

A Delta Group Company



IE9111-0

Al Box User Manual

Key Features

- Qualcomm QCS605 SoC with built-in Al Engine
- Video processing and machine learning
- Supports VCA solutions through video analytics apps from the Azena Application Store
- Enables any type of network camera to act as a IoT Device

Driven by:



Powered by:





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Overview

- Powered by Qualcomm QCS605 SoC with a built-in Al Engine
- Powerful Computing for Video Processing and Machine Learning
- Designed with OSSA Technology Stack, running on Azena Android OS
- Supports a variety of VCA solutions through Azena APPs
- Enables Any Type of Network Camera to act as AloT Device
- RJ-45 or M12 Connectors for PoE Connection
- Digital input*2, Digital Output *2
- EN50155 Compliance for Professional Mobile Surveillance



Revision History

■ Rev. 1.0: Initial release.

■ Rev. 1.1: Updated the initial portal login and other firmware features.

Read Before Use

The use of surveillance devices may be prohibited by law in your country. The Network Camera is not only a high-performance web-ready camera but can also be part of a flexible surveillance system. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for its intended use.

It is important to first verify that all contents received are complete according to the Package Contents listed below. Take note of the warnings in the Quick Installation Guide before the Network Camera is installed; then carefully read and follow the instructions in the Installation chapter to avoid damage due to faulty assembly and installation. This also ensures the product is used properly as intended.

The Network Camera is a network device and its use should be straightforward for those who have basic networking knowledge. It is designed for various applications including video sharing, general security/surveillance, etc. The Configuration chapter suggests ways to best utilize the Network Camera and ensure proper operations. For creative and professional developers, the URL Commands of the Network Camera section serves as a helpful reference to customizing existing homepages or integrating with the current web server.

Symbols and Statements in this Document



INFORMATION: provides important messages or advices that might help prevent inconvenient or problem situations.



NOTE: Notices provide guidance or advices that are related to the functional integrity of the machine.



Tips: Tips are useful information that helps enhance or facilitae an installation, function, or process.



WARNING: or IMPORTANT:: These statements indicate situations that can be dangerous or hazardous to the machine or you.



Electrical Hazard: This statement appears when high voltage electrical hazards might occur to an operator.



NOTE:

- 1. The camera is only to be connected to PoE networks without routing to outside plants.
- 2. For PoE connection, use only UL listed I.T.E. with PoE output.



Package Contents

- IE9111-O
- Screw pack.
- Wall-/Panel-mount bracket.
- Quick Installation Guide.

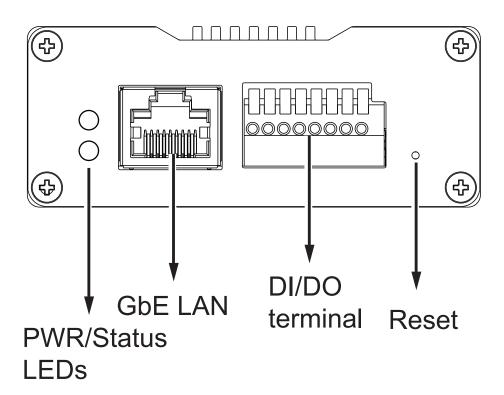
Application



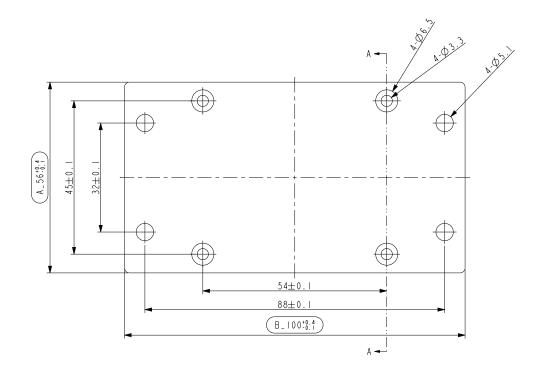


Physical Description

Outer View

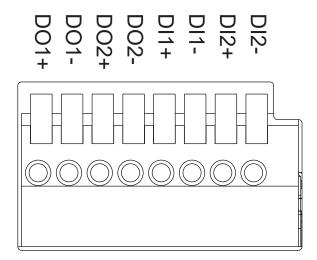


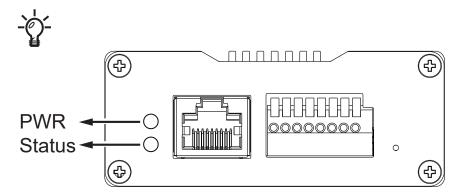
Bracket Dimensions





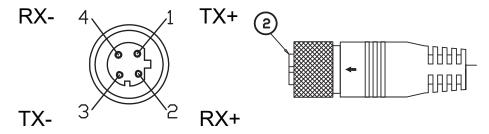
DI/DO Terminal Block Pinouts





LED	Behavior
PWR Red ON	Power is on
PWR Red ON + Status Green blinking	System ready
PWR Red + Status Green blinking	Reset taking place / restoring default

Below is the pinouts for the model that comes with a M12 connector:



M12 D-CODE 4 pin F



Consumption & Power Input
PoE: 802.3af class3



Hardware Reset

The reset button is used to reset the system or restore the factory default settings. Sometimes resetting the system can return the camera to normal operation. If the system problems remain after reset, restore the factory settings and install again.

Use a flatten paper clip to press the button.

Reset: Press the recessed reset button. Wait for the Network Camera to reboot.

<u>Restore</u>: Press and hold the reset button until the status LED rapidly blinks. Note that all settings will be restored to factory default. Upon successful restore, the status LED will blink green and red during normal operation.

Prerequisites

Hardware:

- Azena Enabled camera.
- A host computer (Windows/Linux/Mac/Ubuntu) with Google Chrome browser.
- Local network (e.g. router and cables) to connect the camera and the host computer.
- POE Power Over Ethernet (via router, hub or PoE adapter) to power the camera.

Network:

- Network with connectivity to internet (offline camera supported: not described in this document).
- DHCP Network (Using DHCP the camera automatically receives the IP address once connected to a network).

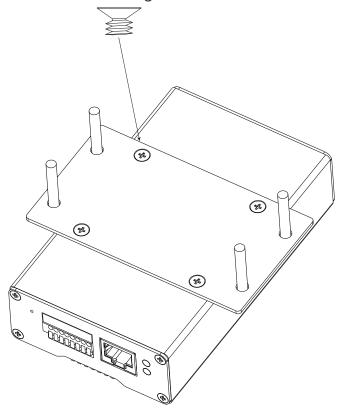
Software:

- Ecosystem credentials used across application store and Device Management
 Portal. Additionally you can also invite your colleagues to the account via the User Management.
- Download Azena Device Management tool from the resources section and install
 on the host computer. The tool can be used for device discovery and installing
 applications on cameras in offline network.
- Our devices communicate to the external URLs which needs to be allowed in the network firewall details can be found in the resources section to the left.

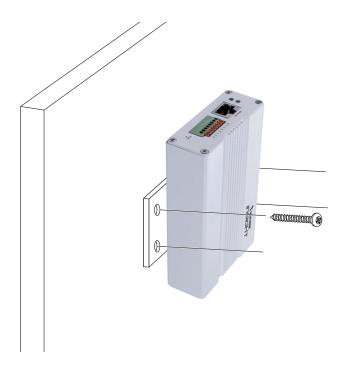


Hardware Installation

1.The optional bracket allows you to install the AI box to a wall or panel. Secure the bracket to the box using the included sunk head screws.



2. Secure the assembly to wall/panel using the included tapping screws and anchors.





Purchase apps from the Azena Application Store

Sign up/log in to the Azena platform

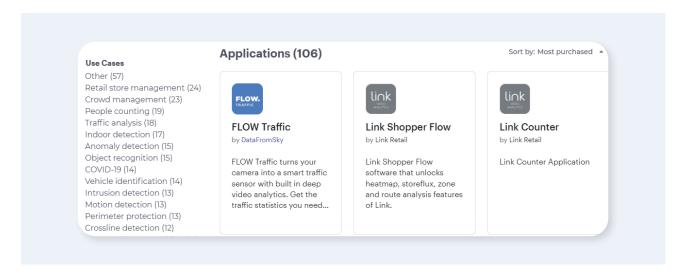
- Visit the Application Store and click "register".
- Choose in which role you want to use the Application Store, system integrator, application developer or both. Depending on which role you choose, the store will be set up for you.

First you'll be asked for information about you and your company as well as contact details. The email you give will be your login name. When everything is completed, we'll send you an email to confirm your identity.

Finally, we check your registration and provide you with your personal link to the shop by e-mail for you to start creating your user profile. In the "Team" section of your profile, you can also invite other users from your team and manage their user rights and permissions.

Browse the Application Store and find apps

To access the Azena Application Store, click on "Application Store" in the navigation bar at the top of the Azena website or visit store.azena.com/shop. There you will get an overview of the available apps, search function and detailed information.



- Search for apps by name, developer and use cases
- Get an idea of each app's functionality, use cases and developer details
- See how other users rate the apps and browse their comments



Purchase the desired apps

Buying apps for your AI Box is as easy as searching and clicking. The Azena Application Store works in the same familiar way as other online shops.

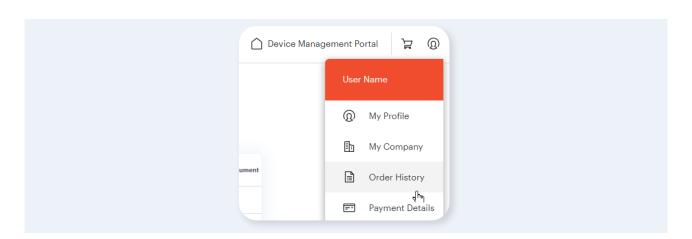
Add an app to the shopping cart with just one click

- Simply select the number of licences you need for your cameras in the app page's "Pricing" section and click "Add to card".
- If a trial version is available, you can install the app for free and test it for 30 days. Each trial licence expires automatically after this period.

Place orders and checkout securely

- After adding an app to your shopping cart, you're taken directly to the order summary. You also get there by clicking the shopping cart symbol at the top of the page.
- When you're ready to buy, just click "Place order". The new app is immediately added to your apps. You get there by clicking "Applications" in the navigation at the top of the page. With every purchase you'll receive a confirmation email.

Note: You'll find an overview of all your orders in the "Order history" section, in the profile menu in the upper right corner of the Application Store.



Scan here for the full **Azena Application Store guide:**





Configuration

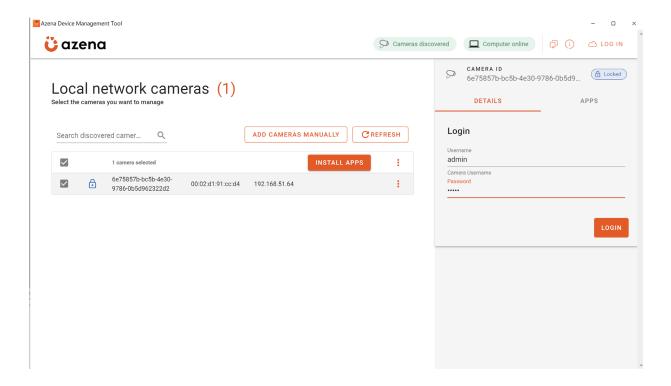
1. Download the **Device Management Tool**. The tool can be requested here: https://devices.azena.com/tooldownload



Make sure DHCP service is available in your local network.

Resources:

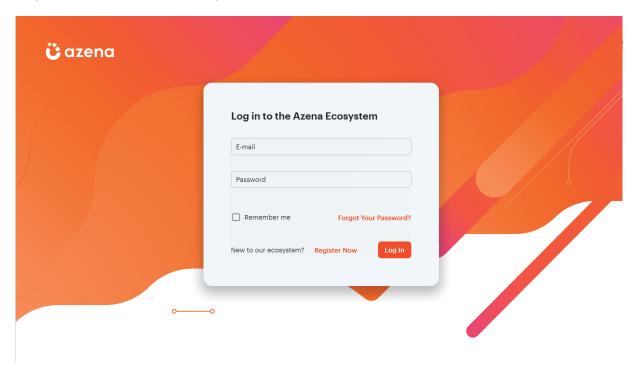
- 1 User Management Guide: https://hubs.ly/H0xV2j40
- 2 Download Azena Device Management Tool: https://hubs.li/H0xYjtL0
- 3 Network Firewall Details: https://hubs.li/H0xYhkr0
- 2. Use the Device Management Tool to locate your device.





3. You can click Cloud Login to download Azena apps or visit:

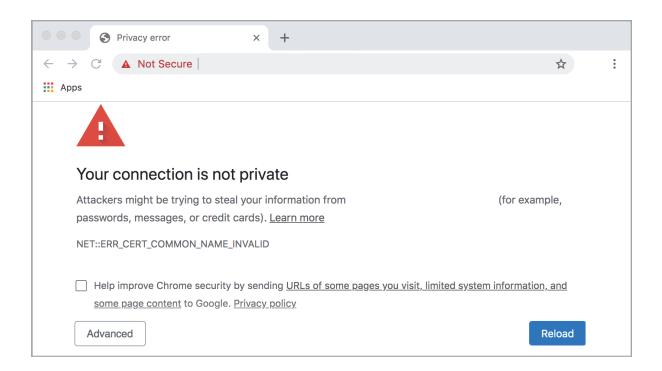
https://store.azena.com/shop/



4. Enter URL: https://<ip_address>:8443/

Enter admin/admin as the default credential.

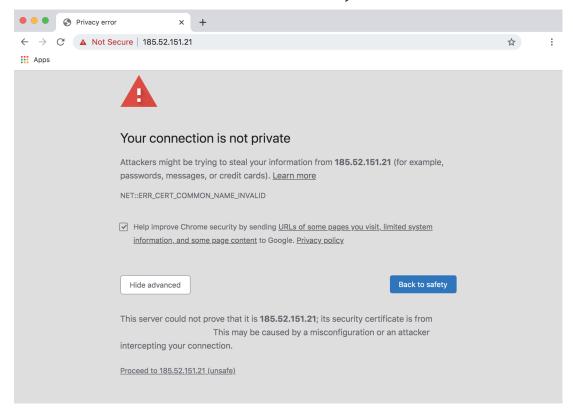
Since the connection is using a self-signed certificate, your connection will not be considered as a secure connection. Click Advanced to proceed.



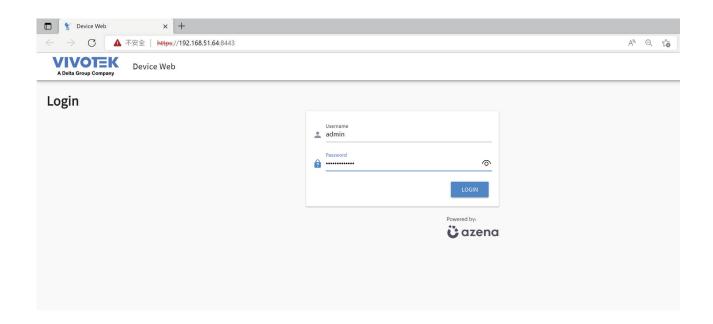


Click Proceed to xxx.xxx.xxx (Unsafe) to open the web console.

Note the IP addresses below are for reference only.



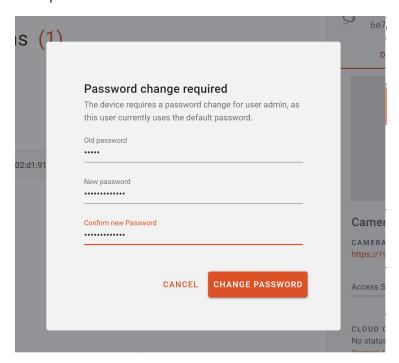
Enter admin/admin as the default credential.





You will be requested to create a new password for security concern. Enter a combination of alphabetic, numeric, and special characters that is strong enough for protection.

The new password must comprise of at least 10 characters, containing uppercase, lowercase, digits or special characters.



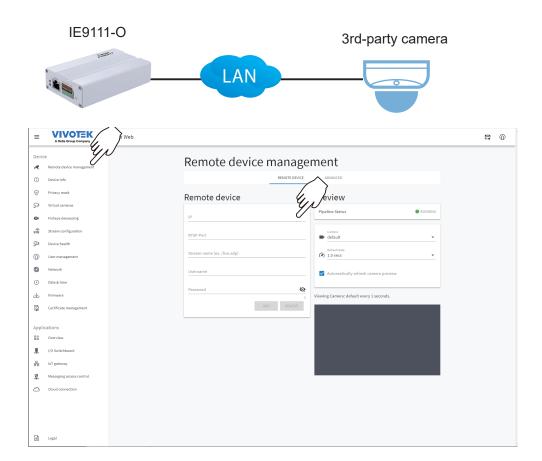
You can also use 3rd party tools like Onvif Device Manager to discover the Azena enabled cameras.

NOTE:

If installing or testing Insight devices on a network with different VMS, there will be a chance that a software like Nx Witness will scan and try to add the devices automatically. If this happens, the user will be timed out from our devices due to login failures. It is highly recommended that users change their login name from "admin" to something else, or add a second login account.



5. From the Remote device management page, you can enter the address, and credentials for connecting to the 3rd-party IP camera.



Enter 8554 as the RTSP port.

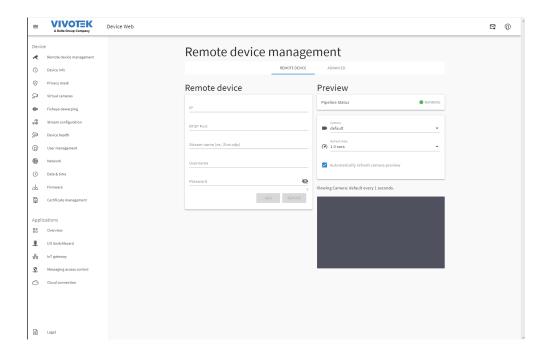
Enter /live.sdp as the stream name. /live1s1.sdp can also be used.

For some older models, the RTSP port can be 554.



Remote Management

This page is used mainly to connect a 3rd-party network camera.



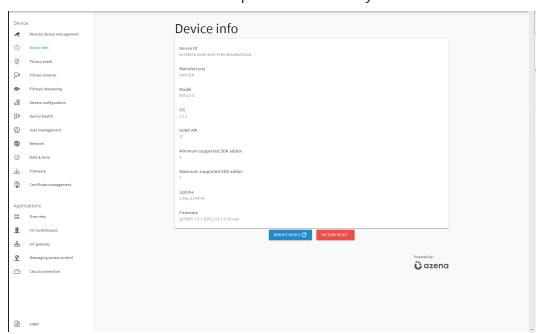


Device Info

Important information about this device is displayed on this page: including Device ID, OS version, AOSP API, SDK addon, firmware version, etc.

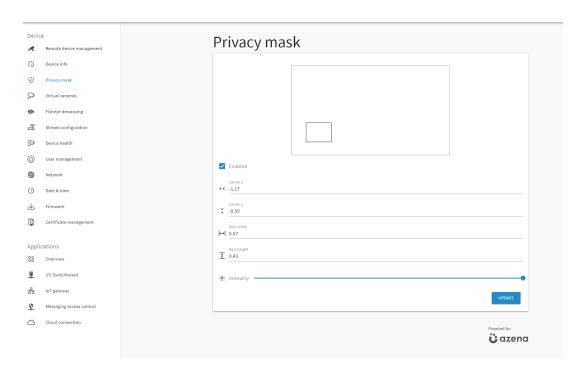
The Device ID is a unique ID for each camera and will be displayed in the Device Management Portal.

Here, you can also reboot the device or perform a Factory reset.



Privacy Mask

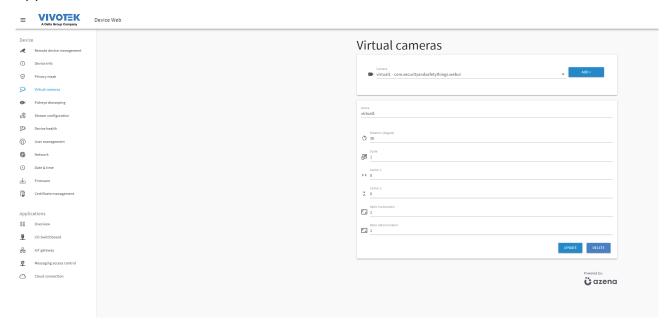
Click and drag on the screen to block out sensitive areas in your field of view. The size the orientation will display on screen. Use the Intensity slide bar to determine how much image within the privacy mask is blurred. Currently 1 privacy mask is supported.





Virtual Camera

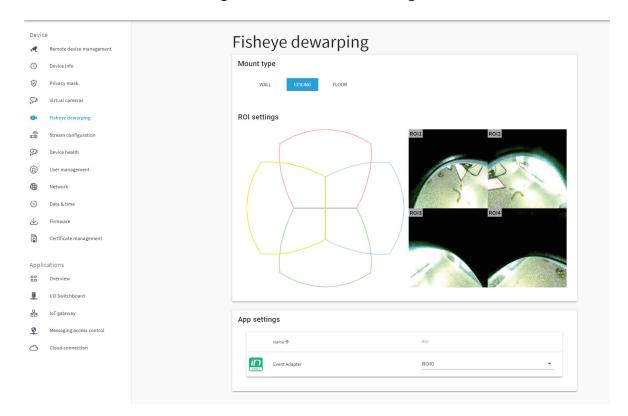
Allows the creation of additional sub-stream(s) which can cover a certain zone of interest in the camera's field of view. The sub-streams are used for video analytics on apps.



Fisheye dewarping

On this page, there are four pre-configured Region of Interest for the dewarped views for a fisheye camera.

Streams are defined as Full High Definition and Ultra High Definition streams.

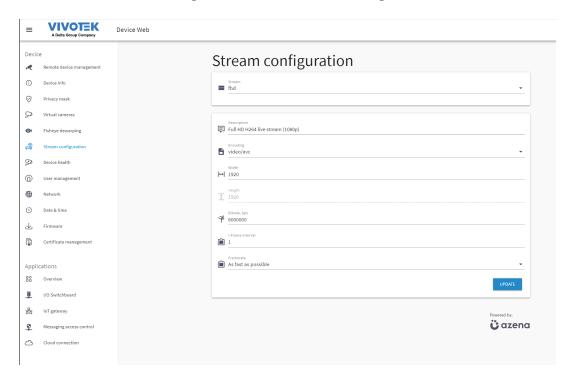




Stream Configuration

On this page, there are four pre-configured video streams which can be additionally modified with regards to encoding, size, bitrate and I-frame interval.

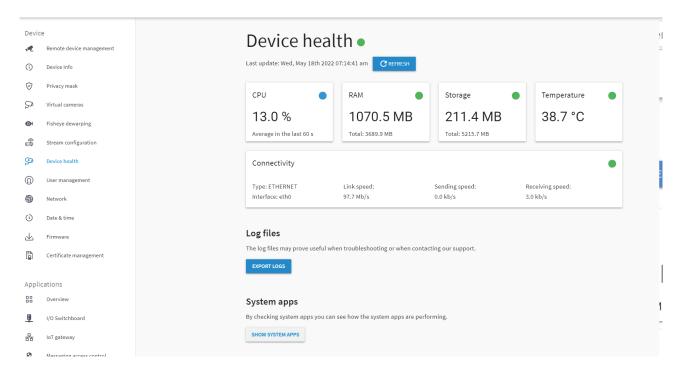
Streams are defined as Full High Definition and Ultra High Definition streams.





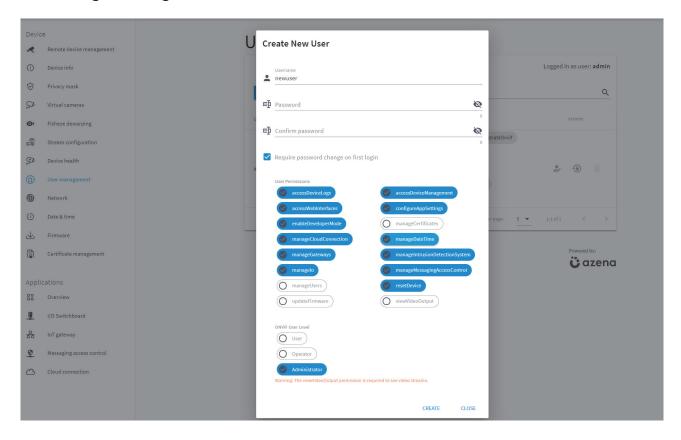
Device Health

This page displays various device health information: CPU/Memory/Storage usage, Connectivity, Temperature and App status. You can also export a system log for troubleshooting.



User Management

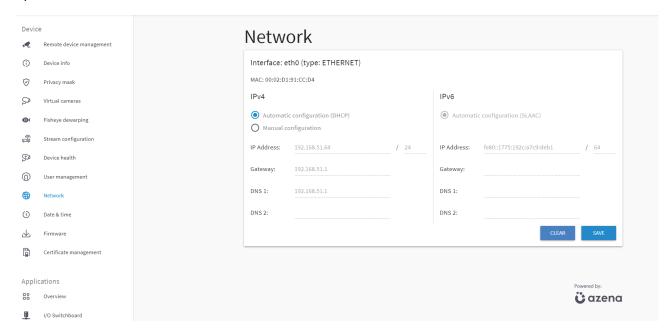
On this page, you can add/remove users and set user's rights and permissions. Select the management rights from the checkboxes.





Network

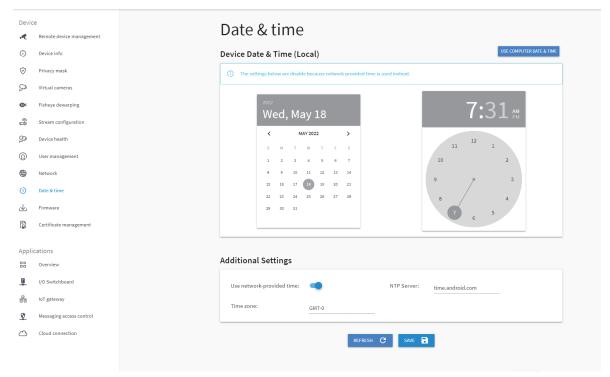
By default, the AI box has the network setup to receive the IP address via DHCP. On this page you can change different network parameters, disable the DHCP and set a specific IP.



Date & Time

This page allows the user to configure the current date/time on the device, synchronize with computer time and also to enable network time synchronization via an NTP server.

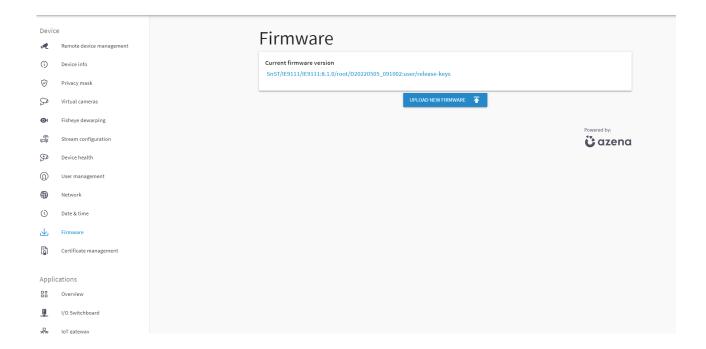
The network time setting is necessary when you "claim" the camera for downloading apps.





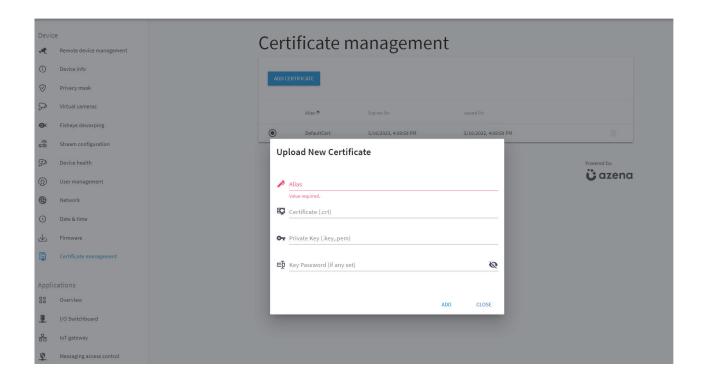
Firmware

On this page you can perform a Firmware (OS version) OTA upgrade.



Certificate management

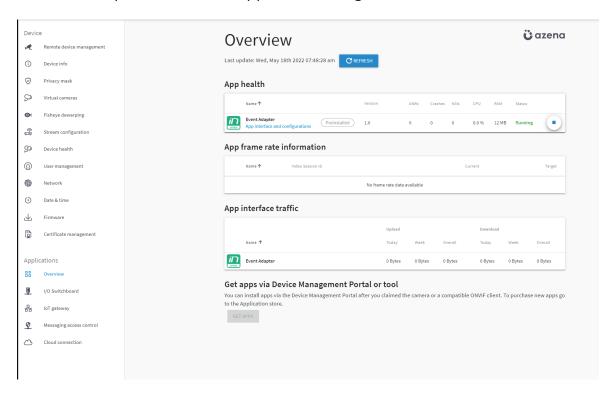
Use this page to upload a certificate for secure connection.





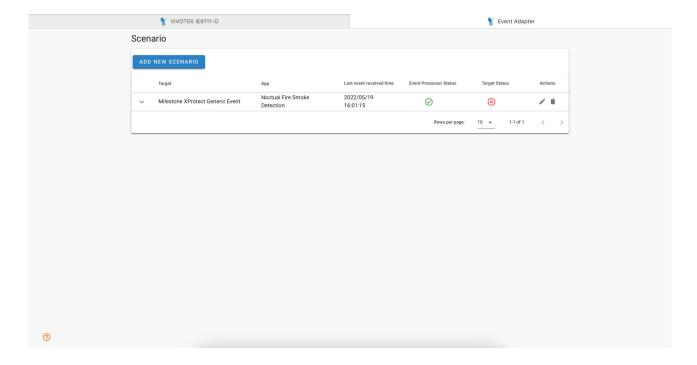
Applications - Overview

On this page, users can see all the installed applications, their status, version and they can also start/stop or uninstall an application using the vertical 3-dot menu:



Data Magnet and VAST2

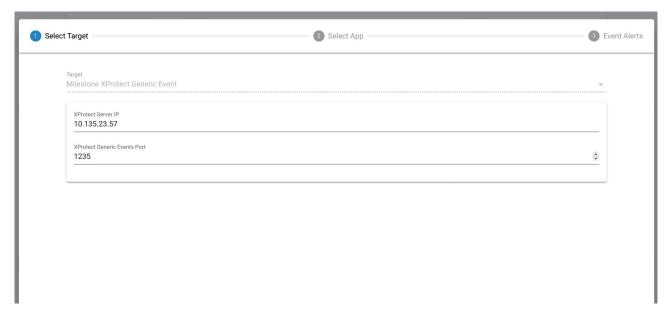
To enable the display of video analytics from apps on the VAST2, click on the **App interface and configurations**. Please note that **NOT ALL** Azena apps can be integrated through the Data Magnet interface.

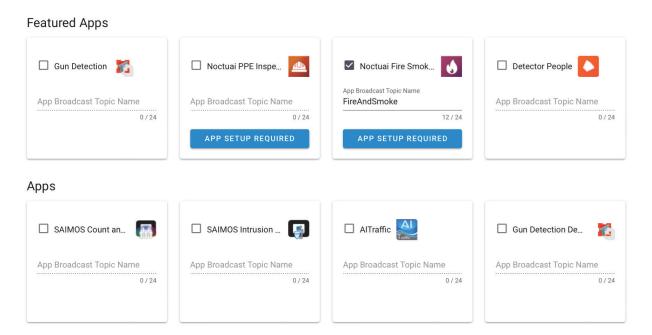




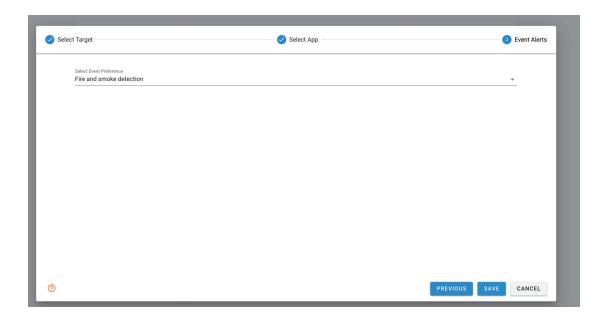
Enter the following to enable the connection through Data Magnet:

- 1. Your VAST2 server IP.
- 2. Data Magnet port: usually 3443.
- 3. Data Source Name: Note that this name must be identical to that on the VAST2 Data Magnet setting page.
- 4. VAST2 user name and password.
- 5. Select the app installed on your device. Click the Update button.

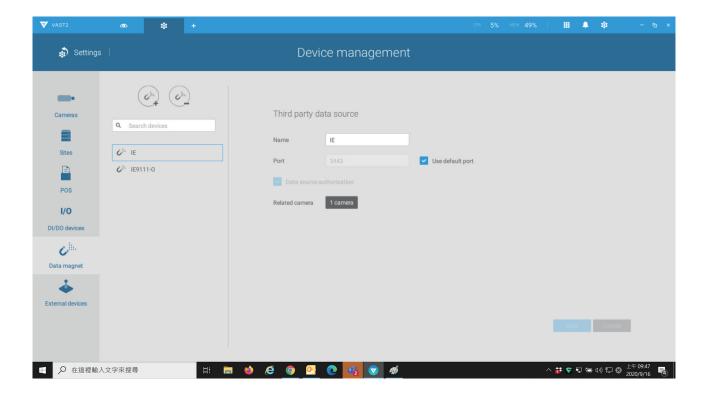








6. On VAST2 > Settings > Device > Data Magnet, click Add data source.



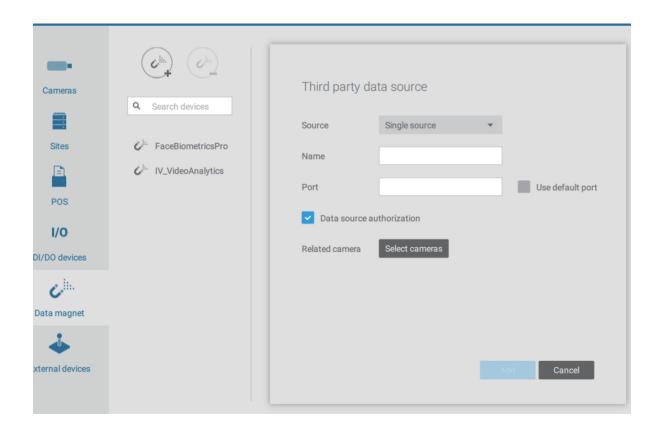


7. Select Third party data source.



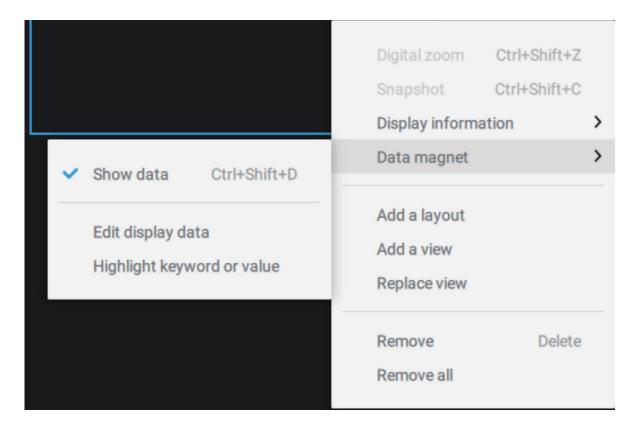
8. Enter the Data Source Name, port (usually 3443), select the associated camera, and click Add.

Note that the camera should be the one that the IE9111-O is connected to. The camera should be manually added to VAST2.





9. You can then right-click on a VAST2 view cell to display the Data magnet data. The analytics detection results can display along with the live video.

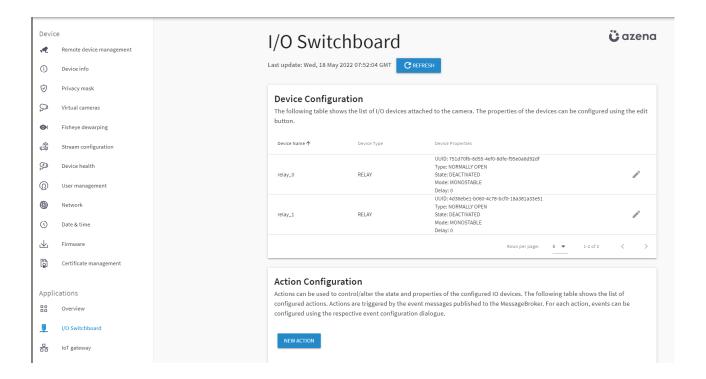




I/O Switchboard

From this page, you can detect the connected statuses of external relay devices. where it can be easily retrieved. Check the statuses and see if the connected devices are working properly.

You can then configure the action to activate those devices.





IoT gateway

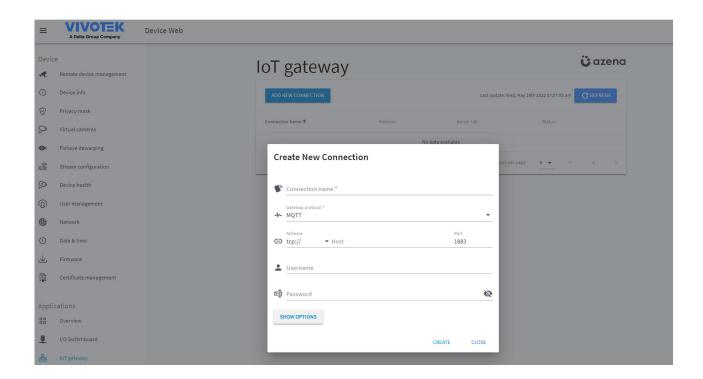
This page is used for connecting to a specific MQTT broker through a TCP connection.

MQTT allows for messaging between a deevvice to cloud and cloud to device. The connection can also be with an external MQTT client.

Type a Connection Name, choose MQTT as the gateway protocol, choose a schema (TCP or SSL), input the server URL and a port number.

If you set the schema to SSL, then you must upload the CA certi cate of the MQTT broker to the camera Ashttps://docs.azena.com/developer/core_topics/os_components/iot_gateway/mqttsoon as you select 'ssl' an extra option will appear in the window with which the camera. As soon as you select 'ssl', an extra option will appear in the window with which you can do this.

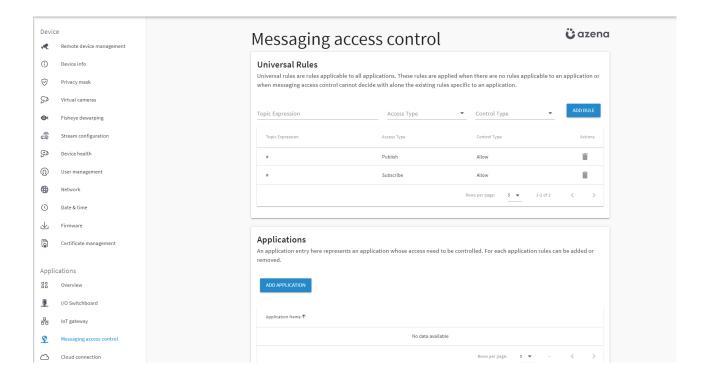
Next, set a user name and password if your MQTT broker requires one, otherwise leave it blank.





Messaging access control

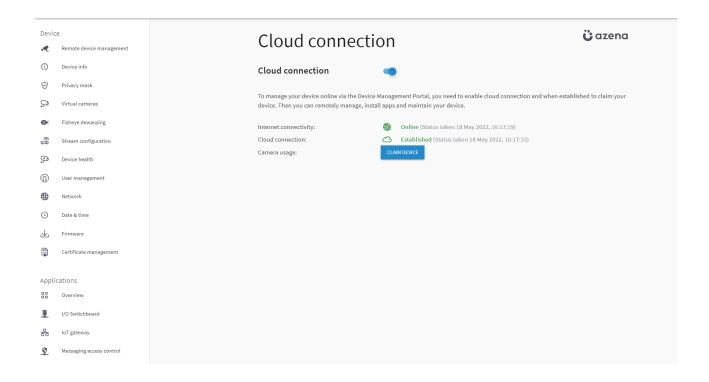
From this page, you can create messaging rules for applications that do not have applicable rules.





Applications - Cloud Connection

You can connect your device to the Azena cloud where you can install and manage the applications, buy additional licenses and monitor your camera's health. Also, if crash reporting is enabled, all the information about application crashes is sent to the cloud where it can be easily retrieved.





In order to be able to install applications through the Device Management Portal, the camera has to be connected to the Azena cloud. That process is called claiming.

The prerequisites for connecting the camera to the cloud are:

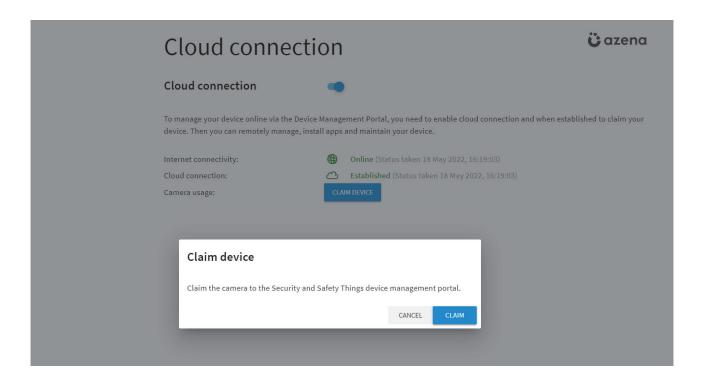
- You have an account on the Azena Device Management Portal.
- Cameras have a non-restricted access to the Internet.
- Your camera has a valid certificate. Please verify this by accessing the camera using a web browser and go to the Device info page. Then check if a Device ID is present:



• Your device has a proper date/time set. This can be verified and set on the Date & time page on the camera's front end.

Proceed with the following for connecting the camera to the Device Management Portal:

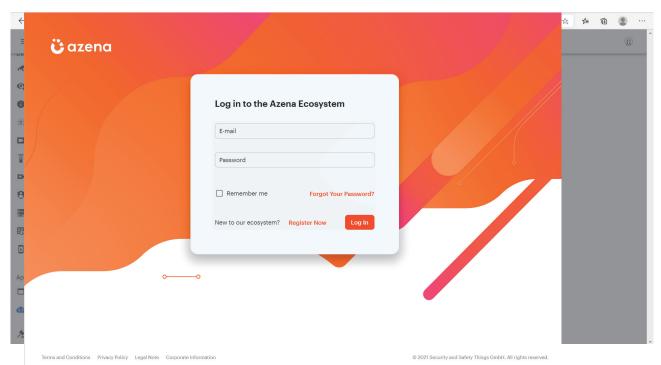
- 1. Go to the Date & time option on camera's web console and enable "Use network-provided time". If necessary, please configure your own NTP server
- 2. Go to Cloud connection option and enable "cloud based device management". A pop-up will appear with a message. Click Continue.
- 3. Click on "CLAIM DEVICE."



Clicking the CLAIM button will redirect you to the Device Management Portal page where you can enter some additional information regarding this camera:



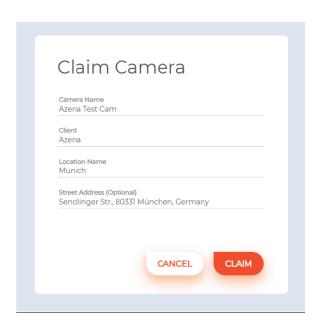
Click Continue.



On the Device Management Portal page, you can enter some additional information regarding the device:

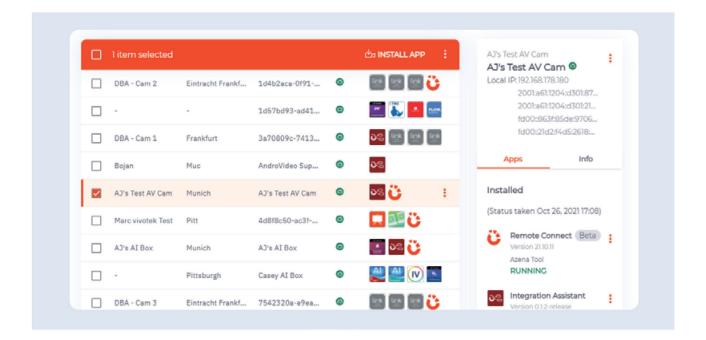
- Camera name
- Client
- Location name
- Street address (optional)

Click the SAVE button in order to save the changes and your camera will appear in the list of cameras on the Device Management Portal.

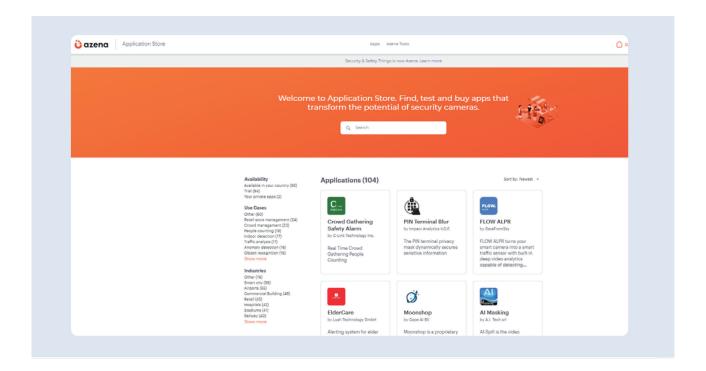




On the Device Management Portal page, you can see all connected devices/cameras.



Click to select your device. On the right pane, click INSTALL APP.





Scroll to select an app. Select and click INSTALL.

You can find apps by either typing into the search bar or navigating on the left side panel. There you will find tailored solutions divided by use cases, such as retail store management, crowd management and COVID-19.



Applications - Legal

This page provides legal information for the OS.

Licenses

WRITTEN OFFER

This product may contain software under a licence granting you the right to obtain the source code for such software from the entity (person or organisation) that has distributed this product to you. Such licences include but are not limited to Public License (GPL), the GNU Lesser General Public License (LGPL), the Mozilla Public License (MPL).

In case you have not received the complete and corresponding source code for such software alongside the distribution you or any third party are hereby offered a complete machine-readable copy of the corresponding source for such softw this product at a charge no more than the cost of physically performing source distribution.

This offer is valid for three years after this product has been distributed to you.

In order to accept this offer, please send a request (via e-mail, postal mail or fax) stating

(1) The name and identification code of the product

(2) The firmware or software version number, as applicable

(3) Your name

(4) Your company name (if applicable)

(5) Your email address (if applicable)

(6) Your address to which you wish the software to be delivered.

Notwithstanding the above offer, you may also obtain the source code under the terms of the offer described above by addressing your request

to the postal address that is available in the product documentation, or to

Security and Safety Things GmbH Sendlinger Strasse 7 80331 Munich Germany

- flake_packages/selinux_policy-timestamp
 /kemel
 /kemel
 /recovery/root/tet/mke2fs.conf
 /recovery/root/tet/mke2fs.conf
 /recovery/root/nonplat_property_contexts
 /recovery/root/plat_flee_contexts
 /recovery/root/plat_property_contexts
 /recovery/root/plat_property_contexts
 /recovery/root/plat_property_contexts



Technology License Notice

AMR-NB Standard

THIS PRODUCT IS LICENSED UNDER THE AMR-NB STANDARD PATENT LICENSE AGREEMENT. WITH RESPECT TO THE USE OF THIS PRODUCT, THE FOLLOWING LICENSORS' PATENTS MAY APPLY:

TELEFONAKIEBOLAGET ERICSSON AB: US PAT. 6192335; 6275798; 6029125; 6424938; 6058359. NOKIA CORPORATION: US PAT. 5946651; 6199035. VOICEAGE CORPORATION: AT PAT. 0516621; BE PAT. 0516621; CA PAT. 2010830; CH PAT. 0516621; DE PAT. 0516621; DK PAT. 0516621; ES PAT. 0516621; FR PAT. 0516621; GB PAT. 0516621; IT PAT. 0516621; LI PAT. 0516621; LU PAT. 0516621; NL PAT. 0516621; SE PAT 0516621; US PAT 5444816; AT PAT. 819303/AT E 198805T1; AU PAT. 697256; BE PAT. 819303; BR PAT. 9604838-7; CA PAT. 2216315; CH PAT. 819303; CN PAT. ZL96193827.7; DE PAT. 819303/DE69611607T2; DK PAT. 819303; ES PAT. 819303; EP PAT. 819303; FR PAT. 819303; GB PAT. 819303; IT PAT. 819303; JP PAT. APP. 8-529817; NL PAT. 819303; SE PAT. 819303; US PAT. 5664053. THE LIST MAY BE UPDATED FROM TIME TO TIME BY LICENSORS AND A CURRENT VERSION OF WHICH IS AVAILABLE ON LICENSOR'S WEBSITE AT HTTP://WWW.VOICEAGE.COM.



Notices from HEVC Advance:

THIS PRODUCT IS SOLD WITH A LIMITED LICENSE AND IS AUTHORIZED TO BE USED ONLY IN CONNECTION WITH HEVC CONTENT THAT MEETS EACH OF THE THREE FOLLOWING QUALIFICATIONS: (1) HEVC CONTENT ONLY FOR PERSONAL USE; (2) HEVC CONTENT THAT IS NOT OFFERED FOR SALE; AND (3) HEVC CONTENT THAT IS CREATED BY THE OWNER OF THE PRODUCT. THIS PRODUCT MAY NOT BE USED IN CONNECTION WITH HEVC ENCODED CONTENT CREATED BY A THIRD PARTY, WHICH THE USER HAS ORDERED OR PURCHASED FROM A THIRD PARTY, UNLESS THE USER IS SEPARATELY GRANTED RIGHTS TO USE THE PRODUCT WITH SUCH CONTENT BY A LICENSED SELLER OF THE CONTENT. YOUR USE OF THIS PRODUCT IN CONNECTION WITH HEVC ENCODED CONTENT IS DEEMED ACCEPTANCE OF THE LIMITED AUTHORITY TO USE AS NOTED ABOVE.

H.264

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE HTTP://WWW.MPEGLA.COM



Electromagnetic Compatibility (EMC)

FCC Statement

This device compiles with FCC Rules Part 15. Operation is subject to the following two conditions.

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a partial installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

VCCI Warning

この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の基準にづくクラスB情報技術装置です。こ の装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用される と、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい

Liability

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