



# DS-MESH-02D

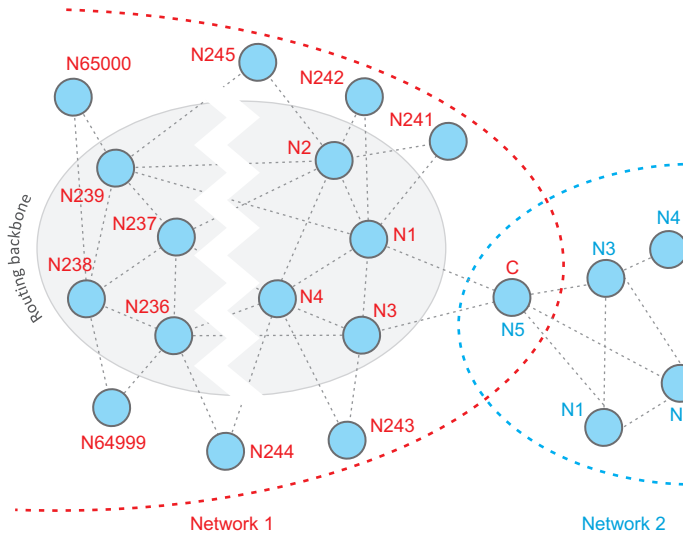
## Development set for IQMESH Brief User's Manual



IQMESH is an IQRF network topology with one Coordinator mastering the network and up to 65 000 end devices (Nodes). Up to 239 Nodes can be defined to create a structure (backbone) for background routing. Full network support is included in operating system built in transceiver modules.

This set contains selected combinations of IQRF devices optimized for typical network applications for advantageous price. It is intended to demonstrate IQMESH usage and enable to develop user's own applications. DDC kits are intended for demonstration of end nodes with I/Os, sensors and relays.

IQRF features are explained in IQRF examples including demonstrating an IQMESH (building a simple network, basics of bonding, discovery, timing, routing, power management, ...).



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### How to start

- Plug TR-modules with example E09-LINK into two DK-EVAL-04 kits. (TR modules are delivered with this example uploaded from the factory.) Connect power-on jumpers. RF link is just established and wireless connection is indicated by LEDs. Red LED indicates every successful receipt and green LED means an unsuccessful one. RF range can be tested in this way.
- The IQRF Quick start guide describes all needed knowledge concerning installation and following steps.
- Go through all basic examples E00 to E10 to get familiar with individual IQRF features.
- Finally, the E11-IQMESH example should be applied to implement IQMESH demonstrating data collection from Nodes.
- Then, some network devices can be realized by gateways included in the set to exploit their additional features, performance and USB connectivity.
- GW-USB-04 is very suitable also as a programmer for RF (wireless) programming of TR modules.
- Training by IQRF manufacturer is available for further speeding-up.

### 868 MHz / 916 MHz selection

TR modules must be operated in proper band due to local regulations (868 MHz in EU and other countries, 916 MHz in USA and other countries). The band can be selected in user SW by the `setRFBand(x)` function. If omitted, the default band is used. TR modules have preselected RF band 916 MHz if delivered to USA or 868 MHz elsewhere. This default selection can be switched to the other frequency. To change this, OS v3.xx can be modified by the plug-in `PGIN-INIT916BAND` or `PGIN-INIT868BAND` by the following procedure (example to change 868 MHz to 916 MHz):

- Upload the plug-in `PGIN-INIT916BAND` to the TR module using CK-USB-04 and IQRF IDE like any other code for TR module.
- Perform reset after uploading and wait ~2 s. OS will be reconfigured for default RF band 916 MHz. This is stored in non-volatile memory. Thus, changes will work also after power-down.
- Once the OS is modified, it is not necessary to have the plug-in uploaded any more. It can be removed by the `PGIN-DUMMY` plug-in anytime later on. 916 MHz will remain to be a default.
- To return to 868 MHz, the `PGIN-DUMMY` and then `PGIN-INIT868BAND` plug-ins should be used in a similar way. Refer to the `OS-configuration.zip` for details.

Refer to the CD included. For further information see [www.iqrf.org](http://www.iqrf.org) (sections Support, How to start and Downloads). Detailed description can be found in IQRF OS User's Guide, IQRF OS Reference Guide and documentation of individual products.

## Pack list

▪ TR-52DA	16 pcs	E09-LINK uploaded	Transceiver module
▪ CK-USB-04	1 pc		Programmer/debugger
▪ DK-EVAL-04	15 pcs		Development kit
▪ GW-USB-04	2 pcs		USB gateway
▪ DDC-IO-01	1 pc		I/O kit
▪ DDC-SE-01	1 pc		Sensor kit
▪ DDC-RE-01	1 pc		Relay kit
▪ MI-TY-A6-microUSB	1 pc		Power supply
▪ DK-PWR-01	2 pcs		Power supply expansion board
▪ CABUSBABMICRO	1 pc		Micro USB cable

▪ CD DS-MESH-02D	1 pc		CD or USB Flash memory stick with SW and documentation. All the files can also available at <a href="http://www.iqrf.org/download">www.iqrf.org/download</a>
▪ BRIQRF	PDF		IQRF Brochure
▪ \Accessories			
▪ MNMITYA6MICROUSB	PDF		Power supply user's guide
▪ MNDKPWR01	PDF		Power supply expansion board user's guide
▪ \Application Note			
▪ MNQUICKSTART	PDF		IQRF Quick start guide
▪ AN008	ZIP		IQRF Firmware upgrade
▪ AN009	ZIP		IQRF Wireless upload
▪ \OS			
▪ MNIQRFOS300	PDF		IQRF OS User's guide
▪ MNRGIQRFOS300	PDF		IQRF OS Reference guide
▪ OS-configuration	ZIP		Plug-ins to configure OS
▪ \Products			
▪ DSTR52D	PDF		TR-52D datasheet
▪ MNCKUSB04	PDF		CK-USB-04 User's guide
▪ MNDKEVAL04	PDF		DK-EVAL-04 User's guide
▪ MNGWUSB04	PDF		GW-USB-04 User's guide
▪ MNDDCIO01	PDF		DDC-IO-01 User's guide
▪ MNDDCSE01	PDF		DDC-SE-01 User's guide
▪ MNDDCRE01	PDF		DDC-RE-01 User's guide
▪ \SW			
▪ IQRF-Startup-Package	EXE, ZIP		All-in-one bundle to start with IQRF. (TR datasheet, development SW, examples, ...)

## Contacts

IQRF web:	<a href="http://www.iqrf.org">www.iqrf.org</a>
E-shop:	<a href="http://www.iqrf.org/eshop">www.iqrf.org/eshop</a>
E-mail: (sales):	<a href="mailto:sales@iqrf.org">sales@iqrf.org</a>
E-mail (technical support):	<a href="mailto:support@iqrf.org">support@iqrf.org</a>

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](http://www.microrisc.com)