SERVICE MANUAL

FS530C

TECHNICAL NOTE 55

March 2018

Technical Note #	55
KIT Reference	KSP0530PV3REV8
Applicable to	FS530C

When should I apply this update?

- PV3 replacement (no boot/system crashes/blue screen/slow behavior despite all patient exams being backed up and new OS is installed)
- Preventive maintenance.

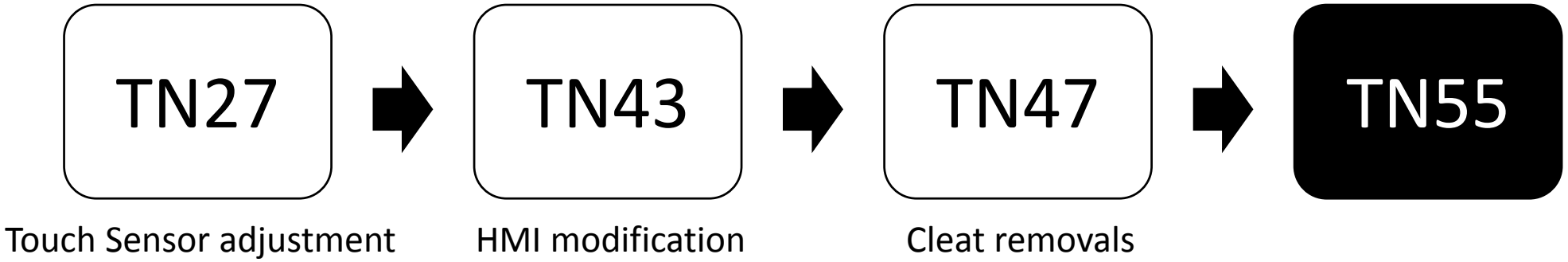
***Please note that this document replaces Technical note 54 as it has never been deployed in the field.**

Who can apply this update

only trained and ECHOSENS certified service engineers are authorized to open and troubleshoot FS530C as taught in this document.

Explanations of FS530C inner electronic and parts disassembly can be found on E320M003_2 service manual 530C distributed at the end of ECHOSENS service trainings.

Other Technical Notes



Make sure that other **TECHNICAL NOTES** have been applied.

If not, apply them.

Available at http://echosensdistributor.com

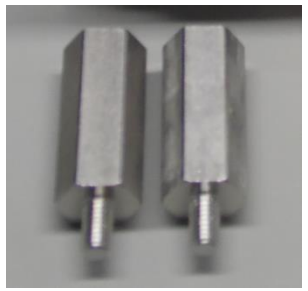
Kit content

Part	Description	Quantity
A	Hexagonal standoffs M4 H10x25 (*) M300071	2
B	CHC M4x8 (*) M200387	3
C	Electrical connection (*) M300072	1
D	VCTE probe connector housing KSP0530CLOCHE	1
E1	Pre-cut EMC foam 12 x6.4x135 M300073	1
E2	Pre-cut EMC foam 12x10x135 M300074	1
E3	Pre-cut EMC foam 12x10x110 M300076	1
E4	Pre-cut EMC foam 12x10 x25 M300077	3
F	EMC Ribbon Cable M300075	2
G	PLATINE PV3 FOR FS530C M300062	1
H	MODIFIED HMI CABLE M300021	1

** upon delivery mounted on the VCTE probe connector housing*
all dimensions in mm

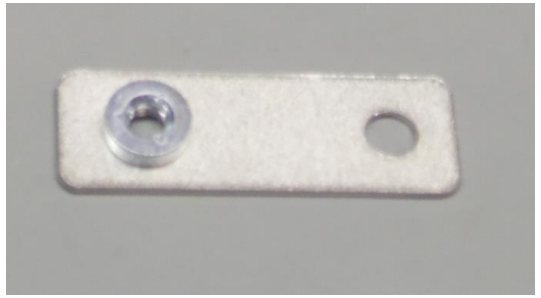
Kit details (1/2)

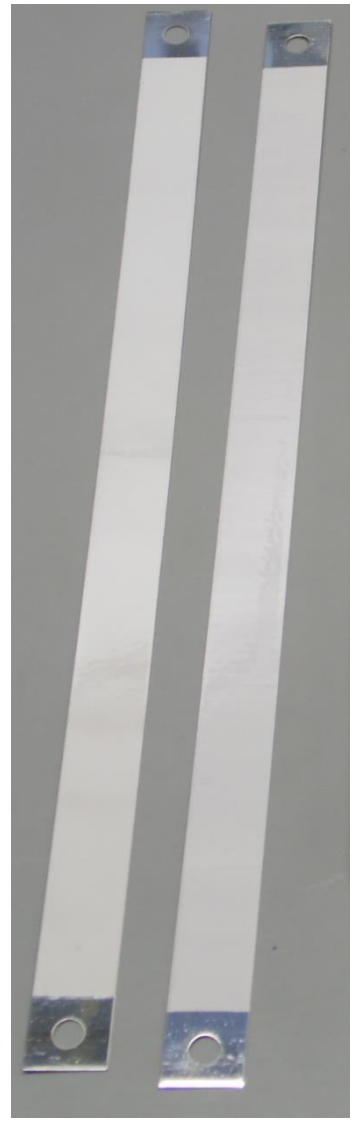
A



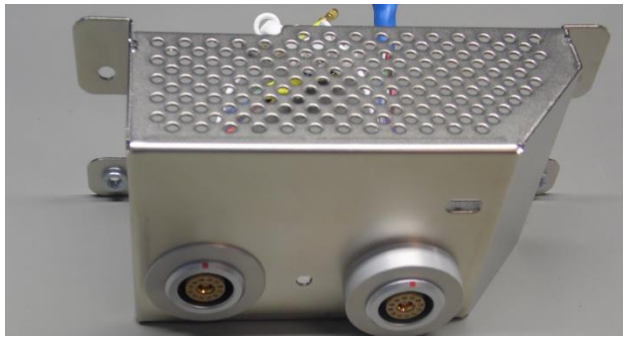
B

C

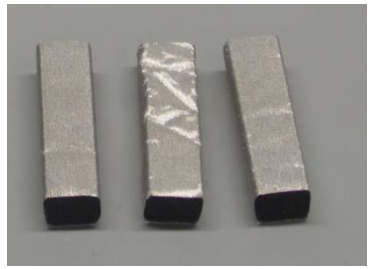




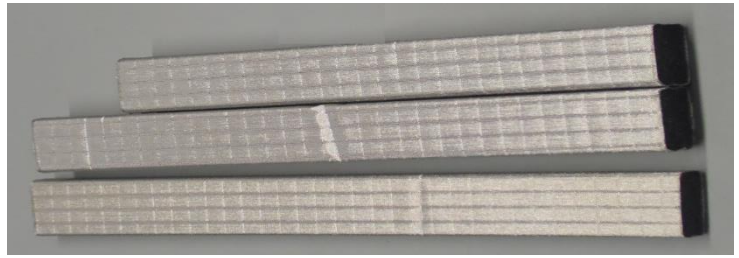
F



D



E4

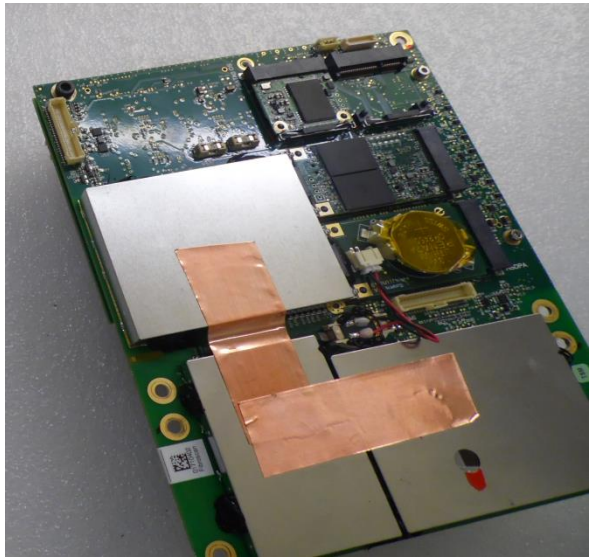


E3

E2

E1

Kit details (2/2)



PLATINE PV3

G

MODIFIED HMI CABLE

H

Tools needed

Tool	Description
1	Screwdriver for hexagonal head metric screws ball ended size 4
2A	Allen key for hexagonal head metric screws size 2.5
2B	Allen key for hexagonal head metric screws size 3
3A	5.5 flat key
3B	7 flat key
4	Calibrated screwdriver (Hoffman 659917 200) to hold the reassembly bits
5	Hexagonal metric screws ball ended size 3 bit
6A	Hexagonal 5.5 bit
6C	Hexagonal 10 bit
7	LOCTITE 222
8	GLUE REMOVER

all dimensions in mm
Blue cells for disassembly
Green cells for assembly

Tools details

Other tools can be used to disassemble the device, only use the tools listed for the assembly instruction.
**Glue remover brand is shown as an exemple;*

1

2

3

4

5

6

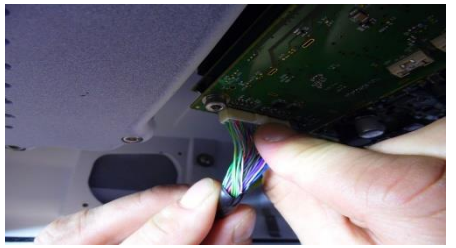
7

8*

Precautions

Before any manipulation of the device remove the battery (see chapter 5.5 of E330M002 user manual for details) and make sure main outlet is disconnected

Apply proper ESD protection methods see http://www.electronicsandyou.com/blog/esd-safe-electrostatic-discharge-safety.html for more details.
ESD carpet can be requested at service@echosens.com in case of need

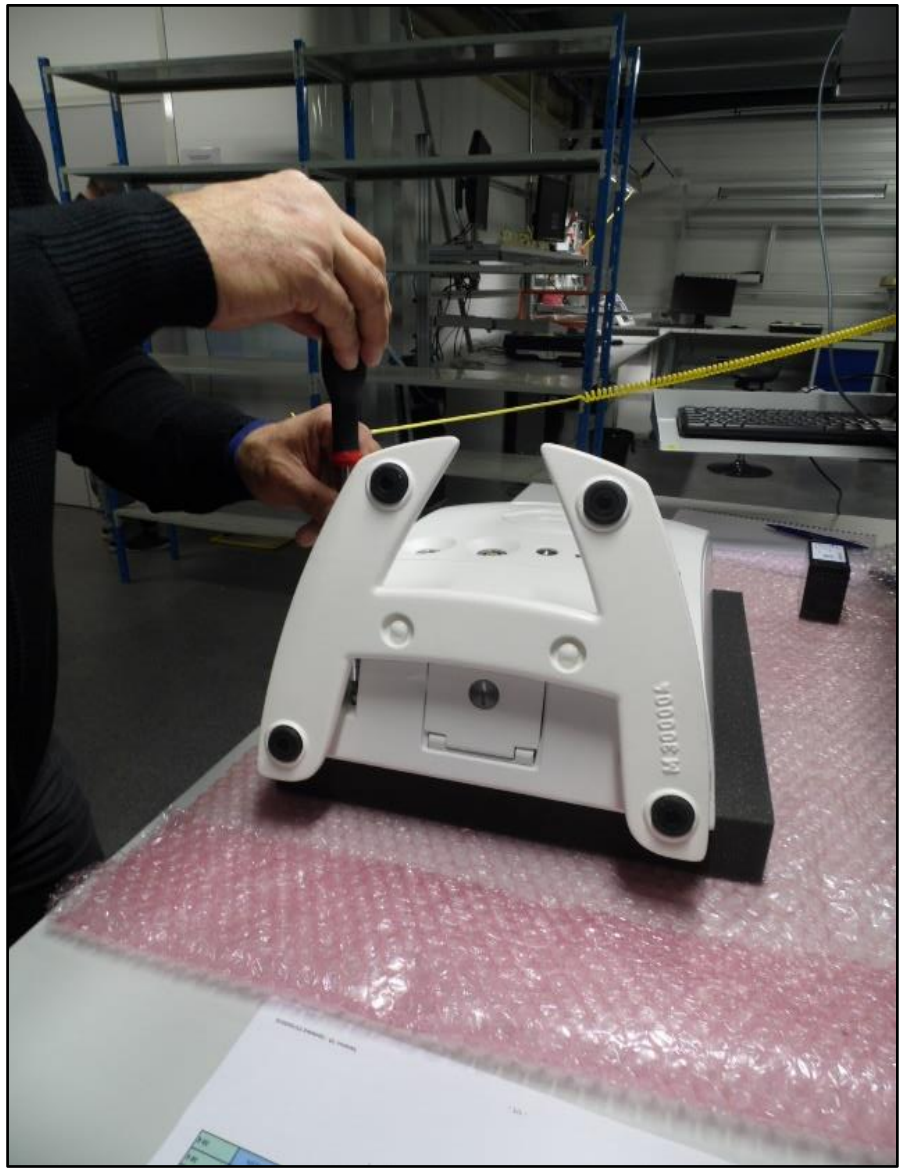


Most of the connectors have to be taken away with care (white locker to be gently clipped between fingers before pulling the cable connector upward).

Disassembly instructions

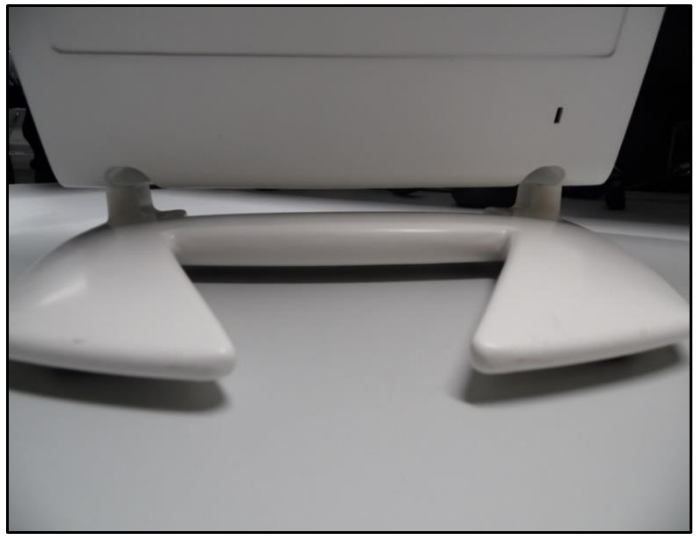
**some tools pictures are non contractual*

The LCD screen should always lie on a mellow surface (foam, Manila paper).



Step 1

Unscrew the 2 bottom outer screws in order to access the inside of the device
Use tool 1



Step 2

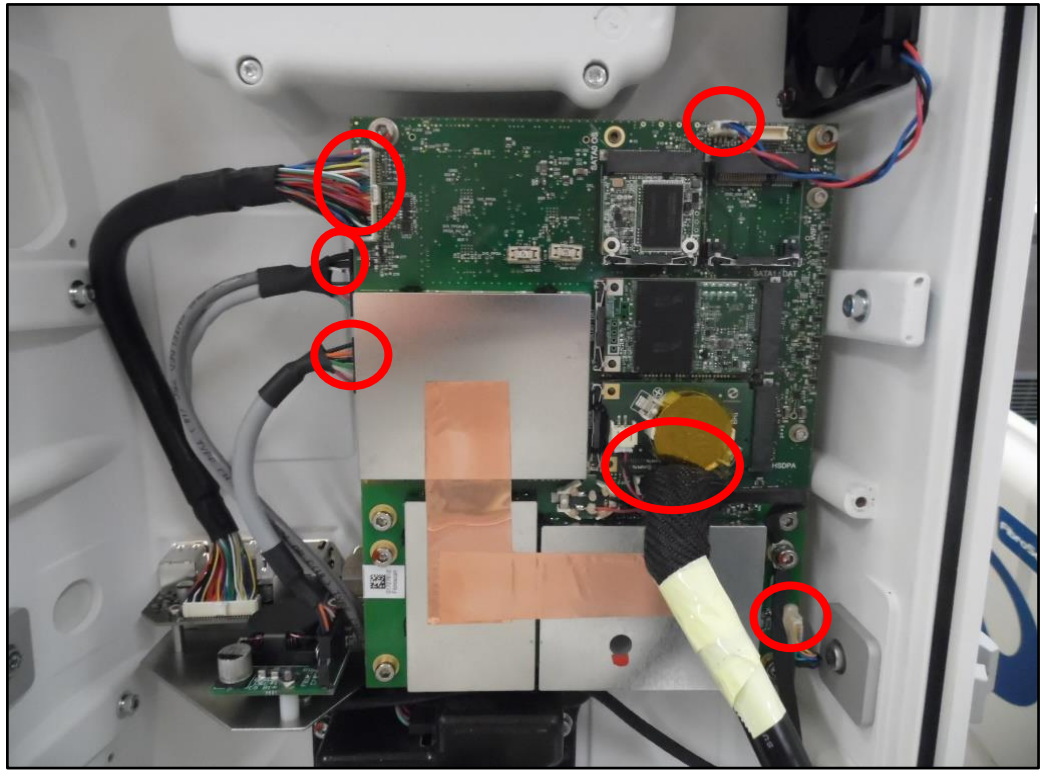
Gently lift up the back cover to remove the HMI cable and its ground.

Remember to press the connector locker before lifting it up.

Step 3

Remove all connectors.

Operate carefully to avoid damaging the connectors.

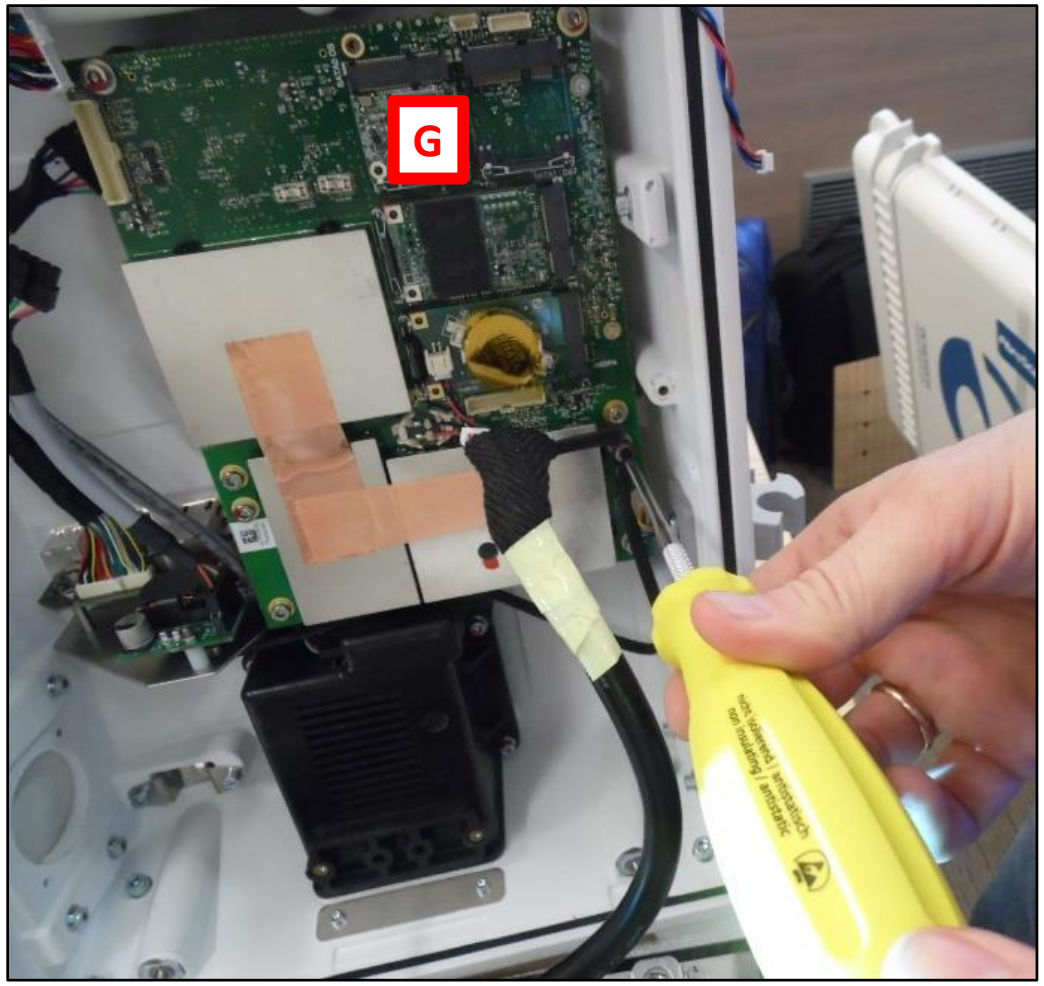


Step 4

Remove Bluetooth and WIFI modules if present.

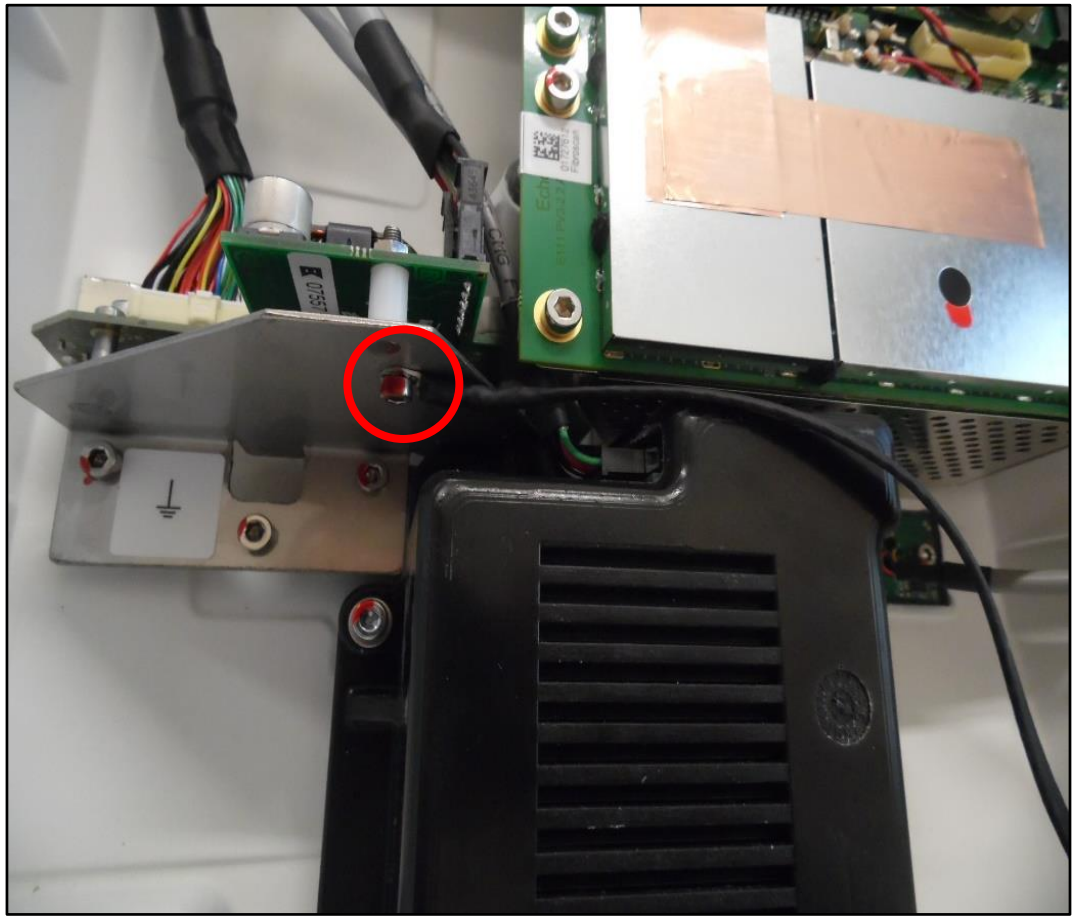
Step 5

Remove the screw used to connect the ground cable on Part G.
Use tool 2B.



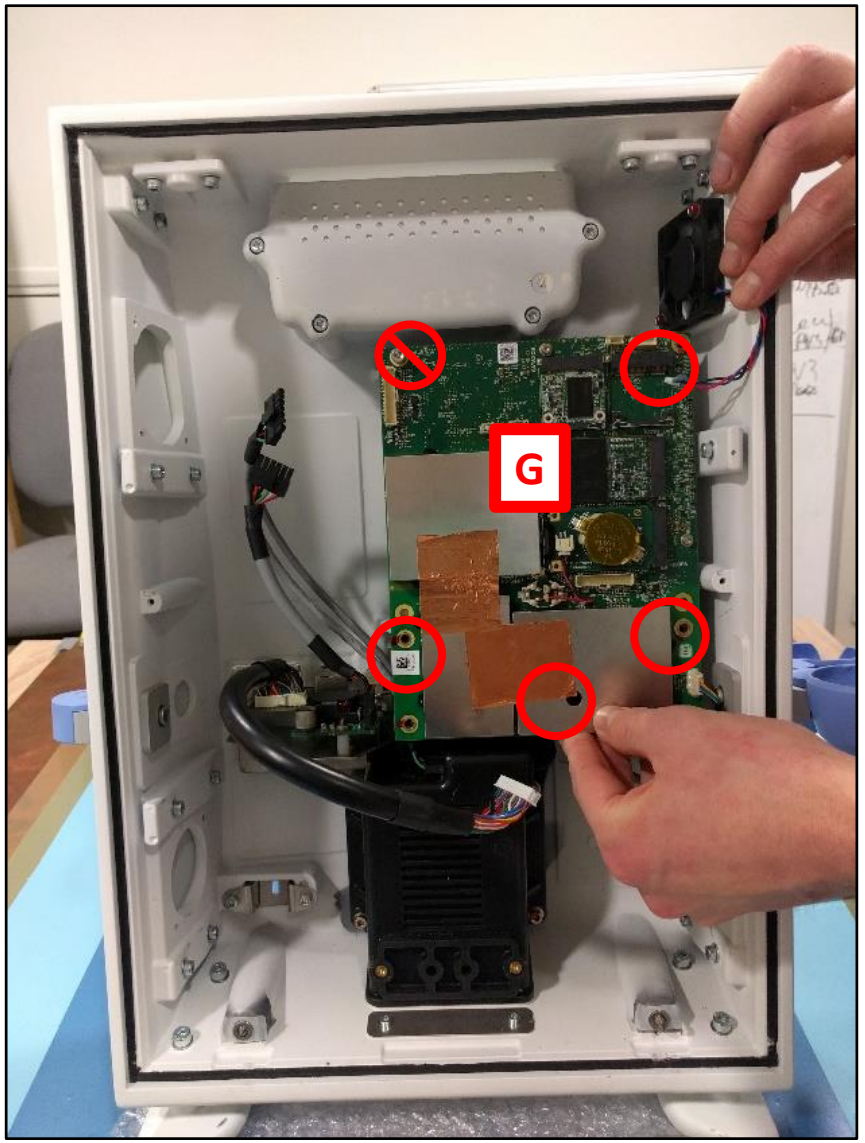
Step 6

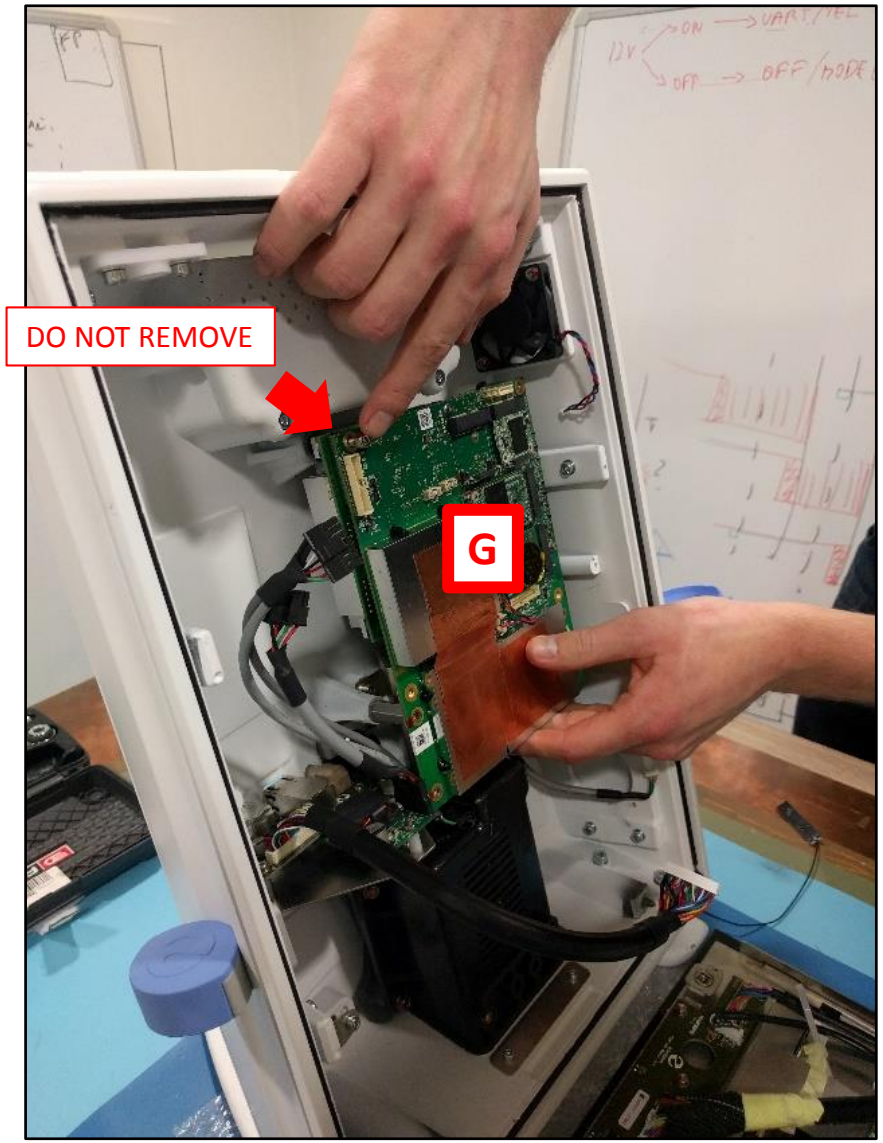
Unscrew the other side of the grounding cable fixed under the external connector card.
Use tool 2A.
The screw will have to be refitted



Step 7

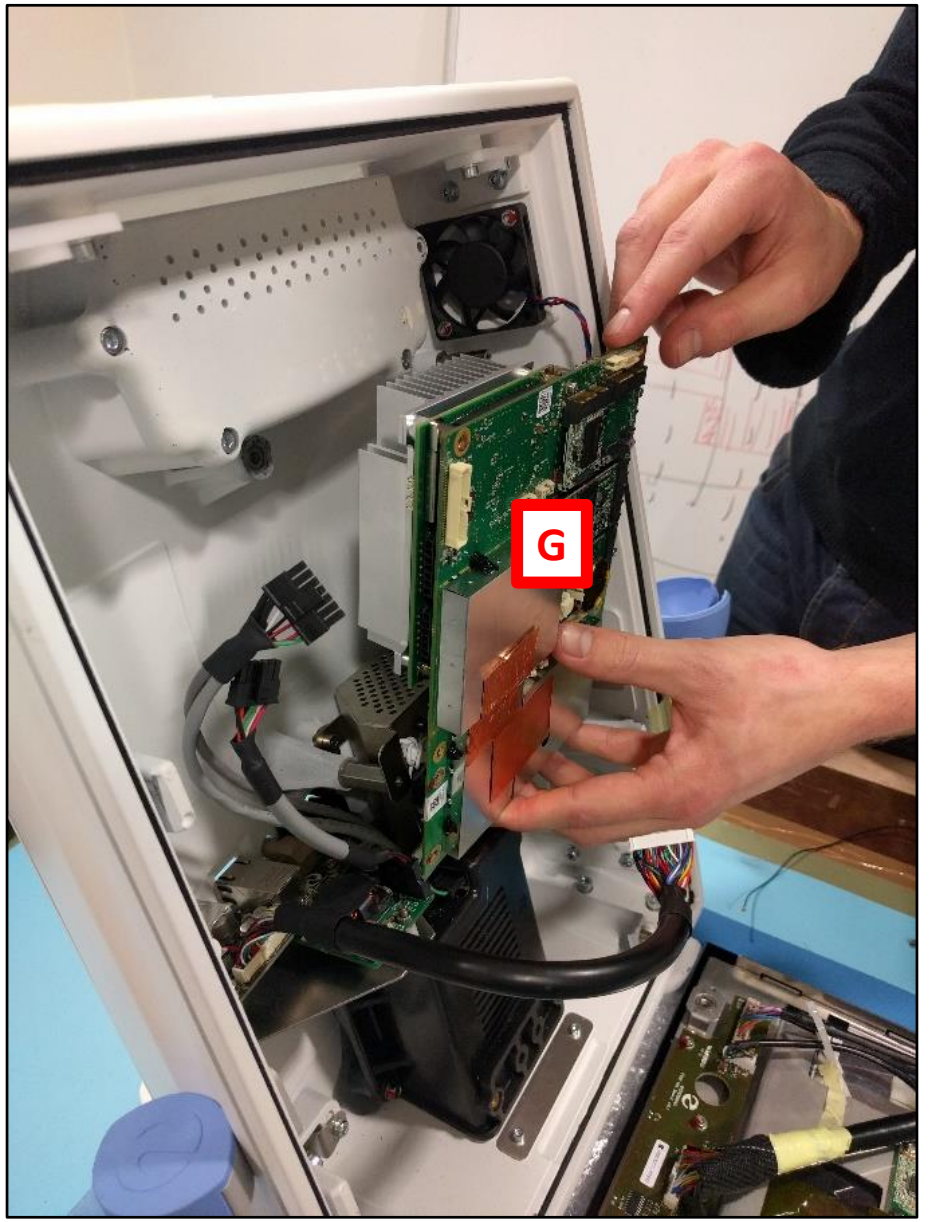
Remove the screws holding Part G <u>except the one on the top left corner</u>





Step 8

While maintaining Part G, remove the last screw on the top left corner, then remove Part G from the device.



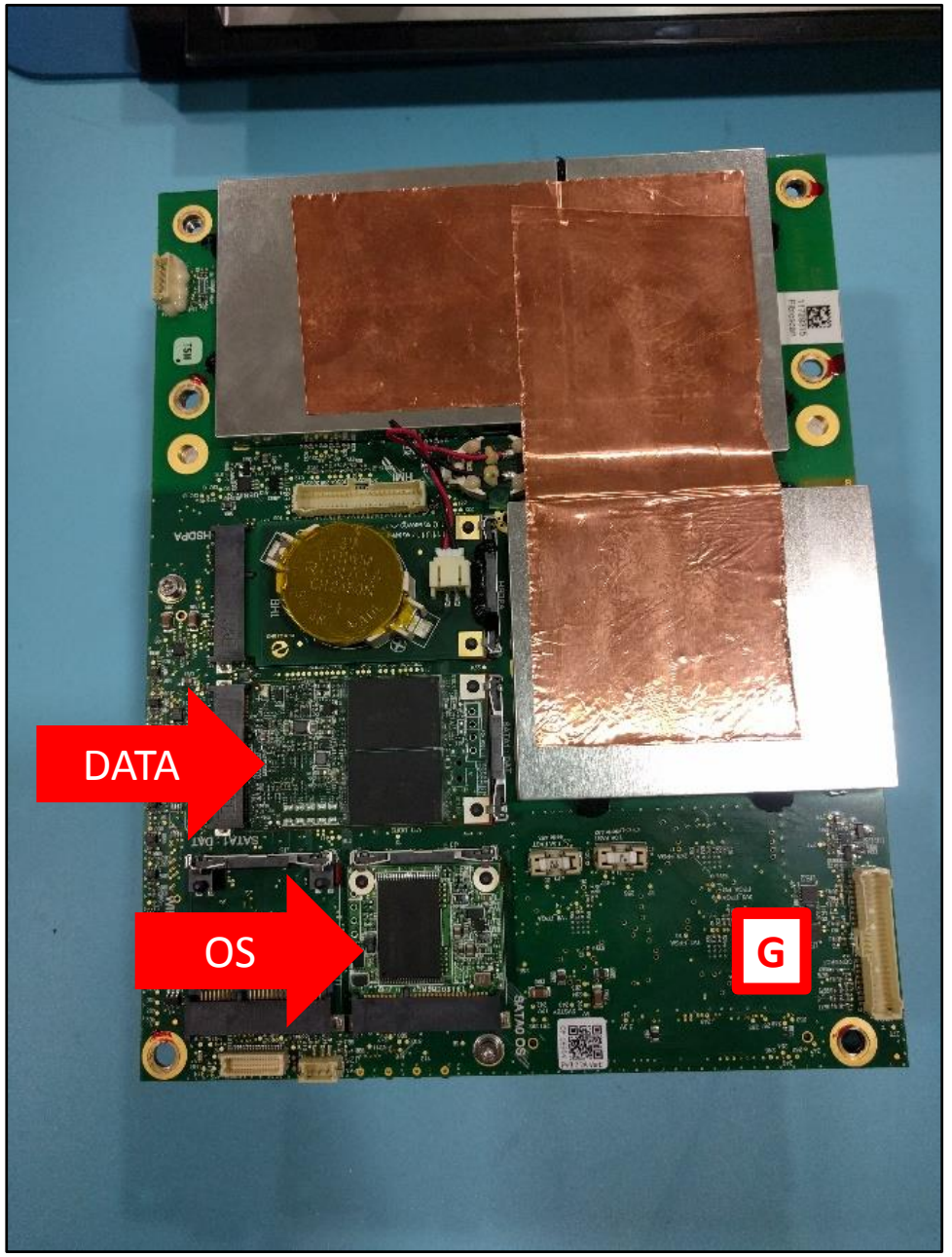
Step 9

Remove the washer shown in the picture below if present.

Step 10

Unmount both SSD disks from the removed Part G.

See next slide for information about how to proceed.

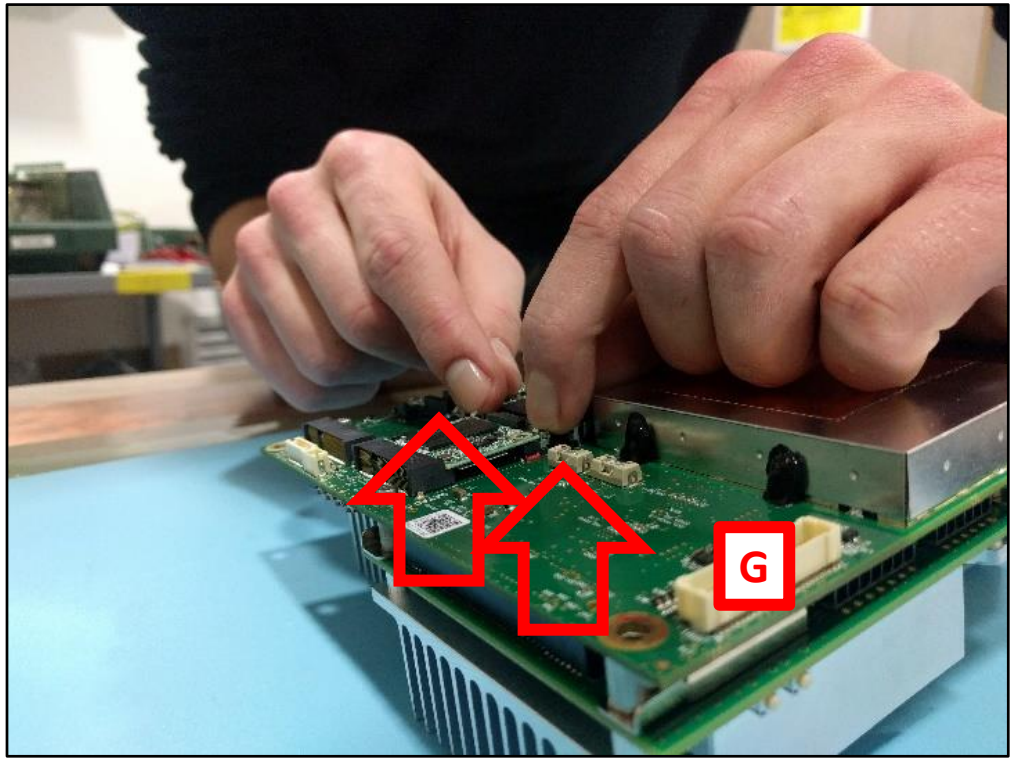


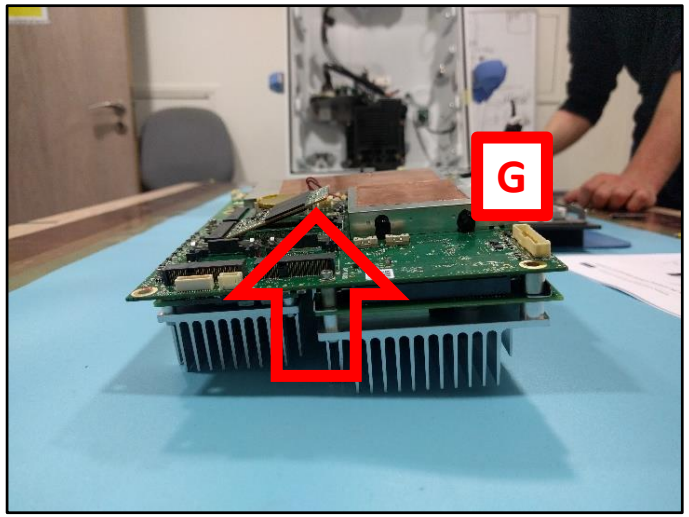
Step 10 (continued)

Push the two little metal pieces that maintain the SSD disk.

The SSD disk should lift automatically.

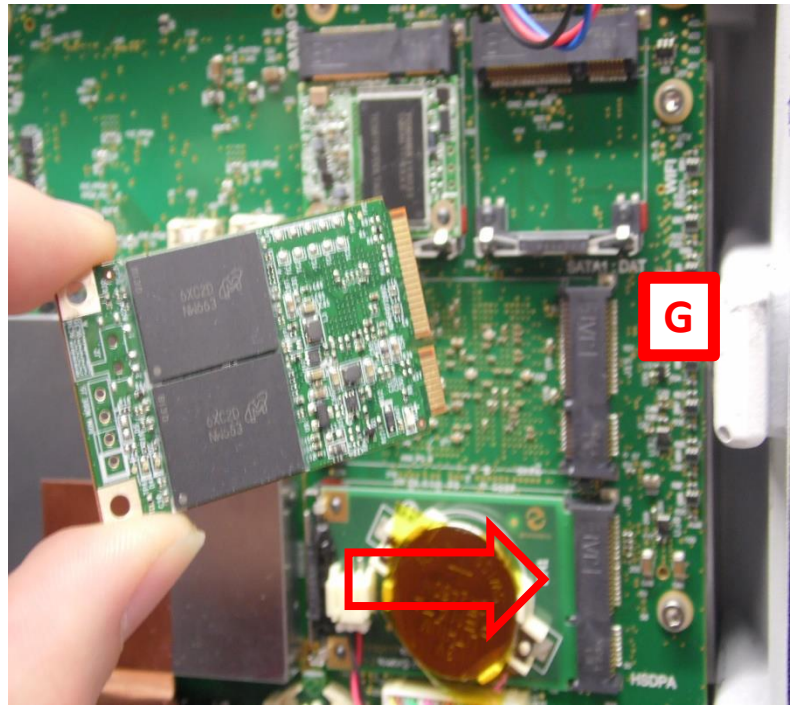
Remove it.





Step 11

Place the DATA SSD disks in the replacement Part G.
The OS disk will be replaced only if the capacity of the initial one is superior to the one supplied with part G (otherwise leave the OS disk on the part G from the kit).



**the size of the MSATA disk can be seen on its label*

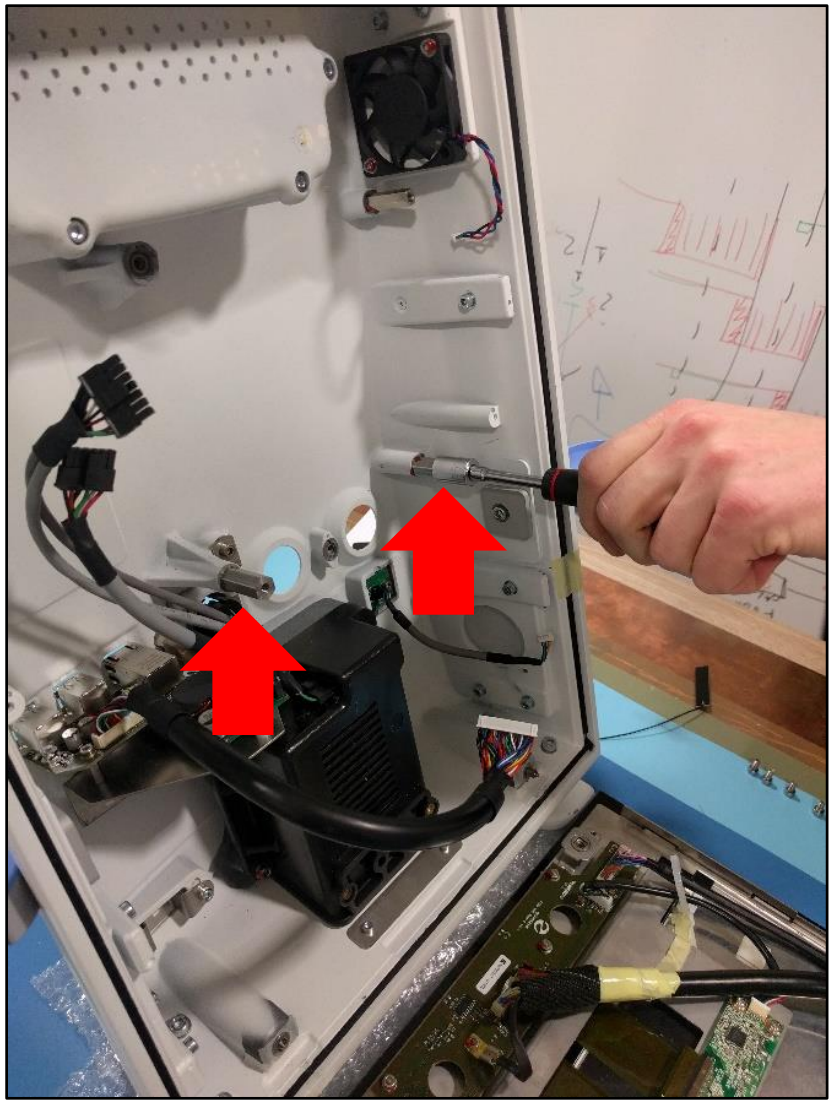
Step 12

Remove the Wifi and Bluetooth antennas.

Clean the remaining glue of the removed tape with glue remover spray.

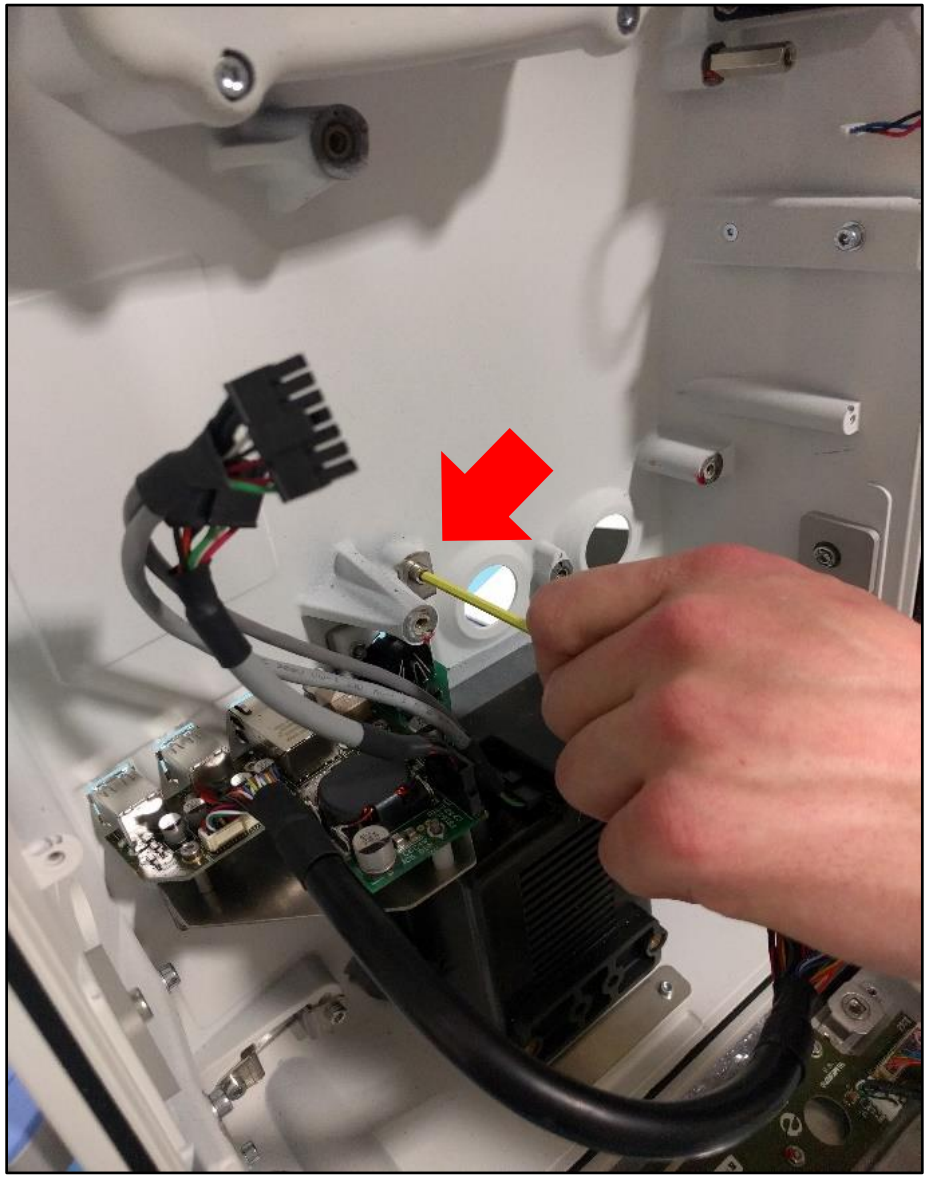
Step 13

Remove the 2 standoffs.
Use tool 3B.



Step 14

Remove the screw indicated by the arrow. Use tool 2B.



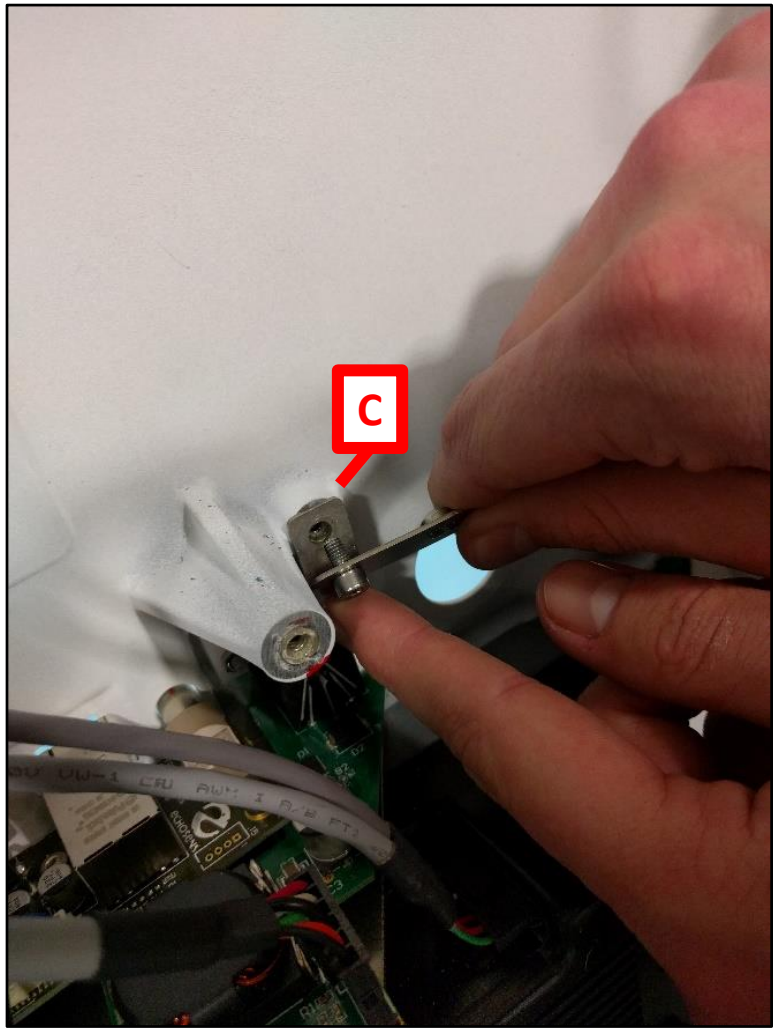
Assembly instructions

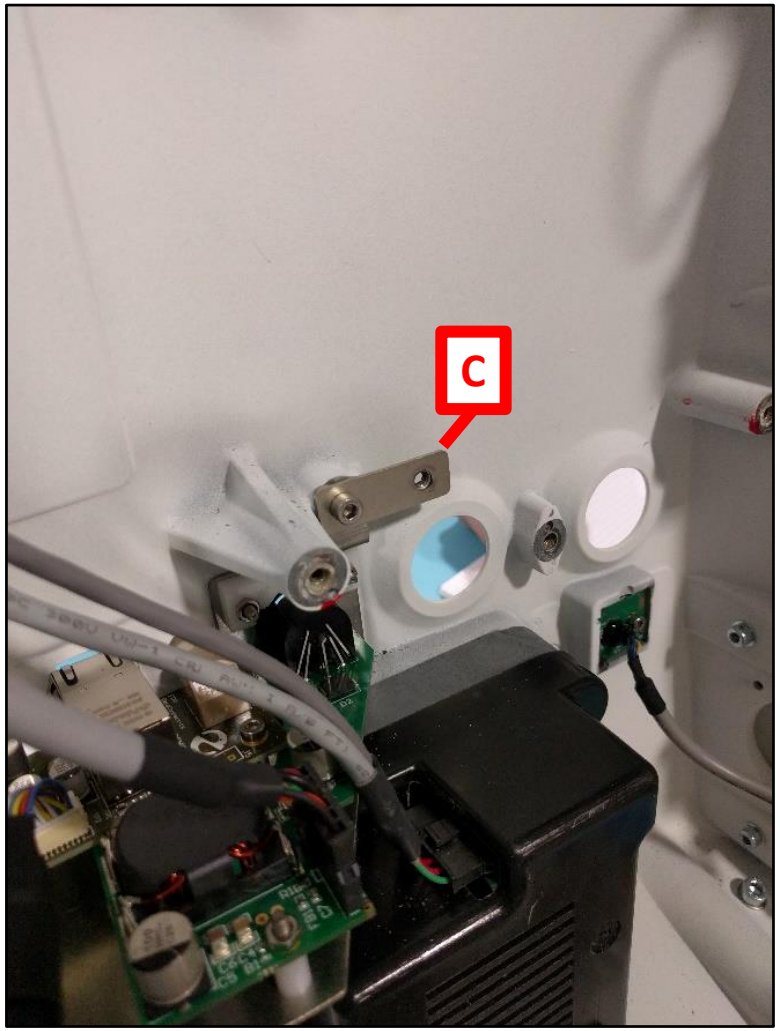
Unless otherwise specified, use a torque of 1.5 N.m

Use thread lock LOCTITE 222 to secure screws.

Step 1

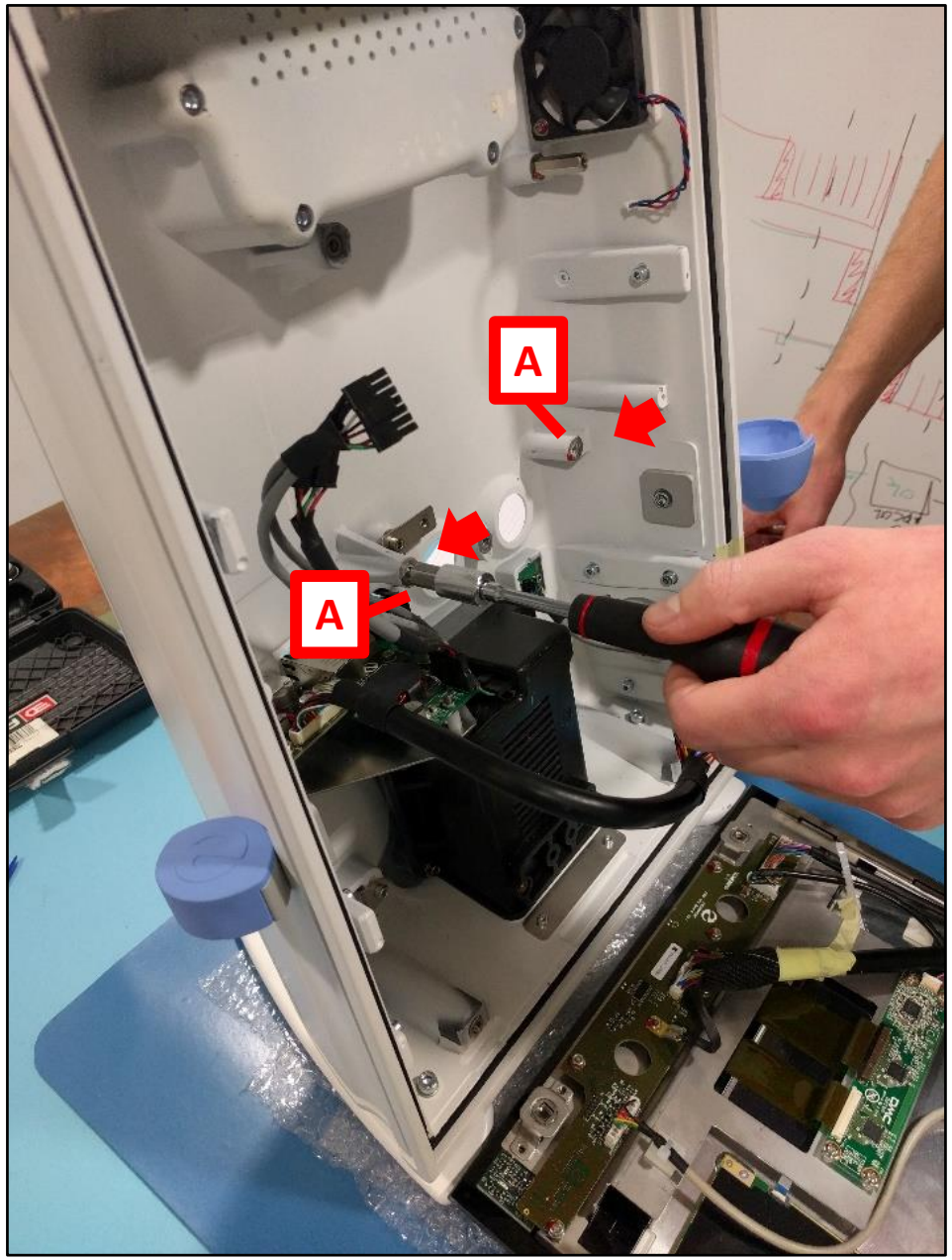
Place Part C (the hole without thread must be on the left) and mount it with the screw previously removed.
Use tool 2B





Step 2

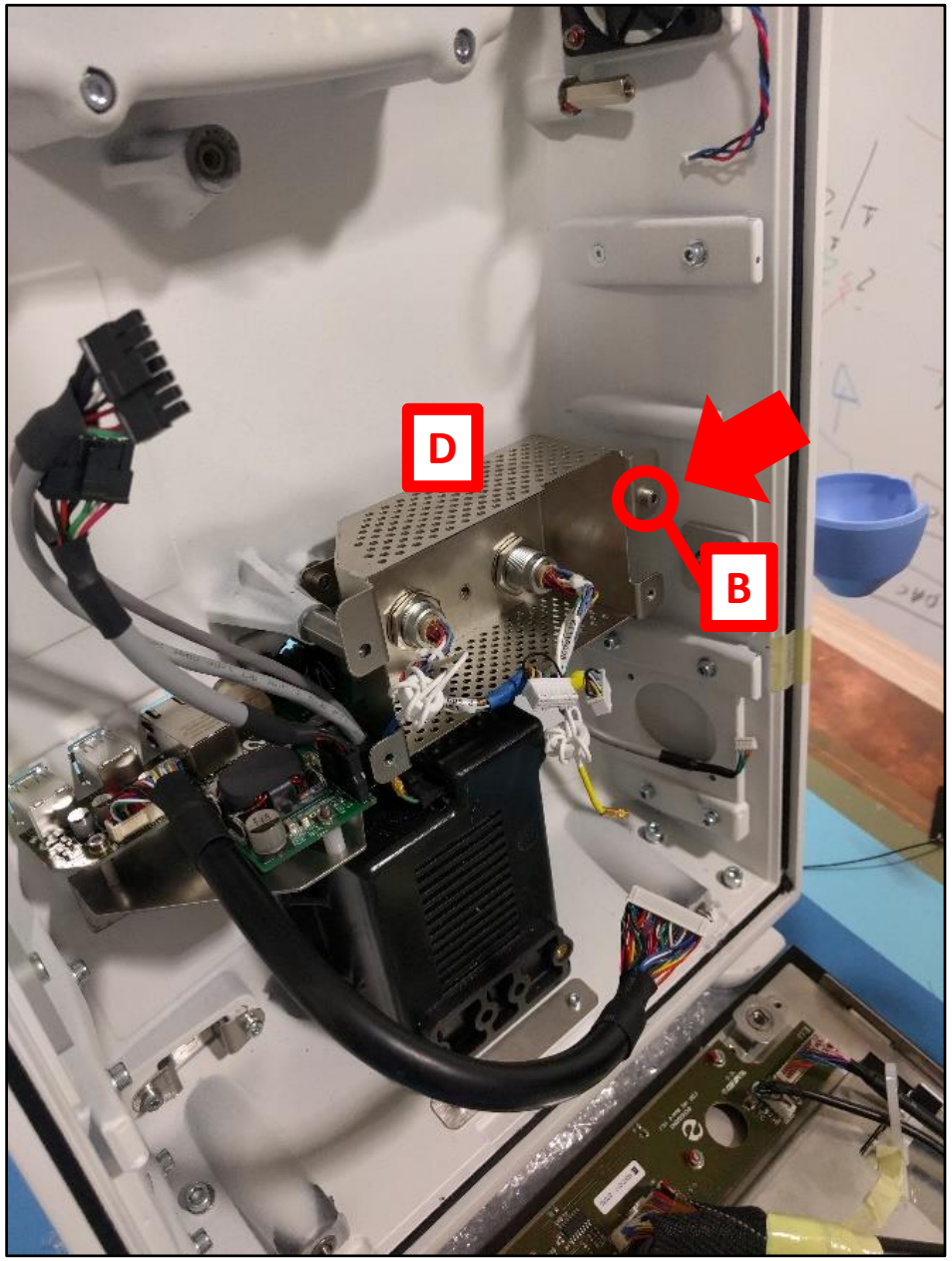
Screw the 2 new Parts A.
Use tool 6C



Step 3.1

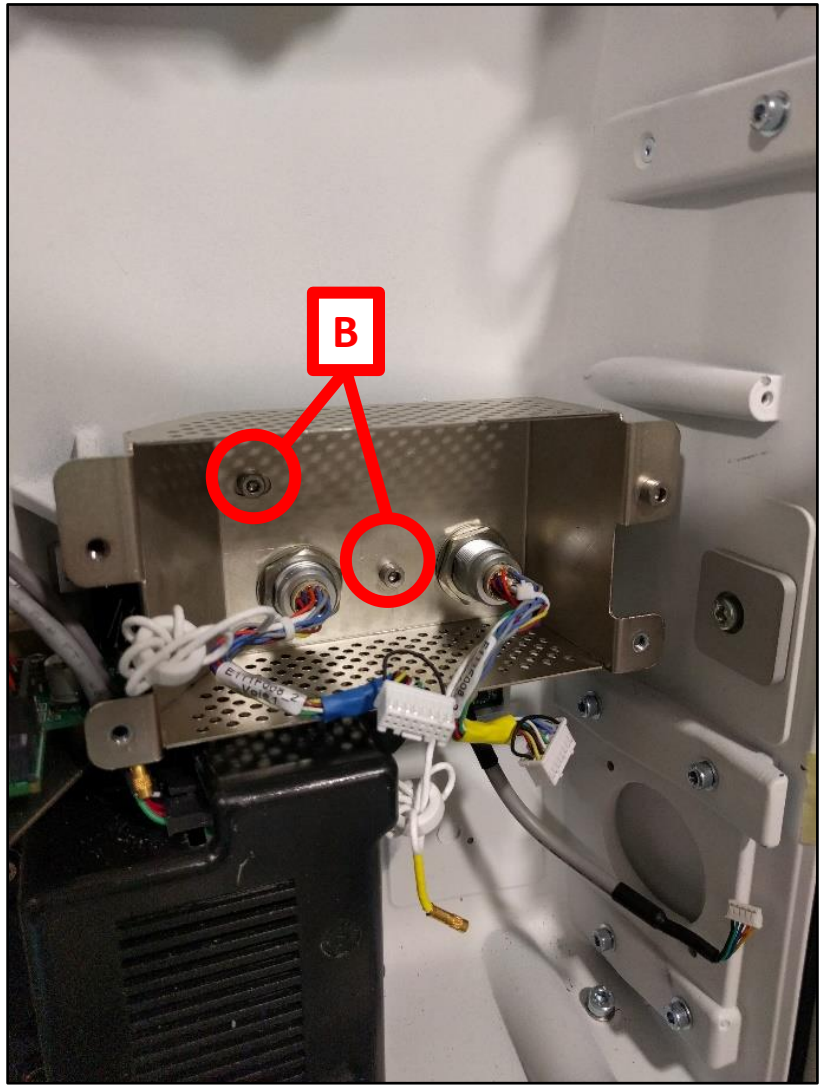
Screw (part B) on part D as shown on the image.

Note that this screw will be removed at the end of Part D assembly.
Use tool 4&5



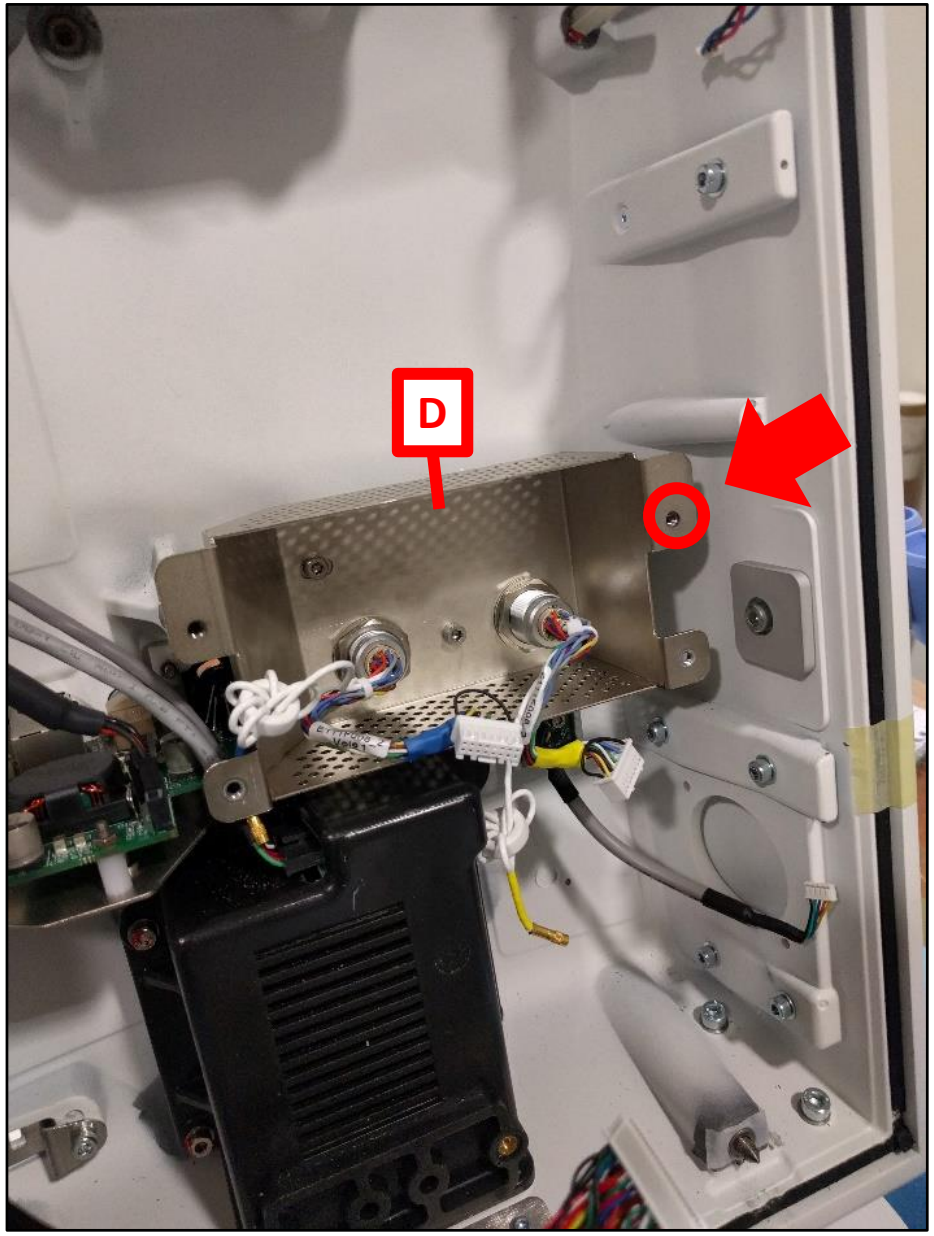
Step 3.2

Use 2 Parts B screws to fix part D in the device.
Use tool 4&5



Step 3.3

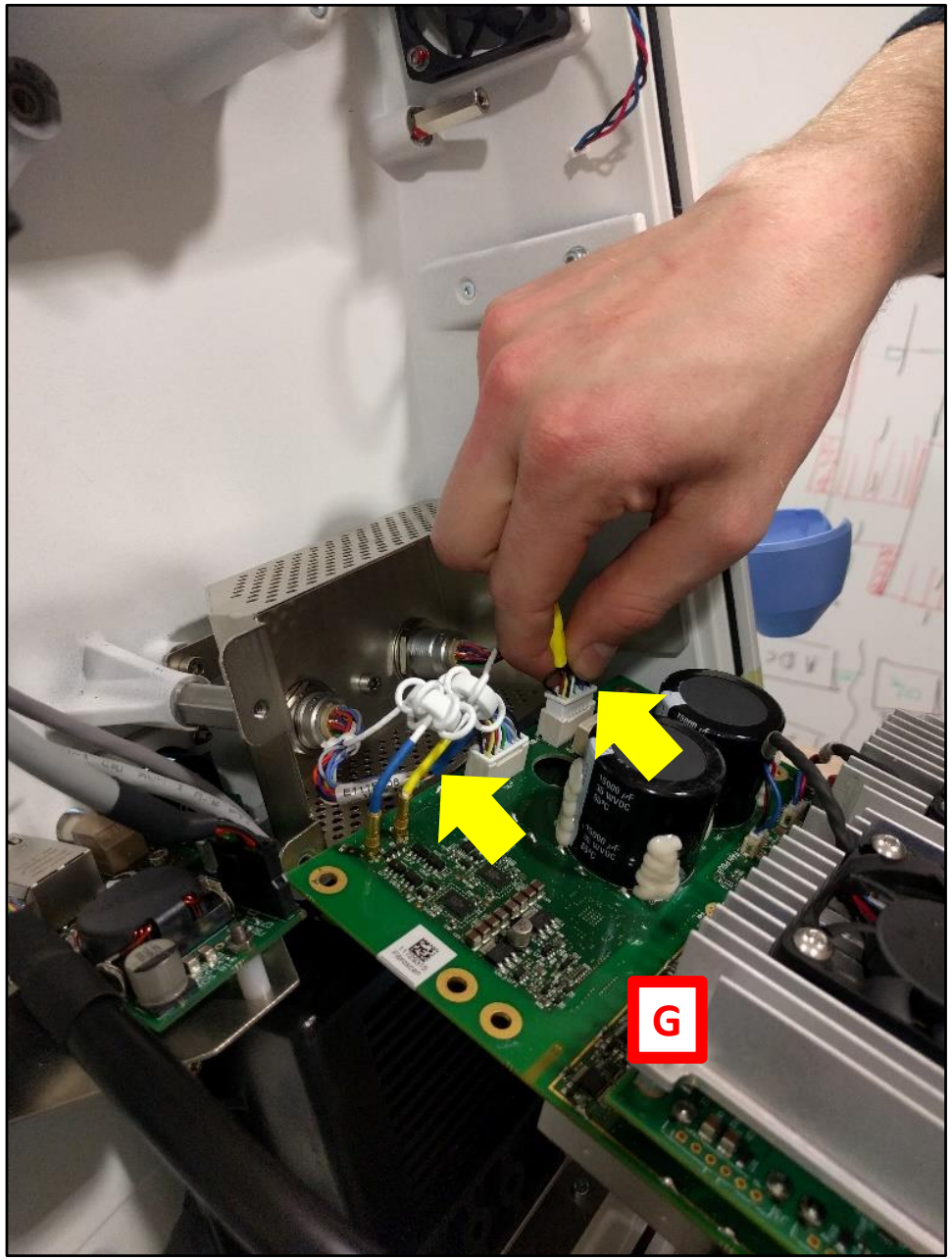
Remove Part B screw indicated by arrow.
Use tool 4&5



Step 4

Connect all probe connectors cables to their corresponding connector.

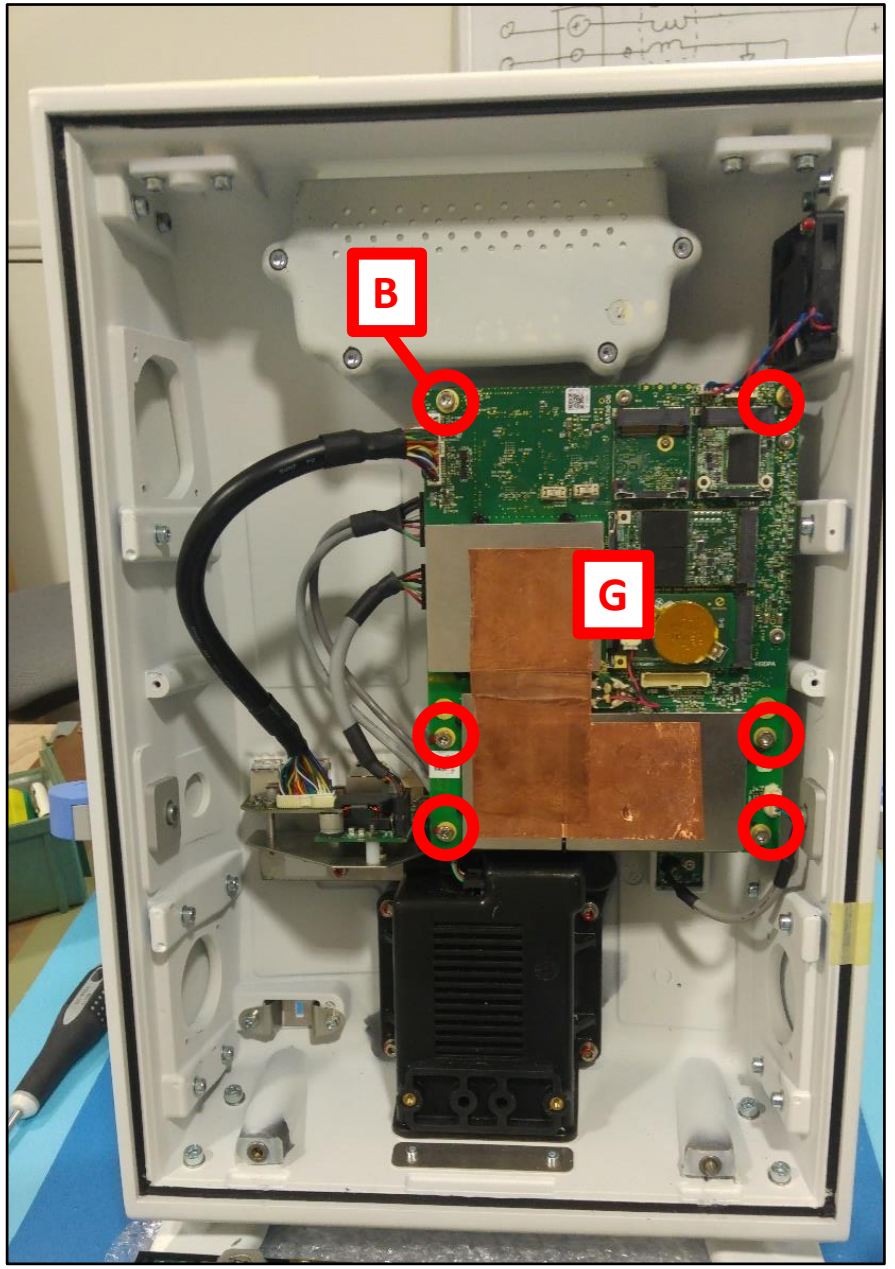
Note the yellow color code.



Step 5

Screw Part G into the device using:
4 original CHC M4x8* screws
and
2 new CHC M4x8 screws from the kit (part B)
Use tool 4&5

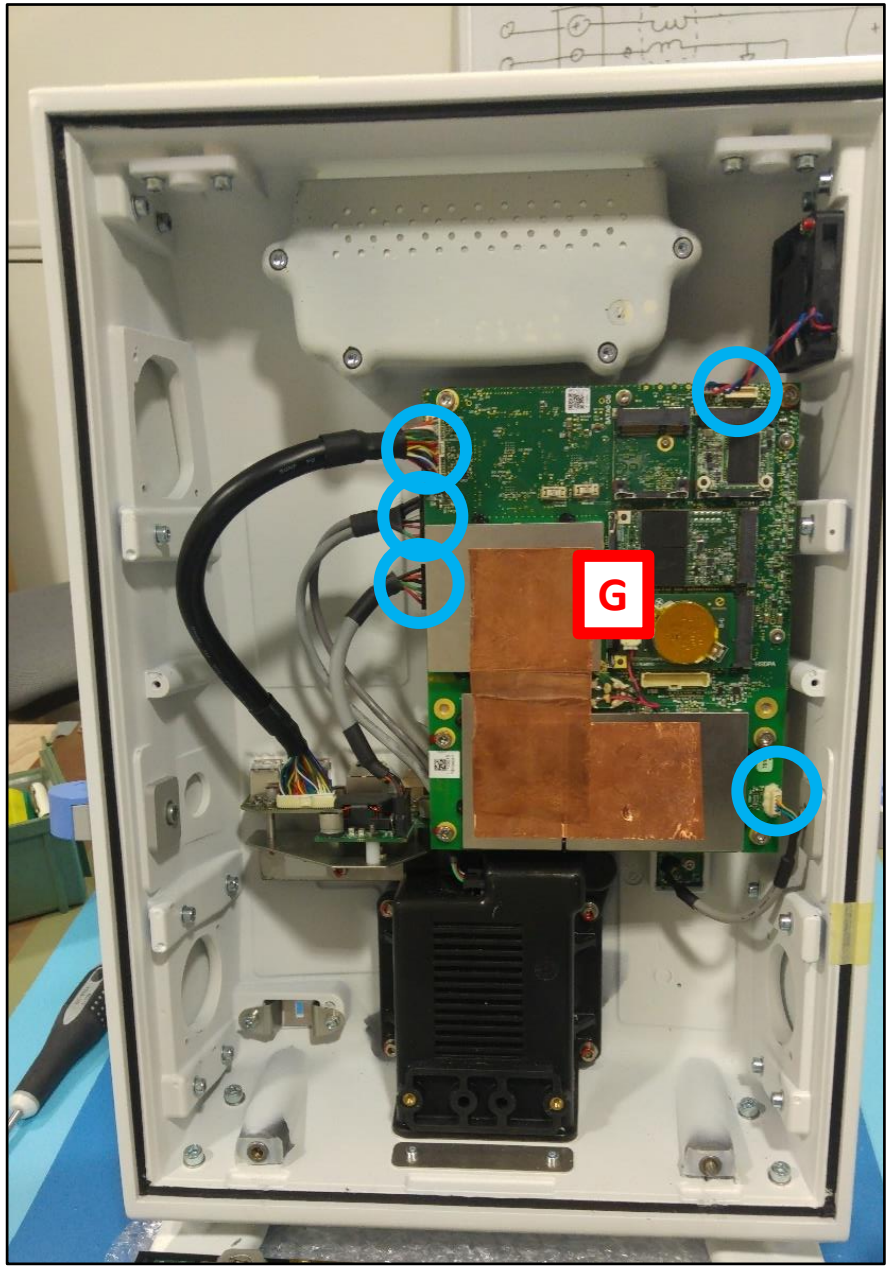
**3 screws come from the kit and one from step 5 of the disassembly process*



Step 6

Reconnect the cables

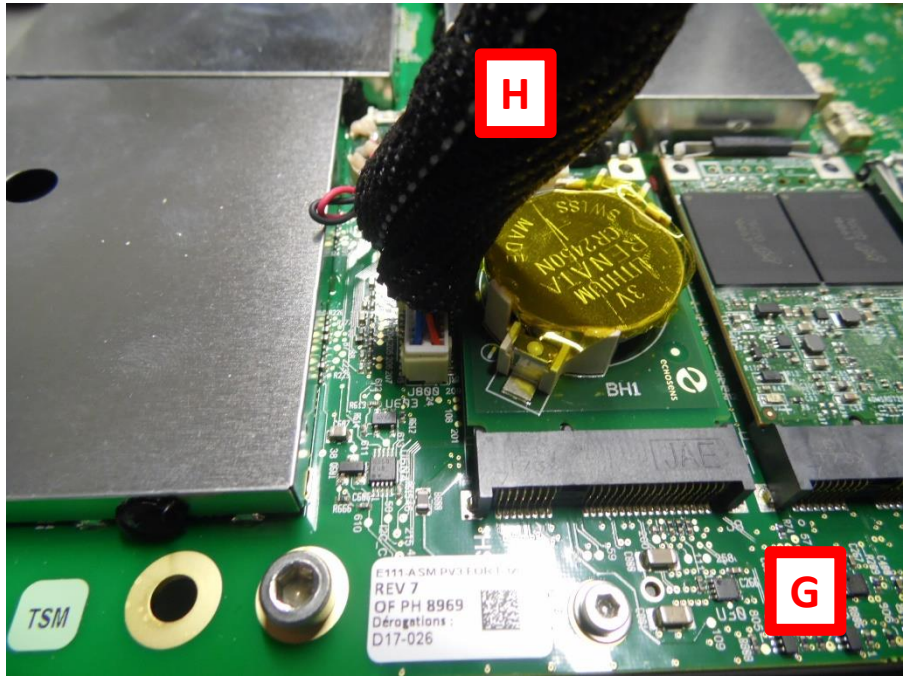
All connectors in blue circles should be connected



Step 7

Connect Part H from the Kit to Part G.

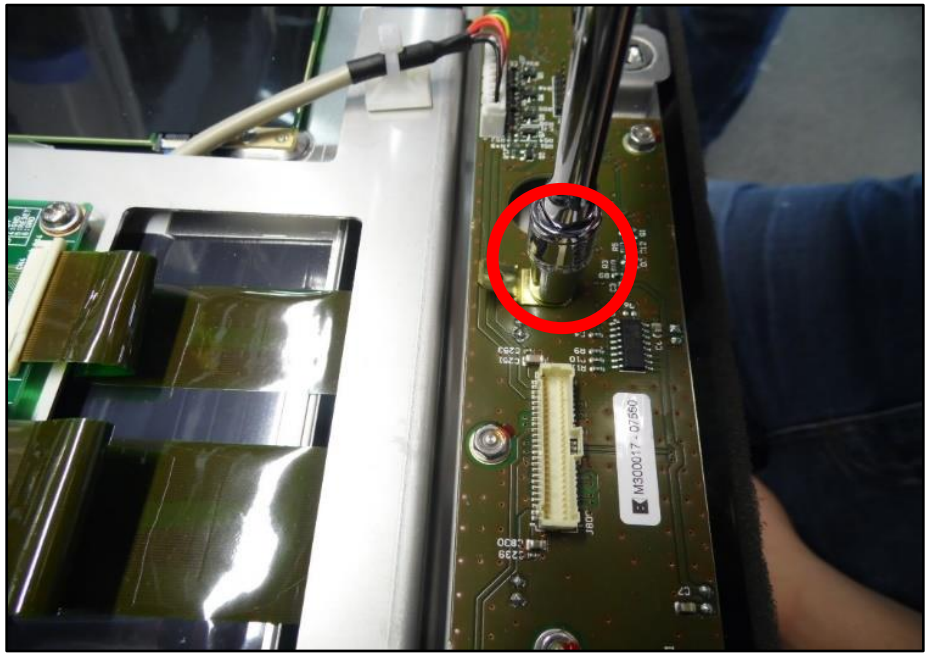
Note: do not use the existing HMI cable. Replaced HMI cable should be sent to Echosens.

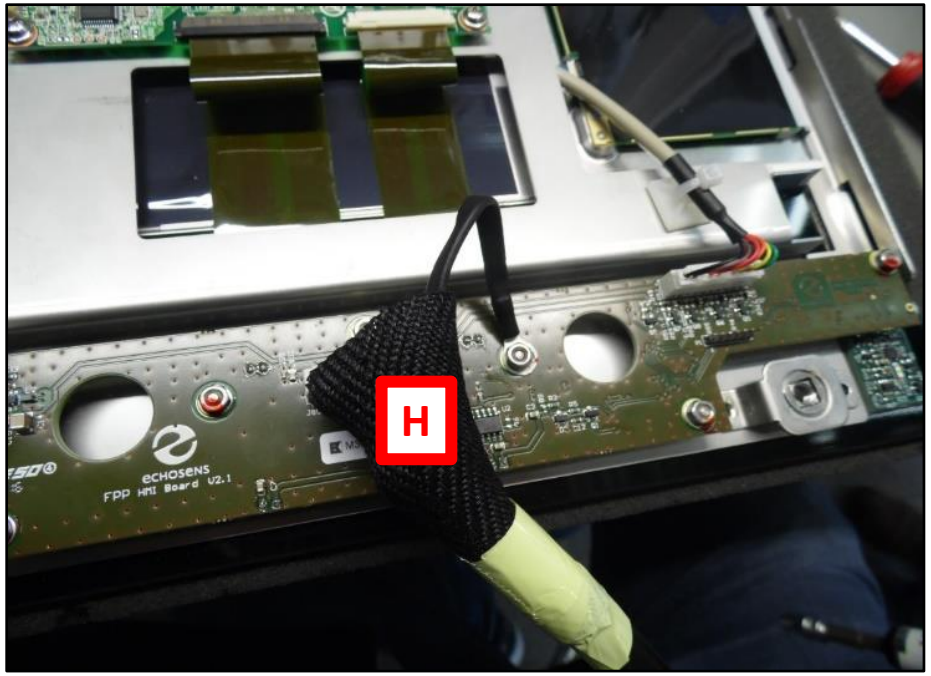


Step 8

Connect Part H to the HMI PCB board
Remove the grounding loop screw from the HMI board
Use tool 3A

Secure the grounding loop of Part H to the HMI PCB board
The torque must be 0.49 N.m
Use tool 4&5



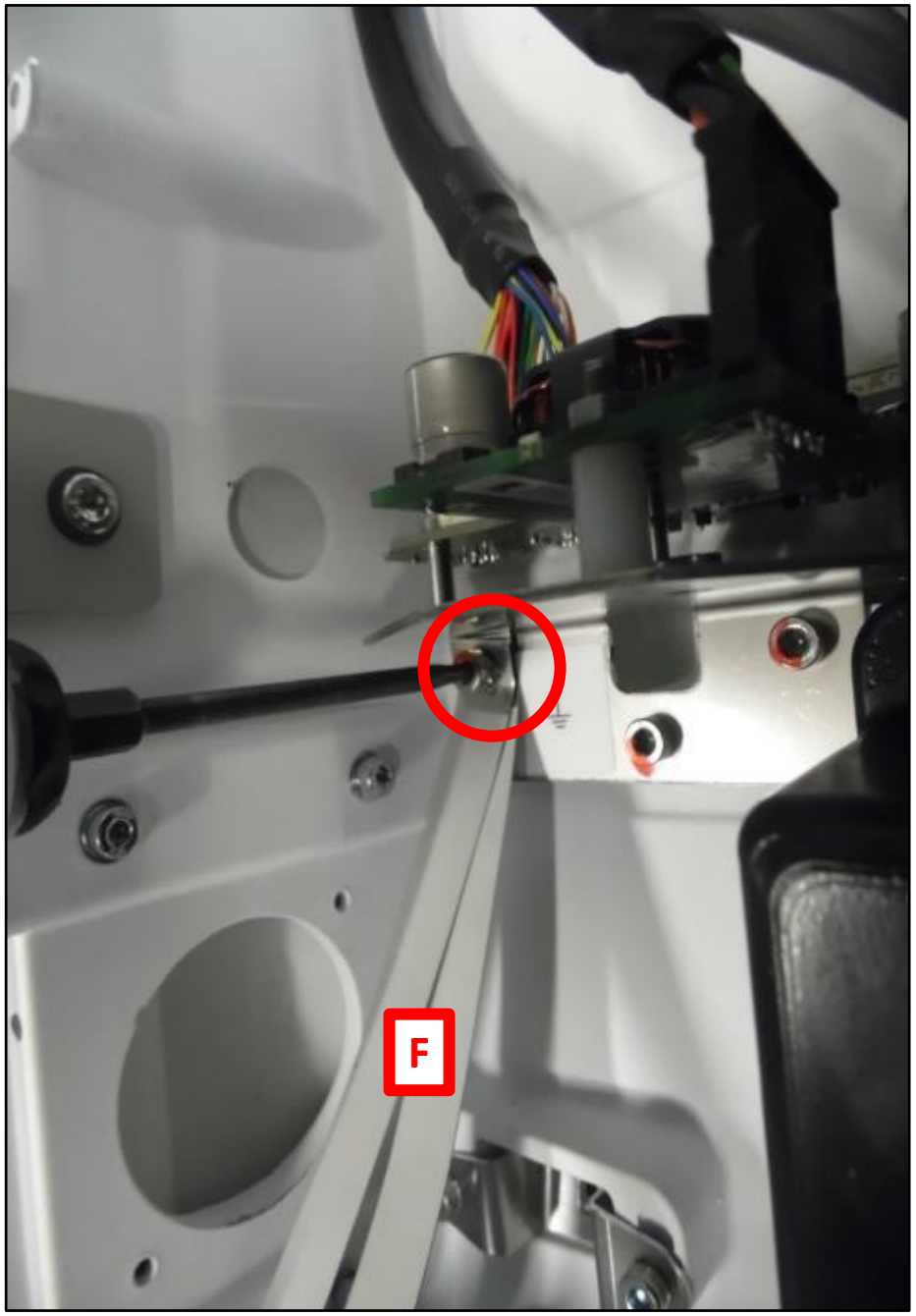


Step 9

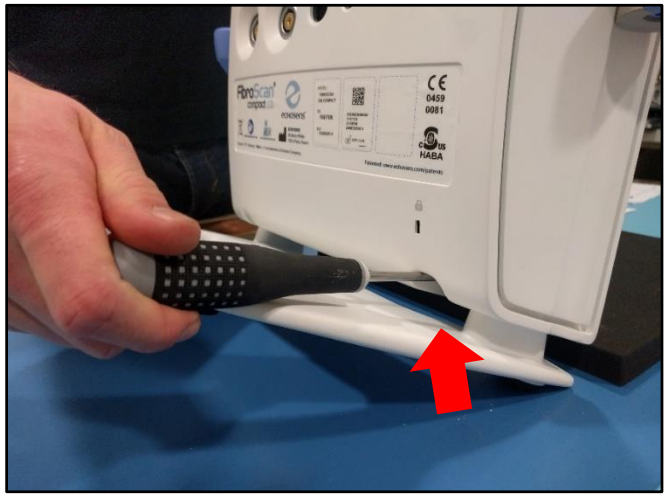
Unscrew the top left screw used to fix the metal square that holds the external connectors PCB board.

Insert the 2 EMC ribbon cables (Part F)

Use tool 2B to remove the screw and tool 4&5 to rescrew it.



Step 10

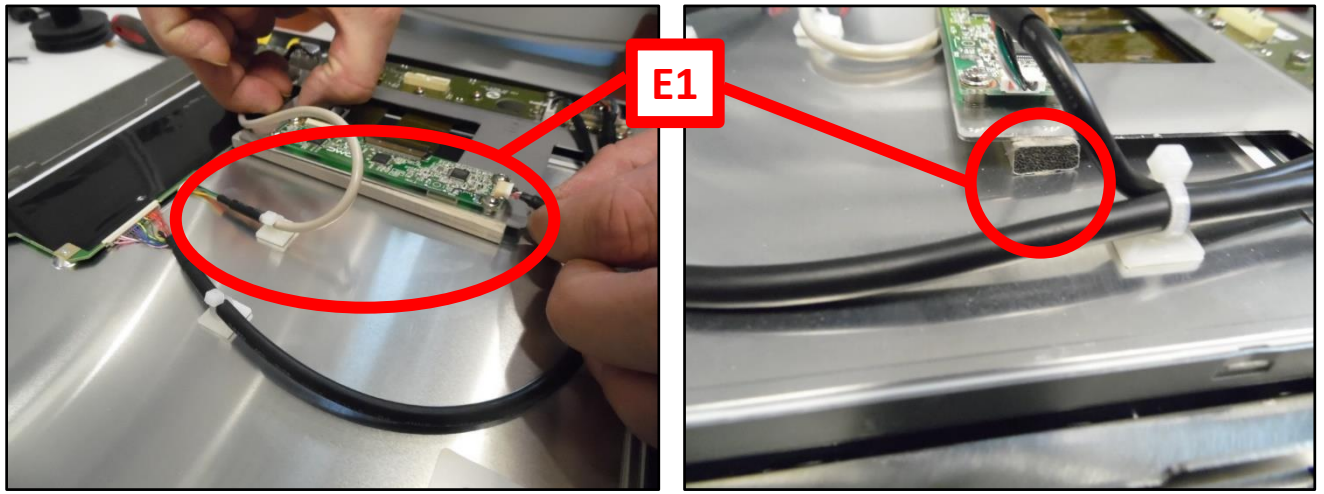


Push with a screwdriver the screw on the right on the back of the device.
Use tool 1

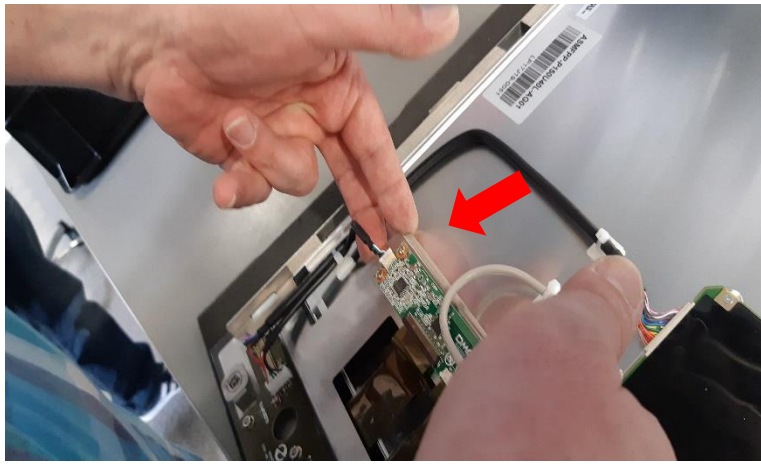
Insert the other side of the EMC ribbon cables on the threading of the backcover right screw

Step 11.1

Remove the white sticker protection from E1, then gently lift TOUCHCTRL board and stick the part E1 underneath (sticker band upward).

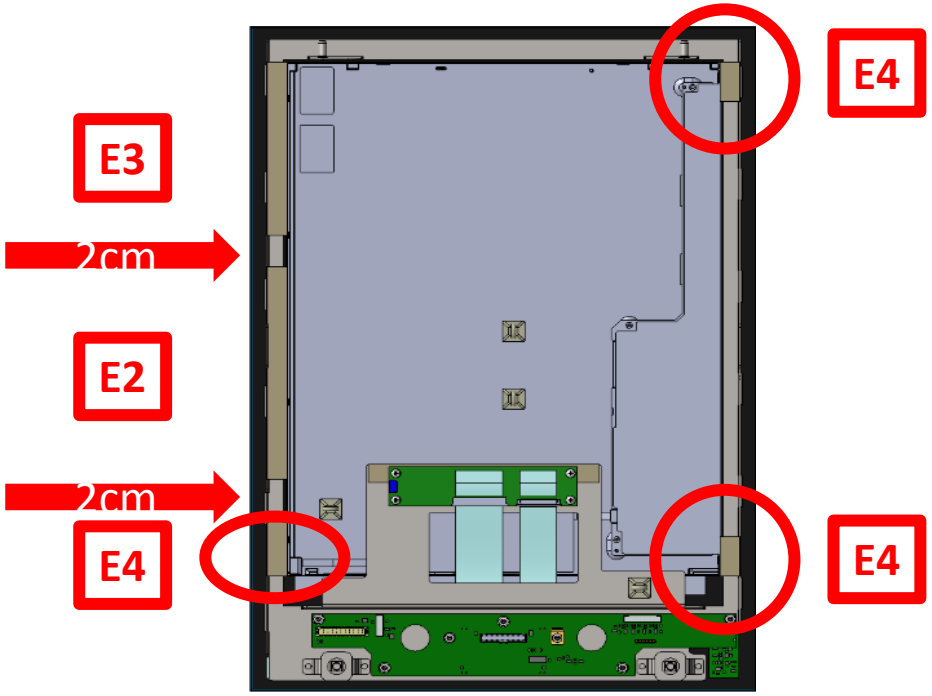


In order not to damage the board, middel fingers will be used to gently lift it and forfingers will be used to slide E1 underneath .



Step 11.2

Remove the white sticker protection and Stick parts E2 and E3 around the LCD as taught in the illustration



Final operations

Close the device , take extra care to have no cable pinched.
Use tool 1.

Upgrade the Software to version 3.2.5(see technical note 57).

Perform a preventive maintenance (follow document QF216.4)

Dissasembled spare parts return

The material taken away will have to be sent to:

ECHOSENS
Service department
5 rue Jean Lemoine
94 000 Creteil