

Technical Document

AX 3.x.108 SMS Driver
User Guide

Dec 13, 2017

SMS Driver User Guide

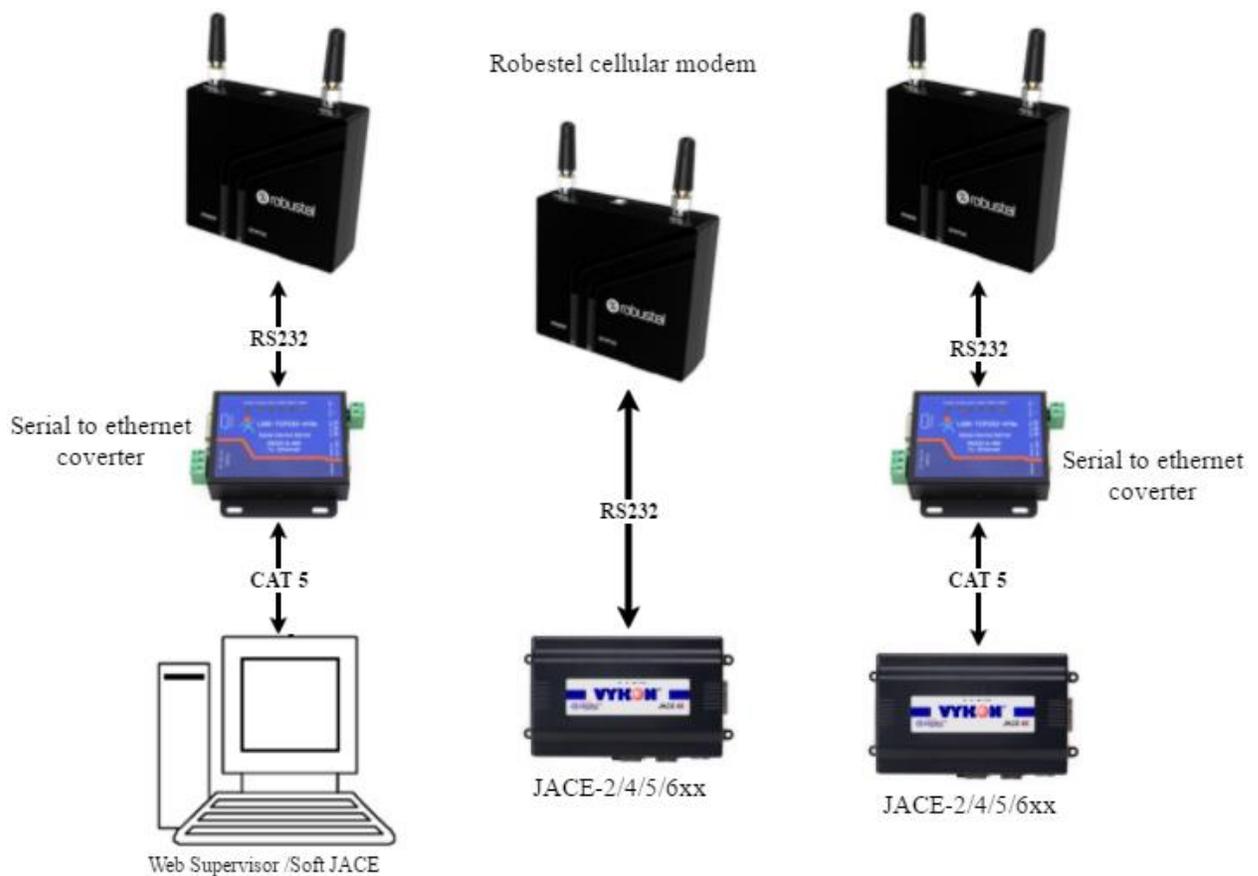
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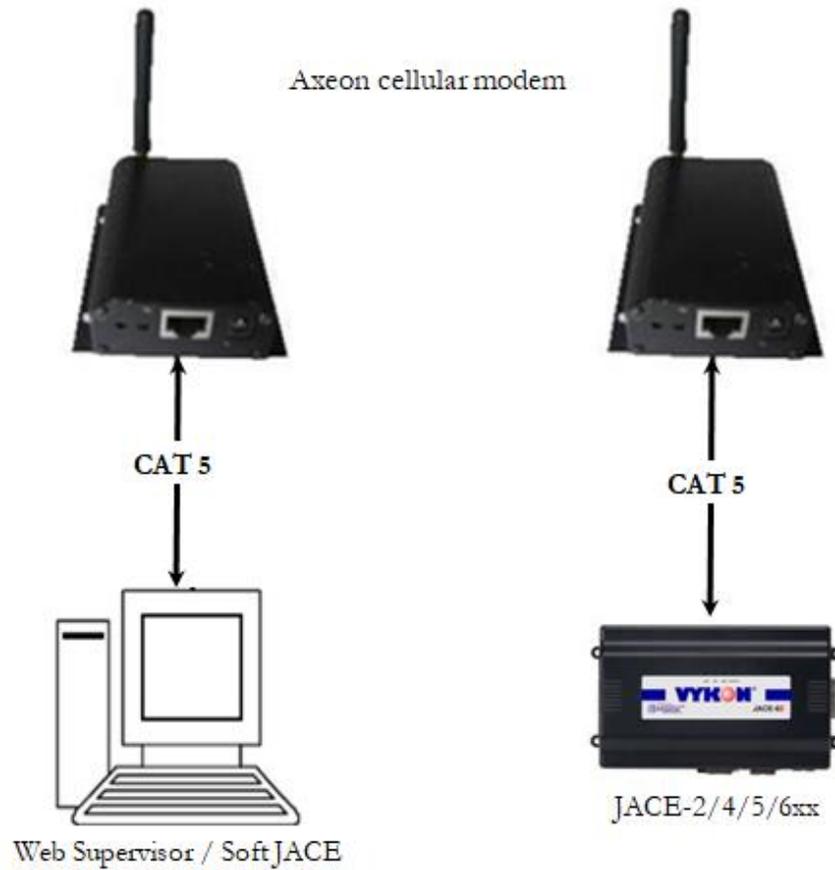
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Capability

This driver integrates with the cellular modem. It has been tested with the **Robustel GoRugged M1000 MP** and **Axeon TCP-GSM** cellular modem with standard AT command. This driver provides the capability to send a Niagara AX alarm message to cellular devices via SMS service.

USR-TCP232-410s is a Serial-to-Ethernet Converter which allows you to connect a serial RS232/RS485 device (e.g. **Robustel** modem) to a standard Ethernet/LAN network. This converter can be added in between the cellular modem and host unit depending on the system's requirement.





Platform

1. Cellular Modem (Robustel GoRugged M1000 MP– serial connection) – work with any of the Niagara AX platform.
2. Cellular Modem (Axeon TCP-GSM– TCP port connection) – work with any of the Niagara AX platform.

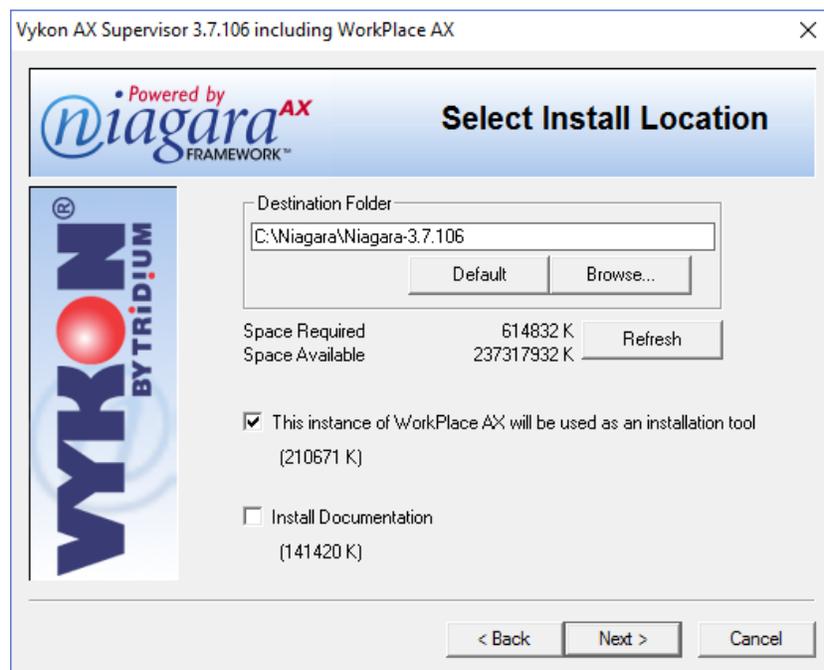
Installation

From your PC, use the Niagara Workbench 3.*n.nn* installed with the “installation tool” option (checkbox “This instance of Workbench will be used as an installation tool”). This option installs the needed distribution files (*.dist* files) for commissioning various models of remote JACE platforms. The dist files are located under your Niagara install folder in various revision-named subfolders under the “sw” folder.

When installing Workbench on your PC, you are required to select the **ifcSms** module, the optional required module will install automatically.

Apart from installing the 3.*n.nn* version of the Niagara distribution files in the JACE, make sure to install the **ifcSms** module too (if not already present, or upgrade if an older revision). For more details, see “About the Commissioning Wizard” in the JACE NiagaraAX Install and Startup Guide.

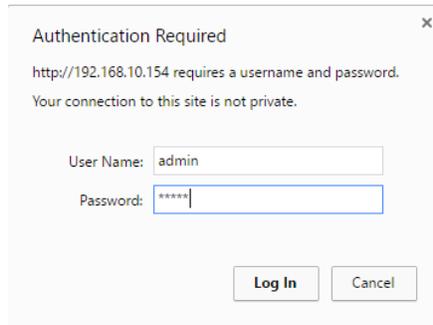
Following this, the station is now ready for SMS integration, as described in the rest of this document.



Configuration

The **USR-TCP232-410s** Serial-to-Ethernet Converter can be configured with a required parameter. From your PC, connect the Serial-to-Ethernet Converter to the PC network. Enter the preset IP address (**192.168.10.154**) in your PC web browser address bar to log in to the device.

User name : admin
Password : admin



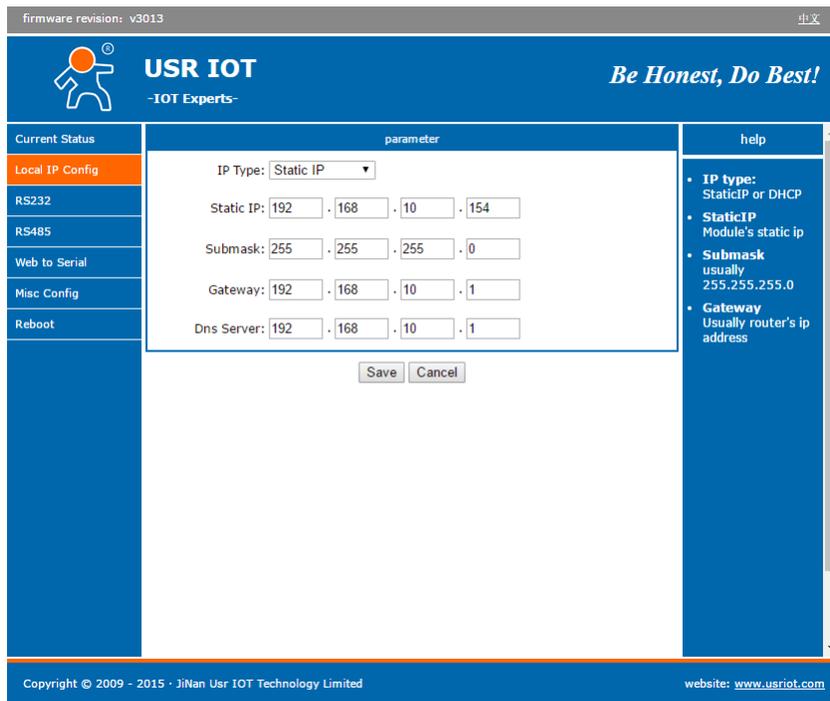
Authentication Required

http://192.168.10.154 requires a username and password.
Your connection to this site is not private.

User Name:

Password:

Login the configuration page with user name and password. The network IP address of the Serial-to-Ethernet Converter can be configured in the **Local IP Config** tab as shown in the figure below.



firmware revision: v3013 中文

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Current Status

Local IP Config

RS232

RS485

Web to Serial

Misc Config

Reboot

parameter

IP Type:

Static IP: . . .

Submask: . . .

Gateway: . . .

Dns Server: . . .

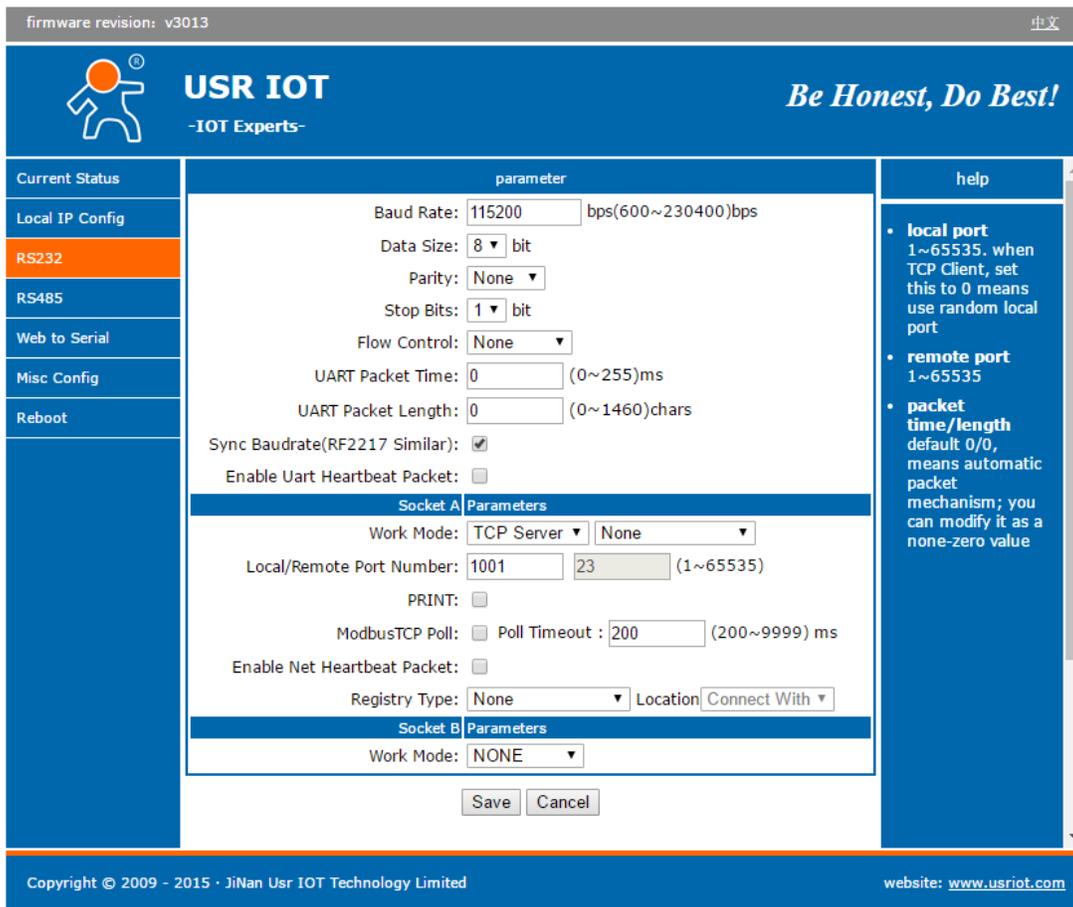
help

- **IP type:** StaticIP or DHCP
- **StaticIP** Module's static ip
- **Submask** usually 255.255.255.0
- **Gateway** Usually router's ip address

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The RS232 port parameter configuration can be done in the **RS232** tab as shown in the figure below. The default serial communication parameters as follow :

Baud rate : 115200 bps
 Data size : 8 bit
 Parity : None
 Stop bits : 1 bit
 Flow control : None



A reboot on the device is required for any changes made on the configuration in order for it

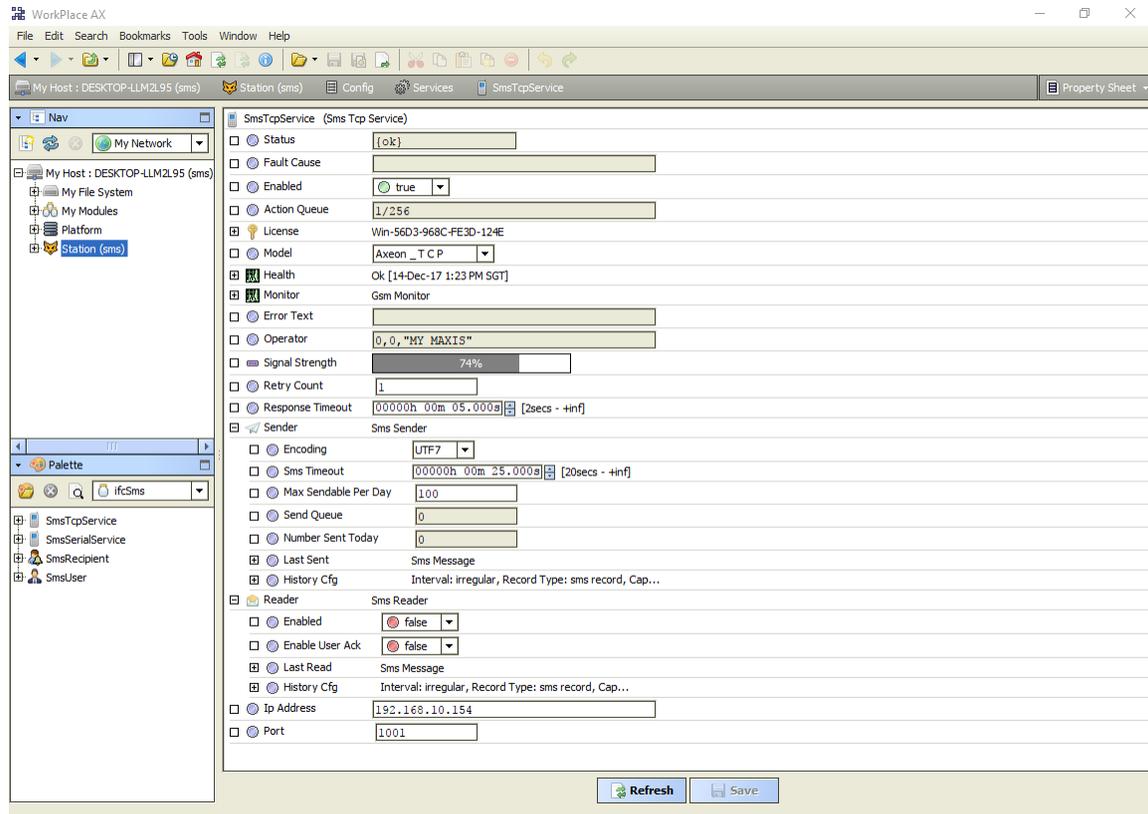
Quick Start

- ✚ Follow the installation and configuration instructions preceding this.
- ✚ Open the ifcSms palette and find the SmsService object.
- ✚ Paste a SmsService object under the Services node in your station.
 - Edit the Serial Port Config properties as needed.
 - Edit the Encoding at the “Sender” properties :
 - **UTF7** (7-bit character encoding) - 160 characters maximum characters per SMS. (7-bit character encoding is suitable for encoding Latin characters like English alphabets.)
 - **UCS2** (Unicode character encoding) - 70 characters maximum characters per SMS. (SMS text messages containing non-Latin characters like Chinese characters should use 16-bit character encoding.)
- ✚ Drag and drop the SmsRecipient object under the ‘AlarmService’ folder, or copied from “ifcSms” palette.
 - Edit the Time Range properties as needed.
 - Edit the Days Of Week as needed.
 - Edit the Transaction as needed.
 - To receive the SMS message the Route Ack and Enable required to turn to true.
 - Add one or more users and set the mobile number for each user at SMS User Manager. Alternative method is to copy or drag the “Sms User” from the “ifcSms” palette into the “Sms Recipient”.
 - Select the Alarm Class from the Alarm Service and link to the “Sms Recipient”.

SMS Component Guide

SmsService

The SmsService is the "network-level" component in the NiagaraAX architecture. It has the standard network component properties such as status and enabled (see "Driver Architecture / Common network components" in the NiagaraAX Users Guide for more information).



NOTE: In the following properties, the blue-gray out properties are inherited from the base AX driver classes, and as such are only touched on here. For a full explanation, refer to the AX Driver Architecture document.

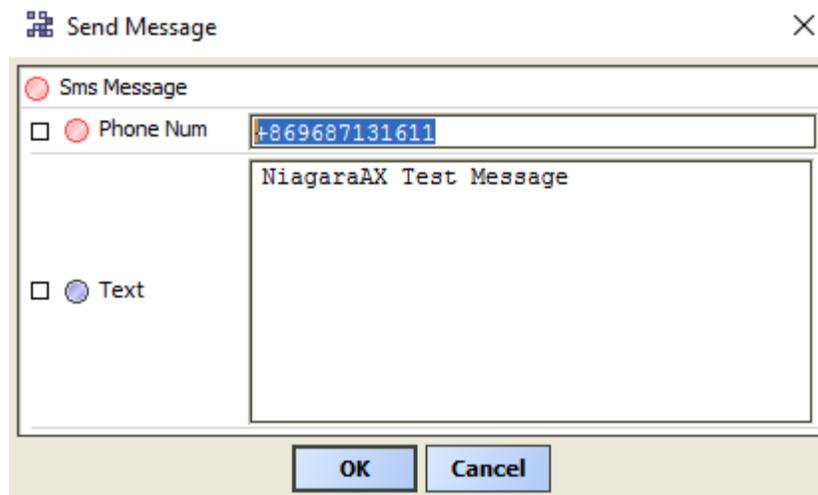
- Status – The status of the network. Will normally be {ok}. A value of {fault} usually indicates an incorrect Serial Port Config setting.
- Fault Cause – if the “Status” is fault, the fault cause will appear here. For instance, if a non-existent COM port is configured into the “Serial Port Config” property, then this will say “Could not enable serial communication (javax.baja.serial.PortClosedException)”.
- Enabled – Enables or Disables the Sms Driver.

- Action Queue – Specifies the number of tasks to be executed.
- License – A container for the SMS License properties.
 - ◆ Host Id – Is the machine Host Id automatically generates by Tridium system.
 - ◆ Unlock Code – the unlock code supply by Infocon Holding Pte Ltd to unlock the license to run permanently without time trial.
 - ◆ The driver can run without the unlock code but has the time trial for 2 hour. After the time trial expired the communication will stop communicating to the cellular modem. User required re-booting the JACE to re-establish the Sms Service communication again.
 - ◆ To unlock the license simply select at the word “license” with the right mouse button -> action -> and the “license Update will appear. Key-in the unlock code and the mode property should turn to registered if the unlock code is successful enter with the correct unlock code.
- Model – Cellular modem model which is used in the system.
 - Robustel_M1000 – Robustel GoRugged M1000 MP
 - Axeon_TCP – Axeon TCP-GSM
- Monitor – container for monitor (ping) properties.
- Error Text– The status of the cellular modem. Will normally be empty. The error message reply from the cellular modem will appear here.
- Signal Strength – The current signal strength of the cellular modem. Typically 20% or greater is suitable for sending text message.
- Retry Count – Specifies number of retry sending command to the device if respond timeout occur.
- Response Timeout - Specifies the maximum time to wait for a standard response like a ping, signal straight and read the SMS record.
- Sms Sender -> Encoding - 160 characters if **7-bit** (UTF7) character encoding is used. (7-bit character encoding is suitable for encoding Latin characters like English alphabets.).70 characters if 16-bit **Unicode** (UCS2) character encoding is used. (SMS text messages containing non-Latin characters like Chinese characters should use 16-bit character encoding.)
- Sms Sender -> SMS Timeout - Specifies the maximum time to wait for a response to a SMS message is sent.

- Sms Sender -> Max Send able Per Day – The maximum number of message that can send in one day.
- Sms Sender -> Total Queue – the total number of message is pending to send.
- Sms Sender -> Number Sent Today – the total number of message sent today. This number gets reset to zero at midnight every day.
- Sms Sender -> Last Sent Message – the SMS message that has been deliver to user.
- Sms Reader -> Enable – Enables or Disables the Reader
- Sms Reader -> Enable User Ack – Allowed user to acknowledge the alarm by sending back the response to the sender number, user also receive the alarm code “Uuid” to identify the specific alarm message to acknowledge.
- Sms Reader -> Last Read Message – the SMS message that has been read from the cellular modem SIM card.
- Serial Port Config – A container for the serial port properties.
 - ◆ Status - {ok} or {fault}.
 - ◆ Port Name – Common name of a serial port, such as “COM1”.
 - ◆ Baud Rate – Selected from a drop-down list.
 - ◆ Data Bits – select 5, 6, 7, or 8 bits.
 - ◆ Stop Bits – select 1 or 2 bits.
 - ◆ Parity – select None, Odd, Even, Mark, or Space.
 - ◆ Flow Control Mode – Do not select any flow control for Sms Driver.
- IP Address – the TCP/IP address of Serial-to-Ethernet Converter.
- Port – the Local/Remote TCP port number of Serial-to-Ethernet Converter.

Actions

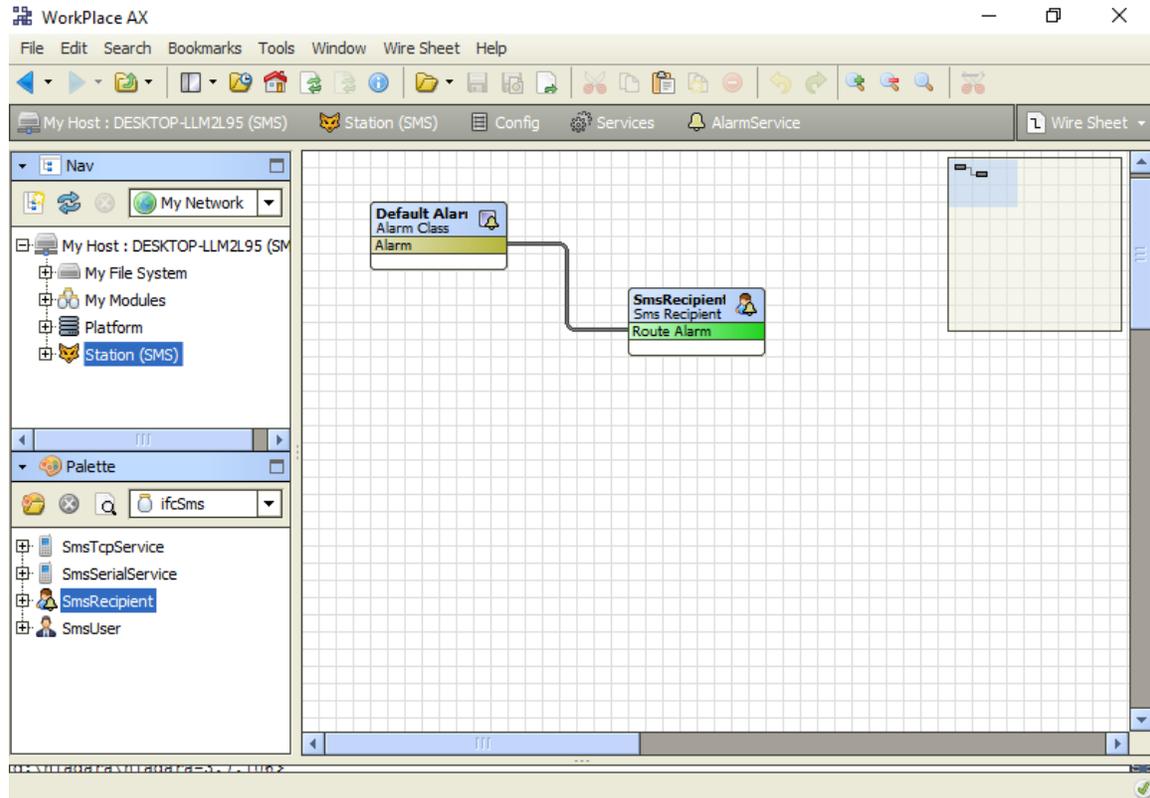
- Ping – Ping the cellular modem to insure it is connected.
- Init – Initialize and configure the cellular modem, this will also try to update the signal strength.
- Sms Sender -> Clear Queue – Clear all the messages which is pending to send.
- Sms Sender -> Send Message – This function able to do a testing, to make sure the WS/JACE connectivity to the cellular modem is proper configured.



- Sms Sender -> Reset Count – Reset the number of message sent today. Please note the number of message sent will reset automatically at midnight everyday and whenever the station is started.
- Sms Reader -> Read Message – Manually trigger the read message action.
- Sms Reader -> Read Message – Delete all messages store in the Inbox storage.

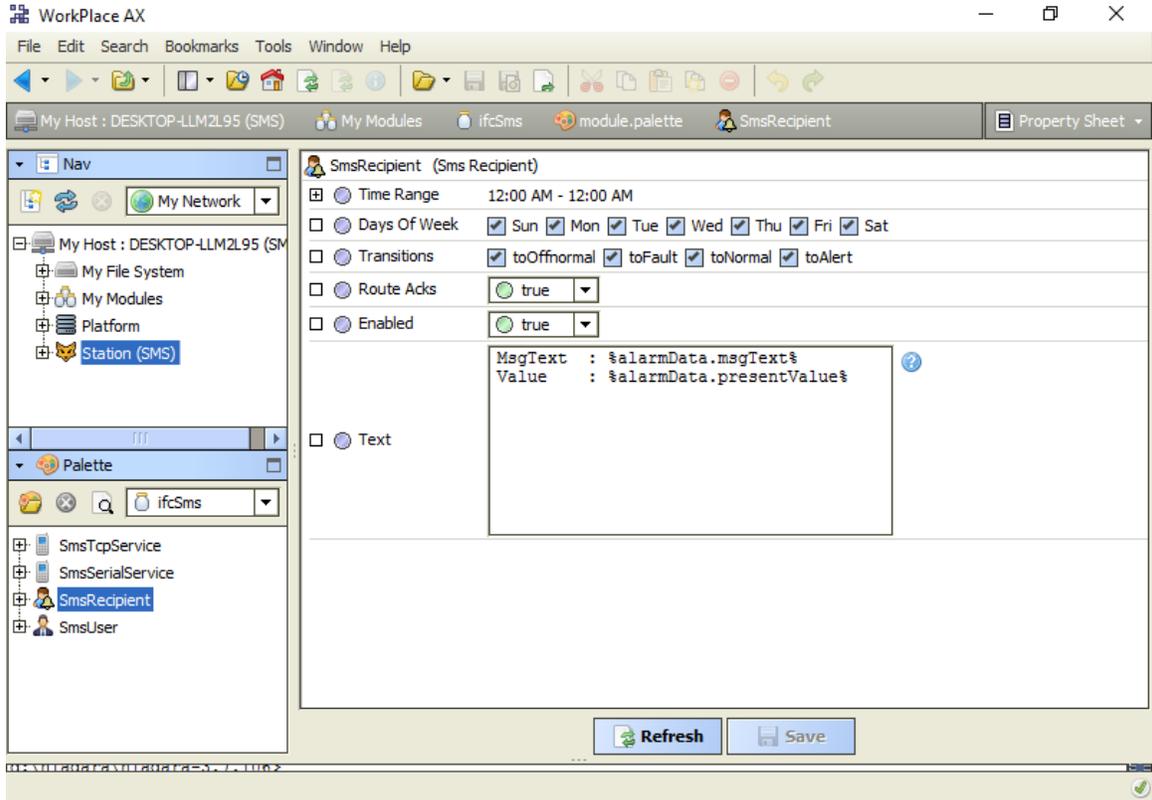
SmsRecipient

Sms recipients object must be placed under the 'Alarm Services'. User required "to link" the "Alarm Class" to the 'Sms Recipient' object.



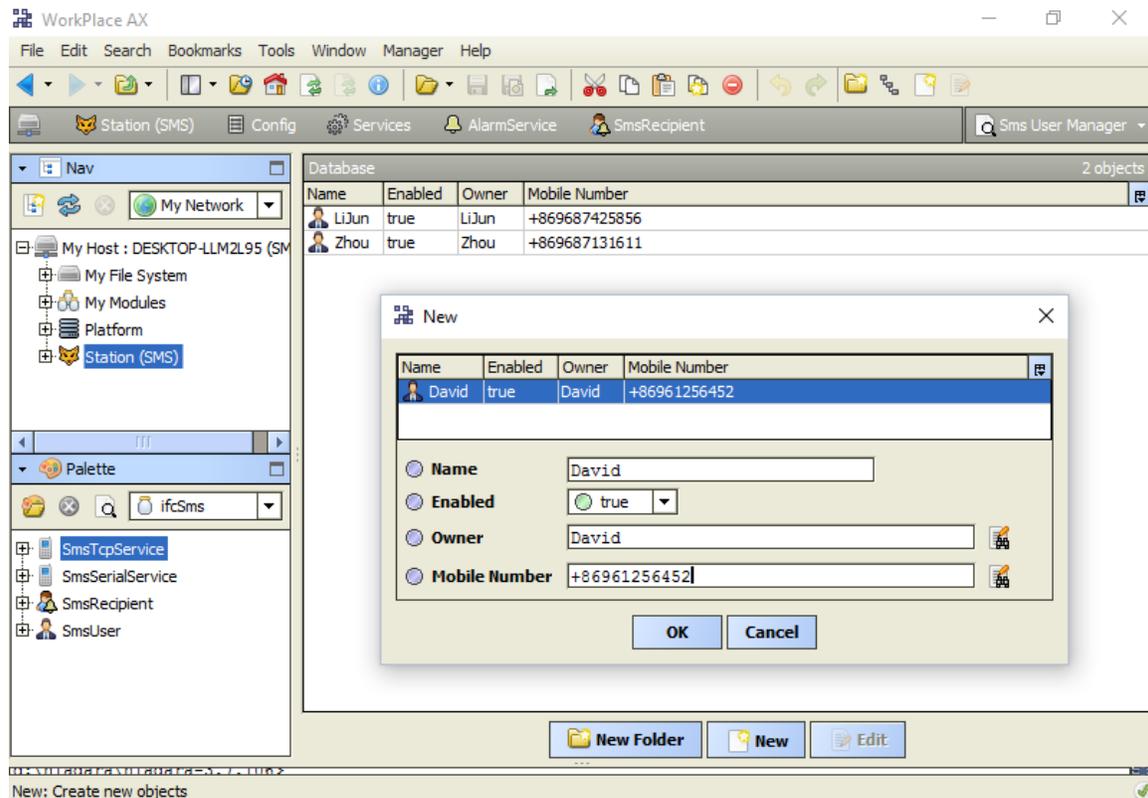
Sms recipients are linked to an alarm class (from the alarm topic on the alarm class to the routeAlarm action on SmsRecipient), as shown as below in Sms Recipients may be configured to receive alarms at certain times of the day, certain days of the week, and to receive alarms of only specified transitions.

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SmsUser

The **SmsUser** component provides a dynamic object to specify the recipient cellular modem number. If more than 1 user to receive the SMS message, user could add more SmsUser by copying from “ifcSms” palette and paste it under the SmsRecipient. Alternative method to add multiple recipients is to enter the Sms User Manager by double click on the SmsRecipient object.



SMS Alarm Acknowledged

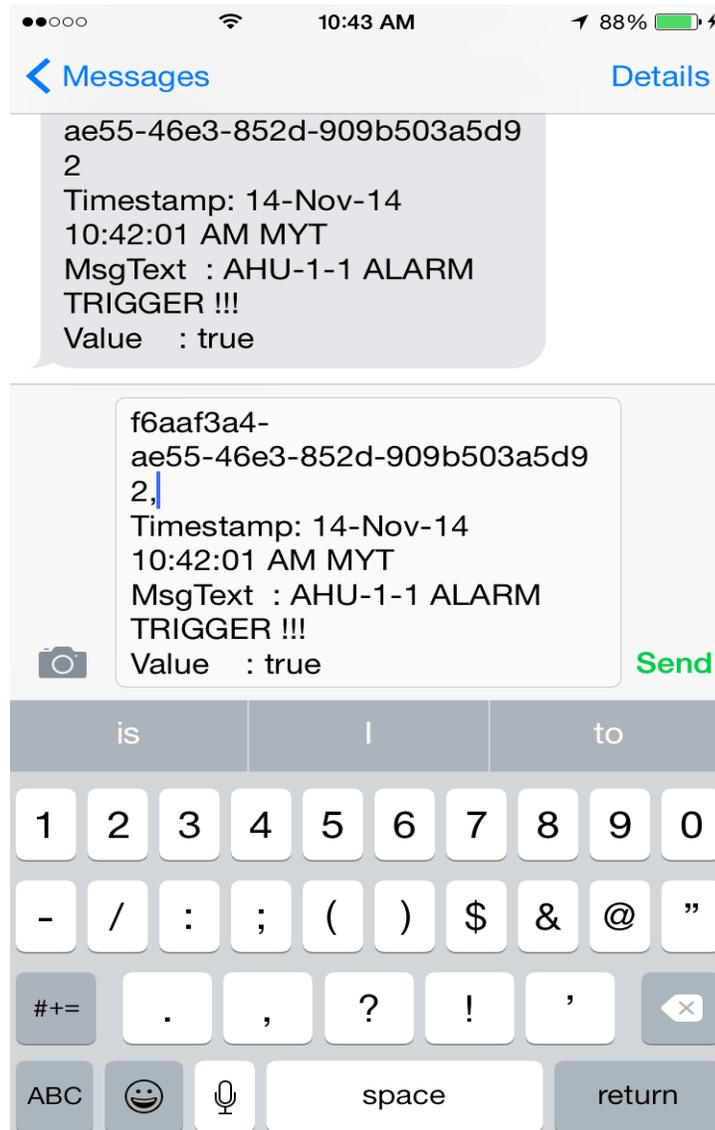
The **ifcSms** driver provides the options to acknowledge the alarm from the recipient user mobile phone, to enable this option at the Config -> Services -> SmsService -> “Reader” -> Enabled User Acks.

When this option is enabled all the sending message text to recipient user will automatically append the “alarm Uuid”, this is to identify the alarm point.

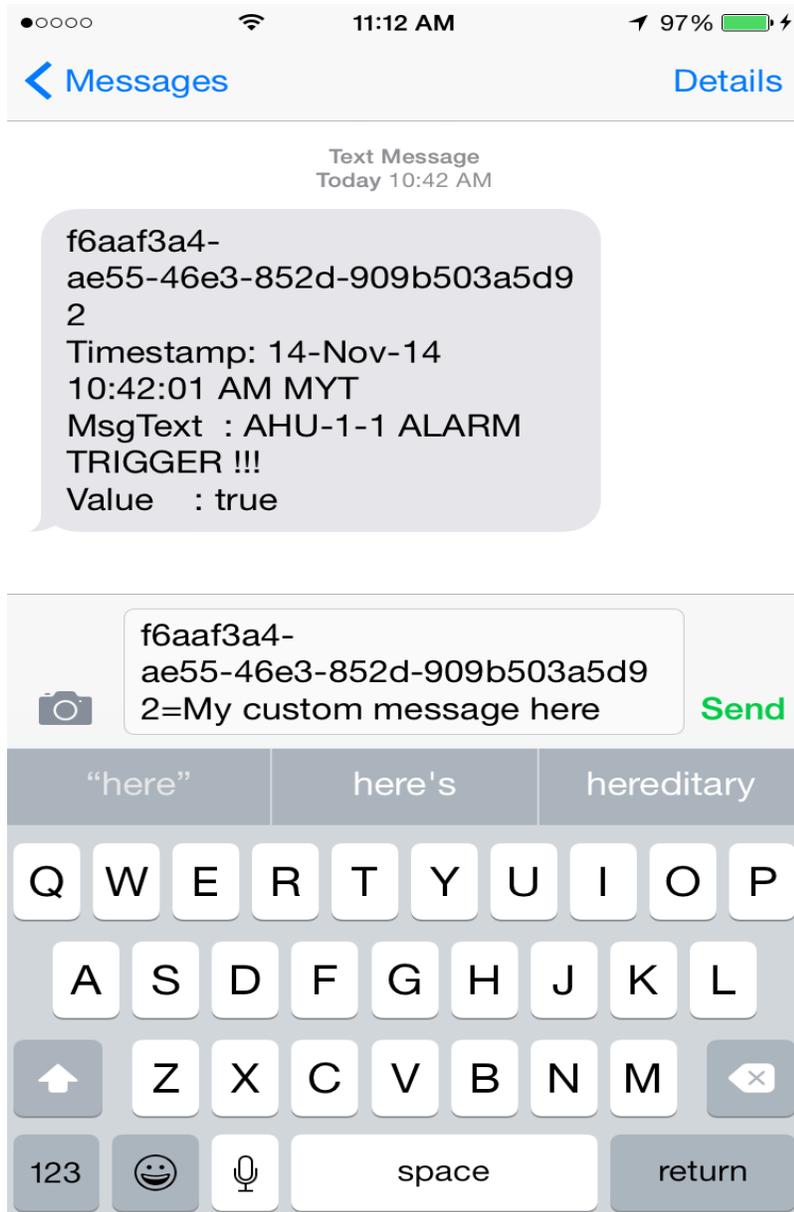
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To acknowledge the alarm from the recipient mobile phone there were 2 option available to do this:-

1. Copy the receive text message and paste into the new message text, add on the “;” comma sign at the last of the Uuid code. See the figure as below. Finally sent back the message to the sender number.

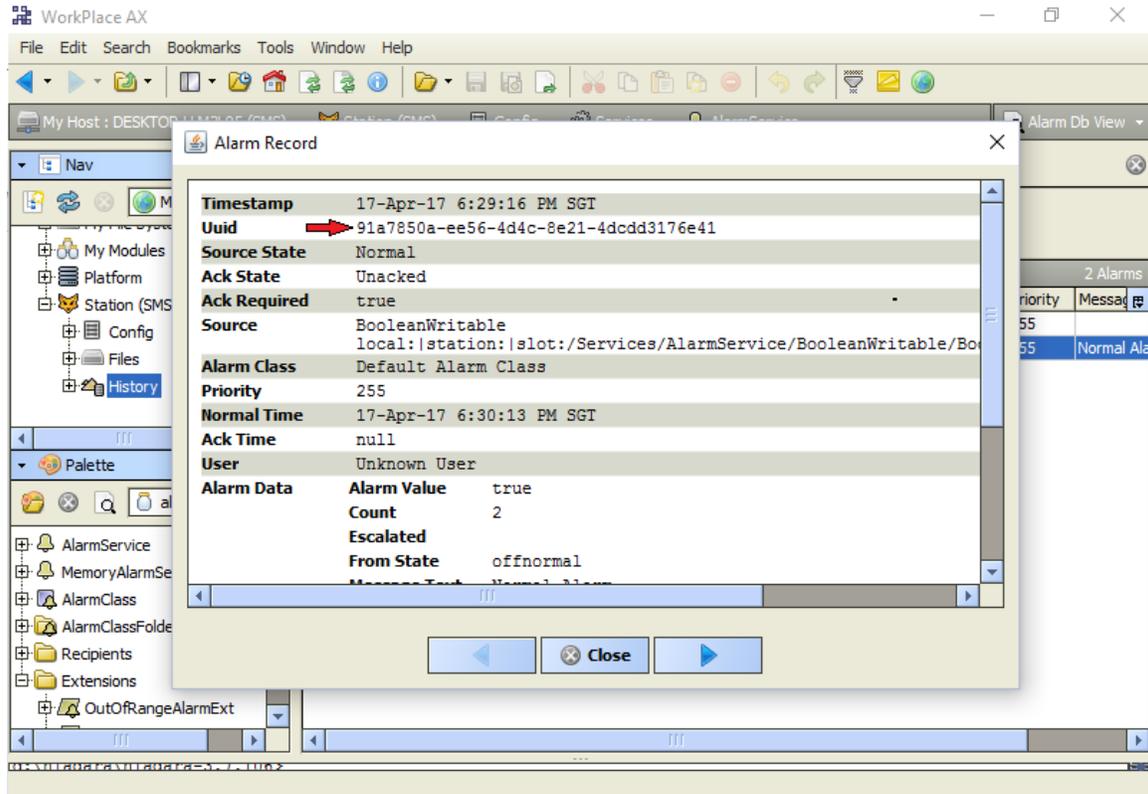


- Copy the receive text message and paste into the new message text, replace all the message from the end of the Uuid code e.g. <uuid>=<your custom message here>, more info see figure as below.



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To view the system acknowledge by the user go to the alarm console, you can add the note column to view, your SMS custom message.



Only the first user acknowledge the alarm will record at the user acknowledge alarm column, if second recipient user acknowledge the alarm it will store the record at the note column.

Sms Delivery Report

The *ifcSms* driver provides the report, can be view from the standard history report. After SMS message has been delivering to the user, the report will generate automatically.

