



# WiFi

## Setup and Operation Manual



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Contains FCC ID: 2ABXJ-DUO

1. This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
  - (1) This device may not cause harmful interference.
  - (2) This device must accept any interference received, including interference that may cause undesired operation.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter. This equipment must be installed and operated with a minimum distance of 20 cm between the radiator and user body.

# INTRODUCTION

This manual is furnished as a guide to setup and operation of the apex WiFi. It has been supplied in addition to the apex Digital Clinical Scale Owner's Manual, 3300-0188-0M. This manual should be consulted for information concerning the installation, operation and service of the equipment comprising this system.

## FEATURES

- Soft Access Point (AP) for setting credentials for WiFi module
- Setup option to select static or dynamic IP address
- Built-in web server to display weight, height, and BMI
- TCP/IP connection for continuous output of weight, height, and BMI

## SETUP

### Configure Network Settings

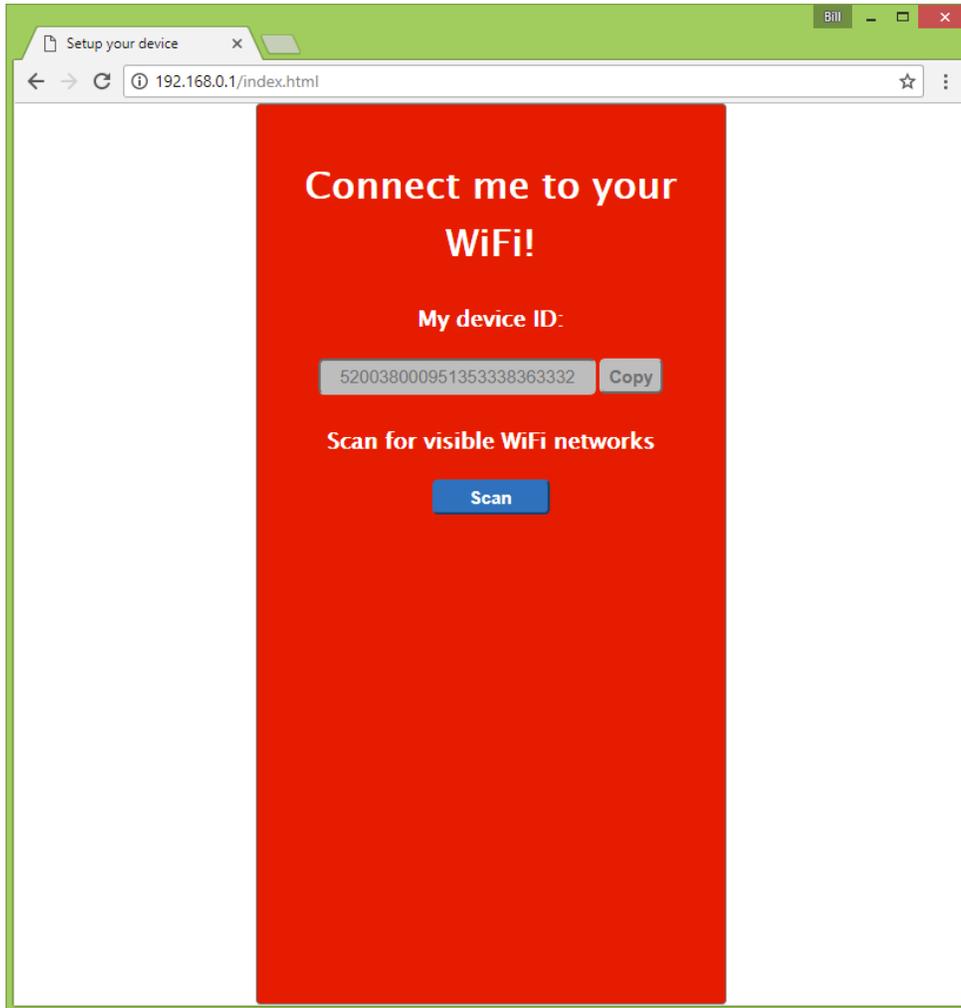
To enter setup mode:

1. Press the  key to turn the scale on.
2. Press and hold the  and the  keys until the display shows the prompt *dE n n 0*.
3. Press the  key until the prompt *Y F 1* is displayed. Use the  or  keys to change the selection to *0 n* and press the  key.
4. The prompt will change to *b L E* for Bluetooth Low Energy Enable. Select *n 0* and press the  key.
5. The prompt will change to *d H C P*. Select *n 0* to use a static IP address. Select *Y E S* to use a dynamic IP address assigned by a DHCP server. Consult with your network administrator for the proper selection.
6. The next prompt will be *I P 1*. If *d H C P* was set to *0 n*, nothing needs to be entered here. If *d H C P* was set to *0 F F*, enter the first octet of the static IP address. For example, if the static IP address is "192.168.0.2", press the  or  key until the display shows 192, and then press the  key.
7. The next three prompts will be *I P 2*, *I P 3*, and *I P 4* for the remaining octets of the IP address. Press the  or  key until the display shows the value for the octet, and then press the  key.
8. If *d H C P* was set to *0 n*, proceed to *Y C L* below. Otherwise, the prompt *S u b 1* will be shown. Press the  or  key until the value for the first octet of the network subnet mask is displayed. Press the  key. Repeat for the remaining three octets of the subnet mask, *S u b 2*, *S u b 3*, and *S u b 4*.
9. The next prompt will be *g a t e 1* for the first octet of the network gateway's IP address. Press the  or  key until the value of the first octet is displayed, and then press the  key. Repeat for the remaining three octets of the gateway's IP address, *g a t e 2*, *g a t e 3*, and *g a t e 4*.
10. The display will prompt *Y C L*. To clear the WiFi module's credentials (SSID and password), press the  or  key until *Y E S* is displayed. Press the  key and the credentials will be cleared. Select *n 0* and the credentials will be retained.
11. Press the  key to turn the scale off and then press it again to turn the scale back on.

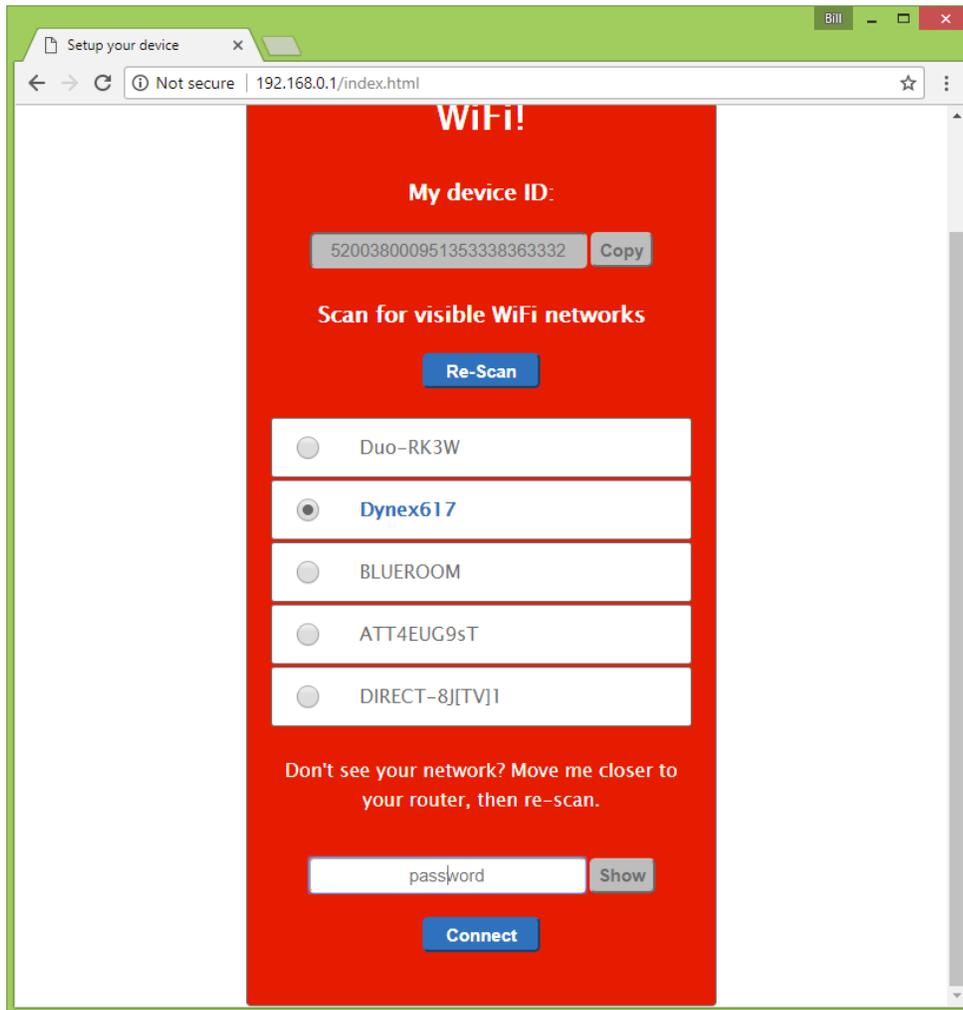
## Configure Wireless Network Module

Without WiFi credentials, the WiFi module will enter listening mode, in which it functions as a WiFi access point. The SSID of the AP is of the form “Duo-xxxx”, where the “xxxx” varies. Use a WiFi device, such as a Smartphone or laptop to connect to the Duo module. If the connection fails, try moving the scale to another location or cycling power to the scale.

When the connection has been made, open a web browser and go to the location **http://192.168.0.1**. The “Connect me to your WiFi!” page should appear.



Click on the **Scan** button to see a list of available WiFi networks.



Select the network the module should connect to and enter the password for that network. Click on the **Connect** button and the module should try to connect to that network. This may take several seconds. The module will store these network credentials and connect to this network each time the scale is turned on.

To change the network credentials, go into setup and select *YES* at the *Y [L]* prompt. This will clear the network credentials. Repeat the above steps to set the new network credentials.

## Display IP Address

To display the scale's IP address:

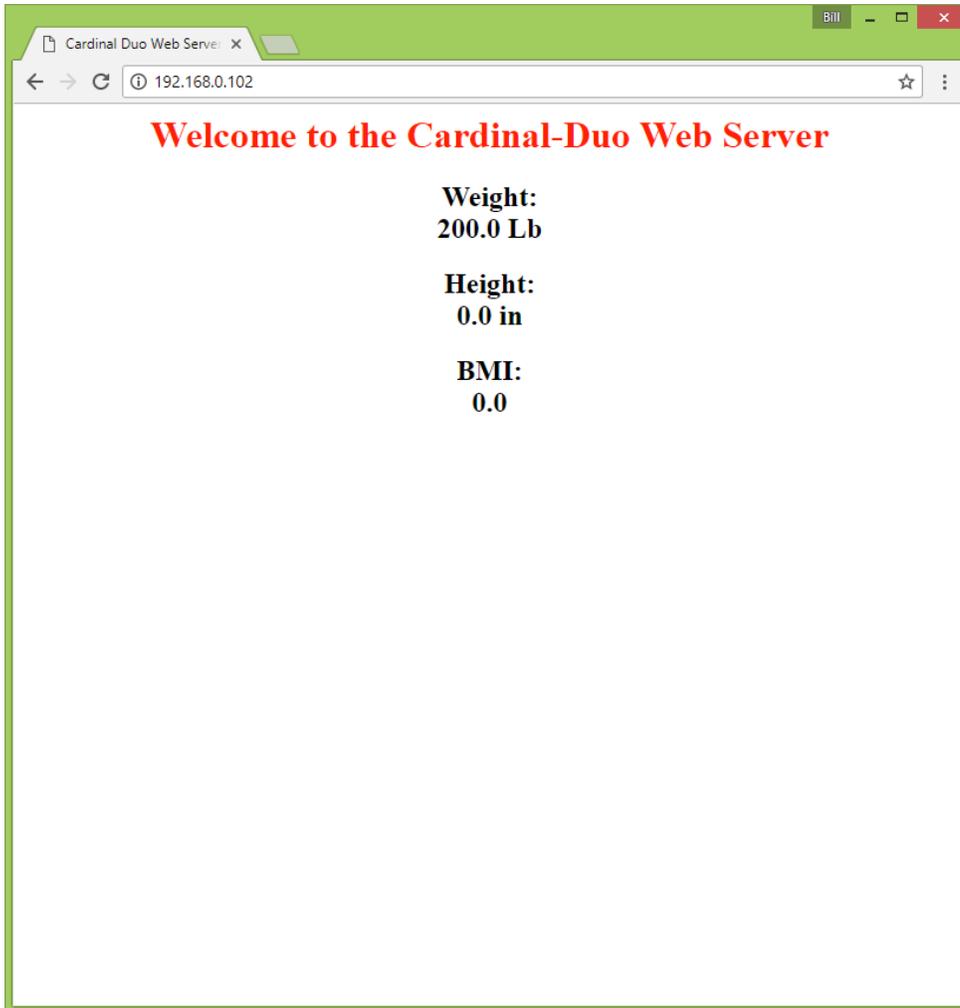
1. With no weight on the scale, press and hold the **←** key.
2. The display will change to all dashes, followed by the software revision.
3. Release the **←** key.
  - The calibration counter and configuration counter will be shown for approximately two seconds each.
  - Then, the software revision for the WiFi module will be shown.
  - After that, the four octets of the IP address for the scale will be shown.
  - The display will change to all dashes again.
4. Press the **←** key to return to normal operation.

If all four octets of the IP address are 0, the scale is not connected to a network. If a scan of WiFi networks shows the "Duo-xxxx" AP, then the module is in listening mode. See above for the procedure for setting the WiFi credentials.

# OPERATION

## Web Server

To see scale data with your WiFi device, open a web browser and go to the IP address for the scale. For example, if the IP address is “192.168.0.102”, enter **http://192.168.0.102** and a page like the following should appear.



## TCP/IP connection

Continuous output is available by TCP/IP connection to the scale's IP address at port 10001.

For Imperial units, the format of the output is:

`Sc^wwwwwUUhi.ibbb.b<CR><LF>`

Where:

S	=	ASCII S (53 Hex)
c	=	status ('Z' = center of zero, 'I' = overcapacity, 'U' = below zero, Space = none of the preceding)
^	=	ASCII space (20 Hex)
wwwww	=	weight
UU	=	Unit (lb)
h	=	feet height
i.i	=	inches height
bbb.b	=	BMI
<CR>	=	ASCII CR (0D Hex)
<LF>	=	ASCII LF (0A Hex)

For metric units, the format of the output is:

`Sc^wwwwwUU,hhhhh,bbb.b<CR><LF>`

where

S	=	ASCII S (53 Hex)
c	=	status ('Z' = center of zero, 'I' = overcapacity, 'U' = below zero, Space = none of the preceding)
^	=	ASCII space (20 Hex)
wwwww	=	weight
UU	=	Unit (kg)
hhhhh	=	height in cm
bbb.b	=	BMI
<CR>	=	ASCII CR (0D Hex)
<LF>	=	ASCII LF (0A Hex)



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203 E. Daugherty, Webb City, MO 64870 USA

Ph: 417-673-4631 or 1-800-641-2008

Fax: 417-673-2153

Technical Support: 1-866-254-8261

E-mail: [tech@cardet.com](mailto:tech@cardet.com)