



## **FIBERME Communications LLC.**

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Configuring FAG410X with Grandstream UCM630X

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## OVERVIEW

This document describes basic configuration to interconnect UCM630X 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 UCM630X series IP PBX with the FAG410X.

- **Method 1:** Configure FAG410X as a SIP Peer Trunk.
- **Method 2:** Register FAG410X on the UCM630X directly as an extension.



### Warning:

When using the IVR in UCM630X 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 UCM630X'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".

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# CONNECT UCM630X TO FAG410X USING PEER SIP TRUNK

## Create IVR On UCM630X

On the UCM630X web GUI, create an IVR extension under **Call Features->IVR**.

In IVR settings, if "Dial Other Extensions" is enabled, the calls dialing into the UCM630X IVR will be able to reach the internal extensions registered to the UCM630X. 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 UCM630X



## Create Peer SIP TRUNK On UCM630X

On the UCM630X 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 UCM630X

## Configure Outbound Rule on UCM630X

On the UCM630X web GUI, go to **Extension/Trunk ->Outbound Routes** to create a new outbound rule. This would allow the extension on the UCM630X to reach numbers in PSTN network via the peer SIP trunk we just configured.



Create New Outbound Rule Cancel Save

**General**

• Outbound Rule Name:

• Pattern:

PIN Groups:

Password:

Local Country Code:

Disable This Route: ☐

Privilege Level:

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:

Strip:

Prepend:

**Figure 3: Configure Outbound Rule on the UCM630X**

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 UCM630X

On the UCM630X 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 UCM630X

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

## Connect FAG410X with UCM630X

1. On the FAG410X web GUI, go to the **VoIP->SIP** page and enter the IP address of the UCM630X 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 UCM630X: Registrar IP Address

2. Please make sure the **Register Gateway** option under **VoIP-> SIP** is set to **No**. In the following example, UCM630X has IP address 192.168.5.250.





**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: ☐ Enable

Custom Host Of From Field: ☐ Enable

DNS-SRV ENABLE: ☐ Enable

Register Interval Time(ms): 0

Registry Validity Period (s): 3600

Multi-Registrar Server Mode: ☒ Enable

Figure 6: Connect FAG410X with UCM630X: 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.

**FXO Settings**

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	

8 Items Total 16 Items/Page 1/1 First Previous Next Last Go to Page 1 1 Pages Total

[Batch Modify](#)

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 UCM630X Inbound Route.

**FXO-Modify**

Port: 1  
 Type: FXO

Register Port: No

**SIP Account: 20000**

Display Name:   
 Authentication Username:   
 Display Name preferred: ☐ Enable

Server Index: 1:192.168.1.20

Input Gain (dB): 0  
 Output Gain (dB): 0

Echo Canceller: ☒ Enable  
 Forbid Outgoing Call: ☐ Enable  
 Caller ID Detection: ☒ Enable  
 Polarity Reversal Detection: ☐ Enable

Whitelist of FXO Out Calls:

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”.

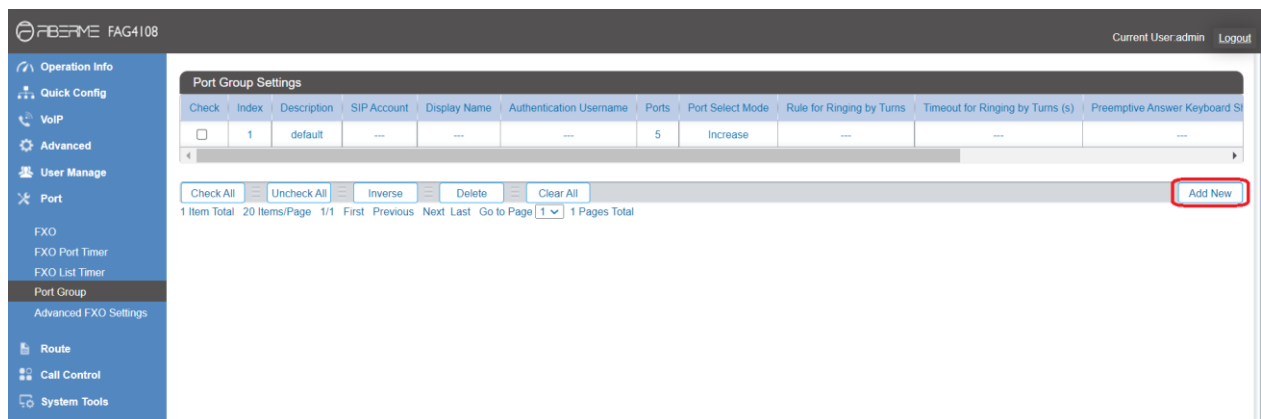


Figure 9: Create Port Group on FAG410X: Add New

2. Select the FXO port you will use.

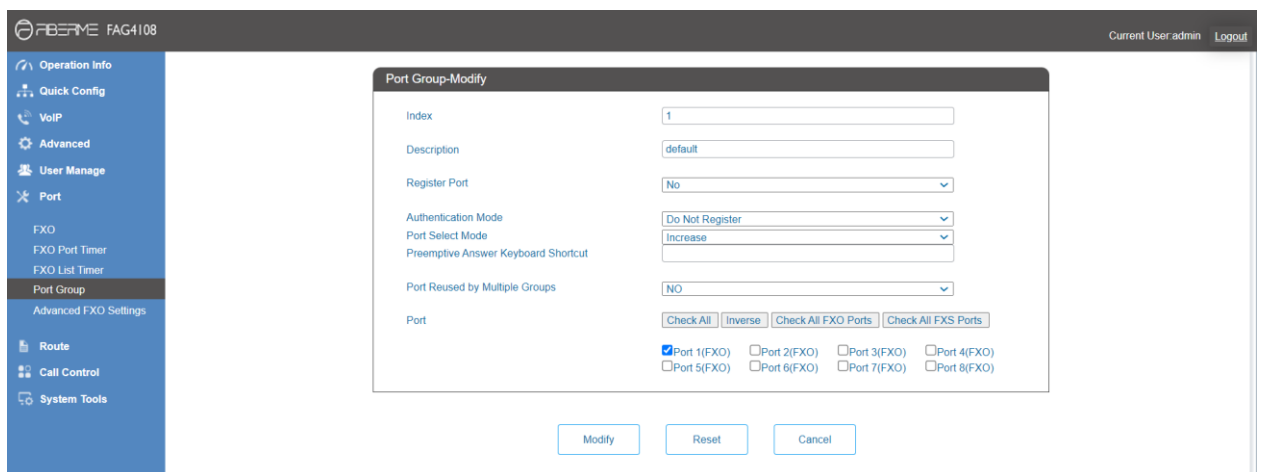


Figure 10: Create Port Group on FAG410X: Group Configurations



# REGISTER FAG410X ON UCM630X AS AN EXTENSION

## Create SIP Extension on UCM630X

To manually create new SIP user, go to UCM630X 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), Language (Default), Concurrent Registrations (1), and Mobile Phone Number.

Figure 11: Create SIP Extension on UCM630X

## Configure FAG410X SIP Account as a Registered Extension on UCM630X

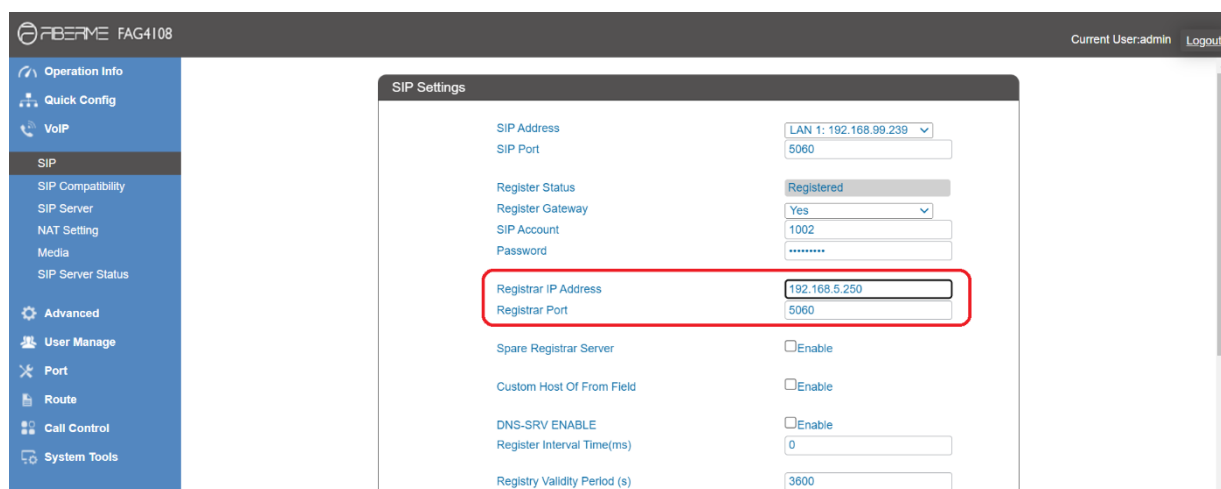
Under FAG410X **web GUI->VoIP->SIP**, please set Register Gateway to Yes, then enter SIP Extension information created earlier in the UCM630X. In this example, extension 1002 is used in order to register FAG410X as an extension user on UCM630X.

Figure 12 shows the 'SIP Settings' dialog box in the FAG410X web GUI. The 'SIP Settings' section is highlighted with a red box. It contains fields for Register Status (Registered), Register Gateway (Yes), SIP Account (1002), and Password (masked). Other fields include SIP Address (LAN 1: 192.168.99.239), SIP Port (5060), 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 UCM630X information as explained in method 1.



The screenshot shows the FAG410X web GUI with the SIP Settings page. The Registrar IP Address is highlighted with a red box. The settings are as follows:


Field	Value
SIP Address	LAN 1: 192.168.99.239
SIP Port	5060
Register Status	Registered
Register Gateway	Yes
SIP Account	1002
Password	*****
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


Figure 13: FAG410X Registrar IP Address


We can check UCM630X SIP Extension Status to see if FAG410X has been successfully registered as an extension device. The green icon indicates that FAG410X is registered on UCM630X.


Extensions

+ Add


 Edit

 Delete

 Reset

 Edit All SIP

More ▾

 Extension Number or Name






<input type="checkbox"/>	STATUS ▾	PRESENCE S... ▾	EXTENSION ▾	NAME ▾	MESSAGE	TYPE ▾	IP AND PORT ▾	EMAIL... ▾	OPTIONS
<input type="checkbox"/>	<div><div>Idle</div></div>	Available	1002		0/2/0	SIP(WebRTC)	192.168.99.239:5060 (Gat...		<div><div></div><div></div><div></div><div></div></div>

Figure 14: UCM630X - SIP Extension Status

Now FAG410X is registered at UCM630X 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”.

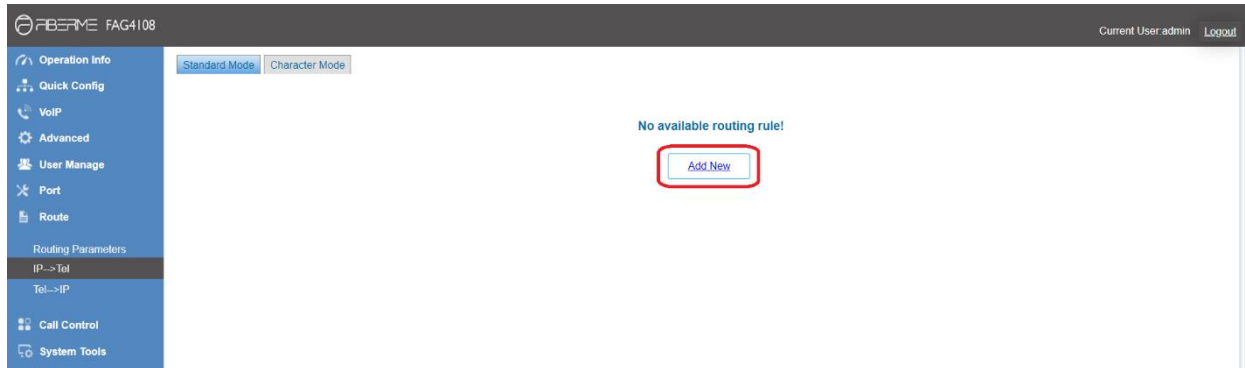


Figure 15: FAG410X – IP to TEL

2. Enter the UCM630X 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”.

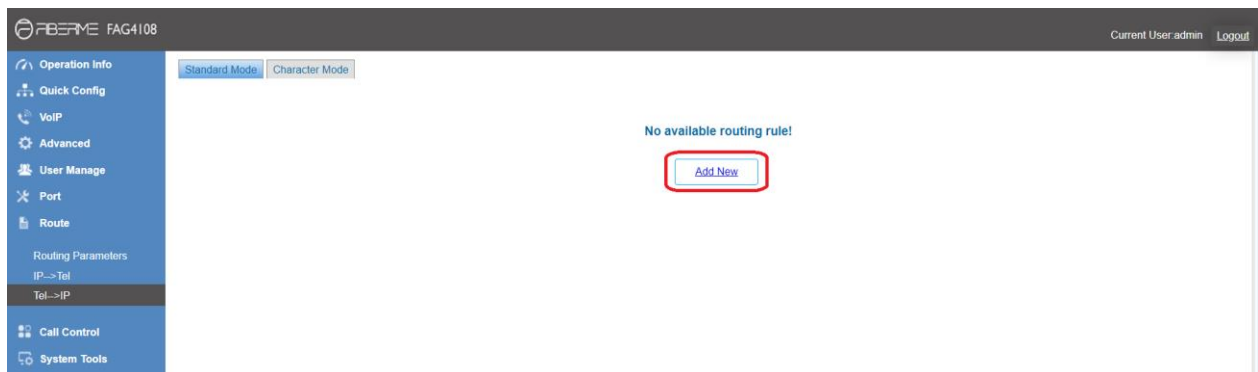


Figure 17: FAG410X – TEL to IP

2. Select the Port Group you will use from “Source Port Group” and enter the UCM630X IP address in “Destination Address”.

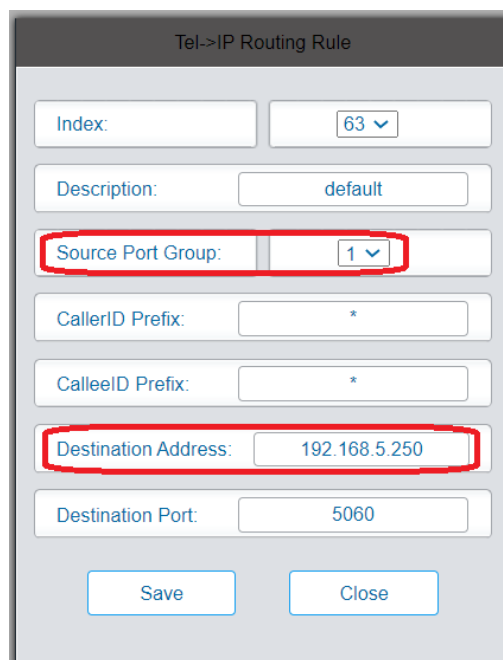


Figure 18: TEL to IP Settings

