Simplify Ingenico Developer Guide 2.02.024-025

Ingenico Download Configuration and Troubleshooting Guide 2.02.024-025

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Code Format Demo

“The story so far:
In the beginning the Universe was created.
This has made a lot of people very angry
and been widely regarded as a bad move.”

The following code is taken from the CSS file for this page.


Copy

```
:root {
```

```
  --table-vertical-spacing: 30px;
  --table-horizontal-spacing: 30px;
}
/*Demo specific CSS - Do not copy to production*/

.tooltip_templates { display: none; }

@media (min-width: 0px) {/*Smaller than mobile*/
  body {
          width: 80%  ;
  }

  .sidebar {
          width: 80%  ;
  }
}

@media (min-width: 375px) {/*Mobile to landscape mobile*/
  body {
          width: 80%  ;
  }

  .sidebar {
          width: 80%  ;
  }
}
@media (min-width: 576px) {/*Small devices (landscape phones, 576
  body {
          width: 75%%;
  }
  .sidebar {
          width: 75%  ;
  }
     }
@media (min-width: 768px) {/*Medium devices (tablets, 768px and u

  body {
          width: 75%;
  }
  .sidebar {
          width: 75%;
  }
}

@media (min-width: 992px) {/*Large devices (desktops, 992px and u
    body {
            width: 70%;
    }
```

```
        .sidebar {
                width: 70%;
        }
    }
    @media (min-width: 1200px) {
        body {
                width: 70%;
        }

        .sidebar {
                width: 70%;
        }

    }


    a:link {
      text-decoration: none;
      color:#58585a;
    }

    a:visited {
      text-decoration: none;
      font-color:#6008BA;
    }


  .h1 {
    font-size:36px;
    font-family: 'Roboto', sans-serif;
    color:#0a1c76;
    line-height: 54px;
  }

  .h2 {
    font-size:32px;
    font-family: 'Roboto Light', sans-serif;
    color:#0a1c76;
    line-height: 48px;
  }

  .h3 {
    font-size:28px;
    font-family: 'Roboto', sans-serif;
    color:#2C7BBC;
    line-height: 42px;
    line-weight:300;
  }
```

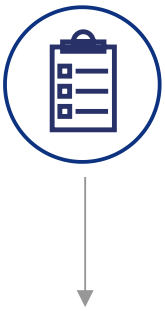
```
.h4 {
  font-size:24px;
  font-family: 'Roboto', sans-serif;
  color:#58585a;
  line-height: 34px;
}

.h5 {
  font-size:20px;
  font-family: 'Roboto', sans-serif;
  color:#58585a;
  line-height: 34px;
  font-weight: 700;
}
```

Simplify Overview

Simplify® is a semi-integrated, payment application that resides on the payment device and ensures card holders and merchants experience a secure credit or debit payment transaction, using both magstripe and EMV chip enabled cards. Simplify securely encrypts card data (tapped, inserted, swiped or manually entered) at the Point of Interaction, and sends the encrypted transaction data to Elavon's payment gateway (Fusebox) where a token for the payment card data is created.

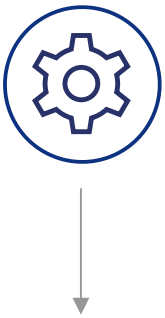
Through the Simplify application programming interface (API), customers in the Retail, Healthcare, Hospitality and Service industries can easily isolate sensitive cardholder data from their Point-of-Sale (POS) or Property Management System (PMS), thereby eliminating or reducing the scope of PCI compliance audits. The Simplify solution offers the flexibility of a variety of PIN Transaction Security (PTS)-approved devices, from tethered to wireless, along with communication and connectivity modes ranging from RS232 through WiFi. This solution is also available as a full P2PE solution.

Integration Timeline



Project Kickoff

- Choose your integration method
- Define your scope
- Read the documentation
- Create test account



Development

- Write and test code

Integration Testing

- Test all transaction types in demo environment
- Work with Solution Engineers on any problems
- Complete certification test cases

Post Implementation Support

- Support website after launch.

Total Estimated Time

- 8-12 weeks

Learn the API

Learn the API using the following guides:

- Simplify Ingenico Developer Guide 2.02.024-025 (you're reading it!)
- Simplify Telium Developer Guide 2.02.021
- Simplify VeriFone Developer Guide 2.19

- Simplify VeriFone Developer Guide 2.18

Learn PIN Pad Procedures

Learn PIN pad procedures using the following guides:

- Simplify Ingenico Download Configuration Troubleshooting Guide2.02.024-025.
- Simplify Verifone Download Configuration Guide 2.19

Communications

Communication Modes between PIN Pad and POS:

- RS232 (Serial)
- PPP over RS232
- TCP/IP
  - Bluetooth
  - WiFi
  - Ethernet
- USB emulating RS232

For more information see **Message and Communications Protocols** in the Simplify Developer Guide.

Supported Devices

Version 24 for Ingenico
We've released version 24 for all Ingenico products. This version supports Telium terminals only:

Ingenico Telium 2

- iPP320
- iPP350
- iSC250
- iSC480
- iSMP4
- iWL2xx

Ingenico Tetra (Starting with Version 25)

- Link 2500
- Move 5000
- Lane 3000
- Lane 5000
- Lane 7000

Verifone MX

- MX915
- MX925

Additional Resources

Get more information and resources to optimize your experience with Simplify.

Partner News : Elavon's newsletter for Integration Partners.
Payments Core 365 : A payments validation service available for Elavon products.

What's New for Ingenico Products?

- **TLS 1.2** We've added an instructional guide for implementing TLS 1.2.
- **Test Cards** We've added a new section covering how to work with test cards for your Simplify integrated Point-of-Sale devices.
- **New for Ingenico in Version 25** Version 25 added new Ingenico support for:
  - Tetra devices
  - Bluetooth communications
- **Version 24 for Ingenico** We've released version 24 for all supported Ingenico products. This version supports the following features:

  Introduction - Communications
  - Simplify now supports Wi-Fi

  Message Details - Non-Financial Messages
  - Signature Request Message supports new tag (002) allowing more flexible signature screen layout.
  - Initiate Ingestate Message allows POS to set IngEstate identifier (TMSID).
  - Scrolling Receipt Message supports up to five lines of text plus a total line in a single request.
  - Print Request Message from POS (NEW) supports Simplify printing on non-Pay@Table systems.

  EMV
  - Fusebox supports processing Returns from Simplify as EMV transactions
  - Simplify supports Contactless EMV.
  - Stand-In response supports return of EMV tags (configurable).

  Informational Prompting
  - Simplify supports additional tags (011, 012, 071, 072).

  Pay@Table
  - Get Check Info Response supports text field.

  Auto Signature
  - Simplify supports Auto signature (no Signature Request message required).

Quick Chip

- Simplify supports Quick Chip to speed EMV processing. (Includes optional Quick Chip message to enable tendering ahead of transaction total.)

Appendix F - API 5104

- Simplify supports the display of Tip amounts for configured or POS-controlled Tip percentages.

Configuration, Download, and Troubleshooting Guide

- Added Wi-Fi Setup.

- **Developer Guide Changes**

  We've made several edits to our developer guide for Ingenico Version 24. The main changes are:

  - **General Guidelines** - Guidelines have been added. Some guidelines have been placed at the start of Message Details.
  - **Message Details** - Reorganized sequence to group related messages. Moved some notes to a Guidelines section at the start of the chapter. Made other changes for clarity.
  - **EMV** - Added list of EMV tags. Modified description of Return transaction using chip card to say EMV supported, consult Elavon for configuration.
  - **Simplify - Generated Response Messages** - Defined processing required for response codes that produce Simplify-generated response messages.
  - **Appendix F** - Renamed to Simplify-Controlled Fields. Made old Appendix F on field 11 a subsection, and rewrote for clarity. Added subsections on API fields 5001, 5070, 5071, 5104.

Simplify Introduction

Simplify is Elavon's PIN Pad-based application designed to process electronic payment transactions received from a Point of Sale (POS) or a Property Management System (PMS).

This document is a developer guide for customers interfacing their POS / PMS process to Simplify. It applies specifically to implementations that run Simplify on Ingenico PIN Pads using Voltage or On-Guard encryption, and send transactions to Elavon's Fusebox gateway.

The Developer Guide is distributed with the application and available to the customer on the Elavon website. It is reviewed for every application update and change to **PCI P2PE** requirements (at least annually) and updated as required.

See Usage for conventions used in this document.

See Addendum for material added since the initial Developer Portal release for this version of Simplify.

Supported Hardware

Supported Telium Devices: - ipp320 - iPP350 - iSC250 - iCS480 - iSMP4 - iWL2xx

New for Version 25: - Tetra Lane 3000 - Tetra Lane 5000 - Tetra Lane 7000 - Tetra Link 2500 - Tetra Move 5000

General Guidelines

POS development for Simplify should be based on the following set of principles:

1. **PCI DSS** Compliance: The customer is responsible for securely deleting the encrypted account data and making it unrecoverable after authorization using a method that supports **PCI DSS** secure delete standards (***PCI DSS*** *3.0 Requirement 3.2*).
2. The POS process should disregard any unexpected message from Simplify. This can be done by:

   a) Discarding messages that do not correspond with the POS state.

   b) Comparing the Transaction ID / Reference Number (field 7) in the request and response. If the response doesn't match the request, the message should be discarded.
3. If multiple POS workstations can be associated with a single PIN Pad, Simplify assumes that the POS process ensures there is only one outstanding transaction per PIN Pad. (This situation can occur under TCP/IP.)
4. Simplify can return encrypted account data to allow Stand-in processing by the POS. See Stand-in Processing for more information.
5. For support purposes, Elavon strongly recommends that the POS logs all messages received from and sent to Simplify.
6. API fields in messages sent to the POS will not necessarily appear in order by field number. E.g. the following sequence of fields is possible:

API Field #, Value	Description
0001,36	Transaction Type
5001,010003888	Non-Financial Data
0011,14123010000?V102.18B01803	User Data

7. For API fields that are defined as variable length, the POS must be able to handle data of varying lengths.
8. Elavon uses IngEstate for terminal maintenance and updates. Any issue with IngEstate connectivity will require shipping back the terminal for updates. Elavon recommends testing the connection to IngEstate during pilot.
9. Elavon uses Inquiry and Voids to recover from communication issues on Financial Messages. Please pay close attention when implementing Inquiry and Void logic.
10. Fields 13 (date) and 14 (time) are required in all financial requests.
11. To protect against EMV cards being left in the Simplify device, Simplify will not accept any message from the POS until the card is removed. An error message will be returned indicating that the card is still inserted.
12. If no response is received for a financial request, or if you need to start over for any reason, the POS should send a Cancel before sending another financial request.

Message and Communications Protocols

A message using the Elavon Gateway API format consists of a list of fields, each assigned a field number. The field number (which can be 0-filled to 4 characters or just the number up to 4 characters) is followed by a comma which is followed by the field value. Each line is terminated with a <CR><LF>. Alternatively each line might be terminated by a UNIX <LF>. The message is terminated with an <EOT>.

Control Characters are defined as follows:

<CR> = (0x0D) 1 byte, hex D

<LF> = (0x0A) 1 byte, hex A

<EOT> = (0x04) 1 byte, hex 4

Note: Sample messages shown in this document do not show the control characters.

The communications protocol between the POS process and Simplify is TCP/IP, or RS-232 (Serial), or PPP with TCP/IP over RS-232.

TCP/IP

TCP/IP communications between the POS and Simplify can be by wired ethernet, Wifi or Bluetooth transport to the base. The availability of these communication methods is device-dependent.

In most systems, Simplify will act as the TCP/IP server. The POS process will act as a TCP/IP client and initiate the connection to Simplify.

Exception: For Pay@Table systems, the POS process will act as the TCP/IP server. Simplify will act as a TCP/IP client and initiate the connection to the POS.

Simplify-POS messaging can use plain TCP/IP or TCP/IP with TLS 1.2. Depending on security configuration, a certificate may be needed if TLS is used.

Appendix B describes the Simplify RS-232 communication protocol.

Simplify RS-232 communication could optionally be over USB emulating RS-232.

PPP under RS-232 (Serial)

Simplify supports PPP (Point to Point Protocol) communications over RS-232. Using this protocol for the transport layer allows customers to communicate via TCP/IP over a RS-232 physical link.

The Simplify PIN Pad will be the PPP client and communicate with a PPP server on the customer network. Elavon will set the PIN Pad to receive the following data from the PPP server: (1) A host IP address to use for TCP/IP communications between the PIN Pad and Fusebox. (2) An IngEstate server address to use for TCP/IP communications between the PIN Pad and IngEstate.

There will be three TCP/IP sockets:

- One socket is from the POS to Simplify. The POS will be the socket client and Simplify will be the socket server.
- Another socket is from Simplify to Fusebox. FuseBox will be the socket server and Simplify will be the socket client. This socket is non-persistent (as usual) and is secured by TLS 1.2.
- Another socket is from Simplify to the IngEstate server. IngEstate will be the socket server and Simplify will be the socket client.

Apart from interaction with the PPP server, Simplify TCP/IP communications under PPP will follow the usual Simplify TCP/IP rules.

Versioning

The Simplify versioning scheme (from 2.02.021 on) includes a two-part prefix (S-PP below) indicating: (1) whether Simplify is operating as part of a **PCI P2PE**-validated solution, and (2) the encryption type. The prefix for a validated solution using On-Guard will be V-OG. Versions with any other prefix will be non-validated.

The Simplify versioning implemented will be as follows:

S-PP-X.YY.ABBCC, where:

Element	Data Type	Description
S	alphanumeric	Elavon enterprise implementation type (PCI P2PE-validated solution indicator)V = validated Missing or any other value = non-validated
PP	alphanumeric	Encryption type used by application: OG = On-Guard G2 = Voltage
X	numeric	Major Version Example: X was incremented to 2 when EMV support was added.
YY	numeric	Minor Version. Changes that affect architecture or security.
ABBCC	numeric	Build release A: 0-4: Only used for On-Guard implementations. 5-9: Only used for Voltage implementations. BB: Feature changes that do not affect architecture or security. CC: Sequential build number for IngEstate control. No impact on functionality. For bug fixes or adjustments.

The Simplify version number will not affect the EMV level. A separate internal EMV version will be used for purposes of EMV certification:

EMVX.YY

Any time there is a change in the EMV interface or functionality, the EMV version will be updated.

The Simplify version number will be displayed during boot up and on an Informational Screen that can be briefly displayed by pressing 0 when the terminal is in the closed state. (To lengthen the display, press the + or – key.) If the second part of the prefix of the version number is OG (indicating On-Guard encryption), this will serve as an indicator that SRED is activated in the terminal.

Current version numbers for Simplify and supporting software are as follows:

Simplify Version 24

Software Component	Version

Software Component	Version
Simplify OnGuard version	2.02.024xx-OG
Simplify Voltage version	2.02.524xx-G2
Simplify EMV Cert version	2.23
Easy Path to C'Less version	5.14.0.02
Easy Path to EMV version	22.14.2.01
Telium SDK version	11.16.7.Patch G
OnGuard version	1.6.0.00

Simplify Version 25

Software Component	Version
Simplify OnGuard version	2.02.025xx-OG
Simplify Voltage version	2.02.525xx-G2
Simplify EMV Cert version	2.25
Easy Path to C'Less version (Telium)	5.14.0.02
Easy Path to EMV version (Telium)	22.14.2.01
SDK version (Telium)	11.16.07.Patch G
Easy Path to C'Less version (Tetra)	7.6.7.00
Easy Path to EMV version (Tetra)	30.12.3.01
SDK version (Tetra)	11.16.05.Patch M

Software Component	Version
OnGuard version	1.6.0.00

Message Details

This chapter provides details on message types sent between Simplify and the POS. These messages follow the Elavon Gateway API as specified in the Fusebox Integration Guide. The chapter covers both Financial Messages and Non-Financial Messages (Tran Type 36). For additional information on Financial Messages, see the Fusebox industry guides. Message samples in this chapter do not include EMV fields; please refer to the EMV chapter for more information.

Guidelines for Handling Financial Messages

Messages built for Simplify and the handling of messages received from Simplify should be based on the following set of principles:

1. If account data is sent in Field 3 of the POS request, the Tender Type is required in Field 115 (Transaction Qualifier).
2. If the POS wants Simplify to prompt for Manual Entry, send 'K' in Field 3.
3. If the data in Field 2 (Amount) or any other amount field does not include a decimal point, the decimal point will be assumed. (E.g., a value of 2000 in this field will be read as 20.00.)
4. If a transaction refers back to a previous transaction (e.g. Void, Prior Auth), the request for the later transaction follows the Fusebox Integration Guide, including the rules for POS data code (API field 47).
5. Fields 13 (date) and 14 (time) are required in all financial requests.
6. Elavon recommends not padding Field 7 (Transaction ID / Reference Number) with leading zeros. Elavon recommends presenting this field in the same manner in all messages.
7. The messages in this document are basic samples. The POS should be able to handle any additional API fields in the response as defined in the Fusebox Integration Guide under "API Reference".
8. If a Void Request needs to be re-sent, it should be sent without modification until a Host Response is received.
9. If a voice auth transaction is sent to Simplify without an account number or a token in field 3, Simplify will prompt for account data. The operator verifies that the account data for which

voice auth was obtained matches that entered at the PIN Pad.

10. Elavon recommends sending API 5071 in all financial requests, using the value that reflects the actual transaction environment. See under Simplify-Controlled Field Definitions.
11. The value in field 0007 (Transaction ID / Reference ID) is incremented by the POS for each new transaction.

Sale Message (Tran Type 02)

Simplify supports a Sale message from the POS process.

Request

The following table shows an example of a Sale Request message (from the POS to Simplify).

API Field #, Value	Description
0001,02	Transaction Type
0002,1.00	Transaction Amount
0007,55	Transaction ID / Reference Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date)– MMDDYY
0014,105007	Transaction Time (current time) – HHMMSS
0017,0.00	Cash Back Amount
0109,Term02	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0201,0.00	Tip Amount
1008,ID:	Set to 'ID:' to request that an account Token be returned by Fusebox

API Field #, Value	Description
5071,xxx...	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
5104,xxx...	Tip Settings. See Simplify-Controlled Field Definitions.
8002,ONGUARD	Location Name (provided by Elavon)
8006,TSTLA3	Chain Code (provided by Elavon)

Response

The table below is an example of a Sale Response message (from Simplify to the POS).

API Field #, Value	Description
0001,02	Transaction Type
0002,1.00	Transaction Amount
0003,ID:4476082153699999	Account Token (returned by Fusebox)
0004,0119	Expiration Date (MMYY)
0006,419039	Authorization Code (returned by Fusebox)
0007,55	Transaction ID / Reference Number
0009,001	Fusebox – Host Batch number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,105007	Transaction Time (current time) – HHMMSS

API Field #, Value	Description
0017,0.00	Cash Back Amount
0030,1	Fusebox – Online Indicator
0032,022519	Fusebox – Authorization Transaction Date
0033,135016	Fusebox – Authorization Transaction Time
0035,5245	Validation Code
0036,018031513501628	Host Transaction Identifier
0037,0	Fusebox - Authorizer
0043,117595	System Trace Audit Number
0047,M;1;1;1;0;1;2;5;4;1;3;C;0;4	POS Data Code
0052,5	Transponder / Proximity Indicator (0 = contact; 2 = contactless; 5 = swiped)
0054,90	POS Entry Mode
0062,154	Service Code
0109,TERM02	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0112,400	Fusebox – Processor ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
0125,315175016	Retrieval Reference Number (may need to appear on receipt)
0126,2	Track Indicator (may need to appear on receipt)

API Field #, Value	Description
0129,0	Fusebox – Compliance Data
0130,1.00	Authorized Amount
0140,USD	Merchant Currency
0201,0.00	Tip Amount
0651,00003@;010011759503151; 75016000004717050000000000; 419039807417117595	Reversal data (for reversal, if needed)
0738,106781MMCC539137 Y 0225	Recurring Compliance Data
1000,VI	Card Type
1001,VISA	Card Name
1002,CERTIFICATION-VISA/ELAVON	Cardholder Name
1003,0000	Gateway Response Code
1004,APPROVAL	Host Response Message
1005,00106000080145936139999	Merchant Number
1008,**********9999	Masked Account Number (for printing on receipt)
1009,AA	Host Response Code
1010,COMPLETE	Gateway Response Message
1012,0039	Gateway Batch Number
1200,0000AA	Issuer Network Information

API Field #, Value	Description
1339,00	EMV Response Code
1359,4	EMV CVM Indicator
4747,040311	Third Party Interface POS Data Code
5002,80649419	Device Serial Number
5004,OG	Encryption Provider ID
5010,EMVDC0838	EMV kernel version
5070,Merchant: Demo;Simplify: V-OG-2.02.02124;PARM: 2.21.1; TENDERDEF: 2.21.1; EMVPARM: EMVPARM-E4-1	Simplify Information. See Simplify-Controlled Field Definitions.
5071,xxx...	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
5104,xxx...	Tip Settings. See Simplify-Controlled Field Definitions.
7007,1118074642168320	Transaction Link Identifier (unique identifier to link transactions)
8002,ONGUARD	Location Name (provided by Elavon)
8006,TSTLA3	Chain Code (provided by Elavon)

Auth Only Message (Tran Type 01)

Simplify supports an Auth Only message from the POS process.

Request

The following table shows an example of an Auth Only Request message from the POS to Simplify.

API Field #, Value	Description
0001,01	Transaction Type
0002,1.00	Transaction Amount
0007,57	Transaction ID / Reference Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date)– MMDDYY
0014,105120	Transaction Time (current time) – HHMMSS
0109,TERM02	Terminal ID (provided by Elavon)
0110,205	Cashier ID
1008,ID:	Set to 'ID:' to request that an account Token be returned by Fusebox
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
5104,xxx…	Tip Settings. See Simplify-Controlled Field Definitions.
8002,ONGUARD	Location Name (provided by Elavon)
8006,TSTLA3	Chain Code (provided by Elavon)

Prior Auth Sale Message (Tran Type 07)

Simplify supports a Prior-Auth Sale (Completion) message from the POS process.

The Prior-Auth Sale transaction type is designed to record a previously authorized transaction for funding. It is also called a "post-authorized sale" or a "completion" transaction, and works in conjunction with an Auth Only transaction.

API Field #	Description
0003	Account Data (token)
0004	Expiration Date
0006	Authorization Code
0007	Transaction ID / Reference Number

Request

An example of a Prior-Auth Sale Request message (from the POS to Simplify) is:

API Field #, Value	Description
0001,07	Transaction Type.
0002,8.00	Transaction Amount. Should be the final amount to be processed
0003,ID:1111748353147271	Account Data. Must match Auth Only response.
0004,1208	Expiration Date – MMYY. Must match Auth Only response (if present).
0006,CVI014	Authorization Code. Must match Auth Only response.
0007,1025	Transaction ID / Reference Number. Must match Auth Only response
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS

API Field #, Value	Description
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
5104,xxx…	Tip Settings. See Simplify-Controlled Field Definitions.
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Response

API Field #, Value	Description
0001,07	Transaction Type
0002,8.00	Transaction Amount
0003,ID:1111748353147271	Account Token (returned by Fusebox)
0004,1208	Expiration Date – MMYY
0006,CVI014	Authorization Code (returned by Fusebox)
0007,1025	Transaction ID / Reference Number
0009,0025	Host Batch number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.

API Field #, Value	Description
0013,022519	Transaction Date (current date) – MMDDYY
0014,115745	Transaction Time (current time) – HHMMSS
0030,1	Online Indicator
0033,115754	Fusebox – Authorization Transaction Time
0035,0DF9	Validation Code
0036,111175957465103	Host Transaction Identifier
0037,0	Authorizer
0043,223946	System Trace Audit Number
0047,2;1;0;1;0;0;6;5;4;1;2;4;0;4	POS Data Code
0052,5	Transponder / Proximity Indicator (0 = contact; 2 = contactless; 5 = swiped)
0054,01	POS Entry Mode
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0112,189	Processor ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
0125,0624155745	Retrieval Reference Number (may need to appear on receipt)
0126,2	Track Indicator (may need to appear on receipt)
0128,6.00	Original Authorization Amount

API Field #, Value	Description
0129,1	Compliance Data
0130,8.00	Total Authorized Amount
0131,00	CPS Total Incremental Auths sent
0132,0	Authorization Reversal Sent
0140,USD	Merchant Currency
0651,00003@; 175016000004717050000000 000041903980741711759 5	Reversal data (for reversal, if needed)
1000,VI	Card Type
1001,VISA	Card Name
1003,0000	Gateway Response Code
1004,ACKNOWLEDGED	Host Response Message
1008,466206******0005	Masked Account Number (for printing on receipt)
1010,COMPLETE	Gateway Response Message
1012,1832	Gateway Batch Number
1200,0000AA	Issuer Network Information
1359,4	EMV CVM Indicator
5002,80378002	Device Serial Number
5004,OG	Encryption Provider ID
5010,EMVDC0838	EMV kernel version

API Field #, Value	Description
5070,xxx...	Simplify Information. See Simplify-Controlled Field Definitions.
5071,xxx...	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
5104,xxx...	Tip Settings. See Simplify-Controlled Field Definitions.
7007,1111175588200494	Transaction Link Identifier (unique identifier to link transactions)
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Incremental Authorization Message (Tran Type 75)

Simplify supports an Incremental Authorization message from the POS process if tokenization is implemented.

The following table shows a sample of fields in the Incremental Authorization message that may need to match fields in the original transaction. See the Fusebox Integration Guide and the Lodging Integration Guide for more information on this Transaction Type.

API Field #	Description
0003	Account Data (token)
0004	Expiration Date
0006	Authorization Code
0007	Transaction ID / Reference Number

Request

An example of a Prior-Auth Sale Request message (from the POS to Simplify) is:

API Field #, Value	Description
0001,07	Transaction Type.
0002,8.00	Transaction Amount. Should be the final amount to be processed
0003,ID:1111748353147271	Account Data. Must match Auth Only response.
0004,1208	Expiration Date – MMYY. Must match Auth Only response (if present).
0006,CVI014	Authorization Code. Must match Auth Only response.
0007,1025	Transaction ID / Reference Number. Must match Auth Only response
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
5071,xxx...	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
5104,xxx...	Tip Settings. See Simplify-Controlled Field Definitions.
8002,RETL01	Location Name (provided by Elavon)

API Field #, Value	Description
8006,TSTLAR	Chain Code (provided by Elavon)

Full Authorization Reversal Message (Tran Type 61)

Simplify supports a Full Authorization Reversal message from the POS if tokenization is implemented.

The following table shows a sample of fields in the Full Authorization Reversal message that may need to match fields in the original transaction. See the Fusebox Integration Guide for more information on this transaction type.

API Field #	Description
0003	Account Data (token)
0004	Expiration Date
0006	Authorization Code
0007	Transaction ID / Reference Number

Request

An example of a Full Authorization Reversal message (from the POS to Simplify) is:

API Field #, Value	Description
0001,61	Transaction Type
0002,1.00	Transaction Amount
0003,ID:1111748353147271	Account Data. Must match Auth Only response.

API Field #, Value	Description
0004,1208	Expiration Date – MMYY. Must match Auth Only response (if present).
0006,106845	Authorization Code. Must match Auth Only response.
0007,140	Transaction ID / Reference Number. Must match Auth Only response.
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
5071,xxx...	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Response

An example of a Full Authorization Reversal Response message (from Simplify to the POS) is:

API Field #, Value	Description
0001,61	Transaction Type
0002,1.00	Transaction Amount

API Field #, Value	Description
0003,ID:1120106195107475	Account Token (returned by Fusebox)
0004,1215	Expiration Date – MMYY
0006,CVI790	Authorization Code (returned by Fusebox)
0007,140	Transaction ID / Reference Number
0009,0104	Host Batch number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS
0030,1	Online Indicator
0032,022519	Authorization Transaction Date
0033,161934	Authorization Transaction Time
0035,E2F9	Validation Code
0036,112010967961779	Host Transaction Identifier
0037,0	Authorizer
0043,118410	System Trace Audit Number
0047,2;1;0;1;0;0;6;5;4;1;2;4;0;4	POS Data Code
0052,5	Transponder / Proximity Indicator (0 = contact; 2 = contactless , 5 = swiped)
0054,01	POS Entry Mode
0109,TERM1	Terminal ID (provided by Elavon)

API Field #, Value	Description
0110,205	Cashier ID
0112,189	Processor ID
0115,010	Transaction Qualifier(010 = credit; 030 = debit)
0125,0110224915	Retrieval Reference Number (may need to appear on receipt)
0126,0	Track Indicator (may need to appear on receipt)
0128,16.00	Original Authorization Amount
0129,0	Compliance Data
0130,32.00	Total Authorized Amount
0131,01	CPS Total Incremental Auths sent
0132,0	Authorization Reversal Sent
0140,USD	Merchant Currency
0651,00003@;0100117595031517501600000471705000000000004190398074171175 95	Reversal data (for reversal, if needed)
0738,106781MMCC539137 Y 0225	Recurring Compliance Data
1000,VI	Card Type
1001,VISA	Card Name
1003,0000	Gateway Response Code
1004,APPROVAL	Host Response Message

API Field #, Value	Description
1005,0010600008014593613999	Merchant Number
1008,400555******4460	Masked Account Number (for printing on receipt)
1009,AA	Host Response Code
1010,COMPLETE	Gateway Response Message
1012,1832	Gateway Batch Number
1200,0000AA	Issuer Network Information
1339,00	EMV Response Code
1359,4	EMV CVM Indicator
4747,020111	Third Party Interface POS Data Code
5002,80649419	Device Serial Number
5004,G2	Encryption Provider ID
5010,EMVDC0838	EMV kernel version
5070,xxx…	Simplify Information. See Simplify-Controlled Field Definitions.
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
7007,1112010821551364	Transaction Link Identifier. A unique identifier to link transactions
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Partial Authorization Reversal Message (Tran Type 76)

Simplify supports a Partial Authorization Reversal message from the POS.

Important: Not all processors support this transaction type. It is important to consult Elavon before implementing this transaction type.

API Field #	Description
0003	Account Data (token)
0004	Expiration Date
0006	Authorization Code
0007	Transaction ID / Reference Number

Request

An example of a Partial Authorization Reversal Request message (from the POS to Simplify) is:

API Field #, Value	Description
0001,76	Transaction Type.
0002,1.00	Transaction Amount
0003,ID:1120106195107475	Account Data. Must match Auth Only response.
0004,1215	Expiration Date – MMYY. Must match Auth Only response (if present).
0006,106844	Authorization Code. Must match Auth Only response.
0007,140	Transaction ID / Reference Number. Must match Auth Only response.

API Field #, Value	Description
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143008	Transaction Time (current time) – HHMMSS
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Response

An example of a Partial Authorization Reversal Response message (from Simplify to the POS) is:

API Field #, Value	Description
0001,76	Transaction Type
0002,1.00	Transaction Amount
0003,ID:1120106195107475	Account Token (returned by Fusebox)
0004,1215	Expiration Date – MMYY
0006,CVI790	Authorization Code (returned by Fusebox)
0007,140	Transaction ID / Reference Number

API Field #, Value	Description
0009,0104	Host Batch number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS
0030,1	Online Indicator
0032,022519	Authorization Transaction Date
0033,161934	Authorization Transaction Time
0035,E2F9	Validation Code
0036,112010967961779	Host Transaction Identifier
0037,0	Authorizer
0043,118410	System Trace Audit Number
0047,2;1;0;1;0;0;6;5;4;1;2;4;0;4	POS Data Code
0052,5	Transponder / Proximity Indicator (0 = contact; 2 = contactless, 5 = swiped)
0054,90	POS Entry Mode
0062,154	Service Code
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0112,189	Processor ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)

API Field #, Value	Description
0125,0110224915	Retrieval Reference Number (may need to appear on receipt)
0126,0	Track Indicator (may need to appear on receipt)
0128,16.00	Original Authorization Amount
0129,0	Fusebox - Compliance Data
0130,32.00	Total Authorized Amount
0131,01	CPS Total Incremental Auths sent
0132,0	Authorization Reversal Sent
0140,USD	Merchant Currency
0651,09901@	Reversal data (for reversal, if needed)
0738, MMTI539215 02255	Recurring Compliance Data
1000,VI	Card Type
1001,VISA	Card Name
1003,0000	Gateway Response Code
1004,APPROVAL	Host Response Message
1005,00106000080145936139999	Merchant Number
1008,400555******4460	Masked Account Number (for printing on receipt)
1009,AA	Host Response Code
1010,COMPLETE	Gateway Response Message
1012,1832	Gateway Batch Number

API Field #, Value	Description
1200,0000AA	Issuer Network Information
1339,00	EMV Response Code
1359,4	EMV CVM Indicator
4747,040311	Third Party Interface POS Data Code
5002,80649419	Device Serial Number
5004,G2	Encryption Provider ID
5010,EMVDC0838	EMV kernel version
5070,xxx...	Simplify Information. See Simplify-Controlled Field Definitions.
5071,xxx...	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
7007,1112010821551364	Transaction Link Identifier (unique identifier to link transactions)
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Return Message (Tran Type 09)

Simplify supports a Return message from the POS.

Request

An example of a Return Request message (from the POS to Simplify) is:

API Field #, Value	Description
0001,09	Transaction Type.
0002,125.98	Transaction Amount
0007,1025	Transaction ID / Reference Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
1008,ID:	Set to 'ID:' to request that an account Token be returned by Fusebox
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Response

An example of an Incremental Authorization Response message (from Simplify to the POS) is:

API Field #, Value	Description
0001,01	Tran Type. Note that the Tran Type in the response is a 01 (Auth Only response) – not a 75.

API Field #, Value	Description
0002,19.00	Transaction Amount
0003,ID:1120064425266606	Account Token (returned by Fusebox)
0004,1208	Expiration Date – MMYY
0006,CVI130	Authorization Code (returned by Fusebox)
0007,1123	Transaction ID / Reference Number
0009,0102	Host Batch Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS
0030,1	Online Indicator
0032,022519	Authorization Transaction Date
0033,161934	Authorization Transaction Time
0035,BF66	Validation Code
0036,112006976774166	Host Transaction Identifier
0037,0	Authorizer
0043,211605	System Trace Audit Number
0047,2;1;0;1;0;0;6;5;4;1;2;4;0;4	POS Data Code
0052,5	Transponder / Proximity Indicator (0 = contact; 2 = contactless , 5 = swiped)
0054,01	POS Entry Mode

API Field #, Value	Description
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0112,189	Processor ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
0125,0106211934	Retrieval Reference Number (may need to appear on receipt)
0126,2	Track Indicator (may need to appear on receipt)
0128,1.00	Original Authorization Amount
0129,1	Compliance Data
0130,19.00	Total Authorized Amount
0131,00	CPS Total Incremental Auths sent
0140,A	Merchant Currency
0651,00003@; 01001175950315 175016000004717050000000000 00419039807417117595	Reversal data (for reversal, if needed)
0738,106781MMCC539137 Y 0225	Recurring Compliance Data
1000,VI	Card Type
1001,VISA	Card Name
1003,0000	Gateway Response Code
1004,APPROVAL	Host Response Message

API Field #, Value	Description
1005,0010600008014593613999	Merchant Number
1008,400555******4460	Masked Account Number (for printing on receipt)
1009,AA	Host Response Code
1010,COMPLETE	Gateway Response Message
1012,1832	Gateway Batch Number
1200,0000AA	Issuer Network Information
1339,00	EMV Response Code
1359,4	EMV CVM Indicator
4747,020111	Third Party Interface POS Data Code
5002,80649419	Device Serial Number
5004,G2	Encryption Provider ID
5010,EMVDC0838	EMV kernel version
5070,xxx…	Simplify Information. See Simplify-Controlled Field Definitions.
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
5104,xxx…	Tip Settings. See Simplify-Controlled Field Definitions.
7007,1112006767740668	Transaction Link Identifier (unique identifier to link transactions)
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Void Return Message (Tran Type 17)

Simplify supports a Void Return message from the POS process if tokenization is implemented. Customers might want to void a return transaction after it has been completed. The POS does this by sending a Void Return message to Simplify.

The following table shows a sample of fields in the Void Return message that may need to match fields in the original transaction. See the Fusebox Integration Guide for more information on this Transaction Type.

API Field #	Description
0002	Transaction Amount
0003	Account Data (token)
0004	Expiration Date
0007	Transaction ID / Reference Number
0109	Terminal ID
8002	Location Name
8006	Chain Code

Request

An example of a Void Return Request message (from the POS to Simplify) is:

API Field #, Value	Description
0001,17	Transaction Type.
0002,125.98	Transaction Amount. Must match Return response.

API Field #, Value	Description
0003,ID:1120106195107475	Account Data. Must match Return response.
0004,1208	Expiration Date – MMYY. Must match Return response (if present).
0007,1025	Transaction ID / Reference Number. Must match Return response.
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143515	Transaction Time (current time) – HHMMSS
0109,TERM1	Terminal ID. Must match Return response.
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit). Must match Return response.
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
8002,RETL01	Location Name. Must match Return response.
8006,TSTLAR	Chain Code. Must match Return response.

Response

An example of a Void Return Request message (from the POS to Simplify) is:

API Field #, Value	Description
0001,17	Transaction Type.

API Field #, Value	Description
0002,125.98	Transaction Amount. Must match Return response.
0003,ID:1120106195107475	Account Data. Must match Return response.
0004,1208	Expiration Date – MMYY. Must match Return response (if present).
0007,1025	Transaction ID / Reference Number. Must match Return response.
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143515	Transaction Time (current time) – HHMMSS
0109,TERM1	Terminal ID. Must match Return response.
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit). Must match Return response.
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
8002,RETL01	Location Name. Must match Return response.
8006,TSTLAR	Chain Code. Must match Return response.

Void Transaction Message (Tran Type 11)

In some transactions, the customer may wish to void a Sale transaction after it has already been completed. The POS can accomplish this by sending a Void Transaction message to Simplify. A Void Transaction is also used to financially recover from a timed-out financial request.

In some transactions, the customer may wish to void a Sale transaction after it has already been completed. The POS can accomplish this by sending a Void Transaction message to Simplify. A

Void Transaction is also used to financially recover from a timed-out financial request.

API Field #	Description
0002	Transaction Amount
0003	Account Data (token)
0004	Expiration Date
0007	Transaction ID / Reference Number
0109	Terminal ID
8002	Location Name
8006	Chain Code

Request

An example of a Void Request message (from the POS to Simplify) is:

API Field #, Value	Description
0001,11	Transaction Type.
0002,125.98	Transaction Amount. Must match Sale response.
0003,ID:1102571965098318	Account Data. Must match Sale response.
0004,1215	Expiration Date – MMYY. Must match Sale response (if present).
0007,1025	Transaction ID / Reference Number. Must match Sale response.
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY

API Field #, Value	Description
0014,143515	Transaction Time (current time) – HHMMSS
0109,TERM1	Terminal ID. Must match Sale response.
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit). Must match Sale response.
8002,RETL01	Location Name. Must match Sale response.
8006,TSTLAR	Chain Code. Must match Sale response.

Response

An example of a Void Response message (from Simplify to the POS) is:

API Field #, Value	Description
0001,11	Transaction Type.
0002,125.98	Transaction Amount
0003,ID:1102571965098318	Account Token (returned by Fusebox)
0006,CMC663	Authorization Code (returned by Fusebox)
0007,1025	Transaction ID / Reference Number
0009,0020	Fusebox – Host Batch number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY

API Field #, Value	Description
0014,143515	Transaction Time (current time) – HHMMSS
0030,1	Fusebox – Online Indicator
0032,022519	Fusebox – Authorization Transaction Date
0033,105319	Fusebox – Authorization Transaction Time
0035,1008	Validation Code
0036,MCC0DFA9A	Host Transaction Identifier
0037,0	Fusebox – Authorizer
0043,022284	System Trace Audit Number
0047,2;1;0;1;0;0;6;5;4;1;2;4;0;4	POS Data Code
0052,5	Transponder / Proximity Indicator (0 = contact; 2 = contactless, 5 = swiped)
0054,90	POS Entry Mode
0109,TERM1	Terminal ID. Must match Sale response.
0110,205	Cashier ID
0112,400	Fusebox – Processor ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
0125,1008145319	Retrieval Reference Number (may need to appear on receipt)
0126,0	Track Indicator (may need to appear on receipt)
0128,1.00	Original Authorization Amount

API Field #, Value	Description
0129,0	Fusebox – Compliance Data
0130,1.00	Authorized Amount
0131,00	CPS Total Incremental Auths sent
0132,0	Authorization Reversal Sent
0140,USD	Fusebox – Merchant Currency
0651,0000000	Reversal data (for reversal, if needed)
1000,MC	Card Type
1001,MASTERCARD	Card Name
1003,0000	Gateway Response Code
1004,ACKNOWLEDGED	Host Response Message
1005,0031940008024682711000	Merchant Number
1008,**********1114	Masked Account Number (may need to appear on receipt)
1009,AA	Host Response Code
1010,COMPLETE	Gateway Response Message
1012,0020	Gateway Batch Number
1200,0000AA	Issuer Network Information
1359,4	EMV CVM Indicator
5002,80378002	Device Serial Number
5004,G2	Encryption Provider ID

API Field #, Value	Description
5010,EMVDC0838	EMV kernel version
5070,xxx...	Simplify Information. See Simplify-Controlled Field Definitions.
5071,xxx...	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
7007,1114281539351186	Transaction Link Identifier (unique identifier to link transactions)
8002,RETL01	Location Name. Must match Sale response.
8006,TSTLAR	Chain Code. Must match Sale response.

Gift Card Messages (Tran Types 01, 02, 07, 09, 11, 17, 24)

Simplify supports Gift Card messages from the POS process. As indicated in the table, supported Gift Card messages are identified as follows:

- All Gift Card messages send a value of 50 in Field 115 (Transaction Qualifier).
- The type of Gift Card transaction is indicated by Field 1 (Tran Type) and Field 117 (Stored Value Function).

Type of Transaction	Field 1	Field 115	Field 117
	Tran Type	Tran Qualifier	Stored Value Function
Auth Only	01	50	n/a
Redemption/Redemption with Cash Back	02	50	5

Type of Transaction	Field 1	Field 115	Field 117
Redemption with Cash Out/Cash Out	02	50	6
Prior Auth / Voice Auth	07	50	7
Card Activation	09	50	1
Card Issuance	09	50	2
Card Reload	09	50	3
Return	09	50	4
Void Redemption	11	50	5
Void Activation	17	50	1
Void Issuance	17	50	2
Void Reload	17	50	3
Void Return	17	50	4
Balance Inquiry	24	50	n/a

A sample Card Issuance request/response is shown below. Please refer to the Gift and Stored Value Card Integration Guide for more information on this Transaction Type.

Request

An example of a **Card Issuance Request** message (from the POS to Simplify) is:

API Field #, Value	Description
0001,09	Transaction Type of 9, in combination with Field 115 of 050 and Field 117 of 2, indicates a Gift Card Issuance

API Field #, Value	Description
0002,50.00	Dollar amount to be authorized
0007,1025	Transaction ID / Reference Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,131535	Transaction Time (current time) – HHMMSS
0109,RETAIL	Terminal ID (provided by Elavon)
0110,00000301	Cashier ID
0115,050	Transaction Qualifier (050 = Gift / Stored Value)
0117,2	Stored Value Function. A Value of 2 indicates a Card Issuance
1008,ID:	Set to 'ID:' to request that an account Token be returned by Fusebox
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
8002,PLSNTN	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Response

An example of a **Card Issuance Response** message (from Simplify to the POS) is:

API Field #, Value	Description
0001,09	Transaction Type

API Field #, Value	Description
0002,000050.00	Transaction Amount
0003,ID:1120106195107475	Account Token (returned by Fusebox)
0004,1218	Expiration Date – MMYY
0006,001000	Authorization Code (returned by Fusebox)
0007,1025	Transaction ID/Reference Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,131535	Transaction Time (current time) – HHMMSS
0043,500586	System Trace Audit Number
0052,5	Transponder / Proximity Indicator (0 = contact; 2 = contactless , 5 = swiped)
0054,01	POS Entry Mode
0109,RETAIL	Terminal ID (provided by Elavon)
0110,00000301	Cashier ID
0112,34	Fusebox – Processor ID
0115,050	Transaction Qualifier (010 = credit; 030 = debit)
0117,2	Stored Value Function
0125,111293621357294	Retrieval Reference Number (may need to appear on receipt)
0126,0	Track Indicator (may need to appear on receipt)
0140,USD	Merchant Currency

API Field #, Value	Description
1000,SV	Card Type
1001,SVS	Card Name
1003,0000	Gateway Response Code
1004,01 – APPROVAL	Host Response Message
1005,061286	Merchant Number
1008,600649*********1083	Masked Account Number (for printing on receipt)
1009,01	Host Response Code
1010,COMPLETE	Gateway Response Message
1012,1784	Gateway Batch Number
5002,169018710	Device Serial Number
5004,G2	Encryption Provider ID
5010,EMVDC0838	EMV Kernel Version
5070,xxx…	Simplify Information. See Simplify-Controlled Field Definitions.
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
7007,1111293621357294	Transaction Link Identifier. A unique identifier to link transactions
8002,PLSNTN	Location Name (provided by Elavon)
8006,TEST	Chain Code (provided by Elavon)

Inquiry Message (Tran Type 22)

In normal cases, Simplify will respond to a POS/PMS request in a timely manner. If this does not occur, the POS/PMS will need to send an **Inquiry** message to Simplify requesting information from Fusebox about the transaction. An **Inquiry** message should contain all elements of the original transaction.

- Inquiry processing is required for the following situations:
    - No response to a financial request.
    - Field 1010 in the financial response contains one of the following:
      *SLR STAND-IN.
      *SLR COMMUNICATIONS ERROR.
- After sending an **Inquiry** message, Elavon highly recommends that the POS/PMS wait for a response and continue processing based on the response. *The **Inquiry** message should be resent until it receives one of the following*:
    - Fusebox approval for the original transaction
    - Fusebox decline for the original transaction
    - Fusebox no record response (Field 1010 = NO RECORDS FOUND).

  If the POS/PMS stops sending **Inquiry** messages for a transaction before receiving a Fusebox response, *the transaction will need to be reconciled manually*.
- The possible outcomes at the POS/PMS after sending an **Inquiry** message are as follows:
    - The POS/PMS receives a normal transaction response. (Transaction Type = original). This response indicates that the **Inquiry** message and the original transaction were both processed online by Fusebox. The POS/PMS should treat this response as a normal response to the original transaction.
    - The POS/PMS receives a no record response. (Transaction Type =22 and Field 1010 contains NO RECORDS FOUND). This response indicates that the original request was NOT processed by Fusebox. The POS/PMS can proceed in accordance with corporate policy. E.g. a **Void Request** can be sent for the transaction.
    - If the **Inquiry** message times out at the host, the POS/PMS will receive a host down response (Transaction Type = 22 and Field 1010 contains *SLR COMMUNICATIONS ERROR. or *SLR SWITCH TIMEOUT.) The POS/PMS must then re-send the **Inquiry** message until it receives a host response
    - If the POS/PMS times out before receiving an **Inquiry Response**, it must re-send the **Inquiry** message until it receives a host response.
- The **Inquiry** message can be re-sent by Simplify or through a back channel. All rules for Inquiry processing apply regardless of how the **Inquiry** message is re-sent.
- The **Inquiry** message can be sent any time before the Gateway Batch Close.

The following table shows a sample of fields in the **Inquiry** message that may need to match fields in the original transaction. See the Fusebox Integration Guide under “Transaction Types” > “Transaction Inquiry (22)” for more information on this Transaction Type.

API Field #	Description
0002	Transaction Amount
0007	Transaction ID / Reference Number
0109	Terminal ID
8002	Location Name
8006	Chain Code

Request

An example of an **Inquiry Request** message (from the POS to Simplify) is as follows:

API Field #, Value	Description
0001,22	Tran Type.
0002,5.00	Transaction Amount. Must match the financial request.
0007,1025	Transaction ID / Reference Number. Must match the financial request.
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,131559	Transaction Time (current time) – HHMMSS
0017,0.00	Cash Back Amount
0109,TERM1	Terminal ID. Must match the financial request.

API Field #, Value	Description
1008,ID:	Set to ID: to request that an account token be returned by Fusebox.
8002,RETL01	Location Name. Must match the financial request.
8006,TSTLAR	Chain Code. Must match the financial request.

Response

An example of an **Inquiry Response** message (from Simplify to the POS) is as follows:

API Field #, Value	Description
0001,02	Original Transaction Type (entire response = original host response)
0002,5.00	Transaction Amount
0003,ID:4546705467010002	Account Token (returned by Fusebox)
0004,1221	Expiration Date - MMYY
0006,CVI758	Authorization Code (returned by Fusebox)
0007,1025	Transaction ID / Reference Number
0009,001	Fusebox – Host Batch number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,151729	Transaction Time (current time) – HHMMSS
0017,0.00	Cash Back Amount

API Field #, Value	Description
0030,1	Fusebox – Online Indicator
0032,022519	Fusebox – Authorization Transaction Date
0033,181733	Fusebox – Authorization Transaction Time
0035,D07D	Validation Code
0036,114120980253909	Host Transaction Identifier
0037,2	Fusebox – Authorizer
0043,214872	System Trace Audit Number
0047,M;1;1;1;0;1;2;5;4;1;3;C;0;4	POS Data Code
0052,5	Transponder / Proximity Indicator (0 = contact; 2 = contactless; 5 = swiped)
0054,90	POS Entry Mode
0062,110	Service Code
0109,TERM1	Terminal ID
0110,205	Cashier ID
0112,400	Fusebox – Processor ID
0115,010	Transaction Qualifier (010 = Credit; 030 = debit)
0125,430181733	Retrieval Reference Number (may need to appear on receipt)
0126,2	Track Indicator (may need to appear on receipt
0129,1	Fusebox – Compliance Data

API Field #, Value	Description
0130,5.00	Authorized Amount
0140,USD	Fusebox – Merchant Currency
0201,0.00	Tip Amount
0651,00003@;01001175950315175016000004717050000000000041903980741711759 5	Reversal data
0738,106781MMCC539137 Y 0225	Recurring Compliance Data
1000,VI	Card Type
1001,VISA	Card Name
1003,0000	Gateway Response Code
1004,APPROVAL	Host Response Message
1005,0010600008014593613999	Merchant Number
1008,**********0002	Masked Account Number (may need to appear on receipt)
1009,AA	Host Response Code
1010,COMPLETE	Gateway Response Message
1012,0039	Gateway Batch Number
1200,0000AA	Issuer Network Information
1339,00	EMV Response Code
1359,4	EMV CVM Indicator

API Field #, Value	Description
4747,050311	Third Party Interface POS Data Code
5002,80378002	Device Serial Number
5004,G2	Encryption Provider ID
5010,EMVDC0838	EMV kernel version
5070,xxx...	Simplify Information. See Simplify-Controlled Field Definitions.
7007,1114281539351186	Transaction Link Identifier (unique identifier to link transactions)
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

DCC Inquiry Message (Tran Type 46)

The DCC Inquiry Message is a non-financial message used to support DCC processing. If Simplify receives a DCC Inquiry Request from the POS, it will pass through the message to Fusebox. For more information on DCC, see Dynamic Currency Conversion (DCC).

Token Request Message (Tran Type 37)

Simplify supports a **Token Request** message from the POS process.

The **Token Request** message is a non-financial message, used to obtain the Fusebox-assigned token for an account number.

Request

An example of a **Token Request** message (from the POS to Simplify) is:

API Field #, Value	Description
0001,37	Transaction Type.
0002,0.00	Transaction Amount. The amount should be 0.00 for a Token Request
0007,1045	Transaction ID / Reference Number
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
1008,ID:	Set to the value 'ID:' to request that an account Token be returned by Fusebox
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Response

An example of a **Token Request** message (from the POS to Simplify) is:

API Field #, Value	Description
0001,37	Transaction Type
0002,0.00	Transaction Amount
0003,ID:1111748353147271	Account Token (returned by Fusebox)
0004,1208	Expiration Date – MMYY
0007,1045	Transaction ID / Reference Number

API Field #, Value	Description
0052,5	Transponder / Proximity Indicator (0 = contact; 2 = contactless, 5 = swiped)
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
0126,2	Track Indicator
1000,VI	Card Type
1001,VISA	Card Name
1003,0000	Gateway Response Code
1004,ACKNOWLEDGED	Host Response Message
1008,400555******4460	Masked Account Number
1010,COMPLETE	Gateway Response Message
5002,80378002	Device Serial Number
7007,11111799604661403	Transaction Link Identifier. A unique identifier to link transactions
8002,RETL01	Location Name (provided by Elavon)
8006,TSTLAR	Chain Code (provided by Elavon)

Cancel Message (Tran Type 80)

Simplify supports a **Cancel** message from the POS process. When Simplify receives a **Cancel Request**, it will attempt to cancel the transaction (return to the Closed state) and send a **Cancel Response** to the POS.

The **Cancel** message is available to allow the POS process to clear the PIN Pad. This message should be used if the POS process and the PIN Pad are out of sync.

Request

An example of a **Cancel Request** is as follows:

API Field #, Value	Description
0001,80	Transaction Type
0007,7765	Transaction ID / Reference Number
0013,092818	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS

Response

Transaction Cancelled

An example of a **Cancel Response** for a successful Cancel is as follows:

API Field #, Value	Description
0001,80	Transaction Type
0007,7765	Transaction ID / Reference Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions for the use of this field
0013,092818	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS

Transaction Not Cancelled

An example of a **Cancel Response** for an unsuccessful Cancel (transaction already being processed) is as follows:

API Field #, Value	Description
0001,80	Transaction Type
0007,7765	Transaction ID / Reference Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions for the use of this field
0013,092818	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS
1003,0030	Gateway Response Code
1004,0030	Host Response Message
1009,0030	Host Response Code
1010,*SLR Busy.	Gateway Response Message
5002,284431938	Device Serial Number

Health Message (Tran Type 73)

Simplify supports **Health** messages from the POS process.

A **Health** message is sent by the POS process to verify that Simplify is up and running on the PIN Pad. If Simplify receives a **Health** message, it echoes back the same message it receives.

If the POS process does not receive a response to the **Health** message, the POS process disconnects the TCP/IP socket and initiates the TCP/IP socket connection again.

API Field #, Value	Description
0001,73	Transaction Type
0007,7765	Transaction ID / Reference Number
0013,022519	Transaction Date (current date) — MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS

Batch Close Message (Tran Type 13)

Simplify supports a **Batch Close** message from the POS process. This message requests that a current batch be closed. The scope of the batch close is determined as follows:

- If the Terminal ID is sent in Field 109 of the **Batch Close Request**, the batch close will only apply to transactions run on the PIN pad specified by this Terminal ID.
- If the Location Name is sent in Field 8002, the batch close will apply to transactions run in the entire location specified by this Location Name (typically: one store).
- If the Chain Code is sent in Field 8006, the batch close will apply to transactions run for the entire chain specified by this Chain Code.

In the following example, the Terminal ID is sent in Field 109, so the batch close will only apply to transactions run on the specified PIN pad.

For more details on this tran type, see the Fusebox Integration Guide.

Request

An example of a **Batch Close Request** message (from the POS process to the Simplify application) is:

API Field #, Value	Description
0001,13	Transaction Type
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.

API Field #, Value	Description
0109,RETERM1	Terminal ID (provided by Elavon)

Response

An example of a **Batch Close Response** message (from the Simplify application to the POS process) is:

API Field #, Value	Description
0001,13	Transaction Type
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0109,RETERM1	Terminal ID (provided by Elavon)
0140,USD	Merchant Currency Trigraph
1003,0000	Gateway Response Code
1004,ACKNOWLEDGED	Host Response Message
1010,COMPLETE	Gateway Response Message
1012,0248	Gateway Batch Number
1013,26.00	Local Batch Net Amount
1014,2	Local Batch Transaction Count
1016,26.00	Host Batch Net Amount
1017,2	Host Batch Transaction Count
1018,26.00	Funded Batch Amount

API Field #, Value	Description
1019,2	Funded Batch Transaction Count
7007,1115126747425133	Transaction Link Identifier. A unique identifier to link transactions.

Batch Inquiry Message (Tran Type 14)

Simplify supports a **Batch Inquiry** message from the POS process. This message is used to obtain information about a current batch.

The scope of this inquiry is determined in the same manner as for a **Batch Close** message:

- If the Terminal ID is sent in Field 109 of the **Batch Inquiry Request**, the inquiry will only apply to transactions run on the PIN pad specified by this Terminal ID.
- If the Location Name is sent in Field 8002, the inquiry will apply to transactions run in the entire location specified by this Location Name (typically: one store).
- If the Chain Code is sent in Field 8006, the inquiry will apply to transactions run for the entire chain specified by this Chain Code.

In the following example, the Location Name is sent in Field 8002, so the inquiry will only apply to transactions run in the specified location.

For more details on this tran type, see the Fusebox Integration Guide.

Request

An example of a **Batch Inquiry Request** message (from the POS to the Simplify application) is:

API Field #, Value	Description
0001,14	Transaction Type
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
8002,SIMTESTVOLT	Location Name (provided by Elavon)

Response

An example of a **Batch Inquiry Response** message (from the Simplify application to the POS) is:

API Field #, Value	Description
0001,14	Transaction Type
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0140,USD	Merchant Currency Trigraph
1003,0022	Gateway Response Code
1004,EMPTY BATCH	Host Response Message
1010,EMPTY BATCH	Gateway Response Message
1012,0248	Gateway Batch Number
7007,1115126747595135	Transaction Link Identifier. A unique identifier to link transactions
8002,SIMTESTVOLT	Location Name (provided by Elavon)

Non-Financial Messages (Tran Type 36)

Transaction Type 36 is used for non-financial purposes. The specific purpose of a Tran Type 36 message is indicated by the value in the first two bytes of Field 11, which define the Message Type. Field 5001 may be used to further define the request and/or return data in the response.

Transaction Type 36 is used for non-financial purposes. The specific purpose of a Tran Type 36 message is indicated by the value in the first two bytes of Field 11, which define the Message Type. Field 5001 may be used to further define the request and/or return data in the response.

Non-Financial Message Format

API Field #, Value	Description
0001,36	Transaction Type 36. Non-Financial message
0011,xxx..	User Data. The first two bytes of Field 11 define the **Message Type** , as described below. Usage of other bytes varies based on Message Type; see Simplify-Controlled Field Definitions.
5001,xxx..	Non-Financial Data. The format of this field depends on the value of message type. See the sections on specific messages for details.

Message Types

Currently defined **Message Types** (Field 11) are as follows:

Message Type	Use	Direction
01	Signature Request	from POS to Simplify
02	Signature Response	from Simplify to POS
03	Demo Message (NOT USED)	(not used)
06	Version Number Inquiry Message	Request from POS to Simplify. Response from Simplify to POS
07	Initiate IngEstate Message	Request from POS to Simplify. Response from Simplify to POS
10	Scrolling Receipt Message	From POS to Simplify
11	Scrolling Receipt Stop Message	from POS to Simplify
12	Exit Reversal Mode Message	from POS to Simplify

Message Type	Use	Direction
13	Reserved for Bridge (SAF Done Message. Not used by POS)	Request from Bridge to Simplify Response from Simplify to Bridge
14	Informational Prompt Message	Request from POS to Simplify. Response from Simplify to POS
40	Quick Chip Message	Request from POS to Simplify Response from Simplify to POS
45	Print Request Message	Request from POS to Simplify Response from Simplify to POS
51	Status Message	from POS to Simplify

Signature Message (Tran Types 36-01, 36-02)

Simplify supports a signature process on touchscreen PIN Pads. When this process is triggered, Simplify will prompt for a signature and send the signature data (or customer Cancel) to the POS in a **Signature Response** (36-02) message. There are two ways to trigger signature processing:

- Request message – The POS can send Simplify a **Signature Request** (36-01) message.
- Auto signature – For approved **Sale**, **Auth Only** and **Return** transactions, signature process can occur automatically (no **Signature Request** required). For details, see Auto Signature.

The template used for the Signature screen is controlled by a Screen ID subfield in field 11 of the **Signature Request**. Additional screen details are defined by field 5001 of the request. The value of Screen ID will determine the screen elements that can be controlled by field 5001, as follows:

- If Screen ID is 001, field 5001 can be used to define up to four lines of fixed text, with up to 40 characters per line.
- If Screen ID is 002, field 5001 can be used to define up to three screen areas, from top to bottom: as follows:
    - Button area – Define height (as percentage of screen). Buttons are fixed size and vertically centered in the button area.
    - Text area – Define height (as percentage of screen). Define font size. Define rows of texts. Maximum number of rows depends on height of text area and font size.

- Signature area – Height is remaining percentage of screen.

If signature data is captured by Simplify, it will be sent to the POS in field 5000 of the Signature Response. The format of this data is three-byte ASCII.

The detailed format of field 5001 and sample Signature Request and Response messages are shown below:

Field 5001 Format

Message	Description
(Generic format)	The format of this field is TTTLLLVVV…VV (can be repeated up to four times in Request), where: TTT is a Tag LLL is the length of the data. VVV..VV is the data
Request (optional)	Provides the POS with some control over the signature screen. Available tags depend on the Screen ID sent in field 11 bytes 6-8. For Screen ID = 001: TTT - Supported tags are: 001 – Text line 1 (Maximum length of 40) 002 – Text line 2 (Maximum length of 40) 003 – Text line 3 (Maximum length of 40) 004 – Text line 4 (Maximum length of 40) VVV..VV defines the text to be displayed. For Screen ID = 002 TTT - Supported tags are: 001 – Defines screen layout, font size and user text VVV..VV defines screen and text formatting, followed by the text to be displayed (see sample below) **Note:** If a PIN Pad model supports fewer text lines than defined by this field, the excess lines will be ignored.
Response (not used)	

Request (Screen ID = 001)

An example of a **Signature Request** message (from the POS process to the Simplify application) for Screen ID = 001 is:

API Field #, Value	Description
0001,36	Transaction Type. A value of 36 indicates a Non- Financial transaction
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
5001,001019 Work order # 112233002018 Estimate = $259.00	See format described above. 001 = Tag for Text Line 1 019 = Length of text for line 1 Work order # 112233 = Text for line 1 002 = Tag for Text line 2 018 = Length of text for line 2 Estimate = $259.00 = Text for line 2

Request (Screen ID = 002)

An example of a **Signature Request** message (from the POS process to the Simplify application) for Screen ID = 002 is:

API Field #, Value	Description
0001,36	Transaction Type. A value of 36 indicates a Non- Financial transaction
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.

API Field #, Value	Description
5001,00109220FS50FS5FS Message 1; Message 2; Message 3; Message 4; Message 5; Message 6	See format described above. 001 = Tag 092 = Length of following data 20 = Vertical percentage of screen for Button area 50 = Vertical percentage of screen for Text area 5 = Font size (0 = extra small to 6 = extra large) Message 1 (etc.) = first row (etc.) of user text (semicolon-delimited)

Response

An example of a **Signature Response** message (from the Simplify application to the POS process) is:

API Field #, Value	Description
0001,36	Transaction Type. A value of 36 indicates a Non-Financial transaction
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0052,5	Transponder / Proximity Indicator (0 = contact; 2 = contactless, 5 = swiped)
5000,xxxxxxxxxxxxxxxxxxxxxxxx…….xx	Signature data

Version Number Inquiry Message (Tran Type 36-06)

Simplify supports a **Version Number Inquiry** message from the POS process.

The POS can send this message to Simplify when it wants to check the Simplify application (program) version number, parameter version number, and/or build number.

The **Version Number Inquiry Request** does not contain field 5001. The only fields are field 1 (Tran Type = 36) and field 11.

Field 5001 Format

Message	Description
(Generic format)	The format of this field is TTTLLLVVV…VV, where: TTT is a Tag LLL is the length of the data. VVV..VV is the data
Request	Not used
Response	Simplify program, parameter and build version numbers active in the PIN Pad. TTT - Currently defined tags are: 006 – Simplify program/parameter/build version values. LLL = 040 VVV..VV Positions 1-20 - Simplify program and parameter version numbers Positions 21-40 - Simplify build number

Sample Response Message

An example of a **Version Number Inquiry Response** message (from Simplify to the POS) is:

API Field #, Value	Description
0001,36	Transaction Type. A value of 36 indicates a Non-Financial transaction
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.

API Field #, Value	Description
5001,006040 Ver: 2.23 - 2.23.1 Build: 52302	Version number data 006 = Tag for Simplify Program/Parameter/Build version values 040 = Length of version number data Ver: 2.23 - 2.23.1 = Simplify program and parameter version numbers (20 bytes, right justified) Build: 52302 = Simplify build number (20 bytes, right justified)
5002,80378002	PIN Pad serial number

Initiate IngEstate Message (Tran Type 36-07)

IngEstate is Ingenico's PIN Pad management system implemented by Elavon.

Simplify supports an **Initiate IngEstate** message from the POS process. This message can be used to determine whether an updated package is available for downloading. Packages are used to download an updated Simplify application, parameter files, form files, etc.

This message can also be used to update the TMS Identifier, by sending it in field 5001 of the request (optional). See sample Request below for details.

The **Initiate IngEstate Response** message includes the PIN Pad serial number as well as a Status flag indicating whether the PIN Pad was able to successfully communicate with IngEstate.

The Initiate IngEstate Message should only be sent when necessary and based on coordination with Elavon.

Field 5001 Format

Message	Description
(Generic format)	The format of this field is TTTLLLVVV…VV, where: TTT is a Tag LLL is the length of the data. VVV..VV is the data

Message	Description
Request (optional)	TTT - Currently defined tags: 881 = New TMSID
Response	TTT - Currently defined tags are: 007 – Download information LLL *must* be 052 VVV..VV Bytes 1-50 = Padded PIN Pad Serial Number (*must* be 50 bytes) Bytes 51-52 = Status Flag 00 – Request successfully communicated to IngEstate 01 – Simplify is busy with customer interaction 02 – Parameter missing from parameter file

Request

An example of a possible **Initiate IngEstate Request** message (from the POS process to Simplify) is:

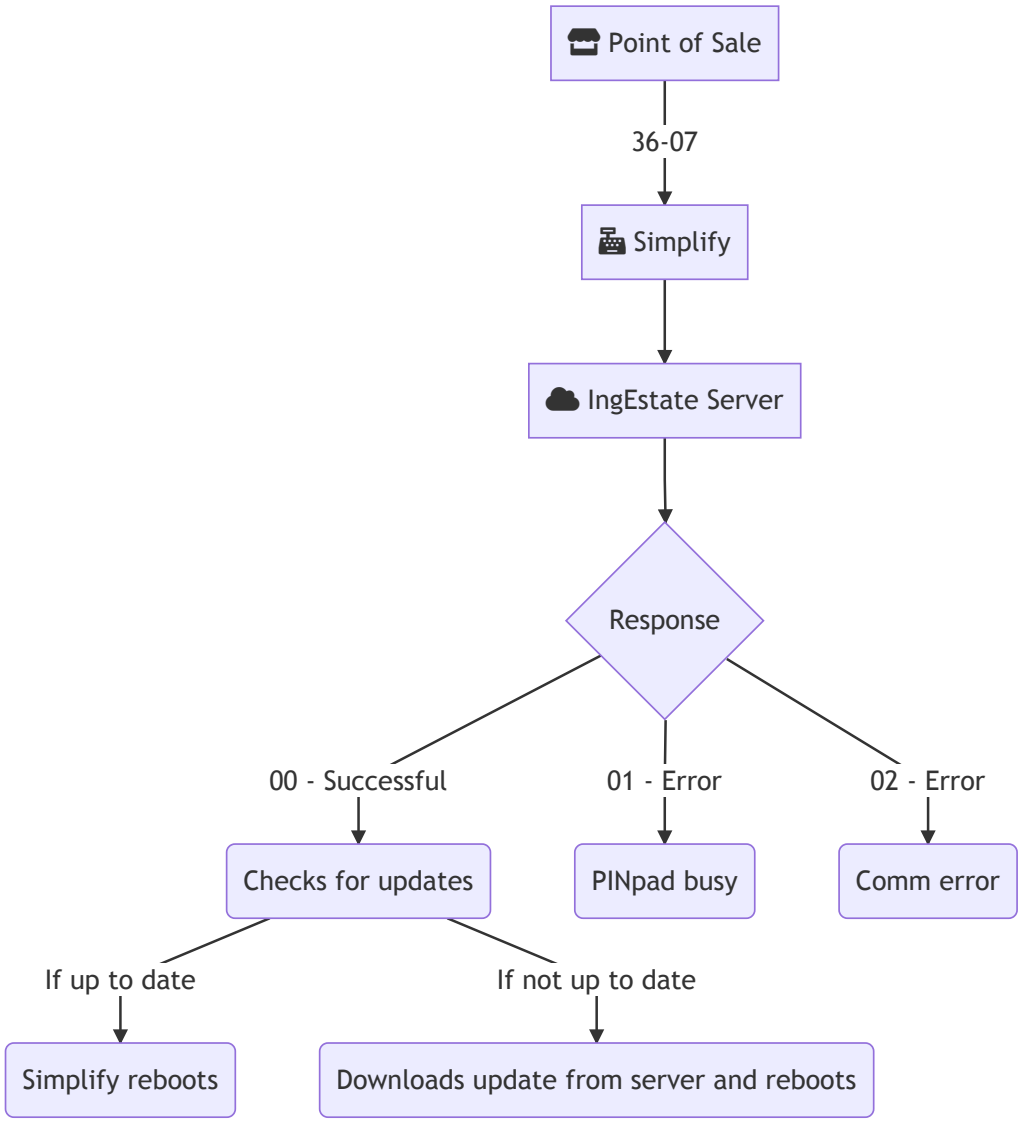
API Field #, Value	Description
0001,36	Transaction Type. A value of 36 indicates a Non-Financial transaction
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
5001,88100899990000	881=Tag for TMSID 008=Length of Data 99990000=new TMSID

Response

An example of a possible **Initiate IngEstate Response** message (from Simplify to the POS process) is:

API Field #, Value	Description
0001,36	Transaction Type. A value of 36 indicates a Non-Financial transaction
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
5001,0070528007044000	007 = Tag for File download information 052 = Length of data (must be 52) 80070440 (plus blanks) = padded PIN Pad Serial # (must be exactly 50 bytes) 00 = Status Flag (00 = Simplify successfully communicated with IngEstate)

IngEstate Update Flow



Scrolling Receipt Request Message (Tran Type 36-10)

Simplify supports a **Scrolling Receipt Request** message from the POS process. If Simplify receives this message, it responds by displaying the data sent in the request (no Response message). There are currently two types of supported data: item data and a running order total.

After a **Scrolling Receipt Request** message is sent, the only message types that can be processed next are additional **Scrolling Receipt Request** messages or a **Scrolling Receipt Stop** message.

If additional **Scrolling Receipt Request** messages are sent, the additional item data will be appended to the existing item data display and the running total will be updated with the most recent total. If the item data will not all fit on the screen, the oldest item data will not be displayed. Up to five lines of item data can be sent in a single **Scrolling Receipt Request** message.

The display of scrolling receipt data is terminated by sending a **Scrolling Receipt Stop** message (36-11). When the PIN Pad receives this message, it will display the Idle screen. The PIN Pad will then be available to process messages as usual.

Field 5001 Format

Message	Description
(Generic format)	The format of this field is TTTLLLVVV…VV , where: TTT is a Tag LLL is the length of the data. VVV..VV is the data
Request	This field can be included in the Scrolling Receipt Request message. It allows the POS system to send up to 6 lines of text to be displayed on the screen (in addition to the canned text on the screen). TTT - Currently defined tags are: 001 – The data describing the item just scanned. (Can be repeated up to 5 times per message.) 002 – The running total of the price of all items, to be displayed on the bottom of the screen. If tags other than 001 and 002 are sent, they will be ignored. VVV..VV – This field should contain data formatted for the desired display output. The maximum length will depend on the platform.
(No Response message)	

Request

An example of a possible **Scrolling Receipt Request** message (from the POS process to Simplify) is:

API Field #, Value	Description
0001,36	Transaction Type. A value of 36 indicates a Non-Financial transaction
0011,xxx..	User Data See Simplify-Controlled Field Definitions.

API Field #, Value	Description
5001,001025	001 = Tag for Item Data
2LB PKG	025 = Length of Item Data
STRAWBERRIES	2LB PKG STRAWBERRIES 2.98 = Item Data
2.98002013	002 = Tag for Running Total Data
SubTotal 2.98	013 = Length of Running Total Data
	SubTotal 2.98 = Running Total Data

Scrolling Receipt Stop Message (Tran Type 36-11)

Simplify supports a **Scrolling Receipt Stop** message from the POS process.

When Simplify receives a **Scrolling Receipt Stop** message, it responds by stopping the display of Scrolling Receipt data and displaying the Idle screen. The PIN Pad will then be available to process messages as usual. There is no response message to the POS.

This message does not contain field 5001. The only fields are field 1 (Tran Type = 36) and field 11. See Simplify-Controlled Field Definitions for the use of field 11.

Exit Reversal Mode Message (Tran Type 36-12)

Reversal mode is used to force a host reversal if this is required during EMV processing. In this processing mode, Simplify resends the request until a host response is received, while all new transactions on the PIN Pad are processed offline.

Simplify supports an **Exit Reversal Mode Message**. When Simplify receives this message, it will send a **Void Transaction Response** (11) message to the POS, including the data required to request the reversal, and return to normal processing mode. For more information, see Chip Declines and Simplify Reversal Mode.

Important: Forcing Simplify to exit reversal mode is an exception procedure that should only be used when necessary. If Simplify is forced out of reversal mode, the merchant will be responsible for ensuring that the transaction is reversed by the host, using the data in the **Void Transaction Response**. Elavon strongly recommends allowing Simplify to reverse all host-approved transactions that are declined by the chip.

Informational Prompting Message (Tran Type 36-14)

Simplify supports “Informational Prompts”, which allow the merchant to display screens and receive customer feedback in the response. See Informational Prompting.

Quick Chip Message (Tran Type 36-40)

A Quick Chip message can be sent from the POS to Simplify to allow the customer to insert, swipe or tap a card during item entry. This allows the customer to complete all payment steps before the total is known. See Quick Chip Tendering for more information.

Normal tendering steps must follow the Quick Chip process.

Print Message Request (Tran Type 36-45)

The Print Request message allows devices with integrated printers running the standard (non-Pay@Table) Simplify application to print receipts. Simplify will accept a **Print Request** message when the PIN Pad is in the Closed/Idle state. For all other states, the Simplify response will indicate that Simplify is busy (field 5110 = 2). The maximum message size is 4K bytes, including all formatting and function characters.

The **Print Request** message is currently supported on Move 5000 and iWL258 PIN Pads.

Print data is sent in fields 5107 (merchant receipt) and 5108 (customer receipt).

5107 Merchant reciept print data and commands

Print data must be formatted as follows:

<FORMAT command> <print data> #

A FORMAT command takes the form ~~FORMATabcde#, where:
a = Font (1=Monospace, 2=Ingenico proportional default)
b = Scale(1-7=xxSmall, Small, Medium, Large, xLarge, xxLarge)
c = Style - Normal, Bold(1-2)(Bold supported only with Monospace
d = Alignment - Left-justified, Center-justified, Right-justified(1-3)
e = Reverse - Normal, Inverted (1-2)(Black foreground, white background/ white foreground, black background)

Formatting defined by a FORMAT command will be used until a new FORMAT comman is sent or the print job completes.

Use /n to start a new line within <print data>.

Use ## within <print data>to print a blank line and then start a new line.

Use ## at the end of <print data>to print a blank line after the data.

ACTION commands can be included in this field. These commands take the form ~~<ACTION>#. Available action commands are as follows:

~~BEEP# - Calls beep command

~~EJECT# - Sends four line feeds for tear-off

~~DISPLAYccc# - Sends the specified text (ccc...) to the PIN Pad display (replaces default display for current PIN Pad state). Use /n to start a new line

~~PAUSEnn# - Pauses printing for nn seconds. If no nn pause until Enter is pressed.

~~SIGNATURE# - Prints Signature line.

Using two pound signs (##) before <print data> or at the end of an ACTION command will print a blank line before printing the data or performing the action:

~~FORMATabcde##<print data>#

~~<ACTION>##

5108 Customer receipt print data and commands

Same format as API 5107

Request (to demonstrate available formatting)

API Field #, Value	Description
0001,36	Transaction Type. A value of 36 indicates a Non-Financial transaction
0011,xxx..	User Data See Simplify-Controlled Field Definitions.
5108,[see value below]	Customer receipt print data and commands (see format table above)
5111, Printing Receipt	Message displayed on PIN Pad during printing.

Status Message (Tran Type 36-51)

Simplify supports a **Status Message** to the POS. This message is sent to the POS to provide it with status information on the current transaction.

The **Status** message is informational only and does not follow the general rules for recovery after a timeout. See Appendix D: Recovery after Timeout Flow for details.

This message does not contain field 5001. The only fields are field 1 (Tran Type = 36) and field 11. See Simplify-Controlled Field Definitions for the use of field 11.

Stand-In Processing

Simplify can be configured to support Stand-in processing for timed-out (offline) transactions. A transaction is considered to have timed out when: (1) the Fusebox response indicates that the Fusebox request to the authorizer timed out, or (2) Simplify times out before receiving a Fusebox response. (The Simplify timeout interval for a request to Fusebox is defined individually for each request from the POS in the first 3 bytes of Field 11.)

If Stand-in is enabled, a Stand-in Response will be sent for timed-out transactions, allowing these transactions to be approved offline by the POS and resubmitted through Simplify (or directly to Fusebox) for host approval.

Important: Note for purposes of PCI DSS compliance that a contains encrypted customer data. The merchant is responsible for making this data unrecoverable after completion of the authorization process (*PCI DSS 3.0 Requirement 3.2*).

For EMV transactions, Simplify can be configured to return EMV tags in the Stand-In Response. The POS can include these tags in the resubmitted transaction. Submitting EMV Stand-In transactions without EMV tags can cause declines from some issuers. See Fusebox EMV Integration Guide for more information.

Stand-In support is configured independently for each tender type and applies to the following transaction types:

- Sale
- Auth
- Refund

If Simplify times out waiting for a **Host Response** to one of these three financial transaction types, the outcome at the POS process will depend on whether Stand-in is enabled, as follows:

Stand-in Enabled

If Stand-in is enabled, the POS process will receive a **Stand-in Response** (Field 1010 contains "*SLR STAND-IN.").

Simplify will return encrypted transaction data for Stand-In transactions. This will allow the transaction to be resubmitted for host approval. *The POS is responsible* for approving or declining all Stand-In transactions.

Stand-in Not Enabled

The POS process will receive a **Host Down Response** (Field 1010 contains "*SLR COMMUNICATIONS ERROR." or *SLR SWITCH TIMEOUT.), if Stand-in is *not* enabled.

Inquiry processing must be performed at this time as described under Inquiry Message.

Note: Inquiry processing is not affected by whether or not Stand-in is enabled.

Stand-In and Online Response Differences

The main differences between a **Stand-in Response** and an **Online Response** occur in the following fields:

Field #	Field Name	Usage
3	Account Data	Online: Token for the account number (from the Fusebox response)Stand-in: If a token is used for authorization, the token is returned. Otherwise, this field contains the encrypted version of the account number.
4	Expiration Date	Stand-in: If the card was keyed, contains encrypted Expiration Date.
6	Authorization Code	Online: Approval code returned by Fusebox.Stand-in: "SN:" followed by the Serial Number of the PIN Pad.
1003	Gateway Response Code	Stand-in: "0000"
1010	Gateway Response Message	Stand-in: "*SLR STAND-IN."
1379	EMV Receipt Field List	Online: From Fusebox, for use on declines (see Fusebox Integration Guide). Stand-in: From Simplify (same format as online).

Note: A value of *SLR STAND-IN. in field 1010 *does not mean that Simplify has performed stand-in.*

Sample Stand-In Response

A sample of the **Stand-In Response** for an offline transaction is as follows:

(Stand-in enabled; EMV enabled but configured not to return EMV tags on Stand-In)

API Field #, Value	Description
0001,02	Transaction Type
0002,1.00	Transaction Amount
0003,;&&&&&& &&&&&&&&&& = &&&&&&&&&& &&&&&&&&&?	Encrypted Track Data (See under Usage for details.)
0006,SN:80649419	Serial Number (needed to Decrypt)
0007,53	Reference Number
0011,xxx…	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date
0014,104720	Transaction Time
0017,0.00	Cash Back Amount
0047,C;1;1;1;0;1; 5;5;4;3;3;C;0;4	POS Data Code
0052,0	Transponder / Proximity Indicator (0 = contact; 2 = contactless , 5 = swiped)
0054,05	POS Entry Mode
0109,TERM02	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)

API Field #, Value	Description
0126,2	Track Indicator (may need to appear on receipt)
0201,0.00	Tip Amount
1000,VI	Card Type
1002,UAT USA/Test Card 03	Cardholder Name
1003,0000	Response Code
1008,476173******0119	Masked Account Number
1010,*SLR STAND-IN.	Response Message.
1314,A0000000031010	Dedicated File Name
1315,0096	ICC Application Version Number
1379,1326|Application Label: ;1300|AAC: ;1307|TVR: ;1325|AID: ;	Offline EMV Receipt Field List
1382,F000F0A001	Additional Terminal Capabilities
5002,80649419	Serial Number needed to Decrypt
5004,OG	Encryption Provider ID
5006,FFFF4D4D4D0000C0046C050006	Encryption Transmission Block
5010,EMVDC0838	EMV kernel version
5070,xxx…	Simplify Information. See Simplify-Controlled Field Definitions.
8002,ONGUARD	Location Name (provided by Elavon)

API Field #, Value	Description
8006,TSTLA3	Chain Code (provided by Elavon)

Recommended Rules for Handling Stand-In Responses

The recommended rules for handling **Stand-in Responses** are as follows:

1. All responses with "*SLR STAND-IN." need to be recorded by the POS (**Stand-In List**). This includes all transactions that were either locally approved or locally declined.
2. Go through the **Stand In-List**.

   a. If the POS processed the transaction as approved:

   ```
   i.  Send an inquiry

       1.  If inquiry response is **APPROVED**
           (Transaction Type = original)

           a.  Done

       2.  If inquiry response is **NO RECORD
           FOUND** (Transaction Type = 22)

           a.  Submit the Stand-in Transaction
               for processing.
   ```

   b. If the POS processed the transaction as declined:

   ```
   i. Send an inquiry

       1.  If inquiry response is **APPROVED**
           (Transaction Type = original)

           a.  Send a void

       2.  If inquiry response is **NO RECORDS
           FOUND** (Transaction Type = 22)

           a.  Done
   ```

Store and Forward Transactions

For a Store and Forward (deferred authorization) transaction resubmitted through Simplify, the following fields must be sent (in addition to the regular fields):

API Field #, Value	Description
0003	Encrypted account data
0004	Expiry date (if available from the Stand-In Response)
0115	Transaction Qualifier (provided by POS or returned in Stand-in Response)
0116	Offline Flag (Must be set to 2 if there is no Voice Auth)
1008	Should contain ID: if the merchant uses a token
5002	Device Serial Number (from Stand-in Response)
5004	Encryption Provider ID (from Stand-in Response)
5005	Encryption Transmission Block (from Stand-in Response)

EMV

EMV (for **E**uropay-**M**asterCard-**V**isa) is a global standard supporting the use of chip cards (ICC cards, “smart cards”) for card present debit and credit transactions.

Simplify supports EMV processing, both contact and contactless, for the following Tran Types:

- **Auth Only** (01)
- **Sale** (02)
- **Return** (09)

Based on settings, each supported Transaction Type can be processed as either EMV or swiped. Please contact your Elavon representative for configuration setting.

When the POS sends a request to Simplify, it must populate the fields required to process the transaction. For in depth information on message requirements for EMV, refer to the Fusebox EMV

Integration Guide.

Simplify will attempt to process a transaction as EMV when the chip reader successfully communicates with the chip to obtain card data, and EMV processing is enabled for the card type and transaction type.

EMV processing is largely transparent to the POS, with the exception of receipt printing. Additional **Status Message** codes are used for EMV processing; see under Simplify-Controlled Field Definitions.

Contactless EMV is supported using rules similar to those used for contact EMV. Contactless EMV is enabled separately from contact; please contact your Elavon representative if you would like to enable contactless EMV. Simplify can also be configured to process contactless transactions using MSD emulation.

EMV Receipt Printing

EMV rules require the printing of additional data on the receipt for contact and contactless EMV transactions. The fields that must be printed will vary by TPP (Acquirer) and transaction outcome.

The response message from Simplify for an EMV transaction will provide the POS with two ways to print required EMV data:

- The Fusebox response includes fields specifically designed to provide receipt data. Simplify adds chip data to these EMV receipt fields before sending the POS a response.
- For more control over printing, the print string can be built by the POS from individual data fields in the response, where each field contains data for one EMV tag.

See “Sample EMV Sale Message” for examples of EMV receipt fields. See “EMV Tags” for a list of commonly used tags. For more information, see the Fusebox EMV Integration Guide under “EMV Receipt Details”.

EMV Tags

EMV tags are typically present in the response to the POS in the following fields. (This is a generic list; specific transactions may omit some of these tags or include others not shown below.)

API Field #, Value	Description
0054,05	POS Entry Mode (EMV Tag 9F39)
0163,en	Cardholder Language Preference (EMV Tag 5F2D)
1300,6340AF8FFA1D0121	Application Cryptogram (EMV Tag 9F26)

API Field #, Value	Description
1301,E8D8ACF3A49D94373030	Issuer Authentication Data (EMV Tag 91)
1302,221231	Application Expiration Date (EMV Tag 5F24)
1303,5E0300	Cardholder Verification Method (CVM) Results (EMV Tag 9F34)
1305,06010A03602000	Issuer Application Data (EMV Tag 9F10)
1306,E0F8C8	Terminal Capabilities (EMV Tag 9F33)
1307,8080008000	Terminal Verification Results (TVR) (EMV Tag 95)
1312,124	Terminal Country Code (EMV Tag 9F1A)
1313,01	Application PAN Sequence Number (EMV Tag 5F34)
1314,A0000000031010	Dedicated File Name (EMV Tag 84)
1315,0096	ICC Application Version Number (EMV Tag 9F08)
1317,008C	Terminal Application Version Number (EMV Tag 9F09)
1318,00000107	Transaction Sequence Counter (EMV Tag 9F41)
1319,1C00	Application Interchange Profile (EMV Tag 82)
1320,0145	Application Transaction Counter (ATC) (EMV Tag 9F36)
1321,40	Cryptogram Information Data (EMV Tag 9F27)
1322,22	Terminal Type (EMV Tag 9F35)
1323,F131728B	Unpredictable Number (EMV Tag 9F37)
1325,A0000000031010	ICC Application Identifier (AID) (EMV Tag 4F)
1326,Visa Credit	ICC Application Preferred Name (EMV Tag 9F12)

API Field #, Value	Description
1327,VISA CREDIT	Terminal Application Label (EMV Tag 50)
1328,A0000000031010	Terminal Application Identifier (AID) (EMV Tag 9F06)
1332,FF00	Application Usage Control (EMV Tag 9F07)
1334,7800	Transaction Status Information (EMV Tag 9B)
1339,00	EMV Response Code (EMV Tag 8A)
1350,92	CA Public Key Index (EMV Tag 8F)
1354,03	ICC Public Key Exponent (EMV Tag 9F47)
1357,124	ICC Transaction Currency (EMV Tag 5F2A)
1358,00	Cryptogram Tran Type (EMV Tag 9C)
1361,840	Issuer Currency Code (EMV Tag 5F56)
1376,0000000000000000 0420142045E031F00	CVM List (EMV Tag 8E)
1382,F000F0A001	Additional Terminal Capabilities (EMV Tag 9F40)

Other EMV-Related Response Fields

In addition to print fields, other fields have also been added to the Simplify response to support EMV processing. As show in the following table, some of these added fields provide the POS with information regarding e.g. data entry mode, terminal capabilities and chip condition. Please refer to Fusebox integration documentation for more information.

API Field	Field Name	Description

API Field	Field Name	Description
0047	POS Data Code	Defines properties of the POS device, PIN Pad capabilities or the cardholder interaction
0052	Transponder / Proximity Indicator	Value based on a combination of PIN Pad contactless capability, card data entry mode and type of contactless supported (if any)
0054	POS Entry Mode	Identifies how the card data was entered
0055	PIN Capabilities	Identifies whether the PIN Pad is capable of accepting PIN entry
0057	ICC Chip Condition Code	Identifies the condition of the ICC Chip / Account data source
1359	EMV CVM Verification Indicator	Field to indicate to the POS the cardholder verification methods. Valid values are: 0 - Failed CVM 1 - Signature required 2 - PIN required 3 - PIN and signature required 4 – Not determined. POS should request signature.

These fields will be sent to the POS for any transaction (EMV or not) in which a chip (ICC) is present. For more information, see the Fusebox EMV Integration Guide under “Host Request” > “EMV Elavon Gateway API Request Changes”.

Offline Situations

Simplify supports Stand-In processing for offline situations based on configured settings; see Stand-in Processing for more information. When a transaction is processed offline, a Simplify-generated response message is returned to the POS in field 1010 of the Stand-In Response; see Simplify-Generated Messages.

Traditionally EMV tags are not returned in a Stand-In response. Starting with version 2.02.023, Simplify can be set to return EMV tags to the POS in Stand-In. This allows the POS to process Store and Forward (deferred authorization) transactions as EMV.

Other changes to offline processing for EMV: (1) If EMV print data is returned on an offline response, the POS must print the data. (2) Simplify does not validate the expiration date for offline EMV transactions.

ICC Declines and Simplify Reversal Mode

If the ICC chip declines a host-approved transaction, or the customer removes their card from the chip reader before a host-approved transaction is completed, the host approval will need to be reversed.

If one of these scenarios occurs, the message in field 1010 will begin with *ICC (see Simplify-Generated Messages) and field 26 will specify the reason for the reversal. 2 = Chip requested decline: 3 = Premature EMV card removal.

If a host approval needs to be reversed, Simplify will send an EMV decline of the original transaction to the POS and go into reversal mode to force a host reversal. In reversal mode, Simplify sends the reversal (Tran Type 11) to the host, and resends it if necessary, until a response is received. While this is taking place, any other transactions sent to the PIN Pad will be processed offline. After Simplify receives an approval of the reversal, it will return to normal processing mode.

Alternatively, the POS can force Simplify out of reversal mode by sending an **Exit Reversal Mode** (36-12) message. Simplify will respond by sending a **Void Transaction Response** (11) message to the POS, including the data required to request the reversal. The PIN Pad will then return to normal processing mode. (If this message is sent and Simplify is not in reversal mode, it will just echo back the same message it receives.) See below for format and sample message exchange.

(Simplify can also be forced to exit reversal mode from within the Elavon Main Menu on the PIN Pad; see the Simplify Configuration,Download and Troubleshooting Guide under “Exiting Reversal Mode” for details.)

Important:

> Forcing Simplify to exit reversal mode is an exception procedure that should only be used when necessary. Affected transactions must be reviewed to ensure that customers have been correctly charged. If Simplify is forced out of reversal mode, the *merchant will be responsible* for ensuring that the transaction is reversed by the host, using the data in the **Void Transaction Response**. Elavon strongly recommends allowing Simplify to use reversal mode to reverse all host-approved transactions that are declined by the chip.

The following tables provide:

- A sample of an ICC Chip Decline response.
- The format of the **Exit Reversal Mode** message.

- A sample of the **Exit Reversal Mode** / **Void Transaction Response** message exchange.

Sample ICC Chip Decline Response 🔗

Below is a sample response for a **Sale** transaction that was declined by the ICC:

API Field #, Value	Description
0001,02	
0002,3.00	
0003,ID:5555396468550434	
0004,1218	
0006,006276	
0007,221	
0009,001	
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	
0014,143339	
0017,0	
0026,2	Reason for chip decline (2=Chip requested decline; 3=Premature EMV card removal)
0030,1	
0032,022519	
0033,173346	

API Field #, Value	Description
0034,M	
0035,0707	
0036,MCC0110ZU	
0037,0	
0043,015755	
0047,C;1;1;1;0;1;5;0;5;3;3;1;0;4	POS Data Code
0052,0	Transponder / Proximity Indicator (0 = contact; 2 = contactless; 5 = swiped)
0054,05	POS Entry Mode (EMV Tag 9F39)
0055,1	PIN Capabilities
0057,0	ICC Chip Condition Code
0061,00	
0062,201	
0063,00	
0109,RETERM1	
0110,205	
0112,400	
0115,010	
0125,707213346	
0126,2	

API Field #, Value	Description
0129,0	
0130,300	
0140,USD	
0163,en	Cardholder Language Preference (EMV Tag 5F2D)
0651,0000000	
1000,MC	
1001,MASTERCARD	
1002,Test Card 10	
1003,264	
1005,00106000080145936139999	
1008,**********0434	
1010,*ICC EMV DECLINED.	
1012,0774	
1200,0000AA	
1300,DF60405EFAA61BE6	Application Cryptogram (EMV Tag 9F26)
1301,D9816C720D4ECD560012	Issuer Authentication Data (EMV Tag 91)
1302,181231	Application Expiration Date (EMV Tag 5F24)
1303,1F0002	Cardholder Verification Method (CVM) Results (EMV Tag 9F34)

API Field #, Value	Description
1305,021020100F220 4000000000 00000000000FF	Issuer Application Data (EMV Tag 9F10)
1306,E0F8C8	Terminal Capabilities (EMV Tag 9F33)
1307,4200008000	Terminal Verification Result (TVR) (EMV Tag 95)
1312,124	Terminal Country Code (EMV Tag 9F1A)
1313,00	Application PAN Sequence Number (EMV Tag 5F34)
1314,A0000000041010	Dedicated File Name (EMV Tag 84)
1317,0002	Terminal Application Version Number (EMV Tag 9F09)
1318,00000192	Transaction Sequence Counter (EMV Tag 9F41)
1319,5800	Application Interchange Profile (EMV Tag 82)
1320,0014	Application Transaction Counter (ATC) (EMV Tag 9F36)
1321,00	Cryptogram Information Data (EMV Tag 9F27)
1322,22	Terminal Type (EMV Tag 9F35)
1323,E66C0DB5	Unpredictable Number (EMV Tag 9F37)
1325,A0000000041010	ICC Application Identifier (AID) (EMV Tag 4F)
1326,MasterCard	ICC Application Preferred Name (EMV Tag 9F12)
1327,MasterCard	Terminal Application Label (EMV Tag 50)
1328,A0000000041010	Terminal Application Identifier (AID) (EMV Tag 9F06)
1332,FF00	Application Usage Control (EMV Tag 9F07)

API Field #, Value	Description
1333,06152016	Last Host EMV Key Download
1334,E800	Transaction Status Information (EMV Tag 9B)
1339,00	EMV Response Code (EMV Tag 8A)
1350,F1	CA Public Key Index (EMV Tag 8F)
1357,124	ICC Transaction Currency (EMV Tag 5F2A)
1358,00	Cryptogram Tran Type (EMV Tag 9C)
1359,4	EMV CVM Verification Indicator
1361,0840	Issuer Currency Code (EMV Tag 5F56)
1376,00000000000000001F00	CVM List EMV Tag (8E)
1378,1326|Application Label: ;1300|TC:;1307|TVR: ;1325|AID: ;	EMV Approved Receipt Field List
1379,1326|Application Label: ;1300|AAC: ;1307|TVR: ;1325|AID: ;	EMV Declined Receipt Field List
1380,CHIP	POS Entry Receipt Indicator
4747,04051	
5002,70117222	
5004,G2	
5010,EMVDC0838	EMV kernel version
7007,1116189776252145	

API Field #, Value	Description
8002,SIMTESTVOLT	
8006,TSTLA3	

Sample Exit Reversal Mode Message Exchange

The response to an Exit Reversal Mode (36-12) Request is a Void Transaction (11) Response:

Exit Reversal Mode Request

API Field #, Value	Description
0001,36	Transaction Type
0007,1	Transaction Amount
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,150258	Transaction time (current time) – HHMMSS

Void Transaction Response

API Field #, Value	Description
0001,11	Transaction Type
0002,20.00	Transaction
0003,;541333 ***0011=25126 01MUYytYLBrXYG?	Account Data

API Field #, Value	Description
0007,35	Reference Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction date(current date) – MMDDDYY
0014,135718	Transaction time (current time) – HHMMSS
0017,0	Cash Back Amount
0047,5;1;1;1;0;1;5;1;1;3;*;C	POS Data Code
0052,0	Transponder / Proximity Indicator (0 = contact; 2 = contactless; 5 = swiped)
0054,05	POS Entry Mode (EMV Tag 9F39)
0055,9	PIN Capabilities
0057,0	ICC Chip Condition Code
0109,RETAIL	Terminal ID
0110,205	Cashier ID
0115,10	Transaction Qualifier
0163,EN	Cardholder Language Preference (EMV Tag 5F2D)
1002,MTIP06 MCD 13A	Cardholder Name
1300,DD38ED49BCA8EA20	Application Cryptogram (EMV Tag 9F26)
1302,251231	Application Expiration Date (EMV Tag 5F24)
1303,410302	Cardholder Verification Method (CVM) Results (EMV Tag 9F34)

API Field #, Value	Description
1305,0210A580 0F0400000000000 00000000000FF	Issuer Application Data (EMV Tag 9F10)
1306,E0F8C8	Terminal Capabilities (EMV Tag 9F33)
1307,0000008000	Terminal Verification Results (TVR) (EMV Tag 95)
1312,840	Terminal Country Code (EMV Tag 9F1A)
1313,03	Application PAN Sequence Number (EMV Tag 5F34)
1317,0002	Terminal Application Version Number (EMV Tag 9F09)
1318,00000070	Transaction Sequence Counter (EMV Tag 9F41)
1319,3000	Application Interchange Profile (EMV Tag 82)
1320,0027	Application Transaction Counter (ATC) (EMV Tag 9F36)
1321,80	Cryptogram Information Data (EMV Tag 9F27)
1322,22	Terminal Type (EMV Tag 9F35)
1323,65058BBD	Unpredictable Number (EMV Tag 9F37)
1325,A0000000041010	ICC Application Identifier (AID) (EMV Tag 4F)
1326,MasterCard	ICC Application Preferred Name (EMV Tag 9F12)
1327,MASTERCARD	Terminal Application Label (EMV Tag 50)
1328,A0000000041010	Terminal Application Identifier (AID) (EMV Tag 9F06)
1332,FF00	Application Usage Control (EMV Tag 9F07)
1334,E800	Transaction Status Information (EMV Tag 9B)

API Field #, Value	Description
1350,F1	CA Public Key Index (EMV Tag 8F)
1354,03	ICC Public Key Exponent (EMV Tag 9F47)
1357,840	ICC Transaction Currency (EMV Tag 5F2A)
1358,00	Cryptogram Tran Type (EMV Tag 9C)
1361,0056	Issuer Currency Code EMV Tag (5F56)
1376,000000000000000 0410342031E031F00	CVM List EMV Tag (8E)
5002,70045363	Device Serial Number
5004,G2	Encryption Provider ID
5010,EMVDC0838	EMV kernel version
8002,EMVG2	Location Name (provided by Elavon)
8006,CHAIN	Chain Code (provided by Elavon)

Sample EMV Sale Message

A sample **Sale Request** and **Sale Response** for an approved EMV transaction is shown below. Note concerning this sample:

- The POS request to Simplify does not require modification for EMV.
- Descriptions are given for response fields added to support EMV.
- Additional fields, not shown in the samples, may also be sent to the POS for EMV.
- For purposes of reference, EMV tags have been noted for potential EMV receipt fields.

Sample Message 🔗

Request

API Field #, Value	Description
0001,02	
0002,1.00	
0007,219	
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	
0014,143210	
0017,0.00	
0109,RETERM1	
0110,205	
0201,0.00	
1008,ID:	
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
5104,xxx…	Tip Settings. See Simplify-Controlled Field Definitions.
8002,SIMTESTVOLT	
8006,TSTLA3	

Response

API Field #, Value	Description
0001,02	
0002,1.00	
0003,ID:4979252177090148	
0004,1217	
0006,CVI875	
0007,219	
0009,001	
0011,xxx..	Field 11 is defined as User Data. See Simplify-Controlled Field Definitions.
0013,022519	
0014,143214	
0017,0	
0030,1	
0032,022519	
0033,173225	
0035,2469	
0036,116189977545650	
0037,0	
0043,228812	
0047,M;1;1;1;0;1;5;1;3;1;3;C;0;4	POS Data Code

API Field #, Value	Description
0052,0	Transponder / Proximity Indicator
0054,05	POS Entry Mode (EMV Tag 9F39)
0055,9	PIN Capabilities
0057,0	ICC Chip Condition Code
0062,201	
0109,RETERM1	
0110,205	
0112,400	
0115,010	
0125,707173225	
0126,2	
0129,1	
0130,100	
0140,USD	
0163,fr	Cardholder Language Preference (EMV Tag 5F2D)
0651,0000000	
1000,VI	
1001,VISA	
1002,CARD 14/VISA TEST	

API Field #, Value	Description
1003,0000	
1004,APPROVAL	
1005,0010600008014593613999	
1008,**********0148	
1009,AA	
1010,COMPLETE	
1012,0774	
1200,0000AA	
1300,2AF039B4B32A2DCC	Application Cryptogram (EMV Tag 9F26)
1301,CD120BA4CDD06DFB0012	Issuer Authentication Data (EMV Tag 91)
1302,171231	Application Expiration Date (EMV Tag 5F24)
1303,410302	Cardholder Verification Method (CVM) Results (EMV Tag 9F34)
1305,06010A03649C00	Issuer Application Data (EMV Tag 9F10)
1306,E0F8C8	Terminal Capabilities (EMV Tag 9F33)
1307,8000008000	Terminal Verification Results (TVR) (EMV Tag 95)
1312,124	Terminal Country Code (EMV Tag 9F1A)
1313,01	Application PAN Sequence Number (EMV Tag 5F34)
1314,A0000000031010	Dedicated File Name (EMV Tag 84)
1315,0001	ICC Application Version Number (EMV Tag 9F08)

API Field #, Value	Description
1317,008C	Terminal Application Version Number (EMV Tag 9F09)
1318,00000190	Transaction Sequence Counter (EMV Tag 9F41)
1319,1C00	Application Interchange Profile (EMV Tag 82)
1320,05E1	Application Transaction Counter (ATC) (EMV Tag 9F36)
1321,40	Cryptogram Information Data (EMV Tag 9F27)
1322,22	Terminal Type (EMV Tag 9F35)
1323,D67895E4	Unpredictable Number (EMV Tag 9F37)
1325,A0000000031010	ICC Application Identifier (AID) (EMV Tag 4F)
1326,Credit	ICC Application Preferred Name (EMV Tag 9F12)
1327,VISA TEST	Terminal Application Label (EMV Tag 50)
1328,A0000000031010	Terminal Application Identifier (AID) (EMV Tag 9F06)
1332,FF80	Application Usage Control (EMV Tag 9F07)
1333,06152016	Last Host EMV Key Download
1334,6800	Transaction Status Information (EMV Tag 9B)
1339,00	EMV Response Code (EMV Tag 8A)
1357,124	ICC Transaction Currency (EMV Tag 5F2A)
1358,00	Cryptogram Tran Type (EMV Tag 9C)
1359,2	EMV CVM Verification Indicator
1361,0076	Issuer Currency Code (EMV Tag 5F56)

API Field #, Value	Description
1362,100	EMV Cryptogram Amount
1363,000	EMV Cryptogram Other Amount
1376,00000 0000000000 041034203 1E031F02	CVM List (EMV Tag 8E)
1378,1327|Label Application: ;1300|TC:;1307|TVR: ;1325|AID: ;	EMV Approved Receipt Field List
1379,1327|Label Application: ;1300|AAC: ;1307|TVR: ;1325|AID: ;	EMV Declined Receipt Field List
1380,CHIP	POS Entry Receipt Indicator
1382,F000F0A001	Additional Terminal Capabilities (EMV Tag 9F40)
4747,04050	
5002,70117222	
5004,G2	
5010,EMVDC0838	EMV kernel version
5070,Merchant: Demo; Simplify: V-OG-2.02.02124; PARM: 2.21.1;TENDERDEF: 2.21.1; EMVPARM: EMVPARM-E4-1	Simplify Information. See Simplify-Controlled Field Definitions.
5071,xxx…	Defines whether card and cardholder are present. See Simplify-Controlled Field Definitions.
5104,xxx…	Tip Settings. See Simplify-Controlled Field Definitions.

API Field #, Value	Description
7007,1116189775452137	
8002,SIMTESTVOLT	
8006,TSTLA3	

Pay-At-Table

Simplify supports Pay@Table processing on Ingenico iWLxxx PIN Pads.

Pay@Table transactions can be broken down into three steps:

1. **Pre-pay** (Simplify Pay@Table process) – Simplify sends a **Login Request** to login and connect to the POS. Pay@Table configuration values are received in the response. After determining a check for processing, Simplify sends a **Get Check Information Request** to the POS and receives data on the specified check(s) in the response. Simplify finalizes transaction data for a tender and sends a **Make Payment Request** to the POS.

2. **Authorization** (Simplify Payment process) – Simplify receives a financial request from the POS, obtains customer account data, and prepares and sends a host request to Fusebox. Simplify processes the host response, and sends a financial response to the POS.

   Supported Tran Types for the financial request are Auth Only (01), Sale (02), Return (09). For more information on these Tran Types, see Message Details . The POS can also send a Void (11) or an Inquiry (22) after a host or Simplify timeout; for more information see under Simplify Payment Processing.

3. **Post-pay** (Simplify Pay@Table process) – Simplify receives a **Print Receipt Request** from the POS, prints the receipts and send a **Print Receipt Response** to the POS.

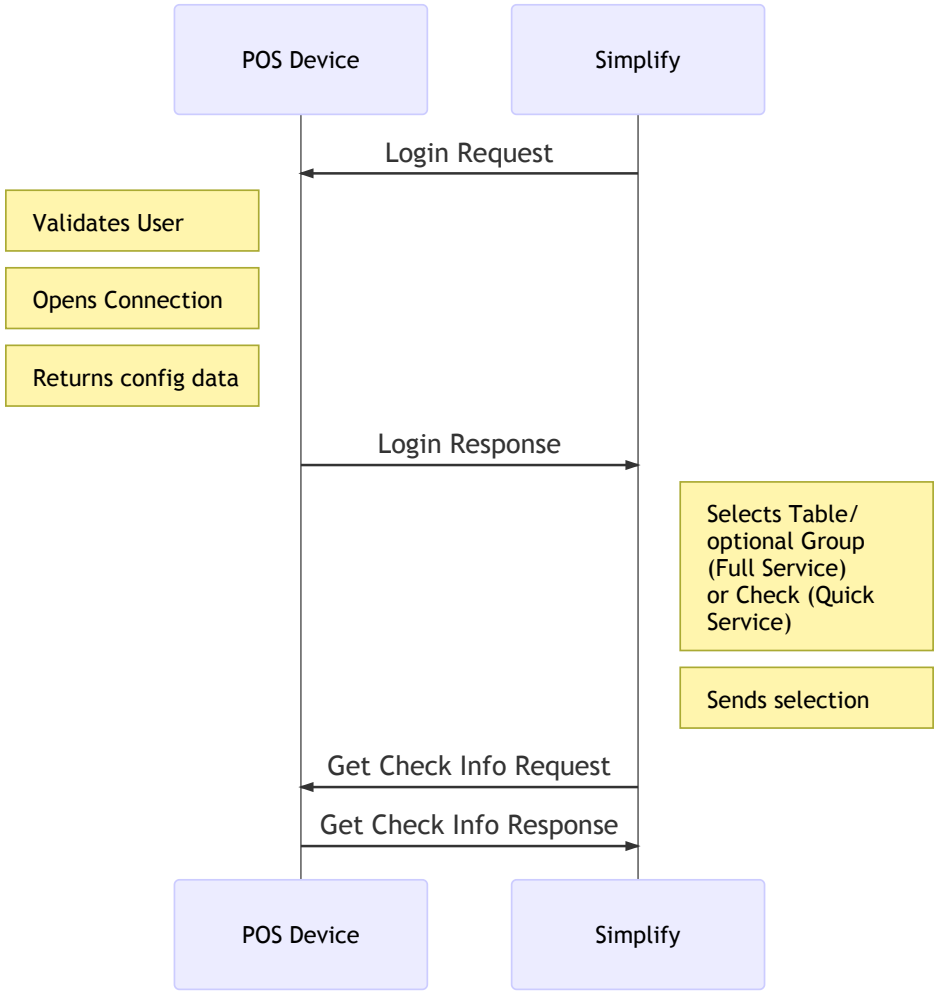
POS responsibilities during a Pay@Table transaction include the following:

- Upon **Login Request**, validates user. If valid login, returns **Login Response** based on message specification.
- Upon **Get Check Information Request**, returns list of open checks.
- After receipt of **Make Payment Request** (completion of Pay@Table pre-pay process), builds and sends financial request to Simplify.
- After receiving financial response, sends **Print Receipt Request** to Simplify.
- Handle timeout from financial response, if applicable.

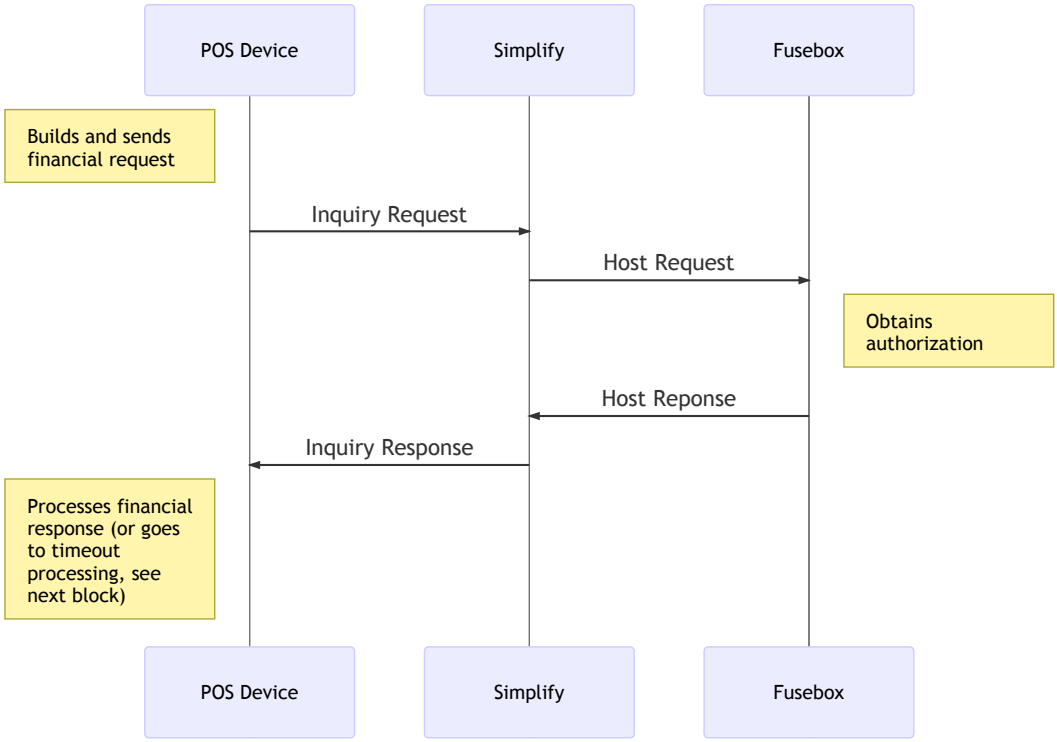
- Upon **Logout/Disconnect Request**, sends response, logs user out and disconnects from PIN Pad.
- There can be multiple Pay@Table terminals for a single base. All terminals connected to the same base will have the same IP address, with the POS responsible for managing multiple sockets.

Message Flow

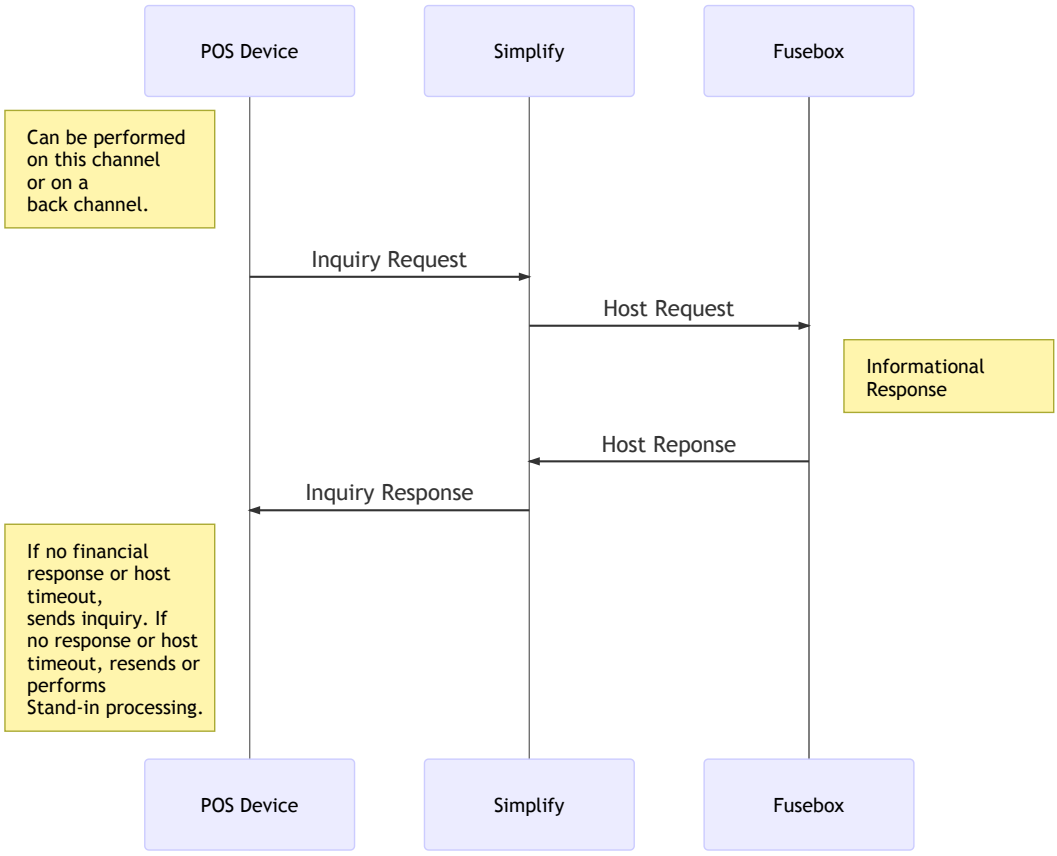
Simplify Pay@Table Process



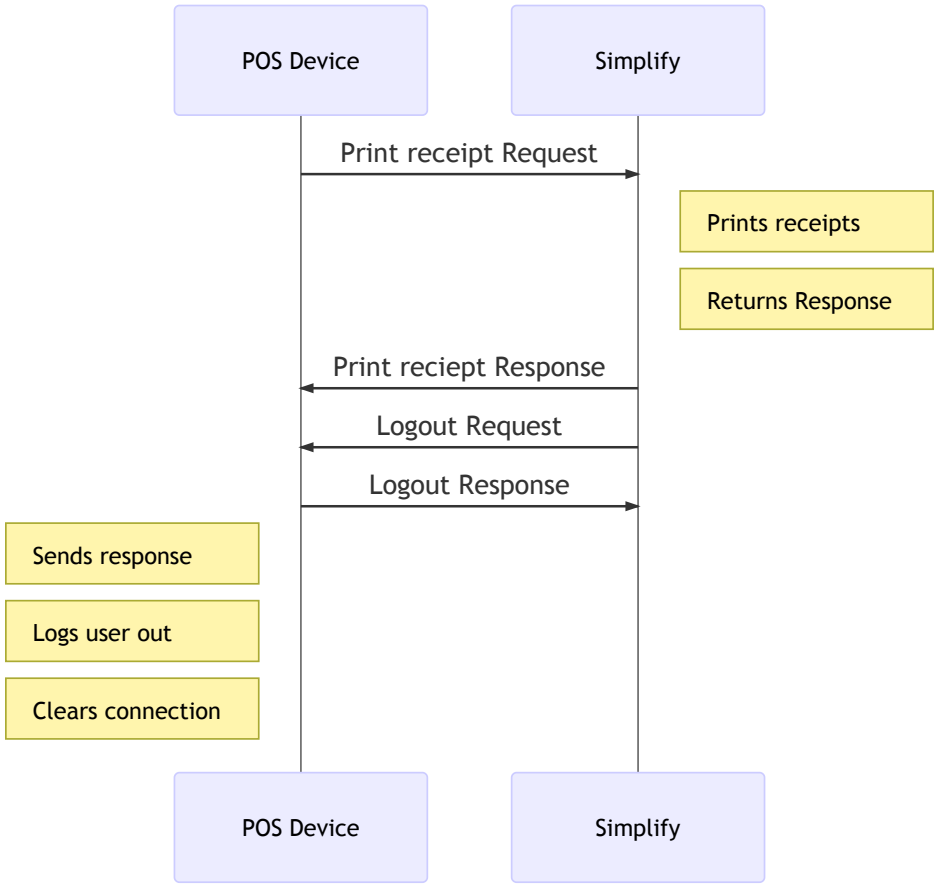
Simplify Payment Process



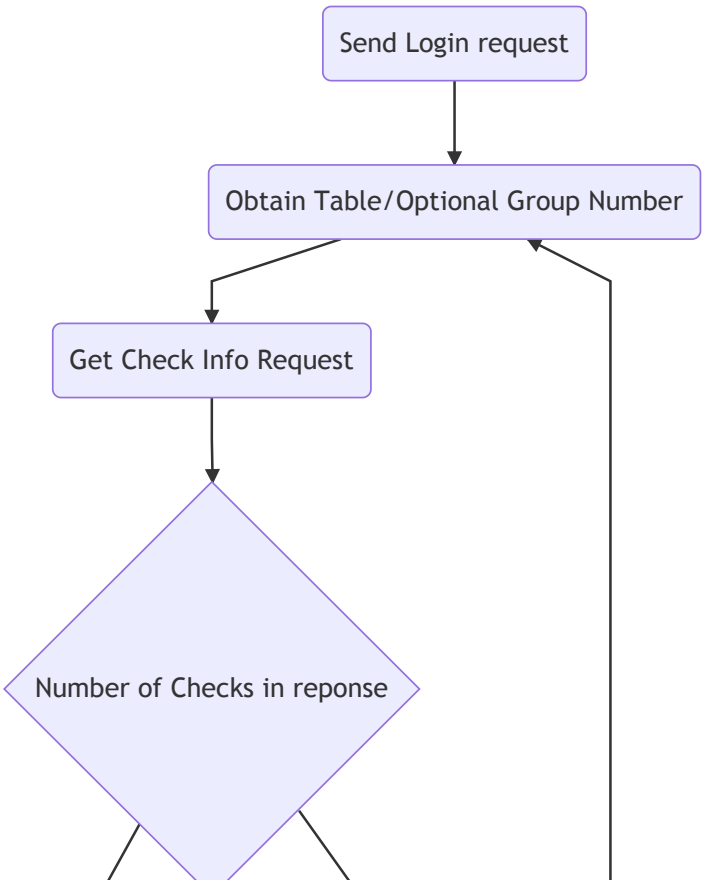
Simplify Payment Process (timeout on financial request)

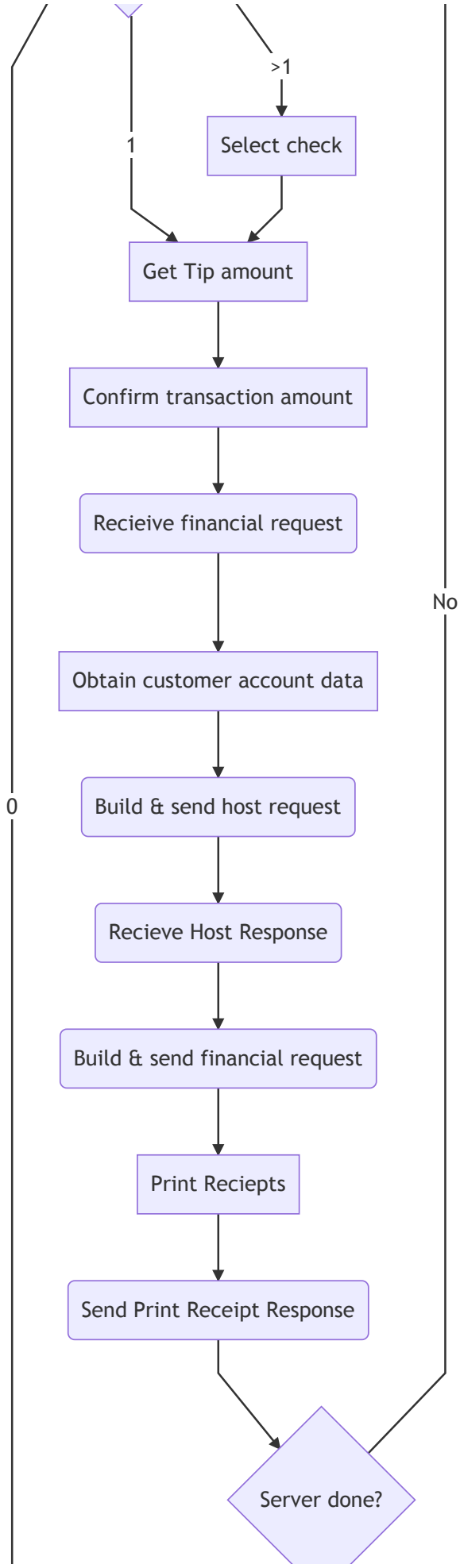


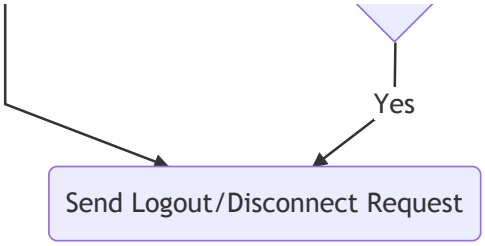
Simplify Pay@Table Process



Transaction Flow




>1
1
Select check
Get Tip amount
Confirm transaction amount
Recieive financial request
No
Obtain customer account data
0
Build & send host request
Recieve Host Response
Build & send financial request
Print Reciepts
Send Print Receipt Response
Server done?



Field Formats and Description

The following table gives formats/descriptions for all fields included in Simplify Pay@Table messages.

Note: Data Type = C refers to currency fields. These fields must include an explicit decimal point.

Field #	Field Name	Size	Data Type	Description
0001	Transaction Type	2	N	Simplify Tran Type. Always 39 for Pay@Table messages.
0002	Transaction Amount	1-14	C	Total transaction amount (includes Tip if any). The decimal point will be explicitly included as part of the data.
0141	Currency Code	3	N	840=USD
0201	Tip Amount	1-14	C	Entered or selected by customer. The decimal point is explicitly included in the data. Note that the POS must send this value separately in field 201 of the financial request.
5002	Device Serial Number	1-20	A/N	PIN Pad serial number

Field #	Field Name	Size	Data Type	Description
5100	Message Type	2	A/N	01=Login 02=Get Check Info 04=Logout/Disconnect 05=Make Payment 06=Print Receipt
5101	Store ID	1-25	A/N	Optional field; may be blank or missing Only populated if a Store ID is defined under Simplify configuration.
5102	Employee ID	1-20	A/N	Server ID
5103	Service Type Flag	1	N	Controls Simplify prompt displayed on the Get Check Information screen: 00=Table and Check Number 01=Check Number
5104	Tip Percentages	1-8	A/N	Contains up to three one or two-digit percentages separated by semicolons (;) The percentage sign is assumed.
5105	Table Number	1-25	A/N	Entered at prompt
5106	Check Number	1-25	A/N	Entered at prompt or selected from list

Field #	Field Name	Size	Data Type	Description
5107	Merchant Receipt	1-2047	A/N	Data for merchant receipt. Receipt lines are separated by the pound sign (#). E.g. ## tells Simplify to print a blank line before beginning the next line. Receipt lines are printed using left justification. For center justification, pad with spaces. Note on Font Size: this is controlled by Simplify in the **Print Receipt Request**. See Print Receipt Message for more information.
5108	Customer Receipt	1-2047	A/N	Data for customer receipt. Same format as 5107.
5110	POS Response Code	2	N	Response Code from POS: 00=approved Any other value=declined.
5111	POS Response Message	1-50	A/N	Response Message from POS. Displayed on PIN Pad.
5114	Check Information	1-2047	A/N	Check Information sent in five subfields (separated by semicolons) - Check number. (25 bytes maximum) - Amount due (includes explicit decimal point; if negative, the check is a refund) (14 bytes maximum) - Check receipt (5 bytes maximun) - Employee ID (10 bytes maximum) - Text data (30 bytes maximum) See under Get Check Information Message for more information.

Field #	Field Name	Size	Data Type	Description
…	Check Information	1-2047	A/N	Information for each check is sent in a separate field. Up to 99 checks can be processed per table or group, using fields 5114 through 5212.
5213	Partial Payment Flag	1	N	0=Disabled; 1=Enabled
5214	Tip Flag	1	N	0=Disabled; 1=Enabled
5216	Group Number	1-2	N	Entered at prompt (optional)
5217	Type of Transaction	2	N	Simplify Tran Type that should be sent by the POS: 01=Auth Only 02=Sale 09=Return (will be sent if the check is a refund)
5218	Pay@Table Message Reference Number	1-8	N	Message number incremented for each Pay@Table request (from Simplify or POS) and returned in each response message (if any). Used to match requests and responses. For **Print Receipt** messages, the Reference Number must match field 7 in the preceding financial response.
5219	Pay@Table Session ID	1-8	N	Used if necessary to recover the correct session. Sent in **Login Response** and all subsequent messages until logout/disconnect. Incremented for each **Login Response**.

Message Summary

All messages sent and received by the Simplify Pay@Table process have 39 as the Transaction Type (field 1) and use a Message Type (field 5100) to define the purpose of the message.

> **Note:** Messages sent and received by the Simplify Pay@Table process are referred to as Simplify Pay@Table messages. Simplify Pay@Table messages are organized much like Non-financial messages, which all have 36 as the Transaction Type (field 1) and use a Message Type (field 11 bytes 1-2) to define the purpose of the message.

The message sequence used during a Simplify Pay@Table transaction is as follows:

The following pages show formats/descriptions for fields used in Simplify Pay@Table messages, followed by transaction flow details with sample messages.

Pay@Table Message Type	Use	Direction
01	Simplify Pay@Table Process Login Request/Response	Request from Simplify to POS Response from POS to Simplify
02	Get Check Info Request/Response	Request from Simplify to POS Response from POS to Simplify
05	Make payment request	Request from Simplify to POS No Response message
N/A	Simplify Payment Process	Simplify recieives financial request from POS (Trans Type 01, 02, or 09), obtains customer account data, builds and sends host request to Fusebox, receives host response, and sends financial response to POS. No Pay@Table-specific processing. See Chapters 2-4 for details
06	Print Receipt Request/Response	Request from Simplify to POS Response from POS to Simplify
04	Logout/Disconnect Request/Response	Request from Simplify to POS Response from POS to Simplify

Message and Flow Details

The following pages provide information on Pay at Table (39-xx) message types, as follows:

- The role of the message type in the Pay at Table transaction flow is described.
- The message format is defined, and illustrated with one or more sample messages.

Login Request and Response (Tran Type 39-01)

Simplify sends a **Login Request** message to the POS after the server logs in to the PIN Pad. The POS attempts to validate the user and open a connection.

If login is successful, the **Login Response** from the POS will contain store configuration values used by Simplify to control Pay@Table processing for the transaction (Service Type, Tip Percentages, Partial Payment Flag, Tip Flag).

Login Request

A sample **Login Request** message is as follows:

API Field #, Value	Description
0001,39	Transaction Type
5101,12345	Store ID
5100,01	Message Type
5102,111	Employee ID
5002,80667259	Device Serial Number
5218,713	Pay@Table Message Reference Number

Login Response 🔗

A sample **Login Response** message is as follows:

API Field #, Value	Description
0001,39	Transaction Type
5100,01	Message Type
5103,00	Service Type
5104,xxx…	Tip Settings. See Simplify-Controlled Field Definitions.
5110,00	POS Response Code
5111,Approved	POS Response Message
5213,1	Partial Payment Flag
5214,1	Tip Flag
5218,713	Pay@Table Message Reference Number
5219,12345678	Pay@Table Session ID

Get Check Info Request and Response (Tran Type 39-02)

The **Get Check Information Request** is used to request check data from the POS. Depending on configuration, Simplify can request check information by table number, check number or group number.

The **Get Check Information Response** returns a list of open checks. Open checks can be presented as check numbers or as text descriptions controlled by the POS.

Get Check Info Request 🔗

A sample **Get Check Info Request** message is as follows:

API Field #, Value	Description

API Field #, Value	Description
0001,39	Transaction Type
5100,02	Message Type
5106,1 and/or 5105,1 and/or 5216,1	Check Number and/or Table Number and/or Group Number. See next table for details.
5218,714	Pay@Table Message Reference Number
5219,12345678	Pay@Table Session ID

Controlling Returned Check Data

The following fields in the **Get Check Info Request** can be used to control the check(s) for which data will be returned. The field(s) used for a transaction will depend on values returned in the **Login Response** (which control Simplify prompting) and on server input, as follows:

API Field #	Contents	Use
5105	Table Number	Used in request if prompted for and entered. Defines a single table for which check data will be requested.
5106	Check Number	Used in request if prompted for and entered. Requests data for a single check.
5216	Group Number	This field is available for implementations that choose to use it.

Get Check Info Response

The **Get Check Information Response** contains check data for Simplify to display. As illustrated by the following samples, Simplify handling of data for a check is based on whether the corresponding Check Information field contains valid Text Data (fifth subfield; see next table):

- If yes, the Text Data will be displayed and other subfields will be ignored.

- If no, the values in the other subfields will be displayed.

Field #	Field Name	Size	Data Type	Description
5114 5212	Check Information (can be repeated up to 99 times)	1-2047	A/N	Check Information sent in five subfields (separated by semi-colons): - Check number. (25 bytes maximum) - Amount due (includes explicit decimal point; if negative, the check is a refund) (14 bytes maximum) - Check receipt (5 bytes maximum) - Employee ID (10 bytes maximum) - Text data (30 bytes maximum)

Sample Messages and Screens

The following scenarios are distinguished by the type of data (if any) present in the Text Data subfield of Check Information fields (API 5114-5212) in the **Get Check Information Response** message. For each scenario, a sample response is shown, followed by the Simplify screen resulting from this message:

No Text Data

API Field #, Value	Description
0001,39	Transaction Type
5100,02	Message Type
5110,00	POS Response Code
5111,Approved	POS Response Message

API Field #, Value	Description
5114,25; $1.00;22;LCOLE;	Check Information 1
5115,26; $2.00;22;JOANNE;	Check Information 2
5116,1112;$3.00;12;JEREMY;	Check Information 3
5218,714	Pay@Table Message Reference Number
5219,12345678	Pay@Table Session ID

Text Data (Check Number, Amount Due, Check Description)

API Field #, Value	Description
0001,39	Transaction Type
5100,02	Message Type
5110,00	POS Response Code
5111,Approved	POS Response Message
5114,25; $1.00;22;LCOLE;#25 $1.00 Seat 25;	Check Information 1
5115,26; $2.00;22;JOANNE;#26 $2.00 Man with cigar;	Check Information 2
5116,112;$3.00;12;JEREMY;#112 $3.00 Green jacket;	Check Information 3
5218,714	Pay@Table Message Reference Number
5219,12345678	Pay@Table Session ID

Text Data (Check Description only)

API Field #, Value	Description
20001,39	Transaction Type
5100,02	Message Type
5110,00	POS Response Code
5111,Approved	POS Response Message
5114,25; $1.00;22;LCOLE;Guest in Seat 25;	Check Information 1
5115,26; $2.00;22;JOANNE;Man with cigar;	Check Information 2
5116,112;$3.00;12;JEREMY;Guest in green jacket;	Check Information 3
5218,714	Pay@Table Message Reference Number
5219,12345678	Pay@Table Session ID

Make Payment Request (Tran Type 39-05)

A **Make Payment Request** message is sent by Simplify after transaction information has been entered for a check (or part of a check if partial payment is enabled and selected by the customer) and the customer has approved the transaction amount.

There is no **Make Payment Response** message. The POS responds to a **Make Payment Request** by sending a financial request to Simplify.

Make Payment Request 🔗

A sample **Make Payment Request** message is as follows:

API Field #, Value	Description
0001,39	Transaction Type

API Field #, Value	Description
5100,05	Message Type
5105,1	Table Number
5106,125	Check Number
5217,01	Type of Transaction
0002,14.00	Transaction Amount.
0201,1.99	Tip Amount
0141,840	Currency Code
5218,715	Pay@Table Message Reference Number
5219,12345678	Pay@Table Session ID

Simplify Payment Process

After the Simplify Pay@Table process sends a **Make Payment Request**, the next steps in processing a Pay@Table transaction are performed by the Simplify Payment process. For supported Tran Types, this processing is identical to that performed by Simplify for non-Pay@Table transactions:

1. The POS builds and sends a financial request to Simplify.
2. Simplify display screens to obtain customer account data (including PIN if debit).
3. Simplify builds and sends the host request to Fusebox.
4. Fusebox attempts to obtain transaction authorization and sends the host response to Simplify.
5. Simplify processes the host response, and builds and sends a financial response to the POS.

The type of financial request that the POS should send is determined by the Type of Transaction field (5217) that it receives in the **Make Payment Request**. If the value in this field is 01, the POS should send an **Auth Only Request**. (As always, if an **Auth Only Request** is sent, a Completion transaction will also need to be performed.) If the value is 02, a **Sales Request** should be sent, and if 09, a **Return Request**.

Stand-In is supported for Pay@Table transactions using current rules (as defined under Stand-in Processing). Cashback is *not* supported on Pay@Table transactions.

> **Important:**
>
> If a timeout or other communication error occurs while waiting for a financial response, the POS can send an Inquiry Request using current rules, followed by a Void Request if required to recover the financial transaction.
>
> If the POS cannot post an approved transaction, it must decline the transaction and inform Simplify of the transaction decline. This can be done by sending Simplify a **Void Request**.

Print Receipt Request and Response (Tran Type 39-06)

After the Simplify Payment process sends the financial response, control of the PIN Pad is returned to the Simplify Pay@Table process.

After receiving a financial response from Simplify for a Pay@Table transaction, the POS sends a **Print Receipt Request** message to Simplify. This request contains data needed by Simplify to print the receipts. After receiving this request, Simplify will print the Merchant receipt followed by the Customer receipt.

> **Note:** Since the iWL series does not support signature capture, the merchant receipt will include a signature line.

After printing the receipts, Simplify will send a **Print Receipt Response** message to the POS. This completes Simplify processing for the tender.

> **Note:** If the POS does not receive a **Print Receipt Response**, it should resend the **Print Receipt Request**.

Print Receipt Request 🔗

A sample **Print Receipt Request** message is as follows:

API Field #, Value	Description
0001,39	Transaction Type
5100,06	Message Type
5110,00	POS Response Code
5111,Approved	POS Response Message

API Field #, Value	Description
5107,RECEIPT DATA IS SENT FROM THE POS #Elavon Demo Restaurant #4234 Hacienda Drive Suite 250 #Pleasanton Ca 94588 # #Merchant Copy # #Merchant ID :123456789012345 #Terminal ID : RETERM1 #Card No. : **********1111 #Expiry Date: XX/XX #Card Type : VI #Trans Type : SALE #Trans Time : 09/18/2015 16:06:55 #Trace No. : 2 #RRN :100161000312 #Auth Code : 000052 # #App Label :Personal Account #AID : A000000025010801 #AC :52A80ACE8E0D9CA4 # #AMOUNT :USD $14.00 #APPROVAL # # I agree to the terms of my # credit agreement. # # # # #———————————————— # Signature. [Line breaks added for readability.]	Merchant Receipt

API Field #, Value	Description
5108,Elavon Demo Restaurant #4234 Hacienda Drive Suite 250 #Pleasanton Ca 94588 # # Customer Copy # #Merchant ID : 9795818996 #Terminal ID : RETERM1 #Card No. : **********1111 #Expiry Date: XX/XX #Card Type : VISA #Trans Type : SALE #Trans Time : 09/18/2015 16:06:55 #Trace No. : refnum. #RRN : 100161000312 #Auth Code : 000052 # #App Label: Personal Account #AID : A000000025010801 #AC : 52A80ACE8E0D9CA4 # #AMOUNT : USD14.00 #APPROVAL # # I agree to the terms of my # credit agreement. # # # # #—————————————— # Signature. [Line breaks added for readability.]	Customer Receipt
5218,21	Pay@Table Message Reference Number
5219,12345678	Pay@Table Session ID

Print Receipt Response 🔗

A sample Print Receipt Response message is as follows:

API Field #, Value	Description
0001,39	Transaction Type
5100,06	Message Type
5110,00	Fusebox Response Code
5111,Success	Fusebox Response Message
5218,11	Pay@Table Message Reference Number
5219,12345678	Pay@Table Session ID

Sample Receipt🔗

A sample merchant receipt is shown below:

Logout/Disconnect Request and Response (Tran Type 39-04)

After printing the receipts, Simplify will check whether there is a remaining balance on the check or (if Full Service) whether the table or group still has open checks.

- If yes, Simplify will resend the **Get Check Information Request** and repeat the processing steps through the **Print Receipt Response**.
- If no, Simplify will send a **Logout/Disconnect Request** to the POS. The POS responds by sending a Logout/Disconnect Response, logging out the user and disconnecting from the PIN Pad.

Logout/Disconnect Request 🔗

A sample **Logout/Disconnect Request** message is as follows:

API Field #, Value	Description

API Field #, Value	Description
0001,39	Transaction Type
5002,80667323	Device Serial Number
5100,04	Message Type
5102,2	Employee ID
5218,1826	Pay@Table Message Reference Number
5219,11	Pay@Table Session ID

Logout/Disconnect Response

A sample **Logout/Disconnect Response** message is as follows:

API Field #, Value	Description
0001,39	Transaction Type
5100,04	Message Type
5110,00	POS Response Code
5111,Approved	POS Response Message
5218,1826	Pay@Table Message Reference Number
5219,11	Pay@Table Session ID

Recovery

General Principles

1. For systems supporting Pay@Table, Simplify acts as a TCP/IP client to the POS. Simplify will be the one connecting to the POS.

2. For every message that Simplify sends to the POS which requires a response, a timer will be started by Simplify. These timers can be configured independently to define a different wait time for the response to each message type. If a response is not received in time, the current socket will be closed and a new socket connection will be opened by Simplify.

3. A disconnect or socket error while waiting for a response will cause Simplify to open a new socket to the POS.

4. Recovery points are defined to be resent when Simplify times out waiting for a response. (See table below.)

5. When a timer expires waiting for a response, and reconnection to the recovery point is not successful, Simplify will go to the logged-off (idle) state.

6. The **Login Response** will contain a PATT Session ID (Gateway API field 5219) which is unique for every login. This Session ID will be attached to all subsequent requests and responses in the session, and can be used to recover the correct session.

Simplify Recovery Points and Actions 🔗

State	Message	Expected Response	Recover State on Timeout	Action on Timeout/Dropped Socket
Idle		Idle	Idle	Idle
Login/Connect	Login Request	Login Response	Login/Connect	Close and create new socket
Get Check Information	Get Check Information Request	Get Check Information Response	Get Check Information	Close and create new socket
Make Payment Request	Make Payment Request	financial request	Get Check Information	Close and create new socket
Financial Request	Same process as current	Same process as current	Get Check Information	Close and create new socket
Receipt Printing	Print Receipt Request	Print Receipt Response	Receipt printing	Wait for new socket

State	Message	Expected Response	Recover State on Timeout	Action on Timeout/Dropped Socket
Logout/Disconnect	Logout/Disconnect Request	Logout/Disconnect Response, User logged out, POS disconnects	Idle	Close socket

POS Recovery

If a timeout or other communication error occurs while waiting for a financial response, the POS can send an **Inquiry Request** (22) using current rules (as defined under Inquiry Message.

Mini Receipt

If Simplify does not receive a **Print Receipt Request** before timing out, it will not know whether the transaction was successfully posted. In this case, Simplify will print a mini receipt like the following sample:

Mini Receipt:

> ChkNo: 125
>
> Amt: $12.01
>
> TblNo: 34

This receipt tells the server that Simplify has lost communications with the POS after sending the financial response for the indicated transaction. The server will need to find out from the POS what it has done with the transaction.

Informational Prompting

Simplify supports an **Informational Prompt Message**. This is a flexible feature designed to allow merchants to display information for customers and get customer input using a variety of screen layouts. This message type does not affect the processing of financial transactions.

> **Note:** The full functionality described in this chapter is available on the iSC250 and iSC480. The iPP350 supports Tag 010 only. Informational Prompting is not currently supported on other terminal types.

The POS controls this process by sending an **Informational Prompt Request** that defines the screen to be displayed. The PIN Pad must be in a Closed state to process this request. Exceptions: (1) If

another **Informational Prompt Request** is sent when the PIN Pad is already displaying an Informational Prompt screen, the display for the second request will replace the first screen. (2) After sending an **Informational Prompt Response**, the PIN Pad will display a wait screen for a configurable interval before going to the Closed state. If a new **Informational Prompt Request** is sent during this interval, the PIN Pad will process the request.

Simplify returns the customer input in the **Informational Prompt Response**. Input includes the action button (virtual button) or hard key pressed. Depending on the type of **Informational Prompt Message** sent, input may also include entered text or a selected radio button, check boxes or slider position. Additional requests can be sent if further customer interaction is required.

> **Important:** For P2PE Systems: Informational Prompt messages must not pass card data. Doing so will defeat the purpose of P2PE, and result in increased need for PCI auditing.

Generic Non-Financial Message Format

The **Informational Prompt Message** is a **Non-Financial** message type (Transaction Type 36) with a Message Type of 14. It is discussed separately in this chapter due to its many uses.

As described in Chapter 2 under Non-Financial Messages, all **Non-Financial** messages have the following generic format:

API Field #, Value	Description
0001,36	Transaction Type 36. Non-Financial message
0011,xxx..	User Data. See Simplify-Controlled Field Definitions. For Transaction Type 36, it will always include: Positions 1-2 Message Type
5001,xxx..	Non-Financial Data. The format of this field depends on the value of Message Type.

Fields 11 and 5001 in Informational Prompt Messages

The remainder of this page provides information on fields 11 and 5001 specific to the **Informational Prompt Message**.

Field 11

The format of field 11 in the **Informational Prompt Message** (36-14) is modeled on that in the **Signature Request** and **Response Messages** (36-01, 36-02). Exception: the **Screen ID** subfield of

field 11 is not used. As shown in the following table, the Response echoes the Request except for the Timeout Value, which is replaced with the Completion Code.

Field 11 Subfield	Length	Description
Message Type	2	Always 14
Sequence Number	3	Transaction identifier
Screen ID	3	Not used
Timeout Value/ Completion Code	3	Request: Screen timeout in seconds (000=No timeout) Response: Completion Code (000 = Success) See Simplify-Controlled Field Definitions.
VersionBuildInfo	Var	Response only: '?' followed by Version and Build numbers

Field 5001

In the **Informational Prompt Message**, field 5001 is used in the Request to define the screen that will be displayed and in the Response to return customer action/data entered. The generic structure of Field 5001 is TTTLLLVVV..VV, broken down as follows:

Field 5001 Subfield	Length	Description
TTT	3	Tag identifying screen to be displayed: 010=Text with optional buttons 011: Static and Scrolling Text with Optional Buttons 012: Text and Graphics with Optional Buttons 020=Scrolling text 030=Virtual keyboard 040=Radio buttons 050=Check boxes 060=Slider 070=Scrolling text with radio buttons 071=Scrolling text with virtual buttons

Field 5001 Subfield	Length	Description
LLL	3	Length of data (VVV…VV) Note that if the data is longer than 999 bytes, set LLL to 999. The application will process the additional data.
VVV…VV	var	Data

The following pages provide detailed breakdowns of Field 5001 and sample messages for each supported value of Tag.

Tag 010 - Text with Optional Buttons

The **Text with Optional Buttons Message** is used to display virtual buttons and/or fixed text onscreen. The screen may have button(s) on top (and/or bottom on some models) plus labels (lines of text) below and/or above any buttons.

A virtual button will only be displayed if data is entered in the descriptor field (ButtonNDesc) for the button. Note that pressing the Enter key is not required after pressing a virtual button.

The following details are device-specific:

For iSC250 and iSC480 – Screen may have button(s) on top and/or bottom plus labels (lines of text) in the middle. The maximum number of labels depends on the buttons present. The maximum is 6 if there are button(s) on the top and bottom, 7 if there are button(s) on the top or bottom but not both, and 8 if there are no buttons. *Do not send excess labels.* The maximum length of each Button Descriptor is 10. The maximum length of each Button Label is 52 for the iSC250 and 62 for the iSC480.

For iPP350 – Buttons on top of the screen are not supported; up to four buttons are supported on the bottom. Up to six labels are supported. The maximum length of each Button Descriptor is 7. The maximum length of each Button Label is 43.

The **Text with Optional Buttons Response** returns the button pressed by the customer. Fields in the Request (AllowEnter, AllowCancel) control whether the (hard) Enter and Cancel keys can be used.

Field 5001 Format

Request

Field 5001 Subfield	Length	Description
TTT	3	Tag (always = 010)
LLL	3	Length of the following data
AllowEnter	1	Allow Enter hard key (0=Not allow, 1=Allow)
AllowCancel	1	Allow Cancel hard key (0=Not allow, 1=Allow)
Beeper	1	Sound tone (0=No, 1=Yes)
ButtonADesc	0 (iPP350) 0-10 (iSCxxx)	Descriptor for first button position (from left) on top (A)
FS	1	Field separator (Hex 1C)
ButtonBDesc	0 (iPP350) 0-10 (iSCxxx)	Descriptor/field separator for second button position on top (B)
FS	1	
ButtonCDesc	0 (iPP350) 0-10 (iSCxxx)	Descriptor/field separator for third button position on top ©
FS	1	
ButtonDDesc	0 (iPP350) 0-10 (iSCxxx)	Descriptor/field separator for fourth button position on top (D)
FS	1	

Field 5001 Subfield	Length	Description
ButtonEDesc	0-7 (iPP350) 0-10 (iSCxxx)	Descriptor/field separator for first button position (from left) on bottom (E)
FS	1	
ButtonFDesc	0-7 (iPP350) 0-10 (iSCxxx)	Descriptor/field separator for second button position on bottom (F)
FS	1	
ButtonGDesc	0-7 (iPP350) 0-10 (iSCxxx)	Descriptor/field separator for third button position on bottom (G)
FS	1	
ButtonHDesc	0-7 (iPP350) 0-10 (iSCxxx)	Descriptor/field separator for fourth button position on bottom (H)
FS	1	
Label1Just	1	Label 1 Justification (1=Left justify, 2=Center, 3=Right justify)
Label1Reverse	1	Reverse mode (0=standard mode, 1=reverse mode).
Label1Text	0-43 (iPP350) 0-52 (iSC250) 0-62 (iSC480)	Label 1 Text

Field 5001 Subfield	Length	Description
FS	1	Field separator (Hex 1C)
Label2Just	1	Justification/mode/text/field separator for Label 2.
Label2Reverse	1	
Label2Text	0-43 (iPP350) 0-52 (iSC250) 0-62 (iSC480)	
FS	1	
Label3Just	1	Justification/mode/text/field separator for Label 3.
Label3Reverse	1	
Label3Text	0-43 (iPP350) (iSC250) (iSC480)	
FS	1	
Label4Just	1	Justification/mode/text/field separator for Label 4.
Label4Reverse	1	
Label4Text	0-43 (iPP350) 0-52 (iSC250) 0-62 (iSC480)	
FS	1	

Field 5001 Subfield	Length	Description
Label5Just	1	Justification/mode/text/field separator for Label 5.
Label5Reverse	1	
Label5Text	0-43 (iPP350) 0-52 (iSC250) 0-62 (iSC480)	
FS	1	
Label6Just	1	Justification/mode/text/field separator for Label 6.
Label6Reverse	1	
Label6Text	0-43 (iPP350) 0-52 (iSC250) 0-62 (iSC480)	
FS	1	
Label7Just	1	Justification/mode/text/field separator for Label 7.
Label7Reverse	1	
Label7Text	0 (iPP350) 0-52 (iSC250) 0-62 (iSC480)	
FS	1	

Field 5001 Subfield	Length	Description
Label8Just	1	Justification/mode/text for Label 8.
Label8Reverse	1	
Label8Text	0 (iPP350) 0-52 (iSC250) 0-62 (iSC480)	

Response

Field Name	Length	Description
TTT	3	Tag (always = 010)
LLL	3	Length of the following data
ActionButton	var	If field 11 Completion Code = 000 (success), returns code for action button or key pressed: 777=Enter (green) key 888=Cancel (red) key 1=ButtonA 2=ButtonB 3=ButtonC 4=ButtonD 5=ButtonE 6=ButtonF 7=ButtonG 8=ButtonH

Sample Message (One Button)

Request

API Field #, Value	Description
0001,36	Transaction Type
0011,14123010120	User Data. See Simplify-Controlled Field Definitions.
5001,[see value below]	Non-Financial Data 010=Tag 276=Length of data 1=Allow Enter key 1=Allow Cancel key 1=Beeper active Button 2=Descriptor for virtual button position B 1=Line 1 left-justified 0=Line 1 standard mode This line is left justified (etc.)=Text of line 1 (etc.)

5001,010276111FSButton 2FSFSFSFSFSFSFS10Thisline is left justified in normal mode 52 charsFS20This second line should be centeredFS30This third line is right justifiedFS21This line should be in reverse modeFS20This fifth line should be back in normal modeFS10This is line 6left justifyFS10This is line 7 left justify

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14123010000	User Data. See Simplify-Controlled Field Definitions.
5001,0100038880	Non-Financial Data 010=Tag 003=Length of data 888=Cancel key pressed

Sample Message (Eight Buttons) 🔗

Request

API Field #, Value	Description
0001,36	Transaction Type
0011,14123010120	User Data. See Simplify-Controlled Field Definitions.
5001,[see value below]	Non-Financial Data 010=Tag 128=Length of data 1=Allow Enter key 1=Allow Cancel key 1=Beeper active Button 1=Descriptor for virtual button position A (etc.) 1=Line 1 left-justified 0=Line 1 standard mode Line 1=Text of line 1 (etc.)

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14123010000	User Data
5001,0100011	Non-Financial Data 010=Tag 001=Length of data 1=ButtonA (Button 1) pressed

Tag 011 - Static and Scrolling Text with Optional Buttons

The **Static and Scrolling Text with Optional Buttons Message** can be used to display both static (non-scrolling) and scrolling user text on the same screen, as well as optional buttons. Buttons and static text and scrolling text are placed in three screen areas, whose heights can be configured (0 = do not display). These areas are, from top to bottom:

Button area – Up to four virtual buttons can be displayed at the top of the screen. As for Tag 010, a virtual button will only be displayed if data is entered in the request descriptor field for the button (ButtonNDesc). The vertical extent of this area is defined (as a percentage of screen height) by a request field; 20(%) is recommended. Buttons are centered in the button area. Button descriptor font size is defined by a request field (see samples below). Maximum descriptor length is 10.

Static text area – The vertical extent of this area is defined (as a percentage of screen height) by a request field. Other request fields define the font size and justification of static text.

Scrolling text area – The vertical extent of this area is whatever is left over after the first two areas. Other request fields define the font size and justification of scrolling text.

For both text areas: See below for sample font sizes. The maximum number of characters per line depends on the font size. E.g. 60 upper case characters can be displayed using font size=1, 55 using font size=2 and 44 using font size=3. The maximum number of lines in an area depends on the height of the area and the font size used. E.g. if the static text area height is 40(%), up to 5 lines can be displayed for font size = 1, and up to 4 lines for either 2 or 3.

Pressing the Enter key is not required after pressing a virtual button.

The **Static and Scrolling Text with Optional Buttons Response** returns the button pressed by the customer. Request fields (AllowEnter, AllowCancel) control whether the (hard) Enter and Cancel keys can be used.

Not supported on the iPP.

Field 5001 Format 🔗

> **Note:** Field separators must be sent for both button and label fields as shown below, even if some of these fields are null.

Response

Field 5001 Subfield	Length	Description
TTT	3	Tag (always = 011)
LLL	3	Length of the following data
AllowEnter	1	Allow Enter hard key (0=Not allow, 1=Allow)
AllowCancel	1	Allow Cancel hard key (0=Not allow, 1=Allow)
Beeper	1	Sound tone (0=No, 1=Yes)

Field 5001 Subfield	Length	Description
FS	1	Field separator (Hex 1C)
ButtonAreaHeight	2	Height of Button area (as % of screen height)
FS	1	Field separator (Hex 1C)
ButtonFontSize	1	Button descriptor font size (0 = extra small to 6 = extra large)
FS	1	Field separator (Hex 1C)
ButtonADesc	0-10	Descriptor for first button position (from left) on top (A)
FS	1	Field separator (Hex 1C)
ButtonBDesc	0-10	Descriptor for second button position on top (B)
FS	1	Field separator (Hex 1C)
ButtonCDesc	0-10	Descriptor for third button position on top ©
FS	1	Field separator (Hex 1C)
ButtonDDesc	0-10	Descriptor for fourth button position on top (D)
FS	1	Field separator (Hex 1C)
StaticTextAreaHeight	2	Height of Static text area (as % of screen height)
FS	1	Field separator (Hex 1C)
StaticTextFontSize	1	Static text font size (0 = extra small to 6 = extra large)
FS	1	Field separator (Hex 1C)

Field 5001 Subfield	Length	Description
StaticTextJust	1	Static text justification (1=Left; 2=Center; 3=Right)
FS	1	Field separator (Hex 1C)
StaticText	(see above)	Static text defined in semi-colon (;) delimited lines
FS	1	Field separator (Hex 1C)
ScrollingTextFontSize	1	Scrolling text font size (0 = extra small to 6 = extra large)
FS	1	Field separator (Hex 1C)
ScrollingTextJust	1	Scrolling text justification (1=Left; 2=Center; 3=Right)
FS	1	Field separator (Hex 1C)
ScrollingText1	(see above)	First line of scrolling text
FS	1	Field separator (Hex 1C)
ScrollingTextLast	(see above)	Last line of scrolling text

Request

Field 5001 Subfield	Length	Description
TTT	3	Tag (always = 011)
LLL	3	Length of the following data

Field 5001 Subfield	Length	Description
ActionButton	var	If field 11 Completion Code = 000 (success), returns code for action button or key pressed: 777=Enter (green) key 888=Cancel (red) key 1=ButtonA 2=ButtonB 3=ButtonC 4=ButtonD

Sample Message (Four Buttons)

Request

The following request tells Simplify to display the screen shown below (start of scrolling text is shown):

API Field #, Value		Description
0001,36		Transaction Type
0011,14123010120		User Data. See Simplify-Controlled Field Definitions.
5001		See value below
	011	Tag
	934	Length of data
	1	Allow Enter key
	1	Allow Cancel key

API Field #, Value	Description
1	Beeper active
20	Height (%) of Button area
3	Button descriptor font size
Button 1	Descriptor for virtual button position A
40	Height (%) of static text area 3=Static text font size
3	Static text font size
2	Static text justification
Text1	Text of static line 1
;	Delimiter for text of static line 1
2	Scrolling text font size
2	Scrolling text justification
Text of scrolling line 1	You agree that any Services contain proprietary content,information

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14123011000	User Data. See Simplify-Controlled Field Definitions.

API Field #, Value	Description
5001,0110003777	Non-Financial Data 011=Tag 003=Length of data 777=Enter key pressed

Sample Message (Two Buttons)

Request

The following request tells Simplify to display the screen shown below (start of scrolling text is shown):

API Field #, Value	Description
0001,36	Transaction Type
0011,14124011000	User Data. See Simplify-Controlled Field Definitions.

API Field #, Value	Description
5001,[see value below]	Non-Financial Data011=Tag 899=Length of data 1=Allow Enter key 1=Allow Cancel key 1=Beeper active 20=Height (%) of Button area 3=Button descriptor font size Button 1=Descriptor for virtual button position A (etc.) 10=Height (%) of static text area 2=Static text font size 2=Static text justification Text1=Text of static line 1 2=Scrolling text font size 2=Scrolling text justification You agree that any Services contain proprietary content, information=Text of scrolling line 1 and material that is protected by applicable intellectual property =Text of scrolling line 2 (etc.)

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14123011000	User Data. See Simplify-Controlled Field Definitions.
5001,0110003888	Non-Financial Data 011=Tag 003=Length of data 888=Cancel key pressed

Tag 012 - Text and Graphics with Optional Buttons

The **Text and Graphics with Optional Buttons Message** can be used to display static (non-scrolling) user text and graphics, as well as optional buttons. Buttons and static text and graphics are placed

in three screen areas, whose heights can be configured (0 = do not display). These areas are, from top to bottom:

Button area – IDENTICAL TO 011 – Up to four virtual buttons can be displayed at the top of the screen. As for Tag 010, a virtual button will only be displayed if data is entered in the request descriptor field for the button (ButtonNDesc). The vertical extent of this area is defined (as a percentage of screen height) by a request field; 20(%) is recommended. Buttons are centered in the button area. Button descriptor font size is defined by a request field (see samples below). Maximum descriptor length is 10.

Static text area – IDENTICAL TO 011 – The vertical extent of this area is defined (as a percentage of screen height) by a request field. Other request fields define the font size and justification of static text (see samples below). The maximum number of characters per line depends on the font size. E.g. 60 upper case characters can be displayed using font size=1, 55 using font size=2 and 44 using font size=3. The maximum number of lines of static text depends on the height of the area and the font size used. E.g. if the static text area height is 40(%), up to 5 lines can be displayed for font size = 1 and up to 4 lines for font size 2 or 3 (see samples below).

Graphics area – The vertical extent of this area is whatever is left over from the first two areas. It can contain up to two graphics side by side.

Pressing the Enter key is not required after pressing a virtual button.

The **Text and Graphics with Optional Buttons Response** returns the button pressed by the customer. Request fields (AllowEnter, AllowCancel) control whether the (hard) Enter and Cancel keys can be used.

Not supported on the iPP.

Field 5001 Format 🔗

Request

Note: Field separators must be sent for both button and label fields as shown below, even if some of these fields are null.

Field 5001 Subfield	Length	Description
TTT	3	Tag (always = 012)
LLL	3	Length of the following data
AllowEnter	1	Allow Enter hard key (0=Not allow, 1=Allow)

Field 5001 Subfield	Length	Description
AllowCancel	1	Allow Cancel hard key (0=Not allow, 1=Allow)
Beeper	1	Sound tone (0=No, 1=Yes)
FS	1	Field separator (Hex 1C)
ButtonAreaHeight	2	Height of Button area (as % of screen height)
FS	1	Field separator (Hex 1C)
ButtonFontSize	1	Button descriptor font size (0 = extra small to 6 = extra large)
FS	1	Field separator (Hex 1C)
ButtonADesc	0-10	Descriptor for first button position (from left) on top (A)
FS	1	Field separator (Hex 1C)
ButtonBDesc	0-10	Descriptor for second button position on top (B)
FS	1	Field separator (Hex 1C)
ButtonCDesc	0-10	Descriptor for third button position on top ©
FS	1	Field separator (Hex 1C)
ButtonDDesc	0-10	Descriptor for fourth button position on top (D)
FS	1	Field separator (Hex 1C)
TextAreaHeight	2	Height of text area (as % of screen height)
FS	1	Field separator (Hex 1C)
TextFontSize	1	Text font size (0 = extra small to 6 = extra large)

Field 5001 Subfield	Length	Description
FS	1	Field separator (Hex 1C)
TextJust	1	Text justification (1=Left; 2=Center; 3=Right)
FS	1	Field separator (Hex 1C)
Text	(see above)	Text defined in semi-colon (;) delimited lines
FS	1	Field separator (Hex 1C)
Image1	variable	First image
FS	1	Field separator (Hex 1C)
Image2	variable	Second image

Response

Field 5001 Subfield	Length	Description
TTT	3	Tag (always = 012)
LLL	3	Length of the following data
ActionButton	var	If field 11 Completion Code = 000 (success), returns code for action button or key pressed: 777=Enter (green) key 888=Cancel (red) key 1=ButtonA 2=ButtonB 3=ButtonC 4=ButtonD

Sample Message (Four Buttons)

Request

The following request tells Simplify to display the screen shown below:

API Field #, Value	Description
0001,36	Transaction Type
0011,14125012000	User Data. See Simplify-Controlled Field Definitions.
5001,[see value below]	Non-Financial Data 012=Tag 092=Length of data 1=Allow Enter key 1=Allow Cancel key 1=Beeper active 20=Height (%) of Button area 3=Button descriptor font size Button 1=Descriptor for virtual button position A (etc.) 40=Height (%) of text area 3=Text font size 2=Text justification Text1;=Text and delimiter of line 1 (etc.) LOGO.PNG=First (left) image TAP.PNG=Second (right) image

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14125012000	User Data. See Simplify-Controlled Field Definitions.

API Field #, Value	Description
5001,0120003777	Non-Financial Data 012=Tag 003=Length of data 777=Enter key pressed

Sample Message (Two Buttons)

Request

The following request tells Simplify to display the screen shown below:

API Field #, Value	Description
0001,36	Transaction Type
0011,14125012000	User Data. See Simplify-Controlled Field Definitions.
5001,[see value below]	Non-Financial Data 012=Tag 057=Length of data 1=Allow Enter key 1=Allow Cancel key 1=Beeper active 20=Height (%) of Button area 3=Button descriptor font size Button 1=Descriptor for virtual button position A (etc.) 25=Height (%) of text area 2=Text font size 2=Text justification Text 1=Text of line 1 LOGO.PNG=First (left) image TAP.PNG=Second (right) image

Response

API Field #, Value	Description

API Field #, Value	Description
0001,36	Transaction Type
0011,14125012000	User Data. See Simplify-Controlled Field Definitions.
5001,0120003888	Non-Financial Data 012=Tag 003=Length of data 888=Cancel key pressed

Tag 020 - Scrolling Text

The Scrolling Text Message is used to display scrolling text onscreen. Up to 100 lines of scrolling text are supported.

The Scrolling Text Response returns whether the customer pressed the Enter (green) or Cancel (red) key.

Not supported on the iPP.

Request

Field Name	Length	Description
TTT	3	Tag (always = 020)
LLL	3	Length of the following data
Beeper	1	Sound tone (0=No, 1=Yes)
Info1	1-48	Information 1
FS	1	Field separator (Hex 1C)
Info2	1-48	Text/field separator for Information 2
FS	1	

Field Name	Length	Description
Info3	1-48	Text/field separator for Information 3
FS	1	
Info4	1-48	Text/field separator for Information 4
FS	1	
Info5	1-48	Text/field separator for Information 5
FS	1	
Info6	1-48	Text/field separator for Information 6
FS	1	
...	.	...
Info100	1-48	Information 100

Response

Field Name	Length	Description
TTT	3	Tag (always = 020)
LLL	3	Length of the following data
ActionButton	3	If field 11 Completion Code = 000 (success), returns code for key pressed by customer: 777=Enter (green) key 888=Cancel (red) key

Sample Message

The following request tells Simplify to display the screen shown below:

API Field #, Value	Description
0001,36	Transaction Type
0011,14125020000	User Data. See Simplify-Controlled Field Definitions.
5001,[see value below]	Non-Financial Data 020=Tag 223=Length of data 0=Beeper not active Information 1=Text of line 1 (etc.)

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14125020000	User Data. See Simplify-Controlled Field Definitions.
5001,020003777	Non-Financial Data 020=Tag 003=Length of data 777=Enter key pressed

Additional Samples (field 5001)

Value in Field 5001	Screen Use
030049Enter AmountFSFSFS0 FS/d/d/d/d/d/d/d/d/d/d/d/D./D/D US$FS	Prompt for dollar amount
030041Enter Date (YYMMDD)FSFSFS0FS/d/d///d/d///d/dFS	Prompt for date
030039Enter Time (HHMMSS)FSFSFS0FS/d/d:/d/d:/d/dFS	Prompt for time

Value in Field 5001	Screen Use
030036Enter PasswordFSFSFS1FS/c/c/c/c/c/c/c/cFS	Prompt for password

Tag 040 - Radio Buttons

Simplify supports a **Radio Buttons Message**. The Request displays a screen with up to 100 radio buttons and up to three lines of text. The customer can select one radio button. A field in the Request (Required) determines whether the Enter key is accepted when no radio button is selected.

One field in the **Radio Buttons Response** (ActionButton) will indicate whether Enter or Cancel was pressed. If the customer presses the Enter key, another field (Data) indicates the radio button selected by the customer (if any).

Not supported on the iPP.

Field 5001 Format

Request

Field Name	Length	Description
TTT	3	Tag (always = 040)
LLL	3	Length of the following data
Required	1	Data is required when ENTER is pressed (0=No, 1=Yes)
FS	1	Field separator (Hex 1C)
Title1	0-48	Title 1
FS	1	Field separator (Hex 1C)
Title2	0-48	text/field separator for Title 2
FS	1	

Field Name	Length	Description
Title3	0-48	text/field separator for Title 3
FS	1	
Choice1	0-40	Choice 1
FS	1	Field separator (Hex 1C)
Choice2	0-40	button text/field separator for Choice 2
FS	1	
Choice3	0-40	button text/field separator for Choice 3
FS	1	
Choice4	0-40	button text/field separator for Choice 4
FS	1	
Choice5	0-40	button text/field separator for Choice 5
FS	1	
Choice6	0-40	button text/field separator for Choice 6
FS	1	
…	.	…
Choice100	0-40	Choice 100

Response

Field Name	Length	Description

Field Name	Length	Description
TTT	3	Tag (always = 040)
LLL	3	Length of the following data
ActionButton	3	If field 11 Completion Code = 000 (success), returns code for key pressed by customer: 777=Enter (green) key 888=Cancel (red) key
FS	1	Field separator (Hex 1C)
Data	var	If ActionButton = 777 (Enter), returns selected item using index of 1 to nn(= number of selections).

Sample Message

Request

API Field #, Value	Description
0001,36	Transaction Type
0011,14125040000	User Data. See Simplify-Controlled Field Definitions.
5001,[see value below]	Non-Financial Data 040=Tag 206=Length of data 1= Data required when ENTER pressed Select from one of the options=Title1 Choice 1901234567890(etc.)=Descriptor for radio button 1 (etc.)

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14125040000?V102.18B01803	User Data. See Simplify-Controlled Field Definitions.
5001,040006777FS100	Non-Financial Data 040=Tag 006=Length of data 777=Enter key pressed 10=Radio button (Choice) 10 pressed

Tag 050 - Check Boxes

Simplify supports a **Check Boxes Message**. The Request displays a screen with up to 100 check boxes and up to three lines of text. The customer can select one or more check boxes. A field in the Request (Required) determines whether the Enter key is accepted when no check box is selected. With the exception of the Tag value, the format of this request is identical to that for Tag 040.

One field in the **Check Boxes Response** (ActionButton) will indicate whether Enter or Cancel was pressed. If Enter was pressed, another field (Data) will indicate the check box(es) selected by the customer (if any). Not supported on the iPP.

Field 5001 Format

Request

Field Name	Length	Description
TTT	3	Tag (always = 050)
LLL	3	Length of the following data
Required	1	Data is required when ENTER is pressed (0=No, 1=Yes)
FS	1	Field separator (Hex 1C)

Field Name	Length	Description
Title1	0-48	Title 1
FS	1	Field separator (Hex 1C)
Title2	0-48	text/field separator for Title 2
FS	1	
Title3	0-48	text/field separator for Title 3
FS	1	
Choice1	0-40	Choice 1 Field separator (Hex 1C)
FS	1	
Choice2	0-40	button text/field separator for Choice 2
FS	1	
Choice3	0-40	button text/field separator for Choice 3
FS	1	
Choice4	0-40	button text/field separator for Choice 4
FS	1	
Choice5	0-40	button text/field separator for Choice 5
FS	1	
Choice6	0-40	button text/field separator for Choice 6
FS	1	
…	.	…

Field Name	Length	Description
Choice100	0-40	Choice 100

Response

Field Name	Length	Description
TTT	3	Tag (always = 050)
LLL	3	Length of the following data
ActionButton	3	If field 11 Completion Code = 000 (success), returns code for key pressed by customer: 777=Enter (green) key 888=Cancel (red) key
FS	1	Field separator (Hex 1C)
Data	var	If ActionButton = 777 (Enter), returns selected check boxes (if any). Each check box is represented as either 0 (not selected) or 1 (selected).

Sample Message

Request

API Field #, Value	Description
0001,36	Transaction Type
0011,14125050000	User Data. See Simplify-Controlled Field Definitions.

API Field #, Value	Description
5001,[see value below]	Non-Financial Data 050=Tag 194=Length of data 1= Data required when ENTER pressed Multiple selections=Title1 Choice 190123456789(etc.)=Descriptor for check box 1 (etc.)

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14125050000?V102.18B01803	User Data. See Simplify-Controlled Field Definitions.
5001,050017777FS10101000000000	Non-Financial Data 050=Tag017=Length of data 777=Enter key pressed 1010100000000=Check boxes 1, 3 and 5 selected

Tag 060 - Slider Message

Simplify supports a **Slider Message**. The Request displays a screen with up to three lines of text and an adjustable slider.

One field in the Response (ActionButton) indicates whether Enter or Cancel was pressed. If the customer presses Enter, another field (Data) indicates the customer-selected position of the slider.

Not supported on the iPP.

Field 5001 Format

Request

Field Name	Length	Description
TTT	3	Tag (always = 060)
LLL	3	Length of the following data
Msg1	0-50	Message 1
FS	1	Field separator (Hex 1C)
Msg2	0-50	Message 2
FS	1	Field separator (Hex 1C)
Msg3	0-50	Message 3
FS	1	Field separator (Hex 1C)
MinValue	var	Minimum Value to start (e.g. 0)
FS	1	Field separator (Hex 1C)
MaxValue	var	Maximum Value to end (e.g. 100)
FS	1	Field separator (Hex 1C)
Increment	var	Incremental steps of the slider (e.g. 5)
FS	1	Field separator (Hex 1C)
Initial	var	Initial Value of the slider (e.g. 0 = start at zero)
FS	1	Field separator (Hex 1C)
ProgLabel	var	Text label for the progress of the slide (e.g. %)

Response

Field Name	Length	Description
TTT	3	Tag (always = 060)
LLL	3	Length of the following data
ActionButton	3	If field 11 Completion Code = 000 (success), returns code for key pressed by customer: 777=Enter (green) key 888=Cancel (red) key
FS	1	Field separator (Hex 1C)
Data	var	If ActionButton = 777 (Enter), returns selected position of the slider as a Percent (%).

Sample Message 🔗

Request

The following request tells Simplify to display the screen shown below:

API Field #, Value	Description
0001,36	Transaction Type
0011,14125060060	User Data. See Simplify-Controlled Field Definitions.
5001,[see value below]	Non-Financial Data 060=Tag 101=Length of data Rate this survey using the slider below01234567890=Msg1 (Msg2 is null) 0% <————————> 100%=Msg3 0=MinValue 100=Maxvalu 5=Increment 50=Initial %=ProgLabel

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14125060000?V102.18B01803	User Data. See Simplify-Controlled Field Definitions.
5001,060006777FS650	Non-Financial Data 060=Tag 006=Length of data 777=Enter Key Pressed 65=Customer-selected position of the slider

Tag 070 - Scrolling Text with Radio Buttons

Simplify supports a **Scrolling Text with Radio Buttons Message**. This Tag can be used to display a Consent screen. The Request displays a screen with up to 2 radio buttons and up to 100 lines or text through which the customer can scroll. A field in the Request (Required) determines whether the Enter key is accepted when no radio button is selected.

Device details – The maximum length of radio button text is 40 characters for the iSC250 and 43 for the iSC480. The maximum length of text lines (Info fields) is 47 characters for the iSC250 and 49 for the iSC480. Not supported on the iPP.

One field in the Response (ActionButton) indicates whether Enter or Cancel was pressed. Another field (Data)indicates the radio button selected by the customer (if any).

Field 5001 Format 🔗

Request

Field Name	Length	Description
TTT	3	Tag (always = 070)
LLL	3	Length of the following data

Field Name	Length	Description
Required	1	Data is required when ENTER is pressed (0=No, 1=Yes)
FS	1	Field separator (Hex 1C)
Radio1	0-40 (iSC250) 0-43 (iSC480)	Radio button1 text (left justified).
FS	1	Field separator (Hex 1C)
Radio2	0-40 (iSC250) 0-43 (iSC480)	Radio button2 text (left justified)
FS	1	Field separator (Hex 1C)
InfoJust	1	Justification for all Information fields (1=Left justify, 2=Center, 3=Right justify)
FS	1	Field separator (Hex 1C)
Info1	0-47 (iSC250) 0-49 (iSC480)	Information 1 (left justified)
FS	1	Field separator (Hex 1C)
Info2	0-47 (iSC250) 0-49 (iSC480)	Text/field separator for Information 2
FS	1	

Field Name	Length	Description
Info3	0-47 (iSC250) 0-49 (iSC480)	Text/field separator for Information 3
FS	1	
Info4	0-47 (iSC250) 0-49 (iSC480)	Text/field separator for Information 4
FS	1	
Info5	0-47 (iSC250) 0-49 (iSC480)	Text/field separator for Information 5
FS	1	
Info6	0-47 (iSC250) 0-49 (iSC480)	Text/field separator for Information 6
FS	1	
...	.	...
Info100	0-47 (iSC250) 0-49 (iSC480)	Information 100

Response

Field Name	Length	Description
TTT	8	Tag (always = 070)
LLL	3	Length of the following data
ActionButton	3	If field 11 Completion Code = 000 (success), returns code for key pressed: 777=Enter hard key pressed 888=Cancel hard key pressed
FS	1	Field separator (Hex 1C)
Data	1	If ActionButton=777, returns selected radio button, if any (1 = top button, 2= bottom button)

Sample Message

Request

The following request tells Simplify to display the screen shown below (start and end of scrolling text are shown):

API Field #, Value	Description
0001,36	Transaction Type
0011,14125070000	User Data. See Simplify-Controlled Field Definitions.
5001,[see value below]	Non-Financial Data 070=Tag 989=Length of data 1= Data required when ENTER pressed I agree=Radio button 1 descriptor I do not agree=Radio button 2 descriptor 2= center justification You agree that any Services contain proprietary=text for Info1 (etc.)

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14125070000?V102.18B01803	User Data. See Simplify-Controlled Field Definitions.
5001,070005777FS10	Non-Financial Data 070=Tag 005=Length of data 777=Enter key pressed 1=Radio button 1 pressed

Tag 071 - Scrolling Text with Virtual Buttons

Simplify supports a **Scrolling Text with Virtual Buttons Message**. The Request displays a screen with scrolling text plus virtual buttons at the bottom of the screen. This message can be used to display a Consent screen.

Scrolling text – Up to 100 lines of scrolling text can be defined. Font size and justification are defined in the request. The maximum number of characters per line depends on the font size. E.g. 60 upper case characters can be displayed using font size=1, 55 using font size=2 and 44 using font size=3.

Buttons – Up to two virtual buttons can be defined. The maximum length of the button descriptors depends on the font size defined in the request. E.g. for font size =3, each descriptor can be up than 20 characters in length.

One field in the Response (ActionButton) indicates which action button or key was pressed (Cancel, Virtual button 1, Virtual button 2) was pressed. Another field (Data) indicates the virtual button selected by the customer (if any).

Not supported on the iPP.

Field 5001 Format 🔗

Request

Field Name	Length	Description

Field Name	Length	Description
TTT	3	Tag (always = 071)
LLL	3	Length of the following data
ButtonSize	1	Font size of virtual buttons (0=extra small to 6=extra large)
FS	1	Field separator (Hex 1C)
VirtualButton1	(see above)	Virtual button1 text (left justified).
FS	1	Field separator (Hex 1C)
VirtualButton2	(see above)	Virtual button2 text (left justified)
FS	1	Field separator (Hex 1C)
InfoFontSize	1	Font size for Info fields (0=extra small to 6=extra large)
FS	1	Field separator
FS	1	Field separator (Hex 1C)
Info1	(see above)	Text for Information 1 (left justified)
FS	1	Field separator (Hex 1C)
Info2	(see above)	Text for Information 2
FS	1	Field separator
Info3	(see above)	Text for Information 3
FS	1	Field separator
Info4	(see above)	Text for Information 4
FS	1	Field separator

Field Name	Length	Description
Info5	(see above)	Text for Information 5
FS	1	Field separator
Info6	(see above)	Text for Information 6
FS	1	Field separator
…	.	…
Info100	(see above)	Text for Information 100

Response

Field Name	Length	Description
TTT	8	Tag (always = 071)
LLL	3	Length of the following data
ActionButton	3	If field 11 Completion Code = 000 (success), returns code for key pressed: 1=Virtual button 1 (button on left) pressed 2=Virtual button 2 (button on right) pressed 888=Cancel hard key pressed
FS	1	Field separator (Hex 1C)
Data	1	Returns selected virtual button, if any (1 = left button, 2= right button)

Sample Message 🔗

Request

The following request tells Simplify to display the screen shown below (note that bottom of scrolling screen is shown):

API Field #, Value	Description
0001,36	Transaction Type
0011,14125071000	User Data. See Simplify-Controlled Field Definitions.
5001,[see value below]	Non-Financial Data 071=Tag 883=Length of data 3= Button descriptor font size I Agree=Descriptor for first (left) virtual button I do not agree=Descriptor for second (right) virtual button 3=Scrolling text font size 2=Scrolling text justification You agree that any Services contain proprietary=Text for line 1 (etc.)

Response

API Field #, Value	Description
0001,36	Transaction Type
0011,14125071000?V102.18B01803	User Data. See Simplify-Controlled Field Definitions.
5001,071005777FS1	Non-Financial Data 071=Tag 005=Length of data 777=Enter key pressed 1=Virtual button 1 pressed

Dynamic Currency Conversion (DCC)

Dynamic Currency Conversion (DCC) allows customers with eligible cards to pay in the base currency of the card. Simplify has modified processing for Sale (02) and Auth Only (01) transactions to support DCC. Other Tran Types are not eligible for DCC. Supported terminal types are iPP3xx, iSC250, iSC480, iSMP4 and all Tetra devices.

(Note that if the POS builds a Financial Request using a converted currency, Simplify will pass through the converted currency.)

Simplify supports a DCC Inquiry Message from the POS. This is a non-financial message used to support DCC processing. If Simplify receives this message, it will send it as a pass through message to Fusebox (see below for message sample).

Simplify will process a Sale or Auth Only transaction using DCC if the following conditions are met:

1. Field 169 is sent in the Financial Request and set to 1, and the request does not include a token.

   (Possible values of Field 169 are as follows: 0 = not DCC-capable; 1 = DCC-capable/enabled; 2 = DCC-capable/not enabled. 3 = DCC-capable/enabled, but merchant opted for no DCC on this transaction.)

2. The card is DCC-eligible.

3. The customer approves currency conversion when prompted at the PIN Pad (“customer Opt-In”).

If Simplify processes a transaction using DCC, the Financial Response to the POS will include DCC information from Fusebox. For more information on DCC fields, see the Fusebox DCC Integration Guide.

Sample Message

Request

The following table shows a sample DCC Inquiry Request sent from the POS to Fusebox via Simplify:

API Field #, Value	Description
0001,46	Transaction Type
0002,1.00	Transaction Amount
0003,ID:5915537177642302	Account Number (token)
0007,65	Transaction ID / Reference Number

API Field #, Value	Description
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date)– MMDDYY
0014,014500	Transaction Time (current time) – HHMMSS
0017,0.00	Cash Back Amount
0109,DCC250	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0115,010	Transaction Qualifier (010 = Credit; 030 – Debit)
0169,1	**Merchant PMS/POS DCC Capability**
0201,0.00	Tip Amount
5002,80005652	Device Serial Number
5004,G2	Encryption Provider ID
8002,LDG	Location Name (provided by Elavon)
8006,AGILYS	Chain Code (provided by Elavon)

Response

The following table shows a sample DCC Inquiry Response sent from Fusebox to the POS via Simplify:

API Field #, Value	Description
0001,46	Transaction Type
0002,1.00	Transaction Amount

API Field #, Value	Description
0003,ID:5915537177642302	Account Data (token)
0007,65	Transaction ID / Reference Number
0009,001	Fusebox – Host Batch number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,014500	Transaction Time (current time) – HHMMSS
0017,0.00	Cash Back Amount
0030,1	Fusebox – Online Indicator
0032,022519	Fusebox – Authorization Transaction Date
0033,164529	Fusebox – Authorization Transaction Time
0037,0	Fusebox – Authorizer
0043,000000	System Trace Audit Number
0047,C;1;1;1;0;1;1;0;5;1;3;1;0;4	POS Data Code
0052,5	Transponder / Proximity Indicator (0 = contactless; 2 = contactless, 5 = swiped)
0061,00	Terminal Type
0063,00	CAT Indicator
0109,DCC250	Terminal ID
0110,205	Cashier ID
0112,400	Fusebox – Processor ID

API Field #, Value	Description
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
0126,0	Track Indicator (may need to appear on receipt)
0140,USD	Merchant Currency
0142,GBP	Cardholder Currency
0144,0.72	Converted Amount
0150,71953	**DCC Rate**
0159,5	**DCC Exponent**
0163,en	Cardholder Language Preference (EMV Tag 5F2D)
0165,0550	**DCC Markup Percentage**
0166,US Bank	**DCC Rate Provider Name**
0169,1	**Merchant PMS/POS DCC Indicator**
0201,0.00	Tip Amount
0307,1	Duration of Stay
1000,MasterCard	Card Type
1001,MASTERCARD	Card Name
1003,0000	Gateway Response Code
1004,APPROVAL	Host Response Message
1005,00106000080247247605 42	Merchant Number
1008,**********2302	Masked Account Number (for printing on receipt)

API Field #, Value	Description
1009,AA	Host Response Code
1010,COMPLETE	Gateway Response Message
1012,0021	Gateway Batch Number
1200,0000AA	Issuer Network Information
4747,04020	Third Party Interface POS Data Code
5002,80005652	Device Serial Number
5004,G2	Encryption Provider ID
5010,EMVDC0838	EMV kernel version
7007,1116147747290484	**Transaction Link Identifier. (Required for DCC transactions)**
8002,LEADING	Location Name
8006,AGILYS	Chain Code

Point to Point Encryption (P2PE)

Point to Point Encryption (P2PE) enhances the security of account data by encrypting it between a Point of Interaction (POI) device and the decryption environment. Starting with version 2.02.021, Simplify can be implemented as part of an Elavon PCI-validated P2PE solution. This will allow Simplify customers to reduce the scope of their PCI audits.

The principal purpose of this chapter is to serve as a guide to inform users on the role of Simplify in Elavon's PCI-validated P2PE solution. Customer requirements for PCI-validated P2PE can be summarized as follows:

- Ingenico Telium or Tetra PIN Pads using On-Guard encryption. See Versioning for more information.
- All general requirements for secure communications must be followed. Network security must be reviewed periodically.

- Any PCI-sensitive data received by the POS (encrypted or unencrypted) must be securely deleted when no longer needed.
- Printing must conform with PCI and TPP rules for masking.
- Informational Prompt messages (see Informational Prompting) must not be used to request PCI-sensitive data from the customer.

Encryption Types

Simplify supports two types of encryption (starting with version 2.02.021):

- The legacy Voltage encryption. Not eligible for PCI-validated P2PE.
- Ingenico's On-Guard encryption. Eligible for PCI-validated P2PE.

The type of encryption used in an implementation can be displayed on the PIN Pad, as described in Chapter 1 under . This information is also sent in API field 5004, which has been modified as follows:

Encryption Provider ID (field 5004)

The Elavon API uses field 5004 to indicate the encryption type as follows:

- G2 = Voltage
- OG = On-Guard (version 2.02.021 and higher)

Whitelisting

Simplify uses a Whitelisting process to determine which accounts can be exempted from encryption of PCI-sensitive data and returned to the POS unencrypted. This process is based on two lists of account numbers, a whitelist (merchant-configurable) and a blacklist, used together as follows:

- Data for accounts in the whitelist will not be sent to the host, but will be returned to the POS unencrypted for use as determined by the merchant (Whitelist response).
    - **Exception:** Sensitive data for PCI-protected accounts (as defined in the blacklist) will never be sent to the POS unencrypted, even if the PAN is included in the whitelist.
- PCI-sensitive data fields for non PCI-protected accounts not in the whitelist (i.e. for accounts not in the whitelist or blacklist) will normally be encrypted.
    - **Exception:** If there is an encryption failure (not caused by system failure), sensitive data for these accounts can be sent unencrypted.
- A Whitelist response is triggered by the POS sending a financial request for an account in the whitelist and not in the blacklist. Please see below for a sample request/Whitelist response.

If you want to use a Whitelisting process, please contact your Elavon representative for whitelist configuration.

Sample Transaction with Whitelist Response

The following sample of a whitelisted Sale transaction shows the Whitelist response sending account data to the POS in the clear (field 3). The PAN must be in the whitelist and not in the blacklist.

Request

API Field #, Value	Description
0001,02	Transaction Type
0002,4.00	Transaction Amount
0007,1025	Transaction ID / Reference Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS
0017,0.00	Cash Back Amount
0109,TERM1	Terminal ID
0110,205	Cashier ID
0201,0.00	Tip Amount
1008,ID:	Set to 'ID:' to request that an account Token be returned by Fusebox.
8002,ONGUARD	Location Name (provided by Elavon)
8006,TSTLA3	Chain Code (provided by Elavon)

Whitelist Response

The Response Message field (1010) will contain *SLR WHITELIST, indicating a Whitelist response. Note that field 5004 (Encryption Provider ID) is not sent in a whitelist response because the account data is not encrypted.

API Field #, Value	Description
0001,02	Transaction Type
0002,4.00	Transaction Amount
0003,&&&&&&&&&&&&&&&&=&&&&	**Account data in the clear** See under Usage for details.)
0007,1025	Transaction ID / Reference Number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,143005	Transaction Time (current time) – HHMMSS
0017,0.00	Cash Back Amount
0109,TERM1	Terminal ID (provided by Elavon)
0110,205	Cashier ID
0201,0.00	Tip Amount
1003,0000	Response Code
1004,-99	Response Message
1008,ID:	Echoes values in request
1009,999	Response Code
1010,*SLR WHITELIST	Simplify Response Message

API Field #, Value	Description
5002,81112159	Device Serial Number
5010,EMVDC0838	EMV kernel version
8002,ONGUARD	Location Name (provided by Elavon)
8006,TSTLA3	Chain Code (provided by Elavon)

Auto Signature

Auto Signature is a feature that allows Simplify to automatically prompt for a signature and send a Signature message (**Signature Response** format) to the POS, *without* first receiving a **Signature Request**. (Signature prompt will occur before or after the prompt to remove EMV card, depending on configuration.)

The following transactions are eligible for auto signature: approved **Sale**, **Auth Only** and **Return** transactions on touchscreen PIN Pads. If Auto Signature is supported, all Stand In responses from Simplify must be approved by the POS, as signature processing will occur *regardless* of the POS decision.

Configuration settings determine whether auto signature will occur for an eligible transaction. However these settings can be overridden by a field in the authorization request. This design provides two ways to trigger an auto signature:

- Configuration – Simplify can be configured to perform an auto signature for all transactions that satisfy a configured minimum.
    - This minimum is defined independently for each combination of supported transaction type and tender type. If set to 0, auto signature will be disabled.
- POS message – An optional Auto Signature Control field in the authorization request (field 11 bytes 4-5) can be used to force or suppress an auto signature for the transaction, regardless of configuration.
    - The use of the Auto Signature Control field must be enabled. This is controlled by a separate setting that only affects the use of this field. This setting is defined independently for each combination of supported transaction type and tender type.
    - To force an auto signature, send S1 in this field.
    - To suppress auto signature (regardless of configuration) send S0 in this field.

- If this field is blank, configuration settings will determine whether auto signature processing occurs.

For auto signature-eligible transactions, Simplify will use field 5001 bytes 1-8 in the authorization response to inform the POS whether Simplify is performing auto signature processing for the transaction, as follows:

- 991002S0 = Simplify will not prompt for signature. It is in CLOSED state
- 991002S1 = Simplify is asking for signature, wait for Signature Response.

The wording on the auto signature screen can be customized by Elavon. Up to three lines of text can be defined, with a maximum length of 40 characters each. Please contact your Elavon representative regarding your requirements.

Sample Messages 🔗

Sale Request

The following table shows an example of a **Sale Request** message (from the POS to Simplify) with field 11 set to force an auto signature:

API Field #, Value	Description
0001,02	Transaction Type
0002,1000.00	Transaction Amount
0007,34	Transaction ID / Reference Number
0011,035**S1**	User Data. See Simplify-Controlled Field Definitions. **Bytes 4-5 = S0 suppresses signature** **Bytes 4-5 = S1 forces auto signature**
0013,022519	Transaction Date (current date)– MMDDYY
0014,115654	Transaction Time (current time) – HHMMSS
0017,0.00	Cash Back Amount
0109,Term02	Terminal ID (provided by Elavon)
0110,205	Cashier ID

API Field #, Value	Description
1008,ID:	Set to 'ID:' to request that an account Token be returned by Fusebox
8002,ONGUARD	Location Name (provided by Elavon)
8006,TSTLA3	Chain Code (provided by Elavon)

Sale Response

The table below is an example of a **Sale Response** message (from Simplify to the POS) with field 5001 set to indicate that Simplify is performing an auto signature process.

API Field #, Value	Description
0001,02	Transaction Type
0002,1000.00	Transaction Amount
0003,ID:4295897590750119	Account Data (token)
0004,1222	Expiration Date (MMYY)
0006,26793F	Authorization Code (returned by Fusebox)
0007,33	Transaction ID / Reference Number
0009,001	Fusebox – Host Batch number
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0013,022519	Transaction Date (current date) – MMDDYY
0014,113425	Transaction Time (current time) – HHMMSS
0017,0.00	Cash Back Amount
0030,1	Fusebox – Online Indicator

API Field #, Value	Description
0032,022519	Fusebox – Authorization Transaction Date
0033,143439	Fusebox – Authorization Transaction Time
0034,E	Fusebox – Authorization Characteristics Indicator
0035,RXG9	Validation Code
0036,307229668795255	Host Transaction Identifier
0037,5	Fusebox – Authorizer
0043,207870	System Trace Audit Number
0047,C;1;1;1;0;1;5;5;4;3;3;C;0;4	POS Data Code
0049,F	Fusebox – Card Product Result Code
0052,0	Transponder / Proximity Indicator (0 = contact; 2 = contactless , 5 = swiped)
0054,05	POS Entry Mode
0055,1	PIN Capabilities
0057,0	ICC Chip Condition Code
0061,00	Terminal Type
0062,201	Service Code
0063,00	CAT Indicator
0109,TERM02	Terminal ID
0110,205	Cashier ID

API Field #, Value	Description
0112,400	Fusebox – Processor ID
0115,010	Transaction Qualifier (010 = credit; 030 = debit)
0125,817183439	Retrieval Reference Number (may need to appear on receipt)
0126,2	Track Indicator (may need to appear on receipt)
0129,0	Fusebox – Compliance Data
0130,1000.00	Authorized Amount
0140,USD	Merchant Currency
0201,5.00	Tip Amount
0651,0000000	Reversal data (for reversal, if needed)
1000,VI	Card Type
1001,VISA	Card Name
1002,UAT USA/Test Card 03	Cardholder Name
1003,0000	Gateway Response Code
1004,APPROVAL	Host Response Message
1005,00106000080145936139999	Merchant Number
1008,**********0119	Masked Account Number (for printing on receipt)
1009,AA	Host Response Code
1010,COMPLETE	Gateway Response Message

API Field #, Value	Description
1012,0021	Gateway Batch Number
1200,0000AA	Issuer Network Information
1333,03062017	Last Host EMV Key Download
1359,1	Card Verification Method
1378,1326|Application Label: ;1300|TC: ;1307|TVR: ;1325|AID: ;	EMV Approved Receipt Field List
1379,1326|Application Label: ;1300|AAC: ;1307|TVR: ;1325|AID: ;	EMV Declined Receipt Field List
1380,CHIP	POS Entry Receipt Indicator
4747,040511	Third Party Interface POS Data Code
5001,**991002S1**	**991002S0 = No auto signature.** **991002S1 = Wait for auto signature.**
5002,80649419	Device Serial Number
5004,OG	Encryption Provider ID
5006,FFFF4D4D4D0000C00152050006	Terminal KSN
5007,V	PCI P2PE-validated solution indicator
5010,EMVDC0838	EMV kernel version
5070,xxx...	Simplify Information. SeeSimplify-Controlled Field Definitions.
8002,ONGUARD	Location Name (provided by Elavon)
8006,TSTLA3	Chain Code (provided by Elavon)

Sample Signature Message

An example of a Signature Message sent for an auto signature (from Simplify to the POS) is shown below. The format is identical to a **Signature Response** (36-02) message.

API Field #, Value	Description
0001,36	Transaction Type. A value of 36 indicates a Non-Financial transaction
0011,xxx..	User Data. See Simplify-Controlled Field Definitions.
0052,0	Transponder / Proximity Indicator (0 = contact; 2 = contactless , 5 = swiped)
5000,xxxxxxxxxxxxxxxxxxxxxxxx…….xx	Signature data

Quick Chip Tendering

Quick Chip is a feature used to speed up the processing of EMV and other transactions. This feature has two parts:

- On EMV transactions, no second Application Cryptogram (AC) will be required when processing the response. This will allow the customer to complete card processing and remove their card before Simplify receives the host response.
- A **Quick Chip Message** (Tran Type 36-40) will be supported for Sale, Auth and Refund transactions (EMV or non-EMV). If Simplify receives a valid Quick Chip request from the POS, it will allow the customer to insert their card and complete card processing before the PINpad receives the transaction total. The Quick Chip request will then need to be followed by a financial request.

A Quick Chip tender is defined as a tender whose processing includes a valid Quick Chip Message.

Quick Chip Message details are as follows:

- Message fields are field 1 (Tran Type = 36) and field 11.
- Field 11 in the request must contain a Q token.
- Field 11 in the response contains a Completion Code (bytes 9-11) giving the outcome of the request. A value of 000 indicates a valid Quick Chip request; if non-zero, processing ahead of the transaction total will not be allowed.

- See Simplify-Controlled Field Definitions especially under Token Area for more information on field 11 in the Quick Chip Message.

Other processing modifications for Quick Chip tenders include the following:

- After Simplify receives a Quick Chip request, the following screens will be suppressed until the Financial request is received: Amount OK or DCC, Tip Amount.
- Additional Status Messages have been added to support Quick Chip. Please consult your Elavon representative for more information.
- Simplify can be configured to support Cash Back for Quick Chip Sale tenders. Please consult your Elavon representative for more information.
- If a tender type is sent in both the Quick Chip request and the financial request (both optional), the tender types must match; if not the transaction will be declined.
- Simplify can be configured to require customer confirmation if Cancel is pressed during a Quick Chip tender.

Simplify-Generated Messages

Simplify-generated response messages are used for transactions processed offline. This will occur if a transaction is declined locally (no host message) or if the host is unavailable.

For EMV, Simplify will also generate a response message if the chip declines a host-approved transaction or the customer removes the card before the transaction is completed.

Simplify-generated response messages are indicated by an asterisk (*) as the first character of the message. The first four characters indicate the type of transaction as follows:

***SLR** – non-EMV

***ICC** – contact or contactless EMV

Non-EMV

Field 1003 (Gateway Response Code)	Field 1004 (Host Response Code)	Field 1010 (Gateway Response Message)	Condition	Action

Field 1003 (Gateway Response Code)	Field 1004 (Host Response Code)	Field 1010 (Gateway Response Message)	Condition	Action
-7		*SLR NO MATCHING RECORDS.	An inquiry message (Tran Type 22) was received by Simplify, but Simplify could not find the corresponding Account Number.	Decline – No Inquiry needed
-16		*SLR FINAL $ TOO LRG.	Amount of Cash back is over limit	Decline – No Inquiry needed
0		*SLR STAND-IN.	Setting is for Simplify to Stand In, and either request timed out or no communication. The response contains the encrypted account number, which is required for the store to perform Stand-In.	POS decides to approve or decline. Inquiry needed. See under Stand-in Processingfor more information.
0000	-99	*SLR WHITELIST.	Whitelisted transaction returned to POS (not sent to Fusebox) with account data in the clear.	POS processes the returned data. See Whitelisting for more information.
3		*SLR COMMUNICATIONS ERROR.	Simplify cannot get connected to Fusebox.	Inquiry needed

Field 1003 (Gateway Response Code)	Field 1004 (Host Response Code)	Field 1010 (Gateway Response Message)	Condition	Action
30		*SLR BUSY.	Simplify is processing another request.	Retry – No Inquiry needed
41		*SLR BAD ACCT NUMBER.	Account number failed MOD 10 validation	Decline – No Inquiry needed
47		*SLR BAD CARD TYPE.	Card not valid	Decline – No Inquiry needed
49		*SLR BAD EXPIRATION.	Invalid expiration date	Decline – No Inquiry needed
60	99	*SLR INVALID FORMAT.	Request message format is invalid.	Decline – No Inquiry needed
60	-99	*SLR CALL HELP DESK.	Voltage error invalidating account data or error in On-Guard process.	Decline – No Inquiry needed
88		*SLR SWITCH TIMEOUT.	Host timeout	Inquiry needed
173		*SLR TRAN NOT ALLOWED	Offline not allowed	Decline – No Inquiry needed

Field 1003 (Gateway Response Code)	Field 1004 (Host Response Code)	Field 1010 (Gateway Response Message)	Condition	Action
174		*SLR ACCOUNT NOT TOKEN ELIGIBLE.	The account number entered as a result of a Token Request is not Token eligible	Decline – No Inquiry needed
208		*SLR CANCEL KEY PRESSED.	The Cancel key was pressed on the PIN Pad, or Timeout on PIN entry	Decline – No Inquiry needed
208		*SLR INCOMPLETE PIN	(Requires special configuration. Will not occur in most installations. Consult Elavon for more information.)	Decline – No Inquiry needed
259		*SLR Reset	Error condition from invalid input	Decline – Inquiry needed

EMV

Field 1003 (Gateway Response Code)	Field 1010 (Gateway Response Message)	Action
208	*SLR INCOMPLETE PIN	(Requires special configuration. Will not occur in most installations. Consult Elavon for more information.) No Inquiry needed

Field 1003 (Gateway Response Code)	Field 1010 (Gateway Response Message)	Action
253	*ICC EMV PROCESSING ERROR.	Inquiry
254	*ICC EMV CANCELED TRANS.	Inquiry
255	*ICC EMV CARD ERROR.	Inquiry
258	*ICC CARD STILL PRESENT.	Informational - No Inquiry needed
260	*ICC EMV UNDEFINED STATUS.	Inquiry
264	*ICC EMV DECLINED.	Decline - No Inquiry needed

Appendices

Appendices A-E in this chapter provide some generic information on Simplify transaction flow, communications, and message flow.

Appendix F describes Simplify-controlled field definitions.

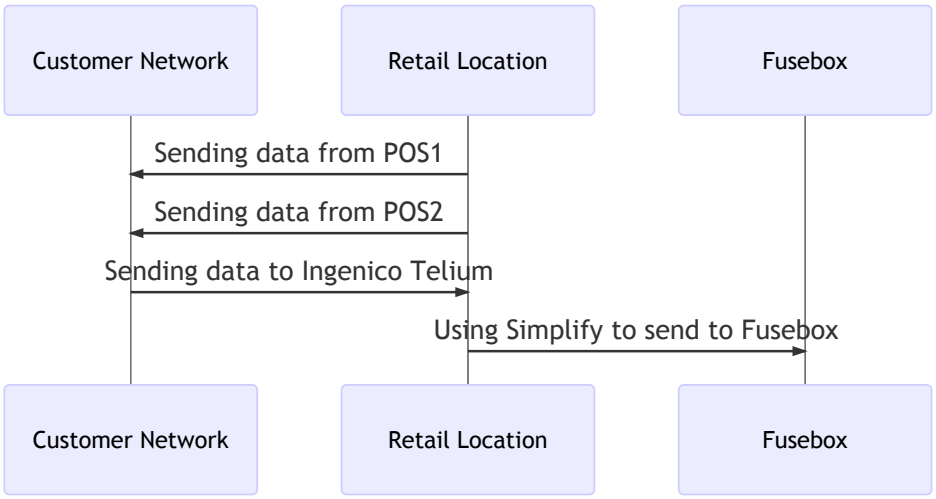
Appendix G provides notes on Usage.

Appendix H provides a revision history for this document on the Elavon Developer Portal.

Appendix I is an Addendum containing material added since the initial Developer Portal release for this version of Simplify.

Appendix A - Generic Transaction Flow

The following diagram shows the Point of Sale (POS) System, PIN Pad and Fusebox host communicating over a TCP / IP connection:



Appendix B - Simplify RS-232 Communication Protocol

When using the Simplify RS-232/HID Communication Protocol, the PIN Pad is attached to the POS device using an RS-232 serial connection (or USB emulating RS-232). The communication protocol between the POS device and the Simplify application includes the following elements:

- Start of Text (STX)
- End of Text (ETX)
- Longitudinal Redundancy Check (LRC)

The **Longitudinal Redundancy Check** (**LRC**) is generated by performing an exclusive OR on all characters in the message except the **Start of Text** (**STX**), but inclusive of the **End of Text** (**ETX**). The LRC calculation is performed by both the sending and receiving stations, as shown in Appendix C.

There are two types of messages flowing between the POS device and Simplify:

- Link-level messages
- Data-level messages

Data-level messages are described in Chapter 2 “Message Details”. This appendix describes the Link-level messaging.

The **Link-level Response** between the POS device and Simplify provides positive acknowledgement to a message. All messages result in a **Link-level Response**:

- An ACK (hex 06) is a positive acknowledgement to a received message. It indicates to the sending station that the message was correctly received, including proper message format and a successful LRC check. If the sending station does not receive an ACK within a parameterized amount of time, it must retransmit the previous message. If the retransmission

is repeated a parameterized number of times for the same message and an ACK is not received, communication with the device is assumed to be lost and the proper actions are to be taken by the sending station.

- A NAK (hex 15) is a negative acknowledgement to a received message. It indicates to the sending station that some data was received but it was not received correctly. The reasons for a NAK include invalid format or failed LRC check. If the sending station receives a NAK response to a message, it should re-transmit the previous message. If a NAK continues to be received after a parameterized number of retransmissions, communications with the other device is assumed to be lost and the proper actions are to be taken by the sending station.

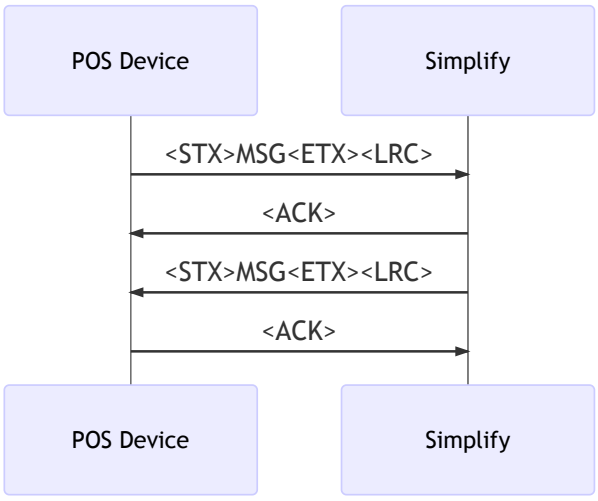
Note: The following values are configurable parameters in Simplify (it is suggested they should also be configurable parameters in the POS device as well):

- Number of Retries – a default value of 3
- Timeout Waiting for ACK / NAK – a default value of 1 second.

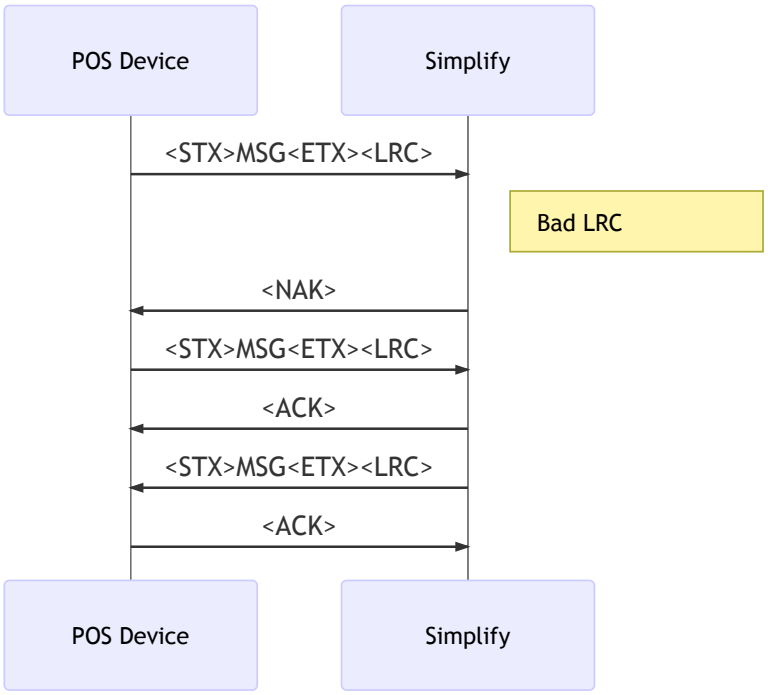
Appendix C - Example Link Level Exchanges (Serial Communications and USB emulating Serial)

The POS device will attempt to transmit the message a parameterized number of times before assuming communications are lost.

Normal Message Flow



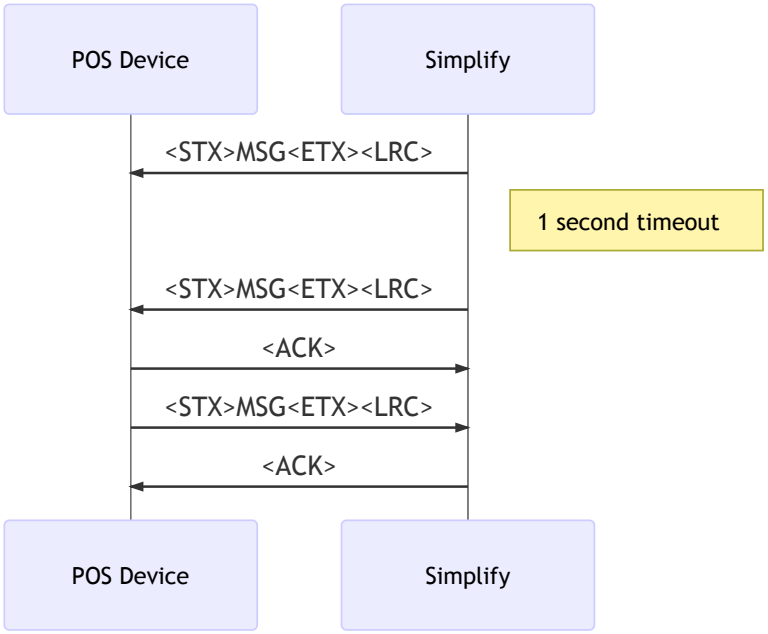
NAK Response Message Flow



Appendix D - Recovery after Timeout Flow

Simplify attempts to transmit the message a parameterized number of times before assuming communications are lost.

The message flow is bi-directional. The POS device or Simplify can initiate a message. In order to avoid timeouts and retransmissions between the POS device and Simplify, each endpoint (POS device or Simplify) should read an incoming message, calculate the LRC, and immediately respond with an ACK or NAK.



Exception to Timeout/Recovery Rules

After a timeout on a non-critical message, Simplify does not expect an ACK and will not retry the message. Sending an ACK for a non-critical message will not cause any issue. The following messages are considered non-critical, with the default exceptions noted:

Message Type	Exceptions
Status messages (Tran Type 36-51)	Exceptions: Status Identifier = 001, 021 (For information on Status Identifiers, see Simplify-Controlled Field Definitions.)

The list of Status Identifiers for which a Status Message must be ACK'd is configurable. Please consult your Elavon representative for more information.

Appendix E - LRC Calculation

Returns: Longitudinal Redundancy Checksum (LRC)

Appendix F - Simplify-Controlled Field Definitions

This appendix describes the following fields whose definition is controlled by Simplify:

Field 0011 (User Data)

Field 5001 (Non-Financial Data)

Field 5070 (Simplify Information)

Field 5071 (Card/Cardholder Present?)

Field 5104 (Tip Prompting)

Since Fusebox does not modify these fields (and in some cases, does not receive them), they allow the POS and Simplify to communicate with each other with no concern for how Fusebox might affect the data.

Field 11 (User Data)

Field 11 is defined by the Gateway Interface Specification as a user-defined field with a variable length (up to a maximum of 512 characters).

Structure of Field 🔗

For added flexibility, this field contains two data areas, a **Command Area** for non-tokenized data and a **Token Area** for tokenized data ("TAG Length Data Structure"). These data areas are used as follows (see below for details):

- The **Command Area** contains subfields required in the request. Some or all of these subfields may be echoed in the response. In Non-Financial Messages, the Command Area in the response may contain a Completion Code indicating the outcome of the request.
- The **Token Area** is informational. It can be used to inform the POS of error conditions and/or Simplify version data.
    - Exception: In the Quick Chip (36-40) Message, data is required in both the Command and Token areas of the request.

The generic format of field 11 is as follows:

Subfield Name	Description	Offset	Length
Command Area	The format of fields in the Command Area depends on the Transaction Type (and Message Type for Transaction Type = 36). The Maximum Length of this area is currently 11 characters.	0	VAR
Field Separator	The character '?' is used to separate the Command Area from the Token Area	VAR	1
Token Area	The Token Area contains Tokenized fields in the format "TLLDDD…" where T = Token LL = Length of Data DDD… = Data (Length = LL)	VAR	VAR

The Command Area will be discussed below, followed by the Token Area

Command Area

As shown in the following tables, the use of the Command Area can vary by Tran Type and (for Non-Financial Messages) by Message Type. Since the use of this field for Financial Messages is totally distinct from that for Non-Financial Messages, the following discussion will be broken down by these two categories.

Command Area - Financial Messages

Depending on Tran Type, the following subfields may be used in the Command Area of field 11 for Financial Messages.

Bytes	Subfield Name	Use
1-3	Switch Timeout Value	Defines host timeout value used by Simplify
4-5	Auto Signature Control	Can be used to ovrride configured Auto Sigature settings

The following table shows supported Command Area subfields for each defined Financial Message Type:

Field 11 Command Area subfields are used in Financial messages as follows:

- **Switch Timeout Value** – Three-digit field (right-justified / zero-filled) controls how long (in seconds) Simplify will wait for a response from Fusebox.

  Note: The length of this timeout value *must be shorter* than the POS timeout value.

- **Auto Signature Control** – Two-byte field that can be used to override auto signature configuration on a per transaction basis. The use of this field is optional and must be enabled under configuration. Use as follows:

  - Send S0 to suppress auto signature for the transaction regardless of configuration settings. (No signature processing will occur unless a **Signature Request** is received.)
  - Send S1 to force auto signature for the transaction regardless of configuration settings.
  - If blank, configured settings will determine whether auto signature processing occurs.

  For additional information on auto signature,see Chapter 9.

Command Area - Non-Financial Messages

The purpose of a Non-Financial Message (Tran Type 36) is defined by its Message Type (field 11 bytes 1-2). The structure of the Command Area for field 11 on a Non-Financial Message can vary depending on the Message Type (bytes 1-2), but the following subfields are typical:

Bytes	Subfield Name	Use
1-2	Message Type	Defines purpose of message.
3-5	Transaction Sequence Number	POS transaction sequence number.
6-8	Screen ID	Used in request to define PIN Pad screen to be displayed (may be blank or not used).

Bytes	Subfield Name	Use
9-11	Completion Code	Used in response to inform POS of request outcome.

Variations from the above structure are illustrated in the following table showing supported Command Area subfields for each defined Message Type. Except where indicated, the Command Area in the response echoes the request.

Note concerning the following Non-Financial Message Types:

- Message Type 40 (Quick Chip Message) – Data is also required in the Token Area (Q token).
- Message Types 08, 09, 13, 16-21 – These values are reserved for future use.

Field 11 Command Area subfields are used in Non-Financial messages as follows:

Message Type – Two-digit field used along with the Tran Type to identify the purpose of the message. Always present for Tran Type = 36.

Transaction Sequence Number – Three-byte field containing POS transaction sequence number. This field is echoed back in the response. Always present for Tran Type = 36.

Screen ID – Three-digit field in **Signature Request** used to indicate which screen should be displayed when prompting for the customer's signature. This field is echoed back in **Signature Response**. (Currently supported values are 001 and 002.) This field is also present in the **Informational Prompt** request and response messages, but is not used.

Completion Code – Three-digit field in **Signature Response** or **Informational Prompt**, **Response** indicating the outcome of the request.

Completion Code	Outcome
000	In Informational Prompt and Quick Chip responses: Successful
004	DONE/ACCEPT key pressed with Signature data present
006	ABORT/CANCEL key pressed twice with no detectable signature
008	Signature entry aborted by Simplify
009	Signature entry aborted due to memory being exceeded
010	Memory exhaustion

Completion Code	Outcome
099	Customer pressed CANCEL after starting to sign. (NA 006 will be sent if cannot detect signature)
100	Transaction not allowed for device. PIN Pad is currently busy. For signature capture: Unable to create sigcap object or signature too small two times. In Quick Chip response: error (e.g. Quick Chip not enabled).
131	In Quick Chip response: Customer pressed Cancel.
132	In Quick Chip response: Bad Card Type
133	In Quick Chip response: Transaction not allowed.
200	EMV card still inserted
998	Invalid format
999	Timed out

Version Build Info – Simplify version and build information.

Timeout – Screen timeout in seconds. (000=No timeout)

Status Identifier – Three-digit transaction status code sent from Simplify to POS in Status Messages. A table included in a Simplify parameter file indicates which Status Identifiers are enabled. The following Status Identifiers are currently defined:

Status Identifier	Status Message
001	Processing Please Wait
002	Slide Card
003	Enter PIN
004	Amount OK

Status Identifier	Status Message
005	Enter Tender Type (Debit / Credit)
006	Cash Back
007	Enter Account Number
008	Enter Expiration Date
009	Enter CVV
010	Enter ZIP Code (AVS Data)
011	Cash Back Other
012 – 016	[Reserved]
017	EMV AID list
018	Language Selection
019	EMV Account Type Selection
020	Enter Tip
021	EMV card has been removed
022	Swiped not allowed, must use chip
023	EMV fallback

Sample Field 11

The following sample of field 11 is for a Signature Response message sent in response to a Signature Request:

0011,02555001004

This value is broken down as follows:

Bytes	Subfield Value	Use
1-2	02	Message Type 02 – Signature Response
3-5	555	POS Transaction sequence number.
6-8	001	Screen ID (Echoed from Signature Request message)
9-11	004	Completion Code. 004 = DONE/ACCEPT key pressed with signature data present.

Token Area

Defined Tokens for the Token Area are as follows:

Token (Case Sensitive)	Description	Usage	Max Length
V	Simplify Version	Simplify response to POS	10
S	Identifies the Source Routine of the Error	Simplify error response to POS	40
R	Return code from Source Routing	Simplify error response to POS	20
E	Actual Error if different from 'R'	Simplify error response to POS	20
Q	Transaction Type and Tender Type (data is optional)	POS Quick Chip request to Simplify, echoed in response	20

With the exception of the Q token, the above tokens are for informational purposes only.

Q token

The Q token must be present in order for Simplify to approve a Quick Chip (36-40) request. The format of the Q token is as follows:

Qaabb<FS>ccc<FS>, where:

Q = Quick chip token

aa = Length of the following data (including field separators)

bb = Optional Transaction type (01=Auth, 02=Sale, 09=Refund)

<FS> = Field separator

ccc = Optional Tender type (e.g. 010=Credit, 030=Debit)

<FS> = Field separator

A sample Quick Chip request, showing the Command Area, '?' separator and Token Area for field 11 is as follows:

0001,36
0011,40001000000?Q0402<FS><FS>

This request is for a Sale (=02) transaction. (Tender Type not specified.)

Field 5001 (Non-Financial Data)

Field 5001 is used in the following types of messages as follows:

- In Non-Financial Messages (Tran Type 36):

  Used in requests and/or responses for most Message Types:

  - In request, used to define display or screen operation.
  - In response, used to indicate outcome of requested operation. In Informational Prompting Messages (36-14), this field returns customer feedback.

  Details are message-specific. For more information, see the formats and sample messages given under Non-Financial Messages and Informational Prompting Messages.

- In Financial Responses:

  For auto signature-eligible transactions, Field 5001 is used in the financial response to inform the POS whether Simplify is performing auto signature processing for the transaction. For details, see Auto Signature.

Field 5070 (Simplify Load Information)

Field 5070 is used in financial responses to the POS to return the Simplify version number and other Simplify load information (e.g. parameter file version numbers, TMS Identifier). The maximum length of this field is 256 bytes.

A current sample of this field is as follows:

5070,Merchant: Elavon; Simplify: G2-2.02.52402;PARM: 2.24.1;TENDERDEF: 2.24.1;EMVPARM: EMVPARM-E4;TMS: 87654321

This field contains the following information about the PIN Pad's Simplify implementation:

Subfield Name	Current value	Meaning
Merchant	<Merchant Name>	Identifies implementation by merchant name.
Simplify	G2-2.02.52402	Simplify version number
PARM	2.24.1	parm.fil parameter file version
TENDERDEF	2.24.1	tenderdef.fil parameter file version
EMVPARM	EMVPARM-E4	emvparm.fil parameter file version
TMS	87654321	TMS identifier of the PIN Pad

Field 5071 (Card/Cardholder Present?)

Field 5071 is used in financial requests from the POS to inform Simplify whether the card and cardholder were present for the transaction. This field is only used by Simplify to help set field 47, and is not sent to Fusebox. If sent in the request, this field will be echoed in the response.

Supported values are:

0=neither present (including all manual entry with cardholder not present)

1=both present

2=only cardholder present

If the value in 5071 is invalid or not present, Simplify will use a default value of 1.

Field 5104 (Tip Prompting)

Simplify can be configured to automatically prompt for a Tip amount. If configured to do so, the Tip prompting screen will also allow the customer to select the Tip amount from displayed amounts based on up to three configured Tip percentages.

Field 5104 can be sent in a Financial Request to override the configured Tip parameters for the current transaction. If sent in the request, this field will be echoed in the response.

The format of this field is aa;bb;cc<FS>d where:

aa, bb and cc are three Tip percentages. d is the Tip prompting flag (0=No, 1=Yes).

The semi-colons (;) and field separator (<FS>) are required even if the Tip percentages are not present.

A sample of this field is as follows:

5104,15;18;20FS1

The effect of this field is as follows:

- If the Tip prompting flag in field 5104 is set to 0, the Tip screen will not be displayed.
- If this flag is set to 1, the Tip screen will be displayed.
- If one or more Tip percentages are defined, the corresponding Tip amounts will be displayed on the Tip screen.
- The customer can either key in the Tip amount or select it from the displayed amounts.
- If no Tip percentages are defined, the Tip amount can only be keyed in by the customer.

Appendix G - Usage

Note concerning usage in this document:

- When you see an ampersand (&), please expect real data that has been masked for documentation.
- This guide will refer to POS / PMS as POS only.

Appendix H - Revision History

Note: This documentation applies to Simplify version 2.02.024 builds 35 and higher, and version 2.02.025 all builds.

Document version	Date	Revision Notes
2.02.025.5	OCT 2019	Added support for non-Pay@Table printing (Print Request Message). Added API 1379 (Offline EMV Receipt Field List) to Stand-in Response to POS.
2.02.025.4	JUL 2019	Modified headings of sample messages to be more uniform and to avoid unnecessary Table of Contents entries in the pdf.

Document version	Date	Revision Notes
2.02.025.3	JUN 2019	Changed references to Telium PIN Pads to refer to Telium and Tetra.
2.02.025.2	MAY 2019	Added ability to process Returns sent to Fusebox as EMV transactions. Added back description of HID USB (removed in 2.02.025). Updated ID information for HID USB to include Tetra devices. Added instructions for obtaining additional ID information. (Addendum only) Added timeout on PIN entry as additional condition for API 1010 = "*SLR Cancel Key Pressed." Added tag 072 under Informational Prompting to display scrolling text with configurable buttons (Addendum only).
2.02.025.1	APR 2019	Updated sample messages. Updated information on matching fields when a transaction depends on a prior transaction.
2.02.025	MAR 2019	Supported Hardware - Added support for Tetra devices on Version 25. Added list of all supported Ingenico devices. Communications - Added support for Wifi and Bluetooth. Versioning - Added table of current version numbers for Simplify and supporting software. Message Details – Added tables of matching fields required for transaction types dependent on prior transactions EMV - Corrected description of Return transaction using ICC chip card to say that card must be swiped. Auto Signature - Added support for auto signature. Signature Request Message - Added tag 002. Initiate Ingestate Message - Added capability for POS to set IngEstate identifier (TMSID).

Document version	Date	Revision Notes
		Scrolling Receipt Message - Added capability to send up to five lines of text plus a total line in a single request. EMV - Added support for contactless EMV. EMV – Added list of EMV tags. EMV - Added option to return EMV tags on a Stand-In response. EMV - For ICC decline of host-approved transaction, added reason for decline to response to POS. Pay@Table - Added enhancements from customer feedback. Informational Prompting - Added tags 011, 012, 071. Quick Chip Tendering - Added support. Simplify-Generated Response Messages - Added additional messages. Status Message ACKing - Made configurable the list of Status Identifiers for which a Status Message require an ACK. Added 021 to the default list. Simplified-Controlled Fields - Renamed and rewritten. Added subsections on API 5001 (Financial Data), 5070 (Simplify Information), 5071 (Card/Cardholder Present?), 5104 (Tip Prompting). Documented Quick Chip token. Added Quick Chip and PIN Pad busy entries to Completion Code table.
2.02.021	OCT 2017	Initial Developer Portal version

Appendix I - Addendum

EMV

Added ability to process Returns sent to Fusebox as EMV transactions. Updated information on supported transaction types as follows:

Simplify supports EMV processing, both contact and contactless, for the following Tran Types: - Auth Only (01): - Sale (02): - Return (09):

Based on settings, each supported Tran Type can be processed as either EMV or swiped. Please contact your Elavon representative for configuration setting.

Simplify-Generated Messages

Added timeout on PIN entry as new condition for "*SLR CANCEL KEY PRESSED." in API 1010. Updated description of this message as follows:

Field 1003	Field 1004	Field 1010	Condition	Action
208		*SLR CANCEL KEY PRESSED.	The Cancel key was pressed on the PIN Pad, or Timeout on PIN entry.	Decline – No Inquiry needed

Tag 072: Scrolling Text with Configurable Buttons

(*Added under **Informational Prompting***)

Simplify supports a Scrolling Text with Configurable Buttons Message. The Request displays a screen with scrolling text plus configurable buttons at the bottom of the screen. This message can be used to display a Consent screen.

Scrolling text – Up to 100 lines of scrolling text can be defined. Font size and justification are defined in the request. The maximum number of characters per line depends on the font size.

Buttons – Up to two buttons can be defined in the request. Buttons can be on every page or only at the end, and arranged horizontally or vertically. Button type can be push (action) or radio (Enter key required). For radio buttons, a button can be selected by default (user just presses Enter key) and pressing Enter without any selection can allowed or disallowed.. The maximum length of the button descriptors depends on the defined font size.

A field in the Response will indicate the action performed by the customer.

Not supported on the iPP.

Field 5001 Format

Request

Subfield Name	Length	Description
TTT	3	Tag (always = 072)
LLL	3	Length of the following data
ButLoc	1	Screen location of buttons: 0 – At the end of the scrolling screen 1 – At the bottom of each page of the screen
ButPos	1	Relative location of buttons: 0 – left and right 1 – top and bottom
ButScale	1	Button scale: 1=XXSMALL, 2=XSMALL, 3=SMALL,4=MEDIUM, 5=LARGE,6=XLARGE, 7=XXLARGE
ButType	1	Button type: 0 – Push button (action button) 1 – Radio button (must follow with Enter key)
RadCheck	1	Check settings (only used if Radio buttons active): 0 - No check (no default) 1 - Check 1st button (left or above button is default) 2 - Check 2nd button (right or below button is default)
RadReq	1	Button selection (only used if Radio buttons active): 0 - Can press ENTER without radio selection 1 - Radio button must be selected when ENTER is pressed
FS	1	Field separator (Hex 1C)
But1Txt	(see above)	Button 1 text
FS	1	Field separator (Hex 1C)
But2Txt	(see above)	Button 2 text

Subfield Name	Length	Description
FS	1	Field separator (Hex 1C)
LblScale	1	Label scale: 1=XXSMALL, 2=XSMALL, 3=SMALL,4=MEDIUM, 5=LARGE, 6=XLARGE, 7=XXLARGE
FS	1	Field separator (Hex 1C)
LblAlign	1	Label alignment: 1=Left, 2=Center, 3=Right
FS	1	Field separator (Hex 1C)
Lbl1	(see above)	Label 1 text
FS	1	Field separator (Hex 1C)
Lbl2	(see above)	Label 2 text
FS	1	Field separator
…		
Lblx	(see above)	Label x text

Response

Subfield Name	Length	Description
TTT	3	Tag (always = 072)
LLL	3	Length of the following data

Subfield Name	Length	Description
ActionButton/Data	var.	If field 11 Completion Code = 000 (success), indicates button or key pressed: 1 - button 1 (button on left or top) selected 2 - button 2 (button on right or bottom) selected 888 – Cancel key pressed Not present (LLL=000) – Enter key pressed with no button selected

Sample Message

Request

The following request tells Simplify to display the screen shown below (end of first page of scrolling text is shown):

API Field #, Value	Description
0001,36	Transaction Type
0011,14125072000	User Data. See Simplify-Controlled Field Definitions.
5001,[see value below]	Non-Financial Data 072=Tag 883=Length of data 1=Screen location of buttons 1=Relative location of buttons 3=Button scale 1=Button type 1=Check settings 0=Button selection I Agree=Descriptor for first (top) radio button I do not agree=Descriptor for second (bottom) radio button 3=Label scale 2=Label alignment You agree that any Services contain proprietary content, information=Text of Label 1 (etc.)

Reponse

API Field #, Value	Description
0001,36	Transaction Type
0011,14125072000	User Data. See Simplify-Controlled Field Definitions.
5001,0720011	Non-Financial Data: 072=Tag 001=Length of data 1=Button 1 pressed

HID USB Interface

(*Added under **Message and Communication Protocols***)

HID USB is a protocol that allows for serial bidirectional data transfer in a manner similar to the serial protocol (as described in Appendix B), but using the USB link layer. This has some advantages over “regular” Serial, for example you don’t need to specify baud rate or stop bits, as these are not part of the USB link layer.

In general there are two ways an ECR can communicate using HID USB. The first is via a third-party driver; this software will hide the HID complexity and allow existing ECR software to work unmodified. However if a direct HID USB interface is preferred, additional steps must be taken to conform to the HID USB link layer data transfer requirements:

For Ingenico PIN Pads, the HID interface requires 32 byte frames, with the first byte being a Report ID and the next 31 bytes available for payload data. Extra bytes must always be padded with zeroes, as you can never transfer less or more than a full 32 byte frame. For frames going to the PIN Pad, the Report ID byte must be 2; when receiving data from the PIN Pad, you can expect a Report ID byte with a value of 1. Messages longer than 31 bytes must be transferred in multiple frames. The payload data must still start with STX and include ETX and LRC (same as for Visa2 transfers).

Messages received from the PIN Pad must also be filtered to skip over both the Report ID bytes (value = 1) and any extra padding bytes (value = 0) from the incoming data stream. This will allow the ECR to interpret messages received from the PIN Pad. Special care must be taken in locating the LRC byte when processing incoming data. It’s not necessarily the byte following the ETX, as that byte might be a Report ID. Also, the LRC byte can have any value (including 1) so it’s not sufficient to simply ignore a “1” byte after the ETX. The correct algorithm keeps track of how many bytes into the frame it is, identifying the Report ID byte by its position (i.e. at the start of the frame), not its value.

HID USB protocol also includes the concepts of Interface and Endpoint. In this implementation, there is only one Interface (0) and two endpoints:

Telium 2 terminals: ENDPOINT_OUT (0x04) and ENDPOINT_IN (0x85).
Tetra terminals: ENDPOINT_OUT (0x02) and ENDPOINT_IN (0x81).

The endpoint information can be obtained from a Windows utility (e.g. the Simplify POS simulator).

To connect to a HID USB terminal, an application must know the Vendor ID and Product ID values. For Ingenico PIN Pads, the following table (see next page) shows the model name, the VID and the PID for each supported hardware model:

TERMINAL	VID	PID	String	Class
iPP320	0x0B00	0x0071	Ingenico iPP320	HID
iPP350	0x0B00	0x0072	Ingenico iPP350	HID
iSC480	0x0B00	0x0073	Ingenico iSC480	HID
iSC250	0x0B00	0x0074	Ingenico iSC250	HID
Lane/7000	0x0B00	0x6780	Ingenico Lane 7000	HID

If the VID and PID is not on the above list, they can be obtained by the following procedure:

To obtain the VID and PID from a Windows PC:

1) Connect the PIN Pad to the PC. Open the “Device Manager”, look for “Human Interface Devices”
2) Under “Human Interface Devices”, Right-click on the “HID-compliant device” or “USB Input Device”, select “Properties”. The properties dialog box will be displayed. 3) Select the “Details” tab on the Properties dialog box.
4) Open the “Property” drop-down list and select “Hardware IDs”. 5) In the “Value” text box, look for string “VID_0B00”

6) Next to the “VID_0B00”, you will find the “PID” value in the format of “PID_xxxx”. 7) If the VID is not “0B00”, it is not an Ingenico device. Go to Step 2 and choose another device.

Ingenico Download Configuration and Troubleshooting Guide 2.02.024-025

Introduction

The purpose of this guide is to provide information on configuring Simplify, downloading files and troubleshooting.

The document is distributed with the application and available to the customer on request. It is reviewed for every application update and change to **PCI P2PE** requirements (at least annually) and updated as required.

Overview

Simplify is an application that resides on the PIN pad that works together with a POS application to process electronic payment transactions. Authorization requests are sent directly from the PIN pad, which simplifies PCI-DSS compliance. EMV and Pay@Table are supported.

Simplify can be integrated into a POS system by following the instructions in the Simplify Developer Guide.

This document covers implementations of Simplify that operate as follows:

- Simplify runs on Ingenico Telium or Tetra PIN pads, using Voltage or On-Guard encryption
- Simplify is programmed to send transactions directly to Elavon's Fusebox Gateway

Supported Features

Supported tender types:	• Credit • Debit • Gift Card
EMV	Supported in U.S and Canada. (Interac not supported)
Pay@Table	Supported in U.S. and Canada. (For all supported tender types.)
Supported transaction types:	• Authorization Only; Tokenization supported • Sale; Tokenization supported • Prior-Authorized Sale [Completion] • Return • Void Sale • Transaction Inquiry • Gift Card • Request for Token • Full Authorization Reversal • Incremental Authorization • Void Return

Additional supported features:	Card Entry: • Swiped • Key-entered • Contactless magstripe emulation • Contact or contactless EMV Application download: via IngEstate Communications between POS and Simplify: • TCP/IP • RS-232 (including USB emulation) Communication to Fusebox • TCP/IP – Encrypted based on Fusebox security requirements • Fusebox certificate Configuration using Elavon Menu Voltage or On-Guard End to End Encryption Signature Capture Scrolling Receipt Status Message to the POS Batch Close Support

Navigation and Data Entry on Ingenico PIN Pads

The chapter describes the techniques used to configure Simplify Telium or Tetra PIN Pads. Accessing Elavon configuration, selecting menu items, scrolling and entering dots are described separately for touchscreen models (ISCxxx) and non-touchscreen models (iPPxxx, iWL250, iSMP4). Additional comments concerning Elavon setup menus and data entry screens apply to all models.

Touchscreen Models

- **Accessing the Elavon Sub Menu**

  Reboot the PIN Pad by pressing the Clear and minus (–) keys. The Elavon Sub Menu can be accessed during bootup whenever a white circle in a green rectangle is present in the lower right corner of the screen. To display this menu, touch this white circle or press the **Enter** (green) key.

- **Using Elavon Menus**

  A menu item can be selected by touching the item or by scrolling to the item using the plus (+) or minus (–) keys and pressing the **Enter** (green) key.

If a scroll bar appears in the lower right corner, additional parameters are available after the first screenful. These items can be made visible by scrolling as described above or by dragging the scroll bar.

- **Entering Dots**

  To type a dot on data entry screens, use the minus (–) key.

Non-Touchscreen Models

- **Accessing the Elavon Sub Menu**

  Reboot the PIN Pad by pressing the Clear and .,#* keys until a happy face appears in the upper left corner of the screen. The Elavon Sub Menu can be accessed by pressing the **Enter** (green) key during bootup whenever a rectangle is present in the lower right corner of the screen. On the iPP350, this rectangle is a white circle on a green background. On the iPP320, this rectangle appears as follows:

- **Using Elavon Menus**

  A menu item can be selected by keying the item number or by scrolling to the item and pressing the **Enter** (green) key. The up and down keys are used for scrolling.

  If a scroll bar (iWLxxx) or arrow (IPPxxx) appears in the lower right corner, more parameters are available after the first screen. These items can be made visible by scrolling as described above.

- **Entering Dots**

  To type a dot on data entry screens, use the .,#* key.

- **Timeout**

  To save battery life, iWLxxx screens timeout after a 60 second idle.

All Models

- **Using Elavon Setup Menus**

  Each parameter name is followed by a colon (:) followed by the current value of the parameter. E.g. **DHCP:0**

  When a setup menu is displayed, the first parameter on the screen is selected by default.

  If the value of a Simplify parameter is changed, the re-displayed setup menu displays the updated value.

  Pressing the **Cancel** (red) key returns to the **Elavon Main Menu** without changing anything.

- **Using Elavon Data Entry Screens**

All data entry screens accessed through the **Elavon Main Menu** initially display the current value of the parameter. This value is automatically overwritten by any entered data.

Pressing the **Enter** (green) key saves the entered data and displays the updated setup menu.

Pressing the **Cancel** (red) key discards any change and re-displays the setup menu.

Pressing the **Clear** (yellow) key deletes the last character entered on this screen. Pressing the **Clear** key again will delete additional characters from the right, one character at a time.

To enter a letter on the PIN pad, key in the applicable number (example: 2 for A, B or C) and repeat quickly to toggle through its associated letters.

Configuring Simplify

The **Elavon Main Menu** is used to configure Simplify. This menu is available on all Simplify Telium or Tetra PIN pads. This chapter describes:

- Accessing the Elavon Menu
- Network Setup
- Host Setup
- POS Setup
- Terminal Setup
- Wireless
    - Wifi Setup
    - Bluetooth Setup
- Status Bar
- Enabling Configuration Changes

Note:

- Unless stated otherwise, all screenshots shown under “Configuring Simplify” are taken from the following devices:
    - Move 5000 for Wireless and its submenus.
    - iSMP4 for all other menus.
- All values displayed are samples. Contact your network administrator for the values required on your system.

Accessing the Elavon Main Menu

To access the **Elavon Main Menu:**

1. Once this rectangle appears, press the **Enter** (green) key to display the **Elavon Sub Menu** (see below).
   The Elavon Sub Menu can be accessed whenever this rectangle is displayed during the boot up sequence. This menu provides access to IngEstate (see Initiating IngEstate) and the **Elavon Main Menu**.

   For systems that support Point to Point Protocol (PPP) communications, the Elavon Sub Menu will contain a third entry, Disable PPP Session (see below). This selection will temporarily disable PPP functionality, which will allow PIN Pad maintenance to be performed through an IP connection. PPP functionality will be restored following the next reboot.

   Note: the above screenshot was taken on an iPP320.

2. Select **Elavon Main Menu** to display the login screen for this menu.
3. Use the login screen to type in the Elavon password. The **Elavon Main Menu** will display.

   Note: Contact your Elavon representative for the password.

4. To display a Setup screen, select the item from the **Elavon Main Menu**. When done with this menu, Restart can be used to restart the PIN Pad.
5. Additional items are available at the end of this menu.

Important: The Voltage encryption key should only be rotated when instructed to do so by the Elavon Help desk.

Note:

- **Telium Manager** displays the initial screen for Ingenico's Telium Manager. For more information, refer to Ingenico documentation.
- **Renew Voltage Key** rotates the Voltage encryption key.
- On Wireless-capable PIN Pads, there is an additional menu item, **Wireless**. This is located between **Telium Manager** and **Renew Voltage Key**, and provides access to **Wifi Setup** and **Bluetooth Setup**.

Network Setup

Simplify supports Ethernet as the network type. Ethernet communications on the Telium or Tetra can be configured under **Network Setup**. As described below, the use of this menu is controlled by the setting of 0-DHCP.

Access Network Setup

1. Select Network Setup on the Elavon Main Menu to display the following menu.

2. Scroll down to display more items.

Available Parameters

DHCP:

View/modify whether DHCP is enable/disabled. Set by Elavon prior to shipping Simplify, based on the customer's network requirements. Controls how Network Setup parameters are defined:

- If set to 1: DHCP will be enabled (IP mode = DHCP). The values of other Network Setup parameters will be defined by the DHCP server and read-only under Network Setup.
- If set to 0: DHCP will be disabled (IP mode = Static). The values of other Network Setup parameters will be displayed under Network Setup and available for editing.

IP:

View IP Address (and modify if allowed). Must be unique value; cannot be shared with anything else on the network.

NTM:

View Netmask (and modify if allowed).

Gateway:

View Gateway (and modify if allowed).

DNS1:

View primary DNS server address (and modify if allowed). If IP: is defined as a symbolic name, DNS1: must be defined.

DNS2:

View secondary DNS server address (and modify if allowed). Backup for DNS1

Host Setup

The **Host Setup** menu displays the current values of parameters required for host communications. Most parameters on this menu are read-only. This menu can be used as follows:

Access Host Setup

1. Select Host Setup on the Elavon Main Menu to display the following menu:

2. Scroll down to display more items.

Available Parameters

IP:

View the IP address of the Fusebox gateway.

PORT:

View the Fusebox port that communicates with Simplify.

SECURED:

View whether or not communications with Fusebox are encrypted. (0=No, 1=Yes)

METHOD:

View encryption type used for communications with Fusebox.

TMS ID:

View/modify the TMS identifier. This is an IngEstate locator value assigned to the PIN Pad by Elavon. This value must only be changed on instructions from Elavon, using the Elavon-supplied value.

POS Setup

The POS Setup menu displays/defines parameters required for Simplify-POS communications and other POS-related parameters. The contents of this menu vary depending on communications type. There are three versions, used for:

- IP communications with Simplify as server (non-Pay@Table systems)
- IP communications with Simplify as client (Pay@Table systems)
- RS-232 communications or USB emulating RS-232

The appropriate menu for your system will be displayed, based on the setting of the parameter that controls the Simplify-POS communications type.

IP Communications, Simplify as Server 🔗

In non-Pay@Table systems, Simplify acts as TCP/IP server. POS Setup can be used on these systems as follows:

Access POS Setup

1. Select **POS Setup** on the Elavon Main Menu to display the **Client IP** Setup menu:

Available Parameters

Port:

View/modify port ID on which the POS Server listens for the Simplify client.

Secured:

View whether or not Simplify-POS communications are encrypted. (0 = No encryption, 1 = Encryption)

Method:

View encryption type used for Simplify-POS communications. (1=SSLv2; 2=SSLv3; 3=TLSv1; 4=SSLv23; 5=TLSv1.1; 6=TLSv1.2)

IP Communications, Simplify as Client 🔗

In Pay@Table systems, Simplify acts as a TCP/IP client. POS Setup can be used on these systems as follows:

Access POS Setup

Note: the following screenshot was taken from an iWL250 PIN Pad.

1. Select POS Setup on the Elavon Main Menu to display the POS Setup menu.

2. Additional items are available by scrolling down:

Available Parameters

0-IP:

View/modify IP Address of the POS.

1-Port:

View/modify port ID on which the POS Server listens for the Simplify client.

2-Persist:

View/modify persistence of the Simplify-POS link. (0 = Non-persistent, 1 = Persistent)

3-Store:

View/modify the Store Number.

4-Font:

View/modify the Font Size for receipts. (1 = XXSMALL; 2 = XSMALL; 3 = SMALL; 4 = MEDIUM; 5 = LARGE (the default); 6 = XLARGE; 7 = XXLARGE)
If a receipt field does not fit on one line using the defined font, it will wrap around to print on multiple lines.

5-Secured:

View whether or not Simplify-POS communications are encrypted. (0 = No encryption, 1 = Encryption)

6-Method:

View encryption type used for Simplify-POS communications. (1=SSLv2; 2=SSLv3; 3=TLSv1; 4=SSLv23; 5=TLSv1.1; 6=TLSv1.2)

RS-232 Communications (or USB Emulating RS-232) 🔗

On systems using RS-232 Communications or USB Emulating RS-232, POS Setup can be used as follows:

Access POS Setup

Note: the following screenshot was taken from an iPP320 PIN Pad.

1. Select POS Setup on the Elavon Main Menu to display the POS Setup menu:

2. Additional items are available by scrolling down:

Available Parameters

0-Port:

ID of the POS COM port that communicates with the PIN Pad. 3 = RS-232. 10 = USB emulating RS-232.

1-Baud:

Speed used for Simplify-POS communications.

2-Databit:

Number of bits in each byte that are used to transmit data. This value should be set to 8 (the default).

3-Parity:

Type of check bit used to detect corrupted data. This value should be set to N =no parity (the default).

4-Stopbit:

The number of bits in the end-of-text marker. This value should be set to 1 (the default).

5-v4683:

Two-byte retry parameter. Byte 1 defines the number of retries. Byte 2 defines the interval between retries (in seconds). Change only upon instruction from Elavon.

Terminal Setup

The Terminal Setup menu displays the current values of parameters used in the operation of the PIN Pad, excluding communications parameters. Most parameters shown in this menu are read-only. This menu can be used as follows:

Access Terminal Setup

1. Select Terminal Setup on the Elavon Main Menu to display the Terminal Setup menu.

2. Scroll down to display more items.

Available Parameters

MerchLang:

View the Merchant Preferred Language. (0=English. 1=French)

AllowedLang:

View available languages. (en = English. fr = French. enfr = English/French. fren = French/English). This parameter is used for EMV and Pay at the Table transactions, as follows:

- EMV – A list of Customer Preferred Languages is read from the EMV card and compared with the value(s) in **AllowedLang**. The tender will be processed using the first match between Customer Preferred Language and **AllowedLang**. If there is no match, the Merchant Preferred Language will be used.
- Pay@Table – For transactions in Canada: After Pre-Pay server interaction, the customer will be prompted to select a language to be used for customer interaction (through receipt printing). The available languages in this prompt are defined by **AllowedLang**.

Currency:

View the default currency. (USD840 = US$; CAD124 = Canadian $) The seventh byte defines the number of currency decimal places.

DateFormat:

View the format used for dates.

Date:

View/modify the PIN Pad’s internal date.

Time:

View/modify the PIN Pad’s internal time.

Associate Base:

Renew PINpad/base association. (Only available on the iWL250.) After selecting Associate Base, a message will be displayed indicating the result of the attempted re-association.

Wireless

Simplify supports Wifi and Bluetooth communications. The Elavon Main Menu allows users to configure wireless communications.

- Wifi can be used to communicate with the POS, Fusebox and Ingestate.
- Bluetooth can be used to communicate with the POS.

Access Wireless Setup

1. Access the Elavon Main Menu as described under Accessing the Elavon Main Menu:
2. Scroll down until Wireless is displayed. Select this menu item to display Wireless Setup:
3. Select Wifi Setup or Bluetooth Setup, based on the setup you wish to perform.

Wifi Setup

- Select Wifi Setup from the Wireless Setup menu to display the Wifi Setup menu:

Available Configuration

Disable/Enable

This button is a toggle to enable or disable Wifi.

Scan networks

This button will scan for all available and non-hidden networks. The PIN Pad will display a list of the networks found. E.g.

Select a network from this screen. (To access a network not detected by scanning, select Other at the end of the list and define the SSID manually.) Follow the prompts to complete configuration.

Advanced Options

Selecting this button will provide access to the following functions:

My Networks

This button allows the user to manage configured networks, as follows:

Force use

Force use is used to assign the highest priority to the selected network.

Remove

Select to delete the definition of this network.

Update

Select to modify this network definition as follows:

Access Point Visibility

Select Visible or Hidden. A network will only be detected during scanning if this parameter is set to Visible.

Security Type

Select Home Security or Enterprise Security.

Wifi Password

Enter a password.

Connect

Select to connect to the POS using this network.

IP configuration

Select to report on IP configuration values.

Default IP Configuration

Use to configure IP communications.

Note that Ethernet configuration for Wifi can be performed either here or under Network Setup.

Active Roaming

Select this item to display a screen used to enable/disable active roaming.

SSID Status

Select this item to modify whether the SSID is displayed on the Status Bar.

Not available on all systems.

Bluetooth Setup

- Select Bluetooth Setup from the Wireless Setup menu to display the Bluetooth Setup menu:

Note: the above screenshot was taken from an iWL250 PIN Pad.

Available Configuration

1-Disable/Enable

This button is a toggle to enable or disable Bluetooth.

2-Pair with phone

Selecting this item will display information needed to pair the PIN Pad with a phone.

3-Add device

When this item is selected, setup will search for available Bluetooth-capable devices and display a list of devices found.

When a device is selected from this screen, a list of device types will be displayed. Select a type (typically **Other**) from this screen to pair the selected device with the Simplify PIN Pad.

4-Paired devices

Select this item to display a list of paired devices for the PIN Pad.

5-Advanced Options

When this item is selected, the **Advanced options** menu will be displayed. This menu allows you to manage Bluetooth settings.

Status Bar

Pin Pad status is displayed in a status bar at the top of Simplify screens, when appropriate. A sample status bar is as follows:

The Status Bar contains the following information:

- Bluetooth indicator
- Ethernet indicator
- Wifi indicator
- Battery indicator

Enabling Configuration Changes

Configuration changes made under the **Elavon Main Menu** can be enabled as follows:

1. From any Elavon setup menu, select **Main Menu** to return to the **Elavon Main Menu**.
2. Select **Restart** on the **Elavon Main Menu** to restart the PIN Pad application.
3. Allow the application to run until completion.

Terminal Maintenance

IngEstate is Ingenico's Terminal Management System. Elavon maintains an IngEstate server to update Simplify PIN pads. This chapter explains how PIN Pads are maintained.

Signed Sensitive Files

For purposes of security, sensitive Simplify files are signed. Unsigned sensitive files, or files signed with a different certificate, will not be accepted by the PIN Pad. If this occurs, a signing error message will be displayed after the file is loaded to the PIN Pad. The merchant will then need to contact Elavon.

Initiating IngEstate

The IngEstate update process can be initiated manually on the PIN Pad, by command from the POS (see Simplify Developer Guide) under “Initiate Ingestate Message” for details) or scheduled by Elavon. Once initiated, the process proceeds automatically.

The IngEstate update process can be initiated manually from the **Elavon Sub Menu**. As described under Accessing the Elavon Main Menu, this menu can be accessed during the PIN pad boot up sequence. (See Navigation and Data Entry on Ingenico PIN Pads for device-specific details.)

Select **Initiate Ingestate** to initiate the IngEstate update process.

Viewing Simplify Load Information

Information on the Simplify load present in the PIN pad is displayed during boot up and by keying 0 when the PIN pad is in a closed state. (To lengthen the display, press the + or – key.) For additional fields, scroll down. This information may be requested by Elavon for troubleshooting purposes. The PIN pad will return to the usual closed screen after several seconds.

The fields on this screen will vary by implementation. The list gives a sample of the available fields:

Simplify
Serial: 80498883
TMS ID: 12345678
Vers: N-OG-2.02.02504
Package: 2.25.1
IP Addr: xx.xxx.xxx.34
Merchant: Elavon
Client: TCP Clnt Non-SSL-6000 08/19/18 - 13:46:18
Base 2.25.1
EMVCert: 2.25
EmvKernel: EMVDC0838
ParmVer: 2.25.1
TndrVer: 2.25.1
EMVParm: EMVPARM-E4-1
ClessParm: CLESSEMV
TSA Serial: 2214180SC010031 SDK Ver: 11.16.07.Patch G ScrSaver: 0
RKI
Device: Lane 5000 Flash Memory: 50332

Flash Free Code: 396197 Flash Free Data: 396197
RAM Memory: 518279
RAM Memory Free: 427438 PosIP Acpt Active

Note: The **IP Addr** field initially displays the partially masked IP Address of the PIN Pad. An optional feature is available allowing this field to display the unmasked address. If this feature is present, pressing Enter at the load information screen will display a login screen. After logging in on this screen (special password required), the load information screen will be redisplayed with the IP Address unmasked. Please contact your Elavon representative if you want to implement this feature.

The above fields provide the following information:

Field	Description
Serial:	PIN Pad L3 Serial Number
TMS ID:	TMS Identifier
Vers:	Simplify version, build and implementation information: Format is S–PP-X.YY.ABBCC, where: S = first part of prefix, indicates whether Simplify is operating as part of a PCI P2PE-validated solution. (Optional. If not present, solution is not validated.) PP = second part of prefix, indicates encryption type. X.YY.ABBCC = Simplify version and build information For more information, see Simplify Developer Guide under “Versioning”.
Package:	ID of package used to build current load
IP Addr:	Masked IP address of PIN Pad (see note above for viewing the unmasked IP address)
Merchant:	Customer for whom load was built
Client:	POS Communications type and port
(Date/Time)	Current date/time

Field	Description
Base	ID of first package sent to POSPortal for this customer
EMVCert:	EMV version
EmvKernel	EMV Kernel version
ParmVer:	parm version
TndrVer:	tenderdef version
EMVParm:	EMVParm version
ClessParm:	ClessEMV (or ClessMSD) version
TSA Serial:	PIN Pad L4 Serial Number
SDK Ver:	SDK version
ScrSaver:	Screen Saver group ID
RKI	Status of last Remote Key Injection file download
Device	PIN Pad model
Flash Memory:	Total Flash memory in PIN Pad
Flash Free Code:	Unused Flash code space
Flash Free Data:	Unused Flash data space
RAM Memory:	Total RAM memory in PIN Pad

Field	Description
RAM Memory Free:	Unused RAM memory
PosIP Acpt	Status of Simplify-POS IP connection

Remote Key Injection

Simplify supports Remote Key Injection (RKI). This section documents how to determine the outcome of an attempted key injection. For more information on RKI, consult your Elavon representative.

When the PIN Pad restarts after an attempted key injection, RKI messages will be displayed during the bootup sequence. The first RKI message will always be as follows:

This message will be followed by a second RKI message indicating the outcome of the attempted injection. There are three possible scenarios:

- If the RKI file downloaded to the PIN Pad is invalid, the following error message will be displayed:
- If the RKI file is valid, but the serial number in the file does not match that in the PIN Pad, an error message will be displayed showing the L4 serial number of the PIN Pad. E.g.:
- If the key injection is successful, the following message will be displayed:

Exiting Reversal Mode

The host approval will need to be reversed when either of the following situations occur:

- An EMV transaction is approved by the host and declined by the chip.
- The customer removes their card from the chip reader before the transaction is completed.

If a reversal is needed, Simplify will go into reversal mode to force the reversal. It does this by sending a reversal (Tran Type 11) to the host, and resending the reversal (if necessary), until a response is received. While this is taking place, any other transactions that are sent to the PIN pad will be processed offline.

The PIN pad can be rebooted and commanded to exit reversal mode from the **Elavon Main Menu**, as follows:

1. Reboot the PIN pad. When a rectangle appears in the lower right corner of the screen, press the **Enter** (green) key to display the **ELAVON SUB MENU**.
2. Select **Elavon Main Menu** and login to display this menu.
3. Scroll down and select **REMOVE EMV REVERSAL** (only present if currently in reversal mode).
4. Select **RESTART** to reboot the PIN pad.

If Simplify is forced out of reversal mode, the data required to request the reversal is sent to the POS in a **Void Transaction Response** (11) message, after which the PIN pad returns to normal processing mode.

Important: Forcing Simplify to exit reversal mode is an exception procedure that should only be used when necessary. If Simplify is forced out of reversal mode, the merchant will be responsible for ensuring that the transaction is reversed by the host, using the data in the **Void Transaction Response**. Elavon strongly recommends allowing Simplify to reverse all host-approved transactions that are declined by the chip.

Troubleshooting

This chapter describes the following:

- TCP/IP Comm Error Codes
- IngEstate Connection Errors

See also Simplify Developer Guide under “Simplify-Generated Messages”.

TPC/IP Comm Error Codes

Error Code	Condition	Resolution
-1	TCP connection failed.	Verify firewall and DNS settings for host connection
-2	TCP connection timeout.	Verify firewall and DNS settings for host connection
-3	TCP address is not reachable.	Verify firewall and DNS settings for host connection

IngEstate Connection Errors

Status Flag (36-07 Response)	Condition	Resolution
Initial connection attempt		
01	PIN pad busy	Retry
02	Comm error	• Verify that your firewall is configured to allow encrypted traffic to the IngEstate server. Please contact your Elavon representative to verify IngEstate communication parameters. • Verify that the addresses of your DNS servers are correctly defined using the Elavon menu (DNS 1 and DNS 2 fields under Network Setup) • Verify your DNS server can handle the configured server name • If the problem cannot be resolved, contact your Elavon representative
(no response)	(Unknown)	Same as for 02
Unable to connect after successful connection		
01	PIN pad busy	Retry
02	Comm error	• Verify your firewall settings • If the problem cannot be resolved, contact your Elavon representative
(no response)	Unknown	Same as for 02

Appendices

This chapter contains the folowing appendices:

Appendix A - Revision History

Appendix B - Usage

Appendix A - Revision History

Note: This documentation applies to Simplify version 2.02.024 builds 35 and higher, and version 2.02.025 all builds.|

Document Revision	Date	Revision Notes
2.02.025.3	JUN 2019	Changed references to Telium PIN Pads to refer to Telium and Tetra.
2.02.025.2	MAY 2019	(No changes)
2.02.025.1	APR 2019	(No significant changes)
2.02.025	MAR 2019	Initial Developer Portal version

Appendix B - Usage

Note concerning usage in this document:

- This guide will refer to POS / PMS as POS only.