

# RF Expansion Module





## Important Safety Instructions

PLEASE READ AND FOLLOW ALL SAFETY INSTRUCTIONS BEFORE PROCEEDING

**DANGER** Discontinue use if any signs of water are present in any electronic/electrical device.

WARNING – To avoid injury to yourself and others, safety precautions should always be observed.

DANGER – Never attempt to service any electronic /electrical equipment before unplugging the device from the outlet. Risk of electrical shock if care is not taken.

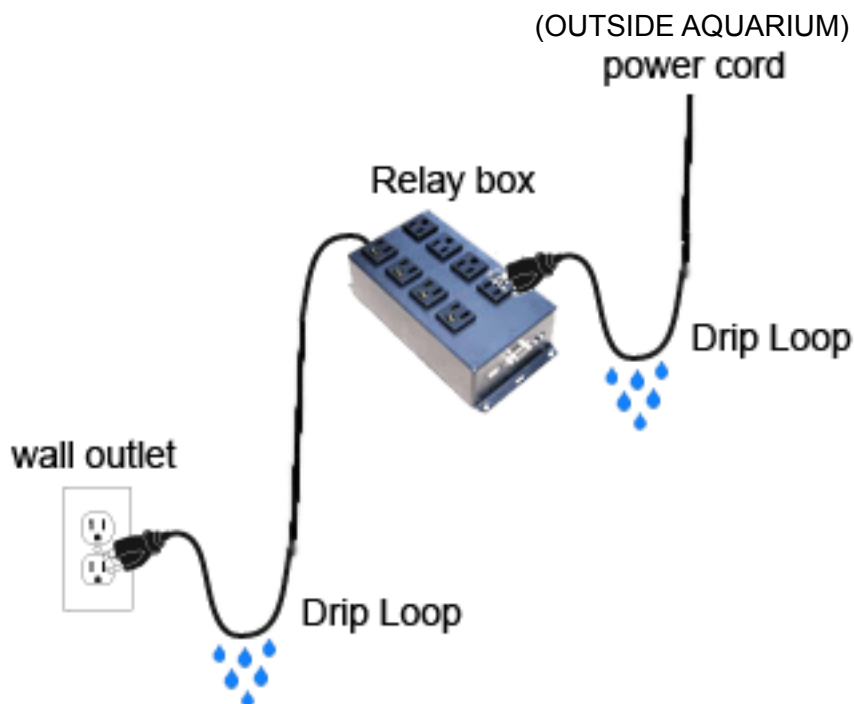
Special care should always be taken when operating any aquarium equipment.

If the plug or receptacle gets wet, NEVER unplug it from the outlet. Always use the fuse or circuit breaker that supplies power to the device. Disconnect it and then examine for water presence.

- If device shows any sign of abnormal appearance, discontinue use.
- Never operate the device if plugs or cords are damaged, torn, ripped or malfunctioning.

NOTE: A “drip loop” should be arranged and position your aquarium stand and tank to the side of the aquarium to avoid the device or power receptacle from getting wet power receptacle. Please refer to Figure 1 below.

Figure 1



## RF Expansion Module Unit



### Contents:

- RF Expansion Module
- Built – in Ecotech RF Module
- Expansion Bus cable

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## Adding your RF Expansion Module directly on your Reef Angel Relay Box

1. Plug the bus cable to the bus port of the RF expansion module.
2. If you are only using one expansion module you can plug the other end of the bus cable straight into the expansion port of the main relay box. Please refer to Figure 3 below.

**Figure 3**



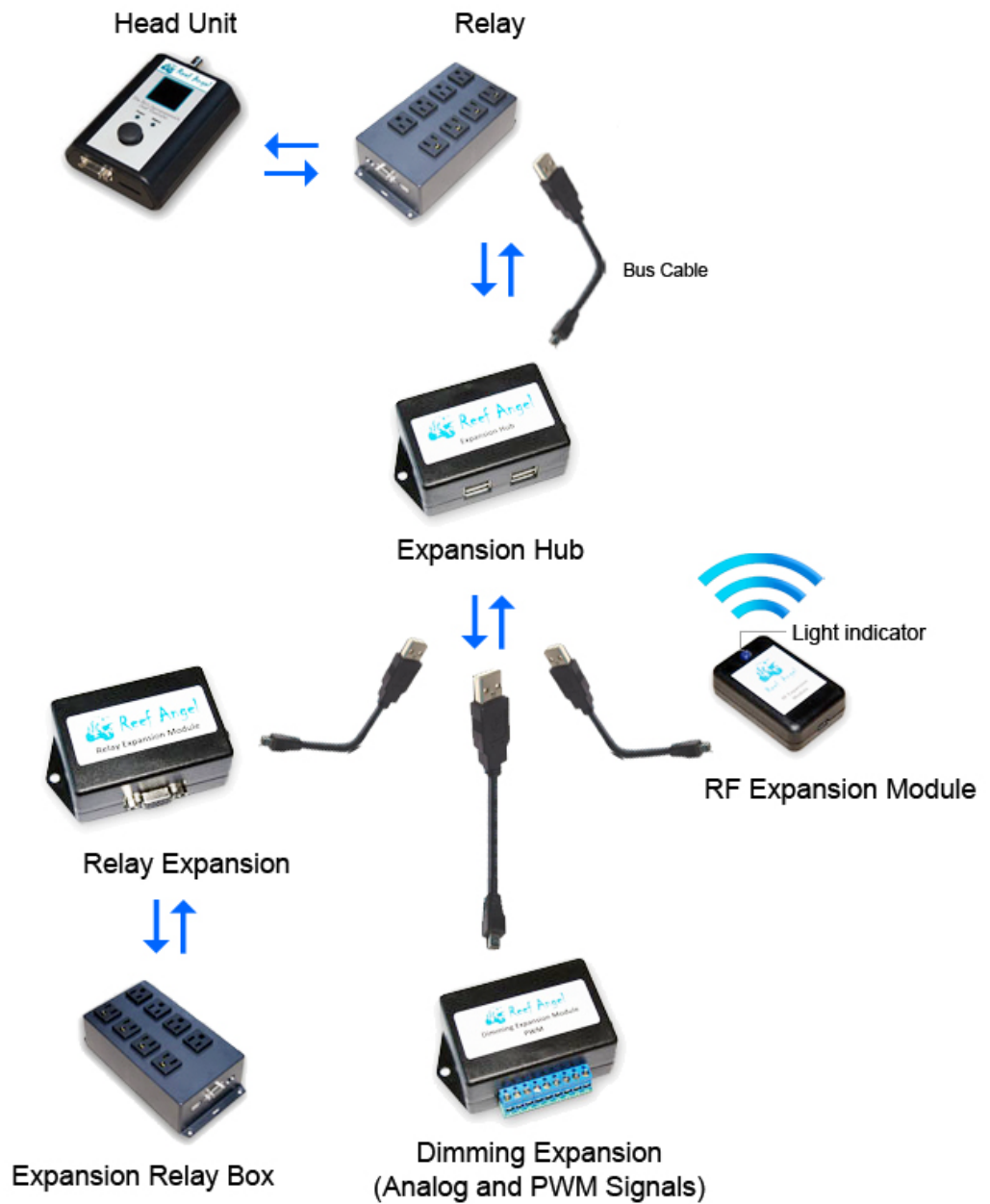
Note: If you have successfully clear all memory of the pump and assign the unit into slave mode by uploading the code properly. A white color light dial will appear in the control dial of ecoSMART Driver. If you start changing the mode of the pump using your browser, ipad, or mobile devices. You will notice the RF Expansion Module light indicator changes its color according to the operational color settings modes of the control dial of the ecoSMART driver.

Example Green for constant speed, purple for lagoon, Yellow for Reef Crest, Blue color for short pluse mode, etc.

## Adding your RF Expansion Module with other Reef Angel Devices.

3. If you are connecting more than one expansion module, you will need an expansion hub, which offers 8 additional usb ports to connect more expansion modules. Please refer to Figure 4 below.

Figure 4



## Setting Up Your RF Expansion Module with Ecotech Vortech Pumps

### Performing Soft Reset on your Vortech Pump (clearing all memory)

1. On your Ecotech Vortech pump, you will need to clear all memory settings. Please follow the instructions on your pump manual or watch this video link: <http://ecotechmarine.com/media-gallery/video/ecotech-how-to-performing-a-soft-reset-on-your-vortech-pump/>
2. Repeat Step 1 for all remaining pump for clear memory.

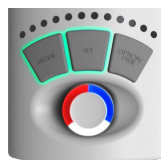
### Preparing and uploading the code to the Reef Angel controller.

3. Start your Arduino Software using your computer.
4. Upload the Vortech setup code to the Reef Angel controller by going to the menu **File -> Example Codes and selecting VortechSetup**.
5. The RF Expansion Module indicator light should start blinking blue and green.

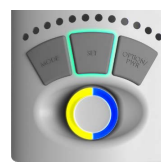
### Preparing your pump to slave mode

6. To prepare your pump to slave mode, follow the steps on the manual. The following step below were extracted from the Vortech manual.

7. Press and Hold both Mode and Set buttons together until the driver blinks **red/white/blue**.



8. Press the Set button to assign your pump into slave mode. The control dial will then **blue and yellow** will blink.



Note: If the control dial blinks **blue and red**, it was too far away from the Reef Angel RF Expansion module and could not communicate properly.

9. Repeat steps 6 and 8 for all remaining pumps.

### Assigning the pump to slave mode using your Reef Angel Controller

10. Go to your Reef Angel controller. Pressing the Ok button by using the joystick to finalize your pump setup.
11. The RF Expansion module indicator light will turn to solid green and your Ecotech Vortech control dial will turn solid white. At this point your Ecotech Vortech pumps are synced to the Reef Angel RF Expansion module and will follow whichever mode you assign using your mobile device or computer.
12. You may choose to configure each pump to sync, anti-sync or back to tank mode. Please read your pump manual for more information.