



GYC 90 Series
VHF Diversity Radio Systems

USER GUIDE



THANK YOU FOR PURCHASING A GYC 90 SERIES VHF DIVERSITY RADIO SYSTEM

The following pages tell you how to set up the system in order to get the best performance from it.

General considerations:

Always try to locate the receiver as close as possible to the transmitter; this minimises the chance of there being any drop out.

Always try to ensure a line of sight signal path between the transmitter and receiver – obstacles such as walls can significantly reduce the radio signal strength.

If you are using more than one system simultaneously, you must choose a set of intermodulation free frequencies. Please contact our technical department if there is any doubt, the service line number is on the box.

The receiver should never be sited close to computers or mobile telephone equipment; this could create unwanted radio interference.

Always operate any radio microphone system with its antennas fully extended.

Always test a radio microphone system in the location where it is to be used by performing a 'walk test'. This means where the system is tested as the transmitter is 'walked' around the area in which it is to be used, with the receiver remaining static. This will normally show up any problem areas, allowing you to try a new receiver location. By adjusting the location of the receiver, or even just the alignment of its antenna, it should be possible to obtain trouble free operation over the desired area, provided that it is not too large to exceed the transmitter's range, which is typically around 50m.

The GYC 90 VHF Series comprises:

S90 – Hand held microphone transmitter with a matching VHF Diversity receiver.

H90 – Belt pack transmitter with a headset microphone with a matching VHF Diversity receiver.

L90 – Belt pack transmitter with a tie clip microphone with a matching VHF Diversity receiver.

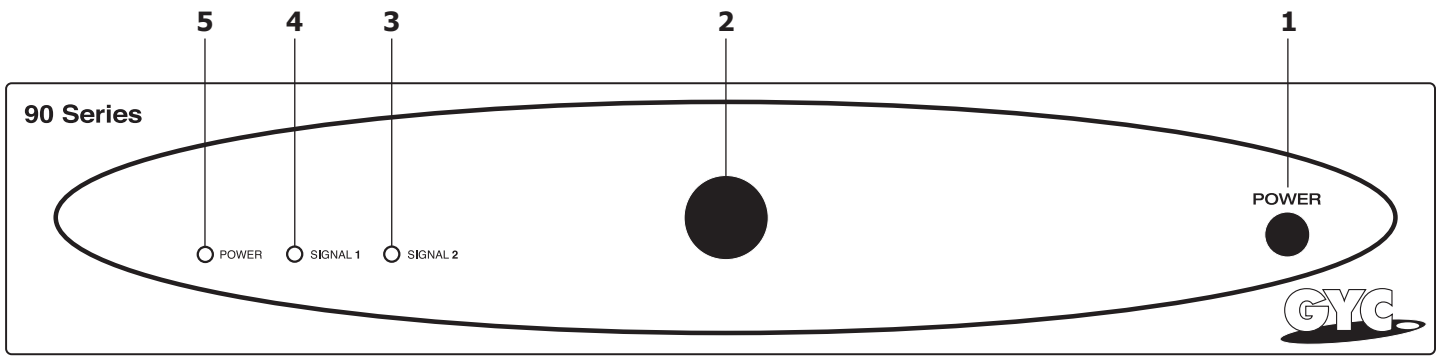
Each system is supplied with full operating instructions.

Guarantee:

All GYC products are guaranteed for a period of one year from date of purchase against defects in materials and workmanship. In the event of a claim under guarantee the system should be returned to your dealer in its original packaging and with proof of purchase. Defects caused by modification, misuse or accident are not covered by the guarantee.

Due to our continual policy of research and development we reserve the right to alter specifications without prior notice.

Receiver - Setting up

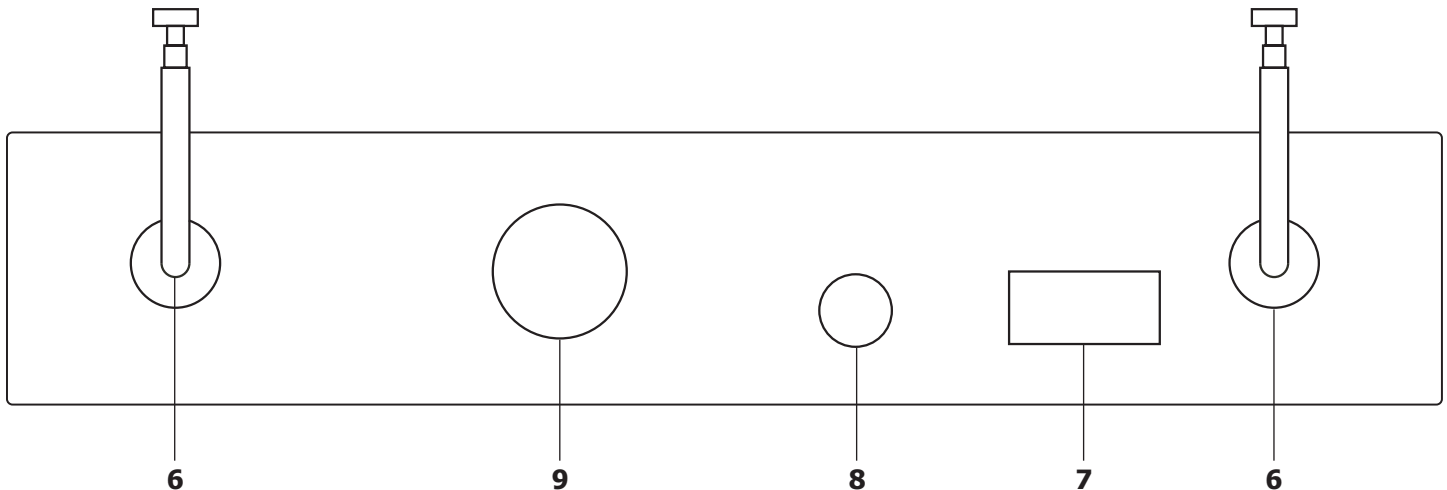


1. **Power On/Off.** This switches the receiver on and off.

2. **Volume.** This adjusts the audio output level of the receiver, from zero (anticlockwise) to full (clockwise).

3 and 4. **LED's** for signal 1 and 2 respectively. The GYC S90 receiver uses a system called diversity reception. There are two receivers inside the case, each connected to its own individual aerial. Both aerials will pick up a different amount of signal, and the receiver automatically chooses the strongest signal available. If you watch the receiver, you will see that it is constantly switching between signal 1 and 2, as the signal levels at the aerials vary, and the receiver switches between the two.

5. **Power LED.** This illuminates to show you have power.



6. **Aerials.** Extend aerials to maximum length and angle to form a 'V' shape.

7. **Plug.** Plug the mains plug into a suitable 230V 50Hz power point.

8. **High Z (unbalanced/AF out) Output Connector.** This 1/4 inch/6.35mm phone jack provides an unbalanced high impedance line level output.

9. **Low Z (balanced/AF out) Output Connector.** XLR connector provides a balanced low impedance mic. level output.

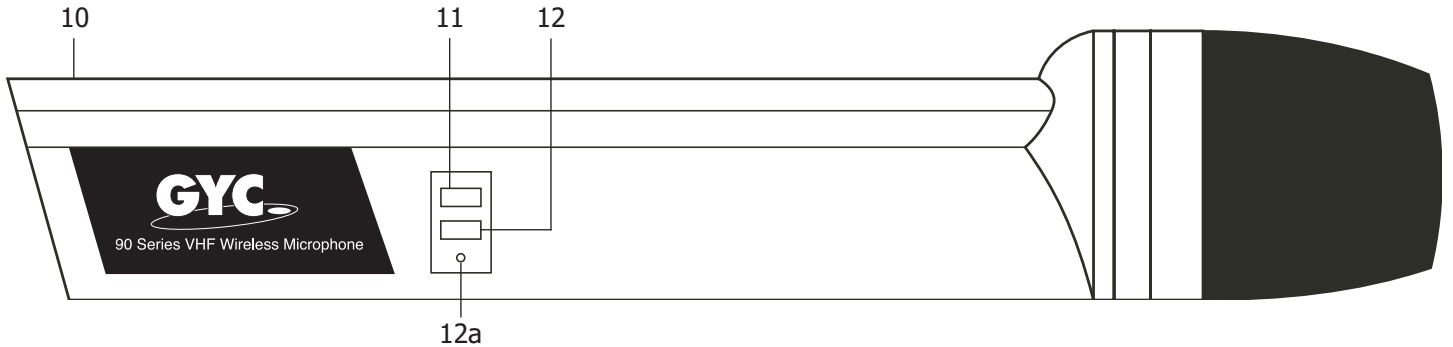
Hand Held Microphone

10. **Battery Compartment.** Lifting the battery cover reveals the battery compartment. The battery can only be inserted one way, fitting it the wrong way will not cause damage, but the transmitter will not function. After fitting the battery, refit the battery cover. Use a 9V alkaline battery.

11. **ON/OFF Switch.** Turns the transmitter power on and off.

12. **Signal Mute.** Pushing this switch to the mute position silences the audio section of the transmitter.

12a. **Power LED.**



Belt Pack Transmitter

13. **Volume control.** This adjusts the sensitivity of the transmitter audio input to the microphone you are using. To adjust the volume control, start with the control set anticlockwise, and increase the volume control whilst singing loudly; increase the volume control level until the receiver display is just below peak.

14. **Input.** The 3.5mm input socket accepts just about any audio input. Plug in the headset or tie clip microphone.

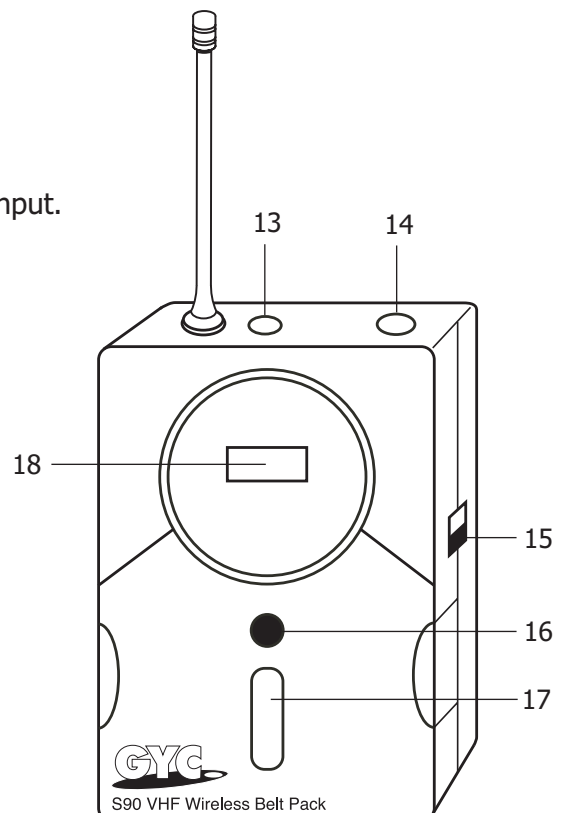
15. **ON/OFF Switch.** Turns transmitter power on and off.

16. **Battery Compartment Release Button.**

17. **Battery Compartment.** Push down the black button and lift the battery cover to reveal the battery compartment. The battery can only be inserted one way, fitting it the wrong way will not cause damage, but the transmitter will not function.

After fitting the 9V battery, close the battery cover.

18. **Display.** Information display panel.



OPERATING THE GYC S90

Setting up the GYC system is extremely simple.

RECEIVER

1. Extend the two aerials into the sockets on the receiver rear panel and angle the aerials to form a 'V' shape.
2. Insert the power cable into the power socket (7)
3. Insert the power cable plug into a suitable 230V 50Hz mains power point.
4. Connect the audio output from your GYC receiver to your sound system. Two output sockets are provided; a balanced low impedance (microphone level) XLR socket, and an unbalanced 1/4 inch/6.35mm (instrument level) signal. If the receiver is to be situated a long way from the amplifier or mixer, it is preferable to use the balanced XLR output. The lower impedance eliminates induced noise and minimises HF audio signal loss.
5. Switch on the receiver.

For best operation the receiver should be at least 1m above the ground and at least 1m away from a wall or metal surface to minimise HF reflections. Keep aerials away from noise sources such as digital equipment, motors and neon lights, as well as large metal objects.

HAND HELD TRANSMITTER

1. Flip up battery cover (10) and insert battery, observing correct polarity. No harm will be done if the battery is inserted incorrectly; the transmitter will not operate. We recommend using only good quality alkaline batteries. Use of rechargeable cells (NICAD's) is not recommended as the end point discharge is extremely abrupt, and give little or no warning of battery failure.
2. Slide power switch (11) to the ON position. NOTE. When power switch is moved to ON position, the power LED (12a) will illuminate indicating battery is serviceable. Should the LED illumination diminish, the battery requires replacement.
3. Now look at the receiver. You should now have an RF signal level (Signal 1 or 2).
4. Adjust the receiver's volume control (2) as you speak (sing) loudly to adjust the receiver's output volume to match your amplifier.

BELT PACK TRANSMITTER

1. Push down the black button (16) and flip open the battery cover, insert battery observing correct polarity. No harm will be done if the battery is inserted incorrectly; the transmitter will not operate. Replace battery cover. We recommend using only good quality alkaline batteries. Use of rechargeable cells (NICAD's) is not recommended as the end point discharge is extremely abrupt, and gives little or no warning of battery failure.
2. Slide power switch (15) to the ON position. The display (18) will activate.
3. Plug in the required microphone (14).
4. If the audio signal from the transmitter is too weak as displayed on the receiver, or the receiver's overload illuminates, adjust the transmitter's volume control (13) to obtain a good audio level, with no distortion.

Never leave a battery in the transmitter whilst it is not in use. A discharged battery may leak acid into the transmitter, destroying the circuitry.

TIPS FOR ACHIEVING OPTIMUM PERFORMANCE

1. Maintain a line of sight between transmitter and receiver antennae.
2. Avoid placing transmitter and receiver where metal or other dense materials may be present.
3. Avoid placing receiver near computers or other RF generating equipment.
4. Avoid placing receiver in the bottom of an equipment rack unless the aerials are remotely located.
5. Use the supplied receiver aerials.
6. Point receiver antenna tips away from each other at a 45° angle from vertical, and keep them away from large metal objects.
7. Do not obstruct receiver aerials.
8. Perform a walk-through before your performance or presentation. If dead spots are found, try moving the receiver a metre or so. If dead spots remain, simply mark these spots and avoid them.
9. Use only fresh alkaline batteries. Do not use general purpose (carbon-zinc) batteries.
10. The receiver cannot pick up signals from two transmitters at the same time.
11. Turn transmitter off when not in use. Always remove the battery if the transmitter is not to be used for a period of longer than one week. If a battery is left in the unit, it may leak battery acid into the unit, if this happens, it is not possible to effect any form of repair and such damage is not covered by warranty.

TROUBLESHOOTING YOUR 90 SERIES SYSTEM

No sound; no receiver signal indication. Make sure transmitter and receiver are both turned on. Check transmitter battery, and replace the battery if it is low. Make sure at least one aerial is in line of sight of transmitter. If necessary, reduce distance between transmitter and receiver.

No receiver sound; signal level indicated. Turn up receiver audio output Level control. Check for proper connection between receiver and microphone mixer. Talk into the microphone and observe receiver audio level. If they change, the problem is elsewhere in the sound system.

Received signal is noisy or contains extraneous sounds with transmitter on.

Check the transmitter battery and replace battery if power is low. Remove local sources of RF interference, such as lighting equipment. Two transmitters may be operating on the same frequency. Locate and turn one off. The RF signal may be too weak, reposition receiver closer to transmitter.

Momentary loss of sound as the transmitter is moved around performing area.

Reposition receiver and perform another walk through test and observe the signal indicators. If audio drop-outs persist, mark these as dead spots in the performing area and avoid them during performance.

S90 SYSTEMS

S90 GYC Hand Held Microphone VHF System

H90 GYC Headset Microphone VHF System

L90 GYC Tie Clip Microphone VHF System

S90 ACCESSORIES

CC90 GYC Carry Case for 90 Series Systems

SPECIFICATIONS

RECEIVER

Receiver Mode:	Crystal controlled single channel
Receiver Type:	Diversity
Carrier Frequency:	Spot frequency, factory set
Frequency Stability:	0.005%
Deviation:	±15KHz (max)
Sensitivity:	20dBmV (SN ratio >60dB)
De-emphasis	50ms
Image & Spurious Rejection:	>70dB
S/N Ratio:	<60dB
T.H.D:	<0.5%
Frequency Response:	100Hz – 12KHz
Audio Output:	Unbalanced 775mV 5kΩ load
Power Supply:	230V A.C. 50Hz
Dimension:	210(L) x 130(W) x 45(H) mm

HAND HELD MICROPHONE TRANSMITTER

Operating Frequency:	Spot frequency, factory set
Modulation:	±15KHz (max)
Power Output:	10mW (max)
Pre-emphasis:	50ms
Spurious emissions:	>60dB below carrier
T.H.D:	0.05%
Frequency Response:	100Hz – 12KHz
Battery:	9V alkaline
Battery life:	About 8 hrs
Current Consumption:	<20mA
Dimensions:	45mm diameter body, 250mm long

BELT PACK TRANSMITTER

Operating Frequency:	Spot frequency, factory set
Modulation:	±15KHz (max)
Power Output:	10mW (max)
Pre-emphasis:	50ms
Spurious emissions:	>60dB below carrier
T.H.D:	0.05%
Frequency Response:	100Hz – 12KHz
Battery:	9V alkaline
Battery life:	About 8 hrs
Current Consumption:	<20mA
Dimensions:	97(L) x 63(W) x 23(H) mm

CERTIFICATION

European ETSI Standards EN 300 422-1/-2 and EN 301 489-1/-9.
CE marking. 0678

For technical assistance call:

0113 232 082

For details of other GYC Products and sound reinforcement products visit:



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