Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for RANE FME 15. You'll find the answers to all your questions on the RANE FME 15 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

> **User manual RANE FME 15**
> **User guide RANE FME 15**
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RANE OPERATING / SERVICE MANUAL **FME 15**
EQUALIZER

QUICKSTART

For many of you, reading an owner's manual is about as insulting as using training wheels on your first two-wheeler. We therefore offer the following Quick Start section which outlines the basics of the FME 15 so briefly it counts only as familiarization material, not training.

Using the FME 15 in an insert loop of a mixer is extremely easy. Simply connect them together using a single stereo cable (¼" TRS) between the mixer's insert loop and the FME 15's **PATCH I/O** jack. This jack is wired for the tip=send, ring=return convention used by mixer manufacturers.

Anyone familiar with other graphic equalizers will find this one just as familiar. One word of caution: the boost/cut **RANGE** switch drastically changes the impact of a given filter. *Be careful*.

Set the **IN** and **OUT GAIN** controls to the same physical positions for unity gain through the equalizer. That is, moving both slider handles together (keeping them aligned) always maintains overall unity gain from input to output. Many strange gain structure conditions may be handled with these controls. See the Operating Instructions on the back page for more information. Most applications require only a few dB of boost or cut. Start with the **RANGE** switch in the **±6dB** position, and increase to **±12dB** only if necessary. Setting curves is as easy as it is on all Rane graphics thanks to our unique interpolating constant-Q circuitry. For more information on setting up your curves correctly, again, see the back page.

NEVER CONNECT ANYTHING EXCEPT AN APPROVED RANE POWER SUPPLY TO THE RED THING THAT LOOKS LIKE A TELEPHONE JACK ON THE REAR OF THE FME 15. This is an AC input and requires special attention if you do not have an operational power supply **EXACTLY** like the one that was originally packed with your unit. See the full explanation of the power supply requirements elsewhere in this manual.

SYSTEM CONNECTION

When first connecting the FME 15 to other components, *leave the power supply for last*. This gives you a chance to make mistakes and correct them without damaging your fragile speakers, ears and nerves.

INPUTS. All three Inputs are wired in parallel and are actively balanced (all Flex modules feature true instrumentation amplifier balanced inputs). Each works equally well. Choose strictly from a favorite hardware point-of-view, there will be no performance trade-offs. The wiring convention adheres to American, British and International standards of pin 2, **"+"**, or tip being hot; pin 3, **"–"**, or ring being return; and pin 1, COMMON GND, or sleeve being signal ground. Unbalanced operation involves using only pin 2, "+", or tip as signal; and pin 1, COMMON GND, or sleeve as ground. It is not necessary to short any terminals or pins to any others. Due to the true instrumentation nature of the inputs, there is no gain reduction if pin 3, or "–", is left open; however, if pin 3 gets shorted, it won't hurt anything either. Use pin 1, the shell, or the COMMON GND point on the terminal strip for shield ground. (See Rane Note 110 for further information.)

OUTPUTS. The FME 15's Outputs mimic the Inputs. True balanced output interconnection only requires the use of pin 2, **"+"**, or tip; and pin 3, **"–"**, or ring for signal transmission. It does not require pin 1, or signal ground. All the signal exists between the two balanced leads; ground is not in-

volved. Ground is used only for shielding. If unbalanced output is your preference, use pin 2, **"+"**, or tip as signal; and pin 1, COMMON GND, or sleeve as return. Leave pin 3, "–", or ring open. Again, have a look at Rane Note 110 for more detail.

EXPANDING. Expanding and/or daisychaining the inputs and outputs normally uses the ¼" jacks. Multiple parallel connectors allow using another output to drive a second processor or amplifier without special cabling.

PATCH I/O. The PATCH I/O (Input/Output) jack makes connection to mixer effects loop insert points very simple. Just connect a shielded stereo tip-ring-sleeve (TRS) cable between the FME 15's PATCH I/O jack and the TRS effects loop insert on your console. (Your mixer must use the tip=send, ring=return effects loop wiring convention.)

SIGNAL LEVELS. The FME 15 is designed for all line-level signals. Signal levels from -10dBV to +4dBu or considered normal and within range (at least 16dB of headroom exists above these levels). Do not directly connect microphones into the FME 15. Use a mic preamp first.
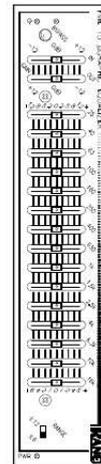
Manual abstract:

We therefore offer the following Quick Start section which outlines the basics of the FME 15 so briefly it counts only as familiarization material, not training. Using the FME 15 in an insert loop of a mixer is extremely easy. Simply connect them together using a single stereo cable (¼" TRS) between the mixer's insert loop and the FME 15's PATCH I/O jack. This jack is wired for the tip=send, ring=return convention used by mixer manufacturers. Anyone familiar with other graphic equalizers will find this one just as familiar. One word of caution: the boost/cut RANGE switch drastically changes the impact of a given filter. Be careful. Set the IN and OUT GAIN controls to the same physical positions for unity gain through the equalizer. That is, moving both slider handles together (keeping them aligned) always maintains overall unity gain from input to output. Many strange gain structure conditions may be handled with these controls. See the Operating Instructions on the back page for more information. Most applications require only a few dB of boost or cut. Start with the RANGE switch in the ±6dB position, and increase to ±12dB only if necessary. @@@@@@This is an AC input and requires special attention if you do not have an operational power supply EXACTLY like the one that was originally packed with your unit. See the full explanation of the power supply requirements elsewhere in this manual.

FME 15 EQUALIZER SYSTEM CONNECTION When first connecting the FME 15 to other components, leave the power supply for last. @@INPUTS. @@Each works equally well. Choose strictly from a favorite hardware point-of-view, there will be no performance trade-offs. The wiring convention adheres to American, British and International standards of pin 2, "+", or tip being hot; pin 3, "", or ring being return; and pin 1, COMMON GND, or sleeve being signal ground.

Unbalanced operation involves using only pin 2, "+", or tip as signal; and pin 1, COMMON GND, or sleeve as ground. It is not necessary to short any terminals or pins to any others. Due to the true instrumentation nature of the inputs, there is no gain reduction if pin 3, or "", is left open; however, if pin 3 gets shorted, it won't hurt anything either. Use pin 1, the shell, or the COMMON GND point on the terminal strip for shield ground. (See Rane Note 110 for further information). OUTPUTS. The FME 15's Outputs mimic the Inputs. True balanced output interconnection only requires the use of pin 2, "+", or tip; and pin 3, "", or ring for signal transmission. It does not require pin 1, or signal ground. All the signal exists between the two balanced leads; ground is not involved.

Ground is used only for shielding. If unbalanced output is your preference, use pin 2, "+", or tip as signal; and pin 1, COMMON GND, or sleeve as return. Leave pin 3, "", or ring open. Again, have a look at Rane Note 110 for more detail. EXPANDING. Expanding and/ or daisychaining the inputs and outputs normally uses the ¼" jacks. @@PATCH I/O. @@@@@@The FME 15 is designed for all linelevel signals. @@Do not directly connect microphones into the FME 15. Use a mic preamp first.

FRONT PANEL DESCRIPTION 1. MASTER OVERLOAD INDICATOR. @@It lights whenever these levels exceed 4dB below clipping. Occasional flickering is normal; however, it should not be allowed to light steadily. 2.

OVERALL BYPASS SWITCH & INDICATOR. This pushbutton switch activates the "hard-wire" bypass function. When pressed into the engaged position (red BYPASS LED on), all three pins of the INPUT connectors are directly connected to the same pins on the OUTPUT connectors (hard-wired). Engaging this switch converts the FME 15 into a relatively expensive patch cord, but one with pretty lights. 3.

INPUT AND OUTPUT GAIN CONTROLS. These slide controls set the relative IN and OUT gain structures. The range of each control is ±12dB; however, note that they are labelled opposite to each other, i.e., the top of the IN control reads +12dB while the top of the OUT controls reads -12dB. @@Normally set these controls in their center detent positions. 4. FILTER LEVEL CONTROLS. @@@@@@5. FILTER RANGE SWITCH.

@@6. POWER INDICATOR. @@3-pin INPUT Connector. Pin 2 is positive, pin 3 is negative and pin 1 is signal ground. For unbalanced operation, use pin 2 as hot and pin 1 as return. Do not use more than one of the INPUT connectors on the FME 15. 2. INPUT Expand Connector. @@Tip is positive, Ring is negative and Sleeve is signal ground. 3.

Terminal Strip INPUT and OUTPUT. @@Used for primary Inputs and Outputs or additional patch connections. Use only one INPUT connector: they do not sum. You may use more than one OUTPUT connector to split to other devices. 4.

OUTPUT Connector. @@As before, Tip is hot, Ring is not and Sleeve is signal ground. 5. 3-pin OUTPUT Connector. Pin 2 is positive, pin 3 is negative and pin 1 is signal ground.

For unbalanced operation, do not short any pins to any others. @@Pin 3 should be left disconnected. @@@@@@6. PATCH I/O Connector. @@@@@@@@THESE ARE NOT SUMMING INPUTS. ONLY ONE AT A TIME MAY BE USED. 7. GROUND LIFT Switch. @@Normally, this switch should be in the LIFT position. In some circumstances, moving it to the opposite position eliminates stubborn hum and buzz problems.

We realize a scientific explanation would be helpful, unfortunately science doesn't have enough to do with it. If you are tempted to try moving this switch with your power amplifiers turned on and up, don't be. always turn your amplifier levels down before changing your grounds around and then bring them up slowly. Put a speaker re-coner out of work today! 8. Chassis Ground Point. A 6-32 screw is used for chassis grounding purposes. See the CHASSIS GROUNDING note on the last page for details. 9. Remote Power Supply Input. The unit is supplied from the factory with a Model RS 1 Remote Power Supply suitable for connection to this input jack.

@@IT IS NOT A TELEPHONE JACK. @@@@@@@@@@The BYPASS switch is useful for making quick A-B comparisons, i.e., comparing equalized (BYPASS out, LED off) versus unequalized (BYPASS in, LED on) sound. To do this freely, without danger of system damage, requires you set the level through the FME 15 to approximately unity.

Failure to do so can produce alarming results, when A-B-ing. The input and output gain ranges of the FME 15 go from 12dB to +12dB. The FME 15 is always unity gain in Bypass, so if you add or reduce gain (beyond EQ make-up gain) the level differences between BYPASS in/out can be startling. Therefore you want to set the GAIN controls for equal in/out loudness levels. To get started, make the following initial set-up adjustments: 1.

BYPASS switch depressed (equals bypassed condition equals red LED on). 2. Both GAIN controls center-detent positions. 3. All slide controls center-detent positions (0dB boost/ cut). 4. Apply a signal to the system. 5. Check that the OL indicator is not on.

If the OL LED is on, move both GAIN controls down just enough for it to go out.

@@@@If the OL LED is not on, then leave the GAIN controls in their center-detent positions. Do not increase the gain above this point until you do enough cutting with the EQ controls to warrant adding make-up gain. 6. @@@@@The best way to find out what room acoustics are doing to your sound is to use either a real time analyzer or computerized measurement systems such as time delay spectrometry or other similar devices. This sort of test equipment lets you see the response of the combination of room and sound system and is the only accurate means available for setting up the FME 15 properly. If you are unable to utilize science in this way, your ears will have to be the judge. It is a very good idea to always start the equalization process with the filter RANGE switch in the ±6dB position. It should stay there unless you absolutely cannot achieve your goal any other way. Then and only .