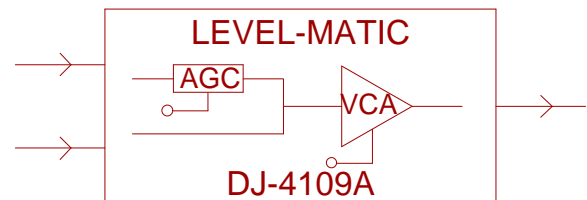


FEATURES

- 15dB Of Gain Reduction
- 6 LED Gain Display
- Control Based On Time/Frequency Characteristics Of The Human Ear
- No Audible Gain Pumping
- Remote Output Level Control VCA
- Direct Post-AGC Input
- Single Threshold Control
- Level-Matic[®] Bypass Switch
- Remote Level-Matic[®] Enable
- Removable Screw-Clamp Connectors
- Signal Present LED
- Five Year Limited Warranty

DESIGN SYMBOL



DESCRIPTION

The DJ-4109A senses variation in input level and adjusts gain to maintain a uniform output level and provides up to 15dB of gain reduction. This effectively compensates for differing talker level and varying microphone to talker distance, thus making the DJ-4109A a particularly useful addition to any microphone mixing system. Unlike most compressors, the patented circuitry of the DJ-4109A causes no audible gain pumping.

A remote main output level control uses a low noise/low distortion VCA with temperature compensation. A remote 10k Ω linear potentiometer can be connected to the DB-9 connector to provide DC control of the main output level. A dry contact closure can be used to mute the output 100dB.

The DJ-4109A can also be enabled remotely via a simple dry contact closure.

The DJ-4109A also features a direct input which bypasses the Level-Matic[®] circuitry. This input allows signals to sum into the output unaffected by the Level-Matic[®] circuitry. This feature is very useful when using signals such as program sources (CD, Cassette) where dynamic responses are desirable to hear.

The DJ-4109A is equipped with removable screw-clamp connectors to allow for quick and easy field installation. A signal present light is provided to indicate presence of signal on the output of the DJ-4109A.

OPERATION

Gain control voltages are based on the loudness vs. frequency and loudness vs. time response of the human ear.

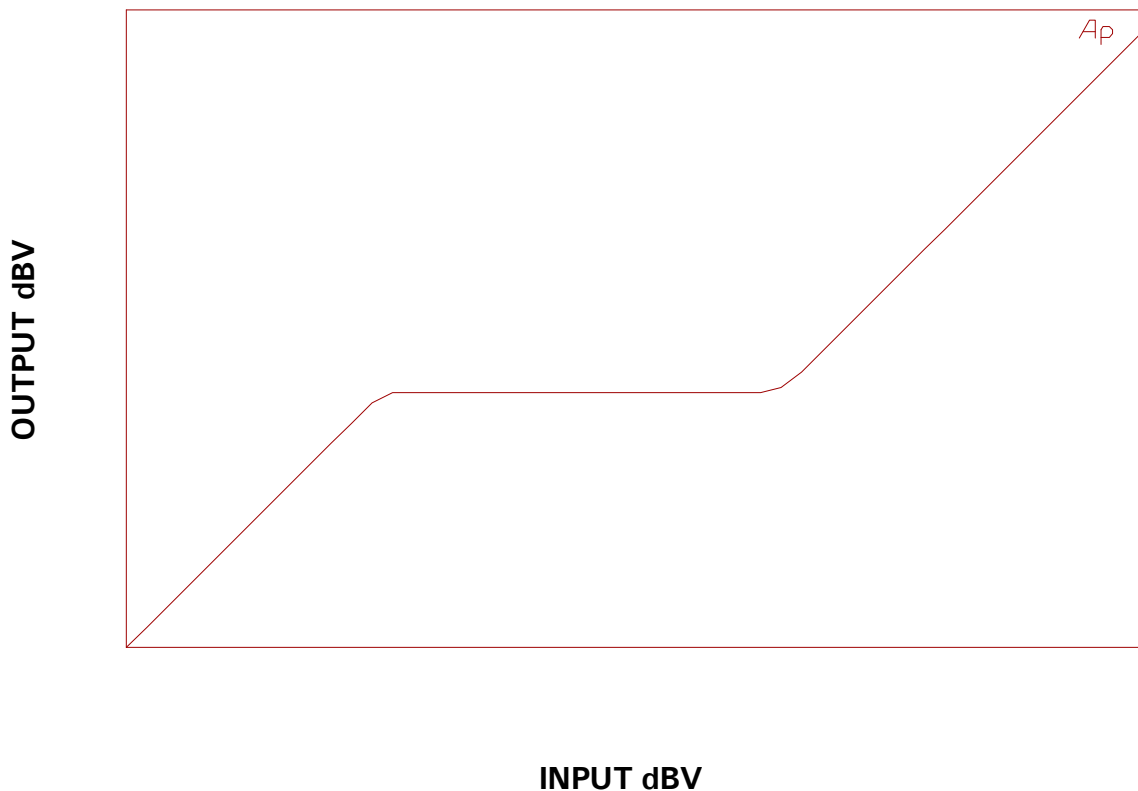
A feedforward control voltage is derived from a sampled and averaged input loudness and establishes a quasi-stationary control voltage that is updated only when input is present.

A feedback control voltage is derived from the peak output loudness and reacts quickly to transient loudness increases.

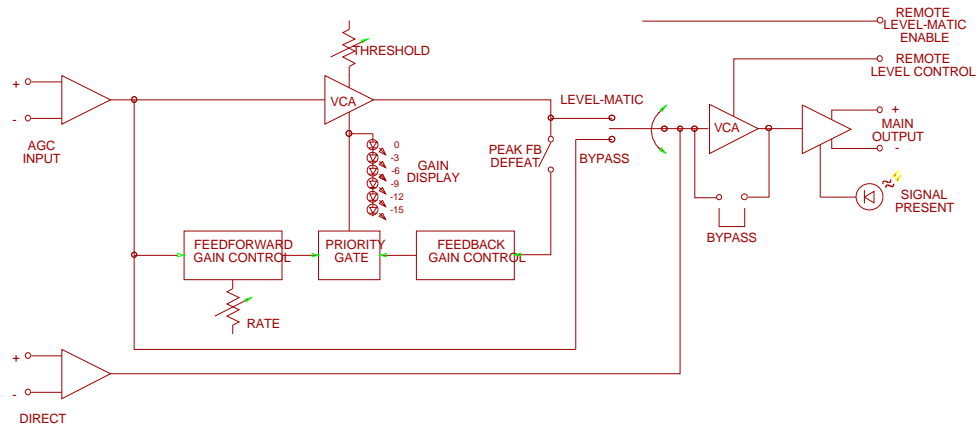
A Priority Gate senses and applies the larger of the control voltages to a voltage controlled attenuator.

System gain is controlled by either the feedforward or the feedback control voltage. This enables the DJ-4109A to respond with feedback control for temporary increases in level and to return to the gain established by the feedforward control voltage. Gain corrections are made at a constant dB/sec (adjustable rate) slew rate to minimize gain hunting. The feedback control loop may be defeated when only the slower acting gain control is desired.

STEADY STATE SINEWAVE INPUT/OUTPUT FUNCTION WITH THRESHOLD SET AT -20dBV



FUNCTIONAL DIAGRAM



ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

An automatic gain control (AGC) shall be provided. The AGC shall be adjustable by a single threshold control and shall provide both feedforward gain control and feedback gain control. The feedback gain control shall be defeatable to allow short duration signals to pass uncompressed. A priority gate shall automatically apply the appropriate control signal. An AGC bypass switch shall enable fixed gain conditions. There shall be no audible gain pumping noise. Gain shall be held constant during silent intervals. The total gain control range shall be 15dB and be displayed in 3dB steps by an LED bar graph.

At threshold, THD + noise shall be less than 0.15%. The presence of output signal shall be monitored by an LED. An auxiliary input which bypasses the AGC action and feeds directly to the output shall be provided. Remote adjustment of the output level shall be via a DC control voltage. A continuous control range of 47dB shall be provided. Full counterclockwise rotation of a 10k Ω potentiometer shall provide 100dB of attenuation. The 100dB of attenuation shall be accessed via a simple dry contact closure without disturbing the potentiometer setting. The AGC circuitry shall be capable of being remotely enabled via a simple dry contact closure. The AGC unit shall mount in, and be powered by, the IRP Model DJ-4100/4101/4150/4151 mainframe. The AGC unit shall be the IRP Model DJ-4109A Level-Matic.

SPECIFICATIONS

AUTOMATIC GAIN CONTROL (AGC)	Level-Matic®
Threshold	Adjustable, -40dBV to +0dBV
Gain Reduction Range	15dB At Threshold
Gain Reduction Display	Six LEDs, 3dB Per LED
Feedback Attack	100msec.
Feedback Release	500msec.
Feedforward Gain Slew Rate	1.0dB/sec., Field Adjustable
AGC/DIRECT INPUT	Standard SYSTEM 41 Active Balanced
Impedance	82kΩ Balanced, 41kΩ Unbalanced
Maximum Input	+19dBV
MAIN OUTPUT	Standard SYSTEM 41 Active Balanced
Impedance	200Ω For 600Ω Or Greater Load
Maximum Output	+19dBV
FREQUENCY RESPONSE	20Hz - 20kHz, +0dB, -0.5dB
VOLTAGE CONTROLLED AMPLIFIER (VCA)	
Control Range	0 to -47dB, >-100dB Off
TOTAL HARMONIC DISTORTION (THD)	Less than 0.15% @ Threshold, 100Hz - 20kHz
Less Than 0.005% For Post AGC Mix Input, VCA Bypassed	
OUTPUT NOISE (22Hz - 22kHz)	-92dBV @ AGC Threshold
Less Than -95dBV @ > 3dB Reduction	
-91dBV With VCA Enabled, -102dBV With VCA Muted	
PANEL SPACE	1 Unit, 1.20 Inches
CURRENT CONSUMPTION	60mA

ORDERING INFORMATION

Specify - LEVEL-MATIC® AGC DJ-4109A