

Replicator Software Release Notes February 2004

For users of
FX8000 DIGITAL AUDIO EFFECTS REPLICATOR
and
FX2000 CLASSIC EQ/COMPRESSOR

Software Release v3.1

Licence and Registration

Software version 3 is supplied under the terms of the licence conditions printed at the end of this document. In particular it is now necessary for end users to register this software before the end of the evaluation period. Registration is easy and free of charge to end user customers. Distributors may extend the evaluation on request subject to the terms of the licence.

If you have already registered version 3.0 software you will not need to register v3.1 again.

Please note that although the same software release supports both FX2000 and FX8000 hardware this does not make FX8000 advanced features available to the FX2000 owner, as these are options not available in the FX2000 hardware.

Main Features of Version 3.1 software

- New Classic EQ technology allows an even closer approach to the original equipment
- Compatible mode included so Classic EQs and programs from previous sessions can be loaded to sound as before
- New internal channel pair routing matrix supports M/S modes and internal chaining from one channel to its pair.
- FX2000 in dual mono mode swaps display page as channels are swapped for quick operation when using different processes or chaining through both channels
- Support for new EQ models built from November 2003

Detailed Operational Changes from 3.0 to 3.1

New Classic EQ Optimisation

Classic EQ's now automatically load with improved performance using the latest technology enhancements. If you need a familiar model to sound the same as it did before (for example to load a program or favourite effect) then go to the power-up options page (system -> setup -> more setup -> power-up options) and change the field "Optimise EQ's" to "Preserve Original EQ". This latter mode is called the "compatible" mode.

You can cancel the compatible mode either from the power-up page or when you load a Classic EQ. Then you are offered the option to "turn off compat". To load a Classic EQ as before, select "load in old way" or "don't ask me again". If you use this last option you will not be prompted again to turn off the compatibility mode until a power off/on cycle occurs. Newer Classic EQ's built from November 2003 do not have a compatible mode as they are built from scratch for the new technology and they will not show this message and will ignore the compatibility selection in the power-up page.

Linear phase use: The new optimisation cannot generate both linear phase and optimal frequency response match. You are offered the option in the POWER LINEAR page to optimise for the best frequency response (recommended) or for true linear phase. There may be some significant frequency response deviations as before in this latter case, but these can often be EQ-ed out by careful use of the model settings.

Channel Pair Routing

The Input Select page now offers several routing modes for each channel pair in the system (one pair only in FX2000 and FX8000 without expansion channels). (see note 1)

The INPUT to each channel pair can be routed through the new routing matrix in the following ways (note 3):

- Normal: The signals are routed as before
- L out-> R: The left channel output (e.g. channel 1) is routed to the right input (e.g. channel 2),
- R out-> L: The right channel output (e.g. channel 2) is routed to the left input (e.g. channel 1),
- Swap: The left and right inputs are swapped
- Mono from L: The left input drives both channels
- Mono from R: The right input drives both channels
- Mono Sum: The two inputs are summed and fed to both channels
- MS Matrix:: The left and right input are matrixed to a "mono/stereo" signal. This feeds the sum of the two inputs to the left channel, and the difference to the right channel. Both signals are attenuated 3dB so the use of an output M/S matrix recreates the correct LR signal of a stereo pair. (see note 2)

The OUTPUT from each channel can also be routed in much the same way (except use the INPUT matrix for routing back to the other channel input).

- Normal: The signals are routed as before
- Swap: The left and right outputs are swapped
- Mono from L: The left channel drives both outputs
- Mono from R: The right channel drives both outputs
- Mono Sum: The two outputs are summed and fed to both outputs
- MS Matrix:: The left and right channels are matrixed to convert a "mono/stereo" signal back to a "left/right" signal. The sum of the two channels recreates the left channel, and the difference recreates the right channel. Both signals are attenuated 3dB so the use with the associated input M/S matrix recreates the stereo pair with unity gain. (note 2)

These routing options are useful in the following situations:

- Where external digital routing is not available and you need to patch through a pair of channels or manage the left/right pair in an AES stream
- Where mono compatibility needs to be checked frequently
- Where mastering for M/S media, for instance disk cutting, or situations where the dynamics applied in the L/R domain do not suit the material (note 4, 5).

Notes

1. The routing matrix applies between each pair of channels only. The matrix modes are available when the input to both channels in a pair is from the same source, e.g. both analogue or both digital.
2. The M/S matrix is the same at the input and the output.
3. Metering displays the actual channel input after the matrix, but input clip is still indicated for the system input before the matrix. This allows you to keep track of true input overloads while monitoring the actual signal levels you are processing.
4. For information on M/S modes in mastering dynamics consult for example Bob Katz' "Mastering Audio".
5. You can use the MS mode (or any matrix mode) with different processes in each channel. This allows, for example, different compressor dynamics or EQ in the difference (S) channel and the sum (M) channel.

Classic EQ's built from November 2003

There is no operational difference, but for your information Classic EQ's built from November 2003 require version 3.1 software to operate. They contain modifications to support the new technology employed from software v3.1 onwards, to allow sections which could be bypassed on the original model to be properly bypassed in the replication, and to reduce file size where sections are duplicated.

Summary of Previous Updates

Features already included in Version 3.0 software

- Programs can be loaded seamlessly during program material with a choice of effect cross-fade time*
- MIDI Parameter Control and Program Changes are supported to allow sequencer automation of effect changes during a song, compilation or performance.
- Compressor Gain reduction can be digitally linked between more than one machine for multi-channel dynamics control, including recording of gain reduction profile.
- New RMS compressor mode has been introduced to model optical compressor gain control, i.e. where the program energy rather than peak level controls gain reduction.
- Compressor gain half-wave mode has been introduced to allow creative use of dynamic second harmonic distortion rather than the purely third harmonic of full wave level detection.
- Ability to link gain reduction "softly" rather than 100%, with two gain busses for accurate surround dynamics control.

*provided it is not necessary to change the loaded model or system configuration which requires muting.

Features already included in v2.2

- 4-band Digital EQ in addition to sampled classic is provided. This can be used in the compressor side-chan or it can be switched pre- and post- the compressor for additional EQ. This EQ is a carefully designed high quality digital EQ with each band being switchable between peaking with a range of Q values and shelving. The lower two bands offer low shelves, the upper two band high shelves. In the side-chain it can be used with HF lift to act as a de-esser, or in many other settings to fine tune your control over the compressor/gate functions. The side-chain of all Compressor models can be EQ-ed, not just in sample compressors that originally provided this facility.
- Expander / Gate available in all compressors models even if the sampled model did not have this.
- System Bypass is "click-free" as a soft cross-fade is performed between the processed signal and the clean digital through signal. Bypass can be even more subtle if the delay matching mentioned below is used.
- Delay Management: Typical processing delay is around 2mS (analogue in to out - less for digital in to out). Some processes can be significantly more, e.g. linear phase EQ. For most processes it is possible to set the system to match the processing delay in bypass, or to set a constant delay regardless of process (for typical processes that do not exceed 150 samples delay).
- Compressor slopes can be adjusted in steps of 0.1:1 for precision applications.
- FX2000 users can import FX8000 snapshots.
- FX8000 users have AFX reverberation effects available (up to 48k) in addition to multi-tap delays. It is possible to combine these with early reflection samples for some interesting new effects based on partial room sampling.
- A visual demo mode is available in which the meters move in the absence of sound. Press the bottom "OPTION SELECT" button and "INPUT VIEW" together and see "Visual Demo" below for details.

Fixes in v3.1.0 (February 2004) over v3.0.1 (October 2003)

1. Programs which modify a Classic EQ by changing the RMS/PEAK detect mode or +/-full wave mode would not load these changes. This has been fixed.

Fixes in v3.0.1 (October 2003) over v3.0.0 (April 2003)

1. Compressor RMS level sampling (opto modelling) would reduce gain after several seconds of digital silence was received. This no longer happens in v3.0.1.
2. FX8000: Compressor gain curve sampling would fail waiting for level to stabilise. This is fixed in v3.0.1.
3. FX8000: mix output (SPDIF/ADAT and analogue) could generate clicks and noises during program and effect load. This is fixed in v3.0.1.
4. Version 3.0.1 contains several enhancements to support remote control from the Apple Macintosh under OSX. This has no effect on stand-alone or PC use of Replicator.

Downloading New Software To FX2000/FX8000 (PC users)

Determine the software release you already have installed. This can most easily be done by pressing the POWER button briefly to view the power down screen. The software version and copyright notice is displayed in the top line of the text.

First fetch the latest release of Sintefex Replimat Software and the RepApp FX system software from the Sintefex Audio web-site www.sintefex.com. These can be unzipped into separate directories (folders). Download takes several minutes with a 56k connection.

You must install the latest Replimat software on a PC running Windows XP, 98, or 2000 (or compatible upgrades), and fitted with a USB port. See the installation instructions supplied with the Replimat software as a readme.txt or .PDF file.

Connect the PC to the FX machine to be updated using a standard USB lead and ensure the FX machine is running properly. Make sure that under the remote control section of the FX screen, USB remote control is set to "yes" and is selected to "standard" (or to "fast" on pre version 2 software). Press "do it" and ensure that in the information box the message "USB host attached" is displayed. You may need to refer to the Replimat installation instructions if Windows enters its "New Hardware Found" wizard at this stage.

Run Replimat software and use the "System" | "Download/Upload Data" option (or the starburst toolbar button). Tick "PC to Replicator" and "Operating Software Send" "Main". Press the "browse" button next to "Main" and select the file "rmx-x-x.ldr" in the directory (folder) into which you unzipped the RepApp software (where x-x-x is the version of software, e.g 3-1-0 for version 3.1 first release).

Ensure no other boxes are ticked and press "GO". The software download takes several seconds.

Switch off the FX machine for about 5 seconds and then switch it back on again. The new software should be in operation. Once you are happy with the new software we recommend that you repeat the download with the "Operating Software Send" "Alternate" button pressed (instead of "Main"). This will install a second copy of the software on the FX machine which you can revert to in future in an emergency.

Downloading New Software to FX2000/FX8000 (Mac users under OSX)

Fetch the FxRemote Mac software from the Sintefex Audio web-site www.sintefex.com. Check that the release notes indicate that it will update your software to the current release version.

Unzip the application package onto a Macintosh running Mac OSX operating system (Stuff-it expander will unzip the files). Run the FxRemote software.

Follow the onscreen instructions for connecting Replicator and downloading the latest software.

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Model: FX2000 FX8000

System Code: Version:

Name: _____ Company: _____

Address: _____ Country: _____

Telephone: _____ Fax: _____ Email: _____

Do you want us to send the authorisation by email fax post

Distributor from whom purchased: _____ Date of purchase: _____

Main activity (tick all that apply):

Mastering Tracking Mixing Audio for Picture Surround Hire Education

Other (please specify _____)

Please register the software in my name. I accept the terms of the licence conditions

signed _____ date _____

Please send the form to:

Sintefex Audio Lda, Vale Formosilho, S. Marcos da Serra, P-8375 Portugal;
or by fax to + 351 282 361 749
or submit the form at www.sintefex.com