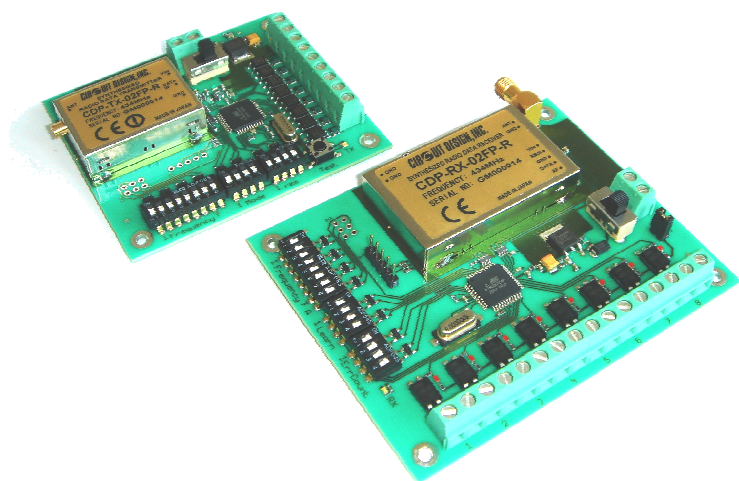


# TEST board for RF module CDP series TB-CDP02-TX/RX



## Programming Guide

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## GENERAL DESCRIPTION

The firmware of the test boards TB-CDP02-RX and TB-CDP02-TX is written in C and compiled with the AVR GNU compiler.

We recommend the AVR Studio 4 from Atmel which offers a free development environment including AVR compiler and programming software.

For programming the board you have to use a 6-pin ISP programmer with the X2 port next to the radio module.

The main function is located in the tb-cdp02.c file. It recognizes the board type (receiver or transmitter) and does the appropriate initialization. After the init it will continue in an infinite loop which handles the switch states, transmission and reception of the packets and the fail safe mode.

## MODULES

### **atm324p.c**

This module contains the low level functions for IO, USART, ADC and EEPROM.

### **isr.c**

This module contains the interrupt service functions.

### **learn.c**

This module contains the implementation of the learning mode.

### **tb-cdp02.c**

This is the main module with the main function.

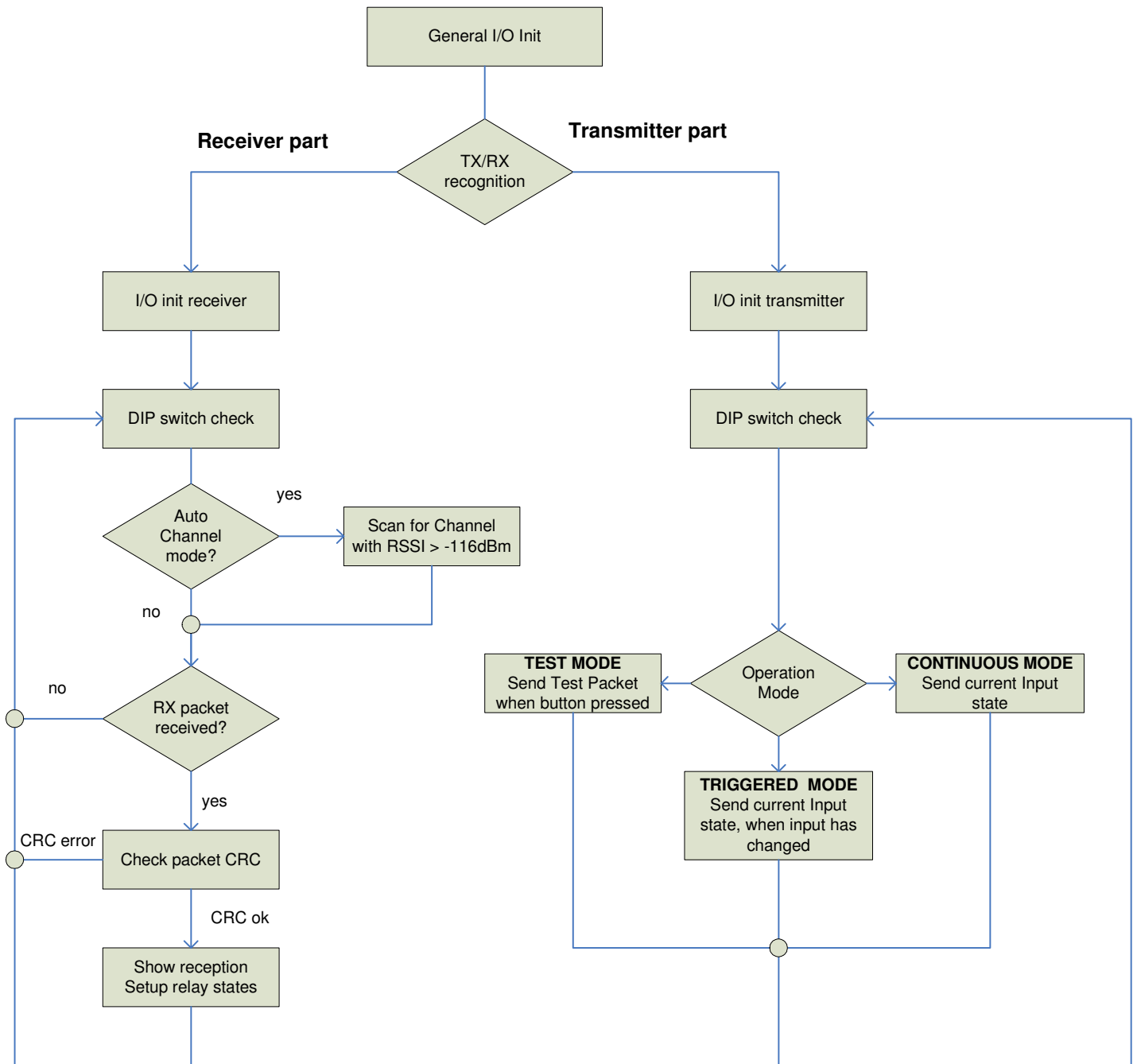
### **tx-rx.c**

This module contains the functions for transmitting and receiving the data.

### **usart.c**

This module contains functions for usart output.

**FLOW CHART**



## Cautions

- As the product communicates using electronic radio waves, there are cases where transmission will be temporarily cut off due to the surrounding environment and method of usage. The manufacturer is exempt from all responsibility relating to resulting harm to personnel or equipment and other secondary damage.
- Do not use the equipment within the vicinity of devices that may malfunction as a result of electronic radio waves from the product.
- The manufacturer is exempt from all responsibility relating to secondary damage resulting from the operation, performance and reliability of equipment connected to the product.
- Communication performance will be affected by the surrounding environment, so communication tests should be carried out before actual use.
- Ensure that the power supply for the product is within the specified rating. Short circuits and reverse connections may result in overheating and damage and must be avoided at all costs.
- Ensure that the power supply has been switched off before attempting any wiring work.
- The case is connected to the GND terminal of the internal circuit, so do not make contact between the '+' side of the power supply terminal and the case.
- When batteries are used as the power source, avoid short circuits, recharging, dismantling, and pressure. Failure to observe this caution may result in the outbreak of fire, overheating and damage to the equipment. Remove the batteries when the equipment is not to be used for a long period of time. Failure to observe this caution may result in battery leaks and damage to the equipment.
- Do not use this product in vehicles with the windows closed, in locations where it is subject to direct sunlight, or in locations with extremely high humidity.
- The product is neither waterproof nor splash proof. Ensure that it is not splashed with soot or water. Do not use the equipment if water or other foreign matter has entered the case.
- Do not drop the product or otherwise subject it to strong shocks.
- Do not subject the equipment to condensation (including moving it from cold locations to locations with a significant increase in temperature.)
- Do not use the equipment in locations where it is likely to be affected by acid, alkalis, organic agents or corrosive gas.
- The GND for the product will also affect communication performance. If possible, ensure that the case GND and the circuit GND are connected to a large GND pattern.

## Warnings

- Do not take apart or modify the equipment.
- Do not remove the product label (the label attached to the upper surface of the product.) Using a product from which the label has been removed is prohibited.

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