Grandstream Networks, Inc.

GSC3620

FHD Infrared Weatherproof, Varifocal and Auto-Focus

Dome IP Camera

User Manual

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CAUTION

Changes or modifications to this product not expressly approved by Grandstream, or operation of this product in any way other than as detailed by this guide, could void your manufacturer warranty.

WARNING

Please do not use a different power adaptor with devices as it may cause damage to the products and void the manufacturer warranty.

FCC Caution

U.S. FCC part 15 Regulatory Information

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Note: 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 particular 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.

Canada Regulatory Information

CAN ICES-3 (B)/NMB-3(B)

GNU GPL INFORMATION

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DOCUMENT PURPOSE

This document describes how to configure the GSC3620 via web UI menu to fully manipulate device's features. Please visit https://www.grandstream.com/support to download the latest "GSC3620 User Manual".

This guide covers following topics:

- Product Overview
- Getting Started
- Hardware Installation
- GSC3620 Web GUI
- GSC3620 Settings
- Experiencing the GSC3620

CHANGE LOG

This section documents significant changes from previous versions of user manual for GSC3620 Series. Only major new features or major document updates are listed here. Minor updates for corrections or editing are not documented here.

Firmware Version 1.0.7.5

- Added support for GSC3620 new hardware versions: 1.0A, 1.0B.
- Added support for GDMS/TR069. [TR069]

Firmware Version 1.0.5.3

- This is the initial version.

WELCOME

Thank you for purchasing Grand stream's GSC3620 FHD IP Dome Camera, the innovative powerful weatherproof Vari-focal and Auto-Focus camera. The GSC3620 is a ceiling-mounted fixed dome IP camera with a 3.6mm lens - making it an ideal device for wide-angle monitoring of nearby subjects in environments such as banks, hotels, retail stores, offices, warehouses, and building entrances. GSC3620 supports motion detection and smart infrared technology for white balance and exposure to monitor activity at night in outdoor or dark enclosed spaces. The GSC3620 can be managed with GSURF Pro, Grandstream's free video management software, along with other ONVIF-compliant video management systems. It pairs with Grandstream's video phones and GSC3570 HD intercom and facility control station for active end-point monitoring and facility control. By adding weatherproof capabilities, this is an ideal device for increasing security and facility management in any indoor or outdoor area.

Designed for both indoor and outdoor environment, the GSC3620 IP Camera ensures ease of use, integration, and deployment, with multilingual graphical user interface, provides powerful solution to professional surveillance applications.

This manual will help you to learn how to operate and manage your GSC3620 FHD Infrared Weatherproof Vari-focal and Auto-Focus, Dome Camera, and make the best use of it.

PRODUCT OVERVIEW

Feature Highlights

The following table contains the major features of the GSC3620:

Table 1: GSC3620 Features in a Glance

GSC3620 	• Motion detection • Vari-focal and Auto-Focus • Smart infrared technology for optimal white balance and exposure • Built-in PoE to power the device and provide a network connection • Alert notifications via outbound voice or video call & email screenshot • IP67-level weatherproof capability • Primary stream 1920x1080 and Secondary stream 640x480 • SIP/VoIP support for video and audio streaming to endpoints (external microphone required)

GSC3620 Technical Specifications

The following table resumes all the technical specifications including the protocols / standards supported, voice codecs, telephony features, languages, and upgrade/provisioning settings for GSC3620.

Table 2: GSC3620 Technical Specifications

Network Protocol	SIP RFC3261, TCP/IP/UDP, RTP/RTCP, HTTP/HTTPS, ARP, ICMP, DNS (A record, SRV, NAPTR), DHCP, SSH, TFTP, NTP, STUN, LLDP-MED, TLS, SRTP
Image Sensor Resolution	1/2.7” CMOS Sensor, 2 megapixels (2MP), 1920(H)x1080(V) resolution
Video Compression	H.264JPEG/MJPEG
Supported Maximum Video Resolution	Primary Stream: 1920x1080; 1280x960; 1280x720 Secondary Stream: 1280x720; 704x576; 640x480; 352x288; 320x240
Video Output	Network
Audio	Line-In: 1 x 3.5mm, 1-50mVpp; Line-Out: 1 x 3.5mm, 560Ω, 4.0Vpp
Scanning System	Progressive

Image Configuration	Saturation, Brightness, Contrast, Sharpness, White Balance
Focal Length	2.8mm - 12mm Vari-Focal, Electronic Auto-Focus
Infrared LED	42μ x 2, up to 25M, Auto Control
Ethernet	One RJ-45 (10/100Base-T) Port with PoE
ONVIF	Yes, Profile S
Day/Night	Color/ Black &White (IR-CUT)
Motion Detection	Supported
Language Supported	Multi-Language
Privacy Mask	4 Rectangular Zones
Weatherproof Grade	Metal, IP67-level weatherproof capability
Power	DC12V±10%,1A (Power Adapter NOT Included) PoE: Support IEEE 802.3af
Temperature / Humidity	-20 °C ~ 60 °C, RH95% Max
Weight and Dimensions	Unit: 714g, Dimension: 128 x 108 (LxH) mm; Package Weigh: 900g
Compliance	FCC, CE, RCM, IC

GETTING STARTED

This chapter provides basic installation instructions including the list of the packaging contents and also information for obtaining the best performance with the GSC3620.

Equipment Packaging

Table 3: Equipment Packaging – GSC3620

GSC3620
• 1x GSC3620 Main Case. • 1x Drill Template • 2x Hex Keys • 1x Waterproof RJ45 Socket (5 pieces) • 3x Wall Anchors and Screws • 1x Quick Installation Guide.

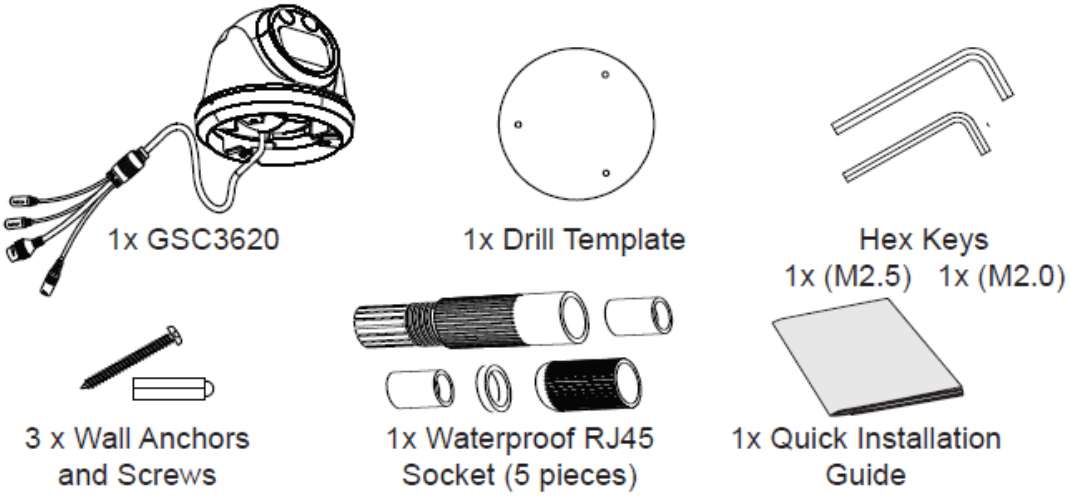


Figure 1: GSC3620 Package Content

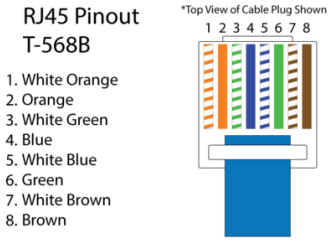
Note:
Check the package before installation. If you find anything missing, contact your system administrator.

Powering and Connecting the GSC3620

The GSC3620 can be powered either using the right PSU (DC12V, 1A) or using a PoE switch, please refer to illustration below to do the wiring and connect the waterproof RJ45 socket:

Option A (Recommended)

1. Based on T-568B (see diagram below) to install the RJ45 plug, tighten the connector using the provided waterproof socket.



2. Connect other end of the cable into a switch supporting Power over Ethernet.

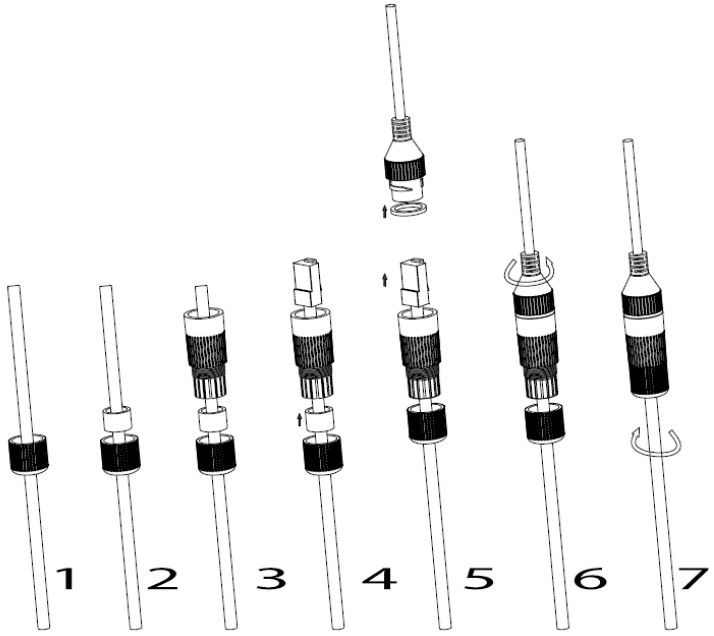


Figure 2: RJ45 plug installation

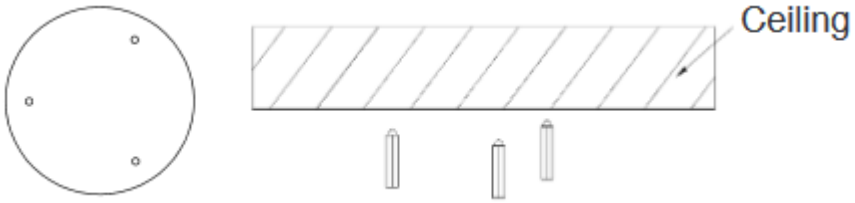
Option B

1. Wire the cable and connect it to a network switch as in the figure above.
2. Connect a 12VDC, 1A (minimum) Power Adapter (not provided) to the power socket of the GSC3620 tail cable. Make sure the polarity "+" (center) and "-" (outside) are correctly connected.

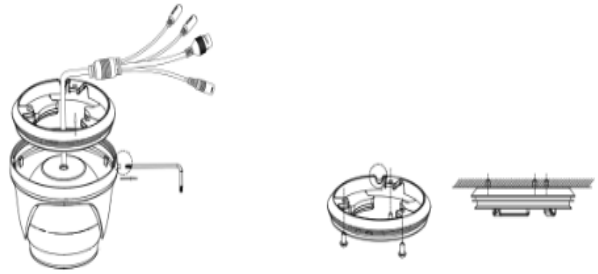
HARDWARE INSTALLATION

Mounting GSC3620

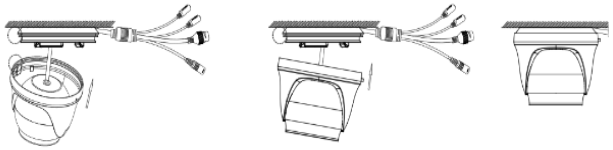
Step 1: Use supplied drill template to drill holes at ceiling. Select appropriate anchors or screws based on ceiling material.



Step 2: Remove the top cover of the camera by turning it counterclockwise as shown in the figure below. Refer to the arrow and small notch on the machine body as shown below to align the machine cover.



Step 3: Place the cable into the groove of camera cover, mount the cover into ceiling using provided screws as shown in below diagram. Leave the connectors of cable dangling outside the cover.



Step 4: Hold the body of camera and align to the notch as shown in the diagram, then push the body of camera into the cover of camera already mounted at the ceiling.

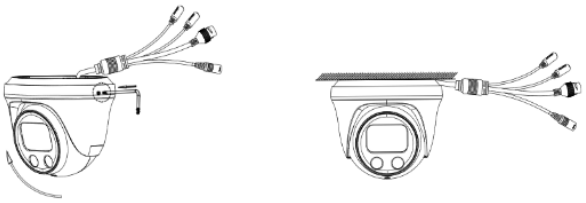


Figure 3: Mounting GSC3620

GSC3620 APPLICATION SCENARIOS

GSC3620 is very versatile infrared IP Camera, it can be used in a lot of scenarios.

LAN without Internet

For multi-room or a bigger space, multiple GSC3620 might be required. User can establish a local area network using PoE switch.

If remote access required, a router with internet access may add in.

Equipment List:

1. Several GSC3620
2. Ethernet cables
3. Switch (Static IP required to configure to IP Cameras)
4. PoE Switch (Optional, better solution)

   Note: If remote access to the cameras required to view the LIVE video stream, then broadband Internet is required, and more equipment required:

5. Router (if DHCP configured than static IP is not required although still recommended)
6. iPhone or Android phone. (Application like “IP Cam Viewer”)

Figure 4: GSC3620 Working in LAN

LAN with Internet

For multi-room or a bigger space, with Internet access and local video recording required, following list is recommended:

Equipment List:

1. Several GSC3620
2. Ethernet cables
3. Switch (PoE Switch recommended)
4. Router
5. Broadband Internet Access (FiOS, Cable or DSL)
6. iPhone or Android phone. (Application like “IP Cam Viewer”)
7. VMS GSurf_Pro Remote Access (Optional)

Figure 5: GSC3620 working with Internet

Application Peripheral Connection

Below is the illustration of GSC3620 peripheral connections for related application.

Figure 6: Application Peripheral Connection for GSC3620

- Audio Output and Input using 3.5mm interface must match below parameters:

Audio Output	3.5mm Line-Out, 560Ω, 4.0Vpp
Audio Input	3.5mm Line-In, 1-50mVpp

- Grandstream phones can work with GSC3620 (video stream video phones GXV33xx & GXV34xx only) via either Peer IP (LAN) or SIP extension (WAN). Peer to Peer (or Direct IP) works only at LAN using static IP; SIP extension requires related SIP server/proxy provided and configured.

GSC3620 WEB GUI

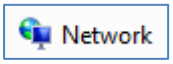
Note the below requirement to access/configure the GSC3620:

- Internet Browser like Firefox, Chrome, Microsoft Internet Explorer.
- DHCP server enabled on the network.

Two ways exist for Windows user to get access to the GSC3620:

UPnP

By default, the GSC3620 has the UPnP feature turned ON. For customers using Windows network with UPnP turned on (most SOHO routers support UPnP), it is easy to access the GSC3620:

1. Find the "Network" icon 

on the windows Desktop.
2. Click the icon to get into the "Network", the GSC3620s will list as "Other Devices" shown. Refresh the pages if nothing displayed. Otherwise, the UPnP may not be active in the network.
3. Click on the displayed icon of related GSC3620, the default browser (e.g.: Internet Explorer, Firefox, or Chrome) will open and connect directly to the login webpage.

GS Search

Double check the requirements then follow the below steps to access the GSC3620 WEB configuration page:

1. Download and install GS_Search tool from the link below: https://www.grandstream.com/products/tools/surveillance/GS_Search.zip
2. Run the Grandstream GS_Search tool.
3. Click on

button to start device detection.
4. The detected devices will appear in the output field as below.

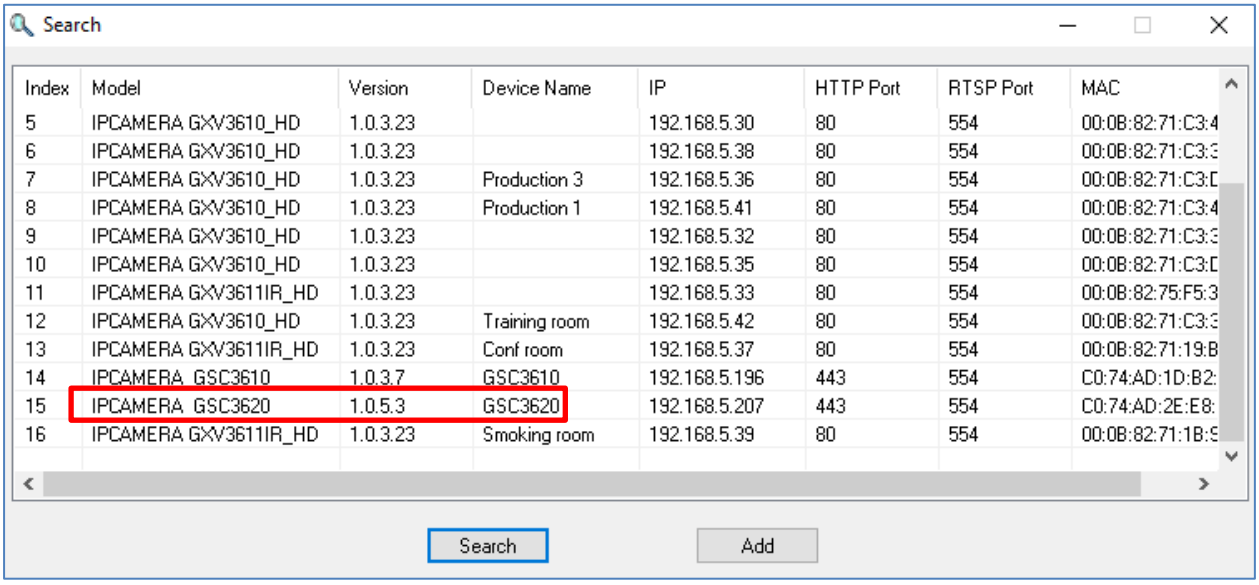


Figure 7: GS_Search tool

5. Double click on the detected device. The default browser (Chrome in this example) will open to display the camera's login web interface.

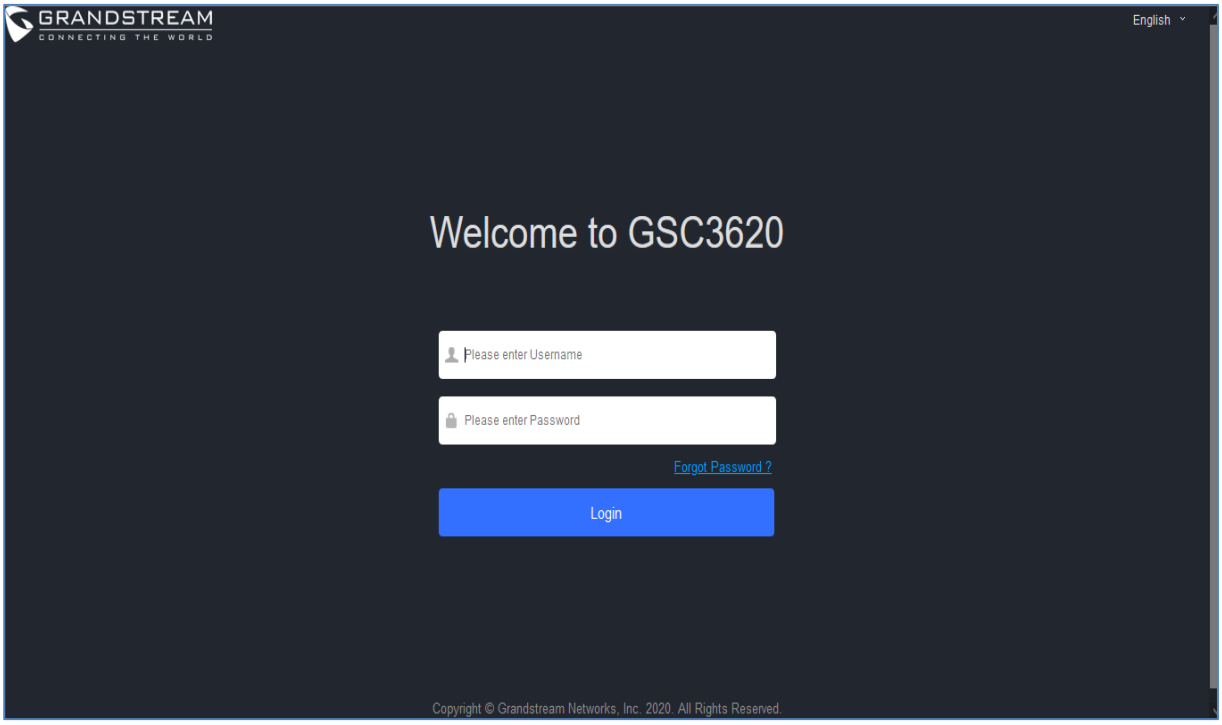


Figure 8: GSC3620 Login Page

- When clicking on the "Language" drop down, supported languages will be displayed. Click to select the related webpage display language. (Current firmware supports only English as default and simplified Chinese).

6. Username and password are required to login the camera to manage the device.

The default username is “admin”; the default password is a random password printed in a sticker which can be found on the camera body or cable.

- The default connection is via HTTPS. Once input the correct username and password, the device configuration webpage will be available.

Web GUI Settings

The GSC3620 embedded Web server responds to HTTP/HTTPS GET/POST requests. Embedded HTML pages allow users to configure the application phone through a Web browser such as Microsoft’s IE, Mozilla, Firefox, Google Chrome and etc.

- Once logged in successfully to the GSC3620, the browser will display the GUI as shown below:

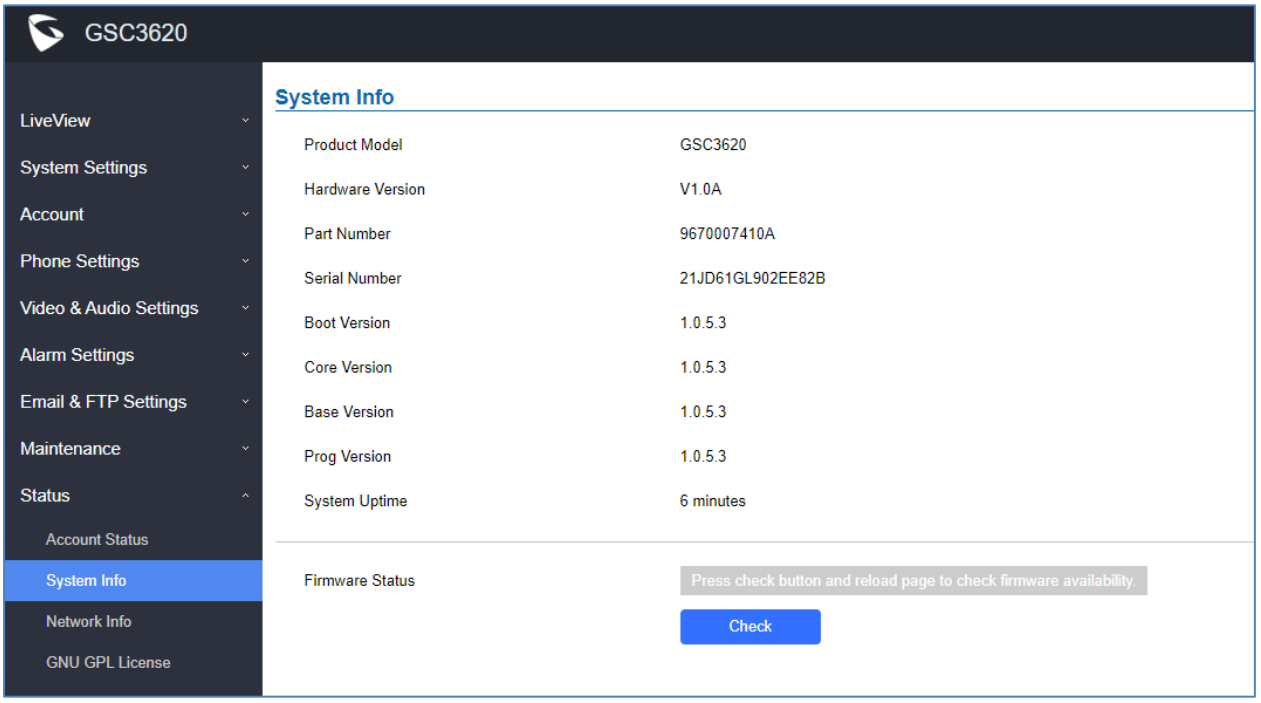


Figure 9: GSC3620 Web GUI

Table 4: GSC3620 WEB GUI Sections

Fields	Description
LiveView	Access to live view stream page.
1	Play the primary stream.
2	Play the secondary stream.

System Settings	Access to “System Settings” page.
Account	Access to “Account” configuration page.
Phone Settings	Access to “Phone Settings” configuration page.
Video & Audio Settings	Access to “Video & Audio settings” page.
Alarm Settings	Access to “Alarm settings” page.
Email & FTP Settings	Access to “Email & FTP Settings” page.
Maintenance	Access to “Maintenance” page.
Status	Click to enter “Status” page.

GSC3620 SETTINGS

Live View Page

This page allows users to view the live video of the GSC3620.

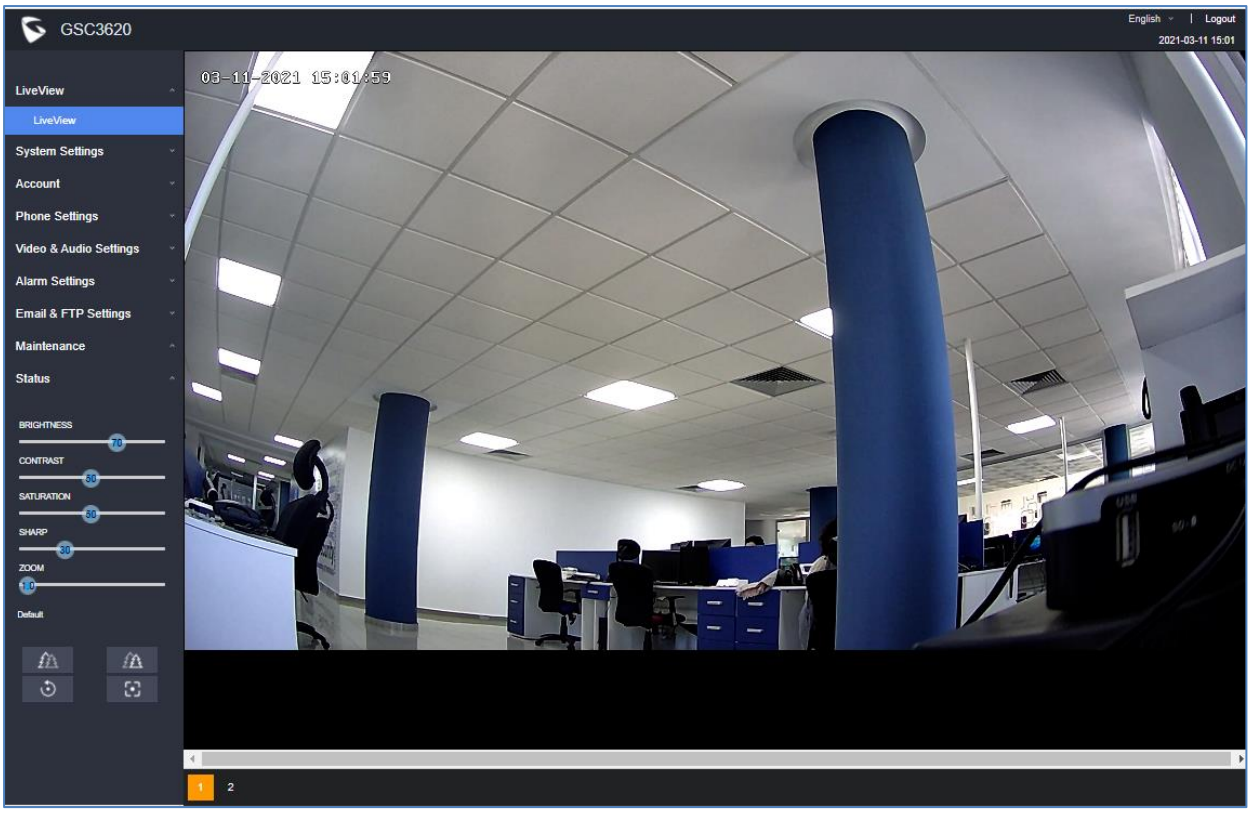


Figure 10: Live View

Two streams are available:

- **Primary video stream:** 1920*1080 resolution, recommended for continuous full HD recording
- **Secondary video stream:** 640*480 resolution, recommended for SIP/VoIP video calls

Note: Make sure to download/Install the browser video plugin to have access to the Live View and video stream tools.

Vari-focal and Auto-Focus Settings

At the “LiveView” page, sliding the “ZOOM” bar left or right to zoom out/in the lens; click “Focus+/–“ to fine tune the focus; or click “One key focus” to let system auto-focus the scene; click “initialize lens” to go back to default.

Figure 11: GSC3620 Zoom

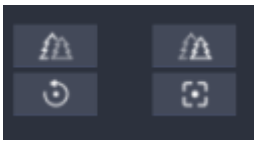


Figure 12: GSC3620 Auto-Focus Settings

Table 5: GSC3620/GSC362 Auto-Focus Settings Description

Fields	Description
	Focus+
	Focus-
	One Key Focus
	Initialize Lens

Notes:

- After adjusting the focal length of the lens or click “One Key Focus”, the device will automatically adjust the image definition (no other lens operation allowed during the auto-focus process).
- Due to the scene limitation, the effect of “one key focus” may not always be satisfied. When this happened, it is recommended manually click the “Focus+/-“ button to fine tune and complete the focus operation.
- If after several round of zoom and focus, the image is still not clear, please click “Initialize lens” to reset the lens by removing the accumulated errors of the lens.

System Settings

This page allows users to configure date and time, network settings as well as access method to the GSC3620 and password for accessing the Web GUI.

Date & Time Settings

This page allows users to adjust system date and time.

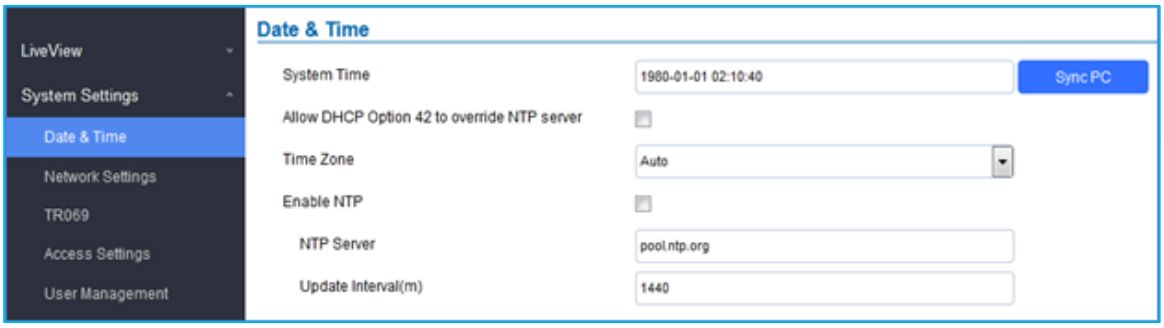


Figure 13: Date & Time Page

Table 5: Date & Time

System Time	Displays the current system time.
Allow DHCP Option 42 to override NTP server	Defines whether DHCP Option 42 should override NTP server or not. When enabled, DHCP Option 42 will override the NTP server if it is set up on the LAN. The default setting is “Yes”.
Sync PC	Clicks to synchronize current time with the computer.
Time Zone	Selects from drop down menu the preferred time zone. Default is “Auto”
Enable NTP	Enables NTP to synchronize device time.
NTP Server	Configures the domain name of NTP server. Default is “pool.ntp.org”
Update Interval	Configures the Interval (in minutes) to retrieve updates from the NTP server.

Network Settings

This page allows users to set either a static or DHCP IP address to access the unit.

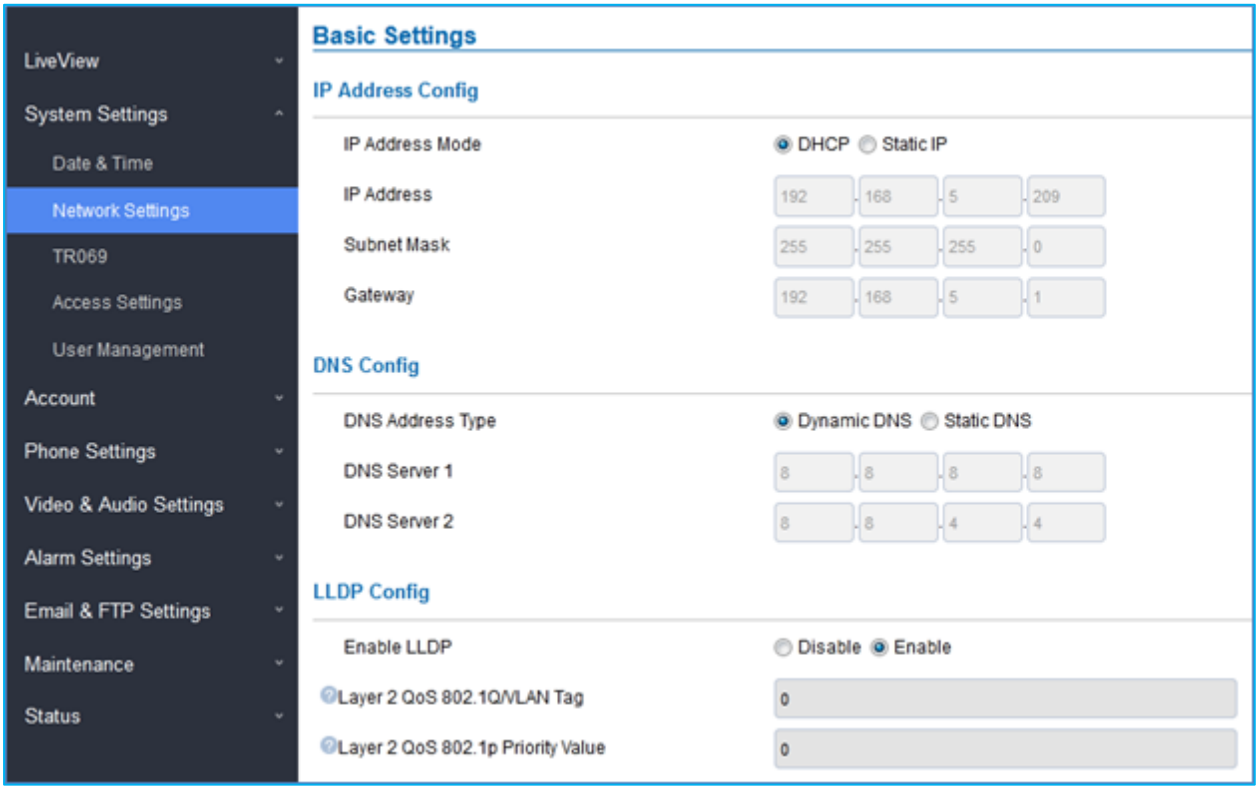


Figure 14: Basic Settings Page

Table 6: Basic Settings

IP Address Mode	Selects DHCP or Static IP. Default DHCP. (Static recommended)
IP Address	Configures the Static IP of the GSC3620.
Subnet Mask	Configures the Associated Subnet Mask.
Gateway	Configures the Gateway IP address.
DNS Address Type	Specifies the DNS type used: Dynamic DNS or Static DNS.
DNS Server 1	Configures DNS Server 1 IP address.
DNS Server 2	Configures DNS Server 2 IP address.
Enable LLDP	Controls the LLDP (Link Layer Discovery Protocol) service. The default setting is “Enabled”.
Layer 2 QoS 802.1Q/VLAN Tag	Assigns the VLAN Tag of the Layer 2 QoS packets. Default value is 0.
Layer 2 QoS 802.1p Priority Value	Assigns the priority value of the Layer2 QoS packets. Default value is 0.

Notes:

- If the device is behind SOHO (Small Office Home Office) router with port forwarding configured for remote access, static IP should be used to avoid IP address changes after router reboot.
- TCP port above 5000 is suggested to Port forward HTTP for remote access, due to some ISP would block port 80 for inbound traffic. For example, change the default HTTP port from 80 to 8088, to make sure the TCP port will not be blocked.
- In addition to HTTP port, RTSP port is also required to configure via port forwarding, so that the remote party can view the video stream.

TR069

This page allows users to set TR-069.

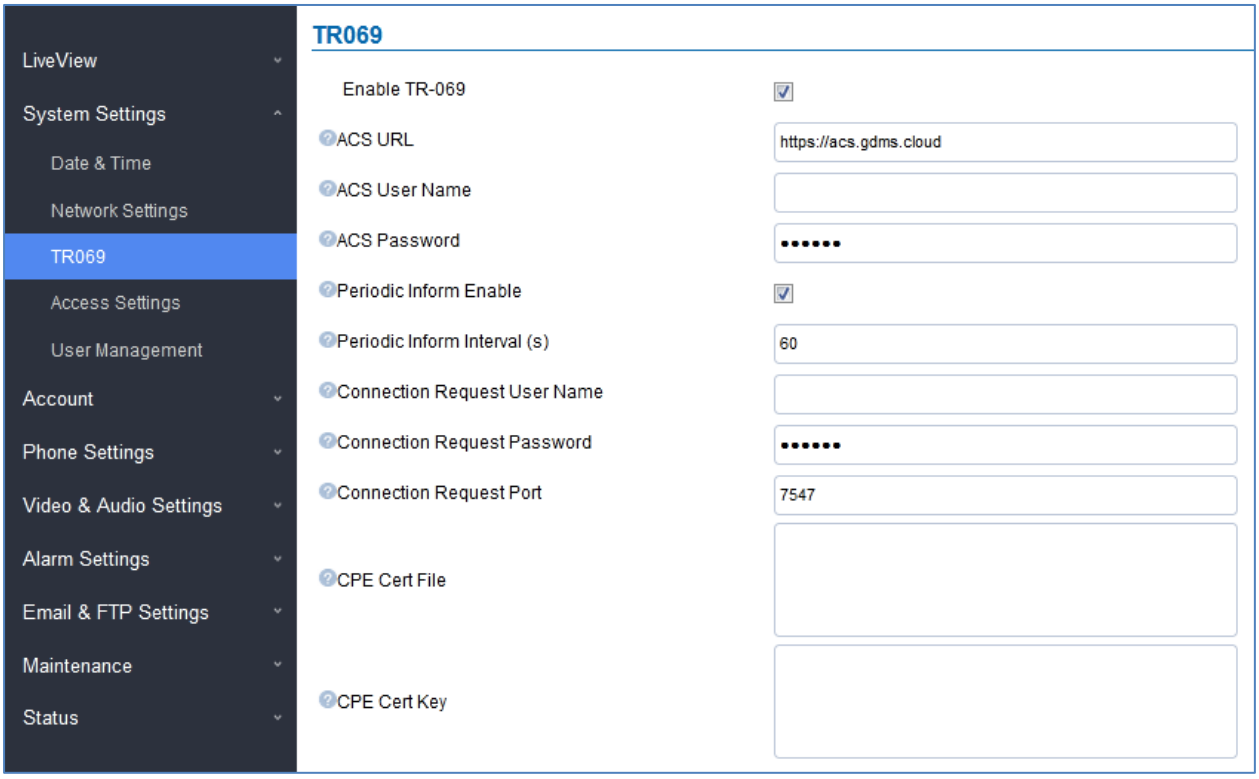


Figure 15: TR069 Settings Page

This feature allows centralized management and provisioning of mass product operations. This is very useful for ITSP customers and enterprise solutions. With GDMS management, customers can manage, provision the GSC3620 from GDMS platform.

For detailed management and usage of this feature, please refer to Grandstream Device Management System (GDMS) product page: http://www.grandstream.com/products/device-management/gdms

Table 6: TR069 Settings

ACS URL	Specifies URL of TR-069 ACS (e.g.,http://acs.mycompany.com), or IP address. Default setting is “https://acs.gdms.cloud”
TR-069 Username	ACS username for TR-069.
TR-069 Password	ACS password for TR-069.
Periodic Inform Enable	Enables periodic inform. If set to “Yes”, device will send inform packets to the ACS.
Periodic Inform Interval	Sets up the periodic inform interval to send the inform packets to the ACS. The default value is “60”.
Connection Request Username	The username for the ACS to connect to the phone.
Connection Request Password	The password for the ACS to connect to the phone.
Connection Request Port	The port for the ACS to connect to the phone. The default value is “7547”.
CPE Cert File	The Cert File for the phone to connect to the ACS via SSL.
CPE Cert Key	The Cert Key for the phone to connect to the ACS via SSL.

Access Settings

This page configures the GSC3620 access control parameters.

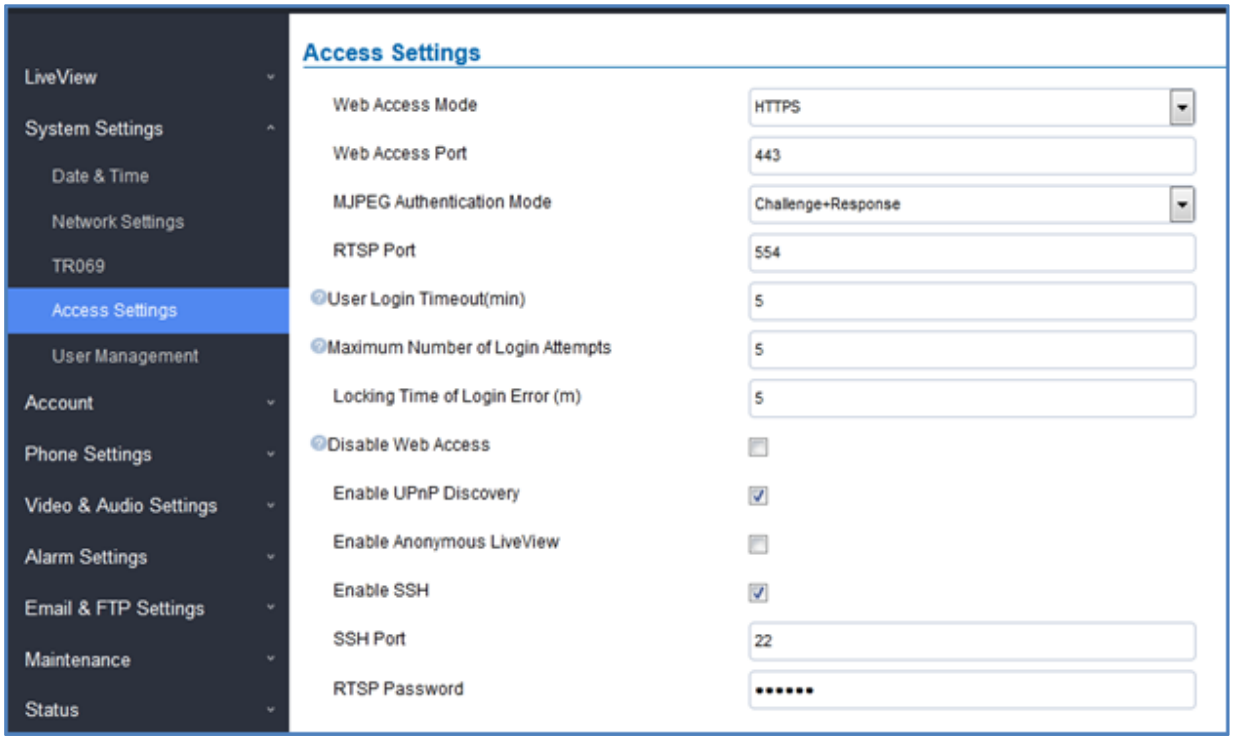


Figure 16: Access Settings Page

Table 7: Access Settings

Web Access Mode	Selects the access mode to the Web GUI either HTTP or HTTPS.
Web Access Port	Specifies the TCP port for Web Access, default 443.
MJPEG Authentication Mode	Allows 3rd party system integrator or developers to implement related application for users. By default, this feature is disabled and use more secured "Challenge+Response" mode. If enabled, user can send HTTP API with correct credentials to retrieve MJPEG video stream or JPEG snapshot from GSC. Notes: 1- The MJPEG stream can be retrieved via the following URL HTML based ➔ **http(s)://admin:password@IP_GSC3620:Port/jpeg/mjpeg.html** Stream ➔ **http(s)://admin:password@ip:port/jpeg/stream** 2- The MJPEG stream retrieved via the methods above is running on the background and cannot be tuned. If users want more flexibility, they can use the three configurable video streams as shown on [**Retrieving Video Streams**]
RTSP Port	Specifies RTSP port for media stream, default TCP port 554.
User Login Timeout(min)	If no action is made within this time the GSC3620 will logout from the Web GUI, range is between 3 and 60. Default is 5.
Maximum Number of Login Attempts	Specifies the allowed login times error limit, if the unsuccessful login attempts exceed this value, the GSC3620 webGUI will be locked for the time specified in Login Error Lock Time. Default is 5.
Locking Time of Login Error (m)	Specifies how long the GSC3620 is locked before a new login attempt is allowed. Default is 5.
Disable Web Access	Allow or deny the web access to the GSC3620. (HTTP API do not take effect when this option is enabled). **Note:** If both WebUI and SSH are disabled, GSC3620 will get blocked and not be able to be accessed. Only two ways to get it back: 1. Re-provisioned by ITSP or Service Provider (by adjusting the related parameters) 2. Hard Reset (GSC3620 has to be offline and uninstalled to perform this hard reset).
Enable UPnP Discovery	UPnP (or mDNS) function for local discovery. Default setting is enabled.

Enable Anonymous LiveView	1. When enabled, user can display the camera stream from without admin credentials using the following URL scheme: http(s)://GSC3620_IP:port/videoview.html 1. User can also retrieve a real-time snapshot without admin credentials using the following URL: http(s)://IP:port/anonymous/snapshot/view.html Or with: https://IP_GSC3620:Port/anonymous/snapshot/view.jpg 2. To retrieve video stream via RTSP, users can use the following format: rtsp://IP_GSC3620:Port/X where X=0,4 for 1st, 2nd streams, respectively.
Enable SSH	Allows SSH access for remote secured configuration purposes (restart, upgrade, provision...)
SSH Port	Specifies the SSH port. Default setting is 22.
RTSP Password	This password can be used for RTSP stream display.

Retrieving Video Streams

RTSP Stream

To retrieve video stream via RTSP, users can use the following format:

rtsp://admin:password@IP_GSC3620:Port/X where X=0,4 for 1st, 2nd streams respectively

MJPEG Stream

The GSC3620 supports MJPEG Stream live viewing via HTTP API commands, this can be used without installing the Live view browser plugin. Users can deploy two methods to retrieve MJPEG stream depending on *MJPEG Authentication Mode,* which can be set under following path:

Web UI ➔ System Settings ➔ Access Settings

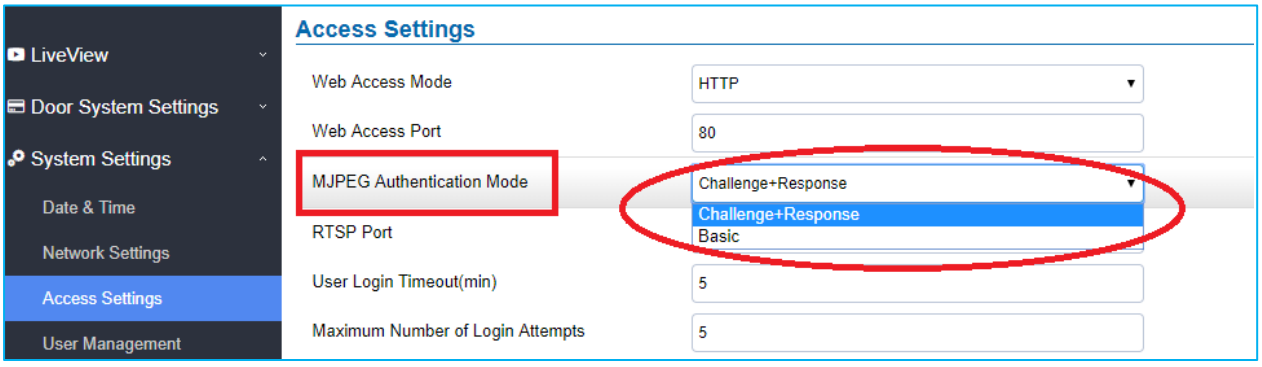


Figure 17: MJPEG Authentication Mode

A. **"Challenge+Response"** MJPEG Authentication Mode:

In order to get live view stream using MJPEG stream over HTTP command on this mode, please fellow below steps:

1. In browser type in **http(s)://IP_Address_GSC3620:Port/jpeg/mjpeg.html**

   Example: https://192.168.5.146/jpeg/mjpeg.html

2. The browser will pop up the window above asking for credentials, user needs to enter admin credential.
3. The browser will show MJPEG stream (720p).

B. **"Basic"** MJPEG Authentication Mode:

Please follow below steps in order to take a snapshot via HTTP commands:

1. In browser type in: **http(s)://admin:password@IP_Address_GSC:Port/jpeg/mjpeg.html**

   Example: https://admin:admin@192.168.5.157:443/jpeg/mjpeg.html

2. The browser will show MJPEG stream (720p).

Note: Similar command can be applied to open source application like **VLC Media Player** to retrieve H.264 video stream with better quality: **rtsp://admin:password@IP_GSC3620:Port/X**

Where **X=0,4** corresponded to **1st, 2nd** video stream

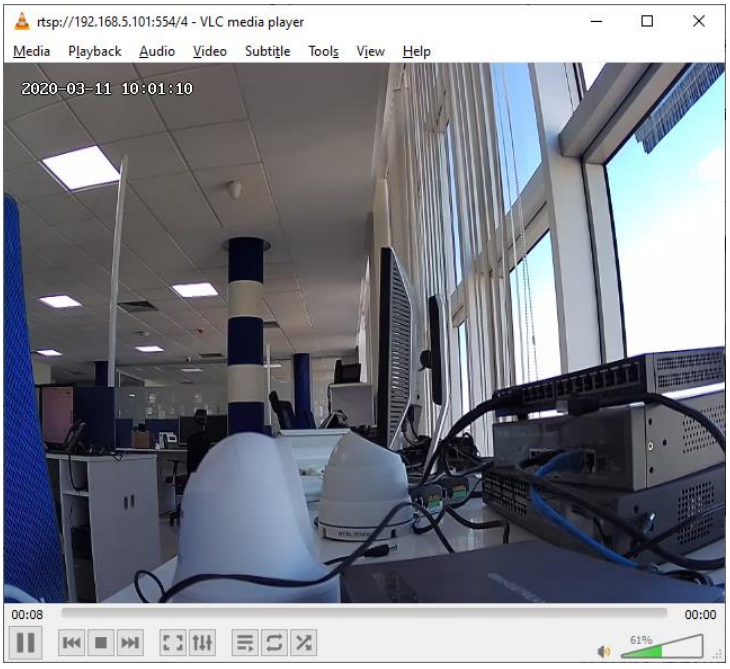


Figure 18: RTSP steam display using VLC

User Management

This page allows users to configure the password for administrator. Since this is a door system which must be a secure product, the use is only limited to administrator.

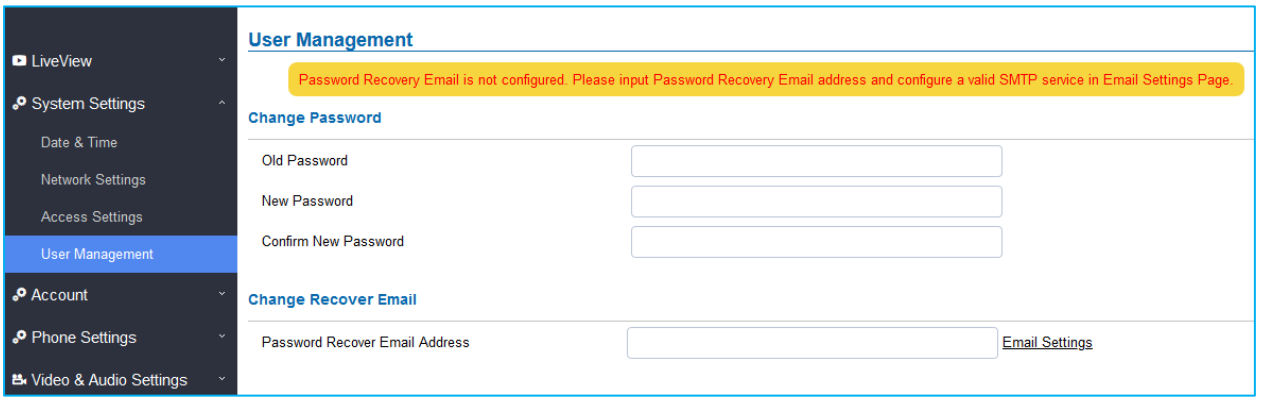


Figure 19: User Management Page

Table 8: User Management

Old Password	Old password must be entered to change new password.
New Password	Fill in the revised new password in this field.
Confirm User Password	Re-enter the new password for verification, must match.
Password Recovery Email Address	This option is **highly recommended,** as if the password is lost, you can recover it on the configured Email address. **Note:** Make sure to configure SMTP Email Settings under "**Email Settings**"

Note:

- When trying to change the password, users need to set the "Password Recovery Email" which should be a valid Email account configurable under "**Email & FTP Settings →Email Settings**" to retrieve the email before the new admin password take effect as displayed on the following screenshot.

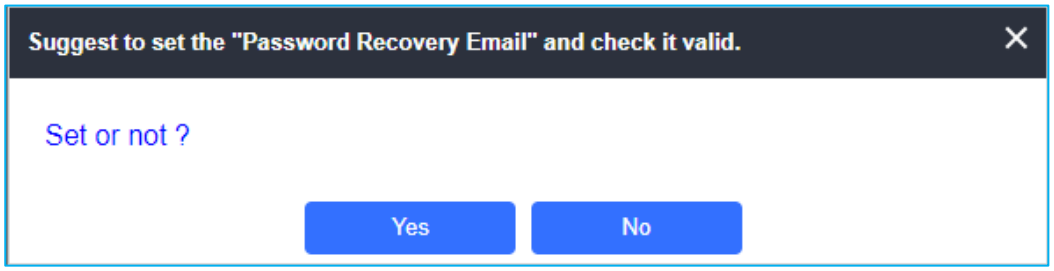


Figure 20: Password Recovery Email

Account

The GSC3620 supports 4 SIP accounts and 4 lines, this section covers the configuration of basic and advanced sip settings for each account.

Account 1 - 4

This page allows the administrator to configure the SIP account basic and advanced settings for each SIP account:

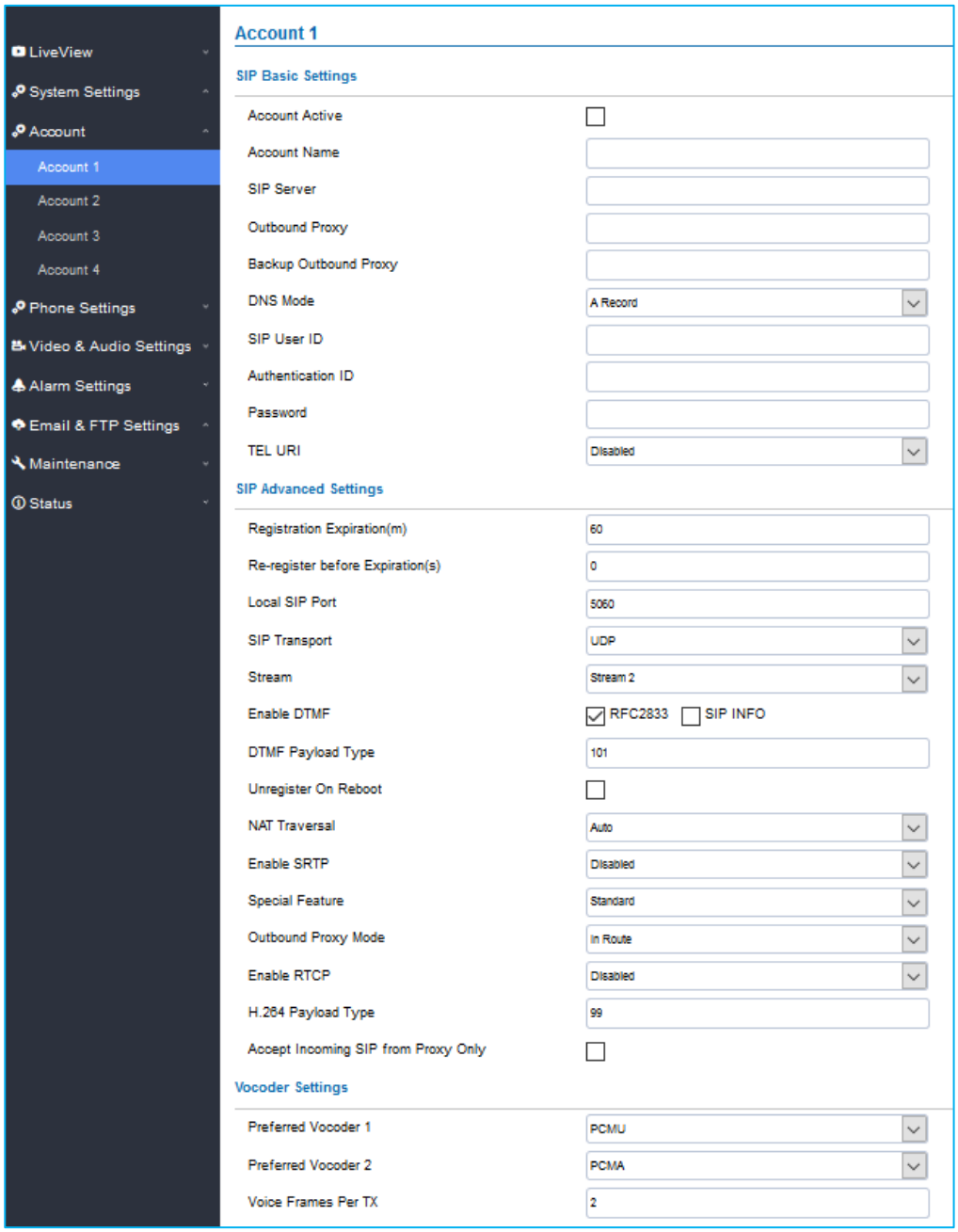


Figure 21: SIP Account Settings Page

Table 9: SIP Account Basic & Advanced Settings

SIP Basic Settings	
Account Active	This field indicates whether the account is active. Default setting is “Yes”.
Account Name	Configures the SIP account name used for identification.
SIP Server	Configures the FQDN or IP of the SIP server from VoIP service provider or local IPPBX.
Outbound Proxy	Configures the IP address or the domain name of the outbound proxy, media gateway, or session border controller. It is used by the GSC for firewall or NAT penetration in different network environments. If a symmetric NAT is detected, STUN will not work and only an outbound proxy can provide a solution.
Backup Outbound Proxy	Configures the backup outbound proxy to be used when the “Outbound Proxy” registration fails. By default, this field is left empty.
DNS Mode	Configure which DNS mode will be used to translate the SIP Server FQDN (Default value is **A Record**): • **A Record.** • **SRV.** • **NAPTR/SRV.**
SIP User ID	Configures the SIP username or telephone number from ITSP. **Note:** Letters, digits and special characters including @ are supported.
Authenticate ID	Configures the Authenticate ID used by SIP proxy.
Password	Sets the Authenticate password used by SIP proxy. **Note:** For security reasons, the SIP password is invisible on the web UI.
TEL URI	Select “User=Phone” or “Enabled” from the dropdown list. If the SIP account has an assigned PSTN telephone number, this field should be set to "User=Phone". Then a "User=Phone" parameter will be attached to the Request-Line and "TO" header in the SIP request to indicate the E.164 number. If set to "Enable", "Tel:" will be used instead of "SIP:" in the SIP request. The default setting is "Disable".
SIP Advanced Settings	
Registration Expiration (m)	Sets the registration expiration time. Default setting is 60 minutes. Valid range is from 1 to 64800 minutes.
Re-register before Expiration (s)	Specifies the time frequency (in seconds) that the GSC3620 sends re-registration request before the Register Expiration. The default value is 0. Range is from 0-64800 seconds.

Local SIP Port	Sets the local SIP port. Default setting is 5060 for Account 1, 5062 for Account 2, 5064 for Account 3, 5066 for Account 4.
SIP Transport	Chooses the SIP transport protocol. UDP, TCP or TCP/TLS. Default setting is UDP.
Stream	Select the Video stream to be used by the GSC3620 when call is made from this SIP Account. Default is Stream 2.
Enable DTMF	Specifies the mechanism to transmit DTMF digits. There are 2 supported modes: • **RFC2833** sends DTMF with RTP packet. Users can check the RTP packet to see the DTMFs sent as well as the number pressed. • **SIP INFO** uses SIP INFO to carry DTMF. Default setting is "RFC2833"
DTMF Payload Type	Configures the payload type for DTMF using RFC2833. Default value is 101. Range: 96~127.
Unregister on Reboot	Allows the SIP user's registration information to be cleared when the GSC reboots. The SIP REGISTER message will contain “Expires: 0” to unbind the connection.
NAT Traversal	This parameter configures whether the NAT traversal mechanism is activated. Users could select the mechanism from No, STUN, Keep-alive, UPnP, Auto. The default setting is “No”. If set to “STUN” and STUN server is configured, the GSC will route according to the STUN server. If NAT type is Full Cone, Restricted Cone or Port-Restricted Cone, the unit will try to use public IP addresses and port number in all the SIP&SDP messages. The GSC will send empty SDP packet to the SIP server periodically to keep the NAT port open if it is configured to be “Keep-alive”. Configure this to be “No” if an outbound proxy is used. “STUN” cannot be used if the detected NAT is symmetric NAT. If the firewall and the SIP device behind the firewall are both able to use UPNP, it can be set to “UPNP”. Both parties will negotiate to use which port to allow SIP through.
Enable SRTP	Enable SRTP mode based on your selection from the drop-down menu. The default setting is “**Disabled**”, the two other modes are “**Enabled but Not Forced**” and “**Enabled and Forced**”.
Special Feature	Configures GSC settings to meet different vendors’ server requirements. Users can choose from Standard, BroadSoft or Telefonica Spain. The default setting is “Standard”.

Outbound Proxy Mode	**In route:** outbound proxy FQDN is placed in route header. This is used for the SIP Extension to notify the SIP server that the device is behind a NAT/Firewall. **Always sent to:** SIP messages will always be sent to Outbound proxy. **Not in route:** remove the Route header from SIP requests.
Enable RTCP	This option allows 3rd party Service Provider or Cloud Solution to monitor the operation status of the GSC3620 by using related SIP Calls. By default, it is disabled. Users can choose either RTCP or RTCP-XR.
H.264 Payload Type	The H.264 payload type can now be configured to be compatible with 3rd party video phones, as well as other advanced SIP settings, to easy system integration process. Default is 99.
Accept Incoming SIP from Proxy Only	When set to "Yes", the SIP address of the Request URL in the incoming SIP message will be checked. If it does not match the SIP server address of the account, the call will be rejected. The default setting is disabled.
Vocoder Settings	
Preferred Vocoder 1	Select audio codec to prioritize. Supported codecs are: PCMU and PCMA.
Preferred Vocoder 2	Select the second audio codec PCMU or PCMA.
Voice Frame Per TX	Configures the number of voice frames transmitted per packet. When configuring this, it should be noted that the "ptime" value for the SDP will change with different configurations here. This value is related to the codec used and the actual frames transmitted during the in-payload call. For end users, it is recommended to use the default setting, as incorrect settings may influence the audio quality. Range is from 1-64. The default setting is 2.

Phone Settings

The phone settings allow users to configure the GSC3620 phone settings and the White list for all the SIP accounts.

Phone Settings

This page allows users to configure the GSC3620 phone settings.

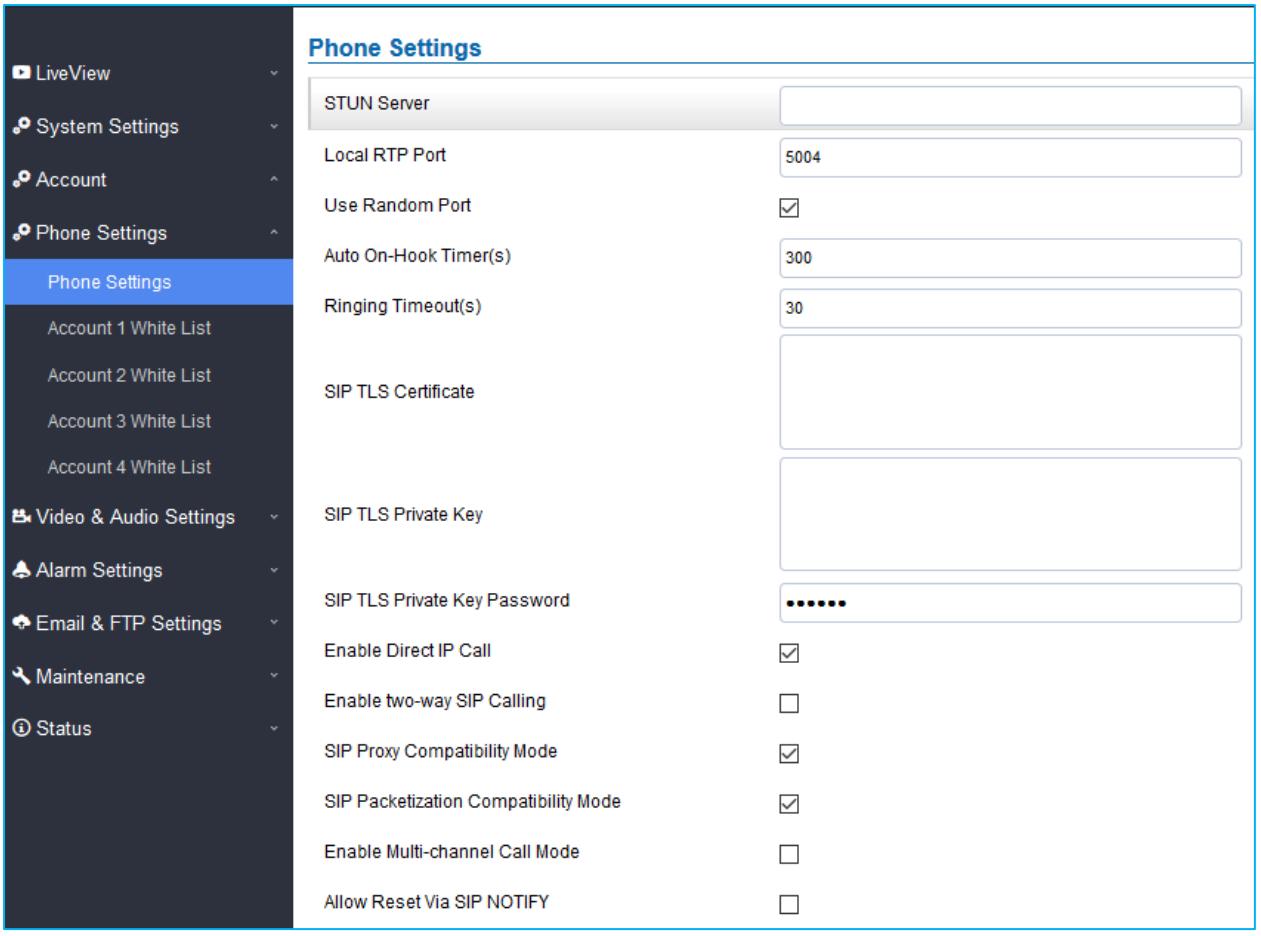


Figure 22: Phone Settings Page

Table 10: Phone Settings

STUN Server	Configures the STUN server FQDN or IP. If the device is behind a non-symmetric router, STUN server can help to penetrate & resolve NAT issues.
Local RTP Port	Sets the local RTP port for media. Default setting is 5004. Range between 1024~65400.

Use Random Port	Forces the GSC3620 to use random ports for both SIP and RTP messages. This is usually necessary when multiple units are behind the same full cone NAT. The default setting is “Disabled” **Note:** This parameter must be set to “Disabled” for Direct IP Calling to work.
Auto On-Hook Timer	Configures the auto on-hook timer (in seconds) for automatic disconnecting the SIP call. Default setting is 300. Range between 0~65535.
Ring Timeout(s)	Specifies the Ring timeout, when no reply is returned from the called party after exceeding this field, the GSC3620 will hang up the call. The value is in the range of 0s – 90s. By default, it is “30” seconds.
SIP TLS Certificate	Input the TLS certificate here for encryption.
SIP TLS Private Key	Input private key here for TLS security protection.
SIP TLS Private Key Password	Specifies the password for SIP TLS private Key.
Enable Direct IP Call	Accepts peer-to-peer IP call (over UDP only) without SIP server. Default is “Enabled”.
Enable two-way SIP Calling	Allows the user to enable/disable the alarm sound during a SIP call triggered by doorbell pressing.
SIP Proxy Compatibility Mode	Enables more proxy compatibility with cost of bandwidth, the SIP call will send audio no matter what.
SIP Packetization Compatibility Mode	When enabled, the GSC3620 will have in SDP “packetization-mode = 0”. This is required when the device is interacting with legacy video phones that only accepts this value to decode the RTP.
Enable Multi-channel Call Mode	This feature allows the device to receive multiple calls at the same time, with one active and others on hold (up to 4 calls maximum).
Allow Reset Via SIP NOTIFY	Allows to factory reset the devices directly through SIP Notify. If “Allow Reset Via SIP NOTIFY” is “check”, then once the GSC3620 receives the SIP NOTIFY from the SIP server with Event: reset, the device will perform a factory reset after authentication. This authentication can be either with: • The admin password if no SIP account is configured on the unit. • The SIP User ID and Password credentials of the SIP account if configured on the unit. Default is unchecked (disabled).

Account [1-4] White List

This page allows users to configure the white list per account, which is a phone number or extension list that can call the GSC3620. (The call will be automatically answered when calling from a phone set on the white list, and all other inbound calls will be blocked), the user can configure up to 30 white phone numbers per SIP account. Moreover, besides numbers associated to active cards, and numbers on the "Number Called When Doorbell Pressed" setting, all whitelisted numbers can open door remotely by using the respective PIN code.

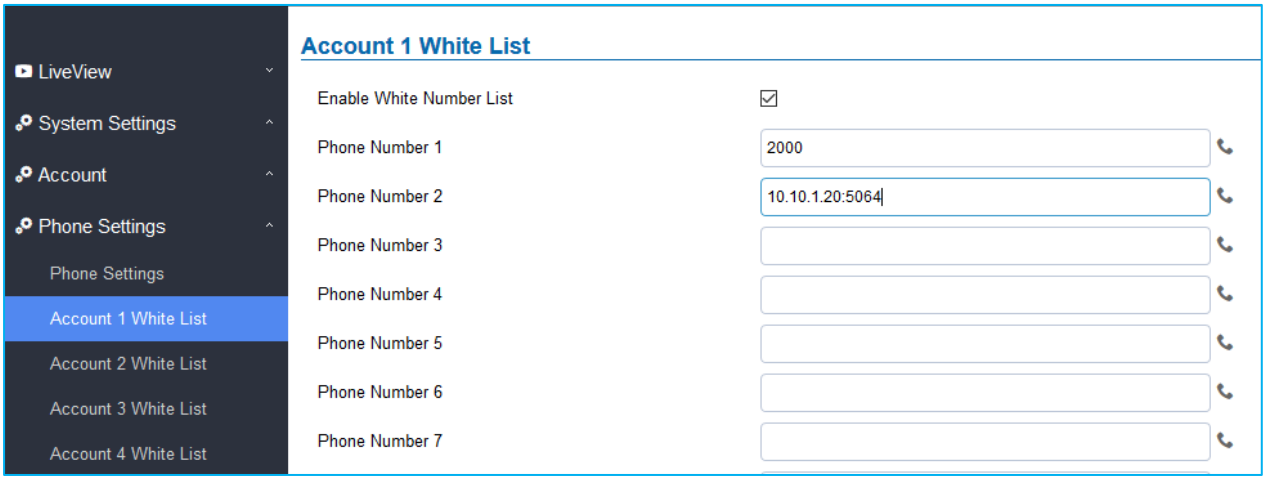


Figure 23: White List Page

The table below gives a brief overview of the options:

Table 11: White List

Enable White Number List	Enables the White List feature.
Phone Number 1 - 30	Adds a new phone number (or IP address) to the white list. **Notes:** • When using IP addresses, the port number should be appended (default 5060). • Only the whitelisted numbers/IPs can open door remotely using PIN Code when calling GSC3620.

Video & Audio Settings

The audio and videos settings allow users to configure the video / audio codecs, videos resolution, CMOS settings and audio related settings.

Video Settings

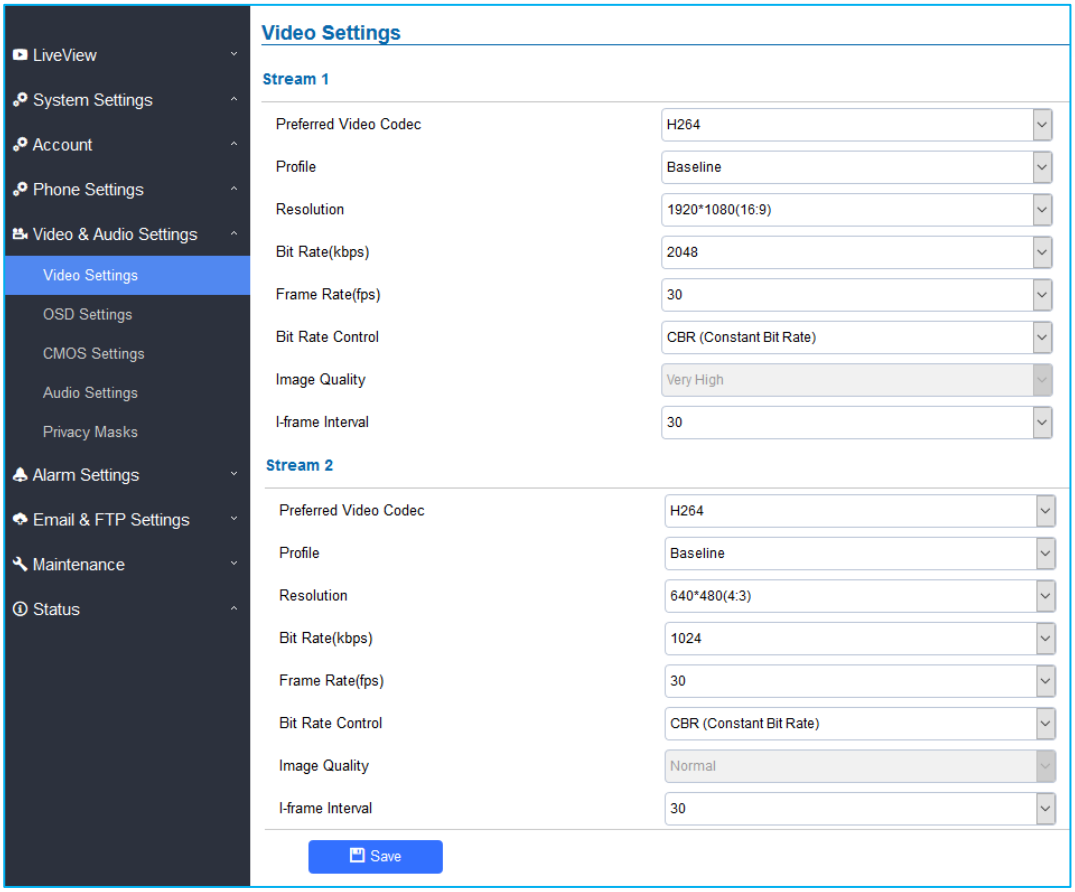


Figure 24: Video Settings Page

Table 12: Video Settings

Stream 1	
Preferred Video Codec	Selects the videos codecs, the codecs supported are H.264 and MJPEG. Default setting is H.264.
Profile	Selects the H.264 profile. Three profiles are available for H.264: Baseline, Main Profile and High Profile.
Resolution	Specifies the resolution in pixels used at video image.
Bit Rate(kbps)	Selects the video bit rate or bandwidth used.
Frame Rate(fps)	Selects the maximum frame rate used (more data if big frame used).
Bit Rate Control	Selects the constantly bit rate, or variable bit rate.
Image Quality	Selects the image quality used when Variable Bit Rate used.
I-frame Interval	Configures the I-frame interval (suggested 2~3 times of frame rate).
Stream 2	

Preferred Video Codec	Selects the videos codecs, the codecs supported are H.264 and MJPEG. Default setting is H.264.
Profile	Selects the H.264 profile. Three profiles are available for H.264: Baseline, Main Profile and High Profile.
Resolution	Specifies the resolution in pixels used at video image.
Bit Rate(kbps)	Selects the video bit rate or bandwidth used.
Frame Rate(fps)	Selects the maximum frame rate used (more data if big frame used).
Bit Rate Control	Selects the constantly bit rate, or variable bit rate.
Image Quality	Selects the image quality used when Variable Bit Rate used.
I-frame Interval	Configures the I-frame interval (suggested 2~3 times of frame rate).

Notes:

- H.264 suggested if the GSC3620 needs to be viewed via Internet.
- For definition of Baseline, Main Profile and High profile of H.264 please refer to: H.264 Profiles
- If MJPEG is selected, reduce the frame rate to the minimal value to save bandwidth and get better image.
- Grandstream GSC3620 provides two video streams, users can use them with flexibility. For example, the high-resolution stream for local recording, another low or high resolution for SIP video phone call or remote smartphone monitoring application, or vice versa depending on application scenarios.
- Use below link to calculate bandwidth and storage before installation https://www.grandstream.com/support/tools/bandwidth-storage-calc

OSD Settings

OSD Settings (On Screen Display) allow the users to Display time stamp and text on the video screen.

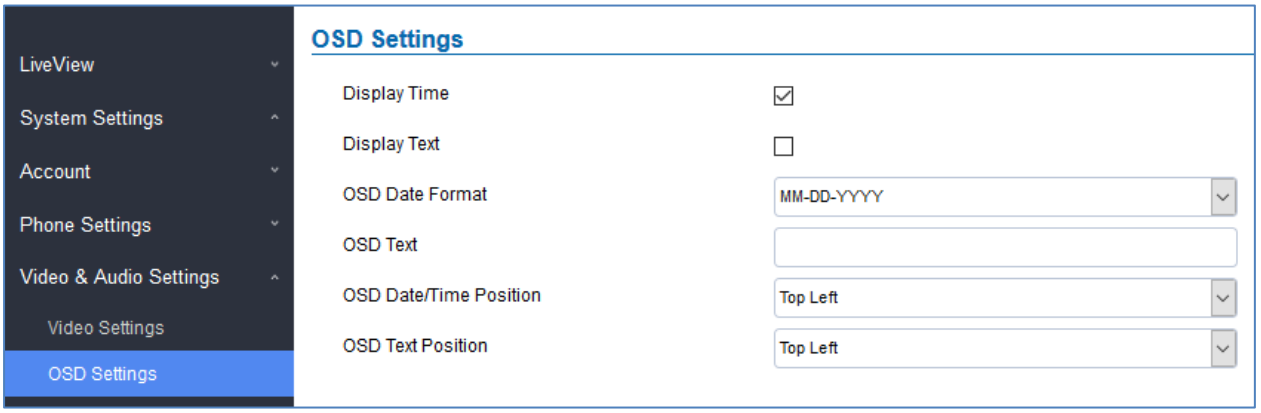


Figure 25: OSD Settings Page

Table 13: OSD Settings

Display Time	When checked, time will be displayed inside the video image.
Display Text	When checked, inputted text on “OSD Test” will be displayed on the video image.
OSD Date Format	Select the date format from drop down list.
OSD Text	Input a text (to identify the GSC3620) it will be shown on the screen.
OSD Date/Time Position	Show the Date/Time position on the screen.
OSD Text Position	Show the text position on the screen.

CMOS Settings

This page configures the CMOS parameters for different scenarios.

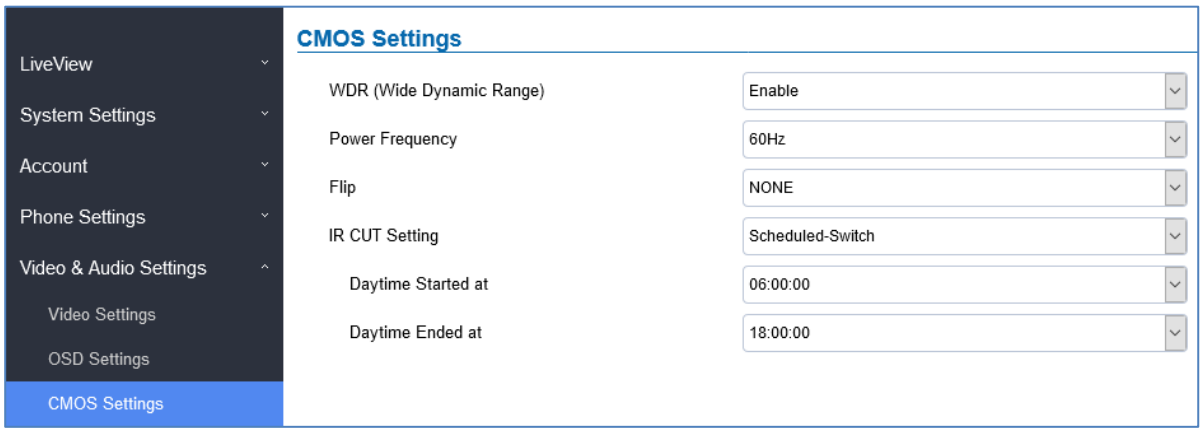


Figure 26: CMOS Settings Page

Table 14: CMOS Settings

WDR (Wide Dynamic Range)	Enable or Disable the Wide Dynamic Range fature. Default “Enable”.
Power Frequency	Select correct light condition for the scene monitored: 50Hz power frequency (Europe, China, etc.) or 60Hz power frequency (US, Japan, etc.).
Flip	Pull down to choose to flip video either vertically, horizontal or both
IR CUT Setting	**Manual:** User can set manually The Daytime/Night Model to either **Daytime** or **Night**. **Automatic:** The Camera will automatically switch to either Daytime or Night depending on light condition. **Scheduled-Switch:** The user can configure Daytime schedule by editing both "Daytime Started at" and "Daytime Ended at" fields. Default is **Automatic**.

Audio Settings

This page allows users to configure the audio settings.

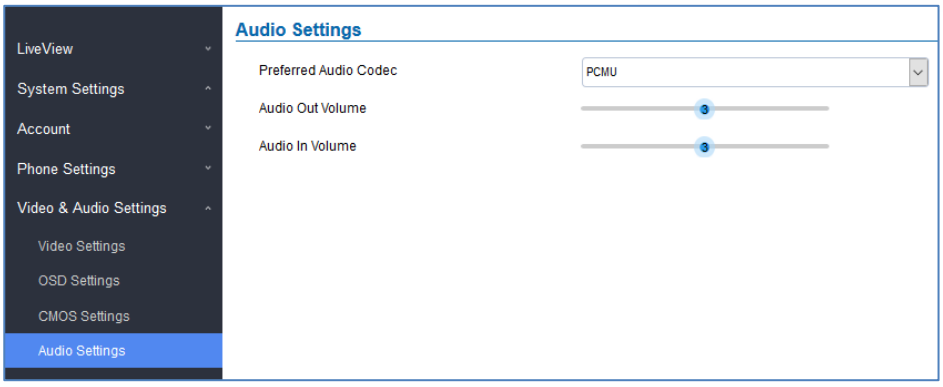


Figure 27: Audio Settings Page

Table 15: Audio Settings

Preferred Audio Codec	Configures the audio codec. Two codecs are available: PCMU and PCMA.
Audio Out Volume	Adjusts the speaker volume connected.
Audio In Volume	Adjusts the Mic volume.

Privacy Masks

This page allows users to configure privacy masks up to 4 different regions by selecting different regions requiring privacy mask as displayed on the following figure. When privacy mask enabled, the video at related region will be masked by black color and no video displayed inside that mask.

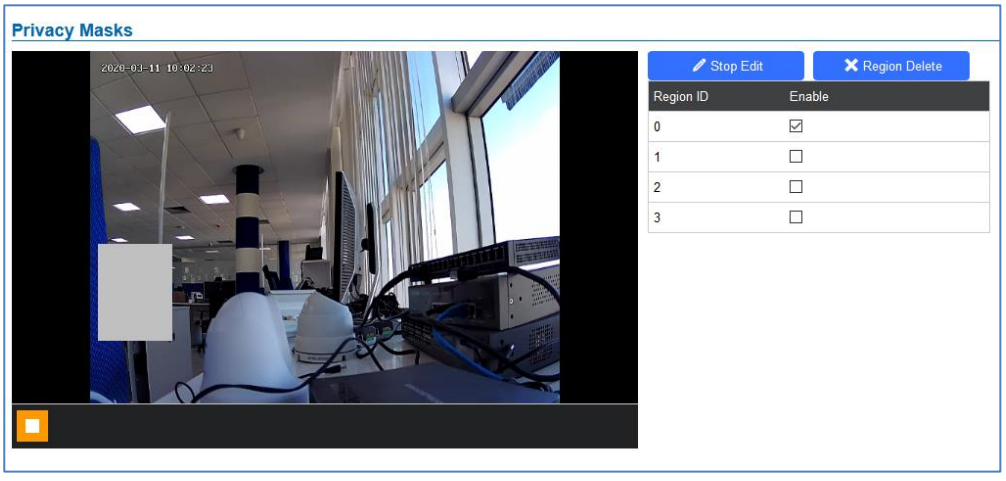


Figure 28: Privacy Masks Configuration Page

- Click "**Start Edit**" then long press and slide to identify a region
- Select a preconfigured region then Click "**Region Delete**" to remove it.

Alarm Settings

This page allows users to configure alarm schedule and alarm actions.

Alarm Events Config

This page allows users to configure GSC3620 events to trigger programmed actions within predefined schedule.

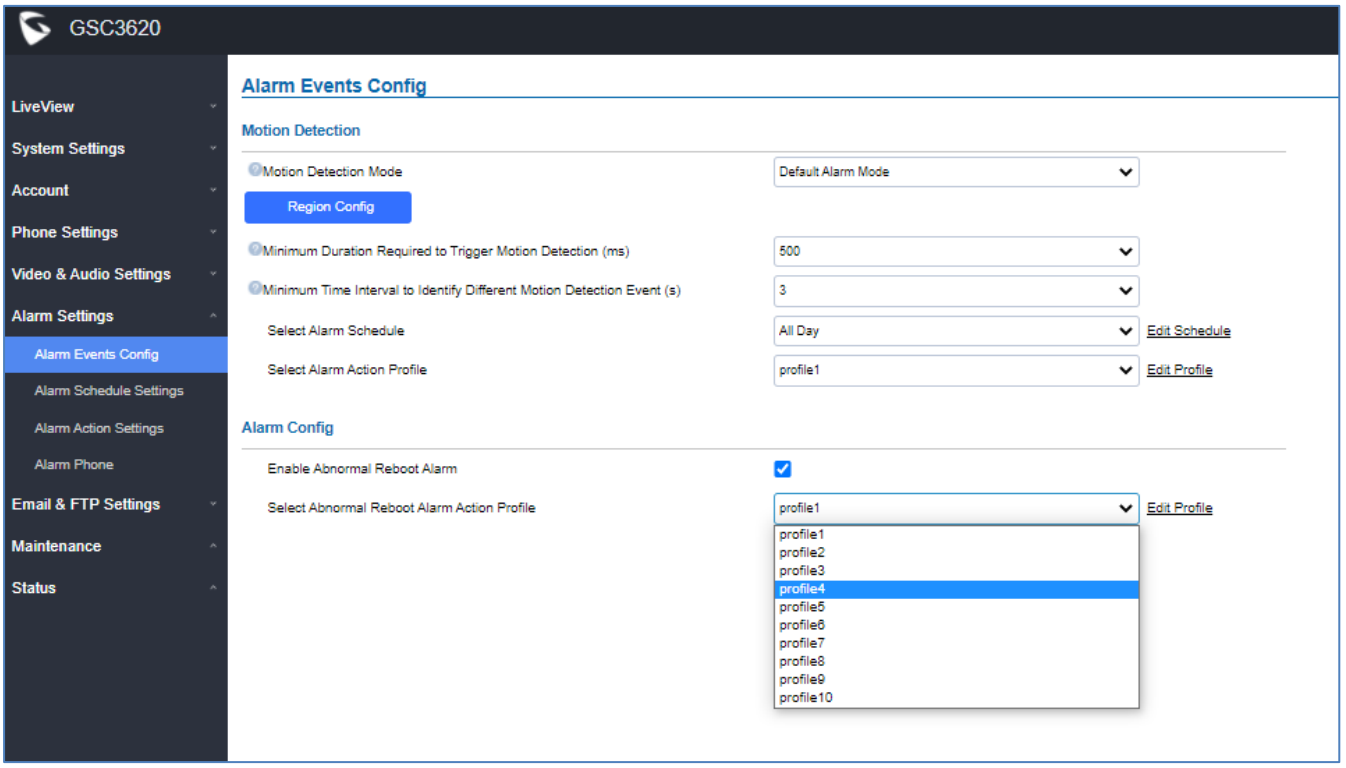


Figure 29: Alarm Events Config page

Table 16: Alarm Events Config Settings

Motion Detection Mode	• **Default Alarm Mode:** Single zone independent alarm • **Sequence Alarm Mode:** Set the sequence of multi-zone alarms. Alarm will trigger if matched the configured zone sequence, otherwise alarm will not trigger. • **Multi-zone Combined Alarm Mode:** Alarm will trigger when number of combined alarming zones reaches the configured amount, otherwise alarm will not trigger. • **Zone Trigger Ratio Alarm Mode:** Configure the ratio of single small squares compared to the whole alarm zone, alarm will trigger when the ratio reached.

Maximum Time to Identify a Valid Multi-Zone Alarm Detection	If all preset zones have triggered an alarm within the configured time (in Seconds), this will be considered as a valid alarm/event, otherwise it will be an invalid alarm.
Minimum Number of Alarming Zones for a Valid Multi-Zone Alarm Detection	If set multi-zone alarm, when the number of detection zones where alarm triggered reaches the configured number, it is considered a valid alarm/event, otherwise it will be an invalid alarm. For example, the value is set 3 with total of 4 zones, when zones with triggered alarm get to 3, a valid alarm/event will be reported.
Minimum Number of Blocks Per Region to Trigger Detection	The threshold is the ratio of single small squares compared to the whole alarm zone, alarm will trigger when the ratio reached.
Minimum Duration Required to Trigger Motion Detection (ms)	The time when an object moving in the preset zone is longer than the configured duration, this is considered a valid alarm/event, otherwise it is invalid alarm/event.
Minimum Time Interval to Identify Different Motion Detection Event (s)	This minimum time interval is used to identify different motion detection events. If two consecutive motion detection alarm events occurred within this time interval, they will be considered as the same motion event. Otherwise they will be considered as two different motion events.

Motion Detection

Users can select a specific region to trigger the alarm using motion detection.

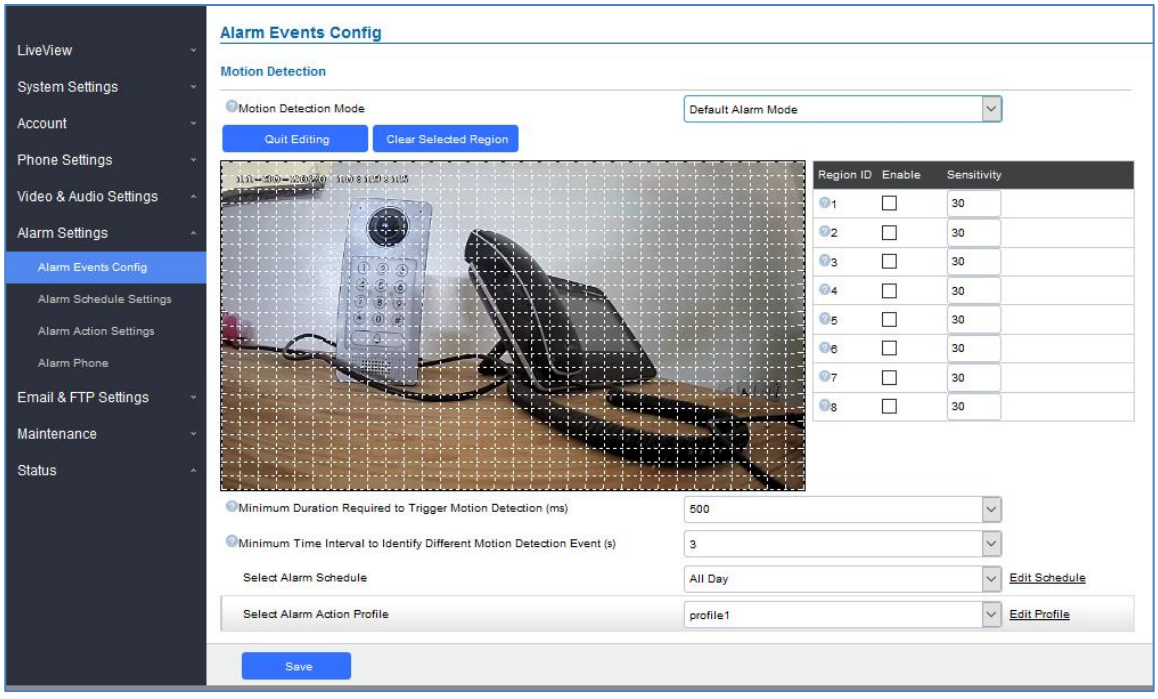


Figure 30: Region Config

Table 17: Motion Detection

Region Config	Configures the motion detection region. First click to access the Region Config menu and second click to quit.
Clear Selected Region	Selects a zone on the screen then click on “Clear” to delete the region.
Sensitivity	Specifies the region sensitivity (value between 0-100%).
Select Alarm Schedule	Selects the alarm schedule.
Select Alarm Action Profile	Selects the programmed Alarm Action profile.

Alarm Config

This page specifies the configuration of Abnormal Reboot Alarm Action.

Enable Abnormal Reboot Alarm	When checked, the IPC will sent an email if there is a power outage, which could affect the Auto-Focus as the AF might be affected after this power failure causing all the later on recording to become unclear. Thus the email will help the administrator to login and take corrective actions.
Select Abnormal Reboot Alarm Action Profile	If all preset zones have triggered an alarm within the configured time (in Seconds), this will be considered as a valid alarm/event, otherwise it will be an invalid alarm.

Alarm Schedule Settings

This page specifies the configuration of Alarm Schedule.

Note: Schedule must be configured first to allow the alarm to take the related action.

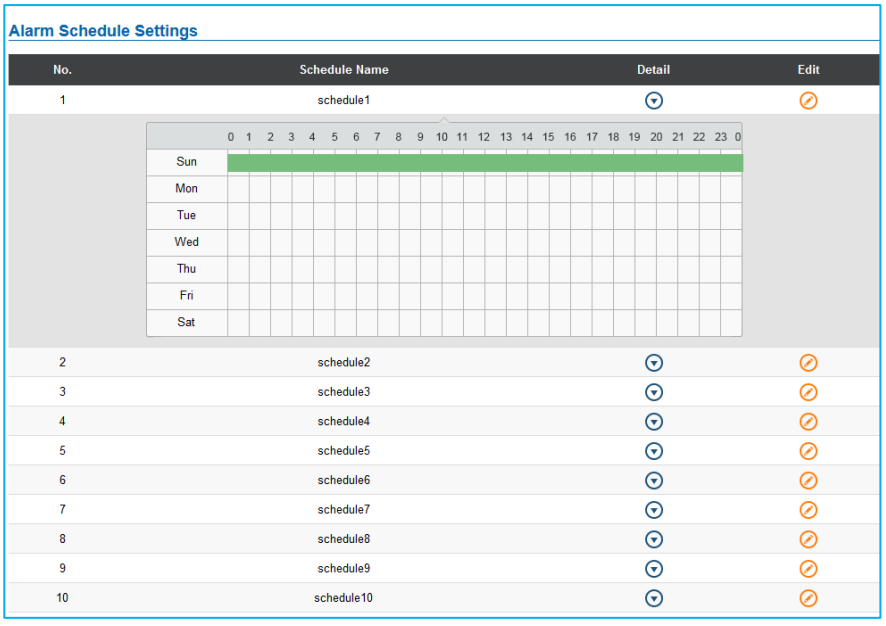


Figure 31: Alarm Schedule

GSC3620 supports up to 10 alarm schedules to be configured, with time span specified by users. Users can View the schedule details by clicking or Edit the alarm schedule by clicking button.

Usually the 24 hours' span is 00:00 ~ 23:59, which is 24 hours' format. Note that it is possible to copy the configuration to different date during the schedule programming using the banner at the bottom.

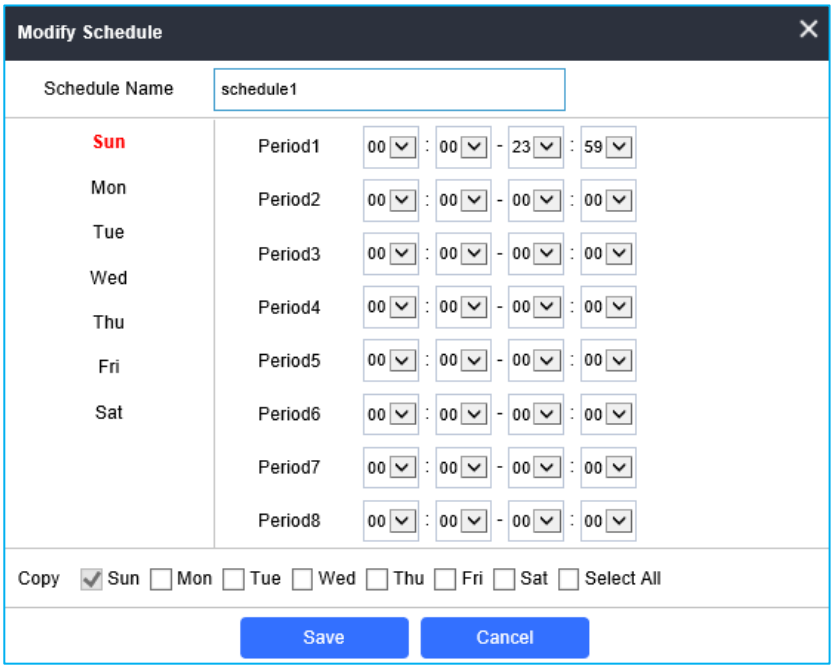


Figure 32: Edit Schedule

Alarm Action Settings

This page specifies the configuration of Profile used by the Alarm Actions. A Profile is required before the Alarm Action can take effect.

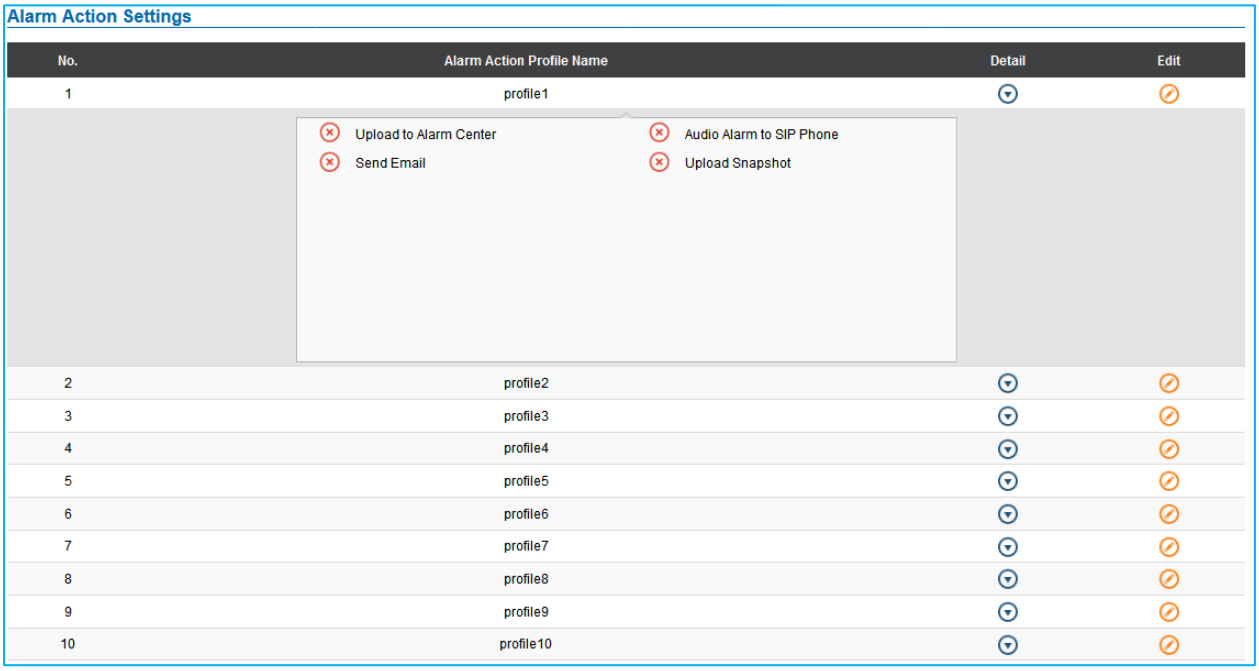


Figure 33: Alarm Action

User can edit the alarm action by clicking button, the following window will popup.

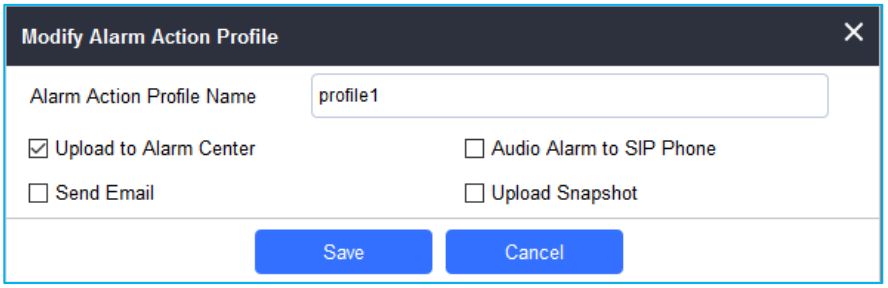


Figure 34: Edit Alarm Action

Table 18: Alarm Actions

Upload to Alarm Center	If selected, the GSurf will popup alarm window and sound alarm in the computer speaker.
Audio Alarm to SIP Phone	If selected, GSC3620 will call pre-configured (video or audio) phone and will play sound alarm.
Send Email	If selected, an email with snapshot will be sent to the pre-configured email destination.
Upload Snapshot	If selected, snapshots at the moment where the event is triggered will be sent to preconfigured destination (e.g.: FTP or email).

Alarm Phone List

This page allows users to configure the Alarm Phone List, which are phone numbers or extensions list that the GSC3620 will call out when event is trigged.

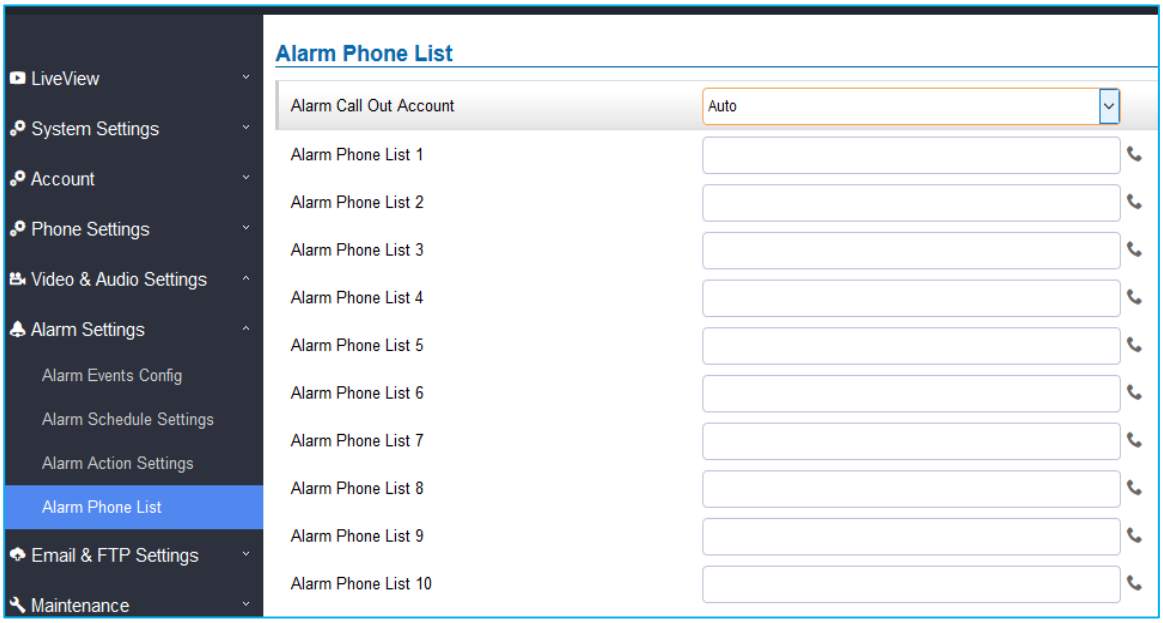


Figure 35: Alarm Phone List

Table 19: Alarm Phone List

Alarm Call Out Account	Select the SIP Account to be used by the GSC3620 when alarm out is triggered.
Alarm Phone List 1-10	Add or delete number from the phone alarm list. (When IP address is used then the port needs to be appended, example: 192.168.1.12:5060).

Once the event is triggered the GSC3620 will call the first number, once time out is reached and no answer is returned from the first number, the GSC3620 will try the next number on the list and so on. Once the remote phone answers the call, an alarm will be played to notify users that an event is triggered.

Email & FTP Settings

This page contains Email and FTP Settings.

Email Settings

This page allows users to configure email client to send out an email when the alarm is trigged.

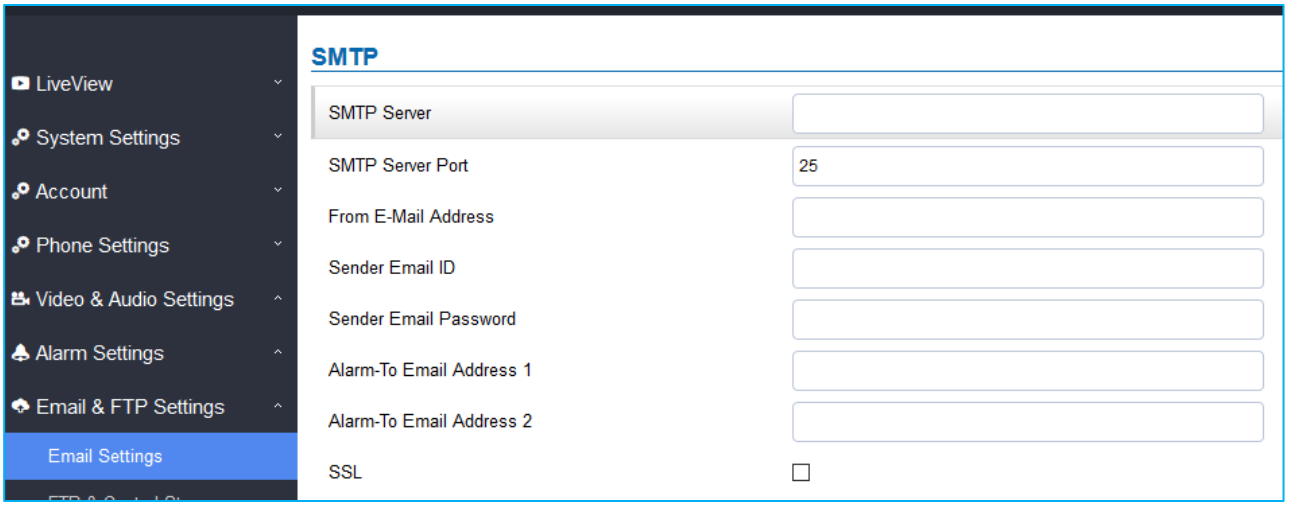
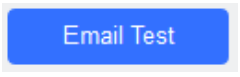


Figure 36: Email Settings - SMTP Page

Table 20: Email Settings - SMTP

SMTP Server	Configures the SMTP Email Server IP or Domain Name.
SMTP Server Port	Specifies the Port number used by server to send email.
From E-mail address	Specifies email address of alarm email sending from, usually client email ID.
Sender Email ID	Specifies sender's User ID or account ID in the email system used.
Sender Email Password	Specifies sender's password of the email account.
Alarm-To Email Address 1	Specifies the 1st email address to receive the alarm email.
Alarm-To Email Address 2	Specifies the 2nd email address to receive the alarm email.
SSL	Check if the SMTP email server requires SSL.

Notes:

- Click "Save" to save the email configuration information.
- Click "Email Test" after configuration, if settings are correct, a test email will send out and "E-mail test successfully" message on the top page will appear. 

FTP & Center Storage

This page allows users to configure the FTP Settings in order to upload capture images.

Table 21: Picture Storage Settings

FTP Server	Configures the IP address of the FTP server when selected to upload images to.
FTP Server Port	Specifies the FTP address port.
FTP Username	Specifies the FTP server account name.
FTP Password	Specifies the FTP server password.
FTP Path	Specifies the storage path.
FTP Test	Click to test the connection with FTP server.

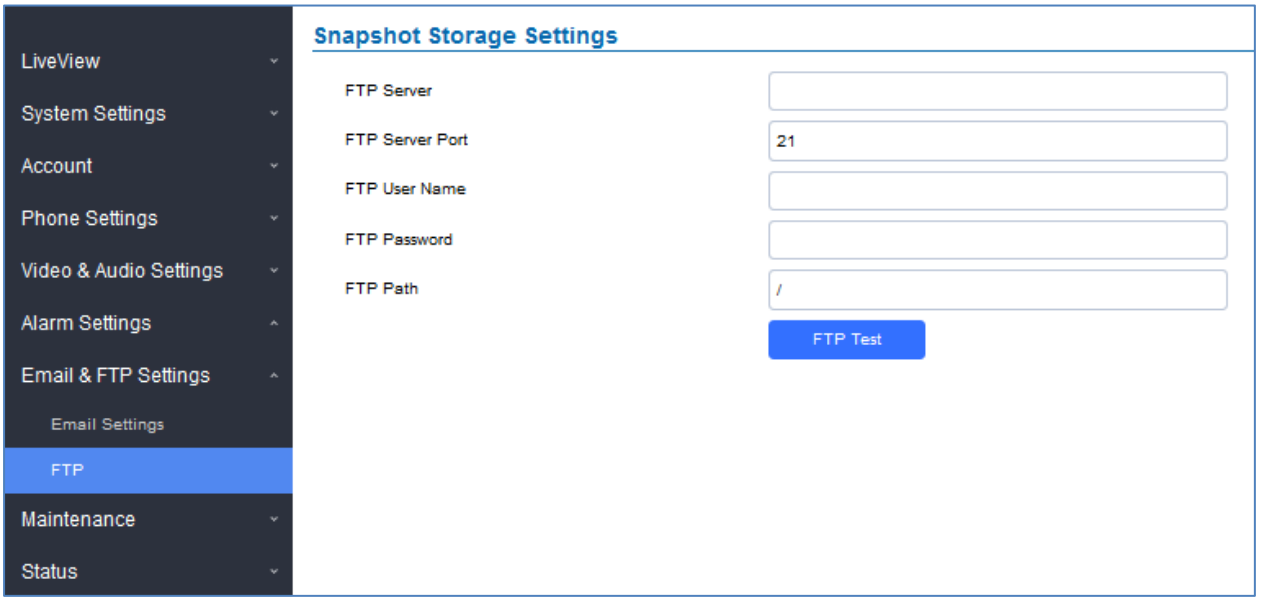


Figure 37: Picture Storage Settings

Notes:

- If the connection to the FTP server is successful, a ".txt" file containing a success message will be uploaded to the FTP server. And the following message will pop up on the Web GUI FTP test successfully.
- Central Storage will store screenshots locally.

Maintenance Settings

This page shows the GSC3620 Maintenance parameters.

Upgrade

This page contains the upgrade and provisioning parameters of the GSC3620.

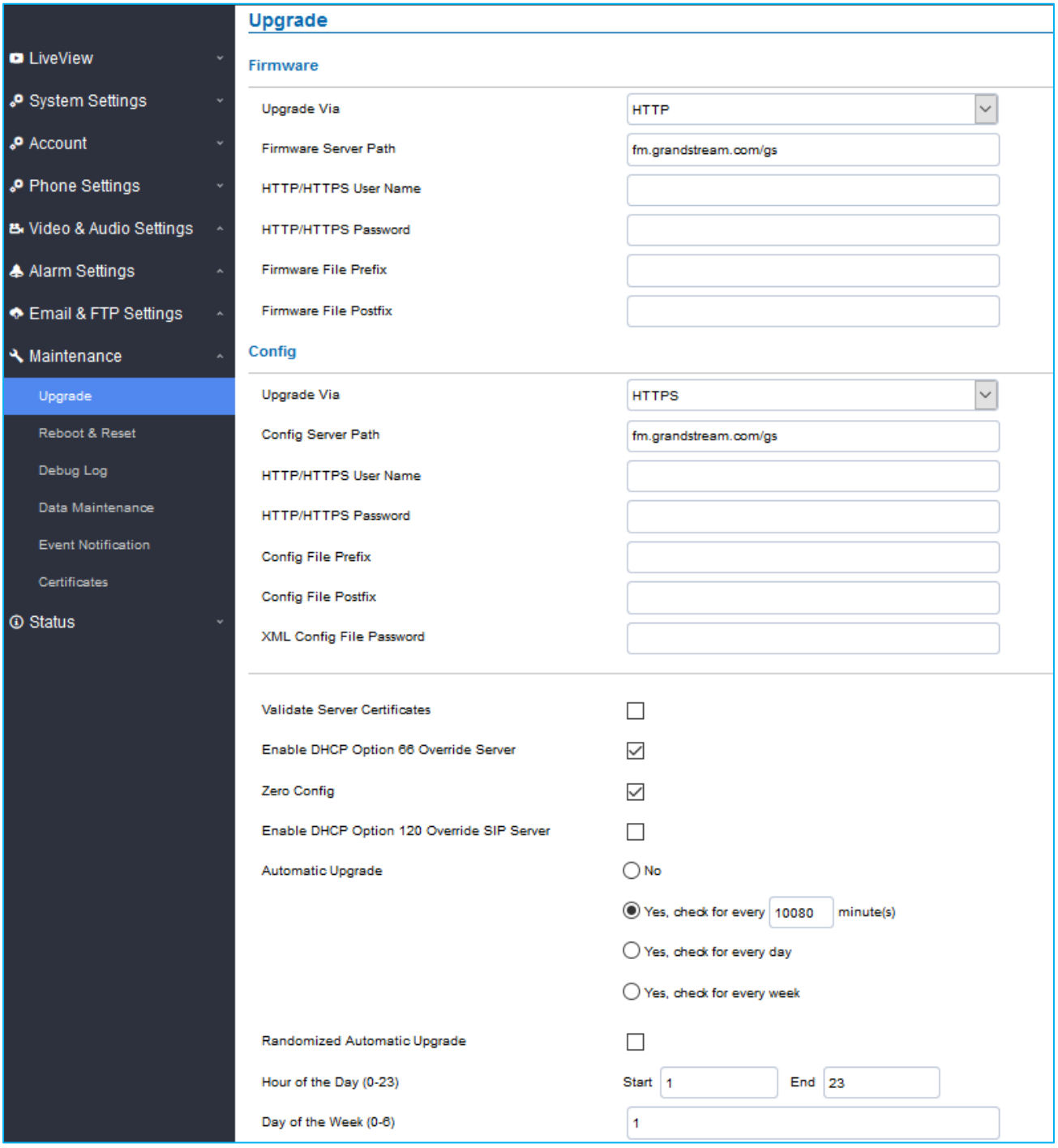


Figure 38: Upgrade Page

Table 22: Upgrade

Firmware	
Upgrade Via	Selects the upgrade method (TFTP, HTTP, or HTTPS).
Firmware Server Path	Configures the IP address or the FQDN of the upgrade server.
HTTP/HTTPS Username	The username for the HTTP/HTTPS server.
HTTP/HTTPS Password	The password for the HTTP/HTTPS server.
Firmware File Prefix	Enables your ITSP to lock configuration updates. If configured, only the firmware file with the matching encrypted prefix will be downloaded and flashed into the phone.
Firmware File Postfix	Enables your ITSP to lock firmware updates. If configured, only the firmware with the matching encrypted postfix will be downloaded and flashed into the phone.
Config	
Upgrade via	Selects the upgrade method (TFTP, HTTP, and HTTPS).
Config Server Path	Configures the IP address or the FQDN of the configuration server.
HTTP/HTTPS Username	The username for the HTTP/HTTPS server.
HTTP/HTTPS Password	The password for the HTTP/HTTPS server.
Config File Prefix	Enables your ITSP to lock configuration updates. If configured, only the configuration file with the matching encrypted prefix will be downloaded and flashed into the phone.
Config File Postfix	Enables your ITSP to lock configuration updates. If configured, only the configuration file with the matching encrypted postfix will be downloaded and flashed into the phone.
XML Config File Password	Specifies the password for the configuration file.
Validate Server Certificate	Enable this option in order to validate certificate with trusted ones during TLS connection.
Enable DHCP Option 66 Override Server	Activates DHCP option 66 to override upgrade/config servers.

Zero Config	Enables Zero Config feature for auto provisioning.
Enable DHCP Option 120 Override SIP Server	Enables DHCP Option 120 from local server to override the SIP Server on the phone. The default setting is enabled.
Automatic Upgrade	Enables automatic upgrade and provisioning. Set schedule for provisioning for either every X minute, every day, or every week. Default is No.
Randomized Automatic Upgrade	Enable and define the start/End hours of the day and days of the week where the GSC3620 will randomly checking for update.

Reboot & Reset

This page allows user to reboot and reset the GSC3620.

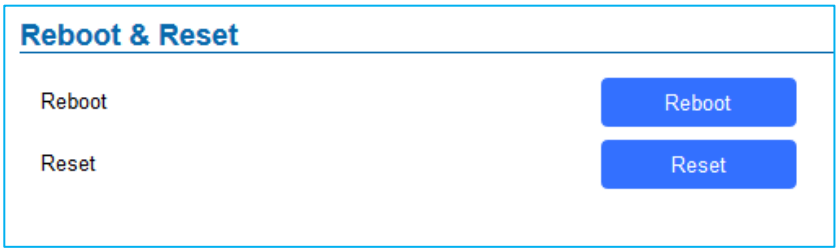


Figure 39: Reset & Reboot Page

Table 23: Reset & Reboot

Reboot	When clicked, the GSC3620 will restart (soft reboot).
Reset	Restore Factory Default Settings

Debug Log

This page allows user to configure SYSLOG to collect information to help troubleshooting issues with GSC3620.

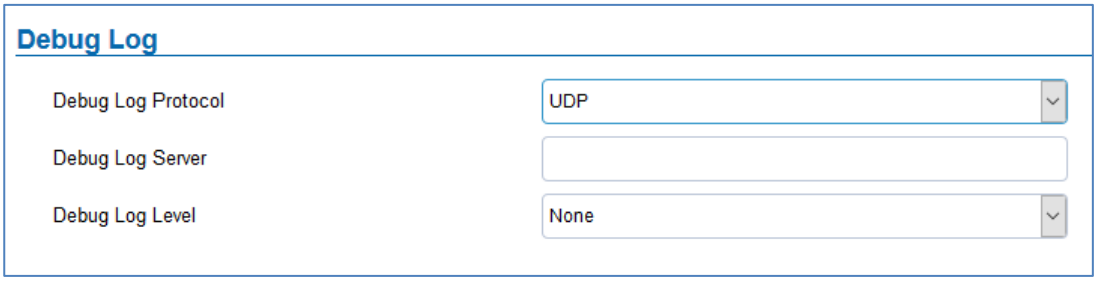


Figure 40: Debug Log Page

- Users can choose to set Debug Log Protocol to **UDP** or **SSL/TLS**.
- Five levels of Debugging are available, **None**, **Debug**, **Info**, **Warning**, **Error**.

- Once the Syslog Server and the level entered, press "**Save**" and then Reboot the device to apply the settings.

Data Maintenance

This page allows users to manage the GSC3620 configuration file by importing/exporting configuration files.

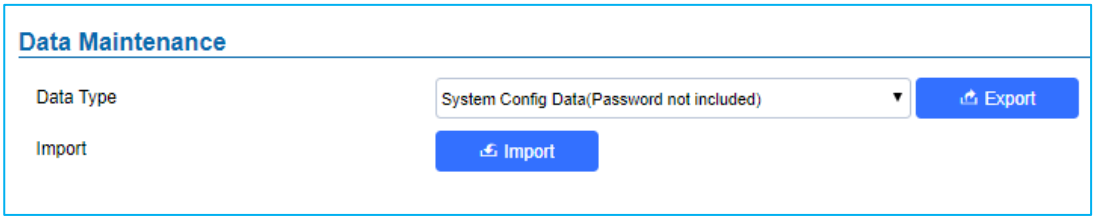
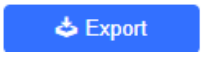


Figure 41: Data Maintenance Page

Notes:

- Click on 

to save the GSC3620 configuration in a predefined directory.
- Users can either select to include all the passwords (SIP, FTP, Remotes access…) on the configuration files exported or not including the passwords as displayed on the previous figure.

Event Notification

This page allows users to configure the event notification details that will be used by GSC3620 to communicate to an HTTP server to log the events. When the feature is enabled and configured, all the event logs will be uploaded to server:

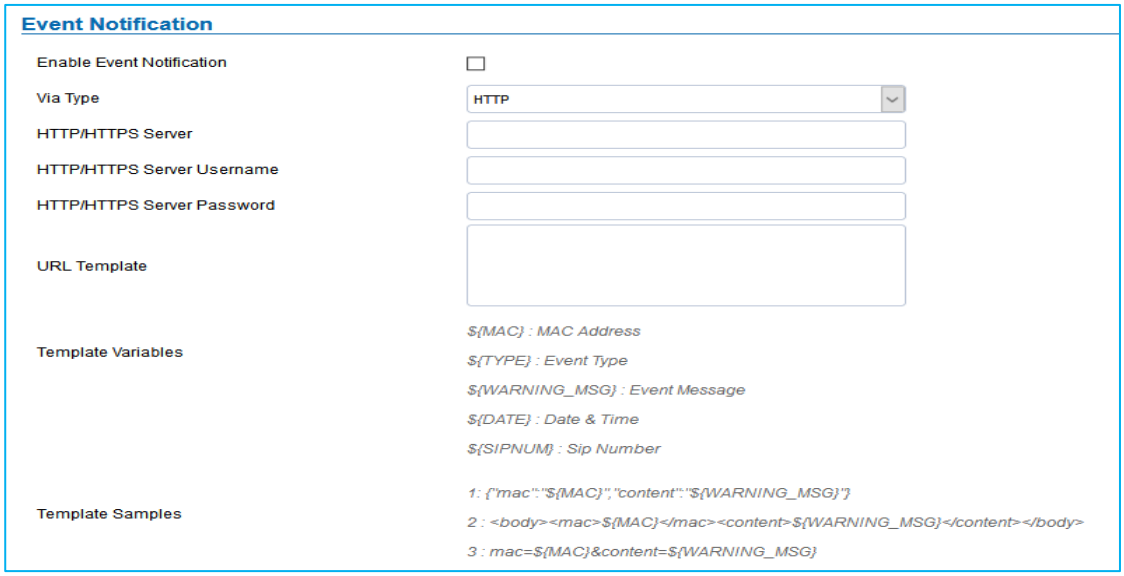
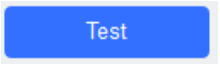


Figure 42: Log Manager Page

Table 24 : Log Manager Settings

Enable Event Notification	Enables Event Notification feature
Via Type	Choose which protocol will be used to connect to the logs server (HTTP or HTTPs).
HTTP/HTTPS Server	Enter the IP address of domain name for the logs server.
HTTP Server Username	Configure the username of your HTTP(s) server
HTTP Server Password	Configure the password of your HTTP(s) server
URL Template	Specify the template for the event log messages that will be sent to the server, users can use the following variables to customize the message: • ${MAC}: MAC Address • ${TYPE}: Event Type • ${WARNING_MSG}: Event Message • ${DATE}: Date & Time • ${SIPNUM}: SIP Number

- User can test the configuration by clicking on 

button at the bottom

Certificates

This page allows users to upload up to 6 Trusted CA certificate files which will be trusted by the GSC3620 during SSL exchange. Also, users are allowed to configure the device with custom certificate signed by custom CA certificate under the Custom Certificate section.

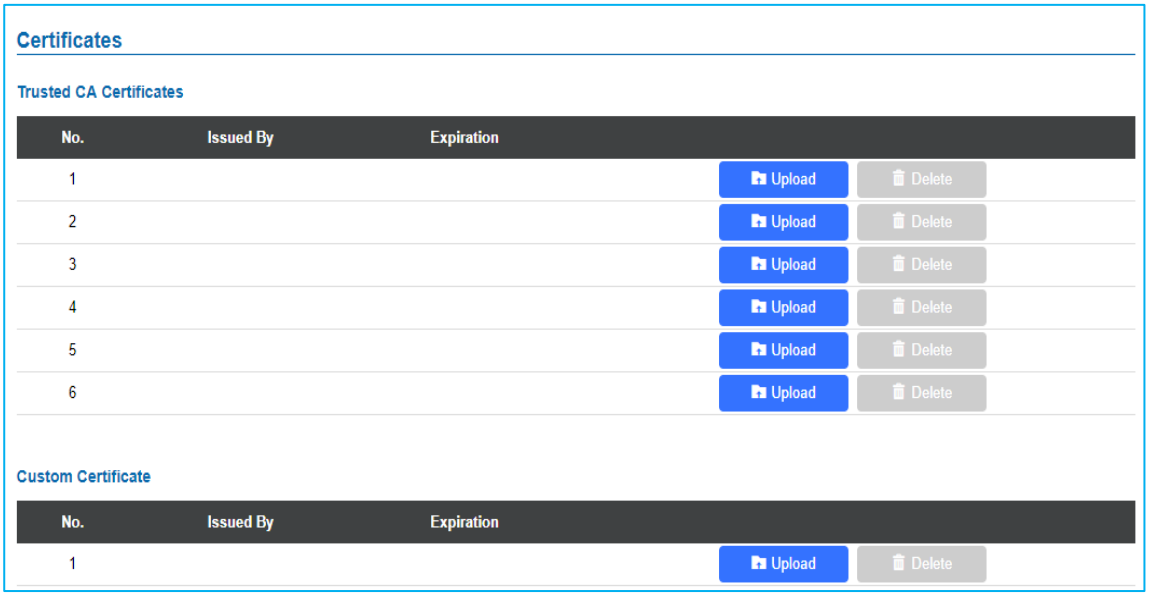


Figure 43: Upload Certificate files

In order to upload your Trusted CA certificate, you may proceed as follows:

- Click on Upload button to upload a file and some related information to the uploaded file will be displayed, such as **"Issued by"** and **"Expiration date"**.

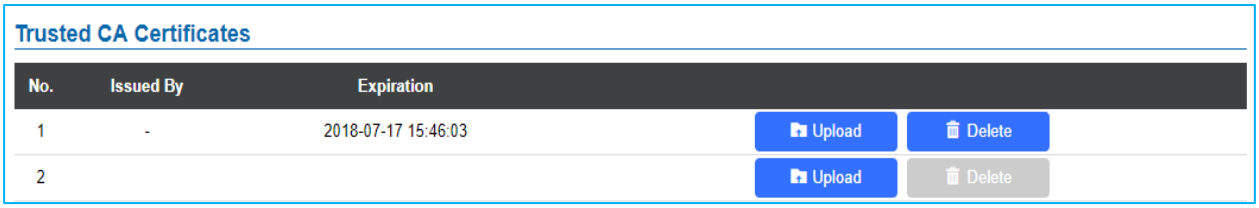


Figure 44: Trusted CA Certificates

- Users could press Delete to delete one of the files.

In order to upload your Custom certificate, you may proceed as follows:

- Click on Upload button to upload a file and some related information to the uploaded file will be displayed, such as **"Issued by"** and **"Expiration date"**.

Figure 45: Custom certificate

Status

This page displays GSC3620 system and network information.

Account Status

This page displays of configured accounts' SIP user ID, SIP server as well as the SIP Registration status, from Account 1 to Account 4.

Notes:

- When the SIP account is registered, the SIP Registration status display will be Online
- When SIP account is unregistered, the SIP Registration status display will be Offline

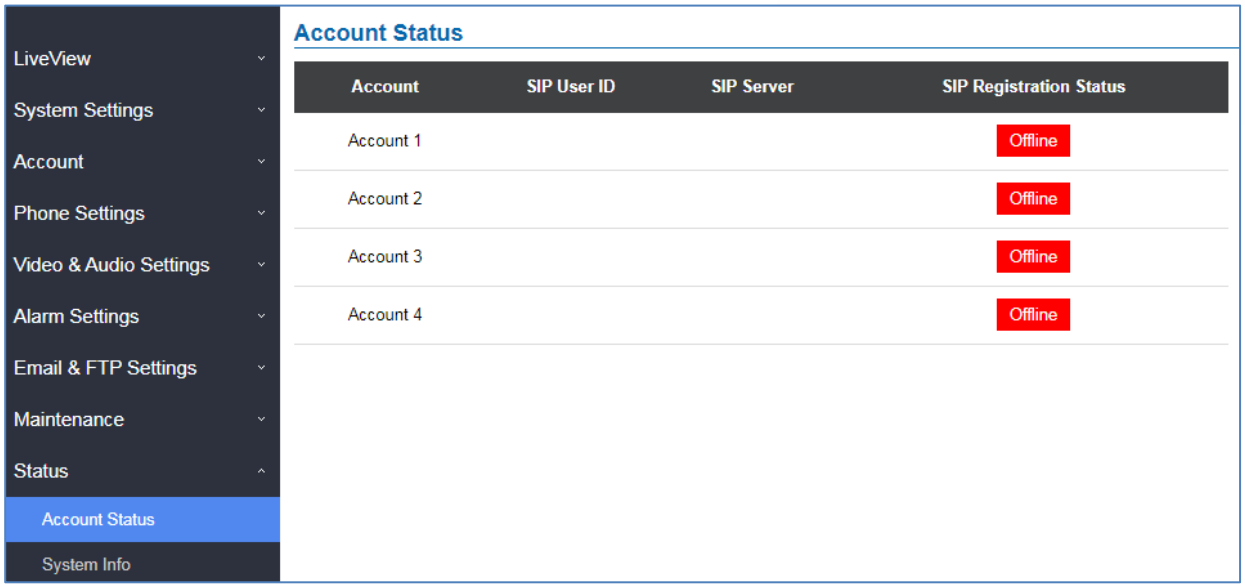


Figure 46: Account Status Page

System Info

This page displays information such as the product model, the hardware version, firmware…

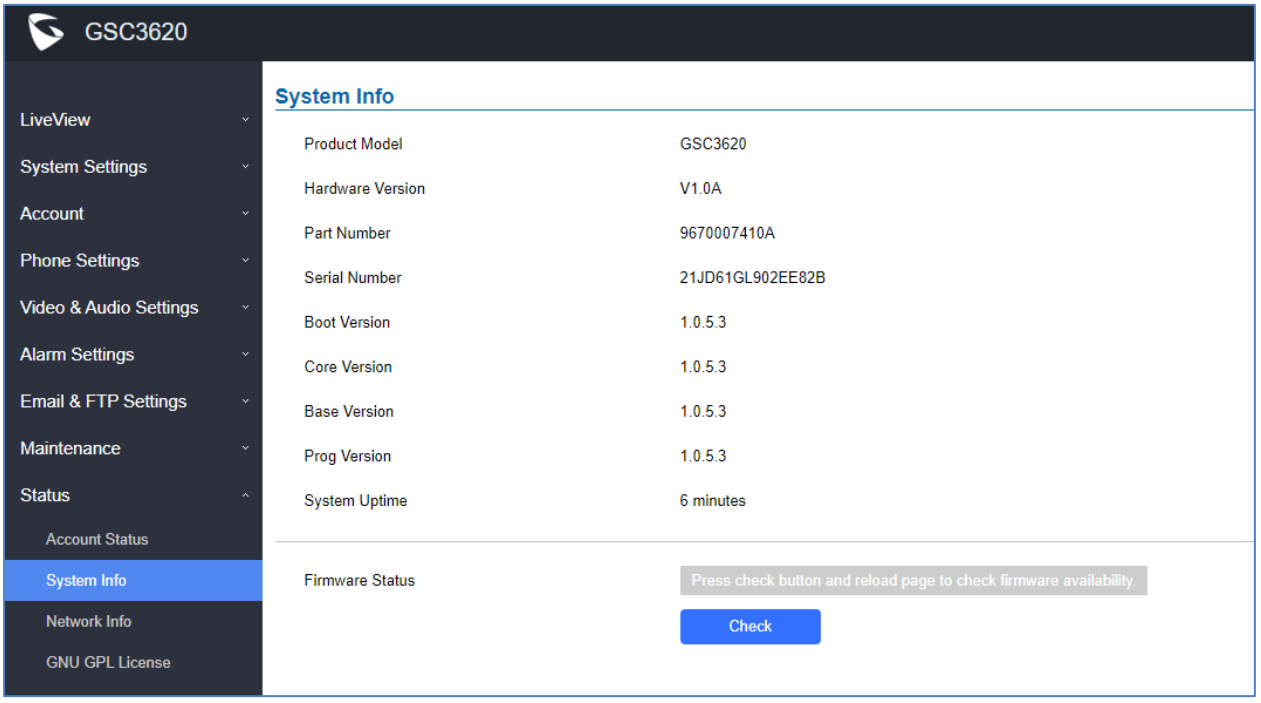


Figure 47: System Info Page

Table 25: System Info

Product Model	Displays the Product Model.
Hardware Version	Displays the Hardware Version.
Part Number	Displays the Part Number.
Boot Version	Displays the Boot Version.
Core Version	Displays the Core Version.
Base Version	Displays the Base Version.
Prog Version	Displays the Prog Version.
System Up Time	Displays the time since the first boot of the GSC3620.
Firmware Status	Click the Check button to check whether the firmware in the firmware server has an updated version, if so, update immediately.

Network Info

This page displays the network system information of GSC3620.

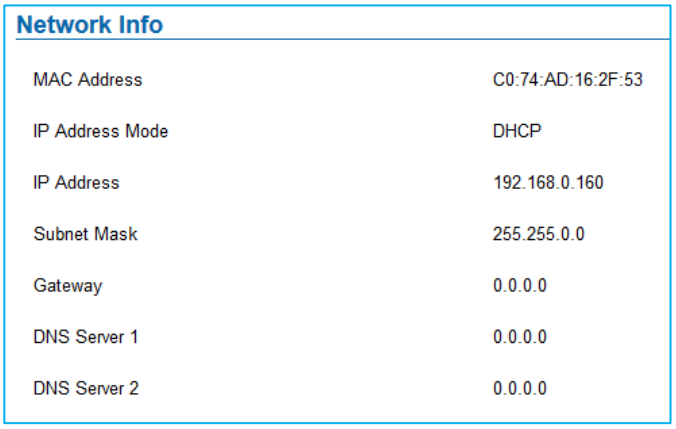


Figure 48: Network Info Page

Table 26: Network Info

MAC Address	Displays the GSC MAC Address.
IP Address Mode	Displays the IP address mode used.
IP Address	Displays the IP address of the GSC3620.
Subnet Mask	Displays the Subnet Mask used.
Gateway	Displays the GSC3620 Gateway.
DNS Server 1	Displays the Preferred DNS Server.
DNS Server 2	Displays the secondary DNS Server.

EXPERIENCING THE GSC3620

Please visit our website: https://www.grandstream.com to receive the most up- to-date updates on firmware releases, additional features, FAQs, documentation and news on new products.

We encourage you to browse our product related documentation, FAQs and User and Developer Forum for answers to your general questions. If you have purchased our products through a Grandstream Certified Partner or Reseller, please contact them directly for immediate support.

Our technical support staff is trained and ready to answer all of your questions. Contact a technical support member or submit a trouble ticket online to receive in-depth support.