

VINETIC®

Voice and Internet Enhanced Telephony Interface Circuit

VINETIC®-CPE System Package V1.0

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

CONFIDENTIAL**Preface**

This document gives an overview of the supported features, latest changes and open issues for the VINETIC®-CPE Package V1.0. All features have been tested in a module evaluation.

The version number "Package V1.0" is the label for the feature set described in [Table 2](#).

This System Package replaces the VINETIC®-CPE System Package V0.9.

1 General Issues

The VINETIC®-CPE System 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 V1.0.

Table 1 Components of the VINETIC®-CPE System Package V1.0

Component Type	Component Description, Version	Release Date	Comment
VINETIC®-2CPE (PEB 3332 F, PEB 3332 HT)	Version 2.1	N/A	Date code newer or equal E541
SLIC-DC (PEF 4268 T, PEF 4268 F)	Version 1.2	N/A	
VINETIC®-CPE Version 2.1 Device Driver	Release 1.1.12 alpha Version 1.1.12.1	2005-12-23	Filename drv_vinetic-1.1.12.tar.gz
EDSP Firmware	2CPE1-RTP4 Rel. 0.16.234.V2.1	2005-12-08	

Revision History: none Previous Version: N/A Major Changes: none

Table 1 Components of the VINETIC®-CPE System Package V1.0 (cont'd)

Component Type	Component Description, Version	Release Date	Comment
VINETICOS	V1.1.11.2	n/a	VINETICAL2CPE.EXE V0.1.16.2
VINETIC® documentation			Documents [1] , [3] , [4] , [5] and [6] from chapter References

2 Supported Features

Table 2 lists the available features of the VINETIC®-CPE System Package V1.0.

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	
Connection Control Service			
3-Party conferencing via packet network	Y		
3-Party conferencing via PCM	N		
3-Party conferencing via PCM and packet network	N		
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) according to ITU-T Q.552	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	
AC Ring Trip detection	Y	n/a	

Table 2 Supported Features (cont'd)

Feature	S	Channels/ Resources	Restrictions/ Comments
Fast Ring Trip detection	Y		
Ringing with DC offset	N	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	N	n/a	Supported by the Device Driver but not by the EDSP firmware that is contained in this System Package ¹⁾
Wide band support (16kHz transmission possible)	N	n/a	
Polling access	N	n/a	

1) For pre-evaluation of the GR-909 linetesting feature, a demo-version of the EDSP firmware is available on request. This firmware is fully functional under room temperature condition.

3 Changes

Table 3 Changes between Device Driver Release 1.1.12 and 1.1.10

Change	Change Type
Reduced stack usage for Linux ioctl's	Improvement

Table 4 Changes between Device Driver Release 1.1.10 and 1.1.9

Change	Change Type
GR.909 support ¹⁾	New Feature
3-party conferencing support	New Feature
FXO support	New Feature
LEC default settings	Improvement
Improved protection for concurrent accesses	Bug Fix

1) Only supported by driver, not by system.

Table 5 Changes between Device Driver Release 1.1.9 and 1.1.7

Change	Change Type
8 UTG support (supporting sending of different tones to network and analog side)	New Feature ¹⁾
Flash hook minimum time may now be smaller than the pulse digit low maximum time. In the case of an overlap time a flash hook and a digit 1 is reported. No flash hooks are reported for other digits	Improvement
Configure minimum signal level detection of CED, DIS and TONEHOLDING tone individually	Improvement
Changed CID structure field "private" to "priv" in IFX_TAPI_CID_ABS_REASON_t because private is a reserved keyword in C++	Improvement
Attention Before starting usage of T.38 services, it must be ensured that encoding, decoding and LEC are disabled (using respectively IFX_TAPI_ENC_STOP, IFX_TAPI_DEC_STOP and IFX_TAPI_LEC_PHONE_CFG_SET). It is also recommended deactivation of fax/modem signal detectors (using IFX_TAPI_SIG_DETECT_DISABLE), optionally tone holding detection might be enabled in order to detect end of fax transmission.	Change
Event settings in RTP Conf for IFX_TAPI_PKT_EV_OOB_ALL and IFX_TAPI_PKT_EV_OOB_ONLY was swapped. Default is now IFX_TAPI_PKT_EV_OOB_ONLY (previously IFX_TAPI_PKT_EV_OOB_ALL).	Bug Fix
Ringing and ring pause line modes doesn't affect the reverse polarity setting	Bug Fix
Handshake mechanism for mailbox. Mailbox stability may occur if an access to the mailbox hits exactly the same internal clock cycle while internally the firmware accesses the mailbox.	Workaround

1) Prepared in Device Driver but not supported by EDSP Firmware.

Table 6 shows the detailed changes between the new VINETIC®-CPE System and the replaced one.

Table 6 Changes compared to System Package Release V0.9

Issue	Issue Type / Comment
Device Driver Issues (Changes between Device Driver Release 1.1.7 and 1.1.4)	
RTP changed the timestamp on all channels which caused a resync in the jitter buffer of all active connections	Bug Fix
LEC could have been activated on wrong PCM channel	Bug Fix
TAPI Initialization failed for PCM Advanced mode	Bug Fix
CID NTT on hook transmission is done in normal polarity mode (was reverse polarity before)	Bug Fix
VINETIC®-2CPE (PEB 3332) V2.1 Issues	
Date code 530 replaced by date code E541	Latest production and fusing status
EDSP FW Issues (Changes between EDSP FW Rel. 0.16.234.V2.1 and Rel. 0.16.186.V2.1); also affected: Device Driver Release 1.1.12 alpha and VINETICOS V1.1.11.2	
For some telephones ring trip detection did not work reliable. Change: Algorithm for ring trip detection in EDSP FW Rel. 0.16.234.V2.1 modified.	Bug Fix
VINETICOS Issues (Changes between VINETICOS V1.1.11.2 / VINETICAL2CPE.EXE V0.1.16.2 and VINETICOS V1.1.9.2 / VINETICAL2CPE.EXE V0.1.14.2)	
Restrictions for VINETIC®-2CPE V2.x calculations: Wrong factor of sqrt(2) with Fast AC ring trip threshold corrected	Bug Fix

4 Open Issues

Table 7 contains open issues of the VINETIC®-CPE System Package V1.0.

Table 7 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

References

- [1] VINETIC®-2CPE/-1CPE (PEB 3332/-3331) Version 2.1 Prel. Data Sheet Rev. 1.0, 2005-11-03
- [2] VINETIC®-2CPE/-1CPE (PEB 3332/-3331) Version 2.1 Prel. User's Manual System Description Rev. 1.0, (in preparation)
- [3] VINETIC®-CPE Version 2.1 Device Driver Prel. User's Manual Driver and API Description Rev. 1.0, (in preparation)
- [4] VINETIC®-CPE Version 2.1 Device Driver Porting and Integration Guide Rev. 1.0, (in preparation)
- [5] VINETIC®-2CPE/-1CPE (PEB 3332/-3331) Version 2.1 Hardware Design Guide Rev. 1.0, 2005-12-15
- [6] SLIC-DC (PEF 4268) Version 1.2 Prel. Data Sheet Rev. 2.0, 2005-07-11
- [7] VINETIC®-CPE Version 2.1 System Errata Sheet Rev. 1.0, 2005-11-04

Note: Preliminary Draft Versions of documents are available upon request for [\[3\]](#) and [\[4\]](#).