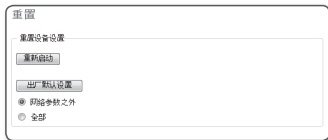
设置屏幕

重置系统

如果系统工作不正常或造成问题,请重新启动或重置系统。

选择 <系统> - <重置>。

重置窗口将会出现。



- 重新启动: 重新启动系统。
- 出厂默认设置: 通过以下两个选项将系统设置重置为出厂默认设置:
 - 网络参数之外: 重置除网络参数之外的所有设置。
 - 全部: 将所有设置恢复为默认值。该设置与按下摄像机背面的 [RESET] 按钮效果相同。

- !
- 在系统重置或重新启动后,您应该重试连接到摄像机。
 - 等系统完成重新启动可能需要几分钟时间。等待系统完成重新启动后,再重试连接。
 - 在执行 <出厂默认设置> 后,您必须运行 <IP Installer.exe> 程序更改基本的网络设置,如 IP 地址、子网掩码、网关等,然后才能连接到互联网。

设置 HTTPS

1. 选择 <系统> - <HTTPS>。

HTTPS 设置窗口将会出现。

- 安全连接系统: 选择要使用的安全连接系统。若要使用对安全连接系统要求公共证书的安全连接模式,您必须在系统上安装由证书颁发机构颁发的签名证书。
- 安装公共证书: 若要安装摄像机证书,您需要键入证书名称(可能由用户随意分配)、颁发机构颁发的证书文件以及密钥文件。完成后,单击 [安装]。



如果成功安装了证书,将显示用户定义的证书名称。

此外,还会激活上方的 <HTTPS(使用公共证书的安全连接模式)>选项按钮。

- 🔑
- 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。

2. 完成后,单击 [应用]。

Web 查看器将切换到设置安全连接系统。

重叠设置

您可以在屏幕上显示文本。

设置文本

1. 选择 <重叠> - <重叠文本>。
重叠文本设置窗口将会出现。
2. 完成后，单击 [应用]。
将保存设置。
 - 重叠文本设置：如果您选择 <禁用>，将不会显示重叠文本；如果选择 <启用>，将在屏幕上显示重叠文本。
 - 显示日期：在屏幕底部显示日期信息。
 - 输出格式：选择日期信息的显示格式。
YYYY-MM-DD：年-月-日 / MM-DD-YYYY：月-日-年 / DD-MM-YYYY：日-月-年
 - 显示时间：在屏幕底部显示时间信息。
 - 输出格式：选择时间信息的显示格式。
24hr：以 24 小时制显示时间。
12hr：以 12 小时制显示时间。
 - 文本颜色：对文本颜色选择黑色或白色。
 - 背景颜色：对背景颜色选择黑色或白色。



设置屏幕

事件设置

设置事件传输功能

在出现警报事件时，您可以设置 FTP/电子邮件服务器（SMTP）传输在摄像机中存在的警报图像。

选择 **<事件>** - **<传输设置>**。
图像传输设置窗口将会出现。



- 有关商业 SMTP 服务的详细信息，请联系 SMTP 服务提供商。

测试 FTP 传输

单击 **[测试]**。

这将测试是否正确地将图像传输到指定的 FTP 服务器。

在测试 FTP 服务器连接并完成传输时，将显示 **<已验证>** 消息。

如果测试失败，您将看到错误消息。如果出现这种情况，请再次检查 FTP 服务器状态或设置。

- FTP 传输**：您可以使用此设置将警报图像传输到 FTP 服务器。如果初始 FTP 服务器设置和连接状态没有验证，将出现 **<未验证>** 消息。

- 使用被动方式：当被动方式连接由于防火墙或 FTP 服务器设置无法避免时，选择此选项。
- FTP 服务器地址：输入警报图像将传输到的 FTP 服务器 IP 地址。

- 上载路径：您可以指定将警报图像传输到的 FTP 目录的路径。
您可以通过在该字段中键入 </目录名称> 或 <目录名称>指定路径。
如果没有指定任何内容，路径将默认为 FTP 服务器的根目录。
- 端口：FTP 端口默认为 21。该值可以根据 FTP 服务器设置进行更改。
- 用户 ID：提供访问 FTP 服务器的用户帐户 ID。
- 密码：提供访问 FTP 服务器的用户帐户密码。
- **子部件 (SMTP) 传输**：您可以使用此设置将警报图像传输到电子邮件服务器。此功能仅适用于 SMTP 电子邮件服务器。
当初始 SMTP 服务器设置和连接没有验证时，将出现 <未验证> 消息。
 - SMTP 服务器地址：输入您在发送电子邮件时使用的 SMTP 服务器地址。
例) 10.240.56.228
 - 端口：输入您在发送电子邮件时使用的端口号。默认值是 25。
 - 用户 ID：提供访问 SMTP 服务器的用户帐户 ID。
 - 密码：提供访问 SMTP 服务器的用户帐户密码。
 - 电子邮件发件人：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 SMTP 服务器分类为垃圾邮件，并且可能不发送。
 - 电子邮件收件人：输入电子邮件收件人的地址。
 - 标题：输入要发送的电子邮件主题。
 - 信息：输入要发送的电子邮件内容。

测试电子邮件传输

单击 [测试]。

这将测试是否正确地图像传输到指定的 SMTP 服务器。

在测试 SMTP 服务器连接并完成传输时，将显示 <(已验证)> 消息。

如果测试失败，您将会看到错误消息。

如果出现这种情况，请再次检查 SMTP 服务器状态或设置。

设置屏幕

设置警报图像

您可以设置将警报图像传输到 FTP/SMTP 服务器。

当发生事件或激活预约传输功能时,选择传输方式。

1. 选择 <事件> - <警报图像>。

警报图像设置窗口将会出现。

- **传输模式** : 从 FTP 传输和电子邮件传输中选择警报图像传输模式。

- FTP 传输: 发送到指定 FTP 地址的图像。
- 电子邮件传输: 发送到指定电子邮件地址的图像。

- **已传输的图像命名设置** : 您可以设置在触发警报时或计划传输过程中发送的警报图像的文件名。

- **预先/延迟警报图像** : 您可以设置保存之前或延迟警报图像。

- 图像编号: 每秒帧率可以是 1、2、3 和 5 之一。
- 预先警报持续时间: 预先警报持续时间可以是 5 秒、10 秒、15 秒和 30 秒之一。在触发警报之前,您可以发送最长 30 秒的预先警报图像。(最长时间取决于帧率)
- 延迟警报持续时间: 延迟警报持续时间可以是 5 秒、10 秒、15 秒和 30 秒之一。在触发警报之前,您可以发送最长 30 秒的延迟警报图像。(最长时间取决于帧率)

- 预先/延迟警报持续时间在 SMTP 传输模式中不可用。
在相应的时间将仅传输一个图像。

2. 完成后,单击 [应用]。

将保存设置。





设置警报输入

1. 选择 **<事件>** - **<警报输入 1>** 或 **<警报输入 2>**。

警报输入设置窗口将会出现。

2. 完成后，单击 **[应用]**。

将保存设置。

- **输入设备设置**：根据摄像机背面的警报感应器特性选择输入类型。
 - 关：关闭警报输入设置。
 - 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。
- **激活时间**：您可以设置在出现警报时执行特定命令的时间。
 - 始终：在发生警报时，总是执行指定的命令。
 - 仅预约时间：仅在指定的工作日或时间发生警报时，执行指定的命令。
- **动作**：您可以设置在发生警报时执行的操作。
 - 警报输出：设置将警报信号传输到的警报输出端口。
 - 输出持续时间：设置在出现警报时将警报信号输出到指定警报输出端口的时间段。如果在警报输出过程中探测到新警报事件，将根据最近警报的探测时间重新计算延迟时间。
 - 警报图像传输：如果您选择 **<开>**，就可以根据 **<事件>** - **<传输设置>** 中的设置将 JPEG 图像传输到 FTP 或 SMTP 服务器。

警报输入 1

输入设备设置
☒ 关 ☐ 常开 ☐ 常闭

激活时间
☒ 始终 ☐ 仅预约时间
 日 一 二 三 四 五 六
 开始时间 [9] : [0] 结束时间 [5] : [59]

动作
 警报输出 [无]
 输出持续时间 [3 秒]
 警报图像传输 [关]

[应用]

● 设置屏幕

设置移动探测功能

1. 选择 **<事件>** - **<移动>**。

移动探测设置窗口将会出现。

2. 完成后，单击 **[应用]**。

将保存设置。

- **移动探测功能**：如果选择 **<启用>**，将激活移动探测功能；如果选择 **<禁用>**，将不会有任何操作。

移动

移动探测功能
☒ 启用 ☐ 禁用

移动探测位置
 移动探测位置 [中] [设置]

激活时间
☒ 始终 ☐ 仅预约时间
 日 一 二 三 四 五 六
 开始时间 [9] : [0] 结束时间 [5] : [59]

动作
 警报输出 [无]
 输出持续时间 [3 秒]
 警报图像传输 [关]

[应用]



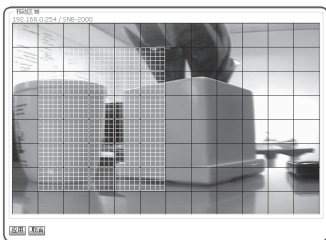
设置屏幕

- **移动探测配置**：配置移动探测设置。
 - 移动灵敏度：选择 <高>、<中> 和 <低> 之一。
选择 <高> 后，即使很小的移动也会触发移动探测事件。
 - 移动区域：设置执行移动探测的区域。
- **激活时间**：在探测到移动时，设置激活指定操作的时间。
 - 始终：在探测到移动时，总是执行指定的命令。
 - 仅预约时间：仅在指定的工作日或时间探测到移动时，执行指定的命令。
- **动作**：您可以设置在探测到移动时执行的操作。
 - 警报输出：设置将移动探测信号传输到的警报输出端口。
 - 输出持续时间：设置在探测到移动时将移动探测信号输出到指定警报输出端口的时间段。如果在警报输出过程中探测到其他移动，将根据最近移动的探测时间重新计算延迟时间。
 - 警报图像传输：如果您选择 <开>，就可以根据 <事件> - <传输设置> 中的设置将 JPEG 图像传输到 FTP 或 SMTP 服务器。

设置移动区域

您可以设置探测移动所在的特定区域。

1. 从移动探测设置窗口中，在 <移动区域> 中单击 [设置]。移动区域窗口将会出现。您可以设置探测移动所在的特定区域。
2. 在与目标移动区域对应的小方块上单击。所选区域将以黄色突出显示。
3. 若要取消选择，可再单击小方块。小方块将恢复原来的颜色。
4. 完成后，单击 [应用]。
将保存设置。
移动探测功能将在选取的区域操作。





设置计划的传输

您可以设置以特定的间隔将 JPEG 图像传输到 FTP/SMTP 服务器。

1. 选择 <事件> - <计划>。

计划传输设置窗口将会出现。

• 预约传输功能：

如果选择 <启用>，将激活预约传输功能；如果选择 <禁用>，将会取消激活。

• 传输时间间隔：

您可以设置传输图像的时间间隔。您可以设置间隔单位 <秒> 或 <分>；也可以设置每 5/15/30/45/60 秒钟传输一个图像，或每 5/15/30/45/60 分钟传输一个图像。

• 激活时间：

- 始终：总是以设置的间隔发送图像。
- 仅预约时间：仅在指定的工作日或时间发送图像。

2. 如果您选择手动，请手动输入日期和时间。将保存设置。



网络设置

设置视频传输模式

您可以根据视频传输模式和网络速度控制传输率。

1. 选择 <网络> - <流类型>。

视频传输设置窗口将会出现。

2. 完成后，单击 [应用]。

将保存设置。

• VNP 流：

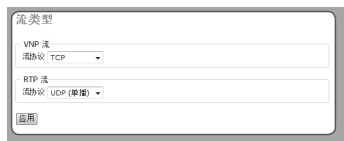
您可以设置用于现场直播服务的 Samsung 协议 (VNP)。

- 协议：从 TCP*、UDP(单播)*和 UDP(多播)*中选择视频传输协议。
 - 不支持多播架构 (MBone)；您可以仅在本多播本地网络环境中访问摄像机。

• RTP 流：

您可以设置用于现场直播服务的 RTP 协议。

- 协议：从 UDP(单播)和 UDP(多播)中选择视频传输协议。



设置屏幕

设置 DDNS

DDNS 是动态域名服务的缩写,可以将摄像机的 IP 地址转化成一般主机名,以便用户可以轻松地记住它,并且能够以固定的主机名连接摄像机,即使摄像机的 IP 地址可能会动态更改。

1. 选择 **<网络>** - **<DDNS>**。
DDNS 设置窗口将会出现。
2. 完成后,单击 **[应用]**。
将保存设置。



 ■ 若要检查 DDNS 地址,请参阅“**检查 DDNS 地址**”。(第 36 页)

附录

概图

摄像机设置菜单		标准	道路交通	背光	日/夜	娱乐场所
上一级菜单	子菜单					
光圈		自动光圈	自动光圈	自动光圈	自动光圈	自动光圈
	自动光圈	-	-	-	-	-
	镜头	直流驱动	直流驱动	直流驱动	直流驱动	直流驱动
	数值	0	0	0	0	0
	背光	关	关	背光补偿	关	关
移动		(很快) ——	(很快) ——	标准	(很快) ——	慢
数字降噪		中	中	中	中	中
快门		关	自动 1/250	关	关	关
低速快门		自动 X4	自动 X2	自动 X4	自动 X4	自动 X4
暗区补偿		中	中	中	中	中
日/夜		自动	自动	白天	自动	白天
	夜晚	-	-	-	-	-
	色同步	关	开	关	关	关
白平衡		白天	日/夜	白天	日/夜	白天
	白天	-	-	-	-	-
	模式	自动跟踪2	自动跟踪1	自动跟踪1	自动跟踪1	自动跟踪1
	红	0	0	0	0	0
	蓝	0	0	0	0	0
	夜晚	-	-	-	-	-
	亮度	自定义设置	中	自定义设置	中	自定义设置
	模式	关	自动跟踪2	关	自动跟踪2	关
	红	自定义设置	0	自定义设置	0	自定义设置
	蓝	自定义设置	0	自定义设置	0	自定义设置
清晰度		2	2	2	2	2

附录

术语

- **GOP**：默认值是 15。如果设置为 15，则每 15 帧将输出一个 I 帧，因为一个 I 帧和 14 个 P 帧构成 GOP。
GOP 越小，质量越好；但是，比特率及数据大小将增加，导致 fps 较小。GOP（图片组）是用于 MPEG4 和 H.264 格式压缩的视频帧，表示从初始 I 帧（关键帧）到下一个 I 帧的帧集合。I 帧是压缩的基本帧，也称为关键，包含一个完整的图像数据。P 帧仅包含从上述 I 帧更改的数据。
- **熵编码**：用于从编码中减少压缩损失的数据传输技术。
 - CAVLC（自适应变长码编码）：比 CABAC 记录更高的压缩损失率。
 - CABAC（自适应二进制算术编码）：表明比 CAVLC 的压缩损失更小。
- **比特率控制**
 - CBR（恒定比特率）
这将始终以相同的大小传输视频数据，不管视频复杂程度如何。视频质量可能会降低，取决于视频复杂程度。
 - VBR（可变比特率）
要传输的视频数据量可能会有不同，取决于视频复杂程度。这可以保证始终以相同的质量接收视频数据。。
- **TTL**：TTL 表示“生存时间”，您可以指定来防止丢失通过多阶段路由器的数据包。每个路由器在数据包每次通过它时会减小 TTL 值；如果 TTL 值达到 0，则数据包无法再通过路由器。
- **TCP**：它是用于要求可靠性的传输的普通用途协议。通过在发件人和收件人之间的持续通信，它可以提供高可靠的数据传输；但是，它会模拟以高速实时传输大量数据。它能够以相对较低的速度通过 xDSL 和电缆网可靠传输数据。
- **UDP（单播）**：它表示仅在一个发射器和一个接收器（1:1）之间传输数据的系统。
- **UDP（多播）**：它表示在传输和接收终端之间一对多（1:N）的数据传输协议；虽然它能够减少网络负荷，但是它需要有〈多播〉路由器。有关安装摄像机的网络是否支持〈多播〉的详情，请联系网络管理员。
- **UDP**：它是适合以高速传输大量数据（如多媒体数据）的协议。但是，通过使用非连接结构，它比 TCP 记录更高的传输效率，尤其在速度超过 100Mbps 的高 LAN 环境中。

规格

项目			说明	
			NTSC	PAL
摄像机类型	彩色/黑白		彩色	
图像	设备		1/3" Super-HAD PS CCD	
	像素	总计	811 x 508	795 x 596
		有效	768 x 494	752 x 582
扫描	系统		逐行	
	水平频率		15,734 Hz	15,625 Hz
	垂直频率		59.94 Hz	50 Hz
最小景物亮度	彩色		低照度关闭: 0.12 勒克司 (15 IRE), 0.24 勒克司 (30 IRE), 0.4 勒克司 (50 IRE)@F1.2 低照度补偿 x512: 0.00023 勒克司 (15 IRE), 0.00047 勒克司 (30 IRE), 0.0008 勒克司 (50 IRE)@F1.2	
	黑白		低照度关闭: 0.012 勒克司 (15 IRE), 0.024 勒克司 (30 IRE), 0.04 勒克司 (50 IRE)@F1.2 低照度补偿 x512: 0.000023 勒克司 (15 IRE), 0.000047 勒克司 (30 IRE), 0.00008 勒克司 (50 IRE)@F1.2	
功能	加密区域数		12 个	
	白天/夜晚		白天/夜晚/自动(软方法)	
	暗区补偿		关/开(级别设置)	
	数字变焦		x1 ~ x16(x0.1 步幅)	
	画中画		关/开(高级)	
	高速快门		1/60 ~ 1/10Ksec	1/50 ~ 1/10Ksec
	防闪烁		关/开	
	低照度补偿		x2 ~ x512	
	背光补偿		关/开(区域设置)	
	自动增益		关/开(最大级别设置)	
	电子光圈		关/开 (~ 1/200Ksec)	
	摄像机识别号		关/开(最大 54ea/2Line)	
	白平衡		自动跟踪 1/自动跟踪 2/自动控制白平衡/3200K/5600K	
	数字降噪		关/开(自适应 3D+2D)	
	数字图像稳定器		关/开	
	其他功能		清晰度, 翻转 (H/V), 正片/底片	
分辨率	水平		600 TV 行	
	垂直		350 TV 行	

附录

项目		说明	
		NTSC	PAL
视频输出	视频输出	VBS 1.0Vp-p	
S/N 比率	S/N 比率	大约 52 dB	
镜头	镜头驱动类型	手动/AI(视频驱动/直流驱动)	
	安装类型	CS/C	
网络板	操作系统		嵌入式 Linux
	硬件	闪存	32M byte
		RAM	256M byte
		DSP	TI Davinci
		以太网	RJ-45 (10/100BASE-T)
		PoE	是 (IEEE802.3af)
报警	输入		2 个
	输出		2 个
视频	压缩		H.264 / MPEG4 / MJPEG 多编解码器 (H.264 / MPEG4 可选) 同时双流
	分辨率	4CIF	704x480 704x576
		VGA	640x480
		CIF	352x240 352x288
	帧率		30, 15, 8, 3, 1 fps 25, 13, 6, 3, 1 fps
	质量		1 ~ 10 级
OSD	摄像机控制和调整		视频上的 OSD 菜单 (菜单输入/退出, 由 Web UI 移动) * CGI API 将支持某些主要的调整菜单。
移动探测	灵敏度和区域设置		高、中、低



项目			说明	
			NTSC	PAL
协议	IP		IPv4 / IPv6	
	网络协议	IPv4	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTSP, NTP, HTTP, HTTPS, SSL, DHCP PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, VSIP	
		IPv6	TCP/IP, HTTP, HTTPS, SSL, DHCP	
	流		单播 (TCP, UDP)、多播 (UDP)	
	安全性		HTTPS 登录认证 分类登录验证	
	DDNS		支持 Samsung DDNS 和公共 DDNS 服务	
连接	最大用户访问量		在单播 (TCP, UDP) 模式最多 10 个用户 在多播 (UDP) 模式最多 20 个用户	
	用户访问级别	管理员	现场监视、警报 I/O 控制、OSD 菜单控制、设置	
		操作员	现场监视、警报 I/O 控制	
		用户	现场监视	
事件管理	警报输入		JPEG 图像传输 FTP、SMTP 通知 通知查看器或通过电子邮件(一个图像附件) 警报输出	
	移动探测			
	计划		JPEG 图像传输 FTP、SMTP	
Web 浏览器查看器(默认)	支援的操作系统		Windows XP, Windows VISTA, Windows 7	
	支持的浏览器		Internet Explorer 6.0 或更高版本	
	界面语言		英语/法语/德语/西班牙语/意大利语/中文/韩语	
	软件升级		支持	
视频播放器	RTP/RTSP 流		Quicktime、VLC 播放器	
视频管理软件			Samsung IPOLiS 第三方软件应用程序	
应用程序	IP 安装		适用于所有 Samsung IP 设备的 IP Installer 应用程序	
SDK	HTTP API	CGI 命令	提供控制摄像机及设置/检索内部参数值的功能。 获取 JPEG 图像或 MJPEG 流 信号输入/输出控制	
	RTP/RTSP API		RTP 报头、RTSP 命令文档	
	ActiveX	SDK	ActiveX API 用于查看来自 IP 摄像机的数据流。	



附录

项目	说明	
	NTSC	PAL
电源	24 伏交流电 $\pm 10\%$ (60Hz ± 0.3 Hz)/ 12 伏直流电 $+10\%/-5\%$ /PoE(以太网供电)	
耗电量	关于 7W	
工作温度	$-10^{\circ}\text{C}\sim 50^{\circ}\text{C}$	
工作湿度	$\sim 90\%$	
尺寸	宽 72 X 厚 139 X 高 60	
重量	关于 425g	

帧率 (NTSC)



■ 测试条件: MJPEG - 解像度 (CIF), 质量 (1), 帧率 (1)

H.264 - 比特率控制 (CBR), 压缩 (40), 编码优先级 (帧率),
GOP 大小 (15), 解块 (开), 概图 (基线), 熵编码 (CAVLC),
预计动作 (HPel)

MPEG4 - 比特率控制 (CBR), 压缩 (40), 编码优先级 (帧率),
GOP 大小 (15)

❖ MPEG4 (4CIF)

质量 \ 帧率	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
数值10	4239 Kbps 23 FPS	2765 Kbps 15 FPS	1290 Kbps 7 FPS	737 Kbps 4 FPS	221 Kbps 1 FPS
数值9	3686 Kbps 24 FPS	2304 Kbps 15 FPS	1075 Kbps 7 FPS	614 Kbps 4 FPS	184 Kbps 1 FPS
数值8	3072 Kbps 25 FPS	1843 Kbps 15 FPS	860 Kbps 7 FPS	492 Kbps 4 FPS	147 Kbps 1 FPS
数值7	2396 Kbps 26 FPS	1382 Kbps 15 FPS	645 Kbps 7 FPS	369 Kbps 4 FPS	111 Kbps 1 FPS
数值6	1659 Kbps 27 FPS	922 Kbps 15 FPS	430 Kbps 7 FPS	246 Kbps 4 FPS	74 Kbps 1 FPS
数值5	1336 Kbps 29 FPS	691 Kbps 15 FPS	323 Kbps 7 FPS	184 Kbps 4 FPS	55 Kbps 1 FPS
数值4	1133 Kbps 30 FPS	576 Kbps 15 FPS	269 Kbps 7 FPS	154 Kbps 4 FPS	46 Kbps 1 FPS
数值3	922 Kbps 30 FPS	461 Kbps 15 FPS	215 Kbps 7 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
数值2	691 Kbps 30 FPS	346 Kbps 15 FPS	161 Kbps 7 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
数值1	461 Kbps 30 FPS	230 Kbps 15 FPS	108 Kbps 7 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS

附录

❖ H.264 (4CIF)

质量 \ 帧率	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
数值10	2298 Kbps 19 FPS	1229 Kbps 10 FPS	737 Kbps 6 FPS	369 Kbps 3 FPS	147 Kbps 1 FPS
数值9	1751 Kbps 19 FPS	1198 Kbps 13 FPS	645 Kbps 7 FPS	369 Kbps 4 FPS	111 Kbps 1 FPS
数值8	1536 Kbps 20 FPS	1075 Kbps 14 FPS	538 Kbps 7 FPS	307 Kbps 4 FPS	92 Kbps 1 FPS
数值7	1352 Kbps 22 FPS	897 Kbps 15 FPS	430 Kbps 7 FPS	246 Kbps 4 FPS	74 Kbps 1 FPS
数值6	1129 Kbps 25 FPS	691 Kbps 15 FPS	369 Kbps 8 FPS	184 Kbps 4 FPS	55 Kbps 1 FPS
数值5	960 Kbps 25 FPS	576 Kbps 15 FPS	307 Kbps 8 FPS	154 Kbps 4 FPS	46 Kbps 1 FPS
数值4	799 Kbps 26 FPS	461 Kbps 15 FPS	246 Kbps 8 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
数值3	622 Kbps 27 FPS	346 Kbps 15 FPS	184 Kbps 8 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
数值2	445 Kbps 29 FPS	230 Kbps 15 FPS	123 Kbps 8 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS
数值1	223 Kbps 29 FPS	115 Kbps 15 FPS	61 Kbps 8 FPS	31 Kbps 4 FPS	9 Kbps 1 FPS

❖ MPEG4 (VGA)

质量 \ 帧率	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
数值10	4055 Kbps 22 FPS	2580 Kbps 14 FPS	1290 Kbps 7 FPS	737 Kbps 4 FPS	221 Kbps 1 FPS
数值9	3533 Kbps 23 FPS	2304 Kbps 15 FPS	1075 Kbps 7 FPS	614 Kbps 4 FPS	184 Kbps 1 FPS
数值8	2949 Kbps 24 FPS	1843 Kbps 15 FPS	860 Kbps 7 FPS	492 Kbps 4 FPS	147 Kbps 1 FPS
数值7	2304 Kbps 25 FPS	1382 Kbps 15 FPS	645 Kbps 7 FPS	369 Kbps 4 FPS	111 Kbps 1 FPS
数值6	1536 Kbps 25 FPS	922 Kbps 15 FPS	430 Kbps 7 FPS	246 Kbps 4 FPS	74 Kbps 1 FPS
数值5	1152 Kbps 25 FPS	691 Kbps 15 FPS	323 Kbps 7 FPS	184 Kbps 4 FPS	55 Kbps 1 FPS
数值4	998 Kbps 26 FPS	576 Kbps 15 FPS	269 Kbps 7 FPS	154 Kbps 4 FPS	46 Kbps 1 FPS
数值3	799 Kbps 26 FPS	461 Kbps 15 FPS	246 Kbps 8 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
数值2	622 Kbps 27 FPS	346 Kbps 15 FPS	184 Kbps 8 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
数值1	415 Kbps 27 FPS	230 Kbps 15 FPS	123 Kbps 8 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS

● 画质

附录

❖ H.264 (VGA)

质量 \ 帧率	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
数值10	2089 Kbps 17 FPS	1229 Kbps 10 FPS	737 Kbps 6 FPS	369 Kbps 3 FPS	147 Kbps 1 FPS
数值9	1659 Kbps 18 FPS	1014 Kbps 11 FPS	553 Kbps 6 FPS	276 Kbps 3 FPS	111 Kbps 1 FPS
数值8	1459 Kbps 19 FPS	845 Kbps 11 FPS	538 Kbps 7 FPS	307 Kbps 4 FPS	92 Kbps 1 FPS
数值7	1229 Kbps 20 FPS	737 Kbps 12 FPS	430 Kbps 7 FPS	246 Kbps 4 FPS	74 Kbps 1 FPS
数值6	1014 Kbps 22 FPS	691 Kbps 15 FPS	323 Kbps 7 FPS	184 Kbps 4 FPS	55 Kbps 1 FPS
数值5	883 Kbps 23 FPS	576 Kbps 15 FPS	269 Kbps 7 FPS	154 Kbps 4 FPS	46 Kbps 1 FPS
数值4	707 Kbps 23 FPS	461 Kbps 15 FPS	215 Kbps 7 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
数值3	553 Kbps 24 FPS	346 Kbps 15 FPS	161 Kbps 7 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
数值2	384 Kbps 25 FPS	230 Kbps 15 FPS	108 Kbps 7 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS
数值1	200 Kbps 26 FPS	115 Kbps 15 FPS	54 Kbps 7 FPS	31 Kbps 4 FPS	9 Kbps 1 FPS

❖ MPEG4 (CIF)

质量 \ 帧率	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
数值10	1382 Kbps 30 FPS	691 Kbps 15 FPS	369 Kbps 8 FPS	184 Kbps 4 FPS	55 Kbps 1 FPS
数值9	1152 Kbps 30 FPS	576 Kbps 15 FPS	307 Kbps 8 FPS	154 Kbps 4 FPS	46 Kbps 1 FPS
数值8	922 Kbps 30 FPS	461 Kbps 15 FPS	246 Kbps 8 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
数值7	691 Kbps 30 FPS	346 Kbps 15 FPS	184 Kbps 8 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
数值6	461 Kbps 30 FPS	230 Kbps 15 FPS	123 Kbps 8 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS
数值5	346 Kbps 30 FPS	173 Kbps 15 FPS	92 Kbps 8 FPS	46 Kbps 4 FPS	14 Kbps 1 FPS
数值4	288 Kbps 30 FPS	144 Kbps 15 FPS	77 Kbps 8 FPS	38 Kbps 4 FPS	12 Kbps 1 FPS
数值3	230 Kbps 30 FPS	115 Kbps 15 FPS	61 Kbps 8 FPS	31 Kbps 4 FPS	9 Kbps 1 FPS
数值2	173 Kbps 30 FPS	86 Kbps 15 FPS	46 Kbps 8 FPS	23 Kbps 4 FPS	7 Kbps 1 FPS
数值1	151 Kbps 30 FPS	76 Kbps 15 FPS	40 Kbps 8 FPS	20 Kbps 4 FPS	6 Kbps 1 FPS

● 画质

附录

❖ H.264 (CIF)

质量 \ 帧率	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
数值10	922 Kbps 30 FPS	461 Kbps 15 FPS	215 Kbps 7 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
数值9	691 Kbps 30 FPS	346 Kbps 15 FPS	184 Kbps 8 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
数值8	576 Kbps 30 FPS	288 Kbps 15 FPS	134 Kbps 7 FPS	77 Kbps 4 FPS	23 Kbps 1 FPS
数值7	461 Kbps 30 FPS	230 Kbps 15 FPS	108 Kbps 7 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS
数值6	346 Kbps 30 FPS	173 Kbps 15 FPS	81 Kbps 7 FPS	46 Kbps 4 FPS	14 Kbps 1 FPS
数值5	288 Kbps 30 FPS	144 Kbps 15 FPS	67 Kbps 7 FPS	38 Kbps 4 FPS	12 Kbps 1 FPS
数值4	230 Kbps 30 FPS	115 Kbps 15 FPS	54 Kbps 7 FPS	31 Kbps 4 FPS	9 Kbps 1 FPS
数值3	173 Kbps 30 FPS	86 Kbps 15 FPS	40 Kbps 7 FPS	23 Kbps 4 FPS	7 Kbps 1 FPS
数值2	115 Kbps 30 FPS	58 Kbps 15 FPS	27 Kbps 7 FPS	15 Kbps 4 FPS	5 Kbps 1 FPS
数值1	58 Kbps 30 FPS	29 Kbps 15 FPS	13 Kbps 7 FPS	8 Kbps 4 FPS	2 Kbps 1 FPS



帧率 (PAL)



■ 测试条件: MJPEG - 解像度 (CIF), 质量 (1), 帧率 (1)

H.264 - 比特率控制 (CBR), 压缩 (40), 编码优先级 (帧率),
GOP 大小 (15), 解块 (开), 概图 (基线), 熵编码 (CAVLC),
预计动作 (HPel)

MPEG4 - 比特率控制 (CBR), 压缩 (40), 编码优先级 (帧率),
GOP 大小 (15)

❖ MPEG4 (4CIF)

质量 \ 帧率	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
数值10	4645 Kbps 21 FPS	2654 Kbps 12 FPS	1327 Kbps 6 FPS	664 Kbps 3 FPS	221 Kbps 1 FPS
数值9	4055 Kbps 22 FPS	2212 Kbps 12 FPS	1106 Kbps 6 FPS	553 Kbps 3 FPS	184 Kbps 1 FPS
数值8	3391 Kbps 23 FPS	1769 Kbps 12 FPS	885 Kbps 6 FPS	442 Kbps 3 FPS	147 Kbps 1 FPS
数值7	2544 Kbps 23 FPS	1327 Kbps 12 FPS	664 Kbps 6 FPS	332 Kbps 3 FPS	111 Kbps 1 FPS
数值6	1769 Kbps 24 FPS	885 Kbps 12 FPS	442 Kbps 6 FPS	221 Kbps 3 FPS	74 Kbps 1 FPS
数值5	1382 Kbps 25 FPS	664 Kbps 12 FPS	332 Kbps 6 FPS	166 Kbps 3 FPS	55 Kbps 1 FPS
数值4	1152 Kbps 25 FPS	553 Kbps 12 FPS	276 Kbps 6 FPS	138 Kbps 3 FPS	46 Kbps 1 FPS
数值3	922 Kbps 25 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
数值2	691 Kbps 25 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
数值1	461 Kbps 25 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS



附录

❖ H.264 (4CIF)

质量 \ 帧率	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
数值10	2359 Kbps 16 FPS	1180 Kbps 8 FPS	737 Kbps 5 FPS	442 Kbps 3 FPS	147 Kbps 1 FPS
数值9	1991 Kbps 18 FPS	1106 Kbps 10 FPS	664 Kbps 6 FPS	332 Kbps 3 FPS	111 Kbps 1 FPS
数值8	1751 Kbps 19 FPS	1014 Kbps 11 FPS	553 Kbps 6 FPS	276 Kbps 3 FPS	92 Kbps 1 FPS
数值7	1475 Kbps 20 FPS	885 Kbps 12 FPS	442 Kbps 6 FPS	221 Kbps 3 FPS	74 Kbps 1 FPS
数值6	1161 Kbps 21 FPS	664 Kbps 12 FPS	332 Kbps 6 FPS	166 Kbps 3 FPS	55 Kbps 1 FPS
数值5	968 Kbps 21 FPS	553 Kbps 12 FPS	276 Kbps 6 FPS	138 Kbps 3 FPS	46 Kbps 1 FPS
数值4	811 Kbps 22 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
数值3	608 Kbps 22 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
数值2	424 Kbps 23 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS
数值1	230 Kbps 25 FPS	111 Kbps 12 FPS	55 Kbps 6 FPS	28 Kbps 3 FPS	9 Kbps 1 FPS

❖ MPEG4 (VGA)

质量 \ 帧率	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
数值10	4424 Kbps 20 FPS	2654 Kbps 12 FPS	1327 Kbps 6 FPS	664 Kbps 3 FPS	221 Kbps 1 FPS
数值9	3871 Kbps 21 FPS	2212 Kbps 12 FPS	1106 Kbps 6 FPS	553 Kbps 3 FPS	184 Kbps 1 FPS
数值8	3097 Kbps 21 FPS	1769 Kbps 12 FPS	885 Kbps 6 FPS	442 Kbps 3 FPS	147 Kbps 1 FPS
数值7	2433 Kbps 22 FPS	1327 Kbps 12 FPS	664 Kbps 6 FPS	332 Kbps 3 FPS	111 Kbps 1 FPS
数值6	1769 Kbps 24 FPS	885 Kbps 12 FPS	442 Kbps 6 FPS	221 Kbps 3 FPS	74 Kbps 1 FPS
数值5	1382 Kbps 25 FPS	664 Kbps 12 FPS	332 Kbps 6 FPS	166 Kbps 3 FPS	55 Kbps 1 FPS
数值4	1152 Kbps 25 FPS	553 Kbps 12 FPS	276 Kbps 6 FPS	138 Kbps 3 FPS	46 Kbps 1 FPS
数值3	922 Kbps 25 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
数值2	691 Kbps 25 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
数值1	461 Kbps 25 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS

● 画质

附录

❖ H.264 (VGA)

质量 \ 帧率	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
数值10	2507 Kbps 17 FPS	1327 Kbps 9 FPS	737 Kbps 5 FPS	442 Kbps 3 FPS	147 Kbps 1 FPS
数值9	1991 Kbps 18 FPS	1217 Kbps 11 FPS	664 Kbps 6 FPS	332 Kbps 3 FPS	111 Kbps 1 FPS
数值8	1659 Kbps 18 FPS	1106 Kbps 12 FPS	553 Kbps 6 FPS	276 Kbps 3 FPS	92 Kbps 1 FPS
数值7	1401 Kbps 19 FPS	885 Kbps 12 FPS	442 Kbps 6 FPS	221 Kbps 3 FPS	74 Kbps 1 FPS
数值6	1106 Kbps 20 FPS	664 Kbps 12 FPS	332 Kbps 6 FPS	166 Kbps 3 FPS	55 Kbps 1 FPS
数值5	968 Kbps 21 FPS	553 Kbps 12 FPS	276 Kbps 6 FPS	138 Kbps 3 FPS	46 Kbps 1 FPS
数值4	774 Kbps 21 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
数值3	608 Kbps 22 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
数值2	424 Kbps 23 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS
数值1	230 Kbps 25 FPS	111 Kbps 12 FPS	55 Kbps 6 FPS	28 Kbps 3 FPS	9 Kbps 1 FPS

❖ MPEG4 (CIF)

质量 \ 帧率	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
数值10	1382 Kbps 25 FPS	664 Kbps 12 FPS	332 Kbps 6 FPS	166 Kbps 3 FPS	55 Kbps 1 FPS
数值9	1152 Kbps 25 FPS	553 Kbps 12 FPS	276 Kbps 6 FPS	138 Kbps 3 FPS	46 Kbps 1 FPS
数值8	922 Kbps 25 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
数值7	691 Kbps 25 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
数值6	461 Kbps 25 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS
数值5	346 Kbps 25 FPS	166 Kbps 12 FPS	83 Kbps 6 FPS	41 Kbps 3 FPS	14 Kbps 1 FPS
数值4	288 Kbps 25 FPS	138 Kbps 12 FPS	69 Kbps 6 FPS	35 Kbps 3 FPS	12 Kbps 1 FPS
数值3	230 Kbps 25 FPS	111 Kbps 12 FPS	55 Kbps 6 FPS	28 Kbps 3 FPS	9 Kbps 1 FPS
数值2	173 Kbps 25 FPS	83 Kbps 12 FPS	41 Kbps 6 FPS	21 Kbps 3 FPS	7 Kbps 1 FPS
数值1	151 Kbps 25 FPS	73 Kbps 12 FPS	36 Kbps 6 FPS	18 Kbps 3 FPS	6 Kbps 1 FPS

● 帧率

附录

❖ H.264 (CIF)

质量 \ 帧率	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
数值10	922 Kbps 25 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
数值9	691 Kbps 25 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
数值8	576 Kbps 25 FPS	276 Kbps 12 FPS	138 Kbps 6 FPS	69 Kbps 3 FPS	23 Kbps 1 FPS
数值7	461 Kbps 25 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS
数值6	346 Kbps 25 FPS	166 Kbps 12 FPS	83 Kbps 6 FPS	41 Kbps 3 FPS	14 Kbps 1 FPS
数值5	288 Kbps 25 FPS	138 Kbps 12 FPS	69 Kbps 6 FPS	35 Kbps 3 FPS	12 Kbps 1 FPS
数值4	230 Kbps 25 FPS	111 Kbps 12 FPS	55 Kbps 6 FPS	28 Kbps 3 FPS	9 Kbps 1 FPS
数值3	173 Kbps 25 FPS	83 Kbps 12 FPS	41 Kbps 6 FPS	21 Kbps 3 FPS	7 Kbps 1 FPS
数值2	115 Kbps 25 FPS	55 Kbps 12 FPS	28 Kbps 6 FPS	14 Kbps 3 FPS	5 Kbps 1 FPS
数值1	58 Kbps 25 FPS	28 Kbps 12 FPS	14 Kbps 6 FPS	7 Kbps 3 FPS	2 Kbps 1 FPS



故障排除

故障	解决方法
无法使用网络浏览器访问摄像机。	<ul style="list-style-type: none"> 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。 若使用 DDNS URL, 确认 MAC 地址输入是否正确。 若摄像机与路由器连接, 确认是否 正确设置了端口转发。
查看器在监视期间断开。	<ul style="list-style-type: none"> 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 xDSL 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。
无法使用 IE 7.0 的选项卡浏览器连接系统。	<ul style="list-style-type: none"> 在尝试使用选项卡浏览器连接系统时, 使用的 cookie 信息相同, 这导致了连接时出错。因此, 打开新的浏览器窗口, 而非使用选项卡浏览器来连接系统。
IP 安装程序未检测到连接至网络的摄像机。	<ul style="list-style-type: none"> 关闭 PC 上的防火墙设置, 再次搜索摄像机。
图像重叠。	<ul style="list-style-type: none"> 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。	<ul style="list-style-type: none"> 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。



附录

故障	解决方法
我在移动探测下启用了移动检测功能,但是 .jpg 文件不能通过 FTP/SMTP 发送,即使在 FT 摄像机上检测到运动时也不能发送。	<ul style="list-style-type: none">• 请确认以下序列中的设置<ul style="list-style-type: none">A. 必须正确配置 NTP。B. 必须启用移动探测功能。C. 必须启用警报视频传输。D. 检查是否存在时间安排冲突。
移动探测功能禁用时可以配置“运动区域”吗?	<ul style="list-style-type: none">• 可以。运动区域”可单独配置, 无论是否使用了移动探测功能。
运动事件发生但没有触发警报。	<ul style="list-style-type: none">• 请检查警报输出端口设置。



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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional : if the application does not supply it, the square root function must still compute square roots.)

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

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However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the

Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library.

The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.) Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section.

Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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- a) Accompany the work with the complete corresponding machine-





readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above) ; and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that
 - (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and
 - (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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