

# REPEATER OS1.1 Release Notes

The following document gives a detailed look at the changes made between Repeater OS1.0 and OS1.1 (released October 2001). For additions and changes to the MIDI control of Repeater please refer to the document titled **MIDI, CC and PC Implementation**

(<http://www.electrixpro.com/support/softwareupdates.html>)

## OS1.1 Software installation instructions

1. Download the new software (in either Mac “.SIT” or PC “.ZIP” format) from <http://www.electrixpro.com/support/softwareupdates.html>
2. Make sure that you have correctly installed your CompactFlash reader\* to your computer (contact the reader’s manufacturer if you are encountering problems).
3. Open the folder titled “**Repeater\_OS1-1**” and locate the file “**repr1-10.raf**”
4. Insert a CompactFlash card into the reader and copy the file “**repr 1-10.raf**” onto the card. **Note:** The OS update requires 350K of space on the CompactFlash card.
5. Unplug Repeater’s power supply.
6. Insert the CompactFlash card containing the new software into Repeater.
7. Connect Repeater’s power supply and check to make sure that the supply has power (green light on supply will be on).
8. The unit will display “Starting...” and then the prompt “BOOT FILES”. After a moment the display will show a number on the left and a filename on the right. Using the encoders, select “repr1-10” (note that no .raf extension will be displayed). When selected, press “Record” to start the upload process. Pressing stop would cancel the installation and boot Repeater with the pre-existing OS version.
9. The unit will display “Verifying”, “Loading” with a countdown, and then when the process is completed will display “Starting...” and then the version banner “REPEATER1-1” will appear before the unit is ready.
10. Your Repeater is now updated to OS1.1

\*CompactFlash readers are widely available from the same resellers who handle CompactFlash cards. They can be purchased with a variety of connections and range in price from \$30 - \$70, depending on complexity. The cheaper readers will still get the job done, allowing you to upgrade your Repeater AND move loops to the computer domain.

**Having problems** with any part of the installation process? Contact Electrix Support at [support@electrixpro.com](mailto:support@electrixpro.com)

## **Additional Features:**

### **Fractional Loop Multiply**

Once a multiply operation has been performed, yielding a loop composed completely of virtual (multiplied) tracks, the last fundamental multiplication can be undone to the limit of forcing the loop back to its original unmultiplied state. This is achieved in the multiply edit by dialing the multiplier down through 1 to access the fractional multipliers.

### **Dry signal path mute**

The dry signal path through the unit can now be muted. This supports equipment setups in which Repeater is provided as a supplemental signal source. Yes, we missed this in the original design.

From the front panel, the mute can be toggled by holding down stop and pressing the 'Overdub' button. The display will inform whether the mute is being engaged or disengaged. This is also supported by an extension to the MIDI spec allowing the mute to be engaged and disengaged.

### **Slip/Pitch display for stereo linked tracks**

In P1.00 the slip/pitch display for stereo linked tracks uses the four simultaneous track display, only providing the user with coarse information. Now, once tracks are stereo linked, pitch and slip displays for both tracks are displayed together as tracks 1 or 3.

### **Coarse slip/pitch control**

In the slip and pitch displays, coarse adjustment is provided by the left encoder (whole semitones, whole beats) whereas the right encoder still accesses the sub-beat and sub-semitone adjustment.

### **Erase loop via MIDI CC**

A MIDI CC message is now provided allowing the user to perform a one-button loop erase. The front panel mechanism remains the same.

### **Armed record via MIDI CC/PC**

A MIDI CC/PC message is now provided allowing the unit to be set up in armed (audio triggered) record mode.

### **Stereo Level control via MIDI CC**

Two new CCs are provided for controlling the levels of tracks 1 and 2 jointly, and 3 and 4 jointly to support Repeater's use in Stereo setups.

### **Record Track advance selection MIDI CC/PC**

A new CC/PC is provided to allow the user to advance to the next possible track for recording with a single MIDI event. This simplifies MIDI setups.

### **Trim Cut when not in trim edit**

The trim cut functionality (hold down trim button) is now functional at either the top level or in the trim edit. Previously it was only functional during the trim edit.

### **Trim point data persisted with loop**

Previously, the underlying audio at the trim points was not preserved with a loop and was only available from the time initial recording was performed. This meant that moving the loop trim points after moving away from the loop and back again could introduce audio clicks. The loop data file now contains the loop point start and end underlying data so that the crossfades can be dynamically computed when the trim points are subsequently moved.

### **Tempo lock new behaviour**

Tempo lock has been modified so that:

1. Tempo lock does not operate in MIDI mode.
2. Tempo lock is disengaged on a sync mode switch.

This simplifies the operation and forcibly separates the semantics between audio sync and user sync modes, where tempo lock actually has a different meaning.

### **Changed user tempo confidence reset mechanism**

The old mechanism was confused with reset to native tempo. The mechanism is now to reset user confidence on pressing tap tempo whilst stop is held. Simple and intuitive.

### **RT Control (Start, Stop, SPP) Inhibit**

Downstream syncd MIDI devices are getting RT Start and Stop from Repeater always. If these devices are just to slave to Repeater's Beat Detection (DJ setup), then the RT start and stop are not always desired. Solution is a MIDI CC to inhibit MIDI RT Start and Stop output traffic.

### **Added PC for stereo mute/unmute**

There is no MIDI PC for muting/unmuting Tracks1&2, Tracks3&4. This breaks the symmetry of the implementation for tracks1,2,3,4 MIDI Level CC/PC.

### **Armed record toggle**

Successive record presses while holding stop arms and disarms audio triggered recording.

### **Auto Record at Loop end**

Record into a new loop now has the same behaviour as play into a new loop.

### **Armed record (via MIDI) during play**

Can now set up armed record during playback.

## **Enhancements/Bug Fixes:**

### **Initial recording 'delay' after sleep or cancelled resample**

This bug caused the first ~250msec of an initial recording after sleep mode or a cancelled resample occurred to return as silence on the first repetition of the loop. Nasty. Now fixed.

### **MIDI Clock out timing irregularities (24th clock too early)**

The 24th clock tick out of the unit was substantially delayed. This has led to some problems syncing other units to Repeater via MIDI. Now fixed.

### **Start message reset MIDI beat on blank loop**

The receipt of the MIDI start message now resets the beat to the position of the next received MIDI clock when the unit is in MIDI sync mode. If there is a loop loaded, this also will start playback.

### **Start Quantize in MIDI mode**

The press of the play button in MIDI mode no longer defines the downbeat. Both Play and Record are quantized to the incoming MIDI clock. The beat position can only be redefined in MIDI mode by pressing the Tap Tempo button or through the receipt of a MIDI start message.

### **Play on blank loop sends MIDI start**

Pressing play on Repeater should start any slaved MIDI device. This was not happening with a blank loop as no MIDI RT start was being sent. Fixed.

### **Fixes for Drum Machines only sending MIDI clock whilst running**

### **Start/End and Trim point crossfade inconsistency on initial recording**

An internal inconsistency would sometimes prevent correct trim point underlying data being saved on an initial recording to a loop. This would mean that subsequently moving the trim points could introduce clicks in the audio. Now fixed.

### **Auto loop engage time slew from stretched loop**

Auto-engaging a loop where the playback mechanism needed to change playback speed resulted in a time period at the loop switch when the playback rate was slewing to its new value. Now fixed.

### **MIDI navigation to external loop with no CFC**

The MIDI implementation allowed an external loop to be selected when no CFC was inserted, with all the attendant disastrous consequences. Now fixed.

### **On FX Send engage/disengage, CC rec track output 4x**

Not a major bug, but did identify redundancy in the execution path through this and a few related UI operations. Now fixed.

**Switching loops should cancel resample**

A resample was allowed to remain prepared whilst switching loops. A resample is now cancelled on a loop switch.

**Hitting play when set up for resample**

This was doing strange things. It is now correctly just restarting the loop and not changing the resample mechanism state.

**Armed record when memory full**

It was possible to set up the system in armed record if there was no memory available. Now prevented.

**Armed record then loop switch**

An armed record across a loop switch is now permitted and behaves correctly.

**Bar trim start no longer resets to zero**

The bars trim on subsequent operations reset to zero and showed the number of bars currently in the loop. Whilst correct this was misleading and meant the user had to remember what they were doing. The bars trim now correctly keeps track of the bar number that the user last adjusted to.

**Slip display incorrect if loop beats changed**

The slip display became incorrect across a tempo edit. Now fixed and consistent.

**New loop cancel does not remove ellipsis**

Cancelling a new loop (dialing back to the original) before the new loop was prepared (ellipsis displayed) resulted in the ellipsis being displayed with the original loop number. Annoying. Fixed.

**Slaved repeater not following master browsing via MIDI**

Browsing away and then back to the current loop would result in the slaved repeater going to the new loop and not coming back again. Now fixed.

**Bad bar/beat display when going from ~1 - ~100BPM**

The display was doing strange things. It is not anymore.

**Ending short recording via play anomaly**

This led to an apparent 'hang'. Some strange behaviour. Now fixed.

**Fixed Track Mute (MIDI PC)**

Track muting via the MIDI PC was being countermanded by a press of play. The muting mechanism is now fixed.

**Tentative Stereo Break**

The behaviour of the tentative break mechanism could be foiled in some cases.

Fixed.

**Stop LED switched off during force format prompt**

A little annoyance. Fixed.

**Reduced rare splice time below 10msec**

At playback rates close to 1, occasional crossfades in excess of 15msec would occur. Subjectively disturbing. The limit is now below 10msec.

**Modified loop-end crossfade**

Loop end crossfading mechanism modified to improve 'ambient' behaviour.

**Track1 mute during Track3 resample**

Minor weirdness muting the wrong track output. Fixed.

**Handling simultaneous Reverse/Record presses**

The handling of this situation was poor leading to quality issues. The entire mechanism has been audited and fixed with far better results.

**Persistent 'beats' display on initial recording**

Timing issues could lead to 'beats' not coming up on the display initially. Resolved.

**Fixed MIDI PC loop select**

The MIDI PC loop select was not actually browsing to the new loop at all. Now fixed.

**Card formatting error codes**

Card formatting now returns a variety of error codes, rather than the ubiquitous 'Format Fail'. Provided to aid with any card compatibility issues in the future.

**Improved initial attack on first playback of loop**

The first transient of the loop was sometimes getting squashed. Vastly improved.

**Card removal during operation – behaviour now fixed**

Removing the card was leading to anomalous behaviour. This was due to changes recently made before the release of P1.00. Now all fixed – you can even remove the card during record and everything is fine.

**Improved tap tempo behaviour**

Better tracking and initial setup.

**Audio quality improvements at Reversal**

There were some audio issues when reversing the transport. Now resolved.

**Stop whilst copy in progress changed display**

Pressing stop during a copy changed the display, but the copy continued. Not major, but misleading to the user. Now fixed.

**Click on multiply in Reverse fixed**

On some occasions, a click could be generated when multiplying in reverse. Now fixed.

**Slip reset on trim fixed**

The slip reset was not being correctly applied – only if track 1 was slipped did the reset occur. Now fixed.

**Minor Mode display on record exit**

If a slip/pan/pitch edit was entered during record, on exit from the record the display would be restored, but the track select mechanism would not be consistent with the new display.

**MIDI Loop change during record**

Trying to change loops via MIDI during a record, this prevents the system from ever exiting record.

**Slip/Pan/Pitch cancel (armed record)**

If you are in an edit (slip/pan/pitch) and you then hold down stop and press record to enter armed trigger – the current is not cancelled properly. Fixed.

**Corrected PC for loop selection**

PC values above 24 access CFC loops starting at number 24. This is odd. Suggested correction is to make PC 48-63 switch to internal 1-16. PC 64-127 switch to CFC loops 1-64.

**Suppress MIDI Stop on loop erase**

'Undo' on an initial record, or loop erase causes MIDI Stop (CC and RT) to be sent.

**MIDI Ignore during sleep**

All MIDI is now ignored during sleep.

**Inhibit trim edits during trim cut**

Trim point edits active (left and right encoder) during trim cut entered from trim mode.

**Loop multiply limit now enforced**

Loop multiply factor now limited to the maximum possible. Sorts out all the range checking problems.

**Inhibited stop not fully ignored**

Fixed stop press ignore problem. if a stop press is to be ignored i.e. if we get one immediately after we start recording, which can happen if you hit the play/stop and record buttons on the footswitch at the same time) then don't turn off any LEDs, and don't output an RT STOP message.

**Ending an overdub via stop - potential Audio Artifacts**

Ending an overdub via stop could introduce audio artifacts. Fixed.

End of REPEATER OS1.1 Release Notes

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