

# **DDC-SE-01**

## **IQRF Development Daisy Chain**

### **Sensor kit**

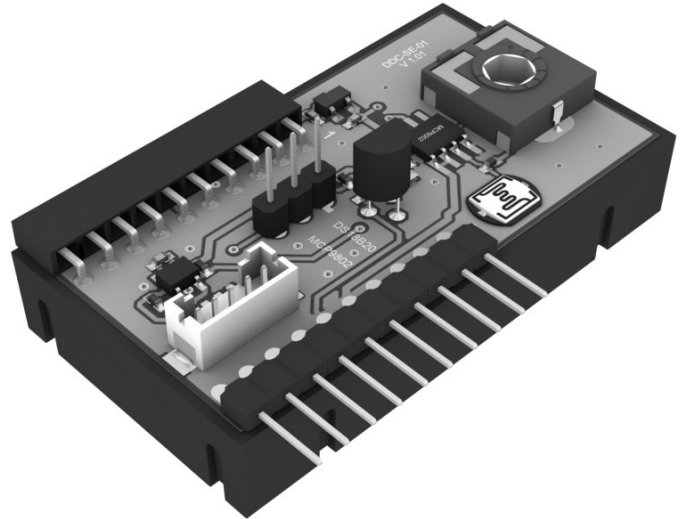
### **User's Guide**



## Description

A sensor development kit for IQRF wireless applications with transceiver modules (TR) plugged in DK-EVAL-04 kit. Compatible with other DDC (Development Daisy Chain) kits.

Ready-to-use examples are available demonstrating how to use I<sup>2</sup>C and Dallas 1-wire buses and A/D converter inside TR to measure temperature, voltage etc.



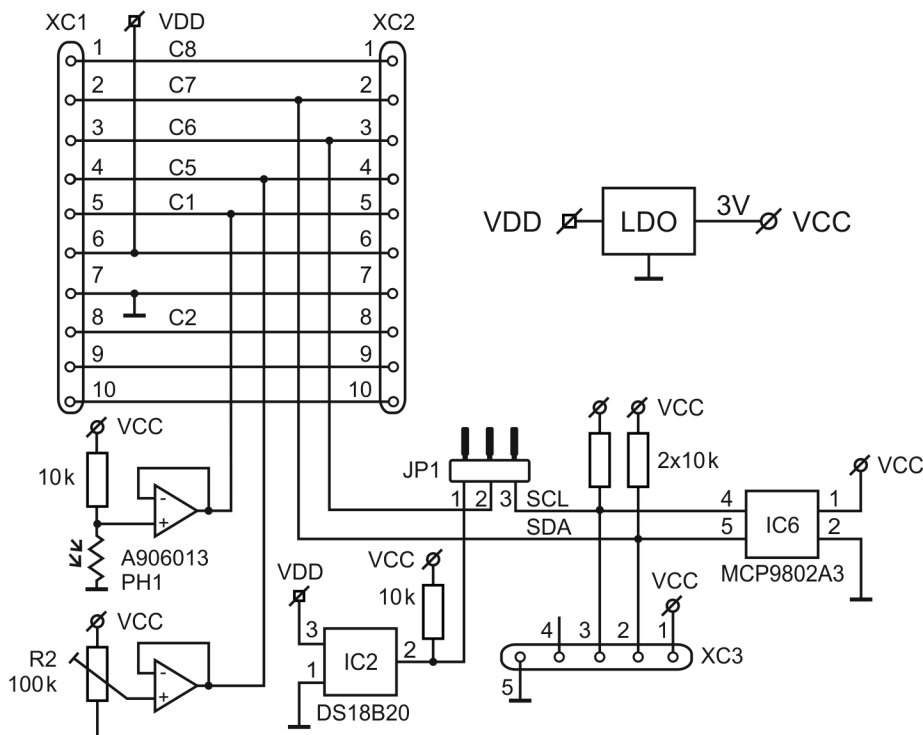
## Applications

- Development of IQRF applications
- I<sup>2</sup>C and Dallas 1-wire bus demonstration
- A/D measurement demonstration

## Key features

- Compatible with other IQRF DDC kits
- Supplied from DK-EVAL-04
- I<sup>2</sup>C temperature sensor
- I<sup>2</sup>C bus connector to access external peripherals
- Dallas 1-wire temperature sensor
- Light intensity measurement using a photoresistor
- Voltage measurement using a potentiometer
- Internal voltage LDO regulator

## Simplified schematics



## Electrical specifications

(typical values unless otherwise stated)

Power supply (VDD)	3.2 V to 5.5 V DC
Internal supply voltage (VCC)	3 V
Supply current (when peripherals inactive)	650 $\mu$ A
Temperature range	0 °C to +70 °C
Dimensions	48 mm x 27 mm x 11 mm
Weight	10 g

## Absolute maximum ratings

Stresses above those values may cause permanent damage to the device. Exposure to maximum rating conditions for extended periods may affect device reliability.

Supply voltage:	6.0 V
Storage temperature:	-40 °C to +85 °C

## Hardware

### Power supply

DDC-SE-01 should be supplied from DK-EVAL-04 via connector XC2.

### Interface connectors

The XC2 male connector with square 0.635 mm, 2.54 mm pitch pins is intended for I/Os and power supply.

Corresponding XC1 female connector serves for interconnection with other DDC kits.

XC3 is a 1.25 mm pitch miniature connector DF13C-5P (Hirose). Mating Hirose cable connector: DF13-5S (plastic shell), DF13 crimp contacts.

### Jumper JP1

- In position 1 – 2 enables 1-wire sensor.
- In position 2 – 3 enables I<sup>2</sup>C temperature sensor and I<sup>2</sup>C external bus.

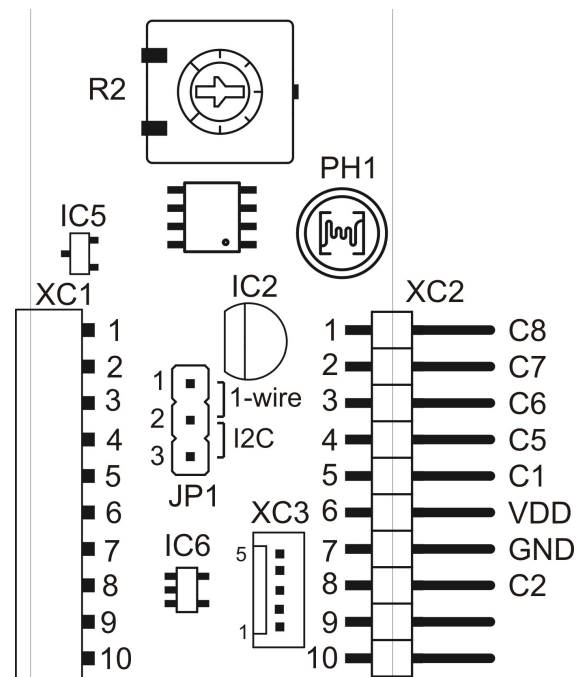
### Sensors

- I<sup>2</sup>C temperature sensor: MCP9802A3 (Microchip) with fixed I<sup>2</sup>C slave address 10010110 (in binary).
- External I<sup>2</sup>C device must have I<sup>2</sup>C slave address different from 10010110 (in binary).
- 1-wire temperature sensor: DS1820B20 (Dallas).
- Photoresistor: A906013 by Perkin Elmer. Resistance 8 k $\Omega$  at 100 lux, dark resistance ~1.5 M $\Omega$ .

Refer to datasheets of used devices.

## Software

Ready-to-use examples are available in the Startup package at [www.iqrf.org](http://www.iqrf.org).



---

**Product information**

---

**Pack list**

- DDC-SE-01 DDC sensor kit

**Recommended options**

- DK-EVAL-04 IQRF development kit for TR modules
- DDC-IO-01 DDC input/output kit
- DDC-RE-01 DDC relay kit
- DF13-5S Cable connector fitting to XC3
- DF13 Crimp contacts for cable connector fitting to XC3

**Ordering code**

- DDC-SE-01 IQRF sensor DDC kit

**Document history**

- 160203 The value of pull-up resistor on Dallas bus added to simplified schematics.
- 110415 First release

---

# Sales and Service

---

## Corporate office

MICRORISC s.r.o., Prumyslova 1275, 506 01 Jicin, Czech Republic, EU  
Tel: +420 493 538 125, Fax: +420 493 538 126, [www.microrisc.com](http://www.microrisc.com)

## Partners and distribution

Please visit [www.iqrf.org/partners](http://www.iqrf.org/partners)

---

## Quality management

*ISO 9001 : 2009 certified*

*Complies with Directive 2002/95/EC (RoHS)*



## Trademarks

*The IQRF name and logo and MICRORISC name are registered trademarks of MICRORISC s.r.o.  
PIC, SPI, Microchip and all other trademarks mentioned herein are property of their respective owners.*

## Legal

*All information contained in this publication is intended through suggestion only and may be superseded by updates without prior notice. No representation or warranty is given and no liability is assumed by MICRORISC s.r.o. with respect to the accuracy or use of such information.*

*Without written permission it is not allowed to copy or reproduce this information, even partially.*

*No licenses are conveyed, implicitly or otherwise, under any intellectual property rights.*

*The IQRF products utilize several patents (CZ, EU, US)*

---

**On-line support: [support@iqrf.org](mailto:support@iqrf.org)**

---



Smarter wireless. Simply.