## Wi-Fi Administration and Operation

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## Introduction

Qualified Persons	A WARNING
	The equipment covered by this publication must be installed, operated, and maintained by qualified persons who are knowledgeable in the installation, operation, and maintenance of overhead electric power distribution equipment along with the associated hazards. A qualified person is one who is trained and competent in:
	• The skills and techniques necessary to distinguish exposed live parts from nonlive parts of electrical equipment.
	• The skills and techniques necessary to determine the proper approach distances corresponding to the voltages to which the qualified person will be exposed.
	• The proper use of the special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment.
	These instructions are intended only for such qualified persons. They are not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment.
Read this Instruction Sheet	Thoroughly and carefully read this instruction sheet before programming, operating, or maintaining your S&C IntelliRupter PulseCloser Fault Interrupter. Familiarize yourself with the Safety Information on page 3. The latest version of this instruction sheet is available online in PDF format at <b>sandc.com/en/Support/product-literature/asp.</b>
Retain this Instruction Sheet	This instruction sheet is a permanent part of your S&C IntelliRupter PulseCloser Fault Interrupter. Designate a location where you can easily retrieve and refer to this publication.
Special Warranty Provisions	The standard warranty contained in S&C's standard conditions of sale, as set forth in Price Sheet 150, applies to IntelliRupter fault interrupter and its associated options except for the control group (the protection and control module and communication module) and S&C SpeedNet <sup>™</sup> Radio, as applicable. For these devices the first paragraph of said warranty is replaced by the following:
	(1) General: The seller warrants to the immediate purchaser or end user for a period of 10 years from the date of shipment that the equipment delivered will be of the kind and quality specified in the contract description and will be free of defects of workmanship and material. Should any failure to conform to this warranty appear under proper and normal use within 10 years after the date of shipment, the seller agrees, upon prompt notification thereof and confirmation that the equipment has been stored, installed, operated, inspected, and maintained in accordance with recommendations of the seller and standard industry practice, to correct the nonconformity either by repairing any damaged or defective parts of the equipment or (at the seller's option) by shipment of necessary replacement parts.
	Replacement control groups and S&C SpeedNet Radios provided by the seller or repairs performed by the seller under the warranty for the original equipment will be covered by the above special warranty provision for its duration. Replacement control groups and S&C SpeedNet Radios purchased separately will be covered by the above special warranty provision.
	This warranty does not apply to major components not of S&C manufacture, such as batteries and communication devices, as well as hardware, software, resolution of protocol-related matters, and notification of upgrades or fixes for those devices. However, S&C will assign to the immediate purchaser or end user all manufacturers' warranties that apply to such major components.
Use the Latest LinkStart Software Revision	Install the latest IntelliRupter fault interrupter software on your computer—available at: <b>sandc.com/en/support/sc-customer-portal/</b> . This is the latest version of LinkStart software. If LinkStart encounters earlier software on a Wi-Fi card, it will require that you automatically update that software, and then proceed with your Wi-Fi tasks.

### Understanding Safety-Alert Messages

Several types of safety-alert messages may appear throughout this instruction sheet and on labels attached to the IntelliRupter PulseCloser Fault Interrupter. Familiarize yourself with these types of messages and the importance of these various signal words:

## ▲ DANGER

"DANGER" identifies the most serious and immediate hazards that will likely result in serious personal injury or death if instructions, including recommended precautions, are not followed.

## 

"WARNING" identifies hazards or unsafe practices that can result in serious personal injury or death if instructions, including recommended precautions, are not followed.

## 

"CAUTION" identifies hazards or unsafe practices that can result in minor personal injury if instructions, including recommended precautions, are not followed.

## NOTICE

*"NOTICE"* identifies important procedures or requirements that can result in product or property damage if instructions are not followed.

## Following Safety Instructions

If you do not understand any portion of this instruction sheet and need assistance, contact your nearest S&C Sales Office or S&C Authorized Distributor. Their telephone numbers are listed on S&C's website sandc.com Or call S&C Headquarters at (773) 338-1000; in Canada, call S&C Electric Canada Ltd. at (416) 249-9171.

### NOTICE

Read this instruction sheet thoroughly and carefully before installing or operating your S&C IntelliRupter PulseCloser Fault Interrupter.



If you need additional copies of this instruction sheet, contact your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

It is important that any missing, damaged, or faded labels on the equipment be replaced immediately. Replacement labels are available by contacting your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

## Replacement Instructions and Labels

This document is applicable to IntelliRupter Installer versions 2.29 through 3.49, which only operate with Wi-FiAdminInstaller 1.0.0. For IntelliRupter Installer version 3.5.x and ater refer to S&C Instruction Sheet 766-522.

Two programs are used to generate security keys. **WiFiKeys** creates the key files, and **DBEdit** database editor assigns keys to specific IntelliRupter fault interrupters. The distribution engineer or a security administrator has responsibility for authentication key security. The most secure procedure is installing the WiFiKeys program on a security personal computer (PC), and installing the DBEdit program on a separate database PC. Keys generated on the security PC are then transferred to the database PC with a secure means, such as by using a USB thumb drive. The WiFiKeys program, by default, saves key files in the LinkStart folder. The DBEdit and LinkStart programs also store files in a LinkStart Folder, located at: \*Documents and Settings*\*All Users*\*Application Data*\ *S&C Electric*\*LinkStart*\. This folder requires administrative privilege and uses folder security for access to existing files and for adding new files. Transferring data is simple—using administrative and folder privileges on both computers, move the files from the security PC LinkStart folder to the database PC LinkStart folder.

#### NOTICE

The key files are generated on the security PC. For each named key there will be two files, one with a ".pub" file name extension and one with a ".pri" extension. Both files are part of a single "key pair" half used by a Wi-Fi module and the other half by LinkStart. It is important to backup and properly manage the key files. When a key is generated it can never be regenerated. This means the WiFiKeys program will not duplicate a key set if the same key name is used. Instead of duplication, two different sets of key files will have the same name. Take care to avoid this situation, so sers will not be locked out because they are using the wrong key which has the right name.

For authentication purposes, the LinkStart program encrypts specifically defined data with its private key, so it can be decrypted by the Wi-Fi module using the public key on the mobile computer. The Wi-Fi module, in turn, encrypts different specifically defined data with its private key, so it can be decrypted by LinkStart using the Wi-Fi module's public key. This requires that the Wi-Fi module be supplied with a private key and a different pair's public key and that LinkStart be supplied with the public part of the first key pair and the private part of the second key pair.

The DBEdit program expects to find both the required key files present in the LinkStart folder and will use the private and public keys for the key names specified in the MasterKey.txt file created by the *Master Key Entry* screen. When the config file is exported by DBEdit, it should then be transferred to the portable PC that will be used in the field to transfer the config file to specific IntelliRupter fault interrupters.

If the two key names for master keys are: IntelliRupter Master Key: **MasterIR**, and Mobile Master Key: **MasterLT**, then DBEdit will require that the files MasterIR.pri and MasterLT.pub both be present so it can include them in the config file. However, it will not expect the other files from these two pairs (MasterIR.pub MasterLT.pri) to be in the LinkStart folder.

The file needed for configuring IntelliRupter fault interrupters to use master keys will have the extension ".wm" and will include either the individual serial number of the IntelliRupter fault interrupter or the universal serial number: install.00-0000000.wm depending on the choice used when exporting from DBEdit. The files needed for any LinkStart program to connect to an IntelliRupter fault interrupter AFTER it has been loaded with the config file install.00-0000000.wm would be the files not included in the config file: MasterIR.pub MasterLT.pri.

The portable PC used to upload the .wm file should have both the .wm file and the two separate key files. Any other portable PCs that connect to the IntelliRupter fault interrupters after the config file has been uploaded will only need to have the two separate keyfiles: **MasterIR.pub MasterLT.pri**.

#### Follow these steps to create and install IntelliRupter master keys:

- **STEP 1.** On the security PC, make two key files with the Wi-Fi Key Generator program. From these two files the Wi-Fi Key Generator program will generate four key files that will be saved in the LinkStart folder. See page 6.
- **STEP 2.** Copy the four key files stored in the LinkStart folder on the security PC to a USB thumb-drive. Insert the thumb-drive in the database PC and paste the four files into that LinkStart folder.
- **STEP 3.** Open the DBEdit program on the security PC, and enter the key names in the Master Key Set dialog box. See page 8.
- **STEP 4.** Add all the IntelliRupter fault interrupters to the DBEdit database list. See page 11.
- STEP 5. Generate a Wi-Fi Configuration file. See page 15.
- **STEP 6.** Generate the Master Key Configuration filet hat is saved in the LinkStart folder. See page 16.
- STEP 7. Save the Master Key Configuration file, the IntelliRupter fault interrupter public key, and the laptop private key in the LinkStart folder on the portable computer that will be used to connect with Wi-Fi to IntelliRupter fault interrupters in the field. If using the example file names that were used in the beginning of the "overview" section, install.00-000000.wm, MasterIR. pub, and MasterIT.pri would be used.
- **STEP 8.** When at an IntelliRupter fault interrupter in the field, start LinkStart on the portable computer. Select the device name or serial number for that IntelliRupter fault interrupter and connect to it. See page 17.
- STEP 9. Click on the Wi-Fi Admin button and log in to LinkStart with an administrative password. On the Wi-Fi Configuration and Setup dialog box, click on the Transfer Wi-Fi Settings button to load the master key set into the IntelliRupter fault interrupter's Wi-Fi module. See page 18.

#### Follow these steps to remove your IntelliRupter Master Keys:

- **STEP 1.** Open the DBEdit program on your database PC. Disable the **Master Keys** option. See page 24.
- **STEP 2.** Generate an empty Master Key Configuration file, which is saved to the LinkStart folder. See page 25.
- **STEP 3.** Save the empty Master Key Configuration file in the LinkStart folder on the portable computer to be used to connect with Wi-Fi to IntelliRupter fault interrupters in the field. The LinkStart folder must contain a copy of the active key until they have been removed from the Wi-Fi module.
- **STEP 4.** When at an IntelliRupter fault interrupter in the field, start LinkStart on the portable computer. Select the device name or serial number for that IntelliRupter fault interrupter and connect to it. See page 17.
- STEP 5. Click on the Wi-Fi Admin button and log in to LinkStart with an administrative password. On the Wi-Fi Configuration and Setup dialog box, click on the Transfer Wi-Fi Settings button to load the master key set into the IntelliRupter fault interrupter's Wi-Fi Module. See page 18.

Before telling the DBEdit program the names of the master keys to use during authentication, keys must be generated using the WiFiKeys program. See Figure 1.

WiFiKeys le Make Key Help					99
5C S&C Electric	Company	WiFi	Key	Genera	tor Version 3.1.4.2
Choose folder for the keys:	Or use this folder:				
Select Save Folder	C:\Documents and Set	ttings\All Users\Applica	tion Data\S&	C Electric/LinkStart	
inter the Name for the key pair:					
Make Key		Exit			

Figure 1. The Wi-Fi Key Generator screen.

The screen shown in Figure 1 shows the default path to the folder where the keys will be written. Both DBEdit and LinkStart look in this folder for the keys and the database files.

To generate the keys needed as master keys, select two names—one for the IntelliRupter fault interrupter and one for the PC computer. Type the name into the **Name for the key pair** field and click on the **Make Key** button. The screen shows the names of the two keys generated. See Figure 2.

WiFiKeys Re Make Key Help					89
S&C Electric	Company	WiFi	Key	Genera	Version 3.1.4.2
Choose folder for the keys:	Or use this folder:				
Select Save Folder	CADocuments and Setting	s\All Users\Applica	ation Data\S&	C Electric(LinkStart)	
Enter the Name for the key pair: MasterIR	Name: MasterIR				
	Size: 128 bytes, 1024 bits				
Make Key	Exit				
Key files: MasteriR.pub / MasteriR.p	ri				

Figure 2. Naming the key pair.

🚰 WiFiKeys File – Nake Key – Help				
S&C Electric	Company	WiFi	Key	Generator Version 3.1.4.2
Choose folder for the keys:	Or use this folder:			
Select Save Folder	C1Documents and Set	ttings\All Users\Applica	tion Data\S8	C Electric/LinkStart)
Enter the Name for the key pair:				
MasterLT	Name: MasterLT			
	Size: 128 bytes, 1024	bits		
		_		
Make Key		Exit		
Key files: MasterLT.pub / MasterLT	.pri			

Repeat this process for the second key name. See Figure 3.

Figure 3. Repeat the key-naming process for the second key.

Now the key files (four of them) have been saved in the LinkStart folder, where the DBEdit program will look for them. If sing two separate computers, move these files from the security PC to the LinkStart folder on the database PC.

Each time a key is generated it is unique. Therefore, a lost key cannot be replaced by re-entering that key name. A completely unique key will be generated the second time the same name is used, and the new key cannot be used to replace the first key.

#### **DBEdit Program**

The first time the DBEdit program is run after installation, the screen shown in Figure 4 appears, overlaying the main DBEdit screen.

IntelliR	upter(R) WiFi D	atabase Mar	hagement	itecture O	ntions
	ioenn apoe	, occur			poiorio
Г	Provide for N	Master Key			
				Save	Exit

Figure 4. The screen overlaying the DBEdit screen.

Clicking on the Provide for Master Key checkbox and clicking on the **Save** button configures the DBEdit program to work with a pair of master key names to provide company-specific authentication security during the connection setup between a PC computer and an IntelliRupter fault interrupter.

Figure 5 shows the main DBEdit screen before the **Provide for Master Key** option is selected.

liRupter(R) WFi D	atabase M	anagement		_	_	_		93
S&C Elec Excellence Th	tric Co trough Inn	ompany iovation						DBedi
de-Click To Add, R	emove or E	dit A Device						
Serial Number	Device N	lame		Device	Location			
00-0000000	Universa	d		Univer	al Serial Nu	mber		
								100
					P			
			1		ater	ch red		-
			2					2
ptions Decry	d Files	Expert					Save	Exit
sert De	lete	Undelete	M	we Up	Meure Da	wa		
	SSC Elec Secolistica T Ecolistica T Add, R Serial Number 00-000000	plana Decrypt Files	SSC University Files Expert	Plana Decrypt Files Expert	SSAC Electric Company SSAC Electric Company Excellence Through Innovation Ne Click To Add, Renove or Edit A Device Serial Number Device Name Name Device Name Name Device Nam	SSC Electric Company SSC Electric Company Excellence Through Innovation Ne Click Ta Add, Renove or Edit A Device Serial Number Device Name Device Location 00-0000000 Universal Universal Serial Nu Universal Serial Nu Sear Sear Sear Decrypt Files Expert sert Defet Undefete More University More University	SSC Electric Company Secolience Through Innovation Tectick To Add, Renove or Edit A Device Serial Number Device Name Device Location 00-000000 Universal Universal Serial Number Universal Serial Number Search Text	Plana Decrypt Files Expert Save More Dawn

Figure 5. The main DBEdit screen.

Note in Figure 6 the addition of the **Master Key** button, with text at the right. Clicking the **Options** button will reopen the IntelliRupter Security Architecture Options dialog box, allowing changes to be entered. The following screen shows the configuration for default security only, with no company-specific keys.

Intel	liRupter(R) WiFi D	atabase #	lanagement	_		_	_		
5. (	Excellence Th	tric C	ompany novation						DBedi
Dout	le-Click To Add, R	lemove or	Edit A Device						
	Serial Number	Device	Name	Dev	ice Loc	ation			
	00-0000000	Univers	al	Uni	rersal S	Serial Number			
<b>č</b> ]									
						Search Tex	a		
Mat	iter Key Ma	aster Key pt Files	Set: (not assi Export	gned) (not a	algned	ŋ		Save	Exit

Figure 6. The addition of the Master Key button.

## Enter Master Key Name

Click on the **Master Key** button on the main *DBEdit* screen. See Figure 7.

Inte	elliRupter(R) WiFi D	atabase Management				508
<b>5</b> 8	S&C Elec Excellence Tr	tric Company				DBedi Version 3.1.4.
Dou	ible-Click To Add, R	temove or Edit A Device				
	Serial Number	Device Name		Device Location		
1	00-0000000	Universal		Universal Serial Number		
1						151
				Proved Text		
				Search Text		
			1			<u> </u>
Ma	ster Key Ma	ator Kay Sati Inst as	(honois	(heat acciment)		
	INIC INIC	seen rey oor (nor as	signed) (	(nor applying)		
	Ontions Deser	et Elles Evenet			Caus	5.4
	Ophons Decry	pt riles Export			Save	Exa
			1			
	Insert De	elcte Undelete	Me	we Up Move Down		
			-			

#### Figure 7. Click on the Master Key button.

The Master Key Set dialog box will open. See Figure 8.

Master K	ley Set
Intellirupter Master Key	Mobile Master Key

Figure 8. The Master Key Set dialog box.

Master I	Key Set
Intellirupter Master Key MasterIR	Mobile Master Key MasterLT

Enter the two key names here. click on the **Save** button, then click on the **Exit** button.

Figure 9. Entering the two key names.

The names will now appear on the main screen to the right of the **Master Key** button. See Figure 10.

Serial N		1					
00-0000	lumber 1000	Device Name Universal		Device Lo Universal	cation Serial Number		
00-0000		Universal		Universal	ochai Namoti		
							10
					Search Tex	a	
Master Key	Ma	ster Key Set: M	asterIR Ma	sterLT			

Figure 10. Key names now appear next to the Master Key button.

### Add IntelliRupter Fault Interrupters to the Database

IntelliRupter fault interrupters can now be added to the database. If there is an existing database file named MBL DB.csv, use Microsoft Excel to convert that database. See the "Excel File Examples" section on page 28 for the conversion procedure. The default file created when the program ran the first time has one record, the Universal Serial Number, which can address any Wi-Fi module that is not connected to the control in an IntelliRupter fault interrupter.

To enter new information, first click on the **Insert** button to create the line for the new entry. This opens the **Edit** screen where IntelliRupter fault interrupter information can be entered. If multiple entries exist in the database, the new line will be inserted below the line that is selected in the database list. See Figure 11.

Intellikupter	(R) WIFI Database Ma	Edit	
Serial No	Device Name	Device Location	
00-0000000	Universal	Universal Serial Number	
ſ			
Сору	Paste	Settings	Done

Figure 11. The Wi-Fi Database Management Edit screen.

Click in each field to type in the information. When an entry has been completed, click on the **Done** button. See Figure 12.

Serial No         Device Name         Device Location           00-0000000         Universal         Universal Serial Number           08-0008734         IRPC1005A         First cross after Johns Road MP27			Edit
00-0000000 Universal Universal Serial Number 08-0008734 IRPC1005A First cross after Johns Road MP27	Serial No	Device Name	Device Location
08-0008734 RPC1005A First cross after Johns Road MP27	00-0000000	Universal	Universal Serial Number
	08-0008734	IRPC1005A	First cross after Johns Road MP27

Figure 12. Entering database information.

	T-	1		
_	Serial Number	Device Name	Device Location	_
	08-0008734	IRPC1005A	First cross after Johns Road MP27	
1				
1			Search Text	
1			Search Text	]
)			Search Text	]
) Ma	ister Key Ma	ister Key Set: MasteriR	Search Text	]
) Ma	ster Key Ma	ister Key Set: MasteriR	Search Text	]

This will transfer the data to the main screen on the next line. See Figure 13.

Figure 13. Data gets transferred to the next line.

Repeat this process to enter information for each IntelliRupter fault interrupter. Click on the **Insert** button and type information in the *Edit* screen for each new record added to the database.

The device name cannot contain spaces, but spaces are allowed in the **Device** Location field.

To edit an existing entry, select it and double click on the entry line. This will open the Edit dialog box.

### Data Entry with Notepad

The same file name can be created using Notepad, and the entry can be saved as LSDB. txt into the LinkStart folder. When entering data, be sure to always end each line by pressing the Enter key on the keyboard.

It is important to press the Enter key on the keyboard at the end the last line of text. Failure to do this prevents recognition of the last record. See Figure 14.

LSDB.txt - Notepad		838
Eile Edit Format View Help		
Ele Edt Fernst View Helo 00-0000000 Universal 08-0008734 IRPC1005A 08-0008735 IRPC1006A 08-0008737 IRPC1006A	Universal Serial Number First Cross after Johns Road MP27 Johns Road M032 Jims Road at rail grade crossing	<u>م</u>
		2

Figure 14. Press the Enter key on the keyboard at the end of the last line of text to recognize the last record.

The text file can also be loaded by DBEdit when it is placed in the same folder as the key files, the LinkStart folder.

Files can also be created and edited in Excel. Save the file using the tab delimited \*.txt file extension, and Excel will add tab character field delimiters. Using Excel is described in a later section.

This is the Notepad file loaded by DBEdit. See Figure 15.

Intel	lliRupter(R) WiFi D	atabase Management	8			98
5. 8 f	S&C Elec	tric Company	ſ.			DBedi
	Excellence Th	rough Innovation				Version 3.1.4.
Dout	Die-Click To Add, R	emove or Edit A Devic	c	Deviles Lessilles		
_	00-000000	Universal		Universal Serial Number		
2	08-0008734	IRPC1005A		First Cross after Johns Ro	ad MP27	
3	08-0008735	IRPC1006A		Johns Road MP32		
4	08-0008737	IRPC1006A		Jims Road at rail grade cr	rossing	
<]					1	][3
					30.	•
Ma: O	ster Key Ma	nster Key Set: Mast	eriR Mast	erLT	Save	Exit
Ir	nsert D	elete Undelete	e Mi	Move Down		

Figure 15. The Notepad file loaded by DBEdit.

Similarly, an Excel spreadsheet saved as a tab-delimited text file can be loaded into DBEdit. See Figures 16 and 17.

3	Microsoft Exce	I - LSDB.txt			800
	Eile Edit V	ew Insert Form	$\begin{array}{c} \text{nat}  \text{Tools}  \text{Qata}  \text{Window}  \text{Help}  \begin{array}{c} \text{Type} \\ \\ \  \ & \ & \ & \ & \ & \ & \ & \ & \ & \$	a question for help 100% Type a qu	estion for hel
	A5 -	© 15 ठ।⊉ &	🖏 👔   Vi Reply with Changes End Review 👳		
-	A	B	C	D	E
1	00-0000000	Universal	Universal Serial Number		
2	08-0008734	IRPC1005A	First Cross after Johns Road MP27		
3	08-0008735	IRPC1006A	Johns Road MP32		
4	08-0008737	IRPC1006A	Jims Road at rail grade crossing		
5					
6					
7					
8					
9					
10					1
11					
12					
13	L				
14	I HALSDB		<b>6</b>		>
Rea	dy			NUM	

Figure 16. An Excel spreadsheet saved as a tab-delimited text file.

Inte	lliRupter(R) WiFi D	atabase Management		90
5. /*[	S&C Elec Excellence Th	tric Company		DBedit Version 3.1.4.1
Dout	le-Click To Add, R	emove or Edit A Device		
	Serial Number	Device Name	Device Location	
1	00.0000000	Universal	Universal Serial Number	
2	08-0008734	IRPC1005A	First Cross after Johns Road MP27	
3	08-0008735	IRPC1006A	Johns Road MP32	
	00 0000707		onno rioda actual grade crossing	
<			11.	>
			Search Text	
				*
Mas	ster Key Ma	ster Key Set: MasterIR Ma	asterLT	
0	options Decryr	t Files Export		Save Exit
h	nsert De	lete Undelete	Move Up Move Down	

Figure 17. The Excel spreadsheet loaded into the DBEdit screen.

When records have been added, click on all the required records, click on the  ${\bf Save}$  button to preserve the data.

A Wi-Fi configuration file generated by the DBEdit program contains the Wi-Fi settings described below and the Authentication Security Key files. This file loads into the Wi-Fi module to configure it for security. Using a master key set requires that only a single configuration file be generated and loaded into all IntelliRupter fault interrupters. When this approach is used, the configuration file should be generated from the universal serial number and only the universal serial number will require its settings to be configured. Alternatively, each IntelliRupter fault interrupter Wi-Fi Module can be loaded with a unique configuration file based on the IntelliRupter serial number. If this approach is taken, then each device in the database will require a unique configuration setting file.

To configure the WAN radio serial port settings and the Wi-Fi administrative passwords, select the IntelliRupter fault interrupter, or the universal serial number, from the main *DBEdit* screed by double-clicking on it to open the *Edit* screen. See Figure 18.

		Edit	
Serial No	Device Name	Device Location	
00-0000000	Universal	Universal Serial Number	
08-0008734 08-0008735	IRPC1005A IRPC1006A	First Cross after Johns Road MP27 Johns Road MP32	

Figure 18. Opening the Edit screen.

Now click on the Settings button. See Figure 19.

	vvii 1 ivio		ungs		
WAN Radio Po	rt Settings				
Bits/Sec	Data Bits	Parity	Stop Bits	Flow Co	ntrol
				1	
		WiFi M	odule Pa	assword	ds
		WiFi M	odule Pa	Admin PV	ds v
	[	WiFi M User PW	odule Pa	Admin PV	ds v
	-	WiFi M User PW	odule Pa	assword Admin PV	ds v

Figure 19. The Wi-Fi Module Settings screen.

The **Baud Rate** (Bits/Sec), **Data Bits**, **Parity**, **Stop Bits**, and **Flow Control** settings for the selected device can be changed from the screen shown in Figure 19. Click on the down arrow icon to display a list from which to select the value for the parameter being changed.

The user and admin passwords can also be changed here by clicking in the appropriate field and typing in a password.

When finished, click on the **Save** button and on the **Exit** button. These settings are recorded in a .ini file and will now remain associated with this device. The universal serial number can also have an .ini file: "00-0000000.ini".

### Generate Master Key Configuration File

Click on the **Export** button on the main *DBEdit* screen to open the Export Configuration and Database Files dialog box. To generate a universal configuration file from the universal serial number—click on (select) the universal serial number 00-0000000 and click on the **Export** button. This will generate the Master Key Configuration File: install.00-0000000.wm in the LinkStart folder. See Figure 20.

IntelliRupter® WiFi Database Management	×
Export Configur	ation and Database Files
Export Contigur Select IntelliRupter serial numbers from the list and pre 00-0000000 07-0001448 07-1234006 08-9001295 08-9002000 08-0001077 07-0001472 08-9001038 08-9001038 08-900003	ation and Database Files ss the Export button to Export a set of Configuration and Database files
08-9001037 08-9001025 08-9001453 08-9001488	Export Exit

Figure 20. The Export Configuration and Database Files screen.

To generate configuration files for each device, select the serial number or serial numbers to generate the configuration files for, and click on the **Export** button. A configuration file containing the serial number in its name will be generated for each of the selected serial numbers.

The database is now ready for use.

To view the contents of a Master Key Confirmation File that has either the .vm or .wd file extension, click on the **Decrypt Files** button on the main *DBEdit* screen to open the *Config File Decryption* screen. Click to select the name of the file to view, and click on the **Decrypt File** button. See Figure 21.

IntelliRupter® WiFi Database Manageme	ent	
	Config File Decryption	_
Select File To Decrypt install.00-0000000_120109a.v install.08-9000014after_12010 install.08-9000014_b4_12010	Decrypted File Contents D:\Documents and Settings\All Users\Application Data\S&C Size: 1520 Flags 00000001 Timestamp 12/02/2009 20:53:30 UTC CRC calculated 4086CBD4 File 00-0000000.ini Size: 37 Ini: <admin 1="" 57600="" 8="" n="" noradio="" user=""> File 120109alR.pri Size: 993 File 120109aLT.pub Size: 417</admin>	Ē
Delete File	Decrypt File Exit	

Figure 21. The Config File Description screen.

### Decrypting a Master Key Configuration File

Start LinkStart and select the IntelliRupter fault interrupter to connect to. Scroll through the database by clicking on the **Prev** and **Next** buttons, or click on the **Clear** button and type text into the **Device Name** field to perform a dynamic search of the database. When the deisred record appears in the drop-down list, click on it to select it.

Click on the **Connect** button. See Figure 22.

IntelliRupter(R) WiFi Connection Management	- 0 🛛
S&C Electric Company Excellence Through Innovation	LinkStart Version 3.1.4.2
Connect to an IntelliRupter	
Device Name: TestMBL Prev	Next
Device Location: Shop	
Serial Number: 07-0030909 Record: 4	Clear
Connect	
Connection Progress	
Select WiFi Adapter	Exit
Intel(R) PRO/Wireless 3945ABG Network Connection - Tee	fer2 Miniport

Figure 22. Scrolling through the database.

After the connection is established, click on the **Wi-Fi Admin** button and log in using the administrator password. See Figure 23.

🚼 IntelliRupter(R) WiFi Connection Management	_ 🗆 🖂
S&C Electric Company Excellence Through Innovation	LinkStart Version 3.1.4.2
Connect to an IntelliRupter	· · · · · · · · · · · · · · · · · · ·
Device Name: TestMBL Device Location: Shop Serial Number: 07-0030909 Record: 4 Serial Number Selected: 07-0030909 Disconnect IntelliLINK Do	wnload Utility
Connection Su	Iccessful
A27 Active Connection CH 11	-51 dBm
Select WiFi Adapter W	/iFi Admin Exit
Intel(R) PRO/Wireless 3945ABG Network Connectio	n - Teefer2 Miniport

Figure 23. The Wi-Fi Admin button is on this screen.

1		
WiFi Passwords		
Transfer WiFi Settings		
Reload WiFi Firmware		

When logged in, click on the Transfer Wi-Fi Settings button. See Figures 24 and 25.

Figure 24. Click on Open Transfer Wi-Fi Settings button.

WiFi Administration
WiFi Configuration and Setup
Transfer Encrypted WiFi Settings File
Send File to WiFi Module: Send
Get File from WiFi Module: Get
Apply 🔽 Override Base Memory at next power-on
Settings File in WiFi Module: 01/01/1601 00:00 UTC 0x00000001
Settings File available: install.00-0000000.wm ID: 08/19/2009 00:30 UTC 0×00000001 Done

Figure 25. The Wi-Fi Configuration and Setup screen.

Notice that install.00-0000000.wm is displayed as the available file.

The Get button can be used to pull a copy of the existing settings file prior to uploading the new settings file. If selected, a file with the name install.XX-XXXXX.wd, where XX-XXXXXX = the serial number of the connected device, will be created in the directory containing the new settings file.

If you are working with a docking station it is necessary to check the Override Base Memory at next power-on check box and click on the **Apply** button. This will cause the security information to be written to the base memory module (BMM). If this box has not been checked, the data in the base memory will overwrite the new configuration in the Wi-Fi module. The same is also true when transferring a communication module from an IntelliRupter fault interrupter with an updated BMM to one that does not have an updated BMM.

Now, click on the **Send** button to upload this file to the IntelliRupter fault interrupter's Wi-Fi module and base memory module.

Click on the **Done** button, and then click on the **Log Out** button.

A Wi-Fi configuration file can be sent to an IntelliRupter fault interrupter with IntelliLink® Remote Setup Software. The latest IntelliRupter fault interrupter software must be installed on both the IntelliRupter fault interrupter and the portable PC computer. The configuration file is saved on the IntelliRupter Compact Flash card, and then the file is installed from the Compact Flash Card. Follow these steps:

- STEP 1. Copy and then rename the Master Key Configuration file from install.XX-XXXXXX.wm to WIFICTRL.WFM.
- STEP 2. Log in to the IntelliRupter fault interrupter with IntelliLink Remote Software.
- **STEP 3.** In the IntelliLink Remote Software menu bar, select: *Tools>Compact Flash Access...*
- STEP 4. Navigate to the Compact Flash Card Settings folder. See Figure 26.
- **STEP 5.** Navigate the PC File System to the location of the renamed configuration file WIFICTRL.WFM. You may need to allow view system files in the **Tools>Options** menu.
- **STEP 6.** Upload the file **WIFICTRL.WFM** from the PC File System to the Compact Flash Card. You may need to select the **YES** option to overwrite the existing file.



Figure 26. The Compact Flash Card screen.

- **STEP 7.** Close Compact Flash Explorer.
- STEP 8. In the IntelliLink software screenset, select Setup>Communications>Wi-Fi. See Figure 27 on page 20.

LintelliRupter®	WiF	9		
Operation	WiFi Ider	ntification		
otelliTEAM II	Firmware Version	3. 1. 4. 4		
ature and a second at	MAC Address	00 40 9D 37 0F 7F		
etup	Copy of Base Serial Number	08-9001037		
General		······································		
Protection	WiFi S	tatus		
Restoration	Startup Exchange Sequence	08 - Link to WiFi Active		
Communications	Keepalive Status	Keepalive Active		
Comm. Setup	Base Memory Access Status	WiFi Signature Record obtained		
Security Validate/Apply	Transfer WiFi Configuration NOTE: The soliwing commands will take place immediately. There is no need to Validate or Apply settings.			
isapostics	Save	Install		
lagnostics	Will Cattions File to Compact Filesh	New WEE Carlings Ells From Compare Elash		
<u>viz</u>	Wiri Settings rife to Compact Plast	New Wart Settings File From Compact Flash		
	Bytes Transferred 0	Bytes Transferred 96		
	Transfer Status	Transfer Stature		
-				
	connected to: IREQ-IR1 Location:	IREQ Test Line		

Figure 27. The Wi-Fi setup screen.

- STEP 9. On the Wi-Fi screen, click on the Install button. Then, select the Transfer Configuration option and and click on the OK button to load the new Wi-Fi settings file from the Compact Flash card.
- **STEP 10.** Verify that transfer status is complete.
- **STEP 11.** To check this procedure, take the portable PC to the IntelliRupter fault interrupter in the field, and log on via a Wi-Fi connection with the proper keyset.

🚰 IntelliRupter(R) WiFi Connection Management	908
S&C Electric Company Excellence Through Innovation	LinkStart Version 3.1.4.2
Connect to an IntelliRupter	
Device Name: Universal Prev	Next
Device Location: Universal Serial Number	
Serial Number: 00-0000000 Record: 0	Clear
Connect	
Connection Progress	
Select WiFi Adapter	Exit
Compact wireless-G OSD Adapter	

The first time LinkStart is run, the first record of the database is displayed. See Figure 28.

Figure 28. The LinkStart screen displays the first database record.

Clicking on the **Clear** button prepares LinkStart to search for a character or string of characters that appear anywhere in the main database file. See Figure 29.

IntelliRupter(R) WiFi Connection Management	908
S&C Electric Company Excellence Through Innovation	LinkStart Version 3.1.4.2
Connect to an IntelliRupter Device Name:	Next
Device Location:	
Serial Number: Record: 0	Clear
Connect Connection Progre	255
Select WiFi Adapter	Exit
Compact Wireless-G USB Adapter	

Figure 29. The LinkStart Search screen.

Typing even a single character in the **Device Name** field opens a drop-down list of matches. See Figure 30.

IntelliRupter(R) WiFi Cor	nection Management	992
S&C Elect Excellence Thr	ric Company	LinkStart Version 3.1.4.2
Connect to an IntelliRupter Device Name: F Device Location:	Prev	Next
Serial Number:	Record: 0	Clear
Connect	07-0009014 GP00001 West e 07-0009033 GP33582 Jeffers 07-0009050 GP11331 Framin 07-0009052 PC78961 Fortuna 08-0004159 GP12678 Corner 07-0009063 PC54321 Foldere 07-0009064 GP65434 Tentha 07-0009070 GP23651 FortuS	ind of first river road on road gham A West sta Ln of main and cherry in Duvall of Rd and Forrest eventh and oli Exit
Compact Wireless-G USB	07-1204576 RC66767 Creeks 07-0009083 GP56776 Frontal	ide Cafe on tenth

Figure 30. The drop-down list of search matches.

Typing another character narrows the search results. See Figure 31.

IntelliRupter(R) WiFi Co	nnection Management	992
S&C Elect Excellence Thr	ric Company ough Innovation	LinkStart Version 3.1.4.2
Connect to an IntelliRupte	r	
Device Name: Fr Device Location:	Prev	Next
Serial Number:	Record: 0	Clear
Connect	07-0009050 GP11331 Fram 07-0009083 GP56776 From	ningham A West tal Lobe Road
	Connection Progr	css
Select WiFi Adapter Compact Wireless-G USB	Adapter	Exit

Figure 31. Narrowing the search.

Clicking on an IntelliRupter fault interrupter in the match list causes it to be selected. Clicking on the **Connect** button would link to that device. See Figure 32 on page 23.

🔀 IntelliRupter(R) WiFi Connection Management	908
S&C Electric Company Excellence Through Innovation	LinkStart Version 3.1.4.2
Connect to an IntelliRupter Device Name: GP11331 Prev Device Location: Framingham A West	Next
Serial Number: 07-0009050 Record: 42	Clear
Connection Progres	s
Select WiFi Adapter Compact Wireless-G USB Adapter	Exit

Figure 32. Connecting to a specific IntelliRupter fault interrupter.

When the IntelliRupter Installer has been loaded on a portable PC, follow the procedures outlined in the "Connecting to an IntelliRupter Fault Interrupter" and "Send-ing Configuration File" sections for each IntelliRupter fault interrupter to be configured.

For the most secure key management, copy only those files needed to a specific portable PC. After the IntelliRupter fault interupters have been configured with the master keys, remove the .WM file from the PC that uploaded the master keys.

S&C recommends preserving copies of the original key files in a secure place. If ALL copies of a key are lost, there is no "back-door" means to re-create the key.

There is no way to gain access to an IntelliRupter Wi-Fi module without the correct master keys once the Wi-Fi module has been configured with master keys. If the master keys are lost, the communication module will have to be returned to the factory to have the factory defaults restored. As long as the configured master keys are available, the factory default keys can be restored at any time with the following procedure.

To remove master keys and restore the factory default security keys, run the DBEdit program. From the main screen, click on the **Options** button and uncheck the Provide for Master Key check box, shown in Figure 33. Click on the **Save** button, click on the **OK** button on the confirmation dialog box, and click on the **Exit** button.

🔲 IntelliRu	pter® WiFi Database Management	×
In	telliRupter Security Architecture Options	
Γ	Provide for Master Key	
	Save	

Figure 33. Uncheck the Provide for Master Key checkbox.

The **Master Key** button has now been removed from the main *DBEdit* screen See Figure 34.

Jou	Serial Number	Device Name	Device Location
1	00-0000000	Universal	Universal access
2	07-0001448	Tester-1448	Desk
3	07-1234006	TR1-07-1234006	SR3
4	08-9001295	TR2-08-9001295	SR3
5	08-9002000	TR3-08-9002000	SR3
6	08-0001077	TR4-08-0001077	SR3
7	07-0001472	Tester-1472	About
8	08-9001038	WiFiLab1038	WiFiLab
9	08-9000014	BMM_08-9000014	DS
10	08-9000003	BMM_08-9000003	DS
11	08-9001037	DS-08-9001037	I-Lab
12	08-9001025	DS_80-9001025	I-Lab
13	08-9001453	DS-08-9001453	I-Lab
14	08-9001488	DS-08-9001488	I-Lab
			Search Text
			×

Figure 34. The *DBedit* screen without the Master Key button.

Follow the instructions on pages 16 through 18 to generate and deploy an empty key file. The empty key file overwrites the existing key file, removes the master keys, and re-enables the factory defaults.

If examining the Master Key Configuration File with the Config File that was generated after the Provide for Master Key check box was unchecked, notice that there are no Master Key files listed at the bottom of the list on the left. Compare Figure 35 with the Figure 21 on page 16.

🔲 IntelliRupter® WiFi Database Managemen		- 🗆 🗙			
C	Config File Decryption				
Select File To Decrypt       Decrypted File Contents         install.00-0000000.wm       D:\Documents and Settings\All Users\Application Data\S&C         Size: 64       Flags 00000001         Timestamp 12/11/2009       17:54:09 UTC         CRC calculated 01F96238       File 00-0000000.ini         File 00-0000000.ini       Size: 34         Ini: <admin 1="" 8="" 9600="" n="" n<="" noradio="" td="" user="">       &gt;</admin>					
Delete File	Decrypt File Exit				

Figure 35. The Config File Decryption screen.

### Converting MBL\_DB.csv to LSDB.txt

Information can be typed directly into an LSDB.txt file, or the file type can be converted, as described in the next steps.

Locate the MBL\_DB.csv file in the folder: \Documents and Settings\All Users\Application Data\S&C Electric\LinkStart\Keyfiles, and make a backup of the file. Open this file with Microsoft Excel. The order and quantity of columns may vary depending on the version of LinkStart used to create this file. See Figure 36.

<b>B</b> )	Aicrosoft Ex	cel - MBL_DB.(	SV												
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-	A1		& Mode												
	A	В	C	D	E	F	G	H	I	J	K	L	М	N	07
1	Mode	Serial	DeviceName	DeviceLocation	Configured	KeyFile1	KeyFile2	KeyFile3	KeyFile4	KeyFile5	ConfigFile	WANRadi	WANRadi	Editor	EditorT
2	TRUE	00-0000000	Universal	Universal access	TRUE						comport ini				1.000000
3	TRUE	08-9000001	PulseCloser 1	North Side	TRUE				1						
4	TRUE	08-9000002	PulseCloser 2	South Side	TRUE										
5	FALSE	08-9000003	PulseCloser 3	East Side	FALSE				11 11						
6	FALSE	08-9000004	PulseCloser 4	West Side	FALSE										
7	FALSE				FALSE										
8	FALSE		1		FALSE				1 · · · · ·						1
9	FALSE				FALSE										
10	FALSE				FALSE										
н н	+ H MBL	_DB/							<			A.I.			2
Read	ły													NUM	

Figure 36.The MBL\_DB.csv Excel file.

Delete all of the columns except the column containing serial numbers typically labeled "Serial," the column containing device names typically labeled "Name," and the column containing device locations typically labeled "DeviceLocation."

To delete a column, move the mouse cursor over the letter of the column to be deleted and click to select the column. Column A, in the screen shown in Figure 37, shows what a selected column looks like. Then, right click on the column letter to open the **Options** menu and click on the **Delete** option. Repeat this process until only the "Serial," "DeviceName," and "DeviceLocation" columns remain.

🛯 м	Microsoft Excel - MBL_DB.CSV									
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	Al 🔹 🏂 Mode									
	A		В	C	D	E	F			
1	Mode	x	Cu <u>t</u>	viceName	DeviceLocation	Configured	KeyFile1			
2	TRUI	63	⊆opy	versal	Universal access	TRUE				
3	TRUI	1	Paste	seCloser 1	North Side	TRUE				
4	TRUI	_	Paste Special	seCloser 2	South Side	TRUE				
5	FALS		Terent	seCloser 3	East Side	FALSE				
6	FALS		Inserc	seCloser 4	West Side	FALSE				
7	FALS		Delete			FALSE				
8	FALS		Clear Co <u>n</u> tents			FALSE				
9	FALS	1	Eormat Cells			FALSE				
10	FALS		<u>C</u> olumn Width			FALSE				
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Read	y		<u>U</u> nhide							

Figure 37. How a selected Excel column appears.

Next, select Row 1, the title row, by moving the cursor over the number in the far-left column of the row and click it. The screen in Figure 38 shows a selected row. Right click on that number to open the **Options** menu and click on the **Delete** option. See Figure 39.

_							
🛯 N	licrosoft Excel - M	BL_DB.CSV					
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Tim	es New Roman 🛛 👻	12 • <b>B</b> <i>I</i> <u>U</u>   <b>≣</b>	≣≣⊠ \$%	, .0 .00 0.€ 00.	律律日田	• 🖄 • 🗛	• -
_	A1	🔹 🎓 Serial					
	A	В	C	D	E	F	G 🗖
1	Serial	DeviceName	DeviceLocation			1	a
2	00-0000000	Universal	Universal access				
3	08-9000001	PulseCloser 1	North Side				
4	08-9000002	PulseCloser 2	South Side				
5	08-9000003	PulseCloser 3	East Side				
6	08-9000004	PulseCloser 4	West Side				
7							
14 4	H MBL_DB	/		<	1		>
Read	у					NUM	

Figure 38. Right click to select a row.

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		A	В	С	D	E	F	G	~
1	Se	rial	DeviceName	DeviceLocation					
2	*	Cu <u>t</u>	niversal	Universal access					
3	6	⊆ору	ulseCloser 1	North Side					
4	2	<u>P</u> aste	ulseCloser 2	South Side					
5		Paste Special	ulseCloser 3	East Side					
6		Insert	ulseCloser 4	West Side					
7		Delete							
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Figure 39. Click on the Delete option.

In the Excel menu bar select *File>Save As...* to open the Save As dialog box. See Figure 40. Browse to the location to save the new database file. The default location is D:\Documents and Settings\All Users\Application Data\S&C Electric\LinkStart. Enter "LSDB.txt" as the file name. Use the **Save as type:** pull-down box to select the **Text** (**Tab delimited**) (\*.txt) and click on the **Save** button.

Microsoft Excel - MBL_DB_CSV   Image: Struct - MBL_DB_CSV     Image: Struct - MBL_DB_CSV     Image: Struct - MBL_DB_CSV     Image: Struct - MBL_DB_CSV     Image: Struct - MBL_DB_CSV     Image: Struct - MBL_DB_CSV     Image: Struct - MBL_DB_CSV     Image: Struct - MBL_DB_CSV     Image: Mex Roman     I 20     A1     A1     Image: New Roman     I 20     B I   U Image: Struct - MSL_OB_CSV     A1     Image: New Roman   I 20   B I   U Image: Struct - MSL_OB_CSV   A1   Image: Struct - MSL_OB_CSV   A1   Image: Struct - MSL_OB_CSV   A1   Image: Struct - MSL_OB_CSV   Image: Struct - MSL_OB_CSV <th>-</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>-</th>	-									-
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2 08-9000001 PulseCloser 1 North Side 3 08-9000002 PulseCloser 2 South Side 4 08-9000003 PulseCloser 3 East Side 5 08-9000004 PulseCloser 4 West Side 6 Save As 7 Save in: LinkStart ♥ ③ - ▲ Q × ➡ ⊞ * Tools * Wy Recent Documents Wy Documents Wy Documents Wy Computer Wy Network File name: LSDB.bt ♥ Save as type: Text (Tab delimited) (*.bxt) ♥ Car	1	00-0000000	Universal	Unive	rsal access					
3 08-9000002 PulseCloser 2 South Side 4 08-9000003 PulseCloser 3 East Side 5 08-9000004 PulseCloser 4 West Side 6 Save As 7 Ready NH A + H MBL_DB Ready NH Recent Documents Wy Recent Documents File name: LSDB.ht Save as type: Text (Tab delimited) (*.txt) Car	2	08-9000001	PulseCloser 1	North	Side					
4       08-9000003       PulseCloser 3       East Side         5       08-9000004       PulseCloser 4       West Side         6       Save As         7       Save in:       LinkStart         Mathematical Action       Mathematical Action         Mathematical Action       Mathematical Action         My Recent       Documents         My Documents       My Documents         My Network       File name:       LSDB.ht         My Network       Save as type:       Text (Tab delimited) (*.txt)	3	08-9000002	PulseCloser 2	South	Side					
5 08-9000004   6   7   Ready     Save As     Save in:     LinkStart     Image: Save As     Save in:     LinkStart     Image: Save As     Save As     Save As     Save in:     LinkStart     Image: Save As     My Documents   My Documents   My Documents   My Computer   My Recent   Save as type:   Text (Tab delimited) (*.bxt)     Save as type:     Text (Tab delimited) (*.bxt)	4	08-9000003	PulseCloser 3	East S	Side					
6       7         7       Save As         Save As         Save in:         LinkStart         W       Save in:         W       With Recent Documents         Desktop       Desktop         My Documents       My Documents         Wy Computer       My Recent Documents         My Baces       File name:         LSDB.ht       Save as type:         Text (Tab delimited) (*.txt)       Car	5	08-9000004	PulseCloser 4	West	Side					
/       Save in:       LinkStart       Save in:       LinkStart         Ready       Wy Recent Documents       My Recent Documents       Save in:       LinkStart       Save in:       Save in:         My Recent Documents       My Documents       Save in:       LinkStart       Save in:       Sa	6		Save As							?
Ready Wy Recent Documents Desktop My Documents My Documents My Computer My Computer My Recent Save as type: Text (Tab delimited) (*.bxt)	1		Save in:	🛅 LinkStart		*	() - ( <b>1</b> )	0. X 📬 🛙	👔 🕶 Tools 🕶	10
Template (*,xlt) Text(Tab delimited) (*,txt) Unicode Text (*,txt)			My Recent Documents Desktop My Documents My Computer	File game:	LSDB.bd				× [	Save

Figure 40. The Excel Save As dialog box.

The dialog box shown in Figure 41 will open. Click on the Yes button to close Excel.





Figure 42 shows an example of a converted database.

🖡 LSDB.txt - Notepad							
<u>File E</u> dit F <u>o</u> rmat	<u>V</u> iew <u>H</u> elp						
00-0000000 08-9000001 08-9000002 08-9000003 08-9000004	Univ000 PulseCloser_1 PulseCloser_2 PulseCloser_3 PulseCloser_4	Universal access North Side South Side East Side West Side	<				
			~				
<			> .::				

Figure 42. An example of a converted database.

# Entering a New LSDB.txt File

A new LSDB.TXT file can easily be created in Excel.

Starting from a "New" Excel workbook, enter the fields manually See Figure 43. Save it as LSDBe.xls (different name, in this example, to prevent overwriting the 'real' LSDB.TXT file).

Microsoft Exce	I - LSDBe.xls							
18 gile gdit V	ew Insert Format ]	[ools <u>D</u> ata <u>W</u> indow <u>H</u> elp			Type a	question fo	r help	8 ×
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A	В	C	D	E	F	G	н	
1 08-0001023	GFPC5492A	Langdon Farm Road South						
2 08-0001025	GFPC5497C	Duck Creek Road West at Hunter Rd						
3 08-0001478	GFPC5502A	West End Railway Ave						
4								
5				-				-
6								
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18								
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20	In a la se l		1.1				5	
H 4 F H \Sheet1	/ Sheet2 / Sheet3 /		1<					5
Ready							NUM	

Figure 43. Entering the new LSDB.txt file fields Excel.

Then, enter the Save As information using the same file name, but chose the **Save as** type to be a Text Tab Delimited (\*.txt) file. See Figure 44.



Figure 44. Saving the file as a .txt file.

Excel then warns that it will only save one sheet—the active sheet. Click on the **OK** button. See Figure 45.



Figure 45. Click on the OK button on this warning ialog box.

Excel then warns of possible loss of features. Click on the Yes button. See Figure 46.



Figure 46. Click on the Yes button when this warning dialog box appears.

Excel then changes the name of the workbook to be LSDBe.txt. See Figure 47.

Microsoft E	xcel - LSDBe.txt							-02
🕲 gile gdit	View Insert Format ] 	[cols <u>D</u> ata <u>Wi</u> ndow <u>H</u> elp <b>3 3 - √</b>   √ - (* -   <b>9</b> Σ - 2↓ ⊀↓	<b>10</b> 🐴 10	10% 🔬	Type a	question fo	c help	• _ 8 ×
2000 N4	<u>ে আজি আৰু জি</u>	A Ye Reply with Changes End Review						
A	B	C	D	E	F	G	н	
1 08-000102 2 08-000102 3 08-0001478	3 GFPC5492A 5 GFPC5497C 3 GFPC5502A	Langdon Farm Road South Duck Creek Road West at Hunter Rd West End Railway Ave						
4 5 6								
7 8								
9 10 11								
12 13								
15 16								
17 18 19								
20	DBc/Sheet2/Sheet3/				ж.		1	2
Ready							NUM	

Figure 47. The workbook with a .txt name.

Excel then asks about saving changes. Click on the No button. See Figure 48.



Figure 48. Click on the No button when this dialog box appears.

# Checking File with a Binary Viewer

To demonstrate what has been created, open the file with a binary viewer. See Figures 49 and 50.

Look in:	😂 LinkStart	:	v 📀 -	🖄   🔍 🗙 📷 • 1	rools -
	Name 🔺		Size	Туре	Date Modifie
	300-00000	00.ini	1 KB	Configuration Settings	8/18/2009 3
Desktop	DBEdit.ini	DBEdit.ini		Configuration Settings	8/18/2009 2
and the second second	install.00-	0000000.wm	2 KB	Windows Media Audi	8/18/2009 3
00	KeyList.b	t	1 KB	Text Document	8/18/2009 2
	LSDB200	90818095630.txt	5 KB	Text Document	8/17/2009 1
My Projects	D LSD8200	90818154304.txt	1 KB	Text Document	8/18/2009 3
	LSD8.bxt		1 KB	Text Document	8/18/2009 3
	LSDBe.tx		1 KB	Text Document	8/19/2009 6
20	S LSDBe.xk	5	14 KB	Microsoft Excel Wor	8/19/2009 6
My Computer	MasterIR.	pri	1 KB	PRI File	8/18/2009 2
	MasterIR.	pub	1 KB	Microsoft Office Publ	8/18/2009 2
	MasterKe	y.bd	1 KB	Text Document	8/18/2009 2
	MasterLT.	pri	1 KB	PRI File	8/18/2009 2
	MasterLT.	pub	1 KB	Microsoft Office Publ	8/18/2009 2
	<		11		
	File name:			~	Open
	Files of type:	All Files (*.*)		~	Cancel

Figure 49. Select the file to be viewed.

Open With - LSDBe.txt	2 🗵
Choose the program you want to use to open this file:	
Source Code (Text) Editor (Default) Source Code (Text) Editor With Encoding XML Editor XML Editor with Encoding HTML Editor with Encoding Notepad (Microsoft® Windows® Operating System) Binary Editor Resource Editor	Add <u>R</u> emove Set as <u>D</u> efault
	OK Cancel

Figure 50. Open the file with a binary viewer.

Figure 51 shows the hexadecimal display of the file contents, along with the corresponding character glyphs on the right.

🛷 Solution1 - Microsoft Visual Studio								
<u>File Edit View Debug Tools Wind</u>	ow <u>C</u> ommunity <u>H</u> elp							
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∞ LSDBe.txt			- 12					
00000000 30 38 2D 30 30 30 31	30 32 33 09 47 46	50 43 35 08-0001	023.GFPC5					
00000010 34 39 32 41 09 4C 61 00000020 6D 20 52 6F 61 64 20	53 6F 75 74 68 0D	45 51 72 492A.La	South08					
00000030 2D 30 30 30 31 30 32	35 09 47 46 50 43	35 34 39 -000102	5.GFPC549					
00000040 37 43 09 44 75 63 68	20 43 72 65 65 68 20 61 74 20 48 75	6F 74 65 ad West	Creek Ro					
00000060 72 20 52 64 0D 0A 30	38 2D 30 30 30 31	34 37 38 r Rd0	8-0001478					
00000070 09 47 46 50 43 35 35	30 32 41 09 57 65	73 74 20 .GFPC55	02A.West					
00000090 0A	60 77 61 79 20 41	76 65 UD End Rai	Ivay Ave.					
Ready	Off 0x0000000	Len 0x00000000	INS					

Figure 51. The hexadecimal display of the file contents.

Here are the invisible (non-printing ASCII) characters in the file: the 09 in the 11th character position of the first row; the 09 in the fifth character position of the second row; and the 0D and 0A in the 13th and 14th character positions of the third row. ASCII 09 is the "tab" character. ASCII 0D and 0A are the "carriage return" and the "line feed" characters. These carry overs from the old Teletype electromechanical printers are used as delimiters between fields (tabs) and end-of-line or record separators (carriage return and line feed), often referred to as a "new line" pair.

This format, achieved either through use of Excel as described above or through use of the DBEdit program, is compatible with the LinkStart program and the DBEdit program.

**Note:** The same format with a "space" character instead of the "tab" character is also compatible with the LinkStart program. The DBEdit program can read such a file, but when saving it would write it with the tab characters.

There are no particular limitations to the number of records that LinkStart can work with.

Opening an existing text file is also simple. Figure 52 shows a file with spaces used instead of tab characters.

	3
The Text Wizard has determined that your data is Fixed Width. f this is correct, choose Next, or choose the data type that best describes your data. Original data type	
Choose the file type that best describes your data:	
<ul> <li>Qelmited</li> <li>Characters such as commas or tabs separate each field.</li> <li>Fixed width</li> <li>Fields are aligned in columns with spaces between each field.</li> </ul>	
Start import at row: 1 🗇 File origin: 437 : OEM United States	~
Preview of file C:\Documents and Settings\All Users\Application Data\S&C\LSDBb.txt. 1 08-0001023 GFPC5492A Langdon Farm Road South 2 08-0001025 GFPC5497C Duck Creek Road West at Hunter Rd 3 08-0001478 GFPC5502A West End Railway Ave 4 5	< III >
Preview of file C:\Documents and Settings\All Users\Application Data\S&C\LSDBb.txt. 1 08-0001023 GFPC5492A Langdon Farm Road South 2 08-0001025 GFPC5497C Duck Creek Road West at Hunter Rd 3 08-0001478 GFPC5502A West End Railway Ave 4 5	

Figure 52. An existing text file open with spaces instead of tab characters.

Excel places rather arbitrary dividers, but these are easily changed. See Figure 53.

ext import	Wizard - S	tep 2 of 3				2
This screen lets	you set field w	idths (column breaks).				
Lines with arro	ows signify a co	olumn break.				
To CREATE	a break line, d	ick at the desired position				
To DELETE To MOVE a	a break line, do break line, click	uble click on the line. and drag it.				
Data greview -						
Data greview	<u>.</u>	0 30	. <u>40</u>		60	
Data greview	0 2 GFPC5492A	0 30 Langdon Farm Road	40 South		60	 <b>-</b> _
Data greview	0 2 GFPC5492A GFPC5497C	0 30 Langdon Farm Road Duck Creek Road #	40 South est at Hun	50 ter Rd	<mark>60</mark>	
Data greview 08-0001023 08-0001025 08-0001478	0 2 GFPC5492A GFPC5497C GFPC5502A	0 30 Langdon Farm Road Duck Creek Road W West End Railway	40 South est at Hun Ave	50 ter Rd	60	
Data greview	0 2 GFPC5492A GFPC5497C GFPC5502A	0 30 Langdon Farm Road Duck Creek Road W West End Railway	40 South est at Hunt Ave	50 ter Rd	60	
Data greview 08-0001023 08-0001025 08-0001478	0 2 GFPC5492A GFPC5497C GFPC5502A	0 30 Langdon Farm Road Duck Creek Road W West End Railway	40 South est at Hun Ave	50 ter Rd	<u>6</u> 0	
Data greview	0 2 GFPC5492A GFPC5497C GFPC5502A	0 30 Langdon Farm Road Duck Creek Road W West End Railway	40 South est at Hund Ave	50 ter Rd	<u>60</u>	
Data greview	0 2 GFPC5492A GFPC5497C GFPC5502A	0 30 Langdon Farm Road Duck Creek Road W West End Railway	40 South est at Hun Ave	50 ter Rd	<u>60</u>	

Figure 53. Arbitrary dividers can be easily changed.

Here the extra dividers have been removed by double-clicking. See Figure 54.

ext Import	Wizard - S	tep 2 of 3		2
This screen lets	you set field v	idths (column breaks).		
Lines with arr	ows signify a co	olumn break.		
To CREATE To DELETE To MOVE a	a break line, c a break line, d break line, clid	lick at the desired position. ouble dick on the line. k and drag it.		
Data greview				
	0	0 30 40 5	0	60
08-0001023 08-0001025	GFPC5492A GFPC5497C GFPC5502A	Langdon Farm Road South Duck Creek Road West at Hunte West End Bailway Ave	r Rd	
08-0001478				
08-0001478				×

Figure 54. The extra dividers removed.

When the final screen appears, click on the **Finish** button. See Figure 55.

Text Import Wizard - Step 3 of 3	2 🔯
This screen lets you select each column and set the Data Format.     General converts numeric values to numbers, date values to dates, and all remaining values to text.	Column data format © General ○ Text ○ Date: MDY ○ Do not import column (skip)
Data greview	
08-0001023 GFPC5492A Langdon Farm Roa 08-0001025 GFPC5497C Duck Creek Road 08-0001478 GFPC5502A West End Railway	d South Nest at Hunter Rd
Cancel	< gack Next > Einish

Figure 55. Click on the Finish button when the final screen appears.

The text is now properly imported. See Figure 56.

×	Microsoft Exce	I - LSDBb.txt		
:2	<u></u> Edit <u></u> i	ew <u>I</u> nsert F <u>o</u> rmat	<u>T</u> ools <u>D</u> ata <u>W</u> indow <u>H</u> elp	_ & ×
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: 🕒	12200	M 5 M 2 4	] 🕒   ♥∉Reply with Changes End Review.	
	D4 👻	fx		
	A	B	C	DE
1	08-0001023	GFPC5492A	Langdon Farm Road South	
2	08-0001025	GFPC5497C	Duck Creek Road West at Hunter Rd	E
3	08-0001478	GFPC5502A	West End Railway Ave	
4				
5				
6				
7				
8				~
14	LSDBb	/	<b>K</b>	
Rea	dy		NUM	

Figure 56. Properly formatted text.

This could alternatively have been done by interpreting the input as being space delimited to separate fields one and two, and two and three, and removing all the rest of the dividers.

#### 1. What are the system requirements?

A laptop computer running Windows XP. The Wi-Fi module and the IntelliRupter fault interrupter control module must have the software components for Installer Version 1.6.9 or later.

#### 2. Can I install more than one key in an IntelliRupter fault interrupter?

No. This implementation is for the Master encryption key only and allows only one key in each IntelliRupter fault interrupter.

#### 3. Can I replace a communication module that has master security keys installed in its Wi-Fi module with a new communication module?

Yes. The security configuration is also stored in the base memory module. When a new communication module is plugged in to an IntelliRupter fault interrupter, the Wi-Fi module reads the security information in the base memory module and resets itself to match the local security configuration. For the laptop to connect, it must have the correct keys that match the IntelliRupter fault interrupter's security configuration.

#### 4. Can I configure Wi-Fi security with a Docking Station?

Yes. There is a check box in the Wi-Fi Configuration and Setup dialog box that will direct the Wi-Fi module to overwrite the base memory module configuration on next power-up. Select that check box, and click on the **Apply** button when you execute the steps outlined in the "Sending Configuration Files" section on page 18.

#### 5. Can I recreate my key files if I loose them?

No. Even when using the same name each time the key files are generated, the Wi-Fi key program generates a new encryption.

#### 6. If I lose my key files, is there a back door to unlock the Wi-Fi connection?

No. If the keys have been lost, S&C recommends returning the communication module to S&C to have the factory defaults restored.

#### 7. If I lose my key files, is there a back door to unlock the Wi-Fi connection?

No. If the keys have been lost, S&C recommends returning the communication module to S&C to have the factory defaults restored.