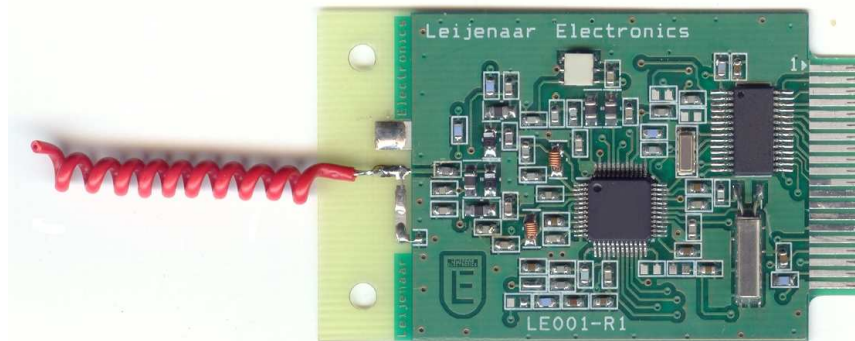


LE001-R1 SMART-DATA-TRANSCEIVER

- **Smart RF Data Transceiver for 868 MHz and 915MHz Industrial, Scientific, and Medical Bands**
- **Small Size: 36mm x 60mm x 4mm**
- **Low Voltage Range: 1.8V to 3.6V**
- **Low Power Consumption**
- **RF Frequency PLL Crystal Controlled and software programmable.**
- **FSK Data Transmission up to 19200 bps**
- **8 dBm Typical Output Power**
- **Multi RF Output:**
 - o **Direct Wire Antenna**
 - o **Coaxial Cable for External RF PA**
- **RSSI (Receive Strength Signal Indicator)**
 - o **Readable by Onboard MCU**
 - o **Extra Analog Output**
- **Onboard Low Power and High Speed Micro Controller Unit (MCU)**
- **Onboard MCU features:**
 - o **Serial In-System Programmable**
 - o **8kb Flash Memory**
 - o **256 bytes RAM**
 - o **Up to 5MHz Clock Speed**
 - o **Onboard Temperature Sensor (To Improve RF Temperature Drift)**
- **10 programmable ports**
 - o **8 Digital I/O Ports**
 - o **Two Selectable Ports: I/O or ADC**
- **20 pin PCB connector interface**



Introduction

The LE001-R1 is a Data Transceiver unit with an onboard micro controller. The combination of these two make this device very flexible to use in all kinds of applications. Applications can be from simple point-to-point data communication to multi-point or large token-ring network systems. With only a 3V power supply the LE001-R1 can already be used as a simple network repeater. In case a wireless switching system is needed, the LE001-R1 has 10 programmable ports of which 8 can be used as fast I/O pins and the other 2 can be selected as I/O or ADC input pins.

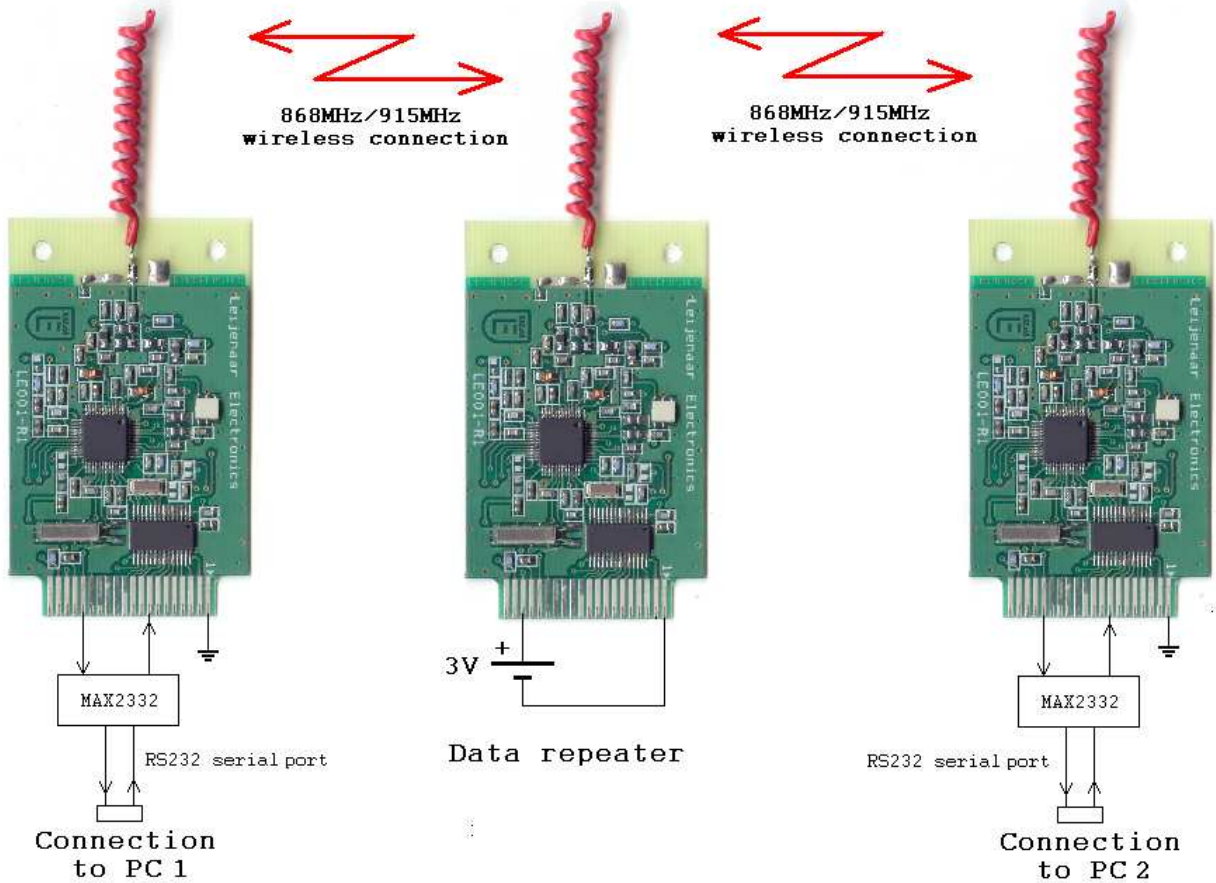
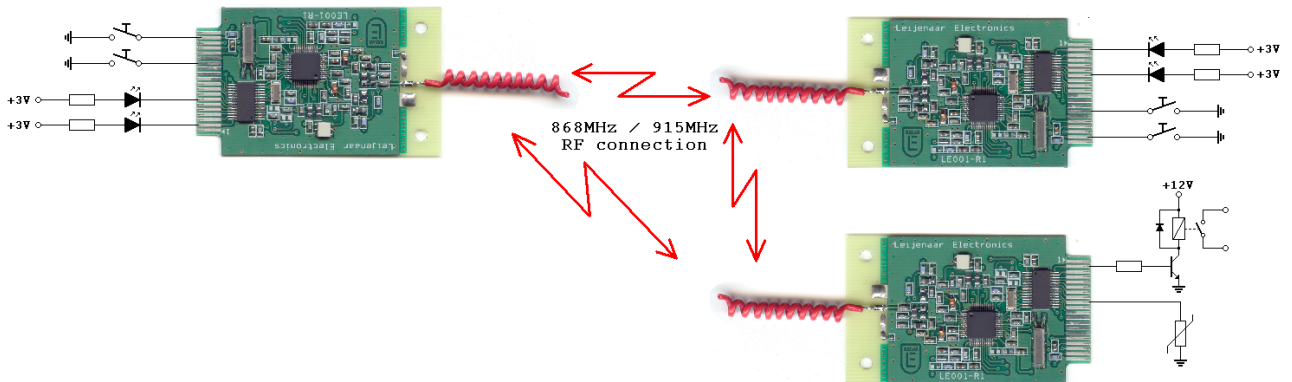
The I/O and ADC are all software programmable from easy on-off switching off a light bulb up to a full-duplex high speed RS232 port for interconnection with a PC terminal. The only thing the user has to know is about digital circuits and micro controller programming.

Programming of the MCU can be done by free available software what can be found on their world-wide internet. Demo software is available for fast and easy starting with the LE001-R1. The following demo software is available:

- Routines for setting the transceiver and the RF pin-diodes
- RS232 RX and TX serial port emulation routines that can work in full-duplex up to 19200bps.
- Routines for wireless transmission and receiving of data frames

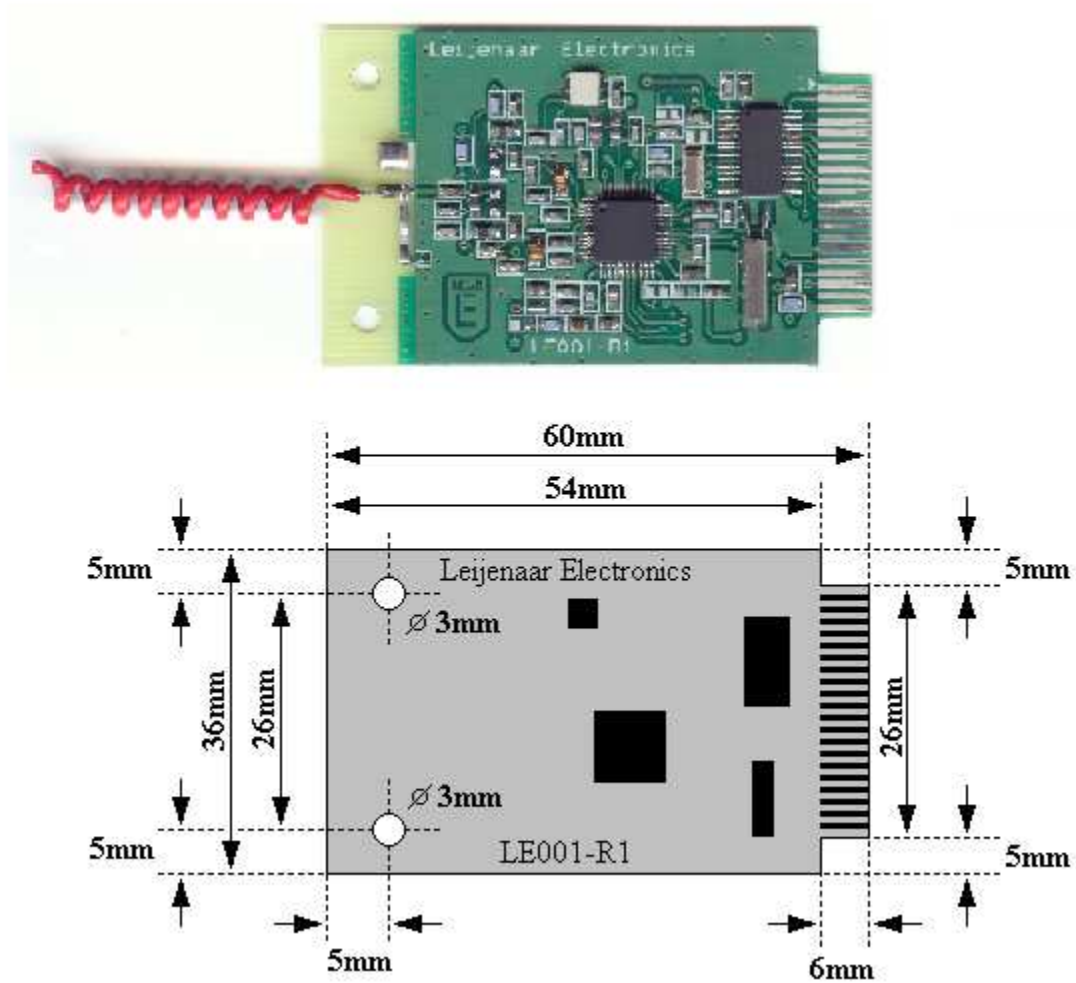
All demo software is written in assembly code and with easy to read explanations of each assembly code. Besides the assembly code the software routines are worked out in flow chart graphs for easy understanding and easy failure analysis. All this makes the LE001-R1 an easy to use platform for fast and easy use in your own system. Because the LE001-R1 uses several different technologies, like RF data transmissions, digital interfacing, sensor interfacing and micro controller programming, it is an excellent platform for students engineers to play and get in touch with these technologies.

Example Applications



MAX232 = 0..3V logic ↔ RS232 level

Mechanical Data



Circuit Diagram

