the Master

Why should I want one?
With mixers there is normally a payoff between features and size, for the predictable reason that more knobs and faders are going to take up more space. Studiomaster has worked round that problem with the C3X, so you can still enjoy comprehensive mix facilities, even if your car or the venues you play don't have room for a conventional 12-input desk.

Plus, because it's a flexible unit with a lot of inputs, the C3X should continue to be useful even if your line-up expands or you add some new keyboards. In fact, the C3X would make a very nice keyboard submixer, as well as a compact Front of House unit.

Factor in the high-quality digital effects that will add extra polish to your performances and you have a number of good reasons to want one of these versatile little mixers.

Studiomaster C3X
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Ask someone to draw a 12 input mixer and the chances are they will depict a reasonably large piece of rectangular real-estate with 14 faders across the front. Although mixers can be like that, they don't have to be. Studiomaster has taken a fresh look at compact mixers and come up with the C3X, a 1U rack-mounting mixer with 12 inputs and built-in digital effects.

You might be tempted to imagine that Studiomaster has pulled off this coup by lobbing off most of the features you would expect to find on a decent conventional mixer – but that's not the case. Through intelligent use of space, the company has managed to incorporate three-band EQ, as well as separate aux mixes for monitor and effects, on the four mic channels. There are also four stereo line channels that can be used for keyboards, CD backing tracks and so on.

As a result, it's possible to have quite sophisticated live sound mixing in situations where it would otherwise be difficult. After all, not every act is able to lug large amounts of gear around and not every venue has the space for it either. When you're playing small clubs and pubs, you'll usually find the owner doesn't want your gear taking up space that could have been filled by paying punters.

Versatile

If you've been looking at the C3X pictures, you may have been trying to match up the abundance of features I've been telling you about with the two sockets on the front panel. All the others, including two of the mic sockets, are on the rear panel. Although that may seem a little unorthodox, I know exactly why RSD has gone this route.

The blindingly obvious fact is that there is not a vast amount of space on the front panel, so some features had to go on the back. While users will want constant access to all of the controls, they only need access to the sockets when plugging and unplugging, so having most of the sockets round the back is no great hardship, especially if the mixer is used as part of a permanent installation, or you were sensible enough to buy a rack with a removable lid front and back. On the other hand, there are bound to be times when a couple of mics are all that's required, so putting two sockets on the front was a useful way of making life easier some of the time. Alternatively, you could have a couple of radio receivers plugged in the back and leave the front panel completely clear.

As it happens, those two sockets are more versatile than they first appear. They are actually Combi connectors, meaning they accept XLR and jack plugs. You can use them for balanced, low impedance mics, or line level signals. In addition, they can supply 17V phantom power to condenser mics. If you're worried about frying dynamic mics (highly unlikely) there are two switches next to the mic sockets on the rear. These are phantom on/off for 1-2 and 3-4, which gives more flexibility than a single on/off. You'll need a pen to reach these switches, so there's no chance of using them accidentally.

It's worth pointing out that although the majority of condenser mics that will run on 17V, not all of them do. Some require 48V, so if you are choosing mics to go with this mixer, it's something to check.

Input one gets a section all to itself on the front panel, with level and a three-band EQ. There is also a prefade level that would normally be used for a monitor mix, plus a postfade to control the effects level. I would think that most users will be happy to use the internal effects but it is possible to connect external effects via the aux output on the back.

Input two shares EQ, plus monitor and effects levels with inputs three and four, although each has an individual level when it comes to the main mix. In an ideal world, each mic channel would have completely separate facilities but on a mixer this compact there have to be some design compromises and I think this is quite a sensible one. If you imagine that input one is used by a lead singer and that the other three are used by backing singers, you'll see why I think they could happily share monitor and effects levels.

The next section is for the four pairs of stereo inputs. Again they share monitor and effects mixes, as well as the EQ section, which is two-band. A lot of mixers have two band EQ for this type of application, partly because the sort of source that is likely to be used – CD, MiniDisk, electronic keyboard etc – doesn't normally require much in the way of EQ. In this instance, I think the fact they share a monitor mix level is actually an advantage. Typically, it would put all the elements of your instrumental backing under one monitor control. ‣

Bags of features in a compact mixer is a rare combination. Simon Croft thinks he's found a great example in the Studiomaster C3X

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ROADTEST!

My test is probably not the way Studiomaster envisaged the C3X being used but it's a good illustration of the versatility of this unit if you use a bit of creative thinking. I quite like doing a bit of live recording, so when a band asked me if I could do the honours at their gig, I said I'd have a go.

Unfortunately, the most convenient place for the recording was also one where the band would have to rely on their already stretched PA system and a motley selection of backline.

I particularly wanted to get the bass and keyboards directly to tape, not least to bypass a 'bargain basement' HH bass amp that now puts out almost as much hiss as bass guitar. I also needed more mics on the drums. But the band's little mixer was already full, so I brought the C3X to the rescue.

By cascading the output of the C3X into two of the inputs on the band's desk, I gained more inputs overall. That was the easy bit. Persuading the bass player and keyboard to turn down on stage, so that I could turn them up in the main mix, was hard work. Persuading the guitarist to do the same was almost impossible until I convinced him that the louder he played during the gig, the quieter he would be on the recording, because I only had the ability to create one mix for front of house and posterity.

But I was able to get extra mileage out of the C3X's digital effects. This is what I did – and I hope it doesn't make your brain hurt too much. I took the post fade aux mix (ie effects mix) output from the back of the main mixer and plugged it into a spare line channel on the C3X, then turned up the effects level for that channel on the C3X.

This meant that when I turned up, say, the main vocalist's aux level on the main desk, the signal went to the effects in the C3X.

Bear in mind that the effects were coming back from the C3X into the main mixer through the same two channels that were carrying the keyboards, bass and a couple of drum mics. If I had been daft enough to turn up the post aux levels on those two channels, the result would have been instant feedback. However, I did turn up the pre fade levels to get a bit of keyboards and bass into the onstage monitor mix.

If I had wanted to get really clever, I could have linked the prefade mixes on the two desks to get a completely integrated monitoring system but it didn't seem necessary, so I left that idea alone.

The most difficult bit was working out whether what I could hear in the room bore any relation to what was going to tape. Fortunately, we got that one sorted by the end of the sound check. **PM**

Effects

The DSP (effects) section is a marvel of compact design. There are eight different reverb/delay treatments made accessible from the rotary controller with a LED beside each one to show which is active. But this section has more tricks up its sleeve, as we'll see when we look at the four LED-illuminated buttons to the right of the rotary.

Of the four switches, the first is simply on/off for the effects section. The second puts the section into reverb mode, as explained above. The third puts the section into delay mode, at which point the rotary adjusts and displays the repeat time between 10-720ms. Finally, the fourth switch introduces regeneration, or the number of repeats you get before the echo disappears completely. In this mode, the rotary controls the regeneration level – up to 90%, which is almost infinite.

This is a very neat system that is much easier to use than it is to explain. It also sounds very good. If you can't find a setting here that sweetens your voice, you might be better off learning the banjo! There are also two level controls in the DSP section. One controls the effects level in the main mix, the other the level in the monitor mix.

Round the back, there is a socket for a footswitch to turn the effects on and off. This is a useful inclusion because it sounds really stupid if you are talking to the audience between numbers and there is enough echo to call in an Alpine goat herd.

That just about wraps it up for the front panel apart from the level meters, monitor level, master level and the mains switch.

Round the back are all the sockets you would expect, plus a few you might not. All the stereo line inputs are on jacks but two pairs are also on phonos, which makes connecting CD players and the like easier. The master outputs are on XLRs but again, there's a set of phonos, which could be handy for recording your gig.

Choices

Well, the C3X is certainly not short on features and it seems very nicely made. Certainly, your are getting a lot of inputs and facilities for your money.

It's worth adding that the front panel is a substantial piece of metal and the whole unit gives the impression that it is going to stay in one piece for a long time – doubly so if it lives in a rack case, of course.

Whether it is the right unit for you depends on how much you value its compact design. If that isn't your biggest priority, I would suggest that you also check out some of Studiomaster's larger mixers. **PM**

MY BRAIN HURTS! IT MUST BE...

THE TECHNICAL BIT!

For such a compact unit, the C3X has a surprisingly versatile DSP (Digital Signal Processing) section, as the effects technology is called if you really want to sound technical.

Best of all, several of the settings have two effects simultaneously, which seems like a lot of bang for your buck. If you take the trouble to match the effects to each individual song, this section of the mixer is going to give your sound a lot of polish.

Mind you, whatever settings you choose, it's going to sound better than Playmusic's All-Time Worst Use of Effects. This entirely imaginary award goes out to an act that was only too real, although God knows what planet they were from.

Imagine if you will a male/female singing duo with one electric guitar, all going through the same combo with the tremelo on full all night!

For a more impressive result, here's a rundown of some of the reverb effects that you'll find awaiting you on the C3X...

Whatever settings you choose on this Studiomaster, it's going to sound better than Playmusic's All-Time Worst Use of Effects.

Reverb mode

VOCAL 1	**reverb with medium delay**
VOCAL 2	**reverb with short delay**
VOCAL 3	**reverb with long delay**
ADT	**25ms delay with ambient reverb**
S REV	**small room reverb**
L REV	**large hall reverb**
PLATE 1	**short plate reverb**
PLATE 2	**medium plate reverb**