

www.car-solutions.com

Date: 11.11.2015 / Version: v1.0

Model: RTC_v1.0 / Product code:846729

RTC – UNIVERSAL OEM RESISTIVE TOUCH SCREEN SWITCH BOARD

Manual

www.carsolutions.com

support@car-solutions.com

CAUTION

- Check the package contents after receiving the product. In case there is component missing, immediately contact the provider or the manufacturer.
- Many car models use systems that block the car when it is stolen. Before disconnecting a battery, a fuse or wiring, make sure you have the codes for unlocking. You can find this information on a separate page of car d ocuments. You can also find the code on the sticker in the glove compartment of the car. Contact the local c ar dealer if the code has been lost.
- We recommend disconnecting the negative terminal from the car battery or the fuse in charge of the OEM syst em that the switch board will be connected to.
- The switch board should be installed by qualified specialists. If the device is installed incorrectly there is a risk of damage or malfunction of OEM or aftermarket equipment.
- Never install the board close to the "AIRBAG" equipment or wiring.
- High-power devices or electromagnets (generators, servomotors, solenoids) should not be located in the place of installation.
- Do not install additional equipment in places that are subject to accumulation of moisture, water, dust or any other liquids.
- > Never remove or modify existing equipment fasteners when installing additional equipment.
- Use insulating tape to insulate wires. Insulate endings of all wires, even the ones that are not used, in order to prevent the short circuit, which can damage OEM or aftermarket equipment.
- Make sure the wiring of the equipment is not in contact with sharp metal parts in order to prevent wearing an d tearing of the wires.
- Connect power in the end of the installation process.
- Never use GND(-) of connected devices, bodies of OEM devices or any other metal parts of the car to connect the power of the switch board. This can cause a potential difference effect, which has bad impact on both OEM and aftermarket equipment. Always take plus and minus from the same source.
- > After installing the additional equipment check if all on-board systems of the car are working.
- > Warranty will be lost if the device is disassembled (violation of the warranty stickers is prohibited).
- > Warranty does not cover damages caused by an error made by a user or an installation engineer.

Main Characteristics of the Switch Board

RTC – UNIVERSAL OEM RESISTIVE TOUCH SCREEN SWITCH BOARD

This device is used to control aftermarket equipment with OEM touch screens. If an aftermarket navigation box is installed, you will be able to control it with the OEM touch screen without duplicating control commands to the OEM media system of the vehicle.

The following signals may be used as triggers (control signals) for the switch board:

- 1. Constant +12 V
- 2. Constant GND
- 3. Impulse +12 V
- 4. Impulse GND

Depending on the equipment used in the installation, the signals mentioned above can be taken from additional controllers, video interfaces, fixed or clock switches.

The device has two inputs to connect a signal, "**POS**" and "**NEG**". You can choose the functionality of those inputs, either impulse or constant, in the settings of the device.

Package contents allows the switch board to work with the following resistive touch screens:

- 1. Touch screens with 4-pin flat cable with 1 mm step
- 2. Touch screens with 8-pin flat cable with 0,5 mm step
- 3. Touch screens with 8-pin flat cable with 1 mm step
- 4. Touch screens with 16-pin flat cable with 0,5 mm step

Because of separate construction of the controller and compact sizes of switch boards, they can be connected to the touch screen of any monitor.

Switch Board Package Contents



www.carsolutions.com

Switch Board Wiring



Switch Board Settings

The switch board can work in two modes:

- 1. Constant **«POS»** or **«NEG»** control signal. With constant +12 V or GND signal applied, the switch board will switch the OEM touch screen to the aftermarket navigation box. When the signal is disconnected, the OEM touch screen will switch back to the OEM system.
- 2. Impulse **«POS»** or **«NEG»** control signals. With impulse +12V or GND signal applied, the switch board will switch the OEM touch screen to the aftermarket navigation box. When the impulse is applied again, the OEM touch screen will switch to the OEM system.

By default, the switch board is in the constant control signal mode. Press and hold the button until the **«OUT»** and **«OEM»** LEDs start to flash in order to switch the board to the impulse signal mode. Release the button as soon as the LEDs start to flash. Repeat this procedure to switch back to the constant signal mode.



www.carsolutions.com

Connection to Switch Board Sockets

Connecting the power and the control signal

In order to simplify connection of the power and the control signal, "latch" sockets are used in the device.

In order to connect a wire to the socket, simply plug in the <u>tinned</u> end of the wire into the socket. Carefully pull the wire to check if the connection is reliable.



You will need a small screwdriver or just a regular pen to disconnect the wire from the socket. Press the button inside a small hole beside the cable and carefully pull the wire. Do not apply too much force so that you do not damage the device.

Connecting flat cables

Always act according to the following rule when connecting flat cables to this device: Pins of the flat cable that is being connected should always be on the side of the board.



Always pay attention to the orientation of the flat cable (which side the pins of the flat cable are on) when connecting the flat cable from the switch board to the OEM monitor board.

Connecting to the "TOUCH OUT" socket

"TOUCH OUT" socket is used to connect the switch board to navigation boxes, video interfaces or touch screen controllers, depending on the equipment used in the installation. When connecting to the "TOUCH OUT" socket, pay close attention to the polarity of both the OEM touch screen and the device that the switch board is being connected to.



Typical OEM touch screen pinout in 99 % of cases



Troubleshooting

- M: It is impossible to control the OEM functions of the car and the additional navigation box after the controller has been connected.
- **S: 1.** Check if the main board and the switch board are connected correctly. Also check the orientation of the flat cable. Flat cable pins should be on the side of the board.

2. Check if the switch board and the OEM monitor board are connected correctly. Also check the orientation of the flat cable. Flat cable pins should be on the side of the board.

3. Check if the flat cable from the OEM touch screen to the switch board is connected correctly. Also check the orientation of the flat cable. Flat cable pins should be on the side of the board.

M: It is impossible to control the additional navigation box.

S: Try calibrating the touch screen. Check if the main board and the navigation box are connected correctly.

M: Pressing the touch screen does not correspond to what is shown on the screen.

S: Check if the flat cables are connected correctly. Also check the orientation of the flat cable.

M: The switch board does not respond to the applied control signal.

S: Check if the control signal is correctly connected to the corresponding **"POS"** or **"NEG"** sockets. When using the "POS" control signal, make sure the signal amplitude is between 10 and 14 V.

