VINETIC®

Voice and Internet Enhanced Telephony Interface Circuit

VINETIC®-CPE System Package V1.1

for

VINETIC®-2CPE (PEB 3332) Version 2.1 and SLIC-DC (PEF 4268) Version 1.2

Distribution with NDA only

Preface

This document gives an overview of the supported features, latest changes and open issues for the VINETIC®-CPE System Package V1.1. All features have been tested in a module evaluation.

The version number “V1.1” is the label for the feature set described in **Table 2**.

This System Package replaces the VINETIC®-CPE System Package V1.0.

1 General Issues

The VINETIC®-CPE System Package V1.1 consists of:

- VINETIC®-2CPE (PEB 3332) Version 2.1
- SLIC-DC (PEF 4268) Version 1.2
- EDSP Firmware
- VINETIC®-CPE Version 2.1 Device Driver
- VINETICOS coefficient calculation tool

This chapter enumerates the components which belong to the system package. These components are available via your local Infineon Technologies sales team or the VINETIC® Confidential Library within MyInfineon.

Table 1 gives an overview about the components of the VINETIC®-CPE System Package V1.1.

Table 1 Components of the VINETIC®-CPE System Package V1.1

Component Type	Component Description, Version	Comment
VINETIC®-2CPE (PEB 3332 F, PEB 3332 HT)	Version 2.1	Date code newer or equal E541
SLIC-DC (PEF 4268 T, PEF 4268 F)	Version 1.2	
VINETIC®-CPE Version 2.1 Device Driver	Release 1.1.17 beta Version 1.1.17.3	
EDSP Firmware	2CPE1-RTP4 Rel. 0.16.298.V2.1	
VINETICOS	V1.1.11.2	VINETICAL2CPE.EXE V0.1.16.2
VINETIC® documentation		Refer to all documents from chapter **References**.

2 Supported Features

Table 2 lists the available features of the VINETIC®-CPE System Package V1.1.

Abbreviations used in Table 2: S = supported; Y = yes; N = no

Note: Not all VINETIC® hardware and EDSP firmware features are supported by current VINETIC®-CPE Version 2.1 Device Driver release. In case of questions please contact your local Infineon Technologies sales team.

Table 2 Supported Features

Feature	S	Channels/ Resources	Restrictions/ Comments
Voice over IP			
RTP protocol support	Y	4	
RTCP support	Y		
G.711 incl. Appendix I (PLC) and Appendix II (VAD/CNG)	Y	4	PLC is sometimes called BFI
G.711 VAD/CNG with noise spectral information	Y	4	
G.726 incl. VAD/CNG and BFI error concealment (16, 24, 32, 40 kbit/s)	Y	4	G.726 Coder resources are overlaid with PCM resources
G.723.1 (5.3 kbit/s and 6.3 kbit/s)	Y	4	
G.729 Annex A (8 kbit/s) and Annex B	Y	4	
G.729 Annex E (11.8 kbit/s)	Y	4	
iLBC (13.3 kbit/s and 15.2 kbit/s)	Y	4	
Line Echo Cancellation exceeding G.165, G.168, G.168-2002: NLEC up to 16 ms tail length	Y	3	
Window based LEC	N		
Voice Play Out (voice packet reordering, fixed and adaptive jitter buffer, clock synchronization)	Y	4	
Automatic Gain Control (AGC)	Y		
Connection Control Service			
3-Party conferencing via packet network	Y		
3-Party conferencing via PCM	Y		
3-Party conferencing via PCM and packet network	Y		
Voice Mute for Conferencing	N		
Music on hold	N		

Table 2 Supported Features (cont'd)

Feature	S	Channels/ Resources	Restrictions/ Comments
Fax Relay			
T.38 support (V.21, V.27ter, V.29 and V.17)	Y	4	Fax Relay T.38 resources are overlaid with Coder resources.
Signaling			
Integrated DTMF generator	Y	4	
Integrated DTMF decoder	Y	4	
Integrated Caller ID (FSK) generator, according to Bellcore 202 and V.23	Y	4	
Caller ID receiver	Y	4	
Support for FXO-driver on analog and PCM interface	Y	n/a	
Caller ID (on hook = type 1) Telcordia/Bellcore ETSI CID between ring bursts (FSK and DTMF) ETSI prior to first ring burst (FSK and DTMF - with DTAS, LR or RP) SIN 227 (British Telecom) NTT (Japan)	Y	n/a	
Caller ID (off hook = type 2) Telcordia/Bellcore ETSI (FSK and DTMF) SIN 227 (British Telecom) NTT (Japan)	Y	n/a	
Message Waiting Indication with support of VMWI (FSK)	Y	n/a	By integrated Caller ID (FSK) generator
Call Progress Tone detection (CPT)	Y	4	
RFC2833 support for named DTMF events	Y	4	
Howler Tones (very high level on analog port)	N		
Universal Tone Generation in up- and downstream (same tones)	Y	4	One generator per signaling module
Universal Tone Generation in up- and downstream (different tones)	N	8	Two generators per signaling module
CODEC/SLIC			
Worldwide programmability for AC transmission performance parameters (country specific programming, e.g. AC impedance matching, hybrid balance, transmit and receive gain, frequency response), specification in accordance with ITU-T Recommendation Q.552 **[14]** for interface Z and ETSI Standard ES 202 971 **[13]**	Y	n/a	
Integrated sinusoidal balanced ringing capability - software programmable up to 65 Vrms ringing voltage (depending on external components), frequency range between 15 and 75 Hz	Y	n/a	
Loop start signaling	Y	n/a	
Polarity reversal	Y	n/a	

Table 2 Supported Features (cont'd)

Feature	S	Channels/ Resources	Restrictions/ Comments
AC Ring Trip detection	Y	n/a	
Fast Ring Trip detection	Y		
Ringing with DC offset	Y	n/a	
On-hook transmission	Y	n/a	
PCM Interface G.711 A-law/µ-law	Y	8	
PCM Interface 16 bit linear	Y	8	
PCM Interface G.726 (16, 24, 32, 40 kbit/s)	Y	4	G.726 Coder resources are overlaid with PCM resources
Driver/API			
Linux	Y	n/a	
VxWorks	N	n/a	
Host Interface			
Parallel Host Interface: Intel/Motorola compatible	Y	n/a	
Serial Control Interface SCI (Infineon), SPI compatible	Y	n/a	SPI mode 3 is used (different to previous chip versions)
Big and little endian support	Y	n/a	
Miscellaneous			
Integrated Test and Diagnostic Functions for local loop monitoring according to GR-909	Y	n/a	Please note changed resistance values for voltage dividers from tip and ring to VINETIC input pins
Wide band support (16kHz transmission possible)	N	n/a	
Polling access	N	n/a	

3 Changes

Table 3 Changes between Release 1.1.17 and 1.1.15

Change	Change Type
VINETIC-CPE v2.x support for DC ring offsets in BBD downloads	New Feature
n-Way conferencing	New Feature
Automatic resource management to reduce MIPS load in the firmware	New Feature
AGC Automatic Gain Control	New Feature
GR-909 coefficients have been replaced	Improvement
Level value 0 dB is now allowed in IFX_TAPI_TONE_CFG_SET	Improvement
CID tx and rx were using hardcoded levels, now levels can be configured in steps of 0.5 dB in a range from -96 to 0 dB defaults are changed to -14 dB for CID tx and -15 dB for CID rx.	Change
Call Progress Tone Detection (CPTD) did not work properly for non continuous tones	Bug Fix
NTT CID was using wrong seizure and mark defaults, DLE escaping did not consider the overall length field of the buffer	Bug Fix

Table 3 Changes between Release 1.1.17 and 1.1.15 (cont'd)

Change	Change Type
CID Transmission for type 2 CIDs was using the configured seizure bits for CID type 1, for type 2 CIDs the number of seizure bits is always 0	Bug Fix
CID Receiver did not use the configured mark and seizure settings and therefore failed for certain standards as NTT for example	Bug Fix
PCM activation was only working for channel zero, other channel overwrote channel zero	Bug Fix
IFXPHONE_GET_VERSION, version string was not copied to user properly for Linux	Bug Fix
DispatchCmd could have overwritten internally cached values	Bug Fix

Table 4 Changes between Release 1.1.15 and 1.1.12

Change	Change Type
Configuration of hook validation times	New Feature
PCM activation status (IFX_TAPI_PCM_ACTIVATION_GET) is now returned via the pbAct parameter, the return value just indicates SUCCESS or ERROR	Improvement
DTMF detection level is set to -30 dB	Change
Capability check returned always 0 even if cap was supported for Linux	Bug Fix
Tone stopping with index 0 could caused a crash in Linux	Bug Fix
GR-909 ringer impedance test (fix in lib_tapi)	Bug Fix
Attention: tones generated by the DSP were played out with a gain of -10 dB, the gain has been corrected to 0 dB	Bug Fix

Table 5 shows the detailed changes between the new VINETIC®-CPE System Package and the replaced one.

Table 5 Changes compared to System Package Release V1.0

Issue	Issue Type / Comment
Device Driver Issues	
Please refer to Table 3 and Table 4	
VINETIC®-2CPE (PEB 3332) V2.1 Issues	
No change	
EDSP FW Issues	
Caller ID Receiver Initialization Description: The drop out support configuration of the CID receiver was undefined within the initialization function.	Bug Fix
VINETICOS Issues	
No change	

4 Open Issues

Table 6 contains open issues of the VINETIC®-CPE System V1.1.

Table 6 Open issues of the VINETIC Alpha System Package

Description of Issues	Status
The pause time of simple tones in a composed tone must be unequal to zero, otherwise only the first simple tone is played out.	Open
Documentation needs to be extended to clarify that with 30 ms or longer packetization time it might happen that the device driver cannot store the packet into the chip's mailbox (return 0). In this case the application has to resend the packet. In the meantime the firmware will move the packet out of the mailbox (every second 8 kHz clock).	Open
PCM channels 4 to 7 are not accessible.	Open
GPIO release effects other GPIOs and sets callbacks to NULL.	Open
CID NTT standard: timing for Ringalert + Ring Pause needs to be configurable independently.	Open

References

[1] VINETIC®-2CPE/-1CPE Version 2.1 Product Brief

[2] VINETIC®-2CPE/-1CPE (PEB 3332/-3331) Version 2.1 Prel. Data Sheet Rev. 2.0, 2006-02-13

[3] VINETIC®-CPE Prel. User's Manual System Description Rev. 1.1, 2006-03-13

[4] VINETIC®-CPE Device Driver Prel. User's Manual Driver and API Description Rev. 1.1, in preparation

[5] VINETIC®-CPE Device Driver Prel. Porting and Integration Guide Rev. 1.0, 2006-03-06

[6] T.38 Fax Agent Release 1.1 User's Manual Programmer's Reference Rev. 1.0, 2005-09-22

[7] T.38 Protocol Stack Release 1.16 User's Manual Programmer's Reference Rev. 1.0, 2005-09-22

[8] T.38 Test Application Release 1.0 User's Manual Programmer's Reference Rev. 1.0, 2005-09-22

[9] VINETIC® T.38 Fax Relay Package Release 1.1b Release Note Rev. 1.0, 2005-10-14

[10] VINETIC®-2CPE/-1CPE (PEB 3332/-3331) Version 2.1 Hardware Design Guide Rev. 2.0, 2006-03-14

[11] SLIC-DC (PEF 4268) Version 1.2 Prel. Data Sheet Rev. 2.0, 2005-07-11

[12] VINETIC®-CPE System Errata Sheet Rev. 1.0, 2006-01-13

Attention: Please refer to the latest revision of the documents.

Standards

[13] ETSI Standard ES 202 971 V1.2.1, (2006-01), Access and Terminals (AT); Public Switched Telephone Network (PSTN); Harmonized specification of physical and electrical characteristics of a 2-wire analogue interface for short line interface

[14] ITU-T Recommendation Q.552, (11/2001), Transmission characteristics at 2-wire analogue interfaces of digital exchanges