**NAME OF THE PRODUCT**

subtitle

**User Guide**

# tECHNICAL DESCRIPTION

image of your product

*Shortly describe your product.*

# KEY FEATURES

*Describe key features of your product.*

# aPPLICATIONS

*Describe IoT applications for which is your product intended.*

# Parameters

*Describe product inputs/outputs and wireless communication. Use images and descriptions accordingly to your product.*

# Dimensions and Mounting options

*Describe dimensions of the product and tell a customer how he can mount the product, if possible.*

image of your product

showing dimensions

and mounting options

# Wireless Network

## LED Indication

*Describe indication LEDs and their meanings.*

image of your product

showing indication LEDs

## Buttons

*Describe functional buttons of your product.*

image of your product

showing buttons

(bonding, unbonding, reset…)

## First start

*Describe the procedure of starting the device and the status after connection to the electricity.*

## Adding (bonding) a device to a wireless network

*Describe a procedure how to add a device to a wireless IQRF network. Include information related to product indication LEDs and buttons.*

*Example*:

This device, which you are adding to the network, works in the wireless IQRF® network as a Node. A Coordinator is a wireless device in your network which starts the communication.

A Node to be bonded must be in the unbonded state. It is indicated by *red LED flashing* (*or specify your indication*).

It is possible to bond a Node by several methods:

* **Local Bonding**
	+ The Node to be bonded must be in direct range with the Coordinator.
	+ Press the *button XX (specify and describe it on the image)* on the Node side.
	+ The Node to be bonded must have the Access Password (the same as it is used by the Coordinator) specified in its configuration.

Local bonding can be invoked by DPA command Bond node sent from Coordinator. After sending this command, the action *(the button XX pressing)* to invoke the bonding must be accomplished in 10 s.

For details, see the [IQMESH Network Deployment](http://www.iqrf.org/weben/downloads.php?id=564) document.

* **Smart Connect**
	+ The Node to be bonded doesn’t have to be in direct range with the Coordinator.
	+ No action (e.g. a button-press) is required on the Node side.
	+ The Node to be bonded need not have the Access Password of given network.

Smart Connect can be invoked by the DPA command Smart Connect sent from Coordinator. The main input parameters of this command are IBK and MID of the Node to be bonded. They can be found on the device (MID, IBK, IQRF Smart Connect code – contains MID and IBK, IQRF Smart Connect QR code – contains MID, IBK and HWPID) and can be read and sent by the application (e.g. by reading IQRF Smart Connect QR code with IQRF Network Manager or by sending MID and IBK parameters from IQRF IDE or from web application of an IQRF Gateway).

For details, see the [IQMESH Network Deployment](http://www.iqrf.org/weben/downloads.php?id=564) document.

* **Autonetwork**
	+ The Node to be bonded by Autonetwork need not be in direct RF range with the Coordinator but must be in range with at least one already bonded Node.
	+ No action (e.g. a button press) is needed on the Node side.
	+ All Nodes to be bonded must have specified the same Access Password as the Coordinator.

For details, see the [IQMESH Network Deployment](http://www.iqrf.org/weben/downloads.php?id=564) document.

## Removing (unbonding) a device from a wireless network

*Describe the bonding procedure. It depends on your hardware.*

## Wireless communication

### Unicast communication

The product contains following standardized peripheries:

* *xx*
* *xy*
* *yy*
* *…*

*Describe how to communicate with your device (values reading, control commands).*

*You can use a link to a specific file and location in IQRF Standard manuals (https://www.iqrfalliance.org/techDocs/).*

The product contains following special peripheries:

* *xx*
* *xy*
* *yy*
* *…*

*Commands which are not standardized please describe in detail.*

**Reading a value from a special periphery:**

Request

|  |  |  |  |
| --- | --- | --- | --- |
| ***NADR*** | ***PNUM*** | ***PCMD*** | ***HWPID*** |
|  |  |  |  |

Response

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***NADR*** | ***PNUM*** | ***PCMD*** | ***HWPID*** | ***ErrN*** | ***DpaValue*** | ***0 … 1*** |
|  |  |  |  |  |  |  |

### Group communication – FRC (Fast Response Command)

If you have a group of devices of the same type, you can send a command to this whole group or to selected devices from this group to control them or to get responses at once.

Fast Response Command allows quick and using only one request to collect the same type of information from multiple Nodes in the network. IQRF operating system allows collecting either 2 bits from all (up to 239) Nodes, 1 byte from up to 63 Nodes, 2 bytes from up to 31 Nodes or 4 bytes from up to 15 Nodes.

Read details in [DPA Frameworks Technical Guide](http://www.iqrf.org/weben/downloads.php?id=565).

*Describe FRC commands or use link to the* [*IQRF Standard manuals*](https://www.iqrfalliance.org/techDocs/)*.*

The product contains following standardized peripheries:

* *xx*
* *xy*
* *yy*
* *…*

*Describe how to use FRC to communicate with your devices (values reading, control commands).*

*You can use a link to a specific file and location in IQRF Standard manuals (https://www.iqrfalliance.org/techDocs/).*

The product contains following special peripheries:

* *xx*
* *xy*
* *yy*
* *…*

*Commands which are not standardized please describe in detail.*

**Reading a value from a special periphery using FRC:**

Request

|  |  |  |  |
| --- | --- | --- | --- |
| ***NADR*** | ***PNUM*** | ***PCMD*** | ***HWPID*** |
|  |  |  |  |

Response

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***NADR*** | ***PNUM*** | ***PCMD*** | ***HWPID*** | ***ErrN*** | ***DpaValue*** | ***0 … 1*** |
|  |  |  |  |  |  |  |