

# T8000- I smart gateway user manual

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## 1. Introduction

This document explains the hardware features and functionalities of T8000-I smart gateway. The scope of this document includes a brief device overview and step-by-step device configuration guide.

### 1.1 Related document

- [1] Quick user guide for T8000-I
- [2] TMAS cloud guide
- [3] User document for T8000 Embedded web

### 1.2 Product label

The label at the back of the T8000-I gateway comprises information listed in Table below.



No.	Information
1	Model Name
2	Power Supply
3	Device Serial Number
4	Manufacturer Code
5	Device Module IMEI Number
6	Marking "Product of Singapore"

## 2. Device overview

TMAS T8000-I, is the smart IOT gateway and controller for both smart home and industrial applications. It is designed to support Singapore Smart Nation Platform, and also in close compliance with Singapore IDA TR-38 and TR-40 standard.

T8000-I is the industrial grade gateway, with consideration for mission critical installation and suit many operational requirement. It come with comprehensive I/O handling capabilities. It has data logging and embedded web to manage the data profile and events efficiently. With local smart analytic capabilities, it is an ideal IOT Platform for many applications, such as building facilities management.

## 2.1 Key specification at a glance

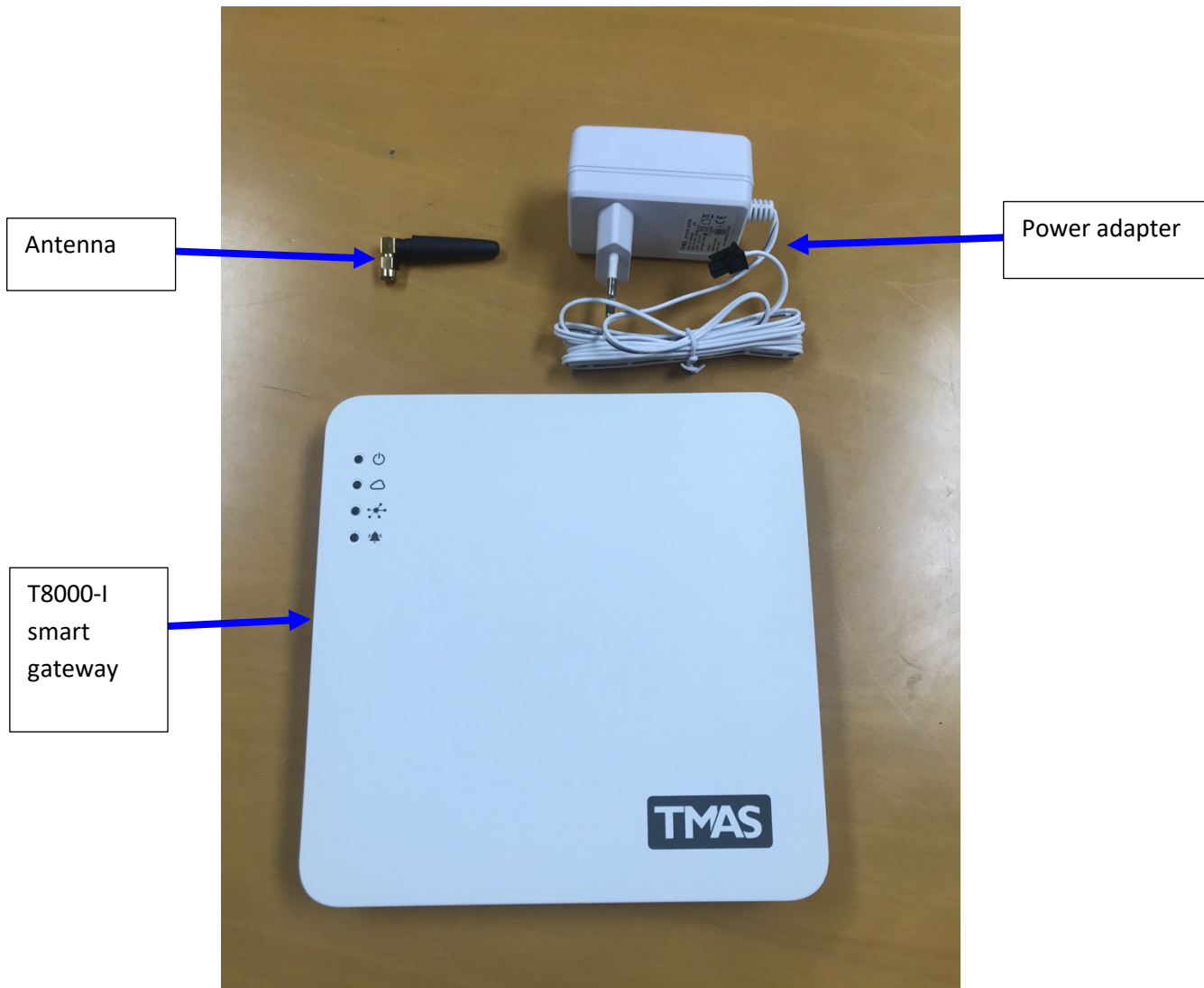
1) Specifications	T8000-I
<b>General</b>	
Application	Industrial M2M / IOT
CPU and OS	34 bits Cortex A8 ARM / Linux OS
Memory	SDRAM 512MB / Flash 4GB
Unique App Module	I/O management and logging
SMS App Module	Yes
Em Web Configuration	Yes
SQL dBase Module	Yes
<b>Network Specifications</b>	
Ethernet	10/100Mbps (RJ45)
Cellular (Optional)	UMTS/HSPA+: 800/850,900,2100MHz
Cellular Antenna	2dbi (Optional 5dbi with 3m cable ext antenna) via SMA Female (50Ω)
Internet Protocol	HTTP / MQTT / JSON
<b>I/O Specifications</b>	
I/O Channels	8xDI, 4x AI, 2xDO
Serial Port	1x RS232, 1x RS485 (optional)
Discrete Input (DI)	Configurable NC/NO Dry contact or TTL Signal
Analogue Input (AI)	0-10Vdc 12bits ADC
Discrete Output (DO)	Open Drain max 40Vdc 2A drain
<b>Power Supply</b>	
Supply Voltage	6~32VDC
Battery Backup	3.7V 2000mAH (2 hours typ.)
Power Adaptor	230VAC / 12VDC 1A included
<b>Mechanical</b>	
Enclosure Material	Polycarbonate (White)
Dimension	183x183x22 mm
Weight (Excl. accessories)	330g
Mounting	Wall/Panel Mount or Desktop
Operating Temperature	-25 to +85 °C
Relative Humidity	90%

### 3. Setup T8000 Gateway

T8000-I Smart gateway is a plug-and-play device. After simple configuration it will be ready to carry out its mission. This section will guide you step-by-step to setup your device. For a more intuitive setup guide, you can also watch our video guide online.

#### 3.1 Box open

T8000-I Smart Gateway Kit Set will be delivered with all necessary accessories inside. Please refer to the photo below for all the accessories.

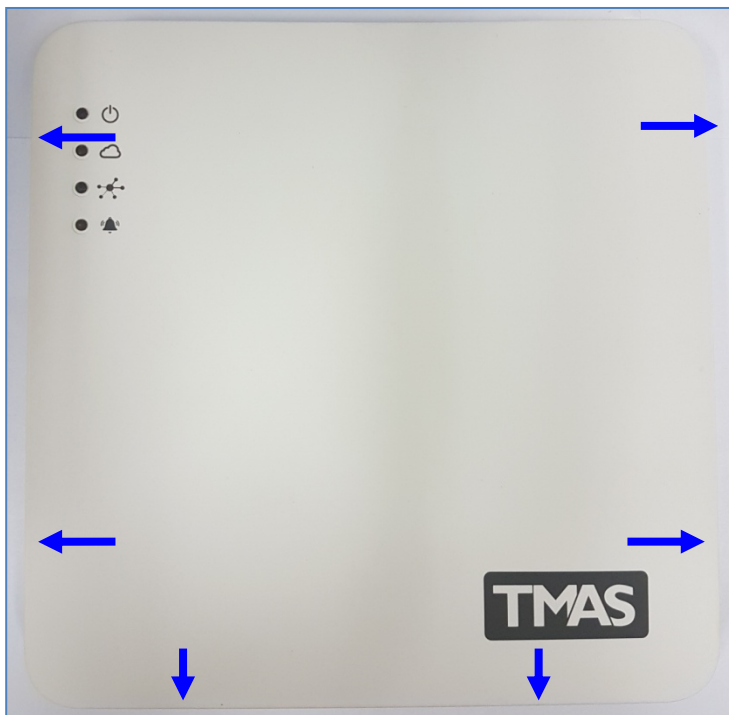


### 3.2 Insert SIM Card

Open the casing using a flat screwdriver and apply a downward followed by upward force.

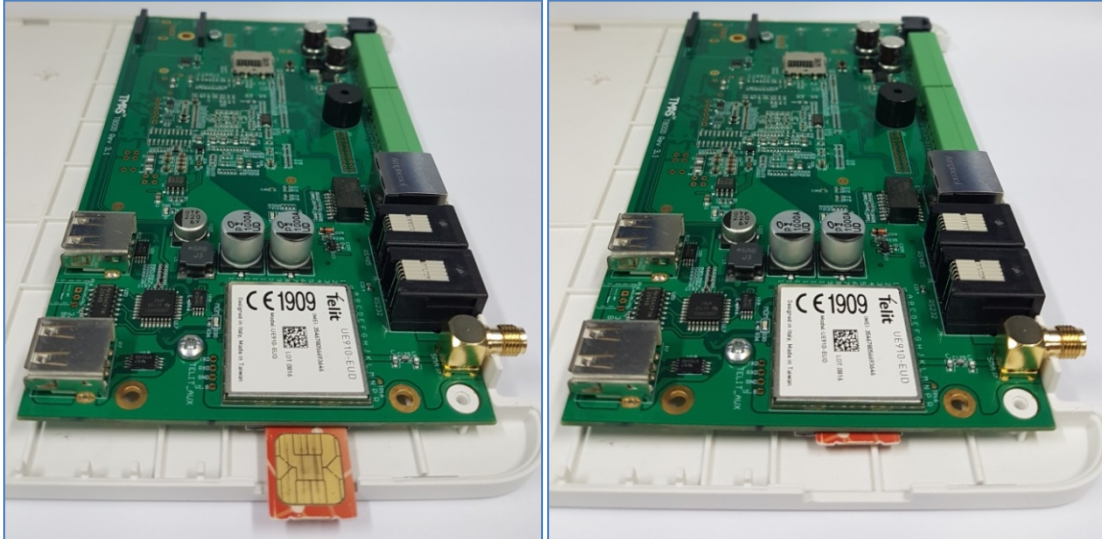


There 6 locks in total and the location is indicated below



The SIM – with the circuit side facing upwards – is inserted by gently pushing into the SIM card slot until it snaps hold.

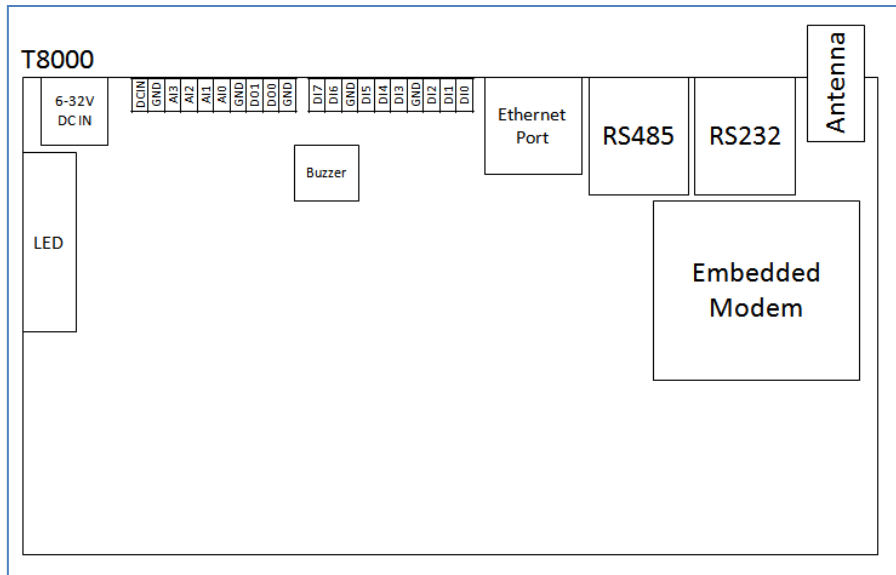
To extract out the SIM card, push the SIM card inward to unlock the SIM card.



Close the casing by aligning the 2 bottom lock part first followed by the 2 lock on the left and right side.







### 3.3 Hardware Connection



Connect the Power Adapter, Ethernet Port and Antenna.



### 3.4 LED Blinking

LED	Indication	Description
 <b>Power LED</b>	OFF	No AC power
	ON	T8000 is powered
 <b>Cloud LED</b> <b>-network connectivity status</b>	OFF	Waiting for Network Manager program to start
	Blinking	Network Manager running and trying to connect to internet.
	ON	Connected to internet
 <b>Event LED</b>	OFF	No event occurring
	2s ON	When event occurs on DI, DO, AI If new event occurs less than 2 seconds, after 1st event, LED delay timer will restart and keep led on for 2 seconds after 2nd event
 <b>Alarm LED</b>	OFF	No alarm occurring
	ON	One of the channel input is in alarm state DI, AI.

## 4. Locate T8000 Gateway IP

### 4.1 Setting Up for the First Time

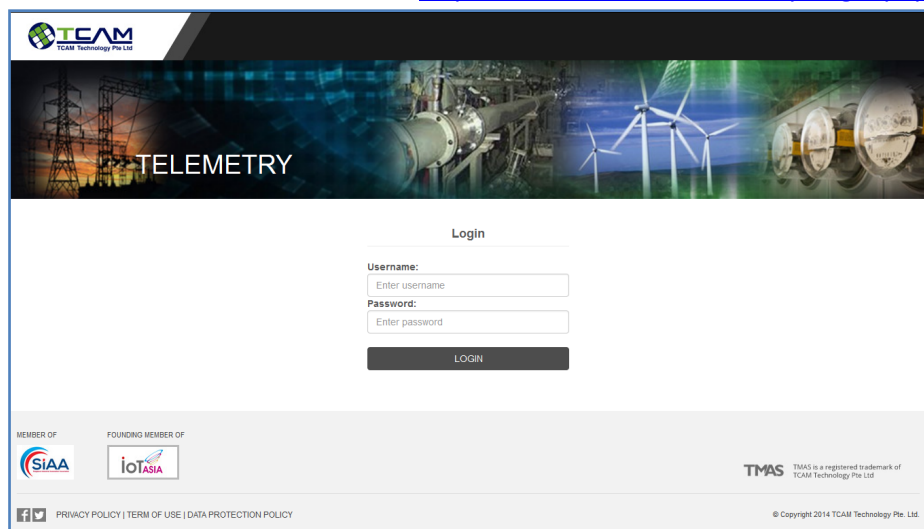
Refer to Appendix on Connecting to T8000 for the first time.

Take note of the T8000 IP you have changed.

## 5. Embedded Server

### 5.1 Login to Embedded Web

The URL for web access would be: <https://192.168.1.100/Gateway/Login.php>

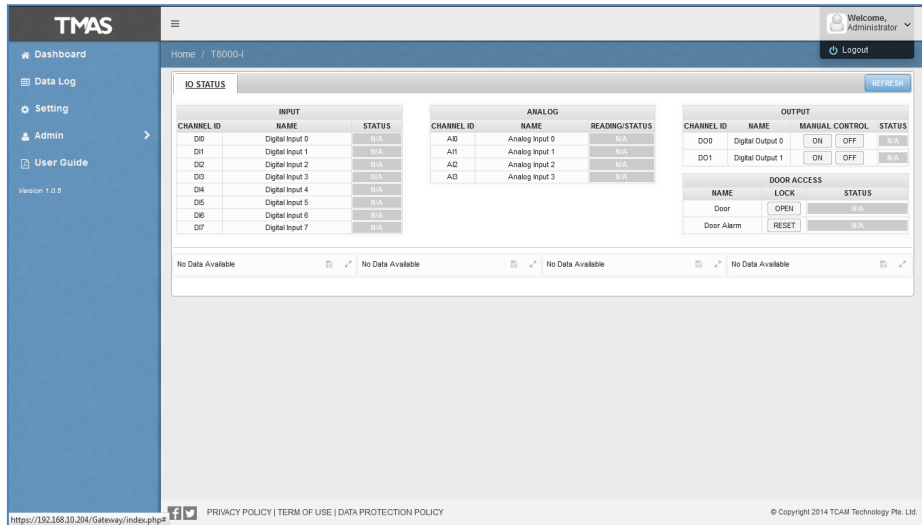


Username: admin

Password: admin123

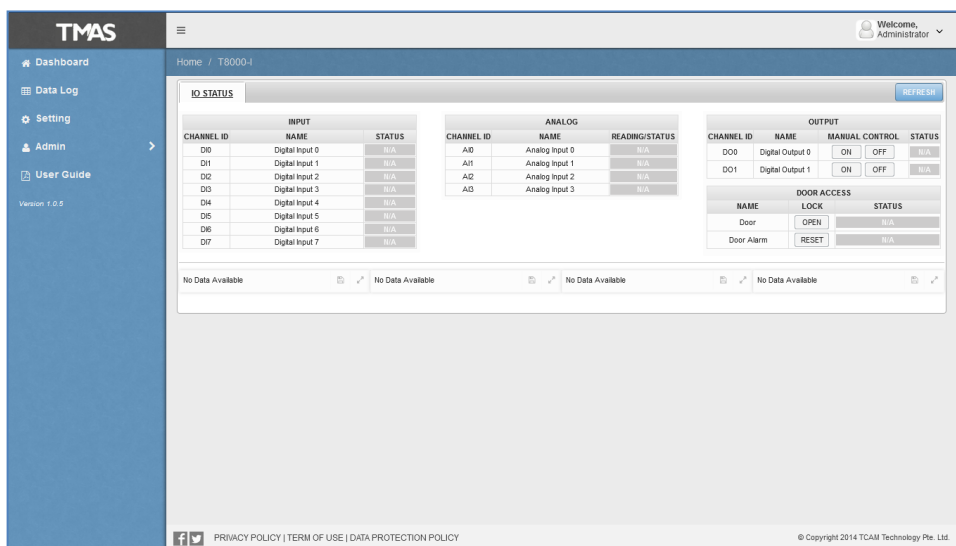
## 5.2 Logout to Embedded Web

Upon login, you can logout by clicking on the “Welcome” at the top right corner.



## 5.3 Dashboard

Upon successful login, you will see the dashboard.



Under Input Table, channel status will be reflected as **NORMAL**, **TRIGGER** or **N/A**.

Under Output Table, manually control output ON or OFF by clicking on the respective button, channel status will be reflected as **OFF**, **ON** or **N/A**.

Under Analog Table, channel reading status will be reflected as **54.15 %**, **11.02 °C** or **N/A**.

Under Door Access Table, control the opening of the door by clicking “OPEN” button and reset any door alarm by clicking “RESET” button

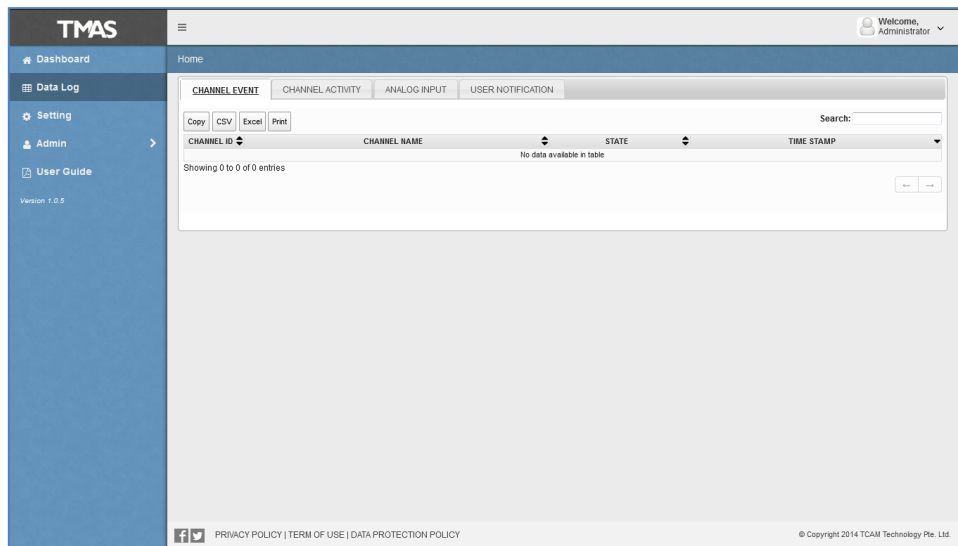
Door status will be reflected as LOCKED or UNLOCKED.

Door Alarm status will be reflected as NORMAL, DOOR OPEN TOO LONG or DOOR BREAK.

## 5.4 Data Log

### 5.4.1 Channel Event

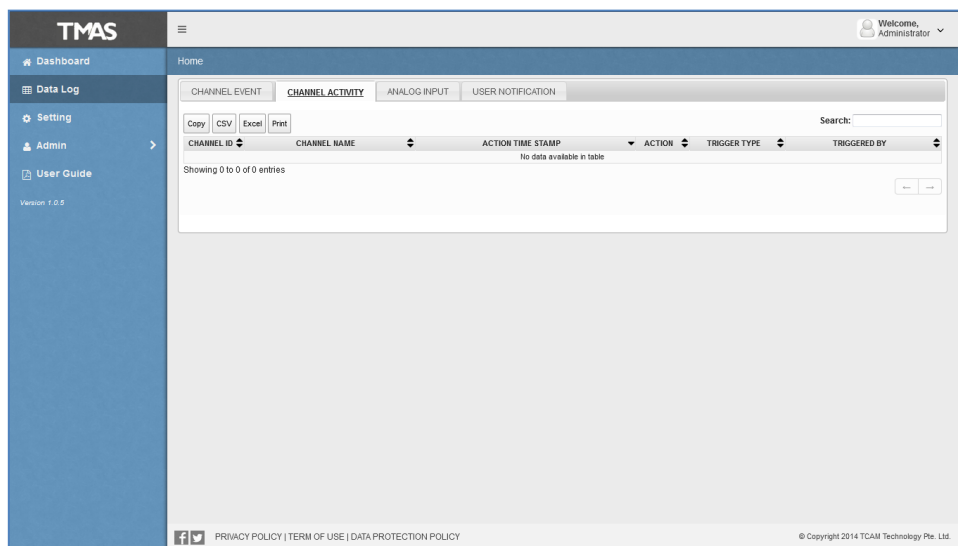
Display channel event in table form.



The screenshot shows the TMS web interface with the 'Data Log' section selected. The 'CHANNEL EVENT' tab is active. The table has the following columns: CHANNEL ID, CHANNEL NAME, STATE, and TIME STAMP. The table is currently empty, displaying 'Showing 0 to 0 of 0 entries'. The interface includes a search bar, export options (Copy, CSV, Excel, Print), and a footer with social media icons and copyright information.

### 5.4.2 Channel Activity

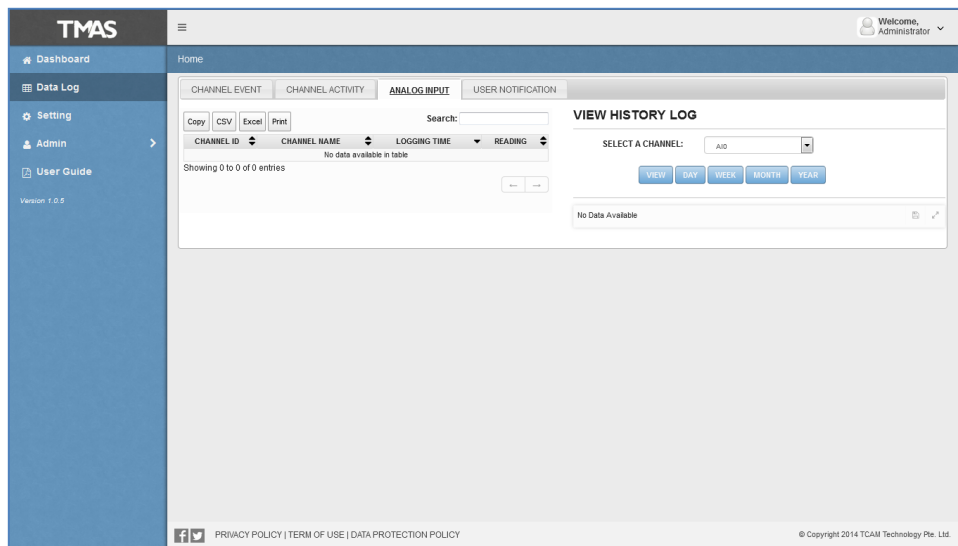
Display channel activity in table form.



The screenshot shows the TMS web interface with the 'Data Log' section selected. The 'CHANNEL ACTIVITY' tab is active. The table has the following columns: CHANNEL ID, CHANNEL NAME, ACTION TIME STAMP, ACTION, TRIGGER TYPE, and TRIGGERED BY. The table is currently empty, displaying 'Showing 0 to 0 of 0 entries'. The interface includes a search bar, export options (Copy, CSV, Excel, Print), and a footer with social media icons and copyright information.

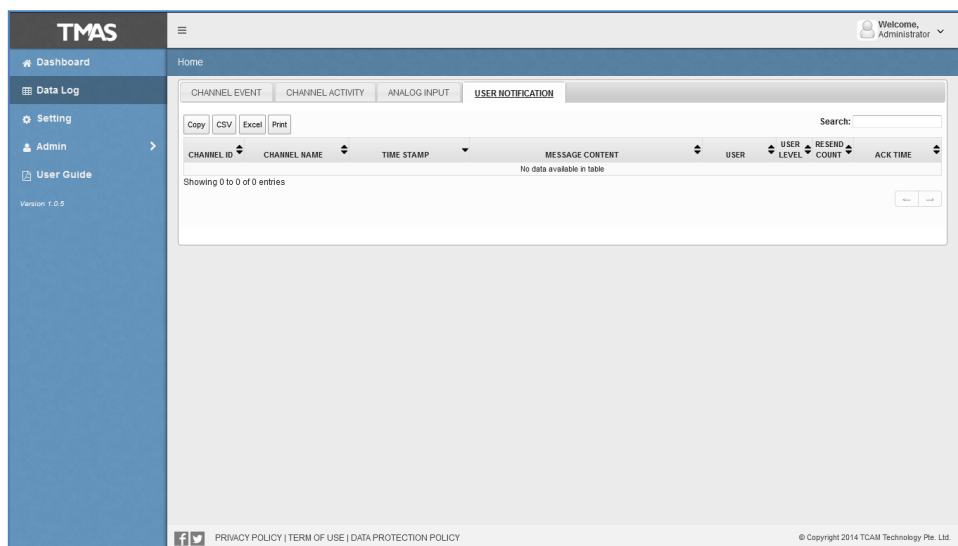
### 5.4.3 Analog Input

Select a channel to view the analog chart and table of the device.



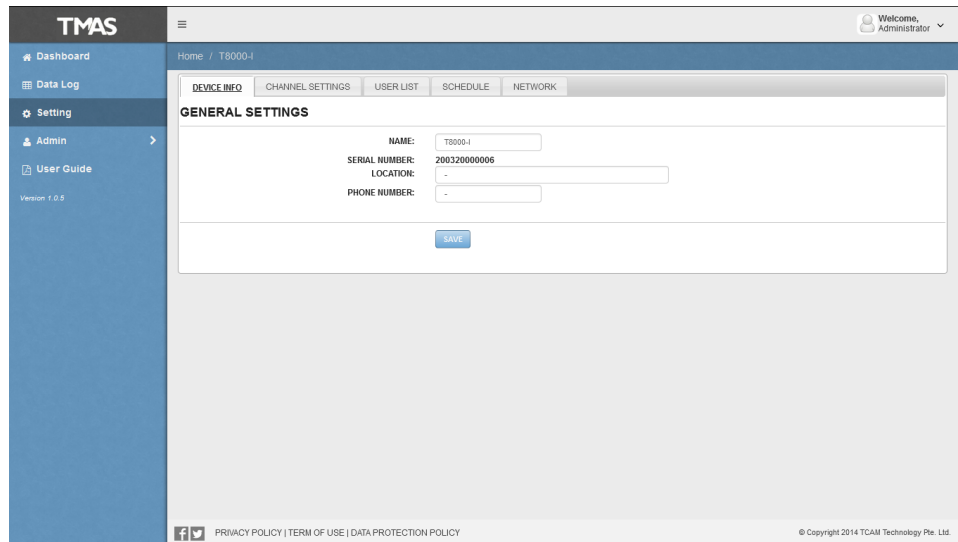
### 5.4.4 User Notification

Display user notification in table form.



## 5.5 Setting

### 5.5.1 Device Info



The screenshot shows the 'DEVICE INFO' section of the TMS interface. The 'GENERAL SETTINGS' tab is active, displaying a form with the following fields:

- NAME: T8000-I
- SERIAL NUMBER: 200320000006
- LOCATION: -
- PHONE NUMBER: -

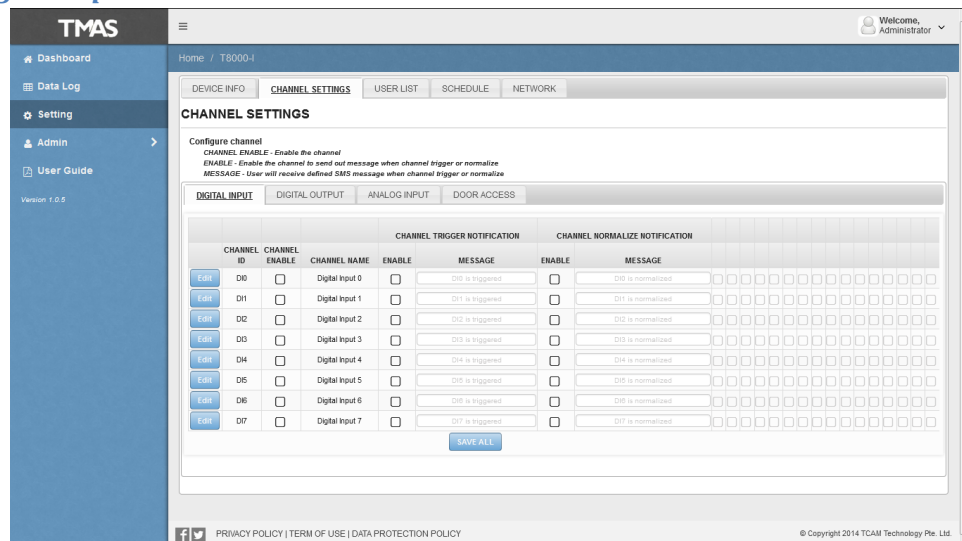
A 'SAVE' button is located below the form. The interface also includes a sidebar with navigation options like Dashboard, Data Log, Setting, Admin, and User Guide, and a footer with social media icons and copyright information.

General Setting consists of device name, location and phone number for synchronizing real time clock.

Click **SAVE** button when done with editing.

### 5.5.2 Channel Settings

#### (1) Digital Input



The screenshot shows the 'CHANNEL SETTINGS' section of the TMS interface. The 'DIGITAL INPUT' tab is active, displaying a table for configuring digital input channels. The table has columns for Channel ID, Channel Enable, Channel Name, Channel Trigger Notification (Enable and Message), and Channel Normalize Notification (Enable and Message). There are 8 rows, one for each digital input (DI0 to DI7).

Channel ID	Channel Enable	Channel Name	CHANNEL TRIGGER NOTIFICATION		CHANNEL NORMALIZE NOTIFICATION	
			ENABLE	MESSAGE	ENABLE	MESSAGE
DI0	<input type="checkbox"/>	Digital Input 0	<input type="checkbox"/>	DI0 is triggered	<input type="checkbox"/>	DI0 is normalized
DI1	<input type="checkbox"/>	Digital Input 1	<input type="checkbox"/>	DI1 is triggered	<input type="checkbox"/>	DI1 is normalized
DI2	<input type="checkbox"/>	Digital Input 2	<input type="checkbox"/>	DI2 is triggered	<input type="checkbox"/>	DI2 is normalized
DI3	<input type="checkbox"/>	Digital Input 3	<input type="checkbox"/>	DI3 is triggered	<input type="checkbox"/>	DI3 is normalized
DI4	<input type="checkbox"/>	Digital Input 4	<input type="checkbox"/>	DI4 is triggered	<input type="checkbox"/>	DI4 is normalized
DI5	<input type="checkbox"/>	Digital Input 5	<input type="checkbox"/>	DI5 is triggered	<input type="checkbox"/>	DI5 is normalized
DI6	<input type="checkbox"/>	Digital Input 6	<input type="checkbox"/>	DI6 is triggered	<input type="checkbox"/>	DI6 is normalized
DI7	<input type="checkbox"/>	Digital Input 7	<input type="checkbox"/>	DI7 is triggered	<input type="checkbox"/>	DI7 is normalized

A 'SAVE ALL' button is located at the bottom of the table. The interface also includes a sidebar with navigation options and a footer with social media icons and copyright information.


Channel Enable: Enable the channel

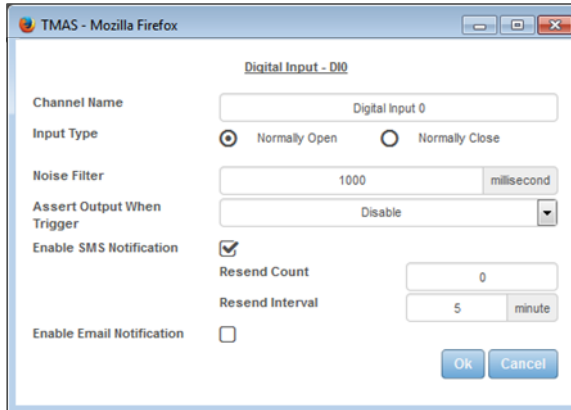
Enable: Enable the channel to send out message when channel is triggered or normalized

Message: User will receive defined SMS message when channel is triggered or

normalized

Check the users to receive alerts from selected channels

Click on  button to change more settings.




Noise Filter: Number of milliseconds channel state has to be in before being asserted as a change of state

Assert Output When Trigger: Set either none or one output channel to be turn on when input is asserted

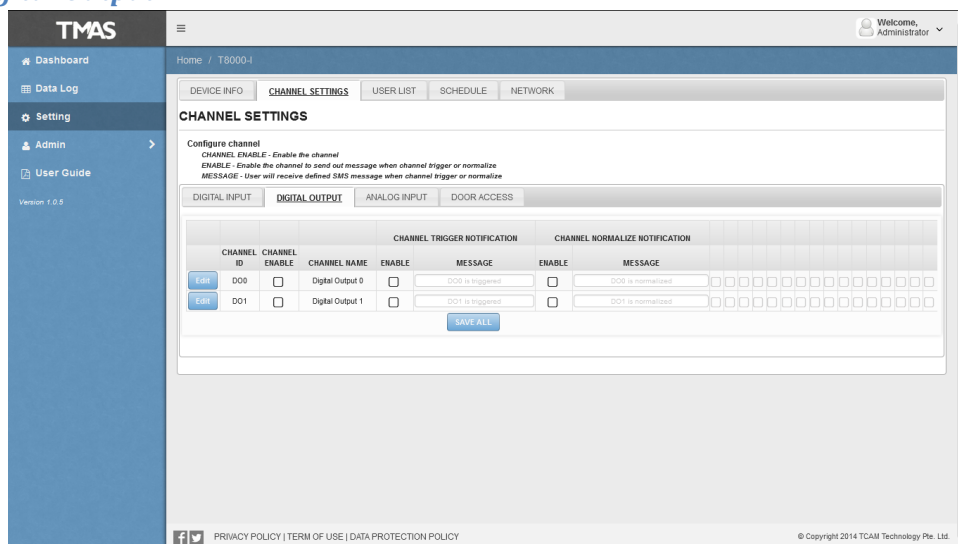
Resend Count: Number of resending of alert sms if user did not acknowledge the sms received



Resend Interval: No of minutes before resending the next alert sms if user did not acknowledge the sms received

Click on  button when done with editing.

Click on  button to save all unsaved settings.

## (2) Digital Output




CHANNEL ID	CHANNEL ENABLE	CHANNEL NAME	CHANNEL TRIGGER NOTIFICATION		CHANNEL NORMALIZE NOTIFICATION	
			ENABLE	MESSAGE	ENABLE	MESSAGE
 D00	<input type="checkbox"/>	Digital Output 0	<input type="checkbox"/>	D00 is triggered	<input type="checkbox"/>	D00 is normalized
 D01	<input type="checkbox"/>	Digital Output 1	<input type="checkbox"/>	D01 is triggered	<input type="checkbox"/>	D01 is normalized

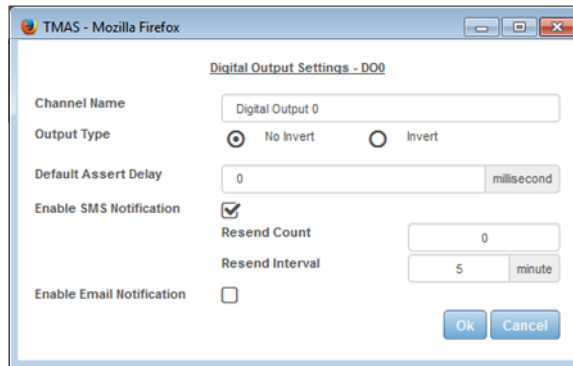
Channel Enable: Enable the channel

Enable: Enable the channel to send out message when channel is triggered or normalized

Message: User will receive defined SMS message when channel is triggered or normalized

Check the users to receive alerts from selected channels.


Click on  button to edit more settings.




Default Assert Delay: Number of milliseconds channel will remains asserted, set to 0 to disable feature and allows channel to always ON/ OFF

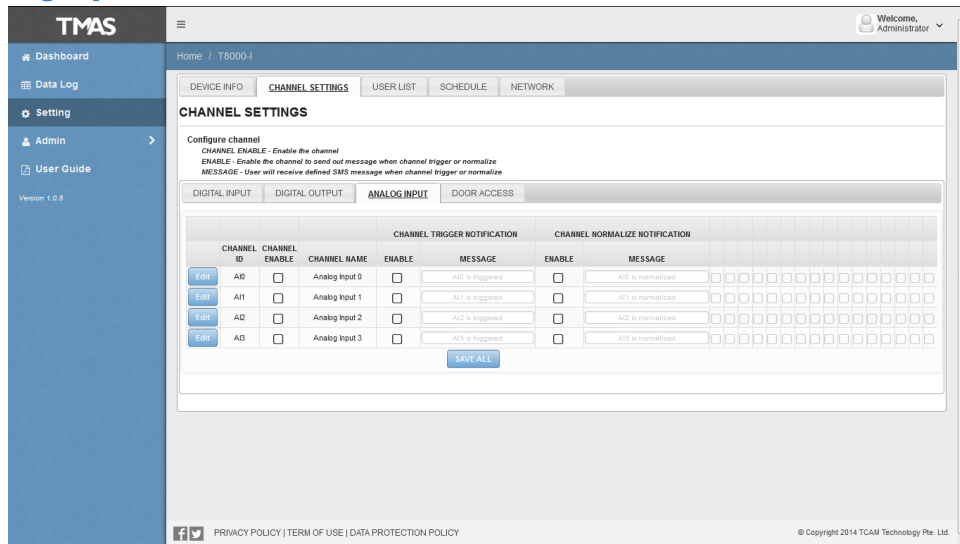
Resend Count: Number of resending of alert sms if user did not acknowledge the sms received

Resend Interval: No of minutes before resending the next alert sms if user did not acknowledge the sms received

Click on  button when done with editing.

Click on  button to save all unsaved settings.

### (3) Analog Input



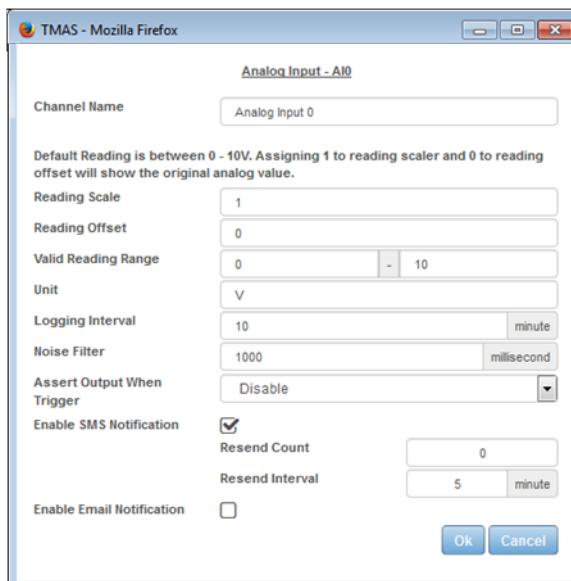
Channel Enable: Enable the channel

Enable: Enable the channel to send out message when channel is triggered or normalized

Message: User will receive defined SMS message when channel is triggered or normalized

Check the users to receive alerts from selected channels

Click on  button to edit more settings.



Reading Scale: Scale value that will be multiplied to analog reading

Reading Offset: Offset value that will be added to analog reading after reading scale processing

Valid Reading Range: Set valid reading range after processing of reading scale and offset

Unit: Set a unit for reading display


Logging Interval: Set the frequency in minutes to log the readings


Noise Filter: Number of milliseconds channel state has to be in before being asserted as a change of state

Assert Output When Trigger: Set either none or one output channel to be turn on when input is asserted

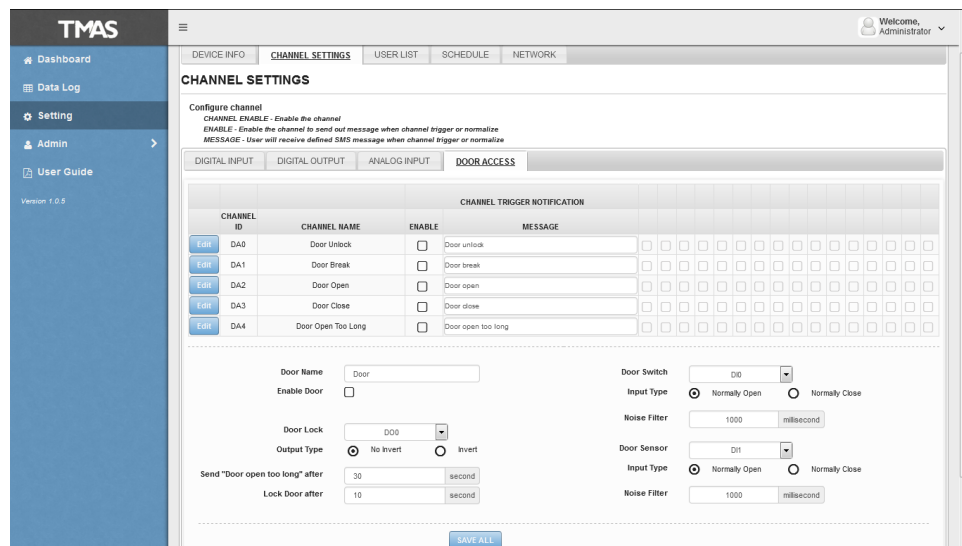
Resend Count: Number of resending of alert sms if user did not acknowledge the sms received

Resend Interval: No of minutes before resending the next alert sms if user did not acknowledged the sms received

Click on  button when done with editing.

Click on  button to save all unsaved settings.

#### (4) Door Access



The screenshot shows the 'CHANNEL SETTINGS' page for 'DOOR ACCESS'. It includes a table for channel configurations and various settings for door switches and sensors.

CHANNEL ID	CHANNEL NAME	ENABLE	MESSAGE
DA0	Door Unlock	<input type="checkbox"/>	Door unlock
DA1	Door Break	<input type="checkbox"/>	Door break
DA2	Door Open	<input type="checkbox"/>	Door open
DA3	Door Close	<input type="checkbox"/>	Door close
DA4	Door Open Too Long	<input type="checkbox"/>	Door open too long

Settings for Door Switch (D0):  
 Door Name: Door  
 Enable Door:   
 Door Lock: D00  
 Output Type:  No Invert  Invert  
 Send "Door open too long" after: 30 second  
 Lock Door after: 10 second

Settings for Door Sensor (D1):  
 Door Switch: D0  
 Input Type:  Normally Open  Normally Close  
 Noise Filter: 1000 millisecond

Enable: Enable the channel to send out message when channel is triggered or normalized

Message: User will receive defined SMS message when channel is triggered or normalized

Check the users to receive alerts from selected channels

*Note: Door access requires 2 Digital Input and 1 Digital Output.*

Door Name: Set a door name

Enable Door: Check to enable door features

Door Lock: Select the digital output door lock is connected to

Output Type: Set if output is No Invert or Invert

Send "Door open too long" after: Set timing to alert when door is not closed back after opening


Lock Door after: Set timing to lock door after opening

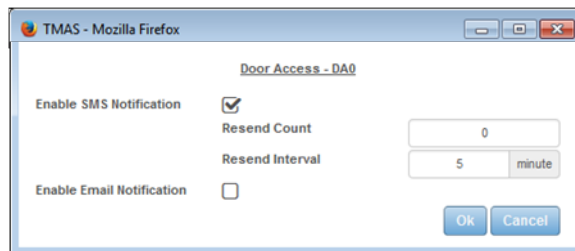
Door Switch: Select the digital input door switch is connected to

Input Type: Set if input is Normally Open or Normally Close

Noise Filter : Number of milliseconds channel state has to be in before being asserted as a change of state


Door Sensor: Select the digital input door sensor is connected to


Click on  button to edit more settings.



Resend Count: Number of resending of alert sms if user did not acknowledge the sms received

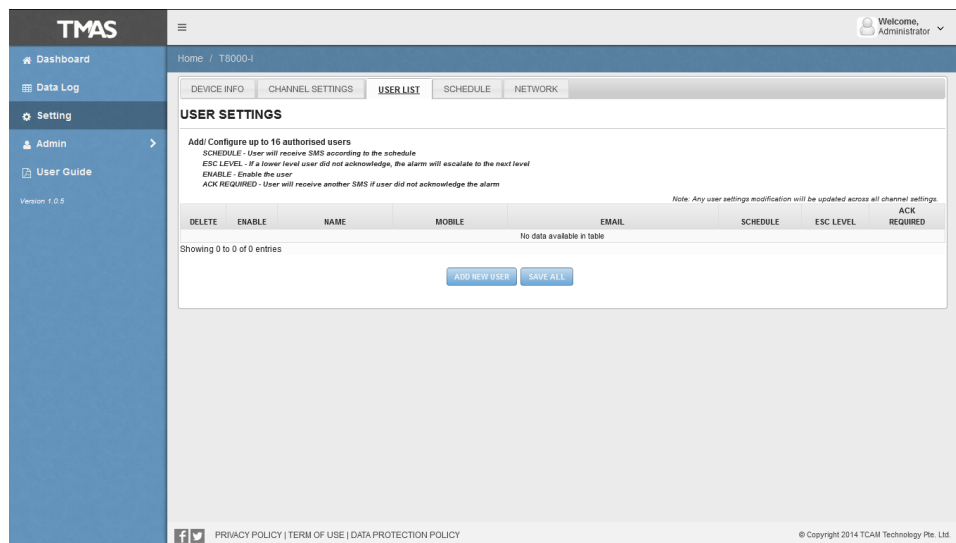
Resend Interval: No of minutes before resending the next alert sms if user did not acknowledge the sms received

Click on  button when done with editing.

Click on  button to save all unsaved settings.

### 5.5.3 User List

View or Add the user to receive the channel alert.



Add/ Configure up to 16 authorized users

SCHEDULE - User will receive SMS according to the schedule

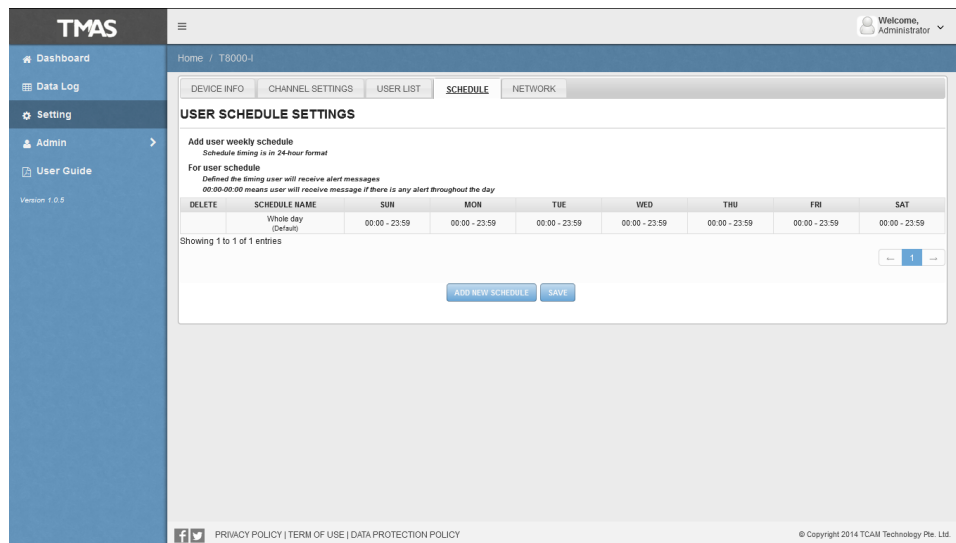
ESC LEVEL - If a lower level user did not acknowledge, the alarm will escalate to the next level

ENABLE - Enable the user

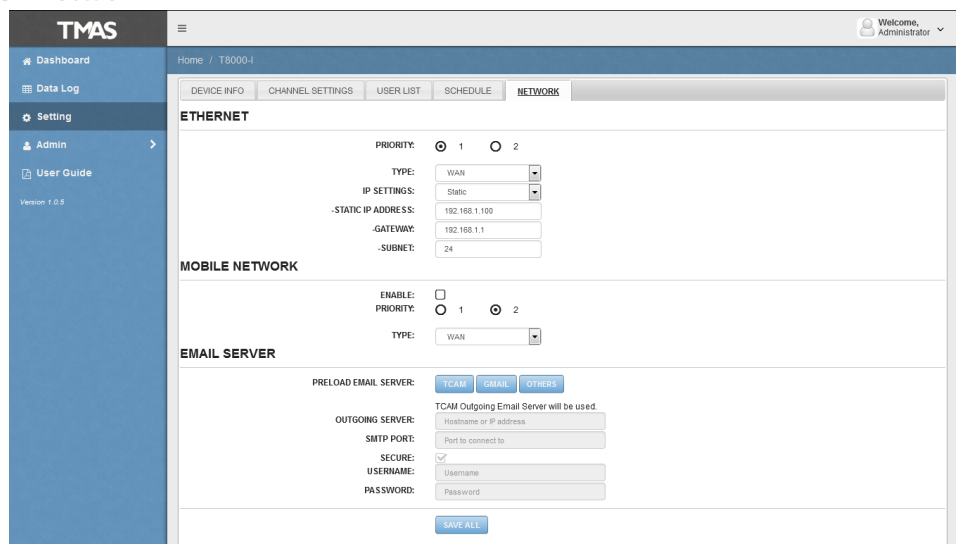
ACK REQUIRED - User will receive another SMS if user did not acknowledge the alarm

### 5.5.4 Schedule

Add/ delete a new schedule for user to receive alerts. Only users under the current shift will receive alerts.



### 5.5.5 Network



Select the priority and type.

Type as WAN: Network will be used for Wide Area Network  
 Type as LAN: Network will be used for Local Area Network  
 For Ethernet, you can choose Static or DHCP as IP Settings.  
 Key in the Static IP Address, Gateway and subnet when selecting Static IP Settings.

ENABLE:   
 PRIORITY:  1  2  
 TYPE:   
 -SIM PIN:   
 -APN:   
 -USERNAME:   
 -PASSWORD:

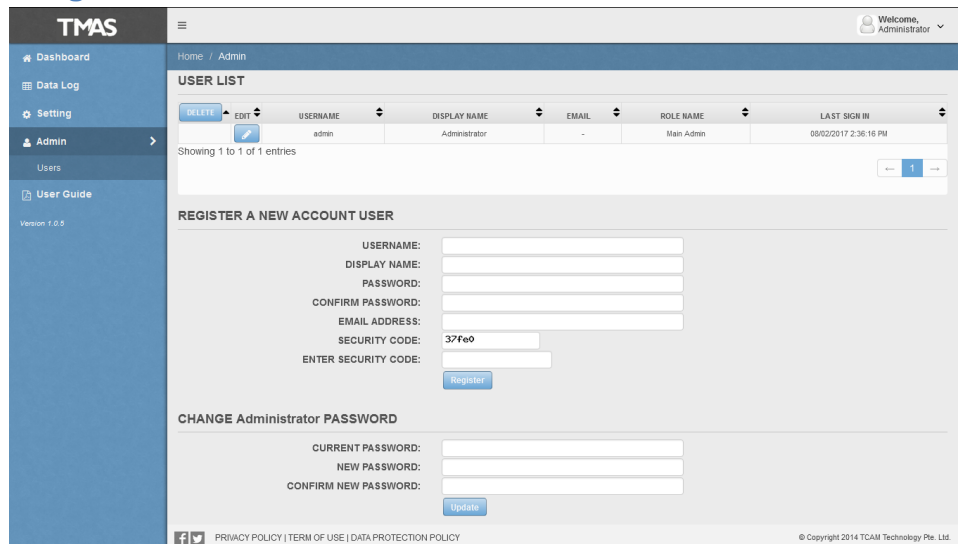
When Mobile Network is enabled, additional field will appear  
 Key in SIM Pin, APN (access point name), username and password if required by SIM card provider. Please contact your local Network Service Provide for more information.  
 Email Server will be used for sending out email alert for T8000-I product, default TCAM server is selected. Change to other Email Server if required.

*Note: To use Gmail server you may need to configure "Allow Less Secure Apps" in your Gmail account.*

Click  button when done with editing.

## 5.6 Admin

### 5.6.1 Register a New Account User



The screenshot shows the TMAS Admin interface. The left sidebar contains navigation options: Dashboard, Data Log, Setting, Admin, Users, and User Guide. The main content area is titled 'USER LIST' and shows a table with one entry: 'admin' with role 'Main Admin'. Below the table is the 'REGISTER A NEW ACCOUNT USER' form with fields for USERNAME, DISPLAY NAME, PASSWORD, CONFIRM PASSWORD, EMAIL ADDRESS, SECURITY CODE, and ENTER SECURITY CODE. There is also a 'CHANGE Administrator PASSWORD' section with fields for CURRENT PASSWORD, NEW PASSWORD, and CONFIRM NEW PASSWORD. A 'Register' button is located below the registration form, and an 'Update' button is below the password change form.

Provide a user name, display name, password and email address to create a new account user. Click "Register" button when done.

*Note:*

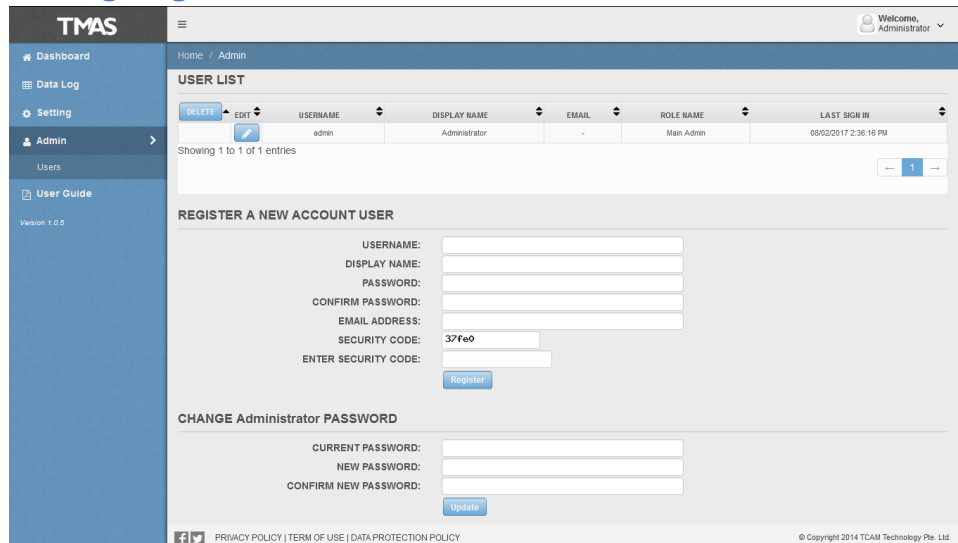
*Your username must be between 5 and 25 characters in length and can only include alpha-numeric characters.*

*Your display name must be between 5 and 25 characters in length and can only include alpha-numeric characters.*

*Your password must be between 7 and 50 characters in length.*

*Your email can be set to "-" if you do not have a valid email address.*

## 5.6.2 Change Login User Password



The screenshot shows the TMS Admin interface. The left sidebar contains navigation options: Dashboard, Data Log, Setting, Admin, Users, and User Guide. The main content area is titled 'USER LIST' and shows a table with one entry for 'admin'. Below the table, there are two sections: 'REGISTER A NEW ACCOUNT USER' and 'CHANGE Administrator PASSWORD'. The 'CHANGE Administrator PASSWORD' section contains the following form fields:

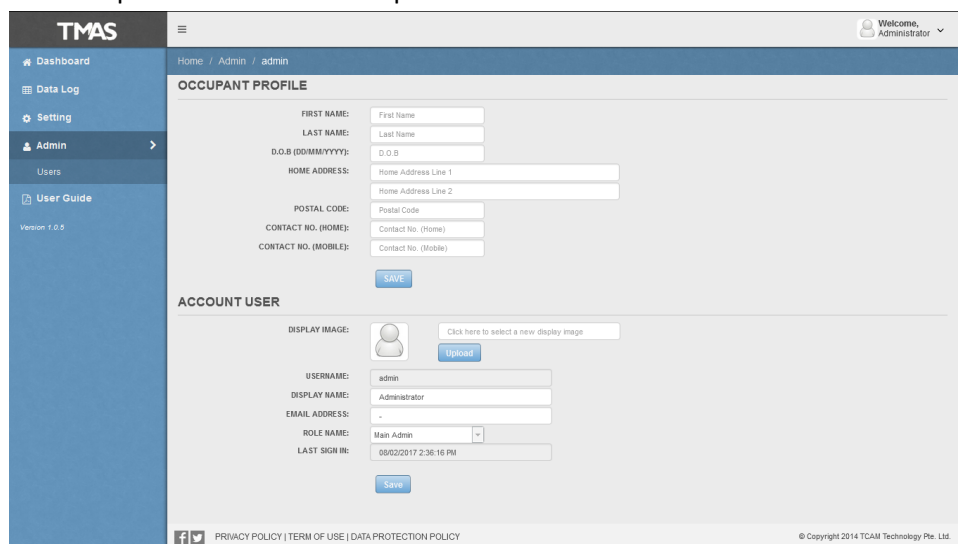
- CURRENT PASSWORD:
- NEW PASSWORD:
- CONFIRM NEW PASSWORD:

At the bottom of this section is an 'Update' button.

Key in your current password and the new password, click “Update” button when done.

## 5.6.3 Edit User Information

Edit user profile or account user profile here.



The screenshot shows the TMS Admin interface with the 'Admin' menu selected. The main content area is titled 'OCCUPANT PROFILE' and contains the following form fields:

- FIRST NAME:
- LAST NAME:
- D.O.B (DD/MM/YYYY):
- HOME ADDRESS:  (Home Address Line 1)
- (Home Address Line 2)
- POSTAL CODE:
- CONTACT NO. (HOME):
- CONTACT NO. (MOBILE):

Below these fields is a 'SAVE' button. The section below is titled 'ACCOUNT USER' and contains the following form fields:

- DISPLAY IMAGE:  (Click here to select a new display image) with an 'Upload' button
- USERNAME:
- DISPLAY NAME:
- EMAIL ADDRESS:
- ROLE NAME:
- LAST SIGN IN:

At the bottom of this section is a 'Save' button.

## Appendix

### I. Connecting to T8000 for the first time

By default, T8000 is set to Static IP: 192.168.1.100

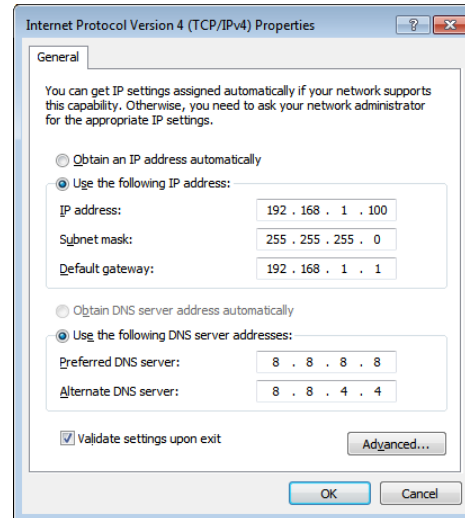
To change static IP of T8000, connect T8000 to PC with an Ethernet cable.

Set PC to same IP range as T8000

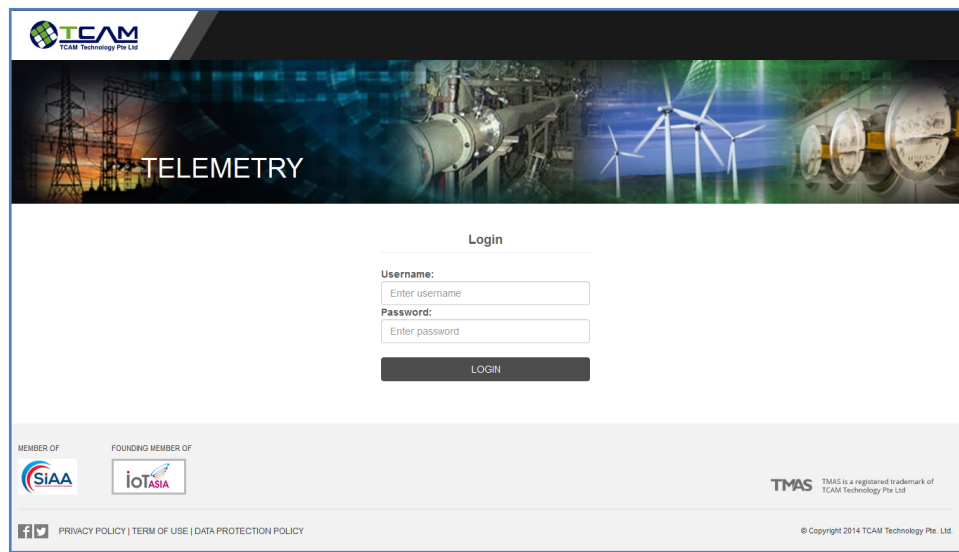
IP address: 192.168.1.1

Subnet mask: 255.255.255.0

Default gateway: 192.168.1.1



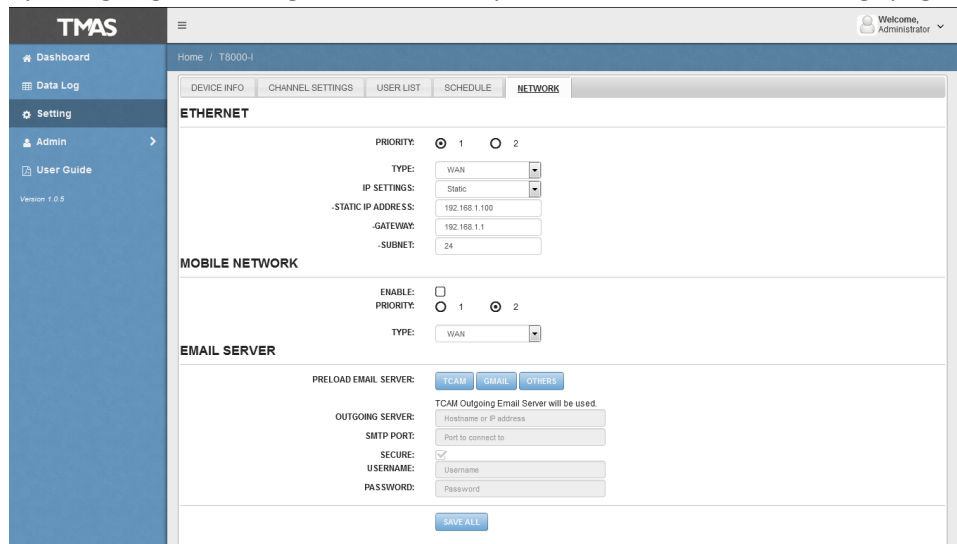
The URL for web access would be: <https://192.168.1.100/Gateway/Login.php>



Username: admin

Password: admin123

Upon login, go to Setting->Network Tab, you will see the network settings page.



Locate an IP address in Local LAN that is not in used.

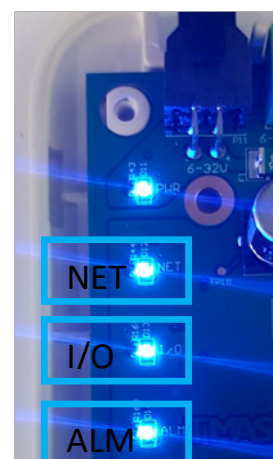
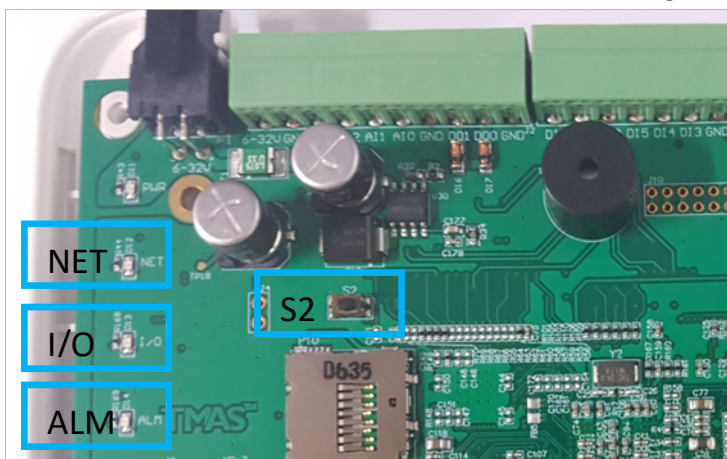
Set T8000 Static IP Address to the unused IP Address and set a Gateway IP Address.

Click "Save All" when done.

Repeat the above steps to ensure IP have been changed before connecting T8000 to local LAN network.

## II. Reset T8000 network to default

1. Power off T8000 and open up the casing
2. Power on T8000 and wait 10 seconds
3. Press and hold button S2 till NET, I/O and ALM led lights (takes about 20 seconds)



4. T8000 will be loaded with default network settings, refer to Appendix on Connecting to T8000 for the first time to set up network.

## Support

For any sales and technical enquiries, please contact our local sales representatives directly or TCAM Technology Pte Ltd.

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2 Kaki Bukit Ave 1, #05-04,  
Singapore 417938.

Tel: 65-67461930  
Fax: 65-67461938

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For sales enquiries, please email to [enquiry@tcam.com.sg](mailto:enquiry@tcam.com.sg)  
For technical enquiries, please email to [support@tcam.com.sg](mailto:support@tcam.com.sg)