

# *Operation Manual*

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Output Expander

OEX-6sr



## **What is the OEX-6sr Output Expander?**

The OEX6sr is a multi-function digital device that adds six individual outputs, or three additional pairs of stereo outputs to an ASR- 10, ASR-88, or EPS- 16 PLUS keyboard, enhancing the capabilities and flexibility of the ASR/EPS-16 PLUS.

The power of the OEX-6sr Output Expander lies in its unique configuration: six individual outputs or three stereo pairs (AUX 1, AUX 2, AUX 3). The addition of these outputs allows you to route separate signals for independent processing, or isolate parts for click or monitoring references. Even individual WaveSamples within an instrument (for instance, the snare and kick drum from a drum kit) can be sent to different outputs for discrete external effects processing (such as with the ENSONIQ DP/4+ Parallel Effects Processor). The design of this product resulted from customer requests for a multi-purpose output device that could be configured with stereo outputs and/or individual outputs. As with any product, getting to know its operation will help to increase your productivity and enhance the performance and expression of your music.

***IMPORTANT! Because the OEX-6sr is a digital device, no audio signal passes through the connector cable from the ASR/EPS-16 PLUS to the OEX-6sr. Do not connect this cable to any other device that uses a similar connector (such as a Macintosh), as this will damage both units and void their warranties.***

## **Important points about the OEX-6sr**

- Never connect the OEX-6sr while the power to the ASIUEPS-16 PLUS is on. This will damage both units and void their warranties.
- The signals sent to AUX 1, AUX 2, and AUX 3 on the OEX-6sr are dry; these outputs do not pass signals with effects. The wet signal is only present at the Main Audio Outputs.
- The AUX 1, AUX 2, and AUX 3 outputs on the OEX-6sr are always active when the OEX-6sr is connected; see the signal flow diagram.
- The Outputs on the OEX-6sr are not affected by the ASR/EPS-16 PLUS master Volume Slider.
- Assigning of sounds to the OEX-6sr can be handled two

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ways; at the WaveSample level or at the track level.

## **Setting-up the OEX-6sr**

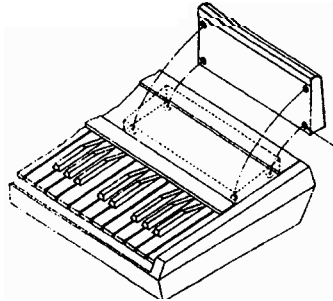
Although you can set-up your OEX-6sr any way you like, we suggest using one of these practical mounting methods:

### **Rubber Feet Only Mount**

Here's what you'll need to get started:

- OEX-6sr Output Expander
- Six foot connection cable (cable lengths of 10 feet or longer may not give optimal results, and are not recommended by ENSONIQ)
- Four rubber feet (included)

- 1) Apply rubber feet to the bottom of the OEX-6sr.
- 2) Place the OEX-6sr in the position of your choice, such as the recess over the ASR/EPS- 16 PLUS logo, or on the floor beneath your keyboard stand.

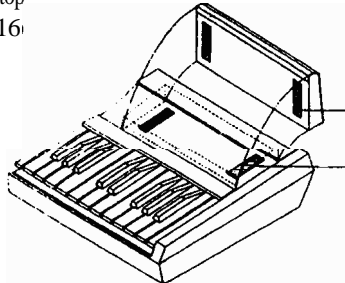


### **Velcro Only Mount**

Here's what you'll need to get started:

- OEX-6sr Output Expander
- Six foot connection cable (cable lengths of 10 feet or longer may not give optimal results, and are not recommended by ENSONIQ)
- Two strips of adhesive velcro (included)

- 1) Position the OEX-6sr on the top right corner of the ASR/EPS-16 PLUS. It fits comfortably in the recess directly over the ASR/EPS-16 PLUS logo.
- 2) Mark the position with masking tape (not included).
- 3) Place the "furry" side of the two adhesive velcro strips



(included) in the position marked by your masking tape. Remember to remove the masking tape and discard. Then place the “hook” side of the velcro strips on the bottom of the OEX-6sr. Use your thumb to apply pressure to all velcro strips to ensure a secure fit. Keep in mind, that it could be difficult to remove the velcro from the front panel of the ASR/EPS- 16 PLUS at a later time.

You should now be able to place your OEX-6sr on the velcro strips and have it remain in position. We suggest cleaning the velcro strips periodically to maintain a secure fit.

### Rubber Feet and Velcro Mount

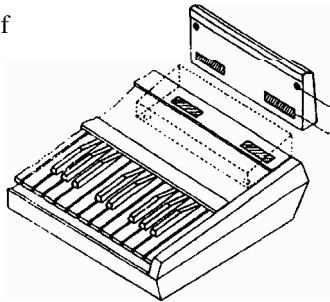
Here's what you'll need to get started:

- OEX-6sr Output Expander
- Six foot connection cable (cable lengths of 10 feet or longer may not give optimal results, and are not recommended by ENSONIQ)
- Four rubber feet (included)
- Two strips of adhesive velcro (included)

1) It is also possible to mount the OEX-6sr with a combination of rubber feet and velcro. Apply the rubber feet to the bottom front of the OEX-6sr as shown in the illustration.

2) Mark a location on the upper right hand lip of the ASR/EPS-16 PLUS. This is where your velcro will be positioned (the velcro is mounted horizontally in this application).

3) Place the “furry” side of the two adhesive velcro strips (included) in the position marked by the masking tape. Remember to remove the masking tape and discard. Then place the “hook” side of the two velcro strips on the bottom of the OEX-6sr. Use your thumb to apply pressure to all velcro strips to ensure a secure fit.



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## **Single Space 19" Rack Shelf Mount**

Here's what you'll need to get started:

- OEX-6sr Output Expander
- Six foot connection cable (cable lengths of 10 feet or longer may not give optimal results, and are not recommended by ENSONIQ)
- Two 6-32 x 3/8 SEM machine screws (included)
- Optional 19" rack mount shelf. The following universal rack shelves are compatible with the OEX-6sr:

- MIDDLE ATLANTIC PRODUCTS model #UTR- 1  
For the dealer nearest you, contact:

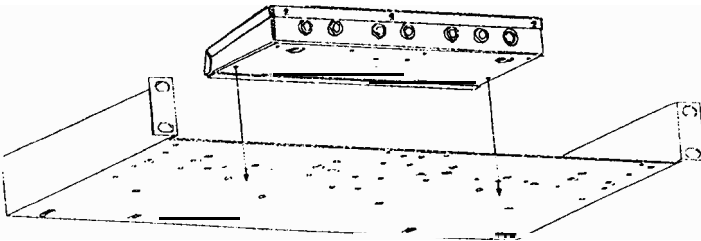
MIDDLE ATLANTIC PRODUCTS, INC.  
P.O. Box 29  
Riverdale, NJ 07457-0029  
USA

telephone: (201) 839-1011 (New Jersey)  
(805) 529-6104 (California)

- RAXXESS model #UNS- 1  
For the dealer nearest you, contact:

RAXXESS Metalsmiths  
Precision Industry Specialties  
P.O. Box 417  
Riverside Station  
Paterson, NJ 07544-04 17  
USA

telephone: (800) 398-7299  
(201) 523-1425



- 1) Position the OEX-6sr on the optional rack shelf, aligning the two outer holes on the bottom of the OEX-6sr with a pair of holes on the rack shelf. The OEX-6sr can be mounted facing either way, but we suggest facing the Output jacks of the OEX-6sr towards the front of the rack shelf. This will aid in quick changes for recording purposes.
- 2) Attach the OEX-6sr to the rack shelf using two (included) screws.
- 3) Once the OEX-6sr is attached to the rack shelf, you can mount the shelf into a rack mount housing.

### **Mic Flange Mount**

Here's what you'll need to get started:

- OEX-6sr Output Expander
- Six foot connection cable (cable lengths of 10 feet or longer may not give optimal results, and are not recommended by ENSONIQ)
- Three 6-32 x 3/8 SEM machine screws (included)
- Optional microphone stand hardware
- Optional flange. The following 5/8"-27 F. microphone stand mounting flanges are compatible with the OEX-6sr:
  - ATLAS/SOUNDOLIER models #AD- 11 B (chrome) and #AD- 11 BE (ebony)

For the dealer nearest you, contact:

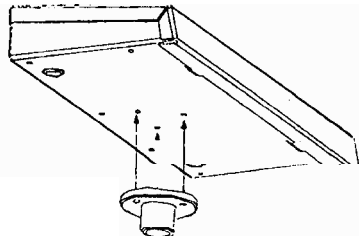
ATLAS/SOUNDOLIER

Atapco Security & Communications Group  
1859 Intertech Drive  
Fenton, MO 63026  
USA

telephone: (800) 876-7337

(3 14) 349-3 110

- 1) Turn the OEX-6sr upside down, and attach the flange using the three provided screws.
- 2) Now by using additional microphone hardware, the OEX-6sr can be positioned in a variety of ways. One



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of the simplest mountings would be to remove the microphone holder from a mic stand and attach the OEX-6sr (flange) to the stand.

### **Connecting the OEX-6sr**

Once the OEX-6sr has been mounted, connect the multiplexed input of the OEX-6sr to the Output Expander jack on the ASR/EPS-16 PLUS, with the enclosed connection cable.

**Important! Power to the ASR/EPS-16 PLUS must be off prior to connecting or disconnecting the OEX-6sr. Connecting the OEX-6sr with the power on can cause damage to the ASR/EPS-16 PLUS and/or the OEX-6sr itself.**

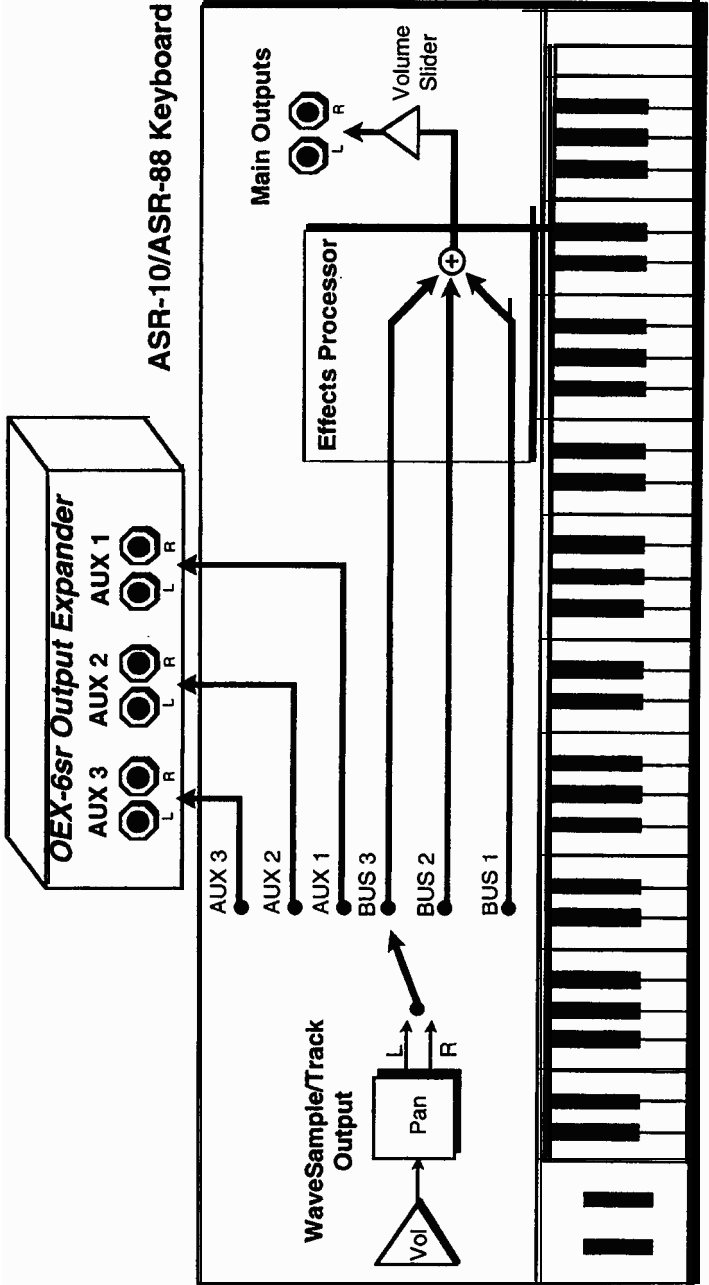
### **Understanding the ASR-10/ASR-88 Output Busses**

A sound in the ASR can be assigned to one of six stereo sends, which we call busses. An understanding of how these busses are routed to the OEX-6sr, as well as to the ASR Main Audio Outputs, is crucial to your getting the most out of the OEX-6sr. The signal flow of the six output busses is shown in the diagram on the facing page. We suggest you study it carefully, as it can answer many of your questions regarding what signal will be routed where.

When the PAN parameter is set to -99, the sound will be sent only to the left signal of the bus. When the PAN parameter is set to +99, the sound will be sent only to the right signal of the bus. This is how you can create six individual outputs.

The six output busses are as follows:

- \***BUS 1,2,3** Sounds assigned to these busses will always be routed to the ASR's internal effects processor and on to the Main Audio Outputs.
- **AUX 1,2,3** Sounds assigned to these busses will always be routed to the output labeled AUX 1, 2, or 3 on the OEX-6sr, and only to that output. Sounds assigned to AUX 1,2, or 3 will always **be** dry, with no effects processing.





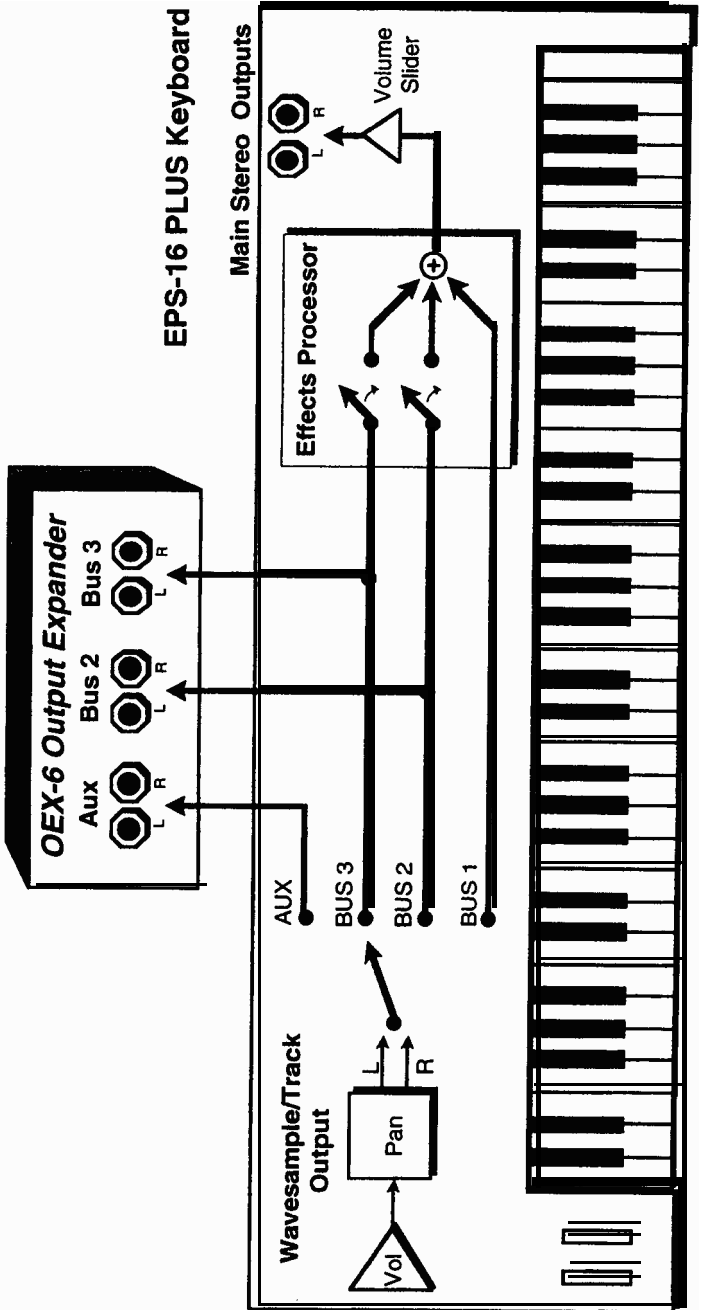
## **Understanding the EPS-16 PLUS Output Busses**

A sound in the EPS-16 PLUS can be assigned to one of four stereo sends, which we call busses. An understanding of how these busses are routed to the OEX-6, as well as the EPS- 16 PLUS main audio outputs, is crucial to your getting the most out of the OEX-6. The signal flow of the four output busses is shown in the diagram on the facing page. We suggest you study it carefully, as it can answer many of your questions regarding what will be sent where.

The four output busses are as follows:

- **FX 1**            Sounds assigned to this bus will **always go** to the EPS- 16 PLUS's internal effects processor and on to the main audio outputs.
- \***BUS 2**            BUS 2 is "shared" by the internal effects processor and the outputs marked BUS 2 on the OEX-6. Sounds assigned to this bus will always go to the OEX-6, but can be switched out of the EPS-16 PLUS's internal effects processor (and thus the main outputs) by turning the FX SEND BUS 2 parameter on the Edit/System\*MIDI page to OFF. (See below for more details.)
- \***BUS 3**            Likewise, BUS 3 is "shared" by the internal effects processor and the outputs marked BUS 3 on the OEX-6. Sounds assigned to this bus will always go to the OEX-6, but can be prevented from going to the internal effects processor (and thus the main outputs) by turning the FX SEND BUS 3 parameter on the Edit/System\*MIDI page to OFF. (See below for more details.)
- **AUX 1**            Sounds assigned to this bus will **always go** to the output labeled AUX 1 on the OEX-6, and only to that output.

As you can see from the above, BUS 2 and BUS 3 can be used as additional effects mixes to the main outs, or as auxiliary outputs to the OEX-6, depending on how you set the FX SEND parameters and which outputs you bring up at your mixer. Some combination of the two (two effects mixes and two dry auxilliary outs, for example) might suit your needs best.



### Using the OEX-6sr with the ASR-IO/ASR-88

The ASR can route a single WaveSample, Layer, or Instrument\*Sequence Track to any of the OEX-6sr outputs. The procedure for each is similar.

#### 1) Setting up the ASR for use with an OEX-6sr.

- Connect the OEX-6sr to an ASR using the instructions in the previous sections.
- Turn on the ASR.

#### 2) Routing a WaveSample (Layer, Instrument-Sequence Track) to an OEX-6sr Stereo Output (AUX 2).

- Load an Instrument.
- Select the Instrument.
- Press Edit. This takes you to the Edit Context page, and shows the following:

NAME OF INST LYR=1 WS=ALL

This screen shows whether an Instrument, Layer, or WaveSample is selected for editing. The selection is underlined. Since we would like to edit an individual WaveSample, scroll (using the *Left/Right Arrow* buttons) to underline WS=ALL. The screen should now look like this:

NAME OF INST LYR=1 WS=ALL

Now select the WaveSample that you would like to route to the OEX-6sr by either pressing the key on the keyboard that the WaveSample is assigned to, or by editing (using the *Up/Down Arrows* buttons or the *Data Entry Slider*) to the desired WaveSample number.

Let's assume we are editing/routing WaveSample 16. The display should now look like this:

NAME OF INST LYR=1 WS=16

- Press *Edit*, then *Amp*. This page shows you the output parameters for the instrument, layer, or in this case, the WaveSample. Scroll through the different parameters

until you see this display:

OUT=BUS | <name of effect>

The OUT parameter allows you to assign the selected WaveSample (layer or instrument) to the appropriate bus. We will assign WS 16 to AUX 2.

- By editing the OUT value with the **Up/Down Arrow** buttons or the **Data Entry** Slider, you should see BUS 1, BUS 2, BUS 3 (the three different effects busses that are routed to the Main Audio Outputs), and AUX 1, AUX 2, AUX 3 (three discrete direct dry stereo outputs).
- Set OUT=AUX 2 and stop. The display should look like this:

OUT=AUX 2

*You have now selected the AUX 2 output of the OEX-6sr to play WS 16. You should now be able to hear sound out of the AUX 2 outputs. If for some reason you do not, check the following:*

- *Is the OEX-6sr connected properly?*
- *Did you follow the above steps carefully?*
- *Are properly working audio cables connected to the outputs of the OEX-6sr?*
- *Is the volume properly set on your amplification source?*

At this point you could adjust the volume, panning, and other parameters of the WaveSample (layer, instrument) to meet your needs.

After adjusting parameters, you can save them as a part of the instrument. If you like the setting you have just created, you should save it now. **See Section 11 – WaveSample and Layer Parameters** of the ASR Musician’s Manual for more information on output programming.

Use the above example to route an instrument or layer to the OEX-6sr by selecting a layer or the entire instrument as the current Edit Context. **See Section 9 – WaveSample and Layer Concepts** for more information about selecting an Edit Context. Remember, edits made to the Edit/Amp output parameter are saved with the instrument.

### **3) Routing an Instrument\*Sequence Track or Audio Track to an OEX-6sr Stereo Output**

You can also route a signal to the OEX-6sr by using the OUT parameter on the Edit/Track page. This method overrides the previous example and requires the results to be saved as a part of a bank.

- Follow step one above.
- Select desired track.
- Press **Edit** then **Track**. Scroll using the **Left/Right Arrow** buttons until you see this display:

OUT= WAVESAMPLE

Please note that depending on the previous configuration, WAVESAMPLE could be replaced by BUS 1, BUS 2, BUS 3, AUX 1, AUX 2, or AUX 3. Also note that Audio Tracks do not have a WAVESAMPLE setting. As described above, set the OUT value to AUX 1. The display should now look like this:

OUT=AUX 1

By assigning an **Instrument\*Sequence Track** to AUX 1, you have overridden the output routings set on the Edit/Amp page. The signal on the selected track is now being routed to AUX 1. One benefit of using the Edit/Track OUT parameter to configure your output routings is that you can quickly assign different Instrument\*Sequence Tracks or Audio Tracks to different outputs for mixing purposes. See **Section 18 -Audio Track Applications** for more information on Audio Track output routing.

## **Using the OEX-6sr with the EPS-16 PLUS**

The EPS- 16 PLUS can route a single wavesample, layer, or Instrument/Track to any of the outputs. The procedure for each is similar.

### **1) Setting up EPS-16 PLUS for use with OEX-6.**

- Connect OEX-6 to EPS- 16 PLUS using previous instructions.
- Turn on EPS- 16 PLUS.
- Press *Edit*, then *System\*MIDI*. Scroll to the FX SEND page the display should look like this:

FX SEND BUS 2=ON BUS 3=ON

This shows you that BUS 2 and 3 are routed through the effects processor to the main stereo outputs of the EPS-16 PLUS. This is not the best way to configure the machine when using the OEX-6, so we suggest turning those busses OFF. Scroll to BUS 2=ON and use the *Up/Down Arrows* or the *Data Entry Slider* to change to it OFF. Repeat this procedure for BUS 3. The display should now look like this:

FX SEND BUS 2=OFF BUS 3=OFF

Now any sounds routed to BUS 2 or BUS 3 will appear only at the OEX-6 outputs, not the main stereo outputs.

### **2) Assigning a wavesample (layer, instrument/track) to an OEX-6 Stereo Output, (BUS 2).**

- Load an Instrument.
- Select the Instrument.
- Press *Edit*. You should see the following:

NAME OF INST LYR=A WS=ALL

This screen show whether an instrument, layer, or wavesample is selected for editing. The selection is underlined. Since we would like to edit an individual wavesample, scroll (using arrows) to underline

WS=All. The screen should now look like this:

NAME OF INST LYR=A WS=ALL

Now select the wavesample to send to the OEX-6 by either pressing a key on the keyboard designated for that wavesample, or scroll (using *Up/Down Arrows* buttons or *Data Entry Slider*) to the desired wavesample number. Let's assume we are editing/sending wavesample 16. The display should now look like this:

NAME OF INST LYR=A WS=16

- Press *Edit*, then *Amp*. This page shows you the output parameters of the instrument, layer, or in this case, the wavesample. Scroll through the different parameters until you see this display:

~~OUT=FX1~~ JUST REVERB

This is the page allows you to assign the selected wavesample 16 (layer or instrument) to the appropriate bus. We will assign WS 16 to BUS 2.

- Scroll through choices, you should see FX- 1 (signal with effects direct to main stereo outputs), AUX 1 (direct dry stereo output), BUS 2 and BUS 3 (direct dry stereo output to expander and/or signal with effects to main stereo outputs).

Scroll back to BUS 2 and stop temporarily. The display should look like this:

OUT=BUS 2

If the display shows an effects description like:

~~OUT=BUS2~~ REVERB

it means that the signal on BUS 2 is being routed

through the effects processor to the main stereo outputs.  
(You may want to change this.)

***You have now selected the BUS 2 output of the OEX-6 to play WS 16. You should now be able to hear sound out of those outputs. If for some reason you do not, check the following:***

- ***Is the OEX-6 connected properly?***
- ***Did you follow the above steps carefully?***
- ***Are properly working audio cables connected to the outputs of the OEX-6?***

At this point you could adjust the volume, panning, and other parameters of the wavesample (layer, instrument) to meet your needs.

After adjusting parameters you can save them as a part of the instrument. So if you like the setting you have created save it. See section **Section 7 · Voice Parameters** of the Musician's Manual for more on output programming.

Use the above example to route an instrument or layer to the OEX-6. Remember edits made to the output (AMP) page are saved with the sound.

### **3) Assigning a Track to the OEX-6**

You can also route signal to the OEX-6 by using the EDIT/ TRACK page. This method overrides the previous example and requires the results to be saved as a part of a bank and not an individual instrument.

- Follow step one above.
- Select desired track.
- Press Edit then **Track**. You should now scroll left/right until you see the output page. It looks like this:

OUT= WAVESAMPLE

Please note that depending on the previous configuration wavesample could be replaced by AUX 1, BUS 2, BUS 3, FX 1, or ROTATE. Using the same example as



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above, scroll up/down to BUS 2. The display should now look like this:

OUT=BUS

By doing this you have over-ridden any output parameters and instructions created on the EDIT/AMP page and the signal on the selected track is now being sent to BUS 2. Use the track output parameters to configure the output to meet your needs.

### **Using Panning to Create Individual Outputs**

In both examples above, panning controls the left/right image of a given signal. This is important to understand because by panning a signal hard left or hard right, you can isolate a sound to one output on the OEX-6sr, creating an individual output. At any time you could have multiple stereo outputs and individual outputs running simultaneously.

WaveSample, layer, or instrument panning is controlled by the Edit/Amp PAN parameter setting. Instrument\*Sequence Track and Audio Track panning is controlled by the Edit/Track PAN parameter. As with the Edit/Track OUT parameter, the Edit/Track PAN settings will override the Edit/Amp settings.

As you will find, the features and flexibility of the OEX-6sr Output Expander are unmatched. Remember, that comments and suggestions from musicians like yourself, help to make our musical products better. So feel free to write to us with your comments and suggestions. Enjoy the music!

## **Limited Warranty**

### **What Is Covered**

This warranty covers all defects in material and workmanship for thirty days from the date of purchase from an Authorized ENSONIQ Dealer.

### **What Is Not Covered**

This warranty does not cover damage to or deterioration of the casing or internal circuitry resulting from accident, misuse, neglect, attempted unauthorized repair or failure to follow operating instructions. Power to the ASR must be off prior to connecting or disconnecting the OEX-6sr to the ASR. Failure to do so will damage the ASR and/or the OEX-6sr itself. This will invalidate their warranties.

### **How To Obtain Warranty Performance**

Return your defective OEX-6sr Output Expander with its packaging to an Authorized ENSONIQ Dealer along with proof of purchase. The defective OEX-6sr will be replaced.

**Limitations Of Implied Warranties And Exclusion Of Certain Damages**

Any implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty.

ENSONIQ's liability, for any defective product, is limited to repair or replacement of the product.

ENSONIQ shall not be liable under any circumstance for:

1. Damages based upon inconvenience, loss of the OEX-6sr Output Expander, loss of time, interrupted operation, or commercial loss.
2. Any other damages, whether incidental, consequential, or otherwise, except damages which may not be excluded under applicable law.

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

The warranty gives you specific legal rights, and you may also have other right which may vary from state to state.

**No Claim For Warranty Will Be Honored Without Proof Of Purchase.**

**ENSONIQ Corp Worldwide Headquarters  
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(610) 647-3930 FAX (610) 647-8908**

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Part # 9310013401- C**



Part #9310013401  
Price \$3.95 (US)  
Model #OM-6sr



LEADING THE WORLD IN SOUND INNOVATION