

STUDER

169 PROFESSIONAL PORTABLE AUDIO MIXER

AUDIO/MIXING



Mixing Console STUDER 169

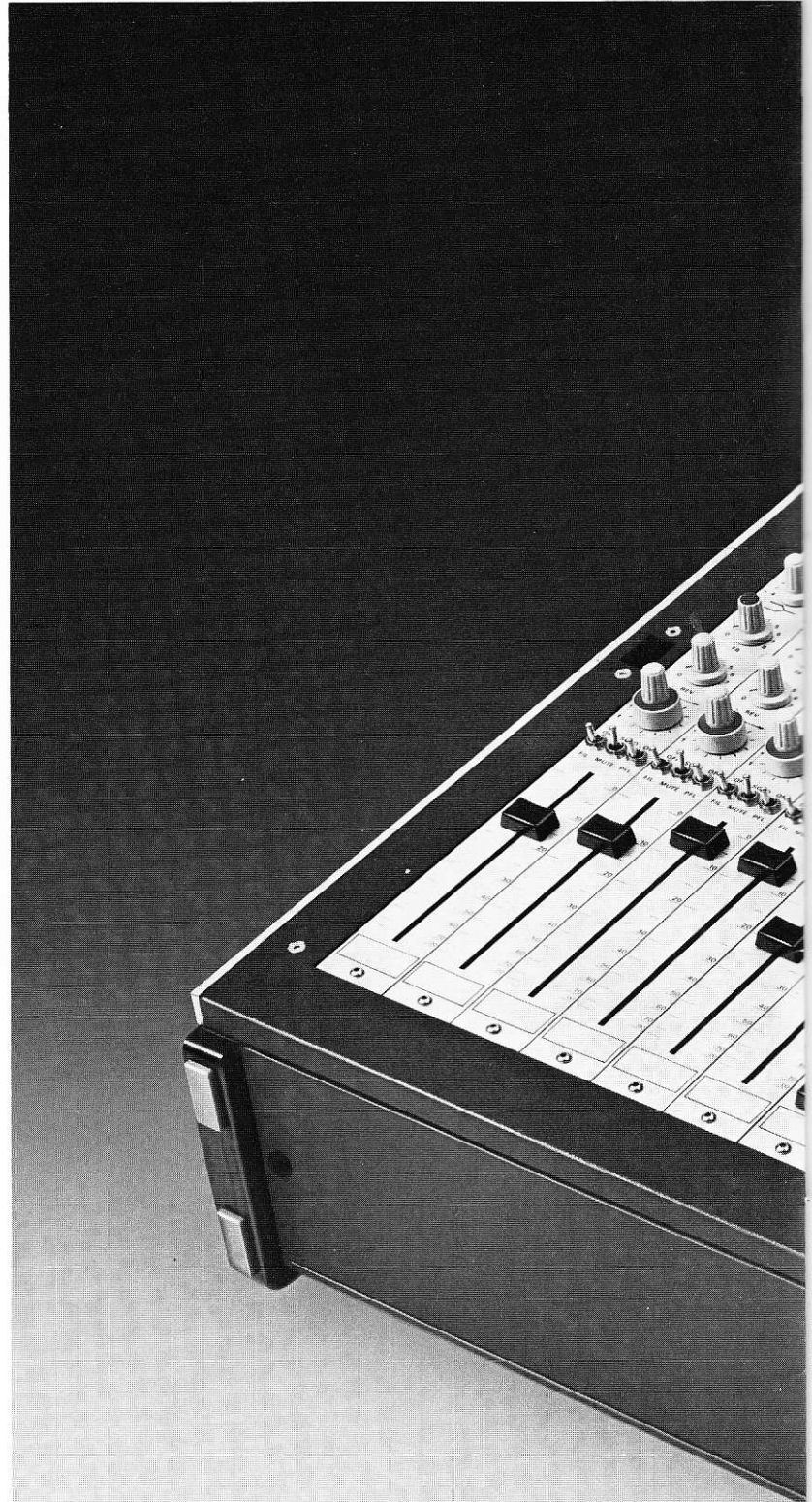
Mixing Console STUDER 169, the professional miniature mixer, made by the best-known manufacturer of the most famous studio sound equipment.

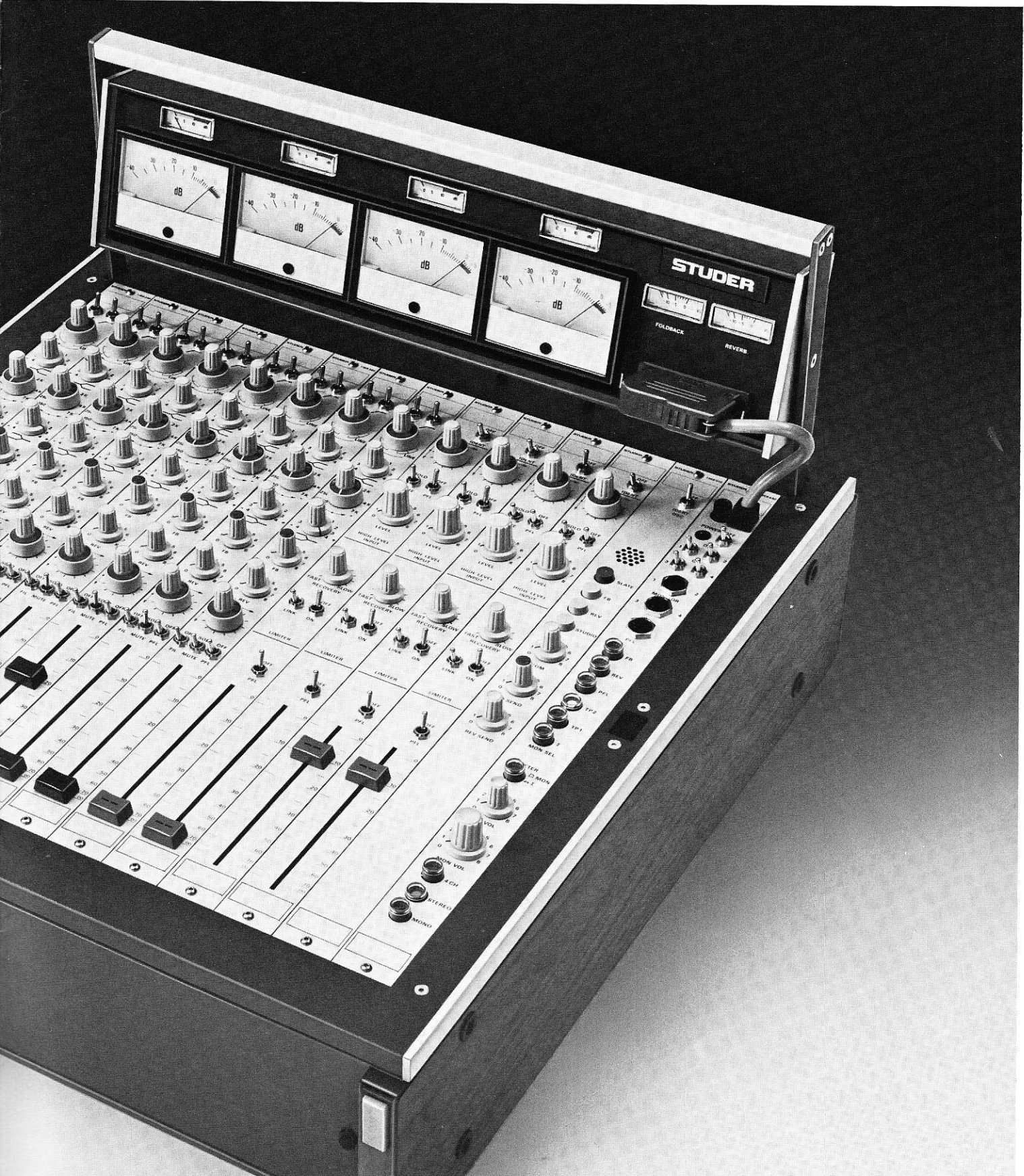
The new mixer offers an unusually high performance within its small dimension. Intended for a wide range of application with mono, stereo and quadro programs, it is ideally suited for use in mobile studios.



Console model of STUDER 169 for fixed location.

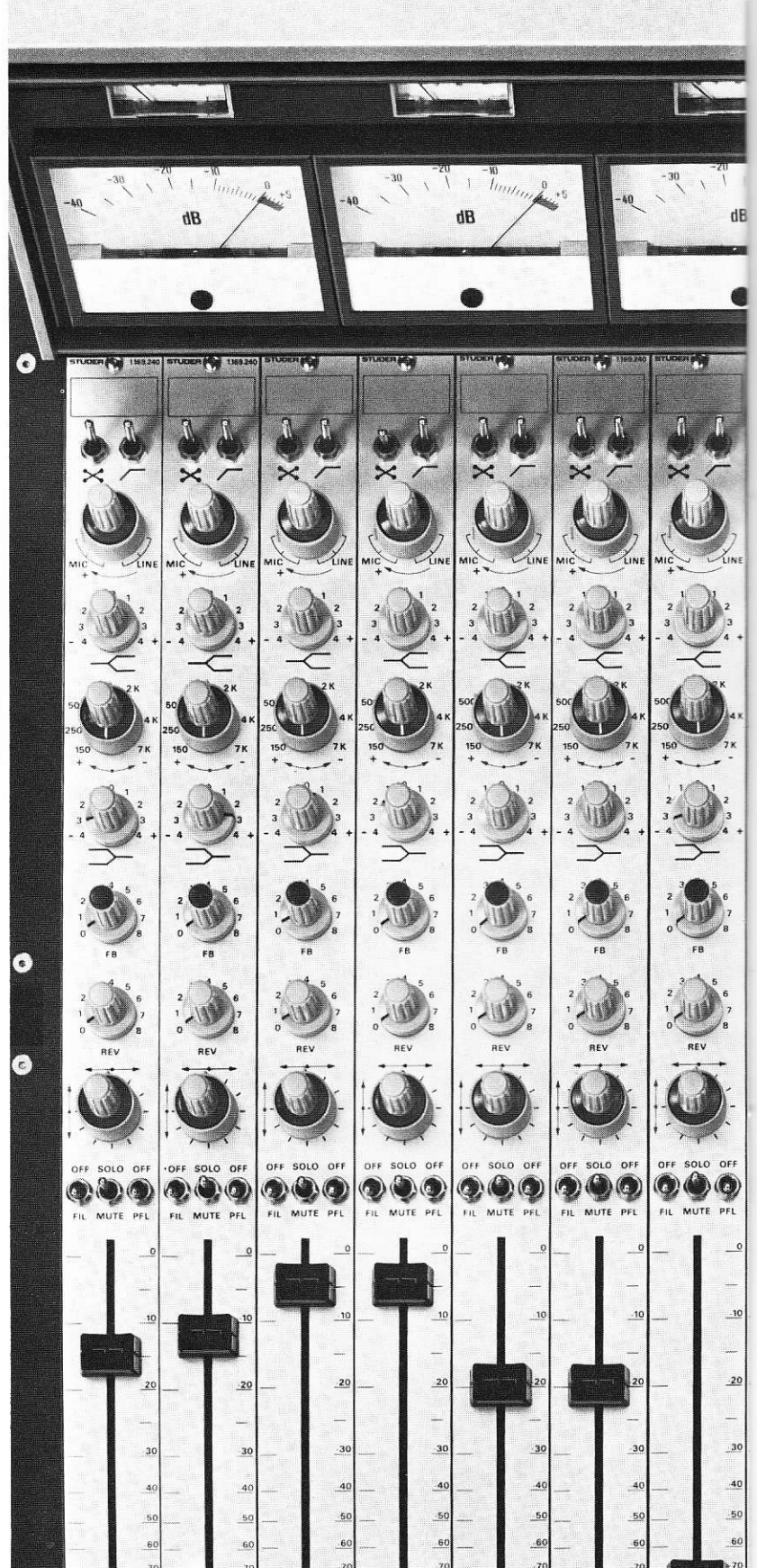
- Dimensions are the same as the B67 studio tape recorder; the mixer can be mounted in a 19" rack.
- Fitted with rechargeable nickel-cadmium batteries, charged automatically from external power supply.
- Operating voltage 12 V DC, so power can be taken from dry-cell batteries (UM-1), mains power supply or vehicle battery.
- NC batteries fully charged give approximately 4-5 hours operation.







- Modular construction: 30 mm wide modules connected from above. Possible configurations:
 - 11 input units - 1 master unit
 - 10 input units - 2 master units
 - 9 input units - 2 stereo masters, 1 mono master
 - 8 input units - 4 master units (max.)
 Each master unit is equipped with a linear high-level input.



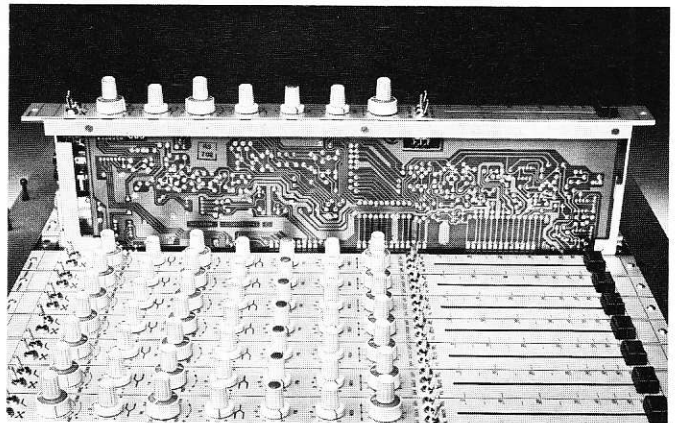
Compact, but clearly laid out, a specific feature of STUDER professional mixers.

Input Unit



Each input channel comprises:

- One XLR connector each for microphone and line input, equipped with XLR plugs. Both inputs balanced and floating. Phantom power for microphones (switchable internally on power pack). 6-step sensitivity switch (+4, -9, -22, -35, -48, -61 dBu) with additional continuously variable attenuation.
- Bass cut filter 70 Hz; 12 dB/octave.
- Bass equalizer ± 15 dB, continuous.
- Treble equalizer ± 15 dB, continuous.



- Presence equalizer ± 11 dB, continuously variable from 150 to 7000 Hz.
- Pre-fader insert for external filters (-10 dBu).
- Pre-fade listening selection with keyswitch.
- Mute/Solo switch. Mute position: channel concerned is muted. Solo position: channel concerned is in circuit, all others are muted.
- Panorama potentiometer with stereo model and double pan pot with 4-channel version.
- Professional linear fader (resistor layer of scratch-proof conductive plastic), mechanical travel 103 mm.
- Bypass switch for all filters except bass cut.
- Two adjustable auxiliary outputs (reverb and foldback), connected before or after fader, according to customers specification (interchangeable).
- One indicator contact per fader.

Master Unit Reverb and Foldback Unit Monitor Unit

Each master unit comprises:

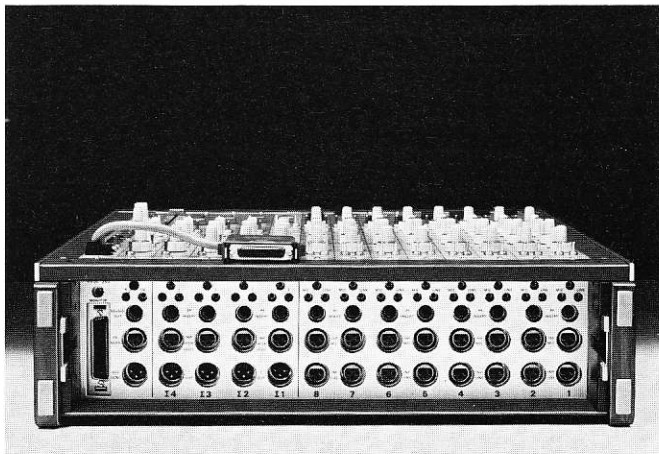
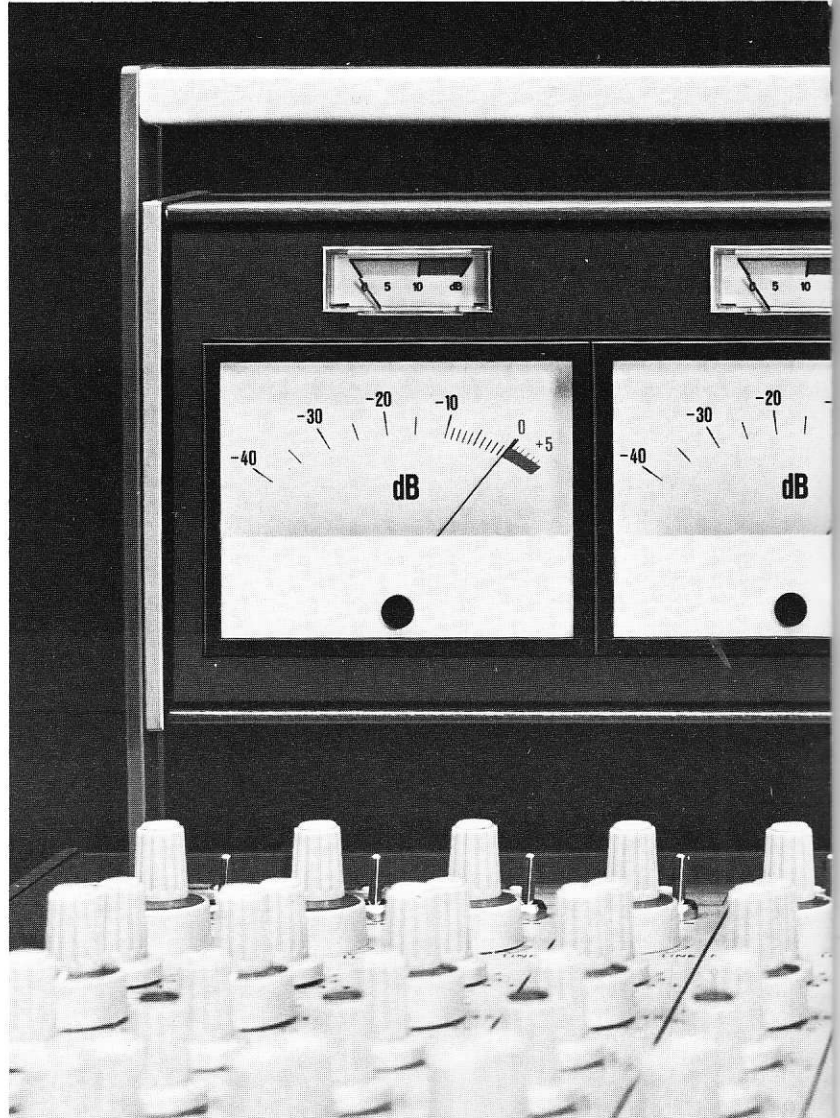
- Zero ohm balanced bus input
- Linear fader
- Pre-fade listening
- Switchable identification signal
- High-quality switchable limiter; reset time variable according to program. Can be coupled for stereo and 4-channel operation.
- Each master unit has a high-level input (balanced and floating), Mute/Solo switching and pre-fade listening. Stereo model with panorama pot, 4-channel version with double pan pot.
- Master output balanced and floating. Max. level +21 dBu into 200 ohms. Output impedance 50 ohms.

Reverb and foldback unit offers:

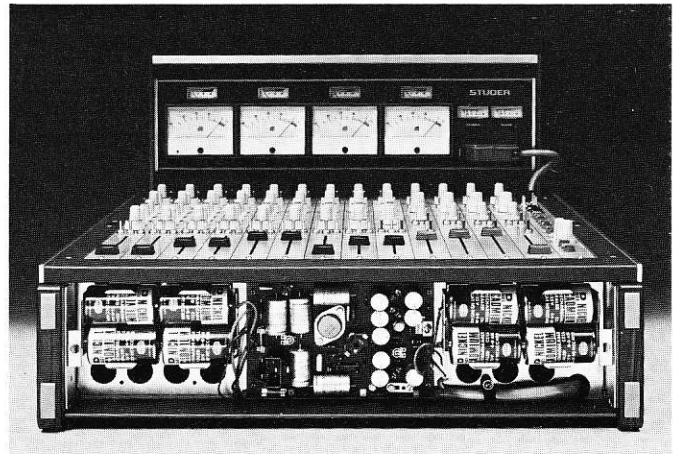
- Two master amplifiers with balanced and floating line outputs, individually variable.
- Integral electret microphone with limiter amplifier. Push-button selection to masters, reverb, foldback or studio.
- Integral oscillator for identification.

Monitor unit in four different versions for mono, stereo, 3 and 4-channel operation. Each separately switchable unit offers:

- Selector buttons for masters, foldback, reverb, pre-fade listening, tape 1 and tape 2.
- Monitoring potentiometers single, double or four-gang.
- Parallel-wired outputs on headphone jacks and multipole socket for external amplifiers.
- Mode selector buttons for mono, stereo and 4-channel.
- Pre-fade listening amplifier with volume control and outputs via jack and multipole socket.



Easy access to all inputs and outputs, XLR connectors for all important links.

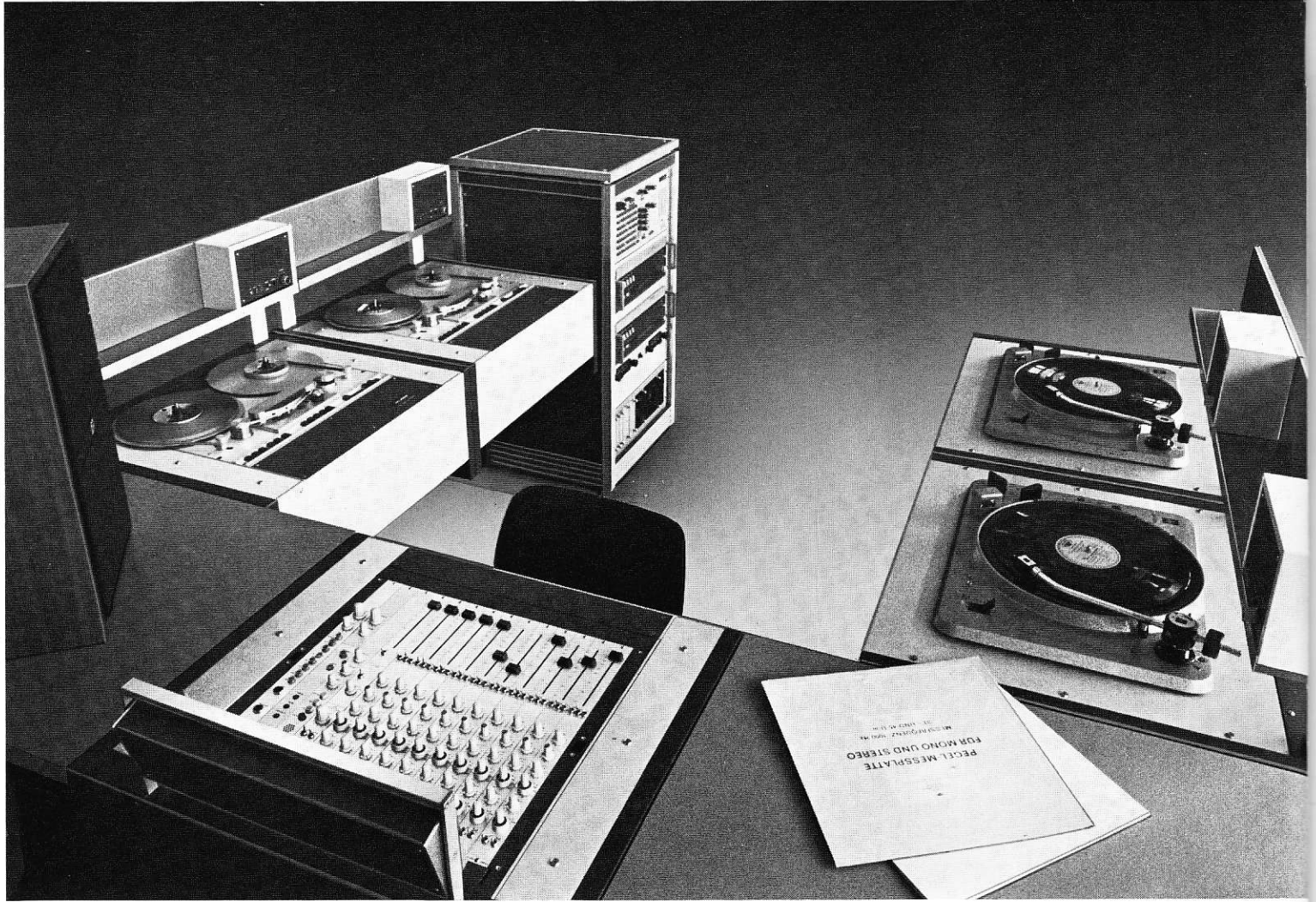


Meter Panel

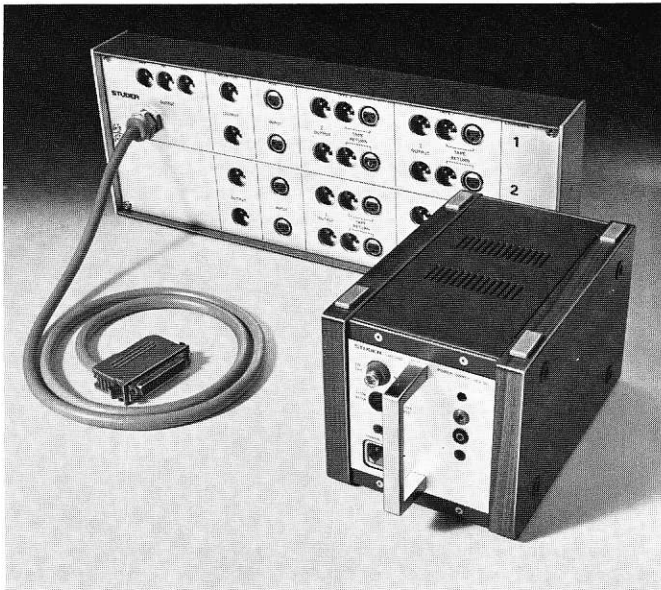


Plug connector coupled with carrying handle. Pivoted to stop reflection. One output meter per master (PPM or VU). One meter per master, indicating gain reduction in limiter. One extra VU meter each for reverb and foldback outputs. PFL speaker in mono, stereo and 3-channel mixers. In stereo mixers a correlation meter on request. Output meters switchable between monitor and master. Each monitor channel can be switched off individually.

Studio application and accessories



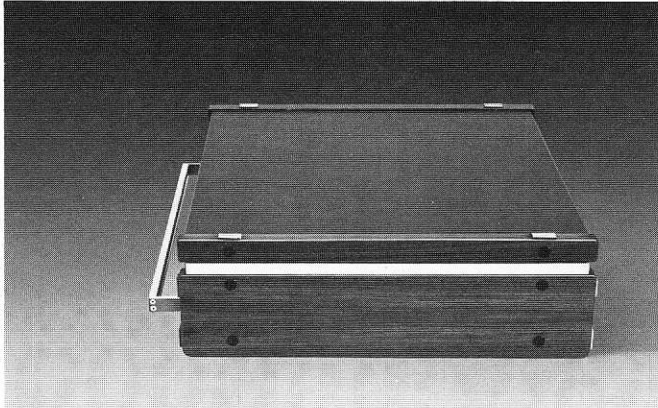
STUDER 169 Mixing Console used in a small monophonic studio



Accessories:

- Consoles for 169 mixer
- Power supply (1.169.990.81)
- Wire link (20.020.10601)
- Accumulators (89.01.0270)
- Monitor connection panel (50 pole plug)

Versions of the STUDER 169



169-11/1-PPM (70.300.61111/70.300.61112)
equipped with 11 inputs, 1 master, 1 reverb/foldback, 1 monitor, 1 peak program meter, PFL, speaker

169-11/1-VU (70.300.61121/70.300.61122)
equipped with 11 inputs, 1 master, 1 reverb/foldback, 1 monitor, 1 VU-meter, PFL speaker

169-10/2-PPM (70.300.61211/70.300.61212)
equipped with 10 inputs, 2 masters, 1 reverb, 1 reverb/foldback, 1 monitor, 2 peak program meters, PFL speaker

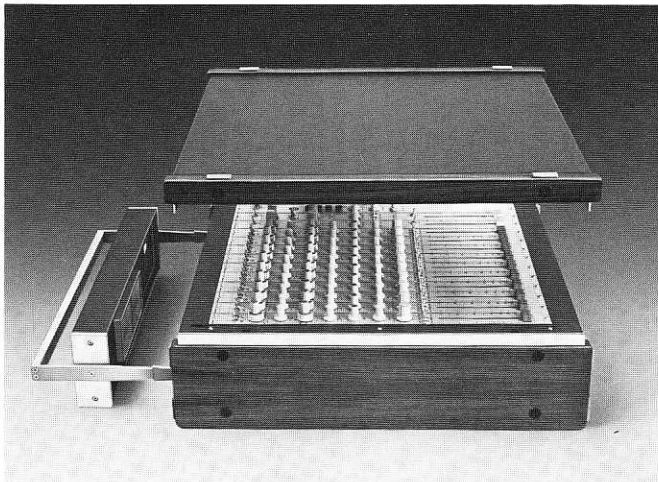
169 (70.300.61231/70.61232)
as above, but with correlator added

169-10/2-VU (70.300.61221/70.300.61222)
equipped with 10 inputs, 2 masters, 1 reverb/foldback, 1 monitor, 2 VU-meters, PFL speaker

169 (70.300.61241/70.300.61242)
as above, but with correlator added

169-8/4-PPM (70.300.61411/70.300.61412)
equipped with 8 inputs, 4 masters, 1 reverb/foldback, 1 monitor, 4 peak program meters

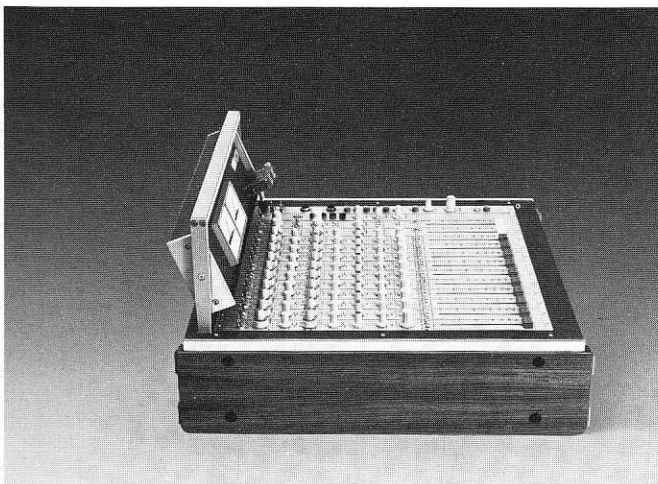
169-8/4-VU (70.300.61421/70.300.61422)
equipped with 8 inputs, 4 masters, 1 reverb/foldback, 1 monitor, 4 VU-meters



For simultaneous stereo and mono production:

169-9/3-PPM (70.300.61311/70.300.61312)
equipped with 9 inputs, 3 masters, 1 reverb/foldback, 1 monitor, 3 peak program meters, PFL speaker

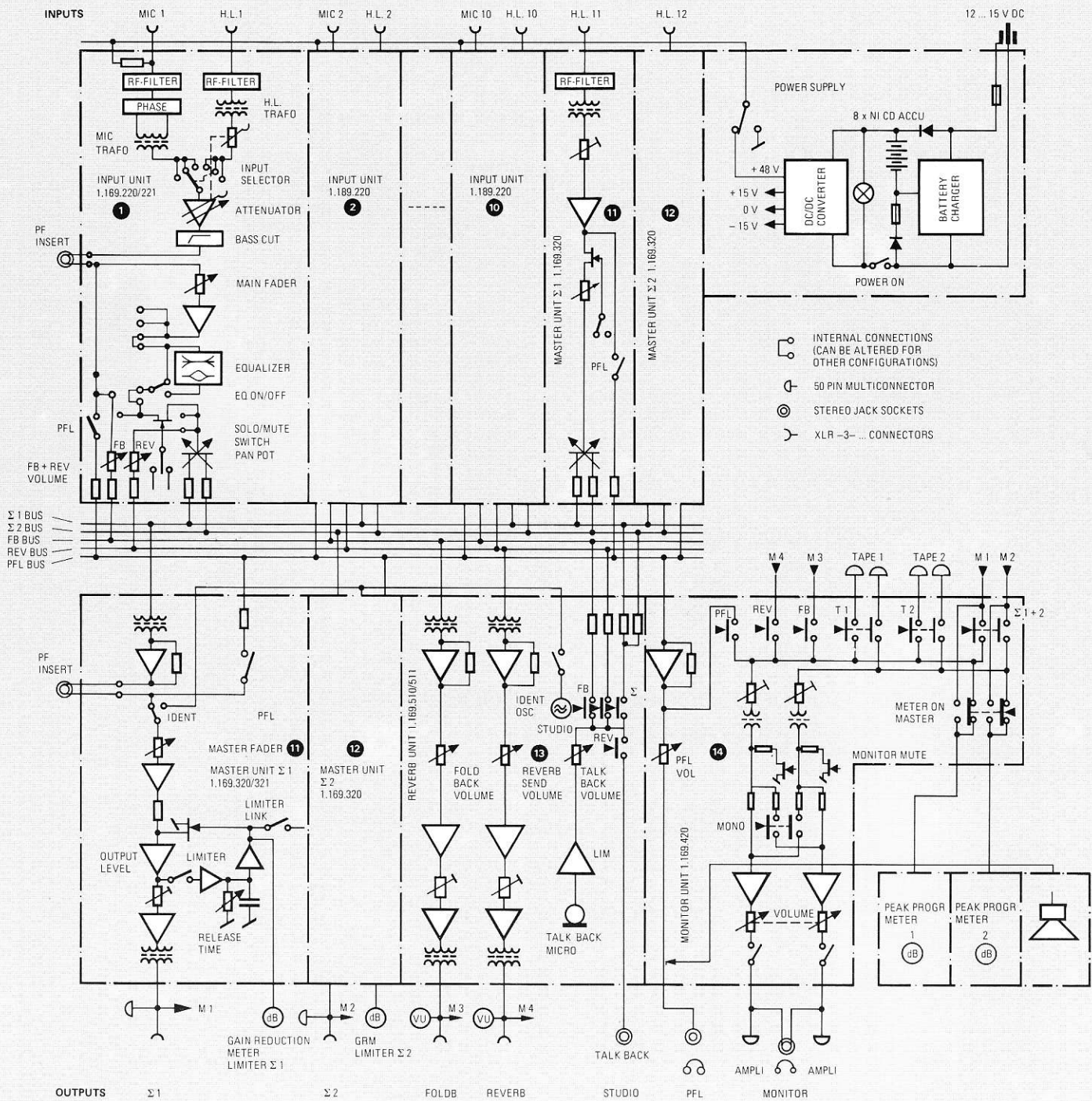
169-9/3-VU (70.300.61321/70.300.61322)
equipped with 9 inputs, 3 masters, 1 reverb/foldback, 1 Monitor, 3 VU-meters, PFL speaker



Simple and easy set-up of the mixer.

70.300.61...1, with built-in NiCad accumulators
70.300.61...2, with built-in power supply for mains

Block Diagram

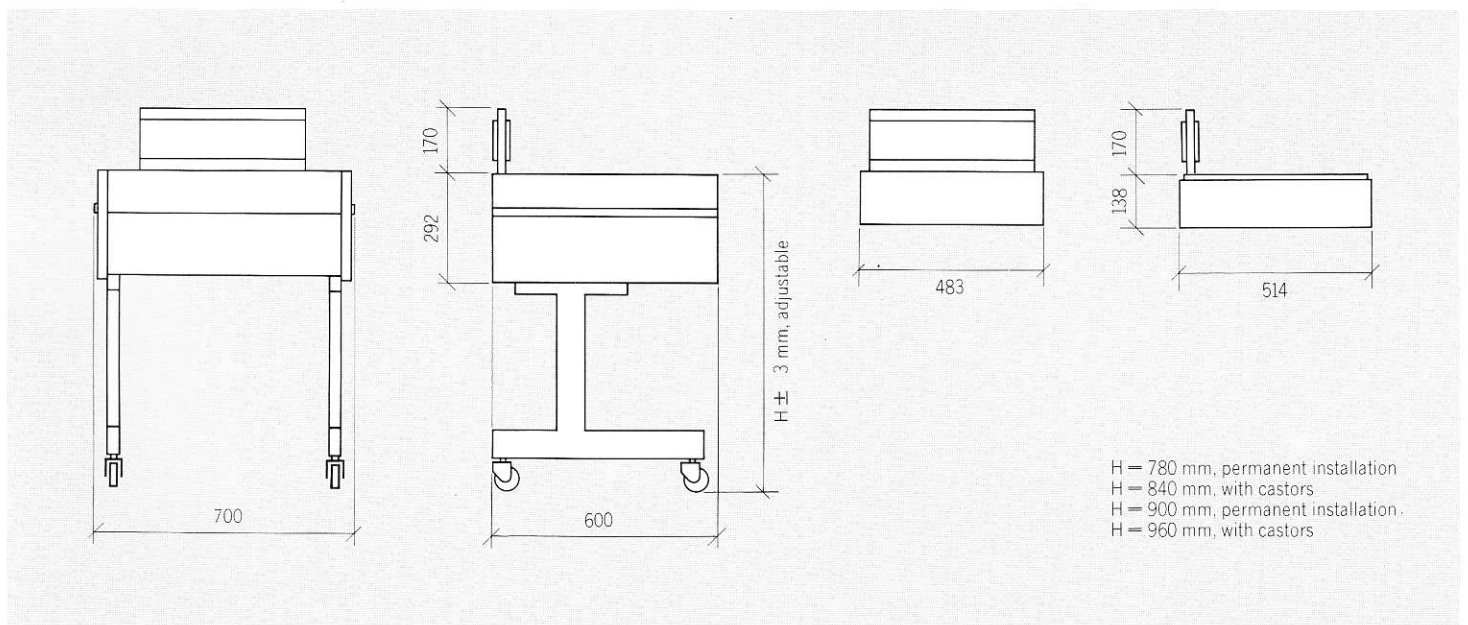


STUDER 169, Block Diagram, stereo version

Technical specifications

Mixing Console STUDER 169

General		Noise	
Levels in dBu are referred to 0.775 V.		Noise voltages are measured with an effective reading voltmeter and an equivalent noise bandwidth of 30 Hz ... 23 kHz (e.g. Siemens U2033 or equal).	
Channel and master faders are set to -10 dB.		Noise figure F of the micro input,	
Line outputs are loaded with 600 ohms.		source impedance = 200 ohms: ≤ 5 dB	
External sources (e.g. microphones) have a source impedance of ≤ 200 ohms.		Signal/noise ratio, master closed: > 86 dB	
Data given are valid from 40 Hz ... 15 kHz.		One channel unity gain filter off: > 83 dB	
Levels are measured with a continuous sine wave and correspond to a so-called peak recording level.		filter on (linear): > 80 dB	
		11 channels unity gain filters off: > 80 dB	
		filters on (linear): > 74 dB	
Levels		Distortion	
Sensitivity of mic inputs:	-61 dBu ... -22 dBu	Unity gain 1 kHz, +6 dBu: $\leq 0.03\%$	
line inputs:	-23 dBu ... +16 dBu	Unity gain 40 Hz ... 15 kHz: $\leq 0.3\%$	
Level at the insert points:	-10 dBu	Any level allowed by level diagram, 60 Hz ... 10 kHz: $\leq 0.5\%$	
Line output levels adjustable, according to customers requirements:	+6 dBu ... +15 dBu		
Monitor and PFL levels: (unbalanced and unloaded)	+6 dBu ... +15 dBu		
Impedances		Crosstalk	
Input impedance line:	> 5 kohm	Crosstalk from master to master, only one panpot being centered (mono-crosstalk): > 75 dB	
microphone:	≤ 1.2 kohm	Crosstalk from master to master all panpots being centered (stereo-crosstalk): > 70 dB	
Source impedance line outputs:	≤ 50 ohms		
Frequency response		Supply	
Filters off:	+0.5 ... -1 dB	The console is equipped with a DC/DC converter which produces the needed supply voltages. Batteries and external power supply are floating.	
Low cut 12 dB/oct., -3 dB at:	75 Hz ± 5 Hz	Supply internal amplifiers: ± 15 V, 300 mA	
Treble control shelving:	± 15 dB	mic phantom: 48 V, 60 mA	
Bass control shelving:	± 15 dB	Supply external: 8.5 ... 16 V DC max. 2.5 A	
Presence/absence filter Q ≈ 1 : (frequency adjustable 150 Hz ... 7 kHz)	± 11 dB	Min. external supply voltage to recharge the NiCad batteries: ≥ 13.5 V	
Overload margin		Time of operation with fully charged batteries, according to number of channels equipped and load conditions: 4 ... 5 h	
Max. level at mic input $k_3 = 1\%$ at 40 Hz:	-2 dBu		
Max. level at line input $k_3 = 1\%$ at 40 Hz:	+23 dBu		
Overload margin at channel fader: ($k_{tot} = 1\%$)	30 dB		
Overload margin at master fader: ($k_{tot} = 1\%$)	25 dB		
Max. line output, $R_L \geq 200$ ohms:	+21 dBu	Weight	
		Fully equipped incl. cover: approx. 25 kg	



Designed and Manufactured in Switzerland

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We reserve the right to make alterations as technical progress may warrant.

