GYC SU100

10 Channel UHF Diversity Systems

USER GUIDE

THANK YOU FOR PURCHASING A GYC SU100 DIVERSITY RADIO SYSTEM

The GYC SU100 range is available as either a hand held system and a belt pack systems (available as individual items), with tie clip or vocal headset microphone.

The benefits of diversity reception. A receiving antenna receives not only the electromagnetic waves which reach it by a direct path, but also the reflections of these waves which are created in the room by walls, windows, ceilings and fittings. When these waves are superimposed, interference can occur, resulting in loss of signal. In a switched diversity receiver, instead of one antenna and one receiver, two antennae and one switchable receiver section is employed. The antennae are spatially separated, and are fed to a high speed switching comparator circuit, which ensures that the strongest RF signal feeds the AF output. Diversity reception ensures that signal dropout is virtually eliminated, and system performance optimised.

SYSTEM FEATURES

UHF Band Operation. The GYC SU100 system operates within the UHF frequency band, which is less congested than the VHF band. Typically, UHF systems encounter less interference than VHF systems.

Powerful Audio Compander. Provides a wide dynamic range.

Frequency Agility. The SU100 transmitter and receiver frequencies can be changed over a range of 10 pre-set frequencies, ensuring interference free operation, even in congested RF environments.

RF Signal Level Indicator. Indicates received signal strength at each antenna, making it easier to identify "dead spots" in the performing area.

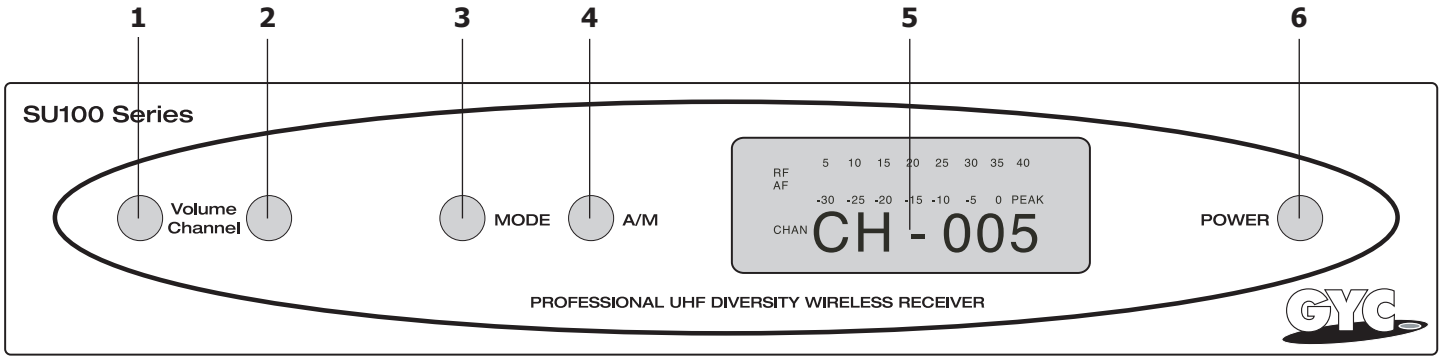
Audio Signal Level indicator. Indicates received audio level and assists in optimising the transmitter gain setting.

The set up procedure for each of the SU100 systems is detailed in these instructions and if followed will ensure your complete satisfaction with the product.

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.



1. Volume / Channel down
2. Volume / Channel up
3. Mode
4. A/M
5. Display
6. Power

The mode button selects three different operations, channel number, frequency indication and output level; channel number is the default setting as the unit powers up.

In the channel number mode, depressing buttons 1 or 2, channel / volume up or down, you are able to step through channels 1 to 10 sequentially, in order to match the receiver channel number to the transmitter channel number.

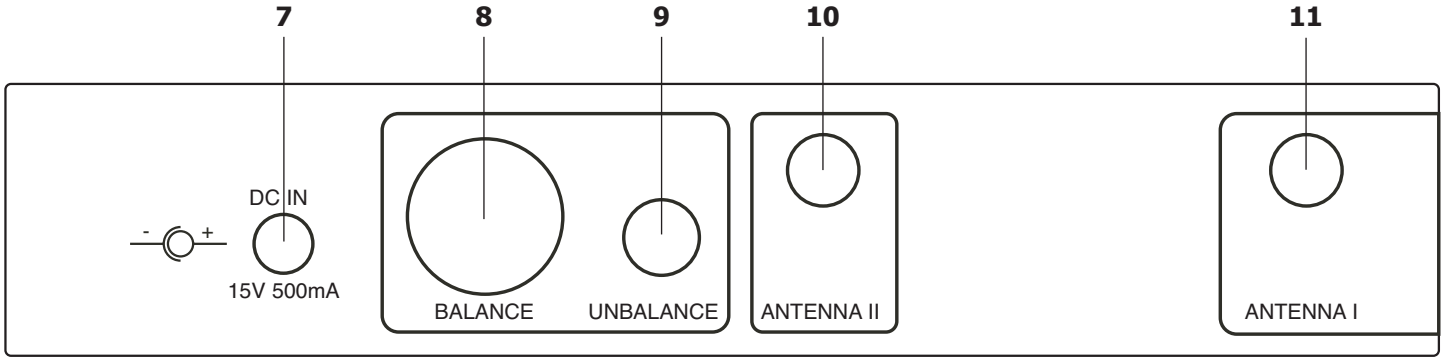
Depressing the mode button once moves onto to the frequency menu, this does exactly the same as the previous channel menu, but reads out the frequency in megahertz (MHz).

Depressing the mode button a final time brings up dB. This is the audio output level of the receiver. The output level can be set from 0 to 30dB using the channel / volume up or down buttons.

4. **A / M.** stands for Automatic / Manual. At power up, the receiver selects manual, allowing you to select the required channel or frequency. If you do not know the channel or frequency, simply switch on the transmitter, and depress the A / M button once. The receiver will now look briefly at each available channel, stopping when it reaches any channel it finds a signal to lock onto. If it is the wrong signal, press the A / M button twice to resume the search.

5. **Display.** This gives you a numerical and graphical readout of the channel number, frequency, RF signal level and audio signal level.

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



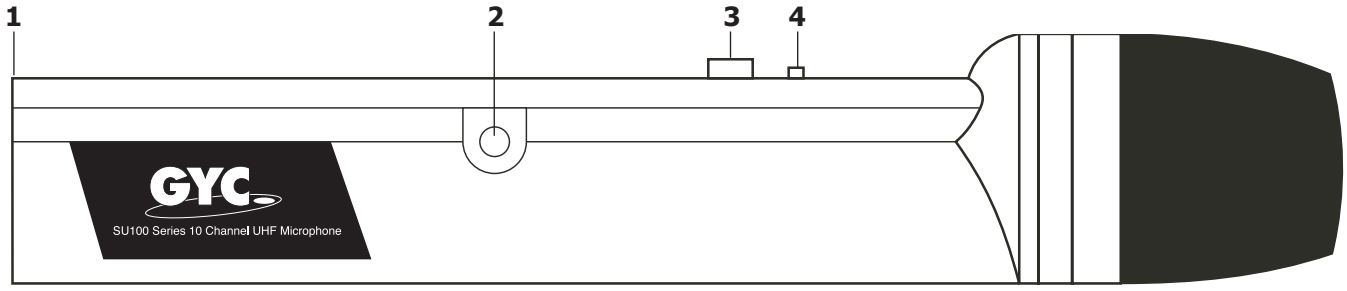
7. **Power Connector.** Accepts power from the supplied AC adapter.

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

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

10 / 11. **Antenna I and II Input Connector.** A TNC type connector provides connection to the supplied aerials, or any suitable external aerial system (not supplied).

Hand Held Microphone



1. **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.

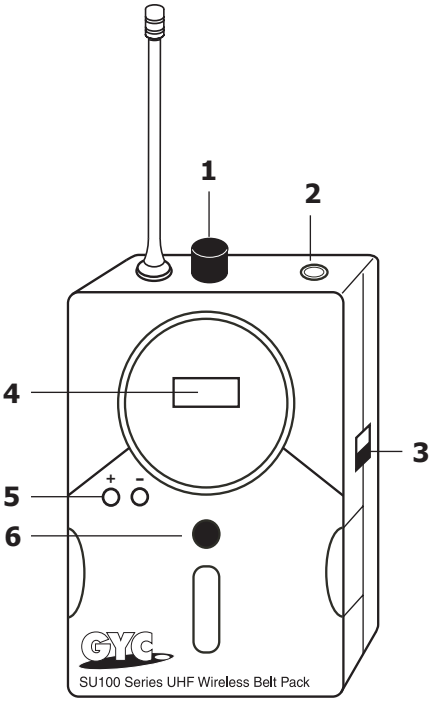
2. **Channel Number Window.** This gives a numerical readout of the selected RF channel.

NB. Care should be taken in changing the frequency selector to ensure that:
a) no damage is caused to the switch
b) that the channel selector matches channel selected on receiver.

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

4. **Power LED.** When power switch is moved to ON position, the power LED will illuminate, indicating battery is serviceable. Should the LED brightness start to drop, the battery requires replacement.

Belt Pack Transmitter



1. **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; increase the volume control level until the receiver display is just below peak.

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

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

4. **Display.** This gives a numerical readout of the channel number selected.

5. **Channel Select Switches** (under the battery cover).
The channel + and – buttons allow you to change the output channel to match your wish to use. Note that the receiver must be set to the same channel.

6. **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 battery, close the battery cover. Use a 9V alkaline battery.

OPERATING THE GYC SU100

Setting up the GYC system is extremely simple.

Receiver

1. Fit the two aerials into the sockets on the receiver rear panel, marked ANTENNA-I and ANTENNA-II, angle the aerials so that they form a 'V' shape.

2. Insert the D.C. power connector into the socket on the rear marked D.C. IN.

3. Plug power adaptor 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. If any of the LCD display shows signal activity, listen to the signals; if you can hear musical or vocal signals, there is another system being used on your selected frequency, and you need to change channels.

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 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 to ON position. NOTE. When power switch is moved to ON position, the power LED 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. If there is no RF indication, check that both the transmitter and receiver are set to the same frequency.

4. Observing the receiver's AF Signal level as you speak (sing) loudly, adjust the receivers output volume to match your amplifier.

Belt Pack Transmitter

1. Push down the black button (6) 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 (3) to the ON position. NOTE. When power switch is moved to ON position, the display (4) will activate.

3. Now look at the receiver, you should now have an RF signal level. If there is no RF indication, check that both the transmitter and receiver are set to the same frequency.

4. Plug in the required microphone, headset or tie clip microphone.

5. Observe the AF Signal on the receivers display as you sing or speak loudly. If the signal is too weak, or the overload illuminates, adjust the transmitter's volume control (1) to obtain the correct signal levels.
For the best sound, the Peak should only illuminate occasionally.

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 transmitter and receiver must be set to the same channel number.

11. A receiver cannot pick up signals from two transmitters at the same time.

12. For best operation, full RF Level should be indicated (maximum RF input); but only about 3/4 of the AF level should be indicated during normal use. Never be tempted to over-modulate the signal to produce overdrive distortion. Overdriving a frequency modulator produces very unmusical distortion.

13. If the AF Level control of receiver is set too high, it may overdrive the input of the mixer or clip the output of the receiver, causing distortion. Conversely, if receiver output is set too low, the overall signal-to-noise ratio of the system may be reduced.

14. 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 SU100 SYSTEM

No sound; no receiver RF and AUDIO indication. Make sure transmitter and receiver are both turned on. Check transmitter battery, and replace the battery if it is low. Make sure transmitter and receiver channel settings are identical. Check receiver aerial connections.

Make sure at least one aerial is in line of sight of transmitter. If necessary, reduce distance between transmitter and receiver.

No receiver sound; RF and AUDIO 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, or change frequency. The RF signal may be too weak, reposition receiver closer to transmitter.

Noise from receiver with transmitter off.
Try using another frequency. Reposition the receiver.

Momentary loss of sound as the transmitter is moved around performing area.
Reposition receiver and perform another walk through test and observe the RF level or diversity signal indicators. If audio drop-outs persist, mark these as dead spots in the performing area and avoid them during performance.

FREQUENCY GUIDE:

The following set of frequencies is stored in standard UK units. This set has been calculated to be intermodulation free, so it should be possible to operate them all simultaneously, although other radio sources may cause interference that prevents this. Presets 1 to 5 are on the Licence Exempt band, and so no licence is required. Presets 6 to 10 are on the UK Shared band, and a licence is required to operate UHF systems on these frequencies in the UK.

A UK licence application form is available as a download from www.jfmg.co.uk.
If you have any enquiries regarding licensing, please contact:

JFMG Limited. 72 Upper Ground. London. SE1 9LT.
Tel: (020) 7261 3797
Fax: (020) 7737 8499
Web: www.jfmg.co.uk

1 = 863.25MHz	6 = 855.27MHz
2 = 863.60MHz	7 = 855.90MHz
3 = 864.50MHz	8 = 856.17MHz
4 = 864.90MHz	9 = 857.95MHz
5 = 854.90MHz	10 = 858.20MHz

SU100 SYSTEMS

SU100 GYC Hand Held Microphone System including carry case.
SU100HMV GYC Headset Microphone System including carry case.
SU100LVM GYC Tie Clip Microphone System including carry case.

SU100 ACCESSORIES

SU100BPT GYC Belt Pack UHF Transmitter
SU100HVM GYC Headset Microphone
SU100LVM GYC Tie Clip Microphone

SPECIFICATIONS

SU100RU RECEIVER

Frequency Range:	750 to 1000MHz
RF Sensitivity:	10dBmV for >60dB SNR
Nominal deviation:	±15kHz
S/N Ratio:	>103dB
AF Frequency Response:	100Hz – 15kHz
AF Output Unbalanced:	1.25V into 5000 ohms.
Balanced:	2.5V into 600 ohms
Distortion:	<0.5%
Frequency Stability:	±0.005%
Dimensions:	225mm(L) x 160mm(W) x 45mm(D)

SU100HT HAND HELD MICROPHONE TRANSMITTER

Frequency Range:	750 to 1000MHz
Output Power:	10mW (max)
Nominal Deviation:	±15kHz
RF Harmonic & Spurious Radiation:	>40dB below carrier
Frequency Stability:	±0.005%
Power Consumption:	<70mA
Battery End Point:	6.5V
AF Frequency Response:	100Hz – 15kHz
Dimensions	240mm(L) x 45mm(ø)

SU100BPT BELT PACK TRANSMITTER

Frequency Range:	750 to 1000MHz
Output Power:	10mW (max)
Nominal Deviation:	±15kHz
RF Harmonic & Spurious Radiation:	>60dB below carrier
Frequency Stability:	±0.005%
Power Consumption:	<70mA
Battery End Point:	6.5V
AF Frequency Response:	100Hz – 15kHz
Dimensions	97mm(L) x 63mm(W) x 23(D)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:

www.jhs.co.uk

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