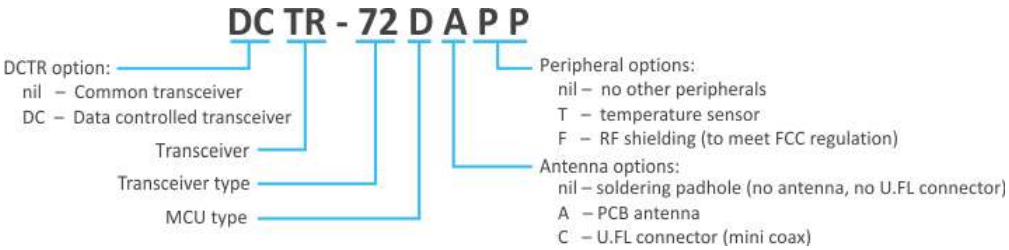
Technology for wireless

Transceivers

An IQRF transceiver module (**TR**) is a tiny intelligent electronic board with complete circuitry needed for realization of wireless RF connectivity. It is a **basic communication component** of the IQRF platform, used also in all IQRF gateways, routers etc.

- Transceiver modules
- TR series
  - + TR-52D
  - + TR-54D
  - + TR-55D
  - + TR-56D
  - + TR-58D-RJ
  - + TR-62D
  - + TR-72D
  - + TR-52B - Not for new designs
  - + TR-53B - Not for new designs



DCTR

IQRF transceivers are available in two variants (from IQRF OS v3.05D):

- **TR** Common **transceivers**, fully programmable, Demo HWP allowed, **General HWP not allowed**.
- **DCTR** **Data controlled transceivers**, fully programmable, Demo HWP allowed, **General HWP allowed**. DCTR fully (non-demo) supports application without programming.

In short, DCTR allows to use full HWP version even for IQRF Alliance non-members.

Features

- License-free ISM bands **868 MHz** and **916 MHz**
- Compact highly integrated design
- No external components required
- Very small: **20.2 x 14.9 mm** (**SMT**), 25.0 x 14.9 mm (**SIM**)
- Microcontroller with **operating system** supporting **MESH**
- Up to 12 I/O pins, up to 3 analog inputs (A/D)
- **RF**, **SPI**, **UART** and **I2C** interfaces supported
- **All** IQRF TRs are **bidirectional**. It implies:
  - Higher **performance**
  - Much higher **reliability**
  - Much higher **security**
- **Extra low power** consumption
  - Sleep: **380 nA**
  - Receiving:
    - 13 mA (STD mode)
    - 330 µA (LP mode)
    - **25 µA** (XLP mode)
  - Transmitting: 14 –24 mA (SW selectable)
- Up to 189 **RF channels** (SW selectable)
- Bit rate: up to 86.2 kb/s (SW selectable)
- RF output power: up to **3.5 mW** (SW selectable)
- Signal range: up to **850 m**/hop, up to **240 hops**/packet
- Options:
  - Temperature sensor
  - Additional serial EEPROM
  - +3 V voltage regulator
  - 2 LEDs
- Antenna options:
  - **Soldering**
  - **On-board antenna** ("A" option)
  - **U.FL connector** ("C" option)
- Mounting options:
  - **SIM** connector
  - **SMT** soldering
  - **Through-slot** soldering
- Very **easy to use**
- **Inexpensive**