PMR446 Transceiver

Midland G8E-BT

► INSTRUCTION GUIDE

MIDLAND | PMR446 TRANSCEIVER

MIDLAND®

Midland G8E-BT

User's manual

*Thanks for choosing Midland! The **MIDLAND G8E-BT** is a portable transceiver that is free use in almost all European countries. For further information, we suggest you look at the "Restrictions on the use" chart.*

*Combining the latest technology in radio communication along with a sturdy mechanical frame, the **MIDLAND G8E-BT** makes the ideal and effective solution for the professionals who need to stay in touch with colleagues (construction sites, buildings, hotels, trade fairs, shows) or with leisure users that just want to keep up with friends and family. Its robust frame, ease of use and simple design mean that it is ideal for use in any activity.*
G8E-BT is equipped with a built-in Bluetooth module that allows wireless communications: just pair the radio to a headset or any Bluetooth Intercom system!

Content

N° 1 Midland G8E-BT
N° 1 Single desktop charger
N° 1 Wall adaptor
N° 1 Battery pack
N° 1 Belt clip
N° 1 wired PTT box

Coverage/range

The maximum range depends on terrain condition and is obtained during use in an open space.
The only limitation to maximum possible range are environmental factors such as blockage caused by trees, buildings, or other obstructions. Inside a car or a metallic construction, the range can be reduced. Normally the coverage in the city, with buildings or other obstructions is about **1 or 2 Km**. In open space but with obstructions like trees, leaves or houses the maximum possible range is about **4-6 Km**. In open space, without obstructions and in sight, like for example in mountain, the coverage can be more than **12 Km**.

Batteries and battery compartment

The transceiver accepts the supplied rechargeable battery pack or 4AAA alkaline/rechargeable batteries. To open the battery compartment: with the back of the radio facing you, unhook the battery holder in the lower part of the radio and gently slide the cover. Insert the battery observing the polarity and place the cover again.
Attention: the supplied battery pack must be recharged before the first use.

Warnings

***BATTERIES** - Strictly follow all the warnings on the batteries stated at chapter "Battery recharge".*
***DO NOT OPEN THE RADIO FOR ANY REASON!** The radio's precision mechanics and electronics require experience and specialized equipment; for the same reason, the radio should under no circumstances be realigned as it has already been calibrated for maximum performance. Unauthorized opening of the transceiver will void the warranty.*
***Do not use detergents, alcohol, solvents, or abrasives to clean the equipment.** Just use a soft, clean cloth. If the radio is very dirty, slightly dampen the cloth with a mixture of water and a neutral soap.*

FEATURES

› Thanks to the **built-in Bluetooth module**, you can connect without any wires, a Bluetooth headset or an Intercom system to G8E-BT. It is also possible to mount the radio and external PTT key on the motor bike: this ensures a better communication range, since the radio is no more operated from a pocket in your jacket. A free radiating antenna can extend the communication range under optimized conditions up to 4-6 km.

› **Intercom function**: with the G8E-BT you can enable the Intercom function between rider and pillion. Just connect an optional wired speaker/mike to the MIC/SPK jack (for rider's radio) and to the INTERCOM jack (pillion's radio). For more information concerning the MIDLAND wired speaker/mike accessories, visit our website ***www.midlandradio.eu***

› The **automatic voice switching** (VOX-function) of the radio can also be used in Bluetooth mode (if the headset ensures sufficient noise canceling). Some high-end motor bike helmets may allow VOX operation at moderate speed. However, we recommend to use manual PTT switching for 2-way motor bike radio communication. Only the PTT can activate the communication at high speed situations. The supplied PTT is waterproof.

› The radio can also be used by ***security staff***. While wearing a standard BT headset, the radio can be hidden in the pocket, and the PTT key of the radio can be used as well as the hidden external PTT button.

› **'Manual out of range' function**: just press twice the BT button and you will verify whether there are some radios within the range of your equipment.

› Power: 500mW

› Built-in Bluetooth technology

› 8 PMR446 + 16 pre-set channels

› 38 CTCSS tones/104 DCS codes

› Waterproof: IPX5

› VOX adjustable in 3 levels and with "TalkBack"

› INTERCOM

› Vibracall

› Keypad lock

› Auto power save: automatic current economy circuit

› Low battery indicator

› Dual Watch

› CALL with 5 selectable melodies

› SCAN

› Monitor

› Out of Range

› Roger beep

› High/Low power selection

› LCD Display with backlight

› Power supply: NiMH battery pack 800mAh 4,8V or 4 AAA batteries

› 2pin accessory plug

› Weight: 114gr (w/o batteries)

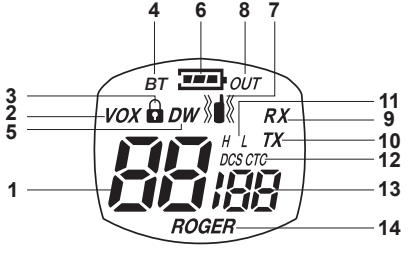
› Dimensions: 58x110x32mm

› Battery life: more than 12 hours with 800mAh battery pack

DESCRIPTION OF THE CONTROLS AND FUNCTIONS

Display

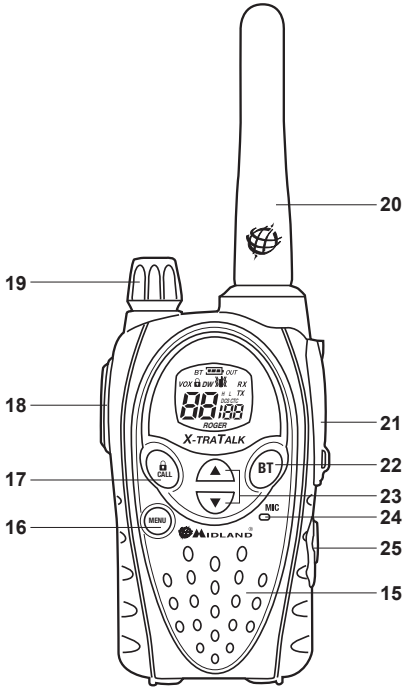
Your **MIDLAND G8E-BT** keeps you constantly updated about its operational status through a Liquid Crystal Display (LCD). The symbols and their corresponding parameters that may appear, according to the operational status of the device, are described as follows:



1.	**CHANNEL**	These two large digits indicate the selected channel
2.	**VOX**	VOX function activated
3.	🔒	This symbol appears when the keypad lock is activated
4.	**BT**	Bluetooth function activated
5.	**DW**	Dual Watch activated
6.		Indicates the battery status
7.		Vibra-Call function activated
8.	**OUT**	Indicates if the Automatic Out of Range function loses contact with the other radios.
9.	**RX**	Reception mode
10.	**TX**	Indicates the transmission(PTT pressed)
11.	**H(High) / L(Low)**	High or low power selection
12.	**CTCSS/DCS**	Indicate the type of sub audio tone selected
13.	**CTCSS/DCS tones**	These three small digits indicate the code of the CTCSS/DCS tones selected (1-38 / 1-104)
14.	**ROGER**	Roger Beep activated

Radio

Refer to this picture to identify the various parts of the device:



15. **Built-in speaker**
    Here is where the speaker is housed.
16. **MENU button**
    Press this button to enter the radio's menu.
17. **CALL/🔒 button**

To send a call on the selected channel. If you keep it pressed for about 5 seconds, the keypad lock is activated.

18. **PTT (push to talk)**
    Push this button to transmit.
19. **VOLUME knob**
    On/off switch for the device and adjusts volume of reception.
20. **ANTENNA**
    Receives and transmits radio signals.
21. **2 pin Accessory socket - (under protective cover)**
    To connect to external audio devices such as microphones, chargers, etc. (2pin type)
22. **BT button**
    To activate the Bluetooth function.
23. **▲▼ buttons**
    To change the setting within the MENU
24. **Built-in MICROPHONE**
    Here is where sound is picked up by the microphone.
25. **Intercom plug**
    To connect to headset/mike accessories suitable for intercom communications.

Turning on/off

To turn on the transceiver, turn the **VOLUME** knob clockwise until you hear it clicks.
To turn off the transceiver, turn the knob counter-clockwise.

Channel selection

Press the **MENU** button. The number of the channel will start flashing on the display.
Press the scroll buttons ▲▼ till you select the desired channel. You can choose amongst 8 PMR446 + 16 pre-set channels. Press the **PTT** button to confirm, or wait for 5 seconds.

Displaying the channel/sub audio tone

To momentarily display the PMR446 channel and the subadio tone used in the pre-set channels, go to the desired channel (from 9p to 24p) and keep pressed ▼ for 3 seconds.

Transmission and reception

To transmit keep the **PTT** button firmly pressed. Wait for a fraction of a second then speak normally in the direction of the microphone and hold the device at a distance of about 5 cm; ***TX*** will appear on the display.
When you have finished, release the **PTT**.
When the radio is in reception mode (**PTT** released) you will automatically receive any communication. ***RX*** will be displayed.

Volume adjustment

Rotate the **VOLUME** knob till you reach the desired level.

“CALL”

Push the **CALL** button and you will send an audio signal to the users tuned on the same channel; you can choose amongst different call tones.

“BT” button

The Bluetooth function is activated by keeping pressed the **BT** button for 4 seconds (**BT** blinks on the display).

Keypad lock

Keep pressed **CALL/🔒** for about 5 seconds. and 🔒 will be displayed as confirmation. Only **PTT, BT** and **CALL/🔒** remain active. To disable this function, keep pressed again **CALL/🔒** for 5 seconds approx.

MON (Monitor) function / Squelch

The Monitor button is for temporarily excluding (opening) the squelch, in order to listen to signals that are too weak to keep the squelch permanently opened. To activate the monitor function, keep pressed for about 2 seconds both ▲▼ at the same time. Follow the same procedure to deactivate the function, or switch off and on the radio.

Attention!!

When MON is active, you will probably hear a constant background noise.

Scanning all the channels

MIDLAND G8E-BT can automatically search for signals throughout the bands by scanning the channels in rapid sequence. This function is useful to find out any active channel.
When a signal is detected, the scanning pauses on that channel for 5 seconds. Press ▲ for 2 seconds: the scanning will start. To stop it, push **PTT**: the MIDLAND G8E-BT will go back to the channel from which the scanning originally started.

BLUETOOTH FUNCTIONALITY

Pairing-Procedure

If there is any paired Bluetooth Headset nearby (range up to some meters), it can be connected with the radio.
Before first connection, both units (radio and headset) must be paired together, because both must know that they „belong“ to each other. This is important, because you certainly do not wish that your neighbor can use your radio without your agreement!

How to perform the Pairing Process: Please study the user instructions for your headset. Although the procedure is similar among many Bluetooth sets, we cannot describe all these procedures here. Please study the chapter about ***pairing with a mobile phone***, the procedure to pair it with the G8E-BT is the same! Nearly all headsets indicate the pairing process by rapid flashing of the LED's (green-red or blue red, depending on the model).
Before pairing, the Bluetooth function on G8E-BT must be disabled, so switch off the radio.
Then, turn it on again while keeping the **BT** button pressed. To confirm the pairing, the display will show '**bt PA**' and '**PA**' will blink.
You will have about 1 minute time to start the same procedure with Your headset (read carefully the instructions of your headset). When both units are paired, the display will show '**BT**' steady. From this moment, both devices are paired and they will identify each other even though they have been switched off; so, there's no need to repeat the pairing procedure.

Info: Automatic PIN Code transfer

If You have already paired a BT device with a mobile phone, you will have learned to enter the 4 digit PIN code for the headset into the mobile phone. Since the G8E-BT has no keyboard, this procedure is automatically done by the Bluetooth chipset in Your radio. The PIN code in this case is '0000'. Verify that the your Bluetooth headset has the same PIN code.
Devices with different PIN codes cannot be paired to G8E-BT.
Sometimes you can't pair the devices at the first trial; try till you succeed and always follow the above listed steps.

Talk connection on/off

When the radio is switched on, the built-in Bluetooth module is disabled ('**BT**' is not displayed).
To activate the Bluetooth communication press the '**BT**' button for 4 seconds: '**BT**' blinks for 1 second on the display and then becomes steady.
Now you can establish Bluetooth communications.

Usually the communication link is automatically activated because the units/headsets have been previously paired; but you can also enable/disable the communication link by pushing the **Talk/Start** button on the *Bluetooth headset (if you use intercom systems for motorbikes, you have to press the* **Talk/Start** button used for the pairing procedure).
To disable the Bluetooth communication on the radio without turning it off, press the '**BT**' button for 4 seconds till '**BT**' disappears from the display.

Note:

- Bluetooth connections to transceivers are different from cellular phone connections. In 2-way radio communications the Bluetooth link is always active: the radio must be always tuned on the selected channel, otherwise you wouldn't hear the conversations!
- In 2 way radio systems the headset remains permanently connected with the radio and ***cannot be connected with any other Bluetooth audio source at the same time***.
- When the Bluetooth connection of the radio is active ('BT' steady on the display), the internal mike and speaker are disabled. The PTT button of the radio or the wired PTT connected to MIC jack can operate with the Bluetooth connection.

Activating and deactivating the Bluetooth connection

You can activate or deactivate the communication link any time by short pressing the **Start** / **Stop** key on the headset or the Bluetooth key of the G8E-BT radio
Activated: '**BT**' steady on the display; **deactivated:** '**BT**' disappeared.

Switching off the Bluetooth module

If you do not use the Bluetooth for a long time, you can switch it off completely by pushing the **BT** button for 4 seconds till '**BT**' disappears from the display.
Note: every-time you turn on the radio, the Bluetooth module is disabled ('**BT**' is not displayed).

To activate it, press the '**BT**' button of the radio for 4 seconds.

Vox or manual PTT Operation?

G8E-BT can work in VOX or manual PTT. You can choose one of the two options also when you operate in Bluetooth mode.
Since we do not recommend to use VOX operation on the motor bike, owing to the high speed and to the wind noise, you'd better use the supplied manual PTT button. The PTT button is waterproof and can be mounted with velcro tape on the steering bar.

For a different use, both possibilities can be chosen. The internal mike of the radio will be deactivated as soon as the Bluetooth link is established.

Volume setting

The volume on the Bluetooth headset can be adjusted by its button or by the volume knob of the radio.

Attention: when the Bluetooth is enabled, the radio's speaker will be excluded and the volume is adjusted on the Bluetooth.

Trouble Shooting:

Bluetooth Connection interrupted or not possible

If the communication link is interrupted or not possible, please try first to switch both units off, wait some seconds and then switch on again. Press the **BT** button and check whether or not the link is re-established. If this procedure does not help, please repeat the pairing procedure. However, it can happen that 2 devices may lose their pairing, maybe through EMC or radio interference effects.

"MENU" key

The following features can be selected by using the **"menu"** button**:**

› Channel selection
› CTCSS tone setting
› DCS tone setting
› High/low power selection
› VOX
› Vibracall function
› Call melodies
› Roger Beep
› Keypad Beep
› Dual Watch function
› Out of Range

CTCSS/DCS tone setting

CTCSS and DCS tones are similar to access codes and enable the radio to communicate only with the users that are tuned on the same channel and have set the same code. For each channel, you can set up to 38 CTCSS and 104 DCS tones.
These tones can be set only on the 8 main PMR446 channels (from P1 to P8). The pre-set channels from 9p to 24p cannot be modified.

Activating the CTCSS tones:

1. Turn on the unit.
2. Select the desired channel by pushing the **MENU** button and the ▲▼ channels.
3. Press the **MENU** button till the display shows ***CTC*** and the CTCSS tone blinks on the right ("of"= no code – default condition).
4. Select the desired CTCSS tone by pushing **▲▼.**
5. To confirm the setting, push **PTT** or wait for 5 seconds.

Deactivating the CTCSS tones:

If you don't want to use the CTCSS tones, follow these steps:

1. Select the desired channel
2. Press the **MENU** key till the display shows the CTCSS tone blinking on the left;
3. Select "**of**" by means of **▲▼.**

Activating the DCS codes:

1. Turn on the unit.
2. Select the desired channel by pressing MENU and ▲▼ keys**.**
3. Push the **MENU** button again till the display shows DCS and the tone code blinks on the right ("of"=no code – default condition).
4. Select the desired DCS code by pushing **▲▼.**
5. To confirm the setting, press the **PTT** or wait for 5 seconds.

Deactivating the DCS codes:

1. Select the desired channel.
2. Press the **MENU** key till the display shows the channel in use and the DCS code blinks on the right.
3. Select "**of**" by pushing **▲▼.**

Hi/low power selection

To select the power level, press the **MENU** button till the display shows **Pr.** Use ▲▼ to select **L** (low power) or **H** (high power). To confirm your selection, push **PTT** or wait for 5 seconds.
When the batteries are fully charged, the high power is 500 mW (ERP), while the low is 10mW (ERP).
If your radio has to operate within a short range, you can select the low power and therefore extend the battery life.

VOX function

MIDLAND G8E-BT enables hands free conversations through the **VOX** function: just speak in the direction of the microphone and the communication will be automatically activated.
The **VOX** sensitivity can be adjusted in 3 different levels. You can enable **VOX** function with or without accessories.
The fourth level activated is the Vox TalkBack: if one radio is continuously

transmitting in VOX, the VOX TB will automatically stop the transmission after 20 seconds to allow the transmission to the other users as well.
To activate **VOX** function press the **MENU** button till **VOX** appears on the display.
Use ▲▼ to select the sensitivity levels:
Of: Off;
1: High
2: Middle
3: Low
4: Talk Back (with high sensitivity)
To confirm your selection, press **PTT** or wait for 5 seconds.
To disable the **VOX** function, follow the procedure here above indicated and select **oF.**

Vibra-Call function

Midland G8E-BT is equipped with the "Vibra-Call" feature, which provides a silent alert for incoming calls.
To activate this feature, press the **MENU** button until the display shows ; use the ▲▼ buttons to disable or enable this feature (**on**: enables, **oF**:disables);
Push **PTT** to confirm or wait for 5 seconds.

CALL feature

MIDLAND G8E-BT can send 5 different call tones. To send this audio signal to other users, press the **CALL/** key.
To select the call tones:
› Press **MENU**, until the display shows "***CA***" and the active tone code.
› By pushing ▲▼ you will hear the 5 pre-set melodies.
› Confirm by pressing **PTT** or wait for 5 seconds.

ROGER BEEP (End transmission tone)

When the **PTT** button is released, the radio will beep to confirm to other users that your transmission has finished.
In the **MIDLAND G8E-BT** this function is factory disabled. To activate it:

Press the **MENU** button until the display shows **"rb of";** using the scroll buttons ▲▼ select "**on**" and **"rb on"** will be displayed**;** to confirm the roger beep activation, press **PTT** or wait for 5 seconds.

Keypad Beep

Everytime a button is pressed, you will hear a beep.
To disable the beeps, follow this procedure:
› Press **MENU,** till the display shows "**bP on**".
› Push ▲▼ till "**bP of**" is displayed.
› Confirm your selection by pushing **PTT** or wait for 5 seconds.
› In this way, all beeps and tones are disabled.
› To enable the keypad beep, repeat this procedure and select **"bP on"**

Manual Out of range function

This function allows you to know if there are any radios within your range.
By pushing the **BT** button twice, you will send a request of acknowledge to the other G8 or G9 operating within your range and tuned on the same channel.
If any radio replies, it means that it's within your range and you will receive an audio tone for confirmation.

DUAL WATCH

The Dual Watch allows you to monitor constantly two channels of your choice at the same time.

Enabling - Disabling

› Press the **MENU** button until the display shows **DW of**.
› Select the second channel to monitor by pushing ▲▼.
› To confirm your selection, press **PTT** or wait for 5 seconds. The display will alternately show the channel in use and the second channel to monitor.

To stop the function, simply press **MENU**.
When the transceiver detects a transmission on one of the two channels, the Dual Watch temporarily pauses, remains tuned for 5 seconds on the corresponding channel, giving the user a chance to respond to a call. After this pause, the Dual Watch starts again.

Automatic Out-of-Range

By setting this mode a pair of G8E-BT is transmitting every 30 seconds a data control code. As soon as the contact between both units is getting lost and one radio doesn't receive this data control code twice consecutively, the icon ***OUT*** starts flashing in the display and you will hear a beep tone.

Activating – Deactivating

Press **MENU** till the display shows "**OUT**" and "**Or of"**, select "**Or** on" (activated) with the ▲▼ buttons.
Switch off both radios.
Turn them on at the same time.

To disable this function, push **MENU** till "**OUT**" and "**Or** on" are displayed; select "**Or** of" (disabled) with the ▲▼ buttons.
Confirm your selection by pushing **PTT** or wait for 5 seconds.

Display illumination

If there is insufficient light to read the display, press briefly **BT** and the display illumination will activate for about 5 seconds. Every time the **MENU** is pressed, the display will automatically light up.

Power save

The battery power saving feature enables a reduction in the consumption of up to 50%; power saving comes on automatically when the transceiver does not receive any signal for more than 7 seconds. When the batteries are discharged, the icon appears on the display: replace the batteries or recharge the battery pack.

Battery recharge

The supplied battery pack is Ni-MH type 4.8V 800mAh and must be recharged only when it's inserted into the radio; it takes 8 hours to fully recharge.
To get a better performance of the batteries we suggest operating 2 or 3 charge/discharge cycles before using the radio for the first time.

To recharge the battery pack:

Connect the socket of the wall adaptor to a mains power socket and insert the jack of the wall adaptor into the desktop charger plug.
Place your transceiver into the cradle of the desktop charger. The red led of the charger will light up.
When charging is complete take the transceiver out of the cradle and detach the socket of the wall adaptor from the mains.

! Do not overcharge the batteries! When these are fully charged the charging process does not stop automatically. Do not forget therefore, to remove the transceiver from the charger as soon as the batteries are charged, otherwise the radio and batteries may be damaged.

! Do not try to charge alkaline batteries or non rechargeable batteries. Make sure that when you charge the radio, only rechargeable NI-MH batteries or the supplied battery pack should be contained in the battery compartment! Alkaline batteries are not rechargeable! Batteries which are not suitable to be recharged may leak, explode or even burn and cause damage!

! Using a different battery charger other than the one specified can cause damage to your device or may even cause explosions and personal injuries.

! Do not throw batteries into fire or place them near heat as this may cause explosions or personal injuries. Dispose of the batteries according to the procedures set out by local regulations.

! Do not mix old and new batteries or batteries of different types or batteries which have been used in different manners.

WARRANTY

The Warranty does not limit the user's (statutory) rights under applicable National laws relating to the sale of consumer products.
During the Warranty period, the Manufacturer or the authorized customers service will, in accordance with this Limited Warranty , remedy defects by repair or replace the product.
This Limited Warranty is only valid and enforceable in the country where the user has purchased the product.

Warranty period

The warranty period starts at the time of Product's original purchase by the first end-user. The product may consist of several different parts and these parts are covered by different warranty periods:

› 24 months for the device
› 6 months for these following parts: battery, chargers, headset , antennas..

How to get the Warranty service

In the event of a product defect, please return it to the authorized customer service or to the Manufacturer himself. To make use of this warranty, it is necessary to return to the authorized service centre:

› The affected product (or accessory)
› The original proof of purchase, which clearly indicates the name and address of the seller and the date and place of purchase.

What the Warranty does not cover

The warranty does not cover:

› Normal wear and tear of the product
› Defects caused by rough handling (defects caused by sharp items, by bending, compressing or dropping …)
› Defects or damage caused by misuse of the product, including use that is contrary to instructions provided by manufacturer
› Defects caused by other factors/acts beyond the reasonable control of the manufacturer.

The warranty does not cover defects or damage caused to the Product by misuse with, or connection to, any product, accessory software and/or services not produced or supplied by the manufacturer or by use of

the product for any other use than for intended use of the product.
The warranty is not enforceable if the product has been opened, modified or repaired by anyone other than the authorized service centre; if it is repaired using unauthorized spare parts or if the serial number has been removed, erased, defaced, altered or is illegible.
The warranty is not enforceable if the product has been exposed to moisture, to dampness or to extreme thermal or environmental conditions or to corrosion, to oxidation, to spillage of food or liquid or to influence from chemical products.

TECHNICAL SPECIFICATIONS

Channels	8 + 16 preprogrammed PMR446
Frequency range	446.00625 ÷ 446.09375MHz
Channel spacing	12.5 KHz
Power supply	6+/- 10% Vdc
Temperature	from -20° to +55°C
Dimensions (w/o batteries)	58 (L)x 110 (H)x32 (D) mm
Weight (w/o batteries)	114gr
Duty cycle	TX 5%, RX 5%, stand-by 90%

Transmitter

Output power	500 mW
Modulation	FM
Spurious rejection	within European legal terms

Receiver

Sensitivity @ 12dB Sinad	0,35µV
Adjacent channel rejection	70dB
Audio output power	300mW @ 10% THD
Intermediate frequencies	1st :21,4 MHz ; 2nd:450 KHz
Jack for ext.mike and recharge	stereo 2,5 mm
Jack for ext. speaker	mono 3.5 mm
Intercom jack	stereo 2,5mm

Specifications are subject to change without notice.