



KLEIN + HUMMEL

# Pro M 1012

Monitor Management System

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MONITOR MANAGEMENT SYSTEM

## Monitor Management System



[www.klein-hummel.com](http://www.klein-hummel.com)

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## Monitor Management System



# Features

## Features

- completely configurable surround loudspeaker management system
- powerful routing matrix
- full-featured bass management system utilizing 24 dB Linkwitz-Riley type X-overs and phase adjustment for every channel
- any combination of configurations can be made with the 10 inputs and 12 outputs which are programmable to suit any surround system and other loudspeaker configurations
- unique MUTE/SOLO control feature allowing "Solo-in-Center" and "Solo-in-Place"
- all kinds of programmable downmix combinations
- 12 channel volume control with user defined gain offsets
- optional hard wired and IR-remote control
- lighted single-function keys allow ease of operation
- user defined presets allowing all settings to be configured with instant recall utilizing dedicated keys
- link function for cascading multiple units
- digitally controlled pure analog signal path featuring high performance components without the use of VCA's
- Simple system setup with the included Windows® "Configuration Manager" software



WRC 1012 - optional Hard Wired Remote Control



RC 1012 - optional IR-Remote Control

## Surround Control and Bass Management

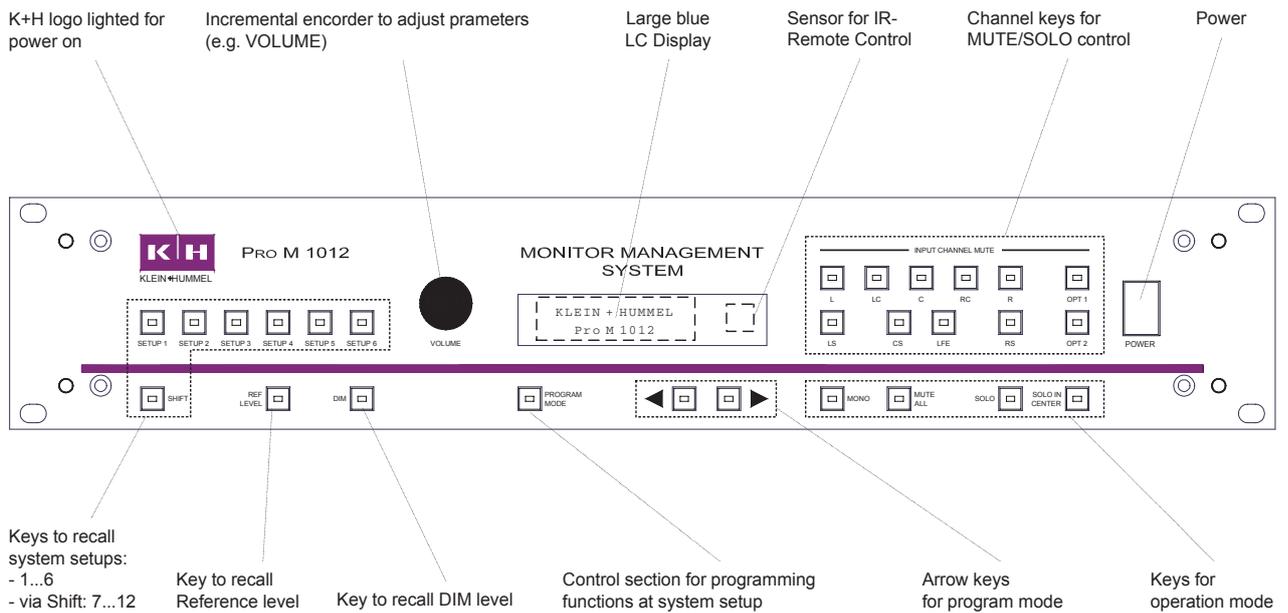
- all setups and configurations are possible between the satellites, subwoofers, surround and auxiliary speakers:
  - up to 7.1 with additional stereo near field systems
  - switching between different surround loudspeaker setups (i.e. music or cinema)
  - problem solving in installations featuring small rear monitors, center speaker, etc.
- assignable HP / LP X-over functions, individually controllable for each channel
- unique X-over frequencies and slopes can be created by adding additional filter modules
- fully variable bass routing which is configurable for each channel:
  - Bass routing to LFE or any additional subwoofers
  - Bass redirection to every other channel, such as low frequency part of rear signals to front channels
- fully variable LFE routing, such as to dedicated subwoofer(s), or LFE redirection to satellite speakers
- 4-step phase adjustment (0, -60, -120, -180) for accurate subwoofer/satellite alignment
- all kinds of downmixes are possible, such as 7.1 to 5.1, 5.1 and to stereo
- freely definable signal paths for a multitude of applications

# PRO M 1012

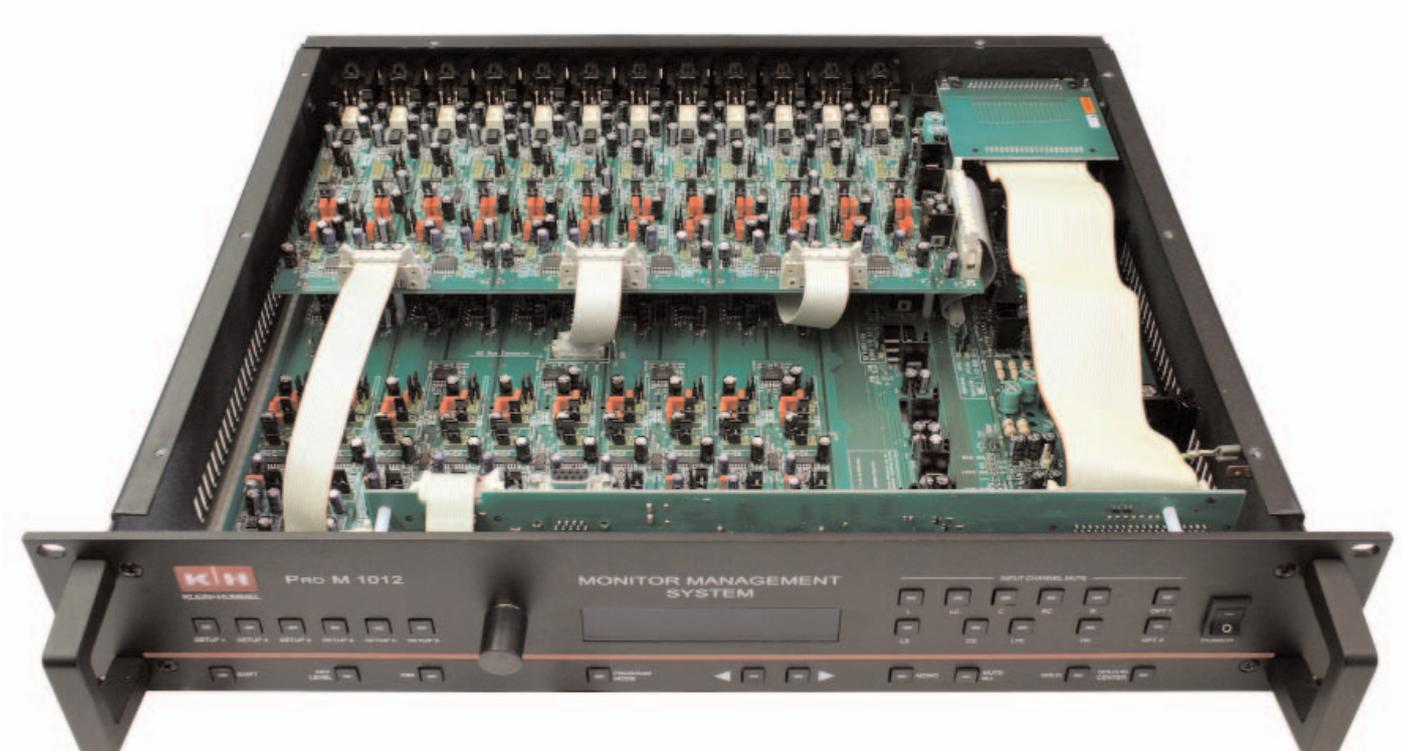
## Monitor Management System

### Front Panel

- clear splitting into 3 functional sections
- all keys feature integrated LED's for on / off



### Interior View



# Features

## Mute / Solo Control

- muting of input channels as well as "all mute" on the dedicated keys
- there are two Solo modes: "Solo in place" and "Solo in center" function to control and compare any channel (even LFE) from same acoustic position
- the controls are similar to the operation of mixing consoles

## Volume Control

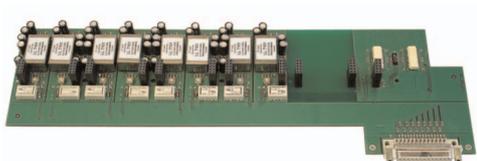
- volume control for all outputs up to maximum of 12 channels
- utilizing the latest technology such as MDAC devices which offer ultra low distortion and noise characteristics, without the use of VCA's
- LFE +10 dB function
- user definable gain offsets in 0,5 dB steps to adjust monitor levels
- user definable sensitivity for every input channel (0...+20 dB)

## Upgrades and Adaptations with Extension Modules

- optional input boards featuring 8 channels:
  - 8 analog inputs, electronically balanced
  - 8 analog inputs, transformer balanced
  - 4 AES/EBU digital inputs (transformer balanced)
- output board featuring 8 additional outputs, electronically balanced
- HP and LP X-over modules with X-over frequencies of 24 dB/oct. or 12 dB/oct.
- 2 Ch PEQ module for subwoofer or room equalization
- 2 Ch digital delay module for the correction of non-equidistant speakers



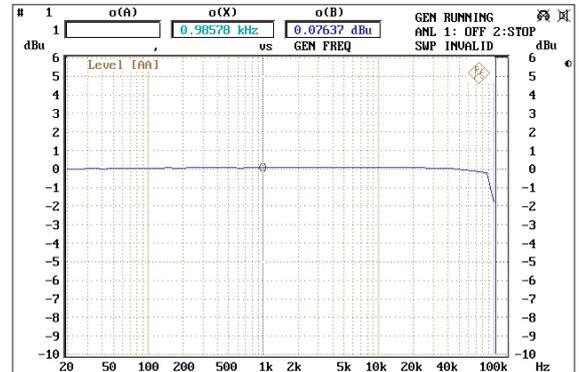
Extension Modul for 8 Inputs, Electronically Balanced



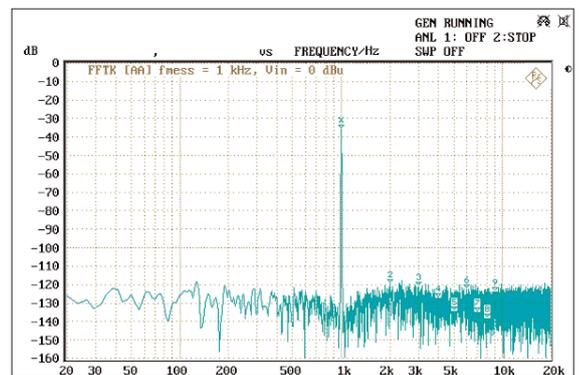
Extension Modul for 8 Inputs, Transformer Balanced

## Way of Operation

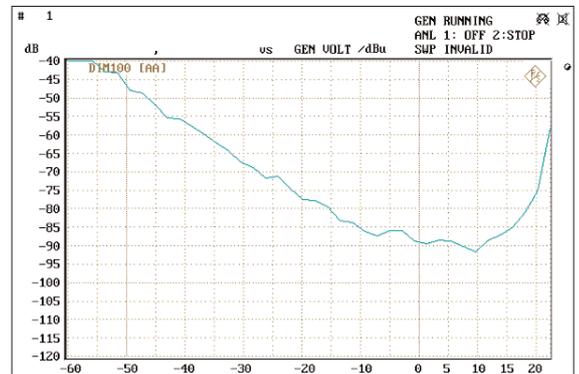
- basic setup of all signal paths is accomplished by recalling any of the 80 stored pre-configured memories
- convenient editing of basic configurations with the included Windows® Configuration Manager® software
- 12 additional local presets definable by recall of the dedicated keys
- local system programming function with clear menu structure
- hard wired remote control with lighted keys for all functions (like front panel)
- optional IR-remote control



Frequency Response



THD at 0 dBu, 1kHz



DIM 100

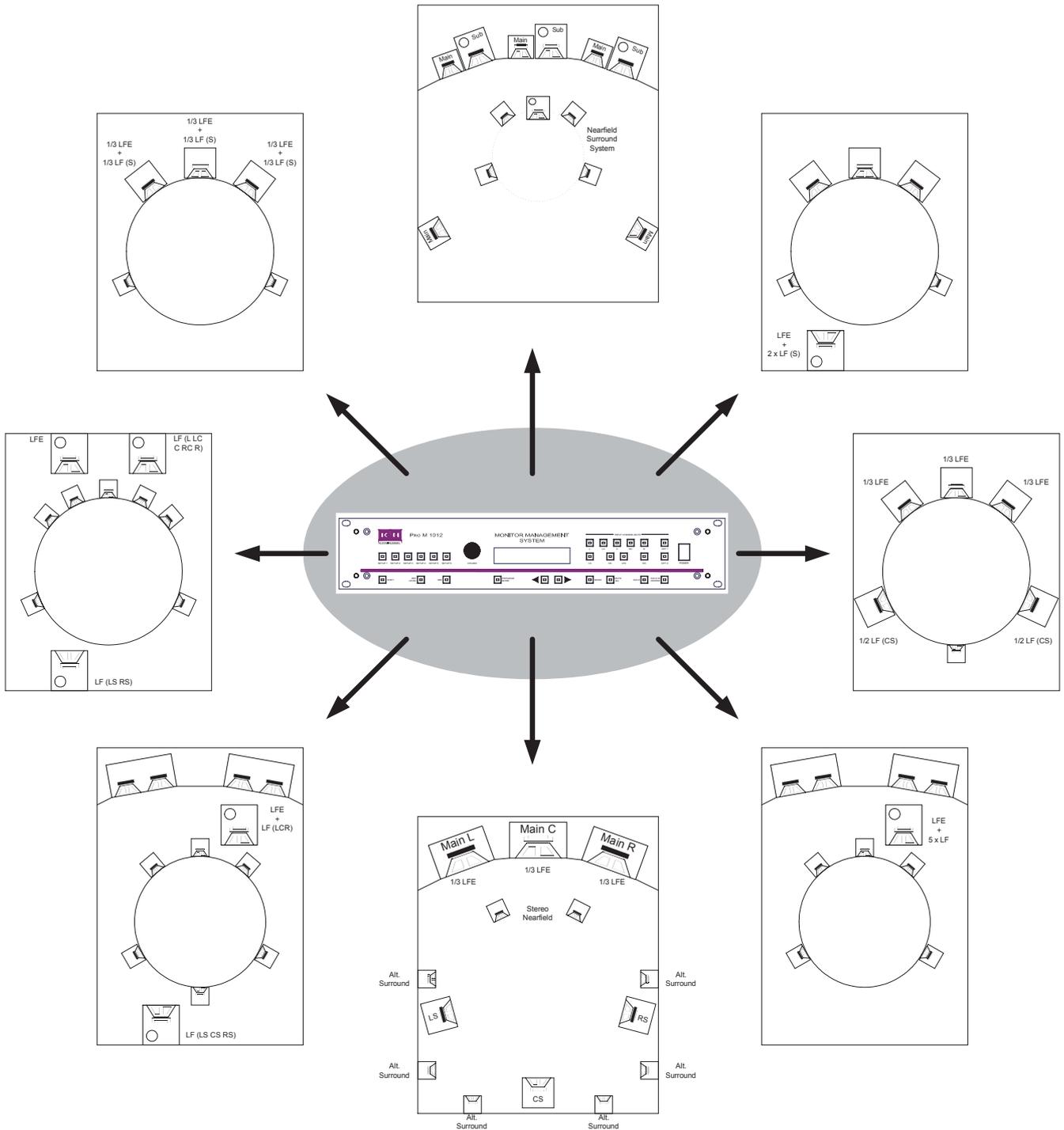


Cross Talk

# PRO M 1012

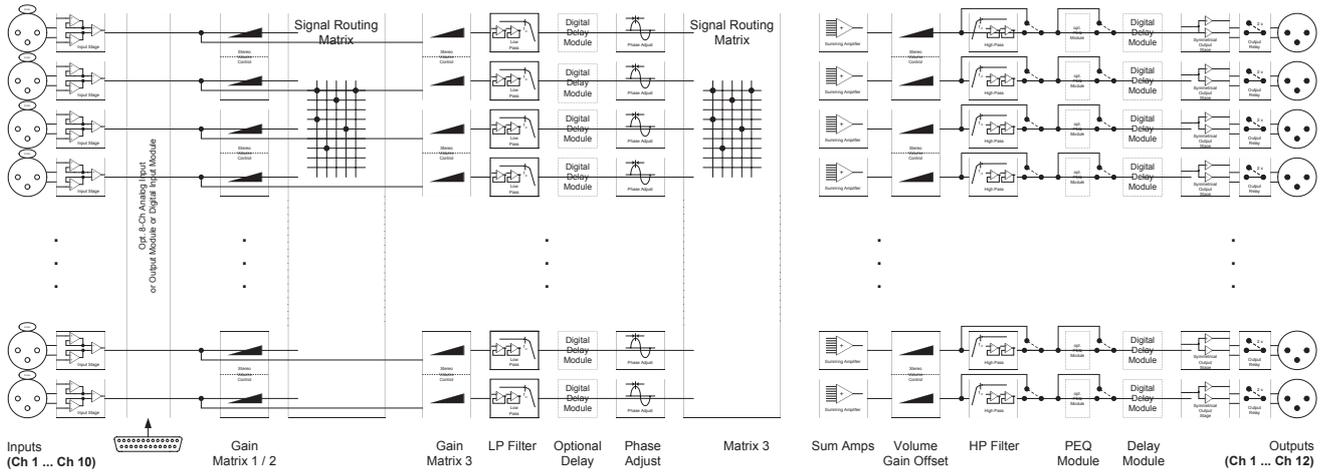
## Monitor Management System

### Same Selected Applications

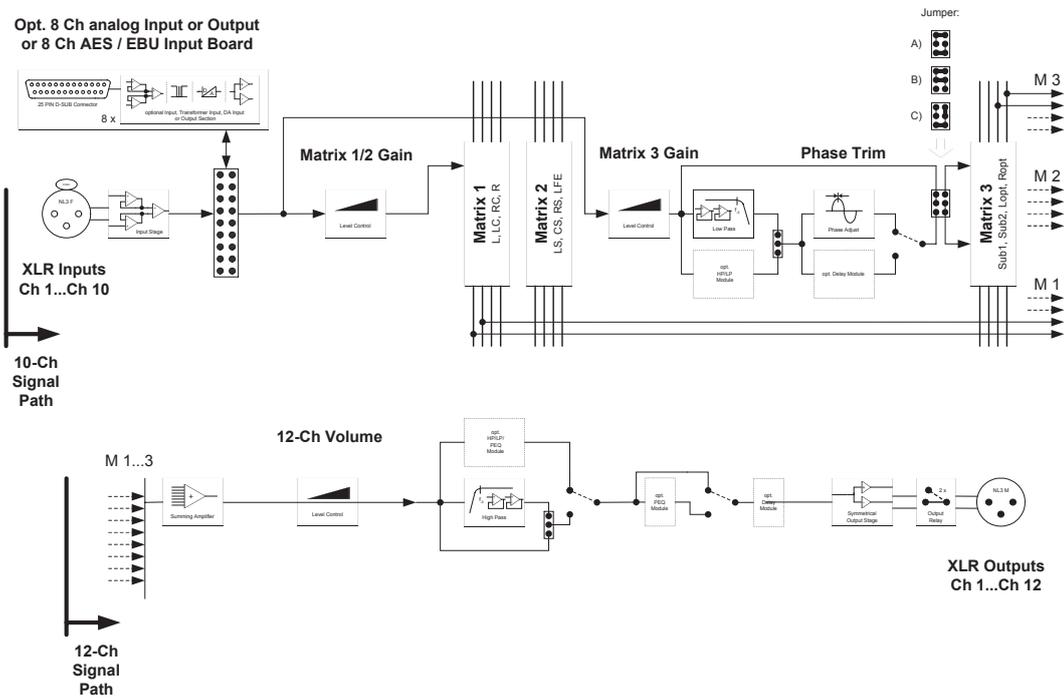


# Features

## Block Diagram



## Functions of each Channel

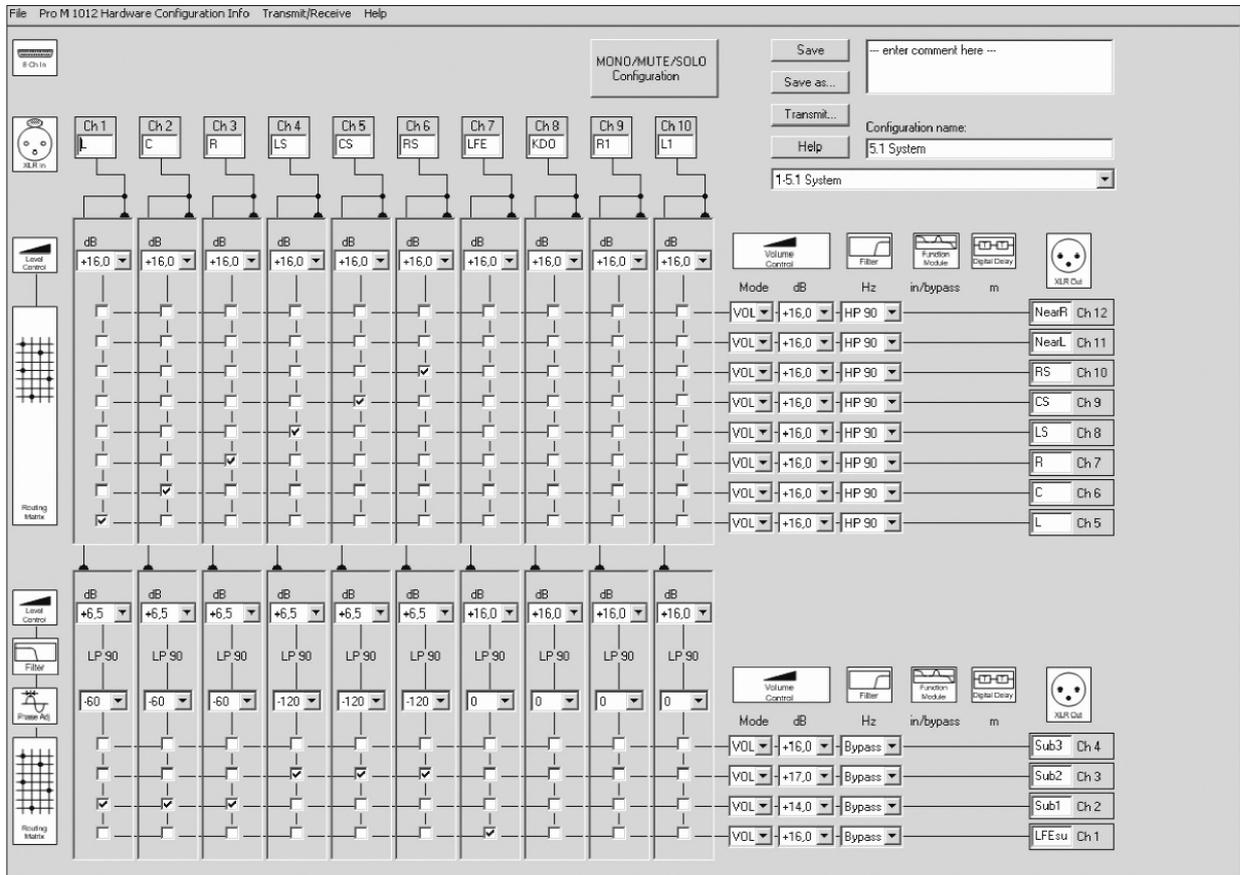


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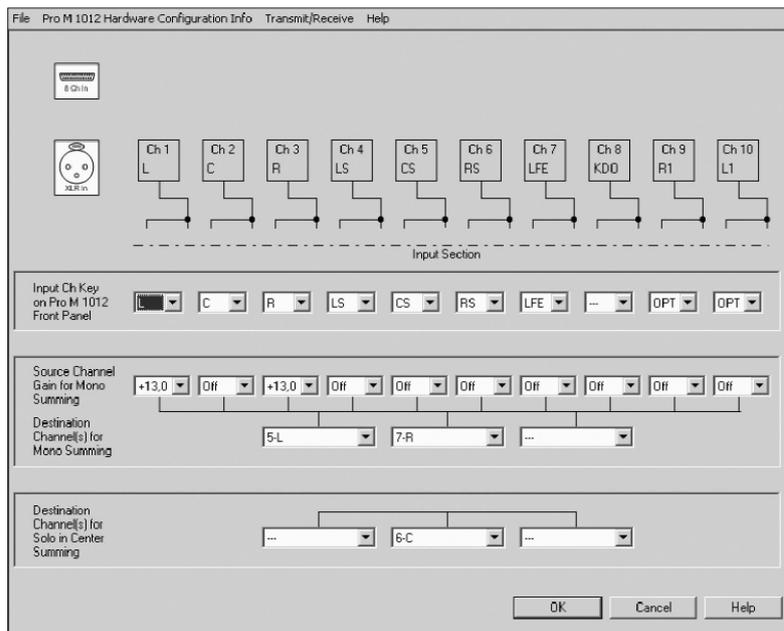
## Monitor Management System

### Windows® Configuration Manager®

- Window to Edit Basic Configurations:



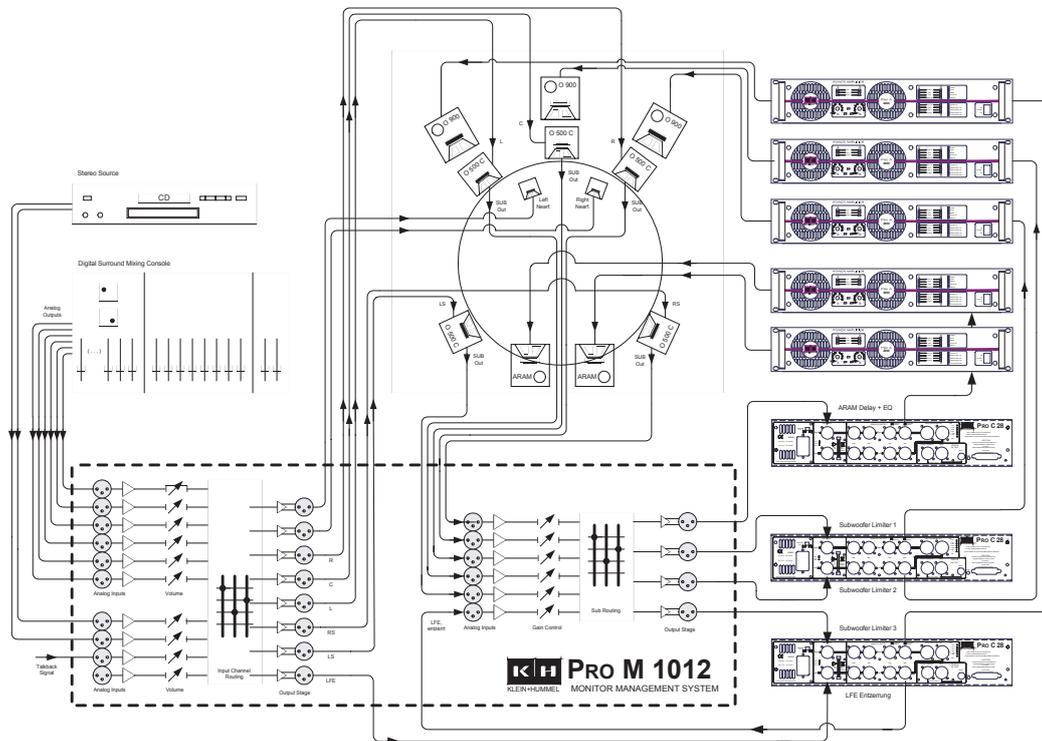
- Setup Window to define SOLO/MUTE Functions:



# Features

## Example System Setup with PRO M 1012

5.1 Setup with K+H main monitors O 500 C, studio subwoofers O 900, power amplifiers PRO A 2000 and digital FIR controller PRO C 28



## Technical specification

## PRO M 1012

### Connectors

Inputs	10 x XLR-F
Impedance	14 kOhm
max. Input Level	22 dBu
Outputs	12 x XLR-M
Impedance	< 70 Ohms
Optional	8 x D-Sub 25
Version	electronically bal. input; transformer bal. input; AES/EBU transformer bal. input

### Control elements

Inkremental encoder	Parameter variation
Pushbutton	27, with LED
Mains switch	

### Performance

Frequency response	10 Hz ... 60 kHz +/- 0,1 dB
THD	- 111 dB, 1 kHz, 0 dBu
THD+N	- 93,4 dB, 1 kHz, 0 dBu
DIM 100	- 90 dB, 0 dBu
CMRR	> 75 dB, 20 Hz ... 20 kHz
Cross-talk attenuation	> 100 dB, 1 kHz
Noise floor	- 93 dBu

### Power supply

	230 V AC +/- 15 %
Power consumption	max. 50 VA

### Mechanic

Dimensions (H x B x T)	88 mm (2 HE) x 483 mm (19") x 360 mm installation depth, 405 mm over all
Weight	7 kg



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