



T-FBK 2

User's Manual

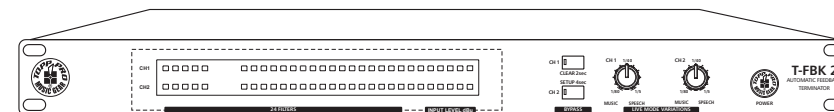
DIGITAL PROCESSOR
Automatic Feedback Killer

T-FBK 2



TOPP PRO MUSIC GEAR

www.topppro.com



T-FBK 2

Safety Related Symbols



This symbol, wherever used, alerts you to the presence of un-insulated and dangerous voltages within the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock or death.



This symbol, wherever used, alerts you to important operating and maintenance instructions.



Protective Ground Terminal



AC mains (Alternating Current)



AC mains (Alternating Current)

ON:

Denotes the product is turned on.

OFF:

Denotes the product is turned off.

WARNING

Describes precautions that should be observed to prevent the possibility of death or injury to the user.



CAUTION

Describes precautions that should be observed to prevent damage to the product.

Disposing of this product should not be placed in municipal waste but rather in a separate collection.

WARNING

Power Supply

Ensure that them a inssource voltage (AC outlet) matches the voltage rating of the product. Failure to do so could result in damage to the product and possibly the user. Unplug the product before electrical storms occur and when unused for long periods of time to reduce the risk of electric shock or fire.

External Connection

Always use proper ready-made insulated mains cabling (power cord). Failure to do so could result in shock/death or fire. If in doubt, seek advice from a registered electrician.

Do Not Remove Any Covers

Within the product are areas where high voltages may present. To reduce the risk of electric shock do not remove any covers unless the AC mains power cord is removed. Covers should be removed by qualified service personnel only.

No user serviceable parts inside.

Fuse

To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder. Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

Protective Ground

Before turning the unit ON, make sure that it is connected to Ground. This is to prevent the risk of electric shock.

Never cut internal or external Ground wires. Like wise, never remove Ground wiring from the Protective Ground Terminal.

Operating Conditions

Always install in accordance with the manufacturer's instructions.

To avoid the risk of electric shock and damage, do not subject this product to any liquid/rain or moisture.

Do not use this product when in close proximity to water.

Do not install this product near any direct heat source. Do not block areas of ventilation. Failure to do so could result in fire.

Keep product away from naked flames.

IMPORTANT SAFETY INSTRUCTIONS

Read these instructions

Follow all instructions

Keep these instructions. Do not discard.

Heed all warnings.

Only use attachments / accessories specified by the manufacturer.

Power Cord and Plug

Do not tamper with the power cord or plug. These are designed for your safety.

Do not remove Ground connections!

If the plug does not fit your AC out let seek advice from a qualified electrician.

Protect the power cord and plug from any physical stress to avoid risk of electric shock.

Do not place heavy objects on the power cord. This could cause electric shock or fire.

Cleaning

When required, either blow off dust from the product or use a dry cloth.

Do not use any solvents such as Benzol or Alcohol.

For safety, keep product clean and free from dust.

Servicing

Refer all servicing to qualified service personnel only. Do not perform any servicing other than those instructions contained within the User's Manual.

The mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

PORTABLE CART WARNING



Carts and stands - The component should be used only with a cart or stand that is recommended by the manufacturer.

A component and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the component and cart combination to overturn.

8 GUARANTEE

Topp Pro guarantees the normal operation of the product against any defect of manufacture and/or vice of material, by the term of (12) months, counted as of the date of purchase on the part of the user, committing itself to repair or to change, to its election, without position some, any piece or component that will fail in normal conditions of use within the mentioned period.

This guarantee is valid if the original buyer will have to present/display this certificate properly sealed and signed by the selling house, accompanied by the corresponding invoice of purchase where it consisted the model and serial number of the acquired equipment.

The guarantee does not cover:

- Damages caused by the illegal use of the product, repair and/or nonauthorized modification conducted by people by **Topp Pro**.
- Damages caused by the connection of the equipment to other equipment different from the specified ones in the manual of use, or by bad connection to these last ones.
- Damages caused by electrical storms, blows and/or incorrect transport.
- Damages caused by excesses or falls of tension in the network or by connection to networks with a tension different from the required one by the unit.
- Damages caused by the presence of sand, acid of batteries, water, or any strange element inside the equipment.
- Deteriorations produced by the course of the time, use and/or normal wear of the unit.
- Alteration or absence of the serial number of factory of the equipment.

The repairs could only be carried out the authorized technical service by **Topp Pro**, that will inform about the term and other details into the repairs to take place according to this guarantee.

Topp Pro, will repair this unit in counted a term nongreater to 30 days as of the date of entrance of the unit to the Technical Service. In those cases in that due to the particularity of the spare part, outside necessary their import, the repair time and the viability of the same one will be subject to the effective norms for the import of parts, in which case one will inquire to the user about the term and possibility into repair.

With the object of its correct operation, and of the validity of this one guarantee, this product will have to be installed and to be used according to the instructions that are detailed in the manual associate or the package of the product.

This unit will be able to appear for its repair, next to the invoice of purchase (or any other proof where the date of purchase consists), to its authorized distributor Topp Pro or an authorized technical center on watch by **Topp Pro**.

Exclusion of damages:

THE RESPONSABILITY OF TOPP PRO BY ANY DEFECTIVE PRODUCT IS LIMITED THE REPAIR OR THE REPLACEMENT OF HE HIMSELF, TO TOPP OPTION PRO. IF WE CHOSE TO REPLACE THE PRODUCT, THE REPLACEMENT CAN BE A RECONDITIONATED UNIT. TOPP PRO WILL NOT BE RESPONSIBLE BY THE DAMAGES BASED ON THE LOST, INCONVENIENCE, LOSS OF USE, BENEFITS, LOST SAVINGS, BY THE DAMAGE TO OTHER EQUIPMENT OR OTHER ARTICLES IN THE USE SITE, OR BY ANY OTHER DAMAGE IF HE IS FORTUITOUS, CONSEQUENT OR OF ANOTHER TYPE, ALTHOUGH TOPP PRO HAS BEEN NOTICED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states do not allow to the exclusion or the limitation to the fortuitous or consequent damages, so the aforesaid limitation can not be applied to you. This guarantee gives specific legal rights him, you can also have other right that varies of state to state.

INDEX

1. INTRODUCTION.....	4
2. FEATURES.....	4
3. CONTROL ELEMENTS.....	5
4. REAR PANEL.....	6
5. USER SETUP.....	7
6. INSTALLATION & CONNECTION.....	10
7. TECHNICAL SPECIFICATIONS.....	13
8. WARRANTY.....	14

Don't forget to visit our website at www.toppopro.com for more information about this and other Topp Pro products.

1 INTRODUCTION

Thank you for your purchasing of the TOPP PRO T-FBK 2. The T-FBK 2 is a Dual Channel Digital Processor. It is designed to provide state of the art Feedback elimination processing, for fixed installation or live event, while maintaining a simple and intuitive control interface.

The T-FBK 2 provides up to 24 filters per channel (CH1 & CH2), offers independent selectable modes, live filters lift, process bypasses, continuously variable types of filtration, with widths between 1/80th and 1/5th Octave of which are all available on a intuitive user interface front panel.

Enjoy your T-FBK 2 and make sure to read this Manual carefully before operation!

2 FEATURES

- 24 Programmable Filters per Channel
- Dual Independent Channel Processing
- Live and Fixed Filter Modes
- Automatic Live Filter Release
- Selectable Application of TOPP PRO proprietary Filter Variations (Music/Speech)
- 2 x Input Channel Metering
- 24 LED Filter Metering per Channel
- 2 x XLR and 2 x TRS Electronically Balanced Inputs and Outputs
- Selectable Operating Level Switches (+4 dBu / -10 dBv)
- Rear Panel Lockout Switch

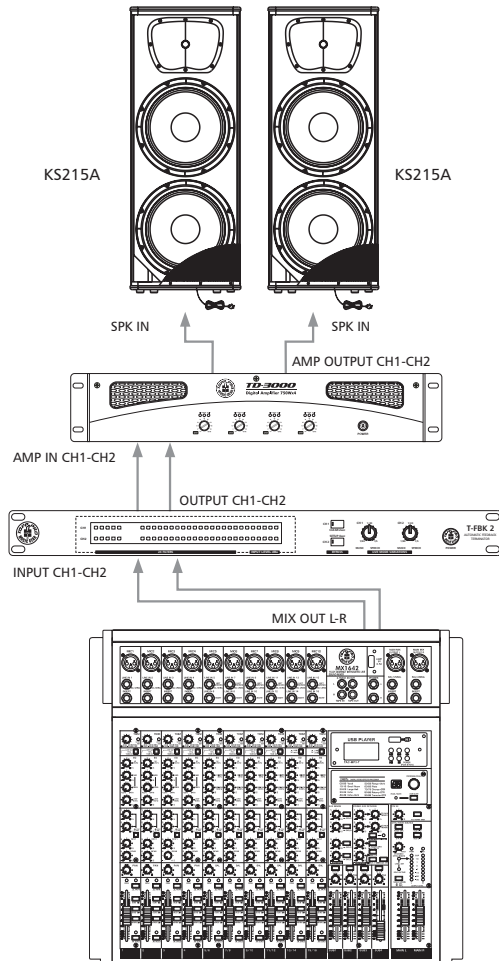
TECHNICAL SPECIFICATION

Analog Inputs	
2 x female XLR and 2 x 1/4" TRS	Electronically Balanced / Unbalanced, RF filter suppressor
Input impedance	30k ohm Balanced / 15k ohm Unbalanced
Max Input line level	+20.5 dBu
Analog Outputs	
2 x male XLR and 2 x 1/4" TRS	Electronically Balanced / Unbalanced, RF filter suppressor
Output impedance	100 Ohm Balanced / 50 Ohm Unbalanced
Max Output level	+14.5 dBu
A/D Performance	
Dynamic Range	114 dB, A-weighted
A/D Conversion	24 bit
D/A Performance	
Dynamic Range	100 dB, A-weighted
D/A Conversion	24 bit
System Performance	
Sample Rate	48 kHz
Dynamic Range	100 dB, A-weighted
THD+N %	0.01 %, 1 kHz
S/N Ratio	100 dB, A-weighted
Frequency Response	20 Hz to 20 kHz, +/- 0.5 dB
Inter channel Crosstalk	100 dB, A-weighted
Crosstalk input to output	100 dB, A-weighted
Operating Voltage	230 VAC 50/60 Hz 115 VAC 50/60 Hz
Power Consumption	15 W
Physical	
Dimension	483 x 195 x 44 mm
Net Weight	3.1kg

ON LINE with the Outputs of the Mixer

- 1- Connect the Outputs L-R from the mixer to the inputs CH 1 & CH 2 of T-FBK 2 with the XLR or TRS (tip-ring-sleeve) stereo jack.
- 2- Connect the Outputs CH1 & CH2 of T-FBK 2 at the Inputs of power amplifiers.
- 3- Set the sensitivity at +4 dBu on the T-FBK 2 and adjust the L-R fader control on the MIXER for having a necessary level on T-FBK 2.

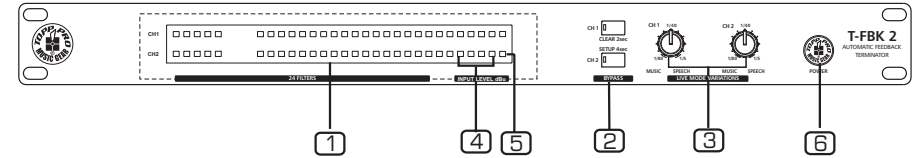
✳ For maximum performance and proper operation, the average input signal should consistently light up at the 0 dBu LED and the +10 dBu LED lighting occasionally.



CONTROL ELEMENTS

3

Front Panel:



1- Filters LEDs

The T-FBK 2 offers 24 notch filters (RED LED) for each channel, which are used to indicate the number of active notch filter. The LEDs that always blink for each channel is the last Live inserted notch filter.

2- Bypass

- a- This button is used to bypass the notch filters in the signal path by pressing quickly (about 1 second).
 - b- Pressing and holding the BYPASS button (about 2 Sec) is used to reset the LIVE filters (CLEAR 2 Sec.).
 - c- Pressing and holding the BYPASS button (more than 4 Sec.) is used to reset the fixed filters and enter the SETUP Mode (SETUP 4 Sec.).
- For more information of filter reset, please see the Clearing Filters in the USER SETUP section.

3- LIVE Mode Variations

This knob is used in LIVE MODE to select the application of TOPP PRO proprietary notch filter, independently on CH1 & CH2. Each selected mode controls the width (1/80th to 1/5th) of the notch filter used to remove the feedback, the velocity of the filter activation and the sensibility in the feedback analysis.

4- Input Level Bar Graph

These four LEDs indicate input level of the T-FBK 2 with a range from -10 dBu to +18 dBu.

✳NOTE: For maximum performance and proper operation, the average input signal should consistently light up at the 0 dBu LED and the +10 dBu LED lighting occasionally.

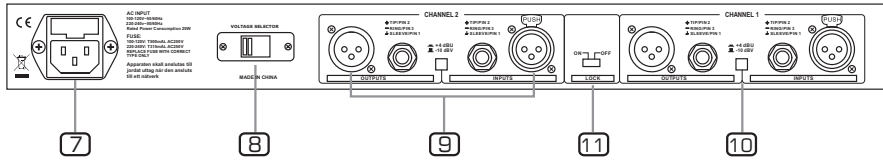
5- Clip LED

This LED indicates that there is signal clipping at the Inputs. If necessary, verify the correct position of input selector -10dBv /+4dBu, or setting the level of the chain with a external pink noise signal.

6- Power Switch

It switches your T-FBK 2 On/Off.

4 REAR PANEL:



7- AC Inlet and Fuse holder

Standard IEC receptacle. Connect your T-FBK 2 to the AC Inlet with the supplied AC power cord. Before powering up your T-FBK 2 for the first time, make certain the stated power requirement of the unit matches the voltage supplied by the AC socket. If the fuse blows, replaced with a fuse of the correct type only.

8- Voltage Selector

This switch has two choices for voltage, 100-120 VAC or 220-240 VAC.

9- Input/Output Connectors

Two types of input connectors are provided for input connections: 2 x female locking XLR type connectors, and 2 x 1/4" TRS jack connectors (tip-ring-sleeve). The maximum input level that the processor can accept is +20 dBu (ref.: 0.775Vrms).

10- Operating Level Switch

This button allows you to select between either +4 dBu or -10 dBv nominal operating level.

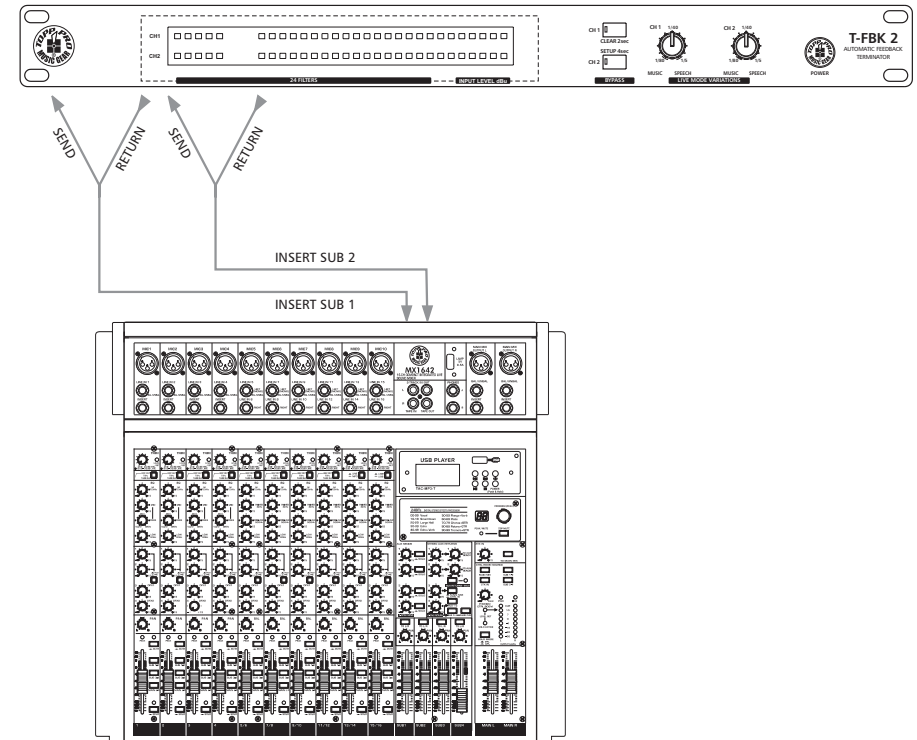
11- Lock Switch

This switch locks/unlocks all access to the front panel of the T-FBK 2.

Insert on the SUB GROUP/MAIN L-R of the Mixer

- 1- Connect the TRS (tip-ring-sleeve) stereo jack into the Mixer SUB GROUP/ MAIN L-R, Insert socket.
- 2- Connect the Send stereo jack (unbalanced) to the CH1 Input of T-FBK 2 and the CH1 Output of T-FBK 2 with a Return stereo jack (unbalanced).
- 3- Set the sensitivity at -10 dBu on the T-FBK 2 and adjust the SUB GROUP/ MAIN L-R, fader control on the MIXER for having a necessary level on T-FBK 2.

✳ For maximum performance and proper operation, the average input signal should consistently light up at the 0 dBu LED and the +10 dBu LED lighting occasionally.

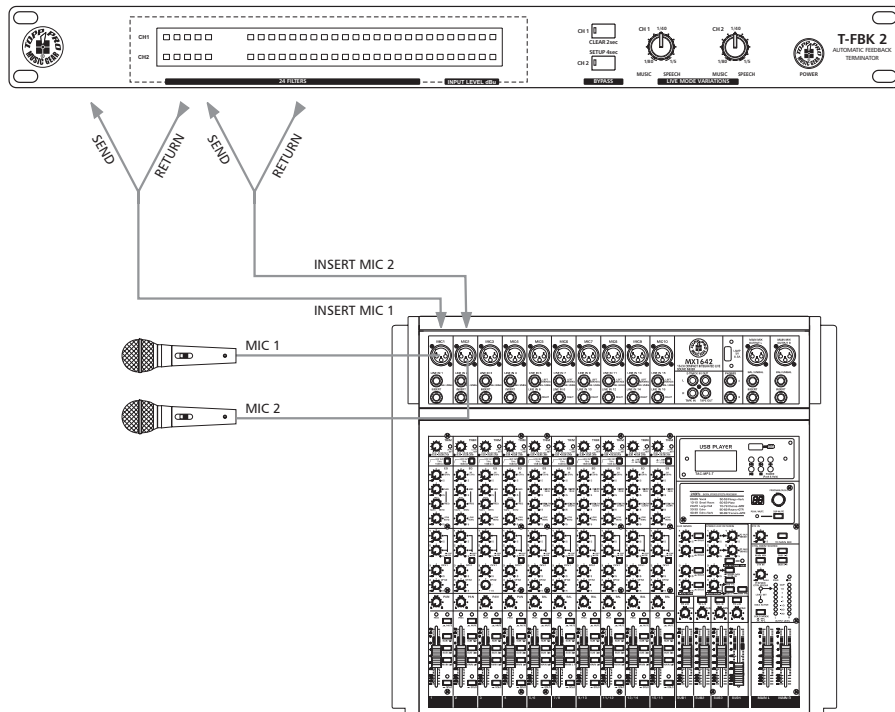


6 INSTALLATION AND CONNECTION

Insert on the MIC channel

- 1- Connect the TRS (tip-ring-sleeve) stereo jack into the mixer MIC channel, Insert socket.
- 2- Connect the Send stereo jack (unbalanced) to the CH1 Input of T-FBK 2 and the CH1 Output of T-FBK 2 with a Return stereo jack (unbalanced).
- 3- Set the sensitivity at -10 dBu on the T-FBK 2 and adjust the MIC Gain control on the MIXER for having a necessary level on T-FBK 2.
- 4- Repeat the same step connections for the CH2 of T-FBK 2 if you like to use.

※ For maximum performance and proper operation, the average input signal should consistently light up at the 0 dBu LED and the +10 dBu LED lighting occasionally.



USER SETUP

1- Setting Audio System

There are three basic ways you can use the T-FBK 2 combine with your audio system. It can be:

- 1). Connected to a MIC channel of a MIXER, into the "Insert" jack (send/return).
- 2). Connected to the SUBGROUP/MAIN OUTPUTS (L/R) of a MIXER into the "Insert" jack (send/return).
The connection of T-FBK 2 to Insert points, is probably the best selection, the levels present in most mixers are pre-fader, (normally 10 dBu) and flow direct to T-FBK 2. In this way any fader level variations do not modified the setup of T-FBK 2.
※ For the best performance and proper operation, the average input signal should consistently light up at the 0 dBu LED and the +10 dBu LED lighting occasionally.

- 3). Connected "ON LINE" between mixer and PA system. From output of the Mixer to input of T-FBK 2 and from Output of T-FBK 2 to PA input (Stereo Amplifier).
The above setup is used when insert points are not available, set the T-FBK 2 at +4 dBu, this value is correct when you connect the outputs of any mixer directly to the input of T-FBK 2.
※ For the best performance and proper operation, the average input signal should constantly light around 0 dBu LED and the +10 dBu LED should light only occasionally.

2- SETUP & LIVE Mode

The T-FBK 2 offers a total number of 24 notch filters for each chann (CH 1/CH 2) and two main operation modes:

- a-SETUP mode, with the fixed filters.
 - b-LIVE mode, with the free filters not used in SETUP mode.
- The SETUP mode is used to detect and remove feedback problems in the audio system due to the microphone placement, different environments shapes, etc. Once these filters are set, they can't be removed unless you reset then again.
- The LIVE mode is used to detect and remove feedback in "real-time", during the musical events.
- The free filters, not used in SETUP mode, automatically work in LIVE mode, the last filter included blink.

1. Using SETUP Mode (SOUND CHECK)

Fixed filters are set before a performance in a process called ringing out a system, this is done after all other setting system has been done.

- a-First, bring down the main mix, turn off all music sources and open the MIC (if you use Vocalist) or the different MIC (if you use a Sub-Group).

- b-Place the T-FBK 2 in SETUP Mode by pressing and holding the BYPASS button for more than 4 seconds.
- c-All the 24 LEDs and the BYPASS LED will start flashing, indicating SETUP mode is selected for CH1 or CH2 or together.
- d-Set the level of each CHANNEL with PFL and slowly turn up the Main Mixer Volume, raising the gain of the system, until feedback occurs.
- e-The T-FBK 2 will detect and remove feedback by placing notch filters on the proper frequencies. Continue to slowly raise the gain until all feedbacks have been eliminated, then exit from SETUP Mode by pressing and releasing the BYPASS button quickly.

All LED turn ON for few seconds, indicating fixed filters are STORED and automatically LIVE Mode is selected, the remaining filters are available in LIVE MODE.

If all 24 filters have been used in SETUP Mode, the SETUP Mode is left automatically and no more filters are available in LIVE Mode.

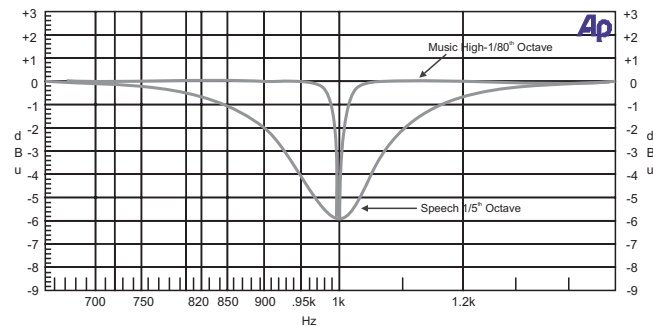
2. Using LIVE Mode (REAL TIME)

The T-FBK 2 operates normally in LIVE Mode (24 notch filters minus the fixed used filters). Live Mode filters are set on the feedback frequency as soon as a new feedback is detected, according to the knob position of the selected LIVE Mode Variations (from MUSIC to SPEECH).

If all LIVE filters are used and a new feedback occurs, the oldest LIVE filter is cleared and reallocate to the new feedback frequency (the correspondent led will light).

The T-FBK 2 will continue to search feedback frequency through the LIVE notch filters.

MUSIC High Q mode, (use notch filters at 1/80th Octave), continuously variable until SPEECH Low Q mode, (use notch filters at 1/5th Octave).



Notch Filter Q Diagram

3- CLEARING FILTERS

To reset the LIVE filters, press and hold the BYPASS button on the selected channel (for about 2sec till the live filter leds will switch off). The currently active filters will be cleared and the assigned LED will turn off.

If you wish to "reset" all the filters, continue to hold the BYPASS button (more than 4 seconds) until all filter LEDs are "blinking", indicating that you have entered the SETUP Mode and that all filters FIXED and LIVE have been cleared.

4- LOCK ON/OFF

When you finished setting the T-FBK 2, you can save your setup, switch ON the LOCK selectors in the rear panel.

After this it will be impossible to operate on front panel.

5- AUTOMATIC FILTER RELEASE

The T-FBK 2 provides the user with 24 notch filters, for each channel, they are enough for normal performances. If several numbers of filters are required, (more than 16), we strongly recommend to operate a new setup of the sound system.

Anyway, even if the T-FBK 2 uses very narrow notch filters, accordingly with the selected application type, unused notch filters must be avoided, to always guarantee the best audio performance.

The T-FBK 2 constantly monitors the status of the LIVE filters and automatically removes the ones that are no longer necessary.