CRANE MERCHANDISING SYSTEMS

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CORA Installation Guide

COR15x-US101

P/N: 250654053_G3

Contents

SERIAL NUMBER CONFIGURATION

WWYLCCPPPPP
WW - Week Manufactured (01 through 52)
Y - Year Manufactured (2 for 2002)
L - Manufacturing Location
CC - Configuration Code
PPPPP - Sequential Production Number

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Introduction

This document details the installation, assignment and use of the CORA telemeter when combined with a cashless credit card bezel.

This guide assumes that the operator has completed the on-boarding process required to establish a banking relationship with one of our available credit card processors.

Ease of Installation(EOI)

Once the physical installation is complete and CORA is powered on, the device will automatically assign with our Ease of Installation feature. This will ensure that any cashless transactions are properly credited to the operator.

VendMAX

For customers using VendMAX, you must continue to use VIX to assign your telemeters or you can use the Crane Cashless app (available in the Apple Store or Google Play Store).

Although many of the tests are performed within the VIX program, CORA's Diagnostic Mode is available for all customers. Minimum software version required for the VIX handheld is build 297.

Components

Verify that all the components listed on page two are present before beginning installation.

CORA should be powered on and communicating 100% of the time. We do not recommend using CORA with energy saving devices that interrupt power to the machine.

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CORA Components

Item #	P/N	Description	Image
1	400046 4000xx	Verizon 4G CORA unit AT&T 4G CORA unit	
2	400048	4G LTE Antenna, Primary	
3	400051	DEX Cable	
4	400050	CORA MDB Power Cable	

Optional Parts

Item #	P/N	Description
1	214137050C	6' DEX Extension Cable
2	804930670	1' DEX Extension Cable
3	400011	IDTech Bezel Adaptor Cable

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Installation

1. Power off the machine.
2. Identify installation location
    - Determine the best location for the antenna(s). Ensure they are placed as far as possible from interference sources like ballasts and transformers.
    - Where possible, the antenna should be placed in an area where metal structure is limited. Please refer to **4G External Antenna Installation** on the following page for more information.
    - There should be no interference from the motion of the machine components and cables, nor should movement cause harnesses to flex excessively.
3. Remove any dirt and dust from the installation area and secure the modules' magnets to the machine.
4. Locate the MDB harness from the validator to the control board (VMC), separate the two MDB connectors, and connect the MDB harness from the cora to both connectors.
    a. Connect all the harnesses as shown in the diagram on page five. Each connector only matches its appropriate outlet.
    b. **The connection from the MDB harness to the VMC must be the first one in line (closest to the board) then all other MDB peripherals, ending with the coin mechanism.**
5. Locate the DEX socket coming from the VMC and plug the male DEX plug from CORA to this connector.
6. Connect the harness from the cashless bezel to the connector on the side of CORA.
7. Dress the harnesses so that there is no stress placed on any of the connections and secure with a zip tie. Do not tighten zip tie until the unit is installed in machine. Adding a service loop to

the harnesses near the connections will reduce the stress on the connectors.

8. Dress the rest of the harnesses and secure them in place with zip ties.

9. Restore power to the machine and allow at least three minutes for CORA to complete the assignment process. This can be monitored on the cashless bezel display. See Assignment Messages on page six.

4G External Antenna Installation

1. Find a mounting location that will not interfere with the operation of the vending machine.
2. Power OFF the vending machine, if it is not already off.
3. Thoroughly clean the machine surface around the area where the 4G antenna will be installed.
   Caution: *A minimum of 20cm (8 inches) should be maintained between the antenna and all persons as well as end users, and must not be co-located or operated in conjunction with any other antenna or transmitter. Only the antennas supplied with this device are to be used or the user may void the authority to use this device.*

4. Drill a 5/8" hole through the top of the vending machine. If there's already an antenna hole, widen it to 5/8", do not drill a second hole.
5. Thread the antenna cable through the top of the machine and attach the 4G connector as shown here:

5a. Thread the nut and washer onto the antenna cable, then insert the cable into the blue connector.	5b. Insert the locking tab into the connector and press the tab down, to lock the cable in place.

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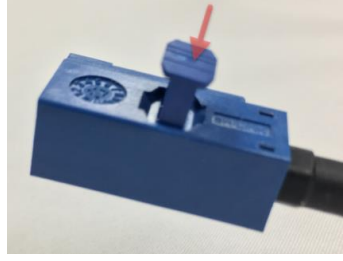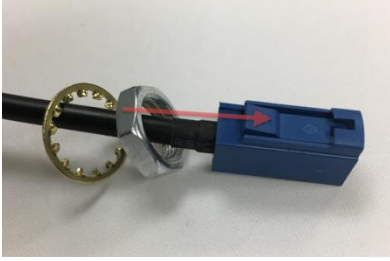
6. Secure the antenna by tightening the lock washer and nut on the antenna post.
7. Plug the assembled 4G connector into the blue primary antenna connector.

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Connections

DEX Socket

LED/ Wrench Button

MDB Connector

Cashless Bezel

Touch Screen

CPI Synq

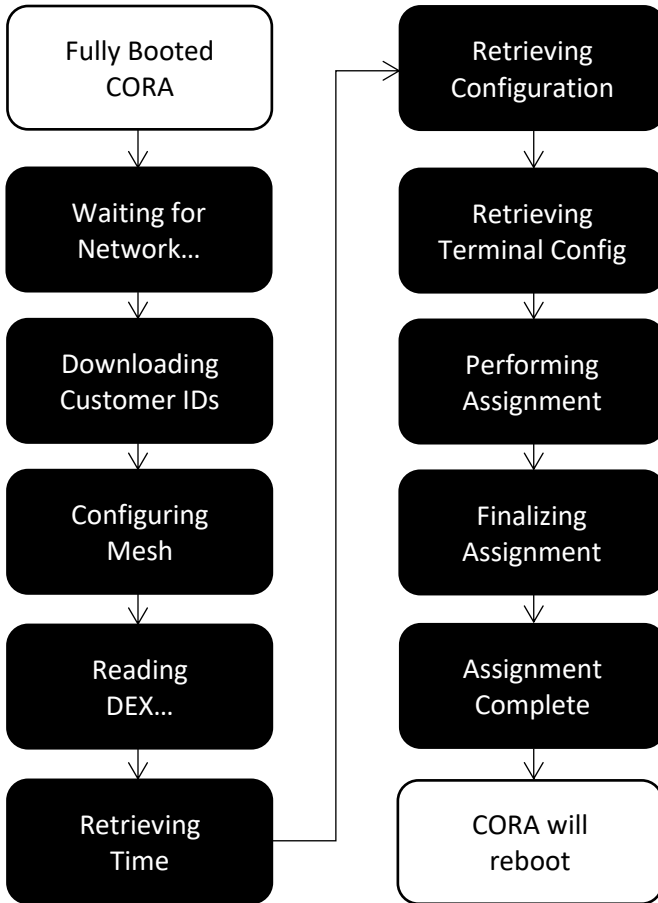Secondary 4G Connector (Gold)

Primary 4G Connector (Blue)

DEX Audit

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Assignment & Messages

During the assignment process, CORA performs numerous checks (outlined below). These messages will be displayed on a cashless bezel if using Ease of Installation (EOI) or Crane Cashless App. Messages will start once CORA has completed its boot up.

If you are a VendMAX customer using a handheld with VIX, you will receive the message "Use VIX to Assign." At this point, connect your VIX handheld and complete the assignment.

```
┌─────────────────┐           ┌─────────────────┐
│  Fully Booted   │           │   Retrieving    │
│      CORA       │      ┌───▶ │  Configuration  │
└─────────────────┘      │     └─────────────────┘
         │               │              │
         ▼               │              ▼
┌─────────────────┐      │     ┌─────────────────┐
│   Waiting for   │      │     │   Retrieving    │
│    Network…     │      │     │ Terminal Config │
└─────────────────┘      │     └─────────────────┘
         │               │              │
         ▼               │              ▼
┌─────────────────┐      │     ┌─────────────────┐
│   Downloading   │      │     │   Performing    │
│  Customer IDs   │      │     │   Assignment    │
└─────────────────┘      │     └─────────────────┘
         │               │              │
         ▼               │              ▼
┌─────────────────┐      │     ┌─────────────────┐
│   Configuring   │      │     │   Finalizing    │
│      Mesh       │      │     │   Assignment    │
└─────────────────┘      │     └─────────────────┘
         │               │              │
         ▼               │              ▼
┌─────────────────┐      │     ┌─────────────────┐
│    Reading      │      │     │   Assignment    │
│     DEX…        │      │     │    Complete     │
└─────────────────┘      │     └─────────────────┘
         │               │              │
         ▼               │              ▼
┌─────────────────┐      │     ┌─────────────────┐
│   Retrieving    │      │     │   CORA will     │
│      Time       │──────┘     │    reboot       │
└─────────────────┘           └─────────────────┘
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Diagnostics

Diagnostics can be used to obtain device information such as signal strength, DEX validation or performing a cashless system test.

Start diagnostics by pressing the wrench button on the unit five times or swiping a Technician Card. The following diagnostics information will cycle through the display. Note: The Technician Card does not perform a test-vend, but it does test cashless authorization.

Waiting for Network…	ID1: SWCODE ID2: NVCODE	Cashless Rev 3.01.08
Getting Customer IDs…	Swipe Skipped 0 retries	Solo 400000001
Do Test Swipe	Processor Success	Verizon -75dBm Connected
Testing Authorization…	Sel: 11 Vended	DMS Comms Good Auth Comms Good
Make Test Selection	Cash: 100 Credit: 110	Press any button on bezel to exit diagnostics
Doing Test Vend…	DEX Read Success	Insert USB Stick For Logs
Reading DEX…	Nav9.15.2 2018-05-03 12:23	Press any button on bezel to exit USB Logs

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Wrench Button LED Codes

LED Color	Description
Solid Green	Full boot & operational
Blinking Green	Attempting to get a DEX file
Blinking Red	Failed to get a DEX file
Solid White	Booting in progress
Solid Red	Fault on unit

Wrench Button Interface

Wrench Button	Description
Press and hold for three seconds	Attempts to get a DEX file
Press five times	Enters Diagnostics
Press and hold for ten seconds	Un-assigns the device

Signal Strength

Use diagnostics to obtain the signal strength of the cora device and compare it the table below to determine if signal is adequate for cashless transactions.

Signal Range	Results
-0dBm	Unable to get a cellular signal
-55dBm to -70dBm	Great signal
-71dBm to -90dBm	Good Signal
-91dBm to -100dBm	Poor Signal
-100dBm to -116dBm	Not recommend for installation

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Regulatory

CORA FCC ID: QP8CORABT   (Verizon Network Operation)
CORA FCC ID: QP8CORABTATT   (AT&T Network Operation)

Cora series Modular Data Port uses radio energy to communicate vending transaction activities to a remote host. CPI has not approved any changes or modifications to Cora. Any changes or modifications could void the user's authority to operate the equipment. See 47 CFR Sec. 15.21

The Cora series complies with 47 CFR Sec. 15 of the FCC Rules. 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 undesirable operation.

To be sure that human exposure to RF energy does not exceed the guidelines in the relevant standards, always follow these instructions:

> **Caution:** *A minimum of 20cm (8 inches) should be maintained between the antenna and all persons as well as end user and must not be co-located or operated in conjunction with any other antenna or transmitter. Only the antennas supplied with this device are to be used or the user may void the authority to use this device.*

Guidance – Pacemakers, Potential Interference -

Radiofrequency energy (RF) from cell phones can interact with some electronic devices. This type of interference is called electromagnetic interference (EMI). For this reason, FDA helped develop a detailed test method to measure EMI of implanted cardiac pacemakers and defibrillators from cell phones. This test method is now part of a standard sponsored by the Association for the Advancement of Medical

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Instrumentation (AAMI). This standard will allow manufacturers to ensure that cardiac pacemakers and defibrillators are safe from cell phone EMI.

The FDA continues to monitor the use of cell phones for possible interactions with other medical devices. Should harmful interference be found to occur, FDA will conduct testing to assess the interference and work to resolve the problem.

For more information reference sources for pacemakers can be found at U.S. Food and Drug Administration web site: www.fda.gov , see Radiation-Emitting Products and procedures, Interference with Pacemakers and Other Medical Devices.

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