



**SBX IP 320™**

---

**IP7000 Remote Phone Configuration Guide v1.0**



---

**VERTICAL™**



# SBX IP 320 for IP7000 Phone Setup Guide

## **Supported IP phones:**

- IP7008D, IP7024D, IP7024LD
- NomadIP Wireless
- Nomad SP Soft Phone

This guide is specifically for setting up the IP7000 series telephones.

## **Minimum requirements:**

### **System**

- SBX IP 320 system with VOIP card
- Static IP address for VOIP card. If NAT is used, it must be a 1-to-1 NAT.
- Separate IP address for the KSU's LAN port for system administration  
Note: No VoIP communication takes place on the KSU LAN port
- KSU version 1.0Cf
- VOIP card software version B.1Dq

### **Installed Environment**

- CAT5E or higher patch cords from VOIP card to LAN Switch
- No hubs
- Adequate bandwidth for the anticipated number of H.323 VoIP calls

## **IP endpoint licensing**

Nomad SP requires a per-seat license. Two seats are included automatically. You do not have to install activation codes for these two seats.

IP7000 series and NomadIP wireless phones require no license.

### ***Note:***

Entering IP address information to the KSU database from a digital phone is performed differently from programming IP settings in an IP remote phone.

Digital Keypad on the KSU: Enter digits in groups of three, with no punctuation or decimal.

Example: To program the address 192.168.1.3, dial 192168001001 > Save

IP phone: Enter digits with an asterisk [\*] as the decimal.

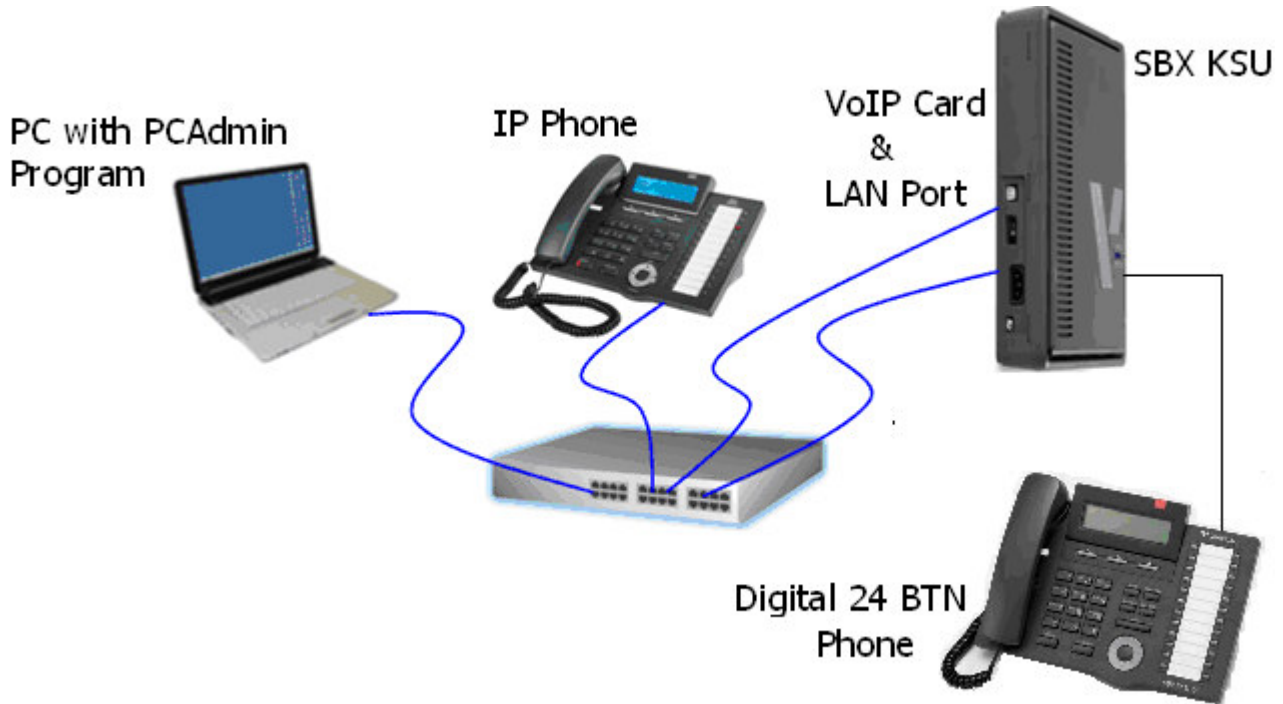
Example: To program the address 192.168.1.10, dial 192\*168\*1\*10 > Save.



**IP Addressing**

To begin, you will need to obtain IP addresses from the network administrator for the location in which you are setting up the SBX IP 320 system. Log them here for reference while programming the system:

	<b>VOIP card (VOIB)</b>	<b>KSU LAN port</b>	<b>IP Phone (may be DHCP)</b>	<b>Your PC (may be DHCP)</b>
IP Address				
Subnet Mask				
Default Gateway				



You will also need a 24-button SBX digital telephone to set up the system.

For a typical test-bench or demonstration setup, you need four connections to a LAN switch, each via a straight-through CAT5E patch cord as shown above.

You may use the following IP addressing information to set up a closed demo of the IP phone.

**NOTE:** These addresses will not function in a wide-area network or the Internet, they are for testing and demonstration purposes only:

	<b>VOIP card</b>	<b>KSU LAN port</b>	<b>IP Phone</b>	<b>Your PC</b>
IP Address	192.168.1.4	192.168.1.3	192.168.1.5	192.168.1.2
Subnet Mask	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
Default Gateway	192.168.1.1	192.168.1.1	192.168.1.1	192.168.1.1

## Preparation:

1. Before starting, verify that your VOIP card is installed into the system properly and that the card is recognized in the KSU database.
2. KSU DIP switches must be set to enable the system to retain programming changes.
3. Set your PC IP address, default gateway, and subnet mask as shown in the table on the previous page.
4. Set the KSU's IP addressing using PGM 108 when logged into KSU administration from the 24-button digital attendant station (station 100 by default). This assigns the IP address to the KSU's LAN port. The configuration for the VOIP card begins here.

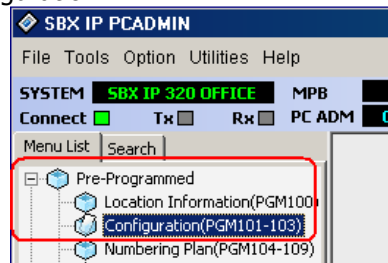
## PCAdmin Connection

Follow the PCAdmin User's Guide or the Tech Tip regarding setting up PCAdmin to establish connection to the SBX system from PCAdmin on your PC. Remember that when connecting to the SBX using a LAN switch, a straight-through patch cable, not a crossover cable, is required.

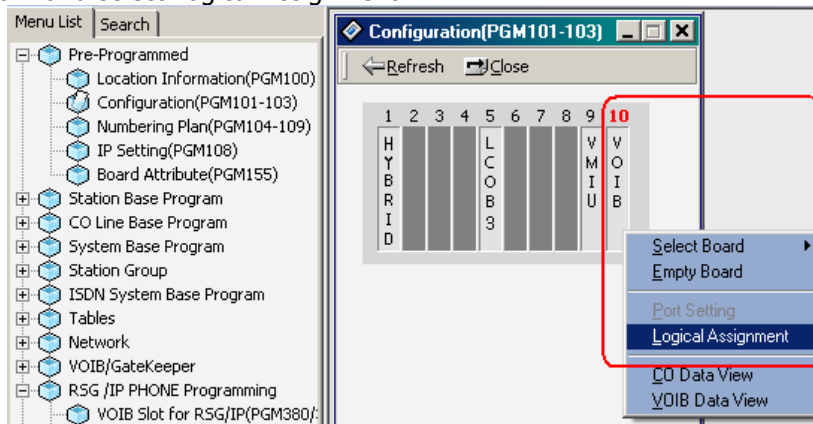
## Configuring The VoIP Card Using PCAdmin

(Note: Digital phone-based programming is shown on page 12)

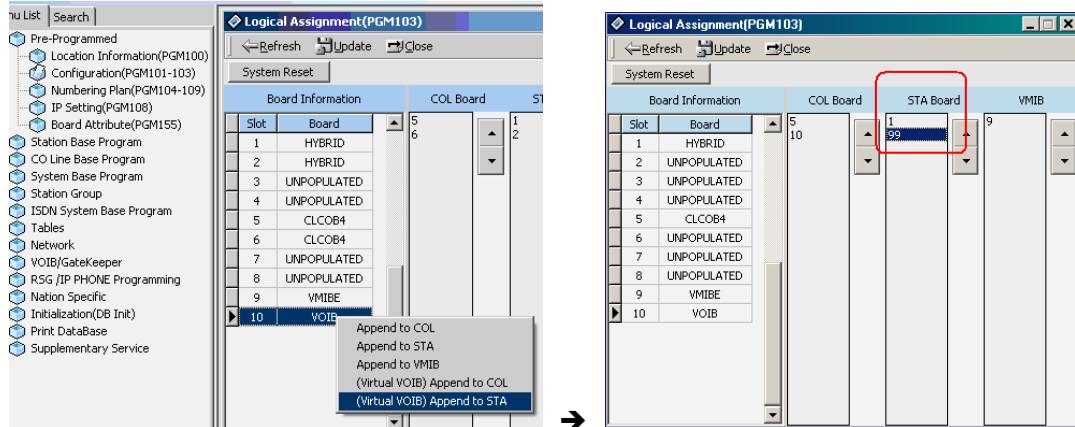
Double-click Pre-programmed > Configuration



Right-click on the VoIB and select Logical Assignment

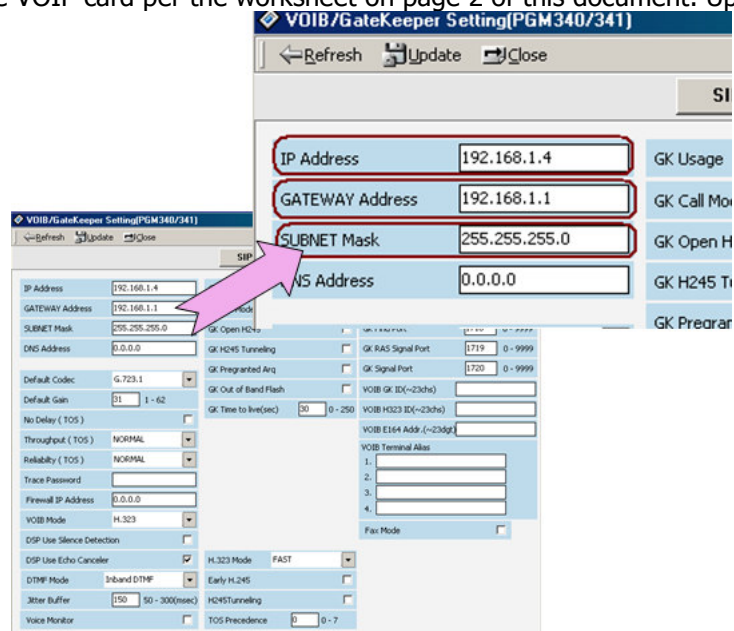


In Logical Assignments right click VoIB and Select (Virtual VoIB) => Append to Station. A notation of 99 will be entered in the STA Board field.

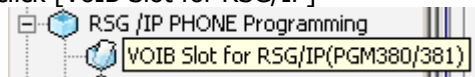


### Update

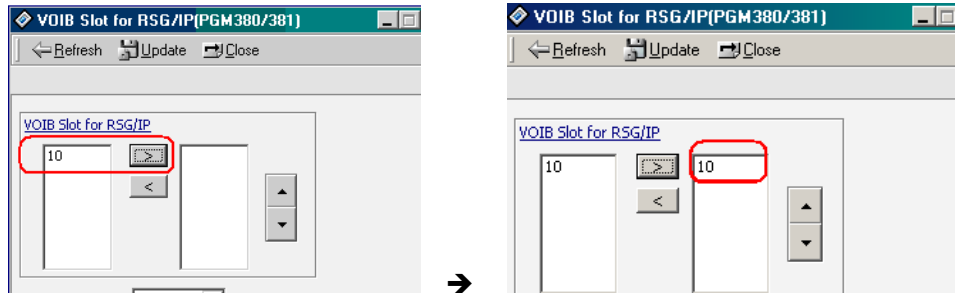
In VoIB Gateway > VoIB Gatekeeper Settings enter the IP Address, Default Gateway and Subnet Mask that you are assigning to the VOIP card per the worksheet on page 2 of this document. Update.



In RSG IP Programming, Double-click [VoIB Slot for RSG/IP]

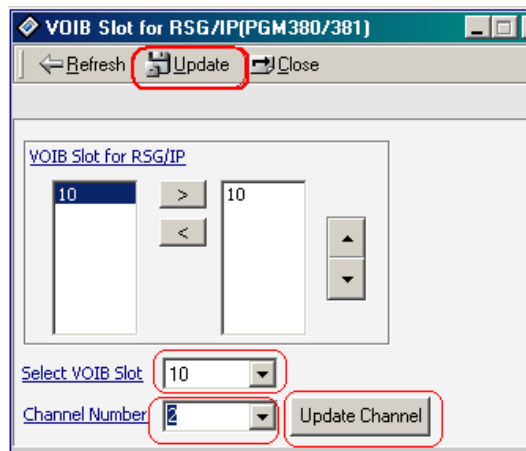


Select the VoIB card (10) and click the > sign

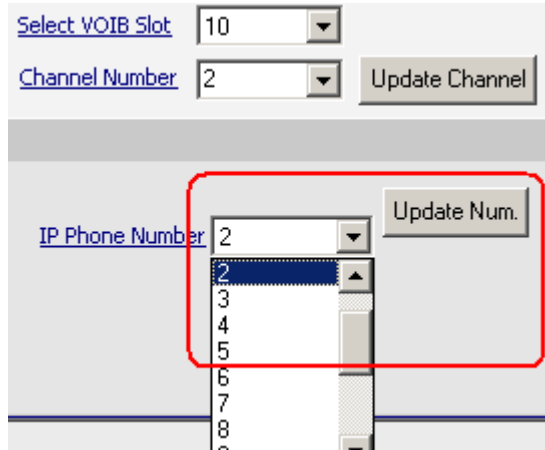


You will see the card slot on the right side. Click Update.

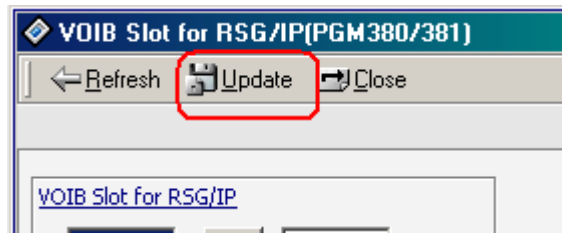
Select the card from the VoIB Slot dropdown. Select 2 for the number of channels to be used for IP Phones from the Channel Number dropdown and click Update Channel.



Select the 2 from the IP Phone Number dropdown and click Update Num. This tells the system to assign 2 IP stations.

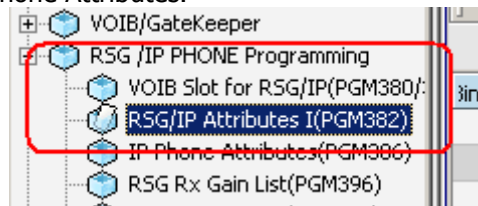


Update



Reset the KSU.

RSG/IP Programming > VoIB IP Phone Attributes.



Double-click on bin #1 (row #1). Enter the MAC address which you will find labeled on the bottom of the IP phone and click Update.

The image shows two screenshots of the 'IP Phone Attributes(PGM386)' configuration window. The left screenshot shows a table with 9 rows, all with default MAC addresses (00:00:00:00:00:00). A red arrow points to the first row. Below the table, the MAC address field for bin 1 is highlighted with a red box and contains '00:40:5A:13:95:09'. The 'Update' button is also highlighted with a red box. The right screenshot shows the same window after the update, with the MAC address for bin 1 now '00:40:5A:13:95:09' and the IP address '0.0.0.0'.

Bin No.	MAC Address	IP Address	Port View	Port Num
1	00:40:5A:13:95:09	0.0.0.0		0
2	00:00:00:00:00:00	0.0.0.0		0
3	00:00:00:00:00:00	0.0.0.0		0
4	00:00:00:00:00:00	0.0.0.0		0
5	00:00:00:00:00:00	0.0.0.0		0
6	00:00:00:00:00:00	0.0.0.0		0
7	00:00:00:00:00:00	0.0.0.0		0
8	00:00:00:00:00:00	0.0.0.0		0
9	00:00:00:00:00:00	0.0.0.0		0

**NOTE:** You must enter the colon characters in the MAC address.

You do not need to program the other data values in PGM 386 for IP7000 remote phones. The ID and Password values will be used when you are configuring a Nomad SP Soft Phone.

## **Configuring IP phone settings**

To verify connectivity to the VoIP card, you should ping the VoIP card from where the phone is located.

Setting up the IP Phone will vary dependent on the network infrastructure, IP Address Schema and location of the System. You will need to have the following information to properly configure the IP Phone.

1. The IP Address of the VoIP card.
2. Is IP Address information supplied dynamically (DHCP) or statically?
3. An IP Address and Subnet Mask for the IP Phone (either static or DHCP).
4. The Default Gateway IP Address (either static or DHCP).

Note: If IP Addresses are static you will need to obtain the correct IP Address, Subnet Mask and Default Gateway information from the IT Administrator.

Connect the IP Phone to the local network. It can be powered with an AC power adaptor or a port on a POE (Power Over Ethernet) Switch. The power adaptor is part #6899-PS. When powered, the IP Phone will complete its boot sequence and attempt to connect to the VOIP Card. If the phone is unable to connect to the VOIP card the display will show:

NO RESPONSE FROM MFIM  
SET [\*] - RESTART [#]

Press \* to begin configuring the phone.

Use the Volume + and - to navigate the settings. Enter information as follows:

1. If you are prompted for a password : Dial 147\*
2. At MODE[R/L] ? (This is the Remote/Local Setting. All IP Phones are considered remote to the SBX320 no matter where they are physically or logically. Set the mode to REMOTE. Press # until the display shows:

MODE[R/L] ?  
[REMOTE] – CHANGE[#]

Press Hold/Save to store the setting as REMOTE.

3. Press the volume + until DHCP ? appears. If IP Addressing is assigned via DHCP this should be enabled. If IP Addressing is Static this should be disabled. Press # until the display shows the correct state. Press Hold/Save to retain the entry.
4. Press the Volume + until MFIM IP ADDRESS (DOT:\*) appears. This is the VOIB IP Address Field. MFIM = VOIB. Enter the IP Address on the dial pad. Press the \* to enter a . (dot). For example, to enter 192.168.1.10, dial 192\*168\*1\*10. Press Hold/Save to retain the entry.

MFIM IP ADDRESS(DOT:\*)  
xxx.xxx.xxx.xxx (The VOIB IP Address)



- Press the Volume + until ROUTER IP ADDRESS(DOT:\*) appears. This is the Default Gateway IP Address Field. If IP Addressing is being assigned you won't need to program this field. If IP Addressing is statically assigned enter the IP Address of the Default Gateway and press Hold/Save.

ROUTER IP ADDRESS(DOT:\*)  
xxx.xxx.xxx.xxx (Default Gateway IP Address)

- Press the Volume + until PHONE NET MASK(DOT:\*) appears. This is the Subnet Mask associated with the IP Address of the phone. If IP Addressing is being dynamically assigned you won't need to program this field. If IP Addressing is statically assigned enter the IP Address of the Default Gateway and press Hold/Save.

PHONE NET MASK(DOT:\*)  
xxx.xxx.xxx.xxx (Subnet Mask)

- Press the Volume + until PHONE IP ADDRESS(DOT:\*) appears. This is the station IP Address Field. If IP Addressing is being dynamically assigned you won't need to program this field. If IP Addressing is statically assigned enter the IP Address of the Station and press Hold/Save.

PHONE IP ASSIGNED(DOT:\*)  
xxx.xxx.xxx.xxx (Station IP Address)

When these fields have been completed, press the Speaker button to reboot the IP Phone. The phone will contact the VOIP card and register to the system. It will receive its station number assignment from the KSU.

In this example, the IP address and station number information appears after two IP phones have registered to the system:

IP Phone Attributes(PGM386)					
← Refresh → Close					
Lin No.	MAC Address	IP Address	Port View	Port Num	NAT IP Address
1	00:40:5A:13:95:09	192.168.1.5	108	5588	192.168.1.5
2	00:40:5A:13:95:04	172.19.5.39	109	5588	172.19.5.39
3	00:00:00:00:00:00	0.0.0.0		0	0.0.0.0
4	00:00:00:00:00:00	0.0.0.0		0	0.0.0.0
5	00:00:00:00:00:00	0.0.0.0		0	0.0.0.0

Test the IP phone by dialing an extension number.

## **Programming VOIP card settings from a digital keyset**

This is an alternative to PCAdmin programming shown above. Disregard this section if you have configured the IP phone using PCAdmin.

1. Enter KSU programming from the digital attendant phone
2. Press PGM
3. Dial 103 (Logical Slot Assign)
4. Press Flex Button 2 (STA)
5. What to enter will depend on what cards are installed. If there are two CHB308 cards installed the display will show 01 02 .. ..  
Dial 01 02 99 to assign station ports to the VOIB.
5. Save

Assign IP Address to the VoIB.

1. Press PGM
2. Dial 340 (VoIB Attributes)
3. Press Flex Button 1 (IP ADDR)
4. Dial the IP Address (eg 192.168.1.10 Dial 192168010010)
5. Save
6. Press Flex Button 2 (Gateway ADDR) - Mandatory
7. Dial Default Gateway for VoIB (eg 192.168.1.1 Dial 192168001001)
8. Save
9. Press Flex Button 3 (Subnet Mask)
10. Dial Subnet Mask (eg 255.255.255.0 Dial 255255255000)
11. Save

VoIB Slot/Port Usage Assignment

1. Press PGM
2. Dial 380 (VoIB Slot Assignment)
3. Press Flex Button (VoIB Slot)
4. Dial 10 (Slot Number to Program)
5. Save
6. Press Flex button 2 (RSG/IP channel Assign)
7. Dial 10 (Slot Number)
8. Dial 4 (or number of channels to reserve for IP Phones)
9. Save

## VoIB IP Station Assignment

1. Press PGM
2. Dial 381 (RSG/IP No Assign)
3. Press Flex Button 2
4. Dial the number of IP Stations you wish to program (eg 04)
5. Save

Reset the system and VoIP card.

Program IP Phone Attributes – The number of bins available to program will correspond to the number of IP phones programmed in PGM 381.

1. Press PGM
2. Dial 386 (IP Phone Attrib)
3. Dial the Bin Number (eg 01 This would be the first IP Station)
4. Press Flex Button 1
5. Dial the MAC Address of the IP Phone

**NOTE:**

\*=A, #=B, NAV Left=C, NAV Right=D, NAV Up=E, NAV Down=F

Save