IMPORTANT NOTES

Before connecting and using the speaker, please read the instructions in this manual carefully and keep it for future reference.

This manual is to be considered an integral part of the product, and must always accompany the speaker when it changes ownership as a reference for correct installation and operation as well as for the safety regulations.

dB Technologies will not assume any responsibility for incorrect installation of the speaker.

CAUTION

To avoid the risk of fire or electrical shock, never allow the speaker to be exposed to rain or dampness.

SAFETY PRECAUTIONS

1. The power supply voltage of this speaker has a sufficiently high value to involve a risk of electrocution; therefore,never install or connect the speaker with the power supply switched on.
2. Before using the speaker, make sure that your mains voltage corresponds to the value indicated on the rear panel of the speaker.
3. To prevent the risk of electrical shock, the metallic parts of the speaker must be earthed. If the current outlet used for supplying the speaker, is equipped with an earth terminal, the speaker is earthed by means of the power cable.
4. To avoid the risk of fire or electrical shock, make sure that the power supply cable cannot be stepped on or crushed by objects, and to prevent any damage to the cable, never bend it excessively, jerk or cut it.
5. To prevent the risk of electrical shock, never open the speaker. There are no parts on the inside that need to be accessed by the user.
6. Make sure that no objects or liquids can get into the speaker, as this could cause the risk of fire or electrical shock.
7. Never attempt to make repairs that are not described in this manual. Contact your authorized service centre or qualified personnel should any of the following occur:
   A. The speaker does not function (or functions in an anomalous way).
   B. The power supply cable has been damaged.
   C. Objects or liquids have got into the speaker.
   D. The speaker has been subject to heavy impact.
8. When the speaker is not to be used for long periods of time, switch it off and disconnect the power supply cable.
9. If the speaker begins to emit any strange odours or smoke, switch it off immediately and disconnect the power supply cable.
10. To prevent the risk of electrical shock, never connect or disconnect the power cable with your hands wet.Always grasp the plug directly, and never pull on the cable.
11. The speaker is capable of producing high acoustic pressure levels that may damage the hearing; we thus recommend that you regulate the volume attentively.
12. In order not to jeopardize the safety of the speaker, it must only be connected to the mains using the power cable provided. If the power cable plug does not fit your electrical outlet, contact a qualified electrician to replace the outlet with a suitable one.

OPERATING PRECAUTIONS

- Do not force the amplifier incorporated in the speaker to work in overload for extended periods of time.
- Never force the control elements (switches, controls, etc.).
- Do not use solvents, alcohol, benzene, or other volatile substances for cleaning the exterior parts of the speaker.

CAUTION

- Make sure that the speaker is positioned in a stable and secure way in order to avoid any dangerous conditions for persons or objects.
- Do not situate the speaker in areas subject to high-intensity vibrations or places that are particularly exposed to dust or dampness.
- When using the speaker outdoors, avoid positions that are directly exposed to harsh weather.
- To ensure efficient cooling of the final stages of the amplifier, situate the speaker in a well-ventilated position which is not exposed to direct sunlight and is far from any source of heat

CONNECTION

CAUTION

- For connecting the speaker, use only qualified and experienced personnel having sufficient technical knowledge or specific instructions for making the connections correctly and thus preventing electrical dangers.
- To prevent the risk of electrical shock, the speaker must only be supplied from the mains after all connections have been completed.
- Before powering up the speaker, it is advisable to re-check all the connections, making sure in particular that there are no short circuits.
- The entire sound system must be designed and installed in compliance with the current standards and regulations regarding electrical systems.

NOTE

To prevent inductive phenomena from giving rise to hum or disturbance which would jeopardize efficient seaker operation, the cables that transmit microphone signals or line level signals (e.g. 0 dB/V) must be screened and should not be run in the vicinity of:

- Equipment that produces strong magnetic fields (e.g. large power supply transformers)
- Electrical energy conductors
- Lines that supply speakers.

AC SUPPLY

CAUTION

- Before supplying the speaker, make sure that your mains voltage corresponds to the value indicate on the rear panel of the speaker.
- Connect the speaker to current outlets having an earth contact.
- For connecting to the mains, use the cable supplied with the speaker, which should first be connected to the socket on the speaker.

PROTECTION SYSTEM

The speaker is equipped of a exclusive system, which protects the loudspeakers against overheating, ensuring the maximum reliability in all professional applications. In addition, a sophisticated system incorporated in the amplifier handles the limiter circuits and the protection against overheating and short circuits.

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5. TECHNICAL SPECIFICATION X

1. CONTROLS AND FUNCTIONS (Fig.1)

1) **"OVERLOAD" INDICATOR**
The indicator lights up red to indicate that the internal limiting circuit has tripped to prevent amplifier distortion and protect the speakers against overloads.

2) **"MASTER VOLUME" CONTROL**
This control regulates speaker output volume.

3) **"CD-AUX VOLUME" CONTROL**
This control regulates the volume of the input signal to the RCA "STEREO CD-AUX INPUTS" connector.

4) **"MIC/LINE VOLUME" CONTROL**
This control regulates the volume of the input signal to the XLR/Jack 1/4" (6.3mm) "MIC/LINE BAL INPUT" connector

5) **"WIRELESS VOLUME" CONTROL**
This control regulates the input volume of the radio microphones.

6) **"VOICE TONE" CONTROL**
This control permits regulating the tones in the microphone and radio microphone channel.

7) **"WIRELESS RX" RADIO MICROPHONE SUPPLY SWITCH**
This switch permits switching off the radio microphone receiver, thereby increasing battery life in the case of this not being used.

8) **SENSITIVITY SWITCH**
Place the switch in MIC position to use a balanced or unbalanced microphone.
Place the switch in LINE position to use a balanced or unbalanced source at line level.

9) **"MIC/LINE BAL" INPUT CONNECTOR**
Balanced input that can be used for connecting up a low-impedance dynamic microphone, or a high-level audio source (eg. preamplifier, mixer, recorder, CD player, musical instrument, etc.,).

10) **"STEREO CD-AUX" INPUT CONNECTOR**
Through the RCA phono connectors, this input permits easy connection of CD, DAT, cassette players, etc.... .

11) **"UNBAL MIXED LINE" OUTPUT CONNECTOR**
This output can be used to send the mixed audio signal to another amplified speaker, to a recorder or to a supplementary amplifier.
To make the connection, use an unbalanced 1/4" (6.3mm) jack connector.

12) **"POWER" SWITCH**
This switch can be used to switch the speaker on and off, but it has no effect on the battery recharge circuit.

13) **"BATTERY STATUS" INDICATOR**
The two-colour indicator lights up green to indicate the speaker is on and operating correctly.
This indicator comes on red to indicate the battery is low.

14) **" BATTERY CHARGE" INDICATOR**
The red indicator stays on steady during battery recharging.
Once the battery has been completely recharged, this indicator will start flashing.

15) **D.C. POWER ADJUSTMENT AT OUTPUT POTENTIOMETER**
By means of this screwdriver adjuster, the output voltage at the D.C. jack connector (16) can be changed.
The output voltage can vary between 1 and 10VDC with maximum current 100mA.

16) **"VARIABLE VOLTAGE " OUTPUT D.C. POWER CONNECTOR**
From this connector take the power voltage for CD players, cassette recorders....or for the active steerable antenna.

17) **"12-20VDC" INPUT D.C. POWER CONNECTOR**
By means of this connector, the battery can be recharged with variable power voltage: 12-20VDC.

18) **POWER SOCKET**
By means of this connector, the battery can be recharged with mains power voltage: 115/230VAC

19) **FUSE CARRIER**
Mains fuse housing.

20) **POWER VOLTAGE CHANGE**
Permits changing the power voltage of the speaker (115/230VAC).
This switch is preset and protected by the manufacturer.

21) **"CHANNEL" FREQUENCY SWITCH**
This 16-position rotating switch permits selecting the radio microphone channels (see label for corresponding work frequencies).

2. POWER SUPPLY

2.1 Battery power supply

The speaker is supplied with a partially-charged battery for safety reasons.

The battery does not feature memory effect and can therefore be charged at any time.

Battery speaker operating time depends on use and can vary between 7 and 12 hours.

2.1.1 First charge

When the speaker is used for the first time, the battery must be fully charged.

- Make sure the speaker is off ("POWER" switch in OFF position)
- Connect the speaker to the mains supply by means of the cable provided.
- The red "BATTERY CHARGE" indicator will remain on steady.
- Leave the speaker to charge until the above indicator light starts to flash (10-15 hours).

2.1.2 Subsequent charging

The battery charge will have to be checked before using the speaker. This check is necessary because even when the battery is not used, battery efficiency declines over time.

Switch the speaker on by means of the "POWER" switch and check the colour of the "BATTERY STATUS" indicator:

- ✓ green = the battery is charged and the speaker can be used straight away
- ✓ red = the battery is low and the speaker can only be used for a very short time. In this condition, it is best to recharge the battery.
- ✓ off = the battery is completely flat and the protection circuit has tripped. In this situation, the battery must be recharged.

To recharge the battery:

- Connect the speaker to the power socket [18] using the lead provided or by means of the jack [17] with D.C. adapter (not provided).
- The red "BATTERY CHARGE" indicator remains on steady.
- Leave the speaker to charge until the above indicator light starts to flash.

⚠ Make sure the D.C. adapter is compatible with the power voltage required by the speaker (12-20VD.C.).
In the case of power supplies below 16VDC, complete battery charge will never be achieved.

2.2 Battery protection

The speaker features a circuit that assures correct battery operation and protects this from complete discharge.
When this protection trips, it means battery operating voltage has dropped below minimum established value (about 9 V.).
The tripping of the protection is first of all indicated by the lighting up of the red "BATTERY STATUS" indicator; afterwards, the speaker is turned off altogether. The interval between these two stages depends on use.

The speaker will automatically start to operate again when the battery is recharged.

2.3 Mains power supply

The OPERA 110 MOBILE can be used connected directly to the mains like any speaker that operates only when the battery is charged or partially charged, by means of one of the two recharge points.
The recharge circuit is always operative with mains power supply.
If, during operation, there is a power break and the battery is charged, the speaker will be automatically powered by the battery without any interruption occurring.

3. RADIO MICROPHONE

The receiver of the radio microphone incorporated in the OPERA 110 MOBILE works in UHF band with a choice of 16 channels (frequencies). Frequency selection can be made by means of a rotating switch. For the correspondence between selected channel and work frequency, refer to the label on the panel.

The receiver is based on the "diversity" principle as it features two separate antennas used to select the best radio signal at any time. The antennas are incorporated in the receiver board inside the speaker.

A switch is fitted for excluding the radio microphone circuit in the event of this not being used. This permits longer battery life and excludes the circuits that are not used.

4. USE

4.1 Inputs

4.1.1 CD-AUX input

By means of the RCA connectors, the STEREO CD-AUX inputs ensure easy connection to DAT, CD, cassette or reel players, etc... This input is mainly used for listening to recordings.

The volume of these inputs is regulated by means of the CD-AUX VOLUME control.

4.1.2 MIC/LINE inputs

The MIC/LINE BAL mono input can be used as a balanced microphone or line input. The input level can be selected by means of the sensitivity switch above the connector.

If musical instruments are used (e.g.,: guitar, bass guitar, keyboard), mixer or CD player,... use the input with LINE sensitivity, while for wire microphones, use the input with MIC sensitivity. The XLR connector or 1/4" (6.3 mm) jack can also be used.

The volume of this input is adjusted by means of the MIC/LINE VOLUME control.

4.1.3 Radio microphone

With the receiver incorporated in the OPERA 110 MOBILE speaker, both a hand transmitter and a pocket (belt) transmitter can be used.

The latter features special audio accessories (Lavalier microphone, instrument or headset cable) and a clip for belt fastening.
If the transmitter is of the mono-frequency type, select one of the 16 available channels on the speaker in accordance with the transmitter work frequency; in the case of a multi-frequency, select the same channel on both the receiver and the transmitter.
Frequency selection can be made by means of the channel switch.

The volume of this input is regulated by means of the WIRELESS VOLUME control.

4.2 Volume and tone control

The OPERA 110 MOBILE features separate volumes for the various inputs which can be regulated independently and a general volume that controls the mixed signal at output.
This is why, when using the speaker, you should always remember to regulate both the volume of the signal/s at input and the general volume.

Tone control involves the microphone channel inputs to permit adjusting voice tones.

⚠ If there is no audio signal, the speaker switches to standby mode after a few minutes to save the battery and not create disturbances.
As soon as the audio signal returns, the speaker will start up automatically.

During low-volume use, the automatic switch-off circuit could come on. To prevent this standby mode, set input volumes high and general volume low.

4.3 Outputs

The speaker features an output for the unbalanced mixed audio signal to which can be connected another active speaker, an amplifier or a recorder (example 1).
Connection is by means of a 1/4" (6.3 mm) jack connector.

Several OPERA 110 MOBILE units can be used with a single radio microphone transmitter, setting the same work frequency between the transmitter and all the receivers. The signal from the transmitter will be reproduced simultaneously on all the tuned-in speakers (example 2).

Thanks to an optional kit called MS 110 KIT (Integrated Antenna Transmitter) the system can be further expanded. The kit consists of a radio repeater with integrated steerable antenna, and extendible stand (500-850mm) and relevant connection cables.

By connecting the mixed audio signal of one of the speakers to an MS 110 KIT repeater, the radio signal can be launched to several OPERA 110 MOBILE units at the same time, covering a maximum distance of about 100 m (free range). The same work frequency must be set for both the MS 110 KIT repeater and for all the speakers to which the signal is to be transmitted (example 3).

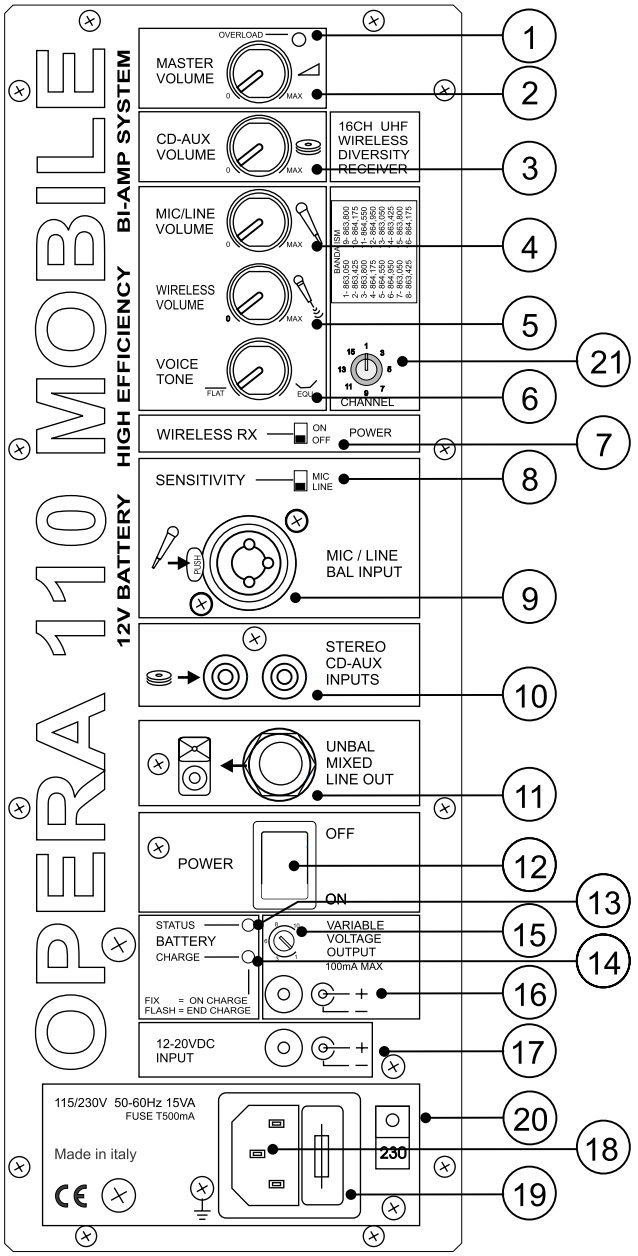
In case a radio microphone transmitter also has to be used, a different frequency from that used by the repeater will have to be set for both the radio microphone transmitter and for the relevant speaker (which works as a master and will therefore be in turn connected to the repeater) (example 4)

5. TECHNICAL SPECIFICATION

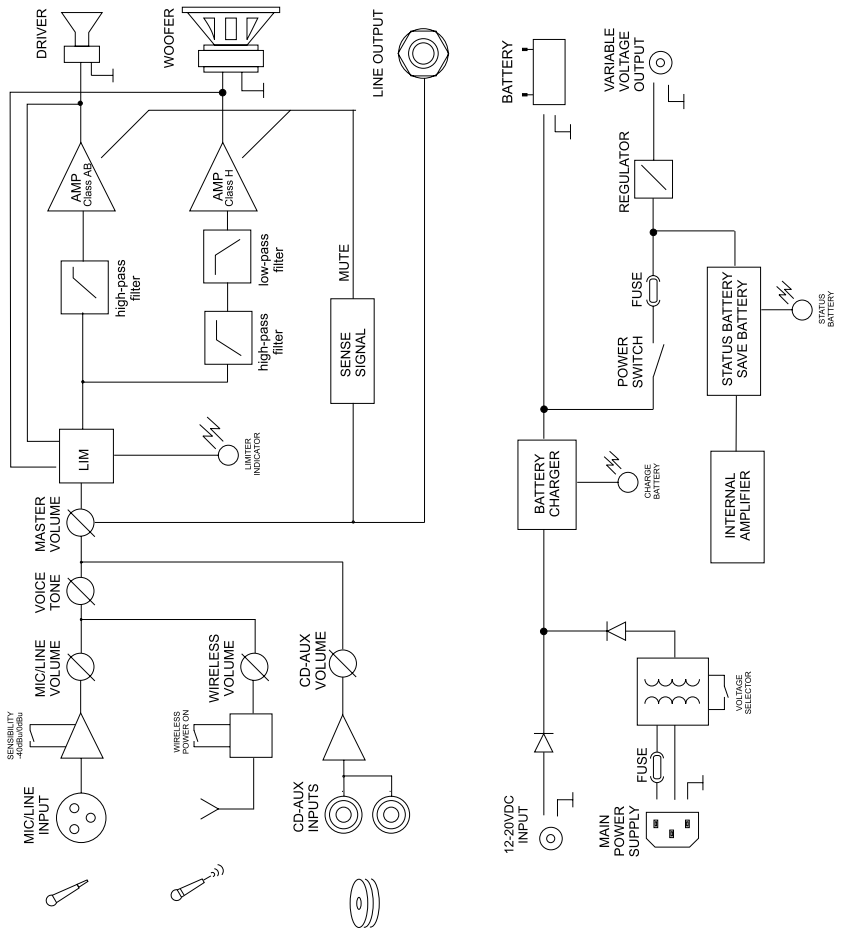
TECHNICAL DETAILS	OPERA 110 MOBILE
Type of amplifer	bi-amp HF class AB LF class H
Acoustic power	40W LF + 10W HF
Frequency response	80 - 18.000 Hz
Crossover	Ft 2000 Hz TW 12dB/oct W 12dB/oct
Sound pressure (SPL)	117 dB max
Component parts	1 woofer 10" 1 tweeter 1”
MIC/LINE input sensitivity	-40dBu / 0dBu (switch)
MIC/LINE impedance (Balanced)	1K2 /30K
MIC/LINE impedance (Unbalanced)	600 /15K
RCA input sensitivity	-10dBuRCA
impedance	47K
LINE OUT output level	0dBu
DC connector at output	from 1 to 10VDC - 100mA MAX
Battery recharge from mains by DC connector	see box plate (230/115 VAC) 12-20 Vdc
Rechargeable battery	12V - 7,2Ah
Battery life	10 -16 hours (depends on use)
Dimensions (wxhxd)	312x550x290 mm
Weight	12 Kg

TECHNICAL DETAILS	RADIO MICROPHONE
Type of receiver	DIVERSITY
Number of channels	16 channels
Channel selection	rotatng switch
Audio band width	35Hz to 16KHz ~3dB
THD distortion	<1%
Signal/disturbance ratio	115dB
Operating frequencies	multi-channel range 770 - 870 KHz
Band width	200 Khz FM
Antennas	2 integrated

Fig. 1
Abb. 1


OPERA 10 MOBILE
12V BATTERY HIGH EFFICIENCY BI-AMP SYSTEM
OVERLOAD
MASTER VOLUME
CD-AUX VOLUME
16CH UHF WIRELESS DIVERSITY RECEIVER
MIC/LINE VOLUME
WIRELESS VOLUME
VOICE TONE
FLAT
EQ
CHANNEL
WIRELESS RX
ON OFF
POWER
SENSITIVITY
MIC LINE
PUSH
MIC / LINE BAL INPUT
STEREO CD-AUX INPUTS
UNBAL MIXED LINE OUT
POWER
OFF
ON
STATUS
BATTERY
CHARGE
VARIABLE VOLTAGE OUTPUT 100mA MAX
FIX = ON CHARGE
FLASH = END CHARGE
12-20VDC INPUT
115/230V 50-60Hz 15VA
FUSE T500mA
Made in italy
230
1
2
3
4
5
21
6
7
8
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12
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18
19

SCHEMA A BLOCCHI
BLOCK DIAGRAM
BLOCKSCHALTBILD
SCHEMAS FONCTIONNELS
DIAGRAMA EM BLOQUES



COLLEGAMENTI ANTENNA MS 110 KIT
MS 110 KIT ANTENNA CONNECTIONS
ANSCHLÜSSE ANTENNE MS 110 KIT
CONEXIONES ANTENA MS 110 KIT
CONNEXION ANTENNE MS 110 KIT

