LinkPlus Interface Guide

Siemens Hicom/HiPath optiset

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Contents

Chapter 1: About this Guide

Spectralink is the market leader in multi-cellular wireless telephone systems for the workplace. We manufacture a range of products to suit any size installation. Many Spectralink 6000 and 8000 Portfolio 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 Spectralink 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.

Note

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.

Product Support

Spectralink wants you to have a successful installation. If you have questions please contact the Customer Support Hotline at 1-800-775-5330.

The hotline is open Monday through Friday, 6 a.m. to 6 p.m. Mountain time.

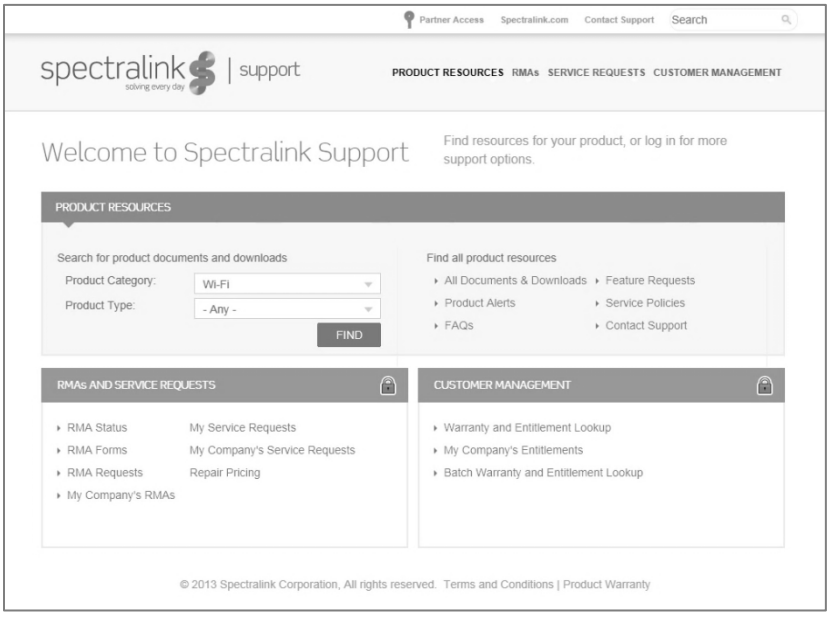
For Technical Support: mailto:technicalsupport@spectralink.com

For Knowledge Base: http://support.spectralink.com

For Return Material Authorization: mailto:nalarma@spectralink.com

Spectralink References

All Spectralink documents are available at http://support.spectralink.com.



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Select the Product Category and Product Type from the dropdown lists and then select the product from the next page. All resources for that particular product are displayed by default under the All tab. Documents, downloads and other resources are sorted by the date they were created so the most recently created resource is at the top of the list. You can further sort the list by the tabs across the top of the list to find exactly what you are looking for. Click the title to open the link.

Specific Documents

Spectralink 6100 MCU: Installation and Operation

Spectralink 6300 MCU: Installation

Telephone Switch Interface Matrix

Chapter 2: 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 or SpectraLink 6100 MCU: Installation and Operation.*

The following information will help the system administrator set up the SpectraLink handsets 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.

It may also help to identify a key layout 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 appearances

The handsets support two line appearances for the Hicom 150/ HiPath 3000 and four line appearances for the Hicom 300/HiPath 4000. Determine what extension numbers will be assigned to the handsets, which line or lines should ring at which handset, and which line will be selected when the user goes off-hook.

Programmable feature keys

The handsets support programmable keys as shown in the key-map diagrams below. Determine which features, if any, should be programmed on

the handsets. Feature keys that are not subject to programming restrictions (described in the Feature Programming Requirements section) can be programmed to any optiset feature on the handset and do not have to match the assignments on the user's desktop telephone.

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 user can toggle between two display views in order to see all 24 possible characters per line sent by the Hicom CS. At the start of each call the leftmost 16 characters are displayed. Pressing
LINE + ► displays the remaining eight characters truncated from the initial screen. Pressing **LINE** + ◄ displays the leftmost 16 characters. When the left characters are being displayed a right arrow icon is displayed. This indicates that the user can press
LINE + ► to see more characters to the right. Likewise, when the right characters are being displayed a left arrow icon is displayed indicating that the user can press **LINE** + ◄ to see characters at the beginning of the line.

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

Although the optiset E Basic telephone does not have a display, any display information sent by the Hicom CS will be displayed on the handset.

Handset icons

The line indicators are associated with line access keys. The status indicators or icons are associated with voicemail, low battery function, service interruption and other functions. In addition, a left or right arrow is displayed when the screen can be toggled either left or right to display more characters as described above.

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 icons will be displayed as follows:

Line State	*optiset LED Status*	*Handset Line Status Icon State*
On-hook	Off	Off
Off-hook	On	On
Ringing	Rates 2, 3, 5, & 6	Fast flash
On hold	Rates 4 & 7	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” optiset E 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 optiset E telephone key. For this reason, it is recommended that line appearance keys on both the Hicom 150/ HiPath 3000 E Basic optiset E and the Hicom 300/HiPath 4000 Standard optiset E should 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 on the optiset E. The handset key sequences **LINE** +**2** to **LINE** +**4** 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. To minimize unwanted interaction between the OptiGuide 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 OptiGuide functions. See *SpectraLink 6300 MCU: Operator's Console* for further procedural information. Another option is to disable the optiset menu at the Hicom CS and exclusively use the SpectraLink menu. This would remove any unwanted interaction, but would also restrict the number of available features to the number of programmable keys on the SpectraLink handset.

SpectraLink 6100 MCU

For the SpectraLink 6100 MCU, the handset function menu can only be changed via remote configuration through the services of Spectralink Customer Support.

Hold

The Hold feature should be programmed to the Hold key as shown on the key-map diagrams so that when the **HOLD** button 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 6020 Wireless Telephones use a **Mute** softkey.

Voicemail

The message-waiting icon on the handset is activated with the message indication of the optiset E. The Mailbox or PhoneMail feature on the optiset E 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. In this case, disable all speakerphone features, particularly any hands-free features that activate the speaker with the telephone on-hook.

Ring types

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

OptiGuide menu

The OptiGuide menu can be activated when the handset is active, but on-hook. Pressing **START** while in the active state (achieved after pressing **START** for the first time) toggles the handset between on-hook and off-hook states. The ability to activate the OptiGuide menu in this mode is useful because some optiset E features (such as Call Forwarding and Do Not Disturb) are only available when the phone is on-hook. The user must remember to press **END** after a session because the active state of the handset requires more battery power than the idle state.

Although the optiset E Basic telephone does not have OptiGuide context-sensitive feature keys, the key codes used for the OptiGuide keys are recognized by the host Hicom CS and can be used on the handset. Refer to the key-map diagram notes.

Prime Line impacts

If a handset is used in conjunction with an optiset desk telephone, each phone is configured on the Hicom CS as an independent phone with its own phone number (each device is assigned to a separate Prime Line). In order for both an optiset E telephone and a handset to ring together, the extensions need to be set up at the Hicom CS to ring at the same time.

A called party's display of the originating line will be different when the handset makes the call compared to the optiset telephone. The name text could identify the source of the call to avoid confusion. For example, the display name of the handset could be stored as "Smith WT" at the Hicom CS. Display names should me kept to a minimum so the full name is displayed on the handset (see The Wireless Telephone Display section above for more details).

It should also be noted that the class of service (COS) of the handset is related to the Prime Line of the phone and not the line appearance.

Speed dial

Users should be made aware that stored speed dial and redial features will have to be saved separately for the optiset E telephone and the handset. Additionally, the Last Number Redial feature will only apply to the device from where the original number was dialed.

Hicom 300/HiPath 4000 Phone Test access code

The Hicom 300/HiPath 4000 Phone Test (access code*940) will not work on the SpectraLink handset.

Button programming

For the Hicom 150/HiPath 3000, phone button programming (access code *91) will not work. All button programming must be done by the administrator and not the user.

Chapter 3: Interface Implementation

This section describes the recommended programming to use the SpectraLink 6000 System with the Siemens Hicom 150/HiPath 3000 E and 300 E/H Communications Server (CS). The procedures assume:

- The Siemens Hicom CS system is installed and initialized according to the following configuration:

PBX Model	*Desktop Phone Model*	*Required Hicom Port Card*	*Required Minimum Hicom Software*
Hicom 150/ HiPath 3000	optiset E Basic	SLMO24, SLU8	Version 520x.01.520 SMR E+, using Assistant HA500B.00.051
Hicom 300/ HiPath 4000	optiset E Standard	SLMO	Model E CS: Versions 6.4, 6.5 Model H: Version 1.0

- A trained Siemens technician or system administrator will be on site with the Installer to program the system.

Set the Switch Interface Type

SpectraLink 6100 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 the SpectraLink 6100 MCU Installation and Operation document. The following table lists the Line LEDs that are lit for the Hicom switch interfaces.

Switch Interface	*Line LEDs*	*MCU Type*
Hicom 150/HiPath 3000	1,2,5	SCH516
Hicom 300/HiPath 4000	3,5	SCH516

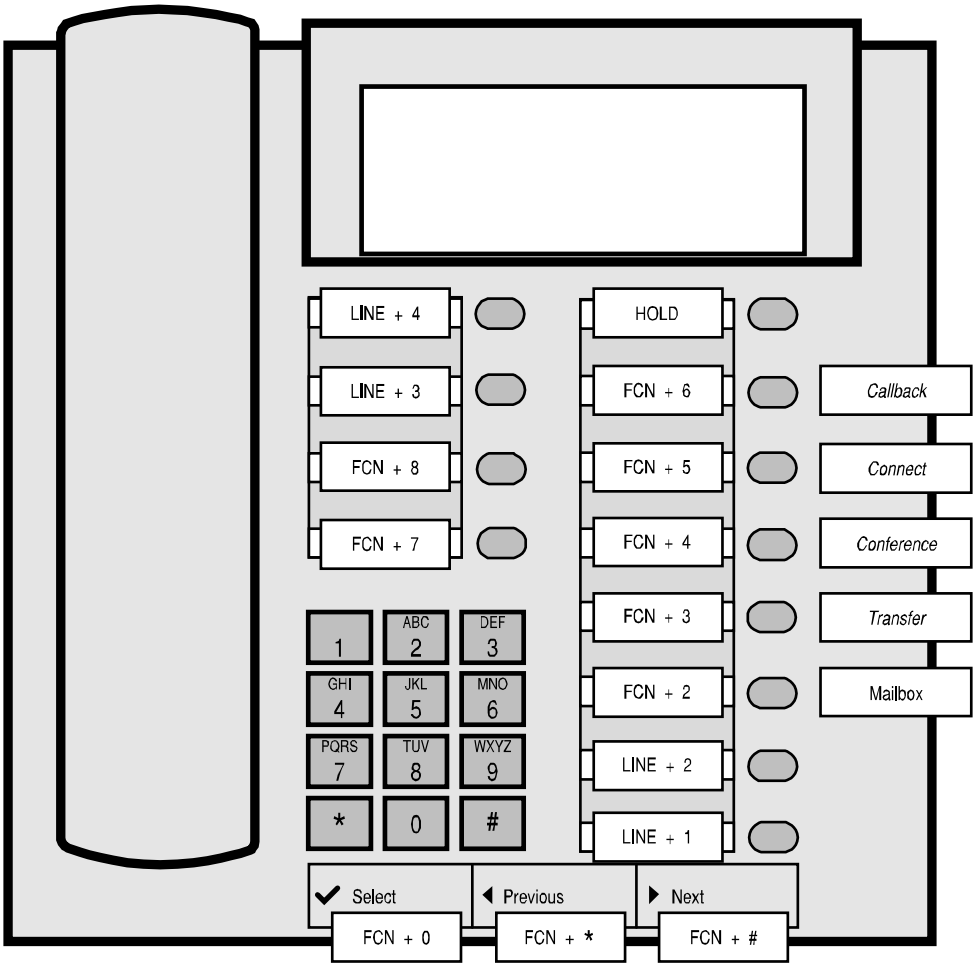
SpectraLink 6300 MCU

When configuring the SpectraLink 6300 MCU, the Hicom 150/HiPath 3000 and Hicom 300/HiPath 4000 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.

Key-mapping the Wireless Telephone to Emulate optiset E Functionality

Siemens optiset E Standard
Hicom 300/HiPath 4000 Key-mapping



The **FCN** and **LINE** labels represent the key sequence on the handset mapped to the corresponding key on the optiset E. The feature labels to the right of the keys represent one possible mapping scheme, but any feature may be programmed to keys that do not have setup restrictions described in the Feature Programming Requirements section.

The handset displays the lines that correspond to each line key identified in the diagram (**LINE** + **1** to **LINE** + **4**). See the Handset Icons section above for an explanation of the icons.

The message-waiting icon displays on the handset when there is voice mail. This is the only use for this key sequence (**FCN** + **2**) in the PTB 4xx and requires the optiset key shown above with the Mailbox label for the PhoneMail® feature.

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 covered by softkeys or **FCN** menu options on the SpectraLink 6020 Wireless Telephones.

FCN + 0 = Select

FCN + 1 = Mute (pre-programmed to mute the microphone in the PTB 4xx.)

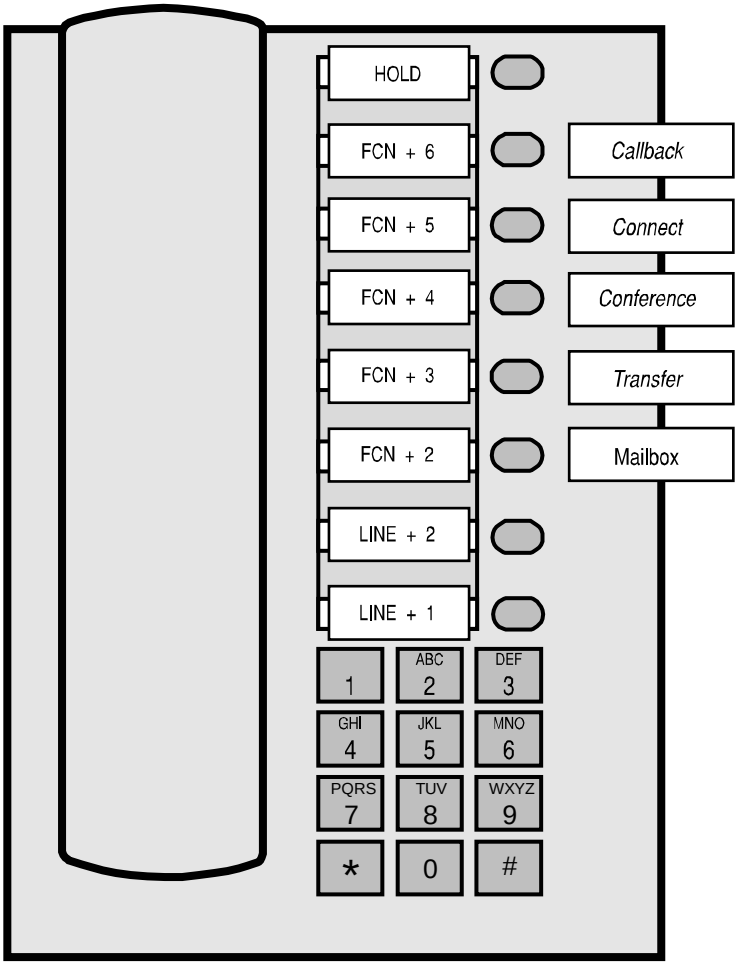
FCN + 2 = Voice mail (corresponds to the Mailbox feature key above)

FCN + 9 = Exit (exits the function menu)

FCN + * = Previous

FCN + # = Next

Siemens optiset E Basic
Hicom 150/HiPath 3000 Key-mapping



The **FCN** and **LINE** labels represent the key sequence on the handset mapped to the corresponding key on the optiset E. The feature labels to the right of the keys represent one possible mapping scheme, but any feature may be programmed to keys that do not have setup restrictions described in the Feature Programming Requirements section.

The handset displays the lines that correspond to each line key identified in the diagram (**LINE** + **1** to **LINE** + **2**).

The message-waiting icon displays on the handset when there is voice mail. This is the only use for this key sequence (**FCN** + **2**) in the PTB 4xx and requires the optiset key shown above with the Mailbox label for the PhoneMail® feature.

The OptiGuide™ Select, Previous, and Next keys do not exist on the optiset E Basic desktop telephone, but these functions will display and can be accessed on the handset using the default function menu sequences shown below.

The handset function key 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 covered by softkeys or **FCN** menu options on the SpectraLink 6020 Wireless Telephones.

FCN + 0 = Select

FCN + 1 = Mute (pre-programmed to mute the microphone in the PTB 4xx)

FCN + 2 = Voice mail (corresponds to the Mailbox feature key above)

FCN + 9 = Exit (exits the function menu)

FCN + * = Previous

FCN + # = Next

Notes

Chapter 4: Extension Assignments Worksheet

Shelf: _____ Interface Module: _____

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

Notes