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# ***dsiEMVUS***

## ***EMV Programming Interface Specification***

***V02.09***

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## 1.0 Introduction

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dsiEMVX is a Windows ActiveX control that provides applications with the ability to process an EMV (chip card) electronic payment in a multi-tiered client-server architecture. Applications integrated with dsiEMVX act as a client to Datacap's U.S. EMV certified NETePay payment servers to process payments.

The dsiEMVX software is designed to communicate exclusively with Datacap's in-store NETePay server products using Internet Protocol (IP). Messages exchanged between the dsiEMVX and the servers are encrypted for secure transmission over open networks (such as the Internet). This secure communications architecture provides the flexibility to configure systems using LAN and/or WAN networks.

Datacap servers are available for in-store or enterprise configurations and are designed to communicate with specific payment systems providers.

dsiEMVX does not use any storage on the client machine; the Datacap servers provide consolidated transaction data storage, logging and data management functions.

dsiEMVX directly controls an approved EMV PIN pad on a PC port (RS232 or USB Virtual COM port) to manage all PIN pad interactions.

The dsiEMVX control uses XML formatted requests and responses for transaction processing requests.

## 2.0 EMV Supported Transactions Summary

The following transaction codes <TranCode> are supported in dsiEMVX:

### **Transaction**

<b>EMVPadReset</b>	This command must be performed before every transaction (Sale, VoidSale, Return, VoidReturn, VoiceAuth and ZeroAuth) to assure that no card is in the PIN pad chip reader before starting a transaction. If no card is in the reader, then a response should be returned with 2-3 seconds. If there's a card in the reader, the PIN pad displays 'Remove Card' and waits for the card to be removed before returning a response; another EMVPadReset should then be issued.
<b>EMVSale</b>	EMV Sale transaction – credit or debit
<b>EMVVoidSale</b>	Void of a previously completed EMV Sale transaction – credit
<b>VoidSaleByRecordNo</b>	Void of a previously completed EMV Sale transaction using transaction reference identifier(s) – credit
<b>EMVReturn</b>	EMV Return transaction – credit or debit
<b>EMVVoidReturn</b>	Void of a previously completed EMV Return transaction – credit
<b>VoidReturnByRecordNo</b>	Void of a previously completed EMV Return transaction using transaction reference identifier(s) – credit
<b>EMVVoiceAuth</b>	Capture a transaction that was authorized by voice into the current batch
<b>EMVZeroAuth</b>	To verify a card is valid without charging any amount.
<b>AdjustByRecordNo</b>	To adjust the gratuity amount on a previously processed EMVSale or EMVVoiceAuth transaction.

### **Admin**

<b>EMVParamDownload</b>	This command loads essential parameter and security information into the EMV PIN pad. This command must be performed as requested by the payment service provider OR when a pad is replaced OR new PIN pad installation
<b>ServerVersion</b>	Reports the NETePay server version with which the dsiEMVX is communicating
<b>BatchSummary</b>	Retrieves current batch summary information (overall counts and net amount; optionally totals by card type)
<b>BatchClose</b>	To close the currently open batch

## 2.1 Supported EMV PIN Pad Devices (SecureDevice)

---

The following approved EMV PIN pads are supported by dsiEMVX. The particular PIN pad depends on the payment processor. The following tables lists the **<SecureDevice>** value to be included in a transaction:

Device/Payment Processing Provider	<SecureDevice> Value
Verifone Vx805 for Paymentech	EMV_VX805_PAYMENTECH
Verifone Vx805 for Mercury	EMV_VX805_MERCURY
Verifone Vx805 for Vantiv	EMV_VX805_VANTIV
Verifone Vx805 for TSYS	EMV_VX805_TSYS
Verifone Vx805 for FDMS Rapid Connect	EMV_VX805_RAPIDCON
Verifone Vx805 for Heartland	EMV_VX805_HEARTLAND
Verifone Vx805 for Global Payments	EMV_VX805_GLOBAL
Verifone Vx805 for WorldPay	EMV_VX805_WORLDPAY

The EMV PIN pads supported by dsiEMVX can be determined by performing the **GetDevicesInfo** method available in dsiEMVX. See section 6.2 for details on **GetDevicesInfo**.

### 3.0 EMV Transaction Request XML Definitions

#### 3.1 EMVPadReset

**Use:** To reset and ready the EMV PIN pad device for a new transaction.

**Notes:** 1. This command must be performed before every transaction (Sale, VoidSale, Return, VoidReturn, VoiceAuth and ZeroAuth) to assure that no card is in the EMV PIN pad chip card (insertion) reader before starting a new transaction. This command should also be performed at the end of any card related transaction (Sale, VoidSale, Return, VoidReturn, VoiceAuth and ZeroAuth) to assure that the user is prompted to remove their card. If no EMV chip card is inserted in the reader, then an EMVPadReset will return a successful response in one second. If there's an EMV chip card in the reader, then the EMVPadReset command will wait up to 15 seconds for removal. If the card is removed within that timeframe, then a successful response is returned when the card is removed. If the chip card remains in the reader after 15 seconds, an error response is returned "TRANSACTION NOT COMPLETE - Card Not Removed".

2. Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

**XML Template: EMVPadReset**

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <Tran Code>EMVPadReset</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <SequenceNo>SequenceNo</SequenceNo>
  </Transaction>
</TStream>
```

Element	Req	Min	Max	Type	Description/Value
HostOrIP	Y	7	128	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	Y	1	24	A	Merchant identification assigned by processor.
TerminalID	Y	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	24	A	Operator (clerk, server, etc.) associated with the transaction.

UserTrace	O	1	24	A	A unique value created and supplied by POS system.
TranCode	Y	1	40	A	"EMVPadReset"
SecureDevice	Y	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	Y	1	3	N	COM (Serial) port number to which an EMV approved PIN pad is attached (1-255).
SequenceNo	Y	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.

Legend:           A     Alphanumeric           N     Numeric  
                  O     Optional                R     Required

### Sample Request for EMVPadReset

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>001</TerminalID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranCode>EMVPadReset</TranCode>
    <SecureDevice>EMV_VX805_PAYMTECH</SecureDevice>
    <ComPort>1</ComPort>
    <SequenceNo>0010010010</SequenceNo>
  </Transaction>
</TStream>
```

### Sample Response for EMVPadReset

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Client</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Success</CmdStatus>
    <TextResponse>Reset Successful.</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
</RStream>
```

## 3.2 EMVSale

---

**Use:** To process a payment using EMV capable equipment. Credit and Debit transactions with chip, MSR and manually input account information are supported.

**Notes:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic EMVSale transaction. See the following XML element table for use of both required and optional fields.

### Functional Option Tags for EMVSale:

1. Cash Back - (Tag: <CashBack>) – Allows a cardholder to request cash back in addition to payment for the transaction. Debit and certain credit card allow cash back.
2. Gratuity Entry - (Tag: <Gratuity>) – Allows a cardholder to specify a tip for a transaction in addition to a base transaction amount. Usually used by restaurant and service merchants.
3. Token Request - (Tags: <RecordNo> and <Frequency>) – Used to request an optional unique transaction identifier (token) to be assigned by the payment processor and returned in the transaction response. This token value is supplied to a subsequent **AdjustByRecordNo** transaction request to alter the amounts on the original transaction without possession of the card (e.g. for tip entry). *Note* that not all processors support token issuance or subsequent use *and* that only cards that don't require a PIN entry during the EMVSale will be able to request a token.

XML Template: **EMVSale**

XML Request Template:

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranCode>EMVSale</TranCode>
    <CollectData>CardholderName</CollectData>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <Account>
      <AcctNo>AcctNo</AcctNo>
    </Account>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <RefNo>RefNo</RefNo>
    <Amount>
      <Purchase>Purchase</Purchase>
      <Gratuity>Gratuity</Gratuity>
      <CashBack>CashBack</CashBack>
    </Amount>
    <LaneID>LaneID</LaneID>
    <Duplicate>Duplicate</Duplicate>
    <SequenceNo>SequenceNo</SequenceNo>
    <PartialAuth>PartialAuth</PartialAuth>
    <RecordNo>RecordNumberRequested</RecordNo>
    <Frequency>Frequency</Frequency>
  </Transaction>
</TStream>
```

Element	Req	Min	Max	Type	Description/Value
HostOrIP	R	7	128	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	24	A	Operator (clerk, server, etc.) associated with the transaction.
UserTrace	O	1	24	A	A unique value created and supplied by POS system.
TranCode	R	1	40	A	"EMVSale"
CollectData	O	1	40	A	"CardholderName" – To optionally extract the cardholder name from the card. If name is available, it will be returned in the <CardholderName> tag in the response and the name will be included in the draft print output.
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
Account:AcctNo	O	1	24	A	When the optional Account tag is included with the value "Prompt", the PIN pad will prompt operator for manual input of account number and expiration date.  <i>See Implementation Note 2.</i>
InvoiceNo	R	1	24	A	Invoice number - sequential receipt number, check number, or other unique transaction identifier created and supplied by POS system.
RefNo	R	1	24	A	Use the same data as InvoiceNo
Amount:Purchase	R	1	8	N	Purchase amount (with 2 place decimal – eg. 29.95)
Amount:Gratuity	O	1	8	N	Gratuity amount (with 2 place decimal – eg. 29.95) OR "Prompt" (which will cause the PIN pad to prompt the cardholder to input the gratuity amount)
Amount:CashBack	O	1	8	N	CashBack amount (with 2 place decimal – eg. 29.95) OR "Prompt" (which will cause the PIN pad to prompt the cardholder to input the cash back amount)
LaneID	O	1	8	N	A unique LaneID (lane number) can be supplied to identify each POS/ECR in a single store location with multiple payment points
Duplicate	O	1	24	A	"None" OR "Override" ( <i>See Implementation Note 1</i> )
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
PartialAuth	R	1	20	A	"Allow"
RecordNo	O	1	40	A	To obtain a token from the payment processor for

					subsequent use in AdjustByRecordNo transaction. Use the value "RecordNumberRequested". Omit this tag if a token is not required.
Frequency	O	1	40	A	To request a token that can be used only in other transactions in the current batch, use the value "OneTime". To request a token that can be used more than once in other transactions in the current or subsequent batches, use the value "Recurring". Omit this tag if <RecordNo> tag is not supplied.

Legend:      A      Alphanumeric      N      Numeric  
                  O      Optional                    R      Required

**Sample Request for EMVSale**

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranCode>EMVSale</TranCode>
    <SecureDevice>EMV_VX805_PAYMENTECH</SecureDevice>
    <ComPort>1</ComPort>
    <InvoiceNo>0003</InvoiceNo>
    <RefNo>0003</RefNo>
    <Amount>
      <Purchase>6.00</Purchase>
    </Amount>
    <SequenceNo>0010010010</SequenceNo>
  </Transaction>
</TStream>
```

**Sample Response for EMVSale**

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Approved</CmdStatus>
    <TextResponse>APPROVED</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <TranResponse>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <AcctNo>*****0119</AcctNo>
    <CardType>VISA</CardType>
    <TranCode>EMVSale</TranCode>
    <AuthCode>036556</AuthCode>
    <CaptureStatus>Captured</CaptureStatus>
    <RefNo>00000001</RefNo>
    <InvoiceNo>0003</InvoiceNo>
    <OperatorID>TEST</OperatorID>
    <Amount>
      <Purchase>6.00</Purchase>
      <Authorize>6.00</Authorize>
    </Amount>
    <AcqRefData>T305187511660041CPRL00599905 |N|6.00|RN101436191862</AcqRefData>
    <EntryMethod>CHIP</EntryMethod>
    <Date>07/06/2015</Date>
    <Time>10:12:38</Time>
```

```

<ApplicationLabel>Visa Credit</ApplicationLabel>
<AID>A0000000031010</AID>
<TVR>8000008000</TVR>
<IAD>06010A03602000</IAD>
<TSI>6800</TSI>
<ARC>00</ARC>
<CVM>SIGN</CVM>
</TranResponse>
<PrintData>
  <Line1>.MERCHANT ID: 700000000245</Line1>
  <Line2>.TERMINAL ID: 002</Line2>
  <Line3>.CLERK ID: TEST</Line3>
  <Line4>.</Line4>
  <Line5>.                               SALE                               </Line5>
  <Line6>.</Line6>
  <Line7>.******0119</Line7>
  <Line8>.VISA                               ENTRY METHOD: CHIP</Line8>
  <Line9>.DATE: 07/06/2015   TIME: 10:12:38</Line9>
  <Line10>.</Line10>
  <Line11>.INVOICE: 0003</Line11>
  <Line12>.REFERENCE: 00000001</Line12>
  <Line13>.AUTH CODE: 036556</Line13>
  <Line14>.</Line14>
  <Line15>.AMOUNT                               USD$ 6.00</Line15>
  <Line16>.                               =====</Line16>
  <Line17>.TOTAL                               USD$ 6.00</Line17>
  <Line18>.</Line18>
  <Line19>.           APPROVED - THANK YOU           </Line19>
  <Line20>.</Line20>
  <Line21>.I AGREE TO PAY THE ABOVE TOTAL AMOUNT</Line21>
  <Line22>.ACCORDING TO CARD ISSUER AGREEMENT</Line22>
  <Line23>.(MERCHANT AGREEMENT IF CREDIT VOUCHER)</Line23>
  <Line24>.</Line24>
  <Line25>.</Line25>
  <Line26>.</Line26>
  <Line27>.x                               </Line27>
  <Line28>.           Cardholder Signature           </Line28>
  <Line29>.</Line29>
  <Line30>.</Line30>
  <Line31>.Application Label: Visa Credit</Line31>
  <Line32>.AID: A0000000031010</Line32>
  <Line33>.TVR: 8000008000</Line33>
  <Line34>.IAD: 06010A03602000</Line34>
  <Line35>.TSI: 6800</Line35>
  <Line36>.ARC: 00</Line36>
  <Line37>.CVM: SIGN</Line37>
</PrintData>
</RStream>

```

### Implementation Notes:

1. The <Duplicate> tag is not supported by all EMV processing providers. In the event that a duplicate response is received for a request (<TextResponse> = "AP\_DUPE"), using a value of "Override" for the <Duplicate> tag on a subsequent attempt will force the processing host to skip duplicate checking and therefore approve what appears to be a duplicate transaction. This is useful in cases where multiple transactions of the same amount to the same card within a short time period are necessary. Do not send the "Override" value unless the previous transaction attempt resulted in a duplicate response otherwise the processing host will return <TextResponse> = "NO\_DUPE\_FOUND".
2. Manual card account entry with the <AcctNo> tag should only be used if the PIN pad insertion reader fails to get card account information on the first transaction attempt. The POS logic should allow the transaction to be run again with the <AcctNo> tag included to force a manual entry of card account information.
3. For draft printing options and instructions, see Section 6.2

### 3.3 EMVVoidSale

**Use:** Void of a previously completed EMVSale transaction – credit.

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

**XML Template: EMVVoidSale**

**XML Request Template:**

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranCode>EMVVoidSale</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <Account>
      <AcctNo>AcctNo</AcctNo>
    </Account>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <RefNo>RefNo</RefNo>
    <AuthCode>AuthCode</AuthCode>
    <Amount>
      <Purchase>Purchase</Purchase>
      <Gratuity>Gratuity</Gratuity>
      <CashBack>CashBack</CashBack>
    </Amount>
    <LaneID>LaneID</LaneID>
    <SequenceNo>SequenceNo</SequenceNo>
    <AcqRefData>AcqRefData</AcqRefData>
    <ProcessData>ProcessData</ProcessData>
  </Transaction>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	128	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.

OperatorID	O	1	24	A	Operator (clerk, server, etc.) associated with the transaction.
UserTrace	O	1	24	A	A unique value created and supplied by POS system.
TranCode	R	1	40	A	"EMVVoidSale"
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
Account:AcctNo	O	1	24	A	When the optional Account tag is included with the value "Prompt", the PIN pad will prompt operator for manual input of account number and expiration date. <i>See Implementation Note 1.</i>
InvoiceNo	R	1	24	A	Invoice number - sequential receipt number, check number, or other unique transaction identifier created and supplied by POS system.
RefNo	R	1	24	A	Use the <RefNo> value obtained in the response to a previous EMVSale transaction to be voided.
AuthCode	R	1	24	A	The value of <AuthCode> returned in the response to the EMVSale to be voided.
Amount:Purchase	R	1	8	N	Purchase price (with 2 place decimal – eg. 29.95)
Amount:Gratuity	O	1	8	N	Gratuity Amount (with 2 place decimal – eg. 29.95)
Amount:CashBack	O	1	8	N	CashBack amount (with 2 place decimal – eg. 29.95)
LaneID	O	1	8	N	A unique LaneID (lane number) can be supplied to identify each POS/ECR in a single store location with multiple payment points
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
AcqRefData	R	1	40	A	Use the <AcqRefData> value obtained in the response to a previous EMVSale transaction to be voided.
ProcessData	R	1	40	A	Use the <ProcessData> value returned in the response to a previous EMVSale, EMVReturn or ZeroAuth transaction. Omit this tag if no <ProcessData> was returned in the response.

Legend:      A      Alphanumeric      N      Numeric  
                  O      Optional                    R      Required

**Sample Request for EMVVoidSale**

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranCode>EMVVoidSale</TranCode>
    <SecureDevice>EMV_VX805_PAYMENTTECH</SecureDevice>
    <ComPort>1</ComPort>
```

```
<InvoiceNo>00000001</InvoiceNo>
<RefNo>00000001</RefNo>
<AuthCode>036556</AuthCode>
<Amount>
  <Purchase>6.00</Purchase>
</Amount>
<SequenceNo>0010010010</SequenceNo>
<AcqRefData>T305187511660041CPRL00599905 ||N|6.00|RN101436191862</AcqRefData>
</Transaction>
</TStream>
```

**Implementation Notes:**

1. Manual card account entry with the <AcctNo> tag should only be used if the PIN pad insertion reader fails to get card account information on the first transaction attempt. The POS logic should allow the transaction to be run again with the <AcctNo> tag included to force a manual entry of card account information.

**Sample Response for EMVVoidSale**

```

<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Approved</CmdStatus>
    <TextResponse>APPROVED</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <TranResponse>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <AcctNo>*****0119</AcctNo>
    <CardType>VISA</CardType>
    <TranCode>EMVVoidSale</TranCode>
    <AuthCode>036556</AuthCode>
    <CaptureStatus>Captured</CaptureStatus>
    <RefNo>00000002</RefNo>
    <InvoiceNo>00000001</InvoiceNo>
    <OperatorID>TEST</OperatorID>
    <Amount>
      <Purchase>6.00</Purchase>
      <Authorize>6.00</Authorize>
    </Amount>
    <AcqRefData>T305187511660041 00599905N|N|6.00|RN101436191862</AcqRefData>
    <EntryMethod>CHIP</EntryMethod>
    <Date>07/06/2015</Date>
    <Time>10:13:02</Time>
    <ApplicationLabel>Visa Credit</ApplicationLabel>
    <AID>A0000000031010</AID>
    <TVR>8000008000</TVR>
    <IAD>06010A03802000</IAD>
    <TSI>2800</TSI>
    <CVM>SIGN</CVM>
  </TranResponse>
  <PrintData>
    <Line1>.MERCHANT ID: 700000000245</Line1>
    <Line2>.TERMINAL ID: 002</Line2>
    <Line3>.CLERK ID: TEST</Line3>
    <Line4>.</Line4>
    <Line5>. VOID SALE </Line5>
    <Line6>.</Line6>
    <Line7>.*****0119</Line7>
    <Line8>.VISA ENTRY METHOD: CHIP</Line8>
    <Line9>.DATE: 07/06/2015 TIME: 10:13:02</Line9>
    <Line10>.</Line10>
    <Line11>.INVOICE: 00000001</Line11>
    <Line12>.REFERENCE: 00000002</Line12>
    <Line13>.AUTH CODE: 036556</Line13>
    <Line14>.</Line14>
    <Line15>.AMOUNT USD$ 6.00</Line15>
    <Line16>. =====</Line16>
    <Line17>.TOTAL USD$ 6.00</Line17>
    <Line18>.</Line18>
    <Line19>. APPROVED - THANK YOU </Line19>
    <Line20>.</Line20>
    <Line21>.I AGREE TO PAY THE ABOVE TOTAL AMOUNT</Line21>
    <Line22>.ACCORDING TO CARD ISSUER AGREEMENT</Line22>
    <Line23>.(MERCHANT AGREEMENT IF CREDIT VOUCHER)</Line23>
    <Line24>.</Line24>
    <Line25>.</Line25>
    <Line26>.</Line26>
    <Line27>.x </Line27>
    <Line28>. Merchant Signature </Line28>
    <Line29>.</Line29>
    <Line30>.</Line30>
    <Line31>.Application Label: Visa Credit</Line31>
    <Line32>.AID: A0000000031010</Line32>
    <Line33>.TVR: 8000008000</Line33>
    <Line34>.IAD: 06010A03802000</Line34>
    <Line35>.TSI: 2800</Line35>
  </PrintData>
</RStream>

```

```
<Line36>.CVM: SIGN</Line36>  
</PrintData>  
</RStream>
```

**Notes:**

1. For draft printing options and instructions, see Section 6.2

### 3.4 VoidSaleByRecordNo

**Use:** To void a previously processed EMVSale transaction without a card present – credit.

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

XML Template: **VoidSaleByRecordNo**

XML Request Template:

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranType>TranType</TranType>
    <TranCode>VoidSaleByRecordNo</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <RefNo>RefNo</RefNo>
    <AuthCode>AuthCode</AuthCode>
    <Amount>
      <Purchase>Purchase</Purchase>
      <Gratuity>Gratuity</Gratuity>
      <CashBack>CashBack</CashBack>
    </Amount>
    <SequenceNo>SequenceNo</SequenceNo>
    <PartialAuth>PartialAuth</PartialAuth>
    <RecordNo>RecordNo</RecordNo>
    <Frequency>Frequency</Frequency>
    <AcqRefData>AcqRefData</AcqRefData>
    <ProcessData>ProcessData</ProcessData>
  </Transaction>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	128	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	24	A	Operator (clerk, server, etc.) associated with the transaction.

UserTrace	O	1	24	A	A unique value created and supplied by POS system.
TranCode	R	1	40	A	"VoidSaleByRecordNo"
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
InvoiceNo	R	1	24	A	Invoice number - sequential receipt number, check number, or other unique transaction identifier created and supplied by POS system.
RefNo	R	1	24	A	Use the <RefNo> value obtained in the response to a previous EMVSale, EMVReturn or EMVVoiceAuth transaction to be voided.
AuthCode	R	1	24	A	The authorization code obtained in the response to the EMVSale transaction to be adjusted.
Amount:Purchase	R	1	8	N	Purchase amount supplied in original transaction (with 2 place decimal – eg. 29.95)
Amount:Gratuity	R	1	8	N	Gratuity amount supplied in original transaction (with 2 place decimal – eg. 29.95)
Amount:CashBack	O	1	8	N	CashBack amount supplied in original transaction (with 2 place decimal – eg. 29.95)
LaneID	O	1	8	N	A unique LaneID (lane number) can be supplied to identify each POS/ECR in a single store location with multiple payment points
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
PartialAuth	R	1	20	A	"Allow"
RecordNo	R	1	40	A	Use the <RecordNo> value obtained in the response to a previous EMVSale transaction that included a token request.
Frequency	R	1	40	A	"OneTime"
AcqRefData	R	1	40	A	Use the <AcqRefData> value obtained in the response to a previous EMVSale transaction.
ProcessData	R	1	40	A	Use the <ProcessData> value obtained in the response to a previous EMVSale transaction. Omit this tag if no <ProcessData> was returned in the response.

Legend:      A      Alphanumeric      N      Numeric  
                  O      Optional                    R      Required

**Sample VoidSaleByRecordNo Request**

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>88430043857</MerchantID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
```

```

    <TranType>Credit</TranType>
    <TranCode>VoidSaleByRecordNo</TranCode>
    <SecureDevice>EMV_VX805_MERCURY</SecureDevice>
    <ComPort>1</ComPort>
    <InvoiceNo>0001</InvoiceNo>
    <RefNo>0001</RefNo>
    <AuthCode>00157A</AuthCode>
    <Amount>
      <Purchase>5.00</Purchase>
    </Amount>
    <SequenceNo>0010010010</SequenceNo>
    <RecordNo>Ldi2SlrjoBCvOUknCWum5N+0hKc5RMtPMhIFEASNAQA==</RecordNo>
    <Frequency>OneTime</Frequency>
    <AcqRefData>aAb314282069480098c1234d e000</AcqRefData>
    <ProcessData>|00|210100200000</ProcessData>
  </Transaction>
</TStream>

```

### Sample VoidSaleByRecordNo Response

```

<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Approved</CmdStatus>
    <TextResponse>REVERSED</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <TranResponse>
    <MerchantID>88430043857</MerchantID>
    <AcctNo>400300XXXXXX6781</AcctNo>
    <ExpDate>XXXX</ExpDate>
    <CardType>VISA</CardType>
    <TranCode>VoidSale</TranCode>
    <AuthCode>00157A</AuthCode>
    <CaptureStatus>Captured</CaptureStatus>
    <RefNo>0001</RefNo>
    <InvoiceNo>0001</InvoiceNo>
    <OperatorID>TEST</OperatorID>
    <Amount>
      <Purchase>5.00</Purchase>
      <Authorize>5.00</Authorize>
    </Amount>
    <AcqRefData>K</AcqRefData>
    <RecordNo>zIz3rxusIJZnRo8Ziv+z1sZsr58s/J51MhIFEASNAQAQ==</RecordNo>
    <ProcessData>|3|210100600000</ProcessData>
  </TranResponse>
</RStream>

```

#### Notes:

1. Draft printing is not required for VoidSaleByRecordNo transactions.

### 3.5 EMVReturn

---

**Use:** To process a return (refund) using EMV capable equipment. Credit and Debit transactions with chip, MSR and manually input account information are supported.

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

**XML Template: EMVReturn**

**Functional Options for EMVReturn:**

1. Token Request - (Tags: <RecordNo> and <Frequency>) – Used to request an optional unique transaction identifier (token) to be assigned by the payment processor and returned in the transaction response. This token value is supplied to a subsequent **AdjustByRecordNo** transaction request to alter the amounts on the original transaction without possession of the card (e.g. for tip entry). *Note* that not all processors support token issuance or subsequent use *and* that only cards that don't require a PIN entry during the EMVReturn will be able to request a token.

**XML Request Template:**

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranCode>EMVReturn</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <Account>
      <AcctNo>AcctNo</AcctNo>
    </Account>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <RefNo>RefNo</RefNo>
    <Amount>
      <Purchase>Purchase</Purchase>
    </Amount>
    <Duplicate>Duplicate</Duplicate>
    <SequenceNo>SequenceNo</SequenceNo>
    <RecordNo>RecordNumberRequested</RecordNo>
    <Frequency>Frequency</Frequency>
  </Transaction>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	128	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	24	A	Operator (clerk, server, etc.) associated with the transaction.
UserTrace	O	1	24	A	A unique value created and supplied by POS system.
TranCode	R	1	40	A	"EMVReturn"
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
Account:AcctNo	o	1	24	A	"Prompt" – When the optional Account tag is included with the value Prompt, the PIN pad will prompt the operator for manual input of account number and expiration date from the card.
InvoiceNo	R	1	24	A	Invoice number - sequential receipt number, check number, or other unique transaction identifier created and supplied by POS system.
RefNo	R	1	24	A	Use the same data as InvoiceNo
Amount:Purchase	R	1	8	N	Purchase price (with 2 place decimal – eg. 29.95)
LaneID	O	1	8	N	A unique LaneID (lane number) can be supplied to identify each POS/ECR in a single store location with multiple payment points
Duplicate	O	1	24	A	"None" OR "Override" (See implementation note 1)
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
RecordNo	O	1	40	A	To obtain a token from the payment processor for subsequent use in AdjustByRecordNo transaction. Use the value "RecordNumberRequested".
Frequency	O	1	40	A	"OneTime"

Legend:      A      Alphanumeric      N      Numeric  
                   O      Optional                R      Required

### Sample EMV Return Request

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranCode>EMVReturn</TranCode>
    <SecureDevice>EMV_VX805_PAYMENTECH</SecureDevice>
    <ComPort>1</ComPort>
    <InvoiceNo>000003</InvoiceNo>
    <RefNo>000003</RefNo>
    <Amount>
      <Purchase>7.00</Purchase>
    </Amount>
    <SequenceNo>0010010010</SequenceNo>
  </Transaction>
</TStream>
```

### Sample EMV Return Response

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Approved</CmdStatus>
    <TextResponse>APPROVED</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <TranResponse>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <AcctNo>*****4111</AcctNo>
    <CardType>M/C</CardType>
    <TranCode>EMVReturn</TranCode>
    <AuthCode>_____</AuthCode>
    <CaptureStatus>Captured</CaptureStatus>
    <RefNo>00000003</RefNo>
    <InvoiceNo>000003</InvoiceNo>
    <OperatorID>TEST</OperatorID>
    <Amount>
      <Purchase>7.00</Purchase>
      <Authorize>7.00</Authorize>
    </Amount>
    <AcqRefData>||N|7.00|RN101436191863</AcqRefData>
    <EntryMethod>CHIP</EntryMethod>
    <Date>07/06/2015</Date>
    <Time>10:13:41</Time>
    <ApplicationLabel>MasterCardCredit</ApplicationLabel>
    <AID>A0000000041010</AID>
    <TVR>0000008000</TVR>
    <IAD>0110808003220000E1FC0000000000000F</IAD>
    <TSI>A800</TSI>
    <CVM>SIGN</CVM>
  </TranResponse>
  <PrintData>
    <Line1>.MERCHANT ID: 700000000245</Line1>
    <Line2>.TERMINAL ID: 002</Line2>
    <Line3>.CLERK ID: TEST</Line3>
    <Line4>.</Line4>
    <Line5>. REFUND </Line5>
    <Line6>.</Line6>
    <Line7>*****4111</Line7>
    <Line8>.MASTERCARD ENTRY METHOD: CHIP</Line8>
```

```

<Line9>.DATE: 07/06/2015  TIME: 10:13:41</Line9>
<Line10>.</Line10>
<Line11>.INVOICE: 000003</Line11>
<Line12>.REFERENCE: 00000003</Line12>
<Line13>.AUTH CODE: _____</Line13>
<Line14>.</Line14>
<Line15>.AMOUNT                                USD$ 7.00</Line15>
<Line16>.</Line16>                                =====</Line16>
<Line17>.TOTAL                                USD$ 7.00</Line17>
<Line18>.</Line18>
<Line19>.</Line19>          APPROVED - THANK YOU          </Line19>
<Line20>.</Line20>
<Line21>.I AGREE TO PAY THE ABOVE TOTAL AMOUNT</Line21>
<Line22>.ACCORDING TO CARD ISSUER AGREEMENT</Line22>
<Line23>.(MERCHANT AGREEMENT IF CREDIT VOUCHER)</Line23>
<Line24>.</Line24>
<Line25>.</Line25>
<Line26>.</Line26>
<Line27>.</Line27>          _____          </Line27>
<Line28>.</Line28>          Merchant Signature          </Line28>
<Line29>.</Line29>
<Line30>.</Line30>
<Line31>.Application Label: MasterCardCredit</Line31>
<Line32>.AID: A0000000041010</Line32>
<Line33>.TVR: 000008000</Line33>
<Line34>.IAD: 0110808003220000E1FC00000000000000F</Line34>
<Line35>.TSI: A800</Line35>
<Line36>.CVM: SIGN</Line36>
</PrintData>
</RStream>

```

**Implementation Notes:**

1. The Duplicate tag is not supported by all EMV processing providers. In the event that a duplicate response is received for a request (<TextResponse = "AP\_DUPE"), using a value of "Override" for the Duplicate tag on a subsequent attempt will force the processing host to skip duplicate checking and therefore approve what appears to be a duplicate transaction. This is useful in cases where multiple transactions of the same amount to the same card within a short time period are necessary. Do not send the "Override" value unless the previous transaction attempt resulted in a duplicate response otherwise the processing host will return <TextResponse> = "NO\_DUPE\_FOUND".
2. For draft printing options and instructions, see Section 6.2

### 3.6 EMVVoidReturn

**Use:** Void of a previously completed EMVReturn transaction – credit.

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

**XML Template: EMVVoidReturn**

**XML Request Template:**

```

<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranCode>EMVVoidReturn</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <Account>
      <AcctNo>AcctNo</AcctNo>
    </Account>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <RefNo>RefNo</RefNo>
    <AuthCode>AuthCode</AuthCode>
    <Amount>
      <Purchase>Purchase</Purchase>
    </Amount>
    <SequenceNo>SequenceNo</SequenceNo>
    <AcqRefData>AcqRefData</AcqRefData>
    <ProcessData>ProcessData</ProcessData>
  </Transaction>
</TStream>

```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	128	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	24	A	Operator (clerk, server, etc.) associated with the transaction.
UserTrace	O	1	24	A	A unique value created and supplied by POS system.
TranCode	R	1	40	A	"EMVVoidReturn"

SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
Account:AcctNo	O	1	24	A	When the optional Account tag is included with the value "Prompt", the PIN pad will prompt operator for manual input of account number and expiration date. <i>See Implementation Note 1.</i>
InvoiceNo	R	1	24	A	Invoice number - sequential receipt number, check number, or other unique transaction identifier created and supplied by POS system.
RefNo	R	1	24	A	Use the <RefNo> value obtained in the response to a previous EMVReturn transaction to be voided.
AuthCode	R	1	24	A	The value of <AuthCode> returned in the response to the EMVReturn to be voided.
Amount:Purchase	R	1	8	N	Purchase price (with 2 place decimal – eg. 29.95)
LaneID	O	1	8	N	A unique LaneID (lane number) can be supplied to identify each POS/ECR in a single store location with multiple payment points
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
AcqRefData	R	1	40	A	Use the <AcqRefData> value obtained in the response to a previous EMVReturn transaction to be voided.
ProcessData	R	1	40	A	Use the <ProcessData> value returned in the response to a previous EMVSale, EMVReturn or ZeroAuth transaction. Omit this tag if no <ProcessData> was returned in the response.

Legend:      A      Alphanumeric      N      Numeric  
                  O      Optional                R      Required

### Sample EMVVoidReturn Request

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranCode>EMVVoidReturn</TranCode>
    <SecureDevice>EMV_VX805_PAYMENTTECH</SecureDevice>
    <ComPort>1</ComPort>
    <InvoiceNo>00000003</InvoiceNo>
    <RefNo>00000003</RefNo>
    <AuthCode>_____</AuthCode>
    <Amount>
      <Purchase>7.00</Purchase>
    </Amount>
    <SequenceNo>0010010010</SequenceNo>
    <AcqRefData>|N|7.00|RN101436191863</AcqRefData>
  </Transaction>
</TStream>
```

## Sample EMVVoidReturn Response

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Approved</CmdStatus>
    <TextResponse>APPROVED</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <TranResponse>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <AcctNo>*****4111</AcctNo>
    <CardType>M/C</CardType>
    <TranCode>EMVVoidReturn</TranCode>
    <AuthCode>_____</AuthCode>
    <CaptureStatus>Captured</CaptureStatus>
    <RefNo>00000004</RefNo>
    <InvoiceNo>00000003</InvoiceNo>
    <OperatorID>TEST</OperatorID>
    <Amount>
      <Purchase>7.00</Purchase>
      <Authorize>7.00</Authorize>
    </Amount>
    <AcqRefData>|N|7.00|RN101436191863</AcqRefData>
    <EntryMethod>CHIP</EntryMethod>
    <Date>07/06/2015</Date>
    <Time>10:14:03</Time>
    <ApplicationLabel>MasterCardCredit</ApplicationLabel>
    <AID>A000000041010</AID>
    <TVR>0000008000</TVR>
    <IAD>0110808003220000FF0500000000000000F</IAD>
    <TSI>A800</TSI>
    <CVM>SIGN</CVM>
  </TranResponse>
  <PrintData>
    <Line1>.MERCHANT ID: 700000000245</Line1>
    <Line2>.TERMINAL ID: 002</Line2>
    <Line3>.CLERK ID: TEST</Line3>
    <Line4>.</Line4>
    <Line5>.                VOID REFUND                </Line5>
    <Line6>.</Line6>
    <Line7>.*****4111</Line7>
    <Line8>.MASTERCARD                ENTRY METHOD: CHIP</Line8>
    <Line9>.DATE: 07/06/2015  TIME: 10:14:03</Line9>
    <Line10>.</Line10>
    <Line11>.INVOICE: 00000003</Line11>
    <Line12>.REFERENCE: 00000004</Line12>
    <Line13>.AUTH CODE: _____</Line13>
    <Line14>.</Line14>
    <Line15>.AMOUNT                USD$ 7.00</Line15>
    <Line16>.</Line16>
    <Line17>.TOTAL                USD$ 7.00</Line17>
    <Line18>.</Line18>
    <Line19>.</Line19>
    <Line20>.                APPROVED - THANK YOU                </Line20>
    <Line21>.I AGREE TO PAY THE ABOVE TOTAL AMOUNT</Line21>
    <Line22>.ACCORDING TO CARD ISSUER AGREEMENT</Line22>
    <Line23>.(MERCHANT AGREEMENT IF CREDIT VOUCHER)</Line23>
    <Line24>.</Line24>
    <Line25>.</Line25>
    <Line26>.</Line26>
    <Line27>.x                </Line27>
    <Line28>.</Line28>
    <Line29>.                Merchant Signature                </Line29>
    <Line30>.</Line30>
    <Line31>.Application Label: MasterCardCredit</Line31>
    <Line32>.AID: A000000041010</Line32>
    <Line33>.TVR: 0000008000</Line33>
    <Line34>.IAD: 0110808003220000FF0500000000000000F</Line34>
```

```
<Line35>.TSI: A800</Line35>  
<Line36>.CVM: SIGN</Line36>  
</PrintData>  
</RStream>
```

**Implementation Notes:**

1. Manual card account entry with the <AcctNo> tag should only be used if the PIN pad insertion reader fails to get card account information on the first transaction attempt. The POS logic should allow the transaction to be run again with the <AcctNo> tag included to force a manual entry of card account information.
2. For draft printing options and instructions, see Section 6.2

### 3.7 VoidReturnByRecordNo

**Use:** Void of a previously completed EMVReturn transaction without a card present – credit.

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

XML Template: **VoidReturnByRecordNo**

XML Request Template:

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranType>TranType</TranType>
    <TranCode>VoidReturnByRecordNo</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <RefNo>RefNo</RefNo>
    <AuthCode>AuthCode</AuthCode>
    <Amount>
      <Purchase>Purchase</Purchase>
    </Amount>
    <SequenceNo>SequenceNo</SequenceNo>
    <PartialAuth>PartialAuth</PartialAuth>
    <RecordNo>RecordNo</RecordNo>
    <Frequency>Frequency</Frequency>
    <AcqRefData>AcqRefData</AcqRefData>
    <ProcessData>ProcessData</ProcessData>
  </Transaction>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	128	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	24	A	Operator (clerk, server, etc.) associated with the transaction.
UserTrace	O	1	24	A	A unique value created and supplied by POS system.

TranCode	R	1	40	A	"VoidReturnByRecordNo"
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
InvoiceNo	R	1	24	A	Invoice number - sequential receipt number, check number, or other unique transaction identifier created and supplied by POS system.
RefNo	R	1	24	A	Use the <RefNo> value obtained in the response to a previous EMVReturn transaction to be voided.
AuthCode	R	1	24	A	The authorization code obtained in the response to the EMVSale, EMVReturn or EMVZeroAuth transaction to be adjusted.
Amount:Purchase	R	1	8	N	Purchase price (with 2 place decimal – eg. 29.95)
LaneID	O	1	8	N	A unique LaneID (lane number) can be supplied to identify each POS/ECR in a single store location with multiple payment points
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
PartialAuth	R	1	20	A	"Allow"
RecordNo	R	1	40	A	Use the <RecordNo> value obtained in the response to a previous EMVReturn transaction that included a token request.
Frequency	R	1	40	A	"OneTime"
AcqRefData	R	1	40	A	Use the <AcqRefData> value obtained in the response to a previous EMVReturn transaction.
ProcessData	R	1	40	A	Use the <ProcessData> value obtained in the response to a previous EMVReturn transaction. Omit this tag if no <ProcessData> was returned in the response.

Legend:      A      Alphanumeric      N      Numeric  
                  O      Optional                    R      Required

### Sample VoidReturnByRecordNo Request

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>88430043857</MerchantID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranType>Credit</TranType>
    <TranCode>VoidReturnByRecordNo</TranCode>
    <SecureDevice>EMV_VX805_MERCURY</SecureDevice>
    <ComPort>1</ComPort>
    <InvoiceNo>0002</InvoiceNo>
    <RefNo>0002</RefNo>
    <AuthCode>123456</AuthCode>
    <Amount>
      <Purchase>5.00</Purchase>
    </Amount>
  </Transaction>
</TStream>
```

```

    </Amount>
    <SequenceNo>0010010010</SequenceNo>
    <RecordNo>ls2xQ3jce4XE9mzxYIVKINdrASzQeZE8MhIFEASNAaqkg==</RecordNo>
    <Frequency>OneTime</Frequency>
    <ProcessData>|20|210100200000</ProcessData>
  </Transaction>
</TStream>

```

### **Sample VoidReturnByRecordNo Response**

```

<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Approved</CmdStatus>
    <TextResponse>AP</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <TranResponse>
    <MerchantID>88430043857</MerchantID>
    <AcctNo>400300XXXXXX6781</AcctNo>
    <ExpDate>XXXX</ExpDate>
    <CardType>VISA</CardType>
    <TranCode>VoidReturn</TranCode>
    <AuthCode>VOIDED</AuthCode>
    <CaptureStatus>Captured</CaptureStatus>
    <RefNo>0002</RefNo>
    <InvoiceNo>0002</InvoiceNo>
    <OperatorID>TEST</OperatorID>
    <Amount>
      <Purchase>5.00</Purchase>
      <Authorize>5.00</Authorize>
    </Amount>
    <AcqRefData>K</AcqRefData>
    <RecordNo>AYGYMSMI0G/iCdVV+U72PYEOI1ND1AxMhIFEASNAaq1A==</RecordNo>
    <ProcessData>|A4|210100600000</ProcessData>
  </TranResponse>
</RStream>

```

#### **Notes:**

1. Draft printing is not required for VoidReturnByRecordNo transactions.

### 3.8 EMVVoiceAuth

**Use:** Capture a transaction that was authorized by voice into the current batch

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

XML Template: **EMVVoiceAuth**

XML Request Template:

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranCode>EMVVoiceAuth</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <Account>
      <AcctNo>AcctNo</AcctNo>
    </Account>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <RefNo>RefNo</RefNo>
    <AuthCode>AuthCode</AuthCode>
    <Amount>
      <Purchase>Purchase</Purchase>
    </Amount>
    <Duplicate>Duplicate</Duplicate>
    <SequenceNo>SequenceNo</SequenceNo>
  </Transaction>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	128	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	24	A	Operator (clerk, server, etc.) associated with the transaction.
UserTrace	O	1	24	A	A unique value created and supplied by POS system.
TranCode	R	1	40	A	"EMVVoiceAuth"

SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
Account:AcctNo	O	1	24	A	"Prompt" – The PIN pad will prompt the operator for manual input of account number and expiration date from the card.
InvoiceNo	R	1	24	A	Invoice number - sequential receipt number, check number, or other unique transaction identifier created and supplied by POS system.
RefNo	R	1	24	A	Use the same data as InvoiceNo
AuthCode	R	1	24	A	The authorization code obtained via telephone to the processing provider
Amount:Purchase	R	1	8	N	Purchase price (with 2 place decimal – eg. 29.95)
LaneID	O	1	8	N	A unique LaneID (lane number) can be supplied to identify each POS/ECR in a single store location with multiple payment points
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.

Legend:      A      Alphanumeric      N      Numeric  
                  O      Optional                R      Required

**Sample EMVVoiceAuth Request**

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranCode>EMVVoiceAuth</TranCode>
    <SecureDevice>EMV_VX805_PAYMTECH</SecureDevice>
    <ComPort>1</ComPort>
    <InvoiceNo>00005</InvoiceNo>
    <RefNo>00005</RefNo>
    <AuthCode>123456</AuthCode>
    <Amount>
      <Purchase>7.00</Purchase>
    </Amount>
    <SequenceNo>0010010010</SequenceNo>
  </Transaction>
</TStream>
```

## Sample EMVVoiceAuth Response

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Approved</CmdStatus>
    <TextResponse>APPROVED</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <TranResponse>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <AcctNo>*****1004</AcctNo>
    <CardType>AMEX</CardType>
    <TranCode>EMVVoiceAuth</TranCode>
    <AuthCode>123456</AuthCode>
    <CaptureStatus>Captured</CaptureStatus>
    <RefNo>00000005</RefNo>
    <InvoiceNo>00005</InvoiceNo>
    <OperatorID>TEST</OperatorID>
    <Amount>
      <Purchase>7.00</Purchase>
      <Authorize>7.00</Authorize>
    </Amount>
    <AcqRefData>|N|7.00|RN101436191864</AcqRefData>
    <EntryMethod>SWIPED</EntryMethod>
    <Date>07/06/2015</Date>
    <Time>10:14:59</Time>
  </TranResponse>
  <PrintData>
    <Line1>.MERCHANT ID: 700000000245</Line1>
    <Line2>.TERMINAL ID: 002</Line2>
    <Line3>.CLERK ID: TEST</Line3>
    <Line4>.</Line4>
    <Line5>. POST AUTH </Line5>
    <Line6>.</Line6>
    <Line7>.*****1004</Line7>
    <Line8>.AMEX ENTRY METHOD: SWIPED</Line8>
    <Line9>.DATE: 07/06/2015 TIME: 10:14:59</Line9>
    <Line10>.</Line10>
    <Line11>.INVOICE: 00005</Line11>
    <Line12>.REFERENCE: 00000005</Line12>
    <Line13>.AUTH CODE: 123456</Line13>
    <Line14>.</Line14>
    <Line15>.AMOUNT USD$ 7.00</Line15>
    <Line16>. =====</Line16>
    <Line17>.TOTAL USD$ 7.00</Line17>
    <Line18>.</Line18>
    <Line19>. APPROVED - THANK YOU </Line19>
    <Line20>.</Line20>
    <Line21>.I AGREE TO PAY THE ABOVE TOTAL AMOUNT</Line21>
    <Line22>.ACCORDING TO CARD ISSUER AGREEMENT</Line22>
    <Line23>.(MERCHANT AGREEMENT IF CREDIT VOUCHER)</Line23>
    <Line24>.</Line24>
    <Line25>.</Line25>
    <Line26>.</Line26>
    <Line27>.x </Line27>
    <Line28>.<u> Cardholder Signature </u> </Line28>
    <Line29>.</Line29>
  </PrintData>
</RStream>
```

### Notes:

1. For draft printing options and instructions, see Section 6.2

### 3.9 EMVZeroAuth

---

**Use:** To verify a card is valid without charging any amount. *This transaction does not create a charge/debit to the cardholder account and no funds will be accrued to the merchant.*

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

XML Template: **EMVZeroAuth**

Functional Options for EMVZeroAuth:

1. Token Request - (Tags: <RecordNo> and <Frequency>) – Used to request an optional unique transaction identifier (token) to be assigned by the payment processor and returned in the transaction response. This token value is supplied to a subsequent **AdjustByRecordNo** transaction request to alter the amounts on the original transaction without possession of the card (e.g. for tip entry). *Note* that not all processors support token issuance or subsequent use *and* that only cards that don't require a PIN entry during the EMVZeroAuth will be able to request a token.

XML Request Template:

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranCode>EMVZeroAuth</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <Account>
      <AcctNo>AcctNo</AcctNo>
    </Account>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <RefNo>RefNo</RefNo>
    <Amount>
      <Purchase>Purchase</Purchase>
    </Amount>
    <SequenceNo>SequenceNo</SequenceNo>
    <RecordNo>RecordNumberRequested</RecordNo>
    <Frequency>Frequency</Frequency>
  </Transaction>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	128	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	24	A	Operator (clerk, server, etc.) associated with the transaction.
UserTrace	O	1	24	A	A unique value created and supplied by POS system.
TranCode	R	1	40	A	"EMVZeroAuth"
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
Account:AcctNo	O	1	24	A	"Prompt" – When the optional Account tag is included with the value Prompt, the PIN pad will prompt the operator for manual input of account number and expiration date from the card.
InvoiceNo	R	1	24	A	Invoice number - sequential receipt number, check number, or other unique transaction identifier created and supplied by POS system.
RefNo	R	1	24	A	Use the same data as InvoiceNo
Amount:Purchase	R	1	8	N	"0.00"
LaneID	O	1	8	N	A unique LaneID (lane number) can be supplied to identify each POS/ECR in a single store location with multiple payment points
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
RecordNo	O	1	40	A	Required by selected payment processors when token use is enabled for the merchant's account. Required by: Mercury. Otherwise omit this tag.
Frequency	O	1	40	A	If RecordNo tag is included, include this tag also with value "OneTime"

Legend:      A      Alphanumeric      N      Numeric  
                   O      Optional                    R      Required

### Sample EMVZeroAuth Request

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IPort>9000</IpPort>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranCode>EMVZeroAuth</TranCode>
    <SecureDevice>EMV_VX805_PAYMENTECH</SecureDevice>
    <ComPort>1</ComPort>
    <InvoiceNo>00006</InvoiceNo>
    <RefNo>00006</RefNo>
    <Amount>
      <Purchase>7.00</Purchase>
    </Amount>
    <SequenceNo>0010010010</SequenceNo>
  </Transaction>
</TStream>
```

### Sample EMVZeroAuth Response

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Approved</CmdStatus>
    <TextResponse>APPROVED</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <TranResponse>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>002</TerminalID>
    <AcctNo>*****4111</AcctNo>
    <CardType>M/C</CardType>
    <TranCode>EMVZeroAuth</TranCode>
    <AuthCode>006550</AuthCode>
    <RefNo>00000001</RefNo>
    <InvoiceNo>00006</InvoiceNo>
    <OperatorID>TEST</OperatorID>
    <Amount>
      <Purchase>7.00</Purchase>
      <Authorize>0.00</Authorize>
    </Amount>
    <AcqRefData>AMCC0118V0706 5999||N|0.00|RN101436191865</AcqRefData>
    <EntryMethod>CHIP</EntryMethod>
    <Date>07/06/2015</Date>
    <Time>10:15:30</Time>
    <ApplicationLabel>MasterCardCredit</ApplicationLabel>
    <AID>A0000000041010</AID>
    <TVR>0000048000</TVR>
    <IAD>01106080032200000FC80000000000000F</IAD>
    <TSI>E800</TSI>
    <ARC>00</ARC>
    <CVM>PIN VERIFIED</CVM>
  </TranResponse>
  <PrintData>
    <Line1>.MERCHANT ID: 700000000245</Line1>
    <Line2>.TERMINAL ID: 002</Line2>
    <Line3>.CLERK ID: TEST</Line3>
    <Line4>.</Line4>
    <Line5> . VERIFY CARD </Line5>
    <Line6>.</Line6>
    <Line7> .*****4111</Line7>
```

```

<Line8>.MASTERCARD          ENTRY METHOD: CHIP</Line8>
<Line9>.DATE: 07/06/2015   TIME: 10:15:30</Line9>
<Line10>.</Line10>
<Line11>.INVOICE: 00006</Line11>
<Line12>.REFERENCE: 00000001</Line12>
<Line13>.AUTH CODE: 006550</Line13>
<Line14>.</Line14>
<Line15>.AMOUNT                USD$ 0.00</Line15>
<Line16>.</Line16>
<Line17>.TOTAL                USD$ 0.00</Line17>
<Line18>.</Line18>
<Line19>.          APPROVED - THANK YOU          </Line19>
<Line20>.</Line20>
<Line21>.BY ENTERING A VERIFIED PIN, CARHOLDER</Line21>
<Line22>.AGREES TO PAY ISSUER SUCH TOTAL IN</Line22>
<Line23>.ACCORDANCE WITH ISSUER'S AGREEMENT WITH</Line23>
<Line24>.CARDHOLDER</Line24>
<Line25>.</Line25>
<Line26>.</Line26>
<Line27>.Application Label: MasterCardCredit</Line27>
<Line28>.AID: A0000000041010</Line28>
<Line29>.TVR: 0000048000</Line29>
<Line30>.IAD: 01106080032200000FC8000000000000000F</Line30>
<Line31>.TSI: E800</Line31>
<Line32>.ARC: 00</Line32>
<Line33>.CVM: PIN VERIFIED</Line33>
</PrintData>
</RStream>

```

Notes:

1. For draft printing options and instructions, see Section 6.2

### 3.10 AdjustByRecordNo

**Use:** To adjust the gratuity amount on a previously processed EMV/Sale or EMV/VoiceAuth transaction.

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

XML Template: **AdjustByRecordNo**

XML Request Template:

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranType>TranType</TranType>
    <TranCode>AdjustByRecordNo</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <RefNo>RefNo</RefNo>
    <AuthCode>AuthCode</AuthCode>
    <Amount>
      <Purchase>Purchase</Purchase>
      <Gratuity>Gratuity</Gratuity>
    </Amount>
    <SequenceNo>SequenceNo</SequenceNo>
    <PartialAuth>PartialAuth</PartialAuth>
    <RecordNo>RecordNo</RecordNo>
    <Frequency>Frequency</Frequency>
    <AcqRefData>AcqRefData</AcqRefData>
    <ProcessData>ProcessData</ProcessData>
  </Transaction>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	128	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	24	A	Operator (clerk, server, etc.) associated with the transaction.

UserTrace	O	1	24	A	A unique value created and supplied by POS system.
TranCode	R	1	40	A	"AdjustByRecordNo"
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
InvoiceNo	R	1	24	A	Invoice number - sequential receipt number, check number, or other unique transaction identifier created and supplied by POS system.
RefNo	R	1	24	A	Use the <RefNo> value obtained in the response to a previous EMVSale or EMVVoiceAuth transaction to be adjusted.
AuthCode	R	1	24	A	The authorization code obtained in the response to the EMVSale, EMVReturn or EMVZeroAuth transaction to be adjusted.
Amount:Purchase	R	1	8	N	Purchase price (with 2 place decimal – eg. 29.95)
Amount:Gratuity	R	1	8	N	Gratuity Amount to be adjusted (with 2 place decimal – eg. 29.95)
LaneID	O	1	8	N	A unique LaneID (lane number) can be supplied to identify each POS/ECR in a single store location with multiple payment points
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
PartialAuth	R	1	20	A	"Allow"
RecordNo	R	1	40	A	Use the <RecordNo> value obtained in the response to a previous EMVSale, EMVReturn or EMVZeroAuth transaction that included a token request.
Frequency	R	1	40	A	"OneTime"
AcqRefData	R	1	40	A	Use the <AcqRefData> value obtained in the response to a previous EMVSale, EMVReturn or ZeroAuth transaction.
ProcessData	R	1	40	A	Use the <ProcessData> value obtained in the response to a previous EMVSale, EMVReturn or ZeroAuth transaction. Omit this tag if no <ProcessData> was returned in the response.

Legend:      A      Alphanumeric      N      Numeric  
                  O      Optional                R      Required

### Sample AdjustByRecordNo Request

```
<TStream>
  <Transaction>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>88430043857</MerchantID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranType>Credit</TranType>
    <TranCode>AdjustByRecordNo</TranCode>
    <SecureDevice>EMV_VX805_MERCURY</SecureDevice>
    <ComPort>1</ComPort>
    <InvoiceNo>0004</InvoiceNo>
    <RefNo>0004</RefNo>
    <AuthCode>003711</AuthCode>
    <Amount>
      <Purchase>8.44</Purchase>
      <Gratuity>1.50</Gratuity>
    </Amount>
    <SequenceNo>0010010010</SequenceNo>
    <RecordNo>epNxoyv7dUzKVJk0Tnhjt5IxUPVyrM7sMhIFEASNAaphg==</RecordNo>
    <Frequency>OneTime</Frequency>
    <AcqRefData>bMCC0006650528 c e001MCC</AcqRefData>
    <ProcessData>|00|210100500000</ProcessData>
  </Transaction>
</TStream>
```

### Sample AdjustByRecordNo Response

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Approved</CmdStatus>
    <TextResponse>AP</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <TranResponse>
    <MerchantID>88430043857</MerchantID>
    <AcctNo>541333XXXXX1064</AcctNo>
    <ExpDate>XXXX</ExpDate>
    <CardType>M/C</CardType>
    <TranCode>Adjust</TranCode>
    <AuthCode>003711</AuthCode>
    <CaptureStatus>Captured</CaptureStatus>
    <RefNo>0004</RefNo>
    <InvoiceNo>0004</InvoiceNo>
    <OperatorID>TEST</OperatorID>
    <Amount>
      <Purchase>8.44</Purchase>
      <Authorize>9.94</Authorize>
      <Gratuity>1.50</Gratuity>
    </Amount>
    <RecordNo>8xRA6A68RLeHs/eNgMkmhMqY2KTWh1hAMhIFEASNAaphw==</RecordNo>
    <ProcessData>|02|210100600000</ProcessData>
  </TranResponse>
</RStream>
```

#### Notes:

1. Draft printing is not required for Adjust transactions.

## 4.0 Admin Transactions

### 4.1 EMVParamDownload

---

**Use:** To download required parameters and security information for an EMV PIN pad.

**Note:** Field values in **BOLD** are required. Field values in **LIGHT GRAY** are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

XML Template: **EMVParamDownload**

XML Request Template:

```
<?xml version="1.0"?>
<TStream>
  <Admin>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranCode>EMVParamDownload</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <SequenceNo>SequenceNo</SequenceNo>
  </Admin>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	15	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	10	A	Operator (clerk, server, etc.) associated with the Transaction.
UserTrace	O	1	20	A	A unique value created and supplied by POS system
TranCode	R	1	40	A	"EMVParamDownload"
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial

					deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
--	--	--	--	--	--

Legend:      A      Alphanumeric      N      Numeric  
                  O      Optional                    R      Required

**Sample EMVParamDownload Request**

```
<?xml version="1.0"?>
<TStream>
  <Admin>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>700000000245</MerchantID>
    <TerminalID>001</TerminalID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranCode>EMVParamDownload</TranCode>
    <SecureDevice>EMV_VX805_PAYMENTECH</SecureDevice>
    <ComPort>1</ComPort>
    <SequenceNo>0010010010</SequenceNo>
  </Admin>
</TStream>
```

**Sample EMVParamDownload Response**

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Success</CmdStatus>
    <TextResponse>SUCCESS</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <TranResponse>
    <TranCode>EMVParamDownload</TranCode>
  </TranResponse>
</RStream>
```

## 4.2 ServerVersion

**Use:** To get the version (and other) information for the NETePay server that is processing for the dsiEMVX.

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

**XML Template: ServerVersion**

**XML Request Template:**

```
<?xml version="1.0"?>
<TStream>
  <Admin>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranCode>ServerVersion</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <SequenceNo>SequenceNo</SequenceNo>
  </Admin>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	15	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	10	A	Operator (clerk, server, etc.) associated with the Transaction.
UserTrace	O	1	20	A	A unique value created and supplied by POS system
TranCode	R	1	40	A	"ServerVersion"
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.

Legend:        A        Alphanumeric        N        Numeric  
                 O        Optional                R        Required

### **Sample ServerVersion Request**

```
<?xml version="1.0"?>
<TStream>
  <Admin>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>88430043857</MerchantID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranCode>ServerVersion</TranCode>
    <SecureDevice>EMV_VX805_MERCURY</SecureDevice>
    <ComPort>1</ComPort>
    <SequenceNo>0010010010</SequenceNo>
  </Admin>
</TStream>
```

### **Sample ServerVersion Response**

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Server</ResponseOrigin>
    <DSIXReturnCode>500000</DSIXReturnCode>
    <CmdStatus>Success</CmdStatus>
    <TextResponse>NETePay for Mercury Version MPH 5.10</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <ServerVersion>
    <ProductName>NETePay 5.10</ProductName>
    <ProductClass>Host Based</ProductClass>
    <Provider>Mercury</Provider>
    <ProductVersion>MPH 5.10</ProductVersion>
  </ServerVersion>
</RStream>
```

### 4.3 BatchSummary

**Use:** Retrieves current batch summary information (totals and counts by card type)

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

Retain tags and values returned in the BatchSummary response enclosed between the <BatchSummary> tags for use in the BatchClose command.

XML Template: **BatchSummary**

XML Request Template:

```
<?xml version="1.0"?>
<TStream>
  <Admin>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranType>Administrative</TranType>
    <TranCode>BatchSummary</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <SequenceNo>SequenceNo</SequenceNo>
  </Admin>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	15	A	Host name or IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	10	A	Operator (clerk, server, etc.) associated with the Transaction.
UserTrace	O	1	20	A	A unique value created and supplied by POS system
TranType	R	1	40	A	"Administrative"
TranCode	R	1	40	A	"BatchSummary"
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an

					EMV approved PIN pad is attached
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.

Legend:      A      Alphanumeric      N      Numeric  
                  O      Optional                    R      Required

**Sample BatchSummary Request**

```
<?xml version="1.0"?>
<TStream>
  <Admin>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>88430043857</MerchantID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranType>Administrative</TranType>
    <TranCode>BatchSummary</TranCode>
    <SecureDevice>EMV_VX805_MERCURY</SecureDevice>
    <ComPort>1</ComPort>
    <SequenceNo>0010010010</SequenceNo>
  </Admin>
</TStream>
```

**Sample BatchSummary Response**

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Success</CmdStatus>
    <TextResponse>OK</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <BatchSummary>
    <MerchantID>88430043857</MerchantID>
    <OperatorID>TEST</OperatorID>
    <BatchNo>0099</BatchNo>
    <BatchItemCount>4</BatchItemCount>
    <NetBatchTotal>32.32</NetBatchTotal>
    <CreditPurchaseCount>4</CreditPurchaseCount>
    <CreditPurchaseAmount>32.32</CreditPurchaseAmount>
    <CreditReturnCount>0</CreditReturnCount>
    <CreditReturnAmount>0.00</CreditReturnAmount>
    <DebitPurchaseCount>0</DebitPurchaseCount>
    <DebitPurchaseAmount>0.00</DebitPurchaseAmount>
    <DebitReturnCount>0</DebitReturnCount>
    <DebitReturnAmount>0.00</DebitReturnAmount>
  </BatchSummary>
</RStream>
```

## 4.4 BatchClose

**Use:** To close the currently open batch. Transactions in an open batch will not be paid to the merchant until the batch is closed. A BatchClose should be performed at least daily for most merchants.

**Notes:** 1. Field values in **BOLD** are required. Field values in LIGHT GRAY are optional and extend the functionality of the basic transaction. See the following XML element table for use of both required and optional fields.

2. A BatchSummary request must be performed immediately prior to a BatchClose request and all *matching* response fields (including those with 0.00 values) in the BatchSummary response must be supplied in the BatchClose request.

### XML Template: **Batch Close Request**

```
<?xml version="1.0"?>
<TStream>
  <Admin>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <UserTrace>UserTrace</UserTrace>
    <TranType>Administrative</TranType>
    <TranCode>BatchClose</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <SequenceNo>SequenceNo</SequenceNo>
    <BatchNo>BatchNo</BatchNo>
    <BatchItemCount>BatchItemCount</BatchItemCount>
    <NetBatchTotal>NetBatchTotal</NetBatchTotal>
    <CreditPurchaseCount>CreditPurchaseCount</CreditPurchaseCount>
    <CreditPurchaseAmount>CreditPurchaseAmount</CreditPurchaseAmount>
    <CreditReturnCount>CreditReturnCount</CreditReturnCount>
    <CreditReturnAmount>CreditReturnAmount</CreditReturnAmount>
    <DebitPurchaseCount>DebitPurchaseCount</DebitPurchaseCount>
    <DebitPurchaseAmount>DebitPurchaseAmount</DebitPurchaseAmount>
    <DebitReturnCount>DebitReturnCount</DebitReturnCount>
    <DebitReturnAmount>DebitReturnAmount</DebitReturnAmount>
  </Admin>
</TStream>
```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	15	A	Host name or IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	Y	1	24	A	Merchant identification assigned by processor.
TerminalID	O	1	24	A	Terminal ID data must be supplied in this tag only if

					required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	10	N	Operator (clerk, server, etc.) associated with the inquiry.
UserTrace	O	1	20	A	A unique value created and supplied by POS system
TranType	Y	1	40	A	"Administrative"
TranCode	Y	1	40	A	"BatchClose"
SecureDevice	R	1	24	A	See Section 2.1 for allowed SecureDevice values.
ComPort	R	1	3	N	RS232 or USB Virtual COM port number to which an EMV approved PIN pad is attached
SequenceNo	R	10	12	A	Use the value returned for <SequenceNo> from the last response. If the SequenceNo is lost or for initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
BatchNo	Y	1	6	A	Batch number returned by BatchSummary request
BatchItemCount	Y	1	8	N	Number of total items in batch returned by BatchSummary request
NetBatchTotal	Y	1	10	N	Net of all transactions in batch returned by BatchSummary request
CreditPurchaseCount	O	1	8	N	Number of credit purchase transactions in batch returned by BatchSummary request. <i>Note: This value must be included in the BatchClose request if it was returned in a BatchSummary response.</i>
CreditPurchaseAmount	O	1	10	N	Net of all credit purchase transactions in batch returned by BatchSummary request <i>Note: This value must be included in the BatchClose request if it was returned in a BatchSummary response.</i>
CreditReturnCount	O	1	8	N	Number of credit return transactions in batch returned by BatchSummary request. <i>Note: This value must be included in the BatchClose request if it was returned in a BatchSummary response.</i>
CreditReturnAmount	O	1	10	N	Net of all credit return transactions in batch returned by BatchSummary request. <i>Note: This value must be included in the BatchClose request if it was returned in a BatchSummary response.</i>
DebitPurchaseCount	O	1	8	N	Number of debit purchase transactions in batch returned by BatchSummary request. <i>Note: This value must be included in the BatchClose request if it was returned in a BatchSummary response.</i>
DebitPurchaseAmount	O	1	10	N	Net of all debit purchase transactions in batch returned by BatchSummary request. <i>Note: This value must be included in the BatchClose request if it was returned in a BatchSummary response.</i>
DebitReturnCount	O	1	8	N	Number of debit return transactions in batch returned by BatchSummary request. <i>Note: This value must be included in the BatchClose request if it was returned in a BatchSummary response.</i>
DebitReturnAmount	O	1	10	N	Net of all debit return transactions in batch returned by BatchSummary request. <i>Note: This value must be included in the BatchClose request if it was returned in a BatchSummary response.</i>

### Sample BatchClose Request

```
<?xml version="1.0"?>
<TStream>
  <Admin>
    <HostOrIP>127.0.0.1</HostOrIP>
    <IpPort>9000</IpPort>
    <MerchantID>88430043857</MerchantID>
    <OperatorID>TEST</OperatorID>
    <UserTrace>Dev1</UserTrace>
    <TranType>Administrative</TranType>
    <TranCode>BatchClose</TranCode>
    <SecureDevice>EMV_VX805_MERCURY</SecureDevice>
    <ComPort>1</ComPort>
    <SequenceNo>0010010010</SequenceNo>
    <BatchNo>0099</BatchNo>
    <BatchItemCount>4</BatchItemCount>
    <NetBatchTotal>32.32</NetBatchTotal>
    <CreditPurchaseCount>4</CreditPurchaseCount>
    <CreditPurchaseAmount>32.32</CreditPurchaseAmount>
    <CreditReturnCount>0</CreditReturnCount>
    <CreditReturnAmount>0.00</CreditReturnAmount>
    <DebitPurchaseCount>0</DebitPurchaseCount>
    <DebitPurchaseAmount>0.00</DebitPurchaseAmount>
    <DebitReturnCount>0</DebitReturnCount>
    <DebitReturnAmount>0.00</DebitReturnAmount>
  </Admin>
</TStream>
```

### Sample BatchClose Response

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Processor</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Success</CmdStatus>
    <TextResponse>OK</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <BatchClose>
    <MerchantID>88430043857</MerchantID>
    <OperatorID>TEST</OperatorID>
    <BatchNo>0099</BatchNo>
    <BatchItemCount>4</BatchItemCount>
    <NetBatchTotal>32.32</NetBatchTotal>
    <CreditPurchaseCount>4</CreditPurchaseCount>
    <CreditPurchaseAmount>32.32</CreditPurchaseAmount>
    <CreditReturnCount>0</CreditReturnCount>
    <CreditReturnAmount>0.00</CreditReturnAmount>
    <DebitPurchaseCount>0</DebitPurchaseCount>
    <DebitPurchaseAmount>0.00</DebitPurchaseAmount>
    <DebitReturnCount>0</DebitReturnCount>
    <DebitReturnAmount>0.00</DebitReturnAmount>
    <ControlNo>0099</ControlNo>
  </BatchClose>
</RStream>
```

## 5.0 Data Capture Transactions

### 5.1 StoreData

---

**Use:** To capture transaction detail in addition to the normal payment parameters. Captured data fields are stored, forwarded, or sent in real-time depending on the available compatible services or servers. Transaction detail supplied for these data capture functions are typically used by external management systems for accounting, inventory or shipping.

**Note:** Field values in **BOLD** are required. Field values in LIGHT GRAY are optional. See the following XML element table for use of both required and optional fields.

XML Template: **StoreData**

XML Request Template:

```
<?xml version="1.0"?>
<TStream>
  <StoreData>
    <HostOrIP>999.999.999.999</HostOrIP>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <StoreID>StoreID</StoreID>
    <RegisterID>RegisterID</RegisterID>
    <TranDate>TranDate</TranDate>
    <TranTime>TranTime</TranTime>
    <GuestCount>GuestCount</GuestCount>
    <UserTrace>UserTrace</UserTrace>
    <TranCode>StoreData</TranCode>
    <Customer>
      <FirstName>FirstName</FirstName>
      <LastName>LastName</LastName>
      <MiddleName>MiddleName</MiddleName>
      <Title>Title</Title>
      <Gender>Gender</Gender>
      <Address>Address</Address>
      <Address2>Address2</Address2>
      <City>City</City>
      <State>State</State>
      <Zip>Zip</Zip>
      <Country>Country</Country>
      <County>County</County>
      <Phone>Phone</Phone>
      <Cell>Cell</Cell>
      <Email>Email</Email>
      <Email2>Email2</Email2>
      <CustomerType>CustomerType</CustomerType>
      <BillToAddress>BillToAddress</BillToAddress>
      <ShipToAddressFlag>ShipToAddressFlag</ShipToAddressFlag>
      <TaxLocation>TaxLocation</TaxLocation>
      <CustomerID>CustomerID</CustomerID>
    </Customer>
    <InventoryNNN>
      <ItemName>ItemName</ItemName>
    </InventoryNNN>
  </StoreData>
</TStream>
```

```

<ItemDescription>ItemDescription</ItemDescription>
<ItemNumber>ItemNumber</ItemNumber>
<Qty>Qty</Qty>
<Vendor>Vendor</Vendor>
<Size>Size</Size>
<Attribute>Attribute</Attribute>
<TaxAmount>TaxAmount</TaxAmount>
<UPC>UPC</UPC>
<UnitOfMeasure>UnitOfMeasure</UnitOfMeasure>
<Manufacturer>Manufacturer</Manufacturer>
<UnitCost>UnitCost</UnitCost>
<SerialNumber>SerialNumber</SerialNumber>
<ShippingWeight>ShippingWeight</ShippingWeight>
<ShippingHeight>ShippingHeight</ShippingHeight>
<ShippingLength>ShippingLength</ShippingLength>
<ShippingWidth>ShippingWidth</ShippingWidth>
<Comments>Comments</Comments>
<TrackingNumber>TrackingNumber</TrackingNumber>
<ShippingCarrier>ShippingCarrier</ShippingCarrier>
<OrderDate>OrderDate</OrderDate>
<ReceivedDate>ReceivedDate</ReceivedDate>
</InventoryNNN>
<Subtotal>
<SubtotalAmountNoTaxDiscount>SubtotalAmountNoTaxDiscount</SubtotalAmountNoTaxDiscount>
<TotalDiscountAmount>TotalDiscountAmount</TotalDiscountAmount>
<TaxAmount1>TaxAmount1</TaxAmount1>
<TaxAmount2>TaxAmount2</TaxAmount2>
<TaxAmount3>TaxAmount3</TaxAmount3>
<TaxAmount4>TaxAmount4</TaxAmount4>
<TaxAmount5>TaxAmount5</TaxAmount5>
</Subtotal>
<PaymentNNN>
<CardType>CardType</CardType>
<Amount>Amount</Amount>
<Last4OfCard>Last4OfCard</Last4OfCard>
<AuthorizationCode>AuthorizationCode</AuthorizationCode>
<ReferenceNo>ReferenceNo</ReferenceNo>
<TransactionType>TransactionType</TransactionType>
</PaymentNNN>
</StoreData>
</TStream>

```

Element	Req	Min	Max	Type	Description
HostOrIP	R	7	15	A	IP address of server to use for this transaction.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	R	1	24	A	Merchant identification assigned by processor.
TerminalID	R	1	24	A	Terminal ID data must be supplied in this tag only if required by the processor or merchant service provider; otherwise this tag should not be included. The POS system should store this value as a parameter to be included when required.
OperatorID	O	1	10	A	Operator (clerk, server, etc.) associated with the Transaction.
InvoiceNo	R	1	24	A	Invoice number - sequential receipt number, check number, or other unique transaction identifier created and

					supplied by POS system.
StoreID	R	1	10	A	Store identifier
RegisterID	R	1	10	A	Register identifier
TranDate	R	8	8	N	Date as "MMDDYYYY"
TranTime	R	4	4	N	Time as "HHMM"
GuestCount	O	1	10	N	Guest count
UserTrace	O	1	20	A	A unique value created and supplied by POS system
TranCode	R	1	40	A	"StoreData"
Customer: <DataTag>	O	1	80	A	<Customer> section data fields
InventoryNNN:<DataTag>	O	1	80	A	<Inventory1> ... <InventorNNN> section(s) data fields
Subtotal: <DataTag>	O	1	80	A	<Subtotal> section data fields
PaymentNNN: <DataTag>	O	1	80	A	<Payment1> ... <InventoryNNN> section(s) data fields

Legend:           A     Alphanumeric           N     Numeric  
                  O     Optional                 R     Required

**Note:** <DataTag> values are defined by the common meaning of the <DataTag> name.

## 6.0 Transaction Responses

### 6.1 EMVPadReset XML Response Template

EMVPadReset XML Response Template:

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>ResponseOrigin</ResponseOrigin>
    <DSIXReturnCode>DSIXReturnCode</DSIXReturnCode>
    <CmdStatus>CmdStatus</CmdStatus>
    <TextResponse>TextResponse</TextResponse>
    <SequenceNo>SequenceNo</SequenceNo>
    <UserTrace> UserTrace</UserTrace>
  </CmdResponse>
</RStream>
```

Element	Return	Min	Max	Type	Description
ResponseOrigin	Y	1	10	A	Indicates the source of the response: "Client" = generated by dsiEMVX control "Server" = generated by Datacap server "Processor" = generated by payment processor
DSIXReturnCode	Y	6	6	N	Six digit return code that identifies the error type.
CmdStatus	Y	1	10	A	Indicates the outcome of the command: "Success" = command completed successfully "Error" = error processing command. Check DSIXReturnCode and TextResponse for additional info on error. See Section 6.
TextResponse	Y	1	40	A	The text response message from the processor.
SequenceNo	Y	10	12	A	The sequence number returned in all responses to be used on the next request. If the SequenceNo is lost or initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
UserTrace	O	0	40	A	Echo of data supplied by the user system in the request; for use by the user system for internal tracking. May be null if no user system data was supplied in the request

#### Implementation Notes:

1. A CmdStatus response of "Success" is required to the EMVPadReset request in order to use the PIN pad.
2. The EMVPadReset must be performed before every transaction (Sale, VoidSale, Return, VoidReturn, VoiceAuth and ZeroAuth) to assure that no card is in the EMV PIN pad chip card (insertion) reader before starting a transaction. This command should also be performed at the end of any card related transaction (Sale, VoidSale, Return, VoidReturn, VoiceAuth and ZeroAuth) to assure that the user is prompted to remove their card. If no card is in the reader, then a response will be returned with 2-3 seconds. If there's a card in the reader, the EMV PIN pad displays 'Remove Card' and waits for the card to be removed before returning a response; another EMVPadReset should then be issued prior to processing a card based transaction request.

## 6.2 XML Response Template for:

**EMVSale**  
**EMVVoidSale**  
**VoidSaleByRecordNo**  
**EMVReturn**  
**EMVVoidReturn**  
**VoidReturnByRecordNo**  
**EMVVoiceAuth**  
**EMVZeroAuth**  
**AdjustByRecordNo**

---

XML Response Template:

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>ResponseOrigin</ResponseOrigin>
    <DSIXReturnCode>DSIXReturnCode</DSIXReturnCode>
    <TextResponse>TextResponse</TextResponse>
    <CmdStatus>CmdStatus</CmdStatus>
    <SequenceNo>SequenceNo</SequenceNo>
    <UserTrace>UserTrace</UserTrace>
  </CmdResponse>
  <TranResponse>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <AcctNo>AcctNo</AcctNo>
    <CardType>CardType</CardType>
    <TranCode>TranCode</TranCode>
    <AuthCode>AuthCode</AuthCode>
    <CaptureStatus>CaptureStatus</CaptureStatus>
    <RefNo>RefNo</RefNo>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <OperatorID>OperatorID</OperatorID>
    <Amount>
      <Purchase>Purchase</Purchase>
      <CashBack>CashBack</CashBack>
      <Gratuity>Gratuity</Gratuity>
      <Authorize>Authorize</Authorize>
    </Amount>
    <CardholderName>CardholderName</CardholderName>
    <AcqRefData>AcqRefData</AcqRefData>
    <PostProcess>PostProcess</PostProcess>
    <ProcessData>ProcessData</ProcessData>
    <RecordNo>RecordNo</RecordNo>
    <EntryMethod>EntryMethod</EntryMethod>
    <Date>Date</Date>
    <Time>Time</Time>
    <ApplicationLabel>ApplicationLabel</ApplicationLabel>
    <AID>AID</AID>
    <TVR>TVR</TVR>
    <IAD>IAD</IAD>
    <TSI>TSI</TSI>
    <ARC>ARC</ARC>
    <CVM>CVM</CVM>
  </TranResponse>
</RStream>
```

```

</TranResponse>
<PrintData>
  <Line1>Line1</Line1>
  <Line2>Line2</Line2>
  <Line3>Line3</Line3>
  .
  .
  <LineN>LineN</LineN>
</PrintData>
</RStream>

```

Element	Return	Min	Max	Type	Description
ResponseOrigin	Y	1	10	A	Indicates the source of the response: "Client" = generated by dsiEMVX control "Server" = generated by Datacap server "Processor" = generated by payment processor
DSIXReturnCode	Y	6	6	N	Six digit return code that identifies the error type.
CmdStatus	Y	1	10	A	Indicates the outcome of the command: "Approved" = transaction approved by payment processor "Declined" = transaction declined by payment processor "Declined Offline" = chip transaction transaction declined offline "Error" = error processing command. Check DSIXReturnCode and TextResponse for additional info on error. See Section 6.
TextResponse	Y	1	40	A	The text response message from the processor.
SequenceNo	Y	10	12	A	The sequence number returned in all responses to be used on the next request. If the SequenceNo is lost or initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
UserTrace	O	0	40	A	Echo of data supplied by the user system in the request; for use by the user system for internal tracking. May be null if no user system data was supplied in the request
MerchantID	Y	1	24	A	The merchant ID supplied in the transaction request.
TerminalID	O	1	24	A	The terminal ID supplied in the transaction request.
AcctNo	O	1	24	A	The account number from the card used for a manually entered transaction – will be truncated.
CardType	O	1	24	A	Card type used on transaction (e.g. VISA, M/C, AMEX, etc)
TranCode	Y	1	40	A	TranCode value supplied in the transaction request.
AuthCode	O	1	24	A	The authorization code issued by the host for an approved transaction.
CaptureStatus	O	1	24	A	Indicates whether the host has captured the transaction.
RefNo	O	1	16	A	Reference number
InvoiceNo	O	1	24	A	The invoice number supplied in the transaction request.
Operator	O	1	23	A	Operator number used in request
Amount:Purchase	Y	1	8	N	The purchase amount requested in the transaction.
Amount:CashBack	O	1	8	N	The cash back amount requested in the transaction.
Amount:Gratuity	O	1	8	N	The gratuity amount requested in the transaction.
Amount:Authorize	O	1	8	N	The amount actually authorized for the transaction. This amount could be less than the Purchase amount requested and the

					POS/ECR system should verify to determine if additional tendering is required to satisfy the total payment.
CardholderName	O	1	40	A	Cardholder name returned which may be present if the <CollectData> tag is used in the request.
AcqRefData	O	1	40	A	Acquirer Reference Data returned by processor.
PostProcess	O	1	40	A	If this tag is returned with a value 'EMVParamDownloadRequired', the POS system should perform an EMV Parameter Download request as the next transaction.
ProcessData	O	1	40	A	Returned when optional <RecordNo> tag used in a request. This value must be retained for use in a subsequent AdjustByRecordNo request.
RecordNo	O	1	80	A	Returned when optional <RecordNo> tag used in a request. This value must be retained for use in a subsequent AdjustByRecordNo request.
EntryMethod	Y	1	40	A	Transaction entry method
Date	Y	1	40	A	Transaction date
Time	Y	1	40	A	Transaction time
ApplicationLabel	O	1	40	A	Transaction application label
AID	O	1	40	A	Transaction AID
TVR	O	1	40	A	Transaction TVR
IAD	O	1	40	A	Transaction IAD
TSI	O	1	40	A	Transaction TSI
ARC	O	1	40	A	Transaction ARC
CVM	O	1	40	A	Transaction CVM
PrintData:LineNNN	O	1	41	A	Receipt print lines. Each <LineN> tag should be printed on a new line. Each <LineN> tag begins with a "." which should not be printed – empty lines (blank) have only "." as data. When <PrintData> elements exist, they should always be printed as the draft for the transaction.

### Response Processing - Implementation Notes:

1. If CmdStatus response is:

<b>Approved</b>	Transaction was successfully processed and cardholder account was charged
<b>Declined</b>	Transaction was successfully processed but cardholder account was declined and not charged– an alternative tender should be processed.
<b>Error</b>	Transaction was not successfully processed due to some error – See Section 8 for error code. Transaction should be retried or alternative tender attempted.

2. The TextResponse **must** be displayed for operator.
3. The DSIXReturnCode should be displayed for operator, if possible.
4. The order of the tags may differ from the presentation above and depends on the XML parser used.

(Continued on next page)

5. Draft Printing

Merchant processing agreements require that a separate draft document must be printed in addition to the POS receipt. Two copies must be printed; one for presentation to the cardholder (a separate draft from the usual receipt) and one for retention by the merchant. A <PrintData> stream is included in the dsiEMVX response that can be used to print the draft document(s). Before printing the contents of the <PrintData> stream, the POS system should print the merchant name, address and phone number as separate lines at the top of the draft. After printing the contents of the <PrintData> stream, the POS must add the phrase "Cardholder Copy" as the last line of the first draft copy and the phrase "Merchant Copy" as the last line of the second draft copy. See the following example.

<pre> MERCHANT NAME MERCHANT STREET CITY, STATE ZIP 123-456-7890  MERCHANT ID: 700000000245 TERMINAL ID: 004  SALE  *****1064 MASTERCARD          ENTRY METHOD: CHIP DATE: 05/13/2015   TIME: 09:22:31  INVOICE: 00000001  AUTH CODE: 012756 REFERENCE: 00000005  AMOUNT                USD\$ 5.00                     ===== TOTAL                 USD\$ 5.00  APPROVED - THANK YOU  BY ENTERING A VERIFIED PIN, CARHOLDER AGREES TO PAY ISSUER SUCH TOTAL IN ACCORDANCE WITH ISSUER'S AGREEMENT WITH CARDHOLDER  Application Label: MCC 106 V1 3 AID: A0000000041010 TVR: 0000008000 IAD: 010103643006DAC0 TSI: E800 ARC: 00 CVM: PIN VERIFIED  Cardholder Copy </pre>	<pre> MERCHANT NAME MERCHANT STREET CITY, STATE ZIP 123-456-7890  MERCHANT ID: 700000000245 TERMINAL ID: 004  SALE  *****1064 MASTERCARD          ENTRY METHOD: CHIP DATE: 05/13/2015   TIME: 09:22:31  INVOICE: 00000001  AUTH CODE: 012756 REFERENCE: 00000005  AMOUNT                USD\$ 5.00                     ===== TOTAL                 USD\$ 5.00  APPROVED - THANK YOU  BY ENTERING A VERIFIED PIN, CARHOLDER AGREES TO PAY ISSUER SUCH TOTAL IN ACCORDANCE WITH ISSUER'S AGREEMENT WITH CARDHOLDER  Application Label: MCC 106 V1 3 AID: A0000000041010 TVR: 0000008000 IAD: 010103643006DAC0 TSI: E800 ARC: 00 CVM: PIN VERIFIED  Merchant Copy </pre>
---	---

**Note:** If the cardholder is prompted to enter a PIN during a transaction and does so successfully, the draft copy will indicate that the cardholder was verified by PIN entry. In the event that a requested PIN entry is unsuccessful, the draft copy will include a signature line for the cardholder to sign. The merchant should have the cardholder sign the Merchant Copy of the draft and retain for their records.

As an alternative to using the <PrintData> stream, a software developer can create their own draft documents from tag data included in the dsiEMVX transaction response. Two identical copies of the draft document should be printed with the exception that the POS must add the phrase "Cardholder Copy" as the last line of the first draft copy and the phrase "Merchant Copy" as the last line of the second draft copy.

**Every draft for an approved transaction must contain the following information:**

Data	Source
Merchant name	POS system
Merchant address	POS system
Merchant phone number	POS system

Merchant ID	Merchant ID: <MerchantID>
Terminal ID	Terminal ID: <TerminalID>
Transaction type	POS system (e.g. sale, return, etc.)
Truncated card account number	<AcctNo>
Card type	<CardType>
Entry method	Entry Method: <EntryMethod>
Transaction date	Date: <Date>
Transaction time	Time: <Time>
Invoice number	Invoice: <InvoiceNo>
Authorization code	Auth Code: <AuthCode>
Reference number	Reference: <RefNo>
Amount	Amount: <Authorize>

If the approved transaction **<EntryMethod> = "CHIP" and <CVM> = "PIN VERIFIED"**, then print the following additional information on the draft:

Data	Source
Cardholder agreement	BY ENTERING A VERIFIED PIN, CARHOLDER AGREES TO PAY ISSUER SUCH TOTAL IN ACCORDANCE WITH ISSUER'S AGREEMENT WITH CARDHOLDER
Application label	Application Label: <ApplicationLabel>
AID	AID: <AID>
TVR	TVR: < TVR>
IAD	IAD: < IAD>
TSI	TSI: < TSI>
ARC	ARC: < ARC>
CVM	CVM: PIN VERIFIED

If the approved transaction **<EntryMethod> = "CHIP" and <CVM> is not "PIN VERIFIED"**, then print the following additional information on the draft:

Data	Source
Cardholder agreement	I AGREE TO PAY THE ABOVE TOTAL AMOUNT ACCORDING TO CARD ISSUER AGREEMENT (MERCHANT AGREEMENT IF CREDIT VOUCHER)
Cardholder signature line	POS system (underline for signature with leading X)
Application label	Application Label: <ApplicationLabel>
AID	AID: <AID>
TVR	TVR: < TVR>
IAD	IAD: < IAD>
TSI	TSI: < TSI>
ARC	ARC: < ARC>
CVM	CVM: < CVM>

If the approved transaction **<EntryMethod> is not CHIP and the transaction uses a credit card** (not debit card), then print the following additional information on the draft:

Data	Source
Cardholder agreement	I AGREE TO PAY THE ABOVE TOTAL AMOUNT ACCORDING TO CARD ISSUER AGREEMENT (MERCHANT AGREEMENT IF CREDIT VOUCHER)
Cardholder signature line	POS system (underline for signature with leading X)

If **CmdStatus = "Declined" and TextResponse = "Declined Offline."** then the POS should capture any <PrintLine> data returned in the response for printing a draft if the cardholder requests. Since the contents of the response for an offline decline will not necessarily contain the usual draft tags, the POS system must utilize the PrintData lines.

A sample offline decline response is as follows:

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>Client</ResponseOrigin>
    <DSIXReturnCode>000000</DSIXReturnCode>
    <CmdStatus>Declined</CmdStatus>
    <TextResponse>Declined Offline.</TextResponse>
    <SequenceNo>0010010010</SequenceNo>
    <UserTrace>Dev1</UserTrace>
  </CmdResponse>
  <PrintData>
    <Line1>.    CHIP OFFLINE DECLINED TRANSACTION    </Line1>
    <Line2>.</Line2>
    <Line3>.MERCHANT ID: 700000000245</Line3>
    <Line4>.TERMINAL ID: 001</Line4>
    <Line5>.CLERK ID: TEST</Line5>
    <Line6>.</Line6>
    <Line7>.DATE: 07/08/2015    TIME: 16:13:48</Line7>
    <Line8>.PAN: *****0010</Line8>
    <Line9>.PAN SEQ: 01</Line9>
    <Line10>.IAC Default: 0000000000</Line10>
    <Line11>.IAC Denial: 0000000000</Line11>
    <Line12>.IAC Online: 0000000000</Line12>
    <Line13>.TAC Default: DC4000A800</Line13>
    <Line14>.TAC Denial: 0010000000</Line14>
    <Line15>.TAC Online: DC4004F800</Line15>
    <Line16>.RESP CD: Z1</Line16>
    <Line17>.DE055:</Line17>
    <Line18>.4F: A0000000031010</Line18>
    <Line19>.50: VISA CREDIT</Line19>
    <Line20>.82: 5C00</Line20>
    <Line21>.95: 0090008000</Line21>
    <Line22>.9A: 150708</Line22>
    <Line23>.9C: 00</Line23>
    <Line24>.5F2A: 0840</Line24>
    <Line25>.5F34: 01</Line25>
    <Line26>.9F02: 700</Line26>
    <Line27>.9F03: 000</Line27>
    <Line28>.9F06: A0000000031010</Line28>
    <Line29>.9F10: 06010A03800000</Line29>
    <Line30>.9F12: CREDITO DE VISA</Line30>
    <Line31>.9F1A: 0840</Line31>
    <Line32>.9F26: 7C4ED725710F9F65</Line32>
    <Line33>.9F27: 00</Line33>
    <Line34>.9F34: 1E0300</Line34>
    <Line35>.9F36: 0002</Line35>
    <Line36>.9F37: 988C332C</Line36>
  </PrintData>
</RStream>
```

**Note:**

Some EMV transactions that are not approved by selected processors may still require that a draft be printed. In the case where the **<CmdStatus> is not "Approved"**, the POS should inspect the response for the presence of <PrintData> and create two separate drafts using the <PrintData> lines.

## 6.3 ServerVersion XML Response Template

ServerVersion XML Response Template:

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>ResponseOrigin</ResponseOrigin>
    <DSIXReturnCode>DSIXReturnCode</DSIXReturnCode>
    <TextResponse>TextResponse</TextResponse>
    <CmdStatus>CmdStatus</CmdStatus>
    <SequenceNo>SequenceNo</SequenceNo>
    <UserTrace>UserTrace</UserTrace>
  </CmdResponse>
  <ServerVersion>
    <ProductName>ProductName</ProductName>
    <ProductClass>ProductClass</ProductClass>
    <Provider>Provider</Provider>
    <ProductVersion>ProductVersion</ProductVersion>
    <SerialNo>SerialNo</SerialNo>
  </ServerVersion>
</RStream>
```

Element	Return	Min	Max	Type	Description
ResponseOrigin	Y	1	10	A	Indicates the source of the response: "Client" = generated by dsiEMVX control "Server" = generated by Datacap server "Processor" = generated by payment processor
DSIXReturnCode	Y	6	6	N	Six digit return code that identifies the error type. See Section 8 on error codes for possible values
CmdStatus	Y	1	10	A	Indicates the outcome of the command: "Success" = command completed successfully "Error" = error processing command. Check DSIXReturnCode and TextResponse for additional info on error
TextResponse	Y	1	40	A	The text response message from the processor.
SequenceNo	Y	10	12	A	The sequence number returned in all responses to be used on the next request. If the SequenceNo is lost or initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
UserTrace	O	0	40	A	Echo of data supplied by the user system in the request; for use by the user system for internal tracking. May be null if no user system data was supplied in the request
ProductName	Y	1	24	A	"NETePay" (Sever product name)
ProductClass	Y	1	24	A	"Terminal Based" OR "Host Based" Type of processing server.
Provider	Y	1	24	A	Processing provider identifier.
ProductVersion	Y	1	40	A	Version information for the Datacap server.
SerialNo	Y	1	40	A	Serial number information for the Datacap server.

## 6.4 EMVParamLoad XML Response Template

EMVParamLoad XML Response Template:

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>ResponseOrigin</ResponseOrigin>
    <DSIXReturnCode>DSIXReturnCode</DSIXReturnCode>
    <TextResponse>TextResponse</TextResponse>
    <CmdStatus>CmdStatus</CmdStatus>
    <SequenceNo>SequenceNo</SequenceNo>
    <UserTrace>UserTrace</UserTrace>
  </CmdResponse>
  <TranResponse>
    <TranCode>TranCode</TranCode>
  </TranResponse>
</RStream>
```

Element	Return	Min	Max	Type	Description
ResponseOrigin	Y	1	10	A	Indicates the source of the response: "Client" = generated by dsiEMVX control "Server" = generated by Datacap server "Processor" = generated by payment processor
DSIXReturnCode	Y	6	6	N	Six digit return code that identifies the error type. See Section 8 on error codes for possible values
CmdStatus	Y	1	10	A	Indicates the outcome of the command: "Success" = command completed successfully "Error" = error processing command. Check DSIXReturnCode and TextResponse for additional info on error
TextResponse	Y	1	40	A	The text response message from the processor.
SequenceNo	Y	10	12	A	The sequence number returned in all responses to be used on the next request. If the SequenceNo is lost or initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
UserTrace	O	0	40	A	Echo of data supplied by the user system in the request; for use by the user system for internal tracking. May be null if no user system data was supplied in the request
TranCode	Y	1	20	A	"EMVParamDownload"

### Implementation Notes:

**If CmdStatus response is:**

- Success – Parameter download completed successfully
- Error – Parameter download was not successful due to some error – see Section 6 for error code. Parameter download should be attempted again until successful.

## 6.5 BatchSummary XML Response Template

BatchSummary XML Response Template:

```

<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>ResponseOrigin</ResponseOrigin>
    <DSIXReturnCode>DSIXReturnCode</DSIXReturnCode>
    <CmdStatus>CmdStatus</CmdStatus>
    <TextResponse>TextResponse</TextResponse>
    <SequenceNo>SequenceNo</SequenceNo>
    <UserTraceData>UserTraceData</UserTraceData>
  </CmdResponse>
  <BatchSummary>
    <MerchantID>MerchantID</MerchantID>
    <OperatorID>OperatorID</OperatorID>
    <TerminalID>TerminalID</TerminalID>
    <BatchNo>BatchNo</BatchNo>
    <BatchItemCount>BatchItemCount</BatchItemCount >
    <NetBatchTotal>NetBatchTotal</NetBatchTotal>
    <CreditPurchaseCount>CreditPurchaseCount</CreditPurchaseCount>
    <CreditPurchaseAmount>CreditPurchaseAmount</CreditPurchaseAmount>
    <CreditReturnCount>CreditReturnCount</CreditReturnCount>
    <CreditReturnAmount>CreditReturnAmount</CreditReturnAmount>
    <DebitPurchaseCount>DebitPurchaseCount</DebitPurchaseCount>
    <DebitPurchaseAmount>DebitPurchaseAmount</DebitPurchaseAmount>
    <DebitReturnCount>DebitReturnCount</DebitReturnCount>
    <DebitReturnAmount>DebitReturnAmount</DebitReturnAmount>
  </BatchSummary>
</RStream>

```

Element	Return	Min	Max	Type	Description
ResponseOrigin	Y	1	10	A	Indicates the source of the response: "Server" = generated by DSI server "Processor" = generated by processor "Client" = generated by DSIClientX control
DSIXReturnCode	Y	6	6	N	Six digit return code that identifies an error type. See Section 8 on error codes for possible values
CmdStatus	Y	1	10	A	Indicates the outcome of the command: "Success" = command completed successfully "Error" = error processing command. Check DSIXReturnCode and TextResponse for additional info on error
TextResponse	Y	1	40	AN	For Successful responses, this field can contain an optional message from the server or processor.
SequenceNo	Y	10	12	N	The sequence number returned in all responses to be used on the next request. If the SequenceNo is lost or initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
UserTraceData	O	0	40	AN	Echo of data supplied by the user system in the request; for use by the user system for internal tracking.

MerchantID	Y	1	24	AN	Merchant identification assigned by processor.
TerminalID	O	0	24	AN	Terminal ID data must be supplied in this tag only if provided by the processor or merchant service provider; otherwise this tag should not be included.
BatchNo	Y	1	6	AN	Batch number returned by processor
BatchItemCount	Y	1	8	N	Number of total items in batch
NetBatchTotal	Y	1	10	N	Net of all transactions in batch
CreditPurchaseCount	O	1	8	N	Number of credit purchase transactions in batch returned by BatchSummary request. Note: This value must be saved for use by the BatchClose command.
CreditPurchaseAmount	O	1	10	N	Net of all credit purchase transactions in batch returned by BatchSummary request. Note: This value must be saved for use by the BatchClose command.
CreditReturnCount	O	1	8	N	Number of credit returns transactions in batch returned by BatchSummary request. Note: This value must be saved for use by the BatchClose command.
CreditReturnAmount	O	1	10	N	Net of all credit return transactions in batch returned by BatchSummary request. Note: This value must be saved for use by the BatchClose command.
DebitPurchaseCount	O	1	8	N	Number of debit purchase transactions in batch returned by BatchSummary request. Note: This value must be saved for use by the BatchClose command.
DebitPurchaseAmount	O	1	10	N	Net of all debit purchase transactions in batch returned by BatchSummary request. Note: This value must be saved for use by the BatchClose command.
DebitReturnCount	O	1	8	N	Number of debit return transactions in batch returned by BatchSummary request. Note: This value must be saved for use by the BatchClose command.
DebitReturnAmount	O	1	10	N	Net of all debit return transactions in batch returned by BatchSummary request. Note: This value must be saved for use by the BatchClose command.

## 6.6 BatchClose XML Response Template

BatchClose XML Response Template:

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>ResponseOrigin</ResponseOrigin>
    <DSIXReturnCode>DSIXReturnCode</DSIXReturnCode>
    <CmdStatus>CmdStatus</CmdStatus>
    <TextResponse>TextResponse</TextResponse>
    <SequenceNo>SequenceNo</SequenceNo>
    <UserTraceData>UserTraceData</UserTraceData>
  </CmdResponse>
  <BatchClose>
    <MerchantID>MerchantID</MerchantID>
    <OperatorID>OperatorID</OperatorID>
    <TerminalID>TerminalID</TerminalID>
    <BatchNo>BatchNo</BatchNo>
    <BatchItemCount>BatchItemCount</BatchItemCount >
    <NetBatchTotal>NetBatchTotal</NetBatchTotal>
    <CreditPurchaseCount>CreditPurchaseCount</CreditPurchaseCount>
    <CreditPurchaseAmount>CreditPurchaseAmount</CreditPurchaseAmount>
    <CreditReturnCount>CreditReturnCount</CreditReturnCount>
    <CreditReturnAmount>CreditReturnAmount</CreditReturnAmount>
    <DebitPurchaseCount>DebitPurchaseCount</DebitPurchaseCount>
    <DebitPurchaseAmount>DebitPurchaseAmount</DebitPurchaseAmount>
    <DebitReturnCount>DebitReturnCount</DebitReturnCount>
    <DebitReturnAmount>DebitReturnAmount</DebitReturnAmount>
  </BatchClose>
  <PostProcess>PostProcess</PostProcess>
</RStream>
```

Element	Return	Min	Max	Type	Description
ResponseOrigin	Y	1	10	A	Indicates the source of the response: "Server" = generated by DSI server "Processor" = generated by processor "Client" = generated by DSIClientX control
DSIXReturnCode	Y	6	6	N	Six digit return code that identifies an error type. See Section 8 on error codes for possible values
CmdStatus	Y	1	10	A	Indicates the outcome of the command: "Success" = command completed successfully "Error" = error processing command. Check DSIXReturnCode and TextResponse for additional info on error
TextResponse	Y	1	40	AN	For Successful responses, this field can contain an optional message from the server or processor.
SequenceNo	Y	10	12	N	The sequence number returned in all responses to be used on the next request. If the SequenceNo is lost or initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
UserTraceData	O	0	40	AN	Echo of data supplied by the user system in the request; for use

					by the user system for internal tracking.
MerchantID	Y	1	24	AN	Merchant identification assigned by processor.
TerminalID	O	0	24	AN	Terminal ID data must be supplied in this tag only if provided by the processor or merchant service provider; otherwise this tag should not be included.
BatchNo	Y	1	6	AN	Batch number returned by processor
BatchItemCount	Y	1	8	N	Number of total items in batch
NetBatchTotal	Y	1	10	N	Net of all transactions in batch
CreditPurchaseCount	O	1	8	N	Number of credit purchase transactions in batch returned by BatchSummary request
CreditPurchaseAmount	O	1	10	N	Net of all credit purchase transactions in batch
CreditReturnCount	O	1	8	N	Number of credit return transactions in batch
CreditReturnAmount	O	1	10	N	Net of all credit return transactions in batch
DebitPurchaseCount	O	1	8	N	Number of debit purchase transactions in batch
DebitPurchaseAmount	O	1	10	N	Net of all debit purchase transactions in batch
DebitReturnCount	O	1	8	N	Number of debit return transactions in batch
DebitReturnAmount	O	1	10	N	Net of all debit return transactions in batch
PostProcess	O	1	40	A	If this tag is returned with a value 'EMVParamDownloadRequired', the POS system should perform an EMV Parameter Download request as the next transaction.

## 6.7 Transaction: StoreData Response

StoreData XML Response Template:

```
<?xml version="1.0"?>
<RStream>
  <CmdResponse>
    <ResponseOrigin>ResponseOrigin</ResponseOrigin>
    <DSIXReturnCode>DSIXReturnCode</DSIXReturnCode>
    <CmdStatus>CmdStatus</CmdStatus>
    <TextResponse>TextResponse</TextResponse>
    <SequenceNo>SequenceNo</SequenceNo>
    <UserTrace>UserTrace</UserTrace>
  </CmdResponse>
  <TranResponse>
    <TranCode>StoreData</TranCode>
  </TranResponse>
</RStream>
```

Element	Return	Min	Max	Type	Description
ResponseOrigin	Y	1	10	A	Indicates the source of the response: "Client" = generated by dsiEMVX control "Server" = generated by Datacap server "Processor" = generated by payment processor
DSIXReturnCode	Y	6	6	N	Six digit return code that identifies the error type. See Section 8 on error codes for possible values
CmdStatus	Y	1	10	A	Indicates the outcome of the command: "Success" = command completed successfully "Error" = error processing command. Check DSIXReturnCode and TextResponse for additional info on error.
TextResponse	Y	1	40	A	The text response message from the processor.
SequenceNo	Y	10	12	A	The sequence number returned in all responses to be used on the next request. If the SequenceNo is lost or initial deployment of the PIN pad, the ECR/POS should attempt any transaction (using "0010010010" as a SequenceNo value) to re-sync.
UserTrace	O	0	40	A	Echo of data supplied by the user system in the request; for use by the user system for internal tracking. May be null if no user system data was supplied in the request
TranResponse:TranCode:	O	1	40	AN	'StoreData'

## 7.0 dsiEMVX Programming Interface Transactions and Functions

---

### 7.1 Method: ProcessTransaction

**ActiveX:** dsiEMVX.ocx

**Use:** *To process EMV transactions.* dsiEMVX is for processing all credit and debit cards as EMV transactions. Check, prepaid or loyalty transactions are processed using a separate ActiveX control, *DSIClientX* or *dsiPDCX*.

**Note:** EBT, FSA, Check, PrePaid and Loyalty transactions can be processed using an additional Datacap ActiveX control for NETePay; either **dsiPDCX** or **DSIClientX**.

**dsiPDCX** provides POS the ability to process payments using NETePay without handling sensitive cardholder data (i.e. account number, expiration date, CVV/CID, PIN). dsiPDCX insulates a POS application from handling cardholder data by directly controlling the card account input device, such as an MSR, PIN pad, contactless reader, etc. Since dsiPDCX directly controls the input cardholder account information to process a payment transaction, it can facilitate an 'out of scope' position from a PCI-DSC (Payment Card Industry Data Security Council) PA-DSS (Payment Application – Data Security Standard) perspective for a POS application.

DSIClientX provides POS the ability to process payments using NETePay utilizing the wide variety of card input peripherals included in the POS hardware. Devices such as keyboard resident, USB and serial stripe readers are supported. However, since the POS is in control of card input functions, DSIClientX does not insulate the POS from handling cardholder data as does dsiPDCX.

**Syntax:** **BSTR ProcessTransaction** (BSTR XMLCommand)

**Arguments:** **BSTR XML Command** – An XML formatted string containing the details of the transaction request. See Sections 3 and 4 on available XML commands, formats and usage.

**Returns:** XML formatted string response of type RStream. See Section 5 on XML Responses.

## 7.2 Method: GetDevicesInfo

**ActiveX:** dsiEMVX.ocx

**Use:** To determine the which SecureDevices are supported in the version of dsiEMVX and the device capabilities and characteristics..

**Syntax:** **BSTR GetDevicesInfo ()**

**Arguments:** None

**Returns:** XML formatted string response of type Devices as follows:

```
<Devices>
<NumSecureDevices>SSSSSS</NumSecureDevices>
<SecureDeviceNN>
  <DescriptionNN>Description</DescriptionNN>
  <InterfaceNN>Interface</InterfaceNN>
  <SecureDeviceIDNN>SecureDeviceID</SecureDeviceIDNN>
</SecureDeviceNN>
</Devices>
```

Element	Min	Max	Type	Description
NumSecureDevices	1	6	N	Where SSSSSS indicates the number of Secure Devices supported in the version of dsiPDCX
SecureDeviceNN: DescriptionNN	1	40	A	Description text of SecureDeviceNN. NN = 1 to SSSSSS.
SecureDeviceNN: InterfaceNN	1	40	AN	Interface type(s) supported for SecureDeviceNN. NN = 1 to SSSSSS.
SecureDeviceNN: SecureDeviceIDNN	1	40	AN	SecureDeviceID for SecureDeviceNN. NN = 1 to SSSSSS.

### Sample Response:

```
<?xml version="1.0"?>
<Devices>
<NumSecureDevices>3</NumSecureDevices>
  <SecureDevice1>
    <Description1>Verifone Vx805 XPI - Mercury</Description1>
    <Interface1>RS-232 or USB/VCom</Interface1>
    <SecureDeviceID1>EMV_VX805_MERCURY</SecureDeviceID1>
  </SecureDevice1>
  <SecureDevice2>
    <Description2>Verifone Vx805 XPI - Paymentech</Description2>
    <Interface2>RS-232 or USB/VCom</Interface2>
    <SecureDeviceID2>EMV_VX805_PAYMENTECH</SecureDeviceID2>
  </SecureDevice2>
  <SecureDevice3>
    <Description3>Verifone Vx805 XPI - Vantiv</Description3>
    <Interface3>RS-232 or USB/VCom</Interface3>
    <SecureDeviceID3>EMV_VX805_VANTIV</SecureDeviceID3>
  </SecureDevice3>
</Devices>
```

### 7.3 Method: ProcessTransactionData

---

**ActiveX:** dsiEMVX.ocx

**Use:** To forward additional transaction information not required by NETePay payment requirements to an external server or process.

**Syntax:** **BSTR ProcessTransactionData** (BSTR XMLCommand)

**Arguments:** **BSTR XML Command** – An XML formatted string containing the transaction data to capture. See Section 5 on available XML commands, formats and usage.

**Returns:** XML formatted string response of type RStream. See Section 6 on XML Responses.

## 8.0 Error Codes

Note: Error codes are informational and may change depending on processor or version. Do not rely on the code number or code text for programmatic decisions. Code numbers should be displayed or printed when possible in case of an error to assist support personnel.

### NETePay Errors (TCP/IP)

Code Number	Code Text
002000	Password Verified
002001	Queue Full
002002	Password Failed – Disconnecting
002003	System Going Offline
002004	Disconnecting Socket
002006	Refused 'Max Connections'
002008	Duplicate Serial Number Detected
002009	Password Failed (Client / Server)
002010	Password failed (Challenge / Response)
002011	Internal Server Error – Call Provider
100201	Invalid Transaction Type
100202	Invalid Operator ID
100203	Invalid Memo
100204	Invalid Account Number
100205	Invalid Expiration Date
100206	Invalid Authorization Code
100207	Invalid Reference Number
100208	Invalid Authorization Amount
100209	Invalid Cash Back Amount
100210	Invalid Gratuity Amount
100211	Invalid Purchase Amount
100212	Invalid Magnetic Stripe Data
100213	Invalid PIN Block Data
100214	Invalid Derived Key Data
100215	Invalid State Code
100216	Invalid Date of Birth
100217	Invalid Check Type
100218	Invalid Routing Number
100219	Invalid TranCode
100220	Invalid Merchant ID
100221	Invalid TStream Type
100222	Invalid Batch Number
100223	Invalid Batch Item Count
100224	Invalid MICR Input Type
100225	Invalid Driver's License
100226	Invalid Sequence Number
100227	Invalid Pass Data
100228	Invalid Card Type

## dsiEMVX Errors (TCP/IP)

Code Number	Code Text
001001	General Failure
001003	Invalid Command Format
001004	Insufficient Fields
001006	API Not Initialized
001007	Timeout on Response
001011	Empty Command String
003002	In Process with server
003003	Socket Error sending request.
003004	Socket already open or in use
003005	Socket Creation Failed
003006	Socket Connection Failed
003007	Connection Lost
003008	TCP/IP Failed to Initialize
003009	Control failed to find branded serial (password lookup failed)
003010	Time Out waiting for server response
003011	Connect Cancelled
003012	128 bit CryptoAPI failed.
003014	Threaded Auth Started Expect Response Event (Note it is possible the event could fire before the function returns.)
003017	Failed to start Event Thread.
003050	XML Parse Error
003051	All Connections Failed
003052	Server Login Failed
003053	Initialize Failed
004001	Response Length Error (Too Short)
004002	Unable to Parse Response from Global (Indistinguishable)
004003	String Error
004004	Weak Encryption Request Not Supported
004005	Clear Text Request Not Supported
004011	Error Occurred While Decrypting Request
004010	Unrecognized Request Format
004017	Invalid Check Digit
004018	Merchant ID Missing
004019	TStream Type Missing
004020	Could Not Encrypt Response- Call Provider
009999	Unknown Error