NEPTUNE SYSTEMS

Lunar Simulation Module (LSM)

Setup Guide

Table of Contents

INTRODUCTION

Congratulations on your purchase of the Apex Lunar Simulation Module. The Lunar Simulator Module (LSM) provides the ability to simulate the true lunar cycle on your aquarium. The 2 to 5 LED lights included with the simulator turn on and off at the appropriate moon rise and moon set times and they wax and wane in intensity in phase with the lunar cycle.

FEATURES

- Supports 2 to 5 blue (470 nm) LEDs.
- The LSM attaches to and is powered by the Apex system via AquaBus.
- Automatic Plug N Play for easy setup and configuration.
- Upgradable firmware through AquaBus.
- Status indicator for lunar lights.
- 2 AquaBus ports for flexible system connections.
- Comes with a 3' AquaBus cable.
- Compatible with Apex, Apex Lite and Apex Jr systems

PHYSICAL INSTALLATION

⚠ WARNING: Your Apex must be running firmware version 4.10 or higher to support the Lunar Simulator Module (LSM). The current firmware version can be checked from the Apex Display on the Self Test screen. If needed, please upgrade the Apex Base Module firmware to 4.10 or higher before proceeding with the installation. See the *Apex Setup and Programming Guide* for firmware upgrade instructions.

The LSM and LEDs should be securely mounted in a location free from moisture. Use wood screws through the mounting tabs of the module case or if mounting on drywall, use drywall anchors (mounting hardware not included).

- Mount all modules above the water line of the aquarium.
- Be sure to utilize drip loops on all power cords, AquaBus cables and probe cables.
- The LED boxes should be mounted above the tank and each LED provides approximately 2′ of coverage for each LED. For best coverage the LED modules should be mounted about 6-8″ above the surface of the water.

⚠ WARNING: Water damage will void your warranty! Mount all modules in locations safe from moisture exposure.

INITIAL CONNECTIONS

Plug one end of the included AquaBus cable into one of the AquaBus ports on the LSM and the other end into an available AquaBus port on your existing Apex system. It makes no difference which AquaBus port is used and you do not need to power down the system when connecting AquaBus accessories as the system is plug-and-play.

⚠ WARNING: NEVER plug standard USB devices into any AquaBus connector or AquaBus accessories into computer USB ports. Damage to the AquaBus accessory and/or USB device may result.

STARTUP

As soon as the LSM is connected to an active AquaBus, the module will power up and begin to initialize. When first connected to an AquaController Base Module (through the AquaBus), the LSM will automatically be assigned an AquaBus address and be added to the AquaController configuration. The LED Status indicator on the LSM will flash yellow while it is being initialized. Once initialized, the LED Status indicator will be solid green. The LED Status indicator will flash when the LSM is powered on and communication with the AquaController Base Module is lost.

VERIFY THE INSTALLATION

Verify the LSM was initialized and added to the AquaController Apex configuration:

Apex Display: Setup – Module Setup – Modify Name – from this screen, you can see all AquaBus modules installed on the system.
Web Interface: Configuration – Module Setup – Verify the LSM is listed in the Apex Module List. Also 1 outlet is automatically created which can be configured Configuration – Outlet Setup. The initial name of the LSM outlet is Lunar_X_1

UPDATE LSM FIRMWARE

A new version of firmware for the LSM may be included with Apex firmware updates. You should check the firmware version status when the LSM is first installed and after updating the AquaController Base Module firmware. See the section titled *Updating Firmware* in *the AquaController Apex Setup and Programming Guide* for instructions to update AquaController Apex Base Module and WXM firmware.

To check or update an Apex module firmware:

Apex Display: Setup – Module Setup – Update Module – use the up/down arrows to highlight the Apex module to update, push Select to update.

Web Interface: Configuration – Module Setup – in the Module Configure area, in the Module: box, select the Apex module to update from the dropdown list, click the Update Firmware radio button, click the Submit Module Update button, a new browser window will open to display the update status.

CONFIGURING THE LSM

When the LSM is installed the Apex automatically creates 1 lunar LED control outlet (named Lunar_X_1) that is be used to control the string of lunar LEDs. Depending on the version of firmware installed on the Apex, the default program for the Lunar_X_1 will be one of these two possibilities:

> **<Lunar_X_1>**
> Set OFF
> If Moon 000/000 Then ON

Important note: If the default program does not contain a Set OFF statement, add the Set OFF as shown above.

This one statement instructs the lunar simulator to turn on the LED lights on at the true moon rise time and off at the moon set time. In addition, the intensity of the lunar lights is adjusted daily so that they match the phase of the lunar cycle.

NEPTUNE SYSTEMS LIMITED WARRANTY

Neptune Systems warrants this product to be free from defects in material and workmanship for a period of 1 year from the date of purchase. If repair or adjustment is necessary and has not been the result of abuse, Neptune Systems warrants this product to be free from defects in material and workmanship for a period of 1 year from the date of purchase. If repair or adjustment is necessary and has not been the result of abuse, misuse, or accidental damage, within the 1-year period, please return the product with proof of purchase, and correction of the defect will be made without charge.

For your protection, items being returned must be carefully packed to prevent damage in shipment and insured against possible damage or loss. Neptune Systems will not be responsible for damage resulting from careless or insufficient packaging. Before returning please obtain a return authorization (RMA) number from Neptune Systems. Returned merchandise will not be accepted without a RMA number. To obtain assistance with your Neptune Systems product, contact Neptune Systems technical support by phone or via the Technical Support Contact Web Page at https://www.neptunesystems.com.

Except for the warranty set forth above, Neptune Systems is not responsible for any damages including, but not limited to, consequential damage occurring out of or relating to the delivery, use or performance of Neptune Systems' products. Buyer's remedies for breach of warranty shall be limited to repair, or replacement and full or partial adjustment to purchase price.

Neptune Systems
15750 Vineyard Blvd, Suite 150
Morgan Hill, CA 95037
USA
www.neptunesystems.com
support@neptunesystems.com
Phone +1 408-779-4090   Fax +1 408-762-2042

©2017 Neptune Systems - All Rights Reserved

Lunar Simulation Module (LSM) Setup Guide v3.1

The symbols to the right mean that according to local laws and regulations your product should be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. Some collection points accept products for free. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.