

1. Record Nr.	UNINA9910383840403321
Autore	Baker Donald L
Titolo	Sensor Circuits and Switching for Stringed Instruments : Humbucking Pairs, Triples, Quads and Beyond // by Donald L. Baker
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-23124-0
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XII, 231 p. 125 illus., 13 illus. in color.)
Disciplina	621.381537
Soggetti	Electronic circuits Engineering design Electronics Microelectronics Circuits and Systems Engineering Design Electronics and Microelectronics, Instrumentation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Introduction and Short Previews of Coming Chapters -- Chapter 2. Series-Parallel Circuit Topologies of Single Sensors -- Chapter 3. Series-Parallel Circuit Topologies of Humbucking Pickups -- Chapter 4. Series-Parallel Circuit Topologies of Matched Single-Coil Pickups -- Chapter 5. The Limits of Mechanical Switches -- Chapter 6. An Efficient uC-controlled Cross-Point Pickup Switching System -- Chapter 7. The Tonal Advantages of Pickups with Reversible Magnets -- Chapter 8. Common Connection Point Humbucking Circuits with Odd and Even Numbers of Matched Single-Coil Pickups -- Chapter 9. A Common-Point Connection Experiment With Two Mini-Humbuckers -- Chapter 10. Switching Systems for Common-Point Connection Pickup Circuits -- Chapter 11. Humbucking Basis Vectors – Tones Without Switching.
Sommario/riassunto	This book presents new methods of circuit design for guitar electronics, based directly upon U.S. Non-Provisional Patent Applications. By systematic construction of unique series-parallel

circuit topologies, the author shows how many series-parallel circuits are possible, including non-matched single-coil pickups, humbucking pickups, and humbucking combinations of matched single-coil pickups. This allows designers to avoid unnecessary and confusing duplicate circuits in pickup switching systems. It shows how electromechanical switches cannot produce the maximum number of tones for more than 2 or 3 pickups. Thus the author discloses an efficient micro-controller and cross-point switch architecture to replace mechanical switches, and allow access to the maximum number of tones. The discussion continues, developing humbucking circuits for odd numbers of matched single-coil pickups, extendable to any odd or even number, greater than 1, using a simplified switching system with very simple rules. It abandons some tones in favor of producing all-humbucking and unique tones, no matter what the switching choice. The author discloses both mechanical and digital switching versions. Then, based on using humbucking basis vectors, the author discloses variable-gain circuits that duplicate all possible switched humbucking tone circuits, and produces all the continuous tone gradations in between. The presentation includes analog and digitally controlled systems. The object of all the disclosures: give the guitarist or pianist a system which allows going from bright to warm tones and back, without ever needing to know which pickups are used in what combination. .

---