

1. Record Nr.	UNINA9911019831903321
Autore	Reveillac Jean-Michel
Titolo	Synthesizers and Subtractive Synthesis 1 : Theory and Overview
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2024 ©2024
ISBN	9781394276721 1394276729 9781394276707 1394276702
Edizione	[1st ed.]
Descrizione fisica	1 online resource (288 pages)
Disciplina	786.74
Soggetti	Electronic music Software synthesizers
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- Preface -- Introduction -- Chapter 1. Sound Synthesis -- 1.1. The art of creating sound -- 1.2. Some reminders -- 1.2.1. Sound: a bit of theory -- 1.2.2. Intensity -- 1.2.3. Pitch of a sound -- 1.2.4. Timbre -- 1.2.5. The ear -- 1.3. Sound typology -- 1.3.1. Sounds and periods -- 1.3.2. Simple and complex sounds -- 1.4. Spectral analysis -- 1.4.1. The sound spectrum -- 1.4.2. Sonogram and spectrogram -- 1.5. Waveforms -- 1.5.1. Sine wave -- 1.5.2. Square wave -- 1.5.3. Rectangular wave -- 1.5.4. Pulse wave -- 1.5.5. Triangular wave -- 1.5.6. Sawtooth wave -- 1.6. Timbre -- 1.6.1. Transient phenomena -- 1.6.2. Range -- 1.6.3. Mass of musical objects -- 1.6.4. Classification of sounds -- 1.7. Sound propagation -- 1.7.1. Dispersion -- 1.7.2. Interference -- 1.7.3. Diffraction -- 1.7.4. Reflection -- 1.7.5. Reverberation (reverb) -- 1.7.6. Absorption -- 1.7.7. Refraction -- 1.7.8. Doppler effect -- 1.7.9. Phase and beat -- 1.8. Noise -- 1.8.1. White noise -- 1.8.2. Pink noise -- 1.8.3. Red noise -- 1.8.4. Blue noise -- 1.8.5. Purple noise -- 1.8.6. Gray noise -- 1.8.7. Other noise -- 1.9. History of sound synthesis -- 1.10. Conclusion -- Chapter 2. The Different Types of Synthesis -- 2.1. Subtractive synthesis -- 2.2. Additive synthesis -- 2.3. FM synthesis --

2.4. Digital synthesis, sampling and wavetables -- 2.5. Physical modeling synthesis -- 2.6. Granular synthesis -- 2.7. Amplitude modulation synthesis -- 2.8. Phase distortion synthesis -- 2.9. Other types of sound synthesis -- Chapter 3. Components, Processing Techniques and Tools -- 3.1. Oscillators -- 3.1.1. Voltage-controlled oscillators -- 3.1.2. Digitally controlled oscillators -- 3.1.3. Digital oscillators -- 3.1.4. Low-frequency oscillators -- 3.2. Filters -- 3.2.1. Low-pass filters -- 3.2.2. High-pass filters. 3.2.3. Band-pass filters -- 3.2.4. Band-stop filters -- 3.2.5. Resonance -- 3.2.6. Other filters -- 3.3. The envelope generator -- 3.3.1. Attack -- 3.3.2. Decay -- 3.3.3. Sustain -- 3.3.4. Release -- 3.3.5. Other parameters -- 3.4. Amplifiers -- 3.5. Sample and hold -- 3.6. Ring modulator -- 3.7. Waveshaping -- 3.8. Special effects -- 3.8.1. Pitchbend -- 3.8.2. Glide -- 3.8.3. Keyboard tracking -- 3.8.4. Reverb and delay -- 3.8.5. Phaser, chorus and flanger -- 3.9. From monody to polyphony -- 3.10. Controllers -- 3.10.1. Modwheel -- 3.10.2. Breath controller -- 3.10.3. Expression switch and pedal -- 3.10.4. Keytar -- 3.10.5. Other controllers -- Chapter 4. Work Environment -- 4.1. Materials -- 4.1.1. ARP 2600 -- 4.1.2. The Minimoog -- 4.1.3. The Behringer Neutron -- 4.1.4. The Novation Bass Station II -- 4.1.5. The Arturia MatrixBrute -- 4.2. Software -- 4.2.1. Native Instruments Reaktor -- 4.2.2. VCV Rack 2 -- 4.2.3. Cycling '74 Max/MSP -- 4.2.4. Pure Data -- 4.3. Conclusion -- Chapter 5. CV/Gate and MIDI -- 5.1. CV/Gate -- 5.1.1. Overview -- 5.1.2. Operation -- 5.1.3. Note definition -- 5.1.4. Operation of the gate (or trigger) -- 5.2. Musical Instrument Digital Interface -- 5.2.1. MIDI version 1.0 -- 5.2.2. MIDI Version 2.0 -- 5.2.3. Principle -- 5.2.4. The hardware -- 5.2.5. The software -- 5.2.6. MIDI Control Change -- 5.2.7. Examples of MIDI transmission -- 5.2.8. MIDI implementation chart -- 5.2.9. General MIDI standard -- 5.2.10. The General MIDI 2 standard -- 5.2.11. The GS format -- 5.2.12. The XG format -- 5.2.13. MIDI file structure -- 5.2.14. An example of a MIDI file -- 5.3. MIDI CV/Gate converters -- Conclusion -- Appendix 1. General MIDI 1 and 2 Instruments -- Appendix 2. MIDI Box, Merger and Patcher -- Glossary -- References -- Index.

Sommario/riassunto

This book, authored by Jean-Michel Réveillac, provides an in-depth exploration of synthesizers and subtractive synthesis. It covers the theory and practical applications of sound synthesis, addressing key concepts such as sound creation, spectral analysis, and waveform types. The text is divided into chapters that discuss various synthesis methods, including additive, FM, digital, and physical modeling synthesis, as well as noise and sound propagation. The book is intended for readers with an interest in music technology, sound engineering, and electronic music production, offering detailed insights into the components, processing techniques, and tools involved in synthesizer technology.