CHI SYSTEM USER GUIDE

Congratulations on purchasing part of the CHI, or a whole, CHI system. You now own a very special professional Ultra-Low-Noise Transformer-less FET condenser microphone system. Please read and keep this guide as it contains important instructions on using and caring for your new purchase.

The CHI is designed to be an extremely flexible platform offering the demanding engineer a range of sounds going from the most classic vintage toned capsules to the most true to the source, “straight wire”, modern specs capsules. Made to be reliable and robust, this microphone system must be regarded as a long term investment, and one that can only grow: indeed, as you add more capsules and accessories, your CHI system will expand and offer more options thus enhancing your recording, helping you getting the sounds you’re after in the studio and generally speaking, broadening your sound “palette” when recording.

The CHI head amp is a very neutral transformer-less impedance converter, simply fed by standard 48 Volts Phantom power. It has ample headroom, extremely low noise and is completely stable and perfectly shielded.

The main strength of the CHI system lies in its flexibility: the transparent head amp lets you pick the sound and behaviour of the capsule to form a combination which offers a sound ranging from transparent and unobtrusive (using the small diaphragm capsules) and flexible (many different polar responses) to obviously colored (any of the large diaphragm capsules).

Let’s now go over the capsules one by one.

SMALL DIAPHRAGM:

- ***Cardioid:*** A very typical SD capsule, probably the one you’ll use most often. Straight cardioids pattern with nice, flat frequency response with only minimal treble peak, giving a very true and neutral sound with just enough reach and directionality for most jobs. The proximity effect is totally predictable
- ***Hypercardioid****:* A more directional version of the Cardioid capsule, with more proximity effect. The treble response is still very realistic and to some people, will actually sound more “real” than the cardioids.
- ***Omni,*** *available with:*

  - ***Diffuse Field response:*** to be used when a relatively flat treble is required off axis, for instance when the room sound needs to be accurately represented (= brighter source). No proximity effect and a detailed, emphasized top end to compensate for HF losses encountered when the mics are placed away from the source. This is the best choice for “natural” distant stereo recordings.
  - ***Free Field response:*** to be used when a relatively flat treble is required on axis, for instance when the source needs to be accurately represented (= darker room sound). No proximity effect and a detailed but un-emphasized top end. This is the best choice for solo work, when a very natural sound up close is needed. Lifelike response, in mono or stereo.

LARGE DIAPHRAGM:

- ***C-Lol-12:*** Designed with the C12* in mind, this capsule will give the CHI head amp the color of the vintage Austrian condenser which became a favorite for pop vocal recordings. Nice predictable polar pattern control with deep bass response.
- ***C-Lol-47:*** Designed with the U47* in mind, this capsule will give the CHI head amp the color of the famous old German condenser which became a classic for mellow vocal recordings. More directional than a straight Cardioid, but still considered a Cardioid capsule. Can very “Robust” used close to the source.
- ***C-Lol-67:*** Designed with the U67* in mind, this capsule will give the CHI head amp the color of the “other” famous old German condenser which became the first choice for “present” vocal recordings when the U47* didn’t deliver enough HF information. Nice, even Cardioid response, with predictable proximity effect.
- ***C-Lol-251:*** Designed as an alternative to the C12*, to emulate the ELAM 251* and its unique treble presence. The top octave has a unique 15K peak but the presence band peaks right in the middle of the vocal range. This is a perfect modern pop microphone. Like the C-Lol-12, it has a nice, even, Cardioid response, with gradual, predictable proximity effect.

*U47, U67, C12, and ELAM 251 are Trademarks of their respective companies and not at all related to 3 Zigma Audio.

CAPSULES SPECIFICATIONS (when used with CHI Transformerless Head-Amp):

SD CARDIOID

Acoustical operating principle: 17mm diaphragm pressure gradient transducer
Directional pattern: cardioid
Frequency range: 20Hz~20kHz
Sensitivity: -36dB (16mV/Pa)
Output impedance: 100 ohms
Equivalent noise A-weighted: 13 dB
S/N ratio (A-weighted, rel 1Pa): 81dB
Maximum SPL @ THD 0.5%: 140 dB
Maximum output voltage: 12 dBu
Dynamic range (A-weighted, THD 0.5%): 127dB
Supply voltage: 48 volts (P48)
Current consumption: approx. 4mA
Diameter: 22mm
Length: 19mm

SD HYPERCARDIOID

Acoustical operating principle: 17mm diaphragm pressure gradient transducer
Directional pattern: hypercardioid
Frequency range: 20Hz~20kHz
Sensitivity: -38dB (12.6mV/Pa)
Output impedance: 100 ohms
Equivalent noise A-weighted: 15 dB
S/N ratio (A-weighted, rel 1Pa): 79dB
Maximum SPL @ THD 0.5%: 142 dB
Maximum output voltage: 12 dBu
Dynamic range (A-weighted, THD 0.5%): 127dB
Supply voltage: 48 volts (P48)
Current consumption: approx. 4mA
Diameter: 22mm
Length: 19mm

SD OMNI-F

Acoustical operating principle: 17mm diaphragm pressure transducer
Directional pattern: omni
Frequency range: 20Hz~20kHz
Sensitivity: -35dB (18mV/Pa)
Output impedance: 100 ohms
Equivalent noise A-weighted: 12 dB
S/N ratio (A-weighted, rel 1Pa): 82dB
Maximum SPL @ THD 0.5%: 139 dB
Maximum output voltage: 12 dBu
Dynamic range (A-weighted, THD 0.5%): 127dB
Supply voltage: 48 volts (P48)
Current consumption: approx. 4mA
Diameter: 22mm
Length: 19mm

CHI SYSTEM USER GUIDE

SD OMNI-D

Acoustical operating principle: 17mm diaphragm pressure transducer
Directional pattern: omni
Frequency range: 20Hz~20kHz
Sensitivity: -37dB (14mV/Pa)
Output impedance: 100 ohms
Equivalent noise A-weighted: 14 dB
S/N ratio (A-weighted, rel 1Pa): 80dB
Maximum SPL @ THD 0.5%: 141 dB
Maximum output voltage: 12 dBu
Dynamic range (A-weighted, THD 0.5%): 127dB
Supply voltage: 48 volts (P48)
Current consumption: approx. 4mA
Diameter: 22mm
Length: 19mm

C-Lol-12 CARDIOID

Acoustical operating principle: 27.5mm large diaphragm pressure gradient transducer
Directional pattern: cardioid
Frequency range: 20Hz~20kHz
Sensitivity: -33dB (22mV/Pa)
Output impedance: 100 ohms
Equivalent noise A-weighted: 7 dB
S/N ratio (A-weighted, rel 1Pa): 87dB
Maximum SPL @ THD 0.5%: 137 dB
Maximum output voltage: 12 dBu
Dynamic range (A-weighted, THD 0.5%): 130dB
Supply voltage: 48 volts (P48)
Current consumption: approx. 4mA

C-Lol-67 CARDIOID

Acoustical operating principle: 27.5mm large diaphragm pressure gradient transducer
Directional pattern: cardioid
Frequency range: 20Hz~20kHz
Sensitivity: -36dB (16mV/Pa)
Output impedance: 100 ohms
Equivalent noise A-weighted: 10dB
S/N ratio (A-weighted, rel 1Pa): 84dB
Maximum SPL @ THD 0.5%: 140 dB
Maximum output voltage: 12 dBu
Dynamic range (A-weighted, THD 0.5%): 130dB
Supply voltage: 48 volts (P48)
Current consumption: approx. 4mA

CHI SYSTEM USER GUIDE

C-Lol-47 CARDIOID

Acoustical operating principle: 27.5mm large diaphragm pressure gradient transducer
Directional pattern: cardioid
Frequency range: 20Hz~20kHz
Sensitivity: -35dB (18mV/Pa)
Output impedance: 100 ohms
Equivalent noise A-weighted: 9dB
S/N ratio (A-weighted, rel 1Pa): 85dB
Maximum SPL @ THD 0.5%: 139 dB
Maximum output voltage: 12 dBu
Dynamic range (A-weighted, THD 0.5%): 130dB
Supply voltage: 48 volts (P48)
Current consumption: approx. 4mA

C-Lol-251 CARDIOID

Acoustical operating principle: 27.5mm large diaphragm pressure gradient transducer
Directional pattern: cardioid
Frequency range: 20Hz~20kHz
Sensitivity: -34dB (20mV/Pa)
Output impedance: 100 ohms
Equivalent noise A-weighted: 8 dB
S/N ratio (A-weighted, rel 1Pa): 86dB
Maximum SPL @ THD 0.5%: 138dB
Maximum output voltage: 12 dBu
Dynamic range (A-weighted, THD 0.5%): 130dB
Supply voltage: 48 volts (P48)
Current consumption: approx. 4mA

RECOMMENDATIONS:

- Apply Phantom Power ONLY after having made all your connections. Always mute the microphone's channel before powering up and wait for a few seconds before un-muting.
- Make sure the CHI head amp is secure in its shock-mount and make sure the cable doesn't interfere with the shock-mount's isolation.
- ALWAYS store all CHI components in their case. Keep all components fastidiously clean.
- ALWAYS keep all CHI components in a dry environment!
- NEVER force a capsule on a head amp. If in doubt, call or Email your dealer, or us.
- NEVER hold a CHI combo by the capsule. ALWAYS hold it by the head amp (ie. the "stem", not the "head").
- ALWAYS use a pop filter for vocal recordings.
- Use high quality pro grade cables, connectors and accessories.
- If you have any doubts, please call or Email your dealer, or us.
- If you are in an environment w. high humidiy, dust, grime, or particulates, store with Head-Amp and Capsule attached and in a sealed plastic envelope with Silica Gel-Packs.