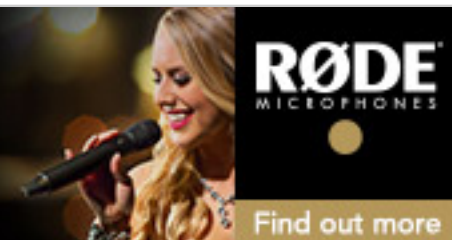




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## Dave Smith Instruments Prophet Rev 2

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Polyphonic Synthesizer

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By Gordon Reid

Published [December 2017](#)**The Rev 2's attractive feature set and inviting price tag could make it the most popular Prophet yet.**

It's hard to believe that it's been nine years since DSI reintroduced the Prophet name to a world crying out for recreations rather than digital emulations of classic analogue synths. Looking back, the chattering classes had significant misgivings when DSI did so, but the Prophet 08 won over many (although, if we're honest, not all) of the doubters, and paved the way for the Prophet 12 and the Pro 2, the Prophet 6 and the OB-6, all of which have offered different flavours of hybrid analogue/digital synthesis. I've reviewed all of these, comparing them with their ancestors — the Prophet 600, the Prophet 5, the Pro One and even the Oberheim 4-Voice — and, without exception, I've been impressed. So today's question is, will the Prophet Rev 2 be another good'un?

### The Voicing

The Rev 2 keyboard and its desktop module are each supplied in two versions: an eight-voice model and an otherwise identical 16-voice model, and you can upgrade the former to the latter using the Rev 2 Expander Kit. Both versions are bi-timbral, allowing you to create a separate sound, each with its own effect, arpeggio and sequence, in Layers A and B of each Program. These can then be layered or positioned either side of a user-defined split point. For the smaller model, layering reduces the polyphony to four notes while, for the larger, it's reduced to eight notes, as you would expect. You can audition and edit either Layer individually or while listening to the composite sound, and copy or swap Layers within a Program. Initially, you couldn't copy sounds from one Program into another, but this was corrected in v1.0.7.2 of the OS. If you switch off Layer B, then Layer A is played with the instrument's full polyphony.

Each voice offers two detunable, mixable DCOs with optional key sync (which initialises the waveform when you press the key) and the ability to be disconnected from the keyboard. There's also a sub-oscillator an octave below osc 1, and a white-noise generator. You can waveshape any of the oscillators' waveforms (not just the pulse wave), picking an initial shape and modulating it as you choose. In addition, an oscillator 'slop' parameter allows you to add errors to the pitches of each oscillator to turn your nice, stable DCOs into horrid,

inconsistent VCOs. Oh yes... and you can hard-sync osc 1 to osc 2 for the usual range of effects, which the Rev 2 does rather well.

The output from the oscillator section is then presented to the same Curtis low-pass filter used in the Prophet 08. This offers resonant 12dB/oct and 24dB/oct modes, the latter of which will self-oscillate at high resonance settings. Its character is as you would expect — warm and flexible, but perhaps not as aggressive as some people might like. The filter cutoff frequency is affected by a dedicated five-stage (DADSR) contour generator. The amplitude of this is velocity sensitive and it can be applied with positive or negative polarity. The maximum delay before the contour begins its journey through the ADSR stages isn't long — around six seconds — but the maximum attack, decay and release times are languorous; around 25 seconds for the attack and decay, and around 40 seconds for the release. At their fastest, the A and D times are reassuringly clicky. You can also modulate the cutoff frequency using the output from osc 1. The possibilities of this are enormous: you can sweep the pitch of osc 1 to create all manner of clangorous timbres and other sophisticated effects and, when the filter is self-oscillating, you can even create 2-op FM sounds this way.

Each voice's audio amplifier is controlled by a second velocity-sensitive DADSR contour. The amplifier section has just one additional parameter: Pan Spread, which places alternate voices either side of the centre by an amount determined by the parameter value. In addition, there's a VCA Level ('Initial Level') parameter tucked away in the Miscellaneous menu, and this allows the synth to drone if that appeals to you.

The Rev 2 is replete with modulation options, not least of which is an eight-slot modulation matrix that allows you to direct your choice of 22 sources to your choice of 53 destinations, with each slot having an individual, bipolar amount control. Programming this can be simpler than you might imagine — just hold down the Source button and adjust the control that you want to define as the modulation source, and then do the same with the Destination button. This doesn't provide access to the complete list of sources or destinations, but it's a quick way to programme the most common ones, and you can access the rest on-screen in the usual fashion.

Four of the modulation sources are LFOs that offer five waveforms, key sync and master clock sync, and you can apply these using their dedicated Destination knob or via the modulation matrix. Their maximum frequencies didn't seem to reach the 500Hz promised in the specification but, at the other end of the scale, I found that I could force them well below the claimed 0.022Hz for some incredibly slow sweeps. There's also an auxiliary envelope that can be routed using another dedicated Destination control or through the matrix. You can set this one to loop if desired, which means that you can use it to create unusual waveforms. With the attack, decay and release set to zero, the maximum frequency attainable is around 400Hz, which suggests some interesting possibilities. At the other end of the scale, the lowest frequency I obtained could be measured in minutes/cycle!

Other voicing facilities include individual Program volumes in addition to the overall master volume control, octave transpose, hold, and a flexible portamento (the rate of which can be determined separately for osc 1 and osc 2) with equal rate and equal time modes, and both legato and non-legato options. There are also two pan modes that determine how the sound is affected when pan is a modulation destination. The first affects the spread of individual notes, to determine how 'wide' the sound is in the stereo field, while the second allows you to move the whole Layer left or right, just as when using the panning knob on a mixer. The Rev 2 also offers the usual range of key modes: low-, high- and last-note priority, with or without multi-triggering, and these are particularly relevant when using the monophonic Unison mode, which allows you to play a single note with up to 16 voices. Strangely, there's no polyphonic unison that would, for example, allow you to play four notes, each with four voices. But on a more positive note, there's chord memory and, like other Prophets of recent years, it offers numerous alternative tuning scales that, if you wish, you can replace with alternatives downloaded from the Internet.

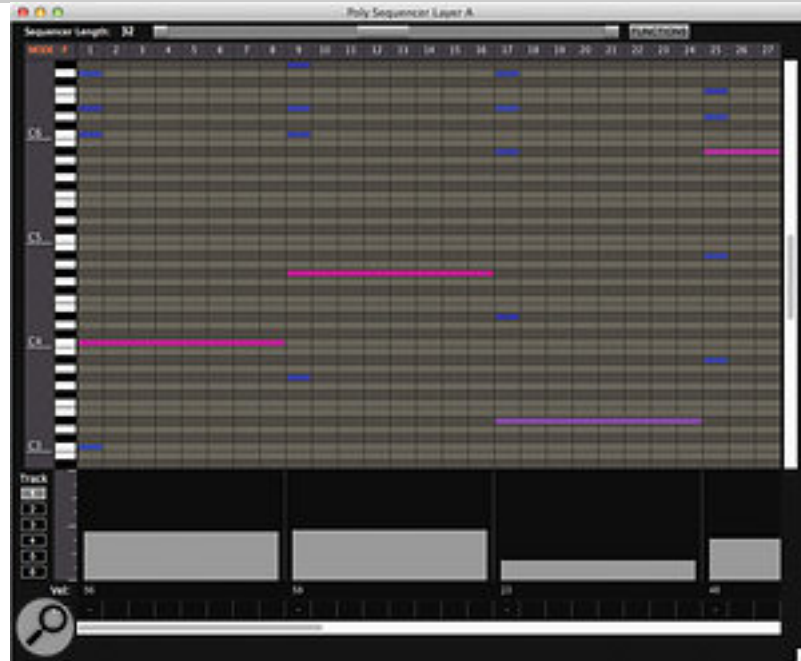


What the Program editor would look like if the SoundEditor window were wide enough.

## The Arpeggiator, Sequencer & Effects

Each Layer includes an arpeggiator offering up, down, up/down, random, and 'as played' modes over one, two or three octaves, with each note repeating up to three times, as you choose. Timing can be derived from the internal clock, MIDI Clock, an external trigger source or external audio and, if you want, a neat re-latching feature allows you to hold an existing arpeggio and then, when you play a new chord, create a new arpeggio rather than adding the new notes to the existing pattern. It's simple, and works well.

There's also a dual-mode sequencer in each Layer. The first mode offers a single, 64-step, six-voice polyphonic track, and you can play along with this using any unallocated voices. Programming notes, ties and rests is straightforward and, if you make a mistake, it's possible to edit each note individually. You can copy and swap sequences between Layers, but not to or from another Program, which you might find frustrating. Unexpectedly, you can change Program while a sequence is playing, and it will continue with the new sound. Unfortunately, transposition on playback requires that you press the Record button and the desired key, which is impractical because it can require two hands, so DSI really should find a better way to accomplish this. The second mode is a four-track, 16-step sequencer called the 'gated sequencer', and you have to press and hold a note on the keyboard or via MIDI for it to run (hence the name). This allows you to create and replay up to four modulation tracks, although you can make it play notes by routing one or more tracks to the oscillators' frequencies. Programming is parametric but straightforward; select the desired track and destination and then enter values on each step using the Value knob. The only complexity is encountered when using the Slew function available on tracks two and four, which allows you to apply programmable amounts of glide to the transitions of values in tracks one and three. Interestingly, the four tracks can have different numbers of steps, which mean that you can create sequences that take a very long time to repeat. Whichever mode you use, you save the sequence by saving the Program containing it.



The six-voice sequencer window.

Each of the Rev 2's Layers has its own effects processor and each of these offers 13 algorithms; three flavours of delay, a chorus, three phasers, two flangers, a reverb, a ring modulator, distortion and a resonant high-pass filter. Each algorithm offers just two parameters. The first defines the delay time, the modulation rate, and so on, while the second determines the magnitude of the effect. These, together with the wet/dry mix, are destinations in the modulation matrix, so you can do far more with them than you might expect. Of course, these facilities are far from unique to the Rev 2, but there's something about the way that the controls and menu options are arranged that encourages experimentation. Consequently, I would treat the effects as part of the sound design process rather than as substitutes for external processors. Alternatively, you can defeat them to ensure a pure analogue signal path from the oscillators to the outside world.

## In Use

Do you remember the famous café scene in *When Harry Met Sally*? If so, you'll be able to picture my reaction when I removed the Rev 2 from its box. Yes, yes, yes... YES! Five octaves. Not three, nor four, but five! If I were allowed to level just one criticism at DSI's recent releases, it would be the widths of their keyboards, which render them of limited use to me without hooking them up to a 61- or 76-note controller. But, like the Prophet 08, the Rev 2 provides a sensible complement of black & whites based upon the high-quality velocity- and pressure-sensitive keyboard mechanism found on the Prophet 6 and OB-6. Mind you, it wasn't just the width of the keyboard that elicited that response; it was the whole look and feel of the instrument, and its build quality. I've loved my Prophet 600 since I bought it in the mid-1980s and, for some sounds, I used it in preference to a Prophet 5 because there was (and still is) something about it that felt 'just right'. Today, with the exception of the position of the pitch-bend and modulation wheels, the Rev 2 feels much the same to me.



The gated sequencer window.

At this point, I must admit that I was surprised when I heard that DSI had named their new baby the Prophet Rev 2 rather than the Prophet 16. But when I started to play it, I understood the decision. Despite boasting up to twice the number of voices, waveshaping, an expanded modulation matrix, digital effects and more, its underlying architecture and character is the same as that of the Prophet 08, to the extent that it's even compatible with Prophet 08 Programs. For me, this is great, but if you're not a fan of the '08, you might not agree. Anyway... I selected 'jump to current position' as my preferred method of using the knobs (it also offers pass-through and relative modes) and, in the absence of a Live Panel mode, invoked the basic template patch, and started programming. I immediately found that the diminutive size of the Rev 2 belies the power within, and was soon programming pads and ensembles of real depth, aetherial patches such as ghostly voices based on filtered noise (the low-pass filters tracked almost perfectly over a wide range), organs that use the filters as the fourth 'drawbar' per voice, electric pianos and other keyboards, and even sounds reminiscent of early digital synths. Of course, the Rev 2 also creates superb leads and basses, and does 'big vintage analogue', although an overdrive would have extended its capabilities in these areas even further. I also had great fun with the effects, for example, invoking a BBD delay with maximum feedback (so that it looped indefinitely) and using the MIDI Note number to control the delay time while arpeggiating suitable sounds. This not only changed the repeat speed as I played but also the pitches of the existing notes in the loop, which was fascinating. Imagine playing early Tangerine Dream tracks on a tape machine with an oval capstan while bouncing up and down on a boat in a force 10 storm. Exhilaration or seasickness? You decide.

The Rev 2 sports a genuine bi-timbral mode over MIDI that allows you to play the A Layers of any two Programs using adjacent MIDI channels, with voices 1-8 allocated to the first, and voices 9-16 allocated to the second. This makes it possible to play two sounds independently across the entire MIDI Note range, which is quite different from the splitting and layering available from the keyboard itself. When testing this, I encountered a few minor bugs, but I understand that these are about to be fixed in the latest OS, so there's no need to recount them here. Oh yes, and while we're talking about MIDI, the Rev 2 responds to polyphonic aftertouch over MIDI, which is an added bonus.

Of course, no synth is perfect, and I found a small handful of shortcomings. For example, you can't re-map the streams of MIDI CCs or NRPNs generated whenever you adjust a top panel or performance control, which would be useful if you wanted to use it to control other instruments and soft synths. Another niggle is the 1980s method of patch naming, but perhaps even more frustrating is the lack of a category search or any other shortcuts when recalling sounds; finding something specific in its capacious memory can be a long and exasperating exercise if you don't know roughly where it is or if you don't have the software editor/librarian (see box) to hand. Happily, I encountered almost no operational difficulties whatsoever. I'm aware that some people have reported a slight audio bleed when the filter is open but no note is being played, so I tested for this using an analogue mixer and found that the gain had to be so high that the background hiss and hum was far more significant than the bleed. Consequently, I think that this can be ignored. The only worrying moment I experienced during my time with the Rev 2 was on a single occasion when the oscillator and filter calibration routine froze. Power cycling unlocked it, and I was then able to calibrate the synth without a problem.

## Conclusions

The Prophet 6, Prophet 12 and Prophet Rev 2 share many attributes but, having spent considerable time with each, I now appreciate the distinctions between them (see table). With its VCOs, Poly-Mod, mono-timbral architecture and 1970s sound, the Prophet 6 is the model that most resembles the earliest Prophets and will appeal to those who lust after a Prophet 5. In contrast, the digital oscillators and enhanced facilities of the Prophet 12 are more appropriate for players who require contemporary sound design capabilities. Between these sits the Rev 2; it's more advanced than the Prophet 6 but remains truer to the vintage ideal than the Prophet 12. Given its price, I can see it becoming the Prophet of choice for many players. Indeed, if money were tight and I were buying one for myself, the Rev 2 is probably the Prophet that I would choose.

Which Prophet?			
Model	Prophet 6	Rev 2	Prophet 12
Timbrality	Mono	Duo	Duo
Voices	6	8 or 16	12
Polychain	2 units (12 voices)	---	---
Oscillators per voice	2 x VCO 1 x sub-oscillator Noise generator	2 x DCO with waveshaping 1 x sub-oscillator Noise generator	4 x digital oscillators offering > 20 waveshapes including noise 1 x sub-oscillator
Filters per voice	1 x LPF 1 x HPF	1 x LPF	1 x LPF 1 x HPF
LFOs	1 global	4 per voice	4 per voice
Contour generators per voice	2 x ADSR	3 x DADSR	4 x DADSR
Mod matrix per patch	Poly Mod with 2 sources and 5 destinations	8 slots 22 sources 52 destinations	16 slots 26 sources 100 destinations
Effects per patch	Dual digital effects offering 10 algorithms Stereo analogue distortion	Dual digital effects (one per Layer) offering 13 algorithms	4 digital delays 5 'character' effects Stereo analogue distortion

Arpeggiator	Yes	Yes	Yes, programmable
Sequencer	64-step polyphonic sequencer	64-step, 6-voice polyphonic sequencer 16-step, 4-track gated sequencer	---
Keyboard Length	49 key, V & P sensitive	61 key, V & P sensitive	61 key, V & P sensitive
MIDI	In, out, thru, USB	In, out, thru, USB	In, out, thru, USB
Pedal Inputs	1 x sustain 1 x volume 1 x LPF cutoff frequency 1 x sequencer	1 x sustain 1 x expression 1 x sequencer	1 x sustain 2 x expression
Prices	\$2799	\$1499/\$1999	\$2999

## The Rear Panel

The Rev 2 boasts independent stereo outputs for Layer A and Layer B, so you can use it as two independent analogue mono/polysynths. If you don't connect anything to the B outputs, both Layers are output from the A outputs, as you would expect. Next to these, you'll find a quarter-inch TRS stereo headphone socket that carries the same signal as the Layer A outputs, meaning that, if you have cables inserted into the B outputs, only Layer A is heard, which is a shortcoming.



There are three analogue control inputs. The operations of two of these are obvious: Sustain accepts a standard TRS sustain pedal, while Pedal/CV allows you to use an expression pedal or external CV as a source in the modulation matrix. The third — Sequencer — can be used with both a pedal or an external analogue signal to provide on/off commands for the sequence and the arpeggiator, or triggers to step through a sequence, or triggers and gates for the synth's contour generators.

Next to these you'll find a conventional set of MIDI in/out/thru sockets and a USB B socket that carries bi-directional MIDI but not audio. The Rev 2 is USB 2 class compliant, so no drivers are needed. Finally, there's an IEC socket for the internal, universal (100V-240V, 50Hz/60Hz) power supply.

## The Editor

In addition to being able to send Programs and Banks via MIDI to another Rev 2, you can export and reload Programs and Banks in SysEx format in the usual fashion. However, these are always reloaded into the locations from which they came, so it can be laborious remembering the position from which a given SysEx file originated, and later reordering your Programs to ensure that you don't overwrite anything important when reloading it.

The answer to this is the SoundTower SoundEditor. This makes visible all of the synth's parameters (including those otherwise accessible only through menus), provides a very welcome sequence editor and, in addition to conventional editing, incorporates SoundTower's usual additions for random Program generation, mixing, morphing, and mutating. But it's also a powerful librarian that allows you to reorder your sounds as well as assigning them to categories, which sorts out many issues. At the moment, only a stand-alone version is available, but an AU/VST version is promised, and this will make it possible to automate the Rev 2 fully from within your plug-in host.



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Dave Smith Instruments

Prophet Rev 2 £1434

**Pros**

- It retains the character of the Prophet 08 but with much greater power and flexibility.
- It's small, light and convenient, but feels solid and robust.
- The keyboard feels good, and offers both velocity and aftertouch sensitivity.
- It's cheaper than its siblings.
- It can sound superb.
- No wall-wart power supply.

**Cons**

- There's no polyphonic unison mode.
- You need to use two hands to transpose the sequencer.
- There are no Program selection shortcuts.

**Summary**

Sometimes a polysynth appears that ticks almost all of the boxes and makes the transition from mere synthesizer to musical instrument. For me, the Rev 2 is one of these. Well done, Dave Smith and the team.

**Information**

Eight Voice £1434, 16 Voice £1859. Prices include VAT.

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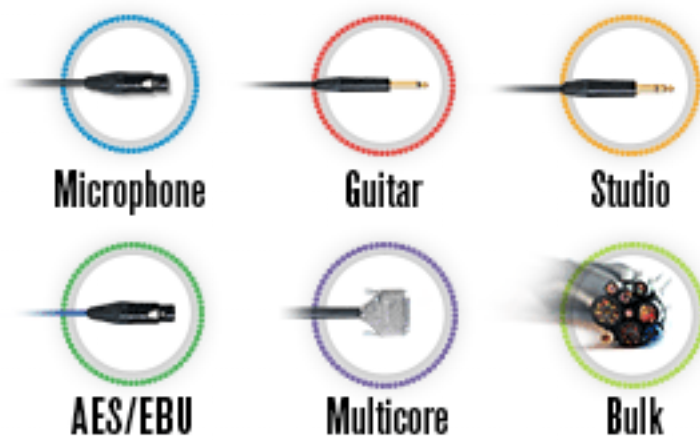
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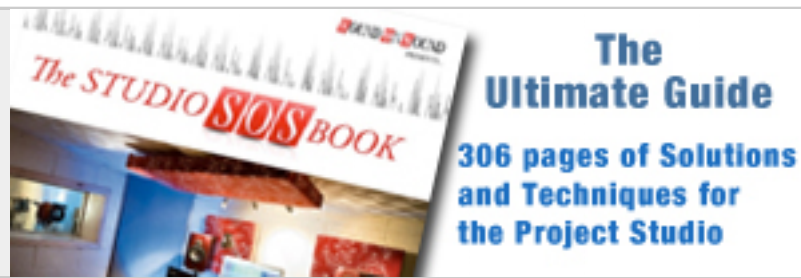
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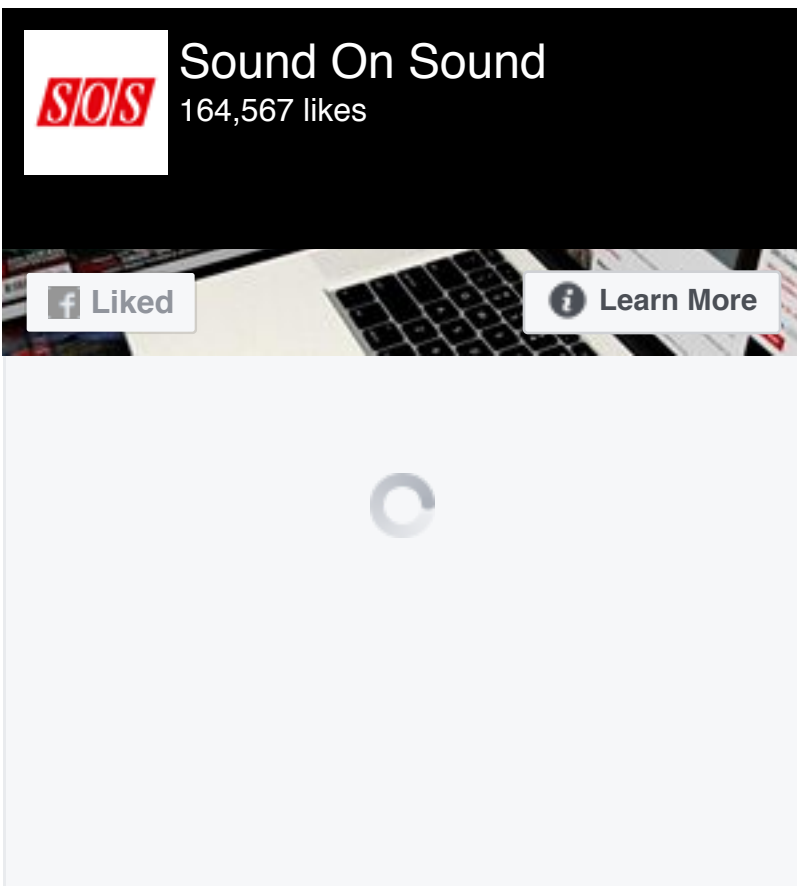
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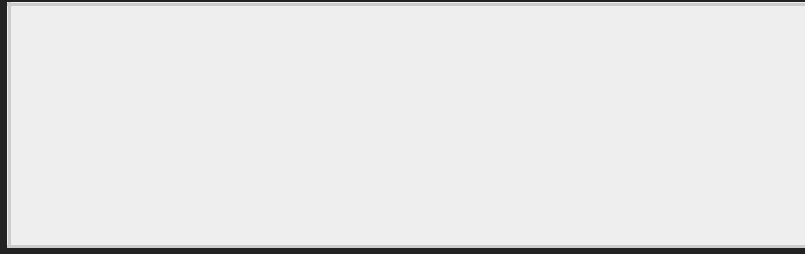
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