



# Avaya DEFINITY Communications System

## LinkPlus Interface Guide

SpectraLink 6000 System

SpectraLink 8000 System

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Version E



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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 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](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](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](mailto: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.



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# 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 8000 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 installation, the parameters of the wired phones should be verified to plan the parameters required for the handsets.

### **Line assignment**

The handset supports up to nine line resources. Which lines should ring at this handset (Bridged Call Alerting) and which lines will be selected when the user goes off-hook (Idle or Alerting Appearance Preference)?

### **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**

Ten programmable buttons are available for lines or features. Determine which features, if any, should be programmed on the handsets. These assignments may emulate assignments on the user's wired set.



It will help to identify a wired set that is programmed exactly or close to the way the handsets should be programmed. This set can be duplicated to copy station parameters to 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.

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.

### 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 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. 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 your handset's *Configuration and Administration* document for further details. Also refer to the *SpectraLink 8000 Telephony Gateway: Administration Guide for SRP* 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 on the PTB 4xx handset to **FCN+1**. 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 voice mail 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, 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.

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# Interface Implementation

This section describes the recommended programming to use the SpectraLink 6000 System with a DEFINITY Communications System. The procedures assume:

- The DEFINITY system is installed and operational in an approved configuration. See the *Telephone Switch Interface Matrix* document for tested configurations.
- A trained DEFINITY technician 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.

## DEFINITY Four-Wire Interface

The DEFINITY TN754B (any vintage) or TN754 (vintage 11 or higher) circuit pack provides eight, four-wire digital station circuits. Two of these wires are used for transmit, two are used for receive. Typically the stations are wired to a block or to a patch panel. From the block or patch panel the stations are wired to a modular jack. The jack can connect to a short patch cord that connects to the MCU. The following table shows the Avaya side of the block or patch panel wiring.

Pair	Function
1	
2	Receive Station 1
3	Transmit Station 1
4	
5	Receive Station 2
6	Transmit Station 2
7	
8	Receive Station 3
9	Transmit Station 3
10	
11	Receive Station 4
12	Transmit Station 4
13	
14	Receive Station 5
15	Transmit Station 5
16	
17	Receive Station 6
18	Transmit Station 6
19	
20	Receive Station 7
21	Transmit Station 7
22	
23	Receive Station 8
24	Transmit Station 8
25	

See the documentation for your SpectraLink components for more information about wiring the demarc block or patch panel.

The following table shows the patch cord pinout for the Avaya side of the modular 8-pin (RJ45) connector.

Pin	Function
1	Receive
2	Receive
3	Transmit
6	Transmit



Each digital pair is polarity insensitive. If you reverse polarity the system will still work.

## Set the Switch Interface Type

### SpectraLink 6100 MCU

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

### SpectraLink 6300 MCU

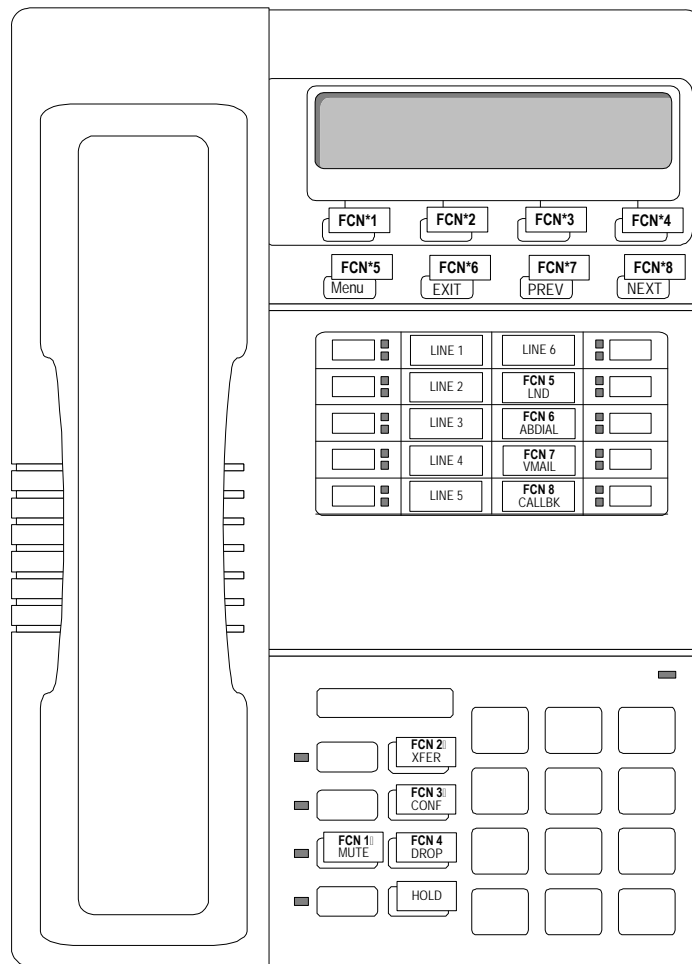
When configuring the SpectraLink 6300 MCU, the PBX interfaces are available as sub-menu selections when defining the Interface Module type using the SpectraLink 6300 MCU Operator's Console. Refer to the *SpectraLink 6300 MCU: Operator's Console* document for details on configuring the Interface Modules.

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

## Key-mapping the Handset to Emulate 8410D Functionality

Programmable buttons on Page 2 of the station form can be assigned as determined in the pre-installation procedures. The following diagram shows how the 8410D buttons map to the handset.



DEFINITY 8410D 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 FCN \* sequence is used to map to softkeys. Pressing the FCN key on the handset followed by the \* key and the [number] key



is the sequence equivalent to pressing the corresponding softkey on the desk set.

The handset function menu default settings are shown on each corresponding button in the above diagram; 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.

<b>FCN + 1</b>	MUTE	<b>FCN + 2</b>	XFER
<b>FCN + 3</b>	CONF	<b>FCN + 4</b>	DROP
<b>FCN + 5</b>	LND	<b>FCN + 6</b>	ABDIAL
<b>FCN + 7</b>	VMAIL	<b>FCN + 8</b>	CALLBK
<b>FCN + 9</b>	EXIT MENUS		

## Program DEFINITY

Each handset must be administered on the DEFINITY so the switch will recognize the handset and allow access to system facilities and features. The DEFINITY technician or local system programmer should perform the necessary programming.

### Save translations

Before beginning to program the system, the technician may want to back up the current programming with the save translations command. This will take time, but will ensure that translations can be restored if necessary.

## Program Handsets

### Copy settings from a wired set

The easiest way to program the SpectraLink Wireless Telephone on DEFINITY is to find a wired 8410D station that has settings and restrictions similar to what is required for the handset, and use the duplicate station command to copy those settings to a “template” handset. If there is no 8410D available, find a station that has similar settings, and use the display or print station command to check the

settings so they can be manually duplicated using an add station command for the template handset.

## Station features for handset

Station features on Page 1 of the station form can be assigned or copied as determined in the pre-installation procedures. The following settings must be set for the handset:

Type: 8410D

Name: the handset user's name, if there is a permanent user assigned.

Auto Answer: None (this is the default, and forces calls to ring the handset)

## Notes for users

The following features are not supported on the PTB 4xx handset:

- Personalized Ring feature
- The 8410's SHIFT, TEST, and SPEAKR keys
- The 8410's red programmable button lamps

The handset display has only 16 characters per line; longer messages will wrap onto the second line of the display. DEFINITY's five-character menu names (for example, CpkUp for Call Pickup) will be truncated to three characters on the handset. If the customer wants to change these three-character messages, they can be customized using DEFINITY's Language Translations feature.

## Assign buttons

The technician can assign Call Appearances, Line (trunk) Appearances, and features to buttons to fit user needs.

If the handset will be used in conjunction with a wired station, administer the handset as a Bridged Appearance of the wired station.

- Assign buttons 1-3 as bridged appearances (brdg-appr) of the wired station. This will allow the first three appearances on the handset to correspond to the first three appearances on the wired station.
- Assign buttons 4-5 as call appearances (call-appr). This must be done because DEFINITY requires at least two call appearances of the extension on each station.

- To make the handset ring when the wired station rings, change Bridged Call Alerting to Yes on the wired station.

If the handset is not a bridged appearance of a wired station, assign buttons 1-3 as call appearances (call-appr).

## **Duplicate programming**

After the model handset or phones have been completely programmed, use the duplicate station command to copy the programming to all “like” handsets. Change the extension of the bridged appearance on each set as it is copied.

The installer can now test the handsets.



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# 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		