WIRED MICROPHONE

PGA STUDIO MICROPHONE KIT

USER GUIDE

© 2014 Shure Incorporated
27A24480 (Rev. 1)
Printed in U.S.A.
PG Alta™ Studio Starter Kit

PG Alta Microphones

Congratulations on the purchase of a new Shure PG Alta series microphone. The PG Alta series delivers professional quality audio at an affordable price, with solutions for capturing nearly any source, including voice, acoustic instruments, drums, and amplified electric instruments. Suitable for live and studio applications, PG Alta microphones are built to last, and meet the same rigorous quality testing standards that make all Shure products trustworthy and reliable.

General Rules for Use

• Do not cover any part of the microphone grille with your hand, as this will adversely affect microphone performance.
• Aim the microphone toward the desired sound source (such as the talker, singer, or instrument) and away from unwanted sources.
• Place the microphone as close as practical to the desired sound source.
• Work close to the microphone for extra bass response.
• Use only one microphone to pick up a single sound source.
• For better gain before feedback, use fewer microphones.
• Keep the distance between microphones at least three times the distance from each microphone to its source (“three to one rule”).
• Place microphones as far as possible from reflective surfaces.
• Add a windscreen when using the microphone outdoors.
• Avoid excessive handling to minimize pickup of mechanical noise and vibration.

Studio Microphone Kit

The microphones included in this kit provide solutions for recording almost any source.

Included Components

• PGA52 Dynamic Microphone
• PGA57 Dynamic Microphone
• (2) PGA181 Condenser Microphones

Applications

• Drums
• Vocals
• Acoustic Guitar
• Full Bands
• Guitar/Bass Amplifiers
• Strings
• Brass and Woodwinds
• Piano

Microphone Techniques for Stereo Recording

Stereo recording using two microphones adds realism by capturing sound similar to the way that humans hear. Panning (directing the signals left and right) adds width and directionality when listening on stereo systems or headphones.

Tip: Panning the signals farther apart increases stereo separation and width. Be careful of panning too far, as it may result in a hollow sound in the middle of the stereo field.

① X-Y Coincident Pair

The X-Y technique provides excellent phase coherency because sound arrives simultaneously at both microphones.

Placement: Set up the microphones with the capsules close together, but not touching. Experiment with angles between 90 and 120 degrees to capture the full width of the source.

② ORTF

Developed as a French broadcasting standard, ORTF technique replicates the spacing and angle of human ears. It provides a natural, wide sound.

Placement: Angle the microphones at 110°, with the capsules 17 cm apart.

③ A/B Spaced Pair

Spaced pair recording can deliver a dramatic stereo effect because sound arrives at each microphone at a slightly different time, providing the listener with timing cues that localize sounds.

Note:
For drum overheads, the snare drum should be equidistant from each microphone to achieve a tight, focused sound. Use a measuring tape or piece of string to verify this distance.
The following table provides basic recording techniques for several sources. Experiment with various configurations and microphone placement to achieve the preferred sound.

<table>
<thead>
<tr>
<th>Source</th>
<th>Suggested Microphones</th>
<th>Tips</th>
</tr>
</thead>
</table>
| Drums            | PGA181: Stereo overheads  
PGA52: Kick drum  
PGA57: Snare Drum | • See stereo microphone techniques for overhead placement options  
• If the kick drum resonant head has a hole in it, place the microphone inside  
for improved isolation from other instruments  
• Aim the PGA57 towards the center of the snare drum head to capture more  
stick attack, or closer the edge to capture more overtones. |
| Vocals           | PGA181                                                     | • Place the microphone 1-6 inches (2-15 cm) from the source  
• Use a pop filter (Shure PS-6) to prevent plosives. |
| Acoustic Guitar  | PGA181                                                     | • Use two PGA181 microphones to record in stereo using one of the stereo  
recording methods, or a single PGA181 for a mono signal  
• Place microphone(s) 6-12 inches (15-30 cm) from the guitar  
• Place near the 12th fret for a balanced sound, or closer to the sound hole  
for more bass. |
| Full Band        | PGA181: Stereo pair, aimed at entire group  
PGA52: Kick drum or bass amplifier  
PGA57: Vocals or guitar amplifier | • Use close-placement microphones on sources that are most likely to need  
extra volume in the mix, such as vocals or acoustic instruments.  
• If more close-placement microphones are necessary, use one PGA181 to  
capture the entire group, and use the second PGA181 on an instrument. |
| Guitar/Bass Amplifiers | PGA52: Bass amplifier  
PGA57: Guitar amplifier  
PGA181: Guitar or bass amplifiers | • Aim the microphone at the center of the speaker cone for a bright, punchy  
sound, or towards the edge of the speaker for a mellow sound.  
• The PGA181 delivers a clear, detailed sound  
• The PGA57 and PGA52 deliver a warmer sound that helps to smooth out  
harsh sounding amplifiers  
Advanced tip: For a more spacious sound, use a PGA57 or PGA52 close to  
the amp, with a PGA181 placed 10-20 feet away. Pan them slightly in opposite  
channels to create a full, roomy sound. |
| Strings          | PGA181: Stereo pair (ensemble), any individual instrument | • To record a string ensemble, use one of the stereo microphone techniques  
to capture the width of the source  
• For an individual instrument, try using one PGA181 approximately 1 foot  
from the source, with the other PGA181 in the room (6-12 feet from the  
source) to capture ambience. |
| Brass and Woodwinds | PGA181: Stereo pair (ensemble), any individual instrument  
PGA52: Tuba  
PGA57: Saxophone, trumpet, trombone | • To capture brass and woodwind ensembles, use one of the stereo  
microphone techniques to capture the width of the source  
• For an individual instrument, such as a saxophone, aim the PGA57 toward  
the bell of the instrument and use a PGA181 in the room (6-12 feet from the  
source) to capture ambience  
• For a simplified approach, simply use one PGA181 placed 1-2 feet from the  
instrument |
| Piano            | PGA181 (Stereo pair)                                      | • Use a stereo recording technique, with the microphones placed inside the  
piano lid  
• For upright pianos, keep the top open and/or remove the front panel when  
possible. |
PGA181 X-Y Stereo Position

The PGA181 is a side-address microphone, and must be set up vertically for the capsules to be coincident.

The capsules are angled 90° apart, just like the alignment with a front-address microphone.

Positioning the Microphone

The front of the microphone is marked by several indicators: four screws around the grille, the cardioid logo, and the PGA181 model number. Position this side toward the sound source.

Proximity Effect

Directional microphones progressively boost bass frequencies as the microphone is placed in closer proximity to the source. This phenomenon, known as proximity effect, can be used to create a warmer, more powerful sound.

Phantom Power

All condenser microphones require phantom power to operate. This microphone performs best with a 48 V DC supply (IEC-61938), but it can operate with lower voltages.

Phantom power is provided by the mixer or audio interface that the microphone is connected to, and requires the use of a balanced microphone cable: XLR-to-XLR or XLR-to-TRS. In most cases, there is a switch or button to activate the phantom power. See the user guide for the mixer or interface for additional information.

NOTE: Applies to PGA181 condenser microphones only. Supplying phantom power to the other included microphones will not cause damage.
### Optional Accessories and Replacement Parts

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.6 m (25 ft.) Cable (XLR-XLR)</td>
<td>C25J</td>
</tr>
<tr>
<td>5/8&quot; to 3/8&quot; Thread Adapter</td>
<td>31A1856</td>
</tr>
<tr>
<td>Vinyl zippered storage bag</td>
<td>95B2324</td>
</tr>
<tr>
<td>Drum Microphone Mount</td>
<td>AP56DM</td>
</tr>
<tr>
<td>Grille</td>
<td>RPM154</td>
</tr>
<tr>
<td>PGA57 Replacement Grille</td>
<td>RPM152</td>
</tr>
<tr>
<td>4.6 m (15 ft.) Cable (XLR-XLR)</td>
<td>95D2153</td>
</tr>
<tr>
<td>Wireless Microphone Clip</td>
<td>WA371</td>
</tr>
<tr>
<td>Popper Stopper® Pop Filter with Metal Gooseneck and Microphone Stand Clamp</td>
<td>PS-6</td>
</tr>
<tr>
<td>Foam Windscreen for all larger Shure &quot;ball-type&quot; Microphones available in black, blue, gray, green, red and yellow</td>
<td>A58WS</td>
</tr>
<tr>
<td>Microphone Clip for SM58, SM57, SM87A, Beta 87A, Beta 87C, PGA57, PGA58, PGA48, PGA81</td>
<td>A25D</td>
</tr>
</tbody>
</table>

### Certifications

This product meets the Essential Requirements of all relevant European directives and is eligible for CE marking.

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

Authorized European representative:
Shure Europe GmbH
Headquarters Europe, Middle East & Africa
Department: EMEA Approval
Jakob-Dieffenbacher-Str. 12
75031 Eppingen, Germany
Phone: 49-7262-92 49 0
Fax: 49-7262-92 49 11 4
Email: info@shure.de

### Specifications

#### PGA52

<table>
<thead>
<tr>
<th>Type</th>
<th>Dynamic (moving coil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Response</td>
<td>50 to 12,000 Hz</td>
</tr>
<tr>
<td>Polar Pattern</td>
<td>Cardioid</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>150 Ω</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>-55 dBV/Pa¹ (1.75 mV)</td>
</tr>
<tr>
<td>Polarity</td>
<td>Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3</td>
</tr>
<tr>
<td>Weight</td>
<td>454 g (16.01 oz.)</td>
</tr>
<tr>
<td>Connector</td>
<td>Three-pin professional audio (XLR), male</td>
</tr>
</tbody>
</table>

#### Environmental Conditions

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>-20° to 165°F (-29° to 74°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Humidity</td>
<td>0 to 95%</td>
</tr>
</tbody>
</table>

1 Pa=94 dB SPL

### Typical Frequency Response

![Typical Frequency Response](image)

### Typical Polar Pattern

![Typical Polar Pattern](image)
PGA57

**Type**
Dynamic (moving coil)

**Frequency Response**
50 to 15,000 Hz

**Polar Pattern**
Cardioid

**Output Impedance**
150 Ω

**Sensitivity**
at 1 kHz, open circuit voltage
-56.5 dBV/Pa¹ (1.5 mV)

**Polarity**
Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3

**Weight**
280 g (9.88oz.)

**Connector**
Three-pin professional audio (XLR), male

**Environmental Conditions**

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>Relative Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20° to 165°F (-29° to 74°C)</td>
<td>0 to 95%</td>
</tr>
</tbody>
</table>

1 Pa=94 dB SPL

---

PGA181

**Type**
Electret Condenser

**Polar Pattern**
Cardioid

**Frequency Response**
50 to 20,000 Hz

**Output Impedance**
at 1 kHz, open circuit voltage
120 Ω, actual

**Sensitivity**
at 1 kHz, open circuit voltage
-38 dBV/Pa [1] (12.7 mV)

**Maximum SPL**
1 kHz at 1% THD, 1 kΩ load
138 dB SPL

**Polarity**
Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3

**Connector**
Three-pin professional audio (XLR), male

**Weight**
383 g (0.8 lbs)

**Housing**
Cast Zinc

**Power Requirements**
48 V DC phantom power (4 mA)

[1] 1 Pa=94 dB SPL

---

Graphs and charts illustrating typical frequency response and polar patterns for both PGA57 and PGA181 microphones.