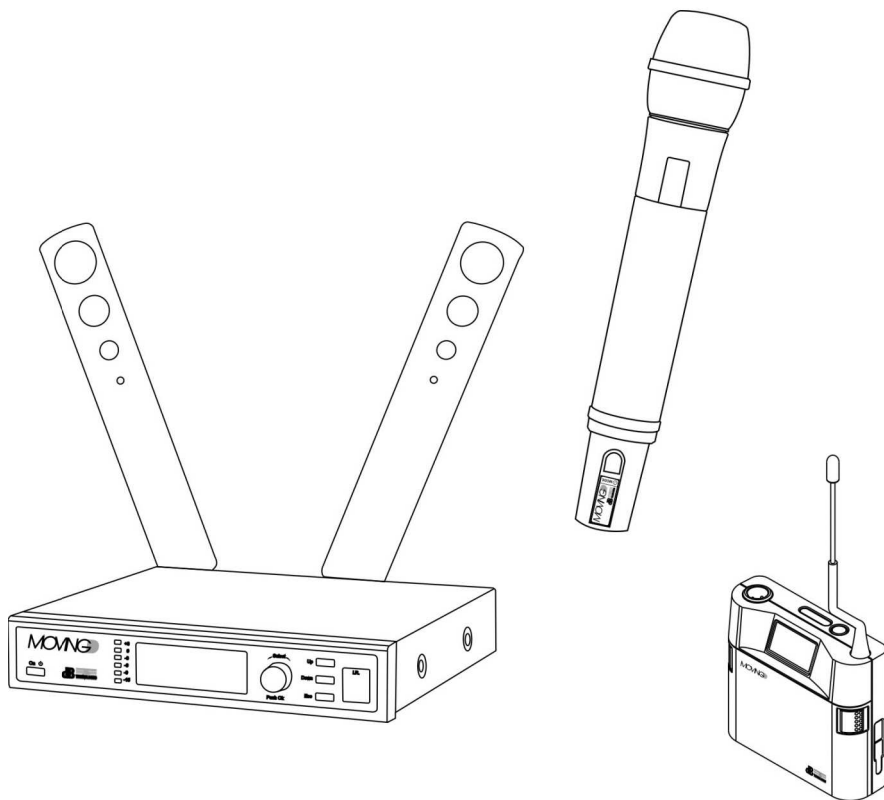


# MOVING

## UHF DIGITAL WIRELESS MICROPHONE SYSTEM



MANUALE D'USO - Sezione 1

USER MANUAL - Section 1

BEDIENUNGSANLEITUNG - Abschnitt 1

CARACTERISTIQUES TECHNIQUES - Section 1

**Le avvertenze** nel presente manuale devono essere osservate congiuntamente al "Manuale d'uso - Sezione 2".

The warnings in this manual must be observed together with the "User Manual - Section 2".

**Die Warnungen** in diesem Handbuch müssen in Verbindung mit der "Bedienungsanleitung - Abschnitt 2" beobachtet werden.

**Les avertissements** dans ce manuel doivent être respectés en collaboration avec le "Caracteristiques Techniques - Section 2".

**dB** TECHNOLOGIES

C E 0682 !

## 1 INTRODUCTION

MOVING D is a digital modulation radio microphone whose hardware has been designed to cover the UHF band ranging between 470 and 870 MHz.

This allows to use the system in the current and future frequency bands, irrespective of any changes to the European Regulations concerning the use of the Radio Spectrum.

The firmware installed on the system defines the frequency bands and the radiated output power for each country of use; it also allows to update the bands, should the evolution of the frequency allocation plans make it necessary.

The usage configuration by upgradeable firmware also allows to automatically block any unauthorised frequencies or to limit the output power to lower values, where required by local regulations.

The system firmware is periodically upgraded and made available by direct download from the dB Technologies Web site.

This feature, along with the 400MHz operating band of MOVING D, allows to ensure that the radio microphone is always up-to-date with the available frequency bands, without having to put the equipment out of service following any change to the country frequency allocation plans.

Coverage of such a wide band allows this system to operate (in Countries where it is permitted) over more than 16000 different frequencies.

The MOVING D includes other different innovative solutions:

- Digital modulation transmission which provides considerable immunity against interference;
- Battery Low which makes it possible to monitor the transmitter battery status at any moment, both on the transmitter itself as well as remotely on the receiver.
- Connection to the PC that, with specific software, makes configuration simple and monitoring easier, providing a series of utilities that simplifies use.
- Frequency Scanner is a function that makes it possible to check for noise in the air, therefore it is an optimal analysis tool for selecting frequencies and makes it possible to use channels with the lowest noise.



### Important

Before using equipment in the Country please check take care to check the frequencies available and admitted for the using of device. Often in some Countries, for the use of the apparatus may be request an "Authorization" or "License". Check with the Local Authorities of the country the necessary requirements for the use of the equipment. Some information can be available on the ERC Recommendation 70-03: Appendix 3 - "Radio microphones and Assistive Listening Devices", [www.ero.dk](http://www.ero.dk). Link to national authorities web sites: [www.ec.europa.eu](http://www.ec.europa.eu).

## 1.1 FAMILY DESCRIPTION

Each MOVING D system is composed of a desktop receiver MOVING D-R (with removable antennas), a hand-held (MOVING D-H) or bodypack (MOVING D-B) transmitter.

Kits are composed as follow:

### Receiver MOVING D-R

- n° 1 Desktop receiver MOVING D-R,
- n° 2 Telescopic antenna for first use,
- n° 1 Full-range 100-240Vac 50/60Hz power supply with 12Vdc output and EU outlet adapter
- n° 1 User manual.

### Handheld transmitter MOVING D-H

- n° 1 Handheld transmitter MOVING D-H,
- n° 2 Battery 1,5 AA type LR6
- n° 5 Five interchangeable coloured silicone rubber rings,
- n° 1 User manual.

### Bodypack transmitter MOVING D-B

- n° 1 Bodypack transmitter MOVING D-B,
- n° 2 Battery 1,5 AA type LR6
- n° 5 Five interchangeable coloured silicone rubber rings,
- n° 1 User manual.

You will then have the following options for coupling:

- MOVING D-R + MOVING D-H
- MOVING D-R + MOVING D-B

The following accessories are also available:

### For receiver MOVING D-R

- |              |  |
|--------------|--|
| MOVING D-ANT | Kit n°2 wide band antenna OWBA+ 2 stand adapter      |
| RDA800W      | Passive directive antenna, in band 470 .. 870MHz .   |
| AA800W       | Low noise antenna amplifier, in band 470 .. 870MHz . |
| UPA800       | Antenna attenuator.                                  |

**For bodypack transmitter MOVING D-B** refer to website [www.dBTechnologies.com](http://www.dBTechnologies.com)

A remote connection to the receiver is possible with a computer via a USB cable (Type A Male - Mini Type B Male).

If multiple MOVING D systems are used at the same time, the MOVING D Touring Rack Kit can be used, which can include up to 6 receivers, a splitter antenna for using only one antenna pair for the entire system, an intelligent power supply RPS10 and the concentrator HUB 800 which makes it possible to control the entire rack remotely via an Ethernet connection.

## **1.2 COUNTRIES AND FREQUENCIES**

The selection of the channels within the banks is connected to the need to not intermodulate multiple systems that work at the same time.

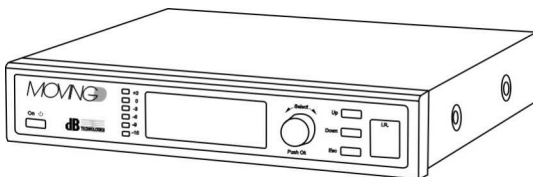
For multi-microphone installations, all transmitters must work within the same frequency bank.

Banks 1 and 3 prefer low frequencies, whereas banks 2 and 4 prefer high frequencies.

If necessary, the correct version with the correct bank can be downloaded from the internet website [www.dbtechnologies.com](http://www.dbtechnologies.com) download section of MOVING D to update the receiver.

**In compliance with the regulations on using transmission frequencies, it is suggested to refer to the tables provided on the official sites of the countries in which the device is used.**

## 2 RECEIVER MOVING D-R

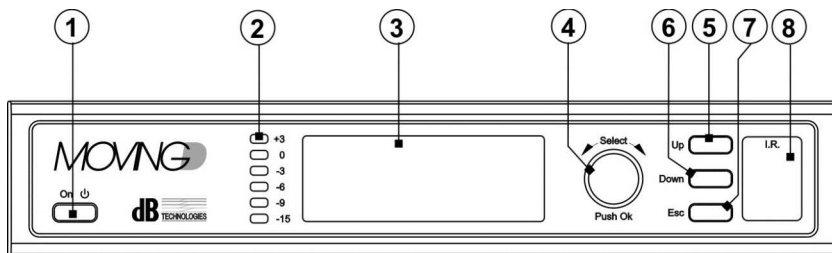


### 2.1 DESCRIPTION

The MOVING D-R receiver has two BNC connections for antennas, two line and microphone outputs and one USB socket for connection from a remote computer.

The MOVING D-R receiver must always be combined with a MOVING D-H (handheld) or MOVING D-B (bodypack) transmitter.

### 2.2 FRONT PANEL FUNCTIONS



1) **“ON- ⏻ ” Push button**

Enables or disables the device STAND-BY status. Hold down the button for a few seconds to enable device stand-by, the display will turn off and a green LED on the panel will flash. Press it again for a few seconds to reactivate the device.

2) **Intensity indicators**

This LED bar indicates the intensity of the audio signal between -15dB e +3dB;

3) **Display**

The display shows all information associated with device operation.

4) **“Select” Knob**

This control makes it possible to move, select and change the parameters in the pages of the displayed menus.

Rotating the knob:

- makes it possible to move within the menu pages;
- makes it possible to change the selected parameters.

Pressing the knob (Push OK):

- makes it possible to select/confirm the parameters.

After 30 seconds of inactivity, the selection function is disabled and any unconfirmed changes will not be saved.

5) **Switch “Up”**

This control allows to scroll up through the menu.

6) **Switch “Down”**

This control allows to scroll down through the menu.

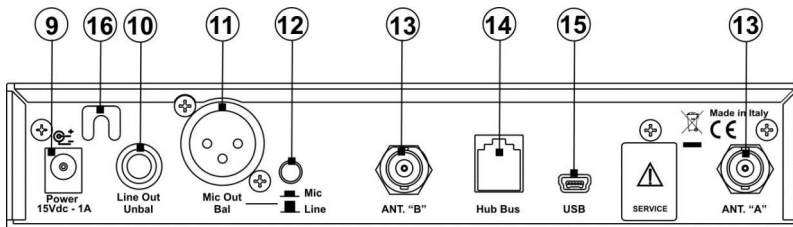
7) **Switch “Esc”**

This control allows to exit from selection function of menu and restores the scrolling.

8) **“I.R.”**

Communication device via IrDA (infrared) with mobile devices (handheld MOVING D-M or bodypack MOVING D-B transmitters).

## 2.3 REAR PANEL FUNCTIONS



### 9) Power connector "Power 15Vdc-1A"

The socket provides power to the receiver through the supplied 12-15Vdc power supply. Use only the provided power supply.

### 10) Connector "Line Out Unbal"

Mono Jack 6,3mm connector for audio level output (unbalanced).

### 11) Connector "Mic Out Bal"

XLR connector for balanced output.

### 12) Switch "Mic/Line"

This control allows to select the level of the output signal MIC / LINE.

### 13) ANTENNAS "A" and "B"

Two BNC connectors for antennas or antenna splitter cables connection.

### 14) Connector "HUB Bus"

RJ11 connector for HUB 800 (optional) device connection, which allows the remote control.

### 15) Connector "USB"

USB Mini-B connector allows connection to a PC where it should be installed the dedicated software, available on website [www.dbtechnologies.com](http://www.dbtechnologies.com).

### 16) Cable lock/anti-tampering

Used to lock the power supply cable and prevent accidental tampering with the cable itself.

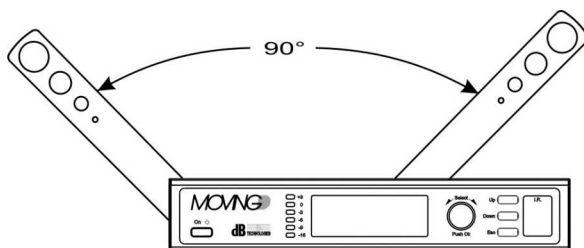
## 3 RECEIVER OPERATION MOVING D-R



The receiver must be supplied with power using the provided power supply unit exclusively.

### 3.1 BASE CONNECTIONS

Connect and lock the two supplied antennas (or the optional antennas MOVING D-ANT) into their BNC inputs of receiver and position the antennas so that there are an  $90^\circ$  angle between them (see picture below). Connect the power supply unit to the "Power 15Vdc - 1A" socket on the back of receiver.



### 3.2 START-UP

The receiver starts up automatically as soon as it is connected to the power supply unit. If it has already been used previously, during start-up, the latest settings used before turning it off will be loaded. There will then be a brief initialization procedure, after which the device is ready for use.

### 3.3 STAND BY

Press the "On/Stby" key for 3 seconds to put the device in stand-by, a green LED will flash to indicate this status. To exit the stand-by status, press the button for 2 seconds, the device will be reactivated.

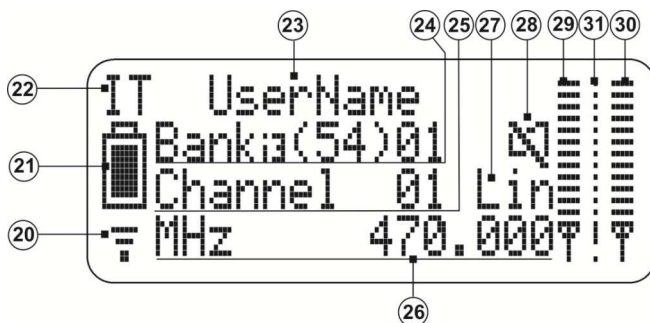
### 3.4 SHUTDOWN

To shut down the receiver, disconnect the power supply cable from the device.

### 3.5 FUNCTIONS ON THE DISPLAY

All receiver and system settings can be selected using the front controls (keys and knob) and are shown on the display.

A quick list of the functions is provided in the diagram on page 34.



#### 3.5.1 INITIAL SCREEN

##### 20) Reception indicator

This symbol appears when the receiver is connected to a transmitter.

##### 21) Battery charge indicator

Indicates the battery charge level of the transmitter connected to the receiver. If the transmitter is turned off, the receiver continues to indicate the battery charge status at the moment it was turned off.

##### 22) Country indicator

Indicates the selected country and as a result the frequencies that can be used according to the current regulations of the relative country.

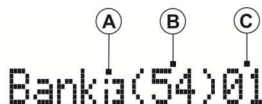
##### 23) User name

The name of the user set on the transmitter connected to the receiver is displayed

##### 24) BANK indicator

The set bank is displayed.

A bank is a group of frequencies that can work at the same time. Multiple receivers that work together must be set to the same bank.



##### A) Bank intermodulation order

Indicates the selectivity of the calculation for intermodulation between transmitters. The pre-calculated intermodulation can be of the third (i3) or fifth (i5) order. The (i3) banks contain a greater number of channels, but are less immune to intermodulation, therefore interruption of the signal, of the receivers with respect to the (i5) banks.

**B) Available channels**

Indicates the quantity of channels available within the selected bank (total number prior to scanning, number of free channels after scanning).

**C) Set bank**

Indicates the currently set bank number.

**25) CHANNEL indicator**

The number of the channel inside the bank used by the receiver is displayed.

**26) FREQUENCY indicator**

Indicates the frequency to which the receiver is tuned.

**27) Output level indicator**

Displays the output level used for the LIN (line) or MIC (microphone). The outputs are selected using the button (12) located on the rear of the receiver (see paragraph 2.5).

**28) MUTE indicator**

Displays if the connected transmitter has been muted or not.

**29) Antenna A signal level**

Indicates the intensity of the signal received from antenna A.

**30) Antenna B signal level**

Indicates the intensity of the signal received from antenna B.

**31) Noise signal level**

When the transmitter is off, it indicates the intensity of the detected input noise.

**3.5.2 SETTING THE COUNTRY**

From the main screen, turn the Select (4) knob until the country is displayed (22).

Press the knob to select the change function, turn the knob again to scroll the countries, for more information about the country abbreviations.

Press the knob to confirm the selected country.

**Note.** Changing the country involves losing the selection of the bank and channel being used.

**3.5.3 SETTING THE BANK**

From the main screen, turn the Select (4) knob until displaying the number that indicates the bank being used (24-C).

Press the knob to select the change function, turn the knob again to scroll the bank numbers. When selecting the bank number, you can see on the display the variation in the order of the bank (24 - A), the number of channels (24 - B) and the frequency (26).

Press the knob to confirm the selected bank.

**Note.** Changing the bank involves losing the selection of the channel being used.

**3.5.4 SETTING THE CHANNEL**

From the main screen, turn the Select (4) knob until displaying the number that indicates the "channel" (25).

Press the knob to select the change function, turn the knob again to scroll the channels. When selecting the channel, you can see the variation of the frequency on the display (26).

Press the knob to confirm the selected channel.

**Note.** When selecting the channel, you can see the intensity of the noise detected by the receiver (31) on the currently selected channel. It is recommended to select the channel with the lowest possible amount of noise in order to optimize device operation.

**3.5.5 SCROLLING THE MENU PAGES**

From the main screen, press the Up (5) or Down (6) button to change the menu. From any menu page, if the selection phase is not active, press the Esc (7) key to automatically return to the main screen.

**3.6 CONFIGURING THE RECEIVER AND TRANSMITTER**

All the basic system settings can be displayed and modified from the various menus of the MOVING D-R receiver.

The transmitter is configured by the receiver, by means of the IRDA device.

### 3.6.1 MENU 1 - TX CONFIGURATION

From this menu it is possible, via the IRDA device, to write (Write Data) or read (Read Data) the parameters set of the two devices.

```

1 TX CONFIGURATION
  Write Data
  Read Data
  Default Data
  
```

#### WRITE DATA

- Set the desired configurations in the various receiver menus (for more details see below in the manual).
- Turn on the transmitter.
- Align the transmitter's IRDA interface with the one for the receiver (recommended distance between 5 and 10 cm). For more information refer to paragraph 5 MOVING D-H and paragraph 7 for MOVING D-B.
- Use the Up (5) button to enter receiver menu 1 and turn the Select (4) knob to select Write Data, then press the knob to confirm (OK).
- Wait for the operation to finish, making sure not to interrupt the IRDA connection between the two devices.
- Once the procedure is complete, "TX SUCCESSFUL" will appear on the display, then close the transmitter. The devices are synchronized and are ready for use.

#### READ DATA

- Turn on the transmitter.
- Align the transmitter's IRDA interface with the one for the receiver (recommended distance between 5 and 10 cm). For more information refer to paragraph 5 for MOVING D-H and paragraph 7 for MOVING D-B.
- Use the Up (5) button to enter receiver menu 1, turn the Select (4) knob to select Read Data, then press the knob to confirm (OK).
- Wait for the operation to finish, making sure not to interrupt the IRDA connection between the two devices.
- Once the procedure is complete, "RX SUCCESSFUL" will appear on the display, then turn off the transmitter. The devices are synchronized and are ready for use.

#### DEFAULT DATA

If necessary, the default configuration can be restored using the Default Data function on page 1 of the menu: TX Configuration.

### 3.6.2 MENU 2 - PARAMETERS A

From this menu, it is possible to set the gain of the hand-held transmitter's microphone capsule and the name to be assigned to the hand-held or bodypack transmitter.

```

2 PARAMETERS A
TX Audio Lev 0dB
Name ABCDEFGHILM
MOVING D ID 1
  
```

#### SETTING THE GAIN FOR THE CAPSULE (TX Audio Level)

- Select "TX Audio Lev" and turning the knob (4), select the desired value, press the knob to confirm.
- Follow the data writing procedure at paragraph 3.6.1 to configure the transmitter.

#### SETTING THE TRANSMITTER NAME (Name)

- Use the Select (4) knob to individually select and modify each letter or character to obtain the desired name (max 11 characters). Press the knob to confirm each character.
- Follow the data writing procedure in paragraph 3.6.1 to configure the transmitter.

#### SET THE RECEIVER ID NUMBER (MOVING D ID) (Only for use with HUB 800)

- By turning knob (4), select the desired ID number value in the 1 to 6 range, then press the knob to confirm.

This setting allows to identify the receiver inside the rack and to communicate with an outside PC.



### 3.6.3 MENU 3 - PARAMETERS B

Menu 3 displays the type of transmitter and its microphone capsule. This information is automatically recognized by the receiver when it is RF connected with the transmitter.

From this menu, you can set encryption in the transmission that can only be decoded by the associated receiver. Finally, it is possible to select the power of the transmission signal (RF Power).



#### ENCRYPTING

With this selection, you can introduce encryption in the transmission that can only be decoded by the associated receiver.

- Select Encrypt and change the setting from NO to YES, then confirm.
- Create the Keygen encryption string and press OK;
- Follow the data writing procedure in paragraph 3.6.1 to configure the transmitter.

In this state, only the receiver that has the encryption key stored is able to reproduce the audio received from the associated transmitter. The symbol of a key will appear on the initial screen of the display.

If you want another receiver to decode the signal of an encrypted transmitter, read the information indicated in paragraph 3.6.1.

Any other receiver that receives the signal will not be able to reproduce it, an exclamation point (!) will appear on the display instead of the key to indicate this anomaly.

To deactivate signal encryption, change the parameter in the receiver settings and then reprogram the transmitter.

**Note.** Once encryption is activated and the transmitter is programmed, the associated receiver will continue to reproduce the signal regardless if the Encrypt parameter is activated on the receiver or not, the key symbol that appears on the display represents the programming status of the transmitter.

#### ERP OUTPUT POWER (RF Output Power)

The Moving D receiver output signal power (RF Power) is factory set to 10mW, in line with the requirements set out by all the countries where it is designed to be used.

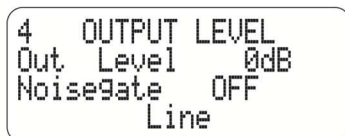


**The output signal power may be raised to 50mW, but the change must only be performed after verifying with the local Authority of the country of use that it complies with the applicable regulations.**

- Select "RF Power" and turn the knob (4) to select the desired value, press the knob to confirm.
- Follow the data writing procedure in paragraph 3.6.1 to configure the transmitter.

### 3.6.4 MENU 4 - OUTPUT LEVEL

This is used to set the volume of the audio signal output in dB and displays the status of the level button located on the rear of the receiver Mic / Line.



- Turn the knob (4) to select the desired value, press the knob to confirm.

#### NOISE GATE SETTINGS

- By turning knob (4), select the Noise Gate triggering threshold value, then press the knob to confirm.

The threshold value must fall in a 1 to 100 range; select OFF to disable the function.

### 3.6.5 MENU 5 - FW VERSION

This menu can be used to check the versions of the firmware installed in the device.

```

5      FW VERSION
Ver Fw DSP X.XX
Ver Fw ARM XX.XX b1
  
```

### 3.6.6 MENU 6 - MANUAL FREQUENCY

This menu can be used to manually select the frequency.

```

6 MANUAL FREQUENCY
Select      ▼
Frequency   813.800
Activate    OFF
  
```

- Use the knob (4) to select "Select", then press it to access the change mode. Turn the knob to position the arrow on the number to be modified, then press to confirm.
- Select "Frequency" and change as necessary the number indicated by the previously set arrow, press the knob to confirm the desired frequency.
- Enable the use of the set frequency by changing the status of the "Activate" parameter from OFF to ON.
- Follow the data writing procedure in paragraph 3.6.1 to configure the transmitter.

**Note.** For the best results, it is recommended to use frequencies with little background noise. It is recommended to set the Buffer parameter in menu "8 SCAN SETUP" to zero.



#### Attention!!!

When manually setting the value of the frequency, all the frequencies between 470 and 870 MHz can be accessed, including the values that may be prohibited in the country where the system is used. To avoid any penalties, it is recommended to consult the regulations of the country of use.

### 3.6.7 MENU 7 - SCAN

Menus 7 and 8 concerning frequency scanning. The time required for scanning the frequencies varies depending on the set frequency interval.

```

7      SCAN
GER      ▼
Min:520000Max:540000
Start    Full Quick
  
```

- Use the knob (4) to select the arrow located above the frequency values. Press it to access the change mode. Turn the knob to position the arrow on the number to be modified, then press it again to confirm.
- Select the "Min" or/and "Max" frequency value and change as necessary the number indicated by the previously set arrow. Press the knob to confirm the extreme values of the desired interval of the frequencies to be analyzed.
- "Start" parameter: select between "Full" and "Quick" scanning:

#### "Quick" scanning

Selecting Quick activates the scanning of the frequency range, related to the selected country, for the channels in the banks.

#### "Full" scanning

Selecting Full activates the scanning of all frequencies within the selected range. For this type of scan, the parameters in this menu as well as those in menu 8 "SCAN SETUP" must be set.

The Full mode may be more accurate than the Quick mode, but may also require a few minutes before it is completed.

### 3.6.8 MENU 8 - SCAN SETUP

It is used to set the frequency scanning parameters.



```

8  SCAN SETUP
Filter: OFF Buffer: 0
Increment: 25 KHz
Level: -090 Delay: 0
  
```

Always use the knob (4) to select, modify and confirm the parameter values.

#### Filter

Enables the use of the "Level" parameter while scanning.

#### Buffer

Indicates the number of measurements for estimating the entity of the noise for each individual frequency. This parameter influences the speed with which the noise is analyzed in real time when selecting the channels. A greater number of samples provides a more accurate analysis, and more time will be needed to complete the operation.

For MANUAL (menu 6) frequency selection, it is recommended to set the Buffer parameter to zero.

#### Increment

It indicates the increment between a scanned frequency and the next one.

A smaller increment will produce a more detailed scanning of the selected frequency interval, and more time will be necessary to complete the operation.

#### Level

It indicates the threshold beyond which a detected signal will be considered noisy. The unit of measure is dB and is an always negative value between 0 and -107dB.

*Example:* Level: 095 is equal to -95 dB.

#### Delay

This indicates the time that passes between the analysis of one sample and the analysis of the next one.

## 4 REMOTE SOFTWARE

Connection to a computer, via a USB connection, makes it possible to remotely view and change all configuration parameters.

The specific "Moving D" software can be used to update the firmware both for the MOVING D-R receiver as well as for the MOVING D-H (hand-held) and MOVING D-B (bodypack) transmitters.

### 4.1 INSTALLING THE PROGRAM "Moving D"

Download program "Moving D" from internet website [www.dbtechnologies.com](http://www.dbtechnologies.com) from MOVING D downloads section.

The program is self-installing.

### 4.2 CONNECTING TO THE COMPUTER

Connect a computer to the USB (15) connector located on the rear of the receiver. Start the program:

Start ➡ Programs ➡ dBTechnologies ➡ dBTechnologies MOVING D

### 4.3 UPDATING THE RECEIVER FIRMWARE

Download firmware for MOVING D-R receiver from internet website [www.dbtechnologies.com](http://www.dbtechnologies.com) from MOVING D downloads section.

Updating the firmware does not change the device configuration.

File ➡ Firmware Update ➡ Load (select the file with the RBN extension)

Follow the instructions that appear on the display until the operation is complete.

**Note.** Make sure to load the correct firmware on the device.

### 4.4 UPDATING THE HAND HELD TRANSMITTER FIRMWARE

Download firmware for hand transmitter MOVING D-H from internet website [www.dbtechnologies.com](http://www.dbtechnologies.com) from MOVING D downloads section.

Updating the firmware does not change the device configuration.

File ➡ Firmware Update ➡ Load (select the file with the TEX extension)

Turn off the transmitter and align its IRDA interface with that of the receiver, turn on the transmitter, making sure the I.R. interfaces are aligned and maintain alignment during the entire procedure.

Follow the instructions that appear on the display until the operation is complete.

Once the update is complete, turn off the device, wait at least 5 seconds before turning it back on.

**Note.** Make sure to load the correct firmware on the device.

### UPDATING THE BODYPACK TRANSMITTER FIRMWARE

Download firmware for bodypack transmitter MOVING D-B from internet website [www.dbtechnologies.com](http://www.dbtechnologies.com) from MOVING D downloads section.

Updating the firmware does not change the device configuration.

File ➞ Firmware Update ➞ Load (select the file with the TEX extension)

Turn off the transmitter and align its IRDA interface with that of the receiver, turn on the transmitter making sure the I.R. interfaces are aligned and maintain alignment during the entire procedure.

Follow the instructions that appear on the display until the operation is complete.

Once the update is complete, turn off the device, wait at least 5 seconds before turning it back on.

**Note.** Make sure to load the correct firmware on the device.

## 4.5 SPECTRUM ANALIZER USE

View ➞ Spectrum Analyzer

The amplitude of the interval and the accuracy of the analysis of parameters can also be set from the computer.

It is also possible to save the analysis parameters to load them later. It is also possible to save the analyses that were carried out and access them later.

## 4.6 TRANSMITTER'S PARAMETERS

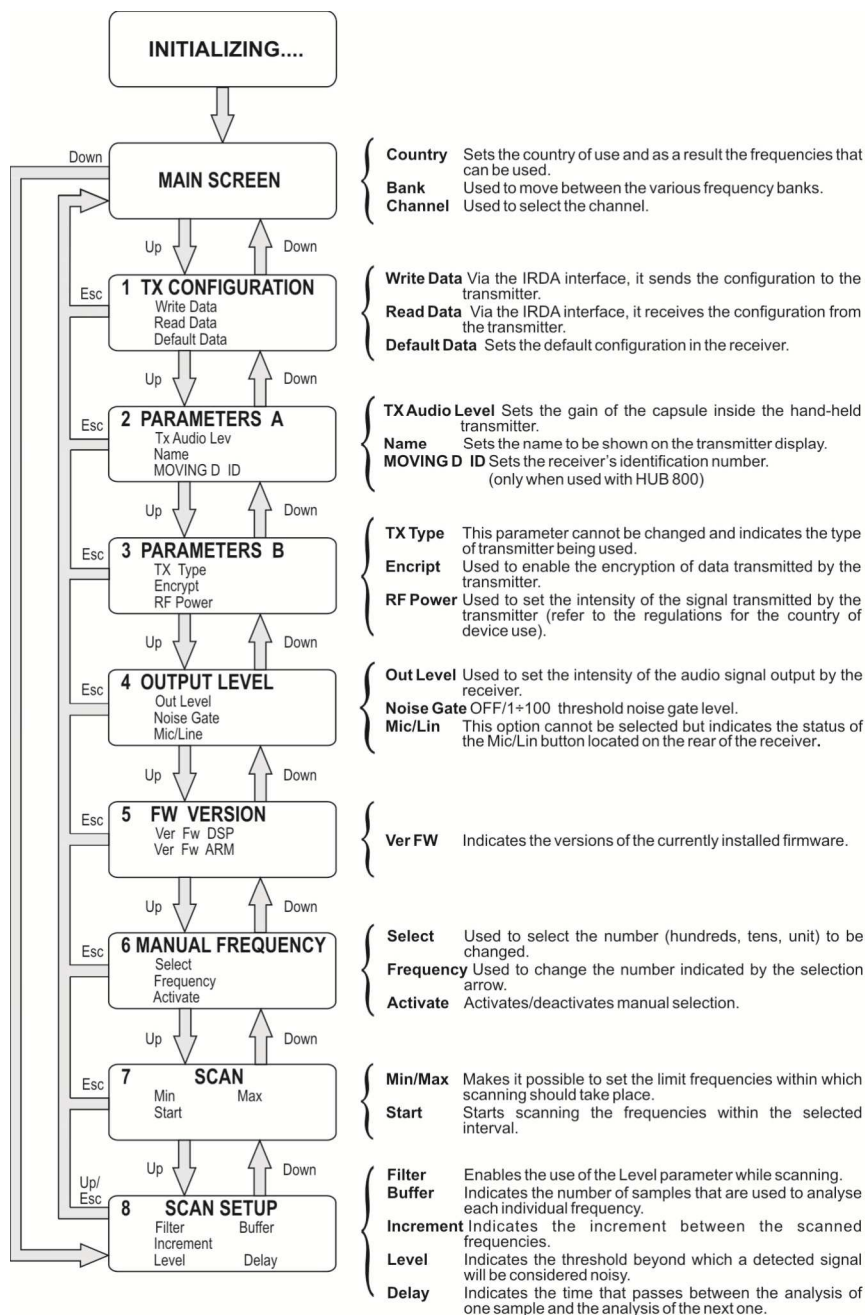
View ➞ Programming View

Exactly as in the version of the menu on board the receiver, in this section it is possible to change various configuration parameters, such as:

the name that appears on the transmitter, the microphone capsule signal gain, the power of the transmitted signal, the country, the frequency bank and the utilized channel.

Once these parameters have been changed, they must be sent to the transmitter via the I.R. interface as described in paragraph 3.6.1.

## MOVING D-R QUICK FUNCTION LIST



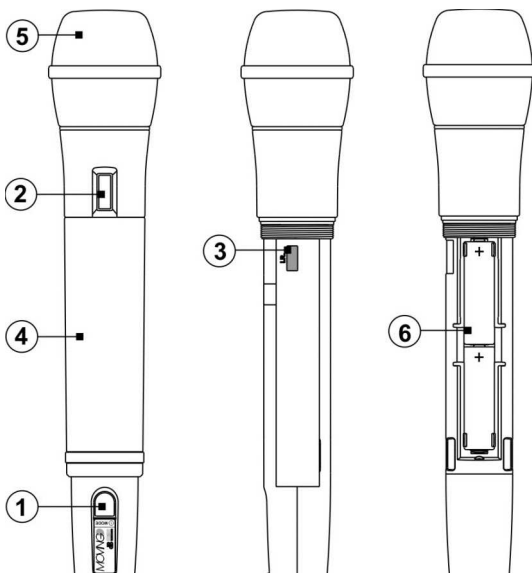
## 5 HAND-HELD TRANSMITTER MOVING D-H

### 5.1 DESCRIPTION

The MOVING D-H model is a hand-held transmitter with a dynamic cardioid capsule Bayerdynamic TG-X58.

The MOVING D-H transmitter must always be combined with a MOVING D-R receiver, which is used to configure the transmitter itself.

### 5.2 FUNCTIONS



- 1) **"MODE" Switch**  
Button for turning the system on/off. This button is also used to activate/deactivate the MUTE status and to scroll the status screens on the display.
- 2) **Display**  
All the information about the device is shown on the display.
- 3) **"I.R."**  
Device for IrDA (infrared) communication with the MOVING D-R receiver.
- 4) **Handle**  
The handle closes and protects the battery compartment and the internal devices. There is a groove in the handle for the insertion of a silicone ring (supplied) to customize the transmitter.
- 5) **Ball grille**  
Grille that protects the microphone capsule.
- 6) **Battery compartment**



Compartment for inserting the batteries supplied.

**The MOVING D-H transmitter uses two standard AA batteries. It is recommended to use high capacity (>2200mAh) NiMH batteries for longer life.**

#### 5.2.1 CUSTOMIZING THE TRANSMITTER

Five colored interchangeable silicon rings are supplied to customize the transmitter if multiple systems are used at the same time.

These rings are inserted in the groove in the lower part of the microphone handle.

The transmitter can also be customized by setting the user's name from the receiver (for more information refer to paragraph 3.6.2).

## 6 MOVING D-H TRANSMITTER OPERATION

Unscrew the handle (4), of your MOVING D-H transmitter, insert the batteries in the compartment (6) making sure the batteries are in the correct direction.

### 6.1 START-UP

Turn on the transmitter by pressing the "MODE" (1) key for a few seconds until the display (2) turns on. There will be a brief initialization procedure, during which "dB Technologies Initializing..." will appear on the display, and after a few seconds transmitter will be ready.

### 6.2 ENERGY SAVINGS

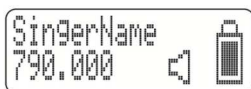
After about 10 seconds, the display will enter the energy savings mode. This status is indicated by an asterisk. To exit this mode, press and immediately release the "MODE" (1) key.

### 6.3 FUNCTIONS ON THE DISPLAY

The basic configurations of the MOVING D-H transmitter will be shown on the display.

#### 6.3.1 MAIN SCREEN

This is the default screen that appears after the device is turned on.



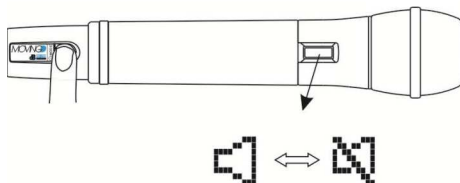
This screen displays:

- The name of the microphone user, if set from the receiver. If not set, the default message will appear : "SingerName".
- The frequency value (expressed in MHz) of the transmission channel currently being used.
- The "active microphone" (loudspeaker) or Mute (crossed off loudspeaker) status indicator.
- The mute indicator.
- The battery level indicator.

#### MUTE

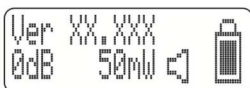
The Mute status is indicated on the transmitter by the crossed off loudspeaker symbol.

To switch from the normal status (functioning) to Mute, or vice versa, hold down the button (1) for a second.



#### 6.3.2 SCREEN 2

Press and release rapidly the button (1) to switch from the main screen to screen 2.



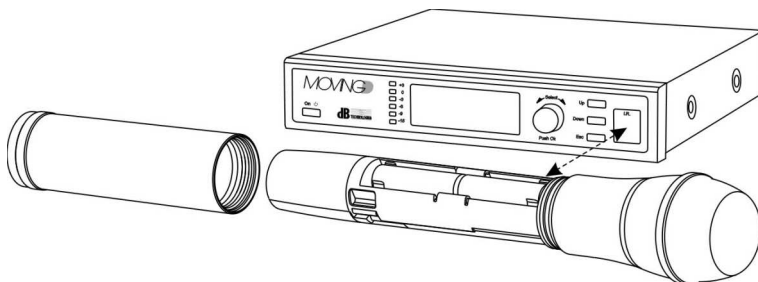
This screen displays:

- The version of the firmware installed in the device.
- The microphone capsule amplification gain (expressed in dB).
- The power of the signal transmitted to the receiver (expressed in mW).
- The mute indicator.
- The battery level indicator.

## 6.4 TRANSMITTER CONFIGURATION

The transmitter is configured through the receiver.

- Set the desired configurations in the various menus of the MOVING D-R receiver (for more details see the manual section concerning the receiver).
- Turn on the transmitter.
- Unscrew and remove the MOVING D-H transmitter handle. Align the transmitter's IRDA interface with the one for the receiver (recommended distance between 5 and 10 cm), see figure below.
- On the receiver: use the Up button to enter menu 1 (TX CONFIGURATION) and turn the Select knob to select Write Data, then press the button to confirm (OK).
- Wait for the operation to finish, making sure not to interrupt the IRDA connection between the two devices.
- Once the procedure is complete, "TX SUCCESSFUL" will appear on the display, then turn off the transmitter. The device is ready to be used.



## 6.5 UPDATING FIRMWARE

Just like the configuration, also the firmware is updated via the receiver. Refer to paragraph 4.4.

## 6.6 SHUTDOWN

Press down the "Mode" (1) button for a few seconds, until the shutdown message appears on the display.

## 6.7 BATTERIES LOW

The battery status is displayed by the specific indicator. When the level has reached its operating limit, this is indicated by an "exclamation mark"; in this condition the device will continue operating until the battery is completely discharged.

If the transmitter is turned off with the battery in a critical phase, the device will no longer turn on.

Replacing the batteries:

- Unscrew the transmitter handle and remove it from the microphone body.
- Insert or replace the batteries in the compartment, paying particular attention to the indicated polarity.



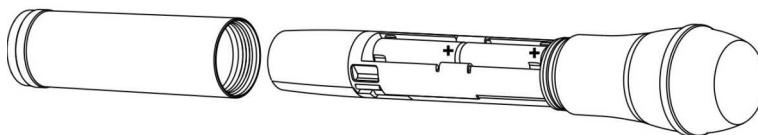
**The MOVING D-H transmitter uses two standard AA batteries. It is recommended to use high capacity (>2200mAh) NiMH batteries.**

- Put the transmitter handle back on.



### WARNING

If the transmitter is not used for a long period, it is advisable to remove the batteries to avoid any leakage.





## 7 BODYPACK TRANSMITTER MOVING D-B

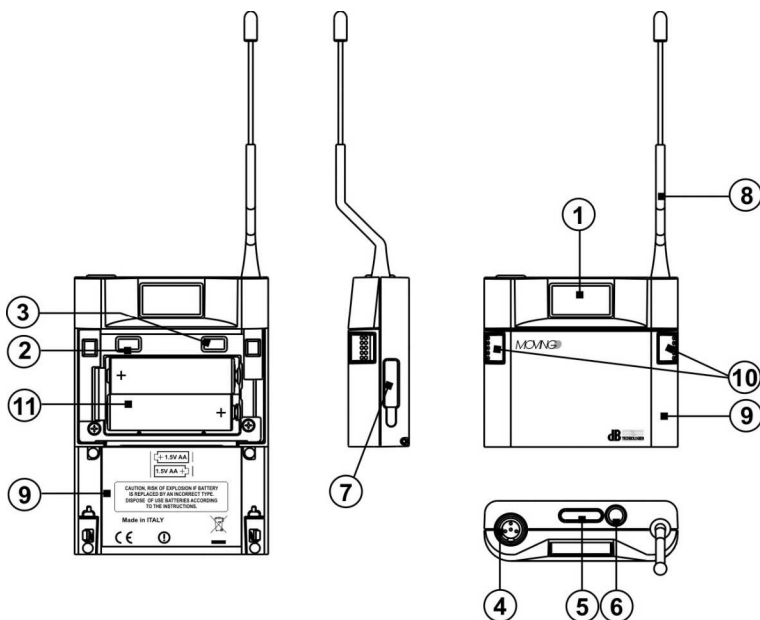
### 7.1 DESCRIPTION

The MOVING D-B model is a bodypack transmitter that can be used for voice or musical instruments such as wind instruments or electric guitars.

The MOVING D-B transmitter must always be combined with a MOVING D-R receiver, which is used to configure the transmitter itself.

It may be combined with a lavalier microphone, with a headset or a cable for connection to an electric guitar or bass, etc.

### 7.2 FUNCTIONS



- 1) **Display**  
All the information about the device is shown on the display.
- 2) **MINUS button**  
This button is used to decrease the gain on the XLR input connector (microphone).
- 3) **PLUS button**  
This button is used to increase the gain on the XLR input connector (microphone).
- 4) **Mini XLR connector**  
Connector for connecting an external accessory (microphone or cable for connecting a guitar).
- 5) **LED status indicators**  
There are two LEDs that indicate the device status:
  - the blue LED flashes to indicate that the device is on: one flash every 4 seconds - ON normal, one flash per second MUTE mode;
  - the red LED turns on to indicate a signal peak, if it remains on, adjust the volume using the MINUS (2) or PLUS (3) buttons.
- 6) **"MODE" Switch**  
Button for turning the system on/off This button is also used to activate/deactivate the MUTE status and to scroll the status screens on the display.

- 7) **“I.R.”**  
Device for IrDA (infrared) communication with the MOVING D-R receiver.
- 8) **Antenna**  
Attention!!! Do not bend or straighten the antenna.
- 9) **Front panel**  
Panel that closes the battery compartment and the internal adjustment buttons.
- 10) **Front panel open buttons**  
Pressing them at the same time releases the front panel, so it can be opened.
- 11) **Battery compartment**  
Compartment for inserting the batteries supplied.



**The MOVING D-B transmitter uses two standard AA batteries. It is recommended to use high capacity (>2200mAh) NiMH batteries for longer life.**

### 7.2.1 CUSTOMISING THE TRANSMITTER

Five colored interchangeable silicon rings are supplied to customize the transmitter if multiple systems are used at the same time.

These rings are inserted in the body of the XLR connector for the accessory (microphone or guitar cable).

The transmitter can also be customized by setting the user's name from the receiver (for more information refer to paragraph 3.6.2).

## 8 TRANSMITTER OPERATION MOVING D-B

Open the front panel (10) of MOVING D-B transmitter, insert the batteries in the compartment (11) making sure the batteries are in the correct direction.

### 8.1 START-UP

Turn on the transmitter by pressing the “MODE” (6) key for a few seconds until the display (1) turns on.

There will be a brief initialization procedure, during which “dB Technologies Initializing...” will appear on the display, and after a few seconds transmitter will be ready. and the blue status LED flashes once every 4 seconds.

### 8.2 ENERGY SAVINGS

After about 10 seconds, the display will enter the energy savings mode. This status is indicated by an asterisk.

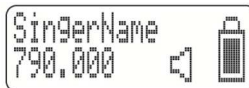
To exit this mode, press and immediately release the “MODE” (6) key.

### 8.3 FUNCTIONS ON THE DISPLAY

The basic configurations of the MOVING D-B transmitter will be shown on the display.

#### 8.3.1 MAIN SCREEN

This is the default screen that appears after the device is turned on.



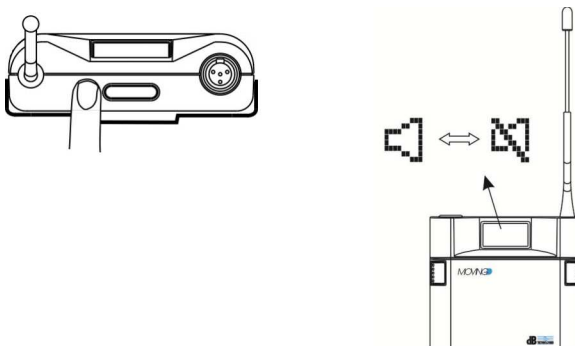
This screen displays:

- The name of the microphone user, if set from the receiver. If not set, the default message will appear : “SingerName”.
- The frequency value (expressed in MHz) of the transmission channel currently being used.
- The “active microphone” (loudspeaker) or Mute (crossed off loudspeaker) status indicator.
- The mute indicator.
- The battery level indicator.

## MUTE

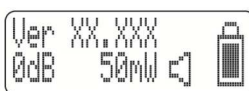
The Mute status is indicated on the transmitter by the crossed off loudspeaker symbol and the blue status LED (5) flashes once per second.

To switch from the normal status (functioning) to Mute, or vice versa, hold down the button (6) for a second.



## 8.3.2 SCREEN 2

Press and release the button (6) to switch from the main screen to screen 2.



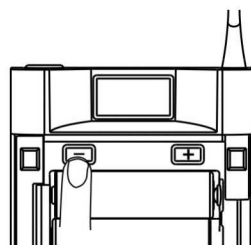
This screen displays:

- The version of the firmware installed in the device.
- The microphone capsule amplification gain (expressed in dB).
- The power of the signal transmitted to the receiver (expressed in mW).
- The mute indicator.
- The battery level indicator.

## ADJUSTING THE GAIN

The gain can only be changed directly on your MOVING D-B transmitter using the PLUS (3) and MINUS (2) buttons located inside the front panel of the transmitter.

**Note.** If the red LED (5) turns on during normal transmitter operation to indicate a signal peak, adjust the gain on the input level using the buttons.

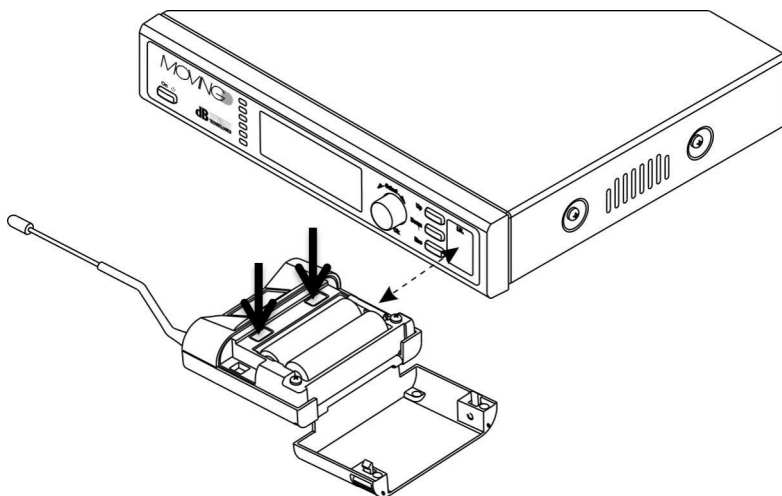


## 8.4 TRANSMITTER CONFIGURATION

The transmitter is configured through the receiver.

- Set the desired configurations in the various menus of the MOVING D-R receiver (for more details see the manual section concerning the receiver).
- Turn on the transmitter.
- Open the front panel on the MOVING D-B transmitter. Press the PLUS (3) and MINUS (2) buttons at the same time until "IrDA ON" appears on the display.
- Align the transmitter's IRDA interface with the one for the receiver (recommended distance between 5 and 10 cm), see figure below.
- On the receiver: use the Up button to enter menu 1 (TX CONFIGURATION) and turn the Select knob to select Write Data, then press the button to confirm (OK).
- Wait for the operation to finish, making sure not to interrupt the IRDA connection between the two devices.

- Once the procedure is complete, "TX SUCCESSFUL" will appear on the display, then turn off the transmitter. The device is ready to be used.



## 8.5 UPDATING FIRMWARE

Just like the configuration, also the firmware is updated via the receiver. Refer to paragraph 4.4

## 8.6 SHUTDOWN

Press down the "Mode" (6) button for a few seconds, until the shutdown message appears on the display.

## 8.7 BATTERIES LOW

The battery status is displayed by the specific indicator.

When the level has reached its operating limit, this is indicated by an "exclamation mark"; in this condition the device will continue operating until the battery is completely discharged.

If the transmitter is turned off with the battery in a critical phase, the device will no longer turn on.

Replacing the batteries:

- When the transmitter is off, open the front panel on the transmitter.
- Insert or replace the batteries in the compartment, paying particular attention to the indicated polarity.



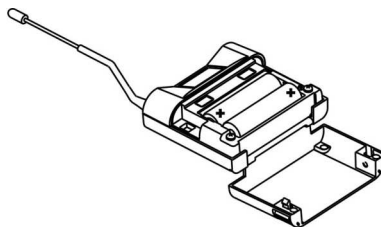
**The MOVING D-B transmitter uses two standard AA batteries. It is recommended to use high capacity (>2200mAh) NiMH batteries.**

- Close transmitter front panel.



### WARNING

If the transmitter is not used for a long period, it is advisable to remove the batteries to avoid any leakage.



## 9 SUGGESTIONS AND RECOMMENDATIONS

### INTERFERENCE PROBLEMS

To avoid any interference problems:

- keep the transmitter at a distance of at least 5 to 6 meters from EACH active receiver.
- receivers antennas must not be positioned too close to each other, if fit directly on the receiver, position them at a 90° angle to each other.
- make sure that transmitters batteries are charged and efficient;
- If you can't avoid the interference you must change the operating frequency of the wireless system who is experiencing problems, searching for an interference free channel.

### Simultaneous use of more radio microphones

The MOVING D series is suitable for the simultaneous use of several transmitters at the same time.

If you have experience problems while using different microphones simultaneously, first of all check the frequencies you are using.

In particular:

- Avoid frequency conflicts (check transmission channels);
- As a general rule: maintain a frequency spacing of 250KHz minimum, 1MHz recommended.

In case of interference:

- Turn all transmitters off and make sure that all receivers are in the "mute" state. This procedure enables you to identify a possible external interference source directly;
- Turn on one transmitter at a time and move it around to check the worst condition and identify the receiver exiting the "mute" state. If a receiver which is not tuned to the frequency of the transmitter in use exits the "mute" state, there is an inter-modulation problem and it is necessary to find a more suitable position with higher distance between receivers.

## 9.1 WARNINGS

### Inductive phenomena

To avoid any inductive phenomena responsible for buzzing and disturbances jeopardizing the good operation of the system, avoid to put the receiver near any equipment producing a strong magnetic field, e.g. power transformers, electric energy wires and lines supplying power to speakers.

### Feedback phenomena.

To avoid any feedback phenomena (emission of "buzzing", particularly dangerous for speaker systems), it is advisable to:

- keep a certain distance between radio microphones and speakers,
- lower the capsule gain or lower the volume of the wireless microphone,
- adjust the transmitter so that the capsule does not point to the speakers.

### Signal drop outs

There are areas where it is difficult to receive the signal correctly. To avoid any drop outs, it is necessary to move the receiver to a most suitable position, remove any obstacles and reduce the distance between transmitter and receiver.

Moreover, place the transmitter as close as possible to the source, to avoid external noise or unwanted sounds.

## 10 USE LICENCES

dB Technologies products fully comply to all regulations in force.

However, in some countries, the use of radio frequency systems must be approved by the relevant authorities and it may be necessary to apply for a license to be able to legally use them.

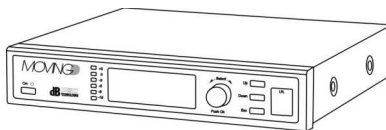
Your local distributor will give you all necessary information.

Check the recommendation ERC 70-03: appendix 3 "Radio Microphones" annex 10, Band C, D, E for details.

## 11 TECHNICAL SPECIFICATIONS

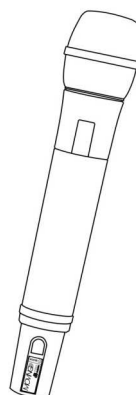
### RECEIVER MOVING D-R

<b>Dimensions</b>	Half rack size
<b>Power supply</b>	12 - 15 VDC
<b>Power consumption</b>	550 mA
<b>Audio output</b>	0 dBm/600 ohm, balanced line/unbalanced
<b>Frequency response</b>	35Hz to 19KHz ~ 3dB
<b>Distortion</b>	< 1%
<b>Operating frequency</b>	470 ÷ 870 MHz
<b>Sensitivity</b>	Up to -90dBm
<b>Modulation</b>	DIGITAL
<b>Deviation</b>	55 KHz
<b>Signal to noise range</b>	104 dB typical
<b>Antennas</b>	2 BNC telescopic removable
<b>Temperature range</b>	-10°C / +50°C
<b>Frequency stability</b> (-10° +50°C):	ETSI EN 300 422-1/-2 ETSI EN 301 489-1/-9 EN 61000-3-2/3
<b>Diversity function</b>	Yes
<b>Weight</b>	1100 g.



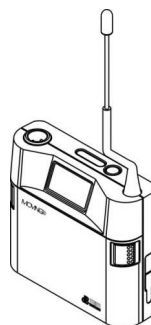
### HAND-HELD TRANSMITTER MOVING D-H

<b>Batteries</b>	2x1,5V AA type high capacity
<b>Frequency response</b>	35Hz to 19KHz ~ 3dB
<b>Distortion</b>	< 1%
<b>Power consumption</b>	150 mA
<b>Operating frequencies</b>	470 ÷ 870 MHz
<b>RF output power</b>	10mW , 50mW ERP
<b>Modulation</b>	DIGITAL
<b>Deviation</b>	55 KHz
<b>Aerial</b>	Integrated
<b>Temperature range</b>	-10°C / +50°C
<b>Frequency stability</b> (-10° +50°C):	ETSI EN 300 422-1/-2 ETSI EN 301 489-1/-9 EN 61000-3-2/3
<b>Input limiter</b>	Yes
<b>Low battery warning</b>	Yes
<b>Battery life</b>	> 7 hours
<b>Weight</b>	350g. (with batteries)



## BODYPACK TRANSMITTER MOVING D-B

<b>Batteries</b>	2x1,5V AA type high capacity
<b>Sound input sensitivity</b>	Adjustable
<b>Frequency response</b>	35Hz to 19KHz ~ 3dB
<b>Distortion</b>	< 1%
<b>Power consumption</b>	150 mA
<b>Operating frequencies</b>	470 ÷ 870 MHz
<b>RF output power</b>	10mW , 50mW ERP
<b>Modulation</b>	DIGITAL
<b>Deviation</b>	55 KHz
<b>Aerial</b>	Integrated
<b>Temperature range</b>	-10°C / +50°C
<b>Frequency stability</b> (-10° +50°C):	ETSI EN 300 422-1/-2 ETSI EN 301 489-1/-9 EN 61000-3-2/3
<b>Input limiter</b>	Yes
<b>“Peak” Indicator</b>	Yes
<b>Low battery warning</b>	Yes
<b>Battery life</b>	> 7 hour
<b>Weight</b>	200g. (with batteries)



## SISTEMS MOVING D-H - MOVING D-B

<b>Type of receiver</b>	Digital wide band true diversity
<b>Frequency response</b>	35Hz to 19KHz ~ 3dB
<b>Distortion THD</b>	< 1%
<b>Signal to noise ratio</b>	> 104 dB nominal
<b>Operating</b>	More then 16000 freq.selectable
<b>Band-width</b>	470 ÷ 870 MHz
<b>Modulation</b>	DIGITAL
<b>Deviation</b>	55 KHz
<b>According to Directive</b> <b>1999/5/EC</b>	ETSI EN 300 422-1/-2 ETSI EN 301 489-1/-9 EN 61000-3-2/3
<b>Working range *</b>	100m (out door)

\* This figure is indicative and capacity depends both from set up and place of use.

Capacity can be reduced very much if there are obstacles and metal and/or reinforced concrete structures.