TÜV NORD
Hochfrequenztechnik

Annex acc. to FCC Title 47 CFR Part 15
relating to
ARC Healthcare Technologies
ARC-BD-100-3

Annex no. 5
User Manual
Functional Description

Title 47 - Telecommunication
Part 15 - Radio Frequency Devices
Subpart C – Intentional Radiators
ANSI C63.4-2014
ANSI C63.10-2013

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ARC Healthcare Technologies

BD KANBAN MAILBOX

USER'S GUIDE

Two groups of people will use the Mailbox:

- Replenishment personnel who stock the bins

- Nurses and others who pick items from the bins for use

Each group has its own procedure, and need not be concerned about the other.

Stocking the Bins

There are two bins for you to stock, a *primary* bin and a *secondary* bin. Each bin has a kanban card, which may be kept in a holder on the front of the bin, or attached to the shelf with Velcro. Here is how you replenish the stock in these bins.

- If there is stock in the secondary bin, move it to the primary bin. Then, fill only the secondary bin with fresh stock.

- If both bins are empty, fill both with stock.

- Each bin that was empty will have a kanban card in the Mailbox. Get the card and put it back in the bin holder or attach it to the shelf.

Picking from the Bins

There are two bins that contain the items you need, a *primary* bin and a *secondary* bin. Each bin has a kanban card, which may be in a holder on the front of the bin or attached to the shelf with Velcro. Here is how you pick items from these bins.

- If the item you need is in the primary bin, take it from there.

- If the primary bin is empty, take what you need from the secondary bin.

- Whenever you take the last item in a bin, leaving it empty, take the bin's kanban card and drop it in the mailbox.

That's it! The system will automatically order more stock for you. And you don't have to rotate the stock, because the primary bin will always contain the oldest items, so they will get used first.

PLACING CARDS IN THE MAILBOX

Here are some things to remember when you are handling the Kanban Mailbox cards:

- Put the cards in the mailbox so they touch the bottom and are parallel to the face of the mailbox. If they are not all the way in, or if they face to the side, the Mailbox may not read them.

- Don't fold or tear the cards. Again, this may prevent the Mailbox from reading them.

- Don't bind the cards with rubber bands, tape, etc. This may damage the cards so they can't be read.

- Don't put cards on top of the Mailbox. It may or may not read them.

- Don't put cell phones, other electronic items or metal objects on or in the Mailbox. This may interfere with its ability to read the cards.

- Don't unplug the power supply or data cable, or hang anything on the cables.

- Don't put metal cabinets or other large metal objects near the Mailbox, and don't route cables directly in front of the Mailbox. This will hurt performance.

- Don't remove the cards from the room or put them in a Mailbox in a different room. The cards are programmed for the Mailbox(es) in a specific room, so supplies will not be reordered if they are placed in another room's Mailbox.

INSTALLATION

The Helios Kanban Mailbox is normally mounted on a wall or similar flat surface. Contact ARC Healthcare if you have special mounting needs.

Installation Requirements

The Mailbox communicates over Ethernet, with a fixed IP address of 192.168.189.104. The unit's RJ45 connector is on the bottom panel. The LAN port it connects to cannot be located behind the panel.

The Mailbox uses AC power at 100-240 V, 50-60Hz. The DC power supply requires one standard receptacle, which cannot be located behind the panel. The DC power connector is on the bottom panel.

Select and Prepare the Location
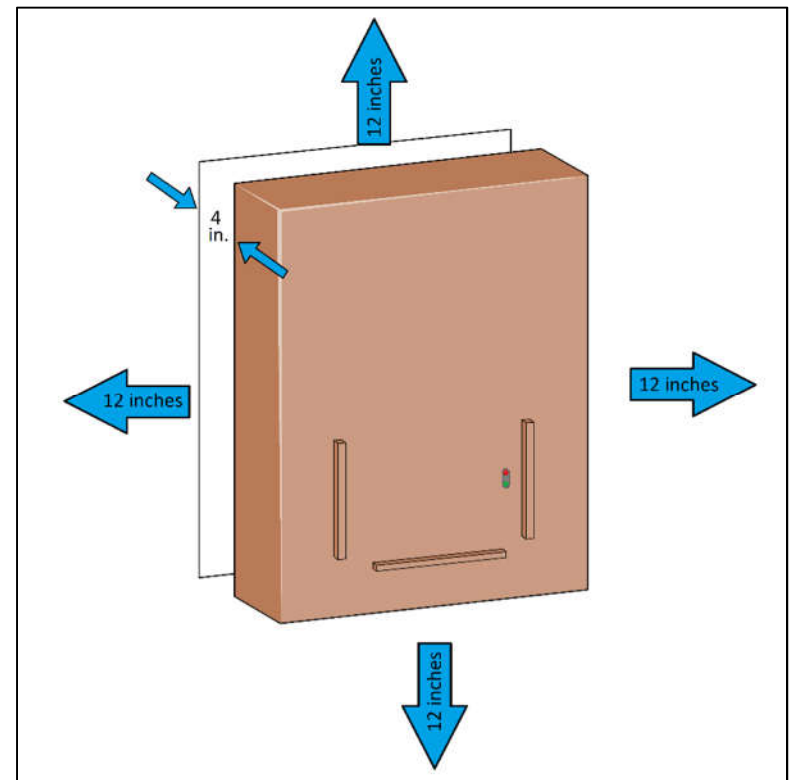
1. Select a suitable location for the mailbox. Some things to consider are:

    - It must be mounted on a wall or other flat, vertical surface.

    - The Mailbox is 11 in. wide and 13 in. high, and mounts on a flat surface.

    - Locate it close to the kanban storage bins it will service. However, do not place it where a bin will be within 12 inches of the top, bottom or side of the Mailbox, or within 4 inches of the back of the Mailbox.

    - Put it in a location that is easy to access, at a height that will be comfortable for users to reach.

    - Avoid locations that are close to large metal objects, such as file cabinets and metal tables.

    - The power and network cables plug into the bottom of the panel. Be sure to allow room for that.

Mount the Backplate

2. Remove the four mounting screws, and then remove the backplate from the Mailbox.

3. Remove and discard the packing foam.

4. Place the backplate in position with the flanges at the top and bottom. It is reversible; either end may be up.

5. Attach the backplate to the wall with anchors that are suitable for the wall material. Because of the many variations in wall materials, the anchors and screws are not included.

Caution!

Use screws or bolts with heads that protrude no more than 5 mm (3/16 inch) above the surface of the plate.

Mount the panel in compliance with applicable building codes and other safety policies. Installations in California and some other jurisdictions may require compliance with earthquake codes.

Mount the Mailbox Panel on the Backplate

6. Orient the mailbox panel so that the connectors are on the bottom, and then slide it onto the backplate.

7. Align the two holes in the top of the mailbox with the holes in the top flange of the backplate. Secure with two of the included self-tapping screws.

8. Secure the bottom of the mailbox to the bottom flange with two of the included self-tapping screws.

9. Slide the drop box into the rails on the front of the mailbox.

Connect the Power Supply

10. Plug the DC connector into the jack on the bottom of the mailbox.

11. Screw the plug's collar onto the jack finger-tight.

12. Plug the power supply into an AC receptacle.

Connect the Ethernet Cable

13. Plug a standard Ethernet patch cable into the Ethernet port on the bottom of the mailbox.

14. Connect the other end of the cable to the Pyxis network.

Note

The Kanban Mailbox uses a static IP address of 192.168.189.104. This address, along with the unit's MAC ID are printed on a label on the bottom panel of the mailbox.

TUNING THE MAILBOX'S ANTENNA

The Kanban Mailbox has an internal RFID antenna. This antenna is tuned at the factory and usually does not need to be tuned at installation. However, metal objects nearby, or wires and pipes in the wall may affect the antenna and reduce the Mailbox's efficiency in reading tags. In such cases, you should tune the antenna at installation.


Caution!

Improper tuning will severely degrade the performance of the Mailbox. Antenna tuning should be attempted only by a service technician who is trained in the procedure and who is familiar with the proper use of the tuning meter and other tools.

The tuning procedure requires about ten minutes to complete.

Required Equipment

- A VSWR (voltage standing wave ratio) meter suitable for working at 13.56 MHz.
- Spare antenna cable (SMA male to SMA male)
- A 5/16-inch open-end wrench.
- A Vishay Spectrol 008T000 Trimmer Adjustment Tool or equivalent tool. An ordinary screwdriver will not work!
- A notebook computer running a web browser, such as Firefox, Chrome or Edge.
- Ethernet crossover cable. (Not a standard Ethernet cable!)

Connect the Tuning Meter and Notebook
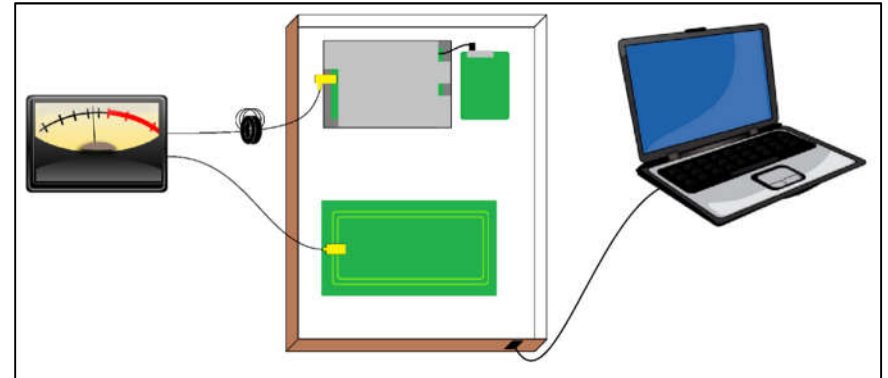
1. Disconnect the Mailbox power supply or unplug the adapter from the AC receptacle.

2. Use a 5/16-inch wrench to disconnect the antenna cable at the antenna, then connect it to the *Transmitter* side of the meter.

3. Connect the *Antenna* side of the meter to the antenna.

4. Use an Ethernet crossover cable to connect the notebook to the Ethernet port on the bottom of the Mailbox.

5. Slide the Mailbox onto its mounting plate. It may be necessary to partially install the mounting screws to keep the Mailbox in its proper position. This is especially important when you are working with a wall-mounted unit.

6. Reconnect the power supply to the Mailbox and plug it in.

Set Up the IP Configuration on the Notebook

Note

This procedure is for Windows 10. Other Windows versions are similar. Non-Windows operating systems may be used, but the steps for this section will be considerably different.

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7. On the notebook, open *Control Panel*.

8. Select *View by Small Icons*, and then select *Network and Sharing Center*.

9. Click *Change Adapter Settings*.

10. Right-click on your Ethernet adapter, and then select *Properties*.
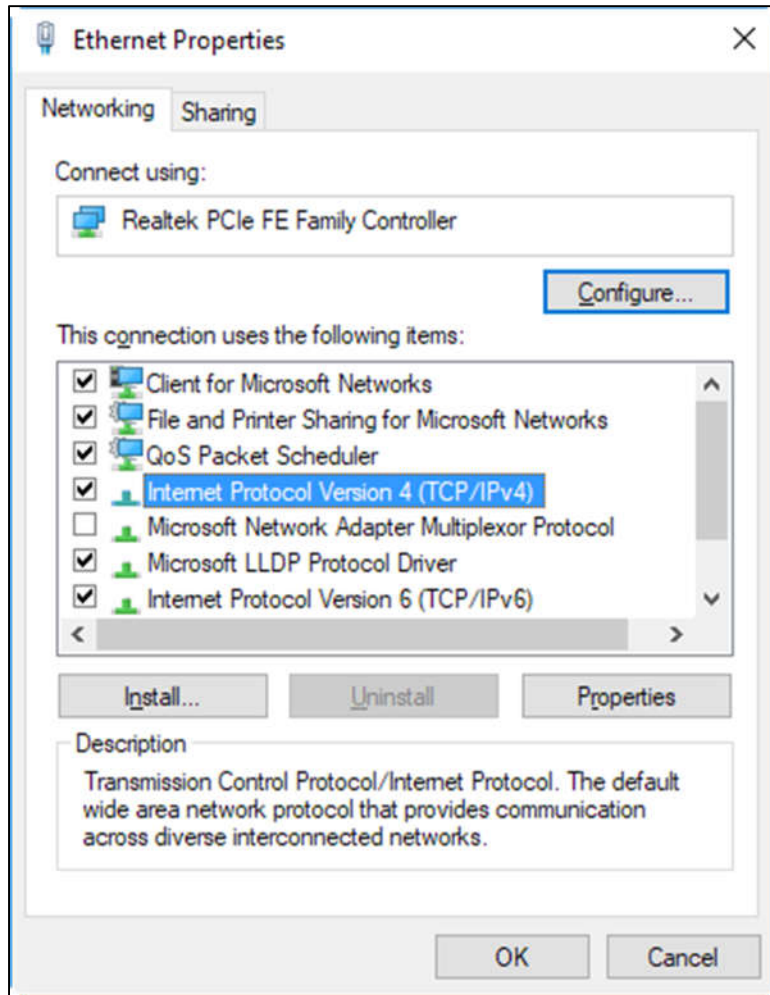

11. Select *Internet Protocol Version 4 (TCP/IPv4)*, and then click *Properties*.
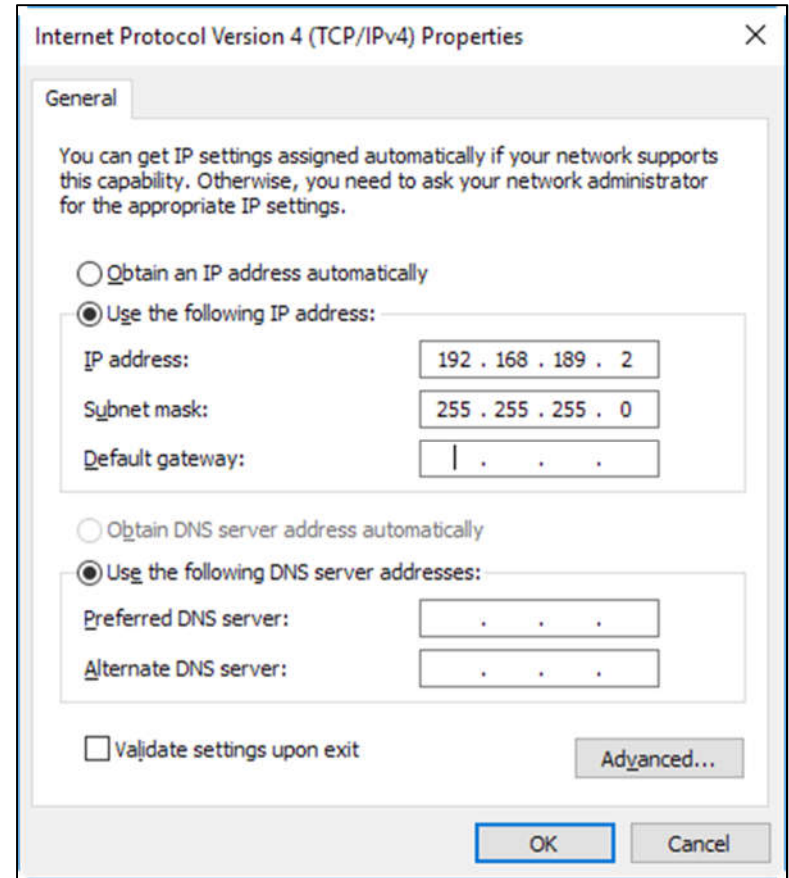
12. Make a note of the current settings. You will want to restore these when you are finished.

13. Select *Use the following IP address*.

14. For the IP address, enter *192.168.189.2*.

15. Check the label on the bottom of the Mailbox to confirm that this is not the same IP address that the Mailbox uses. If it is the same as the Mailbox IP address, change the 2 to any number between 3 and 254.

16. For the Subnet mask, enter *255.255.255.0*, and leave the Default gateway blank.

17. Click *OK*.

Log into the Web Interface
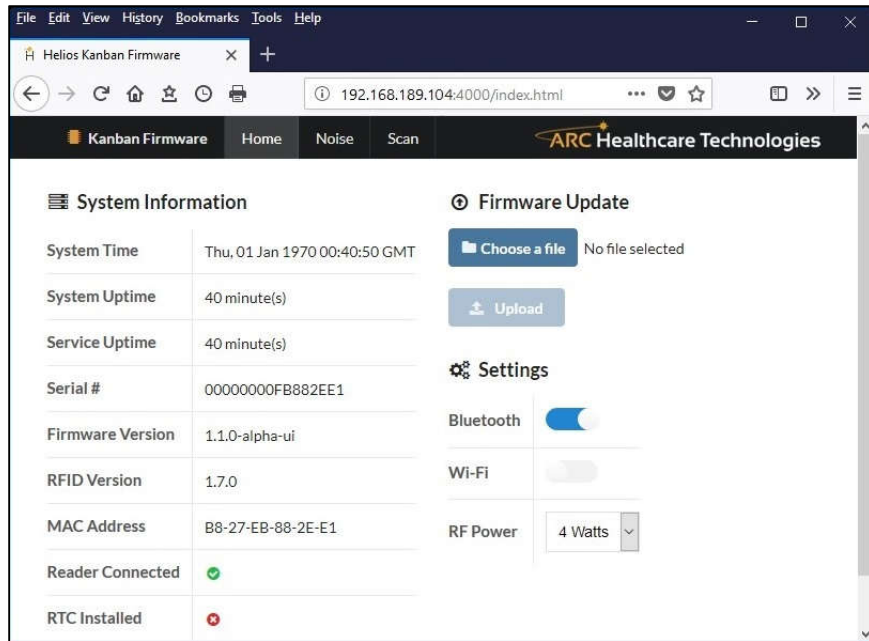
18. Open a web browser. In the address bar, enter the IP address of the Mailbox, followed by *:4000*.

    In this example, the Mailbox uses IP address 192.168.189.104. Therefore, *192.168.189.104:4000* was entered into the address bar.
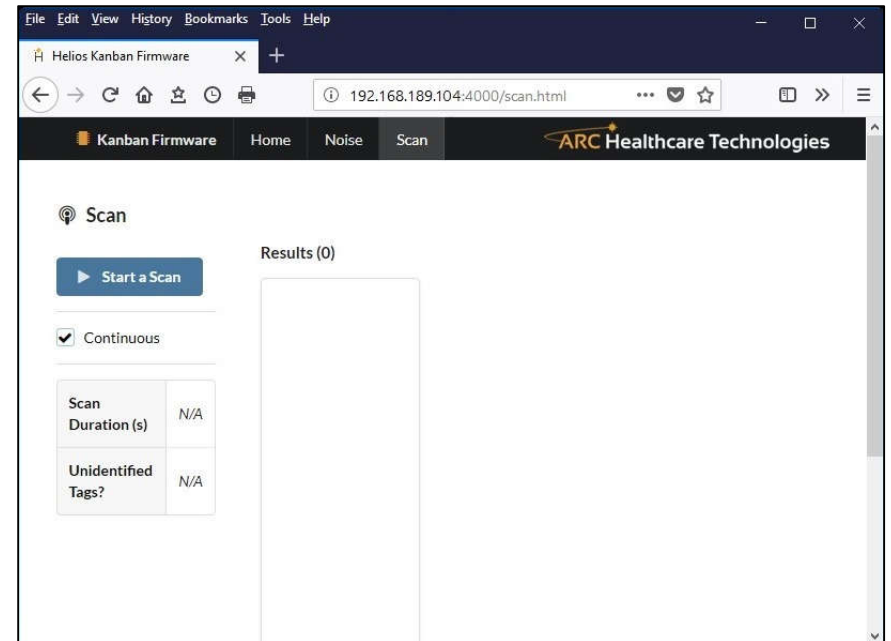
19. Press the *Enter* key on your keyboard.

20. You will be asked for a user name and password. Enter:

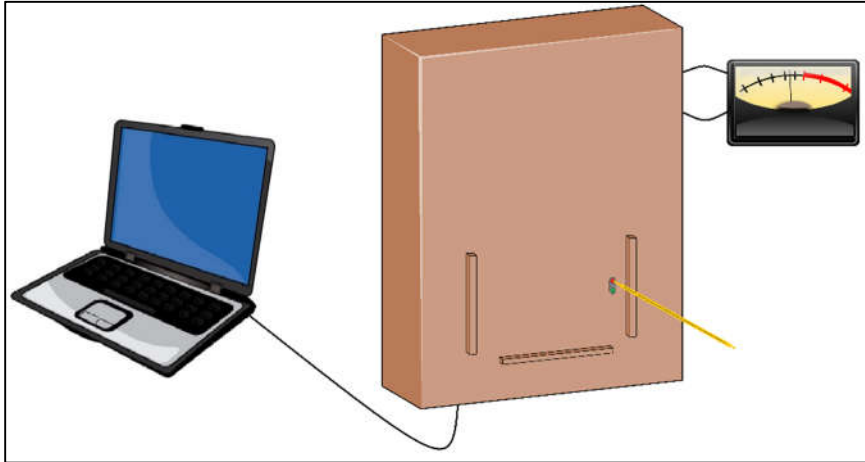   User Name: *root*

    Password: *archlt*

Start a Scan

21. Select the *Scan* tab.

22. Check the *Continuous* box.

23. Click *Start a Scan*.

Tune the Antenna

The exact procedure for setting up and adjusting the tuning meter will vary with the specific meter model. Follow your meter's instructions for measuring VSWR.

Note

The tuning process is rather sensitive, so you will find that you need to make only small adjustments to the capacitors.

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24. Adjust the top tuning capacitor to minimize the meter reading.

25. Adjust the bottom tuning capacitor to again minimize the reading.

26. Continue alternating the capacitor adjustments until you achieve a VSWR of 1.3 or lower. In most cases, each capacitor will need only one adjustment, but occasionally it will take several adjustments.

Note

You should adjust the tuning to the lowest VSWR you can obtain. The specified level of 1.3 is the *highest acceptable* value, but lower values are preferred. If you cannot tune the antenna to 1.3 or lower, the unit is considered defective and should be returned for service.

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27. Click *Stop Scan* on the Web interface to stop the tuning process.

28. Unplug or disconnect the power supply.

29. Disconnect the test equipment and reconnect the antenna cable as it was originally. Use a 5/16-inch wrench to tighten the connector at the antenna.

30. Tuning is complete. You can now remount the Mailbox and install the mounting screws.

31. Reconnect and plug in the power supply.

32. Reconnect the Mailbox to the network.

33. Restore your notebook's IP settings to their original values.

SERVICE

Normally, the Mailbox does not require regular maintenance.

If the Mailbox fails to communicate, or if it fails to read the kanban cards, you should reboot the Mailbox. To do this:

- Unplug the power supply from the AC receptacle.
- Wait 20 seconds.
- Plug the power supply back in.
- Wait one minute for the reader to restart.
- Check the Mailbox for proper operation.

If that fails to resolve the problem, or if it recurs frequently, contact Technical Support.

FCC COMPLIANCE STATEMENT

CAUTION: Changes or modifications not expressly approved could void your authority to use this equipment

This device complies with Part 15 of the FCC Rules for Class A devices. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INDUSTRY CANADA STATEMENT

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Helios
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