Printing the case

I'm not a 3D printing expert at all, in this document I just show how it worked for me.

Print area

The required print area is 240mm x 210mm.

Material

Standard PLA

Slicer

PrusaSlicer 2.5.1

Parts Table

Case IN-12 Version					
Part	Profile	Supports	Ironing	Fill Angle	Sanding
Nixie Calculator Case IN-12 Union Tube.stl	0.2 QUALITY	no	no	45	no
Nixie Calculator Case IN-12 Back Shield.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case IN-12 Bottom.stl	0.2 QUALITY	no	no	0	no
Nixie Calculator Case IN-12 Bracket.stl	0.2 QUALITY	no	no	45	no
Nixie Calculator Case IN-12 Display Front Left.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case IN-12 Display Front Right.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case IN-12 Display Left.stl	0.2 QUALITY	no	no	0	no
Nixie Calculator Case IN-12 Display Right.stl	0.2 QUALITY	no	no	0	no
Nixie Calculator Case IN-12 Extended Keyboard Cover.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case IN-12 Front Panel.stl	0.2 QUALITY	no	no	0	yes
Nixie Calculator Case IN-12 Front.stl	0.1 DETAIL	no	no	0	yes
Nixie Calculator Case IN-12 LED Board Spacers.stl	0.2 QUALITY	no	no	45	no
Nixie Calculator Case IN-12 Left.stl	0.2 QUALITY	no	no	0	yes
Nixie Calculator Case IN-12 Right.stl	0.2 QUALITY	no	no	0	yes
Nixie Calculator Case IN-12 Top.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case IN-12 Tube Holder.stl	0.2 QUALITY	no	no	45	no

Case IN-16 Version					
Part	Profile	Supports	Ironing	Fill Angle	Sanding
Nixie Calculator Case Top.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case Back Shield.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case Bottom.stl	0.2 QUALITY	no	no	0	no
Nixie Calculator Case Extended Keyboard Cover.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case Front.stl	0.1 DETAIL	no	no	0	yes
Nixie Calculator Case IN-16 Left.stl	0.2 QUALITY	no	no	0	yes
Nixie Calculator Case IN-16 Right.stl	0.2 QUALITY	no	no	0	yes
Nixie Calculator Case IN-16 LED Board Spacers.stl (for underlighting only)	0.2 QUALITY	no	no	45	no

Case IN-17 Version					
Part	Profile	Supports	Ironing	Fill Angle	Sanding
Nixie Calculator Case Top.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case Back Shield.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case Bottom.stl	0.2 QUALITY	no	no	0	no
Nixie Calculator Case Extended Keyboard Cover.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case Front.stl	0.1 DETAIL	no	no	0	yes
Nixie Calculator Case IN-17 Left.stl	0.2 QUALITY	no	no	0	yes
Nixie Calculator Case IN-17 Right.stl	0.2 QUALITY	no	no	0	yes
Nixie Calculator Case IN-17 Front Panel Top.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case IN-17 Front Panel Bottom.stl	0.2 QUALITY	no	yes	45	yes

Case B-5870 Version					
Part	Profile	Supports	Ironing	Fill Angle	Sanding
Nixie Calculator Case Top.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case Back Shield.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case Bottom.stl	0.2 QUALITY	no	no	0	no
Nixie Calculator Case Extended Keyboard Cover.stl	0.2 QUALITY	no	yes	45	yes
Nixie Calculator Case Front.stl	0.1 DETAIL	no	no	0	yes
Nixie Calculator Case IN-16 Left.stl	0.2 QUALITY	no	no	0	yes
Nixie Calculator Case IN-16 Right.stl	0.2 QUALITY	no	no	0	yes
Nixie Calculator Case B-5870 Socket Cover.stl (use black PLA)	0.2 QUALITY	no	no	45	no

Case Peripherals					
Part	Profile	Supports	Ironing	Fill Angle	Sanding
Nixie_Calculator_Peripherals_Part_1.stl	0.2 QUALITY	yes	no	45	no
Nixie_Calculator_Peripherals_Part_2.stl	0.2 QUALITY	yes	yes	45	yes
Nixie_Calculator_Peripherals_Part_3.stl	0.2 QUALITY	no	no	0	yes

Ironing

PrusaSlicer has a feature called ironing. I used ironing for some parts to get a nicer surface finish. I used these settings:

On my 3D printer, in order to prevent nozzle clogging after ironing, I have to insert some G-code (red lines) to increase the temperature and advance some filament before the cooling phase starts. **Use this code at your own risk.**

```
...
...
...
G1 Z4 F720 ; Move print head up
G1 X0 Y200 F3600 ; park
G1 Z52 F720 ; Move print head further up
G4 ; wait
; -----------------------------------------------
; avoid clogging after ironing
M104 S250 ; set extruder temp to 250°C
M109 S250 ; wait for extruder temp
G91 ; use relative coordinates
G1 E50 F160 ; advance filament 50mm at 160mm/min
; -----------------------------------------------
M221 S100 ; reset flow
M900 K0 ; reset LA
M907 E538 ; reset extruder motor current
...
...
...
```

Sanding

I used the following sanding steps:

- 80-grit
- 120-grit
- 180-grit wet sanding
- 240-grit wet sanding

If I have to sand a printed part, I normally use light color PLA like light gray. If I must use dark color PLA, after sanding, I polish the part with a vegetable oil. This will roughly bring back the original color.