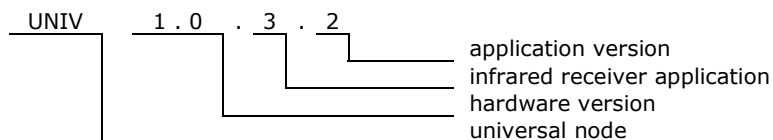


## 1. Features:

- The infrared receiver of universal remote controller
- Maximum transmission distance 35m
- Uses IR receiver TSOP4838
- Operation voltage 10-24V
- Current consumption from bus 15mA
- For back box mounting
- Types of received codes and operating of module depend on firmware uploaded into it.



## 2. Application version



## 3. Technical data

### Bus side

Parameter	Symbol	Value	Unit
Power supply voltage	$U_s$	10-24V	V
Current consumption	$I_s$	15	mA

### Receiver side

Parameter	Symbol	Value	Unit
Maximum transmission distance	$d$	$\leq 35$	m
Half range angle	$\phi_{1/2}$	$\pm 45$	$^\circ$
Maximum length of TSOP4838 connection	$l$	15	m

4. Hardware  
4.1. Schematics

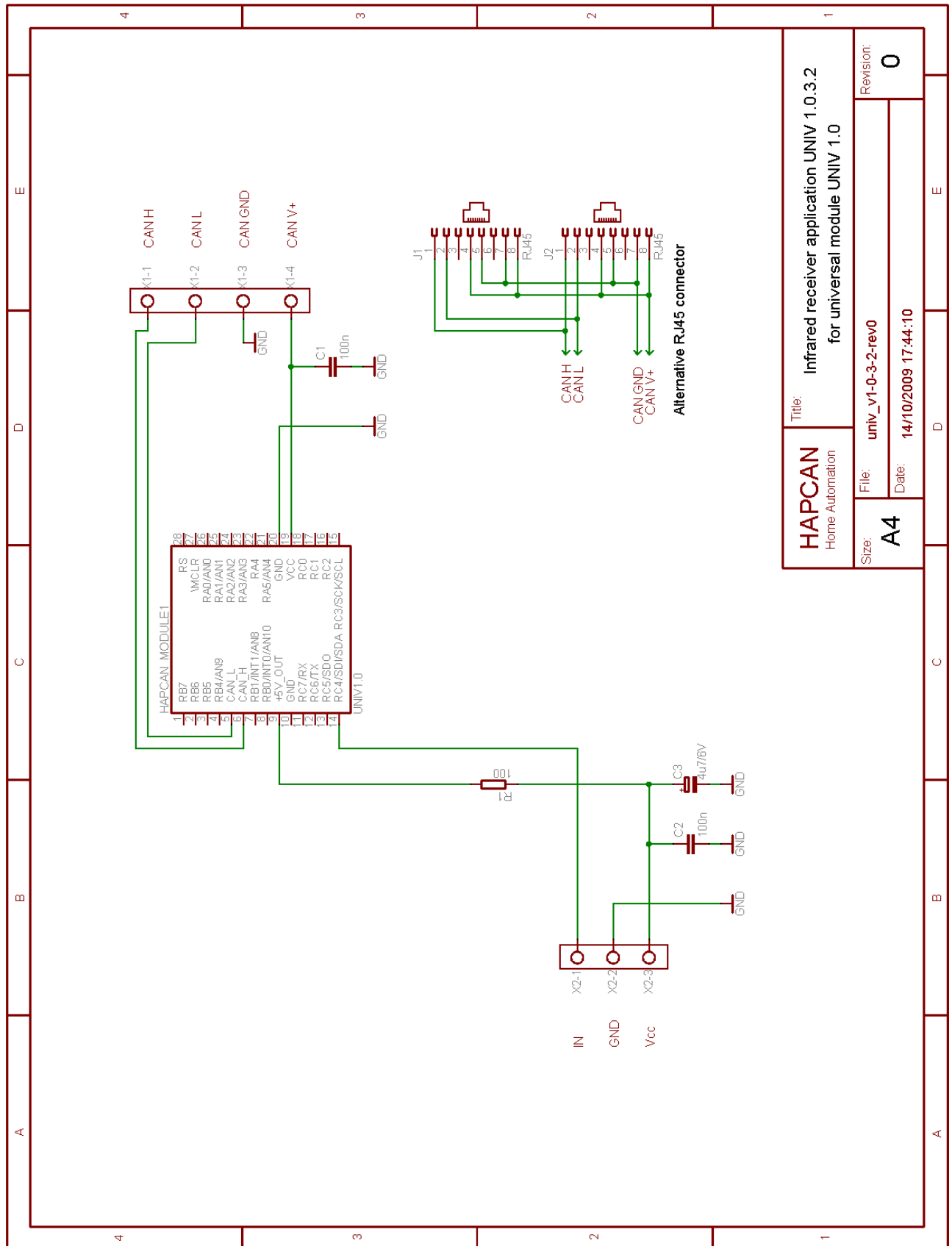
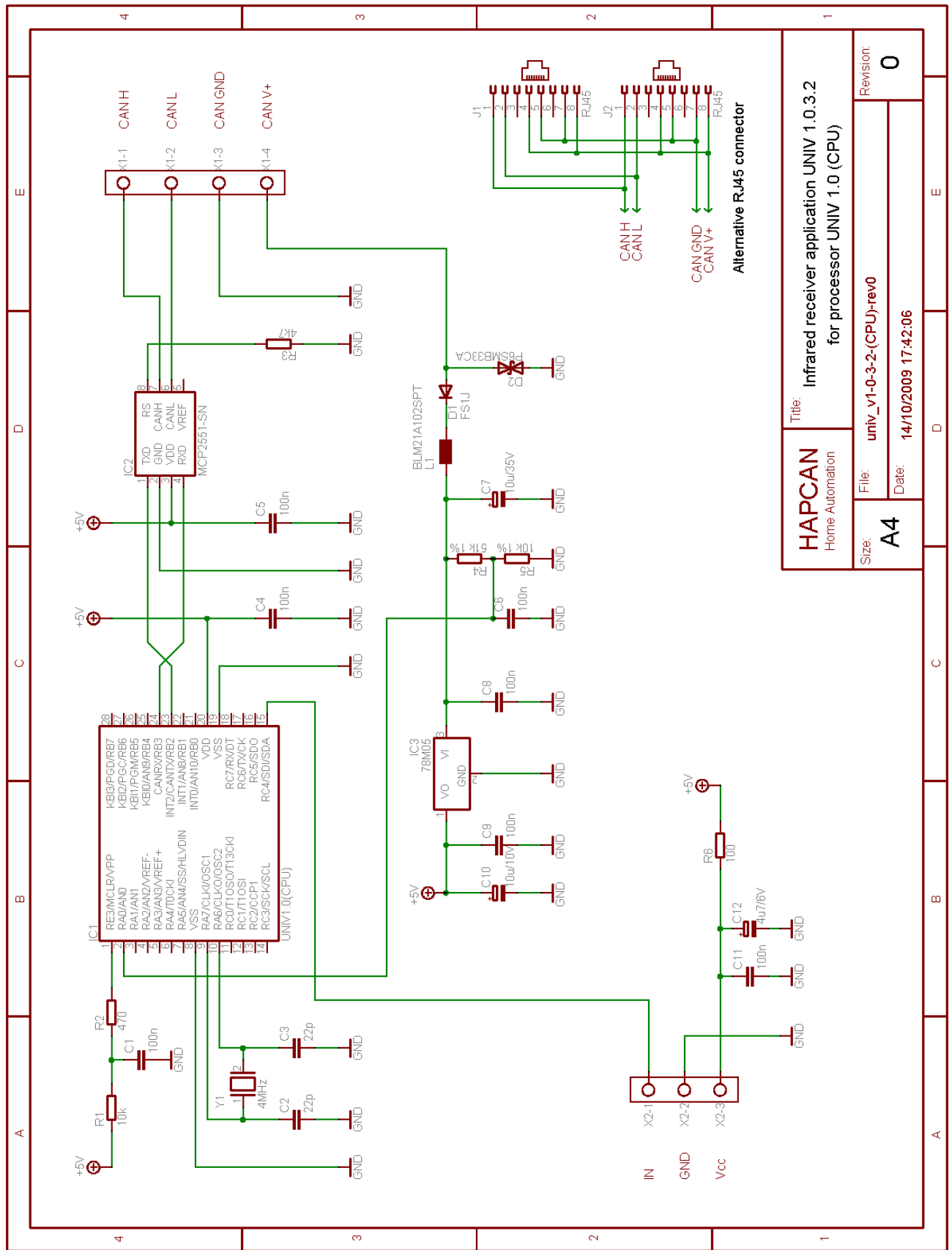


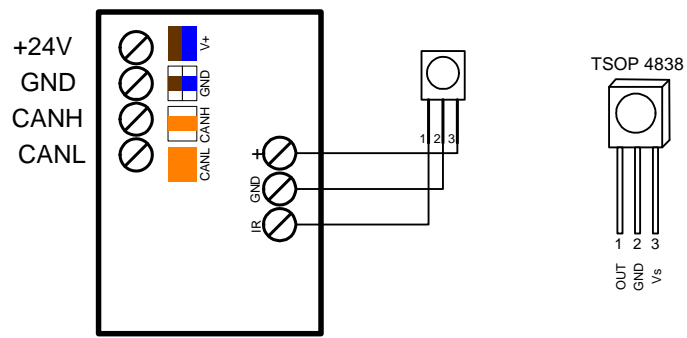
Figure 1. Schematic of infrared receiver application for universal module UNIV 1.0



<b>HAPCAN</b> Home Automation		Title: Infrared receiver application UNIV 1.0.3.2 for processor UNIV 1.0 (CPU)	
Size: <b>A4</b>	File: univ_v1-0-3-2-(CPU)-rev0	Revision: <b>0</b>	
	Date: 14/10/2009 17:42:06		

Figure 2. Schematic of infrared receiver application for processor UNIV 1.0 (CPU).

4.2. Wiring

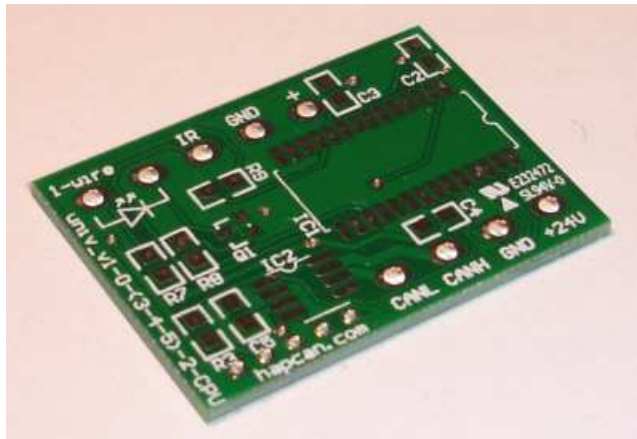


**HAPCAN Bus wiring**  
 white-orange - **CAN H**  
 orange - **CAN L**  
 blue - **V+**  
 white-blue - **GND**  
 white-brown - **GND**  
 brown - **V+**

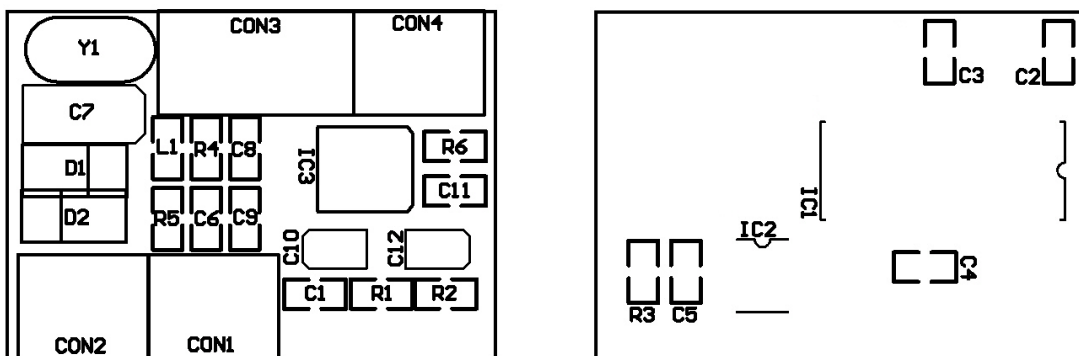
Figure 3. Wiring diagram

4.3. Printed Circuit Board

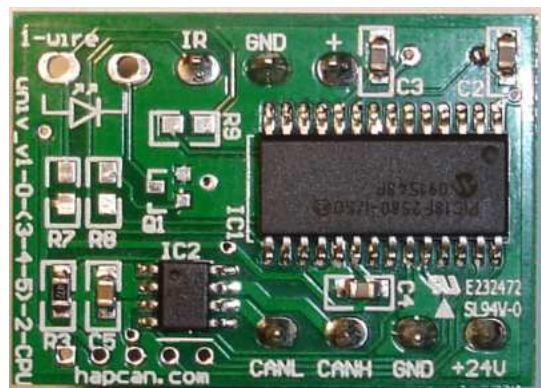
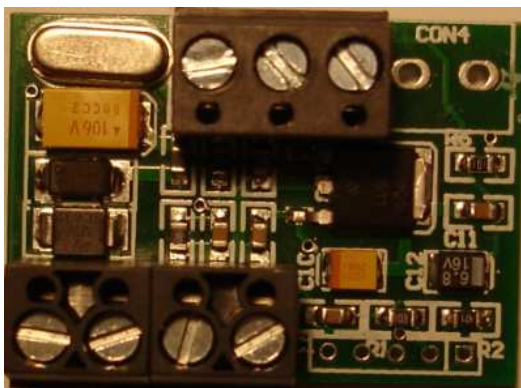
- Printed circuit board for infrared receiver application UNIV 1.0.3.2 with use of processor UNIV 1.0 (CPU)
- PCB dimensions: 38mm x 27mm



4.3.1. Assembly schematic



4.3.2. Assembled PCB



4.3.3. Components

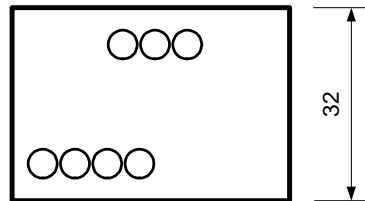
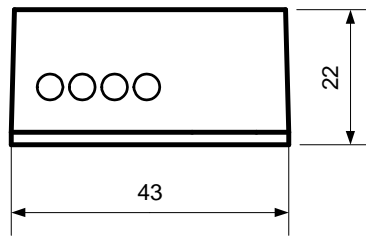
Designator	Type	Footprint	Description
C1, C4, C5, C6, C8, C9, C11	100nF	0805	Capacitor
C2, C3	22pF	0805	Capacitor
C7	10uF/35V	SME	Electrolytic Capacitor
C10	10uF/16V	SMB	Electrolytic Capacitor
C12	4.7uF/6V	SMB	Electrolytic Capacitor
R1	10k	0805	Resistor
R2	470 Ohm	0805	Resistor
R3	4k7	0805	Resistor
R4	51k 1%	0805	Resistor
R5	10k 1%	0805	Resistor
R6	100 Ohm	0805	Resistor
L1	BLM21A102SPT	0805	Choke
Y1	4MHz	HC49-S	Quartz crystal
D1	FS1J	DO-214	Diode
D2	P6SMB33CA	DO-214	Transil diode
IC1	UNIV 1.0 (CPU)	SOIC-28	Processor of HAPCAN universal module
IC2	MCP2551-SN	SOIC-8	CAN Transceiver
IC3	78M05	DPAK	Voltage regulator
X1	2x ARK2	H=12,5mm raster=5mm	Terminal block
X2	ARK3	H=12,5mm raster=5mm	Terminal block
	TSOP4838		Infrared receiver module

4.4. Enclosure

- Enclosure type KM-1
- Dimensions: 43mm x 32mm x 22mm

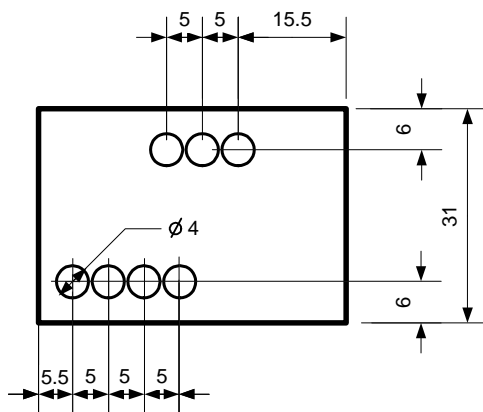
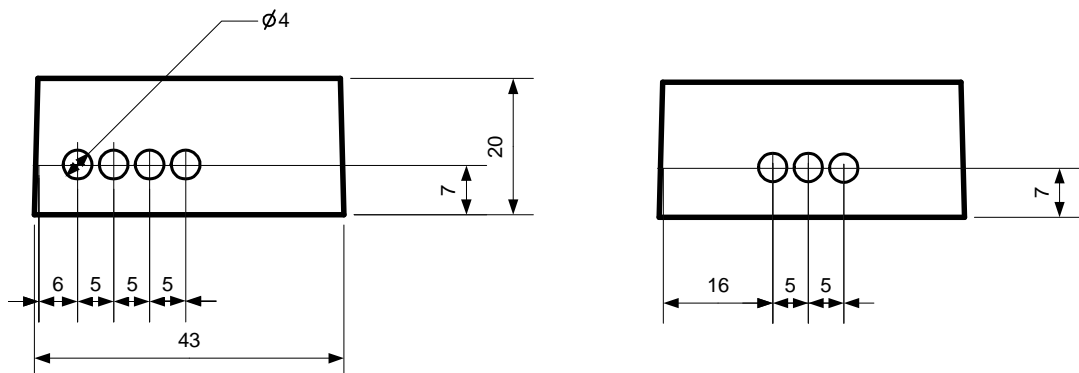


4.4.1. Dimensions



4.4.2. Mechanical processing

4.4.2.1. Main part

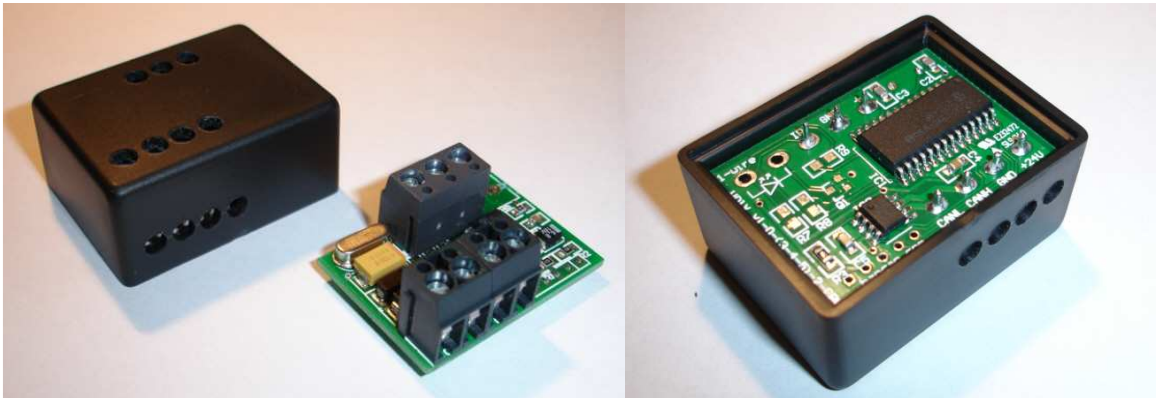


4.4.2.2. Lid

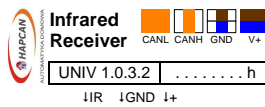
Does not need processing.

**4.4.3. Assembling**

The lid has to be glued to main part.



**4.4.4. Labels**



**5. Document version**

File	Description	Date
univ_v1-0-3-2-pcba.pdf	Original version	May 2010