Mitel SX-50, -200, -2000 System

LinkPlus Interface Guide

SpectraLink 6000 System

SpectraLink 8000 System

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About this Guide

Polycom is the market leader in multi-cellular wireless telephone systems for the workplace. We manufacture a range of products to suit any size installation. All Polycom products use our LinkPlus digital integration technology to integrate with various digital switch platforms. Using LinkPlus technology, Wireless Telephones (handsets) emulate digital telephone sets to deliver advanced capabilities such as multiple line appearances and LCD display features. This document explains the programming or administration required to use the host digital switch with the following Polycom products:

SpectraLink 6000 System - SpectraLink 6300 MCU

The SpectraLink 6000 System 3000 supports up to 3,200 handsets and up to 1,000 Base Stations. Up to 25 shelves can be interconnected for maximum system capacity.

SpectraLink 6000 System – SpectraLink 6100 MCU

Designed for smaller installations supporting up to 64 handsets and up to 16 Base Stations. Up to four MCU controllers can be interconnected for maximum system capacity.

SpectraLink 8000 Telephony Gateway

The SpectraLink 8000 Telephony Gateway is a wireless telephony product that provides high quality packetized voice communications using the Internet Protocol (IP).

Different models of SpectraLink Wireless Telephones vary in functional capabilities. This document covers the basic operational features of all handsets. However, certain handset or PBX features may not be supported by your emulation.

Related Documents

SpectraLink 6300 MCU : Operator's Console (1725-36125-001)

SpectraLink 6100 MCU: Installation and Operation (1725-36097-001)

SpectraLink 6020 Wireless Telephone and Accessories User Guide (1725-36092-001)

Available at http://www.polycom.com/usa/en/support/voice/proprietary_wireless/proprietary_wireless.html

SpectraLink 8000 Telephony Gateway: Administration Guide for SRP (1725-36028-001)

SpectraLink 8020/8030 Wireless Telephone and Accessories User Guide (1725-36023-001)

SpectraLink e340/h340/i640 Wireless Telephone: Configuration and Administration (SRP) (72-1065-09)

Available at http://www.polycom.com/usa/en/support/voice/wi-fi/wi-fi.html

Telephone Switch Interface Matrix (1725-36128-001)

Available at http://www.polycom.com/usa/en/support/voice/wi-fi/pbx_integration.html

Customer Support

Polycom wants you to have a successful installation. If you have questions please contact the Customer Support Hotline at (800) 775-5330. The hotline is open Monday through Friday, 6 a.m. to 6 p.m. Mountain time.

For Technical Support: technicalsupport@polycom.com

For Knowledge Base: http://www.polycom.com/usa/en/support/voice/voice.html

Icons and Conventions

This manual uses the following icons and conventions.

	Caution! Follow these instructions carefully to avoid danger.
	Note these instructions carefully.
Label	This typeface indicates a key, label, or button on SpectraLink hardware.

1

Plan the Interface

The system administrator programs the telephone system for use with the Wireless Telephone System using the normal administration terminal or procedures. Programming can be done after the handsets are registered.

Recommended programming includes assigning extension numbers to the handsets and programming features on the telephone system so they are easily accessible from the handsets.

For analog interfaces, macro codes are in the document relating to configuring the system. See *SpectraLink 6300 MCU: Operator's Console, SpectraLink 6100 MCU: Installation and Operation*, or *SpectraLink 8000 Telephony Gateway: Administration Guide for SRP*.

The following information will help the system administrator set up the SpectraLink Wireless Telephones to operate in a way that feels familiar and comfortable to users.

Plan Programming

Digital Interface programming for the Wireless Telephone System will be faster if it is planned in advance by verifying the parameters and features on the current telephone system and wired phones. The system administrator must assign extension numbers to the handsets and plan the functions (trunk access, toll restrictions, system features, ringing options etc.) to be programmed for the handsets.

One of these scenarios concerning how the handsets are programmed should apply to this site:

- All handsets are programmed alike: All handsets will be programmed exactly the same. Depending on the capabilities of the switch, the system administrator can often program one handset and use it as a model for all other handsets.
- Groups of handsets are programmed alike: Handsets are grouped into classes that are programmed alike. Depending on the capabilities of the switch, the system administrator can program

"model" handsets then use the model as a template to program the other handsets.

- All handsets are different: All handsets are programmed differently, so each handset will be programmed individually.

Before the handset System is installed, verify the customer data entries for the site's system and telephones, and plan the programming required for the handsets. Programming will be faster if you determine this information in advance.

It may also help to identify a wired set that is programmed exactly or close to the way the handsets should be programmed, and use the programming for that set as a model for programming the handsets.

Line/Call appearances

The handset supports up to nine line resources. Which trunks should ring at this handset? Which trunk will be selected when the user goes off-hook? What extension numbers will be assigned to the handsets?

Function buttons

The handset supports three flexible function buttons. Determine which features, if any, should be programmed on the handsets. These assignments should emulate assignments on the user's wired set.

Assign Extension Numbers

The wire contractor should inform the system administrator which port numbers have been designated for the handsets.

The system administrator may use the Extension Assignments Worksheet at the end of this document to track the port numbers, extensions, users, and features assigned to handsets.

The Wireless Telephone Display

The SpectraLink Wireless Telephone will display the telephone number as it is dialed.

Certain characters may be used by the system that are not implemented in the handset. Flashing characters are not implemented on the handset, nor is rolling or scrolling of text.

Although some desksets do not have a display, any display information sent by the system will be displayed on the handset.

Handset indicators

Line indicators are associated with line access keys. Status indicators or icons are associated with voicemail, low battery function, other functions, and service interruption. A left or right arrow is displayed when the screen can be toggled either left or right to display more characters.

When lines are programmed as shown on the key-map diagrams, the numeral icons on the handset display will be mapped to any deskset LEDs associated with the corresponding feature keys. The line icons will be displayed as follows:

Line State	Handset Line Status Icon State
On-hook	Off
Off-hook	On
Ringing	Fast flash
On hold	Slow flash

Feature Programming Requirements

When planning the interface, the following information must be taken into account:

Line sequences

The handset uses two types of key sequences to access PBX features and multiple lines. Line sequences are those where the user presses the **LINE** key and then a number key. The key-map design designates "line" keys that should be programmed for line appearance so that they correspond to line sequences on the handset.

The **LINE** icon on the handset will reflect activity on the corresponding deskset key. For this reason, it is recommended that line appearance keys be used only for line access. If only one line is assigned to a particular handset, leave the other designated line keys identified on the key maps unassigned. The corresponding handset **LINE** + key sequences will then have no function.

- Line select keys 1-9 have corresponding digit icons on the handset display. These icons indicate line status (on, off, slow flash, fast flash, wink) similar to the Superset 420 icons. Use these for line access.
- Line select keys 10-12 (associated with the handset's **FCN** key, see key-mapping diagram) do not have digit icons and should be used for functions or lines that do not require LCD indicators.

Function sequences

Function sequences are those where the handset user presses the FCN key and then a number key. Designated "function" deskset keys programmed to system features such as Transfer and Conference may have their corresponding menu items display on the handset function menu. See the key-map diagram for the function keys that are available for feature programming.

Function Menu Programming

SpectraLink 6300 MCU

Note that the function menu defaults set for the handsets associated with the SpectraLink 6300 MCU can be changed via the SpectraLink Operator's Console. If the system uses softkeys, to minimize unwanted interaction between system display and the handset function menu display, configure the handset menu to include a delay of one function key. The user will then have to press **FCN** twice before the handset menu displays, allowing the first press of the **FCN** key to access softkey functions. See *SpectraLink 6300 MCU: Operator's Console* for further procedural information. Another option may be to disable the softkey menu at the system and exclusively use the SpectraLink menu. This would remove any unwanted interaction, but may restrict the number of available features to the number of programmable keys on the handset.

SpectraLink 6000 MCU

For the SpectraLink 6000 MCU, the handset function menu can only be changed via remote configuration through the services of Polycom Customer Support.

SpectraLink 8000 Telephony Gateways

Menu options can be changed in the Administration Console of the SpectraLink 8000 Telephony Gateways. The Delay function is used when the PBX uses softkeys. With Delay, when the **FCN** key is pressed, the handset displays the features that are associated with the softkeys so that one of these features can be selected first. If Delay is programmed, pressing the **FCN** key twice will bring up the menus immediately. Under the menu programming section of the Administration console there is an option to use Delay (same as the SpectraLink 6300 MCU). See *SpectraLink 8000 Telephony Gateway: Administration Guide for SRP* for further details. Also refer to the same document for details on configuring the telephone switch type

Hold

The Hold feature should be programmed to the Hold key as shown on the key-map diagrams so that when the **Hold** key or softkey is pressed on the handset, the call is placed on hold.

Mute

The handset Mute function is hard-coded to **FCN** +**1** on the PTB4xx handset. This function sequence is recommended, but the system administrator can assign the Mute function to any available function key sequence or leave the function unassigned. The SpectraLink 6000 and SpectraLink 8020/8030 Wireless Telephones use a **Mute** softkey.

Voicemail

The message-waiting icon on the handset is activated with the message indication of the deskset. The voicemail feature on the deskset must be assigned to the feature key as shown in the key-map diagrams. Do not assign any other feature to this key, since the associated LED is directly mapped to the message-waiting icon on the handset. This LED assignment must be used in order to support the message-waiting icon. Using this key for any other feature or for line access could cause unacceptable system performance.

Speakerphone

If a handset such as the PTB 4xx has no speaker, the Microphone, Speaker, and Volume Up/Down buttons on the 420 have no corresponding handset function.

Ring types

Handset ring types (soft, normal, vibrate, etc.) are programmed by the handset user and are not accessible or changeable by the system switch. Whenever possible the audible ringer on the handset will follow the cadence provided by the system switch. Call progress tones provided by the host system will be passed through to the handset.

2

Interface Implementation

This section describes the recommended programming to use the Wireless Telephone System (CPM interface module or SCX-416 MCU) with a Mitel PBX. The procedures assume:

- The Mitel SX-200, SX-50, or SX-2000 system is installed and operational in an approved configuration. See the *Telephone Switch Interface Matrix* document for tested configurations.
- A trained Mitel technician or system administrator will be on site with the Installer to program the system.
- The SpectraLink 6000 System or SpectraLink 8000 Telephony Gateway is installed and the handsets are available for programming.

Set the Switch Interface Type

SpectraLink 6000 MCU

The SpectraLink 6100 Master Control Unit requires the switch interface type to be configured using the front panel buttons. The configuration procedures are detailed in *SpectraLink 6100 MCU: Installation and Operation.*

SpectraLink 6300 MCU

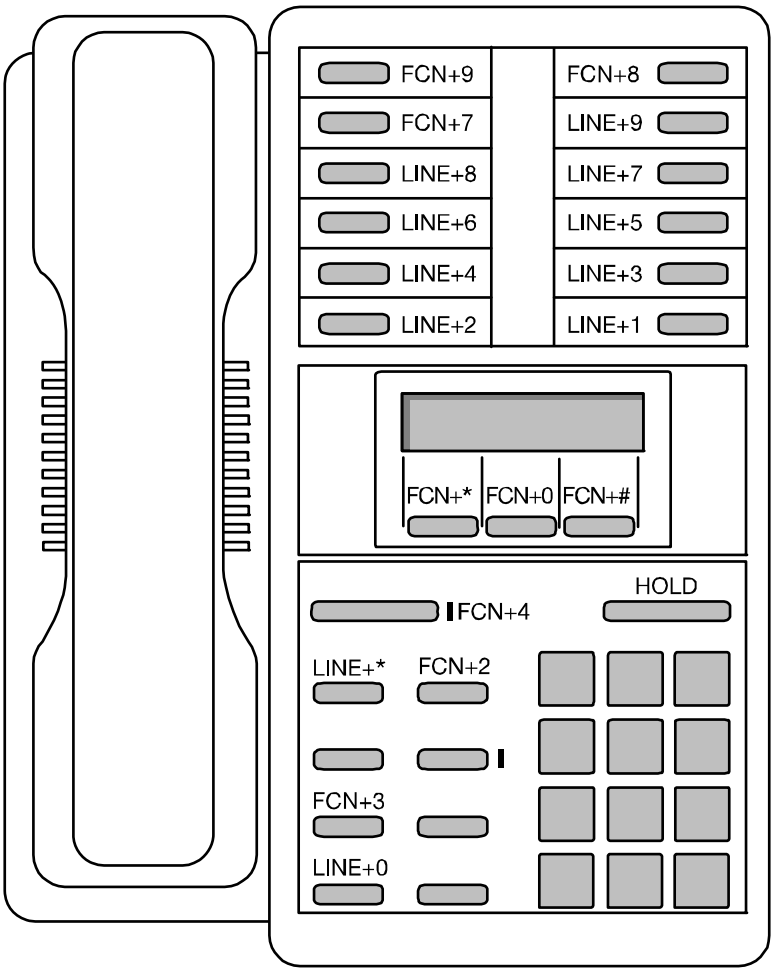
When configuring the SpectraLink 6300 MCU, the PBX interfaces are available as sub-menu selections when defining the Interface Module type using the SpectraLink 6300 MCU Operator's Console. Refer to *SpectraLink 6300 MCU: Operator's Console* for details on configuring the Interface Modules.

SpectraLink 8000 Telephony Gateways

Connect to the SpectraLink 8000 Telephony Gateway using the serial or modem interface. From the Main Menu, choose Gateway

Configuration. Scroll to Telephone Switch Type and press enter to change this field, from the Submenu of PBX types, select Mitel. Refer to *SpectraLink 8000 Telephony Gateway: Administration Guide for SRP* for details on configuring the Telephone Switch Type.

Key-mapping the Handset to Emulate the Superset 420



Superset 420 Key-mapping

The FCN [number] and LINE [number] labels represent the key sequence on the handset mapped to the corresponding key on the desk set.

The handset function menu default settings are shown in the table below; these may be changed as described above in *Function Menu Programming*. Some of these functions (Mute, Redial, Forward, etc.) are activated by softkeys or **FCN** menu options on the SpectraLink 6000 and SpectraLink 8020/8030 Wireless Telephones.

FCN + 1	MUTE	**FCN + 2**	XFER/CONF
FCN + 3	REDIAL	**FCN + 4**	MSG
LINE + 0	CANCEL	**LINE + ***	SUPERKEY
FCN + 9	EXIT MENUS		

Program Mitel

The Mitel Technician should perform the necessary customer data entry, through an ASCII administration terminal or through the attendant console.

- Use Form 09 to program each handset as station type 420.
- Program the keys (line and call appearances and features) according to the pre-installation planning.
- If the handsets have no speaker, disable speakerphone features such as autoanswer, background music, and headset operation.

The installer can now test the handsets:

The handset will not support remote diagnostic tests (e.g., loopback testing.)

3

Extension Assignments Worksheet

Shelf: _____ Interface Module: _____

Handset #	Ext. #	Name	Interface Module Circuit #	Comment	Handset Serial #
Handset 1			1		
Handset 2			2		
Handset 3			3		
Handset 4			4		
Handset 5			5		
Handset 6			6		
Handset 7			7		
Handset 8			8		
Handset 9			9		
Handset 10			10		
Handset 11			11		
Handset 12			12		
Handset 13			13		
Handset 14			14		
Handset 15			15		
Handset 16			16		