

StuDiomaster C3X

Rackmount 12-channel mixer



This highly-portable unit manages to cram 12 inputs, including four mic/line channels, into a 1U rack

box. The designers have even found room to add their own DSP effects section, though a 'no effect' version of the mixer (the C3) is available at a lower cost for those who don't need built-in effects. Although the C3X comes as a standard rackmount device, the rack ears can be removed for desktop use.

Controls and connections

The C3X is set out with the control knobs arranged as two rows on the front panel, along with two combi-jack/XLR connectors to accommodate mic/line inputs 1/2. Inputs 3/4, also on combi-jacks, are on the rear panel, along with four further stereo

Not every live performer needs to mix a huge number of channels on stage, and to fill the need for a compact and cost-effective mixing solution that doesn't sacrifice too much in the way of features, StuDiomaster have come up with the new C3X.

line-only inputs that offer a choice of jack or phono connectivity on channels 9/10 and 11/12 and jacks only on 5/6 and 7/8. All the channels can access two auxiliary sends, one pre-fader and one post-fader, the latter feeding the internal effect processor and also a rear-panel output jack. The effects processor majors on vocal treatments and effects, with the emphasis on reverb and delay, and seems aimed at the Karaoke and conference market as well as the more conventional live-sound performer. Indeed, both the C3X and its no-effect sibling, the C3, are recommended for a variety of live-sound applications, including small installations and houses of worship.

Outputs are on both phonos and balanced XLRs (but, oddly, not on jacks) and there's a jack monitor/foldback output as well as a jack socket to take an optional effects bypass footswitch. There are even TRS jack insert points on the main outputs. Mains power connects via a standard IEC socket, not a wall wart, and operation can be at either 230V or 115V, selected via a recessed switch on the side of the case. There are also two recessed buttons on the rear panel for activating phantom power on channels 1/2 and 3/4. Note, however, that the phantom power voltage is only 17V and so may not work with some capacitor mics and DI boxes.

At first glance, it might seem that such

a compact panel layout leaves no room for luxuries such as EQ, but in fact the first channel has its own three-band EQ, and the remaining three mic/line channels also share a common three-band EQ. The frequencies are fixed at 5.0Hz, 2.5kHz and 12kHz respectively, with a +/-15db gain range. It's a similar story for the aux sends, where channel one has its own but channels two, three and four have to share. The same approach extends to the remaining four stereo channels, which, although they have independent level controls like the other channels, share one set of aux sends and a single two-band equaliser between them.

As master sections go, the C3X's is pretty simple, with the DSP effect treatment presets selectable via a rotary encoder switch with eight LED position indicators. Effect options comprise Vocal 1-3, ADT, Short Reverb, Long Reverb and Plate 1 and 2, although there's also a flexible delay that can be used as an alternative to reverb. Four adjacent buttons with status LEDs control effects bypass, switch reverb or delay mode on, and govern delay regeneration, while separate level controls adjust the effects added to the main and monitor outputs. In reverb mode, the first three programmes are

At a glance

StuDiomaster C3X

Pros

- Compact.
- Good EQ and effects.
- Up to 12 inputs.

Cons

- Can be noisy if you don't set the gain structure properly.
- Phantom power only 17 Volts.

Summary

The C3X should be a good choice for solo acts or duos who need up to four mic channels, some extra stereo line inputs and good effects, all in a compact rack format. There are some design compromises but the results can sound very impressive, especially the EQ and effects.

Information

£ C3X £229; C3 £169. Prices include VAT.
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Test
info

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reverb/delay combinations, while the rest are reverbs of different types and decay times, as shown on the switch legend. However, if you switch to delay mode the rotary encoder now sets delay time, in eight steps from 10ms to 720ms, after which

regeneration can be activated to allow some of the delay output to be fed back to the input, producing repeating echoes. In delay mode with regeneration switched on, the status LEDs around the selector knob indicate how much regeneration is being

▣ Inputs for channels one and two, on 'combi' connectors that accept XLRs or jacks, are provided on the front panel of the C3X, with all other sockets at the rear. For such a compact mixer, facilities are surprisingly generous, including individual three-band EQ on the first mic/line channel and either a shared three-band or two-band EQ for the remaining channels.





used. (If you need to change delay time, you have to switch regeneration off again first.) A nice touch is that when the machine is powered up it remembers the effects settings that were in use when it was switched off.

Master level and monitor level knobs complete the front-panel control section, with level meter (four LEDs per channel) overseeing the main stereo output levels. Given that this is a stereo mixer, you might be concerned at the lack of pan controls, but the way the signal path is arranged places all

As I suspected, there's enough gain for close-miked vocals without the need to fiddle around with the jumpers inside the mixer (see 'Tech Notes' box), but the mic gain needs to be turned well up and some background hiss is evident when you use close to the maximum mic gain. You also need to use the sends close to their maximum position, otherwise the effects section tends to be noisy too, but if you set up the gains correctly the DSP section is quiet enough, and the effects quality is surprisingly good. Not only are the effects of

The DSP effects section is simple to use, with a rotary control to select between eight preset effects treatments designed with live use in mind. Anyone who doesn't need built-in effects could consider the C3 rack mixer, which is similar to the C3X in other respects.

You need to set the gain staging correctly to avoid excessive noise, particularly in respect to the effects section, where the rule is to feed in as much as you can from the channel sends, then regulate the approximate effect level using the master effects level control. If the channel sends are set to around three-quarters up or more,



The rear panel hosts the majority of the C3X's socketry and offers a good variety of input connectivity, including XLR mic inputs, jack inputs, and phons.

the mono channels in the centre of the mix, with the stereo inputs panned hard left and right. This is fine for 'vocals plus keyboard' or backing-track mixes, and even the shared EQ shouldn't be too much of a limitation. I very often approach live mixing with little or no EQ on the console, as this tends to produce the most natural sound.

In use

Before looking at performance, it's worth mentioning that the C3X has a solidly-built feel to it, and that the small knobs are made of a very tactile rubbery material, which helps you get a grip on them. All the panel legending is relatively clear, given the restrictions imposed by panel size, and there are status LEDs for just about everything important except phantom power — which seems an odd omission. And, speaking of LEDs, as is so often the case the LEDs are too bright to allow you to read any nearby panel legend in moderate light, let alone in a dark venue! Otherwise, operating the unit is very simple.

a decent quality on an artistic level, but they're also very practical presets for live use, with no pointlessly excessive examples.

The EQ is very smooth and musical, which doesn't surprise me, as EQ has always been a strong point for Studiomaster designs. Having a 2.5kHz mid EQ doesn't do much for vocals in the boost position, but it can be a useful frequency to cut if the vocal sound is too nasal or honky.

Conclusion

There's no doubt that there's a need in the live market for simple, compact mixers like this, and having effects built in is a useful bonus. Most of the design compromises seem perfectly acceptable, though restricting the phantom power to 17V to save on the cost of a voltage-multiplier chip means that some phantom-powered DI boxes and mics won't work properly. Having said that, few people use externally polarised capacitor mics live, and the kind of back-electret models that are designed for live use are often happy with phantom power voltages as low as 12V. Most DI boxes that can also run from 9V batteries should be happy enough with a 17V supply too.

everything works fine, but if you turn up the master effect knob and then reduce the aux levels on the channels to balance the effects level, you'll end up with a lot of noise.

Ultimately, not everyone needs a mixer this compact, but for solo acts and duos trying to keep everything as compact as possible, the C3X has to be a good idea. It's a lot of mixer for 1U of panel space! **5/5**

Tech Notes

Technically, the C3X has a wide frequency response (22Hz-40kHz) and all the jack inputs are balanced, while the XLR outputs can be used to feed balanced or unbalanced systems. No noise figures are quoted, though, and the maximum mic gain from input to output is a maximum 55dB — enough for all typical close-miked live applications, but less useful if you're trying to mic something like a choir at a distance. If more gain is needed, there's a system of internal jumpers that can increase the XLR channel gains by 15dB, although the manual recommends that a service centre should do this for you. My guess is that the manufacturers didn't build this in as standard, because using that much gain tends to bring up noise as well.