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There was a celebratory feeling that accompanied my receipt of the new multi-pattern, large-diaphragm Neumann TLM 127 studio condenser, the latest FET 100 series mic in the Transformerless Microphone line (TLM). Maybe it's that Neumann released this mic in conjunction with celebrating their 75th anniversary this past September in Berlin or the posh cherry wood 'cigar humidor-style' carrying case that holds the mic and EA 1 shock mount. Suffice it to say, it was fun testing out this multi-patterned 'big brother' to the TLM 103 studio microphone.

Up Close In Proximity

Available in either black matte or Neumann's trademark nickel finish, the side-address TLM 127 starts out with the K 127 large dual diaphragm capsule that's based on the K 103 used in the TLM 103 mic. Like all Neumann large diaphragm capsules, the membrane thickness is 6 microns. Built to Neumann's impeccable standards, the mic has flush-mounted Philips screws, recessed switches, gold-plated XLR connector pins, and a threaded mounting collar that



mates to the EA 1 shock mount's captive, knurled locking nut. The EA 1 is the same elastic suspension mount used by the TLM 103, TLM 193 and M 147 mics and permits you to position the mic exactly by rotating and locking the mic's body within the spider suspension system.

Remote Pattern Control-How Does It Work?

There is a three-position pattern switch on the hot side of the mic for cardioid, omnidirectional and R for remote pattern control mode over a standard XLR mic cable up to 300 meters long. Remotely changing the polar pickup pattern back at the listening/mixing position has an immediate appeal; you can dial in the exact size of the "recorded event" to fit your production. Especially good for recording acoustic instruments like guitars, string sections and also choirs, this is done by using Neumann's special phantom power supply, the N48 R-2 which will power and control two TLM 127s.

This is just like the patented, high-end TLM 170R microphone system where five different directional patterns are selectable with a detented rotary switch on the power supply. Although the N48 R-2 will be available soon (I didn't get one for this review), the principle is simple. The N48 R-2 switches the phantom power voltage over a range of 45 to 51 volts in five, unambiguous 1.5-volt steps. (The IEC 1938 spec allows phantom power supply voltages to fluctuate a maximum of +/- 4 volts.) If you were to switch the mic to R and could vary the phantom voltage yourself you'd get: at 48V, cardioid; 49.5V wide cardioid; 51V omni; 46.5V hypercardioid; and 45V gets you Figure of 8.

The TLM 127 uses a four-bit comparator and a kind of simple A/D converter to 'read' the exact phantom voltage level (of each of those five steps) and 'hard' switches the appropriate bias voltage to the rear-facing capsule as supplied from the mic's internal + and - 60 volt DC-to-DC converter. Sorry, you cannot vary the pattern in between two positions.

With +60 volts bias always on the front facing capsule, the mic's directional polar pattern is determined by the polarity and level of voltage on the rear-facing capsule. The patterns are: cardioid (zero voltage on rear capsule), hyper-cardioid (-23 volts), wide-angle cardioid (+23 volts), omni-directional (+60 volts), and figure of eight (-60 volts).

On the back of the mic are two more switches: a -14dB attenuator pad and a high pass filter selector. The high pass filter has two positions. LIN (or Linear) is a 12dB/octave roll-off starting at 15Hz for wind noise, handling and mic stand vibrations. The other position moves the corner frequency up to 100Hz and is good for proximity effect reduction or just boomy sound sources.



In the Studio

I found the same differences as the [TLM 103](#) (reviewed here in Feb, 1998) when I compared (both in cardioid) my totally stock U87 to the TLM 127. The 127 is a

flatter sounding mic without the slight low mid-range buildup and harder sounding upper midrange of the U87. There is also a very smooth high frequency extension on the 127 where the U87 almost sounded rolled-off by comparison. I tested the mic in cardioid and omni modes but without the power supply I couldn't try my "two facing out-of-phase guitar cabs with figure of eight mic in between" trick.

In a practical sense, the 127 behaved very much like the TLM 103 in the studio except the larger 127 does not fit quite as easily in tight places around a drum kit. The shock mount is a necessity in all cases since the 127 has terrific subsonic response. The EA 1 will take care of any external subsonics mechanically coupling and traveling up the mic stand. This extended low frequency response is great at capturing ALL of the sound from drums, bass instruments or the "thump" from loud Marshall guitar cabinets.

The 100Hz roll-off position worked well for recording acoustic guitars where I put the 127 in cardioid very close (two inches) right over the sound hole--an 'old school' Pop recording method that minimizes fret noise pickup while delivering a consistent and loud sound--albeit boomy. Fingerboard noise permitting, I usually end up moving the mic up the neck a bit. Even though I would not normally use a large diaphragm mic for acoustics, the 127 sounded great on both gut and steel string guitars.

To get a better overall 'sonic picture' of the acoustic guitar, I also tried the 127 in omni-directional mode about a foot away again with the roll off switched in. The sound of the guitar 'moved back' as compared to cardioid but gained an open brilliancy; I liked this better for transparent-sounding chord strumming than for flat-picking. With this mic's low noise floor (7dB-A), I could crank up the mic gain, squash as much as I wanted without pulling up any mic



Technical Specifications

Operation Principal: Pressure gradient
Polar Patterns: Omnidirectional and Cardioid
 In remote control mode, a wide-angle cardioid, hypercardioid and Figure of Eight
Frequency range: 20Hz to 20kHz
Sensitivity: 12 mV/Pa +/- 1dB
Rated Impedance: 50 ohms
Rated Load Impedance: 1000 ohms
S/N ratio: 74dB (CCIR 468-3)
Equivalent SPL: 20dB (CCIR 468-3)
Equivalent SPL: 8 dB-A (DIN/IEC 651)
Self-noise: 7dB-A
Max SPL: 140dB for <0.5% THD
 154dB w/ attenuator
Max Output voltage: 10dBu
Phantom Power: +48 VDC +/- 4 volts
Phantom current: 3.2 mA
Weight: 450 grams
Dimensions: 58 mm X 173 mm

noise or hum. Both these methods produce a bright and clear sound with a minimum of EQ or fuss.

I close mic'd my Fender Concert guitar amp with the TLM 127 and got plenty of sparkle and thick bass. I like using a Shure SM57, a Royer ribbon, and a condenser, usually an 87, on guitar amps. The 127 had more bass and less upper midrange crankiness than the U87 but more super top that can get a little twangy if you want. Mic placement helped here where I favored the outside of the speaker cone away from the center. I had to use the -14dB pad as the 127's hot output distorted my API pre-amp.

There are even more options using the TLM127 for vocals. In cardioid, the proximity effect can be an issue with a mic this fat sounding so even backing my singer off a foot away still produced plenty of low frequency "chestiness." If your singer just loves to "kiss the mic" then the 100Hz roll off position will combat bass buildup but I found it a little high in frequency--I'd wish there was a second, lower position at 50Hz.

The 127 is excellent for loud as well as soft singers. Loud singers, who get edgy when singing in their upper registers, will appreciate the 127's smooth top end that doesn't exacerbate this typical problem. Soft singers will notice a sensitivity and clarity that helps with the lyric articulation.

The TLM127 also opens up the option of omnidirectional vocal recording. In omni, there is no more proximity effect so my singer could worked around the mic without too much tonality change. I also find less "beaming effect" in omni where (in cardioid) if the singer turns slightly off the direction of the mic, the high frequencies die. In omni position, the 127 had a more airy sound and pulled in more room tone around my singer's voice and, for the Blues Rock tune we were recording; it just worked with very little need of additional reverb or delay.

Today's Workhorse

The TLM 127 is an excellent sounding, cost-effective choice for an all-around utilitarian studio microphone. As a direct descendant of the all-time studio workhorse, the U87, when you add in remote pattern control ability, you have a microphone system that's hard NOT to have. The TLM 127 comes in two kits: TLM127/SET Z with EA 1 elastic suspension mount and cherry box at \$2,149.99 MSRP and the lower cost TLM127/SET A with a SG 1 (same basic mount as TLM 103) and cardboard box at \$1,799.99 MSRP. The N48 R-2 power supply/remote controller sells \$1,015. Neumann is at 1 Enterprise Drive, Old Lyme, CT 06371. Telephone 860-434-5220 or visit www.neumannusa.com

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