

36-50 : 3-Zone Mixing Amplifier

482.6mm / 19"



88mm
/ 3 1/2"
(2U)

Cloud 36-50 front view



Cloud 36-50 rear view

General Description

The Cloud 36/50 is a three-zone (two primary zone outputs plus a third utility output), rack-mounting (2U) audio mixing amplifier. It combines simple control of background music, power amplification and versatile microphone paging in a single unit. It is suitable for use in many types of premises, including pubs, bars, clubs, shops, offices, hotels, etc.

The 36/50 has six stereo line inputs and a microphone input which can be configured for use with paging mics; each has its own preset sensitivity control on the rear panel. It has two mono primary zone outputs, plus a third "utility" output; each of the three outputs being driven by a 50 W (nominal rating) power amplifier stage. The main outputs have HF and LF EQ adjustments for zone optimisation during installation. The utility output is useful for secondary areas such as toilets or corridors; its source is user-selectable, and it may follow Zone 1's source, effectively doubling the amplifier power available for the area. Music and mic level controls are provided for the utility output. Any or all of the outputs may be configured as high impedance, to drive 70/100 V-line loudspeaker systems, using either internal or external transformers.

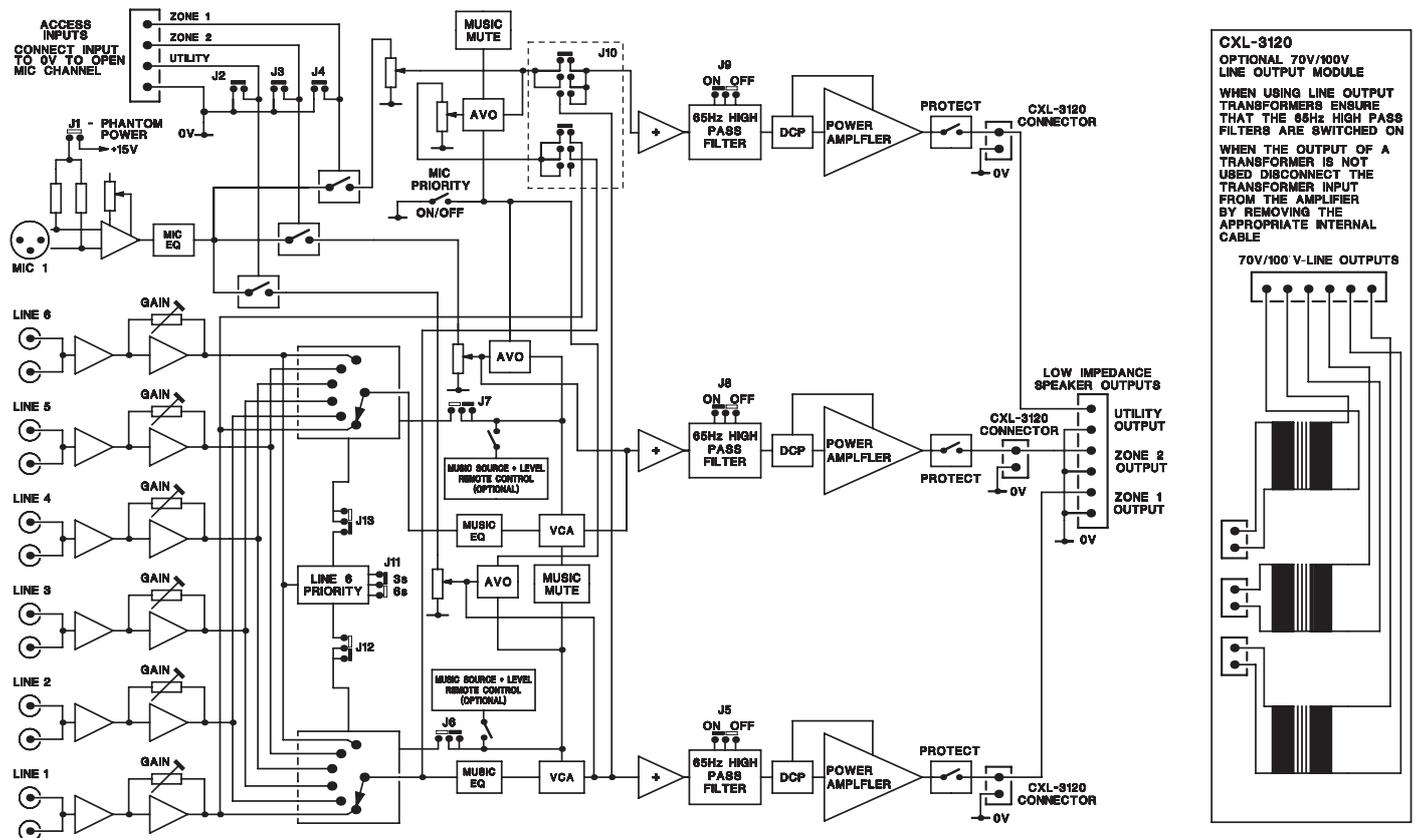
The front panel provides separate controls for music source selection, music level and mic level in each zone. EQ cards to suit popular installation speakers from various manufacturers may be fitted to any or all outputs. Line 6 input may be set to have priority over any other selected music source in either zone, to facilitate connection of a jukebox, digital sound store or similar device. The priority feature has selectable release times, to allow a smooth return to the original music source.

The 36/50 is directly compatible with Cloud PM Series paging microphones; alternatively, the paging mic input can be configured to suit most OEM paging systems. Zone selection for paging is via short-to-ground access connections; and Automatic Voice Over (music ducking) may be selected by a rear panel switch if mic-over-music priority is required. The paging level to each zone is set with a front panel control.

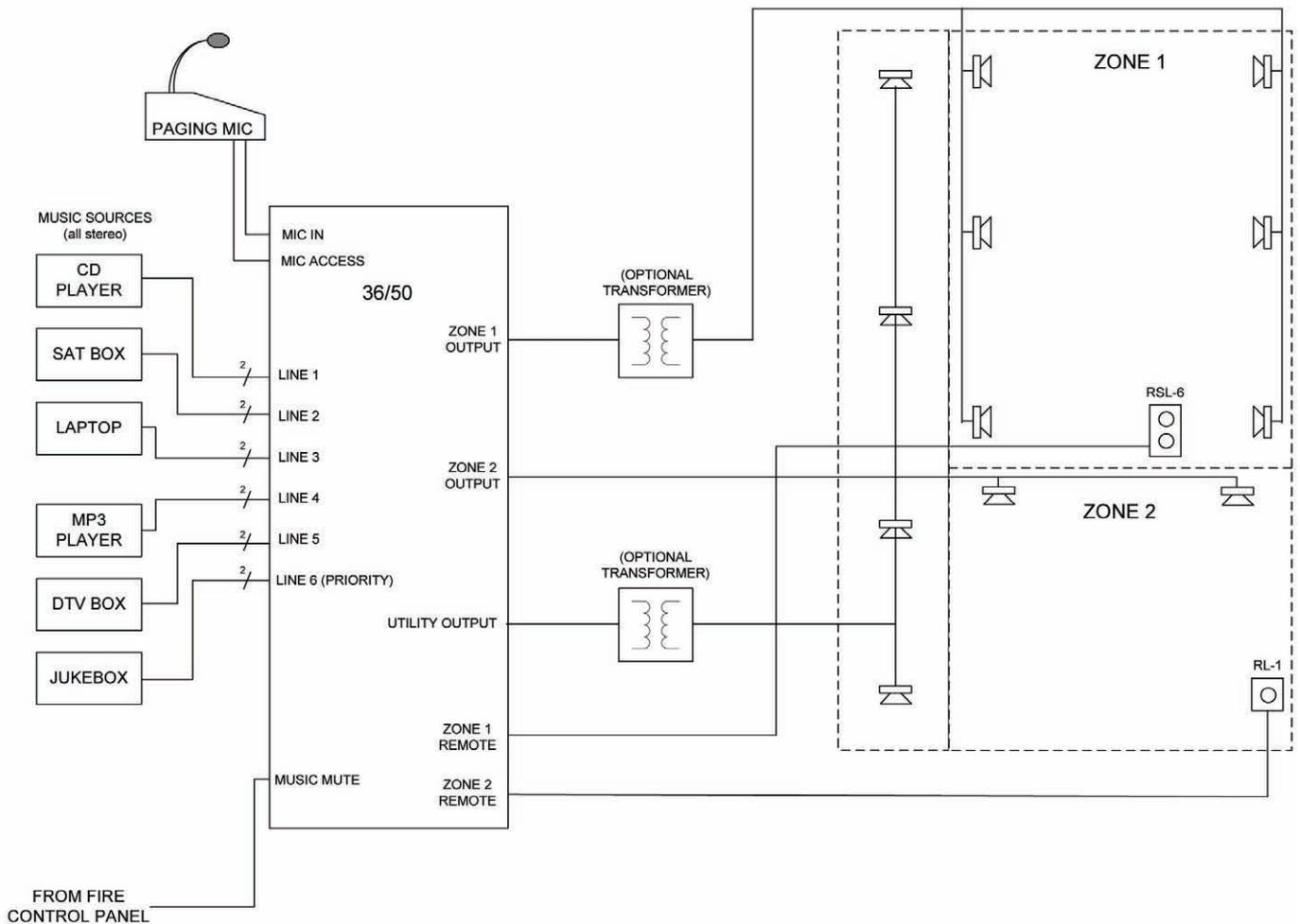
Music level only, or music level and source selection may be controlled remotely in either zone if wished, using standard Cloud RL or RSL Series remote control plates. As with all Cloud commercial audio products, a remote Music Mute facility is provided, which may be used to satisfy the requirements of the Local Fire Officer.

- Mixer/amplifier for two zones, plus separate utility output
- Provides flexible music, paging and announcement facilities in each zone
- 3 x 50 W power output
- Dynamic clip limiting (all outputs)
- Utility output can be used for a third zone, secondary areas, or can double power output available for Zone 1
- Front panel user controls for music source, music level and mic level in each zone
- Rear panel level adjustments for music and mic level at utility output
- Six (unbalanced) stereo line inputs with individual gain trim controls
- Balanced mic input; 15V phantom power selectable
- Contact closure access port for paging zone selection
- Switchable mic-over-music priority (Automatic Voice Over)
- Sensitivity and HF/LF EQ adjustment for mic input (rear panel)
- HF/LF music EQ adjustment on each zone output (rear panel)
- Selectable LINE 6 priority per-zone, with choice of release times
- Optional CL-3120 3-channel 70/100V transformer can be fitted internally
- Optional CXL-40T 70/100V toroidal transformers available for external connection to any or all outputs
- Selectable 65 Hz high-pass filter per-output (for use with 70/100V transformers)
- Music Mute control input (N/O or N/C) to interface to emergency system
- Compatible with standard Cloud remote control plates: RL Series (music level) and RSL Series (music level and source selection), per-zone
- Optional EQ cards available to suit various popular installation loudspeakers may be fitted in any or all outputs
- 2U 19" rack-mounting unit
- Convection cooled – silent in operation

Block Diagram



System Example



The example above shows how the 36/50's various features may be used.

- Six stereo music sources are connected to the line inputs. Note that the jukebox is connected to Line 6; if this input priority option is enabled, any jukebox selection will automatically be replayed through both zones, overriding the local selection for the duration of the track(s).
- The larger area and the “corridor” have been depicted as using 70/100V-line loudspeakers, hence the optional external transformers. In this case, these would be Cloud type CXL-40T, typically mounted on a CXL-800 rack tray. Alternatively, two of the three transformers on the internally fitted CXL-3120 module could be used.

- A paging microphone may be connected to the mic input; the 36/50's access port allows paging to any or all of the 3 outputs (including the utility area) by simple contact-closure.
- The system also shows a Cloud RL-1 remote control plate installed in Zone 2 to allow local volume control, and an RSL-6 in Zone 1 to allow local source selection as well as volume control.

Technical Specification

Line inputs			
Frequency response	20 Hz to 20 kHz ± 0.5 dB		
Distortion	<0.05%, 20 Hz to 20 kHz		
Sensitivity	195 mV (-12 dBu) to 2.0 V (+8 dBu)		
Input Gain control	20 dB range		
Input impedance	47 kohms		
Headroom	>20 dB		
Noise	-90 dB A-weighted (0 dB gain)		
Equalisation	HF: ± 10 dB @ 10 kHz LF: ± 10 dB @ 50 Hz		
Microphone input			
Frequency response	100 Hz -3 dB (fixed filter) to 20 kHz ± 0.5 dB		
Distortion	<0.05%, 20 Hz to 20 kHz		
Gain range	0 dB to 60 dB		
Common Mode Rejection	>70 dB @ 1 kHz		
Input Impedance	>2 kohms (balanced)		
Headroom	>20 dB		
Noise	-126 dB EIN (22 Hz - 22 kHz, 150 ohms)		
Equalisation	HF: ± 10 dB @ 5 kHz LF: ± 10 dB @ 100 Hz		
Outputs			
Power Rating - Low Impedance Outputs	4 ohm load(s)	1 channel driven	60 watts
		2 channels driven	52 watts
		3 channels driven	45 watts
	8 ohm load(s)	1 channel driven	37 watts
		2 channels driven	34 watts
		3 channels driven	30 watts
100V-line Output*		100V balanced – 250 ohm minimum load	
70V-line Output*		70V balanced – 125 ohm minimum load	
Amplifier protection		VI Limiting, DC Offset, thermal & switch-on delay	
Cooling		Convection	
General			
Power input		230V $\pm 5\%$ (115V $\pm 5\%$ available)	
Fuse rating		230V:T3.15AH; 115V:T6.3AH	
Fuse type		20 mm x 5 mm 250V	
Dimensions	Net	482.6 mm x 88 mm (2U) x 300 mm / 19" x 3.5" x 11.8"	
	Shipping (Gross)	610 mm x 200 mm x 460 mm / 24" x 8" x 18"	
Weights	Net	6.7 kg / 15 lbs	
	Shipping (Gross)	8.9 kg / 20 lbs	

* with optional CL-3120 module fitted internally

Architect's and Engineer's Specification

The mixing amplifier shall have three mono output channels; each channel shall be capable of driving 50 watts into a 4 ohm load. Two of the output channels shall be configured as primary zones, with front panel controls for selection of music source, music level and microphone level in each; the third output channel shall be configured as a utility output, and have controls of the pre-set type for adjustment of music and microphone levels.

An optional module shall be available to allow all channels of the mixing amplifier to drive 70 V or 100 V-line loudspeaker distribution systems. The module shall be retrofittable and be contained within the chassis of the mixing amplifier.

The mixing amplifier shall be equipped with six unbalanced stereo music inputs on rear panel phono sockets (RCA jacks) and one electronically balanced microphone input on an XLR socket. The microphone input shall be configured to operate with paging microphones. Each music input shall have a rear panel input gain trim control with a range of 20 dB. Two-band equalisation adjustment shall be provided on the rear panel for the music signal in each primary zone. Two-band equalisation adjustment shall also be available for the microphone input; phantom power shall be available at the microphone input when selected by internal jumper. A gain control of the preset type shall be provided for the microphone input; this shall have a range of 60 dB.

A control input shall be provided to activate the microphone input by external contact closure, and route its signal to any or all outputs, replacing the music signal while the contacts are closed. It shall also be possible to configure the mixing amplifier to perform the following functions: i) detection of a signal at the microphone input will automatically reduce the music level by 30 dB, ii) one line input will automatically override all others in either of the primary zones, even if unselected; it shall be possible to set the time over which the selected sources fade back up after the override input ceases to one of least three values of up to 12 seconds.

Optional remote control plates shall be available to permit control of i) music level in either primary zone; ii) music source selection and music level in either primary zone; it shall be possible to retrofit these to the mixer at any time. The remote control plates shall connect via a rear panel multipin connector. It shall be possible to disable either the front panel music level or the music level and music source selection controls by rear panel switches. An external control input shall be provided to allow muting of the music source by a fire alarm or other external emergency system via isolated, 'volt-free' contacts, and this input shall be configurable to respond to either a short or open external circuit.

The mixing amplifier shall accept a range of plug-in equaliser cards to permit use with compatible loudspeakers. It shall be possible to fit these in any or all of the outputs.

The mixing amplifier shall be built in a 2U steel chassis for mounting in a standard 19" rack. The mixer will be fitted with a front-panel power switch with internal indication. Two mains supply variants shall be available: 230 V or 115 V. Mains supply shall be connected via a detachable IEC cable.

The mixing amplifier shall be the Cloud 36/50; the optional remote control plates shall be the Cloud RL-I Series (music level only) and the Cloud RSL-6 Series (music level and source selection). The optional 70/100 V transformer module shall be the Cloud CL-3120.