

TEST

simmons' SYNTHESIZER CHECK

Dave Simmons is an expert on synthesizers. He understands them both musically and technically and his background has made him uniquely qualified to be I.M.'s Synthesizer Consultant.

Dave's a musician and a technician. He studied classical piano and organ as a child later developing into synthesizer and rock. His musical achievements include playing the massive synthesizer part in David Bedford's "Odyssey" and his technical background included a thorough training in practical and theoretical electronics. For two and a half years he was UK Service Manager for ARP Synthesizers and today he's a partner in a highly specialised company called Music Aid in St. Albans, Hertfordshire where he undertakes all types of synthesizer modification and servicing.

Introduction

I have been looking forward to playing the Roland GR500 Guitar Synthesizer for many months now after seeing Adrian from Roland demonstrate it at various Trade Shows, producing 'walls of sound' and in fact one of the first things you notice when you start playing the instrument is the many and varied sounds that it can produce.

Sections

The synthesizer itself has five sections: Guitar, Polyensemble, Bass, Solo Melody and External Synthesizer, giving the player five layers of sound, each of which can be routed to one of three outputs and therefore to one of three amplifiers.

Guitar

The first section deals with the guitar, so we should start by talking about the guitar itself. It is built along the classic Les Paul lines and has one Humbucker pick-up placed about half way between the neck and the bridge. The guitar is very well made with copy Grover heads and is manufactured in Japan by a subsidiary of Roland formed with the company which makes Ibanez guitars. This, I suppose will be the biggest thing which will put people off buying the Guitar Synthesizer (apart from the fact that it has about a thousand knobs on it) as I have found from experience that people are loathe to give up their Gibson/Fender/Winfield guitars but a guitarist friend of mine, after playing the guitar for a couple of hours, commented on what a good guitar it was and said he wouldn't mind having one.

Controls

The controls for the guitar section on the synthesizer are marked Guitar Volume, Tone and the normal three position E.Q. switch. The guitar is connected to the main console by a multi-way cable.

The sound from the guitar pick-up goes to a single slider E.Q. used to accentuate the highs and lows, and from thence to an output selector and your favourite guitar amp. The only criticism I have of the guitar is the plastic bridge saddles which I am told might wear out and are not expected on a guitar of this quality. Another thing that occurs to me is that it would have been a good idea to put a jack socket on the guitar, for normal guitar sound in case the multi-way cable

gets lost by the roadies, squashed etc., so that at least the guitarist can still play something.

Moving on to the real 'meat' of this instrument which is of course the synthesizer itself, and the first section, Polyensemble.

Polyensemble

The polyensemble is fully polyphonic in as far as it has one tone generator and one envelope generator for each string although the envelope generator controls are common for all six strings. These controls are Attack, Decay and Sustain. The Attack time is variable from instant to around 1 second. I would have liked to have seen this extended to 3 or 4 seconds but this is only a small point as the other envelope generators on the synthesizer seem to have a very slow maximum attack time.

The Decay time is variable from almost instant decay, giving a 'banjo-like' decay characteristic to about 8 seconds. The Sustain is variable from zero to infinite, and this really means infinite as the guitar has a very interesting little device on it, rather like the E-Bow, called a String Energiser which means that while you are using the synthesizer section the strings of the guitar do not actually stop vibrating unless you damp them, so you can in fact hold a chord indefinitely.

The waveforms produced by the

Polyensemble sound to me like pulse waves, the width of the pulse being varied by the envelope shape (if that means anything to you) but to describe the sounds, if you have the envelope set up with a sharp attack and a fairly slow decay it sounds like a fuzz guitar, using a slower attack gives a sound similar to a saxophone.

The sound produced is fed through the polyensemble voicing - which is a four band E.Q. marked FLMH (presumably fundamental, low, medium, high or something of that sort) which gives a mellower or brighter sound. The polyensemble sound can then be routed out through one of three outputs and from there to its own amplifier, the guitar amplifier, or via echo chambers etc. to an amplifier.

Bass

The next section on the synthesizer is Bass and is exactly what it says, a bass synthesizer which works on either all six strings or on the bottom two strings, or on the bottom three strings.

It has its own envelope generator marked Attack, Decay and Sustain. This is a monophonic synthesizer section and it sounds the last note you play, in other words, last note priority. This has advantages and disadvantages over the other method used on some synthesizers which is lowest note priority where the bass



will play the lowest note of the chord.

With last note priority, if you play a chord from the sixth string upwards the bass will follow the last note played. There are three bass voicings, Percussion, Soft and Hard. Percussion is a very percussive bass sound and is not affected by the settings on the envelope generator, there is a switch under the percussion slider marked long or short which changes the length of the decay on the percussion.

The bass voicings are very nice, Soft being a rounded deep sound and Hard producing a sound similar to a tuba. The Soft and Hard voicings are shaped by the envelope generator so you can set up a bass attack and decay to give a sound similar to a normal bass guitar, or with a slower attack, sounds similar to tubas or cellos.

There is also a switch for touch sensitivity on this section and the next two sections of the synthesizer. It is marked Off, 1, and 2. In the off position the level of sound is the same no matter how hard you hit the strings whereas in the other two positions the harder you hit the string, the louder the sound, position 2 being the most sensitive. The output from the bass section can again be routed to one of three output jacks and from there to an amp. I would advise anyone using the synthesizer to route the output from the bass section through a separate Bass amp, because of the nature of the sound produced.

Solo Melody

The next section, Solo Melody, is the most complicated part of the synthesizer and probably the hardest to understand for anyone not familiar with synthesizers. It has a voltage controlled filter (VCF) with two controls marked Frequency and Resonance, Frequency being the frequency at which the filter cuts off (the filter being low pass) and Resonance just accentuates the cut-off point, if desired. The sounds fed into the filter are marked 16' pulse, 8' pulse, 8' sawtooth and Polyensemble through the VCF thus increasing the sounds available from the Polyensemble.

The 16' and 8' pulse width can be modified by a Low Frequency Oscillator (LFO) (The speed of which is controlled by a slider) or manually by a pulse width slider which is marked 50 per cent to minimum, or by yet another envelope generator with its three controls Attack, Decay and Sustain. The 16' and 8' waveform generator works on the last note priority principle as with the Bass section. The VCF can be opened either manually or with the frequency slider, or by the voltage produced by the envelope generator, or by an external pedal, or from a control voltage produced by the guitar, again on the last note priority, which when used with the filter in the self oscillating position (i.e. with the resonance fully up) allows you to play the filter.

The sound from the filter is then routed through a Voltage controlled amplifier (VCA) which can be opened either by the envelope generator or by a manual control marked Initial Gain. The sound produced by the Solo Melody is then routed to one of three outputs.

This section of the synthesizer is similar to most single oscillator keyboard synthesizers and can produce most of the 'classic' single-note synthesizer sounds that I'm sure you are familiar with. In this case however, the sound is more expressive being controlled by a guitar (rather than it's keyboard counterpart) because of the ease of adding vibrato, bending notes and other variations which can be achieved with a guitar.

External Synthesizer

The final section on the console is External Synthesizer and it is really the control panel for an additional synthesizer and just contains a touch sensitivity switch, a transpose switch, which goes from 32' to 1' through 3rds and 5ths, and a portamento slider. Portamento (i.e. glissando between notes) is only available when using an external synthesizer, because it is the only section of the synthesizer which produces a control voltage.

Other sounds on the synthesizer are derived by 'Pitch extraction' from the vibrating guitar strings (so Roland tell me). This is very useful as it does away with any tuning problems on the synthesizer. The only way the synthesizer can be out of tune is if the guitar is out of tune. Any make of additional synthesizer is compatible with the guitar synth whether it be ARP, Moog, EMS, Roland etc. as both positive and negative gates are provided on the back of the console.

I can hear everyone saying "How can the guitarist walking about on stage control all these sounds?". Well I must admit this will be a problem but Roland have done their best to overcome it by supplying an ON/OFF switch and a volume control on the guitar body, for each of the section on the console. Also on the console there is a light emitting diode (LED) indicator which glows when that particular section is switched on from the guitar. The LED becomes brighter when the volume knob is turned up, so it is possible to have a visual display of what kind of levels are produced from the synthesizer.

The guitar also has a master volume which turns down everything and this can be very useful, allowing you to fade in Bass, Solo Melody, Polyensemble, Guitar and however many external synthesizers you have connected to the console. There is also a switch on the guitar marked Guitar/Dual/Synthesizer. In the first position the guitar sound only is heard, in the second position both guitar and synthesizer are heard and in the third position, synthesizer only.

At first sight, the guitar is a little frightening, with myriad knobs and switches, but they are very logically placed, and within a couple of days it is possible to know where everything is. The problem of balancing the different sounds is something that keyboard players have had to learn to live with, and if guitarists want to produce these sounds as well, they will have to learn to do it too!

Playing

Playing the synthesizer section does take some practice, there is a control on the console marked Threshold, which

is there to set the triggering of the synthesizer to your individual style of playing. Set too low, you will miss notes on fast 'licks' and set too high, the synthesizer will sound if you so much as blink at the guitar.

You do need a different technique to play this guitar, because, as soon as you lift your finger from the fretboard the envelope generators stop and the sound stops. You have to be rather positive and very accurate in playing technique. The instrument really comes into it's own on chordal work, using sounds with a slow attack like strings and brass. Lighting 'licks' tend to sound untidy unless you have the sound from the guitar overriding the synthesizer, and use the synthesizer as a backing to the guitar, then the guitar makes up for lost or blurred synthesizer notes.

The raw sounds produced by the synthesizer can be quite nasty and 'stylophonish' as with most synthesizers, and you do have to be careful with the sounds you use, but the facility of being able to route various sections of the synthesizer through different amplifiers and effects means that the basic unit can be expanded considerably. It is possible in fact to sound like the whole of Genesis and of course it will amaze your friends when you, produce a fat brassy sound from the Polyensemble, bring in an 8' pulse on the Solo Melody for a lead guitar sound, add, on the External synthesizer, a high female voice, punch up a 16' Bass for a lot of bottom, bring in the guitar sound itself and the rest of the band can go home.

But there is more to come! Roland tell me that they are working on an interface system which will give six control voltages, one for each string, so in the future, depending on your pocket, you will be able to have a synthesizer for each string of the guitar. I for one, am waiting with bated breath to hear what that sounds like.

The unit really comes into its own in a band situation. I took it along to a band I play with and we plugged it in to as many amplifiers as we could for a full spread of sound - Bass from one amplifier, Polyensemble going through a flanger and echo chamber (to produce strings) from another amplifier, Solo Melody producing brass and top lines from yet another amplifier.

Really this has to be heard to be believed that one six-stringed instrument can produce such a full, rich sound. Tuning an external synthesizer at a fifth above the note played on the guitar and feeding both through a flanger, sounds just like Jean Luc Ponty and John McLoughlin playing one of their lightning solos. Need I say more!

Conclusion

The price? well it's £1,500 retail which sounds like a lot of money and it is a lot of money, but when you consider that the sounds produced by this instrument can replace a keyboard player, and considering the amount of gear a keyboard player carries around nowadays, it's not expensive, and you are getting an excellent synthesizer and an excellent guitar for your money.