

The IMB-ism modules allow the reception of measuring values from 1...8 ISM or IBRit-rf1 radio modules. Each IMB-ism module contains 8 channel numbers and to each channel another address 1...500 of an ISM / IBRit-rf1 radio module can be assigned, which is then received over that channel number by the IMB-ism module.

By the different IMBus connection possibilities measuring values can be transferred wireless over the IMB-ism into :

- Standard-PCs over USB / RS232
- Computer-networks over LAN / Wireless-LAN
- PLC-control units over Profibus / Profinet / EtherCAT
- C200 column gauges / B200 digital gauges
- measuring computers



Messtechnik GmbH & Co. KG



Art.-No. F122 121

Technical data

Mechanical characteristics Case Aluminium and plastic sides

| Case | Aluminium and plastic sides |
|-----------------------------------------|-----------------------------|
| Dimension W x H x D (without antenna) | 25 x 49.25 x 62 mm |

Electrical characteristics

| Power supply of IMBus | +5V | | |
|-----------------------|--------------|--|--|
| Power consumption | 40mA | | |
| Interface | IMBus(RS485) | | |

Measurement data

| Transmission frequency | 433.926 MHz | | |
|----------------------------|------------------------|--|--|
| Frequency range | ± 13 KHz, ± 115.2 kHz | | |
| Modulation type | FSK | | |
| Output power @400 Ω | +10 dBm | | |
| Sensitivity @400 Ω | -105 dBm | | |
| Transmission speed | 9600 baud, 230400 baud | | |

Environmental conditions

| Working temperature range | 045°C |
|---------------------------|----------------------|
| Storage temperature range | -30+80°C |
| Type of protection | IP65 (CEI / IEC 529) |

Electromagnetic compatibility (EMC)

| Electromagnetic compatibility (EMC) | Interference emission according to EN50081-2 |
|-------------------------------------|------------------------------------------------|
| | Interference resistance according to EN50082-2 |

Programming of the IMB-ism and ISM / IBRit-rf1 modules over a PC :

- 1. Connect the IMB-ism by an IMB-connection cable / module to the PC for programming.
- 2. Install the Software IMB_Test.EXE (at least V2.02) and start this software.
- 3. After the selection of the "*PC-Connection*" and the "*IBR-Instrument*" = **IMBus** in the Setup-Menu eight addresses are shown for the **IMB-ism** :

| Pro | Programming of the devices | | | | | | | |
|-----|----------------------------|----------------|------------|----------------------------------------------|--------|-----------|---|--|
| | DEVICE 1 | | | | | | | |
| | PC-Connection | IBR-Instrument | Connection | Gauge / Sensor | | Add | 1 | |
| | USB 🖵 I | MBus 🔹 | Addr.1 | IMB-ISM (for ISM / IBRit-rf1) Connection 1 | on | Setup | | |
| | | | Addr.2 | IMB-ISM (for ISM / IBRit-rf1) Connection 2 | on | Setup | | |
| | | | Addr.3 | IMB-ISM (for ISM / IBRit-rf1) Connection 3 | on | Setup | | |
| | | | Addr.4 | IMB-ISM (for ISM / IBRit-rf1) Connection 4 | on | Setup | | |
| | | | Addr.5 | IMB-ISM (for ISM / IBRit-rf1) Connection 5 | on | Setup | | |
| | | | Addr.6 | IMB-ISM (for ISM / IBRit-rf1) Connection 6 | on | Setup | | |
| | | | Addr.7 | IMB-ISM (for ISM / IBRit-rf1) Connection 7 | on | Setup | | |
| | | Service | Addr.8 | IMB-ISM (for ISM / IBRit-rf1) Connection 8 | on | Setup | - | |
| | | | | DEVICE 2 | | | | |
| | PC-Connection | IBR-Instrument | Connection | Gauge / Sensor | | Mea. Step | J | |
| | 🔻 | - | | | Setup | | | |
| | | | | | Setup | | _ | |
| | | | | | Setup | | _ | |
| | | | | | Setup | | _ | |
| | | | | | Setup | | - | |
| | | | | | Setup | | - | |
| | | Service | | | Setup | | | |
| • | | Dervice | | J | Setup | | | |
| | Print | | | ОК | Cancel | Help | | |

4. To the eight channels of the **IMB-ism** modules addresses from 1...500 of **ISM / IBRit-rf1** modules can be assigned by the **Setup**-Buttons :

| Module Configuration Identification Module type IMB-ISM Serial Number 00001119 Hardware Version V2.0 Software Version V3.4 Firmware Update Programme measuring module | OK Cancel | Additionally, the RF data rate of the IMB-ism can be changed, depending on whether values shall be received from IBRit-rf1 modules or from ISM modules in ISM Permanent mode. 9600 Baud = IBRit-rf1 compatible 230400 Baud = ISM Permanent mode compatible |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IBRit-rf1 Address Address 4 Mode Default RF data rate 230400 Baud (= ISM permanent mode) | Service | Advantages of the 230400 Baud data rate : a) approx. 1 million instead of only 200.000 transmissions possible, before the batteries run out b) ISM Permanent mode can be used Disadvantages of the 230400 Baud data rate : a) not IBRit-rf1 compatible b) only approx. 60% range in comparison with 9600 Baud |

5. By the **Service**-Button the window for programming the **ISM / IBRit-rf1** modules opens. This window is described in **ISM-usb** manuals.

Note :

In this window generally all **ISM / IBRit-rf1** modules can be programmed independent of the addresses assigned to **IMB-ism** module.

But on the measuring value transmission only measuring values from the **ISM / IBRit-rf1** modules are displayed, which are assigned to one **IMB-ism** channel. Because of this on the reception of a measuring value the **IMB-ism** channel number (not the **ISM / IBRit-rf1** address) is shown.

| I | IBR-ISM Service Mode | | | | | |
|---|-------------------------------------------------------------------|-----------------|--------------------|----------|----------------------|----|
| | RF data rate 230400 Baud | | | | | |
| | PROGRAMMING OF THE RF-MODULES | | | | | |
| | Command | | | | Parameter | |
| | Set factory settin | igs | | <u>^</u> | Set factory settings | |
| | Set Module Addre | ess | | | | |
| | Permanent Mode -> Value number Permanent Mode -> Interval time | | | | | |
| | Transmission confirmation (o.k.) - Flash-Time (green) | | | - | | |
| | (*) Factory settings | | | | | ОК |
| | MEASUREMENT | VALUES FROM THE | RF-MODULES | | | |
| | Number | IMB-Address | | | Measurement Value | |
| | 2 | 2 | | | -2.7513 | |
| | 1 2 | 2 2 | -2.7512 -2.7513 | | | |
| | | | | | | |
| | ОК | | | | | |

Programming of the IMB-ism and ISM / IBRit-rf1 modules over a C200 column gauge :

- 1. Connect the **C200** column gauge with built-in **IMB-ism** module to the PC.
- 2. Install the Software C200_PC.EXE (at least V2.21) and start this software.
- On the call of the menu C200 / Programming of IMB-Modules the C200 column gauge is set into a special mode, which allows the programming of the single IMB-modules over the PC. For the programming of the IMB-ism modules the window shown on page 2 is opened in the C200_PC Software.
- 4. After the programming of the **IMB-ism** module the **C200** column gauge must be switched off and then on, because the special mode can be only left by a RESET.