

Configuration Best Practices for Hobart Wireless Scales



Introduction

This document provides design considerations, best practices information, and procedures for configuring Hobart Wireless Scales for network interface cards (NIC) on passive wireless client devices.

Note: Support for the Hobart Scales application should be obtained directly from the vendor or its support channels. Cisco Technical Assistance Center (TAC) staff is not trained to resolve problems related to the Hobart application.

To get the most of out of the information in this document, you may want to refer to the Passive Client Guide in the WLC configuration guide section 7-67 in the WCS Release Notes for 7.0.

Configuring Passive Client:

<http://www.cisco.com/en/US/docs/wireless/controller/7.0/configuration/guide/c70wlan.html#wp1391015>

Release notes for 7.0:

http://cisco.biz/en/US/docs/wireless/wcs/7.0/configuration/guide/7_0ctrlcfg.html

Passive Client Support

The Cisco Wireless Lan Controller System Software Release 7.0 (7.0.98.0) introduces support for passive clients. The majority of retail and grocery stores use these passive wireless clients like the Hobart scales and Zebra printers for their operations.

Issues with Passive Client and Static IP addresses

Wireless legacy clients, such as the ones used in Hobart Wireless Scales, when configured with static IP addresses, do not transmit any of their IP information (IP address, subnet information, gateway information, and so on) upon association. Also, these legacy wireless clients cannot be contacted by the Internet service provider application server in the store (for example, for updating prices).

For passive clients, the Cisco Wireless LAN Controller can never acquire IP information. Such information is available only for wireless clients using Dynamic Host Configuration Protocol (DHCP) dynamic addressing.

In earlier releases of the Cisco Wireless LAN Controller (WLC) software, the controller passes these requests to another device or application, which then processes the requests acting as a proxy for any Address Resolution Protocol (ARP) requests. When the controller earlier than 7.0 receives an ARP request, it responds with an ARP response instead of passing the request to the client. This had two advantages:

- The upstream device that sends out the ARP request cannot know where the client is located.
- It helps in preserving power for battery-operated devices like phones as they do not have to respond to every ARP request.

However, this behavior was not suited for passive clients. Because the WLC does not have any IP information, it cannot respond to the ARP request. Because it cannot respond to the ARP request and cannot forward it to the passive clients, there is no information about these clients in the network. Any application or device trying to access such devices will fail. WLC puts such clients in a DHCP_REQD state, and because of this the passive clients cannot pass any traffic.

The Solution

Wireless Lan Software Release 7.0 solves this issues by supporting a Passive Client feature to handle such clients.

A work-around from Hobart is available in the later versions of Hobart scales. However, the later versions are expensive. It can cost up to \$200 per scale to get the software. If a store has, say 5000 scales, the upgrade costs can easily run into \$1 million.

This new feature alleviates the need for device upgrades

You can configure the passive client feature on the Cisco WLC using the following command-line interface commands:

```
Config wlan passive-client enable <wlan-id>
Config wlan passive-client disable <wlan-id>
```

You can also configure passive client support from the wireless controller GUI. Please review Passive Client Configuration section in the config guide for software release 7.0

<http://www.cisco.com/en/US/docs/wireless/controller/7.0/configuration/guide/c70wlan.html#wp1391015>

Design Considerations

Multicast

Please be aware that enabling passive client support disables the proxy ARP behavior. The passive client support feature needs multicast-multicast and the multicast group address to be configured on the wireless lan controller . Passive clients use the multicast-multicast mode, but this functionality is not available with Hybrid Remote Edge Access Points (H-REAP). The H-REAP feature relies on multicast-unicast mode.

DHCP

It is recommended not to put DHCP clients (particularly running on batteries) on the same WLAN/VLAN as passive clients. Since enabling passive client support disables the proxy ARP behavior, all ARP requests will be transferred to the wireless clients. In this case, the DHCP clients would be busy answering ARP requests as well and this may affect their battery performance.

If you do need some clients to get DHCP dynamic addressing and you set the DHCP_REQD flag, no static IP clients will be allowed. Passive clients, by definition, are static IP clients. Since the DHCP_REQD flag is set, they will not be able to associate.

Network Interface Cards Supported

The Hobart scales can support a variety of NIC cards. You will need a wireless kit to support NICs on Hobart. There are a couple of wireless kits available that support specific NIC cards. For example, the wireless kit 00-442814 supports the Cisco 352 ABG PCMCIA and the Spectrum 24 DS cards. It is essential to know the wireless kit and the cards supported to debug any issues.

Cisco has tested with Spectrum 24 DS (v2.51-08) and Cisco 350 ABG Series (v4.25.10).

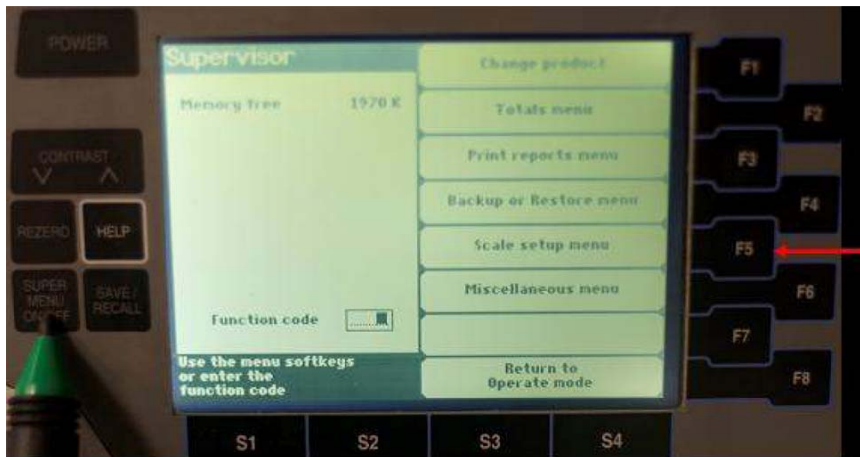
Configuring a Hobart Scale

Before You Start

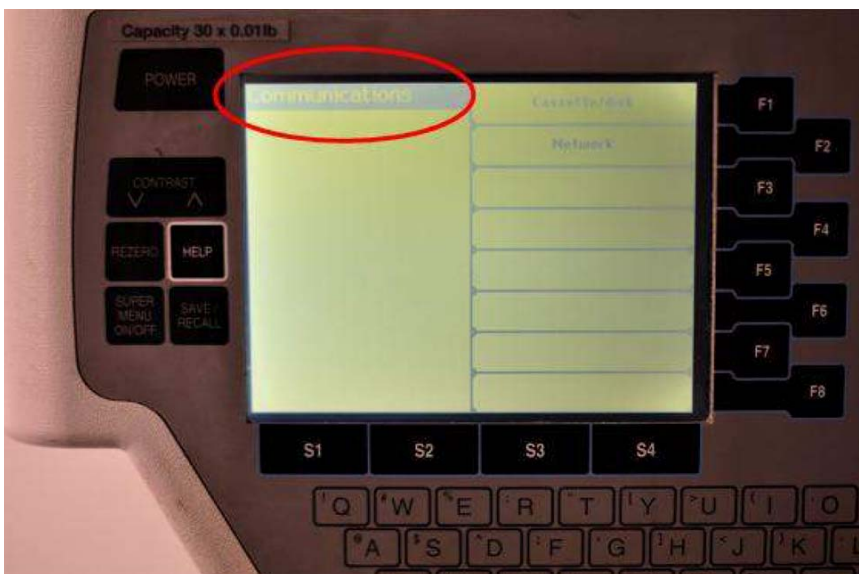
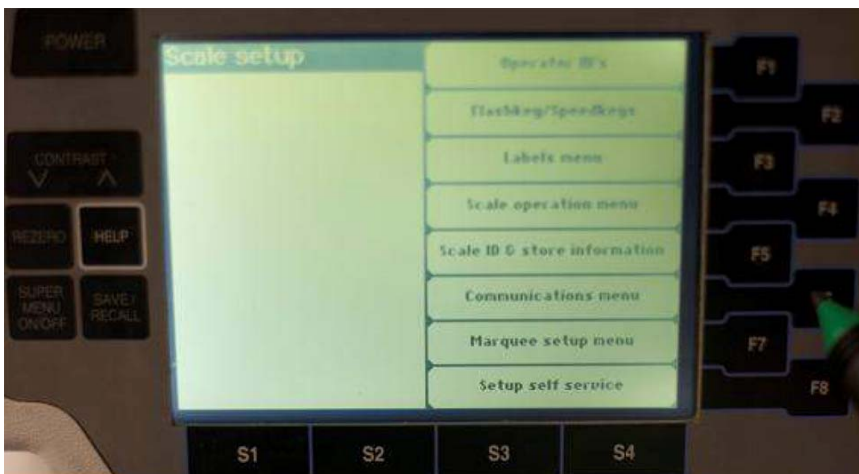
1. You need to be in supervisor mode to configure the Scale
2. Channel Frequency Band or Static channel can be configured
3. The Scale uses default port number that the scale uses is 6000. Make sure it is open all the way.
4. The System ID is the Network ID or the SSID. Make sure it is set correctly; it is case-sensitive
5. Older firmware asks you to enter the IP address of the AP manually. Newer firmware can figure acquire the IP address automatically.
6. The scale should display whether it is using a wired or wireless connection (with the appropriate antenna type) on a label on the body of the scale. Some wireless options include an internal antenna, a small external mount antenna, a large external mount antenna, and an external antenna box.

Setting up for Wireless Access

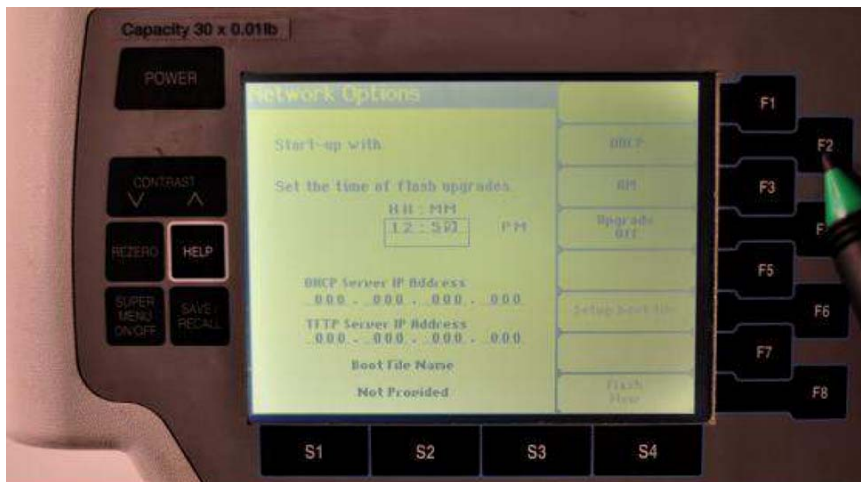
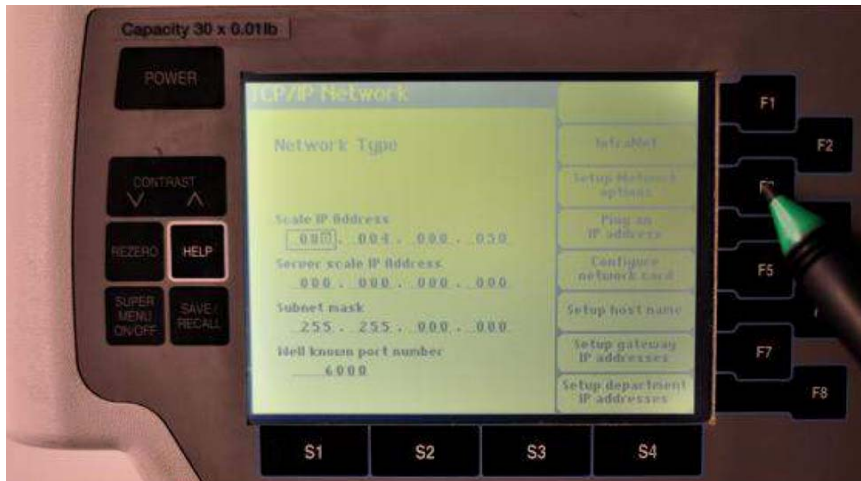
1. Boot up the Hobart scale.
2. You have to be in the supervisor mode to change the network configuration on the scales. To get to the supervisor mode, press the **Esc** key and the **Supervisor Menu** button to access the setup menu
3. To select the network options, go into the Supervisor menu and select **Scale setup menu (F5)**.



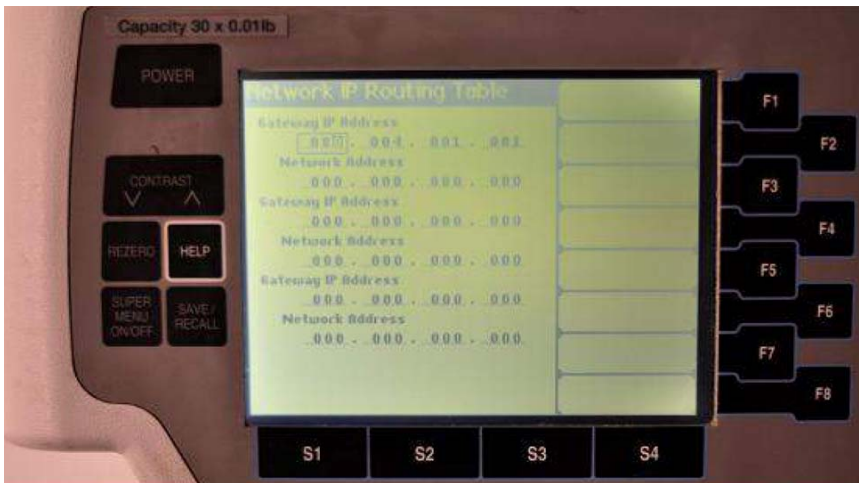
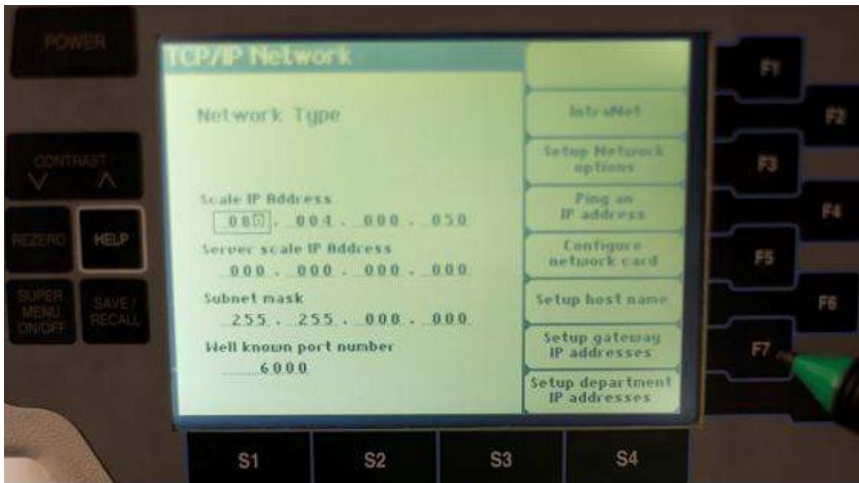
4. To configure WLAN settings, press F6 to access the **Communications** menu.



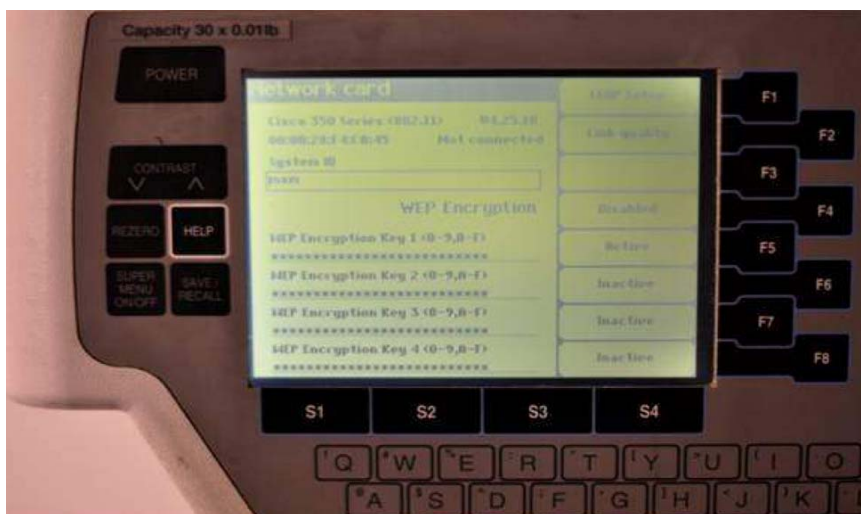
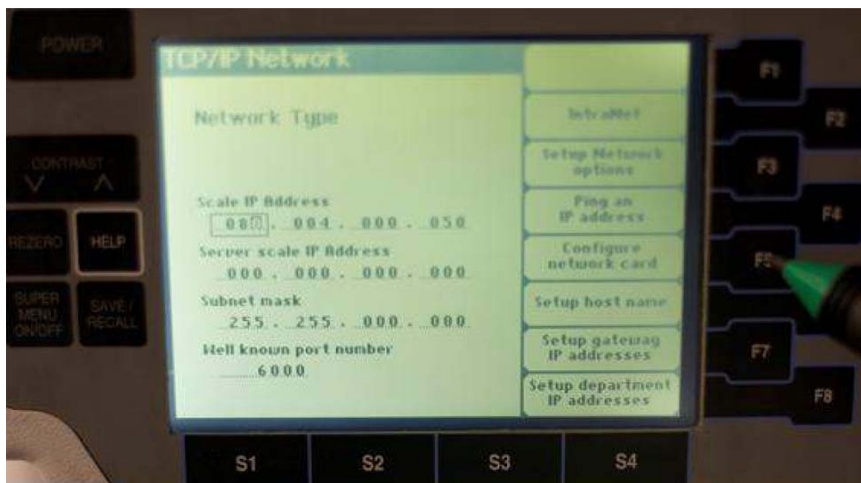
- To set up DHCP/BOOTP, press F3 to access **Setup Network options**. Otherwise, you can configure a Static IP here.



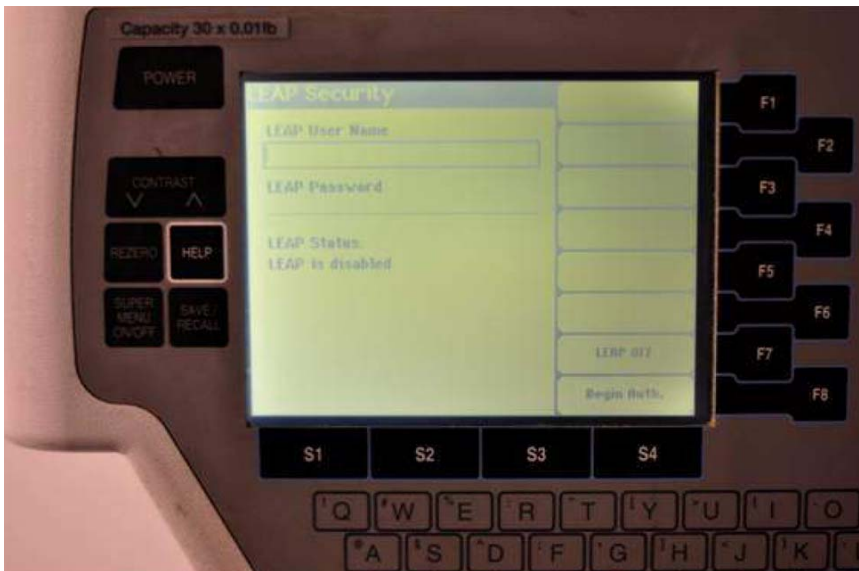
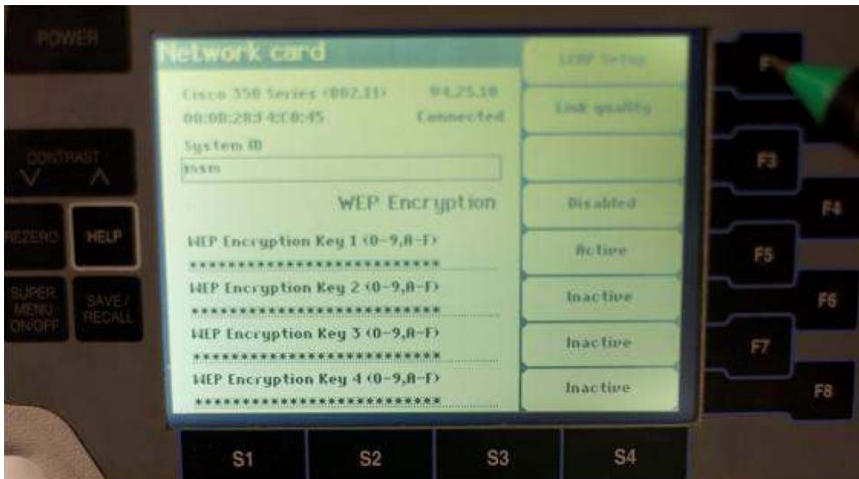
- Once the IP settings are configured, you can configure the gateway information by pressing F7, **Setup gateway IP addresses**.



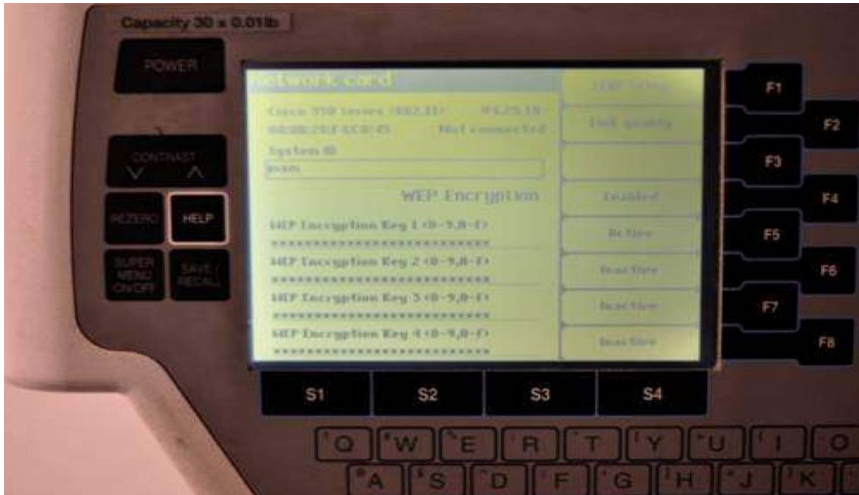
7. To configure security, press F5 to access the **Configure network card** option.



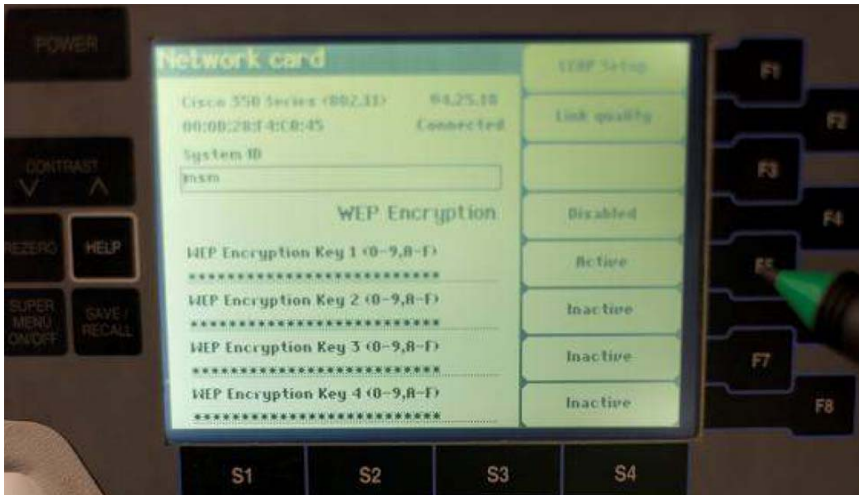
- 8. You can configure 802.1x (Lightweight Extensible Authentication Protocol [LEAP]) by pressing F1, **LEAP Setup**, as shown. When prompted, enter the LEAP username and password.



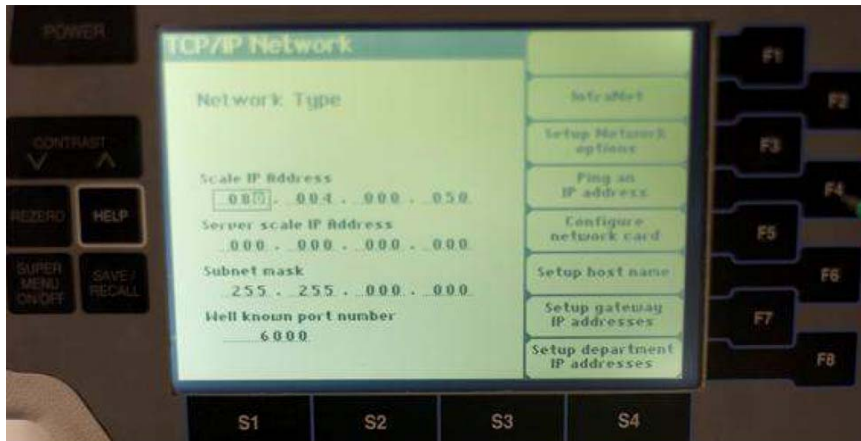
9. To enable static Wired Equivalent Privacy (WEP) keys, toggle WEP encryption to Enabled by pressing F4.



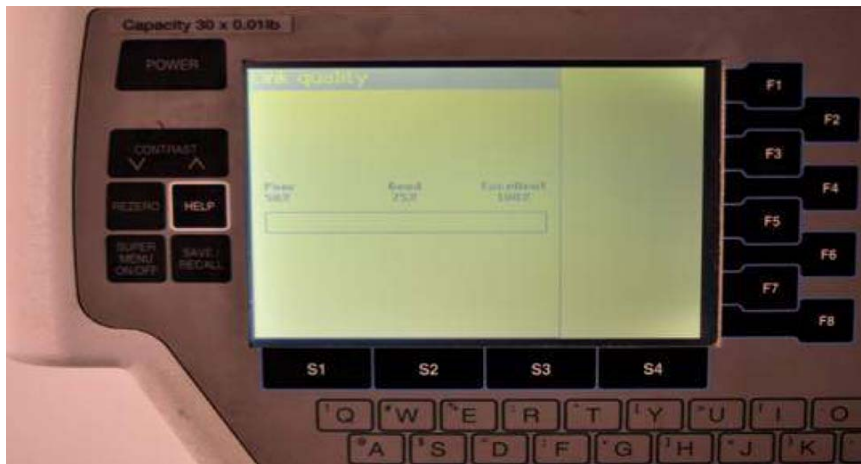
10. Enter the corresponding WEP key(s). Press the function key F5 to set WEP encryption as Active.



11. You can also run continuous pings to test network connectivity. Try to ping an IP address by selecting **Ping an IP address (F4)**.



12. If it cannot ping, check the link quality and the IP address. A link quality value of “Poor” does not necessarily mean that the link quality is bad, as per the Hobart documentation.



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
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