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5/4/17	1.1	C. Meaney	Reformatting to accommodate change from TLV_NN tags to TLV_SETS tag.
5/22/17	1.2	C. Meaney	Added DMS transaction chapter, revised TLV description, added TLV set "NETWORK," added new examples throughout.
5/2/18	1.3	M. Billips	SENDER Address, City, State, Zip Code set to mandatory
6/23/23	1.4	M. Billips	Deprecate ACI codes, add as ACI_EXT codes. Remove CCxM and CCxP transaction types – no longer supported by MC. Update mandatory TLV tags per MC requirements.
7/31/2025	1.5	M. Billips	Add verbiage for MC SENDER requirements – business disbursements

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Contents

Introduction	1
About this guide	1
Related documentation	1
Mandatory and optional fields	2
Transaction types and request formatting	3
Overview	3
SM0G – MasterCard Account Funding Transaction	3
XML request	3
XML response	4
SM0K – MasterCard Payment Transaction	5
XML request	5
XML response	6
TLV data	7
TLV overview	7
TLV_SETS tag	7
TLV elements	8
EPX TLV elements for MoneySend Funding/Payment transactions	9
TLV set - "RECEIVER"	9
Identification Type Codes	10
TLV set - "SENDER"	11
TLV set - "TRAN_DATA"	12
Transaction Purpose	12
Funding Source Codes	13
TLV set - "LANG_DATA"	13
TLV set - "NETWORK"	14
Additional transaction values	15
Valid ACI_EXT values for MasterCard SMS	15
CARD_ID	16

List of Figures

Figure 1: Example SM0G XML request.....	3
Figure 2: Example SM0G XML response	4
Figure 3: Example SM0K XML request.....	5
Figure 4: Example SM0K XML response	6
Figure 13: Example TLV_SETS tag.....	7

List of Tables

Table 1: TLV element properties for TLV set “RECEIVER”.....	9
Table 2: Identification Type Code values.....	10
Table 3: TLV element properties for TLV set “SENDER”	11
Table 4: TLV element properties for TLV set “TRAN_DATA”	12
Table 5: Transaction Purpose values	12
Table 6: Funding Source Code values.....	13
Table 7: TLV element properties for TLV set “LANG_DATA”	13
Table 8: TLV element properties for TLV set “NETWORK”	14
Table 9: ACI_EXT values for MasterCard SMS.....	15
Table 10: CARD_ID values.....	16

Introduction

About this guide

This guide provides details about mandatory and optional fields for the MasterCard MoneySend Funding ("pull" or debit) and Payment ("push") transaction types for use with the Dual and Single Message Systems.

Related documentation

For details about Visa Money Transfer, refer to the *Transaction Specs - Visa Money Transfer* guide.

For additional information about other EPX request and response fields, refer to the *EPX Data Dictionary*.

Mandatory and optional fields

The sections that follow provide examples of each transaction type. Within the examples, some fields are listed as mandatory and others as optional.

Note the following about mandatory and optional fields:

- Mandatory fields are shown in **bold** in the examples and need to be submitted with the transaction request to ensure a successful response.
- Optional fields can be omitted; however, optional fields might still be used during the transaction. For example, if optional AVS fields are provided, they are validated and an AVS response is sent back. Also, a merchant's profile can be setup to make some optional fields mandatory to comply with Risk and Underwriting requirements.

NOTE: The example XML responses provided in this document are for illustration only. Additional fields may be present within the response based on specific card characteristics. The examples are in XML format; EPX supports straight XML and Key Value Pair depending on which processing method you are using on the front end.

Transaction types and request formatting

Overview

This chapter provides information about the transaction types applicable for Single Message System (SMS) transactions.

With SMS, transactions are processed in a single step. That is, the authorization approval response serves as confirmation of payment, and the transaction is then closed.

SM0G – MasterCard Account Funding Transaction

The Funding transaction moves funds from the sender account to the originating institution. Details regarding the payment type and source of funds are defined using the codes sent in the TLV sets and ACI_EXT field, respectively. For information on valid values for these fields, refer to [EPX TLV elements for MoneySend Funding/Payment transactions](#), page 9 and [Valid ACI_EXT values for MasterCard SMS](#), page 15.

XML request

Figure 1: Example SM0G XML request

```

<DETAIL cust_nbr="1234" merch_nbr="1234765" dba_nbr="1" terminal_nbr="1">
<BATCH_ID>2017051801</BATCH_ID>
<TRAN_NBR>707</TRAN_NBR>
<TRAN_TYPE>SM0G</TRAN_TYPE>
<AMOUNT>101.00</AMOUNT>
<ACCOUNT_NBR>5491041172211111</ACCOUNT_NBR>
<EXP_DATE>2512</EXP_DATE>
<ACI_EXT>C07</ACI_EXT>
<TLV_SETS>0036000008RECEIVER001005Steve003005Smith0050000006SENDER001004John003005
Jones01101186532698507002300009TRAN_DATA001002020027000007NETWORK001001Y002001Y</
TLV_SETS>
<CARD_ENT METH>X</CARD_ENT METH>
<CVV2>123</CVV2>
<CARD_ID>1</CARD_ID>
<FIRST_NAME>John</FIRST_NAME>
<LAST_NAME>Jones</LAST_NAME>
<ADDRESS>1 Central Ave</ADDRESS>
<CITY>Portland</CITY>
<STATE>OR</STATE>
<ZIP_CODE>12345</ZIP_CODE>
<COUNTRY_CODE>840</COUNTRY_CODE>
<CURRENCY_CODE>840</CURRENCY_CODE>
</DETAIL>
```

XML response

Figure 2: Example SM0G XML response

```

<RESPONSE>
  <FIELDS>
    <FIELD KEY="MSG_VERSION">003</FIELD>
    <FIELD KEY="CUST_NBR">1234</FIELD>
    <FIELD KEY="MERCH_NBR">1234765</FIELD>
    <FIELD KEY="DBA_NBR">1</FIELD>
    <FIELD KEY="TERMINAL_NBR">1</FIELD>
    <FIELD KEY="TRAN_TYPE">SM0G</FIELD>
    <FIELD KEY="BATCH_ID">2017051901</FIELD>
    <FIELD KEY="TRAN_NBR">707</FIELD>
    <FIELD KEY="LOCAL_DATE">051917</FIELD>
    <FIELD KEY="LOCAL_TIME">122605</FIELD>
    <FIELD KEY="AUTH_GUID">09KF1WU13Z24FZL4KBP</FIELD>
    <FIELD KEY="AUTH_RESP">00</FIELD>
    <FIELD KEY="AUTH_CODE">006025</FIELD>
    <FIELD KEY="AUTH_RESP_TEXT">APPROVAL</FIELD>
    <FIELD KEY="AUTH_CARD_TYPE">M</FIELD>
    <FIELD KEY="AUTH_TRAN_DATE_GMT">05/19/2017 04:26:04 PM</FIELD>
    <FIELD KEY="AUTH_AMOUNT_REQUESTED">101.00</FIELD>
    <FIELD KEY="AUTH_AMOUNT">101.00</FIELD>
    <FIELD KEY="AUTH_CURRENCY_CODE">840</FIELD>
    <FIELD KEY="NETWORK_RESPONSE">00</FIELD>
    <FIELD KEY="AUTH_TLV_SETS">
      0043000007NETWORK001006350727002012713916350727</FIELD>
    <FIELD KEY="AUTH_CARD_COUNTRY_CODE">840</FIELD>
    <FIELD KEY="AUTH_CARD_COUNTRY_NAME">USA</FIELD>
    <FIELD KEY="AUTH_CARD_CURRENCY_CODE">840</FIELD>
    <FIELD KEY="AUTH_CARD_CURRENCY_NAME">USD</FIELD>
    <FIELD KEY="AUTH_CARD_B">MCC</FIELD>
    <FIELD KEY="AUTH_CARD_A">MCC</FIELD>
    <FIELD KEY="AUTH_CARD_C">MCC</FIELD>
    <FIELD KEY="AUTH_SHA1">7643B07232F8829EE379C075C26BA78C29F01CAF</FIELD>
    <FIELD KEY="AUTH_MASKED_ACCOUNT_NBR">*****1111</FIELD>
    <FIELD KEY="AUTH_CARD_K">N</FIELD>
    <FIELD KEY="AUTH_CARD_L">C</FIELD>
    <FIELD KEY="AUTH_STAN">350727</FIELD>
  </FIELDS>
</RESPONSE>

```

SM0K – MasterCard Payment Transaction

The Payment transaction transfers funds to the recipient's account number provided in the request. Details regarding the payment type and source of funds are defined using the codes sent in the TLV sets and ACI_EXT field, respectively. For information on valid values for these fields, refer to [EPX TLV elements for MoneySend Funding/Payment transactions](#), page 9 and [Valid ACI_EXT values for MasterCard SMS](#), page 15.

IMPORTANT!

RECEIVER TLV tags '001' First Name and '003' Last Name are required for all 'SM0K' funding transactions to comply with MasterCard regulations.

XML request

Figure 3: Example SM0K XML request

```
<DETAIL cust_nbr="1234" merch_nbr="1234765" dba_nbr="1" terminal_nbr="1">
<BATCH_ID>2017051901</BATCH_ID>
<TRAN_NBR>708</TRAN_NBR>
<TRAN_TYPE>SM0K</TRAN_TYPE>
<AMOUNT>101.00</AMOUNT>
<ACCOUNT_NBR>5491041111711114</ACCOUNT_NBR>
<EXP_DATE>2512</EXP_DATE>
<ACI_EXT>C07</ACI_EXT>
<TLV_SETS>0036000008RECEIVER001005Steve003005Smith0096000006SENDER001004John003005
Jones004010123 Any St005008Any
Town006002DE00800519801011008112233770023000009TRAN_DATA001002020027000007NETWORK0
01001Y002001Y</TLV_SETS>
<CARD_ENT_METH>X</CARD_ENT_METH>
<CVV2>123</CVV2>
<CARD_ID>1</CARD_ID>
<FIRST_NAME>Steve</FIRST_NAME>
<LAST_NAME>Smith</LAST_NAME>
<ADDRESS>123 Main Street</ADDRESS>
<CITY>wilmington</CITY>
<STATE>DE</STATE>
<ZIP_CODE>12345</ZIP_CODE>
<COUNTRY_CODE>840</COUNTRY_CODE>
<CURRENCY_CODE>840</CURRENCY_CODE>
</DETAIL>
```

XML response

Figure 4: Example SM0K XML response

```

<RESPONSE>
  <FIELDS>
    <FIELD KEY="MSG_VERSION">003</FIELD>
    <FIELD KEY="CUST_NBR">1234</FIELD>
    <FIELD KEY="MERCH_NBR">1234765</FIELD>
    <FIELD KEY="DBA_NBR">1</FIELD>
    <FIELD KEY="TERMINAL_NBR">1</FIELD>
    <FIELD KEY="TRAN_TYPE">SM0K</FIELD>
    <FIELD KEY="BATCH_ID">2017051901</FIELD>
    <FIELD KEY="TRAN_NBR">708</FIELD>
    <FIELD KEY="LOCAL_DATE">051917</FIELD>
    <FIELD KEY="LOCAL_TIME">123101</FIELD>
    <FIELD KEY="AUTH_GUID">09KF1WUA5EXDQ3VTKDZ</FIELD>
    <FIELD KEY="AUTH_RESP">00</FIELD>
    <FIELD KEY="AUTH_CODE">006040</FIELD>
    <FIELD KEY="AUTH_RESP_TEXT">APPROVAL</FIELD>
    <FIELD KEY="AUTH_CARD_TYPE">M</FIELD>
    <FIELD KEY="AUTH_TRAN_DATE_GMT">05/19/2017 04:31:01 PM</FIELD>
    <FIELD KEY="AUTH_AMOUNT_REQUESTED">101.00</FIELD>
    <FIELD KEY="AUTH_AMOUNT">101.00</FIELD>
    <FIELD KEY="AUTH_CURRENCY_CODE">840</FIELD>
    <FIELD KEY="NETWORK_RESPONSE">00</FIELD>
    <FIELD KEY="AUTH_TLV_SETS">
      0043000007NETWORK001006350741002012713916350741</FIELD>
    <FIELD KEY="AUTH_SHA1">70734E9458389C624E795B54C99DDB00602832D6</FIELD>
    <FIELD KEY="AUTH_MASKED_ACCOUNT_NBR">*****1114</FIELD>
    <FIELD KEY="AUTH_STAN">350741</FIELD>
  </FIELDS>
</RESPONSE>

```

TLV data

TLV overview

EPX requires MoneySend data to be presented in tag-length-value (TLV) format, which is a method of encoding information in a single string, versus multiple EPX tags.

TLV_SETS tag

Each request must contain the tag, TLV_SETS. This tag contains multiple TLV sets, which are concatenated together. The maximum length for the TLV_SETS value is 4000 bytes.

A logical simplification for the TLV_SETS tag is as follows (with spaces added for readability):

```
TLV_SETS = "set_length TLVset . . . set_length TLVsetN"
```

Where:

- set_length** is the 4-digit byte count for the length of the referenced TLV set. For example, if a TLV set contains two TLV elements with lengths of 25 and 30, the TLV set length is 0055.
- TLVset** is the set of TLV elements. A TLV set will contain at least two TLV elements. The TLV elements can be presented in any order within a set. (For information about TLV elements refer to [TLV elements](#), page 8.)

NOTE:

- For MoneySend Payment and Funding transactions, the TLV_SETS tag must always include a “RECEIVER” and “SENDER” TLV set, in addition to any other desired TLV set.
- If the same TLV set tag is presented multiple times within the same TLV string, the last instance will be used.

[Figure 5](#) shows an example TLV_SETS tag that contains TLV sets for “RECEIVER,” “SENDER,” and “TRAN_DATA.”

Figure 5: Example TLV_SETS tag

```
TLV_SETS =
"003600008RECEIVER001005steve003005smith005000006SENDER001004John003005jones0110
1186532698507002300009TRAN_DATA00100202"
```

The table that follows describes the data in [Figure 5](#).

TLV tag	Plaintext value	TLV representation
“RECEIVER” TLV set		
000	RECEIVER	000008RECEIVER

TLV tag	Plaintext value	TLV representation
(Tag 000 is required, and indicates the beginning of a TLV set.)		
001	Steve	001005Steve
003	Smith	003005Smith
“SENDER” TLV set		
000 (Tag 000 is required, and indicates the beginning of a TLV set.)	SENDER	000006SENDER
001	John	001004John
003	Jones	003005Jones
011	86532698507 (This is the Account Number)	01101186532698507
“TRAN_DATA” TLV set		
000 (Tag 000 is required, and indicates the beginning of a TLV set.)	TRAN_DATA	000009TRAN_DATA
001	02 (This is the Funding Source; in this case Debit)	00100202

TLV elements

As previously described, a TLV set consists of two or more TLV elements. A TLV element itself consists of three sub-elements:

- **Tag**—a 3-digit tag number such as 012 or 001 to describe the type of data. The tag has significance within the context of its parent TLV set. Thus, a tag 001 in a TRAN_DATA TLV set has a different meaning than 001 in a RECEIVER TLV set.
- **Length**—a 3-digit number representing the byte count for the value associated with the element
- **Value**—a variable alpha-numeric field

For example, the TLV element 003005Jones in the TLV set “SENDER” is parsed as follows:

- 003—identifies the element as a Last Name object (within the context of the SENDER set)
- 005—specifies that the length that follows (Jones) is 5 bytes
- Jones—provides the value for Last Name

The TLV tags of each TLV set are defined in the following [EPX TLV elements for MoneySend Funding/Payment transactions](#) section.

EPX TLV elements for MoneySend Funding/Payment transactions

This section provides the mandatory and optional EPX TLV elements to include with each MasterCard MoneySend Funding and Payment TLV set.

NOTE:

- TLV elements can be presented in any order within a TLV set.
- If the same TLV set tag is presented multiple times within the same TLV string, the last instance will be used.

TLV set - “RECEIVER”

IMPORTANT!

- The RECEIVER TLV set is mandatory for all MoneySend Payment and Funding transactions.

Table 1: TLV element properties for TLV set “RECEIVER”

TLV tag	TLV Data	TLV Max Length	Type	Funding	Payment
000	Always use the value “RECEIVER”	8	alpha	mandatory	mandatory
001	First Name	35	alphanumeric	optional	mandatory
002	Middle Name	1	alphanumeric	optional	optional
003	Last Name	35	alphanumeric	optional	mandatory
004	Street Address	50	alphanumeric	optional	optional
005	City	25	alphanumeric	optional	optional
006	State/Province Code	3	alphanumeric	optional	optional
007	Country (numeric ISO code)	3	numeric	optional	optional
008	Zip/Postal Code	10	alphanumeric	optional	optional

TLV tag	TLV Data	TLV Max Length	Type	Funding	Payment
009	Phone Number	20	numeric	optional	optional
010	Date of Birth	8	numeric	optional	optional
011	Account Number (Bank Account Number or Unique Identifier)	20	numeric	optional	optional
013	Identification Type Examples: 01 = Passport 03 = Government Issued *See Table 2 , page 10	2	numeric	optional	optional
014	Identification Number	25	alphanumeric	optional	optional
015	Identification Country Code (numeric ISO code)	3	numeric	optional	optional
016	Identification Expiration Data	8	numeric	optional	optional
017	Nationality	3	alphanumeric	optional	optional
018	Country of Birth (numeric ISO code)	3	numeric	optional	optional

Identification Type Codes

[Table 2](#) provides values for the Identification Type Codes (tag 013) for use with the "RECEIVER" and "SENDER" TLV sets.

Table 2: Identification Type Code values

Value	Definition
01	Passport
02	National Identification Card
03	Driver's License
04	Government Issued
05	Other

TLV set – “SENDER”

IMPORTANT!

- The SENDER TLV set is mandatory for all MoneySend Payment and Funding transactions.
- For any type of business disbursement transactions where an actual business is sending funds to a customer (cardholder) or another business, both the SENDER First Name (tlv tag '001') & Last Name (tlv tag '003') must contain the full business name. It is crucial that exact same business name is populated in both SENDER First Name & Last Name tlv tags. MasterCard has now mandated this requirement and failing to adhere to it can result in compliance ramifications.

Table 3: TLV element properties for TLV set “SENDER”

TLV tag	TLV Data	TLV Max Length	Type	Funding	Payment
000	Always use the value “SENDER”	6	alpha	mandatory	mandatory
001	First Name	35	alphanumeric	optional	mandatory
002	Middle Name	1	alphanumeric	optional	optional
003	Last Name	35	alphanumeric	optional	mandatory
004	Street Address	50	alphanumeric	optional	mandatory
005	City	25	alphanumeric	optional	mandatory
006	State/Province Code	3	alphanumeric	optional	mandatory
007	Country (numeric ISO code)	3	numeric	optional	optional
008	Zip/Postal Code	10	alphanumeric	optional	mandatory
009	Phone Number	20	numeric	optional	optional
010	Date of Birth	8	numeric	optional	optional
011	Account Number (Bank Account Number or Unique Identifier)	20	numeric	optional	mandatory
013	Identification Type Examples: 01 = Passport 03 = Government Issued *See Table 2 , page 10	2	numeric	optional	optional

TLV tag	TLV Data	TLV Max Length	Type	Funding	Payment
014	Identification Number	25	alphanumeric	optional	optional
015	Identification Country Code (numeric ISO code)	3	numeric	optional	optional
016	Identification Expiration Data	8	numeric	optional	optional
017	Nationality	3	alphanumeric	optional	optional
018	Country of Birth (numeric ISO code)	3	numeric	optional	optional

TLV set – “TRAN_DATA”

Table 4: TLV element properties for TLV set “TRAN_DATA”

TLV tag	TLV Data	TLV Max Length	Type	Funding	Payment
000	Always use the value “TRAN_DATA”	9	alpha	optional	mandatory
001	Funding Source Examples: 01 = Credit 02 = Debit *See Table 6 , page 13	2	alphanumeric	optional	mandatory
002	Additional Message	65	alphanumeric	optional	optional
003	Participant ID	30	alphanumeric	optional	optional
004	Transaction Purpose Examples: 01 = Family Support 03 = Travel & Tourism *See Table 5	2	numeric	optional	optional

Transaction Purpose

[Table 5](#) provides Transaction Purpose (tag 004) values for use with the “TRAN_DATA” TLV set.

Table 5: Transaction Purpose values

Value	Definition
01	Family Support

Value	Definition
02	Regular Labor Transfers (expatriates)
03	Travel & Tourism
04	Education
05	Hospitalization & Medical Treatment
06	Emergency Need
07	Savings
08	Gifts
09	Others

Funding Source Codes

Table 6 provides values for the Funding Source Codes (tag 001) for use with the “TRAN_DATA” TLV set.

Table 6: Funding Source Code values

Value	Definition
01	Credit (Non Visa)
02	Debit (Non Visa)
03	Prepaid (Non Visa)
04	Cash
05	DDA Account
06	Mobil Money Account

TLV set – “LANG_DATA”

Table 7: TLV element properties for TLV set “LANG_DATA”

TLV tag	TLV Data	TLV Max Length	Type	Funding	Payment
000	Always use the value “LANG_DATA”	9	alpha	optional	optional
001	Language Identification	3	alphanumeric	conditional	conditional
002	Language Data	100	alphanumeric	optional	optional

TLV set – “NETWORK”

NOTE: The NETWORK TLV set is reserved for internal MasterCard use to request additional network response elements.

If the NETWORK TLV set is included in the request, the response will contain:

- The System Trace Audit Number (STAN), if a value of “Y” is included with TLV tag 001 in the request. A STAN response is a maximum of 6 bytes, alphanumeric.
- The Retrieval Reference Number (RRN), if a value of “Y” is included with TLV tag 002 in the request. A RRN response is a maximum of 12 bytes, alphanumeric.

Table 8: TLV element properties for TLV set “NETWORK”

TLV tag	TLV Data	TLV Max Length	Type	Funding	Payment
000	Always use the value “NETWORK”	7	alpha	optional	optional
001	STAN (System Trace Audit Number) Always set to “Y” to receive a response	1	alphanumeric	optional	optional
002	RRN (Retrieval Reference Number) Always set to “Y” to receive a response	1	alphanumeric	optional	optional

Additional transaction values

Valid ACI_EXT values for MasterCard SMS

The ACI_EXT field is used to indicate the MasterCard SMS.

Table 9: ACI_EXT values for MasterCard SMS

Value	Description
C02	MasterCard Rebate
C03	rePower Load Value
C04	Gaming Re-pay
C07	General Person-to-Person
C51	MoneySend Funding/Payment Indicator (Reserved for Future Use)
C52	General Transfer to Own Account
C53	Agent Cash Out
C54	Payment of Own Credit Card Bill
C55	Business Disbursement
C56	Government/Non-Profit Disbursement
C57	Rapid Merchant Settlement
C58	MoneySend Cash2ATM (Usage limited to specific countries)
C59	MoneySend Cash2Card (Usage limited to specific countries)
C65	General Business to Business Transfer
C67	MasterCard Merchant Presented QR
C68	MasterCard Merchant Presented QR Refund Payment
C91	Utility Payments (for Brazil domestic use only)
C92	Government Services (for Brazil domestic use only)
C93	Mobile phone top-ups (for Brazil domestic use only)
C94	Coupon booklet payments (for Brazil domestic use only)
F07	General Person-to-Person Transfer
F08	Person-to-Person Transfer to Card Account
F52	General Transfer to Own Account
F53	Agent Cash Out
F54	Payment of Own Credit Card Bill

Value	Description
F55	Business Disbursement
F61	Transfer to Own Staged Digital Wallet Account
F64	Transfer to Own Debit or Prepaid Account
F65	General Business-to-Business Transfer
P01	MasterCard ATM Cash Pick-Up Transaction
P10	Installment-based repayment
P70	Cryptocurrency
P71	High-risk Securities

CARD_ID

The CARD_ID value should be present in all transactions to indicate whether the cardholder is present.

[Table 10](#) provides the CARD_ID values.

Table 10: CARD_ID values

Card ID	Types	Description
0	Funding / Payment	Cardholder Present
1	Funding / Payment	Cardholder Not Present
M	Funding / Payment	Cardholder Present (card not readable)