



## FS530C Troubleshooting help

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## 1. CONTEXT

This document aimed to help to perform after-sale diagnostic for service on FibroScan 530 Compact Step 1 or Step2.

## 2. DEFINITIONS & ACRONYMS

Name	Definition
FS	FibroScan
LF	Low frequency
TM	Time Motion type of ultrasound image representation used on FibroScan devices
A mode	Trace of ultrasound level versus depth representation used on FibroScan devices
LED	Light Electroluminescent Diodes
SWE	Shear Wave Elastography
VCTE	Vibration Controlled Transient Elastography
I <sup>2</sup> C	Inter-Integrated Circuit - Digital synchronous serial communication bus. Used to communicate with probe memory and the IO expender
PCB	Printed circuit board

**Table 1. Definitions.**

### 3. DOCUMENTS

Document	Description
E320M003	Technical manual
E320M001	User guide FS530C1
E320M002	User guide FS530C1 - USA
E320M004	Device description
E322M001	User guide FS530C2
E322M002	User guide FS530C2 – USA
E117F009	Adjusting Hall in 3G probes
E404U013	AlimEE - Design & Architecture
TN43	FibroScan 530 does not turn ON _rev 2
TN27	FibroScan 530 Touch sensor adjustment
TN47	FIBROSCAN 530CCHASSIS ENHANCEMENT
TN23	USING MAGIC FIX
TN42	FS430M & FS530C PV3 battery upgrade
TN59	Reset screen touchpad 530 only
TN79	Log size management

**Table 2. Documents.**

A spare parts list for FS530C1 can be found in E320M003.

### 4. FS530C DESCRIPTION

See E320M004

### 5. PRE-REQUISITES

The servicing procedures described in the below sections must be performed by competent technicians who have been trained in the maintenance of the probe.

For each of these procedures it is compulsory to use antistatic equipment during servicing.

## 6. DIFFERENCES BETWEEN FIBROSCAN 530 COMPACT STEP1 & STEP2

### 6.1. Visual differences

The power logo is different: (See Figure 1)

FS530C1: Classic power logo (One interrupted circle with a straight line)

FS530C2: Classic power logo inside a circle (Two circles)



Figure 1: Power logo – Left FS430C1 – Right FS430C2

The Power connector and power supply is different: (see Figure 2)

FS530C1: Large connector – Large power supply module 1.8 A

FS530C2: Smaller connector – Smaller power supply module 1.2 A



Figure 2: Power connector – Left FS430C1 – Right FS430C2

The FibroScan logo used a different font: (See Figure 3)



Figure 3: FibroScan logo comparison - Left FS430C1 – Right FS430C2

### 6.2. Spare parts differences

Spare parts	Step 1	Step 2
FS530 External Power	M300005	M400003
FS530 Keyboard AZERTY (For Roll-stand)	M200497	
FS530 Keyboard QWERTY UK (For Roll-stand)	M200467	
FS530 Keyboard QWERTY International (For Roll-stand)	M200496	
FS530 Probe support	M300038	
FS530 Coverglass	KSP0530SCREEN	KSP53202
FS530 Battery	M300002	
FS530 HMI Card	M300017	M320016
FS530 Battery Card	M300024	
FS530 Power connectic card	M300027	M320014
FS530 Elastometry module PV3	KSP53001	KSP53201
FS530 Fan	M300031	M320018
FS530 CableDataConnectics	M300029	M320010
FS530 CablePowerConnectics	M300028	M320012
FS530 CableLVDS_CoverGlass	M300018	

FS530 CableBackLight_CoverGlass	M300019	M320007
FS530 CableUSBTouchscreen_CoverGlass	M300020	
FS530 CableCoverGlass PV3	M300021	M320011
FS530 CablebatteryConnectics	M300025	M320013
FS530 MSATA Os	M300080	
FS530 Msata Data	M300081	
FS530 Transport case	P8000022	
FS530 Kit 530 step 1 TN43	KSP53002	NA
FS530 Interventional Kit <i>Including: all spare parts listed above for FS530 step 1 and step 2</i>	KSP0530	KSP0530V2

## 7. SHORTKEYS

When Windows is launched:

- **CTRL + F3**: Active/Deactivate mouse cursor.
- **ALT + SHIFT**: Switch keyboard types between AZERTYUIOP and QWERTIOP.
- **F2**: BIOS Setup (If it does not work, try **DEL**)

## 8. TROUBLESHOOTING

### 8.1. Initialization

Symptom	Actions	Links
Boot on "EPI Shell" prompt	1- mSATA-SSD replacement & Fresh Install 2- PV3 replacement	COM-16391
Boot on a BIOS password request message "Password []" "See password Hint"	1- Smallest mSATA-SSD replacement & Fresh Install 2- PV3 replacement	
Freeze on Logo screen - No active mouse	1- Biggest mSATA-SSD on bad slot 2- Biggest mSATA-SSD replacement & Fresh Install 3- PV3 replacement	
Probe calibration needed – Date and time lost	1- Replace the button battery (TN42 FS430M & FS530C PV3 battery upgrade)	TN42
The FibroScan does not turn on – Logo, LED, and screen Off	1- Check the wall outlet with another equipment 2- Check the Power Supply 3- Realign Touch sensor board on Coverglass 4- Add washers underneath HMI PCB as instructed in TN43 5- Exchange PV3 (See E320M003)	OpenLab E320M003 TN43
The FibroScan turn on but nothing on the screen	1- Reinstall software 2- Exchange Coverglass (See E320M003) 3- Exchange PV3 (See E320M003)	

### 8.2. Black Screen

Symptom	Actions	Links
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Black Screen - LED power is on	<ol style="list-style-type: none"> <li>1- Check if the screen is not in sleep mode by clicking on it (Only FS530C2)</li> <li>2- Try TN27 Touch sensor adjustment</li> <li>3- If not solved TN43 FS530C1 do not turn on</li> <li>4- If not solved Replace PV3</li> </ol>	OpenLab TN27 TN43
The FibroScan does not turn on – Logo, LED, and screen Off	<ol style="list-style-type: none"> <li>1- Check the wall outlet with another equipment</li> <li>2- Check the Power Supply</li> <li>3- Realign Touch sensor board on Coverglass</li> <li>4- Add washers underneath HMI PCB as instructed in TN43</li> <li>5- Exchange PV3 (See E320M003)</li> </ol>	OpenLab E320M003 TN43
The FibroScan turn on but nothing on the screen	<ol style="list-style-type: none"> <li>1- Reinstall software</li> <li>2- Exchange Coverglass (See E320M003)</li> <li>3- Exchange PV3 (See E320M003)</li> </ol>	

### 8.3. Screen

Symptom	Actions	Links
FS530C1: Impossibility to mechanically remove the screen	<ol style="list-style-type: none"> <li>4- Use the recommended vacuum pump and see TNC47</li> </ol>	TN47
	<ol style="list-style-type: none"> <li>5-</li> </ol>	

### 8.4. TouchScreen

Symptom	Actions	Links
FS530C1: Partial or complete loss of tactile - unresponsive click – unexpected clicks	<ol style="list-style-type: none"> <li>1- Launch a hardware calibration “System / Service / Screen calib” – Do not touch the screen during calibration.</li> <li>2- If still not good and FS530C1 – Run TN59</li> </ol>	TN59
FS530C1: Misalignment of the click	<ol style="list-style-type: none"> <li>1- Check with paint if there is a significant misalignment</li> <li>2- If confirmed, and the tactile seems to work perfectly in all its surface, launch a realignments calibration (To be performed only if necessary) “System / Service / Screen calib”</li> <li>3- If still not good run TN59</li> </ol>	TN59

### 8.5. Battery

Symptom	Actions	Links
"Battery communication error" in log	<ol style="list-style-type: none"> <li>1- Upgrade to CLPC 3.2.5 or later</li> </ol>	
Error message warning battery low when battery is fully charged “warning battery low”	<ol style="list-style-type: none"> <li>1- Check with another battery</li> <li>2- Check the mem ID to PV3 connection</li> <li>3- Send to EchoSens service for MEM ID replacement</li> </ol>	Openlab
FS530C1: No shear wave	<ol style="list-style-type: none"> <li>1- Install patch H2.0.6, the FS530 will not allow any exam on low battery</li> </ol>	OpenLab

generated on low battery If battery charge is inferior to 5% the device will be on but the probe will not generate any shearwave	Note that FS530 running OS G3.1.22 will have a threshold of 20%; no need for modification	
Battery does not charge at 100%	Note: To extend the battery life, the battery is not charged at 100% depending of current charge level and temperature. This is a normal behavior. 1- Turn On the device on battery 2- Let it discharge below 60% 3- Turn Off – Connect Power 4- The Battery should be able to reach a charge level over 98 %	E404U013
Blinking green battery LED but Battery logo indicating no charge	The battery logo is the right indicator to know if the battery is charging (with a little delay). The green battery LED is blinking if the battery is not charged at 100% and the unit is connected to power. However, to extend the battery life, the conditions of charge of the battery is more complex. Therefore, in some cases, the battery LED is blinking even if the battery is not charging.	Bug 18239

### 8.6. Ultrasound

Symptom	Actions	Links
EMI disturbance or noisy ultrasound	1- Check the TM is off when we do not apply pressure on the probe (if not, remove the gel at the distal tip - Recalibrate the probe) 2- Try in another room (See TN73-1_Electromagnetic_disturbance_troubleshooting_help) 3- Use UPS or EMI insulator 4- Try another probe 5- Exchange PV3	TN73
Incorrect TM mode or ELASTOGRAM	1- Try another probe 2- Exchange PV3 (See E320M003)	OpenLab
FS530C1: No shear wave generated on low battery If battery charge is inferior to 5% the device will be on but the probe will not generate any shearwave	1- Install patch H2.0.6, the FS530 will not allow any exam on low battery Note that FS530 running OS G3.1.22 will have a threshold of 20%; no need for modification	OpenLab
No ultrasound on the TM mode or A mode	1- Check with another probe If it works try to see if any pin is bent or damaged on the probe 2- Check if FS probe connector pins are not damaged 3- Exchange PV3 (See E320M003)	OpenLab E320M003
FS530C1: Ultrasound pic in the TM mode	1- Add some gel on the probe transducer tip 2- Install CLPC 3.2.4 or later 3- Try with another probe 4- Exchange PV3 (See E320M003)	OpenLab E320M003

### 8.7. Probe

Symptom	Actions	Links
Error message while calibrating probe "X0 is incorrect"	<ol style="list-style-type: none"> <li>1- retry calibration while carefully checking: <ul style="list-style-type: none"> <li>- Probe is clean (including body and transducer tip)</li> <li>- probe receptacle in clean (part where goes the probe)</li> <li>- Probe is well fixed and aligned (including rotation)</li> <li>- No vibration or chock during the procedure</li> </ul> </li> <li>2- Apply E117F009 Hall effect sensor adjustment</li> <li>3- Ask a standard exchange</li> </ol>	OpenLab E117F009 Adjusting Hall in 3G probes
Error message while calibrating probe "K is incorrect" or "Overpressure"	<ol style="list-style-type: none"> <li>4- retry calibration while carefully checking: <ul style="list-style-type: none"> <li>- Probe is clean (including body and transducer tip)</li> <li>- probe receptacle in clean (part where goes the probe)</li> <li>- Probe is well fixed and aligned (including rotation)</li> <li>- No vibration or chock during the procedure</li> </ul> </li> <li>2) Ask a probe standard exchange</li> </ol>	OpenLab
Probe not connected error message	<ol style="list-style-type: none"> <li>1- Check that the probe is well connected</li> <li>2- Try another probe</li> <li>3- Reboot the equipment in case the device is in a temporary unstable state</li> <li>4- Check that probe connector pins are not damaged</li> <li>5- Check that the probe connector of the FS is not damaged</li> <li>6- Exchange PV3 (See E320M003)</li> </ol>	OpenLab E320M003
Probe recalibration needed and the FibroScan - date showing 01 01 2010	<ol style="list-style-type: none"> <li>1- TN 42 FS430M &amp; FS530C PV3 battery upgrade</li> </ol>	

### 8.8. Measurement

Symptom	Actions	Links
<b>FS530C2 SW4.0.3</b> "Communication error" and/or "An error occurred on examination closure!". Those messages appears at first measurement shot. The C: drive is extremely full.	<ol style="list-style-type: none"> <li>1- Try to apply TN79</li> <li>2- If not successful, replace the little m-SATA by one with 4.0.3 P1</li> </ol>	TN79 SCR-1748
<b>FS530C2 SW4.0.3</b> "An error	<ol style="list-style-type: none"> <li>1- Try to apply TN79</li> <li>2- If not successful, replace the little m-SATA by</li> </ol>	TN79

occurred while saving the examination report". It happens when we close the exam and not at first shot. The C: drive has less than 1 GB free.	one with 4.0.3 P1	SCR-1748
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### 8.9. Report – Data

Symptom	Actions	Links
FS530C1: Export to PDF impossible but export to fibx or xls ok	1- Replace the logo,bmp by another file on the "institution" tab (log on as distributor)	OpenLab
Impossible to store exams	1- If possible export datas on an external support and try to reinstall OS 2- Use magic fix (see technical note 23) to run CHKDSK and repair mSATA errors and try to reinstall OS 3- Delete mSATA (See E320M003) and try to reinstall OS 4- Replace mSATA (See E320M003)	OpenLab E320M003 TN23 Using Magic Fix
No print out – No printer detected	1- Check that power cable is connected and that the printer is ON 2- Check the paper tray and printer cartridge 3- Check that the printer is listed in the preinstalled ones – If not try other USB ports 4- Check that the printer works connected to a computer or, If it is a network printer, try to PING it 5- Replace the printer or try another model 6- Exchange PV3 (E320M003)	OpenLab E320M003
Usb export not possible	1- Check with another USB memory key 2- Check with another FIBX (If successful delete the faulty FIBX) 3- Check all exports (pdf/FIBX/xls/log). If none work, swap the USB thumbdrive 4- Reinstall the software (see our "first level of service section") 5- change DATA CONNECTICS (see E320M003) 6- Exchange PV3 (See E320M003)	OpenLab E320M003
Incompatible file format with DICOM - GEPACS program	1- Apply TN related to SCR-1668 when available (SW patch)	COM-20993 COM-21124 SCR-1668
Time mismatch when using DICOM - PACS	1- Apply TN related to SCR-1668 when available (SW patch)	COM-20993 COM-21124 SCR-1668
FS530C2: Incompatibility with	1- FibroView 2.1.5 is the first one compatible with Fibx2 files (CLPC 4.0.3)	e-mail

FibroView		
Desksolution uncompatibility	1- Propose a replacement product – See TN26	TN26
<b>FS530C2 SW4.0.3</b> “Error while exporting data” while trying to export a pdf from the exam screen	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748

### 8.10. Closure

Symptom	Actions	Links
FibroScan does not switch off when start button is pressed (FS530rev2)	1- RealignTouch sensor board on coverglass 2- Exchange Coverglass (see page 14 of E320M003_2) 3- Exchange HMI PCB(see page 18 of E320M003_2) 4- Exchange PV3(see page 19 of E320M003_2)	OpenLab E20M003
<b>FS530C2 SW4.0.3</b> “An error occurred while saving the examination report”. It happens when we close the exam and not at first shot. The C: drive has less than 1 GB free.	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748

### 8.11. Log file

Symptom	Actions	Links
FS530C1: "Get position failure" in log file	1- Install CLPC 3.2.5	OpenLab
FS530C2 SW4.0.3 “Unable to export the log file” appears in a “Log file export”. The free space on C: drive is generally reduced to zero after that until the next boot	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748
FS530C2 SW4.0.3 “unknown software exception” windows popup “FibroScan.exe – Application Error”.	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748

### 8.12. Messages

Symptom	Actions	Links
"Hardware error"	1- check software versions 2- Check all connections with PV3	OpenLab

	3- Check that LED02 on PV3 is red (if so replace PV3)	
<b>FS530C2 SW4.0.3</b> "Unable to export the log file" appears in a "Log file export". The free space on C: drive is generally reduced to zero after that until the next boot	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748
<b>FS530C2 SW4.0.3</b> "Communication error" and/or "An error occurred on examination closure!". Those messages appears at first measurement shot. The C: drive is extremely full.	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748
<b>FS530C2 SW4.0.3</b> "An error occurred while saving the examination report". It happens when we close the exam and not at first shot. The C: drive has less than 1 GB free.	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748
<b>FS530C2 SW4.0.3</b> "Error while exporting data" while trying to export a pdf from the exam screen	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748
<b>FS530C2 SW4.0.3</b> "To update device, battery charge must be above 50%. If it is not, connect device to an external power supply."	1- A battery need to be connected and loaded even if the unit is powered up (Bug)	e-mail

### 8.13. Network

Symptom	Actions	Links
Impossible to add FibroScan to the network	<ol style="list-style-type: none"> <li>1- Execute "Configuration LAN (Fibroscan on Network).pdf" available on Openlab</li> <li>2- Try another RJ45 straight cable</li> <li>3- Set IP assignement from automatic to manual and back again to renew the IP lease</li> <li>4- Try to communicate with the FIBROSCAN from another computer on the LAN</li> <li>5- Check connections between DATA Connectic board and PV3</li> <li>6- Exchange dataconnectics board (See E320M003)</li> <li>7- Exchange PV3</li> </ol>	OpenLab E320M003

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#### 8.14. Mechanic

Symptom	Actions	Links
Impossible to disassemble the device	1- TN47 FIBROSCAN 530CCHASSIS ENHANCEMENT	OpenLab TN47
	2-	

#### 8.15. Maintenance and Service

Symptom	Actions	Links
Impossible to reinstall software	1- Use the CHK DSK /Clear database functions on the configuration menu (will erase patient data) 2- Use eraser key supplied by ECHOSENS 3- Delete or replace mSATA-SSD 4- Exchange PV3 (see E320M003)	OpenLab E320M003
	5-	

#### 8.16. TouchScreen

Symptom	Actions	Links
Not responding touchscreen	1- TN59 Reset screen touchpad 530 only 2- Exchange coverglass (See E320M003) 3- Exchange PV3 (See E320M003)	OpenLab E320M003 TN59
	4-	

#### 8.17. Date and Time

Symptom	Actions	Links
Time zone change when connected to the network	1- Through the remotely access, deactivate the "time server synchronisation" in the control panel	OpenLab
Probe calibration needed – Date and time lost	1- Replace the button battery (TN42 FS430M & FS530C PV3 battery upgrade)	TN42
Probe recalibration needed and the FibroScan - date showing 01 01 2010	1- TN 42 FS430M & FS530C PV3 battery upgrade	TN42

**8.18. Disk**

Symptom	Actions	Links
FS530C2 SW4.0.3 C: drive space is reduced to less than 1 GB of remaining free space	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748
	1-	

**8.19. Printer**

Symptom	Actions	Links
No print out – No printer detected	1- Check that power cable is connected and that the printer is ON 2- Check the paper tray and printer cartridge 3- Check that the printer is listed in the preinstalled ones – If not try other USB ports 4- Check that the printer works connected to a computer or, If it is a network printer, try to PING it 5- Replace the printer or try another model 6- Exchange PV3 (E320M003)	OpenLab E320M003
<b>FS530C2 SW4.0.3</b> Impossibility to install a printer driver – Not enough space on C: drive	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748

**8.20. TeamViewer**

Symptom	Actions	Links
<b>FS530C2 SW4.0.3</b> Impossibility to connect through TeamViewer – Not enough space on C: drive	1- Try to apply TN79 2- If not successful, replace the little m-SATA by one with 4.0.3 P1	TN79 SCR-1748