

ULB2000

ULTRALINK

User's manual



Version 1.0 August 2006



www.behringer.com



ULTRALINK ULB2000

IMPORTANT SAFETY INSTRUCTIONS

CAUTION: To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside; refer servicing to qualified personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus should not be exposed to dripping or splashing and no objects filled with liquids, such as vases, should be placed on the apparatus.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure—voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

DETAILED SAFETY INSTRUCTIONS:

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 8) Only use attachments/accessories specified by the manufacturer.
- 9) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



TABLE OF CONTENTS

1. INTRODUCTION	3
1.1 Before you get started	4
1.1.1 Shipment	4
1.1.2 Registration	4
1.1.3 Initial operation of the transmitter	4
1.1.4 Online registration	5
2. CONTROL ELEMENTS	5
3. OPERATING THE TRANSMITTER	6
3.1 Turning the transmitter on	6
3.2 Channel setting	6
3.3 Setting your own frequency	6
3.4 Preset	7
3.5 Mic Gain	8
3.6 Auto Mute	9
3.7 Turning the transmitter off	10
4. STATUS QUERY	10
4.1 Battery condition and transmission channel	10
4.2 Transmission frequency	11
4.3 Preset	11
4.4 Mic Gain	11
4.5 Auto Mute	11
5. ULB2000 LEVEL SETTING	11
6. APPLICATION EXAMPLE	12
7. INSTALLATION	12
7.1 Operating information	12
7.1.1 Attach the transmitter	12
7.1.2 General information	12
7.2 Audio connections	13
8. SPECIFICATIONS	14
FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION	15
MICROPHONE QUICK START GUIDE	16

GB**1. INTRODUCTION**

Thank you very much for expressing your confidence in us by purchasing the ULTRALINK ULB2000. This Transmitter, coupled to the receiver ULR2000 from BEHRINGER, comprises a modern, high-performance wireless transmission system.

Due to its amazing set of features, you can use the ULB2000 in any situation that requires the highest quality in sound and freedom of movement for live concerts, events and television productions.

Depending on your local wireless transmission regulations, you can use up to 20 systems simultaneously.

The IRC compander system guarantees an extremely wide transmission dynamic range.

The headset holds a high-grade Panasonic® capsule with a cardioid polar pattern. Therefore, it primarily picks up the sound from the front and less from the sides. The sound that reaches the backside of the microphone is suppressed as much as possible, allowing it to be less susceptible to feedback in live situations.

ULTRALINK ULB2000

The ULTRALINK Series equipment features 3 factory presets, each with 8 permanent, interference-free channels. This allows you to use several systems in parallel without them influencing one another. Additionally, you have the option of storing 8 of your own frequencies in a user preset, thus individually addressing your own needs.

Determining which microphone is assigned to which receiver is done either by observing the transmission channel in the display or by comparing the transmission frequency. In addition, the ULTRALINK equipment from BEHRINGER leaves you the option to color-code your gear for easy identification.

Beyond that, both units feature other useful functions, such as Scan and Auto Mute. This way, no wishes are left open during practice or in live situations.



The following instructions are intended to familiarize you with the unit's controls, so that you can learn all of its functions. After having thoroughly read these instructions, store them in a safe place for future reference.



1.1 Before you get started

1.1.1 Shipment

The ULB2000 was carefully packed at the factory to assure secure transportation. Should the condition of the cardboard box suggest that damage may have taken place, please inspect the unit immediately and look for physical indications of damage.



Damaged units should NEVER be sent directly to us. Please inform the dealer from whom you acquired the unit immediately as well as the transportation company from which you took delivery of the unit. Otherwise, all claims for replacement/repair may be rendered invalid.



Always use the original packaging to avoid damage due to storage or shipment.



Never leave children unsupervised with the unit or its packaging.



Please dispose of all packaging materials in an environmentally friendly manner.

1.1.2 Registration

Before powering up the unit for the first time, you **have to register** it with your local postal/telecommunication authority! Additional information is available there.

1.1.3 Initial operation of the transmitter

Prior to taking the ULB2000 into operation for the first time, you need to fit the provided antenna on the transmitter. Connect the antenna to the designated plug located on the top of the ULB2000 by means of the screw connector. Ensure that the antenna has been screwed tightly onto the transmitter.

The ULB2000 requires a 9-V battery to operate. The constant glowing of the LED indicates the operational readiness. When the battery is nearly depleted, the STATUS LED on the transmitter begins to flash quickly. At the same time, an inaudible signal is sent to the ULB2000 receiver which then shows "LowBat" on its display. To ensure a reliable operation of the transmitter-receiver system, change the transmitter's battery as follows:

1. Hold the top of the transmitter with a free hand.
2. Press both latches to the right and left of the casing and, at the same time, slide the cover of the battery compartment downwards.
3. Remove the old battery by using the provided implement.
4. Insert a new 9-V battery in the compartment. Be sure that the implement is placed underneath the battery.
5. Slide the cover back onto the battery compartment until it locks into place.



Remove the battery when the ULB2000 is not used for an extended period of time.



Please ensure that only qualified personnel install and operate the ULB2000. During installation and operation, the user must be sufficiently grounded. Electrostatic charges might affect the operation of the unit.

1.1.4 Online registration

Please do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com (alternatively www.behringer.de) and kindly read the terms and conditions of our warranty carefully.

Should your BEHRINGER product malfunction, our goal is to have it repaired as quickly as possible. To arrange for warranty service, please contact the retailer from whom the equipment was purchased. Should your BEHRINGER dealer not be located in your vicinity, you may directly contact one of our subsidiaries. Corresponding contact information is included in the original equipment packaging (Global Contact Information/European Contact Information). Should your country not be listed, please contact the distributor nearest you. A list of distributors can be found in the support area of our website (www.behringer.com).

Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently.

Thank you for your cooperation!



2. CONTROL ELEMENTS

In this chapter, different control elements of your ULB2000 will be described, explained in detail, and you will get useful information on how to use them.

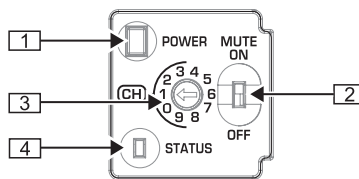


Fig. 2.1: Controls of the ULB2000

1 POWER

To power the hand-held transmitter on or off, keep the POWER button pressed for at least 2 seconds. Briefly pressing the POWER button confirms your choices when entering values (refers to later chapters). Additionally, you can check the current transmitter settings (selected channel and battery condition).

2 MUTE switch

Engaging the MUTE switch mutes the microphone. Additionally, the ULB2000 can be switched to programming mode by selecting the digits 9 or 0; or, you can get a readout of a specific unit setting.

3 SELECTION SWITCH

Using a screwdriver, you can select different values on the SELECTION SWITCH. For example, you can select a channel number and the frequency.

4 STATUS LED

Through repeated blinking, the status LED gives the account of the current settings for all parameters. We differentiate between 3 different blinking tempos:

- ▲ The LED flashes slowly when exiting the programming mode, for example.
- ▲ To give the account of the channel number or individual frequency values, the LED blinks with **medium** tempo.
- ▲ **Rapid** blinking indicates an error, for example an empty battery or a faulty entry.

The constant glowing of the LED indicates the operational readiness of the transmitter.

The **SERIAL NUMBER** is located on the transmitter battery compartment. To get to the serial number, please open the battery compartment (see ch. 1.1.3).

3. OPERATING THE TRANSMITTER

A brief overview with the graphic representation on operating the transmitter is found on the last page of this user manual (QUICK REFERENCE GUIDE).

3.1 Turning the transmitter on

1. Press the transmitter's POWER button for 2 seconds.
2. A blink code indicates the charge level of the battery:
1 = Battery is nearly empty . . . 5 = Battery is fully charged
3. Shortly after, a second blink code indicates the current channel setting for the transmitter:
1 = Channel 1 is selected . . . 8 = Channel 8 is selected

When the blink codes have indicated the operating state, a constant glowing of the LED indicates the operational readiness. However, the battery is discharged and needs to be replaced when the LED continues to flash (see Chapter 1.1.3).

3.2 Channel setting

Within a preset, you can easily select a channel by using the select switch [4]. In this case, it is not relevant whether the transmitter is on or off.

Changing the channel when the transmitter is already powered on

 **During this procedure, the transmitter may not be set to mute!**

1. Turn the selection switch to one of the positions 1 - 8, corresponding to the desired channel number. If a valid value is selected (i.e. neither 9 nor 0), the LED blinks quickly once as a confirmation.
2. Press the POWER button briefly. The LED flashes at a medium rate, corresponding to the channel number (for example, 5 times for channel 5) that has been set by using the select switch.

 **If an invalid channel number is selected (0 or 9), the channel selected last remains selected.**

Changing the channel when the transmitter is powered off

1. Turn the selection switch to one of the values (1 - 8), corresponding to the desired channel number.
2. If you turn on the transmitter, the channel you selected is automatically loaded.

 **If an invalid channel number was selected (0 or 9), the channel selected last remains selected.**

3.3 Setting your own frequency

A carrier frequency in the range between 798.1 and 805.9 MHz can be freely selected. This frequency is stored in a self-assignable user preset (Preset 1).

 **The carrier frequency can only be set in 25-kHz steps. The frequency you select has to be a multiple of 25 kHz. If you select a frequency that is not a multiple of 25 kHz or does not lie in the frequency range between 798.1 and 805.9 MHz, the ULB2000 gives off an error message (the LED blinks quickly 5 times).**

1. Engage MUTE. The transmitter can now be switched to the programming mode.
2. Turn the selection switch to 9 and confirm your selection by keeping the POWER button pressed for about 2 seconds. The LED indicates confirmation by blinking once with medium tempo and blinking once slowly. The transmitter is now in the programming mode and awaits the entry of a 6-digit frequency.

3. Enter all 6 digits one after another in the following fashion:
- ▲ Select the desired value on the selection switch, for example 4. If a valid value is selected, the LED blinks quickly once as a confirmation. This way, you can be sure that a correct value is entered (in regard to the frequency range and divisibility by 25 kHz) even before confirming your selection.
 - ▲ Confirm your selection by briefly pressing the POWER button.
 - ▲ If the end frequency value you entered is valid, the LED blinks quickly once more. If the frequency value is invalid, the LED blinks quickly 5 times, and the unit is no longer in the programming mode. In this case, start anew with step 2.
After a brief interruption, a second blink code is given: the LED blinks corresponding to the value selected (in this case, 4 times) with medium tempo.

 **The value 0 is indicated by a very short blink of the LED, and you will easily tell a 0 from a 1.**



 **If no entry is made for more than 5 seconds (either on the selection switch or by pressing the POWER button), the LED blinks quickly 5 times, and the programming mode is aborted.**

After entering the 6 digits for the frequency value, enter another value to indicate the channel number under which the frequency will be stored.

4. Select a desired channel number on the selection switch, for example channel 2 (possible values: 1 - 8). If a valid value is selected, the LED blinks quickly once to confirm. This way, you can be sure that a correct channel number is being entered even before confirming your selection.
5. Confirm your selection by briefly pressing the POWER button.
6. When a valid value is selected, the LED blinks briefly again. When an invalid value is selected, the LED blinks quickly 5 times and the unit is no longer in the programming mode. In this case, start a new with step 2.
After a brief interruption, a second blink code is given: the LED blinks corresponding to the value selected (in this case, 2 times) with medium tempo.
7. After a second blink pause, an additional blink code is given as a confirmation:
 - ▲ A successfully stored frequency is signaled with 2 slow blinks. The transmitter leaves the programming mode.
 - ▲ If the LED blinks quickly 5 times, the frequency was not stored. In this case, start anew with step 2.

 **If no entry is made for more than 5 seconds (either on the selection switch or by pressing the POWER button), the LED blinks quickly 5 times, and the programming mode is aborted.**

8. Disengage the MUTE switch.

 **A user-assigned frequency is automatically stored in the user preset (Preset 1)!**

3.4 Preset

The ULB2000 lets you work with 4 presets, each with 8 channels.

Factory presets (Presets 2, 3 and 4)

In the ULB2000, there are 3 factory presets (each with 8 interference-free channels). That means that all 8 channels of one preset can run simultaneously with 8 different transmitters and receivers without causing interference to one another.

The channels in the 3 factory presets are all assigned to different frequencies. This way, you can always select a frequency range that assures the best signal transmission.

The following table shows which frequencies are stored in the factory presets.

ULTRALINK ULB2000

CHANNEL	PRESET 2	PRESET 3	PRESET 4
1	798,700 MHz	798,400 MHz	798,100 MHz
2	799,950 MHz	798,950 MHz	798,650 MHz
3	800,650 MHz	799,800 MHz	799,500 MHz
4	801,050 MHz	801,450 MHz	801,150 MHz
5	802,850 MHz	803,250 MHz	802,950 MHz
6	804,500 MHz	803,650 MHz	803,350 MHz
7	805,350 MHz	804,350 MHz	804,050 MHz
8	805,900 MHz	805,600 MHz	805,300 MHz

Table 3.1: Factory preset frequencies (presets 2,3 and 4)

GB

User preset (Preset 1)

Preset 1 is meant for the user. Frequencies of your own choice can be stored in the 8 storage slots of this preset.

If you have not stored any of your own frequencies, the frequencies stored in the user preset (Preset 1) are identical to the frequencies stored in Preset 3.

Loading a preset

1. Engage MUTE. The transmitter can now be switched into the programming mode.
2. Turn the selection switch to 0 and confirm your selection by keeping the POWER button pressed for 2 seconds. As a confirmation, the LED blinks slowly once and then once again with medium tempo. The transmitter is now in the programming mode and waits for you to enter a one-digit number.
3. Select the desired preset number on the selection switch, e.g. 3 (possible choices: 1 - 4). If a valid selection is made, the LED blinks once quickly to confirm your selection. This way, you can be sure that a correct value is entered (in regard to the selection of presets, Mic Gain and Auto Mute) even before confirming your selection.



Selecting 5 or 6 changes the Mic Gain setting (ch. 3.5). Selecting 7 or 8 changes the Auto Mute settings (ch. 3.6). Values 9 and 0 are invalid.

4. Confirm your selection by briefly pressing the POWER button.
5. If the selection you made is valid, the LED blinks quickly once again. An invalid selection is indicated with 5 quick blinks, and the unit is immediately no longer in the programming mode. In this case, start anew with step 2.
After a brief break, a second blink code is given: The LED blinks according to the value selected (for example, in this case 3 times) with medium tempo.



If no entry is made for more than 5 seconds (either on the selection switch or by pressing the POWER button), the LED blinks quickly 5 times, and the programming mode is aborted.

6. After a second brief blink break, an additional blink code is given as a confirmation:
 - ▲ Successful loading of a preset is signaled with two slow blinks. The unit leaves the programming mode.
 - ▲ If the preset could not be loaded, the LED blinks quickly 5 times. In this case, start anew with step 2.
7. After setting the desired preset, disengage the MUTE switch.

3.5 Mic Gain

You have the option to adjust the ULB2000 to the level of the signal being transmitted. If you talk very softly into the microphone, we recommend the "High Gain" setting; if the sound is loud, select "Low Gain." This way, optimal transmitter drive is achieved.

1. Engage MUTE. The transmitter can now be switched into the programming mode.

2. Turn the selection switch to 0 and confirm your selection by keeping the POWER button pressed for 2 seconds. As a confirmation, the LED blinks slowly once and then once again with medium tempo. The transmitter is now in the programming mode and waits for you to enter a one-digit number.

3. Select one of the following two digits on the selection switch:

- ▲ Low Gain: select 5
- ▲ High Gain: select 6

If a valid selection is made, the LED blinks quickly once to confirm your selection. This way, you can be sure that a correct value is entered (in regard to preset, MicGain and Auto Mute selection) even before confirming your selection.



Selecting the values 1 thru 4 changes the preset settings (ch. 3.4). Selecting 7 or 8 changes the Auto Mute settings (ch. 3.6). Values 9 and 0 are invalid.



4. Confirm your selection by briefly pressing the POWER button.
5. If the selection you made is valid, the LED blinks quickly once again. An invalid selection is indicated with 5 quick blinks, and the unit is immediately no longer in the programming mode. In this case, start anew with step 2.

After a brief break, a second blink code is given: The LED blinks according to the value selected (for example, in this case 3 times) with medium tempo.

- ▲ Low Gain: the LED blinks once with medium tempo.
- ▲ High Gain: the LED blinks twice with medium tempo.



If no entry is made for more than 5 seconds (either on the selection switch or by pressing the POWER button), the LED blinks quickly 5 times, and the programming mode is aborted.

6. After a second brief blink break, an additional blink code is given as a confirmation:
 - ▲ Successful loading of a preset is signaled with two slow blinks. The transmitter leaves the programming mode.
 - ▲ If the setting for Mic Gain could not be stored, the LED blinks quickly 5 times. In this case, start anew with step 2.
7. Disengage MUTE.

3.6 Auto Mute

The receiver's incoming signal will contain audible noise and interference should the transmitter be turned on, off or changed to another channel without having muted the microphone beforehand, or if the transmission has been interrupted due to a drained battery in the transmitter. Even if the squelch circuit is turned on at the receiver end, it still requires some time to react, and such noise can not be suppressed safely.

To bridge this latency time, the ULB2000 offers a practical Auto Mute function:

- ▲ When the ULB2000 is being turned off, when you are switching channels or during low-battery indication, an inaudible send signal is being transmitted.
- ▲ The receiver ULR2000 recognizes this signal and automatically mutes the output before the transmitter is actually turned off, switched to another channel or before it powers down on its own due to battery charge being too low.



For the Auto Mute function to work, it has to be activated on both the transmitter and the receiver!

Activating/deactivating the Auto Mute function

1. Engage MUTE. The transmitter can now be switched into the programming mode.
2. Turn the selection switch to 0 and confirm your selection by keeping the POWER switch pressed for 2 seconds. As a confirmation, the LED blinks slowly once and then once again with medium tempo. The transmitter is now in the programming mode and waits for you to enter a one-digit number.

ULTRALINK ULB2000

3. Select one of the following two digits on the selection switch:

- ▲ Activate Auto Mute: select 7
- ▲ Deactivate Auto Mute: select 8

If a valid selection is made, the LED blinks quickly once to confirm your selection. This way, you can be sure that a correct value is entered (in regard to preset, MicGain and Auto Mute selection) even before confirming your selection.



Selecting the values 1 through 4 changes the preset settings (ch. 3.4). Selecting 5 or 6 changes the Mic Gain settings (ch. 3.5). Values 9 and 0 are invalid.

4. Confirm your selection by briefly pressing the POWER button.
5. If the selection you made is valid, the LED blinks quickly once again. An invalid selection is indicated with 5 quick blinks, and the unit is immediately no longer in the programming mode. In this case, start anew with step 2.

After a brief break, a second blink code is given:

- ▲ Auto Mute activated: the LED blinks once at middle tempo.
- ▲ Auto Mute engaged: the LED blinks twice at middle tempo.



If no entry is made for more than 5 seconds (either on the selection switch or by pressing the POWER button), the LED blinks quickly 5 times, and the programming mode is aborted.

6. After a second brief blink break, an additional blink code is given as a confirmation:
 - ▲ Two slow blinks signal that the Auto Mute setting was changed. The transmitter leaves the programming mode.
 - ▲ If the setting for Auto Mute could not be stored, the LED blinks quickly 5 times. In this case, start anew with step 2.
7. Disengage MUTE.

3.7 Turning the transmitter off

To turn off the transmitter, press the POWER button for 2 seconds. The LED flashes slowly to show that the microphone is powering down.



The transmitter stores the frequency and the channel settings. These parameters are restored to these same values the next time you turn the unit on.

4. STATUS QUERY

During operation, the parameters "transmission channel", "battery condition", "transmission frequency", "preset", "Mic Gain" and "Auto Mute" may need to be checked. The statuses can be monitored without having to turn the transmitter off and back on.

4.1 Battery condition and transmission channel

1. Turn the selection switch to 0. The position of the MUTE switch does not matter.
2. Briefly press the POWER button.
3. As is this case when turning the transmitter on, the blink codes flash at a medium rate indicating the current status:

- ▲ battery condition: 1 = battery is nearly empty . . . 5 = battery is fully loaded
- ▲ selected channel: 1 = channel 1 is selected. . . 8 = channel 8 is selected



If the receiver is not powered on, no status is indicated. Briefly pressing the POWER button will neither turn the transmitter on nor off!

4.2 Transmission frequency

1. Turn the selection switch to 9. The position of the MUTE switch is irrelevant.
2. Briefly press the POWER button.
3. Just like during programming, 6 blink medium-tempo codes indicate the individual digits that make up the transmission frequency. Individual codes are separated from one another by brief pauses.



The value 0 is signaled by a very short blink of the LED, and you will easily tell a 0 from a 1.



If the receiver is not powered on, no status is indicated. Briefly pressing the POWER button will neither turn the transmitter on nor off!



4.3 Preset

1. Make sure the transmitter is not muted (MUTE switch is set to OFF).
2. Turn the selection switch to 1, 2, 3 or 4 and confirm your selection by briefly pressing the POWER button.
3. The LED indicates the preset number with the corresponding number of medium-tempo blinks.

4.4 Mic Gain

1. Make sure the transmitter is not muted (MUTE switch is set to OFF).
2. Turn the selection switch to 5 or 6 and confirm your selection by briefly pressing the POWER button.
3. The LED indicates the Mic Gain status with the corresponding number of medium-tempo blinks:
 - ▲ Low Gain: The LED blinks once with medium tempo.
 - ▲ High Gain: The LED blinks twice with medium tempo.

4.5 Auto Mute

1. Make sure the transmitter is not muted (MUTE switch is set to OFF).
2. Turn the selection switch to 7 or 8 and confirm your selection by briefly pressing the POWER button.
3. The LED indicates the Auto Mute status with the corresponding number of medium-tempo blinks:
 - ▲ Auto Mute turned off: The LED blinks once with middle tempo.
 - ▲ Auto Mute turned on: The LED blinks twice with middle tempo.

5. ULB2000 LEVEL SETTING



To optimally set the level on your ULB2000, the High Gain or Low Gain setting has to be set to the level of the signal being transmitted (ch. 3.5).

Adjust the gain control in the microphone channel of your mixing console so that the peak LED lights up only occasionally or never at all. The EQ controls in the microphone channel should be set to mid-travel position to start with. To get the sound you want, try changing the mic position relative to the sound source or even move the microphone around in the recording room of your studio. Adjusting the angle at which walls face the sound source can also be helpful. Only when the desired basic sound has been achieved should you start to use equalizers and signal processors, if any at all (remember: less is often more!)

ULTRALINK ULB2000

6. APPLICATION EXAMPLE

Fig. 6.1 shows how easy it is to use the ULB2000. Simply connect the receiver ULR2000 to your mixing console.

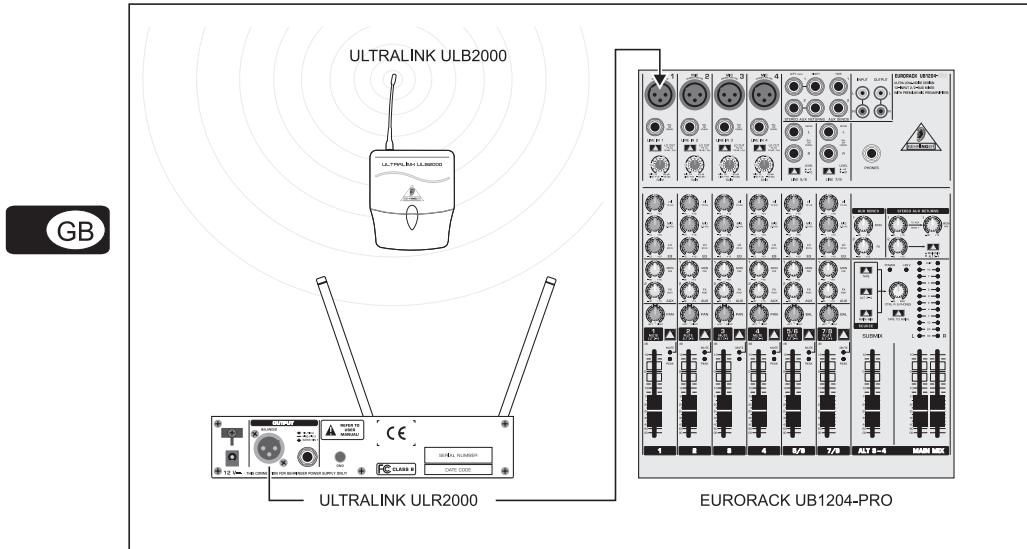


Fig.6.1: Wiring the ULR2000 receiver and the ULB2000 microphone

7. INSTALLATION

7.1 Operating information

The quality of the wireless transmission depends on various local factors as well as the degree of radiation and reception at transmitter and receiver, unlike the signal transmission over cable. To minimize the risk of interference, take the following suggestions into account for a smooth operation of the wireless system.

7.1.1 Attach the transmitter

For optimal operation of the transmitter, please observe the following when attaching the transmitter:

- ▲ Use only the provided headset and ensure that the mini XLR-connector is fastened correctly.
- ▲ Attach the transmitter to a belt by using the provided clip instead of simply placing it into a pocket, for instance. The optimal freedom of movement is guaranteed by fastening the transmitter to one's back or side.
- ▲ Make sure the headset's cable is not wrapped around or comes into contact with the antenna; this would result in an impairment of the transmission.
- ▲ Avoid direct body contact with the antenna to attain a maximum range.
- ▲ The headset's microphone capsule should be aligned towards the speaker at approximately 2-5 cm from the mouth. Ideally, the capsule should be kept off-centered to mouth and nose to avoid the conveyance of breathing sounds.

7.1.2 General information

- ▲ Always make sure that the devices are not operated in direct proximity of large metallic surfaces (radiators, metal racks, reinforced concrete walls and similar).

- ▲ The devices should always be at a height of at least 1 m (3 ft.) off the ground.
- ▲ To assure interference-free reception, ideally there should be no large objects placed between the transmitter and the receiver. Not only the size but also the type of material play a role in determining how strong signal interference will be!
- ▲ Keep a minimum distance of 5 meters between transmitter and sender to avoid signal overmodulation.
- ▲ When using multiple transmitters, the distance between the transmitting units should be at least 20 cm to avoid crosstalk (i.e. intermodulation).
- ▲ Replace used batteries ahead of time. A dropout would be unacceptable at a production, hence, do not wait until the battery indicator warns you that the battery needs to be replaced.
- ▲ Use the presets to guarantee an interference-free transmission of multiple transmitters and receivers on up to 8 channels.



7.2 Audio connections

The transmitter cannot be connected with a cable directly to a mixer, as is the case with wired microphones. The connection between transmitter and the ULB2000 receiver is wireless. Then, the receiver passes on the signal over a cable connection.

A cable connection is required to connect the headset to the transmitter. The plug connection is provided by means of mini XLR connectors, which ensure a secure operation due to their locking mechanism.

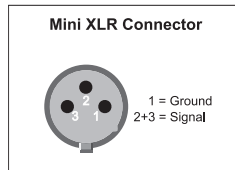


Fig.7.1: Mini XLR connector of the ULB2000

8. SPECIFICATIONS

RF characteristics

Modulation	wideband FM
Frequency range	794 - 810 MHz
Transmission frequencies (for EU/US/CA)	320 frequencies, between 798.1 - 805.9 MHz, adjustable in 25-kHz increments
Channels	8, freely programmable and switchable
Channel bandwidth	< 200 kHz
Channel spacing (min.)	400 kHz
Nominal/peak deviation	± 32 kHz / ± 48 kHz
Frequency stability	< ± 15 ppm
Antenna	External monopole antenna with screw connector
Operating range	80 m (nominal), when used with receiver ULR2000 under optimal conditions

GB

AF characteristics (coupled to ULR2000)

Noise reduction	High-duty IRC compander system, pre/deemphasis
RF system AF frequency response	30 - 19000 Hz (-3dB)
THD (at nom. deviation and 1kHz _{NF})	< 0.4 %
SNR (at peak deviation)	> 105 dB (A)

Headset

Type	Panasonic® back electret condenser with FET impedance converter
Pickup pattern	Unidirectional (cardioid)
Sensitivity	-47 dB (0 dB = 1 V/Pa, 1 kHz)
Frequency response curve	100 - 18000 Hz
Max. input sound pressure	> 120 dB SPL
SNR	> 60 dB

Temperature range	14°F - 122°F (-10°C to +50°C)
-------------------	-------------------------------

In compliance with ETS 300 445, ETS 300 422, FCC

Power supply	1 x 9 V alkaline battery (IEC 6LR61-PP3)
Power consumption	typ. 75 mA
Standby current	typ. 31 mA
Operating time	> 6 hours

Dimensions/Weight

Dimensions (W x H x D)	approx. 2 3/4" x 3 3/16" x 1 29/64" (70 mm x 81 mm x 37 mm)
Weight	approx. 0.4 lbs (0.185 kg)

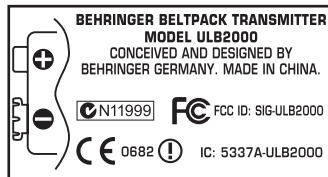
BEHRINGER makes every effort to ensure the highest standards of quality. Necessary modifications are carried out without notice. Thus, the specifications and design of the device may differ from the information given in this manual.

Technical specifications and appearance subject to change without notice. The information contained herein is correct at the time of printing. The names of companies, institutions or publications pictured or mentioned and their respective logos are registered trademarks of their respective owners. Their use neither constitutes a claim of the trademarks by BEHRINGER nor affiliation of the trademark owners with BEHRINGER. BEHRINGER accepts no liability for any loss which may be suffered by any person who relies either wholly or in part upon any description, photograph or statement contained herein. Colors and specification may vary slightly from product. Products are sold through our authorised dealers only. Distributors and dealers are not agents of BEHRINGER and have absolutely no authority to bind BEHRINGER by any express or implied undertaking or representation. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording of any kind, for any purpose, without the express written permission of BEHRINGER International GmbH. BEHRINGER® is a registered trademark.

ALL RIGHTS RESERVED. © 2006 BEHRINGER International GmbH,
Hanns-Martin-Schleyer-Str. 36-38, 47877 Willich-Müncheide II, Germany.
Tel. +49 2154 9206 0, Fax +49 2154 9206 4903

ULTRALINK ULB2000

FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION



Operation of this device is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Notice:

Changes or modifications made to this equipment not expressly approved by BEHRINGER International GmbH may void the FCC/ IC authorization to operate this equipment.



MICROPHONE QUICK START GUIDE

