

SIP Trunk Configuration Guide

using



www.bandwidth.com 1-800-808-5150

The information contained in this document is specific to setting up SIP connections between Vertical SBX IP 320 and Bandwidth. If you require assistance with this application, please contact Vertical Customer Support.

SIP Trunk Setup

> PC Admin is needed to completely integrate SIP trunking with the SBX system.

After starting the PC Admin program, select the program settings from the Menu List tab as indicated in Steps 1-9 for the SBX system to work with the *Bandwidth* SIP trunks.

1.) **Station Attribute 1 (PGM 111)** – Program the SIP User ID Table that will correspond with the SIP account (programmed later in SIP Attributes 2).

File Tools Option Utilities Help							
SYSTEM SBX IP 320 OFFICE MP		078P-1.0Ce FEB/08 D 1.0Ai 2008.02.15		Nation : America	Sit	e Name :	
Menu List Search		on Attribute I(PGA	A111)				_ 🗆 ×
∃- 🌍 Pre-Programmed ∃- 🕥 Station Base Program		sh 🗒 Update 📑	I <u>C</u> lose				
Station List(PGM110/111/112/1 Flex Button Assignment(PGM11	Station N		147	STA Attr II S	TA Attr III	STA Attr IV	
Display station COS(PGM116/1		Auto Speaker			Edit	ool	
CO Group Access Station(PGM	100	ON		Station 100 <	> Edit OK	Edit OK and Next	Close
Internal Page Zone Access(PGI		ON	-			All Edit OK	
Conference Page Zone (PGM1)	102	ON		Select All 🛛 🔽		All Edit OK	
ICM Tenancy Group(PGM120)	103	ON		✓ Auto Speaker	ON 👻	ICM Group	1
Hot / Warm Line (PGM122)	104	ON		Call Forward		Error Tone for TAD	OFF V
SMDR Account Group (PGM124	105	ON				_	
Station IP List (PGM126)	106	ON		DND	ON 💌	- · L	IFF 👤
Hot Desk Attribute(PGM250)	107	ON		🔽 Data Line Security	OFF 👤	🔽 Loop LCR Account	OFF 💌
🖸 🌍 CO Line Base Program	108	ON		🔽 Howling Tone to SLT	ON 💌	VMIB MSG Type	LIFO
🛛 🌍 System Base Program	109	ON		ICM Box Signaling	OFF 🔻	☑ OFFNET Call Forward	I Enable 💌
E Station Group	110	ON		V No Touch Answer		Forced HF	OFF
E- 🌍 ISDN System Base Program	111	ON		Page Access	OFF V	CIDSLT CAS GAIN	
H Network	112	ON					
T VOIB/GateKeeper	113	ON		🔽 Ring Type	0 🔽	CIDSLT FSK GAIN	5 💌
RSG /IP PHONE Programming	114	ON		🔽 Speaker Ring	S 💌	Caller V.Over	OFF
🗄 🍈 Nation Specific	115	ON		🔽 Speaker Phone	ON 🔻	🔽 SIP User ID Table	1 💌
🛛 🍈 Initialization(DB Init)	116	ON		VMIB SLOT		Listen Redial DTMF	ON -
🛛 🍅 Print DataBase	117	ON	-			P LINGT TOUGLD THI	

2.) **CO Line List (PGM 140)** – If the SIP carrier will be providing DID (direct inward dialing) trunks, program the VoIB trunks used for SIP integration as ISDN DID.

File Tools Option Utilities Help												
SYSTEM SBX IP 320 OFFICE MPE Connect Tx Rx PC A		078P-1.0Ce FE D 1.0Ai 2008.0	•	Natio	on :	America		5	iite Name :			
Menu List Search	🛷 CO Li	ne List(PGM	140/141	/142/14	3)						_ 🗆	
⊕ 🌍 Pre-Programmed ⊕ 🕥 Station Base Program												
CO Line Base Program	CO Num	7 - 14	СО	Ring Assi	gn C	0 Attr I	CO At	tr II	CO Attr III	t CO	ISDN Attr	
CO Ring Assignment(PGM144/:						N	ormal					
CO Line Attribute III(PGM146)	CO Num	Туре	Day	Msg	Night	Msg	Weekend	Msg)n Demand	Msg		
SMS Attribute(PGM147)	7	ISDN DID									1	
🗈 🍘 System Base Program	8	ISDN DID										
🗄 👘 Station Group	9	ISDN DID										
🗄 🌍 ISDN System Base Program	10	ISDN DID										
⊕ 🌍 Tables म⊖ în Network	11	ISDN DID										
	12	ISDN DID									-	
E RSG /IP PHONE Programming	13	ISDN DID									-	
🗄 🍈 Nation Specific	14	ISDN DID										
🗄 🍈 Initialization(DB Init)												
🗈 🕎 Print DataBase						Update 1	ool					
🗄 💮 Supplementary Service	CO Num		/pe						Line	late	1	
	7 -	14 IS	DN DID	-						and the		
									Cl	ose		

3.) **CO Line ISDN Attributes (PGM 143)** – Set the COLP and CLIP Table Idx fields to 0, set the Call Type to Unknown, the DID Conv Type to 2 (for integration with Flexible DID Table, PGM 231), set the DID Remove Num to 7 (or other entry if the carrier is sending more than 10 digits), and turn ISDN ENBLK Send to On.

A												
SBX IP PCADMIN												
File Tools Option Utilities Help												
SYSTEM SBX IP 320 OFFICE MPB	VI)78P-1.0Ce	FEB/08	Nation : An	nerica		Site	Name :				
Connect Tx Rx PC A	DM GSVA	D 1.0Ai 200	8.02.15									
Menu List Search	🛷 CO Li	ne ISDN At	tributes(PC	GM143)							- 🗆 ×	
E- Station Base Program	<u>R</u> eme	sn <u>s</u> ucios	e									
CO Line Base Program CO Line List(PGM140/141/142/	CO Num	7	- 14	CO List		CO Att	rI	CO Attr II	CO At	tr III	CO CID	
CO Ring Assignment(PGM144/:	CO Num	OLP Table In	LIP Table Id	Call Type		Conv type	Remove N	SDN ENBLK Send	CLTransit	n for	Jum Plan for Call	
CO Line Attribute III(PGM 146)	7	0	0	Unknown	0.00	2	7	ON		KNOV	UNKNOWN	
CO CID Attribute(PGM147) SMS Attribute(PGM292)	8	0	0	Unknown		2	7	ON		KNOV	UNKNOWN	
	9	0	0	Unknown		2	7	ON	CFW	KNOV	UNKNOWN	
System Base Program Station Group		· .	-			-	-					
	Update Tool											
Tables			_									
• Network	CO Num	`	COLP Table	-	-	🔄 🗹 Num I	Plan for Cal	ling UNKNOWI	N	-		
🗄 🍈 VOIB/GateKeeper	7	F	CLIP Table	Idx 0	-	🛛 🔽 Num I	Plan for Cal	led UNKNOWI	N	-	Update	
RSG /IP PHONE Programming		I P	Call Type	Unknown	-	ISDN	SS CD		NO Service	┓.		
Nation Specific		F	DID Conv t	vpe 2	•	I 🔽 ISDN	1 Digit Ren	nove	OFF	Ţ	Close	
Initialization(DB Init) Print DataBase			DID Remov		-		CP Inband		OFF	<u> </u>		
Supplementary Service	Sele	ct All 📝 📑			_		Type(0~2)	NORMA	J	÷		
			ISDN ENBLI	1			ype(0~2)	INORMA	NL .			
		F	CLI Transit	CFW	-	·						
						Scree	ening Indica	itor	0	-		

4.) **COLP Table (PGM 201)** – Enter the COLP digits in Index 0 (this will correspond with PGM 143 buttons 1 and 2). The COLP digits will most likely be the same as the Authorization User Name in SIP Attributes 2.

SBX IP PCADMIN		
File Tools Option Utilities Help		
SYSTEM SBX IP 320 OFFICE MPB Connect Tx Rx PC A		Nation :
Menu List Search	COLP Table (PGM201)	_ 🗆 🗙
P- Pre-Programmed P- Station Base Program O Line Base Program	∫ ← <u>R</u> efresh <u>⊐JC</u> lose	
System Base Program Station Group	Index COLP Digits	
ISDN System Base Program	0 111111111	
ISDN Attributes (PGM200)	1	
COLP Table (PGM201)	2	
E-C Network	3	
VOIB/GateKeeper	4	
RSG /IP PHONE Programming	6	
	7	
H- Print DataBase	8	
Supplementary Service	9	
•	10	
	11	
	12	
	13	
	14	
	Update Tool	
	Update/Delete and next	
	Index COLP Digits	_
	0 111111111	
	Update Delete Clos	se
	<u> </u>	

5.) Flexible DID Table (PGM 231) – Program the ring assignments for the DID routes in this area. Use the last 3 digits of the inbound numbers that the SIP carrier provides as the table numbers.

SBX IP PCADMIN									- 8
File Tools Option Utilities Help									
SYSTEM SBX IP 320 OFFICE MPB Connect Tx Rx PC AU			tion : Ame	rica	Site Name	:			
Menu List Search									
	🧇 Flexible DID Table	(PGM231)							- 0
E Station Base Program	Refresh 🚽 Close								
CO Line Base Program		4.00				B (1)			
🗄 🍈 System Base Program	Enter Table Range	100	100	Refresh A	All Hange	Refresh			
🗄 💮 Station Group	Index Name	Day Type	Day Dest.	Night Type	Night Dest.	Weekend Type	Weekend Dest.	Reroute Type	Reroute De
🗄 🌍 ISDN System Base Program	100	Station	100	Station	100	Station	100	Not Assigned	
Tables									
LCR Assignment (PGM220) LCR - LDT Table (PGM221)									
LCR - DMT Table (PGM222)									
LCR Table Initialization (PGM22									
Toll Exception Table (PGM224)									
🍈 Canned Toll Table (PGM225)	•								
- Demogency Code Table (PGM22									
				Upa	ate Tool				
Customer Call Routing(PGM228 Executive/Secretary Table(PGN	Index 100 N	lame		Update	Delete	All Initial	All Delete	Close	1
- Carl Executive/Secretary Table(PGM - Carl Flexible DID Table(PGM231)									1
System Speed Zone(PGM232)	🔲 Edit with Range								
Weekly Time Table(PGM233)	Day Type	Night Type		Weekend Type	Rero	ute Type			
💮 Voice-Mail Dialing Table(PGM23		Station		Station		ssigned 👻	1		
				Weekend Dest.			1		
Local Code Table (PGM204)	Day Dest.	Night Dest.		Weekend Dest.	Rero	ute Dest.	-		
Network VOIB/GateKeeper	100	100		100					

6.) Networking CO Line Attribute (PGM 322) – Enter the VoIB trunks used for the SIP integration. Set the Networking CO Group to 0, the Networking CO Line Type to PSTN, Gatekeeper Usage to Off, VoIP mode to SIP, and program DTMF Mode to Inband DTMF, unless the carrier requires 2833.

SBX IP PCADMIN							
File Tools Option Utilities Help							
SYSTEM SBX IP 320 OFFICE MPB Connect Tx Rx PC AD		D78P-1.0Ce FEB/08 D 1.0Ai 2008.02.15	Nation : Am	erica	Site Na	me :	
Menu List Search	Netw	orking CO Line Att	ribute(PGM322)			-	
]	esh <u>H</u> Close					
CO Line Base Program System Base Program	CO Num	7 - 14	CO ISDN	Attr			
🗉 👘 Station Group	CO Num	Networking CO Group	Networking CO Line Type	Gatekeeper Usage	VOIP Mode	DTMF Mode	
🗄 🌍 ISDN System Base Program	7	0	PSTN	OFF	SIP	Inband DTMF	
Tables	8	0	PSTN	OFF	SIP	Inband DTMF	
Network	9	0	PSTN	OFF	SIP	Inband DTMF	
Networking Attributes(PGM320 Networking CO Line Attribute(F	10	0	PSTN	OFF	SIP	Inband DTMF	
Network Numbering Plan Table	11	0	PSTN	OFF	SIP	Inband DTMF	
	12	0	PSTN	OFF	SIP	Inband DTMF	
RSG /IP PHONE Programming	13	0	PSTN	OFF	SIP	Inband DTMF	
🔁 🌍 Nation Specific	14	0	PSTN	OFF	SIP	Inband DTMF	
🗄 🍈 Initialization(DB Init)							
🕀 🔿 Print DataBase	L		Update 1	Tool			
⊡ ·· 🌍 Supplementary Service		Select /	•				
	CO Num				Mode	SIP	
	7 -	14					4
		V Net	working CO Line Type PS	TN 🔽 🗹 DTMF	Mode	Inband DTMF	-
		🔽 Gat	tekeeper Usage OF	F 🔽			
		Uţ	odate Close				

7.) **VoIB/Gatekeeper Setting (PGM 340)** – Program the IP Address, Gateway Address, Subnet Mask, DNS address and Firewall address if you are using a one to one NAT through firewall/router for the VoIB card. Set the VoIB mode to SIP unless the system is networked with another system, if so, use the DUAL option. Program the DTMF Mode so it matches the same field in PGM 322.

File Tools Option Utilities Help	
SYSTEM SBX IP 32/0 OFFICE MPB VD78P-L0Ce FEB/08 Nation : America Site Name : Connect Tx Rx PC ADM GSVAD L0A/2008.02.15	
Menu List Search VOIB/GateKeeper Setting(PGM340/341)	- 🗆 ×
⊕ Pre-Programmed ⊕ Refresh ☐ Update ☐ Gose	
SIP Attr 1 SIP Attr 2	
B Station Group	
ISDN System Base Program IP Address 192.168.1.2 GK Usage GK Address 0.0.0	
Network GATEWAY Address 192.168.1.1 GK Call Mode Direct V GK Find Address 224.0.1.41	
VOIB/Gatekeeper Setting(PGM	0 - 9999
OSIP Attribute 1 DNS Address 4.79.212.236 GK H245 Tunneling GK RAS Signal Port 1719 (0 - 9999
RSG /IP PHONE Programming GK Pregranted Arq GK Signal Port 1720 (0 - 9999
GK Out of Band Flash	
Print DataBase Default Gain 31 1 - 62 GK Time to live(ser) 30 0 - 250 VOTB H323 TD/w23che)	
Supplementary Service No Delay (TOS)	
VOIB E164 Addr. (~23dgt) Throughput (TOS) NORMAL VOIB Terminal Alias	
Reliabity (TOS) NORMAL	
Trace Password 2.	
Firewall IP Address 0.0.0.0 4.	{
VOIB Mode SIP	-
DSP Use Silence Detection	
DSP Use Echo Canceler 🔽 H.323 Mode FAST	
DTMF Mode Inband DTMF 🗾 Early H.245	
Jitter Buffer 150 50 - 300(msec) H245Tunneling	
Voice Monitor TOS Precedence 0 0 - 7	

8.) SIP Attribute 1 – Program the Proxy Server Address (216.82.224.202) Proxy Registration Timer, Use Outbound Proxy check box, Primary and Secondary DNS Addresses, and Domain provided by the SIP carrier. Enable the remaining checkboxes (Remote Party ID, 181 message, SIP name and 100 Rel Support service if the SIP carrier requires them.

File Tools Option Utilities Help							
		VD78P-1.0 GSVAD 1.0Ai 2		· ·	Nation :	America	
Menu List Search		SIP Attribute	1				
Pre-Programmed Station Base Program		← <u>B</u> efresh 🔚 Up	date 📑 🖸 🖾	ose			
CO Line Base Program System Base Program				VOIB	Setting	SIP Attr 2	
Station Group ISDN System Base Program		Proxy Server Addr	ess	4	.79.212.23	6	
Tables Tables Network VOIB/GateKeeper VOIB/GateKeeper Setting(PG	PGM	Proxy Server Port				5060	
		Proxy Registration	Timer			3600	
SIP Attribute 1		Use Outbound Pro:					
SIP Attribute 2 RSG /IP PHONE Programming	111	Primary DNS Addre	:55		4	.79.212.236	
Nation Specific Initialization(DB Init)	111	Secondary DNS Ad	dress		2	16.82.224.202	
🕀 🍈 Print DataBase	111	Domain			4.79.212.2	:36	
Supplementary Service	111	Connection Mode	UDP	-	100Rel Su	ipport	
	111	Use Rport Method			Use Single	Code Only	
		Remote Party ID			181 Messa	age	
		IP Centrex			SIP Name	Service	
		Asserted ID Usage			Use Priva	icy.	
		Use Ext. No					

9.) SIP Attributes 2 – Select the index number you used in Station Attributes 1 (PGM 111) Enter the User ID (*phone number*@216.82.224.202), Authentication User Name and set User ID Registration to provision.

SBX IP PCADMIN							_ 8 ×
File Tools Option Utilities Help							
SYSTEM SBX IP 320 OFFICE MPB Connect Tx Rx PC A		VD78P-1.0Ce FEB/08 Nat 55VAD 1.0Ai 2008.02.15	ion : America	Site Name :			
Menu List Search	Ø 5	IP Attribute 2					
① ① Station Base Program		<u>R</u> efresh <u>⊐</u> 9 <u>C</u> lose					
CO Line Base Program System Base Program					VOIB Setting	SIP Attr 1	
	Index	User ID	Authentication User Name	Authentication User Par	ssword	Contact Number	User ID Re
ISDN System Base Program	1	111111111@4.79.212.236	1111111111			Contact Hamber	Provision
⊕- 🍈 Tables	2						Provision
🔁 🌍 Network	3						Provision
UOIB/GateKeeper	4						Provision
VOIB/GateKeeper Setting(PGM	5						Provision
I SIP Attribute 1	6						Provision
RSG /IP PHONE Programming	7						Provision
🕀 🍈 Nation Specific	8						Provision
🗄 🌍 Initialization(DB Init)	9						Provision
Print DataBase	10						Provision
⊡-	11						Provision
	12						Provision
				Update Tool			
	Inde	ex 1 Contact Number	User ID Registration Provision	on 💌 🔽 User ID Us	age Asc Stn.		Upda
	U	ser ID		Authen	tication User Na	ime	
	1	111111111@4.79.212.236		1111111	1111		
	A	uthentication User Password		Authen	tication User Pa	ssword Repeat	

This completes the SIP Trunk configuration process. If you have any other questions, please contact Vertical Customer Support for assistance.

