PROFESSIONAL

DIGITAL SOUND PROCESSORS

Seed Guangzhou Electronic Ltd.
Seed Asia Ltd.

User's Manual



MP-FX1

Effects Processor



MP-FE2

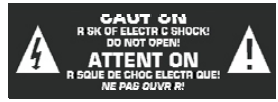
Feedback Eliminator

138mm
5.4"

DIGITAL

CAUTION: To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside; refer servicing to qualified personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.





This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure oltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.



DETAILED SAFETY INSTRUCTIONS:



1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturers instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tipping over.

13) Direct plug-in adapter plug as disconnecting device Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15) CAUTION - These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions unless you are qualified to do so.

16).For ventilation,the distance of the device and other things around should not less than 10centimeter.

17).The device should be used on the condition here below:

Ambient temperature: -10--40˚c

Relative humidity: ≤ 90%

Atmospheric pressure: 86--106kPa

Voltage of power supply:220±10%

Frequency of power supply:50±1Hz

FOREWORD



Dear Customer,

thank you very much for chosing MARANI products.

I really hope that with our products you'll get satisfaction in using them allowing you to reach your goal.

It would be a pleasure to have been able to provide you what you need for expressing your creativity.

This would be for me and all my team a great satisfaction refunding us years of efforts, study and application dedicated to the sound understanding and to it's process in complete respect of it.

The hiegher task and goal for me and my team is to continuously create new tools helping our customer to express themselves at the top in that ART called MUSIC, so as the professional in using the sound as founamental background for their performances.

To contribute to a such high task it is what can make people as us addresing an entire life in researching the best...without any regret.

Nevertheless, even being an hard task try to reach ever the best without compromises, still for all of us the quality and perfection of the final result of our research represent a great satisfaction and also a big fun.

To succed in creating something, giving shape to an idea, it is a foundamental ingredient for feeding the human necessity of going ahead on the path leading to the future.
Purchasing our products, you're helping me and my team in giving a reason to our choices and efforts.
In return we guarantee you uncompromising quality and a neverended research of the best, best that we'll continue to share with you.
As said, all we doing will enable you to fully unfold your creativity without being forced to accept any compromise.
Anything coming from the concretization of our customer's dreams, there where our product had part and helped....is for us a step more on the way of the success.
Our customers' success is our success.

Thank you very much,



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1. INTRODUCTION

Thank you for purchasing the MP-FX1. With the MP-FX1 you have purchased an easy-to-use effects unit, which you will surely come to appreciate for its sound enhancement capabilities.
With the MP-FX1 You get 16 classic effects in 24-bit quality, including reverb, delay, chorus, flanger, phaser, rotary speaker, pitch shifter and other combined-effects.

1.1 Before you get started

1.1.1 Shipment

The MP-FX1 was carefully packed at the assembly plant to assure secure transport. If the condition of the cardboard box suggest that damage may have taken place, please inspect the unit immediately and look for physical indications of damage.

Damaged equipment should NEVER be sent directly to us without Authorisation. Please inform the dealer from whom you acquired the unit or MARANI immediately as well as the transportation company from which delivery has been taken. Otherwise, all claims for replacement/repair may be rendered invalid.

Please always use the original packaging to avoid damage due to storage or shipping.

Please dispose of all packaging materials in an environmentally friendly fashion.

1.1.2 Initial operation

Be sure that there is enough space around the unit for cooling. To avoid overheating, do not place the MP-FX1 on top of power amps or near radiators, etc.

To power the MP-FX1, use only the power supply unit that is delivered with your equipment.

Please ensure that the unit is installed and operated only by people qualified to do so. During installation and operation the user must have sufficient electrical contact to earth. Electrostatic discharge may affect the operation of the unit.

Malfunction may occur due to static discharge at the inputs/outputs of the MP-FX1. In this case, switch off the unit temporarily.

MP-FX1

Compact 24-Bit Stereo FX Processor

A Compact Stereo effects processor for studio and stage

A 16 classic Effects in 24-bit/48 kHz resolution including reverb, delay, chorus, flanger, phaser, rotary speaker, pitch shifter and combined-effects

A Effects selection by a 16 positions absolute encoder

A Effects' main parameter adjustable by potentiometer and multi funcntion Tap/Fx1 and Bypass/Fx buttons.

A Dedicated Mix Balance and Input/Output Level controls for effects level adjustment

A Additional footswitch connectors for Effects on/off and Tap Delay control

A All C0.5 Series modules can be stacked on top of each other

A High-quality Effects set created by MARANI

2. CONTROLS AND CONNECTIONS

2.1 Front panel

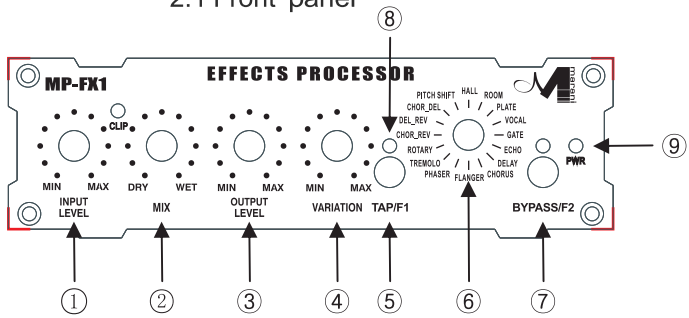


Fig. 2.1: Front panel controls of the MP-FX1

1 INPUT LEVEL POTENTIOMETER: use the *INPUT LEVEL POTENTIOMETER* toadjust the input signal level. Please be sure to set a level that is sufficiently high but does not overload the unit..

2 MIX BALANCE POTENTIOMETER: use the *MIX BALANCE POTENTIOMETER* toadjust the ratio of original vs. effect signal. Turn the control fully to the right to hearonly the processed effect signal. Turn it fully to the left to hear only the unprocessed input signal.

3 OUTPUT LEVEL POTENTIOMETER: use the *OUTPUT LEVEL* control to adjust theoutput level.

4 PARAMETER POTENTIOMETER: use the PARAMETER POTENTIOMETER to adjustthe main parameter of the selected EffectWhen you change effects, the new selected effect will be loaded with the previous setting of the main parameter independently form the current position of the PARAMETER POTENTIOMETER.
Once loaded the new effect, if moved the PARAMETER POTENTIOMETER, then thecurrent effect's main parameter will be set at the value correspondin to the new position of the PARAMETER POTENTIOMETER.
For Effects e3ditable on more than one parameter (as the combined ones) the PARAMETER POTENTIOMER will be used for adjusting more parameters joyntly with the use of the Tap/Fx1 and Bypass/Fx2 buttons (see below)

5 EFFECT SELECTION ENCODER: use the *EFFECTS SELECTION ENCODER* to select one of the 16 effect available.

6 TAP/FX1 BUTTON: Hit the button several times in the tempo of the music piece toadapt the “DELAY” Effects. The TAP LED on top ot the TAP button starts flashing in the corresponding tempo. TAP/FX1 button is also used with extra function for the control/setting of more parameter on REVERBS, GATED REVERB, DELAY/REVERB and ROTARY effects.

7 BYPASS/FX2 BUTTON: Hit the button to “Bypass” the effects muting them on the outputs.The BYPASS LED on top ot the Bypass button will light ON when muted“Bypassed” the effects. BYPASS/FX2 button is also used with extra function for the control/setting of more parameter on REVERBS, GATED REVERB, DELAY/REVERB and ROTARY effects.

8 CLIP LED: the CLIP LED is indicating the occurrency of a digital overflow at the DSP side. When the CLIP LED will start flashing, pleas reduce the Input Leve

9 PWR LED: the PWR LED when lighted is indicating that the unit is ON. Switch ON Push Button is located on the rear panel of the MP-FX1.

[Merely switching the unit off does not mean that it is fully disconnected from the mains. To disconnect the unit from the mains, pull out the mains connector. Please make sure before installation that the mains connector has not been damaged. If you do not use the unit for an extended period of time, please disconnect it at the mains]

2.2 Rear panel

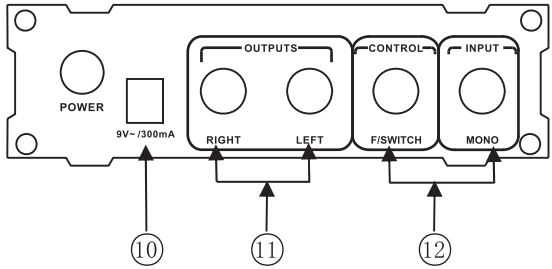


Fig. 2.2: Rear panel connectors of the MP-FX1



10 The MP-FX1 is connected to the mains using a 2-pole POWER connector jack. A matching mains adaptor is included with the unit.

[To avoid damage to your MP-FX1 always use the mains adaptor supplied with the unit]

11 The two OUTPUT connectors are on 1/4" connectors and provide an unbalanced left/right signal.

12 The two INPUT connectors are on 1/4" connectors and can be used for unbalanced left/right signal.

13 SERIAL NUMBER.

2. CONTROLS AND CONNECTIONS

3. THE EFFECTS

The MP-FX1 comes with 16 classic Effects.
All of them perform a pure Stereo or pseudo-Stereo output.

[Table 6.1 contains a list of the preset effect parameters which can be edited as well as a description of the TAP/FX1 and BYPASS/FX2 buttons' function].

3.1 CLASSIC REVERBS

The Classic REVERB effect reproduce the characteristics of natural spaces and a classic artificial reverb as the plate.
The all REVERBS have the possibility through the use of the TAP/FX1 button, to adjust their brightness: pressing the TAP/F1 button when the effect is not in bypass, the potentiometer is no longer used for setting the reverb Decay Time, but for setting the position of an hi-damp filter (low pass...).

A HALL simulates the reverberation that you can hear in big Hall. This effect is characterized by a long reverb and a considerable amount of Pre-Delay. Good for solo instruments and vocals.

A ROOM simulates the reverberation in a mid-size Room. The effect can be used for natural instruments such as piano.

A PLATE simulates the sound of a reverb plate as used in the past in studio as reverb unit. This effect is a sort of modulated reverb and is particularly suited for drums and vocals.

3.2 PARTICULAR REVERBS

The Particular REVERB comprises not natural reverb algorithms. Also these reverbs have the possibility through the use of the TAP/FX1 button, to adjust an extra parameter, as the brightness for the Vocal Rev or the threshold position for the Gated Reverb: pressing the TAP/F1 button when the effect is not in bypass, the potentiometer is no longer used for setting the reverb time, but for setting the position of the Gating threshold.

A VOCAL REV simulates the reverberation that you can hear in big Hall, but with the addition of samll echoes suitable for better characterizing the voice.

A GATED REV simulates the reverb type cut off by a gate.
This effect was typically used with snare or kick drums.

3.3 DELAYS

The DELAY effect is provided in 2 different shapes, dedicate one expressely to the Vocal use and the other one to the classic Delay use.

- VOCAL ECHO produces different echoes on the 2 output channels, with not equal delay times, so to simulate “casual” echoes spreading the and sustaining the voice differently on the 2 output channles.
  Te effects is similar to a reverb, where the voice body is maintained dense and well defined.
- DELAY produces several echoes of the input signal, reducing their amplitude and add the result to the original signal.
  The TAP/FX1 button can be used to set the delay Delay Time and the Leed on top of the TAP/FX1button will blink with the same interval of time used for tapping the TAP.FX1 button, matching theset tapped Delay time.

3.4 MODULATIONS

The MODULATION effects set offers the most classic modulation used for “moving” sound.

- CHORUS gives a signal more body and width, moving it in frequency, creating a nice “moving sound” making the sound itslef richer.
- FLANGER it is sot of “extension” of the Chorus, adding to this one a “retro“ touch, making the “sound movement” more perceivable than with te chorus.
- PHASER is an effect adding a “phase shifted” copy of the input signal , to the input signal itself. PHASER is a traditional guitar, electric piano and keyboard effect.
- TREMOLO is an effect modulating the input signal amplitude, changings so its “volume” incresing and decreasing it cyclically. TREMOLO is particularly suitable for electric pianos or electric organs.
- ROTARY simulates the rotating movements of a Leslie® loudspeaker system. The fast rotation produces a characteristic shifting of frequencies. Traditionally, this is an effect for electronic organ.
  With the ROTARY effect, the BYPASS/F2 button is used for the Stop and GO function of the Rotary,emulating the start and stop of the loudspeakers.
  The TAP/F1 is used for toggling the Rotary Speakers' speed.

3.5 COMBINED EFFECTS

The combined effects are 3 effects combining Reverb, Modulation and Delay in different shapes. The combined effects are set in parallel configuration.

- CHORUS+REV is a combination of the CHORUS and ROOM effects.
- DELAY+REV is a combination of the DELAY and HALL effects.
  For the use of the TAP/FX1 and BYPASS/FX2 buttons allowing to access up tp 3 extra parameters for this effect, please refer to the “Table 6.1”.
  Please note that in order the TAP/F1 button to allow the access to the "Mix Volume" and "Rev decay" functions, it is necessary to have the BYPASS/F2 led blinking…so to not having had entered the MUTE condition.
  To make the BYPASS/F2 led blinking need to maintain the BYPASS/F2 button pressed for at least3 seconds.
  To bring back the BYPASS/FX2 to its original BYPASS function, need to maintain the button pressed again for at least 3 seconds.
- CHORUS+DEL is a combination of the CHORUS and Delay effects.

3.6 PITCH SHIFTER

- PITCH SHIFT adds another signal to the original signal, below or above the original pitch.

4. APPENDIX

4.1 List of effects and parameters

Sel	Effect	Main Parameter [Fx1=Off] [Fx2=Off]	Extra Parameter [Fx1=On] [Fx2=Off]	Extra Parameter [Fx1=Off] [Fx2=On]	Extra Parameter [Fx2=On] [Fx2=On]
1	HALL	Reverb Decay time	Brightness	---	---
2	ROOM	Reverb Decay time	Brightness	---	---
3	PLATE	Reverb Decay time	Brightness	---	---
4	VOCAL	Reverb Decay time	Brightness	---	---
5	GATED REV	Reverb Decay time	Threshold setting	---	---
6	VOCAL ECHO	Time Displacement	---	---	---
7	DELAY	Decay time Delay time by TAP	---	---	---
8	CHORUS	Speed/Depth	---	---	---
9	FLANGER	Speed/Depth	---	---	---
10	PHASER	Speed/Depth	---	---	---
11	TREMOLO	Speed/Depth	---	---	---
12	ROTARY	Speed/Depth	See Note2	See Note2	See Note2
13	CHORUS+REV	Reverb Decay time	---	---	---
14	DELAY+REV	Delay Delay time	Delay Decay time	Reverb Decay time	Delay/Reverb Mix
15	CHORUS+DEL	Delay vs. reverb ratio	---	---	---
16	PITCH SHIFTER	Semi-tone steps (+/-12)	Chorus%	---	---

Table 4.1: *List of effects and parameters*

NOTE: to toggle the BYPASS/FX2 button from BYPASS use to FX2 use, need to press the button for at least 3 seconds.
NOTE 2: When using the ROTARY Effect, the Tap/Fx1 and Bypass/Fx2 buttons are used for particular functions making the Rotary Speaker effect as closer as possible to the real one:
Tap*/*Fx*1 *button*: *toggle between Fast and Slow roatation speed
Bypass*/*Fx*2 *button*: *toggle between Run and Stop of speaker rotation

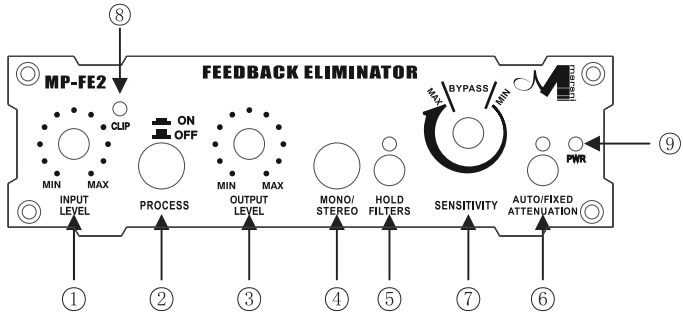
MP-FE2

Compact 24-Bit Stereo Feedback Eliminator Processor

- Compact Stereo Feedback Eliminator processor for studio and stage
- 12 High Precision Notch Filters with 24-bit/48 kHz resolution
- 15 preset Sensitivity Levels
- Automatic Signal Scanning for Feedback detection
- Sharp/Wide Q selectable for detection speed definition
- Freeze/Release automatic filters option
- All C0.5 Series modules can be stacked on top of each other
- High-quality filtering process created by MARANI

5. CONTROLS AND CONNECTIONS

5.1 Front panel



1 INPUT LEVEL POTENTIOMETER: use the *INPUT LEVEL POTENTIOMETER* to adjust the input signal level. Please be sure to set a level that is sufficiently high but does not overload the unit..

2 PROCESS BYPASS BUTTON: use the PROCESS BYPASS BUTTON to bypass the feedback eliminator process.

3 OUTPUT LEVEL POTENTIOMETER: use the *OUTPUT LEVEL* control to adjust the output level.

4 MONO/STEREO BUTTON: use the MONO STEREO BUTTON to decide if to let the unit work in MONO or STEREO mode.
When in MONO mode the detection speed of the unit is faster than in STEREO mode.

5 HPF/UPF KEY: use the HPF/UPF KEY to decide how to manage the notch filters update, when all used to cancel a detected feedback
When the HPF/UPF KEY is selecting the HPF mode (Hold Placed Filters), then once the all the available 12 notch filters are in use for eliminating one or more detected feedback, no more filters can be available for an eventual new feedaback occurring.
When the HPF/UPF KEY is selecting the UPF mode (Update Placed Filters), then even the all available notch filters are used ofr the feedback elimination if a new one is occurring the earliest placed filters are re-used for eliminating the new occurred feedback.
When the HPF/UPF LED is ON, then the HPF mode is active, when the HPF/UPF LED is OFF, then the UPF mode is active.

6 MPF/RPF KEY: use the MPF/RPF KEY to decide how to manage the behaviour of the notch filters after the feedback is cancelled
When the MPF/RPF KEY is selecting the MPF mode (Maintain Placed Filters), then once the notch filters are used for eliminating one or more detected feedback, they will remain placed even the feedback will be eliminated.
When the MPF/RPF KEY is selecting the RPF mode (Release Placed Filters), then once eliminated the feedback, the used notch filters will be released after 3 seconds.
When the MPF/RPF LED is ON, then the MPF mode is active, when the MPF/RPF LED is OFF, then the RPF mode is active.

7 SENSITIVITY ENCODER: with the SENSITIVITY ENCODER 15 different preset Sensitivity levels can be selected, in order to make the feedback eliminator more or less reactive, and so more or less fast, in detecting a potential feedback occurring.
The position 16 of the Encoder is putting the Feedback detection in an inactive condition.

8 CLIP LED: the CLIP LED is indicating the occurrency of a digital overflow at the DSP side.
When the CLIP LED will start flashing, pleas reduce the Input Leve

9 PWR LED: the PWR LED when lighted is indicating that the unit is ON.
Switch ON Push Button is located on the rear panel of the MP-FE2.
[*Merely switching the unit off does not mean that it is fully disconnected from themains. To disconnect the unit from the mains, pull out the mains connector. Please make sure before installation that the mains connector has not been damaged. If you do not use the unit for an extended period of time, please disconnect it at the mains*]

5.2 Rear panel

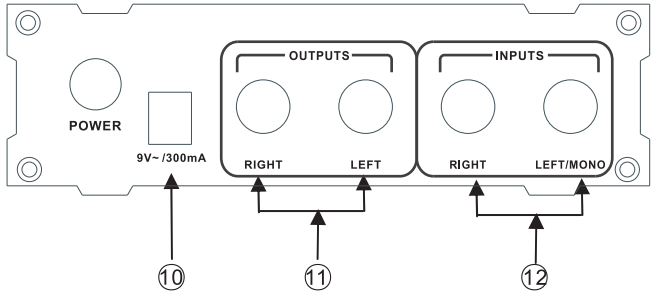


Fig. 5.2: *Rear panel connectors of the MP-FX*1



10 The MP-FE2 is connected to the mains using a 2-pole *POWER* connector jack.
A matching mains adaptor is included with the unit.
[*To avoid damage to your MP-FE2 always use the mains adaptor supplied with the unit*]

11 The two *OUTPUT* connectors are on 1/4" connectors and provide an unbalanced left/right signal.

12 The two *INPUT* connectors are on 1/4" connectors and can be used for unbalanced left/right signal.

13 *SERIAL NUMBER*.

6. THE PROCESS

The MP-FE2 is based on the analysis of the frequencies contained into the incoming signal and removes the spectral Larsen lines with 12 hi-precision notch filters per channel. Initial setup is not required. 15 preset sensitivities are available, allowing to reduce or increase Larsen sensitivity. The notch filter setup is memorized in order to be restored when the device is power-cycled. The device has the possibility to be set interms of sensitivity through the encoder, which passing from the position 1 to the position 15 modifies, decreasing it, the sensitivity of the system lowering the reactivity of it to the feedback detection: the max sensitivity is got with the position 1 of the encoder, and the min sensitivity, with the position 15.An analog bypass control is available.

6.1 PROCESS RUN/STOP

The MP-FE2 can be set so to be active or not activre.

The position 16 of the encoder resets all notch filters of the system and stops the

feedback detection. Reset is operated ONLY in position 16 of the encoder.

The positions 1-15 of the encoder enable the feedback detection.

Working modes are:

- AHPF/UPF(Hold Parametric Filter/ Update Parametric Filter).
- MPF/RPF (Mantein Parametric Filter/ Release Parametric Filter)

6.2 HPF/UPF (Freeze Mode)

The Freeze mode let the user decide how the notch filters have to be managed by the automatic scanning/detection algorithm, once feedback have already be detected and eliminated with filters placement.

The Freeze mode can also depend from the Atenuation mode (see below)

- When HPF/UPF is ON (Led HPF/UPF ON) the system, after inserting the 12 notch (both channels) stops detection and freezes setup. MODE ATT setting has no influence
- When HPF/UPF is OFF (Led HPF/UPF OFF) the system, after inserting the 12 notch (both channels) continues Larsen detection and if necessary resets and reuses already used notches. MODE ATT setting is ENABLED.

6.3 MPF/RPF (Attenuation Mode)

The Attenuation mode let the user decide what has o be the notch filters behaviour after a feebdack has been detected and eliminated.

- When MPF/RPF is ON (Led MPF/RPF ON) the system gradually attenuates active notches if their action is no longer necessary, completely removing them after some time. New feedbacks will cause the notches to be enabled again.
- When MPF/RPF is OFF (Led MPF/RPF OFF) notch attenuation is fixed.

7. SPECIFICATIONS

INPUT	
Type	¼" TS connectors, unbalanced
Impedance	approx. 30 kOhm
Max. input level	+9 dBu
OUTPUT	
Type	¼" TRS connectors, impedance balanced
Impedance	approx. 220 Ohm
Max. output level	+9 dBu
EFX/BYPASS	
Type	¼" TS footswitch connector
DIGITAL PROCESSING	
Converters	24-Bit Delta-Sigma, 128-times oversampling
Sampling rate	48 kHz
SYSTEM SPECIFICATIONS	
Frequency response	10 Hz to 22 kHz, -3 dB
Dynamic range	96 dB, 10 Hz to 22 kHz
Distortion	0,01 % typ. @ 0 dBFS
Crosstalk	-75 dB @ 1 kHz
Signal-to-noise ratio	10 Hz to 22 kHz <86 dB @ 0 dBu, A-weighted
POWER SUPPLY	
Mains connection	external power supply, 9 V,, 750 mA
Mains voltage	230 V,, 50 Hz
Power consumption	approx. 7,5 W
DIMENSIONS/WEIGHT	
Dimensions (H x W x D)	approx.103 mm x 137.5 mm x41mm
Weight	approx.0.473 kg

MARANIis constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or illustrated.

8. WARRANTY

§ 1 OTHER WARRANTY RIGHTS AND NATIONAL LAW

1. This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

2. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

§ 2WARRANTY

1. MARANI warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects withinthe specified warranty period that are not excluded from this warranty as described under § 5, MARANI shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts. In the case that other parts are used which constitute an improvement, MARANImay, at its discretion, charge the customer for the additional cost of these parts.

2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid.

3. Warranty claims other than those indicated above are expressly excluded.

§4 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer (or his authorized dealer) must call MARANI (see enclosed list) during normal business hours BEFORE returning the product. All inquiries must be accompanied by a description of the problem. MARANI will then issue a return authorization number.

2. Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by MARANI.

3. Shipments without freight prepaid will not be accepted.

4. After checked the nature of the damage occurred to the product, MARANI will decide the eventual refund of the freight prepaid.

§ 5 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealer's invoice. Any product deemed eligible for repair or replacement under the terms of this warranty will be repaired or replaced.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/ adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, MARANI shall not be held responsible for any cost resulting from such a modification/adaptation.

3.Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user.

4. Damages/defects caused by the following conditions are not covered by this warranty:

- improper handling, neglect or failure to operate the unit in compliance with the instructions given in MARANIuser or service manuals.
- connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- damages/defects caused by force majeure or any other condition that is beyond the control of MARANI.

5. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty.

6. If an inspection of the product by MARANIshows that the defect in question is not covered by the warranty, the inspection costs are payable by the customer.

7. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. MARANIwill inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, MARAN Iwill return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

§6 WARRANTY TRANSFERABILITY

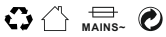
This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of MARANI.

§7 CLAIM FOR DAMAGES

Failure of MARANI to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of MARANI exceed the invoiced value of the product.

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