User Manual

Ruby Calculator Ultimate Edition

Ruby Devices

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Contents

1. Operating Modes 3
2. Chat Mode Guide 4
3. Smash Mode Guide 8
4. How to Connect Two Ruby Calculators 9
5. How to Connect to an iOS Smart Phone 10
6. How to Transfer Text Files to the Calculator for Storage 11
7. How to Connect to an Android Smart Phone 12
8. How to Connect to a Smart Phone through the Internet 13
9. How to Connect to a PC or Mac 14
10. Scientific Calculator Functionality 15
11. Product Compliance 16
12. Support 17

1. Operating Modes

The Ruby Calculator will operate in one of **three modes** at any given time. The default mode upon power up of the calculator is "**Calculator Mode**". In this mode the calculator will work as a **normal scientific calculator** with the limitations as outlined in Section 10.

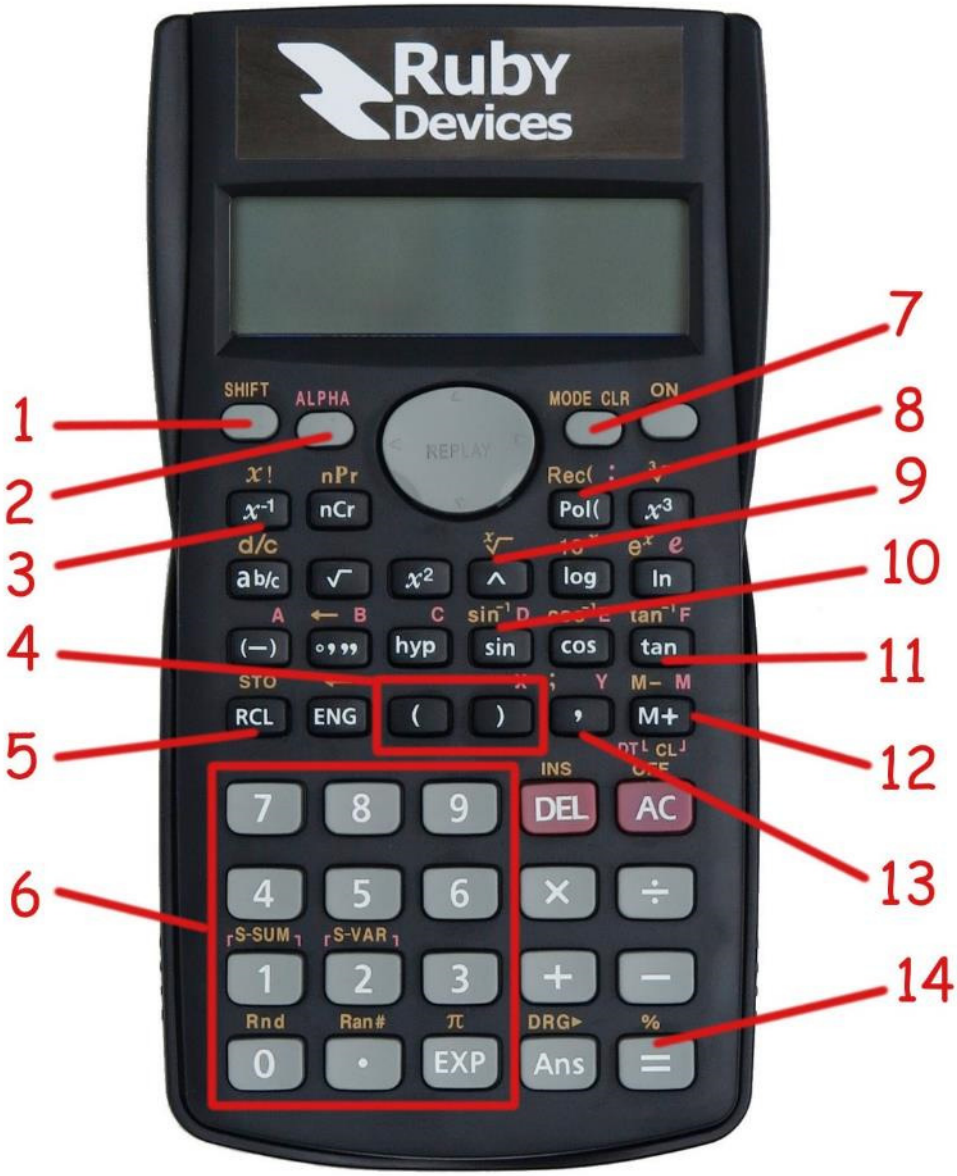
To form a chat session with another device the calculator will need to enter "**Chat Mode**". Prior to being able to enter chat mode, however, the calculator will need to receive a **password** from the user. The default password is "**123456**". Simply enter this value into the calculator and hit the "**Equals**" button. (Note that this default password may be changed; see Section 2)

Once this has been done the calculator may now enter "**Chat Mode**" by hitting the "**MODE/CLR**" button. See Section 2 for a description of the functionality of buttons in "Chat Mode".

Once in Chat Mode the user may press the "**SHIFT**" button followed by the "**MODE/CLR**" button to enter "**Smash Mode**".

"**Smash Mode**" is a special mode for extra fast typing; see Section 3 for further details.

2. Chat Mode Guide



Once in "**Chat Mode**" buttons take on different functionality. Descriptions of the functionality for the above highlighted buttons are given below.

1. The "**SHIFT**" button provides secondary functionality.

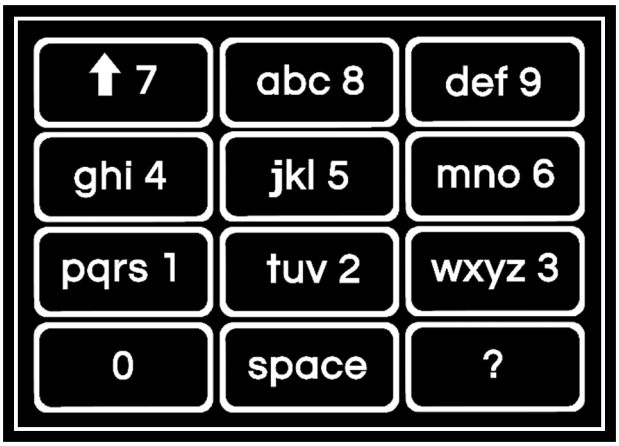
2. The "**ALPHA**" button will cause the Ruby Calculator to attempt to connect to another Ruby Calculator within range. If the Ruby Calculator is already connected to a device this button will alert the user that the calculator is already connected.

3. The "**x^{-1}**" button is used to change the Chat Mode password. Press the "**Equals**" button after typing in the nominated password.

4. The **brackets** buttons are used for scrolling through received messages. The **brackets** buttons are also used for fast file navigation. Pressing the "**)**" button on an opened file will skip 10 pages through the file. Pressing the "**SHIFT**" button followed by the "**)**" button will skip to the end of the file. The other bracket button does the same but skips towards the start of the file.

5. The "**RCL**" button is used for reading stored text files and adding new text files from the RXO Chat App. After pressing the "**RCL**" button use the "**Left**" and "**Right**" arrow keys to select a file. To write a new file to a slot hit the "**Transfer File**" button on the **RXO Chat App** after selecting the desired file slot. To delete a file from a slot press the "**DEL**" button after selecting the desired file. To read the contents of a file hit the "**Equals**" button after selecting the desired file. You may then use the left and right arrow keys to browse through the contents of the file.

6. The "**Number Pad**" becomes a pad for typing alphanumeric sentences in "Chat Mode". Refer to the diagram below for a visual aid of the functionality of the pad. Type like the pad is from an old school mobile phone. Hitting a button once more than the number of letters contained will print the number corresponding to that button, eg hitting "abc" four times in succession will print the number "8". If the user wishes to type faster messages than this mode can offer they may enter "**Smash Mode**" and turn the entire calculator into a keyboard. See Section 3.

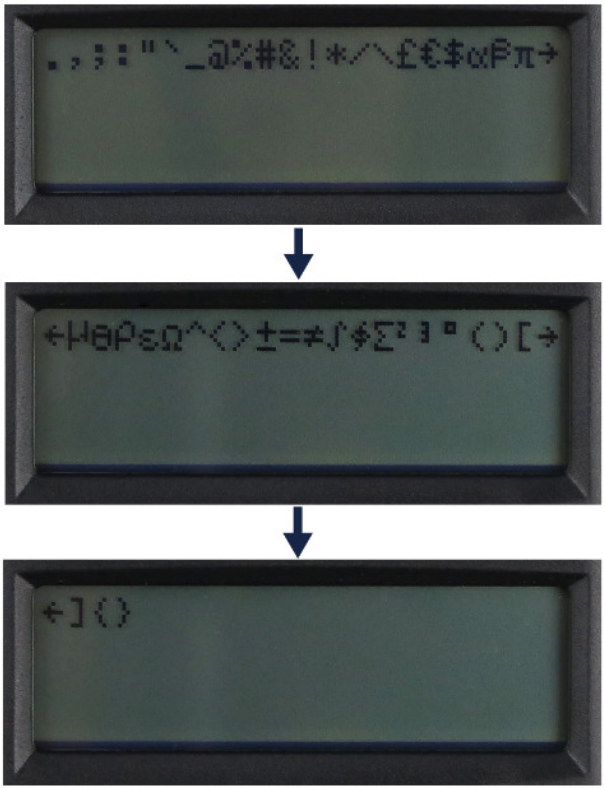


7. The "**MODE/CLR**" button switches the calculator between "Calculator Mode" and "Chat Mode". Note that after establishing a connection the user may alternate between the modes and will still receive messages when in "Calculator Mode".

   If the user presses the "**SHIFT**" button followed by the "**MODE/CLR**" button while in "Chat Mode" the calculator will enter "**Smash Mode**". See section 3 for a description of Smash Mode.

8. The "**Pol(**" button will cause the Ruby Calculator to **disconnect** from any connected devices. This button is necessary when the user wishes to switch the calculator from one device to another.
   This button contains secondary functionality. Press "**SHIFT**" followed by "**Pol(**" to toggle the state of the Bluetooth on the calculator between on and off. This may be useful if the user only wishes to use the note storage feature and would like to turn their Bluetooth off.

9. The "**^**" button will open the "**Special Symbol**" palette. Although users are able to type all standard alphanumeric characters and numbers using the Number Pad they may like to type special symbols like letters from the Greek Alphabet or Mathematical Symbols. This palette will allow the user to do so. See below for a visual description of characters included in the Special Symbol palette.



10. The "**sin(**" button is the Auto-Scroll button for file reading. If the user wishes for a file to automatically scroll page by page through a file without having to touch the calculator they may push this button to enable or disable auto-scrolling. To enable or disable Auto-Scrolling the user should push this button while reading a file to toggle the state of the feature. The default auto-scroll time if 5 seconds per page; this time interval may be modified by pressing the same "**sin(**" button while in standard Chat Mode – that is, not while the file reader is open.

11. The "**tan(**" button is used for searching the internet. Type in a query while in Chat Mode and then press this button to retrieve search engine results to the calculator. Use the **"M+"** button to read the received search results.

    The "**tan(**" button is also used for the File Search feature. While reading a stored file press the "**tan(**" button. Next, type in your search query using the number pad. Finally, press the "**Equals**" button to execute the search and you will automatically skip through the file until the next occurrence of the query is found. After executing a File Search you may want to then skip again to the next occurrence of the query without re-typing the query again. To do so, simply press the "**SHIFT**" button followed by the "**tan(**" button to skip immediately to the next occurrence from the previously entered search query.

12. The "**M+**" button allows the user to cycle through large received messages that are larger than the size of the screen. See below for a visual description of what pushing this button does to the screen.

13. The "**,**" button is the Emergency/Panic button. Pressing this button will force the calculator out of "Chat Mode" and relock the device. The password will need to be re-entered for all "Chat Mode" functionality to resume.

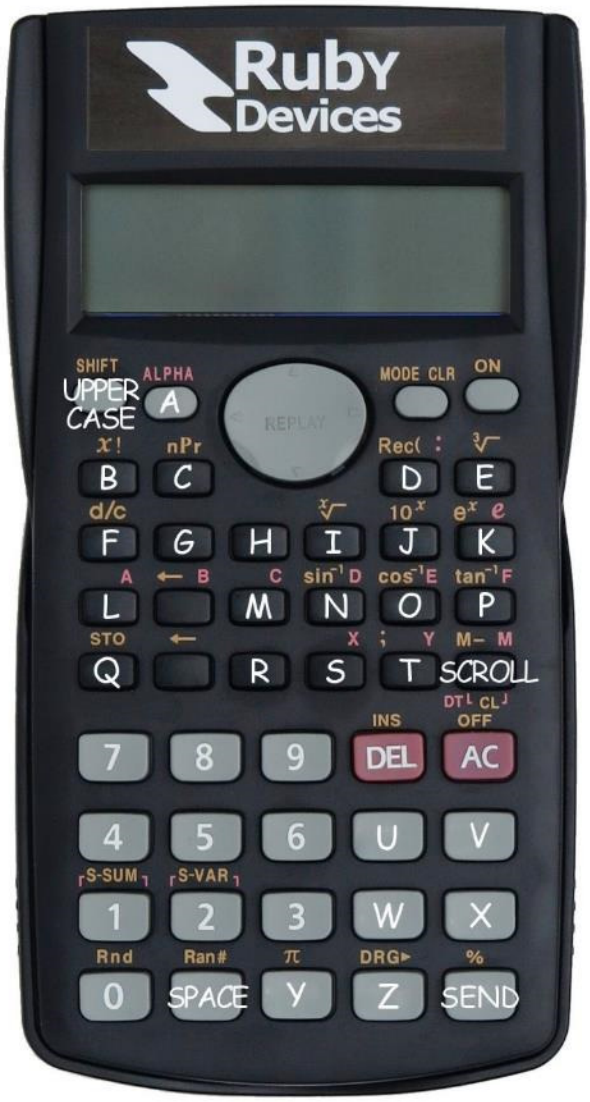
14. The "**Equals**" button in "Chat Mode" will send the typed message to the connected device. If no device is connected this button will alert the user that no devices are connected.

    The "**Equals**" button also offers a feature in "**Calculator Mode**". While in Calculator Mode the "**Equals**" button will naturally evaluate the given expression. What the user may then do, however, is press the "**SHIFT**" button followed by the "**Equals**" button which will send the last evaluated expression and result to any connected devices.

3. Smash Mode Guide

To enter "**Smash Mode**" first enter "**Chat Mode**" and then press the "**SHIFT**" button followed by the "**MODE/CLR**" button.

Once in "**Smash Mode**" buttons take on a different functionality. The entire button pad is transformed into a keyboard for fast typing. A visual description of "Smash Mode" is given below.



4. How to Connect Two Ruby Calculators

To connect two Ruby Calculators to each other perform the following steps.

- Power on both calculators.
- Type the “Chat Mode” password on both calculators and hit the “**Equals/=**” buttons. The default password is “**123456**” to unlock “Chat Mode”.
- Enter “Chat Mode” on both calculators by hitting the “**MODE/CLR**” buttons.
- On one of the calculators press the “**ALPHA**” button. This button will cause the calculator to search for another Ruby Calculator and automatically connect if it finds one.
- After observing the “Connection Established” message the users may begin sending messages. The “**Equals**” button will send a typed message.

5. How to Connect to an iOS Smart Phone

To connect a Ruby Calculator to an iOS Smart Phone perform the following steps.

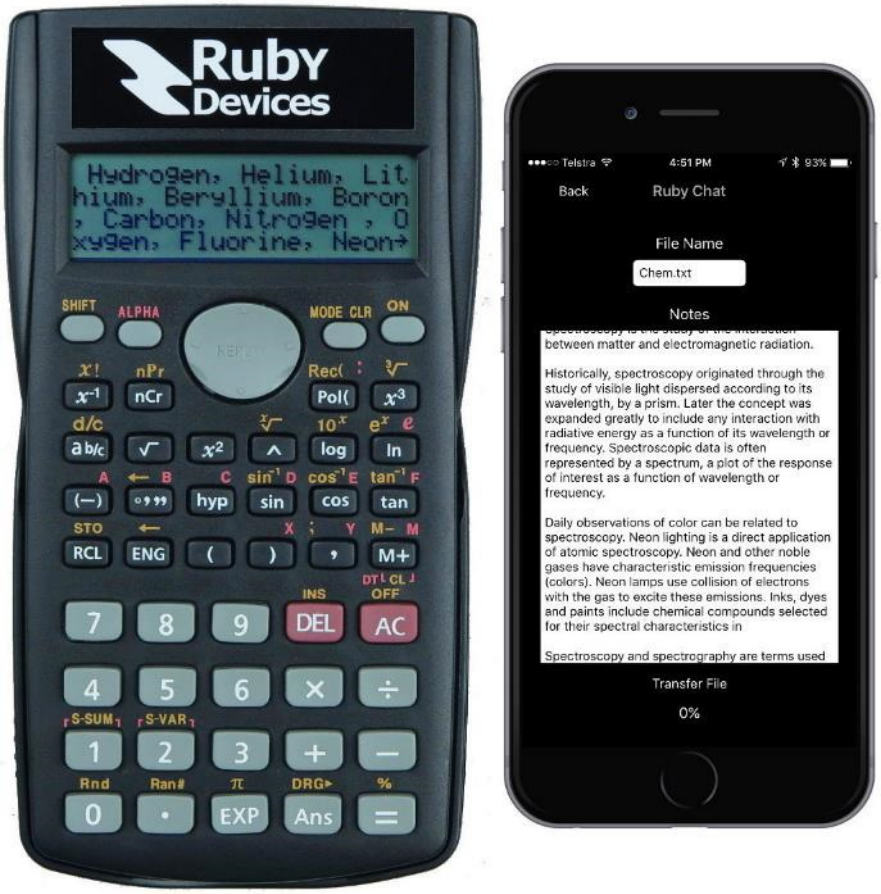
- Download the app by Ruby Devices entitled “RXO Chat” from the Apple App Store.

- Switch on the Ruby Calculator and enter “Chat Mode”.
- Switch on Bluetooth on the Apple device.
- Start up the app and click on “Connect Now” as shown in the screenshot below
- Begin to chat.

6. How to Transfer Text Files to the Calculator for Storage

To transfer a text file to the Ruby Calculator perform the following steps.

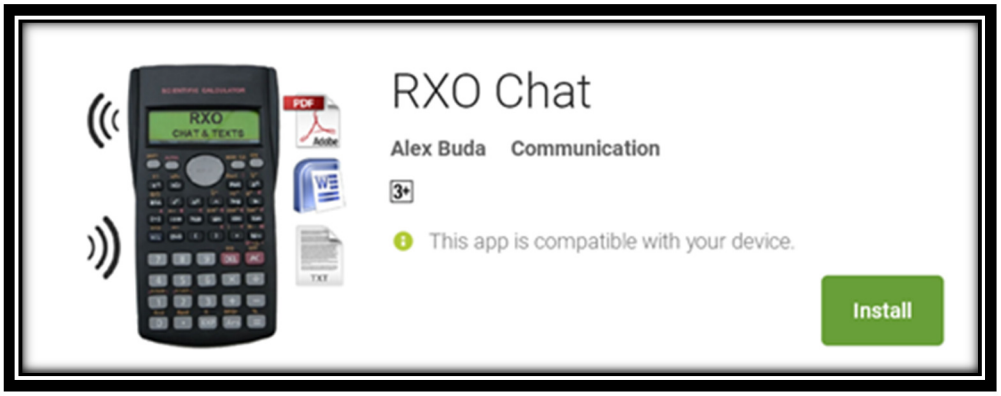
- Enter "**Chat Mode**"
- Hit the "**RCL**" button to open the file storage
- Select the slot you would like to transfer the text file to by using the "**Left**" and "**Right**" arrow keys for navigation.
- Connect to the Ruby Calculator using the **RXO Chat app** on an iOS or Android device.
- On your iOS device select the "**File Transfer**" button.
- On your iOS device enter a "**File Name**" and paste in the "**Notes"** you would like to store.
- Select the "**Transfer File**" button to load the file onto the calculator. See below for a visual aid of how the setup should look. In the example we are transferred the file to slot number ten. Open a file using the "**Equals**" button. Delete a file using the "**DEL**" button.



7. How to Connect to an Android Smart Phone

To **connect** the **Ruby Calculator** to an **Android Smart Phone** perform the following steps.

- Download the App entitled **"RXO Chat"** from the **Google Play Store**.



- Follow the steps outlined for the **iOS App**. The Apps operate identically.

8. How to Connect to a Smart Phone through the Internet

Connecting a Ruby Calculator to a Smart Device through the Internet **requires two Smart Devices**. This is because the Calculators do not have a Wi-Fi module so they will need to utilize a phone to forward the messages.

The First Smart Phone will enter Tunnel Mode. In Tunnel Mode the Smart Phone will connect to the Calculator using Bluetooth. **The Tunnel Device must stay within 50 meters of the Calculator. The Tunnel Device must have an Internet Connection.** The Tunnel Device may be hidden somewhere on the user.

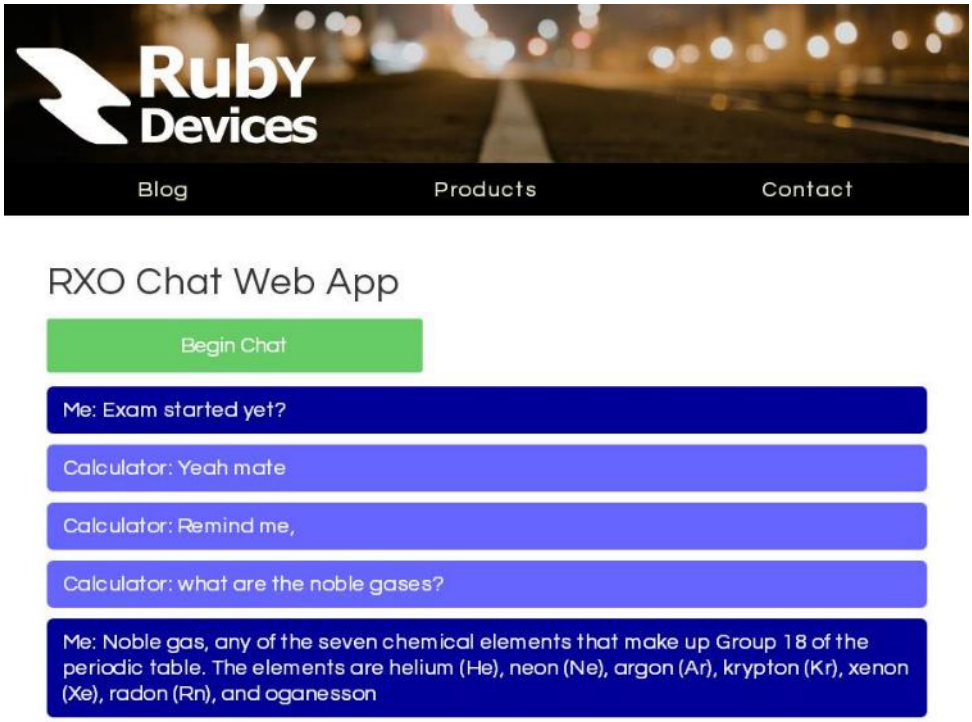
The Second Smart Phone will enter Internet Mode. The Internet Mode Device may be anywhere in the world as long as this device has an Internet Connection.

Now when the user sends a message from the calculator the message will go through the Tunnel Device and on to the Internet Mode Device and vice-versa.

To use this feature perform the following steps:

- Open up the settings page on **both the Tunnel and Internet device** and enter in your unique **Internet and Tunnel ID** given to you upon purchase.
- Select the **appropriate mode** for **both the Tunnel and Internet device**.
- Select "**Done**". The "**Chat**" button will now establish the Internet Connection.

9. How to Connect to a PC or Mac



To connect your Ruby Calculator to a PC or Mac you will need to use the "**RXO Chat Web App**". To access the web app perform the following steps:

- Open up a browser session on your PC or Mac and navigate to the following URL:

  www.rubydevices.com.au/rxo-chat.php

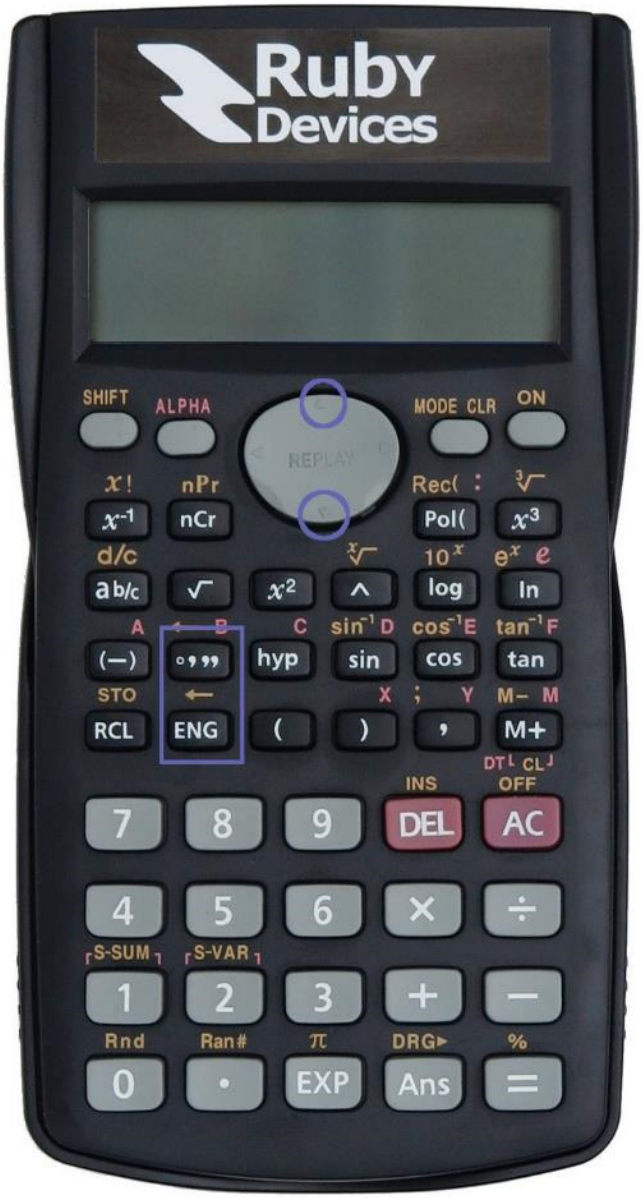
- Log in to the Web App using your Tunnel and Internet Mode credentials.
- Next, start RXO Chat on a **smart phone** and connect to your Ruby Calculator in Tunnel Mode as described in Section 8.

Messages sent will now traverse between the computer and calculator.

10. Scientific Calculator Functionality

There are several buttons which exist for display purposes only on the calculator and do not have any functionality in "Calculator Mode". These buttons are highlighted in blue below.

Furthermore, please note that this calculator uses 32-bit floating point arithmetic and will consequently begin to lose accuracy in results after approximately 6 significant figures.



11. Product Compliance

The Ruby Calculator Ultimate Edition product satisfies all regulatory requirements for product compliance set out by the ACMA (Australian Communications and Media Authority) and ERAC (Electrical Regulatory Authorities Council).

As such, the product is electronically labelled with the RCM (Regulatory Compliance Mark).

The Electronic RCM label may be viewed on the product by pressing the “SHIFT” button followed by the “EXP” button while the user is in “Chat Mode”.

12. Support

For Customer Support or General Enquires please contact Ruby Devices at the following email: **support@rubydevices.com.au**