AN11079

Contact reader ICs - TDA product support packages

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Document information

Info	Content
Keywords	Contact reader ICs, TDA8034, TDA8035, TDA8024, TDA8026, TDA8023, TDA8029, TDA8007B, TDA8037, Motherboard, Daughterboard, Software, EMV Level1, Payment, NDS, CISCO technology
Abstract	This product gives a summary of all available product support packages for the contact reader ICs, the TDA family.

Revision history

Rev	Date	Description
1.1	20141001	Adding of TDA8037, NDS replaced by CISCO technology
1.0	20110523	Initial version

Contact information

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1. Introduction

NXP has shipped more than 600 million reader ICs and its product architecture has become the reference standard across the industry. NXP's strength in cryptography and security has enabled smartcard readers that support the high data rates and security required by advanced applications.

NXP, the world leader in contact reader ICs, supports the Pay TV as well as POS and PC market with a series of optimized solutions that deliver high-level protection to the smartcard and the system.

1.1 Scope

This application note gives an overview of all product support introduced together with our contact reader ICs, such as:

- Documentation
- Development board
- Software

1.2 Abbreviations

These abbreviations are used in this application note.

Table 1. Abbreviations

Abbreviation	Meaning
SAM	Secure Application Module
HW	Hardware
SW	Software
Doc	Documentation

2. Contact reader IC product overview

2.1 Introduction

NXP, the world leader in contact reader ICs, supports the Pay TV as well as POS and PC market with a series of optimized solutions that deliver high-level protection to the smartcard and the system.

Table 2. Overview of contact reader IC portfolio

Product	Description	Features	Compliant	
			CISCO technology	EMV
TDA8037	Cost efficient class B card interface	Cost optimized solution for Pay TV market	✓	✓
TDA8035	Single card interface	Wide VDD range Low power consumption in inactive mode	✓	✓
TDA8034	Cost efficient single card interface	Cost optimized solution Limited VDD range Low power consumption in inactive mode	✓	✓
TDA8024	Reference single card interface	Market proven solution for Pay TV market	✓	
TDA8023	Single card interface tailored for the payment market	Simple logic tailored for payment		✓
TDA8026	Multi (5) slot card interface for multiple SAMs/contact cards	One single IC can act as a front end for up to 5 contact cards, PCI PED compliant.		✓
TDA8007B	Dual card interface with embedded contact UART	Easy integration due to integrated UART.		✓
TDA8029	Smart card controller integrating the whole protocol layer	Very easy integration due to available protocol stack.	✓	✓

The TDA8024, TDA8034, and TDA8035 are low-cost, contact-based smartcard reader ICs that read the majority of viewing cards issued by broadcasters. They are CISCO technology and ISO 7816 compliant, so they offer high levels of design flexibility and support all three levels of smartcard classes.

The TDA8007 is tailored for the requirements for the POS market, enabling with two frontends in addition to an included UART an easy integration into the POS reader, having the EMV L1 certification available. The TDA8023 enables due to its availability of simple logic to include easily the payment functionality into the payment reader. Several SAMs on top of the contact reader IC may be included through the TDA8026, having 5 smart card interfaces on board.

The TDA8029 includes a microcontroller on top of a UART and a smart card interface; as such the integration into existing solutions is only low effort as the protocol is handled by the contact reader IC.

3. Contact reader IC product support packages

3.1 TDA8037 product support package

The TDA8037 is a cost optimized contact front-end. It focuses on the key features needed by contact cards nowadays.

Table 3. TDA8037 product support package overview

Nr.	Item Name	Type	Short description	Ordering information
1	Daughter Board TDA8037	HW	Evaluation Board, which needs to be stacked on top of the Mother Board (see Fig 3 Daughter board TDA8035)	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID: Cake8037
2	Mother Board	HW	This motherboard can be stacked together with a number of daughter boards and enables to run a SW together with your PC (see Fig 4 Motherboard TDA contact reader ICs	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : Cake80xxMBA
4	AN: Design migration from TDA8024 to TDA8037	Doc	Application Note describing the steps for migration from TDA8024 to TDA8037 AN11460	Public available on website or per e-mail from your sales representative
5	AN: TDA8037 Smart Card Reader	Doc	Application Note describing features and hints to design in TDA8037 AN11458	Public available on website or per e-mail from your sales representative
6	AN: TDA8037 Demo board description	Doc	Application note describing Cake8037 AN11459	Public available on website or per e-mail from your sales representative
7	TDA8037 Smart card interface	Doc	Datasheet of the TDA8037	Public available on website or per e-mail from your sales representative
8	EMV Certification Report	Doc	EMV certification report of debugging session at FIME: N° C13CPG08-12-2	Per e-mail from your sales representative
9	CISCO Certification Report	Doc	CISCO certification report of debugging session	Per e-mail from your sales representative
10	TDA8037 sample	HW	TDA8037 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : TDA8037T or TDA8037TT
11	Cake80xxMBA FW	SW	Firmware running on the Motherboard (see Fig 4 Motherboard TDA contact reader ICs	Per e-mail from your sales representative
12	SCRTester	SW	Graphical User Interface, communicating with the evaluation board together with the mother board	Available on web, specific scripts available over e-mail. No Windows7 64 bit support.

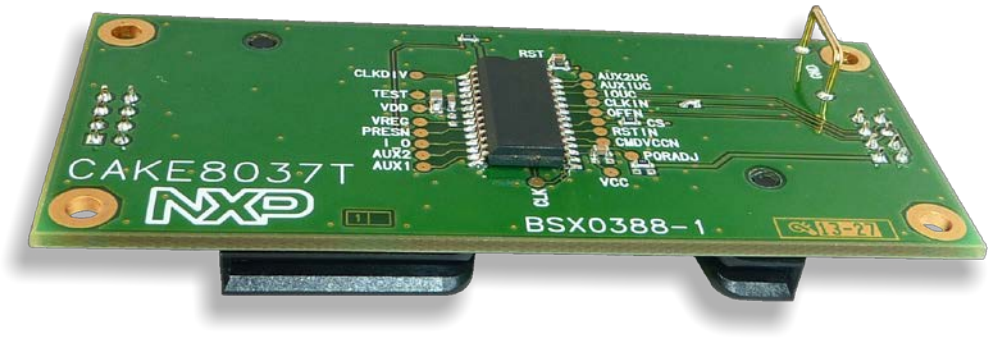

Fig 1. Daughter board TDA8037T

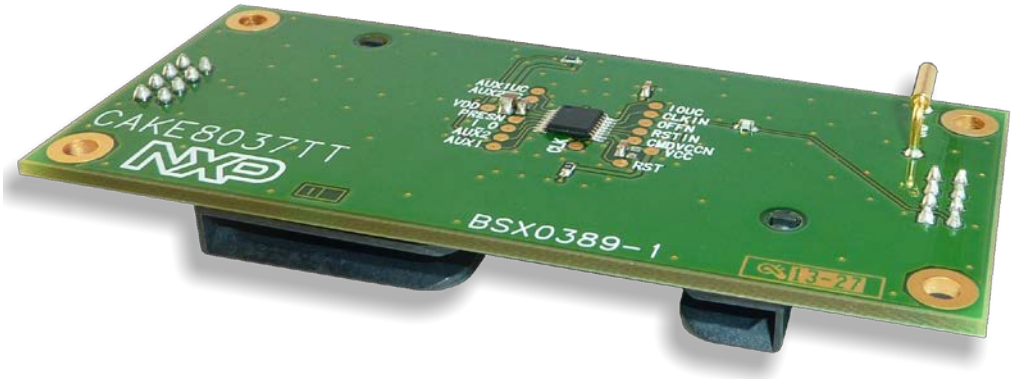

Fig 2. Daughter board TDA8037TT

3.2 TDA8035 product support package

The TDA8035 is the successor of the well established integrated contact smart card reader IC TDA8024.

Table 4. TDA8035 product support package overview

Nr.	Item Name	Type	Short description	Ordering information
1	Daughter Board TDA8035	HW	Evaluation Board, which needs to be stacked on top of the Mother Board (see Fig 3 Daughter board TDA8035)	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID: Cake8035_01_D
2	Mother Board	HW	This motherboard can be stacked together with a number of daughter boards and enables to run a SW together with your PC (see Fig 4 Motherboard TDA contact reader ICs	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : Cake80xxMBA
3	Migration Board TDA8035	HW	This board shows the migration from TDA8024 to TDA8035 and can be used in the migration phase as a reference implementation.	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : Cake8024_8035
4	AN: Design migration from TDA8024 to TDA8035	Doc	Application Note describing the steps for migration from TDA8024 to TDA8035 AN11058	Public available on website or per e-mail from your sales representative
5	AN: TDA8035 Smart Card Reader	Doc	Application Note describing features and hints to design in TDA8035 AN10997	Public available on website or per e-mail from your sales representative
6	AN: TDA8035 Demo board description	Doc	Application note describing Cake8035_01_D AN10999	Public available on website or per e-mail from your sales representative
7	TDA8035HN Smart card interface	Doc	Datasheet of the TDA8035	Public available on website or per e-mail from your sales representative
8	EMV Certification Report	Doc	EMV certification report of debugging session at FIME: N° C10RAP12-06-02	Per e-mail from your sales representative
9	TDA8035 sample	HW	TDA8035 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : TDA8035HN
10	Cake80xxMBA FW	SW	Firmware running on the Motherboard (see Fig 4 Motherboard TDA contact reader ICs	Per e-mail from your sales representative
11	SCRTester	SW	Graphical User Interface, communicating with the evaluation board together with the mother board	Available on web, specific scripts available over e-mail. No Windows7 64 bit support

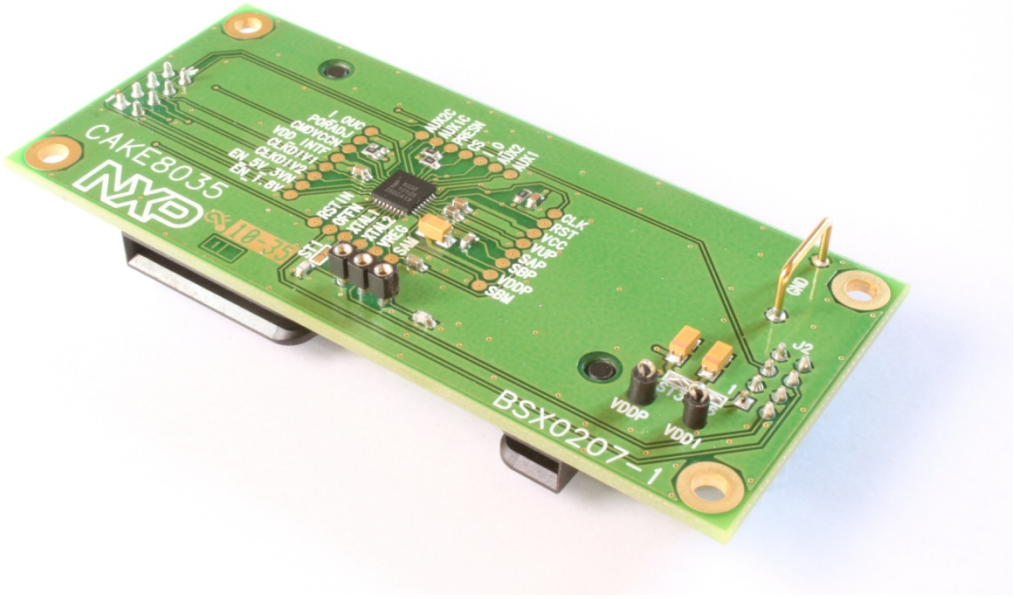

Fig 3. Daughter board TDA8035

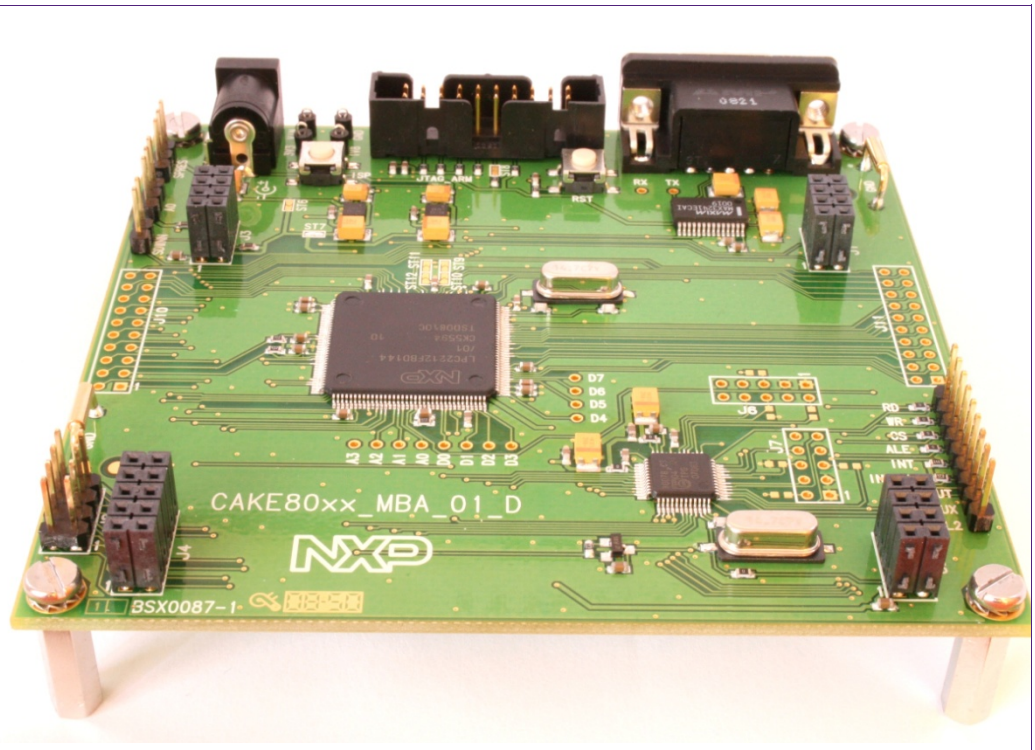

Fig 4. Motherboard TDA contact reader ICs

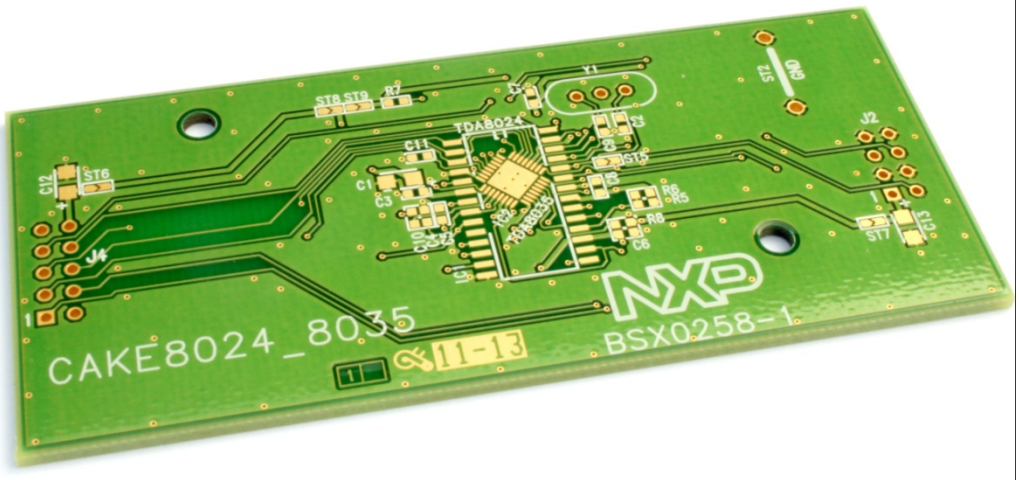

Fig 5. Migration board Part 1 Cake8024_8035_1

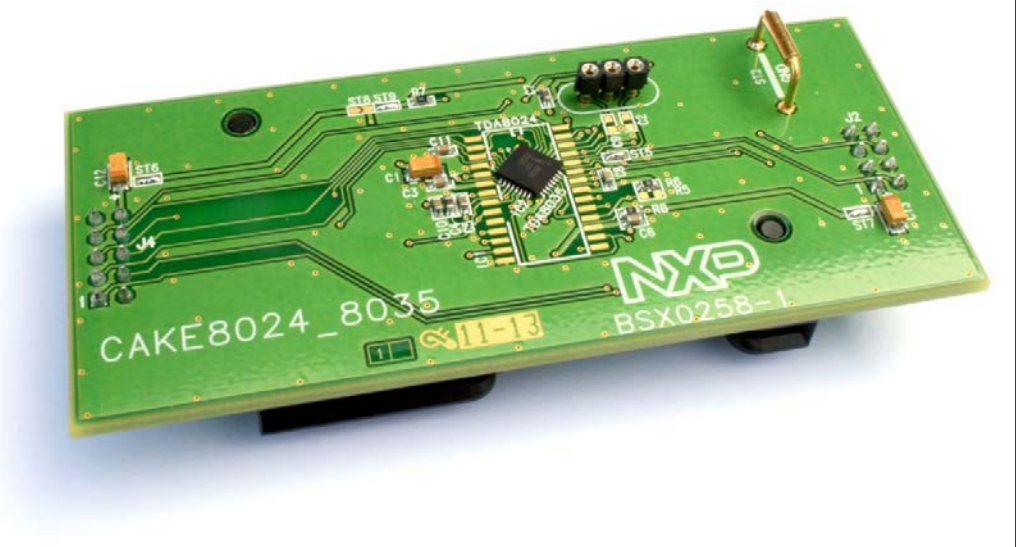

Fig 6. Migration board Part 2 Cake8024_0835_2

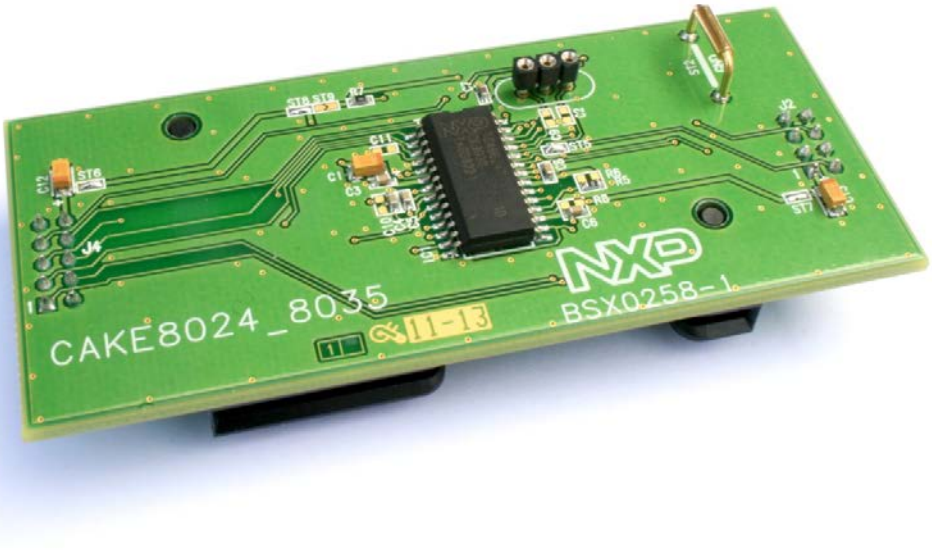

Fig 7. Migration board Part 3Cake8024_8035_3

3.3 TDA8034 product support package

The TDA8034 is the cost efficient contact smart card reader IC frontend within the TDA product portfolio.

Table 5. TDA8034 product support package overview

Nr.	Item Name	Type	Short description	Ordering information
1	Daughter Board TDA8034T	HW	Evaluation Board, which needs to be stacked on top of the Mother Board (see Fig 8 Daughter board TDA8034T)	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID: Cake8034_01_D,
2	Daughter Board TDA8034HN	HW	Evaluation Board, which needs to be stacked on top of the Mother Board (see Fig 9 Daughter board TDA8034HN)	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : Cake8034_02_D
3	Daughter Board TDA8034AT	HW	Evaluation Board, which needs to be stacked on top of the Mother Board	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : Cake8034_03_D
4	AN10792 for TDA8034HN	Doc	Application Note describing the smart card interface integrated circuit TDA8034HN	Public available on website or per e-mail from your sales representative
5	AN10794	Doc	Application Note describing Cake8034_01_D and Cake8034_02_D demo boards: schematics, layout and use of this boards	Public available on website or per e-mail from your sales representative
6	AN10807 for TDA8034T/AT	Doc	Application Note describing the smart card interface integrated circuit TDA8034T/AT	Public available on website or per e-mail from your sales representative
7	EMV Certification Report	Doc	EMV certification report of debugging session at FIME: N° C11RAP03-17-2	Per e-mail from your sales representative
8	TDA8034AT/C1 sample	HW	TDA8034AT sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : 935289276000
9	TDA8034T/C1 sample	HW	TDA8034T sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : 935288349000
10	TDA8034HN/C1 sample	HW	TDA8034HN/C1 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : 935288352000
11	Cake80xxMBA FW	SW	Firmware for TDA8034T/HN/AT running on the Motherboard	Per e-mail from your sales representative
12	SCRTester	SW	Graphical User Interface, communicating with the evaluation board together with the mother board	Available on web, specific scripts available over e-mail. No Windows7 64 bit support

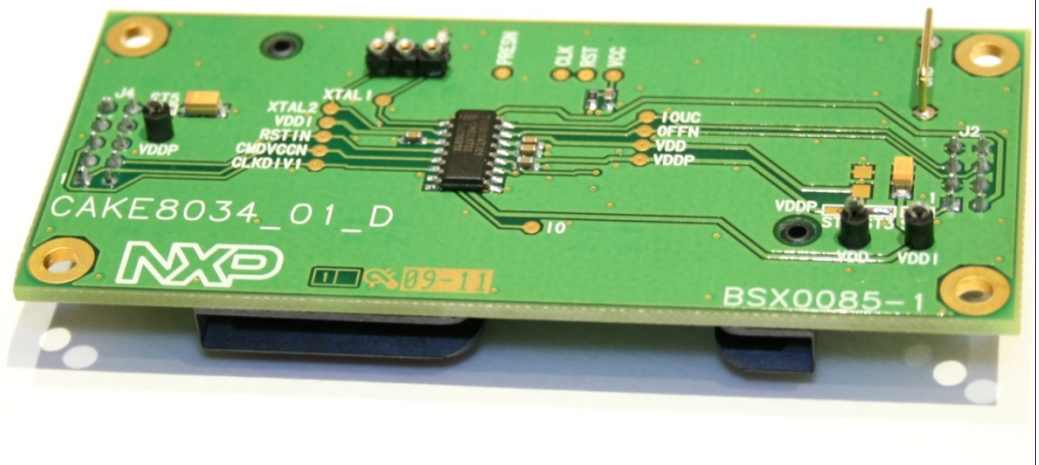

Fig 8. Daughter board TDA8034T

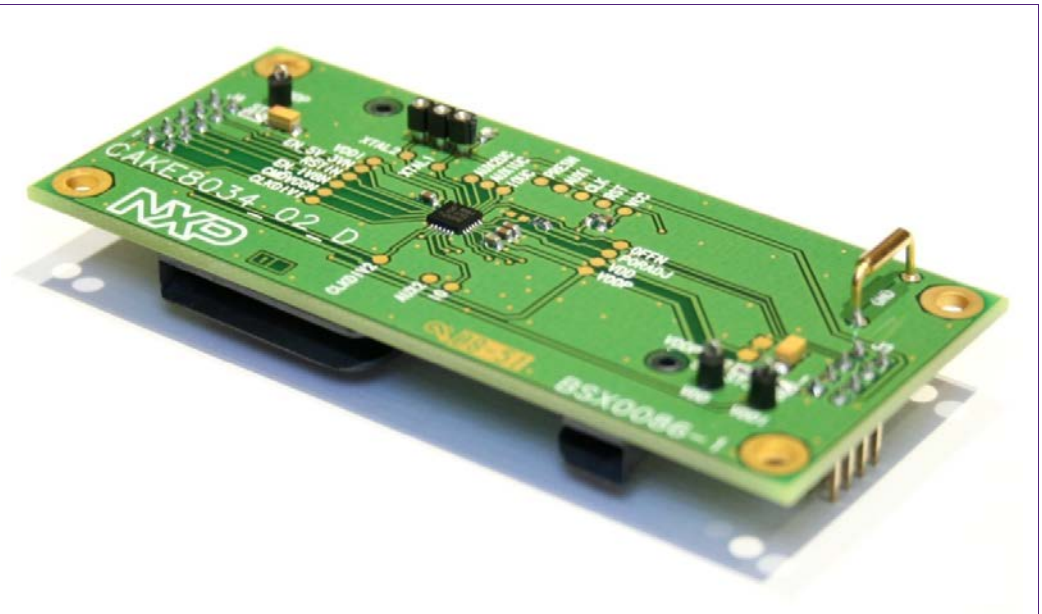

Fig 9. Daughter board TDA8034HN

3.4 TDA8029 product support package

The TDA8029 is a smart card controller integrating the whole protocol layer.

Table 6. TDA8029 product support package overview

Nr.	Item Name	Type	Short description	Ordering information
1	Eval Board Cake8029_11_D	HW	Evaluation board for serial link to the host (BD9) for direct connection to a computer (see Fig 10 Evaluation Board TDA8029 Cake8029_11_D	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID: Cake8029_11_D
2	Eval Board Cake8029_12_D	HW	Evaluation Board for I²C communication to the TDA8029, has a connection to PN53 (see Fig 11 Evaluation Board TDA8029 Cake8029_12_D)	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : Cake8029_12_D
4	AN10207	Doc	Application Note describing the software implemented in both TDA8029HL/C20 and TDA8029HL/C207 masks in order to handle a communication between a system controller and a smart card.	Public available on website or per e-mail from your sales representative
5	UM10338	Doc	User manual describing the Cake8029_12_D	Public available on website or per e-mail from your sales representative
6	TDA8029Demo	SW	Microsoft Visual C++ project to demonstrate access to the Cake8029_11_D from a windows computer.	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : TDA8029Demo
7	ArmTDA8029i2c Driver	SW	Source code for an ARM7core CPU to drive the TDA8029 in I²C mode together with Cake_8029_12_D	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : ArmTDA8029i2cDriver
8	TDA8029HL/C207	HW	TDA8029HL/C207 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : 935274733000
9	SCRTester	SW	Graphical User Interface, communicating with the evaluation board together with the mother board	Available on web, specific scripts available over e-mail. No Windows7 64 bit support

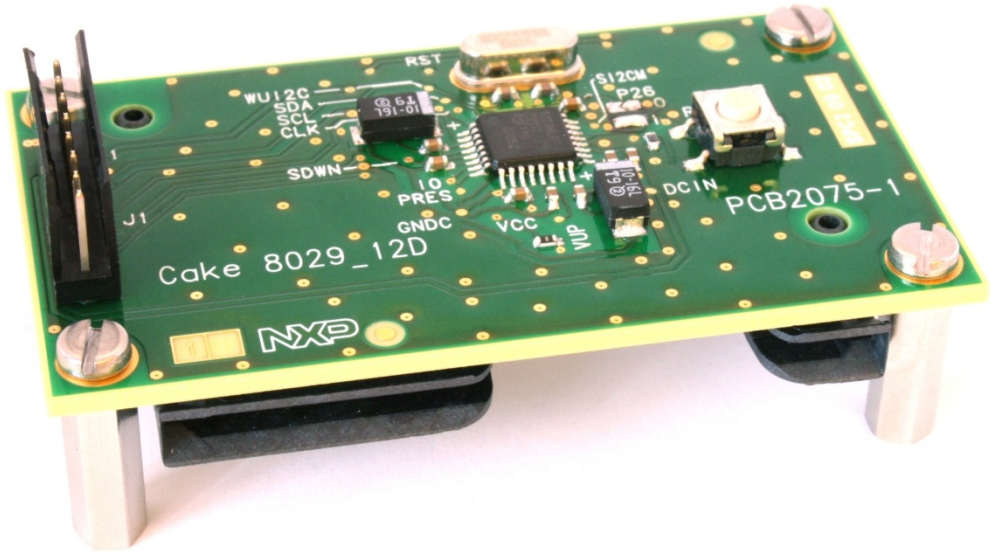

Fig 10. Evaluation Board TDA8029 Cake8029_11_D

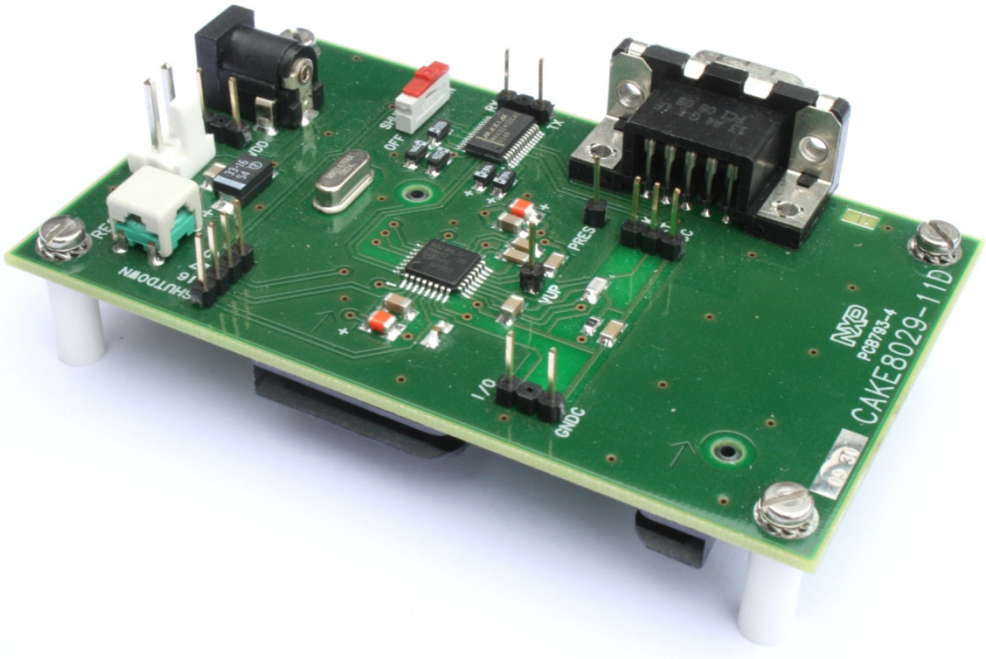

Fig 11. Evaluation Board TDA8029 Cake8029_12_D

3.5 TDA8026 product support package

The TDA8026 is a multi slot card interface for multiple SAMs and contact cards.

Table 7. TDA8026 product support package overview

Nr.	Item Name	Type	Short description	Ordering information
1	Daughter Board TDA8026	HW	Evaluation Board, which needs to be stacked on top of the Mother Board (see Fig 12 Daughter board TDA8026 and Fig 13 Demo TDA8026	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID: Cake8026_02_D
4	AN10724	Doc	Application Note describing the smart card interface integrated circuit TDA8026ET.	Public available on website or per e-mail from your sales representative
5	UM10319	Doc	User Manual describing how to use the Cake8026_02_D	Public available on website or per e-mail from your sales representative
7	EMV Certification Report	Doc	EMV certification report of debugging session at FIME: N° C11RAP03-23-3	Per e-mail from your sales representative
8	TDA8026ET/C2 sample	HW	TDA8026 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : 935288286000
9	Cake80xxMBA FW	SW	Firmware running on the Motherboard	Per e-mail from your sales representative
10	SCRTester	SW	Graphical User Interface, communicating with the evaluation board together with the mother board	Available on web, specific scripts available over e-mail. No Windows7 64 bit support

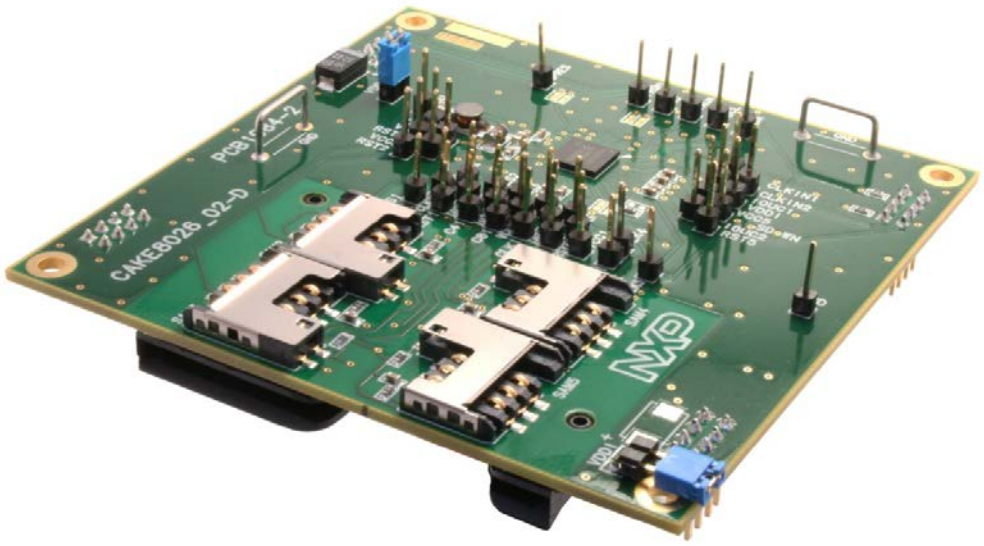

Fig 12. Daughter board TDA8026

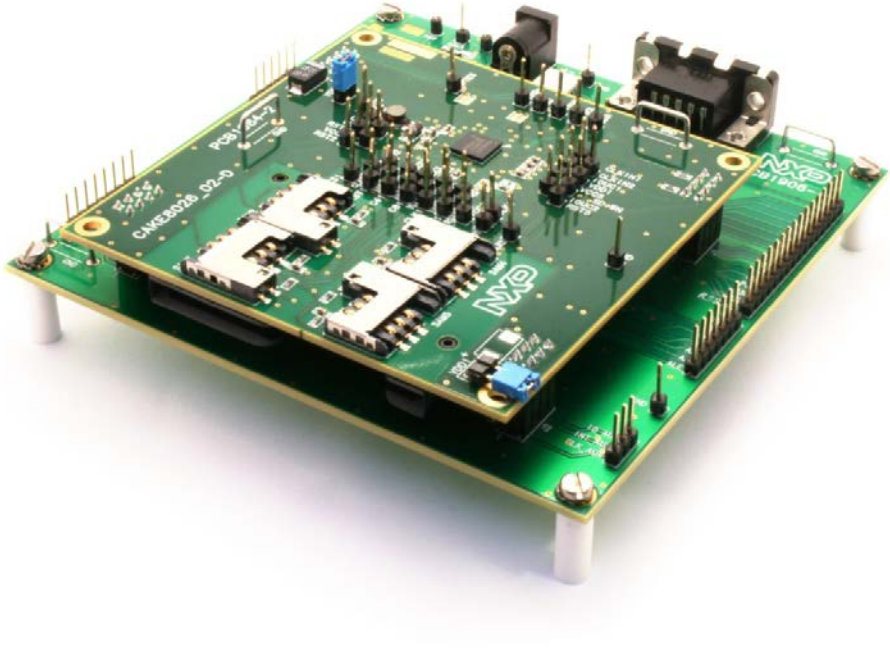

Fig 13. Demo TDA8026

3.6 TDA8024 product support package

The TDA8024 is a low-cost, contact-based reference single card interface offering a high level of design flexibility.

Table 8. TDA8024 product support package overview

Nr.	Item Name	Type	Short description	Ordering information
1	Daughter Board TDA8024TT	HW	Evaluation Board, which needs to be stacked on top of the Mother Board (see Fig 14 Daughter board TDA8024TT)	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID: Cake8024_11_D
2	Daughter Board TDA8024T	HW	Evaluation Board, which needs to be stacked on top of the Mother Board (see Fig 15 Daughter board TDA8024T)	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : Cake8024_12_D
3	AN10141	Doc	Application Note describing the TDA8024T and TDA8024TT	Public available on website or per e-mail from your sales representative
4	AN10265	Doc	Application Note describing DC/DC as voltage follower	Public available on website or per e-mail from your sales representative
5	TDA8024AT/C1 sample	HW	TDA8024AT/C1 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : 935277261000
6	TDA8024TT/C1 sample	HW	TDA8024T/C1 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : 935273723000
7	TDA8024T/C1 sample	Hw	TDA8024TT/C1 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : 935271342000
8	Cake80xxMBA FW	SW	Firmware running on the Motherboard	Per e-mail from your sales representative
9	SCRTester	SW	Graphical User Interface, communicating with the evaluation board together with the mother board	Available on web, specific scripts available over e-mail. No Windows7 64 bit support

Fig 14. Daughter board TDA8024TT

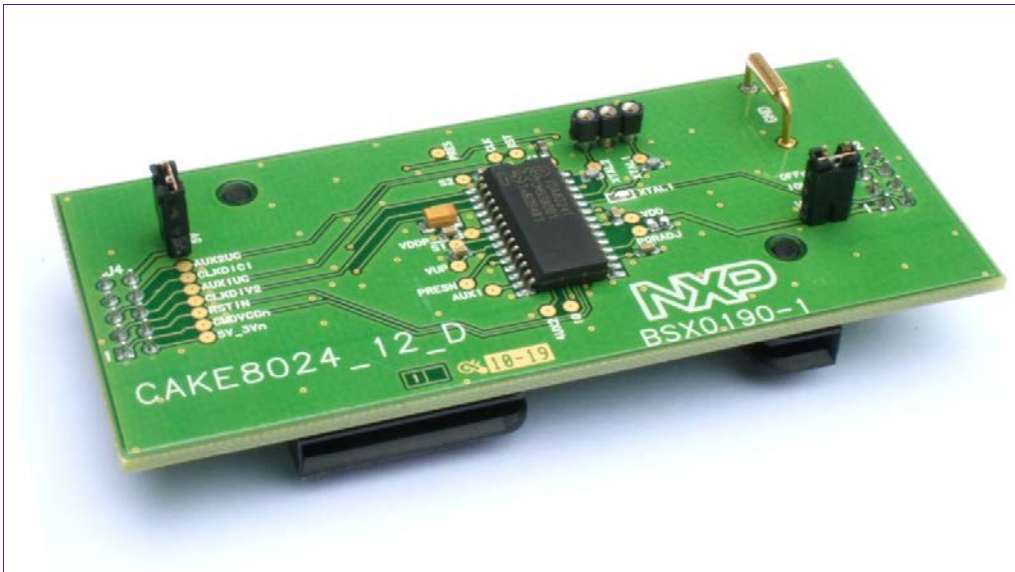

Fig 15. Daughter board TDA8024T

3.7 TDA8023 product support package

The TDA8023 is a single card interface tailored for the payment market.

Table 9. TDA8023 product support package overview

Nr.	Item Name	Type	Short description	Ordering information
1	Daughter Board TDA8023	HW	Evaluation Board, which needs to be stacked on top of the Mother Board (see Fig 16 Daughter board TDA8023)	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID: Cake8023_06_D
2	AN10267	Doc	Application Note describing the TDA8023	Public available on website or per e-mail from your sales representative
3	TDA8023TT/C1 sample	HW	TDA8023TT/C1 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : 935274975000
4	Cake80xxMBA FW	SW	Firmware running on the Motherboard	Per e-mail from your sales representative
5	SCRTester	SW	Graphical User Interface, communicating with the evaluation board together with the mother board	Available on web, specific scripts available over e-mail. No Windows7 64 bit support

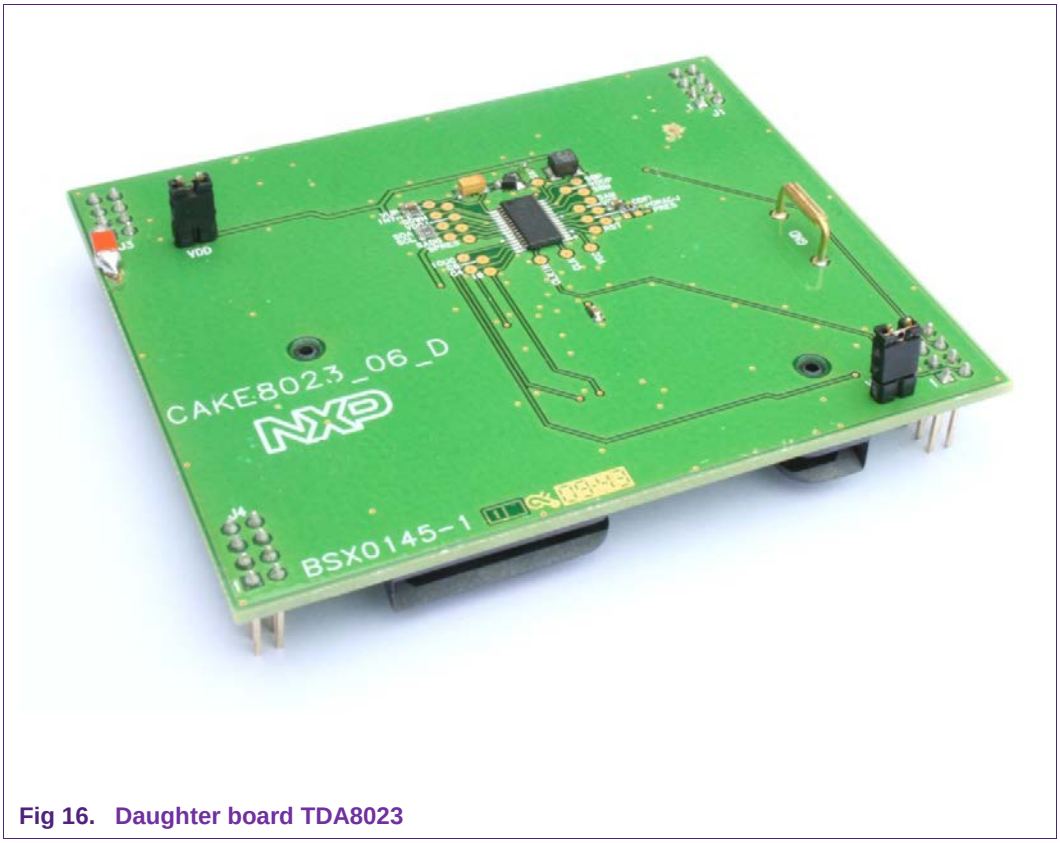

Fig 16. Daughter board TDA8023

3.8 TDA8007B product support package

Dual card interface with embedded contact UART and is tailored for the requirements in the POS market.

Table 10. TDA8007 product support package overview

Nr.	Item Name	Type	Short description	Ordering information
1	Eval board TDA8007B	HW	Evaluation board with a serial link (DB9), microcontroller ARM7 LPC2212 (see Fig 17 Evaluation board TDA8007)	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID: Cake8007_01_D
2	AN01054	Doc	Application Note describing the use of the TDA8007BHL/C2 or C3 and handles a communication between a system controller and two or three smart cards.	Public available on website or per e-mail from your sales representative
3	AN10677	Doc	Application Note describing how to do a complete reset of the TDA8007B chip without a power on/off.	Public available on website or per e-mail from your sales representative
4	EMV Certification Report	Doc	EMV certification report of debugging session at FIME: N° C11RAP03-23-2	Per e-mail from your sales representative
5	TDA8007BHL/C3 sample	HW	TDA8007BHL/C3 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F using the following ID : 935272525000
6	TDA8007BHL/C4sample	HW	TDA8007BHL/C4 sample	It can be ordered from your sales representative over our NFC sample desk in Caen/F
7	Cake8007MBA FW	SW	Firmware running on the motherboard which implements TDA8007 driver, all ISO7816 asynchronous protocols, ALPAR link to the host	Per e-mail from your sales representative
8	SCRTester	SW	Graphical User Interface, communicating with the evaluation board together with the mother board	Available on web, specific scripts available over e-mail. No Windows7 64 bit support

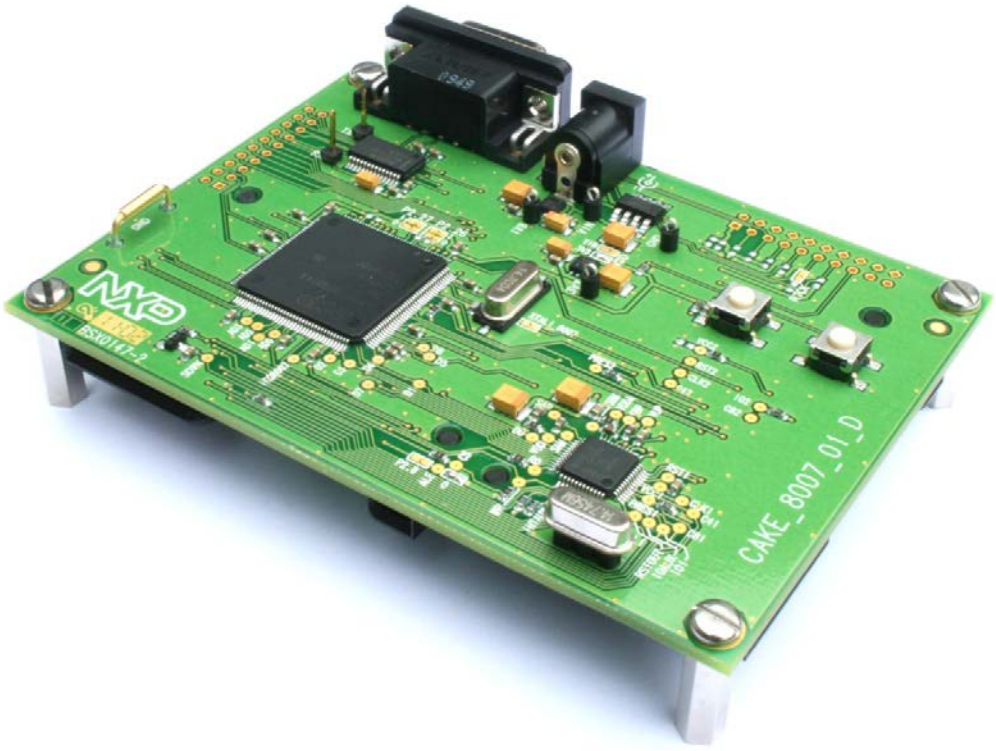

Fig 17. Evaluation board TDA8007

4. References

[1] Data sheet – TDA8035HN Smart card interface, available on NXP web or per e-mail

[2] Data sheet – TDA8034T/AT Smart card interface, available on NXP web

[3] Data sheet – TDA8029 Low power single card reader, available on NXP web

[4] Data sheet – TDA8026 Multiple smart card slot interface IC, available on NXP web

[5] Data sheet – TDA8024 IC card interface, available on NXP web

[6] Data sheet – TDA8023 Low power IC card interface, available on NXP web

[7] Data sheet – TDA8007BHL Multiprotocol IC card interface, available on NXP web

[8] Application Note – TDA8035 Smart card reader, available on NXP web or per e-mail

[9] Application Note – TDA8035 Demonstration board description, available per e-mail

[10] Application Note – TDA8034HN Smart Card reader interface, available on NXP web or per e-mail

[11] Application Note – TDA8034 Demonstration boards description, available on NXP web or per e-mail

[12] Application Note – TDA8034T/AT Smart Card reader interface, available on NXP web or per e-mail

[13] Application Note – Smart Card reader application with TDA8029 Mask07, available on NXP web or per e-mail

[14] Application Note – TDA8026ET 5 slots smart card interface available on NXP web or per e-mail

[15] Application Note – TDA8024 describing DC/DC as voltage follower, available on NXP web or per e-mail

[16] Application Note – Smart Card interface using TDA8007BHL/C2/C3, available on NXP web or per e-mail

[17] Application Note – Reset of the TDA8007B using delay pin, available on NXP web or per e-mail

[18] Application Note – Differences between TDA8007BHLC3 and TDA8007BHL/C4, available on NXP web or per e-mail

[19] Application Note – ARM Microcontroller + TDA8007B, available on NXP web or per e-mail

[20] Application Note – TDA8007B CRED Issue, available on NXP web or per e-mail

[21] User Manual – Description of the TDA8029 I2C Demo Board, available on NXP web or per e-mail

[22] User Manual – Getting started with the TDA8026 Demo Bard, available on NXP web or per e-mail

[23] EMV Certification Report – TDA8035 (N° C10RAP12-06-02), available per e-mail

[24] EMV Certification Report – TDA8034 (N° C11RAP03-17-2), available per e-mail

[25] EMV Certification Report – TDA8026 (N° C11RAP03-23-3), available per e-mail

[26] EMV Certification Report – TDA8007 (N° C11RAP03-23-2), available per e-mail

[27] Software – Cake80xxMBA Firmware, available per e-mail

[28] Software – SCR Tester, available on web

[29] Software – TDA8029 Demo, available per e-mail

[30] Software – ArmTDA8029i2c Driver, available over NFC sample desk

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