Seaboard RISE 25 Creator Manual

November 2015

Introduction

Hello creator, and welcome to the Creator Manual for the Seaboard RISE. We think of the people who buy and use ROLI's products as creators more than customers. Our products are designed to expand the bandwidth of creative expression and thereby empower people as the creators they are. Everyone who buys and uses a Seaboard RISE is investing in this vision of creativity and therefore is also a co-creator of ROLI.

You may already be playing your Seaboard RISE and discovering its creative possibilities. This comprehensive Creator Manual explains all of the details about your Seaboard RISE to ensure that you get the most out of it.

The Seaboard RISE is a multidimensional MIDI controller whose touch-sensitive interface and Equator software synthesiser open new possibilities for musical expression. While a conventional keyboard offers one dimension of touch to control sound (Strike), the Seaboard RISE offers five dimensions of touch. These can be mapped to a variety of sound parameters. Three Touch Faders and an XY Touchpad add another layer of expressive control, allowing you to tune the touch responsiveness of the keywaves to match your personal taste in real time.

On the next page we have included a short list of terms specific to Seaboard instruments. We will refer to these terms throughout the Creator Manual.

Please note that this is a digital manual updated regularly to reflect software updates and other improvements. Be sure to check for updates on My ROLI. This Manual is current up to **Equator** v1.3.0, **ROLI Dashboard** v3.1.2, and **RISE** Firmware v1.0.7.

Support and Feedback

We want you to have the best experience possible with our products and would love to hear your feedback. Should you have any questions, are experiencing any problems, or just want to say hello, please don't hesitate to get in touch.

The easiest way to reach us is to send a support enquiry from: www.roli.com/support. We will respond as soon as possible.

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Glossary of selected RISE terms

Keywave surface: The entire playing surface including all **keywaves** and ribbons. The **keywave surface** corresponds to a keyboard.

Keywave: A wavelike element of the keywave surface that corresponds to a single key on a standard keyboard. Each of the Five Dimensions of Touch can be accessed on a single keywave.

Equator: ROLI's custom-built, multidimensional software synthesiser and sound engine. **Equator** enables refined control of the expressive capabilities of the keywave surface. Equator and Seaboard instruments work together to provide a seamlessly integrated hardware-software experience.

ROLI Dashboard: An application for modifying and customising the internal settings of the RISE.

Expression Mode: A mode of playing the Seaboard RISE in which three Touch Faders control the dynamics of the **Glide**, **Slide**, and **Press** dimensions of touch. Expression Mode lets you modify the touch responsiveness of the Seaboard RISE to suit specific sounds and your individual playing style.

MIDI Mode: A mode of playing the Seaboard RISE in which the Touch Faders can be assigned to any MIDI CCs for additional customisation of sound.

The Five Dimensions of Touch (5D Touch): The feature of real-time control and modulation of sound through the basic movements of Strike, Press, Glide, Slide, Lift.

Strike: The velocity and force with which a finger makes contact with a **keywave**.

Press: The pressure and continuous touch applied to the keywave after the initial Strike

Glide: Horizontal left and right movements from side to side on a **keywave** and along the ribbons.

Slide: Vertical movements up and down a **keywave**.

Lift: The release velocity or speed of liftoff from a **keywave**.

Touch Fader: A control for adjusting the sensitivity of the keywave surface to dimensions of touch.

1. Getting started

1.1 System Requirements

OS X

Mac OS 10.8+

Minimum RAM: 4GB

Recommended RAM: 8GB
Processor: 2.5GHz i5 or faster
Bluetooth connectivity: OS 10.10+

Windows

• Windows 7, 8, or 10

Minimum RAM: 4GB

Recommended RAM: 8GB

Recommended Processor: i5 and equivalent or above

1.2 The Seaboard RISE Software Bundle

Before making music on your Seaboard RISE, you need to download the Seaboard RISE Software Bundle. This software bundle is available on My ROLI. Register with My ROLI to download it. Please follow the instructions below. If you have already installed the Seaboard RISE Software Bundle you can skip to Section 2.

1.3 Register on My ROLI



Visit my.roli.com and sign up with a username and password of your choice. When you have signed up and logged in, the website will ask you to register your product. Use your Product Registration Code. The code is printed on the Registration Card. This card is in the box marked *Make Music Now*, which comes in the package with your RISE.

Login and Download ROLI Software

Now that you have created an account on My ROLI, you can log in and download the latest RISE Software Bundle. The bundle includes **ROLI Dashboard** and **Equator** for RISE. Click either "Download Software Bundle for Mac" or "Download Software Bundle for Windows," depending upon which operating system you use.

1.4 Installation for Mac and Windows

When the download is complete, open the Downloads folder on your computer and double click the installer file(s). Follow the on-screen instructions and choose the location or disk where you want to install the software.

The install will require approximately 2 GB of disk space.

Mac: After double-clicking the installer, you may see a message that says the installer is from an "unidentified developer." Don't worry. The software is safe to install. You can bypass this message by right-clicking the installer from a Finder window and selecting Open.

Windows: After double-clicking the installer, you may see a message to say that Windows has protected your PC by stopping an "unrecognised application" from opening. Don't worry. The software is safe to install. You can bypass this message by clicking "more info" on the message, then the "run anyway" button.

2. Hardware: The Seaboard RISE 25

2.1 Connections and Specifications

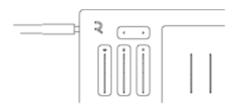


 $A - \frac{1}{4}$ " (6.35mm) pedal jack

B - USB type B

C - USB type A

D - 9-12V 2A DC port



Connecting the pedal jack:

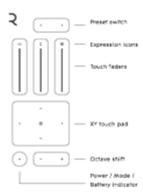
The pedal jack should only be inserted as shown in this image. Take care when inserting the jack, and do not attempt to force it past the position depicted above.

2.2 The Keywave Surface



The RISE features a continuous, elastic, silicone surface divided into 25 keywaves. Following the order of notes on a standard keyboard, the keywaves represent the same pitches and intervals found on a piano. The touch-sensitivity of the keywave surface allows tactile control of parameters such as pitch, volume, and timbre through simple, intuitive movements. The keywave surface is sensitive even to gentle pressure, and strong force is not required to maximise its expressiveness. While made of durable silicone, the keywave surface should not be pinched, stretched, or pounded.

2.3 The Control Panel



Preset Switch:

The two buttons on the Preset Switch are primarily used to select presets within **Equator**. They also have two other functions. In **MIDI Mode** the Preset Switch transmits MIDI program change messages to third-party hardware and software synthesisers. Simultaneously pressing and releasing the two buttons activates Bluetooth pairing, connecting the RISE to compatible Bluetooth-enabled devices.

Touch Faders:

In **Expression Mode**, the Touch Faders control the dynamics of **Glide**, **Slide**, and **Press**. In **MIDI mode** they transmit assignable MIDI CCs.

XY Touchpad:

In **Expression Mode**, you can control any sound parameter in **Equator** through touch along the X and Y axis of the XY Touchpad. In **MIDI Mode**, the XY Touchpad can transmit MIDI CCs for control of third-party software and hardware synthesisers.

The Touchpad behaves as a "free floating" controller. When using Equator for RISE in standalone mode, the Touchpad will remain in the position that you leave it until you move it again or change presets. The Touchpad position gets stored with the preset. Although there are no rules, we store most of our presets with the Touchpad position in the bottom left corner.

Power/Mode button:

This multipurpose button indicates whether the RISE is on or off, whether it is in **Expression Mode** or **MIDI Mode**, and the status of the battery charge.

Octave shift:

These two buttons switch octaves to extend the range of the 25-keywave controller.

2.4 USB connection

Media: wireframe image of the RISE connected to computer via USB



When connected by the USB type B port to a computer, the RISE acts as a USB MIDI controller. Its battery will charge when connected to a computer that is plugged in.

2.5 Bluetooth Connection

Media: Indicated by a blue LED

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The RISE transmits MIDI over Bluetooth to compatible devices. Jointly pressing and then releasing both Preset Switch buttons begins the Bluetooth pairing process. The Power/Mode button blinks blue to indicate Bluetooth Pairing Mode.

When the USB cable is unplugged, the RISE automatically enters Bluetooth pairing mode. You must complete pairing the RISE, however, by enabling Bluetooth and selecting the RISE on the device that you are connecting. This prevents the RISE from accidentally pairing with another device within signal range.

Press and release both Preset Switch buttons simultaneously to exit Bluetooth pairing mode. Disconnect Bluetooth through the device you are connecting to the RISE.

In Mac OS X 10.10

- Press and release both Preset Switch buttons simultaneously
- Open Audio MIDI Setup from the Utilities folder inside Applications
- Click Window → Show MIDI Studio
- Double-click the Bluetooth icon
- A new window will open and scan for nearby Bluetooth devices
- When the RISE is detected, click connect.

2.6 Mode Selection

Press the Mode button once to cycle between the two modes of **Expression Mode** and **MIDI Mode**.

Expression Mode

Indicated by a cyan LED

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In **Expression Mode** the three Touch Faders control the dynamics of the **Glide**, **Slide**, and **Press** dimensions of touch. Setting the Touch Faders at different levels changes the sensitivity of the **keywave surface** to touch and therefore alters expression when you play. **Expression Mode** is designed to let you modify the expressiveness of the Seaboard RISE to suit specific sounds and your individual playing style.

Touch Faders

The left touch fader controls the dynamics of Glide, or sideways movements of the finger on keywaves or along ribbons. When the Glide Touch Fader is set to minimum, sideways movements will not bend pitch. The instrument is in Piano Mode, and it will respond like a standard keyboard. When the Touch Fader is set to maximum, the keywave surface is maximally sensitive to sideways movements, and even minute movements will result in pitch bend.

Note: The illumination of the **Glide** Touch Fader corresponds to the level of the **keywaves**' sensitivity to the **Glide** movement.

The center touch fader controls the dynamics of Slide, or vertical movements up and down the keywave. When the Slide Touch Fader is at a lower setting, the spectrum of sound available for modulation along the Y axis of the keywave is narrower. This means that you can reach the maximum end of the range of modulation with a shorter movement up or down a keywave. When the Slide Touch Fader is at a higher setting, the spectrum of sound available along the Y axis is wider. This means that your finger must travel a greater distance to reach the maximum end of the range of modulation, and you will be able to access a wider range of intermediate sounds along the vertical path of travel.

Note: The illumination on the Slide Touch Fader corresponds to the distance that must be travelled between the two poles of the sound available for modulation.

The right touch fader controls the dynamics of Press, or the response of the keywave surface to continuous pressure applied after Strike. When the Press Touch Fader is at a lower setting, the spectrum of sound available to modulate through pressure is narrower. This means that you can reach the maximum end of the range of modulation through lighter pressure on the keywave surface. When the Press Touch Fader is at a higher setting, the spectrum of sound available through pressure is wider. This means that you will press more firmly to reach the maximum end of the range of modulation, and you will be able to access a wider range of intermediate sounds as you vary pressure on the keywave surface.

Note: The illumination on the **Press** Touch Fader corresponds to the depth of pressure that must be exerted to travel between the two poles of the sound available for modulation.

XY Touchpad

In **Expression Mode**, you can control any sound parameter in **Equator** through touch along the X and Y axis of the XY Touchpad. The XY Touchpad provides two assignable MIDI

control signals. Many external hardware synths and third-party synth plug-ins can also use these two control signals as modulation sources. The XY Touchpad defaults to transmit the following MIDI CCs:

X axis: MIDI CC 113 Y axis: MIDI CC 114

MIDI Mode

Indicated by a white LED

MIDI Mode allows the Touch Faders to be assigned to any MIDI CCs using the Modulation Panel in **Equator**. This allows additional customisation of sound parameters.

The Touch Faders are assignable but default to transmit the following MIDI CCs:

Glide Touch Fader: MIDI CC 107 Slide Touch Fader: MIDI CC 109 Press Touch Fader: MIDI CC 111

2.7 Charging the Battery

Media: wireframe image of RISE plugged into USB port of computer

The battery charges when the RISE is plugged into a power-supplied device through the USB cable or directly to a power source.

The Power/Mode button indicates the battery's level of charge. When charging the LED will be red, amber, or green to indicate a charge status of low charge, half charge, or full charge.

When the RISE is not connected to a power source, the Power/Mode button's LED will flash continuously to notify you of the level of the diminishing charge. The rapidity of red flashes indicates the battery life:

- Flashes red once every five seconds: Battery is low with less than 60 minutes of playing time remaining.
- Flashing red once every three seconds: Battery is low with less than 40 minutes of playing time remaining.
- Flashing red once every two seconds: Battery is very low with less than 20 minutes of playing time remaining.
- Three rapid red flashes: RISE is preparing to shut off.

Charge times are as follows:

USB connected and RISE switched on: 7 hours to full charge. USB connected and RISE switched off: 5.5 hours to full charge.

External DC supply, RISE on or off: 3 hours to full charge.

Protecting the battery:

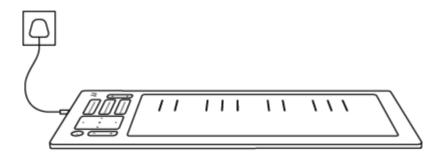
If you anticipate not using your RISE for three months or longer, we recommend that you take the following steps to ensure its functionality:

- Keep it fully charged when not in use.
- Store it in an environment with low humidity and a temperature between 10-25°C.
- Keep it away from corrosive gas.

The protect the health of the lithium polymer battery, we recommend you charge your RISE every six months at the minimum.

2.8 DC Connection and Charging an External Device

Connecting the RISE directly to a power source through an external mains power supply charges the battery as well as any device that is attached to the RISE's USB "A" port. Connecting directly to a power source will charge the battery faster (taking approximately three hours) than if you charge through a USB connection to a power-supplied device. The RISE comes with a USB cable, but it does not include an external mains power supply. Please refer to the specifications below before purchasing one.



Requirements for DC power input:

Outside diameter: 4mm Internal diameter: 1.7mm Shaft length: 11mm

Input voltage for external power supply: 100-240V AC

Output voltage for external power supply: 9-12V DC 24W centre pin positive

USB A output:

Output voltage: DC 5V
Output current: 2.1A max.

2.9 Bootup of the RISE

The RISE calibrates during bootup. Please refrain from touching the **keywave surface** until the boot animation has finished. This will take about two seconds.

3. Software: ROLI Dashboard and Equator

The Seaboard RISE Software Bundle includes **ROLI Dashboard** and **Equator**. Below is a brief description and summary of these software application. Please refer to the "**ROLI Dashboard** for RISE Creator Manual" and "**Equator** for RISE Creator Manual" for a comprehensive explanation of all that you can do with Dashboard and **Equator**.

3.1 ROLI Dashboard

The **ROLI Dashboard** for RISE is an application for managing and customising your settings for the RISE.

You can edit many settings through Dashboard, including:

- Channel Mode: MPE "ON or "OFF, Single, or Multi
- Channel Range: 1-10 for Multi Channel Mode
- MIDI Channel: 1-16 for Single Channel Mode
- Settings for five dimensions of touch: Strike, Press, Glide, Slide, and Lift
- MIDI Mode Settings: Assignable MIDI CC's for Touch Faders and XY Touchpad
- Pedal Settings: Type (continuous or switch) and assignable MIDI CC
- Connection Status Indicator: USB or Bluetooth

3.2 Equator for RISE

Equator is ROLI's custom-built, multidimensional sound engine and software synthesiser. Integrating seamlessly with the RISE's touch-sensitive surface, **Equator** opens new possibilities for multidimensional expression. In **Equator** you can assign the modulation sources controlled by **Strike**, **Press**, **Glide**, **Slide**, and **Lift** to a variety of parameters in the synth such as filter cutoff or LFO frequency.

3.3 Software and firmware updates

The RISE's software and firmware are updated regularly. **ROLI Dashboard** is where you get the latest updates. Connect your RISE to the computer and launch **ROLI Dashboard** for

RISE. Under the application menu select "Check for updates" to update your software and firmware.

4. Playing the Seaboard RISE

4.1 Five Dimensional Touch or 5D Touch

The RISE is a multidimensional instrument that lets you modulate sound through five dimensions of touch. Through simple movements and gestures, you can shape sound easily and discover new modes of expression. The icons below depict the Five **Dimensions of Touch** on the Seaboard RISE and its accompanying software. The **Five Dimensions of Touch** are:

Strike: The velocity and force with which a finger makes contact with a keywave. This dimension of touch corresponds to MIDI velocity on a standard keyboard.

Press: The pressure applied to the keywave after the initial **Strike**. The **keywaves** respond to each moment of continuous touch, transmitting minute variations of pressure to sound. This continuous pressure-sensitivity allows for swells, fades, and other detailed expressions.

Glide: Horizontal movements from side to side on a keywave and left right movements along the ribbons. **Glide** movements bend and adjust pitch as naturally as on a string instrument, allowing effects such as vibrato and glissando, all on a polyphonic basis. **Glide** is typically assigned to pitch, but it can be assigned to other sound parameters.

Slide: Vertical movements up and down a keywave. You can assign **Slide** to most sound parameters in **Equator**. For example, an upward movement can open a filter that turns an organ sound into a brassy sound, while a downward movement can close the filter. Your initial point of contact with the keywave, no matter where this point is, becomes the basis for sound modulation on the Y axis above and below that point.

Lift: The release velocity or speed of liftoff from a keywave. You can assign **Lift** to most sound parameters in **Equator** and other compatible synths. For example, a rapid **lift** can create a lingering resonance or a hard pluck.

The five MIDI messages of the five dimensions of touch:

Strike sends note-on messages in addition to velocity 0-127.

Press sends poly or channel pressure (aftertouch).

Glide sends pitch bend.

Slide sends as MIDI CC 74.

Lift sends note-off and release velocity 0-127.

4.2 Playing Techniques

Media: Diagram or wireframe of hands doing gestures (vibrato, chromatic bend, glide bend, press, and slide) with descriptions under each illustration. (To be created) You can apply playing techniques associated with keyboard, string, and electronic instruments to the Seaboard RISE. Playing techniques include:

Strike and hold: Strike the keywave and hold for a duration without adding any additional movement.

Glide vibrato: Pressing into a keywave and holding the point of your finger there, wiggle your finger from side to side. The pitch-bend effect of vibrato will widen the wider the arc of movement away from the stationary finger.

Glide glissando : Move your fingers along the pitch ribbons at the top and/or bottom of the **keywave surface**. **Glide** bends can be up to two octaves long in either direction.

Continuous press modulation: While sustaining a note, increase and decrease downward pressure on the keywave to modulate the note.

Legato bend: Press and continue to hold any note on the **keywave surface** with one finger and play another note a half-step above or below with another finger

Slide vibrato: After striking and holding a note, **Slide** your fingers up and down the vertical axis of the keywave rapidly.

Slide modulation: After striking a note, move your fingers up or down the keywave to modulate the note.

5. Working with other hardware and software

The RISE is compatible with any electronic instrument that can receive MIDI and produce sound in response. It transmits MIDI on up to 15 MIDI channels simultaneously, enabling polyphonic pitch bend.

The receiving instruments that you use must be multi-timbral for you to experience the full expressive capabilities of the RISE. They should have a pitch-bend range of +/- one octave and be able to respond to aftertouch.

Working with Digital Audio Workstations (DAWs)

Equator is a standalone software synthesiser and sound engine that works seamlessly with the RISE, and no other software is required to create and modify sound. The RISE, however, also works with most DAWs such as Logic or Cubase. Because the RISE transmits standard MIDI messages, it is also compatible with any other software instruments which you might also use in your chosen DAW.

In many DAWs, a single track can receive multiple MIDI channels from the RISE and send the MIDI data to a multi-timbral synth like **Equator**. Other DAWs are limited to a single channel per track, so configuring your project to take full advantage of the RISE's dimensions of expression is not a uniform process. It depends on the DAW.

You can find detailed guides about working with most DAWS on our Support page at www.roli.com/support. We also include template project files. If you do not see your preferred software on the list, get in touch with a support team member through our Support page or through my.roli.com.

The following DAWs have simple workflows which are ideal for use with the RISE:

- Cubase
- Logic
- Reaper

When working with DAWs, **Equator** can be loaded as a VST/AU plugin.

USB MIDI Class Compliancy

The Seaboard RISE is a USB Class Compliant device. It can be connected directly to other USB Class Compliant devices which receive MIDI data and produce sound in response.

Although the RISE does not have traditional five-pin DIN connectors, it lets you connect to hardware that requires these connectors. One option is to connect to a computer and

transmit MIDI via a MIDI interface. Or you can connect a USB MIDI Class Compliant device that converts MIDI over USB to traditional five-pin DIN connectors.

6. Care and Maintenance

Basic care and attention will protect your RISE and help it stay in optimal condition for years to come. Avoid excessive force on the **keywave surface**, and try to keep the RISE away from direct sunlight, sharp objects, liquids, and especially oils - including greasy fingers after eating food.

To clean the **keywave surface** you may use a damp, bleach-free and oil-free cleansing wipes. Do not use any abrasive cleansing agents on the RISE or its **keywaves**.

7. ROLI Support

My ROLI and ROLI Support

Manuals and other resources on My ROLI should help answer initial questions about your RISE. Visit our Support page at www.roli.com/support for a wider range of resources that should help answer questions about the RISE and its software. The page includes frequently asked questions, tutorial videos, and guides for connecting the RISE with third-party plug-ins and DAWs.

Contact our support team

Contact the ROLI support team directly on www.roli.com/support for any questions. You will receive an answer within 24 hours. Our support team is here to help you.

8. ROLI Glossary

Bluetooth Pairing Mode: The mode of broadcasting a Bluetooth signal in order to pair wirelessly with another Bluetooth-enabled device.

Equator: ROLI's custom-built, multidimensional software synthesiser and sound engine.

Expression Mode: A mode of playing the Seaboard RISE that enables full multidimensional control of sound parameters in real time through use of three Touch Faders and an XY Touchpad.

Five Dimensional Touch or "5D Touch": The feature of real-time control and modulation of sound through the basic movements of **Strike**, **Press**, **Glide**, **Slide**, and **Lift**.

Glide: Horizontal movements from side to side on a keywave and along the ribbons.

Keywave: A silicone-covered, sensor-embedded wave that corresponds to the key on a standard keyboard. In **Expression Mode**, tones and semitones are available on a single keywave.

Keywave surface: The entire playing surface including all **keywaves** and ribbons. The **keywave surface** corresponds to a keyboard.

Lift: The release velocity or speed of liftoff from a keywave.

MIDI Mode: A mode of playing the Seaboard RISE that retains the features of **Expression Mode** and also allows the Touch Faders and XY Touchpad to be assigned to any MIDI CCs for additional customisation of sound.

My ROLI: ROLI's online portal for software downloads and product support.

Octave shift: a button on the control panel that shifts up to two octaves.

Preset Switch: Refers to the upper elastomer navigation bar on the Seaboard RISE 25 control panel.

Press: The pressure and continuous touch applied to the keywave after the initial Strike

ROLI Dashboard: An application for modifying and customising the internal settings of the RISE.

Seaboard: A pressure-sensitive, multidimensionally expressive instrument that ROLI launched in 2014. The Seaboard has two product families: the Seaboard GRAND and Seaboard RISE.

Slide: Vertical movements up and down a keywave.

Software Bundle: The software programs that come bundled with the Seaboard RISE. Currently these are **ROLI Dashboard** and **Equator**.

Strike: The velocity and force with which a finger makes contact with a keywave.

Touch Fader: A touch-sensitive bar on the control panel that adjusts the response of the **keywave surface** to a dimension of touch. On the Seaboard RISE three touch faders control the dynamics of **Glide**, **Slide**, and **Press**.

XY Touchpad: a touchpad that allows for control of any assigned sound parameter through movements along the X and Y axis of the pad.

9. FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation

No changes shall be made to the equipment without the manufacturer's permission as this may void the user's authority to operate the equipment

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

This device complies with the FCC safety requirements for RF exposure in accordance with FCC rule part §2.1093

10. Industry Canada Statement

"This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device"

This device has complies with the safety requirement for RF exposure in accordance with RSS-102, issue 5 for portable conditions.

11. Cautions

The Seaboard RISE does not contain any serviceable parts, including the battery. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type