



FIBERME Communications LLC.

Configuring FAG410X with Grandstream UCM620X

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OVERVIEW

This document describes basic configuration to interconnect UCM620X series and FAG410X. In this document, we are using FAG4108 as an example. The following methodology can be used for the FAG4104 as well. This is typically applied to the scenario where users would like to add a FAG410X not only as a remote extension but also as an external PSTN trunk.

There are two ways to set up the UCM620X series IP PBX with the FAG410X.

- **Method 1:** Configure FAG410X as a SIP Peer Trunk.
- **Method 2:** Register FAG410X on the UCM620X directly as an extension.



Warning:

When using the IVR in UCM620X series, please be aware that if "Dial Trunk" option is turned on in IVR settings, the call into the IVR will be able to dial outbound call using UCM620X's trunk. The IVR's permission level will be used when making outbound calls in this case. Please select proper permission level for the IVR to control the outbound calls allowed via "Dial Trunk".



CONNECT UCM620X TO FAG410X USING PEER SIP TRUNK

Create IVR On UCM620X

On the UCM620X web GUI, create an IVR extension under **Call Features->IVR**.

In IVR settings, if "Dial Other Extensions" is enabled, the calls dialing into the UCM620X IVR will be able to reach the internal extensions registered to the UCM620X. Also, you can assign the "Key Pressing Event" to different destinations.

Edit IVR: Welcome

Basic Settings Key Pressing Events

* Name: FAG410X_IVR

* Extension: 7000

Dial Trunk: ☐

Auto Record: ☐

Dial Other Extensions: ☐ All ☒ Extension ☐ Multimedia Meeting
☐ Call Queue ☐ Ring Group
☐ Paging/Intercom Groups ☐ Voicemail Groups
☐ Fax Extension ☐ Dial By Name

* IVR Black/Whitelist: Disable

Replace Display Name: ☐

Return to IVR Menu: ☐

Alert-info: None

* Prompt: welcome [Upload Audio File](#)

[Add Prompt](#) +

* Digit Timeout (s): 3

* Response Timeout: 10

* Response Timeout Prompt: ivr-create-timeout [Upload Audio File](#)

* Invalid Input Prompt: invalid [Upload Audio File](#)

* Response Timeout Prompt Repeats: 3

* Invalid Input Prompt Repeats: 3

Language: Default

Figure 1: Create IVR 7000 on the UCM620X



Create Peer SIP TRUNK On UCM620X

On the UCM620X web GUI, create a peer SIP trunk under **Extension/Trunk ->VOIP Trunks**. In this example, the FAG410X IP address is 192.168.99.239.

Create New SIP Trunk Cancel Save

If the host is not a numeric IP address, but the port number is present in the URI, the FCM performs an A or AAAA record lookup of the domain name. If a domain is configured without a port number, the FCM will do an SRV record lookup.

Type: Peer SIP Trunk

* Provider Name: FAG410X

* Host Name: 192.168.99.239

Transport: UDP

Keep Original CID: ☐

Keep Trunk CID: ☐

NAT: ☐

Disable This Trunk: ☐

TEL URI: Disabled

CallerID Number:

CallerID Name:

Figure 2: Create Peer SIP Trunk on the UCM620X

Configure Outbound Rule on UCM620X

On the UCM620X web GUI, go to **Extension/Trunk ->Outbound Routes** to create a new outbound rule. This would allow the extension on the UCM620X to reach numbers in PSTN network via the peer SIP trunk we just configured.



Create New Outbound Rule Cancel Save

General

• Outbound Rule Name: FAG410X_Outbound

• Pattern: 91XXXXXXXXXX

PIN Groups: None

Password:

Local Country Code:

Disable This Route: ☐

Privilege Level: Internal

Warning: Setting privilege level at "Internal" has potential security risks.

PIN Groups with Privilege Level: ☐

Auto Record: ☐

Enable Source Caller ID Whitelist

Enable Source Caller ID Whitelist: ☐

Outbound Route CID:

Call Duration Limit

Call Duration Limit: ☐

Main Trunk

• Trunk: SIPTrunks -- FAG410X

Strip: 1

Prepend:

Figure 3: Configure Outbound Rule on the UCM620X

In this example pattern "91XXXXXXXXXX", 9 is the first dialing digit and it will be stripped off when the call goes out.

Configure Inbound Rule on UCM620X

On the UCM620X web GUI, go to **Extension/Trunk -> Inbound Rules** to create a new inbound rule. In this example, we create the DID as 20000, which will be used in the FAG410X call forward setting.



Create New Inbound Rule Cancel Save

• Trunks:	SIPTrunks -- FAG410X	Inbound Route Name:	FAG410X_inbound
• Pattern:	20000	CallerID Pattern:	
Disable This Route:	<input type="checkbox"/>	Seamless Transfer Whitelist:	
Alert-Info:	None	Ringback Tone:	None
Fax Detection:	<input type="checkbox"/>	Auto Record:	<input type="checkbox"/>
Block Collect Calls:	<input type="checkbox"/>	Prepend Trunk Name:	<input type="checkbox"/>
Set CallerID Info:	<input type="checkbox"/>	Enable Route-Level Inbound Mode:	<input type="checkbox"/>
Inbound Multiple Mode:	<input type="checkbox"/>		

Default Mode Mode 1

• Default Destination: IVR FAG410X_IVR

Time Condition

Add

Figure 4: Configure Inbound Rule on UCM620X

The default destination is configured to IVR. Ensure to select the proper extension for the IVR.

Connect FAG410X with UCM620X

1. On the FAG410X web GUI, go to the **VoIP->SIP** page and enter the IP address of the UCM620X that you are peering with.

FIBERME FAG4108 Current User:admin Logout

Operation Info
Quick Config
VoIP
SIP
SIP Compatibility
SIP Server
NAT Setting
Media
SIP Server Status
Advanced
User Manage
Port
Route
Call Control
System Tools

SIP Settings

SIP Address	LAN 1: 192.168.99.239
SIP Port	5060
Register Status	Unregistered
Register Gateway	No
Registrar IP Address	192.168.5.250
Registrar Port	5060
Spare Registrar Server	<input type="checkbox"/> Enable
Custom Host Of From Field	<input type="checkbox"/> Enable
DNS-SRV ENABLE	<input type="checkbox"/> Enable
Register Interval Time(ms)	0
Registry Validity Period (s)	3600
Multi-Registrar Server Mode	<input checked="" type="checkbox"/> Enable
SIP Transport Protocol	UDP

Figure 5: Connect FAG410X with UCM620X: Registrar IP Address

2. Please make sure the **Register Gateway** option under **VoIP-> SIP** is set to **No**. In the following example, UCM620X has IP address 192.168.5.250.



The screenshot shows the 'SIP Settings' configuration page in the FAG4108 web GUI. The 'Register Gateway' dropdown menu is highlighted with a red box and is set to 'No'. Other visible settings include SIP Address (LAN 1: 192.168.99.239), SIP Port (5060), Register Status (Unregistered), Registrar IP Address (192.168.5.250), Registrar Port (5060), and Multi-Registrar Server Mode (checked).

Figure 6: Connect FAG410X with UCM620X: Register Gateway

Configure FXO Port on FAG410X

1. Connect the PSTN line to the FAG410X FXO port.
2. On the FAG410X web GUI, go to the **Port->FXO** page and press Modify on the FXO port you will use.

The screenshot shows the 'FXO Settings' table in the FAG4108 web GUI. The table lists 8 FXO ports. The 'Modify' button for the first row (Port 1) is highlighted with a red box.

Port	Type	SIP Account	Display Name	Authentication Username	Forbid Outgoing Call	Caller ID Detection	Reg Status	Echo Canceller	Server Index	Polarity Reversal Detection	Input Gain	Output Gain	Modify
1	FXO	8001	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
2	FXO	8002	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
3	FXO	8003	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
4	FXO	8004	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
5	FXO	8005	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
6	FXO	8006	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
7	FXO	8007	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
8	FXO	8008	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	

Figure 7: Configure FXO Port on FAG410X: Modify Port

3. Enter the SIP Account Number **20000** to be matched with the DID number we configured in UCM620X Inbound Route.

The screenshot shows the 'FXO-Modify' configuration page in the FAG4108 web GUI. The 'SIP Account' field is highlighted with a red box and is set to '20000'. Other visible settings include Port (1), Type (FXO), Register Port (No), Display Name, Authentication Username, Display Name preferred (unchecked), Server Index (1:192.168.1.20), Input Gain (0), Output Gain (0), Echo Canceller (checked), Forbid Outgoing Call (unchecked), Caller ID Detection (checked), and Polarity Reversal Detection (unchecked).

Figure 8: Configure FXO Port on FAG410X: Port Configurations



Create Port Group on FAG410X

1. On the FAG410X web GUI, go to the **Port->Port Group** page and press “Add New”.

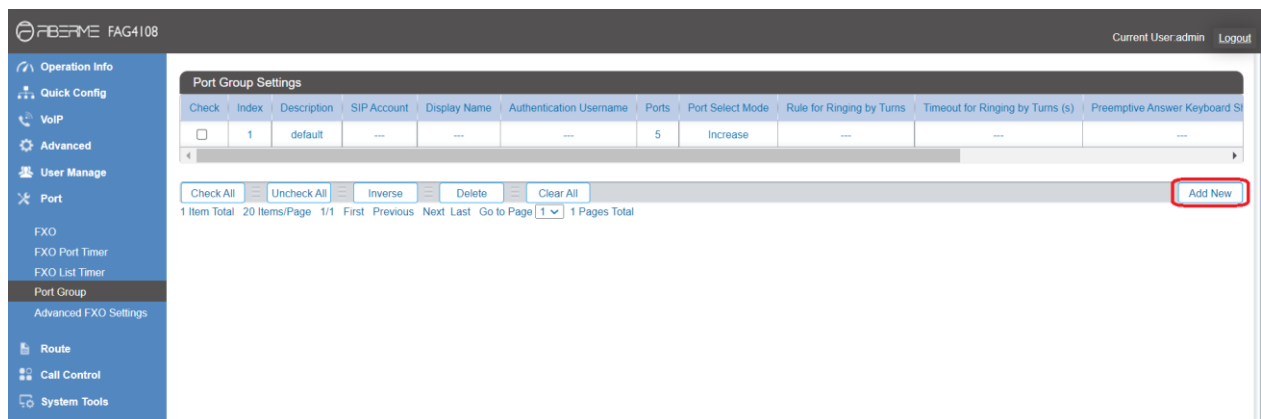


Figure 9: Create Port Group on FAG410X: Add New

2. Select the FXO port you will use.

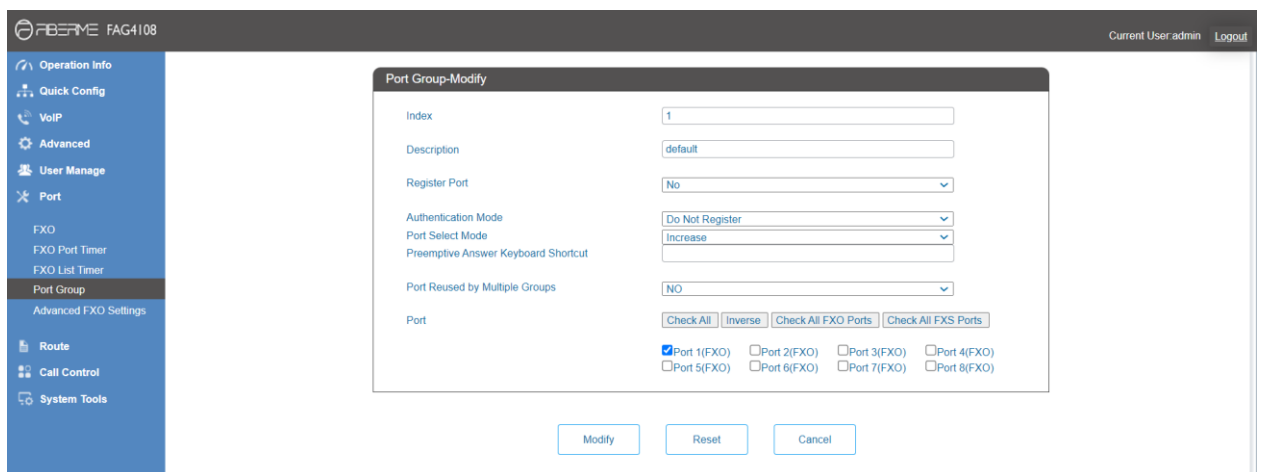


Figure 10: Create Port Group on FAG410X: Group Configurations



REGISTER FAG410X ON UCM620X AS AN EXTENSION

Create SIP Extension on UCM620X

To manually create new SIP user, go to UCM620X web GUI-> Extension/Trunk->Extensions. Click on "Add" and a new dialog window will show for users to fill in the extension information.

Figure 11 shows the 'Edit Extension: 1002' dialog box. The 'Basic Settings' tab is selected. The 'General' section contains fields for Extension (1002), Permission (Internal), CallerID Number (1002), SIP/IAAX Password (masked), Voicemail (Local Voicemail), Skip Voicemail Password (unchecked), Verification (empty), Send Voicemail to Email (Default), Keep Voicemail after (Default), Enable Keep-alive (unchecked), Disable This Extension (unchecked), Emergency Calls CID (empty), Keep-alive Frequency (60), and Enable SCA (unchecked). The 'User Settings' section contains fields for First Name, Last Name, Email Address, User Password (masked), Concurrent Registrations (1), Language (Default), and Mobile Phone Number.

Figure 11: Create SIP Extension on UCM620X

Configure FAG410X SIP Account as a Registered Extension on UCM620X

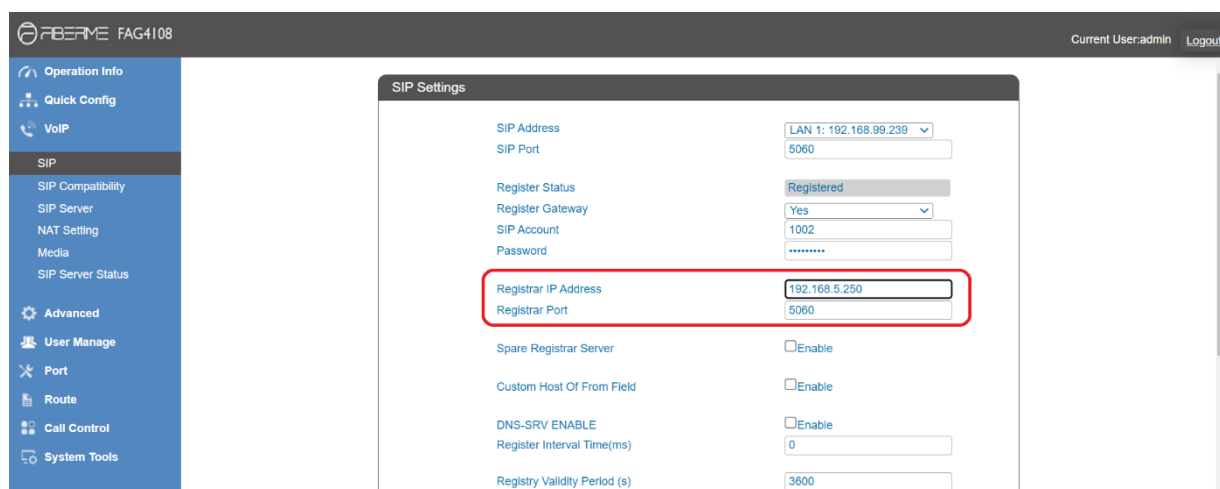
Under FAG410X **web GUI->VoIP->SIP**, please set Register Gateway to Yes, then enter SIP Extension information created earlier in the UCM620X. In this example, extension 1002 is used in order to register FAG410X as an extension user on UCM620X.

Figure 12 shows the 'SIP Settings' dialog box. The 'Register Status' is set to 'Registered', 'Register Gateway' is set to 'Yes', 'SIP Account' is set to '1002', and 'Password' is masked. Other settings include 'Registrar IP Address' (192.168.5.250), 'Registrar Port' (5060), 'Spare Registrar Server' (unchecked), 'Custom Host Of From Field' (unchecked), 'DNS-SRV ENABLE' (unchecked), and 'Register Interval Time(ms)' (0).

Figure 12: FAG410X SIP Account Settings



Under FAG410X web GUI, **VoIP->SIP**, please fill in UCM620X information as explained in method 1.



The screenshot shows the FAG410X web GUI with the 'SIP Settings' tab selected. The 'Registrar IP Address' field is highlighted with a red box, showing the value '192.168.5.250'. Other fields include SIP Address (LAN 1: 192.168.99.239), SIP Port (5060), Register Status (Registered), Register Gateway (Yes), SIP Account (1002), Password (*****), Spare Registrar Server (Enable), Custom Host Of From Field (Enable), DNS-SRV ENABLE (Enable), Register Interval Time(ms) (0), and Registry Validity Period (s) (3600).

Figure 13: FAG410X Registrar IP Address

We can check UCM620X SIP Extension Status to see if FAG410X has been successfully registered as an extension device. The green icon indicates that FAG410X is registered on UCM620X.

Extensions

+ Add	Edit	Delete	Reset	Edit All SIP	More	<input type="text" value="Extension Number or Name"/>			
<input type="checkbox"/>	STATUS	PRESENCE S...	EXTENSION	NAME	MESSAGE	TYPE	IP AND PORT	EMAIL...	OPTIONS
<input type="checkbox"/>	Idle	Available	1002		0/2/0	SIP(WebRTC)	192.168.99.239:5060 (Gat...		Edit Refresh Power Delete

Figure 14: UCM620X - SIP Extension Status

Now FAG410X is registered at UCM620X as an extension device. Please refer to method 1 in the previous section to configure FXO Port settings on FAG410X.



FAG410X CALL Routing

Configure IP to Tel on FAG410X

1. On the FAG410X web GUI, go to the **Route-> IP→TEL** page, Press “Add New”.

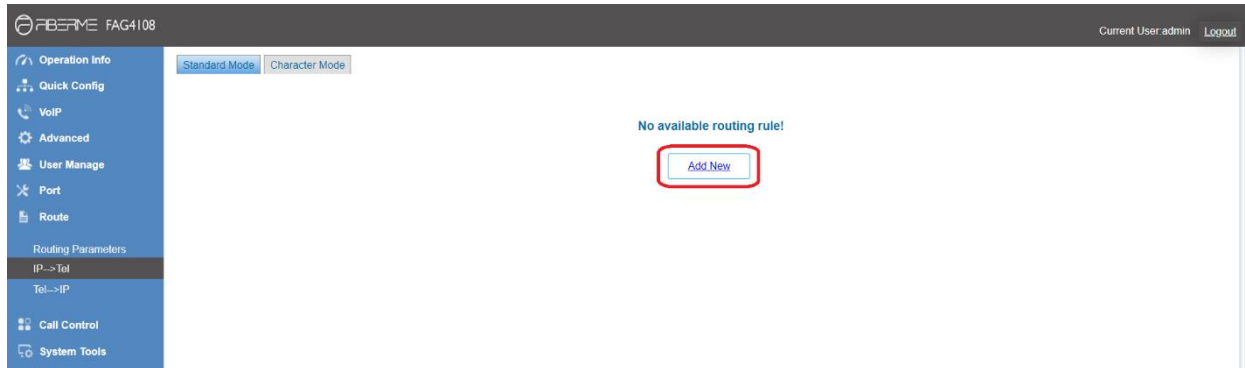


Figure 15: FAG410X – IP to TEL

2. Enter the UCM620X IP address in “Source IP” and select the Port Group you will use from “Call Destination”.

The screenshot shows the 'IP->Tel Routing Rule' configuration form. It has several fields: 'Index' (set to 63), 'Description' (set to default), 'Source IP' (set to 192.168.5.250, highlighted with a red box), 'CallerID Prefix' (set to *), 'CalleeID Prefix' (set to *), 'Route by Number' (with an 'Enable' checkbox), and 'Call Destination' (set to 1, highlighted with a red box). A red message says 'We suggest you input Source IP here.' At the bottom are 'Save' and 'Close' buttons.

Figure 16: IP to TEL Settings



Configure TEL to IP on FAG410X

1. On the FAG410X web GUI, go to the **Route-> TEL->IP** page, Press “Add New”.

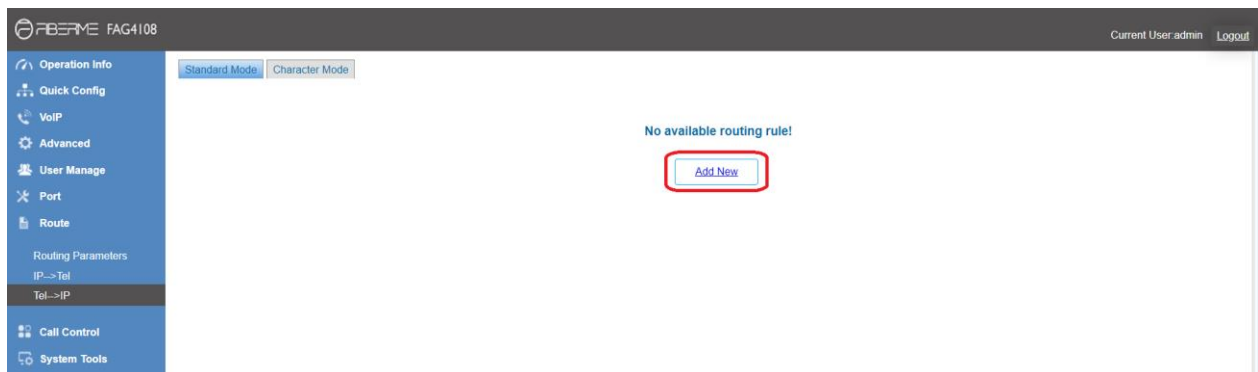


Figure 17: FAG410X – TEL to IP

2. Select the Port Group you will use from “Source Port Group” and enter the UCM620X IP address in “Destination Address”.

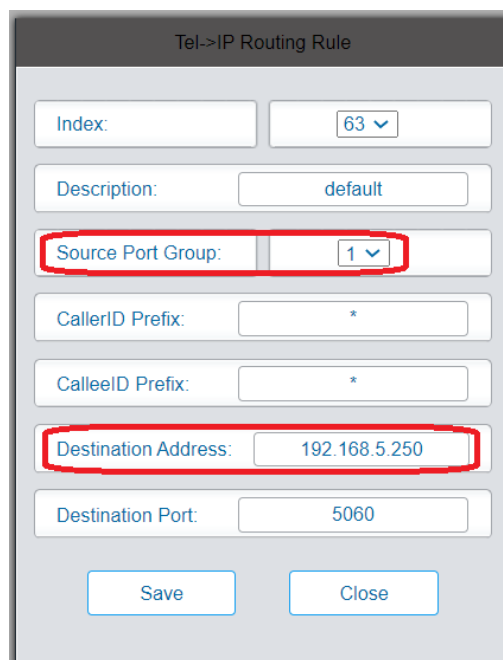


Figure 18: TEL to IP Settings

