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### Revision history

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Rev.	Release. QD	Date	Approval RGQ	Date	Reason for mod



### Scope

This document supplies all of the information required to make a correct connection between Spirolab and an external USB printer.

To use this connection from the Spirolab you must have a printer which supports the "Postscript" language.

### Connection to a printer

You must use a USB cable with a male B connector. This must be connected directly to the printer and the male A connector goes to the Spirolab.



The female connector on the Spirolab is on the rear of the device as shown.

### Select the external USB printer

Select the icon at the end of a test or when viewing the results of a previous test session, when you see the message shown here:

Touch 🔄 for the external printout.



In the service menu you can set the external print to black and white or colour printout.

ipostazioni		02/09/2014 12:22	ver1.0	
	General	Date and Time	Info	Printer
	Printout header			
Spirometry	T.			
Calibration				
Oximetry				
Reference	External printe	er		
Delete results				
	Color Black/W	hite		
SAVE/EXIT				



### **Compatible printers**

The following printers have been tested by us and others MAY be ok:

Make	Model
Brother	HL-3170CDW
Brother	HL-5470DW
Brother	HL-L8350CDW
Brother	MFC-L2740DW
Brother	MFC-8910DW
Brother	MFC-9340CDW
Sharp	MX3140
HP LaserJet Pro	MFP M225DW
HP LaserJet Pro	MFP-M477fnw
HP Color LaserJet	CP252dw
HP Laserjet Mono	M402n
HP Color LaserJet Pro	M426fdw
HP LaserJet Pro	MFP M277DW
HP Color LaserJet	M451DN
HP Color LaserJet	M551
HP Color LaserJet	CP3525
HP Color LaserJet	CP4525
HP Color LaserJet	CP2025
Samsung	Xpress C460FW
Samsung	ML3471
Samsung	SCX-4x20
Ricoh Aficio	SP320DN
Ricoh Aficio	MP301SPF
Ricoh Aficio	MPC2051
Ricoh Aficio	MPC3501

### Setting your printer to Postscript

Some printers recognise PCL as well as Postscript modes. Set Postscript as follows:

1) Go to the printer config menu

2) Select "System"

3) Then select "Printer Language"

4) Set the printer to either AUTO or PS



### Check the language is set to Postscript

To check that you have set the printer correctly proceed as follows. You will need:

- PC with Windows 7 or 10
- Printer
- USB cable as shown above.

**1** Go to the PC control panel and then to "Devices and



### **3** Select "Printer properties" and then "Advanced"







2 Click with the right mouse and onto the icon of the printer in use.



### 4 Select "New Driver...", and then "Next":

Welcome to the Add Printer Driver Wizard
This wizard helps you install a new printer driver.
To continue, click Next.
< Back Next > Cancel

### 6 Select "Generic/Text Only" and "Next"

Select the man listed, click Ha	ufacturer and ve Disk to sele	I model of the printer driver to install. If the driver yo ect the driver you want.	u want is not
If Windows Up	date is availab	ole, click it for more drivers for this processor.	
		[ <b>-</b>	18
Manufacturer		Printers	1
Generic Gestetner		Generic / Text Only Generic Color XPS Class Driver (A)	
Generic Gestetner HP		Generic / Text Only           Generic Color XPS Class Driver (A)           Generic IBM Graphics 9pin	
Generic Gestetner HP InfoPrint	~	Generic Color XPS Class Driver (A) Generic IBM Graphics 9pin Generic IBM Graphics 9pin wide	

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### 7 Click on "Finish"



### **9** Insert **<1B>%-12345X** in the

"Begin Print Job" field and then "End Print Job"

General	Sharing	Ports	Advanced	Color Management
Security	Device S	lettings	Printer Commands	Font Selection
Begin Print Ja	ob	<18>%-1234	5X	
End Print Job	,	<18>%-12345	×	
Paper Size S	elect			
Paper <u>F</u> eed S	Selection			
Unprintable	e Margins			
Left 0	L Io	p 0	Units O 0.01 inch	ies
Bight 0	Bo	ttom 0	● 0.1 <u>m</u> ilim	eters

**11** Click on File and select "Page Setup" make sure that "Header" and "Footer" are empty and click OK

Si <u>z</u> e:	Letter (8.5" x 11") 🗸 🗸	
<u>S</u> ource:	Auto Tray Select $\sim$	
Drientation P <u>o</u> rtrait L <u>a</u> ndscape	Margins (inches)           Left:         2         Bight:         2           Top:         2.5         Bottom:         2.5	The second data and the secon
ader:		
oter:		

# 8 In "Printer properties", select "Printer commands"

General	Sharing	Ports	Advanced	Color Management
Security	Device Se	ettings	Printer Commands	Font Selection
Begin Print Job End Print Job Paper Size Si Paper Eeed S Unprintable Left 0	b	. 0		
Bight 0	Bot	tom 0	0.1 milime	ten

**10** Open Note pad; copy and paste the following text string:

### %!PS-Adobe-

/Times-Roman findfont 20 scalefont setfont 0.000 0.000 0.000 setrgbcolor 1 setlinewidth 150 500 moveto (PostScript Printing Test) show 150 450 moveto (Verdict: PASS) show showpage

**12** Then click again on File and select "Print ...", (ensure that the test printer is selected)

Select Printe	r v7	🛱 Mic	rosoft Print to F		
Fax		Mic Mic	rosoft XPS Doc		
- Hewler	Driptor status Offling	P WIZZOOW DEL PUP	Complete		
<	Documents: 0		>		
Status:	Ready	Print to file	Preferences		
Location: Comment:		Fin <u>d</u> Printer			
Page Range					
Ali		Number of copies	: 1 🖨		
<ul> <li>Selection</li> </ul>	Current Page		90 - 18 - 50		
O Pages:		Collate	1 22 33		

13 On the printer you should then have the following printed in the centre of the page:

PostScript Printing Test Verdict: PASS

In this way you have verified that the test printer works correctly in Postscript. If not then you must repeat the above steps OR contact MIR Technical Service.



#### To check the USB connection.

If the above procedure did not resolve then try as follows, with the following hardware:

- PC with Windows 7 or 10
- Printer
- USB cable
- Software Device monitoring studio (can be downloaded from internet)

This procedure serves to see the connection details that are made when the printer is connected to a PC.

**1** Install "Device monitoring studio" which can be downloaded here:

http://www.hhdsoftware.com/

This software is free for 15 days. Start the program.



**2** Connect the printer via USB. "USB printing support" will be shown in the list of USB devices in the list:

Click on "Device Descriptor" at the bottom left and info will be shown re the connected device.

Copy the text from the window and paste it into a text file and save as "Device Descriptor".

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#### USB direct printing\_EN.doc

**3** Click on "Configuration Descriptor".

Again copy the text and paste it to a text file as above.



4 Then click with the right mouse button on the printer and then on "Start Monitoring ..."

**5** Then double click on "Structure view" and Start.

Remove and reconnect the USB cable to and from the PC.

USB Printing Support						
		Remove	Add More			
vailable Processing	Selected Processing					
* *	i 🗇 🔿					
Visualizers						
Structure View						
Raw Data View						
WIRB View						
Packet View	Capture Filter					
Structure View data visualizer decodes all usb packet data	Empty (capture all packet	;)	✓ Edit			
ising the protocol definitions stored in the product or rovided by the user.	Filter Text					



You will see a log of the connection information.

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**6** Then click on "Tools" and "Save to Log" naming the file "Log info".

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Now you will have 3 files saved:

- Device Descriptor
- Configuration Descriptor
- Log info

Send these 3 files to MIR for analysis.