

Specification Bulletin No. 164
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Electronic Signature Capture and Electronic Receipt Delivery

This Specification Bulletin updates to the EMV Integrated Circuit Card Specifications to allow for electronic capture of signature and electronic delivery of receipts.

Applicability

This Specification Bulletin applies to:

- *EMV Integrated Circuit Card Specifications for Payment Systems Version 4.3 Book 3 [EMV Book3]*
- *EMV Integrated Circuit Card Specifications for Payment Systems Version 4.3 Book 4 [EMV Book4]*

Related Documents

None

Description

It is becoming increasingly common for terminal implementations to support signature capture and receipt delivery using electronic methods. The current EMV specifications only describe the use of paper for these features.

This bulletin describes changes to the specifications to allow implementations to support:

- Capture of cardholder signature on an electronic device.
- Electronic delivery of cardholder receipts, such as delivery of receipts via email.

Specification changes to allow for electronic signature capture

Please update EMV Book 3 section 10.5.3 Signature processing as below:

If a (paper) signature is a required CVM as determined by the above process, the terminal shall determine success based upon the terminal's capability to support the signature process (see complementary payment systems documentation for additional information). If the terminal is able to support signature, the process is considered successful, and cardholder verification is complete.

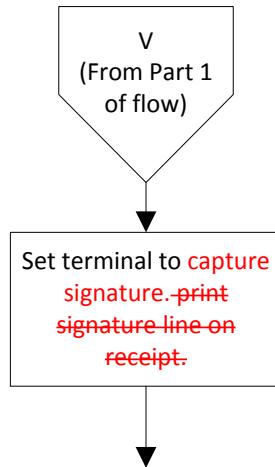
Please update EMV Book 3 Figure 9 “CVM Processing (Part 2 of 5)” as below:

Delete the two instances of “(paper)” in the bulleted list at the bottom of Figure 9:

- Plaintext PIN verification performed by ICC and Signature (Paper)
- Enciphered PIN verification performed by ICC and Signature (Paper)

Please update EMV Book 3 Figure 10 “CVM Processing (Part 3 of 5)” as below:

Change flowchart text “Set terminal to print signature line on receipt” to “Set terminal to capture signature”.



Please update EMV Book 3 Table 39 “CVM Codes” as below:

Delete the three instances of “(paper)”.

	0	0	0	0	1	0	Enciphered PIN verified online
	0	0	0	0	1	1	Plaintext PIN verification performed by ICC and signature (paper)

	0	0	0	1	0	0	Enciphered PIN verification performed by ICC
	0	0	0	1	0	1	Enciphered PIN verification performed by ICC and signature <i>(paper)</i>
	0	x	x	x	x	x	Values in the range 000110-011101 reserved for future use by this specification
	0	1	1	1	1	0	Signature <i>(paper)</i>
	0	1	1	1	1	1	No CVM required
	1	0	x	x	x	x	Values in the range 100000-101111 reserved for use by the individual payment systems
	1	1	x	x	x	x	Values in the range 110000-111110 reserved for use by the issuer
	1	1	1	1	1	1	This value is not available for use

Table 39: CVM Codes

Please update EMV Book 4 section 6.3.4.4 as below:

6.3.4.4 Signature *(Paper)*

When the applicable CVM is signature, the terminal shall set byte 3 of the CVM Results to 'unknown'. At the end of the transaction, *the terminal shall provide a way to capture cardholder signature (e.g., by printing a line for the cardholder signature on the merchant's copy of the receipt, or by using an electronic panel) the terminal shall print a receipt with a line for cardholder signature.* (See Annex A2 for requirements for the terminal to support signature as a CVM.)

Please update EMV Book 4 Table 26 as below:

Delete "(paper)" from the row describing the Terminal Capabilities setting for signature.

b8	b7	b6	b5	b4	b3	b2	b1	Meaning
1	x	x	x	x	x	x	x	Plaintext PIN for ICC verification
x	1	x	x	x	x	x	x	Enciphered PIN for online verification
x	x	1	x	x	x	x	x	Signature (paper)
x	x	x	1	x	x	x	x	Enciphered PIN for offline verification
x	x	x	x	1	x	x	x	No CVM Required
x	x	x	x	x	0	x	x	RFU
x	x	x	x	x	x	0	x	RFU
x	x	x	x	x	x	x	0	RFU

Table 26: Terminal Capabilities Byte 2 - CVM Capability

If the terminal supports a CVM of signature, the terminal shall be an attended terminal (Terminal Type = 'x1', 'x2', or 'x3') and shall support **signature capture by paper or electronic means & printer** (set Additional Terminal Capabilities, byte 4, 'Print or electronic, attendant' bit = 1).

Specification changes to allow for electronic delivery of cardholder receipts

Please update EMV Book 4 Section 7.1 as below:

A keypad may consist of a single key, such as a function key that could be a button on a vending machine to indicate selection of an application or to indicate that a **cardholder** receipt is to be **printed** provided.

Please update EMV Book 4 Section 7.5 as below:

7.5 Receipt Printer

A terminal **may** **should** have a printer for receipt printing. Alternatively, receipts may be provided by electronic means such as email (see complementary payment systems documentation for additional information). ~~If present, the printer shall be able to print at least 20 alphanumeric characters per line (see section 11.4).~~

Cardholder controlled terminal (Terminal Type = '3x') need not **provide** **receipts** **include** **a** **printer**.

Please update EMV Book 4 Section 11.4 as below:

Whenever a Cardholder receipt is provided, it shall contain the AID in addition to the data required by payment system rules. The AID shall be **presented** **printed** as hexadecimal characters.

Please update EMV Book 4 Table 31 as below:

b8	b7	b6	b5	b4	b3	b2	b1	Meaning
1	x	x	x	x	x	x	x	Print or electronic, attendant 1: Paper Receipt, attendant, or Paper Signature, or Electronic Signature
x	1	x	x	x	x	x	x	Print or electronic, cardholder 1: Paper Receipt, cardholder, or Electronic Receipt, cardholder
x	x	1	x	x	x	x	x	Display, attendant
x	x	x	1	x	x	x	x	Display, cardholder
x	x	x	x	0	x	x	x	RFU
x	x	x	x	x	0	x	x	RFU
x	x	x	x	x	x	1	x	Code table 10
x	x	x	x	x	x	x	1	Code table 9

Table 31: Add'l Term. Capabilities Byte 4 - Term. Data Output Capability

Please update EMV Book 4 footnote 24 for Table 31 as below:

*If the terminal is attended (Terminal Type = 'x1', 'x2', or 'x3'), and there is only one printer **and electronic receipts are not supported**, the 'Print or electronic, attendant' bit shall be set to '1' and the 'Print or electronic, cardholder' bit shall be set to '0'.*

If the terminal is attended and there is only one display, the 'Display, attendant' bit shall be set to '1' and the 'Display, cardholder' bit shall be set to '0'.

If the terminal is unattended (Terminal Type = 'x4', 'x5', or 'x6'), the 'Print or electronic, attendant' and 'Display, attendant' bits shall be set to '0'.