

1. Record Nr.	UNINA9910807664203321
Autore	Cerda Ramon M.
Titolo	Understanding quartz crystals and oscillators // Ramon M. Cerda
Pubbl/distr/stampa	Norwood, Massachusetts : , : Artech House, , [2014] [Piscataqay, New Jersey] : , : IEEE Xplore, , [2014]
ISBN	1-60807-119-7
Descrizione fisica	1 online resource (325 p.)
Collana	Artech House microwave library
Disciplina	621.381533
Soggetti	Oscillators, Crystal
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Understanding Quartz Crystals and Oscillators; Contents; Preface; Acknowledgments; 1 Quartz Crystals; 1.1 Introduction; 1.2 Mother Nature Used Quartz First; 1.3 The Curie Brothers; 1.4 Piezoelectricity; 1.5 Quartz; 1.6 Left-Handed and Right-Handed Quartz; 1.7 Quartz Is Anisotropic; 1.8 A Timeline of Quartz Crystals and Oscillators; 1.9 Important Definitions; 1.9.1 Time; 1.9.2 Second; 1.9.3 Frequency; 1.9.4 Nominal Frequency; 1.9.5 Clock; 1.9.6 Room Frequency or 25°C Frequency; 1.9.7 Fractional Frequency; 1.9.8 Allan Deviation; 1.9.9 Accuracy, Precision, and Stability; 1.9.10 Accuracy. 1.9.11 Precision 1.9.12 Stability; 1.9.13 Frequency Stability; 1.9.14 Short-Term Frequency Stability; 1.9.15 Medium-Term Frequency Stability; 1.9.16 Long-Term Frequency Stability; 1.9.17 Aging and Drift; 1.9.18 Ambient Temperature; 1.9.19 Frequency-Temperature Stability (Frequency Versus Temperature Stability); 1.9.20 Tolerance ; 1.9.21.
Sommario/riassunto	"Quartz, unique in its chemical, electrical, mechanical, and thermal properties, is used as a frequency control element in applications where stability of frequency is an absolute necessity. Without crystal controlled transmission, radio and television would not be possible in their present form. The quartz crystals allow the individual channels in communication systems to be spaced closer together to make better use of one of most precious resources -- wireless bandwidth. This book describes the characteristics of the art of crystal oscillator design, including how to specify and select crystal oscillators. While presenting various varieties of crystal oscillators, this resource also provides

microwave engineers with MathCad and Genesys simulations."--

---