

CHANDLER LIMITED® TG MICROPHONE USER MANUAL



TG MICROPHONE

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INTRODUCTION

TG Microphone

Thank you for purchasing the Chandler Limited 'TG Microphone,' you now own a piece of EMI/Abbey Road Studios official equipment.

Continuing in the rich tradition of innovation at EMI and dating back to the early 1930s with Alan Blumlein, the father of Stereo, the company's first coil and velocity 'ribbon' microphones, and the "Blumlein pair" technique, Chandler Limited and Abbey Road Studios introduce the second new EMI badged microphone in over a half century, the TG Microphone.

Designed by Chandler Limited Founder and Chief Designer, Wade Goeke, the TG Microphone is a solid-state large diaphragm condenser microphone, featuring an on-board historic EMI TG12410 mastering console *Tape Equalizer*, three TG amplifiers and a dedicated external power supply.

The microphone's on-board tape equalizer and modifiers, allows the user to sculpt the sound at the source, rather than down-stream or later in the production process. The all-in-one approach reduces electronic circuitry in the signal path and allows for high-grade audio transmission from the source.

The TG Microphone system includes: microphone, 4-pin microphone cable, power supply system, shock mount suspension system, pattern select screwdriver, and wooden microphone box.

Your Chandler Limited TG Microphone has been carefully crafted and built by hand at Chandler Limited's factory in Shell Rock IA, U.S.A., using through-hole components for the ultimate analog experience.

At Chandler Limited we are proud of our American made products and we hope you like them!

Please feel free to call our shop anytime for help or questions.

Phone: (319) 885-4200.

History

Conceived from meetings in 1967 between Abbey Road and EMI's Central Research Laboratories teams, the EMI TG12345 Mark I desk ushered in a sea of change in sound and flexibility at Abbey Road Studios.

Installed in Abbey Road's Studio Two in November 1968 and making its debut on an 8-track recording by the Shadows, the new transistorized solid-state desk marked a departure from the earlier REDD valve consoles.

The EMI TG12345 desk helped shape the sound of the Beatles' final album, "Abbey Road," which was markedly richer sounding to that of the band's earlier work. The sonic qualities of classics like "Here Comes the Sun," "Come Together" and "Something" would have been very different without the EMI TG12345.

From TG12345 console technology and the need for mastering consoles to perform as tape to disk or cutting desks and the further requirement of tape to tape transfers, would give rise to the now legendary EMI TG12410 transfer consoles.

Still in use today at EMI/Abbey Road Studios, the EMI TG12410 transfer consoles and their heralded sound, were never available to the public.



OFFICIAL

EQUIPMENT

IMPORTANT PROCEDURES & QUICK START

Shock Mount

WARNING: To fit the microphone through the shock mount system without damaging the felt, over-flex the mount's latches by pushing them backwards or the opposite direction of closing, until the suspension rings expand to a width suitable to comfortably slip the microphone through them head first.

Connections

1. **WARNING:** Turn off any 48V phantom power from external preamplifiers to be used with the TG Microphone.
2. Connect the TG Microphone to the included power supply unit (PSU) using the supplied 4-pin microphone cable. Only use the Chandler Limited supplied cable, power supply and AC adaptor.
3. Connect a standard 3-pin XLR microphone cable to the TG Microphone's PSU output jack and to the input of a microphone preamplifier; remember to disable the preamp's 48V phantom power prior to connection.
4. Connect the TG Microphone's power supply to the supplied AC adaptor, and connect the AC adaptor to a power outlet.

Power-up

1. Once all connections to and from the TG Microphone's power supply have been made, cycle on the power supply by means of the power switch located at the front of the PSU.
2. If power has been achieved, the TG microphone's on-board LED, located inside the head-basket and the LED on the PSU front panel will illuminate to signify the microphone system is active; the LED inside the TG Microphone head-basket is also used to help align the capsule to the sound source.
3. **WARNING:** Do not disconnect the 4-Pin microphone cable while AC power is applied to the microphone. If disconnection is to be made, power off the TG Microphone's PSU and wait for the power supply's LED to fully discharge before removing the 4-pin microphone

cable or AC power adaptor at either end.

NOTE: The 3-pin XLR audio output connection may be patched or unpatched as necessary, without powering down.

Warm-up

It is recommended for all electronics—once powered on—to be given time to settle before use. Though optional...for optimum results, prior to sound incident or usage, allow the TG microphone to warm-up for a minimum of 3-5 minutes.

Power Down

Prior to disconnecting the 4-pin cable between the microphone and the PSU or AC power adaptor from the PSU and or wall outlet, first power down the PSU, and wait for the external PSU's LED to fully discharge.

NOTE: It is recommended to power down the TG Microphone when not in use.

Vocals

For vocals we always suggest use of a *pop filter*. Large diaphragm condenser microphones (*LDCs*) when exposed to moisture from a source at close proximity—such as a vocal—can sometimes cause a temporary interruption of sound capture. For use on a vocal where a pop filter isn't desired, it may be possible to avoid effects of moisture by tilting the microphone at an angle of 10-15° (degrees) away from the mouth and the center of the capsule placed between the ball of the nose and the upper lip, or between the lower lip and chin, and not directly in line with the mouth.

TIP: The non-pop filter technique also minimizes plosives.

OPERATING INSTRUCTIONS

Dual Tone System

The *Dual Tone System* or *System* facility of the TG Microphone is located on the lower right front of the TG Microphone's body and provides two options, A or B. System A and B modify the input structure of the microphone and have a distinct effect upon how the microphone responds to the source and the character of the sound captured.



System A

Input system A is rich in harmonic content, more forward and characteristically what you'd expect from a TG preamplifier. System A is suitable for a wide array of sources and is comparatively more colored than system B.

System B

Comparatively to system A, input system B is cleaner or more pristine and with less harmonics. System B is also the higher sound pressure level (SPL) mode of the TG Microphone and runs about -6 dB lower in level.

While in system B and with the on-board *Pad* engaged, the TG Microphone is capable of taking extreme SPLs.

Regardless of system B's higher SPL ability, it may be used for any source including— vocals, acoustic guitar and other lower SPL sources. However, if the source is kick drum, bass or electric guitar cabinets, system B is the natural choice.

Tape Equalizer

The dedicated on-board EMI *Tape Equalizer* provides the TG Microphone the ability to sculpt the sound at the source. The tape equalizer and modifiers are adjustable directly from the microphone body; the tape equalizer is not a tape emulator.

Historic Note: The TG microphone's on-board tape equalizer circuit is inherited from historic EMI TG12410 mastering consoles of the late '60s and '70s. The unique NAB/IEC tape equalizer was used to correctly playback master tapes recorded on tape machines of differing standards without the need to recalibrate the machine itself.

Tape Equalizer Settings

The on-board tape equalizer's settings are selectable from the rear of the microphone. There are five settings to choose from, including: *NAB/IEC 7.5*, *15 lps*, *FLAT*, and *IEC/NAB 7.5*, *15 lps*; the nomenclature or labeling on the TG Microphone's tape equalizer section is taken directly from the historic EMI mastering desks.

When looking at the rear of the microphone and reading clockwise from left to right, the tape equalizer settings may be referenced as #1 through #5, with '*FLAT*' being #3.



Tape Equalizer Curves

Each tape equalizer setting is unique, the emphasis of the curves are as follows:

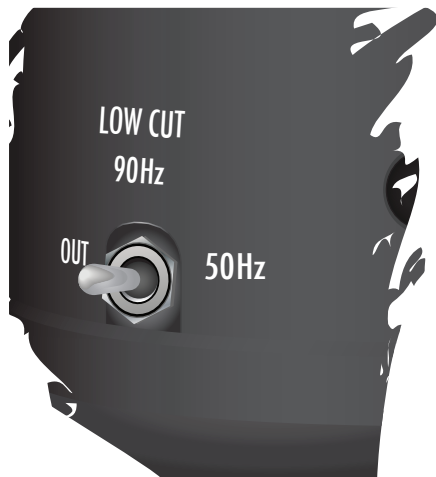
1. *NAB/IEC 7.5 lps* – Bass emphasis
2. *NAB/IEC 15 lps* – Treble emphasis
3. *FLAT* – comparatively is the most neutral of the settings
4. *IEC/NAB 15 lps* – Bass and Treble emphasis
5. *IEC/NAB 7.5 lps* – Greater Bass and Treble emphasis

Each of the tape equalizer presets may be modified by the on-board *low-cut* filter, described in the following section.

Low Cut

The TG Microphone's *Low Cut* filter is more than a rumble or high-pass filter, and is intended to act as a modifier of the TG Microphone's tape equalizer settings.

The *Low Cut* filter toggle switch is found on the lower front left of the TG microphone's body. The *Low Cut* filter has two user selectable frequencies— 50 Hz or 90 Hz and an *Out* or bypass setting.

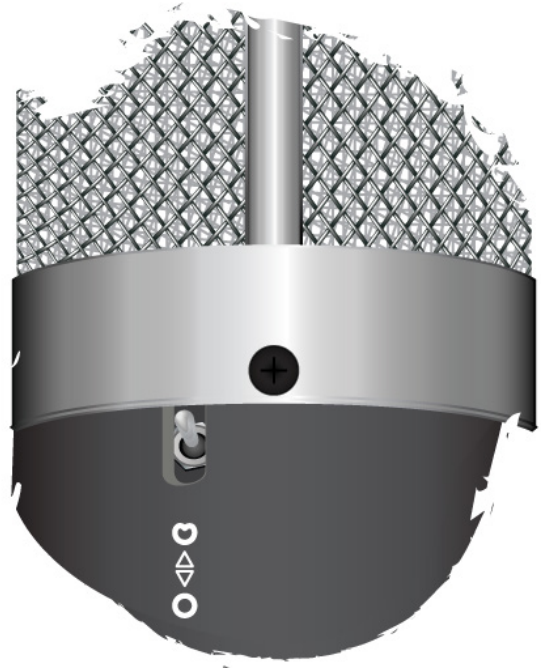


When either of the *Low Cut* frequencies are activated, the net effect of the modification is an additional tier of settings apart from the initial five tape equalizer options, and accounts for a total of ten curves available per system.

When the *Low Cut* toggle switch is set to *Out*, the filter is disabled or bypassed and has no affect upon the tape equalizer or the source.

Polar Patterns

The directional characteristic of the TG Microphone is user selectable. Two polar pattern options are provided— *cardioid* or *omni*, and either is available via a toggle switch from the upper portion of the microphone's body, and may be selected using the supplied pattern select screwdriver.



Cardioid

This unidirectional polar pattern, denoted as a kidney bean shaped icon, discriminates against source arriving at the rear of the capsule and to a lesser degree at the sides, in preference for sound incident at the front of the microphone.



Q CARDIOID

NOTE: Proximity effect is a natural occurrence of the cardioid polar pattern, where low-end is emphasized when the sound source is closer to the microphone.

TIP: If when in the cardioid pattern, the microphone is required to be placed in close proximity to a source—such as acoustic guitar—where capture of low frequency data may be less desired, or in small environments where natural build-up can occur, try using tape equalizer setting #2 (*NAB/IEC 15 lps*) or #3 (*FLAT*.) or #4 (*IEC/NAB 15 lps*) with or without low-cut engaged.

TIP: Use the cardioid pattern in scenarios where minimal pickup at the rear of the microphone is desired.

Omni

The omni-directional polar pattern or omni, denoted as a circle icon, is spherical, picking-up from all sides of the capsule, e.g. the pattern is indiscriminate to the direction of sound incident.



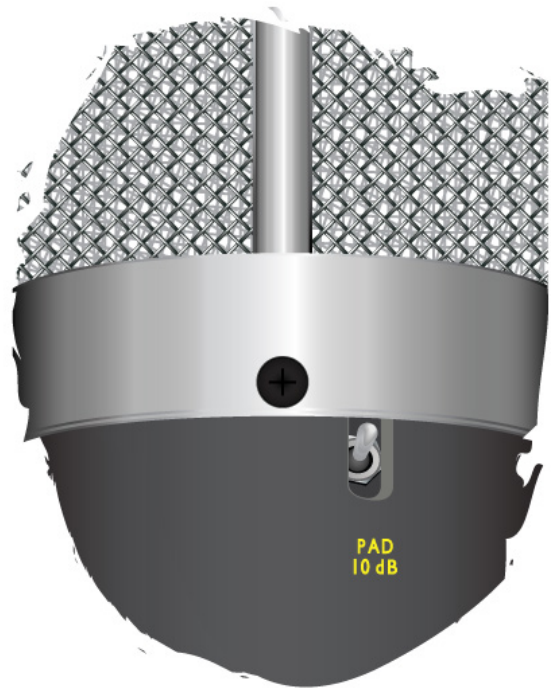
O OMNI

Proximity effect is not a feature of the omni pattern, and as a result, an apparent drop in lows (and apparent level,) is a normal byproduct of this setting. However, if while in omni more low-end is desired, simply use of one the bass emphasis tape equalizer settings, for example— *System B, Tape Equalizer setting #1 (NAB/IEC 7.5 lps)* with or without *Low Cut*, or *System A, Tape Equalizer setting #4 (IEC/NAB 15 lps)* or #5 (*IEC/NAB 7.5 lps*) with or without *Low Cut* engaged.

TIP: Use omni where a sense of space is apropos, for example, strings, acoustic guitars, pianos or other material, or a more natural distribution of low-end is preferable.

Pad

Facility to decrease the sensitivity of the microphone by -10 dB exists via the on-board *Pad* toggle switch, located at upper portion of the microphone's body. The *Pad* is actuated by placing the switch to the downward position and is accomplished using the supplied pattern select screwdriver or similar device.

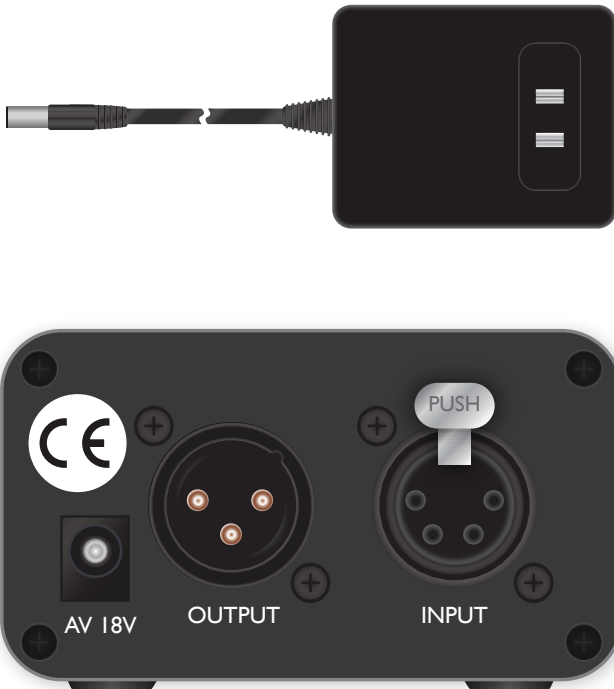


TIP: Use the pad in scenarios where the sound incidence is overloading the capsule. For high SPL sources such as— kick drum, bass or electric guitar cabinets, use the TG microphone's input system B with or without the pad as needed.

POWER & CONNECTIVITY

WARNING: The TG Microphone does not use 48V phantom power, be sure to disable preamplifier 48V phantom power prior to connection. The TG Microphone relies on dedicated power supply unit (PSU) system and specially wired cable; only use the supplied Chandler Limited PSU system and associated components.

Based upon country of purchase, the PSU system supplied with the TG Microphone is localized for regional AC power, for either 110V or 220V (115/230V.) A TG Microphone system purchased in a region where AC is 110V (115V) standard cannot be used in one that is 220V (230V,) unless the voltage specific AC adaptor is used.



Microphone Input

Located on the PSU rear panel is a 4-pin female XLR receptacle, connect the supplied 25' (762cm) 4-pin microphone cable from the microphone to the PSU via this jack.

WARNING: Only use the specially wired Chandler Limited supplied 4-pin microphone cable or risk damage to the TG Microphone system.



Microphone Output

Located on the PSU rear panel is a standard 3-pin male XLR connector, this output jack supplies microphone level signal to an external microphone preamplifier of the engineer's choice; the TG Microphone's output impedance is 200 Ohms.

Ac power

Prior to any connection to AC power or cycling on of AC power, connect the supplied 4-pin XLR cable between the PSU and the TG Microphone.

WARNING: Do not disconnect the 4-pin XLR microphone cable at either end, when the PSU is powered on.

Located on the rear panel of the PSU is an AC power adaptor receptacle, connect the supplied AC power adaptor to this jack, and the AC power adaptor to a suitable AC outlet.

WARNING: Do not leave the AC power adaptor connected to an AC outlet without being plugged into the PSU for long periods of time; only use a Chandler Limited supplied AC Adaptor.

Power Switch

The master power switch is located on the front panel of the PSU. Once all connections to and from the microphone and the PSU have been made, press the master power supply switch inward to activate AC power.



When proper power connectivity has been made and the PSU has been cycled on, both the LED located on the front panel of the PSU and one located inside the TG Microphone's head basket will illuminate.

MAINTENANCE

Storage

WARNING: Turn the microphone system off and wait until the PSU LED has fully discharged before disconnecting any cables or the AC adaptor from the TG Microphone system.

When the TG Microphone is not in use for extended periods of time, please stow the microphone in the supplied plastic dust cover and wooden case; always store the microphone in a room temperature environment.

NOTE: If the microphone is to be left out for daily use, take care to further protect capsule by using the provided plastic dust cover.



SERVICE

United States

Prior to sending in equipment for repair, please contact our shop at the number below. We will assist you in troubleshooting, and if needed, we will issue an RMA# to return the equipment for service.

Send Repairs To:

Chandler Limited, Inc.

Attention: Repairs

222 S. Cherry St.

PO Box 38 (if sending via the postal service)

Shell Rock IA 50670

Phone: (319) 885-4200

Email: support@chandlerlimited.com

International

Repair of Chandler Limited products purchased, outside of the United States, is provided by local or regional authorized Chandler Limited distributors. To obtain service or repairs, please contact your local dealer or regional distributor for further instruction.

Visit chandlerlimited.com for a list of authorized International Distributors.

CE CERTIFICATION

Chandler Limited declares under its sole responsibility that all products manufactured by them are in compliance with Electromagnetic Compatibility (EMC) Directive 2014/30/EU; Standards: EN55103-1:2009+A1:2012; EN55103-2:2009; EN55013:2013 and Low Voltage Directive (LVD) 2014/35/EU; Standards: EN60065:2002+A1:2006+A11:2008+A2:2010+A12:2011.

PRODUCT LIMITED WARRANTY

During the first year from the date of the original purchase, this product is warranted to be free from defects in materials and workmanship under normal use, service and maintenance. This warranty applies to the original purchaser and is subject to the following terms and conditions:

What Is Covered: The product's components as originally installed by the manufacturer that are defective in materials or workmanship under normal use, service and maintenance, except expendables defined as vacuum tubes and meter or badge lamps, which are covered by a lesser warranty period as set forth below.

What Is Not Covered By This Warranty: This warranty does not extend to or cover:

1. Any defect due to the negligence of others; failure to install, operate or maintain the product properly; unreasonable use; accidents; alteration; use of unauthorized or non-standardized parts; acts of God; theft; vandalism; electrical malfunctions (i.e., resulting from power surges, shorted or overloaded circuits, etc.), use of any power source other than supplied by manufacturer; repair by anyone other than an authorized Chandler Limited representative; or damage resulting from improper packing or mishandling by a shipper.
2. Normal wear and tear of parts.
3. Shipping, handling, packaging and delivery costs of the product.

Who Is Covered: The original purchaser.

Repair During The First Year for non-expendables: During the first year, all defective product components that are covered by this Limited Warranty will be repaired free of charge including parts and labor. The purchaser will pay all shipping costs AND a \$35 handling fee per unit.

Repair During The First 90 Days for expendables: During the first 90 days, all defective expendables (vacuum tubes and meter or badge lamps) that are covered by this Limited Warranty will be replaced or repaired free of charge including parts and labor. The purchaser will pay all shipping costs and a \$35.00 handling fee per unit.

What You Must Do for Warranty Service (in the United States): If you live in the United States and your product was purchased through a U.S. Dealer, please contact your dealer OR call 319-885-4200 or email support@chandlerlimited.com.

What You Must Do for Warranty Service (outside of the United States): For warranty service if you live outside of the United States, please contact the dealer where you purchased the product.

Any products returned to Chandler Limited for repair should include: (1) complete description of the problem; (2) name, address, phone number, fax number, and/or e-mail address; (3) receipt of original purchase; (4) power supply and all accessories and cables. The purchaser is responsible for the shipping costs to and from Chandler Limited. Chandler Limited is not responsible for damage resulting from improper packing and/or mishandling by a shipper.

If sent by UPS or Federal Express, ship to: Chandler Limited, 222 South Cherry Street, Shell Rock IA 50670

If sent by Postal Service, ship to: Chandler Limited, PO Box 38, Shell Rock IA 50670

The foregoing expresses Chandler Limited's obligations and liabilities with respect to the quality of the product, its components and accessories. All other warranties, express or implied, including the warranties of merchantability or fitness for a particular purpose are disclaimed. Chandler Limited shall not be liable for the loss or use of the product, its components and accessories, inconvenience, loss or any other damages, direct or consequences arising out of the use of, or inability to use the product or its components or damages resulting from or attributable to defects in the products or its components. No one other than Chandler Limited has authority to extend or modify the terms of this limited warranty in any manner whatsoever.

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