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## AUDIO REPRODUCER CALIBRATION SOURCE

The second product brought to the market by Quarrybank Media Production is the ARCS02 Audio Reproducer Calibration Source. The "02" designation signifies this second revision, which serves as the foundational, entry-level hardware signal source for our calibration suite. Designed specifically for the rapid alignment of vintage reel-to-reel machinery, this unit generates a *1kHz* reference signal intended for basic level setting and functional verification.

### *Design and Limitation*

The ARCS02 represents a primitive stage in our hardware evolution. Unlike clinical laboratory-grade generators, the ARCS02 exhibits a "softened" harmonic profile that is an inherent limitation of its diode-clipping control logic. While it aims for a *1kHz* fundamental, the circuit introduces unintentional harmonic content.

As such, the ARCS02 is categorized as a functional calibration source for simple *1kHz* tone necessities; however, it should not be utilized as a laboratory reference for a pure, clean *1kHz* sine wave. For archival-grade precision or low-distortion bench testing, technicians should look toward our higher-tier reference instruments.

### *Technical Specifications*

- **Frequency:** 1,000hz (approximate fundamental). Measured at 1046hz.
- **Circuitry:** Texas Instruments NE5532AP Dual Op-Amp Wien Bridge Oscillator
- **Power Input:** 12VDC barrel jack, center positive, single rail
- **Capacitors:** Nichicon UPW power filtering, UES "MUSE" output coupling
- **Output:** RCA Mono
- **Output Level:** 0dBu (0.775Vrms nominally)

The Audio Reproducer Calibration Source (02) is engineered to provide a sufficient electrical reference required to set record levels on tape machines, used in tandem with professional calibration media.

A label on the board denotes the purpose of the source, indicating its role in the reproduction of tones for machine alignment. The operator should interface the unit with vintage hardware to achieve a functional alignment for general recording tasks.

### *Calibration Application*

We recommend using our higher-tier reference instruments for calibration of tape recorders. The ARCS02 provides a baseline reference for the following alignment procedures:

#### *1. Gain & Record Level Calibration*

The 0dBu output provides a sufficient signal to set input stages and VU meters. It allows the operator to ensure the electronics are hitting the target fluxivity (e.g., 250nwb/m) when recording onto standard tape formulations like SM911.

#### *2. Basic Frequency Verification*

Due to its harmonic limitations, the ARCS02 is best suited for identifying signal presence and determining if there are major inconsistencies or dropouts within an audio channel's reproduce and record volume.