

ECR-Interface ZVT-Protocol

manufacturer-independent protocol between
payment terminals and electronic cash-register systems/vending
machines


Implications of TA7.0 / DC POS2.4 on the ECR-Interface Protocol

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	ECR-Interface ZVT-Protocol	PA00P017_02_en.doc
		Revision: 02 Seite 2 von 5
Implications of TA7.0 / DC POS2.4		

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01	14.03.2008	Initial release	R.Roos
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1	Overview	3
2	Changes to Status Record (04 0F) of transactions	3
3	Changes to Status Record (04 0F) for "Read Card"	3
4	Changes to Intermediate Status-Information (04 FF)	3
5	ECRs which DO NOT evaluate the Status-Information of the payment and DO use the receipt from the terminal	4
6	ECRs which evaluate the Status-Information of the payment and DO use the receipt from the terminal	4
7	ECRs which evaluate the Status-Information of the payment and DO NOT use the receipt from the terminal	4
8	ECRs which use the interface command „Read Card“	4
9	Filling-Station Systems	4
10	References	4

	<h1>ECR-Interface ZVT-Protocol</h1>	<p>PA00P017_02_en.doc</p> <hr/> <p>Revision: 02 Seite 3 von 5</p>
<h2>Implications of TA7.0 / DC POS2.4</h2>		

1 Overview

The introduction of TA7.0 and DC POS has resulted in changes to the ZVT ECR-Interface which, depending on the implementation state of the ECR or vending machine, may also make changes to these systems necessary.

Most changes are implemented as extensions to the TLV-containers (BMP 06) and are non-critical given correct implementation of the the TLV principles. However, some changes also affect the contents and existence of other BMPs in the status record of a transaction (ZVT command 04 0F) and in the response to ZVT command "Read Card".

The processing of the traditional ec card via track 3 or electronic cash chip remains unaffected, so that an update of the ECR prior to the changeover of the connected terminals to TA7.0 represents the simplest migration path.

2 Changes to Status Record (04 0F) of transactions

To process the new cards under TA 7.0 and DC POS 2.4 new ZVT card-type IDs have been added. These are:

girocard	5
EAPS	7
girocard German debit	9
Visa	10
Visa Electron	11
V PAY	13

For girocard some of the BMPs in the online message from the terminal differ from those for the ec card. The BMP 22 contains only the PAN of the card, as for credit cards, and no longer the bank code or account number.

The BMP 3B contains the AID in ASCII format, as for credit cards.

The BMPs 92, BA and AF are now omitted.


3 Changes to Status Record (04 0F) for "Read Card"

Although a girocard is only processed using track 2 after the changeover to TA7.0, a track 3 may also be present on the magnetic stripe, which will also be read. However, this cannot be used internally by the ECR for card recognition purposes since its presence and/or format cannot be guaranteed.

Depending on migration-type and configuration of the terminal the BMP A7 (EF_ID) can also still be returned if processing of the ec cash application is still allowed.

If the TLV-container is activated, then various TLV-tags with information about the applications (chip and magnet-stripe) will be returned during registration, depending on the configuration.

4 Changes to Intermediate Status-Information (04 FF)

	<h1>ECR-Interface ZVT-Protocol</h1>	<p>PA00P017_02_en.doc</p> <hr/> <p>Revision: 02 Seite 4 von 5</p>
<h2>Implications of TA7.0 / DC POS2.4</h2>		

In future the texts for the payment result will always be sent from the host. These texts are sent to the ECR in Tag 24 in the Intermediate Status message and shall also be shown on the merchant display (ECR)

5 ECRs which DO NOT evaluate the Status-Information of the payment and DO use the receipt from the terminal.

These ECRs ignore the information in the status record and accept the receipt print-out of the terminal via the ZVT-commands „Print Line“ or „Print Text-Block“.

These ECRs can be used unchanged with TA7.0/DC POS2.4 terminals.

6 ECRs which evaluate the Status-Information of the payment and DO use the receipt from the terminal

These ECRs extract the Status-Record Information for internal purposes in the ECR, but implement the receipt print-out of the terminal via the ZVT-commands „Print Line“ or „Print Text-Block“.

Here each particular case must be checked relating to how the ECR reacts to the new ZVT card-type IDs. Thus it will depend on the implementation details of the ECR as to whether changes to the ECR software are necessary or not.

7 ECRs which evaluate the Status-Information of the payment and DO NOT use the receipt from the terminal

These ECRs use Status-Record Information for generating the receipt and where applicable also for internal purposes.

This type of ECR will certainly require changes to the software. The ECR must support the TLV-container and activate the required elements during registration. During generation of the receipt the requirements of TA7.0 and DC POS2.4 must be met.

8 ECRs which use the interface command „Read Card“

These ECRs or vending machines read information from the card before each action to decide how to proceed.

Depending on how the card-data is interpreted, it may be necessary to alter the ECR software.

9 Filling-Station Systems

For filling-station systems all of the points listed above may apply. Furthermore, for cards which only have chip, or cards whereby the magnet-stripe cannot be read, recognition of the card for receipt printing purposes can be a problem.


Until now this was solved using the EF_ID read from track 3 or track 2 which enabled unambiguous identification of the card.

However, if the magnet-stripe could not be read, „Read Card“ only returns a list of possible chip applications in the TLV-container which do not contain card-specific information.

In this case the ECR must employ alternative methods for resolving the printing of the receipt.

10 References

The current version of each document is available under www.terminalhersteller.de :

	ECR-Interface ZVT-Protocol	PA00P017_02_en.doc Revision: 02 Seite 5 von 5
Implications of TA7.0 / DC POS2.4		

- PA00P015 ECR Interface ZVT-Protocol – Commands, Bitmaps, Error-Messages
- PA00P016 ECR-Interface ZVT-Protocol – Transport-Protocol and Application-Protocol