



UT Twin87

TWIN-CIRCUIT LARGE-DIAPHRAGM CONDENSER MICROPHONE

Owner's Manual

THANK YOU!

Thank you for purchasing the United Studio Technologies UT Twin87. We realize how many microphone choices are out there, and we are honored that you have given us a chance. We have done all that we can to exceed your expectations in a quality microphone, in terms of craftsmanship, feel, appearance, and most importantly, sound. We make our microphones not to be good for a price; but to simply be the best we can make them, and to be as good as the best products available. We have scrutinized and labored over not just the major parts; but every component from end to end, as well as the circuit design and mechanics. With proper care, our products should last a lifetime of use and beyond.



A stylized white signature of Chad Kelly on a dark background.

CHAD KELLY

United Studio Technologies, LLC.

Baton Rouge, Louisiana USA

PRODUCT SERVICE

REGISTER YOUR PRODUCT

Before we begin, please take the time to visit www.unitedstudiotech.com to register your product. To ensure you receive proper and uninterrupted warranty support for your product, please register your unit within 14 days from purchase.

UPDATES TO THIS MANUAL

Occasionally, we may have updates to this manual. All current manuals can be downloaded at www.unitedstudiotech.com. For your convenience, every page of this manual displays the version number at the bottom of the page.

SAFETY

Warning: To reduce the risk of electric shock, do not open the device as there are no user-servicable parts inside. **Refer servicing to qualified personnel!**

1. Read and keep these instructions; heed all warnings, and follow all instructions.
2. Do not expose this device to rain and moisture.
3. Clean only with a dry cloth.
4. Servicing is required when the device has been damaged in any way.
5. Always connect with a standard 3 pin XLR (male XLR to female XLR) cable that is in good working order.
6. Always fully connect microphone cable on both ends before engaging +48v Phantom Power.
7. Always disengage +48v Phantom Power and give the microphone a few moments to fully discharge before disconnecting the microphone cable.
8. DO NOT pass this microphone signal directly through a TT (tiny telephone, tip-ring-sleeve) or TRS (¼ inch, tip-ring-sleeve) patchbay! A preamp, of course, can be followed by a patch bay; just not a microphone signal.
9. This microphone ships with a silica gel packet. Do not discard it; this ensures that moisture/humidity does not accumulate on the mic capsule diaphragm and that no part of the device begins to oxidize. If the silica package becomes lost or discolored, replace it with a new, good quality silica gel packet.

WARRANTY SERVICE

United warranties this product to be free from defect in materials and workmanship for one year from date of purchase, for the original purchaser to whom this equipment is registered. This warranty is non-transferrable.

This warranty is void in the event of damage incurred from unauthorized service to this unit, or from electrical or mechanical modification to this unit. This warranty does not cover damage resulting from abuse, accidental damage, misuse, improper electrical conditions such as miswiring, incorrect voltage or frequency, unstable power, disconnection from earth ground (for products requiring a 3 pin, grounded power cable), or from exposure to hostile environmental conditions such as moisture, humidity, smoke, fire, sand and other debris, and extreme temperatures.

United will, at its sole discretion, repair or replace this product in a timely manner. This limited warranty extends only to products determined to be defective and does not cover incidental costs such as equipment rental, loss of revenue, etc. Please visit us at www.unitedstudiotech.com for more information on your warranty, or to request warranty service.

This warranty applies to products sold in the United States of America. For warranty information in any other country, please refer to your local distributor for United Studio Technologies. This warranty provides specific legal rights, which may vary from state to state. Depending on the state in which you live, you may have rights in addition to those covered in this statement. Please refer to your state laws or see your local retailer for more information.

NON-WARRANTY SERVICE

If you have a defective unit that is outside of our warranty period or conditions; we are still here for you and can get your unit working again for a modest service fee. Please visit us at www.unitedstudiotech.com to contact us about setting up a repair or for more information.

With the proper care, your United gear should last a lifetime and provide a lifetime of enjoyment. We believe the best advertisement we can have is a properly working unit being put to great use. Let's work together to make it happen.



CHAPTER 1: NOW LET'S GET STARTED!

1.1 CONNECTIONS AND POWER

The UT Twin87 requires 2 things in order to properly function: a 3 pin XLR cable, and 48V phantom power.

The first is simple; plug the XLR cable to the output jack on the bottom of the UT FET47. Then connect the cable to your recording device, preamp, or mixing console. Ensure that

the cable is properly working...

Sorry, we had to spell that out.

Engage 48V phantom power on your device. If your device does not provide 48V phantom power, an external, dedicated power supply will be required for operation.

1.2 HARDWARE CONTROLS

Pattern select - omnidirectional, cardioid, and figure of eight.

In cardioid mode, the UT Twin87 takes the microphone out of the pattern select circuitry all together and decouples the rear diaphragm, a mod or setting sometimes referred to as 'true cardioid'. This has some performance advantages over normal 'switched', or active cardioid which still goes through the pattern select circuitry. Signal level and signal to noise ratio are slightly enhanced.

Modern/Vintage - This setting allows the user to choose between the earliest 87-style microphone circuit and the more modern reproductions.

HPF - gradual slope rumble filter tuned for voice broadcast, 12 dB down at 80hZ

-10dB pad - attenuates amplifier section by 10dB to provide greater headroom for loud sources.

The UT Twin87 is a multi-pattern, large diaphragm, transformer-balanced condenser microphone designed for a very wide range of recording studio applications. Its operation is fairly straightforward. As with any microphone; the more attention given to setup and placement, the better the results will be. The UT Twin87 features a high pass filter for eliminating subsonic information such as floor vibration and rumble, and a -10 pad for use in very loud sound pressure situations such as kick drum, guitar amplifiers, and especially loud vocalists.

HOW TO KNOW IF YOU NEED THE PAD ENGAGED?

It is good practice, unless you are certain you will need it, to start without the pad engaged. You will know you need the pad if the signal is distorted, clipping, or 'flatlined' even after properly spacing the microphone from its source. The pad will allow for an additional

10dB of headroom in the amplifier circuit for these situations.

WHEN TO ENGAGE THE HIGH PASS FILTER?

In studio recording, we feel it is usually good practice to record an audio source at 'full bandwidth' and to precisely tailor any bandlimiting in the modern workstation. This provides much more accuracy than a single switch on a microphone can provide; and the switch at this point is more a carryover from an earlier time. There are a number of sound sources, however, where one can be fairly sure that frequencies below the switch cutoff frequency are not going to play a major part in the makeup of the audio source, or at least not in the finished (edited/processed) form that the audio track will take. This includes voice, guitar, drum overhead, and possibly some acoustic instruments. This is particularly true of live voice broadcast (podcast, radio broadcast) and narration (books on tape, etc). Because low frequencies have very large

waveforms, a high pass filter on the microphone can sometimes reduce the chances of clipping or allow a slightly hotter signal to be captured, without the damage from moving microphone stands, doors, and rumble from nearby traffic, etc. As a general rule, if engaging the HPF causes no audible loss to the 'body' of the source signal; it is safe to engage. If it does feel that it takes something away, and if the application is professional recording, then best to not engage the switch and tailor the signal at a later point in the process.

WHEN TO USE A POP FILTER?

It is generally good advice to use a pop filter any time you are recording a vocalist. You should always get the best pop filter you can, one that is as sonically neutral as possible. Once you have found the proper distance for spacing a vocalist from the microphone; the pop filter can be set in place to properly maintain that spacing.



Fig. 1: Front of the UT Twin87. Left side controls are for Pattern Select. Right side controls are for Modern/Vintage.



Fig. 2: Rear of the UT Twin87. Left side controls are HPF. Right side controls are Pad.



1.3 USING THE VINTAGE/MODERN MODES

To protect the capsule and circuitry, the UT Twin87 gently raises and lowers capsule polarization voltages; therefore please allow about ten seconds to fully stabilize when switching to Modern or Vintage modes.

The Modern/Vintage switch allows selection between the circuit design and sound of the earliest version of the 87 style microphone and the much later reproductions. This feature works by changing both the circuitry for the high-Z and de-emphasis components, as well as adjusting how the capsule is polarized. In Vintage mode, the capsule is polarized directly with phantom power voltages (48v), while in modern mode, an FET boost circuit is employed to raise capsule polarization to

63v. The modern setting yields a slightly hotter, brighter, more articulate sound, while the vintage setting offers a slightly warmer, softer, and smoother tone.

When Vintage/Modern modes are changed, the UT Twin87 **will require roughly 10 seconds to morph between sounds**. This is normal in all operations, as the circuitry makes significant configuration changes in order to replicate both variations in extreme detail.

The modern setting yields a slightly hotter, brighter, more articulate sound, while the vintage setting offers a slightly warmer, softer, and smoother tone.

1.4 MITIGATING “REAL WORLD” PROBLEMS

While your UT Twin87 should provide clean, trouble-free operation in just about any given situation; we'd like to take a moment to go over some real-world problems we've encountered in our combined years of experience, and how best to navigate through them.

NOISE, INTERFERENCE, AND RADIO

Though rare, we've encountered this issue with other microphones in the past. Usually the result of operating near a radio broadcast station or other large antennae. Though sometimes these situations cannot be 100% resolved; they can usu-

ally be reduced down to an acceptable level by reducing the amount of exposure the signal path has to the source of interference. This means using the shortest length of microphone cable possible, avoiding the use of audio snakes or in-wall connections; especially if unsure of the length or quality of that wiring. Sometimes re-posi-

tioning a mic or cable can be of great benefit. Snake cables (both in-wall and free-standing) with a shared foil shield are the worst of all in this situation; as the foil shields on individual channels can branch out to act as an antenna to pick up signals from the air. Not all microphone cables are created equal; and if there were ever a case for a very well constructed microphone cable with really low noise and good CMR (common mode rejection), this is one. It's also crucial to ensure the mic cable has a proper and dense enough shield, with 100% shield coverage, and is terminated properly to pin 1 on both ends. While we don't recommend specific brands here, some general advice is that a braid shield will have small gaps in the shield due to the braid geometry which, though usually OK, in high-RFI (radio frequency interference) environments, are not ideal. A thick woven shield is better, and a shield that is coupled with a layer of foil or conductive plastic is better yet; ensuring total shield protection. Double-shielded microphone cable is the best of all, for high-RFI environments. BUZZ, HUM, AND GROUND LOOPS Though rare, microphones along with all electronics can misbehave when not properly grounded. Like most phantom-powered condenser microphones,

the UT Twin87's XLR pin 1 grounds the microphone chassis and circuit. This pin mates to the pin 1 XLR input of your preamp, console, or recording interface, and from there to the earth ground on the IEC power connector for that device. Things become tricky if this device itself does not have a 3-pin standard IEC power cable, but instead uses a 2 pin 'wall-wart' or 'line-lump' supply. In some cases, you may have a small interface which has no power supply, relying on bus power from a computer's USB, firewire, or Thunderbolt connector. This situation is sometimes referred to as 'vicarious grounding', where a ground connection is passed through several devices through various analog and digital cables before finally connecting to the 'house grounding'. Computers, unfortunately, can be a source of significant EMI (electro-magnetic interference). While these situations cannot always be fully remedied, especially with field recording; at least being aware of these potential issues when setting up and selecting equipment can spare you from the worst of these effects. For instance, if your interface, laptop, preamp, etc. all have no earth ground, which is entirely possible with laptop recording; you may intentionally select a device to connect in the chain that

the microphone can ground to. An example of this would be connecting an outboard preamp or other processor to the interface, so long as it has a 3 pin IEC power cable that is plugged in and an audio connection such as XLR or TRS that can connect to the interface. This will 'ground' the interface, even if the piece of outboard gear is not being used in the signal chain. Additionally, well constructed and shielded digital cables, particularly with robust ferrite rings clamped on one or both ends, can help reduce any noise contamination from a digital device into the microphone. In any case, for safety and good operation, it cannot be recommended that the UT Twin87 be operated in a situation where there is no access to earth ground to ground the microphone's pin 1 connector.

BUZZ, HUM, AND GROUND LOOPS

Though rare, microphones along with all electronics can misbehave when not properly grounded. Like most phantom-powered condenser microphones, the UT Twin87's XLR pin 1 grounds the microphone chassis and circuit. This pin mates to the pin 1 XLR input of your preamp, console, or recording interface, and from there to the



earth ground on the IEC power connector for that device.

Things become tricky if this device itself does not have a 3-pin standard IEC power cable, but instead uses a 2 pin 'wall-wart' or 'line-lump' supply. In some cases, you may have a small interface which has no power supply, relying on bus power from a computer's USB, firewire, or Thunderbolt connector. This situation is sometimes referred to as 'vicarious grounding', where a ground connection is passed through several devices through various analog and digital cables before finally connecting to the 'house grounding'. Computers, unfortunately, can be a source of significant EMI

(electro-magnetic interference). While these situations cannot always be fully remedied, especially with field recording; at least being aware of these potential issues when setting up and selecting equipment can spare you from the worst of these effects.

For instance, if your interface, laptop, preamp, etc. all have no earth ground, which is entirely possible with laptop recording; you may intentionally select a device to connect in the chain that the microphone can ground to. An example of this would be connecting an outboard preamp or other processor to the interface, so long as it has a 3 pin IEC power cable that is

plugged in and an audio connection such as XLR or TRS that can connect to the interface. This will 'ground' the interface, even if the piece of outboard gear is not being used in the signal chain. Additionally, well constructed and shielded digital cables, particularly with robust ferrite rings clamped on one or both ends, can help reduce any noise contamination from a digital device into the microphone.

In any case, for safety and good operation, it cannot be recommended that the UT Twin87 be operated in a situation where there is no access to earth ground to ground the microphone's pin 1 connector.

1.5 ENGAGING THE RF FILTER

To access filter dip switch, unscrew bottom bell counter-clockwise from base of microphone, then gently slide out brass body tube.

The RF filter should be engaged when used in radio broadcasting, or when radio interference is an issue. The UT Twin87 ships with the RF filter disengaged by default. To engage the filter, lower switch positions 1 and 5, and raise switch positions 2, 3,

and 4 (see Fig. 1). To bypass the RF filter, raise switch positions 1 and 5, while lowering positions 2, 3, and 4 (see Fig. 2). Switch position 6 should always be lowered.

The RF filter present on later incarnations of the 87-type design is a source of much controversy, with some claiming it to be a useful problem solver, while others claim it detracts from the sound. The UT Twin87's filter

section has been ever slightly 'sweetened' by our choice of higher grade components, and selectable for use in both Modern and Vintage modes. While exceptionally subtle, a trained ear will detect a slight focus of the upper top end when the filter is engaged, with wide but definite 'book-ends' placed on the sound field. With the filter disengaged, the top end may appear more natural, open, and extended.

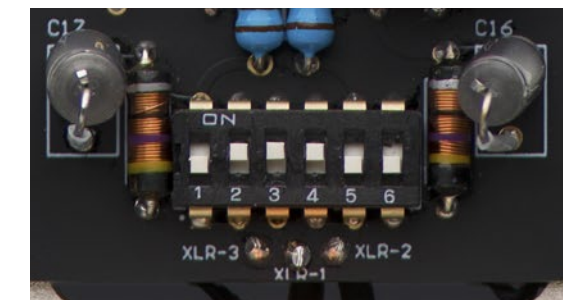


Fig. 1: RF Filter Engaged

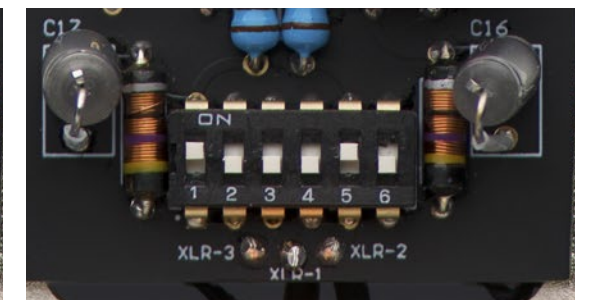
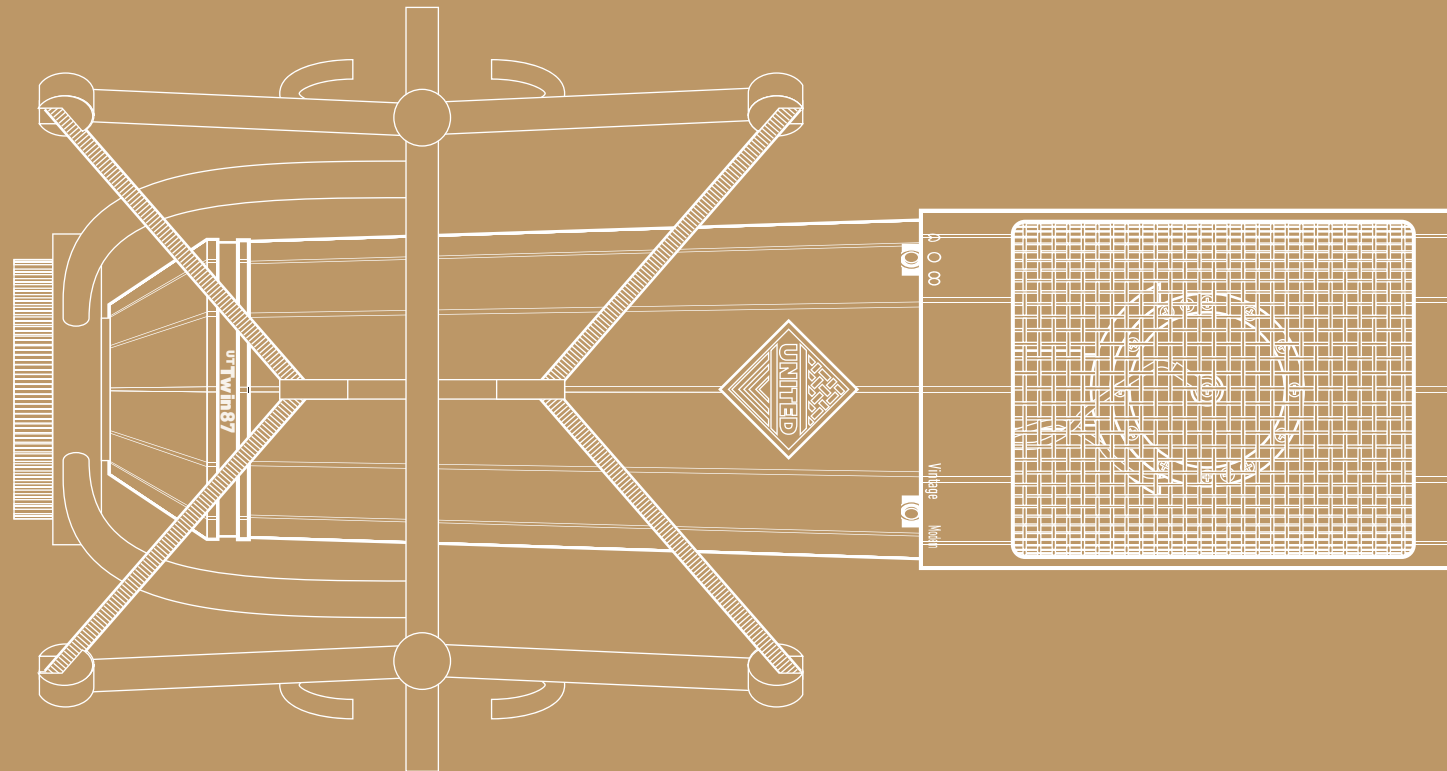


Fig. 2: RF Filter Bypassed



CHAPTER 2: ABOUT THE UT TWIN87

2.1 RECREATING TWO CLASSICS



1967. Solid-state transistors are changing the world with their reliability, portable design, heat dispersion, power requirements, and cost. Initially designed as a solid state replacement for yet another discontinued tube model; the classic FET microphone became a classic unto itself and has remained a workhorse of commercial studios since its release. Known for its cutting edge, focused sound and tight voicing; it became a new standard for lead vocal capture. In a new era of electrified instrumentation, it became known as a “must-have” microphone that was used on countless recordings. It’s popularity led to a production that ran from 1967 to 1986. Most highly regarded were specimens of this microphone produced in the first production runs, in the late 1960’s. It was a ‘golden reference’ unit from this vintage that served as the basis for the UT Twin87 design, when set to Vintage mode.

Chapter 2: About the UT Twin87

2.1 Recreating Two Classics

The updated ‘Modern’ version of this design was introduced in 1986, and featured many design updates which were simply not practical to implement in the original version. One such update was the inclusion of an RF filter to help the mic perform inside of broadcast facilities or in locations with a high amount of RF activ-

ity. Another feature added was the inclusion of a voltage boost circuit to provide a constant and higher polarization voltage to the capsule, making up for any shortcomings caused by direct polarization from phantom power. A ‘golden reference’ specimen of this design was also studied as a basis for the UT Twin87, when set

to Modern mode.

Both the vintage and later editions of this microphone have become a modern classic and a go-to for creating clear, articulate, punchy vocal tracks that cut through a mix, across many different styles of music.

2.2 GETTING THOSE SUBTLE DIFFERENCES RIGHT!

The circuit design of the UT Twin87 is no gimmick or mere emulation of the attributes of a classic microphone - it is a faithful and meticulous recreation of two distinct circuit paths, which took several years of research and prototyping to get just right. We meticulously analyzed both circuits, teasing out the subtle differences between the two. Those differences were subtle; yet real and quan-

tifiable. They mainly related to the two different methods and voltage levels by which the capsule was polarized, as well as subtle differences in component values and tolerances within the de-emphasis and High-Z sections. We implemented both of these distinct layouts faithfully, onto their own boards, and selectable by switch. From there, we follow that selection with a faithful reproduction of

the amplifier section from the classic design, followed by an output transformer section of our own design, but inspired by the larger incarnations of the ‘87 output transformer. We developed our output transformer specifically to be large enough and wound in such a way as to provide a silky output without any real restriction of the low end or dynamic range.

2.3 TO FILTER OR NOT TO FILTER...

There has definitely been much discussion over the RF filter utilized in the later ‘AI’ versions of the classic circuit. While the need to have such a filter in high-RF environments is not disputed, some have claimed that the mic will sound more open and natural without this filter, all other things being equal. Others have claimed that the difference is inaudible. We do agree that if you do not NEED the filter engaged, then it is probably best to go through the least amount of circuitry, hence the

RF filter on the UT Twin87 ships from the factory in the ‘off’ position. We wanted to do more than provide this filter if you need it; however, we also wanted to make it sound good. We ever so slightly played with the filter curves and used much nicer components than are often found on such filters (WIMA audio grade film caps and wirewound inductors opposed to cheaper ceramic caps and more generic components), so that this filter, when engaged, would, with luck, provide a sweetening effect rather

than be detrimental. We believe we have accomplished this, and the filter, when engaged, will provide just the ever slightest top end emphasis and sweetening, while putting subtle ‘bookends’ around the audible frequency range. Keep in mind that this filter technically operates FAR outside of human hearing, and thus its ‘secondary effects’ on the sound you do here are going to be extraordinarily subtle. In the end though, this still makes for a very interesting sonic experiment.



UT Twin87

Twin-Circuit Condenser Microphone

Owner's Manual

Version 1.0 as of 11/15/2021

Additional Support

Visit www.unitedstudiotech.com for additional support.



UT Twin87

Twin-Circuit Condenser Microphone

Owner's Manual

Version 1.0 as of 11/15/2021

Additional Support

Visit www.unitedstudiotech.com for additional support.

2.4 ONE MORE MOD FOR GOOD MEASURE...

In our research into this design, we learned of a certain modification done to the circuit which 'shorts' the mic into a permanent, cardioid-only mode by disabling the pattern circuitry and decoupling the rear diaphragm. This results in a slight improvement in the signal-to-noise ratio and output of the microphone, and can be worth it for studios which

are wholly devoted to vocal production and voice-over work, where the other pattern options will simply never be needed. After some experimentation, we determined that we could implement this mod into the UT Twin87 without interfering with the other two polar patterns. When the UT Twin87 is set to cardioid, it disables the rear diaphragm and pat-

tern circuitry, improving the signal by simplifying the circuit path. Essentially, the microphone becomes a more simplified cardioid design. As with the Modern/Vintage switch, it likewise takes a few moments to stabilize when enabling and disabling the pattern circuitry. This is just one more under-the-hood mod for the enthusiast, included free of charge.

2.5 MESH MATERIAL

While the UT Twin87 employs a new headbasket design aimed at minimizing the sonic influence of the microphone body on the sound, one critical step we took was to identify and locate the exact original mesh gauges of the classic design. We have

recreated the 3 layer mesh makeup of the original headbasket exactly: same mesh gauges, laid down in the same order. This ensures that, while the overall effect of the headbasket-capsule interaction has been reduced, whatever filtering effect the headbas-

ket had on the original microphone has been exactly reproduced in terms of sonic profile. This is one step often overlooked on more budget conscious mic reproductions.

2.6 THE UT SERIES CAPSULE AND IMPLEMENTATION

The UT Twin87 uses our own reproduction of the classic K87 capsule found in the earliest incarnations of the '87 style microphone. Our capsule is an insulated, dual backplate design, skinned with 24k gold sputtered, 6 micron NOS PET film (Japanese Mylar).

The UT Series capsule is terminated with a very fine-strand, silver-plated teflon wire, and the microphone was engineered so that the wire terminations for the capsule are kept at the shortest possible length. This, in conjunction with very good insulation of

the capsule mount, reduces any induced loss or interference to the lowest possible levels.

2.7 MAKING THE RIGHT TRANSFORMER

We prototyped several transformers during the development of the UT Twin87, opting for a part that is somewhat larger than that found in most specimens, with excellent bandwidth, good shielding, and a mostly neutral but just slightly softer/silkier finish to it. Our UT Series transformer matches the turns ratio, impedance,

and inductance of the earlier specimens we measured; but is a design of its own and delivers a very smooth, polished sound.

Having determined that the lamination size and stacking of the transformer can have a restricting effect on low frequencies, we made ours

somewhat larger than most found in this type of circuit.

Our UT Series Twin87 transformers are made to our exact specifications in the US, and made from mostly US-sourced raw materials.

2.8 A HOLISTIC DESIGN APPROACH

The UT Twin87 represents several years of research and development, to attempt to capture the essence of not just one; but two of the most beloved condenser microphones, and recreate them in a single package for the modern recordist. We went through several iterations of PCB design, mechanical designs, capsule design, transformer options, and so on. We worked with the best microphone

circuit engineers, capsule engineers, mechanical engineers, and transformer designers — ensuring every step of the way that we maintained direct and personal control over everything that went into our product. It's a common approach these days to emphasize specific, critical components where a manufacturer placed most of their investment and attention; and not to spend much time on

the rest of a circuit. From the onset, we didn't want this approach. Every component in a design affects quality, and a chain is only as strong as its weakest link. We looked at every resistor, capacitor, transistor, connector and switch. We labored over picking the right thin film resistor here or tantalum and polystyrene capacitor there. Everything matters. This is our approach to gear design.



CHAPTER 3: WAXING PHILOSOPHICAL

3.1 ROOM ACOUSTICS

Probably no factor in recording is as important as room acoustics. No matter how good a microphone and other equipment may be; recording in an untreated room is usually a recipe for disappointment. Drums will sound brash and cheap, vocals hollow and cavernous. Reflections from untreated and parallel walls of ordinary homes and commercial spaces create a comb filtering effect that can wreak havoc on audio fidelity, and almost never work in favor of the recordist. Fortunately, these issues can be remedied sufficiently on a home budget and do not require booking time in a professional studio.

The first solution is to treat the room. There are a number of affordable acoustic panel and foam solutions on the market which do a satisfactory job. It is not necessary to over-treat a room; but the needs of every room are different. It is worth taking the time to research, understand the problems of your room, and

decide how lively or deadened you want your room to be. Typically, it is more than sufficient to treat a room with just the minimal needed to make the room sonically neutral. If you can do this, then you will have a room that is acceptable for tracking, editing, and mixing.

The second solution is more localized. If you only plan to record voice, perhaps you don't need to treat the room. Any of various brands of 'vocal shield' or portable vocal baffle will sufficiently decouple the microphone from its rear wall reflections and deliver an amazing improvement to the sounds you are able to capture. This one investment can often make the difference between a recording that sound professional and one that does not; regardless of the quality of microphone, preamp, or interface. The importance of taking a bit of time to isolate the mic from its room reflections cannot be overstated.

3.2 MICROPHONE CHOICES AS AN ARTIST'S PALETTE

One of the joys for those who get to sometimes work or record in a big studio is the great microphone selection that professional facilities often have available. These impressive collections are usually amassed over a long period of time, and often include fine specimens of tube, solid state, transformer-coupled, transformerless, large diaphragm, medium diaphragm, and small diaphragm condensers, as well as dynamic and ribbon

microphones. They will usually have both vintage specimens as well as new designs.

For all the expense and grandeur, what this truly boils down to is merely a studio's ability to pick the right microphone for the right application; pulling from a palette of options that range from very dark to very bright, with many many shades in between. Microphones with different pickup configurations



and amounts of off-axis rejection, and microphones with unique textures that may complement a given situation, such as smoothness or warmth. Every voice has a slightly different sibilance range, and sometimes one can find a mic whose presence peak does not emphasize those sibilant frequencies. Some microphones are better for male vocals, some for female. As a general rule, professional producers and engineers tend to pair a microphone to an artist that brings out qualities lacking in the source, or de-emphasizes qualities the source has too much of. For instance, a brighter and thinner voice benefits from a darker microphone which has more girth and body. A deep, powerful voice can call

for the opposite kind of selection to help bring out top end and articulation. A microphone with some degree of neutrality usually guarantees that it will work on the widest possible range of situations with good results. These are not hard and fast rules, but generally hold true.

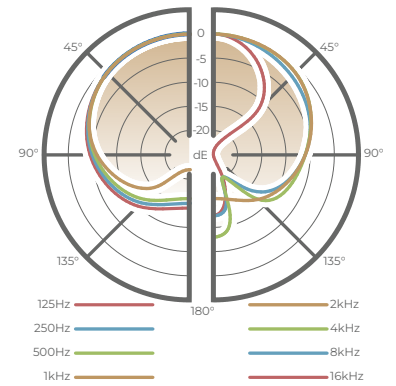
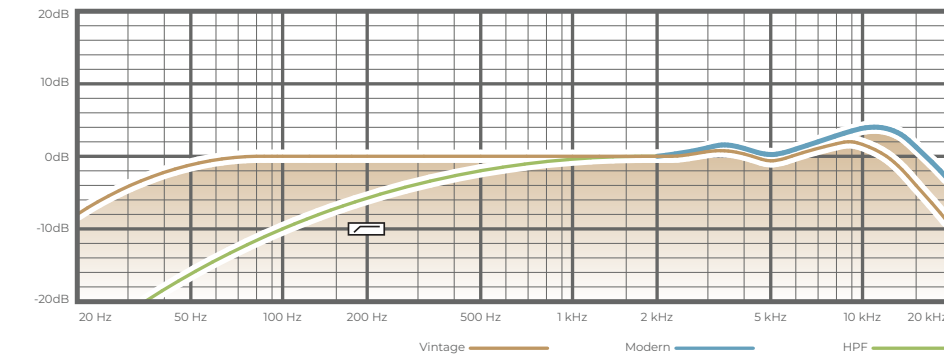
Any great mic locker begins with one mic, and the UT Twin87 is an excellent first choice as well as a welcome addition to a more established studio's collection. With its big, fairly neutral sound and slightly forward midrange presence; the UT Twin87 is the perfect studio 'workhorse' microphone to use in a variety of ways throughout a session.



CHAPTER 4: TECHNICAL SPECIFICATIONS

Type	Condenser Microphone
Diaphragm	Dual-diaphragm, 6 micron, 24k gold sputtered Mylar (PET film)
Capsule	UT Series, 34mm brass, insulated dual backplate K87
Power Supply	+48v Phantom Power (via XLR)
Ground	Pin 1 XLR (required)
Frequency Response	20 Hz - 20 kHz
SPL	117dB (no pad), 127dB (with pad) @ .5% THD
Polar Pattern	Cardioid, Figure 8, Omni
Output Impedance	27 Ω
Amplifier Type	Field Effect Transistor
Self Noise	<10dB (cardioid setting, no pad, no HPF)
Output	Custom-wound UT Series transformer, made in USA
Body	Nickel electroplated, solid milled brass
High Pass Filter	80Hz (12dB down point)
Pad	-10dB
Connector	24k gold plated XLR, pin 2 HOT, pin 1 GND
Mount	Suspension type shock mount (included)
Dimensions	Height: 220mm / 8.6" Diameter: 55mm / 2.2" Shockmount Depth: 190mm / 7.5"

CARDIOID PLOTS



OMNI PLOTS

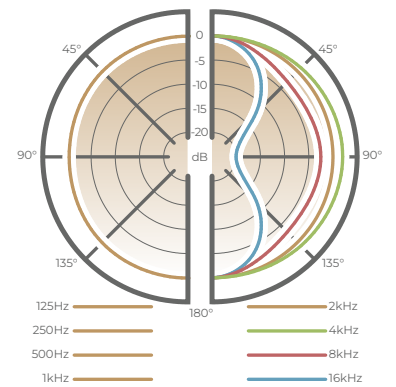
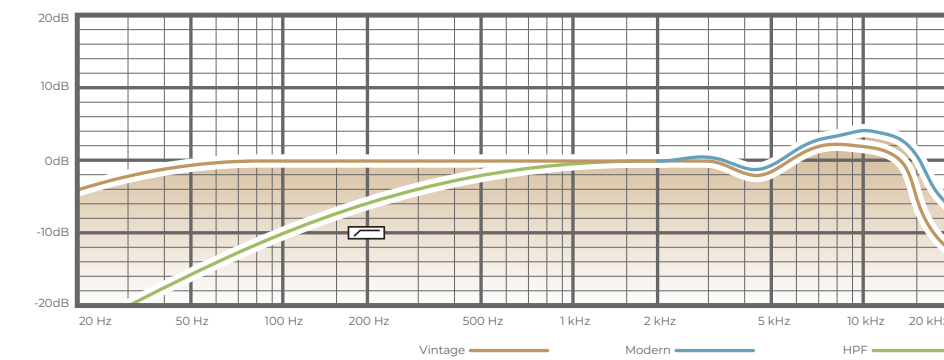
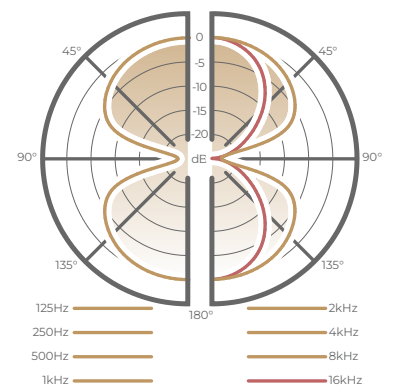
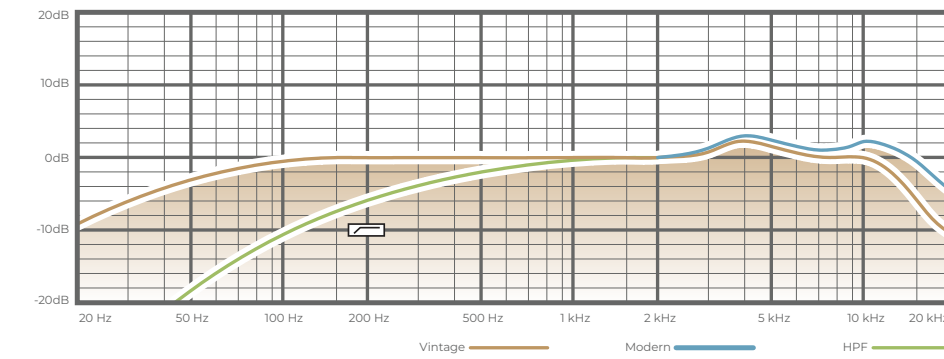


FIGURE 8 PLOTS



OUR STORY IS YOUR STORY.

Every musician and audio engineer has to start somewhere. We start with the entry-level gear we can afford, and work our way up to using the best of the best gear.

In today's age, we all have the luxury of simulating all of the best classic gear directly in a DAW — but is a simulation as good as the real thing? Sure, we think plenty of it is great, but it never settles our need for the original gear. With the rise of software-variants of classic gear, quite a few companies have taken to selling the “original” as a hardware recreation — but very sadly, many of us have seen we're not being sold the real thing by these companies. And to top it all off, the best classic gear is getting older, less reliable, and more expensive — even finding truly great technicians to work on them has gotten to be very difficult.

We at United are working hard to make sure everyone can finally access gear built like the original classics, with zero compromise. We have put everything we have into our products — from conception, custom parts, New Old Stock parts, and in many cases final assembly and testing that is done by hand in Baton Rouge, Louisiana.



CAVE DAUGHDRILL

Vice President / Co-Founder /
Pinball Fanatic

CHAD KELLY

President / Co-Founder /
Barista / Music Director



www.unitedstudiotech.com

Welcome to the United family!

Don't forget to register your product
at www.unitedstudiotech.com