



GML 2030 Mastering Dynamic Gain Control

Overview

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INTRODUCTION

The Model 2030 Mastering Dynamic Gain Control is a precise tool for mastering and other critical applications where the utmost in control, flexibility, and transparency is demanded. Based on the proven GML Series III control and audio architecture, this no-compromise dynamic range controller continues the GML engineering tradition and expands familiar Model 8900 capabilities, including multi-channel operation.

CONNECTORS

- Audio inputs are via 20kΩ precision electronic-balanced XLR
- Sidechain inputs are un-buffered, unbalanced XLR; pin 2 "hot"
- Audio output XLR's are DC Servo stabilized, direct coupled, unbalanced; pin 2 "hot"
- Control Link RCA's are wired in parallel; tip = signal, sleeve = ground

MASTER THRESHOLD REFERENCE

The Model 2030 control architecture provides a user-defined '0' level reference, designed to accommodate various mastering chains.

The internal jumper-settable *Master Threshold Reference* adjusts the '0' dB reference, or "rotation point" from 4dBu to 20dBu in 4dB steps.

Higher positions of the *Master Threshold Reference* (12dBu, 16dBu & 20dBu) are recommended when sources are professional D/A converters (which often have 0dBFS from +18dBu to +26dBu); higher positions of *Master Threshold Reference* set the gain reduction threshold high enough for the most subtle gain reduction activity. The 4dBu position of the *Master Threshold Reference* is best suited for mix-bus and tracking applications or mastering at much lower nominal operating levels.

The internal *Master Threshold Reference* is located on header block J12 "Master Thresh Ref" near the voltage regulators (rear-right corner) for each channel, on the 20304 sub-assembly. It is required that the *Master Threshold Reference* be set the same for all Model 2030 channels in a multi-channel installation.

The default shipping position is 4dBu; specified accuracy for the Model 2030 is maintained for all *Master Threshold Reference* settings.

CONTROLS

All controls except *Fine Threshold* and *Fine Output* use high-quality switches with discrete precision resistors for tight matching, both Left-to-Right and unit-to-unit. The *Threshold* and *Output* functions are broken into two separate control ranges; a *Coarse* switch with 2 dB steps, and a *Fine* potentiometer for flexibility and near-infinite resolution over a +/- 2 dB range.

The *Output* control provides a -6 to +14 dB range of gain, directly affecting the VCA.

The *Timing* control changes the time constants of the Fast and Slow RMS detectors, adjusting both attack and release values simultaneously.

The *Release Hysteresis* control enables a variable degree of program-controlled release, dependent upon the degree by which the audio signal falls after a peak.

The *Fast Crest Factor* control modifies the threshold of the Fast RMS detector relative to the Slow RMS detector.

The *Peak Crest Factor* control shifts the threshold of the Peak detector relative to the Slow RMS detector.

The *Knee* switch selects either Hard or Soft Knee operation:

Soft Knee mode produces a smooth, continuously variable preset gain characteristic, with the *Threshold* control setting the dB value for the onset of compression, relative to the Master Threshold Reference. The *Ratio* control has no bearing on this mode.

Hard Knee mode allows the user to determine a fixed linear compression characteristic, set by the *Ratio* control. The *Threshold* control provides input gain for signals below the Master Threshold Reference.

The *Sidechain* switch inserts the external signal to the control path input, replacing the audio signal for control purposes.

The *Coupling* control connects pre-Knee function control signals to a local (Internal) or global (External) coupling bus. The External coupling bus is carried on the rear panel RCA connectors. The highest signal on the bus (greatest gain reduction) will predominate. All *Threshold*, *Ratio*, and *Output* controls must be set to match multiple channels.

The *Control* switch allows close Left-to-Right tracking by using only one Knee processor to simultaneously affect both VCA's. It may be activated in concert with *Coupling* such that transient content in both channels will alter the processing envelope. The *Output* control must be set to match both channels.

The *Dynamics In* switch provides a "hard-wire bypass" of the unit when disengaged.

NOTICES

- Allow 20-30 minutes for DC servo settling after power-on. Operating the unit before the servos settle may cause clicks and pops that can potentially damage speakers and/or other devices.
- This unit contains no user-serviceable parts: refer service to GML Service only.
- Provide adequate ventilation for the Model 2030 and its power supplies. Inordinate heat buildup can cause premature aging of the components in the unit and may lead to operational failures.
- The Control Link connectors are provided to facilitate the GML coupling function and should not be used in conjunction with any other signal or device. Permanent damage to the Model 2030 and/or other devices may result. Additionally, the internal threshold of the Model 2030 may differ from the Model 2020 and Model 8900; coupling these units is not recommended.
- For additional information please review the enclosed DVD, or refer to the Model 8900 User Guide available at www.massenburg.com

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