



# **MULTIGATE**

## **User Manual**

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## 1.0 BEFORE OPERATING

### PRECAUTIONS:

The product you have just unpacked is manufactured with safety in mind and is double checked in the test department for reliability in its high-voltage section.

The MULTIGATE operates on 115/230 VAC, 50/60 Hz. The voltage-selector on the rear panel indicates how the unit was set at the factory. If the voltage-selector does not indicate the voltage that your country is using, remove the linecord from the mains and place the voltage-selector to its proper position.

WARNING: Never change the position of the voltage-selector while the unit is still connected to the mains! Should any solid object or liquid fall into the cabinet, turn off the unit immediately and have it checked by qualified personnel before operating it any further.

After you have connected the MULTIGATE to the mains, it will start a reset procedure which takes about 5 seconds, before its ready to be used. During this procedure all LED's will be off.

When the unit is not to be used for a long period, turn the power off to conserve energy and to extend the useful life of your unit.

### RACK-MOUNTING:

You can mount the MULTIGATE (height is 1HE, width is 9") in a 19" rack by using two MULTIGATE-modules or using one MULTIGATE and one blindplate.

- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains) that may block ventilation.
- Do not install the unit near heat sources such as radiators or power-amplifiers or in a place subject to excessive mechanical vibration.

### FUSEHOLDER:

The fuse is mounted inside the unit (read product safety). When a fuse is blown, replacing it with a new one may not be sufficient. The actual cause must be detected and solved. Contact your nearest dealer if the unit can not be repaired by replacing the fuse. Use only the fuses specified.

### CLEANING

Clean the cabinet, panel and controls with a dry soft cloth. Do not use a moistened cloth or any type of solvent, such as alcohol or any other spirit, which might damage the finish.

## 1.1 INTRODUCTION

The MULTIGATE is a much more sophisticated version of the already known noisegate.

A noisegate is an audiosignalprocessor that turns off (or greatly attenuates) an audiopath when the incoming signal is below a certain level, which is called the threshold-level.

When the signal level is below this threshold, it will "pass" through the device greatly attenuated, so that low level hiss, noise or leakage will not be heard.

When the signal is above threshold, the device will have no effect on the signal and passes it through at unity-gain.

A noisegate can, when properly adjusted, pass what you want to be heard and reduces the volume or eliminates undesired signals. These signals can range from taperecorder hiss, ground hums, backgroundroom-noise to leakage from other audiosources.

## 1.2 MULTIGATE VERSUS NOISEGATE

The MULTIGATE has all the normal adjustable noisegate functions as thresholdlevel-, attacktime-, releasetime- and rangecontrol. Additionally the MULTIGATE offers a more extended thresholdcontrol by means of a FREQUENCY-DEPENDENT THRESHOLDLEVEL, so it is even possible to select a thresholdlevel for an instrument out of a complex mixture of sound.

The normal attacktime (the time in which a gate opens gradually) is in the MULTIGATE divided into an ATTACK(att.)DELAY- and ATTACKTIME.

You can now even open the gate extremely fast after a delaytime, controlled by the user, this to synchronise other instruments with the MULTIGATE, without creating a swell up sound. You can also add pre-delay to reverb on, for example, a snare drum.

The normal release time is also divided into two controllable times, which are called HOLD- and RELEASETIME.

With the holdtime you can fill up small gaps between signal pauses, so the gate will take no action on to the audiosignal.

A DUCK function is also included, which inverts the working of the MULTIGATE.

The most sophisticated function of the MULTIGATE is the SHIFT-HOLD function.

This makes the working of the MULTIGATE independable of the audiosignal during the time it is above the thresholdlevel, after it was started by an incoming signal that crossed the thresholdlevel.

This feature can be used for creating reversed sounding signals, decrease the ringing time of cymbals, create flam type effects, change a two to the bar bassdrum into a one to the bar,

create accents on instruments, remove low frequency signals out of an instrument without the use of an audiofilter, so no phase errors will occur.

The MULTIGATE also provides a STEREO-LINK for linking up to a maximum of 25 MULTIGATES to one MASTER. Because of an internal checkup procedure, some internal blocks will be matched to each other to ensure a maximum performance. Also after pressing a MASTER-LINK switch, the SLAVES will be perfectly matched to the MASTER. Additionally the VCA-buss can be controlled by any other device for computer controlled purposes.

At the back of the MULTIGATE the normal audioinputs, outputs, key (for AC-signal) and link-input are found. Additionally there is a DC-input for triggering the MULTIGATE by DC-signals coming from devices like drumcomputers, midi-controlled voltages and other user-sources.

The DISPLAY consists of 3 green LED's, 5 red LED's and one bicolor LED.

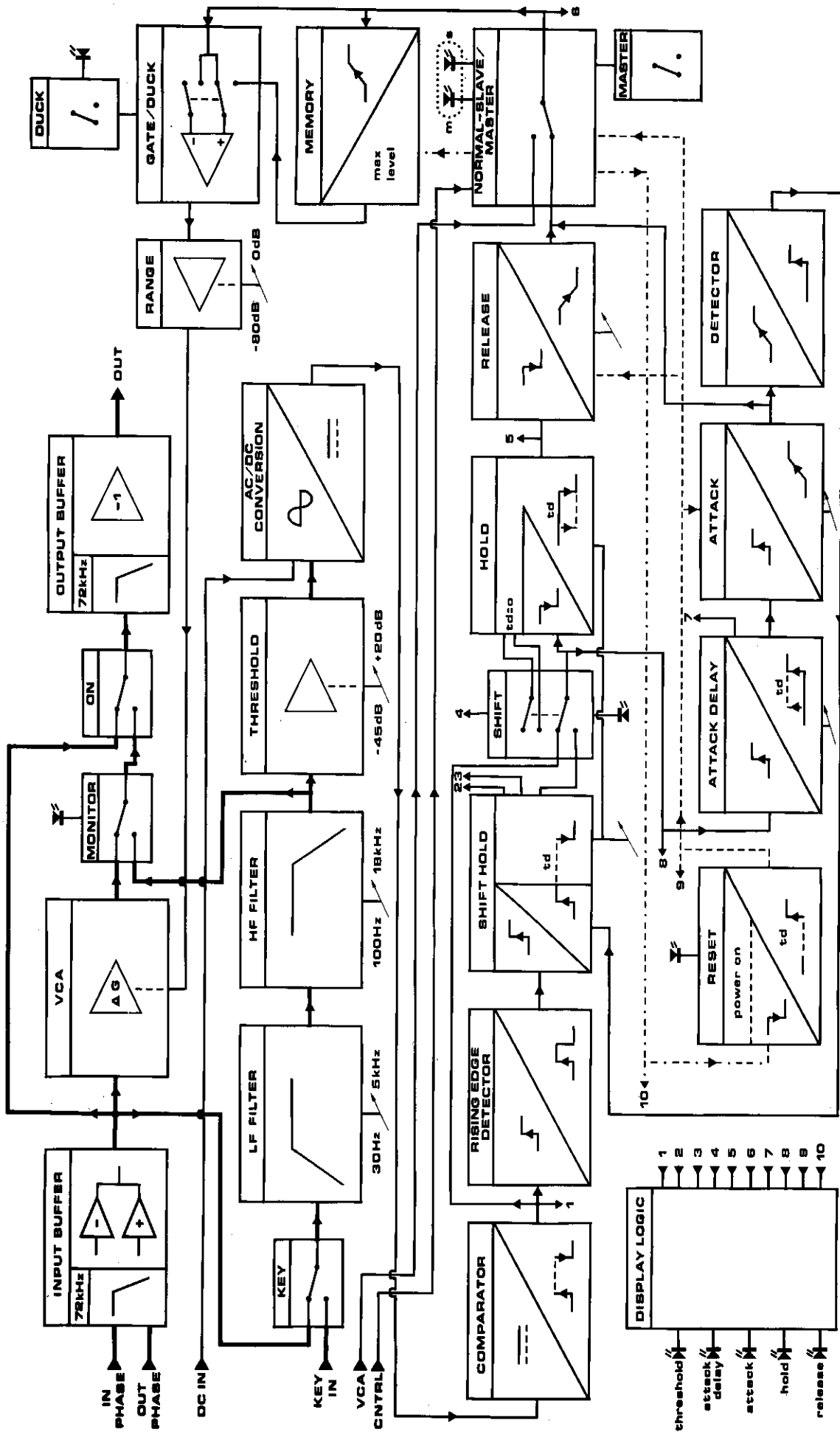
The green led's are function led's, which can be set by the user.

The red led's are envelope led's, which indicates the status of the MULTIGATE.

If the bicolor led lights red, it means it operates as a slave in a multidevice mode.

If the bicolor led lights green, it means it operates as a master in a multidevice mode.

If the bicolor led is off (white), the device works as a stand-alone unit.



NOTES:

- = audio path
- - - = audio control line
- · · = reset control line
- · - · = master/slave control line

P.C.B. INDEX:

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TITLE:

**BLOCKDIAGRAM  
MULTIGATE**

**PR** ELECTRONICA BV

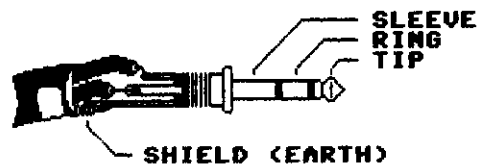
## 2.1 CONNECTIONS

It is recommended to unplug the MULTIGATE from the mains outlet, before making the following connections. Reconnect the mains-lead after the connections have been completed and make sure that they are secure.

### 2.1.0 AUDIO-INPUT

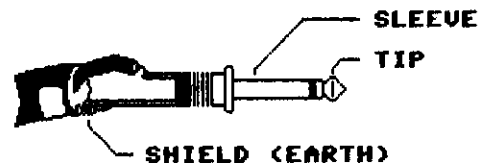
This is a balanced input with a impedance of about 20k ohm each, with a nominal operating level of 0dB and a maximum input level of +22dB.

The input frequency response is -3dB at 72kHz, this to eliminate incoming radiofrequencies.



tip = in phase  
ring = out of phase  
sleeve = earth

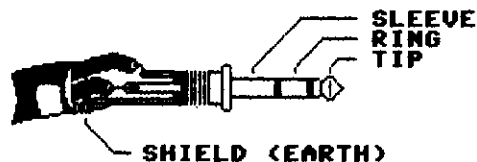
When in unbalanced use, connect the ring to earth, or use a mono jack for proper operation.



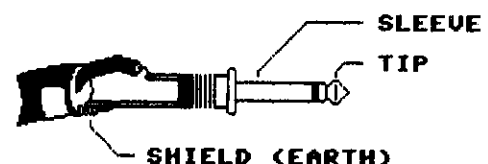
tip = in phase  
sleeve = earth

### 2.1.1 AUDIO-OUTPUT

This is an unbalanced, low impedance, output with a nominal operating level of 0dB and a maximum output level of +22dB.



tip = in phase  
ring = earth  
sleeve = earth



tip = in phase  
sleeve = earth

2.1.2 KEY-INPUT

This input is divided in an AC-input (for audio purposes) and a DC-input (for computer controlled purposes).

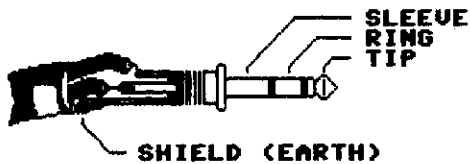
2.1.2.0 AC-INPUT

This input is an unbalanced input with a 10k ohm impedance and a frequency response of -3dB at 72kHz, also for eliminating incoming radiofrequencies.

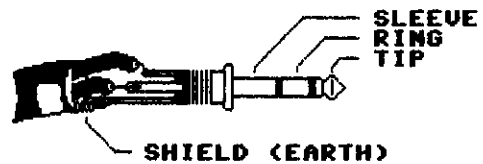
The nominal operating level is 0dB and the maximum input level is +22dB.

This signal is sent to the KEY-switch on the frontpanel of the MULTIGATE.

Connect the ring to earth, or use a mono jack in AC-use only, this is to ensure proper operation.



tip = AC-input  
ring = earth  
sleeve = earth

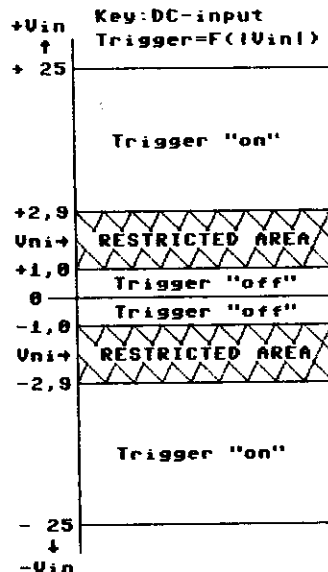


tip = AC-input  
sleeve = earth

2.1.2.1 DC-INPUT

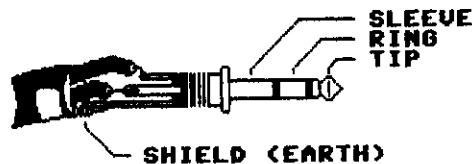
Because of its high input impedance of 12k ohm, this input can be connected to several devices such as homecomputers, drumcomputers, automation systems, synthesizers (adsr), midi-controlled voltages, etc.

The figure below shows the input sensitivity of this input.





Signals on this input can be either positive or negative. The MULTIGATE will pass audiosignals if the DC-signal is above +2,9V (max. = +25V) or below -2,9V (max. = -25V). It will attenuate audiosignals if the DC-signal is below +1,0V (min. = 0V) or -1,0V (min. = 0V). The voltages between +2,9V and 1,0V (i.e. -2,9V and -1,0V) will not change the state of the MULTIGATE. Because of this area, the MULTIGATE is able to trigger even reliable on DC-signals with a high noise level on it. Connect the tip to earth when in DC-use only, this to ensure proper operation.

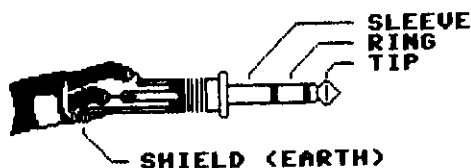


tip = earth  
ring = DC-input  
sleeve = earth

### 2.1.3 LINK-INPUT

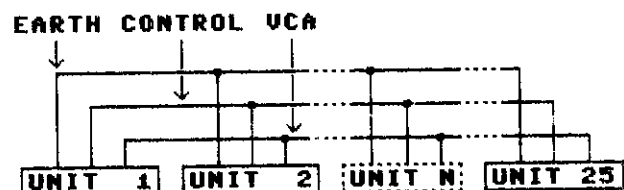
The LINK-input is a combined in- and output on which a bidirectional control- and VCA-buss is implemented. This input can be used to connect up to 25 MULTIGATES to each other.

The wiring of this input does not determine whether the connected MULTIGATE is a master or a slave. This is done by the switch on the front panel, and will be discussed in a later section (2.2.11).



tip = VCA-buss  
ring = CONTROL-line  
sleeve = earth

#### BUSS-STRUCTURE:



\* \* Pay attention to earth loops \* \*

It is also possible to control the internal VCA-buss by connecting an external varying DC-voltage (from 0,0V to +16V) to the VCA-buss. First set this signal to a maximum level (eq.+16V). Then a '1' (eq. +15V to +20V) must be placed on the control-line. Hereafter, all connected MULTIGATES should have a red flashing light beside the master-link switch, which indicates an internal reset which matches the inside electronical parts to the maximum voltage on the VCA-buss. If the led's are steady lighted red, you can now control the VCA-buss between 0,0V and +16V.

## 2.2 CONTROL-FUNCTIONS

Setting up procedure: Put all switches into their off-position (white part of the switch should be visible)

set threshold	at +20 dB
highpass filter	at 30 Hz
lowpass filter	at 18 kHz
att.delay	at min.
attack	at min.
hold	at min.
release	at min.
range	at -80 dB

### 2.2.0 ON-SWITCH

This switch enables you to listen to the material that is coming into the MULTIGATE or listen to the signal that is going out of the MULTIGATE.

In this way you can easily check what the MULTIGATE is doing with your audiosignal.

### 2.2.1 THRESHOLD

The threshold-control gives you the possibility to adjust the threshold level, so when an incoming signal is above that level, the MULTIGATE will turn its audiopath on.

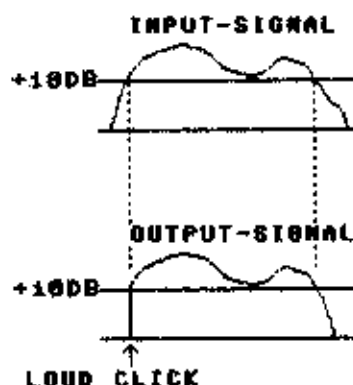
The audiopath will be attenuated again, after the incoming signal is 7dB below this adjusted threshold level.

The dots around the threshold-control indicates the level (in dB) on which the MULTIGATE will turn the audiopath on.

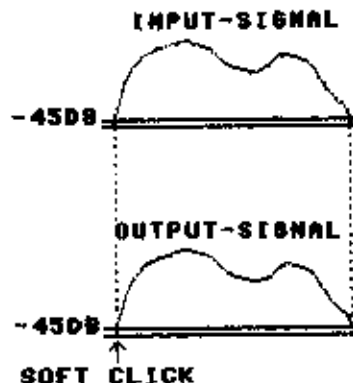
The threshold-led indicates that the audiosignal crosses the threshold level.

Always try to adjust the threshold level as low as possible, this to eliminate chopping into the audiosignal.

Threshold at +10dB



Threshold at -45dB



Because sometimes loud leakage of other audiosources break through, it is not always possible to set the threshold to such a low level.

A solution to this "problem" is that you should be able to let the MULTIGATE look more to the signal you want to work on (2.2.2).

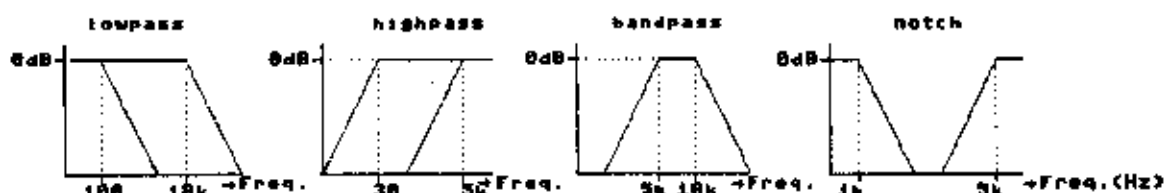
### 2.2.2 FILTER/MONITOR-SECTION

With this filter you are able to filter out all the information of the audiosignal on which you want the MULTIGATE not to act on.

The filter is built up of a high-pass sweep and a low-pass sweep section. In this manner, it is possible to create a bandpass-, a notch-, a lowpass- or a highpass filter, which gives you almost unlimited filtering possibilities.

The filters can be disabled by sweeping them out of the audio-range (i.e. 30 Hz highpass and 18 kHz lowpass).

While pressing the MONITOR-switch, a green led will indicate the monitor-status and the filteroutput will be available at the audio-output for easy filter setup procedures. The filter section can also be used for program-equalization, this when the normal MULTIGATE functions are not used.



Remark: The filter section does not remove any frequency from the real audiopath, but only from the internal detection circuitry.

### 2.2.3.0 SIDE-CHAIN

The sidechain is the circuit that specifies (in conjunction with the control settings) the form of the envelope of the gain-structure, which controls the internal VCA, from the moment the threshold level is exceeded.

The sidechain in the MULTIGATE is made extremely fast, so it can follow fast signal bursts shortly after each other (i.e. fast tapping on a cymbal, which a drumcomputer can do very fast).

### 2.2.3 KEY-SWITCH

AC: Normally the sidechain is connected to the audiosignal coming from the audio-input.

Sometimes it is required to connect it to other signalsources, just to synchronise instruments with each other, or opening the audiopath just before the audiosignal reaches the audio-input (on vocals) through connecting the sidechain to the sync-head of a multitrack which comes from the same track on which the vocals are recorded.

Another example is the fade-in/out mode.

Connect a sinus-oscillator to the key-AC input with a level of about -35dB.

Set the threshold to -45dB, release at a maximum, range at -80dB (all other controls should be set to off/minimum).

The audio will now pass through the MULTIGATE. When you stop the oscillator, the MULTIGATE will start a fade out sequence.

When the duck-mode is activated, the MULTIGATE would have started a fade-in sequence.

Just by pressing the key-switch, the sidechain will be connected to the key-AC input.

(see for connections 2.1.2.0)

You can make the key-AC input-signal audible by pressing the monitor switch. Simultaneously you will hear the working of the filter section on this key-AC signal.

DC: This input can not be switched out by the key-switch and it will work independantly but simultaneously with all the other functions of the MULTIGATE, such as threshold-control and key-AC input.

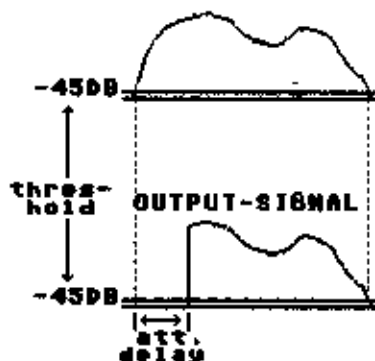
It is recommended to adjust the threshold level (which can not vary the key-DC level!) to +20dB, when the DC-input is used (see also 2.0 and 2.1.2.1), so audiosignals coming from the normal audiopath or key-AC input are not able to trigger the sidechain when you do not want them too.

### 2.2.4 ATT.DELAY (attack delay)

The attack delay is effective when used to add pre-delay to reverb on say a snare drum. In combination with the shift-mode (2.2.10) it can produce interesting flam type effects on the drums themselves.

An unusual effect can be produced by sending a keyboard direct to the left speaker and through the MULTIGATE with some att.delay, to the right. Notes longer then the selected delay time will appear to have a repeat echo. Unlike true echo, the "ghost" note will stop when the key is released.

Another effect of the att.delay is to make short notes sound closer to the listener and long ones further away.



In the environment of connecting the sync-head of a multitrack-machine to the key-AC input and the play-head of the same track to the audio-input, you can open the gate just before the audiosignal reaches the play-head by varying the att.delay time. In this way you "vary the distance" of the sync-head in conjunction to the play-head (see also 2.2.3).

### 2.2.5 ATTACK

The attack-control can change the time in which the audiopath goes from the attenuation point to the unity-gain point. Because of it's logarithmic course, the gain increase will sound in a natural way.

This is also very useful for fade in/out purposes.

The MULTIGATE consists of a very fast attack time circuitry. If it is set to minimum, it will not change the original sound of any instrument, even not on percussive ones (providing that the threshold level is set as low as possible (-45dB)).

### 2.2.6 HOLD

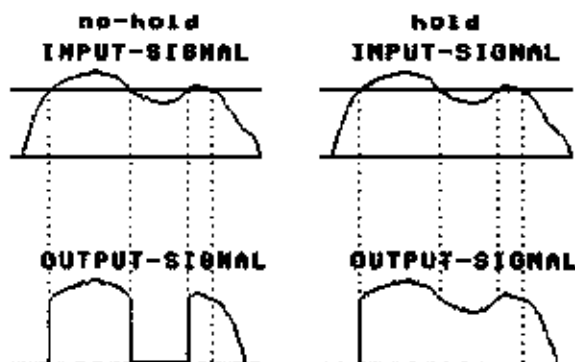
If the signal at the audio-input (or key-AC input) is below the threshold-point again, the MULTIGATE will start to attenuate the audiopath.

If the hold control is set, for a certain time, the MULTIGATE will wait for that period, before starting to attenuate.

If, in this hold time, a new signal will go above threshold level, the MULTIGATE will start again with the delay time, followed by the attack time.

The attack time however, will not be heard this time, because the audiopath was already at unity-gain, as you can see by the red led above the attack time control, which still lights up.

With this hold time you are able to fill up small gaps between signal pauses, so the MULTIGATE will take no action on to the audiosignal.



### 2.2.7 RELEASE

When the hold time is expired, the MULTIGATE will start the release time, which is also a logarithmic time interval. The release control can change the time in which the audiopath goes from the unity-gain point to the attenuation point, set by the range control. The maximum time can be used for fade in/out purposes. The time, which should be set by this control, depends on the kind of instruments which are processed and prevents fast cutting into the audiosignal when the audiosignal comes below the threshold point.

### 2.2.8 RANGE

The range control will set the attenuation of the audiopath when the MULTIGATE is not activated (audiosignal is below threshold point). This control (in combination with the att.delay, attack and shift-hold controls) can also be used for placing accents on certain instruments or for effects as discussed in 2.2.4 .

### 2.2.9 DUCK-SWITCH

The duck function inverts the working of the MULTIGATE. If, for instance, the audiopath is normally attenuated, it will be at unity-gain and if it was at unity-gain, it will then be attenuated.



This function is especially useful in environments where a singing-voice has to come above the backing music. This can be done automatically by sending the music through the MULTIGATE's audiopath, making the attenuation a few dB's by the range control and sending the voice signal into the key-AC input (key switch into on-position).

The effect is, when the voice triggers the MULTIGATE (coming above the adjusted threshold level), the music will decrease by some dB's which were set by the range control.

The envelope of the decreasing music is accordingly to the att.del, attack, hold and release controls.

The duck function is also useful for an easy threshold setup. By pressing the duck switch you hear the audio that will be deleted from the original audiosignal. After this, release the duck switch again and you will hear only the audiosignal without the part you have just listened to.

## 2.2.10 SHIFT-SWITCH

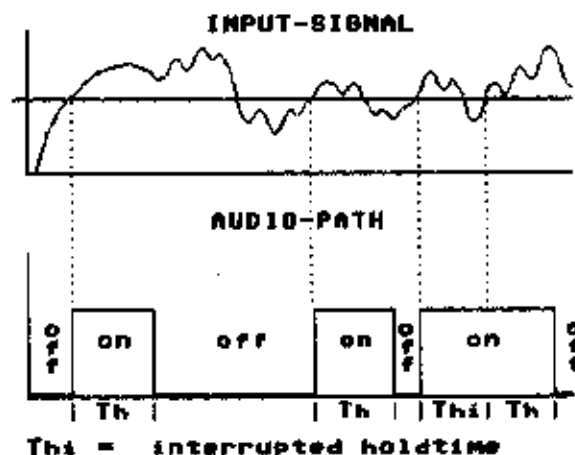
The shift-mode enables you to have a fixed envelope-shaping regardless of the signal length, as long as the signal is above the threshold level.

The shift-mode only affects the hold time, which takes over the sidechain control instead of the audiosignal at the audio- or key (AC and DC) input.

The envelope can only be started again if the input signal first goes below the threshold level and secondly goes above the threshold level again.

If the MULTIGATE was already busy with it's hold time, it will start the hold time again from zero.

In this way the point where the MULTIGATE starts attenuating is shifted towards the point where the MULTIGATE turned on it's audiopath. This feature makes adjusting of the hold time much more easier on instruments with small repeating time intervals, such as tapping on a cymbal by a drumcomputer.



With this shift-hold mode you can process audiosignals in numerous ways. You can, for instance, create reversed sounding signals, just by setting the att.delay control at a minimum, the attack control to 12 O'clock, the (shifted) hold time to a time that is shorter than the audiosignal and the release control at minimum.

Also create flam type effects (in conjunction with the duck mode), create accents on instruments (set attack control at maximum and the range control at -30dB attenuation), remove low frequency parts out of a single instrument, decrease the long and loud ring of tom toms by placing the shift-hold control at minimum and placing the release control to about 2 o'clock, etc.

With your imagination and some time, you will get the strangest results, which gets even better when you use two MULTIGATES in the master/slave mode (stereo mode).

Remark: The moment of starting the hold function can still be affected by the att.delay- and attack time controls. The hold function will wait until the attack time has reached its end, before taking over control.

## 2.2.11 MASTER-LINK SWITCH

When two or more (up to 25) MULTIGATES are connected to each other by means of the link-input on the back of the devices (2.1.3), it becomes possible to let the MULTIGATE work in a master-slave environment.

If on one of the connected MULTIGATES the master-link switch is pressed, the white led (at the left of the switch) will flash green for about 5 seconds. This indicates an internal checkup procedure.

The other MULTIGATES will flash red at the same time, indicating that they are being matched to the master, this to ensure perfect tracking of the slaves at all times.

During this checkup procedure all led's of all connected MULTIGATES will go off, including the function led's.

The audio may be attenuated or may not be, depending on the state of the duck switch.

After these 5 seconds the flashing led's will remain steady. The master is indicated by a green led and the slaves are indicated by a red led.

Any connected MULTIGATE can be a master, just by pressing the master-link switch on the one you want to be master. Always check that you use only one master at one time.

After choosing the master it becomes possible to control the function of the slaves by the controls on the master.

Only the following controls and led's will still be operational on the slaves:

- On-switch (for bypass purposes)
- Monitor-switch (normally off) and led
- Master-link (off in slave-mode) switch and led
- Key-switch (does not affect the working of the slave, but can be used in combination with the monitor switch, to check what is on the key-AC input of that MULTIGATE)
- Duck-switch (for cross-fade, autopanning, etc.) and led
- Filter control (see also monitor and key switch)
- Range (for cross-fade and autopanning depths, etc.)

In stereo-mode the MULTIGATE can be used for, in combination with a reverb, gated reverb sound, automatic panner, stereo ducking (Audio-Visuals) and examples mentioned in 2.2.10 .



### 3.0 SPECIFICATIONS

#### Audio

Input ..... stereo-jack .... 6,3 mm  
balanced  
impedance ..... 23 kOhm  
nom.level ..... 0 dB (0,775 V)  
max.level ..... + 22 dB  
freq.resp. .... - 3 dB at 72 kHz  
              .... - 1 dB at 1 Hz  
CMRR ..... 70 dB (100 Hz - 10 kHz)

Output ..... mono -jack .... 6,3 mm  
unbalanced  
impedance ..... 100 Ohm  
nom.level ..... 0 dB  
max.level ..... + 22 dB

THD at 0 dB .. below noise (100 Hz - 20 kHz)  
at +10 dB .. 100 Hz: 0,003 %  
          .. 1 kHz: 0,004 %  
          .. 10 kHz: 0,007 %

Noise (A-weighted).. bypass               -100 dB  
                  audiopath on       - 88 dB  
                  audiopath off      -102 dB  
                  filteroutput      - 97 dB

#### Key-input

AC ..... stereo/mono jack 6,3 mm  
unbalanced  
impedance ..... 10 kOhm  
nom.level ..... 0 dB  
max.level ..... + 22 dB  
freq.resp. .... - 3 dB at 72 kHz

DC ..... stereo/mono jack 6,3 mm (same as AC)  
TTL and CMOS compatible  
impedance ..... 12 kOhm  
threshold-off ... Vin between : +1,0 V and -1,0 V  
threshold-on ... Vin between : +2,9 V and +25 V  
                  or ...                       -2,9 V and -25 V

#### Link-input

Control-line ..... impedance ..... infinite (slave -mode)  
  ..... 1 kOhm (master-mode)  
max.level ..... + 18 V (input & output)  
min.level ..... + 15 V (input & output)

VCA-buss ..... impedance ..... infinite (slave -mode)  
  ..... 220 Ohm (master-mode)  
max.level ..... + 16 V (input & output)  
min.level ..... 0,0 V (input & output)



**CAUTION**

- Never open your equipment yourself, there are no users serviceable parts inside, therefore we strongly advise not to open the unit yourself.
- The opening of a unit is only allowed to trained and qualified service engineers, who are fully aware of the fact that it can be dangerous to service a mains powered unit.
- Always earth the unit.
- Only make use of the product in a way as is described in the manufacturers brochures and manuals, never use it for other purposes than intended by the manufacturer.
- Never use this equipment in an environment with a high humidity and never expose it to water.
- Do not use this equipment in rain/snow or equivalent type of weather.
- Check your mains cord regularly and see if it is in a safe condition with a properly connected mainsplug on one side and securely tightened in the equipment on the other side.
- Return your product yearly to your dealer for a safety checkup.
- The hazard of an electrical shock can be avoided by carefully following the rules mentioned above.

**PLEASE CAREFULLY READ THE FOLLOWING INFORMATION**

Especially in sound equipment on stage the following information is essential to know. An electrical shock is caused by voltage and current, actually it is the current that causes the shock. In practise the higher the voltage the higher the current will be and the higher the shock. But there is another thing to consider and this is resistance. When the resistance (in ohms) is high between two poles, the current will be low and vice versa. All three of these: voltage, current and resistance are important in determining the effect of an electrical shock. However, the severity of a shock is primarily determined by the amount of current flowing through a person. A person can feel a shock because the muscles in a body respond to electrical current and because the heart is a muscle it can be affected when the current is high enough. Current can also be fatal when it causes the chest muscles to contract. At what potential is current dangerous. Well the first feeling of current is a tingle at 0,001 Amp of current. The current between 0,1 and 0,2 Amp is fatal. Imagine that your home fuses of 20 Amp can handle 200 times more current than is necessary to kill. How does resistance affect the shock a person feels. A typical resistance between one hand to the other in a "dry" condition could be well over 100.000 ohm. If you are playing on stage your body is perspiring profusely and your body resistance is lowered by more than 50 %. This is a situation in which current can easily flow. Current will flow when there is a difference in ground potential between equipment on stage and in the P.A.-system.

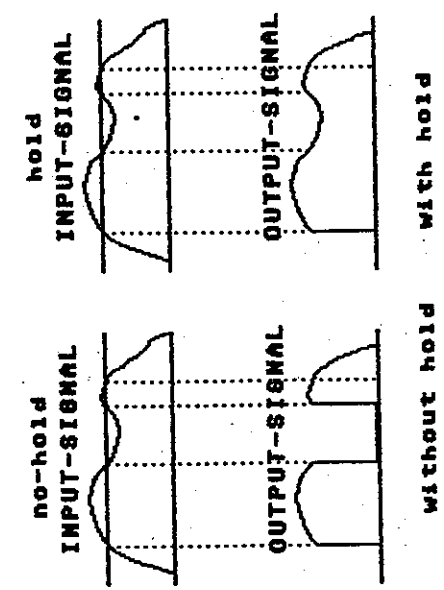
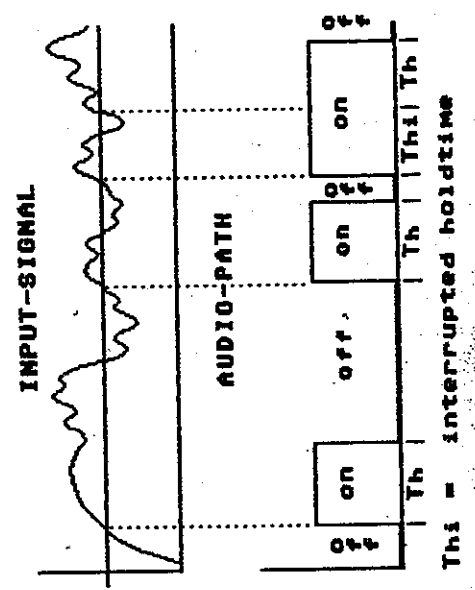
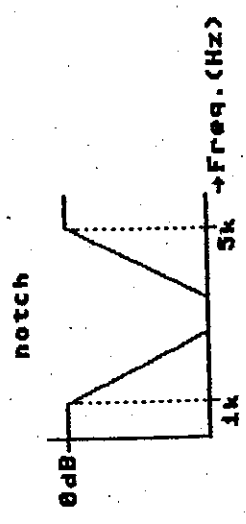
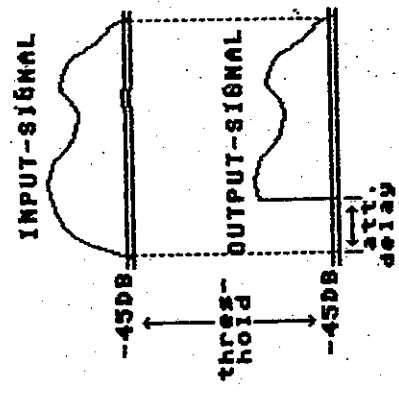
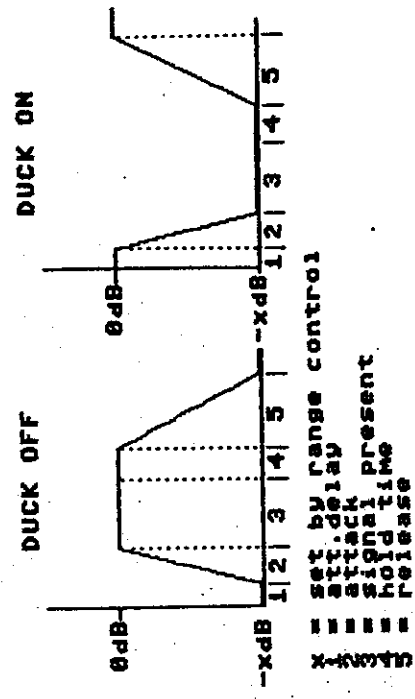
Please do check if there is any potential between the housing of the mikes and the guitar/synth amps, which will be linked by your body on stage. Imagine, a guitar in your hand and your lips close to the mike! A ground potential difference of above 10 Volts is not unusual, in improperly wired buildings it can possibly be as high as 240 Volts. Although removing the ground wire sometimes cures a system hum, it will also create a very hazardous situation for the performing musician.

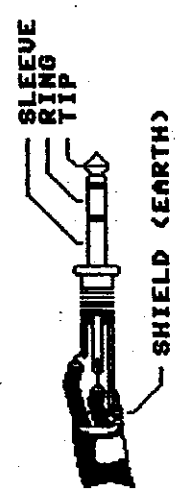
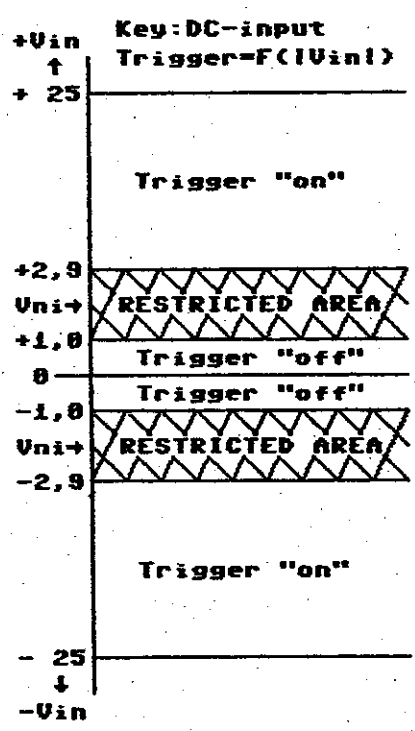
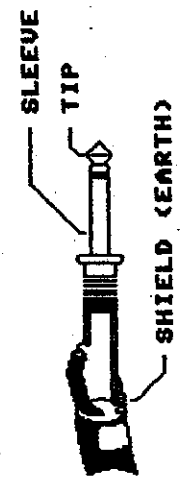
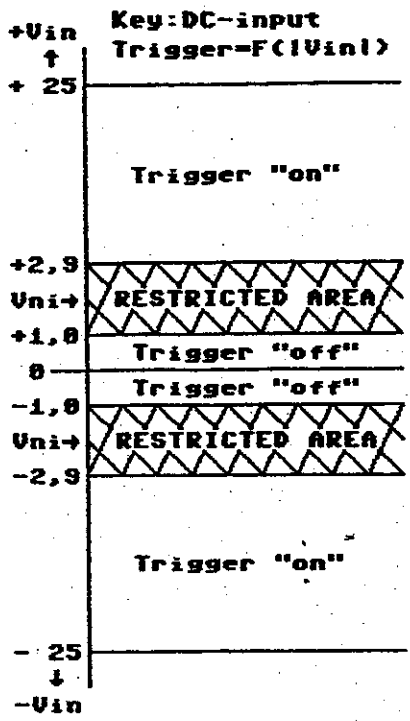
Always earth all your equipment by the grounding pin in your mains plug or to the metal cabin of your device. Hum loops should only be cured by proper wiring and isolation input/output transformers.

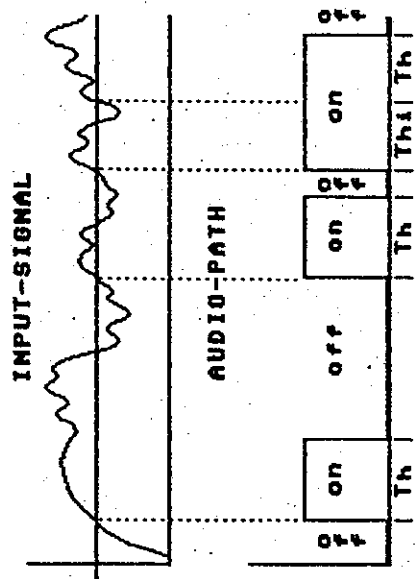
Replace fuses always with the same type and rating after the equipment has been turned off and unplugged. If the fuse blows again you have an equipment failure, do not use it again and return it to your dealer for repair.

And last but not least: Be careful NOT TO TOUCH a person being shocked as you, yourself could also be shocked. Once removed from the voltage, have someone send for medical help immediately.

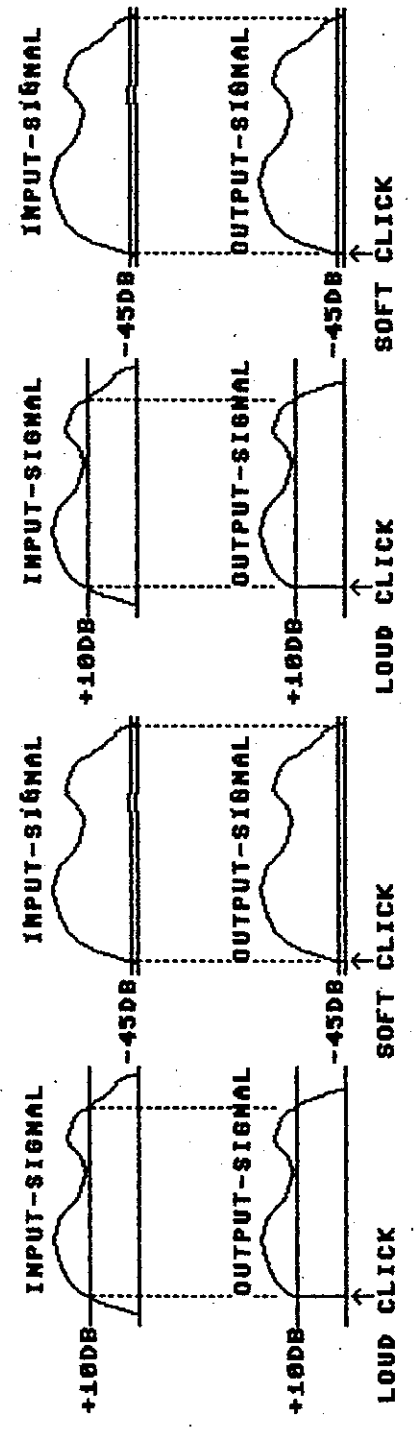
ALWAYS KEEP THE ABOVE MENTIONED INFORMATION IN MIND WHEN USING ELECTRICALLY POWERED EQUIPMENT.

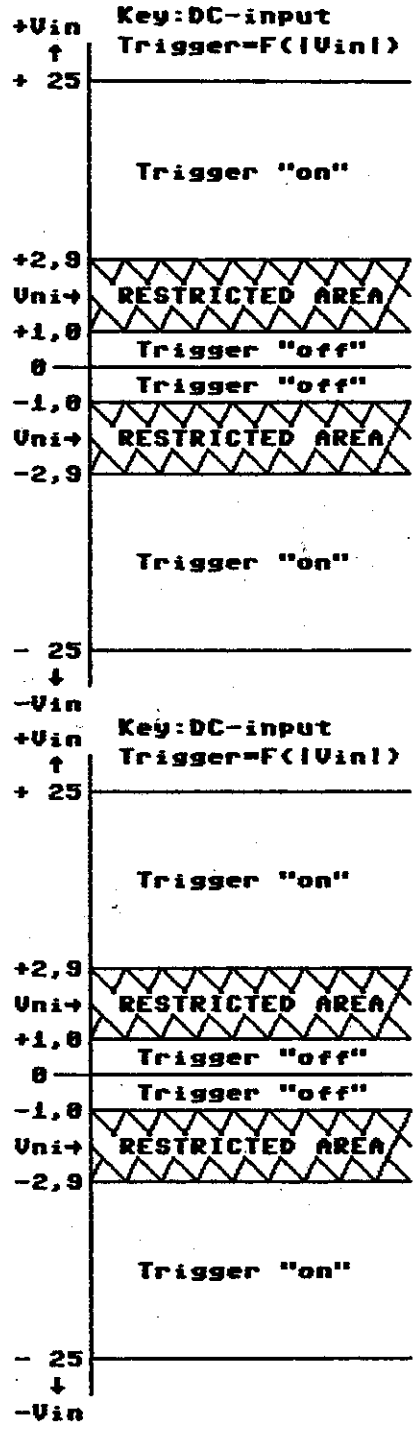
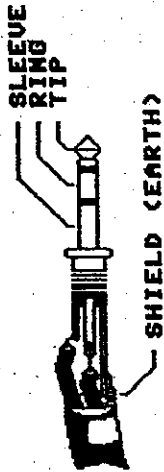
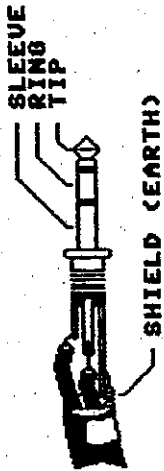




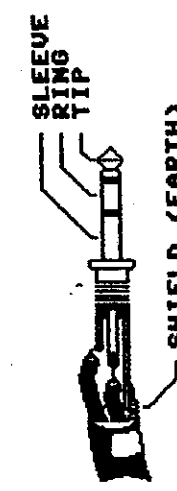
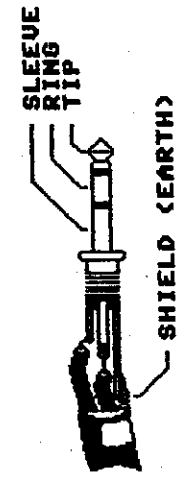
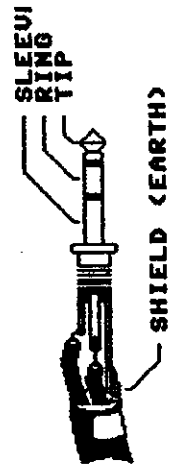
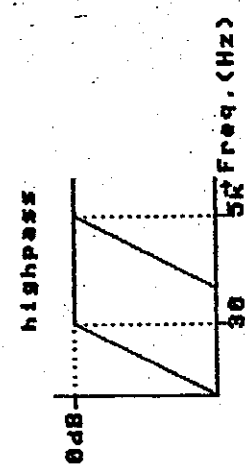
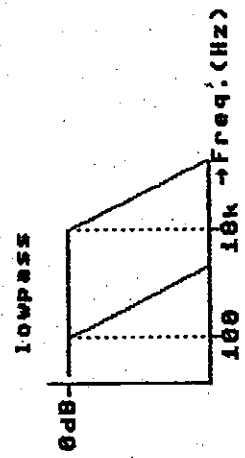
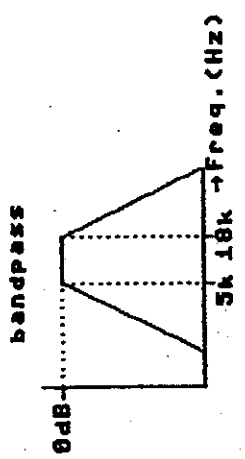


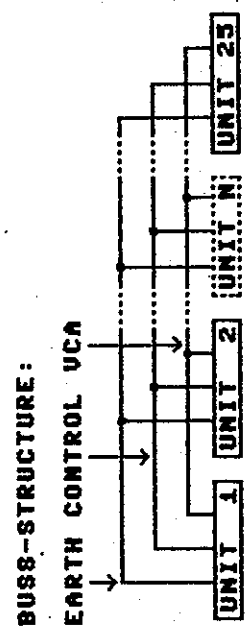
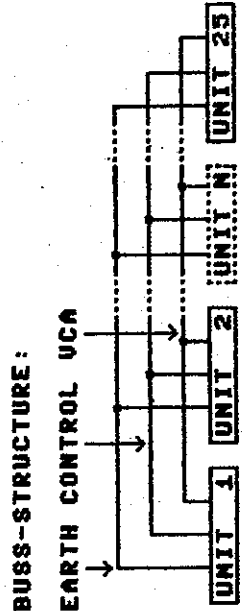
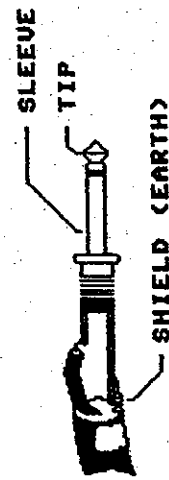
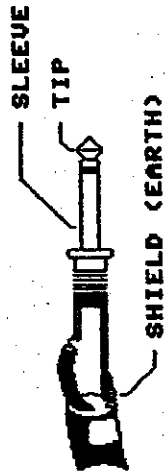
Th1 = interrupted holdtime











# Conformity statement according to ISO/IEC Nr. 22 and EN 45014

**Name Manufacturer** D&R Electronics Weesp b.v.  
**Address manufacturer** Rijnkade 15B,  
1382 GS Weesp,  
The Netherlands

**declares that this product**

**Name product** Multigate  
**Modelnumber** n.a.  
**Produktioptions** All

**passed the following product specifications:**

**Security** EN 60950: 1988 +A1, A2

**EMC:** CISPR-22: 1985 / EN 55022: 1988 class B (\*)  
EN 50082-1: 1992  
IEC 801-2:1991 / prEN 55024-2:1992 - 3kV CD, 8kV AD  
IEC 801-3:1984 / prEN 55024-3:1991 - 3 V/m  
IEC 801-4:1988 / prEN 55024-4:1992 - 0.5kV signalcables,  
1 kV powercables.

**Extra information:**

**The product passed the specifications of the following regulations;**

**Low voltage 73 / 23 / EEG**  
**EMC-regulations 89 / 336 / EEG.**

**(\*) The product is tested in a normal users environment.**

The logo consists of the letters 'D' and 'R' in a bold, stylized font. The 'D' is on the left and the 'R' is on the right, with a small ampersand between them. The letters are black and have a slightly distressed or hand-drawn appearance.