FEATURES

The ME35T is a MIDI processor which converts the click-pulse audio signals
(audio triggers) received from a microphone, an electronic drum head, a
drum sequencer, etc., into MIDI signals (i.e. the data of channels, notes,
dynamic velocity, on-time, recovery time, etc.) and sends them to digital
samplers and synthesizers to play them. It is designed in a compact
EIA/1U-size unit.

Some of its features include:

● Eight audio input terminals and assignment of click-pulse audio signals
  sent through each of the inputs to any MIDI channel or note. It can
  play up to eight notes simultaneously.

● Velocity which can change dynamically in response to the level of the
  click-pulse audio signals received. You can set the type of change in
  this "dynamic velocity" by selecting one of the eight "response
  characteristic curves" representing the same number of
  characteristics. This offers you a wider range of artistic expression.

● LED displays which are used for monitoring the input level of the
  click-pulse audio signals to find out an overload level and a proper
  trigger point. These easy-to-watch LEDs will help your work greatly.

● MIDI IN terminal, which allows merging the MIDI data sent from outside
  with the MIDI data generated in it, and to send them to other MIDI
  instruments through its MIDI OUT terminal. It has also a MIDI THRU
  terminal.

● Easy editing of any parameter with eight parameter-call keys and the
  VALUE ADJUST UP/DOWN keys.

● Memory of edited and stored parameters are backed up by a lithium
  battery. So the stored data will not be lost even if you turn off the
  power of the ME35T.

RATINGS

■ Audio Input Terminals ■

Inputs: 8
Input level: Min -40 dBv   Max +18 dBv (Imp. 22K ohms)

■ MIDI Terminals ■

IN: 1
OUT: 1
THRU: 1

For detailed information about the MIDI data, refer to the section, "MIDI
MESSAGES" in this book.

■ Parameters ■

EDIT CHANNEL SELECT: 1∿8
MIDI CHANNEL: 1∿16
SENSITIVITY: 0∿99 (0.8dB/STEP)
CAPTURE TIME: 0∿20 mS. (1 mS./STEP)
ON TIME: Max. 1 second (0.01 second/STEP)
MIDI NOTE: 0∿127
TRIGGER: 0∿99 (0.8dB/STEP)
RECOVERY TIME: 0∿20 mS. (1 mS./STEP)
V-CURVE: 1∿8

■ Power Voltage/ Consumption	AC 120 V (60 Hz)/8 W AC 220 V (50 Hz)/8 W AC 240 V (50 Hz)/8 W
■ Dimensions	482.6(W) x 45.7(H) x 120(D) mm
■ Weight	2 kg

* These ratings and appearance of the ME35T are subject to modification
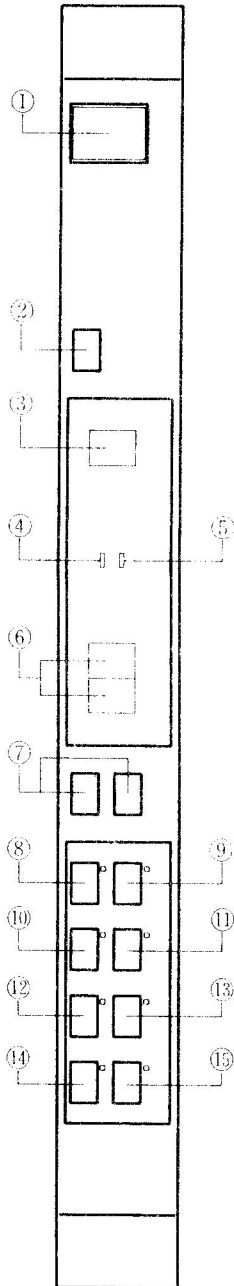 without notice for improvement.

NAMES OF PARTS AND THEIR FUNCTIONS

■ Front Panel ■

(1) POWER:

Turns on or off the power source.

(2) EDIT CHANNEL SELECT:

This key allows you to select an audio
input channel for which you edit
parameters. On the "EDIT CH" display,
" A " is displayed as the default of the
channel you edit. Each time you push
this key, the display will change from
" A " to "1" from "1" to "2" and so on,
until it returns to " A " after "8".

(3) EDIT CH:

Displays the audio input channel you
have selected to edit parameters for it.

(4) TRIGGER:

This LED is lit green each time a
click-pulse audio signal is found.

(5) OVER LOAD:

This LED is lit red when a click-pulse
audio signal exceeds the specified value.

(6) VALUE:

Displays the set value of each parameter.

(7) VALUE ADJUST UP/DOWN:

These keys are for setting the value of
a parameter you have selected. Each
time you push the "UP" or "DOWN" key,
the value of the parameter changes
upwards or downwards at an increment of
one step. If you push and hold a key,
the value will change faster.

(8) MIDI NOTE:

Allows setting of a note number.

A value "60" means the middle C.

(9) MIDI CHANNEL:

Allows assignment of a MIDI channel to an audio channel which you
have selected with the EDIT CHANNEL SELECT key.

(10) TRIGGER:

For setting the threshold level of the audio input signals. Set
the level by selecting a proper value at which the LED "TRIGGER"
begins to be lit in green when the lowest level of the signals is
input (you can find this level by playing a drum head at pianissimo).

(11) SENSITIVITY:

Allows setting of the maximum level for audio input signals. Set
the level by selecting a value at which the LED "OVER LOAD" blinks
when the highest level of the signals is input (you can find this
level by playing a drum head at fortessimo).

In relation to this parameter, you can set proper ME35T response
characteristics to the range of velocity data you have just set. To
do this, select one of the eight types of V-curves representing
response characteristics. This will be referred to later.

(12) RECOVERY TIME:

For setting a parameter to prevent doubled triggering caused by
certain stick work. Set the parameter at a proper value so that no
erroneous note is struck when you roll a drum head.

(13) CAPTURE TIME:

For setting a parameter to adjust the trigger point in the attack
in the envelope which is unique to the sensor of each of the
electronic drum heads. If you set the value larger than "12mS", the
delay of the response of the output sound to your stick work will
become conspicuous.

(14) V-CURVE:

For selecting a type of response characteristic, represented by a
V-curve, corresponding to the full range of the input velocity data
covering from fortessimo to pianissimo. You can select one of eight
types of characteristics.

(15) ON TIME:

For setting the "Note-on" time. Usually, it is set to "0." The
maximum value you can assign is "99" which sets the note-on time at
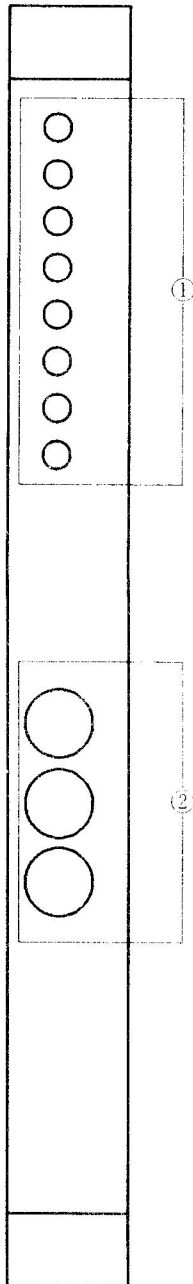one second.

■ Rear Panel ■

① AUDIO TRIG INPUT:

These eight terminals are used to input the click-pulse audio signals into ME35T. Connect these terminals to the outputs of a microphone, an electronic drum head, etc.
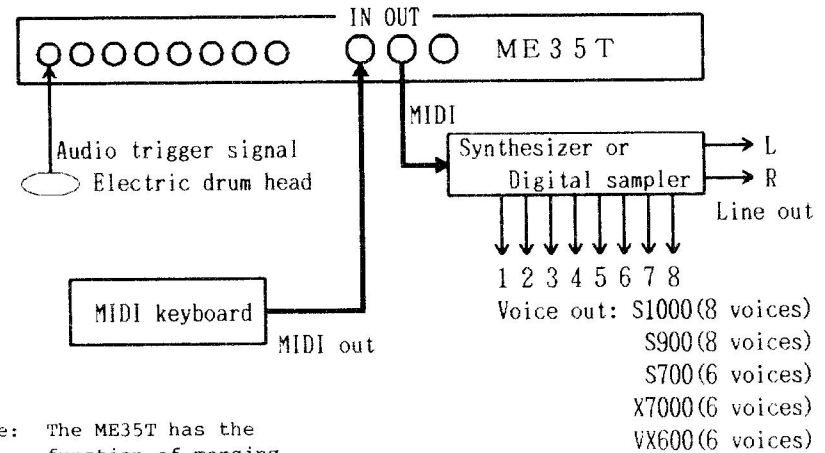
② MIDI IN, OUT, THRU:

Are the MIDI terminals. Connect the MIDI IN terminal to the outputs of a keyboard or a sequencer. The ME35T has the function of merging the MIDI data sent to it. You can also edit its data using the system exclusive messages from outside. For example, if you use AKAI S900 or S1000 (a MIDI stereo digital sampler) for a sound module, you can edit the parameter stored on the ME35T using the display, the keypads and the control knob on the S1000.

Connect the MIDI OUT terminal to an outside sound module, e.g. synthesizer, digital sampler, etc. The MIDI THRU terminal sends out the data received through its MIDI IN terminal unchanged.

For more detailed information about MIDI, refer to the section "MIDI MESSAGES".

■ Usual Connection ■

Note: The ME35T has the function of merging the MIDI data.

Voice out: S1000 (8 voices)
S900 (8 voices)
S700 (6 voices)
X7000 (6 voices)
VX600 (6 voices)

■ Connection to S1000 ■
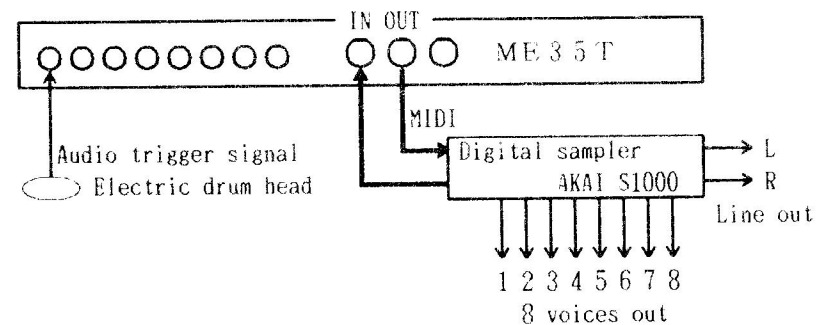
Note: You can edit each parameter stored in the ME35T from the S900 or S1000 using the system exclusive data and their edit function. For more information, refer to their Owner's Manual.

HOW TO OPERATE ME35T

■ Connection ■

Connect the ME35T and the sound module (synthesizer, digital sampler, etc.) with the MIDI cables as illustrated on the previous page, with the power of both units turned off. Next, connect the sensor outputs of the electronic drum heads, etc., or the microphone outputs, which serve as the source of the audio triggers, to the AUDIO TRIG INPUTs of the ME35T.

■ Power On ■

Turn on the power of the ME35T and the equipment of your MIDI system. When you first turn on the ME35T, the EDIT CH display will show " A " which stands for "All the channels." Subsequently, an LED to the left over the SENSITIVITY key will be lit and the VALUE will display "50".

The following are the parameter defaults, which are shown when you first turn on the ME35T, as well as the range of the value of each parameter.

	DEFAULT VALUE	USEFUL VALUE
EDIT CHANNEL	A	A ∿ 1 ∿ 8
MIDI CHANNEL	1	1 ∿ 16
SENSITIVITY	50	0 ∿ 99
CAPUTURE TIME	4	0 ∿ 20
ON TIME	0	0 ∿ 99
NOTE	60	0 ∿ 127 (Displayed as "2.7.")
TRIGGER	25	0 ∿ 99
RECOVERY TIME	10	0 ∿ 20
V-CURVE	3	1 ∿ 8

■ How to Set Parameters ■

1. Select first an audio input channel (channel "1" for example), for which you want to set parameters, by pressing the EDIT CHANNEL SELECT key; the LED of EDIT CH will display the channel number ("1") you have selected.

2. Press the MIDI CHANNEL key, and the LED to the left over the key will be lit. Now the ME35T is ready for you to assign a MIDI channel which will receive data from the audio input channel you have selected in the step 1 above.

3. Select a MIDI channel (channel "1" for example) by pressing the VALUE ADJUST UP or DOWN key.

4. Set the VOLUME properly on the sound module (synthesizer, digital sampler, etc.) connected to the MIDI OUT of the ME35T.

5. Press the SENSITIVITY key, and the LED to the left over the key will be lit. Set the value of the SENSITIVITY parameter by using the VALUE ADJUST UP or DOWN key. You can select the optimum value as follows: Let the audio triggers' source, which is connected to the audio input channel for which you are setting the parameter, output the signals at the maximum level into the ME35T (play a drum head, for example, at fortessimo.) Find out the level of the SENSITIVITY where the LED "OVER LOAD" begins to blink by pressing the VALUE ADJUST UP/DOWN keys; this SENSITIVITY value is what you are searching for.

6. Press the TRIGGER key, and the LED to the left over the key will be lit. Set the value of the TRIGGER parameter, or the threshold value of the input triggers, as follows: Let the audio triggers' source, which is connected to the audio input channel for which you are setting the parameter, output the signals at the lowest level into the ME35T (play a drum head, for example, at pianissimo.) Press the VALUE ADJUST UP/DOWN keys to find out the level of the trigger signals where the LED of the TRIGGER begins to be lit indicating that the ME35T has found a trigger signal. Now, the sound module connected to the MIDI OUT terminal of the ME35T will begin to sound as the ME35T finds out a trigger. Roll or bounce your drum head, and adjust the threshold value so that the sound module can follow your playing correctly.

Level

Threshold level

Audio input's envelope

Trigger point

Time
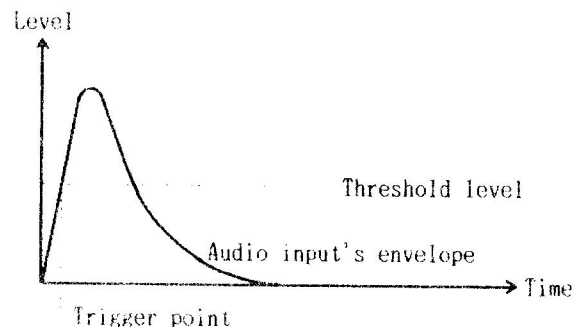
7. Press the MIDI NOTE key, and the LED to the left over the key will be lit. Select the pitch you want for the signals sent through the channel by pressing the VALUE

ADJUST UP/DOWN keys. The value "60" will set the pitch at Middle C. The values in three digits such as 100 or 127 are displayed as "0.0." or "2.7." respectively.

8. Press the CAPTURE TIME key, and the LED to the left over the key will be lit. Play your drum head, which is connected to the channel for which you are setting parameters, at a medium force. Set the value of the parameter at a level where the sound module connected to the MIDI OUT terminal sounds without delay, by pressing the VALUE ADJUST UP/DOWN keys.

This parameter allows you to adjust the triggering point in the attack in the envelope of the audio trigger signals received from the sensor of each of your electronic drum heads. If you set the value larger than "12mS" the response delay of the output sound to your stick work will become conspicuous.

Level

Trigger point

Audio input's envelope

Time

Capture time
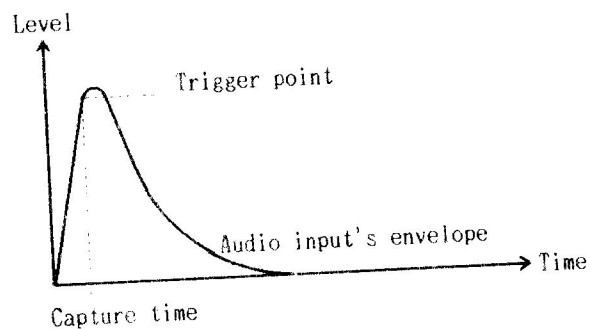
9. Press the RECOVERY TIME key, and the LED to the left over the key will be lit. Set a value for the parameter with the VALUE ADJUST UP/DOWN keys so that erroneous doubled tones will not sound when you hit the drum head once with medium force. Complete the setting by adjusting the value so that no erroneous note should be struck when you roll a drum head.

10. Press the ON TIME key, and the LED to the left over the key will be lit. This parameter allows you to set the "Note-on" time, which is a specified period of time to send the information of a note to the sound module connected the ME35T to sound it. Usually, it is set to "0" (1/100 sec.). You can set various values for this parameter if you want special effects for tone quality or other musical expression. You can set the value at an increment of 1/100 sec. The maximum value you can set is "99" (1 sec.).

11. Press the V-CURVE key, and the LED to the left over the key will be lit. Press the VALUE ADJUST UP/DOWN keys to select the response characteristics of the ME35T to the full range of velocity of the input data from among eight options. The figure below shows eight V-curves representing eight characteristics.

Velocity curve

127

Velocity level

①
④
②
③
⑧
⑤
⑥
⑦

0

0   64   128   192   256

Audio input's level
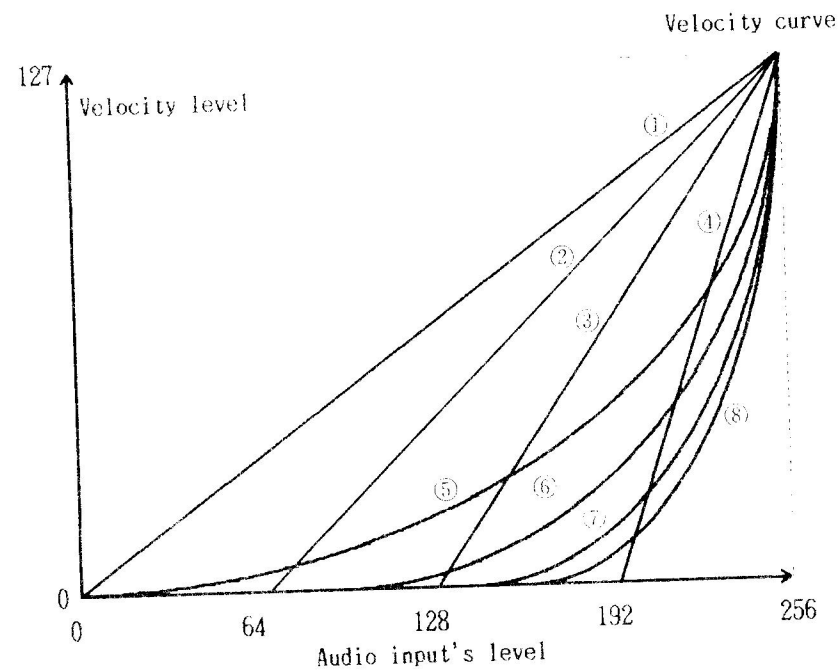
Select one of the curves ① ~ ④ if your sound module, i.e. a synthesizer or a digital sampler, is the logarithmic-coding type which has an exponential type of characteristics; select one of the curves ⑤ ~ ⑧ if your sound module is the linear-coding type which has a linear type of characteristics. If you use AKAI S1000, S900, S700 or X7000, one of the curves ⑥ ~ ⑧ will be best.

Now you have completed the parameters for one audio input channel.

Note that you may set these parameters in any order you want, and that you have to select first the audio input channel for which you want to set parameters, before you start to set the parameters.

MIDI MESSAGES

The following are the MIDI messages which the ME35T sends and receives.

■ MESSAGES TRANSMITTED BY THE UNIT ■

Note on: byte
           1 1001 cccc   Status. MIDI channel cccc.
           2 0kkk kkkk   Key number, 0 to 127.
           3 0vvv vvvv   Velocity, 1 to 127 according to input dynamics.

Note off: byte
           1 1001 cccc   Status. MIDI channel cccc.
           2 0kkk kkkk   Key number, 0 to 127.
           3 0000 0000   Velocity, = 0.

◆ Peak value of all inputs since last transmission:

Mnemonic	byte		
SYSTEX	1	1111 0000	System exclusive code.
AKAI	2	0100 0111	Akai identifier.
	3	0000 cccc	MIDI exclusive channel, 0 to 15. Note that ;this is displayed on the panel as 1 to 16.
FNPK	4	0000 0000	Function code = Peak values.
SDCODE	5	0100 1001	Code to identify this model number.
	6	0vvv vvvv	Highest peak value of input 0 since last transmission.
	7	0vvv vvvv	Ditto input 1
	8	0vvv vvvv	Ditto input 2
	9	0vvv vvvv	Ditto input 3
	10	0vvv vvvv	Ditto input 4
	11	0vvv vvvv	Ditto input 5
	12	0vvv vvvv	Ditto input 6
	13	0vvv vvvv	Ditto input 7
EOX	14	1111 0111	EOX code, marks end of message.

Note that peak value is logarithmically coded with the LSB having a weight of .8 dB.

◆ Report of set up parameters for one input:

	byte		
SYSTEX	1	1111 0000	System exclusive code.
AKAI	2	0100 0111	Akai identifier.
	3	0000 cccc	MIDI exclusive channel.
FNUSP	4	0000 0001	Function code = Set-up parameters reported herewith.
SDCODE	5	0100 1001	Code to identify this model number.
	6	0000 0iii	Input number, 0 to 7 to which following parameters are directed.
	7∿15		Value of setup parameters for on input (See below).
EOX	16	1111 0111	EOX code, marks end of message.

■ MESSAGES RECOGNIZED BY THE UNIT ■

◆ Request for peak value transmissions:

	byte		
SYSTEX	1	1111 0000	System exclusive code.
AKAI	2	0100 0111	Akai identifier.
	3	0000 cccc	MIDI exclusive channel 0 to 15.
FNRQPK	4	0000 0010	Function code = request for peak transmissions.
SDCODE	5	0100 1001	Code to identify this model number.
	6	0ttt tttt	Interval in units of 4 mS between transmissions. A vaue of 0 means to cease transmission. Most useful values are in the range 12 to 96 mS.
EOX	7	1111 0111	EOX code, marks end of message.

After receiving this the unit will send peak values for all inputs without further requets at intervals defined above.

◆ Set-up parameters for one input. NB. Parameters displayed on the unit's panel are scaled differently:

	byte		
SYSTEX	1	1111 0000	System exclusive code.
AKAI	2	0100 0111	Akai identifier.
	3	0000 cccc	MIDI exclusive channel.
FNSP	4	0000 0011	Function code = Set-up parameters to follow.
SDCODE	5	0100 1001	Code to identify this model number.
	6	0000 0iii	Input number, 0 to 7 to which following parameters are directed.
DMDCH	7	0000 cccc	MIDI channel that this input must transmit note on.
DPITH	8	0kkk kkkk	MIDI key number used by this input.
DSENSFS	9	0sss ssss	Input sensitivity. May take values 0 to 127. Weight of LSB is .8 dB. Default is 50.
DTTFS	10	0ttt tttt	Trigger threshold, 0 to 127. This is compared with the envelope follower reading before the sensitivity scaling is added.
DCURVE	11	0000 0ddd	Selects dynamics/velocity curve, 1 of 8. Default is 3.
DATTIME	12	0aaa aaaa	Attack capture time in units of .25 mS. This sets the trade-off between speed of response and accuracy of dynamics. Default value is 4 mS.
DRCTIME	13	0rrr rrrr	Recovery time in units of .25 mS. This sets the minimum time after sending note-off before a new attack is recognized. Default value is 10 mS.
DONTIME	14	0nnn nnnn	On time LSbyte in units of .25 mS. This sets the delay between sending note-on and note-off.
	15	0mmm mmmm	On time MSbyte in units of 32 mS. This sets added to the LSbyte above. Default on-time is 1 mS.
EOX	16	1111 0111	EOX code, marks end message.

◆ Request setup parameters:

	byte		
SYSTEX	1	1111 0000	System exclusive code.
AKAI	2	0100 0111	Akai identifire.
	3	0000 cccc	MIDI exclusive channel.
FNRQSP	4	0000 0110	Function code = Request setup parameters.
SDCODE	5	0100 1001	Code to identify this model number.
	6	0000 0iii	Input number, 0 to 7 for which parameters are requested.
EOX	6	1111 0111	EOX code, marks end message.

After receiving this the unit will replay with a message containing the values of the setup parameters for one input.

■ About ME35T's Merge Function ■

The ME35T has a "merge" function. It allows merging of all the MIDI messages received through the MIDI IN with other MIDI messages originated from the AUDIO TRIG INPUTs, and to output these merged data through its MIDI OUT.

CAUTION

To prevent electric shock, do not use this polarized AC power plug with an extension cord receptacle or other outlet inless the blades can be fully inserted to prevent blade exposure.

LITHIUM BATTERY

This product uses a lithium battery for memory back-up. The lithium battery should only be replaced by qualified service personnel.
Improper handling may cause risk of explosion.

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Sub-part J of Part 15 FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment dose cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interfrence by one or more of the following measures:

Reorient the receiving antenna
Relocate the computer with respect to the receiver
Move the computer away from the receiver
Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio / television technician for additional suggestions.
The user may find the following booklet prepared by the Federal Communications Commission helpful:
How to Identify and Resolve Radio-TV Interference Problems.
This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

"DANGER -Improper connection of the equipmentgrounding conducter can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded.
Do not modify the plug provided with the product -if it will not fit the outlet, have a proper outlet installed by a qualified electrician."

You can take no notice of these as above, if you have a another power-supply coad without grounded terminal.

WARNING

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

1.   Read all the instructions before using the product.
2.   To reduce the risk of injury, close supervision is necessary when a product is used near children.
3.   Do not use this product near water for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
4.   This product should be used only with a cart or stand that is recommended by the manufacturer.
5.   This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss.
      Do not oparate for a long period of time at a high volume level or at a level that is uncomfortabel.
      If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
6.   The product should be located so that its location or position does not interfere with its proper ventilation.
7.   The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
8.   The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9.   This product may be equipped with a polarized line plug (one blade wider than the other). This is a safety feature.
      If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.
10. The power supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
11. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
12. The product should be serviced by qualified service personnel when:
      A. The power-supply cord of the plug has been damaged; or
      B. Objects have fallen, or liquid has been spilled into the product; or
      C. The product has been exposed to rain; or
      D. The product does not appear to operate normally or exhibits a marked change in performance; or
      E. The product has been dropped, or the enclosure damaged.
13. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

SAVE THESE INSTRUCTIONS