

Logitek Electronic Systems

Remora Reference Manual



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Document Revisions

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1 Introduction

About this Manual

This manual describes the installation and operation of the **Logitek Remora** control surface.

Intended Audience

This manual is aimed at Engineers and Technical Operators responsible for installing, configuring and supporting a **Logitek Console Router System** with the *Remora* surface.

In the context of a system installation, or to become familiar with the entire **Logitek Console Router System**, the reader should also reference:

- Audio Engine Installation & Operation Manual
- AEConfig User's Manual
- Supervisor User's Manual
- CommandBuilder Manual

The content of this manual relevant to console operators (Chapter 5) is also duplicated in the separate *Remora Operators Manual*. This provides announcers with a brief overview of using the surface in a broadcast environment.

Manual Conventions

The following conventions are used in this manual:

This text indicates a menu choice to be made, with an arrow separating a multi-level selection, eg Control Panel ➤ Users & Passwords. This can be a menu choice in a Logitek application, or within Windows.

↪ *Indicates a "see-also" section in this manual, or another Logitek manual.*



The exclamation symbol signifies an important note or critical information.

This text represents a command, script block example, instruction to be typed, or directory path.

🗨️ **TIP:** A useful tip from our knowledge base!

About Remora

First released in 2002, *Remora* was designed to replace the *ROC* series of consoles, and adds many new features, including softkey buttons, and single-button access to more functions. The *Remora* surface is based on a series of modules that can be configured to suit the user's requirements. These modules include:

- REM-4** **4 Fader Module** (control module)
- REM-6** **6 Fader Module** (expansion module)
- REM-24B** **24 Button Softkey Module** (expansion module)

The main frame is available in a number of different sizes to accommodate a variety of console sizes and fader numbers; 4, 10, 16 and 22. The frame is designed to be placed on a desk for semi permanent installation.



System Requirements

Remora is designed to connect to a **Logitek Audio Engine** running DSP version 3.x or later. Certain *Remora* functions may require a specific type or release of DSP card. Contact **Logitek Electronic Systems** or your reseller if you are unsure, or are adding a *Remora* surface to a pre-existing **Logitek** facility.

System Architecture

Put simply, the *Remora* surface is just a remote control panel for the **Audio Engine**. Unlike traditional analog consoles, no audio passes through the *Remora* or its faders (with the exception of the cue speaker audio). The *Remora* talks to the **Audio Engine** using the **Logitek Command Protocol**, with all audio processing occurring inside the **Audio Engine**.

The mixing, routing and processing of audio is not dependent upon PCs. However, additional functionality, such as macro buttons, scene snapshots, intercoms, delay control and software tools interface to the system using the *Supervisor* PC application.

Whilst *Supervisor* is not a requirement to run a **Logitek Console Router System**, most systems are now sold with this PC suite, as it unlocks the true power of the **Logitek** system. The *Remora* surface contains many programmable buttons, which require scripting using *CommandBuilder*. The functionality for these buttons is then executed by *Supervisor*. If these buttons are performing on-air critical functions, such as delay control or studio switching, running a *Dual Supervisor* configuration is highly recommended.

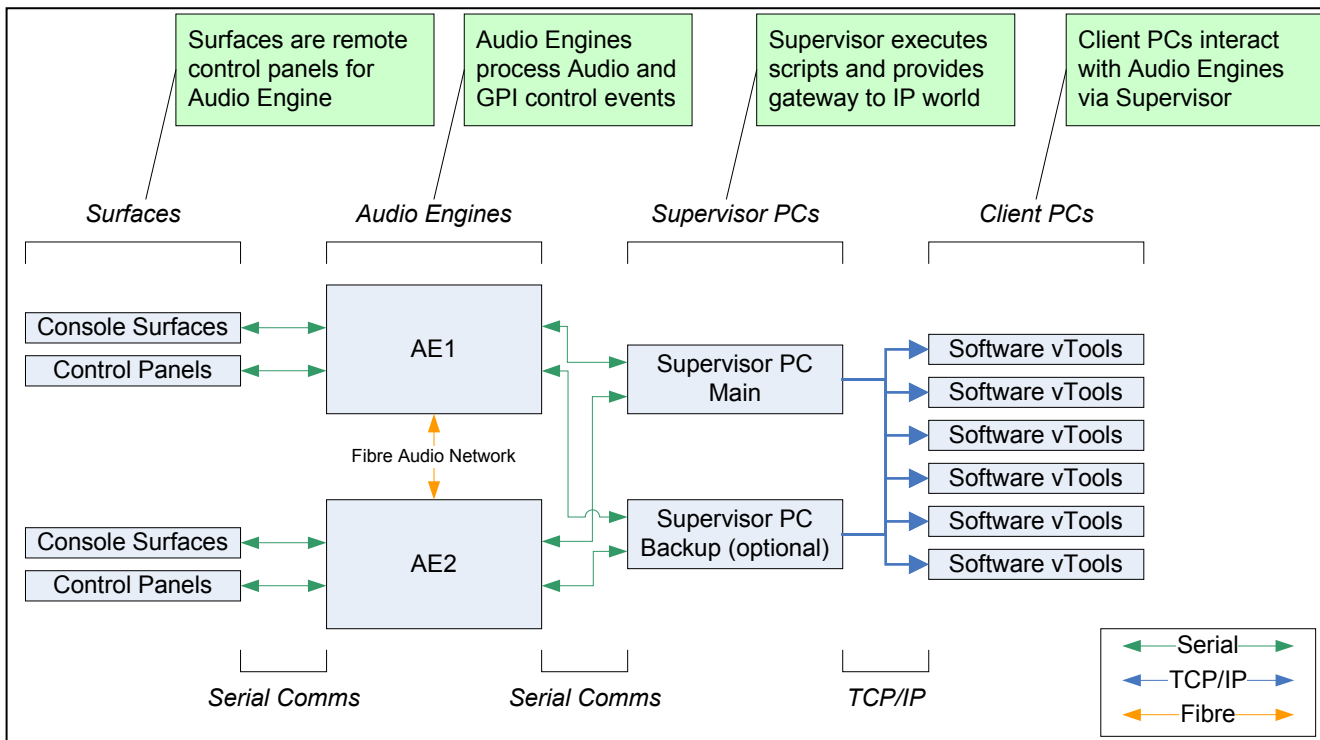


Figure 1 - Logitek System Architecture

Compatibility Matrix

The *Remora* is designed for use with all **Logitek Audio Engines**. The *Remora* retains compatibility with other surfaces for the majority of its features.

Support for Remora specific additional features has been progressively added to other components of the system. Remora v3.x firmware was released in November 2005.

Following is the minimum software release version/date that is required for *Remora* support.

Component	General Support	Additional Features
AE-C2 Controller Card	v3.x	v3.25 Nov 2005 for extra cue/aux meters
AE-C6 Controller Card	v3.x	v3.63 Nov 2005 for extra cue/aux meters
SharcAttack DSP	v3.x	v3.60 Jun 2005 or later v3.63 Nov 2005 for extra cue/aux meters
LoneSharc DSP	v3.x	Contact Logitek or your reseller
Supervisor	2002 / v3	v3.0 November 2005
CommandBuilder	2002	v3.0 November 2005
AEConfig	2002	v3.0 for 16 character

➔ *See Appendix A for Remora related release notes and version information.*

2 Unpacking

This section details what you should do when unpacking your newly arrived *Remora* surface.

Parts List

The exact list of parts received will vary depending on your order, but should generally include:

- 1 x *Remora* Power Supply
- 1 x fully assembled *Remora* frame, containing modules as ordered
- 1 x SCSI (or DB-15 in older systems) type connecting cable (surface to power supply)

You will receive a parts list with the system that is specific to the modules on your order.

Unpacking

Carefully unpack the cartons whilst looking for any signs of shipping damage. You may wish to save the shipping cartons until the operation of the system is verified.

Report any damage to the shipping carrier immediately. Verify that the contents of each box match the packing list and report any discrepancies immediately to **Logitek** in writing.

Contacting Logitek

In the event of a shipping problem, you can contact **Logitek Electronic Systems** in several ways:

U.S. Mail	Logitek Electronic Systems, Inc. 5622 Edgemoor Drive Houston, Texas 77081 USA
Telephone	877-231-5870 +1-713-664-4470 (outside U.S. and Canada)
Fax	+1-713-664-4479
Email	support@logitekaudio.com
Website	www.logitekaudio.com

3 Physical Installation

The *Remora* surface is designed to be mounted on a desk in a semi-permanent studio installation.

Power Supply Unit

The **Power Supply Unit** is designed for mounting on a wall or under a desk. If the supplied cables are not long enough to allow for convenient mounting, custom length cables can be ordered from Logitek.

The **Power Supply** is suitable for mounting in a studio environment and has been designed to be quiet. The modules are a low-noise type and all electronics is solid-state (no mechanical relays).

The **Power Supply** contains a switch-mode supply, with a power indicator on the top panel.

Power inlet is via a single IEC connector on the rear of the **Power Supply Unit**. A power cable is supplied only for US installations. International customers may contact their reseller for the supply of power cables if required.

As the power supply is of switch-mode type, there is no voltage selection required.

Remora Frames

A number of *Remora* frame sizes are available, depending on the total number of faders and control modules. Each module takes up a space in the frame.

The frame will be shipped with the modules connected and fitted as ordered. These modules can be moved if desired. If moving modules, please retain the same internal COM port connections as the surface shipped with. If the COM port connections are changed, the device addressing for those modules will change.

Connections

The *Remora* **Power Supply Unit** contains the control and GPI circuitry for the console. It connects to the **Logitek Audio Engine** via a serial link. The **Power Supply Unit** connects to the **Surface** using a SCSI (or DB-15 in older systems) cable. This cable carries the communication between the surface and the **Power Supply Unit**. A basic connection diagram is shown in Figure 2 below.

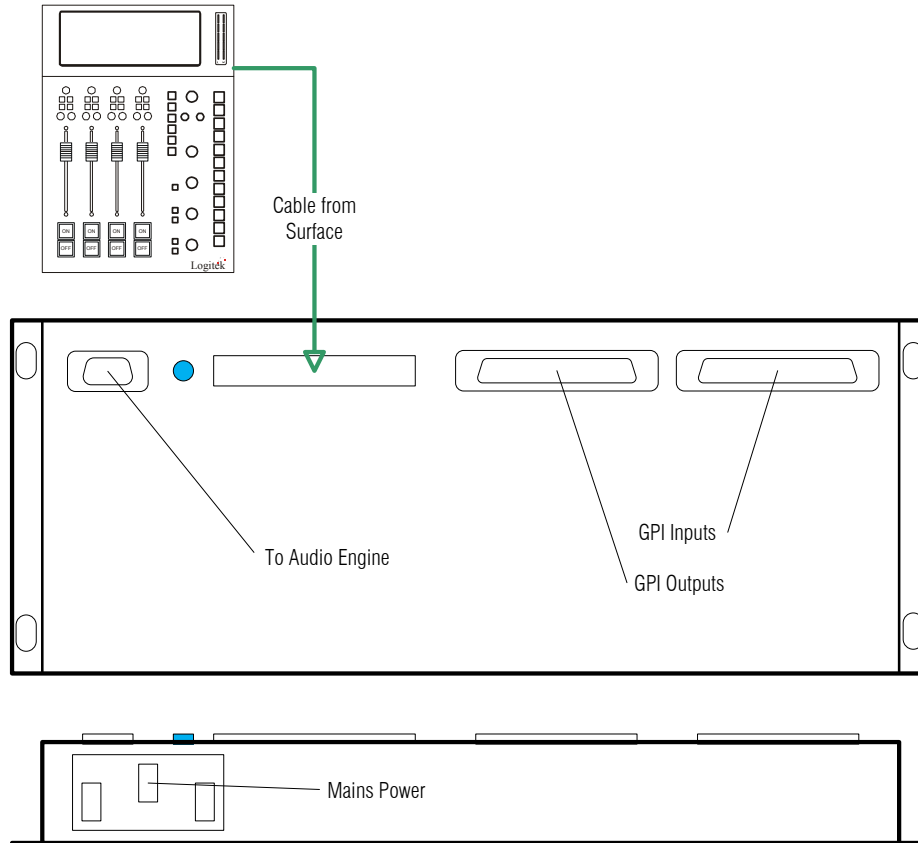


Figure 2 - Remora Connection Diagram

Surface to PSU

A single SCSI (or DB-15 in older systems) cable connects the **Power Supply Unit** to the **Surface**.

The required cable will be supplied with your *Remora*. The length of this Standard cable is 10' (3m).

If the supplied cable is not long enough, you can order SCSI style cables from **Logitek Electronic Systems** or a local supplier. The connectors are standard SCSI (or DB-15 in older systems) style Male plugs, wired straight through (all pairs connected).

Alternative wiring schemes may reverse or drop pairs, so please ensure you specify straight through wiring if purchasing custom-made cables.

→ *See Appendix C for connector pinouts.*

Internal Module Connections

Inside the frame, RJ connectors residing on the rear of the LCD display in the Control Module are used to connect to other modules. Connectors 1 and 2 are for the power supply. Connectors 3, 4 and 5 are for expansion modules.

PSU to Audio Engine

The *Remora* **Power Supply Unit** connects to the **Logitek Audio Engine** using a balanced serial link. Standard CAT5 or better cabling is recommended. The cable required will depend on the type of controller card and connectors in the **Audio Engine**.

New systems are supplied with the AE-C6 controller card, which connects using an RJ45 at the **Audio Engine**. Older Engines running the AE-C2 card (supplied in 2004 or earlier) have a DB9 connection at the **Audio Engine**.

You can use a dedicated CAT5 cable or existing structured cabling. If using structured cabling systems, care should be exercised to ensure the **Audio Engine** connections are not confused with other network outlets and that the link is not unintentionally “un-patched”.

↪ *See Appendix C for connector pinouts.*

GPIs

The *Remora* Surface has 12 GPI inputs and outputs for control of local studio devices.

GPI outputs are driven by optically-isolated, non-polarized, solid state switches, rated at 500ma at 50V AC/DC, with surge to 2A. These solid state devices do not conduct at low voltage, so cannot switch an audio input. However, they are suitable for most control signals, and avoid problems with relay contacts being damaged by surges. Caution should be exercised to avoid overloading the switches. If driving a high current device, we recommend driving an external relay or switch. The GPI inputs are a current source to +5VDC that is pulled to ground to activate. This makes it suitable for control by push-button, relay or open collector. A diode protects against static and over voltage. See the wiring diagram for polarity information if using non-standard activation methods.

GPI connectors are DB25. As wiring schemes vary from station to station, these cables are not supplied with the surface, but can be easily made onsite to suit requirements.

The analog inputs are activated by bringing the top row pin to ground on the bottom row pin, pin 1 to ground on pin 14 and so on. A male DB25 connector is required to connect to the *Remora* **Power Supply Unit**. We suggest making a single-ended cable with tails for punch-down to Krone style block or similar. There is one connector for GPI inputs and another for GPI outputs.

↪ *See Appendix C for connector pinouts.*

4 Configuration

This chapter covers basic configuration information, relating specifically to the *Remora* surface.

Audio Engine setup and configuration is covered in detail in the following manuals:

- *Logitek Audio Engine Reference Manual*
- *Logitek AEConfig Reference Manual*

COM Port Configuration

The *Remora* contains 5 COM ports. These ports are internally mounted on the rear of the LCD display in the control module and are used to connect to the power supply and each expansion module (where fitted).

Use the Configuration Switch (S1) to select the appropriate number of faders for your surface. The Configuration Switch is also located on the rear of the LCD display inside the Control Module. The switch settings are shown below.

Position 1	4 Fader
Position 2	10 Fader
Position 3	16 Fader
Position 4	22 Fader



All other positions are reserved. Setting to other switch positions will cause unpredictable operation or Control Surface failure.

LCD Screen contrast

The contrast for the LCD screen is set using the trimmer control (R13). This is located on the rear of the LCD screen and is present on both the Control Module and any Expansion Modules you may have.

Audio Engine Configuration

Configuration of the **Audio Engine** is done in *AEConfig*. Currently, there are no specific features that are set by *AEConfig* – configuration is as per other **Logitek Surfaces**.

AEConfig includes specific DSP table entries for the *Remora*.

- ➔ *See the AEConfig User's Manual for information on configuring Audio Engines.*

CommandBuilder Triggers

The *Remora* surface contains many programmable buttons and features. These features are scripted in “triggers” in *CommandBuilder*, and executed by *Supervisor*.

→ *See the CommandBuilder User’s Manual for information on writing Triggers.*

The *CommandBuilder* manual includes details and examples of *Remora* specific features. The programming of these features does require a certain level of familiarity with the system. If you need assistance, please contact **Logitek Electronic Systems** or your reseller.

Device & Bus Addressing

Each device (such as a fader input or button panel) requires its own **Device Number**. Within that device, each button, lamp and feature has a **Bus Number**. Together, the **Device** and **Bus Numbers** allow the **Audio Engine** and **Surface** to communicate.

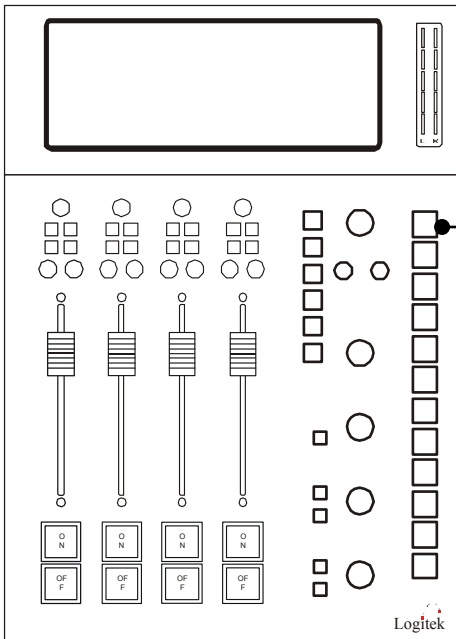
When configuring the *Remora’s* programmable buttons in *CommandBuilder*, you will require the **Device Number** and **Bus Number** for each button or lamp.

Device Numbers

When using **Device** addressing, we recommend you use the SURF# CHAN# notation in *CommandBuilder*. This provides more flexibility for future changes, and allows you to relocate the surface or re-use the code on another port by finding and replacing the SURF# instances. Shown below is the hex equivalent of the channels of a **Surface** connected to **Audio Engine** Port 1.

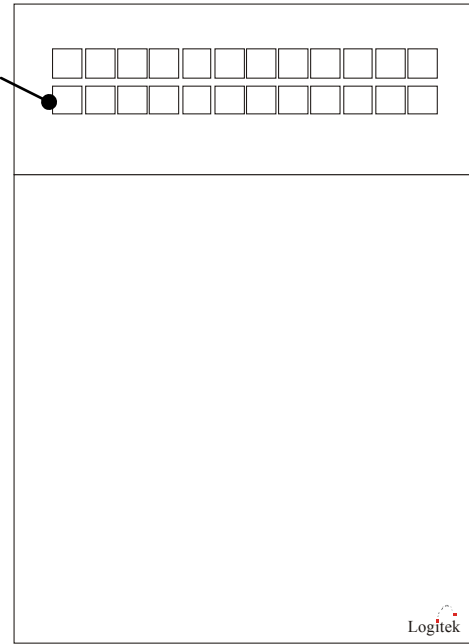
Port	Connector	Standard Module	Alternative	Channel (dec)	Port 1 Device (hex)
1	3	Fader 5-10	REM-24B	5 - 10	0F - 14
2	4	Fader 11-16	REM-24B	11 - 16	15 – 1A
3	5	Fader 17-22	REM-24B	17 - 22	1B - 20

Bus Numbers



Bridge Buttons
BUTT01 to 12

Softkey Buttons
BUS16 to 39



When addressing the bridge buttons on the Control Module, use the SURF# notation. When addressing the Softkey Buttons on the 24 button expansion module, use the SURF# and CHAN# notation.

5 Operation

At first glance, your **Logitek Remora** may appear a little daunting. But if you've had experience with broadcast consoles before, you'll soon be at home, finding your way around quite easily.

Logitek Electronic Systems has been manufacturing broadcast consoles for decades, so we understand how to make control surfaces that are both powerful and straightforward. During the design of the *Remora*, customers and operators provided feedback that helped shape the final product. So we're confident you'll find the *Remora* a joy to use on-air.

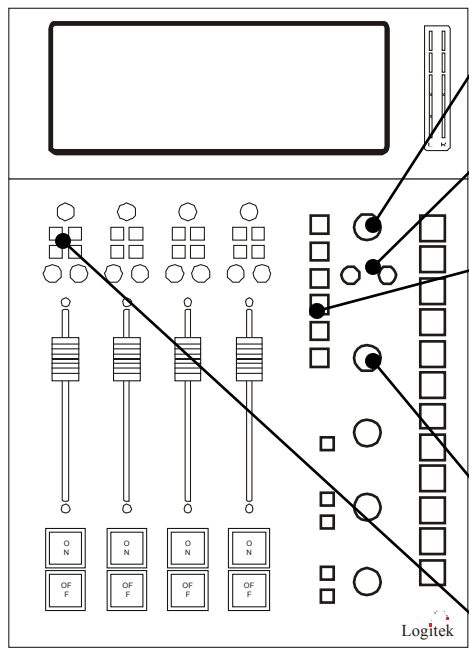
As much of the *Remora* is user-programmable, the specifics of how you use softkey functions will depend on your existing configuration. Following is a look at the Control Module, Fader Expansion Module and the 24 Button Module, and how the standard functions are used.

Remora Module

REM-4 (Control Module) – International (non-UK) Layout

The *Remora* Control Module is the first module, and will always be included with every *Remora* Console no matter the number of faders.

It contains 12 softkey buttons laid out vertically on the right hand side of the module. The bus numbers run from top to bottom.



Use the **SEL** (Select) wheel to change a selection. The selection buttons are explained below.

Use the **TAKE** (Left) and **CANCEL** (Right) buttons to accept or reject a change being made.

The **INPUT**, **MODE**, **PAN**, **TRIM**, **EQ** and **DYN** buttons are used in conjunction with a Fader's **CNG** button to enter the section for changing the value of each of those functions.

This pot and the three below it are used to control the level to their respective outputs; Cue, Studio, Headphone and Monitor.

These buttons control the changing, PGM, Aux 1, Aux 2, Aux 3, Talkback and Cue for their respective fader.

CNG

The **CNG** (Change) buttons appear on each fader, and the Studio, Headphone and Monitor controls. When pressed, for the Studio, Headphones or Monitor, a list of inputs appears on screen and you are able to scroll to the desired input using the **SEL** wheel and then change the routed input using the **TAKE** button. When pressed for a fader, you have the same option with the addition of **INPUT**, **MODE**, **PAN**, **TRIM**, **EQ** and **DYN** by pressing the appropriate button. When pressed, the button LED will illuminate. This then brings up the available options within the screen where the inputs previously appeared.



Each option must be ticked in AEConfig for the input in order to select it for the input.

P, 1, 2, 3

Pressing **PGM** will assign/de-assign the fader to the main Program bus. Pressing **1**, **2** or **3** will assign/de-assign the fader to that AUX bus.

TB

If the source has a return mix-minus, pressing **TB** sends the input assigned to the Takback In (usually the Announcer Mic) to that source. Press the button momentarily to lock on, or hold it down for push to talk.

CUE

Press the **CUE** button to hear the input on the internal cue (PFL) bus. Press again to turn **CUE** off for that fader. The cue bus may be pre or post-fader depending on your Engine and Input configuration. "Click down" Cue @ Infinity can be enabled in your **Engine** configuration to automatically select cue when the fader is all the way down.

Split

The **SPLIT** button for the Headphones will enable the Split Cue mode. When a fader is on Cue, the headphone source mixes to the left ear, and the Cue bus is sent to the right ear.

DIM

Pressing the **DIM** button will turn on the Monitor Dim.

TAKE/CANCEL

Press **TAKE** to accept a choice. Use **CANCEL** to exit the menu without making a change.

Input

After pressing the **CNG** button, press the **Input** button to allow scrolling of available inputs for a fader using the **Select** wheel. Press the **TAKE** button to accept and exit the menu.

Mode

After pressing the **CNG** button, press the **Mode** button to allow scrolling of available modes for a fader using the **Select** wheel. Press the **TAKE** button to accept and exit the menu. This function may not be enabled on certain inputs, depending on your **Audio Engine** configuration.

Pan

After pressing the **CNG** button, press the **Pan** button to move the balance of a fader left or right by winding the **Select** wheel anticlockwise or clockwise. The source is panned as you turn the wheel. Press the **TAKE** button to accept and exit the menu. This function may not be enabled on certain inputs, depending on your **Audio Engine** configuration.

Trim

After pressing the **CNG** button, press the **Trim** button to move the **TRIM** between **-10 dB** and **+10 dB** by turning the wheel anticlockwise or clockwise. The trim level is adjusted as you turn the wheel. Press the **TAKE** button to accept and exit the menu. This function is enabled on all inputs.

EQ

After pressing the **CNG** button, press the **EQ** button to edit the EQ settings for an input, use the **Select** wheel to select a parameter, and then the **Cue** wheel to adjust. The parameters are:

Hi Freq	High Frequency	4,000	to	20,000	Hz
Hi Gain	High Gain	-18	to	+18	dB
HiM Freq	High-mid Frequency	1,000	to	20,000	Hz
HiM Gain	High-mid Gain	-18	to	+18	dB
HiM BWid	High-mid Bandwidth	10	to	4,000	Hz
LoM Freq	Low-mid Frequency	30	to	8,000	Hz
LoM Gain	Low-mid Gain	-18	to	+18	dB
LoM BWid	Low-mid Bandwidth	10	to	4,000	Hz
Low Freq	Low Frequency	30	to	1,000	Hz
Low Gain	Low Gain	-18	to	+18	dB
Scale	Scale	1	to	1000	
Status	EQ Status	In	or	Out	

Press the **TAKE** button again to exit the menu. This function may not be enabled on certain inputs, depending on your **Audio Engine** configuration.

DYN

After pressing the **CNG** button, press the **DYN** button to edit the DYN settings for an input, use the **Select** wheel to select a parameter, and then the **Cue** wheel to adjust. The parameters are:

LimThresh	Limiter Threshold	-20	to	+20	dB
LimRatio	Limiter Ratio	1	to	40	
LimAtkTm	Limiter Attack Time	0	to	20	μ Sec
LimRelTm	Limiter Release Time	10	to	990	mSec
ComThresh	Compressor Threshold	-40	to	0	dB
ComRatio	Compressor Ratio	1	to	40	
ComAtkTm	Comp. Attack Time	5	to	50	mSec
ComRelTm	Comp. Release Time	100	to	6000	mSec
Scale	Scale	1	to	1000	
Status	DYN Status	In	or	Out	

Press the **TAKE** button again to exit the menu. This function may not be enabled on certain inputs, depending on your **Audio Engine** configuration.

Meter

The meters are multifunction LED. They show typical VU levels as well as peaks. The meter in the Control Module indicates Monitor level. For *Remora* 10 and larger consoles, the meter on the *REM-6* Fader Expansion Module farthest to the left will always display Program. This is a fixed selection and cannot be adjusted.




On *Remora* 16 and 22 units, the Meters for the center *REM-6* Fader Expansion Module/s will not display meter data. This is by design.

The Meter LEDs are in a four color arrangement as follows:

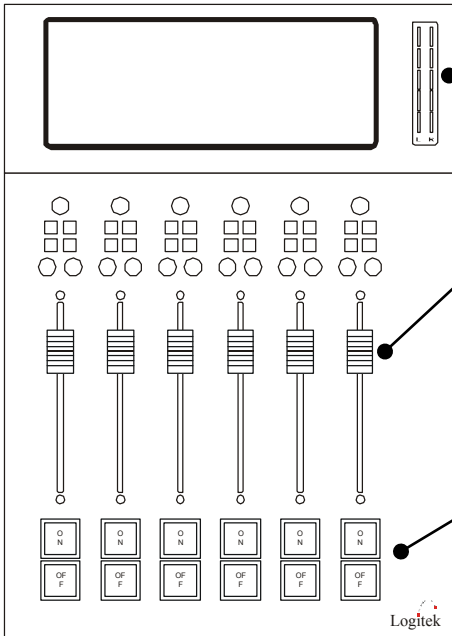
Green	-35 to -1 dB (normal VU operating range)
Yellow	0 dB (reference point)
Orange	+1 to +3 dB (VU warning range)
Red	+4 to +16 dB (normal range for peaks)

The digital output zero VU corresponds to -20 dBFS and cannot be changed.

-  **TIP:** In Version 3.x of the **Audio Engine**, you can override the Monitor meter in the *REM-4 Control Module*. This will make it display something other than what is selected in the monitors. To do this, simply route something to Monitor Meter In (device2C on Port 1, device54 on Port 2, and device6a on Port 3) and turn on bus0 for that device (2C/54/6A). This is useful for studios with 4 fader *Remoras* that monitor air but wish to always have Program in the meters.

REM-6 (Fader Expansion Module) – International (non-UK) Layout

The *Remora* Fader Expansion Module contains 6 faders, a screen and a meter. Fader functionality is identical to that outlined in the **REM-4** section above.



The meters are multifunction LED. They show typical VU levels as well as peaks. The meter in the Control Module indicates Program level. Additional meters in expansion modules indicate Monitor level.

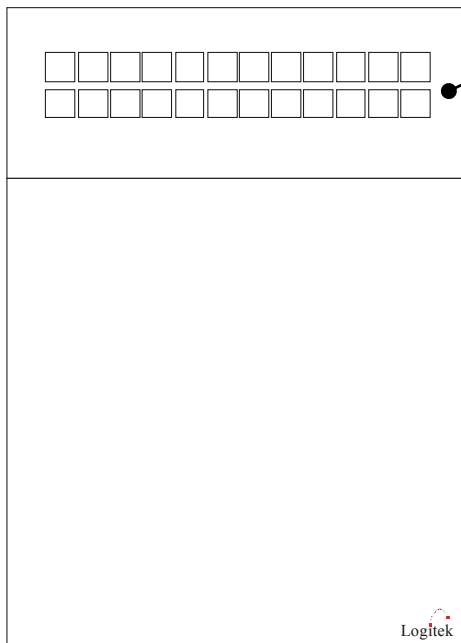
Moving the **FADER** up or down will increase or decrease respectively the level of the assigned source. Fader range is from infinity to +10dB.

Each fader has illuminated **OFF** and **ON** push buttons for that channel. These are used to put sources to air, in conjunction with the **PGM** and **AUX** mix busses. Both the **OFF** and **ON** buttons can have GPI remote control of sources, if configured in your **Audio Engine**.

In some cases, the operation of AUX busses may be configured to be independent of the **ON/OFF** switch and/or the **Fader** gain setting.

REM-24B (24 Button Expansion Module)

The *Remora* 24 Button Expansion Module contains 24 softkey buttons laid out horizontally on the top of the module. The bus numbers run from top left to bottom right.



The 24 softkey buttons are programmable using triggers in *CommandBuilder*.

6 Maintenance

The *Remora* uses multi-layer boards with surface mount technology. As such, the majority of the console is not user-serviceable. However, there are some basic tasks that can be performed by suitably qualified technical personnel.

Warranty

Logitek Electronic Systems will honor the warranty of the system when conducting field maintenance, provided:

- Repairs or updates only relate to recommended and documented procedures
- Care is taken and procedures are followed
- Repairs are conducted by suitably trained or experienced service personnel

If you do not feel comfortable performing maintenance or repairs, please do not proceed. If you would like advice prior to attempting a repair, please contact **Logitek Electronic Systems** or your reseller.

Firmware Updates

Each module has a firmware chip that is field upgradeable. **Logitek Electronic Systems** or your value-added reseller may from time-to-time supply firmware updates to add new features or fix bugs. A list of firmware versions is contained in Appendix A.

Each module type has specific firmware that only runs on that module. When fitting updated firmware ROMs, take care to use the correct chip for that module. Firmware chips are labeled with the module code, version and date.

A PLCC extractor tool is recommended for removing ROMs. Take care to not bend the pins of the chip when removing it.

Tools Required

- Hex/Allen Key –1/16" (Older models)
- Phillips Screwdriver
- PLCC Extractor tool

Procedure

It is essential that the *Remora* be completely powered off during a ROM upgrade.

1. Remove the six screws from the required module.
2. Carefully remove the module from the frame.
3. Disconnect the COM cable from the RJ45 connector.
4. Use the PLCC extractor to carefully remove the existing ROM chip, exercising caution so the pins are not bent.
5. Insert the new ROM chip by lining up the notch on the top-left of the chip and gently pressing it in.
6. Reconnect the module COM cable.
7. Replace the module in the frame, and screw it back in.



Anti-static precautions should be taken when replacing firmware chips. In addition, care should be taken with the module components to ensure no damage is done.

Component Replacement

The *Remora* spares kit contains commonly used physical components, including faders and switches, which can be replaced by station technicians.

Fader Replacement

The *Remora* uses a **Selmark** fader as standard. **Penny & Giles** faders can be supplied as an option by **Logitek Electronic Systems** or your reseller.

No audio is carried through the fader, just control signals. The fader can be easily replaced with a spare from the spares kit, **Logitek Electronic Systems** or your reseller.



Whilst the **Selmark** and **Penny & Giles** faders are electrically identical and fit into the same mounting holes, they use different knobs. Therefore, it is advised to replace **Selmark** faders with **Selmark** and **Penny & Giles** with **Penny & Giles**.

Selmark faders have a light brown casing and no label. **Penny & Giles** faders have either a black metal or black plastic casing and are labelled as **Penny & Giles**. See Figure 3 below.

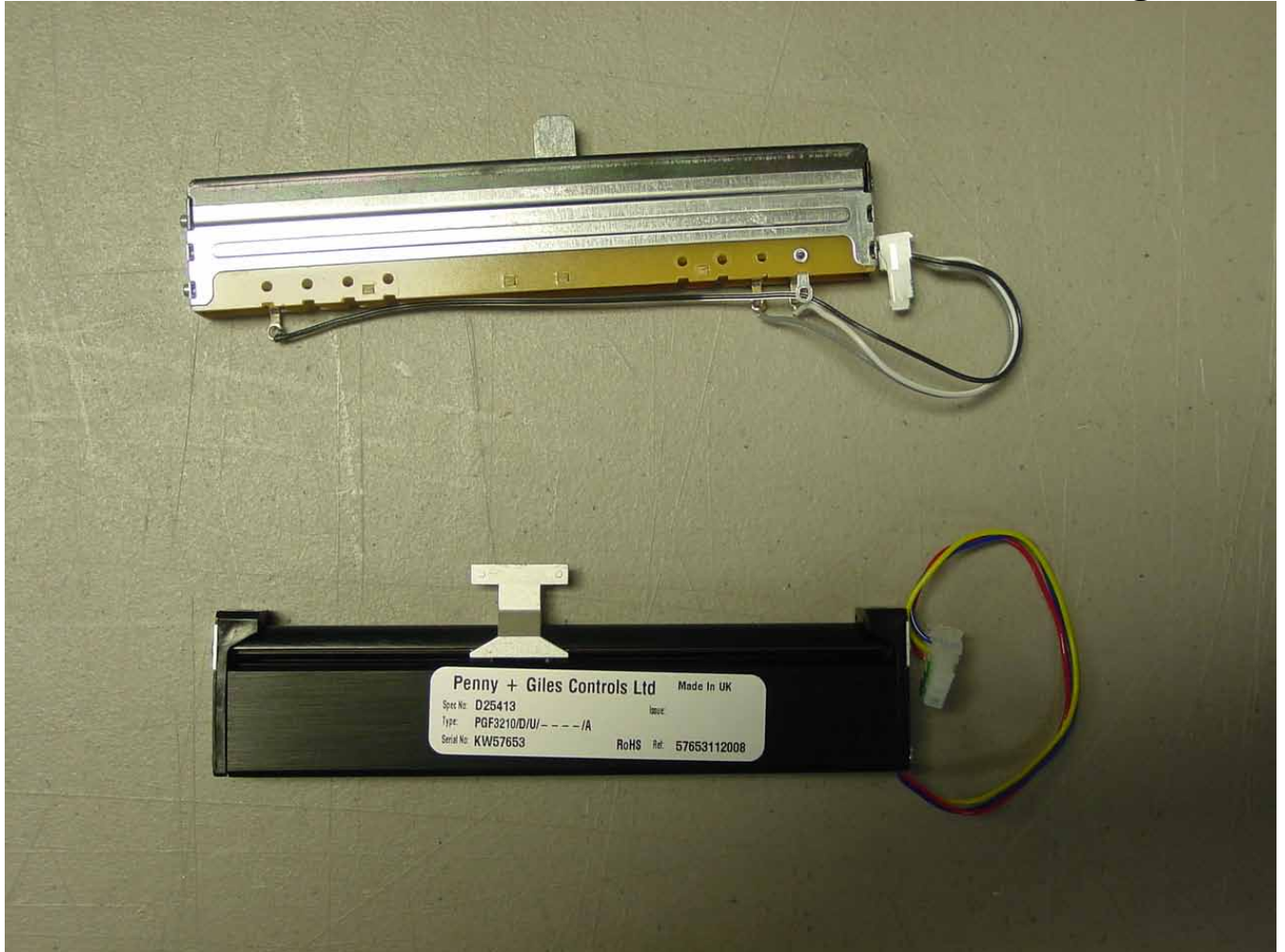


Figure 3 - Remora Fader Types

Both fader types are available for purchase from **Logitek Electronic Systems** or your reseller.

To replace a fader:

1. Remove the six screws from the required module.
2. Carefully remove the module from the frame.
3. Disconnect the fader from the main board.
4. Remove the slider cap.
5. Remove the two hex screws that mount the fader to the module.
6. Fit the replacement fader to the module using the two hex screws.
7. Replace the slider cap.
8. Reconnect the fader connector, ensuring the same polarity as the other fader on the module.
9. Replace the module in the frame, and screw it back in.

Module swap-out

If you need to swap a module with an on-site spare, you will need to power off the surface before doing so.

More Assistance

If you would like more assistance with maintenance and service, please contact **Logitek Electronic Systems** or your reseller.

You can also post questions and review other users' experiences at the **Logitek** support forum. See www.logitekaudio.com and follow the links to Tech Support Forum.

Appendix A Release Notes

Release Notes

The following notes are relevant to the **Logitek Remora** Surface.

Known Issues

As of August 2009, the following known issues exist with the **Logitek Remora** Surface:

1. The *Remora* does not support Small Text on the REM4 wedge. Small Text does work on REM6 modules.
2. The *Remora* message arrow overwrites the Delay display when activated on the right hand faders of a REM4.
3. The *Remora* message arrow deletes too much text on the REM4 wedge when restoring after a message arrow.

Appendix B Specifications

Remora Frames

Remora4 (4 fader frame)

Dimensions 11.5" W x 13" D x 6" H (290 mm x 330 mm x 150 mm)

Weight 12.5 lbs (6 kg)

Remora10 (10 fader frame)

Dimensions 22" W x 13" D x 6" H (560 mm x 330 mm x 150 mm)

Weight 21.5 lbs (10 kg)

Remora16 (16 fader frame)

Dimensions 32.5" W x 13" D x 6" H (830 mm x 330 mm x 150 mm)

Weight 30.5 lbs (14 kg)

Remora22 (22 fader frame)

Dimensions 43" W x 13" D x 6" H (1090 mm x 330 mm x 150 mm)

Weight 39.5 lbs (18 kg)

Remora Modules

Control Module

No of faders 4

- Features** The Control Module provides the following features:
- Illuminated on/off and control start/stop buttons
 - Penny & Giles® conductive plastic faders (optional)
 - Dedicated controls for six bus assigns, default input selection and talkback insertion
 - LCD screen and three rotary controls allow access to the input router control, input mode control, input trim level, pan/balance control, aux bus assigns, 4-band equalizer and dynamics processor
 - Color LCD screen also displays input meters and the 8 or 16-character source name
 - 1 stereo pair, -35 to +18 VU and peak meter
 - 12 buttons which are programmable via *CommandBuilder*. Possible uses include delay control (on, off, dump), remote record start/stop & tally, quick record, and other miscellaneous control functions.
 - Available in standard (International) or U.K. configurations

Expansion Fader Module

No of faders 6

- Features** The Fader Expansion Module provides the following features:
- Illuminated on/off and control start/stop buttons
 - Penny & Giles® conductive plastic faders (optional)
 - Dedicated controls for six bus assigns, default input selection and talkback insertion
 - Color LCD screen also displays input meters and the 8 or 16-character source name
 - 1 stereo pair, -35 to +18 VU and peak meter
 - Available in standard (International) or U.K. configurations

Softkey Module

- Features** The Softkey Module provides the following features:
- 24 buttons which are programmable via *CommandBuilder*. Possible uses include delay control (on, off, dump), remote record start/stop & tally, quick record, and other miscellaneous control functions.

Remora Power Supply

Dimensions 10" W x 6" H x 2" D (250 mm x 150 mm x 50 mm)

Voltage 110 - 230 VAC, automatically selected

Frequency 50/60 Hz

Consumption 25 W (Add 15 W for each addition fader expansion module)

Connections 1 port for connection to surface, 2 ports for GPI inputs and outputs, 1 DB9 for Audio Engine

Interfaces Includes 12 switch closure inputs and 12 relay outputs

Appendix C Pinouts

To Audio Engine

Connection to the **Audio Engine** is via a DB9 connector mounted on the rear of the **Power Supply Unit**.

Ports 1 & 2 (AE-C2)

Pin	Connection
1	Cue +
2	RS485 TX+
3	RS485 RX+
4	No connect
5	Ground
6	Cue -
7	RS485 TX-
8	RS485 RX-
9	No Connect

Port 3 (AE-C2)

Pin	Connection
1	No connect
2	RS485 TX+
3	RS485 RX+
4	No connect
5	Ground
6	No connect
7	RS485 TX-
8	RS485 RX-
9	No Connect

Port 1, 2 & 3 (AE-C6)

Pin	Connection
1	Cue +
2	RS485 TX+
3	RS485 RX+
4	No connect
5	Ground
6	Cue -
7	RS485 TX-
8	RS485 RX-
9	No Connect

Note that Port 3 on an AE-C2 does not have connections for digital cue audio to return to the **Control Surface**. If this port is used for a **Control Surface**, external wiring is required for cue audio.

GPIs

GPI connections are on DB25 connectors. We recommend terminating GPIs to Krone style (or similar) termination blocks.

GPI Inputs

Pin	Connection	Pin	Connection
1	GPI In 1	14	Ground
2	GPI In 2	15	Ground
3	GPI In 3	16	Ground
4	GPI In 4	17	Ground
5	GPI In 5	18	Ground
6	GPI In 6	19	Ground
7	GPI In 7	20	Ground
8	GPI In 8	21	Ground
9	GPI In 9	22	Ground
10	GPI In 10	23	Ground
11	GPI In 11	24	Ground
12	GPI In 12	25	Ground
13	No connect		

GPI Outputs

Pin	Connection	Pin	Connection
1	GPI Out 1A	14	GPI Out 1B
2	GPI Out 2A	15	GPI Out 2B
3	GPI Out 3A	16	GPI Out 3B
4	GPI Out 4A	17	GPI Out 4B
5	GPI Out 5A	18	GPI Out 5B
6	GPI Out 6A	19	GPI Out 6B
7	GPI Out 7A	20	GPI Out 7B
8	GPI Out 8A	21	GPI Out 8B
9	GPI Out 9A	22	GPI Out 9B
10	GPI Out 10A	23	GPI Out 10B
11	GPI Out 11A	24	GPI Out 11B
12	GPI Out 12A	25	GPI Out 12B
13	No connect		

To Surface

Connection from the *Remora* PSU to the Surface is via a DB15 (older models) or SCSI Cable. When using a DB15, the DB15 breaks out into 2 RJ45 connectors on the Control Surface board, the pinouts are shown for reference.

Power Supply (DB15)

Pin	Connection	Pin	Connection
1	Cable 2 Pin 1	9	Cable 2 Pin 5
2	Cable 2 Pin 3	10	Cable 2 Pin 6
3	Cable 2 Pin 4	11	Cable 2 Pin 8
4	Cable 2 Pin 7	12	No connect
5	Cable 1 Pin 1	13	Cable 1 Pin 2
6	Cable 1 Pin 3	14	Cable 1 Pin 5
7	Cable 1 Pin 7 & 8	15	Cable 1 Pin 4 & 6
8	Cable 1 Pin 2		

Surface Cable 1 JP17 (RJ45)

Pin	Connection	Pin
1	White-Green	5
2	Green	13
3	White-Orange	6
4	Blue	15
5	White-Blue	15
6	Orange	14
7	White-Brown	7
8	Brown	7

Surface Cable 2 JP11 (RJ45)

Pin	Connection	Pin
1	White-Green	1
2	Green	8
3	White-Orange	2
4	Blue	10
5	White-Blue	3
6	Orange	9
7	White-Brown	4
8	Brown	11

Appendix D Spares Kit

A spares kit is available from **Logitek Electronic Systems** or your reseller.

This kit contains mechanical parts that may need to be replaced in the life of a console.

Contents

The *Remora* spares kit contains the following:

- 2 x Fader
- 1 x Fader On/Off switch
- 3 x Red switch
- 3 x Yellow switch
- 3 x Green switch
- 1 x Rotary encoder control