

1. Record Nr.	UNINA9910830909903321
Autore	Sivannarayana Nagireddi
Titolo	VoIP voice and fax signal processing [[electronic resource] /] / Sivannarayana Nagireddi
Pubbl/distr/stampa	Hoboken, N.J., : Wiley, 2008
ISBN	1-281-76671-2 9786611766719 0-470-37787-9 0-470-37786-0
Descrizione fisica	1 online resource (592 p.)
Disciplina	621.385
Soggetti	Internet telephony Facsimile transmission Signal processing - Digital techniques
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	VoIP VOICE AND FAX SIGNAL PROCESSING; CONTENTS; Acknowledgments; About the Author; Preface; Glossary; 1 PSTN Basic Infrastructure, Interfaces, and Signals; 1.1 PSTN CO and DLC; 1.1.1 Analog CO; 1.1.2 Digital CO and DLC; 1.2 PSTN User Interfaces; 1.2.1 FXS and FXO Analog Interfaces; 1.2.2 SLAC, CODEC and codec-Clarifications on Naming Conventions; 1.2.3 TIP-RING, Off-Hook, On-Hook, and POTS Clarifications; 1.2.4 ISDN Interface; 1.2.5 T1/E1 Family Digital Interface; 1.3 Data Services on Telephone Lines; 1.3.1 DSL Basics; 1.4 Power Levels and Digital Quantization for G.711 /A-Law 1.4.1 -Law Power Levels and Quantization1.4.2 A-Law Power Levels and Quantization; 1.5 Significance of Power Levels on Listening; 1.6 TR-57, IEEE-743, and TIA Standards Overview; 1.6.1 TR-57 Transmission Tests; 1.6.2 IEEE STD-743-Based Tests; 1.6.3 Summary on Association of TR-57, IEEE, and TIA Standards; 2 VoIP Overview and Infrastructure; 2.1 PSTN and VoIP; 2.1.1 CPE and Naming Clarifications of VoIP Systems in this Book; 2.1.2 VoIP End-User Call Combinations; 2.2 Typical VoIP Deployment Example; 2.3 Network and Acoustic Interfaces for VoIP; 2.4 VoIP Systems Working Principles

2.4.1 VoIP Adapter; 2.4.2 Voice Flow in the VoIP Adapter; 2.4.3 Voice and Fax Software on VoIP Adapter; 2.4.4 Residential Gateway; 2.4.5 Residential Gateway Example; 2.4.6 IP Phones; 2.4.7 Wireless LAN-Based IP Phone; 2.4.8 VoIP Soft Phones on PC; 2.4.9 VoIP-to-PSTN Gateway; 2.4.10 IP PBX Adapter; 2.4.11 Hosting Long-Distance VoIP through PSTN; 2.4.12 Subscribed VoIP Services; 2.5 VoIP Signaling; 2.5.1 VoIP-H.323 Overview; 2.5.2 VoIP-MGCP Overview; 2.5.3 SIP Signaling; 2.5.4 SIP Call Flow; 3 Voice Compression; 3.1 Compression Codecs; 3.2 G.711 Compression
 3.2.1 A-Law Compression of Analog Signal; 3.2.2 PCM for Digitized Signals; 3.2.3 PCM Quantization Effects; 3.2.4 A-Law Compression for Analog Signals; 3.2.5 PCMA for Digitized Signals; 3.2.6 PCMA Quantization Effects; 3.2.7 Power Levels in PCM/PCMA and SNR; 3.3 Speech Redundancies and Compression; 3.4 G.726 or ADPCM Compression; 3.4.1 G.726 Encoder and Decoder; 3.5 Wideband Voice; 3.5.1 G.722 Codec; 3.6 G.729 Family of Low-Bit-Rate Codecs; 3.6.1 G.729 Codec; 3.7 Miscellaneous Narrow and Wideband Codecs; 3.7.1 Narrowband Codecs; 3.7.2 Wideband Codecs; 3.8 Codecs and Overload Levels
 3.9 Voice Quality of Codecs; 3.9.1 Discussion on Wideband codec Voice Quality; 3.10 C-Source Code for Codecs; 3.11 Codecs in VoIP Deployment; 4 Generic VAD/CNG for Waveform codecs; 4.1 VAD/CNG and Codecs; 4.2 Generic VAD/CNG Functionality; 4.3 Comfort Noise Payload Format; 4.4 G.711 Appendix II VAD/CNG Algorithm; 4.4.1 DTX Conditions; 4.4.2 CNG Algorithm; 4.5 Power-Based VAD/CNG; 4.5.1 Signal-Level Mapping Differences; 4.6 VAD/CNG in Low-Bit-Rate Codecs; 4.7 Miscellaneous Aspects of VAD/CNG; 4.7.1 RTP Packetization of VAD/CNG Packets; 4.7.2 VAD Duplicate Packets; 4.7.3 VAD/CNG Interoperability
 4.7.4 Network Bandwidth Saving

Sommario/riassunto

A complete and systematic treatment of signal processing for VoIP voice and fax This book presents a consolidated view and basic approach to signal processing for VoIP voice and fax solutions. It provides readers with complete coverage of the topic, from how things work in voice and fax modules, to signal processing aspects, implementation, and testing. Beginning with an overview of VoIP infrastructure, interfaces, and signals, the book systematically covers: Voice compression Packet loss concealment techniques DTMF detection, generation, and rejection Wideband vo