

MAGNETIC REFERENCE LABORATORY, INC.

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Multifrequency Reproducer Calibration Tape with Nagra Master Equalization for Open-Reel Applications

0 INTRODUCTION

This tape contains a series of recorded sine-wave signals, and a section of broadband pink noise. It is for general-purpose use for standardizing azimuth, equalization, and sensitivity ("level") of open-reel analog audio magnetic tape reproducers that use the Nagra Master Equalization and a reference fluxivity of 200 nWb/m. They are not intended for testing tape reproducer speed, flutter, distortion, or track placement.

The Nagra Master Equalization uses transition frequencies of 50 Hz and 11 800 Hz (time constants of 3180 μ s and 13.5 μ s). The high-frequency part of the equalization is almost identical to that described in "Master-Tape Equalization Revisited" by J. McKnight and P.F. Hille, AES Preprint 856 (1972-05), available on request from MRL.

See "Choosing and Using MRL Calibration Tapes for Audio Tape Recorder Standardization", MRL Publication Choo&U, for more information on choosing and converting between different equalizations and levels, as well as descriptions of other test signals that are available from MRL, and notes on using Calibration Tapes.

The signals on this tape can be monitored with a voltmeter—either the program level meter in the tape reproducer or an external voltmeter. Useful auxiliary test equipment includes a loudspeaker or headphones to hear the voice announcements of frequencies and levels, an oscillo-scope to observe waveforms, and a level recorder in order to provide a graph of the frequency response.

1 CONTENTS OF THE CALIBRATION TAPES

This MRL Multifrequency Reproducer Calibration Tape contains four separate sections. The Reference Fluxivity Section is usually used to set the reproducer gain to give the reference deflection (0 dB) of a vu meter (but see the Nagra instructions for its use with those recorders). The Azimuth, Phase, and Preliminary Equalization Adjusting Section is used to set the azimuth of the heads, and to perform preliminary equalization calibration. The Frequency Response Calibration

Section is used to calibrate the frequency response of the reproducer. Finally the Pink Noise Section may be used with a arid octave spectrometer to measure frequency response. Each section is voice announced. The Pink Noise is *not* plotted on the graph, but *is* recorded on the tape.

Contents of the Multifrequency Tape with Pink Noise

Section	Frequency	Duration of Tone for a Tape Width of ¼ in
Reference Fluxivity	1000 Hz	30 s
Azimuth, Phase, & Preliminary Response	500 Hz	20 s
	8 kHz	20 s
	16 kHz	20 s
Amplitude/ frequency Response	32 Hz	10 s
	63 Hz	10 s
	125 Hz	10 s
	250 Hz	10 s
	500 Hz	10 s
	1 kHz	10 s
	2 kHz	10 s
	4 kHz	10 s
	8 kHz	10 s
	10 kHz	10 s
	12.5 kHz	10 s
16 kHz	10 s	
20 kHz	10 s	
Pink Noise	Broadband	120 s
Reference Fluxivity	1000 Hz	30 s
Approximate Total Duration		8 min

MRL Multifrequency Calibration Tape with Nagra Master Equalization

Tape Width <i>Playing Time</i>	Tape Speed	Equalization Standard	Fringing Compensated?	Level of Frequency Response Section	Catalog Number for Reference Fluxivity of 200 nWb/m	Price
6.3 mm ¼ inch 8 minutes	380 mm/s 15 in/s	Nagra Master	No	-10 dB	245-108-460-129	140 \$

Prices are in US \$, and do not include shipping or applicable taxes.

Prices may be changed without notice.