

OWON SDS7102 NEW IMPROVED VERSION

Illustrated Guide, Rev 01JAN2012, for

Disassembly Assembly

This is not complete
and includes only information
for modify construction
to reduce CH1 noise and modify
backside GND pillar.

Note: Owon factory have fixed this CH1 noise problem
soon after improved model production have started. Late
4Q2011 manufactured units have not this problem!

This document is not Owon official
material.

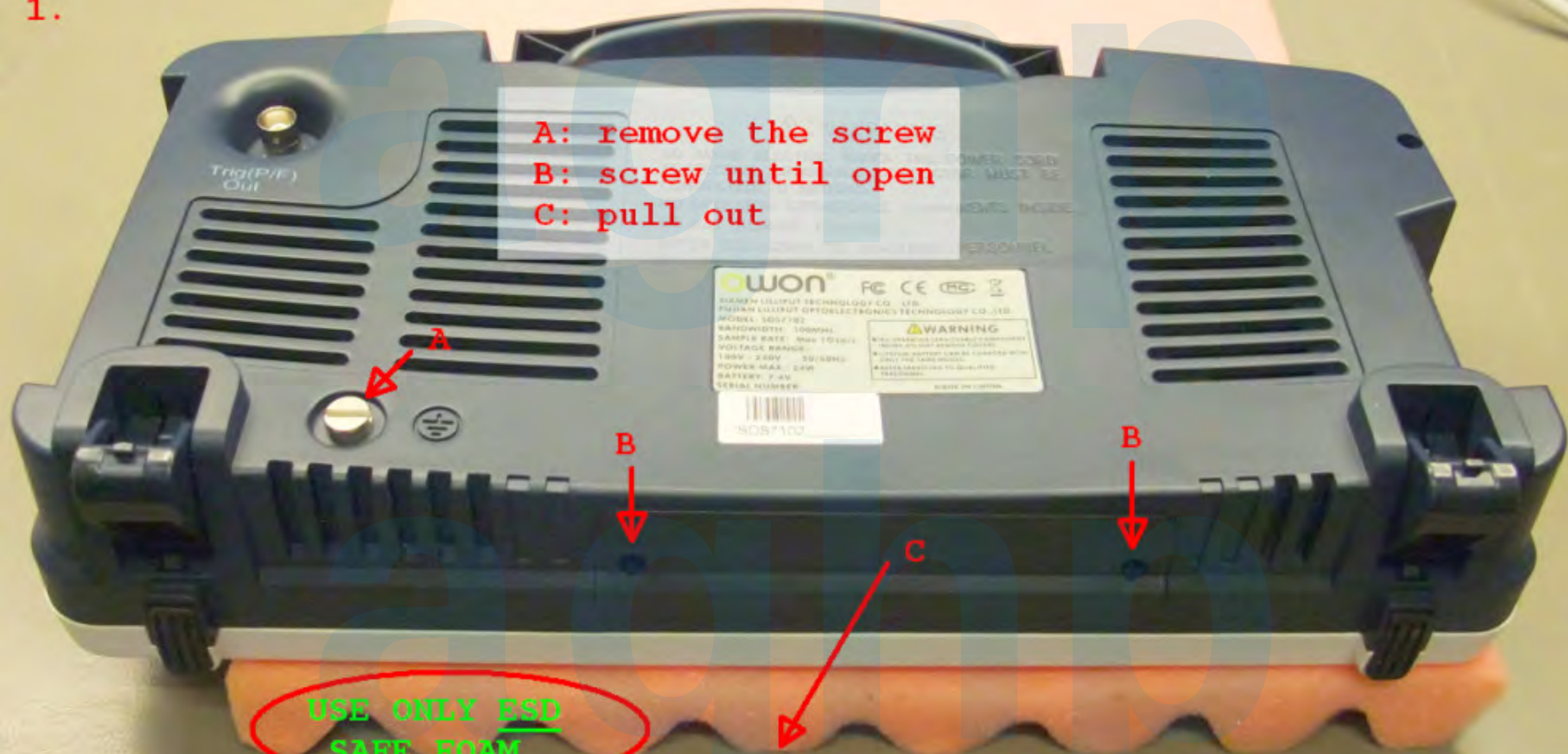
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1.

A: remove the screw
B: screw until open
C: pull out

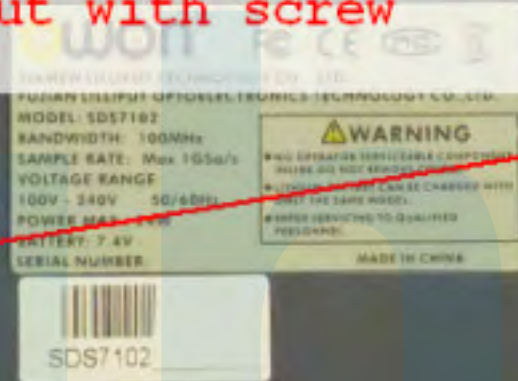
USE ONLY ESD
SAFE FOAM

NOTE: LAB TABLE IS ESD SAFE



2.

- A: remove short screws
B: remove long screws
C: note screws length difference
sides!
D: note every screw have metal
washer, do not loose if they
do not come out with screw



3.



Power button need take off.
First set it OFF (out) position!

Use strong carton to protect button
surface. Carton need be thick and hard enough that
it will protect the surface of button.

Squeeze hard.

Keep oscilloscope with other hand.

Pull out button. Careful, it may be tight!
Pull straight!

Push switch arm inside.
Just like power ON position.



4.



A press inward with your thumb and:

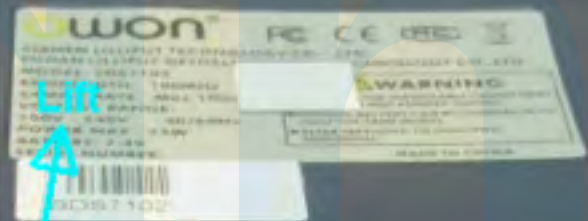
B lift up with your other hand and: watch B.2 and B.1

B.1: 5 - 10mm is enough

C: insert piece of strong carton so that it can not close back again when work other side later

5.

Note C: If A2 is tight then you can use some amount force for drag bacside + lift arrow direction and pressing A2



After A1 is open if A2 is tight

Drag

Note C

A2

A1

first lift A1

2. Press inward A2 and lift using hand inside B this is sometime tight. Note C

1. Press inward A1 lift using hand inside B

5a



6.

Pull out safety ground cable connector OR unscrew A

After wires /connectors opened
move bacside safe place so that
it do not scratch accidentally

Pull out mains power line connector

Protect
scratching

A

Remove 4 screw

Handle carefully
so that FAN
do not damage.
It is weak.



7.

Check connector
is tightly closed
DO NOT OPEN if not
exactly nessessary!

Care this trimmer
when lift up
battery compartment

Press clip and
pull connector out
and move battery compartment
away

Do not push
it is easy
fragile

Take off
plastic
ring

Do not scratch

Do not scratch

8.

② remove screws A

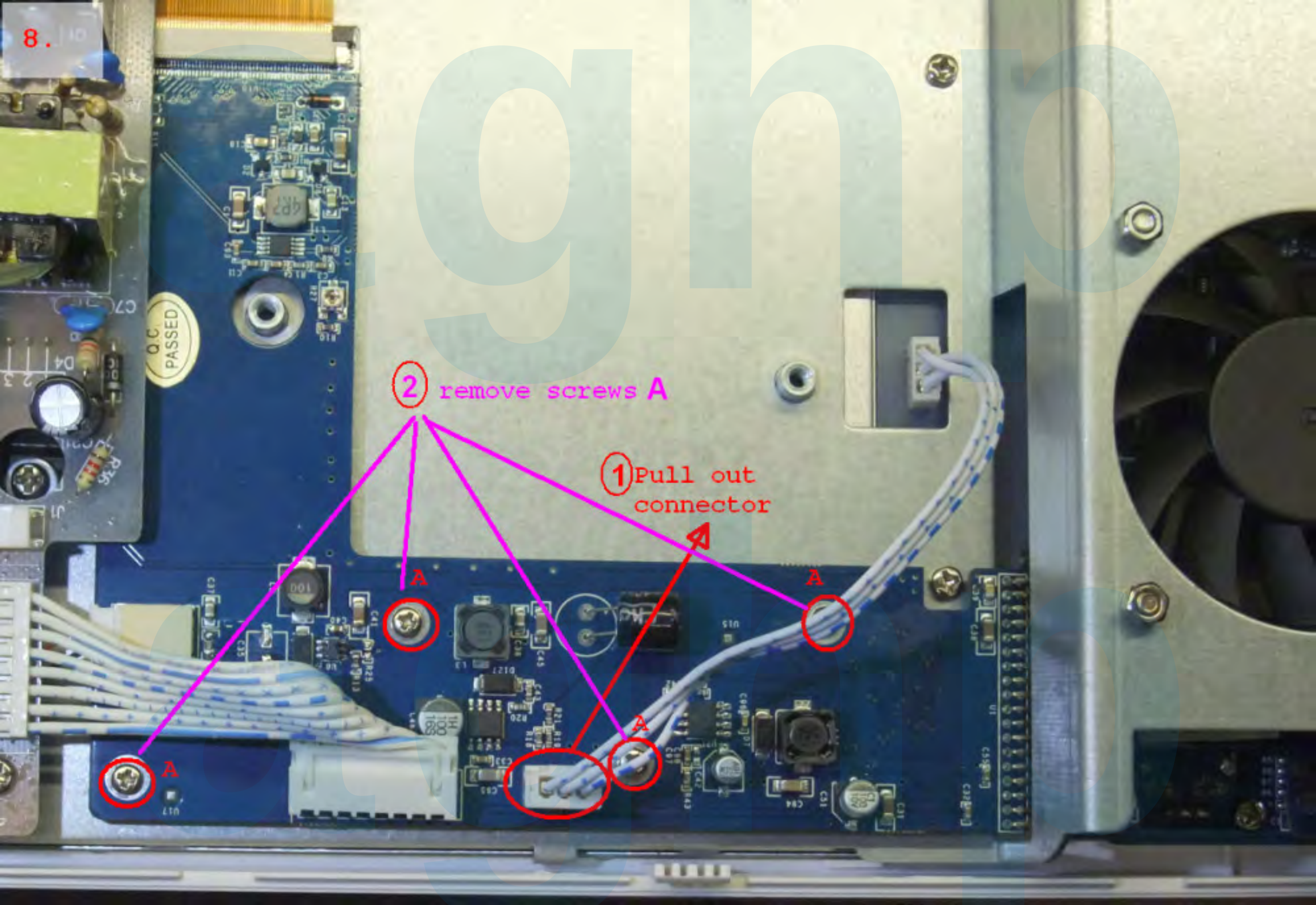
① Pull out connector

A

A

A

A



8. B

a

Move adapter board directly as arrow 1. watch display cable (a) and TFT LED connector (b) and hole (c) it go over screw pillar.

Led connector (b) go just under power board.

Watch main board connector (d) carefully. Just it open then stop. With light force to arrow 1. direction move to arrow 2. direction and lift carefully connector (d) on the Z base plate wall. Carefully that pins do not bend. After this is ok do not push/touch.

c

DO NOT touch. Care this TFT trimmer. also DO NOT adjust. After factory it IS ok until you change it.

Lastly remove 2pcs screws Z

Z

1.

b

2.

d

9.

A
First disconnect
FAN connector

This is Z-plate

All screws Z are removed.

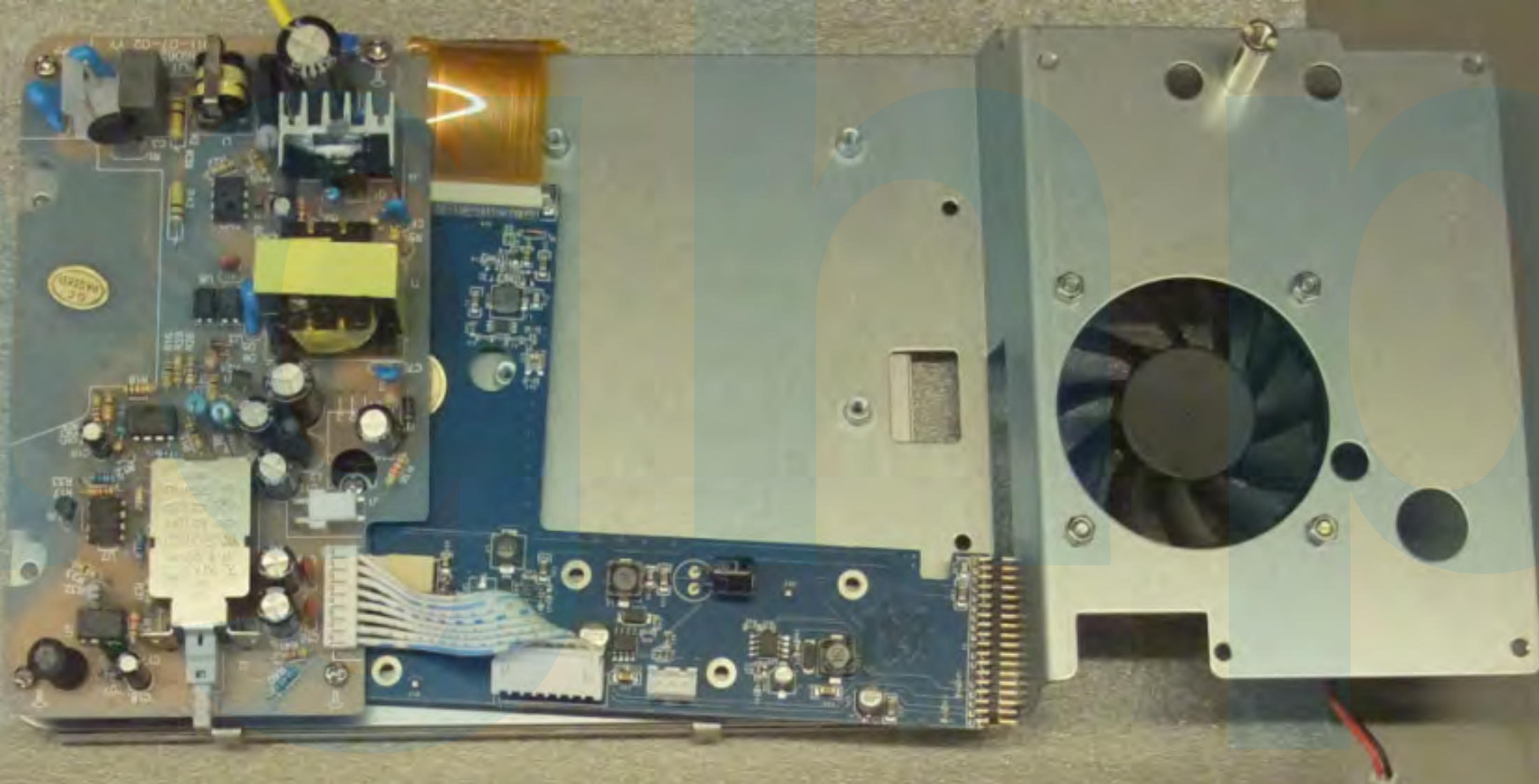
Lastly lift whole Z-base plate
and move it to safe place
face down so TFT protected.

Bend wire so it is straight
up so it can easy pass out
hole when Z base plate lift out

remove if still here
plastic ring



10.



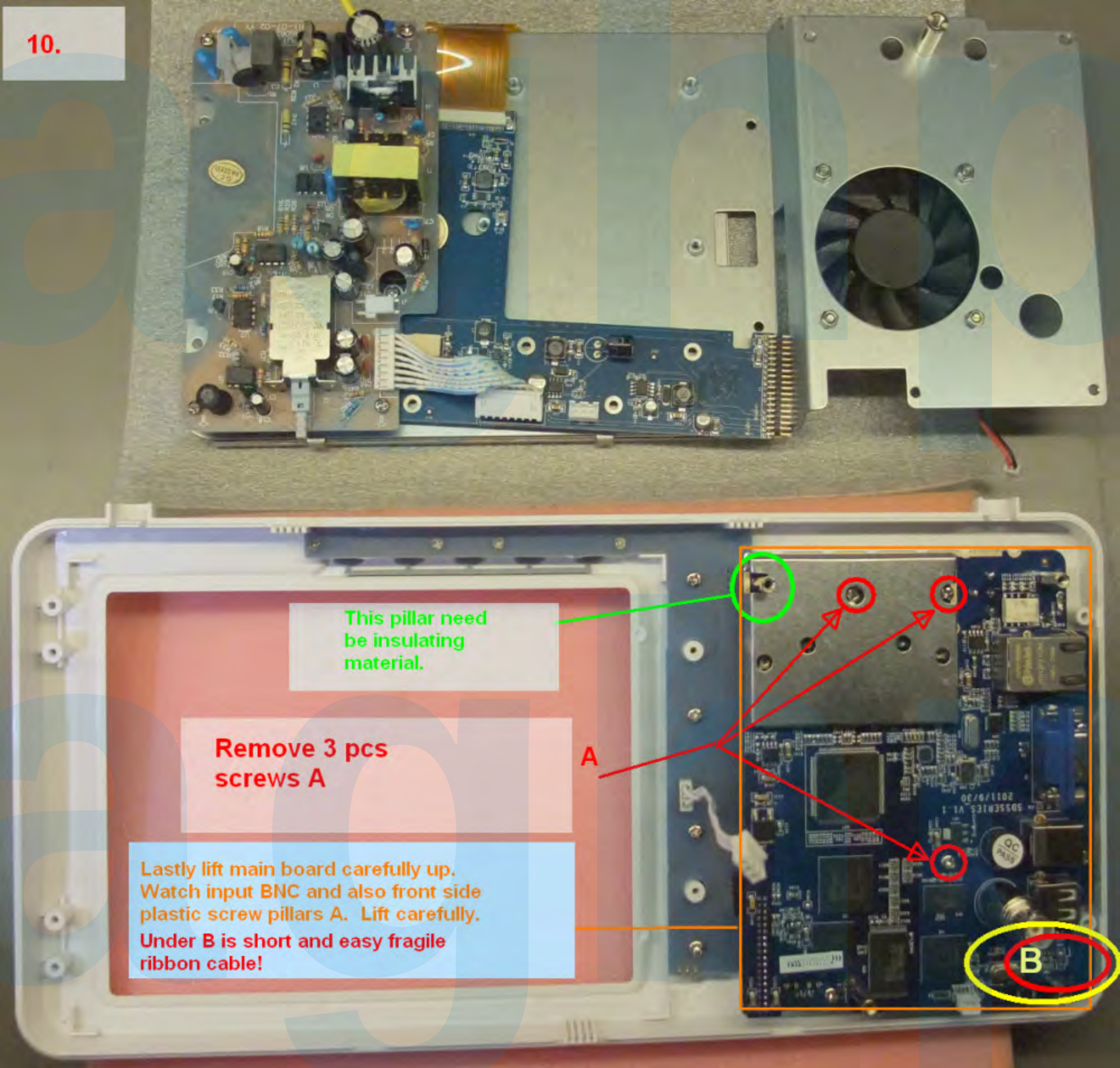
This pillar need
be insulating
material.

Remove 3 pcs
screws A

Lastly lift main board carefully up.
Watch input BNC and also front side
plastic screw pillars A. Lift carefully.
Under B is short and easy fragile
ribbon cable!

A

B



11.

These may be tight if not perfectly positioned

NOTE A

Cut these short if hard
press to RF shield insulator

NOTE A: When assembly back, follow that RF shield do not bend in. There is not room for bend in. It may cause short circuit inside shielding box.

Carefully open connector and disconnect cable.

**Lithium battery (rechargeable!)
DO NOT SHORT CIRCUIT**

12.

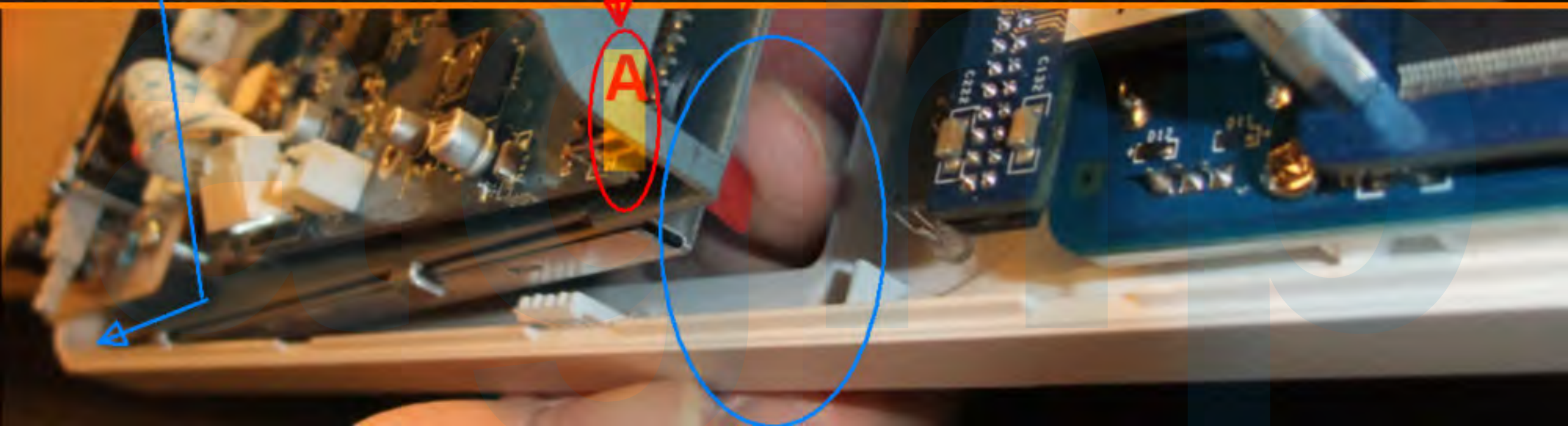
Insert main board and watch carefully RF shield holes and plastic 2 pillars match and RF shield do not bend! Assemble red marked 3 screw and tighten appropriately. Take whole Z-plate with TFT to hand and insert as picture. Care TFT surface. **A:** care that connector pins do not bend when handling!

IF assemble with TFT protective film you need help underside with finger

Table border

15-20mm
for finger

A



13.

Watch

Care

Check tightening

3: carefully and perfectly assemble connector. Do NOT bend pins!

Watch

 Care

5. Check tightening

5.

4.

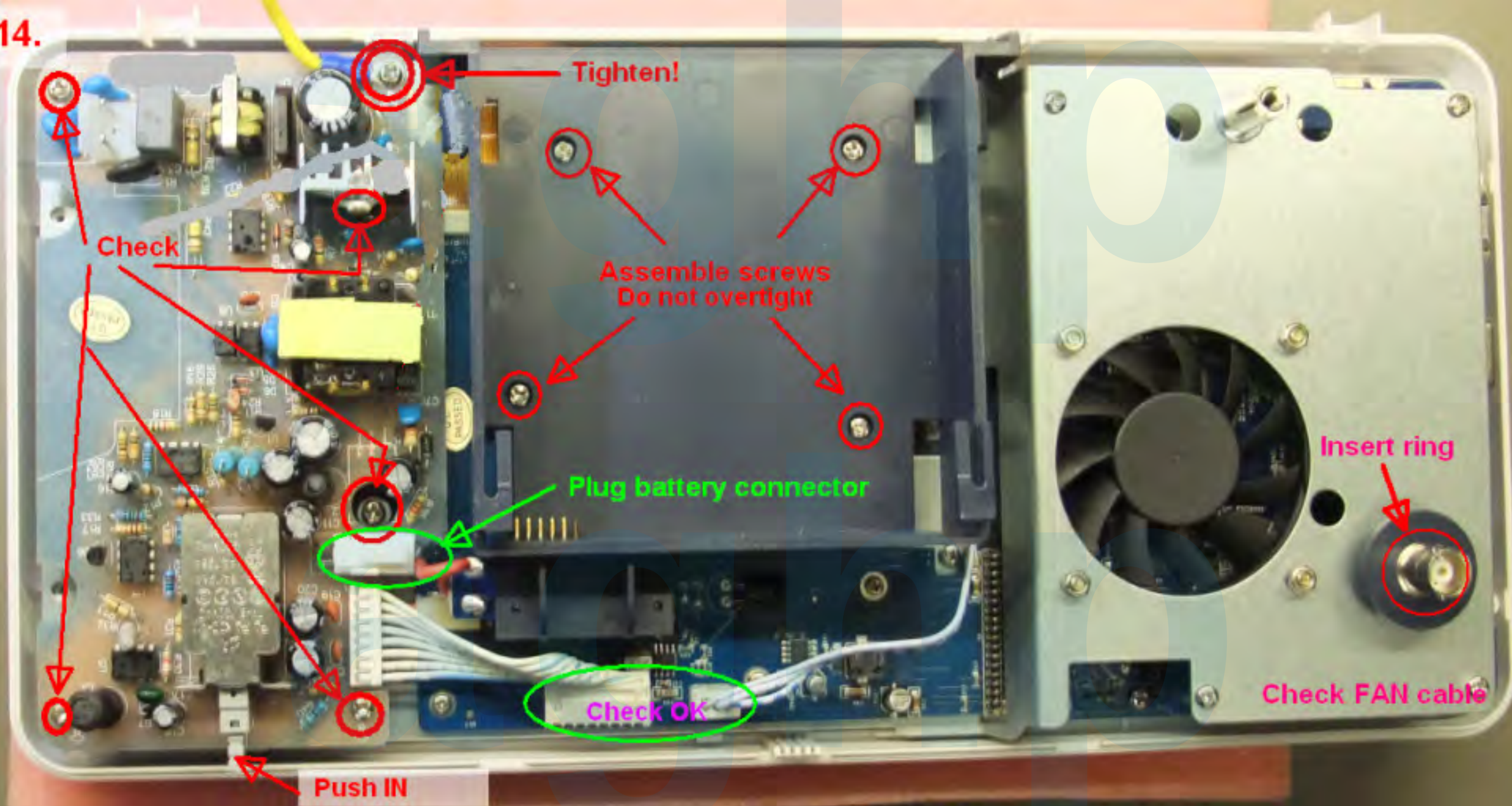
4.

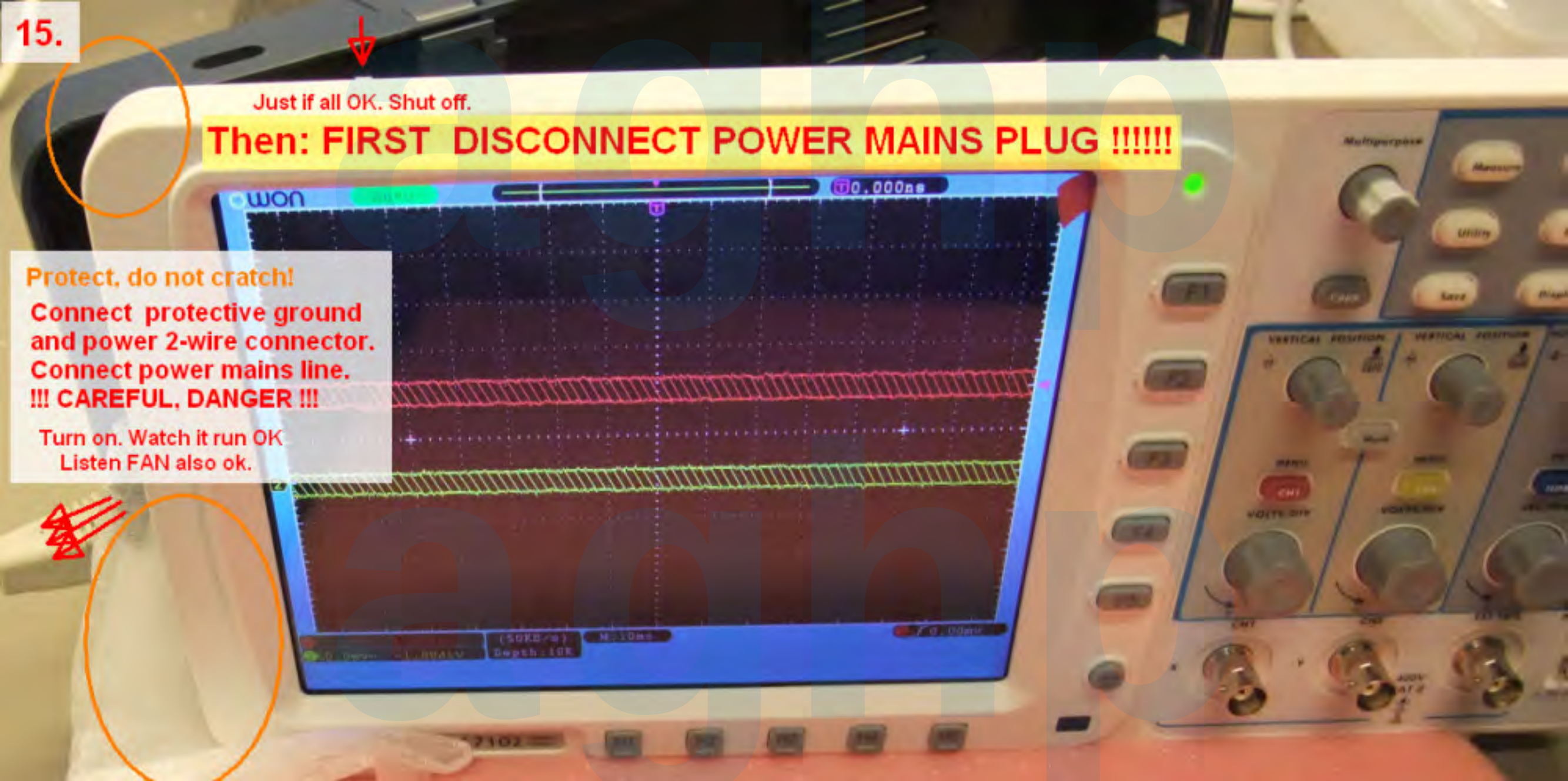
4.

3.

3: carefully and perfectly assemble connector. Do NOT bend pins!

14.





15.

Just if all OK. Shut off.

Then: FIRST DISCONNECT POWER MAINS PLUG !!!!!

Protect, do not cratch!

**Connect protective ground
and power 2-wire connector.
Connect power mains line.
!!! CAREFUL, DANGER !!!**

Turn on. Watch it run OK
Listen FAN also ok.

16.

Push down wathing and adjusting rubber feets and GND pillar.
Help GND by mowing.

Bend cables so they do not go over these

After perfectly closed assemble 4 screws.
Same order (screw lenght) as disassembly.
Finally insert battery or empty box.
Put also GND screw to its place. Check TFT protective film ok
and red strip is ok outside. Clean and look no scratches.
Do final test and selfcal.

CH1 noise upgrade

1.

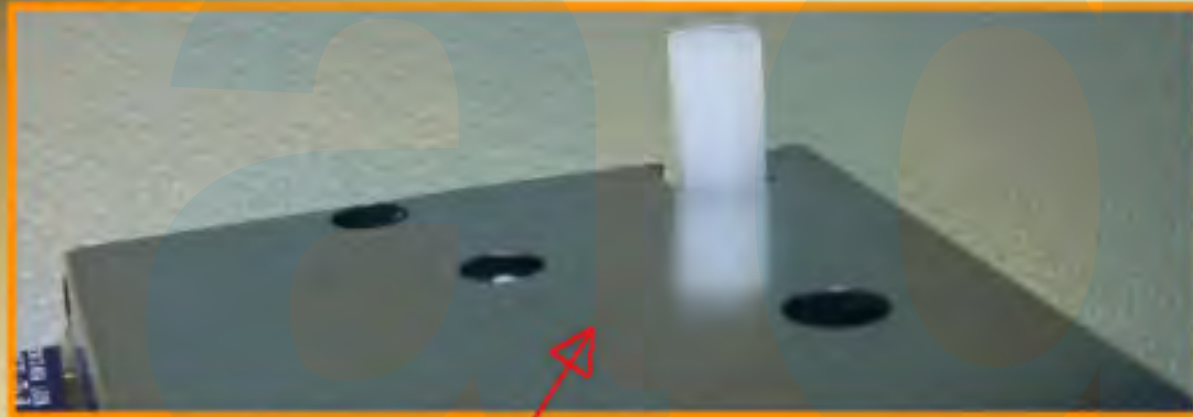
SDS series new main board with also new front-end construction need small change. Metal pillari connect Z-plate noise to CH1 sensitive area and it can see as rised noise level in CH1. Solution is simple. Change metal pillar to Nylon pillar. Nylon pillar lenght (a) is exactly 14.9 - 15.0 mm.

If need, you can adjust slightly RF shield hole for better match with nylon pillar. Nylon pillar is littlebit more thick.

IF RF shield need solder rework you need extremely good solder iron. Example Metcal or equivalent. GND traces drain lot of heating power but temperature must not be too high! Too high temperature damage permanently main board!

(Normal original assembly order is pillars first then RF shield.)

Important note: Do NOT add more solder points to RF shields!



New nylon pillar assembled, back side

4.



2.

Removed old metal pillar and nut.

Assemble new nylon pillar.



New nylon pillar original 1st version

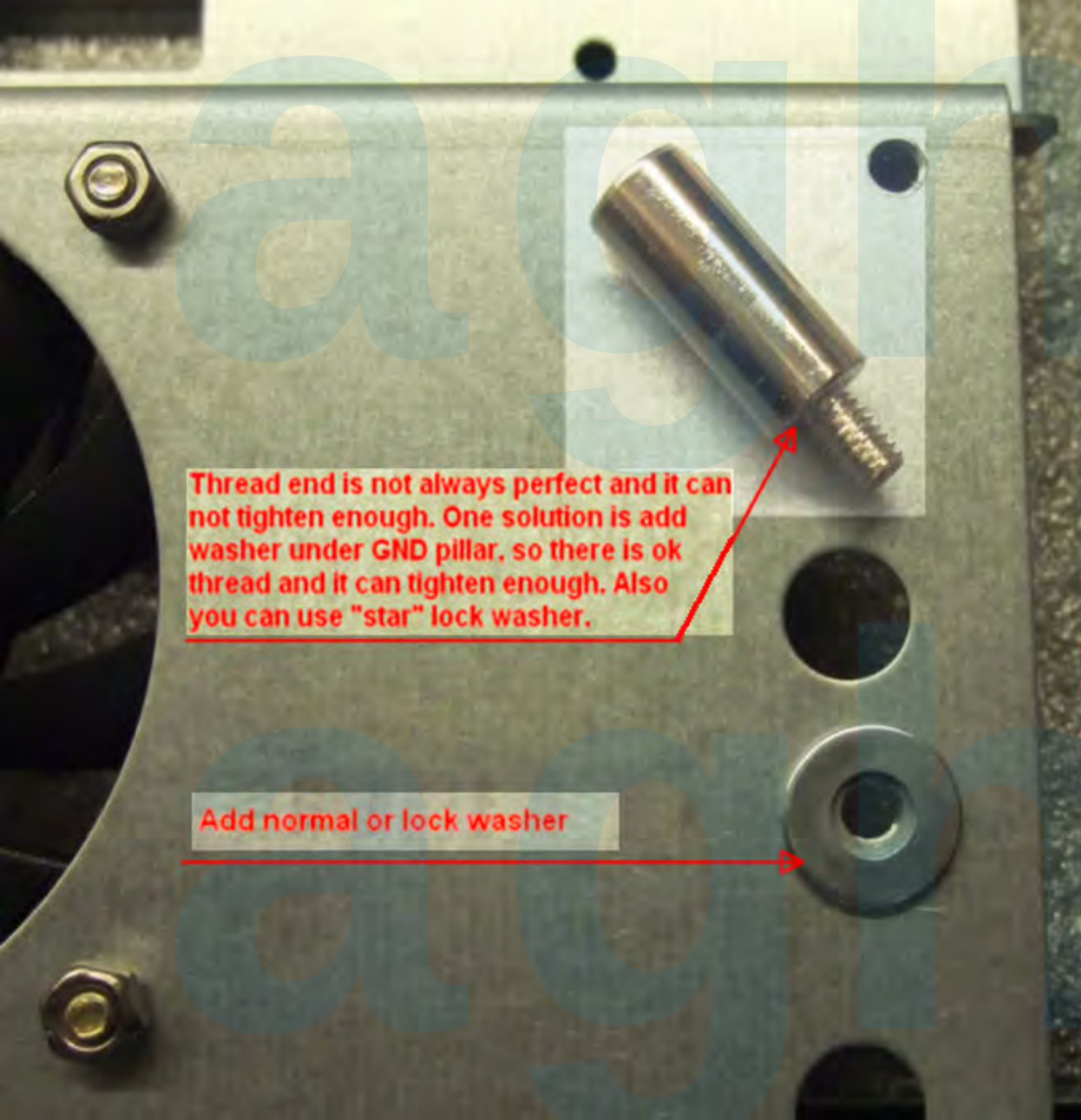
New nylon pillar assembled, front side



a



3.



Thread end is not always perfect and it can not tighten enough. One solution is add washer under GND pillar, so there is ok thread and it can tighten enough. Also you can use "star" lock washer.

Add normal or lock washer

If add 3 mm nut then no need washer but there can add locking washer under nut.

washer under pillar

If GND pillar can not tighten enough there can add 3 mm nut. Lock it with glue so it never can loose and drop.

Front panel

Re assembly: assemble red marked screws but leave loose. Then install all rotating knobs and test every knob turn softly and free without contacting sides. If need fine adjust board position. Tighten some screws and check carefully. After all ok, tighten but not too tight. If tighten too much plastic pillars threads may damage.

Cut wires short if need

Removing front panel: 1: Remove all turning knobs using same method as on/off switch knob. Hard rubber under pliers may be better. Pull straight, they may be tight!
2: Remove red marked screws.
3: Pull board carefully out. Note connector! X

Check cable is perfectly installed

SDS-KEY-V2.0
2011.09.05