- 16 Digital Inputs (suit NPN, PNP, dry contact)
- Dual SIM for redundancy
- Custom SMS messages, user configurable using a web browser
- Dual diversity antennas
- DIN rail mountable
- I/O expandable
- Certified for use in Australia. Compatible with all carriers: Telstra, Optus, Vodafone

The ULC-350 is a 3G/4G SMS alarm kit that can be used to trigger custom messages for remote monitoring of equipment. Text messages are easily set by the user using a web browser, and can be triggered by the 16 digital inputs. Suits NPN, PNP, and dry contact style digital outputs. DIN rail mountable.

The product consists of two separate devices. Each of these products can be found individually on the Ocean Controls website (oceancontrols.com.au). User manuals and specifications are available for download.

YTD-451 Modbus DI module

ULC-035 Industrial Cellular Router

Quick Start

Install your SIM card(s) in the ULC-035 by removing the small screw and sliding away the side cover. You will find this screw adjacent to the power terminals. Only one SIM card is necessary, but two can be used to provide redundancy.

Attach at least one antenna to the ULC-035. The provided antenna is adequate for most situations.

Connect both devices via RS-485. Shielded cable is preferred, but any will suffice over a short distance. 'A' goes to 'DATA+' and 'B' goes to 'DATA-'.

Device	RS-485 Terminals
ULC-035	A and B
YTD-451	DATA+ and DATA-

Apply power to both devices. They can both share the same 10 to 30V DC supply. You should see an orange/red LED illuminates on the YTD-451, and the POWER LED illuminates on the ULC-035 (among others).

Device	Power Terminals
ULC-035	+ and -
YTD-451	+VS and GND

Connect a computer via the included Ethernet cable to any port among LAN1-LAN4 on the ULC-035. The default IP address is:

192.168.1.1

If you are on this subnet, you should be able to enter 192.168.1.1 in your web browser and be served out the configuration page.

For more information, including changing your subnet on Windows, see the ULC-035 user manual (page 13).

You will be greeted with a login screen.
Default username: *admin*
Default password: *password*

Router Configuration

Most of the control has already been set up in the factory, but you will need to add your own phone number(s), and optionally change the SMS alarm message.
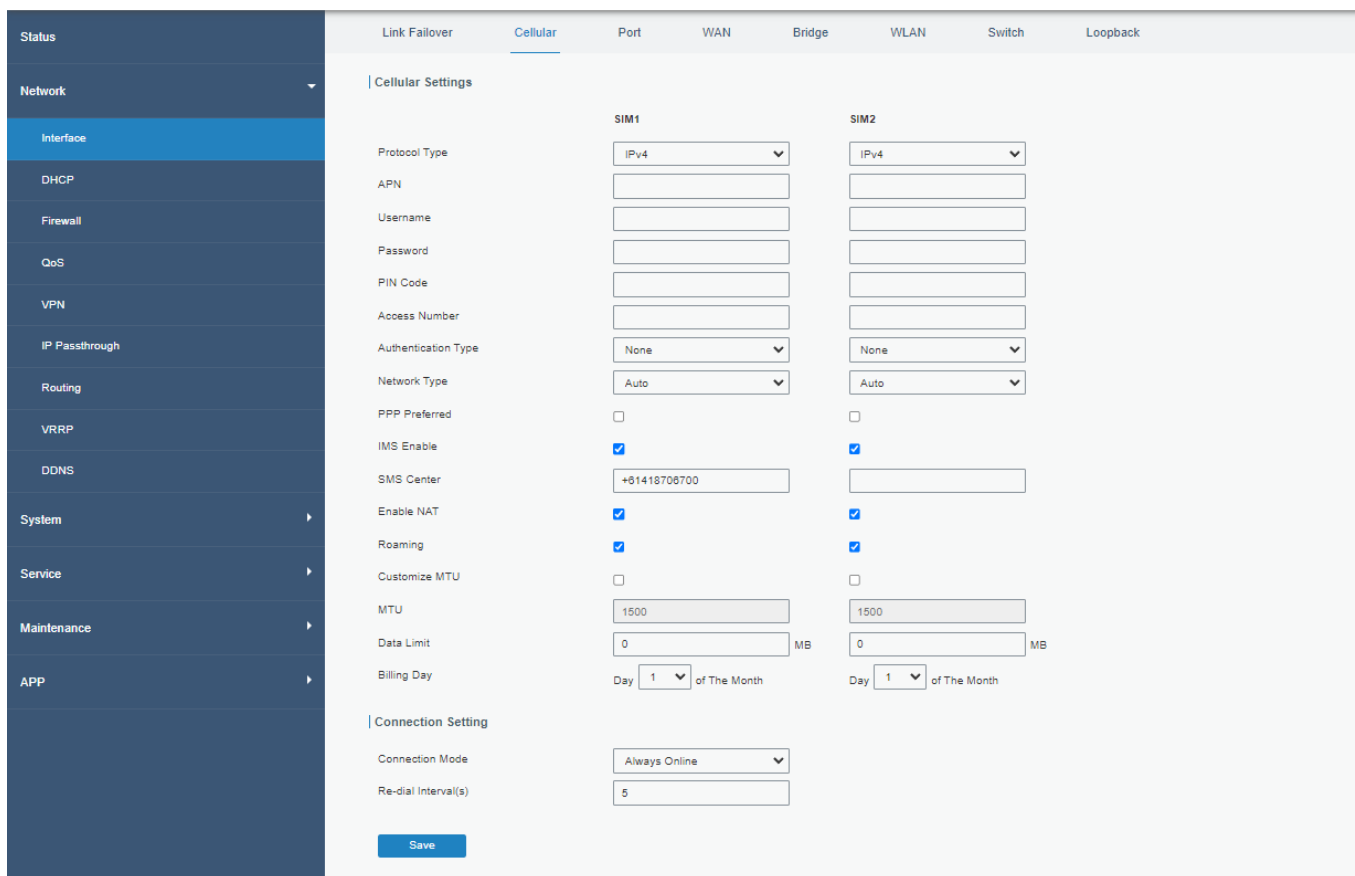
- **Configure the Cellular Connection**

Click on "Network" -> "Interface" -> "Cellular" to configure the cellular setting.

Enable SIM1 (and SIM2), and set "Network Type" to "Auto". Enter the corresponding SMS centre number for your cellular.

Carrier	SMS Centre Number
Telstra	+61418706700
Optus	+61411990001
Vodafone	+61415011501

Click "Save" and "Apply" to update the changes to ULC-035.

- **Adding/Changing Phone Numbers**

Navigate to "System -> Phone & SMS -> Phone" using the left side menu.

Add phone numbers to the "Phone Number List". In "Phone Group List", create a phone group and

select phone numbers. Multiple numbers can be grouped together such that more than one person is notified of an alarm. Different groups can even be created and assigned to different alarms.

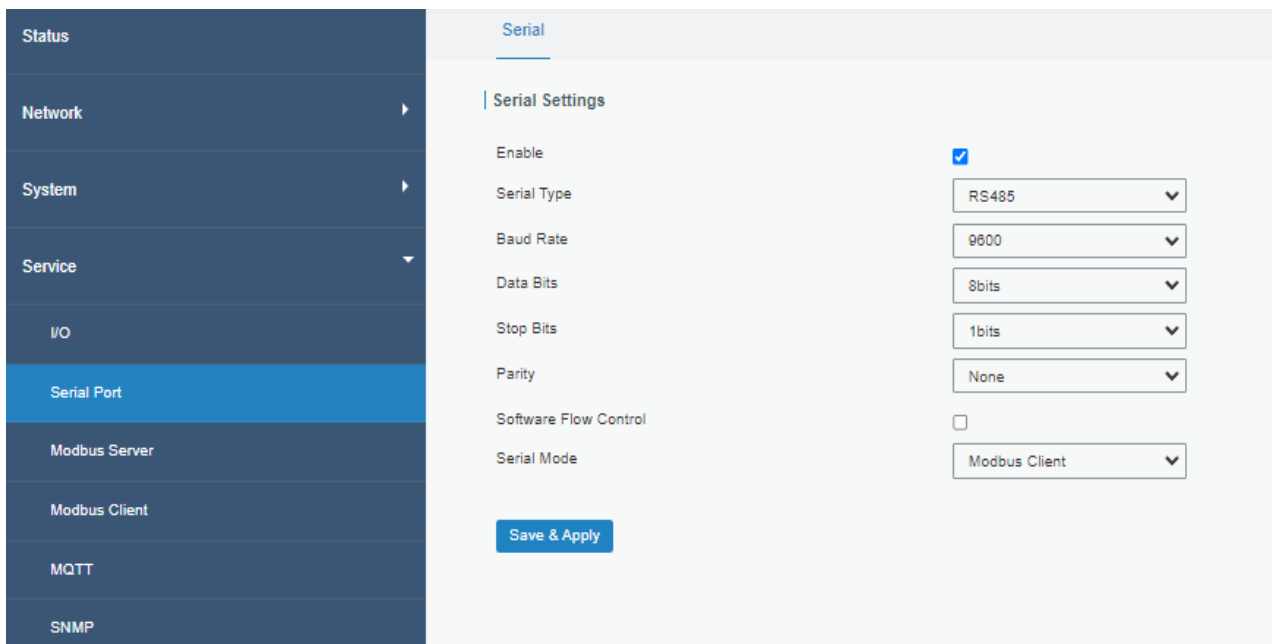Click "Save" and "Apply" to finalize your update.
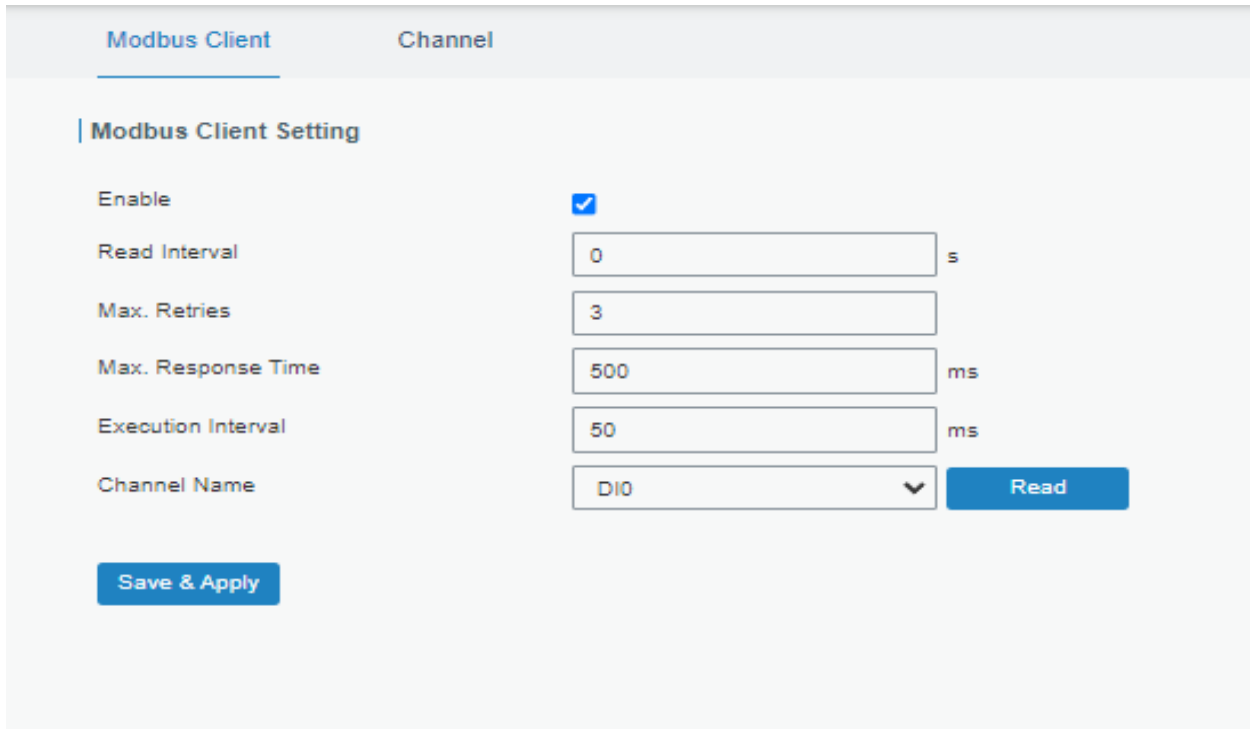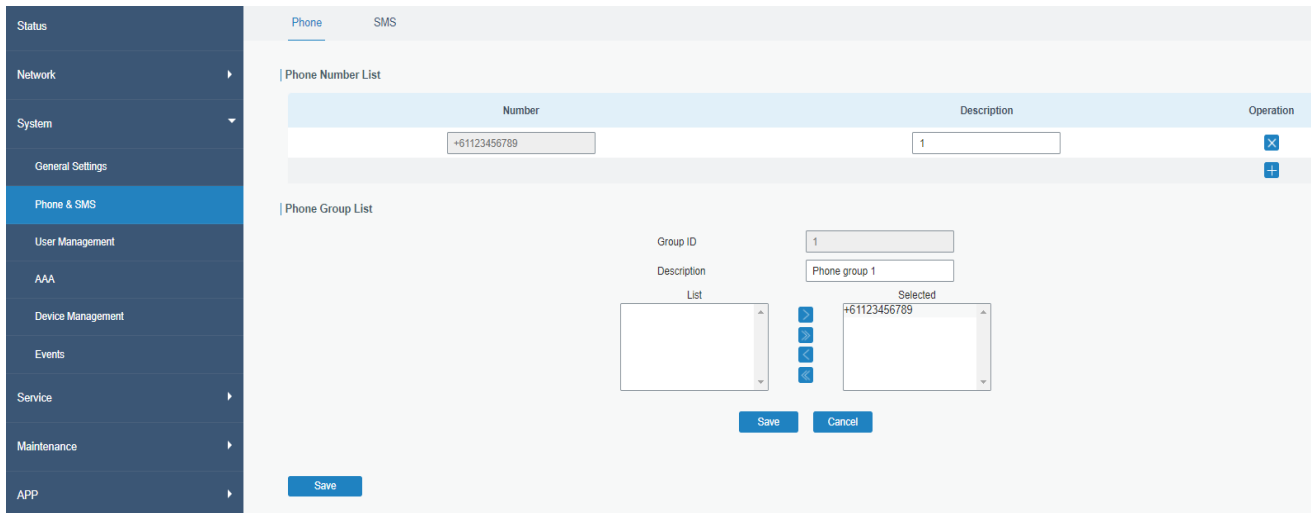

- **Serial Port Setup**

    Navigate to "Service" -> "Serial Port" for communicating via RS485. Choose the following values for the communication parameter:

    o Baud Rate: 9600
    o Data Bits: 8 bits
    o Stop Bits: 1 bit
    o Parity: None

    Set "Serial Mode" to be "Modbus Client", then "Save" and "Apply" all configuration.

Go to "Service ->Modbus Client -> Modbus Client", enable "Modbus Client Setting" and Set up preferred values for the Modbus Master's parameters. Remember to press "Save & Apply".
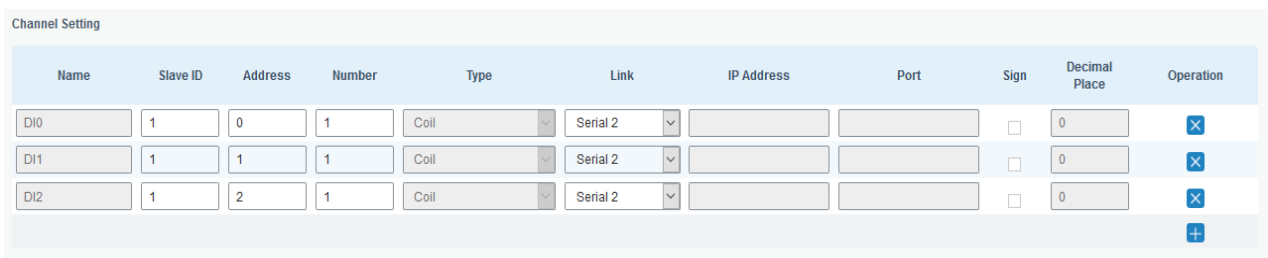

- **Create Channels & Set up Alarm**

    Go to "Service -> Modbus Client ->Channel", add channels and configure alarm setting on this page.

    In "Channel Setting", fill up information for each channel, where

Name	DIx, refers to digital input of YTD-451
Slave ID	Address of YTD-451 (default: 1)
Address	Starting register number (normally equals to the value of x above)
Number	Length of registers this channel will contain
Type	Coil (in this case)
Link	Serial 2

Channel Setting

Name	Slave ID	Address	Number	Type	Link	IP Address	Port	Sign	Decimal Place	Operation
DI0	1	0	1	Coil	Serial 2			☐	0	☒
DI1	1	1	1	Coil	Serial 2			☐	0	☒
DI2	1	2	1	Coil	Serial 2			☐	0	☒
										⊞

In "Alarm Setting", set up the alarm for each channel. You will have list of 16 alarms corresponding to each digital input on the YTD-451, if you choose to use all digital input.

If you click on the "pen" icon on each one, a box will appear with the alarm settings. Towards the bottom of the box there is a text box called "Abnormal Content "and this is the message you will receive when digital input is HIGH if "Condition" is set to be "TRUE". By default, the SMS is a detailed message with time, condition, and current status of the digital input. These messages can be altered to say something more descriptive for your application, EG "pump room 4 VFD fault", or "Eastern Chook shed under temperature."

Once you have finished all changes, press "Save" and "Apply".

Your equipment is now ready.

Wiring Example (Wet Contact; NPN or PNP)