DIV351006 Rev 2 Telium Troubleshooting Guide Guide

Telium Devices (iPP320, iPP350, iSC250, iSC350, iSC480, iSMPc, iSMP350, iUP250, and iWL250 Devices)

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Telium Troubleshooting Guide
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Table of Contents

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1_Introduction to the Telium Troubleshooting Guide

This document is intended for use by customers' support personnel to assist in the troubleshooting of Ingenico Telium devices in service. Along with helpful insights, the document provides step-by-step workflows for troubleshooting ease. Please refer to the following sections for more information about this manual:

- Conventions Used in this Manual
- Assumptions
- Reference Documents
- Support Procedures
- Devices Covered in this Manual

Menus pertaining to troubleshooting procedures are covered in this manual.

1_1 Conventions Used in this Manual

Refer to the below table for acronyms used in this manual.

Acronym	Full Term
EBT	Electronic Benefit Transfer
KCV	Key Check Value
KSN	Key Serial Number
MSR	Magnetic Stripe Reader
POS	Point Of Sale system, refers to cash register
RBA	Retail Base Application
TDA	Telium Download Application
TSA	Telium System Application

Acronym	Full Term
UIA	UnifiedPOS Interface Application

1_2 Assumptions

This manual assumes that the device is loaded with RBA (Retail Base Application) or UIA (UnifiedPOS Interface Application) application. Instructions are based on the following software versions:

- SDK: 9.12.3
- TDA: 8.0.1

1_3 Reference Documents

The following documents shipped with the product should be referenced for setup, installation, and general user information:

- DIV350783 Installation and Quick Reference Guide for iPP3xx
- iPP3xx-900001663 R11 000 01 iPP3xx User Guide
- DIV350824 iSC250 Installation and Quick Reference Guide
- DIV350773 iSC350 Installation and Quick Reference Guide
- ICO-ETU_11_1180 iPP3xx User Guide Addendum

The following document is provided to customers' management level personnel and is included within each Software Integration Kit (IK). The document explains all of the product's available features, including how to install, operate, and configure the device.

- Operations and Product Support Guide

1_4 Support Procedures

Before contacting Ingenico's Technical Support or returning a device for repair, follow these procedures:

1. Contact your Help Desk or Support Department first.
2. Notate the issue, error code, and the process followed to troubleshoot the issue.
3. Record your device serial number.

This document does not cover repair and warranty policies. Refer to your repair contract for the correct procedures.

1_5 Devices Covered in this Manual

Refer to the below table which lists the devices covered in this manual. The below table also provides links to the Quick Reference guides in this manual which include a general device description, power requirements, provisions for Secure Access Modules and SIMs, micro SD cards, interface options and specifications.

Device	Quick Reference
iPP320	iPP320 and iPP350 Quick Reference
iPP350	iPP320 and iPP350 Quick Reference
iSC250	iSC250 Quick Reference
iSC350	iSC350 Overview
iSC480	iSC480 Quick Reference
iSMP	iSMP Quick Reference
iSMP Companion	iSMP Companion Quick Reference
iUP250	iSelf Series Quick Reference
iWL250	iWL250 Quick Reference

Refer to the below gallery which shows images of the devices covered in this manual.

iPP320

iPP350

iSC250

iSC350

iSC480

iSelf Series

iSMP Companion

iSMP

iWL250

1_6 LCD Display Preservation for Telium Devices

Ingenico Telium PIN pad devices utilize backlit LCD displays to convey transaction and advertizing information. As with any LCD display, preventative actions are recommended in order to minimize the occurrence of image persistence. Image persistence occurs when an image is displayed for extended periods, leaving a temporary impression of the image on the screen which may be partially visible when the screen changes to a new image. This can be minimized by taking the following preventative actions:

- Do not allow a still image to be displayed for more than four hours.
- Use a screensaver with black or medium-gray background when the device has been inactive for 10 minutes.
- Power down the device for a period of time when not in use.

2_General Troubleshooting

This section provides troubleshooting procedures for issues which may be encountered in the field. Troubleshooting procedures are organized and categorized as follows:

- Display Issues
- Security Issues
- Pen/Finger Response Issues
- Card Response Issues
- Communication Issues
- Error Messages

If unable to restore the device to proper working condition by following the troubleshooting procedures, return the device for repair.

> ⚠ Follow proper precautions for disconnecting and connecting cables to the terminal as provided in the Quick Reference located in the Appendices section of this document. In order to prevent damage to the terminal, disconnect external power supply when instructed to do so before removing or attaching any interface cables.

2_1 Display Issues

Refer to the below table for troubleshooting display related issues.

Issue	Cause/Error	Recommended Action
No Display	Forms are not loaded (UIA) or hardware issue.	1. Reboot the device and reinitialize with the POS. Forms should load after reconnection. 2. Connect the device to a different POS station. 3. Try replacing the cable to determine if it is defective. 4. Replace the power supply to determine if the power supply is defective, and retest.

Issue	Cause/Error	Recommended Action
White Display or Rainbow Display (Multiple Colors)		1. Verify that the correct power supply is used per specifications for this product. Refer to the product Quick Reference Guide for this device in the Appendices. If the correct power supply is being used then proceed to step 2. 2. Reset power to the device and reinitialize the connection with the POS. If the issue persists, proceed to step 3. 3. Replace the power supply to determine if the power supply is defective.

2_2 Security Issues

Refer to the below table for troubleshooting security related issues.

Issue	Cause/Error	Recommended Action
Alert Irruption Error Message	Tamper Error. The terminal will lock up if the device detects any tampering, which will result in the terminal secure memory areas being cleared and rendering the terminal inoperable.	• Replace the terminal.
Cannot Process Debit Card (Host message error)	Error occurs, when transaction is sent for approval	1. Notate the error from the Host/Processor. 2. Proceed to Encryption Validation and notate your key information. 3. Validate with the Host Processor to ensure that the key is being correctly processed. 4. If the key information is incorrect, return the terminal to your specific key injection facility for key injection.

Issue	Cause/Error	Recommended Action
PIN Entry Screen Does Not Display	• Keys not injected • Application goes offline (RBA)	1. Proceed to Encryption Validation validate that a key is installed in the device. 2. If key is present, validate the key information and index are correct. 3. Check your applications and key configuration index. These value must match the key index. 4. If the key information is incorrect, return the terminal to your specific key injection facility for key injection

2_3 Pen/Finger Response Issues

Refer to the below table for troubleshooting pen/finger response issues.

Issue	Cause/Error	Recommended Action
No Inking on Screen During Signature		1. Disconnect and then reconnect the stylus to the connector on the back of the terminal, and retest. 2. Replace the stylus to determine if it is defective. 3. If stylus is defective, refer to your repair contract for next steps. 4. If the stylus has been replaced and the terminal is still not inking to screen during signature, return for repair.
Signature is Distorted		1. Disconnect and then reconnect the stylus to the connector on the back of the terminal, and retest. 2. Replace the stylus to determine if it is defective. 3. If stylus is defective, refer to your repair contract for next steps. 4. If the stylus has been replaced and the terminal is still not inking to screen during signature, return stylus and terminal for repair.

Issue	Cause/Error	Recommended Action
Incorrect Selection of Menu Option Using Finger	Calibration may be off	1. Reset device to allow for recalibration. Run a test transaction using your finger to determine, if the issue is resolved. 2. If the issue persists, note if the issue is more prevalent on one particular form/screen or if it affects all screens. 3. Return the terminal for repair if consistent in all menu selection or forms requiring user finger input.
Stylus Visibly Damaged or Defective		• Replace stylus.

2_4 Card Response Issues

Refer to the below table for troubleshooting card response issues.

Issue	Cause/Error	Recommended Action
MSR Not Being Read	• Bad MSR stripe • Dirty read head	1. Inspect the card for damage or excessive wear. 2. Try swiping the card at normal swipe speed (0.5 seconds for the full swipe). 3. Use the other read head by flipping the card (iSCXXX devices only). 4. Swipe the card in a reverse direction. For example, if swiping top to bottom, swipe from bottom to top. 5. If the device is experiencing frequent 'Card Read Errors', use an Ingenico approved card cleaner to clean the MSR readers.
Contactless Light Not Displaying	Contactless is not enabled	1. Refer to Contactless section and verify that contactless is enabled. 2. For the IPP3xx and ISC250, open the door at the bottom of the terminal and verify that the contactless module is present and is seated properly. 3. Ensure that the application has configured contactless as enabled. Refer to the RBA or UPOS Developer's Guides.
Contactless Reader is Not Reading Customer Card or Data		• Ensure you are tapping the card or phone near the location on the device where the contactless antenna is located. Refer to the device Quick Reference for the hardware configuration.

2_5 Communication Issues

Refer to the below table for troubleshooting communications issues.

Issue	Cause/Error	Recommended Action
Device Locks Up or "Freezes Up"		1. Reset power to the terminal. Wait until it completely initializes, then reset the POS to determine if communication can be reestablished. 2. Access different screens to determine if the issue is consistent with a particular transaction or form. 3. Check the store network. 4. Check the cable to ensure that no damage is present (bent pin, etc.). Replace the cable, if necessary. 5. Swap the terminal with another POS system register to determine if the issue follows the terminal.
Terminal Not Communicating with POS	Wrong Communication Setting	1. Reset device power and retry connection. 2. Ensure communication settings are correct. Refer to the Telium Download Application (TDA) Menu section and follow the procedure for verifying communication settings.
Device is Unresponsive or Consistently Resets		1. Ensure that the device is at least 12 inches away from any source of magnetic field (security tag deactivation system, scanners, etc.). 2. For IPP3xx only, device may have been configured for contactless but the module is not present or is not seated properly. Verify that the contactless module is present and is properly seated. 3. Reset device to reestablish communication.
Bad Network Port		1. Check Ethernet settings to ensure proper configuration 2. Change Ethernet settings to IP Static (if DHCP) to determine if communication is established (or vice versa). If so, the issue is not with the terminal but with the network configuration.

2_6 Error Messages

Refer to the below table for troubleshooting error messages.

Issue	Cause/Error	Recommended Action
ECC KO		• Replace the terminal.
WAITING FOR DOWNLOAD	Missing data (.dat) files or application	• Reload the generic released application.
UNAUTHORIZED		• Replace the terminal.
BAD SIGNATURE		• Replace the terminal.
LLT	Application is missing	• Reload the generic released application.
SYSTEM PROBLEM CALL HELP DESK	Incorrect parameter settings or an incomplete software load process	• Some or all of the required software may be missing. Return the terminal to the customization site to have software reloaded, or download the software remotely if possible.

3_FUNCTIONS Overview

The Functions menu allows the user to access menus to verify software and hardware configuration settings. This manual will review Telium Manager, Telium System Application (TSA), and Telium Download Application (TDA) menus to assist in the validation of your configuration. Refer to the following sections for more detail:

3_1 Keyboard Shortcut to Access Menus

The Functions menu is accessed using the device keypad as described in the below table. The splash screen is in reference to the generic application (UIA, RBA) that is loaded in the device.

iSC480	Press [#] key and Yellow key	When splash screen displays during power up (for 2 seconds): 1. Press [2], [6], [3], [4], and then press the green [Enter] key. 2. Wait until a second screen appears, and then press [F].
iSMPx	Press [#] key and Yellow key	When splash screen displays during power up (for 2 seconds): 1. Press [2], [6], [3], [4], and then press the green [Enter] key. 2. Wait until a second screen appears, and then press [F2].
iWL250	Press [#] key and Yellow key	When splash screen displays during power up (for 2 seconds): 1. Press [2], [6], [3], [4], and then press the green [Enter] key. 2. Wait until a second screen appears, and then press [F2].
iSC250	Press [-] key and Yellow key	When splash screen displays during power up (for 2 seconds): 1. Press [2], [6], [3], [4], and then press the green [Enter] key. 2. Wait until a second screen appears, and then press [+].
iSC350	Press [-] key and Yellow key	When splash screen displays during power up (for 2 seconds): 1. Press [2], [6], [3], [4], and then press the green [Enter] key.

		2. Wait until a second screen appears, and then press [+].
iPP3XX	Press [.] key and Yellow key	When splash screen displays during power up (for 2 seconds): 1. Press [2], [6], [3], [4], and then press the green [Enter] key. 2. Wait until a second screen appears, and then press [+].

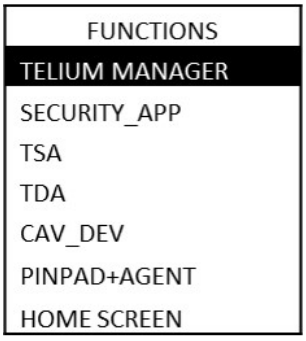
3_2 Navigating Menus

This section describes how to access the Functions menu. Scrolling through the menu options is specific to the device as shown in the below table. Scrolling can be done by selecting a menu key or by selecting the corresponding menu number.

Device	Scroll Up	Scroll Down
iPP3XX	[F3] key	[F2] key
iSC250	[+] or [F3] key	[F2] key
iSC350	[+] or [F3] key	[F2] key
iSC480	[F] or [F3] key	[F2] key
iSMPx	[F3] key	[F2] key
iWL250	[F4] key	[F3] key

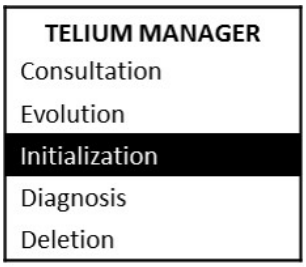
3_3 FUNCTIONS Menu

Access to the Telium Manager, Telium System Application (TSA), and Telium Download Application (TDA) is via the **FUNCTIONS** menu which is illustrated in the following figure.



4_Telium Manager Menu

The Telium Manager menu is accessed via the FUNCTIONS main menu, and allows the user to verify hardware configuration settings. Refer to the below figure which shows the Telium Manager main menu.



To verify contactless or MSR formats, refer to the following section:

- Verify Contactless and Magnetic Stripe Reader (MSR) Formats

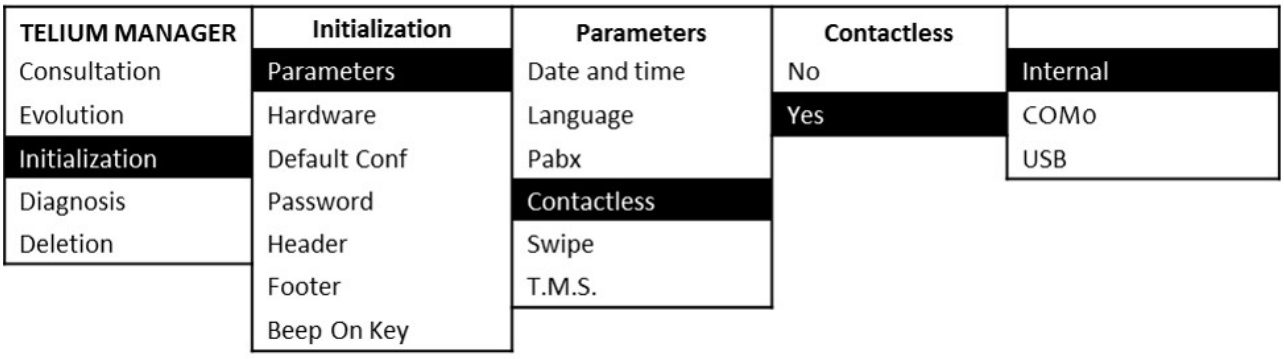
4_1 Verify Contactless and Magnetic Stripe Reader (MSR) Formats

The Telium Manager menu allows the user to verify that contactless is enabled and that the correct ISO format is selected for the MSR. Please refer to the following sections:

- Contactless
- MSR Swipe (ISO)

4_1_1 Contactless

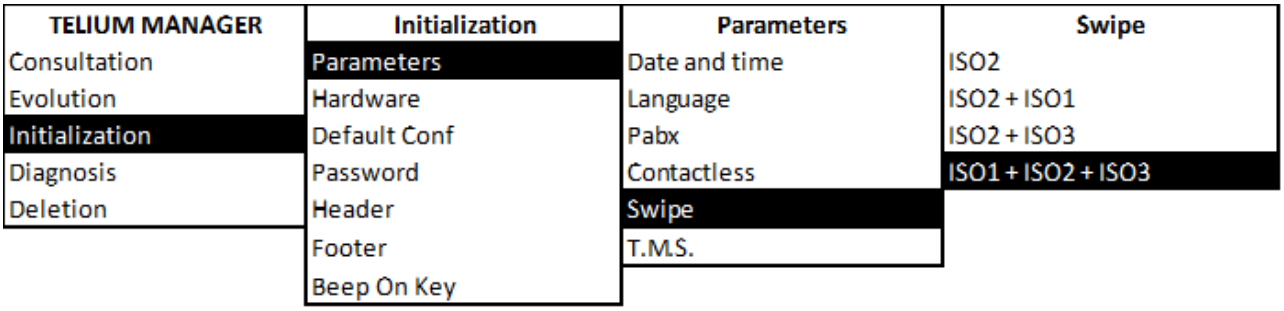
The contactless function used for reading contactless MSR cards, EMV cards, and some NFC enabled devices must be enabled in the application and hardware. To verify that the contactless card reader is enabled for the hardware, choose the [Initialization] option from the Telium Manager menu and follow the subsequent selections as illustrated in the below figure. In the below example, internal contactless is selected.



When contactless is enabled, the first contactless LED will illuminate. This does not apply to the iSC480 with internal contactless.

4_1_2 MSR Swipe (ISO)

ISO refers to the MSR tracks to be read. To verify that the correct ISO is selected, choose the [Initialization] option from the Telium Manager menu and follow the subsequent selections as illustrated in the below figure.



MSR tracks to read can be determined in the application as well. Refer to the appropriate Developer's Guide for more information.

5_Telium System Application (TSA) Menu

The Telium System Application (TSA) menu allows the user to verify the presence of encryption keys and serial numbers. The TSA menu is accessed from the Functions main menu. Three menu options enable the user to verify that the encryption keys are present (Key Check Value, Master Session, and DUKPT) and provide details on the keys which are loaded. Refer to the below figure for an illustration of the TSA menu.

TSA
0 – TERMINAL SERIAL #
1 – SECRET AREA
2 – SECURE DATA KEYS
3 – KEY CHECK VALUE
4 – DUKPT KSN
5 - SCHEMES
6 - PREPARE FOR RKI

Please refer to the following sections for terminal serial number and encryption validation:

- Terminal Serial Number
- Encryption Validation

5_1 Terminal Serial Number

5_1_1 Hardware Part Number

The hardware part number is the device serial number. Only the last 8 characters of the hardware part number (40000808 for the following example image) are displayed on the device screen when selecting the [Terminal Serial #] option.

5_1_2 Injected Serial Number

The injected serial number matches the “Customer Info” label on the back of the device. Refer to the following image which shows a "Customer Info" label. The injected serial number for this device would be "2012048SC070063".

5_1_3 Terminal Serial Number as Displayed on the Screen

When the [Terminal Serial #] option is selected, the TSA will display the last 8 digits of the hardware part number and the complete injected serial number as illustrated in the below image.

0 – TERMINAL SERIAL #	TERMINAL SERIAL NUMBER
1 – SECRET AREA	HARDWARE
2 – SECURE DATA KEYS	XXXXXXXX (8 DIGITS)
3 – KEY CHECK VALUE	INJECTED
4 – DUKPT KSN	XXXXXXXXXXXXXXX (16 DIGITS)
5 - SCHEMES	
6 - PREPARE FOR RKI	

For the above example images, the terminal serial number would be displayed as follows:

0 – TERMINAL SERIAL #	TERMINAL SERIAL NUMBER
1 – SECRET AREA	HARDWARE
2 – SECURE DATA KEYS	40000808
3 – KEY CHECK VALUE	INJECTED
4 – DUKPT KSN	2012048SC070063
5 - SCHEMES	
6 - PREPARE FOR RKI	

5_2 Encryption Validation

In order to perform a Debit, eWIC or EBT transaction, an encryption key must be injected into the device. During the loading process, the encryption key and Key Serial Number (KSN) are injected. Only the KTK and KSN are visible for customer viewing.

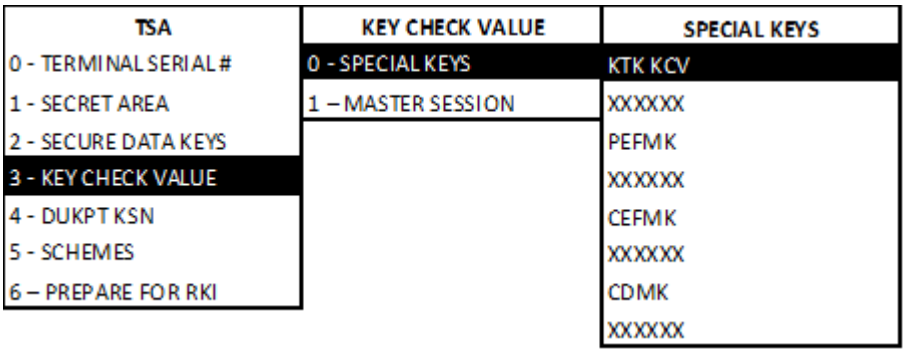
An injected encryption key is also required for some MSR encryptions (e.g., Magtek, Monetra). MSR encryptions are enabled in the application. Ingenico’s devices support Master Session and DUKPT key formats. Encryption key formats are determined by the customer. Follow the validation instruction, per your format. Refer to the following sections for encryption validation:

- Validating Special Keys
- Master Session

- DUKPT KSN

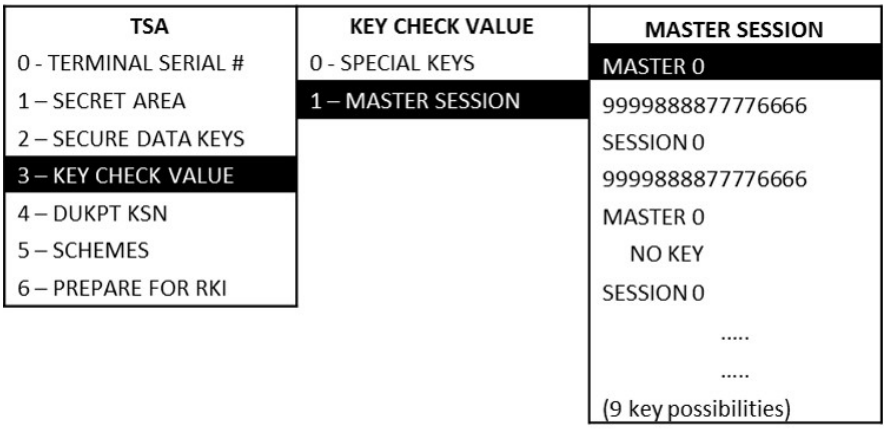
5_2_1 Validating Special Keys

To validate the Key Check Value (KTK), select the [KEY CHECK VALUE] option from the Telium System Application menu and follow the subsequent selections as illustrated in the below figure. Only the KTK value needs to be checked to ensure KTK encryption. If a generic default value of “KTK KCV (7AE462)” is displayed then this indicates that no keys are present.



5_2_2 Master Session

Using the Key Check Value menu, verify that keys are injected. Refer to the below figure for this process.



5_2_3 DUKPT KSN

The DUKPT KSN consists of 3 different values. The first 10 digits represent the KSI value assigned to a customer or region. The KSI is used to verify the key information. The next 5 digits are the device ID, and the last 5 digits are the encryption counter. The counter increases for each encryption. To validate that the DUKPT encryption key has been injected and is correct, select the [DUKPT KSN] option from the TSA menu. Refer to the below figure.

TSA	DUKPT KSN
0 - TERMINAL SERIAL #	DUKPT 0
1 - SECRET AREA	FFFF9876543210A00001
2 - SECURE DATA KEYS	DUKPT n
3 - KEY CHECK VALUE	.....
4 - DUKPT KSN	.....
5 - SCHEMES	(5 key possibilities)
6 – PREPARE FOR RKI	

6_Telium Download Application (TDA) Menu

The Telium Download Application (TDA) is an Ingenico application that can be used to perform the following functions:

- Configure communication port settings.
- Perform initial download and updates of software.

Refer to the section Accessing the TDA Menu which will step you through the menu selection to verify or change settings for RS-232, Ethernet, Tailgate, and Bluetooth.

Communication port settings can also be observed on the main application splash screen.

> TDA settings are configured within TDA.XML. Refer to the DIV350779 RBA Developer's Guide and DIV350825 UPOS Developer's Guide for more info.

> Refer to the DIV350827 Telium Download Guide for more information on TDA.

6_1 Accessing the TDA Menu

The TDA menu provides the user with options to verify and reconfigure communication settings. To view the communication port settings, select the [CONFIGURATION] option from the TDA menu and follow the subsequent selections as illustrated in the below figure.

TDA VX.X.X.XXXX	CONFIGURATION	COMMUNICATION	SELECT COMM. TYPE
0 - CONFIGURATION	0 - COMMUNICATION	0 - DOWNLOAD METHOD	0 – SERIAL
1 - DOWNLOAD	1 - DOWNLOAD TYPE	1 - EFT Settings	1 – ETHERNET
2 - REMOTE DOWNLOAD	2 - EFT SETTINGS	2 - SELECT COMM. TYPE	2 – USB-HID
3 - TMS DOWNLOAD	3 - TMS SETTINGS		3 – USB<>SERIALCONV
4 - ACTIVE SOFTWARE			4 – TAILGATE
			5 – BLUETOOTH
			6 – MAGICbOX SERIAL

By selecting the [SELECT COMM. TYPE] option you will be able to choose which communication port settings to view (i.e. serial, Ethernet, Tailgate). Communication port settings can also be observed on the main application splash screen. If the communication port settings are changed, press the [CANCEL] key several times in the Save and Reboot menu. Then select [YES] to save changes.

Refer to the following sections for verifying or changing Serial, Ethernet, USB-HID, USB-CDC, Tailgate, or Bluetooth communication settings:

- RS-232 (Serial) Setting

- Ethernet Settings
- USB-HID Setting
- USB-CDC Setting
- Tailgate Settings
- Bluetooth Settings

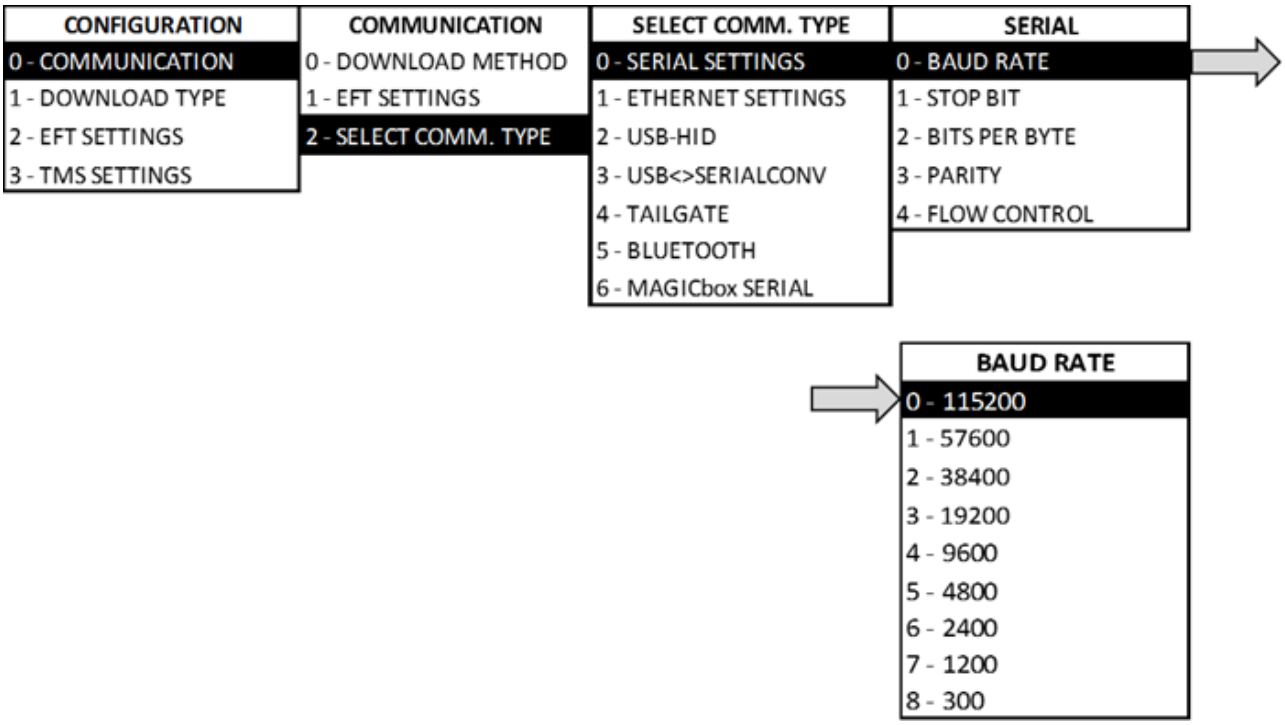
To reverse the steps taken in any of the above menus, and go back to the Telium Manager main menu, press the red [X] keypad button, then press the [+] or [F] keypad button.

If the communication port settings are changed, press the [CANCEL] key several times in the Save and Reboot menu. Then select [YES] to save changes.

6_1_1 RS-232 (Serial) Setting

To view serial port settings, select the [CONFIGURATION] option from the Telium Download Application menu and follow the subsequent selections as illustrated in the below figure. By selecting these options you will be able to view baud rate, stop bit, bits per byte, parity, and flow control settings.

To change baud rate, follow the menu selection as illustrated below. In the below example, a baud rate of 115,200 (default) is selected.



To change bits per byte, from the SERIAL SETTINGS menu proceed as follows:

SERIAL SETTINGS	BITS PER BYTE
0 - BAUD RATE	0 - 7
1 - STOP BIT	1 - 8
2 - BITS PER BYTE	
3 - PARITY	
4 - FLOW CONTROL	

To change parity, from the SERIAL SETTINGS menu proceed as follows:

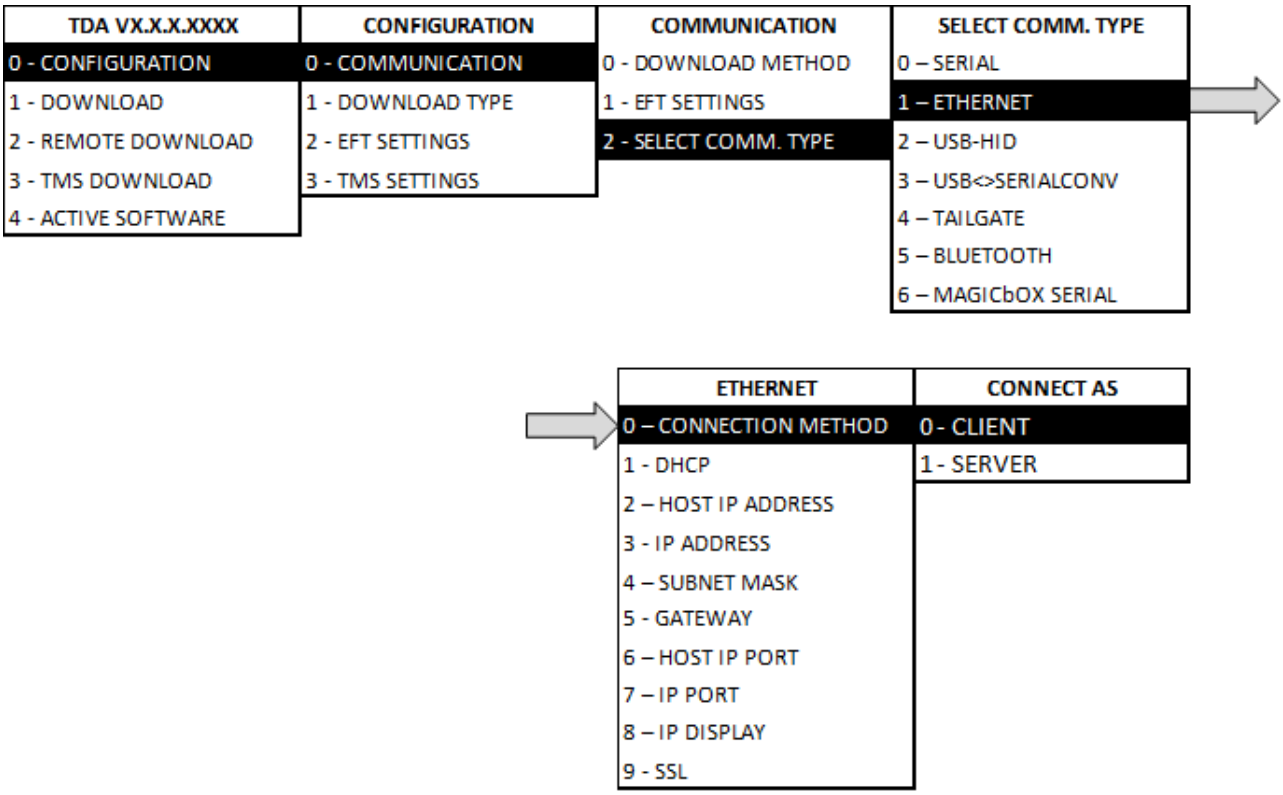
SERIAL SETTINGS	PARITY
0 - BAUD RATE	0 - NONE
1 - STOP BIT	1 - ODD
2 - BITS PER BYTE	2 - EVEN
3 - PARITY	
4 - FLOW CONTROL	

To change flow control, from the SERIAL SETTINGS menu proceed as follows:

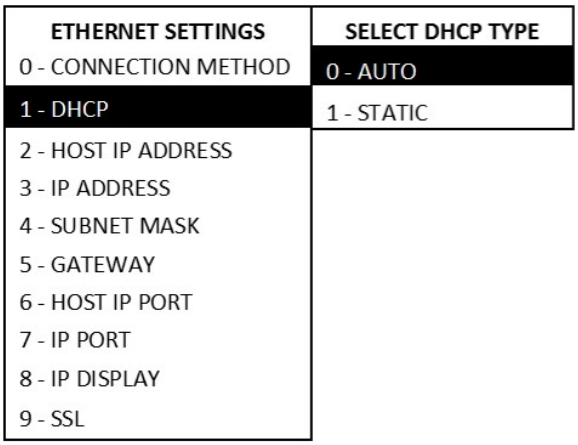
SERIAL SETTINGS	FLOW CONTROL
0 - BAUD RATE	0 - HARDWARE
1 - STOP BIT	1 - NONE
2 - BITS PER BYTE	
3 - PARITY	
4 - FLOW CONTROL	

6_1_2 Ethernet Settings

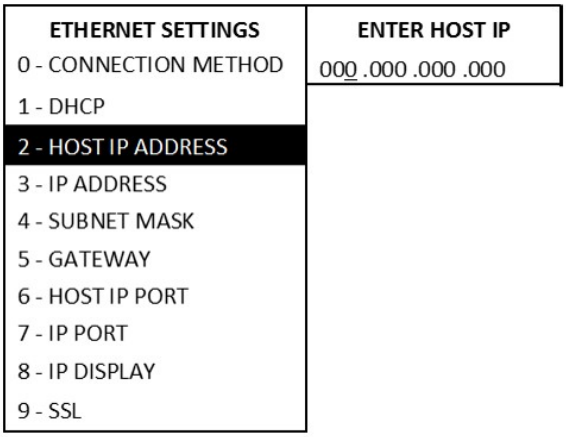
To view or reconfigure Ethernet port settings, select the [CONFIGURATION] option from the Telium Download Application menu and follow the subsequent selections as illustrated in the below figure. In the below example, the Ethernet connection method is selected as “client.”



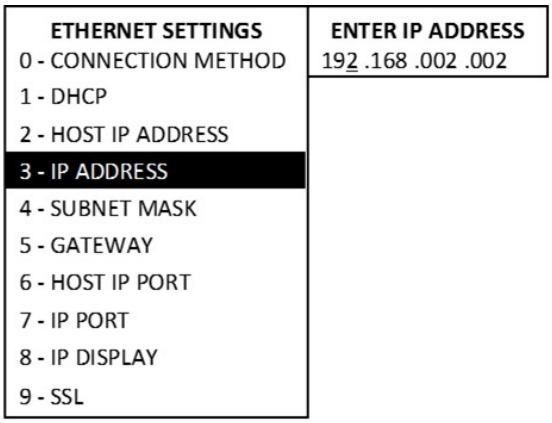
To set or change the DHCP setting, proceed as follows from the Ethernet Settings menu:



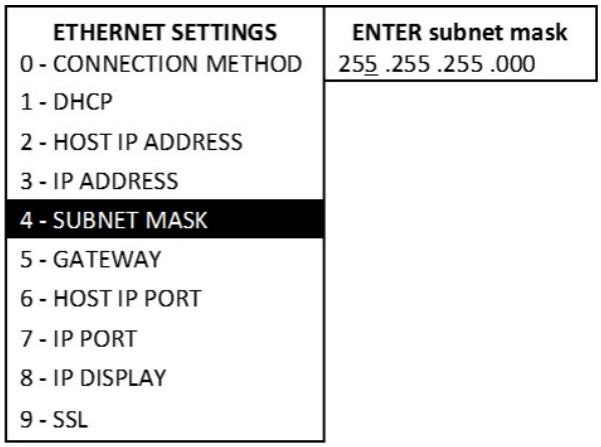
To set or change the Host IP address, proceed as follows from the Ethernet Settings menu:



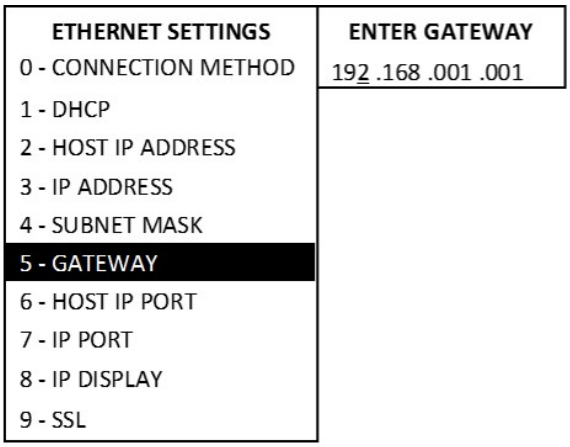
Enter values with keypad and press "Enter". To set or change the IP address, proceed as follows from the Ethernet Settings menu:



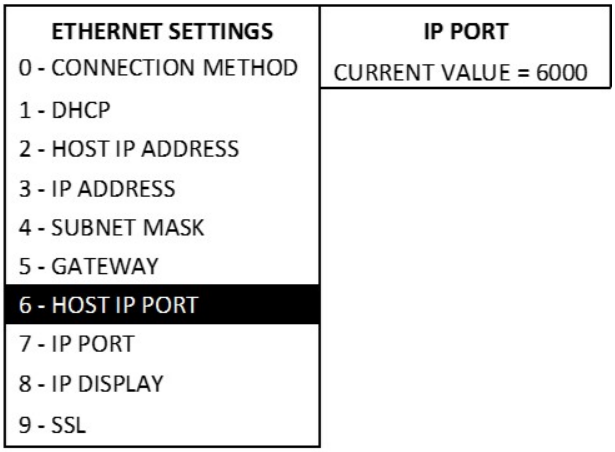
To set or change the subnet mask, proceed as follows from the Ethernet Settings menu:



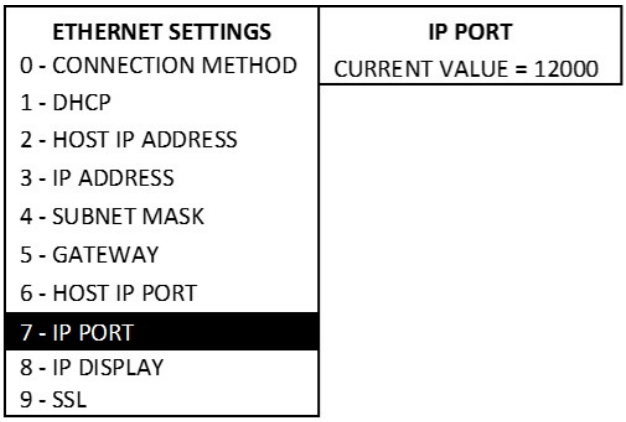
To set or change the Gateway, proceed as follows from the Ethernet Settings menu:



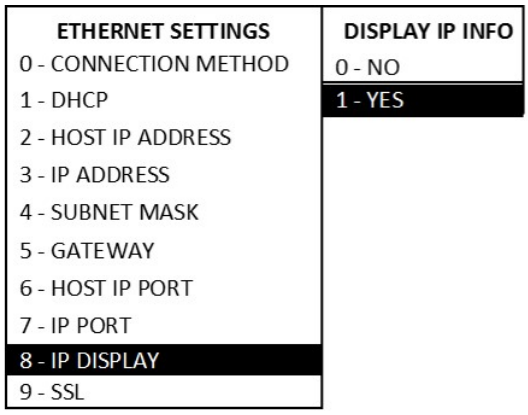
To set or change the Host IP port, proceed as follows from the Ethernet Settings menu:



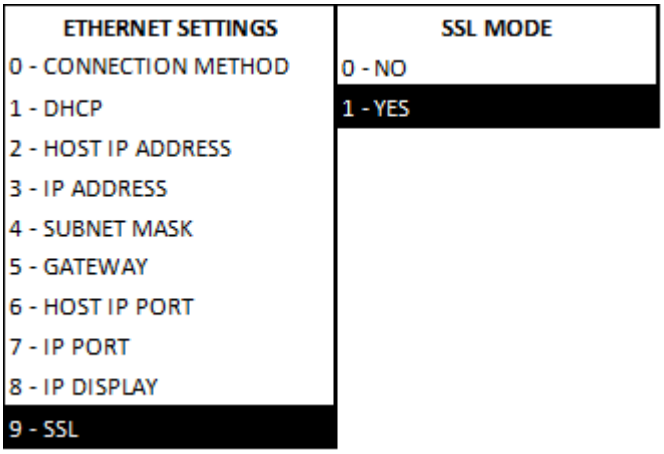
To set or change the IP port, proceed as follows from the Ethernet Settings menu:



To set or change the IP display, proceed as follows from the Ethernet Settings menu:



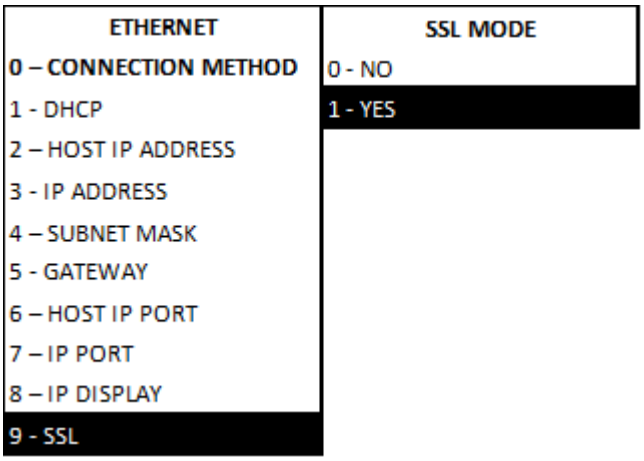
To select SSL mode, proceed as follows from the Ethernet Settings menu:



Information will be displayed on the "splash" screen if "yes" is selected.

6_1_2_1 Enabling SSL

To set or change the SSL mode selection, proceed as follows from the Ethernet Settings menu:



6_1_3 USB-HID Setting

To view or select USB port settings, select the [CONFIGURATION] option from the Telium Download Application menu and follow the subsequent selections as illustrated in the below figure.

TDA VX.X.X.XXXX	CONFIGURATION	COMMUNICATION	SELECT COMM. TYPE
0 - CONFIGURATION	0 - COMMUNICATION	0 - DOWNLOAD METHOD	0 – SERIAL
1 - DOWNLOAD	1 - DOWNLOAD TYPE	1 - EFT SETTINGS	1 – ETHERNET
2 - REMOTE DOWNLOAD	2 - EFT SETTINGS	2 - SELECT COMM. TYPE	2 – USB-HID
3 - TMS DOWNLOAD	3 - TMS SETTINGS		3 – USB<>SERIALCONV
4 - ACTIVE SOFTWARE			4 – TAILGATE
			5 – BLUETOOTH
			6 – MAGICbOX SERIAL

6_1_4 USB-CDC Setting

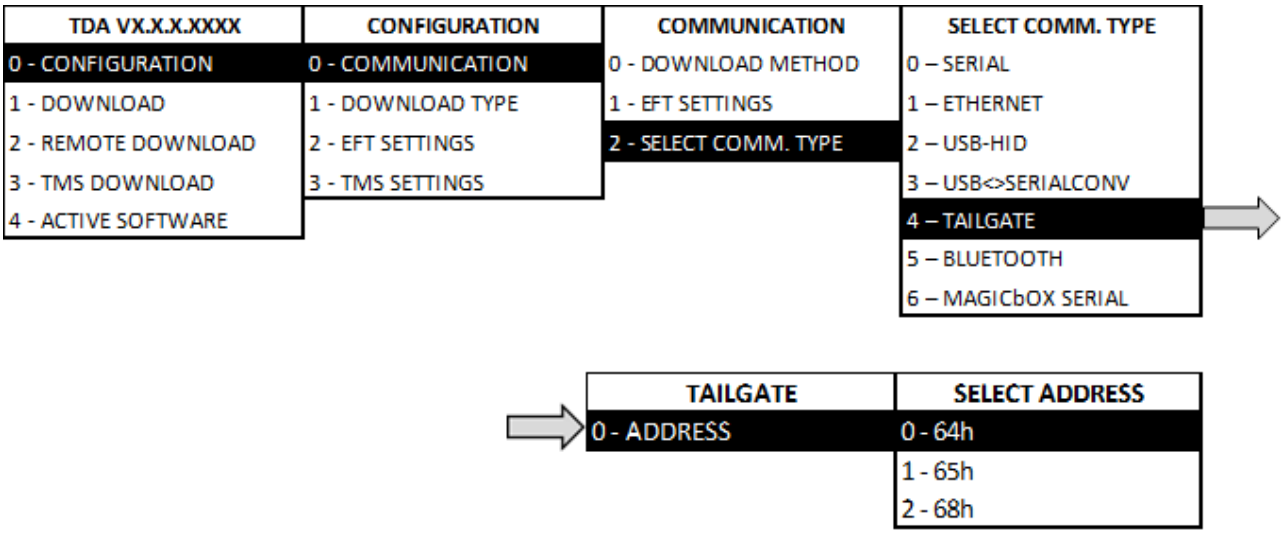
To view or select USB-CDC port settings, select the [CONFIGURATION] option from the Telium Download Application menu and follow the subsequent selections as illustrated in the below figure.

TDA VX.X.X.XXXX	CONFIGURATION	COMMUNICATION	SELECT COMM. TYPE
0 - CONFIGURATION	0 - COMMUNICATION	0 - DOWNLOAD METHOD	0 – SERIAL
1 - DOWNLOAD	1 - DOWNLOAD TYPE	1 - EFT SETTINGS	1 – ETHERNET
2 - REMOTE DOWNLOAD	2 - EFT SETTINGS	2 - SELECT COMM. TYPE	2 – USB-HID
3 - TMS DOWNLOAD	3 - TMS SETTINGS		3 – USB<>SERIALCONV
4 - ACTIVE SOFTWARE			4 – TAILGATE
			5 – BLUETOOTH
			6 – MAGICbOX SERIAL

The Jungo driver is recommended when using the USB-CDC communication setting.

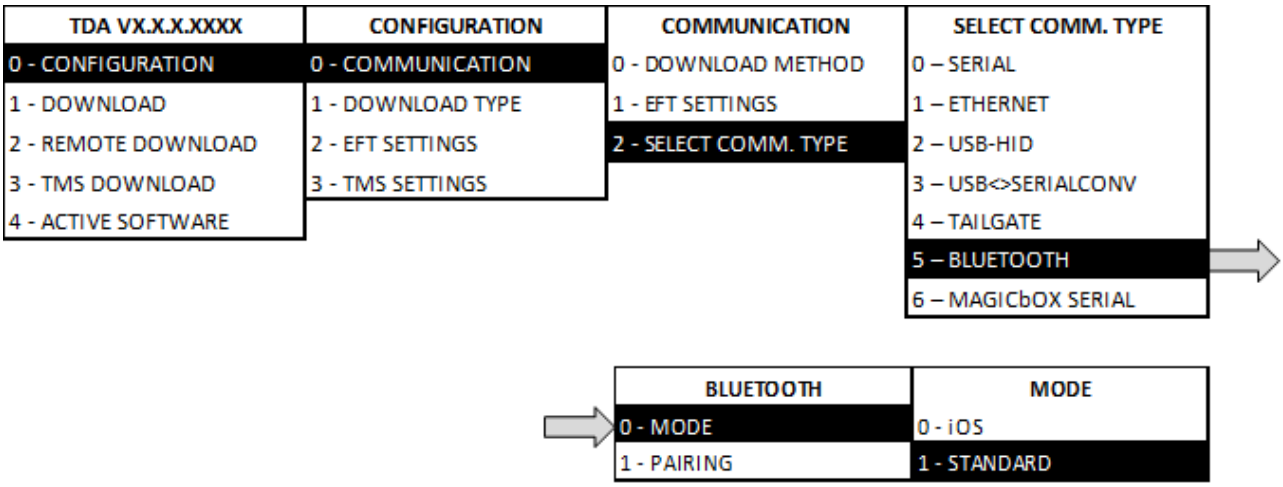
6_1_5 Tailgate Settings

To configure Tailgate settings, select [TAILGATE SETTINGS] from the **SELECT COMM. TYPE** menu. Select option ‘0’ for address, and then select the address as illustrated in the below figure.



6_1_6 Bluetooth Settings

To configure Bluetooth settings, select [BLUETOOTH] from the SELECT COMM. TYPE menu. To select Bluetooth mode, select the [MODE] option and choose the mode as illustrated in the below figure.



To select Bluetooth pairing, select the [PAIRING] option and choose the pairing as illustrated in the below figure.

SELECT COMM. TYPE
0 – SERIAL SETTINGS
1 – ETHERNET SETTINGS
2 – USB-HID
3 – USB<>SERIALCONV
4 – TAILGATE
5 - BLUETOOTH
6 – MAGICbOX SERIAL

BLUETOOTH
0 - MODE
1 - PAIRING

PAIRING
PIN CODE
XXXXXXXX

7_PIN Pad Device Quick Reference Guides

The following sections provide quick references for the devices covered in this manual. This includes a general device overview, power requirements, Secure Access Modules, contactless, interface connections, and interface cable specifications.

- iPP320 and iPP350 Quick Reference
- iSC250 Quick Reference
- iSC350 Quick Reference
- iSC480 Quick Reference
- iSMP Quick Reference
- iSMP Companion Quick Reference
- iWL250 Quick Reference
- iSelf Series Quick Reference

7_1 iPP320 and iPP350 Quick Reference

The iPP320 and iPP350 Quick Reference is organized into the following sections:

- iPP320 and iPP350 Overview
- iPP320 and iPP350 Power Requirements
- iPP320 and iPP350 Secure Access Modules
- iPP320 and iPP350 Host Interface Options

7_1_1 iPP320 and iPP350 Overview

This section provides a quick reference for the iPP320 and iPP350 terminals. These terminals are functionally identical with the exception of the graphical display type. Both terminals feature a contactless card reader, smart card reader, and MSR as shown in the below image.

7_1_2 iPP320 and iPP350 Power Requirements

An external power supply is required when connecting the iPP320 or iPP350 to the Host via Ethernet and 5m length RS-232 cables. Ingenico specifies a DC power supply (model number 179901469) for this device. These terminals may also be powered from a POS via the USB (5V, 500mA) interface.

> ⚠ Connect the cable to the Multipoint port before connecting power to the terminal. Only use the power supply which was provided by Ingenico.

> ⚠ Do not disconnect power from the terminal until you have been instructed to do so.

> ⚠ Before you disconnect the terminal from the POS, you must first disconnect power in order to prevent damage to the terminal.

7_1_3 iPP320 and iPP350 Secure Access Modules

There are three Secure Access Module (SAM) slots designed to hold full-size SAM cards. These slots are accessible via an access door on the bottom of the device as shown in the below image.

7_1_4 iPP320 and iPP350 Host Interface Options

A master port which is located on the back of the device enables the iPP320 and iPP350 PIN pad devices to connect to the Host via the following interfaces:

- USB
- RS-232
- Ethernet

Refer to the below image for the interface port location on these devices.

7_2 iSC250 Quick Reference

The iSC250 Quick Reference is organized into the following sections:

- iSC250 Overview
- iSC250 Power Requirements
- iSC250 SAM and Micro SD Card Slots

- iSC250 Contactless Module
- iSC250 Peripheral Connectors and Host Interface Options
- iSC250 Multipoint Connector

7_2_1 iSC250 Overview

The iSC250 terminal can communicate with a host device such as a Point of Sale (POS) system or PC via serial (RS-232), Tailgate (RS-485), USB, VGA, or Ethernet interfaces. It features a stylus, smart card reader, MSR, and optional contactless card reader as shown in the below figure.

7_2_2 iSC250 Power Requirements

When interfacing the iSC250 to the POS via RS-232, USB (5V), or Ethernet interfaces, an Ingenico power supply (192011597) is required. Power may also be provided by the POS via USB (12V or 24V) or RS-485 (via Multipoint) connections. If an Ingenico power supply was provided with the terminal, plug the power supply connector into the jack on the Multipoint cable.

⚠ Connect the cable to the Multipoint port before connecting power to the terminal. Only use the power supply which was provided by Ingenico.

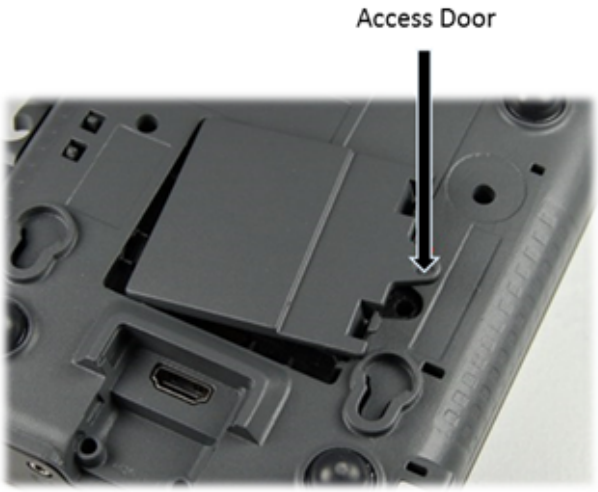
⚠ Do not disconnect power from the terminal until you have been instructed to do so.

⚠

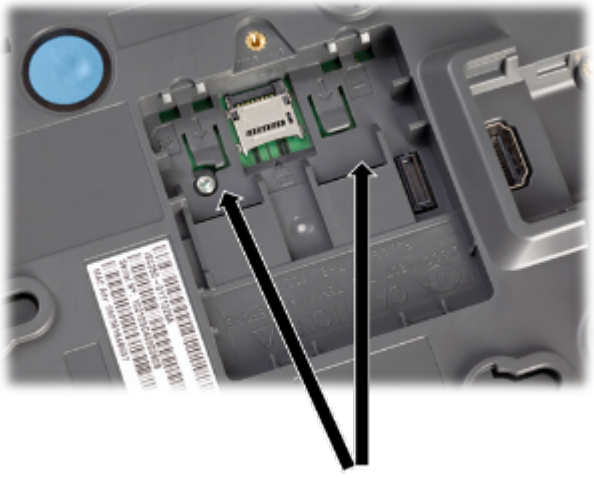
Before you disconnect the terminal from the POS, you must first disconnect power in order to prevent damage to the terminal.

7_2_3 iSC250 SAM and Micro SD Card Slots

There are two Secure Access Module (SAM) slots and two Micro SD slots which are accessible via an access door which is located on the bottom of the terminal. The access door may be opened by removing the screw which secures it as illustrated in the below image.



With the access door removed, there are two slots where Secure Access Modules may be installed as shown in the below image.

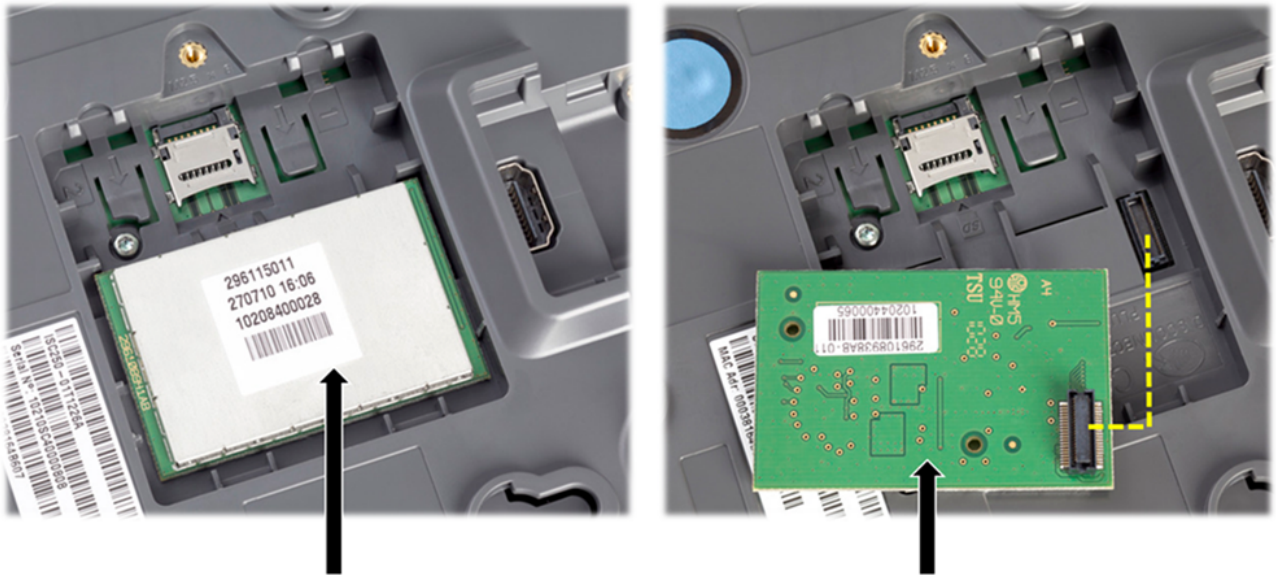


Secure Access Module locations

The SAM cards, when installed, store proprietary information for use with smart card-based applications. The Micro SD cards provide additional memory.

7_2_4 iSC250 Contactless Module

The contactless module is accessible via the access door on the bottom of the device. Refer to the below image which shows the location and removal of the contactless module.



7_2_5 iSC250 Peripheral Connectors and Host Interface Options

The iSC250 may interface to a Host system using any of the following interface options:

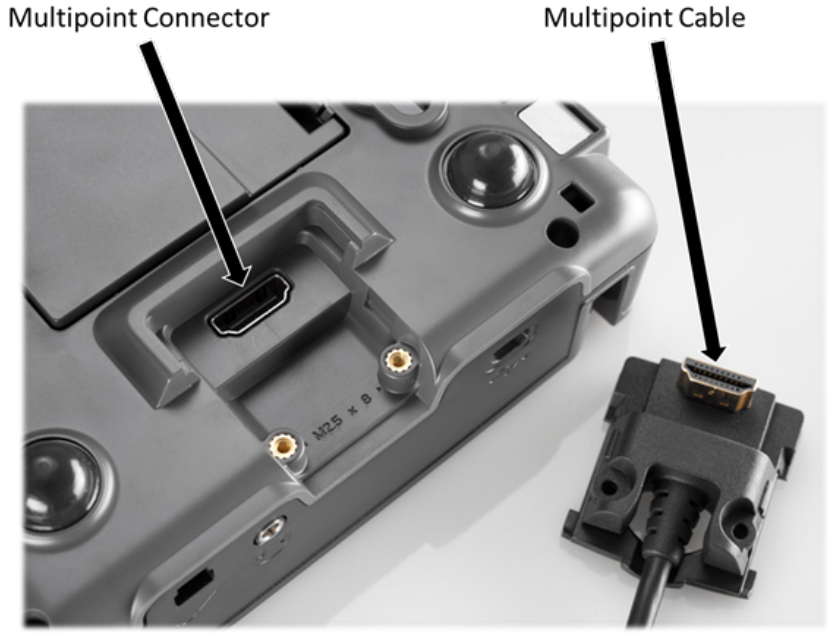
- RS-232
- Tailgate (RS-485)
- USB
- Ethernet

Refer to the iSC250 Multipoint Connector section for a description of the Multipoint port which facilitates RS-232, Tailgate, and Ethernet connections with the Host system.

The USB port is located on the rear of the terminal as shown in the below image. Also located on this panel are the audio jack and stylus connector.

7_2_6 iSC250 Multipoint Connector

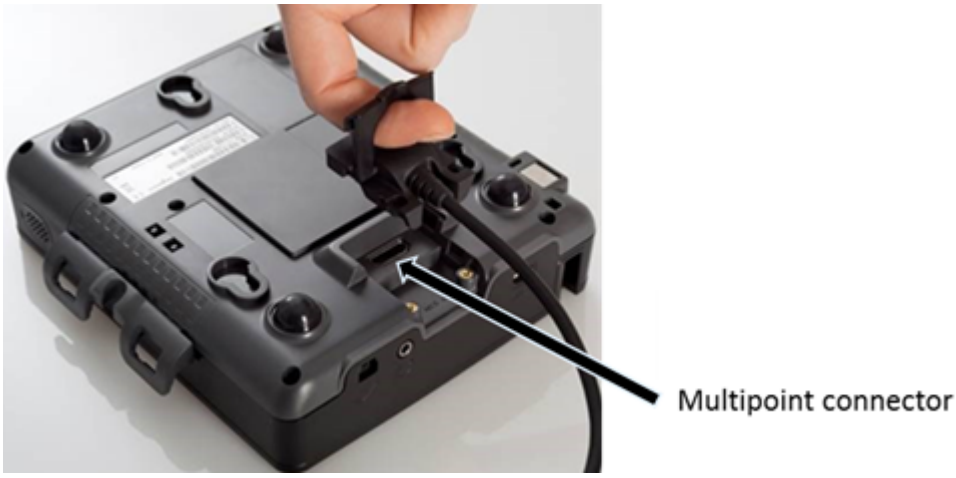
The Multipoint connector located on the bottom of the terminal may be attached with screws for additional security. This connector is used to connect RS-232, Tailgate (RS-485), USB, Ethernet, Magic box or Universal cables. It is important that you are using the correct cable for the required interface. Special care must be taken when connecting or disconnecting the cable which attaches to the Multipoint. Refer to the below image which shows the Multipoint connector and cable.



To disconnect the cable from the Multipoint connector:

1. Disconnect power from the iSC250 to prevent damage to the device.

2. Place the iSC250 in front of you with the bottom of the terminal facing up. Be careful not to place the device on a surface where the display screen can be scratched or damaged.
3. If you have secured the cable with screws, carefully remove the two screws from either side of the Multipoint cable.
4. Carefully pull out the Multipoint cable using the loop as shown in the below image.



7_3 iSC350 Quick Reference

The iSC350 Quick Reference is organized into the following sections:

- iSC350 Overview
- iSC350 Power Requirements
- iSC350 Secure Access Modules
- iSC350 Peripheral Connectors and Host Interface Options

7_3_1 iSC350 Overview

The iSC350 device can communicate with a host device such as a POS or PC via RS-232, Tailgate (RS-485), USB or Ethernet interfaces. This terminal features a stylus, optional integrated contactless card reader, smart card reader, and MSR as shown in the below image.

7_3_2 iSC350 Power Requirements

The iSC350 can receive power from the POS system or via an external power supply provided by Ingenico. When interfacing to the POS via RS-232, USB (5V), or Ethernet interfaces, a separate Ingenico power supply (192008227) is required. Power may also be provided by the POS via USB (12V or 24V) or RS-485 (via Multipoint) connections. If an Ingenico power supply was provided with the terminal, plug the power supply connector into the jack on the Multipoint cable.

⚠ Connect the cable to the Multipoint port before connecting power to the terminal. Only use the power supply which was provided by Ingenico.

⚠ Do not disconnect power from the terminal until you have been instructed to do so.

⚠ Before you disconnect the terminal from the POS, you must first disconnect power in order to prevent damage to the terminal.

7_3_3 iSC350 Secure Access Modules

There are three optional Secure Access Module (SAM) slots for the iSC350 which are accessible via an access door located on the bottom of the terminal as shown in the below image.

7_3_4 iSC350 Peripheral Connectors and Host Interface Options

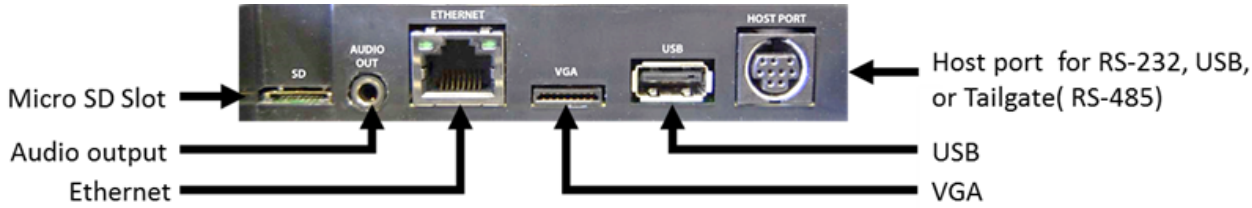
The iSC350 PIN pad device may interface with a Host system using any of the following options:

- RS-232
- Tailgate (RS-485)
- USB
- Ethernet

Interface ports and peripheral connections are located on a panel at the back of the device. Peripheral connectors on this panel include:

- VGA connection
- Audio output
- Micro SD slot

Refer to the below image which shows the location of the interface ports and peripheral connectors.



Depending on device configuration, a USB port and audio output connection are available on the side ports as shown in the below image.

A cable retention bar secures cables to the terminal in order to prevent cables from becoming loose or damaged. When servicing cables, this bar must be removed and then properly reinstalled when servicing is completed. Refer to the below image of the cable retention bar.

To loosen the cable retention bar:

1. Turn the thumbscrew counterclockwise.
2. Lift the cable up and away from the terminal.

To reinstall the cable retention bar:

1. Position the cable retention bar on the terminal with cables aligned in their slots.
2. Turn the thumbscrew clockwise until tightened.

7_4 iSC480 Quick Reference

The iS480 Quick Reference is organized into the following sections:

- iSC480 Overview

- iSC480 Power Requirements
- iSC480 SAM and Micro SD Card Slots
- iSC480 Peripheral Connectors and Host Interface Ports

7_4_1 iSC480 Overview

This section provides a quick reference for the iSC480 PIN pad device. The iSC480 features a color touchscreen, MSR, smart card reader, and contactless card reader. The contactless card reader is available as an integrated module or as an external module with antenna. Refer to the below image for an overview of the iSC480 PIN pad device.

iSC480 with External Card reader **iSc480 with Internal Card Reader**

7_4_2 iSC480 Power Requirements

A separate Ingenico DC power supply (192006210 and power cord 188413214) is required when connecting the iSC480 device via RS232, USB (5V), and Ethernet. When the device is powered from a POS, power may be provided via a USB (12V or 24V) or RS485 cable.

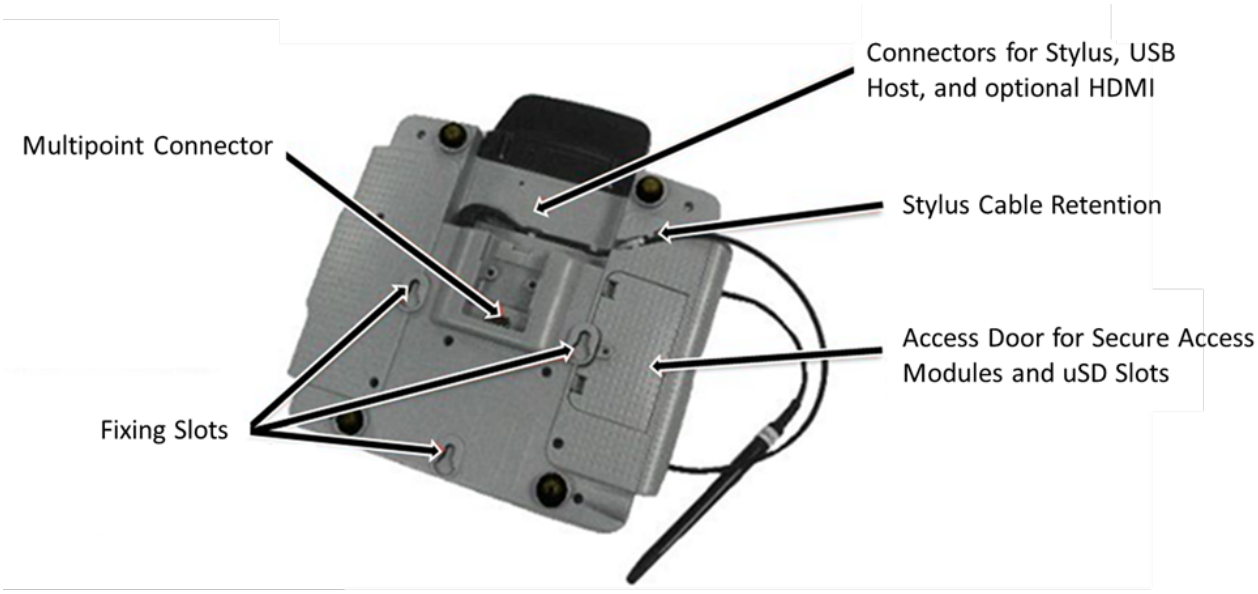
⚠ Connect the cable to the Multipoint port before connecting power to the terminal. Only use the power supply which was provided by Ingenico.

⚠ Do not disconnect power from the terminal until you have been instructed to do so.

⚠ Before you disconnect the terminal from the POS, you must first disconnect power in order to prevent damage to the terminal.

7_4_3 iSC480 SAM and Micro SD Card Slots

The iSC480 features two Secure Access Module (SAM) slots to hold full size SAM cards. These cards store proprietary information for use with smart cardbased applications. Refer to the below image for the location of the SAM access door.

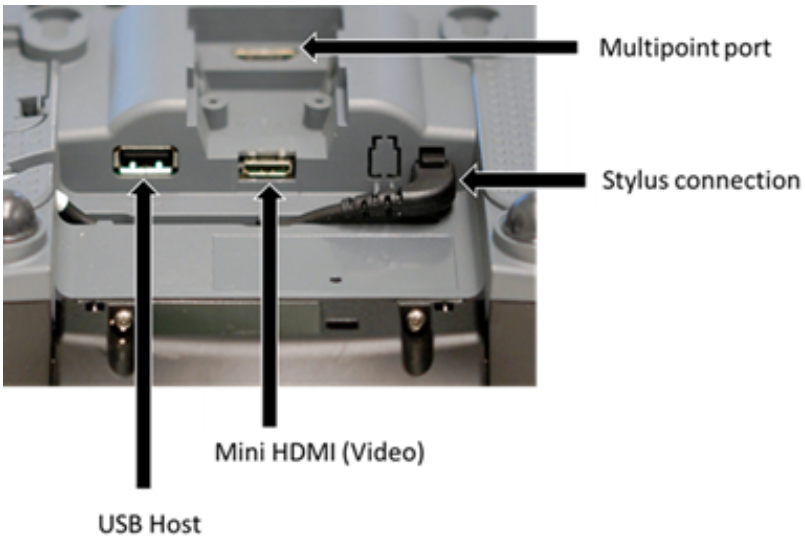


7_4_4 iSC480 Peripheral Connectors and Host Interface Ports

The iSC480 PIN pad device may interface with the Host system via the following interface options:

- RS-232
- Tailgate (RS-485)
- USB
- Ethernet

All interface options are via the Multipoint connector. Refer to the below image which shows the location of the USB port and Multipoint connector. Also shown are the stylus connection and video port.



7_5 iSMP Quick Reference

The iSMP Quick Reference is organized into the following sections:

- iSMP Overview
- iSMP Power Requirements
- iSMP SAM and Micro SD Card Slots
- iSMP Interface Options
- iSMP Barcode Reader

7_5_1 iSMP Overview

This section provides a quick reference for the iSMP PIN pad device. The iSMP processes MSR, contactless, and EMV cards, and is Bluetooth compatible. It features an integrated barcode reader, and is designed to integrate with an iPod Touch for wireless operation. Refer to the below image for an overview of the iSMP.

7_5_2 iSMP Power Requirements

The iSMP may be charged through the cradle accessory, or via the Multi-plug micro-USB cable. The device features a 1200mAh battery which supports up to 800 card transactions and 66 hours in standby mode.

7_5_3 iSMP SAM and Micro SD Card Slots

There are no provisions for Secure Access Modules in the iSMP.

7_5_4 iSMP Interface Options

Interface options include Bluetooth class III and micro-USB AB slave for software upgrading or for charging for integration with iPod Touch. Refer to the below image which shows the USB cable connection.

7_5_5 iSMP Barcode Reader

The iSMP features a factory option 1D/2D barcode reader which supports all major standards. The barcode reader is located in the edge of the device as shown in the below image.

7_6 iSMP Companion Quick Reference

The iSMP Companion Quick Reference is organized into the following sections:

- iSMP Companion Overview
- iSMP Companion Power Requirements
- iSMP Companion Interface Options
- iSMP Companion Barcode Reader

7_6_1 iSMP Companion Overview

This section provides a quick reference for the iSMP Companion (iSMPc) PIN pad device. The iSMP Companion processes MSR, contactless, and EMV cards, and is Bluetooth compatible. Refer to the below image for an overview of this device.

7_6_2 iSMP Companion Power Requirements

The iSMP Companion may be charged through the cradle accessory, or via the Multi-plug micro-USB cable. The device features a 1200mAh battery for extended use independent of a power connection.

7_6_3 iSMP Companion Interface Options

Interface options include Bluetooth class II and micro-USB AB slave for software upgrading or for charging.

7_6_4 iSMP Companion Barcode Reader

The iSMP Companion features an optional 1D/2D integrated barcode reader which supports all major standards. The barcode reader is located in the edge of the device as shown in the below image.

7_7 iWL250 Quick Reference

The iWL250 Quick Reference is organized into the following sections:

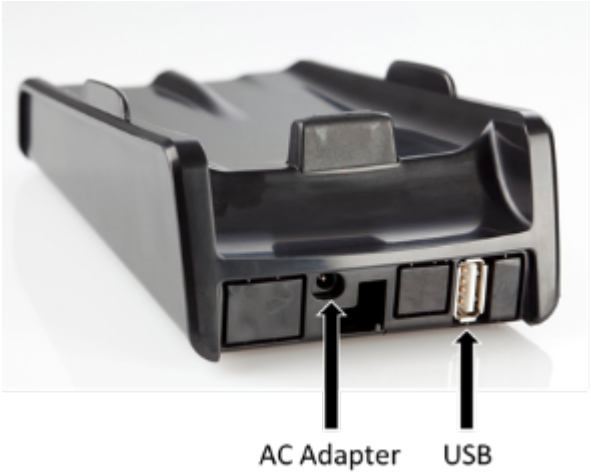
- iWL250 Overview
- iWL250 Power Requirements
- iWL250 SAM and Micro SD Card Slots
- iWL250 Interface with Host System

7_7_1 iWL250 Overview

This section provides a quick reference for the iWL250 PIN pad device. The iWL250 processes MSR cards and EMV cards, and features an optional integrated contactless card reader. Refer to the below image for an overview of this device.

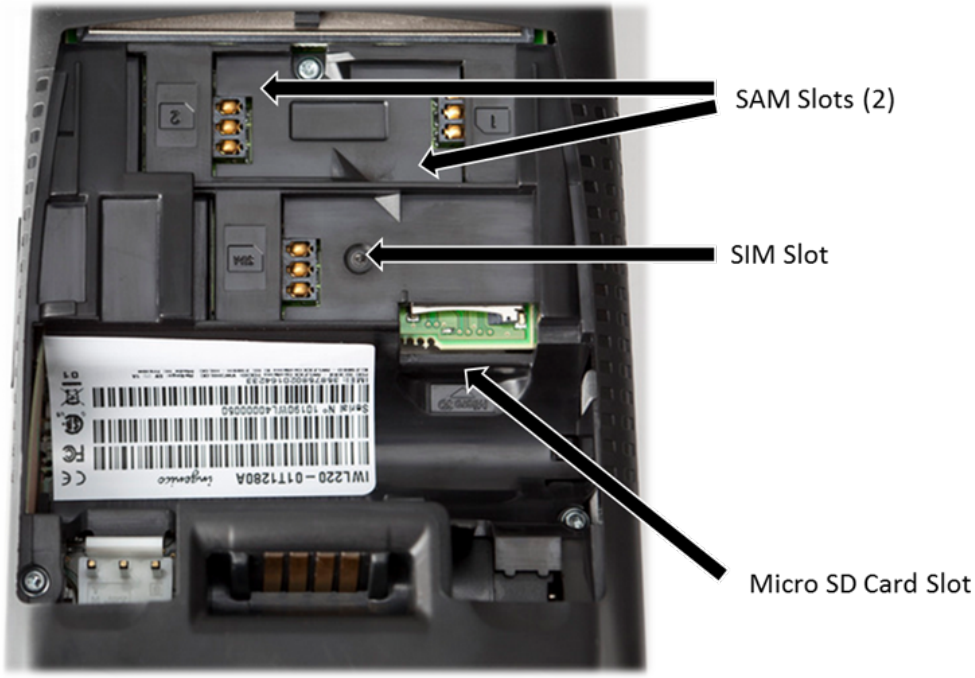
7_7_2 iWL250 Power Requirements

The iWL250 may be powered through the terminal base or through an optional terminal car charger. This device also features a 2050mAh batter for extended use independent of a power connection. Refer to the below image which shows the base and interface connections.



7_7_3 iWL250 SAM and Micro SD Card Slots

The iWL250 can hold 2 SAM cards, 1 SIM card, and 1 micro SD card. Access to these modules is attained by removing the back cover of the device. Refer to the below image which shows the locations for these modules.



7_7_4 iWL250 Interface with Host System

In standalone mode the iWL250 may communicate to the Host system via a micro USB port, or via wireless (GPRS, 3G HSDPA, or Bluetooth).

When connected with its base, communications options for the iWL250 include:

- Dial-up modem (currently not used with RBA and UIA applications)
- USB-A
- RS-232
- Ethernet modem
- Ethernet 10/100 Base T
- USB-B
- Bluetooth Ethernet modem

7_8 iSelf Series Quick Reference

The iSelf Series of devices includes the iUP250, iUR250 smart card and MSR card reader, and the iUC150 contactless card reader as shown in the following image. Configuration options include:

- iUP250 integrated with iUR250 for MSR card and smart card transactions.
- iUP250 integrated with iUC150 for contactless card transactions.
- iUP250 integrated with iUR250 and iUC150 for MSR card, smart card and contactless card transactions.

Refer to the following image for this device family and its components.

This section is organized as follows:

7_8_1 iUP250 Overview

The iUP250 is an iSelf series device which is integrated with external card readers to perform MSR, EMV, Hybrid, and contactless card transactions. The iUP250 features a 128 x 64 pixel black & white graphical display, metallic keyboard, and multiple interface options. Refer to the below image of the iUC250.

7_8_2 iUP250 Power Requirements

The iUP250 is powered by an external 12V-30V DC power supply. Both iUR250 and iUC150 card readers draw 5V power from the iUP250 via the USB.

7_8_3 iUP250 SAM and SIM Options

The iUP250 features provisions for 2 Secure Access Modules and one optional SIM. There are also provisions for one micro SD card.

7_8_4 iUP250 Interface Options

Host interface options for the iUP250 include:

- RS-232
- USB Host
- USB Slave
- MDB Slave
- MDB Master

Integration with the iUR250 is via the USB Slave port.

7_8_5 iUR250 Overview

The iUR250 integrates with the iUP250 as a MSR card and smart card reader (EMV chip and PIN). Communications with the iUP250 and power are provided through a USB interface. The iUR250 functions as a USB slave. Refer to the below image of the iUR250.

7_8_6 iUC150 Overview

The iUC150 integrates with the iUP250 as a contactless card reader. The iUC150 also complies with the following standards:

- MasterCard PayPass
- VISA PayWave
- EMV contactless
- e-wallet

Communications with the iUP250 and power are provided through a USB interface. The iUC150 also features an RS-232 interface. Refer to the below image of the iUC150.

8_Revision History

Manual Revision	Application Revision	Changes

Rev 2		• Reformatted Telium Manager, TDA, and TSA menu option illustrations.
		• Edited General Troubleshooting tables.
		• Removed flowcharts from document.
		• Incorporated new devices to document and added Quick references for:
		  ○ iSc480
		  ○ iSMP
		  ○ iSMP Companion
		  ○ iWL250
		  ○ iUP250
		  ○ iUR250
		  ○ iUC150

Rev 1		• Modified procedures to bring current.
Rev E		• Added flowcharts and Telium tips.
Rev D		• Updated syntax for the iSC480.
Rev C		• Updated document to be generic. • Added section which includes steps to verify contactless and MSR formats, including images.
Rev B		• Changed heading in TDA section.
Rev A		• Initial document creation.