



ANALOGUE SOLUTIONS

TBX-303

Trans-Bass-Xpress

user manual

MIX IN

MIDI THRU

MIDI IN

ANALOGUE SOLUTIONS™

TUNE

CUT OFF

RESONANCE

SQUELCH

ENV MOD

DECAY

ACCENT

MIDI PROGRAM

PHONES

OUTPUT

AC 15V

Bass Line

LFO



VOLUME



TBX-303
Computer Controlled

Trans Bass Xpress™

CONNECTIONS

AC15V x 1:

AC Adaptor Jack, 15VAC, 500mA

Output x 1:

Regular 1/4" (6.35mm) Jack, Output Impedance 10K Ohm

Headphone x 1:

Stereo 1/4" Jack 8 - 30 Ohms (mono signal)

MIDI:

MIDI In x 1

MIDI Thru x 1

MIX IN x 1:

Regular Jack, Impedance 100K Ohms, Input / Output Level 1:1

POWER

AC ADAPTOR:

Uses 2.1mm diameter barrel type 'DC' connector

VOLTAGE:

12-15VAC (AC NOT DC)

CURRENT DRAIN:

approx. 400mA maximum

PHYSICAL

DIMENSIONS:

307mm x 148mm x 60mm

WEIGHT:

1500grams

Specifications subject to change without notice.

TBX-303 INTRODUCTION

The TBX is a bass machine that can play a bass line via a MIDI device.

We have tried to accurately duplicate the analogue voice circuitry of the TB303, using the same discrete components where possible.

We have also tried to duplicate the look where possible, though high manufacturing costs have prevented us having an identical case and knobs.

Note; the sequencer has not been re-created. We have not duplicated the sequencer - this is a MIDI only device. I know that won't please everyone, so we apologies here to those.

KEY FEATURES OF TBX-303

Pure analogue voice circuitry.

Accurate TB303 circuitry clone.

Physically the same size and layout.

Extra tone controls and circuits for more sound variety e.g. LFO, CrossMod.

Rugged steel construction.

MIDI In for software sequencer control.

BASS AND THE TBX

A musical bass line involves many complex factors, such as different pitches and beats, and consequently it is a difficult thing to reproduce automatically. It may vary depending on the rhythm, chord progression, style of music and the character of the musician.

Sometimes it can take the role of a low melody, then it might outline the chords or become a strong rhythmic influence in an ensemble. But overall it is a very important part of the rhythm section, following the chord progression, mainly using the root and fifth note.

The TBX cannot memorise the tone colour - it has no 'memories', just like all the classic synthesisers of old. The bass sound is changed using the TONE CONTROL SECTION. In this way the TBX can create an appropriate Bass sound for the bass line you have written.

HOW TO USE THIS MANUAL

The switches and control knobs may have more than one use, so operating the TBX may seem difficult at first, because it is so different from a Bass Guitar or keyboard instrument. So it is advised you read through the manual first to familiarise yourself with its operation.

SAFETY INSTRUCTIONS

Please read carefully before using:

- Only use the correct power adaptor - 230V (or 115V whatever your country needs) with 12-15V AC output, 500mA (2.1mm plug)
- Never handle the adaptor with wet hands
- Never excessively bend the adaptor cable or get it trapped or place heavy objects on it. If the adaptor cable becomes damaged, replace the adaptor.
- Ensure the unit is disconnected from the mains before moving or cleaning.
- Always disconnect the unit from the mains if there is lightning in your area.
- Ensure the unit is on a stable surface, and never place heavy objects on top of it.
- Never allow young children or animals to operate the unit or adaptor.
- Do not use excessive force when using the controls or inserting cables to the connectors.
- The unit should not be operated in the rain or near water and should not be exposed to moisture. If the unit is brought from a cold environment to a warm one, the unit should be left to reach the ambient temperature.
- Keep TB-X away from heat sources, such as radiators, ovens, heaters etc.
- Never allow TB-X to get wet. Do not operate it near water, like pools, sinks, bathrooms etc. Do not place beverages on or near it.
- Never open the case or attempt to make repairs. Refer any servicing to a qualified service personnel.

Preventing damage to other connected devices;

TBX has a very high dynamic range. It is capable of produce loud signals of very high and sub-sonic frequencies that could blow inadequate speakers if played too loud. It is recommended that input levels to external equipment (mixers, amp's etc.) is kept low when first connected, and then slowly increased to a useable level.

Maintenance Instructions

Any cleaning of the TB-X case should be done with a clean lint-free cloth. DO NOT USE SOLVENTS OR CLEANERS, as this will deteriorate the exterior appearance of the equipment.

Mounting

Mounting does not mean 'place on the wall' or 'to make love to' in this instance. Place TB-X soundly on any stable surface so he cannot fall off or over, causing it or yourself injury.

POWER

Possible sources of US voltage mains adaptors (not tested);

www.radioshack.com
p/n **273-1631** or **273-1690**

NO SEQUENCER?

This may be the wrong decision to some people. But we believe as long as you stick to the 'rules' of 303 sequence programming then you can create authentic 303 MIDI sequences. I believe that in a 'blind fold' test even a purist would not tell the difference.

To create an authentic 303 style pattern you have to think about how you could program the original. Stick within what the original was able to do. These are just a few general points;

Usually notes were programmed as 16ths.

Patterns using triplets are common.

Unusual pattern lengths. Don't stick to 16x 16th notes in a bar. Try 10, 11, 5 or whatever.

Accents and slides in unusual places.

Odd musical patterns. Nothing to 'tune'.

Basically the original sequencer was a pig to program. Not many can program exactly what they have in their head into the sequencer.

I think in most cases the programmer's end results are by accident or flook and a pattern is almost created accidentally, but the quirkiness of it makes it appealing.

So when you are using your computer MIDI sequencer, think about the original and try to stay within the sequencing abilities of the original. Do not approach programming in the same manner as you would any other sound modules. And of course, if you want to be truly authentic, then don't use the included extra features like LFO!

TONE CONTROL SECTION

This section is really a small synthesiser control panel, for creating sounds to suit your music.

First, the standard TB-303 controls are included;

1. CUTOFF FREQ (Cutoff Frequency)

This knob controls the tone colour. By Turning it counter-clockwise, it will begin to shave off the upper harmonics of the sound, making the tone softer and reducing the volume.

2. RESONANCE

Resonance emphasises certain frequencies. The effect will become stronger when this knob is rotated clockwise.

3. ENV MOD (Envelope Modulation)

This knob controls the tone movement of a note. The effect will be stronger when the knob is turned clockwise.

4. DECAY

This knob controls the time a note takes to fade. Both the volume and the tone will take a longer time to fade if the knob is turned clockwise.

5. ACCENT

This knob controls the accent of the Bass Pattern. The effect will be stronger when the knob is turned clockwise.

6. WAVEFORM

The TB-X has two waveforms and you can select either one of the. The tone colour will be changed by the WAVEFORM switch, even if the other dials in the TONE CONTROL SECTION are in the same position.

Now the extra controls and their function. Note, if they are left in their zero / neutral positions, they have no effect over the TB-X's voice circuitry. This might be necessary when you wish to accurately re-create the original TB-X sound as on the original machine.

6. SQUELCH

This knob extends the range of resonance for full self oscillation and squelchiness. Note the RESONANCE control must be up (ideally at maximum) to hear any affect.

7. EXT. LEVEL

This controls the audio level of the signal coming in to the MIX jack. This signal is fed through the filter. Note that it is a little difficult to balance the mix between the external signal and the internal VCO.

8. VCO LEVEL

This knob controls the level of the internal VCO fed into the filter.

9. CROSS MOD

This knob controls the amount of VCO signal that is used to modulate the filter cut-off. For best effect put RESONANCE and SQUELCH at maximum when using CROSS MOD.

10. MIDI MOD

This knob controls the amount of MIDI modulation applied to the filter cutoff. This has to be balanced with the CUT-OFF control for best effect. The MIDI MOD source can be any controller or velocity and is set with the MIDI button.

11. LFO MOD

Left to Centre affects the modulation level of LFO triangle wave to the filter cut-off. Centre to Right affects the modulation level of LFO square wave to the filter cut-off.

12. LFO SPEED

This knob controls the LFO modulation speed.

13. VCA DECAY

This knob controls the VCA envelope decay time. (The standard TB303 VCA decay time is fixed, only the envelope mod on the cut-off can be changed).

14. OVERDRIVE

This boosts the final signal level that goes into the VCA. The first 90% or so the signal is about the same as for a standard TB303. Above this, the last 10% boosts the level enough to over-ride the VCA giving a distorted (and louder) sound. At the last 10% of travel, when overdrive occurs there will be a sharp increase in output level.

Note, keep this control at around 90%, just before the signal starts to distort when in general use to keep the signal to noise ratio at a premium.

CONNECTION DETAILS

MIX IN

The input jack accepts other audio signals (in order to connect a rhythm machine or an electric guitar), the sound then goes through the filter section.

NOTE:

You cannot use the MIX IN if power to the TB-X is off.

Ensure that the EXT.LEVEL control for the MIX IN socket on the TB-X is turned up.

Unlike the original TB-303, the MIX IN signal goes through the filter, not direct to the output amplifier. This is a more practical solution for modern set-ups, allowing you to filter external sounds.

The internal VCO cannot be used at the same time as the MIX IN signal (well, it can, but they are hard to balance).

HEADPHONES

Use headphone to monitor the signal instead of using an amplifier if you wish.

NOTE:

Firstly we should mention that when monitoring a bass sound through headphones, quite often the pitch will appear incorrect. This occurs whenever a bass sound is produced so close to the eardrum. To avoid this you might try altering the TONE CONTROLS, otherwise you will have to use a loud speaker.

AC ADAPTOR JACK

Accepts a 2.1mm barrel type plug, for 15VAC power (500mA).

MIDI

MIDI Button

This button is used to change the MIDI receive channel and MIDI controller source for the MIDI MOD function.

Simply press and hold the MIDI button, then play a MIDI key or move a controller on your MIDI keyboard.

The TBX will set itself to the same MIDI channel as the data received.

Also, if a key was pressed, MIDI MOD source becomes velocity.

If a MIDI controller was used (such as Mod Wheel) then the MIDI MOD source becomes that controller.

Range

The TBX has an approximately 4.5 octave range. Playing outside its range results in the same note being played.

Accent

To activate Accent, you must play a MIDI note with a velocity value over 80.

Slide

To activate Slide you must overlap your notes. I.e. play legato.

MIDI Mod

You can control the filter cut-off level using a MIDI controller or Velocity. The MIDI Mod control must be turned up to hear an effect. The best controller to use is Mod Wheel.

The controller used is set when programming the MIDI channel.

Specification subject to change without notice.

Warranty

TB-X comes with a 1 year (from purchase date) back to base warranty, (i.e. customer must arrange and pay for carriage to and from Analogue Solutions or the dealer from which purchased).

This warranty shall not apply where the product has been subject to alteration, misuse, accident, neglect (such as extremes of temperature and/or moisture) or to wear resulting from normal use.

We will normally carry out most the labour or repairs free of charge for an extended period of an additional 4 years from purchase date, but this may not include cost of any damaged parts which will be charged for.

At the sole discretion of Analogue Solutions, the warranty is deemed to be void should the unit be or considered to have been opened or any other modifications or tampering be carried out by unauthorised parties.



CE Compliance

This unit complies with EU Directives 73/23/EEC and 89/336/EEC. Standards: EN55103-1, EN55103-2, EN60065

TB-X 'user manual'
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