

DK-PGM-01-EXP

I/O Expander for DK-PGM-01

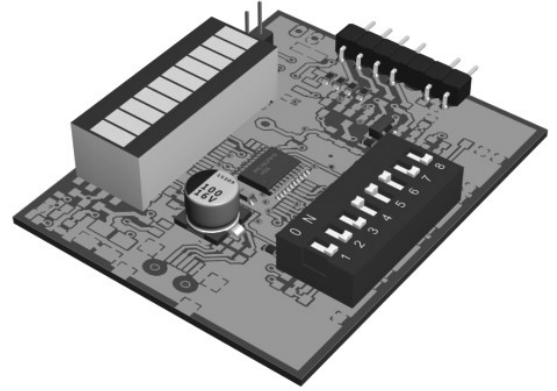
User's Guide



Simple way to smarter wireless solutions

Description

DK-PGM-01-EXP is an I/O expander for the DK-PGM-01 development kit intended for debugging.



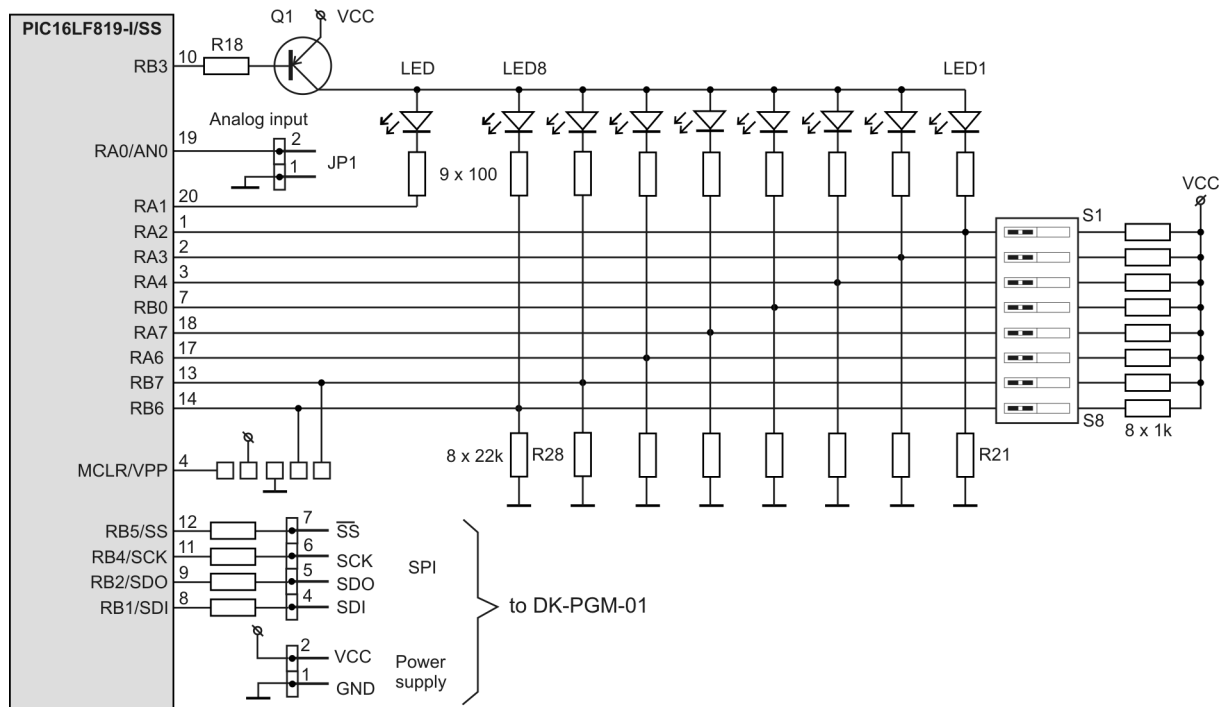
Applications

- IQRF applications where more I/O needed during debugging
- Development and debugging

Key features

- 8 digital inputs controlled by the dipswitch
- 8 digital outputs with LED indication
- 1 status indication LED
- 1 analog input for A/D converter
- SPI interface to DK-PGM-01
- Supplied from DK-PGM-01

Simplified schematics



Electrical specifications

(typical values unless otherwise stated)

| | |
|----------------------|--|
| Power supply | 2.7 V to 3.6 V DC via the SV2 connector (typically 3.3 V from DK-PGM-01) |
| Analog input voltage | ≤ supply voltage |
| Temperature range | 0 °C to +70 °C |
| Dimensions | 49.5 mm x 40 mm x 20 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: | 5.5 V |
| Storage temperature: | -40 °C to +85 °C |

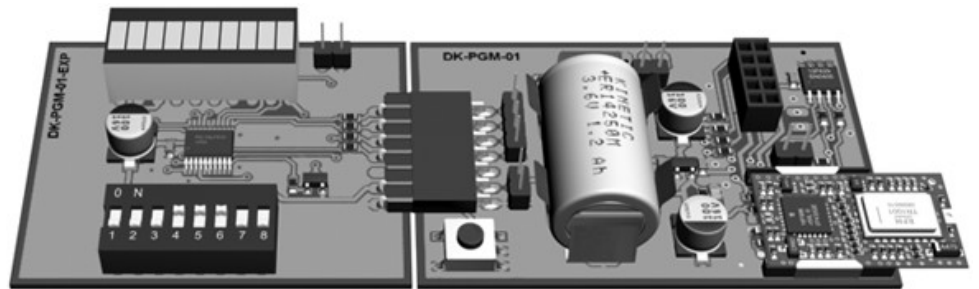
Hardware

DK-PGM-01 connection

DK-PGM-01 should be connected via the SV1 connector.

Power supply

DK-PGM-01-EXP is supplied from the DK-PGM-01. Supply voltage is indicated by LED0.



LEDs

9 LEDs are used. All LEDs are integrated in single bargraph. LED1 to 8 monitor digital outputs 1 to 8 (active low). LED0 is intended for status indication (flashes after successful communication with DK-PGM-01).

Dipswitch

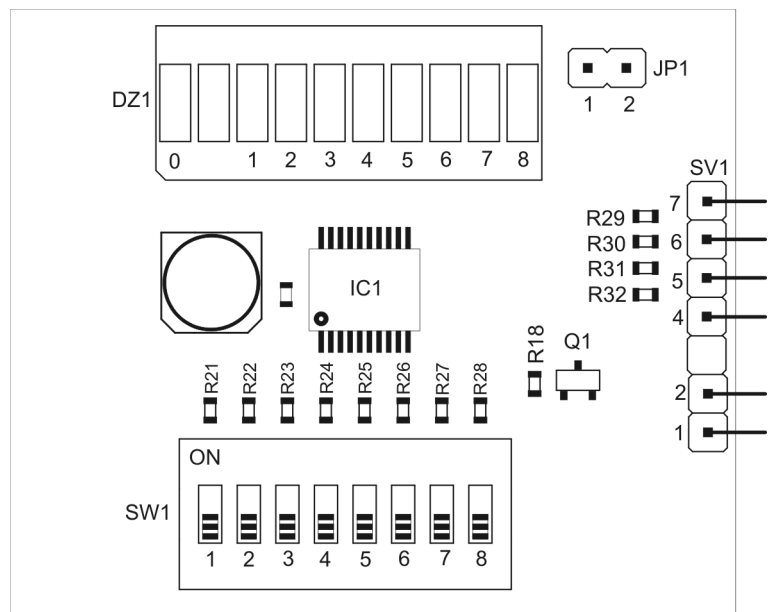
8 digital inputs have weak pull-downs and can be set to high level by switching appropriate sliders to the ON position.

Analog input

Input for A/D converter is available on the JP1 connector. The maximum recommended impedance for analog sources is 2.5 kΩ.

MCU

The IC1 MCU (PIC16LF819) provides I/O expansion and A/D conversion. It communicates with DK-PGM-02 via SPI.



Software

Simple communication protocol utilizing SPI is described in the demo example DK-PGM-01-EXP for the TR-21A transceiver module. It reads digital inputs from the dipswitch and analog value from JP1 and send them to the TR module inserted in the DK-PGM-01 board. The digital values are sent back and displayed on the LEDs. This procedure repeats in 1 s period.

The demo program is available including source codes for the IC1 MCU (not intended for user modification) as well as for MCU in TR module plugged in DK-PGM-01 which can be adapted according user's needs.

Pack list

- DK-PGM-01-EXP

Recommended options

- DK-PGM-01 IQRF universal development kit

Ordering code

- DK-PGM-01-EXP IQRF universal development kit

Document history

- 100116 First release

Sales and Service

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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)



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