

# **via Fader**

## **Outboard Fader System**

Models VF10M and VF16M

### **Reference Manual**



**speck electronics**

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## Edition

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First Printing - February 2019

Edition 2 - November 2019

Edition 3 - March 2025

Speck Electronics  
341 East Alvarado Street  
Fallbrook, California 92028  
USA  
1+760-723-4281  
www.speck.com

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# Introduction

Thank you for purchasing our via Fader Outboard Fader System. The via Fader (V.F.) has operational features that are easy to understand and you should be up and running in no time. If you are unfamiliar with audio equipment or audio signal flow, it is recommended that you read this manual. If you have any questions regarding the V.F. or any Speck product, do not hesitate to contact Speck Electronics.

Speck Electronics  
341 E. Alvarado Street  
Fallbrook, CA 92028  
Phone: +760-723-4281  
Email: [techsupport@speck.com](mailto:techsupport@speck.com)  
[www.speck.com](http://www.speck.com)



Model VF16M



Model VF10M

## General Description

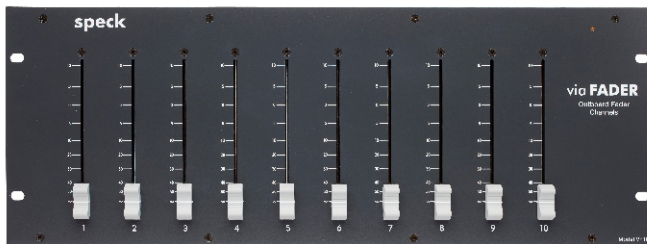
The via Fader is available in 4 models:

**VF10** - 10 Outboard Fader Channels

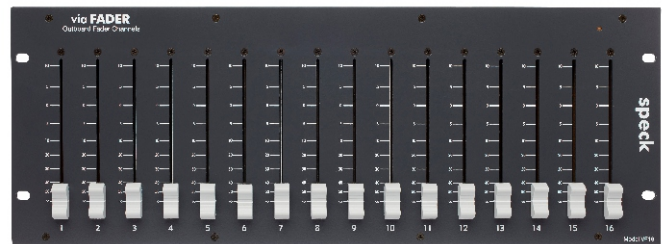
**VF16** - 16 Outboard Fader Channels

**VF10M** - 10 Channel Outboard Fader System with mix assign and master outputs

**VF16M** - 16 Channel Outboard Fader System with mix assign and master outputs.



Model VF10



Model VF16



Model VF10M



Model VF16M

This manual has been prepared for the VF10M and VF16M. **Unless otherwise noted, all references in this manual will be for the via Fader Model VF16M, the 16 fader version with the mix section.** There is no operational difference between the two models except for the number of fader channels.

The via Fader (V.F.) is an outboard fader system available with 10 or 16 slide fader channels. No VCA's, no CMOS switching, and no A/D - D/A converters... just 100% analog signal path.

Each fader channel has the necessary input and output electronics to allow the V.F. to interface to any balanced, unbalanced, transformer, or transformer-less line level signal. But most importantly... no additional mixer or audio interface is required. The V.F. has high headroom that will handle balanced signals up to +28dBu. All audio inputs and outputs are fully balanced and available on DB-25 and TRS connectors.

With its clean, uncluttered layout, the V.F. can be placed in a convenient desktop location or installed in your 19" rack.

The V.F. can be used as part of a 500 series Micpre → Compressor → Equalizer channel strip, for external DAW summing, or as a line mixer for synths and samplers. In some cases, the V.F. can eliminate the need for a mixing console in your studio. The master section has balanced inserts on the mix outputs so you can patch your own external preamps to add character and color to your mix.

## via Fader VF10M and VF16M Features

### Each fader channel has:

- Active-balanced input and output on a DB-25 connector.
- 100mm slide fader
- 10dB gain boost select for each channel.
- Mix assign switch that routes the fader channel to the main stereo mix
- Pan/balance control.
- In-place solo switch.

### Master Section includes:

- 100mm Stereo Master slide fader.
- Monitor level provides adjustment to dedicated monitor outputs.
- Balanced 1/4" TRS stereo mix outputs.
- Balanced 1/4" TRS stereo monitor outputs.
- Balanced 1/4" TRS insert sends and returns for the mix section.
- Mix link connectors.

## Standard Accessories

- **PS7 External Power Supply**
- **Mains Power cord (NA version only)**
- **DC Power Supply cable**
- **Operations Manual**

## Optional Accessories

- **VF-LINK1 Cable** - The VF-LINK1 cable will connect the mix busses of two via Faders.

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# Installation

## General

The following information should give you the basics on how to install the via Fader (V.F.) mixer and power supply. The proper installation of the V.F. requires a clear understanding of audio wiring, AC distribution, grounding, and shielding techniques.

If the V.F. is being installed into a larger studio or as an expander to a host console, it may be necessary to retain the services of someone experienced in these matters.

## Unpacking & Inspection

The V.F. is delivered in a special protective container and was carefully inspected both mechanically and electrically before shipment. All items should be physically free of marks and scratches and in perfect electrical order upon receipt. To confirm this, the mixer and power supply should be inspected for physical damage that may have occurred in transit. Any damage should be reported to your dealer or delivery company as soon as possible.

If the product is to be shipped to Speck Electronics for service or repair contact Speck Electronics for a Return Merchandise Authorization (RMA). Include the model number and serial number of the product. Place the product in the original container if available. If the original container is not used, wrap the product in heavy plastic before placing in an inner container. Use plenty of packing material around all sides of the product and protect panel faces with cardboard strips. Mark shipping container with "Delicate Instrument" or "Fragile", and insure the shipment for the proper amount.

## Cleaning

To clean the front panel, wipe the surface gently using a soft lint-free cloth to avoid scratching the panel or markings. Paper towels are not recommended. Commercially available window cleaner solutions may be used; however, the solution should be applied to the cloth and not the panel to avoid the seepage of liquid to the inside of the enclosure.

Do not use brushes or feather dusters to remove dust. This may cause dust to fall into the openings around the slide fader and pushbutton switches.

## Mechanical Installation

The via Fader was designed to be placed on a desktop or installed in a 19" rack. The location of the via Fader should be such that the operator has a clear, unobstructed view of the front panel from his/her normal operating position. The unit should also be within easy reach of the operators' normal position in order to facilitate the use of the front panel controls.

## Power Supply Installation

One of the primary reasons that the power supply of the V.F. is external is to insure that the power transformer enclosed within the power supply chassis maintains a safe distance from the active electronics of the V.F. For that matter, any device that has a strong magnetic power field should be kept at a reasonable distance from the V.F. and its audio cables.

Because the power supply does not use a cooling fan, it is silent and can be located in the same room as the mixer. However, it is important that the ventilation holes are not obstructed and that the unit is operated in free air to prevent overheating. Allow a minimum of 4" (100mm) of clearance from all ventilation holes.

**Use only the PS7 external power supply that is supplied with your V.F. mixer. Using any other power supply or power source will most definitely damage the V.F.**

The V.F power supply can operate with mains voltages of 100 VAC, 120VAC, 220 VAC, 230 VAC, or 240 VAC 50/60hz. Before switching "on" the power, you should verify that the voltage setting on your power supply is configured to match the AC mains requirements of your country.

**See Item [19] on page 16 for information on changing the AC mains operating voltage.**

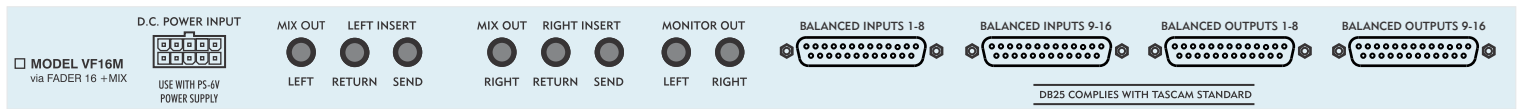
Your V.F is supplied with a gray DC power cable (Fig. 9, Page 16). Before connecting this cable between the power supply and the V.F make certain the power switch is set to the "off" position. To connect the power supply to the mixer, fit the 10 position connector on the DC power cable to the chassis mount receptacle on the rear of the V.F. labeled "DC POWER INPUT". Then fit the 6 position white connector on the DC power cable to the PS7 power supply connector labeled "DC OUTPUT".

The respective connectors are keyed so the plug and the receptacle can fit in only one direction.

## Physical Placement of Adjacent Equipment

Any device that emits a high EMI (Electro Magnetic Interference) or RFI (Radio Frequency Interference) energy field should be treated with suspicion. EMI is considered any unwanted signal which adversely affects the operation of the via Fader or the mixing system.

Electronic equipment such as power amplifiers, power supplies (especially wall mount type), video monitors, computers, certain synths and samplers must be located away from the V.F. and its associated cables. It may be necessary to alter the positions of certain equipment that you feel would cause buzzes or hums in the mixer system.



## Hooking up the via Fader

The via Fader will require a minimum of two (2) DB-25 harnesses to operate; one (1) for the inputs and one (1) for the outputs. A complete system will require a maximum of four (4) DB-25 harnesses and various 1/4" TRS cables.

**Care should be taken to support the DB-25 audio harnesses as not put stress on the chassis mounted DB-25 connectors.**

Due to the high performance of the V.F. it is recommended that you use only the highest quality audio cable. A high quality cable by definition is a cable that provides good mechanical strength, high microphonic noise immunity, high frequency response, low crosstalk, and 100% shielding ability. All audio cable used with the V.F. should be a 3 conductor foil shield type (2 inner conductors and a shield drain conductor). It is not recommended that the 2 conductor "off the shelf cables" be used.

All wire and cable interfaced to the V.F. should be terminated with high quality connectors. A 1/4" plug or XL connector should make a positive connection to its respective mating jack and provide adequate strain relief to its cable. All connectors should also have a metal shell to provide 100% shield for exposed conductors.

We do believe that "you get what you pay for" and advise not to purchase lower quality cables. We recommend that you purchase from a reputable cable manufacturer that uses brand name materials. Brand name cables include (in no particular order) Mogami, Canare, Belden, Gepco, Redco, and ProCo. Connector brands include Switchcraft and Neutrik.

When the time comes to actually interconnect your equipment, proceed slowly. Interfacing the many pieces of electronic equipment to your via Fader and audio system should be a logical and methodical process. Start by connecting only the monitor power amp (or active monitors) to the V.F. and then connect one line signal at a time; carefully listening and monitoring your progress. If a problem arises, such as a buzz, hum, intermittent signal, or nonexistent signal, stop at that point and solve the problem before proceeding.

## Linking two via Faders

The via Fader (V.F.) models VF16M and VF10M have 2 white nylon connectors (See Item [15]) on the bottom panel that can be used to link the left and right mix busses with a second V.F. When the two V.F.'s are linked together, one V.F. will become the MAIN and the other will become the EXPANDER (as shown below).

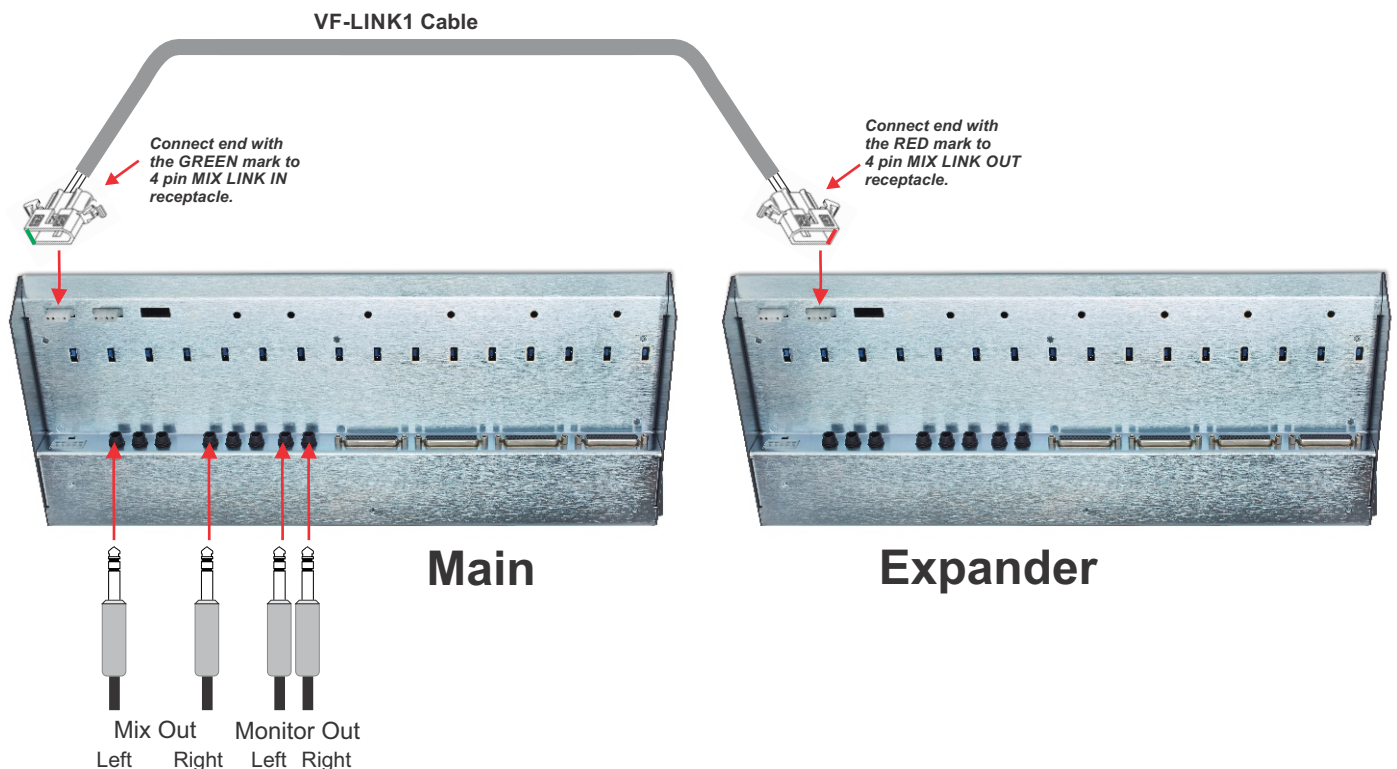
By linking two V.F.'s the stereo master fader, the monitor master, and all 1/4" TRS jacks on the V.F. that you chose to be the MAIN then become the master for both the MAIN and EXPANDER. All fader outputs on the DB-25 connectors remain independent.



Figure 1.

An optional VF-LINK1 cable (Figure 1) is required to perform the link. The VF-LINK1 cable is wired with a nylon plug on each end that connect to the chassis mounted receptacles and will automatically link the left and right mix busses. Connect the green marked plug to the V.F. that you want to be the MAIN mixer and connect the red marked plug to the V.F. that you want as the EXPANDER.

Contact your dealer or Speck Electronics directly to purchase the optional VF-LINK1 mix link cable.



# Operation



Model VF16M Top



Model VF16M Rear

## Overview

In this section we hope to give you basic information on the operation of the via Fader (V.F.) and adequately describe its controls, switches, and connectors.

The information in this section of the manual is intended to help with the technical process when using your V.F. Words alone could not adequately describe how to adjust the controls for every situation you might encounter with the V.F. You should experiment with settings and routing techniques to achieve the best results for any particular situation. Your ears should be your best gauge of how to adjust the settings on the V.F. to make the sound fit your requirements.

## Default Control Settings

Before any attempt is made to operate the V.F., it would be a good idea to set all controls to their neutral positions. This gives you a reference point to work from when adjusting controls and switches.

All slide faders should be set to their full off ( $\infty$ ) setting. All pan controls should be set centered. All pushbutton switches should be set to the out position.

When any future reference is made to the controls or switches on the via Fader, it will be assumed that they have been set to their neutral positions.

### Signal Flow Diagram

Use this channel signal flow diagram shown below as a reference when reading the descriptions of the controls, switches, and connectors [1] through [15] in this chapter.

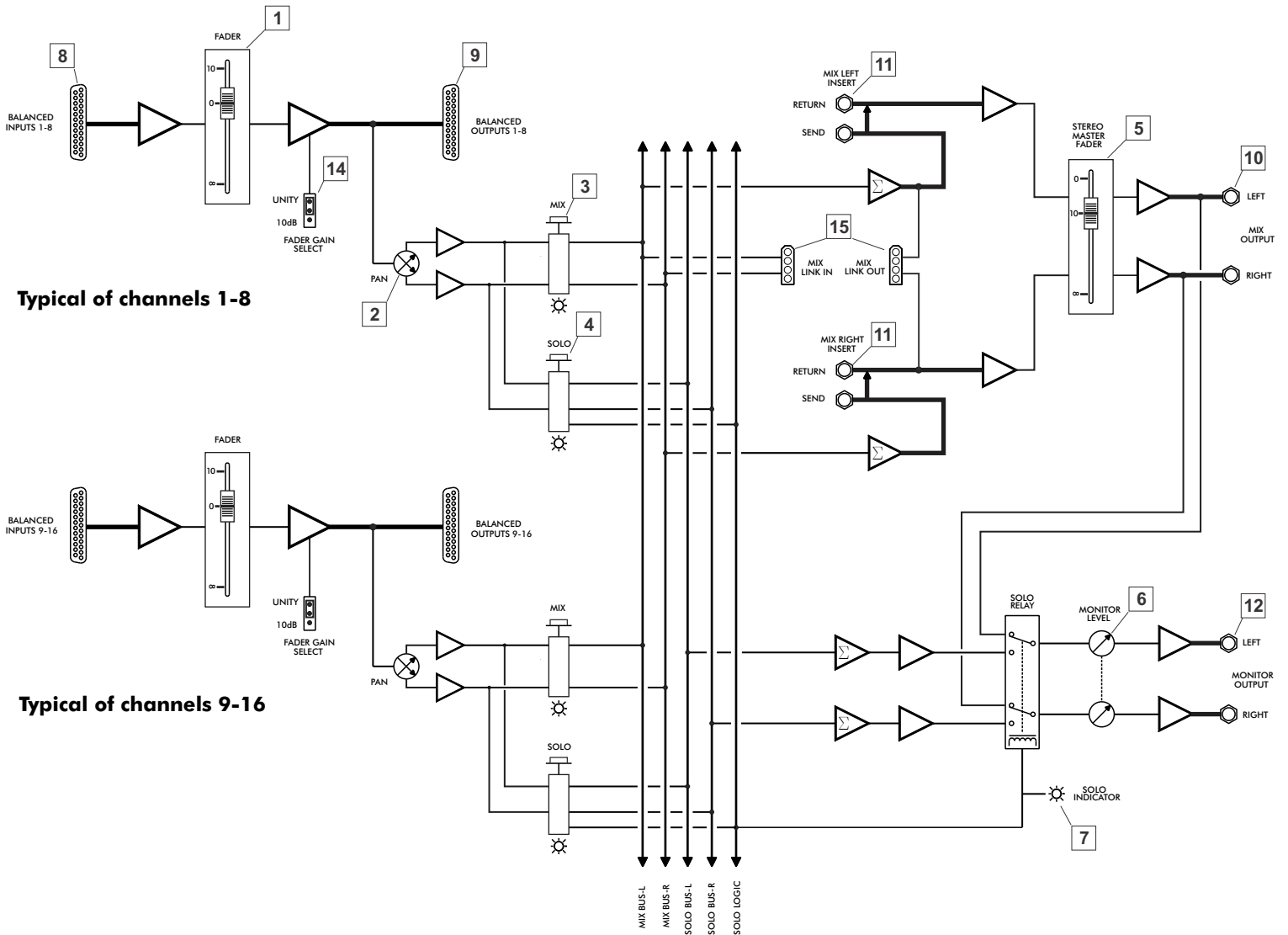


Figure 3. via Fader signal flow and reference designations.

# FRONT PANEL CONTROLS

## 1. Channel Fader

This 100mm slide fader adjusts the level of its respective channel and has a range of  $\infty$ dB to 10dB. The operation of the slide fader adjusts the level to both the fader line output and stereo mix. The “0” mark is the "unity gain" setting for the fader channel.

### Fader In to Fader Out Gain

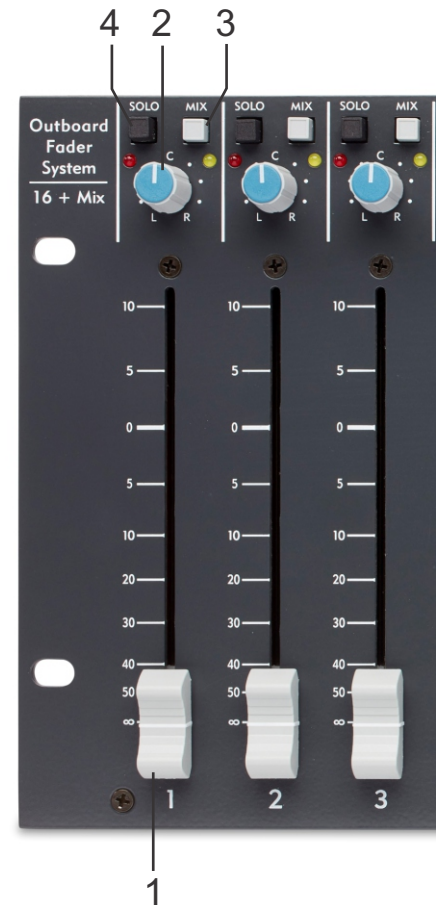
With a balanced +4dBu signal present at a DB-25 line input and its respective fader set to the “0” mark, the corresponding balanced DB-25 line output will be +4dBu.

### Fader In to Mix Out Gain

With a balanced +4dBu signal at one DB-25 line input, fader set to the “0” mark, Mix Switch enabled, Pan Control set to the center position, and Stereo Master Fader set to maximum “0” mark, the balanced left and right mix outputs will be +4dBu.

With the Gain Select [14] set for 10dB and the slide fader set at the “10” mark this will give the channel a total of 20dB of gain.

It is recommended that the fader channels be set to the "0" mark when the V.F. is being used exclusively as a summing mixer.



## 2. Pan Control

This center detent pan control places the channel anywhere in the stereo left/right mix when the Mix Assign Switch [3] is enabled.

## 3. Mix Assign Switch

The Mix Assign switch, in conjunction with the Pan Control [2], allows an input channel to be mixed to the left and right main mix output. The operation of the Mix Assign Switch does not affect the signal at the DB-25 line outputs. A yellow L.E.D. indicates that the channel has been assigned to the Mix outputs.

## 4. Solo Switch

Depressing this switch allows you to isolate any fader channel to the monitor outputs while maintaining stereo perspective - also known as In-Place solo.

Any combination of fader channels may be soloed without interrupting the flow of the signal to the main mix feed. A red LED on this switch as well as the Power/Solo [7] indicator will illuminate if a channel is soloed.

## 5. Stereo Master Fader

This 100mm dual slider is the master volume to the active-balanced mix outputs. The master fader has a range of  $\infty$ dB to 0dB.

Under normal operating conditions the fader should always be set at maximum. If it has to be pulled down a significant distance it indicates that the levels at the fader channels are too high and should be reduced.

## 6. Monitor Level Control

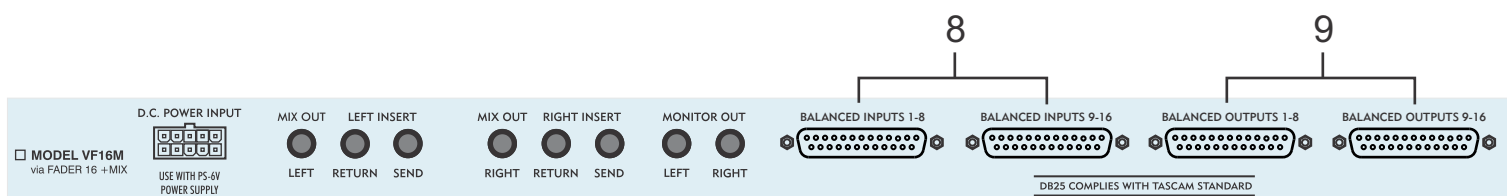
This adjusts the overall level to the stereo Monitor Output Jacks [12] on the rear panel. The Monitor Master typically controls the volume to a stereo power amplifier or powered speakers.

## 7. Power/Solo LED

This LED will illuminate green when the power is applied to the via Fader. When any solo is depressed, this LED will change from green to red.



# REAR PANEL



## 8. Fader Line inputs

There are two DB-25 connectors for the fader line inputs. These balanced inputs will accept a +4dBu reference signal.

*Note: Inputs 11-16 not used on the Model VF10M*

## 9. Fader Line outputs

There are two DB-25 connectors for the fader line outputs. With a balanced +4dBu signal present at the DB-25 line input and the slide fader set to the “0” mark, the balanced DB-25 line output will be +4dBu.

*Note: Outputs 11-16 not used on the Model VF10M*

The DB-25 connectors conform to the Tascam standard pin layout

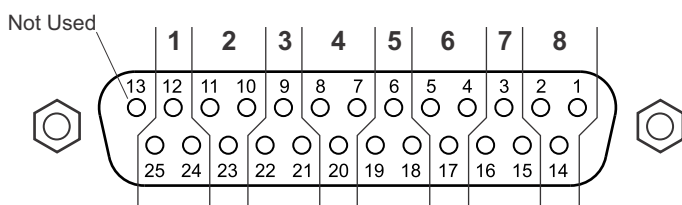
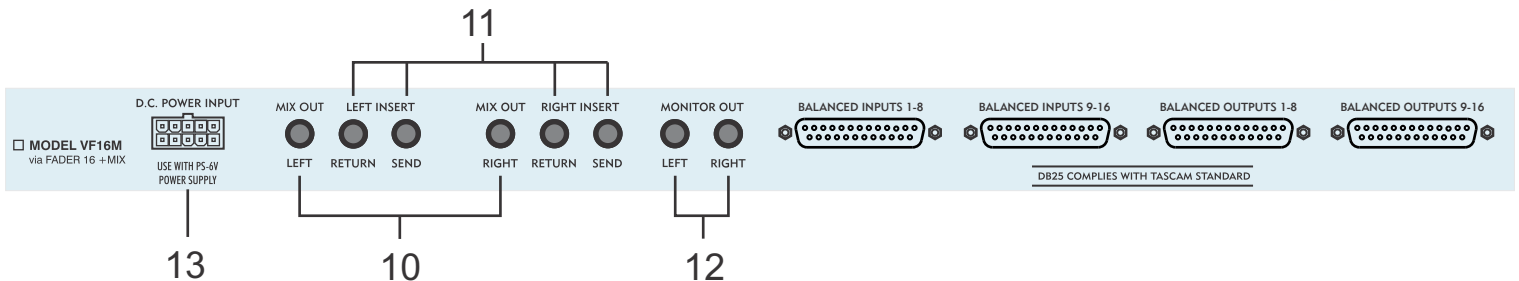


Figure 4

Channel	High	Low	Gnd
1	24	12	25
2	10	23	11
3	21	9	22
4	7	20	8
5	18	6	19
6	4	17	5
7	15	3	16
8	1	14	2

**NOTE - All active-balanced output circuits of the via Fader were designed for balanced lines and should only be connected to balanced inputs. If that is not possible and it is necessary to connect to an unbalanced input, care must be taken not to connect the low (-) terminal to ground. If the low (-) terminal of these outputs is connected to ground, the result may be a high level of audio distortion.**



### 10. Mix Output Jacks

These balanced 1/4" TRS phone type connectors are the left and right outputs for the stereo mix bus. The signal present at these jacks is adjusted by the Stereo Master Fader [5] on the top panel.

The pin configuration for all 1/4" TRS jacks is:  
**Tip=High (+), Ring=Low (-), Sleeve=Ground**

### 11. Mix Insert Jacks

The mix output section has balanced sends and returns available via separate 1/4" TRS jacks. The Insert Jacks provide line level inter-stage access to the mix bus before (pre) the stereo Master Fader. This means that any device interfaced to these jacks will not be affected by any adjustments of the Stereo Master Fader.

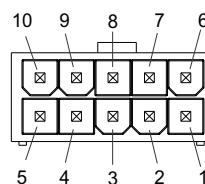
The insert jacks may be utilized to connect processors such as limiter/compressor or equalizers. Another function of the insert connectors is to let you connect your own external preamps to the via Fader should you want to experiment with a more "colored" sound.

### 12. Monitor Output Jacks

These balanced 1/4" TRS jacks are available for hooking up a power amp or powered speakers. The signal present at these jacks is adjusted by the Monitor Master [6] control on the top panel.

### 13. DC Power Inlet

The DC power cable from the power supply connects to this 10 pin rectangular connector. This connector and its respective plug are keyed so they will only fit in one direction. For power supply installation instructions, refer to the Interface Section in this manual.



PIN 1	+16.5 VDC
PIN 2	0 VDC
PIN 3	0 VDC
PIN 4	
PIN 5	-16.5 VDC
PIN 6	+16.5 VDC
PIN 7	0 VDC
PIN 8	
PIN 9	
PIN 10	-16.5 VDC

Figure 5

The connector illustration and chart as shown in Figure 5 represents the DC voltages to power the via Fader.

## 14. Gain Select

Each channel has a gain select jumper directly below the fader on the bottom panel (See Figure 6). The factory default setting is for 0dB of gain. 10dB of gain can be added to the channel by moving the position of the jumper. With the gain select set for 10dB and the slide fader set at the “10” mark this will give the channel a total of 20dB of gain.

## 15. Mix Link Connectors

The via Fader models with the mix section (VF16M or VF10M) have 2 white nylon connectors on the bottom panel that can be used to link the left and right mix busses with a second V.F. When two V.F.'s are linked together, one V.F. will become the MAIN and the other will become the EXPANDER. (See page 8)

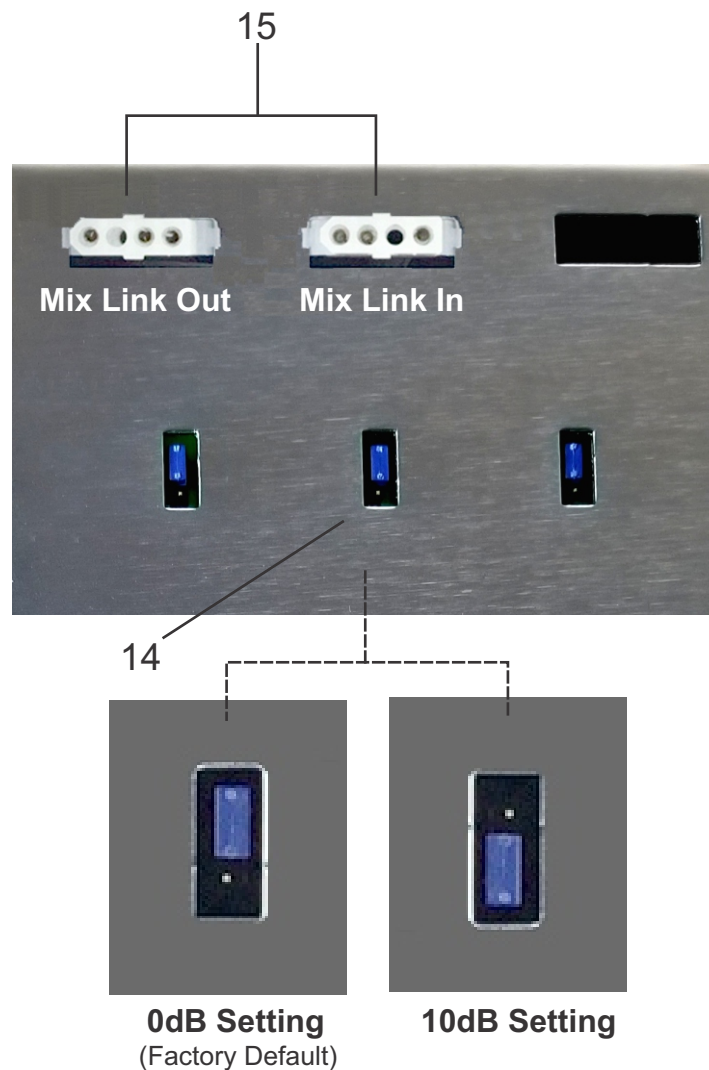


Figure 6.

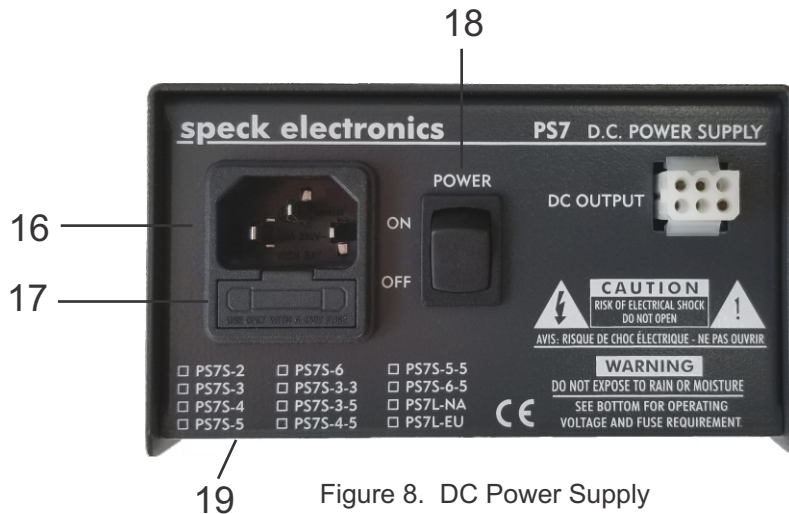


Figure 8. DC Power Supply



Figure 9. DC Power Cable

## 16. AC Power Inlet

This AC (mains) power inlet accepts a standard IEC power cord. Before connecting the power cord, make certain the power cord matches the operating voltage indicated on the voltage selector switch [19].

The ground pin of the power cord is internally connected to the chassis. **For safety reasons, do not lift the ground on the power plug by using a ground lift adapter.**

## 17. Fuse

The AC power inlet has integral fuse holder that uses a 5mm x 20mm slow blow (T) type fuse. To avoid the risk of fire, always replace the fuse with the correct value fuse as marked on the PS7 bottom panel.

## 18. Power Switch

This ON/OFF power switch applies AC (mains) power to the PS7 power supply and the via Fader mixer.

## 19. Voltage Selector Switch (Located on Bottom)

The PS7L-NA power supply will operate at mains voltages between 100VAC -120VAC and the PS7L-EU will operate at mains voltages between 220VAC - 240VAC. The two position switch on the bottom panel must be set to the correct voltage.

Set the voltage selector switch to the "115" position if your mains voltage is 100VAC or 120VAC. Set the voltage selector switch to the "230" position if your mains voltage is 220VAC, 230VAC or 240VAC.

Always turn "Off" the power before changing the 115/230 voltage selector.

**Your via Fader may be supplied with the PS7S-3 power supply. The PS7S-3 is an auto-ranging power supply and will operate at mains voltages between 100VAC to 240VAC. The PS7S-3 does not require any voltage selection.**

### Do not remove covers or panels

To avoid personal injury, do not remove the top cover from the power supply and never operate the external power supply without the cover properly installed. If it becomes necessary to service any part of the mixer, always unplug the AC power and disconnect the DC interface cable before proceeding.

# Specifications

<b>Line input impedance</b>	
Balanced	30K ohms
Unbalanced	15K ohms
<b>Maximum input level</b>	+28dBu
<b>Output Impedance</b>	
All Active-balanced outputs	60 ohms
<b>Maximum output level (2k load)</b>	
All Active-balanced outputs	+28dBu (Balanced)
<b>Frequency Response (10 dB gain)</b>	
Fader input to fader output	3Hz-54kHz (+0/- .5dB)
Fader input to mix output	3Hz-54kHz (+0/- .5dB)
<b>THD+n</b>	
+12dBu any fader input, fader set at "0" mark, +12dBu fader out	.0024%
+12dBu any fader input, fader set at "0" mark, +12dBu mix out	.0024%
<b>Crosstalk (1kHz)</b>	
Channel to channel	-102dBu
Input to Mix out, input fader off, channel mix deselected	-89dBu
<b>Noise (22Hz-22kHz)</b>	
Residual Mix output noise	-102dBu
16 channels routed, faders off	-87dBu
<b>DC Power Requirements (Mixer)</b>	
VF16M	+/- 16 VDC +520ma/-360ma
VF10M	+/- 16 VDC +390ma/-260ma
<b>AC Power Requirements (External supply)</b>	
	100-120 VAC 50/60Hz .5 amp
	220-240 VAC 50/60Hz .25 Amp
<b>Dimensions (Mixer)</b>	
	WxDxH=19" x 7" x 6"
	(483mm x 178mm x 158mm)
<b>Dimensions (External supply)</b>	
	WxDxH=4.6" x 2.75" x 7.3"
	(117mm x 70mm x 185mm)
<b>Weight (Mixer)</b>	14 Lbs (6.4kg)
<b>Weight (External supply)</b>	3 Lbs (1.4kg)
<b>Total shipping weight</b>	19 Lbs (9kg)