Identix MiniPad / rPad User Guide







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Introduction

This guide provides detailed instructions for installing, connecting, configuring, operating and troubleshooting the Identix MiniPad and rPad UHF RFID family of readers.

The intended audience for this guide is anyone installing an Identix MiniPad or rPad reader. The assumed primary users of this guide are systems engineers and IT personnel with experience and basic knowledge of:

- Software development
- Hardware systems integration
- Network connectivity

This guide also assumes that the user has a high-level understanding of RFID, RFID systems management, and a basic familiarity with the EPCglobal Gen 2 specification.

Identix MiniPad and rPad are stationary, small form factor, UHF Gen2 RFID tag readers with USB connectivity.

Identix MiniPad



Downloading Windows drivers and SDK

Before getting started, download and install the following on your PC:

https://idntx.zendesk.com

- 1. Identix MiniPad rPad USB Driver for windows
- 2. Impinj RS500 Software Utility
- 3. The Software Developers Kit (SDK) for the MiniPad and rPad is available for download at the same location. The SDK is available for Microsoft .NET C#. For other programming languages, please contact Identix.

Installing the MiniPad – rPad USB Driver on Windows

- 1. Download the MiniPad-rPad Windows USB driver file from https://idntx.zendesk.com
- 2. Connect the MiniPad or rPad to your PC using the mini USB cable provided.
- 3. Once Microsoft Windows detects the new device, set the downloaded INF file as the device driver file.
- 4. Open Windows Device Manager, search for the MiniPad / rPad device, right-click on the device and then select Update Driver Software.
- 5. Browse your computer and find the location of the *MiniPad-rPad.inf*, click Next
- 6. After installing the drivers correctly, Windows will map a new virtual COM port to the connected MiniPad / rPad RFID reader.
- 7. You may check the successful installation of the driver looking at the Computer management applet



Configuring the device operating mode

The MiniPad / rPad device can operate in three different modes:

Transparent Mode

In this mode of operation, a host application controls the MiniPad / rPad device. The host application communicates with the MiniPad / rPad device using the *IRI – Impinj Reader Interface - protocol*. The connection between the host (PC) and the device is via a virtual COM (serial) port over USB.

By default, MiniPad / rPad operates in Transparent Mode.

HID Keyboard Emulation

In this mode of operation, MiniPad / rPad emulates a keyboard wedge. When reading RFID tags, MiniPad / rPad sends reading data to the host computer as if it were a keyboard. In this scenario, the device operates autonomously sending data through a *virtual keyboard (HID)* connected to the USB port.

RAW Mode

In this mode of operation, a host application controls the MiniPad / rPad device. *The host application communicates with the MiniPad / rPad device using simple ASCII based commands.* The connection between the host (PC) and the device is via a virtual COM (serial) port over USB.

Changing the operating mode

A *configuration file* ("Identix-Pad.cfg") is stored inside a removable drive (labeled IDENTIX that mounts automatically when the MiniPad / rPad device connects to the host computer), allows the user to switch between Transparent, HID Keyboard Emulation and RAW modes.





To change the operation mode between Transparent and HID, edit the entry "Opmode" on the configuration file.

Warning! Use only Windows Notepad to edit the configuration file.

Identix-Pad.cfg - Notepad	- 🗆 X
<u>File E</u> dit Format <u>V</u> iew <u>H</u> elp	
Opmode=1	; defines the device operating mode: T for transparent mode, H for keyboard emulation (HID),
Region=0	; set 0 for FCC (USA), 13 for Anatel (Brasil) or consult Identix for other regions
TXPower=10	; transmit power in dBm (maximum 23)
Inventory=D	; Inventory search mode: D for Dual Target, S for Single Target and SS for Single Target with
Session=1	; Gen2 Tag inventory session: 0, 1, 2 or 3
TagPopulationEstimate=4	; an estimate of the tag population in view of the RF field of the antenna
InventoryCycle=0,0	; set the inventory cycle duration and interval (on-off) in milliseconds. Set to 0,0 (default
RSSIfilterThreshold=0	; only tags with RSSI data above this threshold will be reported (typical value -6500). Set 1
DecodeSGTIN96=False	; decodes encoded SGTIN96 EPC data into SGTIN13 (GTIN13 plus EPC serial number)
AddSerialToDecodedGTIN13=True	; includes the EPC serial number in GTIN13 decoded string
GTIN13SNseparator=0x2F	; ASCII character to be used as separator between decoded GTIN13 and serial number
GS1CompanyPrefixLength=6	; number of digits used for the GS1 Company Prefix Length
DecodeEPCMemory=False	; output EPC data into EPC Tag URI (urn:epc:tag:) format
HidReportFormat=0	: set 0 to report EPC data only or 1 to report EPC+TTD
HidReportSeparator=0x20	ASCII character to be used as separator between FPC and TID in HID reports
HidReport(Rcharacter=0xD	ASCII character to be used as Carriage Return in HID reports
HidReportLFcharacter=0xA	; ASCII character to be used as Line Feed in HID reports
IncludeRSST=False	; set True to include RSSI data at the end of HID report data
RSSIReportSeparator=0x23	; leading character to be used before RSSI information
PrSensor=0	: set to 0 to disable presence sensor or between 1 to 10 to define the sensor sensitivity
HidTrigger=True	: enable Start Inventory by IED Presence Sensor
BeeperVolume=10	: set beeper volume during inventory from θ (no beep) to 10 (maximum volume)
	,
	×
C	

After saving the configuration file, the MiniPad / rPad reader will automatically switch to the selected operating mode.

Reading RFID Tags

In Transparent Mode Operation

1. Configure the device to operate in "Transparent Mode" by editing the configuration file.

Identix-Pad.cfg - Notepad	- 0	×
<u>File Edit Format View H</u> elp		
Opmode=T	; defines the device operating mode: T for transparent mode. H for keyboard emulation (HID).	~
Region=0	; set 0 for FCC (USA), 13 for Anatel (Brasil) or consult Identix for other regions	
TXPower=10	; transmit power in dBm (maximum 23)	
Inventory=D	; Inventory search mode: D for Dual larget, S for Single larget and SS for Single larget wit	٤ł
Session=1	; Gen2 Tag inventory session: 0, 1, 2 or 3	
TagPopulationEstimate=4	; an estimate of the tag population in view of the KF field of the antenna	
PSSIfiltanThrashold-0	; set the inventory cycle duration and interval (on-orr) in milliseconds. Set to 0,0 (detail	
KSSITIIterInreshold=0	; only tags with NSSI data above this threshold will be reported (typical value -0500). Set	1
DecodeSGTIN96=Ealse	: decodes encoded SGTIN96 FPC data into SGTIN13 (GTIN13 plus FPC serial number)	
AddSerialToDecodedGTIN13=True	; includes the EPC serial number in GTIN13 decoded string	
GTIN135Nseparator=0x2F	; ASCII character to be used as separator between decoded GTIN13 and serial number	
GS1CompanyPrefixLength=6	; number of digits used for the GS1 Company Prefix Length	
DecodeEPCMemory=False	; output EPC data into EPC Tag URI (urn:epc:tag:) format	
HidReportFormat=0	; set 0 to report EPC data only or 1 to report EPC+11D	
HidKeportSeparator=0x20	; ASCII character to be used as separator between EPC and IID in HID reports	
HidkeportCKCharacter=0xD	ASCII character to be used as carriage Return in nib reports	
HIGKeportLFcharacter=0XA	; ASCII character to be used as line Feed in HID reports	
IncludeRSSI=False	: set True to include RSSI data at the end of HID report data	
RSSIReportSeparator=0x23	; leading character to be used before RSSI information	
PrSensor=0	; set to 0 to disable presence sensor or between 1 to 10 to define the sensor sensitivity	
Hidlrigger=Irue	; enable Start Inventory by LED Presence Sensor	
BeeperVolume=10	; set beeper volume during inventory from 0 (no beep) to 10 (maximum volume)	
<		>



- 2. Download a copy of the RS500 Development Tool.exe file from https://idntx.zendesk.com
- 3. Connect the MiniPad or rPad to your PC using the miniUSB cable. At this point, the RGB LED, should go on with pink color.
- 4. Place UHF RFID tags on top of the MiniPad or rPad embedded antenna.
- 5. Open the RS500 Development Tool software by double-clicking on the "RS500 Development Tool.exe" file. A screen like the following one will appear.



1. Press the "Scan" button to detect the COM port corresponding to the hardware. Press the "Connect" button to connect to the hardware.

RS500 Development Tool v1.1.4.240	- 🗆 X
R5500 Development Tool v1.1.4.240 Help Connect Disconnect Reset COM7 < Scan	- C X Event Log Device Log Save Clear Log Level: 2:info Port COM7 opened Connected to RS500 [Serial Number:210] on port COM7
Press Stop to stop inventorying taps. Start Stop	
	v



- 2. Under the "Inventory" tab, start an inventory by pressing the "Start" button.
- 3. At this point, the "Event Log" on the right-hand side of the GUI will show the stream of EPCs of the tags that are read by the MiniPad or rPad.
- 4. Try moving the tag relative to the antenna, or introducing a new tag, and observe the change in the reads displayed in the Event Log.

RS500 Development Tool v1.1.4.240	- 🗆 X
Help	
KS300 Development Tool VI.1.4.240 Help Connect Disconnect Reset COM7 Scan Inventory Write EPC Access Tx Control Set/Get Image Loader Inventory Settings Press 'Apply Inventory Settings' to configure inventory settings. A value of 0 for stop values is equal to infinity. Stop Tag Count 0 1 1 0 1	
Tag Population 16 Session 0 Search Mode 0 FastId Tag Focus (Session = 1, Search Mode = 2) All Tag Report Fields Tapble Channel Activity Packets Tag Tope Identifier (Wait TID Read) Apply Inventory Settings Inventory Control Press 'Start' to begin inventorying tags. Start Stap	EPC: 220-116-6000-2005-2acd+337 EPC: 220-1160-6000-2005-2acd+337 EPC: 22
	Inventory Summary Singulation Rate: 6.2 tags/sec Total Singualtions: 29 Total Unique: 4.7 sec Total Unique: Tags: 2 Total Unique Tids: 0

In HID Keyboard Emulation Mode Operation

- 1. Configure the MiniPad / rPad reader to operate in HID Keyboard Emulation mode.
- 2. Open an application like Excel or Notepad.
- 3. Place UHF RFID tags on top of the MiniPad or rPad embedded antenna.
- 4. See the tags reading results at the opened application.

Identix-Pad.cfg - Notepad	- 0	×
<u>File Edit Format View H</u> elp		
Opmode=H	; defines the device operating mode: T for transparent mode, H for keyboard emulation (HID), ^
Region=0	; set 0 for FCC (USA), 13 for Anatel (Brasil) or consult Identix for other regions	
TXPower=23	; transmit power in dBm (maximum 23)	
Inventory=D	; Inventory search mode: D for Dual Target, S for Single Target and SS for Single Target w	itł
Session=1	; Gen2 Tag inventory session: 0, 1, 2 or 3	
TagPopulationEstimate=4	; an estimate of the tag population in view of the RF field of the antenna	
InventoryCycle=0,0	; set the inventory cycle duration and interval (on-off) in milliseconds. Set to $0,0$ (defa	ult
KSS1filterThreshold=0	; only tags with KSSI data above this threshold will be reported (typical value -6500). Se	/t 1
DecodeSGTIN96=Ealse	: decodes encoded SGTIN96 EPC data into SGTIN13 (GTIN13 nlus EPC serial number)	
AddSerialToDecodedGTIN13=True	; includes the EPC serial number in GIN13 decoded string	
GTIN13SNseparator=0x2F	: ASCII character to be used as separator between decoded GTIN13 and serial number	
GS1CompanyPrefixLength=6	; number of digits used for the GS1 Company Prefix Length	
DecodeEPCMemory=False	; output EPC data into EPC Tag URI (urn:epc:tag:) format	
-		
HidReportFormat=0	; set 0 to report EPC data only or 1 to report EPC+TID	
HidReportSeparator=0x20	; ASCII character to be used as separator between EPC and TID in HID reports	
HidReportCRcharacter=0xD	; ASCII character to be used as Carriage Return in HID reports	
HidReportLFcharacter=0xA	; ASCII character to be used as Line Feed in HID reports	
IncludeRSST=True	set True to include RSSI data at the end of HID report data	
RSSTReportSeparator=0x23	: leading character to be used before RSS1 information	
	,,	
PrSensor=0	; set to 0 to disable presence sensor or between 1 to 10 to define the sensor sensitivity	
HidTrigger=True	; enable Start Inventory by LED Presence Sensor	
BeeperVolume=10	; set beeper volume during inventory from 0 (no beep) to 10 (maximum volume)	
		\lor
<		> .::



In RAW Mode Operation

1. Configure the MiniPad / rPad reader to operate in HID Keyboard Emulation mode.

Identix-Pad.cfg - Notepad	- 🗆 X
<u>F</u> ile <u>E</u> dit F <u>o</u> rmat <u>V</u> iew <u>H</u> elp	
Opmode=R	; defines the device operating mode: T for transparent mode, H for keyboard emulation (HID), 🔨
Region=0	; set 0 for FCC (USA), 13 for Anatel (Brasil) or consult Identix for other regions
7/0 40	
TXPower=10	; transmit power in dBm (maximum 23)
Socion=1	; Inventory search mode: D for Dual larget, S for Single larget and SS for Single larget with
TagPopulationEstimate=4	, delz rag inventory session. 0, 1, 2 or 5 an estimate of the tag population in view of the RE field of the antenna
InventorvCvcle=0.0	set the investory cycle duration and interval (on-off) in milliseconds. Set to 0.0 (default
RSSIfilterThreshold=0	; only tags with RSSI data above this threshold will be reported (typical value -6500). Set 1
DecodeSGTIN96=False	; decodes encoded SGTIN96 EPC data into SGTIN13 (GTIN13 plus EPC serial number)
AddSerialToDecodedGTIN13=True	; includes the EPC serial number in GTIN13 decoded string
GTIN13SNseparator=0x2F	; ASCII character to be used as separator between decoded GTIN13 and serial number
GS1CompanyPrefixLength=6	; number of digits used for the GS1 Company Prefix Length
DecodeEPCMemory=False	; output EPC data into EPC Tag URI (urn:epc:tag:) format
HidReportFormat=0	\cdot set 0 to report FPC data only on 1 to report FPC+TTD
HidReportSeparator=0x20	ASCII character to be used as separator between FPC and TID in HID reports
HidReportCRcharacter=0xD	ASCII character to be used as Carriage Return in HID reports
HidReportLFcharacter=0xA	; ASCII character to be used as Line Feed in HID reports
IncludeRSSI=False	; set True to include RSSI data at the end of HID report data
RSSIReportSeparator=0x23	; leading character to be used before RSSI information
PrSensor=0	; set to 0 to disable presence sensor or between 1 to 10 to define the sensor sensitivity
HidTrigger=True	; enable Start Inventory by LED Presence Sensor
BeeperVolume=10	; set beeper volume during inventory from 0 (no beep) to 10 (maximum volume)
	v
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2. Identify the virtual COM port that Windows assigned to the MiniPad – rPad device using the "Computer Management" applet.

E Computer Management		- 🗆 X
<u>File Action View H</u> elp		
🗢 🄿 🖄 📰 🖾 🛛 🖬	嗯 🕅 🙀 🕫	
🛃 Computer Management (Local	🗸 🚔 Lenovo-MS	Actions
🗸 🙀 System Tools	> 🖣 Audio inputs and outputs	Device Manager
> 🕑 Task Scheduler	> 🗃 Batteries	Mars Artists
> 🛃 Event Viewer	> 🚯 Bluetooth	More Actions •
> 👸 Shared Folders	> 💻 Computer	
> 🕵 Local Users and Groups	> Disk drives	
> (N) Performance	> 🔤 Display adapters	
Bevice Manager	> 🕼 Human Interface Devices	
V 🔄 Storage	> IDE ATA/ATAPI controllers	
Disk Management	> 📷 Imaging devices	
Services and Applications	> C Keyboards	
	> Memory technology devices	
	> 1 Mice and other pointing devices	
	> Monitors	
	> Network adapters	
	> Portable Devices	
	V Ports (COM & LPT)	
	OSB Serial Device (COM7)	
	> Processors	
	Security devices	
	> Contractions	
	Sound video and game controllers	
	Storage controllers	
	Suctem devices	
	B Inversal Serial Bus controllers	
< >>		1



- 3. Download a terminal emulation program like Putty. You can get it from: http://www.putty.org/
- 4. Execute Putty.exe and a screen like the following one will be displayed.
 - a. Select the COM virtual port
 - b. Set the Speed to 115.200 Bps
 - c. Set the Connection type to "Serial"
 - d. Hit the "Open" button

🕵 PuTTY Configuration		×
Category:		
Category: Session Logging Terminal Keyboard Bell Features Window Appearance Behaviour Translation Selection Colours Connection Data Proxy Telnet Rlogin SSH SSH Serial	Basic options for your PuTTY se Specify the destination you want to conner Serial line COM7 Connection type: O Raw O Ielnet O Rlogin O SSH Load, save or delete a stored session Saved Sessions	ssion ct to Speed 115200
	Default Settings RAW	Load Sa <u>v</u> e Delete
	Close window on exit: Always Never Only on clean exit	
About	<u>O</u> pen	<u>C</u> ancel

5. Once you open the connection and hit "enter" a screen like this one will be displayed.





6. Press "1" and hit "Enter", then inventory of tags will start immediately. If you enter "0" and "Enter", inventory of tags will stop.

Putty	-	×
Inventory started		~
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
Inventory stopped		
		\sim

Configuration File settings

When operating in **HID and RAW modes**, operating parameters like: transmitted power, inventory mode and other settings may be changed via the Configuration File stored on the Identix drive.

The Configuration File name is "Identix-Pad.cfg".

Attention! The settings on the Configuration File have no effect when the device is running in Transparent mode

Operating Mode

Opmode=R, defines the device operating mode: T for transparent mode, H for keyboard emulation (HID), R for raw serial data output and allows users to configure the MiniPad – rPad mode of operation.

Regulatory Region

Region=0, sets the reader for FCC (USA), 13 for Anatel (Brasil)

Each country determines the frequencies / channels UHF RFID readers may operate. Set this field according to the regulatory region you are in.

Attention! The regions marked in Blue are only available on the European version of the MiniPad and rPad devices. CHECK FOR AVAILABILITY OF EUROPEAN VERSION WITH IDENTIX REPRESENTATIVE

FCC PART 15 247	0
HONG KONG 920 925 MHZ	3
TAIWAN 922 928 MHZ	4
ETSI EN 302 208 V1 4 1	7
KOREA 917 921 MHZ	8
MALAYSIA 919 923 MHZ	9
CHINA 920 925 MHZ	10
SOUTH AFRICA 915 919 MHZ	12
BRAZIL 902 907 AND 915 928 MHZ	13
THAILAND 920 925 MHZ	14
SINGAPORE 920 925 MHZ	15
AUSTRALIA 920 926 MHZ	16
INDIA 865 867 MHZ	17
URUGUAY 916 928 MHZ	18
VIETNAM 920 925 MHZ	19
ISRAEL 915 917 MHZ	20
PHILIPPINES 918 920 MHZ	21
INDONESIA 923 925 MHZ	23
NEW ZEALAND 921P5 928 MHZ	24
JAPAN 916 921 MHZ NO LBT	25
PERU 916 928 MHZ	26
RUSSIA 916 921 MHZ	27

Transmitted Power

TXPower=10 set the transmit power in dBm (maximum 23).

This setting allows to define the transmitter power the RFID radio will use for inventory tags.

Attention! MiniPad and rpad devices allow a maximum transmission power of 23dBm.



Inventory Search Mode

Inventory= X sets the tag inventory search mode: D for Dual Target, S for Single Target and SS for Single Target with Suppression

- Gen2 compliant RFID tags have four logical sessions
 - An inventory round operates in one and only one logical session
 - The session is set by a parameter in the Query command
- Each session has an independent inventory flag
 - \circ The tag toggles the state of its inventory flag once it has been counted
 - The *inventory* flag has two states, A or B (logical 0 or 1 respectively)



- Moves all 'A' tags into 'B'
- Moves all 'B' tags into 'A'
- Generates many, many reads
- Good for small populations or static environments





- Moves all 'A' tags into 'B'
- Reads tags once
- Allows 'B' tags to stay quiet
- Good for high population, dynamic environments





Single Target with Suppression

- Suppression algorithm further reduces the number of times tags are re-read
- Potentially improves read percentages up to 20%

	Sess	ion 0	Sess	ion 1	Session 2		Session 3	
	Tag energized	Tag not energized	Tag energized	Tag not energized	Tag energized	Tag not energized	Tag energized	Tag not energized
Single Target	Infinite	o	0.5 to 5s	0.5 to 5s	Infinite	2s min Up to 60s	Infinite	2s min Up to 60s
Single Target with Suppression	\mathbf{X}	\mathbf{X}	Infinite	0.5 to 5s	\mathbf{X}	$\mathbf{\mathbf{X}}$	\mathbf{X}	\mathbf{X}

Tag on reader field (energized) Tag out of reader field (not energized) Tag read Dual Target В В TS1 Session 1 session x Persistence 0.5 to 5s TS2/3 Session 2 or 3 not TS1 TS1 energized. Minimum Single Target В В В В persistence: 2s up to ~60s Session 1 TS2/3 Single Target В Session 2 or 3 TS1 Single Target В with Suppression

Behavior of Search Mode and Sessions

time



Behavior of Search Mode and Sessions on intermittent reading field

Inventory Gen2 Session

Session= X set the session under Gen2 standard for Tag inventory. Chose session: 0, 1, 2 or 3.

Tag Population Estimate

TagPopulationEstimate= 4 an estimate of the tag population in view of the RF field of the antenna

- Defines the estimation of the tag population you want to read
- This parameter is used to optimize the anti-collision algorithm
- Set this value to a power of 2

Inventory Cycle

InventoryCycle=0,0 sets the inventory cycle duration and interval (on-off) in milliseconds. Set to 0,0 (default) for continuous inventory

• Users can define the inventory cycle (on/off) interval. For instance, to read tags for a period of 5 seconds and sleep another 5 seconds, set InventoryCycle=5000,5000



RSSI Filter

RSSIfilterThreshold=X, only tags with RSSI data above this threshold will be reported (typical value -6500). Set to 0 to disable RSSI filtering

• This is a "filter" that allows users to configure the threshold above a given Received Signal Strength Indication, the tags will be reported

Automatic decoding of SGTIN96 encoded data

DecodeSGTIN96=False - decodes encoded SGTIN96 EPC data into SGTIN13 (GTIN13 plus EPC serial number)

AddSerialToDecodedGTIN13=True - includes the EPC serial number in GTIN13 decoded string

GTIN13SNseparator=0x2F - ASCII character to be used as separator between decoded GTIN13 and serial number

GS1CompanyPrefixLength=6 - number of digits used for the GS1 Company Prefix Length

DecodeEPCMemory=False - output EPC data into EPC Tag URI (urn:epc:tag:...) format

 This setting allows MiniPad – rpad to automatic decode the tags EPC memory (SGTIN96 format) data into to UPC / EAN-13 "human readable" barcode format.

Include TID on inventory reports

HidReportFormat=0 - set 0 to report EPC data only or 1 to report EPC+TID

HidReportSeparator=0x20 - ASCII character to be used as separator between EPC and TID in HID reports

HidReportCRcharacter=0xD - ASCII character to be used as Carriage Return in HID reports

HidReportLFcharacter=0xA - ASCII character to be used as Line Feed in HID reports

• This setting allows MiniPad – rpad to automatic include the TID (Tag Unique ID) data in tag read reports.

Include RSSI on inventory reports

IncludeRSSI=False - set True to include RSSI data at the end of HID report data

RSSIReportSeparator=0x23 - leading character to be used before RSSI information

 This setting allows MiniPad – rpad to automatic include the RSSI value (Received Signal Strength Indication) in tag read reports



Modifying configuration settings in HID Keyboard Emulation mode

Once the device is running in HID Keyboard Emulation mode of operation, simply open the configuration file "Identix-Pad.cfg" and edit it using Notepad.

Warning! Use only Windows Notepad to edit the configuration file.

For example, to change the Transmitter Power from 10dBm to 23dBm, just edit the corresponding entry from "TXPower=10" to "TXPower=23".

Save the file and the MiniPad – rPad device will immediately accept this new setting.

Attention! if you put and invalid value or change the configuration file inappropriately, the wrong setting will be ignored.

Identix-Pad.cfg - Notepad	- □ >	<
<u>File E</u> dit F <u>o</u> rmat <u>V</u> iew <u>H</u> elp		
Opmode=H Region=0	; defines the device operating mode: T for transparent mode, H for keyboard emulation (HID), ; set 0 for FCC (USA), 13 for Anatel (Brasil) or consult Identix for other regions	^
TXPower=23 Inventory=D Session=1 TagPopulationEstimate=4 InventoryCycle=0,0 RSSIfilterThreshold=0	; transmit power in dBm (maximum 23) ; Inventory search mode: D for Dual Target, S for Single Target and SS for Single Target with ; Gen2 Tag inventory session: 0, 1, 2 or 3 ; an estimate of the tag population in view of the RF field of the antenna ; set the inventory cycle duration and interval (on-off) in milliseconds. Set to 0,0 (default ; only tags with RSSI data above this threshold will be reported (typical value -6500). Set t	,
DecodeSGTIN96=False AddSerialToDecodedGTIN13=True GTIN135Nseparator=0x2F GS1CompanyPrefixLength=6 DecodeEPCMemory=False	; decodes encoded SGTIN96 EPC data into SGTIN13 (GTIN13 plus EPC serial number) ; includes the EPC serial number in GTIN13 decoded string ; ASCII character to be used as separator between decoded GTIN13 and serial number ; number of digits used for the GS1 Company Prefix Length ; output EPC data into EPC Tag URI (urn:epc:tag:) format	
HidReportFormat=0 HidReportSeparator=0x20 HidReportCRcharacter=0xD HidReportLFcharacter=0xA	; set 0 to report EPC data only or 1 to report EPC+TID ; ASCII character to be used as separator between EPC and TID in HID reports ; ASCII character to be used as Carriage Return in HID reports ; ASCII character to be used as Line Feed in HID reports	
IncludeRSSI=True RSSIReportSeparator=0x23	; set True to include RSSI data at the end of HID report data ; leading character to be used before RSSI information	
PrSensor=0 HidTrigger=True BeeperVolume=10	; set to 0 to disable presence sensor or between 1 to 10 to define the sensor sensitivity ; enable Start Inventory by LED Presence Sensor ; set beeper volume during inventory from 0 (no beep) to 10 (maximum volume)	
		~
<	>	.::

You may change any other setting using the same procedure.



Modifying configuration settings in RAW mode

Once the device is running in RAW mode of operation you can change the settings on the configuration file in two different ways:

1) By editing the configuration file "Identix-Pad.cfg" and changing the desired settings. While running in RAW mode, the new settings on the configuration file will only take effect when the computer is rebooted.

Warning! Use only Windows Notepad to edit the configuration file.

2) The other way of changing the operating parameters without requiring a reboot is via user commands on the terminal emulation program. In this case, simply open the serial port using a terminal emulation program like Putty.

Modifying settings via command line

- a. Download a terminal emulation program like Putty. You can get it from: http://www.putty.org/
- b. Execute Putty.exe and a screen similar to the following one will be displayed.
- c. Select the COM virtual port
- d. Set the Speed to 115.200 Bps
- e. Set the Connection type to "Serial"
- f. Hit the "Open" button

🕵 PuTTY Configuration		×
Category:		
- Session	Basic options for your PuTTY se	ssion
	Specify the destination you want to conne	ect to
	Serial line	Speed
Bell	COM7	115200
Features ⊡ • Window	Connection type: ○ Ra <u>w</u> ○ <u>T</u> elnet ○ Rlogin ○ <u>S</u> SF	H
Appearance Behaviour Translation Selection Colours Otorection Data Proxy Telnet Rlogin E: SSH	Load, save or delete a stored session Sav <u>e</u> d Sessions Default Settings RAW	Load Sa <u>v</u> e Delete
Serial	Close window on e <u>xi</u> t: Always Never Only on c	lean exit
About	Open	<u>C</u> ancel

3) Once you open the connection and hit "enter", a screen similar to this one will be displayed.



4) To enter the configuration command prompt, hit "TAB". The device will now be ready to accept configuration commands.

B COM7 - PuTTY	_	×
e2801160600002052acde3a7		\wedge
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
e2801160600002052acde397		
e2801160600002052acde3a7		
Inventory stopped		
Identix firmware 1.39		
Configuration mode Press TAB to exit Config mode		
		\sim



5) For example, if you want to have the RSSI data reported along with the tags inventory data, just enter the command exactly as it appears on the Configuration File.

Type "IncludeRSSI=True" and hit "Return"

Attention! All commands are case sensitive.

The new setting will be saved on the configuration file and automatically applied when you leave the configuration mode command prompt.

ø		
see.	COM7 - PuTTY	

🚰 COM7 - PuTTY		-		
sion				~
Session=1	; Gen2 Tag inventory session: 0, 1, 2 or 3			
TagPopulationEstimate=4	; an estimate of the tag population in view of the RF field of the antenna			
InventoryCycle=0,0 ntinuous inventory	; set the inventory cycle duration and interval (on-off) in milliseconds. Set to 0,0 (d $$	efault)	for co	
RSSIfilterThreshold=0 isable RSSI filtering	; only tags with RSSI data above this threshold will be reported (typical value -6500).	Set to	0 to d	
DecodeSGTIN96=False	; decodes encoded SGTIN96 EPC data into SGTIN13 (GTIN13 plus EPC serial number)			
AddSerialToDecodedGTIN13=True	; includes the EPC serial number in GTIN13 decoded string			
GTIN13SNseparator=0x2F	; ASCII character to be used as separator between decoded GTIN13 and serial number			
GS1CompanyPrefixLength=6	; number of digits used for the GS1 Company Prefix Length			
DecodeEPCMemory=False	; output EPC data into EPC Tag URI (urn:epc:tag:) format			
HidReportFormat=0	; set 0 to report EPC data only or 1 to report EPC+TID			
HidReportSeparator=0x20	; ASCII character to be used as separator between EPC and TID in HID reports			
HidReportCRcharacter=0xD	; ASCII character to be used as Carriage Return in HID reports			
HidReportLFcharacter=0xA	; ASCII character to be used as Line Feed in HID reports			
IncludeRSSI=False	; set True to include RSSI data at the end of HID report data			
RSSIReportSeparator=0x23	; leading character to be used before RSSI information			
PrSensor=0	; set to 0 to disable presence sensor or between 1 to 10 to define the sensor sensitivi	ty		
HidTrigger=True	; enable Start Inventory by LED Presence Sensor			
BeeperVolume=10	; set beeper volume during inventory from 0 (no beep) to 10 (maximum volume)			
>				
Identix firmware 1.39				
Configuration mode Press TAB to	exit Config mode			
>IncludeRSSI=True				
Updating Parameters				
Done				
>				~

6) To retrieve the current configuration data, just type "r" while in the main RAM mode command prompt.

Putty	- 🗆 X
Retrieve Mode: Prints config f	ile data ^
Opmode=R w serial data output	; defines the device operating mode: T for transparent mode, H for keyboard emulation (HID), R for ra
Region=0	; set 0 for FCC (USA), 13 for Anatel (Brasil) or consult Identix for other regions
TXPower=23	; transmit power in dBm (maximum 23)
Inventory=D sion	; Inventory search mode: D for Dual Target, S for Single Target and SS for Single Target with Suppres
Session=1	: Gen2 Tag inventory session: 0, 1, 2 or 3
TagPopulationEstimate=4	: an estimate of the tag population in view of the RF field of the antenna
InventoryCycle=0,0 ntinuous inventory	; set the inventory cycle duration and interval (on-off) in milliseconds. Set to 0,0 (default) for co
RSSIfilterThreshold=0 isable RSSI filtering	; only tags with RSSI data above this threshold will be reported (typical value -6500). Set to 0 to d
DecodeSGTIN96=False AddSerialToDecodedGTIN13=True GTIN13SNseparator=0x2F	; decodes encoded SGTIN96 EPC data into SGTIN13 (GTIN13 plus EPC serial number) ; includes the EPC serial number in GTIN13 decoded string ; ASCII character to be used as separator between decoded GTIN13 and serial number
GS1CompanyPrefixLength=6 DecodeEPCMemory=False	; number of digits used for the GS1 Company Prefix Length ; output EPC data into EPC Tag URI (urn:epc:tag:) format
HidReportFormat=0	; set 0 to report EPC data only or 1 to report EPC+TID
HidReportSeparator=0x20	; ASCII character to be used as separator between EPC and TID in HID reports
HidReportCRcharacter=0xD HidReportLFcharacter=0xA	; ASCII character to be used as Carriage Return in HID reports ; ASCII character to be used as Line Feed in HID reports
IncludeRSSI=False	; set True to include RSSI data at the end of HID report data
RSSIReportSeparator=0x23	; leading character to be used before RSSI information
PrSensor=0	; set to 0 to disable presence sensor or between 1 to 10 to define the sensor sensitivity
HidTrigger=True	; enable Start Inventory by LED Presence Sensor
BeeperVolume=10	; set beeper volume during inventory from 0 (no beep) to 10 (maximum volume)



How to integrate MiniPad and rPad devices with user's application

MiniPad and rPad devices were designed for easy integration with virtually any existing software application. The devices may be used in different platforms including, Intel based PCs, MACs, tablets and small computer boards such as RaspberryPi, BeagleBone Black and others.

HID Keyboard Wedge Emulation – read/inventory only

This is the simplest and straightforward way of integration. The device will behave as it were a "barcode scanner", simply reporting the RFID read data as it were a human typing on a keyboard.

Software Development

The other way of integration between MiniPad and rPad devices with businesses applications is via software development. There are basically two options for doing that.

RAW Operating Mode - ASCII commands - read/inventory only

This is the simplest way of to develop the code to integrate the devices with the business application. **Virtually all programing languages may be used** since there are only two functions that must be used: 1) connection over a serial port and 2) parsing of ASCII strings.

Using the RAW operating mode will allow users programmatically to configure the devices and execute inventory (read only). If your application requires writing into the RFID tags, you will need to use the IRI Application Programming Interface.

IRI - Low level API - read/inventory and write commands

IRI stands for "Impinj Reader Interface". It is a low level API that allow users to develop integration software with all features available, including reading, inventory and writing into RFID tags.

IRI was developed in C language and is available in 02 forms

- 1) A "wrapper" for .NET developed by Identix. This library can be downloaded directly from the Identix support web site: *https://idntx.zendesk.com*
- 2) Source codes in C. A special license / authorization is required. Please contact Identix for further details.

Operating System	Programing Language Operating Mode			
Windows	Visual Studio C# (IRI)			
	Java (RAW)			
	ANSI C (IRI and RAW)			
	Phyton (IRI and RAW)			
	Others (Raw)			
Linux	Java (RAW)			
	ANSI C (IRI and RAW)			
	Phyton (IRI and RAW)			
	Other (RAW)			
MacOS	Java (RAW)			
	ANSI C (IRI and RAW)			
	Phyton (IRI and RAW)			

Supported Operating Systems and Programming Languages

	Other (RAW)
Android	Java (RAW)
	ANSI C (IRI and RAW)
	Phyton (IRI and RAW)
	Other (RAW)
Other	Any (Raw)

Firmware Management

MiniPad and rPad devices have 02 distinct firmwares with specific instructions for updating each one of them. The first one is the "RFID-SIP" firmware (related to low level functions of the UHF Gen2 protocol) and the other one is the "Controller Firmware" (which manages the device connectivity to the Host computer).

Obtaining the device serial number and Firmware versions

An information file ("Idevinfo.txt") is created inside a removable drive (labeled IDENTIX that mounts automatically when the MiniPad / rPad device connects to the host computer) automatically when the MiniPad / rPad device connects to a computer. Open the file on notepad to obtain

- Device serial number
- RFID SIP firmware version
- Controller firmware version
- Internal and external temperatures of the device



Updating the "Controller Firmware" on MiniPad – rPad devices

MiniPad and rPad devices have 02 distinct firmwares with specific instructions for updating each one of them. The first one is the "RFID-SIP" firmware (related to low level functions of the UHF Gen2 protocol) and the other one is the "Controller Firmware" (which manages the device connectivity to the Host computer). This chapter contains specific instructions to update the "Controller Firmware" only.

 Open the device information file to identify the current firmware version. Connect your device to a Windows machine and open the "Identix" drive that is automatically mounted when you connect the device to the computer. The file that contains the device information is named "IdevInfo.txt"

🕳 🛃 📙 🖛		Dri	ve Tools	D:\						_		×
File Home	Share	View M	anage									^ ?
Pin to Quick Copy access	Paste	6 Cut ■ Copy path 1 Paste shortcut	🖕 M	ove to ▼ opy to ▼ Orga	X Delete - Rename	New folder	Propert •	ies Open	oen ⊤ it story	Selec Selec Inver	ct all ct none rt selec elect	tion
$\leftarrow \rightarrow \cdot \uparrow$	- > IDEN	NTIX (D:)						5 V	Searc	h IDENTI	X (D:)	م
🖈 Quick access		Name		^		Date modif	ied	Туре		S	ize	
Documents	*	Identix-P	ad.cfg			30/05/2015	12:10	CFG Fil	e			3 KB
🎎 mauricio	*	ldevinfo.	txt			11/09/1981	03:30	Text Do	cument			1 KB
📃 Desktop	*											
🞎 Identix	*											
归 Impinj	*											
- RFID	*											
J OfficeWork	*											
Work-MS	*											
This PC	Ŕ											
🐉 Dropbox												
\land OneDrive												
💻 This PC												
IDENTIX (D:)												
💣 Network												
2 items												

identix

2) Identify the Controller Firmware version by opening the "IdevInfo.txt" file on Notepad.



3) After having the new firmware file on your hands (available for download at the Identix support web site), put your device in DFU (Device Firmware Update) mode. To do that, open the Identix-Pad.cfg file on Notepad and include the statement "DFUmode=True" on the first line of the file. The statement is case sensitive so be careful editing the configuration file.

Identix-Pad.cfg - Notepad	- 0	\times
<u>F</u> ile <u>E</u> dit F <u>o</u> rmat <u>V</u> iew <u>H</u> elp		
DFUmode=True		~
Opmode=T	; defines the device operating mode: T for transparent mode, H for keyboard emulation (HID)	,
Region=0	; set 0 for FCC (USA), 13 for Anatel (Brasil) or consult Identix for other regions	
TXPower=10	; transmit power in dBm (maximum 23)	
Inventory=D	; Inventory search mode: D for Dual Target, S for Single Target and SS for Single Target wi	tł
Session=1	; Gen2 Tag inventory session: 0, 1, 2 or 3	
TagPopulationEstimate=4	; an estimate of the tag population in view of the RF field of the antenna	
InventoryCycle=0,0	; set the inventory cycle duration and interval (on-off) in milliseconds. Set to 0,0 (defau	11
RSSIfilterThreshold=0	; only tags with RSSI data above this threshold will be reported (typical value -6500). Set	1
DecodeSGTIN96=False	; decodes encoded SGTIN96 EPC data into SGTIN13 (GTIN13 plus EPC serial number)	
AddSerialToDecodedGTIN13=True	; includes the EPC serial number in GTIN13 decoded string	
GTIN13SNseparator=0x2F	; ASCII character to be used as separator between decoded GTIN13 and serial number	
GS1CompanyPrefixLength=6	; number of digits used for the GS1 Company Prefix Length	
DecodeEPCMemory=False	; output EPC data into EPC Tag URI (urn:epc:tag:) format	
HidReportFormat=0	; set 0 to report EPC data only or 1 to report EPC+TID	
TIDlength=32	; defines the length of TID field (bits) to chips that are not Impinj Monza. Set to 0 for a	ut
HidReportSeparator=0x20	; ASCII character to be used as separator between EPC and TID in HID reports	
HidReportCRcharacter=0xD	; ASCII character to be used as Carriage Return in HID reports	
HidReportLFcharacter=0xA	; ASCII character to be used as Line Feed in HID reports	
IncludeRSSI=False	; set True to include RSSI data at the end of HID report data	
RSSIReportSeparator=0x23	; leading character to be used before RSSI information	
PrSensor=0	; set to 0 to disable presence sensor or between 1 to 10 to define the sensor sensitivity	
HidTrigger=True	: enable Start Inventory by LED Presence Sensor	
BeeperVolume=10	; set beeper volume during inventory from 0 (no beep) to 10 (maximum volume)	
		~
<		> .:



- 4) After saving the configuration file on Notepad, the device will reboot and enter in "DFU mode". The "Identix" drive will dismount and your will no longer have access to the configuration file.
- 5) Locate the "Python_Firmware Upgrade". Identix provides this utility on a zipped file. Create a folder and unzip all content of the zip package inside it. Execute the file "Pyton_Firmware_UpgradeGUI.exe" by double clicking over it.

🔜 🕑 📴 🛨	Application Tools	C:\Tl\Python_Fi	rmware_Upgrad	er	- 🗆 ×
File Home Share	View Manage				^ (
Pin to Quick Copy Paste	Cut Move to Copy path Copy to	 ✓ Delete ▼ ✓ ■ Rename 	New folder	Properties	Select all
Clipboard	Or	ganize	New	Open	Select
\leftarrow \rightarrow \checkmark \uparrow \square \rightarrow This	s PC \rightarrow Windows (C:) \rightarrow TI \rightarrow	Python_Firmware	_Upgrader	✓ ^で Se	arch Python_Firmw 🔎
📌 Quick access	Name		Date modifie	ed Type	Size
🔮 Documents 🛛 🖈	css		24/02/2015 1	2:40 File folder	
🎎 mauricio 🛛 🖈	doc		24/02/2015 1	2:40 File folder	
📃 Desktop 🛛 🖈	images		24/02/2015 1	2:40 File folder	
🔐 Identix 🛛 🖈	License_Manifest		24/02/2015 1	2:40 File folder	
🛃 Impinj 🛛 🖈	5520 CDC echo bt		24/02/2015 1	4:59 Text Docum	ent 27 KP
RFID 🖈	5529 HID echo.txt		07/11/2014 1	4:59 Text Docum	ient 26 KB
OfficeWork 🖈	5529 LED Blink.txt		07/11/2014 1	4:59 Text Docum	ient 1 KB
Work-MS 🖈	Python_Firmware_Upgra	aderGUI.exe	07/11/2014 1	5:01 Application	5.750 KB
This PC 🖈	Python_Firmware_Upgra	aderGUI.spec	07/11/2014 1	5:01 SPEC File	1 KB
	release_Notes_Example_	Python_Firmwar	07/11/2014 1	4:59 HTML File	19 KB
Tropbox	TargetGUI.py		07/11/2014 1	4:59 PY File	14 KB
a OneDrive	TI_Bug_lcon_Red.ico		07/11/2014 1	4:59 Icon	98 KB
💻 This PC	TIResourceExplorer.htm	I	07/11/2014 1	4:59 HTML File	1 KB
Network					
14 items 1 item selected 5	5,61 MB				

6) Once the program is executed, a scree like the one below must be displayed. The program will automatically recognize the MiniPad / rPad device and a "ready...." Message will be displayed.





7) Select the new firmware file by the the menu "File / Open User Firmware". In the example blow the firmware file is "MiniPad-rPad1.39.txt"

Choose a file									>	<
\leftrightarrow \rightarrow \star	- « P/	ADs ⇒	Software > Firmware PCB V2	√ Ō		Search Firmwa	e PCB	V2	م	
Organize 👻 🕴	New fold	er					-		?	
🎎 mauricio	* ^	Na	ame		Dat	te modified	Тур	e		
📃 Desktop	*		Python_Firmware_Upgrader		18/	11/2015 14:19	File	folder		
🕵 Identix	A	J.	miniPad-rPadv1.39.txt		08/	09/2015 17:22	Text	Docume	nt	
🌄 Impinj	*									
🌄 RFID	*									
🛃 OfficeWork	c 🖈 🗌									
🌄 Work-MS	*									
💻 This PC	*									
💱 Dropbox										
i OneDrive										
💻 This PC	~	۲								>
	File <u>n</u>	ame:	miniPad-rPadv1.39.txt		~	text files (*.txt)			\sim	
						<u>O</u> pen		Cancel		.:

8) When selecting the file, the firmware update process will start automatically. Once finished the "Programming: OK" message will appear

Attention! DO NOT INTERRUPT THIS PROCESS, OTHEWISE YOUR DEVICE MAY BECOME PERMANENTLY DEMAGED.

👋 MSP430 USB Firmware Upgrade Example 2.0 – 🗆 🗙
Eile About
Opening HID device HID device (vID=0x2047, pID=0x0200, v=0x0105); Unknown manufacturer; @input.inf,%hid_device_vendor_defined_range% ;HID-compliant vendor-defined device, Path: \\?\hid#vid_2047&pid_0200#7&112000ad&0&0000#{4dle55b2-f16f-llcf-88cb-00111000030} Mass erase Download full BSL Programming Programming: 0K Waiting for BSL closing HID device Closed!
Opening HID device HID device (vID=0x2047, pID=0x0200, v=0x0109); Unknown manufacturer; @input.inf,%hid_device_vendor_defined_range% ;HID-compliant vendor-defined_device, Path: \\?\hid#vid_2047spid_0200#7s112000ads0s0000#{4dle55b2-f16f-11cf-88cb-00111000030} Programming Programming: OK

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MiniPad – rPad User Guide

9) Disconnect and reconnect the MiniPad – rPad device to the computer. Open the device information file to verify if everything went ok.



Idevinfo.txt - Notepad	-	×
Eile Edit Format View Help		
<pre>biniPad - rPad product Information Device serial number: 467 RFID-SIP finmware version: 1.1.4.240 Controller firmware version: 1.39 External SIP Temperature: 24 Internal SIP Temperature: 31 SIP Unique Id: 10150130467 (00000002.5cfeb323) SIP Microprocessor Id: 00310045-42365716-33343530 Region Id: 0</pre>		~
		ii

Updating the "RFID SIP Firmware" on MiniPad – rPad devices

MiniPad and rPad devices have 02 distinct firmwares with specific instructions for updating each one of them. The first one is the "RFID-SIP" firmware (related to low level functions of the UHF Gen2 protocol) and the other one is the "Controller Firmware" (which manages the device connectivity to the Host computer). This chapter contains specific instructions to update the "RFID SIP Firmware" only.

 Open the device information file to identify the current firmware version. Connect your device to a Windows machine and open the "Identix" drive that is automatically mounted when you connect the device to the computer. The file that contains the device information is named "IdevInfo.txt"

🕳 🕑 📙 -		Drive	Tools D:\					_		×
File Home	Share	View Mar	nage							^ 🕐
Pin to Quick Copy access	Paste	Cut ■ Copy path Paste shortcut	Move to *	X Delete -	New folder	Properties	pen ▼ lit story	Select a Select r Invert s	all none election ct	
$\leftarrow \rightarrow \cdot \uparrow$		NTIX (D:)				ت ب	Search II	DENTIX ((D:)	Q
📌 Quick access 🔠 Documents	*	Name	^ d.cfg		Date modifi 30/05/2015	ied Type 12:10 CFG Fil	e	Size	3 KI	B
mauricio Desktop Identix Impinj RFID OfficeWork Work-MS This PC OneDrive This PC	* * * * * *	ldevinfo.tx	t		11/09/1981	03:30 Text Do	ocument		1 KI	В
 DENTIX (D:) Network 2 items 										



2) Identify the RFID SIP version by opening the "IdevInfo.txt" file on Notepad.



 Make sure your device is configured to work in "Transparent Mode". Set the option "Opmode=T" on the Identix-Pad.cfg file located inside the "Identix" drive.

/// Identix-Pad.cfg - Notepad	- [x c
<u>File Edit Format View H</u> elp		
Opmode= <mark>1</mark> Region=0	; defines the device operating mode: T for transparent mode, H for keyboard emulation (; set 0 for FCC (USA), 13 for Anatel (Brasil) or consult Identix for other regions	HID), ^
TXPower=23 Inventory=D Session=1 TagPopulationEstimate=4 InventoryCycle=0,0 RSSIfilterThreshold=0	; transmit power in dBm (maximum 23) ; Inventory search mode: D for Dual Target, S for Single Target and SS for Single Target ; Gen2 Tag inventory session: 0, 1, 2 or 3 ; an estimate of the tag population in view of the RF field of the antenna ; set the inventory cycle duration and interval (on-off) in milliseconds. Set to 0,0 (c ; only tags with RSSI data above this threshold will be reported (typical value -6500).	t with efault Set t
DecodeSGTIN96=False AddSerialToDecodedGTIN13=True GTIN13SNseparator=0x2F GS1CompanyPrefixLength=6 DecodeEPCMemory=False	; decodes encoded SGTIN96 EPC data into SGTIN13 (GTIN13 plus EPC serial number) ; includes the EPC serial number in GTIN13 decoded string ; ASCII character to be used as separator between decoded GTIN13 and serial number ; number of digits used for the GS1 Company Prefix Length ; output EPC data into EPC Tag URI (urn:epc:tag:) format	
HidReportFormat=0 HidReportSeparator=0x20 HidReportCRcharacter=0xD HidReportLFcharacter=0xA	; set 0 to report EPC data only or 1 to report EPC+TID ; ASCII character to be used as separator between EPC and TID in HID reports ; ASCII character to be used as Carriage Return in HID reports ; ASCII character to be used as Line Feed in HID reports	
IncludeRSSI=True RSSIReportSeparator=0x23	; set True to include RSSI data at the end of HID report data ; leading character to be used before RSSI information	
PrSensor=0 HidTrigger=True BeeperVolume=10	; set to 0 to disable presence sensor or between 1 to 10 to define the sensor sensitiv ; enable Start Inventory by LED Presence Sensor ; set beeper volume during inventory from 0 (no beep) to 10 (maximum volume)	ty
٢		>

4) Verify the COM port your computer assigns to the MiniPad – rPad device by opening the "Computer Management" Windows applet.



🛃 Computer Management		- 0	×
<u>File Action View H</u> elp			
🗢 🄿 🙍 📰 🖾 🚺	總 🖟 🙀 🕫		
🜆 Computer Management (Local	🗸 🛁 Lenovo-MS	Actions	
🗸 🎁 System Tools	> 👖 Audio inputs and outputs	Device Manager	
> 🕑 Task Scheduler	> 🗃 Batteries	beriee manager	
> 🛃 Event Viewer	> 🚯 Bluetooth	More Actions	•
> 👸 Shared Folders	> 💻 Computer		
> 🜆 Local Users and Groups	> 👝 Disk drives		
> 🔊 Performance	> 💵 Display adapters		
🚔 Device Manager	> 🕼 Human Interface Devices		
🗸 🚰 Storage	> 🖙 IDE ATA/ATAPI controllers		
📄 Disk Management	> 🔚 Imaging devices		
> 🚠 Services and Applications	> 📖 Keyboards		
	> Memory technology devices		
	> Mice and other pointing devices		
	> 🛄 Monitors		
	> 📃 Network adapters		
	> 🔟 Portable Devices		
	🗸 🐺 Ports (COM & LPT)		
	The second device (COM7)		
	> 🖃 Print queues		
	> Processors		
	> 💯 Security devices		
	> 📶 Sensors		
	> 🗓 Software devices		
	> 🐗 Sound, video and game controllers		
	> 💠 Storage controllers		
	> 💻 System devices		
	> 🏺 Universal Serial Bus controllers		
< >			
		1	

5) Open the "RS500 Development Tool" or the "Indy Demo Tool" provided by Identix. Click "Scan" to automatically detect the MiniPad – rPad device.

RS500 Development Tool v1.1.4.240 -	×
Help	
Connect Disconnect Reset COM7 V Scan	
Welcome Event Log Device Log	
Select the COM port that the IRI device is connected to from the dropdown menu, then press the Connect button to connect to the IRI device.	
Scanning for devices Found an RS500 [Serial Number: 210] on port COM7	^
	~

6) After a successful connection, the following screen is deployed.

🔗 RS500 Development Tool v1.1.4.240	- 🗆 X
Help	
Connect Disconnect Reset COM7 ~ Scan	
Inventory Write EPC Access Tx Control Set/Get Image Loader	Event Log Device Log
Inventory Settings	Save Clear Log Level: 2:info ~
Press 'Apply Inventory Settings' to configure inventory settings. A value of 0 for stop values is equal to inifinity. Stop Tag Count 0 Tag Population 15 Session 0 Fastid Fastid Fastid Session = 1, Search Mode = 2) All Tag Report Fields Tag Type Identifier (Via TD Read) Apply Inventory Settings Inventory Control Press 'Start' to begin inventorying tags. Press 'Start Stop	Scanning for devices Found an RS500 [Serial Number:210] on port COM7 Port COM7 opened Connected to RS500 [Serial Number:210] on port COM7

7) Now go to the "Image Loader" tab and select the RFID SIP firmware file provided by Identix. Hit the "Open" button to select the firmware file.

In this example the filename is "RS500_Application_01.04.02.240.bin"

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🦃 Open								×
$\leftarrow \rightarrow \cdot \uparrow$	- « C	Dropbox > Identix > Identix Prod	ucts > Identix PADs > Software		✓ [™] Se	earch Software		Q
Organize 🔻	New fold	der						?
🖈 Quick access	^	Name	Date modified	Туре	Size			
Document	s .*	Firmware PCB V2	14/01/2016 12:08	File folder				
mauricio	*	Firmware PCB V3	09/09/2015 16:49	File folder				
		🛃 Identix.TagReader_v1.0	15/01/2016 14:11	File folder				
		indy-release-itk-01.04.02.24	40 05/09/2015 15:50	File folder				
identitis		USB Drivers	10/09/2015 15:29	File folder				
Jdentix	×	RS500_Application_01.04.02	2.240.bin 12/06/2015 09:35	BIN File	120 KB			
🛃 Impinj	. *							
RFID	- *							
OfficeWork	c 🖈							
🛃 Work-MS	*							
💻 This PC	*							
💱 Dropbox								
a OneDrive								
Backup Pic	tures 🗸							
	Filer	name: RS500 Application 01.04.02	240 bin			mage files (* hin)		~
	/ lie j	marrier https://wppication_01.04.02.				noge mes (ibili)		-
					L	<u>O</u> pen	Cancel	

8) After selecting the desired RFID SIP Firmware file, press the" Load Image" button and the firmware update process will begin. A progress bar will be displayed and a "Download Completed Successfully" confirmation message will appear at the end of the update process.

RS500 Development Tool v1.1.4.240	- 0	×
Help		
Connect Disconnect Reset COM7 v Scan		
Inventory Write EPC Access Tx Control Set/Get Image Loader	Event Log Device Log	
Browse to an RS500 loader image and press Load Image to flash the image to the device. Loader images can be an RS500 application or a stored settings image.	Save Clear Clear 2:into ~	
C: Users mauricio Dropbox Udentix Udentix Products Udentix F Open	IRI Device Reset Image load in progress	^
Stored Settings		
Click the button below to save the device settings to an XML file. If the checkbox is checked then the binary image loader file will also be saved. Save Stored Settings to XML Save Settings Image BIN Click the button below to convert a settings XML file to a loader image that is compatible with the attached IRI device. Note that the load image controls above can be used to load the image on to the device. Please see the RSS00 documentation for a description of the XML format. Make Settings Image (BIN) from XML Factory Reset Create Example Stored Settings XML File		~

Attention! DO NOT INTERRUPT this process, otherwise your device may become permanently corrupted.

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9) Now verify is the firmware was successfully updated to the desired version. Go to the "Set/Get" tab and hit the "Retrieve Device Info" button. The current firmware of the RFID SIP will be displayed on the right panel.

RSS00 Development Tool v1.1.4.240 Help Find the desired key, fil in optional parameters, then press the Set or Get button to perform the operation. Value is only valid for Set operations Select the desired key, fil in optional parameters, then press the Set or Get button to perform the operation. Value is only valid for Set operations Access TA Control Set/Get Image Loader Fil Device Reset BankIndex 0 Value Connect Obscome and identification Retrieve Device Info Retrieve Device Info Retrieve Device Info Retrieve Al Key data for a system snapshot Retrieve Al Key data for a system snapshot Retrieve Enfor Info Clear Error Retrieve Tor Info and dear any current errors Retrieve Tor Info and Cher any current errors Retrieve Tor Info and Ch
Help Inventory Connect Reset COM7 V Scan Inventory Write EPC Access Tx Control Set/Get Image Loader Setect the desired key, fil in optional parameters, then press the Set or Get button to perform the operation. Value is only valid for Set operations Event Log Device Log Access PASSWORD Image load in progress Image load in progress Image load in progress ValueIndex 0 Image load in progress Image load in progress ValueIndex 0 Image load in progress Image load in progress ValueIndex 0 Image load in progress Image load in progress Value 0 Image load in progress Image load in progress Value 0 Image load in progress Image load in progress Value 0 Image load in progress Image load in progress Value 0 Image load in progress Image load in progress Retrieve Device Info Image load in progress Image load in progress Image load in progress Retrieve Ali Key data for a system snapshot Image load successful Image lo
Image load in progress Rective Device Info Retrieve Device Info Retrieve All Keys Retrieve Temperature
Get Temperature

You can check also by reopening the "Idenvinfo.txt" file present on the Identix drive



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Emergency recovery procedure for he RFID SIP Firmware

In the case the RFID SIP firmware update process fails and you're no longer able to connect to the device, you may use this procedure to reset the RFID SIP to the latest working firmware version.

Open the Identix-Pad.cfg file located inside the "Identix" drive. Insert on the first line of the configuration file the following statement/command: "*RecoverlRIdevice=True*" (without quotes). Disconnect and reconnect the device from the computer and verify if you're able to access the MiniPad - rPad again.

Identix-Pad.cfg - Notepad	– 🗆 X
<u>F</u> ile <u>E</u> dit F <u>o</u> rmat <u>V</u> iew <u>H</u> elp	
RecoverIRIdevice=True Opmode=R Region=0	; defines the device operating mode: T for transparent mode, H for keyboard emulation (HID), ; set 0 for FCC (USA), 13 for Anatel (Brasil) or consult Identix for other regions
<pre>TXPower=23 Inventory=D Session=1 TagPopulationEstimate=4 InventoryCycle=0,0 RSSIfilterThreshold=0</pre>	; transmit power in dBm (maximum 23) ; Inventory search mode: D for Dual Target, S for Single Target and SS for Single Target with ; Gen2 Tag inventory session: 0, 1, 2 or 3 ; an estimate of the tag population in view of the RF field of the antenna ; set the inventory cycle duration and interval (on-off) in milliseconds. Set to 0,0 (default ; only tags with RSSI data above this threshold will be reported (typical value -6500). Set 1
DecodeSGTIN96=False AddSerialToDecodedGTIN13=True GTIN135Nseparator=0x2F GS1CompanyPrefixLength=6 DecodeEPCMemory=False	; decodes encoded SGTIN96 EPC data into SGTIN13 (GTIN13 plus EPC serial number) ; includes the EPC serial number in GTIN13 decoded string ; ASCII character to be used as separator between decoded GTIN13 and serial number ; number of digits used for the GS1 Company Prefix Length ; output EPC data into EPC Tag URI (urn:epc:tag:) format
HidReportFormat=0 HidReportSeparator=0x20 HidReportCRcharacter=0xD HidReportLFcharacter=0xA	; set 0 to report EPC data only or 1 to report EPC+TID ; ASCII character to be used as separator between EPC and TID in HID reports ; ASCII character to be used as Carriage Return in HID reports ; ASCII character to be used as Line Feed in HID reports
IncludeRSSI=False RSSIReportSeparator=0x23	; set True to include RSSI data at the end of HID report data ; leading character to be used before RSSI information
PrSensor=0 HidTrigger=True BeeperVolume=10	; set to 0 to disable presence sensor or between 1 to 10 to define the sensor sensitivity ; enable Start Inventory by LED Presence Sensor ; set beeper volume during inventory from 0 (no beep) to 10 (maximum volume)

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Antenna Radiation Patterns

Below are the antenna patterns for minPad and rPad respectively. Antenna gains are -4dBi for MiniPad and +8dBi for rPad.



Contacts

Sales: sales@idntx.com Support: https://idntx.zendesk.com

FCC Statement

FCC Statement: §15.105 Digital Devices Statement. Class B Digital Devices.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: (1) reorient or relocate the receiving antenna, (2) increase the separation between the equipment and receiver, (3) connect the equipment into an outlet on a circuit different from that to which the receiver is connected or (4) consult the dealer or an experienced radio/TV technician for help.





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