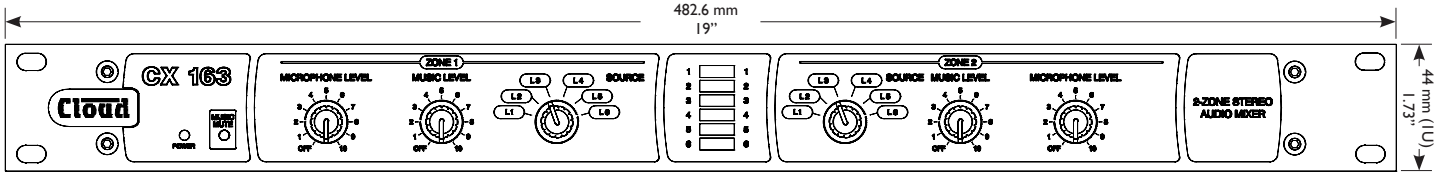
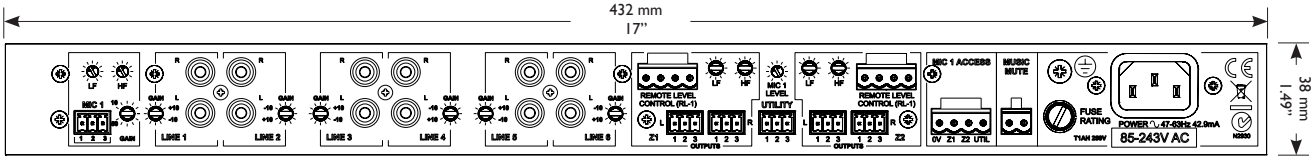
CLOUD CX163 ZONE MIXER



Cloud CX163 Zone Mixer - front panel view



Cloud CX163 Zone Mixer - rear panel view

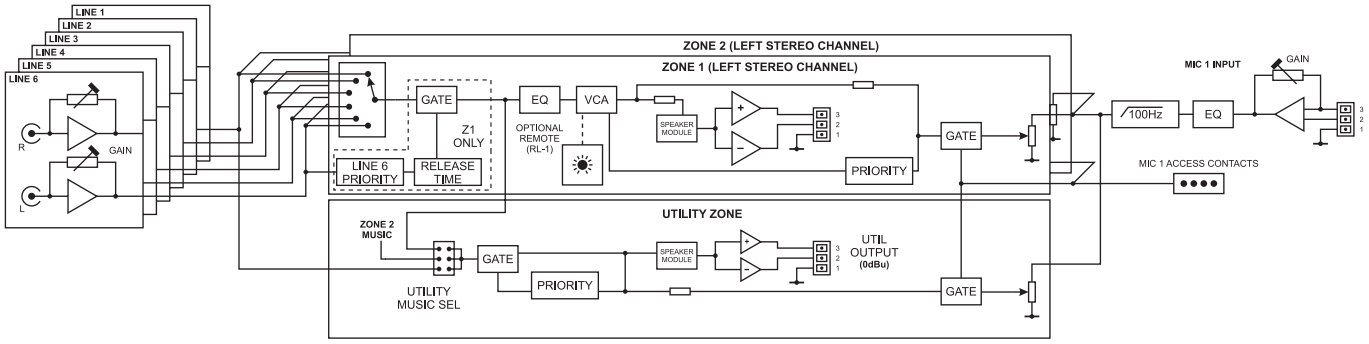
The Cloud CX163 is a two-zone, rack-mounting (1U) audio mixer suitable for use in licensed premises or other leisure sector venues, shops, offices, hotels, or any space where easy control of background music in two separate areas needs to be combined with a microphone or paging system.

The CX163 has six stereo line inputs and a microphone input. It has two separate zone outputs, in each of which one of the line inputs and the microphone input may be mixed together. Separate control of music source selection, and music and mic levels are provided for each zone. The two main zone outputs are stereo, and there is an additional fixed-level mono utility output, which is suitable for speakers in general areas such as foyers and toilets. Music level may be controlled remotely in each zone by standard Cloud RL-1 remote control panels if wished, and if zone outputs are configured as mono, separate RL-1s may be connected to control the left and right outputs.

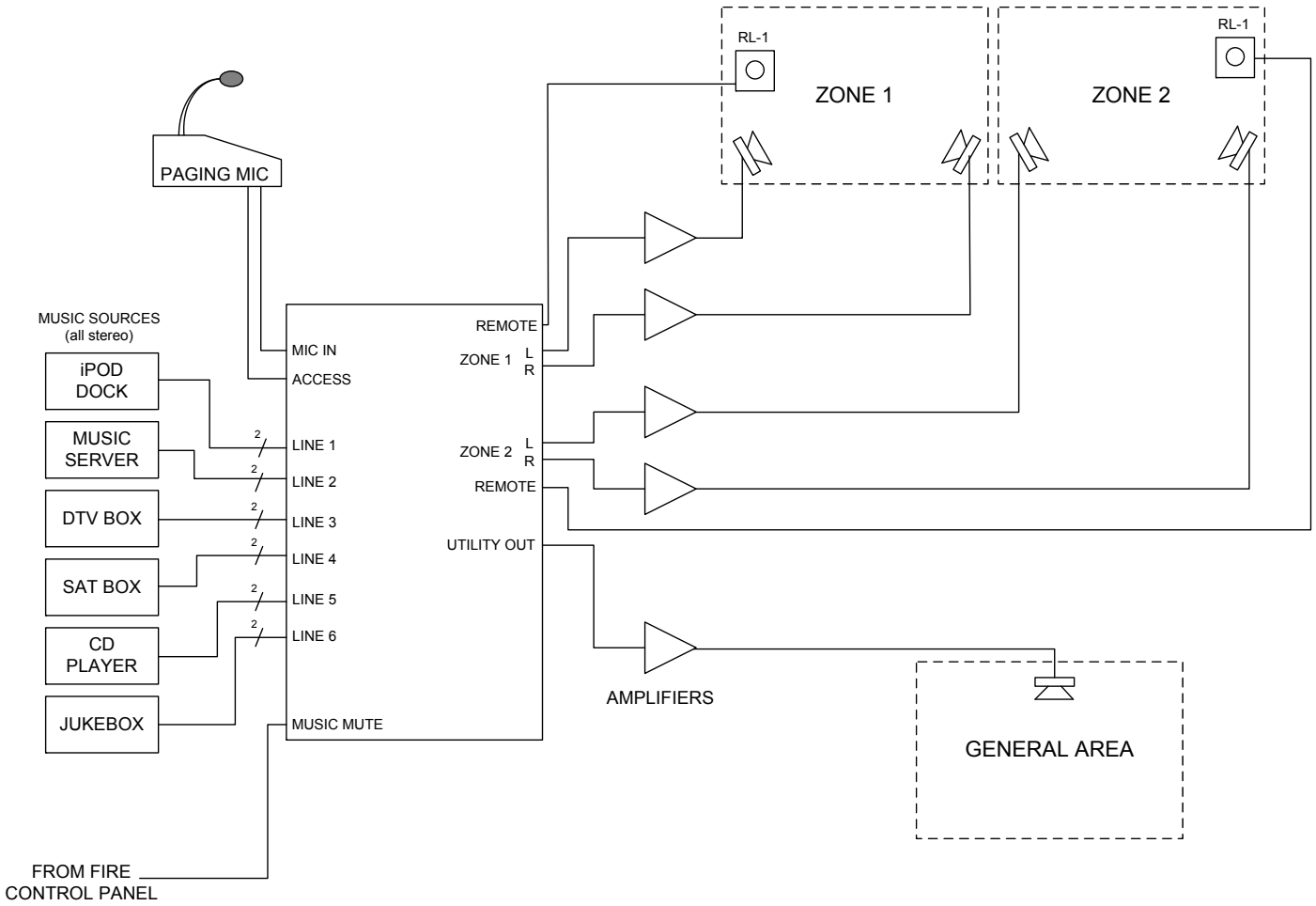
The CX163 is directly compatible with Cloud PM Series paging microphones. Alternatively, the mic input may be configured to suit most OEM paging systems: the mic input may be routed to either zone by short-to-ground access connections. Also, in Zone 1, LINE 6 input may be set to have priority over any other selected input to facilitate connection of a digital sound store or similar device.

- Provides music and paging in two zones
- Front panel controls for music source, music level and mic level in each zone
- Six (unbalanced) stereo line inputs with individual gain controls
- Balanced mic input: 12V phantom power available
- Sensitivity and HF/LF EQ adjustment for mic input
- Two electronically-balanced stereo zone outputs (configurable mono by internal jumpers), each with HF/LF EQ adjustment
- Further electronically-balanced mono utility output with independent mic level adjustment
- Utility output source selection (via internal jumper) – follows either Zone or always LINE 1
- Paging priority control via short-to-ground access connection or VOX triggering
- Selectable music-under-microphone ducking
- Zone 1 has selectable LINE 6 priority with choice of release times
- Music Mute control input (N/O or N/C) for interface to emergency system
- Compatible with standard Cloud RL-1 remote music level control panels
- Optional loudspeaker EQ cards available
- 1U 19" rack mounting unit

Block Diagram



System Example



The example shows a CX163 used to provide music and paging in two separate areas (zones) of a pub or bar. Each area can set its own volume by means of the local RL-1 remote control panels (optional). Alternatively, it can be set from the front panel of the mixer itself. Music at a lower level could be made available to a third area, such as the lobby or toilets.

Paging to either or both zones is achieved using a paging mic (such as the Cloud PM4), which would typically be located somewhere other than either of the two zones.

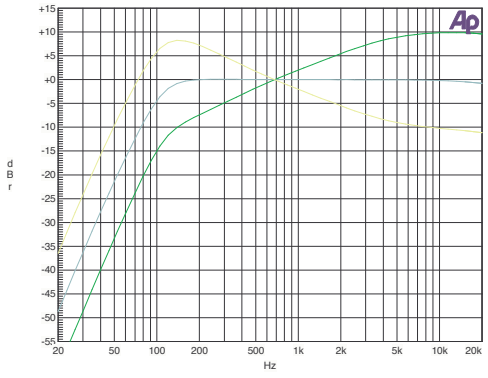
Note that the jukebox is shown connected to Line input 6; If Line 6 Priority is enabled in the mixer, then whenever the jukebox is in use it will always be heard in Zone 1, regardless of the music source setting.

Technical Specifications

Line inputs	
Frequency Response	20 Hz to 22 kHz, +0/-0.5 dB
Distortion	<0.05% typical, 20 Hz to 20 kHz
Sensitivity	100 mV (-17.8 dBu) to 1.5 V (+6 dBu)
Input Gain Control Range	24 dB
Input Impedance	48 kohms
Headroom	>20 dB
Noise	<-84 dB, 20 Hz to 22 kHz @ 0 dB gain
Equalisation	LF: +/-10 dB @ 50 Hz, HF: +/-10 dB @ 10kHz
Microphone input	
Frequency Response	-3 dB @ 100 Hz (filter) to 20 kHz, +/-0.5 dB
Distortion	<0.05%, 20 Hz to 22 kHz
Gain Range	10 dB to 50 dB
Input Impedance	>2 kohms
Common Mode Rejection	>70 dB @ 1 kHz
Headroom	>20 dB
Noise	-128 dB EIN, 20 Hz to 22 kHz @ 0 dB gain
Equalisation	LF: +/-10 dB @ 100 Hz, HF: +/-10 dB @ 5 kHz
Outputs	
Output level (nominal)	0 dBu
Maximum output level	+20 dBu
Minimum load impedance	1.2 kohms
General	
Power input	85 V to 253 V AC, 50/60 Hz
Current consumption	42.9 mA at 240 V
Fuse Rating	1A
Fuse Type	T1A, 20 x 5 mm
Dimensions (w x h x d)	482.6 mm x 44 mm (1U) x 152.5 mm
	19" x 1.73" (1U) x 6"
Shipping Dimensions (w x h x d)	560 mm x 140 mm x 290 mm
	22" x 5.5" x 11.4"
Weight	2.10 kg
	4.63 lb
Shipping Weight	3.2 kg
	7.2 lb

Graphs

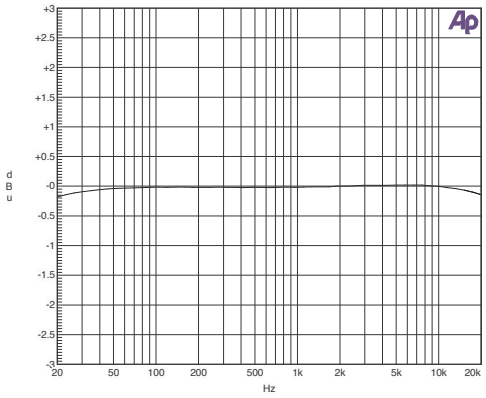
Mic EQ Curves



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Solid	1	Anlr.Ampl	Left	
2	1	Green	Solid	1	Anlr.Ampl	Left	
3	1	Yellow	Solid	1	Anlr.Ampl	Left	

Last.at1

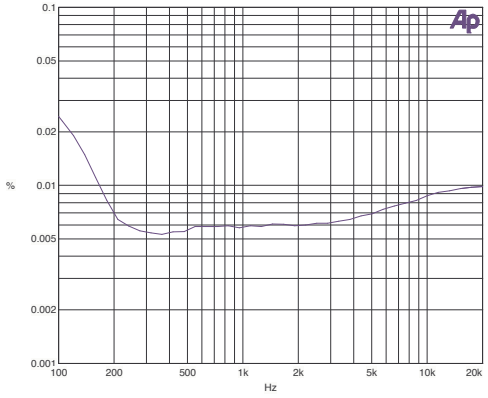
Music Frequency Response



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Solid	1	Anlr.Ampl	Left	

Last.at1

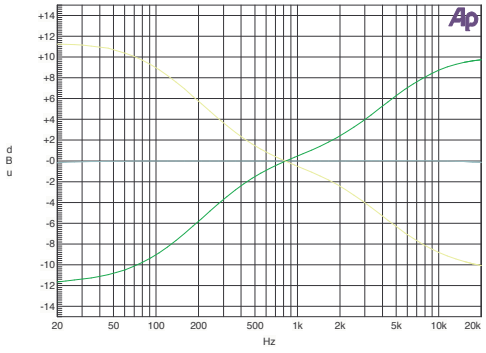
Mic THD+N



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Solid	1	Anlr.THD+N Ratio	Left	

Last.at1

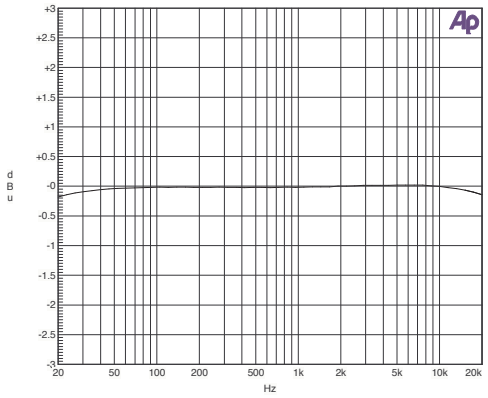
Music eq curves



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Solid	1	Anlr.Ampl	Left	
2	1	Green	Solid	1	Anlr.Ampl	Left	
3	1	Yellow	Solid	1	Anlr.Ampl	Left	

Last.at1

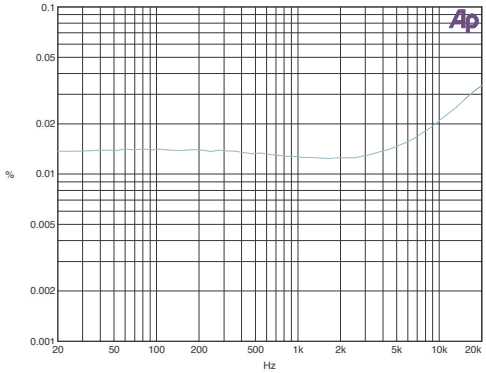
Music Frequency Response



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Solid	1	Anlr.Ampl	Left	

Last.at1

Music THD+N 0dBu Signal Measured over 80kHz BW



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Solid	1	Anlr.THD+N Ratio	Left	

Last.at1

Architect's and Engineer's Specification

The mixer shall be equipped with six unbalanced stereo music inputs on rear panel phono sockets (RCA jacks), one electronically balanced microphone input, two main zone (L & R) electronically balanced outputs and one electronically balanced mono utility output, all on rear panel multipin connectors.

The mixer shall have two stereo channels designated Zone 1 and Zone 2. Except where indicated below, the channels shall be identical. The microphone input shall be mixed and summed with the music input selected in each channel separately. Each channel shall have its own front panel microphone level control. The music input to each channel shall be selected by 6-position front panel rotary switches. It shall be possible to control the level of the music source independently of the microphone levels in each channel.

Each music input and the microphone input shall also have a rear panel input sensitivity control. Independent two-band equalisation adjustment shall be provided on the rear panel for i) the music signal in each mixer channel and ii) the microphone input. Phantom power shall be available at the microphone input when selected by an internal jumper.

A control input shall be provided to activate the microphone input by external contact closure, with separate routing to each mixer channel. It shall be possible to configure the mixer such that this function is overridden and the microphone input is always active. It shall also be possible to configure the mixer to perform the following functions: i) detection of a signal on the microphone input will automatically reduce the music level by 30 dB; ii) one line input will automatically override any other in one mixer channel only when a signal is present at the input, even if it is unselected.

Optional remote control panels shall be available to permit control of music level in either mixer channel; it shall be possible to retrofit these to the mixer at any time. The remote control panels shall connect via a rear panel multipin connector. It shall be possible to disable the front panel music level controls by moving an internal jumper. 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 mono utility output shall be configurable internally to i) follow whichever music source is selected to either mixer channel, or ii) to be permanently fed with a mono sum of one line input; this line input will not be the same one that can be set to have priority over the other line inputs. If the utility output is selected to follow the music signal in mixer channel 1 and the priority line input feature is enabled, the priority line input will also feed the utility output when the input becomes active. The microphone input shall also be mixed into the utility output and it shall be possible to set the microphone level at the utility output independently of that at the main outputs with a rear panel control.

The mixer 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 mixer shall be built in a 1U steel chassis for mounting in a standard 19" rack. A front-panel LED shall indicate when mains power is applied to the unit. The mixer shall operate on mains supply voltages from 85 to 253 V. Mains supply shall be connected via a detachable IEC cable.

The mixer shall be the Cloud CX163; the optional remote control panel shall be the Cloud RL-1 Series.