//This OpenSCAD model uses MCAD functions

use<MCAD/boxes.scad>

use<MCAD/nuts\_and\_bolts.scad>

//parameters

length = 150;

width = 150;

heigth = 20;

roundness = 20;

hole\_width = 130;

hole\_length = 130;

hole\_level = 3;

hole\_tolerance = 1;

ring\_hole = 20;

module board()//lauta kuorien välissä

{

difference()

{

union()

{

roundedBox([width, length, heigth],roundness, true);

translate([width/2,length/2,0])

ring();

}

difference(){

cube([hole\_width+hole\_tolerance,hole\_length+hole\_tolerance, heigth+2], center=true);

translate([hole\_width/2-25,-30,2.5])

radio\_hold();

}

translate([width/2,-30,1])//antennin reikää

rotate([0,90,0])

cylinder(d=11.5,h =width-hole\_width+5, center = true);

translate([-74, 50, -3])

rotate([90,0,-90])

linear\_extrude(height = 2, center = false,convexity = 10)

text("Consair V2", size =9);

switch();

on\_off();

screen();

charger();

usb();

}

difference()

{

union()

{

translate([0,0,-heigth/2+hole\_level])

cube([hole\_width+hole\_tolerance,hole\_length+hole\_tolerance,6],center=true);

translate([-61.5,-40,-2])

cube([25,19,4],center=true);

}

translate([width/2,-30,1])

{//antennin reikää

;

rotate([0,90,0])

cylinder(d=11.5,h =width-hole\_width+10, center = true);

}

for(x = [hole\_width/2-6,-hole\_width/2+6])//ruuvin reiät

for(y = [hole\_length/2-6,-hole\_length/2+6])

translate([x,y,-30])

cylinder(r=2.4, h = 50,$fn=15);

charger();

scale([1,1,1.1]){

translate([-97/2+8,72/2+10,-6])

#nutHole(3, units=MM, tolerance = +0.05, proj = -1);

translate([-97/2+8+85,72/2+10,-6])

#nutHole(3, units=MM, tolerance = +0.05, proj = -1);

}

}

}

//x=-97/2+8

//y=20+72/2-10

module ring()

{

rotate\_extrude()

translate([ring\_hole,0])

scale([0.9,1.])

union()

{

circle(d = heigth);

translate([heigth/4,0])

square([heigth/2,heigth], center=true);

}

}

module shell()

{

rotate([0,0,45])

difference()

{

cylinder(r1=hole\_width\*0.5/sin(45), r2=80,h = 45.35, $fn = 4);

translate([0,0,-4])

difference()

{

cylinder(r1=hole\_width\*0.5/sin(45)-4,r2=80-4,h = 45.35, $fn = 4);

rotate([0,0,45])

for(x = [hole\_width/2-6,-hole\_width/2+6])

for(y = [hole\_length/2-6,-hole\_length/2+6])

translate([x,y,0])

{

cylinder(r=6, h = 40);

}

}

rotate([0,0,45])

for(x = [hole\_width/2-6,-hole\_width/2+6])

for(y = [hole\_length/2-6,-hole\_length/2+6])

translate([x,y,10])

{ translate([0,0,-30])

cylinder(r=2.4, h = 50,$fn=15);

cylinder(r=4.8, h = 40);

}

}

}

module shell\_up()

{

shell();

translate([0,0,-hole\_level-4])

difference()

{

cube([hole\_width,hole\_length,heigth-3-3], center = true);

cube([hole\_width-8,hole\_length-8,heigth-4], center=true);

translate([width/2,-30,-2])//antennin reikää

{

rotate([0,90,0])

cylinder(d=11.5,h =width-hole\_width+10, center = true);

translate([-10,0,-5])

cube([11.5,11.5,11.5], center=true);

}

translate([0,5,-3.8])

scale([1,1,1.2])

switch();

translate([0,hole\_width/2+6,0])

scale([1,2,2])

screen();

}

translate([0,0,31.05])

difference()

{ cube([109,109,4],center=true);

translate([0,0,-0.6])

cube([100,95,3], center = true);//akku, voi olla myös 117\*96

for(y=[51,-51])

translate([0,y,-2.05])

scale([1,1,1.1])

nutHole(3, units=MM, tolerance = +0.05, proj = -1);

}

}

module shell\_down()

{

difference()

{ union()

{

shell();

translate([-25,-25,22.7])

rotate([90,0,45])

minkowski()

{

cube([42,41.5,92],center=true);

sphere(r=2,$fn=10);

}

intersection()

{

translate([-25,-25,22.7])

rotate([90,0,45])

cube([44,44.5,150],center=true);

rotate([0,0,45])

cylinder(r1=hole\_width\*0.5/sin(45), r2=80,h = 45, $fn = 4);

}

}

translate([-50,-0,20])

rotate([90,0,45])

cube([40.5,44,11],center=true);

wind\_tunnel();

translate([-25,-25,12.5])

rotate([90,0,45])

cube([46.5,25,50],center=true);

}

toisto = 7;//ritilän siivekkeiden lukumäärä + 1,

rotate([0,90,-45])

{

for(x=[42,-49])

translate([-22,-35,x])

for(h = [1:toisto-1])

{

translate([0,-18 + h\*36/toisto, 3])

cube([40, 1.8,3], center = true);

}

}

}

module switch()

{

translate([30,-68,2])

union()

{

cube([18,7.5,10.7], center=true);//liukukytkin, kytkin itsessään tarvitsee n. 10\*4 kolon ja on n.5mm korkea

translate([0,-6.2,0,])

cube([10,5,4], center=true);

}

}

module digifan()

{

cube([35.5,46,20.5], center = true);

translate([20,-7,2.5])

cube([10,16,5],center=true);

digifan\_in();

digifan\_out();

}

module digifan\_in()

{

color("Blue")

translate([-18,8.5,5.8])

cube([15,9,4], center=true);

}

module digifan\_out()

{

color("Blue")

translate([17.5,12.8,0])

rotate([0,90,0])

cylinder(r = 9.5,h = 2 );

translate([17.5,4.5,8])

rotate([0,90,0])

cylinder(d= 3.9,h = 1.2,$fn=10 );

}

module radio\_hold()

{ rotate([0,0,-90])

translate([-2,0,0])

difference()

{

cube([22,40,13], center=true);

cube([15.6,46,16], center=true);

translate([0,0,5])

union(){

cube([17,46,1.5],center=true);

translate([2,19,-5.5])

{

cube([7,7,10],center=true);

translate([0,3,-1.5])

rotate([-90,0,0])

cylinder(d=6, h=10);

}

}

}

}

module screen()

{

translate([-30,-hole\_width/2-1.95,2])

rotate([0,0,90])

union()//näyttö

{

cube([3,39,12], center = true);

translate([-2.3,-3.9,0])

cube([10,33,13.5], center=true);

translate([-3.1,-3.9,0])

cube([10,31,11.5], center=true);

translate([2.8,17.9,0])

cube([12,3,10], center=true);

}

}

module on\_off()

{ translate([39,-74.55,2])

{

cube([1,1,6], center = true);

translate([-20,0,0])

rotate([90,0,0])

difference()

{

cylinder(r=4,h = 1,center = true);

cylinder(r=3,h = 2,center = true);

}

}

}

module wind\_tunnel()

translate([-25,-25,20])

{ rotate([90,0,45])

cylinder(r=19, h=190,center=true);

}

module sensor\_hold()

{

intersection()

{

translate([-25,-25,12.7])

rotate([90,0,45])

cube([46.5,25,49.6],center=true);

difference()

{

translate([-25,-25,22.7])

rotate([90,0,45])

minkowski()

{

cube([42,41.5,92],center=true);

sphere(r=2,$fn=10);

}

wind\_tunnel();

translate([-10,-10,15.1])

rotate([180,0,-45])

#digifan();

for(h1=[15,17.5,20,22.5])

translate([-25,5,h1])

rotate([90,0,-45])

cylinder(d=1.5,h=10,center=true,$fn=10);

}

}

translate([-3,-3,2.45])

rotate([0,0,45])

cube([26.2,15,4.5],center=true);

translate([8.35,8.35,7.70])

rotate([0,0,45])

cube([6,15,15],center=true);

}

module charger()

{ translate([-61.5,-40,0])

{

cube([23.88,17.67,4],center=true);

translate([-9,0,0.5])

cube([10,9,4],center=true);

}

}

module usb()

{ translate([-74.8,-52,0])

rotate([0,-90,0])

scale([0.1,0.1,1])

linear\_extrude(height = 1.1, center = true, convexity = 10)

import (file = "usb.dxf", layer = "Taso\_2");

}

\*usb();

\*sensor\_hold();

\*wind\_tunnel();

\*charger();

board();

// rotate([180,0,0])

translate([0,0,heigth/2-hole\_level+3])

\*shell\_up();

difference()

{

rotate([180,0,0])

translate([0,0,10])

shell\_down();

translate([55,0,0])

#cube([50,20,50],center=true);

}

\*ring();

translate([0,0,50])

\*cube([100,95,3], center = true);//akku, voi olla myös 117\*96

\*cube([16,30,1],center=true);//anturiboard, n.2mm tyhjää pitkästä reunasta,komponentit n 4mm korkeita

\*cube([16.5,45,1],center=true);//radio 1, 0,5mm reunaa, antennikuutio n. 10mm korkea pinnasta,

\*cube([16.5,41,1],center=true);//radio 2, 0,5mm reunaa, antennikuutio n. 9.5mm korkea pinnasta,

\*radio\_hold();

\*difference()

{ hull()

{

//cube([8,103,2.3],center=true);

for(y=[51,-51])

translate([-0,y,-0])

scale([1,0.65,1])

cylinder(d=8, h = 2.3,center=true, $fn=50);

}

#for(y=[51,-51])

translate([0,y,-0])

cylinder(d=3.3, h = 8,center=true, $fn=20);

}

//0,203527815468114

//17,67232021709634mm

//23,88602442333786mm

\*intersection()

{ $fa=2;

//cylinder(r1=80, r2=40, h=50,$fn=4);

scale([1,1,0.4])

sphere(d=200);

cube([180,200,55], center=true);

cylinder(h=55,d=196,center=true);

}

translate([0,20,0])

\*cube([97,72,3],center=true);

//x=-97/2+8

//y=20+72/2-10