Roland SH-7 – a truely flexible Performance Synth

Launched in 1978, the Roland SH-7 is one of the rarest models in the Roland SH series. While the instrument is unusually flexible in terms of modulation possibilities, its 24dB VCF cannot keep up with the outstanding filter design of its predecessor, the Roland SH-5. And yet, thanks to its generous controller section (including a few extras), the SH-7 is perhaps the most beautiful compact synthesiser Roland has ever built in terms of performance.

The rarity or rather the mediocre sales success of the SH-7 could be explained by two aspects. On the one hand, the instrument came onto the market in July 1978, six months after the Sequential Prophet-5 was released. While the age of storable, polyphonic synthesisers had already begun, the era of monophonic instruments (especially of *expensive* monophonic instruments) was drawing to a close.

On the other hand – we have already hinted at it – was the price of the new Roland synthesiser unusually high. The SH-7 cost GBP 1,175 when it was released. In comparison, you could buy an ARP Odyssey for GBP 1,000 or a Minimoog for GBP 900. Admittedly, the price of the SH-7 fell by almost half (GBP 585) between 1978 and 1980, but the decline can only be interpreted as a sign of sluggish success.

Main Features

Although Peter Forrest disagrees on this point (quote: "… *as Roland got more and more successful, they became less and less quirky.*" *), the SH-7 can be considered one of the most unusual vintage synthesisers. This can be seen in its design, which goes far beyond the traditional range of modules and functions.

* Peter Forrest (The A-Z Of Analogue Synthesisers, Part Two, page 129)

The SH-7 offers:

- **2 VCOs** with sine, sawtooth, pulse wave and PWM
- **Oscillator FM** (LFO, autobend, S/H) per oscillator
- **Oscillator synchronisation**, VCO-2 (de)tuning
- An additional **pulse wave generator with 5 registers**
- **Ring modulator**, noise (white / pink) and EXT. IN

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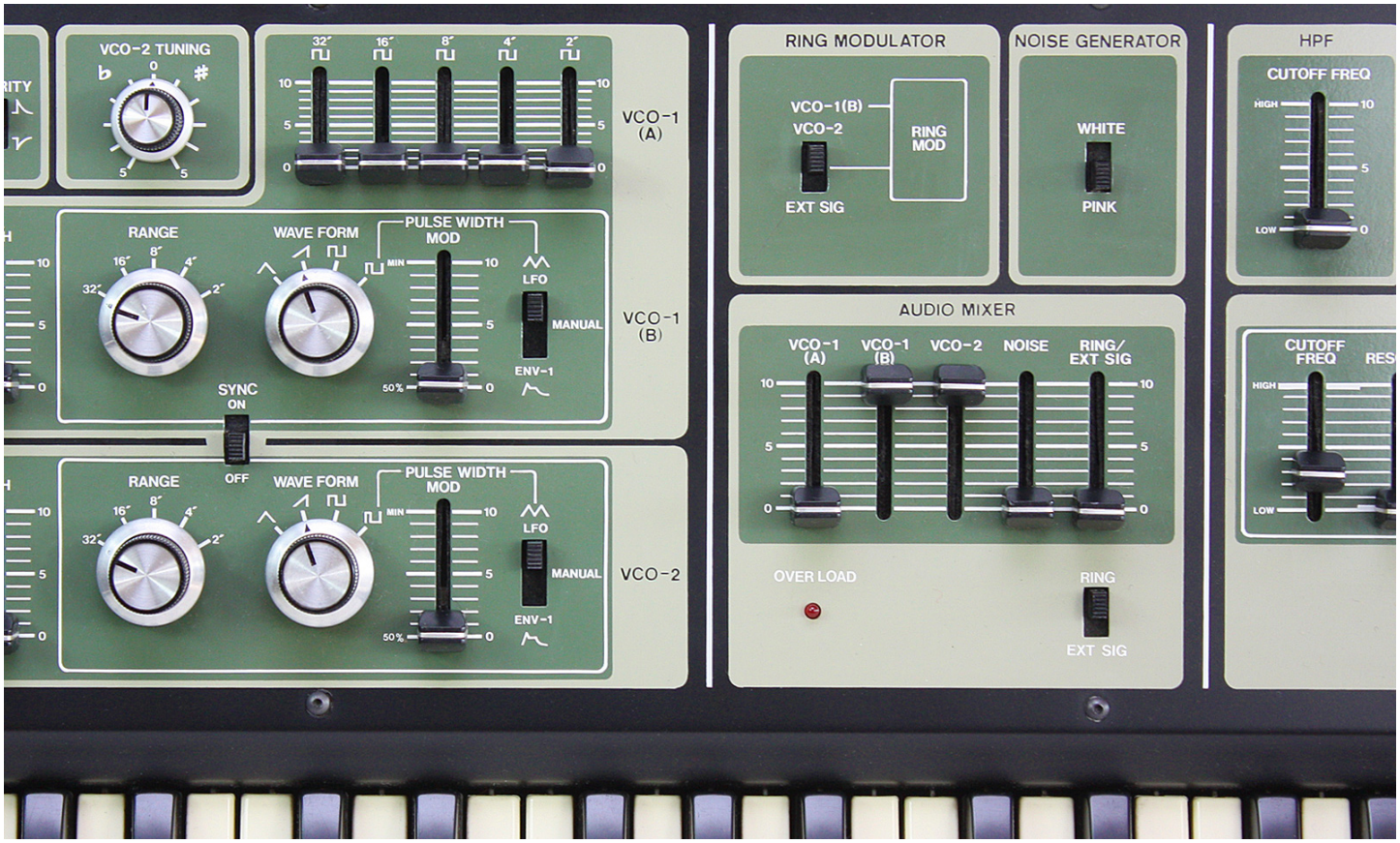

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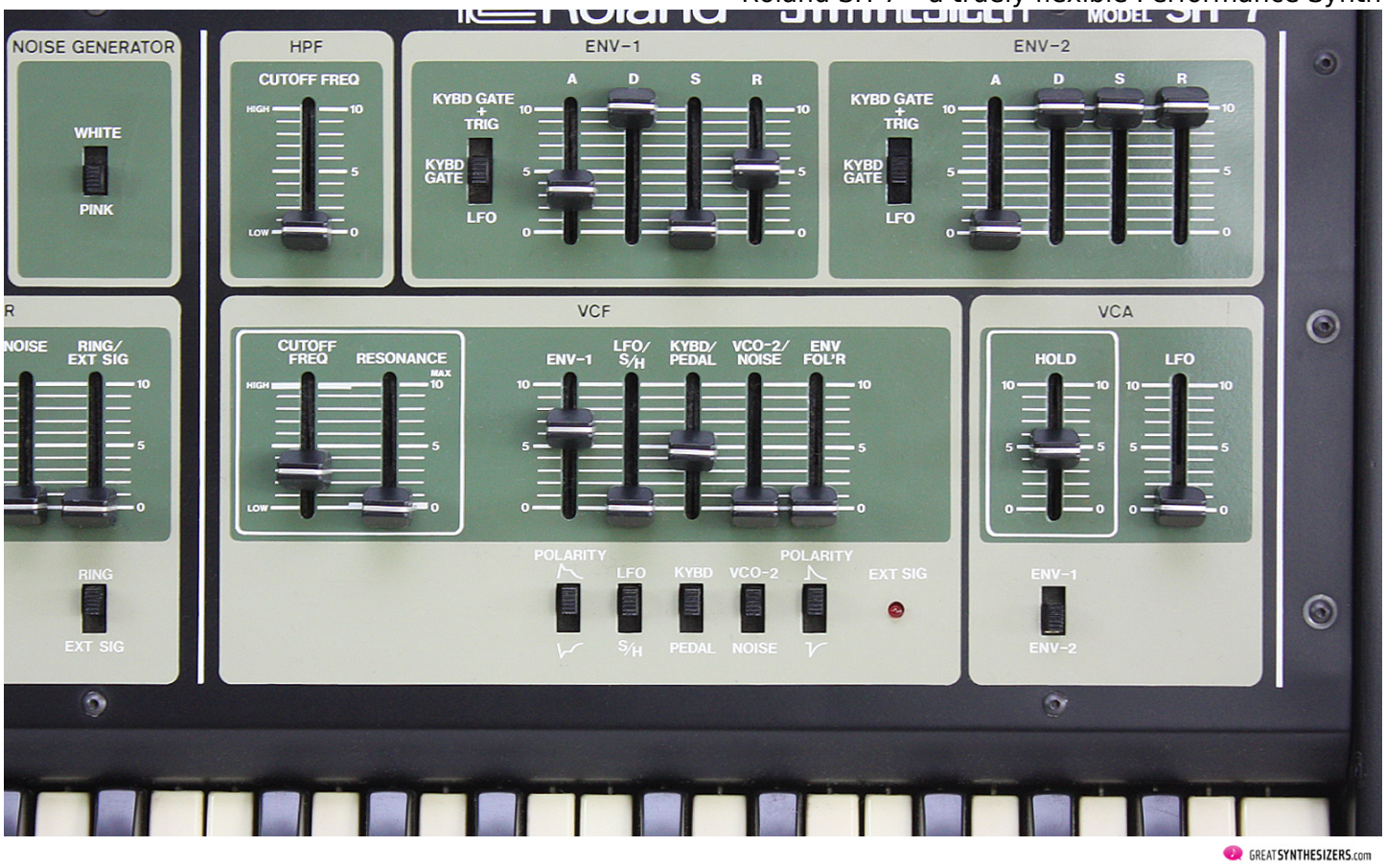

- **MIXER section** for **5 AUDIO sources**
- **LowPass VCF with resonance** (up to self-oscillation) and **ADSR**
- **Filter-FM** via ENV-1 (+/-), LFO/SH, KYBD/PEDAL, VCO-2/NOISE, ENV FOL'R (+/-)
- **Manual HighPass filter** (very useful, especially in conjunction with NOISE)
- **VCA** with **ADSR** (switchable between ENV-1 and ENV-2), HOLD and LFO modulation

- **LFO** (sawtooth, pulse wave, sine with delay function)
- **LFO trigger** function **of the two ADSR envelopes**
- **Keyboard trigger** for synchronising LFO and played notes
- **S/H** (sawtooth, triangle and random) with its own clock and LAG processor
- ONE NOTE, TWO NOTE or S/H or EXT CV/GATE play modes

- **Portamento** with the modes NORMAL, DOWN, UP
  (to deactivate portamento, the potentiometer must be set to zero)
- **Transpose switch** with Low / Medium / High
- **Performance section for VCO, VCF and VCA**
- Direct Bender CV or LFO modulation per section

- Audio **OUTPUT**, PHONES and EXT SIG IN
  (all with their own level switch for L – M – H)
- **CV/GATE** output/input and TRIG input
- **VCF PEDAL CONTROL**
- Rear-accessible tuning potentiometers for VCO 1 / VCO 2

So much for the basic facts. It seems obvious that Roland modelled the SH-7 on American synths – especially the ARP Odyssey (and to some extent the ARP 2600). The great advantage from today's perspective, however, is that the build quality of Roland in 1978 was excellent (!), which means that any SH-7 will most likely still be in such good condition in 2024. With the ARP Odyssey, on the other hand, the problems of the mediocre hardware left their mark very clearly from the 1980s (at the latest) to the present day. Try to find a pristine (original) ARP Odyssey in 2024? Good luck!

Back to the SH-7: the modulation and performance options, which are unusual for a Roland synthesiser, have already been mentioned as a major special feature. However, not everything that shines so beautifully always meets musical expectations – a few small weaknesses must be openly admitted to the SH-7. On the other hand, the somewhat abnormal behaviour of individual functions or modules is ultimately what gives the SH-7 its special character. Whether the sonic results are always deliberate or accidental with regard to individual anomalies of the instrument is, of course, up for debate.

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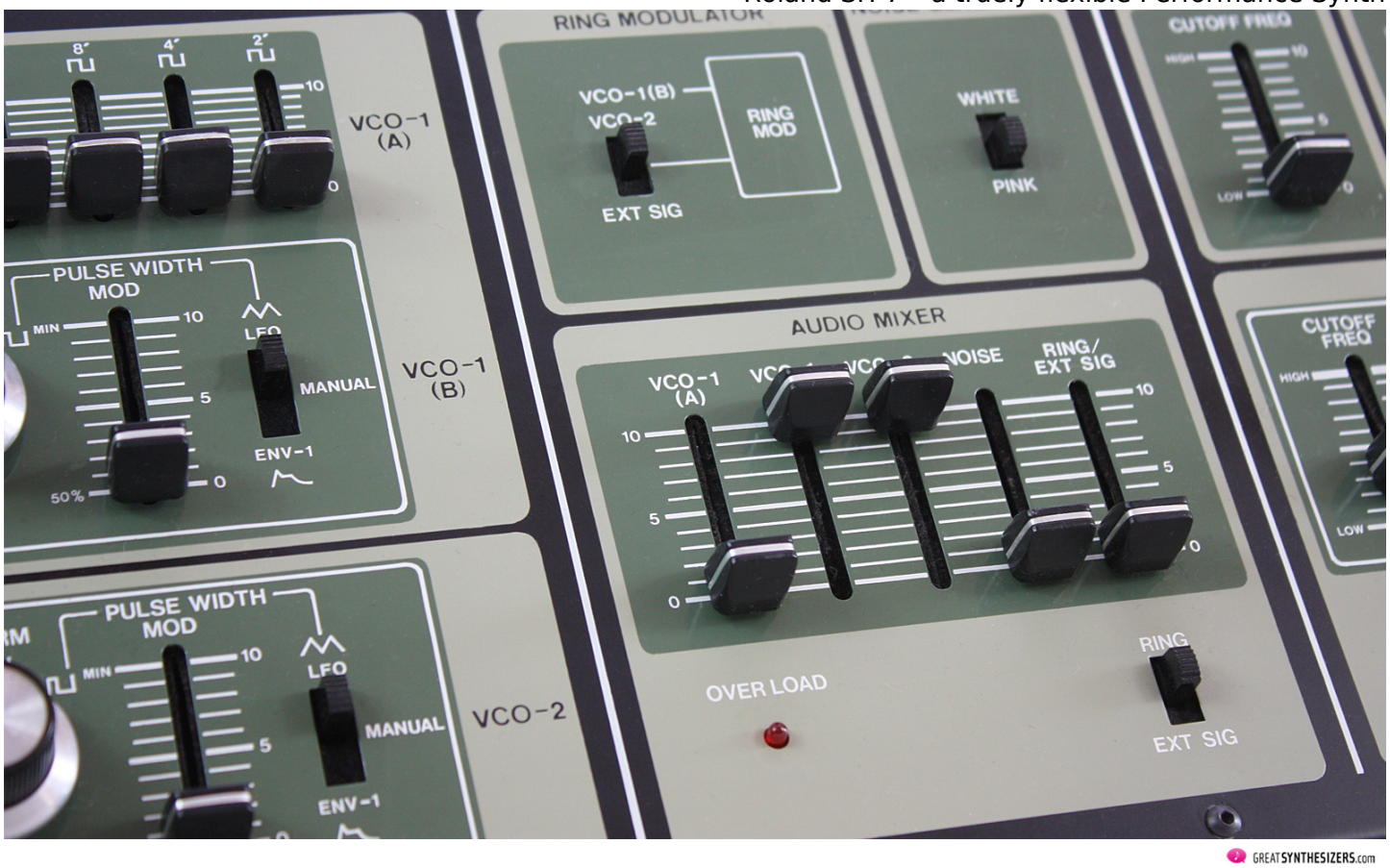
The Special Specialities

Let’s start with **Sample & Hold** – an always welcome source of modulation for analogue synthesizers. What the SH-7 allows: The synchronisation of S/H and envelopes, i.e. ADSR “autotrigger” according to the SAMPLE TIME. This can already be found on the ARP Odyssey and can be used very effectively musically. A small drawback: As with the ARP Odyssey, external triggering of S/H is not provided, which means that the beautiful S/H performances regarding synchronisation are limited exclusively to the SH-7.

On the other hand, we have to face the fact that – like the ARP Odyssey – the SH-7 was designed as a stage instrument. From this point of view, the lack of an external S/H clock input is explainable, since the SH-7 was only intended for stand-alone use. For comparison: The ARP 2600 has said S/H Ext Clock input (which makes it a much higher quality studio synthesizer), but the Roland System-100 surprisingly does *not* (which is a pity, as the System-100 was designed for studio use).

Oscillator synchronisation is also an exciting topic. Due to the particularly numerous modulation options, the SH-7 sync sounds are expected to be “out of this world”. This description would be an exaggeration because, strangely enough, Roland has been experimenting with OSC SYNC over the years. On both the SH-5 and the SH-7, the function sometimes delivers very unique sonic results (which don’t come close to the ideals of American sync sounds). Only from the Jupiter-8 onwards does the issue of oscillator synchronisation seem to have been resolved satisfactorily at Roland.

On the other hand – and this is important – the somewhat idiosyncratic sync sounds of the SH-5 and SH-7 have their very special charm, to put it positively. It wouldn’t be much use if an SH-7 sounded very much like an ARP Odyssey (an unthinkable thing, if only because of the filter), but it wouldn’t be anything “new”. And so we are glad that the SH-7 delivers some very unusual (unpredictable) sync sounds, which sometimes go in a very experimental direction. In terms of character, OSC SYNC is therefore a plus point for the SH-7.



The **AUDIO-MIXER** – only found in this generous form on the ARP 2600 and SH-5 (modular systems excluded) – turns sound design on the SH-7 into a playground for sophisticated sound research with particularly nuanced possibilities. Example: The layering of oscillators or foot positions – this is where the VCO-1 (A) pulse wave mixer with 5 sliders comes into play – is a unique solution on the SH-7. As another example, VCO-1 and VCO-2 can be nuanced with a touch of RING modulator and a pinch of NOISE.

This is where **the possibilities of the SH-7 interlock**. While VCO-2 serves both as its own audio source and as part of the RING modulator sound (and each source can be mixed separately), it is also available in the VCF section for filter FM. If you look at these aspects against the background of the comprehensive VCO-2 modulation sources (LFO, Autobend +/-, S/H), you get an idea of how enormously versatile the SH-7 really is.

Finally, the **Pitchbend / Performance** section provides an additional tool that can directly influence the oscillators (and all their effects), the filter and even the amplifier (and independently of what is happening on the panel). A well-chosen distribution of LFO modulation (e.g. for the VCOs – slight vibrato), as well as direct control voltage (e.g. CV for filter and amplifier for louder / softer individual tones or emphasised / attenuated melody passages) makes the sound design on the SH-7 almost perfect.

Not forgetting **portamento** and **transpose**. In addition to NORMAL, the former has the special features DOWN and UP. In plain language: Depending on the playing direction (on the keyboard), portamento is only active in one direction. If you set DOWN, for example, the sliding of the notes can only be heard in those passages that are played downwards, while notes played upwards remain unchanged. This makes solos possible that would not be possible with the regular use of portamento (NORMAL). Finally, Transpose is the important switch that allows you to directly shift the overall pitch by +/- one octave – very efficient, especially in conjunction with sequencer performances!

The SH-7 Filter

True, it causes controversy: the SH-7 VCF. After the remarkable filter design of its predecessor, the Roland SH-5 (MultiMode VCF plus parallel BandPass filter with its own resonance), expectations for the SH-7 are naturally just as high. But it doesn't quite materialise. With increasing resonance, the VCF thins out considerably (nothing unusual in itself) and gives way to background noise or inharmonic frequencies, which only lead to classic self-oscillation at maximum resonance. We can only speculate as to why this is the case (inharmonic frequencies). Our thought: Roland didn't want to copy the SH-5 (it was still in the company's portfolio / in production in 1978) and instead wanted to offer something of its own.

The unique feature of the SH-7 was its comprehensive range of filter modulations, the likes of which you won't find anywhere else at Roland (with the exception of modular systems). This also opens up a wide and independent sonic universe, the best-known highlight of which is the frequency modulation by VCO-2 already mentioned. Vocal sounds and effect sounds of all kinds are child's play for the SH-7, whereby the results are outstanding, especially with self-oscillation of the filter. This also increases the flexibility of the instrument, which is not only capable of sounding like another SH synthesiser, but can also offer results of an extreme kind – definitely untypical Roland sounds – in addition to the classic Roland sound.

The SH-7 filter should therefore be seen as an enhancement of the SH series rather than a reduction (compared to the SH-5). One thing is clear: If you are looking for powerful basses and effective filter sweeps, you will undoubtedly have more fun with the SH-5. But if you like to take the occasional experimental step in the studio, the SH-7 is the better partner for you.

Flexibilität and Performance: Big Bonus!

Finally to the performance. This is what makes the SH-7 unique and yet – very surprisingly – is rarely mentioned in the literature as a real speciality. Anyone familiar with the Roland Jupiter-4 (or the Roland Promars) will already have a pretty good idea of the SH-7's bender section, which features the three modulation sections VCO – VCF – VCA. However, the SH-7 is also characterised by the fact that each section has its own Amount control (whereas the Jupiter-4 / Promars only have global pots for the LFO or CV voltage).

This is a real blessing for solos, as the pitch bender's mode of action (direct CV or activation of the LFO) can be individually adjusted for VCO – VCF – VCA. A hint of VCO vibrato with a strong VCF boost and a pinch of increasing VCA volume – an example of what can happen when moving the bender. VCO shifting of a certain interval with slight VCF-LFO modulation (wah-wah) and massive bending to double the VCA volume – another example. The possibilities are enormous and have not been realised in this way on any other Roland synthesizer. In addition to the sonic flexibility of the panel, the flexibility of the bender section is also absolutely impressive …

Three Little Hints

Let's start with a note on the **external control of the SH-7**. If you want to operate the instrument with CV/Gate, the switch on the left of the panel must be set to EXT CV GATE (S/H). Only then will external control work. Incidentally, it is a pity that the (additional) VCO input of the SH-5 can no longer be found on its successor. With the SH-5, it was possible to play sequences and transpose them simultaneously via the keyboard. This option is no longer available on the SH-7. Once CV IN is connected at the rear, the keyboard is no longer available as a controller (which, admittedly, also became the general standard for SH models).

The second small note applies to the **design of the SH-7**, which is – typically vintage Roland – impeccable and of outstanding quality. The bevelled panel, the tasteful curves, the generous faders and rotary switches – everything is perfect! The only problem is that the SH-7 is built in such a way that it is practically impossible to stand upright and will tip over immediately. This is just a clear warning never to place the SH-7 upright on the floor or store it upright (without the case). As the controls are the highest point of the panel, the SH-7 would hit the faders with full force if it fell – the instrument is heavy (!) – and cause major damage.

Third note: **Working on the SH-7 requires some patience**. While almost every setting on the SH-5 delivers more or less immediately usable sounds, sound design on the SH-7 is often more difficult. It is a matter of mixing the audio signals correctly, sensitively adjusting the VCF modulation sources, nuanced adjustment of the (jagged) envelopes and much more. The sonic reward is usually not lacking, but as I said: a little patience is required.

Conclusion

The Roland SH-7 is an exceptional instrument in many respects. Its sometimes not quite so effective filter (background noise and inharmonic frequencies with increasing resonance) may make some musicians turn up their noses at the less powerful sound compared to the all-time legend Roland SH-5, but that is only one aspect of the big picture, because ...

... the SH-7 certainly offers the traditional (powerful) vintage SH sound, but also effect sounds and original creations that are not so easy to find, especially on Roland compact synthesizers. Furthermore, the performance around the pitch bend control options (VCO – VCF – VCA) is in a class of its own, which is also significantly enhanced by excellent portamento modes (DOWN or UP) as well as S/H, autobending and the repetitive triggering of the envelopes by sample & hold or by the LFO.

Since the possibilities of duophony, the ring modulator and especially the filter frequency modulation by VCO-2 significantly expand the musical terrain, the SH-7 can be considered one of the most interesting Roland instruments. Embedded in excellent hardware, it is an impressive synthesiser, ideally suited for sequencing, dynamic solos and bass/lead/effect sounds of all kinds.

40+ minutes of audio files are attached. Only the Roland SH-7 can be heard. In one demo, the Korg Monotribe joins in with some drum patterns.

[All sounds were tweaked “live” – without exception. As there is no rustling, crackling or other noise to spoil the recordings, we would like to take this opportunity to emphasise once more the incredibly high-quality construction of the early Roland synthesizers.]

1. DEMO 1
2. DEMO 2
3. Collage 1
4. Collage 2
5. Collage 3
6. Bass PWM
7. Simple Sequ
8. Short Solo
9. Osc Sync
10. Noises 1
11. Noises 2
12. Noises 3

13. Noises 4
14. Powerful 1
15. Powerful 2
16. Powerful 3
17. SampleHold 1
18. SampleHold 2
19. Sequence 1
20. Sequence 2
21. VCF-LFO-Mod
22. Slow RingMod

Roland SH-7

Mono/duophonic Analog Synthesizer
(1978 – 1981)

Dimensions (L / B / H):
87 x 40 x 18 cm

Weight:
15,5 kg

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