ChamberThon RE

Operation manual

GFORCE SOFTWARE

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Welcome to the ChamberTron-RE, the Rack Extension for Reason based on the Chamberlin tape replay instruments.

For those of you unfamiliar with Chamberlin instruments, the story is fascinating. It starts with a California based inventor Harry Chamberlin back in the late 1940s, who, while recording himself playing an organ, hit upon the idea of recording chromatic tones from a variety of instruments and replaying these recordings by placing the appropriate piece of tape under a piano type keyboard.

A series of prototypes were created. These required a tape head to be placed under each key, a motor to drag the tape recordings across the tape heads when the key was pressed, and finally a spring (or later, a motor) to drag the tapes back to their start position after being played for an eight second duration and reaching the end of their travel.

Sound familiar? Well it should do.

After releasing a commercial instrument, Harry Chamberlin employed a salesman who became frustrated by a number of reliability issues and secretly boarded a ship to the UK together with two dual-manual Chamberlin Music Master 600's. On arrival he approached a Birmingham based company called Bradmatic, who were well-known for manufacturing matched tape heads. Claiming ownership of the instrument's design, he sold an unsuspecting Bradmatic the rights to manufacture a slightly more refined instrument, subsequently released under the name… Mellotron.*

So when Harry Chamberlin eventually found out, naturally, he wasn't best pleased and flew to the UK to assert his ownership rights and reach a settlement with Bradmatic. Part of the settlement involved the sharing of one sound, the famous Three Violins, but all other sounds differ markedly between the Chamberlin and the Mellotron.

Sonically, Harry wasn't a fan of rock and roll, so the Chamberlin sounds generally have more natural vibrato. Additionally, Harry used Neumann microphones for many Chamberlin recordings resulting in a more 'open' tone. Some say this contributes to the Chamberlin sounding more natural and hi-fi than the Mellotron, but the truth is both the Mellotron and Chamberlin instruments have such a sublime character, they're both equally valid when it comes to conjuring up those nostalgic, wistful and evocative tones from years gone by.

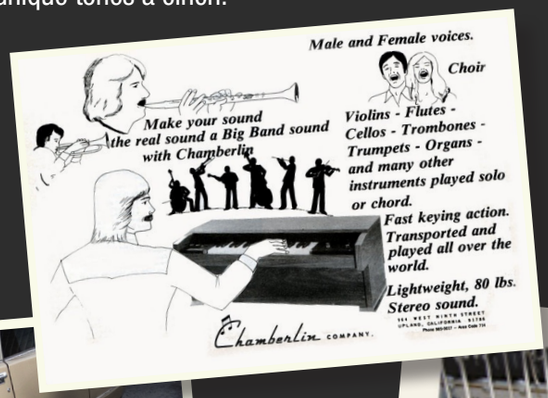
* The Chamberlin to Mellotron (and Bradmatic to Streetly Electronics) story is told in the Bright Sparks (http://brightsparks.movie) documentary which we recommend for fully biased reasons.

As with the Mellotron, each note lasts approximately 8 seconds, the key range is limited to 35 notes and there are no loops. Chamberlin sounds have featured on a wealth of classic tracks thanks to artists including; David Bowie, Three Dog Night, Todd Rundgren, The Moody Blues, The Lettermen, Mitchell Froome, XTC, Patrick Warren, Stevie Wonder and even Kanye West. During a recent conversation with Andy Partridge of XTC he told us *"We got to use Todd Rundgren's Chamberlin whilst recording the Skylarking album although we had to clean a nest of mice out of it first."*

ChamberTron-RE has been developed in conjunction with the original UK Mellotron makers, Streetly Electronics. The sounds in this instrument consist of a combination of Streetly's master tape collection plus recordings from a dual manual Music Master 600, our single manual Chamberlin M1, and our giant and incredibly rare four manual Chamberlin M4. Essentially, our aim with this Rack Extension has been to provide you with the best recordings for 35 tape banks from both companies within an intuitive and creative musical instrument.

Via ChamberTron-RE's dual layer feature you can mix and match sounds to create your own hybrid, retro, Chamberlin patches. Alternatively, if you want to stray outside pure Chamberlin territory, the multitude of instrument samples, coupled to a powerful synthesis engine with delay and spring reverb effects, makes creating personal and unique tones a cinch.

ChamberTron-RE includes 35 tape banks, each described by Streetly Electronics' ever irreverent Martin Smith.



ACCORDION (35 NOTES)

Loud, proud and very reedy. Almost like an accordian at times.

BASSOON (35 NOTES)

There's something about a bassoon that's akin to the legendary and completely fictitious Bass Kazoo. Both are sonically disturbed.

BELLS (35 NOTES)

Bright and cheerful unlike Quasimodo.

BRASS - FOUR SECTION (35 NOTES)

A fab brass ensemble. Clear and consistent.

CELLO (35 NOTES)

This is the cello that runs through *'Isn't Life Strange'* by the Moodies. Played in the upper reaches of the instrument it's almost viola like at times. A wonderful recording.

CLARINET - BASS (35 NOTES)

Deep and satisfying like a good…

CLAVI (35 NOTES)

We believe this was specifically recorded for the previous owners of our Chamberlin M4, Three Dog Night.

FLUTE (35 NOTES)

The Chamberlin flute is all over Crowded House records. It's as recognisable as the Mellotron flute but more delicate and transparent… like the nighty I'm wearing.

GUITAR - ACOUSTIC (35 NOTES)

Good recording of frets buzzing but very useable none-the-less.

GUITAR - ELECTRIC (35 NOTES)

A bit like it's predecessor, just electrified along with the guitarist and his faulty lead.

GUITAR - HAWAIIAN (35 NOTES)

Gentle vibrato and clear recordings make this a very warm and welcoming sound. Aloha.

GUITAR - SLUR (35 NOTES)

A strange double pluck of the string, the first on pitch, the second a semi-tone below with a bend upwards to the original note. Interesting if you find this sort of thing interesting. I don't.

HARP - ARPEGGIO (35 NOTES)

One of Harry's personal tape banks used for many years only on his four manual Chamberlin Riviera. 35 wonderfully evocative harp arpeggios.

HARP - ROLLS (35 NOTES)

The second of Harry's personal tape banks used on his four manual Chamberlin Riviera. 35 wonderfully evocative harp rolls.

NB. The original tape bank only had 30 notes so to gain the extra 5 notes we've transposed some original rolls. These will be from notes 31-35 (D# - F).

HARPSICHORD (35 NOTES)

A damn good harpsichord set against powdered wigs, men in tights and poor hygiene.

MANDOLIN (35 NOTES)

A strident mandolin that will cut through any mix no matter how dense.

MARIMBA (35 NOTES)

A single hit and then a fast marimba roll. The thing about marimba rolls is that you're full after just one.

ORGAN - KINURA (35 NOTES)

A theatre organ that's buzzy and reedy. Very distinctive.

ORGAN - ORGAN 2 (35 NOTES)

Another full on organ sound.

PIANO - ACOUSTIC (35 NOTES)

I have a feeling this is an acoustic piano. Call it sixth-sense, intuition, reading between the lines. Yes, definitely an acoustic piano. Next…

SAX - ALTO (35 NOTES)

A lovely warm sax with a soft vibrato. A fab recording.

SAX - FOUR SAXES (35 NOTES)

After a weird first note where the baritone sax player forgot to blow, things settle down and the balance between the instruments works well.

SAX - TENOR (35 NOTES)

Compared to the Alto, this is IN YER FACE! Turn your amp down and hide under the stairs.

STRINGS & FLUTES (35 NOTES)

A sonic folly where the organ outweighs the other component parts but the result is a unique texture for creepy horror movie scenes.

TROMBONE - MUTED (35 NOTES)

This is what a trombone sounds like with a cat sleeping in the bell.

TROMBONE - OPEN (35 NOTES)

This is what a trombone sounds like when a cat has recently vacated the bell.

TROMBONE - SLUR (35 NOTES)

A drunk trombone who's your best friend and wants to buy you another drink… or cat.

TROMBONES - DO WAH (35 NOTES)

Very Glen Miller-ish with a pitch slide upwards. A thing of it's time. Nostalgia in bucketfuls.

TRUMPET - MUTED (35 NOTES)

See the Trombone but substitute a gerbil for the cat.

TRUMPET - OPEN (35 NOTES)

As above.

VIBRAPHONE (35 NOTES)

Very vibey vibraphones with lots of vibrato.

VIOLINS - PIZZICATO (35 NOTES)

As the name suggests, several violinists doing some plucking.

VIOLINS - THREE VIOLINS (35 NOTES)

The only sound shared with both the Mellotron and the Chamberlin. This iconic sound graced countless records during the 60s and 70s.

VOICE - FEMALE (35 NOTES)

This is a stunning recording. The most useable area is the middle octave but it sounds good wherever you play. One of Harry's best.

VOICE - MALE (35 NOTES)

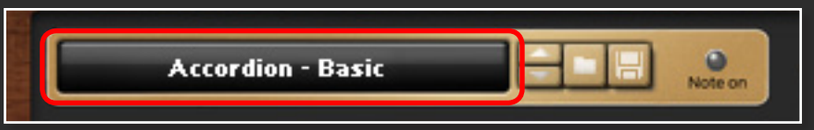
One of Harry's stranger moments. His vocalist goes ballistic at the top end and sounds varispeeded. A strong recording that needs blending or burying depending on your viewpoint.

PATCH MANAGEMENT OVERVIEW

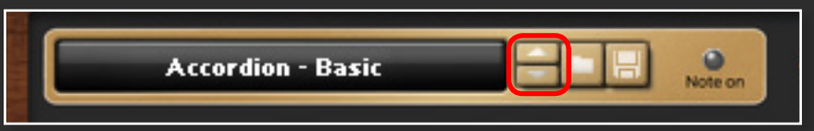
A Patch consists of a combination of up to two sound layers - Layer A and Layer B. A Chamberlin tape bank can be loaded into one or both Layers and then sculpted using a set of independent synth-type parameters such as pan, LFO, filter and filter & amplitude envelope settings. The parameters within each layer have been carefully chosen to offer the most suitable and effective sound sculpting features and without over complicating matters.

PATCH LOADING

To load a patch click on the Patch Selection Window and select from the list of Patches. Loading a patch inserts Chamberlin tape banks into either or both Layers, along with their individual settings and global effects. Patches are stored on your hard drive, in folders, and these can be accessed via the Folder icon.



In the case of each instrument category folder, Brass - Four Section, Flute, Violins - Three Violins, patches have been organised so that you can quickly see the variations of each Patch.



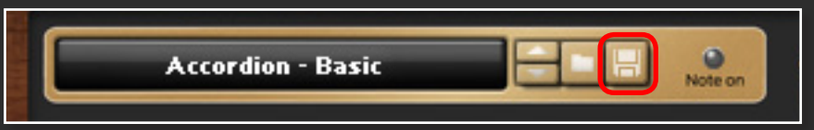
For example, in the Accordion Folder we see a list of Patches created with the Accordion tape banks. By selecting the patch named 'Accordion - Basic' we load a basic mono instance of the Accordion tape bank loaded into Layer A (Red).

Similarly, if we load the patch called 'Accordion - Dual Wide' we load an instance of the Accordion tape bank into both Layer A (Red) and Layer B (Green). Each Layer will be panned left and right for a wider stereo image.

As a rule, the more esoteric and complex sounds will be in the folders named Artist Patches while the more traditional Chamberlin sounds will be in the Instrument Folders.

PATCH SAVING

Saving a Patch saves all the current interface settings. To save a patch simply click on the Patch Save Button, name your patch accordingly and click on OK.



INSTRUMENT SELECTION WINDOW - LAYER A/B

These displays are coloured red and green in order to distinguish them from each other. Clicking in the INSTRUMENT section of the window, allows you to scroll through the tape banks contained within ChamberTron-RE.

When you select your tape bank there will be a short period of silence while it's loaded.

ATTACK START KNOB

This sets the attack start time for the loaded tape bank from between 0 and 2 seconds. You can use this in a multitude of ways as follows:

1. Use to remove the recorded attack of the tape bank. Adjusting the envelope's attack parameters will allow you to create your own attack 'ramp'.

2. Use to widen the sound of the Patch when layering the same tape bank. Pan Layers in opposite directions and offset the attack start of one Layer and the stereo field of the Patch will change markedly.

3. Use in conjunction with the Tape Reverse Button to create a more usable sound.

Some tape banks have a decay that finishes with the sound almost inaudible. When reversed, it can take time for the note to become audible. Turning the Attack Start Knob moves the start point within the audible signal.

DETUNE KNOB

This sets the fine tune range for the samples for the selected layer from between +100 and –100 Cents. Layer A and Layer B can have independent Detune settings.

PAN KNOB

Using this, it's possible to create big, wide sounds. For example Layer A panned to the left and Layer B panned to the right.

LEVEL KNOB

Adjusts the volume level for the selected layer. Again, it's possible to have independent volumes for Layer A and Layer B.

MUTE BUTTON

Each layer has an associated Mute Button which, when selected, will silence that layer. This is ideal for precise editing of the non-muted layer.

TAPE REVERSE BUTTON

Use this to play the tapes in reverse (from end to beginning). Wonderful for creating things like backwards pianos and guitars. Use in conjunction with the Attack Start Knob to fine-tune the reverse time.

HALF SPEED BUTTON

Some users of the original instrument, such as Mike Pinder, used half-speed to get a deeper, fuller sound from their tape collection. This effectively drops the pitch by an octave and is useful in helping to create some fresh and distinctive tones.

LFO CONTROLS

LFO MODE SWITCH

ChamberTron-RE allows you to choose from pitch or filter modulation via the Red Buttons (in Layer A) and Green Buttons (in Layer B).

LFO AMOUNT KNOB

This control determines the vibrato amount or depth and is used in conjunction with the LFO Speed knob to help create pitch movements. Layer A and Layer B can have independent LFO Amount settings.

LFO SPEED KNOB

This control determines the vibrato speed. Use this in conjunction with the Amount knob to create pitch movements. Layer A and Layer B can have independent LFO Speed settings.

When the LFO Sync button is activated, the LFO Speed knob will display a range from 16/4 (a four bar cycle) to 1/32 (a 32nd note cycle) when you mouse-over this knob. Dotted note settings are indicated via a 'd' and triplet note settings are indicated via a 't'.

In Reason it's common to have other monikers for dotted notes as follows: 2/4d = 3/4 1/4d = 3/8 1/8d = 3/16 1/16d = 3/32.

HOST SYNC SWITCH

The LFOs can be synchronized so that they modulate precisely in time with your track. To activate LFO Sync press this button. Whenever you move the mouse over the LFO Speed knob you will see the current setting.

The sync ranges from 16/4 (a four bar cycle) to a 32nd note cycle with both dotted and triplet options (see LFO Speed above for details of this range). (Red for Layer A and Green for Layer B).

FILTER CONTROLS

The ChamberTron-RE filter isn't modelled on a specific hardware instrument. However, we have carefully created it to suit the tape bank sound characteristics. Given the organic nature of these sounds the last thing you want is a filter that self-oscillates so the ChamberTron-RE filter does not self-oscillate when the Resonance knob is fully turned up.

RES KNOB

This adds harmonics at the cutoff frequency (See filter CUTOFF knob).

CUTOFF KNOB

(See LOWPASS, HIGHPASS and BANDPASS buttons).

FILTER MODE BUTTONS

This select the specific filter modes from the following:

LOWPASS BUTTON

This mode allows the low frequencies to pass through while progressively filtering the higher frequencies as you rotate the Cutoff knob anti-clockwise.

HIGHPASS BUTTON

Selecting this mode allows the high frequencies to pass through while progressively filtering the lower frequencies as you rotate the Cutoff knob anti-clockwise.

BANDPASS BUTTON

This allows the selected band of frequencies to pass through while filtering out anything outside that range.

FILTER ENVELOPE CONTROLS

FILTER AMOUNT SLIDER

This slider determines the amount of filter envelope applied to Layer A or Layer B.

FILTER ATTACK SLIDER

Used to alter the Attack Time of the Filter Envelope.

FILTER DECAY SLIDER

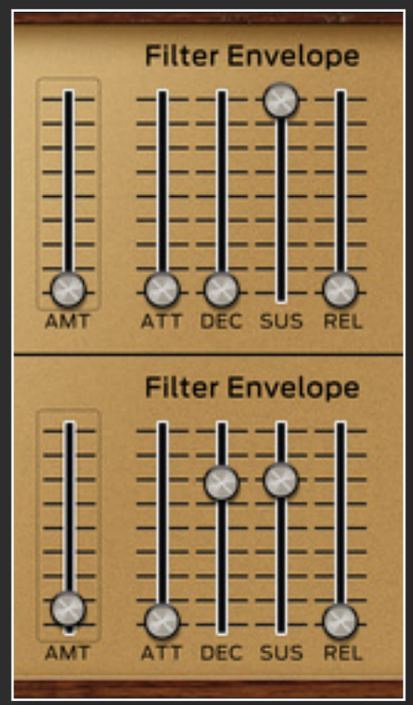
Used to alter the Decay Time of the Filter Envelope.

FILTER SUSTAIN SLIDER

Used to alter the Sustain Level of the Filter Envelope between 0% and 100%.

FILTER RELEASE SLIDER

Used to alter the Release Time of the Filter Envelope.



AMPLITUDE ENVELOPE CONTROLS

AMPLITUDE ATTACK SLIDER

Used to alter the Attack Time of the Amplitude Envelope.

NB: The note-on characteristics of the ChamberTron-RE we recorded differed quite significantly between instruments. This vital characteristic is retained and as such an immediate, sharp attack may not always be possible.

AMPLITUDE DECAY SLIDER

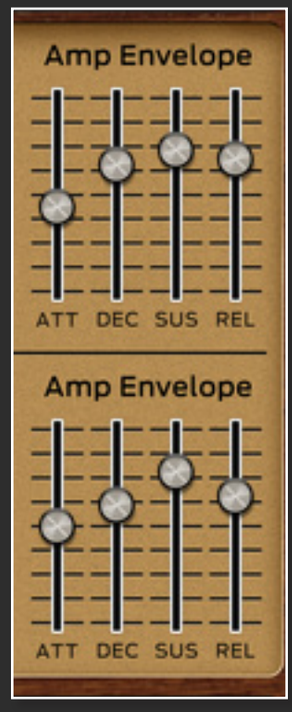
Used to alter the Decay Time of the Amplitude Envelope.

AMPLITUDE SUSTAIN SLIDER

Used to alter the Sustain Level of the Amplitude Envelope between 0% and 100%.

AMPLITUDE RELEASE SLIDER

Used to alter the Release Time of the Amplitude Envelope.



KEYBOARD VELOCITY CONTROLS

MASTER VOLUME KNOB

Sets the global volume while retaining the relative level settings of Layer A and Layer B.

VELOCITY VOLUME KNOB

This determines the amount of dynamic control over volume (or amplitude). When set to zero, all velocities play at a constant volume. Turning the knob clockwise introduces progressively dynamic control over volume, meaning the harder you play the louder the notes and the softer you play the quieter the notes will sound.

VELOCITY FILTER KNOB

This determines the amount of dynamic control over Filter Cutoff. When set to zero, all velocities play at a fixed cutoff amount. Turning the knob clockwise introduces progressively dynamic control over the filter, meaning the harder you play the more the filter opens.

DELAY CONTROLS

ChamberTron-RE's Delay is a global effect and can be used to add a little more depth or shimmer to an overall patch.

LEFT DELAY LENGTH KNOB

This knob allows you to adjust the delay time of the left channel. This is variable between 0 and 2000 milliseconds when unsynchronized and 1/32nd of a beat and 1 Bar when synchronized via the Host Sync button.

LEFT DELAY FEEDBACK KNOB

Determines how many delay repeats occur on the left channel.

DELAY CROSSFEEDBACK (CF) BUTTON

This feeds the left delay into the right channel and vice versa in order to achieve a ping-pong type delay effect.

HOST SYNC BUTTON

The Delay can be synchronized so that it repeats precisely in time with your track. To activate Host Sync press this button and, now, whenever you move the mouse over the Delay Time knobs you will see the current setting.

RIGHT DELAY LENGTH KNOB

This allows adjustment of the delay time of the right channel. As with the Left Delay Time knob this is variable between 0 and 2000 milliseconds when unsynchronized and 1/32nd of a beat and 1 Bar when synchronized via the Host Sync button.

RIGHT DELAY FEEDBACK KNOB

Determines how many delay repeats occur on the right channel.

DELAY DRY/WET MIX KNOB

This simply mixes the level between the dry signal and the wet (delay) signal. Anywhere over halfway will cause the delays to sound at a higher level to the original, dry signal.

SPRING REVERB CONTROLS

ChamberTron-RE's Spring Reverb is a global effect and is designed to simulate the old spring reverb found on the Mellotron MkII and Chamberlin Music Master 600.

LENGTH KNOB

Selects the length of the springs.

FEEDBACK

Determines the feedback from the resonating springs.

DAMPING

Used to apply a degree of damping to the springs.

WET/DRY MIX KNOB

Balances the dry and effect level. Turned clockwise this knob increases the amount of Spring Reverb effect applied to the sound.

KEYBOARD CONTROLS

MASTER TUNE KNOB

Sets the global tune of the instrument.

PITCHBEND RANGE KNOB

This sets the pitch bend range for both layers simultaneously. The range available is from between 0 (no effect) and 12 semitones (one octave).

The original instrument had no pitch bend control, but by flicking this control is possible to simulate the 'snatching of tape' that occurred either when a tape wasn't properly spooled or when hitting a note excessively hard. Used sparingly and carefully this can add extra realism to your ChamberTron-RE performance.

MODULATION

Although there is no modulation wheel on the ChamberTron-RE interface, moving the mod wheel on your keyboard controller will affect the LFO pitch modulation parameters. This affects each layer and takes effect from the point that you have set the LFO Amount. Increasing the modulation wheel on your keyboard controller, progressively adds modulation. If your patch already has a degree of pitch modulation applied to either layer, returning the mod wheel to zero will return pitch modulation to the value set within that patch.

Again, one of our favourite things is to have slightly different mod rates for each layer so that when you use it in earnest, the effect is somewhat epic.

CHAMBERTRON-RE: REAR PANEL

One of the undeniably coolest things about Reason is the ability to flip to the back of the rack via your keyboard Tab key. It's here where you'll encounter a wealth of inputs and outputs via which you can interconnect all manner of Reason devices.

Since this functionality has been around since version 1 of Reason, it's assumed that you have a good grasp of how this interconnection is implemented and the results that can be obtained by using this exceptionally smart feature.

SEQUENCER CONTROL

CV/Gate. These connections are used to trigger ChamberTron-RE via another device such as the Matrix Pattern Sequencer or the RPG-8 Arpeggiator.

LAYER A MODULATION INPUT

Here you can connect external CV modulation sources for modulating specific ChamberTron-RE parameters.

Connect an external CV source to these inputs in order to independently modulate ChamberTron-RE's Layer A parameters. The adjacent sensitivity knob is used to attenuate the CV signal to tailor the amount of modulation affecting the selected parameter including: Pan, Level, Filter Cutoff, Resonance and Filter Envelope.

LAYER B MODULATION INPUT

Connect an external CV source to these inputs in order to independently modulate ChamberTron-RE's Layer B parameters. The adjacent sensitivity knob is used to attenuate the CV signal to tailor the amount of modulation affecting the selected parameter including: Pan, Level, Filter Cutoff, Resonance and Filter Envelope.

LAYER A MODULATION OUTPUT

Use this output to modulate other device parameters according to ChamberTron-RE's Layer A Filter Envelope settings.

LAYER B MODULATION OUTPUT

Use this output to modulate other device parameters according to ChamberTron-RE's Layer B Filter Envelope settings.

CHAMBERLIN LINKS

BRIGHT SPARKS:

A two-hour documentary created in conjunction with I Monster's album of the same name features chapters dedicated to the people behind Moog, ARP, Buchla, Mellotron, EMS, EDP, Freeman & Chamberlin. Bright Sparks features a wealth of pioneering inventors and musicians including Alan R Pearlman, Herb Deutsch, Michelle Moog-Koussa, Ken Freeman, Peter Zinovieff, Alessandro Cortini, Will Gregory, Billy Currie, Karl Hyde & Rick Smith, Daniel Miller, Adrian Utley and more.

Documentary Purchase: http://brightsparks.movie

Documentary Rental: https://vimeo.com/ondemand/brightsparks

THE CHAMBERLIN STORY

Made for the release of the ChamberTron Expansion Pack For M-Tron Pro, this GForceSoftwareTV video tells the story behind the story behind world's original tape playing instrument.

NB: The majority of sounds in the ChamberTron-RE are from Streetly Electronic's own master tape banks and are largely different from those contained in the ChamberTron Expansion Pack For M-Tron Pro

http://www.youtube.com/playlist?list=PLEE5B556ED15B3AEB

Chamberlin Wikipedia: https://en.wikipedia.org/wiki/Chamberlin

An fascinating Chamberlin fan site: http://egrefin.free.fr/eng/mellotron/chamberlinE.php

LEGAL NOTICES

CREDITS AND THANKS

Engineering: Hugo Brangwyn

Graphics: Chris Macleod & Ian Legge

Sound Editing and Patch Design: Dave Spiers, Chris Macleod, Richard Hider, Oliver Davis and Luke Highett

Special Thanks: John Bradley and Martin Smith of Streetly Electronics.

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