

MULTIBAND COMPRESSOR

mastering warmth in stereo



SMC 2B

The TUBE-TECH SMC 2B Stereo Multiband Compressor is an all tube based compressor that adds the warmth of vintage quality masters to your mix. Variable x-over points ensure precise control with all three bands of opto-compression. Independent band specific Threshold, Ratio, Attack, Release & Gain parameters make the SMC 2B as flexible as accurate.

Product Description

The TUBE-TECH SMC 2B Stereo Multiband Compressor features three independent optical stereo compressors. The signal is divided into three bands (Low, Mid & High) by 6 dB/octave x-over networks with variable crossover frequencies: 60-1200 Hz for Low/Mid band and 1,2-6 kHz for the Mid/High band.

The design of the x-over networks optimizes the summing of all three bands, resulting in a flat frequency response (within +/-0,25 dB), when the gain controls for each

band are set at the same level. The three compressors feature Threshold, Ratio, Attack, Release and Gain and a display showing gain reduction. Master levels are set with Output Gain and Balance controls.

Both Input and Output are balanced and have fully floating transformers with a static screen. The power supply and the sidechain circuit is based on a solid state circuit. With the exception of the output stage all DC voltages are stabilised.

Product Features

- ▶ The world's only "all tube based" multiband compressor design
- ▶ Three bands per channel with variable crossover frequencies between bands
- ▶ Stereo sidechain with variable Threshold, Ratio, Attack, Release and Gain controls for all three bands
- ▶ Master Output Gain (off to +10 dB)
- ▶ Balance Control (+/-1,5 dB)
- ▶ LED display showing compression
- ▶ Freq. response @ -3 dB: 5 Hz to 60 kHz
- ▶ Low noise: < -60 dBu @10 dB gain
- ▶ Conductive plastic potentiometers
- ▶ Clickless bypass relay

SMC 2B *technical specifications*



Impedance

Input:	2 kohm
Output:	< 60 ohm

Frequency response @ -3 dB: 5 Hz to 60 kHz

Distortion THD+N @ 40 Hz

	0 dBu	< 0,15 %
	+10 dBu	< 0,15 %
Max. output:	+26 dBu	< 1 %
Max. input:	+21 dBu	< 1 %

Noise Rg=200 ohm

Output Gain @	OdB	+10 dB
22 Hz-22 kHz:	< -70 dBu	< -60 dBu
CCIR-468-4:	< -60 dBu	< -50 dBu

Cross talk @ 10 kHz: < -40 dB

CMRR @ 10 kHz: < -60 dB

Gain

Master:	off to +10 dB
Low-, Mid-, & High band:	off to +10 dB
Tracking between channels:	< 0,5 dB

X-over frequencies x1 x4

Low & Mid band:	60 to 300 Hz	0,24 to 1,2 kHz
Mid & High band:	1,2 to 6 kHz	

Compressor

Ratio:	1,5:1 to 10:1
Threshold:	off to -20 dBu
Attack:	3 ms to 200 ms
Release:	60 ms to 2 s

Tubes

ECC 81	4 pcs
ECC 82	2 pcs
ECC 83	2 pcs

Dimensions

Height: 3 units	132 mm	5,2"
Width:	483 mm	19,0"
Depth:	205 mm	8,1"

Weight

Net:	6,2 kg	13,7 lbs.
Shipping:	7,5 kg	16,5 lbs.

Power requirements

@ 115 V/230 V, 50-60 Hz:	30-45 W
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Notes

All specifications @ R_L=600 ohm
Lydkraft reserves the right to alter specifications without prior notice

Dealer

TUBE-TECH SMC 2B

Stereo Multiband Compressor

Description:

The **TUBE-TECH multiband compressor SMC 2B** is three-band stereo compressor. The two x-over frequencies are each made with a single RC circuit thereby preserving optimum summation of the three bands at the output.

The x-over frequency between the low band and the mid band is variable from 60Hz to 300Hz or 240Hz to 1200Hz and the x-over frequency between mid band and the high band is variable from 1,2kHz to 6kHz.

The signals from the three bands are then fed to the three separate side chain circuits, each common for left and right channel. After processing, the three signals go to a gain control, separate for each band and, are thereafter summed and send to the output gain, controlling the entire output level for all three bands.

Compressor:

The compressors are of the optical device type. It has controls for ratio, threshold, attack and release.

COMPRESSOR CONTROLS:

RATIO: The ratio control varies the ratio by which the input signal is compressed. If the ratio selected is 2:1, and the input signal increases 10 dB, the output signal is only increased by 5 dB.
The ratio control is continuously variable from 1,5:1 to 10:1.

THRESHOLD: The threshold is the point where the compressor begins to respond. It is defined as the point where the gain is reduced by 1 dB.
The threshold is continuously variable from off to -20 dBU.

ATTACK: The attack control chooses how fast/slow the compressor responds to an increase in the input signal.
The attack control is continuously variable from 1 to 100 milliseconds.

RELEASE: The release control chooses how fast/slow the compressor responds to a decrease in the input signal.
The release control is continuously variable from 0,07 to 2,5 seconds.

COMP in/out: This switch controls a relay that bypasses the whole unit.

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OUTPUT GAIN:

The gain control is used to "make up" for the gain loss, which takes place when the unit is compressing. The gain control is continuously variable from off to +10 dB.

BALANCE:

The balance control is used to compensate for the difference between channel 1 and channel 2. The balance control has a range of +/- 1,5dB.

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ADJUSTMENT PROCEDURE:

CAUTION:

Before making any adjustment let the unit heat-up at least 10 min.

Always check the DC voltages at the power supply.

- 1) The DC voltage in TP201 shall be +280V (265-295).
- 2) The DC voltage in TP203 shall be +15,0V (14,7-15,3).
- 3) The DC voltage in TP204 shall be -15,0V (14,7-15,3).

ADJUSTMENT OF PSU:

- 1) The DC voltage in TP202 shall be +240V.
Adjust with P202.

THE GRE SHALL BE MARKED 1.005-1.175

ADJUSTMENT OF BASIC GAIN:

- 1) Set the “**OUTPUT GAIN**” on “**+10**”.
- 2) Set the Low-Mid and High “**Gain**” on “**+10**”.
- 3) Apply a signal of 1 kHz, -20,0 dBu to input.
- 9) Adjust the preset “**Gain**” P1 (P101) (on amp/psu PCB) to an output reading of 0,0 dBu.

ADJUSTMENT OF COMPRESSION:

LOW BAND:

- 1) Turn all the THRESHOLD-controls fully counter-clockwise.
- 2) Turn the **LOW BAND GAIN**-control fully clockwise.
- 3) Turn the **MID BAND and HIGH BAND GAIN**-control fully counter-clockwise.
- 4) Set the **X-OVER LOW** at 300 (1,2k).
- 5) Set the **X-OVER LOW** multiplier at x4.

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- 6) Apply a signal of 100 Hz, (approx. -20 dBu) to the input and adjust the input level for an output reading of 0,0dBu.
- 7) Move the jumper on the low band side chain PCB to “ADJUST” and observe that the output level has dropped to -10,0 dBu in both channels.
- 8) If this is not the case, adjust the balance P 6 to and equal reading for both channels.
- 9) Adjust the gain reduction with P 5, to obtain a drop of -10,0 dB.
- 10) Repeat step 8 and 9.
- 11) Adjust the low band display with P 7 so the green -10 LED turns on and the green -7 LED just turns off

MID BAND:

- 1) Turn all the THRESHOLD-controls fully counter-clockwise.
- 2) Turn the **MID BAND GAIN**-control fully clockwise.
- 3) Turn the **LOW BAND and HIGH BAND GAIN**-control fully counter-clockwise.
- 4) Set the **X-OVER LOW** at 60 (300).
- 5) Set the **X-OVER LOW** multiplier at x1.
- 6) Set the **X-OVER HIGH** at 6k.
- 7) Apply a signal of 400 Hz, (approx. -20 dBu) to the input and adjust the input level for an output reading of 0,0dBu.
- 8) Move the jumper on the low band side chain PCB to “ADJUST” and observe that the output level has dropped to -10,0 dBu in both channels.
- 9) If this is not the case, adjust the balance P 6 to and equal reading for both channels.
- 10) Adjust the gain reduction with P 5, to obtain a drop of -10,0 dB.
- 11) Repeat step 9 and 10.
- 12) Adjust the mid band display with P 7 so the green -10 LED turns on and the green -7 LED just turns off.

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HIGH BAND:

- 1) Turn all the THRESHOLD-controls fully counter-clockwise.
- 2) Turn the **HIGH BAND GAIN**-control fully clockwise.
- 3) Turn the **LOW BAND and MID BAND GAIN**-control fully counter clockwise.
- 4) Set the **X-OVER HIGH** at 1,2k.
- 5) Apply a signal of 10 kHz, (approx. -20 dBu) to the input and adjust the input level for an output reading of 0,0dBu.
- 6) Move the jumper on the high band side chain PCB (top most PCB) to "ADJUST" and observe that the output level has dropped to -10,0 dBu in both channels.
- 7) If this is not the case, adjust the balance P 6 to and equal reading for both channels.
- 8) Adjust the gain reduction with P 5, to obtain a drop of -10,0 dB.
- 9) Repeat step 7 and 8.
- 10) Adjust the high band display with P 7 so the green -10 LED turns on and the green -7 LED just turns off.

CALIBRATING OF GAIN POTS:

When any of the gain potentiometers have been replaced, they will need to be re-calibrated, to minimise the level difference between the two channels.

Two resistors on each gain pot, are used to adjust the channel difference:

R24, R124 at **OUTPUT GAIN**

R21, R121 at **HIGH GAIN**, R22, R122A at **MID GAIN**, R123, R123 at **LOW GAIN**

HIGH, MID and LOW band potentiometers:

Only one gain pot is calibrated at a time. The two others are turned fully anticlockwise (off).

- 1) Turn the OUTPUT GAIN at max. gain (clockwise).
- 2) Turn the gain on the band to be calibrated, at max. gain (clockwise) and check that the difference between the two channels, are less than 0,1dB.
- 3) Set the gain pot to "0" dB.
- 4) The potmeter in the channel with the lowest level is adjusted to match the other channel, by changing the resistor, until the level is within 0,1dB.
The resistance range is normally within 274K Ω to 510K Ω

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- 5) The difference between channels shall be within 0,5dB
- 6) Repeat step 2-5 for the two other bands

OUTPUT GAIN potentiometer:

- 1) Turn the **OUTPUT GAIN** on max. gain (clockwise) and check that the difference between the two channels, are less than 0,1dB.
- 2) Set the gain pot to "0" dB.
- 3) The potmeter in the channel with the lowest level is adjusted to match the other channel, by changing the resistor, until the level is within 0,1dB.
The resistance range is normally within 274K Ω to 510K Ω
- 4) The difference between channels shall be within 0,5dB

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SPECIFICATIONS for TUBE- TECH SMC 2B/M

Impedance

Input	2 kOhm
Output	<60 Ohm

Frequency response @ -3dB 5 Hz to 50 Hz

Distortion THD+N @ 40Hz

	0 dBU	0,15 %
	+10 dBU	0,15 %
Max. output:	+26 dBU	<1 %
Max. input:	+21 dBU	<1 %

Noise Rg=200 Ohm

Gain @	0 dB	+60 dB
22 Hz-22 kHz	< -80 dBU	< -60 dBU
CCIR-468-4	< -70 dBU	< -50 dBU

Cross talk @ 10 kHz: < - 60 dB

CMMR @ 10 kHz: < - 60 dB

Gain:

Master	Off to +10 dB
Low-, Mid-, High band	Off to +10 dB
Tracking between channels	0,5 dB

Gain – Master Version (1 dB steps

Master	-1 dB to +10 dB
Low-, Mid-, High band	Off to +10 dB
Tracking between channels	0,1 dB

X-over frequencies x1 X4

Low & Mid band	60 to 300 Hz	0,24 to 1,2 kHz
Mid & High band	1,2 to 6 kHz	

X-over frequencies

Low & Mid band	60,100,150,200,250,300 Hz
	0.24, 0.4, 0.6, 0.8 1, 1,2 kHz
Mid & High band	1.2, 2, 3.2, 4, 6 kHz

Compressor

Ratio:	2:1 to 10:1
Threshold	off to -20 dBU
Attack	3 ms to 200 ms
Release:	60 ms to 2 s

Tubes

ECC 81	4 pc
ECC 82	1 pc
ECC 83	1 pc

Dimensions

Height: 2 units	88 mm	3,5"
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Depth:	205 mm	8,1"

Weight

Net:	5,3 kg	11,7 lbs
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Power requirements

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