



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for Configuring Yealink VP530 SIP Video Phone Version 23.70.0.40 with Avaya IP Office 500 V2 Release 8.1 – Issue 1.0**

### **Abstract**

These Application Notes describe the procedures for configuring Yealink VP530 SIP Video Phone which was compliance tested with Avaya IP Office 500 V2 Release 8.1. The overall objective of the interoperability compliance testing is to verify Yealink P530 SIP Video Phone functionalities in an environment comprised of Avaya IP Office and various Avaya H.323, Avaya SIP, Avaya Digital and analog telephones.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

## 1. Introduction

These Application Notes describe the procedures for configuring Yealink VP530 SIP Video phone which was compliance tested with Avaya IP Office 500 V2 Release 8.1. The Yealink VP530 SIP Video phone provides a powerful and flexible IP communication solution for Ethernet TCP/IP networks, delivering excellent voice quality. The compliance test used the Avaya IP Office 500 V2 Release 8.1 to test with Yealink VP530 SIP Video phone.

Application Notes assume that Avaya IP Office is already installed and basic configuration steps have been performed. Only steps relevant to this compliance test will be described in this document. For further details on configuration steps not covered in this document, consult **Section 9**.

## 2. General Test Approach and Test Results

The general test approach was to place calls to and from Yealink VP530 SIP Video phone and exercise basic telephone operations. The main objectives were to verify the following:

- Registration.
- Codec Negotiation (G.711MU, G711MA, G722, G729, and G723).
- Basic video call between VP530 phones and between VP530 and Avaya Flare® and IP Office Softphone.
- Telephone functions: Inbound and outbound, hold/resume, call park/pickup, blind and attended transfers, call waiting and conference calls.
- Call termination (origination/destination).
- DTMF method: RFC2833 and INBAND.
- Voicemail and Messaging Waiting Indicator.
- T1/ISDN PSTN Calls.
- Serviceability.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute a full product performance or feature testing performed by third party vendors, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a third party solution.

### 2.1. Interoperability Compliance Testing

All test cases were performed manually. The general approach was to place various types of calls to and from Yealink VP530 SIP Video phone and Yealink VP530 SIP Video phone's operations such as inbound calls, outbound calls, hold, transfer, forward, conference and VP530 interactions with Avaya IP Office, Avaya SIP, H.323 and Digital telephones were verified. For serviceability testing, failures such as cable pulls and resets were applied.

### 2.2. Test Results

All test cases were passed and there is one note as described below.

- Avaya IP Office does not support local call forward on third party SIP phone therefore the call forward feature needs to be provisioned in the IP Office Manager.

### 2.3. Support

Technical support for Yealink VP530 SIP Video phone can be obtained by contacting Yealink as below.

**Yealink Network Technology Co.,Ltd.**

Address: 4<sup>th</sup>-5<sup>th</sup> Floor, South Building, No. 63 Wanghai Road, 2<sup>nd</sup> Software Park, Xiamen, China (361008).

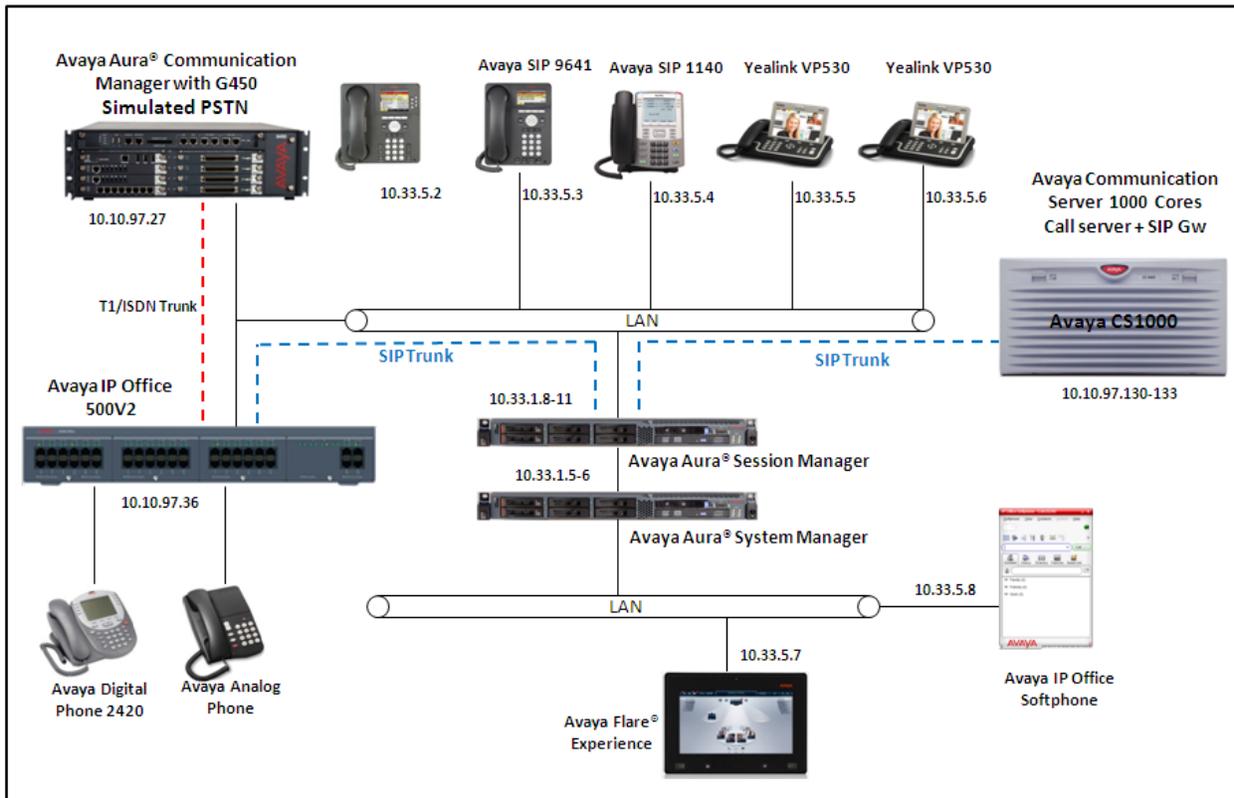
Phone: +86-592-5702000

Email: [support@yealink.com](mailto:support@yealink.com)

Website: <http://www.yealink.com>

### 3. Reference Configuration

**Figure 1** illustrates a sample configuration consisting of an Avaya IP Office system and Yealink VP530 SIP Video phone. The IP office has SIP trunk to Avaya Communication Server 1000 to exercise test cases over SIP trunk and has T1/ISDN trunk to Avaya Aura® Communication Manager to exercise test cases over PRI trunk. The testing used Voice Mail Pro which is a feature on the IP Office acting as a voice mail system.



**Figure 1: Test Configuration of Yealink VP530 SIP Video Phone with Avaya IP Office**

## 4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment	Software
Avaya IP Office 500 V2	8.1 Build 52
Avaya IP Office Manager	8.1 (52)
Avaya S8800 Communication Manager Server	R016x.00.1.510.1
Avaya Media Gateway G450	31 .22 .0.1
Avaya Communication Server 1000 CPPM	Release 7.5
Avaya S8800 System Manager Server	6.1 SP6
Avaya S8800 Session Manager Server	6.1 SP6
Avaya Flare® Experience	1.1.0
Avaya IP Office Softphone	3.2.3.20
Avaya IP H323 9650 Phone	3.104S
Avaya IP H323 9641 Phone	6.2.119
Avaya IP H.323 1608L Phone	1.302S
Avaya IP SIP 1140E Phone	4.03.12
Avaya Digital 2420 Phone	-
Avaya Analog Phone	-
YeaLink T28P SIP Phone	2.70.0.60
Yealink VP530 SIP Phone	23.70.0.40

**Note: Testing was performed with IP Office 500 v2 R8.1, but it also applies to IP Office Server Edition R8.1 (single site configuration only).**

## 5. Configure Avaya IP Office

This document assumes that Avaya IP Office system is already installed, configured, and operating. For more information on how to configure the Avaya IP Office system please refer to **Section 9**. This section provides the procedures for configuring Avaya IP Office. The procedures include the following areas:

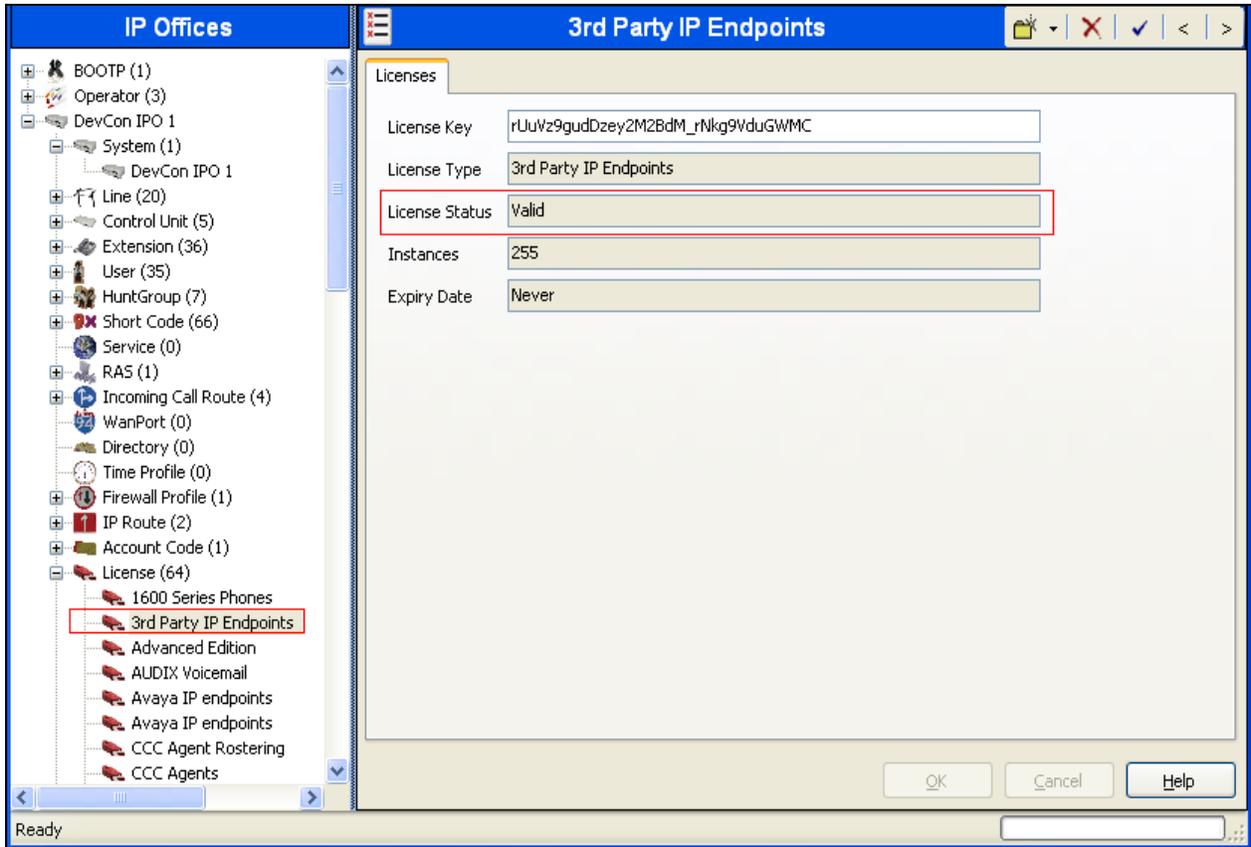
- Verify IP Office license
- Obtain LAN IP address
- Administer SIP registrar
- Administer SIP extensions
- Administer SIP users

These steps are performed from the Avaya IP Office Manager.

## 5.1. Verify IP Office License

From a PC running the Avaya IP Office Manager application, select **Start > All Programs > IP Office > Manager** (not shown) to launch the Manager application. Select the proper IP Office system if there are more than one IP Office system, and log in with the appropriate credentials.

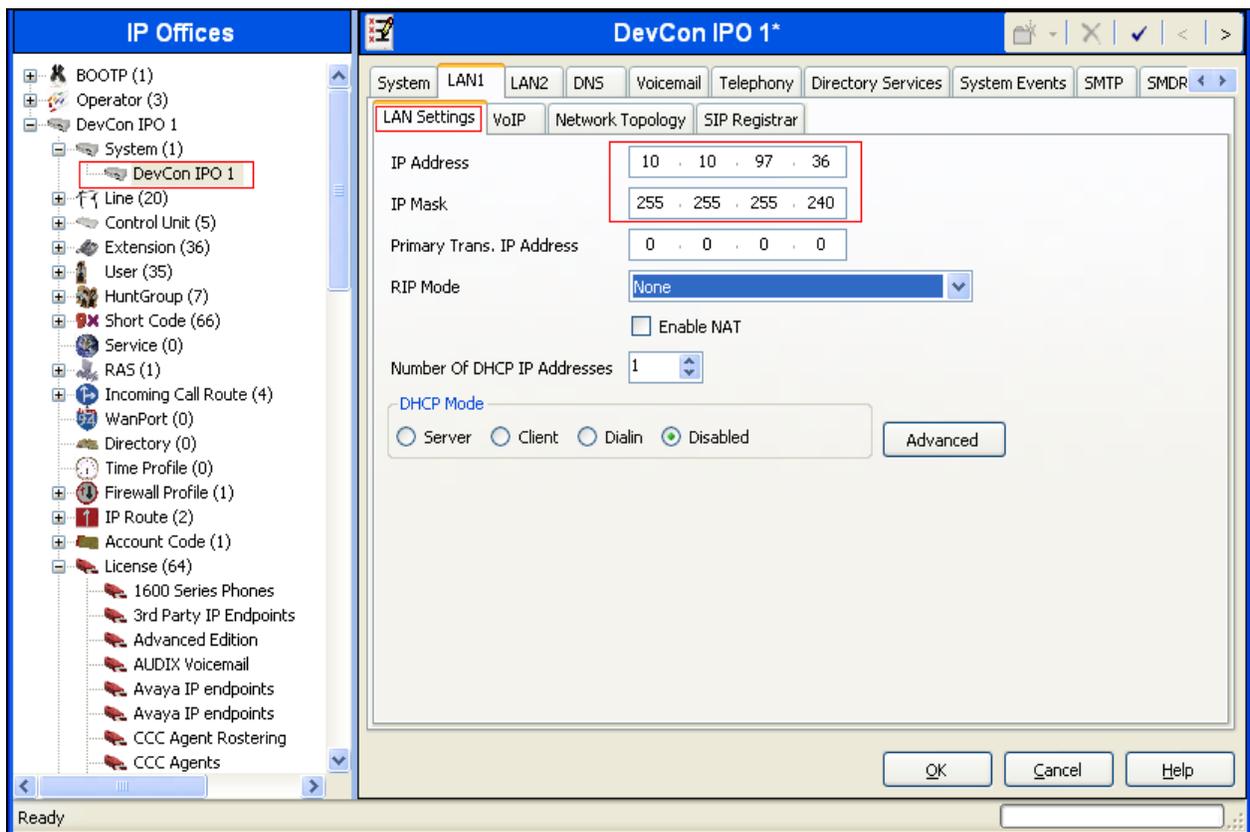
The Avaya IP Office Manager screen is displayed. From the configuration tree in the left pane, select **License > 3rd Party IP Endpoints** to display the Avaya IP endpoints screen in the right pane. Verify that the License Status field is set to **Valid**.



## 5.2. Obtain LAN IP Address

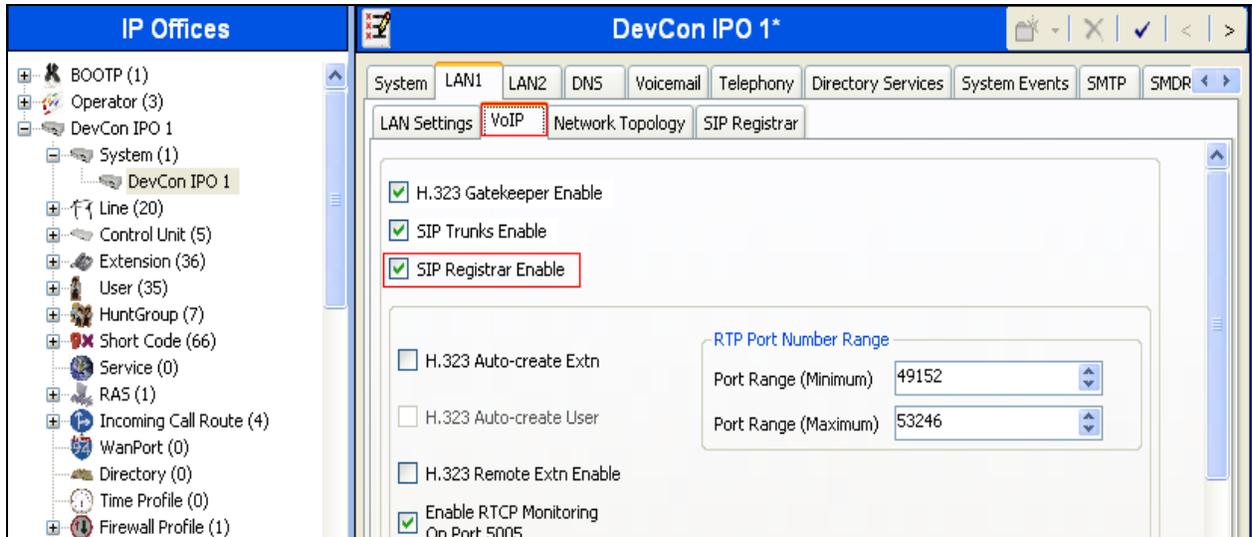
From the configuration tree in the left pane, select **System** to display the System screen in the right pane. Select the **LAN1** tab, followed by the **LAN Settings** sub-tab in the right pane. Make a note of the **IP Address**, which will be used later to configure Yealink VP530 SIP phone.

**Note:** During the initial configuration of Avaya IP Office, the LAN1 was configured on the private network side and LAN2 was configured on the public network side. Avaya IP Office can support SIP extensions on the LAN1 and/or LAN2 interfaces, but the compliance test used the LAN1 interface. Thus, only the LAN1 configuration will be discussed in these Application Notes.

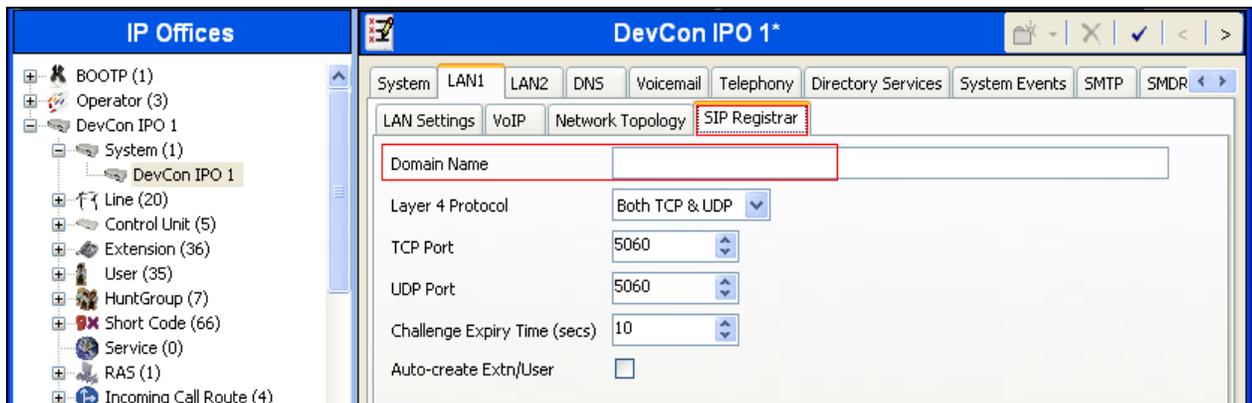


### 5.3. Administer SIP Registrar

Select the **VoIP** sub-tab. Ensure that **SIP Registrar Enable** is checked, as shown below.



Select the **SIP Registrar** sub-tab, and either enter a valid Domain Name for SIP endpoints to use for registration with IP Office or leave it blank. In the compliance testing, the **Domain Name** field was left blank. If the **Domain Name** field is left blank, then the SIP endpoints will use the LAN IP address for registration. Keep the **TCP Port** and **UDP Port** fields at default as **5060**.

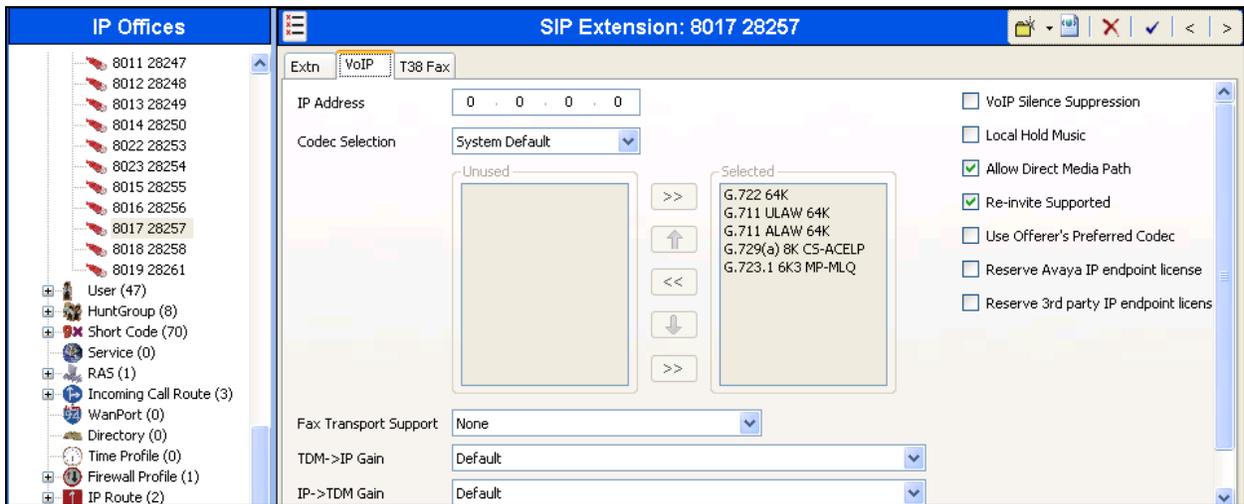


## 5.4. Administer SIP Extensions

From the configuration tree in the left pane, right-click on **Extension** and select **New > SIP Extension** (not shown) from the pop-up list to add a new SIP extension. Enter the desired extension in the **Base Extension** field, e.g. **28257**.



Select the **VoIP** tab, and retain the default values in all fields. Repeat this section to add another new SIP extension for a second Yealink VP530 SIP phone. During the compliance test, extensions **28257** and **28258** were created for two Yealink VP530 SIP phones.



## 5.5. Administer SIP Users

In the left navigation pane, right-click on **User** and select **New** from the pop-up list (not shown). Enter desired values in the **Name** and **Full Name** fields. For the **Extension** field, enter the SIP extension created in **Section 5.4**.

The screenshot shows the 'User' configuration window for 'Yealink VP530 1: 28257\*'. The left pane shows a tree view of 'IP Offices' with various extensions. The main area is the 'User' tab, which contains the following fields and options:

- Name: Yealink VP530 1
- Password: (empty)
- Confirm Password: (empty)
- Full Name: Yealink VP530 Ext28257
- Extension: 28257
- Locale: (dropdown menu)
- Priority: 5
- System Phone Rights: None
- Profile: Basic User
- Receptionist:
- Enable Softphone:
- Enable one-X Portal Services:
- Enable one-X TeleCommuter:

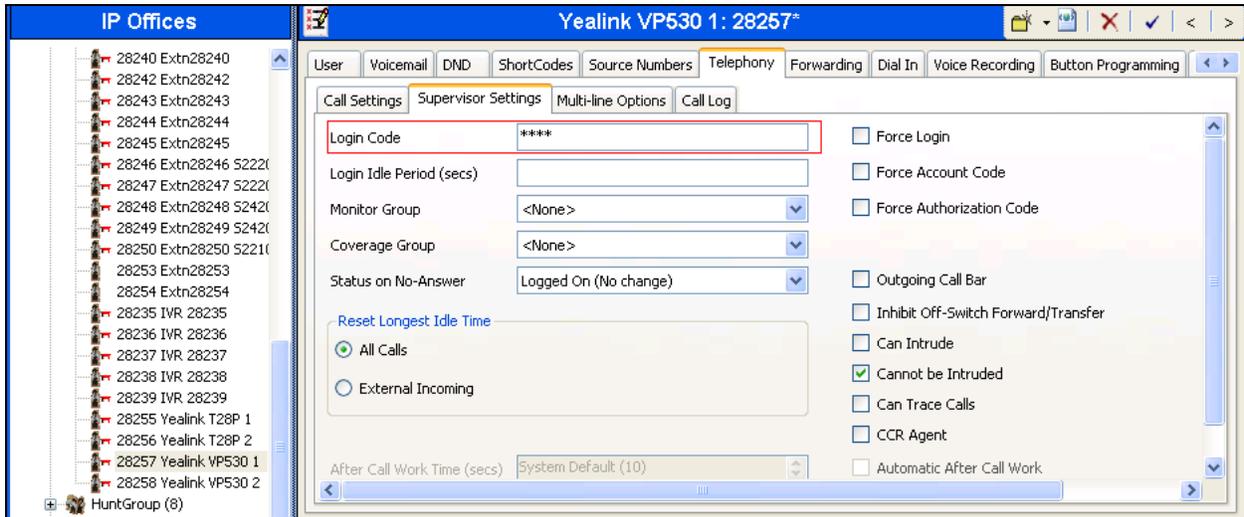
Buttons at the bottom: OK, Cancel, Help.

Select the **Telephony** tab, followed by the **Call Settings** sub-tab. Check the **Call Waiting On** field, as shown below. Note that the **Call Waiting On** must be enabled so that the call waiting, call transfer and conference on Yealink VP530 phone works properly.

The screenshot shows the 'Telephony' tab, 'Call Settings' sub-tab for 'Yealink VP530 1: 28257\*'. The left pane shows the 'IP Offices' tree view. The main area contains the following settings:

- Outside Call Sequence: Default Ring
- Inside Call Sequence: Default Ring
- Ringback Sequence: Default Ring
- No Answer Time (secs): System Default (15)
- Wrap-up Time (secs): 2
- Transfer Return Time (secs): Off
- Call Cost Mark-Up: 100
- Call Waiting On:
- Answer Call Waiting On Hold:
- Busy On Hold:
- Offhook Station:

Select the **Supervisor Settings** sub-tab, and enter a desired **Login Code**, e.g. “1234”. Repeat this section for each SIP extension from **Section 5.4**. This Login Code will be used when Yealink VP530 phone registers to the SIP user **28257** on the IP Office.



## 6. Configure Yealink VP530 SIP Video Phone

This section only provides steps to configure Yealink VP530 SIP Video phone to interface with Avaya IP Office. From a PC, launch webpage of Yealink VP530 phone by entering its IP address in the address box of a browser as shown below. Note that the IP address of the phone can be found by pressing OK button on the physical phone.

### 6.1. Register VP530 SIP phone to Avaya IP Office

To register the VP530 to IP Office, login to the VP530 phone, the login page is displayed with password field, enter appropriate credentials of the VP530 phone and click the **OK** button to log in.



The server 10.33.5.44 at Enterprise IP phone SIP-T28P requires a username and password.

Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).

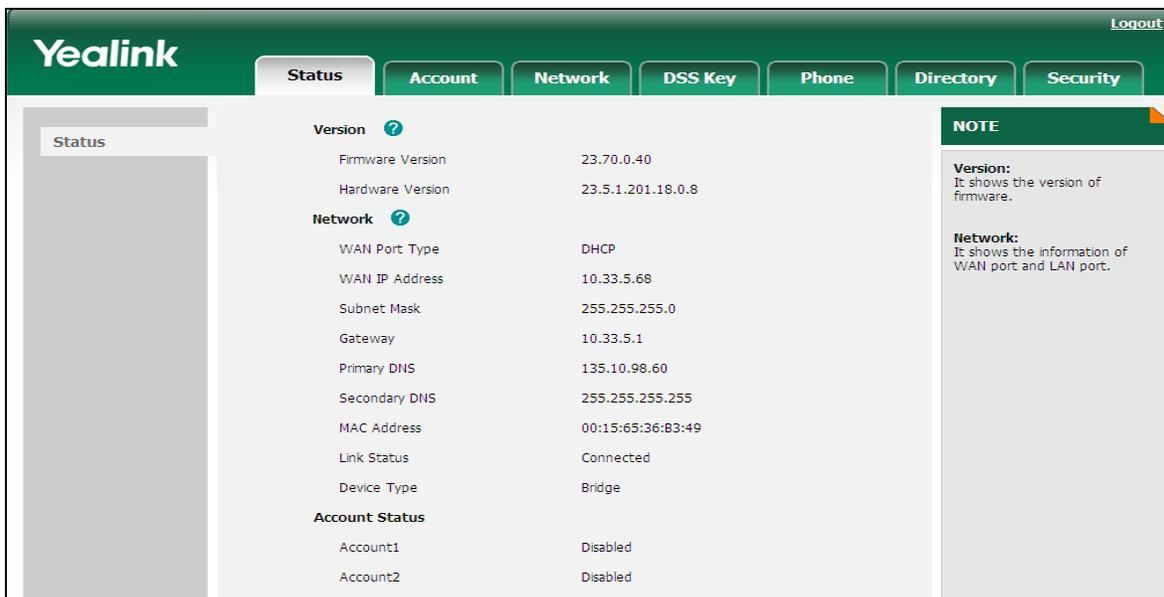
User name:

Password:

Remember my password

OK Cancel

The **Status** page of Yealink VP530 phone is displayed. This displays the current status and information of the phone.



Yealink Logout

**Status** Account Network DSS Key Phone Directory Security

**Status**

<b>Version</b> ?	
Firmware Version	23.70.0.40
Hardware Version	23.5.1.201.18.0.8
<b>Network</b> ?	
WAN Port Type	DHCP
WAN IP Address	10.33.5.68
Subnet Mask	255.255.255.0
Gateway	10.33.5.1
Primary DNS	135.10.98.60
Secondary DNS	255.255.255.255
MAC Address	00:15:65:36:B3:49
Link Status	Connected
Device Type	Bridge
<b>Account Status</b>	
Account1	Disabled
Account2	Disabled

**NOTE**

**Version:**  
It shows the version of firmware.

**Network:**  
It shows the information of WAN port and LAN port.

Click on the **Account** tab to display **Account** page. Select **Account1** in the **Account** dropdown list. Under the **Basic** section, enter the following information as shown below:

- **Account Active:** select **Enabled** to enable Account1.
- **Display Name:** enter a descriptive name, e.g. “**Ext 28258**”.
- **Register Name:** enter the extension **28258** as configured in **Section 5.4**.
- **User Name:** enter the extension **28258** as configured in **Section 5.4**.
- **Password:** enter the Login Code “**1234**” as configured in **Section 5.5**.
- **SIP Server:** enter the LAN1 IP address “**10.10.97.36**” as defined in **Section 5.2** and leave port **5060** as default.
- **Enable Outbound Proxy Server:** select **Enabled** in the dropdown list.
- **Outbound Proxy Server:** enter the LAN1 IP address “**10.10.97.36**” as above.
- **Transport:** leave the default port 5060.

Click **Confirm** (not shown) button in the bottom of the Account page to save the change and apply configuration to the VP530 phone.

The screenshot shows the Yealink web interface with the 'Account' tab selected. The 'Basic' section is active, and the 'Account' dropdown is set to 'Account 1'. The configuration fields are as follows:

Field	Value
Register Status	Disabled
Account Active	Enabled
Label	
Display Name	Ext 28258
Register Name	28258
User Name	28258
Password	••••
SIP Server	10.10.97.36
Port	5060
Enable Outbound Proxy Server	Enabled
Outbound Proxy Server	10.10.97.36
Port	5060
Transport	UDP
Backup Outbound Proxy Server	
Port	5060
NAT Traversal	Disabled
STUN Server	
Port	3478
Voice Mail	

The right side of the interface contains a 'NOTE' section with the following information:

- Display Name:** SIP service subscriber's name which will be used for Caller ID display.
- Register Name:** SIP service subscriber's ID used for authentication.
- User Name:** User account, provided by VoIP service provider.
- NAT Traversal:** Defines the STUN server will be active or not.
- Proxy Require:** A special parameter just for Nortel server. If you login to Nortel server, the value should be: com.nortelnetworks.firewall
- Codecs:** Choose the codecs you want to use.
- Advanced:** The Advanced parameters for administrator.

The screen below shows the VP530 phone registers successfully to SIP user 28258 on the IP Office.

**Yealink** Logout

Status Account Network DSS Key Phone Directory Security

Account Account 1

Register Status Registered

Account Active Enabled

Label 28258

Display Name Ext 28258

**NOTE**

**Display Name**  
SIP service subscriber's name which will be used for Caller ID display.

**Register Name**  
SIP service subscriber's ID used

## 6.2. Configure Voice Mail

Configure the VP530 phone to subscribe MWI to IP Office and voicemail number so that if any new voice message is left for the phone the MWI light is turned on and user is able to press the voice mail key on the physical phone to check voicemail.

In the **Account** page and under the **Basic** section, enter **\*17** as the short code in the **Voice Mail** field to access to voicemail pro application on the IP Office.

**Yealink** Logout

Status Account Network DSS Key Phone Directory Security

Account Account 1

Register Status Registered

Account Active Enabled

Label 28258

Display Name Ext 28258

Register Name 28258

User Name 28258

Password .....

SIP Server 10.10.97.36 Port 5060

Enable Outbound Proxy Server Enabled

Outbound Proxy Server 10.10.97.36 Port 5060

Transport UDP

Backup Outbound Proxy Server Port 5060

NAT Traversal Disabled

STUN Server Port 3478

Voice Mail \*17

Proxy Require

**NOTE**

**Display Name**  
SIP service subscriber's name which will be used for Caller ID display.

**Register Name**  
SIP service subscriber's ID used for authentication.

**User Name**  
User account, provided by VoIP service provider.

**NAT Traversal**  
Defines the STUN server will be active or not.

**Proxy Require**  
A special parameter just for Nortel server. If you login to Nortel server, the value should be: com.nortelnetworks.firewall

**Codecs**  
Choose the codecs you want to use.

**Advanced**  
The Advanced parameters for administrator.

Expand the **Advance** section. Select **Enabled** in the **Subscribe for MWI** dropdown list and keep the **MWI Subscription Period (seconds)** field at default. Click **Confirm** (not shown) button at the bottom of the **Account** page to save the changes.

Advanced	Login Expire (seconds)	3600	?
	Local SIP Port	5062	?
	RPort	Disabled	?
	SIP Session Timer (seconds) T1	0.5	?
	SIP Session Timer (seconds)T2	4	
	SIP Session Timer (seconds)T4	5	
	Subscribe Period(seconds)	1800	?
	DTMF Type	RFC2833	?
	How to INFO DTMF	DTMF-Relay	
	DTMF Payload (seconds)	101	
	100 reliable retransmission	Enabled	?
	Enable Precondition	Disabled	?
	Subscribe Register	Disabled	?
	Subscribe for MWI	Enabled	?
	MWI Subscription Period (Scope:0~84600) (seconds)	3600	
	Caller ID Header	FROM	?

### 6.3. Administer Codec

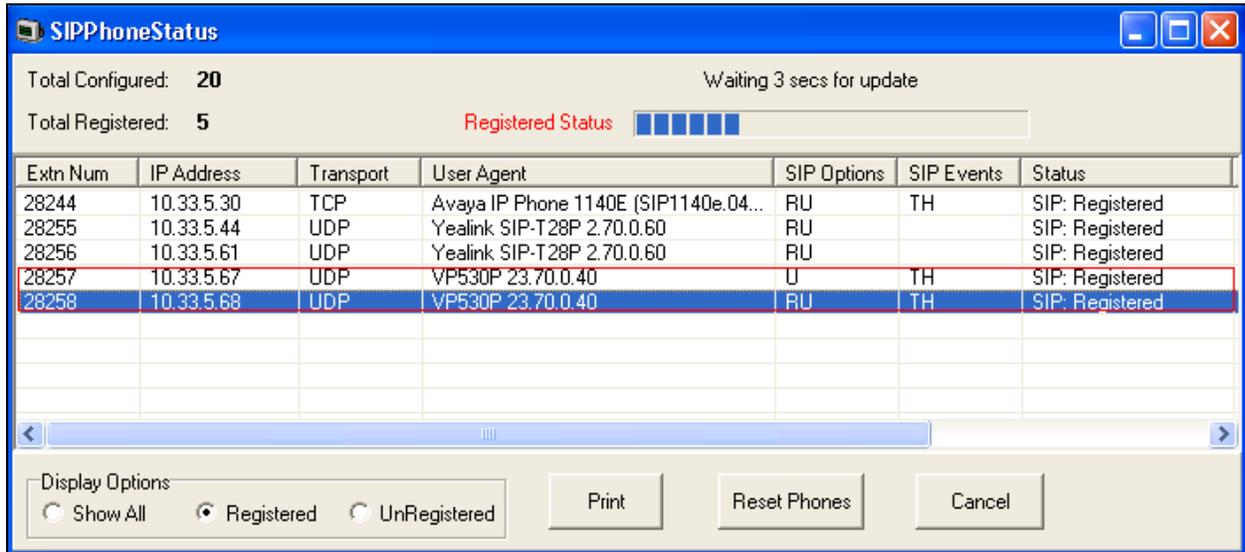
Expand the **Codecs** section in the **Account** page. Add desired voice and video codecs that the VP530 supports in the two **Enable Codecs** table. Note that the voice codec used to establish call in the IP Office is decided by the codec setting in the IP Office system and not by list of codes in the **Enable Codes** table on the VP530 phone. Click **Confirm** (not shown) button to save change in the Codec section.

Yealink		Status	Account	Network	DSS Key	Phone	Directory	Security
Basic		Account			Account 1		NOTE	
Codecs								
Advanced								
		Voice codecs						
		Disable codecs			Enable codes			
		AACLIC ILBC	→	PCM PCMA G722 G729 G723	↑			
			←		↓			
		Video codecs						
		Disable codecs			Enable codes			
			→	H264 H263 mp4v-es	↑			
			←		↓			

## 7. Verification Steps

The following steps may be used to verify the configuration:

- From a PC which the **Avaya IP Office Monitor** application installed, select **Start > All Programs > IP Office > Monitor** to launch the application. The **Avaya IP Office SysMonitor** window is displayed (screen not shown) and then select **Status > SIP Phone Status** from the top menu. The **SIPPhoneStatus** window is displayed as below.



The screenshot shows the SIPPhoneStatus application window. At the top, it displays 'Total Configured: 20' and 'Total Registered: 5'. A progress bar indicates 'Registered Status' with 5 bars filled. Below this is a table with columns: Extn Num, IP Address, Transport, User Agent, SIP Options, SIP Events, and Status. The table contains five rows of data, with the last two rows (28257 and 28258) highlighted in blue. At the bottom, there are 'Display Options' (Show All, Registered, UnRegistered), and buttons for 'Print', 'Reset Phones', and 'Cancel'.

Extn Num	IP Address	Transport	User Agent	SIP Options	SIP Events	Status
28244	10.33.5.30	TCP	Avaya IP Phone 1140E (SIP1140e.04...	RU	TH	SIP: Registered
28255	10.33.5.44	UDP	Yealink SIP-T28P 2.70.0.60	RU		SIP: Registered
28256	10.33.5.61	UDP	Yealink SIP-T28P 2.70.0.60	RU		SIP: Registered
28257	10.33.5.67	UDP	VP530P 23.70.0.40	U	TH	SIP: Registered
28258	10.33.5.68	UDP	VP530P 23.70.0.40	RU	TH	SIP: Registered

- Verify that there is an entry for each Yealink VP530 SIP extensions from **Section 5.4** and the Status is **SIP: Registered**.
- Place video calls from and to Yealink VP530 SIP phone and verify that the calls are successfully established with two-way video and talk path.

## 8. Conclusion

During compliance testing, Yealink VP530 SIP Video phone successfully registered with Avaya IP Office 500 V2 Release 8.1, placed and received calls to and from SIP and non-SIP telephones, and executed other telephony features like three-way conference, transfers, hold, etc. Yealink VP530 SIP Video phone was compliant with Avaya IP Office Release 8.1.

## 9. Additional References

The following Avaya product documentation can be found at <http://support.avaya.com>

[1] IP Office 8.1GA Knowledge Base Documentation, December 17, 2012.

[2] Avaya IP Office Application Server Installation and Management, Release 8.1, Oct 2012, Document number 15-601011.

The following Yealink VP530 SIP phone documents can be found at <http://www.yealink.com>

[1] Yealink VP530 Quick Installation Guide.pdf

[2] Yealink VP530 User Guide.pdf

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