

DDC-SE-01

IQRF Development Daisy Chain

Sensor kit

User's Guide

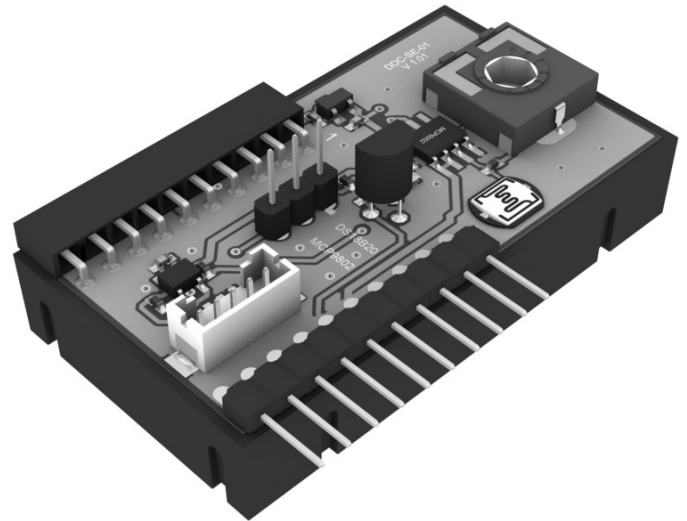


Simple way to smarter wireless solutions

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 I²C and Dallas 1-wire buses and A/D converter inside TR to measure temperature, voltage etc.



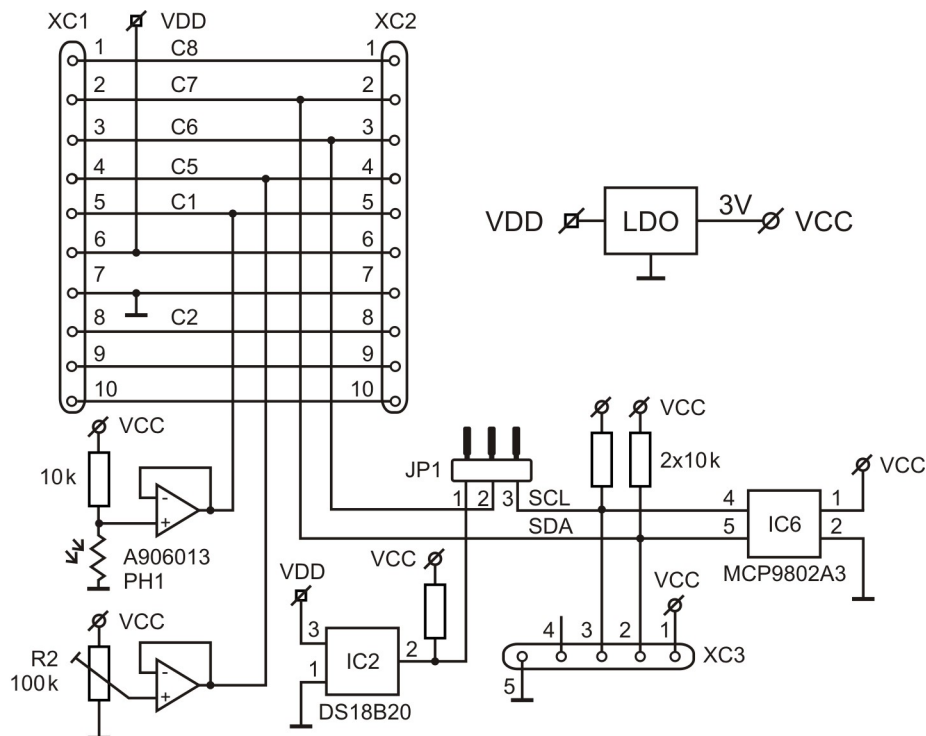
Applications

- Development of IQRF applications
- I²C and Dallas 1-wire bus demonstration
- A/D measurement demonstration

Key features

- Compatible with other IQRF DDC kits
- Supplied from DK-EVAL-04
- I²C temperature sensor
- I²C 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 μ 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 I²C temperature sensor and I²C external bus.

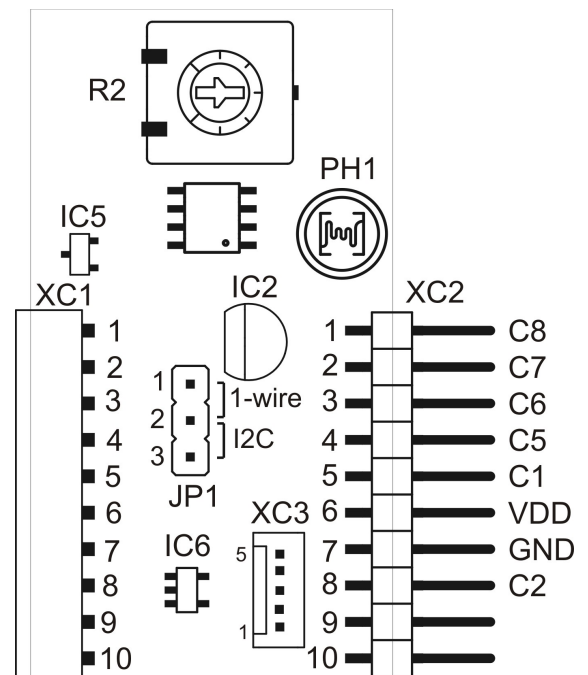
Sensors

- I²C temperature sensor: MCP9802A3 (Microchip) with fixed I²C slave address 10010110 (in binary).
- External I²C device must have I²C slave address different from 10010110 (in binary).
- 1-wire temperature sensor: DS1820B20 (Dallas).
- Photoresistor: A906013 by Perkin Elmer. Resistance 8 k Ω at 100 lux, dark resistance ~1.5 M Ω .

Refer to datasheets of used devices.

Software

Ready-to-use examples are available in the Startup package at 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

- 110415 First release

Sales and Service

Corporate office

MICRORISC s.r.o., Delnicka 222, 506 01 Jicin, Czech Republic, EU
Tel: +420 493 538 125, Fax: +420 493 538 126, www.microrisc.com

Partners and distribution

Please visit www.iqrf.org/partners

Quality management

ISO 9001 : 2000 certified

*Complies with ETSI directives EN 30279 V.1.2.1:99, ETS 30683:97, ETSI EN 301489-1:00,
ETSI EN 300220-1:00, ETSI EN 300390-2V.1.1.1:00*

Complies with FCC directives FCC CFR, Title 47, Part 15, Section 15.209, FCC CFR, Title 47, Part 15, Section 15.249

Complies with Directive 2002/95/EC (RoHS)



Trademarks

*The IQRF name and logo are registered trademarks of MICRORISC s.r.o.
PIC, SPI, Microchip, RFM 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: <http://iq-esupport.com>



Simple way to smarter wireless solutions