Inspirstar Profile Editor For Inspirstar IS02 Programmable Microcurrent Stimulator™

User's Guide



Technical Support: Web site: <u>http://www.inspirstar.com</u> Email: <u>support@inspirstar.com</u>

© 2005-2021 Inspirstar Inc. All rights reserved. Inspirstar and the IS logo are the trademarks of Inspirstar Inc. Trademarks or registered trademarks are the property of their respective holders. Software and specifications are subject to change without notice.

Ver 4.7.0 Copyright © Inspirstar Inc. 2005 - 2021

Table of Contents

Tab	le of	Conten	ts	2
1	Soft	ware Ins	tallation	7
	1.1	System	Requirements7	
	1.2	Install	Inspirstar Profile Editor7	
	1.3	Install	USB Device Driver	
	1.4	Start Ir	spirstar Profile Editor	
	1.5	Softwa	re Update9	
2	Intro	oduction	and Concepts	10
	2.1	Profile	Work Flow10	
		Fig	gure 1 Profile Work Flow10	
	2.2	Therap	y Profiles10	
		Fig	gure 2 the Structure of a Therapy Profile	
	2.3	Therap	y Protocols11	
		2.3.1	Frequency pairs11	
		2.3.2	Waveform and Parameters11	
		Fig	gure 3 Waveform and Parameters	
3	Prof	ile Edito	r	14
	3.1	Start Ir	spirstar Profile Editor	
	3.2	Windo	w Layout14	
		Fig	gure 4 Profile Editor Window	
	3.3	Registe	er Software License	
			gure 15 License Registration Window15	
	3.4	Start w	ith a Profile16	
		3.4.1	To Create a New Profile from Scratch16	
		3.4.2	To Open an Existing Profile16	
		3.4.3	To Save a Profile	
		3.4.4	To Create a Profile from an Existing Profile17	
		3.4.5	To Print a Profile17	
		3.4.6	To Copy the contents of Profile to Excel Spreadsheet	
	3.5	Organi	ze Protocols in a Profile	
		3.5.1	To Select Protocols	
		3.5.2	To Add a Blank Protocol	
		3.5.3	To Remove a Protocol	
		3.5.4	To Move a Protocol	
		3.5.5	To Sort Protocols	
		3.5.6	To Cut, Copy and Paste a Protocol	
		3.5.7	To Export a Protocol to a File	

	3.5.8 To	Export All Protocols to a folder	25
	3.5.9 То	Import an Existing Protocol	25
	3.5.10 То	Move a Protocol between Profiles	
3.6	Change a P	Protocol	27
	3.6.1 Ma	ake changes in Profile Editor	27
	3.6.1.1	To Change the Protocol Name	27
	3.6.1.2	To Change the Protocol Description	27
	3.6.1.3	To Turn off the Beep of Protocol	28
	3.6.1.4	To Change the Output Current Intensity	
	3.6.1.5	To Change the Therapy Time	28
	3.6.2 Ma	ake Changes with Protocol Editor	
	3.6.3 Ma	ake Changes with Global Change	
3.7	Work with	IS02	31
	3.7.1 Co	nnect Inspirstar IS02 to PC	31
	3.7.1.1	Use the Circular Connector	32
	Figure	5 Connect Circular Connector to Inspirstar IS02BA	32
	3.7.1.2	Use the 4-pin Header	33
	Figure	6 Connect 4-Pin Header to Inspirstar IS02AA and IS02BA	33
	3.7.1.3	Use USB Connector	33
	Figure	7 Micro-USB cable connection to IS02 (IS02PRO shown)	34
	3.7.2 Re	ad and Write Profile to IS02	34
	3.7.2.1	To Read Profile from Inspirstar IS02	34
	Figure	8 Read Profile	34
	3.7.2.2	To Write Profile to Inspirstar IS02	35
	Figure	9 Write Profile	
	3.7.2.3	To Erase Profile in Inspirstar IS02	
	Figure	10 Erase Profile	
	3.7.3 Co	nfigure Memory	37
	Figure	11 Memory Configuration	
	3.7.4 Ch	ange IS02 Settings	
	Figure	12 Change IS02 Settings	
	3.7.5 Set	tup Communication	40
	Figure	13 Hints For Communication Problems	42
	3.7.6 Re	trieve Product Information	42
	Figure	14 Product Information	43
	3.7.7 Up	ograde IS02 Firmware	43
	Figure	15 Firmware Upgrade	44
	3.7.8 Re	gister Software License	45
	Figure	16 License Registration Window	46
3.8	Menus and	Tool Bars	47
	3.8.1 Fil	e Menu	47

		3.8.2	Edit	Menu	47
		3.8.3	Tool	s Menu	48
		3.8.4	Help	Menu	48
		3.8.5	Tool	Bars	48
		3.8.6	Shor	tcut Keys	48
		Tal	ble 1	Profile Editor Shortcut Keys	48
4	Prot	ocol Edit	tor		
	4.1	Start Pi	rotocol	Editor	50
	4.2	Window	w Laye	out	50
		Fig	gure 17	Protocol Window	50
	4.3	Start w	ith a P	rotocol	51
		4.3.1	To E	dit a Protocol in a Profile	51
		4.3.2	To E	dit a Standalone Protocol	51
		4.3.3	To M	lerge a Protocol	51
		4.3.4	To Sa	ave a Protocol	52
		4.3.5	To P	rint a Protocol	53
	4.4	Organiz	ze Free	quency Pairs in a Protocol	54
		4.4.1	To S	elect Frequency Pairs	54
		4.4.2	To A	dd a New Frequency Pair	56
		4.4.3	To R	emove Frequency Pairs	56
		4.4.4	To M	love Frequency Pairs	57
		4.4.5	To C	ut, Copy and Paste Frequency Pairs	57
		4.4.6	To Ir	nport Frequency Pairs	58
		4.4.7	To E	xport Frequency Pairs to a File	59
		4.4.8	To M	love Frequency Pairs between Protocols or Profiles	59
		4.4.9	To R	epeat Frequency Pairs	60
		4.4.10	To C	opy/Paste Contents of Frequency Pairs to/from Excel Spreads	heet61
		4.4.11	To Ir	clude other protocols	63
	4.5	Find Fr	equen	cy Pairs	66
	4.6	Change	e Parar	neters of Frequency Pairs	68
		4.6.1	Usin	g the Table	68
		4.6.2	To us	se Random Frequency for F1 or F2	69
		4.6.3	Usin	g Parameters Editor Panel	69
		4.6	5.3.1	Parameters Editor Panel Overview	69
		4.6	5.3.2	Basic Parameters Panel	71
		4.6	5.3.3	Waveform Panel	71
		4.6	5.3.4	Big Display Panel	72
		4.6.4	Usin	g Global Change	73
		Fig	gure 18	Global Change	73
		4.6.5	To C	hange Default Parameters	74
	4.7	Manag	e Pred	efined Waveforms	75

		4.7.1	To cł	nange parameters to a predefined waveform	75	
		4.7.2	To Sl	now or hide waveform parameters		
		4.7.3	To se	lect the parameters in a waveform		
		4.7.4	To de	efine a new waveform	76	
		4.7.5	Mana	age Predefined Waveforms	77	
	4.8	Menus	and To	ool Bars		
		4.8.1	File I	Menu		
		4.8.2	Edit	Menu	79	
		4.8.3	Tools	s Menu	79	
		4.8.4	Help	Menu		
		4.8.5	Tool	Bars	80	
		4.8.6	Shor	teut Keys	80	
		Ta	ble 2	Profile Editor Shortcut Keys	80	
5	Real	l Time C	ontrol	Panel		31
	5.1	Start R	eal Tin	ne Control Panel		
	5.2	Windo	w Layo	but		
		Fig	gure 19	Real Time Control Panel		
	5.3	Real T	ime Se	ssion Control		
		5.3.1	Real	Time Work Flow		
		5.3.2	To St	art a Session		
		5.3.3	To Fi	nish a Session		
	5.4	Run Pr	ofiles of	or Protocols		
		5.4.1	To R	un a Profile in Real Time		
		5.4.2	To R	un a Protocol in Real Time		
	5.5	Make	Real Ti	me Changes to Output		
		5.5.1	Parar	neters Panels		
		5.5	5.1.1	Big Display Panel		
		5.5	5.1.2	Basic Panel		
		5.5	5.1.3	Waveform Panel		
		5.5.2	To C	hange Frequencies		
		5.5.3	To C	hange Output Current		
		5.5.4	To C	hange Run Time		
	5.6	Option	ıs			
			-	Real Time Options		
	5.7	Comm	unicati	ons		
6	Prot	ocol Enc	cryption	n		38
	6.1	About	Protoc	ol Encryption		
	6.2	To Enc	• •	rotocols		
		6.2.1		pply Encryption to Protocols		
		6.2.2		emove Encryption from Encrypted Protocols		
	6.3	To Use	e Encry	pted Protocols		

	6.4	Author	ization	93	
		6.4.1	To Distribute Authorization Code	93	
		6.4.2	To Distribute USB Authorization Keys	93	
7	IS02	Remote	Keypad	9) 5
	7.1	Start IS	02 Remote Keypad	95	
	7.2	Remote	e Keypad Window Layout	95	
	7.3	Operate	e with Remote Keypad	96	
	7.4	Connec	ction to IS02	97	
8	Que	stions an	d Answers	9) 8
	8.1	How to	restore Inspirstar IS02 to its factory default profile?	98	
	8.2	What to	o do if I forgot the password?	98	
	8.3	How to	print a profile?	98	
	8.4	Can tw	o channels run in different period and phase?	98	
	8.5	Can tw	o channels run in different current intensity?	99	
	8.6	How to	turn off the modulating frequency?	99	
	8.7	How to	turn off one channel?	99	
	8.8	How to	change the period for all frequency pairs in the protocol?	99	

1 Software Installation

1.1 System Requirements

- Supported Operating Systems: Windows Server 2003 SP2; Windows XP SP3; Windows Vista SP1; Windows 7, Windows 8, Windows 10
- Required Software:
 <u>Microsoft .NET Framework 4.0 Redistributable Package</u>

Note: The setup.exe will install the required software in your PC if necessary.

- Disk Space Requirements: 850 MB (x86), 2 GB (x64)
- One available USB port
- CD drive
- Minimum size of 800x600 for the PC display, 1024x768 or above recommended
- Adobe Acrobat Reader for the on-line help documents.

1.2 Install Inspirstar Profile Editor

- 1. Insert the CD-ROM to the CD drive of the PC. The setup for Inspirstar Profile Editor shall start.
- 2. If the setup does not start automatically, you can run the setup.exe by double clicking the setup.exe in the root directory of the CD-ROM.
- 3. Follow the instructions in Setup window to finish the installation.

NOTE

If you do not have Microsoft .NET Framework v4.0 installed in your PC, you will be prompted to install the .NET Framework first. Then the installer will guide you to install Profile Editor.

1.3 Install USB Device Driver

You need to install the Windows device driver for Inspirstar IS02 or the Inspirstar USB adaptor. You can use one of the following methods to install the driver.

Install From Inspirstar Folder

Click the "USB Driver\Install USB Driverr" from Inspirstar's program folder. The folder is accessed from Windows Start -> All Programs -> Inspirstar.

Install from Profile Editor

Start Inspirstar Profile Editor from desktop or start menu, click on menu Tools -> Install USB Driver to start the installation.

After a successful installation of the driver, your computer will have a new serial port (COM) when Inspirstar IS02 or the Inspirstar USB Adaptor is inserted into a USB port of the PC.

1.4 Start Inspirstar Profile Editor

You can start Inspirstar Profile Editor from Start -> All Programs -> Inspirstar, if the default installation folder was used.

You will be prompted to enter the license key at the first time when you start the Profile Editor.

💰 Inspirstar Software Licens	se Register				23
No software license v	was registered. Send an	email to Inspirst	tar for software	license.	
User Name: (email address)		Send	f Email	INSPIRSTAR IN	c.
Installation code:	79654569	Сор	oy Code	web: http://www.inspirstar.co	m
Paste or type in the License	Key received in email or by pho	ne:			
				Paste key	
Register Lic	Close				
Registered Licenses:					
Item Software Package/Fe	eatures	Expire Date	License Key		
					-11

If you don't have a license key, click button Send Email ... to Inspirstar or your distributor for a license key. You need to provide the Installation code shown on the screen for the license key.

After you receive the license key, enter the user name and license key into the boxes and

click Register License

To ensure to enter the license key accurately, copy the license key in the email then click

Paste key

After the license key is registered, you can register another key for another feature or continue by click button Close.

1.5 Software Update

Inspirstar Profile Editor connects to the Internet to check for available software updates and product news. If you are prompted for network access permission, please allow the access of the internet. The software does not send any information to the internet server.

2 Introduction and Concepts

2.1 Profile Work Flow

Inspirstar Profile Editor does one main task: to program protocols into Inspirstar IS02 Programmable Microcurrent Stimulator[™] (PMS). The workflow is straight forward as illustrated in Figure 1 Profile Work Flow.

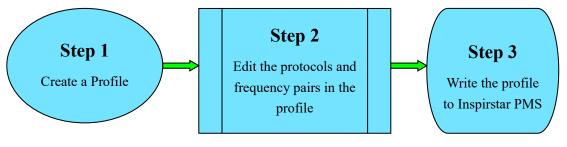


Figure 1 Profile Work Flow

2.2 Therapy Profiles

Inspirstar IS02 supports two therapy profiles: factory profile and user profile. The Factory Profile holds five factory therapy protocols that have been pre-programmed into Inspirstar IS02. The User Profile holds five or more user therapy protocols. Each therapy protocol has one or more frequency pairs. When you program an Inspirstar IS02, you are writing therapy protocols into the user profile in the Inspirstar IS02. If the protocol in the user profile is valid, Inspirstar IS02 will use the user protocol instead of the factory protocol. See Figure 2 the Structure of a Profile.

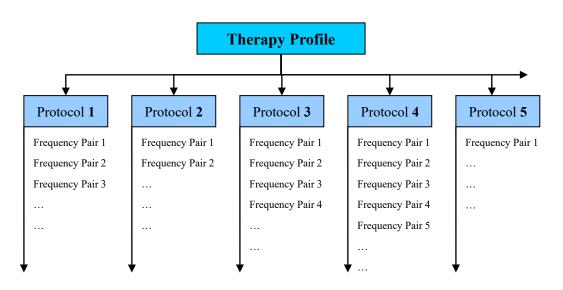


Figure 2 the Structure of a Therapy Profile

2.3 Therapy Protocols

2.3.1 Frequency pairs

A therapy protocol has one or more frequency pairs. Each frequency pair defines the frequency, current intensity, and other parameters of the output waveform of the two output channels. The therapy time of a protocol is the total therapy time of all frequency pairs of the protocol. The frequency pairs will be executed in sequence when a protocol is started.

2.3.2 Waveform and Parameters

Inspirstar IS02 outputs current pulses. The waveform and parameters is illustrated in Figure 3

Waveform and Parameters. Both channels have the parameters marked on the CH1 waveform (at the top).

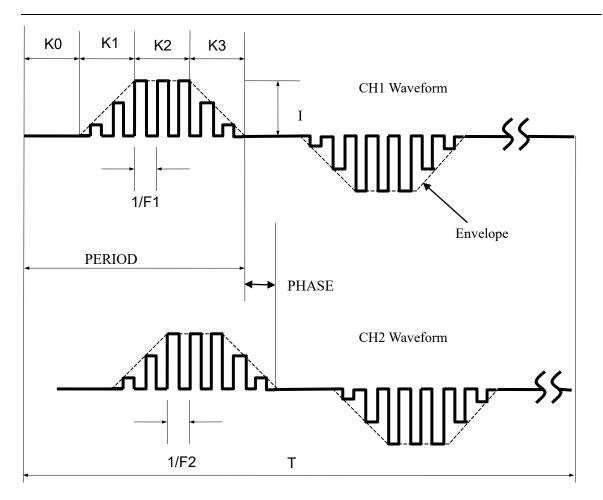


Figure 3 Waveform and Parameters

PERIOD: Period of the modulated pulse. The pulse can be modulated by the carrier frequency F. The period is programmable from 4 ms to 60000 ms. The outline of the waveform is often referred to as the envelope of the waveform, when the pulse is modulated, as shown in dotted lines in the figure.

F: frequency of the carrier, also called chopper frequency.

T: Therapy time in minutes, programmable from 1 minute to 60 minutes for each frequency pair. The waveform will be repeated during the therapy time.

I: peak current intensity of the pulse, expressed in µA.

K: duty cycle of the waveform. The pulse is composed of four segments for their nature in the waveform.

K0: off period, there is no output current at this period, or i=0.

K1: current ramp up period, current ramps up to the peak current intensity I from 0 μA.

K2: peak current plateau period, the output current reaches the programmed peak value and maintains at the peak value for the period.

K3: current ramp down period, current ramps down from the peak current intensity I to 0 μ A.

Each segment is programmable from 0% to 100% of the period of the envelope. When a

period has 0% duty, the period will be eliminated.

Polarity: the polarity of the pulse is programmable to be alternative, always positive, or always negative. In alternative mode, the output polarity will change the polarity.

Phase: is the relationship of the waveforms of the two channels. Channel 1 is used as the reference. A phase of 180 degrees equals to one period of channel 1. The phase of Channel 2 determines the time of the start point of the period of channel 2. When phase is 0 degree, the waveform of channel 2 is aligned with the waveform of channel 1. When the phase is 180 degrees, the waveform of channel 2 starts one period later than CH1.

HINT

Examples are provided to demonstrate how the parameters can be used in a protocol. To open "Waveform Examples.profile", use menu File -> Open Examples in Profile Editor window.

3 Profile Editor

3.1 Start Inspirstar Profile Editor

To start the Inspirstar Profile Editor,

- Click Windows Start -> All Programs -> Inspirstar -> Profile Editor.
- Or browse to a profile file in Windows Explorer, double click on the file with extension .profile.

3.2 Window Layout

The window of Inspirstar Profile Editor is shown in the following picture. The window is organized in five areas. Explanation of the areas is as follows from the top to the bottom of the window.

🔂 м	y Docu	ments\ISO2\Simple	Example.p	rofile - lı	nspirs	tar Profile Editor 🛛 💽 🗖 🔀			
File	File Edit Encryption Tools Help								
10	🗋 😂 🛃 🎒 🕵 🐇 🗈 隆 Write Read 🥝 🕴 Target Model: ISO2BA 🔹 418/3962 (10%)								
Proto	List of Protocols: Protocol Operations: Add New Replace Import Export Remove Edit Move Up Move Down Global Change								
	Line #	Protocol Name	Total Time	l(uA)	Веер	Description			
	1	Example protocol 1	9'	100	~	Example protocol, F1=110~190			
	2	Back pain	9'	100	~	Example protocol, F1=210~290			
	3	Thigh muscle relaxing	9'	100	~	Example protocol, F1=310~390			
	4	Neck pain	9'	100	~	Example protocol, F1=410~490			
	5	Fatigue	9'	100	~	Example protocol, F1=510~590			
	Total	5 Protocols	45'		~	Summary of this profile.			
Not	es to the	profile (The notes will no	t be written to	ISO2 mach	ne. It is	saved only in PC file.)			
the t	Notes to the profile (The notes will not be written to IS02 machine. It is saved only in PC file.) This example profile shows that a profile holds a few protocols. Each protocol can have its name and description. The protocols in this profile does not perform the treatment as their names or descriptions sugguest. This is only to show the use of profiles and protocols.								
Port:	NONE								

Figure 4 Profile Editor Window

Menus and Tool Bars

You can use the menus and tool bars to perform actions on profiles and protocols. More explanation on menus and tool bars can be found in section 3.8 Menus and Tool Bars on page 47.

Protocol Operation Tools

Most frequently used tools for protocols manipulation are shown above the protocol list.

Protocols List

The protocols in the profile are listed in the box. The values in some cells in the table can be changed directly in the table.

Notes to the Profile

The notes can include any useful information related to this profile and protocols in it. The notes will not be written to IS02. It is saved only in PC file.

Status Bar

The bottom of the window features a status bar to show you the status of the profile, such as the COM port that is used to connect to Inspirstar IS02, and other informative messages.

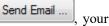
3.3 Register Software License

To register a license for a new software feature, or to check existing software license, use menu Help -> Register License, the following window will pop up. The window will pop up when you try to use a feature that you don't have a license.

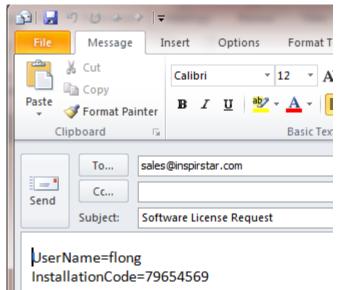
5 Inspirstar Software Licen	se Register								
To acquire additiona	To acquire additional software license, send an email or call Inspirstar.								
User Name:	flong	Sen	d Email	Lucano Carlo nuc					
(email address)	70054500			INSPIRSTAR INC.					
Installation code:	79654569	Co	py Code	web: http://www.inspirstar.com					
Paste or type in the License	Key received in email or by pho	ne:							
F7AD-768F-EE	27-D018-E933-A67	7D-8F64-5A	7D	Paste key					
Register Lie	Close								
Registered Licenses:									
Item Software Package/Fe	eatures	Expire Date	License Key						
1 Encryption		3/3/2016	F7AD-768F-EE27	-D018-E933-A67D-8F64-5A7D					
2 Professional		3/3/2016	F878-8F43-778C-(0E28-4363-DF6D-0369-7A10					
			-	***					

Figure 15 License Registration Window

If you don't have a license or want to purchase a new license, click on button



email client software will pop up with a email draft to sales@inspirstar.com. The user name and the installation code is populated in the email body. You can add some other information then send the email for a software license.



3.4 Start with a Profile

A therapy profile can be started from several sources for editing.

3.4.1 To Create a New Profile from Scratch

Use the menu command File -> New Profile; or click on the New Profile icon tool bar, to start a blank profile. The blank profile has 5 blank protocols added automatically.

3.4.2 To Open an Existing Profile

Use the menu command File -> Open Profile; or click the Open Profile icon is on the tool bar, to load an existing profile.

3.4.3 To Save a Profile

Use the menu command File -> Save Profile; or click the Save Profile icon 🐱 on the tool bar, to save the current profile.

To save the profile to a different name, use the menu command File -> Save Profile As, and give a different name for the file.

3.4.4 To Create a Profile from an Existing Profile

To create a profile from the protocols in current profile, use menu command File -> Create Profile From, the following dialog will pop up.

🛃 Create Profile from curre	nt profile 🛛 🖻 🔀
Step 1 Select the protoco	ols you want to use in the new profile All
 Example protocol 1 Back pain Thigh muscle relaxing Neck pain Fatigue 	Example protocol, F1=110~190 Example protocol, F1=210~290 Example protocol, F1=310~390 Example protocol, F1=410~490 Example protocol, F1=510~590
Step 2 Click the Create b Create	putton to show the new profile in a new window.

Check the box before the protocols to select the protocols you want in the new profile, then click Create, a new profile will be created with the selected protocols.

3.4.5 To Print a Profile

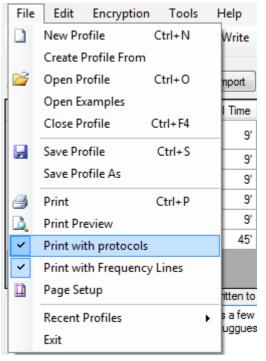
To print the current profile, use menu command File -> Print or tool bar button \bigoplus , the Print dialog will pop up.

To Preview the print of current profile, use menu command File -> Print Preview or tool bar button

, the Print Preview window will show up. By default, only the details of protocols are not printed.

Print Curre	nt Page 🔒 Print 🛛 🗋 Page Set	up 🔍 <u>Z</u> oom	- 14 4	1	of 1 🕨 🔰 🛛 🗙 <u>C</u> lose			
Simple Example.profile								
		ows that a r	orofile	holds	a few protocols. Each protocol can have its na			
names	or descriptions suggue	st. This is or	nly to	show	the use of profiles and protocols.			
			-					
Line #	Protocol Name	Total Time	l(uA)	Beep	Description			
1	Example protocol 1	9'	100	True	Example protocol, F1=110~190			
2	Back pain	9'	100	True	Example protocol, F1=210~290			
3	Thigh muscle relaxing	9'	100	True	Example protocol, F1=310~390			
4	Neck pain	9'	100	True	Example protocol, F1=410~490			
5	Fatigue	9'	100	True	Example protocol, F1=510~590			
Total	5 Protocols	45'		True	Summary of this profile.			
					· · · ·			

To print the profile with details of protocols, check the menu item File -> Print with Protocols.



The details of protocols will be printed after the summary of the profile as illustrated below.

	urrent Page 🔒 Print	- raye	Secup			01	2		• •		
Simple	e Example.profile										
ompie	e Example.prome										
	e Example.profile										
	This example profile sh or descriptions suggue							have	its nam	ie and desci	ription. The p
			-		ines and pro	1000	//3.				
				eep Description	1 54 440	~10					
1	Example protocol 1			rue Example proto							
2 3	Back pain Thigh muscle relaxing			rue Example proto rue Example proto							
4	Neck pain			rue Example proto							
-				rue jexample prote							
5	Eatique	9'	100 T	rue Example proto	ocol E1=510	1 220	0				
Protoc	Fatigue 5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protoco	45' 1 ne: 9'	T	rue Example proto rue Summary of th		0.090	0				
Total Protoc Numbe	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim	45' 1 ne: 9'	T				0				
Total Protoc Numbe Descri Pair #	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protoco [F1(Hz)]F2(Hz)]I(uA)]Ti	45' 1 he: 9' kl, F1=110~1\$ (min'sec") W	90 /aveforr	rue Summary of th	Period(ms)	КО	K1				Description
Total Protoc Numbe Descri Pair # 1	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protoco F1(Hz) F2(Hz) I(uA) Ti 110 100 100 1	45' 1 ne: 9' N, F1=110~15 (min'sec") W	90 /aveforr	rue Summary of th m r default waveform	Period(ms)	K0 20	K1	30 25	5 C	Alternating	
Total Protoc Numbe Descri Pair # 1 2	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protoco F1(Hz) F2(Hz) I(uA) Tr 110 100 100 1 120 100 100 1	45' 1 he: 9' kl, F1=110~15 (min'sec") W l' In l' In	90 /aveforr ispirsta	rue Summary of th m r default waveform r default waveform	Period(ms) 4,000 4,000	K0 20 20	K1 25 25	30 25 30 25		Alternating Alternating	
Total Protoc Numbe Descri Pair # 1 2 3	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protoco F1(Hz) F2(Hz) I(uA) Ti 110 100 100 1 120 100 100 1 130 100 100 1	45' 1 he: 9' N, F1=110~19 (min'sec") W 1' In 1' In 1' In	90 /aveforr ispirsta ispirsta ispirsta	n r default waveform r default waveform r default waveform r default waveform	Period(ms) 4,000 4,000 4,000	K0 20 20	K1 25 25	30 25 30 25 30 25	5 C 5 C	Alternating Alternating Alternating	
Total Protoc Numbe Descri Pair # 1 2 3 4	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protocol F1(Hz) F2(Hz) I(uA) Ti 110 100 120 100 130 100 140 100	45' 1 he: 9' h, F1=110~15 (min'sec") W l' In l' In l' In l' In	90 /aveforr ispirsta ispirsta ispirsta	m r default waveform r default waveform r default waveform r default waveform r default waveform	Period(ms) 4,000 4,000 4,000 4,000	K0 20 20 20 20	K1 1 25 25 25 25	30 25 30 25 30 25 30 25 30 25		Alternating Alternating Alternating Alternating	
Total Protoc Numbe Descri Pair # 1 2 3 4 5	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protocol F1(Hz) F2(Hz) I(uA) Ti 110 100 120 100 130 100 140 100 150 100	45' 1 1e: 9' 1, F1=110~19 (min'sec") W 1' In 1' In 1' In 1' In 1' In 1' In	90 /aveforr ispirsta ispirsta ispirsta ispirsta	m r default waveform r default waveform r default waveform r default waveform r default waveform r default waveform	Period(ms) 4,000 4,000 4,000 4,000 4,000 4,000	K0 20 20 20 20 20	K1 1 25 25 25 25 25	30 25 30 25 30 25 30 25 30 25 30 25		Alternating Alternating Alternating Alternating Alternating	
Total Protoc Numbe Descri Pair # 1 2 3 4 5 6	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protocol F1(Hz) F2(Hz) I(uA) T 110 100 120 100 130 100 140 100 150 100 160 100	45' 1 ne: 9' N, F1=110~19 (min'sec") W (min'sec") M (min'sec") M	90 /aveforr spirsta spirsta spirsta spirsta spirsta	m r default waveform r default waveform r default waveform r default waveform r default waveform r default waveform	Period(ms) 4,000 4,000 4,000 4,000 4,000 4,000 4,000	K0 20 20 20 20 20 20	K1 25 25 25 25 25 25 25 25	30 25 30 25 30 25 30 25 30 25 30 25 30 25		Alternating Alternating Alternating Alternating Alternating Alternating	
Total Protoc Numbe Descri Pair # 1 2 3 4 5	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protocol F1(Hz) F2(Hz) I(uA) T 110 100 120 100 130 100 140 100 150 100 160 100 170 100	45' 1 1e: 9' 1, F1=110~19 (min'sec") W (min'sec") W 1' In 1' In	90 /aveforr spirsta spirsta spirsta spirsta spirsta spirsta	m r default waveform r default waveform r default waveform r default waveform r default waveform r default waveform r default waveform	Period(ms) 4,000 4,000 4,000 4,000 4,000 4,000 4,000 4,000	K0 20 20 20 20 20 20 20 20	K1 1 25 25 25 25 25 25 25 25 25 25	30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25		Alternating Alternating Alternating Alternating Alternating Alternating Alternating Alternating	
Total Protoc Numbe Descri 1 2 3 4 5 6 7	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protoco F1(Hz) F2(Hz) I(uA) T 110 100 100 1 120 100 100 1 130 100 100 1 140 100 100 1 150 100 100 1 150 100 100 1 170 100 100 1 180 100 100 1	45' 1 1e: 9' 1, F1=110~19 (min'sec") W (min'sec") M (min'sec") M	90 /aveforr ispirsta ispirsta ispirsta ispirsta ispirsta ispirsta ispirsta	m r default waveform r default waveform r default waveform r default waveform r default waveform r default waveform	Period(ms) 4,000 4,000 4,000 4,000 4,000 4,000 4,000 4,000 4,000	K0 20 20 20 20 20 20 20 20 20	K1 1 25 25 25 25 25 25 25 25 25 25 25	30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25		Alternating Alternating Alternating Alternating Alternating Alternating	
Total Protoc Numbe Descri 1 2 3 4 5 6 7 8	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protoco F1(Hz) F2(Hz) I(uA) T 110 100 100 1 120 100 100 1 130 100 100 1 140 100 100 1 150 100 100 1 150 100 100 1 170 100 100 1 180 100 100 1	45' 1 1e: 9' 1, F1=110~19 (min'sec") W (min'sec") M (min'sec") M	90 /aveforr ispirsta ispirsta ispirsta ispirsta ispirsta ispirsta ispirsta	m r default waveform r default waveform	Period(ms) 4,000 4,000 4,000 4,000 4,000 4,000 4,000 4,000 4,000	K0 20 20 20 20 20 20 20 20 20	K1 1 25 25 25 25 25 25 25 25 25 25 25	30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25		Alternating Alternating Alternating Alternating Alternating Alternating Alternating Alternating Alternating	
Total Protoc Numbe Descri 1 2 3 4 5 6 7 8 9	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protocol [F1(Hz) F2(Hz) I(uA) Tr 110 100 100 1 120 100 100 1 130 100 100 1 140 100 100 1 150 100 100 1 160 100 100 1 180 100 100 1 190 100 100 1	45' 1 1e: 9' 1, F1=110~19 (min'sec") W (min'sec") M (min'sec") M	90 /aveforr ispirsta ispirsta ispirsta ispirsta ispirsta ispirsta ispirsta	m r default waveform r default waveform	Period(ms) 4,000 4,000 4,000 4,000 4,000 4,000 4,000 4,000 4,000	K0 20 20 20 20 20 20 20 20 20	K1 1 25 25 25 25 25 25 25 25 25 25 25	30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25		Alternating Alternating Alternating Alternating Alternating Alternating Alternating Alternating Alternating	
Total Protoc Numbe Descri Pair # 1 2 3 4 5 6 7 8 9 Protoc	5 Protocols col 1: Example protocol er of pairs: 9 Total Tim iption: Example protoco F1(Hz) F2(Hz) I(uA) T 110 100 100 1 120 100 100 1 130 100 100 1 140 100 100 1 150 100 100 1 150 100 100 1 170 100 100 1 180 100 100 1	45' 1 he: 9' l, F1=110~19 (min'sec") W ' n ' n ' n ' n ' n ' n ' n ' n ' n	90 /aveforr ispirsta ispirsta ispirsta ispirsta ispirsta ispirsta ispirsta	m r default waveform r default waveform	Period(ms) 4,000 4,000 4,000 4,000 4,000 4,000 4,000 4,000 4,000	K0 20 20 20 20 20 20 20 20 20	K1 1 25 25 25 25 25 25 25 25 25 25 25	30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25 30 25		Alternating Alternating Alternating Alternating Alternating Alternating Alternating Alternating Alternating	

To change the orientation of the page, or adjust the margins on page, click on menu File -> Page Setup or click on the Page Setup button on the Print Preview window.

Inspirstar Profile Editor User's Guide

Page Setup	
	9. Status (Status) 1 10. Status (Status) 1
Paper	
Size: Le	etter 🔹
<u>S</u> ource: A	utomatically Select 🔹
Orientation	Margins (inches)
Portrait	Left: 0.5 <u>Right:</u> 0.5
Landscape	Top: 1 Bottom: 1
	OK Cancel

3.4.6 To Copy the contents of Profile to Excel Spreadsheet

To copy the contents of the Profile as displayed on Profile Editor to Excel spreadsheet, select the cells to be copied, then use the Copy button on tool bar or press Ctrl+C. Do not click the row header for selection. Selecting by row header will select the protocols, not the cell contents.

Inspirstar Profile Editor User's Guide

T: File				or\bin\De	bug\	Simple Example.profile - Inspirstar Profile Editor(BETA)(4.2 📼 📼 💌			
🗋 😂 🛃 🎒 🕰 🐰 🏝 🏝 Write Read 🕜 : Target Model: 🔹 149/36730 (0%)									
List of Protocols: Protocol Operations: Add New Replace Import Export Remove Edit Move Up Move Down Global Change									
	Line #	Protocol Name	Total Time	l(uA)	Веер	Description			
		Example protocol 1	9'	100	V	Example protocol, F1=110~190			
		Back pain		100	V	Example protocol, F1=210~290			
		Thigh muscle relaxing		100	V	Example protocol, F1=310~390			
	4	Neck pain		100	V	Example protocol, F1=410~490			
	5	Fatigue	9'	100	V	Example protocol, F1=510~590			
	Total	5 Protocols	45'		V	Summary of this profile.			
Mat		- fle (The estate vill and	he without a l	<u> </u>	·	and act is DC (in)			
		profile (The notes will not							
This example profile shows that a profile holds a few protocols. Each protocol can have its name and description. The protocols in this profile does not perform the treatment as their names or descriptions sugguest. This is only to show the use of profiles and protocols.									
ort:	NONE								

Paste the contents into Excel spreadsheet

	📙 🌖 • (≥ - -					Book	L - Micros	oft Excel	
Fi	ile Ho	me Insert	Page L	ayout	Formula	s Data Review \	/iew Deve	loper	Add-Ins	
	₩	Calibri	* 11	· A	t A ≡		eneral	٣	4	
Pas		B <i>I</i> <u>U</u> ∗	*	<mark>⊘</mark> -	<u>A</u> • ≡		\$*%,	00. 0. → 0.♦ 00.	Conditic Formatti	
Clip	board 🗔	For	nt		E.	Alignment 🕠	Number	F <u>a</u>		
F5 - fx Example protocol, F1=510~590										
	А	В	С	D	E	F	G	Н	1	
1	1	Example protocol 1	9'	100	TRUE	Example protocol, F1=110~190				
2	2	Back pain	9'	100	TRUE	Example protocol, F1=210~290				
3	3	Thigh muscle relaxing	9'	100	TRUE	Example protocol, F1=310~390				
4	4	Neck pain	9'	100	TRUE	Example protocol, F1=410~490				
5	5	Fatigue	9'	100	TRUE	Example protocol, F1=510~590				
6 	► ► Sh	eet1 / Sheet2 /	Shee	t3 / 1	a /					

Ver 4.7.0 Copyright © Inspirstar Inc. 2005-2021.

3.5 Organize Protocols in a Profile

The protocols in the profile are listed in the table in the Profile Editor Window. Operations are provided to help organizing the protocols in the profile.

3.5.1 To Select Protocols

All protocols in the profile are listed in the List of Protocols table. You can select one protocol or multiple protocols for edit operations such as cut, copy, move and export. Selected protocols are highlighted.

	Line	Protocol Name
	1	Sample protocol 1
Þ	2	Back pain
	3	Thigh muscle relaxing
	4	Neck pain
	5	Fatigue

	Line	Protocol Name
	1	Sample protocol 1
	2	Back pain
	3	Thigh muscle relaxing
Þ	4	Neck pain
	5	Fatigue

	Line	Protocol Name
	1	Sample protocol 1
	2	Back pain
	3	Thigh muscle relaxing
	4	Neck pain
Þ	5	Fatigue

	Line	Protocol Name
	1	Sample protocol 1
	2	Back pain
	3	Thigh muscle relaxing
	4	Neck pain
Þ	5	Fatigue

- To select one protocol, click the row header of the protocol. The selected row becomes **current row** and is marked with an arrow.
- To select multiple protocols in consecutive range, click the row header of the first protocol with the left mouse button, then hold down the **SHIFT** key on the keyboard, and then click the row header of another protocol in the list. The protocols between the two clicks will be selected.
- To select multiple protocols in scattered locations, hold down the CTRL key on the keyboard, then click the row headers of the protocols you want to select.
- To select all protocols in the list, use menu command Edit -> Select All; or press **CTRL+A**.

3.5.2 To Add a Blank Protocol

To add a blank protocol into the profile,

- Click on tool bar button Add New, the blank protocol will be added after the current row.
- Or Press Insert key, the blank protocol will be added after the current row.
- Or Press Ctrl + "+" key, the blank protocol will be added after the current row.

3.5.3 To Remove a Protocol

To remove a protocol from the profile,

- Select the protocol to be removed, click on tool bar button Remove, the selected protocol will be removed from the profile.
- Or select the protocol to be removed, Press Delete key, the selected protocol will be removed from the profile.

NOTE

If the protocol to be removed is not blank, you are prompted to confirm the operation.

3.5.4 To Move a Protocol

The protocols in the profile can be moved up and down to your desire. The IS02 machine uses protocol number to refer to a certain protocol so the locations of protocol in the profile is important. To move a protocol in the profile,

- 1. Click the row header to select a single protocol or multiple protocols in the profile.
- 2. Click on tool button Move Up to move the selected protocols up by one line, or button

Move Down to move the selected protocols down by one line.

Another way to move a protocol is through the Cut and Paste features. This allows you to move a protocol within a profile, or between two profiles.

NOTE

If you did not give a name to the protocols, the protocols will be named as "Protocol #" where # is the line number of the protocol. After the protocol is moved up or down, the moved protocol will have a new number. If all protocols have numbers as the name, it would be hard to distinguish if the protocol has been moved. It's recommended to give a name to each protocol.

3.5.5 To Sort Protocols

The protocols in the profile can be sorted in Profile Editor for display purpose. Click the column header to sort protocols for that property in ascend and descent order.

Line # Protocol Name Time I(uA) Beep		Description			
2*	2* Back pain		100	\checkmark	Example protocol, F1=210~290
1*	1* Example protocol 1		200	\checkmark	Example protocol, F1=110~190
5*	Fatigue	9'	220	\checkmark	Example protocol, F1=510~590
4*	4* Neck pain		300	\checkmark	Example protocol, F1=410~490
3*	Thigh muscle relaxing	9'	400	\checkmark	Example protocol, F1=310~390
Total	5 Protocols	46' 3"		\checkmark	Summary of this profile.
	2* 1* 5* 4* 3*	2* Back pain 1* Example protocol 1 5* Fatigue	2* Back pain 10' 3" 1* Example protocol 1 9' 5* Fatigue 9' 4* Neck pain 9' 3* Thigh muscle relaxing 9'	2* Back pain 10' 3" 100 1* Example protocol 1 9' 200 5* Fatigue 9' 220 4* Neck pain 9' 300 3* Thigh muscle relaxing 9' 400	2* Back pain 10' 3" 100 Image: Constraint of the second se

NOTE

The sorting is for display only. The actual order is not changed unless you Renumber all the protocols. Click the right mouse button on the protocol list to either Renumber the protocols as in the displayed order or unsort all the protocols in their storage order in the profile.

	Line #	Protocol Name		A	Time		l(uA)	Веер	Description
►	2*	Back pain			1/)' 3''	100	\checkmark	Example protocol,
	1*	Example protoc	Cut Copy Cell Values			9'	200	\checkmark	Example protocol,
	5*	Fatigue	Paste Cell Values			9'	220	\checkmark	Example protocol,
	4*	Neck pain				9'	300	\checkmark	Example protocol,
	3*	Thigh muscle re	Move Up	Ctrl+	Jp	9'	400	\checkmark	Example protocol,
	Total	5 Protocols	Move Down	Ctrl+Dov	vn	3" 3"		\checkmark	Summary of this pr
This	Notes to the profile (The notes w This example profile shows that a sugguest. This is only to show the		Add New Protocol Ctrl+Ins Remove Protocols Ctrl+Del Import Existing Protocol Ctrl+I)el +	file.) s name and description. The protocols in th			
Port:	COM39 (cc	onnector: USB,	Export Protocol Select All Files Add Recent Protocol Run Protocol in Real Time C Renumber Protocols Unsort Protocols	Ctrl	•				

3.5.6 To Cut, Copy and Paste a Protocol

The protocols in the profile can be moved up and down to your desire. The IS02 machine uses protocol number to refer to a certain protocol so the locations of protocol in the profile is important. To move a protocol in the profile,

- 1. Click the row header to select a single protocol or multiple protocols in the profile.
- 2. Click on tool button , or press Ctrl-X to cut the selected protocols off the profile. The selected protocols will be removed from the profile to the Windows clipboard.

- 3. Click on tool button in , or press Ctrl-C to copy the selected protocols. The selected protocols will be copied to the Windows clipboard.
- 4. Click on tool button into the profile.

3.5.7 To Export a Protocol to a File

You can export a protocol in the profile to a protocol file in disks for other uses. To export a protocol,

- 1. Click the row header to select a protocol in the profile.
- 2. Click on tool button Export, a file browsing dialog opens up. Browse to the folder and give a name for the protocol file. By default, the protocol name is used as the protocol file name.
- 3. Click SAVE to save the protocol file.

3.5.8 To Export All Protocols to a folder

You can export all protocol in the profile to a folder in disks. To export a protocols,

- 1. Click the row header to select more than two protocols in the profile. To select all protocols, click on the top left corner of the table.
- 2. Click on tool button Export, a file browsing dialog opens up. Browse to a folder to hold all

the protocols. By default, the profile name is used as the folder name.

3. Click SAVE to start exporting all protocols to files. Exported protocols will be numbered in the same order as they are in the profile and will be named with their protocol name.

3.5.9 To Import an Existing Protocol

If you have got protocol files in disk, you can import them into the profile. To import an existing protocol into the profile,

- Click on tool bar button **Import**, then browse to select an existing protocol file and select OK. The protocol in the protocol file will be imported to the profile after the current line, i.e. the operation is "insert after".
- Drag-Drop operation: use the Windows Explorer to browse to the protocol file or profile file to be imported, hold the mouse button to drag the file into the Profile Editor window, and then drop the file into the List of Protocols. The protocol in the dragged file will be imported at the insertion point that was highlighted by a red line.

NOTE

You can import a protocol file, or a profile that contains multiple protocols. When the file contains multiple protocols, all protocols will be imported in the same sequence as in the existing profile file.

TIP

You can add a recently used protocol file by right click the table and select a file in the list.

	Line	Protocol Name		Total Time	l(uA)	Веер	Descrip	tion
	1	Protocol 1						
	2	Protocol 2	0' 0 🕼					
•		Protocol 3 Protocol 4	Move Up Ctrl+Up		1 A A			
	5	Protocol 5	WOVE DOW				VII	
	Total	5 Protocols	Add New P	rotocol		Ctrl+1	ns	r of this profile.
			Remove Pr	Remove Protocols Ctrl+Del)el	
Note	es to the	Profile (The note	Import Exis	port Existing Protocol Ctrl+I		+I	n PC file.)	
			Replace wit	th Existing Pr	otocol	s Ctrl	+L	
			Export Prot	ocol		Ctrl	+E	
			Select All F	iles		Ctrl	A	
Port	NONE		Add Recen	t Protocol			•	1 My Documents\IS02\Protocols\Back pain.protocol
-	_		_	_	_	-	_	2 My Documents\IS02\Protocols\Fatigue.protocol
								3 My Documents\IS02\Protocols\Neck pain.protocol
								4 My Documents\IS02\Protocols\Thigh muscle relaxing.protoco
								5 My Documents\IS02\Protocols\Sample protocol 1.protocol

3.5.10 To Move a Protocol between Profiles

To move or duplicate a protocol to another profile, you can choice the following methods.

Through Cut, Copy and Paste:

- 1. Click the row header to select a single protocol or multiple protocols in the first profile.
- 2. Click on tool button in , or press Ctrl-C to copy the selected protocols. The selected protocols will be copied to the Windows clipboard.
- 3. Open another profile or start a new profile.
- 4. Click on tool button into a clipboard into the profile.

Through Drag and Drop:

- 1. Click the row header to select a single protocol in the first profile.
- 2. Hold down the left mouse button and move the mouse pointer to the new profile window.
- 3. The new profile window will display a red line to indicate the insertion point.
- 4. Use the Ctrl key to change to move or to copy the protocols.
- 5. Release the mouse button. The protocols are dragged will be dropped to the new profile

window.

Through Export and Import:

- 1. Click the row header to select a single protocol in the first profile.
- 2. Click on tool button export, or press Ctrl-E to export the selected protocol to a disk file.
- 3. Open another profile or start a new profile.
- 4. Click on tool button , or press Ctrl-I to import the protocol file which was exported from the previous step.

NOTE

You can open two Profile Editor windows and copy and paste protocols between the two profiles.

3.6 Change a Protocol

3.6.1 Make changes in Profile Editor

The information of each protocol listed in the table can be changed. The information is: Protocol Name, Protocol Description, Protocol Total Time, Protocol Output Current Intensity and the option to beep at the end of protocol.

3.6.1.1 To Change the Protocol Name

- Click to select the cell under column header of "protocol name" of the row of the protocol.
- Type in the new name;
- Or press F2 to edit the name;
- After it's done, press Enter or move the cursor to another cell in the table. The name of the protocol has been changed.

NOTE

The protocol name can also be assigned or changed in the Protocol Editor window.

3.6.1.2 To Change the Protocol Description

- Click to select the cell under column header of "Description" of the row of the protocol.
- Type in the new description;
- Or press F2 to edit the description;
- After it's done, press Enter or move the cursor to another cell in the table. The description of

the protocol has been changed.

NOTE

When the profile is written into IS02 machine, the description of the protocol will be truncated to 255 characters, although the limit for the description in the disk file is much longer.

3.6.1.3 To Turn off the Beep of Protocol

The beep that sounds at the end of the protocol running in IS02 machine can be turned off.

- Click to uncheck the box under column header of "Beep" of the row of the protocol.
- Or click to uncheck the box under column header of "Beep" of the last row (the Total line) to make changes to all the protocols.

NOTE

The beep option can only be changed in Profile Editor window.

3.6.1.4 To Change the Output Current Intensity

To change the output current intensity of a single protocol:

- Click to select the cell under column header of "I(uA)" of the row of the protocol.
- Type in the new value for the current;
- Or press F2 to edit the value of the current;
- After it's done, press Enter or move the cursor to another cell in the table. The output current intensity of the protocol has been changed.

To change the output current intensity of all protocols in the profile:

- Click to select the cell under column header of "I(uA)" of the last row (the Total line).
- Type in the new value for the current.
- After it's done, press Enter or move the cursor to another cell in the table. The output current intensity of all protocol in the profile have been changed.

NOTE

When the current is changed with this way in Profile windows, all waveforms of both channels in the protocol will have the same current intensity. In order to achieve non-uniform current intensity for waveforms. you need to use the Protocol Editor window to make the changes.

3.6.1.5 To Change the Therapy Time

To change the therapy time of a protocol:

• Click to select the cell under column header of "Total Time" of the row of the protocol.

Ver 4.7.0 Copyright © Inspirstar Inc. 2005-2021.

- Type in the new value for the therapy time.
- Or press F2 to edit the value of the therapy time.
- After it's done, press Enter or move the cursor to another cell in the table. The therapy time of the protocol has been changed.

NOTE

The time can be entered in different format. Below are valid formats:

Entered	Interpreted as
1'20"	1 minute 20 seconds
1:20	1 minute 20 seconds
1:20:30	1 hour 20 minutes 30 seconds
1	1 minute
20"	20 seconds

NOTE

Because the therapy time of a protocol is the total time of all frequency pairs in the protocols, the change will be made to all frequency pairs proportionally. For example, a protocol has 12 minutes of therapy time from these frequency pairs:

Pair #	F1(Hz)	F1(Hz) F2(Hz)		T(min'sec'')
1	110	100	150	1'
2	120	100	150	2'
3	130	100	150	3'
4	140	100	150	1'
5	150	100	150	1'
6	160	100	150	1'
7	170	100	150	1'
8	180	100	150	1'
9	190	100	150	1'
new				

After the therapy time is changed to 15 minutes with this method, all frequency pairs in the protocol will have new time as

Pair #	F1(Hz)	F2(Hz)	l(uA)	T(min'sec'')
1	110	100	150	1'15"
2	120	100	150	2'30''
3	130	100	150	3'45''
4	140	100	150	1'15''
5	150	100	150	1'15"
6	160	100	150	1'15"
7	170	100	150	1'15"
8	180	100	150	1'15"
9	190	100	150	1'15''
new				

The new time for each frequency pair equals the old time x 15/12, or 1 minute will becomes 1 minute and 15 seconds.

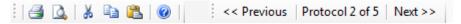
3.6.2 Make Changes with Protocol Editor

To make changes to waveform parameters such as frequency, polarity, duty cycle, etc, you need to use Protocol Editor. To bring up the Protocol Editor window,

- 1. Click to select a protocol for editing.
- 2. Click on tool button Edit, or double click the line of the protocol, the Protocol Editor window will pop up. See 4 Protocol Editor for more details.
- 3. The title of the Protocol Editor shows the protocol number in the profile and the protocol name.



4. You can click on the Previous button on the tool bar to edit the previous or next protocol in the profile; or entering the new protocol number to jump to protocol.



5. when you are done, close the Protocol Editor window.

3.6.3 Make Changes with Global Change

You can change the parameters of the frequency pairs to all or some protocols of the profile:

1. Click Global Change ... to bring up the Global Change window.

Global Change	X		
Step 1 Check the paramete	ers to be applied to protocols. Make changes if necessary.		
Description			
Channel 1 Parameters 📃 All	Channel 2 Parameters All		
🔲 F1 100.0 🚔 Hz	🕅 F2 100.0 🚖 Hz		
🔲 T1 🛛 1' 🚔 min'sec	c" 🔲 T2 1' 🚖 min'sec"		
🔲 I1 🛛 100 🚔 🛛 uA	🗖 12 100 🚖 uA		
Period1 4,000 🚔 ms	Period2 4.000 🚔 ms		
🔲 Duty K0 20 🚔 K1 25	🖹 Duty K0 20 🌩 K1 25 🌩		
K2 30 🚔 K3 25	K2 30 🐳 K3 25 🛬		
Polarity Alternative -	Polarity Alternative		
	Phase 0		
Step 2 Select the protocols for the changes All			
# Protocol Name D	Description		
Sample protocol 1 sa	ample protocol, F1=110~190		
	ample protocol, F1=210~290		
	ample protocol, F1=310~390		
	ample protocol, F1=410~490		
Fatigue sa	ample protocol, F1=510~590		
Step 3 Click the APPLY button to apply the changes			
Apply Cancel			

- 2. In Step 1, check the boxes of the parameters that you want to change and change the values;
- 3. In Step 2, check the protocols that you want to apply the new values to.
- 4. Click Apply to apply the changes to the selected protocols.

NOTE

It would be easier to change parameters in all protocols from the parameters of a frequency pair if you use the Global Change from the Protocol Editor. See 4.6.4 Using Global Change for details.

3.7 Work with IS02

3.7.1 Connect Inspirstar IS02 to PC

You need a spare USB port on your computer for Inspirstar USB adaptor. The Inspirstar USB

Adaptor can be used with either 4-pin connector or circular connector to connect to Inspirstar IS02. Plug the USB connector of the adaptor into the USB port on your PC, as shown in the following picture.



CAUTION

Use only the Inspirstar USB Adaptor. Using other USB adaptors or converters will not work and may damage devices.

3.7.1.1 Use the Circular Connector

The circular connector is available on IS02BA. The circular connector is called miniature DIN circular connector, or most of times mini DIN for short. It has the same shape as S-video connector, or PS/2 mouse/keyboard connector. Insert the circular connector into the COMM port on the top side output panel, and connect the DB9 connector of the other end of the cable to Inspirstar USB Adaptor, as shown in the following pictures.

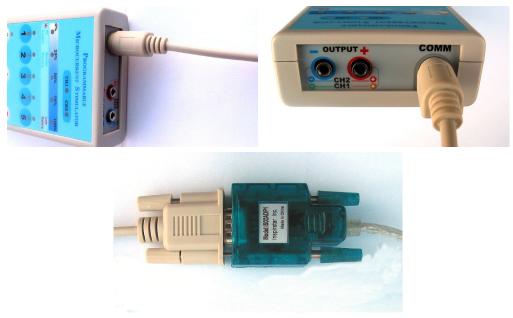


Figure 5 Connect Circular Connector to Inspirstar IS02BA

3.7.1.2 Use the 4-pin Header

The connection to Inspirstar IS02AA and IS02BA is through the connection holes in the battery compartment. Open the battery compartment of Inspirstar IS02AA/BA, remove the batteries, you will see four holes in line at the center of the battery compartment. Align the four pin header from Inspirstar USB adaptor to the four holes; insert the header vertically and firmly with care. See the following pictures. The LED above key 1 will be flashing after the header is properly inserted. The other end of the 4-pin cable needs to be connected to the Inspirstar USB Adaptor, as shown in the following pictures.

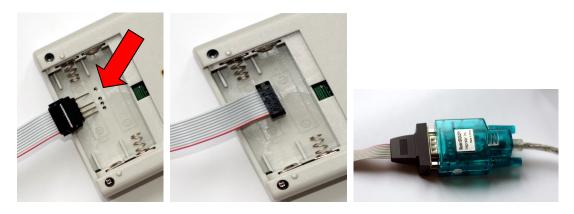


Figure 6 Connect 4-Pin Header to Inspirstar IS02AA and IS02BA

CAUTION

Please keep the 4-pin header away from metal surfaces to avoid short to the USB power. If you see a power failure message on your Windows, you need to unplug the USB plug from your PC and then re-insert it to recover from the failure.

3.7.1.3 Use USB Connector

Newer IS02 models including IS02LCD, IS02PRO and IS02BAs use micro-USB connector for PC connection. Plug in a micro-USB data cable into the USB port on the rear side of. Note some micro-USB cables are for charge only and can't be used for communication.



Figure 7 Micro-USB cable connection to IS02 (IS02PRO shown)

3.7.2 Read and Write Profile to IS02

3.7.2.1 To Read Profile from Inspirstar IS02

Note

You need to connect Inspirstar IS02 to the PC before you start Read Profile. See "3.7.1 Connect Inspirstar IS02 to PC" on how to make the connection.

In Profile Editor Window, use the command "Read From " in Tools menu to read the
profile in an Inspirstar IS02; or click the Read button on the tool bar. The following
dialog will show up.

S Read Profile
Password The protocols in IS02 can be protected against unauthorized read with a password. Enter the password for reading protocols:
Password: (up to 12 letters or digits)
Check this box if you like to save the password in the profile.
Select Protocols to Read
Read user protocols only
Read factory protocols only
Progress: Elapsed Time:
Connection Read Cancel

Figure 8 Read Profile

Password: If the user profile was written into Inspirstar IS02 with a password, the same password is required for reading the user profile. You have the option to save the password in the profile. You don't need to provide the password if you just want to read factory protocols (see options below).

Select Protocols to Read: You have the option to select the protocols to be read into the

profile. By default, both checkbox for user protocols and factory protocols are cleared. This means that the five protocols in the profile will be either a user protocol, if there is one, or a factory protocol, if the user protocol is empty. You can select to read either only the user protocols or only the factory protocols by checking these two options.

Read: Click the Read button to start the read operation. The dialog will be closed and the profile will be displayed in Inspirstar Profile Editor window for viewing or changing.

Connection: invokes the Communication Setup window.

3.7.2.2 To Write Profile to Inspirstar IS02

In Profile Editor Window, use the command "Write to..." in Tools menu to write the profile to Inspirstar IS02; or click the Write button on the tool bar. The following dialog will show up.

😼 Write Profile	×
Password The protocols in IS02 can be protected against unauthorized read with a password. Provide the password for reading protocols, or for protecting your protocols: Password: (up to 12 letters or digits) Show ✓ Check this box if you like to save the password in the profile. Check this box if you forget the password and want to reset it first. Note that the above password will be used as a new password after reset.	
Programming Information (Detected) Required Memory for model IS02PROs Detect Model 455 bytes, 0.3% of 128848 bytes(125.8 KB).	
 Write the description of frequency pairs Clear the batch protocols in IS02. 	
Use slow protocol Remaining Time: Progress: Elapsed Time:	
Connection Write Cancel	

Figure 9 Write Profile

Password: If you want to protect your protocols in Inspirstar IS02, you can provide a password in the password box. You have the option to save the password in the profile. **Programming Information**: If you have a Inspirstar IS02 model IS02BA or later, you can

configure the memory so your profile can fit into.

Detect Model : to detect the model connected to the PC and retrieve the current memory

configuration.

Config Memory... to invoke the memory configuration window so you can change the memory size to fit your protocol.

Write protocols with description: When checked, the description of the protocols and the description of the frequency pairs will be written into IS02. If your protocol does not fit into IS02 memory, unchecked this box. Note that the description of the profile is not written into IS02 regardless of this setting.

Clear the batch protocols in IS02: When checked, the slots of the batch protocols in IS02 device will be cleared when the new profile is written. If the batch protocols is not cleared, the protocol numbers that were programmed with the previous therapy profile in the batch protocols may refer to totally different protocols after the new therapy profile is written into IS02.

Connection...

to setup the communication connection.

Write: Click the Write button to start the write operation. The dialog will be closed after the profile is written into Inspirstar IS02 successfully.

Note

Anytime when the "Write" operation is executed, all 5 protocols in this profile are written into the units and the 5 old protocols in the units are replaced.

3.7.2.3 To Erase Profile in Inspirstar IS02

In Profile Editor Window, use menu Tools -> Erase Profile In IS02... to bring up the following

dialog, then click the

button to erase the user profile in IS02.

Frase Profile in IS02 The profile in IS02 will be erased. The password will be reset. All protocols in the batch will be cleared. Do you want to continue? Click Erase button to continue. Or cancel to abort. Use slow protocol Remaining Time: Progress: Elapsed Time:				
The profile in IS02 will be era	sed.			
The password will be reset.				
All protocols in the batch will	be cleared.			
Do you want to continue?				
Click Erase button to continu	ie. Or cancel	to abort.		
Use slow protocol	Remai	ning Time:		
Progress:	Elaj	osed Time:		
Connection	Erase	Cancel		

Figure 10 Erase Profile

This feature will erase the user profile regardless if it is password protected.

3.7.3 Configure Memory

You can configure the memory in Inspirstar IS02 model IS02 to fit your profile. In Main

Ver 4.7.0 Copyright © Inspirstar Inc. 2005-2021.

Window, use command "Memory Configuration" from Tools menu, or click the

Config Memory... button in the Write Profile widow to invoke this window:

Memory Conf	iguration			
	of ISO2 for the config 02 and retrieve the c			
Configure memory	for model IS02B/	4 🔽 (Det	ected)	Detect Model
	ipacity: 10.8 KB, goo k capacity: 25 KB, go			
Step 2				
	to change the memo	ry configuratio	n:	
OKB				 32KI
	ipacity: 10.8 KB, goo k capacity: 25 KB, gi			
Step 3	Click the APPLY bu	tton to write th	e new configu	ration to the ISO2
Connection	(Apply		Cancel

Figure 11 Memory Configuration

Detect Model: If an Inspirstar IS02 is connected to the PC when the Memory Configuration is

invoked, the memory configuration in the IS02 will be displayed on the window, and is marked as "(Detected)". You can click button "Detect Model" to refresh or detect the model and memory configuration of IS02.

Move the slider to add extra memory for protocols. The total memory capacity for protocols and for logbook is shown on the screen. Click the Apply button to write the new memory configuration into IS02.

3.7.4 Change IS02 Settings

Use menu command Tools -> Change IS02 Settings to bring up the following dialog. These settings are for the whole machine and will be applied to all protocols.

Grange IS02 Settings	×									
Step 1 Change Settings Retrieve Current Settings										
General Settings										
Makes a short beep sound on key pressing										
Supports 10 Protocols (6 to 10) (IS02BA only)										
 Supports for Protocols (or to 10) (ISUZBA only) Enables audible alert on loss of output connection during protocol running 										
LCD Backlight Brightness 15										
Protocol Control Settings										
Beep when a protocol is finished running										
Allow increase/decrease of output current on run time										
Allow forward/backward of frequency pair on run time										
Output Drive Voltage: High ~										
Use high voltage for the constant current output driver.										
This is suitable for contact and body resistance up to 100K ohm.										
Step 2 Click the APPLY button to change the settings to IS02.										
Connection OK Apply Cancel										

Figure 12 Change IS02 Settings

You can change the following options to IS02BA, IS02LCD and IS02PRO.

- General Settings:
 - ✓ Short beep on key press

When checked, there will be a short beep when a key is pressed on IS02.

✓ Supports 10 Protocols

When checked, IS02BA will allow the user to select and run protocol 6 to protocol 10, if the protocols are programmed in the machine. This option is applicable to IS02BA only.

✓ Enables audible alert on the loss of output connection during protocol running

Short beeping sounds will be raised to remind the user to check the output connections when the output has lost connection for more than 10 seconds. This feature needs firmware version 1.65.5 or above. It's not supported on IS02BA.

- Protocol Control Settings:
 - \checkmark Beep when a protocol is finished running
 - When checked, there will be a long beep when a protocol is finished running on

IS02.

✓ Allow increase/decrease of output current on run time

When checked, IS02BA will allow the user to change the output current on protocol run time by using key 4 and key 5. The first press of Key 4 or Key 5 will show the current intensity. The followed press of key 4 will decrease the current intensity by 20uA. The followed press of key 5 will increase the current intensity by 20uA. On IS02LCD and IS02PRO, this option will enable to use Current+ and Current-key to change the output current.

✓ Allow forward/backward of frequency pair on run time

When checked, IS02BA will allow the user to change the sequence of the frequency pairs on protocol run time by using key 1 and key 2. The first press of Key 1 or Key 2 will show the number of the frequency pair. The followed pressing of key 1 will backward by one the frequency pair in the protocol. The followed press of key 2 will forward by one the frequency pair in the protocol.

On IS02LCD and IS02PRO, this option will enable to use SKIP and HOLD to change the running frequency pair.

✓ Output drive voltage

All Inspirstar IS02 models has a constant current driver to be able to drive a connection resistance up to 100K ohms. For applications with very good connection or low resistance electrodes, the voltage can be tuned down to save battery life.

Note

You can use button Retrieve Current Settings to retrieve the current settings from a connected IS02.

Note

Only IS02 with firmware version of 0.80 or greater supports these options.

3.7.5 Setup Communication

Profile Editor will automatically search the IS02 connection on all available communication ports.

The Inspirstar USB Adaptor will show up in Windows as a serial communication port. The Communication Setup window lists all the available serial ports of the PC, including the existing serial ports. Click on the pull down arrow to select the serial port for the Inspirstar USB Adaptor. When port option I Include only COM ports for USB adapters is checked, Profile Editor will search only the ports for the USB adapters, and the detection is faster. When the option is not checked, the COMs for Bluetooth or other devices are included in IS02 detection,

thus will slow the detection process.

You can select the serial port that was assigned to the Inspirstar IS02 USB adaptor cable when the cable was plugged into the PC. You can use the Auto detection option ✓ Auto detection if you are not sure what port number was assigned to the USB adaptor. Inspirstar Profile Editor will scan all serial ports for Inspirstar IS02 if Auto detection option is checked.

Click the	e Detec	butt	ton to start the sea	rching for Ir	nspirstar IS0	2. The s	search resu	ult will be
shown	on	the	Communication	Setup	window,	as	shown	below.
Conn Inspir Foun	d ISO2BA o	s connecto connected	ed to serial port Inc to serial port COM18 the 4-pin header conne	lude only COM	Auto detection ports for USB action any compartment.	dapters	3	

The window can be invoked from either

- 1. Tools menu -> Setup Communication; or
- 2. The <u>Connection...</u> button from the window of operations that need to connect to Inspirstar IS02, such as Write Profile to, Product Information, etc.

It's always recommended to check the Auto Detection. This communication setup is used for all operations that require a connection to Inspirstar IS02.

If no IS02 could be detected, the following window will pop up to remind you for the cable connections. Click on the picture to switch to other connection type and hints.

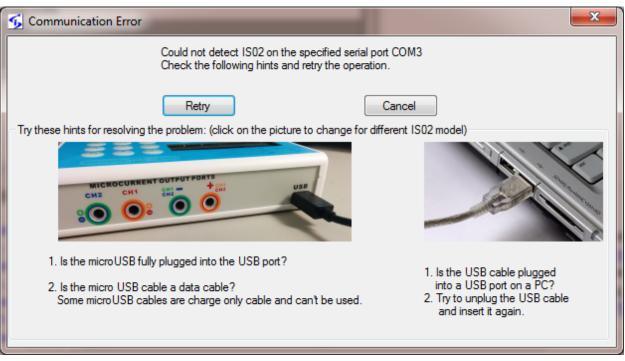


Figure 13 Hints For Communication Problems

3.7.6 Retrieve Product Information

To retrieve product information of the IS02 unit, use the Product Information tool in the Tools menu. The Product Information window shows the model number, serial number, and the version of firmware. If the IS02 model is IS02BA, IS02LCD, IS02PRO or newer models, the battery status will be shown. You need to change to new batteries if the battery status is in the red region.

🜀 Inspirstar IS02 Product Infor	mation	×
Product Information	Include bootloader information	
Property	Value	
Model	IS02PROs	
Serial Number		
Firmware Information		
Firmware Version	1.70.0	
Firmware Build Date	8/5/2021 11:55:07 AM	
Battery Voltage	2.54V	
Hardware Release	6	
Battery Status Battery Voltage: 2.54V		
Need to change	49% left FULL	
Connection Upgrade	Refresh	

Figure 14 Product Information

To upgrade the firmware, click the Upgrade button.

To retrieve the version information of the bootloader, check "Include bootloader information" then click Refresh.

3.7.7 Upgrade IS02 Firmware

The firmware in IS02BA, IS02LCD, IS02PRO and newer models can be upgraded to a newer version through the programming communication port. The firmware in model IS02AA can not be upgraded in this way.

The firmware usually comes with the new Profile Editor software package. The new firmware is installed in this folder by default:

C:\Program Files\Inspirstar\IS02\Firmwares

If you receive a new firmware file by email or download it from web site, it's better to save the file into the default location, which is C:\Program Files\Inspirstar\IS02\Firmwares. A firmware file must have .update as its extension name. The file name usually contains the model name, hardware release and firmware release.

To start firmware upgrade,

- You will be prompted to upgrade the firmware when Profile Editor is instructed to communicate with a connected IS02 machine and if a newer version of firmware is available. We suggest you perform the firmware upgrade.
- You can double click the firmware update file to bring up the firmware upgrade window.
- Use menu command in Profile Editor window: Tools -> Firmware Upgrade.

😼 Firmware Upgrade			>
Step 1			
Pick a firmware update file	e: Browse	Find New Firmware	
(Right click for recent files	s)		
T:\Therapy\avr\IS02LC			
Step 2 Examine	e the information in the Upda	ate File:	
Property	Value	^	
APPLICATION	YES		
ASSYREL	1		
Build Date	Jun 28 2021		
Build Time	18:05:31		
BUILDNO	5		
CALIDATA	NO		
EEPROM	NO		
HWPLATFORM	IS02		
Use slow protocol	E	•	
Progress			
Elapsed Time:	Remaining Tim	e:	
Step 3 Click th	e button to start firmware up	ograde	
Connection	Start Upgra	Cancel	

Figure 15 Firmware Upgrade

Follow the steps in the window to finish the upgrade:

Step 1: Click the Find New Firmware button to find the latest firmware version for your IS02 device. Or use the Browse button to locate the .update file manually, after you select the proper update file and click Open in the file browse window, the firmware information will show up in the Step 2 window.

You need to look at bottom label under the IS02 machine for the correct model name, or use Tools -> Product Information to see the hardware information. Look for model name and hardware release number in the Product Information window. The firmware update file must match the model name and hardware release number.

For example, you have a model of IS02BA of hardware release number 4. You need to look for update files with a file name IS02BA_HW4_SWx.xx_x.*.update.

Step 2: Examine the information in the update file. Key information to look at is model name MODEL, hardware release number HWREL, the SWREL for firmware version and its build number BUILDNO.

Step 3: Click button Start Upgrade to start the upgrade process.

Caution

During firmware upgrade, do not disconnect the communication port or remove the batteries. Doing so will end up with a non-functional IS02 unit. For IS02BA, if LED 1 to LED 5 are all turned on, the firmware in the IS02 is not completed or damaged. You need to restart and complete the above firmware upgrade steps to bring the IS02 back to functional.

3.7.8 Register Software License

To check existing software license or to register a license for a new software feature, use menu Help -> Register License, the following window will pop up. The window will pop up when you try to use a feature that you don't have a license.

💁 Inspirstar Software License Register												
To acquire additional software license, send an email or call Inspirstar.												
User Name: (email address)	flong	Send	l Email	INSPIRSTAR INC.								
Installation code:	79654569	Сор	y Code	web: http://www.inspirstar.com								
Paste or type in the License	Key received in email or by pho	ne:										
F7AD-768F-EE	27-D018-E933-A67	D-8F64-5A7	7D	Paste key								
Register Lie	Close											
Registered Licenses:												
Item Software Package/F	eatures	Expire Date	License Key									
1 Encryption		3/3/2016	F7AD-768F-EE27-D	018-E933-A67D-8F64-5A7D								
2 Professional		3/3/2016	F878-8F43-778C-08	C-0E28-4363-DF6D-0369-7A10								
				.41								

Figure 16 License Registration Window

If you don't have a license or want to purchase a new license, click on button	Send Email , your
email client software will pop up with a email draft to sales@inspirstar.com. The	user name and the
installation code is populated in the email body. You can add some other inform	ation then send the
email for a software license.	

		704	≫ ∓							
F	ile	Message	I	nsert		Opti	ons	Fo	rma	at T
	1	🖌 Cut		Calib	ori		Ŧ	12	-	A
		Copy								
Pas	ste	🏈 Format Pa	inter	в	I	U	ab	- <u>A</u>	Ť	
	Cli	pboard	E.					Ba	sic	Tex
	= •	To Cc	sales	@inspi	rsta	r.com				
		Subject:	Soft	ware Li	icen	se Re	quest			
		lame=flon lationCode	-	55456	59					

3.8 Menus and Tool Bars

3.8.1 File Menu

The Profile menu has utilities for operations on profiles.

<u>New Profile</u>: Start an empty profile with five protocols. There are no frequency pairs in each protocol. You will be prompted to save the current profile if it has been modified.

<u>Create Profile From</u>: Create a new profile by using existing protocols from the current opened profile. A new profile window will pop up.

<u>Open Profile</u>: Open an existing profile. By default, a profile has the extension name of ".profile". You will be prompted to save the current profile if it has been modified.

Open Examples: Open example profiles. A few example profiles are installed.

<u>Close Profile</u>: Close the current profile and start a new profile. You will be prompted to save the current profile if it has been modified.

Save Profile: Save the current profile to a file. By default, a profile has the extension name of ".profile".

<u>Save Profile As</u>: Save the current profile with a different name. By default, a profile has the extension name of ".profile".

<u>Print</u>: Print current profile on a printer.

Print Preview: Preview the printing result of the current profile screen before printing.

<u>Print with Protocols</u>: Print the profile with all protocols when this menu item is checked.

Print with Frequency Lines: Print all frequency lines for each protocol.

Page Setup: Setup the page formats for printing.

Recent Profiles: List of most recently used (MRU) profiles. Click one of the files in the list to open it.

Exit: Exit Inspirstar IS02 Profile Editor. You will be prompted to save the current profile if it has been modified.

3.8.2 Edit Menu

The Edit Menu Menu has editing commands and utilities for protoocls

<u>Cut</u>: Remove the selected protocols and put them into Windows Clipboard for paste.

Copy: Copy the selected protocols to Windows Clipboard.

Paste(Insert): Insert the protocols in Windows Clipboard before the selected protocols.

Select All: Select all protocols listed in this window.

Global Find: Find frequency pairs with certain parameters.

<u>Global Change</u>: Change one or more parameters of all frequency pairs in selected protocols.

3.8.3 Tools Menu

<u>Read Profile From IS02...</u>: Read the profile from IS02. The current profile will be overwritten. You will be prompted to save the current profile if it has been modified. For details, please refer to 3.7.2.1 To Read Profile from Inspirstar IS02 on page 34.

Write Profile To IS02...: Write the current profile to Inspirstar IS02. For details, please refer to 3.7.2.2 To Write Profile to Inspirstar IS02 on page 35.

<u>Erase Profile In IS02...</u>: Erase the user profile in IS02. For details, please refer to 3.7.2.3 To Erase Profile in Inspirstar IS02 on page 37.

Memory Configuration...: allocates more or less memory for protocols.

Change IS02 Settings ... : changes the settings in Inspirstar IS02 PMS.

<u>Product Information...</u>: shows the model number, serial number, firmware version, battery status etc.

Firmware Upgrade...:: upgrades the firmware for Inspirstar IS02 PMS.

<u>Setup Communications</u>: setup the port and communications between PC and Inspirstar IS02 PMS.

Run Profile in Real Time Control Panel: Run this profile in Real Time Control Panel.

3.8.4 Help Menu

Contents/Index/Search: Open the on-line user's guide for Inspirstar Profile Editor.

User's Manuals: Opens the manual of Inspirstar IS02.

<u>Check for Updates</u>: connects to internet and checks it there is a software update.

Check for News: connects to internet and checks it there is a news from Inspirstar Inc.

Register License: Register software license

About: About the version of Profile Editor.

3.8.5 Tool Bars

Place you mouse pointer on the icons on the tool bar for one second, you will see the associated menu command for the icon.

3.8.6 Shortcut Keys

Most of the menu commands have shortcut keys for quick access. The shortcut keys are shown at the right side of the each menu items, if there is a shortcut available to that menu command.

 Table 1
 Profile Editor Shortcut Keys

Operation	Shortcut Keys	Operation	Shortcut Keys
Profile Commands		Protocol Commands	

Inspirstar Profile Editor User's Guide

Operation	Shortcut Keys	Operation	Shortcut Keys
New Profile	Ctrl+N	Import	Ctrl+I
Open Profile	Ctrl+O	Export	Ctrl+E
Save Profile	Ctrl+S	Replace	Ctrl+L
Close Profile	Ctrl+F4	Add New	Insert
Print	Ctrl+P	Remove	Delete
		Move Up	Ctrl+ Up
Write Profile to	Ctrl+W	Move Down	Ctrl+ Down
Read Profile from	Ctrl+R	Edit Protocol 1	Ctrl+1
		Edit Protocol 2	Ctrl+2
Edit Commands		Edit Protocol 3	Ctrl+3
Cut	Ctrl+X	Edit Protocol 4	Ctrl+4
Сору	Ctrl+C	Edit Protocol 5	Ctrl+5
Paste(Insert)	Ctrl+V	Edit Protocol 6	Ctrl+6
Select all	Ctrl+A	Edit Protocol 7	Ctrl+7
Global Find	F3	Edit Protocol 8	Ctrl+8
Global Change	Ctrl+G	Edit Protocol 9	Ctrl+9

4 Protocol Editor

4.1 Start Protocol Editor

To start the Inspirstar Protocol Editor,

- To edit a protocol in a profile, you need to start the Protocol Editor from a Profile Editor. Select a protocol in the Profile Editor window and click on Edit button, or double click the line of the protocol.
- To start with a blank standalone protocol, use Windows Start -> All Programs -> Inspirstar -> Protocol Editor;
- To edit a standalone protocol file in disk, browse to a protocol file using the Windows Explorer; double click on the file with extension .protocol.

4.2 Window Layout

The Protocol Editor window is shown in the following picture. Explanation of the windows areas is as follows from the top to the bottom of the window.

S	Protocol	1: Exar	nple pr	otocol	1 in My Do	ocuments\	\Si	mple	Exam	ıple.	profile - Ir	ıspi	rstar Pi	rotoc	ol Edito	·₽₽		
F	File Edit Encryption Tools Help																	
	🗄 🚰 💁 👗 🗈 🃸 🕢 🎚 << Previous Protocol 1 of 5 Next >>																	
Protocol Information																		
Therapy time: 9' Description: Example protocol, F1=110~190																		
ц аП	List of Frequency Pairs: (9 pairs)																	
			Rem		Move		ove D	own		Sh	ow Paramete	r E di	ting Pape	וה	Global	Change		
	Pair #	F1(Hz)	F2[Hz]	l(uA)	T(min'sec'')		КО	K1	K2	K3	Polarity		Phase		ription	ondrigo		
┢	1	110	100		1'	4,000	20	25	30	_	Alternative	~	0	DOM	aption			
-	2	120	100	100		4.000	20	25	30		Alternative	~	0					
-	3	130	100	100		4,000	20	25	30		Alternative	~	0					
-	4	140	100	100		4,000	20	25	30		Alternative	~	0					
-	- 5	150	100	100		4.000	20	25	30		Alternative	~	0					
	6	160	100	100		4,000	20	25	30		Alternative	~	0					
	7	170	100	100	1'	4,000	20	25	30		Alternative	v	0					
-	8	180	100	100	1'	4,000	20	25	30	25	Alternative	~	0					
-	9	190	100	100	1'	4,000	20	25	30	25	Alternative	~	0					
-	new											~						
-																		
Ľ							IIII											



Menus and Tool Bars

You can use the menus and tool bars to perform actions on this protocol and frequency pairs. More explanation on menus and tool bars can be found in section 4.8 Menus and Tool Bars

Frequency Pairs Operation Tools

Most frequently used tools for frequency pair manipulation are shown above the frequency pair list.

Frequency Pair List

The frequency pairs in the protocol are listed in the box. The values in some cells in the table can be changed directly in the table.

4.3 Start with a Protocol

4.3.1 To Edit a Protocol in a Profile

To start the Protocol Editor in a profile,

- 1. Click to select a protocol for editing.
- 2. Click on tool button Edit, or double click the line of the protocol, the Protocol Editor window will pop up.
- 3. After you finish editing the protocol, you may click menu command File -> Close



and back to Profile, or directly click the X Close of the window. The changes to the protocol will be saved when you save the profile.

4.3.2 To Edit a Standalone Protocol

TO edit a standalone protocol, do one of the following:

• Use the menu command File -> Open Protocol; or click the Open Protocol icon

In the tool bar, to load an existing protocol.

• Use Windows Explorer to browse to a protocol file, double click the protocol to open it. A protocol file ends with extension name .protocol.

4.3.3 To Merge a Protocol

You can merge the frequency pairs in another protocol in the current protocol. When a protocol is merged with the current protocol, all the frequency pairs in the merged

protocol will be inserted before the current line.

To merge a protocol with menu commands,

- 1. Select a line in current protocol window. This is the line that the frequency pairs in the merged protocol will be inserted before.
- 2. Use the menu command File -> Merge Protocol, then file open dialog, browse to

the protocol file in disk to be merged, click button

To merge a protocol with Windows Drag and Drop,

- 1. Use Windows Explorer to browse to the protocol file to be merged, drag (click the file and hold it and move the mouse) it into the frequency pair list table. A red line will indicate the point for the frequency pair to be inserted at.
- 2. Drop the file by releasing the mouse button. All the frequency pairs in the protocol file will be merged (inserted) in the current protocol.

To merge a protocol with Copy, Cut and Paste feature,

- 1. In Profile Editor window, select a protocol and do copy (Ctrl+C) or cut (Ctrl+X).
- Switch to Protocol Editor window, select the line for the merge, then do paste (Ctrl+V), the protocol in Windows clipboard will be inserted to the current protocol.

Caution

If the merged file is a profile with multiple protocols, all protocols in the profile will be merged into current protocol.

4.3.4 To Save a Protocol

When the protocol belongs to a profile, you can only export the protocol to a disk file.

To export the current protocol to a disk file,

 Use the menu command File -> Export Protocol As, and give a new name for the file.

When the protocol is a standalone protocol, you can save it with its current filename, or save it with a new name.

To save the current protocol,

• Use the menu command File -> Save Protocol; or click the Save Protocol icon

😼 on the tool bar, to save the current protocol.

To save the current protocol with a new name,

• Use the menu command File -> Save Protocol As, and give a new name for the file.

4.3.5 To Print a Protocol

To print the current protocol, use menu command File -> Print or tool bar button $\stackrel{\frown}{=}$, the Print dialog

will pop up.

To Preview the print of current protocol, use menu command File -> Print Preview or tool bar

button , the Print Preview window will show up.

Protocol	5: Currer	nt Exar	mples ir	n Wavef	orm Examp	les.profile Print Preview	_						
🖪 Print	t Current	Page	ᢖ Prir	nt 🗋 F	^p age Setup	🔍 <u>Z</u> oom 👻 🚺 🔌	1 of 1		H	×	<u>C</u> lo	ose	
	Protocol	l 5: Cu	rrent Ex	amples in	n Waveform	Examples.profile							
	Number	of pair	s: 12 T	otal Tim	e: 9: 9: 0	Examples.profile of output current intensity							:
	Pair # F	(Hz)	F2(Hz)	l(uA)	T(min'sec")	Waveform	Period(ms)	K0	K1	К2	K3	Polarity	Description
	1	100		100,200		Inspirstar default waveform							CH1 and CH2 can have different current uA.
	2	100	100	0	30'	Inspirstar default waveform	4,000	20	25	30	25	Alternating	When current is set to 0, the output is sh timer.
	3	100	100	0	30'	Inspirstar default waveform	4,000	20	25	30	25	Alternating	Pause for 30 minutes.
	4	100	100	0	8: 0: 0	Inspirstar default waveform	4,000	20	25	30	25	Alternating	Pause for 8 hours
	5	0	100	100	1'	Inspirstar default waveform	4,000	20	25	30	25	Alternating	F1 is set to 0 Hz to turn off the carrier fre current.
	6	0	100	0,100	1'	Inspirstar default waveform	4,000	20	25	30	25	Alternating	CH1 is shut off completely. Only CH2 is
	7	100	100	400	1'	Inspirstar default waveform	4,000	20	25	30	25	Alternating	Maximum output current is 400 uA for ea
	8	100	100	20	1'	Inspirstar default waveform	4,000						Minimum output current is 20 uA for each
	9	100	100	400	1'	Inspirstar default waveform	4,000	20	25	30	25	Alternating	If the CH1+ and CH2+ are used together are used as another electrode, The total
	10	100	100	400	1'	Inspirstar default waveform	4,000	20	25	30	25	Alternating	Same as previous, but with 180 degree p because the phase of 180 would invert th cancels out.
	11	0	0	200	1'		4,000	0	0	100	0	Positive	200 uA DC current from + to -
	12	0	0	200	1'		4,000	0	0	100	0	Negative	200 uA DC current from - to +
(III							Þ

To change the orientation of the page, or adjust the margins on page, click on menu File -> Page Setup or click on the Page Setup button on the Print Preview window.

Inspirstar Profile Editor User's Guide

Page Setup				×
	Construction of the second sec	n Tradigione, n 27 20 mengenen, den, m, m, m, m,	(R	
Paper				
Size: Le	etter			-
Source: A	utomatically	Select		-
Orientation	Margins	; (inches)		
Portrait	Left:	0.5	<u>Rig</u> ht:	0.5
Landscape	<u>T</u> op:	1	Bottom:	1
			ок	Cancel

4.4 Organize Frequency Pairs in a Protocol

4.4.1 To Select Frequency Pairs

All frequency pairs of the current protocol are listed in the frequency pair table. Each line in the table shows the parameters of one frequency pair. The number of the frequency pairs is shown in the title List of Frequency Pairs: (7 pairs)

You can select one frequency pair to edit its parameters. Or you can select one or multiple frequency pairs in the list for operations such as cut, copy, remove and export. Selected frequency pairs will be highlighted. The current line is marked with an arrow. The insertion point is always at the current row.

	Pair #	F1(Hz)
	1	100
	2	200
۲.	3	300
	4	400
	5	500
	6	600
	7	700

	Pair #	F1(Hz)
	1	100
	2	200
	3	300
	4	400
۶.	5	500
	6	600
	7	700
_		i
	Pair #	F1(Hz)
	1	100
	2	200
	3	300
	4	400
	5	500
۲.	6	600
	7	700
	Pair #	E1(U_)
	ган н	F1(Hz)
	ган н 1	100
	1	100
•	1 2	100 200

• To select one frequency pair, click the row header of one pair. The selected row will be highlighted. The current row will be marked with an arrow.

- To select multiple frequency pairs in consecutive range, click the row header of the first pair with the left mouse button, then hold down the **SHIFT** key on the keyboard, and then click the row header of another frequency pair in the list. The frequency pairs between the two clicks will be selected.
- To select multiple frequency pairs in scattered locations, hold down the CTRL key on the keyboard, then click the row headers of the frequency pairs you want to select.

 To select all frequency pairs in the list, use command "Select All frequency pairs" in the Frequency Pairs menu; or press CTRL+A.

500

600 700

6

new

•

4.4.2 To Add a New Frequency Pair

To add a frequency pair in the middle of the list,

- 1. Select a frequency pair as the reference,
- 2. Do one of the following,
 - Click on tool bar button Add
 - Or Press Insert key
 - Or Press Ctrl + "+" key
- 3. The reference frequency pair will be duplicated and added after the current line.

To add a new frequency pair at the end of the protocol,

- 1. Move the cursor to last row of the table,
- 2. Enter new values in any of the blank cells. And press enter or move the cursor off the cell.

To add a group of frequencies like 12,34,56/78,90

- 1. Move the cursor to F1 cell of a row,
- 2. Enter frequencies of F1 followed by frequencies of F2, for example **12,34,56/78,90**. And press enter or move the cursor off the cell.

	Pair #	F1(Hz)	F2(Hz)	l(uA)	T(m
	1*	100	100	100	1'
1	2*	6/78,90	100	100	1'
	new				

3. 6 lines will be added with the combination of the F1 frequencies with F2 frequencies

	Pair #	F1(Hz)	F2(Hz)	l(uA)	T(min'sec'')	Waveform	Period(ms)	KO	K1	K2	K3	Phase	Polarity	Description
	1*	100	100	100	1'	Sharp	2,500	0	5	95	0	0	Alternating	
	2*	12	78	100	1'	Sharp	2,500	0	5	95	0	0	Alternating	Begin of Group 12,34,56/78,90
•	3*	12	90	100	1'	Sharp	2,500	0	5	95	0	0	Alternating	Body of Group 12,34,56/78,90
	4*	34	78	100	1'	Sharp	2,500	0	5	95	0	0	Alternating	Body of Group 12,34,56/78,90
	5*	34	90	100	1'	Sharp	2,500	0	5	95	0	0	Alternating	Body of Group 12,34,56/78,90
	6*	56	78	100	1'	Sharp	2,500	0	5	95	0	0	Alternating	Body of Group 12,34,56/78,90
	7*	56	90	100	1'	Sharp	2,500	0	5	95	0	0	Alternating	End of Group 12,34,56/78,90
	new													
•														4

4.4.3 To Remove Frequency Pairs

To remove frequency pairs from the protocol,

- 1. Select the frequency pairs in the list,
- 2. Do one of the following,

- Click on tool bar button
 Remove
 - Or Press Delete key
- Or Press Ctrl + "-" key
- 3. All selected frequency pairs will be removed.

4.4.4 To Move Frequency Pairs

You can change the order of frequency pairs in a protocol by using buttons or editing commands.

Use Move Up or Move Down buttons

- 1. Select the frequency pairs you want to change the order,
- 2. Click the Move Up or Move Down button.

You can select multiple frequency pairs and move them all together. This method can only be used to move frequency pairs within a protocol.

Use cut and paste

- 1. Select the frequency pairs you want to move,
- 2. Cut (Ctrl+X) the selected frequency pairs into clipboard.
- 3. Select a line for the new position,
- 4. Paste (Insert, Ctrl+V) the frequency pairs from clipboard.

This method can be used to move frequency pairs within a protocol and between protocols.

Use Export and Import methods

- 1. Select the frequency pairs you want to move
- 2. Use menu command Edit -> Export Selected Frequency Pairs ," to export the selected frequency pairs into a file.
- 3. Select a line for the new position,
- 4. Use menu command Edit -> Import Frequency Pairs to import the exported frequency pairs.

This method can be used to move frequency pairs between protocols, and between profiles.

TIPS

You can open multiple instances of Inspirstar Protocol Editor so you can cut and paste frequency pairs between protocols.

4.4.5 To Cut, Copy and Paste Frequency Pairs

To cut, copy and paste frequency pairs from/to Windows clipboard,

Ver 4.7.0 Copyright © Inspirstar Inc. 2005-2021.

- 1. Click the row header to select a single frequency pair or multiple frequency pairs in the protocol.
- 2. Click on tool button , or press Ctrl-X to cut the selected protocols off the protocol. The selected frequency pairs will be removed from the protocol to the Windows clipboard.
- 3. Click on tool button , or press Ctrl-C to copy the selected frequency pair. The selected frequency pairs will be copied to the Windows clipboard.
- 4. Click on tool button into the protocol.

4.4.6 To Import Frequency Pairs

If you have export frequency pairs to a file in disk, you can import the frequency pairs into the protocol.

To import frequency pairs into the protocol,

- With menu command,
 - 1. Use menu command Edit -> Import Frequency Pairs,
 - 2. Browse to select an exported frequency pair file,
 - 3. Select OK. The frequency pairs in the file will be imported to current protocol after the current line, i.e. the operation is "insert after".
- With Drag-Drop operation
 - 1. Use the Windows Explorer to browse to the file to be imported,
 - 2. Hold the mouse button to drag the file into the Protocol Editor window, there will be a red line for the insertion point in the table when the file is in the table area.
 - 3. Drop the file into the table of frequency pairs. The frequency pairs in the dragged file will be imported at the insertion point that was highlighted by a red line.

NOTE

You can import a protocol file, or a profile that contains multiple protocols. When the file contains multiple protocols, all frequency pairs will be imported in sequence.

TIPS

You can import a recently used protocol file with a right click the table and select a file in the list.

Inspirstar Profile Editor User's Guide

rotocol Infor herapy time:	matior) 	🔁 🛛 🥑 Des	cription		vious Pr protocol, F1			f 5	Next >	>					
ist of Freque		airs:	(11 pairs) Remo		Mo	ve Up	Mov	e Do	own		Sh	ow Parameter	r Edi	iting Panel		Global Change
Pair #	F1(H	lz)	F2(Hz)	I(uA)	T(min'sec	") Period	(ms) I	<0	K1	К2	КЗ	Polarity	-	Phase	Desc	cription
• 1	4	Ж	Cut Er	equer	cy Pairs			20	25	30	25	Alternative	-	0		
2	4	er L		· ·	ency Pairs			20	25	30	25	Alternative	-	0		
3					· ·	cy Pairs		20	25	30	25	Alternative	-	0		
4	4		Select All Frequency Pairs					20	25	30	25	Alternative	•	0		
5*	4						20	25	30	25	Alternative	•	0			
6	4			Move Up Ctrl+Up Move Down Ctrl+Down				20	25	30	25	Alternative	•	0		
7*	4		Move	Down	(Ctrl+Down		20	25	30	25	Alternative	•	0		
8	4		Add a	Row		Ctrl+Ins		20	25	30	25	Alternative	•	0		
9	4		Remo	ve Rov	vs	Ctrl+Del		20	25	30	25	Alternative	•	0		
10	4		Export	Frequ	ency Pairs	5		20	25	30	25	Alternative	•	0		
11	4		Impor	t Frequ	uency Pair	s		20	25	30	25	Alternative	•	0		
new			Recen	t Frequ	Jency Pair	s	•		1 N	1y Do	cume	nts\IS02\old	Tex	tFormat\	User p	protocol 2.protocol
			Show	Param	eter Editir	ng Panel			2 N	1y Do	cume	nts\IS02\old	Text	tFormat	User p	protocol 1.protocol
			Print						3 N	1y Do	cume	nts\IS02\Pro	toc	ols\Thigh	n mus	cle relaxing.protocol
		-		-	-	_	_		4 N	1y Do	cume	nts\IS02\test	t10. _j	profile		
									5 N	1y Do	cume	nts\IS02\Pro	toc	ols\Neck	pain.	protocol
									6 N	1y Do	cume	nts\IS02\Pro	to	.\Brain Ba	alanci	ing male_e.protocol
									7 N	1y Do	cume	nts\IS02\Pro	toc	ols\3.prot	tocol	
									8 N	1y Do	cume	nts\IS02\old	Text	tFormat	conci	ussion.program
									9 N		ume	nts\IS02\old	Text	tFormat\	11.pr	otocol

4.4.7 To Export Frequency Pairs to a File

You can export frequency pairs in the protocol to a protocol file in disk for other uses. To export a frequency pairs,

- 1. Click the row header to select a frequency pair or multiple frequency pairs.
- 2. Use menu command Edit -> Export Selected Frequency Pairs, a file browsing dialog opens up.
- 3. Browse to a folder and give a name for the protocol file. By default, the frequency F1 and F2 are used in the file name.
- 4. Click SAVE to finish exporting the frequency pairs.

4.4.8 To Move Frequency Pairs between Protocols or Profiles

To move or duplicate frequency pairs between protocols or profiles, you can choice the following methods.

Through Cut, Copy and Paste:

Ver 4.7.0 Copyright © Inspirstar Inc. 2005-2021.

- 1. Click the row header to select frequency pairs in the first protocol.
- 2. Click on tool button in, or press Ctrl-C to copy the selected frequency pairs. The selected frequency pairs will be copied to the Windows clipboard.
- 3. Open another protocol, or move to another protocol in the same profile.
- 4. Click on tool button into the second protocol.

Through Export and Import:

- 1. Click the row header to select frequency pairs in the first protocol.
- 2. Use menu command Edit -> Export Selected Frequency Pairs, or press Ctrl-E to export the selected frequency pairs to a disk file.
- 3. Open another protocol, or move to another protocol in the same profile.
- 4. Use menu command Edit -> Import Frequency Pairs, or press Ctrl-I to import the protocol file which was exported from the previous step.

NOTE

You can open two Protocol Editor windows and copy and paste frequency pairs between the two protocols.

4.4.9 To Repeat Frequency Pairs

To repeat some frequency pairs in a protocol,

1. Select rows of frequency pairs for the repeat, for example, row 2,3 and 4

	Pair #	F1(Hz)	F2(Hz)	l(uA)	T(min'sec'')
	1*	110	100	100	1'
	2*	120	100	100	1'
	3*	130	100	100	1'
۲.	4×	140	100	100	1'
	5*	150	100	100	1'

2. Right click in the box, a context menu will pop up. Select Repeat Selected Rows.

	Pair #	F1(Hz)	F2(Hz)	l(uA)	T(min'sec'')	Period(ms)	K0	Ī	
	1×	110	100) 100	1'	4,000	20		
	2*	120	100	0 100	1'	4,000	20		
	3*	130	×	Cut Fre	quency Pairs		- T)		
۲.	4*	140			requency Pairs	c .	D		
	5*	150			Copied Freque		þ		
	6*	160			· ·	<u> </u>	—Þ		
	new				All Frequency I				
				Move U	Р	Ctrl+Up			
				Move D	own	Ctrl+Down			
				Add a F	low.	Ctrl+Ins			
				Repeat Selected Rows Ctrl+R					
				Remove Rows Ctrl+Del					

3. A loop is created for the selected rows.

۲.	2*	Repeat	from 3	to 5	3'	for 1 times
	3*	120	100	100	1'	4,000
	4*	130	100	100	1'	4,000
	5*	140	100	100	1'	4,000
	6*	150	100	100	1'	4,000

4. To change the number of times to repeat, select cell "for 1 times", and type in a new number.

						_
►2×	Repeat	from 3	to 5	3'	for 1 times	

5. To change the last row in the loop, select the "To" cell in the repeat row, and type in a new number.



HINT

To see more examples about repeat or loops, open the example profile "Loop Examples.profile" from menu File -> Open Examples in Profile Editor window.

4.4.10 To Copy/Paste Contents of Frequency Pairs to/from

Excel Spreadsheet

The contents of protocol can be selectively copied and pasted between Excel spreadsheet.

To copy cells to Excel Spreadsheet:

1. Select the cells to be copied. Do not select row headers.

	<u> </u>		<u> </u>		
	Pair #	F1(Hz)	F2(Hz)	I(uA)	T(min'sec")
	1	100	200	100	1'
	2	0.1	999.9	100	1'
	3	0.1	999.9	100	1'
	4	0	150	100	1'
•	5	0	100	0,100	1'
	new				

- 2. Use menu command Edit -> Copy, or press Ctrl-C to copy the selected cells.
- 3. Open Excel spreadsheet, select the cell to be pasted to.
- 4. Press Ctrl+V to paste the contents into spreadsheet.

	А	В	С
1			
2		100	200
3		0.1	999.9
4		0.1	999.9
5		0	150
6		0	100
7			
8			

To copy cells from Excel Spreadsheet:

1. Create contents in Excel spreadsheet, with the same structure as in Protocol Editor. Select the contents to be copied. Press Ctrl+C.

	А	В	С
1		F1	F2
2		110	200
3		120	200
4		130	200
5		140	200
6		150	300
7		160	300
8		170	300
9		180	300
10			

2. In Protocol Editor, locate the starting cell to be pasted into.

	Pair # F1(Hz) F2(Hz)		l(uA)	T(min'sec'')	
	1	100	200	100	1'
	2	0.1	999.9	100	1'
	3	0.1	999.9	100	1'
۱.	4	0	150	100	1'
	5	0	100	0,100	1'
	new				

3. Press Ctrl+V to paste the contents. New values will be pasted into the existing lines and replace the old values. New lines will be added when the pasted values has reached the end of protocol.

	Pair #	F1(Hz)	F2(Hz)	l(uA)	T(min'sec'')
	1	100	200	100	1'
	2	0.1	999.9	100	1'
	3	0.1	999.9	100	1'
•	4*	110	200	100	1'
	5*	120	200	0,100	1'
	6*	130	200	0,100	1'
	7*	140	200	0,100	1'
	8*	150	300	0,100	1'
	9*	160	300	0,100	1'
	10*	170	300	0,100	1'
	11*	180	300	0,100	1'
	11*	180	300	0,100	1'

4.4.11 To Include other protocols

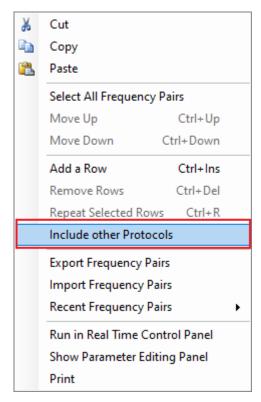
The Include feature allows to run a group of protocols as one line in a protocol. Right click a row in Protocol Editor to include other protocols as one of the "sub protocol".

To include other protocols in this protocol,

1. Click one of the cell of the row for the included protocol.

	Ad	ld	Remo	ove	Move	Up	Move Dov	vn	Show	v Parar	meter E	Editing	Panel	Global
	Pair #	F1(Hz)	F2(Hz)	l(uA)	T(min'sec'')	Wavef	form	Period(ms)	K0	K1	K2	K3	Phase	Polarity
•	1	110	100	100	1'	Inspirstar default		4000	20	25	30	25	0	Alternating
	2	120	100	100	1'	Inspirst	ar default	4000	20	25	30	25	0	Alternating

2. Click the right mouse button for the context menu, select Include other Protocols



3. Select the protocols to be included, then click Include button.

5	S Include other protocols							
S	step	1 Select the protocols you v	vant to use in the new profile All					
	#	Protocol Name	Description					
	1	Example protocol 1	Example protocol, F1=110~190					
	2	Back pain	Example protocol, F1=210~290					
	3	Neck pain	Example protocol, F1=410~490					
	4	Thigh muscle relaxing	Example protocol, F1=310~390					
	5	Fatigue	Example protocol, F1=510~590					
	6	(Empty protocol 6)						
<			>					
- 5	Sten	2 Click the Create button to	show the new profile in a new window.					
	p		Cancel					
		Include	Cancer					

4. The selected protocols will be included in this protocol. The name of the included protocol is shown in the "waveform" column.

	Pair #	F1(Hz)	F2(Hz)	l(uA)	T(min'sec'')	Waveform	Period(ms)	K0	K1	K2	К3	Phase	Polarity	Description
►	1	Include	#2	100	27'	Back pain								include protocol #2 "Back pain"
	2	Include	#3	100	9'	Neck pain								include protocol #3 "Neck pain"
	3	110	100	100	1'	Inspirstar default	4000	20	25	30	25	0	Alternating	

NOTE

If an "include" loop is made because the included protocol also includes the including protocol, the IS02 device will ignore the included protocol during running.

NOTE

The IS02 device needs to have firmware version 1.70 or higher for this Include feature. The feature is not supported for IS02BA and IS02AA.

HINT

To see more examples about repeat or loops, open the example profile "Batch(include) examples.profile" from menu File -> Open Examples in Profile Editor window.

NOTE

The header of the row of protocols will have green background color if the protocol has included other protocols. The protocol line # will be displayed as Bold black if the protocol has been included by other protocols. Hoover the mouse pointer to the Line # cell to show the tips for the protocol. See illustration below.

	Line #		Protocol Name		l(uA)	Beep	Description
•		1 simple include		2'30''	100	\checkmark	including one protocol
		2	multiple inlcudes	6'10"	100	\checkmark	including multiple protocols, mixed with its own frequencies
		3 nested includes		7	100		including a protocol which also included multiple protocols, mixed with its own frequencies
	4 Morning treatment		Morning treatment	3'	100	\checkmark	a simple batch to run two treatment protocols
			pcol 4	6'	100	\checkmark	a batch to run another batch and some other treatment protocols
			ole-Click to edit the protocol.	6'	100	\checkmark	a batch to run another batch and some other treatment protocols
		This protocol has included other protocols. This protocol has been included by 2 other protocol(s).		9'	100		a batch to run other nested batch protocols or simple batch protocols, or simple protocols
		8	All treatments	10'30''	100	\checkmark	a batch to run all batch protocols
		9	(Empty protocol 9)	0'	0		a reserved empty protocol slot for future batch protocols. Best to be placed from protocol number 1 to number 10 for easy access, especially for IS02BAs.

4.5 Find Frequency Pairs

To find frequency pairs with certain parameters in the protocol or in the profile, you can use the Global Find tool from Edit menu. The following dialog will show up. Inspirstar Profile Editor User's Guide

Find in Profile														×
What to Fin	d? -	Find th	ie pairs wi	th the c	hecked paran	neters								_
Description CH1 runs at 100 Hz, CH2 runs at 200 Hz.														
Channel 1 Parameters-	Channel 1 Parameters All Channel 2 Parameters All									_			_	
F1 100	🗖 F1 100 🗘 Hz 🗖 F2 200 🗘 Hz										Find			
📃 Any random	frequenc	y .		[📃 Any rando	m frequency					Close			
🗖 T1 🛛 1' 🗘	min'	sec"] T2	1'	🗘 🛛 min'se	:c''				CIOSE			
🗹 I1 🛛 😂	uA] 12	100	🗘 uA								
Period1 4,000 🛟	ms] Period	d2 4,000	🗢 ms								
🗌 Duty K0 20 🖨	K1 25	5 🗘		Duty	ко 20	🗧 К1 25	\$							
K2 30 😂	K3 25				K2 30	🗧 КЗ 25	\$							
Polarity Alternative	*] Polari	ty Alternati	ve 🔽								
] Phase	e 0 🛟					S	how Find Ra	nge		
Find Result	s	Click a	i line to se	e the pi	rotocol									
Protocol Name	Pair #	F1(Hz)	F2(Hz)	l(uA)	T(min'sec'')	Period(ms)	KO	K1	K2	КЗ	Polarity		Phase	De
Frequency Examples	5	0	100	0,100	1'	4,000	20	25	30	25	Alternative	*	0	
Current Examples	2	100	100	0	30'	4,000	20	25	30	25	Alternative	*	0	Wł use
Current Examples	3	100	100	0	30'	4,000	20	25	30	25	Alternative	*	0	Pa
Current Examples	4	100	100	0	8: 0: 0	4,000	20	25	30	25	Alternative	~	0	Pa
Current Examples	6	0	100	0,100	1'	4,000	20	25	30	25	Alternative	*	0	СН
												*		
1														>

Step 1: Check the parameters that you want to find, and give the value of the parameters. For example, the above window finds all the pairs with CH1 current of 0uA.

Step 2: Optional to specify the protocols as the find range. Use button

Show Find Range

or

Hide Find Range to to	oggle the protocol selections. Check the prot	ocols to be searched.
Find In Range	Select the protocols for the search All	
# Protocol Name	Description	·
Frequency Examples	Examples showing the control to the carrier frequency	
🔽 Waveform Examples	Examples showing the waveforms with different duty cycles	
Polarity Examples	Examples showing the outputs with different polarities	
Timer Examples	Examples showing how to control the run time for each cha	
Current Examples	Examples showing the setting of output current intensity	*

Step 3: Click the **Find** button to start the search. The found pairs is listed in the bottom box of the dialog. Click a row of the found pairs to see the containing protocol of the pair.

4.6 Change Parameters of Frequency Pairs

4.6.1 Using the Table

You can change the parameters for each frequency pair directly in the list table.

To select a cell

The selected cell is highlighted. The following example shows that the current Intensity of pair #2 is selected for editing.

	Pair #	F1(Hz)	F2(Hz)	l(uA)
	1	100	2.8	100
1	2	200	19	15(

To change the value

You can enter the value into the cell when the cell is selected. The old value will be cleared. To edit the old value in the cell, you can press F2 to enter into edit mode to change the value.

The row header will be changed to pencil symbol \checkmark when a cell of the row is in editing. After you finish editing the cell, you can simply move to other cells with arrow keys or press enter.

To change different values for CH2

Only the frequency for channel 2 is shown in a separate cell. All other parameters of ch1 and ch2 are sharing a cell. To use different values for channel 2, type in two values in the cell, separate the values with a comma. The first value is for channel 1, and the second value is for channel 2.

TIPS

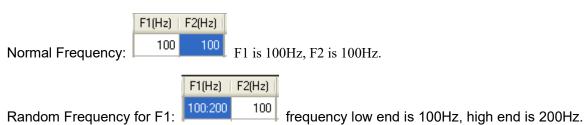
You can use the parameter panels to change the values for channel 2. You will see how the two values are displayed in the cell. You can use the same format to enter values for both CH1 and CH2 directly in the table.

To change the polarity

With mouse: Click on the drop down arrow to select the desired polarity setting **With keyboard**: Press F2 to enter into edit mode, then use up and down arrow to select the desired polarity setting.

4.6.2 To use Random Frequency for F1 or F2

The frequency for CH1 and CH2 can be specified as certain frequency within the range that IS02 supports. The frequency can also be specified as "Random Frequency". A random frequency is specified with a range of frequencies, and IS02 will choose one of the frequencies randomly at protocol run time.



Default granularity is 1 Hz. So the actual frequency at run time will be one chosen out of 101 frequencies.

F1(Hz)

Random Frequency for F1: frequency low end is 100Hz, high end is 200Hz, with

20Hz. So the actual frequency at run time will be one chosen out of 6 frequencies, namely 100, 120, 140, 160, 180, 200Hz.

HINT

To see more examples about random frequency, open the example profile "Random Frequency Examples.profile" from menu File -> Open Examples in Profile Editor window.

TIPS

You can repeat the Random Frequency to get different frequencies at run time for the same setting. See "To Repeat Frequency Pairs" for more details on repeat or loop.

4.6.3 Using Parameters Editor Panel

4.6.3.1 Parameters Editor Panel Overview

Click button Show Parameter Editing Panel to bring up the parameter editor panel as shown below. The panel will stay on top of the protocol window.

Inspirstar Profile Editor User's Guide

Parameters Editor	30433327	
Change Parameters Editor: Basic Parameters Panel	•	
Basic Parameters Advanced Parameters		
Description:		
Carrier Control Channel 1 Frequency (F1) 340.0 Hz Channel 2 Frequency (F2) 100.0 Hz	Time Control	Envelope Control
Channel 1 Frequency (F1) 340.0 👘 Hz	Therapy Time(T): 1' min'sec"	Current (I)
Channel 2 Frequency (F2) 100.0		
General Data (Nantas	Arch Channes During	Canal
<< Previous Pair: 4 Next >>	Apply Changes Revert	Cancel

The parameter editor panel accommodates three different types of sub panels for your convenience on viewing or changing the parameters of a frequency pair. To switch between panels, click and choose from the drop down list on the top of the panel.

Parameters Editor								
l			Basic Parameters Panel 🔹					
l			Basic Parameters Panel Waveform Panel					
l	Description:		Big Display Panel					

To change the parameters for a frequency pair in the parameters panel, you need to select the frequency pair in the frequency pair list box. The parameters for the selected frequency pair will be shown in the parameters panel for editing.

The sequence number (or pair number) of the frequency pair being shown is listed above the

parameter panel like this	<pre><< Previous</pre> Pair: 2	Next >>	You	can	use	button
<pre><< Previous or Next >></pre>	to browse the frequ	ency pair in the pro	otocol.			

The changes will be applied to the frequency pair when you do one of the following,

• Press ENTER key after entering new values;

Click on the Apply Changes button.

- Click on the Protocol Editor window;
- Click on the button
 Click on the button

4.6.3.2 Basic Parameters Panel

There are two parameter pages on the parameters panel: Basic Parameters page and

	Basic Parameters	Advanced Parameters
Advanced Parameters page:		

The Basic Parameters page allows you to change the most commonly used parameters of a protocol. You can change the carrier frequencies for each channel, the therapy time of the frequency pair, the envelope current and period for both channels, and the description of the pair, as shown in the following picture.

Basic Parameters Advanced Parameters		
Description:		
Carrier Control	Time Control	Envelope Control
Channel 1 Frequency (F1) 340.0	Therapy Time(T): 1'	min'sec" Current (I) 100 💼 uA
Channel 2 Frequency (F2) 100.0	lz	

Usually the other parameters are the same for both channel 1 and channel 2. If they are not, you will be prompted to use the Advanced Parameter page for those parameters. You can click on the link to switch to the Advanced Parameters page, or click on tab for the Advanced Parameters page.

Advanced Parameters page lists all parameters for each channel. The page is shown as the following picture:

Basic Pa	rameters Adva	anced Paramete	ers						
			Envelope Co	Envelope Control					
Carrier Therapy Frequency Time		Current Intensity		Waveform Duty Cycle (%) Low Ramp up Peak Ramp down		Output Polarity			
	F (Hz)	T (min'sec'')	I (uA)	(ms)	ко к	-			
CH1	340.0 🚔	1' 🚔	100 🌩	4,000 🚔	20 🊔 2	25 🚖 30	25 🚔	Alternative	Starting
									Phase
CH2	100.0 🌩	1'	100 🚊	4,000	20 🌲 2	25 🌲 30	25 🜲	Alternative 🔻	0
		same as CH1	🔽 same as	CH1					

You can enter new values for each parameter, or use the up-down arrow to change the value.

4.6.3.3 Waveform Panel

The waveform panel provides visual display for the output waveform from IS02. You can see how the parameters change the output waveform.

Inspirstar Profile Editor User's Guide

Parameters Editor						
Change Parameters Editor: Waveform Panel	•					
Description:						
Channel 1 Parameters Frequency(Hz) 340.0 ↓ 1 (uA) T(min'sec") 100 1'	Channel 2 Parameters Frequency(Hz) 100.0 I (uA) T(min'sec'') 100					
K0 K1 K2 K3 Polarity 20 25 30 25 Atemative Period(ms)	K0 K1 K2 K3 Polarity Phase 20 25 30 25 Atemative 0 Image: Comparison of the second se					
< Previous Pair: 4 Next >> Apply Changes	Revert Cancel					

4.6.3.4 Big Display Panel

The big display panel shows selected parameters in very big format. This is useful when you want to see the parameters from distance. The panel also allows you to point the mouse at the digits and change the value with mouse wheel or click.

Parameters Editor									
Change Parameters Editor: Big Display Panel									
Description:									
Channel1 Frequency F	1 (Hz)	Channel2 Frequency F2 (Hz)		Output Current	l (uA)				
340.0	<u>*</u>	100.0	·*··	100	-				
2		100. k on the upper and lower half of the Apply Changes		10 change the value					

4.6.4 Using Global Change

To apply the parameters of the current pair to the other pairs in the protocol or the profile of the protocol, you can use the Global Change tool.

Step 1: Select the frequency pair that contains the parameters you want to apply to other pairs.

Global

Step 2: Invoke the Global Change tool by clicking button Change...; or select menu Tools -> Global Change. The Global Change window will show up as in Figure 18 Global Change. **Step 3**: Follow the three steps in the window. When you have selected the parameters and

protocols to apply, click on the Apply button to apply the change. Or Cancel to close the window without changing anything.

🚯 Global Change	E 🔀
Step 1 Check the parame	eters to be applied to protocols. Make changes if necessary.
Channel 1 Parameters — All —	Channel 2 Parameters All
🗖 F1 100 🗘	Hz 🔽 F2 100 🗘 Hz
🗌 T1 🛛 1' 🔷 min'sa	ec"
🗌 l1 🛛 🗘 🖬 🗠	□ 12 100 🗘 uA
Period1 2,500 💲 ms	Period2 2,500 🗢 ms
Duty K0 20 📚 K1 25	Duty K0 20 \$ K1 25 \$
K2 30 📚 K3 25	
Polarity Alternative 🗸	Polarity Alternative V
	Phase 0
Stan 2 and the	
Step 2 Select the protocol	Is for the changes All Description
\land	Example protocol, F1=110~190
	Example protocol, F1=210~290
Thigh muscle relaxing	Example protocol, F1=310~390
🗹 Neck pain	Example protocol, F1=410~490
Fatigue	Example protocol, F1=510~590
$\mathbf{\vee}$	
	outton to apply the changes
Step 3 Click the APPLY b	
Apply	Cancel

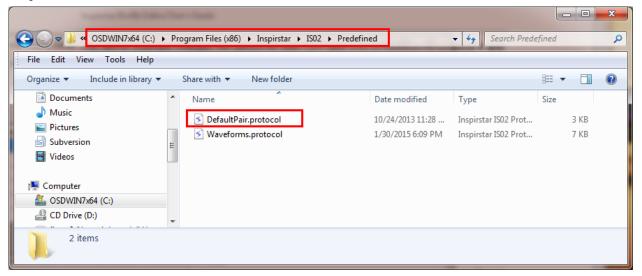
Figure 18 Global Change

The above example changes the period for both CH1 and CH2 to 2500ms for protocol 4 and protocol 5 in the profile.

4.6.5 To Change Default Parameters

When a line is inserted, the parameters of previous line will be carried over as the base for a new line. When a new line is added to a blank protocol, the line will have default parameters. The default parameters can be modified and saved for future use.

Browse to C:\Program Files\Inspirstar\IS02\Predefined\DefaultPair.protocol, and double click to open the protocol file.



The first line in the DefaultPair.protocol gives the default parameters of a new line in a blank protocol. Change the parameters in the first line with new default parameters and save the file, the new parameters will be used as default.This default is shared for all users on the same computer.

5	C:\	Program	n Files ()	(86)\Insp	irstar\]	\DefaultPa	ir.protocol - Ins	spirstar Prot	ocol E	ditor			-		and the second second	• X
	File Edit Tools Help															
1	🗋 😂 🛃 🎒 🞑 🐰 🗈 隆 🔞 i << Previous This protocol does not belong to a profile Next >>															
ſ	Protocol Information															
	Therapy time: 3' Description: The first line gives the waveform parameters when the first new frequency pair is added in a blank protocol. Only the first line is used.															
	List of Frequency Pairs: (3 pairs) Vaveform Details															
	Add Remove Move Up Move Down Show Parameter Editing Panel Global Change															
		Pair #	F1(Hz)	F2(Hz)	I(uA)	T(min'sec'')	Waveform	Period(ms)	K0	K1	K2	K3	Phase	Polarity	Description	_
		1		100	100	1'	Moderate	2,500	3	17	80	0	0	Alternating	Inspirstar	
		2	100	100	100	1'		2,500	0	10	90	0	0	Alternating	Sharp	
		3	100	100	100	1'	Gentle	2,500	5	25	70	0	0	Alternating	Gentle	
	new la															
	•															Þ

To save the new default parameters just for you on this computer, save the DefaultPair.protocol file to folder Documents\IS02\Predefined in your document library.

					-		
COV	ocuments	▶ IS02 ▶ Predefined		_	👻 🍫 Search	Predefined	Q
File Edit View Tools He	lp						
Organize 🔻 🕤 Open 👻	Share	with 🔻 E-mail Ne	ew folder			:== ▼	
 Documents Music Pictures 	•	Documents libr Predefined	ary			Arrange by: Fold	er 🔻
Subversion	=	Name		Date modified	Туре	Size	
Videos		S DefaultPair.protocol		3/21/2016 8:27 PM	Inspirstar ISO	2 Prot 3	КВ
Computer Computer CD Drive (D:)	Ŧ	S Waveforms.protoco	1	3/11/2016 8:48 PM	Inspirstar ISO	2 Prot 8	KB
DefaultPair.protoco Inspirstar IS02 Protoco			3/21/2016 8:27 PM 2.30 KB	Date created: 3/2	1/2016 8:23 PM		

4.7 Manage Predefined Waveforms

A waveform can be pre-defined and given a name for ease of use. Protocol Editor will compare the parameters of a frequency pair with the parameters of predefined waveform. The predefined waveform name is displayed for the frequency pair when the parameters are matched. A predefined waveform is defined by the parameters of period, duty cycles K, phase and polarity.

4.7.1 To change parameters to a predefined waveform

In Protocol Editor window, select the cell under Waveform, and click the dropdown arrow to see all the pre-defined waveforms, select the desired waveform, the parameters of the waveform will be applied to the line.

	Pair #	F1(Hz)	F2(Hz)	l(uA)	T(min'sec'')	Waveform	Period(ms)	K0	K1	K2	K3	Phase	Polarity	Description
•	1*	110	100	100	1'	Gentle	2,500	5	25	70	0	0	Alternating	
	2*	120	100	100	1'	Gentle Sharp	2,500	0	10	90	0	0	Alternating	
	3*	130	100	100	1'	Moderate	2,500	3	17	80	0	0	Alternating	
	4*	140	100	100	1'	triangle wave square wave	2,500	0	50	0	50	0	Alternating	
	5*	150	100	100	1'	saw tooth waveform fast ramp up and slow ramp down	2,500	50	0	50	0	0	Alternating	
	6*	160	100	100	1'	short pulses	2,500	0	100	0	0	0	Positive	
	7*	170	100	100	1'	long pulses Inspirstar default waveform	2,500	0	0	50	50	0	Alternating	
	8*	180	100	100	1'	short pulses	2,500	90	0	10	0	0	Alternating	
	9*	190	100	100	1'	long pulses	2,500	70	0	30	0	0	Alternating	
	new													
•						m								+

4.7.2 To Show or hide waveform parameters

To show or hide the details of waveform parameters, check or uncheck the Show Waveform Details at the top of the waveform list.

- List (of Freque	ncy Pairs	: (9 pairs)			Show Waveform Details					
	Ad	d	Remo	ove	Move	Move Up Move Down Show Parameter Editing Panel					
	Pair #	F1(Hz)	F2(Hz)	l(uA)	T(min'sec'')	Waveform	Description				
►	1*	110	100	100	1'	Gentle					
	2*	120	100	100	1'	new sharp					
	3*	130	100	100	1'	Sharp					
	4*	140	100	100	1'	triangle wave					
	5*	150	100	100	1'	square wave					
	6*	160	100	100	1'	saw tooth waveform					
	7*	170	100	100	1'	fast ramp up and slow ramp down					
	8*	180	100	100	1'	short pulses					
	9*	190	100	100	1'	long pulses					
	new										

4.7.3 To select the parameters in a waveform

To select the defining parameters for a predefined waveform name, click on the Waveform Details, then check or uncheck the parameters to be used in a waveform.

V Show	Wav	veform Details
re Up	~	Period
) Wavefo	~	Duty Cycles(K0,K1,K2,K3)
Gentle	~	Phase
new shar	~	Polarity

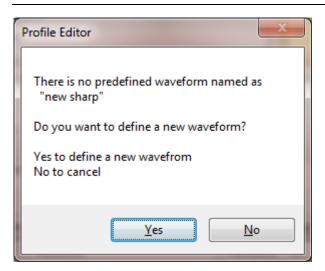
4.7.4 To define a new waveform

Click on the cell under the waveform column, type in the new waveform name and press Enter, this waveform will be added as a pre-defined waveform.

1								-
new sharp	-	4,000	0	10	90	0	0	Alternating

You will be asked to confirm to define this new waveform, press YES to confirm.

Inspirstar Profile Editor User's Guide

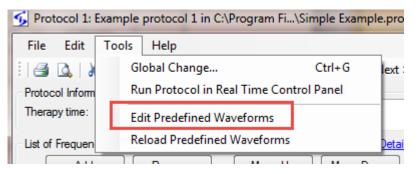


The new waveform will be saved in Users\Documents\IS02\Predefined\Waveforms.protocol.

Profile Editor
The new predefined waveform will be appended to the existing list and saved in file C:\Users\flong\Documents\IS02\Predefined\Waveforms.protocol
OK Cancel

4.7.5 Manage Predefined Waveforms

To change the name or remove a predefined waveform, select menu Tools -> Edit Predefined Waveforms



The predefined waveforms are listed as a protocol. Each line is one predefined waveform. The waveform name is given as the description of the line.

To change the name of a waveform, change the description of the line.

To remove a waveform, select the waveform line and click Remove button.

To change the parameters of the waveform, change the period, K, phase or polarity of the waveform. To change the order of the waveforms, move the l

File	File Edit Tools Help													
	🗋 🚰 🛃 🎒 🐍 🐇 ங 🏨 🥝 🕴 << Previous This protocol does not belong to a profile Next >>													
Prote	otocol Information													
Ther	herapy time: 11' Description: This protocol gives the predefined waveforms. Use the description for a short name or identifier. Add or remove lines and save your own copy as "My Documents\IS02\Predefined\Waveforms.protocol".													
List (st of Frequency Pairs; (11 pairs) Vaveform Details													
	t or rrequency rars: (11 pairs) (V) Snow <u>vvaverom Details</u> Add Remove Move Up Move Down Show Parameter Editing Panel Global Change													
	Pair # F1(Hz) F2(Hz) I(uA) T(min'sec") Waveform Period(ms) K0 K1 K2 K3 Phase Polarity Description													
•	1	100	100	100	1'	Gentle	2,500	5	25	70	0	0	Alternating	Gentle
	2	100	100	100	1'	Sharp	2,500	0	10	90	0	0	Alternating	Sharp
	3	100	100	100	1'	Moderate	2,500	3	17	80	0	0	Alternating	Moderate
	4	100	100	100	1'	triangle wave	2,500	0	50	0	50	0	Alternating	triangle wave
	5	100	100	100	1'	square wave	2,500	50	0	50	0	0	Alternating	square wave
	6	100	100	100	1'	saw tooth waveform	2,500	0	100	0	0	0	Positive	saw tooth waveform
	7	100	100	100	1'	fast ramp up and slow ramp down	2,500	0	0	50	50	0	Alternating	fast ramp up and slow ramp down
	8	100	100	100	1'	short pulses	2,500	90	0	10	0	0	Alternating	short pulses
	9	100	100	100	1'	long pulses	2,500	70	0	30	0	0	Alternating	long pulses
	10	100	100	100	1'	Inspirstar default waveform	4,000	20	25	30	25	0	Alternating	Inspirstar default waveform
	11	120	100	100	1'	new sharp	4,000	0	10	90	0	0	Alternating	new sharp
	new													

After the window is closed and waveforms.protocol is saved, the changes to the predefined waveform will be applied.

4.8 Menus and Tool Bars

4.8.1 File Menu

This menu has utilities for operations on protocols.

When the protocol belongs to a profile, the File menu has the following commands:

Merge Protocol: Import a protocol and merge with the current protocol to a new protocol.

Previous Protocol: Change to edit the previous protocol in the same profile.

Next Protocol: Change to edit the next protocol in the same profile.

Export Protocol: Export the current protocol to a file.

Print: Print current protocol on a printer.

Print Preview: Preview the printing result of the current protocol on a printer.

Page Setup: Setup the page formats for printing.

<u>**Close and back to Profile**</u>: Close this protocol window and go back Main Window. The information of this protocol is automatically saved in the profile.

When the protocol is a stand alone protocol, the File menu has the following commands: **New Protocol**: Start an blank protocol. You will be prompted to save the current protocol if it has been modified.

Open Protocol: Open an existing protocol. By default, a protocol has the extension name of ".protocol". You will be prompted to save the current protocol if it has been modified.

Merge Protocol: Import a protocol and merge with the current protocol to a new protocol.

<u>Close Protocol</u>: Close the current protocol and start a new protocol. You will be prompted to save the current protocol if it has been modified.

<u>Save Protocol</u>: Save the current protocol to a file. By default, a protocol has the extension name of ".protocol".

<u>Save Protocol As</u>: Save the current protocol with a new name. By default, a protocol has the extension name of ".protocol".

Print: Print current protocol on a printer.

Print Preview: Preview the printing result of the current protocol screen before printing.

<u>Page Setup</u>: Setup the page formats for printing.

<u>Recent Protocols</u>: List of most recently used (MRU) protocol files. Click one of the files in the list to open it.

Exit: Exit Inspirstar IS02 Protocol Editor. You will be prompted to save the current protocol if it has been modified.

4.8.2 Edit Menu

This menu has editing commands and utilities for frequency pairs.

<u>Cut</u>: Remove the selected frequency pairs and put them into Windows Clipboard for pasting. <u>Copy</u>: Copy the selected frequency pairs to Windows Clipboard.

Paste(Insert): Insert the frequency pairs in Windows Clipboard before the selected frequency pair.

Select All Frequency Pairs: Select all frequency pairs of the protocol.

Export Selected Frequency Pairs: Export the selected frequency pairs to a file.

Import Frequency Pairs: Insert the frequency pairs in a file before the selected frequency pair.

Global Find: Find frequency pairs with certain parameters.

Global Change: Change one or more parameters of all frequency pairs in selected protocols.

TIPS

The saved files have the same extension name as '.protocol' when you save a protocol or export frequency pairs.

4.8.3 Tools Menu

<u>**Global Change...</u>**: Apply the parameters of the current frequency pair to part of or all the protocols in the current protocol or all protocols in the profile. For details, please refer to 4.6.4 Using Global Change.</u>

Run Protocol In Real Time Control Panel: Run this protocol in Real Time Control Panel.

4.8.4 Help Menu

<u>Contents/Index/Search</u>: Open the on-line user's guide for Inspirstar Profile Editor. <u>About</u>: About the version of Profile Editor.

4.8.5 Tool Bars

Place you mouse pointer on the icons on the tool bar for one second, you will see the associated menu command for the icon.

4.8.6 Shortcut Keys

Most of the menu commands have keyboard shortcut keys for quick access. The shortcut keys are shown at the right side of the each menu items, if there is a shortcut available to that menu command.

Operation	Shortcut Keys	Operation	Shortcut Keys
Protocol Commands		Frequency Pair Commands	
New Protocol	Ctrl+N	Import	Ctrl+I
Open Protocol	Ctrl+O	Export	Ctrl+E
Save Protocol	Ctrl+S	Add	Insert
Close Protocol	Ctrl+F4	Remove	Delete
Print	Ctrl+P	Move Up	Ctrl+ Up
Merge Protocol	Ctrl+M	Move Down	Ctrl+ Down
Edit Commands			
Cut	Ctrl+X		
Сору	Ctrl+C		
Paste(Insert)	Ctrl+V		
Select all	Ctrl+A		
Global Change	Ctrl+G		

Table 2 Profile Editor Shortcut Keys

5 Real Time Control Panel

5.1 Start Real Time Control Panel

The Real Time Control Panel is not enabled when the software package is shipped to you. To enable this feature, please send an email to <u>sales@inspirstar.com</u>, or give a call to Inspirstar. The number can be found at <u>www.inspirstar.com</u>.

To start the Real Time Control Panel,

- Click program from Windows Start -> All Programs -> Inspirstar -> Real Time Control Panel,
- Or in Profile Editor window, click menu command Tools -> Real Time Control Panel.

5.2 Window Layout

The Real Time Control Panel is shown in the following picture. Explanation of the areas in the panel is as follows from the top to the bottom of the panel.

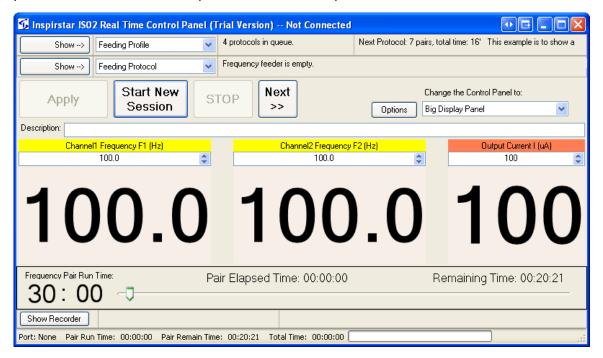


Figure 19 Real Time Control Panel

Profile Feeder

The profile feeder feeds protocols to the protocol feeder. You can load a profile with the profile

Ver 4.7.0 Copyright © Inspirstar Inc. 2005-2021.

feeder and run the whole profile in real time.

Protocol Feeder

The protocol feeder feeds frequency pairs to the control panel. You can load a protocol with the protocol feeder and run it in real time.

Control Buttons

Provides controls to start, pause or stop the running.

Parameters Panel

Displays the parameters for the output waveform. You can change the parameters in real time to change the output waveform.

Pair Run Time Control

Displays the run time of the current running pair and the remaining time of current run pair. You can drag the handle to increase or decrease the remaining time.

Protocol Recorder

All the finished frequency pair of the session will be recorded automatically in the Protocol Recorder. You can save the finished protocol to a file for future use or reference.

5.3 Real Time Session Control

5.3.1 Real Time Work Flow

A brief work flow of using Real Time Control Panel is as the following:

- 1. Start a new session,
- 2. Change the parameters using the parameters panel,
- 3. Finish the session, and save the recorded protocol.

5.3.2 To Start a Session



Click on button to start a new session. The panel will search for a connected IS02BA machine and takes control of the IS02BA. When connected, the current waveform will be

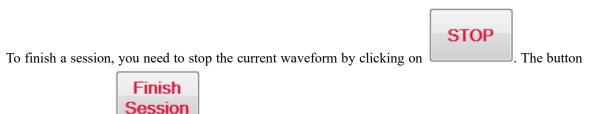
started and the button will be changed to PAUSE



You may be asked whether to continue to use the protocol recorder for the new session. Click on YES to continue using the existing recorded protocol, i.e., the new protocol will be appended to the end of the existing finished protocol. Click NO to save the existing finished protocol in the recorder.

Inspirstar I	S02 Real Time Control Panel (Trial Version)
4	The history recorder for Real Time contains the protocol from previous session. Do you want to continue to use the exisiting session history protocol for this new session? Yes to continue, No to save the existing recorder.
	Yes No

5.3.3 To Finish a Session



will be changed to

, click on the button to finish the session.

5.4 Run Profiles or Protocols

5.4.1 To Run a Profile in Real Time

To run a profile in Real Time Control Panel,

- 1. Open the profile with Profile Editor;
- Use menu command Tools -> Run Profile in Real Time Control Panel. The Real Time Control Panel will start and load the profile in the Profile Feeder of the panel.

5.4.2 To Run a Protocol in Real Time

To run a protocol in a profile in Real Time Control Panel,

- 1. Open the profile with Profile Editor;
- 2. Select the protocol to run, then right click and select Run Protocol in Real Time Control

Panel.

	Line #	Protocol Name		Total Time	l(uA)	Веер	Description
	1	1 Example protocol 1 9' 100				~	Example pro
	2	Back pain	Move	Un	400	Ctrl+	Line Pro
	3	Thigh muscle rel		•			. pro
	4	Neck pain	Move	Down		Ctrl+Do	iwn pri
	5	Fatigue	Add N	lew Protocol		Ctrl+	Ins pro
	Total	5 Protocols	Remo	ve Protocols		Ctrl+	Del ol
⊂No	tes to the	profile (The note	Impor	t Existing Pro	otocol	Ctr	l+I yi
		profile shows tha	Repla	ce with Existi	ng Protocol	s Ctr	l+L ha
the	treatment	as their names or	Ехрон	't Protocol		Ctr	I+E ^{\$0}
			Selec	t All Files		Ctrl	+A
			Add F	lecent Protoc	ol		
Port:	NONE		Run P	rotocol in Re	al Time Coni	trol Pan	el

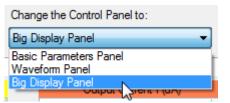
The Real Time Control Panel will start if not started and load the protocol into the Protocol Feeder of the panel.

5.5 Make Real Time Changes to Output

When parameters of the waveform are changed, the output waveform will be changed in 3 seconds. You can change the delay time through Options.

5.5.1 Parameters Panels

There are different parameter panels for real time parameter setting. To switch the parameter panels, click on the drop down menu and select a panel.



5.5.1.1 Big Display Panel

Click on the highlighted digits to change the value of the digit. Click on the top half to increase the value, click on the bottom half to decrease the value. Or roll the mouse wheel forward or backward to increase or decrease the value.

5.5.1.2 Basic Panel

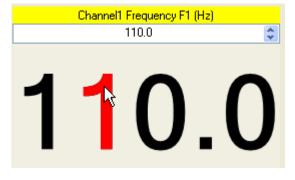
Change the values of the parameters; click the mouse to some blank area to apply the changes.

5.5.1.3 Waveform Panel

Change the values of the parameters; click the mouse to some blank area to apply the changes.

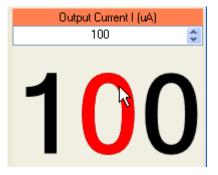
5.5.2 To Change Frequencies

Move the cursor to one of the digit of F1 or F2, the digit will be highlighted. Click on the top half of the digit to increase it by one, or bottom half to decrease by one.



5.5.3 To Change Output Current

Move the cursor to one of the digit of output current, the digit will be highlighted. Click on the top half of the digit to increase it by one, or bottom half to decrease by one.



5.5.4 To Change Run Time

If the frequency pair comes from the feeding protocol in the Protocol Feeder, the pair will have the run time set in the protocol. You can add to reduce the run time of the pair.

Frequency Pair Run Time:	Pair Elapsed Time: 00:00:00	Remaining Time: 00:11:42
30:00	· · · · · · · · · · · · · · · · · · ·	

• To **add** more time to the current running pair, drag the handle of the run time bar to the **left**, the remaining time will be increased.

• To **reduce** the remaining time to the current running pair, drag the handle of the run time bar to the **right**, the remaining time will be decreased.

5.6 Options

Click on button Options to bring up the option window.
🕼 Real Time Options 📃 🔀
Real Time
 The session will be finished automatically after no activities in 120 = seconds. Apply the changes of parameters in 3 = seconds.
Use the frequency pair in the control panel as the default.
Default Run Time for a New Frequency Pair on Control Panel Set the run time to 1800 seconds.
 Run the new pair with the pair run time on the control panel.
O Run the new pair with remaining run time of current pair.
Apply OK Cancel

Figure 20 Real Time Options

The Real Time Control Panel will start with the default parameters set in the option. To set the default parameters, first you set the parameters through the parameter panels, then click Options button. In the

Real Time Options window, check the box 🛛 Use the frequency pair in the control panel as the default.

click OK to set the options. The parameters of the current waveform will be used as the default values.

When a frequency or current is changed, the new settings will be used to run. The run time for this new setting can have three options:

- Fixed run time: The run time will always reset to the number of seconds in the option windows.
- Previous run time: for example, if the pair was to run 3 minutes, the new setting will run another 3 minutes.
- Remaining time: continue the previous settings, do not restart the timer. For example, if the previous pair has run for 1 minute out of the 3 minutes, the new settings will run for the

remaining 2 minutes.

5.7 Communications

window.

Port: COM5

Click on the Port text Least at the bottom left corner to bring up the communication setup

6 Protocol Encryption

6.1 About Protocol Encryption

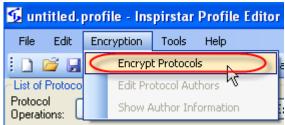
Protocols can be encrypted by Protocol Author. **Protocol Author** is the person who composes the protocol and encrypts it. When a protocol is encrypted, all or part of the parameters of the protocol will not be shown to Protocol Users. **Protocol Users** are those persons who receive the encrypted protocols from Protocol Authors and want to use the protocols on their IS02 units. Protocol Users may need to provide authorization code obtained from Protocol Authors when they use the encrypted protocols. **Authorization Code** is the code or a USB key that is required to present when the encrypted protocol is going to written into IS02 units. Protocol Authors can choose the method of authorization.

Protocol Authors can share the encrypted protocols on their web site, by email, or on online forums.

6.2 To Encrypt Protocols

6.2.1 To Apply Encryption to Protocols

- 1. Compose your protocols in Profile Editor; or load your existing protocols in Profile Editor or Protocol Editor.
- 2. Click Encrypt Protocols in menu Encryption.



3. Select an existing author file, and enter the author password.

🔂 Verify Author ID and Password	🖃 🖬
Load existing Author ID or create a new one Every Author ID file is unique even you choice to have the same Author ID and password. Try to use an existing Author ID File:	Create
C:\Documents and Settings\flong\My Documents\IS02\Authors\Dr. A.author	Browse
Author ID: Dr. A	
OK Cancel	

4. If you don't have an author file, click Create to create a new author file. If you already have an author file, try to re-use that author file. Author files are unique even they have the same author ID and author password.

🚺 Verify Author ID an	d Password	🖬 🔁
	create a new one que even you choice to have the same Author ID an existing Author ID File:	Create
		Browse
-Verify Author ID and pass	word to use the above Author ID file:	
Author ID:	Dr. A 💌	
Author Password:	•••••	
	OK Cancel	

5. Enter the author ID and password that you want to use, enter some author information for the users of your encrypted protocol, then save it into an author file.

🚯 My Documents\ISO2\Authors\Dr. A.author - Inspirstar Protocol Author Editor 👥 🖃 🔳 🗖	×
File Help	
 Author ID and password 	
Author ID: Dr. A Author ID and password is required to encrypt protocols. Password to allow the author have full access to encrypte	ed
Password: 12345678 protocols. Use some long and easy-to-remember phrases.	
Additional author information that you want to show to the users, e.g. name, address, tel, email, etc.:	
Example author	~
Dr. A	
Address: 123 Abo Street	
Tel: 555-555-1234	
Email: info@inspirstar.com	×

6. The Protocol Encryption window will pop up. Follow the 4 steps on the window.

🔂 Protocol Encyption 🛛 🛛 🔀					
Author: Dr. A Step 1 Select the parameters to be enceypted.					
Parameters 📃 All					
CH1 Frequency F1 🛛 C	CH2 Frequency F2				
🗌 Time T 🔄 Ci	Current Intensity I 📃 Description				
🗌 Period 📃 D	Duty (K0,K1,K2,K3)				
Only the author can open and s					
Step 2 Select the protoco	ols to be encrypted.				
Protocol Name	Description				
Example protocol 1	Example protocol, F1=110~190				
🗹 Back pain	Example protocol, F1=210~290				
Thigh muscle relaxing	Example protocol, F1=310~390				
Neck pain	Example protocol, F1=410~490				
Fatigue Example protocol, F1=510~590					
Step 3 Determine what is required in order to use the encrypted protocol O Nothing is required.					
User needs to provide the following Authorization Code. Authorization Code: 123456					
O User needs a valid USB Authorization Key					
Step 4 Click the APPLY button to Encypt the selected protocols and					
	Cancel				

Step 1: select the parameters to be encrypted.

Step 2: Select the protocols that you want encrypt in the profile.

Step 3: Select the authorization method from three options:

- Nothing is required. No authorization is required to use the encrypted protocols. Users can write the protocol to IS02 although some information in the protocol is not visible to them.
- Use Authorization Code: Users need to enter the authorization code in order to write the protocols into IS02. Enter the authorization code in the box, and send the code to the users of your encrypted protocols.
- Use Authorization Key: Users need the USB authorization key from you in order to use the encrypted protocols. See section **Error! Reference source not found.**.

Step 4: Click button Apply. The selected protocols will be encrypted.

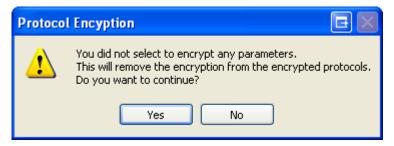
6.2.2 To Remove Encryption from Encrypted Protocols

Only Protocol Authors can remove encryption from encrypted protocols.

- 1. Follow the steps as in Apply Encryption to Protocols until you see the Protocol Encryption window.
- 2. In the window, uncheck all parameters, select the protocols you want to remove the encryption, and select the authorization method to Nothing.

🔂 Protocol Encyption 🕞 🔀							
Author: Dr. B							
Step 1 Select the param	Step 1 Select the parameters to be encypted.						
Parameters 🗌 All							
CH1 Frequency F1 C	H2 Frequency F2						
🗌 Time T 🔤 C	urrent Intensity I	Description					
🗌 Period 📃 D	uty (K0,K1,K2,K3)	Phase					
Only the author can open and	see the contents.)				
Step 2 Select the protoc	ols to be encrypted.	All					
# Protocol Name	Author	Description	~				
Dr.A's Better	Dr. A	This protocol requires an authorization c					
Dr.A's Best	Dr. A	A USB key from Dr. A as an authorizatic					
Dr.B's Protocol 1	Dr. B	A code is required for Dr.B's encryp	pted 🖬 🗐				
Dr.B's Protocol 2	Dr. B	Only the author can see the conte	nts of				
Unencrypted Protocol		This protocol is not encrypted. You	ı can 🤜				
<			>				
 Step 3 Determine what is required in order to use the encrypted protocol Nothing is required. User needs to provide the following Authorization Code. Authorization Code: 1234 User needs a valid USB Authorization Key 							
Step 4 Click the APPLY button to Encypt the selected protocols and Apply Cancel							

3. Click Apply, you will be asked to confirm that the encryption will be removed. Click YES to remove the encryption.



6.3 To Use Encrypted Protocols

Encrypted protocols can be added to a profile as normal protocols. All the operations to a normal protocol, such as copy, cut, paste, move up and down, import, and export, can be used on encrypted

protocols. However, when you want to write the profile with encrypted protocols into IS02 unit, proper authorization is required.

1. The profile with encrypted protocols will have two more columns than normal profile.

Line #	Protocol Name	Total Time	l(uA)	Веер	Author	Authorization Code
1	Dr.A's Good	8'	100	~	Dr. A	<not required=""></not>
2	Dr.A's Better	5'	100	~	Dr. A	<enter code="" here="" the=""></enter>
3	Dr.A's Best	3'	100	~	Dr. A	<usb key="" required=""></usb>

- 2. Protocol 1 is encrypted but no Authorization Code is required. This protocol can be written into IS02 the same as unencrypted protocols.
- 3. Protocol 2 is encrypted and an authorization code is required. Move the cursor to the column Authorization Code and enter the code.

Line #	Protocol Name	Total Time	l(uA)	Веер	Author	Authorization Code
1	Dr.A's Good	8'	100	~	Dr. A	<not required=""></not>
2	Dr.A's Better	5'	100	~	Dr. A 📢	1234
3	Dr.A's Best	3'	100	~	Dr. A	<usb key="" required=""></usb>

Enter codes for other authors if there is more than two authors.

4. Protocol 3 is encrypted and a USB key is required. Plug into a spare USB port of the computer. The USB needs to be plugged when the Write process begins.

6.4 Authorization

6.4.1 To Distribute Authorization Code

Authorization Codes can be given to Protocol Users by all means, such as paper mails, emails, or over telephone. It's the choice of the Protocol Authors.

6.4.2 To Distribute USB Authorization Keys

USB Authorization Keys can be purchased from Inspirstar. Contact sales@inspirstar.com for details.

The USB keys will be used to authorize for your author ID. The key is valid for all encrypted protocols that are encrypted by the same Author ID.

When you purchase the keys from Inspirstar, you need to provide your Author ID file. Inspirstar will associate the keys you purchased with your Author ID file. You will receive the USB keys and a key file. You need to give the USB key and the key file to your protocol users. Your protocol users need to copy the key file in to "KeyFiles" folder in the installed directory, by default it is "C:\Program Files\Inspirstar\IS02\KeyFiles"; or the user data directory in "My Documents\IS02\KeyFiles". At your

option, Inspirstar can put your key files in the software package so that your protocol users do need to copy the key file manually.

7 IS02 Remote Keypad

Inspirstar IS02 Remote Keypad allows you to use Windows PC to control a connected IS02. Note: this feature is not available on the old IS02BA models.

7.1 Start IS02 Remote Keypad

To start the Inspirstar Remote Keypad,

- In Profile Editor, select menu Tools -> IS02 Remote Keypad. The Remote Keypad is in sharing connection mode.
- Or to use Windows Start menu -> Inspirstar -> Inspirstar Remote Keypad. The Remote Keypad is in standalone mode.

Both ways will start Inspirstar Remote Keypad but there is slight difference on how the connection can be shared between Remote Keypad and Profile Editor. When in sharing connection mode, the Profile Editor can still read/write to IS02 when Remote Keypad is connected to IS02. When in standalone mode, the Profile Editor can't access to the same IS02 unit that is under control of Remote Keypad.

7.2 Remote Keypad Window Layout

Inspirstar Remote Keypad shows the keypad for IS02PRO by default before connection to IS02 is made.

🗲 IS02LCD Remote Keypad	
P ROGRAMMABLE MICROCURRENT	Check CH1 Check CH2
INSPIRSTAR _M STIMULATOR Click CONNECT to start	Waveform SKIP I+ 7 8 9 Line Current
Inspirstar IS02 Remote Keypad	Polarity HOLD I- 4 5 6
STOP OFF START PAUSE	F1 F2 Time+ 1 2 3 Run Time
$\underset{\text{Back}}{\longleftarrow} \xrightarrow{\text{Enter}} \qquad \downarrow \qquad \uparrow$	Protocols & Back Light O
	Connection Setup Connect

Click on Connect button to make connection to the IS02 or IS02 connected to USB port. Once connected, the keypad will be changed to the same keypad layout as the connected IS02 model.

7.3 Operate with Remote Keypad

After connected to IS02, the Remote Keypad can be used to see the LCD information and to control the operation of IS02.

- LCD window will display the same message as on IS02.
- You can click on the keys on the keypad image to operate the IS02. You can also press the keys on actual IS02 keypad. Both ways will have the same effects.
- The CH1/CH2 connection LED on Remote keypad is not going to be flashed when the actual LEDs on IS02 are flashing.

NOTE

Hold down the mouse button when clicking on the keys on the screen to emulate the Hold and Repeat operation of the physical keys on IS02 devices.

After connected, the IS02 unit will not power off. You need to disconnect Inspirstar Remote Keypad to allow IS02 unit to be able to power off.

7.4 Connection to IS02

By default, Inspirstar Remote Keypad will detect connected IS02 units. When you have more than one IS02 connected to PC USB ports, you may want to specify the port of connection so you can control the exact unit through Inspirstar Remote Keypad.

Click the **Connection Setup** button on the Remote Keypad to bring up the connection setup

window as below, select the port of IS02 and click Detect button. The model name and serial number of the detected IS02 unit will be shown on the dialog. Change the port number if this is not the unit you want to control.

8 Questions and Answers

8.1 How to restore Inspirstar IS02 to its factory default profile?

Inspirstar IS02 will be restored back to its factory profile if you write a blank user profile to it with a blank password, i.e. entering nothing in the password box. The blank user profile is a new profile that has no frequency pairs in all the five protocols.

8.2 What to do if I forgot the password?

You can restore the IS02 to its factory default. See "7.1 How to restore Inspirstar IS02 to its factory default profile?" However, you will loss your previous user profile in Inspirstar IS02. If you have the profile for that unit, you can open the profile to get the password if you selected to save the password in the profile.

8.3 How to print a profile?

You can print the profile with the Print command in File menu of Profile Editor, or print a protocol with the Print command in Protocol Editor.

8.4 Can two channels run in different period and phase?

It depends on how the two channels are used.

1. The two channels are connected to only one pair of gloves.

In this case, one electrode (glove) is connected to the positive terminals of both channels, i.e. the two buttons on the glove are connected to the one phone jack of Inspirstar IS02. This connection will effectively short the two positive terminals together. So the two channels must be running in same period, same polarity and same phase, in another word, the two channels run synchronously. In this mode, there are only two effective terminals for two channels.

2. The two channels are connected to four electrodes.

The four electrodes can two pairs of gloves, or other means of electrodes. In this case, the positive and negative electrodes of one channel are separated from the electrodes of the

other channel. The two channels are totally independent so they can run in different period, polarity and phase.

Inspirstar IS02 and Inspirstar IS02 Profile Editor do not know the external connection you desire to use. There will be no warning if the period and phase are different for the two channels. You might not get what you want if the connection does not meet the requirement of the protocol.

8.5 Can two channels run in different current intensity?

Yes, the two channels can have different current intensity and wave form duty cycles, no matter if the two channels are used with two electrodes (gloves) or four electrodes. However, the period, polarity and phase depends on the application, see "7.4 Can two channels run in different period and phase?" for more details.

8.6 How to turn off the modulating frequency?

The modulating frequency F1 and F2 will be turned off when the frequency is set to 0 Hz.

8.7 How to turn off one channel?

The channel output current will be turned off when the therapy time (T1 or T2) of the channel is set to 0 minutes. Note that you need to use Advanced Parameters page to set T1 and T2 separately.

8.8 How to change the period for all frequency pairs in the protocol?

Global Change tool is for making changes to part of or all frequency pairs in the profile. See "4.6.4 Using Global Change" for more details.