



Frozen Beverage Dispensers
EVERYONE LOVES FROZEN™

DIGITAL MERCHANDISER

INSTALLATION & OPERATION MANUAL



56X/77X MODELS

24-M4VD-0001_01

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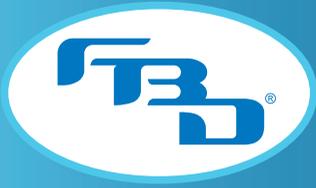
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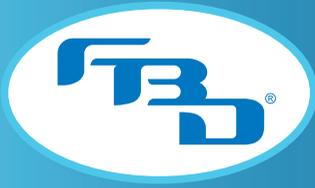
1. SAFETY

1.1 Electrical

This accessory must be properly installed according to the instructions in this manual. This will ensure that the accessory is properly grounded to avoid possible fatal electric shock or serious injury to the operator. Before attempting any internal maintenance, disconnect electrical power to the dispenser to prevent personal injury. Only qualified personnel should service internal components or electrical wiring.

1.2 General Precautions

This equipment, depending on the accessory, can weigh up to 50 pounds (23 kilograms) and is top-heavy. To avoid personal injury or equipment damage, do not attempt to lift the digital merchandiser without help. Working with a partner is highly recommended. Take care when lifting and positioning the merchandiser to avoid damage and injury.



2. SPECIFICATIONS

2.1 General Requirements

The digital merchandiser is compatible with only dispensers from either the 56x or 77x series. The merchandiser will not function properly if installed onto a dispenser outside of the 56x or 77x series. The barrel count on the dispenser and the merchandiser must match. For example, a three-barrel merchandiser should only be installed on a three-barrel dispenser.

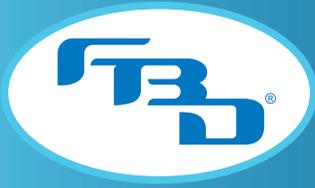
2.2 Dimension, Weight, and Resolution Specifications

561 Merchandiser	
Width	17 in. (432 mm)
Depth	2.9 in. (74 mm)
Height	26 in. (660 mm)
Weight	32.1 lb (14.6 kg)
Shipping Weight	39.1 lb (17.7 kg)
Video Viewing Area	1080 x 1280 .mp4
Flavor Background	1080 x 640 .png
Flavor Images (1X Base Flavor, 4X Flavor Add-ins)	600 x 500 .png

Two-Barrel Merchandiser	
Width	17 in. (432 mm)
Depth	2.9 in. (74 mm)
Height	26 in. (660 mm)
Weight	30.4 lb (13.8 kg)
Shipping Weight	37.4 lb (17 kg)
Video Viewing Area	1080 x 1280 .mp4
Flavor Card (x2)	516 x 600 .png

Three-Barrel Merchandiser	
Width	20.3 in. (516 mm)
Depth	2.9 in. (74 mm)
Height	26 in. (660 mm)
Weight	33.2 lb (15.1 kg)
Shipping Weight	40.7 lb (18.5 kg)
Video Viewing Area	1080 x 1540 .mp4
Flavor Card (x3)	340 x 340 .png

Four-Barrel Merchandiser	
Width	27.1 in. (688 mm)
Depth	2.9 in. (74 mm)
Height	26 in. (660 mm)
Weight	42.5 lb (19.3 kg)
Shipping Weight	50.7 lb (23 kg)
27" Screen for Video	1920 x 1080 .mp4
8" Screen for Flavor Card (x4)	600 x 800 .png



3. RECEIVING

Each merchandiser is tested and thoroughly inspected before shipment. At the time of shipment, the carrier accepts the merchandiser and any claim for damages must be made with the carrier. Upon receiving the merchandiser from the delivering carrier, carefully inspect the carton for visible indication of damage. If damage is present, have carrier note this on bill of lading and file a claim with the carrier.

4. INSTALLATION

Installation instructions vary based on the dispenser model and the circumstances of installation. The digital merchandiser may be installed on a new dispenser or will replace an older merchandiser as part of a door conversion kit. Please refer to the appropriate section based on merchandiser type and required installation.



Before installing a merchandiser, disconnect electrical power to the dispenser.

4.1 Installation of a 561 Digital Merchandiser

1. Remove the collar from each of the hinge pins on the back of the new door using a 3/32" hex wrench. Place the collars and hex wrench nearby so they are accessible for the next step.
2. Slide the hinge pin from the new door into the pivot hole on the upper brackets on the dispenser (**A** on **Figure 4.1**). Place the collar back on each hinge pin and tighten the set screw on the shaft collars with the hex wrench (**B** on **Figure 4.1**).
3. While holding up the door, push the gas shock socket from the door into the ball stud on the front facing bracket. Repeat on opposite side (**Figure 4.2**).
4. Connect the power harness coming out of the right side of the new door to the power extension harness coming out of the right top side of the dispenser (**Figure 4.3**).
5. Connect the harness coming out of the left side of the door with the harness coming out of the top left side of the dispenser (**Figure 4.4**).
6. Reconnect the power to the dispenser and follow start-up instructions in Section 6 of this manual.

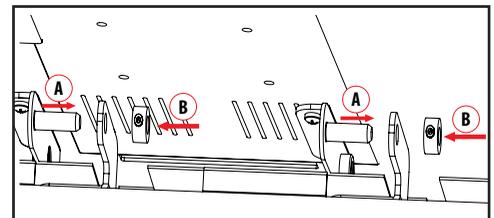


Figure 4.1



Figure 4.2



Figure 4.3



Figure 4.4



4.2 Installation of 56x Multiple Barrel Merchandisers (2-, 3-, or 4-Barrel)

1. Remove the collar from each of the hinge pins on the back of the new door using a 3/32" hex wrench. Place the collars and hex wrench nearby so they are accessible for the next step.
2. Slide the hinge pin from the new door into the pivot hole on the upper brackets on the dispenser (A on Figure 4.5). Place the collar back on each hinge pin and tighten the set screw on the shaft collars with the hex wrench (B on Figure 4.5).
3. While holding up the door, push the gas shock socket from the door into the ball stud on the front facing bracket. Repeat on the opposite side (Figure 4.6).
4. Remove the top panel and acrylic keypad cover from the dispenser to access the harness connections.
5. Run the serial and LED harnesses coming out of the left side of the dispenser so that the connections end up on the left side of the upper board. Make sure to pull the harnesses all the way in to meet the connectors inside dispenser (Figure 4.7).
6. Connect the white LED harness from the door to the J5 harness. Connect the serial harness from the door to the Molex connector on the serial harness (Figure 4.8).
7. Connect the power harness coming out of the right side of the new door to the power extension harness coming out of the right top side of the dispenser (Figure 4.9).
8. Make sure the door harnesses on the top are running through the holes on the top panel. Ensure the harnesses are not pinched or too near the hinges (Figure 4.10)
Note: For 564HR dispensers, the harnesses will connect through the front panel instead of the top panel.
9. Reconnect the power to the dispenser and follow start-up instructions in Section 6 of this manual.

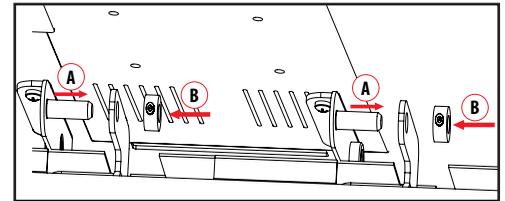


Figure 4.5



Figure 4.6



Figure 4.7

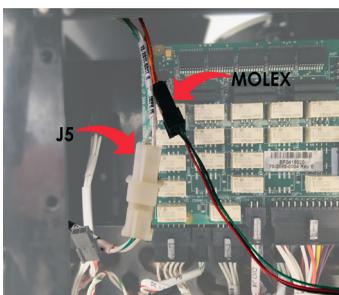


Figure 4.8



Figure 4.9



Figure 4.10



4.3 Installation of 77x Multiple Barrel Merchandisers (2-, 3-, or 4-Barrel)

1. Remove the collar from each of the hinge pins on the back of the new door using a 3/32" hex wrench. Place the collars and hex wrench nearby so they are accessible for the next step.
2. Slide the hinge pin from the new door into the pivot hole on the upper brackets on the dispenser (A on Figure 4.11). Place the collar back on each hinge pin and tighten the set screw on the shaft collars with the hex wrench (B on Figure 4.11).
3. While holding up the door, push the gas shock socket from the door into the ball stud on the front facing bracket. Repeat on the opposite side (Figure 4.12).
4. Connect the power harness coming out of the right side of the new door to the power extension harness coming out of the right top side of the dispenser (Figure 4.13).
5. Connect the serial and LED harnesses from the door to the left side connections on the dispenser (Figure 4.14).
6. Make sure the door harnesses on the top are running through the holes on the top panel. Ensure the harnesses are not pinched or too near the hinges (Figure 4.15).
7. Reconnect the power to the dispenser and follow the start-up instructions in Section 6 of this manual.

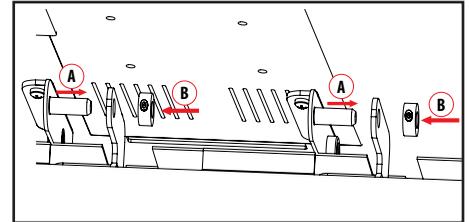


Figure 4.11



Figure 4.12



Figure 4.13



Figure 4.14

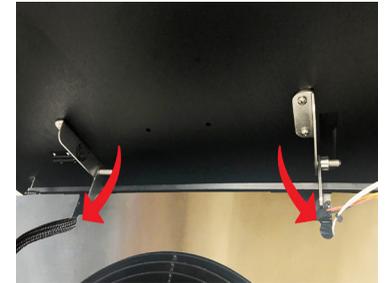


Figure 4.15

4.4 Installation of a Digital Merchandiser with Conversion Kit

Installing a new digital merchandiser on a dispenser that was sold with a non-digital merchandiser requires various internal changes to the dispenser. The conversion kit sold with the digital merchandiser will have all required components for the change. Please refer to the install instructions included with the conversion kit for detailed instructions. If instructions are missing from the conversion kit, please contact Customer Service and ask for these using the part numbers below.

561 Conversion Kit Instructions	24-4001-0004
56x Conversion Kit Instructions	24-4001-0005
77x Conversion Kit Instructions	24-4001-0007



5. START-UP

Once power has been restored to the dispenser, the merchandiser should begin booting up. As part of the start-up sequence, the backlight on the main display will activate followed by a no-signal bubble. The door may take 60 seconds to fully power up.

If there are no indications of power, verify if the door has a rocker switch on the rear side and toggle it. For 561 merchandisers without a toggle switch, disconnect the 20-pin harness, wait 30 seconds, then reconnect it. For all other merchandisers without a rocker switch, or if the door still does not power up after toggling switch, consult the troubleshooting guide in Section 10 of this manual.

6. MENU LAYOUT AND OPERATION FOR 561 MERCHANDISER

The digital merchandiser allows the user to change the visual content of the screen from the user menu. To keep casual users from changing the merchandiser content, the menu is “locked.” The unlock procedure, menu layout, and content change procedure differs based on the barrel configuration of the merchandiser.

6.1 Screen Layout for 561 Merchandiser

The 561 merchandiser allows for control of the flavor and dispensing operations (the 2-4 barrel merchandisers do not have these controls and only act as displays). The merchandiser can operate either a single-flavor layout (Figure 6.1) or a multi-flavor setup (Figure 6.2) and, based on the option ordered, will change the way the bottom portion of the screen looks and functions.



Figure 6.1 Single-Flavor Layout



Figure 6.2 Multi-Flavor Layout

Item	Description	Item	Description
1	Flavor Buttons: Select flavors or flavor add-ins.	3	Pour Button: Press and hold to dispense a drink.
2	Base Flavor Button: Flavor of the base syrup.	4	Barrel Status: Show status of barrel.



6.2 Single-Flavor Operation

To pour a drink in the single-flavor setup, tap a flavor and then press and hold the POUR button. When a flavor is selected, the name of that flavor will appear across the top of the menu region, the flavor button will enlarge, and the POUR button will appear (Figure 6.3). The dispenser will continue pouring as long as the POUR button is pressed. The single-flavor setup, as the name suggests, only allows for one flavor to be selected at a time. If another flavor is selected, the previous flavor will automatically be deselected.



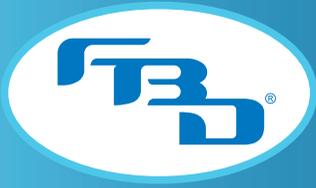
Figure 6.3

6.3 Multi-Flavor Operation

The multi-flavor setup allows the user to select more than one flavor add-in for the drink. When one or more flavors are selected, those flavors will gray-out and the POUR button will blink to indicate the dispenser can start pouring. Once all wanted flavor add-ins are selected and the POUR button blinks, press and hold the POUR button (Figure 6.4). The dispenser will continue pouring as long as the POUR button is pressed. If the POUR button is pushed without any flavors selected, only the base flavor will dispense.



Figure 6.4



6.4 Unlocking a 561 Merchandiser

To unlock the 561 merchandiser screen tap and hold a flavor button (Figure 6.5) for ten seconds. An “Enter Password” window will appear (Figure 6.6). Enter the code “561” to enter the Service Mode.



Figure 6.5

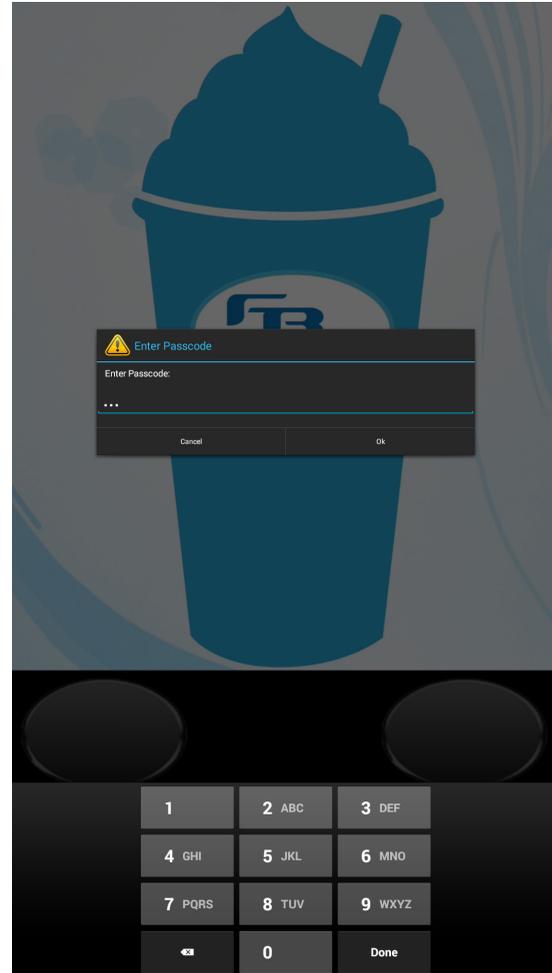


Figure 6.6



6.5 Menu Layout for 561 Merchandiser

Figure 6.7 illustrates the menu displayed after a successful unlock as well as the menu options.

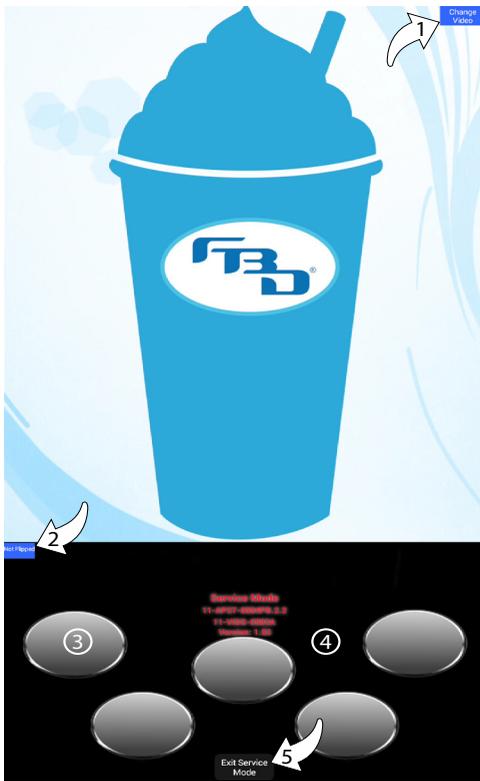


Figure 6.7

Item	Description
1 [¥]	Change Video: Opens video selection menu.
2	Flipped/Not Flipped: Rotates screen orientation.
3 [¥]	Flavor Button: Displays syrup or add-in flavors.
4 [¥]	Flavor Background: Background behind the flavor bubbles.
5	Exit Service Mode: Closes service mode and saves any changes.

¥ Content can be changed.

6.6 Changing Video on 561 Merchandiser

Tap the “Change Video” button to open the video menu (Figure 6.8). Tap the desired video to select it, then press the blue arrow to return to the previous screen.



Figure 6.8



6.7 Changing Flavor Images on 561 Merchandiser

To change the image on a flavor button, tap a flavor image to open the images menu. Select the desired image.

To change the background behind the flavor button, tap any part of the screen where the background is visible to open the background menu. Select the desired image (Figure 6.9). To exit the image or background menus, press the blue arrow.

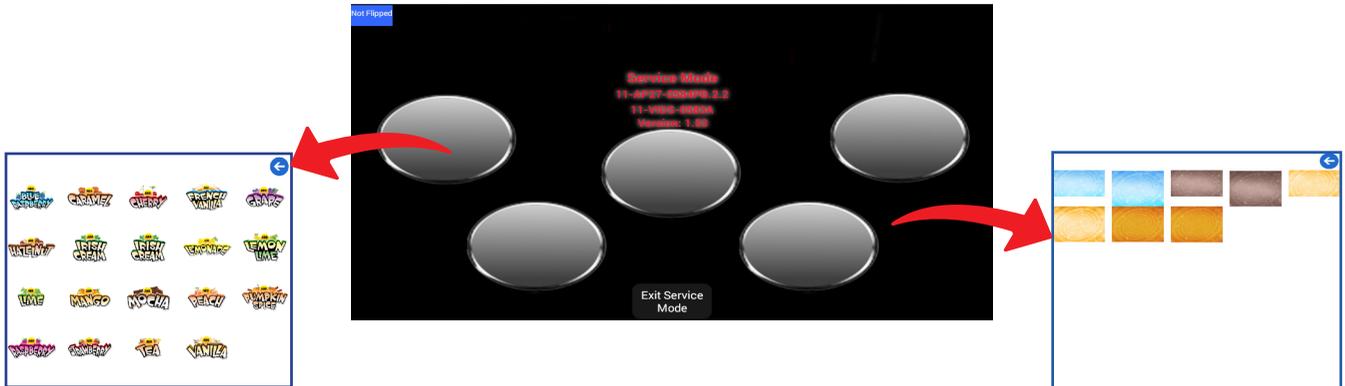


Figure 6.9

6.8 Updating Content on an SD Card

All merchandisers come preloaded with video, flavor, and background content. However, content can be updated, added, or removed as needed. The process below describes the procedure for doing this. However, before adding content to an existing or new large-sized SD card, ensure all folders are named as shown in Figure 6.10. If any folder names are different than illustrated in the figure, content will not load or be updated on the screen properly. Also, all images should be formatted as PNG files and all video files as MP4 files unless otherwise noted.

1. Locate the 4 main folders on the SD card. These 4 folders should be named **Backgrounds**, **Buttons**, **Flavors**, and **Videos**. Ensure each folder name begins with an uppercase letter.
2. The **Backgrounds** folder holds the background images for the lower selection flavor portion of the video door. The background images should be formatted to the standard resolution of 1080 x 640 px.
3. The **Buttons** folder holds the button images for the base flavor image that is the center/middle button on the screen and that corresponds to the base flavor connected to the dispenser. These button images should be formatted to the standard resolution of 600 x 500 px.
4. The **Flavors** folder holds the flavor shot images for the four different flavor shots that can be dispensed. These flavor images should also be formatted to 516 x 600 px.
5. The **Videos** folder holds the video files to display on the upper portion of the video door. These videos should be formatted to 1080 x 1280 px, in portrait orientation.

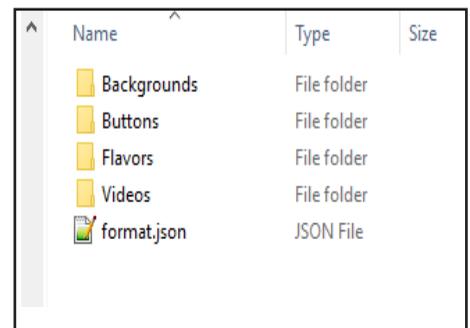


Figure 6.10



6.9 Saving Changes and Exiting Service Mode

As changes are completed throughout the screens in the Service Mode, using the blue arrow found in some of the screens will allow you to return to the previous screens and save the information that was updated. Once all required changes are completed, you can exit the Service Mode by pressing the “Exit Service Mode” button at the bottom of the screen, as shown in **Figure 6.7** found in Section 6.5 of this manual.

7. MULTI-BARREL (TWO-, THREE-, OR FOUR-BARREL)

7.1 Unlocking a Two-, Three-, or Four-Barrel Merchandiser

To unlock the merchandiser display, touch each of the four corners of the video portion of the screen in clockwise order starting with the top left corner. These touches must be made within 1 second of each other or the “unlocking” will not activate. Content management controls will appear upon a successful “unlock” of the screen. **Figure 7.1** illustrates the unlocking procedure on a three-barrel merchandiser (the procedure is the same for a two-barrel merchandiser). **Figure 7.2** illustrates the process on a four-barrel merchandiser.



Figure 7.1

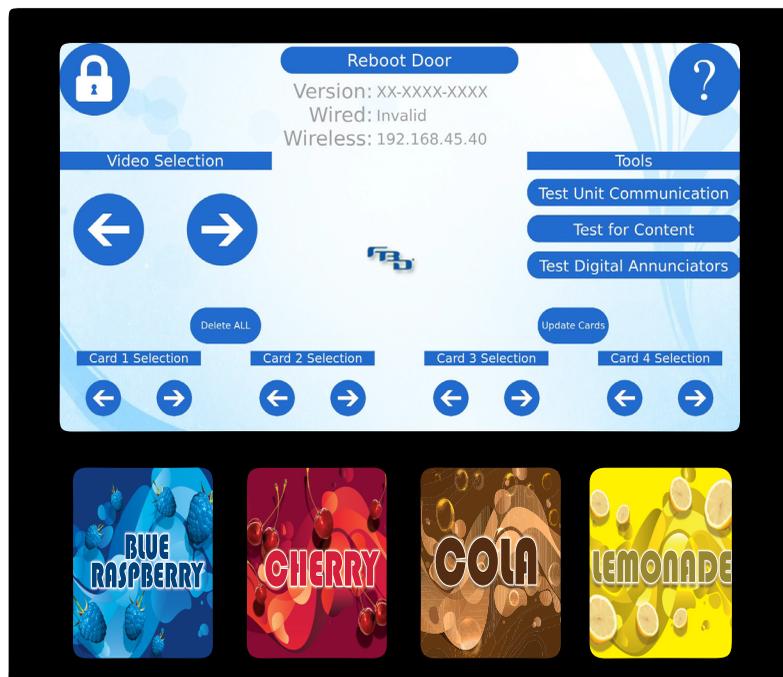


Figure 7.2



7.2 Menu Layout for Two- or Three-Barrel Merchandisers

Figure 7.3 illustrates the menu displayed after a successful “unlock” as well as the menu options.



Item	Description
1	Locks screen, removes controls, saves settings, and starts the video.
2	Reboots the screen.
3	Provides access to additional information through a quick reference guide.
4	Tests connection between the merchandiser and the dispenser.
5	Tests for content available to the merchandiser.
6	Tests for flavor card functionality and content.
7	Changes to previous video.
8	Changes to next video.
9	Left half of each flavor card changes to the previous flavor.
10	Right half of each flavor card changes to the next flavor

Figure 7.3



7.3 Menu Layout for Four-Barrel Merchandiser

Figure 7.4 illustrates the menu displayed after a successful “unlock” as well as the menu items.

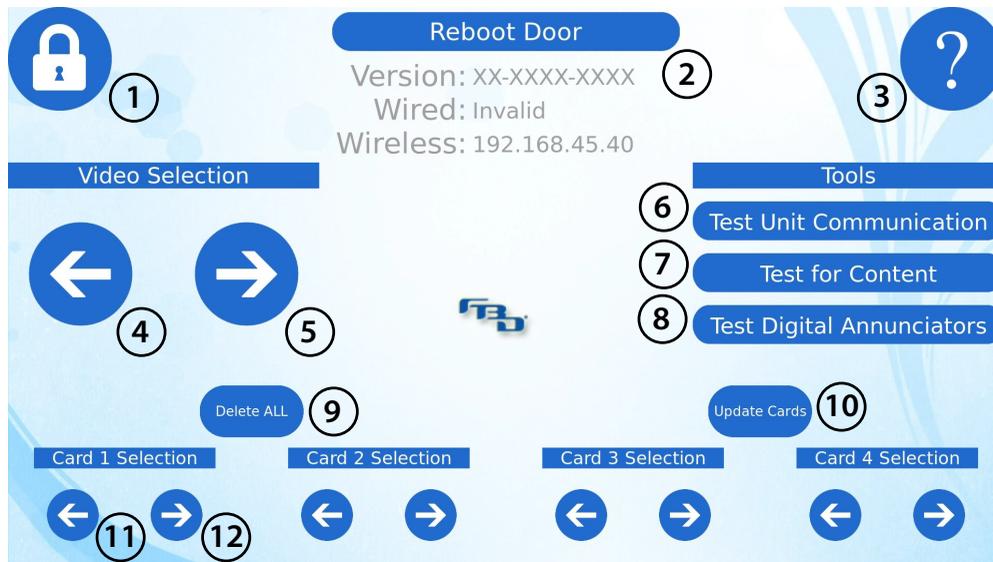
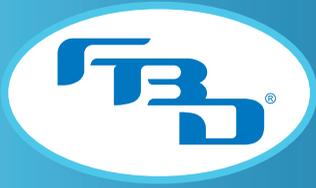


Figure 7.4

Item	Description
1	Locks the screen, exits the controls screen, saves settings, and starts the video.
2	Reboots the screen.
3	Provides access to additional information through a quick reference guide.
4	Changes to the previous video.
5	Changes to the next video.
6	Tests the connection between the merchandiser and the dispenser.
7	Tests for video content loaded on the USB drive.
8	Tests the digital annunciator overlays for flavor cards (verifies if harness and communication is valid and stable).
9	Deletes all flavor card images from each digital flavor card screen.
10	Loads new flavor cards onto the merchandiser from the USB drive.
11	Changes to the previous flavor.
12	Changes to the next flavor.



7.4 Barrel Status Messages for Multiple-Barrel Merchandisers

In addition to displaying the barrel flavor image, the flavor card screens will also show barrel status messages. These messages are specific to the barrel that the flavor card is for. Because these have been set up as image overlays, when the status message appears, the flavor image will be obscured so that the message can be seen. Below is a list of the common messages shown and their meaning.

Barrel Status	Description
	The barrel is in a defrost cycle. If on defrost during peak draw, adjust dispenser defrost schedule as needed (see dispenser operations manual on how to adjust defrost schedules).
	The barrel is freezing down the product. Wait until the dispenser completes freeze down cycle.
	Product out can refer to the barrel being out of syrup, or the dispenser being out of CO ₂ or water. Check the supply for each of these and replenish the needed product(s).
	The barrel is turned off. Restart the barrel/dispenser.

7.5 Changing of a Video or Flavor Image on a Multiple-Barrel Merchandiser

The Service Mode screen provides easy access to change video and flavor images on the multiple-barrel merchandisers. The process simply requires selecting the backward or forward option for each to move through the existing content. Please refer to Sections 7.2 and 7.3 for the location of the buttons to make these changes. Please keep in mind that this is to change videos and images from existing content. If additional content not on the existing USB(s) is needed, please refer to Sections 7.7 and 7.8 of this manual.



7.6 Diagnostic Tools for Multiple-Barrel Merchandisers

The merchandisers come with three diagnostic tools which can be used to ensure the screen will function properly. These can be run by simply selecting the options from the main Service Mode screen. Please refer to Sections 7.2 and 7.3 for the location of each of these. To run the tool, simply press the button for each. Once the diagnostic is completed, select the BACK button to go back to the previous screen.

Diagnostic Tool	Description
<p>Test Unit Communication</p> <p><small>This mode is used to check for incoming messages from the unit to the video door, if messages are being received from the unit, they will appear below in order of flavor card (left to right, 1-4). This can be used to detect a break in communications or if the issue is internal to the door. After 30 seconds of interruption in active communication, a timeout message will appear.</small></p> <p>No Serial Messages - Flavor Card 1 No Serial Messages - Flavor Card 2 No Serial Messages - Flavor Card 3 No Serial Messages - Flavor Card 4</p> <p>BACK</p>	<p>This tool will test the harness connection to verify the dispenser is communicating with the door. Once selected, if there are no issues, the screen will show the barrel status messages for each barrel.</p>
<p>Test for Content</p> <p><small>This mode is used to check for content. When connecting a USB device, there is an approximately 30 second delay for detection. Use the retest button to check for content again. If no folders are found on the USB device or no USB device is detected, a "No Content Found" message will be displayed below. Otherwise, the folder names and number of contained files will be displayed below. The format displayed will be as follows: foldername: #</small></p> <p>System Volume Information: 2 Videos: 3 flavors: 19 overlays: 4</p> <p>Retest BACK</p>	<p>This tool tests for content loaded onto the installed USB. Once selected, the screen will show a list of folders and file count for each of those folders. If the USB is updated, the "Retest" button can be pressed to run the diagnostic again.</p>
<p>Test Digital Annunciators</p> <p><small>***Please wait for test to complete. The controls will not respond until test is complete*** This mode is used to test the digital annunciator overlays. The test will cycle through each side of the barrel displaying the state on the display and causing the appropriate graphic to be displayed on the screens below.</small></p> <p>Testing Complete. Press the retest icon to repeat test or back to exit.</p> <p>Retest BACK</p>	<p>This tool will cycle through the flavor images for each barrel and the overlays for each. It can be run on two-, three-, or four-barrel merchandisers. For the four-barrel merchandisers, this tool tests the connection between the large screen and the four smaller flavor image screens.</p>



7.7 Updating Images and Videos on Multiple-Barrel Merchandisers

All multiple-barrel merchandisers have a USB port to allow new content to be added. The process below describes the procedure for accessing the USB ports.

1. Tilt the merchandiser up so that the back panel is accessible.
2. Remove the two screws securing the L-shaped panel (**Figure 7.5**). The panel should hinge open.
3. Remove the USB and replace it with a USB containing updated content or add the desired content to the existing USB and reinsert it (**Figure 7.6**).
4. Close the access panel and tighten the screws.
5. Tilt the merchandiser down so the screen is visible. Unlock the screen and reboot the door.
6. For the four-barrel merchandiser, make sure you select the “Update Cards” button to upload any new flavor images to the door.

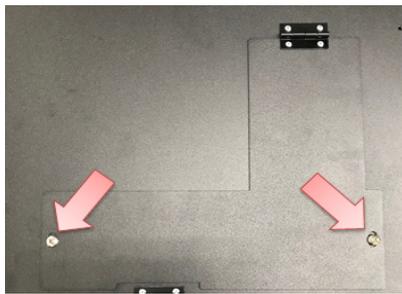


Figure 7.5



Figure 7.6

7.8 Adding Content to a USB Drive

The process below describes the procedure to add content to a new USB drive. Ensure all folders are named as described. If any folder names are different than illustrated below, the content will not load into the merchandiser properly.

1. Create two new folders on the USB drive. Rename the two folders **flavors** and **videos** using lowercase letters only (**Figure 7.7**).
2. Add videos to the **video** folder. Though the merchandiser supports videos in .mp4, .mov, and .mpeg format, .mp4 is the best format to use.
3. Add flavor images to the **flavors** folder. Though the merchandiser supports images in .png, .jpg, and .bmp format, .png is the best format to use.

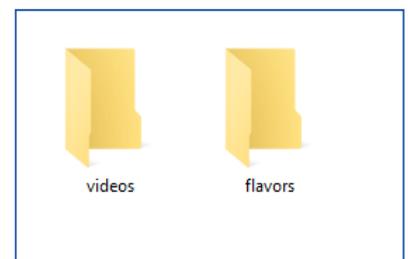
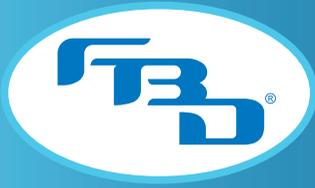


Figure 7.7



8. CLEANING

The merchandiser is a low- to no-maintenance accessory. To ensure consistent performance, the displays and frame should be cleaned as needed to maintain clarity and consistent touch screen operations.

8.1 Cleaning the Screen(s)

The screen has a glass overlay to protect the touch screen, therefore, regular glass cleaner can be used. Apply the cleaner to a soft, lint-free rag and wipe down the screen.

Note: It is not recommended to spray the cleaner directly onto the display.

8.2 Cleaning the Merchandiser Body

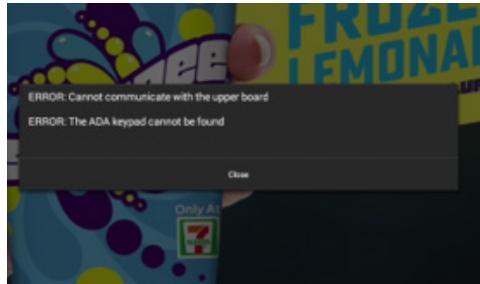
The sheet metal body is coated in a durable powder coating; nonetheless, take care that the cleaner used does not damage the coating. Apply cleaner to a rag and test it on the back of the merchandiser. If the cleaner does not remove the coating on the back panel, it is safe to use on the entire sheet metal body.



9. TROUBLESHOOTING FOR SINGLE-BARREL MERCHANDISER

9.1 Error Warnings

Some errors will appear on the video portion of the screen in the format shown below:



Error	Possible Causes	How to Fix
An unknown ADA keypad error occurred. Please provide entire error message to FBD technical support at 866.323.2777.	N/A	Please call FBD Technical Support at 866-323-2777.
The USB adapter could not be found.	USB adapter is not connected.	Verify that the USB adapter is connected. Use the keypad on the dispenser to access the menu. Navigate to the Service Menu > Readouts > Flavor Readouts > ADA Stat=?.
The ADA keypad could not be found.	ADA Keypad is not connected.	Locate the ADA keypad and verify it is connected. If the keypad is connected properly but still does not function, or the message remains, replace the ADA keypad.
Invalid button reading from ADA keypad. Multiple buttons pressed or hardware malfunction.	Two buttons are being pressed together or a button is faulty.	Reconnect the ADA keypad. If the error remains, replace the keypad.
Cannot communicate with the upper board.	Serial port communication has been interrupted.	Verify that the dispenser is not communicating with the merchandiser. Exit Service Mode on the merchandiser and use the keypad on the dispenser to navigate to Service Menu > Readouts > Flavor Readouts > Door Stat=NoConnect. If the merchandiser is not connected, call Technical Support.
ADA keypad button pressed for more than "X" seconds. Possible short circuit or stuck button.	Faulty button. Buttons may be constantly pressed.	Reconnect the ADA keypad. If the error remains, replace the keypad.

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Error	Possible Causes	How to Fix
Can't play this video.	The file selected is either not available, not in the correct format (.mp4 only), or the SD card is not inserted.	<ol style="list-style-type: none"> 1. Ensure the large SD card is properly inserted inside the SD card slot. 2. Ensure all videos are in .mp4 format. 3. Ensure all videos are in the correct resolution (1080 x 1280 px). 4. Ensure default videoscreen.mp4 file is a valid .mp4 video file that follows the correct specifications.

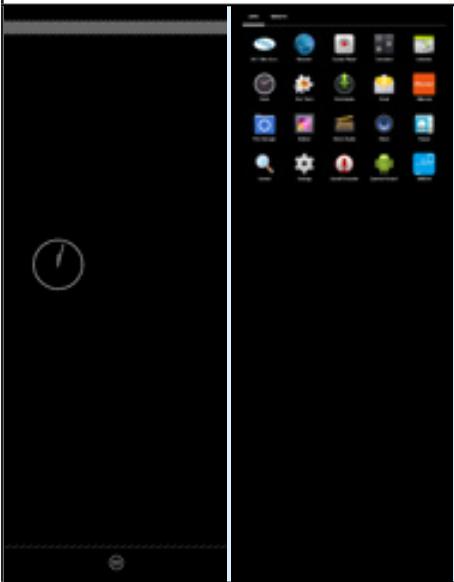
Other Common Errors

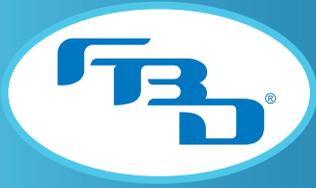
Error	Possible Causes	How to Fix
<pre>U-BOOT 2017.03_1.0-26236-g7d8fb8c-dirty (Dec 11 2018 - 10:33:15 -0600) 6x_bootscript not found serial console at 115200, 8M1 no block devices found =></pre>	The text will appear in the left corner of screen and indicates that the Android board cannot find the files on the microSD card needed to boot the Android OS.	<ol style="list-style-type: none"> 1. Ensure that the microSD card is properly seated in the microSD card slot. 2. Replace the microSD card with another card that has been properly programmed.
	The LCD is not receiving an HDMI video signal from the Android board.	<ol style="list-style-type: none"> 1. Ensure the Android board is powered ON (the green light is illuminated on the board). 2. Ensure the HDMI cable is connected properly. 3. Unplug the power and 20-pin harnesses, wait three seconds, then reconnect the harnesses.
ADA keypad cannot select or dispense flavors.	Various	<ol style="list-style-type: none"> 1. Ensure the software is up to date. 2. Enter the Service Mode and press the warning icons. <ul style="list-style-type: none"> • ADA keypad cannot be found. <ul style="list-style-type: none"> – Keypad is not connected properly; reconnect the keypad and test. – Faulty keypad; keypad needs to be replaced. • ADA adapter cannot be found. <ul style="list-style-type: none"> – Keypad is not connected properly; reconnect the keypad and test. – Faulty keypad; keypad needs to be replaced.

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Error	Possible Causes	How to Fix
	<p>U143 Relay blows, 4A fuse from the E-Box blows, and possibly even 5V power supply shorted out.</p> <p>Note: The old-initial 20-pin door harness has been seen to cause shorting due to the spade terminal ends not clipped correctly, exposing the terminals to the conductive metal on the back of the LCD.</p>	<ol style="list-style-type: none"> 1. Disconnect the in-line rectifier harness (pushbutton dispense harness) from inside the dispenser (it is more difficult to replace the internal door harness). <ul style="list-style-type: none"> • Replace the relay board. • Replace the 4A fuse. • Check to see if the 5V power supply for the Android board is operational (outputs 5V), and replace if necessary. 2. If needed, replace the entire merchandiser.
	<p>FBD merchandiser app is not shown on-screen and the clock app (shown on the left) or the app menu (shown on the right) is displayed.</p> <p>Note: Either of these screens indicate the FBD app has crashed.</p>	<ol style="list-style-type: none"> 1. Be sure the latest software version is loaded. If not, replace with the most up to date version. 2. Go into service mode on the application and press the warning icons <ul style="list-style-type: none"> • ADA keypad cannot be found: <ul style="list-style-type: none"> – Keypad is not properly inserted; reconnect the keypad and test. – Faulty keypad; keypad needs to be replaced. • ADA adapter cannot be found: <ul style="list-style-type: none"> – Keypad is not properly inserted; reconnect the keypad and test. – Faulty keypad; keypad needs to be replaced.
<p>The touchscreen is not working: there is no way to select flavors, access service mode, or exit the FBD application.</p>	<p>Various</p>	<ol style="list-style-type: none"> 1. Be sure the USB touchscreen cable is connected both on the Android board and LCD screen. 2. Be sure the latest software version is loaded. If not, replace with the most up to date version. 3. Be sure that the correct door harness, P/N 12-3116-0177, not 12-3116-0168, is installed inside the door.



10. TROUBLESHOOTING A TWO-, THREE-, OR FOUR-BARREL MERCHANDISERS

10.1 BrightSign Error Lights

The BrightSign module has three status lights (Figure 10.1) that indicate its status.

Light Color	Number of Blinks	Meaning
Green power (Pwr)	N/A	Displays when the board is powered up and not in reset mode. Flashes during firmware update process.
Green file-system activity (Bsy)	N/A	Flashes any time there is file-system activity (on any storage device).
Red status (Err) Flashes a certain number of times to indicate which error is occurring.	2	Unspecified error.
	3	Network recovery script is preparing to run on a device configured for network recovery (BrightSign Network).
	3	No published content or script on the SD card.
	4	No upgrade file found. This is often the result of the player being in Rescue Mode. To complete Rescue Mode, insert an SD card with a .bsfw firmware update file in the root folder (the error code will continue to display for a few seconds while the update file is checked for integrity).
	5	Failed to load kernel module.
	5	OS initialization failed (Init shell script failed).
	6	Board is not capable of running the current firmware version.
	7	A piece of on-board hardware is not working correctly.
	8	Problem related to the storage device (either a USB drive or SD card).
	9	Problem related to the registry/NAND.
	10	The autorun script encountered a load/run error (commonly caused by a locked or NTFS-formatted SD card).
	11	WiFi-related error (mainly WiFi not found on USB).
	12	Unable to find bootable image.
	13	The root file system has failed verification, which is used to detect whether the file system has been tampered with. You can recover a player that is showing this error code by performing a firmware update with secure boot (a process described in the Firmware Installation Instructions).
14	Boot loader failure.	

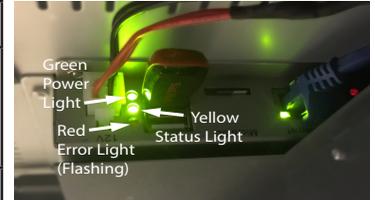
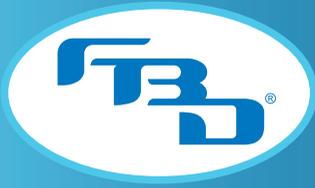


Figure 10.1

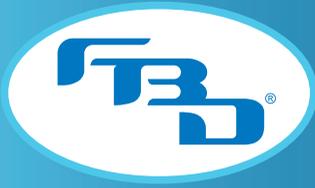
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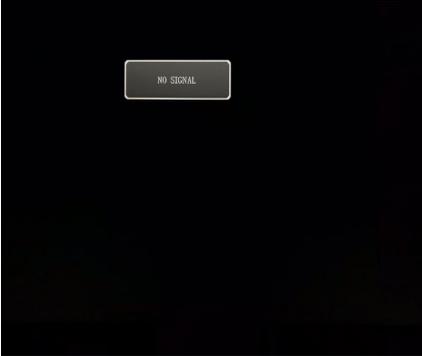
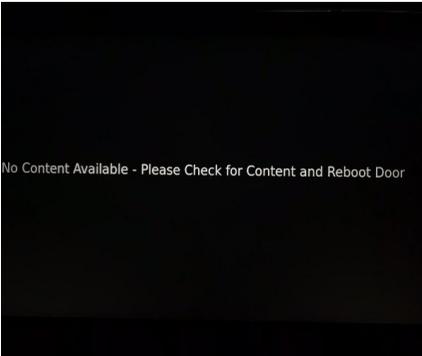
Light Color	Number of Blinks	Meaning
<p>Red alternate</p> <p>The red status LED may give one long initial flash to preface an alternate code. The flash codes that follow one long flash are described below.</p>	2	Erase failed.
	3	Write failed.
	4	Verify failed.
	5	Failed to find UBI partition.
	6	Attempt to write unsigned CFE to dispenser with secure boot enabled.
	7	Failed to find UBI partition.
	8	Failed to create/attach UBI partition.
	9	Unexpected error.
	10	Upgrade script exited abnormally.
	11	Upgrade took longer than expected.
	12	Update completed but update file could not be deleted.
	13	(from firmware v5.1.40) Firmware update file could not be read.

10.2 On-Screen Errors

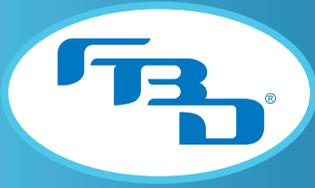
Condition	Possible Causes	How to Fix
<p>Black BrightSign Screen</p> <p>BrightSign logo with other WiFi/wired information is shown on screen.</p> 	<p>MicroSD is missing or not fully inserted.</p> <p>MicroSD format or content is incorrect.</p>	<p>Confirm USB is present and fully inserted.</p> <ol style="list-style-type: none"> If the door content was just updated, this could be the cause. Verify that the USB was updated following the correct formatting guidelines (see Section 7.8). Otherwise, it is unlikely unless the USB has failed. The USB and content can be verified several ways: <ul style="list-style-type: none"> The door can be unlocked by touching the corners of the video area (even though no video is present). This will present the normal controls. Attempting to cycle content could display the content. If available in the menu, the Test for Content button can be used to check for anything on the USB. The USB can also be checked by connecting to a computer and verifying the folder names and presence of files. Confirm presence and remove/reinsert then power door again. Verify software number on microSD and report to Technical Support.



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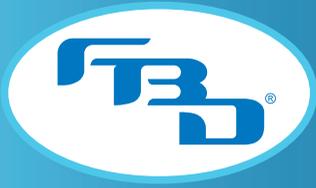
Condition	Possible Causes	How to Fix
<p>Black “No Signal” Screen A floating “No Signal” box is shown.</p> 	<p>The BrightSign player has not yet fully loaded.</p>	<p>Please wait a minimum of 30 seconds for the screen to load or to verify if there is an issue.</p>
	<p>Brightsign DSM is not loading which is leaving the monitor without signal.</p>	<ol style="list-style-type: none"> 1. Open the access panel on the back of the door and look for power indicator lights. 2. Wait for a few seconds to see if the screen loads to show the image/video content. 3. If nothing loads, attempt rebooting the door. Observe the LEDs adjacent to the power connector. A solid red LED indicates an inability to read the storage devices.
	<p>Door power harness may have become disconnected or it could be faulty.</p>	<p>Disconnect the harness from the display module and measure 12VDC power.</p>
<p>No Content Found Screen Cannot find content to show and play images/video content.</p> 	<p>USB is missing from the door.</p>	<p>Confirm there is a USB connected to door. If one is present, verify it's fully inserted. If not present, insert a USB with needed content.</p>
	<p>Content is missing from USB.</p>	<p>Open the back-access cover and replace USB with one that has content in the correct format (Section 7.8) or add needed content to existing USB.</p>
	<p>Folders are mislabeled.</p>	<ol style="list-style-type: none"> 1. Verify that there is content on the USB with the right folder structure. 2. Verify that you have the right file types supported by the digital merchandiser door and that the door style supports the right image/video resolutions.

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Condition	Possible Causes	How to Fix
Screen is Completely Black No output or backlight ever coming on screen.	Power is off or not making it to the door.	<ol style="list-style-type: none"> 1. Open the access panel on the back of the door and look for power indicator lights. 2. There is a slot in the back top of the door. If power is confirmed, the display could have been turned off. The power button can be pressed through the access slot. 3. Check the door power harness (white 2-pin Molex connector on the right side of the door) and verify that wire routing and end connections are not faulty or somehow disconnected. Use an ohmmeter to verify continuity in the wire(s) and/or a multimeter to measure 12VDC across the wires for power.
	Display is turned off.	Use switch to turn display ON.
Flavor card is incorrect for the flavor in the barrel.	The flavor card image needs to be changed.	See Section 7.5.



DIGITAL MERCHANDISER
56X/77X MODELS

NOTES

FBD TECHNICAL SUPPORT: 866-323-277 (US); 852-2369-3998 (International)

www.fbdfrozen.com