Analog Systems

LinkPlus Interface Guide

SpectraLink 6000 System

SpectraLink 8000 System

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Reseller for assistance.

Polycom, Inc.
4750 Willow Road,
Pleasanton, CA 94588
http://www.polycom.com

About this Guide

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

SpectraLink 6000 System – SpectraLink 6300 MCU

The SpectraLink 6300 MCU 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 LAN-based 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)

NetLink e340/h340/i640 Wireless Telephone: Configuration and Administration (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

For Return Material Authorization: rmacoordinator@polycom.com

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 SpectraLink 6100 MCU, SpectraLink 6300 MCU , or SpectraLink 8000 Telephony Gateway so they are easily accessible from the handsets.

Additional information about analog interfaces is 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

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.

All analog 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.

Before installation, the parameters of the wired phones should be verified to plan the parameters required for the handsets.

Line assignment

The handset supports one line.

Call appearances

Should this extension number appear on any other telephone (bridged appearance)? On which sets should it ring (bridged call alerting)?

Class of Service

To which Class of Service should handsets be assigned?

Coverage

Where is this extension forwarded on busy/no answer?

Call pickup group

To which group does this extension or group of extensions belong?

Toll restrictions

To which Class of Restriction group should the handsets be assigned?

Programmable buttons

Twelve programmable buttons are available for features. Determine which features, if any, should be programmed on the handsets.

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.

If the user finds that the handset display is frozen, simply power off the handset then power it back on to recover calling function.

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.

Feature Programming Requirements

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

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.

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.

SpectraLink 6100 MCU

For the SpectraLink 6100 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. See your handset's *Configuration and Administration* document for further details.

Hold

The Hold feature is programmed to the **HOLD** key on the PTB 4xx handset by assigning this feature as a macro to the **FCN +1** item in the SpectraLink 6000 System. In the SpectraLink 8000 Telephony Gateway, the **Hold** feature is programmed to the **HOLD** item.

Mute

The handset Mute function is hard-coded to **FCN+1** on the PTB 4xx handset. In the SpectraLink 8000 Telephony Gateway, **MUTE** can be programmed to any function sequence. The SpectraLink 6000 and SpectraLink 8020/8030 Wireless Telephones use a **Mute** softkey.

Voicemail

The voicemail feature can be programmed to a feature key. Voicemail is indicated by the stutter dial tone.

Speakerphone

If a handset such as the PTB 4xx has no speaker, speakerphone function and functions that require the use of the volume keys will not be made available on the handset.

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

SpectraLink 6100 MCU
Analog Interface Implementation

The SpectraLink 6100 Master Control Unit (MCU) requires the switch interface type to be configured using the front panel buttons.

Defining Macros

On an analog telephone system, telephone system features such as transfer, hold, or speed dial are usually accessed via key presses or hook flashes. The SpectraLink 6100 MCU allows these features to be customized using system macros. These features can then be accessed from all handsets by pressing **FCN** followed by a digit. The macro definitions are the same for all handsets in the system.

For example, suppose your telephone system uses **FLASH * 7** to transfer a call. On the SpectraLink 6100 MCU, you can assign the transfer function to **FCN 2**. When the handset user presses **FCN** followed by **2**, the telephone system will enter the transfer function. Using macros instead of complicated key presses makes it easier for users to remember and access features.

> Do not program analog features on a digital system.

Macro definitions are made up of combinations of the following characters:

0 to 9	The handset keys numbered **0** to **9**
#	The handset **#** key
*	The handset ***** key
F	Flash
S	Pause 65 milliseconds

The SpectraLink 6100 MCU will accept programming for eleven functions. The maximum number of key entries for each function is 20.

Open Application Interface

For systems with Open Application Interface (OAI) software, the user may press **FCN** key sequences to access certain applications. Macro assignments are also used to assign a function key to initiate an OAI application.

Plan Programming

Before programming the features, review the manual for your telephone system to determine what keystrokes are used to access the desired functions. Then determine which handset key sequences should be assigned to these functions on the SpectraLink 6100 MCU. Valid keys are **0-9**, *****, **#**, **START** (flash), and **FCN** (pause). Note that **FCN + 1** is reserved for Mute.

Program Macro Codes

Functions are defined by placing an Administrative Call using the Administrative handset (registered to Line 2 of MCU 1). Follow these steps to place an Administrative Call and define functions.

> In multi-unit installations, be sure all MCUs are properly connected to one another before making an Administrative Call.

1. On the MCU that displays a box ID of 1, move the mode switch to the **ADMIN** position.

2. Press the **START** key on the Administrative handset (the handset registered to MCU 1, line 2). This is the only handset enabled to make the Administrative Call.

3. When you hear a steady tone (not a dial tone), the handset is in an Administrative Call and is ready to program.

4. Press the **FCN** key followed by the key strokes used to access the function. Valid keys are **0-9, *, #, START** (flash), and **FCN** (pause). Note that **FCN + 1** is reserved for Mute and Hold.

5. Press the function key sequence to be programmed. If a key sequence is incorrectly entered, go to the next step.

6. Press the **END** key to complete the programming of the function. Repeat steps 4 through 7 for all remaining functions or to reprogram a function to correct an input error.

7. Return the mode switch to the **NORM** position.

8. The line LEDs now indicate line status and the Administrative handset can now place calls normally.

> Program the **HOLD** feature to **FCN 1**. Although the **FCN + 1** sequence on the handset is hard wired for **MUTE**, the **HOLD** button on the handset refers to the programming at **FCN + 1**.

Examples of Programming

Transfer

On your telephone system, the Transfer feature is accessed using **Flash * 7**. On the handset, Transfer will be accessed using **FCN 2**.

With the Mode switch in the **ADMIN** position, key in the following sequence on the Administrative handset:

START,FCN,2
START(flash),*,7,END

Speed dial

You want **FCN 4** to dial 555-1234. The system must access an outside line by dialing 9 and wait for dial tone, then dial the call. Key in the following sequence on the Administrative handset:

START,FCN,4
9,FCN(pause),FCN(pause),5,5,5,1,2,3,4,END

> The number of pause entries depends upon how quickly your telephone system accesses outside dial tone.

Clear or erase a function

You want to clear **FCN 5** from memory. Key in the following:

START,FCN,5,END

Remember that when you change or delete a function using the Administrative handset, you will change or delete that function on all handsets.

3

SpectraLink 6300 MCU
Analog Interface Implementation

Establishing the analog macros is part of the system configuration of the SpectraLink 6300 MCU. System configuration can be done after the System Controller card is installed. Other cards do not need to be physically installed in order to perform system configuration.

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 the *SpectraLink 6300 MCU : Operator's Console* document for additional information. When an analog PBX type is selected, macros must be set up for handset functions such as transfer and OAI.

> This function applies only to analog interfaces and Open Application Interface.

1. Press F6 to enter the **MCU Macros Display** function. The following screen displays. The screen allows you to define macros that correspond to pressing the **FCN** key on the handset plus one of the digits **1** through **9**, *****, **0**, and **#**.

```
Command Prompt - chk3000                                    _ □ ✕
                    F6  - MCU Macros Display


        Macro Key Sequence           ┌─────────────────────┐
                                     │ Program the first Macro │
              1   F ◄─────────────── │ sequence for HOLD       │
              2   F                  └─────────────────────┘
              3   F
              4   *42
              5   *43
              6   ##
              7   *48
              8
              9
              *
              0
              #   ███████████████
```

2. Use the arrow keys or mouse to move to the desired entry, and press Enter.

3. In the menu, type in the new macro characters for this digit or function, then select **SAVE** to save.

4. To assign a function key to initiate the OAI application, enter **##555** as the macro sequence. When the related function key is pressed, the OAI application will recognize the key sequence and initiate the appropriate OAI application.

> If you customize the handset menus, the features defined on the custom menu should match the system macro. For example, if you define **FCN 2** on the Analog Function Menus as **Xfer**, you must also define **FCN 2** on the Macros Menu as **Xfer**.

> **FCN 1** is assigned to the Mute function on all handsets, but the first macro should be programmed for the HOLD sequence. The **HOLD** button on the handset refers to the sequence programmed at the first macro.

Examples of Macro Programming

Transfer

To assign Transfer to **FCN 4** on the handset when the Transfer feature is accessed using *42 on the wired phone system:

On the Macro definition screen, enter the following sequence next to **4**, as shown in the sample screen above:

***42**

Speed dial

To have **FCN 8** dial 555-1234 when the system must access an outside line by dialing 9 and wait for dial tone, then dial the call.

On the Macro definition screen, enter the following sequence next to **8**:

9,,5551234

The number of pause entries (commas) depends upon how quickly your telephone system accesses outside dial tone.

OAI

To have **FCN *** access the OAI interface:

On the Macro definition screen, enter the following sequence next to *****:

##555

Clear or erase a macro function

Use the arrow keys or mouse to move to the desired entry, and press Enter.

Select **DELETE** from the menu.

4

SpectraLink 8000 Telephony Gateway Analog Interface Implementation

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 **Analog**. Refer to the *SpectraLink 8000 Telephony Gateway: Administration Guide for SRP* document for details on configuring the Telephone Switch Type.

Navigate to the **NetLink Wireless Telephone System** menu for the NetLink Telephony Gateway and select **Feature Programming**. A screen similar to the following displays:
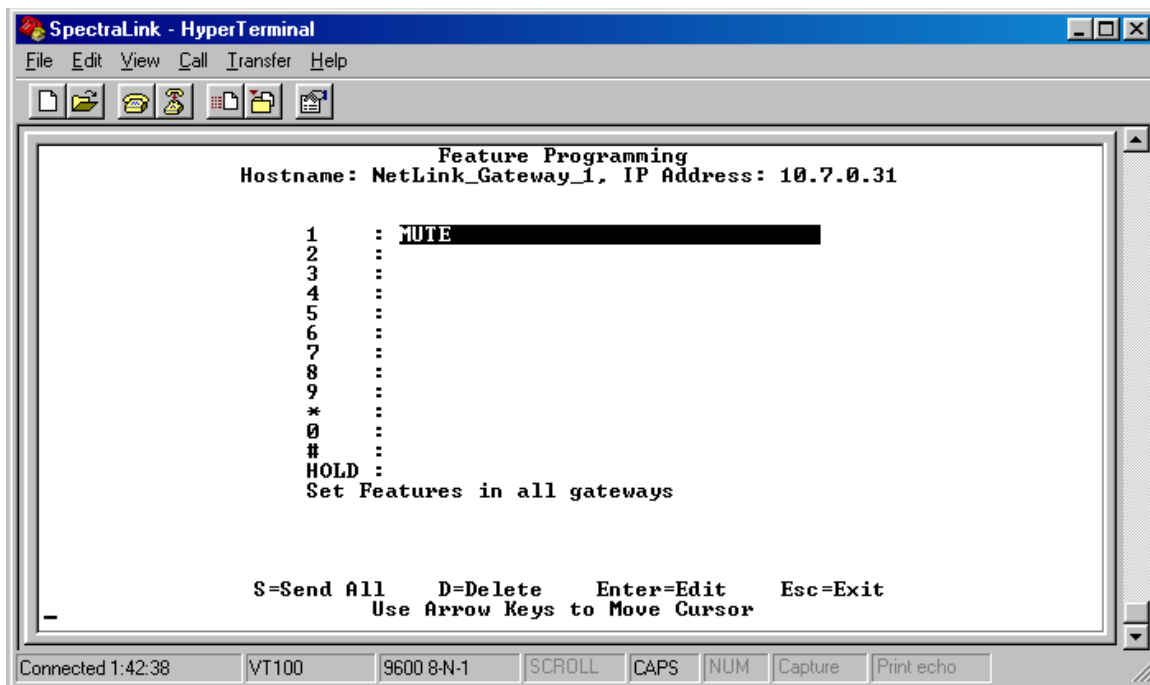
1. Navigate to key **1** and type **MUTE**.

2. If a SpectraLink 8000 OAI Gateway is part of the system, navigate to the key the OAI function is to be assigned to and type **OAI**.

3. The table below displays the default menu options that are programmed into the handsets for an analog system. You may set these same functions here or change them to something else. If you change them, be sure to enter the corresponding changes in the **Menu Programming** screen.

Function Key	Default Feature	Key Sequence
FCN+1	Mute	MUTE
FCN+2	Xfer	
FCN+3	Conn	
FCN+4	Conf	
FCN+5	Fwd	
FCN+6	Redial	
FCN+7	Pick	
FCN+8	Camp	
FCN+9	Exit Menus	Exit Menus
FCN+0		
FCN+*		
FCN+#		

Consult your wired telephone system documents for the key sequence that matches the feature in the above table. Blank cells are provided for your data.

Note that the zero (**0**), star (*****), and pound (**#**) keys are not assigned by default, but may be programmed here and in the default menus on the handsets.

4. Navigate to the function key, press Enter, and type the key sequence that corresponds to the feature you want to activate for that function. Press Enter after each entry. Type **F** to assign the FLASH function.

   – Example: If the Transfer feature key sequence is Flash Star 7 and you wish to keep the default at FCN+2, navigate to key **2**, press Enter, type **F*7** and press Enter.

5. Repeat for each feature you wish to program to a function key macro.

Remember to note the features and macros so that they can be edited in the handset menu, if necessary, and programmed into any other SpectraLink 8000 Telephony Gateways on the same PBX if Send All is not being used.

When you have finished programming the macros, press Esc to return to the **NetLink Wireless Telephone System** menu.

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		