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Sanitation Solution Kit: Schedule Application (SA)

Kit Contents



Direct Select Operator Interface
includes C battery



K70 Wireless Indicator
includes bracket and power
supply



DXM Controller



Power Supply

Not Included

1/4"-20 mounting fasteners

Tools Needed

Phillips screwdriver

How it Works

The Sanitation Solution Kit works by indicating to an operator when station sanitation is required. User-defined cleaning schedules trigger a yellow indicator on the Operator Interface and Indicator Light to notify users when the work station requires cleaning. If the station is not cleaned before a user-defined time (in minutes), a red indicator on the Operator Interface and Indicator Light alerts the operator that the work station is overdue to be cleaned.

Schedule Application (SA) Solution Kits are configured to visually alert four operators at four distinct stations when their respective station requires cleaning. The Operator Interface provides a visual display of the time left before the next cleaning is scheduled and an indicator to alert when a cleaning is scheduled. The Indicator Light mirrors the status of the Operator Interface and can be mounted on the station so it is visible from a distance.

Users can use the DXM Controller to input up to five unique times, in UTC time, to schedule station sanitation. The Sanitation Solution Kit is expandable to include up to 20 stations each with up to 20 unique scheduled sanitation timers.

Cycle Timer (CT) Solution Kits are available when a user requires setting sanitation reminders at continuous intervals.

Use the **DXM Controller** to set the user-defined cleaning schedules. Scheduled sanitation alerts are based on UTC time. Users can input a reset time which will reset the internal metrics that track how long it takes operators to acknowledge a completed sanitation routine. Users can input a global **Time to Clean** parameter which will apply to all stations.

Time to Clean defines the time the operator has to clean the station. If the time is exceeded, the Operator Interface and Indicator Light turn red.

Mount the DXM Controller in a secure location outside of any metal cabinets or enclosures.



The **Direct Select Operator Interface** has a numerical display that calculates and shows the time (in minutes) until the next cleaning is required. The Operator Interface flashes yellow when the station requires cleaning and the display begins a countdown starting at the **Time to Clean** setting.

Operators confirm they sanitized their workstation by pressing the touch button on the Operator interface. After the confirmation, the Operator Interface displays the time left until the next scheduled sanitation and the light turns off. If the next scheduled sanitation reminder is at a time greater than 999 minutes, the Operator Interface displays 999 as the time until the time remaining for the next scheduled sanitation is less than 999 minutes. The Operator Interface may take up to two (2) seconds to update the display and indicator status.

If the operator has not confirmed a sanitation cycle within the **Time to Clean** setting, the Operator Interface flashes red. The display counts the time since the last scheduled sanitation should have been completed. If the Operator Interface status is red for more than 60 minutes, the Operator Interface's display and lights turn off to conserve the battery.



The **K70 Indicator Light** alerts operators when station sanitation has been scheduled (yellow). Each supplied Indicator Light is tied to an Operator Interface and mirrors the status of that station.

If the operator has not confirmed that the cleaning was completed within the **Time to Clean** setting, the Indicator Light turns red to alert the operator that the station has not been cleaned and is overdue.



Indicator Light bracket, model LMB30LP (included with kit)

Set Up Your Hardware

1 Supply power to all devices

The Sanitation Solution Kit arrives with all necessary power sources needed to get the system operating quickly. This includes lithium batteries for the Direct Select Operator Interfaces and DC power supplies for the DXM Controller and K70 Wireless Indicator Lights.

Supply Power to the DXM Controller

Plug the power supply into the DXM Controller, aligning the keys in the connector, and hand tighten. Plug the power supply into a power outlet using the appropriate regional wall adapter.





Supply Power to the Direct Select Operator Interface



1. Unscrew the four corner screws with a Phillips screwdriver and open the Operator Interface.

2. Insert the 3.6 V lithium battery. Verify the battery's positive and negative terminals align to the positive and negative terminals as marked.

Caution: There is risk of damage if the batteries are installed incorrectly.

3. If the indicator LED does not automatically begin flashing, turn on the Operator Interface by pressing and holding  and  together for five seconds or until the small light starts flashing red.

4. Reassemble the Node and tighten the four corner screws. Do not over-tighten.

Mount and Supply Power to the K70 Wireless Indicator Light



1. Position the Indicator Light on the bracket and secure with the supplied lock nut. Hand tighten only.



2. Connect the power supply to the Indicator Light, aligning the keys in the connector. Hand tighten.

3. Connect the power supply into a power outlet using the appropriate regional wall adapter.

2 Mount the System Components

Mounting hardware is not included with the Sanitation Solution Kit. Banner recommends using 1/4-20 mounting bolts, self tapping screws, magnetic mounts, or hardware compatible with the mounting surface.

Do not mount any radios inside metal enclosures. Metal around the radios can reduce wireless signal strength.



Mount the DXM Controller in a secure location, outside of any metal cabinets or enclosures.

The DXM Controller has four mounting holes. Use 1/4-20 mounting bolts or self tapping screws to secure the controller to a rigid surface.



The indicator light can be mounted at eye level near the operator or at a high point in the station for remote monitoring.

Mount the indicator light using the supplied bracket and 1/4-20 mounting bolts, self tapping screws, or optional magnetic mounts listed at the end of this document.



The Operator Interface should be mounted near the operator work station.

Mount the Operator Interface to a rigid surface using the mounting holes and 1/4-20 bolts, self tapping screws, or optional magnetic mounts listed at the end of this document.

Define Sanitation Schedules

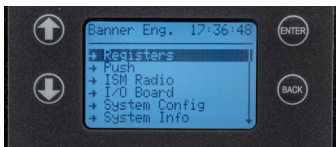
Set Up the Cleaning Interval Settings Using the DXM Controller Display



The Sanitation Solution Kit is designed to provide a visual indication to alert an operator when a sanitation cycle is required for their work station.

The Operator Interface provides a visual display that counts down, in minutes, to when the next station sanitation is scheduled. After the countdown reaches 0, the indicator on the Operator Interface turns yellow. The Operator Interface display counts down the **Time to Clean** time. After the **Time to Clean** countdown reaches 0, the Operator interface and Indicator light change to red and the Operator Interface counts the time that has passed since the last station sanitation should have been performed. The Indicator Light mirrors the status of the Operator Interface.

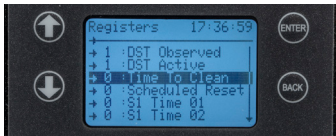
Use the Controller's LCD, buttons, and menu system to configure the Scheduled Sanitation times and the **Time to Clean** setting.



On the DXM Controller, use the arrow keys to select the **Registers** menu and press **ENTER**.

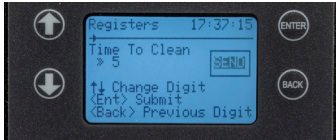
Highlight **Time to Clean** and press **ENTER**.

Enter your desired **Time to Clean**. This is the amount of time in minutes that an operator has to sanitize their work station.



1. Using the up and down arrow buttons, select the first digit and press **ENTER** to set the first digit.
2. Use the up and down arrows to set the second digit and press **ENTER**.
3. Repeat if you are adding a third or fourth digit. Otherwise, continue to the next step.
4. Press **ENTER** to highlight **SEND**. Press **ENTER** again to confirm.

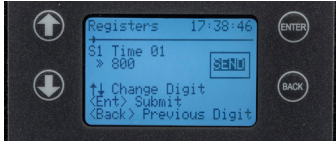
The screen should now display the entered **Time to Clean**.



The Controller display allows a user to schedule up to five sanitations for each station.

1. Highlight the **S# Time #** and press **ENTER**. Enter all times in UTC time; refer to the UTC time offset chart on the next page for your region. For example, enter 8 AM in UTC time without an offset as 800 and enter 5 PM in UTC time without an offset as 1700.
2. Use the up and down buttons to select the first digit. Press **ENTER** to set the first digit.
3. Repeat for the additional digits.
4. Press **ENTER** to highlight **SEND**. Press **ENTER** again to confirm.

The screen now displays the first scheduled sanitation time in UTC time. Repeat for additional scheduled sanitation times and repeat the process for additional stations.



Optional Configuration

Set a **Scheduled Reset** time to reset internal metrics that track the time it takes an operator to acknowledge and complete station sanitation.

1. Highlight **Scheduled Reset** and press **ENTER**.
2. Enter the reset time in UTC time.
3. Use the up and down buttons to select the first digit. Press **ENTER** to set the first digit.
4. Repeat for additional digits. Otherwise, continue to the next step.
5. Press **ENTER** to highlight **SEND**. Press **ENTER** again to confirm.

The screen now displays the time when the monitoring metrics will be reset.

The installation and configuration of your Solution Kit is complete.



Coordinated Universal Time (UTC) Time Conversions

The DXM display only accepts the scheduled time inputs in Coordinated Universal Time (UTC) time. To correctly schedule sanitation alerts, convert your local time to UTC time. Local time zones are generally referenced to UTC time and will have a fixed offset. The following examples show common conversions, refer to your country offset for those that are not supplied.

Central Standard Time (UTC -6): Central Standard Time is 6 hours behind UTC, or UTC -6. To set an alarm for 8AM Central Standard Time, the UTC equivalent time is 6 hours ahead of 8 am, or 1400 UTC.

Pacific Standard Time (UTC -8): Pacific Standard Time is 8 hours behind UTC, or UTC -8. To set an alarm for 10AM Pacific Standard Time, the UTC equivalent time is 8 hours ahead of 10 am, or 1800 UTC.

Eastern Standard Time (UTC -5): Eastern Standard Time is 5 hours behind UTC, or UTC -5. To set an alarm for 4PM Eastern Standard Time, the UTC equivalent time is 5 hours ahead of 4 pm, or 2100 UTC.

Central European Time (UTC +1): Central European Time is 1 hour ahead of UTC, or UTC +1. To set an alarm for 9AM Central European Time, the UTC equivalent time is 1 hour behind 9 am, or 800 UTC.

-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	UTC	1	2	3	4	5	6	7	8	9	10	11	12
Common North and South America Time Zones									Common Europe and Africa Time Zones					Common Asia Time Zones									
1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	0	100	200	300	400	500	600	700	800	900	1000	1100	1200
1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
1500	1600	1700	1800	1900	2000	2100	2200	2300	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400
1600	1700	1800	1900	2000	2100	2200	2300	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
1700	1800	1900	2000	2100	2200	2300	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600
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1900	2000	2100	2200	2300	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
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2100	2200	2300	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
2200	2300	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
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600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	0	100	200	300	400	500
700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	0	100	200	300	400	500	600
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1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	0	100	200	300	400	500	600	700	800	900	1000
1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	0	100	200	300	400	500	600	700	800	900	1000	1100

To use this UTC Offset table:

1. Find your UTC offset column.
2. Moving down the column, select your desired local time.
3. Move horizontally to the UTC column to find the UTC equivalent time.
4. Enter that UTC time into the DXM.

Troubleshooting

Problem	Possible Causes / Solutions
Operator Interface display does not show any values	After the DXM Controller is rebooted, a delay of 5 minutes may occur before the times are displayed.
Operator Interface display does not change from 999	If the amount of time until the next scheduled clean time is greater than 999 minutes, the Operator Interface displays 999 until the remaining time is less than 999 minutes.
Operator Interface no longer counting down/up. Operator Interface no longer responds to touch.	The Operator Interface may not be in sync with the DXM Controller. Verify the green indicator LED is flashing above the Check Mark button. If the LED is flashing red, change positioning of the DXM Controller or Operator Interface to improve the radio signal. If the indicator LED does not begin to flash green, contact your local distributor or Banner Engineering's technical support team at 1-800-203-5616.
Operator Interface LEDs will not turn on. Operator Interface's capacitive touch button will not turn on.	If no light is flashing above the Check Mark button, hold both the Check Mark and Back buttons for five (5) seconds to power on the device. If this doesn't power on the device, replace the battery.
A station's Indicator Light is red, but the Operator Interface is off.	To conserve battery power, the Operator Interface turns off if the Operator Interface has been flashing red for more than one (1) hour. The station is still due to be cleaned and the Indicator Light remains red to indicate cleaning is due. After the capacitive touch button is pressed on the Operator Interface to indicate the station has been cleaned, normal operation resumes.

Optional: Cloud Connectivity

Banner Engineering's Sanitation Solution Kit offers a fast and easy way to gain access to the data and history of sanitation compliance at your facility. The following section will show you how to configure your DXM over Ethernet and quickly create your solution on the Banner CDS platform. See your data on a default dashboard and create your own visual tools and reporting.

1

Connect the devices using the supplied cables

1. Plug the threaded end of the Ethernet cable to the DXM Controller. Aligning the pins and connect the quick disconnect connector. Hand-tighten only.
2. Connect the RJ45 connector to a local area network device, such as a Wi-Fi router or network modem.

Network Configuration

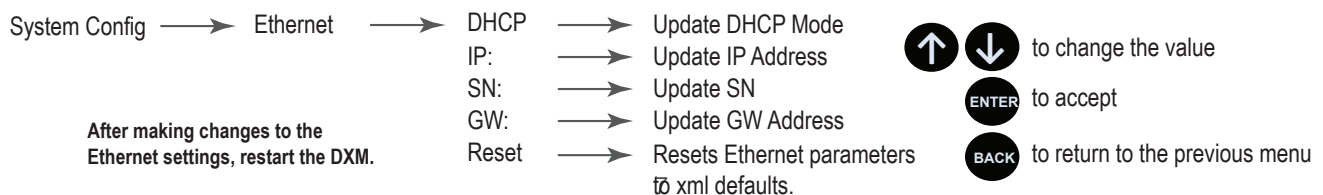
The Sanitation Solution Kit can be connected to a network using either Static IP or Dynamic IP (DHCP). By default, the Solution Kit is configured to use DHCP. Use DHCP when connecting directly to a modem or router. Use a Static IP address if directed to by your IT department.

Setting a Static IP Address

To define a specific IP address of your choosing:

1. On the DXM, use the arrows and move to the **System Config** menu. Press **ENTER**.
2. Use the arrow keys to select the **Ethernet** menu. Press **ENTER**.
3. Highlight the **DHCP** selection and press **ENTER**. Set **DHCP** to **OFF**.
4. The system will request a restart, press **ENTER** to confirm.
5. Follow steps 1 and 2 to enter the **Ethernet** menu. Use the arrow keys to select **IP**. Press **ENTER**.
6. Use the up and down arrows to change the IP address. Press **ENTER** to move to the next octet.
7. Press **ENTER** on the final octet to accept the changes.
8. Cycle power to the DXM1200. The changes are saved on the DXM1200 and the new IP address will be used.

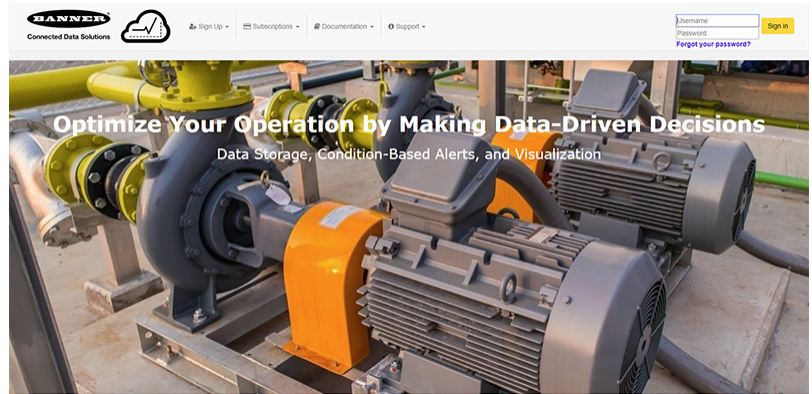
Use the same procedures to set the subnet mask (SN) and default gateway (GW) to match your network requirements. Your IT department can provide these settings if needed.



2

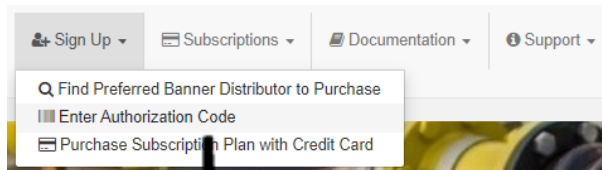
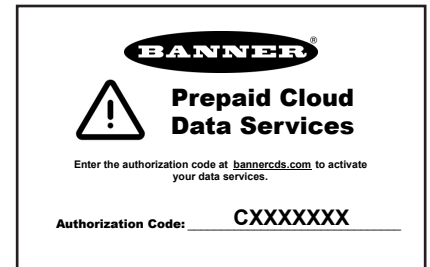
Banner Cloud Data Service (Banner CDS)

Navigate to bannercds.com.



Enter Your Authorization Code

1. Register your account by going to the **Sign Up** menu.
2. Select **Enter Authorization Code**.
3. Enter the requested information. The authorization code is on the Banner Cloud Authorization Code Insert included with the Solution Kit.



3

Add a New Gateway

After launching the CDS webpage, the **Gateways** screen displays. Use the **Gateways** screen to add the DXM Controller to the Cloud application and generate a Dashboard.

1. Click on **+ New Gateway** (+New Gateway) in the top-right corner of the **Gateways** screen.
2. Name your DXM Controller and enter the Serial Number. The Serial Number can be found using the DXM Controller's LCD. On the DXM's main menu, scroll to **System Info** and then press **ENTER** twice to view the seven-digit serial number at the bottom of the information list.
3. Enter all seven digits into the DXM Serial # entry field on Banner CDS.
4. Verify that **Configuration** is set to **Solutions** and select **Sanitation Schedule App** for the **Kit Type**. This allows the Banner CDS application to automatically create Dashboard layouts and metrics for the solution. Click **Create** (Create).

The Banner CDS application creates a site for the system and begins searching for a data push from the DXM Controller. The Sanitation Solution Kit is designed to push data once every five minutes to the Cloud.

The DXM Controller could take up to five minutes to complete recognition by the system.






4

View Dashboard and Set Parameters

After Banner CDS has created the site and detected the DXM Controller, click on [Go to Dashboard](#) (Go to Dashboard). The [Dashboard](#) (Dashboard) panel appears and indicates the metrics of the Sanitation Solution Kit.

Optional Accessories

To add additional sanitation stations, order one of each model listed below (900 MHz or 2.4 GHz).

	Indicator	Operator Interface	Indicator Bracket	Battery	Power Supply
					
900 MHz	K70DXN9GYRQ (Green-Yellow-Red)	DX80N9DSTS	LMB30LP	BWA-BATT-013	PSW-24-1
2.4 GHz	K70DXN2GYRQ (Green-Yellow-Red)	DX80N2DSTS		C Battery	

900 MHz models are more commonly used in the United States; 2.4 GHz models are required in the EU and many other countries. The 900 MHz models ship with batteries. The 2.4 GHz models ship without batteries.

Cellular Modem

SXI-LTE-001

- Used with DXM Controller
- Allows for Cellular Connectivity to the Banner CDS platform

Power Supply Extension Cordset

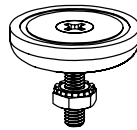
MQDEC-415SS-PUR

- Used with the K70 Indicator Light or DXM Controller
- 4-pin Euro-style connector
- 15 ft length

Additional Mounting Options

BWA-BK-020 Magnet Mount

- Used with the Direct Select Operator Interface or DXM Controller
- Includes two 80-lb pull rare-earth magnet mounts and two #10-32 x 1 inch screw mounts
- Used on multiple mounting brackets
- 31.75 mm (1.25 inch) diameter
- No fasteners included





Banner Engineering Corp.

9714 Tenth Avenue North • Minneapolis, Minnesota 55441
763-544-3164 • 1-888-373-6767

www.bannerengineering.com

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