

Sending a Text Message from a Q45BL Input

Technical Note

Sending a Text Message from a Q45BL Input

The DXM Wireless Controller with a cellular modem can send text messages on defined conditions. This short example shows the configuration settings to send a text message when the button on a Wireless Q45BL Node is pushed.

Equipment	
Model	Description
DXM100-B1C1R1	DXM100 Wireless Controller, 900 MHz ISM Radio, Cellular Modem
DX80N9Q45BL-RYGB	Wireless Q45 Node with Button and Light, 900 MHz, Red, Yellow, Green, and Blue Lights

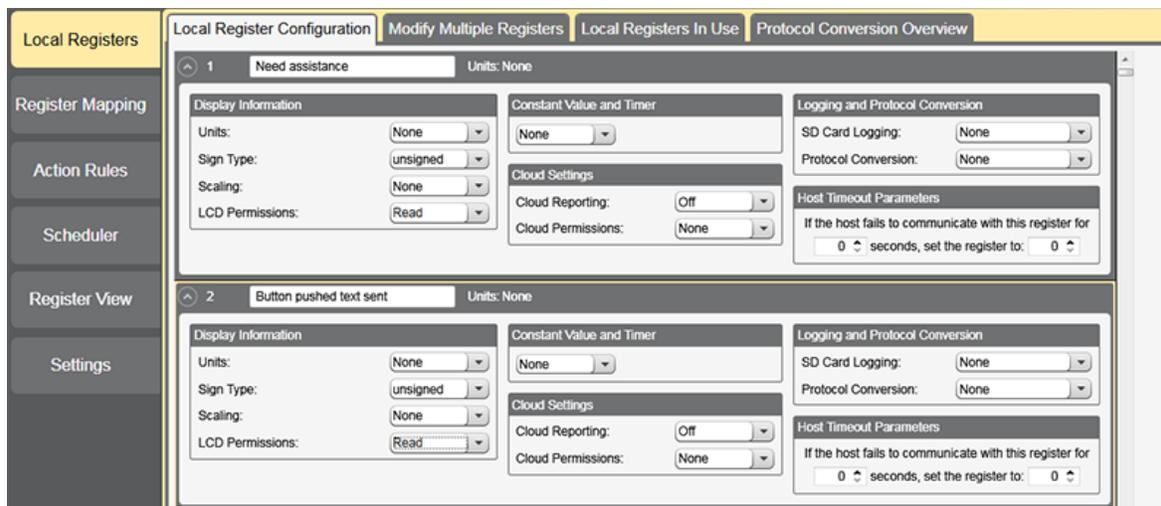
The following example demonstrates sending a text message to call for maintenance or call for service. The Wireless Q45 Node's push button input sends a text message by following these steps:

1. Define the Local Registers.
2. Create a Read Rule to read the Q45 input.
3. Define the SMS recipients and network settings.
4. Set a threshold using Action Rules.

Before beginning the steps below, verify the Wireless Q45BL Node was bound as Node 1 to the Gateway radio board in the DXM100 Wireless Controller. Also verify the cellular module in the DXM100-B1C1R1 was provisioned and has an active data plan.

Define the Local Registers

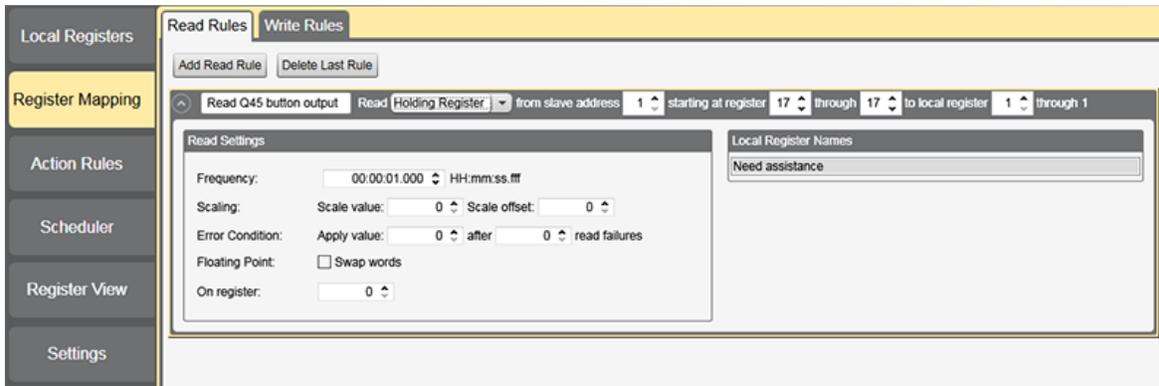
Define the Local Registers in the DXM Wireless Controller's processor.



1. Launch the DXM Configuration Tool software and select the Local Registers screen.
2. Use the drop-down list to select the register to be configured. For this example, we use register 1.
3. Name the register (for example, Need assistance) used to store the value of the push button input.
4. Select a register to store the value of the output of the pushed button (typically a tower or indicator light). For this example, the output is not mapped to anything.
5. For both registers, select "Read" for LCD Permissions to enable the register values to be viewed on the DXM Controller's LCD screen.

Create a Read Rule

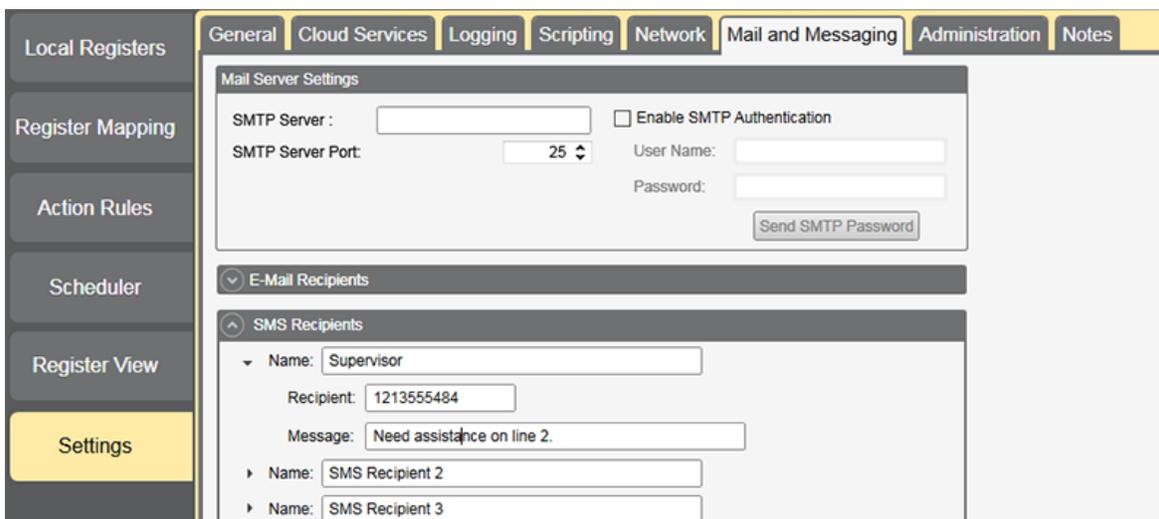
Create a Read Rule to read inputs from the Q45BL.



1. Select the Register Mapping screen.
2. From the Read Rules tab, click Add Read Rule.
3. Click the arrow to open the detailed Read Rule parameters section.
4. Enter a descriptive name for the rule, for example, Read Q45 button input. The data is read from slave address 1, which in this case is the ISM radio in the DXM Wireless Controller. The Q45BL sends the input (pushed button) to the Gateway in the DXM.
5. The Modbus holding register for Node 1, I/O 1 is: $1 + (\text{Node\#} \times 16) = 1 + (1 \times 16) = 17$. This is the Gateway's register 17, which stores Node 1's data. Refer to the DX80N9Q45BL-RYGB datasheet for more information.
6. Select slave address 1, starting at register 17, through 17 to local register 1 through 1. Local Register 1 was defined as "Need assistance".
7. Select the Frequency with which you'd like updates (for example, 1 second).

Define the Text Recipients and Network Settings

Define the list of text or email recipients that will receive the notifications.



1. Go to the Settings > Mail and Messaging screen.
2. Click the arrow next to SMS Recipients.
3. Click the arrow next to Name.
4. In the Name field, enter the name (for example, Supervisor) of the first recipient.
5. In the Recipient field, enter the phone number.
6. In the Message field, enter message to be sent.
7. Go to the Settings > Cloud Services screen.
8. In the Network Interface field, select Cell from the drop-down list.

Set a Threshold Using an Action Rule

Setting the threshold using an Action Rule defines the behavior of the registers under specific conditions, for example, when a button is pressed.

The screenshot shows the 'Action Rules' configuration screen in the Banner Engineering software. The 'Thresholds' tab is selected, and a 'New threshold rule' is being configured. The rule definition is: 'When register 1 (None) equals 1 set register 2 (None) to 1 else set to 0'. The configuration includes fields for 'When local register', 'then set local register number', and 'else set the register to'. Below the definition are sections for 'Hysteresis', 'On Time', and 'Logging Options'. At the bottom, there are tables for 'SMS' and 'E-Mail' recipients, with 'Supervisor' selected for SMS and 'E-mail Recipient 1' selected for E-Mail.

1. Go to the Action Rules > Threshold screen.
2. Click Add Threshold Rule.
3. Click on the arrow to expand the threshold rule.
4. Under Definition, enter a 1 in the When local register field. Local Register 1 was defined as *Need assistance*.
5. To set the threshold, select =, then select Value in the next drop-down list. Enter a 1 in the next field.
6. Under then set local register number, enter a 2. In the next drop-down list, select Value. Enter a 1 in the next field. This defines register 2's value as 1 (on) when the button is pushed.
7. Under else set the register to Value 0, select Value and enter a 0. This means that if the button isn't pushed, the register value remains at 0 (off).
8. At the bottom of this screen, click the arrow under E-mail/SMS on State Transition to expand that section.
9. Select the recipient(s) to send the text to.

Save your XML file to your computer and upload the XML file to the DXM100. You are now ready to receive a text message when the button on the Q45BL has been pushed.